

# SPECTRUM

Northern Cross Science Foundation Newsletter

January 2006

## LOOKING UP

January 5 Thursday

General Meeting

7:30 p.m. Business Meeting

Telescope Workshop

January 7 Saturday

Candlelight Hike/Stargazing

6:30 p.m.

Harrington Beach S. Park

January 19 Thursday

Board Meeting

7:30 p.m.

Home of Jeff Setzer

February 2 Thursday

Annual NCSF Banquet

6:00 p.m. Cash Bar

7:00 p.m. Dinner

**At Buchel's Colonial House  
in Port Washington**

February 4 Saturday

Candlelight Ski

6:30 p.m.

Harrington Beach S. Park

February 11 Saturday

Candlelight Ski & Stars

6:00—9:00 p.m.

Pike Lake State Park

## The Da Vinci Glow

By Dr. Tony Phillips

[http://www.nasa.gov/vision/universe/watchtheskies/04oct\\_leonardo.html](http://www.nasa.gov/vision/universe/watchtheskies/04oct_leonardo.html)

### Five hundred years ago, Leonardo Da Vinci solved an ancient astronomical riddle: the mystery of Earthshine.

When you think of Leonardo Da Vinci, you probably think of the Mona Lisa or 16th-century submarines or, maybe, a certain suspenseful novel. That's old school. From now on, think of the Moon.

Little-known to most, one of Leonardo's finest works is not a painting or an invention, but rather something from astronomy: He solved the ancient riddle of Earthshine.

You can see Earthshine whenever there's a crescent Moon on the horizon at sunset. Look between the horns of the crescent for a ghostly image of the full Moon. That's Earthshine.

For thousands of years, humans marveled at the beauty of this "ashen glow," or "the old Moon in the new Moon's arms." But what was it? No one knew until the 16th century when Leonardo figured it out.

In 2005, post-Apollo, the answer must seem obvious. When the sun sets on the Moon, it gets dark—but not *completely* dark. There's still a source of light in the sky: Earth. Our own planet lights up the lunar night 50 times brighter than a full Moon, producing the ashen glow.

Visualizing this in the 1500s required a wild kind of imagination. No one had ever been to the Moon and looked "up" at Earth. Most people didn't even know that Earth orbited the sun. (Copernicus' sun-centered theory of the solar system wasn't published until 1543, twenty-four years after Leonardo died.)

Wild imagination was one thing Leonardo had in abundance. His notebooks are filled with sketches of flying machines, army tanks, scuba gear and other fantastic devices centuries ahead of their time. He even designed a robot: an armored knight that could sit up, wave its arms, and move its head while opening and closing an anatomically correct jaw.

To Leonardo, Earthshine was an appealing riddle. As an artist, he was keenly interested in light and shadow. As a mathematician and engineer, he was fond of geometry. All that remained was a trip to the Moon. It was a mental journey:

He was wrong about two things:

First, the Moon has no oceans. When Apollo 11 astronauts landed at the Sea of Tranquility, they stepped out onto rock. Lunar "seas" are made of ancient hardened lava, not water.

Second, Earth's oceans are not the primary source of Earthshine. Clouds are. Earth shines because it reflects sunlight, and clouds do most of the reflecting. When Apollo astronauts looked at Earth, the oceans were dark and the clouds were bright.

But these are quibbles. Leonardo understood the basics well enough.

In the decades ahead, humans are going to travel in person where Leonardo's imagination went 500 years ago. NASA plans to send astronauts back to the

*(Da Vinci on page 4)*

## December Meeting Minutes By Kevin Bert

The December business meeting of the Northern Cross Science Foundation was held at the Unitarian Church North in Mequon. President Jeff Setzer opened the meeting at 7:10 p.m. and welcomed 19 members. He asked for standard reports.

Treasurer Rob Powell reports deposits of \$5,527.00 in the observatory checking account. Pledges, gifts and previous totals bring the grand total for the observatory fund to \$26,850.00 .

Secretary Kevin Bert noted the 2006 NCRAL convention in April and had the latest membership roster for the upcoming vote for a board member.

Jeff Setzer asked the two present nominees, (Kip Kaplan & Joyce Jentges) if they would accept or decline their last months nomination to run as a replacement to out going board member Joyce Jentges. Each accepted

and were willing to serve if elected. Jeff opened the floor to additional nominations. With none brought up, Charlotte DuPree made a motion to close nominations and Chris Grenda seconded it. With all in favor Jeff closed the floor and instructed Kevin Bert to pass out the official ballots. Rob Powell assisted in the collection and counting of the ballots. The final results were announced that Joyce Jentges will continue on the board and that final officer status would be determined at the next directors meeting.

Under old business Jeff explained the observatory status. Contact with Backyard Observatories would be made to set up a date for construction very soon.

Under new business, Jeff Setzer talked of upcoming events. The January 5<sup>th</sup> meeting would offer a telescope clinic for the public and members. The Ski

and Hike at Harrington Beach on Jan. 7<sup>th</sup> and Feb. 4<sup>th</sup> was set. It was thought best to set up scopes and view at the upper parking lot if clear. The Ski and Stars date at Pike Lake was not yet known but expected to be some time in February.

The annual NCSF dinner was tentatively slated for February 2<sup>nd</sup> at Klug's Creekside inn. There was to be some discussion on the location at the next directors meeting and any changes would be presented in the next newsletter.

With no further new business, Jeff closed the business meeting at 7:55 p.m.

Respectfully submitted,  
Kevin Bert, secretary

## Telescope Donations Put to Good Use By Kevin Bert - taken from a recent newspaper article

For a person that has an interest in stargazing there are a number of advantages in joining an astronomy club, especially if they are new to the hobby. The camaraderie of other people with similar interests is an obvious benefit, but other advantages exist. Getting to look through a variety of club members' telescopes will give them new insight if they have been toying with the idea of someday purchasing a scope. Better yet, why not check one out for a month to see if this is really something to invest in. That is just what members of the Northern Cross Science Foundation can do if they would like to look at celestial wonders up close and personal.

The Northern Cross has been in existence since 1974 and has entertained thousands of people in southeastern Wisconsin by bringing their telescopes to public locations for views of the heavens. It has over 70 members of all

ages and backgrounds with experienced members that are willing to share their knowledge. Several years ago, two simple homemade telescopes started the loaner program. Today it has grown to a dozen through the generosity of members and non-members that have donated parts or complete telescopes to the program. Any member can check out a telescope as one would check out a book at the library. After brief set-up instructions when picked up and a small maintenance fee, you get to keep the scope for a month and even longer if no other member requests that scope. Other helpful information on how to operate a telescope, objects to look for and how to find them are presented regularly at the clubs monthly meetings where an Astronomy 101 class has topics for beginners in the hobby. There is no substitute for being able to go outside at your own convenience to get the

feel of a telescope and look through it. This experience could make a future telescope purchase a lifetime of enjoyment rather than years of frustration.

Secretary of the Northern Cross, Kevin Bert says, "the club is always looking for donations of telescopes to add to the loaner fleet and there are a variety of reasons that people might donate a telescope. Most scopes were collecting dust in the attic because they were too much work to set up or they never had the impressive views that were promised in the manual or the person slowly lost interest. It ultimately comes down to a donor wanting to put the telescope to good use and can see how the Northern Cross membership can benefit." An added incentive to the donor is the tax benefit received, being that the club is a non-profit organization registered with the State of Wisconsin.

*(Donations page 3)*

**Astronomy 101 And Main Program**

**By Kevin Bert**

Because of the upcoming telescope clinic and NCSF Dinner, look for 101 to resume in March.

The Northern Cross Science Foundation will hold a special Telescope Clinic on Thursday, January 5th at the Unitarian Church North on Port Washington Road in Mequon.

People that have had limited success using a recently purchased telescope or with an older telescope, will be able to get helpful advice from knowledgeable members of the Northern Cross during their yearly telescope clinic. If you are frustrated with the operation and performance of a telescope learn what things you can do to get the most out of it, and find out what you can realistically expect to see through it. Please bring your telescope to this event so members can go over proper setup for your specific model and make any adjustments to the scope if they are needed.

All activities will take place indoors with

the option to view through telescopes if the skies are clear. The meeting starts at 7:30 p.m. and is free and open to the public. In the coming months look for the start of the astronomy 101 classes at the clubs monthly meetings for the basics on all aspects of using a telescope. See their web site at <http://www.ncsf.info> for more information about the club and it's activities.

**Important:** If you are a member, and plan to help out with the workshop, please bring some basic tools. Useful tools would be allen wrenches, phillips and flat head screwdrivers, and wrenches to tighten loose bolts. Sometimes these little adjustments can help the scopes perform just a little bit better.



*(Donations from page 2)*

Kevin adds, "Some telescopes require a bit of work to get back into shape but the club has skilled people that are up to the task of repairing them." He hopes that other people in the area would consider telescope donations and contact the club at 375-2239 for details.

Brad Haubrich of West Bend donated the largest telescope in the Northern Cross loaner fleet at the Harrington Beach Haunted Hike. This beautiful 10-inch home built Newtonian reflecting scope breaks down for easy set-up and transportation. "Knowing that hundreds of people will get a chance to look through my telescope over the

It's not too late!!!! You can still sign up to get your newsletter online! Just send me an email, and tell me you want to get your email online, and I will add you to the online newsletter list starting in January.

Nearly everyone's membership dues are due in January. See Rob Powell to take care of this obligation at the January meeting. You can download a dues invoice on the club website: [www.ncsf.info](http://www.ncsf.info).

Candlelight Hikes: Harrington Beach has a hike scheduled for January 7th and one on February 4th. Weather permitting, we will be there.

Mark your calendars for the banquet on February 2nd. Look for the colored insert in this newsletter!

Please note on page 4 there are 2 changes to email addresses.

years is very gratifying. If they get half the thrill that I had viewing with it, I will consider this donation a success," says Brad.

**From The Editor**

**By Joyce Jentges**

Happy new year! It's already the new year and I haven't made any resolutions yet. Have you? Have you made an astronomical resolutions? Perhaps to buy a new telescope, or to finish an Astronomical League Observing Program? Whatever it is that you have resolved to do, I hope that you will have success. I see an exciting year in store for the

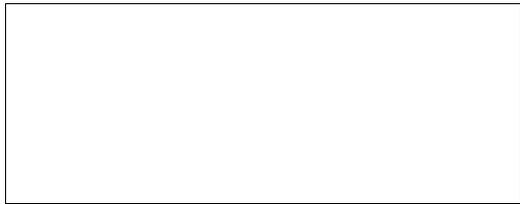
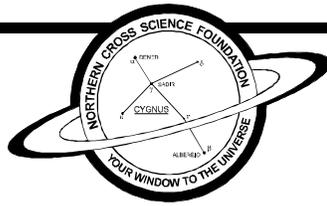
Northern Cross as we prepare to build our new observatory.

This bank of clouds seems to have permanently stalled over us. I hope that by January 7th, we will have clear skies for our first observing event of 2006. See the calendar on page 1 for several other January and

February dates.

It is my hope that many of you will be able to join us for our 4th annual banquet. Direct any questions you may have about the banquet to Jeff Setzer.

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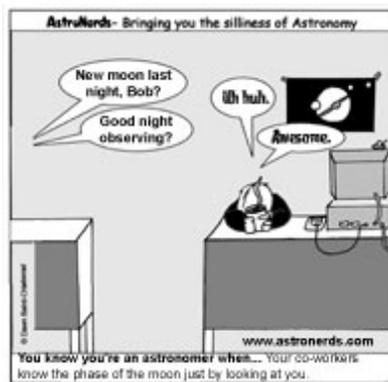
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*(Da Vinci from page 1)*

Moon no later than the year 2018. Unlike Apollo astronauts, who stayed for a few days at most, these new explorers will remain on the Moon for weeks and months. In the process, they'll experience something Apollo astronauts never did: nightfall. A lunar "day" is 29.5 Earth-days long: about 15 Earth-days of light, followed by 15 Earth-days of darkness. Apollo astronauts always landed in daylight and took off again before sunset. Because of the bright sun, they never saw the soft glow of Earthshine at their feet. But the next generation of astronauts will.

And just maybe, on a late-night stroll behind the outpost, guided by the soft light of Earth, one of them will bend over and scratch something in the moondust:

"Leonardo was here."



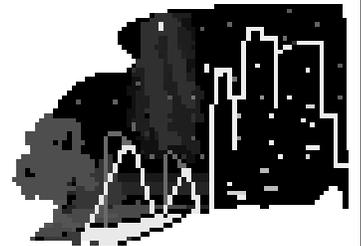
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## SPECTRUM

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<http://www.ncsf.info>