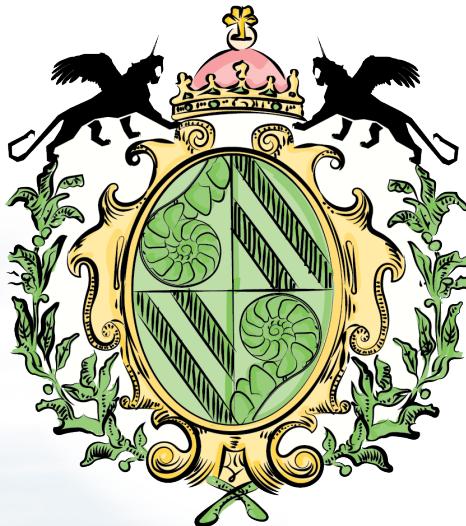


These pages are from the G3 STEM Taught journal,
"Balanced and Unbalanced Forces."



Rocket Engineering

STEMTaught



Beth and Jake Hunter

Earth Scientist, Mechanical Engineer, STEM Taught

Get ready to launch a paper rocket! This is one of our favorite activities in the STEM Taught journal. You can learn a lot from a paper rocket about how real rockets fly. Someday, you could design a rocket that actually goes to space. You can do anything! Don't ever let anyone tell you otherwise. Our two favorite things about life are working hard and having fun. Making STEM Taught for you has been a lot of fun and it has been a lot of hard work too, but you are worth it.

New Horizons Explored Pluto

Do you know what one of the fastest man-made objects ever launched is? It is the New Horizons space probe. Right now, the New Horizons space probe is traveling away from Earth at 36,400 miles per hour, or ten miles every second. That is fast enough to travel from New York to California in four minutes! On an airplane, that flight would take over five hours.



The New Horizons space probe is the fastest man-made object ever created. It was made to explore Pluto.

New Horizons flies really fast and will continue to do so forever because it is in space, and in space there is no air resistance to slow anything down.

Among The Fastest Man-Made Objects

New Horizons was launched in 2005 to explore Pluto, which at the time was the last unexplored planet of our solar system. The launch vehicle used was an Atlas 5 rocket that weighed 1,263,600 pounds at lift-off. Much of that weight was rocket fuel. As the rocket's fuel burned, it provided the space probe with a constant push from behind that caused the probe to travel faster and faster every second that fuel burned.

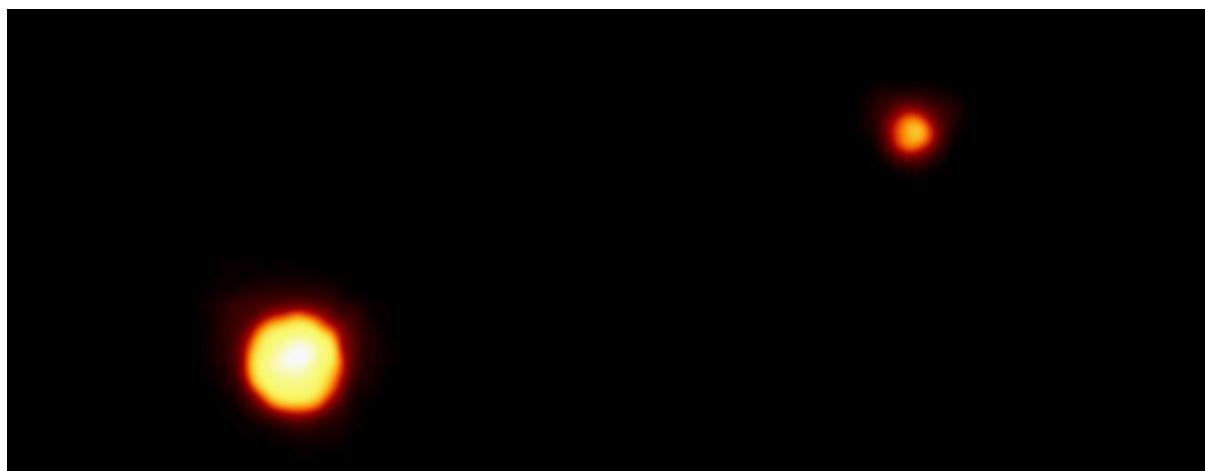


The New Horizons space probe was launched using this Atlas 5 rocket. The rocket is used as a big "push" to make the probe go really, really fast.

The rocket engines provided 860,300 pounds of thrust for 311 seconds. After the rocket's burn was completed, the probe was released to float through space toward Pluto traveling as one of the fastest objects ever created by humans.

New Horizons Flew Past Pluto

After a ten year journey through space, the New Horizon's probe arrived at Pluto. Since the probe could not slow down, when it finally arrived, it zoomed past Pluto in just one day. The scientists had planned for this. As the remotely controlled probe passed the planet, it pointed all of its sensors toward Pluto to collect data and snap as many pictures as it could for us to analyze.



This image taken with the Hubble telescope shows Pluto and its moon Charon. This blurry image was the best image of Pluto that we could see before the New Horizons mission.

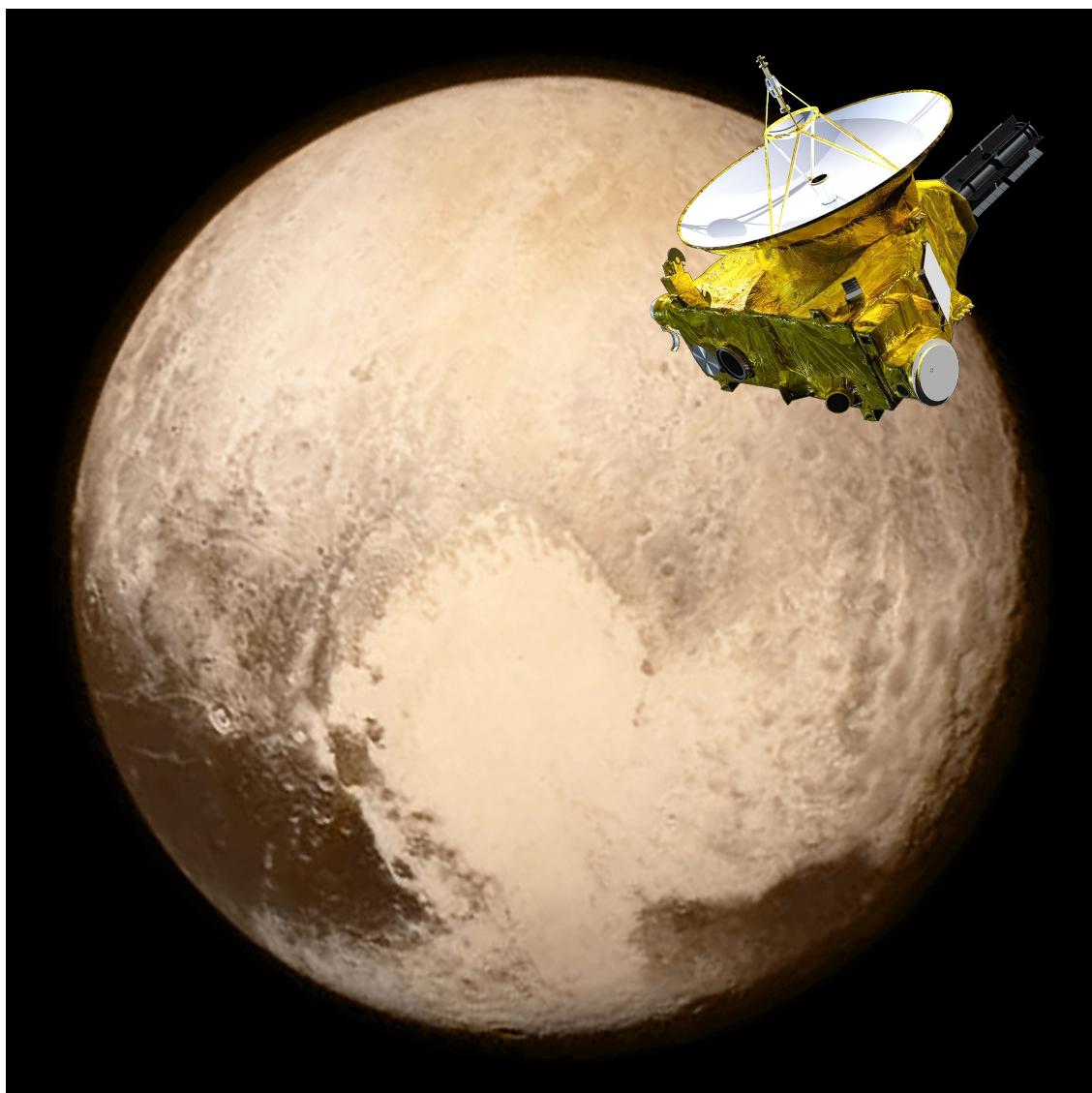
Remember,
dwarf planets are
planets too!



It took 15 months for New Horizons to slowly send back photos and data from its encounter with Pluto, but it was worth the wait. We learned that Pluto was one of the most interesting planets in our solar system.

Pluto Is a Very Interesting Planet

Pluto is a pink planet and it has a large ice field that is shaped like a whale's tail. It has a magnetic field meaning that it has a molten core! It has areas with craters and a large area that does not have craters which shows that it has active geologic processes that refresh its landscape. We found frozen volcanoes that erupt water. We suspect that it has a liquid ocean under its frozen surface.



The New Horizons probe took this amazing picture of the planet Pluto. The image of the probe was added by an artist.