

Just Constellations

Premiere performance by Roomful of Teeth, August 28, 2015, MASS MoCA, North Adams, MA

2016 revised version, premiere performances, March 31 and April 1, 2016
The Park Avenue Armory, New York, NY

Program Notes

- I. The Opening Constellation (Summer)
- II. The Romantic Constellation (Autumn)
- III. The Magic Constellation (Winter)
- IV. The Acoustic Constellation (Spring)

Ever since the 1980's, when I started working as La Monte Young's composition and tuning assistant, I wanted to compose a work like *Just Constellations* for specialized singers exploring gradually evolving constellations of tones in extended just intonation tunings. However, it was not until Brad Wells commissioned me to compose for Roomful of Teeth that the opportunity finally presented itself.

Just Constellations is approximately 18 minutes in duration. It is comprised of four interconnected constellations of justly tuned chords and modes. The first three of these are related to harmonic regions of La Monte Young's epic *The Well-Tuned Piano* using tunings based on the harmonic primes 2, 3 and 7. "The Magic Constellation" presents three variations of "The Theme of The Magic Chord," which is one of the simplest but most profound themes from *The Well-Tuned Piano*. The Acoustic Constellation is based on the fourth octave of the harmonic series and uses what is often referred to as the "acoustic" mode, using the 8th, 9th, 10th, 11th, 12th, 13th, 14th, and 16th partials of the harmonic series (I replace the 13th partial with the 27th partial down an octave).

Nom-tom syllables are used throughout the work. Although the sounds of this ancient musical language are derived from mantras they have no literal meaning. *Nom-tom* has been used by Indian classical vocalists for centuries to create beautiful vocal timbres and rhythmic accentuations. In "The Magic Constellation," *sargam* syllables, or the Indian equivalent to solfege, are also used.

"Just intonation is the tuning system of the later ancient Greek modes as codified by Ptolemy; it was the aesthetic ideal of the Renaissance theorists; and it is the tuning practice of a great many musical cultures worldwide, both ancient and modern." (Gilmore, Bob, "*Maximum Clarity*" and *Other Writings on Music*). It is any musical tuning in which the frequencies of notes are related by ratios of whole numbers. The two notes in any just interval are members of the same harmonic series and are called "just" or pure. Historic just intonation uses only notes derived from multiples of the prime numbers 2, 3 and 5, while "extended" just intonation includes higher primes such as 7, 11 and 13. Just intonation can be contrasted with equal temperament, which dominates most Western instruments, and compromises the purity and harmonic integrity of music for the convenience of having 12 equally spaced notes.

Michael Harrison

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