

SPECTRUM

Northern Cross Science Foundation Newsletter

October, 2018

Looking Up

October 4, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting Follow

October 5, Friday

Friends of the Bog

7:00 p.m.—10:00 p.m.

Cedarburg Bog

October 6, Saturday

Members Night

Binocular Party

7:00 p.m.—11:00 p.m.

Harrington Beach

October 12, Friday

Public Viewing

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

Harrington Beach State Park

October 13, Saturday

Public Viewing

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

Harrington Beach State Park

October 13, Saturday

Luminary Walk

6:00 p.m.-9:00 p.m.

Lac Lawrann

October 18, Thursday

Board Meeting

7:30 p.m.

House of Jeff Setzer

October 20, Saturday

Public Viewing

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

Pike Lake Campground

When Vocation and Advocation Come Together *By Jeff Setzer*

It's been a pretty interesting month. Every year around this time, the mechanical CAD software our company sells, trains and supports (the software known as SOLIDWORKS) has a major new version release. In the weeks preceding, we are given "what's new" materials including data sets and videos, all produced around an interest SOLIDWORKS customer.

I've been with GSC since SOLIDWORKS has existed, and I've personally conducted our rollout presentation events on every one of the previous 26 version releases. This 27th one was very different, however, because the entire presentation is designed around the Canada-France-Hawaii Telescope consortium — the group that owns and operates the 3.6 meter CFHT on Mauna Kea in Hawaii. Turns out they are replacing the 40-year-old scope with a new 11-meter using the same building, and all of the design has been done in SOLIDWORKS. So, yeah, I've got a giant observatory CAD model on my work laptop!

I'll



3.6 meter CFHT on Mauna Kea in Hawaii.

be

giving a presentation on the CFHT's new project, known as the Maunakea Spectroscopic Explorer, for the main program at our October 4th NCSF meeting. But earlier that day, I'll be doing the first of seven work events presenting the new software capabilities to hundreds of customers around Wisconsin and Illinois. And all of those folks will get a dose of astronomy knowledge along with the usual mechanical engineering fun! Check it out:

We are giving away an Astronomers Without Borders OneSky telescope to a lucky winner at each of the seven events. Everyone will get a printed Skymap, and table tent cards will have QR code links to Sky Safari for iOS and Android. I've brought in an inspiring video introducing the importance of the telescope to our understanding of the universe. I'm even tying in Gliese 667 to the first release of SOLIDWORKS software; bonus points to anyone who can suss out the connection before the October meeting.

More than once, I've been able to tie my vocation and advocation together, but to have the entire community of five million SOLIDWORKS users turning their attention to the sky, even peripherally, is a huge thrill for me. And it's an opportunity for astronomy outreach that I can't pass up; indeed, on social media I've become a bit of an evangelist for telescopes and astronomy to the SOLIDWORKS community, and I'm totally getting away with it!

I hope to see lots of you at our October 4th meeting; if I seem a little exuberant, you'll understand why and I hope you'll join me in all the excitement!

October 25, Thursday

NCRAL 2020 Meeting

7:30 p.m.

House of Rick Kazmierski

Notice: Date Change

November 8, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to Follow

Japanese Probe Takes Epic Hop on Asteroid Ryugu

After a three-and-a-half-year journey of 2 billion miles, a Japanese space probe last week dropped a pair of hopping, grapefruit-size rovers on an asteroid called Ryugu and began beaming back snapshots from the surface of the bizarre little world.

The feat marked a trio of firsts: First soft landing on an asteroid, first deployment of rovers in a low-gravity setting, and first close-up look at the sort of celestial object that might have helped seed life on Earth billions of years ago.

The images coming in from the Hayabusa 2 probe also afforded another, more personal first: a glimpse of an alien landscape unlike any humans have ever seen. *(Con't. Pg-4)*

September Meeting Minutes

By Kevin Bert

The September 2018 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 8:15pm and welcomed 22 members and guests. Jeff then asked for standard reports.

Treasurer Gene Dupree tells the membership that the checking balance is \$12,004.88 and the Observatory balance remains at \$418.49.

Secretary Kevin Bert welcomed a new member that just joined, Thomas J Bardenwerper from Thiensville. Under the Astronomical League the regional convention will take place in the Quad Cities in 2019 May 3rd & 4th.

The observatory Director fill in, Kevin Bert, reports that Dan is looking for leaders and assistants for the September 28 & 29. Contact Dan if a scheduled night is clear on your calendar and your willing to help. It

was noted that the park shuttle will pick up at the northern end of the upper parking lot on the 29th fall harvest hike. This in addition to barricades will help minimize the auto activity in the telescope setup area at the south end of the parking lot. The evening patrol of the park by a variety of DNR wardens has caused concern by telescope users in the parking lot when confronted by the 11:00 pm curfew. The park superintendent will be informed of the problem.

Planners for the 2020 NCRAL Convention meeting did not meet last month. October will be the next meeting. Contact Jeff Setzer or Mike Borchert for time and location if you are interested in attending.

Gene Dupree informs the membership that a few 2019 calendars are still available. Contact him if you are looking for one.

With no new business Jeff reminded members of the upcoming events. September 8th is the Community Campfire and telescope viewing at Pike Lake State Park. As mentioned earlier September 28 is a public viewing night at Harrington Beach with the Fall

Harvest Hike the following night. The 29th is also a public viewing night at Pike Lake.

With no further business Jeff closed the meeting at 9:00 pm.

The Optimist

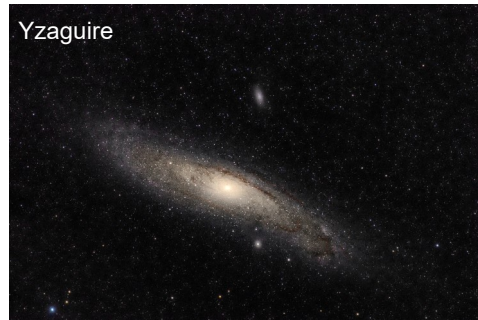


Harrington Beach Imaging Report *By Ernie Mastroianni*

On a couple of mid-September evening without clouds but amply supplied with dead and mosquitoes, Northern Cross members Jerry Kohlmann, Ernie Mastroianni, Tom Schmidtkunz, and Richard Yzaguirre took photos of a few fall classics from the Plunkett Observatory at Harrington Beach State Park. Targets for the group over two nights included M33 in Triangulum, the Andromeda Galaxy, the Bubble Nebula in Cassiopeia, and the Wild Duck Cluster.

Both Kohlmann and Yzaguirre used off-the-shelf Canon DSLR cameras to shoot M33 and M31 respectively. Kohlmann's M33 was a combination of 10 frames at 3 minutes each, plus the addition of an equal number of dark frames to offset the background noise generated by long camera exposures. Kohlmann shot through the club's 5-inch refractor and adeptly managed a steep learning curve on Nebulosity to process and stack his images, with some final adjust-

ments with Adobe Photoshop, both running on a Mac computer.



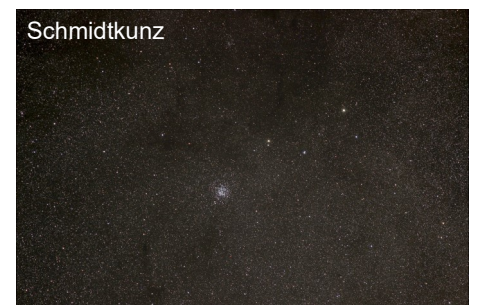
Yzaguirre used the smaller 65mm guidescope refractor which perfectly framed the larger Andromeda galaxy. He stacked a quick series of just six exposures of about 3 minutes each to produced this nicely rendered version that included the accompany galaxies M32 and m110.



Mastroianni used the club's 5-inch refractor to record 24 frames of three minutes each over two nights to capture the glowing hy-

drogen alpha clouds of the Bubble Nebula (NGC 7635) and the nearby open cluster M52.

Tom Schmidtkunz mounted his modified Canon DSLR and a 400mm f/5.6 telephoto lens piggyback on the Panarusky 20-inch telescope, taking a series of 10 unguided frames of three minutes each to produce this final image of M11 (the Wild Duck Cluster) and the surrounding Scutum star cloud. Schmidtkunz has had good luck with the simplicity of shooting unguided frames on the large reflector. Though the Panarusky scope cannot be computer guided, its clock drive with a relatively small periodic error and accurate polar alignment produces good results.



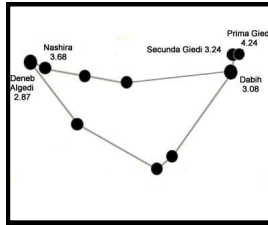
Images in the Newsletter are best viewed in full color and high resolution in the digital format members receive by e-mail.

October General meeting

Astronomy 101 - Kevin Bert

"Telescope Operating Basics"

The October class is entitled "Telescope Operating Basics." Many telescopes come with poor instructions on how to operate your telescope. We will go over simple operating procedures to clear up any confusion.



Constellation of the Month:

Capricornus

Main Program - Jeff Setzer

"CFH 3.6 Meter Telescope"

The 3.6-meter Canada-France-Hawaii Telescope, known as CFHT, is undergoing a metamorphosis at 14,000 feet on top of Mauna Kea. The 40-year-old telescope is due to be replaced by an 11-meter behemoth that will advance spectroscopy immensely. The new instrument, known as the Maunakea Spectroscopic Explorer (MSE) is being designed as we speak, and Jeff Setzer will share some unique insights into the engineering and science of this ambitious project.

September Public Viewing Events

Reuss Ice Age Center September 1

By Charlotte DuPree

The day was a partly cloudy sky, the high thin type. The office had been getting phone calls all day, about the telescope viewing. We were able to do viewing because of the dark sky, and viewing objects between the clouds is challenging. The planets looked good along with the many deep sky objects we saw. Jeff started the evening with an indoor program. Thanks to Al, Joyce, Rick D., Jeff

Pike Lake Community Campfire Sept. 8

By Charlotte DuPree

The night started out mostly cloudy, but we could see a few stars, and no planets at first. The clouds kind of parted, and the planets were in and out the rest of the night. We had a good crowd of people. Thanks to Al, Rick and Georgine, Rick D, Gail and Harvey for bring their scopes.

Harrington Beach September 28

By Charlotte DuPree

When we arrived at the observatory, the sky was mainly clear. No visitors were waiting for us to open, maybe because of the cooler weather. Two visitors at 7:30 and one at 8:00 received private tours of the sky; M11, 13, 27, 57, coathanger, and owl cluster. Because of the slow night, the parking lot crew, Rick D., Rick Sell, Rich S, left early. We had two couples stop in around 9:30 and 10:00. We closed the roof at 11:00 to a few clouds moving in.

Harrington Beach September 29

By Mike Borchert

The public viewing night at Harrington Beach was somewhat hampered by 100 percent cloud cover. But that did not stop the 50-60 members of the public from taking a visit at the

observatory. There were comments of "I did not know it was here and it is in my backyard", to "wow, that's a big telescope". There is always one visitor that stands out, Saturday 9-29 was no exception. A young gentleman, about 12 years old could not ask enough questions when it came to the Messier pictures on the wall. He knew quite a bit of the story behind a lot of the pictures, there was definitely interest. That is what makes it fun to attend public viewing nights, even when you cannot see a star in the sky.

Pike Lake September 29

By Charlotte DuPree

This has not been a good year for public viewing at Pike Lake. The clouds started moving in, early afternoon. Gene put a scope in the truck and we left for Pike Lake. We arrive at the campground around 6:30. The rain started about 6:50.

Universe in the Park

By Gene DuPree

The UW Madison Astronomy department graduate students (Universe in the Park) travel to the state parks, every summer, to present programs to park visitors. For a few years Charlotte, and I have followed their schedule. If they are in the area or where we are camping, we will take our scopes to set-up. They present a slide show (usually above the visitors heads), followed by telescope viewing. On Sept. 22 they were at Kohler-Andrea state park. The presenters were running late, and with the help of Joyce, we had scopes set-up. Magically, we had around 75 people waiting in line, between our three scopes. Our help is, always, appreciated when we talk to the grad students at the end of the evening. You can find the Universe in the Park schedule in early May. So, if you like to travel with your scope, get their schedule, maybe we will see you there.

Related Info

NCSF Welcomes New Member

Thomas Bardenwerper

Leaders for Public Viewing

October 5, Friday

Cedarburg Bog

Jeff Setzer

October 6, Saturday

Harrington Beach State Park

Kevin Bert

October 12, Friday

Harrington Beach State Park

DuPrees

October 13, Saturday

Harrington Beach State Park

Mike Borchert

October 13 Saturday

Lac Lawrann

Rick Kaz

October 20, Saturday

Pike Lake Campground

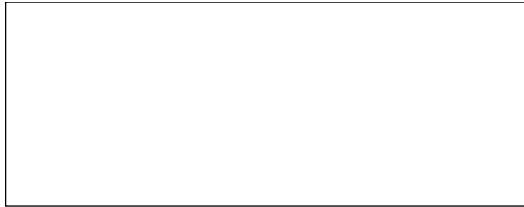
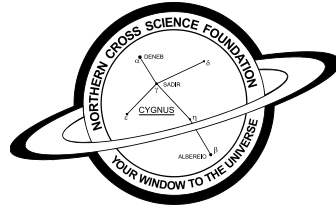
DuPrees



Jim & Gwen Plunkett OBSERVATORY



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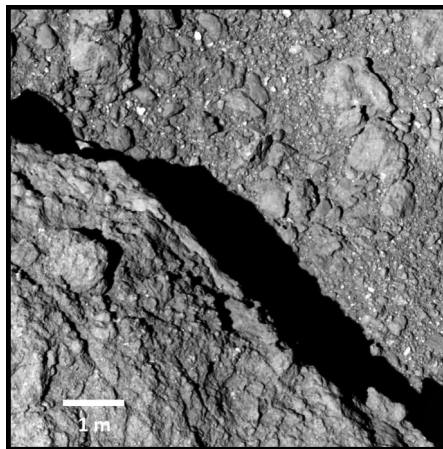
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(Con't. from Pg-1)



WOW! Sharpest image to date.
Image of the asteroid Ryugu captured by Japan's Hayabusa2 mothership from an altitude of about 210 feet on Sept. 21, 2018.
Notice one meter distance marker

target before deploying the rovers.

The half-mile-wide asteroid confounded expectations right from the start. For one thing, Ryugu has an oddly geometric form, wide in the middle and almost pointy at the poles, and a surprisingly rugged surface. "We had not expected the 'top-shape' asteroid before arrival," Tsuda told NBC News MACH in an email. His colleague, Hayabusa 2 project scientist Seiichiro Watanabe, added, "I was surprised at Ryugu's many boulders scattered all over the surface."

Now that the tiny rovers, called MINERVA II-1a and MINERVA II-1b, are able to have a closer look, the odd asteroid seems even odder. "It looks like some volcanic lave flow on Earth, like Izu-Ohshima island in Japan or the Big Island in Hawaii," Watanabe said.

The Hayabusa 2 scientists are excited by the jagged terrain because it offers insights into the asteroid's violent past. Understanding these small bodies also provides crucial context for NASA's OSIRIS-REx probe, currently en route to a similar but slightly smaller asteroid named Bennu.

"I cannot find words to express how happy I am," Yuichi Tsuda, Hayabusa 2's project manager, said in a written statement just after the landing. Hayabusa 2 has been slowly building to this moment since its December, 2014 launch. Nudged along by the gentle thrust of its engines, the spacecraft finally caught up with Ryugu in June and began nestling up to its

SPECTRUM

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



NCSF supports the **International Dark Sky Association**

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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