Our Neighbors in Space

We have a special feeling toward the other planets that circle our sun. Maybe it's all the science fiction stories about visiting the moon, Mars and other planets. But we love to think about those planets that make up what we call "the solar system." that do what our planet does but do it very differently indeed.

The planets of our solar system have taken on personalities and mythical appeal in our literature and arts. It is easy to find artists who render their vision of the planets that make up our society of planets near our sun. The names of the planets, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune are all from our cultural past being gods from Greek and Roman mythology. But the solar system is not just made up of these planets. The solar system is a very busy place indeed.

In 2006, there was quite a bit of controversy as scholars and astronomers agreed to downgrade Pluto and remove its status as a planet. So you have to wonder, what is it that makes something a planet and what happened to Pluto? It didn't just go away so it must still be out there. A planet, by scientific definition is any object in orbit around a sun, that has formed into some kind of round object is a planet as long as it has cleared away any other orbiting items around it. By cleared away, that doesn't mean it has destroyed all space debris etc. For example, our planet has not "cleared away" the moon but it has captured it into its own orbit so we classify as a planet. That's a relief huh?

There are many objects floating around in our solar system other than the planets we know of. It's an interesting piece of trivia that in addition to the planets there are 165 moons orbiting around those nine planets. Some of those moons are so advanced that some scientists have suspected that they might have supported life at some point.

In addition to the regular planets and moons, there are dwarf planets, asteroid belts and routine visits by comets that create a lot of traffic in our cosmic corner of the universe. The two known dwarf planets that exist on the outer rim of our solar system are Eries and Ceres. So when Pluto's status was changed to be removed from the list of planets, it simply joined those two bodies as dwarf planets but still a solid citizen of the community of celestial bodies around our sun.

In addition to these larger bodies, there is an asteroid belt that exists between Mars and Jupiter that most of the asteroids that we see in our night sky come from. There is another belt of large objects further out called the Kuiper belt as well as a "bubble" in space called a heliopause and there is a suspected additional belt outside the known solar system called the Oort belt that we think is the origin of a lot of large asteroids and comets that frequent our solar system and come to orbit our sun.

As fascinating as these many celestial bodies who are our neighbors in space is

the origin of our solar system. We have to break it down to simple terms to understand the terms but we know that the early history of the solar system and the universe was one of great bodies of gas and clouds of matter eventually cooling and heating, exploding and spinning off stars and other massive space giants that became more stars, galaxies and solar systems. It was from this erratic activity that our sun separated from the gasses and carried with it the material that became our solar system. The gravity of the sun captured sufficient matter that it began to go through the process of forming, cooling, exploding and separating. This is what happened as the planets all went through he same process eventually establishing stable orbits and small objects falling into orbit around them.

When you think of how powerful and out of control this process is, it’s amazing to step back and see the beauty of the organization of our solar system today. The more detail you learn about the history of our solar system, the more you will enjoy your explorations of the planets with your telescope. That that discovery is part of the fun of astronomy.

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