

SPECTRUM

Northern Cross Science Foundation Newsletter

October, 2017

Looking Up

October 5, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to Follow

October 14, Saturday

Stargazing at the Marsh

5:00 p.m. - 8:00p.m.

Horicon Marsh

October 19 Thursday

Board Meeting

7:30 p.m.

House of Jeff Setzer

October 21, Saturday

Haunted Hike

6:00 p.m. - 10:00p.m.

Harrington Beach

October 27, Friday

Public Viewing

7:00 -11:00 p.m.

Harrington Beach

October 28, Saturday

Public Viewing

7:00 -11:00 p.m.

Harrington Beach

October 28, Saturday

Public Viewing

7:00 -11:00 p.m.

Pike Lake Campground

November 2, Thursday

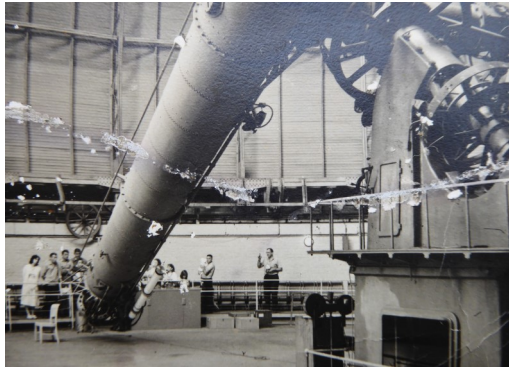
General Meeting

7:00 p.m. - Astronomy 101

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Business Meeting to Follow

Yerkes Observatory – New Insights *by Rick Dusenbury*



Yerkes "Great" Refractor 1963

For us in Wisconsin, it is common knowledge that our state is home to the largest refracting telescope in the world; the great 40-inch refractor at Yerkes Observatory in Williams Bay on the north shore of Geneva Lake. Guess again! There is (or was) one larger; the Great Paris Exhibition Telescope in 1900 with a 49.2-inch objective housed in a 200-foot fixed horizontal tube with a siderostat (movable mirror) to direct light into the objective. Although huge, this telescope was very impractical and ended up being scrapped shortly after the Paris Exhibition. After all, who could build an observatory to house a 200-foot telescope? The Yerkes 40-inch telescope is 62 feet long and is housed in a 90-foot dome. Imagine a dome three times this size! Finally, there is a feature article (the first I've ever seen) on the Paris Exhibition telescope in

the current July issue of *Sky & Telescope* which tells the complete story of this monster instrument with some great photos and diagrams.

But let's get back to "our" great refractor at Yerkes. The included photo was originally taken by a friend during a school field trip back around 1963. Despite the small size (3"x4") of this damaged black & white photo, it clearly shows part of the mounting, tube, and the Saturday morning tour group. These Saturday tours have been available for years. However, now that this telescope is no longer used for research (after all, it is about 120 years old!), there are now public observing events scheduled. A session with the 40-inch refractor is \$100 per person and \$37.50 for the 24-inch reflector program. These programs have been very popular and tend to sell out quickly.

The 40-inch refractor has now been modified for eyepiece use with a selection of Explore Scientific eyepieces for public use. A 40 mm eyepiece with the 19357 mm focal length of the telescope will give 484 power! And that is the lowest practical power. That means a 10 mm eyepiece would yield 1938 power! But seeing conditions would most likely prohibit such a high power.

It is great to see this new use for Yerkes Observatory as a educational and public outreach tool instead of being demolished to make room for commercial development as almost was the case a few years ago. We can be proud of this historical instrument and the contributions it has made to science and astronomy.

Binocular Star Party *by Kevin Bert*



After a disappointing 2016 star party attempt, this year's optimism was high for the scheduled September 16th Binocular event. The weather came through with clear skies as NCSF members set up equipment. Some binoculars are simply hand held while others needed a tripod to steady the view. A few clouds hung over the western horizon but remained low most of the evening. A fireworks display near the southern horizon provided some entertaining views for Dan and Laura Bert while waiting for darkening skies to reveal the upcoming celestial fireworks.

The North Star started my night of observing being a fine binocular target. The wide field re-

veals the Engagement Ring of stars that includes Polaris as the gem stone. As the Milky Way became more and more prominent the Wild Duck cluster drew the attention of several observers. The Hercules globular clusters M13 and M92 gave nice, nearby comparisons. M15 and M2 are another duo near each other that are impressive performers. The Dumbbell always amazes me how large and bright it is in binoculars as it drew my attention. Aris Penikis enjoyed the view too.

The cry of the Coathanger echoed out from the direction of the Duprees and reminded me to turn my attention toward this wide field asterism near Cygnus. It seldom comes out of the closet to be seen in most telescopes due to its large angular size. Here again, binoculars gives a pleasing view. At some point during the evening (*Cont. Pg. 2*)

September Meeting Minutes

By Kevin Bert

The September Business meeting of the Northern Cross Science Foundation was held at the GSC Technology Center in Germantown. President Jeff Setzer called the meeting to order at 8:50pm and reminded members that there are only two more months of public events for 2017. He welcomed 29 members and guests and then asked for standard reports.

Treasurer Gene Dupree reports \$11,262.14. in the checking account. The Observatory account balance was at \$762.23.

Secretary Kevin Bert welcomed newest members Robert Hoff, Carl Hively and Rosalie Lieb.

The Astronomical League 2017 National Convention was held in Casper Wyoming. All were treated to clear skies for the total solar eclipse. The League gave away 10 library telescopes to promote the program.

A new observing program called "Beyond Polaris" just got underway too.

The Observatory Director Dan Bert reports that the turnout for viewing the eclipse at Harrington Beach drew over 100 people. The threshold of the south east door is loose and will need repair. September 29 and 30 are in need of observatory leaders. Operators should contact him if interested.

Jeff Setzer recalled some of the press for the second Library Telescope that went to the Port Washington Neiderkorn Library.

Under upcoming events for September Pike Lake has the annual Community Campfire & telescope viewing on the 9th. September 16th is the Binocular Star Party at Harrington Beach. The 29th and 30th are public viewing nights at Harrington Beach and an additional night at Pike Lake also on the 30th.

With no further business Jeff closed the meeting at 9:10 pm.

(Con't. from Pg. 1)

you just have to just take a leisurely stroll along the plane of our magnificent galaxy, the Milky Way. This brilliant cloud of stars fills the field of view and is truly amazing. As you make your way north you eventually run across what may be the crown jewels of the Milky Way and one of the best binocular views. The Double Cluster. This naked eye glow reveals dozens of stars in small binoculars condensed into two obvious clusters. All this lies within a pleasing rich background of stars. With 100mm binoculars the view appears 3-D with hundreds of stars now visible.

I was advised by Rick Dusenbery to look for a star cluster in Cassiopeia called Caroline's Rose. I barely recall seeing it in the past and eagerly wheeled my 11x80 binoculars toward the location to reacquaint myself. After a little sweeping the area, a large 1/2 degree cloud of glitter appeared. It was the rose and I spent time to take in this wonderful view. I will be sure to explore it again this winter in a telescope as it increases in elevation. Messier should have had this one on his list.

Joyce Jentges and Jeff Setzer were spending a bit of the evening tracking down objects in the Astronomical League's Binocular Deep Sky list. The app Sky Safari on tablets guided their way. In addition to some snacks I had to end the evening directing the bino's to deep space, to what many say is the best object in binoculars. The Andromeda Galaxy. Another naked eye target, the stellar nucleus is centered in the glow of the halo that fills most of the field in 80mm bino's. The two companion galaxies M32 & M110 are both distinguishable. Your mind reels as you take in the view and realize the immense distance of 2.5 million light years between you and the glow of un-resolvable stars that is almost the size of our own Milky Way. While in the area, one last look near the tip of Triangulum. The large faint face-on Pinwheel Galaxy M33. An object best seen in Binoculars that stands out slightly from the background sky, even more so when moving the binocular field of view slightly side to side.

As clouds advanced higher and higher from the west it was time to pack things up. It was an enjoyable evening for all members and I want to thank them for attending to make a remarkable night of viewing.

USE OF CLUB REFRACTOR/MOUNT IN THE OBSERVATORY *by Nolan Zadra*

If you wish to use the club's Explore Scientific 127 refractor on the Celestron CGE Pro mount for viewing or astrophotography, please make sure that you have had training on use of the refractor/mount and FOLLOW CLOSELY the printed instructions in the top drawer of the locked filing cabinet BEFORE AND AFTER EACH USE. Alignment issues have happened twice in the last several months and can eliminate a scheduled night of astrophotography or materially affect the next use for a public or private viewing night. For example, the mount can easily be put out of alignment by improper shutdown, rotating the tube, an inadvertent acceptance of a command in the hand controller and other seemingly small factors.

A couple points that we have discovered with recent use and not mentioned on the current instruction sheet:

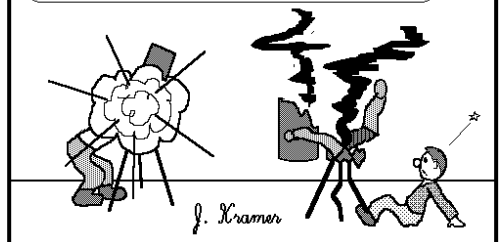
- If there is a need to change the position of the diagonal for more convenient viewing please ROTATE ONLY the finder itself by loosening the three silver thumb-screws. Do NOT loosen the gold nobs further up the shaft. Rotating the tube itself will cause alignment error with the astrophotography guide scope (the finder with the guiding camera attached) and it might cause the guide scope or attached 72mm scope to hit the mount when slewing.
- NEVER turn off the main power until the scope is in HIBERNATE position and ONLY after the hand controller indicates that power can be turned off. Even some-

thing as simple as turning off the power before that point, can ruin the alignment for the next user. Again, the 2 sided instruction sheet provides detailed instructions as to how to properly turn off the system.

- Update the clock on the hand controller at initiation BEFORE EACH USE (it should be updated to at least about 1 or 2 second accuracy). This mount recently lost 1 1/2 minutes of time accuracy over just a few months.
- If alignment is lost, the hand controller gives the option of just a 2 star alignment. That is not sufficient. Recommend 6 star alignment with calibration stars and use of an illuminated reticle. This can take over an hour or 2 to accomplish but is necessary to achieve alignment if alignment is lost by the prior user. Thus, it is important to follow the printed instructions closely so alignment is not lost from one user to the next user. If the dew heater is on, please make sure the power switch on the mount as well as on the power strip are both turned off BUT ONLY AFTER THE HAND CONTROLLER STATES THE POWER CAN BE TURNED OFF.

We will provide additional updates as we continue to learn more about use of the mount.

Manufacturer's Disclaimer:
Caution - If used for star-hopping, computer-controlled telescopes will self-destruct.



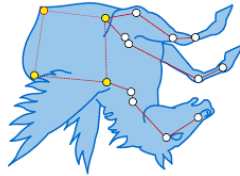
October General Meeting

Astronomy 101 - Kevin Bert

Taking Notes

The Astronomical League has many observing programs to offer members of participating astronomy clubs. All programs require the observer to take notes to receive credit. The Universe Sampler program contains a chapter on notes that we will explore.

Constellation of the month is;
Pegasus



Main Program - Jeff Setzer

An Old Dog Employs New Tricks With Sky Safari

Is paperless astronomy truly possible for dyed-in-the-wool star-hoppers? Sky Safari from Simulation Curriculum is the premier amateur astronomer's tool for mobile devices, and the current version brings planning and functionality to make it a highly-effective observing tool. In this discussion, Jeff will demonstrate the basics of this incredible app, with an emphasis on its use as an "infinite star atlas" and observing log. Questions will be encouraged as we explore the marriage of new technology with old-school observational astronomy.

September Public Viewing Events

Ice Age Center—September 2

By Charlotte DuPree

Jeff gave a talk in the auditorium before start gazing was schedule to start. The Clear Sky Chart showed clearing for about an hour around 9:00. Unfortunately, the clouds did not disperse. Thanks to Joyce and AI for their support.

Pike Lake - September 9

By DuPrees

Friends of Pike Lake community campfire had a clear sky for this night. The event started before dark, so we did some solar viewing. We looked at Jupiter and Saturn until the milky way objects appeared. We had a lot of visitors. Thanks to AI, Jeff, Rick D., Georgine and Rick P.

Binocular Party - September 16

By Kevin Bert

(See page 1)

Ottawa Lake - September 23

By Charlotte DuPree

Gene found out the that Universe in the Park was going to be at Ottawa Lake this night. We arrived at 7:00 with a perfect sky, and found the schedule start time was 9:00 to 10:00. The grad students do a presentation fist, then star gaze. They were happy to see us for assistance. The scope they had was a C11 with all of the bells and whistles, so they only know how to turn it on. One of guys told me the only constellation he knew was the Big Dipper.

Harrington Beach - September 29

By Charlotte DuPree

We had partly cloudy sky to start and a couple dozen visitors. The clouds joined us around 8:30 so we started to close after 9. Two cars pulled in, one from Beaver Dam, and we looked up and saw a totally clear sky, so we opened up and they had private viewing. Rick W. helped with the observatory. Jeff and Rich S. were in the parking lot.

Harrington Beach - September 30

By Joyce Jentges

Saturday night brought a nice crowd of approximately 100 people. Jeff Setzer lead the event and was assisted by Kevin Bert, Mike Schatner and Joyce Jentges. Joyce used the Dynascope from the observatory to let people look at the Moon and take their own photo of it using their smart phone. People seemed to really appreciate the view of the Moon and the craters. In the observatory, people got to see Saturn for the first time and also got to see some deep sky objects such as the Ring Nebula. Kevin used the imaging scope in the observatory to let guests see a close up of an area in the moon called the Bay of Rainbows. Later he turned the scope toward the Double Cluster and the Pleiades. Rich Sauve had his scope set up in the parking lot to show the crowd other objects. Despite a very bright Moon and a chilly night, it was a great night spent doing astronomy outreach.

Pike Lake - September 30

By Charlotte DuPree

Another day with a clear sk. A very bright moon, 2 days after first quarter so we were limited to what we could see. All of the visitors had left so were going to pack-up, and three cars pulled in. Most of them stayed long enough to see the ISS pass over, and Gene showed them what objects he could find. Thanks to AI for joining us.

RELATED INFO

NCSF Welcomes New Member

Carl Hives

Leaders for Public Viewing

October 14

Horicon Marsh
Duprees

October21

Harrington Beach
Leaders Needed

October 27

Harrington Beach
Leaders Needed

October 28

Harrington Beach
Leaders Needed

October 28

Pike Lake
DuPrees

Newsletter Articles

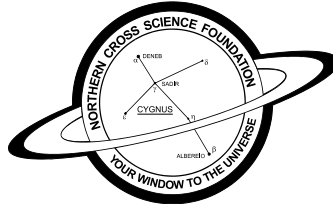
We are all drawn to astronomy for one or more reasons, which can vary greatly from member to member. One of the gifts of Club membership is being able to share our passion with other members.

The NCSF monthly Newsletter is an excellent forum for doing just that. Consider sharing your personal interests or experiences with the Club in a newsletter article. Pictures are always great to highlight the material.

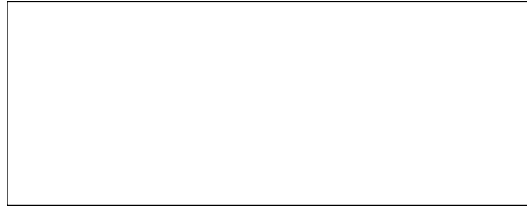
Articles can be sent to me at RickKaz@charter.net.

Thanks

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**Jim & Gwen Plunkett
OBSERVATORY**



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Backyard Observatory Maintenance *by Rick Kaz*



Many of you know that my wife and I built a backyard observatory in 2003. It has stood the test of time, but this past year I began to see small puddles of water in the building after heavy rain. As with most roof leaks, I really couldn't tell where it was coming from, so I decided to caulk all dome seams. Unfortunately, the shape of the dome prevented me from being able to chalk all the way to the top from the outside. I therefore had to finish the job from the inside, off a ladder extended through the dome slit. (See image)

As the project proceeded, I began to notice other issues needing attention. For one, I noticed that over the years condensation on the inside aluminum panels of the dome had been dripping down on the dome base ring, which was beginning to rot in spots. This was not a happy realization! Discussions at dinner with other Club members offered several solutions. Jeff Setzer suggested leaving a single incandescent light bulb burning to fight of the dew. Gene DuPree thought a fan left running might help or the possible addition of another vent higher in the Observatory. My neighbor is a carpenter by trade and recommended insulation. Don't know what the final solution will look like, but for now I painted the dome base ring with a rubber sealant that should protect from additional damage.

I can't complain though; the convenience of an observatory is worth the maintenance required.



SPECTRUM

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NCSF is a member of the North-Central Region of the Astronomical League.



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

Monthly Meeting Information

7:00 p.m. Astronomy 101 Mtg.
7:30 p.m. Main Program
Location at the -
GSC Technology Center
W189 N11161 Kleinmann Dr
Germantown, WI 53022

Spectrum Newsletter
5327 Cascade Drive
West Bend, WI 53095

Please send your Questions, Suggestions, Articles, and photos to:
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