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By: Gabriel Gache, Science News Editor



Is there a 9th planet in the solar system?
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Where is Planet X?

Planet X is still nowhere to be found

There is another planet beyond the orbit of Neptune, and scientists say it's not Pluto. Ever wondered what the X in the name stands for? The X is the equivalent for unknown, opposed to the general believe that it represents the Roman numeral for 10. And another thing... how do you discover a planet that has never been observed? Believe it or not, the planet Pluto was actually discovered while astronomers were looking for Planet X, but it is not considered Planet X!

Even before the 1930, when Pluto was discovered, astronomers studying the orbits of the gas giants, noticed anomalies in their trajectories, which could only be explained by the existence of two trans-Neptunian objects. Thus they suggested that the solar system, is actually formed of ten planets.

On 18 February 1930, Clyde W. Tombaugh discovered what was considered at the time, the 9th planet of the solar system, Pluto. Nevertheless, about two years ago it was demoted from its planet status, due to the discovery of a series of planetoids in the Kuiper belt and the asteroid belt, which had similar characteristics to that of Pluto.

Soon after the discovery of Pluto, Tombaugh resumed the search for other distant planets, however all he found was more asteroids, a series of variable stars and comets. Planet X was nowhere to be found! During the period of time between 1980 to 1990, Robert Sutton Harrington from the US Naval Observatory conducted a set of calculations of Uranus' and Neptune's orbits, which revealed that the mass of Pluto was indeed insufficient to cause the observed perturbations. He estimated the size of Planet X to about three times that of Pluto. It would have a highly elliptical orbit that would take it at a distance from the Sun, three times that of Neptune orbit's radius. The planet's eccentricity would be practically perpendicular to that of the average orbital plane of all the other planets.

The fly-by of the Voyage 2 spacecraft through the vicinity of Neptune in 1989 provided additional data in order to calculate the precise gravitational effect on Uranus. While corroborating the extracted information with data provided by the previous space probes, Miles Standish revealed that there is in fact no perturbation that could be associated with the existence of a planet in the outer regions of the solar system.

Nevertheless, the Planet X debate is far from over. The Kuiper belt, lying between the orbit of Neptune suddenly terminates at a distance equivalent to about 55 astronomical units from the Sun. What determines such configuration is currently unknown. However, a couple of astronomers proposed that the respective area might have been swept by an object with a mass somewhere between that of Mars and the Earth.

John Murray from the Open University in collaboration with a few other astronomers, proposed instead that long period comets do not originate from random location in the theoretical Oort cloud, but they are sent towards the inner regions of the solar system during gravitational interactions with a massive object, at least the size of planet Jupiter, or even by a brown dwarf.

Patryk Lykawka, an astronomer from the Kobe University, argues that in about five years

we would know for sure if such objects exists. Though Standish clearly proved through its calculations made back in 1993 that there are no gravitational anomalies in the orbits of the gas giants, there are still a couple of puzzling features in the Kuiper belt which elude explanation.