



# The Prairie Astronomer

The Official Newsletter of the Prairie Astronomy Club

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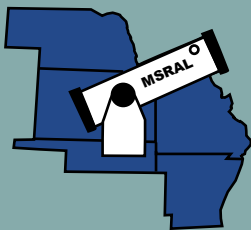
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## October Program

Every holiday season people ponder buying telescopes as gifts, for their children, for their family or for friends. The few designs found in most department stores offer little information and clerks are rarely knowledgeable. Buying on the internet or home shopping channels without any help doesn't inspire confidence. What if you had a chance to have help in making that purchase?

The Prairie Astronomy Club offers this assistance this month at its regular meeting at Hyde Observatory on November 26th with a session on "how to buy a telescope." Experienced amateurs will provide examples of both the good and bad purchases and lots of helpful hints.

The Prairie Astronomy Club  
presents:  
**How to Buy a Telescope!**  
Tuesday, November 26  
7:30pm  
Hyde Observatory

## Night Sky Network

The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: **Regular \$30/yr, Family \$35/yr.** Address all new memberships and renewals to: **The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585.** For other club information, please contact one of the club officers listed to the right. Newsletter comments and articles should be submitted to: **Mark Dahmke, P. O. Box 5585, Lincoln, NE 68505** or [mark@dahmke.com](mailto:mark@dahmke.com), no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.



## Meeting Minutes

Jason called meeting to order at 7:31 on Tuesday October 29, 2013. Announced program for the night: Michael Sibbersen from the Strategic Air and Space Museum.

Next meeting will be "How to Buy a Telescope" on Nov. 26. December meeting will be the Holiday Social, but a date will need to be set.

Treasurer report was provided by Bob Kacvinsky. There were no budget issues presented. A reminder about memberships and notices was sent. 52 members active, with a few other outstanding dues. Secretary and treasurer will check on night sky network auto renewal notices.

Report on outreach activities was provided by Jason. October 5 cancelled due to clouds (cub scout). Oct. 26 was Howling Homestead with several volunteers and 3-400 people. Put up bright lights, but Jason told them next year would

need to do something different for lights or relocate telescopes.

Observing report was provided by Jim Kvasnicka. Star parties were, Oct 25 and Nov 1. Star parties in November will be Nov 29 and December 6.

Officer elections were held. No nominations from floor. Slate was as printed in the October newsletter:

President Jack Dunn  
VP 1 Brett Boller  
VP 2. Zach Thompson  
Secretary. Dale Bazan  
Treasurer. Bob Kacvinsky

Dan Delzell motioned and Jim Kvasnicka seconded to close nominations which was accepted by members in attendance unanimously. Slate was elected by acclamation.

Business meeting adjourned at 7:51.

## Board Meeting Minutes

November 5, 2013. 7 PM Mark, Cassie, Zach, Brett, Jack, Dale were present.

- Jack had contacted Night Sky Network to generate auto reminders of membership renewals. Mark and Jack went through the membership options and could not determine the auto renewal.
- Jack will not be at next PAC meeting. Zach will check on powerpoint available for How to Buy a Telescope and solicit members bring example telescopes.
- Next 3 months of programs are planned, but board was charged by Jack to come up with future ideas.
- Club library was discussed. Inventory will be needed. Brett was willing to go through it.
- Jack recommended a new member packet including Astronomy 101 book (available at Amazon for 11.00). Jack will check for a discount from publisher.
- Mark suggested that we be more engaging with visitors. Zach will be at back of auditorium to greet visitors. Presenter will ask at beginning of meetings whether any visitors and to have them introduce themselves.
- Club telescopes were discussed. Cassie and Brett will divvy up duties for checking out telescopes. Telescope checking out will be more visible and

announced. Two weeks will be the limit for checking out before renewing.

- Jack discussed engagement of Lincoln Public Schools. Suggested being more proactive with school aged kids and growing younger membership. Cassie will contact science coordinators of LPS to engage science teachers. Jack suggested a science teacher night at Hyde (not a Saturday night). A spring target date with some food, a presentation, and a star party was decided upon.
- Programs were discussed with ideas such as rocketry, space law, and others. Jack suggested variety.
- Discussed an annual OAS/PAC dinner at some point. A board member will attend an OAS meeting and suggest a dinner, and negotiations will start. SAC could be used for free. Would just need a caterer.
- Cosmosphere trip was discussed. Investigating costs. Spring is being targeted as possible time.
- Brett had investigated a remote observatory. Costs and manpower would need to be discussed further and voted at a PAC meeting.

## ANNUAL MEMBERSHIP

REGULAR MEMBER - \$30.00 per year. Includes club newsletter, and 1 vote at club meetings, plus all other standard club privileges.

FAMILY MEMBER - \$35.00 per year. Same as regular member except gets 2 votes at club meetings.

STUDENT MEMBER - \$10.00 per year with volunteer requirement.

If you renew your membership prior to your annual renewal date, you will receive a 10% discount.

Club members are also eligible for special subscription discounts on Sky & Telescope Magazine.

## Club Telescopes

To check out one of the club telescopes, contact Cassie Etmund. If you keep a scope for more than a week, please check in once a week, to verify the location of the telescope and how long you plan to use it. The checkout time limit will be two weeks, but can be extended if no one else has requested use of a club scope.

100mm Orion refractor:  
Available

10 inch Meade Dobsonian:  
Available

13 inch Truss Dobsonian:  
Available

## PAC Star Party Dates

Dates in bold are closest to the new moon

Oct 25, **Nov 1**, Nov 29, **Dec 6 & 27**

### 2014 Star Party Dates

January 24, **31**  
February 21, **28**  
March 21, **28**, April 25  
**May 2, 23, 30**, June 20, **27**  
July 18, **25**  
NSP: July 27-Aug 1  
August **22, 29**, Sept 19, **26**  
Oct 17, **24**, Nov 14, **21**  
Dec 12, **19**

### Lunar Party Dates

May 9, June 6, Sept 5, Oct 3  
\* Lunar party dates are tentative, sites to be determined.

### PAC E-Mail:

[info@prairieastronomyclub.org](mailto:info@prairieastronomyclub.org)

### PAC-LIST:

To subscribe send a request to PAC. To post messages to the list, send to the address:

[pac-list@prairieastronomyclub.org](mailto:pac-list@prairieastronomyclub.org)

## Links

PAC: [www.prairieastronomyclub.org](http://www.prairieastronomyclub.org)

Night Sky Network: <https://nightsky.jpl.nasa.gov/>

CafePress (club apparel) [www.cafepress.com](http://www.cafepress.com)

[www.hydeobservatory.info](http://www.hydeobservatory.info)

[www.nebraskastarparty.org](http://www.nebraskastarparty.org)

[www.OmahaAstro.com](http://www.OmahaAstro.com)

[Panhandleastronomyclub.com](http://Panhandleastronomyclub.com)

[www.universetoday.com/](http://www.universetoday.com/)

[www.planetary.org/home/](http://www.planetary.org/home/)

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

NGC4603 Credit: NASA

# Events

## PAC Meeting

PAC Meeting  
Tuesday Nov 26th, 2013  
@Hyde Observatory

December meeting date  
to be determined

Tuesday Jan 28th, 2014  
@Hyde Observatory

PAC Meeting  
Tuesday Feb 25th, 2013  
@Hyde Observatory

Newsletter submission deadline  
December 15, 2013



## Li1 Discovery—Rick Johnson

Back on 4-24-2010 my Observatory Update featured SH2-80 also known as Merrill's Star. For those not on my email list back then or didn't save the post part of it is archived at:

<http://www.spacebanter.com/showthread.php?t=155099>. Little did I know it would play a bit part in this saga.

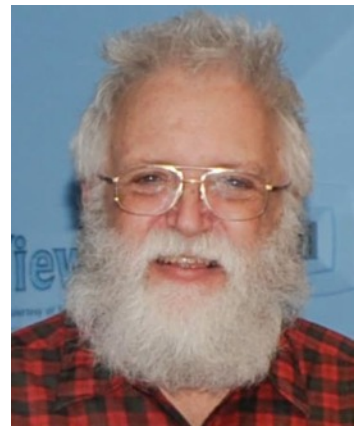
An amateur astrophotographer, Stefan Lilge, I am in regular contact with, decided to try for SH2-80 from his location in DOWNTOWN Berlin Germany! Talk about light pollution. He works with very narrow band filters that I rarely use. I should have in this case. His image of this object taken last August, oriented the same as mine is at <http://ccd-astronomy.de/temp8/Sh2-80/Sh2-80colourcropgut.jpg>.

Notice something besides SH2-80? He did. That got him to go back and look at my image in the Space Banter link. While not nearly as obvious it was there. He wrote me asking what it was as he couldn't find it in any catalog. He thought it a planetary but with no catalog entry was puzzled. I then took the image posted below at 0.5" per pixel (original was at 1"). I had to wait for a good night but luckily one came soon after he contacted me. (It was the only one since so we were really lucky.) That image convinced me it was an unknown planetary nebula. I sent this data to an amateur in England that works with professional astronomers on newly discovered objects, Sakib Rasool. He said there was a survey going on for new planetary nebula and he'd check it. Not there. He contacted Matthias Kronberger, an amateur astronomer in Australia who has discovered many new planetary nebula. He then contacted one of the pros doing the survey, Dianer Harmer. They immediately took a narrow band image of it with the 84" telescope at Kitt Peak using very narrow band filters compared to those Stefan used. It was one they missed in their survey using 2 meter class and larger scopes. Stefan who was using a 10" Meade ACF from his high rise terrace in downtown Berlin didn't miss it.

Matthias Kronberger and the pros announced 37 new likely planetary nebulae at the Asymmetrical Planetary Nebulae VI meeting in Mexico last week. While most carry names like Kn 65 or Pa 36, the former for Kronberger, the latter for

Parker, there's one oddball name, Li1 for Stefan Lilge's discovery.

It's rather ironic that I'm always harping on knowing what is in an image but blew it in this case. If I'd have followed my own advice it would be Jo1. Instead I only get an asterisk for the confirming photo prior to the official confirming photo from Kitt Peak. At least I got to play a part in its discovery.



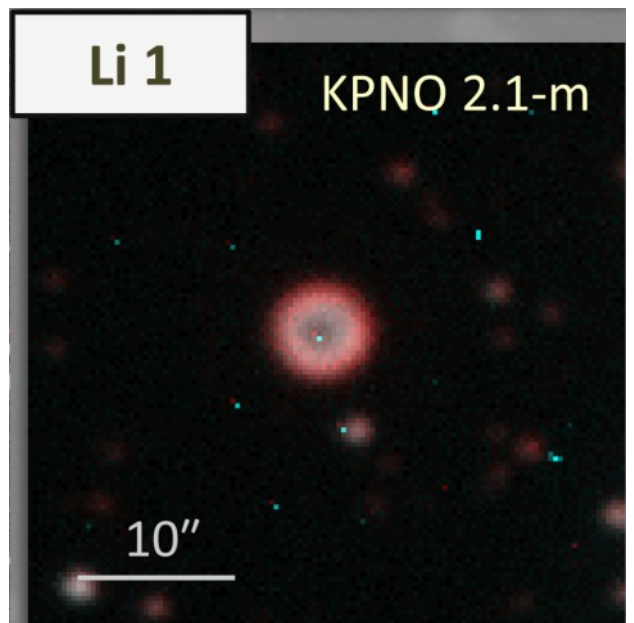
My image is pure LRGB meaning it is ordinary white light. There is a star on the west edge of the planetary that is rather bright somewhat hiding it and the reason I didn't see it in the original image at the lower image scale. Stefan used a combination of 5nm hydrogen alpha and 3nm OIII which greatly reduced all stars, including the one on the edge making it much easier to see. Kitt Peak used even narrower filters in unknown bands (unknown to me that is, not them) that hid the star completely. Oddly they left in the hot pixels that all astronomical CCD's even the pro cameras create. Amateurs remove them. That's why you will see some colored squares in the Kitt Peak image but not Stefan's or mine.

Now for the images. My "full" image has been cropped significantly to reduce the size in half but it is still a 2 meg download. This is why I normally work at 1" rather than 0.5" besides my seeing rarely supporting it but a few times each year. Li1 is down in the lower left to the upper left of the lower of two bright blue stars. I'd hoped to pick up the central star but it is too dim. Kitt Peak didn't either but their narrow band filters so suppressed stars that that this is not unexpected.

<http://www.spacebanter.com/attachment.php?attachmentid=4842&stc=1>

<http://www.spacebanter.com/attachment.php?attachmentid=4843&d=1384484999>

# Li1, Continued



## A Proposal for PAC Consideration—Brett Boller

Jack has appointed me to head a committee to look into the possibility of expanding the club with a remote observatory. This would enable the club to provide the possibility of astrophotography to anyone in the club. Some advantages are just taking single images of the wonders of space to a live video feed for anyone in the club. You can also showcase the differences in the sky quality of Lincoln to that of the observatory. Even if you're just 10 miles outside Lincoln it can be a huge difference in the quality and quantity of things that you can see.

This can also help out anyone not able to or not willing to go out to a dark sky site with a telescope. They can still observe objects from the comfort of their home. An added possibility of a remote site are the recruitment of new members. New members could be anyone from those interested in photography to younger members interested in technology. Also anyone looking at getting into the hobby of astrophotography can use the setup and try out astrophotography and see if they like it before purchasing their own equipment.

The one big question is location. My family has land south of Denton and would be willing to let us use it to build the observatory on. The club would not have to purchase any land and the rent would be next to nothing. This location would be

out in a field and would be doubtful that power would be readily available. The mention of solar panels and deep cycle batteries has already come up. Some of the other necessary equipment that would have to be purchased would be the building, a computer(s), telescope and mount, camera, etc. You would

also need an Internet source for controlling the telescope. There are a few companies that use microwave transmission so as long as you have a line of site to their transmitters, you would have Internet. Diode Communications or Affordable Internet Solutions are just two local companies.

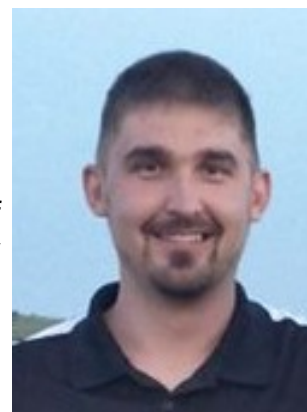
I will be having a short discussion at the next PAC meeting on Tuesday Nov. 26th. If you are interested in being part of such a committee please see me after the PAC meeting or send me an email to let me know.

Brett Boller

Vice-President

Prairie Astronomy Club

[proboller86@yahoo.com](mailto:proboller86@yahoo.com)



## A Message From Our New Outreach Coordinator, Cassie Etmund

As the new outreach coordinator for the following year of PAC, my goal is to increase the presence of the prairie astronomy club in Lincoln. Outreach events are how we get more people interested in astronomy and generate new members. It is very important we as a club have volunteers at these events to share our knowledge and get people excited about what we do. The passion and enthusiasm shown to me by other PAC members is what encouraged me to become a part of the club and volunteer 8 years ago.



## Nature Pulls a Fast One on Astronomers

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What might look like a colossal jet shooting away from a galaxy turns out to be an illusion. New data from the National Science Foundation's Karl G. Jansky Very Large Array (VLA) reveal that two galaxies, one lying behind the other, have been masquerading as one.

In a new image highlighting the chance alignment, radio data from the VLA are blue and infrared observations from NASA's Spitzer Space Telescope and Wide-field Infrared Survey Explorer (WISE) are yellow and orange, respectively. Visible data are also shown, with starlight in purplish blue and heated gas in rose.

The closer galaxy, called UGC 10288, is located 100 million light-years away. It is spiral in shape, but from our viewpoint on Earth, we are seeing its thin edge. The farther galaxy, seen in blue, is nearly 7 billion light-years away. Two giant jets shoot away from this galaxy, one of which is seen above the plane of the closer galaxy's disk.

Earlier radio images of the two galaxies appeared as one fuzzy blob, and fooled astronomers into thinking they were looking at one galaxy. Thanks to the VLA pulling the curtain back on the disguised duo, the scientists have a unique opportunity to learn otherwise-unobtainable facts about the nearer galaxy.

"We can use the radio waves from the background galaxy, coming through the nearer one, as a way to measure the properties of the nearer galaxy," said Judith Irwin, of Queen's University, Canada, lead author of a recent paper on the findings, appearing online Nov. 15 in the *Astronomical Journal*.

Observations from Spitzer and WISE helped to reveal new structures above and below the plane of the closer galaxy's disk. For example, Spitzer helped confirm an arc-like feature rising more than 11,000 light-years above the disk, which was seen in the radio observations.

Irwin worked with an international team of astronomers from North America, India and Europe who are part of the "Continuum Halos in Nearby Galaxies -- an EVLA Survey" (CHANG-

ES) consortium.

The National Radio Astronomy Observatory is a facility of the National Science Foundation, operated under cooperative agreement by Associated Universities, Inc.

NASA's Jet Propulsion Laboratory, Pasadena, Calif., manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate, Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology in Pasadena. Spacecraft operations are based at Lockheed Martin Space Systems Company, Littleton, Colorado. Data are archived at the Infrared Science Archive housed at the Infrared Processing and Analysis Center at Caltech. Caltech manages JPL for NASA. For more information about Spitzer, visit <http://spitzer.caltech.edu> and <http://www.nasa.gov/spitzer>.

JPL manages and operates the WISE mission for NASA's Science Mission Directorate. The WISE mission was selected competitively under NASA's Explorers Program managed by the agency's Goddard Space Flight Center in Greenbelt, Md. The science instrument was built by the Space Dynamics Laboratory in Logan, Utah. The spacecraft was built by Ball Aerospace & Technologies Corp. in Boulder, Colo. Science operations and data processing take place at the Infrared Processing and Analysis Center at Caltech. Caltech manages JPL for NASA. More information is online at <http://www.nasa.gov/wise> and <http://wise.astro.ucla.edu> and <http://www.jpl.nasa.gov/wise>.



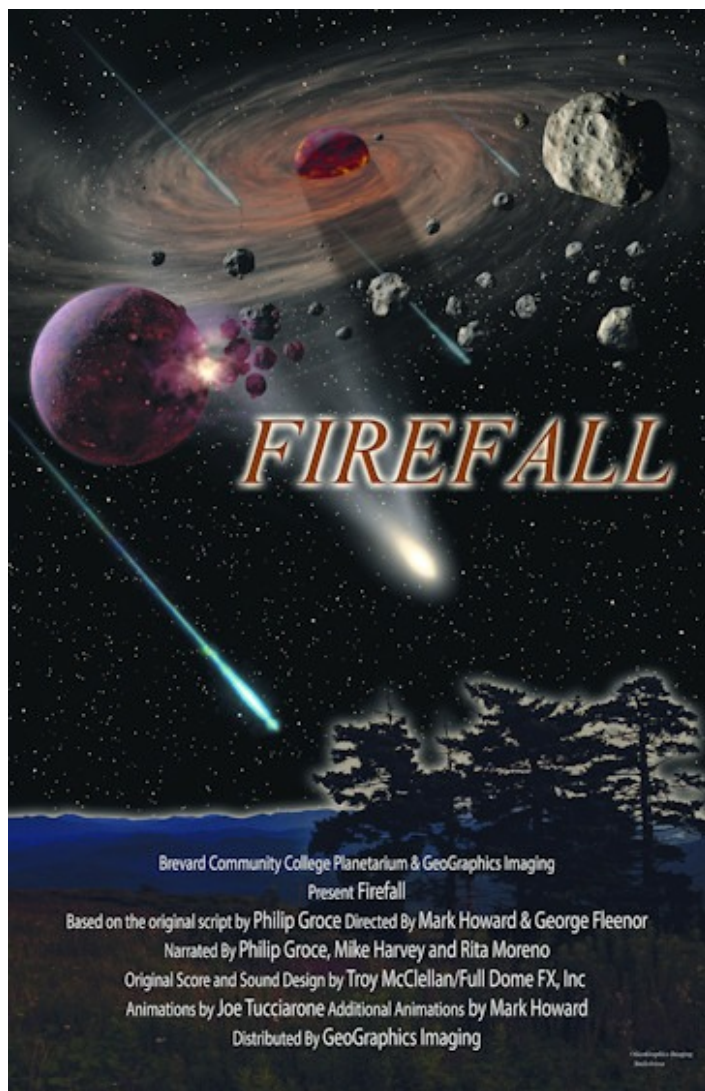
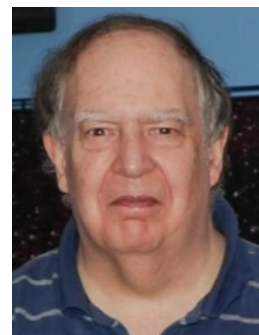
## Where We Are Going—Jack Dunn

The new PAC Board held its first meeting last Tuesday and I thought I would share some ideas with you. Brett has already produced a terrific new PAC brochure. We have a few copies out at Hyde but are investigating getting a bunch printed in color to distribute at various events. Cassie has already been spearheading more outreach. Step up and help when you can and she'll keep you informed via the PAC list and NSN mailings. We are happy to get invitations to volunteer, along with OAS at Strategic Air and Space Museum events such as Space Day. And that increases our contact with OAS to work towards reinstating having an annual joint dinner with OAS. Their president Bill Bond has indicated they are happy to work on this again. And Michael Sibbersen has already offered that we could have the first one in the new year at SASM. So we have a great location. Suggestion is it should be possibly February or more likely in March.

Zach stars with programs next three months with November's "How to Buy a Telescope," the December members and families event at Mueller Planetarium and January's "How to Use Your Telescope." For the December gathering, we will be setting the date soon. I can tell you'll have a new fulldome show called "Firefall." Its topic is meteors, asteroids and objects that crash into things. Reminds us of Pete Schultz.(g) Speaking of Pete, he was just on PBS "Nova" (the one that aired November 19th). Continues showing how far PAC members can go. With regard to future programs, we are looking to the past and the future. We are going back to look at good programs from past years, and working on some new ones. In particular, the general lack of teaching of critical thinking is troubling. So one program may give us both humor and a way to educate some of the public on the pseudo-science which confuses them in the media. Recently, a local TV station did a feature on a "UFO" seen by their tower-cam - an object strangely familiar to amateur astronomers. This will provide a good start to an evening of wacky ideas. The Internet gives us access to an incredible amount of information. But there's no filter except in the individual reader. So we might use this as a chance to make the point to the

public that there is a lot of goofy non-science out there (which some people will still believe).

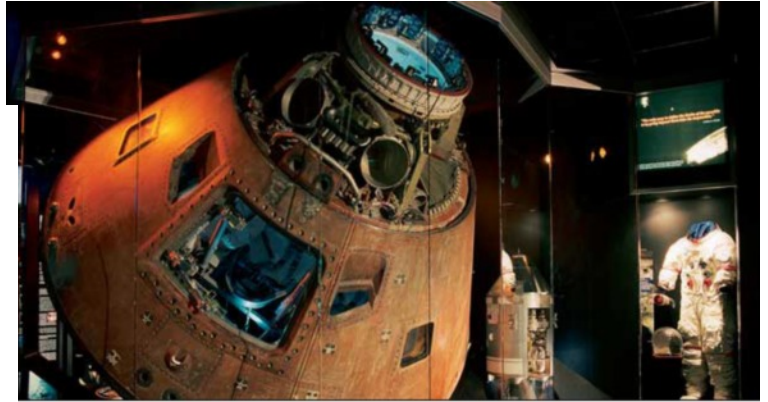
We know that Hyde Observatory and PAC have both been in existence for years, yet there are still people in Lincoln who don't know either exist. It is our goal to improve that both with the schools and with the public. We are initiating a possible event with LPS for science teachers to acquaint them with what we have to offer. And our other goal is a video public service announcement for local broadcast and YouTube. We want to see PAC continue to grow and inspire the new generation of Pete Schultzs, Rick Johnsons and Larry Stepps for the world of Astronomy.





## Where We Are Going, continued

We are also looking at planning a PAC trip to the Kansas Cosmosphere in the Spring of 2014.



## December Observing—Jim Kvasnicka

This is a partial list of objects visible for the upcoming month.

### Planets

**Venus:** Shines at its maximum magnitude of -4.9 in early December.

**Uranus/Neptune:** In Pisces and Aquarius.

**Jupiter:** In Gemini, rises around 7 pm. It shines at magnitude -2.7 with its disk at 47".

**Mars:** Rises a little after midnight at magnitude 0.9.

**Saturn:** Rises around 5 am as the month starts and 1½ hours earlier at the end.

**Mercury:** Starts the month to the lower left of Saturn but it is soon lost to view.

### Comets

**C/2012 S1 ISON:** Travels from Leo across Virgo and Libra into Scorpius this month. It gets brighter and lower each day. See November S&T page 50 for finder charts.

### Messier List

**M2:** Class II globular cluster in Aquarius.

**M15:** Class IV globular cluster in Pegasus.

**M29:** Open cluster in Cygnus.

**M31:** The Andromeda Galaxy.

**M32:** Companion galaxy to M31.

**M39:** Open cluster in Cygnus.

**M110:** Companion galaxy to M31.

**Last Month:** M27, M30, M56, M57, M71, M72, M73.

**Next Month:** M33, M34, M52, M74, M76, M77, M103

### NGC and Other Deep Sky Objects

**NGC 1746:** A large and loose open cluster in Taurus.

**NGC 1980:** An emission nebula in Orion south of M42.

**NGC 2169:** The 37 Cluster in Orion.

**NGC 2244:** An open cluster embedded in the Rosette Nebula in Monoceros.

**NGC 2264:** The Christmas Tree Cluster in Monoceros.



### Double Star Program List

**Eta Cassiopeiae:** Yellow primary with a rose colored secondary.

**Sigma Cassiopeiae:** Yellow and light blue stars.

**Theta Aurigae:** Bright white and pale blue pair.

**1 Camelopardalis:** White and pale blue pair.

**32 Camelopardalis:** Equal white pair.

**Gamma Ceti:** Bright white and pale yellow stars.

**Chi Tauri:** White primary with a pale blue secondary.

**118 Tauri:** White primary with a yellow secondary.

### Challenge Object

**B33:** The Horsehead Nebula in Orion. A dark nebula that is very difficult to see. Dark skies and excellent seeing are a must. A Hydrogen-Beta filter will help.

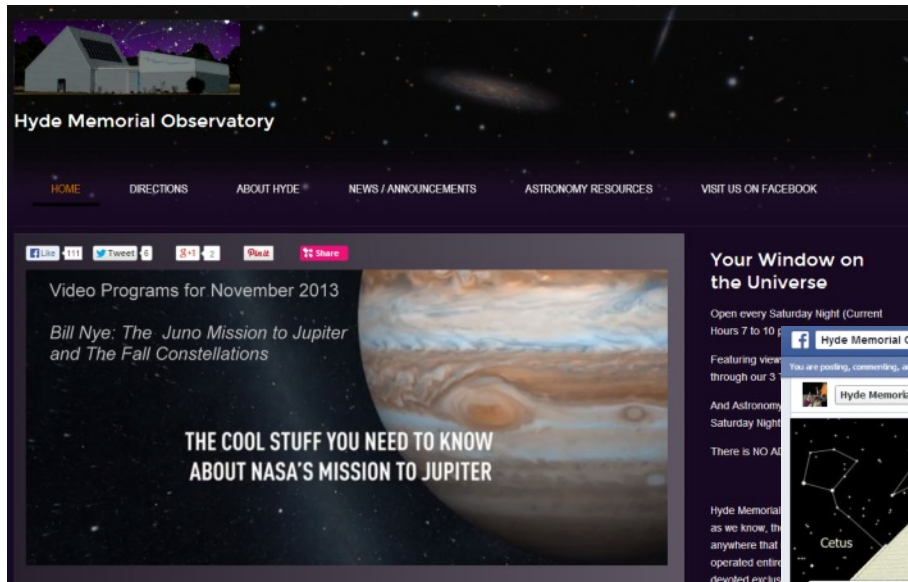
# Website and Social Networking Update—Mark Dahmke

The Hyde website has been redesigned using Wordpress. The site contains the same content as the old site but has been updated and rearranged. It also includes a news and announcements blog page. Zach updated the Hyde Facebook page with a new photo of the observatory and the background constellations will be updated quarterly to match the current sky.

The PAC Facebook group has been consolidated into the Facebook “page” which is open to the public. **Please remember to share and repost announcements for both Hyde and PAC onto your own Facebook/Google+/Twitter**



**accounts to increase our visibility and public awareness of both PAC and Hyde.**



[www.hydeobservatory.info](http://www.hydeobservatory.info)

Twitter: [https://twitter.com/PAC\\_Lincoln\\_Ne](https://twitter.com/PAC_Lincoln_Ne)

Facebook: <https://www.facebook.com/PrairieAstronomyClub>



## NGC Objects—Jim Kvasnicka

### The Christmas Tree Cluster and Cone Nebula NGC 2264

NGC 2264 The Christmas Tree Cluster is an open cluster embedded within the Cone Nebula in Monoceros. The nebula belongs to a much larger group which is currently an active star forming region.

NGC 2264 the open cluster was discovered by William Herschel in 1784. The following year 1785 he discovered the nebula. NGC 2264 is 2,400 light years away and spans 20 light years. Through a telescope it has an apparent size of 20'.

Right: This color image of the region known as NGC 2264 — an area of sky that includes the sparkling blue baubles of the Christmas Tree star cluster — was created from data taken through four different filters (B, V, R and H-alpha) with the Wide Field Imager at ESO's La Silla Observatory, 2400 m high in the Atacama Desert of Chile in the foothills of the Andes. The image shows a region of space about 30 light-years across. Credit: ESO.

NGC 2264 is a bright large cluster that resembles a Christmas tree. It contains about 20 bright stars along with about a hundred dim stars. The Cone Nebula which the open cluster is embedded in is a dim patch of nebulosity. It is best seen in large telescopes under clear dark skies. The Cone Nebula is a beautiful image in photographs but difficult to detect visually.



Cassie and Jack representing PAC at Space Day.



**Amateur Astronomy —  
A Hobby as Big as the  
Universe**

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**FIRST CLASS MAIL**

**Next PAC Meeting  
TUESDAY  
November 26, 2013  
7:30 PM  
Hyde Observatory**