

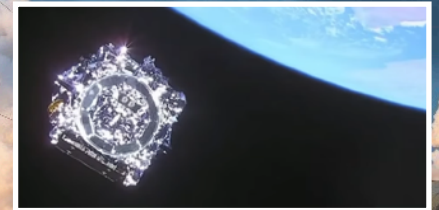
# SPECTRUM

Northern Cross Science Foundation

January 2022



The European Space Agency's Ariane 5 rocket, carrying the James Webb Space Telescope, lifts off from French Guiana on Christmas Day. It will take a month for the telescope to reach its final destination about a million miles from Earth. Science operations will begin in about six months once researchers complete calibration and testing. *Inset: The Webb as it appeared shortly after separation from the rocket in earth orbit.*



ESA and NASA photos

## NCRAL annual meeting reborn for 2022



By Jeff Setzer

Thank you for your interest in NCRAL VISION 2022! After the COVID-19 pandemic forced us to cancel our 2020 event, it is reborn for 2022. The Northern Cross Science Foundation is pleased to be hosting the first in-person Astronomical League-related convention (anywhere) since 2019. We have packed an enticing array of activities and world-class speakers to make your convention experience enjoyable and memorable. Read on to discover all that awaits you when you attend NCRAL VISION 2022, and find all of the information you need to reserve your seat today!

### Speakers:

Our theme is **Vision 2022**, which will have new meaning in a post-pandemic world. We have re-confirmed an exciting list of core speakers:

- **Dr. William Dirienzo**, Assistant Professor of Physics & Astronomy at University of Wisconsin-Sheboygan
- **Brandon Hamil**, Minnesota Astronomical Society: "The Traveling Astronomer"
- **Dr. Franck Marchis**, Senior Planetary Astronomer at the SETI Institute and Chief Science Officer at Unistellar
- **Kate Meredith**, Founder & Director of Education at Geneva Lake Astrophysics & STEAM
- **David Prosser**, Program Manager for Amateur Astronomy at the Astronomical Society of the Pacific & Administrator of the NASA Night Sky Network: "The Latest From The NASA Night Sky Network."
- **Dr. Dennis Roscoe**, Astronomy Instructor at the University of Wisconsin-Milwaukee, Waukesha Campus: "Next Generation Telescopes"
- **"Astro" Bob King**, Retired Photo Editor of the Duluth News Tribune, publisher of "Astro Bob" blog since 2008, contributing author for Sky & Telescope and Universe Today, author of "The Night Sky With The Naked Eye" and "Wonders Of The Night Sky You Must See Before You Die."

### Banquet Speaker:

- Dr. Francis Halzen, Hilldale and Gregory Breit Professor at University of Wisconsin-Madison, and Principal Investigator of the IceCube Neutrino Observatory in Antarctica

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See page 2

## Looking ahead

**January 6, 2022**

General Meeting via Zoom  
7:30 pm

*Program:*

### Update On NASA Missions

Joyce Jentges will recap of some of the major NASA missions from the last two years, including the Parker Solar Probe, Perseverance, Ingenuity and the James Webb Space Telescope.

**January 15, Saturday  
6 to 9 pm**

Candlelight ski and hike  
[Horicon Marsh Education and Visitor Center](#), N7725 Highway 28 Horicon, Wisconsin

**January is time for dues renewal**

Details on page 3

**May 13-14, 2022**

**NCRAL convention**

Country Inn & Suites  
Port Washington  
Website:

<https://ncsf.info/ncral-vision-2022/>

**Volunteers needed!**

Contact [Jeff Setzer](#)

## The Astronomical League explained; convention volunteers needed

By Mike Borchert

You might have heard the terms Astronomical League, AL, ALCOR, and NCRAL used at meetings or in this newsletter. As our club is hosting the NCRAL convention next May 13 and 14, I did some research on the Astronomical League (AL) organization and how it relates to our club, the Northern Cross Science Foundation (NCSF).

The AL's webpage (<https://www.astroleague.org/index.php>) provided all of the information within this report. The AL's main objective is to promote astronomy and communicate to the 240 amateur astronomical society affiliates across the United States. The AL is further subdivided into ten regions. The North Central Region (NCRAL) is the region to which NCSF belongs. The link to the NCRAL website is here <https://ncral.wordpress.com/> and is also listed on the last page of our newsletter.

The AL's basic goal is to encourage interest in astronomy in the United States. As a member of NCSF, you have a membership in the AL through our club affiliation and your dues. One of the main

ways in which the AL communicates is through its publication, [Reflector](#). This publication covers amateur activities all over the country. As acting Astronomical League Coordinator (ALCOR) of NCSF, please let me know if you are not receiving it. I do submit new member's names on a regular basis. It is a quarterly publication. You can also find it online in PDF form:



<https://www.astroleague.org/reflector>

The AL also holds an annual convention (ALCON), although it was cancelled in 2020 and last year it was virtual because of COVID-19.

The AL offers many observing awards that offer encouragement and certificates of accomplishment for demonstrating

observing skills. Certificates include the Messier Club, Binocular Messier Club and the Herschel 400 club. Check the webpage for information on the AL's [Observing Program Division](#). The League also offers a [Celestial Savings Program](#) in which commercial dealers advertise a discount on astronomy-related purchases. I encourage you to delve further into the [AL website](#) to see what else is available.

### Your help is needed at the NCRAL convention

As a side note, NCSF is hosting the NCRAL convention this year. It will be held in Port Washington. The committee has been working on the event ever since it was postponed in 2020 due to the pandemic. We are always looking for more members to volunteer their help at the convention. If you are interested, please send an email to our president, Jeff Setzer. He will send you a ZOOM meeting invitation to discuss what you can do to help.

We hope to see a big club presence at the two-day event, loaded with speakers, interesting people, and good food. (See [the article on page 1](#)).

## NCRAL convention details

From page 1 ..... We have a few more speakers for Friday and Saturday being confirmed, in addition to finalizing a few topics with our confirmed speakers, so be

sure to check back for updates.

### Activities

Additional activities on Friday afternoon and evening include:

- A Library Telescope workshop showing some of the construction steps as well as lessons learned from our experience with the program
- A tour of the Jim & Gwen Plunkett Observatory at nearby Harrington Beach State Park, which features some upgrades to the building and the instrumentation since our previous NCRAL hosting.

Additional Friday afternoon and evening activities are being discussed by the committee; again, updates will be forthcoming.

### Meals

Friday dinner is on your own, although with the planned on-site activities we recommend availing yourself of the [hotel restaurant](#) to stay close to the action — menu is extensive, and includes several traditional Friday Fish Fry selections.

Saturday lunch and dinner meals will be catered, served buffet-style, and are included as part of your convention registration:

### Lunch

- Hot ham & pineapple
- Chicken tips with cream of mushroom sauce
- Mashed potatoes
- Glazed carrots
- Dinner rolls w/butter
- Dinner
- Pepper steak

- Chicken schnitzel
- Sautéed tilapia
- Greek potatoes
- Rice
- Green beans
- Tossed salad
- Greek salad
- Dinner rolls w/butter
- NCRAL VISION 2022 Celebration Cake

Coffee, water and light snacks will also be provided throughout. If you want to sign up online, there are three steps to getting yourself set up for this astronomical experience:

Step 1 — Register for NCRAL Vision 2022 [here](#).

Step 2 — Purchase NCRAL Vision 2022 apparel to be picked up at the conference [here](#).

Step 3 — Secure lodging, if needed (see below)

Questions? [Email us](#).

### Lodging

We have a block of rooms at the conference hotel reserved for NCRAL Vision 2022 guests. Most are double queen, but some are single king. They are all offered at the same discounted rate of \$113/night (plus tax) based on double occupancy. Additional occupants for these rooms are \$10/night (plus tax).

All registered guests will enjoy full use of the hotel facilities, including indoor pool, whirlpool, fitness room, game room, and full hot breakfast.

Our block of rooms will be open until April 13, 2022, and is limited in number, so don't delay! Call the [Country Inn & Suites](#) in Port Washington, WI at [\(262\) 284-2100](tel:262-284-2100) and ask for the NCRAL Convention rate.



## January is dues month, renew your membership now

January is the traditional month to pay your annual membership dues to the Northern Cross Science Foundation (NCSF). We're an active organization, with monthly meetings and compelling programs, access to the Plunkett Observatory at Harrington Beach State Park, and the monthly newsletter.

You'll also receive the quarterly *Reflector* magazine published by the Astronomical League, the national organization to which our club belongs.

The cost is just \$36 for an entire family, \$24 for those under 18 or full-time college students. Patron membership is

\$70 for those who would like to add additional financial support to the NCSF.

You can pay in two ways:

- Send a check for the appropriate amount to NCSF treasurer Gene DuPree at 6219 Jay St. West Bend WI 53095. Make the check out to the Northern Cross Science Foundation.
- You can also pay online through Paypal or by credit card (AMEX, Discover, Mastercard or Visa). Go to the link at <https://ncsf.info/ncsf-online-dues-payment/>.

- Ernie Mastroianni

Northern lights from northern Wisconsin



The northern lights filled the sky for member Nolan Zadra, who spent the night of Nov. 3-4 scouting northern Wisconsin near lake Superior to find an ideal photo spot. He finally settled on a location near the small village of Saxon. "I pulled again over into a farmer's field and spent 4 hours imaging until 5 am" he said. "At about 4 am the sky started to pulse like a strobe light or lightning flashes. I had never seen this before." Zadra used a Canon 5D Mark IV and a 14mm Rokinon lens, set at f/3.5 for 4 seconds at ISO 2500.

### Recommended links from NCSF members

New member **Jim DeLillo**, of Cedarburg, is a veteran travel, tech and science writer, as well as an accomplished [fine art photographer](#). He wrote about William Shatner's flight on Blue Origin's New Shepard spacecraft for [metastellar.com](#). His in-depth article also covers the history of private space flight and science fiction's impact on real world space exploration. Read it at the link below. You can also check out DeLillo's astronomy images on [Astrobin](#).

- [William Shatner's flight into space](#)

**Jerry Kohlmann** found these two websites that will test your knowledge of the International Space Station and the Keck Observatory in Hawaii. Both come via the American Society of Mechanical Engineers. Click on the highlighted text to read more.

- [The International Space Station](#)
- [The Keck Observatory](#)

**Gene and Charlotte DuPree** forwarded this article from the Daily Kos, which reports on Pittsburgh's efforts to reduce light pollution. The intent is not only to preserve the view of the night sky, but to also preserve the day-night cycle for wildlife and reduce glare for better visibility.

- [Pittsburgh lighting ordinance](#)

**Mark Weber** sent along this link to a story from Futurism.com about the Parker Solar Probe's mission to touch the sun. Make sure to view the incredible [video](#).

- [Touching the sun](#)

## Nominations accepted for NCSF board

Jeff Setzer called the meeting to order at the annual Christmas party, held at Libby Montana restaurant.

- 16 club members were present.
- Jeff asked for nominations initially and there were none.

• Jeff announced there are 2 board positions up for a 3-year term. One of those positions, held by Dan Bert, would not be seeking re-election.

• Jeff explained that the board members had no specific duties. The board members would discuss and club positions would then be voted on by the board.

• After some discussion, Jeff again asked if there might be any re-considerations. There were.

• Steve Schowalter was nominated, Steve declined.

• Jason Kazmierski was nominated, Jason accepted.

• Don Woelz was nominated, Don accepted.

• Jeff said the vote would take place via the Zoom meeting in January.

- The business portion of the meeting was then adjourned.

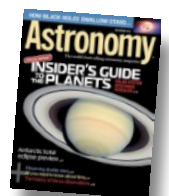
- Mike Borchert

### Club Discounts for Astronomy magazine

As an NCSF member, you can receive discounts on your subscriptions to *Astronomy* magazine. The discounts amount to 62 percent for three years. Click on the link below to subscribe.

No special codes are needed.

[Astronomy Club Exclusive Savings!](#)



## Astronomy and spaceflight links

Any comprehensive list of online astronomy links could fill dozens of pages, and as such, this list is selective and is subject to change. All underlined websites are actively linked. Please email me with any more suggestions that you feel would be useful to NCSF members, and let me know if any links are no longer working. - *Ernie Mastroianni, editor*

### Astronomy clubs, newsletters and websites

NCSF: <https://ncsf.info>  
 Astronomical League: <https://www.astroleague.org/>  
*The Reflector* magazine: <https://www.astroleague.org/reflector>  
 Milwaukee Astronomical Society:  
<http://milwaukeeastro.org/index.asp>  
 North Central region of the AL: <https://ncral.wordpress.com/>  
 NCRAL newsletter archive:  
<https://ncral.wordpress.com/newsletter-archive/>  
 US list of astronomy clubs:  
<https://www.astroleague.org/astronomy-clubs-usa-state>

### Astronomy gear, vendors and online sellers

<https://www.bhphotovideo.com/>  
<https://www.highpointscientific.com/>  
<https://optcorp.com>  
<https://www.telescope.com/>

### Astrophotography

Astrobin (a paid site for astrophotography uploads):  
<https://welcome.astrobin.com/>  
 Rogelio Bernal Andreo <http://www.deepskycolors.com>  
 Chad Andrist <https://www.astrobin.com/users/SparkyHT/>  
 Jim DeLillo <https://www.astrobin.com/users/jimdelillo/>  
 Harrington Beach Imagers Group (Ernie Mastroianni and Tom Schmidtkunz)  
[https://www.astrobin.com/users/Harrington\\_Beach\\_Imagers\\_Group/](https://www.astrobin.com/users/Harrington_Beach_Imagers_Group/)  
 Trevor Jones <https://astrobackyard.com/>  
 Rick Kazmierski <http://skyhawkobservatory.com>  
 Jerry Lodriguss <http://www.astropix.com/index.html>  
 N.I.N.A astrophotography suite:  
<https://nighttime-imaging.eu/download/>  
 Gabe Shaughnessy: <https://www.astrobin.com/users/AstroGabe/>  
 Babak Tafreshi <https://babaktafreshi.com/>

### Classifieds

<https://astromart.com/>  
<https://www.cloudynights.com/>

### Clear sky forecasts

Astrospheric <https://www.astrospheric.com/>  
 Clear Dark Sky <https://www.cleardarksky.com/csk/>  
 Clear Outside <https://clearoutside.com/forecast/50.7/-3.52>

### Digital star atlases

Cartes du Ciel <https://www.ap-i.net/skychart/en/start>  
 Stellarium <https://stellarium.org/>  
 Sky Safari <https://skysafariastromy.com/>

### Magazines and online astronomy news

*Sky & Telescope* <https://skyandtelescope.org/>  
*Astronomy* <https://astronomy.com/>  
*Astronomy Now* <https://astronomynow.com/>  
*Skynews* <https://skynews.ca/>  
*The Reflector* <https://www.astroleague.org/reflector>  
*Sky at Night* <https://www.skyatnightmagazine.com/>  
 Astronomy Picture of the Day  
<https://apod.nasa.gov/apod/astropix.html>



Member Rick Kazmierski captured the subtle detail of NGC 7023, also known as the Iris Nebula, from his home observatory using a Canon DSLR and a 14-inch Meade telescope. The Iris Nebula glows at almost 7th magnitude in the constellation Cepheus. You can see more of Rick's photos at his [website](#), listed under Astrophotography at left.

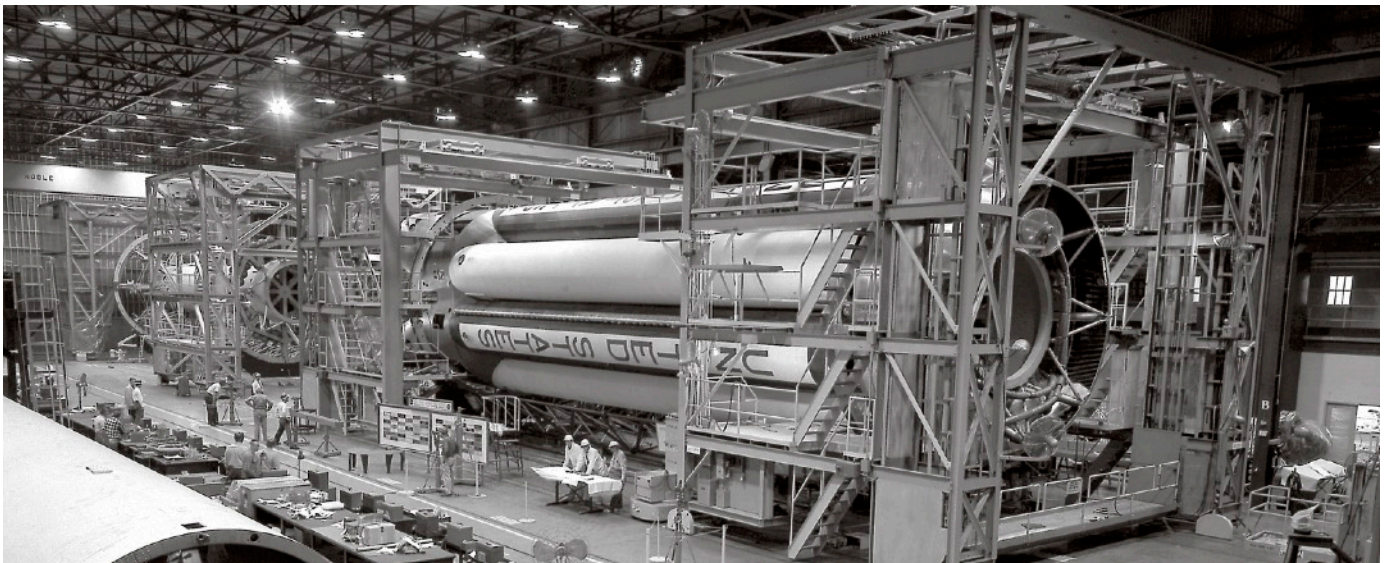
### NASA images and missions

James Webb telescope [https://www.nasa.gov/mission\\_pages/webb/main/index.html](https://www.nasa.gov/mission_pages/webb/main/index.html)  
 Hubble telescope <https://hubblesite.org/>  
 NASA JPL Curiosity <https://www.jpl.nasa.gov/missions/mars-science-laboratory-curiosity-rover-msl>  
 NASA JPL Juno at Jupiter <https://www.jpl.nasa.gov/missions/juno>  
 NASA JPL Mars 2020 <https://www.jpl.nasa.gov/missions/mars-2020-perseverance-rover>  
 NASA Johnson Space Center on Flickr  
<https://www.flickr.com/photos/nasa2explore/>  
 NASA Images  
<https://www.nasa.gov/multimedia/imagegallery/index.html>  
<https://images.nasa.gov/>  
 NASA video on YouTube  
[https://www.youtube.com/channel/UC\\_aP7p621ATY\\_yAa8jMqUVA](https://www.youtube.com/channel/UC_aP7p621ATY_yAa8jMqUVA)  
 NASA International Space Station  
[https://www.nasa.gov/mission\\_pages/station/main/index.html](https://www.nasa.gov/mission_pages/station/main/index.html)  
 NASA Kennedy on Flickr  
<https://www.flickr.com/photos/nasakennedy/>  
 NASA Project Apollo Hasselblad scans:  
<https://www.flickr.com/photos/projectapolloarchive/albums>

### NASA Research Centers

Ames Research Center <https://www.nasa.gov/ames>  
 Armstrong Flight Research Center  
<https://www.nasa.gov/centers/armstrong/home/index.html>  
 Jet Propulsion Laboratory  
<https://www.nasa.gov/centers/jpl/home/index.html>  
 White Sands [https://www.nasa.gov/centers/wstf/index\\_new.html](https://www.nasa.gov/centers/wstf/index_new.html)  
 Johnson Space Center  
<https://www.nasa.gov/centers/johnson/home/index.html>





You can see [this historic image](#), taken 61 years ago this month, in the image gallery of the Marshall Space Flight Center. It shows engineers preparing the first stage of the Saturn I rocket for checkout in Building 4705. The Saturn I S-I stage employed eight clustered H-1 engines capable of producing 1.5 million pounds of thrust.

### NASA Research Centers (continued)

Marshall Space Flight Center

<https://www.nasa.gov/centers/marshall/home/index.html>

Michoud Assembly Facility

<https://www.nasa.gov/centers/marshall/michoud/index.html>

Stennis Space Center

<https://www.nasa.gov/centers/stennis/home/index.html>

Glenn Research Center

<https://www.nasa.gov/centers/glenn/home/index.html>

Plum Brook Station <https://www.nasa.gov/centers/glenn/about/testfacilities/index.html>

Katherine Johnson IV&V facility

<https://www.nasa.gov/centers/ivv/home/index.html>

Goddard Space Flight Center <https://www.nasa.gov/goddard>

Mary W. Jackson NASA headquarters

<https://www.nasa.gov/centers/hq/home/index.html>

Wallops Flight Facility

<https://www.nasa.gov/centers/wallops/home>

Langley Research Center <https://www.nasa.gov/langley>

Kennedy Space Center

<https://www.nasa.gov/centers/kennedy/home/index.html>

### Observatories

UW Astronomy <http://www.astro.wisc.edu/>

Gemini <http://www.gemini.edu/>

WM Keck <http://www.keckobservatory.org/>

European Southern Observatory <https://www.eso.org/public/>

ESO images <https://www.eso.org/public/images/>

NOIRlab: formerly National Optical Astronomy Observatory

<https://noirlab.edu/public/images/>

National Radio Astronomy Observatory <https://public.nrao.edu/>

Lowell Observatory: <https://lowell.edu/>

### Observing

Clear Skies Observing Guides <https://clearskies.eu/csog/>

Current comets: <http://www.aerith.net/comet/weekly/current.html>

Fred Espanek's eclipse guide: <http://mreclipse.com>

Upcoming and seasonal events: <https://in-the-sky.org/>

ISS transits: [transit-finder.com](http://transit-finder.com)

CCD calculator: <https://new-astronomy-ccdcalc.software.informer.com/>

Tonight's Sky localized <https://telescopius.com/>  
Jupiter's Great Red Spot transit

### Outreach organizations

Planetary Society <https://www.planetary.org/>

Night Sky Network from JPL/NASA <https://nightsky.jpl.nasa.gov>

Citizen science participation <https://cosmoquest.org>

NASA Solar System Ambassadors <https://solarsystem.nasa.gov/solar-system-ambassadors/events/>

### Sky calendars

<https://skyandtelescope.org/observing/sky-at-a-glance/>

<https://astronomy.com/observing>

### Spaceflight news, blogs, commercial and foreign space agencies

Earth and Sky: <https://earthsky.org/>

NASA blogs: <https://blogs.nasa.gov>

NASA Spaceflight <https://www.nasaspaceflight.com/>

NASA Watch <http://www.nasawatch.com>

Spaceflight Now <https://spaceflightnow.com/>

Spaceflight Insider: <https://www.spaceflightinsider.com/>

Space News: <https://spacenews.com/>

Space Weather <https://spaceweather.com/>

Space Journal of Asgardia (a borderless nation of space enthusiasts) <https://room.eu.com/>

Universe Today <https://www.universetoday.com/>

### Spaceflight: commercial and foreign space agencies

Blue Origin <https://www.blueorigin.com/>

Boeing <https://www.boeing.com/space/>

China National Space Agency : <http://www.cnsa.gov.cn/english/>

European Space Agency <http://www.esa.int/>

India space agency: <https://www.isro.gov.in/>

Lockheed Martin Space

<https://www.lockheedmartin.com/en-us/capabilities/space.html>

Roscosmos (Russian space agency): <http://en.roscosmos.ru/>

Sierra Nevada Corp. <https://www.sncorp.com/space-systems/>

SpaceX: <https://www.spacex.com/>

United Launch Alliance <https://www.ulalaunch.com/>

Virgin Galactic: <https://www.virgingalactic.com/>



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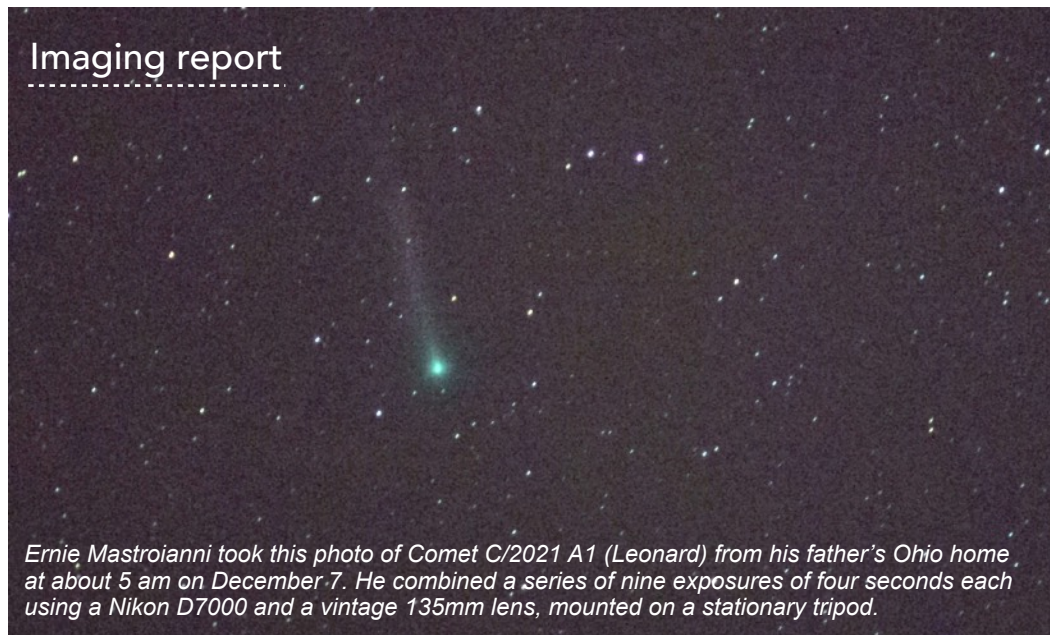
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NCSF is a member of the [North-Central Region of the Astronomical League](#).



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

**Imaging report**

*Ernie Mastroianni took this photo of Comet C/2021 A1 (Leonard) from his father's Ohio home at about 5 am on December 7. He combined a series of nine exposures of four seconds each using a Nikon D7000 and a vintage 135mm lens, mounted on a stationary tripod.*



NGC 1499  
California Nebula  
12/6/2021  
RedCat S1, F4.9  
2 minutes x 45  
Rick Sell

**Above:** Rick Sell's image of the California Nebula combined 92 minutes of exposure with his RedCat telescope. **Right:** Don Woelz used his new iOptron mount, a 73mm William Optics refractor and an unmodified Nikon to capture the North American Nebula last month.

**SPECTRUM newsletter**

Published monthly by the Northern Cross Science Foundation, Inc. (NCSF), a nonprofit amateur astronomy organization based in southeastern Wisconsin.

<https://ncsf.info>

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<https://www.facebook.com/NCSFAstronomy/>

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