



Danny Buckley

Composer, Interpreter

United States (USA), Decatur

About the artist

Born 1987, I began playing guitar at the age of 14 and soon after I began composing within the Heavy Metal idiom. In 2006 I began my undergraduate studies in Music Business at Millikin University. In the fall of 2006 I began to compose piano and instrumental music; and my style has evolved to encompass a wide range from Heavy Metal to Impressionism and even 12 tone serialism. within these different styles I bring what I have emotionally into my work to make it my own.

Enjoy,

Danny Buckley

Artist page : <http://www.free-scores.com/Download-PDF-Sheet-Music-dbuckley.htm>

About the piece



Title:	Hawking Radiation
Composer:	Danny Buckley
Arranger:	Danny Buckley
Copyright:	Copyright © Daniel Daniel Buckley
Publisher:	Danny Buckley
Style:	Electro
Comment:	My first Electroacoustic work entitled Hawking Radiation

Danny Buckley on [free-scores.com](http://www.free-scores.com)



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Hawking Radiation

Electroacoustic work for Piccolo, Flute,
Violin, and Pre-recorded Electronics

Composed by Danny Buckley
2018

Program Notes:

Hawking Radiation is defined as the theoretical radiation that is emitted from black holes due to quantum events near the event horizon. This Phenomenon is named after the physicist Stephen Hawking, who provided a theoretical argument for its existence.

My goal while composing this work was to capture both the essence of beauty and chaos of a black hole. This work is my interpretation of how I envision a black hole phenomenon and how I envision it from a musical perspective.

$$T = \frac{1}{M} \frac{\hbar c^3}{8k\pi G}$$

Instrumentation:

Piccolo

Flute

Violin

2-channel pre-recorded electronics

Performance Notes:

Concerning the Flute and Piccolo parts:
In the free notation sections instructions are given to play the system of notes in random alternating orders as fast as possible. (AFAP)

Concerning the Violin Part:
The extreme high end Harmonics are notated 8va to avoid the use of too many ledger lines.
In the sections marked with tone cluster slides instructions are given to play any notes on all four strings and to slide as high as possible and back down again as far as possible and repeat. (Any cluster of notes may be played with as much dissonance as possible)
The same also holds true for pizzicato clusters; random combination of notes as dissonant as possible.

Concerning the Electronics:
The volume of the electronics should be loud enough to be heard but not set too loud as to overpower the acoustic instruments. Discretion and care are left to the performers in this case.
various electronic events will be notated on the staff when they begin, to serve as cue points within the score.

All Tempo markings are marked Exactly and should be followed as such so as not to get off track from the electronic recording.

Hawking Radiation

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Exactly ♩ = 65

Piccolo

Flute

Violin

Electronics

f

pp *mf* *mp*

electronics begin *electronic breaths*

10

Picc.

Fl.

Vln.

Elec.

mf

mp

ff *mf*

19

Exactly ♩ = 135 on beat 2

Exactly ♩ = 65

Picc.

Fl.

Vln.

Elec.

f

ff *pizz. con forza*

24 Picc. *ppp* *tape delay bells* *f* *massive voice cluster*

24 Fl.

24 Vln. *arco* *ppp* *f*

24 Elec.

33 Picc. *f*

33 Fl.

33 Vln.

33 Elec.

43 Picc. *p* *mf* *p*

43 Fl. *f*

43 Vln. *ff*

43 Elec.

51

Picc.

Fl.

Vln.

Elec.

f

pizz.

pp

electronic ahhs ornamented

58

Picc.

Fl.

Vln.

Elec.

63

Picc.

Fl.

Vln.

Elec.

f

f 3

68 Picc. Fl. Vln. Elec.

68 *f*

Exactly ♩=26 Exactly ♩=65 Picc. Fl. Vln. Elec.

75 *p* *mf* *mf* *mf*

75 arco *mf* roaring wind

82 Picc. Fl. Vln. Elec.

82 *f* *ff*

86

Picc. *mp*

Fl.

Vln. *mf*

Elec.

93

Picc. *f*

Fl. *f*

Vln. *mp*

Elec.

98

Picc. *pp*

Fl.

Vln.

Elec.

Exactly ♩=150 on beat 3

106

Picc.

Fl.

Vln.

Elec.

sul e

mf

mf

113

Picc.

Fl.

Vln.

Elec.

Exactly ♩=65

f

ff

ff

pizz.

scary breathing effect

120

Picc.

Fl.

Vln.

Elec.

arco

slide as high as possible

ff

improvise on these pitches in any order AFAP

improvise on these pitches in 11 any order AFAP

128

Picc.

Fl.

Vln.

Elec.

ff

Detailed description: This system covers measures 128 to 135. The Piccolo part has a rest in measure 128, followed by improvisation instructions and pitch diagrams for measures 129-131, and another rest in measure 132. The Flute part has a rest in measure 128, followed by improvisation instructions and pitch diagrams for measures 129-131, and another rest in measure 132. The Violin part features a tremolo effect across measures 128-135. The Electric guitar part is blank.

improvise on these pitches in any order AFAP

136

Picc.

Fl.

Vln.

Elec.

mf

ff

Detailed description: This system covers measures 136 to 142. The Piccolo part has a rest in measure 136, followed by improvisation instructions and pitch diagrams for measures 137-139, and another rest in measure 140. The Flute part has a rest in measure 136, followed by improvisation instructions and pitch diagrams for measures 137-139, and another rest in measure 140. The Violin part starts with a tremolo effect in measure 136, then changes to a dynamic of *mf* in measure 137, and *ff* in measure 138. The Electric guitar part is blank.

143

Picc.

Fl.

Vln.

Elec.

Detailed description: This system covers measures 143 to 149. The Piccolo part has a rest in measure 143, followed by improvisation instructions and pitch diagrams for measures 144-146, and another rest in measure 147. The Flute part has a rest in measure 143, followed by improvisation instructions and pitch diagrams for measures 144-146, and another rest in measure 147. The Violin part has a melodic line starting in measure 143. The Electric guitar part is blank.

Picc. *f*

Fl. *mf*

Vln. *mf*

Elec.

150

155

158

Picc.

Fl. *mf*

Vln. *ff* *sul e* *sul a*

Elec.

159

166

Picc.

Fl. *ff*

Vln. *ff*

Elec.

167

174

171

Picc.

Fl.

Vln.

Elec.

improvise on these pitches in any order AFAP

b₂ b₃ b₄ e₄ b₂ b₃ b₄ e₄

178

Picc.

Fl.

Vln.

Elec.

ff

ff

arcopont

massive voice cluster

ff

186

Picc.

Fl.

Vln.

Elec.

192

Picc.

Fl.

Vln.

Elec.

Detailed description: This system covers measures 192 to 197. The Piccolo part (top staff) has a melodic line starting with a whole note, followed by eighth notes. The Flute part (second staff) has a similar melodic line. The Violin part (third staff) features a tremolo effect indicated by vertical lines and a slur. The Electronic part (bottom staff) has a long note starting at measure 192, with a line indicating it slowly fades out towards the end of the system.

198

Picc.

Fl.

Vln.

Elec.

f

mf

electronics slowly fade

Detailed description: This system covers measures 198 to 203. The Piccolo part (top staff) has a melodic line starting with a whole note, followed by eighth notes. The Flute part (second staff) has a similar melodic line. The Violin part (third staff) features a tremolo effect indicated by vertical lines and a slur. The Electronic part (bottom staff) has a long note starting at measure 198, with a line indicating it slowly fades out towards the end of the system. Dynamic markings *f* and *mf* are present in the Piccolo and Violin parts respectively. The instruction "electronics slowly fade" is written below the Electronic part.