

Program Notes for *The Ice Cream Truck*¹

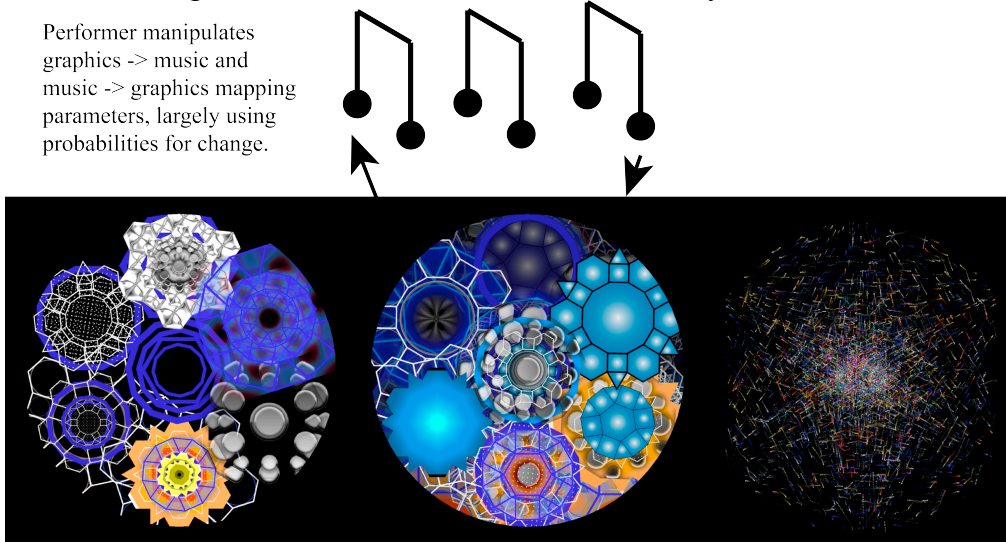
Performed by Dale Parson (Acoustic Interloper) at Electro-Music 2014
September 7, 2014, 1:30PM

The virtual instrument that I am performing in this session is an extension of the HexAtom mobile cellular automaton performed by Matt Basta, Jeremy Parson and myself in the Kutztown University Planetarium on March 20, 2012. In that performance the graphical atoms that we projected onto the dome generated MIDI music.

I have extended HexAtom to make it bi-modal with respect to media: Visual atoms generate MIDI music, and conversely, MIDI notes generate new atoms in a bi-media feedback loop. The original HexAtom used MIDI data returning from the music generator to the visual cellular automaton to light up (“excite”) the graphical atoms as the atoms’ notes played. The current HexAtom uses the MIDI notes to generate new atoms, which in turn generate new MIDI music.

As in the original HexAtom, the process of evolution of the simulated universe of atoms, starting at The Big Bang, is under partial control of the performer. Control is partial because, in addition to manipulating deterministic properties of the visual and aural universe, the performer also manipulates stochastic properties via discrete probabilities. A partial list of automaton properties directed by probabilities include atomic fission, fusion, gravity (curvature of space – attraction of other atoms), deflection other atoms, change in direction, extension of the universe / ricochet / escape at its edge, and the newly added vacuum fluctuation properties. The latter properties allow returning MIDI notes to generate new atoms with new atom numbers (mapped to pitch) and quantum states (mapped to meter) according to generation properties set by the performer. Atoms also support rotation, which a performer can map to pitch bend, as well as nesting. Many properties of the cellular automaton generate MIDI controller messages that the performer can configure and use in the MIDI-driven sound synthesizer.

Performer manipulates
graphics -> music and
music -> graphics mapping
parameters, largely using
probabilities for change.



¹ The reason for handing out this information rather than saying it using the microphone is that the piece runs the full 25 minutes of the session. I plan to start right in.