**PERFORMANCE NOTES**

*Spiral* is a study in sustained timbral combinations, drones, and just intonation harmony. The harmonic language of the piece is based on a progression of overtone series chords. These chords are centered around five successive drones—on the third, fifth, seventh, ninth, and eleventh overtones of a low F. Harmonies are arranged around each drone so that the drone pitch is heard successively in different harmonic meanings: for example, the initial C drone is heard first as the 3rd overtone of F, then the 5th overtone of A-flat, then the 7th overtone of D, and so on. A low F appears at the beginning of each of the five sections, as one drone gives way to another.

Microtonal pitches are notated as follows:

- closed-headed arrows indicate an adjustment of 16 cents (a sixth of a semitone) up or down
- open-headed arrows indicate an adjustment of 33 cents (a third of a semitone) up or down

Altered accidentals indicate quartertones:

- quartertone sharp: ‡
- quartertone flat: ∫

The notated pitches are the closest approximations in 72-tone equal temperament of pitches in just intonation: players may make slight adjustments to make the just intervals perfectly in tune. In a few instances, a held note must be corrected by a small 16-cent interval—here, a dashed tie indicates that the pitch adjustment should be made without a new attack.

Long tones for wind instruments should be played in one breath where possible—when this is impractical, a brief break in the tone and a discreet re-entrance is acceptable. String instruments should change bow as necessary. Both wind and string instruments should play with a full, rich tone without vibrato.

**Duration:** ca. 7’45”

This piece is dedicated to Gabriela Diaz, Eric Hewitt, and the White Rabbit Ensemble.
Spiral

Flute

breathe as necessary - re-enter as unobtrusively as possible

Oboe

breathe as necessary - re-enter as unobtrusively as possible

Clarinet in B♭

breathe as necessary - re-enter as unobtrusively as possible

Bassoon

dim. poco a poco

Horn in F

breathe as necessary - re-enter as unobtrusively as possible

Trumpet in C

breathe as necessary - re-enter as unobtrusively as possible

Trombone

Solo Violin

change bow as necessary

Violin

change bow as necessary

Viola

change bow as necessary

Violoncello

change bow as necessary

Double Bass

(sound 8ve lower)

Robert Hasegawa (2008)
Fl.
Ob.
Cl.
Bsn.
Hn.
Tpt.
Tbn.
Solo Vln.
Vln.
Vla.
Vc.
Db.

\( \text{dim. poco a poco} \)

\text{Cresc. poco a poco}

\text{Peak speed of tremolo}

\text{Tremolo gradually faster...}

\text{Slower tremolo and fade out...}

\text{Unison with solo violin's lowest note}
Fl.  
Ob.  
Cl.  
Bsn.  
Hn.  
Tpt.  
Tbn.  
Solo Vln.  
Vln.  
Vla.  
Vc.  
Db.

adjust pitch slightly upward: unison with bass harmonic

7th harmonic of A (T2)

(harmonics also notated 8ve above the sounding pitch)
7th harmonic of G (T12) (unison with solo violins)

match pitch with the solo violin
horn ossia: tacet until 57, then enter with a crescendo from niente (only if necessary for endurance)

tremolo gradually slower... end on high B♭

7th harmonic on C string

4th harmonic on A string
7th harmonic of F - unison with horn

7th harmonic of F (0) - unison with trombone

Fade out B
Fl.

Ob.

Cl.

Bsn.

Hn.

Tpt.

Tbn.

Solo Vln.

Vln.

Vla.

Vc.

Db.

unison with tbn (can be omitted if no viable fingering can be found)

5th harmonic of G (13)

5th harmonic on G string

5th harmonic on G string
Slowing...
Fl.

Ob.

Cl.

Bsn.

Hn.

Tpt.

Tbn.

Solo Vln.

Vln.

Vla.

Vc.

Db.

unison with trumpet

unison with hn

dim. poco a poco

5th harmonic of B♭ (1)

(semitone trill to B♭1/4tone-flat)

espressivo, legato