

Jordan Dykstra

FATHOM PEAKS UNSEEN

An exploration of the sub-harmonic series

for string quintet and percussion

2015-16
revised in 2022

composed for
The Ensemble at CalArts
Valencia, California

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(2015-16 with revisions in 2022)

By Jordan Dykstra

PERFORMANCE NOTES

INSTRUMENTATION: 2 violins, viola, cello, double bass, crotales (2 players)

DURATION: ca. 11 minutes

DYNAMICS: medium (mf)


Fathom Peaks Unseen utilizes the undertone series (inverted harmonic series) of the fundamental equaling 5000 hertz.

Individual cues are listed on the cue line above each player's staff. This "triggering" effect is achieved by entering quickly (but without accent) after you have been cued. If there is no cue indicated the player should enter as normal, keeping in mind that you may be the first in the series of "triggers".

STRING PLAYERS

1) Each of the string player's strings are tuned specifically to different partials of the u-tone series and are voiced by open strings only. A 4 string scordatura is required for all players. Shown in hertz (with cent deviation), the new string frequency tuning is as follows:

	I.	II.	III.	IV.
Violin I	714 (+55)	455 (+15)	313 (+20)	196 (+12)
Violin II	625 (-34)	417 (-23)	294 (+0)	200 (+4)
Viola	385 (-55)	278 (-16)	179 (-17)	125 (-5)
Cello	217 (-3)	139 (-8)	89 (-9)	63 (-2)
Double Bass	104 (+6)	78 (+5)	50 (-5)	39 (-2)

2) A stopped string(s) is indicated by a notehead with an "x" in the center: 

It is recommended to stop the string near the top of the fingerboard to make sure it is not voiced. There are a few sections where the middle two strings are stopped and the outer two are voiced. In this situation it may be more convenient for the player to bow from underneath the strings.

3) Throughout the piece bow changes should be staggered amongst the players, allowing for a consistency of sound.

CROTALES

1) Use the 2 octave Paiste crotales only. The hertz frequencies of this set of Paiste crotales have been mapped specifically for this piece.

2) The Crotales I player always uses the upper octave of the crotales while the Crotales II player mainly uses the lower octave. There are 7 instances where player II needs move to the upper octave.

3) Use a bass bow with ample rosin to ensure a consistent tone.

4) Allow the sound to naturally decay, never dampen the crotales before each is done ringing.

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(2015-16/22)

Sempre Rubato

0:30

①

1:00

Musical score for the first system, marked **Sempre Rubato**. The score includes staves for Crotales I, Crotales II, Violin I, Violin II, Viola, Violoncello, and Double Bass. The key signature is one sharp (F#). The Crotales I part has a measure ending at 0:30. The Crotales II part has a measure ending at 1:00. The Violin I and II parts have measures ending at 0:30 and 1:00. The Viola part has a measure ending at 1:00. The Violoncello and Double Bass parts have measures ending at 1:00. A circled number 1 is placed above the Crotales I staff at the 1:00 mark.

②

③

1:30

2:00

Musical score for the second system, continuing from the first system. The score includes staves for Crotales I, Crotales II, Violin I, Violin II, Viola, Violoncello, and Double Bass. The key signature is one sharp (F#). The Crotales I part has a measure ending at 1:30. The Crotales II part has a measure ending at 2:00. The Violin I and II parts have measures ending at 1:30 and 2:00. The Viola part has a measure ending at 2:00. The Violoncello and Double Bass parts have measures ending at 2:00. A circled number 2 is placed above the Crotales I staff at the 1:30 mark, and a circled number 3 is placed above the Crotales I staff at the 2:00 mark.

④ 2:30 ⑤ 3:00

Crot. I
Crot. II
Vln. I
Vln. II
Vla.
Vlc.
Db.

⑥ 3:30 ⑦ 4:00

Crot. I
Crot. II
Vln. I
Vln. II
Vla.
Vlc.
Db.

UO
LO

4:30

8

Musical score for the first system, measures 4:30 to 5:00. The score includes parts for Crotonal I and II, Violin I and II, Viola, Violoncello, and Double Bass. The Crotonal parts are marked with 'UO' and 'LO'. The Viola part has a circled '8' above it. The Violoncello part has the instruction 'bow under the string using 2 hands' written above it. The Double Bass part has a circled '6' below it. The score shows a series of notes and rests across the staves, with a vertical line indicating a section boundary.

5:30

Musical score for the second system, measures 5:30 to 6:00. The score includes parts for Crotonal I and II, Violin I and II, Viola, Violoncello, and Double Bass. The Crotonal parts are marked with '#O'. The Violoncello part has a circled '6' below it. The score shows a series of notes and rests across the staves, with a vertical line indicating a section boundary. Dashed lines connect notes between the Violoncello and Double Bass parts, and between the Violin I and II parts.

9

10

6:30

7:00

Musical score for measures 9 and 10. The score includes staves for Crotonchelli I and II, Violin I and II, Viola, Violoncello, and Double Bass. Measure 9 features a downward arrow from the first violin staff to the cello staff. Measure 10 features a dashed line connecting the first violin staff to the cello staff, and a downward arrow from the first violin staff to the cello staff.

11

7:30

8:00

Musical score for measure 11. The score includes staves for Crotonchelli I and II, Violin I and II, Viola, Violoncello, and Double Bass. Measure 11 features a downward arrow from the first violin staff to the cello staff.

12

8:30

13

5
9:00

Crot. I

Crot. II

Vln. I

Vln. II

Vla.

Vlc.

Db.

14

9:30

10:00

Crot. I

Crot. II

Vln. I

Vln. II

Vla.

Vlc.

Db.

UO

10:30

11:00

Musical score for Crotchet (Crot. I, Crot. II), Violin (Vln. I, Vln. II), Viola (Vla.), and Double Bass (Db.). The score is written on seven staves. The Crotchet parts are in treble clef, while the Viola and Double Bass parts are in bass clef. The Violin parts are currently blank. The Viola part has a solid line across the staff. The Double Bass part has a solid line across the staff. The Crotchet II part has a note at 10:30 marked *LO*. Time markers 10:30 and 11:00 are present at the top of the page.