

EXPLORING SPACE

EYES ON THE SKIES

SOPHISTICATED PROBES ARE SLOWLY REVEALING THE SECRETS OF THE UNIVERSE



Japan's first lunar orbiter 'Kaguya' launched in 2007.

JUNO MISSION TO JUPITER

NASA is currently planning a mission to conduct an in-depth study of Jupiter, the largest planet in our solar system. For many scientists, in-depth knowledge of Jupiter is essential to unlocking the mysteries of our solar system's formation and early development.

What is the origin of the name Juno?

What is Juno's primary mission goal?

How will the space craft be launched?

What is the function of each of these instruments aboard the Juno?

JADE - Jovian Auroral Distributions Experiment:

Juno Ultraviolet Spectrograph:

Research links

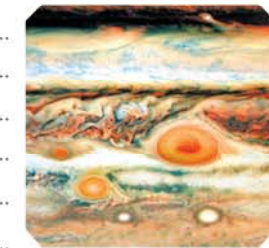
[Juno - juno.wisc.edu](http://juno.wisc.edu)
[Juno Overview - juno.wisc.edu/spacecraft.html](http://juno.wisc.edu/spacecraft.html)
[Juno - viswiki.com/en/Juno_\(spacecraft\)](http://viswiki.com/en/Juno_(spacecraft))

SPENDING MONEY

Space exploration is expensive. Galileo's 14-year odyssey cost \$US1.39 billion. Can we justify spending so much money and more in future explorations? Research and hold a classroom debate on why investments in space science are/are not a good use of money in today's tight economy.

MYSTERIOUS HUBBLE IMAGES

What do you think these Hubble images represent? **Answers:** See Headst@rt www.couriermail.com.au/headstart



LEARNING ABOUT JUPITER

Why do you think Jupiter was given its name?

What is Jupiter composed of?

How many moons does Jupiter have?

List some facts about each of these moons:

Io

Callisto

Ganymede

Europa

What causes Jupiter's Red Spot?

Why does Jupiter appear to have bands running around it?

Research links

[Jupiter - nineplanets.org/jupiter.html](http://nineplanets.org/jupiter.html)
[Nine Planets for Kids - kids.nineplanets.org/](http://kids.nineplanets.org/)

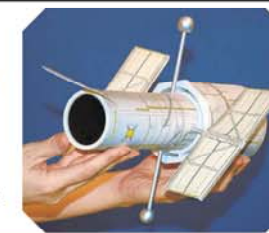
FLY-BY MISSIONS

Research and summarise the achievements of each of the following spacecraft.

SPACECRAFT	DATE AND MILESTONES ACHIEVED
Pioneer 10	<ul style="list-style-type: none"> Launched March 2, 1972 First spacecraft to travel through the asteroid belt First spacecraft to encounter Jupiter in December 1973.
Pioneer 11	
Voyager 1	
Voyager 2	
Ulysses	
Cassini	

CREATE YOUR VERY OWN HUBBLE SPACE TELESCOPE

Create your own hand-held Hubble. Template and instructions online.



LINK
hubblesite.org/the_telescope/hand-held_hubble/

GALILEO SPACECRAFT

This was launched on October 18, 1989 by the Space Shuttle Atlantis on the STS-34 mission. Galileo made a remarkable odyssey through the universe travelling 4,631,778,000 kilometres.

Images from the Galileo spacecraft provided scientists with an opportunity to look closely at the surface of Io, one of Jupiter's moons. Describe what these images revealed?

How did the Galileo mission end?

Research links

[Galileo - galileo.jpl.nasa.gov](http://galileo.jpl.nasa.gov)
[Galileo Mission - solarsystem.nasa.gov/galileo/mission/journey-probe.cfm](http://solarsystem.nasa.gov/galileo/mission/journey-probe.cfm)
[Galileo Spacecraft - www2.jpl.nasa.gov/galileo/spacecraft.html](http://www2.jpl.nasa.gov/galileo/spacecraft.html)
[Juno - viswiki.com/en/Juno_\(spacecraft\)](http://viswiki.com/en/Juno_(spacecraft))

HUBBLE TELESCOPE

The Hubble Space Telescope (HST) is a collaboration between NASA and the European Space Agency. It is the only telescope ever designed to be serviced in space by astronauts. Use the following links to learn more about the HST and answer the questions below.

What was Edwin Hubble's contribution to astronomy?

How old is the Hubble Telescope?

How far does the Hubble travel every year?

Name three special things this telescope has captured in its images and taught ground-based astronomers.

How much better is the resolution of Hubble's images, compared to those from ground-based telescopes?

When is the next servicing mission planned for the telescope and how long is the telescope expected to continue operating?

Research links

[Hubble Gallery - hubblesite.org/gallery/](http://hubblesite.org/gallery/)
[Hubble Essentials - hubblesite.org/the_telescope/](http://hubblesite.org/the_telescope/)