The International Astronomical Union (IAU) is the organization that determines the official names and classifications for all celestial bodies. Prior to the IAU meeting on August 24, 2006, there had not been a singular definition created for planets. It was widely thought that our solar system consisted of nine planets, which ended with Pluto. After the discovery of another large object far beyond Pluto (later named Eris), there was an argument whether the new discovery should also be called a planet. Prior to the discovery of Eris, the general consensus was that a *planet* (with the exception of asteroids and comets) is a celestial body that is round and revolves around the Sun. Thus, the IAU now needed to discuss what characteristics define a planet.

After heated debates among its members, the IAU agreed that the patterns in which objects in our solar system revolve around the Sun, as well as the orbits of the objects, help determine how these objects are classified. Furthermore, the IAU redefined a *planet* as a celestial body that meets three requirements: (1) it orbits the Sun, (2) it has enough mass to overcome forces to reach hydrostatic equilibrium (nearly round) shape, and (3) it dominates the area around its orbit (IAU 2006). Pluto met the first two requirements, but since t the orbit is crowded with other objects and is not massive enough to clear other objects away, it did not meet the third criteria. The IAU decided on the term "dwarf planet" when the object fits the first two criteria, but not the third.

Another unique characteristic debated by the IAU is that Pluto and its largest moon, Charon, are in very close proximity to one another and actually orbit a common center of gravity. This is unusual because in our solar system, the planets are typically the center of gravity that moons orbit. Planets also clear a path along their orbits because they attract nearby asteroids, comets, and other space objects. Because Pluto does not dominate the area around its orbit and has a messy orbital path, patterns are important considerations when classifying objects in our solar system.

During its fall meeting in 2006, members of the IAU held a vote to determine whether Pluto should be reclassified as a dwarf planet. The IAU received a clear majority of votes to reclassify Pluto, as it is vastly different from the other outer planets in a number of ways (Inman 2006). First, Pluto's orbital pattern is tilted when compared to the other planets in the solar system. Second, Pluto's orbital pattern is also highly elliptical and not as circular as the other planets in our solar system. In fact, at times during orbit, Pluto is closer to the Sun than Neptune. Therefore, Pluto and Eris fell into this new category of dwarf planet.

The reclassification from planet to dwarf planet status enraged Pluto-philes around the world who denounced the IAU for heresy. It is interesting to note that the reclassification is not considered a major change in scientific theory or discovery, but rather a change in the rules with which planets are classified (Robertson 2006). This situation illustrates how science and scientific knowledge are tentative and can be altered with new evidence or interpretations of evidence (Lederman 2007; NGSS Lead States 2013). It also demonstrates science as a human endeavor in which classification of our natural world and interpretation of evidence can result in the coexistence of opposing, yet valid, points of view.

To further add to the controversy, in June of 2008 the IAU introduced a new term, "plutoids." The IAU stated that *plutoids* are celestial bodies in orbit around the Sun beyond Neptune that have sufficient mass for their self-gravity such that they assume a near-spherical shape. Plutoids, like Pluto, have a cluttered path around their orbit. Many new discoveries in the Kuiper belt (including Pluto) fit this category. However, satellites (or moons) of plutoids (such as Charon) are not plutoids themselves.