



# SNAKE RIVER SKIES



Monthly Newsletter

December 2009

## December Events:

**12-Board Meeting:** 6:00 pm in the Frost Learning Lab Herrett Center.

**12-Meeting:** 7:00 pm in the Rick Allen room, Herrett Center for Arts & Science, College of Southern Idaho campus. Family Fun Night and Quizzes.

**12- MVAS Star Party:** Will be following the public meeting and co-hosted with the Centennial Observatory at the Herrett Center. Note: the Public Star party for the Herrett Center begins at 5:45 pm.

**Calendar found on pg. 3**

## Letter from the President—Terry Wofford

On behalf of the board, I would like to take a moment as we close out this International Year of Astronomy, to take a brief look back at all of our activities and events we have held over the past year. It is good to know that some members of the club came through and helped make each of these events a reality.

Here is a list of the events we participated in.

IYA Image Unveiling  
Video Messier Marathon  
Yuri's Night  
Sidewalk Astronomy  
100 hours of Astronomy  
Astronomy Day  
Monthly Star Parties

LCROSS event  
Castle Rocks S.P. Star Party  
Pomerelle Mt. Star Party  
Galilean Nights  
Astronomy Talks  
Solar Observing

Yes, we were very busy and will no doubt have a successful year next year.

We are already in the process of planning for 2010 and can always use more help in organizing our programs. As always, MVAS members are invited to join us for our board meeting. The board meetings are now held at 6:00 p.m. on the same nights as the general meeting to allow anyone who wants to attend, the opportunity to do so before t h e

general meeting.

We will be hosting our annual Holiday/Christmas "Family Fun Night" party on Saturday, 12 Dec at 7:00 p.m. in the Rick Allen Room of the Herrett Center for Arts and Science, College of Southern Idaho.

I would like to remind everyone that your annual dues for club membership are due. For more information please see the back page.

Lastly, I would like to wish everyone a joyous and healthy holiday season.

Terry Wofford, President  
Magic Valley Astronomical Society.



## MVAS Board 2010

For the coming year the following are your club board members.

Terry Wofford, President  
TerryWofford@hotmail.com

David Olsen, VP  
DavidOlsen@filertel.com

Jim Tubbs, Treasurer  
jtubbs015@msn.com

Rick Widmer, Secretary  
Rick@developersdesk.com

## Special Announcement

In order to try to avoid some conflicts during the post holiday season a decision was made in November at the general board meeting to cancel the meeting for January.

If you would like to participate in the public star gazing held at the Herrett Center the evenings events will begin at 6:15 p.m. at the Centennial Observatory, Herrett Center, College of Southern Idaho Campus.

Our regular meetings will resume in February.

If you have any comments about this matter please forward them to one of the board members. Contact information has been provided to the left.

Thank you, The Board

## December Geminids

Make hot cocoa. Bundle up. Tell your friends. The best meteor shower of 2009 is about to fall over North America on a long, cold December night.

the sky during the hours around local midnight. For North Americans, this means Sunday night to Monday morning."

prepared a plot showing how the shower has intensified since its discovery:

What's going on? Jupiter's gravity has been acting on Phaethon's debris stream, causing it to shift more and more toward Earth's orbit. Each December brings a deeper plunge into the debris stream.

Meteor expert Peter Brown of the University of Western Ontario (UWO) says the trend could continue for some time to come.

"Based on modeling of the debris done by Jim Jones in the UWO meteor group back in the 1980s, it is likely that Geminid activity will increase for the next few decades, perhaps getting 20% to 50% higher than current rates."

A 50% increase would boost the Geminids to 200 or more meteors per hour, year in and year out. "That would be an amazing annual display," says Cooke.

Moreover, says Brown, "the proportion of large, bright Geminids should also increase in the next few decades, according to Jones' model." So the Geminids could turn into a "fireball shower."

Brown cautions that "other models of the debris stream come to different conclusions, in some cases suggesting that Geminids will decrease in intensity in the coming decades. We understand little about the details of the formation and evolution of Phaethon's debris despite many years of efforts."

Recent trends favor a good show. Enjoy the Geminids!

Author: Dr. Tony Phillips | Credit: Science@NASA

Let's hope for clear skies in the Magic Valley so we can all rise before dawn and view these Meteor Showers.—Ed.

Researchers are interested to see what the Geminids do in 2009. The shower has been intensifying in recent decades and they wonder if the trend will continue.

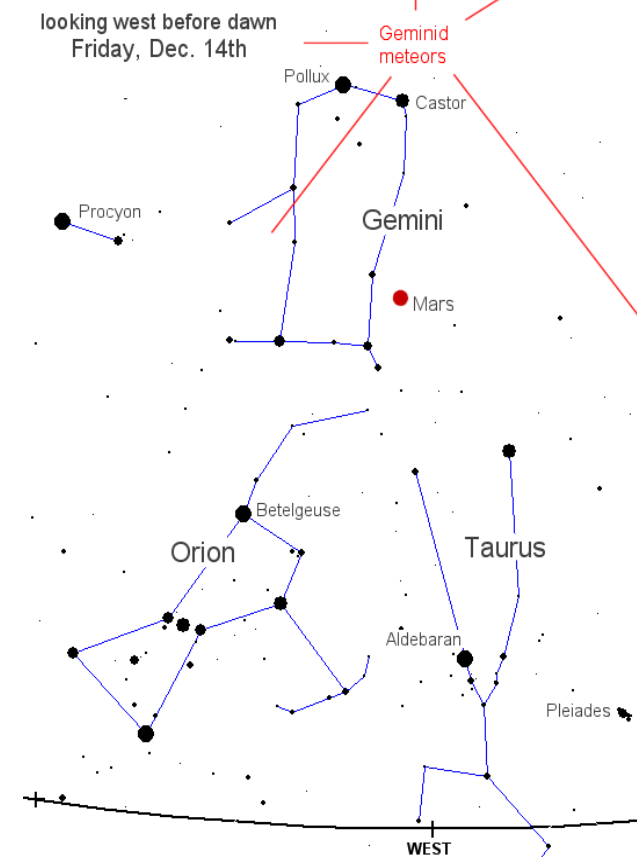
Geminids are pieces of debris from a strange object called 3200 Phaethon. Long thought to be an asteroid, Phaethon is now classified as an extinct comet. It is, basically, the rocky skeleton of a comet that lost its ice after too many close encounters with the sun. Earth runs into a stream of debris from 3200 Phaethon every year in mid-December, causing

meteors to fly from the constellation Gemini:

When the Geminids first appeared in the late 19th century, shortly before the US Civil War, the shower was weak and attracted little attention. There was no hint that it would ever become a major display.

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But now it has. "The Geminids are strong—and getting stronger," says Cooke, who has



"It's the Geminid meteor shower," says Bill Cooke of NASA's Meteoroid Environment Office. "and it will peak on Dec. 13th and 14th under ideal viewing conditions."

A new Moon will keep skies dark for a display that Cooke and others say could top 140 meteors per hour. According to the International Meteor Organization, maximum activity should occur around 10:10 a.m. MST (0510 UT) on Dec. 14th. The peak is broad, however, and the night sky will be rich with Geminids for many hours and perhaps even days around the maximum. Cooke offers this advice: "Watch

## Sky Calendar—December 2009

- 1 **Moon near the Pleiades** (midnight sky) at 15h UT.  
 2 **Full Moon** at 7:31 UT.  
 4 **Moon at perigee** (closest to Earth) at 14h UT (363,479 km; 32.9').  
 5 **Moon near Pollux** (morning sky) at 5h UT.  
 6 **Moon near Beehive cluster (M44)** (morning sky) at 5h UT.  
 6 **Moon near Mars** (morning sky) at 23h UT. Mag. -0.2.  
 7 **Moon near Regulus** (morning sky) at 19h UT.  
 9 **Last Quarter Moon** at 00:13 UT.  
 10 **Moon near Saturn** (morning sky) at 5h UT. Mag. +1.0.  
 11 **Moon near Spica** (morning sky) at 18h UT.  
 14 **Geminid Meteor Shower** peaks at 5h UT. Produces bright, medium-speed meteors at its peak (up to 80 meteors/hour). The parent body of the Geminids is a mysterious asteroid known as 3200 Phaethon believed to be an "extinct comet." Very favorable viewing conditions this year.  
 16 **New Moon** at 12:02 UT. Start of lunation 1076.  
 18 **Moon near Mercury** (20° from Sun, evening sky) at 7h UT. Mag. -0.5.  
 18 **Mercury at greatest elongation**, 20° east from Sun (evening sky) at 17h UT. Mag. -0.5.  
 20 **Moon at apogee** (farthest from Earth) at 15h UT (distance 405,731 km; angular size 29.5').  
 21 **Jupiter 0.53° SSE from Neptune** at 10h UT (evening sky). Mags. -2.2 and +7.9.  
 21 **Moon near Jupiter** (evening sky) at 12h UT. Mag. -2.2.  
 21 **December solstice** at 17:47 UT. The time when the Sun reaches the point farthest south of the celestial equator marking the start of winter in the Northern Hemisphere and summer in the Southern Hemisphere.  
 24 **First Quarter Moon** at 17:36 UT.  
 29 **Moon near the Pleiades** (evening sky) at 1h UT.  
 31 **Full Moon** at 19:13 UT. [Blue Moon](#) (Wikipedia)

December is a Blue Moon Month to learn more about a Blue Moon follow the link provided above. Use ctrl + Click to follow the link. If the link does not work use this URL [http://en.wikipedia.org/wiki/Blue\\_moon](http://en.wikipedia.org/wiki/Blue_moon)



During its mission, the Galileo spacecraft returned a number of images of Earth's only natural satellite. Galileo surveyed the moon on Dec. 7, 1992, on its way to explore the Jupiter system in 1995-1997.

This color mosaic was assembled from 18 images taken by Galileo's imaging system through a green filter. On the upper left is the dark, lava-filled Mare Imbrium, Mare Serenitatis (middle left), Mare Tranquillitatis (lower left), and Mare Crisium, the dark circular feature toward the bottom of the mosaic. Also visible in this view are the dark lava plains of the Marginis and Smythii Basins at the lower right. The Humboldtianum Basin, a 400-mile impact structure partly filled with dark volcanic deposits, is seen at the center of the image.

*Image Credit: NASA/JPL/USGS*



## "Carbon Star T Draconis—Challenging But Worth the Effort" By Chris Anderson

As is often the case this time of year, when the (thermometer's) mercury dips low after sundown, public observing nights can be a bit sparsely attended. Such was the case last Tuesday, December 1<sup>st</sup>, for our Family Night viewing session. When I'm in the observatory waiting for my next customers to appear, I sometimes busy myself checking targets off of various lists that I keep in the observatory "cheat book." One of my favorites is the carbon star list, since carbon stars are variable, and some of them are only visible at certain (unpredictable) times. Furthermore, their variability extends not only to their brightness, but also their color; when they are dimmest, they are at their reddest, so you just never know until you look at them whether they'll be visible, and if so, how red they will appear.

On Tuesday, between visitors, I was working my way down the list and slewed to T Draconis, a carbon star whose brightness ranges from 7.2 to 13.3. Atmospheric transparency, between a few scudding clouds, was pretty good, so I had high hopes of seeing it. Sure enough, it was hanging around 10th magnitude, looking quite red. But the best part of the view was the fact that T Dra was just 16 arcsec away from a pale blue-white, 11th magnitude star, forming a lovely visual binary color combination; the blue-white companion really made T Dra's redness stand out.

I know that 10th-11th magnitude is not easily in the range of everyone's telescopes, and tracking this pretty pair down without the benefit of a well-calibrated "go-to"

scope may be a challenge, but just in case you want to chase them, here are some pointers:

T Dra is also known as GSC 3914:546 and HIP 87820. Its companion is GSC 3914:514 or PPM 36265. T Dra is at RA 17h 56m 23.3s, dec. 58d 13' 06" (J2000). Or if you want to star hop, they're 1.4 degrees ENE (just a shade east of due north, really) of Grumium (Xi Draconis, mag. 3.8), the star where the neck of Draco joins its quadrilateral head. If you have a polar aligned, equatorially mounted scope, it should be easy: Line up on Xi Dra, then move 1.4 degrees toward Polaris, on the declination axis only. There's no star in their vicinity (i.e. in the field of typical small telescope with moderately low power eyepiece) brighter than magnitude 8, but plenty of other 10th and 11th magnitude field stars.

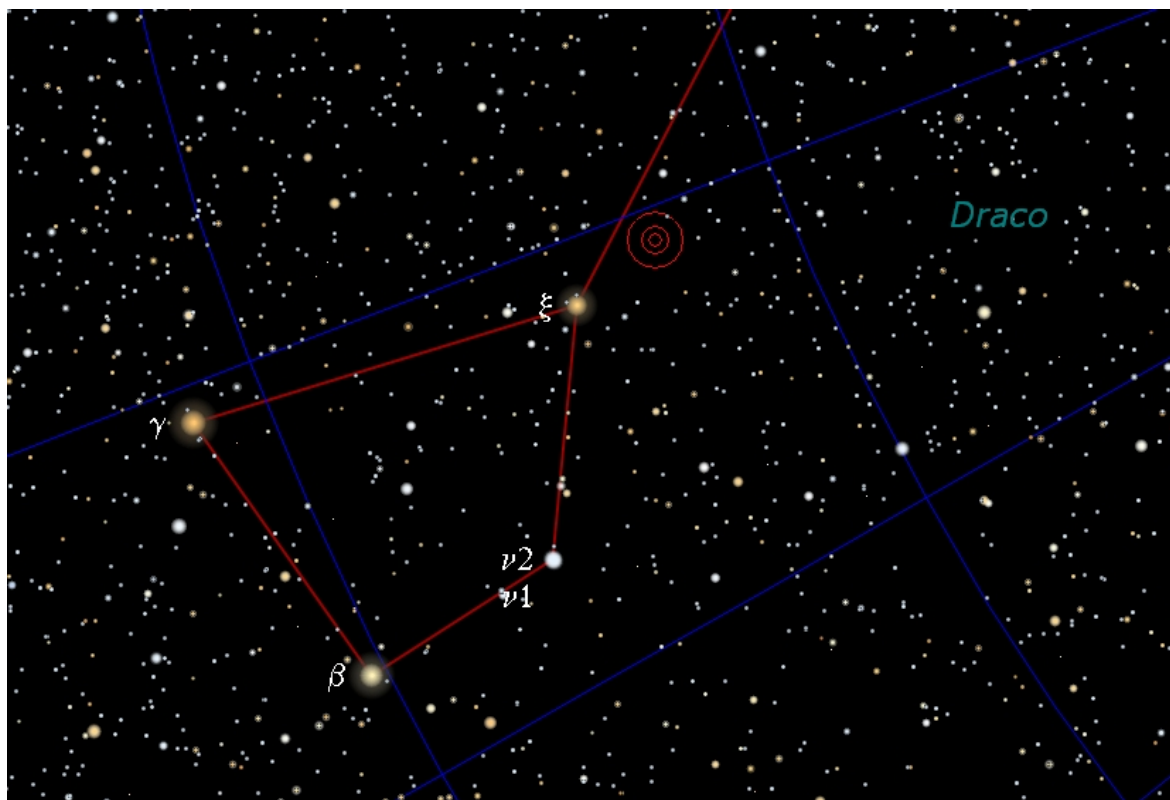
If you have an alt-az mount, all I can offer is that you'll need to do your best to move on a straight line from Xi Dra toward Polaris. Xi Dra's lower culmination (when you could simply move up in altitude by 1.4 degrees to get to T Dra) doesn't occur until around 1:20

a.m., and by then it's so low that you'll be trying to pick out the 10th/11th mag. pair through 1.74 air masses—ick. And, obviously, upper culmination falls 12 hours later—during daylight hours. You could wait until upper culmination falls in dark hours (which won't occur until late April, in the pre-dawn, or late June if you don't want to be up past midnight), but by then T Dra may well have dimmed to its lower limit and be too faint, or brightened to nearer its upper limit, and looking far less red.

Your other option is to ask me to hit it on the next clear night the observatory's open. :)

Chris Anderson is the Production Specialist, Faulkner Planetarium & Coordinator, Centennial Observatory Herrett Center for Arts & Science College of Southern Idaho Twin Falls, Idaho, USA

Chart 1 caption: Head of Draco, showing location of T Dra NNE of Xi Draconis



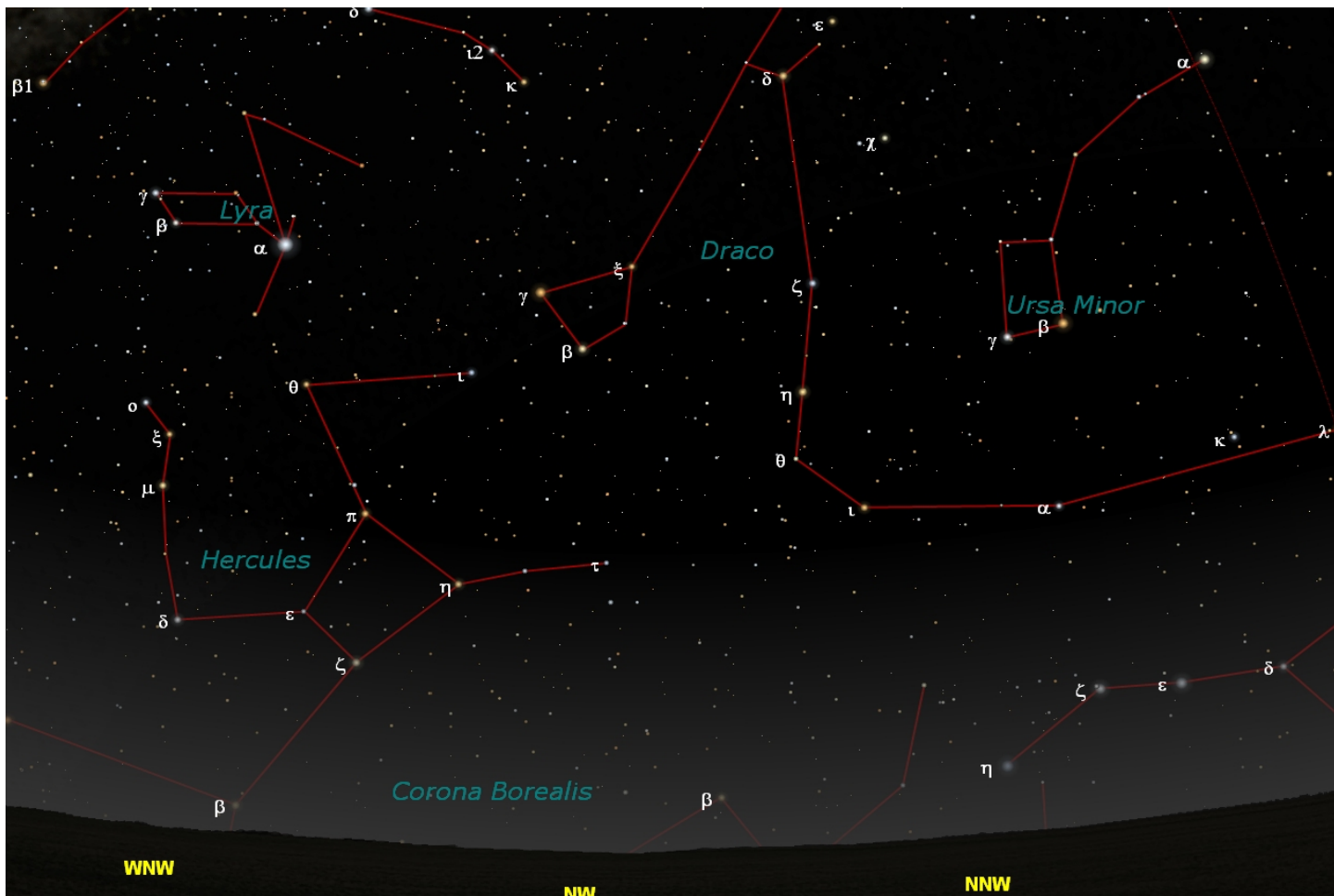


Chart 2 caption: Looking NW, mid-December, end of astronomical twilight (6:45 p.m.)

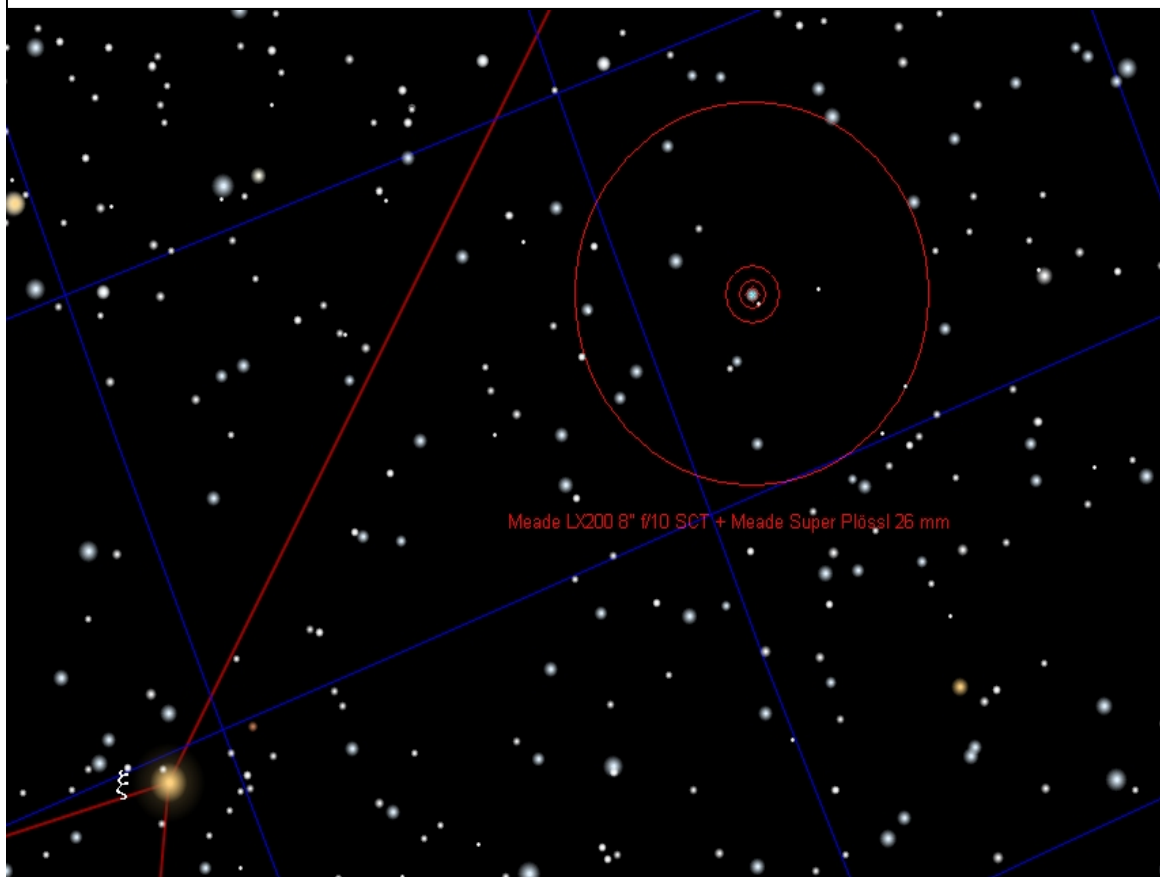


Chart 3 caption: Location of T Dra ( $\xi$  Dra at lower left). FOV circle is for an 8" f/10 SCT with 26 mm eyepiece. Faintest stars shown are mag. 12.

All charts were rendered by Chris Anderson using Bisques "the Sky" Software. The same software used to operate the telescope at the Centennial Observatory.

## Saturn's Weird Hexagon Seen in New Images

By SPACE.com Staff via NASA

Cameras aboard NASA's Cassini spacecraft have captured images of a mysterious hexagon-shaped cloud formation that is likely formed by the path of a jet stream flowing around the planet's north pole.

The hexagon, which was discovered by the Voyager spacecraft in the early 1980s, encircles Saturn with an estimated diameter wider than two Earths. The associated jet stream likely whips along the hexagon at about 220 miles per hour (100 meters per second).

"The longevity of the hexagon makes this something special, given that weather on Earth lasts on the order of weeks," said Kunio Sayanagi, a Cassini imaging team associate at the California Institute of Technology. "It's a mystery on par with the strange weather conditions that give rise to the long-lived Great Red Spot of Jupiter."

The last visible-light images of the entire hexagon were captured by NASA's Voyager spacecraft nearly 30 years ago, the last time spring began on Saturn. For the next 15 years, the north pole was shrouded in darkness.

Cassini has been orbiting Saturn since 2004, and unlike Voyager it has a better angle for viewing the north pole and provides higher-resolution images. But the long darkness of Saturnian winter hid the hexagon

from Cassini's visible-light cameras for years. During this time, the craft's infrared instruments were able to detect the shape using heat patterns, with the resulting images showing the hexagon is nearly stationary and extends deep into the atmosphere. The images also showed a hotspot and cyclone in the same region.

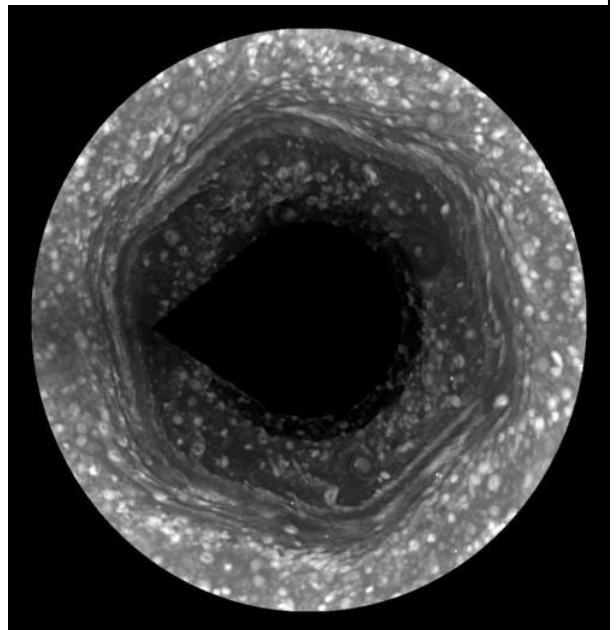
Just as the north pole emerged from winter in January, Cassini's cameras went to work. Imaging team scientists stitched together 55 images to create a mosaic and a three frame movie.

The science team will search the images for clues about the causes of the hexagon, where it gets and expels its energy, and how it has stayed organized for so long. They will pay close attention to the newly identified waves that radiate from the corners of the hexagon where the jet takes its hardest turns, along with the multi-walled structure that extends to the top of Saturn's cloud layer in each of the hexagon's six sides.

"Now that we can see undulations and circular features instead of blobs in the hexagon, we can start trying to solve some of the unanswered questions about one of the most bizarre things we've ever seen in the solar system," said Kevin Baines, an atmospheric scientist at NASA's Jet Propulsion

Laboratory, Pasadena, Calif. "Solving these unanswered questions about the hexagon will help us answer basic questions about weather that we're still asking about our own planet."

A mysterious hexagon shape on Saturn, which was captured by cameras aboard NASA's Cassini spacecraft, spans about two Earths and is likely





## Sky Target: Spot the Double Cluster

One of the greatest mysteries in astronomy is how Charles Messier missed the Double Cluster in Perseus. In his catalog of objects that could be mistaken for comets, he included all the brightest deep sky objects, but somehow overlooked the Double Cluster. So, just because it doesn't have an "M" number, don't you do the same, as it is one of the loveliest objects in the sky, a fine sight in either binoculars or a small telescope.

You don't need to know where Perseus is to find the Double Cluster. Go out on any evening this month and locate Cassiopeia: a distinctive "W" of 2<sup>nd</sup> magnitude stars right across the pole from the Big Dipper. Use the two stars Gamma and Ruchbah in the middle of the "W" as pointers towards the Double Cluster.

In binoculars, you will see two glowing balls of stars; in a small telescope these will resolve into hundreds of individual stars.

These two clusters of stars are a true pair, located at about the same distance from the sun, 7,000 light-years, and are about the same age, 10 million years. Despite their common location and history, they are rather different in appearance, in terms of the density and concentration of stars. Most of the stars are bluish white, but there are a number of yellow stars scattered through the clusters to make them appear colorful.

If you continue to sweep with binoculars beyond the Double Cluster you will reach the Alpha Perseii Cluster. This is one of the closest star clusters to the sun, only 600 light-years away. It is

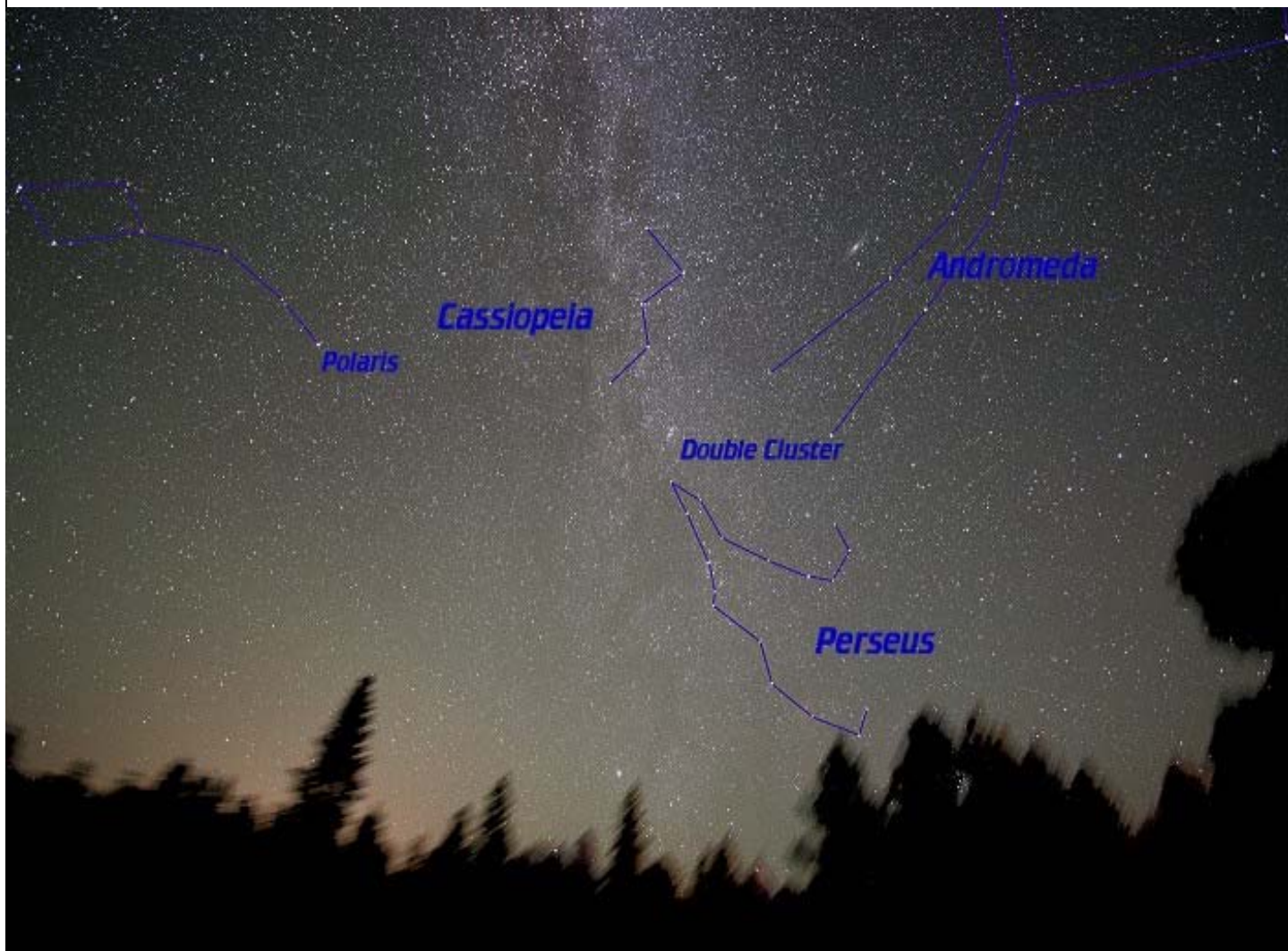
very large in size, overflowing the field of any binocular, and its members are mainly identified by their shared motion through the sky. For that reason it is sometimes called the Perseus Moving Cluster.

Despite being very large and containing many bright stars, this cluster is not well known among amateur astronomers, perhaps because it is too big to view with a telescope. It is one of the objects which is best viewed with binoculars or the naked eye.

Shown below is a image map to assist you in locating the double cluster.

Article by: Geoff Geherty, Space.com

Picture Source: APOD/NASA



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

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The 2010 Olympic flame is held up high into the night sky by George Stewart in CFS-Alert, Nunavut, Canada, Sun., Nov. 8, 2009. Picture-©2009 Vancouver 2010 Games.

### Membership Information

Since 1976, MVAS has promoted Astronomy education in Southern Idaho to continue to do so we need your support. Annual Membership will be:

\$20.00 for individuals,

\$20.00 for families,

\$10.00 for students.

Contact Treasurer Jim Tubbs for more information and benefits information.

E-mail: [jtubbs015@msn.com](mailto:jtubbs015@msn.com)

Telephone: 736-1989

Picture Source: Commons.wikimedia.org



### Trivia

The Olympic Torch is lit by using a solar parabolic mirror at the altar of Herra in Olympia, Greece. The actual lighting time is mere seconds similar to Chris Anderson's demonstration of the Sun's power during a solar observing session held in the summer. The visible flame is never extinguished—though it does burn out and may be blown out via the wind. In 2008, the Chinese Officials did actually extinguish the visible flame (a first) due to protests. To safeguard against extinguishment, the actual flame is carried in a series of six miner's lanterns. A team of flame-keepers maintain the safety of the flame, which includes armed guards.

Perched atop the planet, Canadian Forces Station Alert is the world's northernmost permanent settlement. At this latitude —just 817 kilometres (507 miles) from the pole, on the northeast tip of Nunavut's Ellesmere Island — things get weird. For the most part, it's too northerly for Northern Lights and too polar for polar bears. Compasses point southwest, toward the comparatively equatorial magnetic pole. Distance-wise, Warsaw and Dublin are closer than Ottawa, while Sanikiluaq, Nunavut's southernmost community, is exactly halfway to Florida. Resident's are "transients" within Canada's military serving no more than 1-year.

From mid-October until the end of February the sun does not rise above the horizon and there is 24-hour darkness. The average low temp in Feb. and Mar. is -44° F This makes for some unique starlight conditions.