

# Sky **WAA** tch

*The Monthly Publication of the Westchester Amateur Astronomers*

*January 2008*

Bloomberg radio

Credit: [Mars Exploration Rover Mission](#), [Cornell](#), [JPL](#), [NASA](#)



## **Martian Close up**

The Mars Rover, Spirit, recently stumbled across this interesting feature—it's a patch of nearly pure silica. On Earth, such features are usually associated with either volcanism or hot springs. If the later possibility proves true, it would be an argument for a wet past for Mars. Something to think about when observing Mars this Month. For more details, see: <http://antwrp.gsfc.nasa.gov/apod/ap071218.html>.

# Events for January 2008

## ➤ Monthly Meetings

### "Advances in Collimation Techniques"

Friday January 4, 8:00PM

Andrus Planetarium

Hudson River Museum, Yonkers

Howie Glatter will discuss recent advances in collimating telescopes. Free and open to the public.

## ➤ Starway to Heaven

Saturday, January 5, 7:00-10:00PM

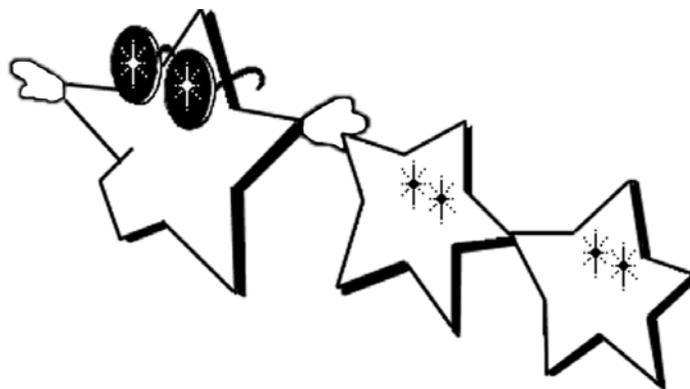
Meadow Picnic Area, Ward Pound Ridge Reservation, Cross River

This is our scheduled observing date for January, weather permitting. Free and open to the public. The scheduled rain/cloud date is January 12.

## Renewing Members. . .

Tom & Maxine Baker, Katonah NY  
Cindy & Tim Dunne, Scarsdale NY  
Jay Friedman, Katonah NY  
Graeme Hutton, Ossining, NY  
Warren Lindholm, Cortlandt Manor NY  
Rosalind Mendell  
William Sawicki, Bronx NY  
Richard Simonds, Scarsdale NY  
George Thomas, Irvington NY

**Call:** 1-877-456-5778 (toll free) for announcements, weather cancellations, or questions. Also, don't forget to periodically visit the WAA website at:  
<http://www.westchesterastronomers.org/>.



## ANNUAL ELECTIONS

It's election time for the Westchester Amateur Astronomers. Please see: <http://www.westchesterastronomers.org/ballot.html> for our 2007 Ballot. Print it out (make sure your web browser is open), mark your votes, then bring it to the next meeting or mail to the Club at WAA, PO Box 44, Valhalla, NY 10595 by January 15.

Westchester Amateur Astronomers, Inc., a 501(c)(3) organization, is open to people of all ages with the desire to learn more about astronomy. The Mailing address is: P.O. Box 44, Valhalla, New York 10595. Phone: 1-877-456-5778. Meetings: Andrus Planetarium, Hudson River Museum of Westchester, 511 Warburton Ave., Yonkers. Observing at Ward Pound Ridge Reservation, Routes 35 and 121 South, Cross River. Annual membership is \$25 per family, and includes discounts on *Sky & Telescope* and *Astronomy* magazine subscriptions. Officers: President: Charlie Gibson; Senior Vice President: Pat Mahon; Secretary: Barbara Moroch; Treasurer: Michael Virsinger; Vice President Membership: Karen Seiter; Vice President Programs: John James; Vice President Field Events: David Butler; Newsletter: Tom Boustead; Webmaster: Robert Davidson.

# Articles and Photos

## Ultraviolet Surprise

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies, the likes of which astronomers on Earth have never seen before? Now you can. Just point your web browser to [galex.stsci.edu](http://galex.stsci.edu) and start exploring.

That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

Astronomers haven't closely examined about 65% of the images from the all-sky survey yet, so there are plenty of surprises waiting to be uncovered. "The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

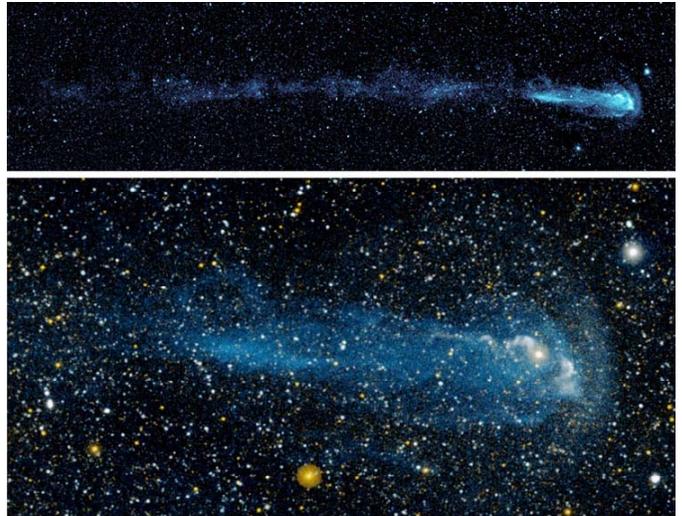
Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and

discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

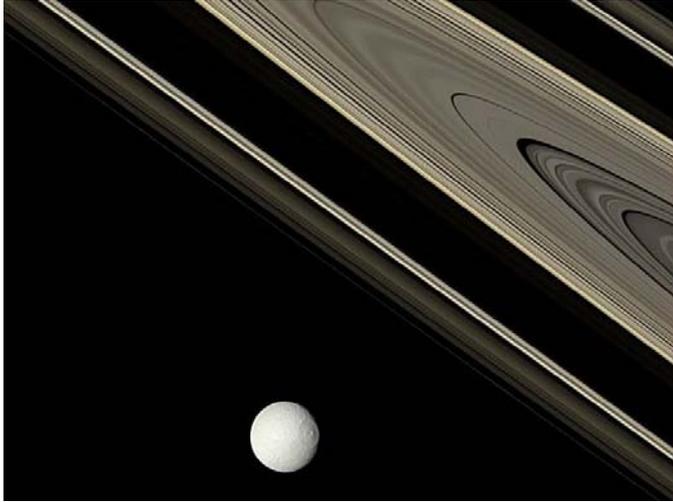
If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin! *The Jet Propulsion Laboratory, California Institute of Technology provided this article under a contract with NASA.*



Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.

This image may be downloaded from [http://spaceplace.nasa.gov/news\\_images/mira.jpg](http://spaceplace.nasa.gov/news_images/mira.jpg).



### ▲ Musings on the Rings

How old are Saturn's rings. NASA's Picture of the Day discusses the question at <http://antwrp.gsfc.nasa.gov/apod/ap071217.html>.

The Cassini Imaging Team, SSI, JPL, ESA, and NASA provided the above image. Besides the rings, the moon – Enceladus—is shown.



### ▲ North America Nebula

Rick Bria and Ted Schimenti took this B&W version (soon to be processed in color) of the North American and Pelican Nebula complex in Cygnus. It is over 8 hours of 15 minute guided sub-exposures through an H-Alpha filter using an FSQ106mm refractor scope.

### Astronomy on the Go ▶

Bob Kelly took this image of the Moon and Venus over Ashford and Abington avenues in Ardsley at 6:20am December 6th, 2007. This shot is a 1/10 sec exposure with a hand held Canon A40. Contrast and brightness were increased slightly in Photoshop Elements 5.0.

Notes Bob: My bus was coming and I didn't have time to set the camera on a tripod.



# Constellation Corner:

by Matt Ganis

While I was getting the almanac column together this month, I was discussing the Quadrantids and its radiant, which is located in the constellation of Boötes. I realized that I had never discussed this interesting area of the sky along with some of its celestial neighbors.

Boötes (pronounced BOH-uh-tees – not "booties") has a variety of myths and legends connected with it. One of the oldest says it represents the son of Zeus and a nymph, Callisto. Boötes was sent away penniless by his brother and left to pick his own fate. Boötes invented a plow which was pulled by oxen. He farmed the land and made a decent living. Callisto was so pleased she convinced Zeus to place their son and his plow in the sky. So Boötes is sometimes called the Ploughman, because the constellation is near to the Big Dipper, which is, at times, referred to as the plough.

Bootes is also associated with the story of Zeus' seduction of the maiden Callisto, who was turned into a bear as result of the jealousy of the goddess Hera (Zeus' wife). Before being turned into a Bear, Callisto bore a boy Arcas as the result of her liaison with Zeus. As a teen, Arcas was hunting in the forest and encountered the Bear Callisto. Of course he did not recognize her and he set off to slay the large bear and to take the skin as a trophy. Callisto fled through the woods to the temple of Zeus with Arcas in hot pursuit. From the temple Zeus swept Callisto and her son up into the sky, where Callisto became the Greater Bear Ursa Major and Arcas became the Bear Driver: Boötes.

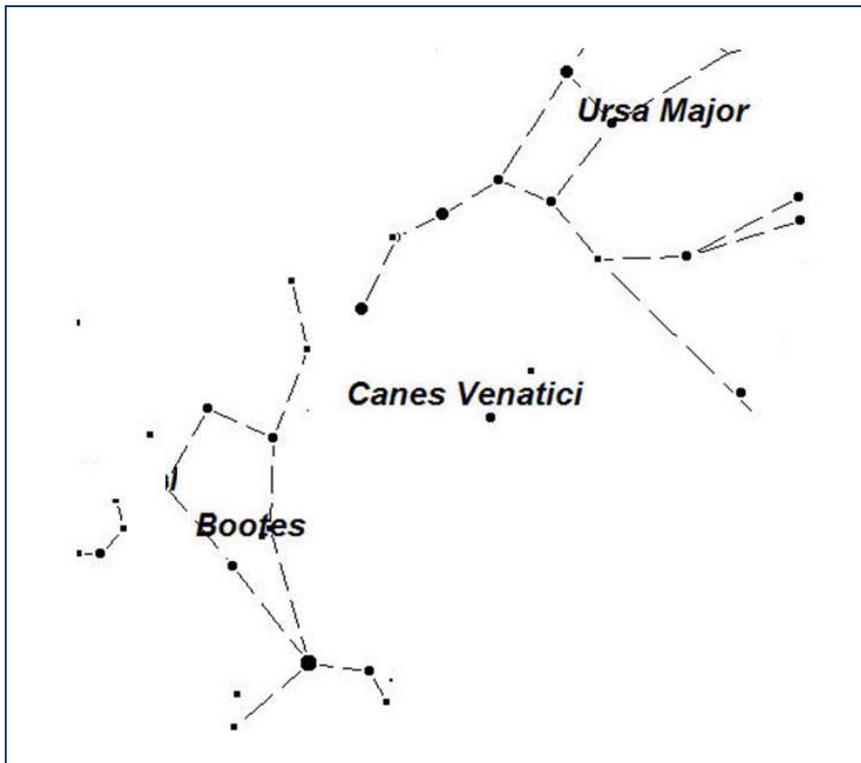
At one time, Boötes was considered by many to be a hunter – hot on the tracks of the Great Bear, accompanied by his two dogs Asterion and Chara (the "Canes Venatici"). And yet the constellation was once known as Arctophylax, which means the protector of the Bear. Perhaps it was the Romans who changed his role, for they called him Venator Ursae: the Bear Hunter.

Nowadays Boötes is generally considered to be a Herdsman (as in French: Le Bouvier), as he eternally shepherds the stars around the North Pole. In fact, the brightest star in Boötes, Arcturus,

is loosely translated as "Bear Guard" or "keeper of the bear". It's no surprise he's viewed as a herdsman, since the journey around the pole represents his task of keeping the celestial beasts together.

One of Bootes' claims to fame is the bright star Arcturus. It's one of the oldest stars in the universe, a member of what astronomers refer to as Population II stars. These stars have only traces of elements other than hydrogen and helium, indicating they were formed when there were few other elements available in the Universe. With a magnitude of -0.1, Arcturus is the fourth brightest star in the sky and a mere 36 light years distant, it is however, a star whose end is near. Once it was probably similar to our Sun and within some billion of years, our Sun will equal its size.

So now, when checking out this month's meteor shower, have a look at Bootes; how would you refer to him: Herdsman, hunter, or a winemaker (that's another story for another day)



# Almanac

For January 2008 by Matt Ganis

The year 2008 opens with some interesting celestial sites for your New Years viewing. Hopefully the crisp, cool January nights will provide you excellent viewing conditions.

The Quadrantid meteor shower is one of the year's best, regularly producing 50 to 120 meteors per hour. The Quadrantids are a strong January meteor shower whose radiant is located in an area inside the constellation Boötes. The name comes from Quadrans Muralis, an obsolete constellation that is now part of Boötes.

This year, the Quadrantid shower will peak on January 4th at 2am EST. The shower doesn't last long, only about 14 hours (they have the distinction of being the shortest of all the meteor showers). Even dedicated meteor watchers are likely to miss such a quick maximum. The radiant will be located in our northeastern skies in the Northern most part of Boötes just "above" Hercules.

Comet Holmes continues to enlarge, which means its surface brightness is decreasing and it's more easily wiped out by moonlight or light pollution. But if you have a dark sky, the comet's total brightness has remained constant at 3rd magnitude since mid-November. If you have a chance, have a look in the constellation of Perseus. Check out <http://www.calsky.com/cs.cgi> for a great interactive ephemeris.

The jewel of our wintertime skies is the planet Saturn. The ringed planet rises around 8pm in our evening skies and is happily situated at the feet of Leo (the Lion). Saturn starts off the New Year at a magnitude of +0.5 and by month's end brightens to only about +0.3. Check out the conjunction of Saturn, the Moon and the bright star Regulus on the evening of January 24th.

The other bright planet in our January skies is Mars. The red planet reached opposition (directly opposite of the Sun) on December



Jan 8



Jan 15



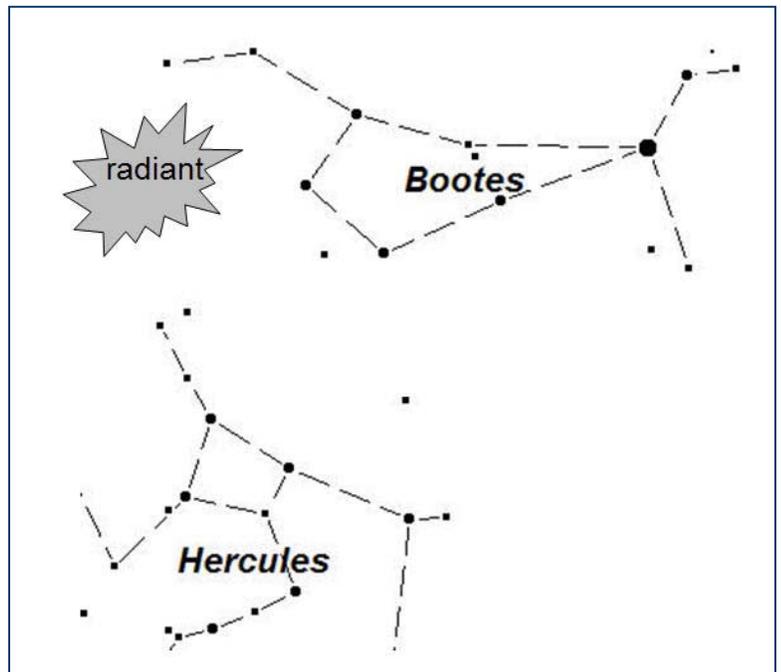
Jan 22



Jan 30

24th making it easily observable all night long. This month, you'll find Mars (which is currently in retrograde) in the constellation of Taurus – just at the tips of the bull's horns, shining at a magnitude of -1.5.

As long as we're "in" the constellation of Taurus, watch as the Moon occults the Pleiades on the night of the 18th. A 10-day old Gibbous moon will pass in front of several of the stars in the open cluster somewhere around 2am-3am. The Moon will be fairly bright, so you may want use binoculars or a telescope to see this event. One interesting fact that I found as I was doing my research this month: did you know: Subaru is the Japanese word for the Pleiades? I drove a Subaru for years, and always loved the emblem on my car (but I never realized it was the Pleiades – neat huh?)



I hope you all have a wonderful and prosperous New Year: a year filled with sights of Nebula, planets and stunning open clusters ;-)  
Happy New Year!