

Resonance Orbits (2018)
for ensemble

Resonance Orbits takes its title from the recently discovered TRAPPIST-1 system, in which seven Earth-sized planets orbit within a very close distance of an ultracool red dwarf star, the system's gravitational stability ensured by a resonance between the planets' orbital periods that links them in a perpetual ratio of approximately 2:3:4:6:9:15:24, without which they would collide. I first read about this factoid, realizing that this wonderfully musical dance fit neatly into a bar of 6/4 time, a few days before I was asked to write a piece for the ultracool Crash Ensemble. It was a coincidence (not to mention a pun) too good to ignore.

This pulse ratio isn't constantly audible throughout the piece, which would probably sound kind of annoying. In fact, the entire complex is heard only once, quite briefly as a climactic gesture. Rather, the resonance pattern forms a pulse grid underlying the music, governing rhythmic durations, as well as entry and exit points for the players. Not all successive pulses within a layer are necessarily articulated, and they're frequently grouped into larger beats. Set groups of players are given short, unvarying figures in each section as the view zooms around the system like a space probe, seeing it from constantly changing perspectives. An orbit will frequently be occupied by several instruments at once, but in general the players stay in their own circuit until the view changes, only rarely jumping between them.

While all this might make the piece sound rather rule-bound and process-oriented, the grid was simply a way of limiting rhythmic choices for myself – as well as creating some absorbing polyrhythmic grooves – while playing freely with layers of repeated notes, harmonies and instrumental colors. In fact, though rooted in science, I wanted the music to feel quite human and intuitive in its unfolding. It even takes on a gently elegiac tone toward the end, in a memorial to my friend and colleague, Jovanka Trbojević, whose music and musicianship continue to inspire me, and who shares the dedication with the ensemble. She would have loved the idea of this planetary system, and I like to think that she may in fact be there right now. It's just too cool.

Resonance Orbits was commissioned for Crash Ensemble by Musica nova Helsinki.