

SPECTRUM

Northern Cross Science Foundation Newsletter

August 2014

Looking Up

August 6, Wednesday

Public Viewing

8:00 p.m.

Bayshore Towne Center

August 7, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Meeting

August 9, Saturday

Lake Moon Festival

4:00 -10:00 p.m.

Concordia College, Mequon

August 16, Saturday

Public Viewing

5:00 p.m.

Horicon Marsh Visitor Center

August 21, Thursday

Board Meeting

7:30 p.m.

Home of Jeff Setzer

August 29, Friday

Public Viewing

7:00 p.m.

Harrington Beach State Park

August 30, Saturday

Public Viewing

8:00 p.m. - 11:00

Henry S. Reuss

Ice Age Center, Dundee

September 3, Wednesday

Public Viewing

7:00 p.m.

Bayshore Town Center

Small Scope Star Party...by Kevin Bert

With clouds off and on during the day there was some doubt if the evening skies would allow any observing. Of course the main focus was to enjoy exploring and talking about the variety of scopes with the company of telescope enthusiasts. Pulling up to the parking lot area next to the observatory there were a number of cars already there. It turns out that a naturalist was giving a talk to a group in the picnic shelter on birds of prey. It had little effect on setting up and turned out to be a positive with many of them returning to view through the scopes.

At 7:00 pm the hazy sun was low in the western sky as scopes were being set up in the usual position of the parking lot. It was one of the better showings of scopes with a variety of classic examples no longer in production. Even with low membership attendance I counted fourteen scopes in all. The icing on the cake was the clearing sky as evening progressed. Jeff Setzer was the first to spot Saturn and one by one each scope turned to the ringed planet. I was particularly interested in an old Criterion RV-6 I acquired. This would be the first chance I have had to view through it since I did some needed maintenance. At 200x it did not disappoint. A number of the other scopes performed equally well under the demanding high power conditions. A nearby 5-inch SCT and long focus refractor were noteworthy.



Rick Dusenbury at the Small Scope Star Party.
Photo by Kevin Bert

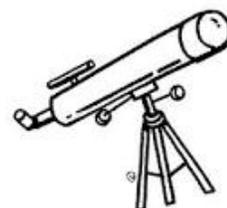
I think Rick Dusenbury put on some serious mileage getting views between all the scopes over the entire evening. Based on his comments he had a very satisfying experience.

The Milky Way really started to pop out when the final glow disappeared from the western sky. We gained another fraction of a magnitude as the light inside the picnic shelter was turned off by the park ranger. An immediate cheer erupted from the field to show our appreciation. Joyce Jentges put aside her 10-inch Dob to comply with the small scope standards. She brought her classic 6-inch Newtonian and was enjoying the sights. About a dozen campers were there to view and talk about their favorite sights. As you can guess Saturn was at the top of their list.

In addition to hunting for some familiar deep sky objects like The Wild Duck Cluster, Hercules Cluster, Andromeda Galaxy, Dumbbell, M81 & 82, Ring, and ET cluster, I enjoyed some wide field vistas sweeping along the galactic plane with the rich field scopes. The Astroscan is hard to beat for sweeping with its sweet movement and coupled with a modern wide field eyepiece. The Bushnell ball scope was a close second. As a disappointment I again was reminded of how frustrating it can be for a beginner to start by purchasing an inexpensive goto telescope. It was apparent using the 3-inch Bushnell North Star 75mm Newtonian. Too much time is spent tinkering and the under-size scopes view adds to the frustration. A simple Dobsonian is still my recommendation.

The heavier than usual dew was the only other negative point. On the plus side mild temperatures allowed you to be comfortable wearing shorts all evening and mosquitoes were not bothersome. At one point I had to beat back the urge to open the observatory and take advantage of the great night with the 20-inch light bucket. (Aperture Fever). But the urge passed as I considered the quality sights offered through small scopes throughout the evening.

As a final note the evening conditions were exceptional and overall it was a big success. It was nice to see our newest member Richard Kaehler in attendance. I believe Dick had a memorable evening as well and I hope that you can create your own memories by joining in on the 2015 SSSP fun.



July Meeting Minutes

By Secretary Kevin Bert

The July Business meeting of the Northern Cross Science Foundation was held at Unitarian Church North. President Jeff Setzer opened the meeting at 8:45pm and welcomed 20 members and guests. He asked for standard reports.

Treasurer Gene DuPree stated checkbook balance of \$15,065.51 and Observatory balance of \$1,055.06.

Secretary Kevin Bert reports that the newest member to join our club is Jennifer Ryan. The Astronomical League's national convention, (ALCON), will take place July 10-12 in San Antonio.

Jeff Setzer reports that the Imaging committee has forwarded a resolution to purchase a Celestron CGE pro Mount. It would easily handle the most often used imaging telescope or telescopes. The mount is the largest that Celestron offers and is currently available at Highpoint Scientific at a sale price. The Board of Directors will take up the proposal at their next meeting.

Jeff covered upcoming events for July. This Saturday at Harrington Beach is a public viewing night. Wednesday the 9th is sidewalk astronomy at Bayshore. July 12th is a night for viewing at Pike Lake State Park with the following Saturday a viewing night at Horicon Marsh Visitor Center. A member's event called The Small Scope Star Party will take place at Harrington Beach on the 26th. August 1 & 2 are back at Harrington Beach along with doubling up efforts at Pike Lake on the 2nd.

Under new business the American Science and Surplus is hosting a viewing night at their store on July 11th. The 19th gives you a chance to see high-powered rockets launch from the Bong Recreation Area.

With no further business Jeff closed the meeting at 9:15 pm.

Imaging Mount Purchase

By Rick Kazmierski

Plans for an imaging platform at the Plunkett observatory moved forward this month following a recommendation and subsequent Board approval for an imaging mount. The mount unanimously chosen was the Celestron Pro CGE. This massive mount weighs in at 154lbs and is rated with a load capacity of 90 lbs. Therefore, it could accommodate a 12 inch SCT and a smaller imaging refractor with camera and guider as proposed by the imaging committee.

The mount comes with a heavy duty stainless steel tripod adjustable from 38 - 55". Initially, the plan is to place the unit at the south end of the observatory using this tripod. It is anticipated that the tripod would need to be fully extended to allow lower southern objects to be visible over the south wall of the observatory. The wider footprint made by the fully extended tripod is a concern and yet to be addressed. Committee discussion continues on installation of a pier to permanently carry the equipment.

Kevin Bert took delivery of the mount on July 23rd. The mount arrived in perfect condition but was missing a 22 lbs. declina-

tion weight. Kevin spoke to the vendor, who shipped the missing piece the next week at no cost. An approved Celestron 12 volt AC adapter was paid for and also came with the weight.

The next step is for the Imaging Committee to consider an imaging wide field refracting telescope in the 4-5" range. Members can start to give their recommendations by email to the committee members so we can start to narrow down the possibilities.

Nolan Zadra spoke to High Point Scientific about our order and mentioned NCSF as a non profit and invited us to come to them for a quote on other equipment we might purchase to see if they can further discount subsequent purchases. He did note that the discount we got on the mount was as low as possible there in light of savings over competitors. Nolan will schedule another night meeting some time in August in person or by phone. Meanwhile, he is asking committee members to research (or update their old notes) as to their desired reflector as our primary imaging telescope.

Interested members wanting to join and contribute to the Imaging committee should contact Nolan Zadra at 262-375-1290.



Things to See In the August 2014 Night Sky

By Don Miles

Mercury: Is now working its way around the back side of the Sun, so will not be viewable this month.

Saturn & Mars: Both closely follow the setting Sun, and Saturn (0.6 mag) will soon be too close to be viewed. Saturn is the first to set, doing so by about (1am/10:30pm). It's still amazing to see and you probably wouldn't regret taking one last peek for a while. Mars (0.5 mag) sets not long after Saturn by about (11:45/10:30pm). Maybe as a special farewell for Saturn for a while, the two make a special pairing the evening of the 25th. They'll be about 3-1/2 degrees from each other with Mars (orange-ish) sliding below Saturn (yellow-white-ish). Saturn will progressively move closer to the Sun until it gets lost in the glare. By late November, Saturn will then become a morning object. Mars will remain at roughly the same distance behind the Sun thru the end of the year.

Pluto, Neptune, & Uranus: Pluto is already up at sunset at (14.1 mag), and still in the constellation Sagittarius. It will be highest in the sky around (11/9pm), and will set around (3:30/1:30am). Neptune rises about (9:30pm/sunset) in the constellation Aquarius and is at (7.8 mag). It will be transit (be directly overhead) by about (3:30/1am). Uranus rises about (11:30/9pm), and is at (5.8 mag) in the constellation Pisces.

Venus & Jupiter: Brilliant Venus is the first of the pair to rise, and does by about (4/5:15am). It's still at (-3.9 mag), and will slowly lose its race with the Sun. It slowly creep towards the following Sun until mid-September when it gets too close to be comfortable viewed. It will take until mid-December to finish its trek behind the Sun and then be seen as an evening object again. Jupiter rises right after Venus (5:30/4am), and is now at a respectable (-1.8 mag). The two make a rare spectacle early in the morning of the 18th as they will pass about 1/4 degree from each other. Ve-

nus will be above with Jupiter below...and the pair will be drifting in front of the Beehive cluster in the constellation Cancer.

Moon:

August 3rd: First Quarter
August 10th: Full Moon
August 17th: Last Quarter
August 25th: New Moon

Special Events:

There is only one meteor shower worth mentioning this month, and those are the Perseids. They peak on the night of the 12th with peak rates of about 110/hr. Unfortunately, the recent full moon will wash out the more faint ones as usual, but with the higher numbers and shielding yourself from the direct moonlight, you may be treated to a wonderful show. Take mosquito repellent and enjoy the warm night.

August General Meeting

Astronomy 101 by Kevin Bert

The Astronomy 101 class for August is entitled "The Star Clock" Here is a simple hands on project that allows you to tell the time in a unique way.

Constellation of the Month: Ursa Minor

Here Ye!, Here Ye! Bring your Children!

August and September General Meetings: Mickey Kazmierski will be giving a "Science themed talk\video and activity for children who come along with their parents to the General Meetings. To be held after the 101, same time as the adults main Program

August: "GPS and the Quest for Pizza"

We will also make an edible satellite!

September : Telescope ..the Time Machine

We will create a Glow in the Dark Galaxy!

Main Program: by Jeff Setzer

"How Telescopes Changed Our View of the Universe"

The telescope is not just an extension of our senses, but an instrument of thought as well. The telescope has changed our view of the Universe and our view of ourselves. Hear what Jeff has to say about this marvelous instrument!

"A Science Show"

Kim, from American Science and Surplus will be presenting us "a Science Show" for our October Main Program.

Mark your Calendars! This will be interesting and fun, bring the Kids along, fun for ALL Ages!



July Public Events

Plunkett Observatory, July 5th

Public Viewing By Charlotte Dupree

Opening the observatory at 8:00 p.m. we started by looking at the Moon before it got too dark. Gene knew, from the night before, that Mars was going to be close by. He shifted the scope a little bit so both objects were in the same field. By the time it got dark enough to see the deep sky objects most of the visitors were gone. Some of the objects seen were the Ring Nebula and Saturn. Thanks to Ed, Rick D., Al, Joyce, Kevin and Jeff for their participation!

Pike Lake State Forest, July 12

Public Viewing Night by Charlotte Dupree

It was a cloudy day/night, with a threat of rain, so we had canceled stargazing. Lisa had asked us to join the night hike and to bring along the laser pointer. By the time we got to the tower it had started to drizzle, so there was no "sky" to see. Thanks to Scott for joining us and showing us his camping trailer!

Horicon Marsh, July 15

Library Night by Charlotte Dupree

We had one large sucker hole, so we were able to do some quick Solar Viewing. There were a few big prominences to see.

Horicon Marsh, July 19

Public Viewing Night by Charlotte Dupree

We started with solar viewing, in and out of the clouds. The visitors for "movie night" were disappointed because we were not able to look at any night sky objects. Thanks to Jeff for bringing his "newest" scope...hence the cloudy sky.

Bayshore Town Center, July 9

Public Viewing Night by Jeff Setzer

The Bayshore event was very busy, with over 100 visitors. Thanks to Rick Dusenbury, Bob Radke and Don Miles for bringing scopes. Our next event is Wednesday, August 6 at 8:00pm and we'd would love to see you there.

The Invisible Shield of our Sun

By Dr. Ethan Siegel



Whether you look at the planets within our solar system, the stars within our galaxy or the galaxies spread throughout the universe, it's striking how empty outer space truly is. Even though the largest concentrations of mass are separated by huge distances, interstellar space isn't empty: it's filled with dilute amounts of gas, dust, radiation and ionized plasma. Although we've long been able to detect these components remotely, it's only since 2012 that a manmade spacecraft -- Voyager 1 -- successfully entered and gave our first direct measurements of the interstellar medium (ISM).

What we found was an amazing confirmation of the idea that our Sun creates a humongous "shield" around our solar system, the heliosphere, where the outward flux of the solar wind crashes against the ISM. Over 100 AU in radius, the heliosphere prevents the ionized plasma from the ISM from nearing the planets, asteroids and Kuiper belt objects contained within it. How? In addition to various wavelengths of light, *Continued on Pg 4*

RELATED INFO

New Members

NCSF welcome new members:

Richard & Suzanne Kaehler

Public Viewing Leaders

August 1

Harrington Beach State Park
Leaders Needed

August 2

Harrington Beach State Park
Leaders Needed

August 2

Pike Lake State Forest
Leaders - Gene & Charlotte DuPree

August 6

Bayshore Towne Center
Leader - Jeff Setzer Jeff Setzer

August 9

Concordia College
Jeff Setzer

August 16

Horicon Marsh Visitors Center
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August 29

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Lesders Needed

August 30

Ice Age Center
Gene & Charlotte DuPree

September 3

Bayshore Town Center
Jeff Setzer

Star Parties 2014

Northwoods Starfest

August 22-24th

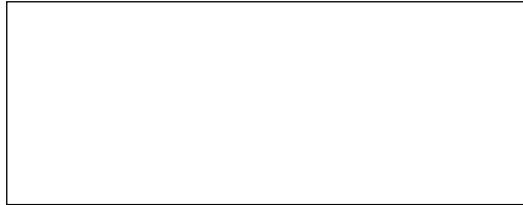
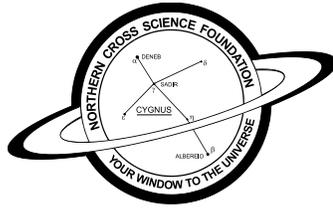
Fall Creek, WI

Jim & Gwen Plunkett OBSERVATORY



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Continued from Pg 3 (Invisible Shield of the Sun)

the Sun also a tremendous source of fast-moving, charged particles (mostly protons) that move between 300 and 800 km/s, or nearly 0.3% the speed of light. To achieve these speeds, these particles originate from the Sun's superheated corona, with temperatures in excess of 1,000,000 Kelvin!

When Voyager 1 finally left the heliosphere, it found a 40-fold increase in the density of ionized plasma particles. In addition, traveling beyond the heliopause showed a tremendous rise in the flux of intermediate-to-high energy cosmic ray protons, proving that our Sun shields our solar system quite effectively. Finally, it showed that the outer edges of the heliosheath consist of two zones, where the solar wind slows and then stagnates, and disappears altogether when you pass beyond the heliopause.

Unprotected passage through interstellar space would be life-threatening, as young stars, nebulae, and other intense energy sources pass perilously close to our solar system on ten-to-hundred-million-year timescales. Yet those objects pose no major danger to terrestrial life, as our Sun's invisible shield protects us from all but the rarer, highest energy cosmic particles. Even if we pass through a region like the Orion Nebula, our heliosphere keeps the vast majority of those dangerous ionized particles from impacting us, shielding even the solar system's outer worlds quite effectively. NASA spacecraft like the Voyagers, IBEX and SOHO continue to teach us more about our great cosmic shield and the ISM's irregularities. We're not helpless as we hurtle through it; the heliosphere gives us all the protection we need!

Image credit: Hubble Heritage Team (AURA / STScI), C. R. O'Dell (Vanderbilt), and NASA, of the star LL Orionis and its heliosphere interacting with interstellar gas & plasma near the edge of the Orion Nebula (M42).

Courtesy of the
NASA Space Place



SPECTRUM

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The NCSF supports the International Dark sky association.



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This Issue, along with back Issues of SPECTRUM, can be found on the NCSF Web Site.

<http://www.ncsf.info>

Monthly Meeting Information

7:00 p.m. Astronomy 101
7:30 Main Program
Unitarian Church North
13800 N. Port Wash. Rd.
Mequon, WI 53097