

# Phasmid

A piece for solo violin by Joe Bates



# Performance Directions

**Duration – c.6'**

## Accidentals

This piece is written using Helmholtz-Ellis Just Intonation notation on D. Accidentals last through the whole bar. A full explanation can be found in the resources section of [www.plainsound.org](http://www.plainsound.org), but the accidentals used in this piece are as follows:

# $\flat$  Standard accidentals are tuned in fifths, also known as Pythagorean tuning.

↳ Lowers a note by a septimal comma ( $64/63$ , or 27c lower than Pythagorean).

† Raises a note by an undecimal quartertone ( $33/32$ , or 53c higher than Pythagorean).

‡ Lowers the note by a tridecimal thirdtone ( $27/26$ , or 65c lower than Pythagorean).

∞ Raises the note by a 17-limit schisma ( $2187/2176$ , or 9c higher than Pythagorean).

## Intervals

Use of these accidentals results in a variety of Just Intonation intervals. Two appendices are provided to aid in the tuning of these intervals. The first shows how the Pythagorean notes differ from equal temperament and gives the frequency ratio and cent distance of each interval.

The second provides the sum and difference tones for the intervals, to allow them to be tuned by ear. Where these combination tones move beyond the 17th harmonic, their difference from Pythagorean tuning is shown in cents.

## Vibrato and Open Strings

The piece should be played with little vibrato and should make use of the open strings where possible.

## Programme Note

A phasmid is a creature from the order of insects that includes sitck insects, but here it refers to the Insulidian Phasmid, a fictional creature from *Disco Elysium*, ZA/UM's elegaic 2019 masterpiece. At the game's climax, the giant insect emerges from the reeds, stridulating while it converses with you. Its chirruping is described as sounding 'like a reel-to-reel tape machine spinning after the tape breaks', creating sounds 'that swarm around you head like swallows. Like laughter. A sort of happiness.'

This piece was written for Jean-Marie Conquer as part of the University of York's collaboration with Ensemble Intercontemporain.

# Phasmid

Joe Bates

Loping ( $\text{♩} = \text{c. } 50$ )

Musical score for the 'Loping' section, measures 1-21. The music is written in treble clef with a 3/8 time signature. It features a series of eighth notes with various dynamics and articulations. Measure 1 starts with a mezzo-piano (*mp*) dynamic, followed by a piano (*pp*) dynamic. Measure 2 has a mezzo-forte (*mf*) dynamic, followed by a piano (*p*) dynamic. Measure 3 has a mezzo-piano (*mp*) dynamic. Measure 4 has a piano (*p*) dynamic. Measure 5 has a mezzo-forte (*mf*) dynamic. Measure 6 has a piano (*p*) dynamic. Measure 7 has a piano (*p*) dynamic. Measure 8 has a mezzo-forte (*mf*) dynamic. Measure 9 has a piano (*p*) dynamic. Measure 10 has a mezzo-forte (*mf*) dynamic. Measure 11 has a piano (*p*) dynamic. Measure 12 has a mezzo-forte (*mf*) dynamic. Measure 13 has a mezzo-piano (*mp*) dynamic. Measure 14 has a piano (*p*) dynamic. Measure 15 has a mezzo-forte (*mf*) dynamic. Measure 16 has a piano (*p*) dynamic. Measure 17 has a mezzo-forte (*mf*) dynamic. Measure 18 has a piano (*p*) dynamic. Measure 19 has a mezzo-forte (*mf*) dynamic. Measure 20 has a piano (*p*) dynamic. Measure 21 has a mezzo-piano (*mp*) dynamic. The score includes various articulations such as accents, slurs, and triplets.

Poco meno mosso ( $\text{♩} = \text{c. } 84$ )

Musical score for the 'Poco meno mosso' section, measures 24-30. The music is written in treble clef with a 4/4 time signature. It features a series of eighth notes with various dynamics and articulations. Measure 24 has a mezzo-piano (*mp*) dynamic. Measure 25 has a piano (*p*) dynamic. Measure 26 has a mezzo-piano (*mp*) dynamic. Measure 27 has a piano (*p*) dynamic. Measure 28 has a mezzo-piano (*mp*) dynamic. Measure 29 has a piano (*p*) dynamic. Measure 30 has a mezzo-piano (*mp*) dynamic. The score includes various articulations such as accents, slurs, and triplets.

33

ff mp f mp f mp

33-35: Musical staff with treble clef, 4/4 time signature. It features several triplet markings (groups of three notes) and dynamic markings: *ff*, *mp*, *f*, *mp*, *f*, *mp*.

36

f mp mf p mf p

36-38: Musical staff with treble clef, 4/4 time signature. It features triplet markings and dynamic markings: *f*, *mp*, *mf*, *p*, *mf*, *p*.

39

mp p mp pp mp

allarg.....

39-41: Musical staff with treble clef, 4/4 time signature. It features triplet markings and dynamic markings: *mp*, *p*, *mp*, *pp*, *mp*. The tempo marking *allarg.....* is present.

42

ppp mp pp mf

(♩ = c. 69)

42-45: Musical staff with treble clef, 4/4 time signature. It features triplet markings and dynamic markings: *ppp*, *mp*, *pp*, *mf*. A tempo marking *(♩ = c. 69)* is present. Roman numerals *III* and *II* are also visible.

46

p mf pp p mp

46-50: Musical staff with treble clef, 4/4 time signature. It features triplet markings and dynamic markings: *p*, *mf*, *pp*, *p*, *mp*.

51

p mf p mp p

Poco rubato

51-57: Musical staff with treble clef, 3/4 time signature. It features triplet markings and dynamic markings: *p*, *mf*, *p*, *mp*, *p*. The tempo marking *Poco rubato* is present.

58

mp p mp pp mp

Tempo I, Giusto

58-65: Musical staff with treble clef, 3/4 time signature. It features dynamic markings: *mp*, *p*, *mp*, *pp*, *mp*. The tempo marking *Tempo I, Giusto* is present.

66

p mp pp p mf pp

66-72: Musical staff with treble clef, 3/4 time signature. It features dynamic markings: *p*, *mp*, *pp*, *p*, *mf*, *pp*.

73

*mp* *p* *mf*

79

Poco meno mosso (♩ = c. 84)

*p* *pp* *mp* *p* *mf* *mp*

83

*f* *mp* *p* *f*

87

*p* *ff* *p* *f*

91

*mp* *ff* *mf* *ff* *f*

Tempo Rubato

97

*mf* *ff* *mf*

99

*ff* *mf*

101

*ff*

103

105

106

*fff*

poco rall.....

107

*ff* *p*

Slow (♩ = c. 66)

109

*pp* *mp* *pp* *ppp*

113

*mp* *pp* *ppp*

poco rall.....

117

*p* *pp* *p* *pp* *p* *pp*

A tempo poco rall..... A tempo poco rall.....

120

*ppp*

## Appendix: Tunings

Pythagorean Tunings

-4¢ -2¢ 0¢ 2¢ 4¢ 6¢ 8¢ 10¢ 12¢  $\frac{7}{4}$  969¢ = m7 -31¢

3  $\frac{7}{8}$  231¢ = M2 +31¢  $\frac{9}{7}$  435¢ = M3 +33¢  $\frac{7}{6}$  267¢ = m3 -33¢

6  $\frac{14}{6}$  1467¢ = m10 -33¢  $\frac{12}{7}$  933¢ = M6 +33¢  $\frac{12}{7}$  933¢ = M6 +33¢  $\frac{21}{16}$  471¢ = P4 -29¢

10  $\frac{21}{8}$  1671¢ = P11 -29¢  $\frac{63}{32}$  1173¢ = P8 -27¢  $\frac{63}{16}$  2373¢ = P16 -27¢

13  $\frac{11}{8}$  551¢ = P4 +51¢  $\frac{11}{6}$  1049¢ = m7 +49¢  $\frac{11}{7}$  782¢ = P5 +83¢

16  $\frac{11}{18}$  853¢ = M6 -47¢  $\frac{14}{11}$  374¢ = P4 -26¢  $\frac{13}{8}$  841¢ = M6 -59¢  $\frac{21}{13}$  830¢ = m6 +30¢  $\frac{34}{21}$  834¢ = A5 +34¢



## Appendix: Difference Tones

The musical score consists of five systems, each with a treble and bass clef staff. The ratios and cents values are as follows:

- System 1:** Ratios  $7/4$ ,  $7/8$ ,  $9/7$ . Includes a label  $8^{ba}$  with a dashed line.
- System 2:** Ratios  $7/6$ ,  $12/7$ ,  $21/16$ ,  $21/8$ . Includes cents values  $(-3c)$ ,  $(+52c)$ , and  $(-34c)$ . Includes a label  $8^{ba}$  with a dashed line.
- System 3:** Ratios  $63/32$ ,  $63/16$ ,  $11/8$ ,  $11/6$ . Includes cents values  $(-18c)$ ,  $(+164c)$ , and  $(-3c)$ .
- System 4:** Ratios  $11/7$ ,  $22/7$ ,  $14/11$ ,  $13/8$ . Includes cents values  $(-34c)$  and  $(+91c)$ .
- System 5:** Ratios  $21/13$ ,  $34/21$ . Includes a cents value  $(+31c)$ .