Fibonacci in a Black Hole

for solo clarinet

as part of the thesis:

The Composition of New Music Inspired by Music Philosophy and Musical Theoretical Writings from Ancient Greece

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PhD in Music
2013

Quotation for Movement I

"If something falls into a black hole and it emits light at regular intervals as it falls in, the light will become redder and red and the intervals between the light pulses will become longer and longer. In the sound wave analogy, if a clarinet were t into a "dumb hole", before it falls in the notes will become lower and lower, and the time between tones will become very long and quiet."

-Dr. Sharon Morsink, University of Alberta

General Notes to Performer:

Fibonacci (Leonardo Pisano Bogollo c. 1170 - c. 1250) series: 0,1,1,2,3,5,8,13,21,34,55,89 etc.

Each phrase has a climax at the Golden Ratio of 1.618 (61.8% of the phrase) as well as the overall piece counting the quavers. Thus if the piece has 233 eighth notes, the climax will be at 144; climax at 89; climax at 55, etc.

site for muliphonics used:

http://www.clarinet-multiphonics.org/clarinet-multiphonics.html Nicolas del Grazia, website 15-02-2010

Recommended fingerings for mulitphonics written above notes except for some spectral harmonics: when the same note is repeated later in the score it is recommended to use the previously mentioned fingering. When the bottom note remains the same but the top note changes, the fingering for the previous notes are recommended.

Accidentals only affect the note they precede.

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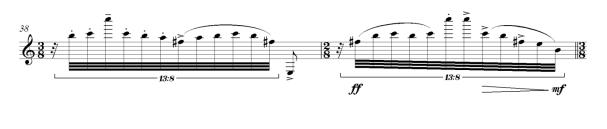
dedicated to Sharon Morsink

l all things are known by number

"And all things, indeed, that are known have number: for it is not possible for anything to be thought of or known without this." Philolaus (c470-385BC)

Coreen Morsink







"Anything that can travel faster than light can escape from a black hole (as long as it hasn't hit the singularity).

Black holes are defined through the speed of light, so they can only tray stuff that has to travel at light-speed or less."

-Dr. S. Morsink



III two black holes merge

Black holes could potentially collide head-on, but the more likely, and more interesting type of collision is when they are orbiting around each other and spiral in towards each other and finally merge into one larger black hole.

-Dr. S. Morsink

