



The Astronomical Chronicle

Next Meeting:
October 28/29
Public Viewing Session
7:00 pm - ??



The 16" Cave (and observer) at night.

In what might be our last official session at Darling Hill for 2011 (weather-pending - we already have snow/rain mixes predicted for this week), we have both Jupiter and the Andromeda Galaxy gracing our night skies. Orion returns to our late night skies as well, making for fantastic targets for all magnifications.

Check the website for more information on Friday at 5:00 p.m. **We hope you can join us!**

Astronomical Events Calendar

Nov. 5-12, Taurids **Outside!**
[Halley's Comet](#) provides the raw material for this mild-to-moderately populated meteor shower. Unfortunately, the approaching-full Moon will make observing difficult. Possibly worth a try!

Nov. 16/18, Leonids **Outside!**
[Comet Tempel-Tuttle](#) provides the raw material for this potentially very active meteor shower. On the other side of the full Moon as the Taurids, this shower may be difficult to see.

November 25/26 **Darling Hill Observatory**
The SAS hosts its 9th Public Viewing Session. If we are able to open, expect Darling Hill to be quite cold. See Stu's article this month and dress accordingly!

Dec 10, 2011 **Outside!**
All of North America will be able to see the Moonset side of a total lunar eclipse. For more info, see http://en.wikipedia.org/wiki/December_2011_lunar_eclipse.

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President's Message for October, 2011

Greetings Fellow Astrophiles!

So, did you miss the aurora this past Monday?

From Mike Brady - *Wow! An amazing phenomena! It has been about 6 or 7 years since last seen by this observer! The apparent red curtain at one point stretched almost to the zenith.*

If you missed the event or want to learn more about it and the extent of the aurora coverage, spaceweather.com has been keeping excellent tabs and collecting photos from across the US.

2011 Elections

The Eng. word "candidate" derives from the Latin phrase **toga candida** ... or sometimes **toga candidata** -- lit. "white(ned) toga."

The practice was for those who were seeking office in ancient Rome to wear togas that were bleached white with chalk as an indication of a pure and ethical character. Those who wore such were called **candidati**.

Relatedly, our word "ambition" comes from the Latin **ambitio** -- lit. "a going around" -- the technical term for the practice of campaigning for office by soliciting votes.

BTW, the word **toga** derives from the Lat. **tegere** meaning "to cover" ... and is ultimately related to the Lat. **tectum** ("covering, roof"). Eng. derivatives are "protect" and "detect" (lit. "to remove the cover from").

- Prof. John McMahon

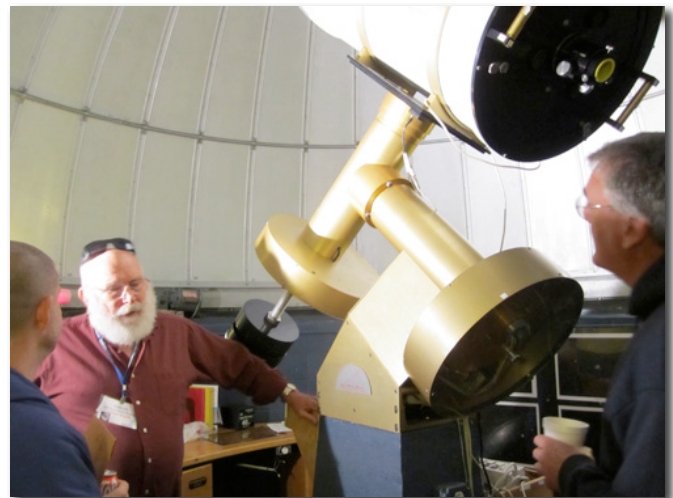
We will be using the first three weeks of the month of November to collect nominations for elected offices. I am pleased to report that all of the current board has, as of present, agreed to stay on in their official capacities, meaning we have a near-full complement regardless of the submission of new nominations. If an SAS member does not come forward to fill the position of secretary now held by Mike Brady in an interim capacity with Stu's passing, Mike has agreed to stay on as secretary, meaning one board member position is open.

Frankly speaking (well, writing), the current SAS board would certainly have no problem with the addition of another member. Board members help run observing sessions, help with grounds maintenance, help run the Summer Seminar, and generally keep the SAS, Darling Hill, and the SAS interests in mind throughout the 2-year term. If you've interest, feel free to send me any questions you might have.

So, as there is no easy way to collect nominations in what may seem to be a completely fair and unbiased manner, I ask that you mail any nominations for not-president to myself (by email or anonymously by snail mail [Damian Allis, 313 E. Willow St. Apt. 501, Syracuse, NY 13203] and for president to Ryan Goodson [260 Tanner Drive, West Monroe, NY 13167]).

We will be mailing out ballots after we list the nominees names in the November newsletter to members in good standing as of December 2011.

Kopernik Astrofest 2011



SAS members Ryan Goodson, Dan Williams, and myself traveled to Vestal, NY this past October 1 to attend the daytime and early evening festivities of the [Kopernik Observatory and Science Center Astrofest 2011](#). Besides a thorough tour of the exceptional facility by Fibber Magee (above), we were treated to several great lectures, friendly discussions, and yet another guest appearance and demonstration by Barlow Bob (below).



Space is the place,
Damian G. Allis, Ph.D.
sas@somewhereville.com

Winter Observing

By Stu Forster, M.D.

Observing in winter takes a little more preparation than warm weather stargazing. Pulling out your scope and spraying on a little mosquito repellent in the summer is different than observing during one of Central New York's wonderful winters. Cold weather requires modifications to not only your technique, but also to your equipment and clothing.

There are three basic principles to keeping warm:

1. **Dress in layers**
2. **Cover your body evenly**
3. **Protect your extremities**

Dead air space is the principle insulator in clothing. This is provided by air that is held by tiny fibers in the clothing. The best materials are those that wick moisture away from the skin. It's also important that the outer layers be windproof. This can be accomplished by the use of elastic on sleeves, pant legs and parka hoods. Even coverage of the body can be accomplished by the use of long underwear and jumpsuits, either snowmobile or mechanic's style.

Extremities

1. **Feet**
2. **Hands**
3. **Head**

Large quantities of body heat are lost by direct contact with the ground. Boots with insulated liners, such as snowmobile and moon boots work well. Standing on a telephone book or a piece of styrofoam will also keep you well insulated from the ground.

Snowmobile mittens are great for keeping hands warm in winter. The only problem is in the need to take them off to change eyepieces or to adjust focus. One solution is to use only one eyepiece and power and therefore avoid the need to adjust the scopes focus. Another is to use an electric focuser. The use of lightweight glove liners under mittens allow one to take off the mittens for a short period of time without getting frostbite, while gaining back their dexterity to make equipment adjustments. There are also shooters mittens, which have a flap over the fingers which can be folded back to expose the fingers as needed. Chemical warmers are also available to place either in pockets or directly in the mittens.

The head is the primary source of heat loss. For a long session, one should wear a hat, scarf and hood. A ski mask will help on breezy nights. The mouth should not be

covered, as the breath tends to fog eyepieces easier than when the mouth is uncovered.

As you are sedentary when observing, **ALWAYS DRESS 30° COLDER THAN YOU NORMALLY WOULD.**

Good quality cold weather gear can be found in most sporting goods and hunting catalogs.

Nutrition

Good nutrition while observing in cold weather has two parts, hydration and carbohydrates. Warm liquids with caffeine in them, such as coffee or tea can be counterproductive due to restricting circulation in the extremities. Alcohol reduces night vision and dilates capillaries, leading to loss of body heat. Warm sweet drinks such as hot cider work well. A good meal supplemented by the nibbling of carbohydrate snacks while observing will help stave off the cold.

Equipment Modifications

1. **Relubricate mounts**
2. **Conserve battery power**

Grease found in most telescope mounts tends to thicken in cold weather. Many of the imported mounts, such as the Chinese made clones of the Vixen GP and GP-DX mounts are full of a viscous Vaseline like substance that turns almost solid in the cold. The grease probably protects the metal surfaces from corrosion during shipping and takes up the slop in the gears, but it renders the slow motion controls almost useless in winter. Users have had the knobs crack off due to the resistance of the grease. In addition, motor drives are overloaded and can burn out or stop functioning. All these mounts benefit from a degreasing and re-lubing with either Radio Shack Teflon grease or snowmobile grease. The later can thin out too much in some warm weather applications. Tear down instructions are easily found on the web.

Lead acid batteries also don't fare too well in the cold. These style batteries work at only 25% capacity when they drop below 32°. The big power robbers are laptops, GOTO drives and dew heaters. Take these factors into consideration when away from home. Always keep spares on hand. In addition, don't run down your car battery if away from home.



Dr. Stuart Forster was a long-time member, former president, secretary, contributing author, scope builder, astrophotographer extraordinaire, host to several of the Messier Marathons that marked the beginning of the SAS observing year, multi-lecturer at past meetings and Summer Seminars, and a true amateur astronomer's astronomer. We are featuring his articles and images this year in the newsletter.

Supernova In M101 And Highlights

A summary of recent Supernova-specific articles from the AAVSO Writer's Bureau

Supernovae Popping Off Like Firecrackers In Carina

By Phil Plait, [Bad Astronomy](#)

The Carina nebula is a sprawling, monstrous complex of gas located a mere 7500 light years from Earth. Hundreds of light years across, it's massive enough to create thousands of stars like the Sun. Tens of thousands.



From chandra.si.edu - [Click to enchandrasharlimitenate](#).

And churn out stars it does. Embedded in the nebula are several clusters of newborn stars, and many of these stars are so massive they're nearly at the limit of how big a star can be without

tearing itself apart. Stars that big explode as supernovae, and [a new mosaic](#) by the orbiting Chandra X-ray Observatory indicate they've been popping off in the nebula for quite some time:

This image is pretty amazing: it's a mosaic of 22 separate images by Chandra, covering 1.4 square degrees (seven times the area of the full Moon on the sky), and represents an exposure time of 1.2 million seconds! Since it shows X-rays coming from astronomical objects, it's false color: red is from lower energy X-rays, green is medium energy, and blue from the highest energy photons.

The diffuse glow is from two sources: the stellar winds from those massive stars slamming into surrounding ambient gas at high speed, and from the shock waves generated when supernovae explode. Both are extremely high-energy events, and produce copious amounts of X-rays. That long, horizontal arc is probably the edge of a bubble, a shell of gas piled up from the winds of stars and supernovae like snow piled up in front of a snowplow.

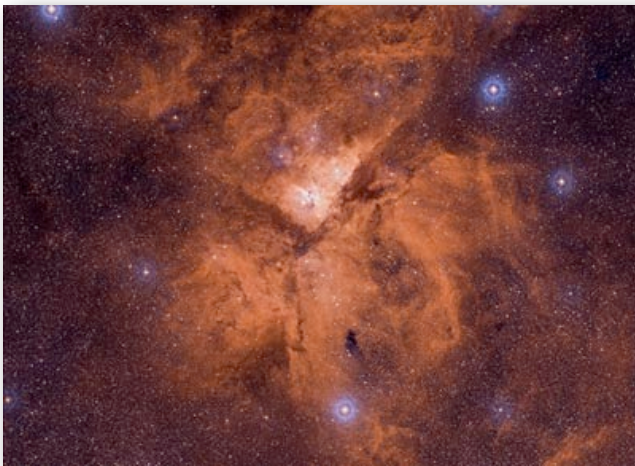
That's evidence right there that Carina has been cranking out supernovae over the past few million years. Interestingly, it's what's missing that provides

m o r e proof. Look near the top of the image; see that loose cluster of stars right near the top edge? That's Trumpler 15, a collection of thousands of stars packed into a volume of space only a few light years a c r o s s (compare that to the Sun's neighborhood, where the nearest star is over 4 light years away).

About 900 of the stars in Trumpler 15 are massive enough to produce X-rays and be seen by Chandra, and the highest mass of these stars should be cranking out lots of the highest-energy X-rays. However, this high-energy emission isn't

seen. Those stars *should* be there, but *aren't*. The conclusion is clear: those stars are gone. The most massive stars only live a few million years before going boom, and the cluster is roughly 8 million years old — plenty of time for those stars to have gone supernova. In other words, Trumpler 15 is has been seeing some action lately.

There are other clusters in the nebula as well, and you can see them in the picture ([an annotated version](#) is available as well); Trumpler 14 is below and to the right of Trumpler 15; Trumpler 16 is below 15 and just above the curving arc of shocked gas (Eta Carinae, a supermassive star just waiting to explode, can be seen just above that). All told, there are over 14,000 stars detected in this image, and that just includes the ones putting out X-rays. Many, many more can be seen in visible light pictures such as the one inset here (and yes, you very much want to [click to embiggen it](#) - from [chandra.si.edu](#)).



Not only that, but this Chandra survey has shown that the number of massive stars in the nebula is probably twice what we previously thought, and has also revealed six new possible [neutron stars](#) — the leftover cores of exploded massive stars. So the big conclusion to draw is that Carina has been churning out massive stars for quite some time, and for the past few million years the most massive of these have been exploding one after the other.

That may sound dangerous — stars exploding like flash bulbs in a nearby gas complex, aiiiiiee!! — but remember, the nebula is actually pretty far away. [A supernova has to be less than 100 light years away to hurt us](#), and more like 25 light years away to really hurt us, so the nebula's distance of 7500 light years means we're safe from death by supernova.

But it does mean we get an excellent view of this star-explodey factory. There's still much to learn about how stars are born, how they live out their lives, and how they die. Chandra's X-ray vision is providing us with a big piece of that knowledge.

Image credits: NASA/CXC; Digitized Sky Survey/CXC

SN2011fe In M101

Phil Plait, [Bad Astronomy](#)

If you were wondering what was going on with the bright new supernova in the spiral galaxy M101, it's now getting very difficult to observe due to its proximity to the Sun in the sky. But happily my friend, the accomplished astronomer Travis Rector, [got a shot of it](#) using the Mayall 4-meter telescope at Kitt Peak National Observatory. I would venture to say it's one of the prettiest ones I've seen so far:



From www.noao.edu/image_gallery/html/im1087.html.
Click to [Chandrasekharegate](#).

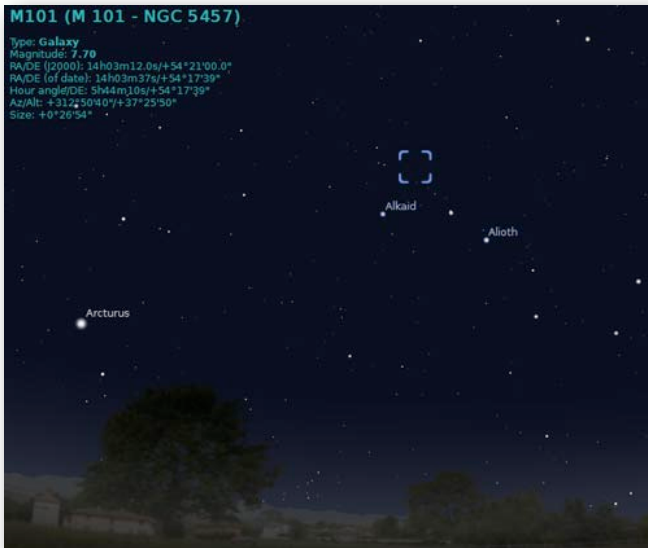
This was taken on September 18th, and the supernova is the bright blue star above and to the right of the center of the picture (to the left of the fuzzy red nebula). Pictures like this are important in pinning down the exact location of the supernova in the galaxy, so that after it fades the potential precursor star can be found (though in this case, [we already have pretty decent Hubble images of the field](#)). Also, of course, big telescopes with sensitive detectors can give very accurate brightness measurements, which are absolutely critical in understanding how these objects change with time. This particular flavor of supernova [is key to our understanding the size and](#)

[scale of the Universe itself](#), so the more data — and the more accurate the data — we have, the better.

Image credit: T.A. Rector (University of Alaska Anchorage), H. Schweiker & S. Pakzad NOAO/AURA/NSF

Finding The Bright Supernova 2011fe In M101

[Astroblog](#), Ian Musgrave



North-western sky as seen from around latitude 30 deg north at astronomical twilight (an hour and a half after sunset). M101, which hosts the supernova is above the handle of the big dipper. Click [HERE](#) to enlarge.

With Supernova 2011fe being exclusively a northern hemisphere object, I have neglected the basic "look here" type posts I normally do.

However, despite this blog being largely about observing from the southern hemisphere, with added exoplanets, most of my readers are from the US (thank you, comet Elenin), so I'm doing a finding the supernova post just for you.

[Now Supernova 2011fe](#) is the [brightest supernova in the past 20 years](#), however it's [currently around magnitude 10](#), which makes it very faint from our perspective (the limit anyone can see under dark skies with ideal eyesight is magnitude 6.5). You will need a small telescope or dark skies and good, tripod mounted binoculars to see it.

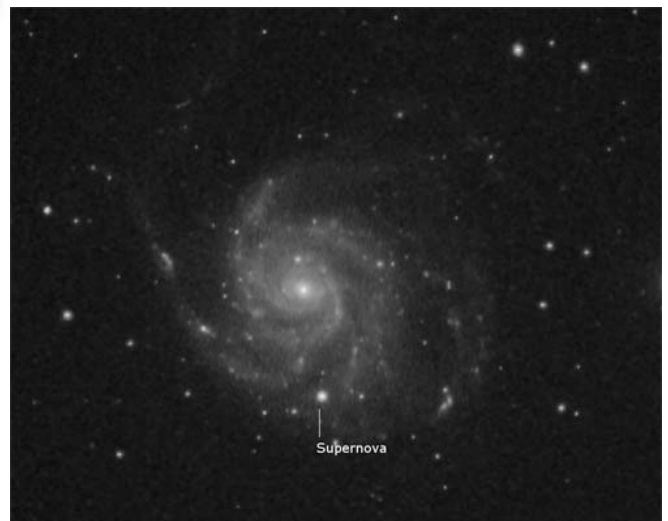
A big problem at the moment is Moonlight, for the next day or so bright Moonlight will mean that the supernova (and its host galaxy M101) will be effectively invisible in binoculars and small telescopes. You will have to wait until the Moon is below the horizon (September 15) to see them.



Approximate binocular view of M101
(Click [HERE](#) to embiggen)

The other problem is that M101 sets not too long after twilight, so you have about 2 hours where it is high enough above the murk around the horizon to see.

With the sky dark, all you need to do basically is look to the north-west, find the Big Dipper and follow the handle of the Big Dipper up.



M101 is a faint patch of light in binoculars, despite its listed brightness of magnitude 7.7, it is a diffuse object, so rather dim, it may look like no more than a fuzzy dot. It will look better in a small telescope, but will still be a fuzzy patch.

Once you have it, the star within the fuzzy dot is the supernova. Happy supernova hunting!

Supernova Update: It's Peaking Now!

By Phil Plait, [Bad Astronomy](#)

A couple of weeks ago, astronomers spotted a star exploding in the nearby face-on spiral M101. They quickly determined it was a Type Ia, [the kind used to calibrate the cosmic distance scale](#), and therefore a star of exceeding importance: we don't see them close by (well, if 20+ million light years is "close", which it is to astronomers) very often. This one promised to get bright enough to study extremely well, which will help us understand these "standard candles" better.

Astronomers at Oxford University got [a great shot of the galaxy and exploding star this week](#) using a telescope located in California:

The supernova is labeled. It was found by the Palomar Transient Factory, a group of folks looking for nearby supernovae, and was given the temporary name PTF 11kly; the official designation is SN 2011fe, the 136th supernova seen so far in 2011 (they're named alphabetically for a given year, so the first 26 are 2011a – z, the second 26 are 2011ba – bz, etc.). This image was taken using a 0.8 meter telescope at [the Las Cumbres Observatory Global Telescope Network](#); that's a relatively small 'scope, which tells you this a pretty bright object!

In fact, it appears to be reaching its peak brightness right now, and should be visible in binoculars. If you have a good view of Ursa Major, currently in the northwest at sunset, finding it shouldn't be too difficult. Any decent star chart will show it ([here's one on wikipedia](#), for example). It's raining here in Boulder (figures) but I'm hoping to get a chance to see it with my binoculars soon. Supernovae usually brighten for a couple of weeks and then fade more slowly, so if you can't see it tonight or tomorrow it's not critical, but of course the sooner you look the better.

Image credit: BJ Fulton/LCOGT. Tip o' the accreting white dwarf to [Dan Vergano](#) (you should follow him on Twitter for lots of sciencey updates).



This content distributed by the [AAVSO Writer's Bureau](#), From the American Association of Variable Star Observers ([www.aavso.org](#)).

From http://www.ox.ac.uk/images/hi_res/13053_supernova_latest_label.jpg. Click to galactenate.

The Gray Cubicle You WANT To Work In

by Dr. Tony Phillips

It's another day at the office.

You're sitting in a gray cubicle, tap-tap-taping away on your keyboard, when suddenly your neighbor lets out a whoop of delight.

Over the top of the carpeted divider you see a star exploding on the computer screen. An unauthorized video game? No, this explosion is real. A massive star just went supernova in the Whirlpool Galaxy, and the first images from Hubble are popping up on your office-mate's screen.

It's another day at the office ... *at NASA.*



Some of the employees of NASA's Science Mission Directorate may work in gray cubicles, but their jobs are anything but dull. They get to study Earth, the Sun, the Solar System, and the Universe!

Just down the hall, another office-mate is analyzing global temperature trends. On the floor below, a team of engineers gathers to decode signals from a spaceship that entered "safe mode" when it was hit by a solar flare. And three floors above, a financial analyst snaps her pencil-tip as she tries to figure out how to afford *just one more* sensor for a new robotic spacecraft.

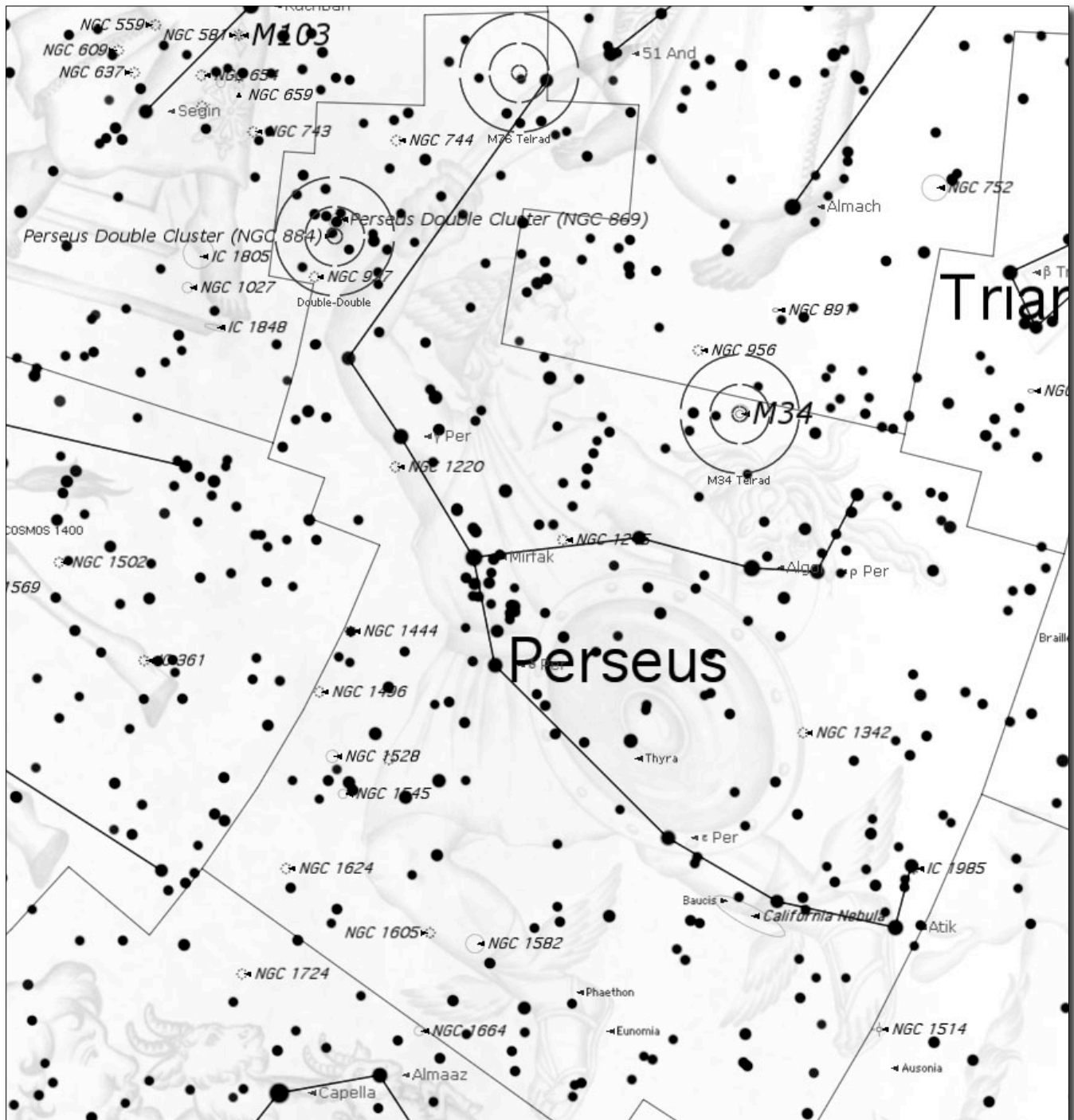
These are just a few of the things going on every day at NASA headquarters in Washington DC and more than a dozen other NASA centers scattered around the country. The variety of NASA research and, moreover, the variety of NASA people required to carry it out often comes as a surprise. Consider the following:

NASA's Science Mission Directorate (SMD) supports research in four main areas: Earth Science, Heliophysics, Astrophysics, and Planetary Science. Read that list one more time. It includes everything in the cosmos from the ground beneath our feet to the Sun in the sky to the most distant galaxies at the edge of the Universe. Walking among the cubicles in NASA's science offices, you are likely to meet people working on climate change, extraterrestrial life, Earth-threatening asteroids, black holes or a hundred other things guaranteed to give a curious-minded person goose bumps. Truly, no other government agency has a bigger job description.

And it's not just scientists doing the work. NASA needs engineers to design its observatories and build its spacecraft, mathematicians to analyze orbits and decipher signals, and financial wizards to manage the accounts and figure out how to pay for everything NASA dreamers want to do. Even writers and artists have a place in the NASA scheme of things. Someone has to explain it all to the general public.

Clearly, some cubicles are more interesting than others. For more information about the Science Mission Directorate, visit science.nasa.gov. And for another way to reach the Space Place, go to <http://science.nasa.gov/kids>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Constellation Map generated with Stary Night Pro 6.

As the sky darkens in early November, the constellation [Perseus](#) is rising in the northeast. It sits just southeast of [Cassiopeia](#), and has a variety of objects to observe. There are two Messier objects to find. The first is a planetary nebula, [M76](#), the “Little Dumbbell” [see below for one of Stu’s images]. It is a miniature version of M27, the “Dumbbell” in [Vulpecula](#). It was first catalogued by [Messier](#)’s assistant, [Mechain](#) in September 1780. It is small, with an angular size of 2'x1'. Its visual magnitude is estimated at 10.1. It appears as a small fuzzy patch in small scopes, but its bi-lobed nature can easily be appreciated when using larger apertures.



The second Messier in Perseus is [M34](#), a 5.2 magnitude open cluster. It was discovered by Messier in 1764. The cluster itself is composed of approximately 80 stars fainter than 7th magnitude and spans 20'. It is both a binocular as well as a telescopic object. In a 6" or larger scope, it appears to have 3 arms radiating outward from the center.

There are two nice galaxies worth scouting out. The first is [NGC 1023](#), a lens shaped galaxy 4.5'x1.3' in size. A 4" scope will show it, while a

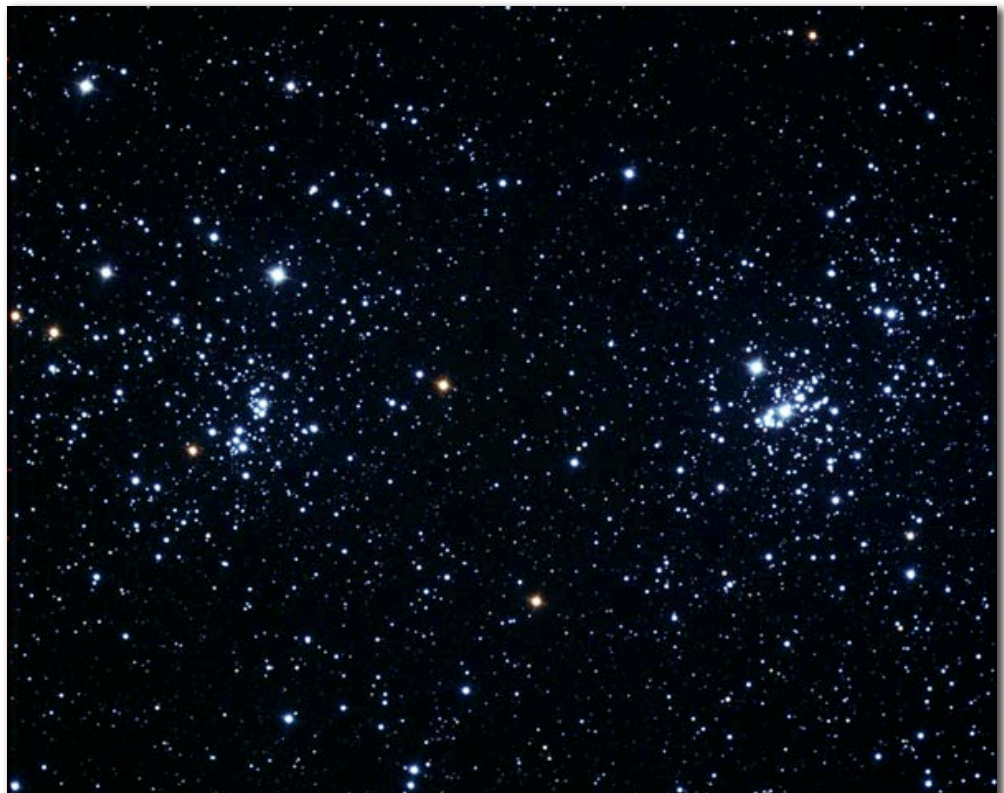
6" will show an elongated nucleus with surrounding nebulosity. [NGC 1275](#) is smaller and requires a larger scope at its .7'x.6'.

The [California Nebula](#) is a large faint emission nebula that is not easily seen at 145'x40', it's over 2 1/2 degrees in length, but very faint with a low surface brightness. It is reportedly easily seen in dark skies, but tough in light polluted areas. It's one object that will show up better when observed with a Hydrogen beta filter. It's tough visually, but is a nice target when a CCD camera and Hydrogen alpha are used.

- Happy Hunting, Stu

[Ed. Note - I did not want to let an article on Perseus go by without featuring at least one of Stu's photos of the Double-double (Caldwell 14) cluster.]

Dr. Stuart Forster was a long-time member, former president, secretary, contributing author, scope builder, astrophotographer extraordinaire, host to several of the Messier Marathons that marked the beginning of the SAS observing year, multi-lecturer at past meetings and Summer Seminars, and a true amateur astronomer's astronomer. We are featuring his articles and images this year in the newsletter.



SAS Member Gallery For October, 2011

About The Gallery

To have your images featured, simply send them to sas@somewhereville.com.



M45 The Pleiades
7 October 2011
By [John Giroux](#)

"The Seven Sisters - incorrectly represented as Subaru's emblem with only SIX stars (Subaru is the Japanese name). So if you have a Subaru, it's DEFECTIVE! This is a single shot, ISO 200, Canon T2i, 8 minutes, Celestron Omni XLT 102 ED, f/8.8, (900mm fl). This is the longest guided exposure so far, and I'm quite happy with the Orion Star Shoot Autoguider. No processing was done, this is straight from the SD card."



M33 - The Triangulum Galaxy
9 October 2011
By [John Giroux](#)

"This was completely unplanned; I imaged this after spotting it with binoculars, was able to get my imaging scope pointed at it (thanks to my green laser pointer!) and at that time used the "Identify" feature on my computerized mount. I definitely need to revisit this; My guess is proper imaging will require two to three hours, this image is the result of 49.5 minutes total imaging time at various ISO settings."



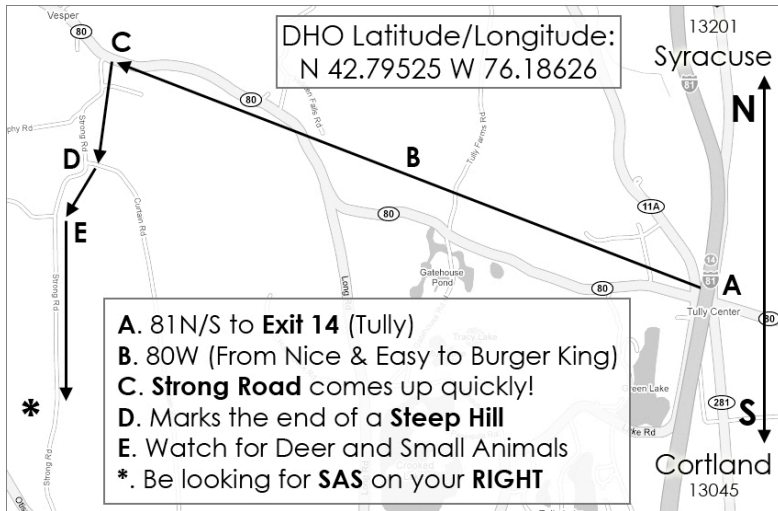
ISS And Star Trail
7 October 2011
By [David Tibbitts](#)

"I was able to photograph the International Space Station this morning at about 06:00 dst. Had a lot of light pollution like John (Giroux) fights with. Wanted to share with you all. This is my first ISS."



2011 Fact Sheet

Darling Hill Observatory (DHO) Directions



* If it is dark, remember to turn your headlights off and use your parking lights (otherwise you will affect the night vision of fellow observers who arrived before you).

* Park in the meadow and proceed up to the observatory building, where our 16 inch Newtonian Telescope resides.

SAS Viewing "Dress Code"

At 1800 ft. above sea level, the Darling Hill Observatory is often 20° cooler than Syracuse. In summer, long sleeves can make for more comfortable viewing. Even in early fall, consider hat and gloves.

When To Use The Website

The website contains information about weather conditions at Darling Hill, if/when viewing sessions are cancelled (check the website by 5:00 pm the evening of announced viewings), and when SAS members are at the Observatory for viewing. Check the [Main Page](#) and the [Who's Observing](#) page for information. To post your own questions or check on viewing opportunities, simply join the [Bulletin Board](#) (please also specify your location so we can sort member from spammer). Please allow up to 24 hours for account activation.

2011 Meetings and Public Viewing Schedule

April 1/2 - Messier Marathon (DHO)

April 29/30 - Darling Hill

May 6/7 - Darling Hill

June 3/4 - Darling Hill

July 1/2 - Darling Hill

July 29/30 - Darling Hill (Lecture)

August 26/27 - Summer Seminar (DHO)

September 23/24 - Darling Hill (Lecture)

September 30/31 - Darling Hill

October 28/29 - Darling Hill

November 25/26 - Darling Hill

SAS Newsletter Online!

This newsletter is mailed in grayscale. A full-color PDF of this and previous issues is available at our website for free download.

Ways To Help The SAS

The [Syracuse Astronomical Society](#) is a non-profit, member-driven organization dedicated to educating the public about astronomy, preserving a national heritage – the night sky, and exploring the splendors of our universe.

How can you help? Contribute an article to the newsletter. Recommend a speaker for a meeting. Let others know about our viewing sessions. Tell people to turn off unnecessary lights! Most of all, the SAS meetings are best when YOU SHOW UP!

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Syracuse Astronomical Society
 Amateur Astronomy in Central New York
www.syracuse-astro.org

Join The Society Or Give This To Someone New!

Annual Membership Dues

___ Individual or Family Membership	\$30
___ Youth Membership (22 or younger)	\$5
___ Reduced-Rate Subscription to "Sky and Telescope" Magazine	\$33
___ Additional Donation	_____

Total: _____

The yearly subscription to Sky & Telescope (www.skyandtelescope.com) is optional, but SAS membership provides a discount over the standard subscription rate.

Name: _____
Address: _____

Phone: _____
Email: _____

Do you own a telescope? **Yes** ___ **No** ___
 Do you own binoculars? **Yes** ___ **No** ___

Please enclose a check payable to:

Syracuse Astronomical Society
c/o Ryan Goodson
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West Monroe, NY 13167

For more information about the
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About the SAS

The **Syracuse Astronomical Society** is a non-profit organization dedicated to educating the public about astronomy, preserving a national heritage – the night sky, and exploring the splendors of our universe.

We invite you to join us. We have Free Public Observing Nights at our Darling Hill Observatory in Vesper, NY. Public observing is held once a month from April through November, around the new moon. Other viewing sessions occur throughout the year when the night sky is clear and available SAS members go to the observatory. Check the "Who's Observing" link on the website for more information.

The Observatory "Cave" is a 16 inch Newtonian telescope, capable of showing you heavenly objects in great detail. For those with telescopes and large binoculars, the Observatory has four concrete pads and accessible outlets.

We also have monthly society meetings throughout the year.

Come and join us!