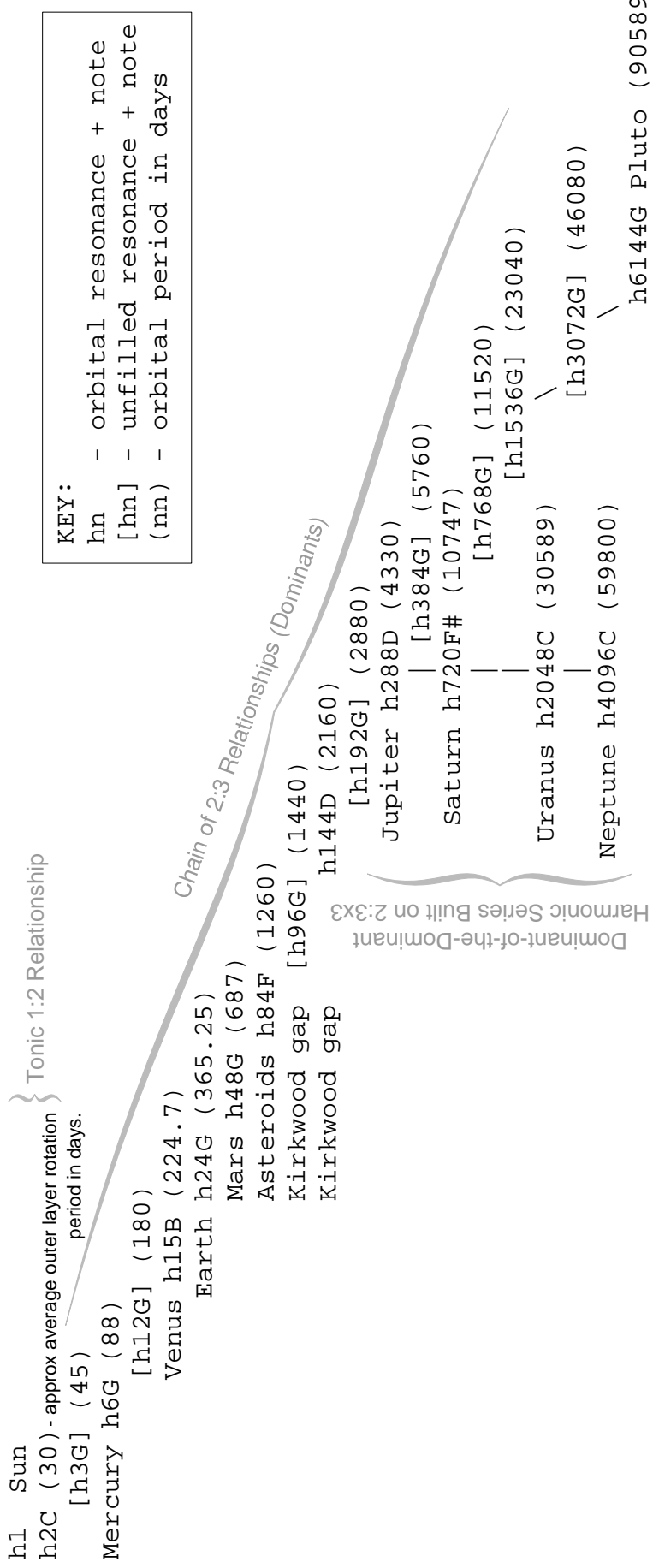


The Solar System: Planetary Orbital Periods Relative to Solar Rotation



Viewed in terms of orbital resonances, the planets of the Solar system, when plotted against the rotational period of the Sun's outer layer appear to produce the telltale footprint pattern of a Modulating Oscillatory System: with the Sun providing an anchoring fundamental frequency h2C, from which flows a chain of 2:3 relationships leading to an harmonic series built on the 2:3x3 relationship. These relationships were noticed by Johann Titus (1729-96) and published by J.E. Bode in 1772 (Titus-Bode Law). In tonal music this structure would be described in terms of the tonic key or tonal center (nominally C-major), the dominant chord (G-maj7th) and the dominant-of-the-dominant chord (Dmaj7th) - all these features are present in the diagram above. Indeed, the structure is somewhat reminiscent of the electronic arrangement of the atoms toward the end of the 5d-subshell described in the articles 'Elements of Music?' (<http://www.archivemag.co.uk/>). However, any similarities, if indeed they does exist, would be due to the application of the underlying principle of the algorithm of modulation lending a 'family resemblance' to any dynamic system of simple whole number relationships, upon which it operates. The actual mechanics of the modulatory process to bring about the resonant alignment shown above, presumably being accomplished by the gravitational effects of scattering, absorption and deflection of large amounts of planetesimal debris during the early formative period of the Solar System (see 'When Giants Roamed', J.Hahn & K.Tsiganis, R.Gomes, A.Morbidelli, H.F.Levinson; Nature Vol.435 26May05). Ultimately, Modulating Oscillatory Systems reduce to physical position-value counting schemes, though most often of a rather awkward and incomplete form, which grind to a halt when the process of modulation runs out of material to fuel further computation.