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TABLES OF IMPEDANCE
AND
RADIAN EFFECTIVE LENGTH
OF
WIDE-ANGLE CONICAL ANTENNAS

by

C W Harrison, Jr

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SANDIA CORPORATION MONOGRAPH

TABLES OF IMPEDANCE AND RADIAN EFFECTIVE LENGTH
OF WIDE-ANGLE CONICAL ANTENNAS

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C. W. Harrison, Jr.

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ABSTRACT

Studies relating to the transient response of wide-angle conical transmitting and receiving antennas, employing coaxial lines, require knowledge of both the steady-state impedance and effective length of these structures over a wide frequency range. To fulfill the need for these data, graphs and tables, based on theoretical analyses, are provided in this report.

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TABLE OF CONTENTS

Introduction.	Page 5
The Driving Point Impedance of a Wide-Angle Conical Antenna Fed by a Coaxial Line	6
The Effective Length of a Wide-Angle Conical Antenna	8
The Driving Point Impedance of an Electrically Short, Wide-Angle Conical Antenna Driven by a Coaxial Line	9
The Radian Effective Length of an Electrically Short, Wide-Angle Conical Antenna	10
Numerical Results	11
List of References	254

LIST OF ILLUSTRATIONS

Fig. 1 -- Spherically capped conical antenna fed by coaxial feed line.	Page 13
Fig. 2 -- Input impedance $Z_o = R_o + jX_o$ of wide-angle conical antennas: $\theta_o = 30$ degrees. $Z_c = 79.017$ ohms	14
Fig. 3 -- $\theta_o = 35$ degrees. $Z_c = 69.254$ ohms	15
Fig. 4 -- $\theta_o = 40$ degrees. $Z_c = 60.641$ ohms	16
Fig. 5 -- $\theta_o = 45$ degrees. $Z_c = 52.882$ ohms	17
Fig. 6 -- $\theta_o = 46.98$ degrees. $Z_c = 49.996$ ohms	18
Fig. 7 -- $\theta_o = 50$ degrees. $Z_c = 45.775$ ohms	19
Fig. 8 -- $\theta_o = 55$ degrees. $Z_c = 39.170$ ohms	20
Fig. 9 -- $\theta_o = 60$ degrees. $Z_c = 32.958$ ohms	21
Fig. 10 -- $\theta_o = 65$ degrees. $Z_c = 27.053$ ohms	22
Fig. 11 -- $\theta_o = 70$ degrees. $Z_c = 21.383$ ohms	23

LIST OF ILLUSTRATIONS (Continued)

Fig. 12 -- Radian effective half-length $kh_e \left(\frac{\pi}{2} \right) = k \left[h_e'' \left(\frac{\pi}{2} \right) + j h_e' \left(\frac{\pi}{2} \right) \right]$	Page
for wide-angle conical antennas:	
$\theta_o = 30$ degrees. $Z_c = 79.017$ ohms	24
Fig. 13 -- $\theta_o = 35$ degrees. $Z_c = 69.254$ ohms	25
Fig. 14 -- $\theta_o = 40$ degrees. $Z_c = 60.641$ ohms	26
Fig. 15 -- $\theta_o = 45$ degrees. $Z_c = 52.882$ ohms	27
Fig. 16 -- $\theta_o = 46.98$ degrees. $Z_c = 49.996$ ohms	28
Fig. 17 -- $\theta_o = 50$ degrees. $Z_c = 45.775$ ohms	29
Fig. 18 -- $\theta_o = 55$ degrees. $Z_c = 39.170$ ohms	30
Fig. 19 -- $\theta_o = 60$ degrees. $Z_c = 32.958$ ohms	31
Fig. 20 -- $\theta_o = 65$ degrees. $Z_c = 27.053$ ohms	32
Fig. 21 -- $\theta_o = 70$ degrees. $Z_c = 21.383$ ohms	33

LIST OF TABLES

TABLE	Page
I.	35
II.	57
III.	79
IV.	101
V.	123
VI.	145
VII.	167
VIII.	189
IX.	211
X.	233

TABLES OF IMPEDANCE AND RADIANT EFFECTIVE LENGTH OF WIDE-ANGLE CONICAL ANTENNAS

Introduction

To discuss quantitatively the response of transmitting and receiving antennas to pulse excitation, using Fourier transform methods, generally requires a knowledge of both the steady-state driving point impedance $Z_o(f)$ and the effective length $h_e(f)$ for the range of frequencies over which the spectrum of the excitation has significant amplitudes. If the far-zone field of an antenna driven by a voltage pulse is to be determined, both $Z_o(f)$ and $h_e(f)$ must be known. This is also true in the analysis of an impedance-loaded receiving antenna excited by an electric field pulse. If the load in the receiving antenna is disconnected from the antenna terminals, the open-circuit voltage may be determined from $h_e(f)$ alone. The reflected voltage on a transmission line with an antenna load may be completely determined from $Z_o(f)$ and the characteristic impedance of the line Z_c .

Happily, the theory of some classes of wave launchers and collectors,¹⁻⁵ notably wide-angle conical and cylindrical antennas, has been developed sufficiently to permit calculation of the transfer functions over the range of frequencies required in the study of transients in these structures. Presumably, for other antenna types, experiments can be devised permitting the measurement of $Z_o(f)$ and $h_e(f)$.

Review of Reference 1 suggests that since wide-angle conical antennas are very broad-band structures they might have potential as receiving antennas for nonrepetitive electromagnetic field pulses of nanosecond duration, or for the transmission of such pulses. The motivation for a study of transients in wide-angle conical antennas is twofold: To determine the feasibility of the use of such structures for receiving nonrepetitive electromagnetic field pulses for the purpose of obtaining a voltage replica of the pulse shape across the load impedance; and, alternatively, to investigate the possibility of establishing a far-zone electromagnetic field pulse having the same shape as the pulse voltage applied to the antenna terminals for use in calibrating pulse receiving systems in a complex. The envisioned receiving system consists, in essence, of a receiving antenna and high-speed wide-band oscilloscope equipped with camera for the purpose of obtaining permanent photographic records of the pulse shape. The transmitting system, in rudimentary form, might consist of a pulse-forming line and an antenna.

When the electrical length of a wide-angle conical antenna exceeds 4 radians, and the cone flare angle lies in the bounds of theory validity, the impedance $Z_o(f) = R_o(f) + jX_o(f)$ is fairly independent of frequency, i. e., $R_o(f) \rightarrow Z_c$, and $X_o(f) \rightarrow 0$. Here, Z_c is the characteristic impedance of the cone. Thus, the antenna may be classed as a broad-band structure. But, from this property alone, one may not conclude that this type of antenna will prove useful for the transmission and reception of pulses, where the waveshapes are to be preserved. Since the reception and transmission of pulses depend on $h_e(f)$, as well

as $Z_o(f)$, an investigation of the behavior of $h_e(f)$ must be made before any conclusions can be drawn relative to the transient response of wide-angle conical antennas. The quantity $h_e(f)$ can be derived from the radiation field pattern of the antenna, using the reciprocity theorem.² If $h_e(f)$ turns out to be fairly independent of frequency, it follows that transfer functions constructed from $Z_o(f)$ and $h_e(f)$ will also be reasonably flat with respect to frequency because $Z_o(f)$ is nearly flat.

The study reported here was embarked upon to extend the range of numerical data for $Z_o(f)$ currently available,¹ and obtain complementing numerical information for $h_e(f)$ over the same frequency range. These data permit determination of the complete response of wide-angle conical antennas to transient fields and driving voltages.

The Driving Point Impedance of a Wide-Angle Conical Antenna Fed by a Coaxial Line

The driving point impedance Z_o of the wide-angle conical antenna pictured in Fig. 1 is the ratio of the applied voltage to the total current. The applied voltage is the integral of the θ -component of the electric field from the cone to the plane along an arc $r = \rho_2$. The total current on the cone crossing the circle $\theta = \theta_o$, $r = \rho_2$ is obtained by integrating the ϕ -component of the magnetic field around the vertex of the cone. Thus,

$$V = \int_{\theta_o}^{\pi/2} E_{\theta} \cdot r d\theta \quad , \quad r \rightarrow \rho_2 \quad (1)$$

and

$$I_o = \int_0^{2\pi} H_{\phi} \cdot r \sin \theta_o d\phi \quad , \quad r \rightarrow \rho_2 \quad (2)$$

Here V and I_o are the driving voltage and input current, respectively.

Papas and King¹ have derived expressions for E_{θ} and H_{ϕ} in the antenna region $\rho_2 \leq r \leq a$, $\theta_o \leq \theta \leq \pi/2$. Subject to the approximations mentioned in their paper,

$$H_{\phi} = \frac{\alpha e^{-jkr} + \beta e^{jkr}}{r \sin \theta} \quad , \quad (3)$$

and

$$E_{\theta} = \zeta_o \left(\frac{\alpha e^{-jkr} - \beta e^{jkr}}{r \sin \theta} \right) \quad (4)$$

Here,

α and β are constants,

k is the wave number; $k = 2\pi/\lambda$.

ζ_o is the characteristic resistance of space; $\zeta_o = 120\pi$ ohms.

Assuming that $k\rho_2 \ll 1$, it follows that

$$V = \zeta_o \alpha \left(1 - \frac{\beta}{\alpha}\right) \int_{\theta_o}^{\pi/2} \frac{d\theta}{\sin \theta} = 2\pi Z_c \alpha \left(1 - \frac{\beta}{\alpha}\right), \quad (5)$$

and

$$I_o = 2\pi\alpha \left(1 + \frac{\beta}{\alpha}\right). \quad (6)$$

The driving point impedance is, therefore,

$$Z_o = \frac{V}{I_o} = Z_c \left(\frac{1 - \frac{\beta}{\alpha}}{1 + \frac{\beta}{\alpha}} \right), \quad (7)$$

where Z_c is the characteristic impedance of the antenna given by

$$Z_c = \frac{\zeta_o}{2\pi} \ell_n \cot \frac{\theta_o}{2}. \quad (8)$$

The ratio of β/α , as obtained by Papas and King,¹ is

$$\frac{\beta}{\alpha} = e^{-j2ka} \left\{ \frac{1 + j \frac{\zeta_o}{2\pi Z_c} \sum_{n=1}^{\infty} \frac{2n+1}{n(n+1)} \left[P_n(\cos \theta_o) \right]^2 \zeta_n(ka)}{-1 + j \frac{\zeta_o}{2\pi Z_c} \sum_{n=1}^{\infty} \frac{2n+1}{n(n+1)} \left[P_n(\cos \theta_o) \right]^2 \zeta_n(ka)} \right\}, \quad (9)$$

where

$$\zeta_n(ka) = \frac{h_n^{(2)}(ka)}{h_{n-1}^{(2)}(ka) - \frac{n}{ka} h_n^{(2)}(ka)}, \quad (10)$$

a is the length of the antenna,

$P_n(\cos \theta)$ is the Legendre polynomial of order n ,

$h_n^{(2)}(x)$ is the spherical Hankel function of the second kind.

The summation in (9) is over odd integral values.

The formula for Z_o is accurate only when the characteristic impedance of the antenna matches that of the coaxial feed line, and the flare angle of the cone is neither too small nor too large, i.e., $30^\circ \leq \theta_o \leq 70^\circ$.

The Effective Length of a Wide-Angle Conical Antenna

In an additional paper, Papas and King² have derived an expression for the far-zone electric field of a wide-angle conical antenna. It is

$$E_{(\theta)}^{\text{rad}} = K \frac{e^{-jkr}}{kr} \sum_{n=1}^{\infty} P_n(\cos \theta_0) P'_n(\cos \theta) \left(\frac{2n+1}{n^2+n} \right) \left\{ \frac{j^n}{h_{n-1}^{(2)}(ka) - \frac{n}{ka} h_n^{(2)}(ka)} \right\}, \quad (11)$$

where

$$K = \frac{\xi_0 \alpha}{a} \left(e^{-jka} - \frac{\beta}{\alpha} e^{jka} \right), \quad (12)$$

$$P'_n(\cos \theta) = -\frac{d}{d\theta} P_n(\cos \theta), \quad (13)$$

and

r is the distance from the point of field calculation in the radiation zone to the vertex of the cone.

The summation is over odd integers, as before.

It can be shown that, as a consequence of the Rayleigh-Carson reciprocity theorem,

$$kh_e \left(\frac{\pi}{2} \right) = F \left(\frac{\pi}{2} \right), \quad (14)$$

for any two-terminal antenna.⁶ In (14), $h_e(\pi/2)$ is the complex effective length when $\theta = \pi/2$, and $F(\pi/2)$ is the vertical field characteristic for $\theta = \pi/2$.

Evidently, to obtain the complex effective length of a wide-angle conical antenna requires only the identification of that portion of (11) corresponding to $F(\pi/2)$. The problem is made simple by using the analogous situation of the dipole antenna. The radiation field of a dipole for $\theta = \pi/2$ may be written

$$E^{\text{rad}} \left(\frac{\pi}{2} \right) = j \frac{\xi_0}{2\pi} I_0 \frac{e^{-jkr}}{r} F \left(\frac{\pi}{2} \right), \quad (15)$$

where I_0 is the input current. Evidently, (11) must be expressed in terms of the input current. For this purpose (6) is employed to obtain α in terms of I_0 . That is,

$$\alpha = \frac{I_0}{2\pi \left(1 + \frac{\beta}{\alpha} \right)}. \quad (16)$$

Substituting (16) into (12), and the result into (11), leads to the final formula for $E^{\text{rad}}(\pi/2)$. It is

$$E^{\text{rad}}\left(\frac{\pi}{2}\right) = \frac{\xi_o I_o}{2\pi ka \left(1 + \frac{\beta}{\alpha}\right)} \left(e^{-jka} - \frac{\beta}{\alpha} e^{jka} \right) \frac{e^{-jkr}}{r} \cdot \sum_{n=1}^{\infty} P_n(\cos \theta_o) P'_n(o) \left(\frac{2n+1}{n^2+n} \right) \frac{j^n}{h_{n-1}^{(2)}(ka) - \frac{n}{ka} h_n^{(2)}(ka)} \quad (17)$$

Comparing this expression with (15), and using (14), it follows that

$$kh_e = \frac{1}{ka \left(1 + \frac{\beta}{\alpha}\right)} \left(\frac{\beta}{\alpha} e^{jka} - e^{-jka} \right) \cdot \sum_{n=1}^{\infty} P_n(\cos \theta_o) P'_n(o) \left(\frac{2n+1}{n^2+n} \right) \frac{j^{n+1}}{h_{n-1}^{(2)}(ka) - \frac{n}{ka} h_n^{(2)}(ka)} \quad (18)$$

This is the final expression for the radian effective length of the wide-angle conical antenna pictured in Fig. 1, for the reception of vertically polarized plane waves, i. e., the electric field is directed parallel to the z co-ordinate.

The Driving Point Impedance of an Electrically Short, Wide-Angle Conical Antenna Driven by a Coaxial Line

Attention is now given to the development of a formula for the impedance of an electrically short, wide-angle conical antenna ($ka \ll 1$).

Since

$$h_n^{(2)}(x) = \sqrt{\frac{\pi}{2x}} H_{n+1/2}^{(2)}(x), \quad (19)$$

and

$$H_n^{(2)}(x) = J_n(x) - jY_n(x), \quad (20)$$

$\xi_1(ka)$, as defined by (10), becomes

$$\xi_1(ka) = \frac{h_1^{(2)}(ka)}{h_o^{(2)}(ka) - \frac{1}{ka} k_1^{(2)}(ka)} \approx -\frac{ka}{1 + jka} \quad (21)$$

Noting that $[P_1(\cos \theta_o)]^2 = \cos^2 \theta_o$ in (9), (7) becomes

$$Z_o \approx -j \frac{4\pi Z_c^2}{ka(4\pi Z_c + 3\xi_o \cos^2 \theta_o)} \quad (22)$$

This is the final formula for the impedance of an electrically short, wide-angle conical antenna. The impedance is a pure reactance. The impedance of an electrically short cylindrical monopole is⁷

$$Z_o \approx -j \frac{\xi_o}{4\pi kh} \left[\frac{\Omega - 2}{1 + \frac{2 \ln 2}{\Omega - 2}} \right] \quad (23)$$

where $\Omega = 2 \ln \frac{2h}{a}$, h is the height of the monopole, and a is its radius. It is to be observed that (22) and (23) are comparable in all respects.

When $ka \ll 1$, the wide-angle conical antenna is equivalent to a lumped capacitor of value

$$C_a = \frac{a(4\pi Z_c + 3\xi_o \cos^2 \theta_o)}{4\pi c Z_c^2} \quad (24)$$

where c is the velocity of light; $c = 3 \times 10^8$ m/sec.

If $\theta_o = 46.982^\circ$, $Z_c = 50$ ohms. Let $ka = 0.1$. The impedance, as given by (22), is $Z_o = 0 - j272.2$ ohms. The impedance given in the appropriate table for this case is $Z_o = 0.12124 - j263.96$ ohms. The latter result is based on taking 29 terms in the series; i. e., the series was truncated following $n = 57$.

The Radian Effective Length of an Electrically Short, Wide-Angle Conical Antenna

The leading term in (18) for $ka \ll 1$ is

$$kh_e = -\frac{j3}{2ka} \left(\frac{1 - \frac{\beta}{\alpha}}{1 + \frac{\beta}{\alpha}} \right) \cos \theta_o P_1'(o) \left[\frac{1}{h_o^{(2)}(ka) - \frac{1}{ka} h_1^{(2)}(ka)} \right] \quad (25)$$

The factor $(1 - \beta/\alpha)/(1 + \beta/\alpha)$ is available from (7) and (22); reference to (13) shows that $P_1'(o) = 1$ when $\theta = \pi/2$. Also,

$$h_o^{(2)}(ka) - \frac{1}{ka} h_1^{(2)}(ka) \approx \frac{1}{(ka)^2} + j \left[\frac{1}{ka} - \frac{1}{(ka)^3} \right], \quad (26)$$

provided $ka \ll 1$. With the above, (25) becomes

$$kh_e = \frac{6\pi ka Z_c \cos \theta_o}{4\pi Z_c + 3\xi_o \cos^2 \theta_o} \quad (27)$$

Note that for $ka \ll 1$, kh_e is real. This result is formally similar to that obtained for the electrically short cylindrical monopole. For this case, King⁸ obtains

$$kh_e = \frac{kh(\Omega - 1)}{2(\Omega - 2 + \ln 4)} \quad (28)$$

As before, if $\theta_0 = 46.982^\circ$, $Z_c = 50$ ohms. If $ka = 0.1$, (26) gives $kh_e = 0.0557$. The machine-computed value for this case, based on 29 terms in the series, is $kh_e = 0.05505 - j0.00001$.

Numerical Results

Figures 2 through 11 provide Z_0 over the range $0 \leq ka \leq 20$, with θ_0 as parameter, for wide-angle conical antennas, as pictured in Fig. 1. Note that the axis of the cone coincides with the z coordinate. The antenna is driven at the apex of the cone by a coaxial line having characteristic impedance Z_c . The sheath of the cable is grounded around its periphery. It is assumed that the earth plane is infinite and perfectly conducting. Figures 12 through 21 provide kh_e under the same conditions mentioned above in connection with Z_0 .

Tables 1 through 10 provide Z_0 and kh_e over the range $0.1 \leq ka \leq 200$ for 10 values of the cone angle θ_0 .

It should be pointed out that 29 terms in the several series were taken in evaluating Z_0 and kh_e ; that is, truncation followed $n = 57$. It is assumed that the numerical results so obtained, even for large ka , are accurate.

Fig. 2 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_0 = 30$ degrees. $Z_c = 79.017$ ohms.

Fig. 3 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_0 = 35$ degrees. $Z_c = 69.254$ ohms.

Fig. 4 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_0 = 40$ degrees. $Z_c = 60.641$ ohms.

Fig. 5 -- Input impedance $Z_o = R_o + jX_o$ of wide-angle conical antennas.
 $\theta_o = 45$ degrees. $Z_c = 52.882$ ohms.

Fig. 6 -- Input impedance $Z_o = R_o + jX_o$ of wide-angle conical antennas.
 $\theta_o = 46.98$ degrees. $Z_c = 49.996$ ohms.

Fig. 7 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_0 = 50$ degrees. $Z_c = 45.775$ ohms.

Fig. 8 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_c = 55$ degrees. $Z_c = 39.170$ ohms.

Fig. 9 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_0 = 60$ degrees. $Z_c = 32.958$ ohms.

Fig. 10 -- Input impedance $Z_o = R_o + jX_o$ of wide-angle conical antennas,
 $\theta_o = 65$ degrees. $Z_c = 27.053$ ohms.

Fig. 11 -- Input impedance $Z_0 = R_0 + jX_0$ of wide-angle conical antennas.
 $\theta_0 = 70$ degrees. $Z_c = 21.383$ ohms.

Fig. 12 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.
 $\theta_0 = 30$ degrees. $Z_c = 79.017$ ohms.

Fig. 13 -- Radian effective half-length $hk_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.

$\theta_0 = 35$ degrees. $Z_c = 69.254$ ohms.

Fig. 14 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.

$\theta_0 = 40$ degrees. $Z_c = 60.641$ ohms.

Fig. 15 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.

$\theta_o = 45$ degrees. $Z_c = 52.882$ ohms.

Fig. 16 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.

$\theta_o = 46.98$ degrees. $Z_c = 49.996$ ohms.

Fig. 17 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.
 $\theta_0 = 50$ degrees. $Z_c = 45.775$ ohms.

Fig. 18 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k \left[kh_e''(\frac{\pi}{2}) + jkh_e'(\frac{\pi}{2}) \right]$

for wide-angle conical antennas.

$\theta_0 = 55$ degrees. $Z_c = 39.170$ ohms.

Fig. 19 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2})]$
for wide-angle conical antennas.

$\theta_0 = 60$ degrees. $Z_c = 32.958$ ohms.

Fig. 20 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k \left[h_e''(\frac{\pi}{2}) + j h_e'(\frac{\pi}{2}) \right]$
for wide-angle conical antennas.

$\theta_0 = 55$ degrees. $Z_c = 27.053$ ohms.

Fig. 21 -- Radian effective half-length $kh_e(\frac{\pi}{2}) = k \left[h_e''(\frac{\pi}{2}) + jh_e'(\frac{\pi}{2}) \right]$
for wide-angle conical antennas.
 $\theta_0 = 70$ degrees. $Z_c = 21.383$ ohms.

TABLE I

TABLE I
Impedance and Radiar. Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
0.1	0.1923	-413.8938	5.1	82.3732	6.4429
0.2	0.7865	-197.3308	5.2	83.6264	5.6992
0.3	1.8349	-120.7295	5.3	84.7381	4.7078
0.4	3.4291	-78.9774	5.4	85.6595	3.4847
0.5	5.7048	-51.0389	5.5	86.3362	2.0549
0.6	8.8454	-29.9322	5.6	86.7093	0.4595
0.7	13.0790	-12.7536	5.7	86.7223	-1.2379
0.8	18.6589	1.7814	5.8	86.3323	-2.9483
0.9	25.8094	14.1257	5.9	85.5234	-4.5609
1.0	34.6242	24.2093	6.0	84.3176	-5.9540
1.1	44.9210	31.6379	6.1	82.7807	-7.0123
1.2	56.1127	35.9400	6.2	81.0186	-7.6451
1.3	67.2196	36.8921	6.3	79.1650	-7.8028
1.4	77.1160	34.7918	6.4	77.3621	-7.4843
1.5	84.9289	30.4766	6.5	75.7410	-6.7357
1.6	90.3284	25.0433	6.6	74.4053	-5.6404
1.7	93.5256	19.4700	6.7	73.4220	-4.3040
1.8	95.0471	14.3845	6.8	72.8196	-2.8390
1.9	95.4772	10.0418	6.9	72.5916	-1.3516
2.0	95.2933	6.4264	7.0	72.7043	0.0680
2.1	94.8031	3.3781	7.1	73.1061	1.3502
2.2	94.1449	0.6961	7.2	73.7357	2.4483
2.3	93.3176	-1.7859	7.3	74.5306	3.3365
2.4	92.2308	-4.1460	7.4	75.4325	4.0063
2.5	90.7722	-6.3465	7.5	76.3908	4.4623
2.6	88.8864	-8.2465	7.6	77.3644	4.7173
2.7	86.6311	-9.6654	7.7	78.3214	4.7878
2.8	84.1783	-10.4704	7.8	79.2370	4.6911
2.9	81.7529	-10.6392	7.9	80.0913	4.4435
3.0	79.5528	-10.2614	8.0	80.8666	4.0601
3.1	77.6965	-9.4909	8.1	81.5460	3.5558
3.2	76.2167	-8.4898	8.2	82.1121	2.9476
3.3	75.0836	-7.3888	8.3	82.5481	2.2557
3.4	74.2353	-6.2736	8.4	82.8401	1.5053
3.5	73.6035	-5.1868	8.5	82.9788	0.7263
3.6	73.1293	-4.1378	8.6	82.9631	-0.0490
3.7	72.7718	-3.1150	8.7	82.8000	-0.7883
3.8	72.5106	-2.0971	8.8	82.5047	-1.4634
3.9	72.3448	-1.0624	8.9	82.0983	-2.0519
4.0	72.2892	0.0040	9.0	81.6049	-2.5388
4.1	72.3694	1.1049	9.1	81.0486	-2.9161
4.2	72.6159	2.2275	9.2	80.4520	-3.1811
4.3	73.0565	3.3426	9.3	79.8346	-3.3352
4.4	73.7097	4.4063	9.4	79.2132	-3.3812
4.5	74.5785	5.3646	9.5	78.6026	-3.3232
4.6	75.6464	6.1609	9.6	78.0167	-3.1655
4.7	76.8776	6.7443	9.7	77.4685	-2.9129
4.8	78.2219	7.0774	9.8	76.9718	-2.5712
4.9	79.6225	7.1398	9.9	76.5402	-2.1477
5.0	81.0232	6.9265	10.0	76.1877	-1.6525

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
10.1	75.9270	-1.0982	15.1	81.0863	-0.7556
10.2	75.7696	-0.5008	15.2	80.8919	-1.1255
10.3	75.7240	0.1213	15.3	80.6345	-1.4506
10.4	75.7951	0.7471	15.4	80.3235	-1.7210
10.5	75.9839	1.3548	15.5	79.9696	-1.9287
10.6	76.2868	1.9221	15.6	79.5845	-2.0670
10.7	76.6960	2.4278	15.7	79.1809	-2.1315
10.8	77.2000	2.8518	15.8	78.7723	-2.1198
10.9	77.7838	3.1765	15.9	78.3727	-2.0318
11.0	78.4295	3.3862	16.0	77.9960	-1.8700
11.1	79.1162	3.4679	16.1	77.6556	-1.6395
11.2	79.8198	3.4113	16.2	77.3641	-1.3478
11.3	80.5129	3.2100	16.3	77.1324	-1.0049
11.4	81.1650	2.8627	16.4	76.9693	-0.6223
11.5	81.7431	2.3745	16.5	76.8817	-0.2135
11.6	82.2131	1.7592	16.6	76.8738	0.2071
11.7	82.5427	1.0402	16.7	76.9472	0.6247
11.8	82.7042	0.2510	16.8	77.1009	1.0240
11.9	82.6792	-0.5655	16.9	77.3314	1.3898
12.0	82.4617	-1.3606	17.0	77.6326	1.7076
12.1	82.0609	-2.0836	17.1	77.9954	1.9632
12.2	81.5011	-2.6881	17.2	78.4081	2.1439
12.3	80.8200	-3.1369	17.3	78.8558	2.2389
12.4	80.0645	-3.4063	17.4	79.3211	2.2398
12.5	79.2850	-3.4882	17.5	79.7836	2.1417
12.6	78.5296	-3.3896	17.6	80.2212	1.9446
12.7	77.8400	-3.1302	17.7	80.6110	1.6535
12.8	77.2480	-2.7381	17.8	80.9309	1.2798
12.9	76.7749	-2.2464	17.9	81.1614	0.8408
13.0	76.4314	-1.6890	18.0	81.2877	0.3592
13.1	76.2196	-1.0978	18.1	81.3016	-0.1384
13.2	76.1347	-0.5011	18.2	81.2022	-0.6238
13.3	76.1674	0.0772	18.3	80.9970	-1.0696
13.4	76.3052	0.6181	18.4	80.7003	-1.4518
13.5	76.5345	1.1063	18.5	80.3322	-1.7519
13.6	76.8409	1.5304	18.6	79.9161	-1.9578
13.7	77.2100	1.8815	18.7	79.4766	-2.0648
13.8	77.6274	2.1529	18.8	79.0370	-2.0742
13.9	78.0784	2.3397	18.9	78.6183	-1.9930
14.0	78.5483	2.4391	19.0	78.2377	-1.8319
14.1	79.0217	2.4498	19.1	77.9083	-1.6040
14.2	79.4831	2.3733	19.2	77.6394	-1.3238
14.3	79.9170	2.2136	19.3	77.4367	-1.0060
14.4	80.3086	1.9777	19.4	77.3028	-0.6647
14.5	80.6447	1.6752	19.5	77.2380	-0.3133
14.6	80.9143	1.3187	19.6	77.2405	0.0358
14.7	81.1090	0.9222	19.7	77.3068	0.3712
14.8	81.2239	0.5012	19.8	77.4320	0.6827
14.9	81.2573	0.0713	19.9	77.6101	0.9610
15.0	81.2101	-0.3524	20.0	77.8335	1.1981
					-0.3430
					-1.0420

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e				
20.1	78.0939	1.3872	-0.3404	-1.0197	25.1	78.9903	-1.4025	0.1696	-0.7479
20.2	78.3819	1.5230	-0.3360	-0.9981	25.2	78.7166	-1.3466	0.1878	-0.7599
20.3	78.6873	1.6020	-0.3298	-0.9773	25.3	78.4652	-1.2405	0.2048	-0.7735
20.4	78.9995	1.6222	-0.3219	-0.9575	25.4	78.2445	-1.0909	0.2206	-0.7886
20.5	79.3075	1.5838	-0.3125	-0.9389	25.5	78.0606	-0.9055	0.2350	-0.8050
20.6	79.6007	1.4889	-0.3017	-0.9218	25.6	77.9185	-0.6927	0.2478	-0.8227
20.7	79.8693	1.3416	-0.2896	-0.9062	25.7	77.8210	-0.4610	0.2591	-0.8415
20.8	80.1040	1.1475	-0.2767	-0.8924	25.8	77.7698	-0.2191	0.2686	-0.8612
20.9	80.2970	0.9138	-0.2631	-0.8804	25.9	77.7651	0.0245	0.2763	-0.8815
21.0	80.4421	0.6490	-0.2491	-0.8703	26.0	77.8056	0.2615	0.2821	-0.9025
21.1	80.5343	0.3625	-0.2351	-0.8621	26.1	77.8888	0.4842	0.2860	-0.9237
21.2	80.5707	0.0645	-0.2213	-0.8556	26.2	78.0108	0.6853	0.2878	-0.9451
21.3	80.5501	-0.2346	-0.2079	-0.8507	26.3	78.1669	0.8584	0.2876	-0.9664
21.4	80.4732	-0.5242	-0.1953	-0.8473	26.4	78.3512	0.9983	0.2853	-0.9872
21.5	80.3426	-0.7939	-0.1837	-0.8452	26.5	78.5571	1.1006	0.2811	-1.0075
21.6	80.1628	-1.0338	-0.1730	-0.8440	26.6	78.7773	1.1621	0.2750	-1.0268
21.7	79.9401	-1.2351	-0.1635	-0.8436	26.7	79.0041	1.1813	0.2672	-1.0450
21.8	79.6826	-1.3899	-0.1552	-0.8436	26.8	79.2298	1.1575	0.2579	-1.0619
21.9	79.3995	-1.4924	-0.1480	-0.8438	26.9	79.4465	1.0919	0.2472	-1.0772
22.0	79.1015	-1.5383	-0.1419	-0.8440	27.0	79.6467	0.9867	0.2355	-1.0909
22.1	78.7996	-1.5256	-0.1367	-0.8440	27.1	79.8233	0.8456	0.2230	-1.1027
22.2	78.5053	-1.4545	-0.1323	-0.8436	27.2	79.9700	0.6734	0.2100	-1.1127
22.3	78.2298	-1.3273	-0.1286	-0.8427	27.3	80.0813	0.4761	0.1967	-1.1208
22.4	77.9835	-1.1485	-0.1254	-0.8412	27.4	80.1529	0.2608	0.1836	-1.1272
22.5	77.7760	-0.9245	-0.1225	-0.8391	27.5	80.1818	0.0352	0.1709	-1.1318
22.6	77.6154	-0.6633	-0.1198	-0.8363	27.6	80.1664	-0.1924	0.1587	-1.1349
22.7	77.5082	-0.3743	-0.1171	-0.8329	27.7	80.1071	-0.4132	0.1474	-1.1366
22.8	77.4594	-0.0682	-0.1144	-0.8288	27.8	80.0056	-0.6188	0.1371	-1.1371
22.9	77.4717	0.2438	-0.1114	-0.8241	27.9	79.8654	-0.8011	0.1280	-1.1368
23.0	77.5461	0.5496	-0.1082	-0.8187	28.0	79.6918	-0.9529	0.1201	-1.1358
23.1	77.6810	0.8371	-0.1046	-0.8128	28.1	79.4912	-1.0677	0.1134	-1.1344
23.2	77.8727	1.0941	-0.1006	-0.8063	28.2	79.2714	-1.1412	0.1080	-1.1329
23.3	78.1151	1.3090	-0.0959	-0.7993	28.3	79.0409	-1.1697	0.1038	-1.1315
23.4	78.3993	1.4714	-0.0905	-0.7918	28.4	78.8087	-1.1524	0.1007	-1.1304
23.5	78.7141	1.5724	-0.0842	-0.7838	28.5	78.5838	-1.0892	0.0985	-1.1299
23.6	79.0461	1.6053	-0.0769	-0.7755	28.6	78.3753	-0.9826	0.0971	-1.1300
23.7	79.3803	1.5667	-0.0684	-0.7669	28.7	78.1914	-0.8363	0.0964	-1.1309
23.8	79.7004	1.4566	-0.0586	-0.7582	28.8	78.0396	-0.6556	0.0962	-1.1328
23.9	79.9902	1.2792	-0.0474	-0.7497	28.9	77.9263	-0.4475	0.0963	-1.1357
24.0	80.2347	1.0425	-0.0347	-0.7416	29.0	77.8566	-0.2198	0.0965	-1.1396
24.1	80.4211	0.7585	-0.0205	-0.7342	29.1	77.8340	0.0186	0.0966	-1.1447
24.2	80.5399	0.4419	-0.0048	-0.7277	29.2	77.8602	0.2578	0.0963	-1.1509
24.3	80.5859	0.1098	0.0123	-0.7225	29.3	77.9347	0.4882	0.0954	-1.1583
24.4	80.5583	-0.2205	0.0306	-0.7189	29.4	78.0556	0.6995	0.0938	-1.1666
24.5	80.4608	-0.5323	0.0498	-0.7170	29.5	78.2184	0.8822	0.0911	-1.1759
24.6	80.3011	-0.8107	0.0698	-0.7170	29.6	78.4165	1.0278	0.0871	-1.1860
24.7	80.0897	-1.0437	0.0901	-0.7191	29.7	78.6417	1.1292	0.0816	-1.1966
24.8	79.8395	-1.2229	0.1106	-0.7233	29.8	78.8836	1.1810	0.0745	-1.2076
24.9	79.5639	-1.3430	0.1308	-0.7295	29.9	79.1312	1.1800	0.0657	-1.2187
25.0	79.2766	-1.4025	0.1506	-0.7378	30.0	79.3725	1.1266	0.0549	-1.2294

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
30.1	79.5966	1.0234	35.1	78.2364	-0.4635
30.2	79.7918	0.8749	35.2	78.1601	-0.2969
30.3	79.9499	0.6896	35.3	78.1187	-0.1156
30.4	80.0633	0.4769	35.4	78.1106	0.0691
30.5	80.1284	0.2480	35.5	78.1490	0.2522
30.6	80.1433	0.0138	35.6	78.2198	0.4251
30.7	80.1091	-0.2148	35.7	78.3259	0.5781
30.8	80.0292	-0.4277	35.8	78.4602	0.7038
30.9	79.9092	-0.6156	35.9	78.6196	0.8025
31.0	79.7571	-0.7724	36.0	78.7956	0.8632
31.1	79.5792	-0.8923	36.1	78.9773	0.8839
31.2	79.3848	-0.9727	36.2	79.1588	0.8715
31.3	79.1826	-1.0126	36.3	79.3311	0.8161
31.4	78.9807	-1.0113	36.4	79.4885	0.7272
31.5	78.7859	-0.9724	36.5	79.6222	0.6080
31.6	78.6057	-0.8968	36.6	79.7241	0.4713
31.7	78.4462	-0.7906	36.7	79.7973	0.3126
31.8	78.3120	-0.6573	36.8	79.8339	0.1453
31.9	78.2069	-0.5039	36.9	79.8370	-0.0239
32.0	78.1333	-0.3349	37.0	79.8023	-0.1820
32.1	78.0938	-0.1569	37.1	79.7445	-0.3384
32.2	78.0881	0.0232	37.2	79.6581	-0.4663
32.3	78.1167	0.1994	37.3	79.5426	-0.5847
32.4	78.1766	0.3660	37.4	79.4168	-0.6619
32.5	78.2661	0.5170	37.5	79.2754	-0.7185
32.6	78.3823	0.6477	37.6	79.1291	-0.7446
32.7	78.5200	0.7549	37.7	78.9800	-0.7458
32.8	78.6757	0.8329	37.8	78.8377	-0.7136
32.9	78.8424	0.8807	37.9	78.7084	-0.6573
33.0	79.0150	0.8959	38.0	78.5892	-0.5866
33.1	79.1873	0.8789	38.1	78.4810	-0.4818
33.2	79.3539	0.8287	38.2	78.4142	-0.3696
33.3	79.5076	0.7474	38.3	78.3486	-0.2431
33.4	79.6434	0.6384	38.4	78.3201	-0.1084
33.5	79.7562	0.5046	38.5	78.3154	0.0259
33.6	79.8420	0.3504	38.6	78.3352	0.1557
33.7	79.8956	0.1815	38.7	78.3841	0.2895
33.8	79.9151	0.0067	38.8	78.4533	0.3965
33.9	79.8991	-0.1706	38.9	78.5443	0.4941
34.0	79.8491	-0.3422	39.0	78.6429	0.5724
34.1	79.7663	-0.4995	39.1	78.7673	0.6351
34.2	79.6518	-0.6399	39.2	78.9110	0.6745
34.3	79.5126	-0.7531	39.3	79.0212	0.6872
34.4	79.3541	-0.8376	39.4	79.1717	0.6627
34.5	79.1801	-0.8889	39.5	79.2805	0.6359
34.6	78.9983	-0.9028	39.6	79.4000	0.5621
34.7	78.8187	-0.8828	39.7	79.5098	0.4778
34.8	78.6459	-0.8246	39.8	79.5885	0.3759
34.9	78.4862	-0.7336	39.9	79.6542	0.2555
35.0	78.3486	-0.6108	40.0	79.6924	0.1188
					0.1455
					-1.0868

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
40.1	79.7122	-0.0209	45.1	78.6219	0.2767
40.2	79.6845	-0.1542	45.2	78.6593	0.3533
40.3	79.6405	-0.2747	45.3	78.7390	0.3945
40.4	79.5759	-0.3980	45.4	78.8269	0.4285
40.5	79.4807	-0.4996	45.5	78.9867	0.4935
40.6	79.3891	-0.5861	45.6	79.0427	0.4544
40.7	79.2621	-0.6511	45.7	79.1039	0.4668
40.8	79.1158	-0.6782	45.8	79.2508	0.4165
40.9	78.9562	-0.7058	45.9	79.2695	0.3845
41.0	78.8437	-0.6638	46.0	79.3491	0.3256
41.1	78.7126	-0.6079	46.1	79.4436	0.2305
41.2	78.6105	-0.5406	46.2	79.4663	0.1528
41.3	78.4865	-0.4274	46.3	79.4875	0.0443
41.4	78.4169	-0.3026	46.4	79.5658	0.0119
41.5	78.3329	-0.1669	46.5	79.4698	-0.1161
41.6	78.3373	-0.0560	46.6	79.4570	-0.1778
41.7	78.3462	0.0839	46.7	79.4253	-0.2571
41.8	78.3796	0.2099	46.8	79.1962	-0.4767
41.9	78.4409	0.3440	46.9	79.2553	-0.4124
42.0	78.5396	0.4444	47.0	79.1439	-0.4937
42.1	78.6553	0.5566	47.1	79.0240	-0.4757
42.2	78.7634	0.6054	47.2	78.9618	-0.4825
42.3	78.9140	0.6204	47.3	78.8723	-0.4525
42.4	79.0155	0.6346	47.4	78.8076	-0.3685
42.5	79.1461	0.5988	47.5	78.7024	-0.3726
42.6	79.3076	0.5654	47.6	78.6779	-0.2735
42.7	79.3778	0.5003	47.7	78.6050	-0.2079
42.8	79.4702	0.4472	47.8	78.5953	-0.1392
42.9	79.5302	0.3205	47.9	78.5947	0.0339
43.0	79.6225	0.2377	48.0	78.5861	0.0864
43.1	79.6082	0.0828	48.1	78.6894	-0.0689
43.2	79.6147	-0.0340	48.2	78.6204	0.2253
43.3	79.6030	-0.1720	48.3	78.7526	0.2904
43.4	79.5492	-0.2723	48.4	79.0400	0.6772
43.5	79.4721	-0.3208	48.5	78.9059	0.2989
43.6	79.4012	-0.3966	48.6	78.9872	0.3916
43.7	79.2908	-0.4486	48.7	79.0544	0.3798
43.8	79.2086	-0.4625	48.8	79.1898	0.3540
43.9	79.0747	-0.5200	48.9	79.1305	0.2802
44.0	79.0007	-0.5650	49.0	79.2984	0.2733
44.1	78.8977	-0.5341	49.1	79.3206	0.2772
44.2	78.7668	-0.4736	49.2	79.3165	0.2479
44.3	78.7002	-0.4146	49.3	79.3134	0.1040
44.4	78.6219	-0.3710	49.4	79.3871	0.0893
44.5	78.6584	-0.2558	49.5	79.3651	-0.0676
44.6	78.5515	-0.1725	49.6	79.3180	-0.1227
44.7	78.5176	-0.0518	49.7	79.2563	-0.1057
44.8	78.5488	0.0378	49.8	79.3104	-0.1136
44.9	78.5555	0.1453	49.9	79.2341	-0.1732
45.0	78.5841	0.1998	50.0	79.1273	-0.1858
					0.1084
					-0.8023

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
50.1	79.1021	-0.1373	55.1	79.0060	0.1776
50.2	79.0888	-0.2645	55.2	79.0333	0.0688
50.3	78.9668	-0.2669	55.3	78.4756	-0.0977
50.4	78.9014	-0.2308	55.4	79.0062	0.1871
50.5	78.9419	-0.2692	55.5	79.0293	0.1318
50.6	78.6716	-0.1796	55.6	79.1804	0.2142
50.7	78.9015	-0.1604	55.7	79.0353	0.1189
50.8	78.6933	-0.3187	55.8	79.0340	-0.0462
50.9	78.8023	-0.0896	55.9	79.1783	0.1009
51.0	78.7837	-0.0840	56.0	78.9518	-0.1833
51.1	78.8021	-0.0322	56.1	79.1247	0.0511
51.2	78.8789	-0.0681	56.2	79.1722	0.0336
51.3	78.9046	0.0671	56.3	79.1137	-0.1079
51.4	78.6761	0.0949	56.4	79.1613	0.0156
51.5	78.7001	-0.0324	56.5	78.6633	-0.0143
51.6	78.8892	0.1521	56.6	79.0504	-0.1037
51.7	78.7537	-0.2017	56.7	78.7322	-0.4297
51.8	78.9868	0.2130	56.8	79.0455	-0.1931
51.9	79.0031	0.1719	56.9	79.0216	-0.1680
52.0	79.0271	0.3771	57.0	79.0708	-0.0839
52.1	79.0520	0.2328	57.1	78.8810	-0.2539
52.2	78.9724	0.1682	57.2	78.8931	-0.1556
52.3	79.0843	0.1798	57.3	78.9155	-0.1421
52.4	79.1068	0.1267	57.4	78.9813	-0.0752
52.5	79.1934	0.1318	57.5	78.8839	-0.0552
52.6	79.1323	-0.0575	57.6	78.9205	-0.0639
52.7	79.2220	0.0721	57.7	78.8734	-0.1128
52.8	79.3080	-0.0098	57.8	78.8665	-0.0265
52.9	78.9981	-0.1042	57.9	78.9908	0.0255
53.0	79.1629	-0.0526	58.0	78.9459	-0.0768
53.1	79.2859	-0.0209	58.1	79.1868	-0.1156
53.2	79.2437	-0.1315	58.2	78.9133	0.0562
53.3	79.1447	-0.1346	58.3	78.8099	0.0525
53.4	79.0777	-0.1527	58.4	78.9248	0.1166
53.5	79.0262	-0.1522	58.5	78.9366	0.1015
53.6	78.7033	-0.5842	58.6	78.9242	0.1036
53.7	79.0293	-0.1952	58.7	78.9249	0.1217
53.8	79.0859	-0.0289	58.8	78.9610	0.0955
53.9	79.0827	-0.3639	58.9	79.0319	0.1746
54.0	78.9406	-0.1578	59.0	79.0733	0.1339
54.1	78.9761	-0.2676	59.1	79.1219	0.1138
54.2	79.2785	-0.0428	59.2	79.1600	-0.0241
54.3	78.8377	-0.0801	59.3	79.1981	0.1001
54.4	78.6215	-0.6909	59.4	79.2012	0.0408
54.5	78.5335	-0.2959	59.5	79.2006	0.0284
54.6	78.8604	0.0184	59.6	79.2107	-0.0258
54.7	78.8755	0.0105	59.7	79.1777	0.0961
54.8	78.8389	0.1874	59.8	79.1682	0.0209
54.9	78.5676	-0.0148	59.9	79.1755	-0.0999
55.0	78.8334	0.2099	60.0	79.1461	-0.1266

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
60.1	79.1279	-0.1812	65.1	79.9810	0.2852
60.2	79.0939	-0.1420	65.2	79.0358	0.2955
60.3	79.0395	-0.1778	65.3	79.0905	0.2832
60.4	79.0205	-0.1655	65.4	79.1463	0.2664
60.5	78.9711	-0.1592	65.5	79.2013	0.2351
60.6	78.9348	-0.1947	65.6	79.2441	0.1925
60.7	78.9059	-0.1398	65.7	79.2817	0.1462
60.8	78.8369	-0.1285	65.8	79.3044	0.0899
60.9	78.8321	-0.1227	65.9	79.3186	0.0323
61.0	78.8290	-0.1351	66.0	79.3218	-0.0279
61.1	78.8187	-0.0178	66.1	79.3121	-0.0903
61.2	78.6768	-0.1554	66.2	79.2852	-0.1453
61.3	78.7828	0.0449	66.3	79.2564	-0.1999
61.4	78.8121	0.0617	66.4	79.2131	-0.2434
61.5	78.8345	0.1167	66.5	79.1597	-0.2798
61.6	78.8716	0.1741	66.6	79.1052	-0.3020
61.7	78.8972	0.1718	66.7	79.0422	-0.3130
61.8	78.9286	0.1991	66.8	78.9824	-0.3132
61.9	78.9891	0.2026	66.9	78.9174	-0.3022
62.0	79.0217	0.2297	67.0	78.8603	-0.2778
62.1	79.0665	0.2198	67.1	78.8062	-0.2430
62.2	79.1120	0.1982	67.2	78.7622	-0.1960
62.3	79.1536	0.2009	67.3	78.7283	-0.1435
62.4	79.1959	0.1593	67.4	78.7036	-0.0846
62.5	79.2195	0.1391	67.5	78.6914	-0.0205
62.6	79.2397	0.0968	67.6	78.6933	0.0453
62.7	79.2717	0.0311	67.7	78.7054	0.1099
62.8	79.2612	0.0045	67.8	78.7334	0.1691
62.9	79.2611	-0.0518	67.9	78.7714	0.2231
63.0	79.2592	-0.0888	68.0	78.8203	0.2678
63.1	79.2221	-0.1374	68.1	78.8760	0.3045
63.2	79.1870	-0.1862	68.2	78.9386	0.3274
63.3	79.1496	-0.2173	68.3	79.0039	0.3362
63.4	79.1078	-0.2380	68.4	79.0734	0.3348
63.5	79.0589	-0.2534	68.5	79.1396	0.3198
63.6	79.0147	-0.2536	68.6	79.2011	0.2900
63.7	78.9495	-0.2458	68.7	79.2560	0.2484
63.8	78.9160	-0.2379	68.8	79.3021	0.1975
63.9	78.8619	-0.2093	68.9	79.3358	0.1379
64.0	78.8151	-0.1803	69.0	79.3575	0.0718
64.1	78.7890	-0.1414	69.1	79.3668	0.0011
64.2	78.7625	-0.0932	69.2	79.3616	-0.0664
64.3	78.7438	-0.0408	69.3	79.3430	-0.1364
64.4	78.7326	0.0099	69.4	79.3116	-0.1968
64.5	78.7529	0.0719	69.5	79.2662	-0.2528
64.6	78.7702	0.1160	69.6	79.2120	-0.2977
64.7	78.7905	0.1697	69.7	79.1487	-0.3312
64.8	78.8285	0.2128	69.8	79.0801	-0.3519
64.9	78.8688	0.2454	69.9	79.0096	-0.3596
65.0	78.9288	0.2766	70.0	78.9378	-0.3514

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
70.1	78.8689	-0.3290	75.1	79.3604	0.2274
70.2	78.8077	-0.2939	75.2	79.3995	0.1550
70.3	78.7522	-0.2475	75.3	79.4238	0.0759
70.4	78.7072	-0.1908	75.4	79.4316	-0.0066
70.5	78.6753	-0.1258	75.5	79.4226	-0.0890
70.6	78.6564	-0.0552	75.6	79.3976	-0.1682
70.7	78.6508	0.0175	75.7	79.3571	-0.2408
70.8	78.6605	0.0899	75.8	79.3027	-0.3041
70.9	78.6851	0.1593	75.9	79.2369	-0.3552
71.0	78.7221	0.2232	76.0	79.1622	-0.3924
71.1	78.7711	0.2777	76.1	79.0813	-0.4138
71.2	78.8303	0.3232	76.2	78.9979	-0.4189
71.3	78.8980	0.3538	76.3	78.9150	-0.4072
71.4	78.9693	0.3722	76.4	78.8360	-0.3793
71.5	79.0448	0.3757	76.5	78.7640	-0.3363
71.6	79.1190	0.3639	76.6	78.7019	-0.2799
71.7	79.1899	0.3377	76.7	78.6522	-0.2120
71.8	79.2541	0.2965	76.8	78.6169	-0.1357
71.9	79.3099	0.2447	76.9	78.5972	-0.0536
72.0	79.3531	0.1829	77.0	78.5942	0.0306
72.1	79.3844	0.1123	77.1	78.6077	0.1141
72.2	79.4005	0.0372	77.2	78.6380	0.1934
72.3	79.4013	-0.0400	77.3	78.6830	0.2653
72.4	79.3862	-0.1158	77.4	78.7415	0.3270
72.5	79.3563	-0.1872	77.5	78.8115	0.3760
72.6	79.3135	-0.2516	77.6	78.8899	0.4103
72.7	79.2586	-0.3058	77.7	78.9738	0.4285
72.8	79.1930	-0.3489	77.8	79.0598	0.4295
72.9	79.1203	-0.3771	77.9	79.1446	0.4134
73.0	79.0433	-0.3910	78.0	79.2248	0.3808
73.1	78.9655	-0.3893	78.1	79.2969	0.3326
73.2	78.8887	-0.3716	78.2	79.3582	0.2709
73.3	78.8173	-0.3389	78.3	79.4060	0.1980
73.4	78.7536	-0.2935	78.4	79.4384	0.1169
73.5	78.7000	-0.2356	78.5	79.4540	0.0308
73.6	78.6589	-0.1685	78.6	79.4521	-0.0568
73.7	78.6318	-0.0942	78.7	79.4327	-0.1424
73.8	78.6198	-0.0163	78.8	79.3965	-0.2226
73.9	78.6231	0.0631	78.9	79.3450	-0.2939
74.0	78.6429	0.1400	79.0	79.2803	-0.3536
74.1	78.6774	0.2121	79.1	79.2050	-0.3993
74.2	78.7254	0.2759	79.2	79.1219	-0.4290
74.3	78.7854	0.3294	79.3	79.0347	-0.4416
74.4	78.8545	0.3700	79.4	78.9465	-0.4365
74.5	78.9310	0.3959	79.5	78.8612	-0.4143
74.6	79.0113	0.4061	79.6	78.7820	-0.3753
74.7	79.0923	0.4005	79.7	78.7118	-0.3215
74.8	79.1706	0.3785	79.8	78.6538	-0.2549
74.9	79.2435	0.3413	79.9	78.6099	-0.1779
75.0	79.3076	0.2905	80.0	78.5823	-0.0938
					0.0255

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
80.1	78.5717	-0.0057	85.1	79.4208	-0.2538
80.2	78.5788	0.0828	85.2	79.3625	-0.3292
80.3	78.6032	0.1683	85.3	79.2902	-0.3915
80.4	78.6441	0.2475	85.4	79.2070	-0.4382
80.5	78.7000	0.3171	85.5	79.1161	-0.4673
80.6	78.7687	0.3744	85.6	79.0213	-0.4778
80.7	78.8477	0.4171	85.7	78.9263	-0.4692
80.8	78.9336	0.4434	85.8	78.8349	-0.4420
80.9	79.0233	0.4521	85.9	78.7507	-0.3972
81.0	79.1132	0.4427	86.0	78.6771	-0.3366
81.1	79.1996	0.4157	86.1	78.6169	-0.2626
81.2	79.2792	0.3717	86.2	78.5725	-0.1782
81.3	79.3485	0.3128	86.3	78.5456	-0.0866
81.4	79.4048	0.2411	86.4	78.5374	0.0086
81.5	79.4457	0.1593	86.5	78.5481	0.1036
81.6	79.4695	0.0710	86.6	78.5774	0.1947
81.7	79.4752	-0.0205	86.7	78.6242	0.2784
81.8	79.4625	-0.1114	86.8	78.6867	0.3513
81.9	79.4318	-0.1980	86.9	78.7626	0.4105
82.0	79.3845	-0.2768	87.0	78.8489	0.4536
82.1	79.3223	-0.3446	87.1	78.9421	0.4788
82.2	79.2478	-0.3987	87.2	79.0387	0.4850
82.3	79.1641	-0.4368	87.3	79.1349	0.4718
82.4	79.0743	-0.4575	87.4	79.2266	0.4397
82.5	78.9823	-0.4600	87.5	79.3104	0.3899
82.6	78.8916	-0.4442	87.6	79.3826	0.3242
82.7	78.8058	-0.4106	87.7	79.4404	0.2453
82.8	78.7284	-0.3608	87.8	79.4813	0.1563
82.9	78.6623	-0.2965	87.9	79.5037	0.0608
83.0	78.6103	-0.2204	88.0	79.5065	-0.0373
83.1	78.5742	-0.1356	88.1	79.4897	-0.1341
83.2	78.5557	-0.0451	88.2	79.4538	-0.2256
83.3	78.5553	0.0473	88.3	79.4003	-0.3081
83.4	78.5733	0.1381	88.4	79.3315	-0.3784
83.5	78.6089	0.2236	88.5	79.2500	-0.4335
83.6	78.6608	0.3006	88.6	79.1592	-0.4712
83.7	78.7270	0.3659	88.7	79.0627	-0.4901
83.8	78.8050	0.4170	88.8	78.9644	-0.4894
83.9	78.8917	0.4516	88.9	78.8683	-0.4692
84.0	78.9838	0.4684	89.0	78.7781	-0.4304
84.1	79.0776	0.4666	89.1	78.6974	-0.3746
84.2	79.1694	0.4460	89.2	78.6293	-0.3036
84.3	79.2554	0.4075	89.3	78.5766	-0.2210
84.4	79.3323	0.3526	89.4	78.5413	-0.1294
84.5	79.3968	0.2833	89.5	78.5247	-0.0325
84.6	79.4462	0.2024	89.6	78.5276	0.0657
84.7	79.4785	0.1131	89.7	78.5499	0.1616
84.8	79.4923	0.0190	89.8	78.5907	0.2513
84.9	79.4871	-0.0760	89.9	78.6485	0.3313
85.0	79.4629	-0.1682	90.0	78.7211	0.3983

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
90.1	78.8058	0.4498	95.1	78.9453	-0.5108
90.2	78.8990	0.4835	95.2	78.8453	-0.4863
90.3	78.9974	0.4981	95.3	78.7523	-0.4425
90.4	79.0969	0.4929	95.4	78.6698	-0.3812
90.5	79.1935	0.4679	95.5	78.6010	-0.3048
90.6	79.2835	0.4241	95.6	78.5488	-0.2163
90.7	79.3630	0.3632	95.7	78.5150	-0.1192
90.8	79.4289	0.2875	95.8	78.5011	-0.0174
90.9	79.4784	0.2000	95.9	78.5075	0.0853
91.0	79.5095	0.1042	96.0	78.5341	0.1847
91.1	79.5208	0.0041	96.1	78.5799	0.2770
91.2	79.5119	-0.0964	96.2	78.6431	0.3586
91.3	79.4830	-0.1931	96.3	78.7213	0.4262
91.4	79.4355	-0.2821	96.4	78.8115	0.4770
91.5	79.3710	-0.3598	96.5	78.9101	0.5091
91.6	79.2924	-0.4231	96.6	79.0133	0.5209
91.7	79.2028	-0.4694	96.7	79.1170	0.5120
91.8	79.1058	-0.4969	96.8	79.2171	0.4825
91.9	79.0053	-0.5046	96.9	79.3095	0.4337
92.0	78.9053	-0.4922	97.0	79.3904	0.3673
92.1	78.8098	-0.4602	97.1	79.4565	0.2860
92.2	78.7226	-0.4100	97.2	79.5051	0.1929
92.3	78.6471	-0.3435	97.3	79.5341	0.0920
92.4	78.5863	-0.2634	97.4	79.5424	-0.0129
92.5	78.5424	-0.1728	97.5	79.5296	-0.1173
92.6	78.5173	-0.0753	97.6	79.4961	-0.2171
92.7	78.5120	0.0252	97.7	79.4434	-0.3082
92.8	78.5266	0.1249	97.8	79.3736	-0.3869
92.9	78.5606	0.2199	97.9	79.2894	-0.4500
93.0	78.6128	0.3063	98.0	79.1945	-0.4951
93.1	78.6812	0.3809	98.1	79.0925	-0.5204
93.2	78.7631	0.4406	98.2	78.9876	-0.5248
93.3	78.8553	0.4829	98.3	78.8840	-0.5084
93.4	78.9543	0.5061	98.4	78.7858	-0.4718
93.5	79.0562	0.5093	98.5	78.6968	-0.4165
93.6	79.1568	0.4921	98.6	78.6206	-0.3447
93.7	79.2522	0.4551	98.7	78.5601	-0.2593
93.8	79.3384	0.3998	98.8	78.5177	-0.1636
93.9	79.4121	0.3283	98.9	78.4950	-0.0614
94.0	79.4700	0.2434	99.0	78.4929	0.0433
94.1	79.5099	0.1485	99.1	78.5115	0.1464
94.2	79.5300	0.0474	99.2	78.5502	0.2439
94.3	79.5295	-0.0557	99.3	78.6074	0.3319
94.4	79.5084	-0.1567	99.4	78.6810	0.4070
94.5	79.4675	-0.2515	99.5	78.7681	0.4662
94.6	79.4085	-0.3362	99.6	78.8654	0.5070
94.7	79.3338	-0.4074	99.7	78.9690	0.5277
94.8	79.2464	-0.4622	99.8	79.0749	0.5275
94.9	79.1499	-0.4986	99.9	79.1788	0.5061
95.0	79.0482	-0.5149	100.0	79.2765	0.4645
					-0.0008
					-0.9935

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
100.1	79.3641	0.4040	105.1	78.4970	-0.1516
100.2	79.4381	0.3272	105.2	78.4771	-0.0456
100.3	79.4953	0.2371	105.3	78.4786	0.0623
100.4	79.5333	0.1372	105.4	78.5013	0.1679
100.5	79.5506	0.0317	105.5	78.5444	0.2670
100.6	79.5465	-0.0753	105.6	78.6064	0.3557
100.7	79.5211	-0.1792	105.7	78.6847	0.4305
100.8	79.4754	-0.2761	105.8	78.7765	0.4885
100.9	79.4112	-0.3618	105.9	78.8780	0.5271
101.0	79.3313	-0.4329	106.0	78.9854	0.5449
101.1	79.2389	-0.4867	106.1	79.0944	0.5410
101.2	79.1377	-0.5209	106.2	79.2007	0.5155
101.3	79.0317	-0.5343	106.3	79.2998	0.4692
101.4	78.9253	-0.5264	106.4	79.3879	0.4040
101.5	78.8227	-0.4976	106.5	79.4614	0.3224
101.6	78.7279	-0.4490	106.6	79.5171	0.2277
101.7	78.6447	-0.3827	106.7	79.5528	0.1236
101.8	78.5762	-0.3012	106.8	79.5669	0.0144
101.9	78.5252	-0.2079	106.9	79.5590	-0.0954
102.0	78.4936	-0.1063	107.0	79.5292	-0.2015
102.1	78.4827	-0.0005	107.1	79.4788	-0.2994
102.2	78.4929	0.1054	107.2	79.4099	-0.3853
102.3	78.5239	0.2074	107.3	79.3253	-0.4557
102.4	78.5744	0.3013	107.4	79.2284	-0.5077
102.5	78.6425	0.3834	107.5	79.1232	-0.5394
102.6	78.7257	0.4506	107.6	79.0139	-0.5495
102.7	78.8207	0.5001	107.7	78.9049	-0.5377
102.8	78.9237	0.5298	107.8	78.8005	-0.5045
102.9	79.0308	0.5385	107.9	78.7048	-0.4513
103.0	79.1377	0.5257	108.0	78.6216	-0.3804
103.1	79.2401	0.4918	108.1	78.5541	-0.2944
103.2	79.3338	0.4381	108.2	78.5050	-0.1968
103.3	79.4151	0.3667	108.3	78.4760	-0.0914
103.4	79.4806	0.2804	108.4	78.4685	0.0176
103.5	79.5276	0.1826	108.5	78.4826	0.1260
103.6	79.5541	0.0774	108.6	78.5178	0.2296
103.7	79.5590	-0.0312	108.7	78.5729	0.3242
103.8	79.5421	-0.1385	108.8	78.6456	0.4062
103.9	79.5041	-0.2404	108.9	78.7333	0.4723
104.0	79.4465	-0.3325	109.0	78.8324	0.5198
104.1	79.3716	-0.4113	109.1	78.9392	0.5468
104.2	79.2827	-0.4735	109.2	79.0494	0.5520
104.3	79.1831	-0.5167	109.3	79.1587	0.5353
104.4	79.0771	-0.5392	109.4	79.2625	0.4970
104.5	78.9688	-0.5401	109.5	79.3569	0.4387
104.6	78.8626	-0.5196	109.6	79.4378	0.3626
104.7	78.7626	-0.4784	109.7	79.5020	0.2718
104.8	78.6729	-0.4184	109.8	79.5468	0.1699
104.9	78.5968	-0.3417	109.9	79.5703	0.0610
105.0	78.5374	-0.2516	110.0	79.5716	-0.0504

TABLE I (Continued)

 $\theta_o = 30$ degrees

Z _o			kh _e		ka			Z _o			kh _e	
110.1	79.5505	-0.1599	0.0083	-1.0050	115.1	78.6515	0.4273	0.0101	-1.0055			
110.2	79.5080	-0.2630	0.0076	-1.0049	115.2	78.7433	0.4918	0.0105	-1.0062			
110.3	79.4458	-0.3554	0.0071	-1.0047	115.3	78.8461	0.5370	0.0107	-1.0069			
110.4	79.3664	-0.4335	0.0066	-1.0043	115.4	78.9561	0.5608	0.0108	-1.0077			
110.5	79.2730	-0.4942	0.0062	-1.0039	115.5	79.0688	0.5624	0.0107	-1.0085			
110.6	79.1696	-0.5350	0.0059	-1.0034	115.6	79.1797	0.5416	0.0105	-1.0093			
110.7	79.0602	-0.5544	0.0058	-1.0028	115.7	79.2845	0.4989	0.0102	-1.0101			
110.8	78.9492	-0.5516	0.0058	-1.0023	115.8	79.3788	0.4362	0.0097	-1.0107			
110.9	78.8412	-0.5269	0.0059	-1.0017	115.9	79.4587	0.3558	0.0091	-1.0113			
111.0	78.7402	-0.4813	0.0062	-1.0012	116.0	79.5211	0.2609	0.0084	-1.0118			
111.1	78.6504	-0.4167	0.0066	-1.0008	116.1	79.5633	0.1554	0.0077	-1.0122			
111.2	78.5751	-0.3356	0.0071	-1.0004	116.2	79.5836	0.0434	0.0069	-1.0124			
111.3	78.5174	-0.2414	0.0077	-1.0002	116.3	79.5810	-0.0703	0.0060	-1.0125			
111.4	78.4795	-0.1376	0.0083	-1.0001	116.4	79.5558	-0.1813	0.0053	-1.0124			
111.5	78.4628	-0.0284	0.0090	-1.0001	116.5	79.5089	-0.2849	0.0045	-1.0122			
111.6	78.4679	0.0820	0.0096	-1.0003	116.6	79.4422	-0.3771	0.0038	-1.0118			
111.7	78.4948	0.1893	0.0103	-1.0006	116.7	79.3585	-0.4540	0.0032	-1.0114			
111.8	78.5423	0.2893	0.0109	-1.0010	116.8	79.2612	-0.5126	0.0028	-1.0108			
111.9	78.6087	0.3780	0.0115	-1.0015	116.9	79.1544	-0.5506	0.0025	-1.0102			
112.0	78.6915	0.4519	0.0119	-1.0022	117.0	79.0422	-0.5666	0.0023	-1.0096			
112.1	78.7874	0.5080	0.0122	-1.0029	117.1	78.9292	-0.5600	0.0022	-1.0089			
112.2	78.8926	0.5441	0.0124	-1.0037	117.2	78.8199	-0.5311	0.0023	-1.0083			
112.3	79.0031	0.5587	0.0125	-1.0046	117.3	78.7185	-0.4812	0.0025	-1.0077			
112.4	79.1145	0.5509	0.0124	-1.0054	117.4	78.6292	-0.4123	0.0029	-1.0072			
112.5	79.2224	0.5212	0.0122	-1.0062	117.5	78.5553	-0.3271	0.0033	-1.0068			
112.6	79.3223	0.4704	0.0119	-1.0070	117.6	78.4997	-0.2291	0.0039	-1.0065			
112.7	79.4102	0.4007	0.0114	-1.0077	117.7	78.4646	-0.1220	0.0045	-1.0063			
112.8	79.4825	0.3147	0.0108	-1.0083	117.8	78.4513	-0.0101	0.0051	-1.0063			
112.9	79.5362	0.2158	0.0101	-1.0087	117.9	78.4603	0.1022	0.0057	-1.0064			
113.0	79.5691	0.1082	0.0094	-1.0091	118.0	78.4913	0.2106	0.0063	-1.0066			
113.1	79.5798	-0.0040	0.0086	-1.0093	118.1	78.5431	0.3108	0.0069	-1.0070			
113.2	79.5679	-0.1160	0.0079	-1.0093	118.2	78.6138	0.3989	0.0073	-1.0075			
113.3	79.5338	-0.2234	0.0071	-1.0092	118.3	78.7006	0.4714	0.0077	-1.0081			
113.4	79.4789	-0.3218	0.0065	-1.0090	118.4	78.8002	0.5254	0.0080	-1.0088			
113.5	79.4055	-0.4072	0.0059	-1.0086	118.5	78.9087	0.5586	0.0081	-1.0095			
113.6	79.3165	-0.4762	0.0054	-1.0082	118.6	79.0218	0.5696	0.0081	-1.0103			
113.7	79.2158	-0.5260	0.0050	-1.0077	118.7	79.1350	0.5579	0.0079	-1.0111			
113.8	79.1072	-0.5548	0.0047	-1.0071	118.8	79.2439	0.5239	0.0076	-1.0118			
113.9	78.9951	-0.5613	0.0046	-1.0065	118.9	79.3439	0.4688	0.0071	-1.0125			
114.0	78.8842	-0.5455	0.0047	-1.0059	119.0	79.4310	0.3947	0.0066	-1.0131			
114.1	78.7787	-0.5080	0.0048	-1.0053	119.1	79.5017	0.3047	0.0059	-1.0136			
114.2	78.6828	-0.4504	0.0051	-1.0048	119.2	79.5531	0.2022	0.0052	-1.0140			
114.3	78.6002	-0.3751	0.0055	-1.0044	119.3	79.5829	0.0914	0.0044	-1.0142			
114.4	78.5343	-0.2850	0.0060	-1.0041	119.4	79.5899	-0.0232	0.0035	-1.0143			
114.5	78.4874	-0.1836	0.0066	-1.0039	119.5	79.5739	-0.1369	0.0027	-1.0142			
114.6	78.4615	-0.0750	0.0073	-1.0038	119.6	79.5354	-0.2450	0.0019	-1.0140			
114.7	78.4574	0.0365	0.0079	-1.0039	119.7	79.4762	-0.3433	0.0012	-1.0137			
114.8	78.4755	0.1467	0.0085	-1.0041	119.8	79.3985	-0.4277	0.0006	-1.0132			
114.9	78.5150	0.2513	0.0091	-1.0044	119.9	79.3056	-0.4948	0.0000	-1.0126			
115.0	78.5745	0.3461	0.0097	-1.0049	120.0	79.2014	-0.5421	-0.0004	-1.0120			

TABLE I (Continued)

 $\theta_o = 30$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
120.1	79.0899	-0.5675	125.1	79.2651	0.5242
120.2	78.9757	-0.5704	125.2	79.3647	0.4648
120.3	78.8633	-0.5505	125.3	79.4507	0.3867
120.4	78.7573	-0.5087	125.4	79.5194	0.2928
120.5	78.6617	-0.4469	125.5	79.5680	0.1870
120.6	78.5803	-0.3674	125.6	79.5944	0.0735
120.7	78.5163	-0.2735	125.7	79.5976	-0.0430
120.8	78.4721	-0.1688	125.8	79.5774	-0.1578
120.9	78.4494	-0.0575	125.9	79.5347	-0.2663
121.0	78.4491	0.0561	126.0	79.4712	-0.3639
121.1	78.4712	0.1676	126.1	79.3895	-0.4469
121.2	78.5150	0.2725	126.2	79.2930	-0.5118
121.3	78.5786	0.3669	126.3	79.1856	-0.5561
121.4	78.6597	0.4470	126.4	79.0716	-0.5782
121.5	78.7553	0.5095	126.5	78.9557	-0.5771
121.6	78.8614	0.5519	126.6	78.8425	-0.5531
121.7	78.9740	0.5724	126.7	78.7364	-0.5071
121.8	79.0887	0.5702	126.8	78.6415	-0.4412
121.9	79.2008	0.5452	126.9	78.5617	-0.3578
122.0	79.3059	0.4982	127.0	78.5000	-0.2604
122.1	79.3996	0.4312	127.1	78.4587	-0.1528
122.2	79.4782	0.3467	127.2	78.4394	-0.0392
122.3	79.5384	0.2481	127.3	78.4430	0.0761
122.4	79.5776	0.1394	127.4	78.4692	0.1883
122.5	79.5944	0.0249	127.5	78.5171	0.2933
122.6	79.5879	-0.0907	127.6	78.5848	0.3869
122.7	79.5584	-0.2026	127.7	78.6698	0.4653
122.8	79.5071	-0.3063	127.8	78.7688	0.5254
122.9	79.4362	-0.3976	127.9	78.8779	0.5648
123.0	79.3485	-0.4729	128.0	78.9928	0.5819
123.1	79.2477	-0.5291	128.1	79.1090	0.5757
123.2	79.1378	-0.5640	128.2	79.2218	0.5465
123.3	79.0233	-0.5764	128.3	79.3268	0.4954
123.4	78.9088	-0.5658	128.4	79.4195	0.4242
123.5	78.7987	-0.5328	128.5	79.4963	0.3358
123.6	78.6976	-0.4786	128.6	79.5539	0.2338
123.7	78.6092	-0.4056	128.7	79.5900	0.1222
123.8	78.5370	-0.3166	128.8	79.6030	0.0056
123.9	78.4839	-0.2151	128.9	79.5925	-0.1113
124.0	78.4519	-0.1052	129.0	79.5587	-0.2237
124.1	78.4421	0.0088	129.1	79.5032	-0.3270
124.2	78.4551	0.1226	129.2	79.4282	-0.4171
124.3	78.4902	0.2316	129.3	79.3368	-0.4904
124.4	78.5463	0.3316	129.4	79.2328	-0.5439
124.5	78.6210	0.4187	129.5	79.1203	-0.5755
124.6	78.7117	0.4894	129.6	79.0038	-0.5842
124.7	78.8146	0.5408	129.7	78.8882	-0.5695
124.8	78.9259	0.5708	129.8	78.7779	-0.5323
124.9	79.0411	0.5782	129.9	78.6772	-0.4740
125.0	79.1557	0.5625	130.0	78.5902	-0.3970

TABLE I (Continued)

 $\theta_o = 30$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
130.1	78.5201	-0.3044	135.1	79.6098	-0.0142
130.2	78.4698	-0.1999	135.2	79.5951	-0.1321
130.3	78.4410	-0.0875	135.3	79.5572	-0.2446
130.4	78.4350	0.0284	135.4	79.4975	-0.3472
130.5	78.4520	0.1431	135.5	79.4186	-0.4357
130.6	78.4913	0.2524	135.6	79.3237	-0.5066
130.7	78.5514	0.3518	135.7	79.2167	-0.5571
130.8	78.6301	0.4374	135.8	79.1019	-0.5853
130.9	78.7243	0.5059	135.9	78.9839	-0.5900
131.0	78.8303	0.5545	136.0	78.8675	-0.5713
131.1	78.9440	0.5812	136.1	78.7573	-0.5299
131.2	79.0610	0.5847	136.2	78.6575	-0.4676
131.3	79.1765	0.5649	136.3	78.5722	-0.3868
131.4	79.2860	0.5225	136.4	78.5045	-0.2909
131.5	79.3849	0.4589	136.5	78.4572	-0.1835
131.6	79.4693	0.3768	136.6	78.4319	-0.0690
131.7	79.5356	0.2794	136.7	78.4297	0.0483
131.8	79.5812	0.1706	136.8	78.4508	0.1637
131.9	79.6040	0.0548	136.9	78.4942	0.2728
132.0	79.6033	-0.0633	137.0	78.5583	0.3713
132.1	79.5789	-0.1788	137.1	78.6407	0.4552
132.2	79.5320	-0.2871	137.2	78.7382	0.5213
132.3	79.4643	-0.3838	137.3	78.8470	0.5668
132.4	79.3788	-0.4649	137.4	78.9629	0.5899
132.5	79.2789	-0.5273	137.5	79.0812	0.5895
132.6	79.1687	-0.5685	137.6	79.1973	0.5655
132.7	79.0527	-0.5869	137.7	79.3065	0.5189
132.8	78.9354	-0.5819	137.8	79.4043	0.4513
132.9	78.8217	-0.5537	137.9	79.4868	0.3655
133.0	78.7159	-0.5036	138.0	79.5505	0.2648
133.1	78.6222	-0.4337	138.1	79.5928	0.1532
133.2	78.5443	-0.3466	138.2	79.6120	0.0354
133.3	78.4851	-0.2460	138.3	79.6072	-0.0838
133.4	78.4470	-0.1357	138.4	79.5786	-0.1997
133.5	78.4313	-0.0201	138.5	79.5275	-0.3075
133.6	78.4388	0.0963	138.6	79.4558	-0.4029
133.7	78.4691	0.2090	138.7	79.3667	-0.4819
133.8	78.5211	0.3136	138.8	79.2637	-0.5415
133.9	78.5928	0.4060	138.9	79.1510	-0.5793
134.0	78.6815	0.4825	139.0	79.0332	-0.5939
134.1	78.7836	0.5400	139.1	78.9149	-0.5849
134.2	78.8953	0.5761	139.2	78.8010	-0.5526
134.3	79.0122	0.5895	139.3	78.6959	-0.4984
134.4	79.1295	0.5793	139.4	78.6037	-0.4246
134.5	79.2427	0.5459	139.5	78.5279	-0.3341
134.6	79.3471	0.4906	139.6	78.4715	-0.2305
134.7	79.4385	0.4154	139.7	78.4368	-0.1178
134.8	79.5132	0.3234	139.8	78.4249	-0.0006
134.9	79.5680	0.2182	139.9	78.4364	0.1168
135.0	79.6006	0.1042	140.0	78.4708	0.2296
					-0.0043
					-0.9994

TABLE I (Continued)

 $\theta_o = 30$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
140.1	78.5268	0.3335	145.1	79.2474	-0.5544
140.2	78.6023	0.4243	145.2	79.1325	-0.5887
140.3	78.6944	0.4986	145.3	79.0132	-0.5995
140.4	78.7996	0.5532	145.4	78.8943	-0.5863
140.5	78.9136	0.5859	145.5	78.7805	-0.5499
140.6	79.0320	0.5954	145.6	78.6764	-0.4917
140.7	79.1502	0.5812	145.7	78.5859	-0.4142
140.8	79.2634	0.5436	145.8	78.5125	-0.3204
140.9	79.3669	0.4842	145.9	78.4592	-0.2140
141.0	79.4567	0.4052	146.0	78.4279	-0.0993
141.1	79.5289	0.3097	146.1	78.4199	0.0194
141.2	79.5807	0.2017	146.2	78.4354	0.1373
141.3	79.6098	0.0853	146.3	78.4739	0.2499
141.4	79.6150	-0.0345	146.4	78.5339	0.3528
141.5	79.5961	-0.1529	146.5	78.6132	0.4419
141.6	79.5540	-0.2652	146.6	78.7085	0.5136
141.7	79.4902	-0.3667	146.7	78.8164	0.5652
141.8	79.4076	-0.4534	146.8	78.9325	0.5943
141.9	79.3093	-0.5217	146.9	79.0523	0.5999
142.0	79.1996	-0.5690	147.0	79.1710	0.5815
142.1	79.0828	-0.5935	147.1	79.2838	0.5398
142.2	78.9636	-0.5943	147.2	79.3862	0.4764
142.3	78.8468	-0.5714	147.3	79.4740	0.3936
142.4	78.7370	-0.5259	147.4	79.5436	0.2949
142.5	78.6385	-0.4597	147.5	79.5921	0.1842
142.6	78.5551	-0.3753	147.6	79.6175	0.0659
142.7	78.4901	-0.2762	147.7	79.6186	-0.0550
142.8	78.4459	-0.1663	147.8	79.5956	-0.1738
142.9	78.4243	-0.0499	147.9	79.5492	-0.2855
143.0	78.4260	0.0685	148.0	79.4815	-0.3856
143.1	78.4511	0.1843	148.1	79.3953	-0.4702
143.2	78.4986	0.2929	148.2	79.2940	-0.5357
143.3	78.5667	0.3901	148.3	79.1818	-0.5796
143.4	78.6526	0.4720	148.4	79.0632	-0.6004
143.5	78.7533	0.5354	148.5	78.9431	-0.5971
143.6	78.8646	0.5777	148.6	78.8262	-0.5701
143.7	78.9823	0.5970	148.7	78.7171	-0.5205
143.8	79.1017	0.5927	148.8	78.6200	-0.4504
143.9	79.2181	0.5646	148.9	78.5389	-0.3626
144.0	79.3267	0.5138	149.0	78.4767	-0.2606
144.1	79.4231	0.4423	149.1	78.4359	-0.1483
144.2	79.5034	0.3528	149.2	78.4180	-0.0303
144.3	79.5642	0.2490	149.3	78.4238	0.0890
144.4	79.6031	0.1351	149.4	78.4530	0.2048
144.5	79.6184	0.0156	149.5	78.5045	0.3127
144.6	79.6095	-0.1046	149.6	78.5763	0.4083
144.7	79.5767	-0.2205	149.7	78.6657	0.4880
144.8	79.5214	-0.3275	149.8	78.7693	0.5485
144.9	79.4459	-0.4212	149.9	78.8829	0.5873
145.0	79.3533	-0.4979	150.0	79.0022	0.6029

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
150.1	79.1224	0.5944	155.1	78.6022	-0.4400
150.2	79.2387	0.5621	155.2	78.5235	-0.3489
150.3	79.3464	0.5073	155.3	78.4643	-0.2441
150.4	79.4411	0.4319	155.4	78.4270	-0.1297
150.5	79.5190	0.3390	155.5	78.4130	-0.0103
150.6	79.5768	0.2324	155.6	78.4228	0.1095
150.7	79.6121	0.1162	155.7	78.4561	0.2252
150.8	79.6234	-0.0047	155.8	78.5116	0.3320
150.9	79.6104	-0.1254	155.9	78.5871	0.4259
151.0	79.5734	-0.2411	156.0	78.6798	0.5031
151.1	79.5140	-0.3470	156.1	78.7861	0.5605
151.2	79.4348	-0.4388	156.2	78.9018	0.5958
151.3	79.3389	-0.5129	156.3	79.0225	0.6074
151.4	79.2303	-0.5662	156.4	79.1432	0.5948
151.5	79.1134	-0.5969	156.5	79.2592	0.5584
151.6	78.9929	-0.6036	156.6	79.3658	0.4995
151.7	78.8736	-0.5864	156.7	79.4586	0.4204
151.8	78.7603	-0.5458	156.8	79.5338	0.3243
151.9	78.6573	-0.4837	156.9	79.5883	0.2149
152.0	78.5688	-0.4026	157.0	79.6199	0.0968
152.1	78.4981	-0.3057	157.1	79.6272	-0.0253
152.2	78.4480	-0.1967	157.2	79.6099	-0.1463
152.3	78.4204	-0.0801	157.3	79.5687	-0.2615
152.4	78.4163	0.0396	157.4	79.5054	-0.3660
152.5	78.4359	0.1579	157.5	79.4225	-0.4557
152.6	78.4784	0.2700	157.6	79.3235	-0.5269
152.7	78.5423	0.3716	157.7	79.2125	-0.5770
152.8	78.6251	0.4587	157.8	79.0938	-0.6038
152.9	78.7236	0.5277	157.9	78.9723	-0.6065
153.0	78.8340	0.5760	158.0	78.8529	-0.5851
153.1	78.9519	0.6015	158.1	78.7403	-0.5405
153.2	79.0728	0.6030	158.2	78.6388	-0.4746
153.3	79.1917	0.5805	158.3	78.5525	-0.3899
153.4	79.3040	0.5347	158.4	78.4847	-0.2900
153.5	79.4050	0.4673	158.5	78.4379	-0.1788
153.6	79.4906	0.3810	158.6	78.4140	-0.0605
153.7	79.5573	0.2792	158.7	78.4139	0.0601
153.8	79.6024	0.1660	158.8	78.4376	0.1784
153.9	79.6239	0.0461	158.9	78.4842	0.2898
154.0	79.6209	-0.0758	159.0	78.5519	0.3899
154.1	79.5937	-0.1946	159.1	78.6382	0.4747
154.2	79.5432	-0.3055	159.2	78.7396	0.5409
154.3	79.4716	-0.4040	159.3	78.8523	0.5857
154.4	79.3819	-0.4861	159.4	78.9718	0.6074
154.5	79.2777	-0.5486	159.5	79.0935	0.6049
154.6	79.1632	-0.5891	159.6	79.2124	0.5782
154.7	79.0432	-0.6059	159.7	79.3238	0.5283
154.8	78.9224	-0.5985	159.8	79.4231	0.4570
154.9	78.8057	-0.5674	159.9	79.5064	0.3673
155.0	78.6975	-0.5138	160.0	79.5700	0.2626
					0.0025
					-1.0027

TABLE I (Continued)

 $\theta_o = 30$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
160.1	79.6115	0.1472	0.0018	-1.0029	165.1	78.4405	0.1989	0.0034	-0.9963
160.2	79.6291	0.0258	0.0010	-1.0031	165.2	78.4911	0.3093	0.0042	-0.9966
160.3	79.6219	-0.0967	0.0003	-1.0030	165.3	78.5625	0.4076	0.0048	-0.9971
160.4	79.5905	-0.2153	-0.0004	-1.0028	165.4	78.6521	0.4900	0.0054	-0.9977
160.5	79.5359	-0.3251	-0.0011	-1.0025	165.5	78.7563	0.5532	0.0058	-0.9983
160.6	79.4606	-0.4217	-0.0017	-1.0021	165.6	78.8711	0.5945	0.0061	-0.9991
160.7	79.3675	-0.5013	-0.0022	-1.0015	165.7	78.9921	0.6122	0.0062	-0.9999
160.8	79.2606	-0.5606	-0.0025	-1.0008	165.8	79.1143	0.6056	0.0062	-1.0007
160.9	79.1442	-0.5974	-0.0027	-1.0001	165.9	79.2330	0.5747	0.0060	-1.0014
161.0	79.0229	-0.6102	-0.0028	-0.9993	166.0	79.3433	0.5207	0.0057	-1.0021
161.1	78.9017	-0.5987	-0.0027	-0.9986	166.1	79.4408	0.4457	0.0053	-1.0028
161.2	78.7853	-0.5635	-0.0024	-0.9979	166.2	79.5214	0.3526	0.0047	-1.0033
161.3	78.6784	-0.5060	-0.0020	-0.9972	166.3	79.5818	0.2452	0.0040	-1.0037
161.4	78.5850	-0.4285	-0.0015	-0.9966	166.4	79.6196	0.1278	0.0033	-1.0040
161.5	78.5089	-0.3342	-0.0009	-0.9961	166.5	79.6331	0.0052	0.0026	-1.0041
161.6	78.4530	-0.2269	-0.0002	-0.9958	166.6	79.6218	-0.1177	0.0018	-1.0040
161.7	78.4193	-0.1106	0.0006	-0.9956	166.7	79.5861	-0.2358	0.0011	-1.0038
161.8	78.4092	0.0100	0.0014	-0.9955	166.8	79.5275	-0.3443	0.0004	-1.0035
161.9	78.4231	0.1302	0.0022	-0.9956	166.9	79.4485	-0.4389	-0.0002	-1.0030
162.0	78.4605	0.2453	0.0029	-0.9959	167.0	79.3523	-0.5156	-0.0006	-1.0024
162.1	78.5198	0.3509	0.0036	-0.9963	167.1	79.2429	-0.5716	-0.0010	-1.0017
162.2	78.5990	0.4428	0.0042	-0.9968	167.2	79.1246	-0.6046	-0.0012	-1.0010
162.3	78.6948	0.5174	0.0047	-0.9974	167.3	79.0023	-0.6134	-0.0012	-1.0003
162.4	78.8037	0.5715	0.0051	-0.9981	167.4	78.8809	-0.5978	-0.0011	-0.9995
162.5	78.9213	0.6031	0.0053	-0.9989	167.5	78.7652	-0.5584	-0.0008	-0.9988
162.6	79.0430	0.6107	0.0054	-0.9997	167.6	78.6597	-0.4970	-0.0004	-0.9981
162.7	79.1640	0.5940	0.0053	-1.0004	167.7	78.5685	-0.4161	0.0001	-0.9976
162.8	79.2794	0.5534	0.0051	-1.0012	167.8	78.4952	-0.3188	0.0007	-0.9971
162.9	79.3846	0.4905	0.0047	-1.0019	167.9	78.4425	-0.2090	0.0015	-0.9968
163.0	79.4753	0.4078	0.0043	-1.0025	168.0	78.4126	-0.0911	0.0022	-0.9967
163.1	79.5477	0.3086	0.0037	-1.0029	168.1	78.4065	0.0305	0.0030	-0.9966
163.2	79.5988	0.1968	0.0030	-1.0033	168.2	78.4245	0.1508	0.0038	-0.9968
163.3	79.6265	0.0769	0.0022	-1.0035	168.3	78.4659	0.2653	0.0045	-0.9971
163.4	79.6297	-0.0461	0.0015	-1.0035	168.4	78.5291	0.3694	0.0052	-0.9975
163.5	79.6082	-0.1672	0.0007	-1.0034	168.5	78.6118	0.4591	0.0058	-0.9980
163.6	79.5629	-0.2816	0.0001	-1.0031	168.6	78.7106	0.5308	0.0063	-0.9987
163.7	79.4957	-0.3845	-0.0006	-1.0027	168.7	78.8218	0.5816	0.0066	-0.9994
163.8	79.4093	-0.4719	-0.0011	-1.0022	168.8	78.9411	0.6094	0.0068	-1.0002
163.9	79.3073	-0.5401	-0.0015	-1.0016	168.9	79.0637	0.6129	0.0069	-1.0010
164.0	79.1940	-0.5866	-0.0018	-1.0009	169.0	79.1848	0.5920	0.0067	-1.0017
164.1	79.0738	-0.6096	-0.0019	-1.0001	169.1	79.2995	0.5473	0.0065	-1.0025
164.2	78.9516	-0.6082	-0.0019	-0.9994	169.2	79.4031	0.4806	0.0061	-1.0032
164.3	78.8323	-0.5826	-0.0017	-0.9986	169.3	79.4914	0.3944	0.0055	-1.0038
164.4	78.7206	-0.5340	-0.0014	-0.9979	169.4	79.5607	0.2922	0.0049	-1.0042
164.5	78.6208	-0.4643	-0.0009	-0.9973	169.5	79.6083	0.1781	0.0042	-1.0045
164.6	78.5369	-0.3763	-0.0003	-0.9968	169.6	79.6321	0.0567	0.0035	-1.0047
164.7	78.4721	-0.2736	0.0004	-0.9964	169.7	79.6311	-0.0670	0.0027	-1.0047
164.8	78.4288	-0.1602	0.0011	-0.9961	169.8	79.6053	-0.1880	0.0019	-1.0046
164.9	78.4088	-0.0406	0.0019	-0.9960	169.9	79.5559	-0.3014	0.0012	-1.0043
165.0	78.4127	0.0807	0.0027	-0.9961	170.0	79.4849	-0.4025	0.0006	-1.0039

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
170.1	79.3952	-0.4873	175.1	78.9613	0.6146
170.2	79.2904	-0.5524	175.2	79.0846	0.6140
170.3	79.1750	-0.5953	175.3	79.2055	0.5889
170.4	79.0535	-0.6143	175.4	79.3192	0.5402
170.5	78.9308	-0.6088	175.5	79.4210	0.4696
170.6	78.8118	-0.5791	175.6	79.5067	0.3800
170.7	78.7012	-0.5264	175.7	79.5729	0.2750
170.8	78.6034	-0.4531	175.8	79.6168	0.1588
170.9	78.5221	-0.3619	175.9	79.6366	0.0361
171.0	78.4604	-0.2566	176.0	79.6314	-0.0881
171.1	78.4207	-0.1412	176.1	79.6014	-0.2087
171.2	78.4046	-0.0203	176.2	79.5479	-0.3209
171.3	78.4126	0.1014	176.3	79.4732	-0.4200
171.4	78.4445	0.2192	176.4	79.3802	-0.5021
171.5	78.4990	0.3284	176.5	79.2728	-0.5639
171.6	78.5741	0.4249	176.6	79.1555	-0.6030
171.7	78.6669	0.5046	176.7	79.0329	-0.6180
171.8	78.7737	0.5646	176.8	78.9099	-0.6083
171.9	78.8905	0.6022	176.9	78.7915	-0.5744
172.0	79.0126	0.6159	177.0	78.6822	-0.5179
172.1	79.1352	0.6051	177.1	78.5865	-0.4409
172.2	79.2534	0.5701	177.2	78.5079	-0.3467
172.3	79.3624	0.5121	177.3	78.4495	-0.2389
172.4	79.4578	0.4335	177.4	78.4136	-0.1217
172.5	79.5356	0.3372	177.5	78.4014	0.0002
172.6	79.5927	0.2273	177.6	78.4136	0.1222
172.7	79.6266	0.1080	177.7	78.4495	0.2394
172.8	79.6360	-0.0156	177.8	78.5080	0.3472
172.9	79.6205	-0.1387	177.9	78.5866	0.4415
173.0	79.5806	-0.2561	178.0	78.6824	0.5185
173.1	79.5181	-0.3631	178.1	78.7917	0.5751
173.2	79.4355	-0.4554	178.2	78.9103	0.6090
173.3	79.3363	-0.5292	178.3	79.0334	0.6186
173.4	79.2245	-0.5817	178.4	79.1561	0.6036
173.5	79.1046	-0.6108	178.5	79.2736	0.5645
173.6	78.9816	-0.6155	178.6	79.3811	0.5026
173.7	78.8602	-0.5957	178.7	79.4742	0.4203
173.8	78.7453	-0.5523	178.8	79.5491	0.3210
173.9	78.6414	-0.4871	178.9	79.6027	0.2087
174.0	78.5526	-0.4027	179.0	79.6327	0.0878
174.1	78.4822	-0.3026	179.1	79.6379	-0.0367
174.2	78.4330	-0.1906	179.2	79.6181	-0.1596
174.3	78.4070	-0.0711	179.3	79.5741	-0.2761
174.4	78.4049	0.0511	179.4	79.5077	-0.3814
174.5	78.4270	0.1714	179.5	79.4217	-0.4712
174.6	78.4724	0.2850	179.6	79.3196	-0.5420
174.7	78.5394	0.3875	179.7	79.2056	-0.5909
174.8	78.6254	0.4748	179.8	79.0843	-0.6160
174.9	78.7271	0.5435	179.9	78.9607	-0.6166
175.0	78.8406	0.5907	180.0	78.8395	-0.5926
					0.0076 -1.0017
					0.0076 -1.0025
					0.0075 -1.0033
					0.0072 -1.0040
					0.0067 -1.0047
					0.0062 -1.0053
					0.0055 -1.0057
					0.0048 -1.0060
					0.0040 -1.0062
					0.0032 -1.0062
					0.0025 -1.0060
					0.0018 -1.0057
					0.0012 -1.0052
					0.0006 -1.0047
					0.0003 -1.0040
					0.0000 -1.0033
					-0.0001 -1.0026
					-0.0000 -1.0018
					0.0002 -1.0011
					0.0006 -1.0004
					0.0010 -0.9998
					0.0016 -0.9993
					0.0023 -0.9990
					0.0031 -0.9988
					0.0039 -0.9987
					0.0046 -0.9988
					0.0054 -0.9991
					0.0061 -0.9994
					0.0067 -1.0000
					0.0072 -1.0006
					0.0075 -1.0013
					0.0078 -1.0021
					0.0078 -1.0029
					0.0077 -1.0037
					0.0075 -1.0045
					0.0071 -1.0052
					0.0066 -1.0058
					0.0060 -1.0063
					0.0053 -1.0066
					0.0045 -1.0069
					0.0037 -1.0069
					0.0029 -1.0068
					0.0022 -1.0066
					0.0015 -1.0062
					0.0009 -1.0057
					0.0005 -1.0050
					0.0002 -1.0043
					0.0000 -1.0036
					0.0000 -1.0028
					0.0002 -1.0021

TABLE I (Continued)

 $\theta_o = 30$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
180.1	78.7257	-0.5452	0.0005	-1.0014	185.1	79.5619	0.3042	0.0058	-1.0077
180.2	78.6236	-0.4763	0.0009	-1.0007	185.2	79.6118	0.1896	0.0051	-1.0080
180.3	78.5373	-0.3886	0.0015	-1.0002	185.3	79.6378	0.0673	0.0043	-1.0082
180.4	78.4700	-0.2857	0.0021	-0.9998	185.4	79.6388	-0.0578	0.0035	-1.0083
180.5	78.4245	-0.1716	0.0028	-0.9995	185.5	79.6148	-0.1805	0.0027	-1.0081
180.6	78.4023	-0.0509	0.0036	-0.9994	185.6	79.5666	-0.2959	0.0019	-1.0078
180.7	78.4043	0.0719	0.0044	-0.9994	185.7	79.4965	-0.3993	0.0013	-1.0074
180.8	78.4305	0.1919	0.0051	-0.9996	185.8	79.4071	-0.4865	0.0007	-1.0069
180.9	78.4799	0.3044	0.0059	-1.0000	185.9	79.3023	-0.5540	0.0003	-1.0062
181.0	78.5506	0.4050	0.0065	-1.0004	186.0	79.1863	-0.5992	-0.0000	-1.0055
181.1	78.6399	0.4898	0.0070	-1.0010	186.1	79.0638	-0.6203	-0.0002	-1.0048
181.2	78.7443	0.5553	0.0075	-1.0017	186.2	78.9397	-0.6167	-0.0001	-1.0040
181.3	78.8598	0.5990	0.0077	-1.0025	186.3	78.8190	-0.5886	0.0000	-1.0032
181.4	78.9818	0.6189	0.0079	-1.0032	186.4	78.7064	-0.5371	0.0004	-1.0025
181.5	79.1056	0.6141	0.0078	-1.0041	186.5	78.6063	-0.4646	0.0008	-1.0019
181.6	79.2261	0.5848	0.0077	-1.0048	186.6	78.5227	-0.3737	0.0014	-1.0014
181.7	79.3386	0.5320	0.0073	-1.0056	186.7	78.4586	-0.2682	0.0020	-1.0010
181.8	79.4384	0.4578	0.0068	-1.0062	186.8	78.4167	-0.1523	0.0028	-1.0008
181.9	79.5214	0.3649	0.0063	-1.0068	186.9	78.3985	-0.0304	0.0035	-1.0007
182.0	79.5843	0.2573	0.0056	-1.0072	187.0	78.4047	0.0927	0.0043	-1.0007
182.1	79.6244	0.1391	0.0048	-1.0075	187.1	78.4350	0.2122	0.0051	-1.0009
182.2	79.6401	0.0153	0.0040	-1.0076	187.2	78.4884	0.3235	0.0058	-1.0013
182.3	79.6306	-0.1092	0.0032	-1.0076	187.3	78.5627	0.4221	0.0064	-1.0018
182.4	79.5965	-0.2293	0.0025	-1.0074	187.4	78.6551	0.5042	0.0069	-1.0024
182.5	79.5390	-0.3400	0.0018	-1.0070	187.5	78.7621	0.5664	0.0073	-1.0031
182.6	79.4606	-0.4369	0.0012	-1.0066	187.6	78.8794	0.6063	0.0076	-1.0038
182.7	79.3645	-0.5161	0.0006	-1.0060	187.7	79.0026	0.6222	0.0076	-1.0046
182.8	79.2547	-0.5745	0.0003	-1.0053	187.8	79.1266	0.6133	0.0076	-1.0054
182.9	79.1356	-0.6098	0.0000	-1.0046	187.9	79.2466	0.5798	0.0074	-1.0062
183.0	79.0121	-0.6206	-0.0000	-1.0038	188.0	79.3576	0.5230	0.0070	-1.0069
183.1	78.8890	-0.6068	0.0001	-1.0030	188.1	79.4553	0.4451	0.0065	-1.0076
183.2	78.7713	-0.5688	0.0003	-1.0023	188.2	79.5355	0.3491	0.0059	-1.0081
183.3	78.6637	-0.5084	0.0007	-1.0017	188.3	79.5949	0.2389	0.0052	-1.0085
183.4	78.5702	-0.4280	0.0012	-1.0011	188.4	79.6311	0.1190	0.0044	-1.0088
183.5	78.4945	-0.3308	0.0018	-1.0006	188.5	79.6426	-0.0058	0.0036	-1.0089
183.6	78.4395	-0.2206	0.0025	-1.0003	188.6	79.6289	-0.1303	0.0028	-1.0088
183.7	78.4074	-0.1018	0.0032	-1.0001	188.7	79.5905	-0.2496	0.0020	-1.0086
183.8	78.3993	0.0209	0.0040	-1.0001	188.8	79.5291	-0.3587	0.0013	-1.0082
183.9	78.4155	0.1429	0.0048	-1.0002	188.9	79.4472	-0.4532	0.0007	-1.0077
184.0	78.4556	0.2593	0.0055	-1.0005	189.0	79.3481	-0.5294	0.0002	-1.0071
184.1	78.5178	0.3656	0.0062	-1.0009	189.1	79.2360	-0.5843	-0.0001	-1.0064
184.2	78.5999	0.4576	0.0068	-1.0014	189.2	79.1154	-0.6156	-0.0003	-1.0056
184.3	78.6986	0.5317	0.0072	-1.0021	189.3	78.9911	-0.6223	-0.0004	-1.0049
184.4	78.8103	0.5848	0.0076	-1.0028	189.4	78.8682	-0.6043	-0.0003	-1.0041
184.5	78.9304	0.6148	0.0078	-1.0036	189.5	78.7514	-0.5623	-0.0000	-1.0034
184.6	79.0543	0.6203	0.0078	-1.0044	189.6	78.6455	-0.4980	0.0004	-1.0027
184.7	79.1770	0.6012	0.0077	-1.0052	189.7	78.5544	-0.4142	0.0009	-1.0021
184.8	79.2936	0.5578	0.0074	-1.0059	189.8	78.4818	-0.3142	0.0015	-1.0017
184.9	79.3994	0.4921	0.0070	-1.0066	189.9	78.4303	-0.2019	0.0022	-1.0014
185.0	79.4901	0.4064	0.0064	-1.0072	190.0	78.4021	-0.0817	0.0030	-1.0012

TABLE I (Continued)

 $\theta_0 = 30$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
190.1	78.3981	0.0418	195.1	79.5184	-0.3770
190.2	78.4185	0.1635	195.2	79.4330	-0.4690
190.3	78.4625	0.2790	195.3	79.3311	-0.5420
190.4	78.5285	0.3835	195.4	79.2169	-0.5932
190.5	78.6139	0.4731	195.5	79.0949	-0.6206
190.6	78.7155	0.5441	195.6	78.9701	-0.6231
190.7	78.8293	0.5936	195.7	78.8474	-0.6009
190.8	78.9508	0.6197	195.8	78.7318	-0.5548
190.9	79.0753	0.6211	195.9	78.6277	-0.4869
191.0	79.1978	0.5977	196.0	78.5392	-0.3998
191.1	79.3133	0.5503	196.1	78.4698	-0.2970
191.2	79.4173	0.4807	196.2	78.4219	-0.1827
191.3	79.5053	0.3917	196.3	78.3976	-0.0612
191.4	79.5739	0.2867	196.4	78.3977	0.0627
191.5	79.6201	0.1701	196.5	78.4223	0.1841
191.6	79.6420	0.0465	196.6	78.4703	0.2984
191.7	79.6387	-0.0790	196.7	78.5400	0.4010
191.8	79.6104	-0.2013	196.8	78.6287	0.4880
191.9	79.5583	-0.3154	196.9	78.7330	0.5558
192.0	79.4844	-0.4166	197.0	78.8487	0.6016
192.1	79.3918	-0.5010	197.1	78.9715	0.6237
192.2	79.2844	-0.5652	197.2	79.0964	0.6209
192.3	79.1665	-0.6066	197.3	79.2185	0.5933
192.4	79.0430	-0.6236	197.4	79.3327	0.5419
192.5	78.9187	-0.6158	197.5	79.4346	0.4686
192.6	78.7986	-0.5836	197.6	79.5199	0.3763
192.7	78.6874	-0.5282	197.7	79.5851	0.2687
192.8	78.5895	-0.4520	197.8	79.6274	0.1502
192.9	78.5087	-0.3582	197.9	79.6452	0.0255
193.0	78.4480	-0.2502	198.0	79.6377	-0.1002
193.1	78.4099	-0.1325	198.1	79.6052	-0.2219
193.2	78.3957	-0.0097	198.2	79.5490	-0.3345
193.3	78.4060	0.1136	198.3	79.4715	-0.4335
193.4	78.4404	0.2324	198.4	79.3758	-0.5150
193.5	78.4976	0.3422	198.5	79.2660	-0.5756
193.6	78.5755	0.4386	198.6	79.1465	-0.6131
193.7	78.6709	0.5179	198.7	79.0220	-0.6260
193.8	78.7804	0.5767	198.8	78.8977	-0.6140
193.9	78.8994	0.6128	198.9	78.7784	-0.5776
194.0	79.0235	0.6246	199.0	78.6688	-0.5184
194.1	79.1476	0.6114	199.1	78.5732	-0.4388
194.2	79.2668	0.5738	199.2	78.4954	-0.3420
194.3	79.3763	0.5131	199.3	78.4382	-0.2317
194.4	79.4716	0.4316	199.4	78.4039	-0.1125
194.5	79.5488	0.3326	199.5	78.3938	0.0112
194.6	79.6047	0.2201	199.6	78.4082	0.1344
194.7	79.6369	0.0986	199.7	78.4467	0.2524
194.8	79.6442	-0.0269	199.8	78.5078	0.3606
194.9	79.6262	-0.1514	199.9	78.5891	0.4546
195.0	79.5837	-0.2697	200.0	78.6874	0.5309
					0.0006
					0.0000
					-0.0004
					-0.0008
					-0.0010
					-0.0010
					-0.0009
					-0.0006
					-0.0002
					0.0004
					0.0010
					0.0017
					0.0025
					0.0033
					0.0040
					0.0048
					0.0054
					0.0059
					0.0064
					0.0066
					0.0062
					0.0058
					0.0052
					0.0045
					0.0037
					0.0029
					0.0021
					0.0013
					0.0006
					-0.0001
					-0.0006
					-0.0010
					-0.0013
					-0.0014
					-0.0013
					-0.0011
					-0.0007
					-0.0002
					0.0004
					0.0011
					0.0018
					0.0026
					0.0034
					0.0041
					0.0048
					0.0054
					0.0058

TABLE II

TABLE II
Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 35$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
0.1	0.1703	-360.7767	0.0652	-0.0000	5.1	74.4094	5.5861	0.3354	-1.5364
0.2	0.6959	-171.9183	0.1319	-0.0002	5.2	75.2993	4.1795	0.2905	-1.5777
0.3	1.6227	-105.0783	0.2015	-0.0011	5.3	75.8201	2.7003	0.2409	-1.6099
0.4	3.0307	-68.6182	0.2753	-0.0037	5.4	76.0076	1.2339	0.1889	-1.6336
0.5	5.0386	-44.1976	0.3550	-0.0094	5.5	75.9075	-0.1635	0.1363	-1.6494
0.6	7.8077	-25.7273	0.4416	-0.0206	5.6	75.5616	-1.4579	0.0842	-1.6587
0.7	11.5406	-10.6722	0.5361	-0.0404	5.7	75.0025	-2.6266	0.0330	-1.6622
0.8	16.4660	2.0915	0.6382	-0.0730	5.8	74.2549	-3.6493	-0.0169	-1.6605
0.9	22.7943	12.9600	0.7458	-0.1237	5.9	73.3405	-4.5017	-0.0655	-1.6541
1.0	30.6306	21.8644	0.8541	-0.1977	6.0	72.2850	-5.1552	-0.1125	-1.6432
1.1	39.8418	28.4322	0.9547	-0.2986	6.1	71.1236	-5.5793	-0.1575	-1.6279
1.2	49.9272	32.1962	1.0364	-0.4260	6.2	69.9044	-5.7486	-0.2002	-1.6082
1.3	60.0009	32.8879	1.0878	-0.5730	6.3	68.6870	-5.6496	-0.2398	-1.5844
1.4	68.9927	30.7152	1.1019	-0.7268	6.4	67.5369	-5.2866	-0.2759	-1.5571
1.5	76.0223	26.4228	1.0796	-0.8720	6.5	66.5185	-4.6851	-0.3080	-1.5266
1.6	80.7085	21.0551	1.0293	-0.9970	6.6	65.6856	-3.8894	-0.3356	-1.4938
1.7	83.2081	15.5882	0.9628	-1.0963	6.7	65.0753	-2.9579	-0.3586	-1.4594
1.8	84.0151	10.6799	0.8909	-1.1710	6.8	64.7042	-1.9550	-0.3770	-1.4241
1.9	83.7090	6.6285	0.8211	-1.2256	6.9	64.5688	-0.9436	-0.3908	-1.3887
2.0	82.7872	3.4635	0.7571	-1.2658	7.0	64.6487	0.0220	-0.4003	-1.3539
2.1	81.6036	1.0658	0.6996	-1.2970	7.1	64.9119	0.8997	-0.4058	-1.3201
2.2	80.3717	-0.7389	0.6478	-1.3229	7.2	65.3206	1.6616	-0.4076	-1.2878
2.3	79.1941	-2.1241	0.5996	-1.3459	7.3	65.8363	2.2928	-0.4062	-1.2575
2.4	78.0964	-3.2318	0.5528	-1.3668	7.4	66.4239	2.7894	-0.4020	-1.2295
2.5	77.0585	-4.1600	0.5054	-1.3853	7.5	67.0538	3.1551	-0.3954	-1.2040
2.6	76.0422	-4.9609	0.4564	-1.3998	7.6	67.7027	3.3979	-0.3869	-1.1814
2.7	75.0136	-5.6499	0.4060	-1.4084	7.7	68.3535	3.5276	-0.3769	-1.1616
2.8	73.9555	-6.2215	0.3554	-1.4097	7.8	68.9938	3.5533	-0.3661	-1.1449
2.9	72.8679	-6.6668	0.3068	-1.4028	7.9	69.6138	3.4824	-0.3549	-1.1313
3.0	71.7588	-6.9823	0.2625	-1.3883	8.0	70.2054	3.3205	-0.3439	-1.1206
3.1	70.6344	-7.1700	0.2242	-1.3673	8.1	70.7600	3.0715	-0.3336	-1.1127
3.2	69.4953	-7.2303	0.1930	-1.3416	8.2	71.2676	2.7389	-0.3246	-1.1072
3.3	68.3396	-7.1554	0.1695	-1.3129	8.3	71.7167	2.3271	-0.3173	-1.1038
3.4	67.1699	-6.9279	0.1539	-1.2826	8.4	72.0945	1.8421	-0.3120	-1.1019
3.5	65.9990	-6.5240	0.1460	-1.2521	8.5	72.3873	1.2935	-0.3089	-1.1010
3.6	64.8538	-5.9190	0.1456	-1.2227	8.6	72.5821	0.6937	-0.3079	-1.1005
3.7	63.7748	-5.0938	0.1525	-1.1956	8.7	72.6676	0.0592	-0.3091	-1.0999
3.8	62.8143	-4.0401	0.1663	-1.1720	8.8	72.6352	-0.5907	-0.3120	-1.0987
3.9	62.0325	-2.7647	0.1866	-1.1532	8.9	72.4798	-1.2341	-0.3165	-1.0966
4.0	61.4935	-1.2923	0.2125	-1.1405	9.0	72.2006	-1.8473	-0.3222	-1.0934
4.1	61.2603	0.3316	0.2432	-1.1353	9.1	71.8014	-2.4054	-0.3288	-1.0890
4.2	61.3885	2.0398	0.2772	-1.1389	9.2	71.2914	-2.8835	-0.3361	-1.0834
4.3	61.9183	3.7419	0.3126	-1.1526	9.3	70.6853	-3.2577	-0.3437	-1.0766
4.4	62.8647	5.3273	0.3470	-1.1772	9.4	70.0035	-3.5063	-0.3516	-1.0686
4.5	64.2061	6.6728	0.3772	-1.2129	9.5	69.2721	-3.6115	-0.3596	-1.0595
4.6	65.8747	7.6570	0.4002	-1.2587	9.6	68.5221	-3.5610	-0.3677	-1.0492
4.7	67.7558	8.1824	0.4127	-1.3126	9.7	67.7881	-3.3495	-0.3758	-1.0378
4.8	69.6986	8.1981	0.4126	-1.3713	9.8	67.1069	-2.9800	-0.3839	-1.0251
4.9	71.5415	7.7156	0.3989	-1.4307	9.9	66.5151	-2.4647	-0.3919	-1.0111
5.0	73.1435	6.8070	0.3724	-1.4868	10.0	66.0465	-1.8250	-0.3996	-0.9956

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
10.1	65.7300	-1.0913	-0.4069	-0.9786	15.1	71.4076	-0.7249	0.1557	-0.7695
10.2	65.5864	-0.3013	-0.4134	-0.9598	15.2	71.2002	-1.1433	0.1687	-0.7705
10.3	65.6265	0.5018	-0.4189	-0.9392	15.3	70.9134	-1.5071	0.1826	-0.7727
10.4	65.8492	1.2723	-0.4230	-0.9168	15.4	70.5607	-1.8020	0.1970	-0.7760
10.5	66.2411	1.9659	-0.4252	-0.8928	15.5	70.1578	-2.0168	0.2121	-0.7807
10.6	66.7767	2.5432	-0.4251	-0.8674	15.6	69.7222	-2.1433	0.2277	-0.7868
10.7	67.4206	2.9738	-0.4224	-0.8408	15.7	69.2727	-2.1769	0.2436	-0.7944
10.8	68.1307	3.2385	-0.4166	-0.8137	15.8	68.8289	-2.1171	0.2598	-0.8038
10.9	68.8626	3.3314	-0.4078	-0.7865	15.9	68.4103	-1.9674	0.2760	-0.8150
11.0	69.5737	3.2593	-0.3958	-0.7598	16.0	68.0354	-1.7353	0.2920	-0.8282
11.1	70.2274	3.0392	-0.3809	-0.7342	16.1	67.7204	-1.4326	0.3075	-0.8436
11.2	70.7951	2.6963	-0.3631	-0.7102	16.2	67.4789	-1.0744	0.3221	-0.8611
11.3	71.2578	2.2593	-0.3429	-0.6880	16.3	67.3202	-0.6787	0.3355	-0.8808
11.4	71.6053	1.7580	-0.3207	-0.6681	16.4	67.2493	-0.2647	0.3472	-0.9026
11.5	71.8351	1.2206	-0.2969	-0.6506	16.5	67.2664	0.1478	0.3567	-0.9261
11.6	71.9505	0.6717	-0.2717	-0.6356	16.6	67.3672	0.5401	0.3639	-0.9512
11.7	71.9587	0.1325	-0.2456	-0.6231	16.7	67.5431	0.8954	0.3682	-0.9773
11.8	71.8692	-0.3798	-0.2189	-0.6131	16.8	67.7825	1.2002	0.3697	-1.0041
11.9	71.6931	-0.8510	-0.1917	-0.6056	16.9	68.0716	1.4441	0.3680	-1.0311
12.0	71.4418	-1.2696	-0.1644	-0.6006	17.0	68.3954	1.6210	0.3634	-1.0577
12.1	71.1276	-1.6266	-0.1371	-0.5981	17.1	68.7388	1.7278	0.3558	-1.0834
12.2	70.7631	-1.9145	-0.1102	-0.5982	17.2	69.0874	1.7651	0.3454	-1.1078
12.3	70.3615	-2.1282	-0.0839	-0.6007	17.3	69.4283	1.7358	0.3327	-1.1306
12.4	69.9362	-2.2642	-0.0586	-0.6055	17.4	69.7500	1.6451	0.3178	-1.1513
12.5	69.5006	-2.3215	-0.0344	-0.6127	17.5	70.0429	1.4994	0.3012	-1.1698
12.6	69.0679	-2.3008	-0.0119	-0.6219	17.6	70.2991	1.3062	0.2832	-1.1858
12.7	68.6508	-2.2051	0.0088	-0.6330	17.7	70.5124	1.0737	0.2644	-1.1994
12.8	68.2609	-2.0389	0.0274	-0.6455	17.8	70.6779	0.8102	0.2450	-1.2104
12.9	67.9088	-1.8083	0.0438	-0.6592	17.9	70.7921	0.5244	0.2255	-1.2189
13.0	67.6040	-1.5205	0.0578	-0.6736	18.0	70.8528	0.2252	0.2061	-1.2250
13.1	67.3550	-1.1837	0.0694	-0.6883	18.1	70.8588	-0.0785	0.1873	-1.2289
13.2	67.1692	-0.8072	0.0787	-0.7029	18.2	70.8101	-0.3775	0.1693	-1.2307
13.3	67.0531	-0.4012	0.0857	-0.7172	18.3	70.7082	-0.6629	0.1523	-1.2306
13.4	67.0120	0.0226	0.0908	-0.7306	18.4	70.5556	-0.9255	0.1367	-1.2289
13.5	67.0499	0.4515	0.0940	-0.7429	18.5	70.3565	-1.1566	0.1225	-1.2258
13.6	67.1688	0.8713	0.0958	-0.7539	18.6	70.1165	-1.3479	0.1099	-1.2216
13.7	67.3682	1.2665	0.0964	-0.7633	18.7	69.8430	-1.4921	0.0990	-1.2165
13.8	67.6447	1.6211	0.0961	-0.7710	18.8	69.5446	-1.5829	0.0898	-1.2109
13.9	67.9911	1.9186	0.0954	-0.7770	18.9	69.2314	-1.6153	0.0825	-1.2050
14.0	68.3964	2.1438	0.0945	-0.7812	19.0	68.9144	-1.5865	0.0770	-1.1992
14.1	68.8451	2.2831	0.0940	-0.7836	19.1	68.6058	-1.4955	0.0732	-1.1939
14.2	69.3186	2.3269	0.0942	-0.7844	19.2	68.3178	-1.3438	0.0711	-1.1892
14.3	69.7951	2.2697	0.0953	-0.7839	19.3	68.0629	-1.1356	0.0704	-1.1855
14.4	70.2515	2.1118	0.0977	-0.7824	19.4	67.8525	-0.8774	0.0710	-1.1831
14.5	70.6653	1.8596	0.1016	-0.7801	19.5	67.6972	-0.5787	0.0726	-1.1823
14.6	71.0160	1.5248	0.1071	-0.7774	19.6	67.6055	-0.2509	0.0749	-1.1832
14.7	71.2867	1.1240	0.1141	-0.7747	19.7	67.5834	0.0921	0.0774	-1.1861
14.8	71.4655	0.6769	0.1226	-0.7724	19.8	67.6340	0.4351	0.0798	-1.1909
14.9	71.5455	0.2053	0.1325	-0.7706	19.9	67.7568	0.7620	0.0816	-1.1978
15.0	71.5251	-0.2690	0.1435	-0.7696	20.0	67.9474	1.0570	0.0823	-1.2065

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
20.1	68.1977	1.3050	0.0815	-1.2170	25.1	69.3750	-1.2415	-0.2165	-0.9385
20.2	68.4960	1.4935	0.0788	-1.2288	25.2	69.1214	-1.2371	-0.2184	-0.9310
20.3	68.8275	1.6127	0.0739	-1.2416	25.3	68.8744	-1.1813	-0.2200	-0.9226
20.4	69.1755	1.6570	0.0666	-1.2548	25.4	68.6443	-1.0763	-0.2212	-0.9135
20.5	69.5224	1.6249	0.0566	-1.2680	25.5	68.4409	-0.9268	-0.2220	-0.9037
20.6	69.8508	1.5194	0.0441	-1.2807	25.6	68.2730	-0.7390	-0.2221	-0.8931
20.7	70.1450	1.3479	0.0291	-1.2922	25.7	68.1476	-0.5212	-0.2215	-0.8819
20.8	70.3920	1.1208	0.0120	-1.3022	25.8	68.0701	-0.2829	-0.2200	-0.8701
20.9	70.5818	0.8511	-0.0069	-1.3102	25.9	68.0439	-0.0348	-0.2176	-0.8578
21.0	70.7083	0.5532	-0.0273	-1.3161	26.0	68.0696	0.2120	-0.2140	-0.8450
21.1	70.7690	0.2419	-0.0488	-1.3195	26.1	68.1457	0.4466	-0.2093	-0.8320
21.2	70.7646	-0.0688	-0.0708	-1.3205	26.2	68.2681	0.6585	-0.2033	-0.8188
21.3	70.6986	-0.3658	-0.0931	-1.3189	26.3	68.4303	0.8386	-0.1960	-0.8056
21.4	70.5769	-0.6377	-0.1152	-1.3149	26.4	68.6244	0.9796	-0.1872	-0.7927
21.5	70.4071	-0.8751	-0.1368	-1.3086	26.5	68.8408	1.0760	-0.1770	-0.7802
21.6	70.1981	-1.0706	-0.1576	-1.3000	26.6	69.0692	1.1249	-0.1654	-0.7683
21.7	69.9594	-1.2187	-0.1774	-1.2895	26.7	69.2992	1.1260	-0.1525	-0.7574
21.8	69.7013	-1.3159	-0.1959	-1.2770	26.8	69.5210	1.0809	-0.1383	-0.7475
21.9	69.4338	-1.3607	-0.2130	-1.2629	26.9	69.7255	0.9934	-0.1231	-0.7388
22.0	69.1669	-1.3535	-0.2285	-1.2474	27.0	69.9051	0.8690	-0.1071	-0.7316
22.1	68.9102	-1.2963	-0.2422	-1.2307	27.1	70.0538	0.7143	-0.0903	-0.7259
22.2	68.6725	-1.1927	-0.2541	-1.2129	27.2	70.1670	0.5368	-0.0731	-0.7218
22.3	68.4614	-1.0479	-0.2640	-1.1944	27.3	70.2424	0.3441	-0.0557	-0.7193
22.4	68.2837	-0.8681	-0.2719	-1.1755	27.4	70.2786	0.1440	-0.0383	-0.7184
22.5	68.1444	-0.6603	-0.2778	-1.1563	27.5	70.2761	-0.0561	-0.0211	-0.7191
22.6	68.0475	-0.4323	-0.2817	-1.1372	27.6	70.2364	-0.2492	-0.0042	-0.7213
22.7	67.9953	-0.1922	-0.2836	-1.1183	27.7	70.1622	-0.4292	0.0120	-0.7249
22.8	67.9888	0.0518	-0.2837	-1.1001	27.8	70.0570	-0.5903	0.0276	-0.7298
22.9	68.0277	0.2915	-0.2821	-1.0827	27.9	69.9249	-0.7277	0.0423	-0.7359
23.0	68.1102	0.5189	-0.2789	-1.0663	28.0	69.7709	-0.8375	0.0560	-0.7430
23.1	68.2335	0.7267	-0.2745	-1.0511	28.1	69.6002	-0.9164	0.0687	-0.7509
23.2	68.3936	0.9078	-0.2689	-1.0373	28.2	69.4185	-0.9623	0.0803	-0.7596
23.3	68.5852	1.0557	-0.2624	-1.0249	28.3	69.2318	-0.9736	0.0908	-0.7688
23.4	68.8021	1.1651	-0.2555	-1.0141	28.4	69.0461	-0.9502	0.1000	-0.7784
23.5	69.0368	1.2313	-0.2482	-1.0048	28.5	68.8678	-0.8922	0.1082	-0.7882
23.6	69.2812	1.2513	-0.2409	-0.9971	28.6	68.7030	-0.8017	0.1152	-0.7981
23.7	69.5263	1.2233	-0.2339	-0.9907	28.7	68.5576	-0.6811	0.1211	-0.8080
23.8	69.7625	1.1474	-0.2274	-0.9856	28.8	68.4371	-0.5340	0.1260	-0.8177
23.9	69.9804	1.0257	-0.2216	-0.9816	28.9	68.3462	-0.3655	0.1300	-0.8270
24.0	70.1708	0.8621	-0.2167	-0.9785	29.0	68.2892	-0.1810	0.1331	-0.8360
24.1	70.3254	0.6628	-0.2127	-0.9760	29.1	68.2692	0.0126	0.1354	-0.8444
24.2	70.4371	0.4355	-0.2098	-0.9738	29.2	68.2878	0.2081	0.1372	-0.8522
24.3	70.5007	0.1896	-0.2078	-0.9718	29.3	68.3453	0.3978	0.1384	-0.8593
24.4	70.5132	-0.0647	-0.2069	-0.9696	29.4	68.4405	0.5736	0.1392	-0.8657
24.5	70.4738	-0.3166	-0.2068	-0.9672	29.5	68.5706	0.7279	0.1399	-0.8714
24.6	70.3839	-0.5553	-0.2075	-0.9642	29.6	68.7305	0.8533	0.1405	-0.8764
24.7	70.2474	-0.7707	-0.2087	-0.9606	29.7	68.9145	0.9440	0.1412	-0.8806
24.8	70.0701	-0.9538	-0.2104	-0.9563	29.8	69.1142	0.9949	0.1421	-0.8842
24.9	69.8595	-1.0969	-0.2124	-0.9512	29.9	69.3209	1.0026	0.1434	-0.8873
25.0	69.6246	-1.1941	-0.2145	-0.9452	30.0	69.5251	0.9670	0.1452	-0.8899

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
30.1	69.7176	0.8890	35.1	68.5741	-0.3908
30.2	69.8888	0.7720	35.2	68.5111	-0.2468
30.3	70.0316	0.6220	35.3	68.4761	-0.0920
30.4	70.1384	0.4466	35.4	68.4741	0.0672
30.5	70.2055	0.2538	35.5	68.5057	0.2230
30.6	70.2308	0.0528	35.6	68.5685	0.3698
30.7	70.2134	-0.1469	35.7	68.6618	0.5010
30.8	70.1554	-0.3368	35.8	68.7772	0.6088
30.9	70.0607	-0.5083	35.9	68.9134	0.6920
31.0	69.9350	-0.6550	36.0	69.0623	0.7432
31.1	69.7837	-0.7713	36.1	69.2196	0.7611
31.2	69.6142	-0.8534	36.2	69.3786	0.7512
31.3	69.4345	-0.8994	36.3	69.5222	0.7021
31.4	69.2512	-0.9083	36.4	69.6595	0.6274
31.5	69.0724	-0.8812	36.5	69.7715	0.5231
31.6	68.9045	-0.8197	36.6	69.8576	0.4081
31.7	68.7537	-0.7276	36.7	69.9208	0.2735
31.8	68.6257	-0.6088	36.8	69.9551	0.1341
31.9	68.5245	-0.4688	36.9	69.9612	-0.0110
32.0	68.4535	-0.3136	37.0	69.9358	-0.1509
32.1	68.4149	-0.1490	37.1	69.8864	-0.2817
32.2	68.4085	0.0183	37.2	69.8118	-0.3966
32.3	68.4344	0.1822	37.3	69.7223	-0.4910
32.4	68.4915	0.3359	37.4	69.6064	-0.5627
32.5	68.5763	0.4751	37.5	69.4967	-0.6186
32.6	68.6854	0.5939	37.6	69.3751	-0.6413
32.7	68.8151	0.6892	37.7	69.2430	-0.6471
32.8	68.9587	0.7567	37.8	69.1180	-0.6271
32.9	69.1122	0.7950	37.9	69.0013	-0.5837
33.0	69.2693	0.8048	38.0	68.8983	-0.5255
33.1	69.4250	0.7829	38.1	68.7853	-0.4468
33.2	69.5724	0.7325	38.2	68.7303	-0.3463
33.3	69.7074	0.6539	38.3	68.6721	-0.2374
33.4	69.8244	0.5514	38.4	68.6409	-0.1229
33.5	69.9203	0.4284	38.5	68.6244	0.0003
33.6	69.9888	0.2899	38.6	68.6417	0.1196
33.7	70.0306	0.1394	38.7	68.6711	0.2389
33.8	70.0424	-0.0155	38.8	68.7290	0.3473
33.9	70.0231	-0.1687	38.9	68.8153	0.4415
34.0	69.9741	-0.3168	39.0	68.9072	0.5210
34.1	69.8969	-0.4515	39.1	69.0133	0.5770
34.2	69.7943	-0.5708	39.2	69.1327	0.6160
34.3	69.6702	-0.6661	39.3	69.2470	0.6511
34.4	69.5314	-0.7344	39.4	69.3919	0.6120
34.5	69.3811	-0.7742	39.5	69.4957	0.5834
34.6	69.2235	-0.7837	39.6	69.6148	0.5161
34.7	69.0695	-0.7621	39.7	69.7185	0.4345
34.8	68.9198	-0.7093	39.8	69.7915	0.3276
34.9	68.7845	-0.6282	39.9	69.8396	0.2121
35.0	68.6694	-0.5209	40.0	69.8730	0.0870
					-0.1425
					-0.9062

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
40.1	69.8820	-0.0389	-0.1393	-0.9049	45.1	68.8647	0.2459	0.1520	-0.9418
40.2	69.8583	-0.1719	-0.1375	-0.9027	45.2	68.9472	0.3360	0.1558	-0.9514
40.3	69.8104	-0.2728	-0.1352	-0.9012	45.3	68.9961	0.3947	0.1569	-0.9564
40.4	69.7534	-0.3825	-0.1342	-0.8985	45.4	69.0386	0.4400	0.1575	-0.9571
40.5	69.6471	-0.4761	-0.1327	-0.8952	45.5	69.2002	0.4439	0.1502	-0.9652
40.6	69.5652	-0.5387	-0.1313	-0.8916	45.6	69.3054	0.4252	0.1564	-0.9676
40.7	69.4398	-0.6030	-0.1305	-0.8872	45.7	69.4057	0.4252	0.1516	-0.9680
40.8	69.3157	-0.6072	-0.1290	-0.8828	45.8	69.5142	0.3854	0.1542	-0.9777
40.9	69.1698	-0.5860	-0.1272	-0.8772	45.9	69.5356	0.3202	0.1570	-0.9744
41.0	69.0829	-0.5596	-0.1260	-0.8720	46.0	69.5813	0.2745	0.1570	-0.9771
41.1	68.9548	-0.5008	-0.1239	-0.8654	46.1	69.7197	0.1944	0.1605	-0.9843
41.2	68.8873	-0.4375	-0.1210	-0.8589	46.2	69.6731	0.1158	0.1629	-0.9916
41.3	68.7960	-0.3513	-0.1175	-0.8517	46.3	69.6614	0.0049	0.1612	-0.9913
41.4	68.7458	-0.2307	-0.1141	-0.8446	46.4	69.6766	-0.0542	0.1686	-0.9960
41.5	68.6892	-0.1368	-0.1088	-0.8369	46.5	69.5975	-0.1355	0.1707	-1.0040
41.6	68.6869	-0.0366	-0.1027	-0.8297	46.6	69.6730	-0.1802	0.1658	-1.0228
41.7	68.6971	0.0600	-0.0968	-0.8228	46.7	69.5266	-0.2815	0.1682	-1.0133
41.8	68.7214	0.1711	-0.0899	-0.8149	46.8	69.5112	-0.3340	0.1750	-1.0266
41.9	68.7875	0.2975	-0.0818	-0.8079	46.9	69.4158	-0.3460	0.1729	-1.0297
42.0	68.8616	0.3632	-0.0721	-0.8017	47.0	69.3110	-0.4489	0.1737	-1.0399
42.1	68.9540	0.4554	-0.0626	-0.7966	47.1	69.2648	-0.3690	0.1796	-1.0480
42.2	69.0622	0.5407	-0.0525	-0.7897	47.2	69.2156	-0.4027	0.1851	-1.0538
42.3	69.1539	0.5156	-0.0410	-0.7851	47.3	69.1415	-0.3569	0.1795	-1.0648
42.4	69.2296	0.5369	-0.0300	-0.7822	47.4	69.0578	-0.2839	0.1860	-1.0774
42.5	69.3516	0.4909	-0.0168	-0.7791	47.5	68.9997	-0.2710	0.1777	-1.0836
42.6	69.4652	0.4747	-0.0036	-0.7778	47.6	68.9766	-0.1580	0.1713	-1.0941
42.7	69.5597	0.3603	0.0087	-0.7756	47.7	68.8627	-0.1724	0.1648	-1.1146
42.8	69.6074	0.3839	0.0233	-0.7776	47.8	68.8902	-0.1938	0.1740	-1.1389
42.9	69.6764	0.3297	0.0357	-0.7785	47.9	68.9433	0.0273	0.1610	-1.1224
43.0	69.7201	0.2218	0.0501	-0.7823	48.0	68.9417	0.0447	0.1564	-1.1394
43.1	69.7507	0.0832	0.0613	-0.7876	48.1	68.9637	0.0404	0.1532	-1.1500
43.2	69.7403	0.0209	0.0738	-0.7919	48.2	68.8411	0.0963	0.1453	-1.2004
43.3	69.7330	-0.2680	0.0858	-0.7971	48.3	69.0287	0.1895	0.1395	-1.1603
43.4	69.7197	-0.1898	0.0962	-0.8038	48.4	69.1104	0.2910	0.1280	-1.1672
43.5	69.6353	-0.2629	0.1041	-0.8125	48.5	69.0983	0.2939	0.1085	-1.1804
43.6	69.6045	-0.3411	0.1147	-0.8211	48.6	69.1573	0.3027	0.0995	-1.1897
43.7	69.4954	-0.3972	0.1220	-0.8291	48.7	69.2616	0.3371	0.0812	-1.1885
43.8	69.4194	-0.4399	0.1293	-0.8395	48.8	69.3383	0.2937	0.0797	-1.1975
43.9	69.3444	-0.4733	0.1363	-0.8464	48.9	69.3679	0.1502	0.0848	-1.1931
44.0	69.2606	-0.4633	0.1416	-0.8569	49.0	69.4533	0.2304	0.0582	-1.1908
44.1	69.1553	-0.4701	0.1449	-0.8691	49.1	69.5442	0.3775	0.0021	-1.2075
44.2	69.0867	-0.4854	0.1510	-0.8769	49.2	69.5566	0.2406	0.0081	-1.2122
44.3	68.9768	-0.4105	0.1534	-0.8886	49.3	69.4257	0.1909	0.0125	-1.2147
44.4	68.8981	-0.3529	0.1538	-0.8939	49.4	69.6310	0.2240	-0.0334	-1.2074
44.5	68.8574	-0.2664	0.1546	-0.9016	49.5	69.5970	0.0500	-0.0153	-1.1865
44.6	68.8192	-0.1873	0.1538	-0.9118	49.6	69.5568	-0.0479	-0.0136	-1.1851
44.7	68.8004	-0.0714	0.1571	-0.9185	49.7	69.4939	-0.1351	-0.0154	-1.1897
44.8	68.8110	0.0247	0.1549	-0.9237	49.8	69.6089	-0.0673	-0.0652	-1.1908
44.9	68.8150	0.0926	0.1585	-0.9309	49.9	69.4761	-0.1761	-0.0260	-1.1774
45.0	68.8182	0.1538	0.1568	-0.9368	50.0	69.4340	-0.2748	-0.0516	-1.1606

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
50.1	69.4213	-0.2981	55.1	69.1910	0.1097
50.2	69.3317	-0.2729	55.2	69.2291	0.0680
50.3	69.2247	-0.3179	55.3	69.1972	0.0938
50.4	69.1203	-0.2876	55.4	69.2600	0.1232
50.5	69.1599	-0.2615	55.5	69.2695	0.1265
50.6	69.0884	-0.1739	55.6	69.4052	0.0993
50.7	69.0745	-0.1613	55.7	68.7187	-0.2630
50.8	68.7022	-0.7027	55.8	69.3627	0.0156
50.9	69.0512	-0.1315	55.9	69.2360	0.2082
51.0	69.0062	-0.0424	56.0	69.4289	0.0700
51.1	69.0073	-0.0606	56.1	69.2825	0.0691
51.2	69.0503	0.1170	56.2	69.3499	0.0155
51.3	69.0518	0.1485	56.3	69.4077	-0.0620
51.4	69.0098	0.1843	56.4	69.4448	-0.0383
51.5	69.1289	0.1363	56.5	69.3769	-0.0508
51.6	69.0923	0.2028	56.6	69.2892	-0.0027
51.7	68.8762	-0.7301	56.7	69.4466	-0.2638
51.8	69.2950	0.2695	56.8	69.3287	-0.1127
51.9	69.2760	0.1565	56.9	69.3220	-0.1111
52.0	69.2566	0.4029	57.0	69.3004	-0.1277
52.1	69.3219	0.1589	57.1	69.2622	-0.1084
52.2	69.3010	0.1857	57.2	69.2519	-0.2586
52.3	69.3172	0.1620	57.3	69.2199	-0.1219
52.4	69.4098	0.1802	57.4	69.1989	-0.1120
52.5	69.4214	0.0895	57.5	68.8476	-0.1892
52.6	69.5830	0.1955	57.6	69.1258	-0.0935
52.7	69.4424	-0.0277	57.7	69.1497	-0.1113
52.8	69.5256	-0.2238	57.8	69.0103	0.0035
52.9	69.4642	-0.0503	57.9	69.1288	0.0817
53.0	69.3408	-0.1251	58.0	69.3522	-0.4222
53.1	69.4066	-0.1463	58.1	69.0909	0.0408
53.2	69.6042	-0.1852	58.2	69.1878	0.0235
53.3	69.3033	-0.1765	58.3	68.9292	0.0676
53.4	69.2679	-0.1462	58.4	69.1627	0.1619
53.5	69.2650	-0.1617	58.5	69.1583	0.1469
53.6	69.2523	-0.3416	58.6	69.1892	0.1308
53.7	69.1934	-0.0880	58.7	69.1865	0.1535
53.8	69.2742	-0.1275	58.8	69.2787	0.1597
53.9	69.2128	-0.0709	58.9	69.2843	0.1349
54.0	69.1605	-0.2789	59.0	69.3756	0.1161
54.1	69.0804	-0.0828	59.1	69.3649	0.1220
54.2	69.1555	-0.0140	59.2	69.4447	-0.2029
54.3	69.1579	0.0092	59.3	69.5142	0.0342
54.4	69.1788	-0.0512	59.4	69.4705	-0.0052
54.5	69.1320	0.0214	59.5	69.3971	-0.0044
54.6	69.1368	0.0495	59.6	69.4516	-0.0824
54.7	69.1060	0.0845	59.7	69.3299	0.3652
54.8	69.1950	0.0771	59.8	69.3592	0.2307
54.9	69.2202	0.0489	59.9	69.3602	-0.0778
55.0	69.1497	0.1260	60.0	69.3817	-0.1358
					0.1662
					-0.9689

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
60.1	69.3721	-0.1372	0.1774	-0.9811	65.1	69.2332	0.2276	-0.0546	-1.1312
60.2	69.3553	-0.0694	0.2038	-0.9751	65.2	69.2633	0.2463	-0.0638	-1.1196
60.3	69.2837	-0.1657	0.1652	-0.9834	65.3	69.3118	0.2364	-0.0690	-1.1196
60.4	69.3118	-0.1782	0.1863	-1.0175	65.4	69.3517	0.2174	-0.0758	-1.1170
60.5	69.1689	-0.0696	0.1809	-0.9531	65.5	69.4128	0.1927	-0.0718	-1.1136
60.6	69.1744	-0.1551	0.1640	-1.0035	65.6	69.4368	0.1564	-0.0811	-1.1124
60.7	69.1802	-0.0101	0.2010	-0.9633	65.7	69.4775	0.1257	-0.0812	-1.1031
60.8	69.0843	-0.0930	0.1553	-1.0039	65.8	69.4860	0.0665	-0.0872	-1.1070
60.9	69.1070	-0.0840	0.1744	-1.0192	65.9	69.5027	0.0236	-0.0900	-1.0987
61.0	69.1315	-0.1878	0.1925	-1.0906	66.0	69.5072	-0.0239	-0.0946	-1.0922
61.1	69.0780	0.0521	0.1616	-1.0016	66.1	69.4979	-0.0796	-0.0944	-1.0901
61.2	68.6808	-0.5278	0.0541	-1.3262	66.2	69.4645	-0.1143	-0.1060	-1.0897
61.3	69.0116	0.0156	0.1384	-1.0752	66.3	69.4554	-0.1686	-0.1012	-1.0774
61.4	69.0747	0.0105	0.1603	-1.0901	66.4	69.4153	-0.2018	-0.1068	-1.0737
61.5	69.1387	0.0944	0.1678	-1.0655	66.5	69.3691	-0.2357	-0.1057	-1.0701
61.6	69.1550	0.1572	0.1481	-1.0567	66.6	69.3281	-0.2532	-0.1097	-1.0629
61.7	69.1837	0.1144	0.1702	-1.0781	66.7	69.2709	-0.2572	-0.1134	-1.0614
61.8	69.2004	0.1682	0.1463	-1.0845	66.8	69.2298	-0.2603	-0.1150	-1.0509
61.9	69.2444	0.1499	0.1542	-1.0913	66.9	69.1641	-0.2500	-0.1131	-1.0507
62.0	69.2268	0.2033	0.1218	-1.1113	67.0	69.1234	-0.2300	-0.1155	-1.0428
62.1	69.3158	0.1465	0.1503	-1.0969	67.1	69.0738	-0.1988	-0.1147	-1.0389
62.2	69.3207	0.1260	0.1461	-1.1140	67.2	69.0458	-0.1599	-0.1193	-1.0332
62.3	69.3700	0.1611	0.1155	-1.1142	67.3	69.0176	-0.1169	-0.1190	-1.0273
62.4	69.4184	0.1319	0.1087	-1.1112	67.4	68.9925	-0.0707	-0.1166	-1.0211
62.5	69.4307	0.1177	0.0950	-1.1240	67.5	68.9810	-0.0184	-0.1152	-1.0161
62.6	69.4465	0.0685	0.0967	-1.1256	67.6	68.9866	0.0391	-0.1160	-1.0132
62.7	69.4608	0.0041	0.0958	-1.1194	67.7	68.9935	0.0949	-0.1131	-1.0094
62.8	69.4317	0.0133	0.0901	-1.1493	67.8	69.0200	0.1411	-0.1145	-1.0040
62.9	69.4462	-0.0551	0.0865	-1.1381	67.9	69.0536	0.1854	-0.1139	-1.0004
63.0	69.4701	-0.0499	0.0530	-1.1532	68.0	69.0922	0.2212	-0.1130	-0.9961
63.1	69.4195	-0.0982	0.0633	-1.1535	68.1	69.1365	0.2557	-0.1090	-0.9922
63.2	69.3819	-0.1388	0.0623	-1.1542	68.2	69.1906	0.2729	-0.1087	-0.9884
63.3	69.3320	-0.1781	0.0629	-1.1503	68.3	69.2400	0.2784	-0.1083	-0.9812
63.4	69.3004	-0.2074	0.0537	-1.1442	68.4	69.3017	0.2769	-0.1071	-0.9805
63.5	69.2855	-0.2007	0.0395	-1.1536	68.5	69.3588	0.2656	-0.1042	-0.9781
63.6	69.2563	-0.1982	0.0275	-1.1569	68.6	69.4105	0.2382	-0.1037	-0.9749
63.7	69.1926	-0.1837	0.0330	-1.1551	68.7	69.4520	0.2052	-0.1012	-0.9694
63.8	69.2056	-0.1709	0.0108	-1.1743	68.8	69.4938	0.1647	-0.0983	-0.9674
63.9	69.1225	-0.1647	0.0140	-1.1509	68.9	69.5194	0.1156	-0.0972	-0.9621
64.0	69.0777	-0.1440	0.0085	-1.1418	69.0	69.5349	0.0579	-0.0974	-0.9590
64.1	69.0791	-0.1180	-0.0047	-1.1540	69.1	69.5443	-0.0028	-0.0952	-0.9577
64.2	69.0543	-0.0762	-0.0088	-1.1512	69.2	69.5390	-0.0552	-0.0918	-0.9517
64.3	69.0230	-0.0384	-0.0164	-1.1390	69.3	69.5258	-0.1158	-0.0893	-0.9512
64.4	69.0120	0.0134	-0.0196	-1.1362	69.4	69.4984	-0.1654	-0.0867	-0.9465
64.5	69.0459	0.0613	-0.0217	-1.1474	69.5	69.4609	-0.2110	-0.0843	-0.9437
64.6	69.0588	0.0936	-0.0299	-1.1450	69.6	69.4146	-0.2479	-0.0826	-0.9400
64.7	69.0772	0.1541	-0.0284	-1.1361	69.7	69.3628	-0.2753	-0.0795	-0.9366
64.8	69.1037	0.1733	-0.0382	-1.1363	69.8	69.3060	-0.2927	-0.0766	-0.9344
64.9	69.1255	0.1966	-0.0518	-1.1321	69.9	69.2471	-0.3014	-0.0724	-0.9330
65.0	69.1955	0.2269	-0.0430	-1.1322	70.0	69.1860	-0.2944	-0.0694	-0.9307

$$\theta_o = 35 \text{ degrees}$$
59

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
80.1	68.8759	-0.0047	0.0276	-1.0471	85.1	69.5973	-0.2161	-0.0354	-1.0344
80.2	68.8817	0.0704	0.0266	-1.0476	85.2	69.5477	-0.2803	-0.0365	-1.0330
80.3	68.9025	0.1431	0.0257	-1.0482	85.3	69.4862	-0.3334	-0.0375	-1.0315
80.4	68.9372	0.2102	0.0246	-1.0490	85.4	69.4153	-0.3731	-0.0383	-1.0300
80.5	68.9846	0.2694	0.0235	-1.0497	85.5	69.3380	-0.3979	-0.0390	-1.0284
80.6	69.0430	0.3179	0.0224	-1.0506	85.6	69.2572	-0.4069	-0.0395	-1.0267
80.7	69.1101	0.3542	0.0212	-1.0515	85.7	69.1763	-0.3996	-0.0400	-1.0251
80.8	69.1831	0.3764	0.0198	-1.0523	85.8	69.0985	-0.3764	-0.0402	-1.0235
80.9	69.2592	0.3840	0.0184	-1.0531	85.9	69.0268	-0.3382	-0.0403	-1.0219
81.0	69.3356	0.3759	0.0168	-1.0539	86.0	68.9641	-0.2866	-0.0403	-1.0204
81.1	69.4090	0.3530	0.0151	-1.0546	86.1	68.9128	-0.2236	-0.0402	-1.0190
81.2	69.4765	0.3155	0.0133	-1.0553	86.2	68.8750	-0.1517	-0.0400	-1.0177
81.3	69.5353	0.2655	0.0114	-1.0558	86.3	68.8521	-0.0737	-0.0397	-1.0165
81.4	69.5831	0.2046	0.0095	-1.0562	86.4	68.8451	0.0074	-0.0394	-1.0154
81.5	69.6180	0.1351	0.0075	-1.0564	86.5	68.8542	0.0884	-0.0390	-1.0145
81.6	69.6380	0.0601	0.0054	-1.0566	86.6	68.8792	0.1661	-0.0387	-1.0136
81.7	69.6429	-0.0176	0.0033	-1.0565	86.7	68.9191	0.2373	-0.0384	-1.0129
81.8	69.6321	-0.0947	0.0012	-1.0563	86.8	68.9724	0.2995	-0.0381	-1.0122
81.9	69.6060	-0.1683	-0.0007	-1.0559	86.9	69.0370	0.3499	-0.0379	-1.0117
82.0	69.5658	-0.2353	-0.0027	-1.0554	87.0	69.1105	0.3865	-0.0377	-1.0112
82.1	69.5130	-0.2929	-0.0045	-1.0548	87.1	69.1900	0.4080	-0.0377	-1.0107
82.2	69.4498	-0.3388	-0.0063	-1.0539	87.2	69.2724	0.4133	-0.0377	-1.0103
82.3	69.3786	-0.3713	-0.0078	-1.0531	87.3	69.3543	0.4020	-0.0379	-1.0099
82.4	69.3023	-0.3889	-0.0094	-1.0522	87.4	69.4325	0.3747	-0.0381	-1.0094
82.5	69.2240	-0.3910	-0.0107	-1.0512	87.5	69.5038	0.3322	-0.0384	-1.0089
82.6	69.1470	-0.3776	-0.0119	-1.0501	87.6	69.5654	0.2762	-0.0388	-1.0083
82.7	69.0741	-0.3490	-0.0130	-1.0491	87.7	69.6146	0.2090	-0.0392	-1.0076
82.8	69.0082	-0.3066	-0.0139	-1.0481	87.8	69.6495	0.1331	-0.0397	-1.0068
82.9	68.9520	-0.2520	-0.0147	-1.0472	87.9	69.6685	0.0518	-0.0402	-1.0059
83.0	68.9078	-0.1873	-0.0155	-1.0463	88.0	69.6709	-0.0319	-0.0406	-1.0049
83.1	68.8771	-0.1152	-0.0161	-1.0455	88.1	69.6565	-0.1144	-0.0411	-1.0038
83.2	68.8613	-0.0383	-0.0167	-1.0447	88.2	69.6259	-0.1924	-0.0414	-1.0026
83.3	68.8610	0.0404	-0.0172	-1.0441	88.3	69.5804	-0.2628	-0.0417	-1.0013
83.4	68.8763	0.1176	-0.0178	-1.0436	88.4	69.5217	-0.3226	-0.0419	-0.9999
83.5	68.9066	0.1904	-0.0183	-1.0431	88.5	69.4522	-0.3696	-0.0419	-0.9985
83.6	68.9507	0.2558	-0.0189	-1.0428	88.6	69.3748	-0.4018	-0.0419	-0.9970
83.7	69.0071	0.3114	-0.0196	-1.0425	88.7	69.2926	-0.4179	-0.0417	-0.9955
83.8	69.0735	0.3549	-0.0203	-1.0422	88.8	69.2088	-0.4173	-0.0413	-0.9940
83.9	69.1473	0.3843	-0.0210	-1.0420	88.9	69.1268	-0.4002	-0.0408	-0.9925
84.0	69.2255	0.3985	-0.0220	-1.0417	89.0	69.0499	-0.3670	-0.0402	-0.9911
84.1	69.3054	0.3970	-0.0229	-1.0415	89.1	68.9810	-0.3194	-0.0395	-0.9897
84.2	69.3835	0.3795	-0.0240	-1.0413	89.2	68.9230	-0.2591	-0.0387	-0.9885
84.3	69.4567	0.3467	-0.0251	-1.0410	89.3	68.8780	-0.1884	-0.0377	-0.9874
84.4	69.5221	0.2999	-0.0264	-1.0406	89.4	68.8479	-0.1103	-0.0368	-0.9863
84.5	69.5769	0.2410	-0.0276	-1.0400	89.5	68.8337	-0.0277	-0.0357	-0.9855
84.6	69.6190	0.1722	-0.0290	-1.0394	89.6	68.8362	0.0562	-0.0347	-0.9847
84.7	69.6464	0.0961	-0.0303	-1.0387	89.7	68.8552	0.1380	-0.0336	-0.9841
84.8	69.6582	0.0161	-0.0317	-1.0378	89.8	68.8901	0.2145	-0.0326	-0.9836
84.9	69.6537	-0.0648	-0.0330	-1.0368	89.9	68.9394	0.2827	-0.0316	-0.9832
85.0	69.6332	-0.1433	-0.0342	-1.0357	90.0	69.0013	0.3399	-0.0307	-0.9829

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z ₀	kh _e	ka	Z ₀	kh _e
90.1	69.0736	0.3838	95.1	69.1924	-0.4365
90.2	69.1532	0.4126	95.2	69.1069	-0.4155
90.3	69.2371	0.4250	95.3	69.0274	-0.3781
90.4	69.3220	0.4205	95.4	68.9569	-0.3257
90.5	69.4044	0.3993	95.5	68.8981	-0.2604
90.6	69.4811	0.3619	95.6	68.8535	-0.1848
90.7	69.5490	0.3098	95.7	68.8246	-0.1018
90.8	69.6052	0.2452	95.8	68.8127	-0.0148
90.9	69.6475	0.1706	95.9	68.8182	0.0730
91.0	69.6740	0.0888	96.0	68.8410	0.1580
91.1	69.6836	0.0034	96.1	68.8801	0.2369
91.2	69.6760	-0.0823	96.2	68.9341	0.3066
91.3	69.6514	-0.1648	96.3	69.0010	0.3644
91.4	69.6108	-0.2408	96.4	69.0781	0.4078
91.5	69.5558	-0.3071	96.5	69.1624	0.4352
91.6	69.4887	-0.3611	96.6	69.2506	0.4453
91.7	69.4122	-0.4007	96.7	69.3393	0.4376
91.8	69.3294	-0.4242	96.8	69.4248	0.4125
91.9	69.2436	-0.4308	96.9	69.5037	0.3707
92.0	69.1583	-0.4202	97.0	69.5729	0.3139
92.1	69.0768	-0.3929	97.1	69.6294	0.2444
92.2	69.0023	-0.3500	97.2	69.6709	0.1649
92.3	68.9378	-0.2932	97.3	69.6958	0.0786
92.4	68.8858	-0.2248	97.4	69.7029	-0.0110
92.5	68.8484	-0.1475	97.5	69.6919	-0.1003
92.6	68.8270	-0.0643	97.6	69.6633	-0.1856
92.7	68.8224	0.0216	97.7	69.6182	-0.2635
92.8	68.8349	0.1068	97.8	69.5585	-0.3308
92.9	68.8639	0.1879	97.9	69.4866	-0.3848
93.0	68.9085	0.2617	98.0	69.4054	-0.4234
93.1	68.9669	0.3254	98.1	69.3182	-0.4450
93.2	69.0369	0.3763	98.2	69.2285	-0.4488
93.3	69.1157	0.4125	98.3	69.1399	-0.4348
93.4	69.2002	0.4323	98.4	69.0559	-0.4035
93.5	69.2872	0.4350	98.5	68.9798	-0.3562
93.6	69.3732	0.4203	98.6	68.9146	-0.2948
93.7	69.4546	0.3887	98.7	68.8629	-0.2217
93.8	69.5283	0.3414	98.8	68.8266	-0.1399
93.9	69.5912	0.2803	98.9	68.8072	-0.0525
94.0	69.6407	0.2078	99.0	68.8054	0.0371
94.1	69.6747	0.1267	99.1	68.8213	0.1253
94.2	69.6919	0.0404	99.2	68.8544	0.2087
94.3	69.6915	-0.0477	99.3	68.9033	0.2840
94.4	69.6734	-0.1340	99.4	68.9663	0.3482
94.5	69.6385	-0.2149	99.5	69.0408	0.3988
94.6	69.5881	-0.2873	99.6	69.1240	0.4337
94.7	69.5243	-0.3481	99.7	69.2127	0.4514
94.8	69.4496	-0.3950	99.8	69.3033	0.4512
94.9	69.3672	-0.4260	99.9	69.3921	0.4329
95.0	69.2803	-0.4400	100.0	69.4757	0.3973
					0.0290

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z_0		kh _e	ka	Z_0		kh _e
100.1	69.5507	0.3456	0.0288 -0.9905	105.1	68.8084	-0.1298	0.0249 -1.0104
100.2	69.6139	0.2799	0.0286 -0.9915	105.2	68.7913	-0.0390	0.0254 -1.0107
100.3	69.6628	0.2028	0.0283 -0.9923	105.3	68.7926	0.0534	0.0258 -1.0111
100.4	69.6954	0.1173	0.0279 -0.9931	105.4	68.8120	0.1438	0.0263 -1.0117
100.5	69.7102	0.0271	0.0275 -0.9938	105.5	68.8490	0.2287	0.0267 -1.0123
100.6	69.7067	-0.0644	0.0270 -0.9943	105.6	68.9021	0.3047	0.0270 -1.0131
100.7	69.6849	-0.1534	0.0265 -0.9947	105.7	68.9692	0.3687	0.0272 -1.0140
100.8	69.6458	-0.2362	0.0261 -0.9950	105.8	69.0477	0.4183	0.0274 -1.0149
100.9	69.5910	-0.3095	0.0257 -0.9951	105.9	69.1347	0.4514	0.0274 -1.0160
101.0	69.5226	-0.3704	0.0254 -0.9952	106.0	69.2267	0.4667	0.0272 -1.0170
101.1	69.4435	-0.4164	0.0252 -0.9952	106.1	69.3200	0.4633	0.0270 -1.0181
101.2	69.3569	-0.4457	0.0251 -0.9951	106.2	69.4110	0.4414	0.0266 -1.0191
101.3	69.2663	-0.4572	0.0251 -0.9950	106.3	69.4959	0.4018	0.0260 -1.0201
101.4	69.1752	-0.4505	0.0252 -0.9949	106.4	69.5714	0.3459	0.0253 -1.0210
101.5	69.0874	-0.4258	0.0255 -0.9947	106.5	69.6343	0.2761	0.0245 -1.0219
101.6	69.0063	-0.3842	0.0258 -0.9947	106.6	69.6820	0.1949	0.0237 -1.0226
101.7	68.9350	-0.3275	0.0263 -0.9947	106.7	69.7125	0.1058	0.0227 -1.0232
101.8	68.8764	-0.2578	0.0268 -0.9948	106.8	69.7246	0.0123	0.0217 -1.0236
101.9	68.8328	-0.1779	0.0275 -0.9950	106.9	69.7178	-0.0818	0.0207 -1.0239
102.0	68.8057	-0.0910	0.0281 -0.9953	107.0	69.6923	-0.1726	0.0197 -1.0240
102.1	68.7964	-0.0004	0.0288 -0.9958	107.1	69.6492	-0.2565	0.0188 -1.0241
102.2	68.8051	0.0903	0.0295 -0.9963	107.2	69.5902	-0.3300	0.0179 -1.0239
102.3	68.8316	0.1775	0.0302 -0.9970	107.3	69.5177	-0.3903	0.0171 -1.0237
102.4	68.8749	0.2579	0.0307 -0.9978	107.4	69.4348	-0.4349	0.0165 -1.0234
102.5	68.9332	0.3282	0.0313 -0.9988	107.5	69.3446	-0.4620	0.0159 -1.0230
102.6	69.0044	0.3857	0.0317 -0.9998	107.6	69.2510	-0.4707	0.0155 -1.0226
102.7	69.0857	0.4281	0.0320 -1.0009	107.7	69.1576	-0.4606	0.0153 -1.0222
102.8	69.1739	0.4535	0.0322 -1.0020	107.8	69.0682	-0.4322	0.0151 -1.0218
102.9	69.2656	0.4609	0.0322 -1.0032	107.9	68.9862	-0.3866	0.0151 -1.0215
103.0	69.3571	0.4499	0.0321 -1.0044	108.0	68.9149	-0.3258	0.0152 -1.0212
103.1	69.4447	0.4209	0.0318 -1.0055	108.1	68.8571	-0.2522	0.0154 -1.0210
103.2	69.5249	0.3750	0.0315 -1.0066	108.2	68.8150	-0.1686	0.0156 -1.0210
103.3	69.5945	0.3138	0.0310 -1.0077	108.3	68.7902	-0.0783	0.0160 -1.0210
103.4	69.6505	0.2400	0.0304 -1.0086	108.4	68.7837	0.0151	0.0163 -1.0212
103.5	69.6907	0.1563	0.0297 -1.0094	108.5	68.7958	0.1080	0.0166 -1.0215
103.6	69.7134	0.0662	0.0289 -1.0101	108.6	68.8260	0.1967	0.0169 -1.0219
103.7	69.7176	-0.0267	0.0281 -1.0106	108.7	68.8732	0.2778	0.0172 -1.0225
103.8	69.7031	-0.1186	0.0274 -1.0110	108.8	68.9355	0.3481	0.0173 -1.0231
103.9	69.6706	-0.2058	0.0266 -1.0113	108.9	69.0106	0.4047	0.0174 -1.0239
104.0	69.6213	-0.2847	0.0259 -1.0114	109.0	69.0956	0.4454	0.0173 -1.0247
104.1	69.5572	-0.3521	0.0252 -1.0114	109.1	69.1871	0.4685	0.0172 -1.0256
104.2	69.4811	-0.4054	0.0247 -1.0114	109.2	69.2815	0.4730	0.0168 -1.0265
104.3	69.3959	-0.4423	0.0242 -1.0112	109.3	69.3751	0.4586	0.0163 -1.0273
104.4	69.3051	-0.4616	0.0239 -1.0110	109.4	69.4641	0.4258	0.0157 -1.0282
104.5	69.2124	-0.4625	0.0237 -1.0108	109.5	69.5449	0.3758	0.0150 -1.0290
104.6	69.1214	-0.4449	0.0237 -1.0106	109.6	69.6142	0.3106	0.0141 -1.0296
104.7	69.0358	-0.4097	0.0237 -1.0104	109.7	69.6692	0.2328	0.0132 -1.0302
104.8	68.9590	-0.3582	0.0239 -1.0103	109.8	69.7076	0.1455	0.0122 -1.0306
104.9	68.8938	-0.2926	0.0242 -1.0102	109.9	69.7277	0.0523	0.0111 -1.0309
105.0	68.8430	-0.2155	0.0245 -1.0103	110.0	69.7288	-0.0432	0.0100 -1.0311

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
110.1	69.7108	-0.1370	0.0089	-1.0311	115.1	68.9404	0.3664	-0.0056	-1.0246
110.2	69.6744	-0.2253	0.0079	-1.0310	115.2	69.0190	0.4217	-0.0056	-1.0250
110.3	69.6211	-0.3045	0.0069	-1.0307	115.3	69.1072	0.4604	-0.0056	-1.0256
110.4	69.5530	-0.3715	0.0060	-1.0303	115.4	69.2015	0.4809	-0.0058	-1.0261
110.5	69.4731	-0.4235	0.0052	-1.0298	115.5	69.2981	0.4822	-0.0061	-1.0267
110.6	69.3844	-0.4584	0.0046	-1.0292	115.6	69.3932	0.4643	-0.0065	-1.0272
110.7	69.2907	-0.4750	0.0041	-1.0286	115.7	69.4830	0.4277	-0.0071	-1.0277
110.8	69.1956	-0.4727	0.0037	-1.0280	115.8	69.5639	0.3739	-0.0078	-1.0282
110.9	69.1030	-0.4515	0.0035	-1.0274	115.9	69.6324	0.3050	-0.0086	-1.0285
111.0	69.0165	-0.4125	0.0034	-1.0268	116.0	69.6859	0.2236	-0.0095	-1.0287
111.1	68.9395	-0.3571	0.0034	-1.0263	116.1	69.7221	0.1332	-0.0105	-1.0288
111.2	68.8750	-0.2877	0.0035	-1.0259	116.2	69.7395	0.0372	-0.0115	-1.0287
111.3	68.8255	-0.2069	0.0037	-1.0256	116.3	69.7373	-0.0603	-0.0125	-1.0285
111.4	68.7930	-0.1179	0.0040	-1.0254	116.4	69.7156	-0.1554	-0.0135	-1.0282
111.5	68.7786	-0.0243	0.0043	-1.0253	116.5	69.6754	-0.2443	-0.0144	-1.0277
111.6	68.7831	0.0704	0.0046	-1.0254	116.6	69.6182	-0.3233	-0.0152	-1.0271
111.7	68.8061	0.1623	0.0049	-1.0256	116.7	69.5465	-0.3893	-0.0160	-1.0263
111.8	68.8468	0.2480	0.0052	-1.0259	116.8	69.4631	-0.4395	-0.0166	-1.0255
111.9	68.9038	0.3240	0.0054	-1.0264	116.9	69.3715	-0.4722	-0.0171	-1.0246
112.0	68.9747	0.3873	0.0055	-1.0269	117.0	69.2753	-0.4859	-0.0175	-1.0237
112.1	69.0569	0.4355	0.0054	-1.0275	117.1	69.1784	-0.4802	-0.0177	-1.0228
112.2	69.1471	0.4664	0.0053	-1.0282	117.2	69.0846	-0.4555	-0.0177	-1.0219
112.3	69.2419	0.4788	0.0050	-1.0289	117.3	68.9977	-0.4127	-0.0177	-1.0211
112.4	69.3373	0.4722	0.0046	-1.0296	117.4	68.9211	-0.3536	-0.0175	-1.0203
112.5	69.4297	0.4467	0.0040	-1.0303	117.5	68.8577	-0.2805	-0.0172	-1.0196
112.6	69.5154	0.4032	0.0033	-1.0309	117.6	68.8100	-0.1964	-0.0168	-1.0190
112.7	69.5907	0.3434	0.0025	-1.0314	117.7	68.7799	-0.1046	-0.0163	-1.0186
112.8	69.6527	0.2697	0.0016	-1.0319	117.8	68.7685	-0.0087	-0.0159	-1.0183
112.9	69.6987	0.1850	0.0006	-1.0322	117.9	68.7762	0.0877	-0.0154	-1.0182
113.0	69.7269	0.0927	-0.0005	-1.0323	118.0	68.8028	0.1806	-0.0149	-1.0181
113.1	69.7361	-0.0034	-0.0015	-1.0324	118.1	68.8473	0.2666	-0.0145	-1.0182
113.2	69.7258	-0.0995	-0.0026	-1.0322	118.2	68.9079	0.3422	-0.0142	-1.0185
113.3	69.6966	-0.1915	-0.0037	-1.0320	118.3	68.9824	0.4043	-0.0139	-1.0188
113.4	69.6496	-0.2759	-0.0047	-1.0316	118.4	69.0678	0.4506	-0.0138	-1.0192
113.5	69.5866	-0.3491	-0.0056	-1.0310	118.5	69.1608	0.4791	-0.0138	-1.0196
113.6	69.5104	-0.4082	-0.0064	-1.0304	118.6	69.2578	0.4885	-0.0140	-1.0201
113.7	69.4240	-0.4509	-0.0070	-1.0297	118.7	69.3550	0.4785	-0.0143	-1.0206
113.8	69.3310	-0.4755	-0.0076	-1.0289	118.8	69.4483	0.4493	-0.0147	-1.0210
113.9	69.2349	-0.4812	-0.0079	-1.0281	118.9	69.5341	0.4020	-0.0152	-1.0214
114.0	69.1398	-0.4676	-0.0082	-1.0273	119.0	69.6088	0.3385	-0.0159	-1.0217
114.1	69.0494	-0.4355	-0.0083	-1.0265	119.1	69.6694	0.2612	-0.0167	-1.0219
114.2	68.9671	-0.3862	-0.0083	-1.0258	119.2	69.7134	0.1733	-0.0175	-1.0219
114.3	68.8964	-0.3216	-0.0081	-1.0252	119.3	69.7390	0.0783	-0.0184	-1.0218
114.4	68.8398	-0.2443	-0.0079	-1.0247	119.4	69.7450	-0.0199	-0.0193	-1.0216
114.5	68.7996	-0.1574	-0.0076	-1.0243	119.5	69.7313	-0.1174	-0.0202	-1.0212
114.6	68.7774	-0.0643	-0.0072	-1.0240	119.6	69.6983	-0.2102	-0.0210	-1.0207
114.7	68.7739	0.0313	-0.0068	-1.0239	119.7	69.6475	-0.2945	-0.0218	-1.0201
114.8	68.7894	0.1258	-0.0065	-1.0239	119.8	69.5809	-0.3668	-0.0225	-1.0193
114.9	68.8233	0.2155	-0.0061	-1.0240	119.9	69.5012	-0.4244	-0.0230	-1.0185
115.0	68.8743	0.2968	-0.0058	-1.0242	120.0	69.4118	-0.4649	-0.0235	-1.0175

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
120.1	69.3162	-0.4868	-0.0237	-1.0166	125.1	69.4666	0.4498	-0.0197	-1.0040
120.2	69.2182	-0.4892	-0.0239	-1.0156	125.2	69.5521	0.3988	-0.0200	-1.0044
120.3	69.1219	-0.4722	-0.0239	-1.0146	125.3	69.6258	0.3318	-0.0205	-1.0046
120.4	69.0309	-0.4364	-0.0237	-1.0137	125.4	69.6848	0.2512	-0.0211	-1.0048
120.5	68.9489	-0.3834	-0.0235	-1.0128	125.5	69.7264	0.1604	-0.0217	-1.0048
120.6	68.8791	-0.3152	-0.0231	-1.0120	125.6	69.7491	0.0630	-0.0223	-1.0047
120.7	68.8241	-0.2346	-0.0226	-1.0114	125.7	69.7519	-0.0369	-0.0230	-1.0044
120.8	68.7862	-0.1448	-0.0221	-1.0108	125.8	69.7346	-0.1354	-0.0237	-1.0040
120.9	68.7667	-0.0493	-0.0215	-1.0104	125.9	69.6979	-0.2285	-0.0243	-1.0035
121.0	68.7665	0.0481	-0.0209	-1.0102	126.0	69.6434	-0.3123	-0.0248	-1.0028
121.1	68.7855	0.1438	-0.0203	-1.0101	126.1	69.5733	-0.3835	-0.0253	-1.0021
121.2	68.8230	0.2339	-0.0198	-1.0101	126.2	69.4905	-0.4392	-0.0256	-1.0012
121.3	68.8776	0.3148	-0.0193	-1.0102	126.3	69.3984	-0.4772	-0.0258	-1.0003
121.4	68.9472	0.3835	-0.0189	-1.0105	126.4	69.3006	-0.4962	-0.0259	-0.9993
121.5	69.0292	0.4371	-0.0186	-1.0108	126.5	69.2011	-0.4953	-0.0258	-0.9984
121.6	69.1202	0.4734	-0.0184	-1.0112	126.6	69.1039	-0.4747	-0.0255	-0.9974
121.7	69.2169	0.4911	-0.0184	-1.0116	126.7	69.0128	-0.4353	-0.0252	-0.9965
121.8	69.3152	0.4891	-0.0185	-1.0121	126.8	68.9314	-0.3786	-0.0247	-0.9957
121.9	69.4114	0.4677	-0.0188	-1.0125	126.9	68.8629	-0.3071	-0.0241	-0.9950
122.0	69.5015	0.4274	-0.0192	-1.0129	127.0	68.8099	-0.2235	-0.0234	-0.9943
122.1	69.5819	0.3699	-0.0197	-1.0131	127.1	68.7745	-0.1311	-0.0226	-0.9939
122.2	69.6493	0.2974	-0.0203	-1.0133	127.2	68.7579	-0.0336	-0.0218	-0.9935
122.3	69.7009	0.2128	-0.0210	-1.0134	127.3	68.7610	0.0653	-0.0210	-0.9933
122.4	69.7346	0.1195	-0.0217	-1.0134	127.4	68.7835	0.1617	-0.0202	-0.9933
122.5	69.7490	0.0213	-0.0225	-1.0132	127.5	68.8246	0.2518	-0.0195	-0.9933
122.6	69.7434	-0.0778	-0.0233	-1.0129	127.6	68.8828	0.3321	-0.0188	-0.9935
122.7	69.7181	-0.1738	-0.0240	-1.0124	127.7	68.9557	0.3994	-0.0183	-0.9938
122.8	69.6741	-0.2628	-0.0247	-1.0118	127.8	69.0407	0.4510	-0.0178	-0.9942
122.9	69.6133	-0.3411	-0.0253	-1.0110	127.9	69.1343	0.4848	-0.0175	-0.9947
123.0	69.5381	-0.4057	-0.0258	-1.0102	128.0	69.2329	0.4994	-0.0173	-0.9952
123.1	69.4516	-0.4539	-0.0262	-1.0093	128.1	69.3327	0.4941	-0.0172	-0.9956
123.2	69.3573	-0.4839	-0.0264	-1.0083	128.2	69.4295	0.4690	-0.0173	-0.9961
123.3	69.2591	-0.4946	-0.0265	-1.0073	128.3	69.5196	0.4251	-0.0175	-0.9965
123.4	69.1608	-0.4855	-0.0265	-1.0063	128.4	69.5992	0.3640	-0.0179	-0.9969
123.5	69.0664	-0.4571	-0.0263	-1.0054	128.5	69.6650	0.2882	-0.0183	-0.9971
123.6	68.9796	-0.4107	-0.0259	-1.0045	128.6	69.7145	0.2006	-0.0188	-0.9972
123.7	68.9037	-0.3480	-0.0255	-1.0036	128.7	69.7454	0.1049	-0.0194	-0.9972
123.8	68.8418	-0.2716	-0.0249	-1.0029	128.8	69.7566	0.0048	-0.0200	-0.9971
123.9	68.7962	-0.1846	-0.0243	-1.0023	128.9	69.7476	-0.0955	-0.0206	-0.9968
124.0	68.7687	-0.0903	-0.0236	-1.0019	129.0	69.7186	-0.1920	-0.0212	-0.9964
124.1	68.7604	0.0076	-0.0229	-1.0016	129.1	69.6710	-0.2807	-0.0216	-0.9958
124.2	68.7715	0.1052	-0.0222	-1.0014	129.2	69.6066	-0.3580	-0.0221	-0.9951
124.3	68.8017	0.1988	-0.0215	-1.0013	129.3	69.5282	-0.4209	-0.0224	-0.9943
124.4	68.8498	0.2846	-0.0209	-1.0014	129.4	69.4389	-0.4668	-0.0226	-0.9935
124.5	68.9139	0.3593	-0.0204	-1.0016	129.5	69.3423	-0.4940	-0.0226	-0.9926
124.6	68.9917	0.4200	-0.0199	-1.0019	129.6	69.2424	-0.5014	-0.0225	-0.9917
124.7	69.0801	0.4641	-0.0196	-1.0023	129.7	69.1431	-0.4889	-0.0223	-0.9908
124.8	69.1756	0.4898	-0.0194	-1.0027	129.8	69.0484	-0.4569	-0.0219	-0.9899
124.9	69.2744	0.4961	-0.0194	-1.0032	129.9	68.9620	-0.4069	-0.0214	-0.9891
125.0	69.3728	0.4826	-0.0195	-1.0036	130.0	68.8873	-0.3408	-0.0207	-0.9884

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
130.1	68.8271	-0.2613	-0.0200	-0.9878	135.1	69.7627	-0.0122	-0.0094	-0.9877
130.2	68.7839	-0.1716	-0.0192	-0.9873	135.2	69.7501	-0.1134	-0.0099	-0.9876
130.3	68.7592	-0.0751	-0.0184	-0.9870	135.3	69.7175	-0.2100	-0.0104	-0.9872
130.4	68.7541	0.0244	-0.0175	-0.9867	135.4	69.6662	-0.2981	-0.0108	-0.9868
130.5	68.7686	0.1229	-0.0166	-0.9867	135.5	69.5985	-0.3741	-0.0111	-0.9862
130.6	68.8024	0.2167	-0.0158	-0.9868	135.6	69.5170	-0.4350	-0.0113	-0.9856
130.7	68.8540	0.3020	-0.0151	-0.9870	135.7	69.4251	-0.4784	-0.0114	-0.9849
130.8	68.9216	0.3756	-0.0144	-0.9873	135.8	69.3266	-0.5026	-0.0114	-0.9841
130.9	69.0024	0.4344	-0.0138	-0.9877	135.9	69.2253	-0.5067	-0.0112	-0.9833
131.0	69.0935	0.4761	-0.0134	-0.9882	136.0	69.1253	-0.4906	-0.0109	-0.9825
131.1	69.1911	0.4989	-0.0131	-0.9887	136.1	69.0306	-0.4550	-0.0105	-0.9818
131.2	69.2915	0.5020	-0.0129	-0.9893	136.2	68.9450	-0.4015	-0.0099	-0.9811
131.3	69.3907	0.4849	-0.0129	-0.9898	136.3	68.8717	-0.3322	-0.0092	-0.9806
131.4	69.4846	0.4485	-0.0130	-0.9903	136.4	68.8136	-0.2498	-0.0084	-0.9801
131.5	69.5695	0.3939	-0.0132	-0.9907	136.5	68.7729	-0.1576	-0.0075	-0.9798
131.6	69.6419	0.3234	-0.0135	-0.9911	136.6	68.7512	-0.0592	-0.0066	-0.9796
131.7	69.6989	0.2398	-0.0140	-0.9913	136.7	68.7493	0.0415	-0.0057	-0.9795
131.8	69.7380	0.1464	-0.0145	-0.9914	136.8	68.7674	0.1406	-0.0048	-0.9796
131.9	69.7576	0.0470	-0.0150	-0.9914	136.9	68.8047	0.2343	-0.0039	-0.9798
132.0	69.7570	-0.0543	-0.0155	-0.9913	137.0	68.8598	0.3189	-0.0031	-0.9802
132.1	69.7361	-0.1535	-0.0161	-0.9910	137.1	68.9306	0.3909	-0.0024	-0.9806
132.2	69.6957	-0.2465	-0.0166	-0.9905	137.2	69.0143	0.4477	-0.0018	-0.9812
132.3	69.6377	-0.3295	-0.0170	-0.9899	137.3	69.1078	0.4867	-0.0013	-0.9818
132.4	69.5643	-0.3991	-0.0173	-0.9893	137.4	69.2073	0.5066	-0.0010	-0.9825
132.5	69.4785	-0.4527	-0.0175	-0.9885	137.5	69.3089	0.5062	-0.0008	-0.9832
132.6	69.3839	-0.4881	-0.0175	-0.9877	137.6	69.4086	0.4856	-0.0008	-0.9839
132.7	69.2843	-0.5039	-0.0174	-0.9869	137.7	69.5023	0.4456	-0.0008	-0.9845
132.8	69.1837	-0.4996	-0.0172	-0.9860	137.8	69.5863	0.3875	-0.0010	-0.9851
132.9	69.0860	-0.4754	-0.0169	-0.9852	137.9	69.6571	0.3138	-0.0014	-0.9855
133.0	68.9952	-0.4324	-0.0164	-0.9844	138.0	69.7118	0.2273	-0.0018	-0.9859
133.1	68.9147	-0.3724	-0.0157	-0.9837	138.1	69.7481	0.1316	-0.0023	-0.9861
133.2	68.8478	-0.2976	-0.0150	-0.9831	138.2	69.7646	0.0304	-0.0028	-0.9862
133.3	68.7970	-0.2112	-0.0142	-0.9827	138.3	69.7605	-0.0720	-0.0033	-0.9862
133.4	68.7642	-0.1165	-0.0133	-0.9823	138.4	69.7360	-0.1715	-0.0038	-0.9860
133.5	68.7508	-0.0173	-0.0124	-0.9821	138.5	69.6920	-0.2641	-0.0043	-0.9857
133.6	68.7572	0.0827	-0.0115	-0.9821	138.6	69.6305	-0.3459	-0.0046	-0.9852
133.7	68.7833	0.1795	-0.0107	-0.9821	138.7	69.5540	-0.4138	-0.0049	-0.9847
133.8	68.8279	0.2693	-0.0098	-0.9824	138.8	69.4655	-0.4650	-0.0051	-0.9840
133.9	68.8895	0.3486	-0.0091	-0.9827	138.9	69.3687	-0.4975	-0.0051	-0.9833
134.0	68.9656	0.4143	-0.0084	-0.9831	139.0	69.2676	-0.5101	-0.0050	-0.9826
134.1	69.0533	0.4636	-0.0079	-0.9837	139.1	69.1660	-0.5023	-0.0047	-0.9819
134.2	69.1493	0.4947	-0.0075	-0.9842	139.2	69.0682	-0.4746	-0.0043	-0.9812
134.3	69.2496	0.5061	-0.0072	-0.9848	139.3	68.9779	-0.4281	-0.0038	-0.9806
134.4	69.3503	0.4974	-0.0071	-0.9855	139.4	68.8987	-0.3647	-0.0032	-0.9800
134.5	69.4475	0.4687	-0.0071	-0.9861	139.5	68.8336	-0.2870	-0.0024	-0.9795
134.6	69.5371	0.4212	-0.0073	-0.9866	139.6	68.7852	-0.1980	-0.0016	-0.9792
134.7	69.6156	0.3566	-0.0075	-0.9871	139.7	68.7553	-0.1012	-0.0007	-0.9790
134.8	69.6797	0.2776	-0.0079	-0.9874	139.8	68.7451	-0.0005	0.0002	-0.9789
134.9	69.7267	0.1874	-0.0083	-0.9877	139.9	68.7550	0.1003	0.0011	-0.9790
135.0	69.7548	0.0894	-0.0088	-0.9878	140.0	68.7845	0.1972	0.0020	-0.9793

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
140.1	68.8327	0.2864	0.0028	-0.9796	145.1	69.4516	-0.4763	0.0062	-0.9868
140.2	68.8975	0.3645	0.0036	-0.9801	145.2	69.3529	-0.5057	0.0061	-0.9862
140.3	68.9767	0.4282	0.0042	-0.9807	145.3	69.2504	-0.5150	0.0062	-0.9856
140.4	69.0670	0.4751	0.0047	-0.9813	145.4	69.1483	-0.5037	0.0064	-0.9850
140.5	69.1649	0.5033	0.0051	-0.9820	145.5	69.0505	-0.4724	0.0068	-0.9844
140.6	69.2666	0.5114	0.0054	-0.9828	145.6	68.9610	-0.4225	0.0073	-0.9838
140.7	69.3681	0.4991	0.0055	-0.9835	145.7	68.8833	-0.3558	0.0079	-0.9833
140.8	69.4653	0.4669	0.0054	-0.9843	145.8	68.8203	-0.2753	0.0086	-0.9830
140.9	69.5542	0.4158	0.0053	-0.9849	145.9	68.7745	-0.1839	0.0094	-0.9828
141.0	69.6313	0.3480	0.0050	-0.9855	146.0	68.7476	-0.0853	0.0103	-0.9827
141.1	69.6933	0.2660	0.0046	-0.9860	146.1	68.7407	0.0167	0.0111	-0.9827
141.2	69.7378	0.1732	0.0041	-0.9863	146.2	68.7540	0.1180	0.0120	-0.9829
141.3	69.7627	0.0733	0.0036	-0.9865	146.3	68.7871	0.2147	0.0128	-0.9832
141.4	69.7672	-0.0296	0.0031	-0.9866	146.4	68.8387	0.3031	0.0136	-0.9837
141.5	69.7510	-0.1313	0.0025	-0.9865	146.5	68.9067	0.3796	0.0143	-0.9843
141.6	69.7148	-0.2278	0.0020	-0.9863	146.6	68.9887	0.4413	0.0149	-0.9849
141.7	69.6601	-0.3149	0.0016	-0.9860	146.7	69.0814	0.4855	0.0153	-0.9857
141.8	69.5891	-0.3894	0.0012	-0.9855	146.8	69.1811	0.5106	0.0157	-0.9865
141.9	69.5048	-0.4481	0.0010	-0.9850	146.9	69.2840	0.5154	0.0158	-0.9874
142.0	69.4105	-0.4887	0.0009	-0.9844	147.0	69.3860	0.4996	0.0159	-0.9882
142.1	69.3102	-0.5098	0.0009	-0.9837	147.1	69.4829	0.4637	0.0157	-0.9890
142.2	69.2078	-0.5105	0.0011	-0.9830	147.2	69.5709	0.4092	0.0155	-0.9897
142.3	69.1075	-0.4909	0.0014	-0.9824	147.3	69.6463	0.3381	0.0151	-0.9904
142.4	69.0132	-0.4518	0.0019	-0.9817	147.4	69.7061	0.2533	0.0147	-0.9909
142.5	68.9285	-0.3949	0.0024	-0.9812	147.5	69.7477	0.1582	0.0141	-0.9914
142.6	68.8569	-0.3224	0.0031	-0.9807	147.6	69.7695	0.0566	0.0135	-0.9916
142.7	68.8010	-0.2373	0.0039	-0.9804	147.7	69.7705	-0.0473	0.0129	-0.9918
142.8	68.7631	-0.1429	0.0048	-0.9802	147.8	69.7507	-0.1493	0.0123	-0.9918
142.9	68.7445	-0.0428	0.0056	-0.9801	147.9	69.7109	-0.2453	0.0117	-0.9916
143.0	68.7460	0.0589	0.0065	-0.9802	148.0	69.6528	-0.3313	0.0112	-0.9913
143.1	68.7676	0.1583	0.0074	-0.9804	148.1	69.5786	-0.4039	0.0108	-0.9909
143.2	68.8084	0.2516	0.0082	-0.9807	148.2	69.4916	-0.4602	0.0105	-0.9904
143.3	68.8668	0.3351	0.0090	-0.9812	148.3	69.3952	-0.4980	0.0104	-0.9898
143.4	68.9407	0.4055	0.0097	-0.9818	148.4	69.2934	-0.5158	0.0104	-0.9892
143.5	69.0272	0.4599	0.0102	-0.9825	148.5	69.1902	-0.5130	0.0105	-0.9886
143.6	69.1228	0.4962	0.0107	-0.9832	148.6	69.0897	-0.4898	0.0107	-0.9880
143.7	69.2239	0.5129	0.0110	-0.9840	148.7	68.9960	-0.4472	0.0112	-0.9875
143.8	69.3265	0.5091	0.0111	-0.9848	148.8	68.9126	-0.3870	0.0117	-0.9870
143.9	69.4264	0.4849	0.0111	-0.9856	148.9	68.8428	-0.3116	0.0123	-0.9866
144.0	69.5197	0.4413	0.0110	-0.9863	149.0	68.7894	-0.2239	0.0131	-0.9863
144.1	69.6025	0.3798	0.0107	-0.9870	149.1	68.7543	-0.1275	0.0138	-0.9862
144.2	69.6714	0.3030	0.0103	-0.9876	149.2	68.7390	-0.0260	0.0147	-0.9862
144.3	69.7237	0.2139	0.0099	-0.9880	149.3	68.7440	0.0765	0.0155	-0.9864
144.4	69.7571	0.1160	0.0093	-0.9884	149.4	68.7690	0.1760	0.0163	-0.9867
144.5	69.7703	0.0134	0.0088	-0.9886	149.5	68.8133	0.2687	0.0171	-0.9871
144.6	69.7626	-0.0898	0.0082	-0.9886	149.6	68.8750	0.3509	0.0178	-0.9877
144.7	69.7345	-0.1894	0.0076	-0.9885	149.7	68.9519	0.4193	0.0184	-0.9883
144.8	69.6870	-0.2813	0.0071	-0.9882	149.8	69.0409	0.4713	0.0189	-0.9891
144.9	69.6221	-0.3618	0.0067	-0.9879	149.9	69.1385	0.5046	0.0192	-0.9899
145.0	69.5426	-0.4276	0.0064	-0.9874	150.0	69.2410	0.5180	0.0194	-0.9908

TABLE II (Continued)

 $\theta_0 = 35$ degrees

ka	Z	kh _e	ka	Z ₀	kh _e
150.1	69.3443	0.5107	155.1	68.8972	-0.3781
150.2	69.4442	0.4829	155.2	68.8295	-0.2998
150.3	69.5367	0.4358	155.3	68.7787	-0.2098
150.4	69.6181	0.3710	155.4	68.7466	-0.1115
150.5	69.6850	0.2913	155.5	68.7346	-0.0089
150.6	69.7346	0.1996	155.6	68.7430	0.0942
150.7	69.7649	0.0998	155.7	68.7716	0.1935
150.8	69.7747	-0.0040	155.8	68.8193	0.2854
150.9	69.7635	-0.1078	155.9	68.8842	0.3660
151.0	69.7317	-0.2071	156.0	68.9639	0.4324
151.1	69.6807	-0.2981	156.1	69.0553	0.4817
151.2	69.6126	-0.3770	156.2	69.1548	0.5120
151.3	69.5303	-0.4406	156.3	69.2584	0.5220
151.4	69.4370	-0.4865	156.4	69.3622	0.5111
151.5	69.3365	-0.5129	156.5	69.4618	0.4798
151.6	69.2330	-0.5187	156.6	69.5534	0.4292
151.7	69.1305	-0.5039	156.7	69.6331	0.3612
151.8	69.0331	-0.4690	156.8	69.6978	0.2786
151.9	68.9446	-0.4157	156.9	69.7446	0.1847
152.0	68.8686	-0.3460	157.0	69.7717	0.0832
152.1	68.8078	-0.2627	157.1	69.7780	-0.0217
152.2	68.7647	-0.1691	157.2	69.7632	-0.1258
152.3	68.7410	-0.0688	157.3	69.7278	-0.2247
152.4	68.7375	0.0341	157.4	69.6734	-0.3145
152.5	68.7543	0.1357	157.5	69.6022	-0.3916
152.6	68.7909	0.2320	157.6	69.5171	-0.4528
152.7	68.8458	0.3194	157.7	69.4217	-0.4958
152.8	68.9170	0.3942	157.8	69.3197	-0.5189
152.9	69.0016	0.4535	157.9	69.2153	-0.5213
153.0	69.0965	0.4950	158.0	69.1127	-0.5029
153.1	69.1978	0.5168	158.1	69.0159	-0.4645
153.2	69.3017	0.5182	158.2	68.9287	-0.4079
153.3	69.4038	0.4988	158.3	68.8545	-0.3352
153.4	69.5003	0.4594	158.4	68.7961	-0.2493
153.5	69.5871	0.4015	158.5	68.7559	-0.1537
153.6	69.6606	0.3273	158.6	68.7354	-0.0520
153.7	69.7179	0.2399	158.7	68.7353	0.0517
153.8	69.7566	0.1426	158.8	68.7557	0.1534
153.9	69.7751	0.0396	158.9	68.7957	0.2491
154.0	69.7726	-0.0651	159.0	68.8540	0.3351
154.1	69.7492	-0.1672	159.1	68.9281	0.4080
154.2	69.7058	-0.2625	159.2	69.0153	0.4649
154.3	69.6443	-0.3471	159.3	69.1121	0.5034
154.4	69.5672	-0.4177	159.4	69.2149	0.5220
154.5	69.4777	-0.4714	159.5	69.3195	0.5199
154.6	69.3794	-0.5062	159.6	69.4217	0.4969
154.7	69.2762	-0.5207	159.7	69.5174	0.4540
154.8	69.1724	-0.5144	159.8	69.6027	0.3927
154.9	69.0721	-0.4876	159.9	69.6743	0.3156
155.0	68.9791	-0.4416	160.0	69.7290	0.2256
					0.0213

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o		kh _e	ka	Z_o		kh _e
160.1	69.7646	0.1265	0.0206 -1.0089	165.1	68.7581	0.1710	0.0190 -1.0079
160.2	69.7797	0.0221	0.0198 -1.0091	165.2	68.8016	0.2659	0.0196 -1.0083
160.3	69.7736	-0.0831	0.0191 -1.0092	165.3	68.8630	0.3505	0.0202 -1.0089
160.4	69.7465	-0.1850	0.0183 -1.0092	165.4	68.9400	0.4213	0.0207 -1.0095
160.5	69.6996	-0.2794	0.0176 -1.0090	165.5	69.0296	0.4755	0.0210 -1.0103
160.6	69.6349	-0.3624	0.0170 -1.0087	165.6	69.1283	0.5110	0.0213 -1.0111
160.7	69.5549	-0.4308	0.0164 -1.0082	165.7	69.2323	0.5263	0.0213 -1.0120
160.8	69.4631	-0.4818	0.0160 -1.0077	165.8	69.3374	0.5205	0.0212 -1.0129
160.9	69.3630	-0.5134	0.0158 -1.0071	165.9	69.4394	0.4940	0.0210 -1.0137
161.0	69.2588	-0.5245	0.0156 -1.0065	166.0	69.5342	0.4476	0.0206 -1.0145
161.1	69.1546	-0.5146	0.0157 -1.0059	166.1	69.6179	0.3831	0.0201 -1.0153
161.2	69.0546	-0.4844	0.0159 -1.0053	166.2	69.6872	0.3031	0.0194 -1.0159
161.3	68.9626	-0.4349	0.0162 -1.0047	166.3	69.7392	0.2108	0.0187 -1.0164
161.4	68.8824	-0.3683	0.0166 -1.0043	166.4	69.7716	0.1099	0.0179 -1.0168
161.5	68.8170	-0.2873	0.0172 -1.0039	166.5	69.7832	0.0044	0.0171 -1.0170
161.6	68.7688	-0.1950	0.0178 -1.0037	166.6	69.7735	-0.1012	0.0162 -1.0170
161.7	68.7399	-0.0951	0.0185 -1.0036	166.7	69.7428	-0.2027	0.0154 -1.0169
161.8	68.7312	0.0086	0.0192 -1.0037	166.8	69.6925	-0.2959	0.0147 -1.0167
161.9	68.7432	0.1119	0.0200 -1.0039	166.9	69.6246	-0.3772	0.0140 -1.0163
162.0	68.7753	0.2109	0.0206 -1.0042	167.0	69.5419	-0.4432	0.0134 -1.0158
162.1	68.8263	0.3017	0.0213 -1.0047	167.1	69.4478	-0.4913	0.0130 -1.0152
162.2	68.8944	0.3807	0.0218 -1.0053	167.2	69.3462	-0.5197	0.0127 -1.0146
162.3	68.9768	0.4447	0.0223 -1.0060	167.3	69.2411	-0.5273	0.0126 -1.0139
162.4	69.0703	0.4913	0.0226 -1.0068	167.4	69.1367	-0.5139	0.0126 -1.0132
162.5	69.1714	0.5184	0.0228 -1.0077	167.5	69.0372	-0.4801	0.0128 -1.0126
162.6	69.2761	0.5249	0.0228 -1.0086	167.6	68.9465	-0.4273	0.0131 -1.0120
162.7	69.3801	0.5105	0.0227 -1.0095	167.7	68.8681	-0.3577	0.0135 -1.0116
162.8	69.4793	0.4756	0.0224 -1.0103	167.8	68.8051	-0.2741	0.0140 -1.0112
162.9	69.5697	0.4216	0.0220 -1.0111	167.9	68.7598	-0.1797	0.0147 -1.0109
163.0	69.6476	0.3505	0.0214 -1.0118	168.0	68.7341	-0.0783	0.0153 -1.0108
163.1	69.7098	0.2652	0.0208 -1.0124	168.1	68.7288	0.0262	0.0160 -1.0109
163.2	69.7537	0.1691	0.0200 -1.0129	168.2	68.7443	0.1297	0.0167 -1.0111
163.3	69.7775	0.0661	0.0192 -1.0132	168.3	68.7799	0.2281	0.0174 -1.0114
163.4	69.7803	-0.0396	0.0184 -1.0133	168.4	68.8343	0.3176	0.0179 -1.0119
163.5	69.7618	-0.1437	0.0176 -1.0133	168.5	68.9053	0.3947	0.0184 -1.0125
163.6	69.7229	-0.2420	0.0169 -1.0132	168.6	68.9903	0.4564	0.0188 -1.0132
163.7	69.6651	-0.3305	0.0162 -1.0129	168.7	69.0859	0.5000	0.0191 -1.0140
163.8	69.5909	-0.4056	0.0156 -1.0125	168.8	69.1885	0.5239	0.0192 -1.0149
163.9	69.5033	-0.4642	0.0151 -1.0120	168.9	69.2939	0.5269	0.0192 -1.0157
164.0	69.4058	-0.5042	0.0147 -1.0114	169.0	69.3980	0.5089	0.0190 -1.0166
164.1	69.3025	-0.5240	0.0145 -1.0108	169.1	69.4965	0.4705	0.0186 -1.0174
164.2	69.1975	-0.5228	0.0145 -1.0101	169.2	69.5856	0.4131	0.0181 -1.0182
164.3	69.0949	-0.5008	0.0146 -1.0095	169.3	69.6615	0.3390	0.0175 -1.0188
164.4	68.9989	-0.4590	0.0148 -1.0089	169.4	69.7211	0.2511	0.0168 -1.0194
164.5	68.9131	-0.3991	0.0152 -1.0084	169.5	69.7620	0.1530	0.0160 -1.0198
164.6	68.8410	-0.3235	0.0157 -1.0080	169.6	69.7824	0.0487	0.0152 -1.0200
164.7	68.7852	-0.2352	0.0163 -1.0077	169.7	69.7815	-0.0576	0.0143 -1.0201
164.8	68.7480	-0.1377	0.0169 -1.0075	169.8	69.7594	-0.1616	0.0135 -1.0200
164.9	68.7308	-0.0349	0.0176 -1.0075	169.9	69.7169	-0.2591	0.0127 -1.0198
165.0	68.7342	0.0694	0.0183 -1.0076	170.0	69.6559	-0.3460	0.0119 -1.0195

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
170.1	69.5788	-0.4189	175.1	69.2058	0.5284
170.2	69.4887	-0.4749	175.2	69.3118	0.5279
170.3	69.3895	-0.5118	175.3	69.4158	0.5063
170.4	69.2850	-0.5281	175.4	69.5135	0.4644
170.5	69.1796	-0.5234	175.5	69.6010	0.4037
170.6	69.0773	-0.4979	175.6	69.6747	0.3267
170.7	68.9822	-0.4526	175.7	69.7316	0.2364
170.8	68.8981	-0.3895	175.8	69.7694	0.1365
170.9	68.8281	-0.3112	175.9	69.7863	0.0310
171.0	68.7751	-0.2206	176.0	69.7819	-0.0757
171.1	68.7410	-0.1214	176.1	69.7561	-0.1794
171.2	68.7271	-0.0174	176.2	69.7101	-0.2759
171.3	68.7340	0.0872	176.3	69.6459	-0.3611
171.4	68.7615	0.1885	176.4	69.5660	-0.4316
171.5	68.8084	0.2824	176.5	69.4737	-0.4848
171.6	68.8729	0.3653	176.6	69.3728	-0.5185
171.7	68.9527	0.4339	176.7	69.2673	-0.5313
171.8	69.0445	0.4854	176.8	69.1616	-0.5230
171.9	69.1449	0.5177	176.9	69.0598	-0.4939
172.0	69.2499	0.5295	177.0	68.9659	-0.4453
172.1	69.3553	0.5202	177.1	68.8835	-0.3792
172.2	69.4569	0.4901	177.2	68.8159	-0.2981
172.3	69.5507	0.4402	177.3	68.7657	-0.2054
172.4	69.6326	0.3726	177.4	68.7348	-0.1046
172.5	69.6995	0.2899	177.5	68.7244	0.0002
172.6	69.7486	0.1953	177.6	68.7348	0.1051
172.7	69.7778	0.0928	177.7	68.7657	0.2058
172.8	69.7858	-0.0135	177.8	68.8160	0.2986
172.9	69.7725	-0.1192	177.9	68.8836	0.3797
173.0	69.7382	-0.2202	178.0	68.9660	0.4459
173.1	69.6845	-0.3121	178.1	69.0600	0.4945
173.2	69.6135	-0.3915	178.2	69.1619	0.5236
173.3	69.5282	-0.4549	178.3	69.2678	0.5319
173.4	69.4321	-0.5001	178.4	69.3733	0.5190
173.5	69.3290	-0.5252	178.5	69.4744	0.4853
173.6	69.2232	-0.5292	178.6	69.5668	0.4321
173.7	69.1189	-0.5122	178.7	69.6468	0.3614
173.8	69.0201	-0.4749	178.8	69.7112	0.2760
173.9	68.9307	-0.4188	178.9	69.7572	0.1794
174.0	68.8544	-0.3463	179.0	69.7831	0.0755
174.1	68.7939	-0.2602	179.1	69.7875	-0.0315
174.2	68.7516	-0.1639	179.2	69.7705	-0.1373
174.3	68.7291	-0.0611	179.3	69.7327	-0.2374
174.4	68.7274	0.0440	179.4	69.6756	-0.3279
174.5	68.7464	0.1474	179.5	69.6017	-0.4052
174.6	68.7854	0.2451	179.6	69.5139	-0.4660
174.7	68.8431	0.3332	179.7	69.4159	-0.5080
174.8	68.9170	0.4083	179.8	69.3116	-0.5297
174.9	69.0045	0.4673	179.9	69.2053	-0.5302
175.0	69.1020	0.5079	180.0	69.1011	-0.5096
					0.0012 -1.0209

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
180.1	69.0032	-0.4688	185.1	69.7222	0.2615
180.2	68.9154	-0.4096	185.2	69.7651	0.1630
180.3	68.8412	-0.3342	185.3	69.7875	0.0579
180.4	68.7833	-0.2457	185.4	69.7884	-0.0497
180.5	68.7441	-0.1476	185.5	69.7677	-0.1552
180.6	68.7250	-0.0437	185.6	69.7263	-0.2544
180.7	68.7268	0.0618	185.7	69.6660	-0.3433
180.8	68.7493	0.1650	185.8	69.5892	-0.4183
180.9	68.7918	0.2618	185.9	69.4990	-0.4763
181.0	68.8526	0.3483	186.0	69.3993	-0.5152
181.1	68.9294	0.4212	186.1	69.2939	-0.5334
181.2	69.0192	0.4776	186.2	69.1872	-0.5303
181.3	69.1185	0.5151	186.3	69.0834	-0.5062
181.4	69.2235	0.5322	186.4	68.9865	-0.4620
181.5	69.3299	0.5281	186.5	68.9005	-0.3995
181.6	69.4335	0.5029	186.6	68.8285	-0.3214
181.7	69.5302	0.4575	186.7	68.7735	-0.2307
181.8	69.6160	0.3936	186.8	68.7374	-0.1310
181.9	69.6874	0.3138	186.9	68.7218	-0.0261
182.0	69.7415	0.2212	187.0	68.7271	0.0798
182.1	69.7760	0.1196	187.1	68.7531	0.1825
182.2	69.7894	0.0131	187.2	68.7990	0.2782
182.3	69.7813	-0.0939	187.3	68.8629	0.3630
182.4	69.7519	-0.1971	187.4	68.9424	0.4336
182.5	69.7025	-0.2923	187.5	69.0345	0.4871
182.6	69.6351	-0.3756	187.6	69.1354	0.5215
182.7	69.5525	-0.4438	187.7	69.2413	0.5351
182.8	69.4581	-0.4940	187.8	69.3480	0.5274
182.9	69.3557	-0.5243	187.9	69.4511	0.4986
183.0	69.2495	-0.5337	188.0	69.5466	0.4497
183.1	69.1436	-0.5218	188.1	69.6306	0.3827
183.2	69.0424	-0.4892	188.2	69.6995	0.3002
183.3	68.9498	-0.4372	188.3	69.7506	0.2054
183.4	68.8694	-0.3681	188.4	69.7818	0.1023
183.5	68.8043	-0.2845	188.5	69.7917	-0.0050
183.6	68.7570	-0.1897	188.6	69.7799	-0.1121
183.7	68.7294	-0.0876	188.7	69.7469	-0.2146
183.8	68.7224	0.0180	188.8	69.6941	-0.3084
183.9	68.7364	0.1229	188.9	69.6236	-0.3897
184.0	68.7708	0.2230	189.0	69.5384	-0.4553
184.1	68.8244	0.3144	189.1	69.4420	-0.5024
184.2	68.8950	0.3935	189.2	69.3383	-0.5294
184.3	68.9799	0.4572	189.3	69.2314	-0.5352
184.4	69.0759	0.5029	189.4	69.1257	-0.5197
184.5	69.1792	0.5287	189.5	69.0253	-0.4836
184.6	69.2858	0.5335	189.6	68.9342	-0.4284
184.7	69.3913	0.5169	189.7	68.8558	-0.3563
184.8	69.4916	0.4797	189.8	68.7933	-0.2702
184.9	69.5825	0.4231	189.9	68.7491	-0.1736
185.0	69.6605	0.3494	190.0	68.7248	-0.0702
					-0.0051

TABLE II (Continued)

 $\theta_o = 35$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
190.1	68.7213	0.0359	195.1	69.6849	-0.3242
190.2	68.7389	0.1407	195.2	69.6115	-0.4033
190.3	68.7768	0.2400	195.3	69.5239	-0.4661
190.4	68.8335	0.3299	195.4	69.4256	-0.5102
190.5	68.9070	0.4069	195.5	69.3207	-0.5337
190.6	68.9944	0.4680	195.6	69.2133	-0.5359
190.7	69.0923	0.5106	195.7	69.1079	-0.5168
190.8	69.1968	0.5329	195.8	69.0084	-0.4772
190.9	69.3039	0.5341	195.9	68.9189	-0.4188
191.0	69.4092	0.5140	196.0	68.8427	-0.3439
191.1	69.5085	0.4732	196.1	68.7830	-0.2555
191.2	69.5979	0.4134	196.2	68.7418	-0.1572
191.3	69.6736	0.3368	196.3	68.7209	-0.0527
191.4	69.7326	0.2465	196.4	68.7210	0.0539
191.5	69.7723	0.1463	196.5	68.7421	0.1584
191.6	69.7911	0.0400	196.6	68.7835	0.2567
191.7	69.7883	-0.0679	196.7	68.8434	0.3450
191.8	69.7640	-0.1731	196.8	68.9197	0.4198
191.9	69.7191	-0.2712	196.9	69.0094	0.4781
192.0	69.6556	-0.3583	197.0	69.1090	0.5175
192.1	69.5760	-0.4309	197.1	69.2146	0.5364
192.2	69.4837	-0.4860	197.2	69.3220	0.5340
192.3	69.3823	-0.5216	197.3	69.4270	0.5103
192.4	69.2760	-0.5363	197.4	69.5253	0.4660
192.5	69.1691	-0.5296	197.5	69.6129	0.4030
192.6	69.0658	-0.5019	197.6	69.6862	0.3236
192.7	68.9702	-0.4543	197.7	69.7422	0.2311
192.8	68.8860	-0.3888	197.8	69.7787	0.1291
192.9	68.8165	-0.3081	197.9	69.7940	0.0219
193.0	68.7643	-0.2152	198.0	69.7875	-0.0862
193.1	68.7315	-0.1140	198.1	69.7595	-0.1908
193.2	68.7193	-0.0083	198.2	69.7112	-0.2877
193.3	68.7281	0.0977	198.3	69.6446	-0.3728
193.4	68.7578	0.1999	198.4	69.5623	-0.4429
193.5	68.8070	0.2944	198.5	69.4679	-0.4951
193.6	68.8739	0.3773	198.6	69.3650	-0.5273
193.7	68.9561	0.4454	198.7	69.2580	-0.5385
193.8	69.0502	0.4961	198.8	69.1511	-0.5281
193.9	69.1526	0.5271	198.9	69.0485	-0.4969
194.0	69.2593	0.5372	199.0	68.9542	-0.4459
194.1	69.3660	0.5258	199.1	68.8720	-0.3774
194.2	69.4686	0.4935	199.2	68.8050	-0.2942
194.3	69.5627	0.4412	199.3	68.7558	-0.1994
194.4	69.6447	0.3711	199.4	68.7263	-0.0968
194.5	69.7110	0.2860	199.5	68.7176	0.0096
194.6	69.7591	0.1893	199.6	68.7300	0.1156
194.7	69.7868	0.0848	199.7	68.7631	0.2171
194.8	69.7931	-0.0232	199.8	68.8157	0.3102
194.9	69.7776	-0.1302	199.9	68.8856	0.3911
195.0	69.7410	-0.2319	200.0	68.9702	0.4567
					-0.0086
					-1.0156

TABLE III

TABLE III
Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 40$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
0.1	0.1492	-316.2508	0.0611	-0.0000	
0.2	0.6099	-150.7106	0.1235	-0.0002	
0.3	1.4222	-92.1277	0.1885	-0.0011	
0.4	2.6561	-60.1753	0.2576	-0.0035	
0.5	4.4158	-38.7769	0.3321	-0.0089	
0.6	6.8425	-22.5951	0.4131	-0.0193	
0.7	10.1137	-9.4081	0.5013	-0.0379	
0.8	14.4295	1.7687	0.5965	-0.0686	
0.9	19.9740	11.2821	0.6968	-0.1163	
1.0	26.8380	19.0711	0.7974	-0.1858	
1.1	34.9035	24.8091	0.8904	-0.2808	
1.2	43.7293	28.0868	0.9651	-0.4005	
1.3	52.5362	28.6708	1.0105	-0.5384	
1.4	60.3848	26.7464	1.0202	-0.6820	
1.5	66.5031	22.9708	0.9950	-0.8168	
1.6	70.5586	18.2630	0.9428	-0.9312	
1.7	72.6910	13.4818	0.8749	-1.0201	
1.8	73.3360	9.2068	0.8020	-1.0840	
1.9	73.0047	5.7023	0.7313	-1.1269	
2.0	72.1380	2.9979	0.6668	-1.1542	
2.1	71.0539	0.9929	0.6099	-1.1704	
2.2	69.9507	-0.4643	0.5607	-1.1793	
2.3	68.9337	-1.5290	0.5183	-1.1835	
2.4	68.0423	-2.3375	0.4816	-1.1846	
2.5	67.2723	-2.9988	0.4497	-1.1836	
2.6	66.5925	-3.5916	0.4217	-1.1812	
2.7	65.9569	-4.1659	0.3969	-1.1776	
2.8	65.3139	-4.7445	0.3747	-1.1730	
2.9	64.6135	-5.3259	0.3548	-1.1673	
3.0	63.8142	-5.8876	0.3368	-1.1600	
3.1	62.8876	-6.3912	0.3211	-1.1510	
3.2	61.8228	-6.7872	0.3079	-1.1400	
3.3	60.6284	-7.0222	0.2980	-1.1270	
3.4	59.3327	-7.0451	0.2921	-1.1122	
3.5	57.9811	-6.8133	0.2909	-1.0963	
3.6	56.6331	-6.2974	0.2952	-1.0800	
3.7	55.3573	-5.4842	0.3053	-1.0646	
3.8	54.2274	-4.3781	0.3215	-1.0514	
3.9	53.3184	-3.0015	0.3438	-1.0419	
4.0	52.7033	-1.3958	0.3718	-1.0375	
4.1	52.4503	0.3778	0.4048	-1.0402	
4.2	52.6175	2.2359	0.4413	-1.0517	
4.3	53.2464	4.0716	0.4796	-1.0736	
4.4	54.3504	5.7547	0.5167	-1.1073	
4.5	55.9002	7.1380	0.5494	-1.1532	
4.6	57.8096	8.0742	0.5734	-1.2107	
4.7	59.9298	8.4438	0.5846	-1.2773	
4.8	62.0605	8.1893	0.5801	-1.3488	
4.9	63.9840	7.3421	0.5584	-1.4197	
5.0	65.5144	6.0243	0.5209	-1.4844	
			5.1	66.5399	4.4202
			5.2	67.0399	2.7289
			5.3	67.0717	1.1188
			5.4	66.7375	-0.2971
			5.5	66.1515	-1.4638
			5.6	65.4159	-2.3720
			5.7	64.6096	-3.0408
			5.8	63.7870	-3.5029
			5.9	62.9810	-3.7934
			6.0	62.2093	-3.9439
			6.1	61.4794	-3.9793
			6.2	60.7940	-3.9175
			6.3	60.1540	-3.7705
			6.4	59.5610	-3.5463
			6.5	59.0181	-3.2502
			6.6	58.5300	-2.8872
			6.7	58.1028	-2.4622
			6.8	57.7430	-1.9811
			6.9	57.4576	-1.4504
			7.0	57.2536	-0.8775
			7.1	57.1389	-0.2707
			7.2	57.1214	0.3600
			7.3	57.2100	1.0023
			7.4	57.4129	1.6403
			7.5	57.7372	2.2545
			7.6	58.1870	2.8202
			7.7	58.7612	3.3084
			7.8	59.4510	3.6865
			7.9	60.2374	3.9202
			8.0	61.0893	3.9771
			8.1	61.9621	3.8321
			8.2	62.8000	3.4734
			8.3	63.5405	2.9082
			8.4	64.1228	2.1666
			8.5	64.4979	1.3003
			8.6	64.6382	0.3768
			8.7	64.5419	-0.5317
			8.8	64.2328	-1.3597
			8.9	63.7529	-2.0577
			9.0	63.1535	-2.5964
			9.1	62.4861	-2.9660
			9.2	61.7955	-3.1718
			9.3	61.1171	-3.2287
			9.4	60.4764	-3.1562
			9.5	59.8907	-2.9742
			9.6	59.3711	-2.7015
			9.7	58.9249	-2.3545
			9.8	58.5575	-1.9475
			9.9	58.2734	-1.4937
			10.0	58.0767	-1.0061
					0.4710
					0.4132
					0.3522
					0.2919
					0.2348
					0.1822
					0.1347
					0.0919
					0.0536
					0.0190
					-0.0123
					-0.0406
					-0.0661
					-0.0888
					-0.1086
					-0.1253
					-0.1386
					-0.1482
					-0.1542
					-0.1565
					-0.1553
					-0.1509
					-0.1438
					-0.1345
					-0.1237
					-0.1121
					-0.1005
					-0.0901
					-0.0818
					-0.0769
					-0.0764
					-0.0812
					-0.0921
					-0.1090
					-0.1317
					-0.1589
					-0.1892
					-0.2210
					-0.2527
					-0.2829
					-0.3108
					-0.3359
					-0.3580
					-0.3771
					-0.3936
					-0.4076
					-0.4196
					-0.4296
					-0.4379
					-0.4447

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
10.1	57.9708	-0.4984	15.1	62.3678	-0.7498
10.2	57.9582	0.0149	15.2	62.1575	-1.0568
10.3	58.0388	0.5178	15.3	61.8988	-1.3095
10.4	58.2099	0.9938	15.4	61.6045	-1.5027
10.5	58.4654	1.4263	15.5	61.2872	-1.6337
10.6	58.7955	1.8003	15.6	60.9587	-1.7021
10.7	59.1874	2.1028	15.7	60.6297	-1.7090
10.8	59.6260	2.3240	15.8	60.3104	-1.6568
10.9	60.0949	2.4576	15.9	60.0100	-1.5493
11.0	60.5773	2.5006	16.0	59.7368	-1.3910
11.1	61.0569	2.4527	16.1	59.4987	-1.1877
11.2	61.5177	2.3166	16.2	59.3023	-0.9460
11.3	61.9447	2.0967	16.3	59.1534	-0.6736
11.4	62.3235	1.7996	16.4	59.0566	-0.3790
11.5	62.6402	1.4340	16.5	59.0152	-0.0712
11.6	62.8818	1.0114	16.6	59.0310	0.2399
11.7	63.0368	0.5461	16.7	59.1043	0.5445
11.8	63.0958	0.0553	16.8	59.2341	0.8324
11.9	63.0532	-0.4404	16.9	59.4174	1.0932
12.0	62.9082	-0.9189	17.0	59.6496	1.3172
12.1	62.6655	-1.3573	17.1	59.9243	1.4946
12.2	62.3359	-1.7340	17.2	60.2329	1.6168
12.3	61.9359	-2.0305	17.3	60.5648	1.6762
12.4	61.4860	-2.2337	17.4	60.9074	1.6670
12.5	61.0093	-2.3362	17.5	61.2462	1.5862
12.6	60.5291	-2.3369	17.6	61.5653	1.4338
12.7	60.0672	-2.2406	17.7	61.8482	1.2139
12.8	59.6422	-2.0563	17.8	62.0792	0.9348
12.9	59.2694	-1.7962	17.9	62.2443	0.6092
13.0	58.9600	-1.4740	18.0	62.3331	0.2536
13.1	58.7221	-1.1041	18.1	62.3399	-0.1126
13.2	58.5609	-0.7010	18.2	62.2645	-0.4691
13.3	58.4794	-0.2786	18.3	62.1123	-0.7962
13.4	58.4789	0.1490	18.4	61.8938	-1.0766
13.5	58.5592	0.5682	18.5	61.6238	-1.2970
13.6	58.7183	0.9648	18.6	61.3191	-1.4491
13.7	58.9521	1.3245	18.7	60.9976	-1.5294
13.8	59.2538	1.6329	18.8	60.6760	-1.5393
13.9	59.6136	1.8761	18.9	60.3694	-1.4837
14.0	60.0181	2.0416	19.0	60.0899	-1.3707
14.1	60.4505	2.1197	19.1	59.8467	-1.2096
14.2	60.8911	2.1044	19.2	59.6461	-1.0110
14.3	61.3181	1.9949	19.3	59.4919	-0.7849
14.4	61.7098	1.7963	19.4	59.3856	-0.5414
14.5	62.0463	1.5194	19.5	59.3272	-0.2893
14.6	62.3111	1.1802	19.6	59.3154	-0.0367
14.7	62.4930	0.7981	19.7	59.3480	0.2090
14.8	62.5868	0.3943	19.8	59.4221	0.4414
14.9	62.5929	-0.0103	19.9	59.5344	0.6548
15.0	62.5168	-0.3969	20.0	59.6810	0.8437
					0.3082 -1.0345

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
20.1	59.8577	1.0035	25.1	60.7613	-1.0482
20.2	60.0597	1.1298	25.2	60.5508	-1.0521
20.3	60.2817	1.2185	25.3	60.3427	-1.0137
20.4	60.5175	1.2663	25.4	60.1457	-0.9340
20.5	60.7603	1.2705	25.5	59.9681	-0.8157
20.6	61.0025	1.2295	25.6	59.8178	-0.6634
20.7	61.2358	1.1427	25.7	59.7014	-0.4832
20.8	61.4516	1.0112	25.8	59.6243	-0.2826
20.9	61.6407	0.8377	25.9	59.5900	-0.0703
21.0	61.7944	0.6270	26.0	59.6002	0.1444
21.1	61.9046	0.3861	26.1	59.6545	0.3520
21.2	61.9644	0.1239	26.2	59.7503	0.5433
21.3	61.9689	-0.1487	26.3	59.8831	0.7099
21.4	61.9156	-0.4196	26.4	60.0465	0.8447
21.5	61.8052	-0.6757	26.5	60.2330	0.9421
21.6	61.6414	-0.9041	26.6	60.4340	0.9987
21.7	61.4312	-1.0928	26.7	60.6405	1.0127
21.8	61.1845	-1.2320	26.8	60.8436	0.9844
21.9	60.9137	-1.3142	26.9	61.0347	0.9161
22.0	60.6325	-1.3355	27.0	61.2061	0.8116
22.1	60.3553	-1.2955	27.1	61.3515	0.6762
22.2	60.0958	-1.1974	27.2	61.4654	0.5160
22.3	59.8664	-1.0476	27.3	61.5442	0.3382
22.4	59.6771	-0.8550	27.4	61.5855	0.1504
22.5	59.5353	-0.6305	27.5	61.5886	-0.0399
22.6	59.4455	-0.3859	27.6	61.5543	-0.2252
22.7	59.4092	-0.1331	27.7	61.4847	-0.3983
22.8	59.4251	0.1166	27.8	61.3834	-0.5528
22.9	59.4898	0.3527	27.9	61.2549	-0.6830
23.0	59.5981	0.5664	28.0	61.1048	-0.7845
23.1	59.7432	0.7507	28.1	60.9393	-0.8539
23.2	59.9180	0.9000	28.2	60.7650	-0.8893
23.3	60.1143	1.0106	28.3	60.5887	-0.8901
23.4	60.3244	1.0805	28.4	60.4172	-0.8570
23.5	60.5403	1.1089	28.5	60.2565	-0.7918
23.6	60.7547	1.0963	28.6	60.1125	-0.6976
23.7	60.9603	1.0446	28.7	59.9901	-0.5783
23.8	61.1507	0.9563	28.8	59.8934	-0.4384
23.9	61.3198	0.8352	28.9	59.8257	-0.2832
24.0	61.4626	0.6856	29.0	59.7890	-0.1184
24.1	61.5744	0.5128	29.1	59.7847	0.0499
24.2	61.6517	0.3227	29.2	59.8129	0.2157
24.3	61.6918	0.1218	29.3	59.8724	0.3730
24.4	61.6934	-0.0830	29.4	59.9615	0.5158
24.5	61.6560	-0.2847	29.5	60.0768	0.6389
24.6	61.5806	-0.4759	29.6	60.2145	0.7370
24.7	61.4697	-0.6496	29.7	60.3691	0.8064
24.8	61.3268	-0.7992	29.8	60.5347	0.8438
24.9	61.1569	-0.9187	29.9	60.7049	0.8473
25.0	60.9660	-1.0029	30.0	60.8725	0.8166
					-0.1310
					-0.1374
					-0.1420
					-0.1448
					-0.1461
					-0.1450
					-0.1432
					-0.1409
					-0.1386
					-0.1365
					-0.1350
					-0.1344
					-0.1347
					-0.1363
					-0.1392
					-0.1435
					-0.1491
					-0.1560
					-0.1640
					-0.1731
					-0.1829
					-0.1933
					-0.2041
					-0.2151
					-0.2260
					-0.2366
					-0.2468
					-0.2562
					-0.2647
					-0.2722
					-0.2784
					-0.2832
					-0.2866
					-0.2884
					-0.2886
					-0.2873
					-0.2844
					-0.2801
					-0.2744
					-0.2675
					-0.2596
					-0.2509
					-0.2416
					-0.2320
					-0.2222
					-0.2125
					-0.2030
					-0.1941
					-0.1858

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z_o		kh_e		ka	Z_c		kh_e	
30.1	61.0310	0.7528	-0.1783	-0.8714	35.1	60.0501	-0.3368	0.1332	-0.8635
30.2	61.1731	0.6581	-0.1716	-0.8706	35.2	59.9962	-0.2120	0.1344	-0.8679
30.3	61.2931	0.5365	-0.1659	-0.8701	35.3	59.9683	-0.0777	0.1357	-0.8718
30.4	61.3858	0.3934	-0.1610	-0.8697	35.4	59.9645	0.0591	0.1371	-0.8752
30.5	61.4474	0.2348	-0.1570	-0.8694	35.5	59.9946	0.1941	0.1387	-0.8783
30.6	61.4754	0.0675	-0.1537	-0.8689	35.6	60.0477	0.3204	0.1406	-0.8810
30.7	61.4688	-0.1015	-0.1512	-0.8681	35.7	60.1271	0.4333	0.1429	-0.8834
30.8	61.4282	-0.2652	-0.1492	-0.8668	35.8	60.2271	0.5262	0.1456	-0.8857
30.9	61.3555	-0.4161	-0.1477	-0.8649	35.9	60.3450	0.5986	0.1488	-0.8879
31.0	61.2546	-0.5489	-0.1465	-0.8625	36.0	60.4752	0.6423	0.1524	-0.8901
31.1	61.1291	-0.6580	-0.1454	-0.8594	36.1	60.6082	0.6579	0.1566	-0.8925
31.2	60.9849	-0.7388	-0.1444	-0.8557	36.2	60.7420	0.6489	0.1613	-0.8952
31.3	60.8285	-0.7888	-0.1433	-0.8512	36.3	60.8688	0.6098	0.1664	-0.8983
31.4	60.6663	-0.8060	-0.1420	-0.8462	36.4	60.9848	0.5456	0.1718	-0.9019
31.5	60.5047	-0.7904	-0.1404	-0.8405	36.5	61.0843	0.4589	0.1776	-0.9061
31.6	60.3504	-0.7421	-0.1383	-0.8343	36.6	61.1615	0.3590	0.1836	-0.9110
31.7	60.2102	-0.6648	-0.1356	-0.8275	36.7	61.2184	0.2429	0.1897	-0.9166
31.8	60.0894	-0.5612	-0.1323	-0.8203	36.8	61.2475	0.1223	0.1956	-0.9230
31.9	59.9926	-0.4369	-0.1282	-0.8128	36.9	61.2537	-0.0025	0.2014	-0.9303
32.0	59.9230	-0.2962	-0.1233	-0.8050	37.0	61.2318	-0.1203	0.2068	-0.9383
32.1	59.8839	-0.1453	-0.1174	-0.7972	37.1	61.1922	-0.2350	0.2118	-0.9470
32.2	59.8754	0.0087	-0.1106	-0.7893	37.2	61.1343	-0.3319	0.2162	-0.9564
32.3	59.8982	0.1595	-0.1028	-0.7817	37.3	61.0524	-0.4238	0.2198	-0.9662
32.4	59.9498	0.3018	-0.0939	-0.7744	37.4	60.9626	-0.4863	0.2229	-0.9768
32.5	60.0278	0.4296	-0.0842	-0.7677	37.5	60.8593	-0.5354	0.2251	-0.9875
32.6	60.1291	0.5380	-0.0735	-0.7616	37.6	60.7499	-0.5621	0.2264	-0.9986
32.7	60.2481	0.6241	-0.0620	-0.7563	37.7	60.6389	-0.5689	0.2268	-1.0097
32.8	60.3810	0.6841	-0.0497	-0.7520	37.8	60.5306	-0.5548	0.2263	-1.0209
32.9	60.5218	0.7166	-0.0370	-0.7488	37.9	60.4300	-0.5192	0.2250	-1.0323
33.0	60.6647	0.7211	-0.0238	-0.7467	38.0	60.3342	-0.4706	0.2230	-1.0433
33.1	60.8046	0.6983	-0.0103	-0.7458	38.1	60.2474	-0.3974	0.2200	-1.0541
33.2	60.9365	0.6487	0.0031	-0.7462	38.2	60.1825	-0.3150	0.2162	-1.0646
33.3	61.0552	0.5751	0.0165	-0.7479	38.3	60.1239	-0.2188	0.2116	-1.0744
33.4	61.1567	0.4806	0.0295	-0.7507	38.4	60.0910	-0.1153	0.2064	-1.0841
33.5	61.2378	0.3689	0.0420	-0.7547	38.5	60.0817	-0.0073	0.2007	-1.0932
33.6	61.2960	0.2435	0.0539	-0.7597	38.6	60.0865	0.1004	0.1943	-1.1015
33.7	61.3286	0.1099	0.0650	-0.7656	38.7	60.1208	0.2136	0.1877	-1.1092
33.8	61.3344	-0.0256	0.0753	-0.7723	38.8	60.1741	0.3069	0.1805	-1.1164
33.9	61.3133	-0.1609	0.0846	-0.7795	38.9	60.2428	0.3950	0.1732	-1.1227
34.0	61.2672	-0.2891	0.0929	-0.7872	39.0	60.3258	0.4638	0.1657	-1.1284
34.1	61.1972	-0.4042	0.1003	-0.7951	39.1	60.4273	0.5217	0.1581	-1.1332
34.2	61.1051	-0.5054	0.1067	-0.8031	39.2	60.5490	0.5555	0.1503	-1.1374
34.3	60.9960	-0.5849	0.1122	-0.8111	39.3	60.6480	0.5647	0.1427	-1.1410
34.4	60.8744	-0.6426	0.1168	-0.8190	39.4	60.7723	0.5482	0.1351	-1.1436
34.5	60.7424	-0.6747	0.1207	-0.8266	39.5	60.8710	0.5197	0.1282	-1.1458
34.6	60.6071	-0.6801	0.1239	-0.8339	39.6	60.9728	0.4527	0.1213	-1.1473
34.7	60.4736	-0.6606	0.1265	-0.8408	39.7	61.0617	0.3753	0.1148	-1.1488
34.8	60.3466	-0.6132	0.1286	-0.8473	39.8	61.1238	0.2817	0.1093	-1.1492
34.9	60.2304	-0.5414	0.1304	-0.8532	39.9	61.1715	0.1774	0.1040	-1.1496
35.0	60.1304	-0.4483	0.1319	-0.8586	40.0	61.1952	0.0597	0.0993	-1.1503

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
40.1	61.1957	-0.0575	45.1	60.3266	0.2317
40.2	61.1572	-0.1594	45.2	60.3688	0.3056
40.3	61.1111	-0.2591	45.3	60.4632	0.3436
40.4	61.0441	-0.3489	45.4	60.5048	0.3658
40.5	60.9605	-0.4182	45.5	60.6420	0.3764
40.6	60.8796	-0.4695	45.6	60.6877	0.3668
40.7	60.7759	-0.5074	45.7	60.7389	0.3557
40.8	60.6668	-0.5123	45.8	60.8516	0.3089
40.9	60.5518	-0.5132	45.9	60.8613	0.2735
41.0	60.4758	-0.4726	46.0	60.8997	0.2268
41.1	60.3867	-0.4175	46.1	60.9719	0.1472
41.2	60.3220	-0.3631	46.2	60.9914	0.0842
41.3	60.2524	-0.2736	46.3	60.9885	0.0009
41.4	60.2109	-0.1996	46.4	61.0472	-0.0013
41.5	60.1575	-0.1006	46.5	60.9712	-0.0914
41.6	60.1668	-0.0319	46.6	60.9354	-0.1991
41.7	60.1767	0.0721	46.7	60.9268	-0.1938
41.8	60.2013	0.1442	46.8	60.7488	-0.3606
41.9	60.2375	0.2303	46.9	60.7854	-0.2959
42.0	60.2987	0.3070	47.0	60.7234	-0.3300
42.1	60.3753	0.3817	47.1	60.6325	-0.3467
42.2	60.4404	0.4020	47.2	60.6157	-0.3346
42.3	60.5422	0.4305	47.3	60.5365	-0.3156
42.4	60.6099	0.4464	47.4	60.5084	-0.2690
42.5	60.7003	0.4388	47.5	60.4398	-0.2555
42.6	60.8120	0.4263	47.6	60.4074	-0.1831
42.7	60.8683	0.4036	47.7	60.3583	-0.1468
42.8	60.9438	0.3573	47.8	60.3461	-0.1561
42.9	61.0137	0.2610	47.9	60.3477	0.0125
43.0	61.0780	0.2199	48.0	60.3335	0.0400
43.1	61.0839	0.1098	48.1	60.4060	-0.0712
43.2	61.1089	0.0056	48.2	60.2545	0.1145
43.3	61.0902	-0.0648	48.3	60.4462	0.1843
43.4	61.0766	-0.1789	48.4	60.6358	0.4599
43.5	61.0193	-0.2317	48.5	60.5352	0.2047
43.6	60.9756	-0.2977	48.6	60.6001	0.2994
43.7	60.8899	-0.3455	48.7	60.6539	0.3025
43.8	60.8290	-0.3773	48.8	60.7196	0.2819
43.9	60.7171	-0.4269	48.9	60.7014	0.2429
44.0	60.6463	-0.4614	49.0	60.8445	0.2104
44.1	60.5615	-0.4404	49.1	60.8397	0.2309
44.2	60.4292	-0.3941	49.2	60.8732	0.2595
44.3	60.3799	-0.3478	49.3	60.9234	0.0799
44.4	60.3186	-0.2970	49.4	60.9968	0.1159
44.5	60.3278	-0.2062	49.5	60.9256	-0.0656
44.6	60.2545	-0.1400	49.6	60.8779	-0.0940
44.7	60.2383	-0.0264	49.7	60.8499	-0.0605
44.8	60.2585	0.0310	49.8	60.9209	-0.0974
44.9	60.2639	0.1321	49.9	60.8031	-0.1421
45.0	60.2871	0.1779	50.0	60.7664	-0.1830

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z ₀	kh _e	ka	Z ₀	kh _e
50.1	60.7258	-0.1423	55.1	60.6301	0.1246
50.2	60.6443	-0.2129	55.2	60.6447	0.0535
50.3	60.6188	-0.2397	55.3	60.2453	-0.0597
50.4	60.5055	-0.2047	55.4	60.6242	0.1355
50.5	60.5378	-0.1977	55.5	60.6409	0.0986
50.6	60.3745	-0.1213	55.6	60.7232	0.1665
50.7	60.5442	-0.1177	55.7	60.7793	0.1742
50.8	60.3937	-0.2005	55.8	60.6416	-0.0105
50.9	60.4515	-0.0669	55.9	60.7805	0.0599
51.0	60.4560	-0.0498	56.0	60.5803	-0.1295
51.1	60.4694	-0.0164	56.1	60.7378	0.0409
51.2	60.5398	-0.0488	56.2	60.7660	0.0292
51.3	60.5480	0.0580	56.3	60.7156	-0.0582
51.4	60.3826	0.0919	56.4	60.7412	0.0201
51.5	60.4285	-0.0012	56.5	60.3939	-0.0036
51.6	60.5511	0.1257	56.6	60.6934	-0.0887
51.7	60.4921	-0.0776	56.7	60.4260	-0.2784
51.8	60.6086	0.1486	56.8	60.6755	-0.1434
51.9	60.6469	0.1207	56.9	60.6536	-0.1306
52.0	60.6532	0.2564	57.0	60.6889	-0.0686
52.1	60.6891	0.1816	57.1	60.5522	-0.2025
52.2	60.6317	0.1192	57.2	60.5556	-0.0986
52.3	60.7005	0.1202	57.3	60.5705	-0.1208
52.4	60.7159	0.0793	57.4	60.6131	-0.0731
52.5	60.7751	0.0834	57.5	60.6109	-0.0389
52.6	60.7210	-0.0563	57.6	60.5688	-0.0633
52.7	60.7822	0.0389	57.7	60.5221	-0.0886
52.8	60.8508	0.0076	57.8	60.5403	-0.0427
52.9	60.6165	-0.0783	57.9	60.6025	-0.0121
53.0	60.7486	-0.0472	58.0	60.5190	0.0293
53.1	60.8285	-0.0187	58.1	60.7500	-0.0882
53.2	60.7455	-0.0915	58.2	60.5313	0.0505
53.3	60.7331	-0.0977	58.3	60.5153	0.0471
53.4	60.6820	-0.1142	58.4	60.5523	0.0827
53.5	60.6414	-0.1164	58.5	60.5694	0.0822
53.6	60.4122	-0.4042	58.6	60.5615	0.0928
53.7	60.6537	-0.1428	58.7	60.5713	0.1069
53.8	60.6847	-0.0113	58.8	60.5884	0.0894
53.9	60.6835	-0.2653	58.9	60.6498	0.1532
54.0	60.5806	-0.0778	59.0	60.6711	0.1269
54.1	60.6147	-0.1994	59.1	60.7201	0.1064
54.2	60.8309	-0.0359	59.2	60.7407	0.0705
54.3	60.5109	-0.0703	59.3	60.7618	0.1023
54.4	60.3540	-0.4962	59.4	60.7797	0.0586
54.5	60.2892	-0.2158	59.5	60.8006	0.0381
54.6	60.5258	0.0039	59.6	60.7989	0.0047
54.7	60.5398	-0.0044	59.7	60.8013	-0.0153
54.8	60.5046	0.1275	59.8	60.7863	-0.0520
54.9	60.2963	-0.0105	59.9	60.7878	-0.0852
55.0	60.5087	0.1508	60.0	60.7550	-0.1023
					-0.0551
					-1.1930

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e	
60.1	60.7348	-0.1515	65.1	60.6061	0.2422	
60.2	60.7043	-0.1447	65.2	60.6565	0.2469	
60.3	60.6686	-0.1553	65.3	60.7027	0.2380	
60.4	60.6356	-0.1455	65.4	60.7510	0.2244	
60.5	60.6181	-0.1653	65.5	60.7926	0.1933	
60.6	60.5775	-0.1705	65.6	60.8315	0.1636	
60.7	60.5436	-0.1568	65.7	60.8605	0.1228	
60.8	60.5034	-0.1237	65.8	60.8826	0.0788	
60.9	60.4846	-0.1119	65.9	60.8934	0.0291	
61.0	60.4696	-0.0882	66.0	60.8955	-0.0221	
61.1	60.4685	-0.0417	66.1	60.8877	-0.0729	
61.2	60.4481	-0.0039	66.2	60.8691	-0.1218	
61.3	60.4539	0.0386	66.3	60.8407	-0.1649	
61.4	60.4644	0.0652	66.4	60.8056	-0.2022	
61.5	60.4725	0.0999	66.5	60.7620	-0.2317	
61.6	60.5035	0.1397	66.6	60.7149	-0.2511	
61.7	60.5259	0.1570	66.7	60.6638	-0.2620	
61.8	60.5573	0.1728	66.8	60.6111	-0.2616	
61.9	60.6048	0.1848	66.9	60.5603	-0.2523	
62.0	60.6465	0.1955	67.0	60.5108	-0.2320	
62.1	60.6743	0.2008	67.1	60.4671	-0.2033	
62.2	60.7207	0.1857	67.2	60.4284	-0.1645	
62.3	60.7535	0.1747	67.3	60.3997	-0.1204	
62.4	60.7862	0.1419	67.4	60.3804	-0.0706	
62.5	60.8106	0.1195	67.5	60.3707	-0.0173	
62.6	60.8296	0.0864	67.6	60.3711	0.0366	
62.7	60.8553	0.0383	67.7	60.3823	0.0896	
62.8	60.8562	0.0022	67.8	60.4045	0.1397	
62.9	60.8522	-0.0392	67.9	60.4355	0.1845	
63.0	60.8420	-0.0823	68.0	60.4762	0.2222	
63.1	60.8190	-0.1207	68.1	60.5231	0.2514	
63.2	60.7922	-0.1599	68.2	60.5746	0.2709	
63.3	60.7641	-0.1844	68.3	60.6300	0.2791	
63.4	60.7270	-0.2008	68.4	60.6862	0.2777	
63.5	60.6798	-0.2186	68.5	60.7405	0.2647	
63.6	60.6384	-0.2211	68.6	60.7913	0.2409	
63.7	60.5888	-0.2171	68.7	60.8377	0.2062	
63.8	60.5464	-0.2097	68.8	60.8750	0.1636	
63.9	60.5106	-0.1830	68.9	60.9037	0.1142	
64.0	60.4739	-0.1563	69.0	60.9224	0.0603	
64.1	60.4444	-0.1212	69.1	60.9296	0.0027	
64.2	60.4228	-0.0810	69.2	60.9255	-0.0545	
64.3	60.4112	-0.0355	69.3	60.9095	-0.1111	
64.4	60.4037	0.0063	69.4	60.8837	-0.1617	
64.5	60.4130	0.0574	69.5	60.8465	-0.2079	
64.6	60.4276	0.0984	69.6	60.8020	-0.2451	
64.7	60.4464	0.1388	69.7	60.7498	-0.2729	
64.8	60.4789	0.1787	69.8	60.6933	-0.2898	
64.9	60.5167	0.2078	69.9	60.6350	-0.2954	
65.0	60.5601	0.2316	70.0	60.5764	-0.2888	
					0.0776	-0.9276

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
70.1	60.5203	-0.2710	75.1	60.9195	0.1851
70.2	60.4689	-0.2423	75.2	60.9514	0.1263
70.3	60.4233	-0.2037	75.3	60.9711	0.0621
70.4	60.3866	-0.1569	75.4	60.9773	-0.0049
70.5	60.3603	-0.1036	75.5	60.9702	-0.0719
70.6	60.3444	-0.0459	75.6	60.9499	-0.1362
70.7	60.3401	0.0138	75.7	60.9170	-0.1953
70.8	60.3477	0.0730	75.8	60.8728	-0.2466
70.9	60.3678	0.1301	75.9	60.8194	-0.2882
71.0	60.3979	0.1825	76.0	60.7587	-0.3184
71.1	60.4383	0.2273	76.1	60.6931	-0.3358
71.2	60.4869	0.2641	76.2	60.6253	-0.3399
71.3	60.5423	0.2901	76.3	60.5582	-0.3303
71.4	60.6012	0.3051	76.4	60.4941	-0.3078
71.5	60.6627	0.3078	76.5	60.4357	-0.2729
71.6	60.7234	0.2982	76.6	60.3853	-0.2271
71.7	60.7816	0.2767	76.7	60.3450	-0.1721
71.8	60.8343	0.2434	76.8	60.3164	-0.1103
71.9	60.8796	0.2010	76.9	60.3004	-0.0438
72.0	60.9155	0.1500	77.0	60.2980	0.0245
72.1	60.9409	0.0923	77.1	60.3090	0.0921
72.2	60.9541	0.0310	77.2	60.3333	0.1564
72.3	60.9547	-0.0321	77.3	60.3699	0.2146
72.4	60.9426	-0.0941	77.4	60.4173	0.2646
72.5	60.9185	-0.1525	77.5	60.4739	0.3043
72.6	60.8832	-0.2051	77.6	60.5374	0.3321
72.7	60.8381	-0.2496	77.7	60.6053	0.3469
72.8	60.7847	-0.2846	77.8	60.6749	0.3477
72.9	60.7254	-0.3077	77.9	60.7436	0.3347
73.0	60.6626	-0.3190	78.0	60.8084	0.3083
73.1	60.5988	-0.3176	78.1	60.8669	0.2694
73.2	60.5366	-0.3033	78.2	60.9165	0.2194
73.3	60.4782	-0.2768	78.3	60.9553	0.1605
73.4	60.4262	-0.2395	78.4	60.9815	0.0949
73.5	60.3823	-0.1926	78.5	60.9941	0.0252
73.6	60.3489	-0.1378	78.6	60.9926	-0.0457
73.7	60.3268	-0.0773	78.7	60.9769	-0.1150
73.8	60.3170	-0.0135	78.8	60.9476	-0.1798
73.9	60.3199	0.0510	78.9	60.9060	-0.2375
74.0	60.3358	0.1137	79.0	60.8537	-0.2857
74.1	60.3638	0.1723	79.1	60.7927	-0.3226
74.2	60.4029	0.2242	79.2	60.7256	-0.3466
74.3	60.4516	0.2677	79.3	60.6551	-0.3568
74.4	60.5081	0.3008	79.4	60.5839	-0.3528
74.5	60.5702	0.3219	79.5	60.5149	-0.3348
74.6	60.6354	0.3303	79.6	60.4509	-0.3033
74.7	60.7015	0.3258	79.7	60.3942	-0.2598
74.8	60.7652	0.3080	79.8	60.3474	-0.2060
74.9	60.8244	0.2777	79.9	60.3120	-0.1438
75.0	60.8765	0.2364	80.0	60.2897	-0.0760
					-0.0359
					-1.0483

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
80.1	60.2811	-0.0049	-0.0363	-1.0470	85.1	60.9654	-0.2040	-0.0462	-0.9899
80.2	60.2868	0.0666	-0.0368	-1.0459	85.2	60.9185	-0.2646	-0.0461	-0.9885
80.3	60.3065	0.1356	-0.0372	-1.0449	85.3	60.8604	-0.3148	-0.0458	-0.9870
80.4	60.3395	0.1995	-0.0376	-1.0439	85.4	60.7934	-0.3523	-0.0455	-0.9856
80.5	60.3846	0.2557	-0.0381	-1.0431	85.5	60.7204	-0.3757	-0.0450	-0.9840
80.6	60.4400	0.3020	-0.0386	-1.0423	85.6	60.6442	-0.3841	-0.0444	-0.9825
80.7	60.5037	0.3365	-0.0391	-1.0416	85.7	60.5678	-0.3772	-0.0437	-0.9810
80.8	60.5731	0.3577	-0.0398	-1.0409	85.8	60.4943	-0.3553	-0.0428	-0.9796
80.9	60.6455	0.3647	-0.0405	-1.0402	85.9	60.4267	-0.3192	-0.0418	-0.9782
81.0	60.7180	0.3572	-0.0413	-1.0395	86.0	60.3675	-0.2706	-0.0407	-0.9770
81.1	60.7877	0.3354	-0.0422	-1.0387	86.1	60.3192	-0.2111	-0.0394	-0.9758
81.2	60.8519	0.3000	-0.0432	-1.0380	86.2	60.2835	-0.1433	-0.0381	-0.9748
81.3	60.9078	0.2525	-0.0443	-1.0371	86.3	60.2619	-0.0697	-0.0368	-0.9739
81.4	60.9533	0.1947	-0.0453	-1.0361	86.4	60.2553	0.0067	-0.0354	-0.9731
81.5	60.9863	0.1287	-0.0464	-1.0350	86.5	60.2639	0.0831	-0.0340	-0.9725
81.6	61.0055	0.0574	-0.0476	-1.0338	86.6	60.2874	0.1563	-0.0327	-0.9720
81.7	61.0101	-0.0163	-0.0486	-1.0324	86.7	60.3250	0.2235	-0.0313	-0.9717
81.8	60.9998	-0.0896	-0.0497	-1.0309	86.8	60.3752	0.2821	-0.0301	-0.9715
81.9	60.9751	-0.1594	-0.0507	-1.0293	86.9	60.4361	0.3296	-0.0289	-0.9714
82.0	60.9369	-0.2230	-0.0515	-1.0276	87.0	60.5054	0.3642	-0.0278	-0.9713
82.1	60.8868	-0.2777	-0.0523	-1.0258	87.1	60.5803	0.3845	-0.0269	-0.9714
82.2	60.8268	-0.3212	-0.0529	-1.0239	87.2	60.6579	0.3895	-0.0260	-0.9714
82.3	60.7592	-0.3520	-0.0533	-1.0220	87.3	60.7351	0.3789	-0.0252	-0.9715
82.4	60.6869	-0.3687	-0.0536	-1.0200	87.4	60.8088	0.3532	-0.0246	-0.9716
82.5	60.6128	-0.3706	-0.0538	-1.0180	87.5	60.8760	0.3132	-0.0241	-0.9717
82.6	60.5397	-0.3579	-0.0538	-1.0161	87.6	60.9341	0.2605	-0.0237	-0.9716
82.7	60.4706	-0.3308	-0.0536	-1.0142	87.7	60.9805	0.1971	-0.0233	-0.9716
82.8	60.4083	-0.2906	-0.0533	-1.0123	87.8	61.0134	0.1257	-0.0230	-0.9714
82.9	60.3551	-0.2389	-0.0529	-1.0106	87.9	61.0314	0.0490	-0.0227	-0.9711
83.0	60.3132	-0.1777	-0.0523	-1.0090	88.0	61.0336	-0.0298	-0.0225	-0.9708
83.1	60.2842	-0.1093	-0.0517	-1.0074	88.1	61.0201	-0.1075	-0.0222	-0.9703
83.2	60.2692	-0.0365	-0.0510	-1.0061	88.2	60.9913	-0.1810	-0.0219	-0.9697
83.3	60.2689	0.0379	-0.0503	-1.0048	88.3	60.9483	-0.2473	-0.0215	-0.9691
83.4	60.2834	0.1110	-0.0496	-1.0037	88.4	60.8931	-0.3036	-0.0211	-0.9683
83.5	60.3120	0.1798	-0.0489	-1.0027	88.5	60.8276	-0.3478	-0.0205	-0.9675
83.6	60.3538	0.2418	-0.0482	-1.0019	88.6	60.7548	-0.3781	-0.0199	-0.9667
83.7	60.4070	0.2944	-0.0476	-1.0011	88.7	60.6774	-0.3932	-0.0191	-0.9659
83.8	60.4698	0.3355	-0.0470	-1.0004	88.8	60.5985	-0.3927	-0.0182	-0.9650
83.9	60.5395	0.3634	-0.0465	-0.9998	88.9	60.5214	-0.3765	-0.0172	-0.9643
84.0	60.6136	0.3769	-0.0462	-0.9992	89.0	60.4490	-0.3453	-0.0160	-0.9635
84.1	60.6892	0.3754	-0.0459	-0.9987	89.1	60.3843	-0.3005	-0.0148	-0.9629
84.2	60.7630	0.3589	-0.0457	-0.9981	89.2	60.3297	-0.2438	-0.0134	-0.9623
84.3	60.8323	0.3280	-0.0456	-0.9975	89.3	60.2874	-0.1773	-0.0120	-0.9619
84.4	60.8941	0.2839	-0.0456	-0.9969	89.4	60.2591	-0.1039	-0.0106	-0.9616
84.5	60.9460	0.2281	-0.0456	-0.9962	89.5	60.2458	-0.0262	-0.0091	-0.9614
84.6	60.9858	0.1630	-0.0458	-0.9954	89.6	60.2482	0.0526	-0.0076	-0.9614
84.7	61.0118	0.0912	-0.0459	-0.9945	89.7	60.2660	0.1295	-0.0061	-0.9615
84.8	61.0230	0.0155	-0.0460	-0.9935	89.8	60.2987	0.2014	-0.0047	-0.9618
84.9	61.0187	-0.0610	-0.0461	-0.9924	89.9	60.3451	0.2655	-0.0033	-0.9622
85.0	60.9993	-0.1352	-0.0462	-0.9912	90.0	60.4033	0.3193	-0.0020	-0.9627

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
90.1	60.4711	0.3606	-0.0008	-0.9632	95.1	60.5833	-0.4087	0.0233	-0.9830
90.2	60.5459	0.3877	0.0002	-0.9639	95.2	60.5033	-0.3891	0.0237	-0.9829
90.3	60.6247	0.3994	0.0011	-0.9646	95.3	60.4288	-0.3541	0.0243	-0.9829
90.4	60.7045	0.3952	0.0019	-0.9653	95.4	60.3628	-0.3050	0.0249	-0.9829
90.5	60.7820	0.3752	0.0026	-0.9661	95.5	60.3079	-0.2439	0.0257	-0.9830
90.6	60.8541	0.3401	0.0031	-0.9668	95.6	60.2661	-0.1731	0.0265	-0.9833
90.7	60.9179	0.2913	0.0035	-0.9674	95.7	60.2391	-0.0954	0.0274	-0.9836
90.8	60.9707	0.2306	0.0039	-0.9680	95.8	60.2279	-0.0140	0.0283	-0.9841
90.9	61.0105	0.1604	0.0041	-0.9685	95.9	60.2331	0.0681	0.0292	-0.9847
91.0	61.0354	0.0837	0.0043	-0.9689	96.0	60.2543	0.1477	0.0300	-0.9855
91.1	61.0445	0.0034	0.0044	-0.9692	96.1	60.2909	0.2215	0.0308	-0.9863
91.2	61.0373	-0.0771	0.0046	-0.9694	96.2	60.3415	0.2868	0.0316	-0.9873
91.3	61.0142	-0.1547	0.0047	-0.9694	96.3	60.4040	0.3408	0.0322	-0.9884
91.4	60.9760	-0.2260	0.0049	-0.9694	96.4	60.4761	0.3815	0.0327	-0.9896
91.5	60.9244	-0.2883	0.0051	-0.9693	96.5	60.5550	0.4071	0.0331	-0.9908
91.6	60.8614	-0.3390	0.0054	-0.9690	96.6	60.6375	0.4166	0.0333	-0.9921
91.7	60.7896	-0.3761	0.0059	-0.9688	96.7	60.7205	0.4095	0.0334	-0.9933
91.8	60.7118	-0.3982	0.0064	-0.9685	96.8	60.8005	0.3860	0.0334	-0.9946
91.9	60.6313	-0.4043	0.0070	-0.9681	96.9	60.8744	0.3469	0.0332	-0.9958
92.0	60.5512	-0.3944	0.0078	-0.9678	97.0	60.9391	0.2938	0.0328	-0.9969
92.1	60.4747	-0.3687	0.0087	-0.9676	97.1	60.9920	0.2288	0.0324	-0.9980
92.2	60.4049	-0.3284	0.0096	-0.9674	97.2	61.0309	0.1544	0.0319	-0.9989
92.3	60.3444	-0.2752	0.0107	-0.9672	97.3	61.0542	0.0736	0.0313	-0.9997
92.4	60.2956	-0.2110	0.0119	-0.9672	97.4	61.0608	-0.0102	0.0306	-1.0004
92.5	60.2605	-0.1385	0.0131	-0.9673	97.5	61.0506	-0.0937	0.0300	-1.0009
92.6	60.2404	-0.0604	0.0143	-0.9676	97.6	61.0238	-0.1735	0.0293	-1.0013
92.7	60.2361	0.0201	0.0156	-0.9679	97.7	60.9816	-0.2464	0.0288	-1.0015
92.8	60.2478	0.0999	0.0168	-0.9684	97.8	60.9257	-0.3093	0.0282	-1.0017
92.9	60.2751	0.1760	0.0180	-0.9691	97.9	60.8585	-0.3598	0.0278	-1.0017
93.0	60.3169	0.2452	0.0192	-0.9698	98.0	60.7825	-0.3958	0.0275	-1.0017
93.1	60.3716	0.3049	0.0202	-0.9707	98.1	60.7010	-0.4160	0.0272	-1.0016
93.2	60.4371	0.3527	0.0212	-0.9717	98.2	60.6171	-0.4196	0.0272	-1.0014
93.3	60.5110	0.3866	0.0220	-0.9727	98.3	60.5343	-0.4064	0.0272	-1.0013
93.4	60.5903	0.4053	0.0227	-0.9738	98.4	60.4558	-0.3771	0.0274	-1.0012
93.5	60.6718	0.4078	0.0232	-0.9750	98.5	60.3847	-0.3329	0.0276	-1.0012
93.6	60.7524	0.3941	0.0237	-0.9761	98.6	60.3238	-0.2755	0.0280	-1.0012
93.7	60.8288	0.3645	0.0239	-0.9772	98.7	60.2755	-0.2072	0.0285	-1.0013
93.8	60.8979	0.3202	0.0241	-0.9783	98.8	60.2416	-0.1308	0.0290	-1.0016
93.9	60.9569	0.2629	0.0241	-0.9793	98.9	60.2234	-0.0491	0.0296	-1.0019
94.0	61.0033	0.1950	0.0240	-0.9802	99.0	60.2218	0.0345	0.0302	-1.0024
94.1	61.0352	0.1190	0.0238	-0.9810	99.1	60.2366	0.1169	0.0308	-1.0031
94.2	61.0513	0.0380	0.0236	-0.9817	99.2	60.2675	0.1948	0.0313	-1.0038
94.3	61.0509	-0.0445	0.0234	-0.9822	99.3	60.3132	0.2652	0.0317	-1.0047
94.4	61.0340	-0.1254	0.0231	-0.9827	99.4	60.3720	0.3252	0.0321	-1.0057
94.5	61.0013	-0.2013	0.0229	-0.9830	99.5	60.4416	0.3725	0.0324	-1.0068
94.6	60.9540	-0.2691	0.0227	-0.9831	99.6	60.5193	0.4051	0.0325	-1.0079
94.7	60.8942	-0.3261	0.0226	-0.9832	99.7	60.6021	0.4217	0.0325	-1.0091
94.8	60.8243	-0.3700	0.0226	-0.9832	99.8	60.6867	0.4215	0.0323	-1.0103
94.9	60.7470	-0.3990	0.0227	-0.9832	99.9	60.7698	0.4045	0.0320	-1.0115
95.0	60.6656	-0.4121	0.0229	-0.9831	100.0	60.8479	0.3712	0.0316	-1.0127

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0		kh_e	ka	Z_0		kh_e
100.1	60.9179	0.3229	0.0310	105.1	60.2257	-0.1210	0.0107
100.2	60.9770	0.2616	0.0303	105.2	60.2098	-0.0364	0.0110
100.3	61.0227	0.1895	0.0295	105.3	60.2110	0.0497	0.0113
100.4	61.0531	0.1097	0.0286	105.4	60.2291	0.1339	0.0116
100.5	61.0670	0.0254	0.0277	105.5	60.2635	0.2130	0.0119
100.6	61.0637	-0.0601	0.0267	105.6	60.3129	0.2838	0.0121
100.7	61.0434	-0.1432	0.0258	105.7	60.3754	0.3435	0.0122
100.8	61.0068	-0.2205	0.0249	105.8	60.4486	0.3897	0.0122
100.9	60.9556	-0.2890	0.0240	105.9	60.5296	0.4206	0.0121
101.0	60.8917	-0.3458	0.0233	106.0	60.6153	0.4348	0.0118
101.1	60.8179	-0.3888	0.0226	106.1	60.7023	0.4317	0.0114
101.2	60.7370	-0.4161	0.0221	106.2	60.7871	0.4113	0.0108
101.3	60.6524	-0.4268	0.0217	106.3	60.8662	0.3744	0.0101
101.4	60.5674	-0.4205	0.0215	106.4	60.9365	0.3224	0.0093
101.5	60.4855	-0.3974	0.0213	106.5	60.9951	0.2573	0.0083
101.6	60.4098	-0.3586	0.0214	106.6	61.0396	0.1817	0.0073
101.7	60.3433	-0.3056	0.0215	106.7	61.0681	0.0987	0.0062
101.8	60.2886	-0.2406	0.0217	106.8	61.0794	0.0116	0.0051
101.9	60.2479	-0.1660	0.0220	106.9	61.0731	-0.0761	0.0039
102.0	60.2227	-0.0849	0.0224	107.0	61.0493	-0.1607	0.0028
102.1	60.2140	-0.0005	0.0228	107.1	61.0091	-0.2389	0.0017
102.2	60.2222	0.0841	0.0232	107.2	60.9541	-0.3074	0.0008
102.3	60.2468	0.1655	0.0235	107.3	60.8866	-0.3635	-0.0001
102.4	60.2872	0.2405	0.0238	107.4	60.8093	-0.4050	-0.0008
102.5	60.3415	0.3061	0.0241	107.5	60.7253	-0.4303	-0.0014
102.6	60.4079	0.3597	0.0242	107.6	60.6381	-0.4383	-0.0019
102.7	60.4837	0.3992	0.0242	107.7	60.5512	-0.4289	-0.0022
102.8	60.5660	0.4230	0.0241	107.8	60.4679	-0.4024	-0.0024
102.9	60.6515	0.4299	0.0238	107.9	60.3916	-0.3600	-0.0024
103.0	60.7369	0.4198	0.0233	108.0	60.3253	-0.3033	-0.0023
103.1	60.8186	0.3927	0.0228	108.1	60.2715	-0.2348	-0.0021
103.2	60.8935	0.3499	0.0221	108.2	60.2323	-0.1570	-0.0018
103.3	60.9584	0.2929	0.0212	108.3	60.2092	-0.0729	-0.0015
103.4	61.0107	0.2240	0.0203	108.4	60.2032	0.0140	-0.0011
103.5	61.0483	0.1459	0.0193	108.5	60.2144	0.1004	-0.0007
103.6	61.0694	0.0618	0.0182	108.6	60.2425	0.1830	-0.0004
103.7	61.0733	-0.0248	0.0171	108.7	60.2864	0.2585	-0.0001
103.8	61.0599	-0.1106	0.0160	108.8	60.3444	0.3239	0.0001
103.9	61.0295	-0.1919	0.0149	108.9	60.4143	0.3766	0.0002
104.0	60.9835	-0.2654	0.0139	109.0	60.4933	0.4145	0.0001
104.1	60.9237	-0.3283	0.0129	109.1	60.5785	0.4360	-0.0001
104.2	60.8527	-0.3780	0.0121	109.2	60.6664	0.4402	-0.0004
104.3	60.7732	-0.4124	0.0114	109.3	60.7535	0.4269	-0.0008
104.4	60.6886	-0.4304	0.0109	109.4	60.8363	0.3964	-0.0015
104.5	60.6021	-0.4311	0.0105	109.5	60.9116	0.3499	-0.0022
104.6	60.5174	-0.4147	0.0102	109.6	60.9761	0.2892	-0.0031
104.7	60.4376	-0.3818	0.0101	109.7	61.0273	0.2168	-0.0040
104.8	60.3660	-0.3339	0.0101	109.8	61.0631	0.1356	-0.0050
104.9	60.3053	-0.2727	0.0102	109.9	61.0818	0.0487	-0.0061
105.0	60.2579	-0.2008	0.0104	110.0	61.0829	-0.0402	-0.0072

TABLE III (Continued)

 $\theta_0 = \pm 0$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
110.1	61.0661	-0.1275	115.1	60.3494	0.3404
110.2	61.0322	-0.2097	115.2	60.4225	0.3918
110.3	60.9825	-0.2834	115.3	60.5044	0.4277
110.4	60.9192	-0.3457	115.4	60.5920	0.4468
110.5	60.8447	-0.3940	115.5	60.6818	0.4481
110.6	60.7623	-0.4265	115.6	60.7702	0.4315
110.7	60.6750	-0.4420	115.7	60.8536	0.3975
110.8	60.5866	-0.4397	115.8	60.9288	0.3476
110.9	60.5004	-0.4200	115.9	60.9925	0.2835
111.0	60.4200	-0.3837	116.0	61.0422	0.2079
111.1	60.3484	-0.3321	116.1	61.0759	0.1238
111.2	60.2884	-0.2675	116.2	61.0920	0.0346
111.3	60.2424	-0.1924	116.3	61.0900	-0.0560
111.4	60.2122	-0.1097	116.4	61.0698	-0.1444
111.5	60.1989	-0.0226	116.5	61.0324	-0.2270
111.6	60.2030	0.0653	116.6	60.9793	-0.3004
111.7	60.2244	0.1508	116.7	60.9126	-0.3616
111.8	60.2623	0.2305	116.8	60.8351	-0.4083
111.9	60.3152	0.3012	116.9	60.7500	-0.4386
112.0	60.3811	0.3601	117.0	60.6606	-0.4513
112.1	60.4575	0.4049	117.1	60.5706	-0.4460
112.2	60.5414	0.4337	117.2	60.4836	-0.4230
112.3	60.6295	0.4453	117.3	60.4029	-0.3832
112.4	60.7183	0.4391	117.4	60.3318	-0.3283
112.5	60.8042	0.4154	117.5	60.2729	-0.2605
112.6	60.8838	0.3750	117.6	60.2287	-0.1824
112.7	60.9539	0.3194	117.7	60.2007	-0.0972
112.8	61.0116	0.2509	117.8	60.1901	-0.0081
112.9	61.0544	0.1721	117.9	60.1973	0.0813
113.0	61.0807	0.0863	118.0	60.2220	0.1676
113.1	61.0892	-0.0031	118.1	60.2632	0.2474
113.2	61.0797	-0.0925	118.2	60.3195	0.3176
113.3	61.0525	-0.1781	118.3	60.3886	0.3753
113.4	61.0087	-0.2565	118.4	60.4679	0.4183
113.5	60.9502	-0.3245	118.5	60.5543	0.4448
113.6	60.8793	-0.3795	118.6	60.6443	0.4536
113.7	60.7990	-0.4192	118.7	60.7345	0.4443
113.8	60.7124	-0.4421	118.8	60.8212	0.4172
113.9	60.6232	-0.4472	118.9	60.9009	0.3734
114.0	60.5348	-0.4346	119.0	60.9703	0.3144
114.1	60.4507	-0.4047	119.1	61.0266	0.2427
114.2	60.3743	-0.3588	119.2	61.0675	0.1610
114.3	60.3086	-0.2988	119.3	61.0912	0.0728
114.4	60.2560	-0.2270	119.4	61.0968	-0.0184
114.5	60.2187	-0.1463	119.5	61.0841	-0.1090
114.6	60.1981	-0.0598	119.6	61.0535	-0.1951
114.7	60.1949	0.0291	119.7	61.0062	-0.2734
114.8	60.2093	0.1168	119.8	60.9444	-0.3406
114.9	60.2407	0.2001	119.9	60.8704	-0.3940
115.0	60.2880	0.2756	120.0	60.7874	-0.4316

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
120.1	60.6986	-0.4519	-0.0251	-1.0031	125.1	60.8379	0.4172	-0.0131	-0.9935
120.2	60.6077	-0.4541	-0.0251	-1.0021	125.2	60.9173	0.3700	-0.0133	-0.9940
120.3	60.5183	-0.4382	-0.0249	-1.0011	125.3	60.9857	0.3078	-0.0137	-0.9943
120.4	60.4338	-0.4050	-0.0246	-1.0001	125.4	61.0404	0.2331	-0.0142	-0.9946
120.5	60.3578	-0.3557	-0.0241	-0.9993	125.5	61.0791	0.1488	-0.0147	-0.9947
120.6	60.2930	-0.2925	-0.0235	-0.9985	125.6	61.1001	0.0585	-0.0153	-0.9947
120.7	60.2420	-0.2177	-0.0228	-0.9978	125.7	61.1027	-0.0342	-0.0159	-0.9946
120.8	60.2069	-0.1344	-0.0221	-0.9973	125.8	61.0866	-0.1256	-0.0165	-0.9943
120.9	60.1888	-0.0458	-0.0213	-0.9969	125.9	61.0526	-0.2119	-0.0170	-0.9938
121.0	60.1886	0.0446	-0.0205	-0.9967	126.0	61.0020	-0.2896	-0.0175	-0.9933
121.1	60.2062	0.1333	-0.0197	-0.9966	126.1	60.9370	-0.3556	-0.0179	-0.9926
121.2	60.2410	0.2169	-0.0190	-0.9967	126.2	60.8602	-0.4073	-0.0181	-0.9918
121.3	60.2916	0.2920	-0.0183	-0.9969	126.3	60.7747	-0.4425	-0.0182	-0.9910
121.4	60.3562	0.3557	-0.0177	-0.9972	126.4	60.6841	-0.4600	-0.0182	-0.9901
121.5	60.4322	0.4055	-0.0172	-0.9976	126.5	60.5918	-0.4592	-0.0180	-0.9892
121.6	60.5167	0.4393	-0.0169	-0.9980	126.6	60.5017	-0.4400	-0.0177	-0.9883
121.7	60.6063	0.4556	-0.0167	-0.9986	126.7	60.4173	-0.4035	-0.0172	-0.9875
121.8	60.6976	0.4539	-0.0166	-0.9991	126.8	60.3419	-0.3510	-0.0166	-0.9867
121.9	60.7869	0.4340	-0.0167	-0.9996	126.9	60.2784	-0.2847	-0.0159	-0.9861
122.0	60.8705	0.3967	-0.0170	-1.0000	127.0	60.2293	-0.2072	-0.0151	-0.9856
122.1	60.9451	0.3433	-0.0173	-1.0004	127.1	60.1965	-0.1216	-0.0142	-0.9852
122.2	61.0077	0.2761	-0.0178	-1.0007	127.2	60.1812	-0.0312	-0.0133	-0.9849
122.3	61.0556	0.1976	-0.0184	-1.0008	127.3	60.1840	0.0605	-0.0124	-0.9848
122.4	61.0869	0.1110	-0.0190	-1.0008	127.4	60.2048	0.1498	-0.0115	-0.9849
122.5	61.1002	0.0198	-0.0196	-1.0007	127.5	60.2429	0.2333	-0.0106	-0.9851
122.6	61.0951	-0.0721	-0.0203	-1.0004	127.6	60.2968	0.3077	-0.0098	-0.9854
122.7	61.0716	-0.1612	-0.0209	-1.0000	127.7	60.3644	0.3701	-0.0091	-0.9859
122.8	61.0308	-0.2438	-0.0215	-0.9994	127.8	60.4431	0.4179	-0.0086	-0.9864
122.9	60.9743	-0.3165	-0.0220	-0.9988	127.9	60.5299	0.4493	-0.0082	-0.9870
123.0	60.9045	-0.3764	-0.0223	-0.9980	128.0	60.6213	0.4629	-0.0079	-0.9876
123.1	60.8242	-0.4211	-0.0226	-0.9971	128.1	60.7137	0.4580	-0.0077	-0.9883
123.2	60.7367	-0.4489	-0.0227	-0.9961	128.2	60.8035	0.4348	-0.0078	-0.9889
123.3	60.6456	-0.4588	-0.0226	-0.9952	128.3	60.8870	0.3941	-0.0079	-0.9895
123.4	60.5544	-0.4503	-0.0224	-0.9942	128.4	60.9608	0.3375	-0.0082	-0.9900
123.5	60.4669	-0.4240	-0.0221	-0.9933	128.5	61.0219	0.2672	-0.0086	-0.9904
123.6	60.3864	-0.3809	-0.0216	-0.9925	128.6	61.0678	0.1860	-0.0091	-0.9906
123.7	60.3161	-0.3227	-0.0210	-0.9917	128.7	61.0965	0.0973	-0.0096	-0.9908
123.8	60.2587	-0.2519	-0.0203	-0.9910	128.8	61.1069	0.0045	-0.0102	-0.9907
123.9	60.2164	-0.1712	-0.0195	-0.9905	128.9	61.0984	-0.0885	-0.0108	-0.9906
124.0	60.1909	-0.0837	-0.0186	-0.9901	129.0	61.0716	-0.1779	-0.0113	-0.9903
124.1	60.1832	0.0070	-0.0178	-0.9899	129.1	61.0274	-0.2602	-0.0118	-0.9898
124.2	60.1935	0.0975	-0.0169	-0.9898	129.2	60.9677	-0.3318	-0.0122	-0.9892
124.3	60.2214	0.1842	-0.0160	-0.9898	129.3	60.8950	-0.3901	-0.0125	-0.9885
124.4	60.2660	0.2638	-0.0153	-0.9900	129.4	60.8122	-0.4326	-0.0126	-0.9878
124.5	60.3255	0.3331	-0.0146	-0.9903	129.5	60.7227	-0.4578	-0.0126	-0.9870
124.6	60.3976	0.3894	-0.0140	-0.9908	129.6	60.6301	-0.4646	-0.0125	-0.9862
124.7	60.4795	0.4303	-0.0135	-0.9913	129.7	60.5381	-0.4530	-0.0122	-0.9853
124.8	60.5680	0.4542	-0.0132	-0.9918	129.8	60.4504	-0.4233	-0.0117	-0.9846
124.9	60.6597	0.4601	-0.0130	-0.9924	129.9	60.3704	-0.3769	-0.0112	-0.9838
125.0	60.7509	0.4476	-0.0130	-0.9929	130.0	60.3011	-0.3157	-0.0105	-0.9832

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
130.1	60.2455	-0.2421	135.1	61.1120	-0.0113
130.2	60.2054	-0.1589	135.2	61.1003	-0.1050
130.3	60.1826	-0.0696	135.3	61.0701	-0.1945
130.4	60.1778	0.0225	135.4	61.0227	-0.2761
130.5	60.1913	0.1138	135.5	60.9599	-0.3464
130.6	60.2225	0.2006	135.6	60.8844	-0.4028
130.7	60.2703	0.2797	135.7	60.7993	-0.4430
130.8	60.3329	0.3478	135.8	60.7080	-0.4653
130.9	60.4078	0.4023	135.9	60.6143	-0.4691
131.0	60.4921	0.4410	136.0	60.5217	-0.4542
131.1	60.5825	0.4622	136.1	60.4341	-0.4212
131.2	60.6755	0.4650	136.2	60.3548	-0.3717
131.3	60.7674	0.4493	136.3	60.2870	-0.3075
131.4	60.8545	0.4156	136.4	60.2332	-0.2312
131.5	60.9332	0.3651	136.5	60.1956	-0.1459
131.6	61.0003	0.2998	136.6	60.1755	-0.0548
131.7	61.0531	0.2223	136.7	60.1738	0.0384
131.8	61.0893	0.1357	136.8	60.1905	0.1301
131.9	61.1075	0.0436	136.9	60.2250	0.2168
132.0	61.1069	-0.0503	137.0	60.2760	0.2951
132.1	61.0876	-0.1422	137.1	60.3415	0.3618
132.2	61.0502	-0.2284	137.2	60.4189	0.4143
132.3	60.9964	-0.3052	137.3	60.5054	0.4505
132.4	60.9283	-0.3698	137.4	60.5975	0.4689
132.5	60.8489	-0.4194	137.5	60.6916	0.4686
132.6	60.7612	-0.4521	137.6	60.7839	0.4496
132.7	60.6689	-0.4667	137.7	60.8707	0.4125
132.8	60.5757	-0.4627	137.8	60.9485	0.3588
132.9	60.4853	-0.4403	137.9	61.0141	0.2906
133.0	60.4012	-0.4004	138.0	61.0647	0.2105
133.1	60.3267	-0.3448	138.1	61.0984	0.1219
133.2	60.2647	-0.2756	138.2	61.1136	0.0282
133.3	60.2177	-0.1956	138.3	61.1098	-0.0666
133.4	60.1874	-0.1079	138.4	61.0871	-0.1588
133.5	60.1750	-0.0160	138.5	61.0464	-0.2445
133.6	60.1809	0.0765	138.6	60.9895	-0.3203
133.7	60.2050	0.1662	138.7	60.9186	-0.3831
133.8	60.2463	0.2493	138.8	60.8367	-0.4305
133.9	60.3033	0.3228	138.9	60.7471	-0.4605
134.0	60.3738	0.3836	139.0	60.6534	-0.4721
134.1	60.4550	0.4293	139.1	60.5594	-0.4649
134.2	60.5438	0.4581	139.2	60.4689	-0.4392
134.3	60.6367	0.4687	139.3	60.3854	-0.3961
134.4	60.7300	0.4606	139.4	60.3121	-0.3374
134.5	60.8200	0.4341	139.5	60.2519	-0.2655
134.6	60.9030	0.3901	139.6	60.2071	-0.1832
134.7	60.9757	0.3304	139.7	60.1795	-0.0937
134.8	61.0351	0.2572	139.8	60.1701	-0.0005
134.9	61.0787	0.1736	139.9	60.1792	0.0928
135.0	61.1047	0.0828	140.0	60.2065	0.1824

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
140.1	60.2510	0.2650	0.0115	-0.9851	145.1	60.8237	-0.4406	0.0110	-0.9954
140.2	60.3110	0.3372	0.0122	-0.9857	145.2	60.7323	-0.4678	0.0108	-0.9948
140.3	60.3842	0.3962	0.0128	-0.9864	145.3	60.6375	-0.4763	0.0108	-0.9941
140.4	60.4677	0.4396	0.0133	-0.9871	145.4	60.5431	-0.4659	0.0109	-0.9935
140.5	60.5583	0.4657	0.0137	-0.9880	145.5	60.4527	-0.4369	0.0112	-0.9929
140.6	60.6525	0.4732	0.0139	-0.9888	145.6	60.3700	-0.3907	0.0117	-0.9923
140.7	60.7464	0.4619	0.0139	-0.9897	145.7	60.2981	-0.3290	0.0122	-0.9918
140.8	60.8364	0.4321	0.0138	-0.9905	145.8	60.2398	-0.2545	0.0129	-0.9915
140.9	60.9187	0.3849	0.0136	-0.9913	145.9	60.1975	-0.1700	0.0137	-0.9912
141.0	60.9900	0.3221	0.0132	-0.9920	146.0	60.1726	-0.0789	0.0145	-0.9911
141.1	61.0475	0.2462	0.0127	-0.9926	146.1	60.1663	0.0154	0.0153	-0.9912
141.2	61.0886	0.1603	0.0121	-0.9930	146.2	60.1786	0.1091	0.0161	-0.9914
141.3	61.1118	0.0679	0.0115	-0.9933	146.3	60.2092	0.1985	0.0169	-0.9918
141.4	61.1159	-0.0274	0.0108	-0.9934	146.4	60.2568	0.2802	0.0177	-0.9923
141.5	61.1009	-0.1216	0.0102	-0.9934	146.5	60.3197	0.3510	0.0183	-0.9929
141.6	61.0674	-0.2108	0.0095	-0.9933	146.6	60.3955	0.4080	0.0189	-0.9937
141.7	61.0167	-0.2915	0.0090	-0.9930	146.7	60.4812	0.4490	0.0193	-0.9945
141.8	60.9510	-0.3603	0.0085	-0.9926	146.8	60.5734	0.4722	0.0195	-0.9954
141.9	60.8729	-0.4146	0.0082	-0.9920	146.9	60.6686	0.4766	0.0196	-0.9963
142.0	60.7857	-0.4522	0.0080	-0.9914	147.0	60.7629	0.4620	0.0196	-0.9972
142.1	60.6929	-0.4717	0.0079	-0.9908	147.1	60.8525	0.4289	0.0194	-0.9981
142.2	60.5981	-0.4723	0.0080	-0.9901	147.2	60.9339	0.3785	0.0190	-0.9989
142.3	60.5053	-0.4541	0.0083	-0.9895	147.3	61.0037	0.3128	0.0185	-0.9996
142.4	60.4181	-0.4179	0.0087	-0.9889	147.4	61.0590	0.2344	0.0180	-1.0002
142.5	60.3398	-0.3652	0.0092	-0.9883	147.5	61.0976	0.1464	0.0173	-1.0007
142.6	60.2736	-0.2982	0.0098	-0.9879	147.6	61.1177	0.0524	0.0166	-1.0010
142.7	60.2219	-0.2195	0.0106	-0.9876	147.7	61.1187	-0.0437	0.0158	-1.0011
142.8	60.1868	-0.1321	0.0114	-0.9874	147.8	61.1003	-0.1381	0.0151	-1.0011
142.9	60.1697	-0.0396	0.0123	-0.9874	147.9	61.0635	-0.2269	0.0144	-1.0010
143.0	60.1711	0.0544	0.0131	-0.9875	148.0	61.0097	-0.3064	0.0138	-1.0006
143.1	60.1910	0.1464	0.0140	-0.9877	148.1	60.9411	-0.3736	0.0132	-1.0002
143.2	60.2287	0.2327	0.0148	-0.9882	148.2	60.8606	-0.4256	0.0129	-0.9997
143.3	60.2827	0.3099	0.0155	-0.9887	148.3	60.7715	-0.4605	0.0126	-0.9991
143.4	60.3511	0.3750	0.0161	-0.9894	148.4	60.6773	-0.4769	0.0125	-0.9985
143.5	60.4310	0.4254	0.0167	-0.9901	148.5	60.5819	-0.4743	0.0125	-0.9978
143.6	60.5195	0.4590	0.0170	-0.9910	148.6	60.4890	-0.4529	0.0127	-0.9972
143.7	60.6130	0.4744	0.0173	-0.9919	148.7	60.4023	-0.4135	0.0131	-0.9966
143.8	60.7079	0.4710	0.0173	-0.9928	148.8	60.3253	-0.3578	0.0136	-0.9961
143.9	60.8003	0.4487	0.0173	-0.9936	148.9	60.2608	-0.2880	0.0142	-0.9957
144.0	60.8866	0.4083	0.0170	-0.9945	149.0	60.2114	-0.2070	0.0148	-0.9954
144.1	60.9633	0.3515	0.0167	-0.9952	149.1	60.1790	-0.1178	0.0156	-0.9952
144.2	61.0271	0.2804	0.0162	-0.9959	149.2	60.1648	-0.0241	0.0164	-0.9952
144.3	61.0755	0.1979	0.0156	-0.9964	149.3	60.1694	0.0707	0.0172	-0.9954
144.4	61.1064	0.1074	0.0149	-0.9968	149.4	60.1926	0.1626	0.0180	-0.9957
144.5	61.1186	0.0124	0.0142	-0.9970	149.5	60.2335	0.2483	0.0187	-0.9962
144.6	61.1115	-0.0831	0.0135	-0.9971	149.6	60.2905	0.3243	0.0194	-0.9967
144.7	61.0854	-0.1752	0.0129	-0.9970	149.7	60.3615	0.3876	0.0200	-0.9975
144.8	61.0415	-0.2603	0.0122	-0.9968	149.8	60.4438	0.4356	0.0204	-0.9983
144.9	60.9815	-0.3347	0.0117	-0.9964	149.9	60.5340	0.4665	0.0207	-0.9991
145.0	60.9078	-0.3956	0.0113	-0.9960	150.0	60.6288	0.4789	0.0208	-1.0000

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
150.1	60.7243	0.4722	0.0208	-1.0010	155.1	60.3112	-0.3494	0.0137	-1.0039
150.2	60.8167	0.4466	0.0206	-1.0019	155.2	60.2487	-0.2770	0.0143	-1.0035
150.3	60.9023	0.4030	0.0203	-1.0027	155.3	60.2017	-0.1938	0.0150	-1.0032
150.4	60.9775	0.3431	0.0198	-1.0035	155.4	60.1721	-0.1030	0.0157	-1.0031
150.5	61.0394	0.2694	0.0192	-1.0041	155.5	60.1610	-0.0082	0.0164	-1.0031
150.6	61.0853	0.1846	0.0186	-1.0046	155.6	60.1688	0.0870	0.0172	-1.0033
150.7	61.1134	0.0924	0.0178	-1.0050	155.7	60.1952	0.1788	0.0179	-1.0036
150.8	61.1224	-0.0037	0.0170	-1.0052	155.8	60.2392	0.2636	0.0186	-1.0041
150.9	61.1120	-0.0997	0.0163	-1.0053	155.9	60.2992	0.3381	0.0192	-1.0047
151.0	61.0826	-0.1916	0.0155	-1.0052	156.0	60.3728	0.3995	0.0197	-1.0054
151.1	61.0355	-0.2757	0.0148	-1.0049	156.1	60.4572	0.4451	0.0201	-1.0062
151.2	60.9725	-0.3486	0.0142	-1.0046	156.2	60.5491	0.4731	0.0203	-1.0071
151.3	60.8963	-0.4074	0.0137	-1.0041	156.3	60.6449	0.4823	0.0203	-1.0080
151.4	60.8100	-0.4498	0.0134	-1.0035	156.4	60.7408	0.4724	0.0202	-1.0089
151.5	60.7171	-0.4741	0.0132	-1.0029	156.5	60.8329	0.4435	0.0200	-1.0098
151.6	60.6214	-0.4795	0.0131	-1.0022	156.6	60.9175	0.3967	0.0195	-1.0106
151.7	60.5267	-0.4657	0.0132	-1.0015	156.7	60.9913	0.3339	0.0190	-1.0113
151.8	60.4367	-0.4335	0.0135	-1.0009	156.8	61.0510	0.2576	0.0183	-1.0120
151.9	60.3549	-0.3842	0.0139	-1.0004	156.9	61.0943	0.1707	0.0176	-1.0124
152.0	60.2846	-0.3197	0.0144	-0.9999	157.0	61.1194	0.0769	0.0168	-1.0128
152.1	60.2285	-0.2427	0.0150	-0.9995	157.1	61.1252	-0.0201	0.0159	-1.0129
152.2	60.1887	-0.1562	0.0157	-0.9993	157.2	61.1115	-0.1162	0.0151	-1.0129
152.3	60.1668	-0.0636	0.0165	-0.9993	157.3	61.0788	-0.2077	0.0143	-1.0128
152.4	60.1635	0.0315	0.0173	-0.9994	157.4	61.0285	-0.2907	0.0135	-1.0125
152.5	60.1791	0.1254	0.0180	-0.9996	157.5	60.9627	-0.3619	0.0129	-1.0121
152.6	60.2129	0.2144	0.0188	-1.0000	157.6	60.8840	-0.4185	0.0124	-1.0115
152.7	60.2636	0.2951	0.0195	-1.0005	157.7	60.7958	-0.4582	0.0120	-1.0109
152.8	60.3294	0.3642	0.0200	-1.0012	157.8	60.7015	-0.4795	0.0117	-1.0102
152.9	60.4076	0.4191	0.0205	-1.0019	157.9	60.6051	-0.4816	0.0117	-1.0095
153.0	60.4952	0.4574	0.0208	-1.0028	158.0	60.5103	-0.4646	0.0117	-1.0088
153.1	60.5889	0.4777	0.0210	-1.0037	158.1	60.4208	-0.4292	0.0120	-1.0082
153.2	60.6849	0.4790	0.0210	-1.0046	158.2	60.3403	-0.3768	0.0124	-1.0076
153.3	60.7793	0.4611	0.0209	-1.0055	158.3	60.2718	-0.3096	0.0129	-1.0072
153.4	60.8685	0.4247	0.0206	-1.0064	158.4	60.2179	-0.2303	0.0135	-1.0068
153.5	60.9487	0.3712	0.0201	-1.0072	158.5	60.1808	-0.1419	0.0141	-1.0066
153.6	61.0168	0.3026	0.0195	-1.0079	158.6	60.1619	-0.0481	0.0149	-1.0065
153.7	61.0698	0.2218	0.0189	-1.0085	158.7	60.1618	0.0477	0.0156	-1.0066
153.8	61.1056	0.1319	0.0181	-1.0089	158.8	60.1806	0.1416	0.0164	-1.0068
153.9	61.1227	0.0366	0.0173	-1.0092	158.9	60.2176	0.2301	0.0170	-1.0072
154.0	61.1203	-0.0602	0.0165	-1.0093	159.0	60.2713	0.3095	0.0177	-1.0078
154.1	61.0987	-0.1546	0.0157	-1.0092	159.1	60.3398	0.3769	0.0182	-1.0084
154.2	61.0586	-0.2427	0.0149	-1.0090	159.2	60.4203	0.4294	0.0186	-1.0092
154.3	61.0017	-0.3209	0.0143	-1.0087	159.3	60.5098	0.4651	0.0188	-1.0101
154.4	60.9304	-0.3861	0.0137	-1.0082	159.4	60.6047	0.4823	0.0189	-1.0109
154.5	60.8476	-0.4358	0.0132	-1.0077	159.5	60.7013	0.4803	0.0189	-1.0118
154.6	60.7567	-0.4679	0.0129	-1.0071	159.6	60.7957	0.4591	0.0186	-1.0127
154.7	60.6614	-0.4812	0.0128	-1.0064	159.7	60.8842	0.4195	0.0183	-1.0136
154.8	60.5655	-0.4753	0.0128	-1.0057	159.8	60.9631	0.3630	0.0178	-1.0143
154.9	60.4727	-0.4506	0.0130	-1.0051	159.9	61.0292	0.2917	0.0171	-1.0150
155.0	60.3869	-0.4080	0.0133	-1.0045	160.0	61.0798	0.2085	0.0164	-1.0155

TABLE III (Continued)

 $\theta_0 = 40$ degrees

ka	Z_0		kh_e	ka	Z_0		kh_e
160.1	61.1127	0.1169	0.0155	165.1	60.1830	0.1578	0.0123
160.2	61.1267	0.0205	0.0147	165.2	60.2231	0.2455	0.0130
160.3	61.1210	-0.0768	0.0138	165.3	60.2798	0.3235	0.0135
160.4	61.0960	-0.1710	0.0130	165.4	60.3509	0.3890	0.0140
160.5	61.0527	-0.2582	0.0122	165.5	60.4336	0.4391	0.0144
160.6	60.9928	-0.3349	0.0115	165.6	60.5248	0.4719	0.0146
160.7	60.9189	-0.3981	0.0109	165.7	60.6208	0.4860	0.0146
160.8	60.8340	-0.4452	0.0104	165.8	60.7178	0.4808	0.0145
160.9	60.7415	-0.4743	0.0101	165.9	60.8120	0.4563	0.0142
161.0	60.6452	-0.4845	0.0099	166.0	60.8996	0.4134	0.0138
161.1	60.5490	-0.4754	0.0099	166.1	60.9770	0.3539	0.0132
161.2	60.4566	-0.4474	0.0101	166.2	61.0410	0.2800	0.0125
161.3	60.3717	-0.4017	0.0104	166.3	61.0890	0.1947	0.0117
161.4	60.2977	-0.3402	0.0108	166.4	61.1190	0.1015	0.0109
161.5	60.2372	-0.2653	0.0114	166.5	61.1298	0.0041	0.0100
161.6	60.1928	-0.1801	0.0120	166.6	61.1208	-0.0934	0.0091
161.7	60.1661	-0.0878	0.0127	166.7	61.0924	-0.1872	0.0082
161.8	60.1581	0.0079	0.0135	166.8	61.0459	-0.2734	0.0074
161.9	60.1691	0.1033	0.0142	166.9	60.9832	-0.3484	0.0067
162.0	60.1988	0.1947	0.0149	167.0	60.9068	-0.4094	0.0061
162.1	60.2459	0.2786	0.0155	167.1	60.8199	-0.4538	0.0056
162.2	60.3087	0.3515	0.0161	167.2	60.7260	-0.4800	0.0053
162.3	60.3848	0.4107	0.0165	167.3	60.6289	-0.4869	0.0051
162.4	60.4712	0.4537	0.0168	167.4	60.5325	-0.4745	0.0052
162.5	60.5645	0.4788	0.0170	167.5	60.4407	-0.4432	0.0053
162.6	60.6612	0.4849	0.0170	167.6	60.3569	-0.3945	0.0056
162.7	60.7573	0.4716	0.0168	167.7	60.2846	-0.3302	0.0061
162.8	60.8489	0.4394	0.0164	167.8	60.2264	-0.2530	0.0067
162.9	60.9325	0.3895	0.0160	167.9	60.1847	-0.1659	0.0073
163.0	61.0045	0.3239	0.0154	168.0	60.1609	-0.0723	0.0080
163.1	61.0620	0.2451	0.0146	168.1	60.1561	0.0242	0.0087
163.2	61.1026	0.1563	0.0138	168.2	60.1704	0.1197	0.0094
163.3	61.1246	0.0611	0.0130	168.3	60.2032	0.2105	0.0101
163.4	61.1271	-0.0366	0.0121	168.4	60.2534	0.2932	0.0107
163.5	61.1100	-0.1328	0.0112	168.5	60.3189	0.3644	0.0112
163.6	61.0740	-0.2236	0.0103	168.6	60.3974	0.4213	0.0116
163.7	61.0206	-0.3053	0.0096	168.7	60.4856	0.4616	0.0119
163.8	60.9521	-0.3747	0.0089	168.8	60.5803	0.4837	0.0120
163.9	60.8711	-0.4289	0.0084	168.9	60.6776	0.4865	0.0120
164.0	60.7811	-0.4658	0.0080	169.0	60.7737	0.4699	0.0117
164.1	60.6856	-0.4840	0.0078	169.1	60.8648	0.4345	0.0114
164.2	60.5886	-0.4829	0.0077	169.2	60.9470	0.3815	0.0108
164.3	60.4939	-0.4625	0.0078	169.3	51.0171	0.3131	0.0102
164.4	60.4053	-0.4239	0.0080	169.4	51.0722	0.2320	0.0094
164.5	60.3261	-0.3685	0.0084	169.5	51.1100	0.1414	0.0086
164.6	60.2595	-0.2987	0.0089	169.6	51.1289	0.0450	0.0077
164.7	60.2081	-0.2172	0.0095	169.7	51.1281	-0.0532	0.0068
164.8	60.1737	-0.1272	0.0102	169.8	51.1077	-0.1493	0.0059
164.9	60.1578	-0.0322	0.0109	169.9	51.0684	-0.2393	0.0050
165.0	60.1610	0.0641	0.0116	170.0	51.0120	-0.3196	0.0043

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
170.1	60.9408	-0.3869	0.0036	-1.0211	175.1	60.5964	0.4878	0.0065	-1.0193
170.2	60.8576	-0.4385	0.0031	-1.0204	175.2	60.6942	0.4873	0.0064	-1.0201
170.3	60.7660	-0.4725	0.0027	-1.0197	175.3	60.7902	0.4674	0.0062	-1.0209
170.4	60.6695	-0.4876	0.0025	-1.0189	175.4	60.8804	0.4287	0.0058	-1.0217
170.5	60.5721	-0.4832	0.0024	-1.0181	175.5	60.9612	0.3728	0.0052	-1.0224
170.6	60.4777	-0.4596	0.0025	-1.0173	175.6	61.0293	0.3017	0.0045	-1.0229
170.7	60.3900	-0.4178	0.0028	-1.0166	175.7	61.0819	0.2183	0.0037	-1.0234
170.8	60.3123	-0.3596	0.0032	-1.0160	175.8	61.1167	0.1261	0.0029	-1.0237
170.9	60.2478	-0.2872	0.0037	-1.0155	175.9	61.1324	0.0287	0.0020	-1.0238
171.0	60.1989	-0.2036	0.0043	-1.0151	176.0	61.1283	-0.0699	0.0011	-1.0238
171.1	60.1674	-0.1120	0.0050	-1.0149	176.1	61.1045	-0.1657	0.0002	-1.0236
171.2	60.1546	-0.0161	0.0057	-1.0148	176.2	61.0620	-0.2547	-0.0007	-1.0233
171.3	60.1610	0.0805	0.0064	-1.0149	176.3	61.0026	-0.3334	-0.0014	-1.0228
171.4	60.1863	0.1739	0.0071	-1.0151	176.4	60.9288	-0.3985	-0.0021	-1.0222
171.5	60.2295	0.2606	0.0078	-1.0155	176.5	60.8436	-0.4475	-0.0026	-1.0214
171.6	60.2891	0.3371	0.0083	-1.0160	176.6	60.7505	-0.4786	-0.0029	-1.0207
171.7	60.3627	0.4005	0.0088	-1.0167	176.7	60.6531	-0.4904	-0.0031	-1.0198
171.8	60.4475	0.4480	0.0091	-1.0174	176.8	60.5556	-0.4827	-0.0031	-1.0190
171.9	60.5401	0.4779	0.0093	-1.0182	176.9	60.4616	-0.4558	-0.0030	-1.0182
172.0	60.6371	0.4889	0.0093	-1.0191	177.0	60.3749	-0.4109	-0.0027	-1.0175
172.1	60.7344	0.4803	0.0091	-1.0199	177.1	60.2990	-0.3499	-0.0023	-1.0169
172.2	60.8282	0.4525	0.0088	-1.0207	177.2	60.2366	-0.2751	-0.0017	-1.0163
172.3	60.9147	0.4065	0.0083	-1.0215	177.3	60.1903	-0.1895	-0.0011	-1.0159
172.4	60.9905	0.3441	0.0077	-1.0221	177.4	60.1618	-0.0966	-0.0004	-1.0157
172.5	61.0523	0.2677	0.0070	-1.0227	177.5	60.1522	0.0002	0.0003	-1.0156
172.6	61.0976	0.1804	0.0062	-1.0231	177.6	60.1618	0.0969	0.0011	-1.0157
172.7	61.1245	0.0858	0.0053	-1.0233	177.7	60.1903	0.1899	0.0018	-1.0159
172.8	61.1320	-0.0124	0.0044	-1.0234	177.8	60.2367	0.2755	0.0024	-1.0163
172.9	61.1196	-0.1101	0.0034	-1.0233	177.9	60.2990	0.3503	0.0030	-1.0168
173.0	61.0880	-0.2033	0.0026	-1.0231	178.0	60.3751	0.4114	0.0034	-1.0175
173.1	61.0384	-0.2882	0.0018	-1.0227	178.1	60.4618	0.4563	0.0037	-1.0182
173.2	60.9728	-0.3615	0.0011	-1.0222	178.2	60.5558	0.4832	0.0038	-1.0190
173.3	60.8940	-0.4201	0.0005	-1.0215	178.3	60.6535	0.4909	0.0038	-1.0198
173.4	60.8053	-0.4617	0.0000	-1.0208	178.4	60.7509	0.4791	0.0036	-1.0206
173.5	60.7101	-0.4848	-0.0002	-1.0200	178.5	60.8442	0.4480	0.0033	-1.0214
173.6	60.6124	-0.4885	-0.0004	-1.0192	178.6	60.9295	0.3989	0.0028	-1.0221
173.7	60.5161	-0.4728	-0.0003	-1.0184	178.7	61.0035	0.3336	0.0021	-1.0227
173.8	60.4249	-0.4383	-0.0001	-1.0177	178.8	61.0629	0.2548	0.0014	-1.0232
173.9	60.3425	-0.3865	0.0002	-1.0170	178.9	61.1054	0.1656	0.0006	-1.0236
174.0	60.2720	-0.3196	0.0007	-1.0164	179.0	61.1293	0.0697	-0.0003	-1.0238
174.1	60.2162	-0.2401	0.0013	-1.0160	179.1	61.1334	-0.0291	-0.0012	-1.0238
174.2	60.1772	-0.1512	0.0019	-1.0156	179.2	61.1177	-0.1267	-0.0021	-1.0236
174.3	60.1565	-0.0564	0.0026	-1.0155	179.3	61.0828	-0.2192	-0.0030	-1.0233
174.4	60.1549	0.0406	0.0034	-1.0155	179.4	61.0300	-0.3027	-0.0038	-1.0229
174.5	60.1724	0.1360	0.0041	-1.0156	179.5	60.9618	-0.3740	-0.0045	-1.0223
174.6	60.2085	0.2261	0.0047	-1.0160	179.6	60.8807	-0.4301	-0.0050	-1.0216
174.7	60.2616	0.3074	0.0053	-1.0164	179.7	60.7902	-0.4689	-0.0054	-1.0208
174.8	60.3298	0.3767	0.0058	-1.0170	179.8	60.6940	-0.4889	-0.0057	-1.0200
174.9	60.4105	0.4313	0.0062	-1.0177	179.9	60.5958	-0.4893	-0.0058	-1.0192
175.0	60.5005	0.4688	0.0064	-1.0184	180.0	60.4997	-0.4702	-0.0057	-1.0184

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
180.1	60.4094	-0.4326	-0.0054	-1.0176	185.1	61.0730	0.2414	-0.0036	-1.0221
180.2	60.3284	-0.3779	-0.0051	-1.0169	185.2	61.1126	0.1505	-0.0044	-1.0224
180.3	60.2600	-0.3083	-0.0046	-1.0163	185.3	61.1333	0.0534	-0.0053	-1.0225
180.4	60.2066	-0.2267	-0.0039	-1.0158	185.4	61.1340	-0.0459	-0.0062	-1.0225
180.5	60.1705	-0.1362	-0.0033	-1.0155	185.5	61.1149	-0.1433	-0.0071	-1.0223
180.6	60.1529	-0.0404	-0.0025	-1.0154	185.6	61.0768	-0.2348	-0.0079	-1.0219
180.7	60.1545	0.0570	-0.0018	-1.0154	185.7	61.0210	-0.3169	-0.0087	-1.0214
180.8	60.1753	0.1522	-0.0011	-1.0155	185.8	60.9501	-0.3860	-0.0093	-1.0208
180.9	60.2145	0.2415	-0.0004	-1.0158	185.9	60.8669	-0.4396	-0.0098	-1.0200
181.0	60.2705	0.3213	0.0002	-1.0163	186.0	60.7749	-0.4754	-0.0102	-1.0192
181.1	60.3414	0.3886	0.0007	-1.0169	186.1	60.6777	-0.4922	-0.0104	-1.0184
181.2	60.4242	0.4406	0.0010	-1.0176	186.2	60.5792	-0.4893	-0.0104	-1.0175
181.3	60.5158	0.4753	0.0012	-1.0183	186.3	60.4834	-0.4669	-0.0103	-1.0167
181.4	60.6126	0.4911	0.0013	-1.0191	186.4	60.3941	-0.4261	-0.0100	-1.0159
181.5	60.7108	0.4873	0.0012	-1.0199	186.5	60.3148	-0.3685	-0.0096	-1.0152
181.6	60.8065	0.4641	0.0009	-1.0207	186.6	60.2484	-0.2964	-0.0091	-1.0146
181.7	60.8957	0.4222	0.0005	-1.0214	186.7	60.1977	-0.2128	-0.0084	-1.0142
181.8	60.9750	0.3633	-0.0001	-1.0221	186.8	60.1644	-0.1208	-0.0077	-1.0139
181.9	61.0409	0.2896	-0.0008	-1.0226	186.9	60.1500	-0.0241	-0.0070	-1.0137
182.0	61.0908	0.2042	-0.0016	-1.0230	187.0	60.1549	0.0735	-0.0062	-1.0137
182.1	61.1227	0.1104	-0.0025	-1.0232	187.1	60.1789	0.1683	-0.0055	-1.0139
182.2	61.1351	0.0121	-0.0034	-1.0233	187.2	60.2212	0.2566	-0.0048	-1.0142
182.3	61.1276	-0.0867	-0.0043	-1.0232	187.3	60.2801	0.3348	-0.0042	-1.0147
182.4	61.1004	-0.1819	-0.0052	-1.0230	187.4	60.3535	0.3999	-0.0038	-1.0152
182.5	61.0548	-0.2698	-0.0060	-1.0226	187.5	60.4383	0.4493	-0.0034	-1.0159
182.6	60.9926	-0.3467	-0.0067	-1.0220	187.6	60.5314	0.4810	-0.0032	-1.0167
182.7	60.9163	-0.4096	-0.0073	-1.0214	187.7	60.6291	0.4936	-0.0032	-1.0175
182.8	60.8292	-0.4559	-0.0078	-1.0206	187.8	60.7275	0.4866	-0.0033	-1.0182
182.9	60.7347	-0.4839	-0.0081	-1.0198	187.9	60.8227	0.4600	-0.0036	-1.0190
183.0	60.6366	-0.4925	-0.0082	-1.0189	188.0	60.9108	0.4150	-0.0040	-1.0197
183.1	60.5390	-0.4814	-0.0082	-1.0181	188.1	60.9883	0.3532	-0.0046	-1.0203
183.2	60.4457	-0.4513	-0.0080	-1.0173	188.2	61.0520	0.2770	-0.0053	-1.0208
183.3	60.3602	-0.4033	-0.0077	-1.0166	188.3	61.0992	0.1896	-0.0061	-1.0211
183.4	60.2861	-0.3395	-0.0072	-1.0159	188.4	61.1279	0.0945	-0.0070	-1.0213
183.5	60.2260	-0.2624	-0.0066	-1.0154	188.5	61.1370	-0.0046	-0.0079	-1.0214
183.6	60.1825	-0.1750	-0.0060	-1.0150	188.6	61.1261	-0.1034	-0.0088	-1.0212
183.7	60.1570	-0.0808	-0.0052	-1.0148	188.7	61.0957	-0.1980	-0.0096	-1.0209
183.8	60.1505	0.0166	-0.0045	-1.0147	188.8	61.0469	-0.2846	-0.0104	-1.0205
183.9	60.1634	0.1133	-0.0038	-1.0148	188.9	60.9819	-0.3596	-0.0111	-1.0199
184.0	60.1952	0.2057	-0.0031	-1.0150	189.0	60.9033	-0.4201	-0.0117	-1.0192
184.1	60.2445	0.2900	-0.0024	-1.0154	189.1	60.8143	-0.4636	-0.0121	-1.0184
184.2	60.3096	0.3630	-0.0019	-1.0159	189.2	60.7186	-0.4884	-0.0123	-1.0175
184.3	60.3880	0.4218	-0.0015	-1.0165	189.3	60.6200	-0.4937	-0.0124	-1.0167
184.4	60.4765	0.4639	-0.0012	-1.0173	189.4	60.5225	-0.4794	-0.0124	-1.0158
184.5	60.5718	0.4878	-0.0011	-1.0180	189.5	60.4299	-0.4460	-0.0121	-1.0150
184.6	60.6701	0.4922	-0.0011	-1.0188	189.6	60.3459	-0.3951	-0.0118	-1.0143
184.7	60.7675	0.4770	-0.0013	-1.0196	189.7	60.2736	-0.3286	-0.0113	-1.0136
184.8	60.8600	0.4427	-0.0017	-1.0204	189.8	60.2160	-0.2492	-0.0107	-1.0131
184.9	60.9440	0.3905	-0.0022	-1.0210	189.9	60.1752	-0.1601	-0.0100	-1.0127
185.0	61.0160	0.3225	-0.0028	-1.0216	190.0	60.1528	-0.0648	-0.0092	-1.0125

TABLE III (Continued)

 $\theta_o = 40$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
190.1	60.1496	0.0331	195.1	61.0384	-0.2991
190.2	60.1658	0.1297	195.2	60.9706	-0.3721
190.3	60.2007	0.2213	195.3	60.8898	-0.4300
190.4	60.2531	0.3042	195.4	60.7991	-0.4706
190.5	60.3208	0.3752	195.5	60.7023	-0.4923
190.6	60.4014	0.4316	195.6	60.6033	-0.4943
190.7	60.4916	0.4709	195.7	60.5061	-0.4766
190.8	60.5880	0.4916	195.8	60.4144	-0.4400
190.9	60.6868	0.4927	195.9	60.3318	-0.3861
191.0	60.7840	0.4742	196.0	60.2617	-0.3171
191.1	60.8757	0.4366	196.1	60.2066	-0.2356
191.2	60.9581	0.3814	196.2	60.1687	-0.1449
191.3	61.0280	0.3108	196.3	60.1494	-0.0485
191.4	61.0824	0.2275	196.4	60.1495	0.0497
191.5	61.1191	0.1350	196.5	60.1689	0.1460
191.6	61.1365	0.0369	196.6	60.2070	0.2366
191.7	61.1339	-0.0627	196.7	60.2623	0.3181
191.8	61.1114	-0.1597	196.8	60.3326	0.3870
191.9	61.0700	-0.2502	196.9	60.4153	0.4408
192.0	61.0114	-0.3306	197.0	60.5071	0.4772
192.1	60.9379	-0.3975	197.1	60.6045	0.4947
192.2	60.8527	-0.4484	197.2	60.7035	0.4925
192.3	60.7592	-0.4812	197.3	60.8004	0.4707
192.4	60.6612	-0.4947	197.4	60.8910	0.4299
192.5	60.5626	-0.4885	197.5	60.9719	0.3717
192.6	60.4673	-0.4629	197.6	61.0395	0.2985
192.7	60.3791	-0.4190	197.7	61.0913	0.2132
192.8	60.3015	-0.3585	197.8	61.1249	0.1191
192.9	60.2374	-0.2841	197.9	61.1390	0.0202
193.0	60.1893	-0.1985	198.0	61.1330	-0.0795
193.1	60.1591	-0.1051	198.1	61.1072	-0.1760
193.2	60.1478	-0.0077	198.2	61.0626	-0.2654
193.3	60.1560	0.0901	198.3	61.0011	-0.3439
193.4	60.1833	0.1843	198.4	60.9252	-0.4085
193.5	60.2286	0.2714	198.5	60.8381	-0.4566
193.6	60.2904	0.3479	198.6	60.7432	-0.4863
193.7	60.3661	0.4108	198.7	60.6445	-0.4966
193.8	60.4528	0.4575	198.8	60.5459	-0.4870
193.9	60.5473	0.4861	198.9	60.4513	-0.4581
194.0	60.6457	0.4955	199.0	60.3644	-0.4111
194.1	60.7442	0.4851	199.1	60.2886	-0.3480
194.2	60.8387	0.4552	199.2	60.2269	-0.2712
194.3	60.9256	0.4071	199.3	60.1816	-0.1838
194.4	61.0012	0.3424	199.4	60.1544	-0.0892
194.5	61.0625	0.2639	199.5	60.1463	0.0089
194.6	61.1068	0.1746	199.6	60.1578	0.1066
194.7	61.1324	0.0782	199.7	60.1883	0.2002
194.8	61.1382	-0.0214	199.8	60.2367	0.2859
194.9	61.1239	-0.1201	199.9	60.3012	0.3606
195.0	61.0902	-0.2140	200.0	60.3792	0.4210
					-0.0095

TABLE IV

TABLE IV
Impedance and Radian Effective Length of Wide Angle Conical Antennas

$\theta_0 = 45$ degrees

ka	Z_0		kh _e	ka	Z_0		kh _e
0.1	0.1290	-277.8673	0.0568	5.1	57.8609	3.9439	0.5514
0.2	0.5275	-132.5032	0.1148	5.2	58.3356	2.5467	0.4953
0.3	1.2308	-81.0974	0.1754	5.3	58.4308	1.1976	0.4364
0.4	2.3002	-53.0871	0.2397	5.4	58.2229	-0.0130	0.3783
0.5	3.8266	-34.3516	0.3090	5.5	57.7981	-1.0389	0.3238
0.6	5.9330	-20.2044	0.3843	5.6	57.2341	-1.8687	0.2743
0.7	8.7722	-8.6972	0.4663	5.7	56.5912	-2.5132	0.2309
0.8	12.5132	1.0314	0.5545	5.8	55.9111	-2.9931	0.1937
0.9	17.3052	9.2839	0.6468	5.9	55.2199	-3.3308	0.1629
1.0	23.2083	16.0125	0.7386	6.0	54.5327	-3.5456	0.1381
1.1	30.0960	20.9521	0.8222	6.1	53.8581	-3.6515	0.1192
1.2	37.5688	23.7884	0.8875	6.2	53.2024	-3.6577	0.1059
1.3	44.9640	24.3767	0.9251	6.3	52.5725	-3.5697	0.0977
1.4	51.5238	22.9247	0.9298	6.4	51.9766	-3.3917	0.0941
1.5	56.6633	20.0034	0.9030	6.5	51.4246	-3.1283	0.0943
1.6	60.1652	16.3561	0.8524	6.6	50.9275	-2.7858	0.0976
1.7	62.1757	12.6451	0.7880	6.7	50.4956	-2.3727	0.1032
1.8	63.0529	9.2980	0.7186	6.8	50.1378	-1.8991	0.1103
1.9	63.1949	6.4942	0.6507	6.9	49.8614	-1.3760	0.1182
2.0	62.9331	4.2338	0.5875	7.0	49.6721	-0.8147	0.1264
2.1	62.4931	2.4199	0.5307	7.1	49.5749	-0.2262	0.1346
2.2	61.9983	0.9223	0.4808	7.2	49.5747	0.3782	0.1427
2.3	61.4893	-0.3806	0.4382	7.3	49.6768	0.9862	0.1504
2.4	60.9488	-1.5771	0.4035	7.4	49.8865	1.5834	0.1577
2.5	60.3294	-2.7079	0.3773	7.5	50.2085	2.1517	0.1642
2.6	59.5834	-3.7651	0.3603	7.6	50.6452	2.6696	0.1697
2.7	58.6884	-4.7064	0.3524	7.7	51.1945	3.1108	0.1736
2.8	57.6593	-5.4813	0.3524	7.8	51.8479	3.4457	0.1752
2.9	56.5398	-6.0565	0.3582	7.9	52.5870	3.6432	0.1735
3.0	55.3807	-6.4272	0.3672	8.0	53.3821	3.6738	0.1677
3.1	54.2209	-6.6100	0.3773	8.1	54.1910	3.5148	0.1565
3.2	53.0797	-6.6271	0.3871	8.2	54.9606	3.1564	0.1393
3.3	51.9621	-6.4929	0.3960	8.3	55.6318	2.6072	0.1155
3.4	50.8693	-6.2088	0.4045	8.4	56.1475	1.8979	0.0854
3.5	49.8081	-5.7650	0.4133	8.5	56.4631	1.0799	0.0497
3.6	48.7966	-5.1469	0.4234	8.6	56.5551	0.2191	0.0098
3.7	47.8657	-4.3417	0.4359	8.7	56.4256	-0.6151	-0.0322
3.8	47.0575	-3.3446	0.4517	8.8	56.1012	-1.3614	-0.0742
3.9	46.4221	-2.1629	0.4713	8.9	55.6258	-1.9749	-0.1145
4.0	46.0141	-0.8196	0.4950	9.0	55.0509	-2.4315	-0.1514
4.1	45.8880	0.6443	0.5224	9.1	54.4267	-2.7262	-0.1841
4.2	46.0927	2.1673	0.5528	9.2	53.7959	-2.8686	-0.2119
4.3	46.6641	3.6662	0.5845	9.3	53.1907	-2.8769	-0.2347
4.4	47.6152	5.0372	0.6153	9.4	52.6333	-2.7734	-0.2526
4.5	48.9235	6.1619	0.6419	9.5	52.1366	-2.5802	-0.2659
4.6	50.5202	6.9218	0.6606	9.6	51.7074	-2.3171	-0.2749
4.7	52.2854	7.2214	0.6678	9.7	51.3482	-2.0009	-0.2802
4.8	54.0592	7.0153	0.6605	9.8	51.0591	-1.6453	-0.2820
4.9	55.6684	6.3282	0.6376	9.9	50.8396	-1.2614	-0.2809
5.0	56.9655	5.2562	0.6002	10.0	50.6888	-0.8586	-0.2774

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
10.1	50.6062	-0.4457	15.1	54.5363	-0.4772
10.2	50.5914	-0.0308	15.2	54.4116	-0.7999
10.3	50.6438	0.3775	15.3	54.2228	-1.0934
10.4	50.7623	0.7699	15.4	53.9759	-1.3445
10.5	50.9448	1.1371	15.5	53.6802	-1.5408
10.6	51.1877	1.4693	15.6	53.3481	-1.6722
10.7	51.4862	1.7569	15.7	52.9941	-1.7312
10.8	51.8337	1.9905	15.8	52.6345	-1.7139
10.9	52.2222	2.1612	15.9	52.2866	-1.6203
11.0	52.6420	2.2609	16.0	51.9672	-1.4547
11.1	53.0813	2.2823	16.1	51.6919	-1.2255
11.2	53.5264	2.2195	16.2	51.4736	-0.9443
11.3	53.9613	2.0687	16.3	51.3222	-0.6258
11.4	54.3680	1.8290	16.4	51.2432	-0.2863
11.5	54.7263	1.5035	16.5	51.2384	0.0573
11.6	55.0157	1.1006	16.6	51.3051	0.3887
11.7	55.2162	0.6346	16.7	51.4374	0.6931
11.8	55.3111	0.1260	16.8	51.6261	0.9582
11.9	55.2888	-0.3988	16.9	51.8601	1.1745
12.0	55.1456	-0.9097	17.0	52.1273	1.3353
12.1	54.8869	-1.3754	17.1	52.4148	1.4374
12.2	54.5274	-1.7670	17.2	52.7104	1.4798
12.3	54.0902	-2.0611	17.3	53.0024	1.4642
12.4	53.6041	-2.2425	17.4	53.2806	1.3940
12.5	53.1004	-2.3055	17.5	53.5356	1.2741
12.6	52.6091	-2.2537	17.6	53.7598	1.1108
12.7	52.1565	-2.0986	17.7	53.9465	0.9110
12.8	51.7629	-1.8573	17.8	54.0907	0.6825
12.9	51.4421	-1.5499	17.9	54.1884	0.4335
13.0	51.2016	-1.1970	18.0	54.2372	0.1728
13.1	51.0435	-0.8184	18.1	54.2362	-0.0906
13.2	50.9654	-0.4317	18.2	54.1859	-0.3476
13.3	50.9625	-0.0516	18.3	54.0884	-0.5894
13.4	51.0277	0.3098	18.4	53.9473	-0.8077
13.5	51.1535	0.6429	18.5	53.7679	-0.9947
13.6	51.3319	0.9402	18.6	53.5566	-1.1440
13.7	51.5549	1.1957	18.7	53.3209	-1.2503
13.8	51.8146	1.4045	18.8	53.0691	-1.3096
13.9	52.1030	1.5626	18.9	52.8103	-1.3195
14.0	52.4120	1.6668	19.0	52.5537	-1.2794
14.1	52.7329	1.7145	19.1	52.3089	-1.1901
14.2	53.0566	1.7043	19.2	52.0852	-1.0543
14.3	53.3733	1.6359	19.3	51.8914	-0.8764
14.4	53.6732	1.5105	19.4	51.7355	-0.6625
14.5	53.9461	1.3312	19.5	51.6247	-0.4202
14.6	54.1821	1.1027	19.6	51.5645	-0.1589
14.7	54.3721	0.8319	19.7	51.5586	0.1109
14.8	54.5081	0.5275	19.8	51.6084	0.3778
14.9	54.5835	0.1998	19.9	51.7129	0.6298
15.0	54.5937	-0.1395	20.0	51.8683	0.8551
					0.0375
					-0.7312

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
20.1	52.0681	1.0431	25.1	52.9047	-0.9672
20.2	52.3030	1.1844	25.2	52.7164	-0.9403
20.3	52.5620	1.2722	25.3	52.5403	-0.9388
20.4	52.8324	1.3025	25.4	52.3821	-0.9864
20.5	53.1009	1.2747	25.5	52.2464	-0.9678
20.6	53.3546	1.1913	25.6	52.1370	-0.9529
20.7	53.5818	1.0577	25.7	52.0565	-0.9720
20.8	53.7729	0.8821	25.8	52.0069	-0.9055
20.9	53.9206	0.6741	25.9	51.9891	-0.9340
21.0	54.0203	0.4446	26.0	52.0033	0.1369
21.1	54.0702	0.2044	26.1	52.0488	0.3016
21.2	54.0707	-0.0359	26.2	52.1240	0.4547
21.3	54.0246	-0.2667	26.3	52.2265	0.5912
21.4	53.9358	-0.4798	26.4	52.3531	0.7063
21.5	53.8099	-0.6679	26.5	52.4998	0.7957
21.6	53.6531	-0.8256	26.6	52.6616	0.8559
21.7	53.4722	-0.9486	26.7	52.8330	0.8841
21.8	53.2742	-1.0340	26.8	53.0080	0.8784
21.9	53.0665	-1.0802	26.9	53.1798	0.8384
22.0	52.8561	-1.0867	27.0	53.3417	0.7645
22.1	52.6501	-1.0542	27.1	53.4867	0.6589
22.2	52.4551	-0.9845	27.2	53.6084	0.5251
22.3	52.2775	-0.8803	27.3	53.7009	0.3682
22.4	52.1228	-0.7455	27.4	53.7596	0.1945
22.5	51.9962	-0.5845	27.5	53.7810	0.0115
22.6	51.9018	-0.4027	27.6	53.7636	-0.1726
22.7	51.8430	-0.2061	27.7	53.7078	-0.3492
22.8	51.8222	-0.0011	27.8	53.6162	-0.5099
22.9	51.8408	0.2052	27.9	53.4930	-0.6471
23.0	51.8989	0.4056	28.0	53.3442	-0.7546
23.1	51.9954	0.5925	28.1	53.1775	-0.8277
23.2	52.1277	0.7585	28.2	53.0007	-0.8638
23.3	52.2918	0.8965	28.3	52.8225	-0.8620
23.4	52.4822	0.9999	28.4	52.6508	-0.8239
23.5	52.6916	1.0633	28.5	52.4930	-0.7522
23.6	52.9117	1.0825	28.6	52.3553	-0.6514
23.7	53.1328	1.0554	28.7	52.2427	-0.5270
23.8	53.3447	0.9819	28.8	52.1587	-0.3848
23.9	53.5371	0.8647	28.9	52.1054	-0.2314
24.0	53.7003	0.7088	29.0	52.0834	-0.0731
24.1	53.8261	0.5216	29.1	52.0926	0.0840
24.2	53.9084	0.3125	29.2	52.1314	0.2343
24.3	53.9434	0.0921	29.3	52.1972	0.3728
24.4	53.9304	-0.1284	29.4	52.2872	0.4947
24.5	53.8714	-0.3383	29.5	52.3978	0.5965
24.6	53.7709	-0.5280	29.6	52.5245	0.6748
24.7	53.6352	-0.6895	29.7	52.6631	0.7275
24.8	53.4723	-0.8169	29.8	52.8083	0.7532
24.9	53.2905	-0.9065	29.9	52.9554	0.7503
25.0	53.0986	-0.9565	30.0	53.0988	0.7199
					-0.0317
					-1.2704

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
30.1	53.2340	0.6628	35.1	52.3420	-0.3067
30.2	53.3554	0.5804	35.2	52.2934	-0.1938
30.3	53.4594	0.4762	35.3	52.2663	-0.0724
30.4	53.5410	0.3538	35.4	52.2645	0.0531
30.5	53.5973	0.2174	35.5	52.2890	0.1749
30.6	53.6262	0.0721	35.6	52.3378	0.2909
30.7	53.6256	-0.0764	35.7	52.4100	0.3936
30.8	53.5954	-0.2225	35.8	52.4993	0.4793
30.9	53.5367	-0.3600	35.9	52.6051	0.5470
31.0	53.4518	-0.4834	36.0	52.7224	0.5898
31.1	53.3431	-0.5873	36.1	52.8457	0.6069
31.2	53.2152	-0.6673	36.2	52.9715	0.6010
31.3	53.0740	-0.7198	36.3	53.0868	0.5655
31.4	52.9246	-0.7422	36.4	53.1967	0.5092
31.5	52.7740	-0.7340	36.5	53.2895	0.4293
31.6	52.6283	-0.6949	36.6	53.3616	0.3397
31.7	52.4942	-0.6269	36.7	53.4151	0.2332
31.8	52.3772	-0.5331	36.8	53.4463	0.1215
31.9	52.2824	-0.4178	36.9	53.4557	0.0044
32.0	52.2137	-0.2861	37.0	53.4387	-0.1080
32.1	52.1742	-0.1438	37.1	53.4036	-0.2182
32.2	52.1642	0.0023	37.2	53.3460	-0.3131
32.3	52.1842	0.1464	37.3	53.2736	-0.3947
32.4	52.2328	0.2815	37.4	53.1826	-0.4570
32.5	52.3067	0.4034	37.5	53.0905	-0.5051
32.6	52.4029	0.5061	37.6	52.9902	-0.5277
32.7	52.5168	0.5872	37.7	52.8809	-0.5353
32.8	52.6431	0.6424	37.8	52.7774	-0.5201
32.9	52.7761	0.6715	37.9	52.6797	-0.4864
33.0	52.9109	0.6741	38.0	52.5889	-0.4386
33.1	53.0421	0.6501	38.1	52.4971	-0.3713
33.2	53.1650	0.6012	38.2	52.4493	-0.2887
33.3	53.2745	0.5298	38.3	52.3983	-0.1957
33.4	53.3674	0.4397	38.4	52.3743	-0.0973
33.5	53.4408	0.3338	38.5	52.3589	0.0023
33.6	53.4916	0.2170	38.6	52.3736	0.1035
33.7	53.5189	0.0922	38.7	52.4012	0.2019
33.8	53.5217	-0.0334	38.8	52.4502	0.2919
33.9	53.4998	-0.1564	38.9	52.5242	0.3689
34.0	53.4550	-0.2732	39.0	52.6027	0.4339
34.1	53.3887	-0.3778	39.1	52.6926	0.4807
34.2	53.3027	-0.4689	39.2	52.7956	0.5106
34.3	53.2016	-0.5405	39.3	52.8872	0.5323
34.4	53.0905	-0.5906	39.4	53.0081	0.5007
34.5	52.9707	-0.6190	39.5	53.0922	0.4725
34.6	52.8464	-0.6228	39.6	53.1862	0.4134
34.7	52.7263	-0.6024	39.7	53.2685	0.3434
34.8	52.6097	-0.5590	39.8	53.3249	0.2550
34.9	52.5049	-0.4937	39.9	53.3617	0.1619
35.0	52.4154	-0.4083	40.0	53.3804	0.0547

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
40.1	53.3845	-0.0446	45.1	52.5937	0.2141
40.2	53.3647	-0.1525	45.2	52.6592	0.2644
40.3	53.3176	-0.2287	45.3	52.6775	0.2907
40.4	53.2713	-0.3144	45.4	52.7661	0.3268
40.5	53.1862	-0.3795	45.5	52.8614	0.3532
40.6	53.1184	-0.4290	45.6	52.9253	0.3141
40.7	53.0198	-0.4722	45.7	52.9797	0.3208
40.8	52.9243	-0.4715	45.8	53.0754	0.2912
40.9	52.8103	-0.4609	45.9	53.0768	0.2615
41.0	52.7420	-0.4361	46.0	53.1300	0.2187
41.1	52.6503	-0.3943	46.1	53.2311	0.1673
41.2	52.5978	-0.3397	46.2	53.1929	0.1083
41.3	52.5205	-0.2753	46.3	53.1992	0.0332
41.4	52.4870	-0.1828	46.4	53.2166	-0.0253
41.5	52.4429	-0.1116	46.5	53.1593	-0.1034
41.6	52.4410	-0.0301	46.6	53.2297	-0.0898
41.7	52.4446	0.0368	46.7	53.1165	-0.2079
41.8	52.4591	0.1257	46.8	53.1035	-0.2594
41.9	52.5045	0.2213	46.9	53.0460	-0.2803
42.0	52.5595	0.2775	47.0	52.9505	-0.3930
42.1	52.6253	0.3467	47.1	52.9120	-0.2992
42.2	52.7075	0.4213	47.2	52.8450	-0.3416
42.3	52.7823	0.4112	47.3	52.7982	-0.3119
42.4	52.8430	0.4335	47.4	52.7300	-0.2464
42.5	52.9387	0.3997	47.5	52.6519	-0.2562
42.6	53.0432	0.3985	47.6	52.6447	-0.1685
42.7	53.1172	0.3264	47.7	52.5482	-0.1642
42.8	53.1674	0.3356	47.8	52.5599	-0.1255
42.9	53.2254	0.2897	47.9	52.5952	0.0218
43.0	53.2776	0.2003	48.0	52.5980	0.0519
43.1	53.3052	0.0771	48.1	52.6245	0.0423
43.2	53.3016	0.0306	48.2	52.6117	0.1232
43.3	53.2809	-0.2078	48.3	52.6939	0.1834
43.4	53.2832	-0.1650	48.4	52.8058	0.3096
43.5	53.2192	-0.2247	48.5	52.7769	0.2597
43.6	53.1837	-0.2998	48.6	52.8162	0.2482
43.7	53.0894	-0.3479	48.7	52.8948	0.2638
43.8	53.0104	-0.3791	48.8	53.0005	0.2319
43.9	52.9366	-0.3942	48.9	52.9915	0.0990
44.0	52.8668	-0.4099	49.0	53.0574	0.1937
44.1	52.7782	-0.3879	49.1	53.1524	0.3019
44.2	52.7178	-0.3818	49.2	53.1117	0.1493
44.3	52.6369	-0.3105	49.3	52.9869	0.1577
44.4	52.5668	-0.2879	49.4	53.1279	0.1321
44.5	52.5541	-0.1947	49.5	53.1527	0.0484
44.6	52.5286	-0.1313	49.6	53.1290	-0.0459
44.7	52.5028	-0.0344	49.7	53.0549	-0.1199
44.8	52.5247	0.0485	49.8	53.1242	-0.0475
44.9	52.5390	0.1027	49.9	53.0613	-0.1423
45.0	52.5588	0.1400	50.0	52.9876	-0.1840
					0.0730
					-1.1881

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e
50.1	52.9998	-0.2047	0.0825	-1.1989	55.1	52.8377	0.0888	-0.1688
50.2	52.9697	-0.2133	0.0435	-1.1912	55.2	52.8663	0.0506	-0.1578
50.3	52.8429	-0.2251	0.0481	-1.1969	55.3	52.7950	0.0584	-0.0990
50.4	52.8124	-0.2052	0.0393	-1.2063	55.4	52.8863	0.1052	-0.1657
50.5	52.8484	-0.2148	0.0398	-1.1958	55.5	52.8970	0.1001	-0.1658
50.6	52.7375	-0.1515	0.0253	-1.1779	55.6	53.0005	0.0872	-0.2147
50.7	52.7502	-0.1340	0.0190	-1.1938	55.7	52.5119	-0.1758	-0.0289
50.8	52.4305	-0.6023	0.0299	-1.3437	55.8	52.9583	0.0022	-0.1635
50.9	52.7356	-0.0992	0.0161	-1.2000	55.9	52.8850	0.1536	-0.1537
51.0	52.6905	-0.0528	0.0045	-1.1972	56.0	53.0007	0.0279	-0.1602
51.1	52.6893	-0.0550	0.0033	-1.2084	56.1	52.9092	0.0474	-0.1596
51.2	52.7233	0.0844	-0.0321	-1.1738	56.2	52.9620	0.0080	-0.1583
51.3	52.7319	0.1146	-0.0390	-1.1920	56.3	52.9985	-0.0543	-0.1929
51.4	52.6769	0.1329	-0.0434	-1.1923	56.4	53.0269	-0.0290	-0.1873
51.5	52.7497	0.0796	-0.0329	-1.1742	56.5	52.9342	-0.0365	-0.1556
51.6	52.7494	0.1513	-0.0398	-1.1978	56.6	52.9066	-0.0113	-0.1584
51.7	52.5291	-0.6652	0.2140	-1.2369	56.7	52.9897	-0.2244	-0.2412
51.8	52.8962	0.2115	-0.0453	-1.1910	56.8	52.9347	-0.0971	-0.1897
51.9	52.8856	0.1322	-0.0496	-1.1674	56.9	52.9301	-0.0923	-0.1894
52.0	52.8815	0.3592	-0.0915	-1.2142	57.0	52.9204	-0.0947	-0.1844
52.1	52.9168	0.1281	-0.0580	-1.1726	57.1	52.8747	-0.0965	-0.1937
52.2	52.8995	0.1529	-0.0736	-1.1742	57.2	52.8689	-0.1952	-0.2231
52.3	52.9280	0.1413	-0.0610	-1.1757	57.3	52.8486	-0.0962	-0.1837
52.4	53.0026	0.1482	-0.0921	-1.1687	57.4	52.8397	-0.0847	-0.1708
52.5	53.0181	0.0855	-0.0847	-1.1630	57.5	52.5837	-0.1359	-0.2380
52.6	53.1534	0.1446	-0.1636	-1.1854	57.6	52.7835	-0.0724	-0.1675
52.7	53.0445	0.0363	-0.0864	-1.1561	57.7	52.7962	-0.0871	-0.1774
52.8	53.1159	-0.1888	-0.1176	-1.0801	57.8	52.6980	0.0011	-0.1698
52.9	53.0426	-0.0463	-0.1254	-1.1485	57.9	52.7931	0.0619	-0.1314
53.0	52.9484	-0.0970	-0.0771	-1.1145	58.0	52.9451	-0.3038	-0.1819
53.1	53.0184	-0.1145	-0.0948	-1.1150	58.1	52.7845	0.0192	-0.1266
53.2	53.1544	-0.1452	-0.0772	-1.1546	58.2	52.8278	0.0215	-0.1530
53.3	52.9232	-0.1441	-0.1003	-1.1150	58.3	52.6374	0.0534	-0.2300
53.4	52.8936	-0.1165	-0.0973	-1.1198	58.4	52.8102	0.1245	-0.1467
53.5	52.8945	-0.1380	-0.1310	-1.1028	58.5	52.8095	0.1120	-0.1583
53.6	52.8602	-0.3177	-0.1762	-1.1469	58.6	52.8287	0.1003	-0.1579
53.7	52.8315	-0.0798	-0.0902	-1.1178	58.7	52.8266	0.1178	-0.1644
53.8	52.9075	-0.0899	-0.1049	-1.1334	58.8	52.8953	0.1190	-0.1403
53.9	52.8615	-0.0779	-0.0770	-1.1317	58.9	52.9055	0.1093	-0.1423
54.0	52.8019	-0.2152	-0.1140	-1.1041	59.0	52.9732	0.0927	-0.1116
54.1	52.7434	-0.0829	-0.1116	-1.0798	59.1	52.9702	0.0945	-0.1313
54.2	52.8382	-0.0072	-0.1032	-1.0776	59.2	53.0289	-0.1448	-0.0247
54.3	52.7950	-0.0010	-0.1326	-1.1129	59.3	53.0806	0.0318	-0.0836
54.4	52.8035	-0.0908	-0.0455	-1.1602	59.4	53.0507	-0.0010	-0.1052
54.5	52.7562	-0.0059	-0.0905	-1.1327	59.5	52.9990	-0.0021	-0.1192
54.6	52.7886	0.0364	-0.1419	-1.1094	59.6	53.0383	-0.0612	-0.0999
54.7	52.7653	0.0693	-0.1359	-1.0898	59.7	52.9502	0.2643	-0.2466
54.8	52.8344	0.0766	-0.1360	-1.1193	59.8	52.9693	0.1637	-0.2027
54.9	52.8206	0.0368	-0.1191	-1.1106	59.9	52.9707	-0.0638	-0.1254
55.0	52.7938	0.1076	-0.1501	-1.1011	60.0	52.9833	-0.1066	-0.1084

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
60.1	52.9739	-0.1126	-0.1119	-0.8398	65.1	52.8645	0.1359	0.1701	-0.8989
60.2	52.9601	-0.0613	-0.1283	-0.8493	65.2	52.8907	0.2300	0.1773	-0.9129
60.3	52.9046	-0.1325	-0.0915	-0.8456	65.3	52.9298	0.1719	0.1802	-0.9162
60.4	52.9222	-0.1395	-0.1043	-0.8214	65.4	52.9629	0.1770	0.1847	-0.9224
60.5	52.8182	-0.0631	-0.0975	-0.8746	65.5	53.0107	0.1568	0.1794	-0.9290
60.6	52.8192	-0.1260	-0.0788	-0.8345	65.6	53.0316	0.1274	0.1853	-0.9334
60.7	52.8203	-0.0189	-0.1047	-0.8704	65.7	53.0635	0.1016	0.1835	-0.9449
60.8	52.7469	-0.0761	-0.0610	-0.8404	65.8	53.0716	0.0549	0.1863	-0.9444
60.9	52.7620	-0.0695	-0.0742	-0.8300	65.9	53.0847	0.0195	0.1864	-0.9545
61.0	52.7795	-0.1434	-0.0867	-0.7735	66.0	53.0881	-0.0194	0.1880	-0.9629
61.1	52.7410	0.0353	-0.0562	-0.8538	66.1	53.0807	-0.0643	0.1853	-0.9674
61.2	52.4496	-0.3834	0.0401	-0.5806	66.2	53.0548	-0.0937	0.1927	-0.9696
61.3	52.6909	0.0152	-0.0273	-0.7982	66.3	53.0458	-0.1368	0.1860	-0.9826
61.4	52.7382	0.0128	-0.0434	-0.7888	66.4	53.0135	-0.1641	0.1885	-0.9876
61.5	52.7853	0.0770	-0.0465	-0.8137	66.5	52.9762	-0.1913	0.1850	-0.9924
61.6	52.7997	0.1262	-0.0255	-0.8265	66.6	52.9424	-0.2056	0.1864	-1.0001
61.7	52.8223	0.0961	-0.0428	-0.8120	66.7	52.8964	-0.2094	0.1873	-1.0026
61.8	52.8369	0.1359	-0.0198	-0.8111	66.8	52.8620	-0.2116	0.1866	-1.0130
61.9	52.8735	0.1233	-0.0240	-0.8108	66.9	52.8100	-0.2033	0.1830	-1.0145
62.0	52.8638	0.1635	0.0083	-0.7984	67.0	52.7761	-0.1870	0.1832	-1.0225
62.1	52.9300	0.1228	-0.0157	-0.8138	67.1	52.7363	-0.1619	0.1809	-1.0271
62.2	52.9377	0.1064	-0.0098	-0.8039	67.2	52.7126	-0.1303	0.1831	-1.0334
62.3	52.9761	0.1314	0.0187	-0.8087	67.3	52.6897	-0.0952	0.1813	-1.0396
62.4	53.0140	0.1069	0.0254	-0.8167	67.4	52.6698	-0.0573	0.1778	-1.0462
62.5	53.0247	0.0951	0.0384	-0.8092	67.5	52.6606	-0.0148	0.1750	-1.0519
62.6	53.0375	0.0569	0.0375	-0.8119	67.6	52.6647	0.0317	0.1742	-1.0559
62.7	53.0507	0.0056	0.0400	-0.8224	67.7	52.6707	0.0768	0.1703	-1.0608
62.8	53.0293	0.0096	0.0461	-0.7997	67.8	52.6919	0.1148	0.1698	-1.0670
62.9	53.0393	-0.0435	0.0487	-0.8137	67.9	52.7190	0.1508	0.1676	-1.0719
63.0	53.0558	-0.0433	0.0790	-0.8058	68.0	52.7506	0.1801	0.1650	-1.0774
63.1	53.0171	-0.0816	0.0699	-0.8087	68.1	52.7868	0.2076	0.1598	-1.0825
63.2	52.9874	-0.1144	0.0713	-0.8119	68.2	52.8306	0.2219	0.1575	-1.0877
63.3	52.9489	-0.1448	0.0703	-0.8180	68.3	52.8713	0.2265	0.1550	-1.0954
63.4	52.9231	-0.1672	0.0778	-0.8267	68.4	52.9210	0.2254	0.1514	-1.0980
63.5	52.9081	-0.1640	0.0910	-0.8231	68.5	52.9673	0.2160	0.1464	-1.1019
63.6	52.8836	-0.1622	0.1013	-0.8236	68.6	53.0092	0.1941	0.1433	-1.1062
63.7	52.8330	-0.1513	0.0967	-0.8286	68.7	53.0435	0.1671	0.1383	-1.1122
63.8	52.8391	-0.1415	0.1172	-0.8157	68.8	53.0771	0.1339	0.1330	-1.1153
63.9	52.7756	-0.1345	0.1132	-0.8387	68.9	53.0982	0.0939	0.1289	-1.1208
64.0	52.7400	-0.1173	0.1181	-0.8499	69.0	53.1111	0.0472	0.1259	-1.1243
64.1	52.7387	-0.0956	0.1300	-0.8430	69.1	53.1185	-0.0019	0.1207	-1.1260
64.2	52.7189	-0.0619	0.1337	-0.8488	69.2	53.1144	-0.0450	0.1148	-1.1316
64.3	52.6952	-0.0305	0.1400	-0.8626	69.3	53.1034	-0.0940	0.1092	-1.1322
64.4	52.6864	0.0104	0.1434	-0.8683	69.4	53.0812	-0.1344	0.1041	-1.1363
64.5	52.7122	0.0497	0.1446	-0.8626	69.5	53.0507	-0.1716	0.0990	-1.1383
64.6	52.7227	0.0764	0.1515	-0.8678	69.6	53.0131	-0.2017	0.0947	-1.1410
64.7	52.7376	0.1238	0.1505	-0.8792	69.7	52.9709	-0.2240	0.0894	-1.1432
64.8	52.7595	0.1412	0.1584	-0.8831	69.8	52.9246	-0.2382	0.0843	-1.1442
64.9	52.7787	0.1605	0.1695	-0.8903	69.9	52.8767	-0.2450	0.0783	-1.1448
65.0	52.8333	0.1846	0.1612	-0.8947	70.0	52.8271	-0.2393	0.0736	-1.1458

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
70.1	52.7791	-0.2228	75.1	53.1177	0.1557
70.2	52.7395	-0.1987	75.2	53.1445	0.1062
70.3	52.7020	-0.1680	75.3	53.1612	0.0518
70.4	52.6710	-0.1300	75.4	53.1668	-0.0049
70.5	52.6487	-0.0858	75.5	53.1603	-0.0614
70.6	52.6372	-0.0374	75.6	53.1433	-0.1158
70.7	52.6328	0.0120	75.7	53.1154	-0.1655
70.8	52.6405	0.0618	75.8	53.0780	-0.2091
70.9	52.6566	0.1085	75.9	53.0328	-0.2440
71.0	52.6824	0.1522	76.0	52.9815	-0.2696
71.1	52.7155	0.1892	76.1	52.9261	-0.2841
71.2	52.7555	0.2212	76.2	52.8688	-0.2875
71.3	52.8015	0.2406	76.3	52.8118	-0.2798
71.4	52.8497	0.2531	76.4	52.7575	-0.2604
71.5	52.9016	0.2558	76.5	52.7081	-0.2309
71.6	52.9527	0.2477	76.6	52.6656	-0.1922
71.7	53.0006	0.2301	76.7	52.6315	-0.1455
71.8	53.0440	0.2014	76.8	52.6070	-0.0931
71.9	53.0828	0.1659	76.9	52.5935	-0.0366
72.0	53.1113	0.1246	77.0	52.5915	0.0211
72.1	53.1331	0.0767	77.1	52.6008	0.0787
72.2	53.1440	0.0249	77.2	52.6217	0.1332
72.3	53.1445	-0.0278	77.3	52.6526	0.1826
72.4	53.1339	-0.0791	77.4	52.6926	0.2249
72.5	53.1130	-0.1282	77.5	52.7408	0.2587
72.6	53.0843	-0.1722	77.6	52.7946	0.2825
72.7	53.0469	-0.2089	77.7	52.8524	0.2948
72.8	53.0021	-0.2383	77.8	52.9117	0.2956
72.9	52.9524	-0.2579	77.9	52.9701	0.2843
73.0	52.8996	-0.2672	78.0	53.0253	0.2619
73.1	52.8470	-0.2662	78.1	53.0748	0.2287
73.2	52.7936	-0.2537	78.2	53.1171	0.1864
73.3	52.7450	-0.2314	78.3	53.1499	0.1361
73.4	52.7017	-0.2009	78.4	53.1722	0.0803
73.5	52.6654	-0.1605	78.5	53.1830	0.0211
73.6	52.6372	-0.1149	78.6	53.1816	-0.0392
73.7	52.6185	-0.0640	78.7	53.1683	-0.0982
73.8	52.6102	-0.0115	78.8	53.1433	-0.1535
73.9	52.6122	0.0433	78.9	53.1079	-0.2026
74.0	52.6260	0.0959	79.0	53.0633	-0.2437
74.1	52.6498	0.1454	79.1	53.0114	-0.2751
74.2	52.6827	0.1893	79.2	52.9542	-0.2957
74.3	52.7240	0.2260	79.3	52.8941	-0.3042
74.4	52.7709	0.2537	79.4	52.8334	-0.3007
74.5	52.8233	0.2716	79.5	52.7746	-0.2853
74.6	52.8787	0.2784	79.6	52.7201	-0.2585
74.7	52.9337	0.2746	79.7	52.6717	-0.2214
74.8	52.9874	0.2595	79.8	52.6316	-0.1755
74.9	53.0377	0.2341	79.9	52.6014	-0.1225
75.0	53.0817	0.1991	80.0	52.5824	-0.0646
					-0.0651
					-0.9353

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
80.1	52.5752	-0.0038	85.1	53.1612	-0.1756
80.2	52.5800	0.0572	85.2	53.1209	-0.2277
80.3	52.5968	0.1162	85.3	53.0709	-0.2709
80.4	52.6250	0.1707	85.4	53.0133	-0.3031
80.5	52.6635	0.2188	85.5	52.9505	-0.3232
80.6	52.7109	0.2582	85.6	52.8849	-0.3305
80.7	52.7654	0.2877	85.7	52.8192	-0.3245
80.8	52.8247	0.3057	85.8	52.7560	-0.3057
80.9	52.8866	0.3119	85.9	52.6978	-0.2746
81.0	52.9486	0.3054	86.0	52.6469	-0.2327
81.1	53.0082	0.2867	86.1	52.6053	-0.1816
81.2	53.0631	0.2564	86.2	52.5746	-0.1232
81.3	53.1109	0.2157	86.3	52.5560	-0.0598
81.4	53.1497	0.1662	86.4	52.5503	0.0060
81.5	53.1780	0.1098	86.5	52.5577	0.0718
81.6	53.1943	0.0489	86.6	52.5780	0.1348
81.7	53.1983	-0.0143	86.7	52.6104	0.1927
81.8	53.1896	-0.0769	86.8	52.6536	0.2431
81.9	53.1683	-0.1368	86.9	52.7061	0.2841
82.0	53.1357	-0.1912	87.0	52.7658	0.3139
82.1	53.0927	-0.2380	87.1	52.8303	0.3314
82.2	53.0414	-0.2753	87.2	52.8972	0.3356
82.3	52.9835	-0.3016	87.3	52.9637	0.3265
82.4	52.9215	-0.3159	87.4	53.0273	0.3043
82.5	52.8579	-0.3176	87.5	53.0852	0.2698
82.6	52.7954	-0.3066	87.6	53.1352	0.2244
82.7	52.7362	-0.2834	87.7	53.1753	0.1698
82.8	52.6827	-0.2490	87.8	53.2036	0.1082
82.9	52.6371	-0.2047	87.9	53.2191	0.0421
83.0	52.6012	-0.1521	88.0	53.2210	-0.0259
83.1	52.5762	-0.0935	88.1	53.2093	-0.0929
83.2	52.5634	-0.0311	88.2	53.1845	-0.1563
83.3	52.5632	0.0328	88.3	53.1475	-0.2135
83.4	52.5757	0.0955	88.4	53.0998	-0.2621
83.5	52.6002	0.1546	88.5	53.0433	-0.3002
83.6	52.6360	0.2077	88.6	52.9804	-0.3263
83.7	52.6818	0.2529	88.7	52.9136	-0.3394
83.8	52.7357	0.2882	88.8	52.8456	-0.3389
83.9	52.7956	0.3121	88.9	52.7790	-0.3249
84.0	52.8592	0.3237	89.0	52.7165	-0.2980
84.1	52.9241	0.3224	89.1	52.6607	-0.2593
84.2	52.9875	0.3082	89.2	52.6135	-0.2103
84.3	53.0470	0.2816	89.3	52.5770	-0.1530
84.4	53.1001	0.2437	89.4	52.5526	-0.0895
84.5	53.1447	0.1958	89.5	52.5411	-0.0225
84.6	53.1788	0.1399	89.6	52.5431	0.0456
84.7	53.2012	0.0781	89.7	52.5586	0.1120
84.8	53.2107	0.0131	89.8	52.5868	0.1741
84.9	53.2071	-0.0527	89.9	52.6269	0.2295
85.0	53.1904	-0.1164	90.0	52.6771	0.2760
					0.0296 -0.9443
					0.0304 -0.9451
					0.0312 -0.9458
					0.0321 -0.9464
					0.0331 -0.9470
					0.0341 -0.9475
					0.0352 -0.9481
					0.0364 -0.9487
					0.0376 -0.9494
					0.0390 -0.9501
					0.0404 -0.9510
					0.0418 -0.9519
					0.0432 -0.9530
					0.0446 -0.9542
					0.0460 -0.9554
					0.0474 -0.9569
					0.0487 -0.9584
					0.0498 -0.9601
					0.0509 -0.9619
					0.0518 -0.9637
					0.0526 -0.9656
					0.0533 -0.9675
					0.0538 -0.9695
					0.0541 -0.9714
					0.0543 -0.9732
					0.0543 -0.9751
					0.0542 -0.9768
					0.0540 -0.9784
					0.0538 -0.9799
					0.0535 -0.9813
					0.0531 -0.9825
					0.0528 -0.9837
					0.0524 -0.9847
					0.0521 -0.9856
					0.0519 -0.9863
					0.0517 -0.9871
					0.0516 -0.9877
					0.0517 -0.9884
					0.0518 -0.9890
					0.0520 -0.9897
					0.0523 -0.9904
					0.0527 -0.9912
					0.0532 -0.9921
					0.0537 -0.9930
					0.0542 -0.9941
					0.0547 -0.9953
					0.0551 -0.9966
					0.0555 -0.9980
					0.0559 -0.9995
					0.0561 -1.0011

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
90.1	52.7358	0.3117	0.0562	-1.0028	95.1	52.8322	-0.3544	0.0179	-1.0399
90.2	52.8004	0.3351	0.0562	-1.0046	95.2	52.7629	-0.3374	0.0172	-1.0395
90.3	52.8685	0.3452	0.0560	-1.0063	95.3	52.6983	-0.3070	0.0167	-1.0391
90.4	52.9375	0.3415	0.0557	-1.0081	95.4	52.6411	-0.2644	0.0163	-1.0387
90.5	53.0045	0.3243	0.0552	-1.0098	95.5	52.5934	-0.2114	0.0160	-1.0385
90.6	53.0668	0.2939	0.0545	-1.0115	95.6	52.5572	-0.1500	0.0158	-1.0383
90.7	53.1219	0.2517	0.0538	-1.0131	95.7	52.5337	-0.0827	0.0156	-1.0382
90.8	53.1676	0.1992	0.0529	-1.0146	95.8	52.5241	-0.0120	0.0155	-1.0383
90.9	53.2019	0.1386	0.0519	-1.0160	95.9	52.5286	0.0592	0.0154	-1.0385
91.0	53.2235	0.0722	0.0508	-1.0173	96.0	52.5470	0.1282	0.0153	-1.0388
91.1	53.2313	0.0028	0.0497	-1.0184	96.1	52.5788	0.1923	0.0152	-1.0392
91.2	53.2251	-0.0669	0.0485	-1.0194	96.2	52.6226	0.2489	0.0149	-1.0397
91.3	53.2051	-0.1339	0.0474	-1.0202	96.3	52.6769	0.2958	0.0146	-1.0403
91.4	53.1721	-0.1956	0.0462	-1.0208	96.4	52.7394	0.3311	0.0142	-1.0410
91.5	53.1275	-0.2495	0.0452	-1.0214	96.5	52.8079	0.3533	0.0136	-1.0417
91.6	53.0729	-0.2933	0.0442	-1.0218	96.6	52.8795	0.3616	0.0129	-1.0424
91.7	53.0108	-0.3254	0.0432	-1.0221	96.7	52.9515	0.3554	0.0121	-1.0432
91.8	52.9435	-0.3445	0.0425	-1.0223	96.8	53.0210	0.3350	0.0111	-1.0439
91.9	52.8739	-0.3498	0.0418	-1.0225	96.9	53.0851	0.3011	0.0100	-1.0445
92.0	52.8046	-0.3412	0.0412	-1.0227	97.0	53.1413	0.2550	0.0088	-1.0450
92.1	52.7384	-0.3190	0.0408	-1.0228	97.1	53.1872	0.1985	0.0074	-1.0455
92.2	52.6779	-0.2842	0.0405	-1.0231	97.2	53.2210	0.1339	0.0061	-1.0457
92.3	52.6256	-0.2381	0.0402	-1.0233	97.3	53.2412	0.0638	0.0046	-1.0459
92.4	52.5834	-0.1825	0.0401	-1.0237	97.4	53.2469	-0.0090	0.0031	-1.0458
92.5	52.5530	-0.1197	0.0400	-1.0241	97.5	53.2380	-0.0815	0.0017	-1.0457
92.6	52.5356	-0.0522	0.0400	-1.0246	97.6	53.2148	-0.1508	0.0003	-1.0453
92.7	52.5319	0.0175	0.0400	-1.0253	97.7	53.1781	-0.2140	-0.0011	-1.0449
92.8	52.5420	0.0867	0.0400	-1.0260	97.8	53.1296	-0.2687	-0.0023	-1.0442
92.9	52.5656	0.1525	0.0399	-1.0269	97.9	53.0712	-0.3125	-0.0035	-1.0435
93.0	52.6018	0.2125	0.0398	-1.0279	98.0	53.0052	-0.3438	-0.0045	-1.0427
93.1	52.6492	0.2642	0.0396	-1.0290	98.1	52.9344	-0.3613	-0.0054	-1.0418
93.2	52.7060	0.3055	0.0393	-1.0302	98.2	52.8616	-0.3644	-0.0061	-1.0409
93.3	52.7700	0.3349	0.0388	-1.0314	98.3	52.7897	-0.3530	-0.0067	-1.0400
93.4	52.8386	0.3510	0.0383	-1.0326	98.4	52.7215	-0.3276	-0.0071	-1.0392
93.5	52.9093	0.3532	0.0376	-1.0339	98.5	52.6597	-0.2891	-0.0074	-1.0383
93.6	52.9791	0.3413	0.0367	-1.0351	98.6	52.6068	-0.2393	-0.0076	-1.0376
93.7	53.0452	0.3157	0.0357	-1.0363	98.7	52.5648	-0.1800	-0.0076	-1.0369
93.8	53.1051	0.2773	0.0346	-1.0374	98.8	52.5354	-0.1135	-0.0076	-1.0364
93.9	53.1562	0.2277	0.0333	-1.0385	98.9	52.5196	-0.0426	-0.0075	-1.0360
94.0	53.1964	0.1688	0.0320	-1.0393	99.0	52.5181	0.0301	-0.0075	-1.0357
94.1	53.2241	0.1030	0.0305	-1.0401	99.1	52.5311	0.1017	-0.0074	-1.0356
94.2	53.2380	0.0328	0.0291	-1.0407	99.2	52.5579	0.1694	-0.0073	-1.0356
94.3	53.2377	-0.0387	0.0276	-1.0411	99.3	52.5976	0.2305	-0.0073	-1.0357
94.4	53.2230	-0.1088	0.0261	-1.0414	99.4	52.6487	0.2827	-0.0074	-1.0359
94.5	53.1946	-0.1746	0.0246	-1.0415	99.5	52.7092	0.3238	-0.0076	-1.0362
94.6	53.1537	-0.2333	0.0232	-1.0415	99.6	52.7768	0.3521	-0.0079	-1.0365
94.7	53.1018	-0.2827	0.0219	-1.0413	99.7	52.8487	0.3665	-0.0084	-1.0369
94.8	53.0412	-0.3208	0.0207	-1.0411	99.8	52.9223	0.3664	-0.0089	-1.0373
94.9	52.9742	-0.3460	0.0196	-1.0407	99.9	52.9945	0.3516	-0.0096	-1.0376
95.0	52.9036	-0.3573	0.0187	-1.0403	100.0	53.0624	0.3227	-0.0105	-1.0379

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
100.1	53.1233	0.2807	-0.0114	-1.0382	105.1	52.5206	-0.1054	-0.0295	-1.0089
100.2	53.1746	0.2273	-0.0125	-1.0383	105.2	52.5068	-0.0316	-0.0288	-1.0083
100.3	53.2144	0.1647	-0.0136	-1.0383	105.3	52.5078	0.0434	-0.0282	-1.0078
100.4	53.2408	0.0953	-0.0148	-1.0382	105.4	52.5236	0.1167	-0.0275	-1.0075
100.5	53.2529	0.0220	-0.0160	-1.0379	105.5	52.5536	0.1856	-0.0269	-1.0073
100.6	53.2500	-0.0523	-0.0172	-1.0374	105.6	52.5966	0.2473	-0.0263	-1.0073
100.7	53.2323	-0.1246	-0.0184	-1.0369	105.7	52.6511	0.2993	-0.0259	-1.0073
100.8	53.2005	-0.1919	-0.0195	-1.0361	105.8	52.7148	0.3396	-0.0255	-1.0075
100.9	53.1560	-0.2514	-0.0206	-1.0353	105.9	52.7854	0.3665	-0.0253	-1.0077
101.0	53.1004	-0.3009	-0.0215	-1.0343	106.0	52.8601	0.3789	-0.0252	-1.0079
101.1	53.0362	-0.3382	-0.0223	-1.0332	106.1	52.9359	0.3762	-0.0252	-1.0082
101.2	52.9658	-0.3620	-0.0229	-1.0321	106.2	53.0098	0.3585	-0.0254	-1.0084
101.3	52.8922	-0.3713	-0.0234	-1.0309	106.3	53.0788	0.3263	-0.0256	-1.0086
101.4	52.8183	-0.3657	-0.0238	-1.0298	106.4	53.1401	0.2810	-0.0261	-1.0087
101.5	52.7470	-0.3457	-0.0240	-1.0286	106.5	53.1911	0.2242	-0.0266	-1.0087
101.6	52.6812	-0.3119	-0.0240	-1.0276	106.6	53.2299	0.1583	-0.0272	-1.0086
101.7	52.6233	-0.2658	-0.0239	-1.0265	106.7	53.2547	0.0859	-0.0278	-1.0083
101.8	52.5758	-0.2092	-0.0237	-1.0256	106.8	53.2646	0.0100	-0.0284	-1.0079
101.9	52.5404	-0.1444	-0.0234	-1.0248	106.9	53.2590	-0.0664	-0.0291	-1.0074
102.0	52.5184	-0.0738	-0.0231	-1.0242	107.0	53.2383	-0.1402	-0.0297	-1.0067
102.1	52.5109	-0.0003	-0.0227	-1.0236	107.1	53.2033	-0.2083	-0.0303	-1.0059
102.2	52.5180	0.0733	-0.0223	-1.0233	107.2	53.1553	-0.2681	-0.0307	-1.0050
102.3	52.5394	0.1441	-0.0220	-1.0230	107.3	53.0965	-0.3170	-0.0311	-1.0040
102.4	52.5745	0.2093	-0.0217	-1.0229	107.4	53.0291	-0.3532	-0.0313	-1.0029
102.5	52.6219	0.2665	-0.0214	-1.0229	107.5	52.9559	-0.3752	-0.0313	-1.0018
102.6	52.6796	0.3131	-0.0213	-1.0230	107.6	52.8799	-0.3822	-0.0313	-1.0007
102.7	52.7456	0.3475	-0.0212	-1.0231	107.7	52.8040	-0.3739	-0.0310	-0.9995
102.8	52.8172	0.3682	-0.0213	-1.0233	107.8	52.7314	-0.3508	-0.0307	-0.9984
102.9	52.8917	0.3742	-0.0215	-1.0236	107.9	52.6649	-0.3139	-0.0302	-0.9974
103.0	52.9660	0.3654	-0.0219	-1.0238	108.0	52.6073	-0.2645	-0.0295	-0.9964
103.1	53.0371	0.3418	-0.0224	-1.0240	108.1	52.5601	-0.2047	-0.0288	-0.9956
103.2	53.1023	0.3045	-0.0230	-1.0241	108.2	52.5260	-0.1368	-0.0280	-0.9949
103.3	53.1588	0.2549	-0.0237	-1.0241	108.3	52.5059	-0.0635	-0.0272	-0.9943
103.4	53.2044	0.1949	-0.0245	-1.0241	108.4	52.5006	0.0123	-0.0263	-0.9939
103.5	53.2370	0.1269	-0.0254	-1.0239	108.5	52.5104	0.0876	-0.0254	-0.9936
103.6	53.2555	0.0537	-0.0263	-1.0235	108.6	52.5349	0.1597	-0.0246	-0.9935
103.7	53.2589	-0.0217	-0.0272	-1.0230	108.7	52.5732	0.2255	-0.0238	-0.9935
103.8	53.2471	-0.0964	-0.0281	-1.0224	108.8	52.6238	0.2825	-0.0231	-0.9936
103.9	53.2207	-0.1671	-0.0290	-1.0216	108.9	52.6847	0.3285	-0.0224	-0.9938
104.0	53.1806	-0.2312	-0.0297	-1.0207	109.0	52.7537	0.3616	-0.0220	-0.9941
104.1	53.1286	-0.2860	-0.0304	-1.0197	109.1	52.8279	0.3804	-0.0216	-0.9944
104.2	53.0667	-0.3292	-0.0309	-1.0186	109.2	52.9046	0.3840	-0.0214	-0.9948
104.3	52.9975	-0.3592	-0.0313	-1.0174	109.3	52.9806	0.3724	-0.0213	-0.9952
104.4	52.9238	-0.3748	-0.0316	-1.0162	109.4	53.0529	0.3458	-0.0214	-0.9955
104.5	52.8485	-0.3755	-0.0317	-1.0150	109.5	53.1185	0.3052	-0.0215	-0.9957
104.6	52.7747	-0.3612	-0.0316	-1.0138	109.6	53.1749	0.2523	-0.0218	-0.9959
104.7	52.7052	-0.3326	-0.0314	-1.0126	109.7	53.2195	0.1891	-0.0222	-0.9960
104.8	52.6428	-0.2908	-0.0311	-1.0115	109.8	53.2507	0.1182	-0.0226	-0.9959
104.9	52.5899	-0.2375	-0.0306	-1.0105	109.9	53.2671	0.0424	-0.0231	-0.9957
105.0	52.5487	-0.1749	-0.0301	-1.0097	110.0	53.2680	-0.0351	-0.0236	-0.9954

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z ₀	kh _e	ka	Z ₀	kh _e
110.1	53.2533	-0.1113	115.1	52.6277	0.2974
110.2	53.2237	-0.1830	115.2	52.6915	0.3423
110.3	53.1804	-0.2473	115.3	52.7631	0.3738
110.4	53.1251	-0.3017	115.4	52.8396	0.3904
110.5	53.0602	-0.3439	115.5	52.9181	0.3915
110.6	52.9882	-0.3723	115.6	52.9953	0.3770
110.7	52.9121	-0.3857	115.7	53.0683	0.3474
110.8	52.8349	-0.3838	115.8	53.1339	0.3037
110.9	52.7597	-0.3666	115.9	53.1896	0.2477
111.0	52.6895	-0.3348	116.0	53.2331	0.1817
111.1	52.6270	-0.2899	116.1	53.2625	0.1082
111.2	52.5746	-0.2335	116.2	53.2766	0.0302
111.3	52.5345	-0.1679	116.3	53.2748	-0.0490
111.4	52.5081	-0.0957	116.4	53.2572	-0.1263
111.5	52.4965	-0.0197	116.5	53.2245	-0.1984
111.6	52.5001	0.0571	116.6	53.1781	-0.2626
111.7	52.5187	0.1317	116.7	53.1198	-0.3161
111.8	52.5518	0.2013	116.8	53.0521	-0.3569
111.9	52.5980	0.2630	116.9	52.9777	-0.3834
112.0	52.6556	0.3144	117.0	52.8995	-0.3945
112.1	52.7223	0.3535	117.1	52.8209	-0.3899
112.2	52.7955	0.3786	117.2	52.7448	-0.3697
112.3	52.8724	0.3888	117.3	52.6742	-0.3350
112.4	52.9499	0.3834	117.4	52.6121	-0.2870
112.5	53.0250	0.3627	117.5	52.5606	-0.2277
112.6	53.0945	0.3274	117.6	52.5219	-0.1594
112.7	53.1557	0.2789	117.7	52.4975	-0.0849
112.8	53.2061	0.2190	117.8	52.4882	-0.0070
112.9	53.2435	0.1502	117.9	52.4945	0.0711
113.0	53.2664	0.0753	118.0	52.5161	0.1466
113.1	53.2738	-0.0028	118.1	52.5521	0.2164
113.2	53.2655	-0.0808	118.2	52.6013	0.2777
113.3	53.2418	-0.1556	118.3	52.6618	0.3282
113.4	53.2035	-0.2241	118.4	52.7311	0.3658
113.5	53.1524	-0.2835	118.5	52.8066	0.3889
113.6	53.0905	-0.3315	118.6	52.8854	0.3966
113.7	53.0204	-0.3662	118.7	52.9642	0.3885
113.8	52.9448	-0.3861	118.8	53.0400	0.3649
113.9	52.8668	-0.3907	118.9	53.1097	0.3265
114.0	52.7896	-0.3796	119.0	53.1704	0.2749
114.1	52.7162	-0.3535	119.1	53.2197	0.2122
114.2	52.6494	-0.3134	119.2	53.2554	0.1408
114.3	52.5920	-0.2610	119.3	53.2762	0.0636
114.4	52.5461	-0.1983	119.4	53.2811	-0.0162
114.5	52.5135	-0.1278	119.5	53.2699	-0.0954
114.6	52.4954	-0.0522	119.6	53.2432	-0.1707
114.7	52.4927	0.0254	119.7	53.2019	-0.2392
114.8	52.5052	0.1021	119.8	53.1477	-0.2979
114.9	52.5327	0.1749	119.9	53.0831	-0.3447
115.0	52.5741	0.2409	120.0	53.0104	-0.3775

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
120.1	52.9328	-0.3953	125.1	53.0549	0.3653
120.2	52.8532	-0.3972	125.2	53.1244	0.3239
120.3	52.7750	-0.3833	125.3	53.1843	0.2694
120.4	52.7012	-0.3542	125.4	53.2321	0.2040
120.5	52.6346	-0.3112	125.5	53.2660	0.1303
120.6	52.5780	-0.2558	125.6	53.2844	0.0512
120.7	52.5334	-0.1904	125.7	53.2867	-0.0300
120.8	52.5026	-0.1175	125.8	53.2726	-0.1100
120.9	52.4868	-0.0400	125.9	53.2428	-0.1856
121.0	52.4866	0.0391	126.0	53.1985	-0.2536
121.1	52.5020	0.1167	126.1	53.1416	-0.3114
121.2	52.5325	0.1898	126.2	53.0743	-0.3567
121.3	52.5768	0.2555	126.3	52.9995	-0.3875
121.4	52.6333	0.3113	126.4	52.9201	-0.4029
121.5	52.6998	0.3548	126.5	52.8393	-0.4021
121.6	52.7737	0.3843	126.6	52.7604	-0.3853
121.7	52.8521	0.3987	126.7	52.6865	-0.3533
121.8	52.9320	0.3972	126.8	52.6205	-0.3073
121.9	53.0101	0.3797	126.9	52.5649	-0.2493
122.0	53.0833	0.3471	127.0	52.5219	-0.1814
122.1	53.1486	0.3004	127.1	52.4931	-0.1064
122.2	53.2033	0.2415	127.2	52.4797	-0.0273
122.3	53.2453	0.1728	127.3	52.4822	0.0530
122.4	53.2727	0.0971	127.4	52.5004	0.1312
122.5	53.2843	0.0173	127.5	52.5338	0.2044
122.6	53.2798	-0.0632	127.6	52.5810	0.2695
122.7	53.2592	-0.1411	127.7	52.6402	0.3242
122.8	53.2235	-0.2134	127.8	52.7091	0.3661
122.9	53.1741	-0.2770	127.9	52.7851	0.3936
123.0	53.1130	-0.3295	128.0	52.8652	0.4054
123.1	53.0427	-0.3686	128.1	52.9461	0.4012
123.2	52.9662	-0.3929	128.2	53.0246	0.3869
123.3	52.8864	-0.4015	128.3	53.0979	0.3452
123.4	52.8066	-0.3941	128.4	53.1626	0.2956
123.5	52.7300	-0.3711	128.5	53.2161	0.2341
123.6	52.6595	-0.3333	128.6	53.2563	0.1630
123.7	52.5980	-0.2824	128.7	53.2814	0.0852
123.8	52.5477	-0.2205	128.8	53.2905	0.0039
123.9	52.5108	-0.1498	128.9	53.2832	-0.0776
124.0	52.4884	-0.0733	129.0	53.2596	-0.1559
124.1	52.4817	0.0062	129.1	53.2209	-0.2280
124.2	52.4907	0.0854	129.2	53.1687	-0.2907
124.3	52.5152	0.1613	129.3	53.1049	-0.3418
124.4	52.5542	0.2310	129.4	53.0324	-0.3791
124.5	52.6062	0.2916	129.5	52.9540	-0.4011
124.6	52.6694	0.3409	129.6	52.8728	-0.4071
124.7	52.7411	0.3767	129.7	52.7922	-0.3969
124.8	52.8186	0.3977	129.8	52.7154	-0.3709
124.9	52.8989	0.4028	129.9	52.6453	-0.3302
125.0	52.9787	0.3919	130.0	52.5846	-0.2766
					0.0185 -0.9939
					0.0182 -0.9947
					0.0178 -0.9955
					0.0173 -0.9961
					0.0167 -0.9967
					0.0161 -0.9971
					0.0154 -0.9973
					0.0147 -0.9974
					0.0141 -0.9973
					0.0136 -0.9971
					0.0131 -0.9968
					0.0127 -0.9963
					0.0125 -0.9959
					0.0124 -0.9953
					0.0125 -0.9948
					0.0127 -0.9942
					0.0131 -0.9937
					0.0136 -0.9933
					0.0142 -0.9930
					0.0149 -0.9927
					0.0156 -0.9927
					0.0164 -0.9927
					0.0172 -0.9929
					0.0180 -0.9933
					0.0188 -0.9938
					0.0194 -0.9944
					0.0200 -0.9952
					0.0205 -0.9960
					0.0208 -0.9970
					0.0209 -0.9979
					0.0210 -0.9989
					0.0208 -0.9998
					0.0205 -1.0007
					0.0201 -1.0016
					0.0195 -1.0023
					0.0189 -1.0029
					0.0182 -1.0033
					0.0174 -1.0036
					0.0167 -1.0038
					0.0160 -1.0038
					0.0153 -1.0036
					0.0147 -1.0033
					0.0142 -1.0029
					0.0139 -1.0024
					0.0136 -1.0019
					0.0136 -1.0013
					0.0137 -1.0008
					0.0139 -1.0002
					0.0143 -0.9997
					0.0147 -0.9993

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
130.1	52.5358	-0.2121	0.0153	-0.9991	135.1	53.2954	-0.0099	0.0147	-1.0147
130.2	52.5008	-0.1392	0.0160	-0.9989	135.2	53.2852	-0.0921	0.0138	-1.0148
130.3	52.4807	-0.0609	0.0167	-0.9989	135.3	53.2587	-0.1705	0.0130	-1.0147
130.4	52.4766	0.0198	0.0175	-0.9990	135.4	53.2171	-0.2421	0.0122	-1.0144
130.5	52.4884	0.0997	0.0182	-0.9993	135.5	53.1620	-0.3038	0.0115	-1.0141
130.6	52.5158	0.1758	0.0189	-0.9998	135.6	53.0958	-0.3532	0.0109	-1.0136
130.7	52.5576	0.2451	0.0196	-1.0003	135.7	53.0212	-0.3884	0.0105	-1.0130
130.8	52.6124	0.3048	0.0201	-1.0010	135.8	52.9412	-0.4080	0.0102	-1.0124
130.9	52.6781	0.3526	0.0206	-1.0018	135.9	52.8589	-0.4113	0.0101	-1.0117
131.0	52.7519	0.3864	0.0209	-1.0027	136.0	52.7778	-0.3982	0.0101	-1.0111
131.1	52.8312	0.4050	0.0211	-1.0037	136.1	52.7010	-0.3694	0.0103	-1.0104
131.2	52.9127	0.4075	0.0211	-1.0046	136.2	52.6315	-0.3259	0.0106	-1.0099
131.3	52.9932	0.3938	0.0209	-1.0056	136.3	52.5720	-0.2696	0.0110	-1.0094
131.4	53.0695	0.3642	0.0206	-1.0065	136.4	52.5248	-0.2027	0.0115	-1.0091
131.5	53.1385	0.3199	0.0202	-1.0073	136.5	52.4918	-0.1279	0.0121	-1.0089
131.6	53.1973	0.2627	0.0196	-1.0081	136.6	52.4742	-0.0481	0.0128	-1.0089
131.7	53.2436	0.1948	0.0189	-1.0087	136.7	52.4727	0.0337	0.0135	-1.0089
131.8	53.2753	0.1189	0.0182	-1.0092	136.8	52.4874	0.1141	0.0141	-1.0092
131.9	53.2913	0.0382	0.0174	-1.0095	136.9	52.5176	0.1901	0.0148	-1.0096
132.0	53.2908	-0.0441	0.0165	-1.0097	137.0	52.5623	0.2588	0.0153	-1.0101
132.1	53.2738	-0.1247	0.0157	-1.0098	137.1	52.6197	0.3173	0.0158	-1.0108
132.2	53.2410	-0.2002	0.0149	-1.0096	137.2	52.6877	0.3634	0.0161	-1.0115
132.3	53.1939	-0.2676	0.0142	-1.0094	137.3	52.7635	0.3951	0.0163	-1.0124
132.4	53.1342	-0.3241	0.0136	-1.0090	137.4	52.8443	0.4112	0.0164	-1.0133
132.5	53.0646	-0.3676	0.0132	-1.0085	137.5	52.9268	0.4110	0.0163	-1.0142
132.6	52.9878	-0.3963	0.0128	-1.0079	137.6	53.0078	0.3943	0.0160	-1.0151
132.7	52.9069	-0.4091	0.0126	-1.0073	137.7	53.0839	0.3618	0.0156	-1.0159
132.8	52.8252	-0.4056	0.0126	-1.0067	137.8	53.1521	0.3147	0.0150	-1.0167
132.9	52.7459	-0.3859	0.0127	-1.0061	137.9	53.2096	0.2549	0.0144	-1.0173
133.0	52.6722	-0.3510	0.0130	-1.0056	138.0	53.2541	0.1846	0.0136	-1.0179
133.1	52.6069	-0.3022	0.0134	-1.0051	138.1	53.2836	0.1069	0.0127	-1.0183
133.2	52.5526	-0.2416	0.0139	-1.0048	138.2	53.2970	0.0247	0.0118	-1.0185
133.3	52.5114	-0.1714	0.0145	-1.0045	138.3	53.2936	-0.0585	0.0109	-1.0186
133.4	52.4848	-0.0946	0.0151	-1.0044	138.4	53.2737	-0.1393	0.0100	-1.0185
133.5	52.4739	-0.0140	0.0158	-1.0045	138.5	53.2380	-0.2145	0.0092	-1.0182
133.6	52.4791	0.0671	0.0165	-1.0047	138.6	53.1881	-0.2810	0.0084	-1.0179
133.7	52.5002	0.1457	0.0172	-1.0050	138.7	53.1259	-0.3361	0.0077	-1.0174
133.8	52.5365	0.2186	0.0178	-1.0055	138.8	53.0540	-0.3776	0.0072	-1.0168
133.9	52.5864	0.2830	0.0184	-1.0061	138.9	52.9754	-0.4040	0.0068	-1.0161
134.0	52.6482	0.3363	0.0188	-1.0069	139.0	52.8933	-0.4141	0.0066	-1.0154
134.1	52.7194	0.3764	0.0192	-1.0077	139.1	52.8108	-0.4078	0.0065	-1.0147
134.2	52.7972	0.4016	0.0193	-1.0086	139.2	52.7314	-0.3852	0.0066	-1.0140
134.3	52.8787	0.4109	0.0194	-1.0095	139.3	52.6582	-0.3475	0.0069	-1.0134
134.4	52.9605	0.4038	0.0192	-1.0105	139.4	52.5939	-0.2960	0.0072	-1.0129
134.5	53.0394	0.3806	0.0189	-1.0114	139.5	52.5411	-0.2329	0.0077	-1.0124
134.6	53.1122	0.3420	0.0185	-1.0122	139.6	52.5018	-0.1607	0.0083	-1.0121
134.7	53.1759	0.2896	0.0179	-1.0130	139.7	52.4776	-0.0821	0.0089	-1.0120
134.8	53.2280	0.2255	0.0172	-1.0136	139.8	52.4693	-0.0004	0.0095	-1.0120
134.9	53.2662	0.1522	0.0164	-1.0141	139.9	52.4773	0.0814	0.0102	-1.0121
135.0	53.2890	0.0726	0.0156	-1.0145	140.0	52.5013	0.1600	0.0108	-1.0124

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
140.1	52.5403	0.2325	0.0114	-1.0128	145.1	53.0427	-0.3867	-0.0010	-1.0197
140.2	52.5930	0.2958	0.0119	-1.0134	145.2	52.9625	-0.4106	-0.0013	-1.0190
140.3	52.6572	0.3476	0.0123	-1.0141	145.3	52.8793	-0.4181	-0.0015	-1.0182
140.4	52.7304	0.3857	0.0125	-1.0149	145.4	52.7964	-0.4089	-0.0016	-1.0174
140.5	52.8099	0.4085	0.0126	-1.0157	145.5	52.7171	-0.3835	-0.0014	-1.0166
140.6	52.8925	0.4152	0.0126	-1.0166	145.6	52.6445	-0.3429	-0.0012	-1.0159
140.7	52.9749	0.4053	0.0124	-1.0174	145.7	52.5814	-0.2888	-0.0008	-1.0153
140.8	53.0538	0.3791	0.0120	-1.0182	145.8	52.5303	-0.2234	-0.0003	-1.0148
140.9	53.1261	0.3377	0.0115	-1.0190	145.9	52.4931	-0.1492	0.0003	-1.0145
141.0	53.1887	0.2826	0.0108	-1.0197	146.0	52.4713	-0.0692	0.0009	-1.0143
141.1	53.2391	0.2160	0.0100	-1.0202	146.1	52.4657	0.0135	0.0016	-1.0142
141.2	53.2752	0.1407	0.0092	-1.0206	146.2	52.4765	0.0957	0.0023	-1.0143
141.3	53.2955	0.0595	0.0083	-1.0209	146.3	52.5034	0.1743	0.0029	-1.0146
141.4	53.2991	-0.0241	0.0074	-1.0210	146.4	52.5452	0.2460	0.0035	-1.0150
141.5	53.2860	-0.1067	0.0064	-1.0209	146.5	52.6004	0.3081	0.0040	-1.0155
141.6	53.2565	-0.1850	0.0055	-1.0207	146.6	52.6669	0.3582	0.0043	-1.0161
141.7	53.2121	-0.2558	0.0047	-1.0203	146.7	52.7421	0.3941	0.0045	-1.0168
141.8	53.1544	-0.3162	0.0040	-1.0198	146.8	52.8231	0.4145	0.0046	-1.0176
141.9	53.0859	-0.3638	0.0034	-1.0192	146.9	52.9066	0.4184	0.0045	-1.0184
142.0	53.0094	-0.3968	0.0030	-1.0185	147.0	52.9894	0.4056	0.0043	-1.0192
142.1	52.9279	-0.4139	0.0027	-1.0178	147.1	53.0681	0.3766	0.0039	-1.0199
142.2	52.8448	-0.4144	0.0025	-1.0171	147.2	53.1396	0.3323	0.0033	-1.0206
142.3	52.7633	-0.3984	0.0025	-1.0163	147.3	53.2009	0.2746	0.0027	-1.0212
142.4	52.6868	-0.3667	0.0027	-1.0156	147.4	53.2494	0.2058	0.0019	-1.0217
142.5	52.6181	-0.3205	0.0030	-1.0150	147.5	53.2833	0.1285	0.0010	-1.0220
142.6	52.5600	-0.2616	0.0035	-1.0145	147.6	53.3010	0.0460	0.0001	-1.0221
142.7	52.5147	-0.1926	0.0040	-1.0141	147.7	53.3018	-0.0384	-0.0008	-1.0221
142.8	52.4839	-0.1159	0.0046	-1.0138	147.8	53.2857	-0.1213	-0.0017	-1.0219
142.9	52.4688	-0.0348	0.0052	-1.0137	147.9	53.2533	-0.1992	-0.0026	-1.0216
143.0	52.4700	0.0478	0.0059	-1.0137	148.0	53.2061	-0.2691	-0.0034	-1.0211
143.1	52.4875	0.1285	0.0066	-1.0139	148.1	53.1459	-0.3280	-0.0041	-1.0205
143.2	52.5206	0.2042	0.0072	-1.0143	148.2	53.0752	-0.3737	-0.0046	-1.0198
143.3	52.5680	0.2720	0.0077	-1.0148	148.3	52.9969	-0.4043	-0.0051	-1.0190
143.4	52.6280	0.3291	0.0081	-1.0154	148.4	52.9143	-0.4188	-0.0053	-1.0182
143.5	52.6981	0.3733	0.0084	-1.0161	148.5	52.8305	-0.4165	-0.0054	-1.0174
143.6	52.7758	0.4028	0.0086	-1.0169	148.6	52.7489	-0.3976	-0.0053	-1.0166
143.7	52.8579	0.4164	0.0086	-1.0177	148.7	52.6728	-0.3630	-0.0051	-1.0158
143.8	52.9411	0.4133	0.0084	-1.0185	148.8	52.6052	-0.3141	-0.0048	-1.0152
143.9	53.0223	0.3937	0.0081	-1.0193	148.9	52.5486	-0.2529	-0.0043	-1.0146
144.0	53.0980	0.3583	0.0076	-1.0201	149.0	52.5052	-0.1817	-0.0037	-1.0141
144.1	53.1653	0.3085	0.0070	-1.0207	149.1	52.4768	-0.1034	-0.0031	-1.0138
144.2	53.2213	0.2461	0.0063	-1.0213	149.2	52.4643	-0.0211	-0.0024	-1.0137
144.3	53.2638	0.1737	0.0055	-1.0217	149.3	52.4684	0.0621	-0.0017	-1.0137
144.4	53.2909	0.0942	0.0046	-1.0220	149.4	52.4887	0.1428	-0.0010	-1.0139
144.5	53.3016	0.0109	0.0036	-1.0221	149.5	52.5246	0.2180	-0.0004	-1.0142
144.6	53.2954	-0.0730	0.0027	-1.0221	149.6	52.5747	0.2847	0.0001	-1.0146
144.7	53.2725	-0.1538	0.0018	-1.0219	149.7	52.6370	0.3403	0.0005	-1.0152
144.8	53.2339	-0.2285	0.0010	-1.0215	149.8	52.7093	0.3825	0.0008	-1.0159
144.9	53.1812	-0.2938	0.0002	-1.0210	149.9	52.7885	0.4096	0.0010	-1.0166
145.0	53.1166	-0.3473	-0.0005	-1.0204	150.0	52.8717	0.4205	0.0010	-1.0173

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
150.1	52.9556	0.4146	155.1	52.5927	-0.3069
150.2	53.0367	0.3921	155.2	52.5378	-0.2433
150.3	53.1118	0.3539	155.3	52.4966	-0.1702
150.4	53.1780	0.3013	155.4	52.4705	-0.0905
150.5	53.2323	0.2365	155.5	52.4608	-0.0072
150.6	53.2726	0.1621	155.6	52.4676	0.0764
150.7	53.2973	0.0811	155.7	52.4908	0.1570
150.8	53.3052	-0.0033	155.8	52.5295	0.2316
150.9	53.2960	-0.0875	155.9	52.5822	0.2971
151.0	53.2702	-0.1682	156.0	52.6468	0.3509
151.1	53.2288	-0.2421	156.1	52.7210	0.3910
151.2	53.1735	-0.3062	156.2	52.8017	0.4156
151.3	53.1066	-0.3578	156.3	52.8858	0.4238
151.4	53.0308	-0.3950	156.4	52.9701	0.4150
151.5	52.9492	-0.4164	156.5	53.0510	0.3896
151.6	52.8652	-0.4211	156.6	53.1254	0.3485
151.7	52.7820	-0.4090	156.7	53.1902	0.2934
151.8	52.7029	-0.3807	156.8	53.2427	0.2263
151.9	52.6312	-0.3374	156.9	53.2807	0.1500
152.0	52.5694	-0.2808	157.0	53.3028	0.0676
152.1	52.5202	-0.2132	157.1	53.3079	-0.0176
152.2	52.4852	-0.1372	157.2	53.2958	-0.1021
152.3	52.4660	-0.0559	157.3	53.2671	-0.1825
152.4	52.4631	0.0277	157.4	53.2229	-0.2554
152.5	52.4768	0.1101	157.5	53.1650	-0.3180
152.6	52.5064	0.1883	157.6	53.0959	-0.3677
152.7	52.5510	0.2592	157.7	53.0184	-0.4026
152.8	52.6087	0.3199	157.8	52.9356	-0.4213
152.9	52.6774	0.3681	157.9	52.8508	-0.4232
153.0	52.7544	0.4018	158.0	52.7675	-0.4082
153.1	52.8366	0.4196	158.1	52.6890	-0.3771
153.2	52.9209	0.4207	158.2	52.6182	-0.3310
153.3	53.0039	0.4050	158.3	52.5580	-0.2720
153.4	53.0822	0.3730	158.4	52.5107	-0.2023
153.5	53.1527	0.3260	158.5	52.4781	-0.1247
153.6	53.2125	0.2658	158.6	52.4614	-0.0422
153.7	53.2591	0.1948	158.7	52.4614	0.0419
153.8	53.2905	0.1158	158.8	52.4779	0.1245
153.9	53.3055	0.0321	158.9	52.5104	0.2022
154.0	53.3035	-0.0529	159.0	52.5576	0.2720
154.1	53.2844	-0.1358	159.1	52.6177	0.3312
154.2	53.2492	-0.2132	159.2	52.6885	0.3773
154.3	53.1992	-0.2819	159.3	52.7671	0.4087
154.4	53.1366	-0.3392	159.4	52.8505	0.4238
154.5	53.0639	-0.3828	159.5	52.9354	0.4221
154.6	52.9840	-0.4110	159.6	53.0184	0.4035
154.7	52.9003	-0.4227	159.7	53.0961	0.3686
154.8	52.8160	-0.4176	159.8	53.1655	0.3189
154.9	52.7346	-0.3958	159.9	53.2236	0.2563
155.0	52.6592	-0.3584	160.0	53.2680	0.1833

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
160.1	53.2970	0.1027	-0.0097	-1.0148	165.1	52.4798	0.1388	-0.0106	-1.0029
160.2	53.3092	0.0180	-0.0106	-1.0149	165.2	52.5151	0.2158	-0.0098	-1.0032
160.3	53.3042	-0.0675	-0.0114	-1.0147	165.3	52.5650	0.2844	-0.0092	-1.0036
160.4	53.2823	-0.1503	-0.0123	-1.0144	165.4	52.6274	0.3419	-0.0087	-1.0041
160.5	53.2442	-0.2269	-0.0130	-1.0140	165.5	52.7001	0.3860	-0.0083	-1.0047
160.6	53.1916	-0.2943	-0.0137	-1.0134	165.6	52.7802	0.4148	-0.0080	-1.0054
160.7	53.1266	-0.3498	-0.0143	-1.0127	165.7	52.8646	0.4272	-0.0079	-1.0061
160.8	53.0520	-0.3912	-0.0147	-1.0119	165.8	52.9499	0.4226	-0.0080	-1.0068
160.9	52.9707	-0.4169	-0.0150	-1.0110	165.9	53.0328	0.4011	-0.0082	-1.0075
161.0	52.8861	-0.4258	-0.0151	-1.0101	166.0	53.1098	0.3634	-0.0086	-1.0082
161.1	52.8015	-0.4178	-0.0150	-1.0092	166.1	53.1778	0.3111	-0.0091	-1.0087
161.2	52.7204	-0.3931	-0.0148	-1.0084	166.2	53.2341	0.2462	-0.0097	-1.0092
161.3	52.6458	-0.3530	-0.0145	-1.0076	166.3	53.2763	0.1712	-0.0104	-1.0095
161.4	52.5807	-0.2989	-0.0140	-1.0069	166.4	53.3027	0.0892	-0.0112	-1.0097
161.5	52.5276	-0.2332	-0.0134	-1.0063	166.5	53.3121	0.0036	-0.0120	-1.0097
161.6	52.4886	-0.1582	-0.0127	-1.0058	166.6	53.3042	-0.0822	-0.0128	-1.0095
161.7	52.4651	-0.0772	-0.0119	-1.0055	166.7	53.2793	-0.1646	-0.0136	-1.0092
161.8	52.4581	0.0070	-0.0112	-1.0054	166.8	53.2384	-0.2404	-0.0143	-1.0087
161.9	52.4677	0.0908	-0.0104	-1.0054	166.9	53.1832	-0.3063	-0.0149	-1.0081
162.0	52.4938	0.1711	-0.0097	-1.0056	167.0	53.1161	-0.3599	-0.0154	-1.0073
162.1	52.5352	0.2448	-0.0090	-1.0059	167.1	53.0396	-0.3990	-0.0158	-1.0065
162.2	52.5904	0.3089	-0.0084	-1.0064	167.2	52.9571	-0.4220	-0.0160	-1.0057
162.3	52.6572	0.3609	-0.0079	-1.0069	167.3	52.8718	-0.4281	-0.0161	-1.0048
162.4	52.7332	0.3988	-0.0076	-1.0076	167.4	52.7870	-0.4172	-0.0159	-1.0039
162.5	52.8152	0.4208	-0.0074	-1.0083	167.5	52.7063	-0.3897	-0.0157	-1.0031
162.6	52.9002	0.4262	-0.0074	-1.0090	167.6	52.6327	-0.3468	-0.0153	-1.0023
162.7	52.9846	0.4145	-0.0076	-1.0097	167.7	52.5691	-0.2903	-0.0147	-1.0016
162.8	53.0652	0.3862	-0.0079	-1.0104	167.8	52.5179	-0.2224	-0.0141	-1.0010
162.9	53.1386	0.3424	-0.0083	-1.0110	167.9	52.4812	-0.1458	-0.0133	-1.0006
163.0	53.2019	0.2847	-0.0089	-1.0115	168.0	52.4604	-0.0635	-0.0125	-1.0004
163.1	53.2524	0.2154	-0.0096	-1.0119	168.1	52.4561	0.0213	-0.0117	-1.0003
163.2	53.2881	0.1374	-0.0104	-1.0122	168.2	52.4687	0.1052	-0.0109	-1.0003
163.3	53.3075	0.0537	-0.0112	-1.0123	168.3	52.4975	0.1851	-0.0101	-1.0005
163.4	53.3097	-0.0322	-0.0120	-1.0122	168.4	52.5416	0.2578	-0.0095	-1.0009
163.5	53.2947	-0.1167	-0.0128	-1.0120	168.5	52.5993	0.3204	-0.0089	-1.0013
163.6	53.2630	-0.1966	-0.0136	-1.0116	168.6	52.6682	0.3704	-0.0084	-1.0019
163.7	53.2161	-0.2684	-0.0143	-1.0110	168.7	52.7458	0.4059	-0.0080	-1.0026
163.8	53.1558	-0.3293	-0.0149	-1.0104	168.8	52.8291	0.4253	-0.0079	-1.0033
163.9	53.0846	-0.3770	-0.0154	-1.0096	168.9	52.9146	0.4278	-0.0078	-1.0040
164.0	53.0055	-0.4094	-0.0157	-1.0087	169.0	52.9991	0.4132	-0.0080	-1.0048
164.1	52.9216	-0.4254	-0.0158	-1.0079	169.1	53.0792	0.3820	-0.0083	-1.0054
164.2	52.8364	-0.4244	-0.0158	-1.0070	169.2	53.1515	0.3355	-0.0087	-1.0060
164.3	52.7531	-0.4065	-0.0157	-1.0061	169.3	53.2132	0.2753	-0.0093	-1.0065
164.4	52.6752	-0.3726	-0.0154	-1.0053	169.4	53.2516	0.2040	-0.0099	-1.0069
164.5	52.6056	-0.3239	-0.0149	-1.0045	169.5	53.2948	0.1243	-0.0107	-1.0072
164.6	52.5471	-0.2626	-0.0143	-1.0039	169.6	53.3124	0.0396	-0.0115	-1.0072
164.7	52.5019	-0.1909	-0.0136	-1.0034	169.7	53.3107	-0.0468	-0.0123	-1.0071
164.8	52.4717	-0.1118	-0.0129	-1.0030	169.8	53.2927	-0.1313	-0.0131	-1.0069
164.9	52.4577	-0.0283	-0.0121	-1.0028	169.9	53.2582	-0.2104	-0.0138	-1.0065
165.0	52.4605	0.0563	-0.0113	-1.0028	170.0	53.2086	-0.2810	-0.0145	-1.0059

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
170.1	53.1460	-0.3402	175.1	52.8432	0.4290
170.2	53.0729	-0.3856	175.2	52.9292	0.4286
170.3	52.9923	-0.4155	175.3	53.0136	0.4111
170.4	52.9075	-0.4287	175.4	53.0930	0.3771
170.5	52.8218	-0.4249	175.5	53.1640	0.3279
170.6	52.7388	-0.4041	175.6	53.2239	0.2653
170.7	52.6617	-0.3674	175.7	53.2702	0.1920
170.8	52.5934	-0.3161	175.8	53.3008	0.1109
170.9	52.5367	-0.2525	175.9	53.3146	0.0252
171.0	52.4936	-0.1790	176.0	53.3110	-0.0615
171.1	52.4660	-0.0985	176.1	53.2901	-0.1457
171.2	52.4547	-0.0141	176.2	53.2527	-0.2240
171.3	52.4603	0.0708	176.3	53.2005	-0.2932
171.4	52.4826	0.1529	176.4	53.1356	-0.3505
171.5	52.5206	0.2292	176.5	53.0606	-0.3936
171.6	52.5730	0.2965	176.6	52.9787	-0.4209
171.7	52.6377	0.3521	176.7	52.8931	-0.4314
171.8	52.7122	0.3940	176.8	52.8073	-0.4246
171.9	52.7937	0.4203	176.9	52.7246	-0.4009
172.0	52.8790	0.4299	177.0	52.6484	-0.3614
172.1	52.9645	0.4224	177.1	52.5816	-0.3077
172.2	53.0470	0.3979	177.2	52.5268	-0.2419
172.3	53.1231	0.3575	177.3	52.4860	-0.1667
172.4	53.1897	0.3026	177.4	52.4610	-0.0849
172.5	53.2441	0.2354	177.5	52.4525	0.0002
172.6	53.2840	0.1587	177.6	52.4610	0.0853
172.7	53.3077	0.0754	177.7	52.4860	0.1670
172.8	53.3142	-0.0109	177.8	52.5268	0.2423
172.9	53.3034	-0.0968	177.9	52.5816	0.3081
173.0	53.2755	-0.1788	178.0	52.6485	0.3619
173.1	53.2319	-0.2535	178.1	52.7248	0.4014
173.2	53.1742	-0.3179	178.2	52.8075	0.4250
173.3	53.1049	-0.3694	178.3	52.8934	0.4318
173.4	53.0269	-0.4060	178.4	52.9791	0.4214
173.5	52.9432	-0.4264	178.5	53.0612	0.3941
173.6	52.8573	-0.4296	178.6	53.1362	0.3509
173.7	52.7726	-0.4158	178.7	53.2013	0.2935
173.8	52.6924	-0.3854	178.8	53.2536	0.2242
173.9	52.6199	-0.3399	178.9	53.2910	0.1457
174.0	52.5579	-0.2810	179.0	53.3120	0.0613
174.1	52.5089	-0.2111	179.1	53.3156	-0.0256
174.2	52.4746	-0.1330	179.2	53.3018	-0.1115
174.3	52.4564	-0.0496	179.3	53.2710	-0.1928
174.4	52.4549	0.0357	179.4	53.2247	-0.2663
174.5	52.4704	0.1196	179.5	53.1646	-0.3290
174.6	52.5020	0.1989	179.6	53.0933	-0.3784
174.7	52.5488	0.2704	179.7	53.0137	-0.4125
174.8	52.6088	0.3313	179.8	52.9290	-0.4300
174.9	52.6797	0.3793	179.9	52.8427	-0.4304
175.0	52.7589	0.4123	180.0	52.7581	-0.4137

TABLE IV (Continued)

 $\theta_o = 45$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
180.1	52.6787	-0.3805	-0.0120	-0.9949	185.1	53.2625	0.2124	-0.0040	-0.9986
180.2	52.6075	-0.3324	-0.0115	-0.9942	185.2	53.2974	0.1324	-0.0047	-0.9989
180.3	52.5472	-0.2712	-0.0109	-0.9935	185.3	53.3156	0.0470	-0.0054	-0.9991
180.4	52.5003	-0.1994	-0.0101	-0.9931	185.4	53.3163	-0.0404	-0.0062	-0.9990
180.5	52.4685	-0.1198	-0.0093	-0.9927	185.5	53.2995	-0.1261	-0.0070	-0.9988
180.6	52.4530	-0.0355	-0.0085	-0.9926	185.6	53.2658	-0.2067	-0.0077	-0.9985
180.7	52.4545	0.0502	-0.0077	-0.9925	185.7	53.2168	-0.2788	-0.0083	-0.9980
180.8	52.4728	0.1339	-0.0068	-0.9927	185.8	53.1544	-0.3397	-0.0088	-0.9974
180.9	52.5072	0.2124	-0.0060	-0.9930	185.9	53.0812	-0.3868	-0.0092	-0.9967
181.0	52.5565	0.2827	-0.0053	-0.9934	186.0	53.0002	-0.4183	-0.0094	-0.9959
181.1	52.6188	0.3419	-0.0047	-0.9939	186.1	52.9147	-0.4331	-0.0095	-0.9951
181.2	52.6917	0.3876	-0.0043	-0.9946	186.2	52.8280	-0.4305	-0.0094	-0.9942
181.3	52.7723	0.4181	-0.0039	-0.9953	186.3	52.7438	-0.4108	-0.0092	-0.9934
181.4	52.8575	0.4320	-0.0038	-0.9961	186.4	52.6652	-0.3749	-0.0088	-0.9926
181.5	52.9439	0.4287	-0.0037	-0.9968	186.5	52.5954	-0.3242	-0.0083	-0.9920
181.6	53.0280	0.4083	-0.0039	-0.9976	186.6	52.5370	-0.2608	-0.0076	-0.9914
181.7	53.1065	0.3715	-0.0042	-0.9983	186.7	52.4923	-0.1872	-0.0069	-0.9910
181.8	53.1762	0.3196	-0.0046	-0.9989	186.8	52.4631	-0.1063	-0.0061	-0.9907
181.9	53.2343	0.2548	-0.0052	-0.9994	186.9	52.4504	-0.0212	-0.0052	-0.9905
182.0	53.2782	0.1796	-0.0059	-0.9998	187.0	52.4547	0.0647	-0.0043	-0.9906
182.1	53.3062	0.0971	-0.0066	-1.0000	187.1	52.4758	0.1481	-0.0035	-0.9907
182.2	53.3171	0.0107	-0.0074	-1.0001	187.2	52.5131	0.2258	-0.0027	-0.9911
182.3	53.3105	-0.0763	-0.0081	-1.0000	187.3	52.5649	0.2946	-0.0020	-0.9915
182.4	53.2866	-0.1601	-0.0089	-0.9997	187.4	52.6294	0.3519	-0.0014	-0.9921
182.5	53.2465	-0.2374	-0.0096	-0.9993	187.5	52.7041	0.3954	-0.0010	-0.9928
182.6	53.1917	-0.3051	-0.0101	-0.9987	187.6	52.7860	0.4233	-0.0007	-0.9936
182.7	53.1246	-0.3604	-0.0106	-0.9980	187.7	52.8719	0.4344	-0.0005	-0.9943
182.8	53.0480	-0.4011	-0.0109	-0.9973	187.8	52.9585	0.4282	-0.0005	-0.9951
182.9	52.9648	-0.4257	-0.0111	-0.9965	187.9	53.0423	0.4048	-0.0007	-0.9959
183.0	52.8786	-0.4333	-0.0111	-0.9956	188.0	53.1199	0.3652	-0.0010	-0.9966
183.1	52.7927	-0.4235	-0.0110	-0.9948	188.1	53.1881	0.3108	-0.0015	-0.9972
183.2	52.7105	-0.3970	-0.0107	-0.9940	188.2	53.2441	0.2438	-0.0021	-0.9977
183.3	52.6354	-0.3548	-0.0102	-0.9932	188.3	53.2856	0.1669	-0.0027	-0.9981
183.4	52.5701	-0.2987	-0.0096	-0.9926	188.4	53.3109	0.0831	-0.0035	-0.9983
183.5	52.5173	-0.2308	-0.0089	-0.9921	188.5	53.3189	-0.0040	-0.0042	-0.9984
183.6	52.4790	-0.1540	-0.0082	-0.9917	188.6	53.3094	-0.0910	-0.0050	-0.9983
183.7	52.4566	-0.0711	-0.0073	-0.9914	188.7	53.2825	-0.1743	-0.0057	-0.9980
183.8	52.4509	0.0146	-0.0065	-0.9914	188.8	53.2396	-0.2505	-0.0064	-0.9976
183.9	52.4623	0.0997	-0.0056	-0.9914	188.9	53.1824	-0.3165	-0.0070	-0.9970
184.0	52.4902	0.1810	-0.0048	-0.9917	189.0	53.1132	-0.3697	-0.0074	-0.9964
184.1	52.5336	0.2552	-0.0041	-0.9921	189.1	53.0349	-0.4080	-0.0077	-0.9956
184.2	52.5909	0.3194	-0.0034	-0.9926	189.2	52.9507	-0.4298	-0.0079	-0.9948
184.3	52.6598	0.3711	-0.0029	-0.9932	189.3	52.8639	-0.4345	-0.0078	-0.9940
184.4	52.7377	0.4082	-0.0025	-0.9939	189.4	52.7781	-0.4218	-0.0077	-0.9931
184.5	52.8216	0.4292	-0.0022	-0.9947	189.5	52.6966	-0.3925	-0.0073	-0.9924
184.6	52.9080	0.4331	-0.0022	-0.9954	189.6	52.6227	-0.3476	-0.0069	-0.9917
184.7	52.9937	0.4197	-0.0022	-0.9962	189.7	52.5591	-0.2891	-0.0063	-0.9911
184.8	53.0752	0.3895	-0.0025	-0.9970	189.8	52.5084	-0.2193	-0.0055	-0.9906
184.9	53.1490	0.3436	-0.0029	-0.9976	189.9	52.4725	-0.1409	-0.0048	-0.9902
185.0	53.2124	0.2838	-0.0034	-0.9982	190.0	52.4528	-0.0570	-0.0039	-0.9900

TABLE IV (Continued)

 $\theta_0 = 45$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
190.1	52.4500	0.0291	195.1	53.2322	-0.2633
190.2	52.4643	0.1142	195.2	53.1726	-0.3275
190.3	52.4950	0.1947	195.3	53.1014	-0.3785
190.4	52.5410	0.2677	195.4	53.0216	-0.4142
190.5	52.6007	0.3302	195.5	52.9364	-0.4333
190.6	52.6716	0.3798	195.6	52.8492	-0.4351
190.7	52.7510	0.4144	195.7	52.7636	-0.4195
190.8	52.8358	0.4326	195.8	52.6829	-0.3873
190.9	52.9227	0.4336	195.9	52.6103	-0.3399
191.0	53.0082	0.4173	196.0	52.5485	-0.2791
191.1	53.0889	0.3843	196.1	52.5000	-0.2073
191.2	53.1615	0.3357	196.2	52.4667	-0.1275
191.3	53.2230	0.2735	196.3	52.4497	-0.0427
191.4	53.2709	0.2002	196.4	52.4498	0.0437
191.5	53.3032	0.1188	196.5	52.4669	0.1285
191.6	53.3185	0.0325	196.6	52.5004	0.2083
191.7	53.3162	-0.0552	196.7	52.5491	0.2799
191.8	53.2965	-0.1406	196.8	52.6109	0.3407
191.9	53.2600	-0.2203	196.9	52.6837	0.3880
192.0	53.2084	-0.2910	197.0	52.7645	0.4201
192.1	53.1438	-0.3499	197.1	52.8502	0.4355
192.2	53.0687	-0.3947	197.2	52.9375	0.4336
192.3	52.9864	-0.4235	197.3	53.0227	0.4143
192.4	52.9001	-0.4354	197.4	53.1025	0.3784
192.5	52.8134	-0.4299	197.5	53.1737	0.3272
192.6	52.7295	-0.4074	197.6	53.2332	0.2628
192.7	52.6519	-0.3687	197.7	53.2788	0.1877
192.8	52.5836	-0.3155	197.8	53.3084	0.1049
192.9	52.5272	-0.2500	197.9	53.3208	0.0178
193.0	52.4849	-0.1747	198.0	53.3156	-0.0700
193.1	52.4583	-0.0925	198.1	53.2928	-0.1550
193.2	52.4484	-0.0068	198.2	53.2536	-0.2336
193.3	52.4556	0.0793	198.3	53.1994	-0.3028
193.4	52.4796	0.1622	198.4	53.1326	-0.3596
193.5	52.5195	0.2389	198.5	53.0559	-0.4020
193.6	52.5738	0.3062	198.6	52.9724	-0.4281
193.7	52.6404	0.3615	198.7	52.8855	-0.4371
193.8	52.7168	0.4026	198.8	52.7987	-0.4287
193.9	52.7999	0.4278	198.9	52.7154	-0.4033
194.0	52.8865	0.4361	199.0	52.6389	-0.3619
194.1	52.9732	0.4269	199.1	52.5722	-0.3063
194.2	53.0565	0.4007	199.2	52.5179	-0.2387
194.3	53.1329	0.3583	199.3	52.4780	-0.1618
194.4	53.1995	0.3014	199.4	52.4540	-0.0785
194.5	53.2534	0.2323	199.5	52.4470	0.0078
194.6	53.2925	0.1537	199.6	52.4571	0.0938
194.7	53.3150	0.0689	199.7	52.4839	0.1762
194.8	53.3201	-0.0188	199.8	52.5265	0.2517
194.9	53.3075	-0.1057	199.9	52.5833	0.3174
195.0	53.2778	-0.1883	200.0	52.6519	0.3706
					0.0051

TABLE V

TABLE V
Impedance and Radian Effective Length of Wide Angle Conical Antennas

$\theta_o = 46.982$ degrees									
ka	Z_o		kh_e		ka	Z_o		kh_e	
0.1	0.1212	-263.9625	0.0551	-0.0000	5.1	54.2911	3.9259	0.5702	-1.3875
0.2	0.4958	-125.9243	0.1113	-0.0002	5.2	54.8382	2.7570	0.5188	-1.4230
0.3	1.1572	-77.1319	0.1700	-0.0010	5.3	55.0773	1.5827	0.4643	-1.4465
0.4	2.1636	-50.5626	0.2324	-0.0033	5.4	55.0556	0.4751	0.4098	-1.4587
0.5	3.6010	-32.8048	0.2996	-0.0085	5.5	54.8281	-0.5244	0.3580	-1.4608
0.6	5.5854	-19.4087	0.3727	-0.0185	5.6	54.4449	-1.3977	0.3106	-1.4544
0.7	8.2601	-8.5256	0.4522	-0.0362	5.7	53.9456	-2.1412	0.2685	-1.4413
0.8	11.7812	0.6604	0.5375	-0.0653	5.8	53.3578	-2.7566	0.2326	-1.4228
0.9	16.2827	8.4358	0.6266	-0.1103	5.9	52.7014	-3.2456	0.2033	-1.4005
1.0	21.8095	14.7590	0.7146	-0.1751	6.0	51.9917	-3.6063	0.1809	-1.3757
1.1	28.2277	19.3928	0.7940	-0.2624	6.1	51.2450	-3.8337	0.1653	-1.3499
1.2	35.1519	22.0667	0.8551	-0.3704	6.2	50.4807	-3.9217	0.1565	-1.3244
1.3	41.9678	22.6799	0.8893	-0.4922	6.3	49.7232	-3.8666	0.1541	-1.3006
1.4	47.9977	21.4551	0.8919	-0.6165	6.4	49.0003	-3.6701	0.1573	-1.2798
1.5	52.7427	18.9291	0.8649	-0.7311	6.5	48.3408	-3.3418	0.1651	-1.2628
1.6	56.0400	15.7686	0.8158	-0.8274	6.6	47.7706	-2.8995	0.1763	-1.2506
1.7	58.0430	12.5478	0.7538	-0.9014	6.7	47.3096	-2.3676	0.1895	-1.2434
1.8	59.0785	9.6235	0.6871	-0.9541	6.8	46.9695	-1.7739	0.2035	-1.2410
1.9	59.4964	7.1320	0.6211	-0.9884	6.9	46.7538	-1.1461	0.2173	-1.2432
2.0	59.5782	5.0531	0.5589	-1.0076	7.0	46.6589	-0.5090	0.2299	-1.2494
2.1	59.5039	3.2839	0.5020	-1.0148	7.1	46.6773	0.1171	0.2410	-1.2590
2.2	59.3533	1.6472	0.4512	-1.0117	7.2	46.7993	0.7169	0.2502	-1.2712
2.3	59.1228	0.1844	0.4073	-0.9997	7.3	47.0161	1.2787	0.2574	-1.2857
2.4	58.7515	-1.3139	0.3717	-0.9799	7.4	47.3200	1.7930	0.2627	-1.3021
2.5	58.1582	-2.7885	0.3461	-0.9543	7.5	47.7051	2.2505	0.2659	-1.3202
2.6	57.2861	-4.1646	0.3318	-0.9254	7.6	48.1660	2.6402	0.2672	-1.3400
2.7	56.1396	-5.3318	0.3290	-0.8971	7.7	48.6968	2.9491	0.2662	-1.3614
2.8	54.7926	-6.1944	0.3365	-0.8729	7.8	49.2881	3.1614	0.2625	-1.3846
2.9	53.3604	-6.7114	0.3512	-0.8554	7.9	49.9258	3.2602	0.2557	-1.4092
3.0	51.9540	-6.9050	0.3697	-0.8455	8.0	50.5888	3.2291	0.2451	-1.4350
3.1	50.6473	-6.8381	0.3891	-0.8424	8.1	51.2484	3.0558	0.2300	-1.4613
3.2	49.4688	-6.5820	0.4073	-0.8445	8.2	51.8690	2.7357	0.2099	-1.4872
3.3	48.4139	-6.1923	0.4236	-0.8500	8.3	52.4113	2.2759	0.1845	-1.5115
3.4	47.4632	-5.7001	0.4379	-0.8571	8.4	52.8372	1.6972	0.1539	-1.5326
3.5	46.5981	-5.1138	0.4510	-0.8647	8.5	53.1155	1.0333	0.1189	-1.5491
3.6	45.8109	-4.4266	0.4639	-0.8721	8.6	53.2282	0.3280	0.0806	-1.5599
3.7	45.1083	-3.6260	0.4776	-0.8793	8.7	53.1725	-0.3718	0.0405	-1.5642
3.8	44.5117	-2.7009	0.4931	-0.8868	8.8	52.9617	-1.0224	0.0004	-1.5616
3.9	44.0546	-1.6491	0.5112	-0.8954	8.9	52.6207	-1.5894	-0.0383	-1.5526
4.0	43.7785	-0.4810	0.5322	-0.9064	9.0	52.1809	-2.0499	-0.0739	-1.5378
4.1	43.7281	0.7763	0.5562	-0.9212	9.1	51.6751	-2.3928	-0.1056	-1.5183
4.2	43.9454	2.0770	0.5824	-0.9415	9.2	51.1331	-2.6166	-0.1326	-1.4952
4.3	44.4621	3.3553	0.6096	-0.9688	9.3	50.5801	-2.7257	-0.1545	-1.4697
4.4	45.2909	4.5274	0.6357	-1.0044	9.4	50.0362	-2.7282	-0.1712	-1.4428
4.5	46.4149	5.4971	0.6580	-1.0489	9.5	49.5171	-2.6333	-0.1829	-1.4156
4.6	47.7796	6.1682	0.6733	-1.1017	9.6	49.0360	-2.4503	-0.1898	-1.3890
4.7	49.2898	6.4636	0.6782	-1.1610	9.7	48.6039	-2.1883	-0.1921	-1.3637
4.8	50.8195	6.3458	0.6705	-1.2235	9.8	48.2315	-1.8567	-0.1905	-1.3406
4.9	52.2335	5.8310	0.6490	-1.2848	9.9	47.9288	-1.4658	-0.1854	-1.3203
5.0	53.4153	4.9891	0.6147	-1.3407	10.0	47.7054	-1.0278	-0.1775	-1.3033

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z ₀	kh _e	ka	Z ₀	kh _e
10.1	47.5694	-0.5568	15.1	51.5478	-0.6384
10.2	47.5270	-0.0695	15.2	51.3684	-0.9200
10.3	47.5808	0.4155	15.3	51.1424	-1.1553
10.4	47.7295	0.8785	15.4	50.8808	-1.3381
10.5	47.9667	1.3001	15.5	50.5949	-1.4647
10.6	48.2818	1.6625	15.6	50.2956	-1.5336
10.7	48.6599	1.9511	15.7	49.9936	-1.5445
10.8	49.0834	2.1555	15.8	49.6990	-1.4993
10.9	49.5334	2.2697	15.9	49.4215	-1.4007
11.0	49.9908	2.2923	16.0	49.1698	-1.2534
11.1	50.4377	2.2259	16.1	48.9521	-1.0631
11.2	50.8579	2.0760	16.2	48.7752	-0.8369
11.3	51.2375	1.8504	16.3	48.6448	-0.5830
11.4	51.5640	1.5588	16.4	48.5649	-0.3104
11.5	51.8269	1.2119	16.5	48.5378	-0.0287
11.6	52.0173	0.8223	16.6	48.5642	0.2524
11.7	52.1280	0.4037	16.7	48.6430	0.5232
11.8	52.1539	-0.0282	16.8	48.7716	0.7744
11.9	52.0929	-0.4564	16.9	48.9459	0.9972
12.0	51.9467	-0.8629	17.0	49.1603	1.1836
12.1	51.7210	-1.2298	17.1	49.4080	1.3263
12.2	51.4259	-1.5406	17.2	49.6808	1.4191
12.3	51.0756	-1.7816	17.3	49.9691	1.4570
12.4	50.6872	-1.9430	17.4	50.2621	1.4367
12.5	50.2796	-2.0200	17.5	50.5481	1.3569
12.6	49.8715	-2.0124	17.6	50.8145	1.2187
12.7	49.4802	-1.9243	17.7	51.0484	1.0263
12.8	49.1208	-1.7635	17.8	51.2379	0.7869
12.9	48.8054	-1.5398	17.9	51.3725	0.5111
13.0	48.5432	-1.2644	18.0	51.4444	0.2120
13.1	48.3408	-0.9491	18.1	51.4495	-0.0953
13.2	48.2026	-0.6055	18.2	51.3874	-0.3947
13.3	48.1313	-0.2450	18.3	51.2626	-0.6708
13.4	48.1283	0.1209	18.4	51.0829	-0.9098
13.5	48.1937	0.4805	18.5	50.8595	-1.1010
13.6	48.3263	0.8223	18.6	50.6056	-1.2373
13.7	48.5230	1.1339	18.7	50.3349	-1.3151
13.8	48.7784	1.4031	18.8	50.0608	-1.3345
13.9	49.0847	1.6178	18.9	49.7955	-1.2986
14.0	49.4310	1.7673	19.0	49.5493	-1.2127
14.1	49.8032	1.8426	19.1	49.3306	-1.0836
14.2	50.1847	1.8381	19.2	49.1454	-0.9189
14.3	50.5575	1.7524	19.3	48.9983	-0.7265
14.4	50.9026	1.5889	19.4	48.8919	-0.5144
14.5	51.2027	1.3561	19.5	48.8277	-0.2905
14.6	51.4432	1.0666	19.6	48.8061	-0.0620
14.7	51.6135	0.7366	19.7	48.8262	0.1639
14.8	51.7079	0.3840	19.8	48.8866	0.3803
14.9	51.7256	0.0266	19.9	48.9848	0.5807
15.0	51.6699	-0.3190	20.0	49.1175	0.7592
					-0.3335
					-0.3414
					-0.3489
					-0.3556
					-0.3615
					-0.3664
					-0.3702
					-0.3728
					-0.3743
					-0.3745
					-0.3733
					-0.3708
					-0.3668
					-0.3614
					-0.3545
					-0.3460
					-0.3362
					-0.3250
					-0.3127
					-0.2994
					-0.2854
					-0.2710
					-0.2565
					-0.2422
					-0.2286
					-0.2159
					-0.2044
					-0.1945
					-0.1861
					-0.1794
					-0.1744
					-0.1710
					-0.1689
					-0.1678
					-0.1674
					-0.1673
					-0.1673
					-0.1669
					-0.1661
					-0.1646
					-0.1622
					-0.1590
					-0.1548
					-0.1496
					-0.1435
					-0.1364
					-0.1284
					-0.1195
					-0.1097
					-0.0991
					-1.0355
					-1.0282
					-1.0192
					-1.0087
					-0.9971
					-0.9844
					-0.9708
					-0.9565
					-0.9416
					-0.9263
					-0.9106
					-0.8947
					-0.8788
					-0.8631
					-0.8477
					-0.8329
					-0.8189
					-0.8060
					-0.7944
					-0.7842
					-0.7757
					-0.7690
					-0.7642
					-0.7611
					-0.7599
					-0.7602
					-0.7618
					-0.7645
					-0.7678
					-0.7715
					-0.7750
					-0.7780
					-0.7802
					-0.7812
					-0.7811
					-0.7796
					-0.7768
					-0.7728
					-0.7677
					-0.7618
					-0.7552
					-0.7480
					-0.7405
					-0.7328
					-0.7251
					-0.7175
					-0.7101
					-0.7029
					-0.6962
					-0.6900

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
20.1	49.2805	0.9101	-0.0876	-0.6844	25.1	50.1021	-0.9420	0.2629	-0.9114
20.2	49.4688	1.0282	-0.0753	-0.6796	25.2	49.9112	-0.9447	0.2626	-0.9223
20.3	49.6763	1.1094	-0.0624	-0.6757	25.3	49.7228	-0.9087	0.2613	-0.9328
20.4	49.8962	1.1504	-0.0488	-0.6729	25.4	49.5450	-0.8347	0.2593	-0.9425
20.5	50.1211	1.1490	-0.0348	-0.6712	25.5	49.3856	-0.7257	0.2567	-0.9516
20.6	50.3430	1.1043	-0.0204	-0.6709	25.6	49.2517	-0.5860	0.2536	-0.9598
20.7	50.5536	1.0171	-0.0060	-0.6719	25.7	49.1494	-0.4214	0.2503	-0.9672
20.8	50.7448	0.8895	0.0083	-0.6743	25.8	49.0834	-0.2391	0.2468	-0.9737
20.9	50.9085	0.7254	0.0222	-0.6781	25.9	49.0568	-0.0473	0.2433	-0.9795
21.0	51.0375	0.5304	0.0355	-0.6832	26.0	49.0708	0.1454	0.2400	-0.9845
21.1	51.1255	0.3115	0.0479	-0.6896	26.1	49.1246	0.3301	0.2371	-0.9888
21.2	51.1676	0.0775	0.0592	-0.6970	26.2	49.2153	0.4987	0.2345	-0.9926
21.3	51.1608	-0.1620	0.0693	-0.7052	26.3	49.3384	0.6434	0.2325	-0.9959
21.4	51.1043	-0.3964	0.0779	-0.7140	26.4	49.4876	0.7582	0.2310	-0.9990
21.5	50.9995	-0.6150	0.0852	-0.7230	26.5	49.6558	0.8386	0.2302	-1.0019
21.6	50.8507	-0.8073	0.0909	-0.7321	26.6	49.8348	0.8819	0.2299	-1.0049
21.7	50.6643	-0.9640	0.0953	-0.7408	26.7	50.0163	0.8872	0.2301	-1.0080
21.8	50.4490	-1.0774	0.0985	-0.7489	26.8	50.1926	0.8557	0.2309	-1.0113
21.9	50.2153	-1.1421	0.1006	-0.7562	26.9	50.3561	0.7901	0.2320	-1.0151
22.0	49.9746	-1.1554	0.1019	-0.7626	27.0	50.5007	0.6944	0.2334	-1.0193
22.1	49.7384	-1.1175	0.1027	-0.7679	27.1	50.6213	0.5739	0.2351	-1.0240
22.2	49.5181	-1.0313	0.1032	-0.7720	27.2	50.7141	0.4343	0.2368	-1.0293
22.3	49.3234	-0.9021	0.1037	-0.7751	27.3	50.7767	0.2818	0.2384	-1.0351
22.4	49.1625	-0.7374	0.1044	-0.7771	27.4	50.8081	0.1225	0.2400	-1.0415
22.5	49.0413	-0.5460	0.1056	-0.7783	27.5	50.8083	-0.0374	0.2413	-1.0483
22.6	48.9636	-0.3375	0.1075	-0.7787	27.6	50.7784	-0.1923	0.2422	-1.0557
22.7	48.9306	-0.1216	0.1100	-0.7786	27.7	50.7204	-0.3370	0.2428	-1.0635
22.8	48.9416	0.0923	0.1134	-0.7782	27.8	50.6371	-0.4667	0.2429	-1.0717
22.9	48.9939	0.2958	0.1177	-0.7776	27.9	50.5319	-0.5775	0.2425	-1.0802
23.0	49.0835	0.4814	0.1228	-0.7770	28.0	50.4086	-0.6661	0.2414	-1.0889
23.1	49.2052	0.6431	0.1287	-0.7766	28.1	50.2718	-0.7296	0.2398	-1.0978
23.2	49.3532	0.7759	0.1354	-0.7766	28.2	50.1259	-0.7663	0.2376	-1.1067
23.3	49.5212	0.8765	0.1428	-0.7771	28.3	49.9761	-0.7749	0.2347	-1.1157
23.4	49.7025	0.9425	0.1507	-0.7782	28.4	49.8273	-0.7553	0.2312	-1.1246
23.5	49.8906	0.9728	0.1591	-0.7799	28.5	49.6848	-0.7079	0.2270	-1.1334
23.6	50.0791	0.9674	0.1679	-0.7824	28.6	49.5534	-0.6342	0.2222	-1.1419
23.7	50.2617	0.9272	0.1770	-0.7858	28.7	49.4380	-0.5363	0.2168	-1.1502
23.8	50.4325	0.8541	0.1862	-0.7899	28.8	49.3431	-0.4175	0.2108	-1.1580
23.9	50.5858	0.7508	0.1954	-0.7950	28.9	49.2724	-0.2817	0.2043	-1.1654
24.0	50.7167	0.6209	0.2045	-0.8010	29.0	49.2293	-0.1337	0.1973	-1.1724
24.1	50.8206	0.4690	0.2133	-0.8079	29.1	49.2161	0.0210	0.1899	-1.1787
24.2	50.8939	0.3002	0.2218	-0.8157	29.2	49.2340	0.1765	0.1822	-1.1845
24.3	50.9338	0.1203	0.2298	-0.8243	29.3	49.2831	0.3266	0.1742	-1.1896
24.4	50.9386	-0.0643	0.2372	-0.8337	29.4	49.3620	0.4646	0.1660	-1.1940
24.5	50.9077	-0.2469	0.2438	-0.8438	29.5	49.4684	0.5845	0.1578	-1.1977
24.6	50.8419	-0.4207	0.2495	-0.8545	29.6	49.5980	0.6805	0.1496	-1.2007
24.7	50.7430	-0.5791	0.2543	-0.8656	29.7	49.7457	0.7479	0.1415	-1.2031
24.8	50.6145	-0.7155	0.2580	-0.8770	29.8	49.9046	0.7830	0.1336	-1.2048
24.9	50.4609	-0.8245	0.2607	-0.8886	29.9	50.0676	0.7835	0.1261	-1.2059
25.0	50.2879	-0.9012	0.2623	-0.9001	30.0	50.2271	0.7498	0.1190	-1.2064

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
30.1	50.3755	0.6830	0.1124	-1.2066	35.1	49.4702	-0.2545	-0.1422	-1.1557
30.2	50.5053	0.5864	0.1063	-1.2064	35.2	49.4375	-0.1463	-0.1447	-1.1551
30.3	50.6112	0.4653	0.1008	-1.2061	35.3	49.4254	-0.0349	-0.1479	-1.1545
30.4	50.6878	0.3261	0.0959	-1.2057	35.4	49.4329	0.0746	-0.1516	-1.1540
30.5	50.7330	0.1757	0.0916	-1.2054	35.5	49.4638	0.1801	-0.1560	-1.1533
30.6	50.7454	0.0212	0.0877	-1.2053	35.6	49.5110	0.2771	-0.1609	-1.1523
30.7	50.7256	-0.1299	0.0843	-1.2054	35.7	49.5767	0.3636	-0.1664	-1.1509
30.8	50.6759	-0.2712	0.0811	-1.2059	35.8	49.6554	0.4345	-0.1723	-1.1489
30.9	50.5998	-0.3969	0.0782	-1.2069	35.9	49.7469	0.4911	-0.1785	-1.1465
31.0	50.5024	-0.5027	0.0754	-1.2083	36.0	49.8464	0.5285	-0.1852	-1.1433
31.1	50.3877	-0.5854	0.0726	-1.2101	36.1	49.9510	0.5456	-0.1919	-1.1395
31.2	50.2617	-0.6427	0.0697	-1.2124	36.2	50.0583	0.5468	-0.1987	-1.1349
31.3	50.1295	-0.6740	0.0665	-1.2151	36.3	50.1608	0.5229	-0.2054	-1.1295
31.4	49.9963	-0.6794	0.0630	-1.2181	36.4	50.2615	0.4806	-0.2119	-1.1233
31.5	49.8666	-0.6600	0.0592	-1.2214	36.5	50.3494	0.4178	-0.2181	-1.1164
31.6	49.7443	-0.6167	0.0549	-1.2249	36.6	50.4236	0.3437	-0.2239	-1.1088
31.7	49.6338	-0.5527	0.0502	-1.2285	36.7	50.4852	0.2515	-0.2292	-1.1004
31.8	49.5383	-0.4697	0.0449	-1.2322	36.8	50.5260	0.1503	-0.2338	-1.0914
31.9	49.4601	-0.3717	0.0391	-1.2359	36.9	50.5467	0.0399	-0.2376	-1.0820
32.0	49.4016	-0.2614	0.0328	-1.2394	37.0	50.5427	-0.0710	-0.2406	-1.0721
32.1	49.3647	-0.1425	0.0259	-1.2428	37.1	50.5188	-0.1818	-0.2426	-1.0619
32.2	49.3501	-0.0189	0.0186	-1.2458	37.2	50.4728	-0.2827	-0.2437	-1.0517
32.3	49.3590	0.1053	0.0107	-1.2486	37.3	50.4058	-0.3756	-0.2438	-1.0415
32.4	49.3909	0.2259	0.0024	-1.2509	37.4	50.3190	-0.4458	-0.2428	-1.0316
32.5	49.4451	0.3391	-0.0064	-1.2527	37.5	50.2242	-0.5035	-0.2411	-1.0221
32.6	49.5206	0.4403	-0.0155	-1.2539	37.6	50.1176	-0.5348	-0.2384	-1.0132
32.7	49.6149	0.5263	-0.0250	-1.2545	37.7	50.0025	-0.5464	-0.2349	-1.0047
32.8	49.7248	0.5926	-0.0347	-1.2543	37.8	49.8909	-0.5335	-0.2311	-0.9970
32.9	49.8468	0.6363	-0.0445	-1.2535	37.9	49.7864	-0.4965	-0.2267	-0.9903
33.0	49.9765	0.6561	-0.0543	-1.2518	38.0	49.6926	-0.4441	-0.2221	-0.9847
33.1	50.1087	0.6491	-0.0641	-1.2492	38.1	49.6009	-0.3691	-0.2175	-0.9794
33.2	50.2376	0.6150	-0.0737	-1.2459	38.2	49.5484	-0.2797	-0.2130	-0.9756
33.3	50.3579	0.5544	-0.0829	-1.2417	38.3	49.5001	-0.1817	-0.2088	-0.9720
33.4	50.4640	0.4699	-0.0916	-1.2368	38.4	49.4787	-0.0786	-0.2051	-0.9695
33.5	50.5510	0.3646	-0.0997	-1.2311	38.5	49.4781	0.0286	-0.2018	-0.9674
33.6	50.6139	0.2428	-0.1071	-1.2249	38.6	49.4998	0.1280	-0.1992	-0.9658
33.7	50.6499	0.1097	-0.1137	-1.2182	38.7	49.5392	0.2262	-0.1972	-0.9644
33.8	50.6570	-0.0269	-0.1193	-1.2113	38.8	49.5981	0.3066	-0.1960	-0.9632
33.9	50.6342	-0.1621	-0.1241	-1.2042	38.9	49.6726	0.3757	-0.1955	-0.9618
34.0	50.5836	-0.2889	-0.1279	-1.1972	39.0	49.7523	0.4266	-0.1956	-0.9603
34.1	50.5082	-0.4005	-0.1308	-1.1904	39.1	49.8429	0.4619	-0.1962	-0.9583
34.2	50.4111	-0.4944	-0.1330	-1.1841	39.2	49.9429	0.4803	-0.1974	-0.9558
34.3	50.2982	-0.5635	-0.1345	-1.1783	39.3	50.0268	0.4872	-0.1987	-0.9528
34.4	50.1757	-0.6069	-0.1355	-1.1731	39.4	50.1300	0.4543	-0.2005	-0.9490
34.5	50.0487	-0.6236	-0.1362	-1.1687	39.5	50.2036	0.4269	-0.2022	-0.9445
34.6	49.9220	-0.6139	-0.1367	-1.1650	39.6	50.2834	0.3699	-0.2041	-0.9395
34.7	49.8033	-0.5804	-0.1372	-1.1619	39.7	50.3528	0.3061	-0.2057	-0.9339
34.8	49.6950	-0.5236	-0.1379	-1.1596	39.8	50.3998	0.2300	-0.2068	-0.9274
34.9	49.6014	-0.4480	-0.1389	-1.1579	39.9	50.4326	0.1463	-0.2073	-0.9204
35.0	49.5269	-0.3570	-0.1403	-1.1566	40.0	50.4545	0.0569	-0.2076	-0.9131

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
40.1	50.4593	-0.0355	-0.2074	-0.9048	45.1	49.7037	0.1912	0.0725	-0.7976
40.2	50.4368	-0.1223	-0.2059	-0.8969	45.2	49.7511	0.2622	0.0788	-0.7988
40.3	50.4051	-0.1988	-0.2039	-0.8882	45.3	49.8155	0.3064	0.0845	-0.8016
40.4	50.3615	-0.2771	-0.2011	-0.8799	45.4	49.8667	0.3327	0.0892	-0.8101
40.5	50.2918	-0.3451	-0.1975	-0.8713	45.5	49.9711	0.3371	0.0961	-0.8082
40.6	50.2339	-0.3949	-0.1934	-0.8634	45.6	50.0309	0.3318	0.1006	-0.8216
40.7	50.1475	-0.4422	-0.1885	-0.8554	45.7	50.0966	0.3281	0.1074	-0.8290
40.8	50.0545	-0.4540	-0.1823	-0.8476	45.8	50.1880	0.2911	0.1099	-0.8298
40.9	49.9489	-0.4550	-0.1758	-0.8402	45.9	50.2048	0.2481	0.1109	-0.8432
41.0	49.8804	-0.4342	-0.1681	-0.8341	46.0	50.2387	0.2116	0.1142	-0.8457
41.1	49.7867	-0.3936	-0.1601	-0.8283	46.1	50.3229	0.1415	0.1159	-0.8523
41.2	49.7267	-0.3528	-0.1524	-0.8239	46.2	50.3205	0.0828	0.1160	-0.8518
41.3	49.6527	-0.2814	-0.1439	-0.8196	46.3	50.3131	0.0000	0.1189	-0.8571
41.4	49.6050	-0.2002	-0.1347	-0.8163	46.4	50.3488	-0.0201	0.1177	-0.8604
41.5	49.5508	-0.1171	-0.1270	-0.8140	46.5	50.2830	-0.0901	0.1164	-0.8642
41.6	49.5488	-0.0464	-0.1195	-0.8123	46.6	50.2896	-0.1654	0.1250	-0.8588
41.7	49.5536	0.0441	-0.1109	-0.8114	46.7	50.2335	-0.1962	0.1269	-0.8671
41.8	49.5725	0.1266	-0.1030	-0.8118	46.8	50.1356	-0.2997	0.1189	-0.8694
41.9	49.6144	0.2225	-0.0957	-0.8121	46.9	50.1230	-0.2683	0.1234	-0.8717
42.0	49.6741	0.2862	-0.0899	-0.8129	47.0	50.0578	-0.3120	0.1187	-0.8774
42.1	49.7487	0.3640	-0.0837	-0.8136	47.1	49.9927	-0.3034	0.1291	-0.8765
42.2	49.8255	0.4091	-0.0780	-0.8163	47.2	49.9721	-0.3074	0.1296	-0.8738
42.3	49.9138	0.4100	-0.0743	-0.8183	47.3	49.9036	-0.2800	0.1360	-0.8738
42.4	49.9779	0.4253	-0.0697	-0.8189	47.4	49.8571	-0.2296	0.1348	-0.8840
42.5	50.0711	0.4015	-0.0674	-0.8204	47.5	49.8079	-0.2167	0.1471	-0.8738
42.6	50.1676	0.3838	-0.0653	-0.8213	47.6	49.7844	-0.1422	0.1419	-0.8792
42.7	50.2325	0.3186	-0.0625	-0.8224	47.7	49.7237	-0.1286	0.1450	-0.8866
42.8	50.2842	0.3069	-0.0612	-0.8228	47.8	49.7262	-0.1481	0.1482	-0.8622
42.9	50.3392	0.2392	-0.0595	-0.8224	47.9	49.7477	0.0165	0.1634	-0.8897
43.0	50.3840	0.1759	-0.0580	-0.8210	48.0	49.7377	0.0349	0.1710	-0.8907
43.1	50.3927	0.0712	-0.0562	-0.8187	48.1	49.7838	-0.0270	0.1805	-0.9071
43.2	50.3952	-0.0041	-0.0547	-0.8168	48.2	49.6516	0.0890	0.1868	-0.8715
43.3	50.3955	-0.1433	-0.0527	-0.8133	48.3	49.8194	0.1552	0.1797	-0.9131
43.4	50.3666	-0.1644	-0.0502	-0.8111	48.4	49.9387	0.3263	0.1882	-0.9213
43.5	50.3049	-0.2124	-0.0439	-0.8065	48.5	49.8863	0.1983	0.1888	-0.9243
43.6	50.2705	-0.2665	-0.0419	-0.8023	48.6	49.9440	0.2572	0.2041	-0.9363
43.7	50.1905	-0.3063	-0.0373	-0.7998	48.7	50.0064	0.2713	0.2084	-0.9403
43.8	50.1388	-0.3313	-0.0312	-0.7956	48.8	50.0587	0.2444	0.2037	-0.9393
43.9	50.0598	-0.3711	-0.0274	-0.7931	48.9	50.0616	0.1854	0.2129	-0.9372
44.0	49.9985	-0.3777	-0.0203	-0.7902	49.0	50.1674	0.1841	0.2087	-0.9666
44.1	49.9219	-0.3731	-0.0132	-0.7842	49.1	50.1865	0.2354	0.1856	-0.9619
44.2	49.8393	-0.3600	-0.0070	-0.7841	49.2	50.2239	0.2172	0.2268	-0.9635
44.3	49.7752	-0.3123	0.0006	-0.7801	49.3	50.2077	0.0984	0.2174	-1.0277
44.4	49.7229	-0.2615	0.0106	-0.7828	49.4	50.3149	0.1403	0.2389	-0.9978
44.5	49.7131	-0.1950	0.0194	-0.7813	49.5	50.2550	-0.0223	0.1909	-1.0060
44.6	49.6598	-0.1341	0.0307	-0.7815	49.6	50.2163	-0.0647	0.1952	-1.0100
44.7	49.6467	-0.0418	0.0371	-0.7831	49.7	50.1877	-0.0768	0.2070	-1.0112
44.8	49.6597	0.0190	0.0458	-0.7841	49.8	50.2615	-0.0760	0.2040	-1.0252
44.9	49.6604	0.0902	0.0525	-0.7883	49.9	50.1547	-0.1302	0.1851	-1.0273
45.0	49.6687	0.1355	0.0618	-0.7913	50.0	50.1261	-0.1902	0.2042	-1.0445

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
50.1	50.0934	-0.1748	55.1	49.9690	0.1063
50.2	50.0260	-0.2008	55.2	49.9921	0.0521
50.3	49.9769	-0.2331	55.3	49.7747	-0.0020
50.4	49.8760	-0.2033	55.4	49.9924	0.1114
50.5	49.9026	-0.1885	55.5	50.0031	0.0942
50.6	49.8042	-0.1196	55.6	50.1058	0.1170
50.7	49.8838	-0.1129	55.7	49.8308	-0.0340
50.8	49.6998	-0.3097	55.8	50.0401	-0.0051
50.9	49.8294	-0.0791	55.9	50.0525	0.1097
51.0	49.8169	-0.0334	56.0	50.0305	-0.0399
51.1	49.8267	-0.0251	56.1	50.0508	0.0475
51.2	49.8746	0.0129	56.2	50.0903	0.0224
51.3	49.8802	0.0773	56.3	50.0870	-0.0579
51.4	49.7846	0.1077	56.4	50.1175	-0.0042
51.5	49.8482	0.0488	56.5	49.9112	-0.0223
51.6	49.8983	0.1340	56.6	50.0275	-0.0414
51.7	49.8133	-0.2347	56.7	49.9581	-0.2466
51.8	50.0060	0.1716	56.8	50.0369	-0.1115
51.9	50.0084	0.1148	56.9	50.0235	-0.1033
52.0	50.0047	0.2525	57.0	50.0334	-0.0790
52.1	50.0474	0.1470	57.1	49.9509	-0.1367
52.2	50.0076	0.1222	57.2	49.9506	-0.1468
52.3	50.0491	0.1147	57.3	49.9474	-0.0999
52.4	50.0845	0.1016	57.4	49.9635	-0.0708
52.5	50.1203	0.0709	57.5	49.8150	-0.0884
52.6	50.1355	0.0362	57.6	49.9148	-0.0587
52.7	50.1303	0.0269	57.7	49.9037	-0.0828
52.8	50.1887	-0.0616	57.8	49.8555	-0.0130
52.9	50.0524	-0.0564	57.9	49.9383	0.0319
53.0	50.0858	-0.0628	58.0	49.9928	-0.1634
53.1	50.1447	-0.0543	58.1	49.9979	-0.0295
53.2	50.1896	-0.1115	58.2	49.9279	0.0308
53.3	50.0633	-0.1072	58.3	49.8077	0.0440
53.4	50.0249	-0.1084	58.4	49.9260	0.0998
53.5	49.9997	-0.1073	58.5	49.9294	0.0910
53.6	49.8741	-0.3177	58.6	49.9367	0.0880
53.7	49.9853	-0.1030	58.7	49.9377	0.1028
53.8	50.0245	-0.0555	58.8	49.9817	0.0962
53.9	50.0033	-0.1623	58.9	50.0116	0.1173
54.0	49.9387	-0.1473	59.0	50.0578	0.0960
54.1	49.9285	-0.1281	59.1	50.0742	0.0900
54.2	50.0568	-0.0256	59.2	50.1159	-0.0661
54.3	49.8981	-0.0279	59.3	50.1537	0.0547
54.4	49.8177	-0.2768	59.4	50.1417	0.0186
54.5	49.7724	-0.1055	59.5	50.1191	0.0127
54.6	49.8951	0.0229	59.6	50.1406	-0.0342
54.7	49.8921	0.0263	59.7	50.0898	0.1513
54.8	49.9025	0.0918	59.8	50.0955	0.0784
54.9	49.8137	0.0095	59.9	50.0978	-0.0665
55.0	49.8910	0.1217	60.0	50.0925	-0.0967
					-0.1643
					-1.0908

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
60.1	50.0819	-0.1189	65.1	49.9739	0.1915
60.2	50.0617	-0.0840	65.2	50.0065	0.2014
60.3	50.0170	-0.1286	65.3	50.0449	0.1935
60.4	50.0171	-0.1288	65.4	50.0809	0.1803
60.5	49.9509	-0.0918	65.5	50.1231	0.1595
60.6	49.9368	-0.1319	65.6	50.1487	0.1304
60.7	49.9262	-0.0649	65.7	50.1773	0.1012
60.8	49.8684	-0.0858	65.8	50.1896	0.0590
60.9	49.8723	-0.0791	65.9	50.2008	0.0212
61.0	49.8774	-0.1151	66.0	50.2036	-0.0190
61.1	49.8558	0.0069	66.1	50.1965	-0.0626
61.2	49.6763	-0.2268	66.2	50.1749	-0.0967
61.3	49.8210	0.0230	66.3	50.1599	-0.1367
61.4	49.8522	0.0300	66.4	50.1291	-0.1654
61.5	49.8817	0.0789	66.5	50.0923	-0.1913
61.6	49.9021	0.1221	66.6	50.0564	-0.2062
61.7	49.9222	0.1091	66.7	50.0121	-0.2122
61.8	49.9411	0.1378	66.8	49.9740	-0.2132
61.9	49.9795	0.1343	66.9	49.9261	-0.2052
62.0	49.9884	0.1615	67.0	49.8894	-0.1888
62.1	50.0358	0.1398	67.1	49.8512	-0.1644
62.2	50.0566	0.1248	67.2	49.8240	-0.1325
62.3	50.0898	0.1359	67.3	49.8008	-0.0969
62.4	50.1228	0.1100	67.4	49.7826	-0.0578
62.5	50.1371	0.0962	67.5	49.7739	-0.0145
62.6	50.1510	0.0627	67.6	49.7765	0.0311
62.7	50.1681	0.0156	67.7	49.7838	0.0757
62.8	50.1554	0.0063	67.8	49.8038	0.1150
62.9	50.1600	-0.0388	67.9	49.8301	0.1515
63.0	50.1663	-0.0532	68.0	49.8627	0.1815
63.1	50.1352	-0.0889	68.1	49.8999	0.2076
63.2	50.1088	-0.1220	68.2	49.9431	0.2226
63.3	50.0772	-0.1476	68.3	49.9860	0.2281
63.4	50.0493	-0.1659	68.4	50.0344	0.2271
63.5	50.0241	-0.1703	68.5	50.0800	0.2172
63.6	49.9959	-0.1698	68.6	50.1220	0.1962
63.7	49.9489	-0.1622	68.7	50.1580	0.1685
63.8	49.9382	-0.1544	68.8	50.1904	0.1344
63.9	49.8895	-0.1407	68.9	50.2126	0.0941
64.0	49.8559	-0.1218	69.0	50.2266	0.0483
64.1	49.8449	-0.0970	69.1	50.2334	-0.0003
64.2	49.8260	-0.0636	69.2	50.2296	-0.0450
64.3	49.8083	-0.0297	69.3	50.2176	-0.0932
64.4	49.8004	0.0082	69.4	50.1958	-0.1341
64.5	49.8190	0.0490	69.5	50.1651	-0.1718
64.6	49.8303	0.0782	69.6	50.1279	-0.2022
64.7	49.8449	0.1196	69.7	50.0853	-0.2248
64.8	49.8692	0.1438	69.8	50.0388	-0.2388
64.9	49.8931	0.1649	69.9	49.9908	-0.2447
65.0	49.9400	0.1873	70.0	49.9416	-0.2391

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
70.1	49.8943	-0.2233	75.1	50.2298	0.1548
70.2	49.8535	-0.1994	75.2	50.2564	0.1056
70.3	49.8159	-0.1682	75.3	50.2730	0.0516
70.4	49.7851	-0.1299	75.4	50.2784	-0.0046
70.5	49.7631	-0.0857	75.5	50.2722	-0.0607
70.6	49.7509	-0.0376	75.6	50.2552	-0.1147
70.7	49.7468	0.0118	75.7	50.2275	-0.1641
70.8	49.7539	0.0613	75.8	50.1904	-0.2073
70.9	49.7703	0.1082	75.9	50.1456	-0.2420
71.0	49.7957	0.1517	76.0	50.0947	-0.2674
71.1	49.8290	0.1888	76.1	50.0396	-0.2818
71.2	49.8690	0.2202	76.2	49.9828	-0.2852
71.3	49.9150	0.2404	76.3	49.9264	-0.2774
71.4	49.9634	0.2529	76.4	49.8725	-0.2583
71.5	50.0149	0.2554	76.5	49.8235	-0.2290
71.6	50.0656	0.2474	76.6	49.7813	-0.1906
71.7	50.1137	0.2297	76.7	49.7475	-0.1444
71.8	50.1572	0.2015	76.8	49.7233	-0.0924
71.9	50.1955	0.1661	76.9	49.7099	-0.0364
72.0	50.2245	0.1244	77.0	49.7079	0.0208
72.1	50.2460	0.0766	77.1	49.7171	0.0778
72.2	50.2569	0.0252	77.2	49.7378	0.1318
72.3	50.2574	-0.0273	77.3	49.7684	0.1807
72.4	50.2471	-0.0787	77.4	49.8081	0.2227
72.5	50.2265	-0.1275	77.5	49.8558	0.2562
72.6	50.1976	-0.1713	77.6	49.9092	0.2796
72.7	50.1602	-0.2081	77.7	49.9664	0.2920
72.8	50.1156	-0.2374	77.8	50.0250	0.2927
72.9	50.0661	-0.2567	77.9	50.0828	0.2816
73.0	50.0136	-0.2661	78.0	50.1375	0.2595
73.1	49.9609	-0.2650	78.1	50.1866	0.2266
73.2	49.9083	-0.2527	78.2	50.2285	0.1847
73.3	49.8598	-0.2305	78.3	50.2610	0.1349
73.4	49.8165	-0.1998	78.4	50.2831	0.0797
73.5	49.7802	-0.1601	78.5	50.2938	0.0210
73.6	49.7523	-0.1145	78.6	50.2924	-0.0387
73.7	49.7338	-0.0640	78.7	50.2792	-0.0971
73.8	49.7255	-0.0113	78.8	50.2545	-0.1518
73.9	49.7277	0.0429	78.9	50.2194	-0.2004
74.0	49.7412	0.0953	79.0	50.1753	-0.2411
74.1	49.7648	0.1444	79.1	50.1239	-0.2722
74.2	49.7975	0.1879	79.2	50.0673	-0.2925
74.3	49.8384	0.2243	79.3	50.0078	-0.3010
74.4	49.8852	0.2519	79.4	49.9478	-0.2975
74.5	49.9373	0.2697	79.5	49.8896	-0.2823
74.6	49.9921	0.2765	79.6	49.8357	-0.2557
74.7	50.0471	0.2728	79.7	49.7879	-0.2191
74.8	50.1004	0.2578	79.8	49.7483	-0.1736
74.9	50.1502	0.2325	79.9	49.7185	-0.1212
75.0	50.1939	0.1979	80.0	49.6996	-0.0639
					-0.0411

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
80.1	49.6925	-0.0039	-0.0427	-1.1005	85.1	50.2713	-0.1731	-0.0897	-1.0057
80.2	49.6973	0.0564	-0.0443	-1.0990	85.2	50.2315	-0.2246	-0.0898	-1.0033
80.3	49.7139	0.1147	-0.0459	-1.0976	85.3	50.1822	-0.2671	-0.0897	-1.0009
80.4	49.7417	0.1686	-0.0474	-1.0964	85.4	50.1254	-0.2989	-0.0895	-0.9984
80.5	49.7798	0.2161	-0.0490	-1.0952	85.5	50.0634	-0.3187	-0.0891	-0.9958
80.6	49.8266	0.2551	-0.0506	-1.0940	85.6	49.9987	-0.3258	-0.0886	-0.9933
80.7	49.8804	0.2843	-0.0523	-1.0929	85.7	49.9339	-0.3200	-0.0879	-0.9908
80.8	49.9390	0.3022	-0.0541	-1.0918	85.8	49.8716	-0.3014	-0.0870	-0.9884
80.9	50.0002	0.3082	-0.0559	-1.0907	85.9	49.8143	-0.2708	-0.0860	-0.9861
81.0	50.0614	0.3018	-0.0578	-1.0895	86.0	49.7641	-0.2295	-0.0848	-0.9839
81.1	50.1204	0.2834	-0.0598	-1.0883	86.1	49.7231	-0.1790	-0.0835	-0.9818
81.2	50.1746	0.2534	-0.0618	-1.0870	86.2	49.6928	-0.1215	-0.0822	-0.9798
81.3	50.2219	0.2133	-0.0640	-1.0856	86.3	49.6745	-0.0590	-0.0807	-0.9780
81.4	50.2603	0.1644	-0.0661	-1.0840	86.4	49.6689	0.0059	-0.0793	-0.9764
81.5	50.2882	0.1086	-0.0683	-1.0822	86.5	49.6762	0.0706	-0.0778	-0.9749
81.6	50.3044	0.0484	-0.0704	-1.0804	86.6	49.6961	0.1328	-0.0763	-0.9735
81.7	50.3083	-0.0140	-0.0725	-1.0783	86.7	49.7280	0.1898	-0.0749	-0.9723
81.8	50.2997	-0.0759	-0.0746	-1.0762	86.8	49.7707	0.2395	-0.0734	-0.9712
81.9	50.2787	-0.1350	-0.0765	-1.0738	86.9	49.8224	0.2799	-0.0721	-0.9702
82.0	50.2464	-0.1888	-0.0783	-1.0713	87.0	49.8812	0.3093	-0.0709	-0.9693
82.1	50.2040	-0.2350	-0.0799	-1.0688	87.1	49.9448	0.3265	-0.0697	-0.9685
82.2	50.1532	-0.2719	-0.0814	-1.0661	87.2	50.0107	0.3308	-0.0687	-0.9677
82.3	50.0961	-0.2979	-0.0827	-1.0633	87.3	50.0762	0.3218	-0.0677	-0.9670
82.4	50.0349	-0.3119	-0.0838	-1.0605	87.4	50.1388	0.3000	-0.0669	-0.9662
82.5	49.9721	-0.3136	-0.0847	-1.0577	87.5	50.1960	0.2660	-0.0661	-0.9654
82.6	49.9103	-0.3028	-0.0854	-1.0549	87.6	50.2453	0.2212	-0.0654	-0.9645
82.7	49.8519	-0.2799	-0.0860	-1.0522	87.7	50.2847	0.1674	-0.0648	-0.9636
82.8	49.7991	-0.2459	-0.0864	-1.0495	87.8	50.3127	0.1067	-0.0642	-0.9626
82.9	49.7541	-0.2021	-0.0866	-1.0468	87.9	50.3279	0.0415	-0.0636	-0.9615
83.0	49.7186	-0.1502	-0.0867	-1.0444	88.0	50.3298	-0.0255	-0.0630	-0.9603
83.1	49.6941	-0.0924	-0.0867	-1.0420	88.1	50.3183	-0.0915	-0.0624	-0.9590
83.2	49.6814	-0.0307	-0.0866	-1.0397	88.2	50.2938	-0.1539	-0.0617	-0.9576
83.3	49.6812	0.0323	-0.0864	-1.0376	88.3	50.2574	-0.2103	-0.0609	-0.9562
83.4	49.6934	0.0941	-0.0863	-1.0356	88.4	50.2103	-0.2582	-0.0601	-0.9547
83.5	49.7177	0.1524	-0.0861	-1.0338	88.5	50.1547	-0.2957	-0.0591	-0.9532
83.6	49.7530	0.2049	-0.0860	-1.0320	88.6	50.0928	-0.3214	-0.0580	-0.9516
83.7	49.7981	0.2494	-0.0858	-1.0304	88.7	50.0270	-0.3343	-0.0567	-0.9500
83.8	49.8513	0.2843	-0.0858	-1.0288	88.8	49.9600	-0.3338	-0.0553	-0.9485
83.9	49.9104	0.3079	-0.0858	-1.0273	88.9	49.8944	-0.3200	-0.0538	-0.9470
84.0	49.9732	0.3194	-0.0859	-1.0258	89.0	49.8329	-0.2935	-0.0522	-0.9456
84.1	50.0372	0.3182	-0.0861	-1.0243	89.1	49.7779	-0.2554	-0.0504	-0.9443
84.2	50.0998	0.3042	-0.0863	-1.0228	89.2	49.7315	-0.2071	-0.0485	-0.9431
84.3	50.1585	0.2779	-0.0867	-1.0213	89.3	49.6955	-0.1507	-0.0466	-0.9421
84.4	50.2109	0.2405	-0.0871	-1.0197	89.4	49.6715	-0.0882	-0.0446	-0.9412
84.5	50.2549	0.1933	-0.0875	-1.0180	89.5	49.6602	-0.0222	-0.0426	-0.9405
84.6	50.2886	0.1381	-0.0879	-1.0162	89.6	49.6622	0.0448	-0.0406	-0.9399
84.7	50.3106	0.0771	-0.0884	-1.0144	89.7	49.6773	0.1102	-0.0385	-0.9394
84.8	50.3201	0.0130	-0.0888	-1.0124	89.8	49.7052	0.1714	-0.0365	-0.9392
84.9	50.3165	-0.0519	-0.0892	-1.0103	89.9	49.7446	0.2259	-0.0346	-0.9390
85.0	50.3000	-0.1148	-0.0895	-1.0081	90.0	49.7941	0.2717	-0.0328	-0.9390

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
90.1	49.8518	0.3068	95.1	49.9469	-0.3485
90.2	49.9154	0.3298	95.2	49.8787	-0.3317
90.3	49.9824	0.3398	95.3	49.8152	-0.3018
90.4	50.0503	0.3363	95.4	49.7590	-0.2600
90.5	50.1163	0.3193	95.5	49.7121	-0.2079
90.6	50.1776	0.2894	95.6	49.6765	-0.1475
90.7	50.2319	0.2478	95.7	49.6535	-0.0813
90.8	50.2769	0.1962	95.8	49.6440	-0.0118
90.9	50.3107	0.1365	95.9	49.6484	0.0582
91.0	50.3319	0.0711	96.0	49.6665	0.1260
91.1	50.3397	0.0028	96.1	49.6977	0.1890
91.2	50.3336	-0.0658	96.2	49.7408	0.2446
91.3	50.3139	-0.1318	96.3	49.7941	0.2907
91.4	50.2814	-0.1925	96.4	49.8556	0.3254
91.5	50.2374	-0.2455	96.5	49.9229	0.3473
91.6	50.1837	-0.2887	96.6	49.9933	0.3554
91.7	50.1226	-0.3203	96.7	50.0641	0.3494
91.8	50.0564	-0.3390	96.8	50.1324	0.3293
91.9	49.9878	-0.3443	96.9	50.1954	0.2960
92.0	49.9196	-0.3358	97.0	50.2507	0.2507
92.1	49.8545	-0.3139	97.1	50.2958	0.1952
92.2	49.7950	-0.2796	97.2	50.3290	0.1317
92.3	49.7436	-0.2342	97.3	50.3489	0.0628
92.4	49.7021	-0.1796	97.4	50.3545	-0.0088
92.5	49.6722	-0.1178	97.5	50.3458	-0.0801
92.6	49.6551	-0.0514	97.6	50.3229	-0.1482
92.7	49.6514	0.0172	97.7	50.2869	-0.2104
92.8	49.6614	0.0852	97.8	50.2392	-0.2641
92.9	49.6846	0.1499	97.9	50.1817	-0.3072
93.0	49.7202	0.2089	98.0	50.1169	-0.3379
93.1	49.7668	0.2598	98.1	50.0473	-0.3551
93.2	49.8226	0.3005	98.2	49.9757	-0.3581
93.3	49.8855	0.3294	98.3	49.9051	-0.3469
93.4	49.9530	0.3453	98.4	49.8381	-0.3219
93.5	50.0225	0.3475	98.5	49.7774	-0.2841
93.6	50.0912	0.3358	98.6	49.7254	-0.2351
93.7	50.1563	0.3106	98.7	49.6842	-0.1768
93.8	50.2152	0.2729	98.8	49.6552	-0.1116
93.9	50.2655	0.2241	98.9	49.6398	-0.0419
94.0	50.3050	0.1661	99.0	49.6383	0.0295
94.1	50.3323	0.1013	99.1	49.6510	0.0999
94.2	50.3460	0.0323	99.2	49.6774	0.1664
94.3	50.3457	-0.0381	99.3	49.7164	0.2264
94.4	50.3312	-0.1070	99.4	49.7666	0.2777
94.5	50.3033	-0.1717	99.5	49.8260	0.3181
94.6	50.2630	-0.2295	99.6	49.8923	0.3459
94.7	50.2120	-0.2781	99.7	49.9630	0.3601
94.8	50.1524	-0.3155	99.8	50.0353	0.3600
94.9	50.0865	-0.3402	99.9	50.1062	0.3454
95.0	50.0171	-0.3514	100.0	50.1729	0.3170
					0.0540
					-0.9954

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z_o		kh_e	ka	Z_o		kh_e
100.1	50.2328	0.2758	0.0537	-0.9970	105.1	49.6411	-0.1034
100.2	50.2833	0.2234	0.0532	-0.9984	105.2	49.6275	-0.0311
100.3	50.3223	0.1619	0.0526	-0.9997	105.3	49.6285	0.0425
100.4	50.3483	0.0937	0.0519	-1.0009	105.4	49.6440	0.1146
100.5	50.3602	0.0216	0.0511	-1.0020	105.5	49.6734	0.1822
100.6	50.3573	-0.0514	0.0504	-1.0029	105.6	49.7156	0.2427
100.7	50.3400	-0.1224	0.0496	-1.0036	105.7	49.7691	0.2938
100.8	50.3087	-0.1885	0.0488	-1.0042	105.8	49.8317	0.3333
100.9	50.2649	-0.2470	0.0481	-1.0047	105.9	49.9010	0.3597
101.0	50.2104	-0.2955	0.0475	-1.0050	106.0	49.9743	0.3719
101.1	50.1472	-0.3322	0.0469	-1.0053	106.1	50.0486	0.3693
101.2	50.0781	-0.3555	0.0465	-1.0054	106.2	50.1212	0.3519
101.3	50.0058	-0.3647	0.0462	-1.0056	106.3	50.1889	0.3203
101.4	49.9332	-0.3592	0.0461	-1.0057	106.4	50.2491	0.2758
101.5	49.8632	-0.3395	0.0461	-1.0058	106.5	50.2992	0.2201
101.6	49.7986	-0.3063	0.0462	-1.0060	106.6	50.3373	0.1555
101.7	49.7418	-0.2611	0.0464	-1.0062	106.7	50.3617	0.0844
101.8	49.6951	-0.2055	0.0467	-1.0065	106.8	50.3714	0.0098
101.9	49.6603	-0.1418	0.0471	-1.0069	106.9	50.3659	-0.0652
102.0	49.6388	-0.0725	0.0476	-1.0075	107.0	50.3456	-0.1376
102.1	49.6314	-0.0003	0.0480	-1.0081	107.1	50.3112	-0.2045
102.2	49.6383	0.0719	0.0485	-1.0090	107.2	50.2641	-0.2631
102.3	49.6594	0.1415	0.0489	-1.0099	107.3	50.2063	-0.3111
102.4	49.6939	0.2055	0.0493	-1.0110	107.4	50.1401	-0.3466
102.5	49.7403	0.2616	0.0496	-1.0122	107.5	50.0683	-0.3682
102.6	49.7970	0.3074	0.0498	-1.0135	107.6	49.9937	-0.3750
102.7	49.8618	0.3412	0.0498	-1.0149	107.7	49.9193	-0.3669
102.8	49.9321	0.3615	0.0497	-1.0163	107.8	49.8480	-0.3443
102.9	50.0052	0.3675	0.0495	-1.0178	107.9	49.7828	-0.3080
103.0	50.0782	0.3588	0.0491	-1.0193	108.0	49.7260	-0.2595
103.1	50.1481	0.3357	0.0485	-1.0207	108.1	49.6800	-0.2008
103.2	50.2121	0.2991	0.0478	-1.0221	108.2	49.6465	-0.1342
103.3	50.2676	0.2504	0.0470	-1.0233	108.3	49.6267	-0.0624
103.4	50.3123	0.1915	0.0460	-1.0245	108.4	49.6216	0.0120
103.5	50.3444	0.1247	0.0449	-1.0255	108.5	49.6312	0.0860
103.6	50.3625	0.0528	0.0438	-1.0264	108.6	49.6552	0.1566
103.7	50.3659	-0.0213	0.0426	-1.0271	108.7	49.6928	0.2212
103.8	50.3544	-0.0946	0.0414	-1.0277	108.8	49.7424	0.2772
103.9	50.3284	-0.1641	0.0402	-1.0281	108.9	49.8022	0.3223
104.0	50.2890	-0.2270	0.0391	-1.0283	109.0	49.8698	0.3548
104.1	50.2379	-0.2808	0.0381	-1.0285	109.1	49.9427	0.3732
104.2	50.1771	-0.3232	0.0372	-1.0285	109.2	50.0179	0.3768
104.3	50.1092	-0.3527	0.0364	-1.0284	109.3	50.0925	0.3654
104.4	50.0368	-0.3680	0.0357	-1.0282	109.4	50.1634	0.3393
104.5	49.9629	-0.3686	0.0352	-1.0280	109.5	50.2279	0.2995
104.6	49.8904	-0.3546	0.0348	-1.0278	109.6	50.2831	0.2476
104.7	49.8222	-0.3265	0.0346	-1.0277	109.7	50.3270	0.1856
104.8	49.7610	-0.2854	0.0345	-1.0276	109.8	50.3576	0.1160
104.9	49.7091	-0.2331	0.0345	-1.0275	109.9	50.3737	0.0417
105.0	49.6686	-0.1717	0.0346	-1.0276	110.0	50.3746	-0.0344
							0.0065
							-1.0481

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
110.1	50.3602	-0.1092	0.0051	-1.0480	115.1	49.7464	0.2916	-0.0163	-1.0332
110.2	50.3311	-0.1796	0.0037	-1.0477	115.2	49.8090	0.3357	-0.0163	-1.0336
110.3	50.2886	-0.2427	0.0025	-1.0472	115.3	49.8792	0.3665	-0.0164	-1.0340
110.4	50.2344	-0.2960	0.0013	-1.0467	115.4	49.9542	0.3828	-0.0166	-1.0345
110.5	50.1706	-0.3374	0.0003	-1.0460	115.5	50.0311	0.3840	-0.0170	-1.0349
110.6	50.1000	-0.3652	-0.0006	-1.0452	115.6	50.1069	0.3698	-0.0175	-1.0354
110.7	50.0253	-0.3784	-0.0013	-1.0444	115.7	50.1784	0.3407	-0.0182	-1.0358
110.8	49.9495	-0.3765	-0.0019	-1.0436	115.8	50.2428	0.2979	-0.0190	-1.0361
110.9	49.8758	-0.3596	-0.0023	-1.0427	115.9	50.2975	0.2430	-0.0200	-1.0363
111.0	49.8069	-0.3285	-0.0025	-1.0420	116.0	50.3401	0.1782	-0.0210	-1.0364
111.1	49.7456	-0.2843	-0.0026	-1.0412	116.1	50.3690	0.1061	-0.0221	-1.0364
111.2	49.6943	-0.2290	-0.0026	-1.0406	116.2	50.3828	0.0297	-0.0232	-1.0361
111.3	49.6549	-0.1647	-0.0025	-1.0401	116.3	50.3811	-0.0480	-0.0243	-1.0357
111.4	49.6291	-0.0939	-0.0024	-1.0398	116.4	50.3638	-0.1238	-0.0254	-1.0352
111.5	49.6177	-0.0193	-0.0021	-1.0396	116.5	50.3317	-0.1946	-0.0265	-1.0345
111.6	49.6212	0.0560	-0.0019	-1.0395	116.6	50.2862	-0.2575	-0.0274	-1.0336
111.7	49.6395	0.1292	-0.0017	-1.0396	116.7	50.2290	-0.3100	-0.0283	-1.0327
111.8	49.6719	0.1974	-0.0016	-1.0398	116.8	50.1626	-0.3500	-0.0290	-1.0316
111.9	49.7172	0.2579	-0.0015	-1.0402	116.9	50.0896	-0.3760	-0.0295	-1.0305
112.0	49.7737	0.3084	-0.0015	-1.0406	117.0	50.0130	-0.3868	-0.0299	-1.0293
112.1	49.8391	0.3467	-0.0016	-1.0412	117.1	49.9358	-0.3823	-0.0301	-1.0281
112.2	49.9109	0.3714	-0.0019	-1.0418	117.2	49.8612	-0.3625	-0.0302	-1.0270
112.3	49.9863	0.3814	-0.0024	-1.0424	117.3	49.7921	-0.3284	-0.0301	-1.0259
112.4	50.0624	0.3761	-0.0029	-1.0430	117.4	49.7311	-0.2813	-0.0299	-1.0249
112.5	50.1360	0.3558	-0.0037	-1.0437	117.5	49.6807	-0.2232	-0.0295	-1.0240
112.6	50.2042	0.3212	-0.0046	-1.0442	117.6	49.6428	-0.1563	-0.0291	-1.0233
112.7	50.2643	0.2736	-0.0056	-1.0446	117.7	49.6189	-0.0832	-0.0286	-1.0227
112.8	50.3137	0.2149	-0.0067	-1.0450	117.8	49.6098	-0.0069	-0.0280	-1.0222
112.9	50.3504	0.1474	-0.0079	-1.0451	117.9	49.6159	0.0697	-0.0275	-1.0219
113.0	50.3729	0.0739	-0.0092	-1.0452	118.0	49.6371	0.1437	-0.0270	-1.0217
113.1	50.3802	-0.0027	-0.0105	-1.0450	118.1	49.6724	0.2121	-0.0265	-1.0217
113.2	50.3720	-0.0793	-0.0118	-1.0447	118.2	49.7206	0.2722	-0.0261	-1.0218
113.3	50.3487	-0.1526	-0.0131	-1.0443	118.3	49.7799	0.3217	-0.0258	-1.0221
113.4	50.3112	-0.2198	-0.0142	-1.0436	118.4	49.8478	0.3586	-0.0257	-1.0224
113.5	50.2611	-0.2781	-0.0153	-1.0429	118.5	49.9219	0.3813	-0.0257	-1.0227
113.6	50.2003	-0.3252	-0.0163	-1.0420	118.6	49.9991	0.3889	-0.0258	-1.0231
113.7	50.1315	-0.3592	-0.0171	-1.0410	118.7	50.0764	0.3809	-0.0261	-1.0235
113.8	50.0573	-0.3787	-0.0178	-1.0400	118.8	50.1507	0.3577	-0.0266	-1.0239
113.9	49.9809	-0.3831	-0.0182	-1.0390	118.9	50.2190	0.3202	-0.0272	-1.0241
114.0	49.9051	-0.3723	-0.0186	-1.0379	119.0	50.2786	0.2696	-0.0279	-1.0243
114.1	49.8331	-0.3467	-0.0188	-1.0369	119.1	50.3269	0.2081	-0.0287	-1.0244
114.2	49.7677	-0.3074	-0.0188	-1.0360	119.2	50.3619	0.1381	-0.0296	-1.0243
114.3	49.7114	-0.2559	-0.0187	-1.0351	119.3	50.3823	0.0624	-0.0305	-1.0241
114.4	49.6664	-0.1944	-0.0185	-1.0344	119.4	50.3871	-0.0158	-0.0315	-1.0237
114.5	49.6344	-0.1253	-0.0182	-1.0338	119.5	50.3762	-0.0935	-0.0324	-1.0232
114.6	49.6168	-0.0512	-0.0178	-1.0333	119.6	50.3499	-0.1674	-0.0333	-1.0225
114.7	49.6140	0.0249	-0.0174	-1.0330	119.7	50.3094	-0.2345	-0.0341	-1.0216
114.8	49.6264	0.1001	-0.0171	-1.0329	119.8	50.2563	-0.2921	-0.0348	-1.0206
114.9	49.6533	0.1715	-0.0168	-1.0329	119.9	50.1929	-0.3379	-0.0354	-1.0196
115.0	49.6938	0.2361	-0.0165	-1.0330	120.0	50.1217	-0.3701	-0.0358	-1.0184

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
120.1	50.0455	-0.3875	-0.0361	-1.0172	125.1	50.1652	0.3580	-0.0283	-0.9990
120.2	49.9676	-0.3894	-0.0362	-1.0160	125.2	50.2333	0.3175	-0.0286	-0.9993
120.3	49.8909	-0.3757	-0.0362	-1.0148	125.3	50.2920	0.2641	-0.0291	-0.9995
120.4	49.8185	-0.3472	-0.0360	-1.0137	125.4	50.3389	0.2000	-0.0296	-0.9996
120.5	49.7533	-0.3050	-0.0356	-1.0126	125.5	50.3721	0.1277	-0.0302	-0.9996
120.6	49.6978	-0.2507	-0.0351	-1.0117	125.6	50.3902	0.0502	-0.0308	-0.9994
120.7	49.6541	-0.1866	-0.0345	-1.0108	125.7	50.3924	-0.0294	-0.0315	-0.9991
120.8	49.6240	-0.1152	-0.0339	-1.0101	125.8	50.3786	-0.1078	-0.0321	-0.9986
120.9	49.6085	-0.0393	-0.0332	-1.0096	125.9	50.3494	-0.1819	-0.0327	-0.9979
121.0	49.6083	0.0383	-0.0325	-1.0092	126.0	50.3060	-0.2486	-0.0332	-0.9971
121.1	49.6234	0.1143	-0.0318	-1.0090	126.1	50.2502	-0.3052	-0.0336	-0.9962
121.2	49.6532	0.1860	-0.0311	-1.0089	126.2	50.1843	-0.3495	-0.0339	-0.9952
121.3	49.6966	0.2504	-0.0305	-1.0089	126.3	50.1109	-0.3798	-0.0340	-0.9942
121.4	49.7520	0.3050	-0.0300	-1.0091	126.4	50.0331	-0.3948	-0.0340	-0.9931
121.5	49.8171	0.3477	-0.0297	-1.0094	126.5	49.9540	-0.3940	-0.0338	-0.9919
121.6	49.8896	0.3767	-0.0295	-1.0097	126.6	49.8766	-0.3776	-0.0334	-0.9909
121.7	49.9664	0.3908	-0.0294	-1.0101	126.7	49.8042	-0.3462	-0.0329	-0.9898
121.8	50.0447	0.3893	-0.0295	-1.0105	126.8	49.7395	-0.3011	-0.0323	-0.9889
121.9	50.1213	0.3723	-0.0297	-1.0108	126.9	49.6851	-0.2442	-0.0316	-0.9881
122.0	50.1931	0.3403	-0.0300	-1.0111	127.0	49.6430	-0.1777	-0.0307	-0.9874
122.1	50.2571	0.2945	-0.0305	-1.0114	127.1	49.6148	-0.1043	-0.0298	-0.9868
122.2	50.3108	0.2368	-0.0312	-1.0115	127.2	49.6017	-0.0267	-0.0289	-0.9864
122.3	50.3519	0.1695	-0.0319	-1.0115	127.3	49.6041	0.0519	-0.0279	-0.9862
122.4	50.3787	0.0952	-0.0326	-1.0113	127.4	49.6220	0.1285	-0.0270	-0.9861
122.5	50.3902	0.0170	-0.0334	-1.0110	127.5	49.6546	0.2002	-0.0261	-0.9861
122.6	50.3857	-0.0619	-0.0342	-1.0105	127.6	49.7008	0.2640	-0.0253	-0.9863
122.7	50.3656	-0.1384	-0.0349	-1.0099	127.7	49.7588	0.3176	-0.0246	-0.9866
122.8	50.3306	-0.2092	-0.0356	-1.0091	127.8	49.8264	0.3587	-0.0240	-0.9870
122.9	50.2821	-0.2716	-0.0362	-1.0082	127.9	49.9008	0.3856	-0.0235	-0.9875
123.0	50.2222	-0.3229	-0.0367	-1.0072	128.0	49.9792	0.3973	-0.0232	-0.9880
123.1	50.1533	-0.3613	-0.0370	-1.0061	128.1	50.0586	0.3931	-0.0231	-0.9885
123.2	50.0783	-0.3851	-0.0372	-1.0050	128.2	50.1357	0.3732	-0.0231	-0.9889
123.3	50.0001	-0.3935	-0.0372	-1.0038	128.3	50.2073	0.3383	-0.0233	-0.9894
123.4	49.9219	-0.3863	-0.0371	-1.0026	128.4	50.2707	0.2897	-0.0236	-0.9897
123.5	49.8468	-0.3636	-0.0368	-1.0015	128.5	50.3232	0.2294	-0.0239	-0.9900
123.6	49.7778	-0.3266	-0.0363	-1.0004	128.6	50.3626	0.1597	-0.0244	-0.9901
123.7	49.7175	-0.2768	-0.0357	-0.9995	128.7	50.3872	0.0835	-0.0250	-0.9900
123.8	49.6682	-0.2160	-0.0350	-0.9986	128.8	50.3961	0.0038	-0.0255	-0.9898
123.9	49.6320	-0.1468	-0.0343	-0.9979	128.9	50.3889	-0.0760	-0.0261	-0.9895
124.0	49.6102	-0.0718	-0.0334	-0.9973	129.0	50.3659	-0.1528	-0.0266	-0.9890
124.1	49.6035	0.0060	-0.0326	-0.9969	129.1	50.3279	-0.2234	-0.0271	-0.9884
124.2	49.6124	0.0836	-0.0317	-0.9966	129.2	50.2767	-0.2849	-0.0275	-0.9876
124.3	49.6363	0.1580	-0.0309	-0.9965	129.3	50.2142	-0.3349	-0.0277	-0.9867
124.4	49.6746	0.2263	-0.0302	-0.9966	129.4	50.1431	-0.3714	-0.0278	-0.9858
124.5	49.7256	0.2858	-0.0295	-0.9967	129.5	50.0663	-0.3930	-0.0278	-0.9848
124.6	49.7874	0.3340	-0.0290	-0.9970	129.6	49.9868	-0.3988	-0.0276	-0.9838
124.7	49.8576	0.3691	-0.0285	-0.9974	129.7	49.9078	-0.3888	-0.0272	-0.9828
124.8	49.9336	0.3897	-0.0282	-0.9978	129.8	49.8325	-0.3633	-0.0267	-0.9818
124.9	50.0123	0.3948	-0.0281	-0.9982	129.9	49.7639	-0.3235	-0.0261	-0.9809
125.0	50.0905	0.3841	-0.0281	-0.9986	130.0	49.7045	-0.2709	-0.0253	-0.9801

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
130.1	49.6567	-0.2077	135.1	50.4008	-0.0097
130.2	49.6224	-0.1364	135.2	50.3908	-0.0902
130.3	49.6028	-0.0597	135.3	50.3648	-0.1671
130.4	49.5987	0.0193	135.4	50.3240	-0.2372
130.5	49.6102	0.0977	135.5	50.2701	-0.2976
130.6	49.6370	0.1722	135.6	50.2052	-0.3460
130.7	49.6781	0.2401	135.7	50.1321	-0.3805
130.8	49.7317	0.2986	135.8	50.0537	-0.3997
130.9	49.7960	0.3453	135.9	49.9732	-0.4029
131.0	49.8683	0.3785	136.0	49.8937	-0.3900
131.1	49.9460	0.3968	136.1	49.8185	-0.3617
131.2	50.0258	0.3993	136.2	49.7504	-0.3191
131.3	50.1047	0.3858	136.3	49.6922	-0.2640
131.4	50.1795	0.3568	136.4	49.6460	-0.1985
131.5	50.2470	0.3135	136.5	49.6137	-0.1252
131.6	50.3047	0.2574	136.6	49.5965	-0.0471
131.7	50.3500	0.1909	136.7	49.5950	0.0330
131.8	50.3812	0.1165	136.8	49.6094	0.1117
131.9	50.3968	0.0374	136.9	49.6390	0.1862
132.0	50.3963	-0.0432	137.0	49.6827	0.2534
132.1	50.3797	-0.1222	137.1	49.7389	0.3107
132.2	50.3476	-0.1961	137.2	49.8055	0.3558
132.3	50.3013	-0.2622	137.3	49.8797	0.3869
132.4	50.2429	-0.3176	137.4	49.9588	0.4027
132.5	50.1747	-0.3601	137.5	50.0396	0.4025
132.6	50.0994	-0.3882	137.6	50.1189	0.3862
132.7	50.0201	-0.4007	137.7	50.1935	0.3544
132.8	49.9401	-0.3973	137.8	50.2603	0.3083
132.9	49.8624	-0.3780	137.9	50.3167	0.2497
133.0	49.7902	-0.3438	138.0	50.3603	0.1809
133.1	49.7263	-0.2960	138.1	50.3892	0.1047
133.2	49.6732	-0.2366	138.2	50.4023	0.0242
133.3	49.6328	-0.1679	138.3	50.3990	-0.0573
133.4	49.6068	-0.0926	138.4	50.3795	-0.1364
133.5	49.5961	-0.0137	138.5	50.3445	-0.2101
133.6	49.6012	0.0657	138.6	50.2956	-0.2752
133.7	49.6219	0.1427	138.7	50.2346	-0.3292
133.8	49.6574	0.2140	138.8	50.1642	-0.3698
133.9	49.7063	0.2771	138.9	50.0873	-0.3956
134.0	49.7668	0.3293	139.0	50.0068	-0.4056
134.1	49.8365	0.3686	139.1	49.9261	-0.3993
134.2	49.9127	0.3933	139.2	49.8483	-0.3772
134.3	49.9925	0.4025	139.3	49.7766	-0.3402
134.4	50.0726	0.3956	139.4	49.7136	-0.2898
134.5	50.1499	0.3728	139.5	49.6620	-0.2280
134.6	50.2212	0.3351	139.6	49.6235	-0.1573
134.7	50.2837	0.2838	139.7	49.5998	-0.0804
134.8	50.3347	0.2209	139.8	49.5917	-0.0004
134.9	50.3722	0.1491	139.9	49.5995	0.0797
135.0	50.3945	0.0712	140.0	49.6230	0.1567

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z_o		kh_e	ka	Z_o		kh_e
140.1	49.6612	0.2276	0.0067	-0.9728	145.1	50.1531	-0.3787
140.2	49.7128	0.2896	0.0076	-0.9734	145.2	50.0746	-0.4021
140.3	49.7756	0.3403	0.0083	-0.9741	145.3	49.9932	-0.4094
140.4	49.8473	0.3776	0.0089	-0.9748	145.4	49.9120	-0.4003
140.5	49.9252	0.4000	0.0094	-0.9757	145.5	49.8343	-0.3754
140.6	50.0060	0.4066	0.0097	-0.9765	145.6	49.7632	-0.3357
140.7	50.0867	0.3969	0.0099	-0.9774	145.7	49.7015	-0.2827
140.8	50.1640	0.3713	0.0098	-0.9782	145.8	49.6515	-0.2187
140.9	50.2348	0.3307	0.0097	-0.9790	145.9	49.6151	-0.1461
141.0	50.2961	0.2768	0.0094	-0.9797	146.0	49.5938	-0.0677
141.1	50.3455	0.2116	0.0090	-0.9802	146.1	49.5883	0.0132
141.2	50.3809	0.1378	0.0085	-0.9807	146.2	49.5989	0.0937
141.3	50.4008	0.0583	0.0080	-0.9810	146.3	49.6251	0.1706
141.4	50.4043	-0.0236	0.0074	-0.9811	146.4	49.6661	0.2408
141.5	50.3914	-0.1045	0.0069	-0.9811	146.5	49.7201	0.3016
141.6	50.3626	-0.1812	0.0064	-0.9809	146.6	49.7852	0.3506
141.7	50.3191	-0.2505	0.0059	-0.9806	146.7	49.8588	0.3858
141.8	50.2626	-0.3097	0.0056	-0.9801	146.8	49.9381	0.4058
141.9	50.1955	-0.3563	0.0053	-0.9795	146.9	50.0199	0.4097
142.0	50.1205	-0.3886	0.0052	-0.9789	147.0	50.1009	0.3972
142.1	50.0407	-0.4053	0.0053	-0.9782	147.1	50.1780	0.3687
142.2	49.9593	-0.4058	0.0055	-0.9775	147.2	50.2480	0.3254
142.3	49.8796	-0.3901	0.0059	-0.9769	147.3	50.3080	0.2689
142.4	49.8046	-0.3590	0.0064	-0.9762	147.4	50.3556	0.2015
142.5	49.7374	-0.3138	0.0070	-0.9757	147.5	50.3887	0.1259
142.6	49.6805	-0.2562	0.0078	-0.9752	147.6	50.4060	0.0451
142.7	49.6361	-0.1885	0.0087	-0.9749	147.7	50.4068	-0.0376
142.8	49.6060	-0.1135	0.0096	-0.9747	147.8	50.3911	-0.1187
142.9	49.5913	-0.0340	0.0106	-0.9747	147.9	50.3594	-0.1951
143.0	49.5925	0.0468	0.0116	-0.9748	148.0	50.3131	-0.2635
143.1	49.6096	0.1258	0.0126	-0.9750	148.1	50.2542	-0.3212
143.2	49.6420	0.1999	0.0135	-0.9755	148.2	50.1849	-0.3659
143.3	49.6884	0.2663	0.0144	-0.9760	148.3	50.1083	-0.3959
143.4	49.7471	0.3222	0.0152	-0.9767	148.4	50.0273	-0.4100
143.5	49.8157	0.3655	0.0158	-0.9775	148.5	49.9453	-0.4077
143.6	49.8917	0.3944	0.0163	-0.9784	148.6	49.8655	-0.3892
143.7	49.9721	0.4077	0.0166	-0.9793	148.7	49.7910	-0.3553
143.8	50.0536	0.4047	0.0168	-0.9802	148.8	49.7248	-0.3075
143.9	50.1331	0.3856	0.0169	-0.9811	148.9	49.6694	-0.2475
144.0	50.2073	0.3509	0.0167	-0.9820	149.0	49.6270	-0.1778
144.1	50.2732	0.3021	0.0165	-0.9828	149.1	49.5992	-0.1012
144.2	50.3280	0.2410	0.0161	-0.9834	149.2	49.5870	-0.0207
144.3	50.3696	0.1701	0.0156	-0.9840	149.3	49.5909	0.0607
144.4	50.3962	0.0923	0.0150	-0.9844	149.4	49.6108	0.1398
144.5	50.4067	0.0106	0.0144	-0.9847	149.5	49.6460	0.2134
144.6	50.4006	-0.0715	0.0138	-0.9847	149.6	49.6950	0.2787
144.7	50.3782	-0.1507	0.0132	-0.9847	149.7	49.7560	0.3331
144.8	50.3404	-0.2237	0.0126	-0.9845	149.8	49.8267	0.3744
144.9	50.2888	-0.2877	0.0122	-0.9841	149.9	49.9042	0.4010
145.0	50.2255	-0.3401	0.0119	-0.9836	150.0	49.9857	0.4117
							0.0263

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
150.1	50.0678	0.4059	155.1	49.7126	-0.3003
150.2	50.1472	0.3839	155.2	49.6589	-0.2381
150.3	50.2208	0.3465	155.3	49.6186	-0.1666
150.4	50.2855	0.2951	155.4	49.5931	-0.0885
150.5	50.3387	0.2316	155.5	49.5836	-0.0070
150.6	50.3782	0.1588	155.6	49.5903	0.0748
150.7	50.4024	0.0794	155.7	49.6130	0.1537
150.8	50.4101	-0.0032	155.8	49.6508	0.2266
150.9	50.4012	-0.0857	155.9	49.7023	0.2907
151.0	50.3759	-0.1647	156.0	49.7656	0.3434
151.1	50.3353	-0.2371	156.1	49.8381	0.3827
151.2	50.2812	-0.2998	156.2	49.9171	0.4068
151.3	50.2157	-0.3503	156.3	49.9995	0.4148
151.4	50.1415	-0.3868	156.4	50.0820	0.4062
151.5	50.0616	-0.4076	156.5	50.1612	0.3814
151.6	49.9793	-0.4122	156.6	50.2340	0.3412
151.7	49.8979	-0.4004	156.7	50.2974	0.2872
151.8	49.8205	-0.3726	156.8	50.3488	0.2215
151.9	49.7503	-0.3302	156.9	50.3861	0.1468
152.0	49.6899	-0.2748	157.0	50.4077	0.0662
152.1	49.6416	-0.2086	157.1	50.4127	-0.0173
152.2	49.6075	-0.1343	157.2	50.4009	-0.1000
152.3	49.5886	-0.0547	157.3	50.3727	-0.1787
152.4	49.5858	0.0271	157.4	50.3295	-0.2501
152.5	49.5992	0.1078	157.5	50.2728	-0.3113
152.6	49.6282	0.1843	157.6	50.2052	-0.3599
152.7	49.6718	0.2536	157.7	50.1293	-0.3941
152.8	49.7283	0.3131	157.8	50.0482	-0.4124
152.9	49.7955	0.3603	157.9	49.9653	-0.4142
153.0	49.8708	0.3933	158.0	49.8837	-0.3995
153.1	49.9514	0.4107	158.1	49.8068	-0.3690
153.2	50.0339	0.4118	158.2	49.7376	-0.3239
153.3	50.1151	0.3965	158.3	49.6787	-0.2662
153.4	50.1918	0.3652	158.4	49.6324	-0.1980
153.5	50.2608	0.3192	158.5	49.6005	-0.1220
153.6	50.3193	0.2603	158.6	49.5842	-0.0413
153.7	50.3649	0.1907	158.7	49.5842	0.0410
153.8	50.3957	0.1134	158.8	49.6003	0.1218
153.9	50.4104	0.0315	158.9	49.6321	0.1978
154.0	50.4084	-0.0518	159.0	49.6783	0.2661
154.1	50.3898	-0.1330	159.1	49.7372	0.3241
154.2	50.3553	-0.2087	159.2	49.8064	0.3693
154.3	50.3063	-0.2760	159.3	49.8833	0.3999
154.4	50.2450	-0.3321	159.4	49.9649	0.4148
154.5	50.1738	-0.3747	159.5	50.0480	0.4131
154.6	50.0957	-0.4023	159.6	50.1292	0.3949
154.7	50.0137	-0.4138	159.7	50.2053	0.3609
154.8	49.9312	-0.4087	159.8	50.2732	0.3122
154.9	49.8515	-0.3874	159.9	50.3301	0.2509
155.0	49.7777	-0.3508	160.0	50.3736	0.1794
					0.0223 -0.9966
					0.0229 -0.9962
					0.0236 -0.9960
					0.0244 -0.9959
					0.0253 -0.9959
					0.0261 -0.9962
					0.0269 -0.9966
					0.0277 -0.9971
					0.0283 -0.9978
					0.0289 -0.9986
					0.0293 -0.9995
					0.0296 -1.0005
					0.0297 -1.0015
					0.0296 -1.0025
					0.0294 -1.0035
					0.0290 -1.0044
					0.0285 -1.0053
					0.0279 -1.0060
					0.0271 -1.0066
					0.0263 -1.0070
					0.0255 -1.0072
					0.0246 -1.0073
					0.0238 -1.0072
					0.0231 -1.0070
					0.0225 -1.0066
					0.0219 -1.0062
					0.0216 -1.0056
					0.0214 -1.0050
					0.0213 -1.0043
					0.0214 -1.0037
					0.0217 -1.0031
					0.0221 -1.0025
					0.0226 -1.0021
					0.0233 -1.0018
					0.0240 -1.0016
					0.0248 -1.0016
					0.0256 -1.0018
					0.0264 -1.0021
					0.0272 -1.0026
					0.0278 -1.0032
					0.0284 -1.0040
					0.0288 -1.0048
					0.0291 -1.0058
					0.0293 -1.0067
					0.0293 -1.0078
					0.0291 -1.0088
					0.0287 -1.0097
					0.0282 -1.0106
					0.0276 -1.0113
					0.0268 -1.0120

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
160.1	50.4020	0.1006	165.1	49.6023	0.1357
160.2	50.4140	0.0176	165.2	49.6368	0.2111
160.3	50.4091	-0.0661	165.3	49.6856	0.2783
160.4	50.3876	-0.1471	165.4	49.7467	0.3345
160.5	50.3503	-0.2221	165.5	49.8178	0.3777
160.6	50.2988	-0.2881	165.6	49.8962	0.4059
160.7	50.2352	-0.3424	165.7	49.9787	0.4181
160.8	50.1622	-0.3829	165.8	50.0622	0.4136
160.9	50.0826	-0.4080	165.9	50.1433	0.3925
161.0	49.9998	-0.4167	166.0	50.2187	0.3557
161.1	49.9170	-0.4088	166.1	50.2853	0.3045
161.2	49.8376	-0.3847	166.2	50.3404	0.2409
161.3	49.7646	-0.3454	166.3	50.3817	0.1576
161.4	49.7009	-0.2925	166.4	50.4075	0.0373
161.5	49.6490	-0.2281	166.5	50.4168	0.0035
161.6	49.6108	-0.1548	166.6	50.4090	-0.0304
161.7	49.5878	-0.0755	166.7	50.3846	-0.1511
161.8	49.5810	0.0068	166.8	50.3446	-0.2353
161.9	49.5904	0.0888	166.9	50.2906	-0.2798
162.0	49.6159	0.1674	167.0	50.2248	-0.3523
162.1	49.6564	0.2395	167.1	50.1500	-0.3704
162.2	49.7104	0.3023	167.2	50.0693	-0.4129
162.3	49.7758	0.3532	167.3	49.9857	-0.4189
162.4	49.8501	0.3902	167.4	49.9028	-0.4082
162.5	49.9304	0.4118	167.5	49.8238	-0.3313
162.6	50.0135	0.4171	167.6	49.7518	-0.3393
162.7	50.0962	0.4057	167.7	49.6896	-0.2340
162.8	50.1750	0.3780	167.8	49.6396	-0.2176
162.9	50.2469	0.3351	167.9	49.6037	-0.1426
163.0	50.3089	0.2786	168.0	49.5833	-0.0521
163.1	50.3584	0.2109	168.1	49.5791	0.0208
163.2	50.3933	0.1345	168.2	49.5914	0.1029
163.3	50.4123	0.0526	168.3	49.6196	0.1311
163.4	50.4144	-0.0315	168.4	49.6628	0.2522
163.5	50.3997	-0.1143	168.5	49.7191	0.3134
163.6	50.3688	-0.1924	168.6	49.7866	0.3524
163.7	50.3228	-0.2627	168.7	49.8625	0.3971
163.8	50.2638	-0.3224	168.8	49.9439	0.4161
163.9	50.1941	-0.3690	168.9	50.0277	0.4186
164.0	50.1166	-0.4007	169.0	50.1104	0.4043
164.1	50.0345	-0.4163	169.1	50.1887	0.3739
164.2	49.9511	-0.4153	169.2	50.2595	0.3283
164.3	49.8697	-0.3978	169.3	50.3199	0.2695
164.4	49.7934	-0.3646	169.4	50.3673	0.1996
164.5	49.7253	-0.3169	169.5	50.3998	0.1217
164.6	49.6681	-0.2569	169.6	50.4161	0.0387
164.7	49.6238	-0.1868	169.7	50.4154	-0.0458
164.8	49.5943	-0.1094	169.8	50.3978	-0.1285
164.9	49.5807	-0.0277	169.9	50.3640	-0.2059
165.0	49.5834	0.0551	170.0	50.3154	-0.2750
					0.0140 -1.0250

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
170.1	50.2541	-0.3329	175.1	49.9577	0.4197
170.2	50.1825	-0.3774	175.2	50.0419	0.4194
170.3	50.1037	-0.4066	175.3	50.1245	0.4023
170.4	50.0207	-0.4195	175.4	50.2022	0.3690
170.5	49.9369	-0.4157	175.5	50.2718	0.3208
170.6	49.8557	-0.3954	175.6	50.3304	0.2597
170.7	49.7802	-0.3594	175.7	50.3756	0.1879
170.8	49.7134	-0.3093	175.8	50.4057	0.1085
170.9	49.6579	-0.2470	175.9	50.4192	0.0247
171.0	49.6158	-0.1751	176.0	50.4156	-0.0602
171.1	49.5888	-0.0964	176.1	50.3951	-0.1426
171.2	49.5778	-0.0138	176.2	50.3585	-0.2192
171.3	49.5833	0.0692	176.3	50.3074	-0.2869
171.4	49.6050	0.1496	176.4	50.2439	-0.3430
171.5	49.6422	0.2242	176.5	50.1705	-0.3852
171.6	49.6934	0.2900	176.6	50.0904	-0.4119
171.7	49.7567	0.3445	176.7	50.0066	-0.4220
171.8	49.8297	0.3855	176.8	49.9226	-0.4154
171.9	49.9094	0.4112	176.9	49.8418	-0.3922
172.0	49.9928	0.4206	177.0	49.7672	-0.3536
172.1	50.0765	0.4133	177.1	49.7019	-0.3010
172.2	50.1573	0.3894	177.2	49.6483	-0.2366
172.3	50.2317	0.3499	177.3	49.6084	-0.1630
172.4	50.2969	0.2962	177.4	49.5839	-0.0831
172.5	50.3501	0.2304	177.5	49.5756	0.0002
172.6	50.3892	0.1553	177.6	49.5839	0.0834
172.7	50.4124	0.0738	177.7	49.6085	0.1634
172.8	50.4188	-0.0107	177.8	49.6483	0.2370
172.9	50.4081	-0.0948	177.9	49.7019	0.3014
173.0	50.3809	-0.1750	178.0	49.7673	0.3540
173.1	50.3382	-0.2481	178.1	49.8420	0.3927
173.2	50.2817	-0.3111	178.2	49.9229	0.4158
173.3	50.2139	-0.3615	178.3	50.0069	0.4225
173.4	50.1375	-0.3973	178.4	50.0908	0.4123
173.5	50.0556	-0.4172	178.5	50.1711	0.3856
173.6	49.9716	-0.4203	178.6	50.2445	0.3433
173.7	49.8887	-0.4068	178.7	50.3082	0.2872
173.8	49.8102	-0.3771	178.8	50.3594	0.2194
173.9	49.7394	-0.3325	178.9	50.3960	0.1426
174.0	49.6787	-0.2749	179.0	50.4165	0.0600
174.1	49.6307	-0.2065	179.1	50.4201	-0.0251
174.2	49.5972	-0.1301	179.2	50.4065	-0.1091
174.3	49.5794	-0.0485	179.3	50.3764	-0.1887
174.4	49.5780	0.0349	179.4	50.3311	-0.2606
174.5	49.5931	0.1170	179.5	50.2723	-0.3219
174.6	49.6241	0.1945	179.6	50.2025	-0.3702
174.7	49.6698	0.2645	179.7	50.1246	-0.4036
174.8	49.7285	0.3241	179.8	50.0418	-0.4208
174.9	49.7979	0.3710	179.9	49.9573	-0.4211
175.0	49.8753	0.4034	180.0	49.8746	-0.4047
					0.0002 -1.0261

TABLE V (Continued)

 $\theta_o = 46.982$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
180.1	49.7969	-0.3722	0.0004	-1.0253	185.1	50.3681	0.2079	0.0002	-1.0311
180.2	49.7272	-0.3251	0.0008	-1.0246	185.2	50.4022	0.1296	-0.0007	-1.0315
180.3	49.6683	-0.2653	0.0013	-1.0240	185.3	50.4200	0.0460	-0.0017	-1.0316
180.4	49.6224	-0.1950	0.0018	-1.0235	185.4	50.4207	-0.0395	-0.0027	-1.0316
180.5	49.5913	-0.1171	0.0025	-1.0232	185.5	50.4042	-0.1234	-0.0036	-1.0314
180.6	49.5762	-0.0347	0.0032	-1.0231	185.6	50.3713	-0.2022	-0.0046	-1.0311
180.7	49.5776	0.0491	0.0040	-1.0231	185.7	50.3234	-0.2728	-0.0054	-1.0306
180.8	49.5955	0.1310	0.0047	-1.0233	185.8	50.2623	-0.3324	-0.0061	-1.0299
180.9	49.6292	0.2078	0.0054	-1.0236	185.9	50.1907	-0.3784	-0.0067	-1.0292
181.0	49.6774	0.2765	0.0059	-1.0241	186.0	50.1114	-0.4093	-0.0071	-1.0283
181.1	49.7383	0.3344	0.0064	-1.0248	186.1	50.0277	-0.4237	-0.0074	-1.0274
181.2	49.8096	0.3792	0.0068	-1.0255	186.2	49.9430	-0.4211	-0.0075	-1.0266
181.3	49.8884	0.4090	0.0069	-1.0263	186.3	49.8605	-0.4019	-0.0074	-1.0257
181.4	49.9717	0.4226	0.0070	-1.0272	186.4	49.7837	-0.3667	-0.0072	-1.0249
181.5	50.0563	0.4195	0.0068	-1.0281	186.5	49.7154	-0.3171	-0.0068	-1.0241
181.6	50.1386	0.3995	0.0065	-1.0289	186.6	49.6583	-0.2551	-0.0062	-1.0235
181.7	50.2155	0.3635	0.0060	-1.0297	186.7	49.6146	-0.1831	-0.0056	-1.0231
181.8	50.2837	0.3128	0.0053	-1.0304	186.8	49.5861	-0.1039	-0.0049	-1.0228
181.9	50.3404	0.2494	0.0046	-1.0310	186.9	49.5736	-0.0207	-0.0042	-1.0226
182.0	50.3834	0.1758	0.0037	-1.0315	187.0	49.5778	0.0633	-0.0034	-1.0226
182.1	50.4109	0.0951	0.0027	-1.0318	187.1	49.5985	0.1449	-0.0027	-1.0228
182.2	50.4216	0.0104	0.0017	-1.0319	187.2	49.6349	0.2208	-0.0020	-1.0232
182.3	50.4151	-0.0746	0.0007	-1.0318	187.3	49.6856	0.2881	-0.0014	-1.0237
182.4	50.3917	-0.1567	-0.0002	-1.0316	187.4	49.7487	0.3442	-0.0010	-1.0243
182.5	50.3524	-0.2323	-0.0011	-1.0312	187.5	49.8217	0.3867	-0.0007	-1.0250
182.6	50.2988	-0.2985	-0.0019	-1.0306	187.6	49.9018	0.4140	-0.0005	-1.0258
182.7	50.2332	-0.3526	-0.0026	-1.0300	187.7	49.9959	0.4249	-0.0005	-1.0266
182.8	50.1581	-0.3924	-0.0032	-1.0292	187.8	50.0706	0.4189	-0.0007	-1.0275
182.9	50.0768	-0.4165	-0.0035	-1.0283	187.9	50.1526	0.3961	-0.0010	-1.0283
183.0	49.9924	-0.4239	-0.0037	-1.0275	188.0	50.2285	0.3573	-0.0015	-1.0290
183.1	49.9084	-0.4143	-0.0037	-1.0266	188.1	50.2952	0.3041	-0.0022	-1.0297
183.2	49.8280	-0.3884	-0.0036	-1.0258	188.2	50.3500	0.2385	-0.0030	-1.0302
183.3	49.7545	-0.3471	-0.0033	-1.0250	188.3	50.3907	0.1633	-0.0039	-1.0306
183.4	49.6907	-0.2922	-0.0029	-1.0244	188.4	50.4154	0.0813	-0.0048	-1.0308
183.5	49.6391	-0.2258	-0.0023	-1.0238	188.5	50.4233	-0.0039	-0.0058	-1.0309
183.6	49.6016	-0.1506	-0.0016	-1.0234	188.6	50.4139	-0.0891	-0.0068	-1.0307
183.7	49.5797	-0.0695	-0.0009	-1.0232	188.7	50.3877	-0.1705	-0.0077	-1.0304
183.8	49.5742	0.0143	-0.0002	-1.0231	188.8	50.3457	-0.2451	-0.0086	-1.0299
183.9	49.5852	0.0975	0.0005	-1.0232	188.9	50.2897	-0.3097	-0.0094	-1.0293
184.0	49.6125	0.1770	0.0012	-1.0235	189.0	50.2220	-0.3617	-0.0100	-1.0286
184.1	49.6550	0.2496	0.0019	-1.0239	189.1	50.1454	-0.3991	-0.0105	-1.0278
184.2	49.7110	0.3124	0.0024	-1.0245	189.2	50.0630	-0.4205	-0.0108	-1.0269
184.3	49.7784	0.3630	0.0028	-1.0252	189.3	49.9781	-0.4250	-0.0109	-1.0260
184.4	49.8546	0.3993	0.0030	-1.0260	189.4	49.8941	-0.4126	-0.0109	-1.0251
184.5	49.9366	0.4198	0.0031	-1.0268	189.5	49.8144	-0.3839	-0.0107	-1.0242
184.6	50.0212	0.4237	0.0031	-1.0276	189.6	49.7421	-0.3400	-0.0104	-1.0234
184.7	50.1050	0.4106	0.0028	-1.0285	189.7	49.6800	-0.2828	-0.0099	-1.0228
184.8	50.1847	0.3811	0.0024	-1.0293	189.8	49.6304	-0.2145	-0.0093	-1.0222
184.9	50.2570	0.3362	0.0018	-1.0300	189.9	49.5953	-0.1378	-0.0086	-1.0218
185.0	50.3190	0.2777	0.0011	-1.0307	190.0	49.5760	-0.0557	-0.0079	-1.0216

TABLE V (Continued)

 $\theta_0 = 46.982$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
190.1	49.5733	0.0285	195.1	50.3384	-0.2576
190.2	49.5872	0.1116	195.2	50.2800	-0.3204
190.3	49.6173	0.1904	195.3	50.2104	-0.3703
190.4	49.6623	0.2618	195.4	50.1323	-0.4052
190.5	49.7206	0.3230	195.5	50.0490	-0.4238
190.6	49.7899	0.3715	195.6	49.9637	-0.4255
190.7	49.8676	0.4053	195.7	49.8800	-0.4103
190.8	49.9506	0.4232	195.8	49.8010	-0.3788
190.9	50.0356	0.4242	195.9	49.7300	-0.3324
191.0	50.1192	0.4083	196.0	49.6696	-0.2729
191.1	50.1982	0.3759	196.1	49.6222	-0.2028
191.2	50.2692	0.3284	196.2	49.5896	-0.1247
191.3	50.3294	0.2676	196.3	49.5730	-0.0418
191.4	50.3763	0.1959	196.4	49.5731	0.0428
191.5	50.4079	0.1162	196.5	49.5898	0.1257
191.6	50.4229	0.0318	196.6	49.6226	0.2037
191.7	50.4206	-0.0540	196.7	49.6701	0.2738
191.8	50.4013	-0.1375	196.8	49.7307	0.3331
191.9	50.3656	-0.2155	196.9	49.8018	0.3795
192.0	50.3151	-0.2847	197.0	49.8809	0.4108
192.1	50.2518	-0.3423	197.1	49.9647	0.4259
192.2	50.1784	-0.3861	197.2	50.0500	0.4241
192.3	50.0979	-0.4143	197.3	50.1334	0.4053
192.4	50.0135	-0.4259	197.4	50.2115	0.3702
192.5	49.9286	-0.4205	197.5	50.2811	0.3201
192.6	49.8466	-0.3985	197.6	50.3394	0.2571
192.7	49.7707	-0.3606	197.7	50.3840	0.1836
192.8	49.7039	-0.3086	197.8	50.4129	0.1026
192.9	49.6488	-0.2445	197.9	50.4251	0.0174
193.0	49.6074	-0.1708	198.0	50.4199	-0.0685
193.1	49.5814	-0.0905	198.1	50.3977	-0.1516
193.2	49.5717	-0.0066	198.2	50.3593	-0.2286
193.3	49.5787	0.0775	198.3	50.3063	-0.2962
193.4	49.6022	0.1586	198.4	50.2409	-0.3518
193.5	49.6412	0.2336	198.5	50.1659	-0.3932
193.6	49.6944	0.2994	198.6	50.0842	-0.4188
193.7	49.7595	0.3536	198.7	49.9992	-0.4276
193.8	49.8342	0.3938	198.8	49.9143	-0.4193
193.9	49.9155	0.4185	198.9	49.8328	-0.3944
194.0	50.0002	0.4266	199.0	49.7580	-0.3539
194.1	50.0850	0.4176	199.1	49.6928	-0.2995
194.2	50.1664	0.3920	199.2	49.6397	-0.2334
194.3	50.2412	0.3505	199.3	49.6007	-0.1582
194.4	50.3064	0.2949	199.4	49.5773	-0.0768
194.5	50.3591	0.2273	199.5	49.5704	0.0076
194.6	50.3974	0.1504	199.6	49.5802	0.0917
194.7	50.4194	0.0674	199.7	49.6065	0.1723
194.8	50.4244	-0.0184	199.8	49.6481	0.2461
194.9	50.4121	-0.1034	199.9	49.7036	0.3104
195.0	50.3830	-0.1843	200.0	49.7708	0.3625
					-0.0121
					-1.0178

TABLE VI

1

TABLE VI
Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
0.1	0.1096	-243.9392	0.0523	-0.0000	
0.2	0.4485	-116.4654	0.1059	-0.0002	
0.3	1.0474	-71.4479	0.1617	-0.0010	
0.4	1.9601	-46.9647	0.2211	-0.0033	
0.5	3.2653	-30.6263	0.2852	-0.0084	
0.6	5.0687	-18.3238	0.3548	-0.0184	
0.7	7.4990	-8.3528	0.4304	-0.0359	
0.8	10.6930	0.0368	0.5113	-0.0647	
0.9	14.7600	7.1086	0.5952	-0.1088	
1.0	19.7202	12.8319	0.6771	-0.1719	
1.1	25.4265	17.0138	0.7498	-0.2559	
1.2	31.5143	19.4551	0.8042	-0.3583	
1.3	37.4451	20.1248	0.8327	-0.4721	
1.4	42.6671	19.2700	0.8323	-0.5865	
1.5	46.8142	17.3744	0.8056	-0.6911	
1.6	49.8089	14.9877	0.7596	-0.7785	
1.7	51.8181	12.5499	0.7023	-0.8463	
1.8	53.1258	10.3083	0.6405	-0.8952	
1.9	54.0136	8.3281	0.5783	-0.9278	
2.0	54.6900	6.5479	0.5183	-0.9466	
2.1	55.2619	4.8416	0.4614	-0.9532	
2.2	55.7299	3.0727	0.4086	-0.9483	
2.3	55.9992	1.1462	0.3618	-0.9322	
2.4	55.9128	-0.9426	0.3237	-0.9054	
2.5	55.3176	-3.0764	0.2977	-0.8699	
2.6	54.1487	-5.0347	0.2866	-0.8300	
2.7	52.4876	-6.5740	0.2910	-0.7913	
2.8	50.5438	-7.5331	0.3087	-0.7590	
2.9	48.5684	-7.8897	0.3353	-0.7366	
3.0	46.7632	-7.7405	0.3661	-0.7249	
3.1	45.2379	-7.2373	0.3973	-0.7227	
3.2	44.0175	-6.5278	0.4262	-0.7280	
3.3	43.0730	-5.7240	0.4520	-0.7384	
3.4	42.3515	-4.8948	0.4742	-0.7520	
3.5	41.7986	-4.0720	0.4935	-0.7673	
3.6	41.3703	-3.2612	0.5105	-0.7831	
3.7	41.0386	-2.4523	0.5262	-0.7992	
3.8	40.7930	-1.6292	0.5416	-0.8153	
3.9	40.6386	-0.7772	0.5574	-0.8319	
4.0	40.5928	0.1107	0.5742	-0.8497	
4.1	40.6807	1.0299	0.5923	-0.8699	
4.2	40.9297	1.9613	0.6112	-0.8934	
4.3	41.3630	2.8704	0.6303	-0.9216	
4.4	41.9927	3.7089	0.6481	-0.9553	
4.5	42.8124	4.4194	0.6625	-0.9950	
4.6	43.7932	4.9435	0.6715	-1.0402	
4.7	44.8828	5.2334	0.6728	-1.0895	
4.8	46.0120	5.2626	0.6648	-1.1408	
4.9	47.1060	5.0320	0.6469	-1.1911	
5.0	48.0983	4.5689	0.6195	-1.2374	
			5.1	48.9409	3.9181
			5.2	49.6070	3.1304
			5.3	50.0875	2.2524
			5.4	50.3830	1.3217
			5.5	50.4967	0.3681
			5.6	50.4301	-0.5831
			5.7	50.1826	-1.5050
			5.8	49.7547	-2.3658
			5.9	49.1526	-3.1275
			6.0	48.3936	-3.7482
			6.1	47.5099	-4.1871
			6.2	46.5481	-4.4123
			6.3	45.5660	-4.4065
			6.4	44.6259	-4.1721
			6.5	43.7866	-3.7314
			6.6	43.0956	-3.1237
			6.7	42.5842	-2.3990
			6.8	42.2661	-1.6117
			6.9	42.1382	-0.8132
			7.0	42.1839	-0.0480
			7.1	42.3778	0.6501
			7.2	42.6900	1.2582
			7.3	43.0901	1.7639
			7.4	43.5502	2.1632
			7.5	44.0467	2.4582
			7.6	44.5608	2.6546
			7.7	45.0783	2.7592
			7.8	45.5885	2.7788
			7.9	46.0828	2.7187
			8.0	46.5535	2.5831
			8.1	46.9923	2.3755
			8.2	47.3900	2.0994
			8.3	47.7362	1.7593
			8.4	48.0196	1.3623
			8.5	48.2294	0.9182
			8.6	48.3561	0.4397
			8.7	48.3927	-0.0580
			8.8	48.3354	-0.5578
			8.9	48.1835	-1.0420
			9.0	47.9402	-1.4927
			9.1	47.6117	-1.8922
			9.2	47.2076	-2.2242
			9.3	46.7407	-2.4734
			9.4	46.2272	-2.6269
			9.5	45.6862	-2.6744
			9.6	45.1399	-2.6095
			9.7	44.6123	-2.4303
			9.8	44.1286	-2.1406
			9.9	43.7137	-1.7501
			10.0	43.3904	-1.2748
					0.5842
					0.5431
					0.4985
					0.4527
					0.4077
					0.3650
					0.3262
					0.2925
					0.2653
					0.2453
					0.2333
					0.2294
					0.2333
					0.2440
					0.2601
					0.2800
					0.3018
					0.3237
					0.3442
					0.3622
					0.3767
					0.3872
					0.3936
					0.3960
					0.3945
					0.3893
					0.3809
					0.3695
					0.3551
					0.3380
					0.3182
					0.2957
					0.2706
					0.2431
					0.2135
					0.1825
					0.1507
					0.1190
					0.0883
					0.0596
					0.0337
					0.0113
					-0.0069
					-0.0206
					-0.0296
					-0.0339
					-0.0335
					-0.0290
					-0.0208
					-0.0097

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e
10.1	43.1779	-0.7365	0.0033	-1.3017	15.1	47.2785	-0.7215	-0.3464
10.2	43.0900	-0.1620	0.0173	-1.2998	15.2	47.0681	-0.9873	-0.3614
10.3	43.1334	0.4180	0.0310	-1.3028	15.3	46.8181	-1.1963	-0.3742
10.4	43.3069	0.9716	0.0433	-1.3106	15.4	46.5427	-1.3455	-0.3847
10.5	43.6003	1.4674	0.0531	-1.3227	15.5	46.2549	-1.4353	-0.3926
10.6	43.9952	1.8778	0.0594	-1.3384	15.6	45.9657	-1.4682	-0.3980
10.7	44.4658	2.1813	0.0613	-1.3567	15.7	45.6849	-1.4480	-0.4008
10.8	44.9820	2.3647	0.0585	-1.3765	15.8	45.4201	-1.3795	-0.4012
10.9	45.5115	2.4241	0.0508	-1.3965	15.9	45.1780	-1.2677	-0.3994
11.0	46.0238	2.3648	0.0384	-1.4155	16.0	44.9640	-1.1183	-0.3957
11.1	46.4923	2.2001	0.0218	-1.4324	16.1	44.7827	-0.9369	-0.3903
11.2	46.8968	1.9487	0.0017	-1.4466	16.2	44.6379	-0.7296	-0.3836
11.3	47.2244	1.6322	-0.0211	-1.4573	16.3	44.5324	-0.5024	-0.3758
11.4	47.4688	1.2727	-0.0456	-1.4643	16.4	44.4687	-0.2619	-0.3672
11.5	47.6294	0.8904	-0.0710	-1.4676	16.5	44.4481	-0.0147	-0.3582
11.6	47.7102	0.5028	-0.0966	-1.4672	16.6	44.4715	0.2323	-0.3490
11.7	47.7177	0.1242	-0.1216	-1.4634	16.7	44.5385	0.4720	-0.3399
11.8	47.6596	-0.2346	-0.1457	-1.4565	16.8	44.6481	0.6971	-0.3311
11.9	47.5444	-0.5653	-0.1683	-1.4469	16.9	44.7981	0.9005	-0.3228
12.0	47.3798	-0.8621	-0.1891	-1.4349	17.0	44.9850	1.0747	-0.3152
12.1	47.1735	-1.1204	-0.2080	-1.4210	17.1	45.2041	1.2129	-0.3085
12.2	46.9322	-1.3366	-0.2248	-1.4055	17.2	45.4491	1.3085	-0.3028
12.3	46.6625	-1.5076	-0.2393	-1.3887	17.3	45.7123	1.3556	-0.2982
12.4	46.3709	-1.6306	-0.2514	-1.3711	17.4	45.9842	1.3499	-0.2950
12.5	46.0640	-1.7031	-0.2613	-1.3529	17.5	46.2540	1.2887	-0.2931
12.6	45.7490	-1.7231	-0.2687	-1.3344	17.6	46.5097	1.1715	-0.2928
12.7	45.4335	-1.6890	-0.2737	-1.3160	17.7	46.7388	1.0011	-0.2939
12.8	45.1260	-1.6000	-0.2765	-1.2981	17.8	46.9290	0.7832	-0.2965
12.9	44.8355	-1.4566	-0.2771	-1.2810	17.9	47.0693	0.5270	-0.3006
13.0	44.5716	-1.2606	-0.2755	-1.2649	18.0	47.1510	0.2446	-0.3058
13.1	44.3441	-1.0157	-0.2721	-1.2503	18.1	47.1689	-0.0496	-0.3119
13.2	44.1627	-0.7274	-0.2671	-1.2373	18.2	47.1217	-0.3402	-0.3187
13.3	44.0368	-0.4034	-0.2607	-1.2264	18.3	47.0123	-0.6117	-0.3257
13.4	43.9746	-0.0539	-0.2533	-1.2177	18.4	46.8477	-0.8503	-0.3324
13.5	43.9827	0.3090	-0.2453	-1.2114	18.5	46.6379	-1.0446	-0.3384
13.6	44.0656	0.6708	-0.2372	-1.2076	18.6	46.3953	-1.1868	-0.3434
13.7	44.2246	1.0153	-0.2296	-1.2065	18.7	46.1331	-1.2725	-0.3471
13.8	44.4573	1.3253	-0.2228	-1.2079	18.8	45.8646	-1.3009	-0.3490
13.9	44.7568	1.5831	-0.2176	-1.2118	18.9	45.6019	-1.2740	-0.3492
14.0	45.1117	1.7725	-0.2146	-1.2176	19.0	45.3557	-1.1963	-0.3474
14.1	45.5054	1.8795	-0.2141	-1.2250	19.1	45.1347	-1.0738	-0.3436
14.2	45.9172	1.8947	-0.2167	-1.2333	19.2	44.9460	-0.9137	-0.3380
14.3	46.3237	1.8146	-0.2226	-1.2418	19.3	44.7949	-0.7237	-0.3305
14.4	46.7006	1.6425	-0.2317	-1.2496	19.4	44.6848	-0.5119	-0.3215
14.5	47.0251	1.3889	-0.2439	-1.2558	19.5	44.6182	-0.2863	-0.3110
14.6	47.2785	1.0708	-0.2588	-1.2598	19.6	44.5958	-0.0549	-0.2994
14.7	47.4483	0.7094	-0.2755	-1.2608	19.7	44.6177	0.1741	-0.2869
14.8	47.5289	0.3282	-0.2935	-1.2587	19.8	44.6821	0.3931	-0.2739
14.9	47.5218	-0.0501	-0.3118	-1.2531	19.9	44.7866	0.5944	-0.2607
15.0	47.4344	-0.4053	-0.3296	-1.2443	20.0	44.9270	0.7710	-0.2475

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
20.1	45.0981	0.9166	25.1	45.7982	-0.8760
20.2	45.2934	1.0258	25.2	45.6288	-0.8533
20.3	45.5056	1.0945	25.3	45.4697	-0.7997
20.4	45.7263	1.1203	25.4	45.3261	-0.7183
20.5	45.9469	1.1023	25.5	45.2019	-0.6131
20.6	46.1587	1.0415	25.6	45.1008	-0.4881
20.7	46.3536	0.9406	25.7	45.0253	-0.3481
20.8	46.5240	0.8039	25.8	44.9773	-0.1977
20.9	46.6635	0.6371	25.9	44.9578	-0.0419
21.0	46.7669	0.4470	26.0	44.9674	0.1144
21.1	46.8306	0.2412	26.1	45.0057	0.2660
21.2	46.8524	0.0279	26.2	45.0715	0.4081
21.3	46.8319	-0.1848	26.3	45.1629	0.5357
21.4	46.7702	-0.3884	26.4	45.2773	0.6445
21.5	46.6697	-0.5752	26.5	45.4111	0.7302
21.6	46.5348	-0.7378	26.6	45.5599	0.7892
21.7	46.3710	-0.8700	26.7	45.7186	0.8187
21.8	46.1849	-0.9666	26.8	45.8817	0.8165
21.9	45.9842	-1.0242	26.9	46.0428	0.7820
22.0	45.7771	-1.0406	27.0	46.1953	0.7152
22.1	45.5718	-1.0157	27.1	46.3327	0.6182
22.2	45.3766	-0.9510	27.2	46.4484	0.4939
22.3	45.1990	-0.8495	27.3	46.5367	0.3471
22.4	45.0457	-0.7158	27.4	46.5930	0.1839
22.5	44.9224	-0.5554	27.5	46.6138	0.0115
22.6	44.8333	-0.3748	27.6	46.5975	-0.1620
22.7	44.7814	-0.1812	27.7	46.5445	-0.3283
22.8	44.7683	0.0183	27.8	46.4573	-0.4793
22.9	44.7943	0.2160	27.9	46.3401	-0.6075
23.0	44.8582	0.4048	28.0	46.1991	-0.7071
23.1	44.9578	0.5775	28.1	46.0415	-0.7735
23.2	45.0897	0.7275	28.2	45.8752	-0.8045
23.3	45.2491	0.8488	28.3	45.7084	-0.7996
23.4	45.4300	0.9363	28.4	45.5489	-0.7606
23.5	45.6257	0.9857	28.5	45.4036	-0.6903
23.6	45.8280	0.9945	28.6	45.2782	-0.5935
23.7	46.0286	0.9614	28.7	45.1772	-0.4756
23.8	46.2184	0.8874	28.8	45.1034	-0.3424
23.9	46.3887	0.7753	28.9	45.0583	-0.2002
24.0	46.5315	0.6300	29.0	45.0425	-0.0548
24.1	46.6400	0.4585	29.1	45.0548	0.0882
24.2	46.7093	0.2690	29.2	45.0936	0.2237
24.3	46.7367	0.0708	29.3	45.1563	0.3473
24.4	46.7218	-0.1264	29.4	45.2399	0.4554
24.5	46.6665	-0.3136	29.5	45.3409	0.5448
24.6	46.5750	-0.4824	29.6	45.4556	0.6130
24.7	46.4528	-0.6261	29.7	45.5799	0.6587
24.8	46.3067	-0.7397	29.8	45.7097	0.6804
24.9	46.1440	-0.8200	29.9	45.8407	0.6776
25.0	45.9721	-0.8654	30.0	45.9687	0.6507

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
30.1	46.0895	0.6004	35.1	45.2858	-0.2795
30.2	46.1988	0.5281	35.2	45.2411	-0.1776
30.3	46.2931	0.4362	35.3	45.2172	-0.0682
30.4	46.3683	0.3277	35.4	45.2127	0.0431
30.5	46.4218	0.2059	35.5	45.2351	0.1543
30.6	46.4510	0.0752	35.6	45.2762	0.2586
30.7	46.4540	-0.0596	35.7	45.3395	0.3538
30.8	46.4302	-0.1934	35.8	45.4201	0.4333
30.9	46.3798	-0.3206	35.9	45.5160	0.4958
31.0	46.3047	-0.4360	36.0	45.6220	0.5359
31.1	46.2070	-0.5343	36.1	45.7329	0.5530
31.2	46.0908	-0.6111	36.2	45.8462	0.5518
31.3	45.9607	-0.6629	36.3	45.9536	0.5223
31.4	45.8224	-0.6869	36.4	46.0562	0.4725
31.5	45.6816	-0.6819	36.5	46.1424	0.4019
31.6	45.5451	-0.6473	36.6	46.2134	0.3184
31.7	45.4184	-0.5855	36.7	46.2665	0.2223
31.8	45.3081	-0.4986	36.8	46.2971	0.1183
31.9	45.2183	-0.3911	36.9	46.3067	0.0092
32.0	45.1531	-0.2680	37.0	46.2925	-0.0967
32.1	45.1154	-0.1347	37.1	46.2597	-0.1987
32.2	45.1059	0.0023	37.2	46.2092	-0.2881
32.3	45.1251	0.1373	37.3	46.1414	-0.3682
32.4	45.1710	0.2642	37.4	46.0563	-0.4265
32.5	45.2415	0.3776	37.5	45.9658	-0.4734
32.6	45.3326	0.4730	37.6	45.8687	-0.4951
32.7	45.4398	0.5472	37.7	45.7665	-0.5001
32.8	45.5580	0.5974	37.8	45.6679	-0.4851
32.9	45.6826	0.6222	37.9	45.5775	-0.4495
33.0	45.8079	0.6228	38.0	45.4963	-0.4029
33.1	45.9295	0.5983	38.1	45.4156	-0.3364
33.2	46.0418	0.5510	38.2	45.3679	-0.2583
33.3	46.1418	0.4830	38.3	45.3230	-0.1730
33.4	46.2256	0.3978	38.4	45.2994	-0.0825
33.5	46.2908	0.2996	38.5	45.2975	0.0151
33.6	46.3349	0.1916	38.6	45.3110	0.1046
33.7	46.3577	0.0779	38.7	45.3433	0.1978
33.8	46.3580	-0.0371	38.8	45.3938	0.2733
33.9	46.3360	-0.1490	38.9	45.4571	0.3425
34.0	46.2933	-0.2542	39.0	45.5274	0.3935
34.1	46.2317	-0.3479	39.1	45.6114	0.4335
34.2	46.1538	-0.4292	39.2	45.7081	0.4567
34.3	46.0617	-0.4924	39.3	45.7883	0.4678
34.4	45.9600	-0.5373	39.4	45.8892	0.4431
34.5	45.8517	-0.5609	39.5	45.9633	0.4219
34.6	45.7404	-0.5637	39.6	46.0460	0.3681
34.7	45.6313	-0.5464	39.7	46.1174	0.3074
34.8	45.5278	-0.5065	39.8	46.1665	0.2330
34.9	45.4330	-0.4475	39.9	46.2034	0.1480
35.0	45.3521	-0.3710	40.0	46.2277	0.0610

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
40.1	46.2328	-0.0345	45.1	45.4899	0.1796
40.2	46.2065	-0.1185	45.2	45.5318	0.2566
40.3	46.1761	-0.1988	45.3	45.6145	0.3070
40.4	46.1266	-0.2755	45.4	45.6473	0.3279
40.5	46.0583	-0.3435	45.5	45.7563	0.3201
40.6	45.9985	-0.3895	45.6	45.8070	0.3291
40.7	45.9119	-0.4333	45.7	45.8744	0.3197
40.8	45.8199	-0.4429	45.8	45.9623	0.2786
40.9	45.7178	-0.4422	45.9	45.9831	0.2326
41.0	45.6525	-0.4165	46.0	46.0062	0.1994
41.1	45.5643	-0.3714	46.1	46.0777	0.1228
41.2	45.5075	-0.3328	46.2	46.0942	0.0660
41.3	45.4425	-0.2577	46.3	46.0783	-0.0154
41.4	45.3974	-0.1845	46.4	46.1221	-0.0164
41.5	45.3454	-0.0986	46.5	46.0561	-0.0802
41.6	45.3491	-0.0365	46.6	46.0313	-0.1931
41.7	45.3581	0.0539	46.7	46.0027	-0.1821
41.8	45.3804	0.1248	46.8	45.8705	-0.3070
41.9	45.4172	0.2134	46.9	45.8821	-0.2522
42.0	45.4754	0.2745	47.0	45.8355	-0.2591
42.1	45.5471	0.3480	47.1	45.7576	-0.2947
42.2	45.6147	0.3784	47.2	45.7601	-0.2822
42.3	45.7021	0.3829	47.3	45.6828	-0.2577
42.4	45.7605	0.3945	47.4	45.6477	-0.2146
42.5	45.8461	0.3788	47.5	45.6094	-0.1935
42.6	45.9336	0.3603	47.6	45.5819	-0.1298
42.7	45.9925	0.3013	47.7	45.5414	-0.1105
42.8	46.0419	0.2874	47.8	45.5338	-0.1583
42.9	46.0977	0.2199	47.9	45.5510	0.0116
43.0	46.1403	0.1717	48.0	45.5326	0.0256
43.1	46.1452	0.0767	48.1	45.5891	-0.0605
43.2	46.1528	-0.0078	48.2	45.4006	0.0717
43.3	46.1741	-0.1006	48.3	45.6060	0.1369
43.4	46.1304	-0.1526	48.4	45.7270	0.3272
43.5	46.0707	-0.1964	48.5	45.6638	0.1629
43.6	46.0396	-0.2439	48.6	45.7306	0.2576
43.7	45.9676	-0.2802	48.7	45.7830	0.2709
43.8	45.9290	-0.3049	48.8	45.8095	0.2451
43.9	45.8472	-0.3561	48.9	45.8148	0.2281
44.0	45.7873	-0.3645	49.0	45.9415	0.1769
44.1	45.7150	-0.3626	49.1	45.9203	0.1938
44.2	45.6224	-0.3484	49.2	45.9993	0.2451
44.3	45.5649	-0.3086	49.3	46.0377	0.0648
44.4	45.5229	-0.2456	49.4	46.1242	0.1416
44.5	45.5125	-0.1926	49.5	46.0212	-0.0579
44.6	45.4494	-0.1316	49.6	45.9769	-0.0737
44.7	45.4405	-0.0387	49.7	45.9725	-0.0561
44.8	45.4523	0.0097	49.8	46.0439	-0.0901
44.9	45.4478	0.0896	49.9	45.9204	-0.1220
45.0	45.4535	0.1362	50.0	45.9138	-0.1896

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
50.1	45.8568	-0.1569	55.1	45.7559	0.1145
50.2	45.7784	-0.1903	55.2	45.7771	0.0526
50.3	45.7653	-0.2322	55.3	45.4949	-0.0322
50.4	45.6317	-0.1969	55.4	45.7682	0.1122
50.5	45.6516	-0.1710	55.5	45.7783	0.0899
50.6	45.5646	-0.1022	55.6	45.8854	0.1278
50.7	45.6728	-0.0995	55.7	45.6847	0.0181
50.8	45.5659	-0.1468	55.8	45.8056	-0.0106
50.9	45.6019	-0.0665	55.9	45.8507	0.0905
51.0	45.6050	-0.0199	56.0	45.7715	-0.0691
51.1	45.6214	-0.0080	56.1	45.8390	0.0481
51.2	45.6733	-0.0212	56.2	45.8723	0.0301
51.3	45.6781	0.0569	56.3	45.8516	-0.0616
51.4	45.5675	0.0919	56.4	45.8849	0.0070
51.5	45.6244	0.0345	56.5	45.6276	-0.0167
51.6	45.6979	0.1228	56.6	45.8052	-0.0524
51.7	45.6872	0.0021	56.7	45.6726	-0.2580
51.8	45.7884	0.1507	56.8	45.8081	-0.1157
51.9	45.7910	0.1044	56.9	45.7908	-0.1056
52.0	45.7883	0.1883	57.0	45.8092	-0.0702
52.1	45.8339	0.1524	57.1	45.7114	-0.1508
52.2	45.7828	0.1035	57.2	45.7145	-0.1250
52.3	45.8306	0.0987	57.3	45.7192	-0.0980
52.4	45.8442	0.0771	57.4	45.7475	-0.0606
52.5	45.8894	0.0614	57.5	45.6396	-0.0661
52.6	45.8415	-0.0170	57.6	45.7027	-0.0485
52.7	45.8914	0.0206	57.7	45.6830	-0.0789
52.8	45.9388	0.0055	57.8	45.6545	-0.0159
52.9	45.7792	-0.0597	57.9	45.7346	0.0218
53.0	45.8757	-0.0429	58.0	45.7521	-0.1102
53.1	45.9258	-0.0218	58.1	45.8237	-0.0511
53.2	45.9365	-0.0936	58.2	45.7060	0.0330
53.3	45.8540	-0.0855	58.3	45.6101	0.0372
53.4	45.8124	-0.1018	58.4	45.7098	0.0872
53.5	45.7741	-0.0862	58.5	45.7131	0.0787
53.6	45.6065	-0.3072	58.6	45.7151	0.0786
53.7	45.7846	-0.1118	58.7	45.7161	0.0917
53.8	45.8034	-0.0413	58.8	45.7494	0.0816
53.9	45.7946	-0.2000	58.9	45.7863	0.1154
54.0	45.7318	-0.1180	59.0	45.8234	0.0915
54.1	45.7449	-0.1457	59.1	45.8461	0.0833
54.2	45.8820	-0.0352	59.2	45.8807	-0.0432
54.3	45.6741	-0.0379	59.3	45.9129	0.0601
54.4	45.5493	-0.3610	59.4	45.9066	0.0230
54.5	45.5085	-0.1516	59.5	45.8943	0.0171
54.6	45.6710	0.0178	59.6	45.9087	-0.0247
54.7	45.6780	0.0050	59.7	45.8713	0.1111
54.8	45.6593	0.0970	59.8	45.8724	0.0489
54.9	45.5417	-0.0046	59.9	45.8757	-0.0646
55.0	45.6627	0.1261	60.0	45.8641	-0.0891
					0.1836 -0.9241
					0.1762 -0.9415
					0.0636 -0.8953
					0.1687 -0.9187
					0.1673 -0.9349
					0.1774 -0.9002
					0.3054 -0.9136
					0.1510 -0.9680
					0.2186 -0.9656
					0.1220 -1.0337
					0.1870 -0.9749
					0.1845 -0.9650
					0.1718 -0.9756
					0.1542 -0.9709
					0.0984 -1.0738
					0.1966 -1.0040
					0.1740 -1.0758
					0.1868 -1.0040
					0.1791 -1.0082
					0.1516 -0.9896
					0.2054 -1.0228
					0.1448 -1.0294
					0.1806 -1.0166
					0.1555 -1.0070
					0.0961 -0.9592
					0.1611 -1.0071
					0.1770 -1.0180
					0.1623 -0.9984
					0.1536 -1.0083
					0.1510 -1.1474
					0.0850 -0.9761
					0.1677 -1.0459
					0.1231 -1.0050
					0.1667 -1.0287
					0.1543 -1.0324
					0.1620 -1.0324
					0.1577 -1.0310
					0.1638 -1.0255
					0.1733 -1.0622
					0.1820 -1.0523
					0.1580 -1.0642
					0.2160 -1.1311
					0.1978 -1.0591
					0.1725 -1.0721
					0.1644 -1.0909
					0.1700 -1.0855
					0.0697 -1.1019
					0.0928 -1.0959
					0.1415 -1.1067
					0.1458 -1.0940

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
60.1	45.8545	-0.1167	65.1	45.7518	0.1854
60.2	45.8324	-0.0866	65.2	45.7853	0.1936
60.3	45.7928	-0.1206	65.3	45.8216	0.1860
60.4	45.7881	-0.1180	65.4	45.8572	0.1740
60.5	45.7370	-0.0956	65.5	45.8959	0.1538
60.6	45.7183	-0.1280	65.6	45.9219	0.1258
60.7	45.7047	-0.0763	65.7	45.9483	0.0967
60.8	45.6533	-0.0843	65.8	45.9614	0.0578
60.9	45.6547	-0.0788	65.9	45.9716	0.0208
61.0	45.6558	-0.1021	66.0	45.9740	-0.0182
61.1	45.6413	-0.0017	66.1	45.9673	-0.0597
61.2	45.5024	-0.1695	66.2	45.9479	-0.0939
61.3	45.6122	0.0252	66.3	45.9315	-0.1312
61.4	45.6372	0.0343	66.4	45.9026	-0.1592
61.5	45.6594	0.0760	66.5	45.8673	-0.1836
61.6	45.6817	0.1161	66.6	45.8323	-0.1980
61.7	45.6997	0.1081	66.7	45.7903	-0.2044
61.8	45.7189	0.1321	66.8	45.7525	-0.2049
61.9	45.7568	0.1312	66.9	45.7080	-0.1975
62.0	45.7715	0.1536	67.0	45.6719	-0.1816
62.1	45.8103	0.1388	67.1	45.6357	-0.1585
62.2	45.8345	0.1246	67.2	45.6084	-0.1278
62.3	45.8645	0.1313	67.3	45.5862	-0.0935
62.4	45.8944	0.1056	67.4	45.5692	-0.0556
62.5	45.9090	0.0924	67.5	45.5611	-0.0137
62.6	45.9225	0.0619	67.6	45.5630	0.0297
62.7	45.9407	0.0175	67.7	45.5704	0.0723
62.8	45.9307	0.0049	67.8	45.5892	0.1104
62.9	45.9335	-0.0357	67.9	45.6143	0.1457
63.0	45.9366	-0.0540	68.0	45.6460	0.1747
63.1	45.9087	-0.0874	68.1	45.6820	0.1994
63.2	45.8845	-0.1196	68.2	45.7232	0.2140
63.3	45.8567	-0.1423	68.3	45.7651	0.2195
63.4	45.8292	-0.1583	68.4	45.8111	0.2185
63.5	45.8017	-0.1649	68.5	45.8547	0.2090
63.6	45.7737	-0.1647	68.6	45.8951	0.1891
63.7	45.7294	-0.1584	68.7	45.9302	0.1622
63.8	45.7140	-0.1520	68.8	45.9610	0.1292
63.9	45.6724	-0.1364	68.9	45.9826	0.0904
64.0	45.6407	-0.1180	69.0	45.9964	0.0467
64.1	45.6271	-0.0932	69.1	46.0028	0.0002
64.2	45.6092	-0.0613	69.2	45.9991	-0.0433
64.3	45.5943	-0.0279	69.3	45.9873	-0.0894
64.4	45.5869	0.0072	69.4	45.9666	-0.1288
64.5	45.6028	0.0471	69.5	45.9370	-0.1652
64.6	45.6139	0.0755	69.6	45.9014	-0.1944
64.7	45.6275	0.1133	69.7	45.8602	-0.2162
64.8	45.6516	0.1388	69.8	45.8155	-0.2297
64.9	45.6760	0.1595	69.9	45.7694	-0.2351
65.0	45.7187	0.1806	70.0	45.7223	-0.2297

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
70.1	45.6770	-0.2147	75.1	45.9987	0.1486
70.2	45.6375	-0.1918	75.2	46.0243	0.1014
70.3	45.6013	-0.1616	75.3	46.0402	0.0496
70.4	45.5718	-0.1247	75.4	46.0453	-0.0043
70.5	45.5508	-0.0823	75.5	46.0394	-0.0582
70.6	45.5388	-0.0361	75.6	46.0230	-0.1100
70.7	45.5350	0.0114	75.7	45.9965	-0.1574
70.8	45.5416	0.0588	75.8	45.9609	-0.1989
70.9	45.5575	0.1039	75.9	45.9179	-0.2322
71.0	45.5818	0.1457	76.0	45.8691	-0.2565
71.1	45.6137	0.1813	76.1	45.8162	-0.2704
71.2	45.6523	0.2113	76.2	45.7617	-0.2736
71.3	45.6965	0.2310	76.3	45.7076	-0.2661
71.4	45.7430	0.2430	76.4	45.6559	-0.2478
71.5	45.7924	0.2454	76.5	45.6089	-0.2196
71.6	45.8410	0.2377	76.6	45.5684	-0.1828
71.7	45.8872	0.2207	76.7	45.5360	-0.1385
71.8	45.9291	0.1936	76.8	45.5129	-0.0886
71.9	45.9658	0.1597	76.9	45.5000	-0.0350
72.0	45.9939	0.1196	77.0	45.4981	0.0199
72.1	46.0144	0.0735	77.1	45.5069	0.0745
72.2	46.0249	0.0243	77.2	45.5267	0.1263
72.3	46.0254	-0.0262	77.3	45.5560	0.1733
72.4	46.0155	-0.0756	77.4	45.5942	0.2136
72.5	45.9959	-0.1224	77.5	45.6399	0.2456
72.6	45.9680	-0.1645	77.6	45.6911	0.2681
72.7	45.9321	-0.1998	77.7	45.7459	0.2800
72.8	45.8892	-0.2279	77.8	45.8021	0.2807
72.9	45.8417	-0.2464	77.9	45.8576	0.2701
73.0	45.7913	-0.2555	78.0	45.9100	0.2489
73.1	45.7406	-0.2544	78.1	45.9571	0.2174
73.2	45.6903	-0.2427	78.2	45.9973	0.1771
73.3	45.6437	-0.2213	78.3	46.0285	0.1295
73.4	45.6021	-0.1918	78.4	46.0497	0.0765
73.5	45.5672	-0.1537	78.5	46.0599	0.0202
73.6	45.5404	-0.1100	78.6	46.0587	-0.0371
73.7	45.5227	-0.0615	78.7	46.0460	-0.0931
73.8	45.5148	-0.0108	78.8	46.0223	-0.1456
73.9	45.5169	0.0411	78.9	45.9886	-0.1922
74.0	45.5299	0.0914	79.0	45.9463	-0.2312
74.1	45.5524	0.1385	79.1	45.8970	-0.2610
74.2	45.5838	0.1802	79.2	45.8427	-0.2804
74.3	45.6230	0.2152	79.3	45.7857	-0.2886
74.4	45.6680	0.2417	79.4	45.7281	-0.2852
74.5	45.7180	0.2587	79.5	45.6724	-0.2706
74.6	45.7705	0.2654	79.6	45.6206	-0.2452
74.7	45.8233	0.2618	79.7	45.5748	-0.2100
74.8	45.8745	0.2474	79.8	45.5369	-0.1664
74.9	45.9222	0.2231	79.9	45.5083	-0.1162
75.0	45.9642	0.1900	80.0	45.4903	-0.0613

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
80.1	45.4834	-0.0038	85.1	46.0382	-0.1659
80.2	45.4880	0.0540	85.2	46.0000	-0.2152
80.3	45.5039	0.1099	85.3	45.9527	-0.2560
80.4	45.5306	0.1616	85.4	45.8983	-0.2864
80.5	45.5671	0.2071	85.5	45.8389	-0.3054
80.6	45.6120	0.2445	85.6	45.7770	-0.3122
80.7	45.6635	0.2725	85.7	45.7149	-0.3066
80.8	45.7197	0.2897	85.8	45.6552	-0.2887
80.9	45.7783	0.2954	85.9	45.6002	-0.2594
81.0	45.8370	0.2893	86.0	45.5522	-0.2198
81.1	45.8935	0.2717	86.1	45.5129	-0.1715
81.2	45.9456	0.2430	86.2	45.4839	-0.1164
81.3	45.9909	0.2045	86.3	45.4664	-0.0565
81.4	46.0277	0.1576	86.4	45.4610	0.0056
81.5	46.0545	0.1042	86.5	45.4680	0.0677
81.6	46.0701	0.0464	86.6	45.4871	0.1272
81.7	46.0738	-0.0134	86.7	45.5176	0.1818
81.8	46.0655	-0.0728	86.8	45.5585	0.2294
81.9	46.0454	-0.1294	86.9	45.6080	0.2681
82.0	46.0144	-0.1810	87.0	45.6643	0.2963
82.1	45.9737	-0.2253	87.1	45.7252	0.3128
82.2	45.9251	-0.2606	87.2	45.7883	0.3169
82.3	45.8703	-0.2855	87.3	45.8512	0.3083
82.4	45.8116	-0.2990	87.4	45.9112	0.2874
82.5	45.7515	-0.3006	87.5	45.9659	0.2549
82.6	45.6922	-0.2902	87.6	46.0132	0.2120
82.7	45.6362	-0.2682	87.7	46.0510	0.1604
82.8	45.5857	-0.2356	87.8	46.0778	0.1022
82.9	45.5425	-0.1937	87.9	46.0924	0.0398
83.0	45.5086	-0.1440	88.0	46.0943	-0.0244
83.1	45.4850	-0.0885	88.1	46.0832	-0.0877
83.2	45.4729	-0.0295	88.2	46.0597	-0.1475
83.3	45.4727	0.0309	88.3	46.0248	-0.2015
83.4	45.4844	0.0902	88.4	45.9797	-0.2474
83.5	45.5076	0.1460	88.5	45.9264	-0.2833
83.6	45.5415	0.1963	88.6	45.8671	-0.3079
83.7	45.5847	0.2390	88.7	45.8040	-0.3202
83.8	45.6357	0.2724	88.8	45.7398	-0.3198
83.9	45.6923	0.2950	88.9	45.6770	-0.3066
84.0	45.7524	0.3060	89.0	45.6181	-0.2811
84.1	45.8138	0.3049	89.1	45.5654	-0.2446
84.2	45.8738	0.2915	89.2	45.5210	-0.1984
84.3	45.9300	0.2664	89.3	45.4866	-0.1443
84.4	45.9803	0.2305	89.4	45.4635	-0.0845
84.5	46.0225	0.1853	89.5	45.4527	-0.0212
84.6	46.0548	0.1324	89.6	45.4546	0.0429
84.7	46.0759	0.0740	89.7	45.4692	0.1055
84.8	46.0850	0.0124	89.8	45.4958	0.1641
84.9	46.0816	-0.0497	89.9	45.5335	0.2163
85.0	46.0657	-0.1100	90.0	45.5809	0.2602
					0.0252 -1.0873

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
90.1	45.6362	0.2938	95.1	45.7273	-0.3337
90.2	45.6971	0.3159	95.2	45.6620	-0.3177
90.3	45.7613	0.3255	95.3	45.6012	-0.2890
90.4	45.8263	0.3221	95.4	45.5474	-0.2489
90.5	45.8895	0.3059	95.5	45.5025	-0.1990
90.6	45.9483	0.2773	95.6	45.4684	-0.1412
90.7	46.0004	0.2375	95.7	45.4464	-0.0778
90.8	46.0435	0.1880	95.8	45.4373	-0.0113
90.9	46.0759	0.1308	95.9	45.4415	0.0557
91.0	46.0962	0.0682	96.0	45.4589	0.1206
91.1	46.1036	0.0027	96.1	45.4887	0.1809
91.2	46.0978	-0.0630	96.2	45.5300	0.2342
91.3	46.0789	-0.1262	96.3	45.5810	0.2784
91.4	46.0478	-0.1844	96.4	45.6399	0.3116
91.5	46.0056	-0.2352	96.5	45.7043	0.3326
91.6	45.9542	-0.2766	96.6	45.7717	0.3404
91.7	45.8956	-0.3068	96.7	45.8395	0.3346
91.8	45.8322	-0.3248	96.8	45.9049	0.3154
91.9	45.7665	-0.3297	96.9	45.9653	0.2835
92.0	45.7012	-0.3216	97.0	46.0182	0.2401
92.1	45.6388	-0.3006	97.1	46.0615	0.1870
92.2	45.5819	-0.2678	97.2	46.0933	0.1262
92.3	45.5326	-0.2243	97.3	46.1123	0.0601
92.4	45.4929	-0.1720	97.4	46.1178	-0.0084
92.5	45.4643	-0.1128	97.5	46.1094	-0.0767
92.6	45.4479	-0.0492	97.6	46.0875	-0.1420
92.7	45.4444	0.0165	97.7	46.0529	-0.2015
92.8	45.4539	0.0816	97.8	46.0072	-0.2529
92.9	45.4761	0.1436	97.9	45.9522	-0.2942
93.0	45.5102	0.2000	98.0	45.8901	-0.3236
93.1	45.5548	0.2488	98.1	45.8235	-0.3401
93.2	45.6083	0.2878	98.2	45.7549	-0.3429
93.3	45.6685	0.3155	98.3	45.6872	-0.3321
93.4	45.7332	0.3307	98.4	45.6231	-0.3082
93.5	45.7997	0.3328	98.5	45.5650	-0.2720
93.6	45.8655	0.3216	98.6	45.5153	-0.2251
93.7	45.9279	0.2975	98.7	45.4758	-0.1693
93.8	45.9843	0.2614	98.8	45.4481	-0.1068
93.9	46.0324	0.2147	98.9	45.4333	-0.0401
94.0	46.0704	0.1591	99.0	45.4319	0.0283
94.1	46.0965	0.0971	99.1	45.4441	0.0956
94.2	46.1096	0.0310	99.2	45.4693	0.1592
94.3	46.1093	-0.0365	99.3	45.5066	0.2168
94.4	46.0955	-0.1025	99.4	45.5547	0.2658
94.5	46.0687	-0.1645	99.5	45.6115	0.3045
94.6	46.0301	-0.2198	99.6	45.6751	0.3312
94.7	45.9812	-0.2663	99.7	45.7428	0.3448
94.8	45.9241	-0.3022	99.8	45.8119	0.3447
94.9	45.8610	-0.3258	99.9	45.8798	0.3308
95.0	45.7945	-0.3365	100.0	45.9438	0.3036

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
100.1	46.0011	0.2642	105.1	45.4346	-0.0990
100.2	46.0494	0.2140	105.2	45.4217	-0.0298
100.3	46.0869	0.1550	105.3	45.4226	0.0407
100.4	46.1118	0.0897	105.4	45.4374	0.1096
100.5	46.1231	0.0207	105.5	45.4656	0.1743
100.6	46.1204	-0.0492	105.6	45.5060	0.2423
100.7	46.1038	-0.1172	105.7	45.5571	0.2812
100.8	46.0738	-0.1805	105.8	45.6170	0.3190
100.9	46.0319	-0.2365	105.9	45.6833	0.3444
101.0	45.9796	-0.2830	106.0	45.7535	0.3560
101.1	45.9192	-0.3181	106.1	45.8247	0.3536
101.2	45.8530	-0.3404	106.2	45.8941	0.3369
101.3	45.7837	-0.3491	106.3	45.9590	0.3067
101.4	45.7142	-0.3439	106.4	46.0166	0.2641
101.5	45.6472	-0.3250	106.5	46.0647	0.2108
101.6	45.5853	-0.2933	106.6	46.1011	0.1489
101.7	45.5310	-0.2499	106.7	46.1245	0.0808
101.8	45.4863	-0.1967	106.8	46.1338	0.0094
101.9	45.4530	-0.1357	106.9	46.1286	-0.0624
102.0	45.4324	-0.0694	107.0	46.1091	-0.1318
102.1	45.4253	-0.0003	107.1	46.0761	-0.1958
102.2	45.4320	0.0688	107.2	46.0310	-0.2519
102.3	45.4522	0.1354	107.3	45.9757	-0.2979
102.4	45.4851	0.1967	107.4	45.9123	-0.3319
102.5	45.5296	0.2504	107.5	45.8435	-0.3525
102.6	45.5839	0.2943	107.6	45.7721	-0.3590
102.7	45.6459	0.3267	107.7	45.7009	-0.3513
102.8	45.7132	0.3461	107.8	45.6327	-0.3295
102.9	45.7831	0.3519	107.9	45.5702	-0.2948
103.0	45.8530	0.3436	108.0	45.5159	-0.2484
103.1	45.9199	0.3215	108.1	45.4719	-0.1922
103.2	45.9812	0.2864	108.2	45.4398	-0.1285
103.3	46.0344	0.2398	108.3	45.4209	-0.0597
103.4	46.0773	0.1834	108.4	45.4160	0.0115
103.5	46.1080	0.1194	108.5	45.4252	0.0823
103.6	46.1254	0.0506	108.6	45.4482	0.1499
103.7	46.1286	-0.0204	108.7	45.4841	0.2117
103.8	46.1175	-0.0906	108.8	45.5316	0.2653
103.9	46.0926	-0.1572	108.9	45.5888	0.3085
104.0	46.0549	-0.2174	109.0	45.6535	0.3396
104.1	46.0060	-0.2689	109.1	45.7233	0.3572
104.2	45.9478	-0.3095	109.2	45.7953	0.3607
104.3	45.8827	-0.3377	109.3	45.8667	0.3498
104.4	45.8134	-0.3523	109.4	45.9346	0.3249
104.5	45.7426	-0.3529	109.5	45.9963	0.2868
104.6	45.6732	-0.3394	109.6	46.0493	0.2371
104.7	45.6080	-0.3125	109.7	46.0913	0.1778
104.8	45.5494	-0.2732	109.8	46.1206	0.1111
104.9	45.4997	-0.2231	109.9	46.1360	0.0399
105.0	45.4610	-0.1643	110.0	46.1368	-0.0330

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
110.1	46.1230	-0.1046	115.1	45.5354	0.2791
110.2	46.0952	-0.1720	115.2	45.5953	0.3212
110.3	46.0545	-0.2324	115.3	45.6625	0.3508
110.4	46.0025	-0.2834	115.4	45.7343	0.3664
110.5	45.9415	-0.3230	115.5	45.8079	0.3675
110.6	45.8738	-0.3497	115.6	45.8805	0.3540
110.7	45.8023	-0.3623	115.7	45.9489	0.3262
110.8	45.7298	-0.3604	115.8	46.0106	0.2852
110.9	45.6592	-0.3442	115.9	46.0630	0.2326
111.0	45.5933	-0.3144	116.0	46.1038	0.1706
111.1	45.5347	-0.2721	116.1	46.1314	0.1016
111.2	45.4856	-0.2192	116.2	46.1447	0.0284
111.3	45.4479	-0.1576	116.3	46.1430	-0.0460
111.4	45.4232	-0.0898	116.4	46.1265	-0.1186
111.5	45.4123	-0.0185	116.5	46.0957	-0.1863
111.6	45.4156	0.0536	116.6	46.0521	-0.2466
111.7	45.4332	0.1236	116.7	45.9974	-0.2968
111.8	45.4642	0.1889	116.8	45.9338	-0.3351
111.9	45.5075	0.2468	116.9	45.8639	-0.3599
112.0	45.5615	0.2951	117.0	45.7905	-0.3703
112.1	45.6241	0.3318	117.1	45.7167	-0.3659
112.2	45.6928	0.3555	117.2	45.6453	-0.3469
112.3	45.7650	0.3650	117.3	45.5792	-0.3143
112.4	45.8379	0.3601	117.4	45.5209	-0.2692
112.5	45.9083	0.3407	117.5	45.4726	-0.2136
112.6	45.9737	0.3075	117.6	45.4364	-0.1495
112.7	46.0312	0.2620	117.7	45.4135	-0.0797
112.8	46.0785	0.2058	117.8	45.4048	-0.0066
112.9	46.1136	0.1412	117.9	45.4106	0.0667
113.0	46.1352	0.0707	118.0	45.4309	0.1375
113.1	46.1422	-0.0026	118.1	45.4647	0.2029
113.2	46.1344	-0.0759	118.2	45.5108	0.2605
113.3	46.1120	-0.1461	118.3	45.5675	0.3079
113.4	46.0761	-0.2104	118.4	45.6325	0.3432
113.5	46.0281	-0.2663	118.5	45.7033	0.3649
113.6	45.9699	-0.3113	118.6	45.7772	0.3722
113.7	45.9040	-0.3438	118.7	45.8512	0.3646
113.8	45.8330	-0.3625	118.8	45.9224	0.3425
113.9	45.7598	-0.3667	118.9	45.9878	0.3065
114.0	45.6873	-0.3563	119.0	46.0448	0.2581
114.1	45.6184	-0.3318	119.1	46.0911	0.1992
114.2	45.5558	-0.2942	119.2	46.1247	0.1322
114.3	45.5020	-0.2449	119.3	46.1442	0.0598
114.4	45.4589	-0.1860	119.4	46.1488	-0.0152
114.5	45.4283	-0.1199	119.5	46.1383	-0.0895
114.6	45.4114	-0.0490	119.6	46.1131	-0.1603
114.7	45.4088	0.0238	119.7	46.0743	-0.2245
114.8	45.4206	0.0958	119.8	46.0235	-0.2796
114.9	45.4464	0.1641	119.9	45.9628	-0.3235
115.0	45.4852	0.2260	120.0	45.8946	-0.3543

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o		kh _e	ka	Z_o		kh _e
120.1	45.8217	-0.3709	0.0342	125.1	45.9362	0.3427	0.0397
120.2	45.7471	-0.3727	0.0342	125.2	46.0014	0.3039	0.0391
120.3	45.6737	-0.3596	0.0344	125.3	46.0577	0.2528	0.0384
120.4	45.6045	-0.3323	0.0348	125.4	46.1026	0.1915	0.0376
120.5	45.5421	-0.2918	0.0352	125.5	46.1344	0.1223	0.0367
120.6	45.4890	-0.2399	0.0358	125.6	46.1517	0.0481	0.0357
120.7	45.4472	-0.1786	0.0365	125.7	46.1538	-0.0281	0.0346
120.8	45.4184	-0.1102	0.0373	125.8	46.1406	-0.1032	0.0336
120.9	45.4035	-0.0376	0.0381	125.9	46.1127	-0.1741	0.0326
121.0	45.4034	0.0366	0.0390	126.0	46.0711	-0.2380	0.0317
121.1	45.4178	0.1094	0.0398	126.1	46.0176	-0.2922	0.0309
121.2	45.4463	0.1779	0.0406	126.2	45.9545	-0.3346	0.0302
121.3	45.4878	0.2396	0.0413	126.3	45.8843	-0.3635	0.0296
121.4	45.5408	0.2919	0.0419	126.4	45.8098	-0.3778	0.0292
121.5	45.6031	0.3327	0.0424	126.5	45.7341	-0.3771	0.0290
121.6	45.6724	0.3605	0.0427	126.6	45.6601	-0.3613	0.0290
121.7	45.7460	0.3740	0.0429	126.7	45.5908	-0.3312	0.0290
121.8	45.8209	0.3726	0.0429	126.8	45.5289	-0.2881	0.0293
121.9	45.8942	0.3563	0.0428	126.9	45.4768	-0.2336	0.0297
122.0	45.9629	0.3257	0.0424	127.0	45.4365	-0.1700	0.0301
122.1	46.0242	0.2819	0.0420	127.1	45.4096	-0.0998	0.0307
122.2	46.0757	0.2267	0.0414	127.2	45.3971	-0.0256	0.0313
122.3	46.1150	0.1623	0.0406	127.3	45.3994	0.0496	0.0319
122.4	46.1408	0.0911	0.0398	127.4	45.4165	0.1230	0.0325
122.5	46.1517	0.0163	0.0390	127.5	45.4477	0.1915	0.0330
122.6	46.1475	-0.0593	0.0381	127.6	45.4919	0.2526	0.0335
122.7	46.1281	-0.1325	0.0372	127.7	45.5474	0.3039	0.0338
122.8	46.0946	-0.2003	0.0364	127.8	45.6120	0.3432	0.0340
122.9	46.0482	-0.2600	0.0357	127.9	45.6832	0.3690	0.0341
123.0	45.9908	-0.3091	0.0350	128.0	45.7583	0.3802	0.0340
123.1	45.9249	-0.3458	0.0345	128.1	45.8342	0.3762	0.0337
123.2	45.8531	-0.3686	0.0342	128.2	45.9080	0.3572	0.0333
123.3	45.7782	-0.3767	0.0339	128.3	45.9766	0.3238	0.0327
123.4	45.7034	-0.3697	0.0339	128.4	46.0373	0.2773	0.0319
123.5	45.6315	-0.3480	0.0340	128.5	46.0875	0.2196	0.0310
123.6	45.5655	-0.3126	0.0343	128.6	46.1252	0.1529	0.0300
123.7	45.5078	-0.2648	0.0347	128.7	46.1488	0.0799	0.0290
123.8	45.4607	-0.2067	0.0352	128.8	46.1574	0.0037	0.0278
123.9	45.4261	-0.1404	0.0358	128.9	46.1505	-0.0728	0.0267
124.0	45.4052	-0.0687	0.0365	129.0	46.1284	-0.1463	0.0256
124.1	45.3988	0.0058	0.0372	129.1	46.0920	-0.2138	0.0246
124.2	45.4073	0.0800	0.0379	129.2	46.0430	-0.2727	0.0236
124.3	45.4302	0.1512	0.0385	129.3	45.9832	-0.3206	0.0228
124.4	45.4668	0.2165	0.0391	129.4	45.9151	-0.3555	0.0221
124.5	45.5155	0.2734	0.0397	129.5	45.8416	-0.3761	0.0216
124.6	45.5747	0.3196	0.0401	129.6	45.7655	-0.3817	0.0212
124.7	45.6419	0.3532	0.0403	129.7	45.6899	-0.3720	0.0210
124.8	45.7146	0.3729	0.0404	129.8	45.6179	-0.3476	0.0210
124.9	45.7899	0.3778	0.0403	129.9	45.5522	-0.3095	0.0211
125.0	45.8648	0.3676	0.0401	130.0	45.4954	-0.2592	0.0213

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e				
130.1	45.4497	-0.1987	0.0217	-1.0259	135.1	46.1618	-0.0093	0.0084	-1.0406
130.2	45.4168	-0.1305	0.0222	-1.0257	135.2	46.1522	-0.0864	0.0072	-1.0405
130.3	45.3981	-0.0571	0.0227	-1.0257	135.3	46.1274	-0.1599	0.0061	-1.0403
130.4	45.3942	0.0185	0.0233	-1.0259	135.4	46.0883	-0.2270	0.0050	-1.0399
130.5	45.4053	0.0934	0.0238	-1.0262	135.5	46.0367	-0.2849	0.0040	-1.0393
130.6	45.4309	0.1648	0.0243	-1.0267	135.6	45.9746	-0.3312	0.0032	-1.0387
130.7	45.4701	0.2297	0.0248	-1.0273	135.7	45.9046	-0.3642	0.0025	-1.0379
130.8	45.5214	0.2856	0.0251	-1.0281	135.8	45.8295	-0.3825	0.0020	-1.0371
130.9	45.5829	0.3304	0.0254	-1.0289	135.9	45.7525	-0.3855	0.0016	-1.0363
131.0	45.6521	0.3622	0.0254	-1.0299	136.0	45.6764	-0.3732	0.0014	-1.0354
131.1	45.7264	0.3797	0.0253	-1.0309	136.1	45.6044	-0.3461	0.0014	-1.0346
131.2	45.8028	0.3821	0.0251	-1.0320	136.2	45.5393	-0.3053	0.0016	-1.0339
131.3	45.8783	0.3692	0.0246	-1.0330	136.3	45.4836	-0.2526	0.0019	-1.0333
131.4	45.9499	0.3415	0.0240	-1.0340	136.4	45.4395	-0.1899	0.0023	-1.0328
131.5	46.0146	0.3000	0.0233	-1.0349	136.5	45.4086	-0.1198	0.0027	-1.0324
131.6	46.0698	0.2464	0.0224	-1.0357	136.6	45.3921	-0.0450	0.0033	-1.0323
131.7	46.1132	0.1827	0.0214	-1.0364	136.7	45.3907	0.0315	0.0038	-1.0322
131.8	46.1430	0.1116	0.0203	-1.0369	136.8	45.4044	0.1069	0.0044	-1.0324
131.9	46.1580	0.0358	0.0191	-1.0372	136.9	45.4328	0.1781	0.0049	-1.0327
132.0	46.1575	-0.0414	0.0179	-1.0374	137.0	45.4746	0.2424	0.0053	-1.0332
132.1	46.1416	-0.1169	0.0167	-1.0374	137.1	45.5284	0.2972	0.0056	-1.0338
132.2	46.1109	-0.1878	0.0156	-1.0372	137.2	45.5920	0.3404	0.0058	-1.0345
132.3	46.0666	-0.2509	0.0146	-1.0368	137.3	45.6631	0.3702	0.0059	-1.0353
132.4	46.0106	-0.3040	0.0137	-1.0364	137.4	45.7387	0.3854	0.0057	-1.0361
132.5	45.9453	-0.3447	0.0129	-1.0358	137.5	45.8161	0.3852	0.0054	-1.0370
132.6	45.8733	-0.3716	0.0122	-1.0351	137.6	45.8919	0.3696	0.0050	-1.0378
132.7	45.7974	-0.3835	0.0118	-1.0344	137.7	45.9633	0.3392	0.0043	-1.0386
132.8	45.7208	-0.3801	0.0115	-1.0336	137.8	46.0273	0.2951	0.0035	-1.0393
132.9	45.6465	-0.3617	0.0114	-1.0329	137.9	46.0813	0.2390	0.0026	-1.0399
133.0	45.5774	-0.3289	0.0114	-1.0322	138.0	46.1230	0.1731	0.0015	-1.0403
133.1	45.5163	-0.2832	0.0116	-1.0317	138.1	46.1507	0.1002	0.0004	-1.0406
133.2	45.4654	-0.2263	0.0119	-1.0312	138.2	46.1632	0.0232	-0.0008	-1.0407
133.3	45.4268	-0.1606	0.0123	-1.0309	138.3	46.1601	-0.0548	-0.0019	-1.0406
133.4	45.4020	-0.0886	0.0128	-1.0307	138.4	46.1414	-0.1306	-0.0031	-1.0404
133.5	45.3918	-0.0131	0.0134	-1.0306	138.5	46.1079	-0.2011	-0.0042	-1.0400
133.6	45.3967	0.0629	0.0139	-1.0308	138.6	46.0610	-0.2634	-0.0052	-1.0394
133.7	45.4164	0.1365	0.0144	-1.0311	138.7	46.0027	-0.3151	-0.0060	-1.0387
133.8	45.4503	0.2048	0.0149	-1.0316	138.8	45.9353	-0.3540	-0.0068	-1.0379
133.9	45.4971	0.2651	0.0153	-1.0322	138.9	45.8616	-0.3786	-0.0073	-1.0370
134.0	45.5550	0.3151	0.0155	-1.0329	139.0	45.7846	-0.3881	-0.0077	-1.0360
134.1	45.6217	0.3527	0.0156	-1.0337	139.1	45.7074	-0.3821	-0.0079	-1.0351
134.2	45.6946	0.3764	0.0156	-1.0347	139.2	45.6330	-0.3609	-0.0080	-1.0342
134.3	45.7709	0.3852	0.0154	-1.0356	139.3	45.5644	-0.3255	-0.0079	-1.0334
134.4	45.8476	0.3786	0.0150	-1.0365	139.4	45.5042	-0.2773	-0.0076	-1.0326
134.5	45.9216	0.3568	0.0145	-1.0374	139.5	45.4548	-0.2181	-0.0072	-1.0320
134.6	45.9899	0.3207	0.0137	-1.0383	139.6	45.4180	-0.1505	-0.0067	-1.0315
134.7	46.0497	0.2716	0.0129	-1.0390	139.7	45.3953	-0.0769	-0.0061	-1.0312
134.8	46.0985	0.2115	0.0119	-1.0397	139.8	45.3876	-0.0004	-0.0056	-1.0310
134.9	46.1344	0.1427	0.0108	-1.0401	139.9	45.3950	0.0762	-0.0050	-1.0310
135.0	46.1558	0.0681	0.0096	-1.0404	140.0	45.4175	0.1499	-0.0044	-1.0312

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e				
140.1	45.4540	0.2177	-0.0039	-1.0315	145.1	45.9247	-0.3624	-0.0221	-1.0303
140.2	45.5033	0.2771	-0.0035	-1.0320	145.2	45.8495	-0.3848	-0.0225	-1.0292
140.3	45.5634	0.3256	-0.0032	-1.0326	145.3	45.7716	-0.3917	-0.0228	-1.0282
140.4	45.6321	0.3613	-0.0031	-1.0333	145.4	45.6939	-0.3830	-0.0228	-1.0271
140.5	45.7065	0.3828	-0.0031	-1.0341	145.5	45.6196	-0.3592	-0.0227	-1.0261
140.6	45.7839	0.3891	-0.0033	-1.0348	145.6	45.5516	-0.3211	-0.0225	-1.0252
140.7	45.8611	0.3798	-0.0037	-1.0356	145.7	45.4926	-0.2704	-0.0221	-1.0244
140.8	45.9351	0.3553	-0.0043	-1.0364	145.8	45.4447	-0.2092	-0.0216	-1.0237
140.9	46.0029	0.3166	-0.0050	-1.0370	145.9	45.4100	-0.1397	-0.0209	-1.0231
141.0	46.0616	0.2649	-0.0058	-1.0376	146.0	45.3896	-0.0648	-0.0203	-1.0227
141.1	46.1088	0.2025	-0.0068	-1.0380	146.1	45.3843	0.0127	-0.0196	-1.0225
141.2	46.1427	0.1319	-0.0078	-1.0383	146.2	45.3944	0.0896	-0.0189	-1.0225
141.3	46.1618	0.0558	-0.0090	-1.0384	146.3	45.4195	0.1632	-0.0182	-1.0226
141.4	46.1652	-0.0225	-0.0101	-1.0383	146.4	45.4587	0.2303	-0.0177	-1.0229
141.5	46.1528	-0.1000	-0.0112	-1.0380	146.5	45.5104	0.2885	-0.0172	-1.0233
141.6	46.1252	-0.1734	-0.0123	-1.0376	146.6	45.5726	0.3354	-0.0168	-1.0238
141.7	46.0835	-0.2398	-0.0133	-1.0370	146.7	45.6430	0.3692	-0.0166	-1.0244
141.8	46.0294	-0.2964	-0.0142	-1.0363	146.8	45.7189	0.3883	-0.0166	-1.0251
141.9	45.9652	-0.3410	-0.0149	-1.0354	146.9	45.7971	0.3920	-0.0167	-1.0258
142.0	45.8934	-0.3719	-0.0155	-1.0345	147.0	45.8747	0.3801	-0.0170	-1.0265
142.1	45.8171	-0.3879	-0.0159	-1.0335	147.1	45.9485	0.3529	-0.0175	-1.0271
142.2	45.7392	-0.3883	-0.0161	-1.0325	147.2	46.0155	0.3114	-0.0181	-1.0276
142.3	45.6629	-0.3733	-0.0162	-1.0315	147.3	46.0729	0.2574	-0.0189	-1.0281
142.4	45.5912	-0.3435	-0.0161	-1.0306	147.4	46.1185	0.1929	-0.0198	-1.0284
142.5	45.5269	-0.3002	-0.0158	-1.0297	147.5	46.1502	0.1205	-0.0208	-1.0285
142.6	45.4725	-0.2450	-0.0154	-1.0290	147.6	46.1668	0.0431	-0.0218	-1.0285
142.7	45.4301	-0.1803	-0.0149	-1.0284	147.7	46.1676	-0.0360	-0.0228	-1.0283
142.8	45.4013	-0.1086	-0.0143	-1.0279	147.8	46.1525	-0.1137	-0.0238	-1.0279
142.9	45.3872	-0.0326	-0.0137	-1.0276	147.9	46.1221	-0.1867	-0.0248	-1.0274
143.0	45.3883	0.0447	-0.0131	-1.0275	148.0	46.0778	-0.2522	-0.0256	-1.0267
143.1	45.4047	0.1203	-0.0124	-1.0276	148.1	46.0214	-0.3074	-0.0264	-1.0258
143.2	45.4356	0.1912	-0.0119	-1.0278	148.2	45.9551	-0.3502	-0.0270	-1.0249
143.3	45.4800	0.2547	-0.0114	-1.0282	148.3	45.8818	-0.3788	-0.0274	-1.0238
143.4	45.5361	0.3082	-0.0110	-1.0287	148.4	45.8043	-0.3923	-0.0276	-1.0228
143.5	45.6018	0.3497	-0.0108	-1.0293	148.5	45.7258	-0.3901	-0.0277	-1.0217
143.6	45.6745	0.3774	-0.0107	-1.0300	148.6	45.6494	-0.3724	-0.0276	-1.0207
143.7	45.7514	0.3901	-0.0108	-1.0307	148.7	45.5782	-0.3400	-0.0274	-1.0197
143.8	45.8295	0.3873	-0.0110	-1.0314	148.8	45.5149	-0.2941	-0.0270	-1.0188
143.9	45.9055	0.3690	-0.0115	-1.0321	148.9	45.4619	-0.2368	-0.0264	-1.0180
144.0	45.9765	0.3359	-0.0121	-1.0327	149.0	45.4213	-0.1701	-0.0258	-1.0174
144.1	46.0396	0.2892	-0.0128	-1.0333	149.1	45.3947	-0.0968	-0.0251	-1.0169
144.2	46.0921	0.2307	-0.0137	-1.0337	149.2	45.3831	-0.0198	-0.0244	-1.0166
144.3	46.1319	0.1629	-0.0147	-1.0340	149.3	45.3868	0.0581	-0.0236	-1.0164
144.4	46.1574	0.0883	-0.0157	-1.0341	149.4	45.4059	0.1337	-0.0229	-1.0165
144.5	46.1674	0.0102	-0.0168	-1.0340	149.5	45.4395	0.2041	-0.0222	-1.0167
144.6	46.1616	-0.0684	-0.0179	-1.0338	149.6	45.4863	0.2666	-0.0216	-1.0170
144.7	46.1401	-0.1442	-0.0189	-1.0334	149.7	45.5447	0.3187	-0.0212	-1.0175
144.8	46.1040	-0.2142	-0.0199	-1.0328	149.8	45.6123	0.3582	-0.0209	-1.0180
144.9	46.0545	-0.2754	-0.0208	-1.0321	149.9	45.6865	0.3837	-0.0207	-1.0186
145.0	45.9940	-0.3255	-0.0215	-1.0312	150.0	45.7644	0.3939	-0.0207	-1.0193

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
150.1	45.8430	0.3884	155.1	45.5032	-0.2873
150.2	45.9190	0.3674	155.2	45.4519	-0.2278
150.3	45.9894	0.3316	155.3	45.4133	-0.1593
150.4	46.0514	0.2824	155.4	45.3890	-0.0847
150.5	46.1024	0.2217	155.5	45.3798	-0.0067
150.6	46.1402	0.1520	155.6	45.3862	0.0715
150.7	46.1633	0.0760	155.7	45.4079	0.1470
150.8	46.1707	-0.0031	155.8	45.4441	0.2168
150.9	46.1621	-0.0820	155.9	45.4934	0.2781
151.0	46.1379	-0.1577	156.0	45.5539	0.3285
151.1	46.0991	-0.2269	156.1	45.6233	0.3661
151.2	46.0472	-0.2869	156.2	45.6988	0.3892
151.3	45.9845	-0.3353	156.3	45.7776	0.3969
151.4	45.9135	-0.3701	156.4	45.8565	0.3887
151.5	45.8371	-0.3901	156.5	45.9324	0.3650
151.6	45.7583	-0.3944	156.6	46.0021	0.3265
151.7	45.6804	-0.3830	156.7	46.0628	0.2749
151.8	45.6064	-0.3565	156.8	46.1120	0.2120
151.9	45.5392	-0.3159	156.9	46.1477	0.1406
152.0	45.4814	-0.2629	157.0	46.1684	0.0633
152.1	45.4353	-0.1995	157.1	46.1732	-0.0165
152.2	45.4026	-0.1284	157.2	46.1618	-0.0957
152.3	45.3846	-0.0523	157.3	46.1349	-0.1710
152.4	45.3820	0.0259	157.4	46.0935	-0.2393
152.5	45.3947	0.1031	157.5	46.0392	-0.2979
152.6	45.4225	0.1763	157.6	45.9745	-0.3445
152.7	45.4642	0.2426	157.7	45.9018	-0.3771
152.8	45.5182	0.2995	157.8	45.8243	-0.3946
152.9	45.5825	0.3447	157.9	45.7449	-0.3963
153.0	45.6545	0.3762	158.0	45.6669	-0.3822
153.1	45.7316	0.3930	158.1	45.5933	-0.3530
153.2	45.8105	0.3941	158.2	45.5271	-0.3099
153.3	45.8883	0.3794	158.3	45.4708	-0.2546
153.4	45.9617	0.3495	158.4	45.4265	-0.1893
153.5	46.0277	0.3055	158.5	45.3961	-0.1167
153.6	46.0838	0.2491	158.6	45.3805	-0.0395
153.7	46.1274	0.1826	158.7	45.3804	0.0392
153.8	46.1569	0.1086	158.8	45.3959	0.1165
153.9	46.1710	0.0301	158.9	45.4262	0.1892
154.0	46.1691	-0.0496	159.0	45.4704	0.2546
154.1	46.1512	-0.1273	159.1	45.5267	0.3100
154.2	46.1182	-0.1998	159.2	45.5929	0.3533
154.3	46.0713	-0.2642	159.3	45.6665	0.3826
154.4	46.0126	-0.3178	159.4	45.7446	0.3968
154.5	45.9445	-0.3586	159.5	45.8241	0.3953
154.6	45.8697	-0.3850	159.6	45.9018	0.3779
154.7	45.7912	-0.3959	159.7	45.9746	0.3453
154.8	45.7123	-0.3910	159.8	46.0396	0.2988
154.9	45.6360	-0.3706	159.9	46.0941	0.2402
155.0	45.5654	-0.3356	160.0	46.1357	0.1717

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
160.1	46.1629	0.0963	165.1	45.3977	0.1298
160.2	46.1744	0.0169	165.2	45.4307	0.2019
160.3	46.1697	-0.0633	165.3	45.4773	0.2662
160.4	46.1491	-0.1408	165.4	45.5358	0.3200
160.5	46.1134	-0.2126	165.5	45.6038	0.3613
160.6	46.0641	-0.2758	165.6	45.6788	0.3883
160.7	46.0032	-0.3277	165.7	45.7578	0.4000
160.8	45.9333	-0.3664	165.8	45.8377	0.3957
160.9	45.8572	-0.3904	165.9	45.9152	0.3756
161.0	45.7779	-0.3987	166.0	45.9874	0.3404
161.1	45.6987	-0.3912	166.1	46.0511	0.2914
161.2	45.6227	-0.3681	166.2	46.1039	0.2306
161.3	45.5529	-0.3304	166.3	46.1435	0.1604
161.4	45.4920	-0.2798	166.4	46.1682	0.0836
161.5	45.4424	-0.2182	166.5	46.1770	0.0034
161.6	45.4059	-0.1481	166.6	46.1696	-0.0770
161.7	45.3839	-0.0722	166.7	46.1463	-0.1542
161.8	45.3773	0.0065	166.8	46.1079	-0.2252
161.9	45.3864	0.0850	166.9	46.0562	-0.2869
162.0	45.4108	0.1602	167.0	45.9933	-0.3371
162.1	45.4495	0.2291	167.1	45.9217	-0.3736
162.2	45.5011	0.2891	167.2	45.8444	-0.3951
162.3	45.5637	0.3379	167.3	45.7645	-0.4008
162.4	45.6347	0.3733	167.4	45.6852	-0.3905
162.5	45.7115	0.3940	167.5	45.6096	-0.3647
162.6	45.7911	0.3991	167.6	45.5407	-0.3246
162.7	45.8701	0.3882	167.7	45.4812	-0.2717
162.8	45.9456	0.3617	167.8	45.4334	-0.2081
162.9	46.0144	0.3207	167.9	45.3991	-0.1364
163.0	46.0737	0.2667	168.0	45.3796	-0.0594
163.1	46.1211	0.2018	168.1	45.3756	0.0199
163.2	46.1546	0.1287	168.2	45.3873	0.0984
163.3	46.1727	0.0503	168.3	45.4143	0.1732
163.4	46.1748	-0.0301	168.4	45.4556	0.2412
163.5	46.1607	-0.1094	168.5	45.5095	0.2998
163.6	46.1311	-0.1842	168.6	45.5740	0.3467
163.7	46.0871	-0.2514	168.7	45.6466	0.3799
163.8	46.0306	-0.3085	168.8	45.7245	0.3981
163.9	45.9639	-0.3531	168.9	45.8046	0.4005
164.0	45.8897	-0.3834	169.0	45.8837	0.3869
164.1	45.8112	-0.3983	169.1	45.9587	0.3578
164.2	45.7313	-0.3974	169.2	46.0265	0.3142
164.3	45.6534	-0.3806	169.3	46.0842	0.2579
164.4	45.5805	-0.3488	169.4	46.1297	0.1911
164.5	45.5154	-0.3032	169.5	46.1608	0.1165
164.6	45.4606	-0.2457	169.6	46.1764	0.0371
164.7	45.4183	-0.1786	169.7	46.1757	-0.0438
164.8	45.3901	-0.1046	169.8	46.1589	-0.1230
164.9	45.3771	-0.0265	169.9	46.1265	-0.1971
165.0	45.3796	0.0527	170.0	46.0800	-0.2632

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
170.1	46.0213	-0.3186	175.1	45.7377	0.4016
170.2	45.9528	-0.3611	175.2	45.8182	0.4013
170.3	45.8773	-0.3891	175.3	45.8973	0.3849
170.4	45.7979	-0.4014	175.4	45.9716	0.3531
170.5	45.7177	-0.3977	175.5	46.0382	0.3070
170.6	45.6400	-0.3782	175.6	46.0943	0.2485
170.7	45.5679	-0.3438	175.7	46.1376	0.1799
170.8	45.5040	-0.2958	175.8	46.1664	0.1039
170.9	45.4509	-0.2363	175.9	46.1793	0.0236
171.0	45.4107	-0.1675	176.0	46.1759	-0.0576
171.1	45.3848	-0.0922	176.1	46.1563	-0.1365
171.2	45.3743	-0.0132	176.2	46.1213	-0.2098
171.3	45.3796	0.0662	176.3	46.0723	-0.2746
171.4	45.4004	0.1431	176.4	46.0115	-0.3282
171.5	45.4359	0.2144	176.5	45.9413	-0.3686
171.6	45.4849	0.2774	176.6	45.8646	-0.3941
171.7	45.5454	0.3295	176.7	45.7844	-0.4038
171.8	45.6152	0.3687	176.8	45.7041	-0.3974
171.9	45.6914	0.3934	176.9	45.6268	-0.3752
172.0	45.7712	0.4025	177.0	45.5555	-0.3382
172.1	45.8513	0.3955	177.1	45.4930	-0.2879
172.2	45.9286	0.3726	177.2	45.4417	-0.2263
172.3	45.9999	0.3348	177.3	45.4036	-0.1559
172.4	46.0623	0.2834	177.4	45.3802	-0.0794
172.5	46.1132	0.2205	177.5	45.3723	0.0002
172.6	46.1506	0.1486	177.6	45.3802	0.0797
172.7	46.1728	0.0706	177.7	45.4036	0.1562
172.8	46.1790	-0.0102	177.8	45.4417	0.2267
172.9	46.1688	-0.0907	177.9	45.4930	0.2883
173.0	46.1427	-0.1675	178.0	45.5556	0.3386
173.1	46.1018	-0.2374	178.1	45.6269	0.3756
173.2	46.0477	-0.2977	178.2	45.7043	0.3978
173.3	45.9828	-0.3460	178.3	45.7848	0.4042
173.4	45.9097	-0.3802	178.4	45.8650	0.3945
173.5	45.8313	-0.3992	178.5	45.9418	0.3690
173.6	45.7509	-0.4022	178.6	46.0121	0.3286
173.7	45.6716	-0.3892	178.7	46.0730	0.2748
173.8	45.5966	-0.3607	178.8	46.1221	0.2099
173.9	45.5288	-0.3181	178.9	46.1571	0.1365
174.0	45.4708	-0.2629	179.0	46.1768	0.0574
174.1	45.4249	-0.1975	179.1	46.1802	-0.0240
174.2	45.3929	-0.1244	179.2	46.1672	-0.1044
174.3	45.3759	-0.0464	179.3	46.1384	-0.1806
174.4	45.3745	0.0334	179.4	46.0950	-0.2494
174.5	45.3889	0.1119	179.5	46.0387	-0.3081
174.6	45.4186	0.1860	179.6	45.9719	-0.3543
174.7	45.4623	0.2530	179.7	45.8974	-0.3862
174.8	45.5184	0.3100	179.8	45.8181	-0.4026
174.9	45.5848	0.3549	179.9	45.7373	-0.4029
175.0	45.6588	0.3859	180.0	45.6581	-0.3871

TABLE VI (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
180.1	45.5838	-0.3561	185.1	46.1304	0.1989
180.2	45.5172	-0.3110	185.2	46.1631	0.1240
180.3	45.4609	-0.2537	185.3	46.1801	0.0440
180.4	45.4170	-0.1865	185.4	46.1808	-0.0378
180.5	45.3873	-0.1120	185.5	46.1650	-0.1181
180.6	45.3728	-0.0332	185.6	46.1335	-0.1935
180.7	45.3741	0.0469	185.7	46.0876	-0.2611
180.8	45.3912	0.1253	185.8	46.0291	-0.3180
180.9	45.4235	0.1987	185.9	45.9606	-0.3621
181.0	45.4696	0.2644	186.0	45.8847	-0.3916
181.1	45.5278	0.3198	186.1	45.8046	-0.4053
181.2	45.5960	0.3627	186.2	45.7236	-0.4029
181.3	45.6714	0.3913	186.3	45.6447	-0.3844
181.4	45.7511	0.4044	186.4	45.5712	-0.3508
181.5	45.8320	0.4013	186.5	45.5059	-0.3033
181.6	45.9108	0.3823	186.6	45.4513	-0.2440
181.7	45.9843	0.3478	186.7	45.4096	-0.1751
181.8	46.0496	0.2993	186.8	45.3822	-0.0994
181.9	46.1039	0.2386	186.9	45.3704	-0.0198
182.0	46.1451	0.1683	187.0	45.3744	0.0605
182.1	46.1714	0.0910	187.1	45.3942	0.1385
182.2	46.1816	0.0100	187.2	45.4289	0.2112
182.3	46.1754	-0.0714	187.3	45.4774	0.2756
182.4	46.1530	-0.1499	187.4	45.5377	0.3292
182.5	46.1154	-0.2223	187.5	45.6076	0.3700
182.6	46.0641	-0.2857	187.6	45.6842	0.3961
182.7	46.0013	-0.3374	187.7	45.7646	0.4065
182.8	45.9294	-0.3755	187.8	45.8457	0.4008
182.9	45.8516	-0.3985	187.9	45.9241	0.3790
183.0	45.7708	-0.4055	188.0	45.9968	0.3419
183.1	45.6905	-0.3964	188.1	46.0606	0.2910
183.2	45.6136	-0.3715	188.2	46.1131	0.2283
183.3	45.5433	-0.3320	188.3	46.1520	0.1563
183.4	45.4823	-0.2794	188.4	46.1757	0.0778
183.5	45.4329	-0.2159	188.5	46.1833	-0.0038
183.6	45.3971	-0.1440	188.6	46.1743	-0.0852
183.7	45.3761	-0.0665	188.7	46.1492	-0.1632
183.8	45.3708	0.0137	188.8	46.1089	-0.2346
183.9	45.3815	0.0933	188.9	46.0553	-0.2963
184.0	45.4076	0.1693	189.0	45.9905	-0.3461
184.1	45.4482	0.2387	189.1	45.9172	-0.3819
184.2	45.5017	0.2988	189.2	45.8384	-0.4023
184.3	45.5662	0.3472	189.3	45.7572	-0.4066
184.4	45.6390	0.3820	189.4	45.6769	-0.3947
184.5	45.7175	0.4016	189.5	45.6006	-0.3672
184.6	45.7984	0.4054	189.6	45.5315	-0.3252
184.7	45.8786	0.3929	189.7	45.4720	-0.2705
184.8	45.9549	0.3647	189.8	45.4246	-0.2051
184.9	46.0241	0.3217	189.9	45.3911	-0.1318
185.0	46.0834	0.2657	190.0	45.3727	-0.0533
					0.0048
					0.0041
					0.0034
					0.0026
					0.0019
					0.0012
					0.0006
					0.0001
					-0.0003
					-0.0005
					-0.0005
					-0.0003
					-0.0000
					0.0005
					0.0011
					0.0018
					0.0027
					0.0036
					0.0046
					0.0056
					0.0065
					0.0074
					0.0082
					0.0089
					0.0095
					0.0099
					0.0101
					0.0102
					0.0101
					0.0098
					0.0094
					0.0088
					0.0082
					0.0075
					0.0067
					0.0059
					0.0052
					0.0046
					0.0040
					0.0036
					0.0033
					0.0032
					0.0033
					0.0035
					0.0039
					0.0044
					0.0051
					0.0059
					0.0068
					0.0078
					-0.9835
					-0.9839
					-0.9841
					-0.9841
					-0.9840
					-0.9836
					-0.9832
					-0.9826
					-0.9819
					-0.9811
					-0.9803
					-0.9794
					-0.9786
					-0.9778
					-0.9772
					-0.9766
					-0.9762
					-0.9759
					-0.9758
					-0.9759
					-0.9761
					-0.9765
					-0.9771
					-0.9778
					-0.9785
					-0.9794
					-0.9803
					-0.9812
					-0.9821
					-0.9829
					-0.9836
					-0.9842
					-0.9847
					-0.9850
					-0.9851
					-0.9851
					-0.9848
					-0.9845
					-0.9839
					-0.9833
					-0.9825
					-0.9817
					-0.9809
					-0.9801
					-0.9793
					-0.9786
					-0.9780
					-0.9776
					-0.9772
					-0.9771

TABLE VI (Continued)

 $\theta_0 = 50$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
190.1	45.3701	0.0273	195.1	46.1019	-0.2465
190.2	45.3834	0.1068	195.2	46.0461	-0.3066
190.3	45.4121	0.1821	195.3	45.9794	-0.3543
190.4	45.4551	0.2504	195.4	45.9047	-0.3877
190.5	45.5109	0.3089	195.5	45.8250	-0.4055
190.6	45.5772	0.3553	195.6	45.7434	-0.4071
190.7	45.6515	0.3878	195.7	45.6633	-0.3925
190.8	45.7308	0.4049	195.8	45.5878	-0.3623
190.9	45.8122	0.4059	195.9	45.5199	-0.3179
191.0	45.8922	0.3906	196.0	45.4621	-0.2610
191.1	45.9678	0.3597	196.1	45.4168	-0.1939
191.2	46.0358	0.3143	196.2	45.3856	-0.1193
191.3	46.0934	0.2561	196.3	45.3698	-0.0400
191.4	46.1382	0.1875	196.4	45.3699	0.0409
191.5	46.1685	0.1112	196.5	45.3859	0.1202
191.6	46.1828	0.0304	196.6	45.4172	0.1948
191.7	46.1807	-0.0517	196.7	45.4626	0.2618
191.8	46.1622	-0.1316	196.8	45.5205	0.3187
191.9	46.1280	-0.2062	196.9	45.5886	0.3630
192.0	46.0797	-0.2724	197.0	45.6641	0.3930
192.1	46.0191	-0.3276	197.1	45.7443	0.4075
192.2	45.9489	-0.3694	197.2	45.8260	0.4057
192.3	45.8718	-0.3964	197.3	45.9057	0.3878
192.4	45.7910	-0.4075	197.4	45.9805	0.3542
192.5	45.7098	-0.4023	197.5	46.0471	0.3064
192.6	45.6314	-0.3812	197.6	46.1029	0.2461
192.7	45.5588	-0.3449	197.7	46.1456	0.1757
192.8	45.4949	-0.2952	197.8	46.1733	0.0982
192.9	45.4422	-0.2338	197.9	46.1850	0.0167
193.0	45.4026	-0.1634	198.0	46.1800	-0.0656
193.1	45.3778	-0.0865	198.1	46.1587	-0.1451
193.2	45.3685	-0.0063	198.2	46.1220	-0.2187
193.3	45.3752	0.0741	198.3	46.0712	-0.2835
193.4	45.3977	0.1517	198.4	46.0087	-0.3367
193.5	45.4350	0.2234	198.5	45.9368	-0.3763
193.6	45.4858	0.2864	198.6	45.8587	-0.4007
193.7	45.5481	0.3382	198.7	45.7773	-0.4091
193.8	45.6195	0.3767	198.8	45.6961	-0.4011
193.9	45.6973	0.4003	198.9	45.6182	-0.3773
194.0	45.7783	0.4081	199.0	45.5467	-0.3385
194.1	45.8594	0.3996	199.1	45.4843	-0.2865
194.2	45.9374	0.3751	199.2	45.4335	-0.2232
194.3	46.0090	0.3354	199.3	45.3962	-0.1513
194.4	46.0713	0.2822	199.4	45.3739	-0.0734
194.5	46.1218	0.2175	199.5	45.3673	0.0073
194.6	46.1584	0.1439	199.6	45.3767	0.0877
194.7	46.1795	0.0645	199.7	45.4018	0.1648
194.8	46.1843	-0.0176	199.8	45.4416	0.2354
194.9	46.1725	-0.0990	199.9	45.4946	0.2969
195.0	46.1447	-0.1764	200.0	45.5588	0.3467
					0.0210 -0.9856

TABLE VII

TABLE VII

Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 55$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
0.1	0.0910	-213.2169	0.0477	-0.0000	5.1	40.9785	3.5432	0.5675	-1.0602
0.2	0.3727	-101.9806	0.0965	-0.0002	5.2	41.6730	3.2183	0.5466	-1.0821
0.3	0.8717	-62.7776	0.1475	-0.0010	5.3	42.3317	2.7412	0.5232	-1.1004
0.4	1.6345	-41.5169	0.2019	-0.0033	5.4	42.9158	2.1056	0.4977	-1.1145
0.5	2.7286	-27.3781	0.2605	-0.0084	5.5	43.3790	1.3161	0.4708	-1.1238
0.6	4.2431	-16.7766	0.3243	-0.0183	5.6	43.6705	0.3937	0.4436	-1.1278
0.7	6.2832	-8.2298	0.3933	-0.0358	5.7	43.7422	-0.6208	0.4171	-1.1260
0.8	8.9532	-1.0890	0.4666	-0.0642	5.8	43.5573	-1.6658	0.3930	-1.1185
0.9	12.3212	4.8752	0.5413	-0.1071	5.9	43.1007	-2.6637	0.3729	-1.1056
1.0	16.3650	9.6539	0.6125	-0.1675	6.0	42.3861	-3.5300	0.3583	-1.0885
1.1	20.9161	13.1317	0.6731	-0.2456	6.1	41.4590	-4.1870	0.3503	-1.0687
1.2	25.6485	15.2281	0.7155	-0.3380	6.2	40.3914	-4.5768	0.3498	-1.0482
1.3	30.1526	16.0231	0.7346	-0.4371	6.3	39.2712	-4.6713	0.3565	-1.0293
1.4	34.0801	15.7941	0.7297	-0.5340	6.4	38.1885	-4.4752	0.3697	-1.0138
1.5	37.2687	14.9350	0.7045	-0.6207	6.5	37.2220	-4.0222	0.3881	-1.0035
1.6	39.7670	13.8165	0.6653	-0.6930	6.6	36.4313	-3.3664	0.4100	-0.9993
1.7	41.7659	12.6827	0.6179	-0.7503	6.7	35.8521	-2.5730	0.4335	-1.0018
1.8	43.5005	11.6195	0.5665	-0.7938	6.8	35.4976	-1.7083	0.4569	-1.0110
1.9	45.1738	10.5748	0.5131	-0.8254	6.9	35.3613	-0.8334	0.4785	-1.0263
2.0	46.9069	9.3953	0.4583	-0.8460	7.0	35.4224	0.0009	0.4969	-1.0470
2.1	48.7015	7.8678	0.4023	-0.8552	7.1	35.6505	0.7558	0.5112	-1.0719
2.2	50.4056	5.7785	0.3460	-0.8513	7.2	36.0110	1.4051	0.5206	-1.0997
2.3	51.6996	3.0105	0.2926	-0.8316	7.3	36.4683	1.9343	0.5249	-1.1294
2.4	52.1606	-0.3265	0.2482	-0.7951	7.4	36.9894	2.3384	0.5239	-1.1595
2.5	51.4483	-3.8201	0.2203	-0.7449	7.5	37.5456	2.6198	0.5180	-1.1890
2.6	49.5375	-6.8651	0.2142	-0.6887	7.6	38.1133	2.7852	0.5076	-1.2169
2.7	46.7882	-8.9497	0.2298	-0.6363	7.7	38.6743	2.8440	0.4932	-1.2424
2.8	43.7581	-9.8892	0.2619	-0.5956	7.8	39.2143	2.8058	0.4757	-1.2650
2.9	40.9340	-9.8225	0.3032	-0.5697	7.9	39.7222	2.6797	0.4557	-1.2841
3.0	38.5946	-9.0479	0.3474	-0.5579	8.0	40.1880	2.4741	0.4341	-1.2996
3.1	36.8251	-7.8681	0.3902	-0.5577	8.1	40.6026	2.1970	0.4117	-1.3113
3.2	35.5928	-6.5181	0.4295	-0.5664	8.2	40.9563	1.8568	0.3892	-1.3193
3.3	34.8132	-5.1537	0.4645	-0.5815	8.3	41.2395	1.4638	0.3674	-1.3239
3.4	34.3897	-3.8673	0.4948	-0.6011	8.4	41.4435	1.0305	0.3469	-1.3255
3.5	34.2322	-2.7062	0.5208	-0.6237	8.5	41.5617	0.5722	0.3281	-1.3245
3.6	34.2640	-1.6877	0.5428	-0.6482	8.6	41.5911	0.1060	0.3114	-1.3215
3.7	34.4239	-0.8102	0.5611	-0.6739	8.7	41.5327	-0.3506	0.2970	-1.3171
3.8	34.6655	-0.0605	0.5762	-0.7002	8.8	41.3916	-0.7808	0.2847	-1.3118
3.9	34.9567	0.5810	0.5887	-0.7267	8.9	41.1765	-1.1703	0.2746	-1.3061
4.0	35.2779	1.1357	0.5989	-0.7532	9.0	40.8982	-1.5076	0.2664	-1.3002
4.1	35.6202	1.6235	0.6073	-0.7799	9.1	40.5684	-1.7843	0.2600	-1.2945
4.2	35.9831	2.0604	0.6141	-0.8067	9.2	40.1993	-1.9944	0.2551	-1.2891
4.3	36.3718	2.4564	0.6192	-0.8341	9.3	39.8026	-2.1338	0.2516	-1.2840
4.4	36.7943	2.8151	0.6226	-0.8621	9.4	39.3900	-2.2000	0.2496	-1.2794
4.5	37.2585	3.1334	0.6240	-0.8908	9.5	38.9733	-2.1913	0.2490	-1.2754
4.6	37.7703	3.4033	0.6227	-0.9203	9.6	38.5648	-2.1076	0.2498	-1.2722
4.7	38.3321	3.6127	0.6185	-0.9500	9.7	38.1771	-1.9500	0.2520	-1.2700
4.8	38.9421	3.7473	0.6110	-0.9796	9.8	37.8234	-1.7219	0.2555	-1.2691
4.9	39.5942	3.7915	0.5999	-1.0083	9.9	37.5169	-1.4292	0.2602	-1.2699
5.0	40.2782	3.7290	0.5854	-1.0354	10.0	37.2704	-1.0807	0.2657	-1.2728

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
10.1	37.0950	-0.6880	15.1	40.5978	-0.3449
10.2	36.9998	-0.2656	15.2	40.5106	-0.6287
10.3	36.9905	0.1696	15.3	40.3647	-0.8933
10.4	37.0689	0.5996	15.4	40.1637	-1.1253
10.5	37.2327	1.0061	15.5	39.9150	-1.3124
10.6	37.4754	1.3716	15.6	39.6290	-1.4438
10.7	37.7867	1.6808	15.7	39.3188	-1.5112
10.8	38.1535	1.9211	15.8	38.9996	-1.5100
10.9	38.5608	2.0831	15.9	38.6874	-1.4394
11.0	38.9924	2.1608	16.0	38.3980	-1.3026
11.1	39.4315	2.1510	16.1	38.1461	-1.1067
11.2	39.8615	2.0535	16.2	37.9438	-0.8621
11.3	40.2656	1.8708	16.3	37.8005	-0.5819
11.4	40.6272	1.6078	16.4	37.7219	-0.2805
11.5	40.9297	1.2729	16.5	37.7097	0.0268
11.6	41.1576	0.8781	16.6	37.7625	0.3253
11.7	41.2972	0.4393	16.7	37.8752	0.6015
11.8	41.3379	-0.0232	16.8	38.0403	0.8439
11.9	41.2743	-0.4857	16.9	38.2482	1.0433
12.0	41.1076	-0.9225	17.0	38.4881	1.1932
12.1	40.8461	-1.3083	17.1	38.7488	1.2895
12.2	40.5058	-1.6207	17.2	39.0187	1.3307
12.3	40.1085	-1.8426	17.3	39.2870	1.3174
12.4	39.6798	-1.9646	17.4	39.5433	1.2521
12.5	39.2462	-1.9850	17.5	39.7783	1.1391
12.6	38.8326	-1.9098	17.6	39.9835	0.9838
12.7	38.4596	-1.7509	17.7	40.1518	0.7934
12.8	38.1426	-1.5243	17.8	40.2777	0.5760
12.9	37.8915	-1.2481	17.9	40.3569	0.3407
13.0	37.7106	-0.9401	18.0	40.3873	0.0971
13.1	37.5998	-0.6171	18.1	40.3687	-0.1448
13.2	37.5556	-0.2934	18.2	40.3031	-0.3750
13.3	37.5723	0.0191	18.3	40.1943	-0.5846
13.4	37.6428	0.3111	18.4	40.0484	-0.7656
13.5	37.7596	0.5759	18.5	39.8724	-0.9118
13.6	37.9152	0.8084	18.6	39.6744	-1.0189
13.7	38.1025	1.0054	18.7	39.4632	-1.0843
13.8	38.3150	1.1645	18.8	39.2470	-1.1076
13.9	38.5466	1.2840	18.9	39.0338	-1.0895
14.0	38.7916	1.3627	19.0	38.8310	-1.0326
14.1	39.0445	1.3998	19.1	38.6449	-0.9402
14.2	39.2995	1.3944	19.2	38.4811	-0.8164
14.3	39.5508	1.3462	19.3	38.3441	-0.6660
14.4	39.7920	1.2552	19.4	38.2378	-0.4942
14.5	40.0164	1.1221	19.5	38.1652	-0.3068
14.6	40.2165	0.9489	19.6	38.1283	-0.1096
14.7	40.3849	0.7388	19.7	38.1284	0.0910
14.8	40.5137	0.4966	19.8	38.1658	0.2884
14.9	40.5960	0.2291	19.9	38.2397	0.4760
15.0	40.6255	-0.0549	20.0	38.3482	0.6472
					-0.2791
					-1.1262

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
20.1	38.4881	0.7955	25.1	39.2741	-0.8168
20.2	38.6549	0.9152	25.2	39.1101	-0.8228
20.3	38.8431	1.0010	25.3	38.9472	-0.7958
20.4	39.0460	1.0489	25.4	38.7921	-0.7364
20.5	39.2561	1.0561	25.5	38.6515	-0.6466
20.6	39.4652	1.0213	25.6	38.5315	-0.5295
20.7	39.6649	0.9449	25.7	38.4374	-0.3901
20.8	39.8468	0.8290	25.8	38.3737	-0.2338
20.9	40.0027	0.6774	25.9	38.3432	-0.0675
21.0	40.1254	0.4957	26.0	38.3476	0.1017
21.1	40.2087	0.2912	26.1	38.3868	0.2664
21.2	40.2481	0.0722	26.2	38.4590	0.4194
21.3	40.2407	-0.1514	26.3	38.5611	0.5539
21.4	40.1861	-0.3694	26.4	38.6884	0.6640
21.5	40.0862	-0.5715	26.5	38.8352	0.7452
21.6	39.9453	-0.7479	26.6	38.9948	0.7942
21.7	39.7700	-0.8897	26.7	39.1602	0.8091
21.8	39.5690	-0.9902	26.8	39.3242	0.7899
21.9	39.3522	-1.0446	26.9	39.4797	0.7377
22.0	39.1307	-1.0510	27.0	39.6202	0.6553
22.1	38.9152	-1.0101	27.1	39.7399	0.5467
22.2	38.7162	-0.9251	27.2	39.8342	0.4169
22.3	38.5425	-0.8016	27.3	39.8995	0.2717
22.4	38.4014	-0.6469	27.4	39.9335	0.1177
22.5	38.2978	-0.4695	27.5	39.9353	-0.0387
22.6	38.2345	-0.2785	27.6	39.9054	-0.1907
22.7	38.2123	-0.0828	27.7	39.8458	-0.3321
22.8	38.2297	0.1089	27.8	39.7597	-0.4570
22.9	38.2840	0.2891	27.9	39.6512	-0.5606
23.0	38.3708	0.4513	28.0	39.5256	-0.6391
23.1	38.4850	0.5903	28.1	39.3886	-0.6899
23.2	38.6209	0.7023	28.2	39.2461	-0.7119
23.3	38.7726	0.7846	28.3	39.1043	-0.7051
23.4	38.9340	0.8359	28.4	38.9686	-0.6710
23.5	39.0993	0.8557	28.5	38.8442	-0.6116
23.6	39.2630	0.8447	28.6	38.7355	-0.5304
23.7	39.4199	0.8042	28.7	38.6458	-0.4312
23.8	39.5651	0.7363	28.8	38.5779	-0.3181
23.9	39.6943	0.6436	28.9	38.5333	-0.1959
24.0	39.8036	0.5295	29.0	38.5128	-0.0689
24.1	39.8898	0.3977	29.1	38.5167	0.0583
24.2	39.9500	0.2525	29.2	38.5440	0.1814
24.3	39.9822	0.0987	29.3	38.5935	0.2966
24.4	39.9852	-0.0587	29.4	38.6632	0.3998
24.5	39.9584	-0.2143	29.5	38.7507	0.4880
24.6	39.9025	-0.3626	29.6	38.8530	0.5580
24.7	39.8188	-0.4981	29.7	38.9677	0.6077
24.8	39.7101	-0.6158	29.8	39.0878	0.6353
24.9	39.5799	-0.7107	29.9	39.2122	0.6391
25.0	39.4328	-0.7787	30.0	39.3355	0.6193

TABLE VI (Continued)

 $\theta_0 = 55$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
30.1	39.4535	0.5760	35.1	38.7251	-0.2597
30.2	39.5612	0.5101	35.2	38.6839	-0.1684
30.3	39.6550	0.4240	35.3	38.6592	-0.0691
30.4	39.7301	0.3208	35.4	38.6550	0.0332
30.5	39.7840	0.2040	35.5	38.6723	0.1345
30.6	39.8138	0.0779	35.6	38.7091	0.2317
30.7	39.8177	-0.0524	35.7	38.7645	0.3188
30.8	39.7950	-0.1816	35.8	38.8358	0.3924
30.9	39.7463	-0.3042	35.9	38.9217	0.4533
31.0	39.6738	-0.4149	36.0	39.0178	0.4946
31.1	39.5794	-0.5085	36.1	39.1216	0.5142
31.2	39.4672	-0.5811	36.2	39.2266	0.5136
31.3	39.3425	-0.6291	36.3	39.3276	0.4906
31.4	39.2103	-0.6500	36.4	39.4242	0.4462
31.5	39.0766	-0.6434	36.5	39.5088	0.3837
31.6	38.9475	-0.6086	36.6	39.5765	0.3079
31.7	38.8287	-0.5480	36.7	39.6287	0.2178
31.8	38.7258	-0.4641	36.8	39.6617	0.1206
31.9	38.6429	-0.3614	36.9	39.6744	0.0169
32.0	38.5837	-0.2443	37.0	39.6627	-0.0848
32.1	38.5507	-0.1181	37.1	39.6344	-0.1844
32.2	38.5443	0.0107	37.2	39.5853	-0.2721
32.3	38.5647	0.1369	37.3	39.5182	-0.3496
32.4	38.6102	0.2546	37.4	39.4379	-0.4081
32.5	38.6778	0.3594	37.5	39.3495	-0.4500
32.6	38.7645	0.4467	37.6	39.2566	-0.4716
32.7	38.8658	0.5140	37.7	39.1576	-0.4765
32.8	38.9771	0.5583	37.8	39.0633	-0.4592
32.9	39.0931	0.5793	37.9	38.9750	-0.4240
33.0	39.2093	0.5769	38.0	38.8962	-0.3751
33.1	39.3212	0.5518	38.1	38.8253	-0.3074
33.2	39.4244	0.5060	38.2	38.7803	-0.2310
33.3	39.5152	0.4413	38.3	38.7423	-0.1457
33.4	39.5909	0.3619	38.4	38.7292	-0.0579
33.5	39.6491	0.2701	38.5	38.7279	0.0276
33.6	39.6881	0.1703	38.6	38.7471	0.1125
33.7	39.7069	0.0654	38.7	38.7808	0.1934
33.8	39.7055	-0.0395	38.8	38.8283	0.2611
33.9	39.6839	-0.1410	38.9	38.8910	0.3177
34.0	39.6439	-0.2364	39.0	38.9591	0.3652
34.1	39.5875	-0.3211	39.1	39.0357	0.3959
34.2	39.5150	-0.3942	39.2	39.1179	0.4133
34.3	39.4309	-0.4520	39.3	39.1911	0.4176
34.4	39.3389	-0.4916	39.4	39.2772	0.3961
34.5	39.2406	-0.5139	39.5	39.3450	0.3710
34.6	39.1395	-0.5158	39.6	39.4106	0.3258
34.7	39.0411	-0.4991	39.7	39.4720	0.2724
34.8	38.9462	-0.4634	39.8	39.5164	0.2083
34.9	38.8605	-0.4110	39.9	39.5488	0.1363
35.0	38.7862	-0.3422	40.0	39.5674	0.0557
					0.2316

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z_o		kh_e	ka	Z_o		kh_e
40.1	39.5737	-0.0198	0.2276	45.1	38.9240	0.1790	0.1242
40.2	39.5595	-0.1000	0.2238	45.2	38.9596	0.2238	0.1227
40.3	39.5321	-0.1667	0.2204	45.3	38.9890	0.2418	0.1201
40.4	39.5008	-0.2387	0.2169	45.4	39.0590	0.2703	0.1168
40.5	39.4402	-0.2953	0.2142	45.5	39.1370	0.3047	0.1093
40.6	39.3876	-0.3449	0.2116	45.6	39.2039	0.2718	0.1085
40.7	39.3132	-0.3850	0.2093	45.7	39.2447	0.2777	0.1043
40.8	39.2283	-0.3994	0.2083	45.8	39.3285	0.2560	0.0987
40.9	39.1361	-0.4047	0.2073	45.9	39.3341	0.2296	0.0910
41.0	39.0707	-0.3887	0.2079	46.0	39.3834	0.1914	0.0847
41.1	38.9882	-0.3579	0.2083	46.1	39.4691	0.1466	0.0795
41.2	38.9304	-0.3137	0.2090	46.2	39.4357	0.0970	0.0726
41.3	38.8601	-0.2554	0.2104	46.3	39.4527	0.0288	0.0645
41.4	38.8212	-0.1795	0.2127	46.4	39.4731	-0.0159	0.0583
41.5	38.7783	-0.1125	0.2135	46.5	39.4156	-0.0921	0.0500
41.6	38.7723	-0.0419	0.2145	46.6	39.4623	-0.0907	0.0465
41.7	38.7725	0.0403	0.2164	46.7	39.3932	-0.1776	0.0412
41.8	38.7860	0.1205	0.2180	46.8	39.3413	-0.2434	0.0353
41.9	38.8308	0.1996	0.2189	46.9	39.3041	-0.2483	0.0252
42.0	38.8821	0.2578	0.2183	47.0	39.2144	-0.3555	0.0149
42.1	38.9503	0.3223	0.2183	47.1	39.1857	-0.2641	0.0237
42.2	39.0201	0.3634	0.2176	47.2	39.1252	-0.2873	0.0204
42.3	39.0956	0.3716	0.2148	47.3	39.0886	-0.2640	0.0163
42.4	39.1590	0.3862	0.2127	47.4	39.0430	-0.2176	0.0137
42.5	39.2400	0.3578	0.2084	47.5	38.9845	-0.2190	0.0145
42.6	39.3355	0.3404	0.2036	47.6	38.9642	-0.1394	0.0024
42.7	39.3834	0.3070	0.1993	47.7	38.8823	-0.1329	-0.0009
42.8	39.4376	0.2758	0.1938	47.8	38.9100	-0.0807	0.0066
42.9	39.4770	0.2012	0.1876	47.9	38.9181	0.0245	0.0076
43.0	39.5202	0.1395	0.1820	48.0	38.9311	0.0475	0.0097
43.1	39.5254	0.0489	0.1755	48.1	38.9521	0.0261	0.0043
43.2	39.5279	-0.0026	0.1695	48.2	38.9684	0.1100	0.0117
43.3	39.4570	-0.1500	0.1638	48.3	39.0221	0.1655	0.0018
43.4	39.4835	-0.1506	0.1573	48.4	39.1383	0.3010	0.0143
43.5	39.4409	-0.1925	0.1553	48.5	39.0982	0.2190	-0.0122
43.6	39.4061	-0.2460	0.1485	48.6	39.1204	0.1990	-0.0052
43.7	39.3327	-0.2844	0.1444	48.7	39.1826	0.2053	-0.0146
43.8	39.2665	-0.3053	0.1414	48.8	39.2786	0.1910	-0.0155
43.9	39.2034	-0.3163	0.1370	48.9	39.2711	0.0617	-0.0110
44.0	39.1567	-0.3255	0.1351	49.0	39.3136	0.1561	-0.0234
44.1	39.0931	-0.3201	0.1325	49.1	39.4069	0.2619	-0.0680
44.2	39.0280	-0.2917	0.1316	49.2	39.3336	0.1188	-0.0409
44.3	38.9799	-0.2516	0.1298	49.3	39.2386	0.1372	-0.0418
44.4	38.9129	-0.2408	0.1288	49.4	39.3460	0.0838	-0.0545
44.5	38.9190	-0.1535	0.1298	49.5	39.3947	0.0404	-0.0740
44.6	38.8850	-0.1105	0.1302	49.6	39.3729	-0.0391	-0.0720
44.7	38.8680	-0.0410	0.1279	49.7	39.2985	-0.0846	-0.0624
44.8	38.8767	0.0266	0.1263	49.8	39.3618	-0.0311	-0.0892
44.9	38.8882	0.0743	0.1250	49.9	39.3103	-0.1138	-0.0784
45.0	38.9023	0.1086	0.1247	50.0	39.2401	-0.1308	-0.0839

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
50.1	39.2714	-0.1427	55.1	39.1442	0.0641
50.2	39.2279	-0.1708	55.2	39.1572	0.0345
50.3	39.1342	-0.1700	55.3	39.0355	0.0312
50.4	39.1270	-0.1608	55.4	39.1641	0.0901
50.5	39.1668	-0.1775	55.5	39.1770	0.0765
50.6	39.0295	-0.1211	55.6	39.2160	0.0894
50.7	39.0797	-0.1129	55.7	39.1138	0.0129
50.8	38.7830	-0.5342	55.8	39.1975	0.0073
50.9	39.0517	-0.0785	55.9	39.2240	0.0814
51.0	39.0193	-0.0688	56.0	39.2126	-0.0229
51.1	39.0116	-0.0543	56.1	39.2154	0.0246
51.2	39.0535	0.0452	56.2	39.2481	-0.0000
51.3	39.0587	0.0888	56.3	39.2526	-0.0287
51.4	38.9780	0.1037	56.4	39.2613	-0.0120
51.5	39.0291	0.0334	56.5	39.1450	-0.0141
51.6	39.0553	0.1139	56.6	39.2105	-0.0377
51.7	38.8347	-0.6340	56.7	39.1673	-0.1567
51.8	39.1329	0.1497	56.8	39.2110	-0.0880
51.9	39.1659	0.1059	56.9	39.2049	-0.0843
52.0	39.1655	0.3333	57.0	39.2097	-0.0667
52.1	39.1855	0.1136	57.1	39.1520	-0.1070
52.2	39.1737	0.1276	57.2	39.1459	-0.1133
52.3	39.2031	0.1203	57.3	39.1376	-0.0881
52.4	39.2683	0.1117	57.4	39.1376	-0.0753
52.5	39.2859	0.0799	57.5	39.0554	-0.0762
52.6	39.4026	0.0876	57.6	39.0993	-0.0691
52.7	39.3083	0.0415	57.7	39.0852	-0.0694
52.8	39.3847	-0.1575	57.8	39.0567	-0.0257
52.9	39.2750	-0.0468	57.9	39.1004	0.0108
53.0	39.2149	-0.0827	58.0	39.1192	-0.0866
53.1	39.2921	-0.0925	58.1	39.1343	-0.0109
53.2	39.3043	-0.1056	58.2	39.0914	0.0309
53.3	39.2026	-0.1203	58.3	39.0354	0.0494
53.4	39.1745	-0.0952	58.4	39.0945	0.0846
53.5	39.1782	-0.1338	58.5	39.1082	0.0850
53.6	39.1209	-0.3041	58.6	39.1145	0.0869
53.7	39.1277	-0.0769	58.7	39.1227	0.1005
53.8	39.1982	-0.0372	58.8	39.1573	0.0965
53.9	39.1681	-0.0921	58.9	39.1846	0.1123
54.0	39.0912	-0.1146	59.0	39.2182	0.1009
54.1	39.0598	-0.0963	59.1	39.2393	0.0908
54.2	39.1914	0.0001	59.2	39.2684	0.0103
54.3	39.0863	-0.0260	59.3	39.2939	0.0617
54.4	39.0854	-0.1397	59.4	39.2958	0.0343
54.5	39.0291	-0.0374	59.5	39.2900	0.0183
54.6	39.0982	0.0140	59.6	39.3036	-0.0149
54.7	39.0845	0.0472	59.7	39.2794	0.0665
54.8	39.1295	0.0753	59.8	39.2782	0.0204
54.9	39.0497	0.0268	59.9	39.2759	-0.0644
55.0	39.0972	0.0932	60.0	39.2662	-0.0885
					-0.1493
					-0.8839

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_o	kh_e	ka	Z_c	kh_e
60.1	39.2486	-0.1111	65.1	39.1459	0.1845
60.2	39.2319	-0.0995	65.2	39.1801	0.1911
60.3	39.1967	-0.1281	65.3	39.2173	0.1845
60.4	39.1816	-0.1273	65.4	39.2525	0.1723
60.5	39.1386	-0.1117	65.5	39.2891	0.1527
60.6	39.1193	-0.1291	65.6	39.3158	0.1257
60.7	39.1011	-0.0892	65.7	39.3409	0.0965
60.8	39.0609	-0.0922	65.8	39.3551	0.0587
60.9	39.0511	-0.0801	65.9	39.3651	0.0218
61.0	39.0480	-0.0874	66.0	39.3672	-0.0172
61.1	39.0322	-0.0133	66.1	39.3608	-0.0576
61.2	38.9402	-0.1140	66.2	39.3434	-0.0922
61.3	39.0113	0.0224	66.3	39.3258	-0.1281
61.4	39.0307	0.0380	66.4	39.2972	-0.1561
61.5	39.0514	0.0770	66.5	39.2630	-0.1800
61.6	39.0687	0.1106	66.6	39.2277	-0.1950
61.7	39.0893	0.1144	66.7	39.1867	-0.2017
61.8	39.1115	0.1350	66.8	39.1485	-0.2025
61.9	39.1454	0.1386	66.9	39.1058	-0.1948
62.0	39.1638	0.1557	67.0	39.0695	-0.1790
62.1	39.2013	0.1457	67.1	39.0344	-0.1560
62.2	39.2271	0.1334	67.2	39.0071	-0.1263
62.3	39.2573	0.1341	67.3	38.9849	-0.0924
62.4	39.2869	0.1109	67.4	38.9686	-0.0545
62.5	39.3041	0.0931	67.5	38.9606	-0.0138
62.6	39.3185	0.0632	67.6	38.9622	0.0287
62.7	39.3341	0.0243	67.7	38.9700	0.0702
62.8	39.3298	0.0044	67.8	38.9880	0.1031
62.9	39.3305	-0.0340	67.9	38.0126	0.1425
63.0	39.3295	-0.0573	68.0	38.0432	0.1713
63.1	39.3071	-0.0890	68.1	38.0790	0.1950
63.2	39.2837	-0.1183	68.2	38.1194	0.2096
63.3	39.2557	-0.1420	68.3	38.1608	0.2155
63.4	39.2284	-0.1587	68.4	38.2053	0.2143
63.5	39.1998	-0.1667	68.5	38.2480	0.2045
63.6	39.1696	-0.1681	68.6	38.2874	0.1853
63.7	39.1292	-0.1625	68.7	38.3220	0.1592
63.8	39.1079	-0.1542	68.8	38.3519	0.1267
63.9	39.0681	-0.1393	68.9	38.3735	0.0886
64.0	39.0384	-0.1190	69.0	38.3872	0.0461
64.1	39.0227	-0.0941	69.1	38.3932	0.0011
64.2	39.0052	-0.0624	69.2	38.3899	-0.0422
64.3	38.9914	-0.0291	69.3	38.3782	-0.0865
64.4	38.9855	0.0065	69.4	38.3576	-0.1257
64.5	38.9970	0.0444	69.5	38.3290	-0.1609
64.6	39.0076	0.0755	69.6	38.2941	-0.1896
64.7	39.0234	0.1114	69.7	38.2541	-0.2109
64.8	39.0465	0.1368	69.8	38.2105	-0.2241
64.9	39.0726	0.1585	69.9	38.1654	-0.2289
65.0	39.1117	0.1779	70.0	38.1196	-0.2238

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
70.1	39.0757	-0.2094	75.1	39.3866	0.1439
70.2	39.0368	-0.1870	75.2	39.4114	0.0982
70.3	39.0017	-0.1576	75.3	39.4267	0.0482
70.4	38.9731	-0.1216	75.4	39.4317	-0.0039
70.5	38.9525	-0.0803	75.5	39.4260	-0.0560
70.6	38.9407	-0.0355	75.6	39.4102	-0.1060
70.7	38.9373	0.0106	75.7	39.3846	-0.1519
70.8	38.9436	0.0567	75.8	39.3502	-0.1918
70.9	38.9588	0.1007	75.9	39.3087	-0.2241
71.0	38.9824	0.1413	76.0	39.2615	-0.2475
71.1	39.0135	0.1760	76.1	39.2105	-0.2609
71.2	39.0510	0.2049	76.2	39.1579	-0.2640
71.3	39.0937	0.2245	76.3	39.1056	-0.2566
71.4	39.1393	0.2361	76.4	39.0559	-0.2390
71.5	39.1871	0.2384	76.5	39.0106	-0.2118
71.6	39.2344	0.2310	76.6	38.9715	-0.1763
71.7	39.2793	0.2144	76.7	38.9403	-0.1336
71.8	39.3201	0.1836	76.8	38.9180	-0.0855
71.9	39.3555	0.1555	76.9	38.9057	-0.0339
72.0	39.3830	0.1164	77.0	38.9038	0.0191
72.1	39.4029	0.0717	77.1	38.9123	0.0716
72.2	39.4131	0.0239	77.2	38.9312	0.1215
72.3	39.4136	-0.0251	77.3	38.9595	0.1667
72.4	39.4041	-0.0730	77.4	38.9963	0.2055
72.5	39.3851	-0.1185	77.5	39.0403	0.2365
72.6	39.3579	-0.1593	77.6	39.0895	0.2582
72.7	39.3230	-0.1937	77.7	39.1423	0.2696
72.8	39.2815	-0.2208	77.8	39.1965	0.2704
72.9	39.2355	-0.2388	77.9	39.2499	0.2603
73.0	39.1867	-0.2475	78.0	39.3004	0.2398
73.1	39.1374	-0.2463	78.1	39.3458	0.2096
73.2	39.0888	-0.2351	78.2	39.3845	0.1708
73.3	39.0437	-0.2145	78.3	39.4147	0.1249
73.4	39.0035	-0.1858	78.4	39.4351	0.0738
73.5	38.9696	-0.1491	78.5	39.4450	0.0196
73.6	38.9437	-0.1067	78.6	39.4438	-0.0356
73.7	38.9265	-0.0598	78.7	39.4315	-0.0895
73.8	38.9189	-0.0107	78.8	39.4087	-0.1400
73.9	38.9211	0.0395	78.9	39.3763	-0.1849
74.0	38.9335	0.0882	79.0	39.3355	-0.2224
74.1	38.9552	0.1337	79.1	39.2881	-0.2511
74.2	38.9855	0.1740	79.2	39.2358	-0.2697
74.3	39.0233	0.2078	79.3	39.1809	-0.2776
74.4	39.0670	0.2335	79.4	39.1256	-0.2743
74.5	39.1152	0.2500	79.5	39.0719	-0.2602
74.6	39.1659	0.2565	79.6	39.0222	-0.2357
74.7	39.2170	0.2530	79.7	38.9782	-0.2019
74.8	39.2665	0.2392	79.8	38.9418	-0.1600
74.9	39.3127	0.2158	79.9	38.9144	-0.1118
75.0	39.3532	0.1837	80.0	38.8970	-0.0590
					0.0486
					-1.1713

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
80.1	38.8904	-0.0037	0.0459	-1.1716	85.1	39.4229	-0.1591	-0.0968	-1.1219
80.2	38.8948	0.0518	0.0432	-1.1719	85.2	39.3863	-0.2063	-0.0991	-1.1191
80.3	38.9101	0.1055	0.0405	-1.1723	85.3	39.3410	-0.2454	-0.1012	-1.1162
80.4	38.9357	0.1551	0.0377	-1.1729	85.4	39.2888	-0.2745	-0.1032	-1.1132
80.5	38.9707	0.1988	0.0349	-1.1734	85.5	39.2318	-0.2927	-0.1049	-1.1101
80.6	39.0138	0.2348	0.0319	-1.1741	85.6	39.1724	-0.2992	-0.1064	-1.1070
80.7	39.0633	0.2617	0.0289	-1.1748	85.7	39.1130	-0.2937	-0.1077	-1.1039
80.8	39.1172	0.2782	0.0257	-1.1755	85.8	39.0558	-0.2766	-0.1088	-1.1008
80.9	39.1735	0.2838	0.0224	-1.1761	85.9	39.0032	-0.2485	-0.1096	-1.0978
81.0	39.2300	0.2780	0.0189	-1.1767	86.0	38.9572	-0.2105	-0.1103	-1.0949
81.1	39.2843	0.2611	0.0153	-1.1772	86.1	38.9196	-0.1643	-0.1109	-1.0922
81.2	39.3343	0.2336	0.0115	-1.1776	86.2	38.8919	-0.1114	-0.1113	-1.0895
81.3	39.3779	0.1966	0.0076	-1.1778	86.3	38.8751	-0.0542	-0.1116	-1.0870
81.4	39.4133	0.1516	0.0036	-1.1778	86.4	38.8699	0.0053	-0.1119	-1.0847
81.5	39.4391	0.1003	-0.0004	-1.1776	86.5	38.8766	0.0647	-0.1121	-1.0826
81.6	39.4540	0.0447	-0.0046	-1.1771	86.6	38.8949	0.1216	-0.1123	-1.0805
81.7	39.4576	-0.0128	-0.0087	-1.1764	86.7	38.9241	0.1739	-0.1126	-1.0787
81.8	39.4496	-0.0699	-0.0128	-1.1755	86.8	38.9632	0.2196	-0.1129	-1.0769
81.9	39.4303	-0.1243	-0.0167	-1.1744	86.9	39.0105	0.2566	-0.1133	-1.0753
82.0	39.4006	-0.1738	-0.0206	-1.1730	87.0	39.0644	0.2836	-0.1139	-1.0737
82.1	39.3615	-0.2163	-0.0243	-1.1714	87.1	39.1227	0.2995	-0.1145	-1.0721
82.2	39.3147	-0.2502	-0.0279	-1.1697	87.2	39.1832	0.3035	-0.1153	-1.0706
82.3	39.2621	-0.2741	-0.0312	-1.1678	87.3	39.2434	0.2953	-0.1161	-1.0690
82.4	39.2057	-0.2870	-0.0344	-1.1658	87.4	39.3008	0.2753	-0.1171	-1.0674
82.5	39.1480	-0.2885	-0.0373	-1.1638	87.5	39.3533	0.2442	-0.1182	-1.0657
82.6	39.0912	-0.2785	-0.0401	-1.1617	87.6	39.3986	0.2031	-0.1194	-1.0639
82.7	39.0374	-0.2574	-0.0426	-1.1596	87.7	39.4348	0.1537	-0.1206	-1.0619
82.8	38.9890	-0.2261	-0.0449	-1.1575	87.8	39.4605	0.0980	-0.1218	-1.0598
82.9	38.9476	-0.1858	-0.0471	-1.1555	87.9	39.4746	0.0382	-0.1230	-1.0575
83.0	38.9151	-0.1381	-0.0491	-1.1537	88.0	39.4763	-0.0233	-0.1242	-1.0551
83.1	38.8925	-0.0850	-0.0510	-1.1519	88.1	39.4657	-0.0839	-0.1253	-1.0525
83.2	38.8809	-0.0284	-0.0528	-1.1502	88.2	39.4432	-0.1412	-0.1263	-1.0498
83.3	38.8807	0.0295	-0.0545	-1.1487	88.3	39.4097	-0.1929	-0.1271	-1.0469
83.4	38.8919	0.0863	-0.0563	-1.1473	88.4	39.3666	-0.2368	-0.1278	-1.0439
83.5	38.9142	0.1399	-0.0580	-1.1460	88.5	39.3155	-0.2712	-0.1283	-1.0409
83.6	38.9466	0.1881	-0.0598	-1.1448	88.6	39.2587	-0.2947	-0.1286	-1.0378
83.7	38.9880	0.2290	-0.0617	-1.1437	88.7	39.1983	-0.3065	-0.1287	-1.0347
83.8	39.0368	0.2611	-0.0636	-1.1427	88.8	39.1369	-0.3060	-0.1286	-1.0316
83.9	39.0911	0.2828	-0.0657	-1.1417	88.9	39.0768	-0.2933	-0.1282	-1.0286
84.0	39.1487	0.2934	-0.0679	-1.1407	89.0	39.0205	-0.2689	-0.1278	-1.0257
84.1	39.2076	0.2924	-0.0702	-1.1397	89.1	38.9701	-0.2340	-0.1271	-1.0228
84.2	39.2651	0.2796	-0.0727	-1.1386	89.2	38.9276	-0.1897	-0.1263	-1.0201
84.3	39.3191	0.2556	-0.0753	-1.1374	89.3	38.8948	-0.1380	-0.1254	-1.0176
84.4	39.3673	0.2212	-0.0779	-1.1361	89.4	38.8728	-0.0808	-0.1244	-1.0152
84.5	39.4078	0.1778	-0.0806	-1.1347	89.5	38.8624	-0.0204	-0.1233	-1.0130
84.6	39.4388	0.1271	-0.0834	-1.1330	89.6	38.8642	0.0410	-0.1222	-1.0110
84.7	39.4592	0.0710	-0.0862	-1.1312	89.7	38.8781	0.1008	-0.1211	-1.0091
84.8	39.4679	0.0120	-0.0890	-1.1291	89.8	38.9035	0.1568	-0.1201	-1.0075
84.9	39.4646	-0.0476	-0.0917	-1.1269	89.9	38.9396	0.2068	-0.1191	-1.0059
85.0	39.4494	-0.1054	-0.0943	-1.1245	90.0	38.9849	0.2487	-0.1182	-1.0045

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z_o	kh_e	ka	Z_c	kh_e
90.1	39.0377	0.2809	95.1	39.1249	-0.3187
90.2	39.0959	0.3021	95.2	39.0626	-0.3033
90.3	39.1573	0.3113	95.3	39.0046	-0.2759
90.4	39.2195	0.3081	95.4	38.9532	-0.2376
90.5	39.2800	0.2926	95.5	38.9105	-0.1899
90.6	39.3362	0.2653	95.6	38.8779	-0.1348
90.7	39.3860	0.2272	95.7	38.8569	-0.0743
90.8	39.4273	0.1799	95.8	38.8483	-0.0109
90.9	39.4584	0.1252	95.9	38.8523	0.0531
91.0	39.4778	0.0653	96.0	38.8688	0.1150
91.1	39.4849	0.0026	96.1	38.8973	0.1726
91.2	39.4793	-0.0602	96.2	38.9366	0.2234
91.3	39.4613	-0.1207	96.3	38.9853	0.2656
91.4	39.4314	-0.1764	96.4	39.0414	0.2974
91.5	39.3911	-0.2250	96.5	39.1029	0.3174
91.6	39.3419	-0.2645	96.6	39.1673	0.3249
91.7	39.2858	-0.2934	96.7	39.2320	0.3195
91.8	39.2252	-0.3105	96.8	39.2945	0.3012
91.9	39.1624	-0.3152	96.9	39.3522	0.2708
92.0	39.1000	-0.3073	97.0	39.4028	0.2294
92.1	39.0404	-0.2873	97.1	39.4441	0.1787
92.2	38.9860	-0.2558	97.2	39.4745	0.1206
92.3	38.9390	-0.2143	97.3	39.4927	0.0575
92.4	38.9010	-0.1643	97.4	39.4979	-0.0080
92.5	38.8737	-0.1078	97.5	39.4899	-0.0732
92.6	38.8581	-0.0470	97.6	39.4689	-0.1356
92.7	38.8548	0.0157	97.7	39.4359	-0.1924
92.8	38.8639	0.0778	97.8	39.3923	-0.2415
92.9	38.8851	0.1370	97.9	39.3397	-0.2809
93.0	38.9176	0.1910	98.0	39.2804	-0.3089
93.1	38.9601	0.2375	98.1	39.2168	-0.3246
93.2	39.0112	0.2748	98.2	39.1513	-0.3273
93.3	39.0687	0.3013	98.3	39.0868	-0.3169
93.4	39.1304	0.3159	98.4	39.0256	-0.2940
93.5	39.1940	0.3180	98.5	38.9702	-0.2594
93.6	39.2569	0.3074	98.6	38.9228	-0.2147
93.7	39.3165	0.2844	98.7	38.8852	-0.1615
93.8	39.3705	0.2499	98.8	38.8588	-0.1019
93.9	39.4165	0.2052	98.9	38.8447	-0.0383
94.0	39.4528	0.1522	99.0	38.8434	0.0269
94.1	39.4778	0.0929	99.1	38.8550	0.0911
94.2	39.4904	0.0297	99.2	38.8790	0.1518
94.3	39.4901	-0.0348	99.3	38.9146	0.2066
94.4	39.4768	-0.0979	99.4	38.9603	0.2535
94.5	39.4512	-0.1572	99.5	39.0145	0.2904
94.6	39.4143	-0.2101	99.6	39.0751	0.3159
94.7	39.3676	-0.2545	99.7	39.1397	0.3289
94.8	39.3130	-0.2887	99.8	39.2057	0.3289
94.9	39.2527	-0.3113	99.9	39.2705	0.3157
95.0	39.1891	-0.3214	100.0	39.3315	0.2898

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
100.1	39.3862	0.2522	0.0027	-0.9257	105.1	38.8463	-0.0943	0.0421	-0.9488
100.2	39.4324	0.2043	0.0033	-0.9265	105.2	38.8340	-0.0284	0.0434	-0.9494
100.3	39.4682	0.1481	0.0038	-0.9273	105.3	38.8348	0.0387	0.0448	-0.9501
100.4	39.4920	0.0857	0.0042	-0.9279	105.4	38.8490	0.1044	0.0461	-0.9510
100.5	39.5028	0.0198	0.0046	-0.9284	105.5	38.8757	0.1660	0.0473	-0.9521
100.6	39.5002	-0.0469	0.0050	-0.9288	105.6	38.9142	0.2212	0.0485	-0.9533
100.7	39.4843	-0.1119	0.0053	-0.9290	105.7	38.9629	0.2678	0.0496	-0.9547
100.8	39.4557	-0.1723	0.0057	-0.9290	105.8	39.0199	0.3039	0.0505	-0.9561
100.9	39.4157	-0.2257	0.0062	-0.9290	105.9	39.0831	0.3281	0.0513	-0.9577
101.0	39.3657	-0.2701	0.0067	-0.9289	106.0	39.1499	0.3393	0.0519	-0.9593
101.1	39.3080	-0.3035	0.0074	-0.9286	106.1	39.2178	0.3370	0.0524	-0.9609
101.2	39.2449	-0.3248	0.0082	-0.9283	106.2	39.2840	0.3212	0.0526	-0.9625
101.3	39.1788	-0.3330	0.0092	-0.9280	106.3	39.3459	0.2925	0.0527	-0.9641
101.4	39.1125	-0.3280	0.0102	-0.9277	106.4	39.4008	0.2519	0.0527	-0.9656
101.5	39.0486	-0.3099	0.0115	-0.9275	106.5	39.4467	0.2011	0.0524	-0.9670
101.6	38.9897	-0.2796	0.0128	-0.9273	106.6	39.4815	0.1420	0.0521	-0.9683
101.7	38.9379	-0.2382	0.0143	-0.9272	106.7	39.5038	0.0771	0.0517	-0.9694
101.8	38.8953	-0.1875	0.0159	-0.9272	106.8	39.5126	0.0090	0.0512	-0.9704
101.9	38.8637	-0.1294	0.0175	-0.9273	106.9	39.5077	-0.0595	0.0506	-0.9712
102.0	38.8441	-0.0662	0.0192	-0.9276	107.0	39.4890	-0.1256	0.0501	-0.9718
102.1	38.8373	-0.0003	0.0210	-0.9281	107.1	39.4576	-0.1867	0.0496	-0.9723
102.2	38.8436	0.0656	0.0227	-0.9287	107.2	39.4146	-0.2402	0.0492	-0.9726
102.3	38.8628	0.1290	0.0244	-0.9295	107.3	39.3618	-0.2840	0.0489	-0.9727
102.4	38.8942	0.1874	0.0260	-0.9305	107.4	39.3013	-0.3163	0.0488	-0.9728
102.5	38.9365	0.2386	0.0275	-0.9316	107.5	39.2358	-0.3359	0.0487	-0.9728
102.6	38.9882	0.2805	0.0289	-0.9328	107.6	39.1677	-0.3421	0.0488	-0.9728
102.7	39.0473	0.3114	0.0302	-0.9341	107.7	39.0999	-0.3346	0.0491	-0.9728
102.8	39.1115	0.3300	0.0313	-0.9355	107.8	39.0349	-0.3139	0.0495	-0.9727
102.9	39.1782	0.3355	0.0322	-0.9369	107.9	38.9755	-0.2807	0.0501	-0.9728
103.0	39.2448	0.3276	0.0330	-0.9383	108.0	38.9238	-0.2365	0.0508	-0.9729
103.1	39.3087	0.3066	0.0336	-0.9398	108.1	38.8819	-0.1830	0.0516	-0.9731
103.2	39.3672	0.2733	0.0340	-0.9411	108.2	38.8514	-0.1223	0.0526	-0.9735
103.3	39.4179	0.2288	0.0343	-0.9424	108.3	38.8334	-0.0568	0.0535	-0.9740
103.4	39.4588	0.1750	0.0344	-0.9436	108.4	38.8287	0.0109	0.0545	-0.9747
103.5	39.4882	0.1140	0.0345	-0.9447	108.5	38.8375	0.0783	0.0555	-0.9755
103.6	39.5048	0.0483	0.0345	-0.9456	108.6	38.8593	0.1426	0.0565	-0.9766
103.7	39.5078	-0.0194	0.0344	-0.9464	108.7	38.8935	0.2015	0.0573	-0.9777
103.8	39.4973	-0.0864	0.0343	-0.9470	108.8	38.9387	0.2525	0.0581	-0.9790
103.9	39.4735	-0.1499	0.0342	-0.9475	108.9	38.9931	0.2937	0.0588	-0.9805
104.0	39.4375	-0.2074	0.0342	-0.9478	109.0	39.0547	0.3234	0.0593	-0.9820
104.1	39.3908	-0.2565	0.0343	-0.9480	109.1	39.1212	0.3403	0.0596	-0.9836
104.2	39.3352	-0.2952	0.0345	-0.9480	109.2	39.1897	0.3437	0.0598	-0.9852
104.3	39.2732	-0.3220	0.0348	-0.9480	109.3	39.2578	0.3333	0.0598	-0.9869
104.4	39.2071	-0.3359	0.0352	-0.9480	109.4	39.3225	0.3096	0.0596	-0.9885
104.5	39.1396	-0.3364	0.0358	-0.9479	109.5	39.3814	0.2734	0.0592	-0.9900
104.6	39.0735	-0.3235	0.0365	-0.9479	109.6	39.4318	0.2260	0.0587	-0.9914
104.7	39.0113	-0.2978	0.0374	-0.9479	109.7	39.4719	0.1695	0.0580	-0.9927
104.8	38.9555	-0.2603	0.0384	-0.9479	109.8	39.4999	0.1060	0.0572	-0.9939
104.9	38.9083	-0.2126	0.0396	-0.9481	109.9	39.5146	0.0381	0.0564	-0.9949
105.0	38.8714	-0.1565	0.0408	-0.9484	110.0	39.5154	-0.0314	0.0555	-0.9957

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z ₀		kh _e		ka	Z _c		kh _e	
110.1	39.5022	-0.0997	0.0546	-0.9963	115.1	38.9425	0.2655	0.0486	-1.0199
110.2	39.4757	-0.1639	0.0537	-0.9968	115.2	38.9995	0.3056	0.0488	-1.0211
110.3	39.4368	-0.2215	0.0529	-0.9971	115.3	39.0633	0.3338	0.0488	-1.0224
110.4	39.3873	-0.2701	0.0522	-0.9972	115.4	39.1317	0.3488	0.0487	-1.0237
110.5	39.3291	-0.3078	0.0517	-0.9972	115.5	39.2018	0.3499	0.0484	-1.0251
110.6	39.2646	-0.3331	0.0512	-0.9971	115.6	39.2708	0.3370	0.0479	-1.0265
110.7	39.1965	-0.3450	0.0509	-0.9970	115.7	39.3361	0.3106	0.0472	-1.0278
110.8	39.1275	-0.3432	0.0508	-0.9968	115.8	39.3948	0.2716	0.0464	-1.0290
110.9	39.0602	-0.3277	0.0509	-0.9967	115.9	39.4447	0.2216	0.0454	-1.0301
111.0	38.9975	-0.2993	0.0511	-0.9966	116.0	39.4836	0.1626	0.0442	-1.0311
111.1	38.9417	-0.2590	0.0515	-0.9965	116.1	39.5100	0.0968	0.0430	-1.0319
111.2	38.8950	-0.2086	0.0520	-0.9966	116.2	39.5226	0.0271	0.0417	-1.0325
111.3	38.8592	-0.1500	0.0526	-0.9968	116.3	39.5210	-0.0438	0.0404	-1.0329
111.4	38.8357	-0.0855	0.0533	-0.9971	116.4	39.5053	-0.1129	0.0391	-1.0332
111.5	38.8253	-0.0176	0.0540	-0.9976	116.5	39.4760	-0.1775	0.0378	-1.0332
111.6	38.8285	0.0509	0.0547	-0.9983	116.6	39.4344	-0.2348	0.0367	-1.0331
111.7	38.8452	0.1176	0.0554	-0.9991	116.7	39.3822	-0.2826	0.0356	-1.0328
111.8	38.8747	0.1797	0.0561	-1.0001	116.8	39.3216	-0.3190	0.0347	-1.0324
111.9	38.9159	0.2349	0.0567	-1.0013	116.9	39.2551	-0.3426	0.0339	-1.0319
112.0	38.9672	0.2809	0.0571	-1.0026	117.0	39.1853	-0.3524	0.0334	-1.0314
112.1	39.0268	0.3159	0.0574	-1.0040	117.1	39.1150	-0.3482	0.0330	-1.0308
112.2	39.0922	0.3384	0.0576	-1.0054	117.2	39.0471	-0.3301	0.0328	-1.0302
112.3	39.1609	0.3476	0.0575	-1.0070	117.3	38.9842	-0.2990	0.0327	-1.0297
112.4	39.2303	0.3429	0.0573	-1.0085	117.4	38.9287	-0.2561	0.0329	-1.0293
112.5	39.2974	0.3245	0.0569	-1.0100	117.5	38.8829	-0.2031	0.0331	-1.0290
112.6	39.3597	0.2930	0.0564	-1.0115	117.6	38.8484	-0.1422	0.0335	-1.0289
112.7	39.4145	0.2496	0.0556	-1.0128	117.7	38.8267	-0.0758	0.0339	-1.0289
112.8	39.4596	0.1961	0.0547	-1.0141	117.8	38.8184	-0.0063	0.0344	-1.0290
112.9	39.4931	0.1345	0.0537	-1.0151	117.9	38.8240	0.0634	0.0349	-1.0294
113.0	39.5137	0.0674	0.0526	-1.0161	118.0	38.8432	0.1307	0.0354	-1.0299
113.1	39.5204	-0.0025	0.0515	-1.0168	118.1	38.8753	0.1930	0.0358	-1.0306
113.2	39.5129	-0.0723	0.0503	-1.0173	118.2	38.9192	0.2477	0.0361	-1.0315
113.3	39.4916	-0.1392	0.0492	-1.0177	118.3	38.9730	0.2928	0.0363	-1.0324
113.4	39.4574	-0.2005	0.0481	-1.0179	118.4	39.0348	0.3264	0.0364	-1.0335
113.5	39.4116	-0.2537	0.0471	-1.0179	118.5	39.1022	0.3472	0.0362	-1.0347
113.6	39.3561	-0.2965	0.0462	-1.0178	118.6	39.1725	0.3542	0.0359	-1.0359
113.7	39.2933	-0.3275	0.0455	-1.0175	118.7	39.2430	0.3471	0.0354	-1.0371
113.8	39.2257	-0.3452	0.0450	-1.0172	118.8	39.3107	0.3260	0.0347	-1.0382
113.9	39.1560	-0.3492	0.0446	-1.0169	118.9	39.3730	0.2918	0.0339	-1.0393
114.0	39.0870	-0.3392	0.0443	-1.0165	119.0	39.4273	0.2458	0.0328	-1.0403
114.1	39.0215	-0.3158	0.0443	-1.0162	119.1	39.4714	0.1897	0.0317	-1.0411
114.2	38.9619	-0.2799	0.0444	-1.0159	119.2	39.5034	0.1259	0.0304	-1.0418
114.3	38.9107	-0.2330	0.0447	-1.0158	119.3	39.5220	0.0569	0.0290	-1.0423
114.4	38.8698	-0.1770	0.0451	-1.0157	119.4	39.5264	-0.0144	0.0277	-1.0426
114.5	38.8407	-0.1140	0.0456	-1.0158	119.5	39.5164	-0.0852	0.0263	-1.0427
114.6	38.8246	-0.0466	0.0461	-1.0161	119.6	39.4925	-0.1526	0.0249	-1.0427
114.7	38.8221	0.0227	0.0467	-1.0165	119.7	39.4555	-0.2138	0.0237	-1.0424
114.8	38.8334	0.0911	0.0472	-1.0171	119.8	39.4071	-0.2662	0.0225	-1.0420
114.9	38.8578	0.1560	0.0478	-1.0179	119.9	39.3492	-0.3079	0.0215	-1.0414
115.0	38.8947	0.2149	0.0482	-1.0188	120.0	39.2843	-0.3372	0.0206	-1.0407

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
120.1	39.2149	-0.3529	125.1	39.3238	0.3261
120.2	39.1439	-0.3546	125.2	39.3859	0.2892
120.3	39.0741	-0.3421	125.3	39.4395	0.2407
120.4	39.0083	-0.3160	125.4	39.4823	0.1823
120.5	38.9490	-0.2775	125.5	39.5126	0.1164
120.6	38.8985	-0.2281	125.6	39.5291	0.0458
120.7	38.8588	-0.1698	125.7	39.5311	-0.0268
120.8	38.8314	-0.1048	125.8	39.5185	-0.0983
120.9	38.8173	-0.0357	125.9	39.4918	-0.1657
121.0	38.8172	0.0348	126.0	39.4522	-0.2265
121.1	38.8309	0.1040	126.1	39.4013	-0.2780
121.2	38.8580	0.1691	126.2	39.3412	-0.3183
121.3	38.8974	0.2278	126.3	39.2744	-0.3458
121.4	38.9477	0.2775	126.4	39.2035	-0.3594
121.5	39.0070	0.3164	126.5	39.1315	-0.3586
121.6	39.0729	0.3429	126.6	39.0612	-0.3435
121.7	39.1428	0.3558	126.7	38.9953	-0.3149
121.8	39.2141	0.3545	126.8	38.9365	-0.2738
121.9	39.2839	0.3391	126.9	38.8871	-0.2220
122.0	39.3493	0.3100	127.0	38.8488	-0.1616
122.1	39.4077	0.2684	127.1	38.8232	-0.0948
122.2	39.4567	0.2159	127.2	38.8113	-0.0243
122.3	39.4942	0.1545	127.3	38.8135	0.0472
122.4	39.5187	0.0868	127.4	38.8298	0.1168
122.5	39.5291	0.0155	127.5	38.8594	0.1820
122.6	39.5251	-0.0564	127.6	38.9014	0.2401
122.7	39.5067	-0.1261	127.7	38.9541	0.2888
122.8	39.4747	-0.1907	127.8	39.0154	0.3262
122.9	39.4305	-0.2475	127.9	39.0831	0.3508
123.0	39.3759	-0.2942	128.0	39.1545	0.3615
123.1	39.3131	-0.3291	128.1	39.2267	0.3578
123.2	39.2447	-0.3507	128.2	39.2969	0.3398
123.3	39.1735	-0.3583	128.3	39.3622	0.3081
123.4	39.1023	-0.3516	128.4	39.4200	0.2639
123.5	39.0340	-0.3309	128.5	39.4678	0.2090
123.6	38.9712	-0.2972	128.6	39.5037	0.1455
123.7	38.9164	-0.2518	128.7	39.5262	0.0761
123.8	38.8717	-0.1965	128.8	39.5344	0.0035
123.9	38.8388	-0.1335	128.9	39.5278	-0.0693
124.0	38.8190	-0.0653	129.0	39.5067	-0.1392
124.1	38.8129	0.0055	129.1	39.4721	-0.2035
124.2	38.8209	0.0760	129.2	39.4254	-0.2595
124.3	38.8427	0.1437	129.3	39.3685	-0.3050
124.4	38.8774	0.2058	129.4	39.3037	-0.3381
124.5	38.9238	0.2599	129.5	39.2337	-0.3577
124.6	38.9800	0.3038	129.6	39.1614	-0.3629
124.7	39.0439	0.3359	129.7	39.0896	-0.3537
124.8	39.1130	0.3547	129.8	39.0211	-0.3304
124.9	39.1846	0.3594	129.9	38.9587	-0.2942
125.0	39.2558	0.3497	130.0	38.9048	-0.2463

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
130.1	38.8614	-0.1888	135.1	39.5385	-0.0088
130.2	38.8302	-0.1240	135.2	39.5293	-0.0822
130.3	38.8124	-0.0543	135.3	39.5056	-0.1522
130.4	38.8087	0.0176	135.4	39.4685	-0.2159
130.5	38.8192	0.0887	135.5	39.4193	-0.2709
130.6	38.8435	0.1565	135.6	39.3602	-0.3150
130.7	38.8808	0.2182	135.7	39.2937	-0.3462
130.8	38.9295	0.2714	135.8	39.2223	-0.3636
130.9	38.9879	0.3140	135.9	39.1490	-0.3664
131.0	39.0536	0.3443	136.0	39.0763	-0.3547
131.1	39.1242	0.3610	136.1	39.0084	-0.3288
131.2	39.1969	0.3633	136.2	38.9466	-0.2901
131.3	39.2687	0.3511	136.3	38.8937	-0.2399
131.4	39.3368	0.3248	136.4	38.8518	-0.1804
131.5	39.3984	0.2854	136.5	38.8225	-0.1138
131.6	39.4509	0.2344	136.6	38.8069	-0.0428
131.7	39.4922	0.1739	136.7	38.8055	0.0299
131.8	39.5206	0.1062	136.8	38.8185	0.1015
131.9	39.5349	0.0341	136.9	38.8454	0.1691
132.0	39.5345	-0.0394	137.0	38.8851	0.2302
132.1	39.5193	-0.1113	137.1	38.9361	0.2823
132.2	39.4900	-0.1786	137.2	38.9966	0.3234
132.3	39.4478	-0.2387	137.3	39.0640	0.3518
132.4	39.3946	-0.2891	137.4	39.1360	0.3663
132.5	39.3324	-0.3278	137.5	39.2094	0.3662
132.6	39.2639	-0.3533	137.6	39.2816	0.3514
132.7	39.1917	-0.3646	137.7	39.3495	0.3225
132.8	39.1189	-0.3614	137.8	39.4104	0.2806
132.9	39.0483	-0.3437	137.9	39.4617	0.2273
133.0	38.9827	-0.3125	138.0	39.5014	0.1647
133.1	38.9246	-0.2690	138.1	39.5278	0.0953
133.2	38.8764	-0.2150	138.2	39.5397	0.0221
133.3	38.8397	-0.1526	138.3	39.5368	-0.0521
133.4	38.8161	-0.0842	138.4	39.5190	-0.1242
133.5	38.8065	-0.0125	138.5	39.4871	-0.1913
133.6	38.8111	0.0597	138.6	39.4425	-0.2505
133.7	38.8298	0.1296	138.7	39.3870	-0.2996
133.8	38.8620	0.1945	138.8	39.3229	-0.3365
133.9	38.9064	0.2518	138.9	39.2528	-0.3599
134.0	38.9614	0.2994	139.0	39.1796	-0.3688
134.1	39.0247	0.3351	139.1	39.1062	-0.3631
134.2	39.0940	0.3577	139.2	39.0355	-0.3429
134.3	39.1665	0.3661	139.3	38.9704	-0.3092
134.4	39.2395	0.3599	139.4	38.9132	-0.2633
134.5	39.3098	0.3393	139.5	38.8663	-0.2071
134.6	39.3748	0.3050	139.6	38.8314	-0.1429
134.7	39.4317	0.2584	139.7	38.8099	-0.0730
134.8	39.4782	0.2012	139.8	38.8026	-0.0004
134.9	39.5124	0.1358	139.9	38.8097	0.0724
135.0	39.5327	0.0648	140.0	38.8310	0.1423
					-0.0249
					-1.0085

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
140.1	38.8656	0.2067	-0.0241	-1.0087	145.1	39.3127	-0.3445	-0.0301	-1.0036
140.2	38.9124	0.2631	-0.0234	-1.0091	145.2	39.2413	-0.3656	-0.0303	-1.0024
140.3	38.9695	0.3093	-0.0228	-1.0097	145.3	39.1672	-0.3722	-0.0303	-1.0013
140.4	39.0346	0.3432	-0.0224	-1.0103	145.4	39.0934	-0.3639	-0.0301	-1.0002
140.5	39.1053	0.3637	-0.0222	-1.0110	145.5	39.0229	-0.3411	-0.0297	-0.9991
140.6	39.1789	0.3697	-0.0221	-1.0117	145.6	38.9583	-0.3049	-0.0292	-0.9981
140.7	39.2523	0.3610	-0.0223	-1.0124	145.7	38.9023	-0.2568	-0.0285	-0.9972
140.8	39.3226	0.3378	-0.0226	-1.0131	145.8	38.8569	-0.1986	-0.0277	-0.9965
140.9	39.3871	0.3010	-0.0231	-1.0137	145.9	38.8239	-0.1326	-0.0267	-0.9959
141.0	39.4429	0.2519	-0.0238	-1.0141	146.0	38.8046	-0.0615	-0.0258	-0.9955
141.1	39.4879	0.1926	-0.0246	-1.0145	146.1	38.7996	0.0120	-0.0247	-0.9952
141.2	39.5202	0.1254	-0.0254	-1.0146	146.2	38.8092	0.0851	-0.0237	-0.9952
141.3	39.5383	0.0531	-0.0264	-1.0146	146.3	38.8330	0.1549	-0.0228	-0.9954
141.4	39.5416	-0.0214	-0.0273	-1.0144	146.4	38.8701	0.2187	-0.0219	-0.9957
141.5	39.5298	-0.0951	-0.0283	-1.0140	146.5	38.9192	0.2739	-0.0211	-0.9961
141.6	39.5035	-0.1649	-0.0292	-1.0134	146.6	38.9782	0.3185	-0.0205	-0.9967
141.7	39.4638	-0.2280	-0.0300	-1.0127	146.7	39.0451	0.3506	-0.0200	-0.9974
141.8	39.4124	-0.2818	-0.0306	-1.0118	146.8	39.1171	0.3688	-0.0198	-0.9982
141.9	39.3512	-0.3242	-0.0311	-1.0107	146.9	39.1914	0.3724	-0.0196	-0.9989
142.0	39.2830	-0.3535	-0.0315	-1.0096	147.0	39.2652	0.3612	-0.0197	-0.9997
142.1	39.2104	-0.3686	-0.0316	-1.0085	147.1	39.3353	0.3354	-0.0200	-1.0004
142.2	39.1364	-0.3689	-0.0316	-1.0073	147.2	39.3990	0.2961	-0.0204	-1.0010
142.3	39.0639	-0.3546	-0.0314	-1.0061	147.3	39.4537	0.2447	-0.0210	-1.0015
142.4	38.9959	-0.3263	-0.0309	-1.0051	147.4	39.4970	0.1834	-0.0217	-1.0019
142.5	38.9348	-0.2851	-0.0304	-1.0041	147.5	39.5272	0.1146	-0.0225	-1.0021
142.6	38.8832	-0.2327	-0.0297	-1.0032	147.6	39.5430	0.0410	-0.0234	-1.0021
142.7	38.8429	-0.1712	-0.0288	-1.0025	147.7	39.5437	-0.0342	-0.0242	-1.0019
142.8	38.8156	-0.1031	-0.0279	-1.0020	147.8	39.5294	-0.1081	-0.0251	-1.0016
142.9	38.8022	-0.0309	-0.0270	-1.0016	147.9	39.5005	-0.1775	-0.0259	-1.0010
143.0	38.8033	0.0425	-0.0260	-1.0014	148.0	39.4583	-0.2397	-0.0266	-1.0003
143.1	38.8189	0.1142	-0.0250	-1.0014	148.1	39.4046	-0.2922	-0.0271	-0.9994
143.2	38.8482	0.1816	-0.0242	-1.0016	148.2	39.3416	-0.3328	-0.0275	-0.9985
143.3	38.8903	0.2418	-0.0234	-1.0020	148.3	39.2719	-0.3600	-0.0277	-0.9974
143.4	38.9436	0.2927	-0.0227	-1.0025	148.4	39.1982	-0.3727	-0.0278	-0.9963
143.5	39.0059	0.3321	-0.0222	-1.0031	148.5	39.1237	-0.3706	-0.0276	-0.9952
143.6	39.0750	0.3585	-0.0218	-1.0038	148.6	39.0512	-0.3537	-0.0273	-0.9941
143.7	39.1480	0.3706	-0.0216	-1.0045	148.7	38.9835	-0.3228	-0.0268	-0.9931
143.8	39.2222	0.3680	-0.0217	-1.0052	148.8	38.9235	-0.2792	-0.0261	-0.9922
143.9	39.2945	0.3507	-0.0219	-1.0059	148.9	38.8732	-0.2247	-0.0253	-0.9914
144.0	39.3620	0.3193	-0.0222	-1.0066	149.0	38.8347	-0.1615	-0.0244	-0.9908
144.1	39.4220	0.2749	-0.0228	-1.0071	149.1	38.8095	-0.0919	-0.0234	-0.9904
144.2	39.4720	0.2194	-0.0235	-1.0076	149.2	38.7985	-0.0188	-0.0224	-0.9901
144.3	39.5099	0.1549	-0.0243	-1.0078	149.3	38.8020	0.0551	-0.0213	-0.9900
144.4	39.5341	0.0840	-0.0251	-1.0079	149.4	38.8201	0.1269	-0.0203	-0.9901
144.5	39.5436	0.0097	-0.0260	-1.0078	149.5	38.8519	0.1937	-0.0194	-0.9904
144.6	39.5381	-0.0650	-0.0269	-1.0075	149.6	38.8964	0.2531	-0.0185	-0.9908
144.7	39.5177	-0.1371	-0.0278	-1.0070	149.7	38.9517	0.3025	-0.0178	-0.9914
144.8	39.4832	-0.2036	-0.0286	-1.0064	149.8	39.0159	0.3402	-0.0173	-0.9921
144.9	39.4362	-0.2618	-0.0292	-1.0056	149.9	39.0864	0.3644	-0.0169	-0.9929
145.0	39.3786	-0.3094	-0.0298	-1.0046	150.0	39.1604	0.3742	-0.0166	-0.9937

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z ₀	kh _e	ka	Z ₀	kh _e
150.1	39.2350	0.3691	155.1	38.9125	-0.2727
150.2	39.3072	0.3492	155.2	38.8638	-0.2162
150.3	39.3742	0.3152	155.3	38.8272	-0.1512
150.4	39.4332	0.2684	155.4	38.8041	-0.0804
150.5	39.4816	0.2108	155.5	38.7954	-0.0064
150.6	39.5176	0.1445	155.6	38.8015	0.0678
150.7	39.5396	0.0723	155.7	38.8221	0.1395
150.8	39.5467	-0.0029	155.8	38.8564	0.2057
150.9	39.5385	-0.0780	155.9	38.9031	0.2639
151.0	39.5155	-0.1499	156.0	38.9605	0.3119
151.1	39.4785	-0.2157	156.1	39.0264	0.3476
151.2	39.4292	-0.2727	156.2	39.0981	0.3696
151.3	39.3695	-0.3186	156.3	39.1729	0.3769
151.4	39.3020	-0.3517	156.4	39.2479	0.3693
151.5	39.2294	-0.3706	156.5	39.3199	0.3468
151.6	39.1546	-0.3746	156.6	39.3862	0.3103
151.7	39.0806	-0.3638	156.7	39.4439	0.2612
151.8	39.0103	-0.3385	156.8	39.4907	0.2016
151.9	38.9466	-0.2999	156.9	39.5247	0.1336
152.0	38.8918	-0.2495	157.0	39.5444	0.0602
152.1	38.8480	-0.1894	157.1	39.5489	-0.0157
152.2	38.8170	-0.1219	157.2	39.5381	-0.0910
152.3	38.8000	-0.0496	157.3	39.5125	-0.1625
152.4	38.7974	0.0246	157.4	39.4731	-0.2275
152.5	38.8095	0.0978	157.5	39.4215	-0.2831
152.6	38.8359	0.1673	157.6	39.3599	-0.3273
152.7	38.8754	0.2303	157.7	39.2909	-0.3582
152.8	38.9266	0.2843	157.8	39.2172	-0.3748
152.9	38.9876	0.3272	157.9	39.1418	-0.3763
153.0	39.0560	0.3573	158.0	39.0678	-0.3629
153.1	39.1292	0.3732	158.1	38.9980	-0.3351
153.2	39.2042	0.3743	158.2	38.9352	-0.2941
153.3	39.2780	0.3605	158.3	38.8817	-0.2416
153.4	39.3478	0.3321	158.4	38.8398	-0.1797
153.5	39.4106	0.2904	158.5	38.8109	-0.1107
153.6	39.4639	0.2368	158.6	38.7961	-0.0375
153.7	39.5054	0.1736	158.7	38.7960	0.0372
153.8	39.5335	0.1032	158.8	38.8107	0.1105
153.9	39.5469	0.0286	158.9	38.8395	0.1795
154.0	39.5451	-0.0471	159.0	38.8814	0.2416
154.1	39.5281	-0.1210	159.1	38.9347	0.2942
154.2	39.4966	-0.1899	159.2	38.9975	0.3353
154.3	39.4521	-0.2511	159.3	39.0674	0.3633
154.4	39.3962	-0.3020	159.4	39.1415	0.3768
154.5	39.3315	-0.3408	159.5	39.2170	0.3754
154.6	39.2603	-0.3657	159.6	39.2909	0.3590
154.7	39.1858	-0.3761	159.7	39.3601	0.3281
154.8	39.1109	-0.3713	159.8	39.4219	0.2839
154.9	39.0385	-0.3519	159.9	39.4737	0.2282
155.0	38.9715	-0.3186	160.0	39.5133	0.1632

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
160.1	39.5391	0.0915	-0.0073	-0.9899	165.1	38.8125	0.1232	-0.0005	-0.9803
160.2	39.5500	0.0160	-0.0081	-0.9900	165.2	38.8438	0.1916	0.0005	-0.9807
160.3	39.5456	-0.0601	-0.0090	-0.9899	165.3	38.8880	0.2525	0.0014	-0.9812
160.4	39.5260	-0.1338	-0.0098	-0.9897	165.4	38.9434	0.3037	0.0022	-0.9819
160.5	39.4920	-0.2021	-0.0105	-0.9892	165.5	39.0079	0.3429	0.0028	-0.9828
160.6	39.4452	-0.2620	-0.0111	-0.9886	165.6	39.0791	0.3686	0.0032	-0.9837
160.7	39.3873	-0.3114	-0.0116	-0.9878	165.7	39.1541	0.3798	0.0035	-0.9846
160.8	39.3208	-0.3481	-0.0119	-0.9870	165.8	39.2299	0.3758	0.0036	-0.9856
160.9	39.2485	-0.3708	-0.0120	-0.9860	165.9	39.3036	0.3568	0.0034	-0.9865
161.0	39.1732	-0.3786	-0.0120	-0.9850	166.0	39.3722	0.3234	0.0031	-0.9874
161.1	39.0980	-0.3714	-0.0118	-0.9841	166.1	39.4328	0.2769	0.0027	-0.9882
161.2	39.0259	-0.3494	-0.0114	-0.9832	166.2	39.4829	0.2191	0.0021	-0.9888
161.3	38.9597	-0.3136	-0.0108	-0.9823	166.3	39.5206	0.1524	0.0013	-0.9893
161.4	38.9019	-0.2655	-0.0100	-0.9816	166.4	39.5441	0.0795	0.0005	-0.9896
161.5	38.8548	-0.2071	-0.0092	-0.9810	166.5	39.5525	0.0032	-0.0003	-0.9898
161.6	38.8202	-0.1405	-0.0082	-0.9805	166.6	39.5454	-0.0732	-0.0011	-0.9897
161.7	38.7994	-0.0685	-0.0072	-0.9802	166.7	39.5232	-0.1465	-0.0019	-0.9894
161.8	38.7932	0.0062	-0.0061	-0.9801	166.8	39.4868	-0.2140	-0.0027	-0.9890
161.9	38.8017	0.0806	-0.0050	-0.9802	166.9	39.4376	-0.2726	-0.0033	-0.9884
162.0	38.8248	0.1519	-0.0040	-0.9805	167.0	39.3778	-0.3202	-0.0038	-0.9877
162.1	38.8615	0.2174	-0.0030	-0.9810	167.1	39.3098	-0.3549	-0.0041	-0.9868
162.2	38.9105	0.2744	-0.0022	-0.9816	167.2	39.2363	-0.3752	-0.0042	-0.9859
162.3	38.9698	0.3207	-0.0015	-0.9823	167.3	39.1604	-0.3805	-0.0042	-0.9850
162.4	39.0373	0.3544	-0.0010	-0.9831	167.4	39.0851	-0.3707	-0.0040	-0.9841
162.5	39.1101	0.3741	-0.0006	-0.9841	167.5	39.0134	-0.3462	-0.0035	-0.9832
162.6	39.1857	0.3790	-0.0004	-0.9850	167.6	38.9481	-0.3080	-0.0029	-0.9824
162.7	39.2608	0.3687	-0.0004	-0.9859	167.7	38.8917	-0.2578	-0.0022	-0.9817
162.8	39.3325	0.3436	-0.0006	-0.9868	167.8	38.8463	-0.1974	-0.0013	-0.9812
162.9	39.3979	0.3047	-0.0010	-0.9876	167.9	38.8138	-0.1294	-0.0004	-0.9808
163.0	39.4543	0.2534	-0.0015	-0.9883	168.0	38.7953	-0.0564	0.0007	-0.9806
163.1	39.4993	0.1918	-0.0021	-0.9889	168.1	38.7916	0.0189	0.0017	-0.9806
163.2	39.5312	0.1223	-0.0029	-0.9893	168.2	38.8027	0.0934	0.0028	-0.9807
163.3	39.5484	0.0478	-0.0037	-0.9895	168.3	38.8283	0.1643	0.0038	-0.9811
163.4	39.5504	-0.0286	-0.0045	-0.9895	168.4	38.8673	0.2288	0.0047	-0.9816
163.5	39.5370	-0.1039	-0.0053	-0.9893	168.5	38.9185	0.2845	0.0055	-0.9823
163.6	39.5088	-0.1750	-0.0061	-0.9890	168.6	38.9796	0.3290	0.0062	-0.9831
163.7	39.4670	-0.2389	-0.0068	-0.9884	168.7	39.0485	0.3606	0.0067	-0.9840
163.8	39.4132	-0.2931	-0.0073	-0.9878	168.8	39.1225	0.3779	0.0070	-0.9849
163.9	39.3498	-0.3354	-0.0077	-0.9870	168.9	39.1985	0.3803	0.0072	-0.9859
164.0	39.2794	-0.3642	-0.0080	-0.9861	169.0	39.2737	0.3674	0.0071	-0.9869
164.1	39.2048	-0.3783	-0.0080	-0.9851	169.1	39.3449	0.3398	0.0069	-0.9878
164.2	39.1290	-0.3773	-0.0079	-0.9842	169.2	39.4093	0.2985	0.0065	-0.9887
164.3	39.0550	-0.3613	-0.0075	-0.9833	169.3	39.4642	0.2450	0.0059	-0.9894
164.4	38.9858	-0.3310	-0.0070	-0.9824	169.4	39.5074	0.1816	0.0052	-0.9900
164.5	38.9241	-0.2877	-0.0064	-0.9816	169.5	39.5370	0.1107	0.0044	-0.9904
164.6	38.8721	-0.2331	-0.0055	-0.9810	169.6	39.5518	0.0352	0.0036	-0.9906
164.7	38.8320	-0.1695	-0.0046	-0.9805	169.7	39.5512	-0.0417	0.0027	-0.9906
164.8	38.8053	-0.0992	-0.0036	-0.9801	169.8	39.5352	-0.1169	0.0019	-0.9905
164.9	38.7929	-0.0251	-0.0026	-0.9800	169.9	39.5044	-0.1873	0.0011	-0.9901
165.0	38.7953	0.0500	-0.0015	-0.9800	170.0	39.4602	-0.2501	0.0004	-0.9896

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
170.1	39.4044	-0.3027	175.1	39.1350	0.3812
170.2	39.3393	-0.3430	175.2	39.2115	0.3810
170.3	39.2676	-0.3695	175.3	39.2865	0.3655
170.4	39.1922	-0.3811	175.4	39.3571	0.3354
170.5	39.1161	-0.3775	175.5	39.4204	0.2917
170.6	39.0423	-0.3590	175.6	39.4738	0.2361
170.7	38.9739	-0.3262	175.7	39.5150	0.1709
170.8	38.9133	-0.2807	175.8	39.5423	0.0987
170.9	38.8630	-0.2241	175.9	39.5546	0.0224
171.0	38.8249	-0.1589	176.0	39.5513	-0.0548
171.1	38.8003	-0.0874	176.1	39.5327	-0.1297
171.2	38.7904	-0.0126	176.2	39.4994	-0.1994
171.3	38.7953	0.0628	176.3	39.4529	-0.2609
171.4	38.8150	0.1357	176.4	39.3951	-0.3118
171.5	38.8488	0.2034	176.5	39.3283	-0.3500
171.6	38.8952	0.2632	176.6	39.2555	-0.3742
171.7	38.9526	0.3127	176.7	39.1794	-0.3833
171.8	39.0187	0.3499	176.8	39.1031	-0.3772
171.9	39.0911	0.3734	176.9	39.0297	-0.3560
172.0	39.1668	0.3821	177.0	38.9621	-0.3209
172.1	39.2429	0.3755	177.1	38.9029	-0.2731
172.2	39.3163	0.3539	177.2	38.8543	-0.2147
172.3	39.3840	0.3180	177.3	38.8182	-0.1479
172.4	39.4433	0.2693	177.4	38.7960	-0.0753
172.5	39.4918	0.2095	177.5	38.7885	0.0001
172.6	39.5273	0.1412	177.6	38.7960	0.0756
172.7	39.5484	0.0671	177.7	38.8182	0.1482
172.8	39.5543	-0.0097	177.8	38.8543	0.2150
172.9	39.5446	-0.0862	177.9	38.9029	0.2735
173.0	39.5198	-0.1591	178.0	38.9622	0.3213
173.1	39.4809	-0.2256	178.1	39.0299	0.3564
173.2	39.4295	-0.2828	178.2	39.1033	0.3776
173.3	39.3678	-0.3286	178.3	39.1797	0.3837
173.4	39.2983	-0.3611	178.4	39.2558	0.3746
173.5	39.2239	-0.3790	178.5	39.3288	0.3504
173.6	39.1475	-0.3818	178.6	39.3956	0.3121
173.7	39.0723	-0.3693	178.7	39.4535	0.2611
173.8	39.0011	-0.3423	178.8	39.5001	0.1995
173.9	38.9368	-0.3018	178.9	39.5335	0.1297
174.0	38.8819	-0.2494	179.0	39.5522	0.0546
174.1	38.8384	-0.1874	179.1	39.5554	-0.0228
174.2	38.8080	-0.1180	179.2	39.5431	-0.0992
174.3	38.7919	-0.0440	179.3	39.5157	-0.1716
174.4	38.7906	0.0316	179.4	39.4744	-0.2369
174.5	38.8043	0.1061	179.5	39.4209	-0.2926
174.6	38.8323	0.1765	179.6	39.3574	-0.3365
174.7	38.8737	0.2400	179.7	39.2866	-0.3667
174.8	38.9269	0.2941	179.8	39.2113	-0.3822
174.9	38.9899	0.3368	179.9	39.1346	-0.3824
175.0	39.0602	0.3662	180.0	39.0595	-0.3674
					0.0069
					-0.9902

TABLE VII (Continued)

 $\theta_o = 55$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e				
180.1	38.9890	-0.3378	0.0074	-0.9894	185.1	39.5080	0.1890	0.0165	-0.9995
180.2	38.9258	-0.2950	0.0080	-0.9886	185.2	39.5391	0.1178	0.0156	-1.0000
180.3	38.8725	-0.2406	0.0087	-0.9880	185.3	39.5553	0.0418	0.0147	-1.0002
180.4	38.8309	-0.1769	0.0095	-0.9876	185.4	39.5559	-0.0359	0.0137	-1.0003
180.5	38.8027	-0.1063	0.0105	-0.9873	185.5	39.5409	-0.1122	0.0128	-1.0002
180.6	38.7890	-0.0315	0.0115	-0.9872	185.6	39.5110	-0.1838	0.0119	-0.9999
180.7	38.7903	0.0445	0.0125	-0.9872	185.7	39.4673	-0.2480	0.0111	-0.9995
180.8	38.8065	0.1188	0.0135	-0.9875	185.8	39.4118	-0.3020	0.0104	-0.9989
180.9	38.8370	0.1885	0.0144	-0.9879	185.9	39.3466	-0.3439	0.0099	-0.9981
181.0	38.8807	0.2508	0.0153	-0.9885	186.0	39.2746	-0.3718	0.0096	-0.9973
181.1	38.9359	0.3034	0.0160	-0.9893	186.1	39.1985	-0.3847	0.0094	-0.9964
181.2	39.0005	0.3441	0.0166	-0.9902	186.2	39.1216	-0.3824	0.0095	-0.9955
181.3	39.0721	0.3713	0.0170	-0.9912	186.3	39.0468	-0.3648	0.0097	-0.9946
181.4	39.1477	0.3838	0.0172	-0.9922	186.4	38.9771	-0.3328	0.0102	-0.9938
181.5	39.2245	0.3810	0.0173	-0.9932	186.5	38.9152	-0.2877	0.0108	-0.9931
181.6	39.2993	0.3630	0.0171	-0.9943	186.6	38.8634	-0.2314	0.0115	-0.9925
181.7	39.3692	0.3303	0.0167	-0.9952	186.7	38.8239	-0.1661	0.0123	-0.9920
181.8	39.4312	0.2843	0.0162	-0.9961	186.8	38.7980	-0.0943	0.0133	-0.9918
181.9	39.4829	0.2267	0.0156	-0.9968	186.9	38.7867	-0.0188	0.0143	-0.9917
182.0	39.5220	0.1598	0.0148	-0.9974	187.0	38.7905	0.0574	0.0153	-0.9918
182.1	39.5470	0.0864	0.0139	-0.9978	187.1	38.8093	0.1314	0.0162	-0.9921
182.2	39.5567	0.0095	0.0130	-0.9980	187.2	38.8422	0.2003	0.0171	-0.9926
182.3	39.5508	-0.0679	0.0120	-0.9980	187.3	38.8882	0.2614	0.0180	-0.9932
182.4	39.5296	-0.1424	0.0111	-0.9978	187.4	38.9453	0.3123	0.0186	-0.9940
182.5	39.4938	-0.2112	0.0103	-0.9975	187.5	39.0115	0.3510	0.0192	-0.9949
182.6	39.4450	-0.2713	0.0096	-0.9969	187.6	39.0842	0.3758	0.0195	-0.9959
182.7	39.3853	-0.3204	0.0090	-0.9962	187.7	39.1606	0.3858	0.0197	-0.9969
182.8	39.3170	-0.3566	0.0086	-0.9955	187.8	39.2375	0.3804	0.0197	-0.9980
182.9	39.2431	-0.3783	0.0083	-0.9946	187.9	39.3120	0.3598	0.0195	-0.9990
183.0	39.1665	-0.3849	0.0083	-0.9937	188.0	39.3810	0.3247	0.0190	-1.0000
183.1	39.0902	-0.3762	0.0084	-0.9928	188.1	39.4417	0.2764	0.0185	-1.0008
183.2	39.0173	-0.3525	0.0087	-0.9919	188.2	39.4916	0.2168	0.0177	-1.0016
183.3	38.9506	-0.3150	0.0092	-0.9912	188.3	39.5286	0.1484	0.0169	-1.0021
183.4	38.8928	-0.2650	0.0099	-0.9905	188.4	39.5511	0.0740	0.0160	-1.0025
183.5	38.8460	-0.2048	0.0107	-0.9900	188.5	39.5583	-0.0036	0.0150	-1.0027
183.6	38.8120	-0.1366	0.0116	-0.9896	188.6	39.5497	-0.0810	0.0141	-1.0026
183.7	38.7922	-0.0630	0.0126	-0.9894	188.7	39.5258	-0.1550	0.0131	-1.0024
183.8	38.7872	0.0130	0.0136	-0.9894	188.8	39.4876	-0.2228	0.0123	-1.0020
183.9	38.7972	0.0884	0.0146	-0.9896	188.9	39.4366	-0.2814	0.0115	-1.0015
184.0	38.8220	0.1605	0.0155	-0.9900	189.0	39.3751	-0.3287	0.0109	-1.0008
184.1	38.8604	0.2264	0.0164	-0.9905	189.1	39.3054	-0.3626	0.0105	-1.0000
184.2	38.9112	0.2834	0.0172	-0.9912	189.2	39.2306	-0.3819	0.0103	-0.9991
184.3	38.9723	0.3294	0.0178	-0.9921	189.3	39.1535	-0.3859	0.0102	-0.9982
184.4	39.0414	0.3624	0.0183	-0.9930	189.4	39.0773	-0.3745	0.0104	-0.9973
184.5	39.1158	0.3812	0.0186	-0.9940	189.5	39.0050	-0.3484	0.0107	-0.9964
184.6	39.1926	0.3848	0.0187	-0.9951	189.6	38.9394	-0.3085	0.0112	-0.9956
184.7	39.2688	0.3730	0.0186	-0.9961	189.7	38.8831	-0.2565	0.0119	-0.9950
184.8	39.3412	0.3463	0.0183	-0.9971	189.8	38.8382	-0.1945	0.0127	-0.9945
184.9	39.4070	0.3055	0.0178	-0.9980	189.9	38.8064	-0.1250	0.0136	-0.9941
185.0	39.4633	0.2524	0.0172	-0.9988	190.0	38.7889	-0.0505	0.0146	-0.9940

TABLE VII (Continued)

 $\theta_0 = 55$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
190.1	38.7865	0.0258	195.1	39.4809	-0.2341
190.2	38.7991	0.1012	195.2	39.4278	-0.2912
190.3	38.8263	0.1727	195.3	39.3645	-0.3364
190.4	38.8671	0.2375	195.4	39.2935	-0.3681
190.5	38.9199	0.2930	195.5	39.2178	-0.3849
190.6	38.9827	0.3371	195.6	39.1404	-0.3863
190.7	39.0532	0.3679	195.7	39.0644	-0.3724
190.8	39.1285	0.3842	195.8	38.9928	-0.3437
190.9	39.2057	0.3852	195.9	38.9285	-0.3015
191.0	39.2817	0.3708	196.0	38.8737	-0.2475
191.1	39.3534	0.3416	196.1	38.8308	-0.1839
191.2	39.4180	0.2985	196.2	38.8013	-0.1131
191.3	39.4728	0.2433	196.3	38.7862	-0.0379
191.4	39.5154	0.1781	196.4	38.7863	0.0388
191.5	39.5442	0.1057	196.5	38.8015	0.1139
191.6	39.5578	0.0289	196.6	38.8311	0.1847
191.7	39.5558	-0.0491	196.7	38.8742	0.2483
191.8	39.5382	-0.1250	196.8	38.9290	0.3022
191.9	39.5057	-0.1959	196.9	38.9936	0.3443
192.0	39.4598	-0.2587	197.0	39.0652	0.3728
192.1	39.4022	-0.3111	197.1	39.1413	0.3867
192.2	39.3355	-0.3508	197.2	39.2188	0.3851
192.3	39.2623	-0.3763	197.3	39.2945	0.3681
192.4	39.1856	-0.3867	197.4	39.3655	0.3363
192.5	39.1086	-0.3817	197.5	39.4288	0.2909
192.6	39.0342	-0.3616	197.6	39.4818	0.2337
192.7	38.9654	-0.3272	197.7	39.5224	0.1669
192.8	38.9048	-0.2799	197.8	39.5487	0.0933
192.9	38.8548	-0.2217	197.9	39.5598	0.0158
193.0	38.8173	-0.1549	198.0	39.5551	-0.0623
193.1	38.7938	-0.0820	198.1	39.5349	-0.1378
193.2	38.7850	-0.0060	198.2	39.4999	-0.2077
193.3	38.7914	0.0703	198.3	39.4517	-0.2692
193.4	38.8126	0.1439	198.4	39.3923	-0.3197
193.5	38.8480	0.2118	198.5	39.3240	-0.3572
193.6	38.8961	0.2716	198.6	39.2498	-0.3803
193.7	38.9552	0.3208	198.7	39.1726	-0.3882
193.8	39.0229	0.3573	198.8	39.0956	-0.3806
193.9	39.0966	0.3798	198.9	39.0217	-0.3579
194.0	39.1735	0.3873	199.0	38.9539	-0.3211
194.1	39.2505	0.3793	199.1	38.8948	-0.2717
194.2	39.3245	0.3561	199.2	38.8466	-0.2117
194.3	39.3926	0.3185	199.3	38.8113	-0.1434
194.4	39.4518	-0.2680	199.4	38.7901	-0.0696
194.5	39.4998	0.2066	199.5	38.7839	0.0069
194.6	39.5346	0.1367	199.6	38.7928	0.0832
194.7	39.5547	0.0613	199.7	38.8166	0.1562
194.8	39.5592	-0.0167	199.8	38.8543	0.2232
194.9	39.5480	-0.0940	199.9	38.9045	0.2815
195.0	39.5215	-0.1675	200.0	38.9654	0.3288
					0.0128 -1.0065
					0.0121 -1.0059
					0.0115 -1.0051
					0.0111 -1.0043
					0.0108 -1.0034
					0.0108 -1.0025
					0.0110 -1.0016
					0.0113 -1.0007
					0.0118 -1.0000
					0.0125 -0.9993
					0.0133 -0.9988
					0.0142 -0.9985
					0.0152 -0.9984
					0.0161 -0.9984
					0.0171 -0.9987
					0.0180 -0.9991
					0.0188 -0.9997
					0.0195 -1.0004
					0.0201 -1.0013
					0.0205 -1.0023
					0.0207 -1.0034
					0.0206 -1.0044
					0.0204 -1.0054
					0.0200 -1.0064
					0.0195 -1.0073
					0.0187 -1.0081
					0.0179 -1.0087
					0.0169 -1.0091
					0.0159 -1.0093
					0.0149 -1.0093
					0.0140 -1.0092
					0.0130 -1.0088
					0.0122 -1.0082
					0.0116 -1.0076
					0.0111 -1.0068
					0.0107 -1.0059
					0.0106 -1.0050
					0.0107 -1.0040
					0.0110 -1.0031
					0.0114 -1.0023
					0.0120 -1.0016
					0.0128 -1.0011
					0.0136 -1.0006
					0.0146 -1.0004
					0.0155 -1.0004
					0.0165 -1.0006
					0.0174 -1.0009
					0.0183 -1.0014
					0.0190 -1.0021
					0.0196 -1.0030

TABLE VIII

TABLE VIII
Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_o = 60$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
0.1	0.0732	-184.7064	0.0428	-0.0000	5.1	34.8391	2.6472	0.5074	-0.8328
0.2	0.3003	-88.5567	0.0866	-0.0002	5.2	35.2888	2.3066	0.5035	-0.8420
0.3	0.7039	-54.7640	0.1325	-0.0010	5.3	35.6950	1.8827	0.4992	-0.8513
0.4	1.3232	-36.5075	0.1815	-0.0033	5.4	36.0391	1.3741	0.4942	-0.8602
0.5	2.2151	-24.4239	0.2346	-0.0085	5.5	36.2981	0.7847	0.4884	-0.8683
0.6	3.4527	-15.4150	0.2922	-0.0184	5.6	36.4465	0.1260	0.4819	-0.8752
0.7	5.1183	-8.2038	0.3543	-0.0359	5.7	36.4590	-0.5804	0.4750	-0.8803
0.8	7.2849	-2.2346	0.4194	-0.0640	5.8	36.3152	-1.3023	0.4683	-0.8834
0.9	9.9813	2.6934	0.4844	-0.1057	5.9	36.0044	-1.9980	0.4625	-0.8842
1.0	13.1469	6.5964	0.5441	-0.1629	6.0	35.5303	-2.6205	0.4584	-0.8831
1.1	16.6012	9.4360	0.5919	-0.2344	6.1	34.9130	-3.1237	0.4568	-0.8805
1.2	20.0674	11.2337	0.6221	-0.3154	6.2	34.1886	-3.4691	0.4582	-0.8772
1.3	23.2646	12.1682	0.6323	-0.3987	6.3	33.4044	-3.6325	0.4629	-0.8742
1.4	26.0201	12.5052	0.6239	-0.4769	6.4	32.6129	-3.6068	0.4706	-0.8727
1.5	28.3262	12.5534	0.6016	-0.5454	6.5	31.8640	-3.4023	0.4808	-0.8737
1.6	30.3152	12.5424	0.5704	-0.6025	6.6	31.1991	-3.0434	0.4928	-0.8777
1.7	32.1922	12.5802	0.5343	-0.6491	6.7	30.6473	-2.5633	0.5053	-0.8853
1.8	34.1727	12.6480	0.4952	-0.6872	6.8	30.2247	-1.9980	0.5174	-0.8963
1.9	36.4401	12.6103	0.4530	-0.7182	6.9	29.9359	-1.3818	0.5282	-0.9105
2.0	39.1041	12.2179	0.4064	-0.7423	7.0	29.7775	-0.7440	0.5368	-0.9272
2.1	42.1348	11.1148	0.3539	-0.7574	7.1	29.7412	-0.1075	0.5428	-0.9459
2.2	45.2538	8.8956	0.2955	-0.7587	7.2	29.8174	0.5105	0.5459	-0.9657
2.3	47.8349	5.2953	0.2353	-0.7398	7.3	29.9974	1.0969	0.5461	-0.9860
2.4	48.9992	0.5253	0.1836	-0.6970	7.4	30.2744	1.6409	0.5434	-1.0061
2.5	48.0912	-4.5206	0.1537	-0.6347	7.5	30.6436	2.1312	0.5380	-1.0254
2.6	45.2442	-8.6353	0.1534	-0.5665	7.6	31.1010	2.5546	0.5302	-1.0436
2.7	41.3430	-11.0508	0.1797	-0.5075	7.7	31.6414	2.8943	0.5203	-1.0603
2.8	37.3882	-11.7606	0.2224	-0.4660	7.8	32.2556	3.1300	0.5086	-1.0751
2.9	34.0057	-11.2217	0.2715	-0.4428	7.9	32.9277	3.2392	0.4953	-1.0878
3.0	31.4104	-9.9547	0.3203	-0.4347	8.0	33.6321	3.1995	0.4808	-1.0980
3.1	29.5748	-8.3549	0.3658	-0.4380	8.1	34.3322	2.9939	0.4656	-1.1053
3.2	28.3791	-6.6719	0.4067	-0.4494	8.2	34.9814	2.6163	0.4504	-1.1095
3.3	27.6888	-5.0480	0.4426	-0.4668	8.3	35.5277	2.0778	0.4359	-1.1107
3.4	27.3837	-3.5576	0.4737	-0.4886	8.4	35.9212	1.4099	0.4230	-1.1088
3.5	27.3645	-2.2357	0.5000	-0.5137	8.5	36.1252	0.6636	0.4125	-1.1045
3.6	27.5511	-1.0937	0.5216	-0.5410	8.6	36.1240	-0.0981	0.4051	-1.0985
3.7	27.8799	-0.1289	0.5386	-0.5698	8.7	35.9277	-0.8110	0.4011	-1.0920
3.8	28.3007	0.6702	0.5510	-0.5993	8.8	35.5686	-1.4216	0.4004	-1.0858
3.9	28.7756	1.3211	0.5590	-0.6288	8.9	35.0933	-1.8951	0.4026	-1.0810
4.0	29.2771	1.8439	0.5629	-0.6574	9.0	34.5524	-2.2171	0.4069	-1.0782
4.1	29.7878	2.2595	0.5632	-0.6844	9.1	33.9924	-2.3911	0.4128	-1.0777
4.2	30.2984	2.5867	0.5605	-0.7093	9.2	33.4500	-2.4329	0.4194	-1.0796
4.3	30.8061	2.8408	0.5554	-0.7316	9.3	32.9511	-2.3648	0.4260	-1.0839
4.4	31.3122	3.0317	0.5487	-0.7511	9.4	32.5110	-2.2107	0.4321	-1.0903
4.5	31.8192	3.1644	0.5412	-0.7678	9.5	32.1373	-1.9929	0.4372	-1.0985
4.6	32.3290	3.2398	0.5337	-0.7820	9.6	31.8313	-1.7308	0.4412	-1.1081
4.7	32.8415	3.2555	0.5268	-0.7941	9.7	31.5911	-1.4399	0.4439	-1.1186
4.8	33.3542	3.2080	0.5207	-0.8046	9.8	31.4127	-1.1324	0.4451	-1.1298
4.9	33.8624	3.0935	0.5156	-0.8143	9.9	31.2918	-0.8174	0.4449	-1.1412
5.0	34.3601	2.9080	0.5113	-0.8235	10.0	31.2238	-0.5019	0.4433	-1.1527

TABLE VIII (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
10.1	31.2049	-0.1912	15.1	34.2315	-0.7051
10.2	31.2318	0.1102	15.2	34.0317	-0.9212
10.3	31.3020	0.3982	15.3	33.8026	-1.0846
10.4	31.4130	0.6688	15.4	33.5571	-1.1945
10.5	31.5627	0.9177	15.5	33.3063	-1.2528
10.6	31.7488	1.1404	15.6	33.0596	-1.2631
10.7	31.9683	1.3321	15.7	32.8244	-1.2298
10.8	32.2181	1.4878	15.8	32.6066	-1.1580
10.9	32.4937	1.6022	15.9	32.4107	-1.0527
11.0	32.7899	1.6702	16.0	32.2404	-0.9192
11.1	33.1000	1.6866	16.1	32.0983	-0.7622
11.2	33.4157	1.6470	16.2	31.9866	-0.5867
11.3	33.7272	1.5479	16.3	31.9070	-0.3976
11.4	34.0227	1.3877	16.4	31.8606	-0.1995
11.5	34.2890	1.1671	16.5	31.8483	0.0026
11.6	34.5120	0.8903	16.6	31.8703	0.2036
11.7	34.6778	0.5654	16.7	31.9265	0.3984
11.8	34.7738	0.2047	16.8	32.0160	0.5818
11.9	34.7906	-0.1754	16.9	32.1373	0.7483
12.0	34.7231	-0.5556	17.0	32.2880	0.8923
12.1	34.5721	-0.9151	17.1	32.4648	1.0086
12.2	34.3443	-1.2335	17.2	32.6632	1.0918
12.3	34.0519	-1.4932	17.3	32.8776	1.1373
12.4	33.7116	-1.6810	17.4	33.1010	1.1411
12.5	33.3426	-1.7891	17.5	33.3252	1.1005
12.6	32.9643	-1.8153	17.6	33.5411	1.0146
12.7	32.5950	-1.7621	17.7	33.7387	0.8845
12.8	32.2506	-1.6361	17.8	33.9082	0.7137
12.9	31.9439	-1.4465	17.9	34.0402	0.5084
13.0	31.6849	-1.2036	18.0	34.1270	0.2771
13.1	31.4808	-0.9186	18.1	34.1628	0.0305
13.2	31.3368	-0.6025	18.2	34.1450	-0.2194
13.3	31.2566	-0.2666	18.3	34.0739	-0.4602
13.4	31.2423	0.0781	18.4	33.9530	-0.6800
13.5	31.2950	0.4199	18.5	33.7887	-0.8682
13.6	31.4143	0.7468	18.6	33.5895	-1.0166
13.7	31.5978	1.0460	18.7	33.3654	-1.1191
13.8	31.8409	1.3045	18.8	33.1270	-1.1725
13.9	32.1358	1.5092	18.9	32.8850	-1.1757
14.0	32.4711	1.6481	19.0	32.6494	-1.1300
14.1	32.8320	1.7114	19.1	32.4297	-1.0384
14.2	33.2004	1.6928	19.2	32.2342	-0.9054
14.3	33.5560	1.5913	19.3	32.0701	-0.7369
14.4	33.8782	1.4114	19.4	31.9437	-0.5396
14.5	34.1478	1.1642	19.5	31.8595	-0.3215
14.6	34.3500	0.8656	19.6	31.8212	-0.0912
14.7	34.4751	0.5354	19.7	31.8304	0.1421
14.8	34.5202	0.1947	19.8	31.8872	0.3686
14.9	34.4885	-0.1364	19.9	31.9896	0.5786
15.0	34.3883	-0.4407	20.0	32.1336	0.7626
					-0.0841
					-1.3657

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
20.1	32.3129	0.9118	-0.0908	-1.3644	25.1	33.0305	-0.8475	-0.2672	-1.2021
20.2	32.5193	1.0193	-0.0975	-1.3625	25.2	32.8565	-0.8405	-0.2687	-1.1993
20.3	32.7428	1.0799	-0.1041	-1.3601	25.3	32.6885	-0.7981	-0.2705	-1.1966
20.4	32.9723	1.0909	-0.1105	-1.3572	25.4	32.5335	-0.7226	-0.2726	-1.1939
20.5	33.1965	1.0526	-0.1166	-1.3538	25.5	32.3980	-0.6175	-0.2750	-1.1911
20.6	33.4043	0.9680	-0.1222	-1.3501	25.6	32.2874	-0.4875	-0.2775	-1.1882
20.7	33.5861	0.8428	-0.1273	-1.3461	25.7	32.2064	-0.3383	-0.2803	-1.1851
20.8	33.7341	0.6848	-0.1320	-1.3420	25.8	32.1580	-0.1765	-0.2832	-1.1818
20.9	33.8429	0.5032	-0.1361	-1.3378	25.9	32.1442	-0.0092	-0.2862	-1.1782
21.0	33.9097	0.3076	-0.1397	-1.3338	26.0	32.1651	0.1563	-0.2892	-1.1742
21.1	33.9341	0.1079	-0.1430	-1.3300	26.1	32.2196	0.3128	-0.2922	-1.1700
21.2	33.9178	-0.0872	-0.1459	-1.3264	26.2	32.3046	0.4534	-0.2950	-1.1654
21.3	33.8645	-0.2700	-0.1486	-1.3232	26.3	32.4159	0.5722	-0.2976	-1.1606
21.4	33.7788	-0.4340	-0.1512	-1.3203	26.4	32.5480	0.6643	-0.3000	-1.1555
21.5	33.6662	-0.5745	-0.1538	-1.3177	26.5	32.6946	0.7262	-0.3021	-1.1503
21.6	33.5325	-0.6880	-0.1565	-1.3153	26.6	32.8488	0.7561	-0.3038	-1.1449
21.7	33.3837	-0.7724	-0.1592	-1.3132	26.7	33.0035	0.7536	-0.3052	-1.1395
21.8	33.2255	-0.8266	-0.1621	-1.3113	26.8	33.1520	0.7200	-0.3062	-1.1342
21.9	33.0635	-0.8505	-0.1652	-1.3094	26.9	33.2882	0.6579	-0.3070	-1.1289
22.0	32.9027	-0.8448	-0.1685	-1.3076	27.0	33.4069	0.5711	-0.3074	-1.1238
22.1	32.7480	-0.8109	-0.1720	-1.3058	27.1	33.5040	0.4643	-0.3076	-1.1189
22.2	32.6037	-0.7506	-0.1755	-1.3039	27.2	33.5766	0.3427	-0.3076	-1.1142
22.3	32.4737	-0.6665	-0.1792	-1.3020	27.3	33.6229	0.2117	-0.3075	-1.1098
22.4	32.3616	-0.5614	-0.1830	-1.2999	27.4	33.6424	0.0768	-0.3073	-1.1057
22.5	32.2703	-0.4386	-0.1869	-1.2977	27.5	33.6357	-0.0569	-0.3072	-1.1018
22.6	32.2026	-0.3017	-0.1908	-1.2954	27.6	33.6040	-0.1846	-0.3071	-1.0982
22.7	32.1604	-0.1549	-0.1947	-1.2931	27.7	33.5496	-0.3021	-0.3072	-1.0947
22.8	32.1453	-0.0023	-0.1986	-1.2906	27.8	33.4752	-0.4055	-0.3074	-1.0913
22.9	32.1582	0.1512	-0.2026	-1.2881	27.9	33.3840	-0.4920	-0.3078	-1.0880
23.0	32.1992	0.3010	-0.2066	-1.2855	28.0	33.2795	-0.5593	-0.3083	-1.0847
23.1	32.2679	0.4419	-0.2107	-1.2828	28.1	33.1657	-0.6054	-0.3089	-1.0814
23.2	32.3627	0.5688	-0.2148	-1.2800	28.2	33.0463	-0.6295	-0.3097	-1.0780
23.3	32.4813	0.6768	-0.2190	-1.2770	28.3	32.9255	-0.6311	-0.3106	-1.0745
23.4	32.6202	0.7612	-0.2233	-1.2739	28.4	32.8071	-0.6106	-0.3115	-1.0709
23.5	32.7749	0.8178	-0.2275	-1.2705	28.5	32.6949	-0.5687	-0.3125	-1.0672
23.6	32.9400	0.8431	-0.2318	-1.2668	28.6	32.5926	-0.5071	-0.3135	-1.0633
23.7	33.1091	0.8349	-0.2360	-1.2629	28.7	32.5035	-0.4276	-0.3144	-1.0594
23.8	33.2751	0.7922	-0.2401	-1.2587	28.8	32.4306	-0.3329	-0.3153	-1.0553
23.9	33.4307	0.7156	-0.2439	-1.2542	28.9	32.3764	-0.2259	-0.3162	-1.0511
24.0	33.5686	0.6076	-0.2475	-1.2494	29.0	32.3431	-0.1102	-0.3170	-1.0468
24.1	33.6820	0.4722	-0.2508	-1.2445	29.1	32.3322	0.0103	-0.3177	-1.0424
24.2	33.7651	0.3150	-0.2536	-1.2394	29.2	32.3444	0.1315	-0.3183	-1.0379
24.3	33.8137	0.1432	-0.2561	-1.2344	29.3	32.3797	0.2492	-0.3189	-1.0333
24.4	33.8251	-0.0354	-0.2581	-1.2294	29.4	32.4375	0.3587	-0.3193	-1.0286
24.5	33.7988	-0.2125	-0.2598	-1.2246	29.5	32.5164	0.4557	-0.3196	-1.0238
24.6	33.7360	-0.3800	-0.2612	-1.2201	29.6	32.6135	0.5361	-0.3198	-1.0189
24.7	33.6398	-0.5303	-0.2624	-1.2159	29.7	32.7259	0.5964	-0.3197	-1.0139
24.8	33.5149	-0.6567	-0.2635	-1.2120	29.8	32.8489	0.6334	-0.3195	-1.0089
24.9	33.3671	-0.7541	-0.2646	-1.2084	29.9	32.9780	0.6448	-0.3191	-1.0038
25.0	33.2033	-0.8184	-0.2658	-1.2052	30.0	33.1077	0.6298	-0.3184	-0.9988

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
30.1	33.2327	0.5885	-0.3174	-0.9937	35.1	32.5406	-0.2509	-0.2290	-0.8245
30.2	33.3470	0.5218	-0.3162	-0.9888	35.2	32.4994	-0.1651	-0.2272	-0.8211
30.3	33.4460	0.4326	-0.3147	-0.9841	35.3	32.4760	-0.0728	-0.2252	-0.8176
30.4	33.5244	0.3246	-0.3130	-0.9795	35.4	32.4684	0.0229	-0.2230	-0.8139
30.5	33.5790	0.2022	-0.3112	-0.9752	35.5	32.4828	0.1187	-0.2206	-0.8102
30.6	33.6071	0.0711	-0.3092	-0.9712	35.6	32.5137	0.2105	-0.2179	-0.8065
30.7	33.6073	-0.0632	-0.3073	-0.9675	35.7	32.5650	0.2956	-0.2150	-0.8027
30.8	33.5794	-0.1946	-0.3053	-0.9641	35.8	32.6304	0.3690	-0.2118	-0.7990
30.9	33.5250	-0.3170	-0.3035	-0.9609	35.9	32.7104	0.4283	-0.2083	-0.7954
31.0	33.4467	-0.4253	-0.3019	-0.9580	36.0	32.8014	0.4700	-0.2045	-0.7919
31.1	33.3474	-0.5146	-0.3004	-0.9552	36.1	32.8975	0.4925	-0.2005	-0.7885
31.2	33.2326	-0.5811	-0.2992	-0.9525	36.2	32.9997	0.4991	-0.1963	-0.7855
31.3	33.1069	-0.6220	-0.2983	-0.9498	36.3	33.0973	0.4788	-0.1918	-0.7827
31.4	32.9763	-0.6358	-0.2976	-0.9471	36.4	33.1935	0.4421	-0.1873	-0.7803
31.5	32.8464	-0.6225	-0.2972	-0.9442	36.5	33.2768	0.3826	-0.1826	-0.7782
31.6	32.7226	-0.5825	-0.2969	-0.9412	36.6	33.3464	0.3132	-0.1779	-0.7765
31.7	32.6110	-0.5186	-0.2968	-0.9379	36.7	33.4034	0.2253	-0.1733	-0.7751
31.8	32.5158	-0.4333	-0.2967	-0.9343	36.8	33.4386	0.1295	-0.1688	-0.7742
31.9	32.4409	-0.3314	-0.2966	-0.9305	36.9	33.4546	0.0265	-0.1646	-0.7735
32.0	32.3891	-0.2171	-0.2964	-0.9264	37.0	33.4480	-0.0746	-0.1606	-0.7731
32.1	32.3623	-0.0959	-0.2961	-0.9220	37.1	33.4219	-0.1761	-0.1570	-0.7728
32.2	32.3609	0.0269	-0.2955	-0.9173	37.2	33.3752	-0.2648	-0.1537	-0.7727
32.3	32.3846	0.1459	-0.2947	-0.9125	37.3	33.3121	-0.3454	-0.1509	-0.7726
32.4	32.4311	0.2557	-0.2936	-0.9076	37.4	33.2298	-0.4034	-0.1482	-0.7724
32.5	32.4983	0.3529	-0.2921	-0.9025	37.5	33.1444	-0.4515	-0.1460	-0.7721
32.6	32.5826	0.4327	-0.2902	-0.8975	37.6	33.0479	-0.4731	-0.1439	-0.7715
32.7	32.6800	0.4939	-0.2880	-0.8926	37.7	32.9454	-0.4770	-0.1422	-0.7706
32.8	32.7858	0.5328	-0.2855	-0.8878	37.8	32.8487	-0.4600	-0.1403	-0.7694
32.9	32.8957	0.5499	-0.2827	-0.8831	37.9	32.7606	-0.4227	-0.1386	-0.7679
33.0	33.0052	0.5458	-0.2796	-0.8788	38.0	32.6803	-0.3732	-0.1370	-0.7659
33.1	33.1098	0.5203	-0.2763	-0.8747	38.1	32.6009	-0.3059	-0.1352	-0.7636
33.2	33.2060	0.4749	-0.2728	-0.8710	38.2	32.5660	-0.2255	-0.1329	-0.7614
33.3	33.2903	0.4128	-0.2693	-0.8676	38.3	32.5277	-0.1403	-0.1306	-0.7587
33.4	33.3599	0.3369	-0.2658	-0.8646	38.4	32.5139	-0.0501	-0.1278	-0.7558
33.5	33.4135	0.2501	-0.2624	-0.8618	38.5	32.5162	0.0420	-0.1247	-0.7530
33.6	33.4488	0.1557	-0.2591	-0.8593	38.6	32.5399	0.1251	-0.1212	-0.7501
33.7	33.4655	0.0571	-0.2559	-0.8571	38.7	32.5763	0.2043	-0.1174	-0.7472
33.8	33.4634	-0.0405	-0.2530	-0.8551	38.8	32.6296	0.2716	-0.1132	-0.7445
33.9	33.4422	-0.1362	-0.2503	-0.8531	38.9	32.6973	0.3284	-0.1087	-0.7421
34.0	33.4040	-0.2251	-0.2478	-0.8513	39.0	32.7655	0.3657	-0.1038	-0.7398
34.1	33.3500	-0.3045	-0.2455	-0.8495	39.1	32.8404	0.3925	-0.0990	-0.7381
34.2	33.2824	-0.3732	-0.2435	-0.8476	39.2	32.9269	0.4051	-0.0936	-0.7366
34.3	33.2037	-0.4256	-0.2416	-0.8456	39.3	32.9920	0.4116	-0.0885	-0.7356
34.4	33.1179	-0.4631	-0.2399	-0.8436	39.4	33.0835	0.3759	-0.0831	-0.7349
34.5	33.0260	-0.4834	-0.2383	-0.8414	39.5	33.1385	0.3528	-0.0779	-0.7348
34.6	32.9308	-0.4864	-0.2368	-0.8390	39.6	33.2060	0.3025	-0.0727	-0.7348
34.7	32.8387	-0.4718	-0.2353	-0.8365	39.7	33.2624	0.2480	-0.0678	-0.7351
34.8	32.7502	-0.4397	-0.2338	-0.8337	39.8	33.2986	0.1842	-0.0631	-0.7359
34.9	32.6685	-0.3905	-0.2323	-0.8308	39.9	33.3204	0.1175	-0.0589	-0.7370
35.0	32.5990	-0.3267	-0.2307	-0.8277	40.0	33.3360	0.0433	-0.0547	-0.7378

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
40.1	33.3409	-0.0346	45.1	32.7255	0.1609
40.2	33.3254	-0.1062	45.2	32.7814	0.2143
40.3	33.2944	-0.1647	45.3	32.8295	0.2529
40.4	33.2591	-0.2280	45.4	32.8649	0.2740
40.5	33.2019	-0.2835	45.5	32.9672	0.2684
40.6	33.1563	-0.3239	45.6	32.9837	0.2645
40.7	33.0850	-0.3656	45.7	33.0349	0.2605
40.8	33.0154	-0.3716	45.8	33.1128	0.2250
40.9	32.9253	-0.3730	45.9	33.1172	0.2008
41.0	32.8703	-0.3582	46.0	33.1436	0.1718
41.1	32.7942	-0.3290	46.1	33.2025	0.1150
41.2	32.7490	-0.2998	46.2	33.2196	0.0670
41.3	32.6812	-0.2441	46.3	33.2044	0.0072
41.4	32.6404	-0.1778	46.4	33.2399	-0.0064
41.5	32.5907	-0.1079	46.5	33.1975	-0.0553
41.6	32.5859	-0.0489	46.6	33.1973	-0.1250
41.7	32.5864	0.0127	46.7	33.1448	-0.1487
41.8	32.5984	0.0844	46.8	33.0812	-0.2342
41.9	32.6213	0.1736	46.9	33.0826	-0.2119
42.0	32.6696	0.2284	47.0	33.0471	-0.2237
42.1	32.7232	0.2958	47.1	32.9700	-0.2520
42.2	32.7921	0.3552	47.2	32.9607	-0.2666
42.3	32.8677	0.3482	47.3	32.8943	-0.2467
42.4	32.9181	0.3674	47.4	32.8507	-0.1947
42.5	33.0025	0.3496	47.5	32.7859	-0.1960
42.6	33.0855	0.3475	47.6	32.7852	-0.1461
42.7	33.1592	0.2687	47.7	32.7457	-0.1235
42.8	33.2014	0.2799	47.8	32.7072	-0.1630
42.9	33.2595	0.2456	47.9	32.7440	0.0014
43.0	33.3021	0.1804	48.0	32.7191	0.0266
43.1	33.3218	0.0698	48.1	32.7734	-0.0258
43.2	33.3171	0.0036	48.2	32.6178	0.0818
43.3	33.3731	-0.1384	48.3	32.7896	0.1290
43.4	33.3077	-0.1539	48.4	32.8964	0.2814
43.5	33.2415	-0.1991	48.5	32.8509	0.1655
43.6	33.2060	-0.2511	48.6	32.9192	0.2488
43.7	33.1287	-0.2850	48.7	32.9687	0.2619
43.8	33.0851	-0.3047	48.8	33.0064	0.2246
43.9	33.0054	-0.3390	48.9	32.9952	0.2195
44.0	32.9422	-0.3528	49.0	33.1242	0.1734
44.1	32.8687	-0.3200	49.1	33.1010	0.1671
44.2	32.8040	-0.3229	49.2	33.1882	0.2083
44.3	32.7398	-0.2592	49.3	33.2080	0.0524
44.4	32.7107	-0.2091	49.4	33.2838	0.1317
44.5	32.6973	-0.1583	49.5	33.1836	-0.0497
44.6	32.6630	-0.0994	49.6	33.1491	-0.0731
44.7	32.6477	-0.0070	49.7	33.1466	-0.0777
44.8	32.6744	0.0424	49.8	33.1928	-0.0928
44.9	32.6753	0.1036	49.9	33.0975	-0.1237
45.0	32.6907	0.1333	50.0	33.0840	-0.1851
					0.2372
					-0.9264

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o		kh_e		ka	Z_c		kh_e	
50.1	33.0189	-0.1642	0.2238	-0.9265	55.1	32.9255	0.1090	0.2089	-1.0459
50.2	32.9813	-0.1786	0.1959	-0.9188	55.2	32.9543	0.0556	0.2120	-1.0397
50.3	32.9434	-0.2165	0.2297	-0.9269	55.3	32.7723	-0.0060	0.2997	-1.0764
50.4	32.8274	-0.1761	0.2001	-0.9392	55.4	32.9579	0.1006	0.2214	-1.0700
50.5	32.8362	-0.1550	0.1881	-0.9277	55.5	32.9647	0.0905	0.2222	-1.0636
50.6	32.7910	-0.1019	0.2157	-0.9000	55.6	33.1013	0.1005	0.2215	-1.1159
50.7	32.8472	-0.0880	0.2048	-0.9229	55.7	32.6451	-0.1280	0.0535	-1.0839
50.8	32.7720	-0.1140	0.2027	-0.8999	55.8	33.0200	-0.0080	0.2316	-1.0614
50.9	32.8049	-0.0582	0.2165	-0.9374	55.9	32.9781	0.1282	0.1689	-1.0581
51.0	32.7995	0.0045	0.2055	-0.9244	56.0	33.0133	-0.0105	0.2580	-1.0140
51.1	32.8206	0.0012	0.2192	-0.9299	56.1	32.9969	0.0594	0.1982	-1.0657
51.2	32.8510	0.0120	0.2104	-0.9265	56.2	33.0377	0.0354	0.2017	-1.0821
51.3	32.8602	0.0601	0.2192	-0.9418	56.3	33.0454	-0.0657	0.2141	-1.0910
51.4	32.7980	0.0862	0.2164	-0.9256	56.4	33.0884	-0.0048	0.2331	-1.0918
51.5	32.8523	0.0602	0.2048	-0.9144	56.5	32.9040	-0.0296	0.2667	-1.0117
51.6	32.8945	0.1189	0.2193	-0.9445	56.6	32.9732	-0.0199	0.1784	-1.0723
51.7	32.9050	0.0499	0.1434	-0.9178	56.7	32.9645	-0.2537	0.2117	-1.0338
51.8	33.0128	0.1589	0.2186	-0.9438	56.8	32.9964	-0.0977	0.1927	-1.0888
51.9	32.9749	0.1001	0.2230	-0.9452	56.9	32.9831	-0.0898	0.1978	-1.0879
52.0	32.9741	0.1435	0.2619	-0.9389	57.0	32.9858	-0.0786	0.2193	-1.1100
52.1	33.0175	0.1260	0.2211	-0.9553	57.1	32.9183	-0.1121	0.1686	-1.0919
52.2	32.9725	0.0927	0.2229	-0.9493	57.2	32.9203	-0.1628	0.2329	-1.0929
52.3	33.0127	0.0885	0.2304	-0.9586	57.3	32.9146	-0.0852	0.1878	-1.1049
52.4	33.0222	0.0826	0.2263	-0.9665	57.4	32.9302	-0.0565	0.2085	-1.1151
52.5	33.0569	0.0493	0.2386	-0.9668	57.5	32.7119	-0.0995	0.2778	-1.1890
52.6	33.0187	0.0202	0.2312	-0.9953	57.6	32.8802	-0.0413	0.1983	-1.1304
52.7	33.0618	0.0111	0.2409	-0.9706	57.7	32.8853	-0.0769	0.1855	-1.1207
52.8	33.0869	-0.0013	0.2554	-1.0060	57.8	32.8094	0.0065	0.1954	-1.1552
52.9	32.9966	-0.0431	0.2150	-0.9880	57.9	32.9108	0.0541	0.1909	-1.1460
53.0	33.0562	-0.0352	0.2264	-0.9931	58.0	33.0268	-0.2535	0.2080	-0.9662
53.1	33.0845	-0.0238	0.2459	-0.9944	58.1	32.9477	-0.0178	0.2497	-1.1782
53.2	33.1898	-0.0960	0.2061	-0.9815	58.2	32.9215	0.0182	0.1797	-1.1208
53.3	33.0302	-0.0758	0.2339	-1.0052	58.3	32.7430	0.0317	0.2468	-1.1777
53.4	32.9981	-0.0902	0.2273	-1.0063	58.4	32.9091	0.0988	0.1771	-1.1580
53.5	32.9646	-0.0606	0.2309	-1.0181	58.5	32.9001	0.0829	0.1899	-1.1575
53.6	32.8478	-0.2356	0.2113	-1.0567	58.6	32.9122	0.0729	0.1806	-1.1593
53.7	32.9671	-0.0902	0.2335	-1.0240	58.7	32.9054	0.0860	0.1863	-1.1659
53.8	32.9797	-0.0753	0.2217	-0.9896	58.8	32.9576	0.0826	0.1694	-1.1757
53.9	32.9629	-0.1496	0.2596	-1.0278	58.9	32.9735	0.0893	0.1600	-1.1506
54.0	32.9309	-0.1689	0.2137	-1.0167	59.0	33.0290	0.0664	0.1386	-1.1678
54.1	32.9242	-0.1043	0.2543	-1.0370	59.1	33.0283	0.0696	0.1650	-1.1639
54.2	32.9947	-0.0400	0.2369	-0.9759	59.2	33.0781	-0.1520	0.0650	-1.0725
54.3	32.8789	-0.0138	0.2384	-1.0456	59.3	33.1243	0.0254	0.1053	-1.1918
54.4	32.7817	-0.2515	0.2936	-1.0713	59.4	33.0951	-0.0081	0.1328	-1.1788
54.5	32.7602	-0.1021	0.2633	-1.0761	59.5	33.0502	-0.0009	0.1434	-1.1602
54.6	32.8594	0.0274	0.2292	-1.0371	59.6	33.0813	-0.0541	0.1274	-1.1744
54.7	32.8588	0.0145	0.2273	-1.0397	59.7	33.0024	0.2394	0.2810	-1.1518
54.8	32.8563	0.0731	0.2041	-1.0579	59.8	33.0194	0.1484	0.2375	-1.1668
54.9	32.8180	0.0010	0.2540	-1.1002	59.9	33.0250	-0.0501	0.1546	-1.1648
55.0	32.8554	0.1060	0.2173	-1.0605	60.0	33.0330	-0.0840	0.1411	-1.1870

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
60.1	33.0321	-0.0928	65.1	32.9453	0.1457
60.2	33.0164	-0.0388	65.2	32.9652	0.1579
60.3	32.9698	-0.0980	65.3	32.9950	0.1508
60.4	32.9915	-0.1025	65.4	33.0212	0.1395
60.5	32.9042	-0.0380	65.5	33.0601	0.1232
60.6	32.9049	-0.0984	65.6	33.0758	0.0996
60.7	32.9090	-0.0065	65.7	33.1018	0.0795
60.8	32.8431	-0.0542	65.8	33.1074	0.0422
60.9	32.8636	-0.0542	65.9	33.1176	0.0146
61.0	32.8800	-0.1234	66.0	33.1206	-0.0158
61.1	32.8513	0.0355	66.1	33.1146	-0.0516
61.2	32.5893	-0.3399	66.2	33.0928	-0.0744
61.3	32.8061	0.0138	66.3	33.0866	-0.1090
61.4	32.8469	0.0074	66.4	33.0613	-0.1303
61.5	32.8844	0.0593	66.5	33.0313	-0.1518
61.6	32.8998	0.1027	66.6	33.0052	-0.1625
61.7	32.9154	0.0704	66.7	32.9686	-0.1651
61.8	32.9244	0.1042	66.8	32.9422	-0.1665
61.9	32.9563	0.0911	66.9	32.9003	-0.1603
62.0	32.9462	0.1263	67.0	32.8741	-0.1475
62.1	32.9988	0.0911	67.1	32.8424	-0.1278
62.2	33.0039	0.0770	67.2	32.8239	-0.1025
62.3	33.0337	0.1007	67.3	32.8061	-0.0749
62.4	33.0634	0.0798	67.4	32.7902	-0.0454
62.5	33.0700	0.0741	67.5	32.7830	-0.0115
62.6	33.0794	0.0439	67.6	32.7864	0.0253
62.7	33.0918	-0.0004	67.7	32.7907	0.0612
62.8	33.0708	0.0081	67.8	32.8078	0.0908
62.9	33.0802	-0.0351	67.9	32.8291	0.1195
63.0	33.0961	-0.0312	68.0	32.8545	0.1425
63.1	33.0617	-0.0627	68.1	32.8828	0.1647
63.2	33.0380	-0.0905	68.2	32.9174	0.1758
63.3	33.0081	-0.1134	68.3	32.9494	0.1792
63.4	32.9876	-0.1303	68.4	32.9893	0.1787
63.5	32.9766	-0.1268	68.5	33.0259	0.1716
63.6	32.9591	-0.1242	68.6	33.0594	0.1540
63.7	32.9166	-0.1152	68.7	33.0865	0.1325
63.8	32.9257	-0.1091	68.8	33.1134	0.1062
63.9	32.8751	-0.1029	68.9	33.1298	0.0745
64.0	32.8458	-0.0908	69.0	33.1399	0.0373
64.1	32.8462	-0.0739	69.1	33.1461	-0.0021
64.2	32.8306	-0.0475	69.2	33.1426	-0.0358
64.3	32.8113	-0.0230	69.3	33.1339	-0.0753
64.4	32.8033	0.0085	69.4	33.1165	-0.1070
64.5	32.8266	0.0406	69.5	33.0920	-0.1368
64.6	32.8352	0.0594	69.6	33.0622	-0.1606
64.7	32.8451	0.0977	69.7	33.0284	-0.1783
64.8	32.8630	0.1115	69.8	32.9916	-0.1894
64.9	32.8765	0.1259	69.9	32.9535	-0.1951
65.0	32.9218	0.1460	70.0	32.9140	-0.1904
					-0.1200
					-1.1476

TABLE VIII (Continued)

 $\theta_0 = 60$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
70.1	32.8756	-0.1771	75.1	33.1470	0.1248
70.2	32.8445	-0.1579	75.2	33.1685	0.0851
70.3	32.8146	-0.1334	75.3	33.1819	0.0414
70.4	32.7899	-0.1033	75.4	33.1864	-0.0041
70.5	32.7723	-0.0681	75.5	33.1811	-0.0494
70.6	32.7632	-0.0296	75.6	33.1675	-0.0930
70.7	32.7595	0.0099	75.7	33.1451	-0.1329
70.8	32.7657	0.0495	75.8	33.1149	-0.1679
70.9	32.7786	0.0866	75.9	33.0787	-0.1957
71.0	32.7992	0.1214	76.0	33.0375	-0.2162
71.1	32.8255	0.1508	76.1	32.9930	-0.2277
71.2	32.8573	0.1765	76.2	32.9472	-0.2304
71.3	32.8940	0.1916	76.3	32.9015	-0.2242
71.4	32.9322	0.2018	76.4	32.8580	-0.2086
71.5	32.9738	0.2040	76.5	32.8184	-0.1849
71.6	33.0145	0.1977	76.6	32.7845	-0.1539
71.7	33.0527	0.1837	76.7	32.7572	-0.1165
71.8	33.0874	0.1606	76.8	32.7376	-0.0745
71.9	33.1185	0.1323	76.9	32.7268	-0.0292
72.0	33.1412	0.0994	77.0	32.7252	0.0170
72.1	33.1587	0.0612	77.1	32.7326	0.0632
72.2	33.1674	0.0197	77.2	32.7494	0.1068
72.3	33.1678	-0.0225	77.3	32.7741	0.1464
72.4	33.1593	-0.0635	77.4	32.8061	0.1803
72.5	33.1424	-0.1027	77.5	32.8447	0.2075
72.6	33.1195	-0.1379	77.6	32.8878	0.2266
72.7	33.0897	-0.1671	77.7	32.9342	0.2366
72.8	33.0538	-0.1907	77.8	32.9818	0.2372
72.9	33.0140	-0.2062	77.9	33.0286	0.2282
73.0	32.9717	-0.2137	78.0	33.0730	0.2103
73.1	32.9298	-0.2128	78.1	33.1129	0.1837
73.2	32.8871	-0.2027	78.2	33.1469	0.1497
73.3	32.8482	-0.1847	78.3	33.1733	0.1093
73.4	32.8137	-0.1603	78.4	33.1912	0.0645
73.5	32.7848	-0.1280	78.5	33.1999	0.0169
73.6	32.7624	-0.0915	78.6	33.1988	-0.0316
73.7	32.7474	-0.0509	78.7	33.1880	-0.0790
73.8	32.7408	-0.0091	78.8	33.1679	-0.1235
73.9	32.7423	0.0347	78.9	33.1394	-0.1629
74.0	32.7534	0.0768	79.0	33.1035	-0.1960
74.1	32.7724	0.1163	79.1	33.0618	-0.2212
74.2	32.7987	0.1514	79.2	33.0158	-0.2376
74.3	32.8317	0.1809	79.3	32.9675	-0.2444
74.4	32.8691	0.2030	79.4	32.9187	-0.2414
74.5	32.9111	0.2174	79.5	32.8715	-0.2290
74.6	32.9554	0.2228	79.6	32.8278	-0.2074
74.7	32.9995	0.2200	79.7	32.7890	-0.1776
74.8	33.0424	0.2079	79.8	32.7568	-0.1408
74.9	33.0828	0.1875	79.9	32.7327	-0.0982
75.0	33.1181	0.1597	80.0	32.7175	-0.0517
					-0.1897
					-0.1916
					-0.1935
					-0.1955
					-0.1970
					-0.1988
					-0.2002
					-0.2017
					-0.2029
					-0.2040
					-0.2047
					-0.2053
					-0.2061
					-0.2063
					-0.2064
					-0.2064
					-0.2063
					-0.2061
					-0.2058
					-0.2055
					-0.2053
					-0.2048
					-0.2046
					-0.2046
					-0.2044
					-0.2045
					-0.2044
					-0.2046
					-0.2047
					-0.2050
					-0.2054
					-0.2059
					-0.2062
					-0.2066
					-0.2070
					-0.2072
					-0.2073
					-0.2073
					-0.2072
					-0.2069
					-0.2064
					-0.2057
					-0.2048
					-0.2036
					-0.2024
					-0.2009
					-0.1993
					-0.1975
					-0.1957
					-0.1938

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
80.1	32.7117	-0.0030	-0.1917	-0.9095	85.1	33.1829	-0.1416	-0.0746	-0.8112
80.2	32.7156	0.0460	-0.1898	-0.9067	85.2	33.1504	-0.1837	-0.0719	-0.8099
80.3	32.7290	0.0933	-0.1877	-0.9041	85.3	33.1100	-0.2184	-0.0692	-0.8086
80.4	32.7516	0.1371	-0.1858	-0.9016	85.4	33.0636	-0.2443	-0.0663	-0.8072
80.5	32.7825	0.1757	-0.1838	-0.8992	85.5	33.0129	-0.2604	-0.0634	-0.8059
80.6	32.8205	0.2074	-0.1820	-0.8969	85.6	32.9601	-0.2661	-0.0602	-0.8046
80.7	32.8643	0.2311	-0.1801	-0.8947	85.7	32.9072	-0.2612	-0.0570	-0.8034
80.8	32.9118	0.2457	-0.1784	-0.8926	85.8	32.8563	-0.2460	-0.0536	-0.8022
80.9	32.9616	0.2507	-0.1768	-0.8904	85.9	32.8095	-0.2210	-0.0502	-0.8012
81.0	33.0114	0.2456	-0.1752	-0.8883	86.0	32.7686	-0.1872	-0.0466	-0.8003
81.1	33.0594	0.2307	-0.1738	-0.8861	86.1	32.7352	-0.1460	-0.0429	-0.7995
81.2	33.1036	0.2063	-0.1723	-0.8840	86.2	32.7106	-0.0990	-0.0392	-0.7990
81.3	33.1421	0.1736	-0.1709	-0.8817	86.3	32.6956	-0.0480	-0.0354	-0.7985
81.4	33.1735	0.1338	-0.1696	-0.8793	86.4	32.6911	0.0049	-0.0317	-0.7983
81.5	33.1963	0.0884	-0.1682	-0.8769	86.5	32.6970	0.0578	-0.0279	-0.7982
81.6	33.2094	0.0393	-0.1669	-0.8744	86.6	32.7133	0.1085	-0.0242	-0.7983
81.7	33.2126	-0.0116	-0.1654	-0.8717	86.7	32.7393	0.1550	-0.0205	-0.7986
81.8	33.2056	-0.0621	-0.1639	-0.8690	86.8	32.7741	0.1957	-0.0169	-0.7990
81.9	33.1884	-0.1102	-0.1623	-0.8662	86.9	32.8162	0.2287	-0.0134	-0.7995
82.0	33.1621	-0.1540	-0.1606	-0.8633	87.0	32.8643	0.2528	-0.0100	-0.8002
82.1	33.1274	-0.1917	-0.1587	-0.8603	87.1	32.9162	0.2669	-0.0068	-0.8010
82.2	33.0861	-0.2217	-0.1567	-0.8574	87.2	32.9701	0.2705	-0.0036	-0.8018
82.3	33.0394	-0.2428	-0.1544	-0.8544	87.3	33.0237	0.2632	-0.0006	-0.8027
82.4	32.9895	-0.2542	-0.1521	-0.8515	87.4	33.0750	0.2454	0.0022	-0.8036
82.5	32.9384	-0.2554	-0.1495	-0.8486	87.5	33.1218	0.2176	0.0050	-0.8045
82.6	32.8881	-0.2466	-0.1468	-0.8458	87.6	33.1622	0.1810	0.0076	-0.8054
82.7	32.8405	-0.2278	-0.1439	-0.8431	87.7	33.1945	0.1370	0.0101	-0.8062
82.8	32.7976	-0.2001	-0.1409	-0.8405	87.8	33.2174	0.0873	0.0125	-0.8070
82.9	32.7610	-0.1644	-0.1378	-0.8381	87.9	33.2299	0.0339	0.0149	-0.8077
83.0	32.7322	-0.1221	-0.1346	-0.8359	88.0	33.2315	-0.0210	0.0172	-0.8083
83.1	32.7122	-0.0751	-0.1313	-0.8337	88.1	33.2220	-0.0751	0.0195	-0.8089
83.2	32.7019	-0.0249	-0.1280	-0.8318	88.2	33.2019	-0.1262	0.0218	-0.8093
83.3	32.7017	0.0264	-0.1246	-0.8301	88.3	33.1720	-0.1723	0.0242	-0.8097
83.4	32.7117	0.0768	-0.1213	-0.8285	88.4	33.1335	-0.2115	0.0266	-0.8101
83.5	32.7314	0.1243	-0.1180	-0.8271	88.5	33.0879	-0.2422	0.0291	-0.8104
83.6	32.7602	0.1670	-0.1147	-0.8258	88.6	33.0371	-0.2632	0.0317	-0.8106
83.7	32.7969	0.2033	-0.1115	-0.8247	88.7	32.9832	-0.2736	0.0344	-0.8109
83.8	32.8402	0.2318	-0.1084	-0.8237	88.8	32.9284	-0.2731	0.0372	-0.8112
83.9	32.8893	0.2511	-0.1053	-0.8227	88.9	32.8748	-0.2618	0.0401	-0.8115
84.0	32.9395	0.2605	-0.1024	-0.8218	89.0	32.8245	-0.2400	0.0431	-0.8119
84.1	32.9917	0.2596	-0.0996	-0.8210	89.1	32.7795	-0.2088	0.0462	-0.8124
84.2	33.0428	0.2483	-0.0969	-0.8202	89.2	32.7416	-0.1693	0.0494	-0.8131
84.3	33.0908	0.2269	-0.0943	-0.8194	89.3	32.7123	-0.1231	0.0526	-0.8138
84.4	33.1336	0.1964	-0.0917	-0.8186	89.4	32.6927	-0.0720	0.0559	-0.8147
84.5	33.1696	0.1578	-0.0892	-0.8178	89.5	32.6835	-0.0180	0.0592	-0.8158
84.6	33.1972	0.1128	-0.0868	-0.8168	89.6	32.6851	0.0367	0.0625	-0.8170
84.7	33.2152	0.0629	-0.0844	-0.8159	89.7	32.6975	0.0902	0.0657	-0.8185
84.8	33.2230	0.0105	-0.0820	-0.8148	89.8	32.7202	0.1402	0.0690	-0.8200
84.9	33.2200	-0.0425	-0.0796	-0.8137	89.9	32.7524	0.1848	0.0721	-0.8218
85.0	33.2065	-0.0940	-0.0771	-0.8125	90.0	32.7926	0.2223	0.0751	-0.8237

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
90.1	32.8400	0.2511	95.1	32.9176	-0.2860
90.2	32.8920	0.2701	95.2	32.8616	-0.2721
90.3	32.9469	0.2783	95.3	32.8096	-0.2475
90.4	33.0025	0.2755	95.4	32.7635	-0.2131
90.5	33.0566	0.2617	95.5	32.7252	-0.1703
90.6	33.1070	0.2373	95.6	32.6960	-0.1209
90.7	33.1515	0.2032	95.7	32.6772	-0.0666
90.8	33.1885	0.1609	95.8	32.6694	-0.0096
90.9	33.2163	0.1119	95.9	32.6730	0.0477
91.0	33.2337	0.0583	96.0	32.6878	0.1033
91.1	33.2400	0.0022	96.1	32.7134	0.1550
91.2	33.2350	-0.0541	96.2	32.7487	0.2007
91.3	33.2188	-0.1032	96.3	32.7923	0.2385
91.4	33.1921	-0.1581	96.4	32.8428	0.2671
91.5	33.1560	-0.2015	96.5	32.8980	0.2852
91.6	33.1119	-0.2369	96.6	32.9558	0.2919
91.7	33.0617	-0.2627	96.7	33.0139	0.2870
91.8	33.0074	-0.2780	96.8	33.0701	0.2707
91.9	32.9512	-0.2822	96.9	33.1219	0.2433
92.0	32.8953	-0.2751	97.0	33.1674	0.2062
92.1	32.8420	-0.2571	97.1	33.2046	0.1605
92.2	32.7933	-0.2290	97.2	33.2320	0.1083
92.3	32.7512	-0.1918	97.3	33.2483	0.0516
92.4	32.7173	-0.1470	97.4	33.2530	-0.0073
92.5	32.6928	-0.0964	97.5	33.2458	-0.0660
92.6	32.6789	-0.0420	97.6	33.2269	-0.1220
92.7	32.6759	0.0141	97.7	33.1972	-0.1731
92.8	32.6840	0.0698	97.8	33.1579	-0.2173
92.9	32.7030	0.1229	97.9	33.1106	-0.2526
93.0	32.7321	0.1712	98.0	33.0573	-0.2778
93.1	32.7702	0.2129	98.1	33.0001	-0.2919
93.2	32.8159	0.2463	98.2	32.9412	-0.2943
93.3	32.8674	0.2701	98.3	32.8832	-0.2849
93.4	32.9228	0.2832	98.4	32.8282	-0.2643
93.5	32.9798	0.2851	98.5	32.7784	-0.2332
93.6	33.0361	0.2756	98.6	32.7358	-0.1929
93.7	33.0896	0.2550	98.7	32.7020	-0.1451
93.8	33.1380	0.2241	98.8	32.6783	-0.0915
93.9	33.1794	0.1840	98.9	32.6656	-0.0343
94.0	33.2119	0.1364	99.0	32.6645	0.0243
94.1	33.2343	0.0832	99.1	32.6749	0.0820
94.2	33.2456	0.0265	99.2	32.6965	0.1366
94.3	33.2453	-0.0314	99.3	32.7284	0.1859
94.4	33.2335	-0.0880	99.4	32.7696	0.2280
94.5	33.2105	-0.1412	99.5	32.8183	0.2613
94.6	33.1773	-0.1886	99.6	32.8728	0.2843
94.7	33.1354	-0.2285	99.7	32.9309	0.2960
94.8	33.0863	-0.2591	99.8	32.9903	0.2960
94.9	33.0322	-0.2794	99.9	33.0486	0.2842
95.0	32.9752	-0.2884	100.0	33.1036	0.2609
					0.1498 -1.0389

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
100.1	33.1529	0.2270	105.1	32.6662	-0.0850
100.2	33.1945	0.1839	105.2	32.6551	-0.0255
100.3	33.2267	0.1333	105.3	32.6559	0.0350
100.4	33.2482	0.0771	105.4	32.6686	0.0942
100.5	33.2579	0.0178	105.5	32.6927	0.1498
100.6	33.2556	-0.0424	105.6	32.7274	0.1996
100.7	33.2413	-0.1009	105.7	32.7713	0.2416
100.8	33.2155	-0.1553	105.8	32.8227	0.2743
100.9	33.1794	-0.2034	105.9	32.8797	0.2961
101.0	33.1344	-0.2434	106.0	32.9400	0.3062
101.1	33.0824	-0.2735	106.1	33.0013	0.3042
101.2	33.0255	-0.2926	106.2	33.0611	0.2900
101.3	32.9660	-0.2999	106.3	33.1169	0.2640
101.4	32.9063	-0.2954	106.4	33.1666	0.2274
101.5	32.8487	-0.2791	106.5	33.2030	0.1816
101.6	32.7956	-0.2517	106.6	33.2395	0.1282
101.7	32.7490	-0.2144	106.7	33.2596	0.0696
101.8	32.7107	-0.1687	106.8	33.2676	0.0081
101.9	32.6822	-0.1164	106.9	33.2631	-0.0538
102.0	32.6646	-0.0595	107.0	33.2463	-0.1136
102.1	32.6585	-0.0002	107.1	33.2179	-0.1687
102.2	32.6642	0.0591	107.2	33.1790	-0.2170
102.3	32.6815	0.1162	107.3	33.1313	-0.2566
102.4	32.7097	0.1689	107.4	33.0767	-0.2857
102.5	32.7479	0.2150	107.5	33.0174	-0.3034
102.6	32.7944	0.2527	107.6	32.9560	-0.3089
102.7	32.8476	0.2806	107.7	32.8947	-0.3022
102.8	32.9054	0.2974	107.8	32.8361	-0.2834
102.9	32.9656	0.3024	107.9	32.7824	-0.2534
103.0	33.0256	0.2954	108.0	32.7358	-0.2135
103.1	33.0832	0.2765	108.1	32.6980	-0.1652
103.2	33.1360	0.2464	108.2	32.6704	-0.1104
103.3	33.1818	0.2063	108.3	32.6542	-0.0513
103.4	33.2187	0.1578	108.4	32.6500	0.0099
103.5	33.2452	0.1028	108.5	32.6579	0.0707
103.6	33.2601	0.0435	108.6	32.6776	0.1288
103.7	33.2629	-0.0176	108.7	32.7085	0.1820
103.8	33.2534	-0.0780	108.8	32.7492	0.2281
103.9	33.2319	-0.1353	108.9	32.7984	0.2653
104.0	33.1994	-0.1872	109.0	32.8540	0.2922
104.1	33.1572	-0.2314	109.1	32.9140	0.3074
104.2	33.1071	-0.2663	109.2	32.9760	0.3105
104.3	33.0511	-0.2905	109.3	33.0375	0.3012
104.4	32.9915	-0.3030	109.4	33.0960	0.2798
104.5	32.9306	-0.3034	109.5	33.1492	0.2471
104.6	32.8710	-0.2917	109.6	33.1949	0.2043
104.7	32.8149	-0.2685	109.7	33.2311	0.1532
104.8	32.7646	-0.2347	109.8	33.2564	0.0958
104.9	32.7220	-0.1916	109.9	33.2697	0.0344
105.0	32.6888	-0.1411	110.0	33.2705	-0.0285
					0.0102

TABLE VIII (Continued)

 $\theta_0 = 60$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
110.1	33.2586	-0.0902	115.1	32.7523	0.2402
110.2	33.2345	-0.1483	115.2	32.8038	0.2766
110.3	33.1994	-0.2004	115.3	32.8616	0.3021
110.4	33.1546	-0.2443	115.4	32.9234	0.3157
110.5	33.1019	-0.2784	115.5	32.9869	0.3168
110.6	33.0436	-0.3012	115.6	33.0494	0.3052
110.7	32.9820	-0.3120	115.7	33.1085	0.2813
110.8	32.9196	-0.3103	115.8	33.1618	0.2460
110.9	32.8588	-0.2962	115.9	33.2070	0.2007
111.0	32.8021	-0.2705	116.0	33.2423	0.1472
111.1	32.7517	-0.2341	116.1	33.2661	0.0877
111.2	32.7096	-0.1885	116.2	33.2776	0.0245
111.3	32.6772	-0.1355	116.3	33.2762	-0.0397
111.4	32.6560	-0.0772	116.4	33.2619	-0.1024
111.5	32.6466	-0.0159	116.5	33.2353	-0.1608
111.6	32.6495	0.0461	116.6	33.1976	-0.2128
111.7	32.6645	0.1063	116.7	33.1503	-0.2561
111.8	32.6912	0.1625	116.8	33.0954	-0.2890
111.9	32.7284	0.2123	116.9	33.0351	-0.3103
112.0	32.7748	0.2540	117.0	32.9719	-0.3192
112.1	32.8286	0.2856	117.1	32.9082	-0.3153
112.2	32.8878	0.3061	117.2	32.8467	-0.2989
112.3	32.9499	0.3144	117.3	32.7898	-0.2707
112.4	33.0127	0.3102	117.4	32.7396	-0.2318
112.5	33.0734	0.2936	117.5	32.6981	-0.1839
112.6	33.1298	0.2651	117.6	32.6670	-0.1287
112.7	33.1794	0.2259	117.7	32.6473	-0.0685
112.8	33.2203	0.1775	117.8	32.6398	-0.0057
112.9	33.2506	0.1217	117.9	32.6449	0.0574
113.0	33.2692	0.0610	118.0	32.6622	0.1184
113.1	33.2753	-0.0023	118.1	32.6913	0.1747
113.2	33.2685	-0.0655	118.2	32.7310	0.2244
113.3	33.2493	-0.1261	118.3	32.7797	0.2652
113.4	33.2182	-0.1816	118.4	32.8357	0.2957
113.5	33.1767	-0.2297	118.5	32.8967	0.3145
113.6	33.1265	-0.2685	118.6	32.9604	0.3209
113.7	33.0697	-0.2964	118.7	33.0243	0.3145
113.8	33.0085	-0.3124	118.8	33.0857	0.2955
113.9	32.9454	-0.3160	118.9	33.1422	0.2645
114.0	32.8830	-0.3069	119.0	33.1914	0.2228
114.1	32.8237	-0.2857	119.1	33.2314	0.1720
114.2	32.7698	-0.2532	119.2	33.2605	0.1141
114.3	32.7235	-0.2108	119.3	33.2773	0.0516
114.4	32.6865	-0.1601	119.4	33.2813	-0.0131
114.5	32.6602	-0.1031	119.5	33.2722	-0.0773
114.6	32.6457	-0.0421	119.6	33.2505	-0.1384
114.7	32.6434	0.0205	119.7	33.2169	-0.1939
114.8	32.6536	0.0825	119.8	33.1730	-0.2414
114.9	32.6757	0.1412	119.9	33.1205	-0.2792
115.0	32.7090	0.1945	120.0	33.0616	-0.3057
					-0.0413
					-0.0415
					-0.0419
					-0.0426
					-0.0434
					-0.0444
					-0.0456
					-0.0470
					-0.0485
					-0.0501
					-0.0518
					-0.0536
					-0.0553
					-0.0570
					-0.0586
					-0.0601
					-0.0614
					-0.0625
					-0.0634
					-0.0641
					-0.0646
					-0.0649
					-0.0648
					-0.0645
					-0.0641
					-0.0637
					-0.0632
					-0.0627
					-0.0622
					-0.0616
					-0.0613
					-0.0612
					-0.0611
					-0.0612
					-0.0613
					-0.0615
					-0.0617
					-0.0618
					-0.0616
					-0.0613
					-0.0609
					-0.0602
					-0.0593
					-0.0582
					-0.0569
					-0.0555
					-0.0538
					-0.0521
					-0.0502

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
120.1	32.9987	-0.3199	125.1	33.3977	0.2959
120.2	32.9344	-0.3213	125.2	33.1541	0.2625
120.3	32.8711	-0.3100	125.3	33.2027	0.2184
120.4	32.8115	-0.2863	125.4	33.2416	0.1655
120.5	32.7578	-0.2514	125.5	33.2691	0.1057
120.6	32.7121	-0.2066	125.6	33.2841	0.0415
120.7	32.6761	-0.1538	125.7	33.2859	-0.0243
120.8	32.6513	-0.0949	125.8	33.2745	-0.0892
120.9	32.6386	-0.0323	125.9	33.2503	-0.1505
121.0	32.6384	0.0315	126.0	33.2143	-0.2057
121.1	32.6509	0.0942	126.1	33.1681	-0.2525
121.2	32.6754	0.1533	126.2	33.1135	-0.2890
121.3	32.7111	0.2064	126.3	33.0528	-0.3139
121.4	32.7567	0.2515	126.4	32.9885	-0.3261
121.5	32.8104	0.2868	126.5	32.9231	-0.3254
121.6	32.8701	0.3108	126.6	32.8593	-0.3117
121.7	32.9335	0.3226	126.7	32.7996	-0.2857
121.8	32.9981	0.3215	126.8	32.7463	-0.2484
121.9	33.0614	0.3075	126.9	32.7014	-0.2014
122.0	33.1207	0.2812	127.0	32.6667	-0.1465
122.1	33.1737	0.2435	127.1	32.6436	-0.0860
122.2	33.2182	0.1958	127.2	32.6328	-0.0220
122.3	33.2523	0.1402	127.3	32.6348	0.0428
122.4	33.2745	0.0787	127.4	32.6495	0.1060
122.5	33.2840	0.0140	127.5	32.6764	0.1651
122.6	33.2803	-0.0513	127.6	32.7144	0.2178
122.7	33.2636	-0.1145	127.7	32.7622	0.2621
122.8	33.2346	-0.1730	127.8	32.8178	0.2961
122.9	33.1944	-0.2246	127.9	32.8793	0.3184
123.0	33.1448	-0.2670	128.0	32.9440	0.3282
123.1	33.0879	-0.2986	128.1	33.0096	0.3249
123.2	33.0258	-0.3182	128.2	33.0733	0.3085
123.3	32.9612	-0.3250	128.3	33.1327	0.2798
123.4	32.8967	-0.3188	128.4	33.1851	0.2397
123.5	32.8347	-0.3001	128.5	33.2286	0.1898
123.6	32.7778	-0.2694	128.6	33.2613	0.1322
123.7	32.7282	-0.2282	128.7	33.2817	0.0691
123.8	32.6876	-0.1781	128.8	33.2891	0.0032
123.9	32.6578	-0.1210	128.9	33.2831	-0.0630
124.0	32.6399	-0.0592	129.0	33.2640	-0.1265
124.1	32.6344	0.0050	129.1	33.2325	-0.1849
124.2	32.6417	0.0690	129.2	33.1901	-0.2358
124.3	32.6614	0.1303	129.3	33.1383	-0.2770
124.4	32.6928	0.1866	129.4	33.0795	-0.3071
124.5	32.7348	0.2357	129.5	33.0159	-0.3248
124.6	32.7858	0.2756	129.6	32.9502	-0.3295
124.7	32.8437	0.3047	129.7	32.8850	-0.3211
124.8	32.9064	0.3217	129.8	32.8229	-0.3000
124.9	32.9713	0.3260	129.9	32.7663	-0.2670
125.0	33.0360	0.3174	130.0	32.7173	-0.2235
					-0.0626
					-0.9725

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
130.1	32.6780	-0.1713	135.1	33.2932	-0.0081
130.2	32.6497	-0.1125	135.2	33.2848	-0.0748
130.3	32.6336	-0.0492	135.3	33.2633	-0.1384
130.4	32.6302	0.0160	135.4	33.2295	-0.1964
130.5	32.6397	0.0806	135.5	33.1847	-0.2464
130.6	32.6618	0.1421	135.6	33.1310	-0.2864
130.7	32.6956	0.1981	135.7	33.0705	-0.3148
130.8	32.7398	0.2464	135.8	33.0056	-0.3305
130.9	32.7927	0.2851	135.9	32.9390	-0.3330
131.0	32.8524	0.3126	136.0	32.8733	-0.3223
131.1	32.9165	0.3278	136.1	32.8112	-0.2988
131.2	32.9825	0.3300	136.2	32.7551	-0.2635
131.3	33.0478	0.3190	136.3	32.7070	-0.2179
131.4	33.1096	0.2951	136.4	32.6690	-0.1638
131.5	33.1656	0.2594	136.5	32.6424	-0.1033
131.6	33.2134	0.2130	136.6	32.6282	-0.0388
131.7	33.2510	0.1580	136.7	32.6270	0.0272
131.8	33.2768	0.0965	136.8	32.6388	0.0922
131.9	33.2898	0.0310	136.9	32.6632	0.1537
132.0	33.2894	-0.0358	137.0	32.6993	0.2092
132.1	33.2756	-0.1012	137.1	32.7456	0.2566
132.2	33.2489	-0.1624	137.2	32.8005	0.2939
132.3	33.2106	-0.2170	137.3	32.8618	0.3197
132.4	33.1622	-0.2628	137.4	32.9271	0.3329
132.5	33.1056	-0.2979	137.5	32.9939	0.3329
132.6	33.0433	-0.3210	137.6	33.0596	0.3195
132.7	32.9778	-0.3313	137.7	33.1213	0.2933
132.8	32.9116	-0.3282	137.8	33.1767	0.2552
132.9	32.8475	-0.3122	137.9	33.2234	0.2068
133.0	32.7880	-0.2838	138.0	33.2596	0.1498
133.1	32.7352	-0.2443	138.1	33.2836	0.0867
133.2	32.6914	-0.1952	138.2	33.2945	0.0201
133.3	32.6582	-0.1385	138.3	33.2918	-0.0475
133.4	32.6368	-0.0764	138.4	33.2755	-0.1131
133.5	32.6280	-0.0113	138.5	33.2465	-0.1740
133.6	32.6322	0.0542	138.6	33.2059	-0.2279
133.7	32.6492	0.1177	138.7	33.1554	-0.2725
133.8	32.6784	0.1766	138.8	33.0971	-0.3061
133.9	32.7187	0.2287	138.9	33.0333	-0.3273
134.0	32.7686	0.2719	139.0	32.9668	-0.3354
134.1	32.8261	0.3044	139.1	32.9000	-0.3301
134.2	32.8890	0.3250	139.2	32.8358	-0.3117
134.3	32.9550	0.3327	139.3	32.7766	-0.2810
134.4	33.0212	0.3271	139.4	32.7247	-0.2393
134.5	33.0852	0.3084	139.5	32.6821	-0.1882
134.6	33.1443	0.2773	139.6	32.6504	-0.1298
134.7	33.1960	0.2349	139.7	32.6309	-0.0664
134.8	33.2383	0.1829	139.8	32.6242	-0.0003
134.9	33.2694	0.1235	139.9	32.6306	0.0658
135.0	33.2880	0.0589	140.0	32.6500	0.1293

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
140.1	32.6815	0.1879	145.1	33.0879	-0.3135
140.2	32.7240	0.2392	145.2	33.0229	-0.3327
140.3	32.7758	0.2811	145.3	32.9555	-0.3386
140.4	32.8350	0.3121	145.4	32.8884	-0.3310
140.5	32.8993	0.3307	145.5	32.8242	-0.3103
140.6	32.9662	0.3363	145.6	32.7655	-0.2773
140.7	33.0329	0.3284	145.7	32.7146	-0.2335
140.8	33.0969	0.3073	145.8	32.6733	-0.1806
140.9	33.1556	0.2738	145.9	32.6433	-0.1206
141.0	33.2064	0.2293	146.0	32.6258	-0.0559
141.1	33.2474	0.1753	146.1	32.6212	0.0109
141.2	33.2768	0.1142	146.2	32.6300	0.0774
141.3	33.2933	0.0483	146.3	32.6516	0.1408
141.4	33.2962	-0.0195	146.4	32.6854	0.1989
141.5	33.2855	-0.0866	146.5	32.7299	0.2492
141.6	33.2616	-0.1501	146.6	32.7836	0.2898
141.7	33.2255	-0.2075	146.7	32.8444	0.3190
141.8	33.1786	-0.2565	146.8	32.9099	0.3356
141.9	33.1230	-0.2950	146.9	32.9776	0.3390
142.0	33.0609	-0.3216	147.0	33.0447	0.3287
142.1	32.9948	-0.3353	147.1	33.1086	0.3053
142.2	32.9275	-0.3356	147.2	33.1666	0.2696
142.3	32.8616	-0.3225	147.3	33.2164	0.2228
142.4	32.7997	-0.2967	147.4	33.2559	0.1670
142.5	32.7442	-0.2592	147.5	33.2834	0.1043
142.6	32.6973	-0.2115	147.6	33.2978	0.0373
142.7	32.6607	-0.1556	147.7	33.2985	-0.0312
142.8	32.6359	-0.0937	147.8	33.2854	-0.0985
142.9	32.6238	-0.0281	147.9	33.2591	-0.1617
143.0	32.6248	0.0386	148.0	33.2206	-0.2183
143.1	32.6389	0.1038	148.1	33.1717	-0.2661
143.2	32.6656	0.1651	148.2	33.1143	-0.3030
143.3	32.7038	0.2199	148.3	33.0508	-0.3277
143.4	32.7522	0.2662	148.4	32.9838	-0.3393
143.5	32.8089	0.3021	148.5	32.9159	-0.3372
143.6	32.8717	0.3261	148.6	32.8499	-0.3218
143.7	32.9381	0.3372	148.7	32.7884	-0.2937
143.8	33.0055	0.3349	148.8	32.7337	-0.2540
143.9	33.0713	0.3192	148.9	32.6881	-0.2044
144.0	33.1328	0.2906	149.0	32.6531	-0.1469
144.1	33.1874	0.2502	149.1	32.6302	-0.0836
144.2	33.2330	0.1997	149.2	32.6201	-0.0171
144.3	33.2675	0.1410	149.3	32.6234	0.0501
144.4	33.2896	0.0765	149.4	32.6398	0.1154
144.5	33.2983	0.0088	149.5	32.6687	0.1763
144.6	33.2932	-0.0592	149.6	32.7091	0.2303
144.7	33.2746	-0.1249	149.7	32.7595	0.2753
144.8	33.2432	-0.1854	149.8	32.8178	0.3096
144.9	33.2004	-0.2384	149.9	32.8819	0.3317
145.0	33.1479	-0.2817	150.0	32.9493	0.3406

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
150.1	33.0172	0.3360	155.1	32.7236	-0.2482
150.2	33.0831	0.3179	155.2	32.6793	-0.1967
150.3	33.1441	0.2870	155.3	32.6460	-0.1376
150.4	33.1978	0.2445	155.4	32.6251	-0.0731
150.5	33.2419	0.1920	155.5	32.6172	-0.0058
150.6	33.2748	0.1316	155.6	32.6227	0.0618
150.7	33.2948	0.0658	155.7	32.6414	0.1269
150.8	33.3012	-0.0027	155.8	32.6726	0.1872
150.9	33.2938	-0.0711	155.9	32.7151	0.2403
151.0	33.2728	-0.1366	156.0	32.7673	0.2839
151.1	33.2391	-0.1965	156.1	32.8273	0.3165
151.2	33.1942	-0.2484	156.2	32.8926	0.3366
151.3	33.1398	-0.2902	156.3	32.9607	0.3433
151.4	33.0783	-0.3203	156.4	33.0290	0.3364
151.5	33.0121	-0.3374	156.5	33.0947	0.3159
151.6	32.9440	-0.3411	156.6	33.1551	0.2828
151.7	32.8766	-0.3311	156.7	33.2077	0.2381
151.8	32.8127	-0.3081	156.8	33.2504	0.1837
151.9	32.7547	-0.2729	156.9	33.2814	0.1218
152.0	32.7049	-0.2270	157.0	33.2993	0.0549
152.1	32.6651	-0.1723	157.1	33.3035	-0.0143
152.2	32.6369	-0.1109	157.2	33.2937	-0.0830
152.3	32.6214	-0.0451	157.3	33.2703	-0.1482
152.4	32.6191	0.0224	157.4	33.2343	-0.2073
152.5	32.6301	0.0890	157.5	33.1873	-0.2581
152.6	32.6540	0.1522	157.6	33.1311	-0.2983
152.7	32.6900	0.2096	157.7	33.0682	-0.3264
152.8	32.7366	0.2588	157.8	33.0010	-0.3414
152.9	32.7921	0.2978	157.9	32.9324	-0.3428
153.0	32.8543	0.3253	158.0	32.8649	-0.3305
153.1	32.9209	0.3398	158.1	32.8014	-0.3052
153.2	32.9892	0.3409	158.2	32.7442	-0.2678
153.3	33.0565	0.3283	158.3	32.6956	-0.2200
153.4	33.1200	0.3025	158.4	32.6574	-0.1636
153.5	33.1773	0.2645	158.5	32.6311	-0.1008
153.6	33.2259	0.2158	158.6	32.6177	-0.0341
153.7	33.2637	0.1582	158.7	32.6176	0.0339
153.8	33.2893	0.0941	158.8	32.6310	0.1006
153.9	33.3015	0.0261	158.9	32.6572	0.1634
154.0	33.2999	-0.0430	159.0	32.6953	0.2200
154.1	33.2844	-0.1103	159.1	32.7438	0.2679
154.2	33.2557	-0.1731	159.2	32.8010	0.3054
154.3	33.2151	-0.2288	159.3	32.8646	0.3309
154.4	33.1642	-0.2752	159.4	32.9321	0.3433
154.5	33.1051	-0.3104	159.5	33.0009	0.3421
154.6	33.0403	-0.3332	159.6	33.0682	0.3271
154.7	32.9725	-0.3425	159.7	33.1313	0.2990
154.8	32.9042	-0.3381	159.8	33.1877	0.2588
154.9	32.8383	-0.3204	159.9	33.2349	0.2081
155.0	32.7773	-0.2900	160.0	33.2711	0.1488
					0.0302
					-0.9772
					0.0310
					-0.9768
					0.0320
					-0.9765
					0.0331
					-0.9764
					0.0342
					-0.9766
					0.0353
					-0.9769
					0.0364
					-0.9774
					0.0375
					-0.9781
					0.0384
					-0.9790
					0.0392
					-0.9800
					0.0398
					-0.9812
					0.0402
					-0.9824
					0.0405
					-0.9837
					0.0405
					-0.9850
					0.0403
					-0.9863
					0.0400
					-0.9875
					0.0394
					-0.9886
					0.0387
					-0.9895
					0.0379
					-0.9903
					0.0370
					-0.9909
					0.0361
					-0.9913
					0.0351
					-0.9914
					0.0342
					-0.9912
					0.0334
					-0.9918
					0.0327
					-0.9908
					0.0321
					-0.9902
					0.0317
					-0.9896
					0.0316
					-0.9889
					0.0316
					-0.9881
					0.0318
					-0.9874
					0.0322
					-0.9867
					0.0328
					-0.9861
					0.0335
					-0.9856
					0.0344
					-0.9853
					0.0354
					-0.9851
					0.0364
					-0.9852
					0.0375
					-0.9854
					0.0386
					-0.9858
					0.0396
					-0.9865
					0.0405
					-0.9873
					0.0413
					-0.9882
					0.0419
					-0.9894
					0.0424
					-0.9906
					0.0427
					-0.9918
					0.0427
					-0.9932
					0.0426
					-0.9945
					0.0422
					-0.9957
					0.0417
					-0.9968
					0.0410
					-0.9978
					0.0401
					-0.9987

TABLE VIII (Continued)

 $\theta_0 = 60$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
160.1	33.2946	0.0834	165.1	32.6325	0.1122
160.2	33.3046	0.0146	165.2	32.6610	0.1745
160.3	33.3005	-0.0548	165.3	32.7012	0.2300
160.4	33.2827	-0.1220	165.4	32.7516	0.2766
160.5	33.2517	-0.1842	165.5	32.8104	0.3124
160.6	33.2089	-0.2389	165.6	32.8752	0.3359
160.7	33.1561	-0.2839	165.7	32.9435	0.3461
160.8	33.0955	-0.3173	165.8	33.0127	0.3426
160.9	33.0296	-0.3379	165.9	33.0799	0.3253
161.0	32.9610	-0.3450	166.0	33.1424	0.2949
161.1	32.8925	-0.3383	166.1	33.1977	0.2525
161.2	32.8268	-0.3182	166.2	33.2435	0.1999
161.3	32.7665	-0.2856	166.3	33.2778	0.1390
161.4	32.7139	-0.2418	166.4	33.2993	0.0725
161.5	32.6710	-0.1885	166.5	33.3070	0.0029
161.6	32.6395	-0.1279	166.6	33.3005	-0.0667
161.7	32.6206	-0.0624	166.7	33.2803	-0.1337
161.8	32.6149	0.0056	166.8	33.2470	-0.1952
161.9	32.6228	0.0734	166.9	33.2021	-0.2487
162.0	32.6438	0.1384	167.0	33.1475	-0.2920
162.1	32.6772	0.1980	167.1	33.0855	-0.3236
162.2	32.7217	0.2499	167.2	33.0185	-0.3421
162.3	32.7757	0.2921	167.3	32.9493	-0.3469
162.4	32.8371	0.3228	167.4	32.8807	-0.3378
162.5	32.9035	0.3408	167.5	32.8154	-0.3154
162.6	32.9723	0.3453	167.6	32.7559	-0.2806
162.7	33.0408	0.3360	167.7	32.7045	-0.2348
162.8	33.1062	0.3133	167.8	32.6632	-0.1798
162.9	33.1658	0.2778	167.9	32.6336	-0.1179
163.0	33.2173	0.2311	168.0	32.6168	-0.0513
163.1	33.2584	0.1749	168.1	32.6133	0.0172
163.2	33.2874	0.1116	168.2	32.6235	0.0851
163.3	33.3032	0.0436	168.3	32.6468	0.1497
163.4	33.3050	-0.0261	168.4	32.6823	0.2085
163.5	33.2928	-0.0948	168.5	32.7289	0.2592
163.6	33.2670	-0.1596	168.6	32.7846	0.2998
163.7	33.2288	-0.2179	168.7	32.8474	0.3286
163.8	33.1798	-0.2673	168.8	32.9147	0.3445
163.9	33.1220	-0.3058	168.9	32.9841	0.3467
164.0	33.0578	-0.3320	169.0	33.0526	0.3350
164.1	32.9897	-0.3448	169.1	33.1176	0.3099
164.2	32.9207	-0.3438	169.2	33.1763	0.2722
164.3	32.8533	-0.3292	169.3	33.2265	0.2235
164.4	32.7902	-0.3015	169.4	33.2659	0.1656
164.5	32.7340	-0.2621	169.5	33.2929	0.1010
164.6	32.6868	-0.2123	169.6	33.3064	0.0321
164.7	32.6503	-0.1543	169.7	33.3059	-0.0380
164.8	32.6259	-0.0904	169.8	33.2912	-0.1066
164.9	32.6146	-0.0229	169.9	33.2631	-0.1709
165.0	32.6169	0.0455	170.0	33.2228	-0.2281
					0.0295 -1.0216

TABLE VIII (Continued)

 $\theta_0 = 60$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
170.1	33.1718	-0.2761	175.1	32.9261	0.3476
170.2	33.1124	-0.3128	175.2	32.9959	0.3474
170.3	33.0470	-0.3369	175.3	33.0643	0.3334
170.4	32.9782	-0.3475	175.4	33.1288	0.3060
170.5	32.9089	-0.3442	175.5	33.1865	0.2661
170.6	32.8417	-0.3272	175.6	33.2353	0.2155
170.7	32.7793	-0.2973	175.7	33.2729	0.1560
170.8	32.7241	-0.2558	175.8	33.2978	0.0901
170.9	32.6783	-0.2042	175.9	33.3091	0.0205
171.0	32.6436	-0.1447	176.0	33.3061	-0.0500
171.1	32.6213	-0.0796	176.1	33.2891	-0.1184
171.2	32.6122	-0.0114	176.2	33.2587	-0.1820
171.3	32.6167	0.0572	176.3	33.2162	-0.2381
171.4	32.6347	0.1237	176.4	33.1634	-0.2845
171.5	32.6654	0.1853	176.5	33.1025	-0.3194
171.6	32.7076	0.2398	176.6	33.0360	-0.3413
171.7	32.7599	0.2850	176.7	32.9666	-0.3496
171.8	32.8202	0.3190	176.8	32.8971	-0.3439
171.9	32.8861	0.3404	176.9	32.8302	-0.3246
172.0	32.9551	0.3484	177.0	32.7685	-0.2925
172.1	33.0245	0.3425	177.1	32.7145	-0.2490
172.2	33.0915	0.3228	177.2	32.6703	-0.1957
172.3	33.1533	0.2901	177.3	32.6374	-0.1348
172.4	33.2074	0.2457	177.4	32.6172	-0.0686
172.5	33.2517	0.1912	177.5	32.6104	0.0001
172.6	33.2841	0.1289	177.6	32.6172	0.0689
172.7	33.3034	0.0613	177.7	32.6374	0.1351
172.8	33.3087	-0.0089	177.8	32.6703	0.1960
172.9	33.2999	-0.0787	177.9	32.7146	0.2493
173.0	33.2772	-0.1452	178.0	32.7686	0.2929
173.1	33.2417	-0.2058	178.1	32.8303	0.3250
173.2	33.1948	-0.2581	178.2	32.8973	0.3443
173.3	33.1385	-0.2998	178.3	32.9669	0.3500
173.4	33.0751	-0.3293	178.4	33.0364	0.3417
173.5	33.0072	-0.3456	178.5	33.1030	0.3197
173.6	32.9376	-0.3481	178.6	33.1640	0.2848
173.7	32.8690	-0.3367	178.7	33.2168	0.2383
173.8	32.8041	-0.3120	178.8	33.2594	0.1821
173.9	32.7455	-0.2751	178.9	33.2898	0.1184
174.0	32.6955	-0.2273	179.0	33.3069	0.0498
174.1	32.6558	-0.1707	179.1	33.3099	-0.0208
174.2	32.6282	-0.1075	179.2	33.2986	-0.0906
174.3	32.6135	-0.0401	179.3	33.2736	-0.1566
174.4	32.6123	0.0288	179.4	33.2358	-0.2163
174.5	32.6248	0.0967	179.5	33.1870	-0.2671
174.6	32.6503	0.1608	179.6	33.1290	-0.3070
174.7	32.6881	0.2187	179.7	33.0644	-0.3346
174.8	32.7365	0.2681	179.8	32.9957	-0.3486
174.9	32.7939	0.3070	179.9	32.9257	-0.3488
175.0	32.8579	0.3339	180.0	32.8573	-0.3350

TABLE VIII (Continued)

 $\theta_o = 60$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e				
180.1	32.7930	-0.3080	0.0140	-1.0284	185.1	33.2667	0.1725	0.0138	-1.0386
180.2	32.7354	-0.2690	0.0145	-1.0276	185.2	33.2951	0.1076	0.0126	-1.0391
180.3	32.6868	-0.2194	0.0151	-1.0269	185.3	33.3099	0.0382	0.0114	-1.0394
180.4	32.6489	-0.1612	0.0158	-1.0264	185.4	33.3104	-0.0328	0.0101	-1.0395
180.5	32.6233	-0.0968	0.0167	-1.0260	185.5	33.2968	-0.1024	0.0089	-1.0393
180.6	32.6108	-0.0287	0.0176	-1.0259	185.6	33.2694	-0.1679	0.0077	-1.0389
180.7	32.6119	0.0406	0.0185	-1.0260	185.7	33.2295	-0.2264	0.0066	-1.0383
180.8	32.6267	0.1083	0.0194	-1.0263	185.8	33.1787	-0.2757	0.0057	-1.0376
180.9	32.6545	0.1718	0.0203	-1.0268	185.9	33.1192	-0.3139	0.0049	-1.0367
181.0	32.6943	0.2287	0.0210	-1.0274	186.0	33.0535	-0.3393	0.0043	-1.0357
181.1	32.7446	0.2767	0.0216	-1.0283	186.1	32.9841	-0.3511	0.0040	-1.0346
181.2	32.8035	0.3138	0.0221	-1.0293	186.2	32.9139	-0.3488	0.0038	-1.0335
181.3	32.8687	0.3387	0.0223	-1.0304	186.3	32.8456	-0.3327	0.0039	-1.0325
181.4	32.9377	0.3501	0.0223	-1.0315	186.4	32.7821	-0.3035	0.0042	-1.0315
181.5	33.0078	0.3476	0.0222	-1.0327	186.5	32.7256	-0.2624	0.0047	-1.0306
181.6	33.0760	0.3312	0.0218	-1.0338	186.6	32.6785	-0.2110	0.0054	-1.0299
181.7	33.1398	0.3015	0.0212	-1.0349	186.7	32.6425	-0.1514	0.0061	-1.0294
181.8	33.1965	0.2595	0.0204	-1.0359	186.8	32.6189	-0.0859	0.0070	-1.0290
181.9	33.2437	0.2069	0.0194	-1.0367	186.9	32.6086	-0.0171	0.0079	-1.0289
182.0	33.2794	0.1459	0.0183	-1.0373	187.0	32.6121	0.0523	0.0089	-1.0289
182.1	33.3022	0.0789	0.0171	-1.0378	187.1	32.6292	0.1198	0.0098	-1.0292
182.2	33.3111	0.0087	0.0158	-1.0380	187.2	32.6592	0.1826	0.0106	-1.0297
182.3	33.3058	-0.0620	0.0146	-1.0380	187.3	32.7010	0.2384	0.0113	-1.0304
182.4	33.2863	-0.1301	0.0133	-1.0377	187.4	32.7531	0.2848	0.0119	-1.0312
182.5	33.2536	-0.1928	0.0122	-1.0373	187.5	32.8135	0.3202	0.0123	-1.0321
182.6	33.2091	-0.2477	0.0112	-1.0367	187.6	32.8798	0.3429	0.0125	-1.0332
182.7	33.1545	-0.2925	0.0103	-1.0359	187.7	32.9494	0.3521	0.0125	-1.0343
182.8	33.0922	-0.3254	0.0096	-1.0350	187.8	33.0197	0.3472	0.0123	-1.0354
182.9	33.0247	-0.3452	0.0091	-1.0340	187.9	33.0877	0.3284	0.0119	-1.0365
183.0	32.9548	-0.3511	0.0088	-1.0329	188.0	33.1507	0.2964	0.0112	-1.0375
183.1	32.8852	-0.3431	0.0088	-1.0319	188.1	33.2061	0.2524	0.0104	-1.0384
183.2	32.8188	-0.3215	0.0090	-1.0309	188.2	33.2517	0.1980	0.0094	-1.0391
183.3	32.7580	-0.2872	0.0093	-1.0300	188.3	33.2855	0.1356	0.0083	-1.0397
183.4	32.7053	-0.2417	0.0099	-1.0292	188.4	33.3061	0.0675	0.0070	-1.0400
183.5	32.6627	-0.1867	0.0106	-1.0286	188.5	33.3126	-0.0033	0.0058	-1.0401
183.6	32.6317	-0.1245	0.0114	-1.0281	188.6	33.3048	-0.0740	0.0045	-1.0400
183.7	32.6136	-0.0575	0.0123	-1.0279	188.7	33.2830	-0.1416	0.0033	-1.0397
183.8	32.6091	0.0118	0.0132	-1.0278	188.8	33.2481	-0.2034	0.0022	-1.0391
183.9	32.6182	0.0806	0.0141	-1.0280	188.9	33.2015	-0.2570	0.0012	-1.0384
184.0	32.6407	0.1463	0.0150	-1.0284	189.0	33.1453	-0.3000	0.0004	-1.0376
184.1	32.6758	0.2064	0.0158	-1.0290	189.1	33.0817	-0.3310	-0.0003	-1.0366
184.2	32.7220	0.2584	0.0165	-1.0297	189.2	33.0133	-0.3485	-0.0007	-1.0355
184.3	32.7777	0.3004	0.0170	-1.0306	189.3	32.9430	-0.3521	-0.0009	-1.0344
184.4	32.8407	0.3306	0.0173	-1.0317	189.4	32.8734	-0.3417	-0.0009	-1.0333
184.5	32.9086	0.3477	0.0174	-1.0328	189.5	32.8075	-0.3178	-0.0007	-1.0323
184.6	32.9787	0.3511	0.0173	-1.0339	189.6	32.7477	-0.2814	-0.0003	-1.0313
184.7	33.0482	0.3404	0.0170	-1.0350	189.7	32.6964	-0.2339	0.0003	-1.0305
184.8	33.1143	0.3160	0.0165	-1.0361	189.8	32.6554	-0.1774	0.0011	-1.0299
184.9	33.1744	0.2789	0.0158	-1.0371	189.9	32.6265	-0.1139	0.0019	-1.0294
185.0	33.2259	0.2304	0.0149	-1.0380	190.0	32.6106	-0.0461	0.0028	-1.0291

TABLE VIII (Continued)

 $\theta_o = 50$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
190.1	32.6083	0.0236	195.1	33.2420	-0.2138
190.2	32.6198	0.0923	195.2	33.1935	-0.2659
190.3	32.6446	0.1575	195.3	33.1356	-0.3072
190.4	32.6818	0.2166	195.4	33.0708	-0.3360
190.5	32.7299	0.2672	195.5	33.0017	-0.3513
190.6	32.7872	0.3075	195.6	32.9310	-0.3526
190.7	32.8515	0.3357	195.7	32.8617	-0.3398
190.8	32.9202	0.3506	195.8	32.7964	-0.3136
190.9	32.9906	0.3516	195.9	32.7377	-0.2751
191.0	33.0600	0.3385	196.0	32.6878	-0.2258
191.1	33.1255	0.3118	196.1	32.6486	-0.1677
191.2	33.1845	0.2725	196.2	32.6217	-0.1031
191.3	33.2346	0.2221	196.3	32.6080	-0.0345
191.4	33.2735	0.1627	196.4	32.6081	0.0354
191.5	33.2998	0.0965	196.5	32.6219	0.1039
191.6	33.3123	0.0264	196.6	32.6490	0.1685
191.7	33.3105	-0.0448	196.7	32.6882	0.2265
191.8	33.2943	-0.1142	196.8	32.7382	0.2757
191.9	33.2647	-0.1789	196.9	32.7970	0.3142
192.0	33.2227	-0.2363	197.0	32.8624	0.3403
192.1	33.1701	-0.2840	197.1	32.9319	0.3529
192.2	33.1091	-0.3202	197.2	33.0026	0.3516
192.3	33.0423	-0.3435	197.3	33.0717	0.3361
192.4	32.9723	-0.3530	197.4	33.1366	0.3071
192.5	32.9020	-0.3484	197.5	33.1944	0.2657
192.6	32.8341	-0.3299	197.6	33.2429	0.2135
192.7	32.7713	-0.2985	197.7	33.2800	0.1525
192.8	32.7161	-0.2553	197.8	33.3041	0.0852
192.9	32.6706	-0.2022	197.9	33.3142	0.0145
193.0	32.6364	-0.1413	198.0	33.3099	-0.0569
193.1	32.6149	-0.0748	198.1	33.2914	-0.1259
193.2	32.6070	-0.0055	198.2	33.2594	-0.1898
193.3	32.6128	0.0641	198.3	33.2154	-0.2459
193.4	32.6321	0.1312	198.4	33.1610	-0.2919
193.5	32.6644	0.1932	198.5	33.0987	-0.3262
193.6	32.7082	0.2478	198.6	33.0309	-0.3472
193.7	32.7621	0.2926	198.7	32.9604	-0.3544
193.8	32.8238	0.3261	198.8	32.8901	-0.3474
193.9	32.8911	0.3466	198.9	32.8227	-0.3266
194.0	32.9613	0.3535	199.0	32.7608	-0.2930
194.1	33.0316	0.3463	199.1	32.7069	-0.2479
194.2	33.0992	0.3251	199.2	32.6630	-0.1931
194.3	33.1613	0.2908	199.3	32.6308	-0.1308
194.4	33.2154	0.2448	199.4	32.6115	-0.0635
194.5	33.2593	0.1887	199.5	32.6058	0.0063
194.6	33.2911	0.1249	199.6	32.6140	0.0759
194.7	33.3094	0.0560	199.7	32.6356	0.1425
194.8	33.3136	-0.0153	199.8	32.6700	0.2036
194.9	33.3033	-0.0859	199.9	32.7158	0.2569
195.0	33.2791	-0.1530	200.0	32.7713	0.3001
					-0.0069
					-0.0078
					-0.0086
					-0.0092
					-0.0096
					-0.0097
					-0.0096
					-0.0093
					-0.0089
					-0.0082
					-0.0074
					-0.0065
					-0.0056
					-0.0046
					-0.0037
					-0.0028
					-0.0020
					-0.0014
					-0.0009
					-0.0006
					-0.0005
					-0.0007
					-0.0011
					-0.0016
					-0.0024
					-0.0034
					-0.0044
					-0.0056
					-0.0068
					-0.0081
					-0.0093
					-0.0104
					-0.0114
					-0.0122
					-0.0129
					-0.0133
					-0.0135
					-0.0133
					-0.0135
					-0.0129
					-0.0123
					-0.0115
					-0.0107
					-0.0097
					-0.0087
					-0.0078
					-0.0068
					-0.0060
					-0.0053
					-0.0047

TABLE IX

TABLE IX
Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 65$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
0.1	0.0564	-157.5454	0.0375	-0.0000	5.1	30.3078	1.9358	0.4258	-0.6255
0.2	0.2317	-75.7642	0.0761	-0.0002	5.2	30.4587	1.1576	0.4333	-0.6262
0.3	0.5447	-47.1230	0.1165	-0.0010	5.3	30.4304	0.4278	0.4417	-0.6288
0.4	1.0273	-31.7259	0.1599	-0.0033	5.4	30.2632	-0.2177	0.4503	-0.6333
0.5	1.7257	-21.5971	0.2069	-0.0085	5.5	29.9990	-0.7632	0.4588	-0.6394
0.6	2.6975	-14.1010	0.2579	-0.0184	5.6	29.6740	-1.2082	0.4666	-0.6467
0.7	4.0034	-8.1546	0.3126	-0.0357	5.7	29.3151	-1.5609	0.4738	-0.6551
0.8	5.6872	-3.2882	0.3690	-0.0633	5.8	28.9402	-1.8334	0.4802	-0.6641
0.9	7.7439	0.6754	0.4236	-0.1034	5.9	28.5597	-2.0375	0.4857	-0.6737
1.0	10.0855	3.7799	0.4712	-0.1566	6.0	28.1785	-2.1830	0.4905	-0.6836
1.1	12.5360	6.0556	0.5061	-0.2201	6.1	27.7985	-2.2765	0.4945	-0.6936
1.2	14.8811	7.6089	0.5247	-0.2885	6.2	27.4206	-2.3215	0.4979	-0.7037
1.3	16.9581	8.6451	0.5271	-0.3550	6.3	27.0455	-2.3190	0.5007	-0.7138
1.4	18.7240	9.4149	0.5167	-0.4147	6.4	26.6755	-2.2683	0.5030	-0.7239
1.5	20.2595	10.1356	0.4981	-0.4653	6.5	26.3141	-2.1677	0.5047	-0.7339
1.6	21.7262	10.9413	0.4753	-0.5075	6.6	25.9668	-2.0158	0.5059	-0.7438
1.7	23.3211	11.8717	0.4506	-0.5433	6.7	25.6403	-1.8117	0.5066	-0.7536
1.8	25.2510	12.8758	0.4243	-0.5749	6.8	25.3424	-1.5557	0.5067	-0.7631
1.9	27.7210	13.8023	0.3951	-0.6041	6.9	25.0819	-1.2494	0.5064	-0.7723
2.0	30.9100	14.3618	0.3602	-0.6310	7.0	24.8680	-0.8963	0.5057	-0.7812
2.1	34.8856	14.0670	0.3160	-0.6530	7.1	24.7102	-0.5013	0.5047	-0.7896
2.2	39.3927	12.2244	0.2599	-0.6632	7.2	24.6180	-0.0715	0.5034	-0.7976
2.3	43.5364	8.1867	0.1954	-0.6509	7.3	24.6007	0.3840	0.5021	-0.8051
2.4	45.7637	2.0779	0.1368	-0.6073	7.4	24.6671	0.8534	0.5007	-0.8122
2.5	44.8314	-4.5828	0.1049	-0.5379	7.5	24.8247	1.3220	0.4993	-0.8191
2.6	41.1077	-9.7121	0.1101	-0.4638	7.6	25.0791	1.7721	0.4980	-0.8256
2.7	36.2395	-12.3205	0.1445	-0.4054	7.7	25.4328	2.1823	0.4967	-0.8319
2.8	31.6786	-12.7736	0.1925	-0.3693	7.8	25.8836	2.5283	0.4955	-0.8380
2.9	28.0532	-11.9083	0.2427	-0.3528	7.9	26.4226	2.7830	0.4941	-0.8439
3.0	25.4205	-10.4120	0.2895	-0.3506	8.0	27.0323	2.9189	0.4928	-0.8495
3.1	23.6202	-8.7016	0.3311	-0.3582	8.1	27.6847	2.9110	0.4914	-0.8548
3.2	22.4582	-6.9959	0.3673	-0.3726	8.2	28.3412	2.7416	0.4902	-0.8596
3.3	21.7675	-5.3982	0.3980	-0.3917	8.3	28.9544	2.4057	0.4893	-0.8641
3.4	21.4186	-3.9506	0.4236	-0.4142	8.4	29.4740	1.9154	0.4889	-0.8681
3.5	21.3146	-2.6630	0.4441	-0.4391	8.5	29.8542	1.3018	0.4891	-0.8720
3.6	21.3836	-1.5281	0.4596	-0.4655	8.6	30.0629	0.6121	0.4901	-0.8761
3.7	21.5745	-0.5291	0.4702	-0.4924	8.7	30.0875	-0.0981	0.4918	-0.8806
3.8	21.8533	0.3556	0.4760	-0.5190	8.8	29.9364	-0.7748	0.4941	-0.8859
3.9	22.2011	1.1480	0.4773	-0.5443	8.9	29.6348	-1.3733	0.4966	-0.8923
4.0	22.6126	1.8668	0.4748	-0.5674	9.0	29.2178	-1.8638	0.4988	-0.8997
4.1	23.0933	2.5235	0.4690	-0.5877	9.1	28.7228	-2.2310	0.5003	-0.9082
4.2	23.6552	3.1179	0.4608	-0.6046	9.2	28.1844	-2.4717	0.5009	-0.9175
4.3	24.3114	3.6364	0.4511	-0.6176	9.3	27.6315	-2.5903	0.5002	-0.9271
4.4	25.0686	4.0511	0.4411	-0.6268	9.4	27.0870	-2.5954	0.4981	-0.9367
4.5	25.9189	4.3239	0.4316	-0.6322	9.5	26.5689	-2.4972	0.4948	-0.9459
4.6	26.8337	4.4138	0.4238	-0.6342	9.6	26.0920	-2.3062	0.4902	-0.9543
4.7	27.7618	4.2899	0.4183	-0.6337	9.7	25.6690	-2.0330	0.4848	-0.9616
4.8	28.6353	3.9440	0.4158	-0.6315	9.8	25.3116	-1.6887	0.4788	-0.9675
4.9	29.3835	3.3988	0.4164	-0.6288	9.9	25.0305	-1.2855	0.4726	-0.9720
5.0	29.9504	2.7062	0.4200	-0.6265	10.0	24.8355	-0.8376	0.4667	-0.9751

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
10.1	24.7347	-0.3615	15.1	28.4745	-0.2921
10.2	24.7335	0.1240	15.2	28.3893	-0.5848
10.3	24.8334	0.5980	15.3	28.2421	-0.8550
10.4	25.0312	1.0386	15.4	28.0388	-1.0887
10.5	25.3182	1.4239	15.5	27.7884	-1.2738
10.6	25.6799	1.7342	15.6	27.5029	-1.4004
10.7	26.0964	1.9538	15.7	27.1965	-1.4620
10.8	26.5440	2.0726	15.8	26.8845	-1.4554
10.9	26.9970	2.0878	15.9	26.5826	-1.3813
11.0	27.4303	2.0036	16.0	26.3055	-1.2442
11.1	27.8216	1.8311	16.1	26.0664	-1.0519
11.2	28.1535	1.5862	16.2	25.8762	-0.8147
11.3	28.4144	1.2879	16.3	25.7427	-0.5452
11.4	28.5989	0.9558	16.4	25.6706	-0.2570
11.5	28.7065	0.6087	16.5	25.6613	0.0362
11.6	28.7411	0.2630	16.6	25.7131	0.3209
11.7	28.7091	-0.0679	16.7	25.8218	0.5847
11.8	28.6186	-0.3733	16.8	25.9805	0.8169
11.9	28.4787	-0.6453	16.9	26.1809	1.0087
12.0	28.2983	-0.8779	17.0	26.4133	1.1534
12.1	28.0866	-1.0673	17.1	26.6671	1.2464
12.2	27.8523	-1.2110	17.2	26.9314	1.2852
12.3	27.6040	-1.3080	17.3	27.1953	1.2696
12.4	27.3499	-1.3586	17.4	27.4480	1.2012
12.5	27.0975	-1.3640	17.5	27.6793	1.0834
12.6	26.8539	-1.3268	17.6	27.8797	0.9219
12.7	26.6252	-1.2503	17.7	28.0408	0.7239
12.8	26.4168	-1.1383	17.8	28.1559	0.4987
12.9	26.2331	-0.9953	17.9	28.2202	0.2568
13.0	26.0776	-0.8259	18.0	28.2316	0.0098
13.1	25.9535	-0.6347	18.1	28.1906	-0.2304
13.2	25.8632	-0.4267	18.2	28.1010	-0.4523
13.3	25.8087	-0.2066	18.3	27.9689	-0.6460
13.4	25.7917	0.0202	18.4	27.8028	-0.8034
13.5	25.8134	0.2483	18.5	27.6126	-0.9193
13.6	25.8744	0.4717	18.6	27.4087	-0.9910
13.7	25.9747	0.6840	18.7	27.2011	-1.0187
13.8	26.1132	0.8783	18.8	26.9991	-1.0046
13.9	26.2877	1.0476	18.9	26.8105	-0.9529
14.0	26.4943	1.1846	19.0	26.6413	-0.8688
14.1	26.7277	1.2825	19.1	26.4960	-0.7582
14.2	26.9807	1.3353	19.2	26.3775	-0.6270
14.3	27.2446	1.3380	19.3	26.2874	-0.4811
14.4	27.5093	1.2877	19.4	26.2263	-0.3260
14.5	27.7635	1.1836	19.5	26.1941	-0.1666
14.6	27.9957	1.0275	19.6	26.1898	-0.0074
14.7	28.1947	0.8236	19.7	26.2123	0.1476
14.8	28.3498	0.5792	19.8	26.2600	0.2945
14.9	28.4522	0.3037	19.9	26.3312	0.4300
15.0	28.4951	0.0088	20.0	26.4238	0.5510
					0.2316
					-1.2960

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
20.1	26.5354	0.6544	25.1	27.0029	-0.7696
20.2	26.6634	0.7374	25.2	26.8548	-0.7304
20.3	26.8047	0.7974	25.3	26.7209	-0.6646
20.4	26.9556	0.8322	25.4	26.6053	-0.5764
20.5	27.1122	0.8397	25.5	26.5111	-0.4704
20.6	27.2697	0.8186	25.6	26.4404	-0.3511
20.7	27.4231	0.7682	25.7	26.3943	-0.2233
20.8	27.5668	0.6888	25.8	26.3734	-0.0917
20.9	27.6951	0.5817	25.9	26.3774	0.0393
21.0	27.8023	0.4496	26.0	26.4052	0.1652
21.1	27.8829	0.2964	26.1	26.4553	0.2822
21.2	27.9323	0.1274	26.2	26.5253	0.3866
21.3	27.9469	-0.0508	26.3	26.6125	0.4751
21.4	27.9246	-0.2308	26.4	26.7137	0.5452
21.5	27.8649	-0.4044	26.5	26.8251	0.5949
21.6	27.7697	-0.5635	26.6	26.9428	0.6228
21.7	27.6423	-0.7004	26.7	27.0629	0.6282
21.8	27.4883	-0.8081	26.8	27.1812	0.6113
21.9	27.3145	-0.8816	26.9	27.2937	0.5730
22.0	27.1291	-0.9171	27.0	27.3966	0.5145
22.1	26.9404	-0.9132	27.1	27.4866	0.4381
22.2	26.7570	-0.8704	27.2	27.5605	0.3465
22.3	26.5868	-0.7909	27.3	27.6159	0.2428
22.4	26.4372	-0.6788	27.4	27.6508	0.1306
22.5	26.3139	-0.5391	27.5	27.6641	0.0138
22.6	26.2217	-0.3781	27.6	27.6549	-0.1035
22.7	26.1639	-0.2023	27.7	27.6238	-0.2172
22.8	26.1425	-0.0190	27.8	27.5715	-0.3230
22.9	26.1580	0.1649	27.9	27.4998	-0.4172
23.0	26.2099	0.3422	28.0	27.4113	-0.4962
23.1	26.2965	0.5059	28.1	27.3090	-0.5569
23.2	26.4146	0.6494	28.2	27.1964	-0.5971
23.3	26.5602	0.7667	28.3	27.0778	-0.6150
23.4	26.7277	0.8522	28.4	26.9575	-0.6097
23.5	26.9105	0.9016	28.5	26.8398	-0.5812
23.6	27.1008	0.9118	28.6	26.7292	-0.5301
23.7	27.2901	0.8812	28.7	26.6300	-0.4582
23.8	27.4692	0.8104	28.8	26.5461	-0.3677
23.9	27.6291	0.7022	28.9	26.4810	-0.2617
24.0	27.7615	0.5616	29.0	26.4376	-0.1439
24.1	27.8594	0.3958	29.1	26.4181	-0.0189
24.2	27.9178	0.2137	29.2	26.4239	0.1088
24.3	27.9343	0.0251	29.3	26.4554	0.2340
24.4	27.9091	-0.1599	29.4	26.5121	0.3515
24.5	27.8450	-0.3319	29.5	26.5924	0.4561
24.6	27.7470	-0.4827	29.6	26.6934	0.5428
24.7	27.6219	-0.6060	29.7	26.8113	0.6073
24.8	27.4771	-0.6975	29.8	26.9411	0.6463
24.9	27.3207	-0.7552	29.9	27.0773	0.6570
25.0	27.1603	-0.7787	30.0	27.2133	0.6386

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
30.1	27.3430	0.5915	35.1	26.6766	-0.2362
30.2	27.4597	0.5176	35.2	26.6385	-0.1604
30.3	27.5581	0.4201	35.3	26.6134	-0.0776
30.4	27.6329	0.3043	35.4	26.6045	0.0090
30.5	27.6811	0.1756	35.5	26.6147	0.0963
30.6	27.7004	0.0401	35.6	26.6403	0.1806
30.7	27.6905	-0.0952	35.7	26.6820	0.2593
30.8	27.6522	-0.2241	35.8	26.7386	0.3275
30.9	27.5881	-0.3408	35.9	26.8090	0.3869
31.0	27.5023	-0.4403	36.0	26.8899	0.4297
31.1	27.3985	-0.5186	36.1	26.9792	0.4548
31.2	27.2819	-0.5728	36.2	27.0720	0.4633
31.3	27.1587	-0.6015	36.3	27.1639	0.4519
31.4	27.0337	-0.6040	36.4	27.2541	0.4204
31.5	26.9127	-0.5814	36.5	27.3363	0.3711
31.6	26.8002	-0.5346	36.6	27.4059	0.3081
31.7	26.7011	-0.4670	36.7	27.4627	0.2297
31.8	26.6192	-0.3818	36.8	27.5024	0.1424
31.9	26.5568	-0.2834	36.9	27.5233	0.0458
32.0	26.5162	-0.1757	37.0	27.5208	-0.0521
32.1	26.4988	-0.0634	37.1	27.5005	-0.1488
32.2	26.5038	0.0481	37.2	27.4615	-0.2378
32.3	26.5310	0.1548	37.3	27.4006	-0.3186
32.4	26.5783	0.2524	37.4	27.3270	-0.3802
32.5	26.6428	0.3373	37.5	27.2413	-0.4276
32.6	26.7219	0.4065	37.6	27.1494	-0.4537
32.7	26.8115	0.4579	37.7	27.0518	-0.4623
32.8	26.9082	0.4900	37.8	26.9578	-0.4505
32.9	27.0076	0.5022	37.9	26.8688	-0.4168
33.0	27.1059	0.4954	38.0	26.7891	-0.3684
33.1	27.1996	0.4697	38.1	26.7190	-0.3009
33.2	27.2852	0.4276	38.2	26.6688	-0.2250
33.3	27.3597	0.3701	38.3	26.6315	-0.1385
33.4	27.4214	0.3009	38.4	26.6184	-0.0517
33.5	27.4678	0.2222	38.5	26.6210	0.0355
33.6	27.4986	0.1372	38.6	26.6402	0.1202
33.7	27.5127	0.0486	38.7	26.6785	0.2043
33.8	27.5099	-0.0395	38.8	26.7318	0.2687
33.9	27.4907	-0.1246	38.9	26.7953	0.3236
34.0	27.4564	-0.2047	39.0	26.8675	0.3653
34.1	27.4086	-0.2752	39.1	26.9467	0.3927
34.2	27.3476	-0.3366	39.2	27.0315	0.4010
34.3	27.2771	-0.3854	39.3	27.1064	0.3952
34.4	27.2000	-0.4195	39.4	27.1853	0.3688
34.5	27.1177	-0.4388	39.5	27.2494	0.3366
34.6	27.0332	-0.4418	39.6	27.3086	0.2822
34.7	26.9498	-0.4299	39.7	27.3593	0.2235
34.8	26.8693	-0.4016	39.8	27.3906	0.1561
34.9	26.7961	-0.3597	39.9	27.4132	0.0854
35.0	26.7311	-0.3043	40.0	27.4203	0.0073

TABLE IX (Continued)

 $\theta_0 = 65$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
40.1	27.4107	-0.0612	-0.3106	-1.0875	45.1	26.8165	0.1943	-0.2823	-0.9430
40.2	27.3810	-0.1270	-0.3111	-1.0821	45.2	26.8515	0.2491	-0.2824	-0.9443
40.3	27.3494	-0.1832	-0.3120	-1.0767	45.3	26.9029	0.2685	-0.2824	-0.9430
40.4	27.3094	-0.2391	-0.3120	-1.0715	45.4	26.9627	0.2865	-0.2812	-0.9383
40.5	27.2507	-0.2786	-0.3115	-1.0661	45.5	27.0369	0.2943	-0.2815	-0.9419
40.6	27.2044	-0.3074	-0.3107	-1.0619	45.6	27.1181	0.2745	-0.2830	-0.9328
40.7	27.1370	-0.3309	-0.3095	-1.0571	45.7	27.1587	0.2652	-0.2852	-0.9282
40.8	27.0662	-0.3324	-0.3074	-1.0526	45.8	27.2371	0.2342	-0.2854	-0.9292
40.9	26.9933	-0.3281	-0.3059	-1.0485	45.9	27.2455	0.1923	-0.2829	-0.9205
41.0	26.9498	-0.3079	-0.3042	-1.0462	46.0	27.2718	0.1547	-0.2833	-0.9198
41.1	26.8892	-0.2739	-0.3018	-1.0432	46.1	27.3505	0.1013	-0.2849	-0.9142
41.2	26.8472	-0.2383	-0.2999	-1.0405	46.2	27.3147	0.0527	-0.2817	-0.9152
41.3	26.8034	-0.1873	-0.2983	-1.0381	46.3	27.3142	-0.0143	-0.2820	-0.9092
41.4	26.7761	-0.1387	-0.2966	-1.0368	46.4	27.3345	-0.0327	-0.2789	-0.9071
41.5	26.7390	-0.0866	-0.2956	-1.0346	46.5	27.2668	-0.1080	-0.2735	-0.9031
41.6	26.7391	-0.0398	-0.2948	-1.0336	46.6	27.2830	-0.1362	-0.2814	-0.9043
41.7	26.7390	0.0299	-0.2936	-1.0323	46.7	27.2404	-0.1663	-0.2767	-0.8971
41.8	26.7459	0.0816	-0.2933	-1.0313	46.8	27.1481	-0.2503	-0.2773	-0.8946
41.9	26.7771	0.1395	-0.2929	-1.0308	46.9	27.1292	-0.2205	-0.2679	-0.8912
42.0	26.8097	0.1915	-0.2934	-1.0296	47.0	27.0517	-0.2974	-0.2626	-0.8790
42.1	26.8602	0.2472	-0.2931	-1.0293	47.1	27.0379	-0.2311	-0.2663	-0.8865
42.2	26.9034	0.2690	-0.2940	-1.0273	47.2	27.0071	-0.2248	-0.2626	-0.8846
42.3	26.9612	0.2955	-0.2951	-1.0256	47.3	26.9706	-0.2047	-0.2614	-0.8845
42.4	27.0086	0.3153	-0.2963	-1.0241	47.4	26.9433	-0.1796	-0.2556	-0.8771
42.5	27.0743	0.3090	-0.2972	-1.0221	47.5	26.9225	-0.1600	-0.2586	-0.8849
42.6	27.1581	0.3058	-0.3000	-1.0202	47.6	26.8885	-0.0885	-0.2486	-0.8823
42.7	27.1974	0.3035	-0.3018	-1.0172	47.7	26.8123	-0.0940	-0.2477	-0.8695
42.8	27.2512	0.2761	-0.3024	-1.0145	47.8	26.8639	-0.0680	-0.2478	-0.8862
42.9	27.3053	0.2038	-0.3053	-1.0101	47.9	26.8596	0.0218	-0.2488	-0.8744
43.0	27.3508	0.1658	-0.3062	-1.0077	48.0	26.8689	0.0267	-0.2517	-0.8758
43.1	27.3633	0.0968	-0.3066	-1.0020	48.1	26.8857	-0.0282	-0.2460	-0.8710
43.2	27.3901	0.0387	-0.3078	-0.9988	48.2	26.8538	0.0583	-0.2562	-0.8827
43.3	27.3182	-0.0699	-0.3080	-0.9927	48.3	26.9343	0.1203	-0.2454	-0.8648
43.4	27.3690	-0.1061	-0.3084	-0.9884	48.4	27.0282	0.2617	-0.2541	-0.8537
43.5	27.3329	-0.1562	-0.3075	-0.9839	48.5	26.9792	0.1612	-0.2369	-0.8610
43.6	27.3117	-0.2161	-0.3074	-0.9796	48.6	26.9932	0.1597	-0.2507	-0.8539
43.7	27.2465	-0.2546	-0.3053	-0.9759	48.7	27.0481	0.1719	-0.2479	-0.8574
43.8	27.1830	-0.2888	-0.3038	-0.9710	48.8	27.1157	0.1702	-0.2457	-0.8582
43.9	27.1196	-0.3154	-0.3004	-0.9683	48.9	27.1263	0.0521	-0.2583	-0.8685
44.0	27.0654	-0.3302	-0.2995	-0.9612	49.0	27.1582	0.1309	-0.2438	-0.8470
44.1	27.0006	-0.3375	-0.2969	-0.9627	49.1	27.2410	0.2511	-0.2076	-0.8535
44.2	26.9098	-0.2977	-0.2921	-0.9573	49.2	27.1806	0.1391	-0.2474	-0.8545
44.3	26.8682	-0.2681	-0.2902	-0.9577	49.3	27.1078	0.1396	-0.2404	-0.8030
44.4	26.8015	-0.2398	-0.2907	-0.9526	49.4	27.2225	0.1004	-0.2485	-0.8337
44.5	26.8008	-0.1601	-0.2873	-0.9516	49.5	27.2573	0.0394	-0.2162	-0.8255
44.6	26.7580	-0.1080	-0.2879	-0.9504	49.6	27.2327	-0.0219	-0.2201	-0.8325
44.7	26.7490	-0.0309	-0.2811	-0.9484	49.7	27.1701	-0.0460	-0.2358	-0.8371
44.8	26.7547	0.0190	-0.2833	-0.9477	49.8	27.2535	-0.0122	-0.2207	-0.8257
44.9	26.7693	0.0877	-0.2791	-0.9464	49.9	27.1830	-0.0849	-0.2194	-0.8311
45.0	26.7829	0.1275	-0.2808	-0.9457	50.0	27.1337	-0.1141	-0.2276	-0.8268

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
50.1	27.1674	-0.1179	-0.2056	-0.8367	55.1	27.0495	0.0605	-0.1215	-0.7724
50.2	27.0963	-0.1539	-0.2060	-0.8233	55.2	27.0562	0.0236	-0.1101	-0.7617
50.3	27.0338	-0.1618	-0.2214	-0.8223	55.3	26.8717	0.0008	0.0012	-0.7807
50.4	27.0056	-0.1601	-0.1984	-0.8170	55.4	27.0507	0.0809	-0.0996	-0.7712
50.5	27.0501	-0.1674	-0.1875	-0.8158	55.5	27.0622	0.0588	-0.0912	-0.7626
50.6	26.9024	-0.1045	-0.1912	-0.7999	55.6	27.0805	0.0885	-0.1218	-0.7840
50.7	26.9837	-0.1098	-0.2042	-0.8230	55.7	27.1392	0.0894	-0.1185	-0.7825
50.8	26.6918	-0.5037	-0.1849	-0.9472	55.8	27.0562	-0.0096	-0.0700	-0.7463
50.9	26.9364	-0.0807	-0.1897	-0.8130	55.9	27.1331	0.0397	-0.1082	-0.7553
51.0	26.9129	-0.0802	-0.1918	-0.8157	56.0	27.0458	-0.0722	-0.0388	-0.6940
51.1	26.9012	-0.0583	-0.1897	-0.8254	56.1	27.1010	0.0065	-0.0789	-0.7624
51.2	26.9553	0.0137	-0.2205	-0.7967	56.2	27.1249	-0.0108	-0.0689	-0.7688
51.3	26.9546	0.0742	-0.2124	-0.8124	56.3	27.1089	-0.0316	-0.0811	-0.7369
51.4	26.8467	0.0969	-0.2049	-0.7923	56.4	27.1108	-0.0062	-0.0579	-0.7655
51.5	26.8970	0.0110	-0.1881	-0.7929	56.5	26.9507	-0.0051	-0.0147	-0.6634
51.6	26.9402	0.1041	-0.1899	-0.8164	56.6	27.0839	-0.0531	-0.0758	-0.7427
51.7	26.7296	-0.6062	0.0585	-0.8576	56.7	26.9632	-0.1470	-0.0975	-0.6621
51.8	26.9957	0.1288	-0.1853	-0.8126	56.8	27.0737	-0.0854	-0.0765	-0.7421
51.9	27.0517	0.0944	-0.1790	-0.7974	56.9	27.0671	-0.0777	-0.0728	-0.7410
52.0	27.0465	0.3285	-0.2097	-0.8355	57.0	27.0844	-0.0431	-0.0526	-0.7587
52.1	27.0697	0.1196	-0.1636	-0.7930	57.1	27.0129	-0.1102	-0.0897	-0.7310
52.2	27.0525	0.1203	-0.1816	-0.7974	57.2	27.0114	-0.0657	-0.0571	-0.7243
52.3	27.0823	0.1119	-0.1669	-0.8032	57.3	27.0142	-0.0733	-0.0626	-0.7424
52.4	27.1447	0.0944	-0.1916	-0.7951	57.4	27.0266	-0.0552	-0.0359	-0.7536
52.5	27.1681	0.0767	-0.1717	-0.7947	57.5	27.0211	-0.0333	-0.0197	-0.7577
52.6	27.2643	0.0511	-0.2575	-0.8209	57.6	27.0004	-0.0535	-0.0361	-0.7469
52.7	27.1839	0.0397	-0.1664	-0.7922	57.7	26.9741	-0.0540	-0.0484	-0.7553
52.8	27.2685	-0.1409	-0.1803	-0.7123	57.8	26.9796	-0.0277	-0.0332	-0.7567
52.9	27.1186	-0.0573	-0.2071	-0.7839	57.9	27.0104	-0.0029	-0.0104	-0.7637
53.0	27.0922	-0.0829	-0.1375	-0.7512	58.0	26.9677	0.0106	-0.0301	-0.7368
53.1	27.1767	-0.0839	-0.1483	-0.7517	58.1	27.0785	-0.0331	0.0399	-0.7971
53.2	27.1288	-0.0971	-0.1564	-0.7710	58.2	26.9779	0.0341	-0.0270	-0.7519
53.3	27.0820	-0.1163	-0.1424	-0.7532	58.3	26.9745	0.0412	-0.0244	-0.7671
53.4	27.0492	-0.0943	-0.1356	-0.7615	58.4	26.9881	0.0608	-0.0189	-0.7549
53.5	27.0476	-0.1356	-0.1661	-0.7583	58.5	27.0058	0.0624	-0.0163	-0.7619
53.6	26.9575	-0.3227	-0.2183	-0.8098	58.6	27.0024	0.0677	-0.0217	-0.7651
53.7	27.0103	-0.0793	-0.1152	-0.7674	58.7	27.0111	0.0787	-0.0193	-0.7689
53.8	27.0790	-0.0049	-0.1292	-0.7652	58.8	27.0278	0.0694	-0.0143	-0.7801
53.9	27.0581	-0.1126	-0.0749	-0.7889	58.9	27.0629	0.1014	-0.0200	-0.7577
54.0	26.9695	-0.0657	-0.1355	-0.7481	59.0	27.0790	0.0900	-0.0123	-0.7648
54.1	26.9554	-0.1078	-0.0980	-0.7380	59.1	27.1096	0.0748	-0.0059	-0.7610
54.2	27.1225	0.0122	-0.0901	-0.7105	59.2	27.1234	0.0589	-0.0016	-0.7581
54.3	26.9654	-0.0300	-0.1153	-0.7805	59.3	27.1364	0.0654	-0.0144	-0.7602
54.4	26.9440	-0.1993	0.0017	-0.8353	59.4	27.1494	0.0404	-0.0060	-0.7592
54.5	26.8818	-0.0622	-0.0483	-0.8148	59.5	27.1622	0.0214	-0.0076	-0.7587
54.6	26.9908	0.0135	-0.1089	-0.7746	59.6	27.1634	0.0012	-0.0032	-0.7607
54.7	26.9846	0.0406	-0.0984	-0.7516	59.7	27.1651	-0.0150	0.0036	-0.7581
54.8	27.0150	0.0879	-0.1043	-0.7948	59.8	27.1551	-0.0364	0.0042	-0.7588
54.9	26.8898	0.0200	-0.0617	-0.8146	59.9	27.1536	-0.0597	0.0015	-0.7563
55.0	26.9895	0.0987	-0.1033	-0.7865	60.0	27.1343	-0.0727	0.0044	-0.7596

TABLE IX (Continued)

 $\theta_0 = 65$ degrees

ka	Z_0		kh _e	ka	Z_0		kh _e
60.1	27.1156	-0.1026	0.0070	65.1	27.0280	0.1706	0.1310
60.2	27.0991	-0.1033	0.0108	65.2	27.0629	0.1741	0.1332
60.3	27.0744	-0.1127	0.0146	65.3	27.0965	0.1682	0.1351
60.4	27.0486	-0.1063	0.0152	65.4	27.1301	0.1582	0.1377
60.5	27.0350	-0.1176	0.0124	65.5	27.1596	0.1401	0.1400
60.6	27.0092	-0.1178	0.0154	65.6	27.1870	0.1157	0.1412
60.7	26.9855	-0.1066	0.0181	65.7	27.2075	0.0873	0.1431
60.8	26.9604	-0.0871	0.0243	65.8	27.2230	0.0557	0.1453
60.9	26.9431	-0.0758	0.0229	65.9	27.2311	0.0206	0.1466
61.0	26.9334	-0.0584	0.0236	66.0	27.2325	-0.0156	0.1482
61.1	26.9294	-0.0287	0.0255	66.1	27.2270	-0.0517	0.1497
61.2	26.9191	-0.0007	0.0278	66.2	27.2139	-0.0859	0.1505
61.3	26.9206	0.0255	0.0344	66.3	27.1941	-0.1165	0.1520
61.4	26.9282	0.0449	0.0358	66.4	27.1688	-0.1428	0.1538
61.5	26.9364	0.0708	0.0378	66.5	27.1381	-0.1637	0.1550
61.6	26.9544	0.0966	0.0431	66.6	27.1046	-0.1777	0.1568
61.7	26.9718	0.1115	0.0434	66.7	27.0684	-0.1851	0.1583
61.8	26.9948	0.1221	0.0434	66.8	27.0312	-0.1852	0.1598
61.9	27.0260	0.1313	0.0474	66.9	26.9952	-0.1781	0.1621
62.0	27.0537	0.1386	0.0526	67.0	26.9604	-0.1636	0.1637
62.1	27.0754	0.1418	0.0556	67.1	26.9295	-0.1431	0.1658
62.2	27.1068	0.1313	0.0581	67.2	26.9026	-0.1159	0.1672
62.3	27.1307	0.1235	0.0600	67.3	26.8823	-0.0848	0.1693
62.4	27.1546	0.1015	0.0607	67.4	26.8685	-0.0495	0.1716
62.5	27.1722	0.0838	0.0620	67.5	26.8616	-0.0122	0.1734
62.6	27.1857	0.0599	0.0637	67.6	26.8621	0.0259	0.1754
62.7	27.2022	0.0279	0.0698	67.7	26.8700	0.0632	0.1774
62.8	27.2041	0.0012	0.0705	67.8	26.8856	0.0987	0.1792
62.9	27.2010	-0.0283	0.0719	67.9	26.9075	0.1301	0.1811
63.0	27.1934	-0.0589	0.0729	68.0	26.9359	0.1569	0.1826
63.1	27.1783	-0.0852	0.0758	68.1	26.9691	0.1775	0.1845
63.2	27.1591	-0.1114	0.0797	68.2	27.0055	0.1914	0.1861
63.3	27.1380	-0.1301	0.0814	68.3	27.0445	0.1974	0.1874
63.4	27.1125	-0.1425	0.0827	68.4	27.0842	0.1963	0.1885
63.5	27.0802	-0.1546	0.0856	68.5	27.1228	0.1870	0.1898
63.6	27.0506	-0.1567	0.0873	68.6	27.1587	0.1702	0.1907
63.7	27.0167	-0.1534	0.0905	68.7	27.1914	0.1460	0.1911
63.8	26.9867	-0.1468	0.0947	68.8	27.2179	0.1159	0.1920
63.9	26.9596	-0.1293	0.0950	68.9	27.2384	0.0809	0.1924
64.0	26.9344	-0.1097	0.0985	69.0	27.2517	0.0426	0.1927
64.1	26.9145	-0.0856	0.1020	69.1	27.2567	0.0019	0.1930
64.2	26.8992	-0.0571	0.1051	69.2	27.2539	-0.0388	0.1932
64.3	26.8906	-0.0254	0.1072	69.3	27.2426	-0.0787	0.1931
64.4	26.8857	0.0049	0.1118	69.4	27.2240	-0.1148	0.1935
64.5	26.8915	0.0399	0.1133	69.5	27.1977	-0.1472	0.1934
64.6	26.9015	0.0698	0.1162	69.6	27.1660	-0.1736	0.1937
64.7	26.9159	0.0985	0.1206	69.7	27.1292	-0.1931	0.1939
64.8	26.9379	0.1255	0.1231	69.8	27.0892	-0.2050	0.1942
64.9	26.9649	0.1464	0.1253	69.9	27.0479	-0.2087	0.1947
65.0	26.9952	0.1628	0.1289	70.0	27.0065	-0.2040	0.1952

TABLE IX (Continued)

 $\theta_0 = 65$ degrees

ka	Z ₀	kh _e	ka	Z ₀	kh _e
70.1	26.9669	-0.1914	75.1	27.2497	0.1313
70.2	26.9306	-0.1709	75.2	27.2724	0.0896
70.3	26.8987	-0.1437	75.3	27.2864	0.0440
70.4	26.8728	-0.1107	75.4	27.2909	-0.0035
70.5	26.8542	-0.0730	75.5	27.2858	-0.0510
70.6	26.8431	-0.0323	75.6	27.2713	-0.0967
70.7	26.8402	0.0097	75.7	27.2479	-0.1385
70.8	26.8456	0.0515	75.8	27.2165	-0.1749
70.9	26.8595	0.0918	75.9	27.1786	-0.2043
71.0	26.8808	0.1287	76.0	27.1355	-0.2256
71.1	26.9092	0.1605	76.1	27.0890	-0.2378
71.2	26.9434	0.1865	76.2	27.0410	-0.2405
71.3	26.9824	0.2050	76.3	26.9935	-0.2336
71.4	27.0242	0.2156	76.4	26.9483	-0.2175
71.5	27.0676	0.2177	76.5	26.9071	-0.1927
71.6	27.1106	0.2110	76.6	26.8716	-0.1603
71.7	27.1518	0.1959	76.7	26.8433	-0.1214
71.8	27.1892	0.1725	76.8	26.8231	-0.0777
71.9	27.2214	0.1425	76.9	26.8119	-0.0309
72.0	27.2468	0.1064	77.0	26.8102	0.0173
72.1	27.2649	0.0655	77.1	26.8179	0.0650
72.2	27.2743	0.0220	77.2	26.8350	0.1103
72.3	27.2748	-0.0228	77.3	26.8607	0.1515
72.4	27.2661	-0.0667	77.4	26.8942	0.1869
72.5	27.2490	-0.1082	77.5	26.9341	0.2150
72.6	27.2239	-0.1454	77.6	26.9789	0.2348
72.7	27.1918	-0.1769	77.7	27.0269	0.2454
72.8	27.1540	-0.2015	77.8	27.0761	0.2462
72.9	27.1119	-0.2178	77.9	27.1248	0.2371
73.0	27.0675	-0.2257	78.0	27.1708	0.2186
73.1	27.0223	-0.2245	78.1	27.2123	0.1911
73.2	26.9783	-0.2143	78.2	27.2476	0.1557
73.3	26.9372	-0.1955	78.3	27.2752	0.1139
73.4	26.9006	-0.1691	78.4	27.2939	0.0674
73.5	26.8697	-0.1359	78.5	27.3029	0.0179
73.6	26.8461	-0.0972	78.6	27.3018	-0.0325
73.7	26.8306	-0.0545	78.7	27.2906	-0.0817
73.8	26.8237	-0.0095	78.8	27.2697	-0.1276
73.9	26.8257	0.0359	78.9	27.2401	-0.1685
74.0	26.8370	0.0802	79.0	27.2029	-0.2027
74.1	26.8566	0.1216	79.1	27.1596	-0.2287
74.2	26.8841	0.1583	79.2	27.1120	-0.2456
74.3	26.9184	0.1890	79.3	27.0620	-0.2526
74.4	26.9583	0.2125	79.4	27.0117	-0.2496
74.5	27.0022	0.2276	79.5	26.9629	-0.2367
74.6	27.0482	0.2337	79.6	26.9177	-0.2143
74.7	27.0949	0.2306	79.7	26.8778	-0.1835
74.8	27.1401	0.2181	79.8	26.8448	-0.1454
74.9	27.1821	0.1968	79.9	26.8199	-0.1015
75.0	27.2192	0.1676	80.0	26.8042	-0.0536
					0.2091 -1.0655

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
80.1	26.7982	-0.0034	85.1	27.2825	-0.1449
80.2	26.8022	0.0470	85.2	27.2491	-0.1879
80.3	26.8161	0.0957	85.3	27.2077	-0.2234
80.4	26.8393	0.1408	85.4	27.1601	-0.2498
80.5	26.8710	0.1806	85.5	27.1083	-0.2663
80.6	26.9101	0.2134	85.6	27.0542	-0.2720
80.7	26.9550	0.2379	85.7	27.0002	-0.2669
80.8	27.0040	0.2530	85.8	26.9483	-0.2513
80.9	27.0552	0.2582	85.9	26.9006	-0.2256
81.0	27.1066	0.2531	86.0	26.8589	-0.1911
81.1	27.1561	0.2378	86.1	26.8248	-0.1491
81.2	27.2017	0.2128	86.2	26.7997	-0.1011
81.3	27.2415	0.1792	86.3	26.7845	-0.0492
81.4	27.2738	0.1382	86.4	26.7799	0.0048
81.5	27.2973	0.0914	86.5	26.7859	0.0586
81.6	27.3110	0.0408	86.6	26.8025	0.1103
81.7	27.3143	-0.0116	86.7	26.8289	0.1578
81.8	27.3070	-0.0637	86.8	26.8643	0.1993
81.9	27.2894	-0.1133	86.9	26.9072	0.2330
82.0	27.2622	-0.1584	87.0	26.9561	0.2576
82.1	27.2265	-0.1971	87.1	27.0090	0.2722
82.2	27.1838	-0.2279	87.2	27.0640	0.2759
82.3	27.1359	-0.2495	87.3	27.1187	0.2686
82.4	27.0846	-0.2611	87.4	27.1711	0.2506
82.5	27.0321	-0.2624	87.5	27.2189	0.2223
82.6	26.9804	-0.2531	87.6	27.2602	0.1850
82.7	26.9316	-0.2339	87.7	27.2933	0.1401
82.8	26.8876	-0.2053	87.8	27.3167	0.0893
82.9	26.8501	-0.1687	87.9	27.3295	0.0348
83.0	26.8206	-0.1254	88.0	27.3312	-0.0212
83.1	26.8002	-0.0771	88.1	27.3215	-0.0765
83.2	26.7897	-0.0257	88.2	27.3009	-0.1287
83.3	26.7895	0.0267	88.3	27.2703	-0.1757
83.4	26.7997	0.0783	88.4	27.2310	-0.2156
83.5	26.8198	0.1269	88.5	27.1844	-0.2468
83.6	26.8492	0.1708	88.6	27.1327	-0.2681
83.7	26.8867	0.2080	88.7	27.0777	-0.2786
83.8	26.9310	0.2372	88.8	27.0219	-0.2780
83.9	26.9803	0.2571	88.9	26.9673	-0.2664
84.0	27.0327	0.2668	89.0	26.9162	-0.2442
84.1	27.0862	0.2660	89.1	26.8706	-0.2123
84.2	27.1386	0.2545	89.2	26.8321	-0.1721
84.3	27.1877	0.2327	89.3	26.8024	-0.1252
84.4	27.2317	0.2015	89.4	26.7825	-0.0733
84.5	27.2687	0.1620	89.5	26.7731	-0.0185
84.6	27.2970	0.1158	89.6	26.7748	0.0371
84.7	27.3156	0.0648	89.7	26.7873	0.0914
84.8	27.3235	0.0110	89.8	26.8103	0.1422
84.9	27.3205	-0.0434	89.9	26.8429	0.1876
85.0	27.3067	-0.0961	90.0	26.8840	0.2257
					0.0598 -1.2224

TABLE IX (Continued)

 $\theta_0 = 65$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
90.1	26.9318	0.2550	95.1	27.0110	-0.2895
90.2	26.9847	0.2744	95.2	26.9545	-0.2754
90.3	27.0405	0.2829	95.3	26.9019	-0.2504
90.4	27.0970	0.2802	95.4	26.8554	-0.2155
90.5	27.1520	0.2662	95.5	26.8166	-0.1722
90.6	27.2033	0.2415	95.6	26.7872	-0.1222
90.7	27.2487	0.2069	95.7	26.7682	-0.0674
90.8	27.2863	0.1639	95.8	26.7604	-0.0099
90.9	27.3147	0.1141	95.9	26.7640	0.0481
91.0	27.3324	0.0595	96.0	26.7790	0.1042
91.1	27.3389	0.0024	96.1	26.8047	0.1564
91.2	27.3338	-0.0549	96.2	26.8403	0.2026
91.3	27.3173	-0.1100	96.3	26.8844	0.2410
91.4	27.2901	-0.1606	96.4	26.9353	0.2699
91.5	27.2533	-0.2048	96.5	26.9910	0.2883
91.6	27.2084	-0.2407	96.6	27.0495	0.2952
91.7	27.1574	-0.2669	96.7	27.1083	0.2904
91.8	27.1022	-0.2823	96.8	27.1652	0.2740
91.9	27.0451	-0.2864	96.9	27.2177	0.2464
92.0	26.9884	-0.2791	97.0	27.2638	0.2088
92.1	26.9343	-0.2608	97.1	27.3015	0.1627
92.2	26.8850	-0.2322	97.2	27.3293	0.1098
92.3	26.8424	-0.1944	97.3	27.3459	0.0524
92.4	26.8081	-0.1490	97.4	27.3506	-0.0073
92.5	26.7834	-0.0977	97.5	27.3433	-0.0667
92.6	26.7693	-0.0426	97.6	27.3242	-0.1234
92.7	26.7662	0.0142	97.7	27.2941	-0.1752
92.8	26.7745	0.0705	97.8	27.2543	-0.2198
92.9	26.7936	0.1242	97.9	27.2063	-0.2555
93.0	26.8230	0.1732	98.0	27.1523	-0.2809
93.1	26.8616	0.2155	98.1	27.0944	-0.2950
93.2	26.9078	0.2494	98.2	27.0350	-0.2973
93.3	26.9600	0.2736	98.3	26.9764	-0.2877
93.4	27.0160	0.2870	98.4	26.9209	-0.2668
93.5	27.0738	0.2890	98.5	26.8708	-0.2353
93.6	27.1310	0.2795	98.6	26.8278	-0.1946
93.7	27.1853	0.2587	98.7	26.7938	-0.1463
93.8	27.2344	0.2274	98.8	26.7700	-0.0923
93.9	27.2764	0.1869	98.9	26.7572	-0.0347
94.0	27.3095	0.1386	99.0	26.7560	0.0244
94.1	27.3323	0.0846	99.1	26.7665	0.0825
94.2	27.3438	0.0270	99.2	26.7882	0.1376
94.3	27.3436	-0.0317	99.3	26.8204	0.1873
94.4	27.3315	-0.0892	99.4	26.8618	0.2299
94.5	27.3081	-0.1431	99.5	26.9109	0.2635
94.6	27.2744	-0.1912	99.6	26.9658	0.2868
94.7	27.2318	-0.2316	99.7	27.0244	0.2987
94.8	27.1820	-0.2626	99.8	27.0843	0.2989
94.9	27.1271	-0.2830	99.9	27.1433	0.2870
95.0	27.0694	-0.2921	100.0	27.1988	0.2636
					-0.1427
					-1.1499

TABLE IX (Continued)

 $\theta_0 = 65$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
100.1	27.2487	0.2295	105.1	26.7587	-0.0854
100.2	27.2908	0.1860	105.2	26.7475	-0.0257
100.3	27.3234	0.1348	105.3	26.7483	0.0351
100.4	27.3452	0.0781	105.4	26.7611	0.0945
100.5	27.3551	0.0181	105.5	26.7853	0.1504
100.6	27.3527	-0.0428	105.6	26.8201	0.2005
100.7	27.3382	-0.1019	105.7	26.8641	0.2428
100.8	27.3121	-0.1569	105.8	26.9158	0.2757
100.9	27.2755	-0.2055	105.9	26.9730	0.2978
101.0	27.2300	-0.2457	106.0	27.0337	0.3081
101.1	27.1775	-0.2760	106.1	27.0953	0.3062
101.2	27.1200	-0.2952	106.2	27.1555	0.2920
101.3	27.0600	-0.3025	106.3	27.2119	0.2660
101.4	26.9998	-0.2978	106.4	27.2620	0.2292
101.5	26.9418	-0.2812	106.5	27.3038	0.1830
101.6	26.8884	-0.2536	106.6	27.3355	0.1293
101.7	26.8415	-0.2160	106.7	27.3559	0.0702
101.8	26.8030	-0.1699	106.8	27.3640	0.0082
101.9	26.7744	-0.1172	106.9	27.3594	-0.0542
102.0	26.7566	-0.0600	107.0	27.3424	-0.1144
102.1	26.7505	-0.0003	107.1	27.3137	-0.1700
102.2	26.7562	0.0594	107.2	27.2745	-0.2186
102.3	26.7736	0.1169	107.3	27.2263	-0.2583
102.4	26.8020	0.1699	107.4	27.1713	-0.2876
102.5	26.8403	0.2163	107.5	27.1117	-0.3053
102.6	26.8871	0.2544	107.6	27.0498	-0.3107
102.7	26.9406	0.2825	107.7	26.9883	-0.3037
102.8	26.9988	0.2996	107.8	26.9294	-0.2848
102.9	27.0594	0.3048	107.9	26.8755	-0.2546
103.0	27.1199	0.2978	108.0	26.8287	-0.2144
103.1	27.1780	0.2788	108.1	26.7909	-0.1658
103.2	27.2313	0.2486	108.2	26.7633	-0.1108
103.3	27.2776	0.2082	108.3	26.7471	-0.0515
103.4	27.3149	0.1593	108.4	26.7428	0.0099
103.5	27.3417	0.1038	108.5	26.7507	0.0709
103.6	27.3568	0.0440	108.6	26.7705	0.1292
103.7	27.3596	-0.0177	108.7	26.8014	0.1826
103.8	27.3500	-0.0787	108.8	26.8422	0.2289
103.9	27.3283	-0.1365	108.9	26.8915	0.2664
104.0	27.2954	-0.1888	109.0	26.9473	0.2934
104.1	27.2528	-0.2334	109.1	27.0076	0.3089
104.2	27.2022	-0.2685	109.2	27.0698	0.3122
104.3	27.1457	-0.2927	109.3	27.1317	0.3029
104.4	27.0856	-0.3052	109.4	27.1906	0.2815
104.5	27.0243	-0.3055	109.5	27.2442	0.2487
104.6	26.9643	-0.2936	109.6	27.2902	0.2057
104.7	26.9080	-0.2701	109.7	27.3268	0.1543
104.8	26.8575	-0.2360	109.8	27.3523	0.0965
104.9	26.8147	-0.1927	109.9	27.3657	0.0347
105.0	26.7814	-0.1418	110.0	27.3664	-0.0286
					-0.1667
					-0.9745

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
110.1	27.3544	-0.0908	115.1	26.8457	0.2406
110.2	27.3302	-0.1492	115.2	26.8972	0.2772
110.3	27.2948	-0.2016	115.3	26.9551	0.3029
110.4	27.2496	-0.2457	115.4	27.0171	0.3166
110.5	27.1966	-0.2799	115.5	27.0807	0.3178
110.6	27.1379	-0.3027	115.6	27.1435	0.3063
110.7	27.0760	-0.3134	115.7	27.2029	0.2824
110.8	27.0133	-0.3116	115.8	27.2564	0.2471
110.9	26.9523	-0.2974	115.9	27.3019	0.2017
111.0	26.8955	-0.2714	116.0	27.3374	0.1480
111.1	26.8450	-0.2348	116.1	27.3614	0.0882
111.2	26.8028	-0.1890	116.2	27.3730	0.0247
111.3	26.7704	-0.1359	116.3	27.3715	-0.0399
111.4	26.7491	-0.0774	116.4	27.3571	-0.1028
111.5	26.7398	-0.0160	116.5	27.3304	-0.1615
111.6	26.7427	0.0461	116.6	27.2925	-0.2137
111.7	26.7577	0.1065	116.7	27.2449	-0.2571
111.8	26.7843	0.1628	116.8	27.1897	-0.2901
111.9	26.8216	0.2128	116.9	27.1292	-0.3113
112.0	26.8681	0.2546	117.0	27.0657	-0.3200
112.1	26.9220	0.2865	117.1	27.0020	-0.3160
112.2	26.9813	0.3071	117.2	26.9404	-0.2994
112.3	27.0437	0.3156	117.3	26.8834	-0.2711
112.4	27.1067	0.3116	117.4	26.8332	-0.2321
112.5	27.1677	0.2950	117.5	26.7918	-0.1840
112.6	27.2244	0.2665	117.6	26.7607	-0.1288
112.7	27.2744	0.2271	117.7	26.7410	-0.0686
112.8	27.3155	0.1785	117.8	26.7335	-0.0057
112.9	27.3461	0.1225	117.9	26.7386	0.0574
113.0	27.3649	0.0614	118.0	26.7559	0.1184
113.1	27.3710	-0.0022	118.1	26.7850	0.1748
113.2	27.3642	-0.0658	118.2	26.8246	0.2245
113.3	27.3447	-0.1268	118.3	26.8733	0.2655
113.4	27.3135	-0.1825	118.4	26.9293	0.2961
113.5	27.2717	-0.2308	118.5	26.9904	0.3151
113.6	27.2212	-0.2697	118.6	27.0542	0.3216
113.7	27.1640	-0.2977	118.7	27.1182	0.3153
113.8	27.1025	-0.3136	118.8	27.1798	0.2964
113.9	27.0392	-0.3170	118.9	27.2365	0.2654
114.0	26.9766	-0.3078	119.0	27.2860	0.2236
114.1	26.9172	-0.2864	119.1	27.3262	0.1727
114.2	26.8633	-0.2538	119.2	27.3555	0.1147
114.3	26.8169	-0.2112	119.3	27.3724	0.0518
114.4	26.7799	-0.1603	119.4	27.3765	-0.0131
114.5	26.7537	-0.1033	119.5	27.3673	-0.0776
114.6	26.7391	-0.0422	119.6	27.3454	-0.1389
114.7	26.7369	0.0205	119.7	27.3117	-0.1945
114.8	26.7470	0.0825	119.8	27.2676	-0.2422
114.9	26.7692	0.1413	119.9	27.2148	-0.2800
115.0	26.8025	0.1947	120.0	27.1557	-0.3065
					-0.0660
					-0.8845

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
120.1	27.0927	-0.3206	-0.0650	-0.8832	125.1	27.1917	0.2964	0.0002	-0.8852
120.2	27.0282	-0.3219	-0.0638	-0.8819	125.2	27.2482	0.2631	0.0006	-0.8863
120.3	26.9649	-0.3103	-0.0623	-0.8806	125.3	27.2970	0.2190	0.0009	-0.8874
120.4	26.9052	-0.2866	-0.0607	-0.8795	125.4	27.3361	0.1659	0.0011	-0.8882
120.5	26.8515	-0.2515	-0.0589	-0.8784	125.5	27.3637	0.1060	0.0011	-0.8889
120.6	26.8059	-0.2067	-0.0570	-0.8775	125.6	27.3788	0.0417	0.0010	-0.8894
120.7	26.7700	-0.1538	-0.0550	-0.8768	125.7	27.3806	-0.0244	0.0009	-0.8897
120.8	26.7453	-0.0949	-0.0528	-0.8763	125.8	27.3691	-0.0895	0.0008	-0.8898
120.9	26.7326	-0.0323	-0.0506	-0.8760	125.9	27.3448	-0.1509	0.0008	-0.8897
121.0	26.7324	0.0315	-0.0484	-0.8759	126.0	27.3087	-0.2061	0.0008	-0.8894
121.1	26.7448	0.0941	-0.0463	-0.8760	126.1	27.2623	-0.2529	0.0010	-0.8889
121.2	26.7693	0.1532	-0.0442	-0.8763	126.2	27.2076	-0.2894	0.0014	-0.8883
121.3	26.8049	0.2064	-0.0422	-0.8768	126.3	27.1467	-0.3142	0.0019	-0.8876
121.4	26.8504	0.2515	-0.0404	-0.8775	126.4	27.0823	-0.3263	0.0027	-0.8869
121.5	26.9041	0.2869	-0.0387	-0.8783	126.5	27.0169	-0.3254	0.0036	-0.8862
121.6	26.9638	0.3111	-0.0372	-0.8792	126.6	26.9532	-0.3116	0.0047	-0.8854
121.7	27.0272	0.3230	-0.0360	-0.8801	126.7	26.8935	-0.2855	0.0061	-0.8848
121.8	27.0920	0.3220	-0.0349	-0.8811	126.8	26.8403	-0.2481	0.0076	-0.8842
121.9	27.1554	0.3082	-0.0340	-0.8821	126.9	26.7956	-0.2011	0.0093	-0.8838
122.0	27.2149	0.2819	-0.0334	-0.8829	127.0	26.7610	-0.1463	0.0111	-0.8836
122.1	27.2681	0.2442	-0.0329	-0.8837	127.1	26.7379	-0.0858	0.0129	-0.8836
122.2	27.3128	0.1964	-0.0326	-0.8844	127.2	26.7272	-0.0220	0.0149	-0.8837
122.3	27.3470	0.1406	-0.0324	-0.8849	127.3	26.7292	0.0427	0.0168	-0.8841
122.4	27.3694	0.0790	-0.0323	-0.8852	127.4	26.7438	0.1058	0.0188	-0.8847
122.5	27.3789	0.0141	-0.0322	-0.8853	127.5	26.7706	0.1648	0.0206	-0.8855
122.6	27.3752	-0.0514	-0.0321	-0.8852	127.6	26.8085	0.2175	0.0224	-0.8865
122.7	27.3584	-0.1148	-0.0321	-0.8849	127.7	26.8562	0.2617	0.0240	-0.8876
122.8	27.3292	-0.1735	-0.0319	-0.8844	127.8	26.9117	0.2958	0.0254	-0.8889
122.9	27.2889	-0.2252	-0.0316	-0.8838	127.9	26.9731	0.3183	0.0267	-0.8903
123.0	27.2391	-0.2676	-0.0312	-0.8830	128.0	27.0378	0.3282	0.0277	-0.8918
123.1	27.1819	-0.2992	-0.0306	-0.8821	128.1	27.1034	0.3250	0.0285	-0.8932
123.2	27.1198	-0.3186	-0.0298	-0.8811	128.2	27.1672	0.3088	0.0292	-0.8947
123.3	27.0551	-0.3253	-0.0287	-0.8802	128.3	27.2266	0.2802	0.0295	-0.8961
123.4	26.9905	-0.3190	-0.0275	-0.8792	128.4	27.2793	0.2401	0.0297	-0.8974
123.5	26.9285	-0.3001	-0.0261	-0.8783	128.5	27.3229	0.1902	0.0298	-0.8986
123.6	26.8717	-0.2694	-0.0245	-0.8775	128.6	27.3557	0.1325	0.0297	-0.8996
123.7	26.8221	-0.2281	-0.0228	-0.8768	128.7	27.3762	0.0693	0.0294	-0.9004
123.8	26.7817	-0.1780	-0.0209	-0.8763	128.8	27.3836	0.0032	0.0292	-0.9011
123.9	26.7520	-0.1209	-0.0189	-0.8759	128.9	27.3776	-0.0631	0.0289	-0.9014
124.0	26.7341	-0.0591	-0.0168	-0.8758	129.0	27.3584	-0.1267	0.0286	-0.9016
124.1	26.7286	0.0049	-0.0147	-0.8758	129.1	27.3268	-0.1852	0.0284	-0.9016
124.2	26.7358	0.0688	-0.0127	-0.8761	129.2	27.2842	-0.2361	0.0283	-0.9014
124.3	26.7555	0.1301	-0.0106	-0.8766	129.3	27.2324	-0.2773	0.0284	-0.9010
124.4	26.7869	0.1864	-0.0087	-0.8773	129.4	27.1734	-0.3073	0.0286	-0.9006
124.5	26.8288	0.2355	-0.0069	-0.8781	129.5	27.1098	-0.3249	0.0290	-0.9000
124.6	26.8796	0.2754	-0.0052	-0.8791	129.6	27.0441	-0.3295	0.0297	-0.8994
124.7	26.9375	0.3046	-0.0037	-0.8803	129.7	26.9789	-0.3209	0.0305	-0.8988
124.8	27.0001	0.3219	-0.0024	-0.8815	129.8	26.9169	-0.2996	0.0316	-0.8982
124.9	27.0651	0.3263	-0.0013	-0.8827	129.9	26.8604	-0.2666	0.0328	-0.8978
125.0	27.1298	0.3177	-0.0005	-0.8840	130.0	26.8116	-0.2231	0.0343	-0.8974

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
130.1	26.7724	-0.1710	0.0358	-0.8973	135.1	27.3873	-0.0080	0.0678	-0.9369
130.2	26.7442	-0.1122	0.0375	-0.8973	135.2	27.3790	-0.0748	0.0671	-0.9375
130.3	26.7281	-0.0491	0.0392	-0.8975	135.3	27.3574	-0.1385	0.0664	-0.9378
130.4	26.7248	0.0159	0.0410	-0.8979	135.4	27.3235	-0.1965	0.0657	-0.9379
130.5	26.7343	0.0803	0.0428	-0.8985	135.5	27.2786	-0.2465	0.0652	-0.9379
130.6	26.7562	0.1417	0.0446	-0.8993	135.6	27.2248	-0.2864	0.0649	-0.9376
130.7	26.7899	0.1976	0.0462	-0.9004	135.7	27.1642	-0.3146	0.0647	-0.9373
130.8	26.8339	0.2459	0.0477	-0.9016	135.8	27.0993	-0.3302	0.0647	-0.9368
130.9	26.8868	0.2847	0.0491	-0.9030	135.9	27.0328	-0.3326	0.0650	-0.9363
131.0	26.9463	0.3123	0.0503	-0.9045	136.0	26.9673	-0.3217	0.0654	-0.9358
131.1	27.0103	0.3276	0.0513	-0.9061	136.1	26.9053	-0.2981	0.0661	-0.9354
131.2	27.0763	0.3299	0.0520	-0.9078	136.2	26.8494	-0.2629	0.0670	-0.9350
131.3	27.1415	0.3190	0.0526	-0.9094	136.3	26.8016	-0.2173	0.0681	-0.9348
131.4	27.2035	0.2953	0.0529	-0.9110	136.4	26.7637	-0.1633	0.0693	-0.9347
131.5	27.2595	0.2596	0.0530	-0.9125	136.5	26.7373	-0.1030	0.0707	-0.9348
131.6	27.3074	0.2133	0.0529	-0.9140	136.6	26.7232	-0.0387	0.0721	-0.9351
131.7	27.3452	0.1583	0.0526	-0.9152	136.7	26.7219	0.0271	0.0736	-0.9357
131.8	27.3711	0.0967	0.0523	-0.9163	136.8	26.7337	0.0919	0.0751	-0.9364
131.9	27.3841	0.0311	0.0518	-0.9171	136.9	26.7579	0.1531	0.0765	-0.9374
132.0	27.3837	-0.0358	0.0513	-0.9178	137.0	26.7938	0.2085	0.0778	-0.9386
132.1	27.3698	-0.1013	0.0508	-0.9182	137.1	26.8400	0.2558	0.0790	-0.9400
132.2	27.3431	-0.1626	0.0503	-0.9184	137.2	26.8946	0.2932	0.0801	-0.9416
132.3	27.3047	-0.2172	0.0499	-0.9184	137.3	26.9557	0.3191	0.0809	-0.9432
132.4	27.2561	-0.2630	0.0497	-0.9182	137.4	27.0209	0.3324	0.0815	-0.9450
132.5	27.1995	-0.2980	0.0496	-0.9178	137.5	27.0877	0.3325	0.0819	-0.9468
132.6	27.1371	-0.3210	0.0498	-0.9174	137.6	27.1532	0.3193	0.0821	-0.9487
132.7	27.0716	-0.3311	0.0501	-0.9169	137.7	27.2150	0.2932	0.0820	-0.9504
132.8	27.0055	-0.3279	0.0506	-0.9164	137.8	27.2705	0.2553	0.0817	-0.9521
132.9	26.9415	-0.3118	0.0514	-0.9159	137.9	27.3173	0.2068	0.0811	-0.9537
133.0	26.8821	-0.2833	0.0524	-0.9154	138.0	27.3535	0.1499	0.0805	-0.9550
133.1	26.8296	-0.2438	0.0535	-0.9151	138.1	27.3776	0.0868	0.0796	-0.9562
133.2	26.7859	-0.1947	0.0548	-0.9149	138.2	27.3885	0.0201	0.0787	-0.9572
133.3	26.7528	-0.1381	0.0563	-0.9149	138.3	27.3858	-0.0475	0.0778	-0.9579
133.4	26.7315	-0.0762	0.0578	-0.9151	138.4	27.3695	-0.1131	0.0769	-0.9583
133.5	26.7228	-0.0113	0.0595	-0.9155	138.5	27.3404	-0.1741	0.0760	-0.9586
133.6	26.7270	0.0540	0.0611	-0.9161	138.6	27.2997	-0.2279	0.0752	-0.9586
133.7	26.7439	0.1173	0.0627	-0.9169	138.7	27.2491	-0.2724	0.0746	-0.9584
133.8	26.7730	0.1761	0.0642	-0.9179	138.8	27.1908	-0.3059	0.0741	-0.9581
133.9	26.8131	0.2281	0.0657	-0.9192	138.9	27.1271	-0.3269	0.0738	-0.9577
134.0	26.8628	0.2713	0.0669	-0.9206	139.0	27.0606	-0.3349	0.0738	-0.9572
134.1	26.9201	0.3039	0.0681	-0.9222	139.1	26.9940	-0.3294	0.0740	-0.9566
134.2	26.9829	0.3245	0.0690	-0.9238	139.2	26.9299	-0.3110	0.0744	-0.9561
134.3	27.0487	0.3324	0.0697	-0.9256	139.3	26.8709	-0.2802	0.0751	-0.9557
134.4	27.1149	0.3269	0.0701	-0.9273	139.4	26.8192	-0.2386	0.0759	-0.9554
134.5	27.1789	0.3084	0.0703	-0.9291	139.5	26.7768	-0.1876	0.0770	-0.9552
134.6	27.2381	0.2774	0.0703	-0.9308	139.6	26.7453	-0.1294	0.0781	-0.9552
134.7	27.2899	0.2351	0.0701	-0.9323	139.7	26.7259	-0.0661	0.0794	-0.9554
134.8	27.3323	0.1831	0.0697	-0.9338	139.8	26.7193	-0.0003	0.0807	-0.9558
134.9	27.3635	0.1236	0.0692	-0.9350	139.9	26.7257	0.0655	0.0821	-0.9565
135.0	27.3821	0.0590	0.0685	-0.9361	140.0	26.7449	0.1288	0.0834	-0.9574

TABLE IX (Continued)

 $\theta_0 = 65 \text{ degrees}$

ka	Z ₀	kh _e	ka	Z ₀	kh _e
140.1	26.7762	0.1872	145.1	27.1815	-0.3130
140.2	26.8185	0.2384	145.2	27.1166	-0.3321
140.3	26.8701	0.2803	145.3	27.0493	-0.3378
140.4	26.9291	0.3113	145.4	26.9824	-0.3301
140.5	26.9932	0.3300	145.5	26.9184	-0.3093
140.6	27.0599	0.3357	145.6	26.8600	-0.2763
140.7	27.1266	0.3279	145.7	26.8093	-0.2326
140.8	27.1906	0.3070	145.8	26.7683	-0.1798
140.9	27.2492	0.2737	145.9	26.7385	-0.1201
141.0	27.3001	0.2292	146.0	26.7211	-0.0557
141.1	27.3412	0.1753	146.1	26.7166	0.0109
141.2	27.3706	0.1142	146.2	26.7253	0.0770
141.3	27.3872	0.0484	146.3	26.7468	0.1402
141.4	27.3901	-0.0195	146.4	26.7803	0.1980
141.5	27.3794	-0.0866	146.5	26.8246	0.2482
141.6	27.3554	-0.1501	146.6	26.8780	0.2887
141.7	27.3192	-0.2075	146.7	26.9386	0.3179
141.8	27.2723	-0.2563	146.8	27.0038	0.3347
141.9	27.2166	-0.2947	146.9	27.0713	0.3381
142.0	27.1545	-0.3212	147.0	27.1383	0.3281
142.1	27.0886	-0.3347	147.1	27.2021	0.3049
142.2	27.0214	-0.3348	147.2	27.2601	0.2692
142.3	26.9557	-0.3216	147.3	27.3099	0.2226
142.4	26.8940	-0.2958	147.4	27.3494	0.1669
142.5	26.8388	-0.2583	147.5	27.3770	0.1043
142.6	26.7921	-0.2107	147.6	27.3914	0.0373
142.7	26.7557	-0.1550	147.7	27.3921	-0.0312
142.8	26.7311	-0.0933	147.8	27.3790	-0.0984
142.9	26.7190	-0.0280	147.9	27.3526	-0.1616
143.0	26.7200	0.0384	148.0	27.3142	-0.2181
143.1	26.7340	0.1034	148.1	27.2652	-0.2657
143.2	26.7605	0.1644	148.2	27.2078	-0.3025
143.3	26.7985	0.2190	148.3	27.1444	-0.3270
143.4	26.8467	0.2652	148.4	27.0775	-0.3384
143.5	26.9031	0.3011	148.5	27.0096	-0.3362
143.6	26.9657	0.3252	148.6	26.9441	-0.3207
143.7	27.0319	0.3364	148.7	26.8828	-0.2926
143.8	27.0992	0.3342	148.8	26.8285	-0.2530
143.9	27.1649	0.3187	148.9	26.7831	-0.2035
144.0	27.2264	0.2903	149.0	26.7483	-0.1462
144.1	27.2810	0.2501	149.1	26.7255	-0.0832
144.2	27.3266	0.1996	149.2	26.7156	-0.0170
144.3	27.3612	0.1410	149.3	26.7188	0.0499
144.4	27.3833	0.0765	149.4	26.7351	0.1149
144.5	27.3920	0.0088	149.5	26.7638	0.1754
144.6	27.3870	-0.0592	149.6	26.8040	0.2292
144.7	27.3683	-0.1248	149.7	26.8541	0.2741
144.8	27.3369	-0.1853	149.8	26.9121	0.3084
144.9	27.2940	-0.2382	149.9	26.9760	0.3305
145.0	27.2415	-0.2813	150.0	27.0431	0.3396
					0.0831 -1.0197

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
150.1	27.1109	0.3352	155.1	26.8186	-0.2470
150.2	27.1765	0.3173	155.2	26.7745	-0.1957
150.3	27.2375	0.2866	155.3	26.7415	-0.1369
150.4	27.2912	0.2442	155.4	26.7207	-0.0727
150.5	27.3354	0.1918	155.5	26.7129	-0.0058
150.6	27.3682	0.1315	155.6	26.7183	0.0614
150.7	27.3883	0.0658	155.7	26.7369	0.1262
150.8	27.3948	-0.0026	155.8	26.7679	0.1862
150.9	27.3873	-0.0710	155.9	26.8101	0.2391
151.0	27.3663	-0.1365	156.0	26.8620	0.2826
151.1	27.3326	-0.1963	156.1	26.9216	0.3151
151.2	27.2876	-0.2481	156.2	26.9866	0.3353
151.3	27.2332	-0.2897	156.3	27.0545	0.3421
151.4	27.1718	-0.3196	156.4	27.1226	0.3354
151.5	27.1058	-0.3365	156.5	27.1881	0.3151
151.6	27.0378	-0.3400	156.6	27.2484	0.2821
151.7	26.9707	-0.3300	156.7	27.3010	0.2377
151.8	26.9071	-0.3069	156.8	27.3437	0.1834
151.9	26.8494	-0.2717	156.9	27.3747	0.1216
152.0	26.7999	-0.2260	157.0	27.3927	0.0548
152.1	26.7603	-0.1715	157.1	27.3968	-0.0143
152.2	26.7324	-0.1103	157.2	27.3870	-0.0828
152.3	26.7169	-0.0449	157.3	27.3636	-0.1479
152.4	26.7147	0.0222	157.4	27.3276	-0.2070
152.5	26.7256	0.0885	157.5	27.2806	-0.2575
152.6	26.7493	0.1514	157.6	27.2245	-0.2975
152.7	26.7850	0.2085	157.7	27.1617	-0.3255
152.8	26.8314	0.2576	157.8	27.0947	-0.3403
152.9	26.8865	0.2966	157.9	27.0263	-0.3415
153.0	26.9485	0.3240	158.0	26.9591	-0.3291
153.1	27.0148	0.3387	158.1	26.8959	-0.3038
153.2	27.0828	0.3399	158.2	26.8391	-0.2665
153.3	27.1500	0.3275	158.3	26.7908	-0.2188
153.4	27.2134	0.3019	158.4	26.7529	-0.1627
153.5	27.2706	0.2641	158.5	26.7268	-0.1002
153.6	27.3192	0.2154	158.6	26.7135	-0.0339
153.7	27.3571	0.1580	158.7	26.7134	0.0337
153.8	27.3827	0.0940	158.8	26.7266	0.1000
153.9	27.3950	0.0261	158.9	26.7526	0.1625
154.0	27.3933	-0.0429	159.0	26.7904	0.2188
154.1	27.3778	-0.1101	159.1	26.8387	0.2665
154.2	27.3491	-0.1728	159.2	26.8955	0.3040
154.3	27.3084	-0.2284	159.3	26.9588	0.3295
154.4	27.2576	-0.2747	159.4	27.0260	0.3420
154.5	27.1986	-0.3097	159.5	27.0945	0.3409
154.6	27.1339	-0.3322	159.6	27.1616	0.3262
154.7	27.0662	-0.3414	159.7	27.2246	0.2983
154.8	26.9982	-0.3369	159.8	27.2809	0.2583
154.9	26.9326	-0.3191	159.9	27.3281	0.2077
155.0	26.8719	-0.2887	160.0	27.3643	0.1486
					0.0584 -1.0367
					0.0591 -1.0361
					0.0599 -1.0357
					0.0608 -1.0356
					0.0617 -1.0357
					0.0627 -1.0360
					0.0637 -1.0366
					0.0646 -1.0375
					0.0653 -1.0385
					0.0659 -1.0398
					0.0663 -1.0412
					0.0665 -1.0428
					0.0664 -1.0444
					0.0660 -1.0460
					0.0654 -1.0476
					0.0645 -1.0491
					0.0634 -1.0505
					0.0620 -1.0516
					0.0605 -1.0526
					0.0589 -1.0533
					0.0573 -1.0537
					0.0556 -1.0539
					0.0540 -1.0538
					0.0525 -1.0535
					0.0512 -1.0529
					0.0500 -1.0521
					0.0491 -1.0512
					0.0484 -1.0502
					0.0479 -1.0491
					0.0478 -1.0480
					0.0479 -1.0470
					0.0482 -1.0462
					0.0488 -1.0454
					0.0495 -1.0449
					0.0503 -1.0446
					0.0513 -1.0445
					0.0523 -1.0447
					0.0532 -1.0451
					0.0541 -1.0458
					0.0549 -1.0467
					0.0556 -1.0478
					0.0560 -1.0491
					0.0562 -1.0506
					0.0562 -1.0521
					0.0559 -1.0537
					0.0554 -1.0552
					0.0545 -1.0567
					0.0535 -1.0580
					0.0522 -1.0592
					0.0507 -1.0602

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
160.1	27.3878	0.0833	165.1	26.7283	0.1115
160.2	27.3978	0.0146	165.2	26.7565	0.1734
160.3	27.3938	-0.0547	165.3	26.7964	0.2287
160.4	27.3759	-0.1218	165.4	26.8465	0.2751
160.5	27.3449	-0.1839	165.5	26.9049	0.3108
160.6	27.3021	-0.2384	165.6	26.9694	0.3344
160.7	27.2494	-0.2831	165.7	27.0374	0.3447
160.8	27.1889	-0.3164	165.8	27.1062	0.3413
160.9	27.1231	-0.3368	165.9	27.1732	0.3242
161.0	27.0547	-0.3437	166.0	27.2356	0.2940
161.1	26.9865	-0.3369	166.1	27.2908	0.2519
161.2	26.9212	-0.3168	166.2	27.3366	0.1994
161.3	26.8612	-0.2842	166.3	27.3709	0.1387
161.4	26.8090	-0.2405	166.4	27.3924	0.0723
161.5	26.7664	-0.1875	166.5	27.4001	0.0029
161.6	26.7352	-0.1272	166.6	27.3936	-0.0666
161.7	26.7164	-0.0620	166.7	27.3733	-0.1334
161.8	26.7108	0.0056	166.8	27.3401	-0.1947
161.9	26.7186	0.0730	166.9	27.2952	-0.2480
162.0	26.7394	0.1375	167.0	27.2407	-0.2911
162.1	26.7725	0.1968	167.1	27.1788	-0.3225
162.2	26.8168	0.2485	167.2	27.1120	-0.3408
162.3	26.8704	0.2906	167.3	27.0431	-0.3454
162.4	26.9315	0.3213	167.4	26.9748	-0.3362
162.5	26.9975	0.3394	167.5	26.9099	-0.3138
162.6	27.0660	0.3440	167.6	26.8508	-0.2791
162.7	27.1343	0.3349	167.7	26.7998	-0.2334
162.8	27.1995	0.3123	167.8	26.7588	-0.1787
162.9	27.2590	0.2771	167.9	26.7294	-0.1171
163.0	27.3104	0.2306	168.0	26.7128	-0.0510
163.1	27.3515	0.1746	168.1	26.7094	0.0171
163.2	27.3806	0.1114	168.2	26.7194	0.0845
163.3	27.3964	0.0435	168.3	26.7425	0.1487
163.4	27.3982	-0.0261	168.4	26.7778	0.2072
163.5	27.3859	-0.0946	168.5	26.8240	0.2577
163.6	27.3602	-0.1593	168.6	26.8793	0.2981
163.7	27.3220	-0.2174	168.7	26.9417	0.3270
163.8	27.2730	-0.2666	168.8	27.0087	0.3429
163.9	27.2153	-0.3049	168.9	27.0777	0.3452
164.0	27.1512	-0.3308	169.0	27.1460	0.3338
164.1	27.0834	-0.3434	169.1	27.2108	0.3089
164.2	27.0146	-0.3423	169.2	27.2694	0.2714
164.3	26.9475	-0.3276	169.3	27.3195	0.2229
164.4	26.8849	-0.3000	169.4	27.3589	0.1652
164.5	26.8290	-0.2606	169.5	27.3859	0.1007
164.6	26.7821	-0.2111	169.6	27.3994	0.0321
164.7	26.7459	-0.1534	169.7	27.3989	-0.0379
164.8	26.7218	-0.0898	169.8	27.3842	-0.1064
164.9	26.7106	-0.0227	169.9	27.3562	-0.1704
165.0	26.7128	0.0452	170.0	27.3158	-0.2275
					0.0091 -1.0698

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e				
170.1	27.2650	-0.2752	0.0079	-1.0688	175.1	27.0200	0.3459	0.0049	-1.0622
170.2	27.2057	-0.3117	0.0068	-1.0676	175.2	27.0895	0.3459	0.0046	-1.0635
170.3	27.1404	-0.3356	0.0060	-1.0663	175.3	27.1577	0.3321	0.0041	-1.0648
170.4	27.0719	-0.3460	0.0055	-1.0650	175.4	27.2219	0.3048	0.0032	-1.0660
170.5	27.0029	-0.3425	0.0052	-1.0636	175.5	27.2795	0.2653	0.0022	-1.0671
170.6	26.9361	-0.3255	0.0052	-1.0623	175.6	27.3282	0.2148	0.0009	-1.0679
170.7	26.8741	-0.2956	0.0055	-1.0611	175.7	27.3658	0.1555	-0.0005	-1.0686
170.8	26.8193	-0.2542	0.0059	-1.0600	175.8	27.3907	0.0898	-0.0021	-1.0690
170.9	26.7738	-0.2029	0.0066	-1.0591	175.9	27.4019	0.0204	-0.0037	-1.0691
171.0	26.7394	-0.1438	0.0075	-1.0584	176.0	27.3990	-0.0498	-0.0054	-1.0690
171.1	26.7173	-0.0791	0.0084	-1.0579	176.1	27.3819	-0.1181	-0.0070	-1.0686
171.2	26.7083	-0.0114	0.0094	-1.0577	176.2	27.3516	-0.1814	-0.0085	-1.0679
171.3	26.7128	0.0568	0.0105	-1.0578	176.3	27.3091	-0.2373	-0.0099	-1.0670
171.4	26.7306	0.1228	0.0115	-1.0581	176.4	27.2564	-0.2835	-0.0111	-1.0659
171.5	26.7610	0.1841	0.0124	-1.0587	176.5	27.1957	-0.3181	-0.0120	-1.0646
171.6	26.8029	0.2383	0.0131	-1.0595	176.6	27.1294	-0.3398	-0.0127	-1.0632
171.7	26.8548	0.2833	0.0137	-1.0605	176.7	27.0603	-0.3479	-0.0131	-1.0617
171.8	26.9147	0.3172	0.0141	-1.0616	176.8	26.9911	-0.3421	-0.0133	-1.0603
171.9	26.9802	0.3387	0.0142	-1.0629	176.9	26.9247	-0.3228	-0.0131	-1.0589
172.0	27.0489	0.3468	0.0141	-1.0642	177.0	26.8635	-0.2908	-0.0128	-1.0576
172.1	27.1180	0.3410	0.0137	-1.0655	177.1	26.8099	-0.2474	-0.0122	-1.0565
172.2	27.1847	0.3216	0.0130	-1.0668	177.2	26.7660	-0.1944	-0.0114	-1.0555
172.3	27.2464	0.2892	0.0120	-1.0680	177.3	26.7334	-0.1338	-0.0104	-1.0548
172.4	27.3004	0.2449	0.0109	-1.0691	177.4	26.7134	-0.0682	-0.0094	-1.0543
172.5	27.3446	0.1907	0.0095	-1.0699	177.5	26.7066	0.0001	-0.0083	-1.0541
172.6	27.3770	0.1286	0.0080	-1.0705	177.6	26.7134	0.0684	-0.0072	-1.0542
172.7	27.3963	0.0611	0.0063	-1.0709	177.7	26.7334	0.1341	-0.0062	-1.0545
172.8	27.4017	-0.0089	0.0047	-1.0709	177.8	26.7660	0.1947	-0.0053	-1.0550
172.9	27.3928	-0.0785	0.0030	-1.0707	177.9	26.8099	0.2477	-0.0045	-1.0558
173.0	27.3702	-0.1448	0.0014	-1.0703	178.0	26.8635	0.2911	-0.0039	-1.0568
173.1	27.3347	-0.2053	-0.0001	-1.0695	178.1	26.9248	0.3231	-0.0036	-1.0579
173.2	27.2878	-0.2572	-0.0014	-1.0686	178.2	26.9913	0.3425	-0.0035	-1.0591
173.3	27.2316	-0.2987	-0.0025	-1.0674	178.3	27.0606	0.3483	-0.0036	-1.0603
173.4	27.1684	-0.3280	-0.0034	-1.0661	178.4	27.1298	0.3402	-0.0040	-1.0616
173.5	27.1008	-0.3441	-0.0040	-1.0647	178.5	27.1961	0.3184	-0.0047	-1.0628
173.6	27.0314	-0.3464	-0.0044	-1.0633	178.6	27.2570	0.2837	-0.0057	-1.0639
173.7	26.9632	-0.3350	-0.0045	-1.0619	178.7	27.3097	0.2375	-0.0068	-1.0648
173.8	26.8987	-0.3103	-0.0043	-1.0606	178.8	27.3522	0.1815	-0.0082	-1.0655
173.9	26.8406	-0.2734	-0.0038	-1.0594	178.9	27.3826	0.1180	-0.0097	-1.0660
174.0	26.7909	-0.2259	-0.0032	-1.0584	179.0	27.3997	0.0497	-0.0113	-1.0662
174.1	26.7516	-0.1696	-0.0024	-1.0576	179.1	27.4027	-0.0207	-0.0129	-1.0661
174.2	26.7242	-0.1068	-0.0014	-1.0570	179.2	27.3914	-0.0903	-0.0145	-1.0658
174.3	26.7096	-0.0398	-0.0004	-1.0566	179.3	27.3664	-0.1562	-0.0160	-1.0651
174.4	26.7085	0.0286	0.0007	-1.0565	179.4	27.3287	-0.2156	-0.0174	-1.0643
174.5	26.7208	0.0960	0.0017	-1.0567	179.5	27.2799	-0.2661	-0.0186	-1.0632
174.6	26.7462	0.1597	0.0027	-1.0572	179.6	27.2221	-0.3058	-0.0196	-1.0619
174.7	26.7836	0.2173	0.0035	-1.0578	179.7	27.1577	-0.3331	-0.0204	-1.0605
174.8	26.8316	0.2664	0.0042	-1.0587	179.8	27.0893	-0.3470	-0.0209	-1.0591
174.9	26.8886	0.3052	0.0047	-1.0598	179.9	27.0197	-0.3469	-0.0211	-1.0576
175.0	26.9522	0.3321	0.0049	-1.0610	180.0	26.9516	-0.3331	-0.0210	-1.0562

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
180.1	26.8878	-0.3062	185.1	27.3594	0.1720
180.2	26.8306	-0.2672	185.2	27.3878	0.1072
180.3	26.7824	-0.2179	185.3	27.4026	0.0381
180.4	26.7449	-0.1601	185.4	27.4031	-0.0327
180.5	26.7194	-0.0962	185.5	27.3895	-0.1021
180.6	26.7071	-0.0285	185.6	27.3621	-0.1673
180.7	26.7082	0.0403	185.7	27.3223	-0.2256
180.8	26.7228	0.1075	185.8	27.2716	-0.2747
180.9	26.7504	0.1706	185.9	27.2123	-0.3125
181.0	26.7898	0.2271	186.0	27.1468	-0.3377
181.1	26.8398	0.2749	186.1	27.0777	-0.3493
181.2	26.8982	0.3119	186.2	27.0079	-0.3469
181.3	26.9630	0.3367	186.3	26.9401	-0.3307
181.4	27.0316	0.3483	186.4	26.8770	-0.3016
181.5	27.1013	0.3460	186.5	26.8210	-0.2606
181.6	27.1693	0.3298	186.6	26.7743	-0.2095
181.7	27.2329	0.3003	186.7	26.7385	-0.1503
181.8	27.2894	0.2586	186.8	26.7152	-0.0853
181.9	27.3365	0.2063	186.9	26.7050	-0.0170
182.0	27.3722	0.1455	187.0	26.7085	0.0519
182.1	27.3950	0.0787	187.1	26.7254	0.1189
182.2	27.4039	0.0086	187.2	26.7551	0.1813
182.3	27.3985	-0.0618	187.3	26.7966	0.2367
182.4	27.3791	-0.1297	187.4	26.8483	0.2829
182.5	27.3464	-0.1922	187.5	26.9082	0.3181
182.6	27.3020	-0.2468	187.6	26.9740	0.3409
182.7	27.2475	-0.2913	187.7	27.0432	0.3501
182.8	27.1854	-0.3240	187.8	27.1131	0.3455
182.9	27.1182	-0.3436	187.9	27.1808	0.3269
183.0	27.0486	-0.3493	188.0	27.2436	0.2952
183.1	26.9794	-0.3412	188.1	27.2989	0.2514
183.2	26.9134	-0.3195	188.2	27.3444	0.1973
183.3	26.8531	-0.2853	188.3	27.3781	0.1351
183.4	26.8008	-0.2400	188.4	27.3987	0.0673
183.5	26.7585	-0.1854	188.5	27.4053	-0.0033
183.6	26.7279	-0.1236	188.6	27.3975	-0.0737
183.7	26.7099	-0.0570	188.7	27.3757	-0.1411
183.8	26.7054	0.0117	188.8	27.3408	-0.2027
183.9	26.7145	0.0800	188.9	27.2943	-0.2560
184.0	26.7368	0.1453	189.0	27.2382	-0.2988
184.1	26.7715	0.2049	189.1	27.1748	-0.3294
184.2	26.8174	0.2567	189.2	27.1068	-0.3468
184.3	26.8726	0.2985	189.3	27.0368	-0.3502
184.4	26.9352	0.3286	189.4	26.9677	-0.3397
184.5	27.0027	0.3458	189.5	26.9022	-0.3158
184.6	27.0723	0.3493	189.6	26.8429	-0.2795
184.7	27.1415	0.3388	189.7	26.7920	-0.2323
184.8	27.2074	0.3147	189.8	26.7514	-0.1761
184.9	27.2673	0.2778	189.9	26.7228	-0.1131
185.0	27.3187	0.2296	190.0	26.7070	-0.0457

TABLE IX (Continued)

 $\theta_o = 65$ degrees

ka	Z _o	kh _e	ka	Z _c	kh _e				
190.1	26.7048	0.0234	-0.0324	-1.0362	195.1	27.3347	-0.2130	-0.0428	-1.0393
190.2	26.7161	0.0916	-0.0312	-1.0363	195.2	27.2863	-0.2648	-0.0439	-1.0381
190.3	26.7407	0.1563	-0.0301	-1.0367	195.3	27.2286	-0.3058	-0.0447	-1.0368
190.4	26.7775	0.2150	-0.0292	-1.0372	195.4	27.1640	-0.3344	-0.0453	-1.0354
190.5	26.8253	0.2654	-0.0283	-1.0380	195.5	27.0952	-0.3494	-0.0456	-1.0339
190.6	26.8821	0.3055	-0.0277	-1.0390	195.6	27.0250	-0.3505	-0.0456	-1.0323
190.7	26.9459	0.3336	-0.0274	-1.0400	195.7	26.9561	-0.3377	-0.0454	-1.0309
190.8	27.0141	0.3486	-0.0272	-1.0412	195.8	26.8912	-0.3115	-0.0450	-1.0295
190.9	27.0842	0.3497	-0.0274	-1.0424	195.9	26.8330	-0.2731	-0.0443	-1.0282
191.0	27.1532	0.3369	-0.0278	-1.0435	196.0	26.7836	-0.2241	-0.0434	-1.0271
191.1	27.2185	0.3105	-0.0285	-1.0446	196.1	26.7448	-0.1664	-0.0423	-1.0262
191.2	27.2773	0.2714	-0.0294	-1.0455	196.2	26.7181	-0.1023	-0.0411	-1.0256
191.3	27.3273	0.2213	-0.0305	-1.0463	196.3	26.7046	-0.0343	-0.0399	-1.0252
191.4	27.3662	0.1621	-0.0318	-1.0468	196.4	26.7046	0.0351	-0.0387	-1.0251
191.5	27.3924	0.0962	-0.0332	-1.0471	196.5	26.7183	0.1031	-0.0375	-1.0252
191.6	27.4049	0.0263	-0.0347	-1.0471	196.6	26.7451	0.1672	-0.0363	-1.0256
191.7	27.4030	-0.0447	-0.0362	-1.0468	196.7	26.7840	0.2248	-0.0353	-1.0262
191.8	27.3869	-0.1138	-0.0376	-1.0463	196.8	26.8335	0.2737	-0.0345	-1.0270
191.9	27.3573	-0.1783	-0.0389	-1.0455	196.9	26.8919	0.3120	-0.0339	-1.0279
192.0	27.3154	-0.2354	-0.0401	-1.0445	197.0	26.9568	0.3381	-0.0335	-1.0290
192.1	27.2629	-0.2828	-0.0411	-1.0433	197.1	27.0258	0.3508	-0.0334	-1.0302
192.2	27.2022	-0.3188	-0.0419	-1.0419	197.2	27.0961	0.3496	-0.0335	-1.0313
192.3	27.1356	-0.3418	-0.0424	-1.0404	197.3	27.1649	0.3344	-0.0340	-1.0324
192.4	27.0660	-0.3510	-0.0426	-1.0389	197.4	27.2295	0.3057	-0.0346	-1.0335
192.5	26.9961	-0.3463	-0.0426	-1.0374	197.5	27.2872	0.2646	-0.0355	-1.0343
192.6	26.9287	-0.3278	-0.0423	-1.0359	197.6	27.3355	0.2126	-0.0366	-1.0350
192.7	26.8664	-0.2965	-0.0418	-1.0346	197.7	27.3725	0.1519	-0.0378	-1.0355
192.8	26.8116	-0.2535	-0.0410	-1.0334	197.8	27.3966	0.0849	-0.0392	-1.0357
192.9	26.7665	-0.2007	-0.0401	-1.0324	197.9	27.4067	0.0144	-0.0406	-1.0357
193.0	26.7326	-0.1402	-0.0390	-1.0316	198.0	27.4024	-0.0567	-0.0420	-1.0354
193.1	26.7114	-0.0742	-0.0378	-1.0310	198.1	27.3839	-0.1254	-0.0434	-1.0348
193.2	26.7035	-0.0054	-0.0366	-1.0308	198.2	27.3520	-0.1890	-0.0446	-1.0340
193.3	26.7092	0.0636	-0.0354	-1.0307	198.3	27.3080	-0.2448	-0.0457	-1.0329
193.4	26.7284	0.1302	-0.0342	-1.0310	198.4	27.2539	-0.2906	-0.0466	-1.0317
193.5	26.7603	0.1918	-0.0332	-1.0314	198.5	27.1918	-0.3246	-0.0473	-1.0303
193.6	26.8038	0.2460	-0.0323	-1.0321	198.6	27.1243	-0.3454	-0.0477	-1.0288
193.7	26.8572	0.2906	-0.0315	-1.0330	198.7	27.0542	-0.3523	-0.0478	-1.0273
193.8	26.9184	0.3239	-0.0310	-1.0340	198.8	26.9843	-0.3452	-0.0477	-1.0258
193.9	26.9853	0.3445	-0.0308	-1.0351	198.9	26.9174	-0.3244	-0.0473	-1.0243
194.0	27.0550	0.3515	-0.0308	-1.0363	199.0	26.8560	-0.2909	-0.0466	-1.0230
194.1	27.1249	0.3445	-0.0311	-1.0375	199.1	26.8026	-0.2460	-0.0458	-1.0219
194.2	27.1922	0.3236	-0.0316	-1.0386	199.2	26.7591	-0.1916	-0.0448	-1.0209
194.3	27.2541	0.2896	-0.0324	-1.0395	199.3	26.7272	-0.1298	-0.0436	-1.0202
194.4	27.3081	0.2438	-0.0334	-1.0404	199.4	26.7081	-0.0630	-0.0424	-1.0197
194.5	27.3519	0.1880	-0.0346	-1.0410	199.5	26.7024	0.0062	-0.0411	-1.0194
194.6	27.3837	0.1245	-0.0359	-1.0414	199.6	26.7105	0.0753	-0.0399	-1.0195
194.7	27.4020	0.0558	-0.0374	-1.0415	199.7	26.7319	0.1414	-0.0387	-1.0197
194.8	27.4061	-0.0152	-0.0388	-1.0413	199.8	26.7660	0.2021	-0.0376	-1.0203
194.9	27.3959	-0.0856	-0.0402	-1.0409	199.9	26.8114	0.2549	-0.0367	-1.0210
195.0	27.3717	-0.1525	-0.0416	-1.0402	200.0	26.8664	0.2979	-0.0360	-1.0219

TABLE X

TABLE X

Impedance and Radian Effective Length of Wide Angle Conical Antennas
 $\theta_0 = 70$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
0.1	0.0407	-130.8856	0.0319	-0.0000	
0.2	0.1677	-63.1780	0.0647	-0.0002	
0.3	0.3955	-39.5697	0.0993	-0.0010	
0.4	0.7489	-26.9567	0.1365	-0.0032	
0.5	1.2633	-18.7234	0.1769	-0.0083	
0.6	1.9811	-12.6858	0.2207	-0.0180	
0.7	2.9430	-7.9487	0.2673	-0.0349	
0.8	4.1681	-4.1227	0.3143	-0.0613	
0.9	5.6265	-1.0499	0.3578	-0.0988	
1.0	7.2195	1.3389	0.3930	-0.1465	
1.1	8.7958	3.1253	0.4154	-0.2005	
1.2	10.2127	4.4576	0.4240	-0.2549	
1.3	11.4030	5.5353	0.4207	-0.3045	
1.4	12.3986	6.5519	0.4097	-0.3465	
1.5	13.3049	7.6487	0.3953	-0.3807	
1.6	14.2648	8.9029	0.3802	-0.4091	
1.7	15.4387	10.3369	0.3656	-0.4339	
1.8	17.0075	11.9236	0.3512	-0.4576	
1.9	19.1888	13.5691	0.3353	-0.4820	
2.0	22.2469	15.0528	0.3147	-0.5080	
2.1	26.4487	15.9025	0.2845	-0.5342	
2.2	31.8355	15.2274	0.2395	-0.5546	
2.3	37.6281	11.7858	0.1786	-0.5558	
2.4	41.6293	5.0241	0.1157	-0.5218	
2.5	41.4280	-3.1892	0.0796	-0.4544	
2.6	37.2815	-9.5089	0.0863	-0.3815	
2.7	31.7595	-12.4877	0.1233	-0.3287	
2.8	26.8474	-12.9051	0.1705	-0.3011	
2.9	23.1441	-11.9800	0.2162	-0.2927	
3.0	20.5445	-10.5237	0.2562	-0.2968	
3.1	18.7778	-8.9470	0.2897	-0.3087	
3.2	17.5986	-7.4296	0.3169	-0.3257	
3.3	16.8227	-6.0366	0.3384	-0.3458	
3.4	16.3201	-4.7790	0.3542	-0.3678	
3.5	16.0017	-3.6424	0.3649	-0.3905	
3.6	15.8095	-2.6002	0.3707	-0.4128	
3.7	15.7103	-1.6214	0.3720	-0.4338	
3.8	15.6912	-0.6764	0.3696	-0.4528	
3.9	15.7562	0.2595	0.3641	-0.4690	
4.0	15.9229	1.2016	0.3564	-0.4819	
4.1	16.2187	2.1524	0.3474	-0.4914	
4.2	16.6765	3.0983	0.3378	-0.4973	
4.3	17.3294	4.0064	0.3285	-0.4997	
4.4	18.2026	4.8223	0.3203	-0.4988	
4.5	19.3022	5.4697	0.3138	-0.4948	
4.6	20.6007	5.8566	0.3100	-0.4882	
4.7	22.0236	5.8926	0.3096	-0.4797	
4.8	23.4458	5.5169	0.3132	-0.4704	
4.9	24.7094	4.7313	0.3210	-0.4616	
5.0	25.6644	3.6168	0.3326	-0.4549	
			5.1	26.2163	2.3194
			5.2	26.3524	1.0053
			5.3	26.1329	-0.1872
			5.4	25.6570	-1.1743
			5.5	25.0276	-1.9270
			5.6	24.3296	-2.4551
			5.7	23.6222	-2.7882
			5.8	22.9414	-2.9616
			5.9	22.3063	-3.0078
			6.0	21.7253	-2.9530
			6.1	21.2015	-2.8167
			6.2	20.7365	-2.6132
			6.3	20.3320	-2.3531
			6.4	19.9909	-2.0462
			6.5	19.7169	-1.7022
			6.6	19.5128	-1.3323
			6.7	19.3801	-0.9489
			6.8	19.3175	-0.5648
			6.9	19.3207	-0.1920
			7.0	19.3831	0.1591
			7.1	19.4964	0.4808
			7.2	19.6518	0.7680
			7.3	19.8410	1.0181
			7.4	20.0567	1.2306
			7.5	20.2931	1.4056
			7.6	20.5462	1.5437
			7.7	20.8126	1.6451
			7.8	21.0900	1.7092
			7.9	21.3757	1.7342
			8.0	21.6665	1.7177
			8.1	21.9580	1.6564
			8.2	22.2440	1.5474
			8.3	22.5165	1.3884
			8.4	22.7660	1.1785
			8.5	22.9815	0.9192
			8.6	23.1514	0.6149
			8.7	23.2643	0.2732
			8.8	23.3103	-0.0949
			8.9	23.2817	-0.4752
			9.0	23.1742	-0.8514
			9.1	22.9880	-1.2055
			9.2	22.7275	-1.5195
			9.3	22.4019	-1.7764
			9.4	22.0247	-1.9618
			9.5	21.6127	-2.0648
			9.6	21.1848	-2.0790
			9.7	20.7610	-2.0027
			9.8	20.3610	-1.8388
			9.9	20.0030	-1.5945
			10.0	19.7030	-1.2808
					0.3470
					-0.4514
					0.3629
					-0.4516
					0.3789
					-0.4557
					0.3940
					-0.4631
					0.4074
					-0.4733
					0.4187
					-0.4855
					0.4275
					-0.4992
					0.4338
					-0.5136
					0.4376
					-0.5282
					0.4388
					-0.5424
					0.4377
					-0.5557
					0.4346
					-0.5675
					0.4301
					-0.5773
					0.4245
					-0.5849
					0.4188
					-0.5901
					0.4134
					-0.5930
					0.4090
					-0.5939
					0.4061
					-0.5933
					0.4048
					-0.5917
					0.4053
					-0.5896
					0.4076
					-0.5874
					0.4113
					-0.5856
					0.4165
					-0.5845
					0.4226
					-0.5842
					0.4296
					-0.5849
					0.4372
					-0.5867
					0.4451
					-0.5895
					0.4532
					-0.5933
					0.4615
					-0.5982
					0.4697
					-0.6042
					0.4777
					-0.6111
					0.4854
					-0.6192
					0.4927
					-0.6283
					0.4994
					-0.6385
					0.5052
					-0.6498
					0.5099
					-0.6621
					0.5133
					-0.6752
					0.5149
					-0.6889
					0.5147
					-0.7029
					0.5125
					-0.7167
					0.5083
					-0.7299
					0.5021
					-0.7419
					0.4944
					-0.7524
					0.4854
					-0.7609
					0.4757
					-0.7672
					0.4657
					-0.7712
					0.4560
					-0.7729
					0.4469
					-0.7725
					0.4391
					-0.7700
					0.4328
					-0.7658

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
10.1	19.4740	-0.9116	15.1	22.3658	-0.6473
10.2	19.3257	-0.5029	15.2	22.1977	-0.8018
10.3	19.2643	-0.0722	15.3	22.0114	-0.9158
10.4	19.2921	0.3621	15.4	21.8158	-0.9894
10.5	19.4078	0.7821	15.5	21.6186	-1.0246
10.6	19.6066	1.1705	15.6	21.4263	-1.0243
10.7	19.8805	1.5114	15.7	21.2439	-0.9921
10.8	20.2188	1.7911	15.8	21.0752	-0.9315
10.9	20.6086	1.9979	15.9	20.9235	-0.8464
11.0	21.0354	2.1226	16.0	20.7910	-0.7403
11.1	21.4830	2.1584	16.1	20.6797	-0.6166
11.2	21.9340	2.1009	16.2	20.5911	-0.4788
11.3	22.3695	1.9485	16.3	20.5266	-0.3301
11.4	22.7692	1.7033	16.4	20.4870	-0.1741
11.5	23.1120	1.3717	16.5	20.4733	-0.0140
11.6	23.3769	0.9657	16.6	20.4858	0.1464
11.7	23.5448	0.5035	16.7	20.5247	0.3035
11.8	23.6012	0.0097	16.8	20.5898	0.4533
11.9	23.5385	-0.4861	16.9	20.6804	0.5917
12.0	23.3588	-0.9519	17.0	20.7951	0.7144
12.1	23.0741	-1.3573	17.1	20.9318	0.8170
12.2	22.7056	-1.6769	17.2	21.0878	0.8952
12.3	22.2807	-1.8939	17.3	21.2589	0.9450
12.4	21.8298	-2.0009	17.4	21.4405	0.9626
12.5	21.3821	-2.0004	17.5	21.6264	0.9454
12.6	20.9627	-1.9023	17.6	21.8098	0.8915
12.7	20.5910	-1.7216	17.7	21.9830	0.8006
12.8	20.2804	-1.4763	17.8	22.1381	0.6743
12.9	20.0384	-1.1845	17.9	22.2669	0.5161
13.0	19.8676	-0.8636	18.0	22.3623	0.3315
13.1	19.7675	-0.5287	18.1	22.4182	0.1280
13.2	19.7348	-0.1932	18.2	22.4305	-0.0855
13.3	19.7651	0.1319	18.3	22.3975	-0.2990
13.4	19.8531	0.4373	18.4	22.3199	-0.5023
13.5	19.9929	0.7149	18.5	22.2008	-0.6857
13.6	20.1786	0.9577	18.6	22.0455	-0.8406
13.7	20.4036	1.1591	18.7	21.8611	-0.9600
13.8	20.6606	1.3131	18.8	21.6561	-1.0389
13.9	20.9411	1.4142	18.9	21.4394	-1.0739
14.0	21.2352	1.4579	19.0	21.2202	-1.0640
14.1	21.5314	1.4414	19.1	21.0076	-1.0100
14.2	21.8168	1.3644	19.2	20.8103	-0.9142
14.3	22.0782	1.2297	19.3	20.6360	-0.7804
14.4	22.3027	1.0438	19.4	20.4919	-0.6140
14.5	22.4792	0.8168	19.5	20.3838	-0.4214
14.6	22.5998	0.5617	19.6	20.3165	-0.2099
14.7	22.6604	0.2929	19.7	20.2933	0.0120
14.8	22.6616	0.0255	19.8	20.3158	0.2354
14.9	22.6075	-0.2273	19.9	20.3842	0.4510
15.0	22.5058	-0.4542	20.0	20.4966	0.6492
					0.4859 -0.9793
					0.4755 -0.9811
					0.4661 -0.9809
					0.4580 -0.9791
					0.4514 -0.9762
					0.4464 -0.9724
					0.4430 -0.9681
					0.4412 -0.9637
					0.4409 -0.9595
					0.4420 -0.9556
					0.4443 -0.9523
					0.4477 -0.9497
					0.4520 -0.9480
					0.4571 -0.9472
					0.4627 -0.9476
					0.4687 -0.9490
					0.4749 -0.9517
					0.4812 -0.9554
					0.4874 -0.9604
					0.4933 -0.9666
					0.4986 -0.9739
					0.5033 -0.9824
					0.5071 -0.9919
					0.5098 -1.0023
					0.5111 -1.0134
					0.5110 -1.0251
					0.5091 -1.0369
					0.5055 -1.0487
					0.5001 -1.0599
					0.4930 -1.0702
					0.4844 -1.0792
					0.4745 -1.0866
					0.4638 -1.0919
					0.4528 -1.0952
					0.4418 -1.0962
					0.4315 -1.0951
					0.4222 -1.0921
					0.4145 -1.0875
					0.4085 -1.0817
					0.4045 -1.0750
					0.4027 -1.0680
					0.4030 -1.0611
					0.4054 -1.0548
					0.4096 -1.0495
					0.4155 -1.0454
					0.4226 -1.0431
					0.4308 -1.0427
					0.4394 -1.0444
					0.4481 -1.0483
					0.4564 -1.0544

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
20.1	20.6488	0.8208	25.1	21.4062	-0.6114
20.2	20.8350	0.9575	25.2	21.2933	-0.6003
20.3	21.0472	1.0521	25.3	21.1853	-0.5696
20.4	21.2758	1.0995	25.4	21.0854	-0.5205
20.5	21.5099	1.0966	25.5	20.9963	-0.4550
20.6	21.7383	1.0430	25.6	20.9205	-0.3752
20.7	21.9495	0.9412	25.7	20.8600	-0.2833
20.8	22.1331	0.7963	25.8	20.8166	-0.1821
20.9	22.2801	0.6156	25.9	20.7918	-0.0746
21.0	22.3837	0.4085	26.0	20.7864	0.0363
21.1	22.4394	0.1856	26.1	20.8011	0.1472
21.2	22.4453	-0.0419	26.2	20.8358	0.2547
21.3	22.4024	-0.2629	26.3	20.8901	0.3553
21.4	22.3139	-0.4670	26.4	20.9629	0.4454
21.5	22.1853	-0.6448	26.5	21.0525	0.5217
21.6	22.0239	-0.7889	26.6	21.1565	0.5808
21.7	21.8384	-0.8935	26.7	21.2718	0.6197
21.8	21.6384	-0.9551	26.8	21.3947	0.6361
21.9	21.4335	-0.9727	26.9	21.5208	0.6280
22.0	21.2335	-0.9471	27.0	21.6451	0.5945
22.1	21.0470	-0.8815	27.1	21.7624	0.5358
22.2	20.8818	-0.7807	27.2	21.8671	0.4530
22.3	20.7440	-0.6507	27.3	21.9541	0.3488
22.4	20.6384	-0.4986	27.4	22.0185	0.2270
22.5	20.5675	-0.3319	27.5	22.0565	0.0927
22.6	20.5326	-0.1584	27.6	22.0654	-0.0483
22.7	20.5333	0.0145	27.7	22.0440	-0.1892
22.8	20.5675	0.1801	27.8	21.9928	-0.3231
22.9	20.6324	0.3323	27.9	21.9139	-0.4435
23.0	20.7239	0.4659	28.0	21.8110	-0.5446
23.1	20.8373	0.5767	28.1	21.6891	-0.6214
23.2	20.9676	0.6618	28.2	21.5539	-0.6707
23.3	21.1091	0.7189	28.3	21.4120	-0.6905
23.4	21.2563	0.7472	28.4	21.2698	-0.6803
23.5	21.4038	0.7467	28.5	21.1334	-0.6410
23.6	21.5461	0.7182	28.6	21.0087	-0.5751
23.7	21.6783	0.6637	28.7	20.9007	-0.4855
23.8	21.7957	0.5859	28.8	20.8134	-0.3763
23.9	21.8945	0.4883	28.9	20.7502	-0.2523
24.0	21.9715	0.3752	29.0	20.7133	-0.1183
24.1	22.0244	0.2512	29.1	20.7042	0.0201
24.2	22.0520	0.1213	29.2	20.7231	0.1576
24.3	22.0540	-0.0094	29.3	20.7696	0.2887
24.4	22.0313	-0.1360	29.4	20.8418	0.4079
24.5	21.9857	-0.2539	29.5	20.9373	0.5100
24.6	21.9196	-0.3593	29.6	21.0522	0.5906
24.7	21.8364	-0.4488	29.7	21.1820	0.6458
24.8	21.7396	-0.5201	29.8	21.3208	0.6724
24.9	21.6331	-0.5714	29.9	21.4623	0.6690
25.0	21.5206	-0.6019	30.0	21.6000	0.6355
					0.2597 -1.3073

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
30.1	21.7272	0.5733	35.1	21.0394	-0.2307
30.2	21.8375	0.4851	35.2	21.0006	-0.1624
30.3	21.9258	0.3757	35.3	20.9753	-0.0863
30.4	21.9876	0.2509	35.4	20.9632	-0.0067
30.5	22.0206	0.1171	35.5	20.9684	0.0738
30.6	22.0239	-0.0190	35.6	20.9880	0.1543
30.7	21.9982	-0.1506	35.7	21.0243	0.2293
30.8	21.9457	-0.2719	35.8	21.0736	0.2968
30.9	21.8702	-0.3771	35.9	21.1362	0.3541
31.0	21.7765	-0.4625	36.0	21.2097	0.3983
31.1	21.6688	-0.5252	36.1	21.2903	0.4274
31.2	21.5531	-0.5636	36.2	21.3789	0.4429
31.3	21.4346	-0.5772	36.3	21.4659	0.4361
31.4	21.3183	-0.5666	36.4	21.5547	0.4139
31.5	21.2087	-0.5338	36.5	21.6350	0.3712
31.6	21.1098	-0.4806	36.6	21.7056	0.3171
31.7	21.0252	-0.4106	36.7	21.7666	0.2447
31.8	20.9574	-0.3265	36.8	21.8098	0.1618
31.9	20.9085	-0.2325	36.9	21.8369	0.0698
32.0	20.8794	-0.1325	37.0	21.8425	-0.0243
32.1	20.8707	-0.0306	37.1	21.8307	-0.1224
32.2	20.8817	0.0694	37.2	21.7967	-0.2111
32.3	20.9115	0.1639	37.3	21.7462	-0.2938
32.4	20.9584	0.2489	37.4	21.6753	-0.3602
32.5	21.0196	0.3224	37.5	21.5977	-0.4143
32.6	21.0928	0.3814	37.6	21.5079	-0.4465
32.7	21.1750	0.4250	37.7	21.4094	-0.4612
32.8	21.2624	0.4509	37.8	21.3124	-0.4530
32.9	21.3517	0.4597	37.9	21.2214	-0.4274
33.0	21.4397	0.4521	38.0	21.1379	-0.3861
33.1	21.5235	0.4282	38.1	21.0544	-0.3261
33.2	21.6000	0.3889	38.2	21.0089	-0.2505
33.3	21.6669	0.3370	38.3	20.9635	-0.1680
33.4	21.7222	0.2740	38.4	20.9408	-0.0762
33.5	21.7648	0.2029	38.5	20.9346	0.0169
33.6	21.7926	0.1259	38.6	20.9525	0.1061
33.7	21.8061	0.0455	38.7	20.9838	0.1912
33.8	21.8042	-0.0343	38.8	21.0329	0.2671
33.9	21.7873	-0.1123	38.9	21.1020	0.3292
34.0	21.7567	-0.1854	39.0	21.1735	0.3769
34.1	21.7135	-0.2509	39.1	21.2559	0.4077
34.2	21.6590	-0.3083	39.2	21.3469	0.4251
34.3	21.5957	-0.3531	39.3	21.4239	0.4325
34.4	21.5256	-0.3857	39.4	21.5235	0.3980
34.5	21.4505	-0.4050	39.5	21.5887	0.3642
34.6	21.3720	-0.4101	39.6	21.6612	0.3072
34.7	21.2960	-0.4010	39.7	21.7198	0.2412
34.8	21.2212	-0.3775	39.8	21.7558	0.1645
34.9	21.1516	-0.3405	39.9	21.7737	0.0834
35.0	21.0916	-0.2905	40.0	21.7781	0.0012
					0.0312 -1.3712

TABLE X (Continued)

 $\theta_0 = 70$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
40.1	21.7697	-0.0813	45.1	21.1342	0.1140
40.2	21.7411	-0.1594	45.2	21.1694	0.1602
40.3	21.6937	-0.2170	45.3	21.2058	0.2036
40.4	21.6435	-0.2717	45.4	21.2485	0.2394
40.5	21.5743	-0.3150	45.5	21.3360	0.2713
40.6	21.5109	-0.3429	45.6	21.3591	0.2611
40.7	21.4379	-0.3631	45.7	21.4235	0.2734
40.8	21.3658	-0.3517	45.8	21.4931	0.2531
40.9	21.2857	-0.3336	45.9	21.5160	0.2296
41.0	21.2391	-0.3000	46.0	21.5646	0.2007
41.1	21.1798	-0.2602	46.1	21.6216	0.1477
41.2	21.1509	-0.2185	46.2	21.6408	0.1014
41.3	21.1031	-0.1628	46.3	21.6485	0.0346
41.4	21.0883	-0.0934	46.4	21.6724	-0.0089
41.5	21.0652	-0.0338	46.5	21.6367	-0.0527
41.6	21.0743	0.0177	46.6	21.6522	-0.1010
41.7	21.0890	0.0625	46.7	21.5891	-0.1704
41.8	21.1104	0.1151	46.8	21.5486	-0.2244
41.9	21.1403	0.1779	46.9	21.5236	-0.2342
42.0	21.1862	0.2085	47.0	21.4742	-0.2638
42.1	21.2359	0.2509	47.1	21.3915	-0.2632
42.2	21.2871	0.2917	47.2	21.3525	-0.2884
42.3	21.3417	0.2713	47.3	21.2962	-0.2604
42.4	21.3788	0.2765	47.4	21.2454	-0.1939
42.5	21.4364	0.2558	47.5	21.1734	-0.2008
42.6	21.4947	0.2481	47.6	21.1900	-0.1451
42.7	21.5387	0.1826	47.7	21.1531	-0.1093
42.8	21.5711	0.1999	47.8	21.1136	-0.1124
42.9	21.5987	0.1817	47.9	21.1494	0.0271
43.0	21.6368	0.1349	48.0	21.1438	0.0617
43.1	21.6522	0.0497	48.1	21.1913	0.0548
43.2	21.6424	0.0106	48.2	21.1214	0.1347
43.3	21.6969	-0.1033	48.3	21.2336	0.1653
43.4	21.6434	-0.0941	48.4	21.3385	0.2692
43.5	21.6037	-0.1271	48.5	21.3179	0.1930
43.6	21.5827	-0.1654	48.6	21.3807	0.2360
43.7	21.5301	-0.2035	48.7	21.4256	0.2341
43.8	21.5057	-0.2243	48.8	21.4705	0.1953
43.9	21.4517	-0.2507	48.9	21.4536	0.1824
44.0	21.4097	-0.2667	49.0	21.5565	0.1476
44.1	21.3493	-0.2612	49.1	21.5407	0.1211
44.2	21.3138	-0.2804	49.2	21.5956	0.1329
44.3	21.2468	-0.2449	49.3	21.6007	0.0179
44.4	21.2081	-0.2156	49.4	21.6399	0.0646
44.5	21.1887	-0.1734	49.5	21.5707	-0.0566
44.6	21.1461	-0.1361	49.6	21.5423	-0.0833
44.7	21.1235	-0.0718	49.7	21.5325	-0.0978
44.8	21.1287	-0.0062	49.8	21.5458	-0.1017
44.9	21.1177	0.0298	49.9	21.4857	-0.1267
45.0	21.1198	0.0680	50.0	21.4600	-0.1593
					-0.1947
					-1.2661

TABLE X (Continued)

 $\theta_0 = 70$ degrees

ka	Z_0	kh_e	ka	Z_0	kh_e
50.1	21.4065	-0.1439	55.1	21.3282	0.0856
50.2	21.3935	-0.1488	55.2	21.3534	0.0566
50.3	21.3508	-0.1674	55.3	21.2642	0.0262
50.4	21.2803	-0.1298	55.4	21.3678	0.0920
50.5	21.2809	-0.1195	55.5	21.3767	0.0923
50.6	21.2586	-0.0838	55.6	21.4883	0.0917
50.7	21.2803	-0.0628	55.7	21.0874	-0.1087
50.8	21.2359	-0.0719	55.8	21.4432	0.0267
50.9	21.2626	-0.0355	55.9	21.3898	0.1328
51.0	21.2565	0.0158	56.0	21.4601	0.0404
51.1	21.2765	0.0102	56.1	21.4246	0.0688
51.2	21.2898	0.0287	56.2	21.4604	0.0454
51.3	21.3019	0.0538	56.3	21.4793	-0.0344
51.4	21.2767	0.0669	56.4	21.5153	-0.0008
51.5	21.3143	0.0608	56.5	21.4119	-0.0256
51.6	21.3361	0.0936	56.6	21.4228	-0.0099
51.7	21.3483	0.0608	56.7	21.4579	-0.1912
51.8	21.4307	0.1272	56.8	21.4414	-0.0833
51.9	21.3899	0.0829	56.9	21.4291	-0.0842
52.0	21.3947	0.0990	57.0	21.4201	-0.0897
52.1	21.4228	0.0910	57.1	21.3765	-0.1005
52.2	21.3951	0.0736	57.2	21.3703	-0.1654
52.3	21.4250	0.0724	57.3	21.3552	-0.0942
52.4	21.4307	0.0727	57.4	21.3541	-0.0765
52.5	21.4532	0.0420	57.5	21.1552	-0.1171
52.6	21.4325	0.0372	57.6	21.3027	-0.0594
52.7	21.4625	0.0145	57.7	21.3087	-0.0811
52.8	21.4735	0.0040	57.8	21.2338	-0.0094
52.9	21.4366	-0.0180	57.9	21.3083	0.0342
53.0	21.4650	-0.0177	58.0	21.4209	-0.2343
53.1	21.4787	-0.0155	58.1	21.3126	0.0002
53.2	21.5861	-0.0692	58.2	21.3266	0.0171
53.3	21.4472	-0.0534	58.3	21.1754	0.0379
53.4	21.4278	-0.0658	58.4	21.3185	0.0983
53.5	21.4059	-0.0435	58.5	21.3133	0.0913
53.6	21.3402	-0.1550	58.6	21.3319	0.0865
53.7	21.4002	-0.0724	58.7	21.3320	0.0997
53.8	21.4046	-0.0839	58.8	21.3837	0.1023
53.9	21.3867	-0.1080	58.9	21.3965	0.0985
54.0	21.3702	-0.1585	59.0	21.4508	0.0820
54.1	21.3550	-0.0813	59.1	21.4508	0.0854
54.2	21.3776	-0.0524	59.2	21.4990	-0.1075
54.3	21.3230	-0.0229	59.3	21.5433	0.0368
54.4	21.2608	-0.1573	59.4	21.5207	0.0072
54.5	21.2483	-0.0714	59.5	21.4820	0.0084
54.6	21.2930	0.0090	59.6	21.5122	-0.0421
54.7	21.2874	0.0048	59.7	21.4427	0.2094
54.8	21.2897	0.0391	59.8	21.4590	0.1261
54.9	21.2890	0.0036	59.9	21.4606	-0.0519
55.0	21.2862	0.0733	60.0	21.4681	-0.0873
					-0.2891
					-1.1252

TABLE X (Continued)

 $\theta_0 = 70$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
60.1	21.4639	-0.0941	-0.2983	-1.1232	65.1	21.3671	0.1488	-0.2698	-1.0236
60.2	21.4474	-0.0537	-0.3161	-1.1247	65.2	21.3885	0.1597	-0.2654	-1.0299
60.3	21.4032	-0.1081	-0.2932	-1.1194	65.3	21.4194	0.1535	-0.2647	-1.0281
60.4	21.4180	-0.1161	-0.3074	-1.0949	65.4	21.4462	0.1419	-0.2633	-1.0263
60.5	21.3345	-0.0565	-0.3001	-1.1459	65.5	21.4844	0.1258	-0.2702	-1.0270
60.6	21.3317	-0.1068	-0.2913	-1.1163	65.6	21.5013	0.1025	-0.2663	-1.0242
60.7	21.3315	-0.0250	-0.3169	-1.1485	65.7	21.5269	0.0815	-0.2697	-1.0284
60.8	21.2716	-0.0667	-0.2900	-1.1199	65.8	21.5337	0.0445	-0.2696	-1.0210
60.9	21.2854	-0.0616	-0.3014	-1.1124	65.9	21.5439	0.0162	-0.2705	-1.0239
61.0	21.2962	-0.1176	-0.3149	-1.0635	66.0	21.5467	-0.0148	-0.2703	-1.0246
61.1	21.2672	0.0232	-0.2926	-1.1265	66.1	21.5407	-0.0505	-0.2739	-1.0215
61.2	21.0389	-0.3012	-0.2170	-0.8889	66.2	21.5202	-0.0744	-0.2675	-1.0161
61.3	21.2277	0.0116	-0.2813	-1.0780	66.3	21.5125	-0.1086	-0.2740	-1.0212
61.4	21.2637	0.0120	-0.2982	-1.0706	66.4	21.4871	-0.1304	-0.2724	-1.0184
61.5	21.2991	0.0615	-0.3053	-1.0929	66.5	21.4574	-0.1518	-0.2753	-1.0158
61.6	21.3133	0.1018	-0.2950	-1.1009	66.6	21.4304	-0.1630	-0.2740	-1.0162
61.7	21.3308	0.0784	-0.3121	-1.0871	66.7	21.3940	-0.1661	-0.2727	-1.0116
61.8	21.3424	0.1114	-0.2950	-1.0856	66.8	21.3666	-0.1675	-0.2723	-1.0143
61.9	21.3726	0.1020	-0.3058	-1.0805	66.9	21.3255	-0.1610	-0.2750	-1.0085
62.0	21.3675	0.1332	-0.2853	-1.0672	67.0	21.2988	-0.1481	-0.2734	-1.0091
62.1	21.4201	0.1014	-0.3123	-1.0830	67.1	21.2675	-0.1283	-0.2744	-1.0065
62.2	21.4277	0.0893	-0.3125	-1.0702	67.2	21.2485	-0.1033	-0.2703	-1.0055
62.3	21.4585	0.1075	-0.2931	-1.0740	67.3	21.2306	-0.0755	-0.2703	-1.0052
62.4	21.4884	0.0882	-0.2918	-1.0772	67.4	21.2150	-0.0458	-0.2717	-1.0052
62.5	21.4979	0.0788	-0.2845	-1.0708	67.5	21.2078	-0.0120	-0.2719	-1.0045
62.6	21.5089	0.0482	-0.2900	-1.0708	67.6	21.2109	0.0244	-0.2706	-1.0022
62.7	21.5196	0.0066	-0.2984	-1.0736	67.7	21.2156	0.0600	-0.2719	-1.0010
62.8	21.5028	0.0088	-0.2955	-1.0518	67.8	21.2322	0.0898	-0.2700	-1.0011
62.9	21.5111	-0.0337	-0.2984	-1.0611	67.9	21.2533	0.1184	-0.2697	-1.0000
63.0	21.5240	-0.0343	-0.2762	-1.0498	68.0	21.2783	0.1415	-0.2695	-0.9999
63.1	21.4927	-0.0660	-0.2889	-1.0474	68.1	21.3067	0.1633	-0.2719	-0.9995
63.2	21.4693	-0.0931	-0.2946	-1.0448	68.2	21.3410	0.1747	-0.2717	-0.9988
63.3	21.4390	-0.1167	-0.2996	-1.0471	68.3	21.3732	0.1786	-0.2715	-1.0010
63.4	21.4171	-0.1347	-0.2964	-1.0510	68.4	21.4125	0.1779	-0.2721	-0.9982
63.5	21.4042	-0.1323	-0.2898	-1.0407	68.5	21.4488	0.1708	-0.2743	-0.9966
63.6	21.3841	-0.1311	-0.2838	-1.0371	68.6	21.4822	0.1536	-0.2746	-0.9954
63.7	21.3434	-0.1229	-0.2921	-1.0347	68.7	21.5093	0.1322	-0.2762	-0.9961
63.8	21.3471	-0.1156	-0.2798	-1.0194	68.8	21.5360	0.1061	-0.2785	-0.9941
63.9	21.2982	-0.1091	-0.2846	-1.0343	68.9	21.5527	0.0746	-0.2794	-0.9942
64.0	21.2693	-0.0955	-0.2844	-1.0389	69.0	21.5630	0.0377	-0.2792	-0.9921
64.1	21.2670	-0.0774	-0.2777	-1.0276	69.1	21.5690	-0.0011	-0.2809	-0.9888
64.2	21.2513	-0.0505	-0.2778	-1.0274	69.2	21.5656	-0.0351	-0.2831	-0.9889
64.3	21.2328	-0.0251	-0.2744	-1.0342	69.3	21.5568	-0.0739	-0.2845	-0.9850
64.4	21.2259	0.0074	-0.2759	-1.0345	69.4	21.5394	-0.1057	-0.2859	-0.9834
64.5	21.2459	0.0391	-0.2759	-1.0236	69.5	21.5152	-0.1351	-0.2867	-0.9807
64.6	21.2545	0.0602	-0.2726	-1.0242	69.6	21.4856	-0.1587	-0.2868	-0.9784
64.7	21.2658	0.0977	-0.2775	-1.0293	69.7	21.4522	-0.1762	-0.2875	-0.9762
64.8	21.2839	0.1125	-0.2728	-1.0258	69.8	21.4158	-0.1871	-0.2879	-0.9730
64.9	21.2990	0.1280	-0.2650	-1.0272	69.9	21.3782	-0.1924	-0.2890	-0.9692
65.0	21.3423	0.1474	-0.2756	-1.0247	70.0	21.3393	-0.1877	-0.2889	-0.9663

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
70.1	21.3016	-0.1746	75.1	21.5661	0.1219
70.2	21.2707	-0.1557	75.2	21.5871	0.0832
70.3	21.2414	-0.1315	75.3	21.6002	0.0407
70.4	21.2172	-0.1018	75.4	21.6047	-0.0037
70.5	21.1999	-0.0673	75.5	21.5995	-0.0479
70.6	21.1908	-0.0295	75.6	21.5862	-0.0904
70.7	21.1874	0.0092	75.7	21.5643	-0.1292
70.8	21.1933	0.0480	75.8	21.5349	-0.1632
70.9	21.2059	0.0845	75.9	21.4996	-0.1902
71.0	21.2260	0.1186	76.0	21.4595	-0.2100
71.1	21.2517	0.1476	76.1	21.4163	-0.2211
71.2	21.2829	0.1727	76.2	21.3717	-0.2236
71.3	21.3188	0.1879	76.3	21.3275	-0.2174
71.4	21.3564	0.1980	76.4	21.2853	-0.2021
71.5	21.3970	0.2003	76.5	21.2471	-0.1791
71.6	21.4370	0.1942	76.6	21.2143	-0.1490
71.7	21.4746	0.1805	76.7	21.1880	-0.1128
71.8	21.5088	0.1582	76.8	21.1691	-0.0722
71.9	21.5393	0.1304	76.9	21.1587	-0.0284
72.0	21.5619	0.0980	77.0	21.1572	0.0162
72.1	21.5790	0.0605	77.1	21.1643	0.0607
72.2	21.5877	0.0198	77.2	21.1804	0.1029
72.3	21.5881	-0.0216	77.3	21.2042	0.1412
72.4	21.5798	-0.0619	77.4	21.2350	0.1741
72.5	21.5633	-0.1004	77.5	21.2722	0.2004
72.6	21.5406	-0.1349	77.6	21.3139	0.2190
72.7	21.5112	-0.1635	77.7	21.3587	0.2289
72.8	21.4761	-0.1865	77.8	21.4047	0.2297
72.9	21.4371	-0.2016	77.9	21.4502	0.2211
73.0	21.3958	-0.2087	78.0	21.4932	0.2039
73.1	21.3548	-0.2078	78.1	21.5319	0.1783
73.2	21.3132	-0.1979	78.2	21.5650	0.1454
73.3	21.2754	-0.1803	78.3	21.5907	0.1063
73.4	21.2417	-0.1564	78.4	21.6081	0.0628
73.5	21.2136	-0.1249	78.5	21.6167	0.0166
73.6	21.1918	-0.0894	78.6	21.6156	-0.0305
73.7	21.1773	-0.0499	78.7	21.6051	-0.0765
73.8	21.1709	-0.0091	78.8	21.5855	-0.1196
73.9	21.1725	0.0334	78.9	21.5579	-0.1577
74.0	21.1831	0.0743	79.0	21.5230	-0.1896
74.1	21.2015	0.1127	79.1	21.4825	-0.2139
74.2	21.2269	0.1469	79.2	21.4380	-0.2297
74.3	21.2589	0.1756	79.3	21.3913	-0.2360
74.4	21.2952	0.1973	79.4	21.3442	-0.2331
74.5	21.3360	0.2114	79.5	21.2987	-0.2209
74.6	21.3791	0.2169	79.6	21.2566	-0.2000
74.7	21.4220	0.2142	79.7	21.2193	-0.1712
74.8	21.4640	0.2026	79.8	21.1885	-0.1356
74.9	21.5033	0.1829	79.9	21.1653	-0.0946
75.0	21.5378	0.1558	80.0	21.1507	-0.0499

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
80.1	21.1452	-0.0030	-0.1615	-0.7987	85.1	21.5986	-0.1363	-0.1032	-0.7980
80.2	21.1488	0.0440	-0.1589	-0.7986	85.2	21.5672	-0.1768	-0.1030	-0.7972
80.3	21.1617	0.0895	-0.1566	-0.7987	85.3	21.5282	-0.2100	-0.1026	-0.7962
80.4	21.1834	0.1316	-0.1543	-0.7989	85.4	21.4835	-0.2348	-0.1020	-0.7951
80.5	21.2130	0.1689	-0.1521	-0.7993	85.5	21.4347	-0.2501	-0.1013	-0.7939
80.6	21.2495	0.1995	-0.1501	-0.7998	85.6	21.3840	-0.2555	-0.1004	-0.7928
80.7	21.2915	0.2225	-0.1483	-0.8004	85.7	21.3332	-0.2506	-0.0992	-0.7916
80.8	21.3373	0.2367	-0.1467	-0.8010	85.8	21.2845	-0.2358	-0.0980	-0.7905
80.9	21.3852	0.2417	-0.1453	-0.8017	85.9	21.2398	-0.2116	-0.0965	-0.7895
81.0	21.4333	0.2369	-0.1440	-0.8023	86.0	21.2007	-0.1792	-0.0949	-0.7886
81.1	21.4796	0.2227	-0.1430	-0.8029	86.1	21.1688	-0.1397	-0.0933	-0.7879
81.2	21.5224	0.1993	-0.1422	-0.8033	86.2	21.1453	-0.0947	-0.0915	-0.7873
81.3	21.5597	0.1679	-0.1414	-0.8037	86.3	21.1311	-0.0460	-0.0897	-0.7868
81.4	21.5900	0.1295	-0.1408	-0.8040	86.4	21.1268	0.0046	-0.0878	-0.7866
81.5	21.6122	0.0856	-0.1403	-0.8041	86.5	21.1325	0.0551	-0.0861	-0.7865
81.6	21.6250	0.0381	-0.1398	-0.8039	86.6	21.1479	0.1036	-0.0843	-0.7866
81.7	21.6281	-0.0110	-0.1393	-0.8037	86.7	21.1727	0.1481	-0.0827	-0.7869
81.8	21.6212	-0.0598	-0.1388	-0.8032	86.8	21.2058	0.1871	-0.0811	-0.7872
81.9	21.6046	-0.1064	-0.1383	-0.8026	86.9	21.2461	0.2188	-0.0798	-0.7877
82.0	21.5791	-0.1486	-0.1377	-0.8018	87.0	21.2920	0.2420	-0.0785	-0.7883
82.1	21.5455	-0.1849	-0.1370	-0.8009	87.1	21.3417	0.2557	-0.0775	-0.7889
82.2	21.5055	-0.2137	-0.1361	-0.8000	87.2	21.3933	0.2594	-0.0767	-0.7895
82.3	21.4605	-0.2339	-0.1351	-0.7989	87.3	21.4448	0.2526	-0.0760	-0.7901
82.4	21.4124	-0.2447	-0.1338	-0.7979	87.4	21.4941	0.2357	-0.0755	-0.7906
82.5	21.3632	-0.2458	-0.1325	-0.7968	87.5	21.5391	0.2092	-0.0752	-0.7910
82.6	21.3148	-0.2371	-0.1309	-0.7958	87.6	21.5780	0.1741	-0.0750	-0.7913
82.7	21.2692	-0.2189	-0.1293	-0.7949	87.7	21.6093	0.1318	-0.0750	-0.7915
82.8	21.2280	-0.1921	-0.1275	-0.7941	87.8	21.6313	0.0841	-0.0750	-0.7914
82.9	21.1930	-0.1578	-0.1255	-0.7935	87.9	21.6435	0.0327	-0.0750	-0.7911
83.0	21.1654	-0.1172	-0.1235	-0.7929	88.0	21.6450	-0.0201	-0.0751	-0.7907
83.1	21.1463	-0.0721	-0.1215	-0.7926	88.1	21.6358	-0.0721	-0.0751	-0.7900
83.2	21.1365	-0.0240	-0.1194	-0.7924	88.2	21.6164	-0.1213	-0.0751	-0.7892
83.3	21.1364	0.0252	-0.1174	-0.7924	88.3	21.5876	-0.1655	-0.0749	-0.7882
83.4	21.1459	0.0734	-0.1154	-0.7926	88.4	21.5504	-0.2031	-0.0746	-0.7870
83.5	21.1647	0.1190	-0.1135	-0.7930	88.5	21.5066	-0.2324	-0.0741	-0.7857
83.6	21.1921	0.1600	-0.1117	-0.7935	88.6	21.4578	-0.2524	-0.0735	-0.7844
83.7	21.2273	0.1949	-0.1101	-0.7941	88.7	21.4061	-0.2622	-0.0726	-0.7830
83.8	21.2687	0.2223	-0.1087	-0.7948	88.8	21.3536	-0.2615	-0.0716	-0.7816
83.9	21.3149	0.2411	-0.1074	-0.7956	88.9	21.3023	-0.2504	-0.0704	-0.7803
84.0	21.3640	0.2503	-0.1063	-0.7964	89.0	21.2543	-0.2294	-0.0689	-0.7790
84.1	21.4142	0.2496	-0.1054	-0.7972	89.1	21.2114	-0.1995	-0.0674	-0.7778
84.2	21.4634	0.2389	-0.1047	-0.7979	89.2	21.1754	-0.1617	-0.0656	-0.7767
84.3	21.5096	0.2185	-0.1042	-0.7986	89.3	21.1475	-0.1175	-0.0638	-0.7758
84.4	21.5509	0.1892	-0.1039	-0.7991	89.4	21.1288	-0.0688	-0.0619	-0.7751
84.5	21.5857	0.1522	-0.1036	-0.7995	89.5	21.1200	-0.0173	-0.0600	-0.7746
84.6	21.6124	0.1088	-0.1035	-0.7998	89.6	21.1216	0.0349	-0.0580	-0.7742
84.7	21.6298	0.0608	-0.1035	-0.7998	89.7	21.1333	0.0859	-0.0561	-0.7740
84.8	21.6373	0.0102	-0.1035	-0.7996	89.8	21.1549	0.1337	-0.0542	-0.7740
84.9	21.6345	-0.0409	-0.1034	-0.7993	89.9	21.1855	0.1763	-0.0524	-0.7741
85.0	21.6214	-0.0904	-0.1034	-0.7987	90.0	21.2240	0.2122	-0.0508	-0.7744

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
90.1	21.2690	0.2399	95.1	21.3433	-0.2729
90.2	21.3187	0.2582	95.2	21.2900	-0.2595
90.3	21.3712	0.2663	95.3	21.2405	-0.2359
90.4	21.4244	0.2638	95.4	21.1967	-0.2030
90.5	21.4762	0.2508	95.5	21.1603	-0.1621
90.6	21.5246	0.2275	95.6	21.1326	-0.1150
90.7	21.5674	0.1950	95.7	21.1148	-0.0634
90.8	21.6030	0.1545	95.8	21.1074	-0.0092
90.9	21.6298	0.1075	95.9	21.1108	0.0453
91.0	21.6466	0.0561	96.0	21.1249	0.0982
91.1	21.6527	0.0022	96.1	21.1491	0.1474
91.2	21.6479	-0.0518	96.2	21.1825	0.1909
91.3	21.6323	-0.1038	96.3	21.2240	0.2271
91.4	21.6065	-0.1516	96.4	21.2719	0.2545
91.5	21.5718	-0.1932	96.5	21.3245	0.2719
91.6	21.5294	-0.2270	96.6	21.3796	0.2786
91.7	21.4812	-0.2516	96.7	21.4351	0.2741
91.8	21.4291	-0.2660	96.8	21.4888	0.2587
91.9	21.3754	-0.2698	96.9	21.5385	0.2328
92.0	21.3220	-0.2628	97.0	21.5821	0.1973
92.1	21.2711	-0.2455	97.1	21.6179	0.1538
92.2	21.2248	-0.2184	97.2	21.6441	0.1038
92.3	21.1847	-0.1828	97.3	21.6599	0.0495
92.4	21.1525	-0.1401	97.4	21.6644	-0.0069
92.5	21.1293	-0.0919	97.5	21.6574	-0.0631
92.6	21.1161	-0.0400	97.6	21.6393	-0.1168
92.7	21.1132	0.0134	97.7	21.6108	-0.1657
92.8	21.1209	0.0664	97.8	21.5731	-0.2078
92.9	21.1389	0.1169	97.9	21.5277	-0.2415
93.0	21.1665	0.1630	98.0	21.4767	-0.2654
93.1	21.2028	0.2028	98.1	21.4220	-0.2785
93.2	21.2462	0.2349	98.2	21.3658	-0.2806
93.3	21.2953	0.2577	98.3	21.3105	-0.2715
93.4	21.3481	0.2705	98.4	21.2583	-0.2516
93.5	21.4025	0.2725	98.5	21.2110	-0.2218
93.6	21.4565	0.2636	98.6	21.1706	-0.1834
93.7	21.5077	0.2441	98.7	21.1386	-0.1379
93.8	21.5542	0.2147	98.8	21.1162	-0.0869
93.9	21.5939	0.1764	98.9	21.1042	-0.0326
94.0	21.6252	0.1309	99.0	21.1031	0.0230
94.1	21.6468	0.0799	99.1	21.1129	0.0778
94.2	21.6577	0.0255	99.2	21.1333	0.1297
94.3	21.6574	-0.0300	99.3	21.1636	0.1766
94.4	21.6460	-0.0843	99.4	21.2026	0.2168
94.5	21.6238	-0.1353	99.5	21.2488	0.2486
94.6	21.5919	-0.1807	99.6	21.3006	0.2706
94.7	21.5516	-0.2187	99.7	21.3559	0.2821
94.8	21.5046	-0.2479	99.8	21.4125	0.2823
94.9	21.4528	-0.2671	99.9	21.4682	0.2712
95.0	21.3983	-0.2755	100.0	21.5208	0.2492
					0.1033 -0.7658

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
100.1	21.5680	0.2170	105.1	21.1051	-0.0806
100.2	21.6079	0.1759	105.2	21.0947	-0.0242
100.3	21.6388	0.1276	105.3	21.0954	0.0331
100.4	21.6594	0.0739	105.4	21.1074	0.0892
100.5	21.6688	0.0171	105.5	21.1302	0.1420
100.6	21.6666	-0.0405	105.6	21.1630	0.1893
100.7	21.6528	-0.0965	105.7	21.2045	0.2293
100.8	21.6280	-0.1485	105.8	21.2532	0.2605
100.9	21.5934	-0.1944	105.9	21.3073	0.2815
101.0	21.5503	-0.2324	106.0	21.3646	0.2913
101.1	21.5005	-0.2610	106.1	21.4229	0.2896
101.2	21.4461	-0.2790	106.2	21.4799	0.2763
101.3	21.3894	-0.2858	106.3	21.5333	0.2518
101.4	21.3325	-0.2812	106.4	21.5808	0.2171
101.5	21.2779	-0.2655	106.5	21.6204	0.1734
101.6	21.2275	-0.2393	106.6	21.6506	0.1225
101.7	21.1833	-0.2037	106.7	21.6699	0.0665
101.8	21.1470	-0.1602	106.8	21.6776	0.0078
101.9	21.1201	-0.1105	106.9	21.6733	-0.0514
102.0	21.1034	-0.0565	107.0	21.6572	-0.1085
102.1	21.0977	-0.0003	107.1	21.6299	-0.1611
102.2	21.1030	0.0560	107.2	21.5926	-0.2071
102.3	21.1194	0.1102	107.3	21.5470	-0.2447
102.4	21.1461	0.1603	107.4	21.4948	-0.2723
102.5	21.1822	0.2041	107.5	21.4383	-0.2889
102.6	21.2263	0.2401	107.6	21.3798	-0.2939
102.7	21.2767	0.2668	107.7	21.3216	-0.2872
102.8	21.3317	0.2830	107.8	21.2660	-0.2691
102.9	21.3889	0.2880	107.9	21.2151	-0.2405
103.0	21.4461	0.2816	108.0	21.1710	-0.2024
103.1	21.5011	0.2638	108.1	21.1353	-0.1566
103.2	21.5516	0.2353	108.2	21.1093	-0.1046
103.3	21.5955	0.1971	108.3	21.0940	-0.0486
103.4	21.6309	0.1508	108.4	21.0901	0.0093
103.5	21.6563	0.0983	108.5	21.0975	0.0669
103.6	21.6706	0.0416	108.6	21.1161	0.1220
103.7	21.6733	-0.0168	108.7	21.1452	0.1725
103.8	21.6642	-0.0746	108.8	21.1837	0.2163
103.9	21.6436	-0.1293	108.9	21.2302	0.2518
104.0	21.6124	-0.1788	109.0	21.2829	0.2774
104.1	21.5720	-0.2209	109.1	21.3399	0.2922
104.2	21.5240	-0.2541	109.2	21.3988	0.2954
104.3	21.4705	-0.2769	109.3	21.4573	0.2868
104.4	21.4137	-0.2886	109.4	21.5132	0.2666
104.5	21.3557	-0.2887	109.5	21.5640	0.2356
104.6	21.2991	-0.2774	109.6	21.6077	0.1950
104.7	21.2459	-0.2551	109.7	21.6424	0.1463
104.8	21.1982	-0.2228	109.8	21.6667	0.0915
104.9	21.1579	-0.1818	109.9	21.6794	0.0329
105.0	21.1265	-0.1338	110.0	21.6801	-0.0272
					0.2353 -0.9009

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
110.1	21.6687	-0.0861	0.2347	-0.9028	115.1	21.1868	0.2275	0.2517	-0.9825
110.2	21.6457	-0.1415	0.2340	-0.9044	115.2	21.2355	0.2622	0.2527	-0.9852
110.3	21.6120	-0.1911	0.2334	-0.9058	115.3	21.2902	0.2866	0.2534	-0.9882
110.4	21.5691	-0.2329	0.2329	-0.9070	115.4	21.3488	0.2998	0.2539	-0.9912
110.5	21.5188	-0.2652	0.2325	-0.9079	115.5	21.4091	0.3010	0.2541	-0.9944
110.6	21.4632	-0.2867	0.2324	-0.9087	115.6	21.4686	0.2903	0.2540	-0.9976
110.7	21.4045	-0.2967	0.2324	-0.9094	115.7	21.5249	0.2678	0.2536	-1.0009
110.8	21.3452	-0.2948	0.2326	-0.9099	115.8	21.5758	0.2344	0.2529	-1.0040
110.9	21.2876	-0.2812	0.2331	-0.9105	115.9	21.6190	0.1914	0.2519	-1.0071
111.0	21.2339	-0.2566	0.2338	-0.9110	116.0	21.6527	0.1404	0.2506	-1.0099
111.1	21.1862	-0.2219	0.2348	-0.9117	116.1	21.6756	0.0837	0.2492	-1.0126
111.2	21.1464	-0.1786	0.2360	-0.9124	116.2	21.6866	0.0234	0.2475	-1.0149
111.3	21.1159	-0.1283	0.2373	-0.9133	116.3	21.6852	-0.0379	0.2458	-1.0170
111.4	21.0958	-0.0731	0.2389	-0.9144	116.4	21.6715	-0.0976	0.2440	-1.0188
111.5	21.0870	-0.0151	0.2405	-0.9157	116.5	21.6461	-0.1533	0.2422	-1.0203
111.6	21.0897	0.0436	0.2422	-0.9173	116.6	21.6100	-0.2028	0.2405	-1.0214
111.7	21.1039	0.1006	0.2439	-0.9191	116.7	21.5648	-0.2439	0.2389	-1.0223
111.8	21.1290	0.1538	0.2456	-0.9212	116.8	21.5124	-0.2750	0.2374	-1.0230
111.9	21.1642	0.2012	0.2472	-0.9235	116.9	21.4550	-0.2950	0.2362	-1.0234
112.0	21.2080	0.2407	0.2487	-0.9261	117.0	21.3949	-0.3032	0.2353	-1.0238
112.1	21.2589	0.2710	0.2500	-0.9289	117.1	21.3345	-0.2992	0.2346	-1.0240
112.2	21.3150	0.2906	0.2511	-0.9318	117.2	21.2762	-0.2834	0.2343	-1.0242
112.3	21.3740	0.2988	0.2519	-0.9349	117.3	21.2223	-0.2564	0.2342	-1.0244
112.4	21.4337	0.2951	0.2525	-0.9381	117.4	21.1750	-0.2195	0.2343	-1.0248
112.5	21.4915	0.2795	0.2527	-0.9413	117.5	21.1358	-0.1740	0.2347	-1.0252
112.6	21.5453	0.2526	0.2527	-0.9445	117.6	21.1065	-0.1217	0.2354	-1.0259
112.7	21.5927	0.2154	0.2524	-0.9477	117.7	21.0879	-0.0648	0.2362	-1.0268
112.8	21.6318	0.1693	0.2519	-0.9507	117.8	21.0809	-0.0054	0.2371	-1.0279
112.9	21.6609	0.1162	0.2511	-0.9535	117.9	21.0856	0.0543	0.2380	-1.0293
113.0	21.6788	0.0583	0.2501	-0.9561	118.0	21.1020	0.1119	0.2390	-1.0310
113.1	21.6846	-0.0021	0.2490	-0.9584	118.1	21.1294	0.1653	0.2399	-1.0330
113.2	21.6781	-0.0625	0.2478	-0.9605	118.2	21.1668	0.2123	0.2408	-1.0353
113.3	21.6596	-0.1203	0.2465	-0.9623	118.3	21.2128	0.2512	0.2414	-1.0378
113.4	21.6299	-0.1731	0.2453	-0.9638	118.4	21.2657	0.2803	0.2419	-1.0406
113.5	21.5902	-0.2189	0.2441	-0.9650	118.5	21.3235	0.2984	0.2421	-1.0435
113.6	21.5422	-0.2557	0.2431	-0.9660	118.6	21.3839	0.3047	0.2420	-1.0465
113.7	21.4880	-0.2821	0.2423	-0.9668	118.7	21.4446	0.2989	0.2416	-1.0497
113.8	21.4297	-0.2971	0.2417	-0.9674	118.8	21.5031	0.2810	0.2409	-1.0528
113.9	21.3697	-0.3002	0.2413	-0.9679	118.9	21.5569	0.2518	0.2398	-1.0559
114.0	21.3105	-0.2913	0.2412	-0.9684	119.0	21.6040	0.2122	0.2385	-1.0588
114.1	21.2543	-0.2709	0.2413	-0.9688	119.1	21.6422	0.1639	0.2368	-1.0616
114.2	21.2034	-0.2399	0.2417	-0.9693	119.2	21.6700	0.1089	0.2350	-1.0641
114.3	21.1596	-0.1996	0.2424	-0.9699	119.3	21.6862	0.0492	0.2329	-1.0664
114.4	21.1247	-0.1515	0.2432	-0.9706	119.4	21.6900	-0.0125	0.2307	-1.0684
114.5	21.1000	-0.0976	0.2443	-0.9716	119.5	21.6813	-0.0737	0.2285	-1.0700
114.6	21.0863	-0.0399	0.2455	-0.9727	119.6	21.6605	-0.1319	0.2262	-1.0713
114.7	21.0842	0.0194	0.2467	-0.9742	119.7	21.6284	-0.1847	0.2240	-1.0723
114.8	21.0937	0.0780	0.2480	-0.9758	119.8	21.5864	-0.2299	0.2219	-1.0730
114.9	21.1146	0.1336	0.2494	-0.9778	119.9	21.5363	-0.2656	0.2200	-1.0735
115.0	21.1460	0.1841	0.2506	-0.9800	120.0	21.4802	-0.2906	0.2184	-1.0737

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka		Z _o		kh _e	ka		Z _o		kh _e
120.1	21.4204	-0.3039	0.2169	-1.0737	125.1	21.5144	0.2813	0.1845	-1.1350
120.2	21.3593	-0.3049	0.2158	-1.0737	125.2	21.5682	0.2497	0.1828	-1.1376
120.3	21.2993	-0.2939	0.2150	-1.0735	125.3	21.6146	0.2080	0.1807	-1.1400
120.4	21.2429	-0.2713	0.2145	-1.0734	125.4	21.6518	0.1576	0.1784	-1.1421
120.5	21.1922	-0.2380	0.2143	-1.0734	125.5	21.6781	0.1007	0.1759	-1.1440
120.6	21.1491	-0.1955	0.2143	-1.0735	125.6	21.6924	0.0396	0.1732	-1.1456
120.7	21.1152	-0.1454	0.2146	-1.0738	125.7	21.6942	-0.0232	0.1704	-1.1468
120.8	21.0918	-0.0897	0.2151	-1.0744	125.8	21.6832	-0.0850	0.1675	-1.1476
120.9	21.0799	-0.0306	0.2157	-1.0751	125.9	21.6601	-0.1434	0.1647	-1.1482
121.0	21.0797	0.0298	0.2164	-1.0762	126.0	21.6257	-0.1958	0.1620	-1.1483
121.1	21.0914	0.0890	0.2171	-1.0776	126.1	21.5815	-0.2402	0.1595	-1.1482
121.2	21.1145	0.1449	0.2178	-1.0793	126.2	21.5295	-0.2747	0.1572	-1.1478
121.3	21.1481	0.1952	0.2184	-1.0812	126.3	21.4717	-0.2981	0.1552	-1.1472
121.4	21.1911	0.2380	0.2189	-1.0835	126.4	21.4106	-0.3095	0.1535	-1.1465
121.5	21.2418	0.2716	0.2191	-1.0859	126.5	21.3486	-0.3085	0.1521	-1.1456
121.6	21.2983	0.2946	0.2191	-1.0886	126.6	21.2882	-0.2952	0.1511	-1.1448
121.7	21.3584	0.3060	0.2188	-1.0914	126.7	21.2317	-0.2704	0.1503	-1.1440
121.8	21.4197	0.3053	0.2182	-1.0943	126.8	21.1814	-0.2349	0.1499	-1.1433
121.9	21.4799	0.2923	0.2173	-1.0972	126.9	21.1392	-0.1903	0.1498	-1.1428
122.0	21.5364	0.2675	0.2160	-1.1001	127.0	21.1065	-0.1384	0.1499	-1.1425
122.1	21.5870	0.2318	0.2144	-1.1029	127.1	21.0847	-0.0812	0.1502	-1.1425
122.2	21.6295	0.1865	0.2125	-1.1055	127.2	21.0746	-0.0208	0.1506	-1.1428
122.3	21.6620	0.1336	0.2103	-1.1078	127.3	21.0765	0.0404	0.1511	-1.1433
122.4	21.6833	0.0751	0.2080	-1.1099	127.4	21.0903	0.1001	0.1515	-1.1442
122.5	21.6924	0.0134	0.2055	-1.1117	127.5	21.1156	0.1560	0.1519	-1.1455
122.6	21.6889	-0.0488	0.2029	-1.1132	127.6	21.1514	0.2059	0.1522	-1.1470
122.7	21.6729	-0.1091	0.2003	-1.1143	127.7	21.1964	0.2478	0.1523	-1.1488
122.8	21.6451	-0.1648	0.1977	-1.1151	127.8	21.2490	0.2802	0.1522	-1.1508
122.9	21.6068	-0.2138	0.1953	-1.1155	127.9	21.3070	0.3016	0.1517	-1.1530
123.0	21.5594	-0.2540	0.1930	-1.1157	128.0	21.3684	0.3112	0.1510	-1.1553
123.1	21.5051	-0.2838	0.1910	-1.1156	128.1	21.4306	0.3083	0.1499	-1.1577
123.2	21.4461	-0.3022	0.1892	-1.1153	128.2	21.4912	0.2931	0.1485	-1.1600
123.3	21.3847	-0.3084	0.1877	-1.1149	128.3	21.5477	0.2660	0.1467	-1.1623
123.4	21.3235	-0.3023	0.1866	-1.1144	128.4	21.5977	0.2281	0.1447	-1.1645
123.5	21.2649	-0.2842	0.1858	-1.1140	128.5	21.6392	0.1807	0.1423	-1.1664
123.6	21.2112	-0.2550	0.1852	-1.1135	128.6	21.6704	0.1259	0.1397	-1.1680
123.7	21.1643	-0.2159	0.1850	-1.1133	128.7	21.6900	0.0658	0.1369	-1.1694
123.8	21.1261	-0.1683	0.1850	-1.1132	128.8	21.6971	0.0030	0.1340	-1.1704
123.9	21.0981	-0.1143	0.1853	-1.1133	128.9	21.6914	-0.0600	0.1310	-1.1710
124.0	21.0812	-0.0559	0.1857	-1.1137	129.0	21.6731	-0.1205	0.1281	-1.1713
124.1	21.0760	0.0047	0.1862	-1.1143	129.1	21.6430	-0.1760	0.1252	-1.1712
124.2	21.0829	0.0651	0.1868	-1.1153	129.2	21.6024	-0.2243	0.1226	-1.1708
124.3	21.1014	0.1231	0.1873	-1.1166	129.3	21.5531	-0.2634	0.1201	-1.1701
124.4	21.1310	0.1764	0.1878	-1.1182	129.4	21.4971	-0.2917	0.1180	-1.1692
124.5	21.1706	0.2229	0.1881	-1.1201	129.5	21.4366	-0.3083	0.1161	-1.1681
124.6	21.2186	0.2608	0.1882	-1.1223	129.6	21.3743	-0.3124	0.1146	-1.1670
124.7	21.2734	0.2886	0.1881	-1.1246	129.7	21.3125	-0.3042	0.1134	-1.1658
124.8	21.3327	0.3050	0.1877	-1.1271	129.8	21.2538	-0.2839	0.1125	-1.1646
124.9	21.3943	0.3094	0.1870	-1.1297	129.9	21.2003	-0.2525	0.1120	-1.1635
125.0	21.4557	0.3014	0.1859	-1.1324	130.0	21.1542	-0.2113	0.1118	-1.1626

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
130.1	21.1172	-0.1618	0.1118	-1.1620	135.1	21.7008	-0.0077	0.0568	-1.1898
130.2	21.0906	-0.1062	0.1120	-1.1615	135.2	21.6928	-0.0712	0.0538	-1.1897
130.3	21.0754	-0.0465	0.1124	-1.1614	135.3	21.6722	-0.1317	0.0510	-1.1892
130.4	21.0722	0.0151	0.1129	-1.1616	135.4	21.6399	-0.1868	0.0482	-1.1884
130.5	21.0812	0.0760	0.1133	-1.1621	135.5	21.5972	-0.2342	0.0457	-1.1873
130.6	21.1019	0.1341	0.1138	-1.1630	135.6	21.5460	-0.2720	0.0435	-1.1859
130.7	21.1337	0.1871	0.1141	-1.1641	135.7	21.4884	-0.2988	0.0415	-1.1843
130.8	21.1754	0.2329	0.1142	-1.1656	135.8	21.4267	-0.3134	0.0399	-1.1826
130.9	21.2253	0.2697	0.1141	-1.1673	135.9	21.3636	-0.3155	0.0386	-1.1809
131.0	21.2817	0.2960	0.1138	-1.1691	136.0	21.3015	-0.3051	0.0377	-1.1791
131.1	21.3423	0.3106	0.1131	-1.1711	136.1	21.2428	-0.2826	0.0371	-1.1774
131.2	21.4049	0.3130	0.1121	-1.1732	136.2	21.1899	-0.2490	0.0369	-1.1759
131.3	21.4668	0.3028	0.1107	-1.1753	136.3	21.1447	-0.2058	0.0369	-1.1745
131.4	21.5257	0.2804	0.1090	-1.1774	136.4	21.1089	-0.1546	0.0372	-1.1734
131.5	21.5790	0.2466	0.1070	-1.1793	136.5	21.0839	-0.0975	0.0376	-1.1726
131.6	21.6246	0.2027	0.1046	-1.1810	136.6	21.0706	-0.0366	0.0382	-1.1721
131.7	21.6605	0.1504	0.1021	-1.1824	136.7	21.0694	0.0256	0.0388	-1.1719
131.8	21.6852	0.0919	0.0993	-1.1835	136.8	21.0805	0.0870	0.0394	-1.1721
131.9	21.6976	0.0295	0.0964	-1.1843	136.9	21.1034	0.1450	0.0399	-1.1726
132.0	21.6972	-0.0341	0.0934	-1.1847	137.0	21.1373	0.1975	0.0403	-1.1734
132.1	21.6840	-0.0963	0.0904	-1.1848	137.1	21.1809	0.2424	0.0405	-1.1745
132.2	21.6586	-0.1546	0.0875	-1.1845	137.2	21.2327	0.2779	0.0404	-1.1758
132.3	21.6219	-0.2064	0.0848	-1.1839	137.3	21.2906	0.3026	0.0400	-1.1772
132.4	21.5757	-0.2498	0.0823	-1.1830	137.4	21.3524	0.3153	0.0393	-1.1788
132.5	21.5219	-0.2830	0.0800	-1.1818	137.5	21.4157	0.3156	0.0383	-1.1804
132.6	21.4626	-0.3047	0.0781	-1.1804	137.6	21.4780	0.3032	0.0369	-1.1820
132.7	21.4004	-0.3141	0.0765	-1.1790	137.7	21.5367	0.2786	0.0352	-1.1835
132.8	21.3377	-0.3110	0.0752	-1.1775	137.8	21.5895	0.2426	0.0331	-1.1849
132.9	21.2771	-0.2955	0.0743	-1.1760	137.9	21.6341	0.1967	0.0308	-1.1860
133.0	21.2208	-0.2684	0.0738	-1.1746	138.0	21.6686	0.1426	0.0283	-1.1868
133.1	21.1712	-0.2309	0.0735	-1.1733	138.1	21.6915	0.0826	0.0256	-1.1873
133.2	21.1299	-0.1844	0.0735	-1.1723	138.2	21.7019	0.0191	0.0228	-1.1874
133.3	21.0986	-0.1307	0.0737	-1.1715	138.3	21.6993	-0.0452	0.0199	-1.1872
133.4	21.0785	-0.0721	0.0741	-1.1710	138.4	21.6838	-0.1076	0.0171	-1.1866
133.5	21.0703	-0.0107	0.0746	-1.1708	138.5	21.6561	-0.1656	0.0145	-1.1857
133.6	21.0742	0.0512	0.0751	-1.1710	138.6	21.6173	-0.2167	0.0120	-1.1844
133.7	21.0902	0.1111	0.0756	-1.1715	138.7	21.5692	-0.2589	0.0098	-1.1829
133.8	21.1177	0.1668	0.0760	-1.1723	138.8	21.5136	-0.2906	0.0078	-1.1812
133.9	21.1556	0.2161	0.0763	-1.1734	138.9	21.4531	-0.3104	0.0062	-1.1793
134.0	21.2026	0.2570	0.0763	-1.1748	139.0	21.3899	-0.3178	0.0050	-1.1773
134.1	21.2568	0.2880	0.0760	-1.1763	139.1	21.3268	-0.3125	0.0041	-1.1753
134.2	21.3163	0.3077	0.0755	-1.1781	139.2	21.2661	-0.2948	0.0035	-1.1734
134.3	21.3787	0.3153	0.0746	-1.1799	139.3	21.2102	-0.2656	0.0033	-1.1716
134.4	21.4416	0.3103	0.0734	-1.1817	139.4	21.1613	-0.2260	0.0034	-1.1700
134.5	21.5024	0.2929	0.0718	-1.1835	139.5	21.1212	-0.1777	0.0037	-1.1686
134.6	21.5586	0.2635	0.0699	-1.1852	139.6	21.0915	-0.1225	0.0042	-1.1676
134.7	21.6080	0.2234	0.0677	-1.1867	139.7	21.0731	-0.0626	0.0049	-1.1668
134.8	21.6484	0.1741	0.0652	-1.1880	139.8	21.0668	-0.0003	0.0056	-1.1663
134.9	21.6781	0.1176	0.0625	-1.1889	139.9	21.0729	0.0620	0.0063	-1.1662
135.0	21.6958	0.0561	0.0597	-1.1895	140.0	21.0911	0.1220	0.0070	-1.1664

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
140.1	21.1206	0.1773	145.1	21.5049	-0.2975
140.2	21.1606	0.2258	145.2	21.4431	-0.3154
140.3	21.2094	0.2657	145.3	21.3792	-0.3207
140.4	21.2653	0.2951	145.4	21.3157	-0.3132
140.5	21.3260	0.3131	145.5	21.2551	-0.2933
140.6	21.3893	0.3186	145.6	21.1998	-0.2620
140.7	21.4527	0.3114	145.7	21.1519	-0.2204
140.8	21.5135	0.2917	145.8	21.1131	-0.1703
140.9	21.5693	0.2602	145.9	21.0849	-0.1137
141.0	21.6178	0.2179	146.0	21.0684	-0.0527
141.1	21.6569	0.1668	146.1	21.0642	0.0103
141.2	21.6849	0.1086	146.2	21.0724	0.0729
141.3	21.7007	0.0460	146.3	21.0927	0.1328
141.4	21.7035	-0.0186	146.4	21.1244	0.1876
141.5	21.6933	-0.0824	146.5	21.1663	0.2352
141.6	21.6704	-0.1428	146.6	21.2169	0.2737
141.7	21.6359	-0.1973	146.7	21.2742	0.3016
141.8	21.5912	-0.2437	146.8	21.3361	0.3176
141.9	21.5382	-0.2801	146.9	21.4001	0.3211
142.0	21.4792	-0.3051	147.0	21.4638	0.3117
142.1	21.4165	-0.3178	147.1	21.5245	0.2897
142.2	21.3527	-0.3177	147.2	21.5797	0.2560
142.3	21.2904	-0.3051	147.3	21.6271	0.2118
142.4	21.2320	-0.2804	147.4	21.6648	0.1588
142.5	21.1797	-0.2448	147.5	21.6911	0.0993
142.6	21.1356	-0.1996	147.6	21.7049	0.0355
142.7	21.1012	-0.1468	147.7	21.7055	-0.0297
142.8	21.0779	-0.0883	147.8	21.6930	-0.0936
142.9	21.0665	-0.0265	147.9	21.6679	-0.1538
143.0	21.0674	0.0364	148.0	21.6312	-0.2075
143.1	21.0807	0.0979	148.1	21.5846	-0.2527
143.2	21.1057	0.1557	148.2	21.5299	-0.2876
143.3	21.1417	0.2075	148.3	21.4696	-0.3107
143.4	21.1872	0.2514	148.4	21.4060	-0.3214
143.5	21.2407	0.2855	148.5	21.3418	-0.3191
143.6	21.2999	0.3085	148.6	21.2794	-0.3043
143.7	21.3627	0.3193	148.7	21.2214	-0.2774
143.8	21.4267	0.3174	148.8	21.1699	-0.2398
143.9	21.4891	0.3028	148.9	21.1270	-0.1929
144.0	21.5476	0.2759	149.0	21.0941	-0.1385
144.1	21.5996	0.2378	149.1	21.0726	-0.0788
144.2	21.6430	0.1899	149.2	21.0632	-0.0161
144.3	21.6760	0.1341	149.3	21.0662	0.0473
144.4	21.6971	0.0728	149.4	21.0816	0.1088
144.5	21.7054	0.0084	149.5	21.1088	0.1662
144.6	21.7006	-0.0564	149.6	21.1468	0.2173
144.7	21.6828	-0.1188	149.7	21.1942	0.2599
144.8	21.6528	-0.1763	149.8	21.2491	0.2925
144.9	21.6120	-0.2265	149.9	21.3097	0.3137
145.0	21.5619	-0.2675	150.0	21.3733	0.3225
					-0.0627
					-1.1271

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o		kh _e		ka	Z _o		kh _e	
150.1	21.4377	0.3184	-0.0634	-1.1282	155.1	21.1605	-0.2342	-0.0969	-1.0891
150.2	21.5002	0.3016	-0.0645	-1.1293	155.2	21.1188	-0.1855	-0.0958	-1.0875
150.3	21.5582	0.2725	-0.0658	-1.1301	155.3	21.0876	-0.1297	-0.0946	-1.0862
150.4	21.6093	0.2323	-0.0675	-1.1308	155.4	21.0679	-0.0689	-0.0932	-1.0852
150.5	21.6515	0.1825	-0.0694	-1.1312	155.5	21.0605	-0.0055	-0.0919	-1.0845
150.6	21.6828	0.1252	-0.0714	-1.1313	155.6	21.0657	0.0582	-0.0905	-1.0842
150.7	21.7020	0.0626	-0.0736	-1.1311	155.7	21.0833	0.1196	-0.0893	-1.0841
150.8	21.7081	-0.0025	-0.0758	-1.1306	155.8	21.1125	0.1765	-0.0881	-1.0844
150.9	21.7010	-0.0676	-0.0779	-1.1296	155.9	21.1525	0.2266	-0.0872	-1.0849
151.0	21.6809	-0.1299	-0.0800	-1.1284	156.0	21.2016	0.2680	-0.0865	-1.0856
151.1	21.6488	-0.1868	-0.0819	-1.1268	156.1	21.2581	0.2990	-0.0861	-1.0851
151.2	21.6059	-0.2360	-0.0836	-1.1250	156.2	21.3197	0.3183	-0.0860	-1.0875
151.3	21.5541	-0.2755	-0.0850	-1.1230	156.3	21.3842	0.3250	-0.0862	-1.0885
151.4	21.4957	-0.3037	-0.0860	-1.1208	156.4	21.4489	0.3187	-0.0867	-1.0895
151.5	21.4329	-0.3197	-0.0868	-1.1185	156.5	21.5112	0.2996	-0.0876	-1.0905
151.6	21.3683	-0.3228	-0.0872	-1.1161	156.6	21.5686	0.2684	-0.0888	-1.0912
151.7	21.3047	-0.3131	-0.0872	-1.1139	156.7	21.6187	0.2261	-0.0902	-1.0918
151.8	21.2443	-0.2911	-0.0870	-1.1117	156.8	21.6595	0.1746	-0.0918	-1.0921
151.9	21.1897	-0.2576	-0.0864	-1.1098	156.9	21.6890	0.1158	-0.0936	-1.0921
152.0	21.1428	-0.2142	-0.0856	-1.1080	157.0	21.7062	0.0522	-0.0954	-1.0917
152.1	21.1055	-0.1625	-0.0846	-1.1065	157.1	21.7101	-0.0136	-0.0973	-1.0911
152.2	21.0790	-0.1045	-0.0834	-1.1053	157.2	21.7007	-0.0789	-0.0992	-1.0900
152.3	21.0644	-0.0426	-0.0822	-1.1044	157.3	21.6784	-0.1409	-0.1009	-1.0887
152.4	21.0623	0.0211	-0.0809	-1.1039	157.4	21.6441	-0.1970	-0.1024	-1.0871
152.5	21.0726	0.0839	-0.0797	-1.1036	157.5	21.5993	-0.2450	-0.1037	-1.0852
152.6	21.0951	0.1435	-0.0786	-1.1037	157.6	21.5458	-0.2830	-0.1047	-1.0832
152.7	21.1288	0.1976	-0.0777	-1.1041	157.7	21.4860	-0.3094	-0.1055	-1.0810
152.8	21.1726	0.2442	-0.0769	-1.1047	157.8	21.4224	-0.3233	-0.1058	-1.0787
152.9	21.2249	0.2813	-0.0764	-1.1055	157.9	21.3573	-0.3243	-0.1059	-1.0765
153.0	21.2836	0.3075	-0.0763	-1.1065	158.0	21.2936	-0.3124	-0.1056	-1.0743
153.1	21.3465	0.3215	-0.0764	-1.1075	158.1	21.2337	-0.2882	-0.1050	-1.0722
153.2	21.4111	0.3228	-0.0769	-1.1086	158.2	21.1799	-0.2527	-0.1042	-1.0703
153.3	21.4749	0.3112	-0.0777	-1.1096	158.3	21.1342	-0.2074	-0.1031	-1.0687
153.4	21.5353	0.2871	-0.0788	-1.1105	158.4	21.0983	-0.1542	-0.1018	-1.0673
153.5	21.5898	0.2512	-0.0802	-1.1112	158.5	21.0736	-0.0950	-0.1004	-1.0662
153.6	21.6361	0.2050	-0.0818	-1.1116	158.6	21.0610	-0.0321	-0.0990	-1.0654
153.7	21.6722	0.1504	-0.0836	-1.1118	158.7	21.0610	0.0319	-0.0975	-1.0650
153.8	21.6967	0.0895	-0.0856	-1.1117	158.8	21.0735	0.0948	-0.0961	-1.0648
153.9	21.7083	0.0248	-0.0876	-1.1112	158.9	21.0981	0.1540	-0.0949	-1.0650
154.0	21.7067	-0.0409	-0.0897	-1.1104	159.0	21.1339	0.2074	-0.0937	-1.0654
154.1	21.6919	-0.1049	-0.0916	-1.1093	159.1	21.1795	0.2528	-0.0928	-1.0660
154.2	21.6646	-0.1645	-0.0934	-1.1078	159.2	21.2333	0.2884	-0.0922	-1.0669
154.3	21.6258	-0.2174	-0.0950	-1.1061	159.3	21.2933	0.3127	-0.0919	-1.0678
154.4	21.5773	-0.2613	-0.0964	-1.1041	159.4	21.3571	0.3248	-0.0919	-1.0688
154.5	21.5211	-0.2945	-0.0974	-1.1020	159.5	21.4222	0.3239	-0.0922	-1.0699
154.6	21.4596	-0.3157	-0.0981	-1.0997	159.6	21.4860	0.3101	-0.0928	-1.0708
154.7	21.3953	-0.3243	-0.0985	-1.0974	159.7	21.5460	0.2837	-0.0937	-1.0716
154.8	21.3307	-0.3198	-0.0985	-1.0951	159.8	21.5996	0.2457	-0.0949	-1.0723
154.9	21.2685	-0.3028	-0.0983	-1.0930	159.9	21.6446	0.1977	-0.0963	-1.0727
155.0	21.2110	-0.2738	-0.0977	-1.0909	160.0	21.6791	0.1414	-0.0979	-1.0728

TABLE X (Continued)

 $\theta_0 = 70$ degrees

ka	Z_0		kh_e		ka	Z_0		kh_e	
160.1	21.7016	0.0793	-0.0996	-1.0726	165.1	21.0750	0.1057	-0.0989	-1.0290
160.2	21.7111	0.0139	-0.1014	-1.0721	165.2	21.1017	0.1644	-0.0975	-1.0293
160.3	21.7073	-0.0521	-0.1031	-1.0713	165.3	21.1395	0.2169	-0.0963	-1.0298
160.4	21.6902	-0.1160	-0.1047	-1.0701	165.4	21.1869	0.2610	-0.0953	-1.0305
160.5	21.6606	-0.1751	-0.1062	-1.0686	165.5	21.2422	0.2950	-0.0945	-1.0314
160.6	21.6198	-0.2269	-0.1075	-1.0669	165.6	21.3033	0.3175	-0.0941	-1.0324
160.7	21.5696	-0.2694	-0.1085	-1.0649	165.7	21.3679	0.3274	-0.0939	-1.0335
160.8	21.5119	-0.3008	-0.1092	-1.0628	165.8	21.4333	0.3244	-0.0941	-1.0345
160.9	21.4494	-0.3201	-0.1096	-1.0607	165.9	21.4971	0.3083	-0.0946	-1.0355
161.0	21.3844	-0.3265	-0.1097	-1.0584	166.0	21.5565	0.2797	-0.0954	-1.0363
161.1	21.3196	-0.3199	-0.1095	-1.0563	166.1	21.6091	0.2397	-0.0964	-1.0370
161.2	21.2576	-0.3006	-0.1089	-1.0542	166.2	21.6527	0.1899	-0.0976	-1.0374
161.3	21.2008	-0.2696	-0.1081	-1.0523	166.3	21.6855	0.1321	-0.0990	-1.0375
161.4	21.1514	-0.2280	-0.1070	-1.0506	166.4	21.7060	0.0689	-0.1005	-1.0374
161.5	21.1111	-0.1777	-0.1057	-1.0491	166.5	21.7133	0.0028	-0.1021	-1.0369
161.6	21.0816	-0.1205	-0.1043	-1.0480	166.6	21.7072	-0.0634	-0.1036	-1.0361
161.7	21.0638	-0.0587	-0.1027	-1.0471	166.7	21.6878	-0.1270	-0.1050	-1.0349
161.8	21.0585	0.0053	-0.1012	-1.0465	166.8	21.6561	-0.1854	-0.1062	-1.0335
161.9	21.0658	0.0691	-0.0997	-1.0463	166.9	21.6133	-0.2360	-0.1073	-1.0319
162.0	21.0855	0.1304	-0.0983	-1.0464	167.0	21.5613	-0.2770	-0.1080	-1.0300
162.1	21.1169	0.1866	-0.0970	-1.0467	167.1	21.5024	-0.3067	-0.1085	-1.0280
162.2	21.1587	0.2357	-0.0959	-1.0473	167.2	21.4389	-0.3239	-0.1087	-1.0260
162.3	21.2095	0.2757	-0.0951	-1.0481	167.3	21.3734	-0.3281	-0.1085	-1.0239
162.4	21.2674	0.3050	-0.0946	-1.0490	167.4	21.3085	-0.3193	-0.1081	-1.0219
162.5	21.3301	0.3223	-0.0943	-1.0500	167.5	21.2469	-0.2978	-0.1073	-1.0200
162.6	21.3951	0.3268	-0.0944	-1.0510	167.6	21.1909	-0.2647	-0.1063	-1.0182
162.7	21.4600	0.3183	-0.0948	-1.0520	167.7	21.1426	-0.2214	-0.1051	-1.0167
162.8	21.5221	0.2970	-0.0955	-1.0529	167.8	21.1038	-0.1694	-0.1036	-1.0154
162.9	21.5788	0.2636	-0.0965	-1.0537	167.9	21.0761	-0.1110	-0.1021	-1.0144
163.0	21.6278	0.2194	-0.0977	-1.0542	168.0	21.0503	-0.0484	-0.1004	-1.0136
163.1	21.6670	0.1662	-0.0991	-1.0545	168.1	21.0571	0.0162	-0.0988	-1.0132
163.2	21.6947	0.1060	-0.1007	-1.0545	168.2	21.0566	0.0801	-0.0971	-1.0131
163.3	21.7098	0.0415	-0.1023	-1.0541	168.3	21.0384	0.1410	-0.0956	-1.0133
163.4	21.7115	-0.0248	-0.1039	-1.0534	168.4	21.1218	0.1965	-0.0943	-1.0138
163.5	21.6998	-0.0901	-0.1055	-1.0524	168.5	21.1655	0.2444	-0.0931	-1.0145
163.6	21.6752	-0.1517	-0.1069	-1.0511	168.6	21.2179	0.2829	-0.0922	-1.0153
163.7	21.6388	-0.2069	-0.1082	-1.0495	168.7	21.2771	0.3104	-0.0916	-1.0163
163.8	21.5921	-0.2537	-0.1092	-1.0477	168.8	21.3407	0.3257	-0.0913	-1.0174
163.9	21.5371	-0.2900	-0.1099	-1.0458	168.9	21.4062	0.3281	-0.0912	-1.0185
164.0	21.4761	-0.3145	-0.1104	-1.0437	169.0	21.4712	0.3174	-0.0915	-1.0195
164.1	21.4116	-0.3264	-0.1105	-1.0415	169.1	21.5328	0.2938	-0.0921	-1.0205
164.2	21.3463	-0.3251	-0.1103	-1.0394	169.2	21.5887	0.2583	-0.0929	-1.0213
164.3	21.2826	-0.3110	-0.1098	-1.0373	169.3	21.6365	0.2122	-0.0940	-1.0218
164.4	21.2232	-0.2847	-0.1089	-1.0354	169.4	21.6741	0.1574	-0.0953	-1.0221
164.5	21.1703	-0.2472	-0.1079	-1.0337	169.5	21.6999	0.0960	-0.0967	-1.0221
164.6	21.1259	-0.2002	-0.1066	-1.0322	169.6	21.7128	0.0306	-0.0981	-1.0218
164.7	21.0917	-0.1454	-0.1052	-1.0309	169.7	21.7122	-0.0361	-0.0995	-1.0212
164.8	21.0688	-0.0851	-0.1036	-1.0300	169.8	21.6983	-0.1013	-0.1009	-1.0203
164.9	21.0583	-0.0215	-0.1020	-1.0293	169.9	21.6714	-0.1623	-0.1022	-1.0190
165.0	21.0603	0.0429	-0.1004	-1.0290	170.0	21.6330	-0.2166	-0.1032	-1.0176

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o		kh_e		ka	Z_o		kh_e	
170.1	21.5845	-0.2619	-0.1040	-1.0158	175.1	21.3514	0.3286	-0.0806	-0.9915
170.2	21.5280	-0.2966	-0.1046	-1.0140	175.2	21.4174	0.3288	-0.0805	-0.9926
170.3	21.4659	-0.3191	-0.1048	-1.0120	175.3	21.4823	0.3158	-0.0808	-0.9938
170.4	21.4007	-0.3288	-0.1047	-1.0100	175.4	21.5435	0.2901	-0.0813	-0.9948
170.5	21.3351	-0.3254	-0.1044	-1.0080	175.5	21.5984	0.2525	-0.0820	-0.9956
170.6	21.2717	-0.3090	-0.1037	-1.0061	175.6	21.6448	0.2046	-0.0830	-0.9962
170.7	21.2129	-0.2806	-0.1027	-1.0044	175.7	21.6807	0.1482	-0.0842	-0.9966
170.8	21.1611	-0.2412	-0.1015	-1.0028	175.8	21.7045	0.0856	-0.0854	-0.9967
170.9	21.1180	-0.1924	-0.1001	-1.0015	175.9	21.7152	0.0195	-0.0868	-0.9964
171.0	21.0855	-0.1363	-0.0985	-1.0004	176.0	21.7124	-0.0475	-0.0881	-0.9959
171.1	21.0645	-0.0750	-0.0969	-0.9996	176.1	21.6961	-0.1125	-0.0893	-0.9950
171.2	21.0560	-0.0108	-0.0952	-0.9991	176.2	21.6671	-0.1728	-0.0904	-0.9939
171.3	21.0603	0.0539	-0.0935	-0.9990	176.3	21.6266	-0.2260	-0.0914	-0.9925
171.4	21.0771	0.1165	-0.0919	-0.9991	176.4	21.5764	-0.2698	-0.0921	-0.9909
171.5	21.1059	0.1746	-0.0905	-0.9995	176.5	21.5185	-0.3026	-0.0925	-0.9892
171.6	21.1456	0.2261	-0.0892	-1.0001	176.6	21.4554	-0.3232	-0.0926	-0.9874
171.7	21.1947	0.2688	-0.0881	-1.0009	176.7	21.3897	-0.3307	-0.0924	-0.9855
171.8	21.2514	0.3011	-0.0873	-1.0019	176.8	21.3240	-0.3250	-0.0919	-0.9837
171.9	21.3136	0.3217	-0.0868	-1.0030	176.9	21.2609	-0.3065	-0.0911	-0.9820
172.0	21.3789	0.3295	-0.0866	-1.0041	177.0	21.2028	-0.2759	-0.0901	-0.9804
172.1	21.4445	0.3242	-0.0867	-1.0052	177.1	21.1521	-0.2347	-0.0888	-0.9789
172.2	21.5080	0.3059	-0.0871	-1.0063	177.2	21.1105	-0.1843	-0.0873	-0.9778
172.3	21.5668	0.2752	-0.0878	-1.0072	177.3	21.0797	-0.1269	-0.0857	-0.9769
172.4	21.6183	0.2332	-0.0887	-1.0079	177.4	21.0608	-0.0646	-0.0840	-0.9762
172.5	21.6604	0.1816	-0.0898	-1.0083	177.5	21.0544	0.0001	-0.0823	-0.9759
172.6	21.6914	0.1225	-0.0911	-1.0085	177.6	21.0608	0.0649	-0.0805	-0.9758
172.7	21.7098	0.0582	-0.0924	-1.0084	177.7	21.0797	0.1272	-0.0789	-0.9761
172.8	21.7149	-0.0084	-0.0938	-1.0080	177.8	21.1106	0.1846	-0.0774	-0.9766
172.9	21.7065	-0.0748	-0.0952	-1.0072	177.9	21.1521	0.2350	-0.0761	-0.9773
173.0	21.6848	-0.1380	-0.0964	-1.0062	178.0	21.2029	0.2763	-0.0750	-0.9783
173.1	21.6510	-0.1955	-0.0975	-1.0049	178.1	21.2610	0.3068	-0.0742	-0.9794
173.2	21.6063	-0.2449	-0.0983	-1.0033	178.2	21.3242	0.3254	-0.0737	-0.9805
173.3	21.5527	-0.2842	-0.0989	-1.0016	178.3	21.3899	0.3310	-0.0734	-0.9818
173.4	21.4925	-0.3120	-0.0993	-0.9998	178.4	21.4557	0.3235	-0.0735	-0.9830
173.5	21.4281	-0.3272	-0.0993	-0.9978	178.5	21.5189	0.3030	-0.0738	-0.9841
173.6	21.3622	-0.3292	-0.0990	-0.9959	178.6	21.5769	0.2701	-0.0744	-0.9850
173.7	21.2975	-0.3181	-0.0984	-0.9940	178.7	21.6272	0.2262	-0.0753	-0.9858
173.8	21.2363	-0.2945	-0.0975	-0.9923	178.8	21.6678	0.1729	-0.0763	-0.9863
173.9	21.1812	-0.2594	-0.0964	-0.9907	178.9	21.6968	0.1125	-0.0775	-0.9866
174.0	21.1342	-0.2142	-0.0950	-0.9893	179.0	21.7131	0.0473	-0.0788	-0.9866
174.1	21.0970	-0.1608	-0.0935	-0.9882	179.1	21.7159	-0.0198	-0.0801	-0.9862
174.2	21.0710	-0.1012	-0.0919	-0.9874	179.2	21.7052	-0.0861	-0.0814	-0.9855
174.3	21.0573	-0.0378	-0.0902	-0.9868	179.3	21.6813	-0.1488	-0.0825	-0.9846
174.4	21.0562	0.0271	-0.0884	-0.9865	179.4	21.6453	-0.2053	-0.0835	-0.9834
174.5	21.0679	0.0910	-0.0868	-0.9866	179.5	21.5988	-0.2534	-0.0842	-0.9820
174.6	21.0918	0.1514	-0.0852	-0.9869	179.6	21.5437	-0.2911	-0.0847	-0.9803
174.7	21.1272	0.2061	-0.0838	-0.9875	179.7	21.4823	-0.3169	-0.0850	-0.9786
174.8	21.1727	0.2528	-0.0826	-0.9883	179.8	21.4172	-0.3299	-0.0849	-0.9768
174.9	21.2267	0.2897	-0.0817	-0.9892	179.9	21.3511	-0.3297	-0.0845	-0.9751
175.0	21.2870	0.3154	-0.0810	-0.9903	180.0	21.2864	-0.3164	-0.0838	-0.9733

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z_o	kh_e	ka	Z_o	kh_e
180.1	21.2259	-0.2906	185.1	21.6747	0.1639
180.2	21.1717	-0.2536	185.2	21.7018	0.1022
180.3	21.1261	-0.2067	185.3	21.7159	0.0363
180.4	21.0905	-0.1518	185.4	21.7164	-0.0312
180.5	21.0665	-0.0912	185.5	21.7034	-0.0973
180.6	21.0548	-0.0270	185.6	21.6772	-0.1594
180.7	21.0559	0.0382	185.7	21.6392	-0.2149
180.8	21.0697	0.1019	185.8	21.5909	-0.2615
180.9	21.0958	0.1618	185.9	21.5344	-0.2974
181.0	21.1331	0.2155	186.0	21.4719	-0.3212
181.1	21.1804	0.2608	186.1	21.4062	-0.3321
181.2	21.2358	0.2961	186.2	21.3399	-0.3296
181.3	21.2972	0.3198	186.3	21.2755	-0.3141
181.4	21.3624	0.3310	186.4	21.2156	-0.2863
181.5	21.4286	0.3289	186.5	21.1626	-0.2473
181.6	21.4934	0.3137	186.6	21.1183	-0.1987
181.7	21.5539	0.2858	186.7	21.0845	-0.1425
181.8	21.6078	0.2462	186.8	21.0624	-0.0809
181.9	21.6527	0.1965	186.9	21.0528	-0.0161
182.0	21.6868	0.1386	187.0	21.0561	0.0492
182.1	21.7086	0.0750	187.1	21.0720	0.1127
182.2	21.7171	0.0082	187.2	21.1002	0.1719
182.3	21.7120	-0.0589	187.3	21.1395	0.2246
182.4	21.6934	-0.1235	187.4	21.1884	0.2685
182.5	21.6622	-0.1831	187.5	21.2452	0.3021
182.6	21.6198	-0.2350	187.6	21.3077	0.3239
182.7	21.5679	-0.2773	187.7	21.3735	0.3328
182.8	21.5087	-0.3083	187.8	21.4399	0.3286
182.9	21.4447	-0.3267	187.9	21.5043	0.3111
183.0	21.3785	-0.3320	188.0	21.5642	0.2810
183.1	21.3128	-0.3241	188.1	21.6169	0.2394
183.2	21.2502	-0.3034	188.2	21.6603	0.1880
183.3	21.1930	-0.2708	188.3	21.6926	0.1288
183.4	21.1434	-0.2277	188.4	21.7122	0.0642
183.5	21.1034	-0.1758	188.5	21.7185	-0.0031
183.6	21.0744	-0.1172	188.6	21.7110	-0.0703
183.7	21.0575	-0.0541	188.7	21.6902	-0.1345
183.8	21.0532	0.0111	188.8	21.6569	-0.1931
183.9	21.0618	0.0759	188.9	21.6125	-0.2438
184.0	21.0829	0.1378	189.0	21.5591	-0.2844
184.1	21.1158	0.1944	189.1	21.4987	-0.3134
184.2	21.1592	0.2436	189.2	21.4339	-0.3298
184.3	21.2115	0.2833	189.3	21.3673	-0.3329
184.4	21.2709	0.3121	189.4	21.3017	-0.3227
184.5	21.3349	0.3286	189.5	21.2396	-0.2998
184.6	21.4011	0.3321	189.6	21.1833	-0.2652
184.7	21.4669	0.3223	189.7	21.1351	-0.2204
184.8	21.5297	0.2995	189.8	21.0967	-0.1670
184.9	21.5867	0.2645	189.9	21.0696	-0.1072
185.0	21.6358	0.2187	190.0	21.0547	-0.0434

TABLE X (Continued)

 $\theta_o = 70$ degrees

ka	Z _o	kh _e	ka	Z _o	kh _e
190.1	21.0526	0.0222	195.1	21.6511	-0.2029
190.2	21.0633	0.0869	195.2	21.6049	-0.2522
190.3	21.0865	0.1482	195.3	21.5499	-0.2911
190.4	21.1214	0.2040	195.4	21.4884	-0.3182
190.5	21.1666	0.2519	195.5	21.4229	-0.3323
190.6	21.2205	0.2900	195.6	21.3561	-0.3332
190.7	21.2810	0.3169	195.7	21.2906	-0.3208
190.8	21.3458	0.3313	195.8	21.2291	-0.2958
190.9	21.4124	0.3325	195.9	21.1739	-0.2592
191.0	21.4781	0.3205	196.0	21.1271	-0.2126
191.1	21.5403	0.2955	196.1	21.0904	-0.1579
191.2	21.5964	0.2585	196.2	21.0651	-0.0970
191.3	21.6440	0.2108	196.3	21.0523	-0.0325
191.4	21.6811	0.1545	196.4	21.0524	0.0333
191.5	21.7062	0.0917	196.5	21.0653	0.0978
191.6	21.7181	0.0251	196.6	21.0907	0.1586
191.7	21.7164	-0.0426	196.7	21.1275	0.2133
191.8	21.7010	-0.1085	196.8	21.1744	0.2598
191.9	21.6727	-0.1699	196.9	21.2297	0.2963
192.0	21.6327	-0.2242	197.0	21.2913	0.3212
192.1	21.5826	-0.2693	197.1	21.3568	0.3335
192.2	21.5247	-0.3034	197.2	21.4237	0.3325
192.3	21.4613	-0.3251	197.3	21.4892	0.3182
192.4	21.3951	-0.3338	197.4	21.5507	0.2910
192.5	21.3286	-0.3291	197.5	21.6057	0.2520
192.6	21.2646	-0.3114	197.6	21.6519	0.2026
192.7	21.2056	-0.2815	197.7	21.6872	0.1448
192.8	21.1537	-0.2406	197.8	21.7102	0.0809
192.9	21.1109	-0.1904	197.9	21.7199	0.0137
193.0	21.0789	-0.1329	198.0	21.7158	-0.0540
193.1	21.0588	-0.0704	198.1	21.6981	-0.1196
193.2	21.0513	-0.0051	198.2	21.6677	-0.1801
193.3	21.0567	0.0603	198.3	21.6257	-0.2332
193.4	21.0749	0.1235	198.4	21.5740	-0.2767
193.5	21.1051	0.1819	198.5	21.5148	-0.3089
193.6	21.1462	0.2334	198.6	21.4505	-0.3286
193.7	21.1968	0.2759	198.7	21.3838	-0.3350
193.8	21.2549	0.3077	198.8	21.3174	-0.3280
193.9	21.3184	0.3274	198.9	21.2539	-0.3081
194.0	21.3846	0.3342	199.0	21.1957	-0.2762
194.1	21.4512	0.3277	199.1	21.1450	-0.2335
194.2	21.5152	0.3079	199.2	21.1039	-0.1818
194.3	21.5743	0.2757	199.3	21.0737	-0.1231
194.4	21.6258	0.2322	199.4	21.0556	-0.0597
194.5	21.6676	0.1791	199.5	21.0503	0.0059
194.6	21.6979	0.1186	199.6	21.0579	0.0714
194.7	21.7154	0.0532	199.7	21.0782	0.1341
194.8	21.7193	-0.0145	199.8	21.1104	0.1917
194.9	21.7096	-0.0816	199.9	21.1534	0.2420
195.0	21.6865	-0.1453	200.0	21.2056	0.2829
					-0.0181
					-0.9468

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