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Writing 1010

July 16, 2015

What is Pluto? Planet or Not?

"Space, the last frontier", is the anthem from the sci-fi universe Star Trek. The majestic sky has always brought feelings of wonder and made most humans feel infinitesimal when compared with the vast cosmos. Yes, vast cosmos describes our universe well. Is it any wonder then that we have become obsessed with discovering more objects and secrets our solar system has to offer? After all the objects closest to us grant the most promising returns, along with the opportunity to know them best. This led to the discovery of our once ninth planet Pluto. Some say that Pluto shouldn't be considered a planet, however, the evidence to support Pluto's planetary status has caused great stir and objection on the fate our society has placed on this old underdog in our solar system.

Pluto, ever since it's discovery, has led to controversy and changes in the way we think about Planets, and other space material as they orbit around our Sun. Every other planet orbits along the same plane as the others except Pluto, which orbits 17 degrees above the other planets. "Pluto is more than 3.6 billion miles (5.8 billion kilometers) away from the sun. That is about 40 times as far from the sun as Earth." states Heather R. Smith, who works for NASA in the Educational Technology Services. (May) In reference to the Earth, Pluto is only about half as wide as the United States. Not only is it just barely smaller than our Moon, it also takes 248 years for Pluto to make its way around the Sun. This is due, mostly in part to its distance from

the Sun not size, however, its size has everything to do with the 6 ½ days it takes Pluto to complete one of its days.

Pluto's rests in the region called the Kuiper Belt, which is a collection of thousands of icy, small objects. The group of astronomers that name objects in space and qualify them as comets, asteroids, dust, or planets is referred to as the International Astronomical Union or IAU for short. The once great planets demotion to a dwarf planet was caused by the discovery of other planetary object bigger than Pluto nested beyond Pluto. This finding of the new object named "Eris" caused "other astronomers to talk about what makes a planet a 'planet.'" (May) Discovering new objects similar to Pluto has forced the scientific community to question what a planet truly is, so, they have come up with a list of qualifications.

The conference, held in 2006 by the International Astronomical Union in Prague, came up with the first rule, the planet needs to be "… in orbit around the Sun." (IAU.org) It doesn't sound like a rule that needs to be mentioned but if they didn't millions of chaotic rocks floating around in space would be considered planets. There are other planets outside the solar system called exo-planets not planets. Orbiting the Sun is crucial to a planets classification. The second rule on this list of intergalactic proportions is more important; it must "[have] sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape." (IAU.org) Basically it has to be big enough in order to rotate into a round shape like our Earth. Last but surely not least a planets is required to "[clear] the neighbourhood around its orbit." (IAU.org) It is this last qualification that knocked Pluto out of planetary body status. Pluto has become a dwarf planet. The list for these "dwarf planets" is similar to regular planets with the final rule changing to one that "has not cleared the neighbourhood around its orbit." (IAU.org) Lets take a look at these rules though and see how full proof they truly are?

Of course the first rule is a fool proof method of determining a planet. If we didn't include that it would be chaos in the cosmos as any body within our solar system or out of it would be considered a planet and it would jump from eight or nine to thousands if not millions. The second rule is also crucial as it disqualifies celestial bodies like asteroids or comets from being considered planets. Clearly objects too small to become spherical are objects too small to be considered planets. However the third rule is where all the controversy sets in.

A planet has to clear "the neighbourhood around its orbit." This is a tough classification for many reasons. The first one being that if a planet such as Earth was placed at the same distance from the sun and the same angle of travel as Pluto, it would not clear its own path. Diverse groups and sizes of objects in the Kuiper Belt make it nearly impossible for any object to clear its own path around the Sun. Now add in the fact that it takes Pluto roughly 248 years to revolve around the Sun once, and you can see why that last classification might come under scrutiny. No one would deny Earth the classification of "Planet" yet if it was in Pluto's shoes it would be kicked out and we would be living on a "dwarf planet" or a "plutoid" (a term for pluto sized objects at or around the same distance that pluto is). (May)

There are those that say Pluto should not be a planet. Their argument rests on the discovery of new objects deeper in space than Pluto, some of which are bigger than Pluto. It stands to reason that if "Pluto is allowed to remain in the ranks of the planets, then there is a strong argument for the inclusion of many others." (Millis) If Pluto remains a planet then other celestial bodies like Eris will have a strong argument to be considered a planet too.

We should be asking ourselves this question, "Does it even matter?" Does it even matter what we call Pluto? Some like John Millis, a man with a PhD from Purdue University don't seem to believe so. He states, "The way we classify objects has no influence on the physical nature of

the Universe, it only dictates what terminology we learn in textbooks." (Millis). While that may be the case I would argue that it does matter. Words give meaning to the substance of life. Buddha is quoted as saying "Whatever words we utter should be chosen with care for people will hear them and be influenced by them for good or ill." (BrainyQuotes) The famous actor Robin Williams, who received his degree from Julliard Performing Arts, one of the most prestigious universities in New York, had this to say about the power of words, "No matter what people tell you, words and ideas can change the world." (BrainyQuotes) He gave this line while playing the role of John Keating, an English teacher in the movie "Dead Poets Society". Robin Williams made an entire career out of making others smile and laugh, while only moments later having audiences sobbing in tears at the thought of some horrific challenge others may be facing. He was able to do all of this with words as his sword.

Words and the meanings we give to them have lasting consequences. The word planet may not hold much sway in our eyes, but what about a child who admires the night sky, or an aspiring astronomer who hopes to someday find a new planet like Pluto or discover a new moon. These words we give meaning to hold lasting affects and infinite ramifications on the lives of so many humans. How can we expect to maintain a consistent society if we do not hold onto these words and their definitions. Does it matter what we call it? I'll let you decide, however, it would seem that Planet Pluto always wins in the publics eyes yet fails in the eyes of IAU. (Drake)

Many gatherings of scientists, teachers, and students have voted on whether or not Pluto is a planet. One such gathering of an audience happened at Harvard, where the issue was debated once again. They decided "on their favorite definition of a planet, and whether Pluto is in or out." Nadia Drake goes on to recount "Planet Pluto won." (Drake) Terminology such as what makes a planet has changed over the years. At one point the Sun was considered a planet, nowadays no

one would consider that. "'Planet' is a culturally defined word that has changed its meaning over and over again," Gingerich said during the Harvard debate. "My feeling is that in retrospect, the IAU should not have attempted to define the word 'planet.'" (Drake) Gingerich is Professor Emeritus of Astronomy and of the History of Science at Harvard University, and a senior astronomer emeritus at the Smithsonian. These are just a few of the great accomplishments Owen Gingerich has had in his lifetime. (Harvard.edu)

In 2006, a few months before the new classification of dwarf planets and planets by the IAU, NASA launched a new satellite into space. It's mission, code named New Horizons, is rightly so titled. Stretching our horizons by travelling to the far reaches of our solar system, the New Horizon spacecraft just reached Pluto at the edges of our society of planets and will remain there for another 5 months taking photographs and studying Pluto and its moons. Only here can scientists hope to study in greater depth the make up of our solar system and what these objects like Pluto truly have to offer the scientific community. All of our attempts to photograph Pluto come out fuzzy because of how far away it is until now. Thanks to New Horizons we now have the first glimpse of Pluto.

Some of you might be thinking, "How can Pluto be considered a planet if there are so many objects like it in the solar system?" The simple answer is, it's treasured in our hearts as a planet. It is my hope that most would like Pluto to be a planet again, as it appears the community responsible for making these judgment calls did what it could to exclude Pluto from being labelled a planet. Refer back to the discussion about Earth not meeting the requirements if it was that far out in the solar system. The IAU would most certainly never disqualify Earth as a planet so why has it done so to Pluto?

Maybe with new discoveries on the horizon we will see a new classification for our old friend Pluto. I'll let you decide what should or shouldn't be considered a "planet" and at the end of the day all we can do is use our best knowledge and judgment, but remember how you felt as a youth looking into science books and the sky, standing in awe at the beauty of these celestial titans in our neighbourhood. I say let us not change what we have already claimed to be our planets, but only build the future of our solar system, whatever that may be.

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