

SPECTRUM

Northern Cross Science Foundation Newsletter

October 2014

Looking Up

October 1, Wednesday

Public Viewing

7:00 p.m.

Bayshore Town Center

October 2, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Guest

October 4, Saturday

Public Viewing

7:00 p.m.

Pike Lake State Forest

October 11, Saturday

LaLawrann Conservancy

6:30 - 8:30 p.m.

October 16, Thursday

Board Meeting

7:30 p.m.

Home of Jeff Setzer

October 17, Friday

Public Viewing

7:00 p.m.

Harrington Beach State Park

October 18, Saturday

Haunted Hike

6:00—9:00 p.m.

Harrington Beach State Park

October 31, Friday

The Great Pumpkin Event

6:00 - 10:00 p.m.

Bayshore Town Center

The Great ScopeOut Astronomy Fair - Cincinnati Observatory...by Mickey

Blue skies, cool dry temperature, spiraling up narrow roads, passing huge old Victorian homes to the top of Mt. Lookout. Now at the top, greeted, by the site of the National Historic Landmark, The Cincinnati Observatory. Rick and I, along with dear and long-time friends, Steve and Jo Wagner attended this year's Cincinnati Observatory "Scope Out Event"!



To greet you right in front of the Observatory was a Red-Hot Tesla S Motor Car and yes, Rick and Steve had an opportunity to get in behind the wheel and peruse. This fully electric car boasts a 300 Mile range, but comes with a hefty price tag. Tesla is working on a similar car, but within the family price range. Also in the parking lot was a Helicopter provided by Stratus Helicopters, which was used later to do a golf ball drop. If your golf ball landed closest to the flag, out in the viewing field, you won the grand prize!

The Mars Society Exhibit was knowledgeable-staffed, members sharing stories of achievements, and possibilities. Their display was loaded with books, materials, had no idea so many books had been written about Mars. They offered everything from non-fiction, Fiction and Websites. Any club member interested, I will be happy to send out this information via e-mail (mickeyrose@charter.net).

The University of Cincinnati CECH Library, way cool! Their table was a NASA Educator/Enthusiast's dream for resources. An exuberant young woman asked me what interested me in astronomy, after we talked I walked away with about thirty pounds of information, activities, and posters. I want to go back to Cincinnati to see their facility.

Staffed tours of the buildings and scopes were

spaced throughout the day. Dean Regas, CO's Outreach Astronomer and James Albury, Director of the Kika Silva Pla Planetarium, gave a fun, high-spirited talk about their working relationship on the New Stargazers!

Then there was FOTO, Friends of the Observatory, who built a Cloud Chamber! We were viewing alpha particles in motion. An alpha radiation source was inserted into a diffusion cloud chamber and we were able to watch the tracks made by the alpha particles in real time as they traversed a cloud made by a supersaturated solution of methyl alcohol in air. This was a fascinating study of particle physics.

Dinner came quickly; we ate outside under the stars; deer running around in the distance, clear skies, smell of Italian food, catered by a local Italian restaurant, Bella's. Then the Banquet Speaker, James Albury. James is naturally gifted in his ability to speak, his love for astronomy crystal clear. I must digress, earlier in the day, after procuring all my materials from the vendor area, started to look for my traveling companions, and then saw them speaking to James Albury. Star-struck once again, reminiscent of seeing Dean Regas at NCRAL 2014 walk in. These guys really have the "astronomers passion", they know their science, have the enthusiasm which is key in engaging the public. Also, these guys just do not know how famous they are. But, of course we all made sure to tell them! Back to the banquet, James, a young teenager, began an apprenticeship at the Miami Space Transit Planetarium, becoming a part-time job. He reminisced how he had the coolest job of any of the kids in his high school. Also, he apprenticed under the Planetarium's Director, Jack Horkheimer! Later in life he would have the opportunity to meet and speak with COSMOS's Neil DeGrasse Tyson. James life sought-after goal; to have a career in Astronomy. James is the Director of Santa Fe College's, Kika Silva Pla Planetarium in Gainesville, FL!

After the banquet, people bundled up; the viewing began. The recently restored, 16" Clark is used daily by the public and amateur Astronomers. Currently there are a group of volunteers using this telescope to discover exoplanets. The Mitchel building held the impressive, 11-inch Merz and Mahler Refractor Telescope purchased in 1842, a fascinating instrument. The tube is a hollowed out Elm tree, which was covered with Brazilian Mahogany and still beautiful today. (Cont. 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 8:00pm and welcomed 20 members and guests. Jeff reminds us that there are still a number of activities that remain before the public schedule slows down for the year.

Jeff then asked for standard reports. There was no Treasurer report from Gene DuPree but he did say that 2015 Astronomy Calendars were available for interested members. The price is a low \$8.00. Secretary Kevin Bert reports that there was no change in the membership roster. There was no new Astronomical League information.

Observatory news noted that the Sep 26th date is in need of a leader for the public viewing night.

The Imaging committee will be meeting on Sunday to consider an optical tube assembly for the Celestron CGE Pro mount.

Under New Business Jeff reports that the Bayshore donation will be down this year. We remain committed to attending the Wednesday evenings and continue the

relationship with Bayshore to help promote astronomy and our club. We have a new self standing sign for outreach events, like Bayshore, that links a page to the evenings sights and to our website. It can answer a number of questions passersby encountering the viewing session that might otherwise be intimidated to ask what's going on.

Jeff Setzer covered upcoming events for September. Saturday the 13th is a viewing night at Pike Lake State Park called the Community Campfire. The 20th is a After Summer Hike at Harrington Beach. The 26th and 27th are also Public Viewing nights at Harrington Beach. The day before our next meeting Oct. 1st is a sidewalk astronomy night at Bayshore. Moon over Monona Terrace details are still up in the air. October 3rd is the date in Madison. At LaLawrann Conservancy, Oct. 11th, The Lantern Walk, 6:30-8:30 p.m.

A brief discussion on the memberships observing do's and don'ts at Harrington Beach took place.

With no further business Jeff closed the meeting at 8:45 pm.

Imaging Committee

After a 3-year effort, the Northern Cross Science Foundation is very close to expanding its opportunities to all members by offering the ability to explore and pursue the exciting aspect of astrophotography through a permanently aligned platform. This reality is near because of the Foundation's purchase of a new Celestron Pro mount in July and the recent purchase of a used Explore Scientific 127mm F7.5 carbon fiber refractor with a Feather Touch focuser. Also, soon to be purchased will be a camera and guider.

Here you see the refractor seller, Dean Schwartzberg. Nolan Zadra drove to Lexington KY on Sept 13 to pick up the Explore Scientific Instrument.



Kevin Bert is machining a mounting plate to secure the telescope to the mount. More updates and hopefully astro images to follow in future Spectrums.



Things to See In the October 2014 Night Sky By Don Miles

Saturn, Mars, & Pluto: Saturn (0.6 mag) is getting closer to setting Sun, and is the first to set, doing so by about (8:30pm/sunset) and remains in the constellation Libra. Mars (0.8 mag) is the next to set, and does so by about (9:30/9pm). It's still covering a lot of sky as the month progresses starting in the constellation Ophiuchus and moves eastward finishing up about 2.5 degrees above and to the right of the top point of the "lid" of the teapot in Sagittarius. Pluto is faint as always (14.1 mag), but is still worth trying to track down if you like a challenge. It's still possible to find, but you'll have to start looking right after twilight as it will set about (11:30/9:45pm). An 8-10" telescope and a good southern horizon along with current locating charts will help greatly.

Neptune & Uranus: Neptune is already up and in the constellation Aquarius as the Sun is setting, and will transit (when it's directly overhead) at (1am/11pm). It sets at (4:30/2:30am) and is at (7.8 mag). Uranus (5.7 mag) rises around sunset early in the month and sets around 5:15am late in the month. It transits about (1:30am/11pm), is at opposition on the 7th, and remains in the constellation Pisces.

Jupiter, Venus, & Mercury: Jupiter rises about (3/1am), and is at (-1.9 mag). Views

will continue to get better to view as the month goes on as it will be rising earlier and earlier thus distancing itself from the following Sun. Venus (-3.9 mag) is the next to rise, but is too close to the trailing Sun to be viewed easily. It continues to slide closer towards the Sun as it's working its way around the "back side" of the Sun, but by mid-December will be an evening object as it will be then trailing the Sun. Mercury is too close to the Sun early in the month also, but should be visible at (0.5 mag) late in the month just before sunrise (~6am).

Moon:

October 1st: First Quarter

October 7th: Full Moon

October 15th: Last Quarter

October 23rd: New Moon

October 30th: First Quarter

Special Events:

Meteor Showers: There is only one meteor shower that won't be affected by the Moon, and those are the Orinids. They'll peak the night of the 21st (a Tuesday) with pretty reliable rates of 30-40/hr. These are fast (over 41 miles per second) but faint, yellow streaks. The moon sets before sunset so

won't be a problem this year and even the faint members of this shower can be seen.

Moon/Sun Events:

Wednesday October 8th

Before the Moon sets it will start to pass into the Earth's shadow as it begins a "**Total Lunar Eclipse**". It will start around 4:15am, and will continue to darken and turn an orange-ish-rust color as it progresses. It will peak around 6am, and will set (about 7:15) before it actually exits the shadow completely and the eclipse ends. Make sure you have a clear western horizon as all the action will happen low in the sky.

Thursday Oct 23rd – Right before the Sun sets (around 4:30pm), the Moon will start to pass in front of the Sun, and will continue working its way across as the Sun is setting. The maximum coverage of the Sun's surface for us will be around 60 percent, and this is a "**Partial Eclipse of the Sun**". Make sure you use your solar filter(s) if you're going to enjoy this with your telescope/binoculars.



October General Meeting

Astronomy 101 by Kevin Bert

The Astronomy 101 class for October is part two of "Telling Time by the Sun." Jack Heisler and Kevin Bert will facilitate this continuing class on sundials.

The Constellation of the month:
Pisces



"Main Program"

Kim, from **American Science and Surplus** will be presenting "A Science Show" for our October Main Program!

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

RELATED INFO

"Welcome"

New Members:



Patricia Stucke
of North Fond du Lac, WI
and

Jim Macak
of Cedarburg, WI

September Public Events

Pike Lake, September 13th

Public Viewing By Charlotte DuPree

Pike Lake Community Campfire. The evening started our mostly cloudy. The crowd was not as large as in other years, probably because of the cooler than normal weather. During the intermission we had lines at all of the scopes, as we looked at objects in the clearing sky. Thanks to Al, Rick and Georgine, Rick D., Jeff.

Harrington Beach, September 20th

Public Viewing By Charlotte DuPree

Friends of Harrington Beach, End of Summer Hike. Around 7:30 there was a large crowd standing in line for the big scope. Kevin and Gene had smaller scopes out on the South end. Thanks to Rick D., Brian, Kevin

Harrington Beach, September 26

Public Viewing By Rob Powell

32 visitors arrived in "waves", throughout the evening. Low-level fog limited viewing until 8pm, then the skies cleared up until 10:00pm. Heavy fog rolled in at 10:30pm.

M13, M27, M57, M31, M32, M110, M2, M33. The targets drew lots of "oohs", "aahhs", and "WOWs"!

At 9PM, we handed out all the binoculars to those in attendance and showed the guests how to star-hop to M31, then we pointed the telescope at M31 for a closer view.

About that time, Ernie Mastroianni stopped by and took some available-light photos of some of the folks looking through the Panarusky telescope, "painting" the subjects with a dim, red, flashlight in the process.



Photo by Ernie Mastroianni

Additional images online: <http://tinyurl.com/nup6pgt>

Harrington Beach, September 27th

Public Viewing By Charlotte DuPree

Harrington Beach, Public viewing night. We opened the observatory to a mostly cloudy sky. There were enough holes moving through, so we were able bounce between different objects. The clouds covered the sky, the last visitors left, and some fog started to roll in, so we closed-up after 10:00. Thanks to Al S., Rich S. Rick D. for setting-up in the parking lot.

Interpretative Signage Update

...by Rick Kazmierski

The Harrington Beach Superintendent has been working with our Observatory Director Dan Bert to create interpretative signage at the Jim and Gwen Plunkett Observatory. There will be 8 signs placed around the outside of the Observatory. Measuring 8 1/2 x 11 inches, the signs will be general enough for the casual visitor, with informative and interesting facts to catch the eye. The topics agreed upon are; **Telescopes, Observatory, Meteors, Sun, Moon, Circumpolar Constellations, Light Pollution, and Northern Lights.**

Telescopes

All telescopes make distant objects appear to be closer than they really are. Light-collecting optics form an image that can be examined with a magnifying eyepiece. The size of a telescope is determined by the diameter (aperture) of the primary mirror or lens; the larger the optics, the brighter and more detail can be seen.

Mounts form the base of the instrument, allow for pointing the telescope, and sometimes also track the stars. Shown at far right are a German equatorial mount (above) and a simpler Dobsonian mount (below).

Refracting telescopes use a lens mounted in the front of a tube to collect starlight and bend (refract) the light rays to focus, where an eyepiece presents the image to the viewer. The first telescope invented was a refractor. Galileo used them to make important discoveries about the nature of the universe in starting in 1609.

Reflecting telescopes use mirrors instead of lenses to work. There are several designs, but the simplest uses a curved mirror at the bottom of an open tube to collect light, which reflects it forward to a small flat mirror that in turn directs it out to the side of the tube, where an eyepiece is mounted. This form was popularized by Sir Isaac Newton and is called a Newtonian reflector in his honor. It is the least expensive to make, and is often seen in larger sized telescopes.

Compound, or catadioptric, telescopes use a combination of lenses and mirrors to form an image; the Schmidt-Cassegrain and Maksutov-Cassegrain remain the two most popular designs. These tend to be compact for their aperture.

Interpretive Sign Sample

Members of the Board have written scripts for each topic and Jeff Setzer is editing and getting the signs ready for production. Once completed, a Boy Scout pursuing his Eagle Scout Award will supply the manpower to install the signs on location. Jeff will have the completed graphic, and publish online within the next month. Check out our website at NCSF@info.com.

Public Viewing Leaders

October 1

Bayshore Town Center
Jeff Setzer

October 4

Pike Lake State Forest
Gene and Charlotte DuPree

October 11

Laclawrann Conservancy
Rick and Mickey Kazmierski

October 17

Harrington Beach State Park
Leaders Needed

October 18

Harrington Beach State Park
Gene and Charlotte DuPree

October 31

Bayshore Town Center
Jeff Setzer

2015 Astronomy Calendars

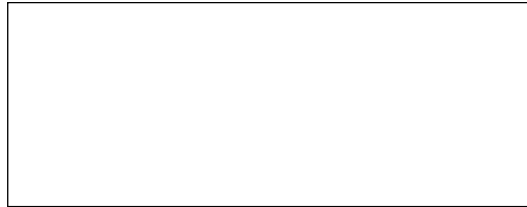
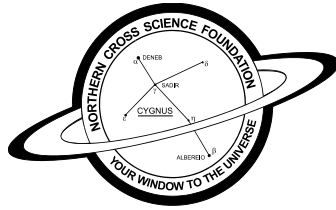
Still available at \$8, see Gene or Charlotte DuPree at the General Meeting for purchase.

Jim & Gwen Plunkett OBSERVATORY



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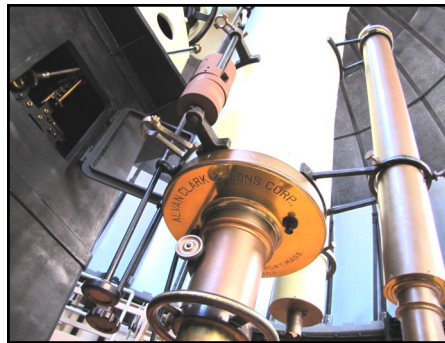
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(Scope Out - from Pg 1)

“The Astronomy Channel”, an award-winning Mobile Observatory made in Brentwood, TN, originally designed in 2005 by Lonnie Puterbaugh was up and running. “The Astronomy Channel,” is a display center and mobile observatory. Lonnie’s system was capturing live 8 second video streams through a 14” Schmidt-Cassegrain, projected onto a 48” flat TV screen, located on the back of his van. He drew quite a crowd with an amazing System!



Cincinnati Observatory “Birthplace of American Astronomy” houses one of the oldest working telescopes and was the first public observatory in the western hemisphere. The observatory is rich in history, and abundant with people dedicated to science, giving the public an “upward” point of view and preserving this beautiful and important Landmark!



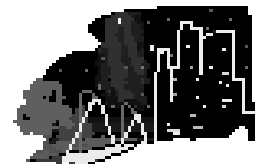
*Astronomer, James Albury
 the Tesla S, and me!*

SPECTRUM

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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