

SPECTRUM

Northern Cross Science Foundation Newsletter

January 2014

Looking Up

January 2, Thursday

General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Business Meeting

"Show & Tell" to follow

January 4, Saturday

Candlelight Ski&Hike

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

Harrington Beach

January 16, Thursday

Board Meeting

7:30 p.m.

Home of Jeff Setzer

January 18 Saturday

Candlelight Ski&Hike

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

Horicon

February 1, Saturday

Candlelight Ski&Hike

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

Harrington Beach

February 8, Saturday

Candlelight Ski&Hike

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

Pike Lake State Forest

March ,6 Thursday

Annual Banquet

Fox & Hounds Restaurant

Hubertus, WI

What Happened to Comet Ison NASA 12/4/13

Astronomers have long known that some comets like it hot. Several of the greatest comets in history have flown close to the sun, puffing themselves up with solar heat, before they became naked-eye wonders in the night sky.

Some comets like it hot, but Comet ISON was not one of them.

The much-anticipated flyby of the sun by Comet ISON on Thanksgiving Day 2013 is over, and instead of becoming a Great Comet...."Comet ISON fell apart," reports Karl Battams of NASA's Comet ISON Observing Campaign. "The fading remains are now invisible to the human eye. "At first glance this might seem like a negative result, but Battams says "rather than mourn what we have lost, we should perhaps rejoice in what we have gained—some of the finest data in the history of cometary astronomy."

On the morning of Nov. 28th, expectations were high as ISON neared perihelion, or closest approach to the sun. The icy comet already had a riotous tail 20 times wider than the full Moon and a head bright enough to see in the pre-dawn eye with the unaided eye. A dose of solar heat could transform this good comet into a great one. During the flyby, more than 32,000 people joined Battams and other solar scientists on a Google+ Hangout. Together they watched live images from a fleet of solar observatories including the twin STEREO probes, the Solar Dynamics Observatory, and SOHO. As Comet ISON approached the sun it brightened and faded again. "That might have been the disintegration event," says Matthew Knight of NASA's Comet ISON Observing Campaign.

Cameras onboard the Solar Dynamics Observatory followed the comet all the way down to perihelion and saw ... nothing. "We weren't

sure what was happening," recalls Knight. "It was such a roller coaster of emotions. "The researchers were surprised again when a fan-shaped cloud emerged from the sun's atmosphere. No one knows for sure what was inside. Possibilities include a remnant nucleus, too small for SDO to detect, or a "rubble pile" of furiously vaporizing fragments. By the end of the day, Comet ISON was nothing but a cloud of dust. "It's disappointing that we didn't get a spectacular naked eye comet," says Knight, "but in other ways I think Comet ISON was a huge success. The way people connected with Comet ISON via social media was phenomenal; our Comet ISON Observing Campaign website earned well over a million hits; and I had trouble downloading images near perihelion because NASA's servers were swamped."

"So maybe ISON was the 'Comet of the New Century'"

Battams agrees: "The comet may be dead, but the observing campaign was incredibly successful." Since its discovery in Sept. 2012, Comet ISON has been observed by an armada of spacecraft, studied at wavelengths across the electromagnetic spectrum, and photographed by thousands of telescopes on Earth. For months at a time, uninterrupted, someone or some spacecraft had eyes on the comet as it fell from beyond the orbit of Jupiter to the doorstep of the sun itself. Nothing was missed.

The two astronomers hope that the wealth of data will eventually allow them and their colleagues to unravel the mystery of exactly what happened to Comet ISON. "This has unquestionably been the most extraordinary comet that Matthew and I, and likely many others, have ever witnessed," says Battams. "The universe is an amazing place and it has just amazed us again."

Museum of Space History

Alamogordo New Mexico by Kazmierski's

A road trip in mid-December,; destination Las Vegas, and along the way we found some real Gems! One of which was the **Museum of Space History in Alamogordo New Mexico**. We were quite impressed with the facility. Built off a mountainside, it overlooks the city of Ala-

mogordo with a magnificent view of White Sands National Monument in the Tularosa Basin. Its purpose is to educate the public on the importance New Mexico played in the development of the U.S. Space Program, as well as collecting, preserving, and interpreting significant artifacts relevant to the history of space.

USAF chose the Tularosa Basin for guided missile research and *Continued on Pg 2*

December Meeting Minutes

By Kevin Bert

The December Business meeting of the Northern Cross Science Foundation was held at Unitarian Church North. President Jeff Setzer opened the meeting at 7:30 pm and welcomed 28 members. Jeff then asked for standard reports.

Treasurer Gene DuPree reported that there was \$12,781.96 in the Checking, \$1,109.00 in the observatory account. He encouraged all to get their membership dues in as soon as possible and that there were only two calendars left for sale.

Secretary Kevin Bert said the final membership roster came to 71. No new Astro-nomical League info was given.

Observatory Director Dan Bert reports that all things were good and in order at the Observatory.

Nolan Zadra says that the Imaging Committee will digest some of the recent information he received at the last board meeting and then meet as a group to plan their next step.

NCRAL chairperson Mickey Kazmierski reports that the convention picked up another speaker. This one is a professor from UWM and will talk about Galaxies. Registration is open online and she feels that the hotel rate was reasonable at \$80.00 per night including breakfast. The

Harley Museum tour for Friday looked to be in order.

Jeff Setzer started the election period out by stating last month's nominees. Gene DuPree, Jack Heisler and Thomas Schmidtkunz who as yet had not agreed to run. After assessing the situation Thomas respectfully declined to run. Jeff then opened the floor to nominations. Gene DuPree nominated Rick Kazmierski, Nolan Zadra seconded and Mickey Kazmierski, in Rick's absence, said that Rick was willing to run again. With no other names nominated Gene DuPree motioned to close nominations, Chris Grenda seconded. Charlotte Dupree motioned to have a unanimous ballot for all three members to be passed by acclimation. Nolan Zadra seconded and Jeff passed the motion after hearing the positive feedback from the membership.

For upcoming events Jeff says the next public viewing event will be at Harrington Beach on January 4th. This will take place during the parks Candlelight Ski & Hike and is often well attended.

Under new business Joyce Jentges reports that Andy has been reassigned to be Park Superintendent at Pike Lake State Park and that Robin will now be in charge at Harrington Beach.

Rick Dusenbery asked for any comet observation updates from the membership. Ernie Mastroianni had seen ISON on 5 occasions in binoculars and gave details.

It appears not to have survived it's close graze with the sun. It was noted that comet Lovejoy is still active in the morning sky. With no further business Jeff closed the meeting at 7:55 pm.. Respectfully submitted by Secretary Kevin Bert

Continued from Pg 1 - **Space Museum**

development. The area had to be large, free of human habitation and far away from highly populated cities. The weather had to be within an agreeable range so that year round testing could occur. According to H.J. Sands, the terrain needed to be somewhat level for "extensive range instrumentation and missile recovery."

Archaeoastronomy

This museum started a project twenty years ago, the **New Mexico Space Trail Project**. This is a historical timeline of New Mexico's cultural heritage discovery of prehistoric observatories up to current exploration and development.

For more information on this project, use the link below for an inter-active map that draws the history for you. http://nmspacerail.com/nmst_map.html

Alternatively, if you prefer to download a map and read it, use this web link in your browser to get a map and index. http://www.nmspacemuseum.org/documents/SpaceTrails_map.pdf

Continued on Pg 3

Things to See In the January 2014 Night Sky By Don Miles

Mercury, Neptune, & Uranus: Mercury starts the month too close to be viewed, but will set progressively later than the Sun as the month progresses. It's at (mag -0.5), and will be at its Greatest Eastern Elongation on the 30th, meaning it will be as far behind the setting Sun on this particular orbit. Neptune is the next to set around (8:45/6:45 pm) [early/late in the month], and is at (mag 7.9). Even earlier in the evening it's pretty low, and coupling that with its low brightness, it isn't currently on the top of most observing lists. Uranus sets not long after Neptune at about (11:30/10pm), is at (mag 5.8), and transits about (6pm/sunset).

Jupiter & Mars: Brilliant Jupiter is at (mag -2.7), and rises around sunset, and will transit around (midnight/10pm) in the constellation Gemini. The night of the 5th, Jupiter will be at Opposition, meaning it will be opposite the Sun from our vantage point, so will rise at sunset, and set at sunrise...being in the sky the whole night. On the 14th, the Moon will pass below

Jupiter within about 5 degrees over the course of the evening. Mars rises around (midnight/11pm), and is at (mag 0.8/0.2) in the constellation Virgo. It swiftly moves eastward within Virgo, and by month's end will pass within 5 degrees above the 1st magnitude star Spica.

Saturn & Venus: Saturn rises about (3:15/1:30am) in the constellation Libra. It's about (mag 0.5), and its rings are still tipped so we can still get excellent views of their divisions. It continues to rise earlier, and be higher in the sky all winter. Once you see Saturn thru a telescope in real-time (as opposed to pictures in books, or on the internet where the pictures come from who-knows-where or when), you cannot help but be impressed with its beauty. Venus starts the month too close to the Sun as it's on its way around the "front" side of the Sun. But by later in the month, it will be a morning object once again as it now "leads" the Sun. It will then be bright (mag -4.6) but since it's so close to the Sun, it won't seem as bright as the numbers would indicate.

Moon:

January 1st: New Moon

January 7th: First Quarter

January 15th: Full Moon

January 24th: Last Quarter

January 30th: New Moon

Special Events:

There is only one meteor shower to speak of this month, and those are the Quadrantids. They peak the early evening of the 3rd, after the sky reaches full darkness (about 6pm), and into the later evening. The just past New Moon won't be an issue this time. The debris trail is very narrow, so if you've got clear skies, you won't have to freeze all night long looking for one or two. Predicted rates could be as high as 120/hr, and travel at a moderate speed of about 25 miles/second, and are known to have a bluish color to them. Look in the direction of Arcturus in Bootes (to the northeast).

January General Meeting

101 Class... with Kevin Bert

The Astronomy 101 class for January will cover a variety of subjects from recent **Star Gazer Programs, with Dean Regas**. Dean will be our Keynote Speaker at our upcoming NCRAL 2014 Convention in April. See our NCSF Website for details.

Main Program

Our Annual SHOW & TELL

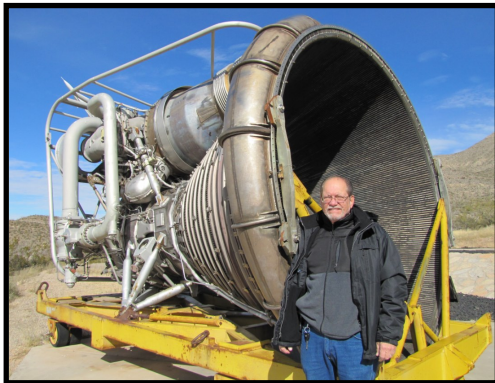
We will have a Show & Tell session for members to display and describe purchases and/or gifts received this Holiday season or during the past year. Have you acquired some recent Astronomy related item you think might be of interest, bring it to the January meeting!

Continued from Pg2 - Space Museum



John P. Stapp Air and Space Park: An outside exhibit for larger exhibits. The above photo is the Rocket Sled that "Fastest Man Alive" John Paul Stapp rode, the Sonic Wind 1 to 632 mph. To what end you may ask. To measure human response to sudden deceleration. The length was 24 ft. width was 8ft.

The Photo below Rick is standing in front of the F-1 Rocket Engine, the most powerful single chamber, liquid fuel-rocket engine



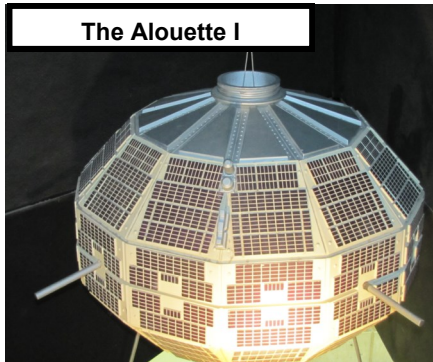
ever flown. **Five** of these engines clustered together to power the first stage of the Saturn V rocket, which carried men to the moon. One of these engines is a height of 18' 3", diameter of 12', and weight of 18,616 lbs.

Satellite Indoor Exhibit – Hanging between floors of the Museum are a group of full size replicas of past Earth orbiting satellites. Seeing them suspended in space as they would appear in orbit was a unique experience we never had before. Not as large as we might have expected with shapes that seldom suggested their purpose, these are examples of satellites we frequently see while viewing the night sky.

A posted sign in the Exhibit said:

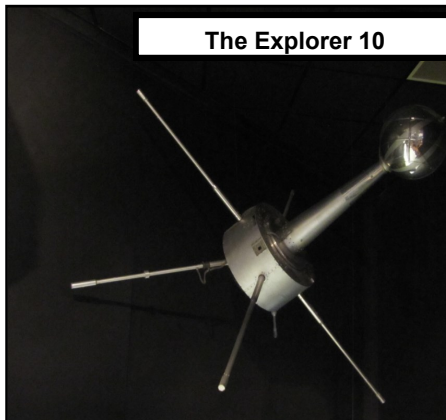
Looking out, looking back. Before man could travel in space, satellites explored the unknown frontier, testing for possible fatal effects of space travel. Today satellites help to conserve and manage resources, and support the global positioning system, telecommunications, and national defense. This gallery tells the story of the remarkable technology of the satellite."

The Alouette I



The Alouette I was designed and built in Canada, 1962. It's purpose was to measure variations in the ionosphere electron density, radio noise origination in outer space and observe cosmic ray particles..

The Explorer 10



The Explorer 10 collected data on the inter-planetary magnetic fields, solar winds and the reaction of our planet's magnetic field to solar flares, launched in 1961. This satellite's transmissions ceased after sixty hours which was five hours longer than expected, they got more for the dollar then...

This article will continue in the February Spectrum!

RELATED INFO

Leaders for Public Viewing

January 4

Candlelight Ski & Hike

Charlotte and Gene DuPree

January 18

Horicon

Charlotte and Gene DuPree

February 1

Candlelight Ski & Hike

Charlotte and Gene DuPree

February 8

Candlelight Ski & Hike

Charlotte and Gene DuPree

Star Parties

NCRAL 2014

April 4 & 5th

Country Inn & Suites

Port Washington

"NCSF Annual Banquet"

Date Change Notice

Our NCSF Banquet Dinner will be held on March 6, 2014 at the Fox and Hounds Restaurant! In Hubertus The menu selection and registration form will be in the February Spectrum

Social hour starts at 6:00 p.m.

Dinner starts at 6:30 p.m.

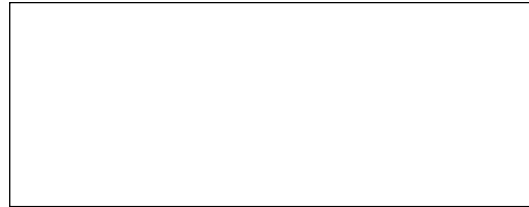
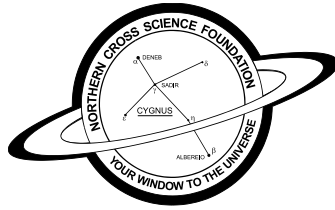
Jim & Gwen Plunkett

OBSERVATORY



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Holiday Party 2013

It's amazing how food and similar interests can make a real party the very best! Photos say a thousand words, enjoy!

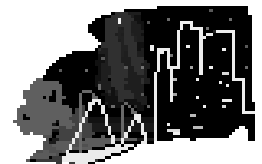


SPECTRUM

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The NCSF supports the International Dark sky association.



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This Issue, along with back Issues of SPECTRUM, can be found on the NCSF Web Site.
<http://www.ncsf.info>

Monthly Meeting Information

7:00 p.m. Astronomy 101
7:30 Main Program
Unitarian Church North
13800 N. Port Wash. Rd.
Mequon, WI 53097