

SPECTRUM

Northern Cross Science Foundation Newsletter

February, 2017

Looking Up

February 2, Thursday

General Meeting

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

Business Meeting to Follow

February 4, Saturday

Cancelled

Candlelight Ski & Hike
Harrington Beach

February 4, Saturday

Reuss Ice Center

5:00 p.m.- 9:00 p.m.
Campbellsport

February 11, Saturday

Day Hike

(Solar Veiwing)
10:00a.m.- 2:00 p.m.
Harrington Beach

February 11, Saturday

Candlelight Ski & Hike

6:00 p.m. - 9:00 p.m.
Pike Lake State Forest

February 16, Thursday

Board Meeting

7:30 p.m.
Jeff Setzer Home

March 2, 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.)

A Spectacular Closing Act *by Ernie Mastroanni*

It does not seem like 20 years. The Cassini spacecraft, a joint project led by NASA and the European Space Agency, began its journey to Saturn from Cape Canaveral on October 15, 1997, launched on a Titan IVB rocket. This year, its epic mission will end when controllers send it plunging into the ringed planet on September 15. During its mission, it snapped hundreds of thousands of spectacular photos, discovered 31 new moons, and sent the Huygens probe to a parachute landing on Titan, the solar system's only moon with a significant atmosphere.

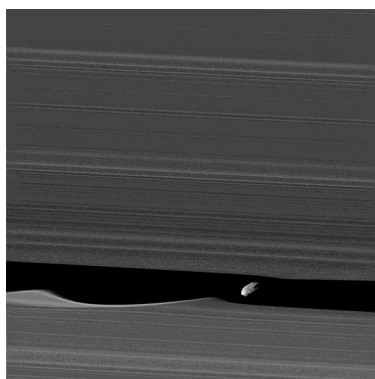
It took Cassini seven years to reach Saturn, taking an indirect route to build up speed by passing Venus twice, then skimming past Earth and Jupiter before entering orbit in 2004 for a four-year mission. The venerable spacecraft proved robust enough that its mission was extended twice: Equinox (2008-2010) and Solstice (2010-2017).

Cassini's current and final mission, dubbed the Grand Finale, brings it over the planet's north pole and just beyond the F ring for several orbits. Beginning in April, controllers will steer it to a series of daring dives between the planet and the inner edge of the rings, passing closer to the rings than ever before.

Cassini is powered by radioisotope thermoelectric generators, producing about 800 watts of power, but fuel is getting low. Rather than risking a dead spacecraft crashing into Enceladus, an icy moon with a salty ocean and the potential for life, mission directors chose to deliberately send it plunging into Saturn's atmosphere.

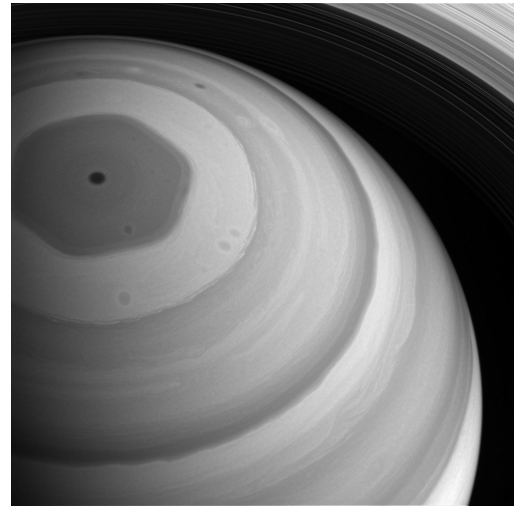
On these final few orbits, Cassini continues to send back images, revealing even greater detail in the rings, closer views of moons and new looks at Saturn's mysterious northern hexagon.

Daphnis:



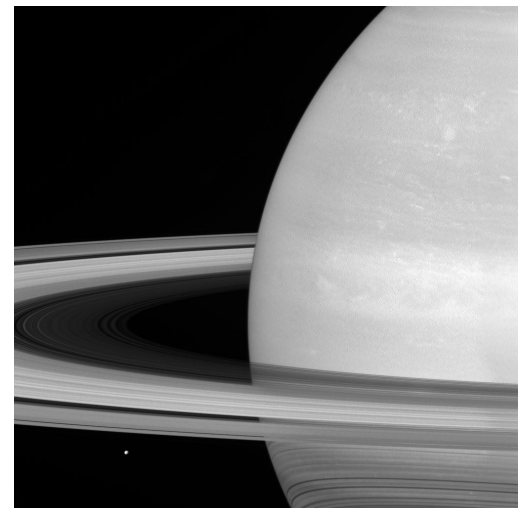
The wave maker moon Daphnis, only 5 miles across, raises waves in the rings as it orbits in the 26-mile wide Keeler Gap on Jan. 16, 2017.

Hexagon:



Saturn's mysterious hexagon-shaped jet-stream caps its north pole region and is seen in full sunshine in this view through an infrared filter on Dec. 26, 2016.

Tiny Mimas



Saturn's icy moon Mimas is dwarfed by the planet's enormous rings, released by NASA on Nov. 28, 2016. Cassini is expected to determine the mass of Saturn's rings to within just a few hundredths of Mimas' mass by tracking radio signals from the spacecraft as it flies close to the rings.

(Con't. pg.3)

January Meeting Minutes

By Kevin Bert

The January 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 3 guests. He then asked for standard reports.

Treasurer Gene Dupree reports \$10,881.31 in the checking account. The Observatory account remains at \$1,042.01. Members are encouraged to get in their 2017 dues if they haven't yet done so.

Secretary Kevin Bert reports that there are 59 members in the roster. A finalized 2017 roster will be available in March. The Astronomical League's publication "The Reflector," had a number of interesting articles with one on meteorite collecting in particular. Astronomy calendars are sold out but eclipse glasses are still available. The date for the Astronomical League 2017 Regional Convention in Rochester Minnesota is April 21 - 23. Look to ncral.wordpress.com for additional information as it becomes available.

Observatory Director Dan Bert had nothing new to report as the 2016 public viewing season came to an end. A full report on our club's participation is being forwarded to the park.

Rick Kazmierski reminded members that they can contribute an article to the newsletter.

With no other events scheduled in December, Jeff Setzer covered upcoming 2017 events. January 21st is a Candlelight Snowshoe Hike at Horicon Marsh, February 4th is a Candlelight Ski & Hike at Harrington Beach State Park with the Reuss Ice Age Center having a winter viewing opportunity on the same night. The 11th is another Candlelight Ski & Hike at Pike Lake State Park. Members telescopes would be appreciated to all these events.

As a reminder, it was also noted that the annual banquet will again take the place of the March meeting.

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



Thanks to an outreach program started in 2008, thousands of specially modified Orion StarBlast 4.5 telescopes are now available to library patrons. *Jennifer Stowbridge*

Library Telescope Update

By Kevin Bert

The Grafton Library has had tremendous success with the Library Telescope Program. All indications show a it is in high demand. At last month's Board Meeting the talk was to expand the program slowly and cover a larger area. With the generous contribution of the Powell Trust It was decided to purchase a second telescope and approach the West Bend Library system for its implementation.

The Significance of This Year's Eclipse

By Rick Dusenbery

By now, we (in the NCSF) and other amateur astronomers across America (and beyond) are getting pretty excited about the Great American Eclipse on August 21. In fact, quite a few of us have already made plans to travel to southern Illinois to be in the path of totality for this event. Those of us with our heads in the stars have been anticipating this eclipse for years, but for the general public, it is probably not big news yet.

However, I was amazed to see mention of the eclipse in "The Daily News" (Washington County) on December 31, 2016. The article is titled; "Best things to see in 2017" written by Margaret Backenheimer of the Tribune News Service. This article includes events around the world such as: the 60th annual Mackinac Bridge Walk, the New Orleans Jazz & Heritage Festival, the Invictus Games in Toronto, Oktoberfest in Munich, Germany, and many more.

But here is how this article opens; "The top event in 2017 is not human-made, but rather celestial – a total solar eclipse. This truly heads-up spectacle has not been seen across America in 99 years." And under the subheading for the month of August:

Update camping information on viewing the August 21, 2017 total solar eclipse.

Gene has found a hassle free way to view the 2017 eclipse. In November we visited the campground in southern Illinois. It is just north of the center line. The owner is very willing to take reservations now, and they have a large open area that he will set aside for our group. All sites (except tent only field) have water, and electric hook-up, for \$30 day. Starting in March a one nights deposit will be requested. Two tents and four adults, or one family group are allowed on each site. We will be going down there on Thursday, August 17th. to the 23rd. We want to beat the rush of travel traffic. You can come and go anytime you want. About 40 sites have been reserved so far. Come down early as the National Shawnee forest is on the edge of the campground and there are many other sites to see.

Latitude N37,5006°, Longitude W88,7968. Totality is 2M 39.4 Sec. Make your reserva-

tion at Cedar Lake Campground, 2090 Gilead Church Rd., Vienna, Ill., 63995, 618-695-2600. When making a reservation tell them you are with the Wisconsin Astronomy group. This campground is under new ownership. They hope to update the bunkhouse cabins which currently have microwave and refrigerator, and some kitchen supplies, and are available for \$100. Please let me know if you plan on making reservations so we know how big of a group to plan for. If you have any questions call Gene, 262-675-0941, grdupree@charter.net. P.S., The next total solar eclipse in the US is April 2024.



21: Oregon to South Carolina – Total Solar Eclipse. Heavenly headliner sweeps across the nation for the first time since 1918." So there it is; the Great American Eclipse as reported in a general local newspaper.

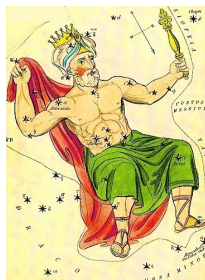
February General Meeting

Astronomy 101 *by Kevin Bert*

The February 101 class is entitled:

"Recommendations to the Beginner"

Looking back at peoples experience of star gazing there a few suggestions to be made to a person starting out in this hobby to make it a more enjoyable.



Constellation of the month;
Cepheus

Main Program

"The Search for Cosmic Clusters"

Video from the History Channel
"The Universe" series

They are some of the largest structures in the universe, huge gatherings of millions, or even billions, of stars in either globular or open clusters. But how are these clusters born? What keeps them together? And what could tear them apart?

Don't miss this episode from the "Universe" series, shown at our new facility with surround sound and large screen presentation.

RELATED INFO

NCSF Welcomes New Member

Tom Tenorio

Leaders for Public Viewing

February 4, Saturday

Reuss Ice Center
DuPrees

February 11, Saturday

Pike Lake State Forest
DuPree's

February 11, Saturday

Harrington Beach
Leaders Needed

January Public Viewing Events

Horicon Marsh - January 21

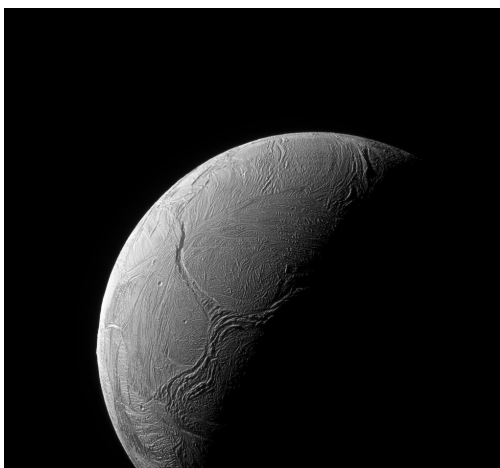
By Charlotte DuPree

candle light snowshoe and hike. No snow and a week of warm weather turned the trail into mud. And, of course the sky was all clouds! We put our display in the lobby area, and told everyone about the August 21 eclipse. The official count was 727 people, since not everyone comes to the front door the guess estimate was around 1000. Thanks to Rick D. for setting-up his scope outside, to view the clouds, and to send people our direction.

(Con't. from pg1)

Enceladus

A sinuous feature snakes northward



from Enceladus' south pole like a giant tentacle, created by stresses in Enceladus' icy shell. A salty ocean sits under the moon's thick icy shell and some think conditions there could support life.

To see more photos, explore the Cassini home page at;

<https://saturn.jpl.nasa.gov/>.

2017 Swap-n-Sell date has been set!

10th Annual Swap-n-Sell
Saturday, March 25th
Aviation Heritage Center
Sheboygan Airport
9:00 a.m. - 2:00 p.m.

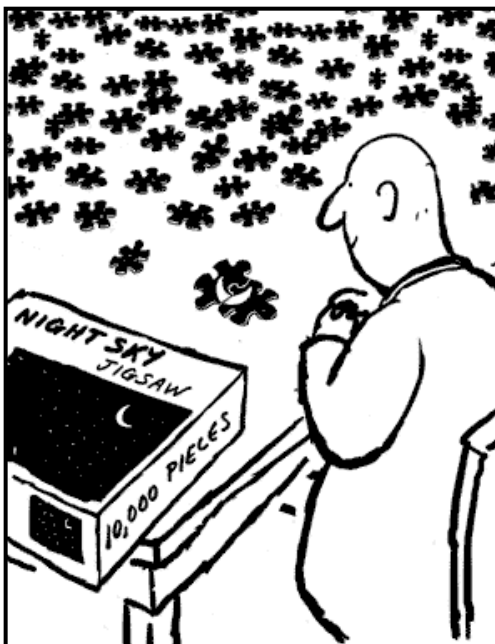
Speaker Schedule:

10:00 - Jeff Setzer, Northern Cross Science Foundation:

"The Library Telescope: A New Approach to Astronomy Outreach"

11:00 - Astronomy Trivia! Test your knowledge against other amateur astronomers

12:30 - Spaceport Sheboygan



Star Parties 2017

NCRAL

April 21 - 23

Rochester, MN

Ncral2017.rochesterskies.org

WOW

June 22 -25

Hartman Creek State Park

WWW.new-star.org

Northwoods

August 25 -27

Hobbs Observatory

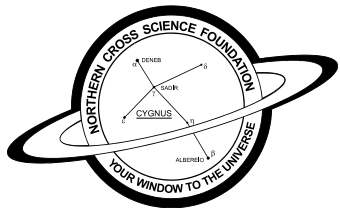
Beaver Creek Reserve

Fall Creek, WI.

www.cvastro.org



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West Bend, WI 53095



Jim & Gwen Plunkett
OBSERVATORY



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Meet Wisconsin Astronaut Jeff Williams

By Joyce Jentges

Astronaut Jeff Williams of Wisconsin has rescheduled his appearance at Spaceport Sheboygan for April 8, 2017. You can choose from 10 am or 1:30 time slots. Tickets must be purchased in advance. Look up Spaceport Sheboygan on Facebook and look for the announcement or go to www.spaceportsheboygan.com. Tickets are \$5. Call 920-889-7148 for more information. As of 1/25/17 the event section is not updated on their website.

Some Great Thoughts

"The great tragedy of Science -- The slaying of a beautiful hypothesis by an ugly fact."
- Thomas Henry Huxley"

The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge."
- Stephen Hawking

"Science is built up of facts, as a house is with stones... But a collection of facts is no more a science than a heap of stones is a house."
- Henri Poincare

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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