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Earth White Fracture

For Contrabass Flute, ‘Cello and Live Electronics

Approximate Duration: 7’20”
Guide to Notation

General marks

\begin{align*}
&\text{ord.} \\
&\text{fp} \\
&\text{mf} \\
&\text{ Crescendo dal niente} \\
&\text{Diminuendo al niente} \\
&\text{Trill, always to indicated note}
\end{align*}
Contrabass flute

. flz. flz. Fluttertongue

mf

‘Cello

s.t Sul tasto

s.p Sul ponticello

molto s.t Sul tasto, as much as possible

molto s.p Sul ponticello, as much as possible

norm. Normal bow position

Increase bow pressure to produce noise, then decrease
Stopped harmonic

Trill between open string and harmonic node

Trill between open string and harmonic nodes. Start glissando immediately.

Arpeggio with harmonic on indicated strings

Harmonics with tremolo and glissando on indicated strings. Start glissando immediately

Jeté con legno battuto. As close to the bridge as possible
**Guide to the Electronics**

The electronic part consists of a three-channel granular synthesiser. A broad overview of the software performance environment is shown below.

The level of the electronic part should be balanced to match the level of the acoustic part as indicated by the dynamics in the score.

A small mixing desk is necessary in order to make minor adjustments to the levels during the performance.
The acoustic instruments should only be amplified only if necessitated by the size of the performance space.

The electronic part requires a computer running Max v. 6 or above (www.cycling74.com), a suitable digital to analogue convertor, a mixing desk and amplification appropriate for the room. The Max patch is available from the composer on request.

Each of the three channels is followed by identical signal processing chains consisting of a delay modulation effect, a pitch shifter and a spectral delay. Each channel carries out real-time granulation of a soundfile. The soundfile is a pre-recorded gesture taken from the ‘cello part. These gestures should be recorded before the performance and edited to eliminate silence and discontinuities at the beginning and end of the recording. The recordings should match, as far as possible, the ambience of the room in which the performance will take place.

An example of a ‘cello gesture used in the electronic part is shown below:

Pre-composed events are triggered manually from the software environment using numbered cues. These are indicated on the score as shown in the example above.
Although the events are pre-composed, all processing takes place in real time and there will be subtle but significant differences between performances.

All timings shown are approximate and will vary between performances.
Guide to Notation (Electronic Part)

A system of graphic notation has been used to indicate both performance parameters and the resulting textures. Examples from system are described below, together with an explanation of abbreviations used.

- \( \text{gs} \) Grain size in milliseconds (small)
- \( \text{gs} \) Grain size in milliseconds (large)
- \( \text{gd} \) Grain density. Dense – becoming less dense in example
- \( \text{PBS} \) Play back speed – time stretching effect. Normal playback speed = 1
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fq</td>
<td>Frequency</td>
</tr>
<tr>
<td>P</td>
<td>Phase</td>
</tr>
<tr>
<td>Win</td>
<td>Window size</td>
</tr>
<tr>
<td>Fb</td>
<td>Feedback</td>
</tr>
<tr>
<td>Bl</td>
<td>Balance</td>
</tr>
<tr>
<td>Pitch</td>
<td>Pitch (Hz)</td>
</tr>
<tr>
<td>Space</td>
<td>Spectral delay effect (wet dry balance 0.2 in example)</td>
</tr>
</tbody>
</table>

Interpolate between parameters.
Instruments

Contrbass Flute

‘Cello

Computer running Max 6 or higher, audio interface, mixing desk, suitable microphones and amplification
4'57"

5'02"

5'06"

5'10"

pitch 20, -20, 40

molto s.p.

gs 90, 80, 100

freq 8, 4, 2

win 800, 400, 200

phase 8, 4, 2

fb 0.2, 0.4, 0.2

space 0.2

(balance 0.2)

gs 90, 80, 100

pbs 0.8, 0.9, 0.7

space 0.2
Cue 12

Frequency: 8, 9, 10
Window: 800, 900, 1000
Phase: 8, 9, 10
Feedback: 0.1, 0.1, 0.1 (balance 1)

Pbs: 0.2, 0.1, 0.05
Gain: 2, 4, 6

Fade:
6'37" 6'41" 6'45" 6'49" 6'53" 6'57" 7'02" 7'06" 7'10" 7'14"

Balance:

P: ff

Duration:

7'18"