

Crystallum

for amplified string quartet & fixed media

Idin Samimi Mofakham





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2021

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Explanation of signs:

-  crescendo dal niente
-  decrescendo al niente
-  continuous repetition of the given pitches.
-  rapid rupture of the sound (on page 10 and at the end)

Bowing:

At each entrance, bowing should be as slow as possible, while repeating the same pitch, the speed of bowing should vary between slow and very fast, never in sync with others.

Notation:

The composition uses the Extended Helmholtz-Ellis JI Pitch Notation (HEJI) to notate the microtones in this score. In addition to the explanation of the HEJI accidentals, which you will find at the beginning of the score to facilitate rehearsal and performance, I have explained the specifics of each pitch in the score in two additional ways:

- 1- as a ratio in relation to the tonal centre of the piece, i.e. D natural.
- 2- as natural harmonic with its fundamental open string.



Technical equipment required:

- Four contact microphones for the amplification of each instrument
- a quadraphonic sound spatialization system

Amplification:

All four instruments should be amplified, and their sound should be defused into the playback system, including the fixed media material. If needed, a moderate reverb considering the size of the room should be added.

Tuning:

When tuning the strings of instruments, please take time to obtain clear, resonant, and beatless pure Pythagorean fifths, so the pitches of the open strings would be (from highest) : E +2¢, A +0, D -2¢, G -4¢, C -6¢, (Pythagorean tuning), considering that my music, is based on them.

The concert pitch note for this piece is A4 = 442 Hz.

Commissioned by **NeoQuartet**.

World premiere on 29th October 2021,

at 10. NeoArte Synthesizer of **Arts Festival Gdansk**, Poland.

Program Note:

"Crystallum" is a journey into the depth of the sounds by investigating the internal and invisible relationships of their inner components and the complex network of their nature.

The piece is structured on the relationship and the mapping of all the possible natural harmonic nodes on the strings of each independent instrument of a string quartet.

"Crystallum" is a compositional kaleidoscope of networks, organized with sounds in several levels and categories and pictured from different angles.

"Crystallum" is the thin thread between the past and the present, orient and occident, Maqam/Adwar system, and Just Intonation music and inspired by the nomadology concept of Gilles Deleuze.

Duration: c. 15'

D 23154

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Crystallum

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$\text{♩} = 60$

0" 5"

10"

15"

20"

25"

30"

35"

40"

45"

50"

55"

The musical score is divided into five measures, each 5 seconds long. The parts are as follows:

- Vln. I:** Remains silent throughout the piece.
- Vln. II:** Enters at 25" with a whole note chord of A4° (A4, C#4, E4) at *mf*. It continues with a whole note chord of D5° (D5, F#5, A5) at 50".
- Vla.:** Enters at 15" with a whole note chord of A3° (A3, C#3, E3) at *mf*.
- Vc.:** Enters at 10" with a whole note chord of C10° (C10, E10, G10) at *mf*.
- Tape:** Enters at 35" with a whole note chord of G8° (G8, B8, D9) at *mf*. It continues with a whole note chord of D5° (D5, F#5, A5) at 50".

Each part is marked with a dynamic of *mf* (mezzo-forte). The score includes various musical notations such as stems, beams, and chord symbols.

1'00" 1'05" 1'10" 1'15" 1'20" 1'25" 1'30" 1'35" 1'40" 1'45" 1'50" 1'55"

The score consists of five staves. The first four staves are for string instruments: Vln. I, Vln. II, Vla., and Vc. The fifth staff is for Tape. The time markers are placed at the top of the page. The Vln. I staff has a whole note with a glissando (gliss.) marking. The Vln. II staff has a whole note with a glissando marking and a *mf* dynamic marking. The Vla. staff has a whole note with a glissando marking and a *mf* dynamic marking. The Vc. staff has a whole note with a glissando marking and a *mf* dynamic marking. The Tape staff has a whole note with a glissando marking and a *mf* dynamic marking. The score includes various performance instructions such as *gliss.*, *mf*, and *8va*. The Vln. II staff has a *15^{ma}* marking with an arrow pointing to the right. The Vla. staff has a *8^{va}* marking with an arrow pointing to the right. The Vc. staff has a *8^{va}* marking with an arrow pointing to the right. The Tape staff has a *gliss.* marking with an arrow pointing to the right. The score also includes various fingering and bowing markings, such as $\frac{3}{2}$, $\frac{15}{8}$, $\frac{13}{8}$, $\frac{16}{9}$, $\frac{10}{9}$, $\frac{39}{32}$, and $\frac{9}{8}$.

2'00" 2'05" 2'10" 2'15" 2'20" 2'25" 2'30" 2'35" 2'40" 2'45" 2'50" 2'55"

15^{ma} →
D/12°

Vln. I *mf*

Vln. II *mf* *f*

Vla. *mf* *f*

Vc. *f*

Tape *f*

3'00" 3'05" 3'10" 3'15" 3'20" 3'25" 3'30" 3'35" 3'40" 3'45" 3'50" 3'55"

Vln. I
(h) (↔) 15^{ma} → A/7°
21
16
f

Vln. II
(h) (↔)

Vla.
(h) (↔) 15^{ma} → A/8°
3
2
f

Vc.
(d) (↔) 15^{ma} → D/11°
11
8
f

Tape
3
2
f
80:81
243
128
gliss.
80:81
2187
1280
gliss.
81:80
gliss.
81:80
ff
gliss.
81:80
ff
gliss.
81:80
ff

Bottom Staff
6
1
→

4'00" 4'05" 4'10" 4'15" 4'20" 4'25" 4'30" 4'35" 4'40" 4'45" 4'50" 4'55"

15^{ma} →
A/10°

Vln. I

Vln. II

Vla.

Vc.

gliss.

81:80

27:16

27:28

2:4

gliss.

80:81

243:160

81:80

gliss.

gliss.

15

8

11

8

13

12

13

8

15^{ma} →
D/11°

15^{ma} →
D/13°

8^{va} →
G/13°

ff

ff

ff

ff

15

8

243

128

14

2

5'00" 5'05" 5'10" 5'15" 5'20" 5'25" 5'30" 5'35" 5'40" 5'45" 5'50" 5'55"

Vln. I (♯) $\frac{3}{4}$ 8^{va} $D/10^\circ$ ff

Vln. II (♯) $\frac{1}{1}$ 8^{va} $D/8^\circ$ ff

Vla. (♯) ff

Vc. (♯) $\frac{11}{8}$ 15^{ma} $D/11^\circ$

$\frac{13}{13}$ $gliss.$ $40:39$ $\frac{13}{10}$ $gliss.$ $26:25$ $gliss.$ $8:9$ $gliss.$ $8:9$

6'00" 6'05" 6'10" *15^{ma}* → 6'15" 6'20" 6'25" 6'30" 6'35" 6'40" 6'45" 6'50" 6'55"

Vln. I *E/13°* 117
64

Vln. II *15^{ma}* *A/13°* 39
32 ***ff*** *15^{ma}* *D/13°* 13
8 ***ff***

Vla. 13
8 ***ff***

Vc. ***ff***

Tape *gliss.* 2187
2048 *gliss.* 13
10 26:27 27
20 80:81 4
3 *gliss.* 75
52 40:39 45
32 *gliss.* 16
9 2048:2187 16
9 243
128 *gliss.* 9:8

7'00" 7'05" 7'10" 7'15" 7'20" 7'25" 7'30" 7'35" 7'40" 7'45" 7'50" 7'55"

Vln. I *fff* possibile

Vln. II *fff* possibile

Vla. *fff* possibile

Vc. *fff* possibile

Tape

gliss. 28:27 36:35

gliss. 81:80

gliss. 512:513

10/9

15/8

40/27

8'00" 8'05" 8'10" 8'15" 8'20" ^{15^{ma}} 8'25" 8'30" 8'35" 8'40" 8'45" 8'50" 8'55"

E/13°

E/14°

A/13°

A/12°

fff possibile sempre

fff possibile sempre

fff possibile sempre

fff possibile sempre

fff possibile sempre

gliss.

gliss.

gliss.

gliss.

gliss.

gliss.

ff

ff

ff

ff

ff

ff

ff

Vln. I

Vln. II

Vla.

Vc.

Tape

9'00" 9'05" 9'10" 9'15" 9'20" 9'25" 9'30" 9'35" 9'40" 9'45" 9'50" 9'55"

The score consists of five staves. The top four staves are for string instruments: Vln. I, Vln. II, Vla., and Vc. The bottom staff is for Tape. The score is divided into measures by vertical dashed lines corresponding to the time markers above. Performance instructions include *gliss.* (glissando) and *15^{ma}* (15th fret). Chordal symbols such as $A/15^\circ$, $E/9^\circ$, and $A/16^\circ$ are present. Fingering numbers are shown in boxes: 45/32, 81/64, 3/2, 9/8, and 135/129. A double bar line is present at the end of the Vln. I staff.

10'00" 10'05" 10'10" 10'15" 10'20" 10'25" 10'30" 10'35" 10'40" 10'45" 10'50" 10'55"

The score consists of five staves. The top four staves are for Vln. I, Vln. II, Vla., and Vc., each with a treble clef and a key signature of one sharp (F#). The bottom staff is labeled 'Tape' and has a treble clef with a key signature of one sharp (F#). The Vln. I staff has a starting key signature of one sharp (F#) and a key signature change to one flat (Bb) at the 10'05" mark. The Tape staff has a starting key signature of one sharp (F#) and a key signature change to one flat (Bb) at the 10'10" mark. The score is divided into measures by vertical dashed lines. The Tape staff contains several glissando markings ('gliss.') with associated ratios and boxed numbers. The ratios are: 243:256, 128:81, 2048:2187, 27:16, 81:80, 5:3, 80:81, 15:16, 9:8, 16:15, 80:81, and 243:128. The boxed numbers are: 32/27, 128/81, 27/16, 15/8, 9/8, 16/15, 80/81, and 243/128. The Vln. I staff has a starting key signature of one sharp (F#) and a key signature change to one flat (Bb) at the 10'05" mark. The Vln. II staff has a starting key signature of one sharp (F#) and a key signature change to one flat (Bb) at the 10'10" mark. The Vla. staff has a starting key signature of one sharp (F#) and a key signature change to one flat (Bb) at the 10'10" mark. The Vc. staff has a starting key signature of one sharp (F#) and a key signature change to one flat (Bb) at the 10'10" mark.

11'00" 11'05" 11'10" 11'15" 11'20" 11'25" 11'30" 11'35" 11'40" 11'45" 11'50" 11'55"

Vln. I

Vln. II

Vla.

Vc.

Tape

27
16

81:80

gliss.

15
8

5/13
5/12

12'00" 12'05" 12'10" 12'15" 12'20" 12'25" 12'30" 12'35" 12'40" 12'45" 12'50" 12'55"

p Tutti

Tape

ppp

Detailed description: This system contains five staves of music. The top staff is in G major (one sharp) and begins with a piano (*p*) dynamic and a *Tutti* marking. The second staff is in G major and contains a box with the numbers 81 and 64. The third staff is in G major and contains a box with the numbers 45 and 32. The fourth staff is in G major and contains a box with the numbers 9 and 8. The fifth staff is in G major and contains a box with the numbers 45 and 1. The score includes various dynamics such as *ppp* and *pp*, and features a *Tutti* marking. There are also some horizontal lines and dots indicating specific musical events or transitions.

13'00" 13'05" 13'10" 13'15" 13'20" 13'25" 13'30" 13'35" 13'40" 13'45" 13'50" 13'55"

Tape

ppp

pp

Detailed description: This system contains three staves of music. The top staff is in G major and contains a box with the numbers 3 and 2. The middle staff is in G major and contains a box with the numbers 128 and 81. The bottom staff is in G major and contains a box with the numbers 45 and 1. The score includes dynamics such as *ppp* and *pp*. There are also some horizontal lines and dots indicating specific musical events or transitions.

