

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)

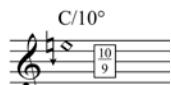
Bowing:

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

Idin Samimi Mofakham

$\text{♩} = 60$

0" 5" 10" 15" 20" 25" 30" 35" 40" 45" 50" 55"

Vln. I

Vln. II

Vla.

Vc.

Tape

$\delta^{va} \rightarrow$
A/3°

$\delta^{va} \rightarrow$
A/4°

$\delta^{va} \rightarrow$
G/8°

$\delta^{va} \rightarrow$
D/5°

$\delta^{va} \rightarrow$
C/10°

mfp

mfp

mfp

mfp

mfp

mfp

mfp

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

Vln. I (♩)

Vln. II (♩)

Vla. (♩)

Vc. (♩)

Glissandi and dynamic markings:

- 1'00": Vln. I, Vln. II, Vla., Vc. play glissandi.
- 1'15": Vln. II, Vla., Vc. play glissandi. Tuning box: $\frac{15}{8}$.
- 1'25": Vln. II, Vla., Vc. play glissandi. Tuning box: $\frac{15}{8}$. Dynamic: **mf**.
- 1'35": Vln. II, Vla., Vc. play glissandi. Tuning box: $\frac{13}{8}$.
- 1'45": Vln. II, Vla., Vc. play glissandi. Tuning box: $\frac{13}{8}$. Dynamic: **mf**.

Tape

(♩)

gliss.

81:80

gliss.

81:80

(♩)

(♩)

(♩)

(♩)

Glissandi and dynamic markings:

- 1'00": Tape plays glissandi.
- 1'15": Tape plays glissandi. Tuning box: $\frac{15}{8}$.
- 1'25": Tape plays glissandi. Tuning box: $\frac{15}{8}$. Dynamic: **mf**.
- 1'35": Tape plays glissandi. Tuning box: $\frac{13}{8}$.
- 1'45": Tape plays glissandi. Tuning box: $\frac{13}{8}$. Dynamic: **mf**.

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

Vln. I
 $\text{15}^{\text{ma}} \rightarrow$
 $\text{D}/12^\circ$

Vln. II
 $\text{8}^{\text{va}} \rightarrow$
 $\text{D}/8^\circ$

Vla.
 $\text{15}^{\text{ma}} \rightarrow$
 $\text{D}/11^\circ$

Vc.
 $\text{15}^{\text{ma}} \rightarrow$
 $\text{D}/13^\circ$

Tape
 $\text{15}^{\text{ma}} \rightarrow$
 $\text{D}/8^\circ$

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 Vln. II Vla. Vc. Tape Bass

Vln. I: Sustained note with grace note at 3'05", dynamic **f** at 3'15", glissando from 21 to 16 at 3'20", dynamic **f** at 3'35", glissando from 3/2 to 2 at 3'45", dynamic **f** at 3'55".

Vln. II: Sustained note at 3'00", dynamic **f** at 3'15", glissando from 3/2 to 2 at 3'35", dynamic **f** at 3'55".

Vla.: Sustained note with grace note at 3'05", dynamic **f** at 3'35", glissando from 11 to 8 at 3'45", dynamic **f** at 3'55".

Vc.: Sustained note at 3'00", dynamic **f** at 3'35", glissando from 11 to 8 at 3'45", dynamic **f** at 3'55".

Tape: Sustained note with grace note at 3'05", dynamic **f** at 3'15", glissando from 80:81 to 243/160 at 3'20", dynamic **f** at 3'35", glissando from 2187/1280 to 243/128 at 3'40", dynamic **ff** at 3'50", glissando from 81/80 to 81.80 at 3'55".

Bass: Sustained note with grace note at 3'05", dynamic **f** at 3'15", glissando from 80:81 to 243/160 at 3'20", dynamic **f** at 3'35", glissando from 2187/1280 to 243/128 at 3'40", dynamic **ff** at 3'50", glissando from 81/80 to 81.80 at 3'55".

4'00" 4'05" 4'10" 4'15" $\xrightarrow{15^{ma}}$
 Vln. I (♩) (♩) A/10°

4'20" 4'25" 4'30" 4'35" 4'40" 4'45" 4'50" 4'55"

Vln. II (♩) (♩) ff (♩) ff (♩) ff

Vla. (♩) (♩) (♩) (♩)

Vc. (♩) (♩) (♩) (♩)

gliss. 81:80 15
8 gliss. 80:81 243
128

Tape gliss. 27:28 7
4 gliss. 80:81 243
160 gliss. 81:80

Bass 1
1 4
3 4
3 4
3

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
 Vln. II
 Vla.
 Vc.
 Tape

(#) *ff*
15^{ma} → A/13° *ff*
15^{ma} → D/13°
(+) *ff*
(#)
gliss. *gliss.*
gliss.
40:39 *26:27* *80:81* *4:3*
75 *2187/2048* *27/20*
52 *13/10*
16 *45* *32*
9
16 *2048:2187* *243*
9
16 *243*
9:8
gliss.

8 (♩)

Vln. I

(♩)

Vln. II

(♩)

Vla.

(♩)

Vc.

(♩)

Tape

(♩)

Bass

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

fff possibile

fff possibile

fff possibile

fff possibile

gliss. 28:27 36:35

gliss. 81:80

10
9

5
4

15
8

40
27

gliss. 512:513

8'00" 8'05" 8'10" 8'15"

Vln. I (d \sharp ∞) ————— , (d \sharp ∞) ————— , (d \sharp ∞) ————— , (d \sharp ∞) ————— ,

Vln. II (d \sharp ∞) ————— , (d \sharp ∞) ————— , (d \sharp ∞) ————— , (d \sharp ∞) ————— ,

Vla. (d \sharp ∞) ————— , (d \sharp ∞) ————— , (d \sharp ∞) ————— , (d \sharp ∞) ————— ,

Vc. (d ∞) ————— , (d ∞) ————— , (d ∞) ————— , (d ∞) ————— ,

Tape (d ∞) ————— , (d ∞) ————— , (d ∞) ————— , (d ∞) ————— ,

8'20" 15^{ma} → E/13° 8'25" 8'30" 8'35" 8'40" 8'45" 8'50" 8'55"

(d \sharp ∞) ————— , (d \sharp ∞) ————— ,

117 64 fff possibile sempre

15^{ma} → E/14° → (d ∞) ————— , (d ∞) ————— ,

7 4 fff possibile sempre

15^{ma} → A/13° → (d \sharp ∞) ————— , (d \sharp ∞) ————— ,

39 32 fff possibile sempre

15^{ma} → A/12° → (d ∞) ————— , (d ∞) ————— ,

9 8 fff possibile sempre

gliss. 81:80 $\frac{3}{2}$ 81:80 $\frac{40}{27}$ gliss. 81:80 $\frac{45}{32}$ 81:80 $\frac{25}{18}$ gliss.

ff 243 160 gliss. 81:80 $\frac{3}{2}$ 81:80 $\frac{40}{27}$ gliss. 81:80 $\frac{45}{32}$ 81:80 $\frac{25}{18}$ gliss.

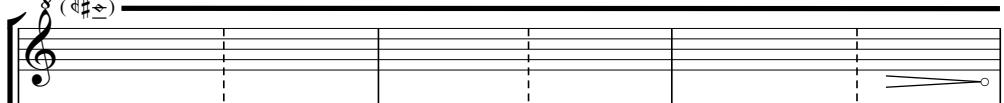
ff 59049 40960 gliss. 81:80 $\frac{729}{512}$ 81:80 $\frac{45}{32}$ gliss. 81:80 $\frac{5}{4}$ gliss.

ff 6561 5120 gliss. 81:80 $\frac{81}{64}$ 81:80 $\frac{5}{4}$ gliss. 81:80 $\frac{10}{9}$ gliss.

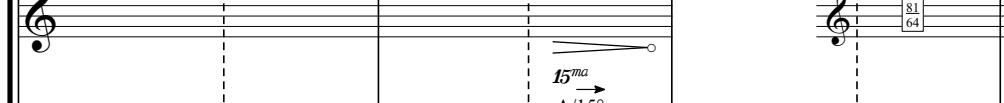
ff 729 640 gliss. 81:80 $\frac{9}{8}$ 81:80 $\frac{10}{9}$ gliss.

ff 81:80 $\frac{9}{8}$ 81:80 $\frac{10}{9}$ gliss.

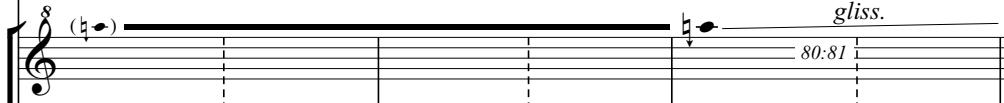
9'00" 9'05" 9'10" 9'15" 9'20" 9'25" 9'30" 9'35" 9'40" 9'45" 9'50" 9'55"

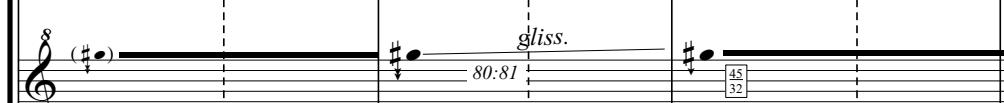
Vln. I 

 Vln. II 

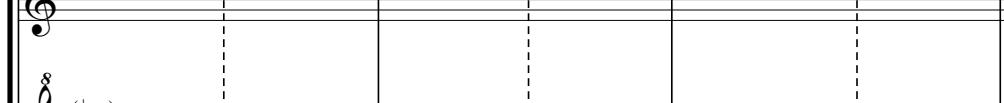
 Vla. 

 Vc. 

Tape 

 Tape 

 Tape 

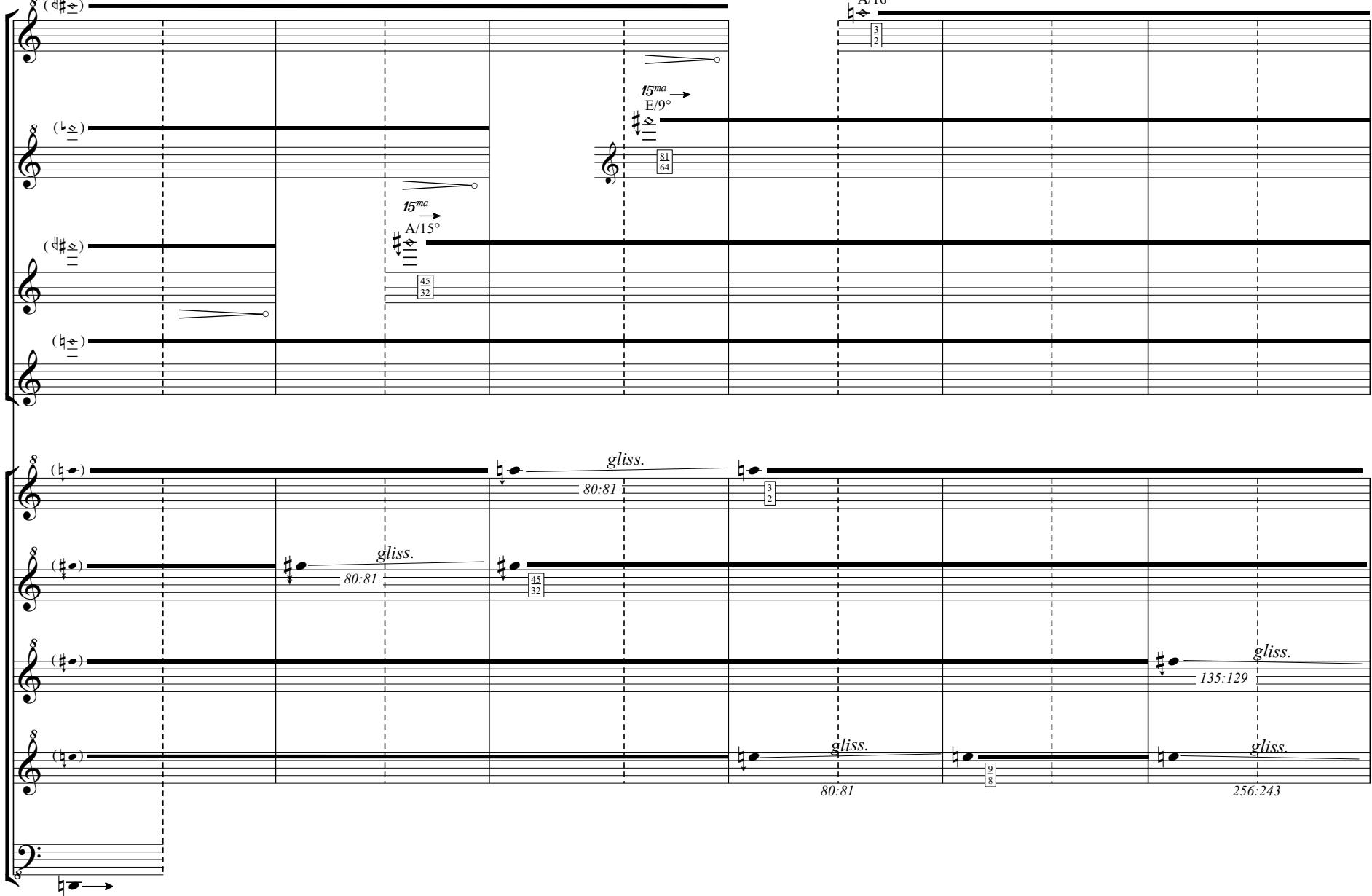
 Tape 

8 (F#) 8 (D) 8 (C) 8 (B) 8 (A) 8 (G) 8 (F#) 8 (E) 8 (D)

15^{ma} → A/16° 15^{ma} → E/9° 15^{ma} → A/15° 15^{ma} → G/16°

gliss. 80:81 gliss. 80:81 gliss. 80:81 gliss. 135:129 gliss. 256:243

81 64 45 32 3 2 8



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

Vln. I Vln. II Vla. Vc.

Tape

gliss.

8
Vln. I
(\natural)
Vln. II
(\natural)
Vla.
(\natural)
Vc.

8
Tape
1 243:256 2 2048:2187 3 27:16 4 81:80 5 80:81
6 15:16 7 3:2
8 256:243 9 9:8 10 16:15 11 15:8 12 80:81
13 243:128
14 2187:2048 15 1:1

8
Bass

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

ppp

Tape

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

pp

ppp

Tape

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