

Rand Steiger

Cryosphere

*commissioned by the Fromm Music Foundation at Harvard University
and the American Composers Orchestra*

chamber orchestra
with digital audio signal processing

Premiere:

February 20, 2009; Zankel Hall, New York City
American Composers Orchestra; George Manahan, conductor
Miller Puckette, computer music programming

Program Note:

The Earth's cryosphere (all of the surfaces where water is frozen) plays a critical role in the global climate system. Global warming is now reducing these surfaces precipitously, and we face great peril in the future if this process is allowed to continue. This piece draws inspiration from the cryosphere, particularly the way glaciers and icebergs form and dissolve. It embraces the beauty and mystery of these structures, while also lamenting their increasingly rapid and unnatural loss.

Cryosphere is scored for flute, oboe, bass clarinet, bassoon, horn, trumpet, trombone, 3 percussion, harp, electronic harpsichord, and chamber string orchestra. Real-time audio signal processing is deployed on all of the instruments enriching the natural sound of the orchestra with various transformations including spatialization, resonance, delay, and just intonation harmonizing.

Cryosphere was commissioned by the Fromm Music Foundation at Harvard University and the American Composers Orchestra, to whom I express my deep gratitude for this opportunity. I would also like to express my gratitude to Jody Steiger and Carlos Bonilla, and to Bill and Allene Plant, for their hospitality during crucial stages of my work on this piece.

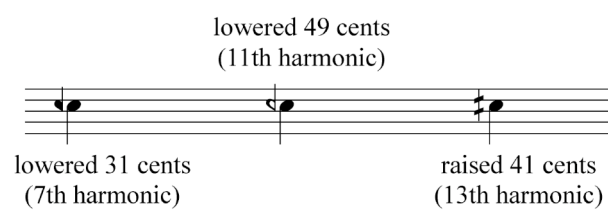
Dynamics:

The dynamic marking *n* is frequently used to indicate notes that begin imperceptibly and gradually fade in over the length of the indicated crescendo. Similarly, decrescendos that end at a rest without a dynamic marking indicate a complete diminuendo to silence. Please note the starting and ending points of these transitions precisely.

Accidentals and Microtonality:

Accidentals carry through the length of the bar, but only in the octave in which they appear.

The following special accidentals are used to indicate specific micro-intervals for just tuning. In the case of the horn and trombone, these pitches are to be realized by playing natural notes.



Horn: All glissandos are to be played as harmonic glissandos. All microtonal pitches specified are to be played as "natural tones" in the corresponding series. For example, F with a 49-cent quarter flat (see above) indicates playing the 11th harmonic in the series of B, while F with a 31-cent flat indicates the 7th harmonic in the series of G.

Trombone: Glissandos are to be played with the slide, unless the indication "Harm." appears above the gliss., indicating a harmonic glissando. All trills are to be played as lip trills to the pitch indicated, or to the next highest partial. As in the horn parts, microtonal notes are to be played as natural tones.

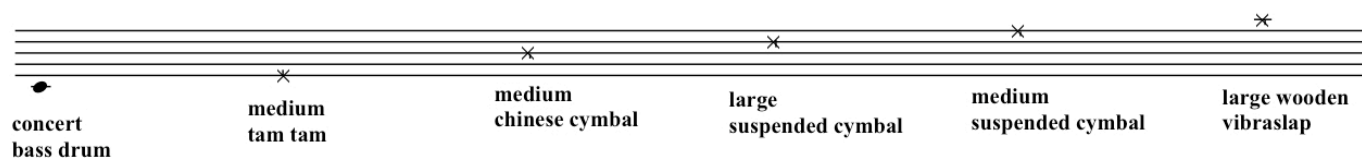
Keyboard: The electronic harpsichord part is played on an 88 key midi keyboard that controls a laptop with sample playback software. The lowest octave of the keyboard does not trigger audible notes, but rather indicates to the computer program a fundamental frequency to which other notes of the keyboard are then adjusted in a just relationship. Therefore the notes produced will not all be tempered, as they appear in the score. A hybrid just tuning scheme is deployed, where the intervals of the tritone (11th harmonic -49 cents), minor sixth (13th harmonic, +41 cents), and minor seventh (7th harmonic, -31 cents) are modified. For example, if the lowest note (A) is depressed, until another note in the lowest octave is depressed, all D#'s will be lowered 49 cents, all g's will be lowered 31 cents, and all F's will be raised 41 cents. **When a diamond shape note head (like those used to indicate string harmonics) appears in the left hand of the keyboard part, it is to be played ONE OCTAVE LOWER THAN NOTATED, and it indicates the playing of one of the silent fundamental notes explained above.** The only exception to this process is when A0 is depressed, which provides an equal tempered arrangement (this is used in measures 140 through 172).

Strings: All natural harmonics sound where they are notated. All indicated dyads are to be played non divisi (as double stops) by all players except when otherwise indicated. From measure 136 through 138 the violins and violas are to gradually introduce overpressure until the sound becomes completely distorted (by the OP mark), remaining that way until the bracket ends, and ord. is indicated. The bass part is always indicated one octave higher than sound, including in treble clef, except for harmonics, which are indicated in treble clef, *suono reale*.

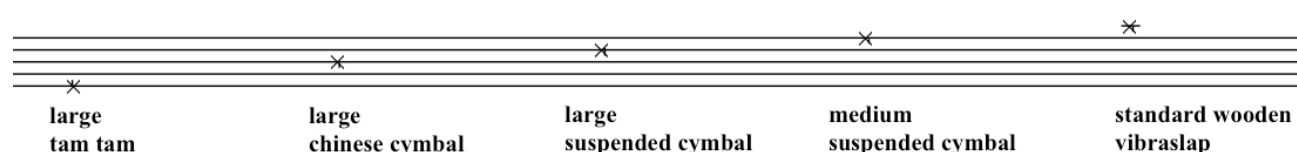
Percussion:

Cymbals, bass drums, and tam tams should always be allowed to ring unless otherwise indicated. Mallets are usually left to the discretion of the performer. Conventional bass drum and tam tam mallets should be used for those instruments, unless otherwise indicated. Cymbal rolls are to be performed with soft mallets. Wood sticks are sometimes indicated for single notes on the cymbals, and in this instance, medium weight, wood tipped drum sticks are recommended. When an S is indicated above a cymbal or tam tam note this indicates scraping with a light triangle beater, for the full length of the note.

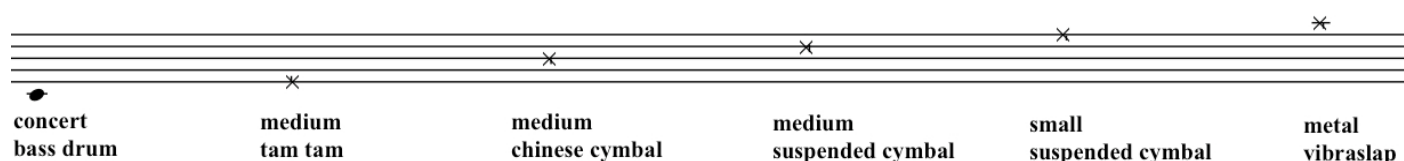
Percussion 1: Vibraphone and these non-pitched instruments:



Percussion 2: Crotales (standard two-octave set) and these non-pitched instruments:



Percussion 3: Vibraphone and these non-pitched instruments:



Vibraphones:

The two vibraphones must be the Musser M-55 Pro Vibe model. The composer will supply a custom tuned set of bars to replace one set on each instrument (diatonic set on Vibraphone 2 and chromatic set on vibraphone 1). The following chart shows the actual sound this will produce for each played note (see chart above for the definition of the microtonal accidentals used here):

The image shows two sets of musical notation for vibraphones. Each set consists of three staves: 'sound vib. 2', 'sound vib. 1', and 'note played'. The first set shows a diatonic scale for vib. 2 and a chromatic scale for vib. 1. The second set shows a chromatic scale for vib. 2 and a diatonic scale for vib. 1. The notes are marked with microtonal accidentals.

Harp:

The harp part is *Sempre L.V.* unless otherwise indicated. Harmonics sound an octave higher than the notated pitch. The harp part also has a microtonal tuning adjustment. The following chart indicates the 10 strings that are to be alternatively tuned (the remaining strings should all conform to conventional tuning):

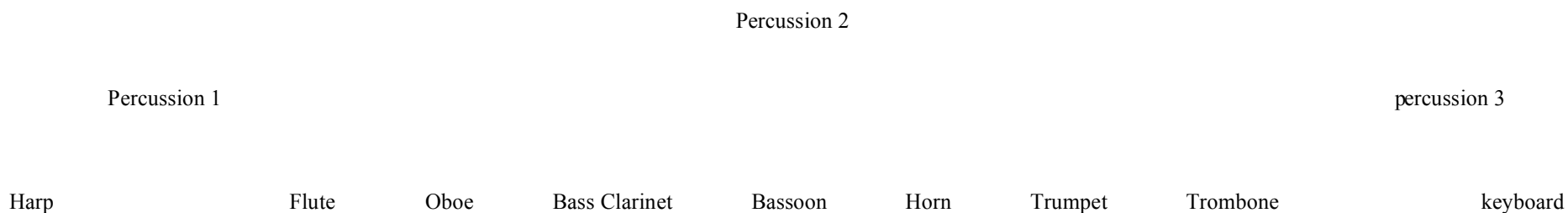
The image shows musical notation for harp strings. It consists of two staves: 'resulting sound' and 'note played'. The notes are marked with microtonal accidentals. Below the notes, there are tuning adjustments in cents: -31 cents, -31 cents, -31 cents, -31 cents, -31 cents, -49 cents, -49 cents, -49 cents, -49 cents, and -49 cents.

Electronics:

A laptop computer running Miller Puckette’s Pd software is used to signal process the sound of the instruments in a variety of ways throughout the piece. Hypercardioid microphones are to be used on the winds and brass instruments, and the harp (and routed directly into the computer audio interface). A stereo mix of the string section, and mono mixes of each percussion station should also be routed, through the house mixer, into the computer audio interface. Six channels of processed sound are then returned to the house system. Channels 1 and 2 are amplified through a pair of speakers located at the foot of the stage in front of the strings (one near the back of the violin section, the other near the back of the cello section). The remaining four channels are to be amplified through house speakers in the conventional quadraphonic arrangement. Great care is to be taken when setting the level of the signal processing amplification. The sound from the speakers should not be louder than the original acoustical sound of the instruments. Ideally, the listener will hear the natural sound of the orchestra, along with a “halo” of transformed sound, blending together equally. Monitor speakers are not necessary for the performers. The orchestra should follow the indicated dynamics and balance and tune in the usual manner. The electronic processing follows the performance, and therefore the conductor has complete interpretive freedom.

Stage Diagram:

The ensemble is to be set up in the configuration indicated below (behind the conventional string arrangement). Percussion 2 and Bassoon are to be centered, Harp and Percussion 1 should be as far right as possible, and keyboard and percussion, as far left, using as much of the stage width and depth as possible to avoid instruments blending into each others microphones.



Contact:

For further information please contact the composer by email to this address:

rand@ucsd.edu

Additional information may be found on the following web site:

http://rand.info

information about Pd software, may be found on Miller Puckette’s website:

http://crca.ucsd.edu/~msp/pdrp/latest/doc/

Score in C

Cryosphere

Rand Steiger

The score is divided into three main sections with tempo markings: $\bullet = 60$, $\bullet = 120$, and $\bullet = 60$. The instruments and their parts are as follows:

- Flute**: Part 1, Part 2
- Oboe**: Part 1, Part 2
- B♭ bass clarinet**: Part 1, Part 2
- Bassoon**: Part 1, Part 2
- Horn**: Part 1, Part 2 (with cup mute through m. 124)
- C trumpet**: Part 1, Part 2 (with cup mute through m. 120)
- Trombone**: Part 1, Part 2
- Percussion 1**: S, *pp* < *mf*, *ppp* < *mf*, *ppp* < *mf* >, *p*
- Percussion 2**: S, *pp* < *mf*, *ppp* < *mf*, *ppp* < *mp*
- Percussion 3**: S, *pp* < *mf*, *p* < *mf*, *ppp* < *mf* >, *pp*
- Harp**: D₂, C₂, B₁, / E₂, F₂, G₂, A₂
- Electronic harpsichord**
- Violin I a.**: *sul pont.*, *ppp*, *f*, *p*
- Violin I b.**: *sul pont.*, *ppp*, *f*, *p*
- Violin II a.**: *sul pont.*, *ppp*, *f*, *p*
- Violin II b.**: *sul pont.*, *ppp*, *f*, *p*
- Viola a.**: *sul pont.*, *ppp*, *f*, *p*
- Viola b.**: *sul pont.*, *ppp*, *f*, *p*
- Cello 1**: *sul pont.*, IV, *ppp*, *f*, *p*
- Cello 2**: *sul pont.*, IV, *ppp*, *f*, *p*
- Cello 3**: *sul pont.*, IV, *ppp*, *f*, *p*
- bs.**: *sul pont.*, I, *ppp*, *f*, *p*

10 $\bullet = 60$ *accel.* $\bullet = 90$

fl. *n* *mf*

ob. *n* *mf*

bass cl. *f* *n* *f* *ppp (pos.)*

bsn. *f* *ppp (pos.)*

hn. $\bullet = 60$ *accel.* $\bullet = 90$

tpt. *cup mute* *n* *mf*

trb. *cup mute* *n* *mf*

perc. 1 $\bullet = 60$ *accel.* $\bullet = 90$

perc. 2 *ppp* *mp* *ppp* *mp* *ppp* *mf* *S*

perc. 3 *ppp* *mp* *ppp* *mf* *S* *pp*

10 $\bullet = 60$ *accel.* $\bullet = 90$

vln. I a. *ppp* *mp* *pp* *f* *mp*

vln. I b. *ppp* *mp* *pp* *f* *mp*

vln. II a. *pp* *f* *mp*

vln. II b. *ppp* *f* *mp*

vla. a. *ppp* *mp* *pp* *f* *mp*

vla. b. *ppp* *mp* *pp* *f* *mp*

vc. 1 *ppp* *f* *mp*

vc. 2 *ppp* *f* *mp*

vc. 3 *ppp* *f* *mp*

bs. *ppp* *f* *mp*

17 *accel.*..... ♩ = 120

fl.
ob.
bass cl.
bsn.
hn.
tpt.
trb.

accel...... ♩ = 120

perc. 1
perc. 2
perc. 3

accel...... ♩ = 120

17
vln. I a.
vln. I b.
vln. II a.
vln. II b.
vla. a.
vla. b.
vc. 1
vc. 2
vc. 3
bs. 1
bs. 2

rit...... ♩ = 80

bass cl.

bsn.

rit...... ♩ = 80

perc. 1

perc. 2

perc. 3

rit...... ♩ = 80

hp.

hpschd.

rit...... ♩ = 80

24

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla. a.

vla. b.

vc. 1

vc. 2

vc. 3

bs. 1

bs. 2

bass cl. *n* *mf*

bsn. *ppp*(pos.) *mf*

perc. 1 *rit.* ♩ = 60 ♩ = 120

perc. 2

perc. 3

hp. *rit.* ♩ = 60 ♩ = 120

C# E2 G# B# F# C# D# Bb

hpschd.

vln. I a. *(sul pont.)* *ppp* *mp*

vln. I b. *(sul pont.)* *ppp* *mp*

vln. II a. *(sul pont.)* *ppp* *mp*

vln. II b. *(sul pont.)* *ppp* *mp*

vla. a. *(sul pont.)* *ppp* *mp*

vla. b. *(sul pont.)* *ppp* *mp*

vc. I *ord. II* *ppp* *mf* *sul pont.* *ppp* *mp*

vc. II *ord. III* *ppp* *mf* *sul pont.* *ppp* *mp*

vc. III *ord. III* *ppp* *mf* *sul pont.* *ppp*

bs. 1 *mf* *sul pont. IV* *ppp*

bs. 2 *mf* *sul pont. IV* *ppp*

45 *accel.* ♩ = 60

fl.

ob.

bass cl.

bsn.

accel. ♩ = 60

hn.

tpt.

trb.

accel. ♩ = 60

perc. 1 *vibraphone*

perc. 2 *crotales*

perc. 3 *vibraphone*

accel. ♩ = 60

hp.

hpschd.

45 *ord.* *accel.* ♩ = 60 *pizz.* (individual rapid aperiodic repetitions of indicated pitch)

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla. a.

vla. b.

vc. 1.

vc. 2.

vc. 3.

bs. 1.

bs. 2.

50

rit. -----

fl.

ob.

bass cl.

bsn.

perc. 1

perc. 2

perc. 3

rit. -----

hp.

rit. -----

hpschd.

rit. -----

50

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla. a.

vla. b.

vc. 1

vc. 2

vc. 3

bs.

55 (rit.) ♩ = 40

fl. *n* *mf* *n*

ob. *n* *mf* *n* *mf* *n* *mf*

bass cl. *n* *mf* *n* *p*

bsn. *n* *mf* *p* *mf* *p* *mf*

(rit.) ♩ = 40

hn. *n*

tpt. (cup mute) *n* *p* *n* *p*

(rit.) ♩ = 40

perc. 1 *p* *mp* *

perc. 2 *mp*

perc. 3 *mp* *

hp.

hpschd. *mp* *

55 (rit.) ♩ = 40

vln. I *arco* *n* *mf* *p*

vln. II *arco* *n* *mf* *p*

vla. *arco* *n* *mf* *p*

vc. *arco* *n* *mf* *p*

bs. *arco* *n* *mf* *p*

62

fl. *mf*

ob. *n* *p*

bass cl. *n* *p*

bsn. *p* *mf* *mf* *pp* *mf*

hn. *mf* *n* *p*

tpt. *n* *p* *n* *mf*

trb. (cup mute) *n* *p*

Detailed description: This system contains the woodwind parts for measures 62-65. The flute (fl.) starts with a half note *mf* in measure 62, then rests. The oboe (ob.) plays a triplet of eighth notes in measure 62, then a half note *p* in measure 63, and a half note *n* in measure 64. The bass clarinet (bass cl.) plays a half note *n* in measure 62, then a half note *p* in measure 63, and a half note *n* in measure 64. The bassoon (bsn.) plays a half note *p* in measure 62, then a half note *mf* in measure 63, and a half note *pp* in measure 64. The horn (hn.) plays a half note *mf* in measure 62, then a half note *n* in measure 63, and a half note *p* in measure 64. The trumpet (tpt.) plays a half note *n* in measure 62, then a half note *p* in measure 63, and a half note *n* in measure 64. The trombone (trb.) plays a half note *n* in measure 62, then a half note *p* in measure 63, and a half note *n* in measure 64. The time signature changes from 3/4 to 5/4 to 4/4.

62

vln. I *n* *mf* *p*

vln. II *n* *mf* *p*

vla. *n* *mf* *p*

vc. *n* *mf* *p*

bs. *n* *mf* *p*

Detailed description: This system contains the string parts for measures 62-65. The violin I (vln. I) plays a half note *n* in measure 62, then a half note *mf* in measure 63, and a half note *p* in measure 64. The violin II (vln. II) plays a half note *n* in measure 62, then a half note *mf* in measure 63, and a half note *p* in measure 64. The viola (vla.) plays a half note *n* in measure 62, then a half note *mf* in measure 63, and a half note *p* in measure 64. The violoncello (vc.) plays a half note *n* in measure 62, then a half note *mf* in measure 63, and a half note *p* in measure 64. The double bass (bs.) plays a half note *n* in measure 62, then a half note *mf* in measure 63, and a half note *p* in measure 64. The time signature changes from 3/4 to 5/4 to 4/4.

68

fl. *n* *p* *n* *mf* *n* *mf*

ob. *n* *p* *n* *mf* *n* *mf* *n* *mf*

bsn. *p* *mf* *p* *mf* *ppp* *mf* *p* *mf* *p* *mf*

hn. *n* *p* *n* *mf* *n* *mf*

tpt. *n* *p* *n* *p* *n* *p*

trb. *n* *p*

Detailed description: This system contains the woodwind parts for measures 68-71. The flute (fl.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The oboe (ob.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The bassoon (bsn.) plays a half note *p* in measure 68, then a half note *mf* in measure 69, and a half note *ppp* in measure 70. The horn (hn.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The trumpet (tpt.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The trombone (trb.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The time signature changes from 3/4 to 5/4 to 4/4.

68

vln. I *ppp* *p*

vln. II *n* *p*

vla. *n* *p*

vc. *n* *p*

bs. *n* *p*

Detailed description: This system contains the string parts for measures 68-71. The violin I (vln. I) plays a half note *ppp* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The violin II (vln. II) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The viola (vla.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The violoncello (vc.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The double bass (bs.) plays a half note *n* in measure 68, then a half note *p* in measure 69, and a half note *n* in measure 70. The time signature changes from 3/4 to 5/4 to 4/4.

♩ = 60

75

fl. *n* *p* *n* *mf* *n* *mf*

ob. *n* *p* *n* *mf* *n* *mf*

bass cl. *n* *p* *n* *mf* *n* *mf*

bsn. *p* *mf* *p* *mf* *n* *p* *f* *ppp* *f* *p*

♩ = 60

hn. *n* *p* *n* *f* *n* *mf*

tpt. *n* *mf* *n* *mf* *n* *mf*

trb.

♩ = 60

perc. 1 *vibraphone* *mf* *5* *5* *5*

perc. 2 *crotales* *mf* *5* *3*

perc. 3 *vibraphone* *mf* *3* *5* *3* *5*

hp. *D₄ C₄ B₃ / E₄ F₄ G₄ A₄* *mf* *3* *3*

hpschd. *mf* *3* *3* *

♩ = 60

75

vln. I *ppp* *p* *ppp* *p*

vln. II *n* *p*

vla. *n* *mf* *p* *n* *p*

vc. *n* *mf* *p* *ppp*

bs. *n* *mf* *p* *ppp*

82 *rit.*.....♩ = 40

fl. *n* < *mf*

ob. *n* < *p* *n* < *mf* > *p* *n* < *mf*

bass cl.

bsn. *mf* *pp* < *mf* *p* < *mf* *pp* < *f*

rit......♩ = 40

hn. *n* < *mf*

tpt. *n* < *mf* > *p* *n* < *mf*

rit......♩ = 40

hpschd.

82

vln. I *ppp* < *p* *f* < *p*

vln. II *ppp* < *p* *div.* *n*

vla. *ppp* < *p* *ppp* < *mf*

vc. *p* *ppp* < *mf*

bs. *p* *n* < *mf* > *p* *ppp* < *mf*

89 *accel.*.....♩ = 80 *rit.*.....♩ = 60

fl. *n* < *p* *n* < *mf*

ob. *n* < *p*

bass cl. *n* < *f* > *p*

bsn. *n* < *p* *n* < *mf*

accel......♩ = 80 *rit.*.....♩ = 60

hn. *n* < *p* *n* < *mf*

tpt. *n* < *p*

89 *div.*

vln. I *ppp* < *mf*

vln. II *p* (*#* continues *p*) *n* < *p*

vla. *ppp* < *mf*

vc. *ppp* < *mf*

bs. *n* < *mf*

96

fl.

ob.

bass cl.

bsn.

hn.

tpt.

trb.

96

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla.

vc.

bs.

102

fl.

ob.

bass cl.

bsn.

hn.

tpt.

trb.

102

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla.

vc.

bs.

108

fl.

ob.

bass cl.

bsn.

hn.

tpt.

trb.

perc. 1

perc. 2

perc. 3

hp.

hpschd.

108

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla.

vc.

bs.

n *mf*

n *f*

fp *f* *pp* *f* *fp* *f* *pp* *n* *f*

(cup mute) *n* *mf* *sfz* *p* *f* *pp* *f* *pp* *f* *p* *f*

vibraslap
(close to mic.) *mp*

vibraslap
(close to mic.) *mp*

vibraslap
(close to mic.) *mp*

f

n *f*

114

fl. *pp* \langle *ff* *f* ⁵ *sfzp* \langle *ff* *f* *pp* \langle *f* ⁵

ob. *pp* \langle *ff* *f* ⁵ *sfzp* \langle *ff* *f* *pp* \langle *f* ⁵

bass cl. *p* \langle *f* *n* \langle *f* *n* \langle *f* *p* \langle *f*

bsn.

hn. *pp* \langle *f* *pp* \langle *f* *pp* \langle *f* *pp* \langle *f*

tpt. (cup mute) *pp* \langle *ff* *f* ⁵ *sfzp* \langle *ff* *f* *pp* \langle *f* ⁵

trb. *sfzp* \langle *f* *harm.* *harm.* (IV) *fp* \langle

perc. 1 *mf*

perc. 2

perc. 3 *mf*

hp.

hpschd.

114

vln. I a. *n* \langle *f*

vln. I b. *n* \langle *f*

vln. II a. *n* \langle *f*

vln. II b. *n* \langle *f*

vla. *n* \langle *f*

vc. (D# continues through change of clef)

bs.

118

fl. *sfzp* *f* *sfzp* *f*

ob. *sfzp* *f* *sfzp* *f*

bass cl. *n* *f* *n* *f*

bsn. *f*

hn. *sfzp* *f* *sfzp* *f*

tpt. *sfzp* *f* *sfzp* *f*

trb. *f* *remove mute* *(senza sord.)* *fp*

perc. 1 bass drum *ppp* *mp*

perc. 2 *mf* *f*

perc. 3 *mf*

hp. (loud and noisy) *fff*

118

vln. I a.

vln. I b. *n* *f*

vln. II a. *n* *f*

vln. II b. *n* *f*

vla.

vc. *n* *f*

bs. *n* *f*

123

fl. *sfzp* *f* *sfzp* *f* *p* *f*

ob. *sfzp* *f* *sfzp* *f* *f* *p*

bass cl. *p* *f* *p* *f*

bsn. *f* *f* *f* *f*

hn. *sfzp* *f* *p* *f*

tpt. *sfzp* *f* *remove mute* *(senza sord.)* *f* *p* *n*

trb. *harm.* *f* *f* *p* *n* *f* *harm.*

perc. 1 *vibraslap* *f* *wood sticks* *mf*

perc. 2 *f*

perc. 3 *bass drum* *pp* *mp*

hp. *8vb*

123

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla. *(III)* *n* *f*

vc. *II* *n* *f*

bs.

132

fl.

ob.

bass cl.

bsn.

hn.

tpt.

trb.

perc. 1

perc. 2

perc. 3

hp.

132

vln. I a.

vln. I b.

vln. II a.

vln. II b.

vla.

vc.

bs.

*gradually introduce over-pressure until the sound is completely distorted at the OP marking, continuing through the length of the bracket

$\text{♩} = 112$

137

fl. *sfz* *p* *ff* *pp* *ff* *n*

ob. *sfz* *p* *ff* *pp* *ff* *n*

bass cl. *ff* *sfz* *p* *ff* *pp* *ff* *n*

bsn. *ff* *pp* *n*

hn. *ff*

tp. *ff* *ffp* *f*

trb. *ff* *ffp* *f*

$\text{♩} = 112$

perc. 1 soft mallets *f* wood sticks *mf*

perc. 2 *f* (vibraslap close to microphone) *ff* wood sticks *mf*

perc. 3 *f* *pp* *f* wood sticks *mf*

hp. *ff* (loco)

hpschd. *mf*

$\text{♩} = 112$

137

vln. I a. *OP* *saltando* *fff* *ord.* *p* *ff* *p*

vln. I b. *OP* *saltando* *fff* *ord.* *p* *ff* *p*

vln. II a. *OP* *saltando* *fff* *ord.* *p* *ff* *p*

vln. II b. *OP* *saltando* *fff* *ord.* *p* *ff* *p*

vla. *OP* *saltando* *fff* *ord.* *p* *ff* *p*

vc. *fff* *f*

bs. *fff* *f*

142

fl.

ob.

bass cl.

bsn.

hn.

tpt.

trb.

perc. 1

perc. 2

perc. 3

hp.

hpschd.

142

vln. I

vln. II

vla.

vc.

bs.

ff *p* *ff* *p* *ff* *ff* *pp* *ff*

ff *p* *ff* *p* *ff* *ff* *pp* *ff*

ff *sfzp* *ff* *sfzp* *ff* *ff* *sfzp* *ff* *sfzp* *ff*

ff *p* *ff* *p* *ff* *p* *ff* *n* *ff*

ff *ffpp* *ff*

ff *ffpp* *f* *ff* *ffpp* *f* *ff* *ffpp*

ff *ffpp* *f* *ff* *ffpp* *f* *ff* *ffpp*

ppp

ppp *mf*

*G*₄ *D*₂

*F*_#

ff *p* *mf* *p* *mf* *p* *mf* *p*

f *p* *ff* *p* *ff* *mf* *ff* *p* *ff* *mf*

f *p* *ff* *p* *ff* *mf* *ff* *p* *ff* *mf*

f *p* *ff* *p* *ff* *mf* *ff* *p* *ff* *mf*

152

fl. *ff* *ff* *ff* *pp* *ff* *ff*

ob. *ff* *pp* *ff* *pp* *ff* *ff*

bass cl. *ff* *ff* *sfzp* *ff* *pp* *ff*

bsn. *pp* *ff* *pp* *ff* *ff* *pp*

hn. *f* *ffp* *f*

tpt. *ff* *ffp* *f*

trb. *f*

perc. 1 *ppp* *mf* *ppp* *mf* *ppp* *mf*

perc. 2 *ppp* *mf*

perc. 3 *ppp* *mf*

hp. \oplus \oplus \oplus \oplus
D₂ A₂ *C₂* *D₂ C₂ B₂ / E₂ F₂ C₂ A₂*

hpschd.

152

vln. I *p* *ff* *mf* *ff* *mf* *ff*

vln. II *p* *ff* *mf* *ff* *mf* *ff*

vla. *p* *ff* *mf* *ff* *mf* *ff*

vc.

bs.

♩ = 48

157

fl. *sfzp* *ff* *ff* *p* *ff* *sfzp* *ff*

ob. *sfzp* *ff* *ff* *p* *ff* *fff* *n < f*

bass cl. *ff* *pp* *ff* *p* *ff* *fff* *n < f*

bsn. *ff* *pp* *ff* *p* *ff* *fff* *n < f*

♩ = 48

hn. *mf* *fff* *8vb - - loco*

tpt. *ffp* *ff* *sfzp* *f*

trb. *fp* *ff* *sfzp* *f*

♩ = 48

perc. 1 bass drum mallet *ppp* *f* wood sticks *f*

perc. 2 tam tam mallet *f* wood sticks

perc. 3 *p* *f*

♩ = 48

hp. *ff* *8vb - -* *(all but low C)* *(loco)* *D₃ A₃* *b* *D₄*

hpschd. *f* *8va* *** *8va* *8va*

♩ = 48

157

vln. I *fff*

vln. II *fff*

vla. *fff*

vc. *fff* *p < ff* *fff*

bs. *fff* *p < ff*

163

fl. *sfzp* *ff* *sfzp* *ff* *p* *ff* *p* *fff*

ob. *sfzp* *ff* *sfzp* *ff* *p* *ff* *p* *fff* *ff*

bass cl. *sfzp* *ff* *sfzp* *ff* *p* *ff* *fff*

bsn. *sfzp* *ff* *sfzp* *ff* *p* *ff* *fp* *fff* *ff*

hn. *sfzp* *ff* *ff* *p* *fff*

tpt. *ff* *p* *ff* *sfzp* *f* *p* *ff*

trb. *ff* *p* *ff* *sfzp* *f* *p* *ff*

perc. 1 tam tam mallet *mf* soft mallets *f* wood sticks *pp* *mf* wood sticks *f*

perc. 2 tam tam mallet *mf* wood sticks *f* tam tam mallet *mf*

perc. 3

hp. *A₁ E₃ B₃* *ff*

hpschd. *Reo* *Reo* *Reo* *Reo* *Reo*

163

vln. I *fff* *ff*

vln. II (tune with horn) *n* *ff* *ff*

vla. *div. pizz.* *div. arco* *n* *ff* *fff* *ff* *non div.*

vc. *p* *fff*

bs. *fff*

170

fl. *f* *mf* *n* *mf*

ob. *f* *mf* *n* *f* *n* *mf*

bass cl. *f* *mf* *mf*

bsn. *f* *n* *f*

hn. *f* *mf* *mp*

tpt. *f* *mf* *mp*

trb. *f* *mf* *mp*

perc. 1 *mf* tam tam mallet *mp* soft mallets *ppp*

perc. 2 wood sticks *mf* soft mallets *mp*

perc. 3 tam tam mallet *mf* wood stick

hp. *f* *mf* *D₃*

hpschd. *And.* *

170

vln. I a. *f* *mf* (unis.)

div. vln. I b. *f* *n* *mf* (unis.)

vln. II *f* *mf*

vla. *f* *mf*

vc. *f* *mf*

bs. *f* *mf*

177 *rit.*..... ♩ = 48 (♩ = ♩)

fl. *n* *mf* *n* *mp*

ob. *n* *mf*

bass cl. *n* *mp*

bsn. *n* *mf*

rit...... ♩ = 48 (♩ = ♩)

hn. *pp*(pos.) *mf* *pp*(pos.) *mp*

tpt.

trb.

rit...... ♩ = 48 (♩ = ♩)

perc. 1 *p*

perc. 2 tam tam mallet *p*

perc. 3 soft mallets *ppp* *p*

rit...... ♩ = 48 (♩ = ♩)

hp.

hpschd.

177 *rit.*..... ♩ = 48 (♩ = ♩)

vln. I *pp* *mp*

vln. II *mp*

vla. *mp*

vc. *pp* *mp*

bs.

184 ♩ = 48

fl. *n* *mf*

ob. *n* *mp*

bass cl.

bsn. *n* *mp*

♩ = 48

hn. *n* *mp*

♩ = 48

perc. 1 *S* *p* *vibraphone* *mp* *5* *♯* (hold through m.204)

perc. 2 *crotales* *mp* *3*

perc. 3 *vibraphone* *mp* *5* (hold through m.202) *5*

♩ = 48

hp. *D₃ C₃ B₂ / E₃ F₃ G₃ A₃* *mp* (sempre l.v. through the end)

hpschd. *pp* *mp* (hold through m.201)

♩ = 48

184 (8^{va})

vln. I *pp* *mf* *pp* *mf* *pp* *mf* *pp* *mf* *pp*

vln. II *pp* *mf* *pp* *mf* *pp* *mf* *pp* *mf* *pp* *mf*

vla. *pp* *mf*

vc. *pp* *mf* *pp* *mf* *pp* *mf* *pp* *mf* *pp* *mf*

bs. *pp* *mf* *pp* *mf*

190

Musical score for measures 190 to 194. The score includes parts for Flute (fl.), Oboe (ob.), Bass Clarinet (bass cl.), Bassoon (bsn.), Horn (hn.), Percussion 1 (perc. 1), Percussion 2 (perc. 2), Percussion 3 (perc. 3), Harp (hp.), and Harpsichord (hpschd.). The time signature changes from 3/4 to 4/4 between measures 191 and 192. Dynamics include *n*, *mf*, and *mp*. The woodwinds and bassoon play sustained notes with dynamic markings. The percussion parts feature rhythmic patterns with triplets and quintuplets. The harp and harpsichord provide harmonic accompaniment.

190

Musical score for measures 190 to 194 for the string section, including Violin I (vln. I), Violin II (vln. II), Viola (vla.), Violoncello (vc.), and Bass (bs.). The time signature changes from 3/4 to 4/4 between measures 191 and 192. Dynamics include *mf* and *pp*. The strings play sustained notes with dynamic markings and some rhythmic patterns. A first ending bracket is indicated above the Violin I part in measure 190.

196

fl.

ob.

bass cl.

bsn.

hn.

perc. 1

perc. 2

perc. 3

hp.

hpschd.

Detailed description of the score for measures 196-200: This section includes staves for flute (fl.), oboe (ob.), bass clarinet (bass cl.), bassoon (bsn.), horn (hn.), three percussion parts (perc. 1, 2, 3), harp (hp.), and harpsichord (hpschd.). The woodwinds and horn play melodic lines with dynamics ranging from *n* (pianissimo) to *mf* (mezzo-forte). Percussion parts feature complex rhythmic patterns with triplets and quintuplets. The harp and harpsichord provide harmonic accompaniment with various articulations and dynamics.

(Sua)

196

vln. I

vln. II

vla.

vc.

bs.

Detailed description of the score for measures 196-200: This section includes staves for Violin I (vln. I), Violin II (vln. II), Viola (vla.), Violoncello (vc.), and Bass (bs.). The strings play sustained melodic lines with dynamic markings of *mf*, *pp*, and *p*. The Viola part includes a specific instruction: "(fade out G)". The Bass part features a melodic line with a dynamic shift from *pp* to *mf*.

