L14c   Based on the theory of relativity, the demonstration of the Titius-Bode law and the calculation of the Saturn ring orbits and the number of its rings

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1) The beautiful Titius-Bode law was discovered 250 years ago but is not demonstrated until now.

$r/r_1 = 0.4 + 0.3 * 2^n = 0.4 + (1 - 0.4) * 2^{n-1}$

The calculated equation by the theory of the General relativity is the same as the Titius-Bode law.

$r/r_1 = 30am^2E^4p_{ai}N_1/(r_1[2E^4 - 4a^2m^2]^{3/2})+$
$+[1 - 30am^2E^4p_{ai}N_1/(r_1[2E^4 - 4a^2m^2]^{3/2})] * Exp[4amp_{ai}(n - 1)/(2E^4 - 4a^2m^2)^{1/2}]$

m,a and E are solar constants with respect to mass,rotation and electric charge.

The Titius-Bode law is demonstrated by physical theory now for the first time in history.

2) The Saturn ring orbits r at aphelion/perihelion is solved by means of the same differential equation that the Titius-Bode law.

$P^2Qr^2 - 2P([F(1 - o)r^2 - 2E^4]Q^2 + 2a^2m^2(2Q + 5P/r^2)^2) + [F^2(1 - o)^2r^2 - 4F(1 - o)E^4]Q^3 = 0$

P:r^{10}polynomial., Q:r^9polynomial., $o = o(r) : 0$

The above equation is the polynomial of r^{31}. Thus the Saturn has maximum 31 rings.

The detailed analysis processes are shown on the internet web.