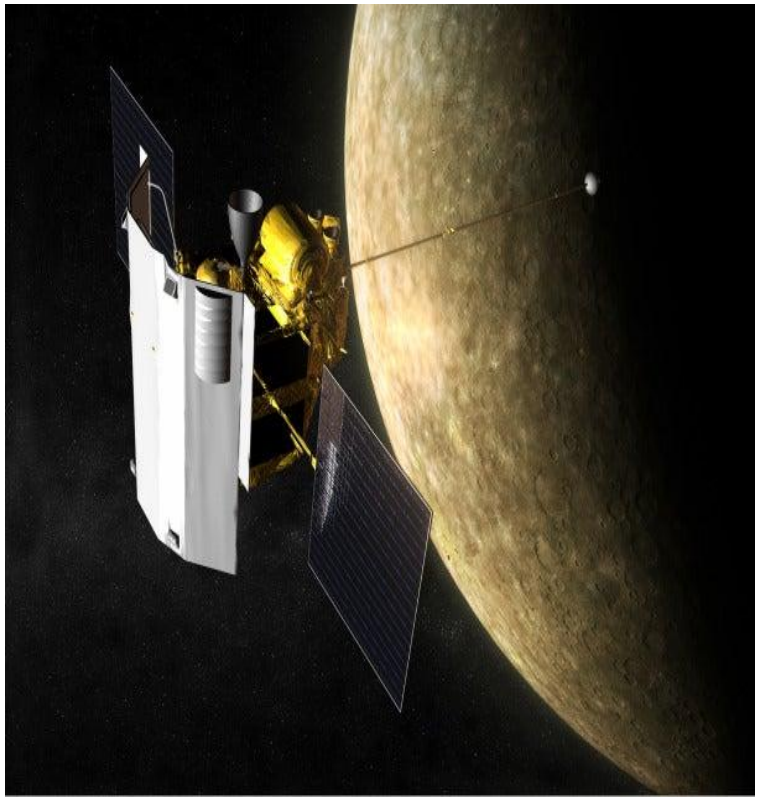
SOLAR SYSTEM EXPLORATIONS

Solar system exploration

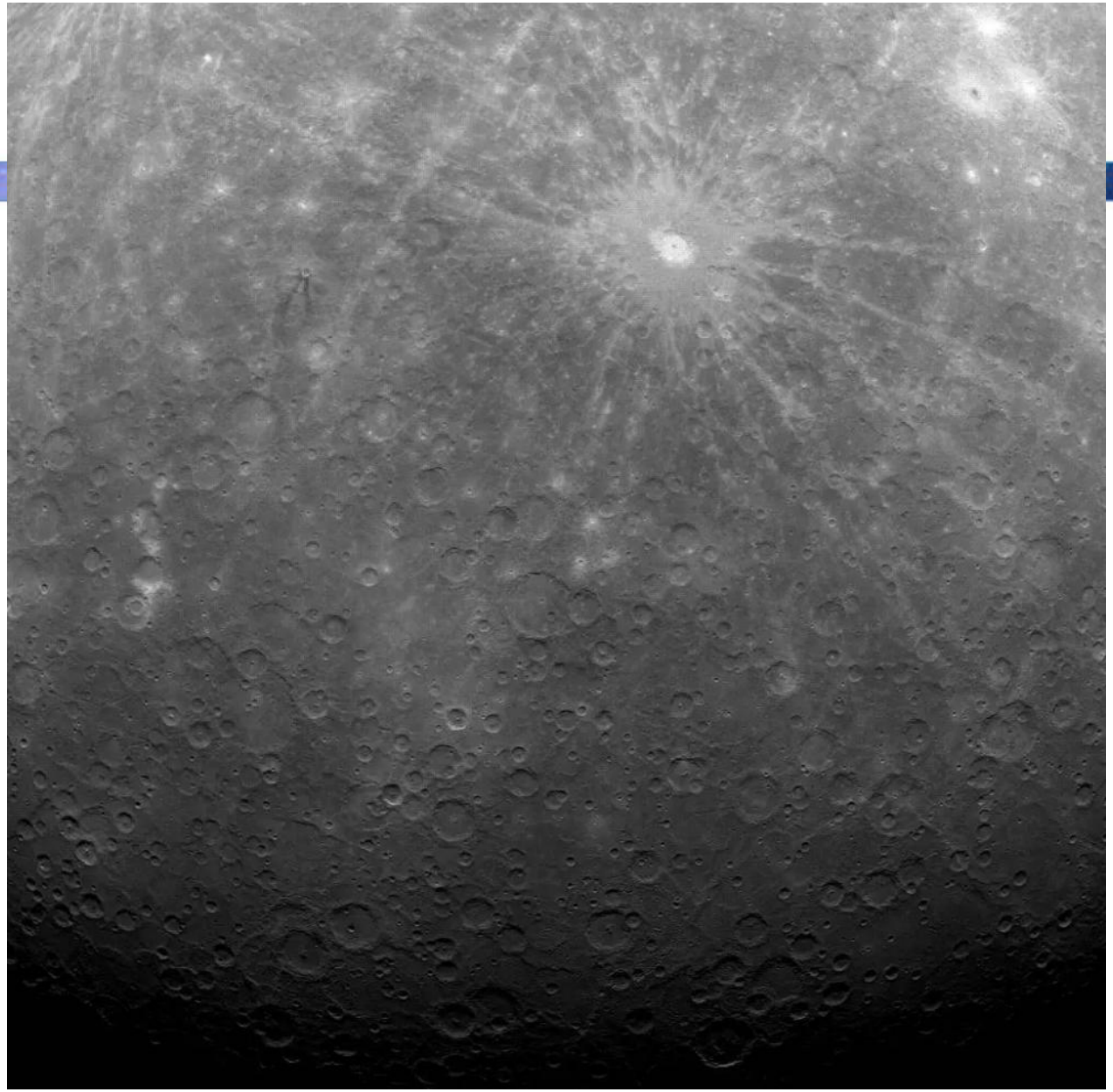
- The race for exploring outside of the Earth with the use of space technology started when the first satellite to orbit the Earth was launched in 1957.
- These space explorations have helped astronomers dramatically increase their knowledge and discoveries regarding celestial; bodies.
- The following are some of the recent and ongoing space explorations done with that purpose in mind.

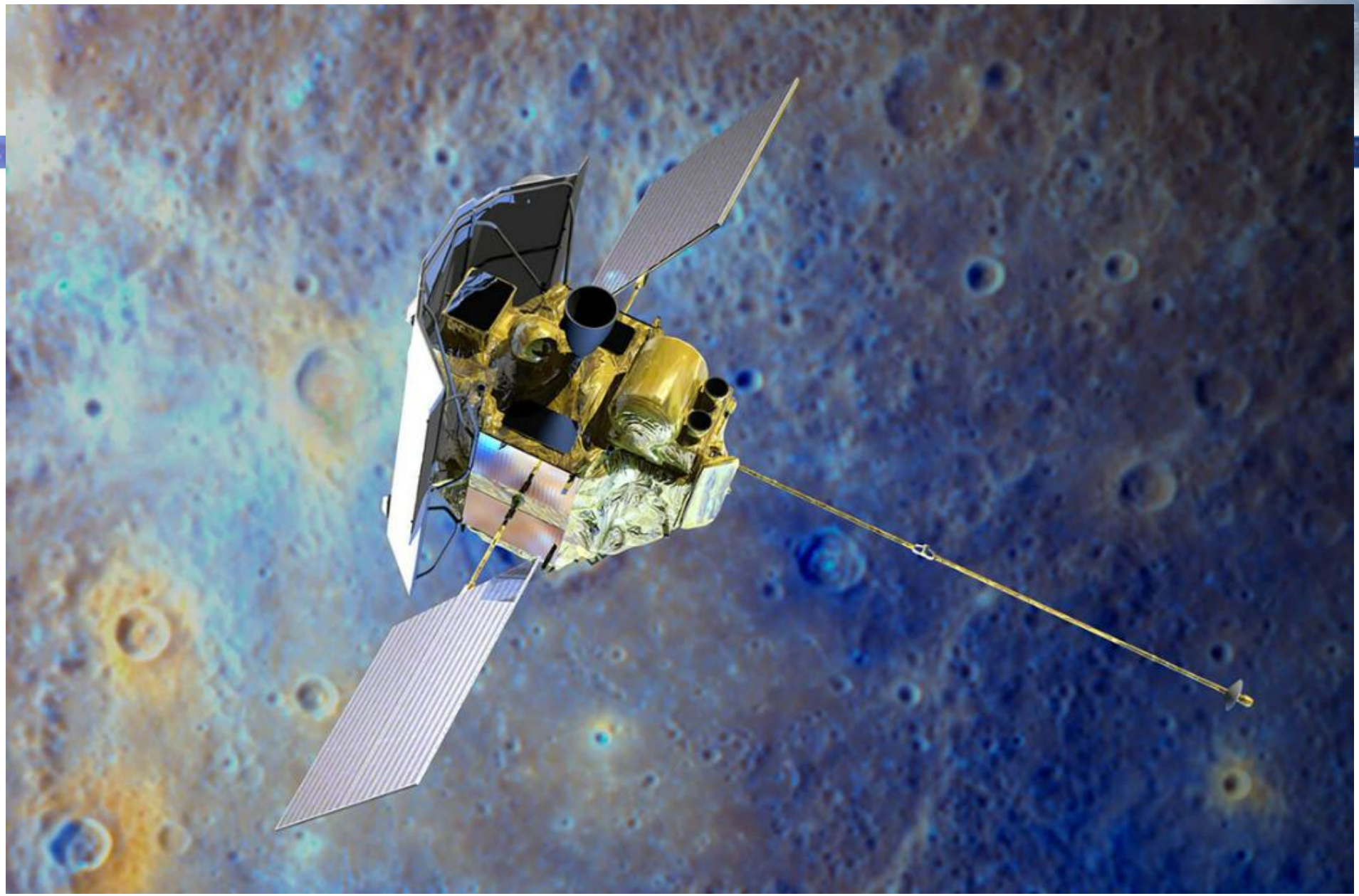
SOLAR SYSTEM EXPLORATION

1. ***March 18, 2011 - First spacecraft to orbit Mercury***



- ✓NASA's MESSENGER (MErcury Surface, Space ENvironment, GEochemistry and Ranging)
- ✓Spacecraft has the mission to take high-resolution photographs and to study Mercury's thin atmosphere and possible presence of water.





SOLAR SYSTEM EXPLORATION

2. July 16,2011 – First spacecraft to orbit an asteroid

- ✓NASA's Dawn spacecraft enters the orbit around asteroid Vesta, one of the largest asteroids in the solar system.
- ✓It was launched in 2007 with the mission to study and photograph the rocky surface of two protoplanets, Vesta and Ceres.

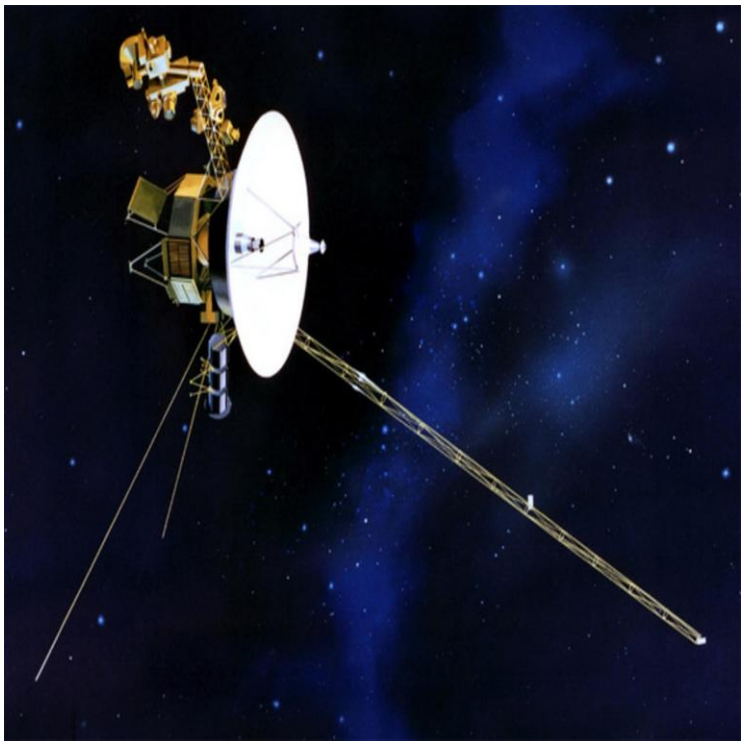
SOLAR SYSTEM EXPLORATION

3. August 6,2012 – Curiosity Rover lands on Mars

- ✓NASA's Curiosity Rover – is the largest and most advanced rover to land on Mars.
- ✓Its mission is to investigate the climate and geology of the planet and also to look for signs of life.

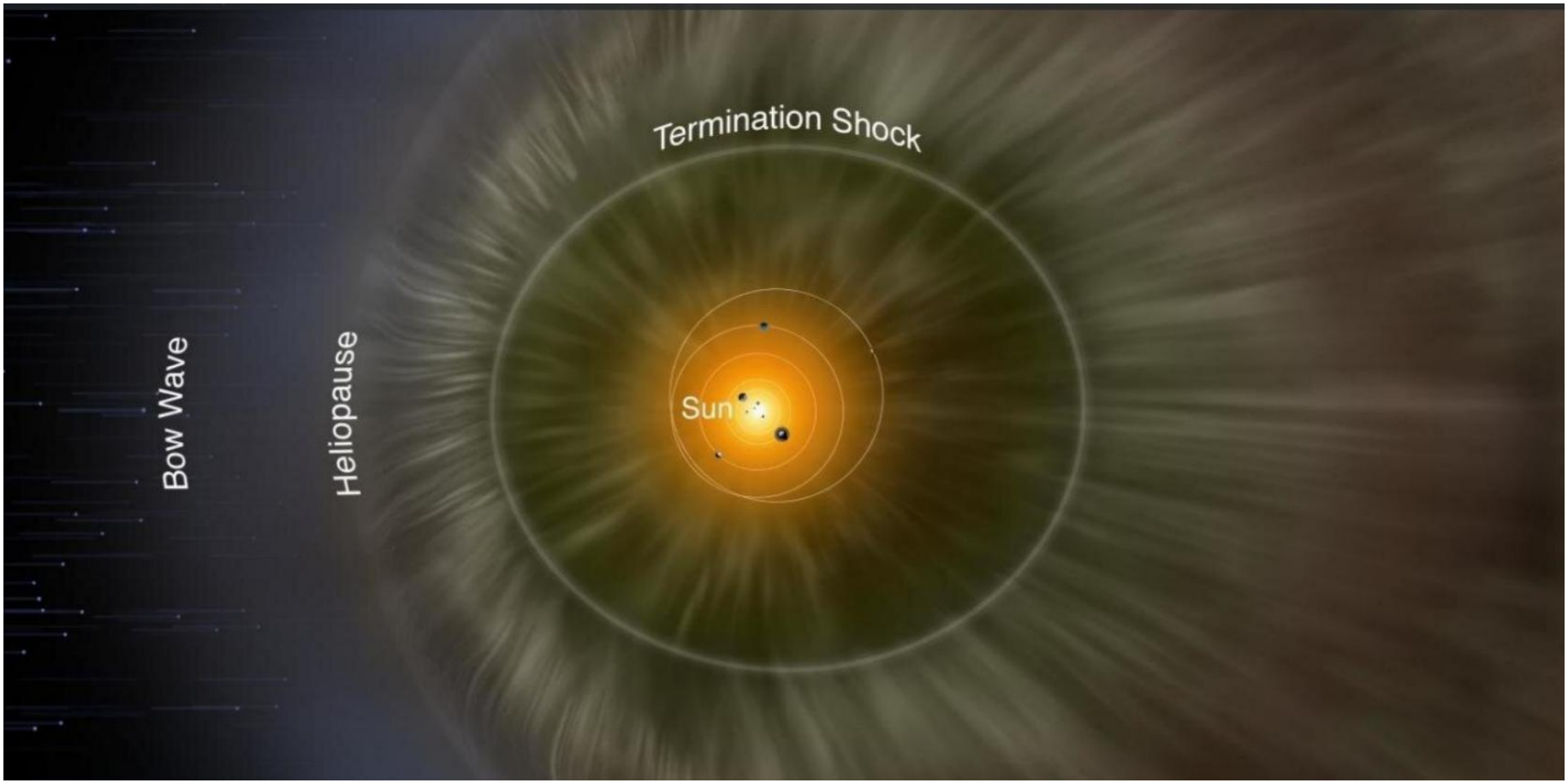
SOLAR SYSTEM EXPLORATION

4. ***August 25, 2012 – First Human made spacecraft in interstellar space***



✓NASA's Voyager 1 sent data indicating that it has passed the extreme outer edge of the Sun's influence known as the "heliopause" and is headed towards parts that are unknown.

SOLAR SYSTEM EXPLORATION



SOLAR SYSTEM EXPLORATION

5. August 6, 2014 – First Spacecraft to orbit a Comet

- ✓European Space Agency's Rosetta enters orbit around comet 67P and is taking high resolution of the comet's surface.

SOLAR SYSTEM EXPLORATION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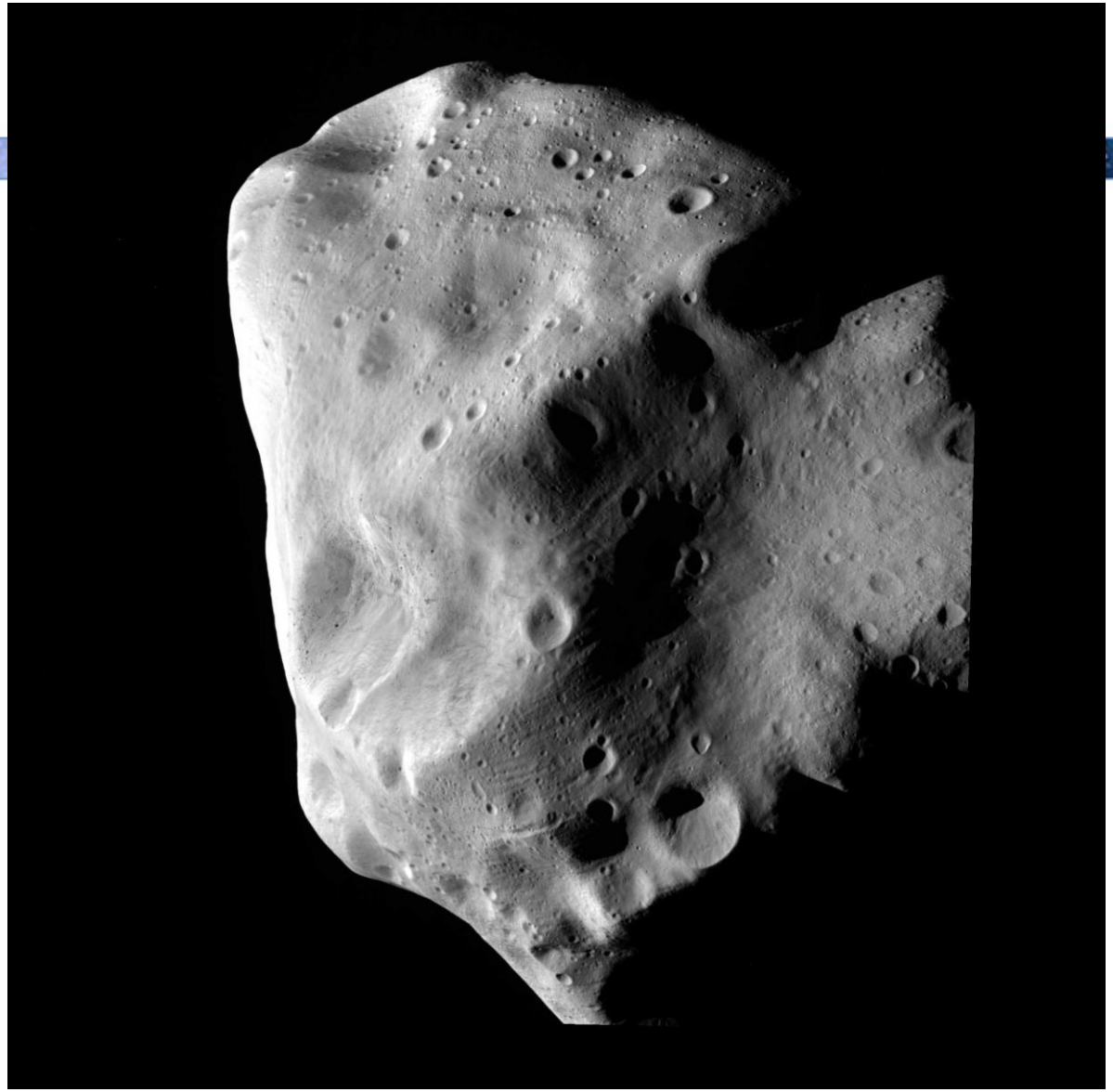
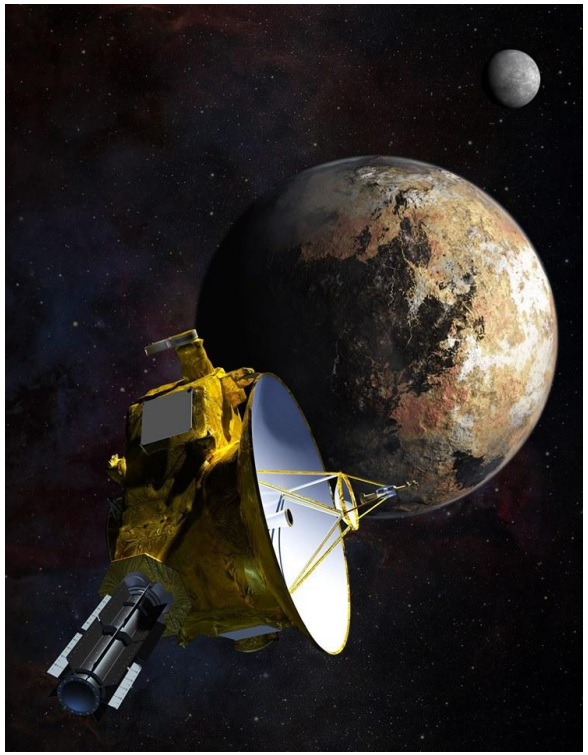


SOLAR SYSTEM EXPLORATION

6. July 14 – New Horizon Mission

- ✓The fastest spacecraft that was ever launched, provided close observations on Pluto and its moons from its nine-year voyage.
- ✓The mission confirmed earlier speculations on the compositions of Pluto, which is similar to most Kuiper Belt objects.



SOLAR SYSTEM EXPLORATION

In resolution B5 released by the International Astronomical Union (IAU), planets, dwarf planets and small solar system bodies are defined as follows.

- PLANET
  a. celestial body that is in orbit around the sun.
  b. has sufficient mass for its gravity to overcome rigid body forces so that it assumes a nearly round shape.
  c. has cleared the neighborhood around its orbit.

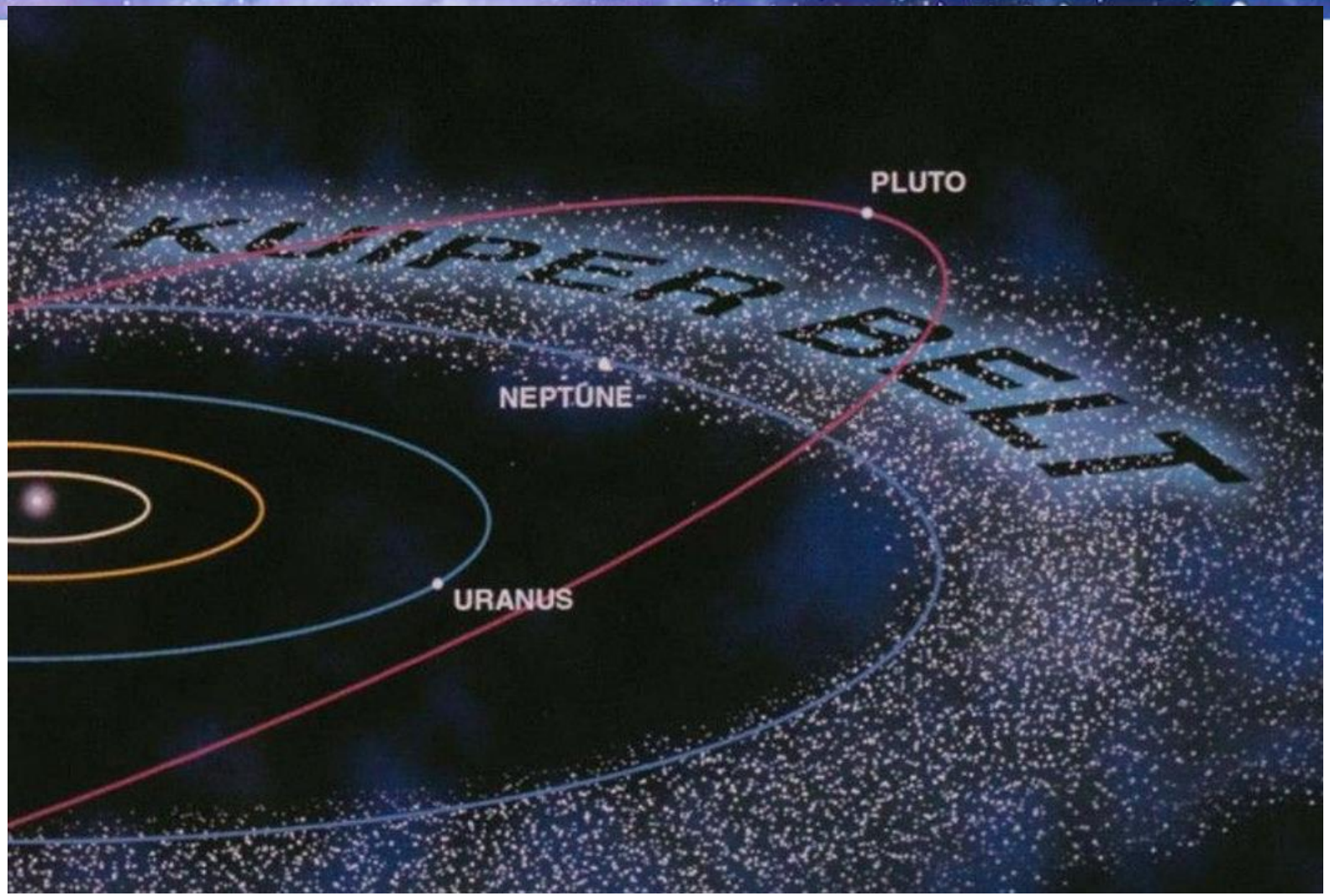
SOLAR SYSTEM EXPLORATION

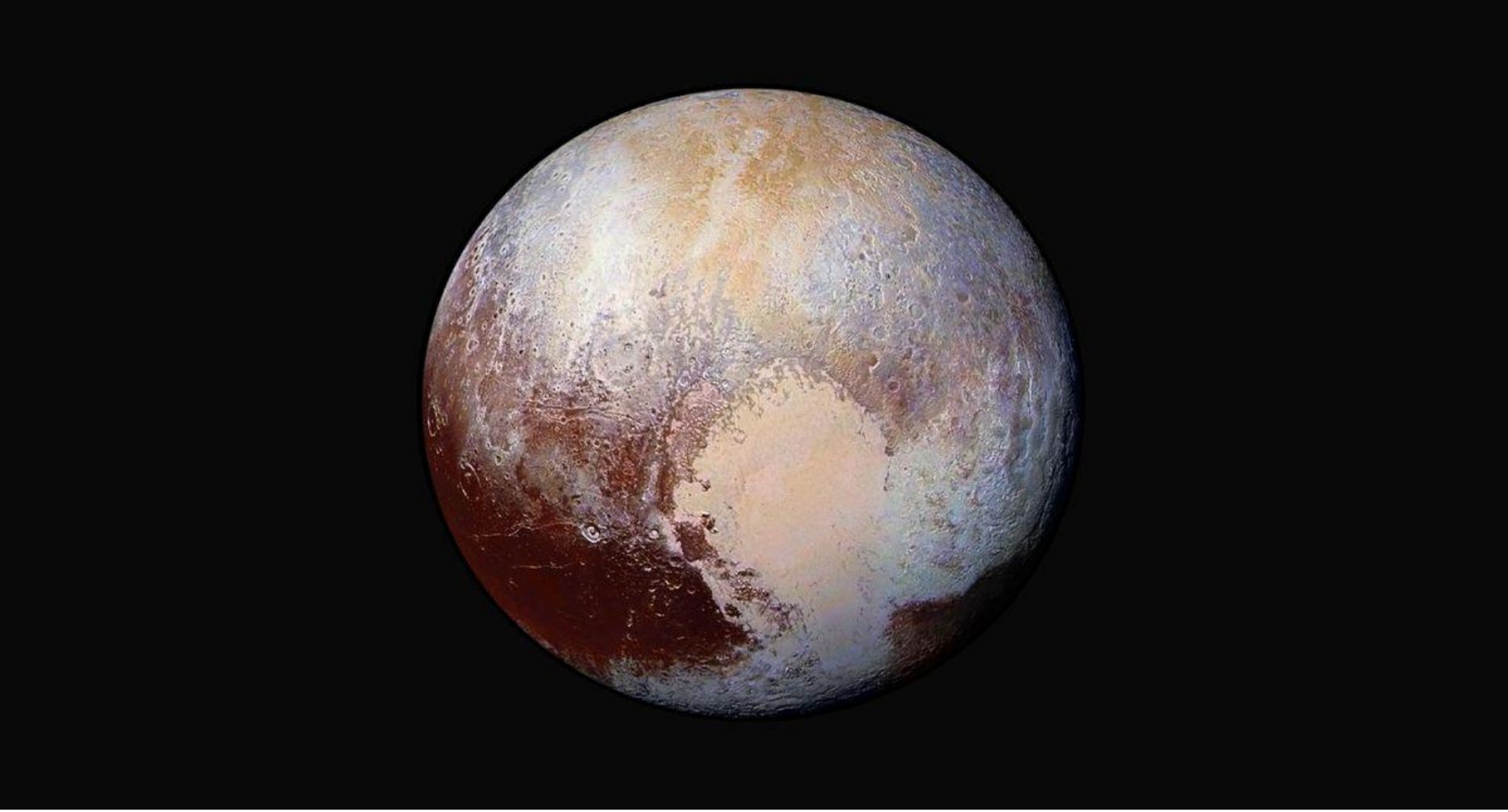
- DWARF PLANET
  a. celestial body that is in orbit around the sun.
  b. has sufficient mass for its gravity to overcome rigid body forces so that it assumes a nearly round shape.
  c. has NOT cleared the neighborhood around its orbit.
  d. is not a satellite.

SOLAR SYSTEM EXPLORATION

- SMALL SOLAR SYSTEM
  a. are all other objects except satellites orbiting around the sun. These currently include asteroids, trans-Neptunian objects (TNOs), comets, and other small celestial bodies.

SOLAR SYSTEM EXPLORATION





THE DISCOVERY OF PLUTO

GLIMPSE OF HISTORY

- July 20, 1969 – Apollo 11 landed on the Moon
- Neil Armstrong – first man to walk on the Moon followed by Buzz Aldrin.
- February 18, 1930 – Clyde Tombaugh found Pluto.
- 2006 – Pluto got demoted to dwarf planet.