Quick info:

SolarMusic was programmed in a programming language called Processing. You can find out more about Processing at:

www.processing.org

I created the physics engine around Newton's equation:

$$F = G\frac{Mm}{d^2}$$

Why did I use Newton instead of Kepler? Newton is less cumbersome for computing real-time interaction than Kepler. In defense of authenticity, Kepler can be derived from Newton. Therefore, I did not stray too far.

Most of the astronomical data came from Kepler's *Harmony of the World*, and I filled in the gaps at:

www.nasa.gov

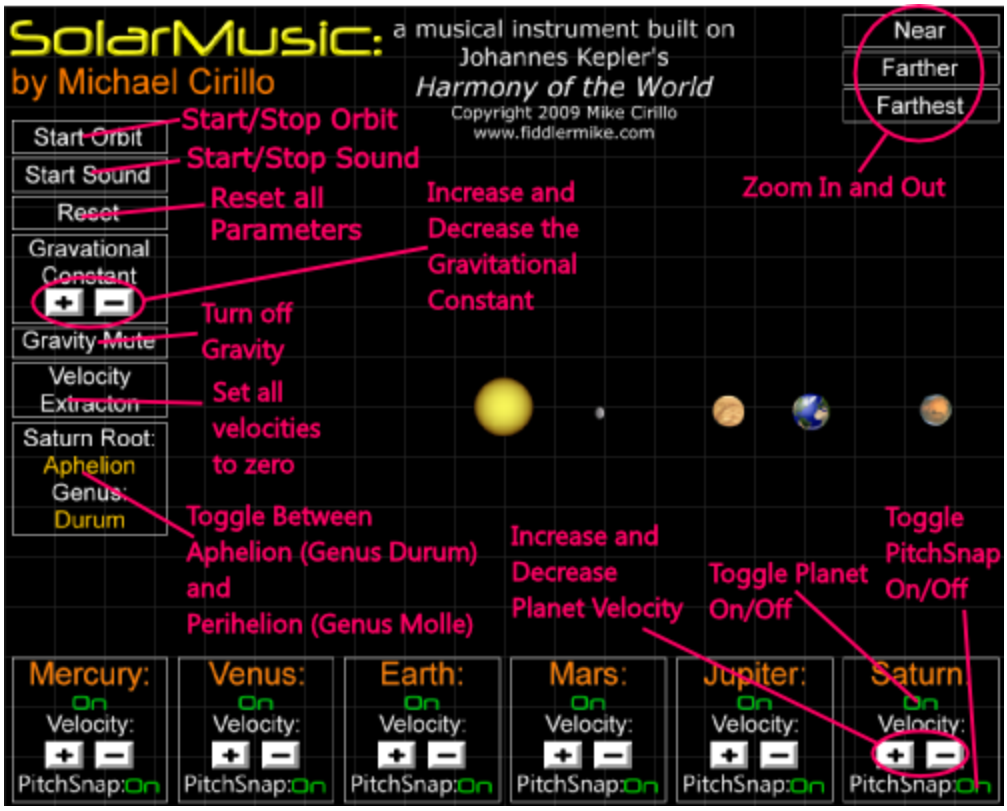
Scaling: 1 AU = 160 pixels

Kepler speculated that at the beginning of time, all the planets were in alignment. That is how I start the simulation.

The music algorithms: I converted Kepler's music theories into computer logic. The aural results match Kepler's music charts. To learn more about Kepler's theories, see my other PDF: *Kepler, Harmony, and the Pythagorean Tradtion.*

I created the PitchSnap algorithm to round the pitch to the nearest note (Just Intonation) in the appropriate scale. I got the idea from a technique Kepler used in rounding proportions into scales.

Here is a diagram of the controls:



Enjoy.

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