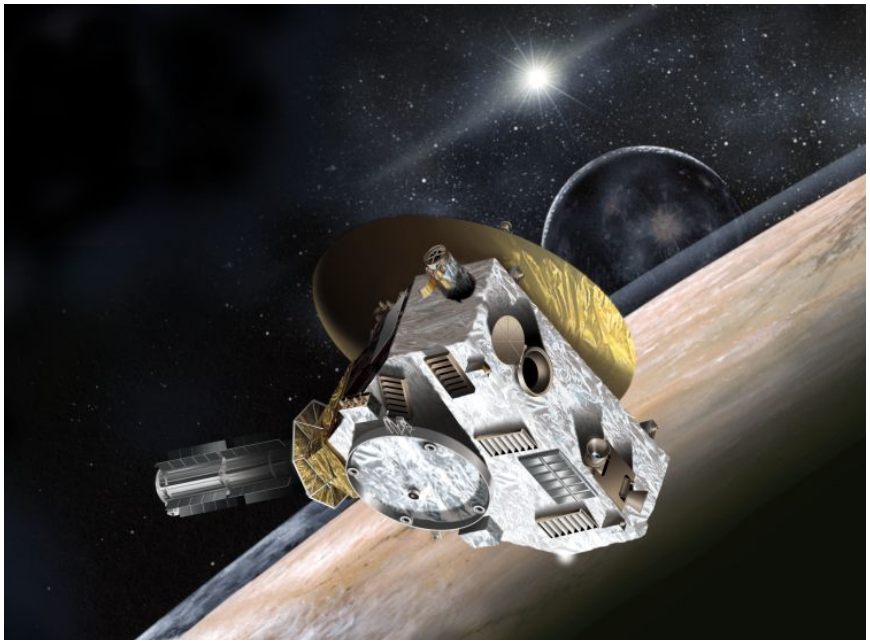


Fact 14: “New Horizons” will show us more about Pluto.

No spacecraft have visited Pluto yet. Since the 1970s, all the information we have is what we have been able to observe through the Hubble Space Telescope. This is about to change.

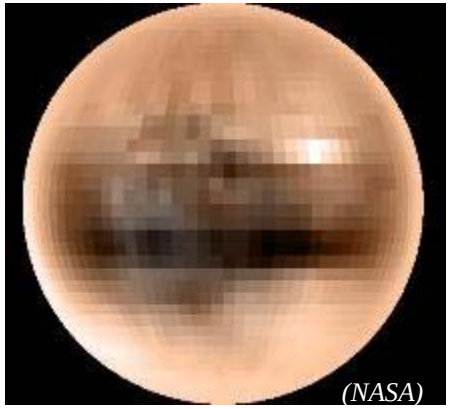
NASA’s Pluto probe is called “New Horizons”. It was launched in January 2006 and will reach Pluto in 2015.

This will give us much more detailed information about what Pluto is really like.

After its trip to Pluto, New Horizons will continue deeper into space and explore the Kuiper Belt region.

Since its discovery, Pluto has caused more questions than it has answered. All information we have is what we have been able to see and calculate from Earth. Finally, we will have close up pictures and information and all the questions should be put to rest. And we can finally discover what is really out there and beyond.

14 FUN FACTS ABOUT



PLUTO

By Jeannie Meekins

A LearningIsland.org
15 - Minute Book

Editor: Jennifer Robinson
Pictures by the National Aeronautics and Space Administration (NASA)

LearningIsland.org

14 Fun Facts About Pluto/Jeannie Meekins
Summary: A brief look at Pluto.

1. Pluto. Juvenile Literature. 2. Charon. Juvenile Literature. 3. Space. Juvenile Literature.

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Fact 13: From Pluto, our sun would look smaller than Venus.

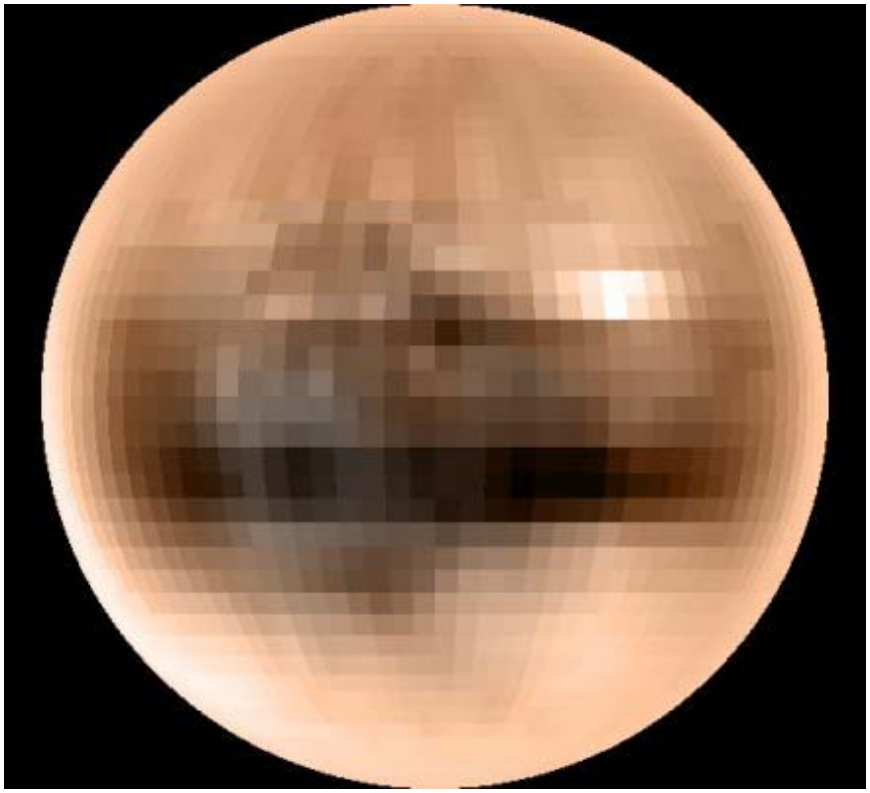
If you were standing on Pluto and looked back at our sun, it would look smaller than Venus.

Venus is the brightest object in our night sky.

Imagine standing on Pluto and looking back at the solar system. That tiny object of light is what holds the solar system together. Its gravitational pull extends more than three times as far as Pluto. It burns at a massive 6000^{o}C.

Yet, Pluto's temperature remains at about -223^{o}C, altering only by about 15^{o} as it nears the sun.

Sunlight takes almost six hours to get there.

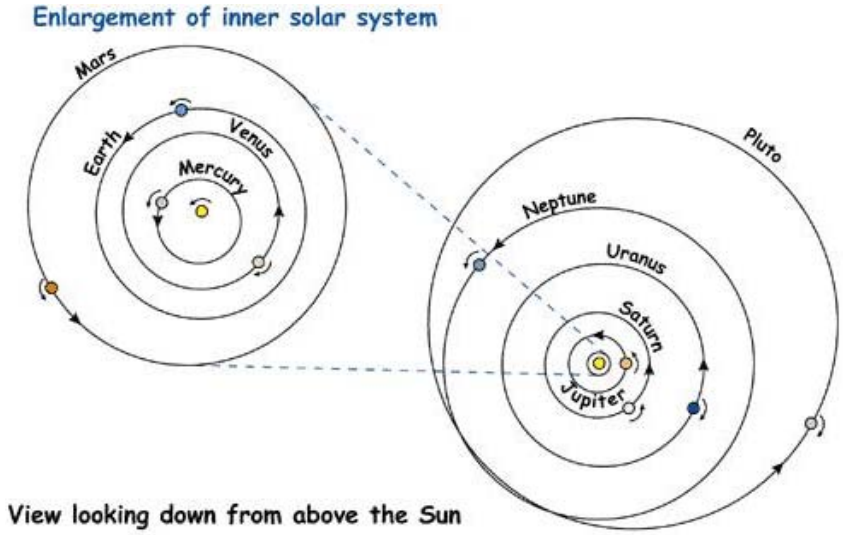


Fact 12: It snows on Pluto.

Pluto has an average temperature of -223^{o}C.

It is basically a ball of rock, with a mainly frozen atmosphere. When Pluto's orbit brings it close to the sun, the atmosphere begins to thaw and becomes gaseous.

As it moves away from the sun, the atmosphere becomes thin and cold. It freezes again, and falls to the ground as snow.



Fact 1: Pluto's existence was predicted before it was ever discovered.

While watching Uranus, astronomers noticed that there were unexplained anomalies with its orbit. All objects have a gravitational pull and it appeared that something was pulling on Uranus.

Astronomers pointed their telescopes beyond Uranus – and in 1846, found Neptune.

More watching showed that both Uranus and Neptune were being affected by something else.

In 1905, Percival Lowell predicted the existence of, and organised a search for another planet.

In 1930, Clyde Tombaugh discovered an object. Its path was tracked for a few days and then extrapolated. (This means they used the information they had to predict a complete path.) This object was shown to be in orbit around our sun.

The textbooks were rewritten. Our solar system now had nine planets.

Fact 2: Pluto was found by “mistake”.

Astronomers predicted orbits for both Uranus and Neptune. The actual positions they could see did not fit in with their predictions. They believed this must be the influence of another planet. Hence, Pluto was found.

What was later found out was that the astronomers were wrong in their calculations of the masses of these two giant planets.

It must be remembered that this was over 100 years ago.

Modern observation and measuring techniques have given us more accurate masses for Uranus and Neptune. These new values account correctly for what is happening with the planetary orbits.

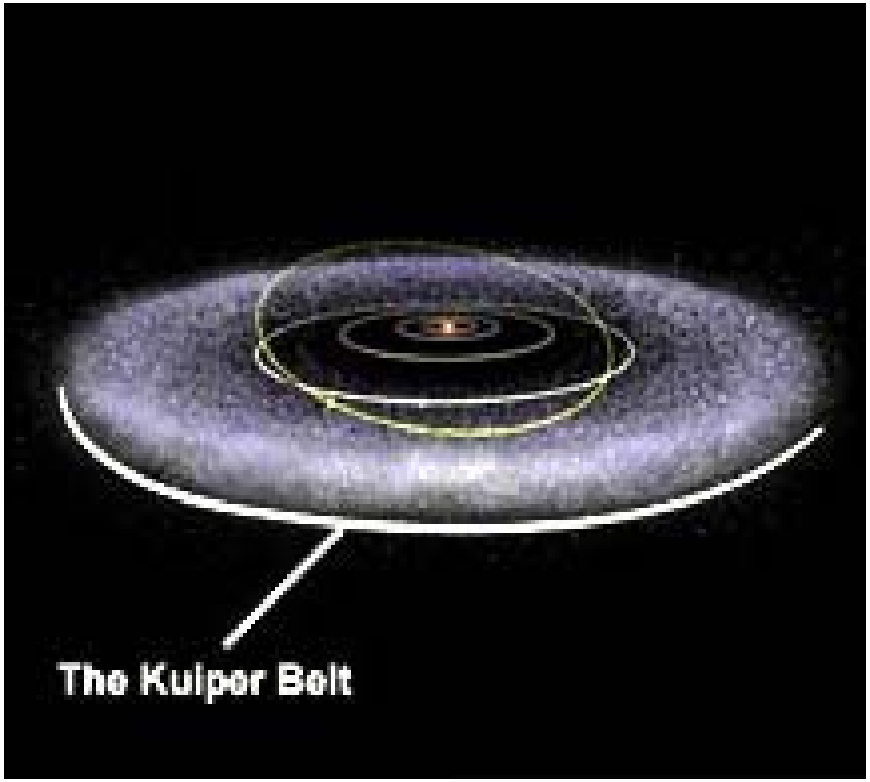
Just think, if the astronomers had not made a “mistake”, Pluto might never have been found!

Fact 11: Pluto and Charon share an atmosphere.

Pluto has an atmosphere of methane and nitrogen. Its gravity is about one twenty fifth that of Earth. This allows the atmosphere to drift a long way from the planet.

Some scientists believe that it can drift as far as Charon, and that the two worlds share the atmosphere.

One twenty fifth works out that if you weigh twenty-five kilograms on Earth, you will weigh one kilogram on Pluto.



Fact 10: Pluto will rotate about 14,209 times in one orbit of the sun.

It takes six Earth days and nine hours for Pluto and Charon to orbit each other once. One Pluto year (the time it takes Pluto to go around the sun) will consist of about 14, 209 Pluto days.

Pluto has a retrograde rotation. This means that is spins the opposite way from Earth. The sun rises in the west and sets in the east. Venus is the only other planet that spins in this direction.

Fact 3: Pluto is no longer considered a planet.

From the moment it was found, scientists had argued whether or not Pluto is a planet.

It does everything a planet should do. It has an atmosphere, it has a moon and it orbits the sun. But it is just too small.

The Kuiper Belt is a region beyond Neptune where over 300 icy bodies orbit our sun. Pluto is in this region.

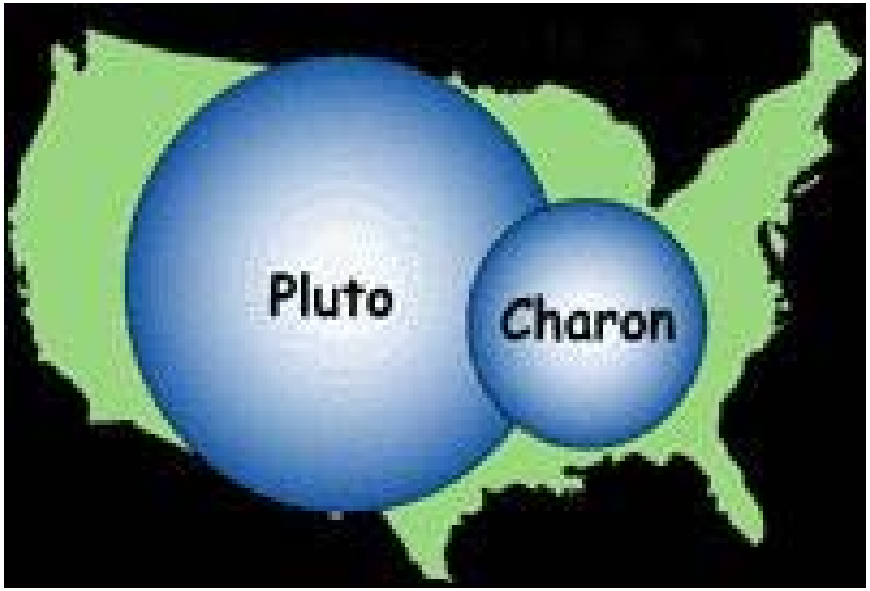
In 2004, another object was found orbiting out past Pluto. It is larger than Pluto and has its own moon.

Huge debates erupted as to what to classify this thing as. After two years it became officially known as a “dwarf planet” by the name of Eris, and its moon is called Dysnomia.

So what does this make Pluto, since Eris is bigger?

More debating erupted, and in late 2006, Pluto was downgraded to “dwarf planet”.

Officially, our solar system has only eight planets.



Fact 4: Pluto is smaller than a lot of countries.

Pluto has a diameter of 2200 kilometres.

If Pluto was cut in half and the cut side put against the Earth, it would not even be able to cover most countries. It would cover a little over half of the USA, and about two thirds of Australia.

You could fit three Plutos in Africa, two in South America – in the top section. The bottom of South America is too skinny to count in measuring.

Get out your atlas and ruler and measure for yourself. Then you will have an idea of how small Pluto really is.

Fact 9: Pluto and Charon always show the same faces to each other.

Pluto and Charon's orbits are synchronised. They rotate so that they always show the same faces to each other.

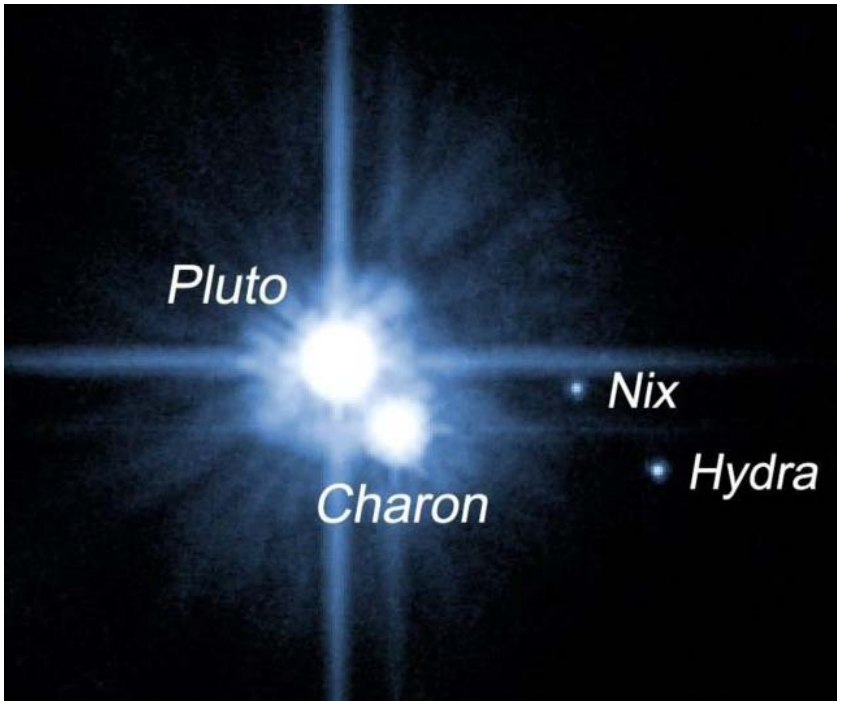
The best way to explain this is for you to do it yourself. You will need two coins and a button, stone or other small object. You can use a floor, table or any flat surface.

Put the button on the surface. We will call the button "the centre of gravity". All stars and planets rotate around a "centre of gravity" and one rotation is what we call a day. Two objects will rotate around each other, so Charon rotates around Pluto and Pluto rotates around Charon.

So, hold your coins so that they face each other.

Rotate them one complete circle around the "centre of gravity", making sure the two facing sides always face each other.

This is how Pluto and Charon orbit each other.



Fact 8: Pluto has two tiny moons.

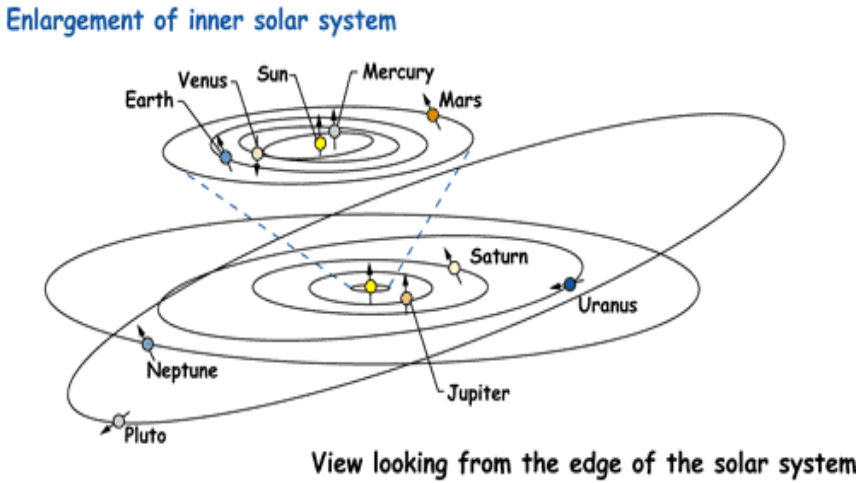
In May 2005, the Hubble Space Telescope detected two tiny objects orbiting Pluto.

These objects were at distances of 50, 000 and 65, 000 kilometres from Pluto. The larger is estimated to be between 110 – 160 kilometres in size, while the smaller one is estimated to be 100 – 140 kilometres in size.

Pluto is about 4000 times brighter than these objects, which explains why they are so hard to see and why they have not been seen earlier.

These objects have been watched very carefully. It appears that they do orbit Pluto and are travelling with Pluto in its orbit of the sun.

In January 2006, they were officially listed as moons of Pluto and given the names of Hydra and Nix.



Fact 5: Pluto has an elliptical orbit.

It takes 248 Earth years for Pluto to complete one orbit of the sun. Since its discovery in 1930, Pluto has completed a little over a quarter of its orbit.

Pluto has an elliptical orbit. This means it goes around the sun in an elliptical shape, like a stretched out circle.

At a certain point in its path, it cuts inside Neptune's orbit. For ten percent of its journey, Pluto is actually closer to the sun than Neptune is.

The angles of the orbits are such that the two planets will never collide.

In 1979, Pluto cut inside Neptune's orbit. It stayed there for twenty years. In 1999, it moved back outside Neptune, where it will stay for another 228 years.

Fact 6: Pluto is named after a Roman god.

Pluto is named after the Roman god, Pluto.

Pluto was the God of the Underworld and God of the Dead.

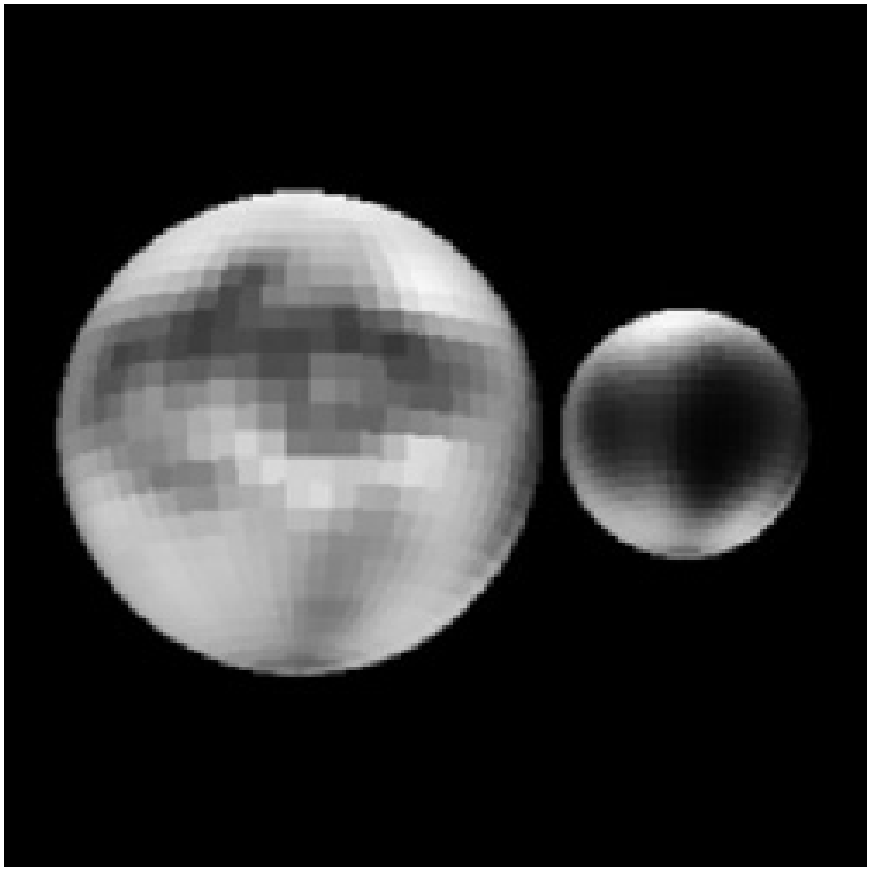
The name Pluto means “wealthy” and this causes confusion as he is a god of abundance as well as a god of death. However both these things relate to the earth.

Hades is the Greek counterpart of Pluto, and Hades is the name given to Pluto’s realm. Hades means “The Unseen One”, which was more of what Pluto was like.

Pluto was fierce and unyielding and became the most hated of all gods. It was not that he was evil to mankind; he was grim and terrible, refusing to listen to the prayers and unappeased by sacrifices in his name.

Hades has now become another name for Hell.

This is ironic, as the fires of Hell are nothing like the frozen wasteland of Pluto.



Fact 7: Pluto has one main moon.

Even though Pluto was discovered in 1930, it took another 48 years to find that it had a moon.

With a diameter of 1200 kilometres, Charon is half as big as Pluto. It orbits Pluto at a distance of about 20,000 kilometres.

If you were standing on Pluto, Charon would look about six times bigger than our moon.

Only fuzzy pictures exist of Pluto and Charon. This is because they are so small and so far away from Earth.