



## Galaxy Gaze

Our Solar System is a collection of planets, asteroids, meteorites and one star (the Sun) found in the Milky Way galaxy. Astronomers have viewed about 3000 different galaxies so far, but there may be many billions of galaxies in the Universe!

The distance between the Sun and Pluto averages 5 913 520 000 kilometres. The distance across the whole Milky Way is about 925 000 000 000 000 kilometres (about 100 000 light years). Imagine how long it would take to travel across many different galaxies!

The Milky Way's nearest neighbour is the Sagittarius Dwarf galaxy (which is slowly being 'swallowed up' by the Milky Way). Ironically, astronomers can view nearby galaxies better than our own Milky Way. This is because there is so much dust floating in the Milky Way, that light cannot pass through.

Galaxies can be many different shapes, but the Milky Way is a spiral galaxy, believed to be about 14 billion years old. Scientists are unsure whether the Milky Way's bulging centre contains a black hole or a mass of dust. Spiral arms extend out from the central bulge of the Milky Way.

### Images from the Galaxy Gaze exhibit

Nebulae are large collections of gas and dust where stars (and possibly planets) are being formed. Go to <http://www.aao.gov.au/images.html/captions/aat019.html> for more information on the Orion Nebula.

The Pleiades star cluster actually contains over 3000 stars, although the 'seven sisters' are easiest to see with the naked eye. Go to <http://www.aao.gov.au/images.html/captions/uks018.html> and <http://apod.gsfc.nasa.gov/apod/ap010506.html> for more information on the Pleiades.

The Crab Nebula contains a neutron star that rotates about 30 times/second and releases pulses of radio waves. Stars like these are called pulsars. Go to <http://www.aao.gov.au/images.html/captions/crab.html> for more information.

### More Information

Cosmic Distance Scale <http://heasarc.gsfc.nasa.gov/docs/cosmic/cosmic.html>

An Atlas of the Universe <http://www.anzwers.org/free/universe/>

Natural History Magazine      Out There      April 2003  
[http://www.amnh.org/naturalhistory/0403/0403\\_outthere.html](http://www.amnh.org/naturalhistory/0403/0403_outthere.html)

Star Child:Galaxies      [http://starchild.gsfc.nasa.gov/docs/StarChild/universe\\_level1/galaxies.html](http://starchild.gsfc.nasa.gov/docs/StarChild/universe_level1/galaxies.html)

Scientific American      Ask the Experts      21 October 1999  
How did scientists determine our location within the Milky Way galaxy--in other words, how do we know that our solar system is in the arm of a spiral galaxy, far from the galaxy's center?  
[http://www.sciam.com/print\\_version.cfm?articleID=000AF71C-7E38-1C72-9EB7809EC588F2D7](http://www.sciam.com/print_version.cfm?articleID=000AF71C-7E38-1C72-9EB7809EC588F2D7)