

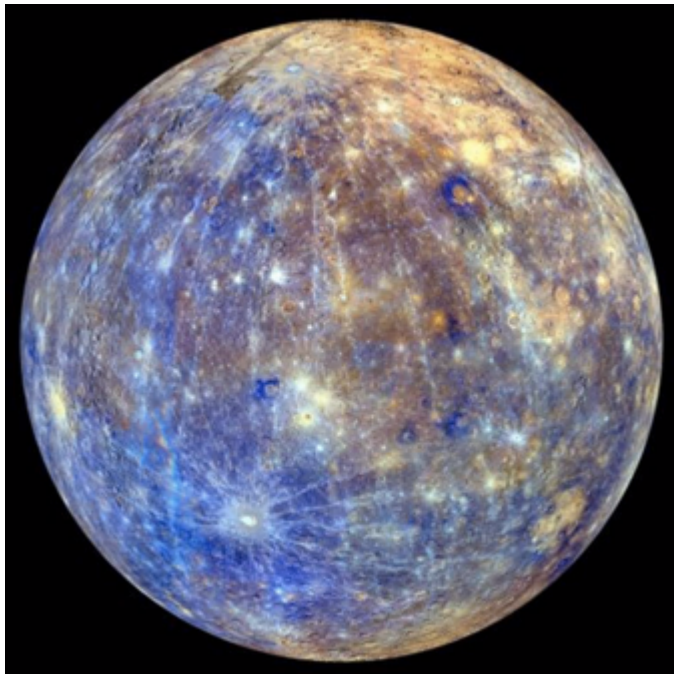
Mariner 10



Planet studied: Mercury

Mariner 10 was launched in 1972. Its mission was to study the surface and atmosphere of Mercury. One surprising discovery it made is that the same side of Mercury is always facing the Sun. This side is INCREDIBLY hot, while the night side is VERY cold.

Mariner 10 was the first probe to use the gravity of another planet to help “sling shot” it towards its destination. Mariner 10 used the gravity of Venus to help it reach Mercury.



Probe results

Temperature: -173°C to 420°C

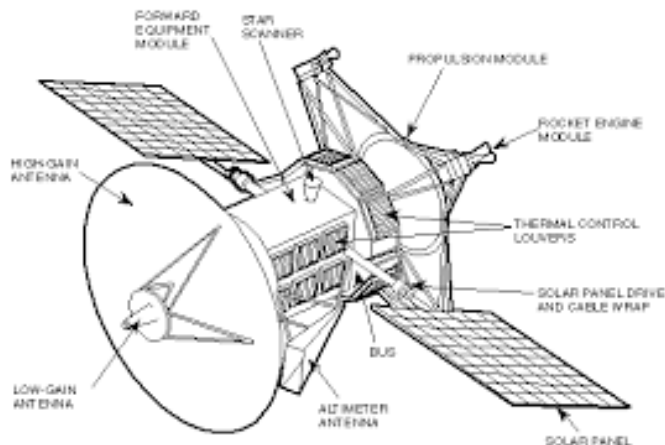
Composition: Rocky crust with iron metal core, almost no atmosphere

Density (g/cm^3): 5.4

Mass (\times Earth): 0.05

Fun fact: Mercury has almost no atmosphere because it has a very weak magnetic field. Without protection, the solar wind constantly blows off its atmosphere.

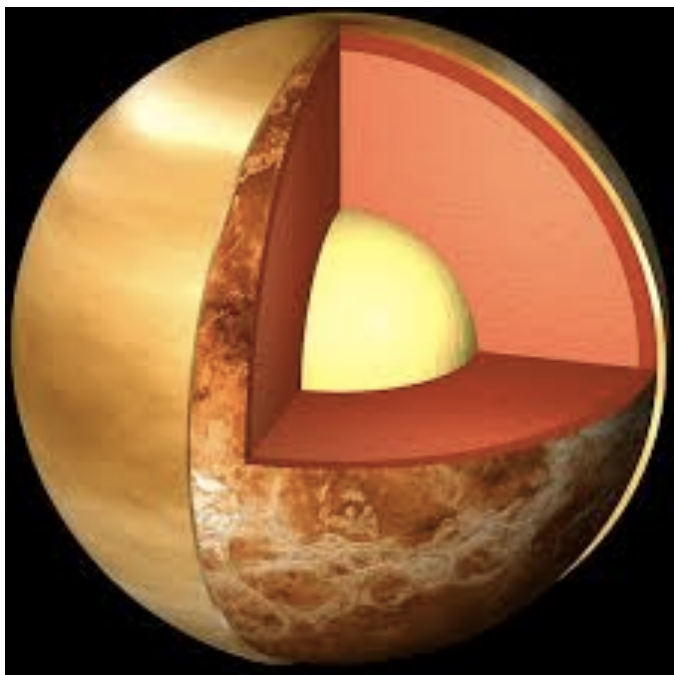
Magellan



Planet studied: Venus

Magellan reached Venus in 1990. Its mission was to make a global map of the surface of Venus. This is very hard to do because Venus has such a THICK atmosphere. Magellan confirmed that Venus is actually a rocky planet covered in clouds.

In 1994, Magellan was crashed into Venus on purpose. As it flew towards the surface it collected data on Venus' atmosphere.



Probe results

Temperature: 461°C

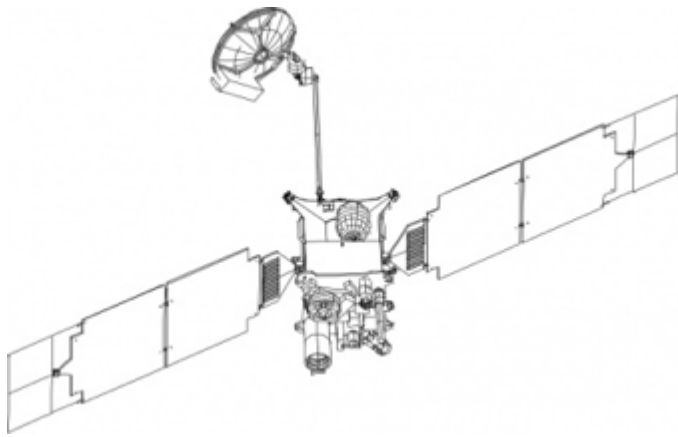
Composition: Rocky crust with iron metal core, EXTREMELY dense atmosphere

Density (g/cm³): 5.2

Mass (x Earth): 0.82

Fun fact: Venus is the hottest planet even though Mercury is closer to the Sun. Venus is so hot because its thick atmosphere has created 'run away' **global warming**.

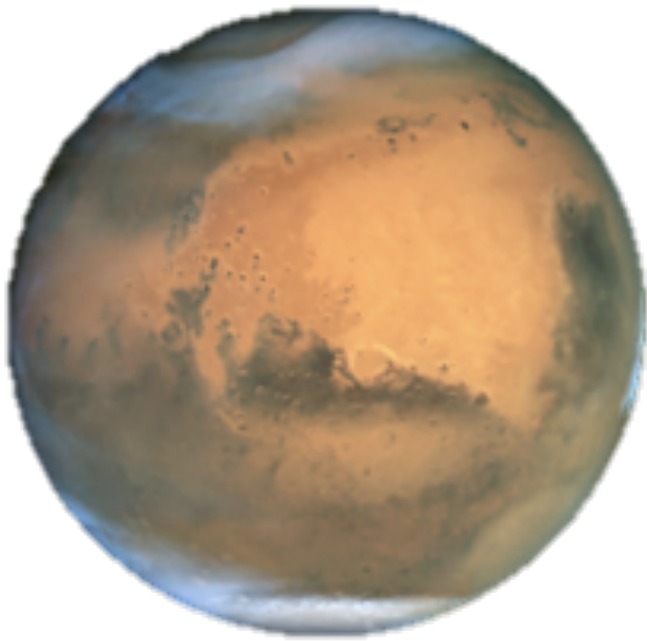
Mars Global Surveyor



Planet studied: Mars

The Mars Global Surveyor orbited Mars for 9 years. Its mission was to study the chemicals of Mars, make maps of the surface and watch for weather.

The orbiter made many discoveries. Perhaps it's most important discovery was evidence of liquid water on the surface of Mars. This might one day allow humans to live on Mars!



Probe results

Temperature: -142°C to 35°C

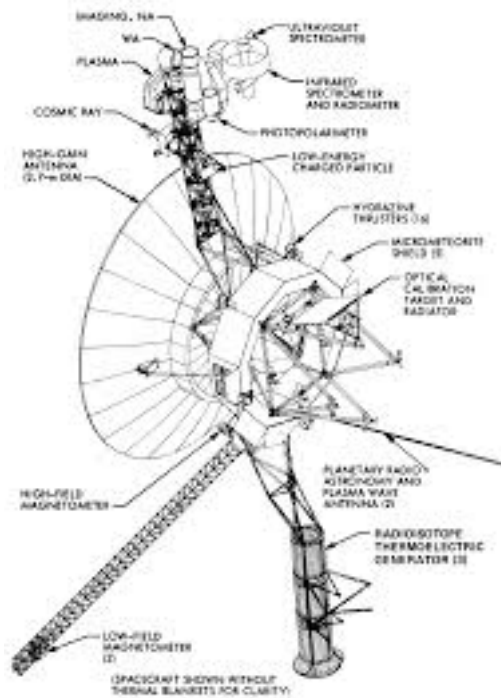
Composition: Rocky crust with metal iron core, Very thin atmosphere

Density (g/cm^3): 3.9

Mass (\times Earth): 0.11

Fun fact: Mars used to be MUCH more like Earth. However, it's magnetic field stopped working and now the solar wind has blown away much of its atmosphere.

Galileo



Planet studied: Jupiter

Galileo was sent to study Jupiter and its mysterious moons. It had many detectors in order to study the atmosphere and 'ocean' of Jupiter. Galileo studied many of Jupiter's moons. A very exciting discovery showed that some of Jupiter's moons have the chemicals needed for life.

On the way to Jupiter, it passed by Venus and was able to take some fascinating photos of Venus' clouds.



Probe results

Temperature: -101°C

Composition: Metallic hydrogen core

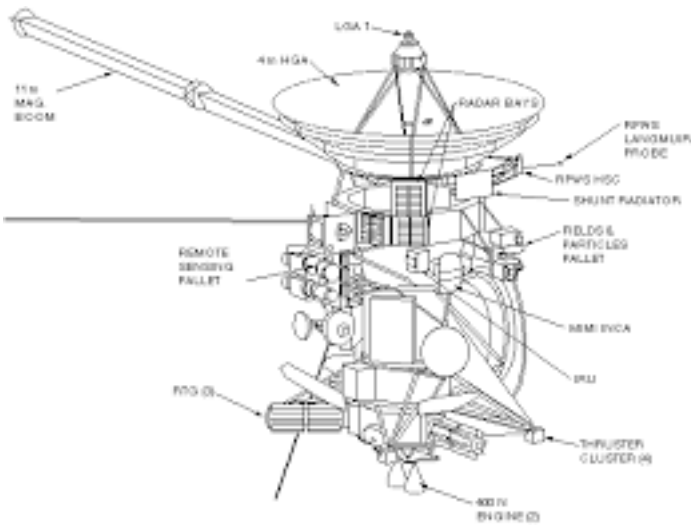
surround by super thick atmosphere

Density (g/cm^3): 1.3

Mass (x Earth): 318

Fun fact: Jupiter is a very hard planet to study with probes because its magnetic field is VERY strong. This creates dangerous radiation that can 'fry' probes that get too close.

Cassini



Planet studied: Saturn

Cassini has been studying space since 1997! On its way to Saturn, Cassini flew by Jupiter and studied the planet for 6 months. Then in 2004 it reached Saturn and began to study the planet and its moons. Cassini also used a smaller probe to study the moon Titan (a place where there might be life).

Cassini is now studying Saturn to watch as the planet completes a full year of seasons.

Probe results

Temperature: -145°C

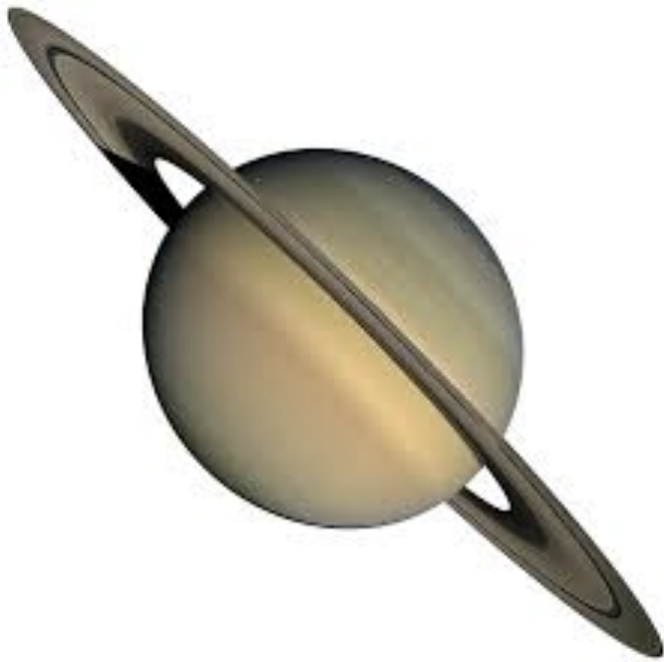
Composition: Metallic hydrogen core

surround by super thick atmosphere

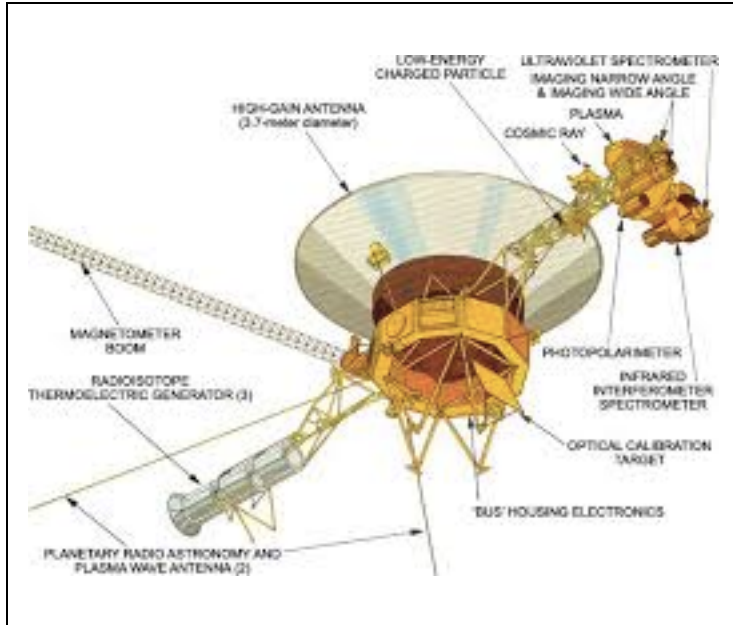
Density (g/cm^3): 0.7

Mass (\times Earth): 95

Fun fact: Most people know Saturn because of its rings. But did you know that the rings of Saturn contain more water than ALL the water on Earth? Or did you know that Saturn's density means it would float on water? Crazy!



Voyager 2



Planet studied: Uranus

Voyager 2 has been flying since 1977! Voyager 1 has visited all four gas giants (Jupiter, Saturn, Uranus, Neptune) and photographed many of the planets' moons.

Voyager 2 is the **ONLY** probe to have visited Uranus and Neptune.

Pictures from Voyager 2 showed that Uranus is covered in thick clouds with many large storms.



Probe results

Temperature: -197°C

Composition: Rock/ice core surround by
super thick, deep atmosphere

Density (g/cm^3): 1.3

Mass (\times Earth): 15

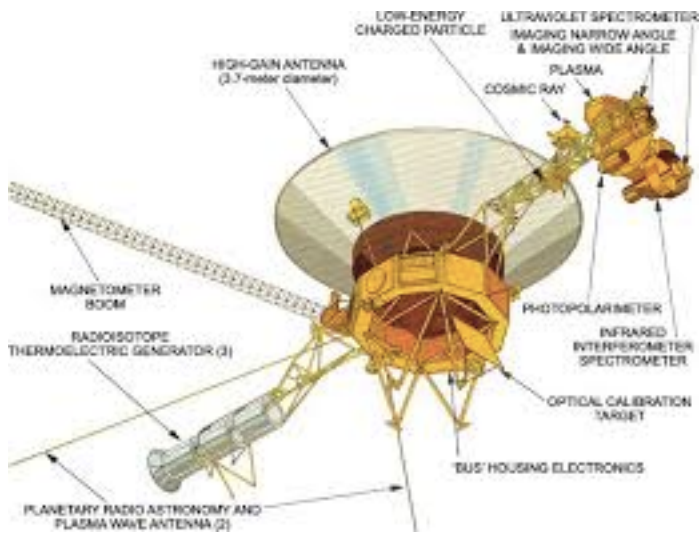
Fun fact: Uranus is the only planet that spins 'sideways'. Instead of spinning East to West, Uranus spins North to South.

Voyager 2

Planet studied: Neptune

While visiting Neptune, Voyager 2 discovered the “Great Dark Spot”. The spot is was a storm similar to the “Red Eye” on Jupiter.

Voyager 2 was also able to analyze Neptune’s atmosphere. It found that Neptune and Uranus are very similar. Both planets have methane (a gas) in their atmosphere that makes them look blue.



Probe results

Temperature: -200°C

Composition: Rock/ice core surround by
super thick, deep atmosphere

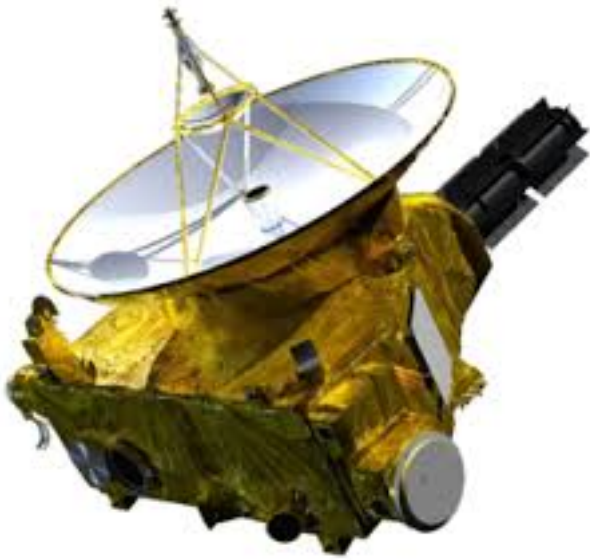
Density (g/cm^3): 1.6

Mass (x Earth): 17

Fun fact: Neptune cannot be seen in the night sky by the naked eye. A mathematician discovered Neptune when he noticed that Uranus’s orbit didn’t make sense. He predicted Neptune existed with math, and later telescopes were able to spot the planet.



New Horizons



Object studied: Pluto

New Horizons is the first probe to have visited Pluto. Once it reached Pluto it spent months take observations of the dwarf planet.

One of the biggest mysteries about Pluto was just how big it is and how large it's moon, Charon, is. Pluto turns out to only be about twice as large as it's moon.

In addition, New Horizons discovered several other moons of Pluto that were unknown.



Probe results

Temperature: -230°C

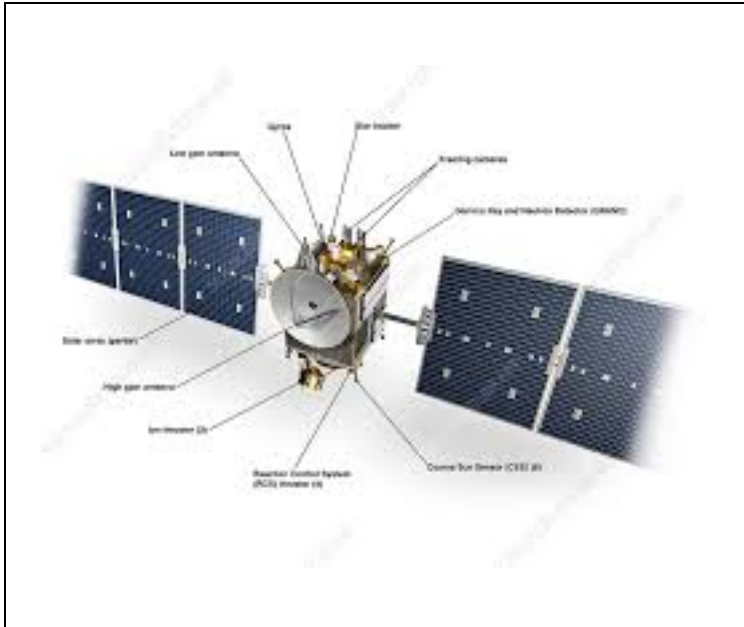
Composition: Water ice crust, Rock core

Density (g/cm^3): 1.8g

Mass (x Earth): 0.002

Fun fact: Pluto has a section of ice that looks just like a heart. Awww!

Dawn



Object studied: Ceres

Dawn visited Ceres, the largest Dwarf Planet in the asteroid belt, in 2015.

During its time studying Ceres, Dawn sent back data that suggests Dwarf Planets might have or once have had oceans, just like planets. Ceres also has “organic chemicals”. Liquid oceans and organic chemicals are both ingredients for life.



Probe results

Temperature: -153°C

Composition: Dusty outer crust, water ice layers, Rocky inner core

Density (g/cm^3): 2

Mass (\times Earth): 0.000,15

Fun fact: Ceres was the first asteroid to be discovered and may have had an ocean below its surface!

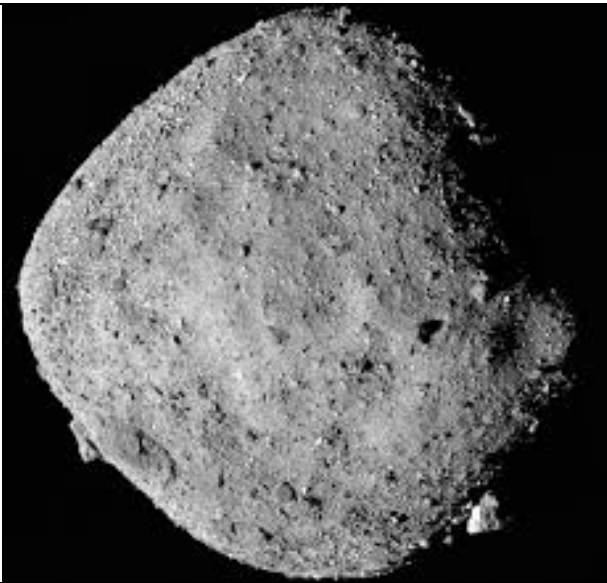
OSIRIS-REx



Object studied: Bennu

OSIRIS-REx was designed to gather a sample from Bennu and return the sample to Earth. This would be the first sample of an asteroid returned to Earth for study.

Bennu is interesting to scientists because it is a “time capsule”. Bennu was formed at the start of our solar system and has not changed much since. A sample from Bennu would help us determine how the Solar System and life on our planet came into being.



Probe results

Temperature: -14°C

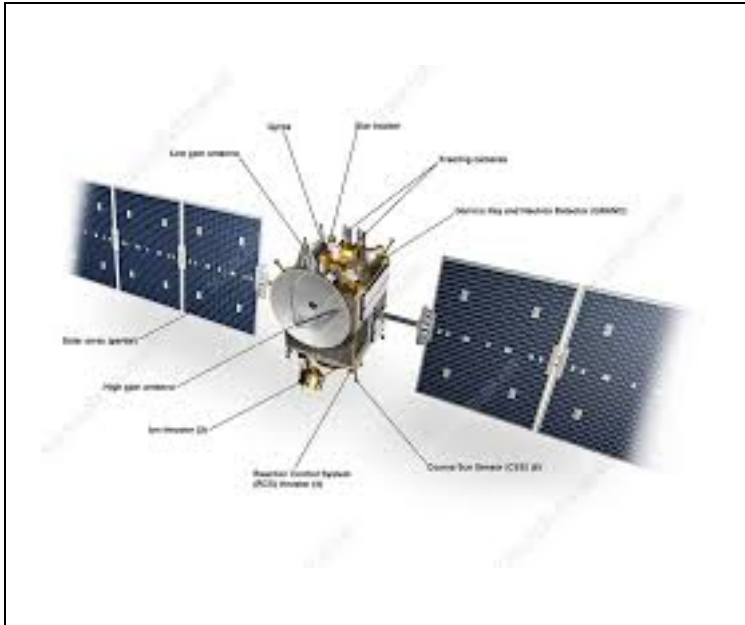
Composition: Chunks of rock

Density (g/cm^3): 1.9

Mass (\times Earth): 0.000,000,000,000,000,8

Fun fact: Bennu is a bit taller than the Empire State building (if it was on Earth).

Dawn



Object studied: Vesta

On it's way to study Ceres, the Dawn probe spent time studying Vesta. During it's time around Vesta the probe mapped the entire asteroid.

Based on the data from Dawn, scientists believe that Vesta may be the last planetoid (baby planet) from the formation of the Solar System.



Probe results

Temperature: -188°C

Composition: Rock crust with metal core

Density (g/cm^3): 3.45

Mass (x Earth): 0.000,04

Fun fact: Something enormous smashed into Vesta at some point in its history. The impact created mountains around the crater and even gave the asteroid stretch marks!

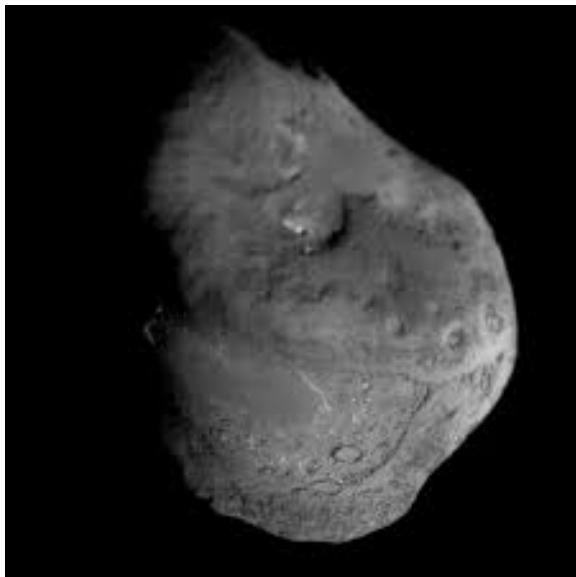
Deep Impact



Object studied: Tempel 1

Deep Impact was designed to smash an impactor into the comet Tempel 1. The impactor is like a big hammer that hit the comet. By hitting the comet, the rest of the probe could study what flew out of the comet.

Data from Deep Impact showed that meteors have many of the ingredients for life. Perhaps, meteors brought those ingredients to Earth when it first formed.



Probe results

Temperature: -50°C

Composition: Chunks of rock and ice

Density (g/cm^3): ???

Mass (\times Earth): ???

Fun fact: The Deep Impact Impactor hit the comet so hard that it smashed 500 foot wide crater into the surface of the comet. That makes sense, since the impactor was traveling at a speed of 23,000 miles per hour!

MISSION

	<p>Object studied: PLANET</p>
	<p>Probe results</p> <p>Temperature:</p> <p>Composition:</p> <p>Density (g/cm³):</p> <p>Mass (x Earth):</p> <p>Fun fact:</p>