

SPECTRUM

Northern Cross Science Foundation Newsletter

October 2015

Looking Up

September 30, Wednesday

Family Fun Night

6:00 p.m. - 8:00 p.m.

Lac Lawrann Conservancy

October 1, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Business Meeting

Observing to follow

October 3, Saturday

Binocular Party

7:00 p.m.

Harrington Beach

October 9, Friday

Observatory Training

7:00 p.m.

Harrington Beach

October 10, Saturday

Luminary Walk

7:00 p.m. - 9:00 p.m.

Lac Lawrann Conservancy

October 15, Thursday

Board Meeting

7:30 p.m.

Home of Jeff Setzer

October 16, Friday

Public Viewing Night

7:00 p.m. - 11:00 p.m.

Harrington Beach

October 17, Saturday

Public Viewing

4:00 p.m. - 10:00 p.m.

Horicon - NEW Viewing Site

(See Pg-3 for directions)

October 17, Saturday

Haunted Hike

7:00 p.m. - 11:00 p.m.

Harrington Beach

Headlands International Dark-Sky Park...by Rick Kazmierski



While traveling in Michigan on a Lake Superior Circle Tour, we found a real Astronomy gem. While shopping in Mackinaw City for an Astronomy book, the shop owner saw our interest and told us about a nearby Dark-Sky Park. Well, you can guess where our next stop was!

Located in Emmet County Michigan, Headlands International Dark Sky Park is one of only nine such parks in the world. What is a Dark Sky Park you might ask? "It is a park or other protected land possessing exceptional starry skies and natural nocturnal habitat where light pollution is mitigated and natural darkness is valuable as an important educational, cultural, scientific and natural resource." The designation is made by the International Dark-Sky Association in Tucson, AZ. (www.darksky.org)

Imager Report...by Ernie Mastroianni

The latest Northern Cross acquisition, a SBIG 8300 one-shot color astrophotography camera, got its first taste of ancient starlight in early September. Hooked up to the club's 5-inch refractor, club member Ernie Mastroianni aimed it at some venerable deep sky objects with the assistance of veteran imagers Chad Andrist, Wally Gersmehl, and Jaime Hanson.

The Hercules Cluster (M-13) was the first target, followed by the Veil Nebula, then the Triangulum Galaxy (M-33). The camera was



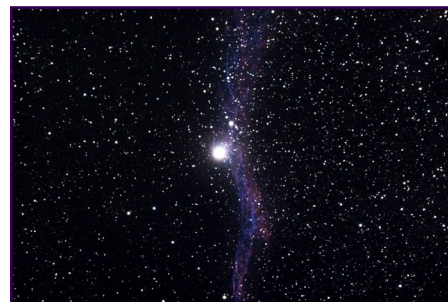
linked to the club's laptop, which is loaded with imaging software courtesy of Hanson, who also wrote an excellent primer on how to use all the software. That primer is included on the laptop. Among the programs available for use are Nebulosity 3, Deep Sky Stacker, and Adobe Photoshop. During a second night of imaging only a few days later, Mastroianni produced photos of the Fireworks Galaxy (NGC-6946) and the Andromeda Galaxy.

The learning curve for the camera, mount, tele

scope and software is a steep one. Besides having a good understanding of how to use and focus the astro-camera with precision, operators will need to know how the camera connects to Nebulosity, how it acquires images, and what to do with the raw files once they are downloaded to the computer hard drive. To accurately track the targets, knowing how the computer connects and runs a guide scope is also necessary. And unlike Mastroianni, the operator will have to remember to shoot multiple dark frames to cancel the digital noise inherent in all raw astrophotography files.

Mars Station

Shabanai, an Anishnaabek, represents the fierce and compassionate nature of warriors living close to the rhythms of Earth and it's people.



The Veil Nebula

These pictures were taken with short exposures. M-13 is a combination of

Continued on Pg 4

September Meeting Minutes

By Secretary Kevin Bert

The September Business meeting of the Northern Cross Science Foundation was held at Unitarian Church North. President Jeff Setzer opened the meeting at 8:50pm and welcomed 18 members and guests. He then asked for standard reports.

Treasurer Gene DuPree tells the membership that the regular accounts balance is \$9,342.96 and the observatory account balance remains at \$1,042.01.

Secretary Kevin Bert reports that there were no changes in the club roster. He had just received the league newsletter, *The Reflector*, and if any club members do not get it soon that they should contact him. It is a part of NCSF membership and each member's household should receive one.

Speaking for the Observatory Director, Kevin Bert says all was running well at the Observatory. A slight adjustment was

made in the clock drive clutch on the Panarusky telescope to hold position better. The second drawer in the locking cart was cleared of binoculars to store imaging equipment. The Astrovid camera, Imaging source camera and other related equipment and manuals now reside there. The new SBIG camera storage case was too big for that drawer and had to be stored in the lower compartment. The variety of binoculars will now be stored in the overhead cabinets when things get rearranged. A south wall swing out table is in the planning stage and will be installed soon.

Under new business, Jeff reports that the new club laptop was purchased for meeting use with windows 10. The old computer will be used at the Observatory for the imaging scope once the needed files and programs are removed.

There was a reminder that on the 27th there will be a lunar eclipse taking place that evening. Partial phases start after 8:00 pm with mid eclipse about 9:45.

Jeff Setzer covered upcoming events for September. This upcoming Saturday, the 5th, is an "Evening With Nature" night at the Ice Age Center near Dundee. An astronomy program will be followed by observing in the parking lot. September 12 is the Community Campfire event at Pike Lake State Park. Telescopes will be set up for evening viewing. The 18th and 19th are Public Viewing Nights at Harrington Beach State Park. Family Fun Night at Lac Lawrann Conservancy in West Bend will offer participants to look through telescopes at the evening skies on Wednesday, Sept. 30th.

Please remember that all of these events are made possible by club members setting time aside and using their equipment to help bring these activities to the public. We thank all members who have participated in the past and encourage other members to become involved too. Extra help is always needed. You do not have to be an expert in astronomy and there is a great deal of satisfaction in giving many people their first view of the heavens.

Things to See in the October 2015 Night Sky...By Don Miles

Saturn & Pluto: Saturn (0.6 mag) closely follows the setting Sun, and will set about (9:30/7:15pm). It continues to slip closer to the setting Sun thru the end of November as it works its way around the "back" side of the Sun. By mid-December, it will become a morning object, and join the other morning planets. Pluto is already high in the sky as the Sun is setting, and is still at (mag 14.1). It'll set around (midnight/10pm), and still a viewable object if you're up for a challenge to see the outcast.

Neptune & Uranus: Neptune is the first of the pair to rise, but both are already up at sunset. Neptune transits by about (11:45pm/9pm), and sets around (4:30/2:30am). It's at (7.8 mag) in the constellation Aquarius. Uranus transits around (1:45am/11:30pm), and is at (5.7 mag) in the constellation Pisces. It's at opposition the night of the 11th, so will be high in the sky all month.

Venus, Mars, Jupiter, & Mercury: All are morning objects and rise shortly before sunrise. Venus is the first to rise, and does by about 3:30am. It is still brilliant (-4.5 mag), and leads the rest of the pack until late in the month when Jupiter will lead. Mars is the next to rise, and will by (4/3:30am). It's getting brighter, but is only at (1.8 mag). As mentioned in previous months, its 'orangish' color will give it away long before you can make out any surface detail. Jupiter is the next to rise, and does by about (5/3:15am). It's now at (-1.8 mag), and is always an impressive sight. The planet party starts early in the month, but really gets rocking' the morning

of the 17th with Mars passing within a half of a degree above Jupiter. Things remain interesting as Venus passes below Jupiter by about one degree the morning of the 25th. If you can get up early to do a little early-morning viewing, you should be impressed, especially if you make a point to take a couple of minutes to make a quick sketch of the planets' positions, and note the date when each sketch was made. Compare them as the month passes, and you'll likely be impressed. Even if your sketches are nothing to brag about, by taking a little time to jot down their positions, you'll be forced to make a mental note about what you're seeing, and it'll probably solidify in your memory the event taking place. There aren't many planetary events involving an easily visible neighbor/outer planet grouping that change this fast. Next to rise is Mercury (-0.6 mag), and although it's not part of the planet party proper, it still leads the Sun, and is worth taking a peak at. Mercury has just finished its latest pass around the front side of the Sun, but won't be visually far enough away from it to get a safe view until after at least the first week. It will continue to widen the gap between them until the morning of the 16th when it will have reached its Greatest Western Elongation. Soon afterwards, Mercury will begin slipping back towards the following Sun on its way around the back side...continuing the cycle.

Moon:

October 4th: Last Quarter

October 12th: New Moon

October 20th: First Quarter

October 27th: Full Moon

Special Events/Objects:

There are a couple of meteor showers worth looking for this month. The first are the Draconids which peak the night of the 9th with very unpredictable rates of from 10-50/hr. These should be very slow meteors moving at leisurely 12.5 miles per second. The just past last quarter moon will rise about 4:30am, so if you observe anytime after it gets completely dark and before then, the Moon won't be an issue. Unlike many other showers, they will only be seen for a couple of days before and after the 9th, as the debris trail is very concentrated. The second showers are the Orinids. They peak the night of the 21st with pretty reliable rates of 20-40/hr. These are fast (over 41 miles per second) and leave faint, yellow streaks. As the name implies, they will generally appear to originate from Orion's "left arm" (southwest). The best equipment for meteor watching is your naked eye. You want the largest field of view you can get, and few things beat your own "factory equipment". Dress warm and secure a comfortable reclining chair as it gets pretty cool as you watch. The recent first quarter moon sets around 1:30am, so shouldn't be a problem for late night/early morning viewing (which is the preferred time anyway). Take a comfortable reclining chair and a blanket, and enjoy the free shows.

October General Meeting

101 Class...By Kevin Bert

"October Scary Skies"

Most amateur astronomers challenge themselves with the Messier Marathon. We take a look at a different list of astronomical subjects that are gaining in popularity that can be viewed in October and have a Halloween theme.

Constellation: Triangulum

Main Program -

Outside Observing

Bring your telescope, binoculars, or enjoy other member set-ups in the parking lot following the Business Meeting.



RELATED INFO

Leaders for Public Viewing

September 30

LacLawrann
Rick Kazmierski

October 10

LacLawrann
Rick Kazmierski

October 16

Harrington Beach
Leaders Needed

October 17

Harrington Beach
Leaders Needed

October 17

Horicon
Gene and Charlotte DuPree

(*The Horicon Marsh viewing site has changed to the old DNR office in Horicon.

The address is:

1210 Palmatory St.

Take Hwy 33 east

One block past Hwy 28, turn right on N. Palmatory St. continue North until come to the end.

September Public Events

Ice Age Center, September 5th

By Charlotte DuPree

Ice Age Center, annual stargazing night. We had warm weather for this night. The clouds kept rolling through, so we had to keep moving between objects to see. After the inside program presentation, from Jeff, the visitors came to the scopes. There was a smaller crowd this year, around 200. Thanks to Rick and Georgine, Rick D., Kevin, Jeff, Al, for their help.

Pike Lake, September 12th

By Charlotte DuPree

Pike Lake Community Camp Fire. This could not have been a more perfect night for stargazing! We had the usual entertainment intermission crowd stop by, about 50. Thanks to Al and Carol for their help.

Harrington Beach, September 18th

By Charlotte DuPree

Despite the completely cloudy sky, with off and on again rain, we had a good crowd of visitors, around 50. Only one family was from the camp ground. The rest had seen our public viewing schedule or have been to observatory before, and were hoping the observatory would be open. This is why it is important that we have a member present at all PVN. Not all people know the difference between a planetarium and an observatory.

Grafton Public Library wins a new Telescope!

As you have all heard, the Grafton Library won a telescope through efforts of Kevin Bert!

What you might not know,:

Jeff Setzer and Kevin Bert will be hosting a program on October 28th, 6:30 pm at the Grafton Public Library. Like our September main program, Jeff will have the PowerPoint and Kevin will go through the steps in setting up and operation of the new Starblast telescope being donated by NCSF. Then there will be a photo op.

USS Liberty Memorial Public Library

1620 11th Avenue
Grafton, WI 53024

Lunar eclipse, September 27th

Mickey and I drove out to Point Beach State Park to meet Family and watch the Lunar Eclipse. We set-up chairs, binoculars, and telescope on a sand dune overlooking the lake and patiently waited for the heavy cloud cover and lake fog to lift.

I've always said, "the only way to be sure you won't see a celestial event is *not to show up*".



The clouds and fog cleared around 9:00pm leaving beautiful skies for totality. Skies stayed clear until eclipse end and heavy clouds returned. What a night!

For Sale

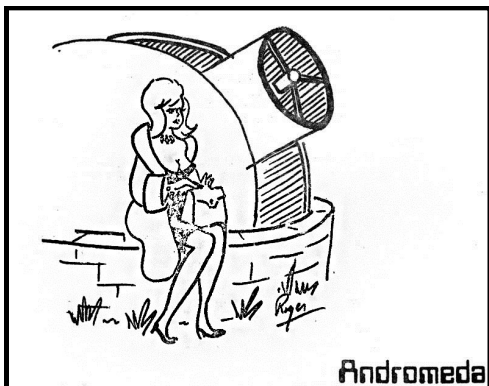
"4 inch Unitron telescope with equatorial mount in excellent condition, includes accessories. Definitely a collector's item.

Call Nick at 906 284-2315."

Jim & Gwen Plunkett OBSERVATORY

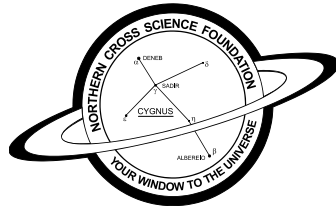


The chance of clouds at a viewing session is directly proportional to the size of the biggest telescope present!



Next time you offer to show a girl the Moon...
count me out!

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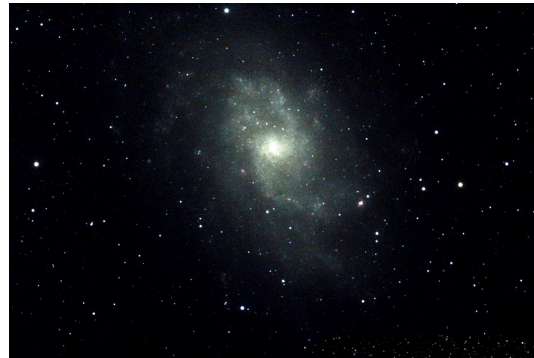
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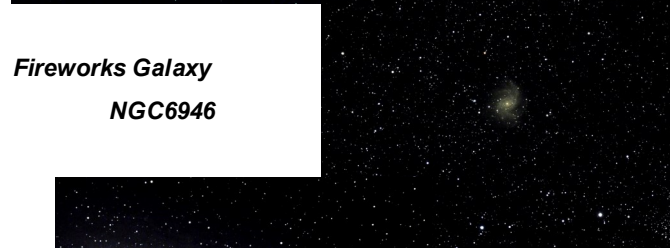
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four exposures (called sub frames, or subs) of 2 minutes each. The Veil was seven subs of 5 minutes. M-33 is eight subs of 5 minutes, as is the Fireworks galaxy. Andromeda is only four subs of 5 minutes.



**Triangulum
Galaxy M33**



**Fireworks Galaxy
NGC6946**



Andromeda Galaxy

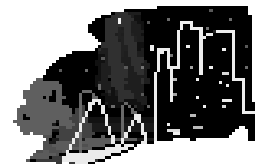
The photos have more digital noise than is acceptable and could use better processing. Perhaps more dark frames are needed to cancel the digital noise. Each image has only one dark frame to balance the active ones. But the potential seems great. This observer, with no prior SBIG camera experience, was able to produce a series of five images over four nights that were, at the very least, in focus, sufficiently exposed, and accurately guided. The next task will be to figure out how to keep all the power and data cords from getting tangled up, especially when the scope slews from target to target.

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