

# ***The Prairie Astronomer***

August 2018 Volume 59, Issue #8

## ***The 25<sup>th</sup> Annual Nebraska Star Party***

# **M33**

*Brett Boller*



**Night Sky Network**



The Newsletter of the Prairie Astronomy Club.

# ***The Prairie Astronomer***

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**NEXT PAC MEETING: August 28 at 7:30pm**

## **PROGRAM**

A review of the Nebraska Star Party

## **FUTURE PROGRAMS**

September: To be announced

October: Club Viewing Night and election of club officers

November: How to Buy a Telescope

December: To be announced

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The Prairie Astronomy Club:  
Fifty Years of Amateur Astronomy



COMPILED AND EDITED BY MARK DAHMKE

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# EVENTS



PAC Meeting  
 Tuesday August 28, 2018, 7:30pm  
 Review of The Nebraska Star Party

4<sup>th</sup> Annual StarBQ at Branched Oak Observatory  
 Saturday, September 8, 2018, 6pm

PAC Meeting  
 Tuesday September 25, 2018, 7:30pm

PAC Meeting  
 Tuesday October 30, 2018, 7:30pm  
 Election of club officers

PAC Meeting  
 Tuesday November 27, 2018, 7:30pm

## 2018 STAR PARTY DATES



Photo by Brian Sivill

|            | Star Party Date                 | Star Party Date |
|------------|---------------------------------|-----------------|
| January    | Jan 12th                        | <b>Jan 19th</b> |
| February   | Feb 9th                         | <b>Feb 16th</b> |
| March      | Mar 9th                         | <b>Mar 16th</b> |
| April      | Apr 6th                         | <b>Apr 13th</b> |
| May        | May 4th                         | <b>May 11th</b> |
| June       | Jun 8th                         | <b>Jun 15th</b> |
| July       | Jul 6th                         | <b>Jul 13th</b> |
| August     | Aug 3rd                         | <b>Aug 10th</b> |
| <b>NSP</b> | <b>Aug 5th -10<sup>th</sup></b> |                 |
| September  | <b>Sep 7th</b>                  | Sep 14th        |
| October    | <b>Oct 5th</b>                  | Oct 12th        |
| November   | Nov 2nd                         | <b>Nov 9th</b>  |
| December   | Nov 30th                        | <b>Dec 7th</b>  |

Dates in **BOLD** are closest to the New Moon.



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Subscribe through [GoogleGroups](#).  
 To post messages to the list, send  
 to the address:

[pac-list@googlegroups.com](mailto:pac-list@googlegroups.com)

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## WEBSITES

- [www.prairieastronomyclub.org](http://www.prairieastronomyclub.org)
- <https://nightsky.jpl.nasa.gov>
- [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/>



**Night Sky Network**

## Meeting Minutes

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President Jim Kvasnicka called the meeting to order at 7:32 p.m

Jim announced dates for club star parties, August 3 and 10, but noted that the August 3<sup>rd</sup> date was unlikely to attract veteran members because many would be packing and traveling to the Nebraska Star Party. Some advice about NSP for people who haven't gone before followed.

Jim gave his observing report, which included the Perseids and two comets, C/2017 S3 (PanSTARRS) and 21P/Giacobini-Zinner. There is a new Astronomical League program, the Nova Observing Program, approved at ALCON this year. It is not online yet, but should be soon on the AL website.

At the September meeting, we will accept nominations for club officers, and the election will be held at the October meeting. Jim put together a nominating committee so that a full roster of candidates will be available. This is to prevent our past years experience of sometimes coming up short of nominees on election night. Lee Taylor, Ron Veys and Jim Kvasnicka volunteered for the committee. It was noted that volunteering

to serve on this committee does *not* exclude members from being nominated or running for office (nice try, though!)

Jim Kvasnicka and Bob Kacvinsky attended the Astronomical League national convention (ALCON) in Minneapolis July 11-14 and received their Master Observer Award plaques at the convention banquet. Plaques are only awarded at the convention. If winners cannot attend, they receive a certificate. So, there was a backlog of past winners who had not received plaques. A total of 17 plaques, some going back 10 years, were presented at the banquet. The Master Observer program was described, and then everyone dined on a cake celebrating Jim and Bob's awards (the first Master Observers in PAC, award numbers 206 and 207!) Next year's ALCON, coinciding with the 50<sup>th</sup> anniversary of the moon landing, will begin with tours of Kennedy Space Center, followed by a three-day cruise to the Bahamas. Details to be announced.

The business meeting was adjourned at 7:55 p.m. A program on light pollution was presented by Alix Cui, a student at Lincoln East High School who was scheduled to deliver a TEDxYouth talk on the subject on August 11.

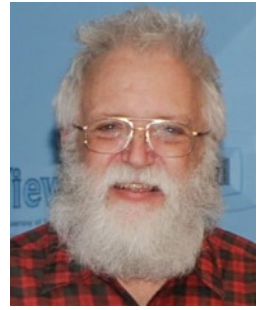


Congratulations Jim Kvasnicka and Bob Kacvinsky for receiving the Astronomical League's Master Observer Award. To receive this award, an AL member must complete at least ten of the League's Observing Programs.

NGC 4866 at first appears to be a red and dead galaxy. Maybe not. NED classifies it as a starburst galaxy. The thick covering dust seems to hide this at visual wavelengths. High-resolution images show very thin dark dust lanes superimposed on the blah red disk. NED's classification is SB(rs)bc; HII Sbrst. It sees a barred rather open armed bc type galaxy. That certainly doesn't fit pure visual images of it but may reflect IR and radio views of the galaxy. Seligman goes with the

more visual saying it is SA0(r)a?. Other have yet other opinions. One says: "NGC 4866 is seen almost edge on. It is classed as Sa because it is clearly not an S0; there is dust throughout the disk in what appears to be a spiral pattern... It is not as late as Sb, judged from the lack of resolution of the disk into knots (HII regions) or stellar associations." This has my head spinning faster than the galaxy. An HST image of much, but not all, of the galaxy, can be found [here](#). Note that east is at

the top in the HST image. He doesn't say what wavelengths are being used for this blue version of the galaxy.



Even more interesting to me is UGC 08091. It is classed as an irregular Magellanic galaxy. It is likely a distant member of the local group at a bit over 5 million miles distant. That may put it



[Full image at 1" per pixel](#)

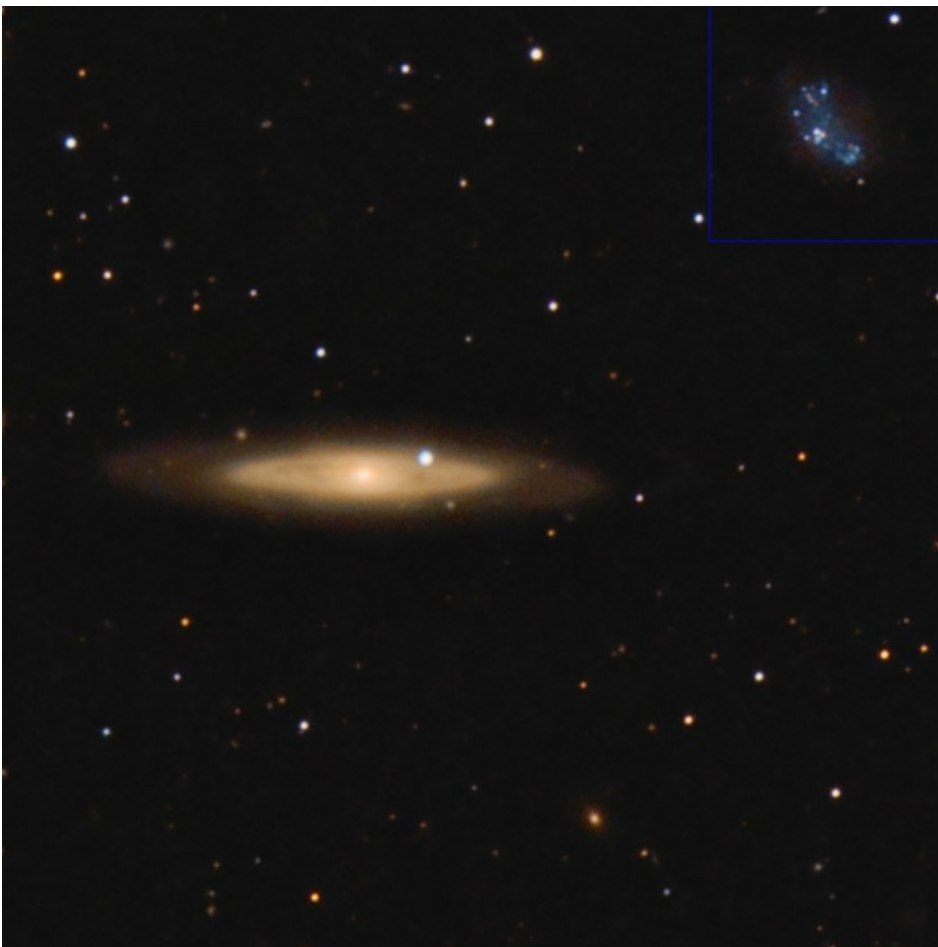
just beyond the local group. In any case, it is a very irregular and sparse galaxy. Redshift puts it 24 million light-years distant which doesn't begin to fit what I'm imaging. Redshift can be very inaccurate at close distances. Assuming the little over 5 million light-year distance I measure it at only 2,400 light-years in size. Now that's a small galaxy. NGC 4886 is 191,000 light-years across if the 110 million light-year distance is right. Since that is almost

impossibly big the non-redshift distance of 77 million light-years may be more correct. That still makes it very large at 133 million light-years.

The rest of the field had limited distance information so the annotated image has fewer galaxies noted. Many more are in the image, they just don't have redshift data at NED, at least at the time this was annotated.

The image is mostly in very northern Virgo. LEDA 3090760 at the top of the frame is just barely in Coma Berenices.

Just as I went to post this I discovered this is another case of my being bit by the tower of babble again. A slightly different version, however. Back in early 2012 I took UGC 08091 and NGC 4866 but filed it under the UGC galaxy so when I also had NGC 4866 on the to-do list I never removed it as I should have. This spring I took the pair again but under the NGC name. This is a reshoot. Back in 2012, I wasn't as good at color balance resulting in a slightly bluer image than it should have been. Also seeing was a slight bit better for this version. This is an unintended reshoot. Short of time, I can't process another yet today so this will have to do. Besides, there are a lot of new folk on the list that weren't here when it ran in early 2013. The original image is [here](#).



NSP this year started early with the inclusion of NET Film Crews at the Hyde June meeting and activities leading up to the actual event. On August 2<sup>nd</sup> they visited my home to do an interview and film a mock loading of the telescope and gear for leading up to the event. Loading the truck and then unloading became a common theme with the NET crew. Their focus was on light pollution, but should provide a nice promotion for PAC and Amateur Astronomy as a whole.

Dan Delzell, Jim Kvasnicka, John Reinhert, and I met at Shoemaker's at 10 am Saturday August 4<sup>th</sup> to caravan out to NSP. Brett Boller joined up along the way. NET filmed our departure from Shoemaker's and also as we left the Friend exit with Brett. They also captured us passing the NE State Forest near Halsey. At Thedford, Brian Seifferlein with NET jumped in with Brett to experience the exciting 23 miles Brownlee one lane road. We also ran into Dave Knisely at Broken Bow during lunch stop.

Saturday night started out with storms along 3 horizons and mostly cloud bank that left after dark a semi-open zone mostly between Cassiopeia through Cygnus about 30 degrees wide. We set up and observed and logged a few objects, but mostly got orientated to the

early August sky. By 2 am the seeing continued to deteriorate and lightning to the west sealed the decision to pack up the scopes. The PAC Hill group walked down to Dob Row and visited before returning to Valentine.

Sunday had storms and weather scheduled for the day. Each day the forecasts changed almost hourly but one consistent theme was over the week would be improving conditions. We were hopeful. Everyone scattered during the day visiting Valentine for food, movie, and even found a new local Brewery for a couple tasters. Saturday night I had difficulty getting my OTA collimated, so Sunday morning we found the base ring had lost 2 screws and one of the adjustment knobs was stripped out. After a visit to the hardware store and some mechanical surgery we got everything fixed. Collimation was much simpler the rest of the week.

The group dinner at Merritt on the observing field had a storm come through early but a nice cherry hole opened in the sky during dinner teasing the group about setting up their telescopes. But, the weather gods were not kind as the skies slowly filled in and lightning and cloud cover took over for the night. Everyone socialized and renewed old connections but many of the

parties broke up by 11:30 as we all worked our ways back for a full night's sleep. NET captured some interviews and conversations but not much viewing. End day 1 (2).

Monday morning started out with a clearing sky with storms predicted to be passing through and out by the time nightfall came. We spent most of Monday reworking our viewing plans and getting caught up on communications. During the NSP dinner there was a stubborn cloud back in the western sky that caused most to delay setting up our telescopes for fear of rainfall. At sunset, 9 pm, the western cloud thinned and looked like it would fade so we all set up just as darkness started to encompass our gathering. NET wanted to capture us setting up earlier, but the rainfall delay forced it to be too dark to complete the task. PAC Hill included Dan, Jim, Bill Lohrberg, John Reinert, and new member James Nardt set up. James is an accomplished photographer and set up for several wide field of views.

The sky was marginal by NSP standards at the beginning, improving throughout the night as we worked on each of our observing plans. The Milky

Way was nicely detailed but along the horizons and western sky the seeing and transparency was generally just good.

I was able to log 2 Planetary Nebulas in Cygnus that were magnitude 14.3 and 14.4 using O III filter. In the western sky the Whirlpool barely resolved the spiral arms. Generally, the seeing was much improved over Saturday night but still not that true "NSP Sky" we have so much enjoyed. Was it the smoke from the California fires, unstable atmosphere from all of the storms, humidity, or just marginal seeing. Good night observing with friends and a few visitors. An outflow wind shift at 2 am came through shifting the winds from SE to a brisk NW for 20 minutes before calming. The temperature dropped into the mid 50's causing many to scramble to find another layer of warmth. By 4 am the sky transparency again faded and we decided to pack up. Fun night, great times. We visited Brett, Brian, and others on Dob Row and Brett was capturing some great time lapse photos of Andromeda, Milky Way, etc. End day 2(3).

Tuesday again started out with clear morning skies and a promise of improving conditions. This was the last night for NET to capture video, so they asked us to arrive early so they could film us setting up using their 360 video system.

We arrived at 5:15, and after getting wired up, Dan Delzell ran the remote stick camera while I set up my telescope completely. Then, after I tore everything down again, we all set up using NET's 360 full field camera. Doing everything twice was starting to be a bit annoying.

Following dinner, the skies opened up with improved seeing and transparency. Humidity was high as we were having moisture build up mostly on the tables, chairs, and materials. Lee Thomas joined the PAC Hill tonight and helped a nice couple from Crete (Don and Sherry Daak) set up a vintage 8" Criterion cassegrain, a precursor to the Celestron. A gentleman Steve from Lincoln with an 8" Orion Dob was setting up out in the open field and having trouble with the grass, prickly pear cactus. I helped him carry his scope up to our raked out area, got a tarp to set up with, and Dan, Jim and I collimated and helped get his scope set up, gave him a Skymaps chart, aligned his finder, and showed him several objects to find.

A family from Omaha was also located in the open field with a pair of 50 mm refractor scopes set up on lightweight tripods. I gave them a Skymaps and showed them how to find a few brighter planets and objects. We invited them along with their 12 yr old son Vaughn to join us to look through our

scopes. Vaughn and his dad visited around 11, and were excited as Dan and Jim showed them several favorite objects. Brian (NET) then did a camera interview with Vaughn about the experience. Vaughn as they left told his dad that they were going to for sure set up Wednesday night on PAC Hill.

From 9 through to about 1:30 we spent most of the night in "Outreach Star Party" mode. We did not get many objects logged, but it was a great NSP night focused on the true meaning of a Star Party. During one of our mandatory "Union Breaks" NET mic'd us up and using a bright red light taped our break. Interesting that the conversation when the mic was on were more mundane, compared the next "break" when more stimulating subjects were covered – such as "If you lived exactly on the equator, would your toilet swirl clockwise (south) or counter clockwise (north), or not swirl, or would it create a warm front effect similar to a low and high pressure system interacting". It kind of went downhill from there with Simpsons episode about toilet swirls. Clearly it was a deep subject evening.



Each night we were slowly picking up more and more Perseids but the camera lights hurt the efforts. Perseids were short bright bursts sometimes leaving a trail of fading light. Tuesday most of us had caught at least 10 Perseids throughout the night. Unfortunately, between 2:30-3:30 the sky transparency and seeing again deteriorated so we whipped down the equipment and packed up. One theme Dan Delzell pointed out was that as time goes on, things became dimmer and dimmer and dimmer. End day 3(4).

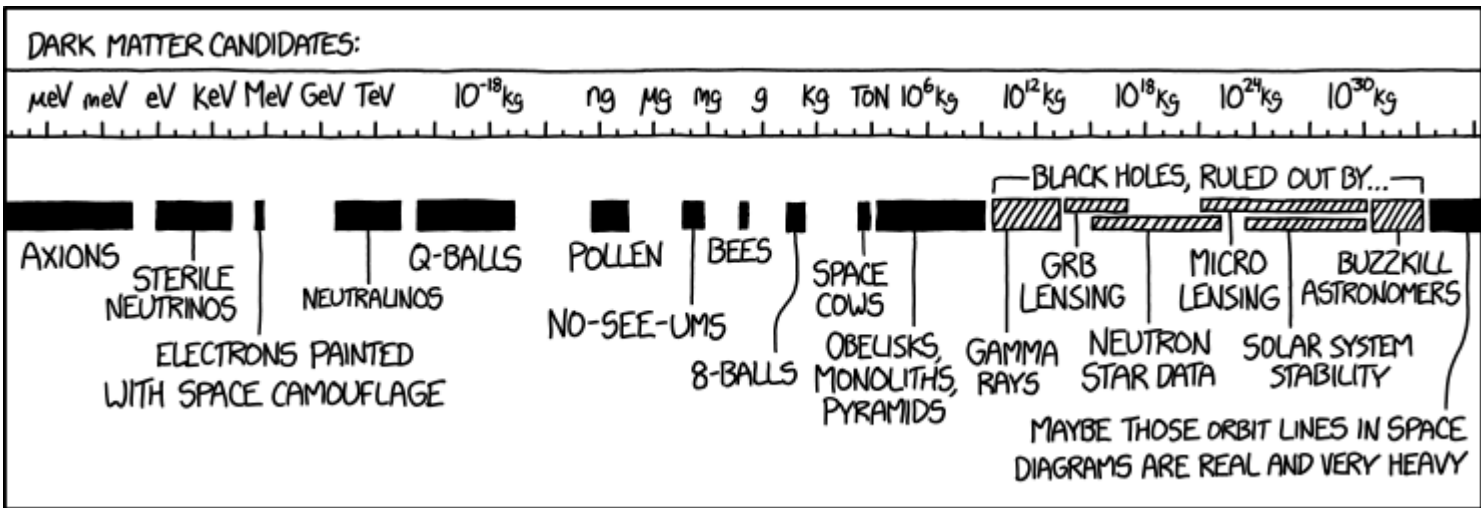
Wednesday night Lee Thomas pointed out that PAC Hill was "becoming quite busy" as several guest gathered to observe. Vaugh's family joined in and we took him and his

parents for a 2 hour tour of the night sky. There was much less humidity but the seeing/transparency was average. Our 16" scopes were limited to under 15 mag objects again. I caught one planetary at 15.1 using averted vision and maybe even some averted imagination. End day 4 (5).

Thursday was the day for guest speakers and program at Valentine High School. The programs were excellent. On Tuesday morning two groups launched balloons from the NSP Observing Field and the results and videos were shared on Thursday. Amazing video and images all the way to 70,000'.

The forecast for Thursday night included marginal skies again, so several of PAC Hill

observers drove back to Lincoln. Generally, the skies this year were not as good as previous NSPs whether due to the western fires, humidity, or the unsettled atmospheres from several weather fronts passing through during the week. Yet, everyone felt that this was one of the best social NSPs we had attended with a number of newcomers that we were able to help enhance their first time at NSP. We may not had been able to experience many new "faint fuzzies", but did experience many "warm fuzzies" best said by 12 year old Vaugh at his fist view of the Hercules Cluster "WOW, that's Cool". No way to top that.



xkcd.com

# September Observing: What to View

Jim Kvasnicka

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

## Planets

**Venus:** Drops to just 7° above the horizon in the west at magnitude -4.8.

**Jupiter:** Dims to magnitude -1.8 with a disk 33" wide.

**Saturn:** In Sagittarius, on September 6<sup>th</sup> it is 2° to the upper left of M8.

**Mars:** During the month it dims from -2.1 to a -1.3 magnitude.

**Neptune:** Reaches opposition on September 7<sup>th</sup> in Aquarius at magnitude 7.8.

**Uranus:** In Aries two magnitudes brighter than Neptune.

**Mercury:** Low in the ENE 30-45 minutes before sunrise.

## Comets

**21P/Giacobini-Zinner:** Begins the month in Cassiopeia at magnitude 7.5 with a coma 7.5' wide.

## Messier List

**M13:** The Great Hercules Cluster, Class V globular cluster.

**M14:** Class VIII globular cluster in Ophiuchus.

**M22/M28:** Class VII and IV globular clusters in Sagittarius.

**M54/M69:** Class III globular clusters in Sagittarius.

**M70:** Class IV globular cluster in Sagittarius.

**M92:** Class IV globular cluster in Hercules.

**Last Month:** M6, M7, M8, M9, M10, M12, M19, M20, M21, M23, M62, M107

**Next Month:** M11, M16, M17, M18, M24, M25, M26, M55, M75

## NGC and other Deep Sky Objects

**NGC 6826:** The Blinking Planetary in Cygnus.

**NGC 6960:** Veil Nebula – Western Segment in Cygnus.

**NGC 6974/6979:** Veil Nebula – Central Segment in Cygnus.

**NGC 6992/6995:** Veil Nebula – Eastern Segment in Cygnus.



## Double Star Program List

**Otto Struve 525:** Yellow and blue pair.

**Gamma Delphinus:** Yellow primary with a yellow-green secondary.

**Zeta Aquarii:** Yellow and white pair.

**94 Aquarii:** Yellow primary with a pale blue secondary.

**Alpha Capricornus:** Wide pair of yellow stars.

**Beta Capricornus:** Yellow and blue stars.

**36 Ophiuchi:** Equal pair of yellow-orange stars.

**Omicron Ophiuchi:** Yellow primary with a pale yellow secondary.

**70 Ophiuchi:** Yellow and orange stars.

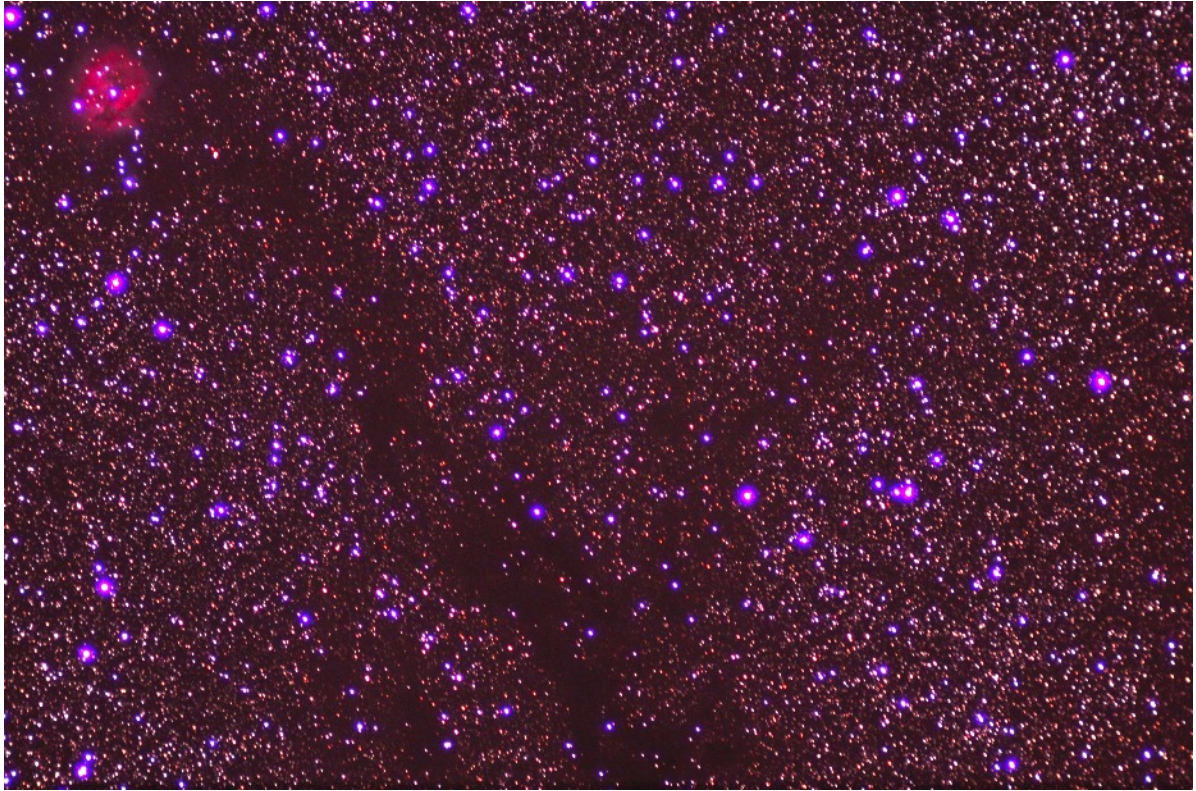
## Challenge Object

**Palomar 12:** Class XII globular cluster in Sagitta, very faint.



*Above: Lagoon Nebula and Trifid. Below: Andromeda. Photos by Brett Boller.*





*Above: Cocoon. Below: Veil Nebula. Photos by Brett Boller.*





*Photos by John Reinert*





*Photos by John Reinert, Dave Knisely and Mark Dahmke*



*By John Reinert*

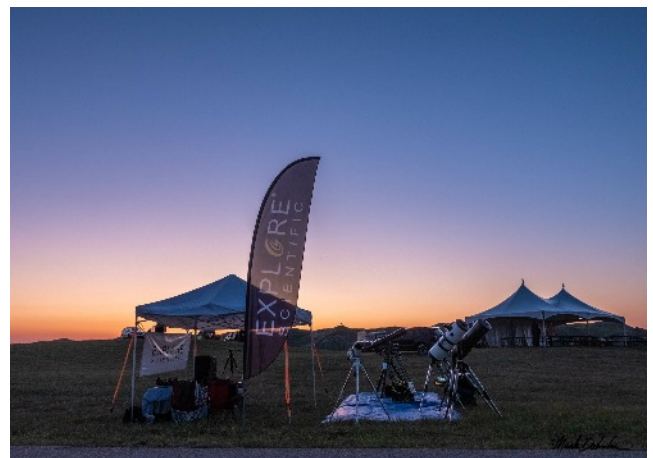


*Photos by John Reinert*

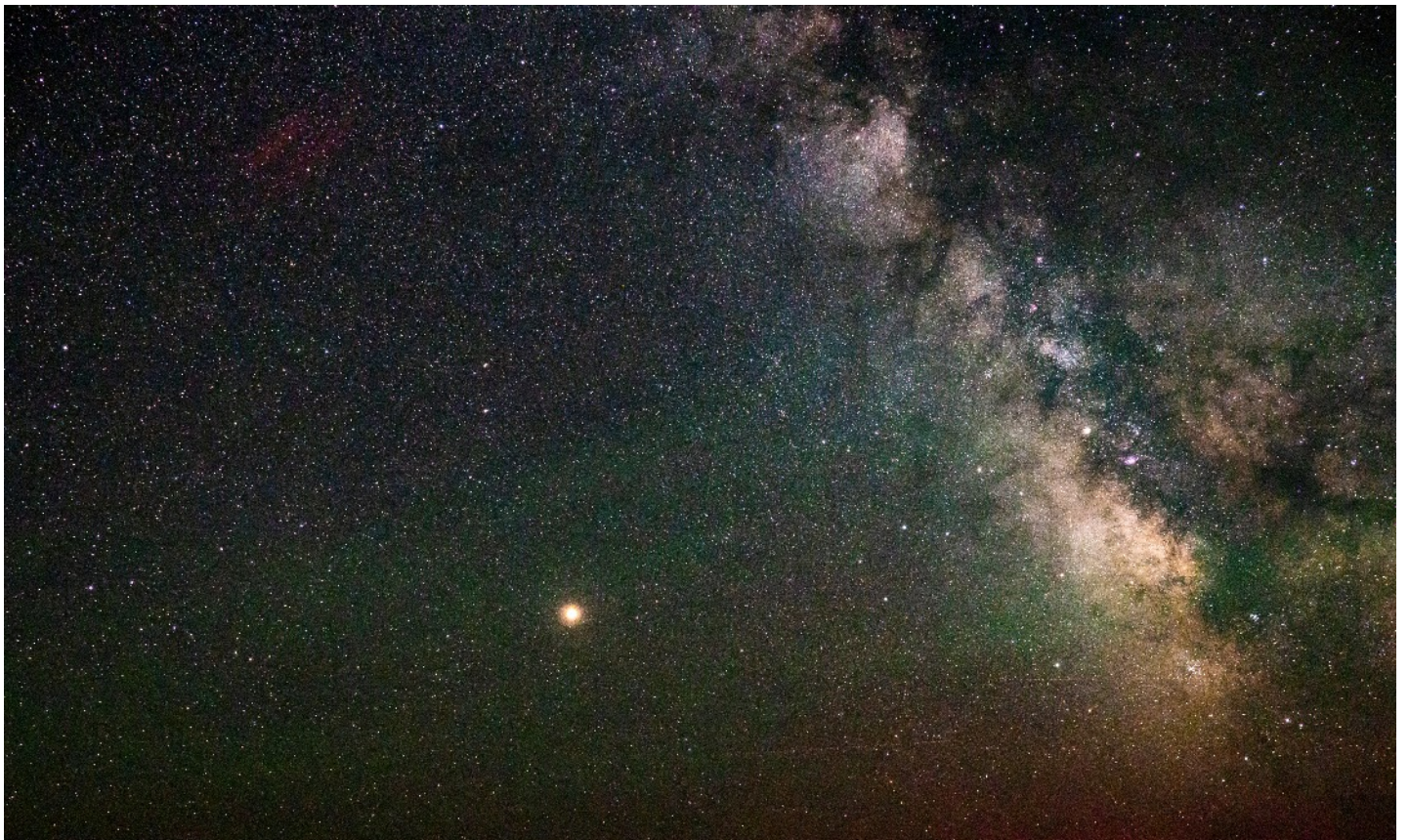


*Above: Silhouette of David Woolf from Kalamazoo. Below: Explore Scientific's tent. Photos by Mark Dahmke*

*Below: Photo of John Reinert by Dave Knisely*



*Photos by Mark Dahmke*





August 4-10, 2018  
Merritt Reservoir

This year's Nebraska Star Party was another one for the books, with fairly decent weather and over 260 attendees enjoying some of the darkest skies in the continental U.S. My experience began on Saturday with the long trip from Beatrice to Lincoln and then on west to the Wood River exit on I-80 where I avoided some construction in Grand Island and finally got to US-2. As I usually do, I stopped in Broken Bow for fuel and lunch, and as I was finishing my meal at Runza, the NSP "Lincoln contingent" (PAC members Jim Kvasnicka, Bob Kacvinsky, Dan Delzel and Brett Boller) showed up to eat as well (along with one of the NET camera crew members who would be filming at NSP). We talked for a bit before I once again hit the road up Highway 2 to Thedford. From there, it was north on US-83 to the "World's Longest Driveway", a.k.a. the 27 mile long Brownlee road that saves the user about 16 miles over going to Mullen and then north on Highway 97 to the lake. I managed to be the first one to make it to Merritt and check in to our 4-bed cabin at Merritt Resort near the dam, followed about a half

an hour later by my cabin mates John Reinert and then Brett Boller. After getting some stuff unloaded, we went into Valentine to meet our final cabin mate NSP Chairperson Eric Balcom at "the Neon Grill" for dinner, along with our friends (John Spack and company) from Chicago who were staying at the cabin next to ours (we again encountered the "Lincoln contingent" as well there). On our way back to Merritt Resort, we noticed the sun almost a dim cherry red color due to the smoke from the fires in Colorado, so John stopped his truck and took a few shots as the sun went down behind the dunes. Eric and Brett went on to the observing fields at the Snake Campground, but the weather looked iffy, so John and I just stayed in the resort's parking lot and tested out his newest acquisition, an iOptron 6 inch Mak-Cassegrain on a rather funky-looking equatorial mount. It was a little confused about the location and the time offset due to our location being almost directly on the line between Central and Mountain time, making its GO-TO slews a bit off, but we did get some looks at Jupiter, Venus, Mars, and M11 before conditions deteriorated. Then, we went back in and got some much-needed sleep.

Sunday was the first "official" day of NSP-25, and it dawned cloudy with a chance of scattered showers, so John Reinert and I drove into Valentine for lunch at "The Bunkhouse", where, once again, we ran into the PAC "Lincoln contingent" (it's kind of hard to lose those guys don't you know :-)). After picking up a few things, we headed back out to the lake and helped with moving the NSP registration materials and T-shirts out to the Boardman campground where registration/check-in was being set up. There were a few sprinkles, but the dedicated NSP staff managed to get everyone what they needed before much rain came down. After 6:30 p.m., we moved out to the big tent above the Snake Campground for the first of several meals offered by the star party (a nice chicken dinner). After dinner, the sky remained cloudy and there were some sprinkles, so after some discussion, we decided to head back to our cabin for our "alternative plan". I had recently purchased a video projector for doing our presentations at the Beginner's Field School, so with Brett's laptop and a

big white bed sheet donated from next door, we turned the cabin into a movie theater, complete with popcorn and drinks. Thanks to Brett's work (and John's popcorn), we got to see the newly-released digital download of, "AVENGERS: Infinity War" on the big sheet (err, the Big Screen).

Monday was "supposed" to be better, with at least a chance at some viewing, but it started out mostly cloudy. I had to be ready for Day-1 of the NSP Beginner's Field School, so with help from my co-teachers (Brian Sivill and Jim Hopkins), we got things up and running just after 2 p.m. in the downstairs of the resort's "Waters Edge" restaurant. The Nebraska Public TV film crew was there and wanted to know who would be talking first (me), so I got "mic'd up" with an under-the-shirt microphone and belt wireless pack so they could record while filming the first hour of the school. We got up and running under the blaze of the TV lights when the skies outside opened up with a big bolt of lightning and the rain poured down. Still, I managed to keep the topics rolling with a \*lot\* of help from Brian as we helped guide nearly 40 people into our wonderful hobby. Once the first Field School session was completed, I took a break and then headed out to the

Snake Campground once again for dinner and door prizes (BBQ Beef sandwiches with all the trimmings). Things looked a bit glum in the sky, but then, the skies slowly began to show a large rift in the southwest that was EXPANDING!! We had to wait a while, but soon, enough of the sky was clear that people started breaking out their scopes and starting to make use of the slightly hazy but still quite usable observing conditions. Indeed, I had left my big scopes at home and I settled down with John Reinert and his 11 inch SCT to attempt to work the skies. We got to see a lot (mostly the "showpiece" objects), but for some reason, like last year, the scope's GO-TO operations were missing a bit, and the tracking was off. While viewing M13, I noted it slowly climbing in the field, so on a lark, I pushed up on the star diagonal hard. The object moved back into the field and stayed there for a bit, so it quickly became obvious that the altitude clutch in the scope was slowly slipping due to an imbalance in the optical tube assembly. Once we understood the problem, it became possible to work around it. Indeed, I showed John two somewhat obscure objects next to M13: the easy oval spiral galaxy NGC 6207 and the challenging 15th magnitude edge-on spiral IC 4617 (which

I had not seen in my old 10 inch Newtonian). I also helped John view the central star in the Ring Nebula for the first time by pointing out the dual techniques of using very high power and patient long-term observing to catch moments of good seeing to make the star visible. We went up and down the Milky Way, trying out both our sets of eyepieces and nailing object after object until a bit after 3 a.m., when the crescent moon came up and the little battery on John's scope finally gave out (after nearly five continuous hours of use). It was a good time to tear down anyway, so we packed everything into John's enclosed truck bed and I gave him a ride back to our cabin for some much needed sleep.

Tuesday was bright and mostly clear. After another run into town for lunch, I had to be back at the resort to help put on Day-2 of the Beginner's Field School covering telescopes and equipment. There, we pulled in three "typical" scopes and let the attendees ask questions and get a first hand look at eyepieces that covered the entire spectrum of cost and performance. After a short nap, it was back out to the

Snake Campground for the "NSP Burger Bash" at the big tent, followed by door prizes and more observing. OAS club member and long time NSP attendee John Johnson had broken his wrist about a week earlier, but he still managed to do a nice laser constellation talk for the Field School students once the sun went down. The night was again pretty good, although we did occasionally have to fight just a few drifting clouds or haze. I pulled out my 100mm f/6 refractor and set it up next to John Reinert's 11 inch on Dob Row and we soon went to work. This time, John had put a heavy camera clamp on the front lower end of his SCT, allowing much better balance and tracking than we had earlier seen. I soon cut John loose when I just opened Sky Atlas 2000 and started reciting NGC or IC numbers for him to find. We visited a number of globular clusters as well as some northern sky galaxies like Draco's Trio, M101, and M51. Indeed, the view of M101 in John's SCT was one of the best I have ever seen in that aperture, as the very faint long whip-like spiral arm was visible extending way out away from the main spiral arms. Another "John Johnson" (this one from Sioux City) had his 20 inch Obsession Dobsonian on Comet Giacobini-Zinner, and it was easy to see the coma

and about half a degree of tail. I later tracked it down in my 100mm f/6 refractor and while I could see the tail in the little scope, it was far fainter than in the big Dob. Brett Boller was going great guns on the other end of Dob row, imaging things right and left. We worked the sky until we hit M33 after 3 a.m., and once again, the little battery powering John Reinert's 11 inch finally said "good night", so we did too, packing things in.

Wednesday promised the best night yet with a beautiful blue daytime sky. I had to attend the annual NSP board meeting, so I didn't make it to the Field School where Jim Hopkins was providing the material on what to look at in the night sky. Wednesday's evening meal was also "build your own sandwich" night on the observing fields, and I really pigged out. However, it was the sky that took center stage. This time, things were simply awesome, as we got one incredible night of clear skies. I simply lost track of everything I saw, as I was either with John much of the time, or over with the big Dobs on the east end of Dob row. I particularly enjoyed exploring the fine dust lanes in M31 with John's 11 inch SCT. We were also treated with a few early Perseid meteors from the shower going on. However, the

nights of long observing were beginning to take their toll, so again around 3:30 a.m., we put our stuff away and headed back to our cabin for some much needed sleep.

Thursday was the day for the in-town formal presentations and activities at the Valentine High School. There were several interesting talks, but probably the best one was by Michael and Kendra Sibbersen on the NSP dual-balloon launch that had occurred during the star party. As usual, Brett Boller won a few of the astrophotography contest awards, while many decent door prizes were handed out. After the presentations ended, it was over to the Peppermill restaurant for some fine dining (I had prime rib). We then headed back out to the observing fields for another night under the stars. The skies were a bit hazy with some occasional lanes of clouds, but overall, we still got a lot looked at.

Friday was "recovery" day, and like Wednesday, it promised to be a good one. John Spack from the cabin next door organized a massive late afternoon cook-out behind our cabins at the resort, with steaks, burgers, brats, sweet corn,

and other things freshly grilled and ready for a lengthy tasting exercise. We probably had around 30 people there all talking, eating, and relaxing under the trees above the lake. The primary activity for that evening would be the NSP Public Star Party, and we were not disappointed, as around 200 members of the general public from around the area flocked to the observing fields to see what we had to offer. I put in my OIII filter and gave Brian Sivill a real eyeful, showing all

three segments of the Veil Nebula at the same time, in addition to the view I gave him of the North America and Pelican Nebulae. The Double Cluster elicited oohs and ahhs from the public, and the people stayed fairly late. Later on, we went back to just observing for the fun of it until we finally had to once again tear down for the final time.

Saturday morning bright and early, I once again put my suitcase and bags back in the van, said my goodbyes, and left Merritt for the trip home.

All in all, it was one of the better Nebraska Star Parties I have ever attended. Indeed, one notable fact was that around half of the 260+ people who attended this year's NSP had done so for the very first time, so this bodes well for the future.

Clear skies to you.

David Knisely





## Club Offices and Duties

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*Nominations for next year's officers will begin at the September meeting, and remain open until election at the October meeting.*

Club officer nominations are made in September and elections are held in October. The following is a list of responsibilities of each of the officers and what is required to maintain a functioning club.

As stated in the bylaws, the club has five officers: President, Vice President, Secretary, Treasurer and Second Vice President. The business of the club is managed by a Board of Directors. The Board consists of the five elected officers. Each decision of the Board requires an affirmative vote by at least three Board members. The Board can also create additional non-elected offices as required and can initiate impeachment proceedings against officers who have been negligent in performing their duties.

The Prairie Astronomy Club has a fifty year history of service to club members and the community. Potential club officers should have a good understanding of the history of the club, its formation and mission, its relationship with Hyde Observatory and the types of events, activities and outreach that is part of the tradition of the club. The most complete resource is the book *The Prairie Astronomy Club: Fifty Years of Amateur Astronomy*, which is in the club library or available as a PDF document.

### **President**

The President organizes and directs the regular monthly meetings and all other club activities. The President also prepares the meeting agenda and PowerPoint for the meeting.

The President also officially represents the club at meetings at the regional and national level where he/she is in attendance or delegates this authority. The President has the authority to call meetings of the Board and to appoint non-elected officers.

The President should have good communication skills and be comfortable interacting with the media and public, be a good public speaker, be available to do radio and TV interviews and to deliver prepared introductions and remarks at club-sponsored events.

Another duty of the President is the annual club audit. Within 10 days of assuming office, the President must appoint a committee of three club members to perform the audit. The audit must be completed within 45 days of the close of the fiscal year which is October 31.

When assuming office, the President should hold a meeting of the Board to present his/her direction and ideas for the club for the coming year, and appoint any unfilled non-elected positions.

### **Vice President**

The Vice President is responsible for running club meetings and other events in the absence of the President. The VP is also to be the mediator in cases of procedural dispute and must be available to assume the duties of any officer at the direction of the President. The VP also maintains control of the current inventory of all club property.

### **Secretary**

The Secretary handles all Club correspondence, is responsible for the distribution of information received through official club correspondence and is in charge of Club publicity (often the job of Publicity or Outreach Coordinator is delegated to a non-elected member). The Secretary also sends out membership renewal notices and delivers meeting minutes to the newsletter editor. The Secretary is responsible for maintaining an accurate club membership roster. The master copy of the roster is currently maintained on the Night Sky Network website. The bylaws also require publication of the complete roster in the newsletter on an annual basis.

### **Treasurer**

The Treasurer is responsible for all Club funds and for keeping accurate records of all monetary transactions. The Treasurer

must submit a written report of the club's monetary status at the request of the President or give a verbal report at the request of any member during regular meetings. He/she also prepares an annual financial report in November for publication in the newsletter and presentation at the November meeting. The Treasurer is also responsible for all tax filings and reporting requirements, to maintain the club's 501c3 status.

### **Second Vice President (and Program Chair)**

The Second Vice President is responsible for the formation and presentation of the monthly club programs. Ideally the 2nd VP should try to plan ahead six months to one year to build a list of potential presenters or programs. The 2nd VP also sends out email announcements of upcoming programs to the membership, and sends a program description to the newsletter/website editors.

The club usually has several non-elected officers:

The **Publications Chairperson** (or Newsletter Editor) is responsible for editing and publishing the *Prairie Astronomer*. The newsletter editor may also be the website manager/editor. The newsletter editor should have a good working knowledge of desktop publishing software (and computers in general), graphics, photo editing, some design and layout experience and some experience with social networking and Internet marketing. The Website editor needs to be familiar with WordPress (or similar CMS software) and HTML, graphics

and word processing applications. Ideally the newsletter and website editor(s) should have prior experience with the publication of a newsletter or website, or demonstrated skills. The publications chairperson is also responsible for social networking for the club - posting Facebook and Twitter announcements for club meetings and events.

If the club has an appointed **Outreach Coordinator**, the coordinator takes on some of the roles performed by other officers – organizes outreach events, shares in media communications tasks, puts together flyers, etc.

The **Club Librarian** (often the Vice President) manages the club library. He/she keeps a current bibliographic listing of all Club library material including the archive of all back issues of *The Prairie Astronomer*. The Club Librarian and Secretary work together to maintain a record of club activities and regularly update the official club history.

The **Observing Chairman** presents a monthly report at Club meetings and/or in the *Prairie Astronomer*. He/she keeps members informed of upcoming celestial events, sky objects of special interest and star parties.

The **Recording Secretary** (often the Club's elected Secretary) is responsible for keeping the minutes of the club meetings and filing a copy with the Club Secretary. Minutes need to be kept in a systematic fashion as they record the history and life of the club and need to be published in the

*Prairie Astronomer* on a monthly basis.

The **Site Chairperson** (if one is appointed) is responsible for establishing a site committee to oversee the maintenance and security of the club observing site.

While not a requirement of the bylaws, all club officers and appointees should have good computer and social media skills, should be accessible and responsive via email and phone.

# ALCON Convention 2018 - MSP

Bob Kacvinsky

Jim Kvasnicka and I attended the Astronomical League annual convention in Minneapolis/St. Paul on July 13-14<sup>th</sup>. The convention hosted approx. 250-300 attendees from across NA Wed-Sat but Jim and I only attended the last 2 days. The program was well put together with interesting speakers and activities in the MSP area. Each night the host Minnesota Astro Society hosted a star party at their site about 25 miles west of the cities although Jim and I were unable to make it to the evening events.

Photo (right): Jim viewing display of antique telescopes.

Some of the key speakers included:

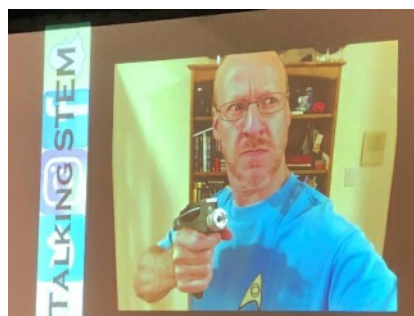
Dr. Jay McLaren, Mayo Clinic Professor of Ophthalmology, who discussed how our eyes work along with proper positioning when observing through the eyepiece. One interesting note is that our eyes dark adapt through two stages, the first in 10-12 minutes to a state of good viewing and then a second deeper adaptation during the next 10 minutes if not exposed to ambient light. The brightness of your red lights will not impact the first level, but can the deeper sense of dark adaptation if you are in a sufficiently dark environment.

Dr. Clement Pryke, researcher of the Cosmic Microwave Background (CMB). One of the interesting points is that his



team spent a couple years developing research and presented summary papers on their findings from Antarctica announcing they had found the microwave patterns, only to find out a few months later that their findings were actually caused by the dust within our own galaxy – aka reminder of when the physicists on the Big Bang Theory traveled to Antarctica and after Shelton announced their findings the others told him they faked to data by turning on the camp blender. Since then Dr. Pryke's Team has since reconfirmed their findings of the microwave background patterns. Needed more data.

Dr. Phil Plait (photo), author and blogger best known for his



Bad Astronomy website debunking bad science and popular misconceptions. He gave a very entertaining talk around social media presence and how to use outreach as a positive message to the public.

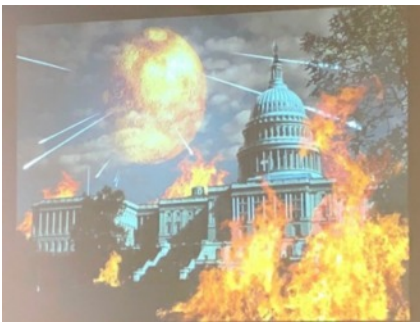
Dr. Terry Jones, Professor of Physics and Astronomy at Un. Of Minnesota gave presentation on Mass Loss in Hypergiants around how they can loss up to 50% of their mass in the later stages of life and thus have a very profound impact on the space around and near them.

Cristin Finnegan, student at NDSU, gave a talk on Space Law 101 and the history starting with Sputnik to the issues today around space junk and who is responsible for damages when they occur.

Bob King, photo journalist (Duluth News Tribune) and author of observing books including "Night Sky with the



Naked Eye” and Wonders of the Night Sky”. His talk was centered on outreach events and how to observe and communicate with an unknowing public about the wonders of the night sky. His talk was very enjoyable and especially focused on helping the public to get excited about observing. He also added humor into some of the fantasy. Note photo.

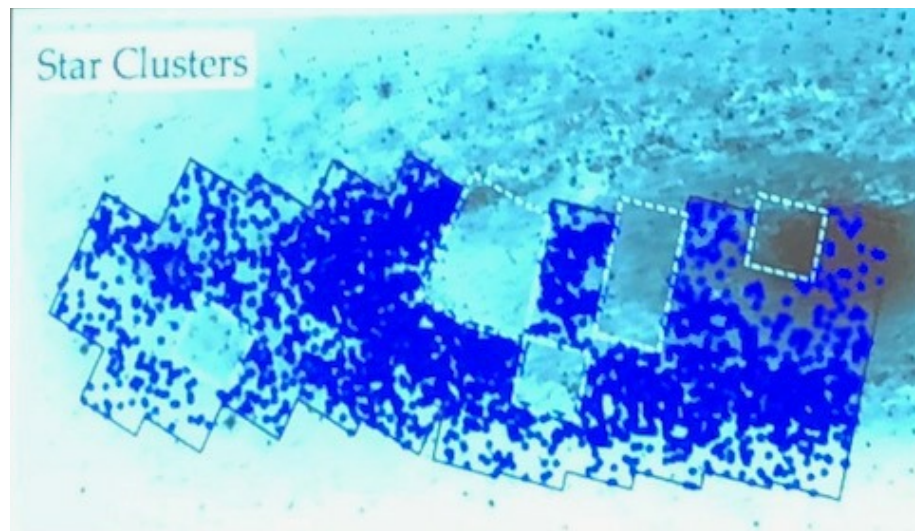


Dr. Larry Rudnick, Teacher of Astrophysics at the Un. Of Minnesota, presenter of Newton’s Apple television program, and presenter at the Bell Museum and Planetarium in MSP. He presented a “look back” to the Big Bang, and how from a small spec our Universe continues to grow for 13.7 billion years and counting. His talk also looked at the science of whether we are very special, or an accident, and does the science support life elsewhere and if so what would it take for life to exist. He presented the math – down to a factor of 10 to the 40<sup>th</sup> power, and how so precise the ratio of elements, protons, neutrons all the way to galaxy, dark matter, and energy had to be in order for us to have existed and that even if the physics were off by a factor

of 1 to the minus 20+ power we would not be here. The preciseness made you really think about how it came to exist.

Dr. Evan Skillman, Director of the MN Institute for Astrophysics at the Un of MN gave a talk around their very large project (PHAT) that encompassed over 898 hours over 3 years of Hubble Telescope’s observing time mapping out locations of stellar forming clusters within 1/3 of the Andromeda Galaxy. Their

precise in selecting stellar masses then the “expert professional astronomers” viewing the photos. The citizen scientist were able to identify over 2900 star forming stellar clusters (photo). They had over half million observations that enabled the largest systematic study of the distribution of the initial masses of stars – all because of the inclusion of amateur citizen scientist participation.



initial findings were overwhelming amounts of data that the scientists were having difficulty determining how to classify and select the stellar masses within the “bricks” of data. They came up with a process to put each brick of data onto a website and asked citizen scientist / amateur astronomers to observe and select potential star forming stellar masses within each brick. What they found was that by using citizen scientist, they were more accurate and

Dr. Pamela Gay, keynote speaker at Saturday Night banquet gave a history of how many of historical discoverers in Astronomy were “turn on” early in their childhood by someone who reached out and shared a view of the sky. Our outreach events and activities are critical to help bring on the future leaders in physics and astronomy.

There were numerous awards given out during the



course of the convention for newsletters, outreach activities, and especially youth programs. There were 3 talks by 14-16 year olds who were working on some incredible research projects across the nation. These were impressive talks and gifted individuals.

During the main banquet was the presentation of Master Observing Awards. Winners receive their certificates and pins following their completion of the program by mail, but only during the annual convention can they receive a special plaque. This year, the AL decided that they would award anyone who had completed the Master's program in the past and could attend the convention could receive their award plaques. This year there

were 17 Master Observers that attended the convention and were individually awarded their Master Observing Award Plaques.

President Jim Kvasnicka was awarded the 206<sup>th</sup> Master Observing Award and Bob Kacvinsky was awarded the 207<sup>th</sup> Master Observing Award during the ceremonies at this year's convention. This award is given following completion of 5 required observing programs including the Herschel 400 I program, and 5 additional programs of the participants choosing. I know that without Jim's encouragement, fellowship, and even a little (lot of) prodding I would not have taken the time or effort to document and finally complete the program. Thanks to

everyone in the Prairie Astronomy Club who have helped to make observing such a fun time along with the opportunity to build a lifetime of friendships.



# Focus on Constellations: Sagitta

Jim Kvasnicka

## Sagitta

Sagitta the Arrow is the third smallest constellation with an area of 80 square degrees. The star pattern of Sagitta really does resemble an arrow; its figure is easily recognized. The constellation contains one Messier object, the loose globular cluster M71. Sagitta is located between Aquila and Cygnus.

## Showpiece Objects

**Globular Clusters:** M71

## Mythology

Sagitta has many associations in mythology. It was identified as the Arrow with which Apollo killed the Cyclops, the Arrow which Cupid shot into the heart of Apollo to make him fall in love with Daphne, and the Arrow with which Hercules killed Jupiter's Eagle Aquila.

## Number of Objects Magnitude 12.0 and Brighter

**Galaxies:** 0

**Globular Clusters:** 1

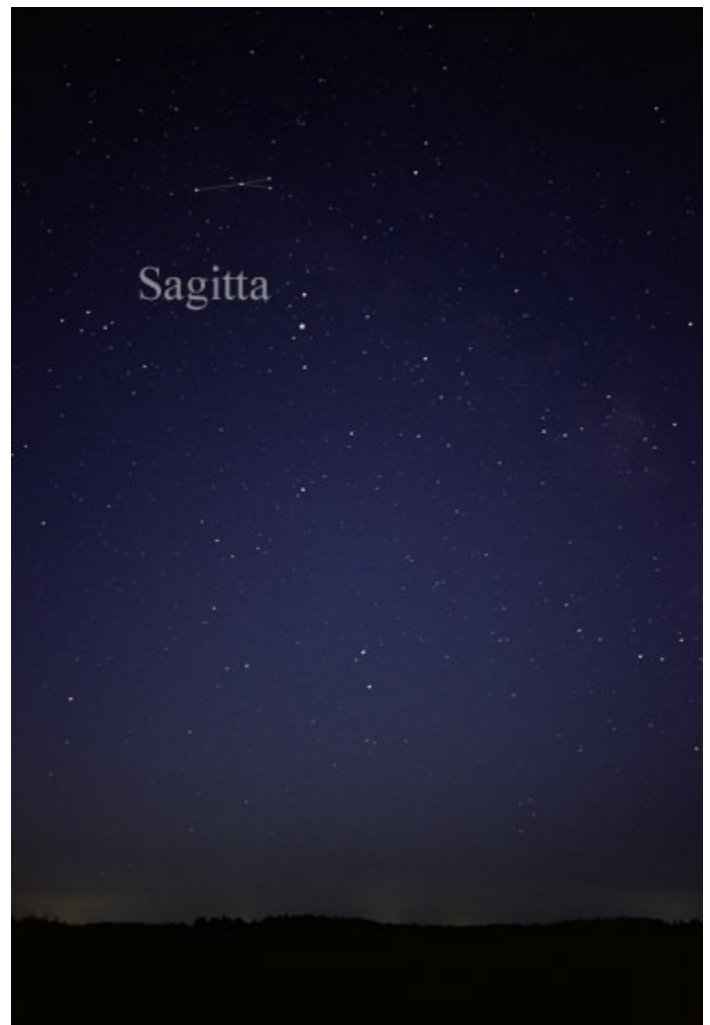
**Open Clusters:** 1

**Planetary Nebulae:** 3

**Dark Nebulae:** 0

**Bright Nebulae:** 0

**SNREM:** 0



*Till Credner - Own  
work: AlltheSky.com  
3.0*



## 1st Annual Nebraska Star Party Is Huge Success!

by Dave Scherping

**T**he 1st Annual Nebraska Star Party turned out to be a huge success. We attracted 73 attendees from Lincoln, Omaha, Chadron, & Amarillo. Thanks to the star party's designated "Clear Skies Coordinator", Jason Stahl, attendees enjoyed 2-1/2 out of 3 nights of fantastic observing with the Milky Way straight overhead. He got off to a slow start though.... Thursday night was cloudy until midnight. Friday and Saturday nights were crystal clear.

On Friday, about one-third of the attendees went canoeing and tubing down the Niabrara River. Friday evening featured the star party barbecue . On Saturday evening, we gave away a substantial number of door prizes and several awards. Bill Canady of Amarillo, who failed to show up, was awarded the "1,000,000 B.C." award, including a tee-shirt showing the cave man at Morrill Hall using the Canady Star Pointer. Alan Scruggs, also from Amarillo, received the "Gaseous Nebula Award" for his notorious reactions to the food at the Prude Ranch. Tom Miller received by far the most awards, including the "Big Dob Award" for largest telescope, the "Al Nagler Award" for most eyepieces, the "Largest Telescope Without Optics Award" for his innovative 30" mirrorless telescope, and the "Obsessed telescope Buyer Award". His wife, Jennifer, received the "Wife Of The Man With The Most Toys Award".

Saturday night ended with a spectacular fireball, which cast shadows on the ground as the last of the die-hard observers finished packing up their equipment and were raising a toast to next year's NSP.

There are still a few tee-shirts that were ordered and were not picked up. Please make arrangements to pick them up at the July meeting or contact me asap. We sold all of the extra tee-shirts. Several people have requested additional tee-shirts. If there are a minimum of 24 additional shirts requested, we will place an-

other order. Cost is \$8.50 per shirt. Contact Jason Stahl at the July meeting or call me at 477-2596.

At the July meeting, we will discuss hosting the 2nd annual NSP next year. We will be seeking several volunteers to help coordinate registrations, reservations, programs, tee-shirts, publicity, and door prizes, etc.



### LAST MONTH....

At the June meeting, there was an excellent demonstration of Dance Of The Planets by David Knisley and a humorous video tour of Car-Henge by Ron Veys. Both presentations were great and well appreciated.

### THIS MONTH....

At the July meeting, we will see a video tape of the Nebraska Star Party, by Earl Moser.

# Welcome!

David Nolte  
1640 So. 38th St.  
Lincoln, NE 68506

## CLUB MEMBERSHIP INFO

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, please contact a club officer. Scopes can be checked out at a regular club meeting and kept for one month. Checkout can be extended for another month if there are no other requests for the telescope, but you must notify a club officer in advance.*

100mm Orion refractor: David Pennington  
10 inch Meade Dobsonian: Lee Taylor  
13 inch Truss Dobsonian: Available

## CLUB APPAREL



Order club apparel from [cafepress.com](http://cafepress.com):



Shop through Amazon Smile to automatically donate to PAC:



## CLUB OFFICERS

|                               |   |
|-------------------------------|---|
| President                     | Jim Kvasnicka<br>(402) 423-7390<br><a href="mailto:jim.kvasnicka@yahoo.com">jim.kvasnicka@yahoo.com</a> |
| Vice President                | Brett Boller  |
| 2nd VP<br>(Program Chair)     | Open  |
| Secretary                     | Lee Thomas<br><a href="mailto:lthomas@allophone.com">lthomas@allophone.com</a>                          |
| Treasurer                     | John Reinert<br><a href="mailto:jr6@aol.com">jr6@aol.com</a>  |
| Club Observing Chair          | Jim Kvasnicka<br><a href="mailto:jim.kvasnicka@yahoo.com">jim.kvasnicka@yahoo.com</a>                   |
| Outreach Coordinator          | Mike Kearns<br><a href="mailto:mkearns@neb.rr.com">mkearns@neb.rr.com</a>                               |
| Website and Newsletter Editor | Mark Dahmke<br><a href="mailto:mark@dahmke.com">mark@dahmke.com</a>                                     |

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.