EGG-CS-5504

July 1981

BOISE CASCADE - INEL SOLAR HOME DATA REPORT
JULY 1, 1980 THROUGH MARCH 31, 1981

MASTER

Ken H. Liebelt
Adrienne H. Novick
James I. Mills

U.S. Department of Energy

Idaho Operations Office • Idaho National Engineering Laboratory

This is an informal report intended for use as a preliminary or working document

Prepared for the Department of Energy
under Contract No. DE-AC07-76-IDO 1570

EG&G Idaho

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

DISCLAIMER

This book was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights. References herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Abstract

This report summarizes the operating data on the Boise Cascade-INEL solar homes located in Boise and Idaho Falls, Idaho for the period from July 1, 1980 through March 31, 1981. All three major system functions are discussed: space heating, domestic hot water heating, and space cooling. In addition, the updated data acquisition system, which allows for simultaneous acquisition and analysis of data, and also the new data reduction and analysis capabilities are discussed. The general performance of the houses during the reporting period is summarized, but it is beyond the scope of this report to present a detailed analysis of the data or to completely address existing data anomalies.

DISCLAIMER

This book was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
2. DATA ACQUISITION AND DATA REDUCTION SYSTEMS.	2
3. GENERAL SYSTEM PERFORMANCE	3
3.1 Performance Synopsis.	3
3.2 Data Availability	3
3.3 System Modifications in Boise	9
3.4 Data Summaries.	10
3.5 Unusable Data	11
3.6 Other Data.	12
4. COLLECTION EFFICIENCY.	17
5. SPACE HEATING SYSTEM PERFORMANCE	25
5.1 System Operation.	25
5.2 Boise Results	26
5.3 Idaho Falls Results	28
6. DOMESTIC HOT WATER SYSTEM PERFORMANCE.	31
6.1 System Operation.	31
6.2 Boise Results	31
6.3 Idaho Falls Results	33
7. COOLING SYSTEM PERFORMANCE	35
7.1 System Operation.	35
7.2 Boise Results	36
7.3 Idaho Falls Results	38
8. CONCLUSIONS.	40
APPENDIX A.	A-1

1. INTRODUCTION

This report summarizes the operating data on the Boise Cascade-INEL solar homes located in Boise and Idaho Falls, Idaho for the period from July 1, 1980 through March 31, 1981. All three major system functions are discussed in this report: space heating, domestic hot water (DHW) heating, and space cooling.

The purpose of this report is to present the data available from the monitoring programs, and to give a "quick look" presentation of the results. It is beyond the scope of this report to delve into the details of the data or to discover, interpret, and correct for the many anomalies in the data.

2. DATA ACQUISITION AND DATA REDUCTION SYSTEMS

The data acquisition system has been reconfigured with the newly received Hewlett Packard equipment. The data collection and communication management tasks have been separated from data reduction so that it is no longer necessary to interrupt data collection for analyses, thus losing data. The 9845S computer previously performing both data collection and analysis has been replaced by a 9835A computer. This computer communicates with the data collection equipment as previously described in INEL TREE-1384 and measures, records, and processes sensor data from both Idaho Falls and Boise. An HP 9895A dual flexible disk drive has been added to the Data Acquisition System so that data can be stored on flexible disks. Previously, data was stored on tape cassettes. Flexible disks have more storage capacity, thus reducing the frequency at which the storage medium must be changed from weekly to monthly. As an added bonus, the system now can use its automatic restart capability in case of power failures.

The existing 9845S calculator was upgraded to a 9845T version and dedicated to data analysis. To increase analysis capabilities a second 9895A dual flexible disk drive, a 2631G printer, a 9872S plotter and a 790bM cartridge disk drive have been added to the 9845T system. Flexible disks with data recorded from the 9835A can be read into the 9845T for analysis. The new equipment greatly enhances the solar program's analysis capabilities while allowing uninterrupted data acquisition.

A number of new programs were required to utilize the new computing hardware. "TRNSFR" was written to collect the data into monthly units. Whether originally stored on tape cassettes or floppy disks, the data is transferred to separate floppy disks in monthly groupings as the first step in the data reduction. This yields a backup copy of the data as an added benefit.

"READSK" was written to scan the transferred data for "shifted" records and out of sequence data. "FIXDSK" was used to correct errors discovered by "READSK". "CONTIN" originated from a previously used program and is used to present an availability chart of the data.

Finally, an extensive revision to the data reduction program previously used is found in "BOEVAL" and "IFEVAL". The emphasis in the revised versions is to make use of the newly acquired computing equipment, whereas previously, because the data reduction interfered with the data acquisition, the emphasis was to do the minimum amount of computing.

None of the programs written is considered final. The complexity and variety of the tasks combined with the ease with which the new system can be used results in frequent changes as required. Necessary documentation is maintained, however.

Appendix A presents a more detailed discussion of the computing methods used for this report.

The reconfigured data acquisition system is performing well at this date. Data availability has improved because:

1. the DAS is interrupted fewer times for data storage medium changes,
2. the DAS can automatically restart in case of power failure,
3. the DAS is no longer interrupted to perform data reduction tasks,
4. the communications hardware was modified by the addition of multidrop jumpers to improve the reliability of the Boise data link, and

5. the DAS software is being reviewed and revised to improve reliability.

Revisions to the DAS are scheduled for completion by the end of June, 1981.

In performing the data reduction for this report a high frequency of data anomalies were discovered, particularly in the Idaho Falls data: for example, temperatures outside the range of possibility and solar insolation occurring at night. These values were corrected at length by manually searching out the bad data points and changing them on the monthly data disks. This was done only enough to achieve believable results, and not necessarily accurate results. Further data analysis, preferably automated, will be required to find and eliminate all of the bad data points. The cause of these anomalies is being investigated, with the emphasis on

1. Loose connections,
2. faulty sensors, and
3. faulty DAS equipment.

3. GENERAL SYSTEM PERFORMANCE

3.1 Performance Synopsis

This report is meant to be a "quick look" at the results of the monitored data. The major anomalies in the data have been either removed, as in the case of the obviously bad data caused by the DAS, or accounted for by consideration of the conditions under which the data was taken, such as system modifications, house occupancy, failed sensors, etc.

Some data has been found to be contradictory, in which case the most reliable, in our opinion, has been presented. The cause of these discrepancies may or may not have been discovered as of this writing. In any case, the data has not been "massaged," and thus does not hide any existing discrepancies.

One significant reason for not working out the anomalies is that the data reduction techniques and the reporting have undergone constant revision as evidenced in each of the data reports. This is due to knowledge and experience gained from working with the systems, changing authors, changing emphasis, and changes in the system and the DAS. It would be a largely wasted effort to refine some given data today which may be of little or no value in the final analysis. A second reason, always to be considered, is funding and manpower constraints.

3.2 Data Availability

The data was processed through a short program, called "CONTIN", in order to display the availability of the data. This program was taken from a previously used program. The major difference is that now each 15-minute point is shown separately whereas before data was grouped by the hour. The results for Boise and Idaho Falls are shown in Appendices B and C, respectively. A summary of the availability results is presented in Table 1.

TABLE 1. DATA AVAILABILITY FRACTION FOR BOISE AND IDAHO FALLS

	<u>Boise</u>	<u>Idaho Falls</u>
JUL, 1980	0.80	0.85
AUG, 1980	0.72	0.78
SEP, 1980	0.63	0.78
SEP, 1-21	--	0.77
SEP, 22-30	--	0.81
OCT, 1980	0.68	0.68
NOV, 1980	0.77	0.77
DEC, 1980	0.78	0.79
JAN, 1981	0.89	0.89
FEB, 1981	0.38	0.63
MAR, 1981	0.93	0.73

Figure 1. Eoise Cascade solar house revised system schematic

Boise Cascade Solar House, Boise, ID Final System Schematic

Figure 2: Boise Cascade solar house final system schematic for Boise, ID

The results show that a fairly equal amount of downtime occurs during all hours of the day, the reasons being that during the day the system was interrupted for data reduction tasks while at night any system perturbation would go unnoticed until an operator would arrive in the morning to clear it. Except for the approximately uniform missing data points on an hourly basis, the data has not been studied for randomness of other types, such as cloudy vs. sunny days. For this "quick look," however, randomness is assumed and the monthly sums are increased by dividing by the availability fraction.

The major loss of data in Boise for February, 1981 was due to system modifications in progress from the 3rd to the 13th.

3.3 System Modifications in Boise

Because of the needs of the new occupants in the Boise house, modifications to the system were required. The occupants desired the capability of a fan-only mode, bypassing the solar storage unit.

Figure 1 shows the system schematic for Boise before the modifications. It is also accurate for the Idaho Falls house. It is called "revised" because of an earlier change in the two systems. Note that damper E is inactive in the Boise system.

Figure 2 shows the modified or "final" system configuration for Boise. The major configuration change is the addition of a bypass duct with an additional damper, B2. An electronic air filter and humidifier also were added. The control system was revised such that there is now more flexibility in the system. The basic winter/summer switch remains for storing heat or coolness in the rock bed. However, the occupants now have the option of switching to the opposite mode on a short term basis at the thermostat without losing the stored energy. For example, on the first hot day in spring the cooling mode might be turned on at the thermostat, activating stage two cooling (i.e., the air conditioner), but the rock bed

stored heat would remain until the winter/summer switch would be turned to "summer" later in the spring. As long as the switch remained in the "winter" position stage one cooling would not be available. The exact opposite occurs in the early fall when Stage 2 heating can be called without dumping the stored coolness.

Full documentation of these changes is pending, awaiting completion of the wiring drawing and working out of the bugs in the system.

3.4 Data Summaries

The data for this reporting period is presented in the form of daily and monthly summaries. Each summary is limited to a single page. The format of the summaries differs somewhat by city due to the differing instrumentation. Data to be presented is based on importance and reliability. More data is available but space is limited and the data may need refinement before being useful. The data presented is in line with the "quick look" approach. The summarizing programs can be revised and rerun in a few hours (per month of data) to look at other results. The Boise monthly summaries are presented in Appendix D and the Idaho Falls monthly summaries are presented in Appendix E. The daily summaries will be documented under separate cover.

Included in each summary is a printout of maximum and minimum values of the output of the data reduction process called "DATA". This serves as an easy check for out-of-range data, and has been invaluable in locating bad data points as discussed in Section 2. Lists describing the variables of each element of the "DATA" array are presented on the last page of both Appendix D and E.

The daily summaries have essentially the same format as the monthly summaries.

3.5 Unusable Data

Many instances arose when the data was invalid. These intervals have not been accounted for in the results presented in this report, although they will be accounted for in a final analysis. These events are generally found recorded in the log book maintained on these systems.

For Boise the significant instances currently identified, as taken directly from the log book, include:

1. Range error in reference thermistor through July 24, 1980. Error apparently introduced prior to July. This results in the temperature data being about 0 to 10°F in error.
2. House vacant until August. Air conditioner installed with no direct monitoring.
3. System modified in February, 1981 to allow bypassing of solar system (fan-only mode). System has different operating modes than before, and occupants can easily switch the auxiliary modes between heating and cooling.

For Idaho Falls the significant instances include:

1. July 24, 1980, DHW heat exchanger switched "back to normal." Window air conditioner installed in computer room. Neither power consumption nor cooling output monitored.
2. Defective DHW flow meters replaced on August 14, 1980. New flow meter being calibrated next five days, readings are too high.
3. Epply pyranometer taken off wall and used for transmissivity tests August 21 through 27, 1980.
4. Leaky dampers discovered September 17, 1980.

5. Air conditioner turned off October 20, 1980.
6. Install new tempering valve November 5, 1980.

3.6 Other Data

In Boise the Idaho Power Company monitors the electrical power consumption and the DHW water flow of the solar house. Four power channels are recorded as listed in Table 2. The water flow data is missing for this reporting period. Detailed 15-minute data is available from IPC if we desire it, but they do not want to furnish it as a general rule because of the cost.

Degree-day data was obtained from NOAA sources in both Boise and Idaho Falls. These data are presented in Table 3 and compared with our degree-day data. Our results have been approximately corrected for missing data by dividing by the monthly availability fraction. The NOAA data is presented based on the daily mean temperature. For heating degree-days, temperatures below 65°F are counted. For cooling degree-days, temperatures above 75°F are counted. Our data has also been looked at on a 15-minute basis and a monthly mean basis to illustrate the effect of having a structure with a very short or long thermal time constant, respectively.

The Idaho Falls data shows good agreement between data sources, differing less than experimental accuracy. In Boise, however, our data shows consistently greater heating degree-days and less cooling degree-days. Of particular note is that even in Boise the average monthly temperature did not exceed 75°F, indicating the advantage of houses with very long thermal time constants to "ride through" daily and longer hot spells. Long thermal time constants are obtained by a combination of high mass and good insulation.

Another type of data not obtained by our DAS is the ground cover data. In Idaho Falls the amount of snow cover in the south yard of the solar house is recorded daily throughout the winter. The ground

TABLE 2. BOISE ELECTRICAL POWER CONSUMPTION AND DHW FLOW FROM IDAHO POWER COMPANY

	House Total Usage (KWHR)	Furnace Usage (KWHR)	Collector Fan Usage (KWHR)	DHW Electrical Usage (KWHR)	DHW Water Usage (GAL)
JUL, 1980	933	302	470	43	N.A.
AUG, 1980	2504	361	228	245	N.A.
SEP, 1980	3528	405	119	771	N.A.
OCT, 1980	2525	257	151	600	N.A.
NOV, 1980	2919	1120	58	602	N.A.
DEC, 1980	5075	2506	45	975	N.A.
JAN, 1981	4643	2455	38	867	N.A.
FEB, 1981	3219	1254	73	521	N.A.
MAR, 1981	3402	763	111	750	N.A.

TABLE 3. DEGREE-DAY RESULTS BASED ON 65°F FOR HEATING AND 75°F FOR COOLING

	Boise				Idaho Falls			
	NOAA Daily Mean Heating/Cooling	EG&G Daily Mean/a H/C	EG&G 15-min Mean/a H/C	EG&G Monthly Mean/a H/C	NOAA Daily Mean/a H/C	EG&G Daily Mean/a H/C	EG&G 15-min Mean/a H/C	EG&G Monthly Mean/a H/C
JUL, 1980	0/251	3/26	79/110	0/0	16/0	28/8	135/58	0/0
AUG, 1980	41/117	24/10	126/96	0/0	35/0	105/0	206/41	64/0
SEP, 1980	104/36	146/0	219/33	106/0	244/0	274/0	332/12	272/0
OCT, 1980	409/2	499/0	537/10	497/0	634/0	688/0	715/4	688/0
NOV, 1980	750/0	844/0	845/0	844/0	977/0	991/0	992/0	991/0
DEC, 1980	983/0	1045/0	1045/0	1045/0	1138/0	1129/0	1129/0	1129/0
JAN, 1981	956/0	1009/0	1009/0	1009/0	1196/0	1170/0	1171/1	1170/0
FEB, 1981	783/0	721/0	721/0	721/0	1109/0	997/0	997/0	997/0
MAR, 1981	631/0	659/0	661/0	659/0	869/0	858/0	858/0	858/0
TOTAL	4657/406	4950/36	5242/249	4881/0	6218/0	6240/8	6535/116	6169/0

a/Corrected by Dividing by Availability Fraction

reflectance is greatly enhanced by snow, changing from about 0.2 to about 0.8 for a full snow cover. This enhances the performance of the vertical collector performance.

The data is reproduced in Table 4. The results show a very meager snow cover for the 1980-81 winter. This will result in below average collector performance.

TABLE 4. SNOW-COVER DATA FOR YARD OF IDAHO FALLS SOLAR HOUSE

Day	DEC, 1980	JAN, 1981	FEB, 1981
1	0.0	0.0	1.0
2	0.0	0.0	1.0
3	0.0	0.0	1.0
4	0.0	1.0	1.0
5	0.0	1.0	1.0
6	0.0	1.0	1.0
7	0.5 (p.m.)	X = 6 ^a	1.0
8	0.5	X = 8	1.0
9	0.9	0.0	X = 8
10	0.9	0.0	X = 9
11	0.0 (p.m.)	0.0	X = 9
12	0.0	0.0	X = 9
13	0.0	0.0	X = 9
14	0.0	0.0	0.0
15	0.0	0.0	0.0
16	0.0	0.0	0.0
17	0.0	0.0	0.0
18	0.0	0.0	0.0
19	0.0	0.0	0.0
20	0.0	0.0	1.0
21	0.0	0.0	X = 5
22	0.0	0.0	X = 7
23	0.0	0.0	0.0
24	0.0	1.0	0.0
25	0.0	1.0	0.0
26	0.0	0.8	0.6
27	0.0	0.4	0.0
28	0.0	0.8	0.0
29	0.0	0.0	
30	0.0	1.0	
31	0.0	1.0	

a. X indicates the distance from the collector to the snow in feet. Distances less than X are essentially barren of snow, while distances greater are essentially 100% snow cover.

4. COLLECTION EFFICIENCY

A summary of the monthly solar collection results is presented in Table 5. The data has been corrected for availability. The results show a 15% higher insolation rate for Idaho Falls compared to Boise for the reporting period, based on the Hollis pyranometers. However, the collected energy is approximately the same for both systems. This is in accord with the milder temperatures in Boise, but may also indicate a higher collector efficiency. For Idaho Falls, numerous bad data points occurred in the data of both pyranometers due to the DAS. They usually showed higher values than expected (including nighttime insolation!), and not all of the data was cleaned up so this precludes definitive conclusions. The low collection efficiencies in summer are the result of the severe sun angle and are to be expected. It is interesting to note that the year-round incident energy values do not vary significantly, the poor sun angle in summer being compensated by the long, clear days; the insolation levels, expressed in BTU per hour, do vary markedly, however.

Sample plots are presented in Figures 3-A, B, C and 4-A, B, C, including system temperatures and solar insolation, storage temperature, and collector efficiency for Boise and Idaho Falls, respectively. The stray points on the efficiency curves result from heat capacity effects, where high efficiencies result as the sun is setting, and vice versa.

The computer generated plots do indicate the capabilities of the program to present the data clearly. With additional control statements and/or scale changes the plots can be easily altered as desired.

TABLE 5. SOLAR COLLECTION RESULTS FOR BOISE AND IDAHO FALLS

	Boise			Idaho Falls			
	Incident Energy ^a (Hollis) (BTU x 10 ⁶)	Solar Energy Collected ^a (BTU x 10 ⁶)	Collection Efficiency (%)	Incident Energy ^a (Hollis) (BTU x 10 ⁶)	Incident Energy ^a (Eppley) (BTU x 10 ⁶)	Solar Energy Collected ^a (BTU x 10 ⁶)	Collection Efficiency (Hollis) (%)
JUL, 1980	15.45	0.44	2.8	16.95	14.41	0.54	3.2
AUG, 1980	18.54	1.33	7.2	19.49	19.32	0.92	4.7
SEP, 1980	19.65	1.86	9.4	21.77	20.35	2.83	13.0
OCT, 1980	21.41	5.66	26.5	20.79	19.96	4.66	22.4
NOV, 1980	13.31	4.09	30.8	13.39	12.84	3.34	25.0
DEC, 1980	11.12	2.95	26.6	14.39	13.71	3.61	25.1
JAN, 1981	6.83	1.52	22.2	17.23	16.49	4.56	26.5
FEB, 1981	18.76	6.90	36.8	19.64	18.78	4.95	25.2
MAR, 1981	18.63	6.46	34.7	21.19	20.45	5.59	26.4
TOTAL	143.70	31.21	21.7	164.84	156.31	31.00	18.8

a. Corrected by dividing by availability fraction.

BOISE PLOT for Sunday, December 7, 1980
Plotted on June 2, 1981
SYSTEM TEMPERATURES AND SOLAR INSOLATION

Figure 3-A

BOISE PLOT for Sunday, December 7, 1980

Plotted on June 2, 1981

ROCK STORAGE TEMPERATURES

Figure 3-B

BOISE PLOT for Sunday, December 7, 1980
Plotted on June 2, 1981
COLLECTOR EFFICIENCY CURVE

FIGURE 3-C

IDAHO FALLS PLOT for Friday, December 12, 1980

Plotted on June 2, 1981

SYSTEM TEMPERATURES AND SOLAR INSOLATION

Figure 4-A

IDAHO FALLS PLOT for Friday, December 12, 1980
Plotted on June 2, 1981
ROCK STORAGE TEMPERATURES

Figure 4-B

IDAHO FALLS PLOT for Friday, December 12, 1980

Plotted on June 2, 1981

COLLECTOR EFFICIENCY CURVE

FIGURE 4-C

5. SPACE HEATING SYSTEM PERFORMANCE

5.1 System Operation

In Idaho Falls, and in Boise prior to the February modifications, the heating system has three basic air flow paths. One path is from the collectors to rock storage. The differential thermostat controller is set to activate the high speed of the collector fan when the collectors are 20°F warmer than the bottom of rock storage. The collector fan is turned off when the temperature difference drops to 15°F.

A second flow path is from the collectors to heat the house directly. This occurs whenever the collectors are heating storage and the house thermostat signals for heat. Both the collector and furnace fans are on in this operational mode.

A third flow path is from rock storage to the house. This occurs whenever the collectors are not activated and the house thermostat signals for heat. The furnace fan circulates the air.

Auxiliary heat can be energized in either of the last two flow paths. However, auxiliary heat is controlled differently in the two houses. In Boise, there is a two-stage heating thermostat. If the house temperature drops to the second stage point, the furnace coils are energized. In Idaho Falls, there is only a one-stage heating thermostat with an additional thermostat sensing the temperature at the top of the rock bed. If the top temperature is less than 75°F, the furnace coils are energized when the house thermostat signals for heat. Thus, the auxiliary can be used in both houses in either the collector-to-house path or the storage-to-house path.

In Boise, after the February modifications, the heating system has four basic air flow paths. The first three are the same as above. The fourth path bypasses the solar components completely with air flowing

between furnace and house only. The fourth path is the only configuration used for stage two heating. The differential thermostat settings were not altered.

The schematics of the systems are shown in Figures 1 and 2 for Idaho Falls and Boise, respectively.

5.2 Boise Results

The space heating results for Boise are summarized in Table 6 where solar fractions have been calculated. Two different solar fractions are presented. This is done because different authors use different methods of calculating solar fractions, and it is important to compare the correct numbers. Also each solar fraction yields information of a different type; thus both should be considered.

The solar fraction based upon total energy consumption internal to the house, averaging 0.31 for the reporting period, is similar to the solar fraction presented in our previous data reports. It tells how much of the house heat load is carried by solar.

The solar fraction based on furnace energy, averaging 0.45 for the reporting period, is always a larger value. It tells how much the auxiliary energy usage has been reduced by the solar system. It indicates whether the size of the auxiliary system can be reduced, or possibly eliminated entirely.

Energy usage not contributing to the house heat load, labeled "OUTSIDE" in Table 6, was estimated from discussions with the occupants. The following was assumed:

- six 75 watt outside lights on 14 hours per day
- two 60 watt outside lights on 14 hours per day
- two loads of laundry drying per day at 5600 watts for 1/2 hour per load.

TABLE 6. BOISE SPACE HEATING PERFORMANCE

	Solar Energy To Space Heating ^a (BTU x 10 ⁶)	Electrical Usage (BTU x 10 ⁶)					Solar Fractions	
		Total	DHW	Furnace	Collector Fan	Outside (Estimated)	Based on (Total-DHW -Outside)	Based on Furnace
OCT, 1980	4.60	8.62	2.05	0.88	0.52	1.44	0.47	0.84
NOV, 1980	3.48	9.96	2.05	3.82	0.20	1.39	0.35	0.48
DEC, 1980	2.44	17.32	3.33	8.55	0.15	1.44	0.16	0.22
JAN, 1981	1.24	15.85	2.96	8.38	0.13	1.44	0.10	0.13
FEB, 1981	6.00	10.99	1.78	4.28	0.25	1.30	0.43	0.58
MAR, 1981	5.61	11.61	2.56	2.60	0.38	1.44	0.42	0.68
Total	23.37	74.35	14.73	28.51	1.63	8.45	0.31	0.45

a. Corrected by dividing by availability factor.

A factor not considered was the use of the fireplace. The occupants have stated that they used the fireplace on almost all weeknights from 6 pm to 10 pm and on weekends all day. The amount of wood consumption and the fireplace efficiency are both unknowns at this time, the fireplace energy consequently was not factored into the calculations.

The exceptionally poor solar fraction for January is consistent with the low incident energy data (Table 5); however, it may also be related to the fact that the collector fan was in need of alignment and the occupants may have kept the system off for some periods of time about this time of year due to excessive noise and vibration problems. Except for January, the Boise solar fraction based on furnace energy is greater than that for Idaho Falls.

The exact date at which the system was switched to heating in Boise is not known. The system was probably switched back and forth a number of times. A few days of winter mode operations were even detected in August (2 days) and September (5 days), but October showed a majority of the time in winter operation (21 days).

5.3 Idaho Falls Results

Table 7 presents the solar fractions for space heating for the Idaho Falls house.

The "outside" electrical usage is limited to a single 135 watt light kept on 24 hrs a day. No laundry drying was done during this reporting period. Also, the fireplace is not used. The windows and doors are seldom left open, providing a very constant heat loss coefficient. For this reporting period the entire basement area is kept at the same temperature as the house by opening all air registers.

The filters in the ducting going to and from the outside are replaced with taped-over filters during the heating season to minimize heat leakage. This is not done in Boise as it would require added occupant interference in operating the system.

TABLE 7. IDAHO FALLS SPACE HEATING PERFORMANCE

	Solar Energy To Space Heating ^a (BTU x 10 ⁶)	Electrical Usage (BTU x 10 ⁶)				Solar Fractions	
		Total ^a	DHW ^a	Furnace ^a	Outside	Based on Total-DHW -Outside	Based on Furnace
SEPT, 22-30, 1980	1.59	1.23	0.25	0.02	0.10	0.64	0.99
OCT, 1980	3.54	5.59	0.71	1.49	0.34	0.44	0.70
NOV, 1980	2.66	7.94	0.51	4.69	0.33	0.27	0.36
DEC, 1980	2.89	12.71	0.70	9.42	0.34	0.20	0.23
JAN, 1981	3.71	12.17	0.48	9.07	0.34	0.25	0.29
FEB, 1981	4.00	10.25	0.46	6.97	0.31	0.30	0.36
MAR, 1981	4.62	6.56	0.40	3.05	0.34	0.44	0.60
Total	23.01	56.45	3.51	34.71	2.10	0.31	0.40

a. Corrected by dividing by availability factor.

The solar fraction based on total internal energy usage averaged 0.31 for the reporting period, compared to the solar fractions based on furnace energy which averaged 0.40. The results are quite similar to those for Boise.

6. DOMESTIC HOT WATER SYSTEM PERFORMANCE

6.1 System Operation

The domestic hot water (DHW) system has its own differential thermostat controller. The low speed of the collector fan is activated whenever the collector temperature exceeds the preheat tank bottom temperature by 25°F. The fan shuts off when the temperature difference drops to 15°F. In this mode, the hot air from the collectors circulates across the finned-tube heat exchanger and then directly back to the collectors in a closed-loop fashion.

During the heating season, this mode is still operable, but when the differential thermostat controlling the storage of collected heat in the rock bed is activated, the DHW-only mode is overridden. The high speed of the collector fan is activated, and the hot air from the collectors circulates first across the finned-tube heat exchanger and then into the rock bed. In the heating season, the DHW-only mode generally operates only in the early morning when the preheat tank bottom temperature is around 50°F and the rock storage bottom temperature is around 65°F. Then, as the collectors begin to warm, the system is first able to heat water only, and as the temperature continues to rise, the collector-to-storage mode is activated.

Water circulation through the heat exchanger is by natural convection. Because the preheat tank is above the heat exchanger, the water heated in the heat exchanger rises into the top of the tank and cooler water is drawn from the bottom of the preheat tank, back into the bottom of the heat exchanger. Reverse flow is prevented by the height difference between the tank and heat exchanger.

6.2 Boise Results

This reporting period is the first time that DHW system usage occurred in Boise. The results are presented in Table 8. No consumption (gallons) data is available due to faulty sensors and DAS equipment.

TABLE 8. BOISE DHW PERFORMANCE

	Solar Energy to DHW ^a (BTU x 10 ⁶)	DHW Electrical Usage (BTU x 10 ⁶)	DHW Solar Fraction
JUL, 1980	0.44	0.15	0.75
AUG, 1980	0.93	0.84	0.53
SEP, 1980	1.00	2.63	0.28
OCT, 1980	1.06	2.05	0.34
NOV, 1980	0.61	2.05	0.23
DEC, 1980	0.51	3.33	0.13
JAN, 1981	0.28	2.96	0.09
FEB, 1981	0.89	1.78	0.33
MAR, 1981	0.84	2.56	0.25
TOTAL	6.56	18.35	0.26

a. Corrected by dividing by availability factor.

The house was unoccupied in July so that these data represent only standby losses from each tank. The solar fraction, averaging 0.26 for the reporting period, does not include the collector fan energy needed to move the air. Rather, the collector fan energy, as a first approximation, has been included in consideration of the space heating and cooling performance. Proper allocation of the collector fan energy to each system could be estimated in a detailed analysis but would not change the overall results significantly.

6.3 Idaho Falls Results

The DHW system in Idaho Falls has a simulated usage only. A hot water tap is turned on for a given period of time each day. This usually occurs on weekdays during daylight hours. As shown in Table 9, at no time was the consumption up to that of a family of four (as in Boise) which would use about 2500 gals/month. Consequently the solar fractions are higher.

The Idaho Falls DHW system is heavily instrumented and the data deserves to be looked at in detail at a later time. The complexities of interpreting the data preclude discussion of it in this report.

As discussed in previous reports the DHW system has unique requirements in the solar system. Heating season efficiencies are not important because the heat is used for space heat anyway. In the summer it is advantageous to keep the collectors under 200°F, thus a DHW system of this type is useful but, again, high efficiency may not be cost effective. The DHW system should be looked at in detail for cost effective trade-offs such as fan speed, heat exchanger design, forced or natural convection water flow, and heat losses to the building.

TABLE 9. IDAHO FALLS DHW PERFORMANCE

	Solar Energy to DHW ^a (BTU x 10 ⁶)	DHW Electrical Usage ^a (BTU x 10 ⁶)	DHW Solar Fraction (BTU x 10 ⁶)	DHW Usage (Gallons)
JUL, 1980	0.62	0.73	0.46	815
AUG, 1980	1.00	0.94	0.52	1871
SEP, 1980	1.28	0.83	0.61	1718
OCT, 1980	1.12	0.71	0.61	1220
NOV, 1980	0.68	0.51	0.57	584
DEC, 1980	0.74	0.70	0.51	805
JAN, 1981	0.85	0.48	0.64	502
FEB, 1981	0.95	0.46	0.67	401
MAR, 1981	0.97	0.40	0.71	250
TOTAL	8.21	5.76	0.59	8166

a. Corrected by dividing by the availability factor.

7. COOLING SYSTEM PERFORMANCE

7.1 System Operation

The cooling system is the "nocturnal" type, which cools the rock storage at night with outside air and then circulates house air through storage during the day to maintain the desired comfort level. The use of this type of cooling system is limited to those regions with large diurnal temperature swings typical of arid climates.

The cooling differential thermostat was set to activate rock storage cooling when the outside temperature drops 10°F below the temperature at the bottom of storage. Outside dampers are opened and the high speed of the collector fan is activated to circulate outside air down through the rock storage bin and then back outside. If the house thermostat signals for cooling while cooling the rock storage, the outside air is sent directly to the house, bypassing the rock storage bin. Rock bed cooling continues until the temperature difference decreases to 5°F. Then in the daytime, the house thermostat cooling signal causes the furnace fan to circulate the house air up through the rock bin and into the house.

In general, the coolness is stored and retrieved in the same way that heat is stored and retrieved in the winter, greatly simplifying the operation and control. Preliminary tests indicated that cool temperatures, as well as warm temperatures, do indeed stratify in the rock bed--there is little thermal communication between points in the rock bed on a daily basis.

In Boise, an air conditioner was added for stage two cooling. When the house temperature can not be maintained by the stage one cooling the second stage is activated. After the February modifications, the rock storage is bypassed during stage two cooling.

7.2 Boise Results

The cooling performance for Boise is shown in Table 10. The installation of the air conditioner, the power consumption of which is not monitored, prevents calculation of a "nocturnal cooling fraction" similar to a solar fraction. Another parameter of interest is a cooling coefficient of performance, similar to that of a heat pump, defined as cooling energy delivered divided by energy expended. Based on a number of assumptions a measure of the cooling C.O.P. was obtained, but the approximate nature of the value is stressed.

The cooling energy delivered was estimated by looking at the daily maximum and minimum (swing) in stored energy. The assumption being that the rock bed is cooled at night to a minimum then picks up heat from the house during the day. Storage losses are neglected, and direct nocturnal cooling is not measured. Storage heat capacity only includes the rocks, although the rocks are in direct contact with the basement walls. To get the energy expended in cooling the electrical consumption of the collector fan and the furnace are summed. This introduces inaccuracies because (1) some of the collector fan energy is used for DHW air circulation, and (2) the furnace fan is used to circulate air for stage two cooling. Other factors affecting the cooling performance are that (1) when the storage coolness is expended the furnace fan keeps running (if there is no air conditioner, as in July), and, (2) when there is very adequate cooling, as in fall, the system repeatedly cools the rock storage as the nights get colder, but very little cooling of the house is actually needed. The net result of these assumptions and factors is a very conservative estimate of cooling performance.

An average coefficient of performance of 0.63 was obtained for Boise. Note that the peak house temperatures are unacceptable indicating insufficient cooling.

TABLE 10. BOISE COOLING PERFORMANCE

	Sum of Daily Swings in Stored Energy (BTU x 10 ⁶)	Collector Fan Electrical Usage (BTU x 10 ⁶)	Furnace Electrical Usage (BTU x 10 ⁶)	Cooling Coefficient of Performance	House Temperature Max/Mean (°F)
JUL, 1980	1.51	1.60	1.03	0.57	89/77
AUG, 1980	1.53	0.78	1.23	0.76	88/75
SEP, 1980	1.18	0.68	1.38	0.57	79/73
<hr/> TOTAL	<hr/> 4.22	<hr/> 3.06	<hr/> 3.64	<hr/> 0.63	<hr/>

7.3 Idaho Falls Results

The same assumptions for the Idaho Falls cooling performance apply as for Boise. The differences are that less DHW operation occurs and there is not a stage two cooling utilizing furnace fan energy. The results are shown in Table 11.

The time at which the system was switched to heating is accurately known (Sep 22) so that the data should be more accurate. The windows and doors were not left open at night, putting an extra cooling load on the system that an occupied house would not have.

A window air conditioner was installed in the computer room for the cooling season. Neither power consumption nor energy delivered were measured. The computer room door was kept closed as much as possible. Temperatures varied widely in the room. The air conditioner has since been removed.

The basement registers are sealed off in the summer because cooling is not needed.

The results for Idaho Falls are much better than Boise. The coefficient of performance is 2.43 for the season, and the peak temperatures in the house are acceptable.

TABLE 11. IDAHO FALLS COOLING PERFORMANCE

	Sum of Daily Swings in Stored Energy (BTU x 10 ⁶)	Furnace Electrical Usage (BTU x 10 ⁶)	Cooling Coefficient of Performance	House Temperature Maximum/Mean
JUL, 1980	2.03	0.58	1.90	80/74
AUG, 1980	1.06	0.19	3.03	78/72
SEP, 1-21, 1980	0.48	0.03	8.70	79/70
TOTAL	3.57	0.80	2.43	

a. Corrected by dividing by availability factor.

8. CONCLUSIONS

The revised DAS systems and appropriate software developments will allow for more complete acquisition and analysis of data from both houses beginning with the 1981 cooling season.

Flow meter problems, spurious signals, possibly resulting from voltmeter errors, and other difficulties have been identified during the reporting period and will be investigated and corrected in order to insure as complete and accurate data acquisition and analyses as possible for future reporting periods.

Environmental problems in Idaho Falls and user related problems in Boise do not allow complete evaluation of the nocturnal cooling system. The performance of the cooling system must be examined with a calibrated computer model to fully evaluate the value of the system. This task has been suggested to DOE-HQ as an FY-82 activity.

APPENDIX A

DATA REDUCTION PROCEDURE

Pages A-1 to A-4

The first step in the data reduction was to transfer the data from tape cassettes to flexible disk. This was done because the disk hold one or two full months of data whereas the cassettes hold only a week of data. The disks then are more convenient and faster to use for monthly summaries. Another advantage was that, by having a second copy of the data, faulty data values could be corrected without destroying the original data. A program had to be written to perform the transfer of the data, and it has been called "TRNSFR."

The next step in the process was to read through the dates of all the data to verify that the data were properly stored. In the past, data had occasionally gotten shifted so that the date was not at the beginning of the record. This problem was not observed, and apparently has been solved by the use of random access print commands versus serial access print commands. However, a problem that was discovered was out of sequence data, caused by a bug in either the tape change program or procedure. The program written to detect these errors is called "READSK."

The out-of-sequence data was detected in eight of the eighteen months of data being processed. The program "FIXDSK" was written to locate the out-of-sequence points and either discard them (if they were a single point) or shift them to the proper location. With the new computer system hardware, the tape change procedure is no longer used, and this problem would no longer occur.

The next step in the data processing was to scan the data to see which time points were recorded. This was done with a program called "CONTIN." It originated from a former program developed for this project and used for previous data reports. It required extensive rewriting. The program generates a two-page array of asterisks and blanks for the available and missing data, respectively. This provides a visual display for a "quick look" at the data acquisition system performance.

The next step in the data processing, which is the final step utilizing the computer system, is to generate a montly summary of the data for each house. This is the first step in which the data values are actually read. The data are first converted from raw units to engineering units. Selected quantities of interest are then calculated, using the data. Daily summaries are also calculated, and each daily and monthly summary is presented on a single page.

Although an existing data summarizing program was available, it could not be used without extensive revision for the following reasons:

1. The use of the new computer hardware required modification to the programming.
2. The avilability of the new computer hardware meant the computer processing could be expanded to reduce the amount of manual processing of the data. This was not done in the past because of the need to minimize interference with the data acquisition task with the computer was also performing.
3. More of the data were processed than in past data reports. In particular, thermal storage data were processed. This does not mean to say that the processed data was studied. Time constraints prevented any analysis of the data and its implications.
4. Some of the data processing algorithms were revised. In particular, gaps in the data are now simply ignored. Previously, for gaps of one hour or less, the first data value following the gap was used for the entire gap time instead of the normal 15 minutes. This incorrectly weighted that data compared to the rest. Other programming was also revised, as needed.

5. The programming was poorly documented and confusing and had to be gone over line by line anyway, to determine what calculations were being performed, so it was natural to rewrite and clarify the programming at the same time.

The new data reduction programs contain as much of the old programming as possible, and use the same variable names where possible. Two programs now exist, one for each city. The old program calculated only daily summaries requiring lengthy handwritten tables and summing to get monthly summaries. The new programs contain the same plot capabilities as the old, rewritten for the new hardware. In addition, a collector efficiency plot was added, which was formerly done by hand. Due to time constraints, full use of the plot capability to interpret the data was not possible.

A data checking printout is now included in the summaries, which shows the maximum and minimum values of all quantities of interest. This quickly flags faulty data and calculations. This helped in revealing huge amounts of faulty data for Idaho Falls. It was necessary to go into the data itself and replace faulty data with more appropriate values. Only obvious errors were corrected and copies of both the "raw" and "massaged" data are available. An example of the type of faulty data would be a thermocouple voltage typically reading in the millivolt range suddenly reading millions of volts. However, some bad data were not so obvious, such as a storage temperature of perhaps -70°F or $+500^{\circ}\text{F}$. In the past, data errors of this type were probably not detected. Searching out and correcting these bad data added significantly to the overall effort; some monthly summaries were rerun several times until all errors were removed. The revised data reduction programs are called "BOEVAL" and "IFEVAL" for Boise and Idaho Falls, respectively.

While the above-mentioned errors were removed from the data, there was no time available to evaluate the data and cross-check it for consistency and accuracy. For example, there are a number of ways of calculating the energy delivered to storage, and these should all yield the same result. This was not always the case, but pursuing and resolving discrepancies was outside the scope of this data report.

The total time to run these programs varies depending on the number of data errors, etc; however, on average the computer time per month per city is approximately six hours, or 108 hours for this report. This does not include the time to write the programs or analyse and report the results.

APPENDIX B

AVAILABLE DATA FROM BOISE FOR July, 1980

2377 out of 2976 data points (80 %) available.

WEEKDAY		T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	
		ue	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	
		ed	u	i	t	n	n	ed	u	i	t	n	n	ed	u	i	t	n	n	ed	u	i	t	n	n	ed
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	
AM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	
HOUR/MIN																										
0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM BOISE FOR July, 1980
 2377 out of 2976 data points (80 %) available.

WEEKDAY		T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T
		ue	eh	ra	uou	ue	eh	ra	uou	ue	eh	ra	uou	ue	eh	ra	uou	ue	eh	ra	uou	ue	eh	ra	uou
		ed	ui	it	nn	ed	ui	it	nn	ed	ui	it	nn	ed	ui	it	nn	ed	ui	it	nn	ed	ui	it	nn
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
	12 0	*			*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 15	*			*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 30	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 45	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 0	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 15	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 30	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 45	*	*		*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR August, 1980
 2157 out of 2976 data points (72 %) available.

WEEKDAY		F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
		r	a	u	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	2	2	2	3	3		
AM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	2	2	3	3	1		
0	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
0	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
0	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
0	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
1	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
1	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
1	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
1	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
2	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
2	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
2	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
2	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
3	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
3	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
3	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
3	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
4	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
4	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
4	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
4	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
5	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
5	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
5	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
5	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
6	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
6	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
6	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
6	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
7	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
7	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
7	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
7	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
8	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
8	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
8	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
8	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
9	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
9	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
9	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
9	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
10	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
10	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
10	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
10	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
11	0	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
11	15	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
11	30	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
11	45	*			*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		

AVAILABLE DATA FROM BOISE FOR August, 1988

2157 out of 2976 data points (72 %) available.

WEEKDAY		F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	
		r	a	o	u	e	d	i	t	n	n	e	d	i	t	n	n	e	d	i	t	n	n	e	d	i
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	
	12 0				*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 15				*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 30				*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 45	*			*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 0				*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 15	*			*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 30	*	*		*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 45	*	*		*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 0	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 15	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 30	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 0	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 15	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 30	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 45	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM BOISE FOR September, 1980
 1827 out of 2880 data points (63 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
		ou	ve	hr	av	ou	ve	hr	av	ou	ve	hr	av	ou	ve	hr	av	ou	ve	hr	av	ou	ve	hr	av	ou	ve	hr	av	ou	ve
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
AM	HOUR/MIN																														
	0 0				*							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11 0				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11 15				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11 30				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11 45				*					*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR September, 1980
 1827 out of 2880 data points (63 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
		o	u	e	h	r	a	u	e	h	r	a	u	e	h	r	a	u	e	h	r	a	u	e
		n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
PM	HOUR/MIN																							
	12 0				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	12 15				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	12 30				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	12 45				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	13 0				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	13 15				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	13 30				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	13 45				*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	14 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	14 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	14 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	14 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	15 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	15 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	15 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	15 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	16 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	16 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	16 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	16 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	17 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	17 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	17 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	17 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	18 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	18 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	18 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	18 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	19 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	19 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	19 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	19 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	20 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	20 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	20 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	20 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	21 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	21 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	21 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	21 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	22 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	22 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	22 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	22 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	23 0		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	23 15		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	23 30		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
	23 45		*		*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR October, 1980
 2010 out of 2976 data points (68 %) available.

WEEKDAY		W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F
		eh	ra	u	o	u	eh	ra	u	o	u	eh	ra	u	o	u	eh	ra	u	o	u	eh	ra	u	o
		du	it	nn	ed	vi	tn	nn	ed	vi	tn	nn	ed	vi	tn	nn	ed	vi	tn	nn	ed	vi	tn	nn	ed
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2
AM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3
HOUR/MIN																									
0	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
0	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
0	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
0	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
1	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
1	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
1	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
1	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
2	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
2	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
2	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
2	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
3	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
3	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
3	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
3	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
4	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
4	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
4	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
4	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
5	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
5	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
5	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
5	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
6	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
6	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
6	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
6	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
7	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
7	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
7	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
7	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
8	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
8	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
8	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
8	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
9	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
9	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
9	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
9	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
10	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
10	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
10	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
10	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*
11	0	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
11	15	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
11	30	*	*	*				*	*	*	*			*	*	*	*			*	*	*	*	*	*
11	45	*	*	*	*			*	*	*	*			*	*	*	*			*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR October, 1980
 2010 out of 2976 data points (68 %) available.

WEEKDAY	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F
	h	r	a	v	e	h	r	a	v	e	h	r	a	v	e	h	r	a	v	e	h	r	a	v
	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i
DATE	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2
PM	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3
HOUR/MIN																								
12 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
13 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
13 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
13 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
13 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
14 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
14 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
14 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
14 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
15 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
15 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
15 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
15 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
16 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
16 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
16 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
16 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
17 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
17 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
17 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
17 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
18 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
18 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
18 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
18 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
19 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
19 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
19 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
19 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
20 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
20 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
20 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
20 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
21 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
21 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
21 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
21 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
22 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
22 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
22 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
22 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
23 0	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
23 15	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
23 30	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
23 45	*	*	*			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR November, 1980
 2223 out of 2880 data points (77 %) available.

WEEKDAY		S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
		a	a	u	u	e	h	r	a	a	u	u	e	h	r	a	a	u	u	e	h	r	a	a	u	u	e	h	r	a	a
		t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	
AM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	
	0 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	0	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	15	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	30	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	45	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR November, 1980

2223 out of 2880 data points (77 %) available.

WEEKDAY		S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S		
		a	n	n	e	d	r	i	n	n	e	d	r	i	n	n	e	n	n	e	d	r	i	n	n	e	n	n	e	r	i	n	n
DATE		1	2	3	4	5	6	7	8	9	0	1	1	2	3	4	5	6	7	8	9	0	1	2	2	3	4	5	6	7	8	9	0
PM	HOUR/MIN																																
	12 0	*	*			*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	12 15	*	*			*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	12 30	*	*			*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	12 45	*	*			*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	13 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	13 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	13 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	13 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	14 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	14 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	14 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	14 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	15 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	15 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	15 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	15 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	16 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	16 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	16 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	16 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	17 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	17 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	17 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	17 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	18 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	18 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	18 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	18 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	19 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	19 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	19 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	19 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	20 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	20 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	20 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	20 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	21 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	21 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	21 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	21 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	22 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	22 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	22 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	22 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	23 0	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	23 15	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	23 30	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		
	23 45	*	*		*	*	*	*	*	*		*	*	*	*	*		*	*							*	*	*	*	*	*		

AVAILABLE DATA FROM BOISE FOR December, 1980
 2326 out of 2976 data points (78 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W							
		on	ue	hu	ri	an	nn	ue	hu	ri	an	nn	ue	hu	ri	an	nn	ue	hu	ri	an	nn	ue	hu	ri	an	nn	ue				
DATE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
AM	HOUR/MIN																															
0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

2326 out of 2976 data points (78 %) available.

[illegible]

AVAILABLE DATA FROM BOISE FOR January, 1981

2637 out of 2976 data points (89 %) available.

WEEKDAY		T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
		h	r	a	u	v	e	h	r	a	u	v	e	h	r	a	u	v	e	h	r	a	u	v	e	h
		u	i	t	n	n	e	d	u	i	t	n	n	e	u	i	t	n	n	e	u	i	t	n	n	e
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	
AM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	
HOUR/MIN																										
0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM BOISE FOR January, 1981

2637 out of 2976 data points (89 %) available.

WEEKDAY		T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		h	r	a	v	e	h	r	a	v	e	h	r	a	v	e	h	r	a	v	e	h	r	a	v
		u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	3
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3
	12 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR February, 1981
 1031 out of 2688 data points (38 %) available.

WEEKDAY	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a
	n	n	e	d	v	i	t	n	n	e	d	v	i	t	n	n	e	d	v	i	t	n	n	e	d	v	i	t
DATE	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	2	2	2
AM HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	2	2	2
0 0	*	*													*	*	*					*	*	*	*	*	*	*
0 15	*	*													*	*	*					*	*	*	*	*	*	*
0 30	*	*													*	*	*					*	*	*	*	*	*	*
0 45	*	*													*	*	*					*	*	*	*	*	*	*
1 0	*														*	*	*					*	*	*	*	*	*	*
1 15	*														*	*	*					*	*	*	*	*	*	*
1 30	*														*	*	*					*	*	*	*	*	*	*
1 45	*														*	*	*					*	*	*	*	*	*	*
2 0	*	*													*	*	*					*	*	*	*	*	*	*
2 15	*	*													*	*	*					*	*	*	*	*	*	*
2 30	*	*													*	*	*					*	*	*	*	*	*	*
2 45	*	*													*	*	*					*	*	*	*	*	*	*
3 0	*														*	*	*					*	*	*	*	*	*	*
3 15															*	*	*					*	*	*	*	*	*	*
3 30															*	*	*					*	*	*	*	*	*	*
3 45															*	*	*					*	*	*	*	*	*	*
4 0															*	*	*					*	*	*	*	*	*	*
4 15															*	*	*					*	*	*	*	*	*	*
4 30															*	*	*					*	*	*	*	*	*	*
4 45															*	*	*					*	*	*	*	*	*	*
5 0															*	*	*					*	*	*	*	*	*	*
5 15															*	*	*					*	*	*	*	*	*	*
5 30															*	*	*					*	*	*	*	*	*	*
5 45															*	*	*					*	*	*	*	*	*	*
6 0															*	*	*					*	*	*	*	*	*	*
6 15															*	*	*					*	*	*	*	*	*	*
6 30															*	*	*					*	*	*	*	*	*	*
6 45															*	*	*					*	*	*	*	*	*	*
7 0															*	*	*					*	*	*	*	*	*	*
7 15															*	*	*					*	*	*	*	*	*	*
7 30															*	*	*					*	*	*	*	*	*	*
7 45															*	*	*					*	*	*	*	*	*	*
8 0															*	*	*					*	*	*	*	*	*	*
8 15															*	*	*					*	*	*	*	*	*	*
8 30															*	*	*					*	*	*	*	*	*	*
8 45	*														*	*	*					*	*	*	*	*	*	*
9 0	*	*													*	*	*					*	*	*	*	*	*	*
9 15	*	*													*	*	*					*	*	*	*	*	*	*
9 30	*	*													*	*	*					*	*	*	*	*	*	*
9 45	*	*													*	*	*					*	*	*	*	*	*	*
10 0	*														*	*	*					*	*	*	*	*	*	*
10 15	*														*	*	*					*	*	*	*	*	*	*
10 30	*														*	*	*					*	*	*	*	*	*	*
10 45	*														*	*	*					*	*	*	*	*	*	*
11 0	*														*	*	*					*	*	*	*	*	*	*
11 15	*														*	*	*					*	*	*	*	*	*	*
11 30	*														*	*	*					*	*	*	*	*	*	*
11 45	*														*	*	*					*	*	*	*	*	*	*

AVAILABLE DATA FROM BOISE FOR February, 1981
1031 out of 2688 data points (38 %) available.

WEEKDAY		S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		u	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

AVAILABLE DATA FROM BOISE FOR March, 1981

2777 out of 2976 data points (93 %) available.

WEEKDAY		S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	
		u	o	o	e	h	r	a	u	o	e	h	r	a	u	o	e	h	r	a	u	o	e	h	r	a
		n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3
PM																										3
HOUR/MIN																										1
12	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	15	*	*	*	*	*	*	*	*	*	*	*</														

APPENDIX C

AVAILABLE DATA FROM IDAHO FALLS FOR July, 1980

2516 out of 2976 data points (85 %) available.

WEEKDAY	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T
	u	e	h	r	a	u	e	h	r	a	u	e	h	r	a	u	e	h	r	a	u	e	h	r
	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u
DATE	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
AM	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
HOUR/MIN	0	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30	45	0	15	30
0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR July, 1980

2516 out of 2976 data points (85 %) available.

WEEKDAY		T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T
		veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh	veh
		edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu	edu
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2
PM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3
HOUR/MIN																									
12	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR August, 1980

2311 out of 2976 data points (78 %) available.

WEEKDAY		F	S	M	T	W	T	F	S	M	T	W	T	F	S	M	T	W	T	F	S	M	T	W	T	F	S	
		r	a	u	e	r	a	u	e	r	a	u	e	r	a	u	e	r	a	u	e	r	a	u	e	r	a	u
		i	t	n	n	e	d	i	t	n	n	e	d	i	t	n	n	e	d	i	t	n	n	e	d	i	t	n
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	3	3
AM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	2	2	3	3
HOUR/MIN																												
0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM IDAHO FALLS FOR August, 1980

2311 out of 2976 data points (.78 %) available.

WEEKDAY		F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
		r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u
		i	n	n	e	d	v	i	n	n	e	d	v	i	n	n	e	d	v	i	n	n	e	d	v
DATE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	12 0				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 15				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 30		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 0		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR September, 1980

2259 out of 2880 data points (78 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	
		on	ue	h	ri	an	on	ue	h	ri	an	on	ue	h	ri	an	on	ue	h	ri	an	on	ue	h	ri
		ne	du	it	nn	ne	du	it	nn	ne	du	it	nn	ne	du	it	nn	ne	du	it	nn	ne	du	it	nn
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	
AM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	
	0	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	0 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	0 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	0 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	1 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	2	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	2 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	2 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	2 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	3	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	3 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	3 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	3 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	4	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	4 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	4 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	4 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	5	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	5 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	5 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	5 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	6	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	6 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	6 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	6 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	7	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	7 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	7 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	7 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	8	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	8 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	8 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	8 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	9	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	9 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	9 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	9 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	10	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	10 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	10 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	10 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	11	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	11 15	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	11 30	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	11 45	*	*	*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM IDAHO FALLS FOR September, 1980

2259 out of 2880 data points (78 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	
		on	ue	h	r	a	un	un	ue	h	r	a	un	un	ue	h	r	a	un	un	ue	h	r	a	un
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	
	12 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	12 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	12 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	12 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	13 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	13 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	13 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	13 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	14 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	14 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	14 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	14 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	15 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	15 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	15 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	15 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	16 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	16 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	16 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	16 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	17 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	17 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	17 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	17 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	18 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	18 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	18 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	18 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	19 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	19 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	19 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	19 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	20 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	20 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	20 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	20 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	21 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	21 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	21 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	21 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	22 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	22 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	22 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	22 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	23 0	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	23 15	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	23 30	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	
	23 45	*	*	*	*	*				*	*	*	*	*		*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM IDAHO FALLS FOR October, 1980

2814 out of 2976 data points (68 %) available.

WEEKDAY		W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F			
		eh	ui	ra	it	nn	ed	eh	ui	ra	it	nn	ed	eh	ui	ra	it	nn	ed	eh	ui	ra	it	nn	ed	eh		
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3
AM																												
HOUR/MIN																												
0	0	*	*	*	*						*										*	*	*	*	*	*	*	*
0	15	*	*	*	*						*										*	*	*	*	*	*	*	*
0	30	*	*	*	*						*										*	*	*	*	*	*	*	*
0	45	*	*	*	*						*										*	*	*	*	*	*	*	*
1	0	*	*	*	*						*										*	*	*	*	*	*	*	*
1	15	*	*	*	*						*										*	*	*	*	*	*	*	*
1	30	*	*	*	*						*										*	*	*	*	*	*	*	*
1	45	*	*	*	*						*										*	*	*	*	*	*	*	*
2	0	*	*	*	*						*										*	*	*	*	*	*	*	*
2	15	*	*	*	*						*										*	*	*	*	*	*	*	*
2	30	*	*	*	*						*										*	*	*	*	*	*	*	*
2	45	*	*	*	*						*										*	*	*	*	*	*	*	*
3	0	*	*	*	*						*										*	*	*	*	*	*	*	*
3	15	*	*	*	*						*										*	*	*	*	*	*	*	*
3	30	*	*	*	*						*										*	*	*	*	*	*	*	*
3	45	*	*	*	*						*										*	*	*	*	*	*	*	*
4	0	*	*	*	*						*										*	*	*	*	*	*	*	*
4	15	*	*	*	*						*										*	*	*	*	*	*	*	*
4	30	*	*	*	*						*										*	*	*	*	*	*	*	*
4	45	*	*	*	*						*										*	*	*	*	*	*	*	*
5	0	*	*	*	*						*										*	*	*	*	*	*	*	*
5	15	*	*	*	*						*										*	*	*	*	*	*	*	*
5	30	*	*	*	*						*										*	*	*	*	*	*	*	*
5	45	*	*	*	*						*										*	*	*	*	*	*	*	*
6	0	*	*	*	*						*										*	*	*	*	*	*	*	*
6	15	*	*	*	*						*										*	*	*	*	*	*	*	*
6	30	*	*	*	*						*										*	*	*	*	*	*	*	*
6	45	*	*	*	*						*										*	*	*	*	*	*	*	*
7	0	*	*	*	*						*										*	*	*	*	*	*	*	*
7	15	*	*	*	*						*										*	*	*	*	*	*	*	*
7	30	*	*	*	*						*										*	*	*	*	*	*	*	*
7	45	*	*	*	*						*										*	*	*	*	*	*	*	*
8	0	*	*	*	*						*										*	*	*	*	*	*	*	*
8	15	*	*	*	*						*										*	*	*	*	*	*	*	*
8	30	*	*	*	*						*										*	*	*	*	*	*	*	*
8	45	*	*	*	*						*										*	*	*	*	*	*	*	*
9	0	*	*	*	*						*										*	*	*	*	*	*	*	*
9	15	*	*	*	*						*										*	*	*	*	*	*	*	*
9	30	*	*	*	*						*										*	*	*	*	*	*	*	*
9	45	*	*	*	*						*										*	*	*	*	*	*	*	*
10	0	*	*	*	*						*										*	*	*	*	*	*	*	*
10	15	*	*	*	*						*										*	*	*	*	*	*	*	*
10	30	*	*	*	*						*										*	*	*	*	*	*	*	*
10	45	*	*	*	*						*										*	*	*	*	*	*	*	*
11	0	*	*	*	*						*										*	*	*	*	*	*	*	*
11	15	*	*	*	*						*										*	*	*	*	*	*	*	*
11	30	*	*	*	*						*										*	*	*	*	*	*	*	*
11	45	*	*	*	*						*										*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR October, 1980

2014 out of 2976 data points (68 %) available.

WEEKDAY		W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	
		ed	hr	ri	un	un	on	ed	ed	ri	ri	un	un	on	ed	ed	ri	ri	un	un	on	ed	ed	ri	ri	un	un	on	ed	ed	ri	ri	un
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3		
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	
	12 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 0	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 15	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 30	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	23 45	*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM IDAHO FALLS FOR November, 1980

2224 out of 2880 data points (77 %) available.

WEEKDAY		S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
		a	v	a	v	e	r	a	v	a	v	e	r	a	v	a	v	e	r	a	v	a	v	e
		t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n
DATE		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
AM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
	0 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	0 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	5 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	7 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	8 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9 45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	0	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	15	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	30	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	45	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR November, 1980

2224 out of 2880 data points (77 %) available.

WEEKDAY		S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
		a	u	o	e	h	r	a	u	o	e	h	r	a	u	o	e	h	r	a	u	o	e	h
		t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2
PM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
HOUR/MIN																								
12	0	*	*			*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
12	15	*	*			*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
12	30	*	*			*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
12	45	*	*			*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
13	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
13	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
13	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
13	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
14	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
14	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
14	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
14	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
15	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
15	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
15	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
15	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
16	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
16	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
16	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
16	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
17	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
17	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
17	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
17	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
18	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
18	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
18	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
18	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
19	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
19	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
19	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
19	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
20	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
20	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
20	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
20	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
21	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
21	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
21	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
21	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
22	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
22	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
22	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
22	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
23	0	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
23	15	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
23	30	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*
23	45	*	*		*	*	*	*	*	*		*	*	*	*		*	*		*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR December, 1980

2340 out of 2976 data points (79 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	
		on	ue	hu	ri	at	un	ne	ue	hu	ri	at	un	ne	ue	hu	ri	at	un	ne	ue	hu	ri	at	un	ne	ue	hu	ri	at	un	ne	ue
DATE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
AM	HOUR/MIN																																
0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
0	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
2	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
3	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
4	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

AVAILABLE DATA FROM IDAHO FALLS FOR December, 1980

2340 out of 2976 data points (79 %) available.

WEEKDAY		M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W
		ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave	ave
		ned	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed	ed
DATE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PM	HOUR/MIN																								
12	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR January, 1981

2641 out of 2976 data points (89 %) available.

WEEKDAY		T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		h	r	a	u	v	e	h	r	a	u	v	e	h	r	a	u	v	e	h	r	a	u	v	e
		u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t
DATE		1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3
AM		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3
HOUR/MIN																									
0 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 30	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 45	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

AVAILABLE DATA FROM IDAHO FALLS FOR January, 1981

2641 out of 2976 data points (89 %) available.

WEEKDAY		T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		h	r	a	v	o	u	e	h	r	a	v	o	u	e	h	r	a	v	o	u	e	h	r	a
		u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2
PM	DATE	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2
HOURLY	MIN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2
12	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23	45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

1695 out of 2688 data points (63 %) available.

[illegible]

AVAILABLE DATA FROM IDAHO FALLS FOR February, 1981

1695 out of 2688 data points (63 %) available.

WEEKDAY		S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a
		n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t	n	n	e	d	u	i	t
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	
PM	HOUR/MIN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	
	12 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	12 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	13 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	15 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	16 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	17 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	18 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	19 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	20 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	21 45	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	22 30	*	*	*	*	*	*	*	*	*	*	*	*</																

AVAILABLE DATA FROM IDAHO FALLS FOR March, 1981

2177 out of 2976 data points (73 %) available.

WEEKDAY		S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
		u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u	e	h	r	a	u	o	u
		n	n	e	d	i	t	n	n	e	d	i	t	n	n	e	d	i	t	n	n	e	d	i	t
DATE		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	3
AM		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	3
HOUR/MIN		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	3
0 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
0 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 0		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 15		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 30		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11 45		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

2177 out of 2976 data points (73 %) available.

C-18

APPENDIX D

BOISE MONTHLY DATA SUMMARIES

Pages D-1 to D-10

BOISE MONTHLY SUMMARY for July, 1980

Summarized on May 27, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	25858	BTU/FT2
SOLAR ENERGY COLLECTED -----	356432	BTU
MONTHLY COLLECTION EFF -----	2.9	%
MAXIMUM 15-MIN EFFICIENCY ----	497.6	%
MINIMUM 15-MIN EFFICIENCY ----	3	%
MAX SWING IN STORED ENERGY ----	268052	BTU
NET CHANGE IN STORED ENERGY ---	237983	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	103	47	71	75	DEG F
HOUSE	MAX/MIN/MEAN -----	89	69	77		DEG F
AVERAGE ABSORBER, MAX	-----	165				DEG F
AVERAGE STORAGE, MAX	-----	83				DEG F
AVERAGE STORAGE, MIN	-----	62				DEG F
MAXIMUM STORAGE	-----	96				DEG F
MINIMUM STORAGE	-----	57				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	63	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	88	F DEG-DAYS
MEAN HEATING DD -----	0	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	7.2	-.1	.2	MPH
--------------------	-----	-----	----	-----

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2376
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)
1	0	166	*	18	66	89	*	35	84	94
2	0	1705	*	19	63	103	*	36	53	126
3	0	2841	*	20	83	94	*	37	59	87
4	0	0	*	21	47	103	*	38	58	165
5	0	0	*	22	69	89	*	39	0	0
6	0	0	*	23	71	96	*	40	0	0
7	0	0	*	24	65	86	*	41	0	42
8	0	0	*	25	64	83	*	42	0	0
9	0	0	*	26	61	88	*	43	-31	5504
10	0	0	*	27	60	83	*	44	0	0
11	0	0	*	28	60	80	*	45	-0	498
12	0	0	*	29	59	86	*	46	-44	1146
13	-0	7	*	30	57	83	*	47	62	83
14	0	0	*	31	58	80	*	48	0	0
15	58	123	*	32	61	83	*	49	0	0
16	64	131	*	33	59	82	*	50	0	24
17	54	87	*	34	84	94	*			

BOISE MONTHLY SUMMARY for August, 1980

Summarized on May 25, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	27932	BTU/FT2
SOLAR ENERGY COLLECTED -----	964943	BTU
MONTHLY COLLECTION EFF -----	7.2	%
MAXIMUM 15-MIN EFFICIENCY ---	979.9	%
MINIMUM 15-MIN EFFICIENCY ---	0.0	%
MAX SWING IN STORED ENERGY ----	262484	BTU
NET CHANGE IN STORED ENERGY ---	-146076	BTU

SYSTEM TEMPERATURES

AMBIENT MAX/MIN/MEAN/AVE ---	98	41	69	69	DEG F
HOUSE MAX/MIN/MEAN -----	88	68	75		DEG F
AVERAGE ABSORBER, MAX -----	181				DEG F
AVERAGE STORAGE, MAX -----	83				DEG F
AVERAGE STORAGE, MIN -----	62				DEG F
MAXIMUM STORAGE -----	96				DEG F
MINIMUM STORAGE -----	52				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	91	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	69	F DEG-DAYS
MEAN HEATING DD -----	0	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	5.1	- .0	.2	MPH
--------------------	-----	------	----	-----

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2157
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)
1	0	184	*	18	61	94	*	35	83	94
2	0	1823	*	19	66	105	*	36	46	128
3	0	3851	*	20	82	93	*	37	44	105
4	0	0	*	21	41	98	*	38	53	181
5	0	0	*	22	68	88	*	39	0	0
6	0	0	*	23	73	96	*	40	0	0
7	0	0	*	24	68	84	*	41	0	46
8	0	0	*	25	66	82	*	42	0	11179
9	0	0	*	26	70	86	*	43	-33	2674
10	0	0	*	27	59	82	*	44	0	72
11	0	0	*	28	60	79	*	45	0	980
12	0	0	*	29	56	85	*	46	-11	2678
13	-0	5	*	30	52	90	*	47	62	83
14	0	0	*	31	54	86	*	48	0	0
15	56	124	*	32	63	82	*	49	0	0
16	62	138	*	33	56	82	*	50	0	24
17	48	120	*	34	83	94	*			

BOISE MONTHLY SUMMARY for September, 1980
Summarized on May 25, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	25891	BTU/FT2
SOLAR ENERGY COLLECTED -----	1168080	BTU
MONTHLY COLLECTION EFF -----	9.4	%
MAXIMUM 15-MIN EFFICIENCY ----	2543.9	%
MINIMUM 15-MIN EFFICIENCY ----	0.0	%
MAX SWING IN STORED ENERGY ----	348279	BTU
NET CHANGE IN STORED ENERGY ---	-43698	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	93	37	62	65	DEG F
HOUSE	MAX/MIN/MEAN -----	79	67	73		DEG F
AVERAGE ABSORBER, MAX	-----	225				DEG F
AVERAGE STORAGE, MAX	-----	84				DEG F
AVERAGE STORAGE, MIN	-----	57				DEG F
MAXIMUM STORAGE	-----	104				DEG F
MINIMUM STORAGE	-----	50				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	138	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	21	F DEG-DAYS
MEAN HEATING DD -----	2	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	10.8	- .0	.5	MPH
--------------------	------	------	----	-----

DATA AVAILABILITY

TIME POINTS(2880 MAX) -----	1827
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)
1	0	244	*	18	61	97	*	35	82	90
2	0	4760	*	19	65	147	*	36	47	140
3	0	3891	*	20	80	88	*	37	44	108
4	0	0	*	21	37	93	*	38	45	225
5	0	0	*	22	67	79	*	39	0	0
6	0	0	*	23	64	93	*	40	0	0
7	0	0	*	24	60	75	*	41	0	61
8	0	0	*	25	60	74	*	42	0	13439
9	0	0	*	26	62	82	*	43	-5	3636
10	0	0	*	27	56	83	*	44	0	60
11	0	0	*	28	57	79	*	45	0	2544
12	0	0	*	29	52	98	*	46	-10	4502
13	-0	11	*	30	50	104	*	47	57	84
14	0	0	*	31	51	100	*	48	0	0
15	56	134	*	32	58	77	*	49	0	0
16	62	152	*	33	53	96	*	50	0	24
17	48	128	*	34	81	89	*			

BOISE MONTHLY SUMMARY for October, 1980

Summarized on May 24, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	30451	BTU/FT2
SOLAR ENERGY COLLECTED -----	3853200	BTU
MONTHLY COLLECTION EFF -----	26.5	%
MAXIMUM 15-MIN EFFICIENCY ---	3017.3	%
MINIMUM 15-MIN EFFICIENCY ---	0.0	%
MAX SWING IN STORED ENERGY ----	508023	BTU
NET CHANGE IN STORED ENERGY ---	44955	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	89	22	49	56	DEG F
HOUSE	MAX/MIN/MEAN -----	77	65	72		DEG F
AVERAGE ABSORBER, MAX	-----	223				DEG F
AVERAGE STORAGE, MAX	-----	96				DEG F
AVERAGE STORAGE, MIN	-----	56				DEG F
MAXIMUM STORAGE	-----	112				DEG F
MINIMUM STORAGE	-----	50				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	365	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	7	F DEG-DAYS
MEAN HEATING DD -----	11	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	10.0	-.1	.3	MPH
--------------------	------	-----	----	-----

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2009
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)
1	0	271	18	57	100	35	83	90
2	0	2176	19	61	148	36	45	142
3	0	4093	20	82	89	37	43	113
4	0	0	21	22	89	38	35	223
5	0	0	22	65	77	39	0	0
6	0	0	23	62	92	40	0	0
7	0	0	24	60	83	41	0	68
8	0	0	25	60	80	42	0	13644
9	0	0	26	59	90	43	0	4262
10	0	0	27	55	97	44	0	3017
11	0	0	28	56	94	45	0	1129
12	0	0	29	52	107	46	-3	3377
13	-0	10	30	50	112	47	56	96
14	0	0	31	51	108	48	0	0
15	53	136	32	58	93	49	0	0
16	62	157	33	53	102	50	0	24
17	47	126	34	83	90			

BOISE MONTHLY SUMMARY for November, 1980

Summarized on May 27, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	21442	BTU/FT2
SOLAR ENERGY COLLECTED -----	3152790	BTU
MONTHLY COLLECTION EFF -----	30.8	%
MAXIMUM 15-MIN EFFICIENCY ----	2191.9	%
MINIMUM 15-MIN EFFICIENCY ----	0.0	%
MAX SWING IN STORED ENERGY ----	420323	BTU
NET CHANGE IN STORED ENERGY ---	-213402	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	73	17	37	45	DEG F
HOUSE	MAX/MIN/MEAN -----	76	63	70		DEG F
AVERAGE ABSORBER, MAX	-----	194				DEG F
AVERAGE STORAGE, MAX	-----	93				DEG F
AVERAGE STORAGE, MIN	-----	61				DEG F
MAXIMUM STORAGE	-----	111				DEG F
MINIMUM STORAGE	-----	54				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	651	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	0	F DEG-DAYS
MEAN HEATING DD -----	22	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	10.2	- .0	.5	MPH
--------------------	------	------	----	-----

DATA AVAILABILITY

TIME POINTS(2880 MAX) -----	2222
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)	
1	0	324	*	18	48	78	*	35	79
2	0	1842	*	19	54	151	*	36	54
3	0	4143	*	20	78	88	*	37	60
4	0	0	*	21	17	73	*	38	30
5	0	0	*	22	63	76	*	39	0
6	0	0	*	23	54	74	*	40	0
7	0	0	*	24	60	79	*	41	0
8	0	0	*	25	60	77	*	42	0
9	0	0	*	26	57	88	*	43	14207
10	0	0	*	27	62	97	*	44	452
11	0	0	*	28	61	92	*	45	0
12	0	0	*	29	57	106	*	46	0
13	-0	10	*	30	62	111	*	47	-1
14	0	0	*	31	62	106	*	48	61
15	42	82	*	32	61	89	*	49	0
16	60	137	*	33	62	102	*	50	0
17	58	126	*	34	79	89	*		24

BOISE MONTHLY SUMMARY for December, 1980

Summarized on May 27, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	18137	BTU/FT2
SOLAR ENERGY COLLECTED -----	2304710	BTU
MONTHLY COLLECTION EFF -----	26.6	%
MAXIMUM 15-MIN EFFICIENCY ----	1403.0	%
MINIMUM 15-MIN EFFICIENCY ----	0.0	%
MAX SWING IN STORED ENERGY ----	111331	BTU
NET CHANGE IN STORED ENERGY ---	-18655	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	57	8	31	32	DEG F
HOUSE	MAX/MIN/MEAN	75	61	68		DEG F
AVERAGE ABSORBER, MAX		188				DEG F
AVERAGE STORAGE, MAX		69				DEG F
AVERAGE STORAGE, MIN		60				DEG F
MAXIMUM STORAGE		91				DEG F
MINIMUM STORAGE		52				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	815	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	0	F DEG-DAYS
MEAN HEATING DD -----	815	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN	13.6	-.1	1.1	MPH
--------------	------	-----	-----	-----

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2325
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)	
1	0	318	*	18	51	71	*	35	77
2	0	1748	*	19	49	149	*	36	41
3	0	4131	*	20	77	83	*	37	48
4	0	0	*	21	8	57	*	38	21
5	0	0	*	22	61	75	*	39	0
6	0	0	*	23	52	65	*	40	0
7	0	0	*	24	59	67	*	41	0
8	0	0	*	25	59	66	*	42	0
9	0	0	*	26	54	61	*	43	14159
10	0	0	*	27	61	66	*	44	584
11	0	0	*	28	61	65	*	45	1403
12	0	0	*	29	54	82	*	46	508
13	-0	14	*	30	61	91	*	47	7347
14	0	0	*	31	61	85	*	48	69
15	38	71	*	32	60	66	*	49	1
16	59	126	*	33	61	75	*	50	0
17	56	115	*	34	78	83	*		24

BOISE MONTHLY SUMMARY for January, 1981

Summarized on May 28, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	12725	BTU/FT2
SOLAR ENERGY COLLECTED -----	1352400	BTU
MONTHLY COLLECTION EFF -----	22.2	%
MAXIMUM 15-MIN EFFICIENCY ---	1026.2	%
MINIMUM 15-MIN EFFICIENCY ---	0.0	%
MAX SWING IN STORED ENERGY ----	128260	BTU
NET CHANGE IN STORED ENERGY ---	-1540	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	59	18	32	38	DEG F
HOUSE	MAX/MIN/MEAN -----	73	60	67		DEG F
AVERAGE ABSORBER, MAX	-----	175				DEG F
AVERAGE STORAGE, MAX	-----	69				DEG F
AVERAGE STORAGE, MIN	-----	59				DEG F
MAXIMUM STORAGE	-----	93				DEG F
MINIMUM STORAGE	-----	52				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	898	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	0	F DEG-DAYS
MEAN HEATING DD -----	898	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	14.7	- .0	.8	MPH
--------------------	------	------	----	-----

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2637
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)
1	0	291	*	18	50	70	*	35	76	82
2	0	1502	*	19	47	150	*	36	53	115
3	0	4130	*	20	76	82	*	37	58	117
4	0	0	*	21	18	59	*	38	29	175
5	0	0	*	22	60	73	*	39	0	0
6	0	0	*	23	52	62	*	40	0	0
7	0	0	*	24	58	67	*	41	0	73
8	0	0	*	25	58	66	*	42	0	13000
9	0	0	*	26	53	60	*	43	0	573
10	0	0	*	27	60	65	*	44	0	1026
11	0	0	*	28	59	64	*	45	0	407
12	0	0	*	29	53	83	*	46	0	5832
13	-0	15	*	30	60	93	*	47	59	69
14	0	0	*	31	60	87	*	48	0	0
15	41	72	*	32	59	66	*	49	0	0
16	58	123	*	33	60	77	*	50	0	24
17	55	114	*	34	77	83	*			

BOISE MONTHLY SUMMARY for February, 1981

Summarized on May 27, 1981

SYSTEM ENERGY FLOWS
 INSOLATION(VERTICAL) ----- 14911 BTU/FT2
 SOLAR ENERGY COLLECTED ----- 2620000 BTU
 MONTHLY COLLECTION EFF ----- 36.8 %
 MAXIMUM 15-MIN EFFICIENCY ---- 1437.0 %
 MINIMUM 15-MIN EFFICIENCY ---- 0.0 %
 MAX SWING IN STORED ENERGY ---- 195560 BTU
 NET CHANGE IN STORED ENERGY --- 131014 BTU

SYSTEM TEMPERATURES
 AMBIENT MAX/MIN/MEAN/AVE --- 65 18 39 41 DEG F
 HOUSE MAX/MIN/MEAN ----- 76 61 69 DEG F
 AVERAGE ABSORBER, MAX ----- 234 DEG F
 AVERAGE STORAGE, MAX ----- 74 DEG F
 AVERAGE STORAGE, MIN ----- 58 DEG F
 MAXIMUM STORAGE ----- 100 DEG F
 MINIMUM STORAGE ----- 53 DEG F

DEGREE-DAYS
 INSTANTANEOUS HEATING DD ----- 274 F DEG-DAYS
 INSTANTANEOUS COOLING DD ----- 0 F DEG-DAYS
 MEAN HEATING DD ----- 274 F DEG-DAYS
 MEAN COOLING DD ----- 0 F DEG-DAYS

WIND SPEED
 MAX/MIN/MEAN ----- 8.2 -.0 .7 MPH

DATA AVAILABILITY
 TIME POINTS(2688 MAX) ----- 1031

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)	I	Dminmo(I)	Dmaxmo(I)
1	0	308	18	45	70	35	73	89
2	0	1387	19	47	147	36	55	117
3	0	4034	20	73	89	37	58	110
4	0	0	21	18	65	38	31	234
5	0	0	22	61	76	39	0	0
6	0	0	23	53	61	40	0	0
7	0	0	24	57	63	41	0	77
8	0	0	25	58	65	42	0	14228
9	0	0	26	55	62	43	0	536
10	0	0	27	58	71	44	0	1437
11	0	0	28	59	68	45	0	175
12	0	0	29	56	92	46	-3	4331
13	-0	8	30	59	100	47	58	74
14	0	0	31	59	97	48	0	0
15	41	70	32	58	64	49	0	0
16	58	125	33	58	87	50	0	24
17	56	116	34	73	90	*		

BOISE MONTHLY SUMMARY for March, 1981

Summarized on May 27, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL) -----	36263	BTU/FT2
SOLAR ENERGY COLLECTED -----	6007360	BTU
MONTHLY COLLECTION EFF -----	34.7	%
MAXIMUM 15-MIN EFFICIENCY ---	2549.9	%
MINIMUM 15-MIN EFFICIENCY ---	0.0	%
MAX SWING IN STORED ENERGY ----	338661	BTU
NET CHANGE IN STORED ENERGY ---	-95294	BTU

SYSTEM TEMPERATURES

AMBIENT MAX/MIN/MEAN/AVE ---	71	21	44	46	DEG F
HOUSE MAX/MIN/MEAN -----	76	62	70		DEG F
AVERAGE ABSORBER, MAX -----	184				DEG F
AVERAGE STORAGE, MAX -----	88				DEG F
AVERAGE STORAGE, MIN -----	62				DEG F
MAXIMUM STORAGE -----	104				DEG F
MINIMUM STORAGE -----	54				DEG F

DEGREE-DAYS

INSTANTANEOUS HEATING DD -----	615	F DEG-DAYS
INSTANTANEOUS COOLING DD -----	0	F DEG-DAYS
MEAN HEATING DD -----	613	F DEG-DAYS
MEAN COOLING DD -----	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	13.5	- .0	1.2	MPH
--------------------	------	------	-----	-----

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2776
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See BOEVAL program).

I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)	*	I	Dminmo(I)	Dmaxmo(I)
1	0	269	*	18	51	74	*	35	74	90
2	0	1350	*	19	47	148	*	36	57	120
3	0	4020	*	20	75	89	*	37	40	108
4	0	0	*	21	21	71	*	38	31	184
5	0	0	*	22	62	76	*	39	0	0
6	0	0	*	23	54	69	*	40	0	0
7	0	0	*	24	57	76	*	41	0	67
8	0	0	*	25	60	74	*	42	0	14239
9	0	0	*	26	61	83	*	43	0	418
10	0	0	*	27	63	91	*	44	0	2550
11	0	0	*	28	62	88	*	45	0	348
12	0	0	*	29	62	98	*	46	-4	4252
13	-0	14	*	30	63	104	*	47	62	88
14	0	0	*	31	63	103	*	48	0	0
15	45	80	*	32	60	86	*	49	0	0
16	60	129	*	33	62	96	*	50	0	24
17	61	119	*	34	75	90	*			

"DATA" ARRAY IN DATA EVALUATION PROGRAM "BOEVAL"

	<u>Variable</u>	<u>Units</u>	<u>Description</u>
DATA (1)	Isol	BTU/HR·FT ²	Incident Solar Insolation
(2)	Cmassh	LB/HR	House Return Mass Flow
(3)	Cmassc	LB/HR	Collector Mass Flow
(13)	Wspd	MPH	Wind Speed
			<u>Temperatures</u>
(15)	T(1)	°F	Collector Supply Air
(16)	T(2)	°F	Collector Return Air
(17)	T(3)	°F	Storage Top Air
(18)	T(4)	°F	House Return Air
(19)	T(5)	°F	Cold Water In
(20)	T(6)	°F	Tempered Water
(21)	T(7)	°F	Outside
(22)	T(8)	°F	House
(23)	T(9)	°F	Storage #2
(24)	T(10)	°F	Storage #5
(25)	T(11)	°F	Storage #8
(26)	T(12)	°F	Storage #11
(27)	T(13)	°F	Storage #14
(28)	T(14)	°F	Storage #17
(29)	T(15)	°F	Storage #20
(30)	T(16)	°F	Storage #23
(31)	T(17)	°F	Storage #26
(32)	T(18)	°F	Storage #28
(33)	T(19)	°F	Storage #29
(34)	T(20)	°F	Reference Thermistor
(35)	T(21)	°F	Reference Thermistor
(36)	T(22)	°F	Heat Exchanger Air Outlet
(37)	T(23)	°F	Furnace Air Outlet
(38)	T(24)	°F	Average Absorber
(39)	Edhwlo	BTU	Energy to DHW at Flows < 3200 > 500 FT/LB
(40)	Edwhi	BTU	Energy to DHW at Flows > 3200
(41)	Isolt	BTU/FT ²	Incident Solar Energy
(42)	Ecol	BTU	Energy Collected at Flows > 3200
(43)	Edhw	BTU	Energy to DHW at Flows > 500
(44)	Coleffhi	%	Collector Efficiency at Flows > 3200
(45)	Colefflo	%	Collector Efficiency at Flows < 3200 > 500
(46)	Colpara	°F·HR·FT ² /BTU	Collector Parameter at Flows > 500
(47)	Tstorave	°F	Vol. Wt. Average Storage Temp.
(48)	Hdd	FDEG-DAYS	Instantaneous Heating Degree Days
(49)	Cdd	FDEG-DAYS	Instantaneous Cooling Degree Days
(50)	HR+MI/60	HR	Time of Day

APPENDIX E

IDAHO FALLS MONTHLY DATA SUMMARIES

Pages E-1 to E-10

IDAHO FALLS MONTHLY SUMMARY for July, 1980

Summarized on May 31, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS	----	30139	BTU/FT2
EPPLEY	----	25632	BTU/FT2
SOLAR ENERGY COLLECTED	-----	461700	BTU
DAILY COLLECTION EFFICIENCY	---	3.2	%
MAXIMUM 15-MIN EFFICIENCY	---	29.9	%
MINIMUM 15-MIN EFFICIENCY	---	0.0	%
MAX SWING IN STORED ENERGY	----	157833	BTU
NET CHANGE IN STORED ENERGY	----	80698	BTU
DHW USAGE	-----	815	GAL
DHW NET ENERGY USAGE	-----	138918	BTU
SOLAR DELIVERED TO DHW HX	-----	532277	BTU
ENERGY LOSSES FROM DHW SYSTEM	----	1008620	BTU

ELECTRICAL ENERGY USAGE

FURNACE	-----	493462	BTU
DHW SYSTEM	-----	615043	BTU
HOUSE TOTAL	-----	3045740	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	---	94	41	67	67	DEG F
HOUSE	MAX/MIN/MEAN	-----	80	69	74		DEG F
DHW TANK	MAX/MIN/MEAN	-----	111	59	96		DEG F
MAXIMUM ABSORBER	-----	203					DEG F
AVERAGE ABSORBER, MAX	-----	157					DEG F
AVERAGE STORAGE, MAX	-----	75					DEG F
AVERAGE STORAGE, MIN	-----	59					DEG F
MAXIMUM STORAGE	-----	78					DEG F
MINIMUM STORAGE	-----	47					DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING	-----	115	49	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING	---	24	7	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING	---	0	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN	-----	9.5	--.0	.6	MPH
--------------	-------	-----	------	----	-----

SOLAR FRACTIONS

SPACE HEATING	-----	.01
DHW SYSTEM	-----	.46
TOTAL	-----	.33

DATA AVAILABILITY

TIME POINTS(2976 MAX)	-----	2515
-----------------------	-------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	81	95	25	56	103	48	41	102
2	62	79	26	40	257	49	-0	303
3	56	114	27	58	76	50	0	50
4	46	97	28	45	113	51	0	5305
5	62	122	29	56	112	52	0	4489
6	47	97	30	59	76	53	0	1758
7	52	79	31	40	264	54	0	1921
8	52	78	32	39	304	55	0	28
9	65	104	33	48	77	56	0	30
10	69	80	34	39	258	57	-45	3016
11	41	94	35	38	279	58	50	157
12	48	170	36	48	75	59	59	75
13	69	79	37	39	265	60	0	0
14	48	162	38	47	74	61	0	0
15	50	157	39	63	76	62	0	6018
16	68	76	40	50	75	63	-43	44
17	49	160	41	0	199	64	0	18449
18	50	203	42	0	3505	65	-1329	5523
19	66	77	43	0	18	66	-0	76
20	54	142	44	-1	2	67	0	0
21	81	96	45	-0	1	68	0	0
22	59	111	46	0	3	69	0	0
23	73	113	47	-0	10	70	0	24
24	61	78	*					

IDAHO FALLS MONTHLY SUMMARY for August, 1980

Summarized on May 31, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS	----	31807	BTU/FT2
EPPLEY	----	31533	BTU/FT2
SOLAR ENERGY COLLECTED	-----	717530	BTU
DAILY COLLECTION EFFICIENCY	-----	4.7	%
MAXIMUM 15-MIN EFFICIENCY	----	30.3	%
MINIMUM 15-MIN EFFICIENCY	----	-1.0	%
MAX SWING IN STORED ENERGY	----	179921	BTU
NET CHANGE IN STORED ENERGY	----	-108127	BTU
DHW USAGE	-----	1871	GAL
DHW NET ENERGY USAGE	-----	463146	BTU
SOLAR DELIVERED TO DHW HX	----	780708	BTU
ENERGY LOSSES FROM DHW SYSTEM	----	1048120	BTU

ELECTRICAL ENERGY USAGE

FURNACE	-----	152399	BTU
DHW SYSTEM	-----	730464	BTU
HOUSE TOTAL	-----	3688390	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	----	89	35	63	62	DEG F
HOUSE	MAX/MIN/MEAN	-----	78	63	72		DEG F
DHW TANK	MAX/MIN/MEAN	-----	114	58	96		DEG F
MAXIMUM ABSORBER	-----	180					DEG F
AVERAGE ABSORBER, MAX	-----	172					DEG F
AVERAGE STORAGE, MAX	-----	74					DEG F
AVERAGE STORAGE, MIN	-----	55					DEG F
MAXIMUM STORAGE	-----	103					DEG F
MINIMUM STORAGE	-----	35					DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING	-----	161	32	F DEG-DAYS
DAILY MEAN, HEATING/COOLING	----	82	0	F DEG-DAYS
MONTHLY MEAN, HEATING/COOLING	----	50	0	F DEG-DAYS

WIND SPEED

MAX/MIN/MEAN	-----	10.5	-1.2	.6	MPH
--------------	-------	------	------	----	-----

SOLAR FRACTIONS

SPACE HEATING	-----	0.00
DHW SYSTEM	-----	.52
TOTAL	-----	.47

DATA AVAILABILITY

TIME POINTS(2976 MAX)	-----	2311
-----------------------	-------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	67	93	25	55	111	48	-43	96
2	58	81	26	35	255	49	-0	283
3	51	120	27	54	75	50	0	57
4	42	111	28	41	371	51	0	0
5	58	132	29	56	118	52	0	0
6	43	110	30	55	74	53	-29	2609
7	52	77	31	36	258	54	-38916	2867
8	53	68	32	30	298	55	0	0
9	60	110	33	46	75	56	-1	30
10	63	78	34	30	254	57	-98	3391
11	35	89	35	31	269	58	42	172
12	42	180	36	35	103	59	55	74
13	44	278	37	34	270	60	0	0
14	41	178	38	44	71	61	0	0
15	42	175	39	57	75	62	0	15147
16	59	75	40	49	74	63	-85	9
17	26	177	41	0	230	64	-13	29981
18	42	168	42	0	2752	65	-38917	6384
19	44	220	43	0	40	66	-0	71
20	44	153	44	-0	1	67	0	0
21	68	93	45	-0	1	68	0	0
22	58	114	46	-1	3	69	0	0
23	61	121	47	-1	11	70	0	24
24	56	77						

IDAHO FALLS MONTHLY SUMMARY for September, 1980

Summarized on June 1, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS ----	35518	BTU/FT2
EPPLEY ----	33194	BTU/FT2
SOLAR ENERGY COLLECTED ----	2207610	BTU
DAILY COLLECTION EFFICIENCY -	13.0	%
MAXIMUM 15-MIN EFFICIENCY ---	253.0	%
MINIMUM 15-MIN EFFICIENCY ---	0.0	%
MAX SWING IN STORED ENERGY ----	556365	BTU
NET CHANGE IN STORED ENERGY ---	465176	BTU
DHW USAGE -----	1718	GAL
DHW NET ENERGY USAGE -----	612349	BTU
SOLAR DELIVERED TO DHW HX ----	998512	BTU
ENERGY LOSSES FROM DHW SYSTEM -	1040200	BTU

ELECTRICAL ENERGY USAGE

FURNACE -----	42893	BTU
DHW SYSTEM -----	653907	BTU
HOUSE TOTAL -----	3514950	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	90	28	56	59	DEG F
HOUSE	MAX/MIN/MEAN -----	79	61	70		DEG F
DHW TANK	MAX/MIN/MEAN -----	115	57	96		DEG F
MAXIMUM ABSORBER -----		203				DEG F
AVERAGE ABSORBER, MAX -----		192				DEG F
AVERAGE STORAGE, MAX -----		111				DEG F
AVERAGE STORAGE, MIN -----		52				DEG F
MAXIMUM STORAGE -----		126				DEG F
MINIMUM STORAGE -----		42				DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING -----	259	9	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING ---	214	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING -	212	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	8.4	-.9	.7	MPH
--------------------	-----	-----	----	-----

SOLAR FRACTIONS

SPACE HEATING -----	.97
DHW SYSTEM -----	.60
TOTAL -----	.77

DATA AVAILABILITY

TIME POINTS(2880 MAX) -----	2258
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	78	107	25	55	118	48	29	98
2	55	96	26	31	268	49	-0	290
3	49	128	27	51	110	50	0	70
4	41	128	28	40	127	51	0	11690
5	57	142	29	56	118	52	0	9422
6	42	127	30	51	107	53	0	6980
7	51	103	31	32	271	54	0	3192
8	54	71	32	27	303	55	0	253
9	58	108	33	43	123	56	0	31
10	61	79	34	28	248	57	-5	3446
11	28	90	35	33	272	58	35	192
12	35	201	36	43	123	59	52	111
13	29	287	37	33	275	60	0	0
14	34	203	38	42	126	61	0	0
15	35	197	39	55	108	62	0	17051
16	54	104	40	47	115	63	-89	8
17	36	199	41	0	282	64	0	29318
18	33	186	42	0	4888	65	-12106	7274
19	29	226	43	0	44	66	-0	72
20	34	167	44	-0	4	67	0	0
21	77	106	45	-0	1	68	0	0
22	57	115	46	-1	4	69	0	0
23	61	128	47	-1	8	70	0	24
24	51	109	*					

IDAHO FALLS MONTHLY SUMMARY for October, 1980

Summarized on June 1, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS -----	29592	BTU/FT2
EPPLEY -----	28384	BTU/FT2
SOLAR ENERGY COLLECTED -----	3168910	BTU
DAILY COLLECTION EFFICIENCY -	22.4	%
MAXIMUM 15-MIN EFFICIENCY ----	1098.5	%
MINIMUM 15-MIN EFFICIENCY ----	0.0	%
MAX SWING IN STORED ENERGY -----	539553	BTU
NET CHANGE IN STORED ENERGY ---	-195961	BTU
DHW USAGE -----	1220	GAL
DHW NET ENERGY USAGE -----	430763	BTU
SOLAR DELIVERED TO DHW HX -----	763707	BTU
ENERGY LOSSES FROM DHW SYSTEM -	814161	BTU

ELECTRICAL ENERGY USAGE

FURNACE -----	1008940	BTU
DHW SYSTEM -----	480974	BTU
HOUSE TOTAL -----	3797710	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	83	15	43	49	DEG F
HOUSE	MAX/MIN/MEAN	81	64	69		DEG F
DHW TANK	MAX/MIN/MEAN	122	56	99		DEG F
MAXIMUM ABSORBER		217				DEG F
AVERAGE ABSORBER, MAX		202				DEG F
AVERAGE STORAGE, MAX		122				DEG F
AVERAGE STORAGE, MIN		65				DEG F
MAXIMUM STORAGE		134				DEG F
MINIMUM STORAGE		63				DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING -----	486	3	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING ---	468	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING -	468	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	10.1	-1.3	.3	MPH
--------------------	------	------	----	-----

SOLAR FRACTIONS

SPACE HEATING -----	.70
DHW SYSTEM -----	.61
TOTAL -----	.68

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2013
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	75	107	25	54	122	48	9	90
2	60	107	26	16	269	49	-1	314
3	46	109	27	65	122	50	0	75
4	65	137	28	62	134	51	0	12860
5	61	145	29	59	117	52	-397	9978
6	63	135	30	65	120	53	0	6966
7	17	141	31	16	272	54	0	3085
8	53	74	32	12	293	55	0	1098
9	62	106	33	66	131	56	0	54
10	64	81	34	13	234	57	0	6027
11	15	83	35	17	246	58	22	202
12	24	213	36	67	131	59	65	122
13	14	271	37	17	245	60	0	1
14	22	217	38	68	134	61	0	0
15	22	210	39	64	121	62	0	15012
16	63	117	40	65	125	63	-35	7
17	21	211	41	0	302	64	0	23640
18	20	194	42	0	4850	65	-14800	6526
19	15	217	43	0	45	66	-0	79
20	19	170	44	-0	5	67	0	0
21	74	106	45	-0	1	68	0	0
22	56	122	46	-1	5	69	0	0
23	61	132	47	-1	10	70	0	24
24	63	121	*					

IDAHO FALLS MONTHLY SUMMARY for November, 1980

Summarized on June 1, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS	----	21577	BTU/FT2
EPPLEY	----	20682	BTU/FT2
SOLAR ENERGY COLLECTED	-----	2574160	BTU
DAILY COLLECTION EFFICIENCY	----	25.0	%
MAXIMUM 15-MIN EFFICIENCY	----	2388.7	%
MINIMUM 15-MIN EFFICIENCY	----	0.0	%
MAX SWING IN STORED ENERGY	----	304255	BTU
NET CHANGE IN STORED ENERGY	----	-234010	BTU
DHW USAGE	-----	584	GAL
DHW NET ENERGY USAGE	-----	309181	BTU
SOLAR DELIVERED TO DHW HX	-----	524978	BTU
ENERGY LOSSES FROM DHW SYSTEM	----	608701	BTU

ELECTRICAL ENERGY USAGE

FURNACE	-----	3609110	BTU
DHW SYSTEM	-----	392478	BTU
HOUSE TOTAL	-----	6105170	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	----	73	8	32	41	DEG F
HOUSE	MAX/MIN/MEAN	-----	74	50	64		DEG F
DHW TANK	MAX/MIN/MEAN	-----	114	56	82		DEG F
MAXIMUM ABSORBER	-----	208					DEG F
AVERAGE ABSORBER, MAX	-----	192					DEG F
AVERAGE STORAGE, MAX	-----	94					DEG F
AVERAGE STORAGE, MIN	-----	62					DEG F
MAXIMUM STORAGE	-----	123					DEG F
MINIMUM STORAGE	-----	59					DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING	-----	764	0	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING	----	763	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING	----	763	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN	-----	11.4	- .9	.8	MPH
--------------	-------	------	------	----	-----

SOLAR FRACTIONS

SPACE HEATING	-----	.36
DHW SYSTEM	-----	.57
TOTAL	-----	.39

DATA AVAILABILITY

TIME POINTS(2880 MAX)	-----	2223
-----------------------	-------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	72	97	25	48	101	48	6	81
2	48	75	26	10	264	49	-1	311
3	40	79	27	62	94	50	0	79
4	59	126	28	55	123	51	0	12529
5	56	134	29	62	123	52	-288	10055
6	57	124	30	62	92	53	0	9813
7	56	140	31	10	267	54	0	3082
8	47	66	32	6	285	55	0	2389
9	64	122	33	59	119	56	0	302
10	50	74	34	6	219	57	0	4741
11	8	73	35	9	259	58	13	192
12	14	206	36	62	118	59	62	94
13	7	274	37	9	259	60	0	1
14	12	208	38	62	123	61	0	0
15	13	199	39	61	87	62	0	19731
16	60	77	40	62	110	63	-0	10
17	13	202	41	0	316	64	0	12563
18	11	183	42	0	4875	65	-19733	6759
19	7	210	43	0	36	66	-0	78
20	12	153	44	-0	5	67	0	0
21	72	97	45	-0	1	68	0	0
22	56	114	46	-4	6	69	0	0
23	56	119	47	-1	11	70	0	24
24	59	94	*					

IDAHO FALLS MONTHLY SUMMARY for December, 1980

Summarized on June 1, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS ----	23780	BTU/FT2
EPPLEY ----	22655	BTU/FT2
SOLAR ENERGY COLLECTED ----	2850800	BTU
DAILY COLLECTION EFFICIENCY --	25.1	%
MAXIMUM 15-MIN EFFICIENCY ---	1085.8	%
MINIMUM 15-MIN EFFICIENCY ---	0.0	%
MAX SWING IN STORED ENERGY ----	159747	BTU
NET CHANGE IN STORED ENERGY ---	105256	BTU
DHW USAGE ----	805	GAL
DHW NET ENERGY USAGE ----	455128	BTU
SOLAR DELIVERED TO DHW HX ----	574672	BTU
ENERGY LOSSES FROM DHW SYSTEM -	670792	BTU

ELECTRICAL ENERGY USAGE

FURNACE -----	7437750	BTU
DHW SYSTEM -----	551049	BTU
HOUSE TOTAL -----	10044400	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE ---	55	3	28	29	DEG F
HOUSE	MAX/MIN/MEAN -----	69	59	65		DEG F
DHW TANK	MAX/MIN/MEAN -----	106	47	77		DEG F
MAXIMUM ABSORBER -----		197				DEG F
AVERAGE ABSORBER, MAX -----		181				DEG F
AVERAGE STORAGE, MAX -----		79				DEG F
AVERAGE STORAGE, MIN -----		62				DEG F
MAXIMUM STORAGE -----		115				DEG F
MINIMUM STORAGE -----		56				DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING -----	892	0	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING ---	892	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING -	892	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	10.2	-.8	.6	MPH
--------------------	------	-----	----	-----

SOLAR FRACTIONS

SPACE HEATING -----	.23
DHW SYSTEM -----	.51
TOTAL -----	.26

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2339
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	71	96	25	45	103	48	4	60
2	56	68	26	4	239	49	-0	320
3	36	71	27	62	72	50	0	81
4	54	119	28	56	116	51	0	12562
5	55	126	29	91	123	52	-309	10256
6	54	117	30	62	70	53	0	2508
7	61	145	31	4	244	54	0	3062
8	42	65	32	1	257	55	0	1086
9	67	122	33	58	111	56	0	277
10	59	69	34	2	171	57	0	5795
11	3	55	35	4	266	58	9	181
12	12	195	36	62	110	59	62	79
13	12	261	37	4	263	60	0	1
14	9	197	38	62	115	61	0	0
15	8	189	39	62	69	62	0	21652
16	56	65	40	62	96	63	0	2
17	9	192	41	0	325	64	0	11495
18	7	173	42	0	4670	65	-17903	6241
19	3	202	43	0	35	66	-0	80
20	8	141	44	-0	5	67	0	0
21	71	95	45	-0	1	68	0	0
22	47	106	46	-1	8	69	0	0
23	54	115	47	-1	10	70	0	24
24	58	70	*					

IDAHO FALLS MONTHLY SUMMARY for January, 1981

Summarized on June 2, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS ----	32062	BTU/FT2
EPPLEY ----	30704	BTU/FT2
SOLAR ENERGY COLLECTED -----	4061600	BTU
DAILY COLLECTION EFFICIENCY -	26.5	%
MAXIMUM 15-MIN EFFICIENCY ----	1432.4	%
MINIMUM 15-MIN EFFICIENCY ----	6.3	%
MAX SWING IN STORED ENERGY ----	161594	BTU
NET CHANGE IN STORED ENERGY ----	1658	BTU
DHW USAGE -----	502	GAL
DHW NET ENERGY USAGE -----	296043	BTU
SOLAR DELIVERED TO DHW HX -----	759462	BTU
ENERGY LOSSES FROM DHW SYSTEM -	898789	BTU

ELECTRICAL ENERGY USAGE

FURNACE -----	8072020	BTU
DHW SYSTEM -----	434942	BTU
HOUSE TOTAL -----	10825600	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	171	6	27	89	DEG F
HOUSE	MAX/MIN/MEAN	72	63	66		DEG F
DHW TANK	MAX/MIN/MEAN	114	47	84		DEG F
MAXIMUM ABSORBER		205				DEG F
AVERAGE ABSORBER, MAX		188				DEG F
AVERAGE STORAGE, MAX		80				DEG F
AVERAGE STORAGE, MIN		63				DEG F
MAXIMUM STORAGE		117				DEG F
MINIMUM STORAGE		59				DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING -----	1042	1	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING ----	1041	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING -	1041	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	10.8	-1.2	.4	MPH
--------------------	------	------	----	-----

SOLAR FRACTIONS

SPACE HEATING -----	.29
DHW SYSTEM -----	.64
TOTAL -----	.32

DATA AVAILABILITY

TIME POINTS(2976 MAX) -----	2641
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	69	95	* 25	42	105	* 48	7	105
2	58	70	* 26	7	258	* 49	-0	405
3	39	74	* 27	63	74	* 50	0	32
4	59	121	* 28	55	118	* 51	-8	13918
5	54	129	* 29	20	123	* 52	-241	11518
6	57	119	* 30	63	99	* 53	0	9897
7	63	156	* 31	7	264	* 54	-15	3312
8	40	66	* 32	4	274	* 55	-6	1432
9	71	122	* 33	60	112	* 56	0	504
10	63	72	* 34	5	193	* 57	-41	4675
11	6	171	* 35	8	268	* 58	11	188
12	13	202	* 36	63	112	* 59	63	80
13	5	270	* 37	7	270	* 60	0	1
14	12	205	* 38	63	117	* 61	0	1
15	11	196	* 39	63	70	* 62	0	29722
16	62	66	* 40	63	97	* 63	0	7
17	11	198	* 41	0	329	* 64	0	21393
18	10	179	* 42	0	4679	* 65	-22990	7012
19	6	210	* 43	0	45	* 66	-0	101
20	10	146	* 44	-0	5	* 67	0	0
21	68	95	* 45	-0	1	* 68	0	0
22	47	114	* 46	-1	6	* 69	0	0
23	53	117	* 47	-1	11	* 70	0	24
24	59	72	*					

IDAHO FALLS MONTHLY SUMMARY for February, 1981

Summarized on June 2, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS -----	25871	BTU/FT2
EPPLEY -----	24742	BTU/FT2
SOLAR ENERGY COLLECTED -----	3121920	BTU
DAILY COLLECTION EFFICIENCY -----	25.2	%
MAXIMUM 15-MIN EFFICIENCY -----	121.3	%
MINIMUM 15-MIN EFFICIENCY -----	0.0	%
MAX SWING IN STORED ENERGY -----	160314	BTU
NET CHANGE IN STORED ENERGY -----	87902	BTU
DHW USAGE -----	401	GAL
DHW NET ENERGY USAGE -----	254878	BTU
SOLAR DELIVERED TO DHW HX -----	602496	BTU
ENERGY LOSSES FROM DHW SYSTEM -	639845	BTU

ELECTRICAL ENERGY USAGE

FURNACE -----	4387920	BTU
DHW SYSTEM -----	292029	BTU
HOUSE TOTAL -----	6458490	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	59 -6 29 27	DEG F
HOUSE	MAX/MIN/MEAN	74 64 68	DEG F
DHW TANK	MAX/MIN/MEAN	109 56 85	DEG F
MAXIMUM ABSORBER		201	DEG F
AVERAGE ABSORBER, MAX		186	DEG F
AVERAGE STORAGE, MAX		80	DEG F
AVERAGE STORAGE, MIN		63	DEG F
MAXIMUM STORAGE		115	DEG F
MINIMUM STORAGE		58	DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING -----	628	0	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING -----	628	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING -	628	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN -----	12.2	-.2	.7	MPH
--------------------	------	-----	----	-----

SOLAR FRACTIONS

SPACE HEATING -----	.36
DHW SYSTEM -----	.67
TOTAL -----	.40

DATA AVAILABILITY

TIME POINTS(2688 MAX) -----	1695
-----------------------------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	77	93	* 25	43	102	* 48	59	90
2	58	70	* 26	3	263	* 49	-1	358
3	33	74	* 27	63	75	* 50	0	91
4	60	119	* 28	54	116	* 51	0	13331
5	57	127	* 29	104	124	* 52	-111	10669
6	57	117	* 30	63	73	* 53	0	3217
7	61	145	* 31	3	270	* 54	0	3296
8	40	66	* 32	5	286	* 55	0	121
9	71	123	* 33	58	111	* 56	0	40
10	64	74	* 34	2	201	* 57	0	6406
11	-6	59	* 35	4	270	* 58	12	186
12	13	201	* 36	63	110	* 59	63	80
13	4	284	* 37	4	278	* 60	0	1
14	12	200	* 38	63	115	* 61	0	0
15	12	198	* 39	63	71	* 62	0	25096
16	62	66	* 40	63	95	* 63	0	7
17	12	198	* 41	0	365	* 64	0	18219
18	11	179	* 42	0	4548	* 65	-22818	6619
19	2	214	* 43	0	40	* 66	-0	90
20	11	146	* 44	-0	5	* 67	0	0
21	76	93	* 45	-0	1	* 68	0	0
22	56	109	* 46	-1	8	* 69	0	0
23	54	115	* 47	-0	12	* 70	0	24
24	58	74	*					

IDAHO FALLS MONTHLY SUMMARY for March, 1981

Summarized on June 2, 1981

SYSTEM ENERGY FLOWS

INSOLATION(VERTICAL)HOLLIS	----	32359	BTU/FT2
EPPLEY	----	31243	BTU/FT2
SOLAR ENERGY COLLECTED	-----	4081230	BTU
DAILY COLLECTION EFFICIENCY	----	26.4	%
MAXIMUM 15-MIN EFFICIENCY	----	251.5	%
MINIMUM 15-MIN EFFICIENCY	----	0.0	%
MAX SWING IN STORED ENERGY	----	181942	BTU
NET CHANGE IN STORED ENERGY	----	-59903	BTU
DHW USAGE	-----	250	GAL
DHW NET ENERGY USAGE	-----	153763	BTU
SOLAR DELIVERED TO DHW HX	-----	710125	BTU
ENERGY LOSSES FROM DHW SYSTEM	----	843137	BTU

ELECTRICAL ENERGY USAGE

FURNACE	-----	2234900	BTU
DHW SYSTEM	-----	286492	BTU
HOUSE TOTAL	-----	4791850	BTU

SYSTEM TEMPERATURES

AMBIENT	MAX/MIN/MEAN/AVE	----	62	18	37	40	DEG F
HOUSE	MAX/MIN/MEAN	-----	74	55	67		DEG F
DHW TANK	MAX/MIN/MEAN	-----	109	71	90		DEG F
MAXIMUM ABSORBER	-----	218					DEG F
AVERAGE ABSORBER, MAX	-----	178					DEG F
AVERAGE STORAGE, MAX	-----	83					DEG F
AVERAGE STORAGE, MIN	-----	64					DEG F
MAXIMUM STORAGE	-----	116					DEG F
MINIMUM STORAGE	-----	60					DEG F

DEGREE-DAYS

15-MIN, HEATING/COOLING	-----	626	0	F	DEG-DAYS
DAILY MEAN, HEATING/COOLING	----	626	0	F	DEG-DAYS
MONTHLY MEAN, HEATING/COOLING	----	626	0	F	DEG-DAYS

WIND SPEED

MAX/MIN/MEAN	-----	12.1	-1.3	9	MPH
--------------	-------	------	------	---	-----

SOLAR FRACTIONS

SPACE HEATING	-----	.60
DHW SYSTEM	-----	.71
TOTAL	-----	.62

DATA AVAILABILITY

TIME POINTS(2976 MAX)	-----	2176
-----------------------	-------	------

DATA CHECK: Max and min values of DATA array(See IFEVAL program).

I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)	I	Dmin(I)	Dmax(I)
1	69	92	25	42	105	48	53	85
2	51	70	26	19	265	49	-0	375
3	42	109	27	64	82	50	0	69
4	56	119	28	55	117	51	0	12189
5	53	126	29	106	123	52	0	10211
6	51	118	30	64	79	53	0	10097
7	55	153	31	19	271	54	-1	3171
8	39	66	32	12	294	55	0	252
9	66	122	33	60	112	56	0	78
10	55	74	34	13	217	57	0	4567
11	18	62	35	20	238	58	22	178
12	26	218	36	64	112	59	64	83
13	15	262	37	15	248	60	0	0
14	23	192	38	63	116	61	0	0
15	22	184	39	62	74	62	0	21533
16	63	66	40	65	100	63	0	7
17	21	186	41	0	278	64	0	15053
18	21	169	42	0	4757	65	-16506	6117
19	15	209	43	0	34	66	-0	94
20	21	148	44	-0	5	67	0	0
21	69	92	45	-0	1	68	0	0
22	71	109	46	-2	6	69	0	0
23	63	116	47	-1	12	70	0	24
24	61	80	*					

"DATA" ARRAY IN DATA EVALUATION PROGRAM "IFEVAL"

	<u>Variable</u>	<u>Units</u>	<u>Description</u>
			<u>Temperatures</u>
DATA (1)	T(1)	°F	Reference Thermistor
(2)	T(2)	°F	House Return
(3)	T(3)	°F	Collector Supply
(4)	T(4)	°F	Storage Top, Air
(5)	T(5)	°F	Collector Return
(6)	T(6)	°F	Furnace Inlet
(7)	T(7)	°F	Furnace Outlet
(8)	T(8)	°F	DHW Water Inlet
(9)	T(9)	°F	DHW Water Outlet
(10)	T(10)	°F	House
(11)	T(11)	°F	Outside
(12)	T(12)	°F	Absorber #1
(13)	T(13)	°F	Vertical Stagnation Collector #5-6
(14)	T(14)	°F	Absorber #2
(15)	T(15)	°F	Absorber #3
(16)	T(16)	°F	Storage #5
(17)	T(17)	°F	Absorber #4
(18)	T(18)	°F	Absorber #5
(19)	T(19)	°F	Vertical Stagnation Collector #7-8
(20)	T(20)	°F	Absorber #6
(21)	T(21)	°F	Reference Thermistor
(22)	T(22)	°F	Top of DHW Preheat Tank
(23)	T(23)	°F	DHW Heat Exchanger Outlet, Water
(24)	T(24)	°F	Storage #11
(25)	T(25)	°F	DHW Heat Exchanger Inlet, Water
(26)	T(26)	°F	Tilting Stagnation Collector #1
(27)	T(27)	°F	Storage #14
(28)	T(28)	°F	DHW Heat Exchanger Outlet, Air
(29)	T(29)	°F	Top of DHW Aux. Tank
(30)	T(30)	°F	Storage #17
(31)	T(31)	°F	Tilting Stagnation Collector #2
(32)	T(32)	°F	Tilting Stagnation Collector #3
(33)	T(33)	°F	Storage #20
(34)	T(34)	°F	Tilting Stagnation Collector #4
(35)	T(35)	°F	Vertical Stagnation Collector #1
(36)	T(36)	°F	Storage #23
(37)	T(37)	°F	Vertical Stagnation Collector #2
(38)	T(38)	°F	Storage #26
(39)	T(39)	°F	Storage #28
(40)	T(40)	°F	Storage #29