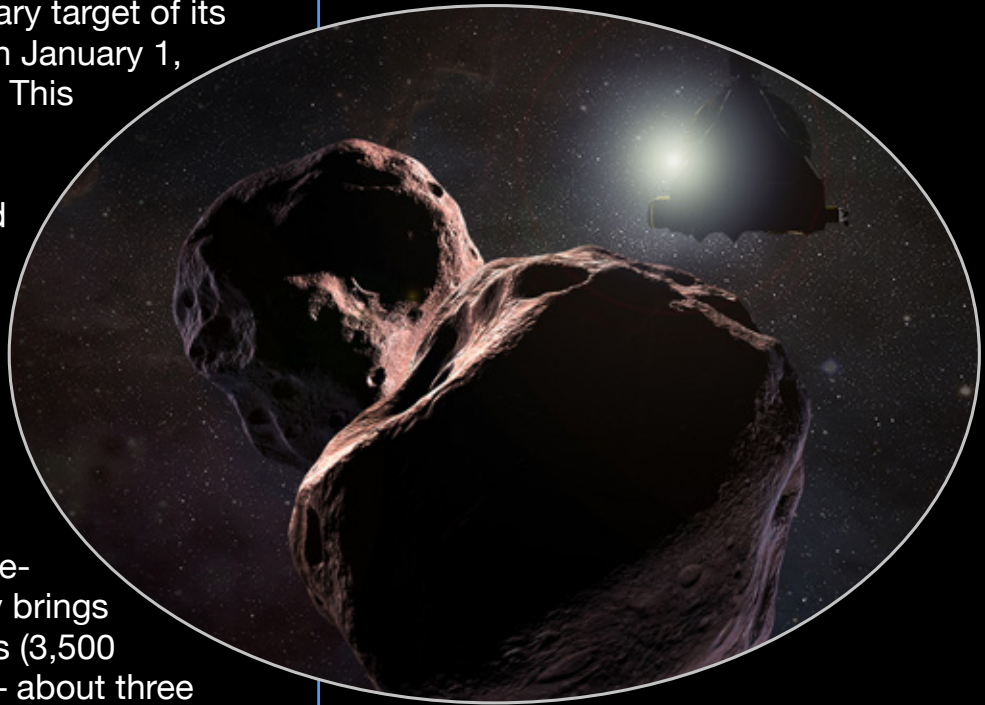


Ultima Flyby

Timeline

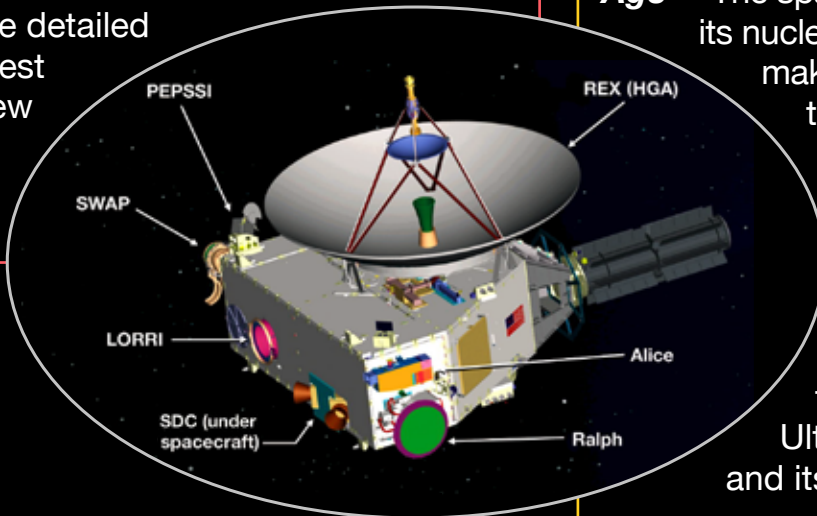
New Horizons will fly by the primary target of its first extended mission on January 1, 2019, at 12:33 a.m. EST. This target is an ancient and scientifically valuable Kuiper Belt Object called 2014 MU69 (also nicknamed "Ultima Thule," pronounced "Ultima Toolee").

New Horizons will use all seven of its instruments to study Ultima Thule in detail. The spacecraft's nominal trajectory brings it as close as 2,000 miles (3,500 kilometers) from Ultima – about three times closer than its flyby of Pluto in 2015.



Objectives & Observations

All flyby science objectives are designed to better understand this ancient Kuiper Belt Object. The mission team will map its surface in black-and-white, color, and for composition; search for any moons or rings; search for an atmosphere; and determine interactions with the solar wind so far from Earth. The closest approach images of Ultima Thule will be much more detailed than the best images New Horizons took of Pluto.



Challenges

Many challenges make New Horizons' Ultima Thule flyby more difficult than its Pluto flyby. These include:

Distance— Ultima Thule is a billion miles beyond Pluto. The Sun is only half as bright as seen from Pluto, making it harder for the spacecraft's instruments to "see" the object. It also takes about 90 minutes longer to communicate with Earth.

Age— The spacecraft is three years older and its nuclear battery generates less power, making the choreography of scientific observations more complex.

Size— Ultima Thule is fainter and about 100 times smaller than Pluto, so navigating there is much harder. But, despite these challenges, the New Horizons team plans to collect as much data about Ultima Thule as it did on Pluto and its moons

