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How fast could our Jupiter become hot?

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Speculative analysis of causes of eccentricities of planetary orbits show
that only the fast spin prevents Jupiter and Saturn from coming near to Sun

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The discovery of the hot Jupiters – planets, whose masses are in range of our Jupiter but whose orbits lies about 0.015 to 0.5 astronomical units away from parent stars was puzzling to scientists in several ways. First, it is assumed, that they have migrated nearer to stars from colder regions. Second - it appears that some of the hot Jupiters were found to be orbiting in the opposite direction to the rotation of their host star (Cameron, 2010).

Recently we had proposed an 1/R repulsive force coming from the Sun (and Jovial planets) in order to explain elliptic orbits and solar "inertial motion" (Alksnis, 2014, cf.Alksnis, 2012) (Fig.1).

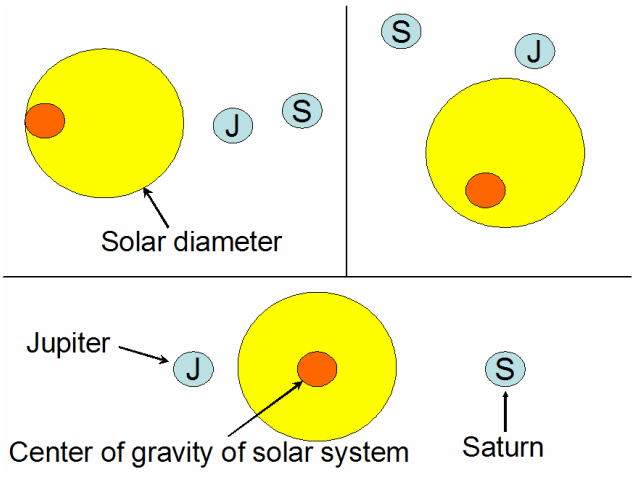

Fig. 1. Position of Jupiter/Saturn and the solar „inertial" motion.

The cause for orbital eccentricities, as far it cannot be explained by recent impacts, clearly lies outside the Standard model (and perhaps also outside of the gyrotation theory (DeMees)). Within our concept, orbital eccentricity arises from the fact that during orbital motion planets are not evenly exposed to the solar equator (from which solar repulsive force is thought to originate). Repulsion from spinning liquids in micro level has

been detected previously (Tajmar and Plesescu, 2009; Mishin, 2009). Perhaps interesting in this connection is Mishin's concept - liquid is considered as one of the natural states of ether.

Even a short look at the proportional data of solar system parameters (table 1, uncorrected G and masses of celestial bodies) is puzzling (for our purposes we will call the apoapsis/periapsis relation as "orbital elongation".

Planet	Relative minimum orbital distance	Relative maximum orbital distance	Relative mass	Maximum gravitational interaction with the Sun	Relative surface area	Orbital elongation
Mercury	0.313	0.459	0.0553	0.56	0.11	1.517
Venus	0.731	0.716	0.815	1.52	0.90	1.013
Earth	1	1	1	1	1	1.033
Mars	1.405	1.639	0.107	0.054	0.28	1.205
Jupiter	5.034	5.369	317.83	12.31	120	1.092
Saturn	9.195	9.957	95.159	1.13	83.7	1.115
Uranus	18.637	19.748	14.536	0.04	15.9	1.096
Neptune	29.886	30.216	17.147	0.019	14.9	1.023
Pluto	30.164	48.494	0.0022	0.0000024	0.033	1.659

Table 1. Proportional data of planets.

The imagined force, whose action is clearly visible in the eccentric orbits of Mercury, Mars and Pluto, is practically not able to disturb the orbit of the heavier Venus. But seeing further starting from Jupiter, we observe unexplained eccentric orbits again.

In order to check if there is any relation we can the calculate force necessary for overcoming gravity by perihelion and supply to planet an acceleration 1 m/s^2:

$$F=ma$$

$$F- F_{Gr} =m$$

where F_{Gr}= maximum gravitational attraction between the Sun and the planet.

$$F =m + F_{Gr}$$

A calculation of necessary force F for each planet gives us the following (table 2):

Planet	Minimum orbital distance, m	Mass, kg	Maximum gravitational force, N	½ of surface area, m^2	F, N
Mercury	$4.60x10^{10}$	$3.30x10^{23}$	$2.07x10^{22}$ N	3.74×10^{13}	3.5×10^{23}
Venus	$1.075x10^{11}$	$4.87x10^{24}$	$5.59x10^{22}$ N	2.30×10^{14}	4.9×10^{24}
Earth	$1.471x10^{11}$	$5.98x10^{24}$	$3.68x10^{22}$ N	2.55×10^{14}	6.0×10^{24}
Mars	$2.067x10^{11}$	$6.42x10^{23}$	$1.99x10^{21}$ N	7.20×10^{13}	6.5×10^{23}
Jupiter	$7.469x10^{11}$	$1.90x10^{27}$	$4.53x10^{23}$ N	3.10×10^{16}	$1.90x10^{27}$
Saturn	$1.348x10^{12}$	$5.69x10^{26}$	$4.16x10^{22}$ N	2.13×10^{16}	$5.69x10^{26}$
Uranus	$2.739x10^{12}$	$8.70x10^{25}$	$1.54x10^{21}$ N	4.06×10^{15}	$8.70x10^{25}$
Neptune	$4.444x10^{12}$	$1.03x10^{26}$	$6.94x10^{20}$ N	3.82×10^{15}	$1.03x10^{26}$
Pluto	$4.447x10^{12}$	$1.30x10^{22}$	$8.95x10^{16}$ N	8.32×10^{12}	$1.30x10^{22}$

Table 2. Planetary data with absolute numbers.

An analysis of orbital elongation of Mercury, Mars and Pluto obviously show mentioned 1/R mode of action. Slight eccentricity in the orbit of the Earth might be caused by the repulsion from Earth's mantle turbulence generated field (commonly misinterpreted as geomagnetic (cf.Biggin et al, 2012). This way we are not able to explain the origins of orbital eccentricity of Jovian planets, which, too, seems to stem from the repulsive force generated by the spin of mentioned planets.

Thus perhaps hot Jupiters are planets without a fast spin. In this regard, recent data that Saturn (and Jupiter) is slowing down self rotation (Martinez and Galluzzo, 2004) might give us reason to worry.

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