

Roomful of Teeth
Just Constellations
Michael Harrison





Just Constellations

by **Michael Harrison**

performed by **Roomful of Teeth**

- I. The Opening Constellation: Summer
- II. The Romantic Constellation: Autumn
- III. The Magic Constellation: Winter (based on a theme by La Monte Young)
- 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 was completed in 2016 and recorded in the ultra-reverberant acoustics of the TANK Center for Sonic Arts in Rangely, Colorado in 2017. The work 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*. "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 the "acoustic" mode with the 8th, 9th, 10th, 11th, 12th, 13th, 14th and 16th partials (I replace the 13th partial with the 27th partial transposed 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 music and instruments, and compromises the sonic beauty, clarity, harmonic integrity, and diversity in intervallic relationships for the convenience of having 12 equally spaced notes.

Michael Harrison

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Just Constellations

Producer: *Jesse Lewis*

Recording Engineer: *Jesse Lewis, Bruce Odland*

Recording Assistants: *Joshua Hill, Samantha Lightshade*

Editing and Mixing Engineer: *Jesse Lewis*

Mastering Engineer: *Randall L. Squires*

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Martha Cluwer, soprano

Caroline Shaw, alto

Virginia Warnken Kelsey, alto

Eric Dudley, tenor

Avery Griffin, baritone

Dashon Burton, bass-baritone

Cameron Beauchamp, bass

Sunny Cyr, ensemble manager

New Amsterdam:

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