

SPECTRUM

Northern Cross Science Foundation Newsletter

February, 2018

Looking Up

February 1 Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to Follow

February 3, Saturday

Candlelight Ski & Hike

5:30 p.m. - 8:30 p.m.

Ice Age Center (Dundee)

February 10, Saturday

Candlelight Ski & Hike

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

Pike Lake Beach Area

February 15, Thursday

Board Meeting

7:30 p.m.

House of Jeff Setzer

March 1, Thursday

NCSF Annual Banquet

Social Hr - 6:00 p.m.

Dinner - 7:00 p.m.

Fox & Hounds Restaurant

1298 Friess Lake Road

Hubertus, WI

(See Banquet Form Inclosed.)



Japanese spacecraft shows Venus in new light *by Ernie Mastroianni*

When Japan's Akatsuki spacecraft (known also as the Venus Climate Orbiter) spacecraft closed in on Venus in late 2010, its main engine failed to fire. With no way of slowing down, the spacecraft overshot the planet and barreled into orbit around the Sun.

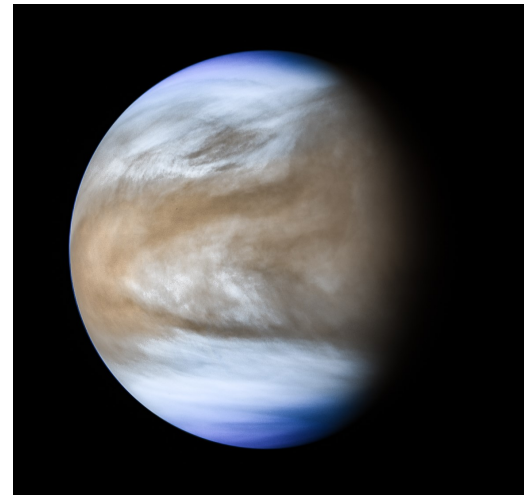
The mission, meant to study the dynamics of the planet's perpetual cloud cover and hellishly hot surface, was feared lost. But failed engine aside, the spacecraft was in good working order. So five years later, when its path neared Venus, engineers at the Japan Aerospace Exploration Agency (JAXA) commanded the spacecraft to fire four attitude control thrusters to slow it into an elliptical orbit around the planet.

The move succeeded and the hardy spacecraft is now snapping photos in ultraviolet and infrared light, revealing unprecedented details of the dynamic weather patterns on Venus. Photos taken in conventional wavelengths would leave the planet looking a plain blinding white - just how it looks through our telescopes.

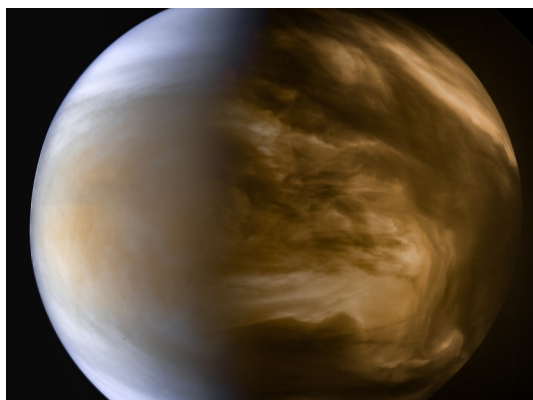
The images can be viewed and downloaded from a publicly-accessible gallery (<http://darts.isas.jaxa.jp/planet/project/akatsuki/>). The most recent batch of photos were made available in December. While displayed in black and white, those with image-processing experience can merge the photos taken in different wavelengths to produce color photos that reveal

the planet in startling new detail, albeit in false color.

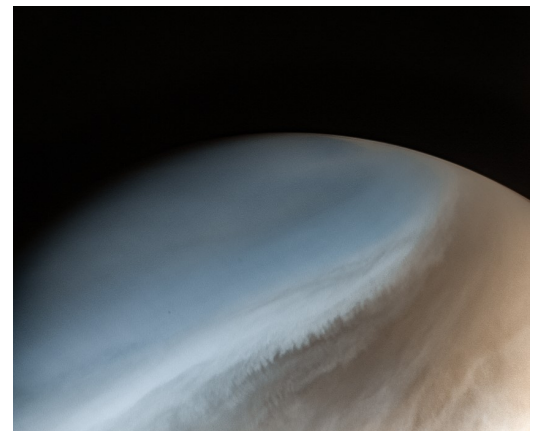
These three photos have been processed by veteran image processor Kevin Gill, who uploads the images to his Flickr account and allows them to be shared freely. You can see more of his work here: <https://www.flickr.com/photos/kevinmgill/>



A combination of dark and night images are combined into one. The dark side is on the right. The infrared camera takes pictures of heat, so even though the planet is dark, it glows brightly to an infrared sensor.



Venus clouds and weather patterns are clearly visible, though the surface is still obscured. Processed using infrared and ultraviolet filtered images of Venus taken by Akatsuki.



Venus' southern polar region is shown in a closer view.

Photo credit: JAXA/ISAS/DARTS/
Kevin M. Gill/CC BY 2.0

January Meeting Minutes

By Kevin Bert

The January 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 8:20pm and welcomed 14 members and guests. It was welcome to 2018 and goodbye to 2017 and the amazing total solar eclipse. Jeff then asked for standard reports.

Treasurer Gene Dupree tells the membership that the checking balance is \$12,008.90 and the Observatory balance remains at \$551.40. We are fortunate again to have the Powell Trust donate \$1,500.00 to the Northern Cross. He welcomes any 2018 membership dues.

Secretary Kevin Bert reports that the membership count remained the same since last month. Under Astronomical League news the 2018 Regional Convention will be held in Sturgeon bay at the Lathem-Smith Lodge on May 4th and 5th. The doorastronomy.org site has all of the details of speakers and fees.

Observatory Director Dan Bert reports that all is operational and outreach is now in the hibernation mode. The final year's volunteer hours report to the park will be turned in soon. Whether to image or observe, it is a great time for members to take advantage of the early dark conditions to enjoy the winter skies with next to no interruptions from park activities. Dressing warm is obviously the key. Don't forget that there is a heater there to warm up if needed. So, "May the quartz be with you".

Jeff Setzer informed the membership that recruiting for the 2020 regional planning committee is postponed. Apparently another member society had spoken for that convention. He will look to confirm the results but planning to host a future convention may have to be pushed off to a future year.

On another topic Jeff explained why the Wisconsin Observers Weekend, (WOW), is scheduled late this year. It unfortunately conflicts with the Astronomical League's National Convention. As in other years a pre WOW will run the previous weekend up to WOW and might appeal to those that plan on attending the convention. Contact Jeff for details.

Under new business Aris Penikis suggested that the club would benefit from hosting a public telescope clinic over these low activity winter months. Topics on how to buy and use a scope along with one on one help should appeal too many. A large public advertising of the event would be key to attracting interested people. In the end it could lead to new NCSF memberships.

Rick Wandsnider was asking for help for Boy Scout Astronomy Merit Badge activity March 23-25. Interested members can contact him for details.

Jeff Setzer covered upcoming events. January 20th is a candlelight ski & hike at Horicon Marsh. February 3rd is another ski & hike at the Ice Age Center in Dundee. February 10th is Pike Lake's Ski & Hike. Telescopes are needed if you are willing to brave the elements.

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

Astronomy and Astrophotography *by Mike Borchert*

I am writing this partly to document my adventure in pursuing astrophotography, but also to relate how astronomy keeps my life interesting. Having just retired last year, one of my goals was to get back into observing, and, try my hand at astrophotography. The beautiful Nebulas, close-ups of the moon, planetary pictures, as well as galactic images, our Milky Way as well as far away giants, have always intrigued me. Now there is a debate as to whether time is better spent behind a telescope eyepiece or on a computer, processing images, but I really plan to do both, after all, I did retire. I am getting better on the large club reflector, and I will always be in awe of it and what it can do. I am hoping imaging will fill up those five below and rainy, cloudy nights.

That being said, I have had a great time at a couple of star parties in Eau Claire and Waupaca, while also having basically a once in a lifetime solar eclipse event that I will not forget (along with a few solar eclipse picture). Along the way I have met some truly generous individuals who have share their equipment, as well as their time. The travels have taken me and my wife Gayle, to fun places, making memories.

To start, the hook was set one night with Ernie M sharing his expertise with myself and a few other fellow photographers obtaining some beautiful exposures of M81 and M82. I am not sure why, but after spending some time with those objects, they stay in my mind like other pictures I have taken while on vacations or other spe-

cial events. I would like to in future articles, relate where this hobby takes me. So please stay tuned, more to come



Listening to the Chief Investigator for a future mission to the asteroid Psyche, while visiting the East Valley Astronomy Club in Gilbert (Phoenix) Arizona.

2018 Dues

Just a reminder that if you haven't paid your NCSF 2018 Dues yet, it is not too late. Submit a completed Dues Invoice form to Secretary Gene DuPree. Form is attached with the digital copy of the Newsletter.

Library Telescope Program

At our NCSF Board meeting in January, Kevin Bert reported on our Library Telescope Program. For those members who may not be aware, NCSF has donated a number of Orion 4.5 inch telescopes to local libraries and is in the process of donating several more. These scopes are meant for loan to interested Library patrons and are maintained by NCSF members. It is hoped that once a Library receives a telescope and realizes its value to their program, they will add additional scopes on their own.



Kevin Bert oversees the program and makes several custom changes to a scope prior to it being assigned to a Library. These adjustment help make the instruments more user friendly and more durable for use by the public. We currently have five telescopes for our Library Program assigned as follows:

Grafton Library

Port Washington Library

West Bend Library

(Pending Final Adjustments)

2 Additional telescopes

(Not yet been assigned)

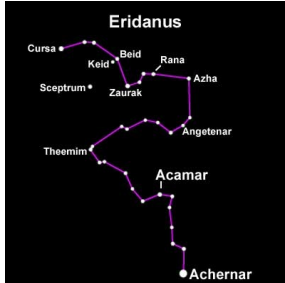
February General Meeting

Astronomy 101 - Kevin Bert

"Stating the Location of Objects"

Part 2

Last month we covered the earth based alt-azimuth system of location. This month we explore a system that uses sky coordinates found on most detailed maps.



Constellation of the month;

Eridanus

The River

Main Program - Rick Wandsnider

A Book Review

The Glass Universe by Dava Sobel

Did you ever wonder how the stellar categorization began or why astronomer's focus on variable stars changed the size of the universe overnight? All these events and more share space and time with a handful of women known as the Pickering Harem. Rick will share what he learned in his NCSF Book Review.

The History of Stellar Enlightenment

If you've ever wondered about how the stellar categories of O, B, A, F, G, K, M came to be or how astronomers even know to which category to classify a star or how variable stars are used to judge distances with a high degree of accuracy you will want to hear the presentation on the evolution of our understanding of stars deemed by some to be "the greatest example of using the scientific method".

January Public Viewing Events

Horicon Marsh, January 20

By Charlotte DuPree

The 8th annual ski and hike event started partly cloudy with a warm temperature, and the Moon was the main object to see. Around 7:00 the sky cleared, and many visitors waited to look through the scopes. We like to set-up by the front door, because the shuttle busses stop there, and we can take turns going in and out to warm up. Because of the large crowd, over 1500, we set-up a display inside and talk about the night sky. Unfortunately, there are street lights, which limits the direction we can look. During summer viewing sessions we get a lot of request to see the Orion nebula, so this was a great night for everyone to take a look. Next year we plan to find a better spot to view from. Thanks to Jeff for bringing his 8 inch dob.



Gene Dupree set-up and bundled-up at the Horicon Marsh Ski and Hike.

News Flash! *By Jeff Setzer*

The NCSF WILL be hosting the 2020 NCRAL convention, after all! Charlotte DuPree, former Vice Chair of the NCRAL, had the records from when we informed the NCRAL leadership that we would host in 2020, and the current NCRAL Chair tracked down the error and corrected the record, so we are in! That means the our 2020 Convention Committee will be forming post-haste. Let me know if you want in! Our first meeting will be sometime in late February — stay tuned!

Observatory Report *By Dan*

2017 Observing Summary:

The volunteer participation forms completed at each public viewing event have now been totaled. Looking back at this past year, a total of 20 public viewing nights were held at the Jim & Gwen Plunkett Observatory. All together 28 different members logged a combined total of 400 volunteer hours towards public outreach at the park. A big thank you to everyone who gave of their time to help provide a window to the universe for the estimated 1000 plus visitors. Looking forward to the 2018 viewing season, clear skies.

Generous Donation

Northern Cross Science Foundation would like to thank the Powell Family Trust for the generous donation of \$1,500 to our Club for 2017. THANKS AGAIN!

RELATED INFO

Leaders for Public Viewing

February 3

Ice Age Center

DuPrees

February 10

Pike Lake

Charlotte and Gene DuPree

Conferences 2018

NCRAL

May 4 - 5

Sturgeon Bay, WI

Door Peninsula Astronomical Soc.

www.doorastronomy.org

ALCON

July 11 - 14

Minneapolis/St. Paul, Minnesota

Minnesota Astronomical Society

alcon2018.astroleague.org

Star Parties 2018

WOW

July 12 - 15

Hartman Creek State Park

WWW.new-star.org

Northwoods

August 17 - 19

Hobbs Observatory

Beaver Creek Reserve

Fall Creek, WI.

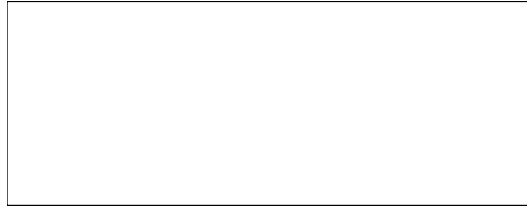
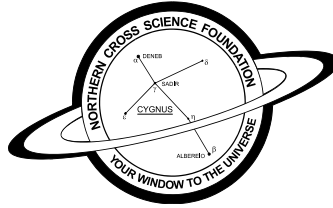
www.cvastro.org

11th Annual Swap-n-Sell Saturday, March 24th

9:00 a.m. - 2:00 p.m.

Aviation Heritage Center, Sheboygan Airport

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**Jim & Gwen Plunkett
OBSERVATORY**



SPECTRUM

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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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