



[www.astrosociety.org/uitc](http://www.astrosociety.org/uitc)

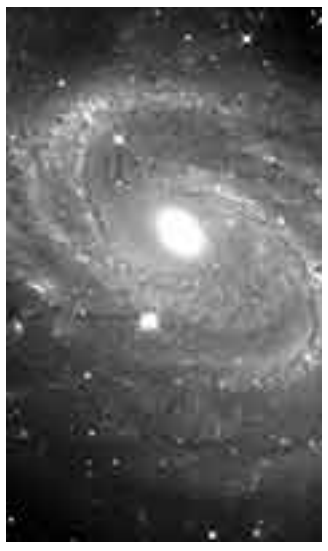
**No. 47 - Summer 1999**

© 1999, Astronomical Society of the Pacific, 390 Ashton Avenue, San Francisco, CA 94112.

# Taking a Grand Virtual Voyage in the Milky Way

by **Kent Cheatham**

After a few friends had raised their brows as to why I was spending so much time pursuing my newfound hobby, astronomy, I decided to make a pictorial tour to answer their looks (and concerns for me). You see, whether skimming the alien atmospheres of the nearby worlds in the Solar System or slipping through the lightyear-long strands of luminous gas in the remote Eagle nebula, you are participating in this Cosmos.



The links to images on the web follow each introductory statement in the following itinerary, but please stay with the tour until the end as you and your students follow the links (we don't want anyone left behind!). Remember that the experience is only a sampler for the greater journeys you can take later. Make a note which spots interest you the most, and return to those locations later, using them as the starting points for other voyages. Bon Voyage!

## All Aboard

As we leave Earth we look back as the Space Shuttle astronauts did when they snapped this picture.

 <http://www.nineplanets.org/earth.html>

We pass the Moon in a breath's second as we pick up speed.

 [http://nssdc.gsfc.nasa.gov/image/planetary/moon/gal\\_moon\\_color.jpg](http://nssdc.gsfc.nasa.gov/image/planetary/moon/gal_moon_color.jpg)

We're truly into the Solar System now and headed towards the Sun. It's getting hotter...

 <http://www.nineplanets.org/sol.html>

As we slingshot around the Sun to pick up break-away speed, we see the first planet coming into sight -- barren Mercury.



<http://www.nineplanets.org/mercury.html>

Next up is bland Venus, which is quite often our Earthly evening or morning "star." Except for similarities in size and density, however, Earth and Venus -- sometimes referred to as planetary twins -- have quite different atmospheres: Tremendous atmospheric pressure and a surface temperature of 750 kelvins (enough to melt lead) make Venus an unpleasant place for us.



<http://www.nineplanets.org/venus.html>

Leaving sweltering Venus, we again pass Earth and notice clear weather over Saudi Arabia.



<http://images.jsc.nasa.gov/images/pao/AS11/10075246.jpg>

Our water world falls behind us, yet ahead is Mars, a planet known to have had large quantities of liquid water, too, in the distant past. As its atmosphere thinned, however, most of the Martian water evaporated into space.



<http://www.nineplanets.org/mars.html>

Woops, but we almost hit Phobos, Mars's larger moon!



<http://www.nineplanets.org/phobos.html>

Clearing the Martian region of space, we now must navigate the Solar System's asteroid belt. And what do we come upon, but the asteroid 243 Ida (pronounced "EYE-duh") and its tiny (1.5 kilometer) moon Dactyl ("DAK-til").



<http://www.jpl.nasa.gov/galileo/idamncr.html>

Past the majority of the small bodies in the asteroid belt, we continue outward until planetary giant Jupiter now looms ahead of us.



<http://www.nineplanets.org/jupiter.html>

Quite apparent are the belts and zones of the Jovian atmosphere -- and the Great Red Spot, an ancient storm more than twice the size of Earth, looks like a great red eye peering at us.

To our surprise, we see Jupiter has rings (very thin ones) somewhat similar to those of Saturn.



Gaspra, an inhabitant of the Asteroid Belt. Image courtesy of The Galileo Project and NASA.



<http://www.jpl.nasa.gov/galileo/callisto/p48188.html>

Hit the retro-rockets! Let's take a side trip by one of Jupiter's sixteen known moons. Io ("EYE-oh"), Jupiter's third largest and most colorful moon, is a world that is constantly flexed by the gravity of its parent planet; all this flexing makes Io a very active world with a number of belching volcanoes.



<http://www.nineplanets.org/io.html>

Getting back on course, we leave kingly Jupiter and approach the planetary ringmaster, Saturn. At almost twice Jupiter's distance from the Sun, Saturn is a very chilly planet.



<http://www.nineplanets.org/saturn.html>

Saturn's rings are among the most delicate structures you will find anywhere in the Cosmos. Only tens of meters thick, yet about 250,000 kilometers in diameter! Indeed, if you decided to make a scale model of the ring system using a sheet of paper of normal thickness, you would need a sheet bigger than the entire football stadium complex (stadium and parking lots, too) at a major university!



The planetary ringmaster, Saturn.  
Image courtesy of AURA/STScI and NASA.



[http://ringmaster.arc.nasa.gov/saturn/voyager/saturn\\_rings.gif](http://ringmaster.arc.nasa.gov/saturn/voyager/saturn_rings.gif)

Another Saturnian moon is Mimas ("MY-mas" or "MEE-mas"), a body that got smacked by something a long time ago -- just look at the size of that impact crater! It's almost one third the size of Mimas!



[http://antwrp.gsfc.nasa.gov/apod/image/9904/mimas\\_vg1\\_big.jpg](http://antwrp.gsfc.nasa.gov/apod/image/9904/mimas_vg1_big.jpg)

Uranus's name has been the butt of many a joke (pardon the pun). And being composed almost entirely of gases has not helped its situation a bit (oh, somebody stop me).



<http://www.nineplanets.org/uranus.html>

Like the larger gas giants Jupiter and Saturn, Uranus also has a ring system, highlighted in this image collected by the Hubble Space Telescope.



<http://oposite.stsci.edu/pubinfo/pr/96/15/A.html>

And what about moons? Yes, Uranus has those, too - seventeen in all (and we're still counting). Here's Miranda, the innermost of the planet's large moons.



[continue the voyage](#)

---

| [1](#) | [2](#) | [3](#) | [next page](#) >>

[back to Teachers' Newsletter Main Page](#)