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Drag caused by two gravity well interacting

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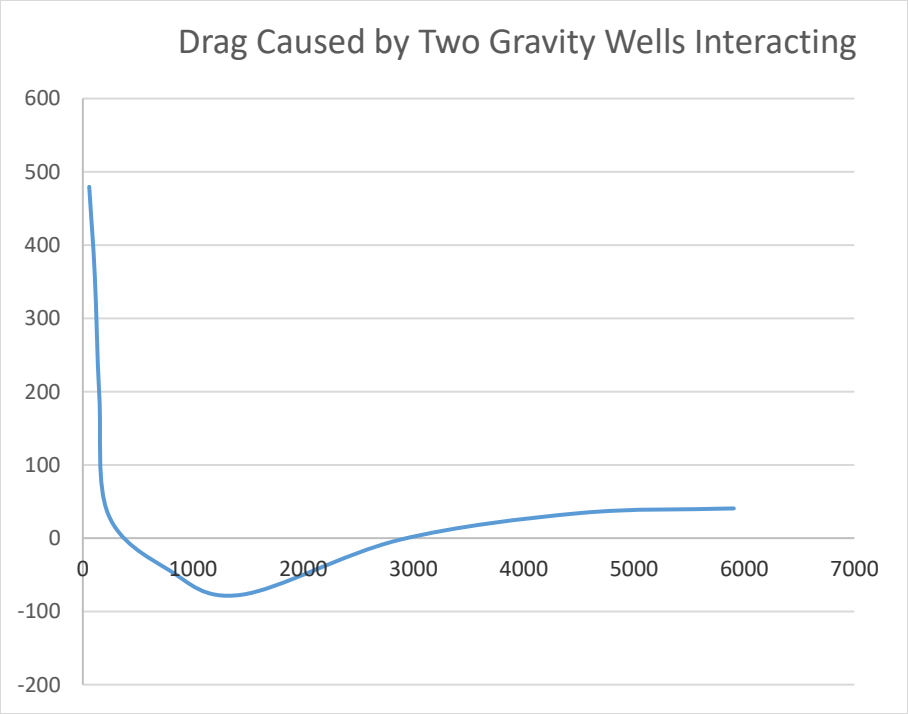
No Affilation

With all matter that has mass there is a gravity well no matter how small a mass. One would not notice the gravity well for an atom, but it's there. However, for the sun it is large. According to the Newton equation the force of gravity is proportional to the inverse of the distance of separation squared, i.e. $F \propto -\frac{1}{x^2}$. This equation has a very interesting properties. First if we plot F on the vertical axis the graph is symmetrical with respect to the vertical axis, say y axis. As x goes to zero, F goes to infinity but touches the y axis and as x goes to infinity, F goes to zero x axis. This argument is true for both +x and –x. Therefore, the plot look like a well with a flowered top but with no bottom. All of the planets and minor planets produces a gravitational well that interact with the sun and all other particles. The eight planets and Pluto gravitational well orbit the sun and the orbital velocity is affected by the sun gravitational well. The sun gravitation well caused each planet have a force in the opposite direction of the planet movement caused by the drag that the planet gravitation well suffer as it is move in its orbit. The gravitational force caused by the sun should be in balance with the force caused by the orbital velocity of each planet. If you set the Newton gravitational equation equal the centrifugal force caused by the orbital velocity for the nine bodies in the solar system and solve for the orbital velocity and compare it to the observed velocity, there is a discrepancy. The data used to calculate the orbital velocity with the Newton gravitation equation and centrifugal velocity was obtained from the WEB Site: http://nssdc.gsfc.nasa.gov/planetary/factsheet/. The sun mass was obtained by doing a search for the mass of the sun. A graph of the discrepancy is shown in the figure below plotted against the distance from the sun to the planet.



The value of the discrepancy for Venus was -19 m/s. This value was way out of line for the data plotted above. It would appear that some event changed the orbital velocity of Venus. One possibility is that some large object collided with Venus changing its orbital velocity.

I took the value of the discrepancy for the Earth minus the value for Mercury and prorated for Venus by the ratio of the distance of Venus and Earth and the distance from Earth to Mercury since the plot showed that the graph between Mercury and earth is straight in this region of the graph. The prorated value was 378 m/s for Venus. Evidently, Venus must have suffered an accelerated event. I used the momentum and energy equations composed for the before the event and after the event and set the momentum and kinetic part equal to each other. The mass of the object was 2.64EE22 kg and it velocity was 104,000 m/s that could have caused the event of increase in the planet velocity in the direction of the orbital velocity or Venus was hit from the rear. It is assumed that it was a near headlong collision with an angle of larger than 90 degrees with respect from the tangent of the Venus orbit and the vector from the sun to Venus. The diameter of the impactor was 2,200 kilometers assuming that it had the same density as Venus. The event caused an increase in Venus distance from the sun by 2.4 million kilometers. The kinetic energy release was 10 EE 32 Joules. With a search of the WEB, a similar event had been proposed. There is no way to determine when the event occur; however, it would explain why the planet is extremely hot (The mean temperature of 464 degrees centigrade which is much higher the mean temperature of Mercury) and the fact that its rotational velocity is very slow. The negative part of the graph is for Jupiter, Saturn, and Uranus. The migration and interaction of these planets could explain the negative values shown in the graph above. These three planets could still be moving away from the sun. The orbit increases for Jupiter, Saturn, and Uranus should be 8, 32, and 26 million kilometer, respectfully. Venus could be also moving away from the sun since the observed orbital velocity is greater than the calculated orbital velocity with Newton equation. By moving toward the sun, the calculated orbital velocity would decrease thus becoming balance with sum of the drag and the centrifugal velocity. The centrifugal velocity would push Venus outward until the velocity calculated

from Newton method was reduced to 34,622 m/s since R in the equation would increase. The observed orbital velocity would stay at 35,000 m/s.

It is expected that Venus lost most of it magnetic field since the collision would have knock the center core out of place and cause the planet to wobble for many years thus decreasing it spin. With a rough calculation, it would appear that a major part of the energy went into heating the planet.

We are very lucky since this could have happen to Earth. The object that probably struck Venus did not come from the Asteroid belt since there are none in this area now of this size. It could have happen sometime after the solar system formed planets out of planetesimals. It is hard to believe that Venus would remain as hot for 4.5 billion years since the earth did not. There are two Plutino size objects the size of Pluto in the Kuiper Belt the right size of the object that hit Venus. This would allow for the collision to have happen much later. The data for the objects in the Kuiper belt are listed on the WEB at http://www.johnstonsarchive.net/astro/tnoslist.html. At present only a small fraction of these objects have been discovered. Even though the Oort Cloud are believed to be mostly water and organics, they may contain a large portion of rock. Therefore, an object 2700 meters in diameter could contain the mass required to change the velocity and orbit of Venus