

*From the desk of Pierre Beaudry*



## THE ARCHYTAS MUSICAL FUNCTION FOR DOUBLING THE CUBE.

by Pierre Beaudry, 8/22/2009



How do you determine the doubling of the cube by using only the Archytas conical function? The short answer to this question is by determining the logarithmic range of two mean proportionals of the equal-tempered system between the octave of C-256 and C-512.

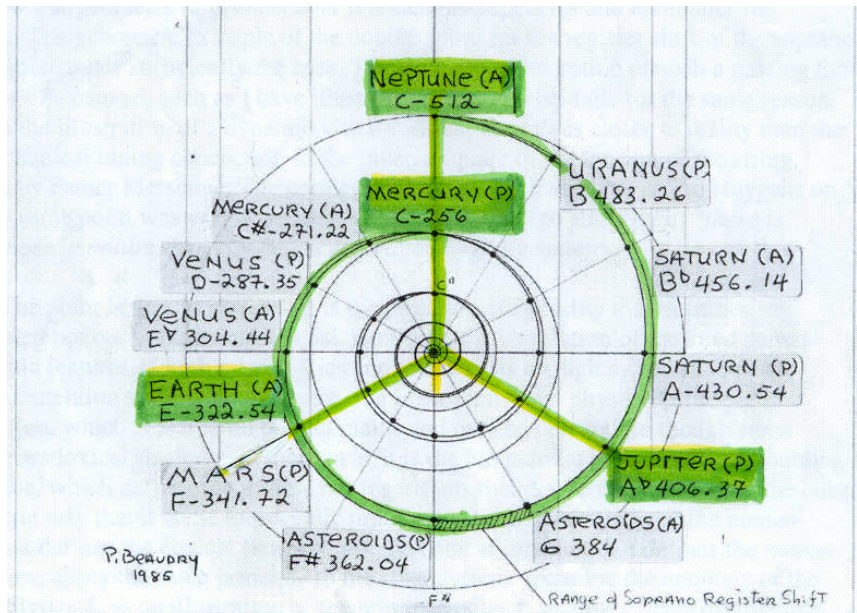


Figure 1. Correspondence between the conical projection of the equal-tempered musical system and the planets aphelion and perihelion.

As curious as the case may be, the simplest way of solving the problem of doubling the cube is a musical idea that goes back to Plato, Archytas, and Hippocrates. It is the equivalent of finding the two mean proportionals within a musical octave of the equal-tempered system. Take, for instance, the octave between C-256 and C-512. The two mean proportionals will be E-322.54 and Ab-406.37.

Those two mean proportionals, E and Ab, also correspond to the aphelion of Earth and the Perihelion of Jupiter when you establish that the perihelion of Mercury and the aphelion of Neptune mark the octave.

Planets	ASTRONOMICAL UNITS	Log 10 <sup>x</sup>	ADDED CONSTANT	multiple CONSTANT	Cycle EQUIVALENT	MUSICAL CYCLES	Planets
MERCURY	(P) 0.310	-0.5086	+2.496	x128.8	255.97	C = 256	MERCURY
	(A) 0.470	-0.3279	" "	" "	279.25	C# = 271.22	MERCURY
VENUS	(P) 0.715	-0.1457	" "	" "	302.72	D = 287.35	VENUS
	(A) 0.725	-0.1397	" "	" "	303.49	E <sup>b</sup> = 304.44	VENUS
EARTH	(P) 0.983	0.0074	" "	" "	320.52		
	(A) 1.017	0.0073	" "	" "	322.42	E = 322.54	EARTH
MARS	(P) 1.379	0.1396	" "	" "	339.46	F# = 341.72	MARS
	(A) 1.661	0.2204	" "	" "	349.86		
ASTEROIDS	(P) 2.2	0.3424	" "	" "	363.32	F# = 362.04	ASTEROIDS
	(A) 3.6	0.5563	" "	" "	393.13	G = 383.57	ASTEROIDS
Jupiter	(P) 4.95	0.6946	" "	" "	410.95	A <sup>b</sup> = 406.37	JUPITER
	(A) 5.45	0.7364	" "	" "	416.33		
SATURN	(P) 9.006	0.9545	" "	" "	444.43	A = 430.54	SATURN
	(A) 10.074	1.0032	" "	" "	450.69	B <sup>b</sup> = 456.14	SATURN
URANUS	(P) 18.288	1.2622	" "	" "	484.05	B = 483.26	URANUS
	(A) 20.092	1.3030	" "	" "	489.31		
Neptune	(P) 29.799	1.4742	" "	" "	511.36		
	(A) 30.341	1.4820	" "	" "	512.37	C = 512	NEPTUNE

Figure 2. Planetary orbits and the equal-tempered system established by Bill Bohdan.

The longer answer is by constructing the conical function of the logarithmic system of musical equal tempering. This is constructible with a straight edge alone. I will show this construction to anyone who wishes to travel to Jupiter and back?

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