



The Prairie Astronomer

August, 2010

Volume 51, Issue #8

The Official Newsletter of the Prairie Astronomy Club

August PAC Program:

Survey results and NSP Recap.

August 31, 7:30pm

In This Issue:

NSP Report,
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The 17th Annual Nebraska Star Party–Dave Knisely

As with every summer, I look forward to the wonderful experience of viewing the night sky under some of the darkest locations in North America at the Nebraska Star Party. Each year brings new sights and new people to the high sandhills of north-central Nebraska just above the south shores of Merritt Reservoir, about 29 miles southwest of the small resort community of Valentine. The lake is about 11 miles long with 22 miles of white-sand beach shoreline, allowing visitors to engage in boating, fishing, swimming, and nature observations. At over 3,000 ft elevation and no cities of significant size within 90 miles of the site, the observing fields near Merritt's Snake Campground offer

wide-open spaces with little in the way of light pollution.

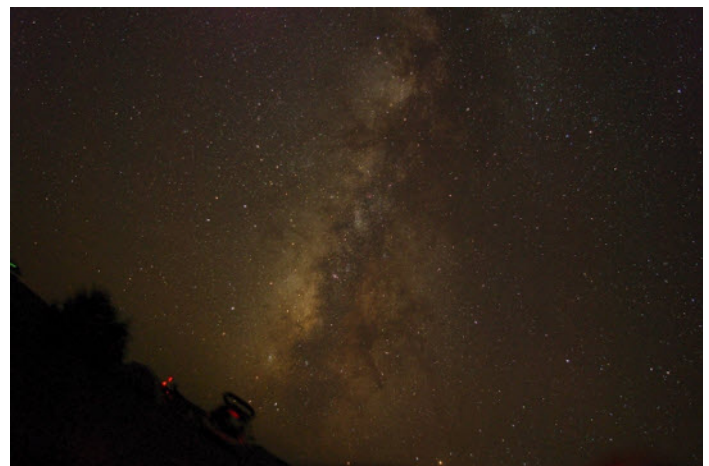
This year's event actually started with the “early bird” day of Saturday, August 7th. It was clear that night, but the seeing wasn't extremely stable. Still, some of the big Dobsonians made their appearance that night, covering a multitude of interesting targets. Sunday was the official start of NSP-17. After a six hour drive from my hot and humid home, I arrived at my cabin at the Merritt Resort on the lake and settled in. Skies were nicely clear and the low humidity made the 90+ degree temperature seem very tolerable. Registration was held about eight miles away in the central tent

[Continued on page 8](#)



Dave Knisely with his scope at dusk.

Photos by Brian Sivill.



Club Business

July 27th, 2010 PAC Meeting

Announcements:

Dan Delzell called the meeting to order.

The next PAC star parties will be on Aug 6th and the 13th.

There will be no lunar party in August.

The next PAC meeting will be Tuesday Aug 31th, 7:30 PM at Hyde.

The Nebraska Star Party is August 8th through 13th, 2010.

Outreach upcoming events

Spring Creek/Prairie Twilight – Sept 18th.

Homestead Halloween – October 30th.

Hyde Saturday nights.

Observing Report

Stare parties

July 2nd - 0 attendees very windy.

July 9th – 8 attendees and 7 telescopes.

July 16th – 6 attendees.

Evening planets in August include Mercury, Venus, Mars, and Saturn

Night Planets in August include Jupiter, Uranus, and Neptune.

Brett Boller

Secretary

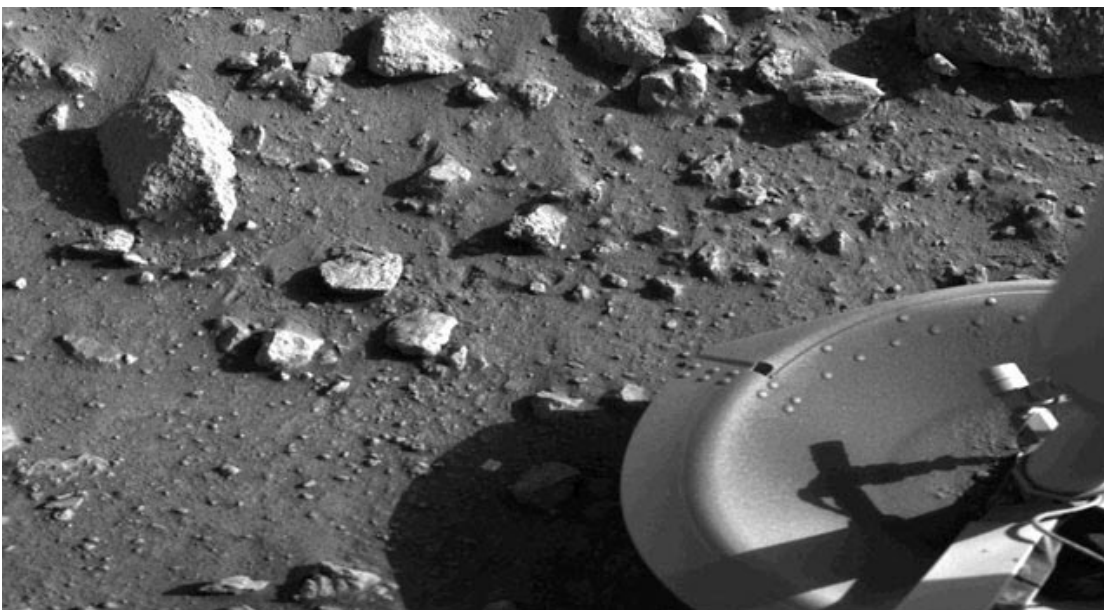
Prairie Astronomy Club

History-Making Mars Mission Launched 35 Years Ago

Thrust from a Titan 3/Centaur rocket launched NASA's Viking 1 spacecraft on a 505-million-mile journey to Mars on Aug. 20, 1975. Viking 2 followed three weeks later.

Each mission included both an orbiter and a lander, and all four components accomplished successes. On July 20,

1976, the Viking 1 lander returned the first photograph taken on the surface of Mars. That lander in a region called Chryse Planitia operated until Nov. 13, 1982. The Viking 2 lander operated in the Utopia Planitia region from Sept. 3, 1976 to April 11, 1980. The orbiters sent home images of the entire planet at resolutions of 300 meters or less per pixel.



This is the first photograph ever taken on the surface of the planet Mars. It was obtained by Viking 1 just minutes after the spacecraft landed successfully.

Club Events

Newsletter submission deadline, September 18, 2010

PAC Club Meeting

Tuesday, August 31, 2010 7:30pm @ Hyde Obsv.
Program: Survey Results and NSP Recap.

Spring Creek/Prairie Twilight – Sept 18th.

PAC Club Meeting

Tuesday, September 28, 2010 7:30pm @ Hyde Obsv.

The September Meeting program is The Antikythera Mechanism, the First Astronomical Computer. The speaker is Steve Ingracia.

PAC Club Meeting

Tuesday, October 26, 2010 7:30pm @ Hyde Obsv.
Program: How to Buy a Telescope

Homestead Halloween – October 30th.

2010 PAC Star Party Dates

September	3 rd & 10 th
October	1 st & 8 th
November	Oct 29 th & 5 th
December	3 rd & 10 th

2010 PAC Lunar Party Dates

September 17th, October 15th, November 12th

Volunteer Activities

Spring Creek Prairie Twilight on the Tallgrass – September 18
Homestead National Monument Halloween on the Prairie – Sat. before Halloween
Hyde Observatory on Saturday nights

Additional volunteer events will occur when they are scheduled.

ON THE NET

PAC:

www.prairieastronomyclub.org

PAC E-Mail:

info@prairieastronomyclub.org

NSP:

www.nebraskastarparty.org

NSP E-Mail:

info@nebraskastarparty.org

OAS

www.OmahaAstro.com

Hyde Observatory

www.hydeobservatory.info

Panhandle Astronomy Club

Panhandleastronomyclub.com

PAC-LIST: You may subscribe to the PAC listserv by sending an e-mail message to: imailsrv@prairieastronomyclub.org. In the body of the message, write "Subscribe PAC-List your-email-address@your-domain.com"

For example:

Subscribe pac-list me@myISP.com

To post messages to the list, send to the address

pac-list@prairieastronomyclub.org

PAC can also be found on Twitter and Facebook.

Buy club apparel through the club website. Shirts, hats, mugs, mouse pads and more.



September Observing: What to View--Jim Kvasnicka

This is a partial list of objects visible for the upcoming month. M55, M75

Planets

Venus: Very low in the WSW, reaches magnitude -4.8 late in the month.

Saturn: Below Venus, by the middle of September it is too close to the Sun to see.

Mars: A little higher than Venus at magnitude 1.5, difficult to see with the naked eye.

Neptune: In Capricornus, look for a 2.3" blue disk.

Jupiter and Uranus: South of the Great Square of Pegasus. They spend the month less than $1\frac{1}{2}^\circ$ apart and are the closest on September 18th at 0.8° . Jupiter shines at -2.9 and its disk is 49" wide.

Mercury: Look for it in the eastern horizon a half hour before sunrise.

September Messier List

M13: The Great Hercules Cluster. Class V GC in Hercules.

M14: Class VIII GC in Ophiuchus.

M22: Class VII GC in Sagittarius.

M28: Class IV GC in Sagittarius, close to M22.

M54/M69/M70: Class III, III, and IV GCs along the bottom of Sagittarius.

M92: Class IV GC in Hercules often over looked because of M13.

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

Next Month: M11, M16, M17, M18, M24, M25, M26,

NGC and Other Deep Sky Objects

NGC 6826: The Blinking Planetary in Cygnus.

NGC 6905: The Blue Flash Nebula. Planetary nebula in Delphinus.

NGC 6934: Globular cluster in Delphinus.

NGC 6960/6992/6995: The Veil Nebula in Cygnus.

Use a wide FOV eyepiece with an OII filter.

Double Star Club List

Otto Struve 525: Yellow and blue stars in Lyra.

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 primary with a blue secondary.

36 Ophiuchi: Equal pair of yellow-orange stars.

Omicron Ophiuchi: Yellow primary with a light yellow secondary.

70 Ophiuchi: Yellow and orange pair.

Challenge Object

NGC 7293: The Helix Nebula in Aquarius. Its diameter is half of the full moon but it has extremely low surface brightness. Use low power and a nebula filter.

From the Newsletter Archives, August, 1969 – Mark Dahmke

A partial eclipse of the sun on September 11 was viewed by the public at Gateway. Our club had the honor of putting on this show for a large number of interested spectators. Three of the scopes were reflectors and used the projection method for viewing the eclipse. The other two scopes were Questars, and they used their own sun filters and direct viewing. Ten club members were on

hand to help in giving the public a safe view of the sun. Thanks to our public relations chairman this event was well covered by the radio, television, and newspapers.

Earl Moser

Focus On Constellations - Jim Kvasnicka

Aquila

Aquila the Eagle is probably one of the oldest constellations in the sky. The Greeks inherited it from the cultures of Mesopotamia, the Babylonians, and the Sumerians. Aquila is on the celestial equator and cut through by the Milky Way. Altair the brightest star in the constellation is 16.5 light years distant, making it one of the nearest stars to our Solar System. Altair makes up the Summer Triangle along with Deneb and Vega. The name Altair is from the Arabic for "The Eagle". Though Aquila is on the Milky Way it is poor in open clusters. Art of the reason for this is the obscuring clouds of the Great Rift which block the light of distant open clusters. Aquila is rich in planetary nebula and a good place to look for dark dust clouds. Aquila is best seen in the month of September.

Mythology and History

It is said in the old Greek myths that during the ten-year war between the followers of Zeus and the giant Titans that a magnificent eagle known as Aquila was ever by the side of Zeus waiting to carry his thunderbolts that Zeus hurled down to kill the giant Titans. It was for his loyalty that the eagle was given a place among the stars as the constellation Aquila.

Objects Magnitude 12.0 and Brighter

Galaxies: NGC6814

Open Clusters: NGC6709, NGC6755, NGC6738, NGC6756

Globular Clusters: NGC6760, NGC6749, Pal 11

Planetary Nebula: NGC6803, NGC6790, NGC6852, NGC6781, NGC6751, NGC6741,

PK52.2-2, IC4846

Bright Nebulae:

SNREM:

Dark Nebulae: B142-3, B133, B134, B135-6, B139, B137-8, B335, LDN582, LDN617,

LDN673, LDN684

Named Stars: Altair (Alpha), Alshain (Beta), Tarazed (Gamma)

Number of Objects in Various Observing Clubs

Messier Club: 0 objects

Double Star Club: 2 objects

Herschel 400 Club: 3 objects

Globular Cluster Club: 3 objects

Open Cluster Club: 4 objects

Planetary Nebula Club: 11 objects

Urban Club: 1 object

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.

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 **Jason Noelle**. If you keep a scope for more than a week, please check in with Jason 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.



Focus on Outreach–Dave Churilla

In July Jim Kvasnicka and Brett Boller went to the Prairie Life Learning Center for an Outreach Event for a few campers there. I believe there were 7 kids and an adult and the skies weren't the most cooperative but they were able to show some objects and planets and for the 2nd year the class enjoyed the views and the information about constellations that Jim & Brett gave them. Thanks to Brett and Jim for going to that event.

There is a huge need for volunteers to help at Hyde. So that's going to be my focus for this month.

I'm sure most of you suffered through my talk at the MSRAL Convention so are aware that kids are an enjoyable part of Outreach for me. At Hyde you get the best of both worlds; adults who know nothing about science and kids who are usually better educated than us adults...or at least that's the way it seems sometime. Lately I've noticed a lot of young adults with dates at Hyde and it's very rewarding to talk them about astronomy and give them a view, sometimes their first, through a telescope. Kids are usually elated but I find it very rewarding when an elder patron or a young adult is blown away by seeing the moon, Saturn or the Ring Nebula in one of Hyde's Scopes. When we let them view these wonders of our universe we are giving them a first hand glimpse of stuff they see on TV...and although it's nothing like those images (usually Hubble's) it's REAL and people really get excited about that IF you explain what it is they are looking at...and we do at Hyde. Now I know I've been through this before. But it's worth repeating because as each of us learns to appreciate the hobby and science of astronomy the next reward is the evolution of sharing. Try it...it's addictive!
☺

Adding more volunteers to help on the Deck at Hyde a Saturday each month (that's all, if that often) would go a long way to help out in other areas as well. Please give some consideration to volunteering. For PAC it's by far the biggest Outreach activity and is a lot of fun (yeah, it's a commitment and yeah it's a little bit of work...but wait until you see that little boy's or girl's face light up when they see Jupiter!). Steve Lloyd is the Volunteer Coordinator and he can help you get started, but many of the experienced volunteers will help as you learn what to do. It really isn't as daunting as it appears and it's fun learning how to point the scopes and where to point them. As you go along you learn information about objects that are being viewed and that helps not only the

public that comes through, but yourself as well.

Once you commit to helping, Steve generally meets with you to go over the deck procedures and show how things are done. To help you get to know those things you then work on the deck with scheduled volunteers who show what they are doing during an Open Saturday night. You can be as much hands on those nights (or as little) as you feel comfortable with. I think Steve usually lets this go on for about 4 - 6 months as you have time to come to Hyde to learn. Even when it's time to be scheduled you'll always be with an experienced operator who can help you...and the Supervisors are ALWAYS experienced and can answer any of your questions.

So you see, as I said it's not as daunting as it seems. If you have the desire to help the club and help Hyde then contact Steve at loyds45@aol.com to sign up to volunteer.

Here's what's coming up for the rest of the year. Remember that if for some reason you can't make it to an event DON'T just assume we've got plenty of people and not show up. Please let someone know so the event organizer can be kept informed and if necessary find a replacement.

Hyde Observatory: Saturday nights. If you are not already volunteering, please consider doing so. It's not hard and can be a lot of fun. Don't worry, we won't throw you to the wolves...Steve does a good job of training you and there's a time period where you are teamed up with another experienced volunteer while you learn. But it's really not that difficult – Joey and I began volunteering before we could even find the Moon...well, Joey could but I couldn't! If you can't yet find objects there is always an experienced volunteer there to help out – and in time that helps you learn how. So contact Steve Lloyd today and start volunteering.

Spring Creek's Twilight on the Tallgrass: Saturday, September 18th from 5 pm to 8 pm. We like to have at least 6 telescopes to set up for this event – so far committed are Dave Churilla, Jim Kvasnicka, John Lammers, Lee Thomas and Bob Kacvinsky – maybe's are Erik Hubl, Brett Boller, Dan Delzell (on Deck) & Jason Noelle. If you guys can let me know if you'll be coming it would be great. The scopes set up on the Prairie as 1 of about 3 stations for hikers to stop at during a nighttime trail walk. One or 2 of us (so far usually me) set up by the

building for those who can't walk the trail. Wachiska Audubon Society confirmed things and are very excited that we are willing to do this once again this year. The event usually attracts between 300 and 400 people and is at Spring Creek Prairie west of Denton with viewing from about 8 pm to 10 pm. I usually ask volunteers to get there by 6:45 pm as at 7 pm they'll take us out onto the prairie to set up. That usually takes about 30 – 40 minutes (driving and set up) and we're ready just before start time of 8 pm. 1st Quarter Moon (well 3 days after) rises at 5:10 pm to view. I'll be emailing everyone about 10 days before with directions and instructions. Oh, and in case you're wondering, the Huskers' game against Washington is at 2:30 that afternoon...and away.

Homestead National Monument's Howling

Halloween: Saturday, October 23rd 6 pm to 10 pm. This is the Federal Park's Open house and is geared toward kids and their parents and is usually held the Saturday before Halloween. So far I have 3 volunteers who have committed: Dan Delzell, Bob Kacvinsky and John Lammers – so we can use a couple of more people. While I haven't heard back from the email I sent yet (Dave K is checking for me) the site shows that the event will be held on Saturday October 23rd (so that lets me out as that's my anniversary – I KNOW my wife has

devised a dozen ways to kill me if I try to do something astronomical on THAT night). This event attracts over 400 people but in small groups of 15 to 20 and is west of Beatrice with viewing generally from 7 pm – 10 pm and the full moon rises at 6:38 pm. We'll usually gather about 6 pm for this one so that we can fill out their volunteer forms then be led to the viewing area and set up. The Huskers play at OSU that day (Time TBA)

What if you're contacted for Outreach? If you are contacted for an Outreach Activity and want to handle it yourself, that's great – I don't need (nor want) to be involved with every event that we do. I do, however, ask that you let me know about it and afterward send me information about the event so I can track and log it. I need:

- Event Name
- Event Location
- Organization
- Contact Name and Information (phone, email, etc)
- Volunteers (and who organized)
- Event Date & Time – include set up time – so we can track volunteer hours
- What you did (i.e. Set up scopes, did presentation or a talk, etc.)



The 17th Annual Nebraska Star Party–Dave Knisely

Continued from page 1.

pavilion on the observing fields in the late afternoon, and was followed by a nice catered chicken barbeque. At that point, we had one vendor already set up: Dragan Niken's "Dark Skies Apparel," who was selling T-shirts and a rather unique hooded observing vest which I purchased later in the week. I ran into many old friends from previous NSPs, which is one of the reasons I enjoy going there.

As the sky darkened, most went to their scopes and started a long night of observing. Bill Patton of California pulled out his SQM meter and got a 22.06 reading, so it was clear that the night would be a memorable one. Indeed, I managed to hit about magnitude 7.6 with my unaided eye and averted vision, and at one point succeeded in seeing M81 without optical aid. I didn't set up, but divided my time between my own little group of Prairie Astronomy Club "regulars," and those down on Dob Row. Our group was up on the top of one of the southern grassy knolls with about five scopes ranging in size from 9.25 inches to 12 inches. We were playing with some new eyepieces before 'getting serious' and going after some new and difficult targets. After a while, I went down to Dob Row to see what was happening there. I was greeted by a long line of large telescopes, including at least four real giants in the 18 to 25 inch aperture range. Dragan Niken had extended an invitation to observe with him, so I took him up on his offer. He has equipped his 25 inch f/5 Obsession with full Go-To, so we were able to observe just about anything we wanted to. After gazing into the heart of M51 and looking at a few rather obscure but interesting targets, we pointed the scope at some of the brighter planetary nebulae. The Cat's Eye (NGC 6543) was a beautiful emerald-colored oval with some fine interior detail, while the Saturn Nebula really showed its stuff. Indeed, the interior of the nebula showed some of the twisted filamentary detail that is only seen well in some of the HST images. I would have stayed out until dawn, but I had to have enough sleep to be ready for my first day helping teach the NSP Beginner's Field School on Monday.

Monday dawned partly cloudy, but the forecast was not promising for that evening. Still, fellow field school teacher John Johnson and I got the Field School up and running at the "Water's Edge" restaurant in the afternoon. We covered the basics of star party etiquette,

books, atlases, and finding things, along with binocular basics. John had to dash into Valentine to help with the NASA Aerospace Education Workshop, so after we finished, I got a short afternoon nap in my cabin before heading back over to the observing fields for the evening pork sandwich barbeque. The food was great and so was the company. Despite the thickening clouds, several of us walked down to the northern part of the Snake Campground to Brian Sivill's campsite to sit around next to the water and enjoy the cool evening. The thunderstorms finally started to get going after 11 p.m., so I went back to the cabin to get a good night's sleep despite the loud booms of thunder.

Tuesday dawned bright and beautifully clear with pleasant temperatures and low humidity. I took a morning 2-mile walk over the Merritt Dam to the "Powderhorn" portion of the lake and back, enjoying the view over the lake under crystal clear blue skies. After a quick lunch, I had to get all my observing equipment into the restaurant for Day-2 of the Beginner's Field School, where we were covering telescopes and equipment selection. It was a pretty full house with a long session and lots of questions including many from teachers attending the NASA workshop. After tearing down, I grabbed something cold to drink and headed back to the observing fields for the free Hamburger dinner. The dinner was great (as were all the meals at NSP), and after the door prizes were drawn, I headed up to the southern ridge where part of our small Prairie Astronomy Club contingent was setting up. I had brought my NexStar 9.25 SCT but was still smarting from being unable to bring my new 14 inch Orion Dob which had mirror problems. I set up my 9.25 and fortunately, our group had some larger aperture available, so that helped a bit. Our NSP "star lady" Lorri May from South Dakota started her constellation talk for the Beginner's Field School Attendees as it got dark, and that is always fun to hear.

Once set up, I fulfilled a promise made to an NSP Beginner's Field School attendee to help with his little NexStar 8 down in the "lower bowl" on the fields. After an hour of fighting a fussy telescope and some hungry mosquitoes, I went back up the hill to spend what turned out to be a great night with my friends. The Milky Way was stunning to the unaided eye, as the Pipe Nebula combined with nearby dark nebulae to form a gigantic

“horse” feature in the glow. Indeed, the night was so good that the Gegenschein was quite easy to see over in Capricorn, along with some of the Zodiacal band. Lee Thomas was also fighting equipment problems with his CPC 9.25, but he also had an Ethos eyepiece, which, of course, ended up in my scope from time to time. Dan Delzell had his 12 inch Lightbridge, Brett Boller had his CPC-11, Bob Kacvinski had his 10 inch Dob and Jim Kvasnicka had his 12 inch Dob. I spent some time on some planetaries in Sagittarius before joining the group on their “quest for the Palomar Globulars.” After that, we just went after some of the old favorites, checking on Jupiter from time to time as it got higher above the eastern horizon. The seeing went from good to outstanding, and we used over 400x on Jupiter in both 12 inch scopes with outstanding results. We could easily see detail inside the red spot, as well as numerous white ovals and swirls in the belts. I clued the group into some of my favorite “challenge” objects, like the Perseus Galaxy cluster or the Pegasus 1 galaxy group. Indeed, when we went back to good old NGC 253, it seemed absolutely stunning when compared to some of the other more obscure objects we had been going after. In the east, the glow of the morning Zodiacal light was mounting higher and higher, so with dawn not far away, around 4:30 am we finally called it quits and put our “toys” away for the night.

I didn't get much sleep, because Wednesday morning, I had to be up early to go into Valentine to start the daytime activities at the Valentine High School. Veteran NSP teacher Jim Hopkins of Illinois started things off around 10:15 am with Day-3 of the Field School, covering what to observe and how to do it. At about the same time, the NASA Aerospace Education Workshop was getting going in another room. As noon approached, the vendors got up and “selling” in the school lobby while the pizza buffet lunch was being served. I took a quick trip downtown to a local 'burger hop' I like to frequent (and yes, they do still serve you in your car with the little tray that sits on your window). I got back in time to see a solar flare blow in a little PST solar telescope that was running on the south side of the high school. I wanted to hear Dr. Martin Gaskell of the University of Texas give his presentation, “Galaxies and Supermassive Black Holes: How Those Faint Fuzzies Got There,” so I headed into the main auditorium to listen to his wonderful talk. It was followed by a couple of presentations by Jack Dunn of Mueller Planetarium, and more door prizes. However, I was so tired that I just had to leave and get some sleep in my motel room in Valentine. I did go out to eat with a few friends from our club at Jordan's Restaurant, but I was still pretty

wiped out, so I did not go out to the observing fields that evening. It was another good clear evening from the sounds of it, so while I did miss out, at least I was well-rested for the Thursday canoe and tubing trip down the Niobrara river.

I always look forward to my tubing trip each Thursday morning of NSP, as I have missed only one in the 16 years I have been attending. It is a pleasant three hours in wonderful water just floating along and admiring the scenery in the Niobrara canyon with some fellow amateur astronomers. The weather was pretty much perfect, and the trip was one of the more restful I have had. This year, I left my water cannon at home, so the action in the tubing groups was pretty subdued. Still, it was nice to see Smith Falls once again and spend some time on and in the cool waters of the river. Once done, I headed back out to my cabin at the Merritt Resort and on to the observing fields for another nice catered meal. Afterwards, I just headed back down to Dob Row to spend the evening observing with Dragan Niken and his 25 inch Obsession. We covered a lot of things, but it got a little partly cloudy, so we just sat in our chairs and observed the Perseids while talking until about 3 a.m. At that point, a little black cloud formed right over the observing fields and let out a bit bolt of lightning, so we called it quits and scattered to our vehicles to get some more rest. Still, despite the lightning and a little rain, I could still see some stars and meteors as I left the site, so this marks the first time I have been able to watch the Perseids in the middle of a thunderstorm!

Friday was the last day of NSP. It was a free day with nothing official going on except the public star party that evening, so I didn't get up until almost noon. I got invited to lunch with the Lainofs from Omaha, so we spent a pleasant hour behind the cabins cooking hot dogs and eating other odds and ends. In the evening, we had the last of our catered meals and then set our scopes up for the NSP Public Night, where people from all over Cherry County came to view the wonders of the evening sky. Perhaps 100 people showed up to look through our scopes, while Lorri May once again gave her star talk to an appreciative audience. After the public left, we viewed for a while under the wonderful dark Nebraska Skies, but it came to an end all too soon, as I had a long drive the next day. Still, NSP-17 has got to rank as one of the very best Nebraska Star Parties I have ever attended.

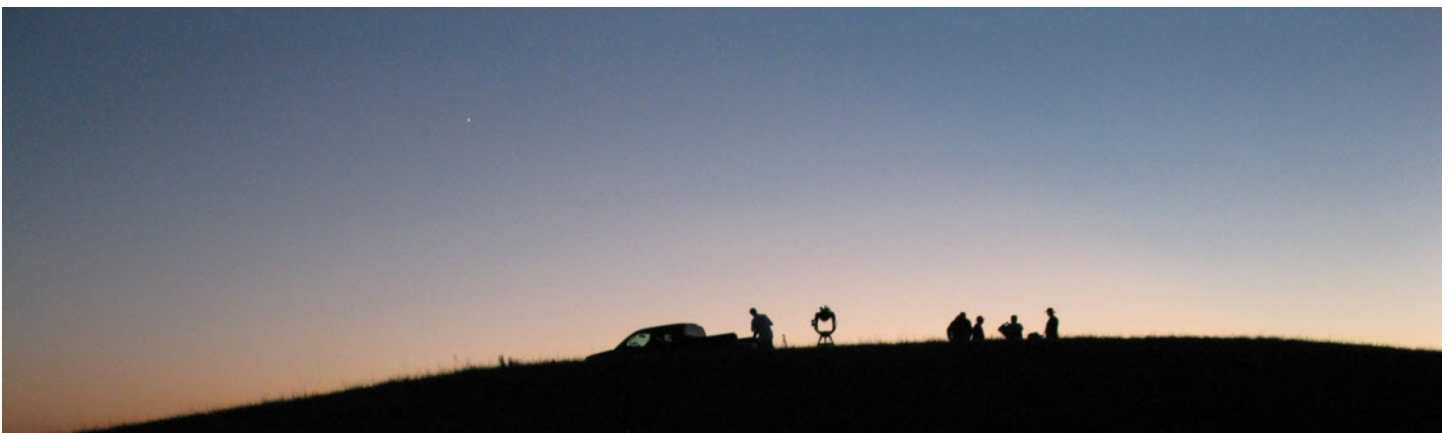


NSP Photos

Dragan Nikin's 25" Obsession with a youth at eyepiece.
Photos by Brian Sivill.



Below: "PAC Hill" by Liz Klimek

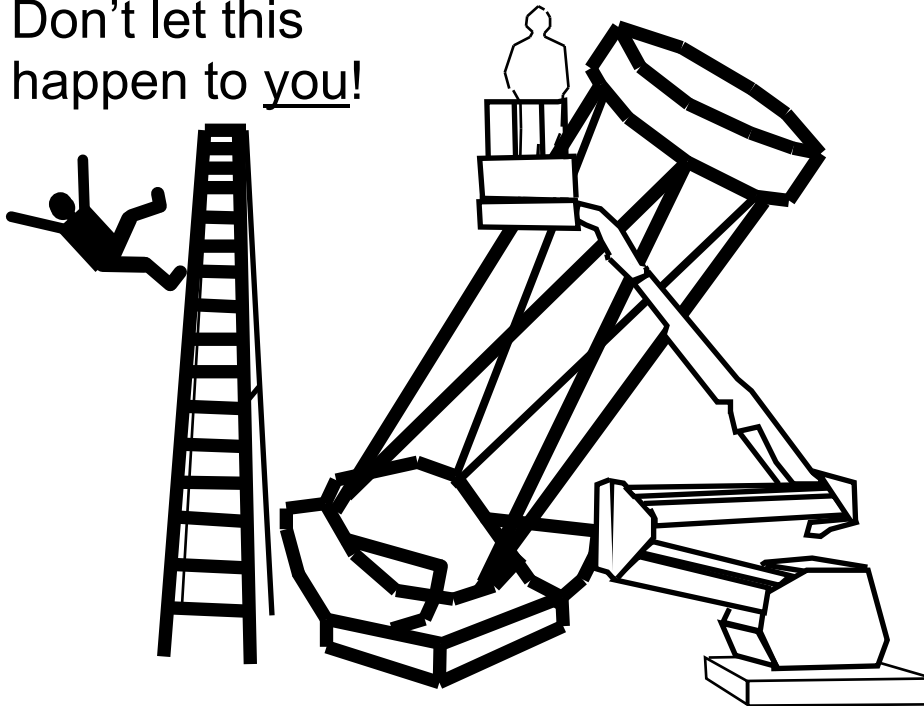




Dob row at dusk. Photo by Brian Sivill.

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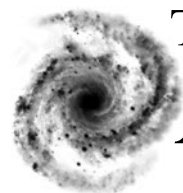
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Mark Dahmke 8/2010



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Amateur Astronomy --
A Hobby as Big as the Universe

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FIRST CLASS MAIL

{MM:TITLE} {MM:FIRSTNAME}
{MM:MIDDLENAME} {MM:LASTNAME}
{MM:CAREOF}
{MM:ADDRESS1}
{MM:CITY} {MM:STATE}, {MM:ZIP}

{MM:RENEWALDATE}

Next PAC Meeting
TUESDAY
August 31, 2010
7:30 PM
Hyde Observatory