

SPECTRUM

Northern Cross Science Foundation Newsletter

March 2020

Calendar

No March general meeting

March 5, Thursday

Annual banquet

Libby Montana restaurant
5616 W. Dongs Bay Rd.
Mequon

March 19, Thursday

Board Meeting

7:30 p.m.
Home of Jeff Setzer

March 26, Thursday

NCRAL Planning Meeting

7:30 p.m.
Home of Rick Kazmierski

April 2, Thursday

Monthly Meeting

GSC Technology Center

April 16, Thursday

Board Meeting

Home of Jeff Setzer

May 1-2, Friday and Saturday

Country Inn and Suites

Port Washington
NCRAL meeting
Hosted by Northern Cross
Science Foundation

General Meeting

information:

7:00 p.m. Astronomy 101
7:30 p.m. Main Program

Location:
GSC Technology Center
W189 N11161 Kleinmann
Dr. Germantown, WI

Email Editor Ernie
Mastroianni with dates and
times of any upcoming
NCSF events
ernie.mastroianni@gmail.com

See the novel Unistellar eVscope at NCRAL

By Ernie Mastroianni

As amateur stargazers, our telescopes are the tools that connect us to the universe. So the [Unistellar eVscope](#), to be demonstrated by SETI astronomer Franck Marchis at the NCRAL meeting this May, should draw some serious interest.

The Unistellar telescope looks much like a modest-sized Cassegrain or Maksutov, but it is actually a Newtonian.

The sensor sits where the Newtonian diagonal would normally be. When peering through the eyepiece, you'll be viewing an electronic screen, so the non-interchangeable ocular is located in a spot most convenient for the viewer and not in the Newtonian position.

The image, which builds up over several seconds to about a minute, becomes an enhanced view of a typical deep sky target. The image can also be viewed on a smart phone screen.

The telescope has a 4.5 inch f/4 primary mirror. It weighs 20 pounds with the tripod. The optical path is projected onto a 1.23-megapixel Sony CMOS chip that is 1280 by 960 pixels and measures 6 millimeters diagonally.

The mount is a computer-controlled, alt-azimuth design that has all the software and electronics included and is controlled by a smart phone app. The telescope will know exactly where it is, the precise time, and the



exact field of view, so setup in the field (tripod included) can be done in minutes, according to Unistellar.

The company used crowd-sourced funding to finance the telescope and says that more than 2,500 have been preordered. It lists the price at \$2,999 in the United States.

Magnification is digitally controlled to a range of 50 to 150 power. Images can be saved onto the phone as PNG files and from there, shared to any desired online platform.

The app does more than control the telescope.

[see page two](#)

Sign up now for the NCRAL regional meeting May 1-2

Final planning is nearing completion for this year's NCRAL convention, hosted by our Northern Cross Science Foundation.

Participating members from clubs in the North Central Region of the Astronomical League will hear an impressive list of speakers, so sign up for a truly exceptional experience.

See the link at <https://ncsf.info/ncral-vision-2020/> for all the information you need to register. Contact an NCRAL committee member if you have a question. This a great opportunity to meet like-minded people from clubs across the midwest.

Speakers (topics in January *Spectrum*):
Dr. William Dirienzo, Asst. Prof. of Physics and Astronomy, UW-Green Bay, Sheboygan campus

Brandon Hamil, Minnesota Astronomical Society

[Pranvera Hyseni](#), founder of Astronomy Outreach Of Kosovo

[Dr. Franck Marchis](#), SETI institute astronomer and Chief Scientific Officer at Unistellar

[Kate Meredith](#), founder, Geneva Lake Astrophysics and education director, Yerkes Observatory

[David Prosper](#), Astronomical Society of the Pacific

Dr. Angela Van Sistine, data scientist at Harley-Davidson

Banquet Speaker
[Dr. Francis Halzen](#), Principal Investigator of the IceCube Neutrino Observatory in Antarctica

February meeting minutes

By Kevin Bert

The February 2020 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 19 members and guests. He turned the attention to Gene and Charlotte Dupree who were sporting some of the new 2020 NCRAL convention apparel. The shirts will be available as part of registration. Jeff then asked for standard reports.

Treasurer Gene Dupree reported a balance of \$11,942.32 in the checking account. He noted that the old observatory savings account had been closed and added to the checking.

Secretary Kevin Bert reported no change in the membership roster. He said a revised roster would be sent to all members in April and encouraged members to get their 2020 dues in soon if not yet done. There was no Astronomical League report.

There was no observatory report.

Jeff Setzer gave an update on some of the planned Friday events for the NCRAL convention. A library telescope talk and workshop will be one activity. Another will be a talk from SETI astronomer Franck Marchis, who will demonstrate the new Unistellar telescope. If skies are clear the demo will take place at Harrington Beach in

conjunction with the observatory tour that evening. Look to the Spectrum for additional events and speakers to come and be sure to plan for the events on May 1st and 2nd.

Jeff noted to the membership that the February 2020 Spectrum was the final issue with Rick Kazmierski as editor. An article was in the last Spectrum detailing Ernie Mastroianni as the new editor starting with the March issue. Thanks to many years of newsletter service from Rick as he continues to be active on the board and as an astro-imager.

With no more new business Jeff reminded members about the Pike Lake Ski and Stars viewing event on the 8th of February. The 13th annual Sheboygan Swap-n-Sell will take place on March 21st.

As a final reminder, next month's general meeting will be replaced with the annual banquet, this year at a new location, Libby Montana. No money is required ahead of time but Gene Dupree needs a count on how many members and guests will attend. Please let him know.

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

101 Class

No class scheduled in March due to the Annual Banquet.



M51 as seen and photographed through a Unistellar telescope

from page one

Images and the attached data can be shared with other Unistellar owners around the world by using a network set up by SETI. This network, using the same instruments, each of which knows its precise position and time, can be a valuable tool for astrometry.

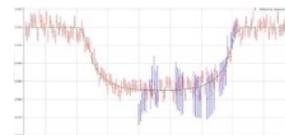
Last September, a team of researchers directed by Marchis traveled to Oman and set up two Unistellar telescopes 30 kilometers apart to observe the asteroid Orus as it occulted an 11th magnitude star. Orus is one of the ancient Trojan asteroids in Jupiter's solar orbit. One scope saw the occultation, one did not.

From this event, Marchis was able to determine that the asteroid's size (about 55 kilometers across) was in line with estimates. That data is important to NASA, which is planning to explore the Trojans via spacecraft in a mission dubbed Lucy, slated for an October 2021 launch.

A Unistellar team also demonstrated that they could roughly replicate the light curve of a star dimmed by the transit of Osiris, an exoplanet orbiting a star 160 light years away.

There's no doubt, looking through an eyepiece to view an electronic screen will not be the same as seeing the real thing through a conventional telescope. But the scope does offer citizen scientists a way to easily contribute valuable data and network with others in collaboration with SETI.

And you'll still be outside, under the stars, and connected to them in real time.



Winter observing draws many to Ice Age Visitor Center and Pike Lake Unit

By Gene DuPree

Ice Age Visitor Center

This event was the annual candle light ski and hike, held at the Reuss Ice Age Visitor Center in Campbellsport, on Feb. 1. We had a cloudy sky with a slight clearing when we arrived. Venus could be seen, but that was short-lived. The Moon stayed visible for about an hour or two, and again the clouds won over the rest of the night.

Charlotte was inside with our display table, passing out the handouts and schedules to interested people.

We have a new indoor display item. A basketball is the size of the Earth and a tennis ball is the size of the Moon. We place them 25 feet apart with a measured rope and that is the scale size and distance of the two.

Thanks to Rick Dusenbery for his help. The approximate attendance was more than 200.

Pike Lake Candle Light Ski

The night of Feb. 8 at the Kettle Moraine State Forest Pike Lake Unit started with some small sucker holes in the clouds. Venus was the first object we viewed, with the Moon to follow. We had a steady flow of visitors.

With a clearing sky, the Orion Nebula, M35, the Owl and Christmas Tree clusters were some of the objects we viewed. We had a few hundred visitors looking through the scopes and more than 2,000 in attendance at the overall event.

Thanks to Al Steinberg and Rick Dusenbery for assistance with their telescopes and visitors.

Joyce Jentges chosen for NASA's Solar System Ambassador program

Editor's note: NCSF vice president Joyce Jentges has been a passionate amateur astronomer for many years and active in the club, including service as president. She also closely follows this country's achievements in space exploration. To better share her enthusiasm with the general public, she applied and was accepted into NASA's Solar System Ambassador program. Jentges explains how this program works and what she'll be doing.

By Joyce Jentges

The Apollo 50th anniversary was a turning point for me. Last year, I compiled a list of all the Apollo-related events that were happening at local libraries. I made it to quite a few but it wasn't enough. When I saw that NASA was recruiting for [Solar System Ambassadors](#) in September, I decided to apply. I'm not doing this for recognition but because this is yet another step forward in outreach for me. Essentially, my role is to share NASA's story with the public.

There are about a thousand ambassadors across the United States. Among them are amateur astronomers, librarians, teachers, museums workers and just people who love space.

I'll be required to present a minimum of four programs a year on NASA-related projects. It could be presentations, like my upcoming [Parker Solar Probe](#) talk at the Sheboygan Swap & Sell in March and the April NCSF meeting.

I could also present talks at star parties, as long as I tie in NASA. Say I'm observing the Moon at a public viewing night. I could include information about the [Artemis](#) program, which will return astronauts to the Moon. I could collaborate with other ambassadors at STEM and science fairs. I could give presentations at libraries and classrooms. What really excites me are the regularly scheduled teleconferences that bring us behind the scenes with the scientists and other individuals who make the space missions happen.

For instance, a teleconference last week explained how an idea for a mission evolves from the drawing board to the mission that blasts off into space.

My term as an ambassador is for one year. At the end of the year, NASA officials will review my participation.

If I met all the goals, then I'll be renewed for two more years.



Jentges with her 10-inch Dobsonian scope

I don't have a territory, but I get around! Living in Cedar Grove, working in Grafton, I feel that anything in that area is fair game for me. Yes, there are other ambassadors in the area. I know that there is one in the Kohler area, another in Menominee Falls, and several in Milwaukee. I have a connection at the Kohler Library, so I'm thinking I should talk to the ambassador in Kohler before I make any arrangements to speak there, because I am new at this and I don't want to step on any toes! But collaboration with other ambassadors is encouraged by those running this NASA program.

We can draw on resources not available to the public, such as a treasure trove of teleconferences viewable online. I believe we can use any material we find as long as we don't modify it in any way and credit to the person who created it. Also, we can request materials for a talk that we are doing. After doing this, I got my first box of materials yesterday. I won't say what's in it, except that it's an eclectic mix and I can hand out what's inside to the public.

NASA's Jet Propulsion Laboratory sponsors the program.



Ambassador Joyce as she appears on the official [NASA page](#).

March sky

By Gene Dupree

For the early morning riser, Jupiter, Mars, and Saturn are well placed to watch. In mid-March, Jupiter and Mars play tag about 75 minutes before sunrise. On March 18th, Jupiter and Mars will form a tight pair with the waning crescent moon, which passes just two degrees below.

On March 20th, Jupiter and Mars, less than a degree apart, can be seen in the same low power telescopic view.

At month's end, Saturn and Mars play tag too. On April 1 (no fooling) both can be viewed in the same low power field.

Successive supermoons will brighten the skies on March 9th and April 7th. A supermoon occurs when the full moon appears at perigee, or closest point, in its orbit around the earth.

While the moon will appear larger than average, the increased diameter amounts to only about seven percent over a typical full moon's size.

This point is important to make when non-stargazers, who might expect a far larger moon, ask about this often-hyped phenomena.

Looking ahead

**June 18 –21,
Thursday to Sunday
Hartman Creek State Park
Wisconsin Observers
Weekend**
www.new-star.org

**August 21-23, 2020
Friday to Sunday
Northwoods Starfest
Hobbs Observatory,
Beaver Creek Reserve
Fall River, Wisconsin**
<https://www.cvastro.org/northwoods-starfest/>

Do you have stories or photos for the newsletter? Send them to editor Ernie Mastroianni. Include dates, times and places: ernie.mastroianni@gmail.com

Board of Directors, 2020

President - Jeff Setzer
1418 Trillium CT
West Bend, WI 53095
262-338-8614
astrosetz@hotmail.com

Vice President - Joyce Jentges
336 N Main Street, Apt.3
Cedar Grove, WI 53013
262 483- 4270
joycejentges@hotmail.com

Secretary - Kevin Bert
2292 Ridgewood Road
Grafton, WI 53024
262-674-0610
kevin.bert@hotmail.com

Treasurer - Gene DuPree
6219 Jay St.
Myra, WI 53095
262-675-0941
grdupree@charter.net

Observatory Director - Dan Bert
1517 Green Valley Rd.
Grafton, WI 53024
262-357-1973
dbert64@gmail.com

Mike Borchert
3656 Willow Creek Rd.
Colgate, WI 53017
262-628-4098
gmborchert@charter.net

Rick Kazmierski
5327 Cascade Dr.
West Bend, WI 53095
262-305-1895
rickkaz@charter.net



NCSF is a member of the [North-Central Region of the Astronomical League.](#)



NCSF supports the [International Dark Sky Association](#)

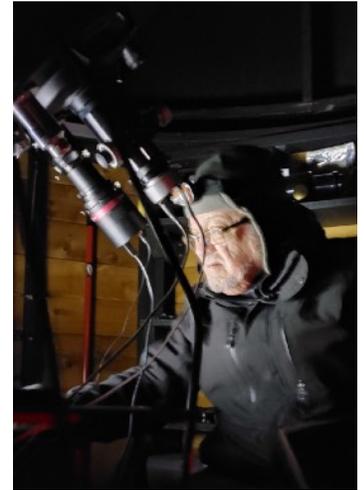
Imaging Report: First light with a new camera reveals a spectacular winter classic

To take this dramatic wide field photo of the Rosette Nebula, NCSF board member Rick Kazmierski used a new QHY 168C astro camera connected to a 70mm Stellarvue refractor from his home observatory.

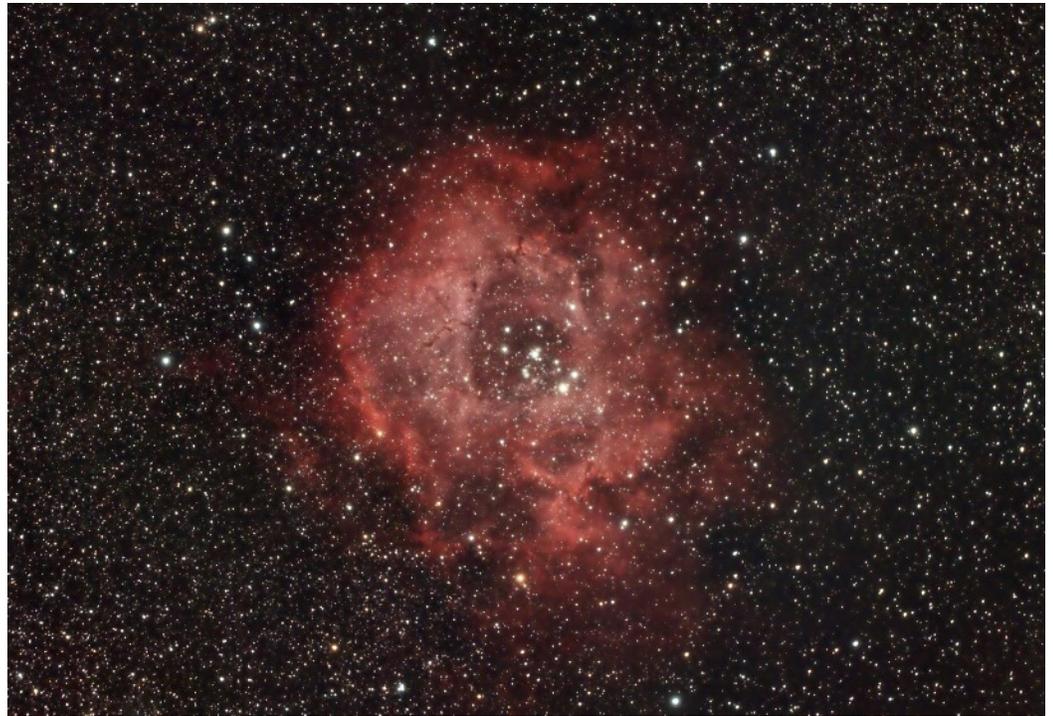
The camera has a full color sensor, the same as used in some Nikon digital cameras. Unlike the Nikon, the QHY does not filter out the deep red part of the spectrum where Rosette glows brightest. This vast nebula of hydrogen gas is in the constellation Monoceros, just east of Orion,

This photo shows a field about the width of five full moons and combines 60 separate frames of just 50 seconds each. The advantage of shooting many short exposure images is that when combined, the signal is enhanced, and the inherent digital noise is reduced.

- Ernie Mastroianni



Rick Kazmierski, at his home observatory outside West Bend, shoots the Rosette Nebula.



The Rosette Nebula as pictured by Kazmierski with a 70mm wide-field apochromatic refractor.

SPECTRUM newsletter

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<https://ncsf.info>

Editor:
Ernie Mastroianni
5821 N. Santa Monica
Whitefish Bay, Wis 53217

Please send your articles and photos to:
ernie.mastroianni@gmail.com
Letters, questions, and suggestions are welcome.

