STELLAR QUINTET: A SUITE FOR TWO VIOLINS, VIOLA, VIOLONCELLO, AND HARPSICHORD

THESIS

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By

Robert J. Frank, B.A., B.M.
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Stellar Quintet is a composition in five movements (Prologue, Allegro, "...Of Stars", Rondo, Epilogue) for two violins, viola, violoncello, and harpsichord. It makes extensive use of constellations, a term used in this work to denote arrangements of pitches in spatial notation. This method of notation is derived from actual astronomical constellations. The score makes use of both real and freely constructed constellations which are rotated around their own central axis. The score is 90 pages long with a 28 page analysis preceding the score. The work has a performance time of approximately 18-20 minutes.
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OVERVIEW OF THE WORK

stellar: adj. 1. of, relating to, or consisting of stars.
2. a. of, or relating to, a star performer.
   b. outstanding; principal; leading.

The above definition from the American Heritage Dictionary of the English Language was used as the basis for this work. Stellar Quintet, for harpsichord, two violins, viola, and violoncello, is a suite in five movements. Definition 1 was used in the writing of movements I, III, and V. Definition 2b was used for movement II, and definition 2a was used for movement IV.

The large-scale form of the work may best be represented by figure 1.

Figure 1. Chart of form.
Stellar Quintet opens and closes with slow, introspective movements which are connected without break to their adjacent movements. They are, as their subtitles indicate, short statements made directly to the audience, foreshadowing and summarizing the ideas and themes. These movements, along with movement III make use of constellations, a term used in this work to describe both the horizontal and vertical relationships of certain sets of pitches in spatially notated sections. Discussion of constellation notation will be reserved until the analysis of the third movement, which most fully explores its use.

Movements II and IV use only standard notation and explore the technical aspects of the instruments. Movement II concentrates on the vertical sonorities while movement IV centers around the linear aspects of the themes. Each movement showcases both individual performers and small ensembles of players. These two movements are also about the same length, giving the work as a whole a symmetrical form.

Movement III (...of Stars) is the only movement that is completely separate from the other movements. It is the longest, and most cerebral of all the movements. It is for that reason that the form shown in figure 1 was used. Movements I, III, and V serve as an exposition, development, and recapitulation, respectively. Movements II and IV function as contrasting sections, not only in tempo, but in texture and metric stability as well. All five movements are linked by use of a leitmotif, which is shown in example 1. This motif is used as a musical "punctuation mark"
throughout the work, serving as a cadential figure at climactic points. It is also used as the harmonic basis for various sections in some of the movements.

MOVEMENT I: PROLOGUE

The Prologue is in a three-part AB-AB-AB form. Each section consists of statements of constellations by the harpsichord followed by metered replies in the strings. The leitmotif introduces the first of these statements in the harpsichord, with constellations constructed primarily of perfect fifths and minor seconds. These statements are unaccompanied at first, followed by the entrance of a sustained A in the cello. This is answered by a two-voice reply in the strings, which uses the same pitches that were stated by the harpsichord.

In the second statement, the constellations are inverted and freely developed. This time the statement is accompanied by the opening two pitches (D-A) in the violins, which then introduce a slow half-step glissando. Following this, the first reply is transposed up a step and inverted, with the addition of a third voice.

The third section is the most active, with free development of the constellations over a three-voice, more dissonant (C-Gb) accompaniment. The third reply is less rigidly based on previous material. The glissando is now used in the reply as the strings approach the final D-A cadence, which the harpsichord echoes.
MOVEMENT II: ALLEGRO

The Allegro is in a modified sonata form, beginning *attacca* subito from the first movement. The exposition presents the themes until letter C, where there is a short bridge section. The development section, from letters D to J, is in free form, constituting a transition from isolated themes against accompaniment to interdependence of lines. The recapitulation consists of a short restatement of main themes at letter J followed by a coda, which diminishes to a quiet cadence.

The accompanimental figure (example 2) opens the exposition and establishes a pitch environment from which the main theme (example 3) is derived. The second chord is an inversion of the first, which is then transposed down a half-step. Also, if the upper note of the second chord is displaced down an octave, one sees that the second chord is a tritone transposition of the first. This gives each chord a major second surrounding the single note of the other chord, which causes a shift in tonal color rather than a change of harmony.
After the introduction of the accompanimental figure, the main theme answers it in the strings.

At letter A, the strings briefly develop the main theme while the harpsichord introduces the secondary motive (example 4). This new motive is of tertian construction as opposed to the quartal structure of the accompanimental figure, and serves as a catalyst throughout the movement to help agitate the pitch environment.

When the themes return at letter B, the chords of the accompanimental theme are inverted, as is the second half (chord 2) of the main theme. This builds into letter C, ending the exposition.

The development section begins with thematic fragments building up to the entrance of the *leitmotif* in the strings at letter D, over which the harpsichord has the second half of the main theme in diminution. The accompanimental figure is represented by a single chord transposed at the octave, and finally only a single line in the violoncello. These ideas are freely developed, with the addition of ascending sixteenth-note passages derived from the second half of the main theme. This section remains centered around the alternation between strings and harpsichord.

At letter F, the 1st violin and harpsichord freely exchange soloistic fragments over a slower, choral-like accompaniment derived from the main theme. At letter G the violoncello replaces the violin, with the accompaniment now using an expanded version of the secondary motive in the upper register. This builds into letter H, with the entire ensemble together in strict rhythm. Pyramid-like entrances build up to a climax at letter I.
At this point, the strings enter with the second half of the main theme in stretto over final developmental figures in the harpsichord. The strings respond to these figures with accented eighth-notes, which occur with greater frequency as the music builds to letter J.

In the recapitulation, the main theme and the accompanimental figure return transposed up a tritone, paralleling the intervallic relationship between the two chords on which they are based. In these statements, however, the violins continue the accompanimental figure as the lower strings present the main theme. After two of these alternating statements, the harpsichord extends the accompanimental figure over canonic entrances in the strings. This canon builds to letter K where the secondary motive returns in its expanded form. In the brief coda section which follows, the themes grow softer and fragment until cadencing quietly on the first chord of the accompanimental figure.
MOVEMENT III: "...OF STARS"

The third movement, "...of Stars", serves as the focal point of the work. The harpsichord makes substantial use of *constellation notation*. This is a new method of notation derived from diagrams of astronomical constellations on star maps. It was inspired by the observation that some constellations were easily recognizable at any degree of rotation. This work explores the aural aspects of this characteristic.

As stated in the Overview, the term *constellation* will be used in this work to describe both the horizontal and vertical relationships between sets of pitches in spatially notated sections. These relationships are between the note-heads in a X-Y coordinate system. In this movement, they were physically rotated on graph paper then transferred onto music staves. This rotation occurred around the mean center of the constellation (for all but the 180° rotation, to be discussed later) and were then freely transposed. Note-heads that did not fall exactly on a line or space on the staff were moved to the nearest conventional position with an accidental added to account for the alteration. As figure 2 shows, when the constellations are rotated, the intervalic and rhythmic placement of individual pitches may change, but the spatial relationship of these note-heads with regard to each other remains constant.
This extra-musical device was used as a means of development in this movement. Though the actual pitch and rhythmic content of the constellations varied from one rotation to another, some of the motivic characteristics remained recognizable. This was found by trial and error to be less effective when constellations were rotated beyond 45° from the vertical (original) position.

![Figure 2. Rotation of constellations.](image)

In actual performance of sections written in constellation notation, the lines connecting the pitches indicate the spatial grouping and phrasing of the set of pitches. The note-heads are played in a consistent time-line manner.

The constellations used in this movement are both freely composed as well as derived from actual astronomical constellations. A polar-centered star map was superimposed over a circular stave system (figure 3). The constellations were then isolated and the staves were straightened out. The resulting constellations were used as source material for the final forms used in the work. Though the integrity of the actual layout of the stars was respected, some minor adjustments were made for aesthetic reasons. This
work does not suppose to be a scientific study of the aural properties of groups of stars, but used these formations only as an inspiration for the creation of a musical work.
In the final copy of the score, the constellations may appear "stretched out" along the staves. This is due to the irregular length of the measures. During the composition of this movement, the measures had a consistent length of 2-3/8 inches. When the constellations were transferred to the final score, their spacing within each measure was adjusted proportionally to the length between bar lines.

The form of Movement III is **Introduction-A-A'-A"-A-coda**. The A sections consist of constellations rotated to different degrees in the harpsichord over a continual development in the strings. In each successive rotation the strings become more imitative of, and interactive with, the harpsichord. Each statement of the A material is separated by a brief transitional section in the strings.

The thematic treatment in this movement centers around the rotation of constellations and interaction with them. A complete listing of constellations used and their source is shown in figure 4. This illustration shows the constellations in the order which they are presented in the A section. Freely-composed constellations were constructed with both visual and aural properties in mind.
Figure 4. Chart of constellations.
The introduction begins with a modified version of the Canis Major (Big Dipper) constellation in the first violin. The other strings follow this with the initial statement of the principle accompanimental chords (example 5).


At letter A the harpsichord makes its first statement of the constellations in the order shown in figure 4. The accompaniment in the strings is very thin and fragmented. At letter B the strings briefly develop the ideas presented in the previous section.

In the first rotation at letter C, each constellation is independently rotated clockwise 45°. They are presented in the same order and some are transposed to different pitch levels. The string parts are more imitative in this section and begin to interact more with the harpsichord. The transitional section at letter D is longer than
the first. This time it continues directly into the next rotation section.

This rotation centered around middle C and was at 180°, giving the effect of literally "flipping" the staves upside-down. The constellations are now presented in reverse (retrograde) order. The strings have a much more active role in this section. Pizzicattos and glissandos accentuate the various statements. These statements begin by imitating the harpsichord but grow more independent as the section progresses, building into the climactic tutti statement in the final transitional section at letter F.

In the final A section at letter G the harpsichord has the original non-rotated constellations in standard notation rather than constellation notation, allowing the strings and harpsichord to be metrically aligned. The strings both double the harpsichord part and accompany that part with figures from throughout the movement. This leads into the coda, which quietly reiterates some of the principal ideas expressed in the movement. This then cadences in the harpsichord with the first two chords of the leitmotif in retrograde.
MOVEMENT IV: RONDO

In contrast to the third movement, Movement IV is entirely in standard notation. It is in rondo form A-B-A'-B'-A/B-coda. The A sections consist primarily of tutti statements with rapidly shifting harmonies, while the B sections are scored much thinner, with soloistic lines over ostinato accompaniments. In the coda the ostinato motives return, fragment, and diminish until the fifth movement, which begins without pause.

After a dramatic opening cadence, the A theme (example 6) begins in measure two, presented by the second violin. This theme is the longest in the entire work, and also provides a contrast from the motivic nature of the third movement. It immediately draws attention to the linear aspect of the themes in this movement. Ascending scalar passages, cadential eighth-note figures, and neighboring tone motives all combine to form this theme. They are used in alternation with one another along with shifting harmonies to provide a unity to the theme without becoming predictable.

The accompaniment consists of sparse eighth notes in tenths. As the theme progresses, the accompaniment becomes more interactive until the last four measures where both come together rhythmically to form the cadence. At letter A the strings briefly develop the A theme, passing motives between the first violin and the duo of the second violin and viola. This is followed at letter B by
the harpsichord soloing with fragments of the A theme. The strings join in to strengthen the cadence, closing the section.


At letter C the strings enter canonically with the B theme (example 7), which is derived from the pitches of the accompaniment to the A theme in the opening section.
Ten measures later, the viola and cello have the B theme in sixths with ostinato lines in the violins. This continues to build until letter D, where the viola has a solo line built upon the B theme. The harpsichord has an ostinato accompaniment which extends the harmonies over longer periods than the A section. The other string parts gradually enter and help build the energy until the return of the A material at letter E.

At this point the cello enters with the beginning of the A theme. Canonic entrances by the other string parts again build up the texture and then begin to fragment the theme until letter F, where the first violin and cello state a variation of the A theme with accented interjections by the other string parts. This section then closes with driving eighth-notes which increase in harmonic intensity until their abrupt final cadence.

The B theme returns quietly in the cello at letter G, again with an ostinato accompaniment in the harpsichord. The cello line is joined by the first violin at letter H. Both parts build in activity until letter I, where the entire ensemble has fragments of the B theme in augmentation. As the note values lengthen the tempo broadens, creating a dramatic rallentando before the return of both themes in the thematic final section.
When the original tempo returns two measures before letter J, the first violin and viola state the A theme and the second violin and cello present the B theme. The harpsichord enters at various points with motivic fragments of both themes. Finally, all of the string parts come together for the final cadential chords, which are echoed by the harpsichord and then sequenced up a step. This idea is next augmented in the strings with the harpsichord stating them in the same manner as the chords of the accompanimental theme from the second movement of the work. As the harpsichord fades out, the strings grow in dynamic and activity until the climactic return of the leitmotif before letter L, where the coda begins.

The material used in the coda is from the ostinato figure used in the first B section. As more parts fade out, the ideas become smaller, softer, and more isolated. A gradual ritard reduces the tempo, completing the group disintegration into the final movement of the work.
The Epilogue serves as a brief coda to the entire work, summarizing the principle motives from the previous movements. It is in a simple two-part form A-B.

The A section consists of a quiet chorale in the strings with short statements by the harpsichord after each phrase. The first phrase of the chorale is six beats long and contains the leitmotif in the cello. It is answered by a single chord in the harpsichord. The second phrase is only four beats long and uses the accompanimental chords of the third movement as its material. The harpsichord then answers it with the secondary motive from Movement II. The final two-beat phrase in the strings is extended by the harpsichord and echoed with quiet pizzicatos in the strings, closing the A section.

At letter A the B section begins. The harpsichord and muted strings have a collage of themes and constellations from the previous movements. The following excerpt (example 8) labels them as to their source. The relationships and similarities between various themes are brought out by their close proximity. This collage continues until eight measures after letter A, where the strings build to a mild climax on the accompanimental chords of Movement III. After a quiet restatement of the "Ursa Major (Big Dipper)" motive, the work ends in the same manner as the third movement with the same pitches (D-A) upon which it began.
Mvt. II: Accompanimental Figure

Mvt. II: Secondary Motive

Mvt. IV: A Theme

Mvt. III: "Big Dipper" motive

Mvt. III: Free-composed Constellation #4

Mvt. III: Cassiopeia Constellation

Mvt. IV: B Theme
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1988
Stellar Quintet

Mvt. I
Prologue

Note on performance of constellations:
Notes should be sounded at the point in the measure/time-line where they occur. Lines connecting the note heads indicate only the phrasing and grouping of the pitches. Notes within constellations should be sustained as long as possible.
Mvt. II
Allegro

Hpschd.

Vln. I

Vln. II

Vla.

Vcl.
in tempo

freely, solo
Mvt. III
"...Of Stars"

Epschd.

Freely, slowly

Vln. I

muted

Vln. II

muted

Vla.

muted

Cello

p

spatial: fit const.

into rough time

frame of bar.

37
Tempo Primo

rit...
trem. near bridge

Piu Mosso

pizz.

Piu Mosso

mf
pizz.
mf
pizz.
mf
pizz.

arco

mf

mf
remove mute arco dolce

arco
freely

remove mute

\( p \)
Mvt. IV
Rondo

Allegro

Hrpschd.

Vln. I

Vln. II

Vla.

Vcl.
Attacca Subito
(con sord.)

Attacca Subito
(con sord.)

(con sord.)

(con sord.)
Mvt. V
Epilogue

Hzpschd. con sord.

Vln. I

Vln. II

Vla.

Vcl.

(\(J=66\))