

Sky **WAA** tch

The Monthly Publication of the Westchester Amateur Astronomers

January 2009



Inside the ISS

Peering out of the window of the International Space Station (ISS), astronaut Greg Chamitoff takes in the planet on which we were all born. About 350 kilometers up, the ISS is high enough so that the Earth's horizon appears clearly curved. Astronaut Chamitoff's window shows some of Earth's complex clouds, in white, and life giving atmosphere and oceans, in blue. The space station orbits the Earth about once every 90 minutes.

Credit: [Expedition 18 Crew](#), [NASA](#)

Events for January 2009

➤ **Monthly Meetings**

“Astronomy Talk by David High”

Friday, January 9th, 8:00 PM

Andrus Planetarium

Hudson River Museum, Yonkers

David High, a designated NASA Solar System Ambassador, will make an encore performance before the WAA. Free and open to the public.

WAA at RAC

Friday, February 6th, 7:00 PM

Rye Arts Center

51 Milton Rd, Rye

Rick Bria will be speaking on astrophotography and Hubble. WAA'ers will have an opportunity to visit the galleries at the Rye Arts Center and peruse the Hubble Images at their leisure. Free and open to the public.

Directions: <http://www.ryeartscenter.org/>.

➤ **Starway to Heaven**

Saturday, January 24th, 6:30-9:00PM

Meadow Picnic Area, Ward Pound Ridge Reservation, Cross River

This is our scheduled Starway to Heaven observing date for January, weather permitting. Free and open to the public. The scheduled rain/cloud date is January 31st

New Members. . .

Robert Ryan, Bronx, NY

Kathleen O'Donnell, Briarcliff Manor, NY

Renewing Members. . .

Gregory DiNome, Hawthorne, NY

Sridhar Mani, Riverdale, NY

Patrick McGuire, Tuckahoe, NY

Paul Wieland, Yonkers, NY

WAA'ers Speaking at RAC

The Rye Arts Center is hosting "Heavens Above", a display of 30 30x40-inch backlit transparencies from the HST. This is the official traveling Hubble exhibit. The exhibit will run from January 13 to February 21. The opening reception is Wednesday, January 14 at 6:30-8:30 pm. WAA'ers Doug Baum, Rick Bria and Matt Ganis will speak on their experiences as Astro-photographers. Directions:

<http://www.ryeartscenter.org/>.

See Page 6 for more details on the Exhibit.

- **NOTE: The WAA election for officers has been postponed while the slate is completed. Volunteers for Webmaster and VP Membership are needed. Those interested should contact the Club.**

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/>.

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; Vice President: Michael Virsinger Vice President Programs (lectures): Pat Mahon; Treasurer: Doug Baum; Vice President Membership: Karen Seiter; Vice President Field Events: David Butler; Newsletter: Tom Boustead.

Articles

Superstar Hide and Seek

By Dr. Tony Phillips

It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes, but Spitzer is an infrared telescope able to penetrate the dusty gloom.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly gamma-ray bursts waiting to happen? Oskinova is not worried.

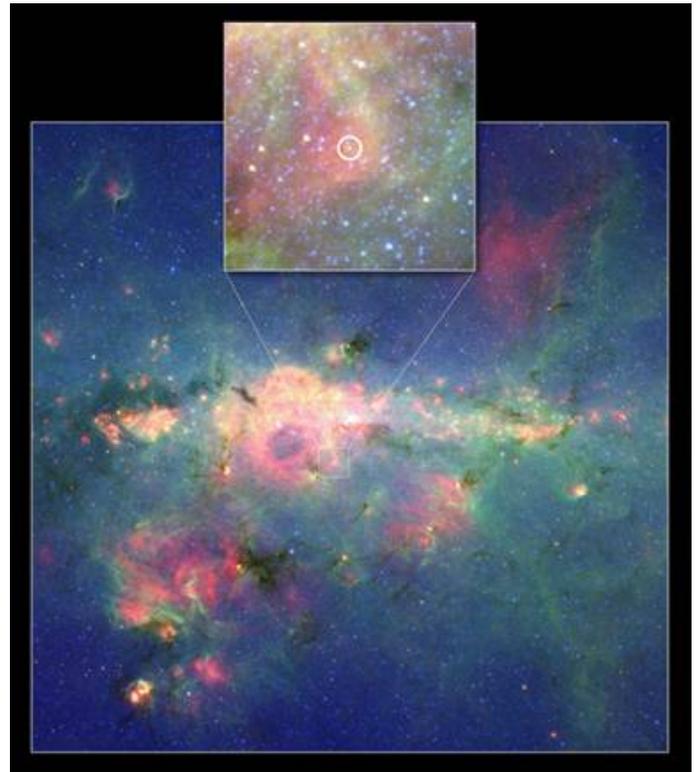
"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the

way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes one of the biggest explosions since the Big Bang itself.

Now that might be hard to hide.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.



The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.

Constellation Corner

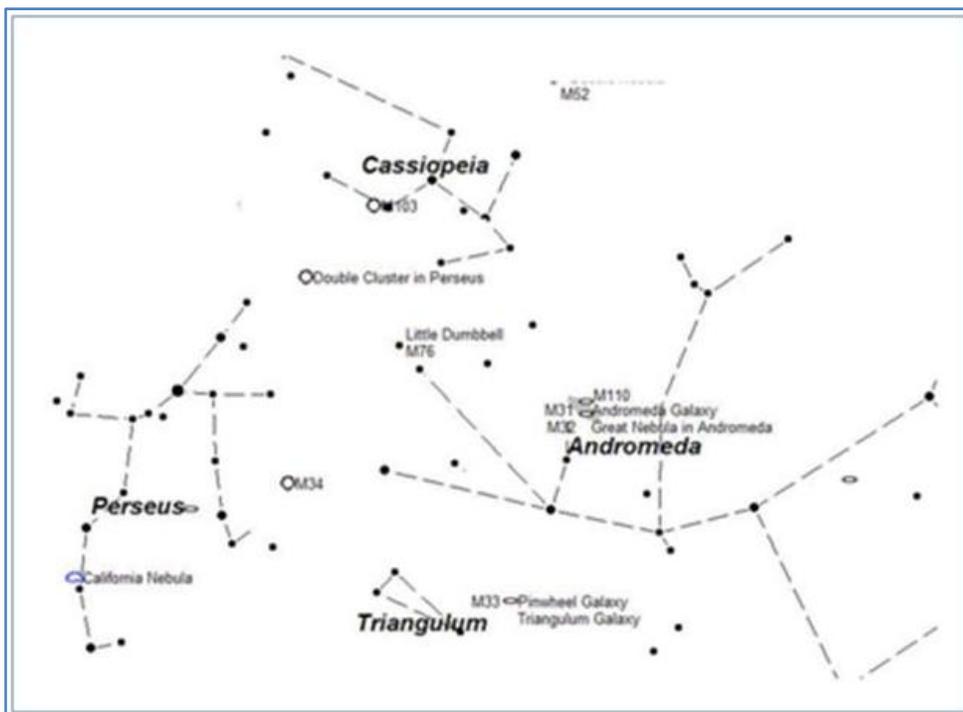
By Matt Ganis

I thought I'd start using this column to point out some of the interesting objects we can see as we look around at some of the more prominent constellations in our skies. This month, let's have a look at the constellation of Perseus which is riding high in our Zenith this month.

If we take a look between the constellation of Perseus and Cassiopeia, we come across the famous "double cluster" in Perseus which is made up of NGC 869 and NGC 884. The Double Cluster resides in a Milky Way spiral arm and is estimated to be about 7,300 light-years from Earth. These clusters are thought to have been formed around 13 million years ago from a single cloud of dust and gas. For us here on Earth, we see the Double Cluster through thick clouds of interstellar dust that line the plane of the Milky Way and were it not for this dust, we would see the Double Cluster shining at a magnitude of +1.6 (about 4.4 times brighter than it appears today). These clusters provide a wonderful sight in binoculars and they literally sparkle in modest sized telescopes. In the "Southern" portion of Perseus is the California Nebula. The name comes from the fact that it vaguely resembles the shape of the state of California, with the North being to the right-hand side in most pictures. It's not an object that you can typically observe in a telescope so it's really a photographic-only object.

Just "above" Perseus in the constellation of Cassiopeia, you'll come across another open star cluster called M103. This is a relatively small loosely gathered, open cluster about 8' in diameter which contains about 20 relatively bright stars. When viewed through the finder scope or binoculars it appears as a slightly hazy patch. In small scopes, you may not think you are seeing an open cluster due to so few resolved stars, so be patient trying to find it.

Messier 52 is another fine open cluster located in a rich Milky Way field. To find M52, follow the right side of the "W" (Beta Cassiopeiae or Caph) straight out for 6 degrees and M52 is almost on a direct line.

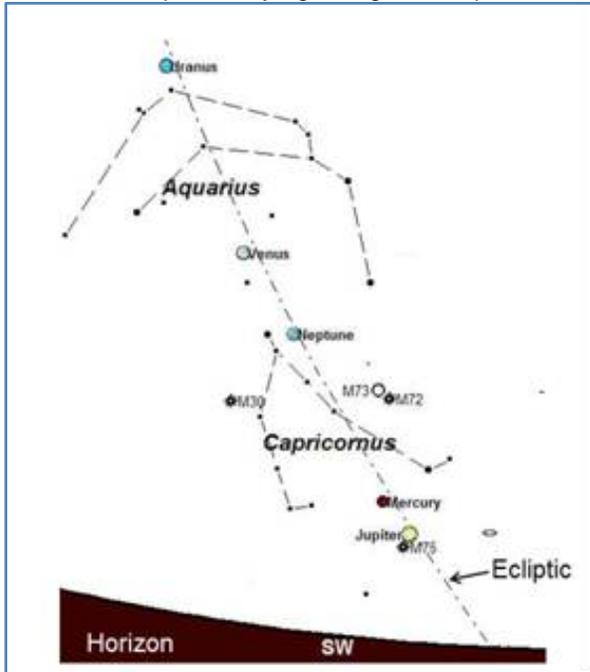


Of course, we can't look at this area of the sky and not mention M31, the nearest large galaxy to the Earth, the Great Andromeda Galaxy. It is so bright that it is easily seen by the naked eye as a faint fuzzy patch of light in the northern part of Andromeda. On clear nights M31 can be seen with the naked eye as a hazy smudge, and binoculars shows its elliptical shape that can be traced to its full extent of over two degrees (that's is four times the width of the full Moon!) There are two more satellite galaxies that lie near M31. The brightest of these is 9th-magnitude M32, located half a degree south of M31. The other satellite is M110, one degree northwest of M31. These two satellite galaxies are pretty faint, and the key to viewing them is to set up your scope away from local lights on a dark, transparent, moonless night.

Almanac

For January 2009 by Matt Ganis

The year 2009 opens with an interesting alignment of the planets. I love when this happens – it gives a clear indication of where and what the Ecliptic is. The Ecliptic is the apparent annual path of the Sun along the celestial sphere (as seen from Earth). It is so named because eclipses occur only when the Moon is on or near this path. At the start of January we can look out toward our Western skies and see several of the planets lying along the ecliptic.



Let's have a look at the planets, nearest the Western horizon. Jupiter is quickly sinking below the horizon and will set, out of view, by about 6pm early in the month and will be completely obscured by the Sun by month's end. If you can catch a glimpse of it, you see it will be in a close conjunction (about 1 degree) with M75, a Globular cluster situated in the western part of Sagittarius (however this is one of the fainter globular clusters in Messier's catalog, due to its large distance).

About 3-degrees above Jupiter is the smallest planet in our Solar System, Mercury. The two planets will remain within about 5 degrees of each other for the first few days of the New Year. After that, the two planets part company with Mercury rising higher into the sky, while Jupiter recedes out of view. A view of Mercury in the beginning of the month reveals a disk of only about 7" and will grow to only about 9" about a week to ten days later (and will decrease in magnitude from magnitude of -0.65 to +1.6 over this same period)



Jan 4



Jan 10



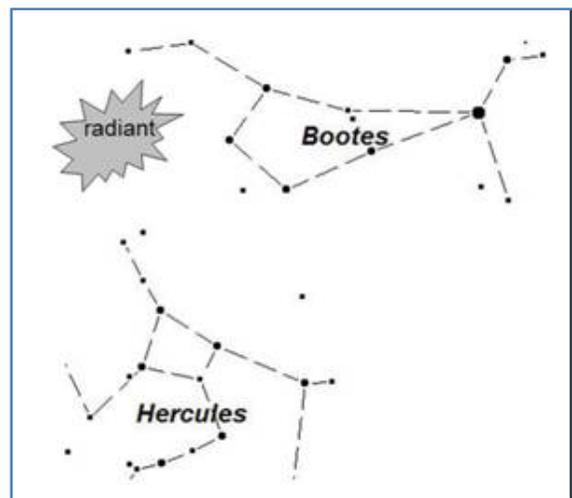
Jan 17



Jan 26

Venus continues to rise higher in our evening skies, reaching a stunning magnitude of -4.4 by month's end. Be sure to check a glimpse at this beacon in our western skies. A look at Venus reveals its crescent phase (similar to a first quarter moon).

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 the morning of January 3rd. 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 north-eastern 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.

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!



heavens above

photographs of the universe from
the hubble space telescope



Stellar Life Cycles in NGC 3603

The Rye Arts Center hosts . . .
Heavens Above:
Photographs of the Universe
from the Hubble Space Telescope
January 13 — February 21, 2009

Opening reception:
Wednesday, January 14, 2009,
6:30-8:30 pm with Panel Discussion,
"Focus on Hubble and Astrophotography"
7:30- 8:30pm.

This traveling exhibition features
30 breathtaking images presented as
large format, captioned transparencies
mounted in light boxes.

"Heavens Above" was organized by the
NASA Space Telescope Science Institute and
Alden B. Dow Museum of Science and Art of
the Midland Center for the Arts.

Please Visit:
www.ryeartscenter.org
51 Milton Road, Rye, NY 10580

For information:
Call 914-967-0700 x 33

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