

# SPECTRUM

Northern Cross Science Foundation Newsletter

January 2011

## LOOKING UP

### January 6, Thursday

#### General Meeting

7:00 p.m. - Bring your scopes

7:30 p.m. - Main Program

Business Meeting to follow

### January 8, Saturday

#### **Candlelight Ski & Hike**

6:00 p.m. to 9:00 p.m.

Harrington Beach

### January 20, Thursday

#### Board Meeting

7:30 p.m.

Home of Joyce Jentges

### January 22, Saturday

#### **Horicon Marsh**

6:00 p.m. to 9:00 p.m.

Mayville, WI

### February 3, Thursday

#### **Annual Banquet**

Fox & Hounds Restaurant

Hubertus, WI (See Insert)

### February 5, Saturday

#### **Candlelight Ski & Hike**

6:00 p.m. to 9:00 p.m.

Harrington Beach

### February 12, Saturday

#### **Candlelight Ski & Hike**

6:00 p.m. to 9:00 p.m.

Pike Lake, WI

## NCSF 2010 Reflections...by President Joyce Jentges

As I write this we only have a few weeks left of 2010, and I'm reflecting back on the year. I'm looking over a spreadsheet provided by Dan Bert, our Observatory Director. Just for events at Harrington Beach, we had a total of **29 members** contribute a total of **478 hours** of their time to be at public events at this location. This doesn't even include girl/boy scout groups, private tours, or even time spent doing maintenance at the sight. Over all, members spent **560.25** hours at our observatory in 2010. We don't even have participation numbers for Bayshore and Pike Lake events, but I'm sure we'd easily add another 150 hours. That said, I am grateful for the amount of support that each of you provide to help us be able to bring astronomy to the public.

It is very important that you sign in and out if you help out at the observatory for a public/private viewing, so we can get accurate numbers.

That said, we will soon begin planning our outreach events for 2011. I think that if possible, we will try to scale back the amount of events that we host. The reason for this is that it is difficult at times to get leaders to run

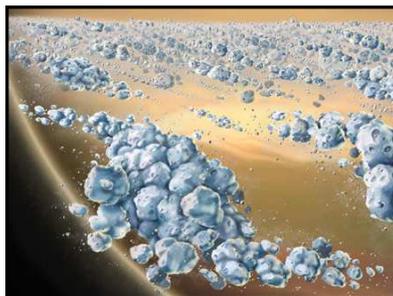
events at the observatory, and it seems like we have a harder time getting our members to help at these events with their own telescope. Most of the time when you talk to people who volunteer for various organizations, they will tell you that while their membership is large, it is a small group who does most of the work. The same is true for our club, although I can say, that we do have a much larger than average participation rate. That being said, I wish to encourage all of you to participate as much as you can in the events that are scheduled this new year. Whether you help at the observatory, or give a main program, your participation is essential to our success as we try to educate the public about astronomy.

Elections for the Board of Directors were held at the December meeting, and I would like to congratulate Gene DuPree, Rick Kazmierski and Tony Marek who were elected to three year terms. I want to thank Al Steinberg for the time he has served on the board.

I wish all of you and your families, continued successes and good health as we embark on the journey of a new year. **Keep looking up.**

## Saturn's Rings Explained...by Alexandra Witze *sciencenews.org*

The icy particles that make up Saturn's rings may owe their existence to a big moon that smacked into the planet about 4.5 billion years ago. *NASA/JPL/University of Colorado*



Saturn's majestic rings are the remnants of a long-vanished moon that was stripped of its icy outer layer before its rocky heart plunged into the planet, a new theory proposes. The

icy fragments would have encircled the solar system's second largest planet as rings and eventually spalled off small moons of their own that are still there today, says Robin Canup, a planetary scientist at the Southwest Research Institute in Boulder, Colo.

"Not only do you end up with the current ring, but you can also explain the inner ice-rich moons that haven't been explained before," she says. Canup's paper appears online December 12 in *Nature*.

The origin of Saturn's rings, a favorite of backyard astronomers, has baffled professional scientists. Earlier ideas about how the rings formed have fallen into two categories: either a small moon plunged intact into the planet and shattered, or a comet smacked into a moon, shredding the moon to bits. *(Cont'd on Pg 3)*

## 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 Joyce Jentges opened the meeting at 7:40 pm. and welcomed over 30 members and guests. She then asked for standard reports.

Treasurer Gene Dupree reported a balance of \$894.13 in the Observatory account and \$6598.45 in the general fund. Membership statements have been sent along with the Spectrum and dues or magazine subscriptions could be paid at any time.

Secretary Kevin Bert presented the official copy of the NCSF roster to prepare for the upcoming vote for board members. No new members joined from last month. No new Astronomical League information was presented.

Under new business, Joyce Jentges reminded members that, as in past years, there will be no February meeting and in place there will be a dinner. Results from last year were favorable at the Fox & Hounds in Hubertus and initial plans are to schedule it there for 2011. A form in the January newsletter will give all the selec-

tions and costs. A few concerns were brought up as far as location and driving distance for the membership. It was encouraged that the members would get in touch with a board member to forward any alternative establishments for their consideration at the next board meeting.

Under upcoming events, Joyce said that the next public viewing opportunity would be in 2011. That would be the Ski and Hike at Harrington Beach on January 8<sup>th</sup>.

Gene and Charlotte Dupree asked for help in entertaining about 30 children and parents the following week on Friday the 10<sup>th</sup> in Oconomowoc. Final details have yet to be revealed and those interested should get in touch with the Dupree's.

With most of the business taken care of, Joyce moved on to the main business of electing officers.

The floor was opened for any additional nominees. After three attempts with no nominations Jeff Setzer offered a motion to close nominations and move on to a vote. The motion was seconded and passed. The nominees from last month were Rick Kazmierski, Al Steinberg, Gene Dupree and Tony Marek. Having four candidates for three positions required a vote. Ballots were handed out to the membership and they were instructed to vote

for three candidates. Ballots were collected and tabulated by Board members Don Miles and Kevin Bert. The results were announced as follows. Top vote getter was Rick Kazmierski. Second most voted was Tony Marek. And final member was Gene Dupree. These newly elected board members will attend the December 16<sup>th</sup> meeting to select officer positions. Al Steinberg was thanked for his service.

With no further business, Rebecca Setzer made a motion to close the meeting. With a second and no objections the meeting was closed at 8:25 pm by Joyce.

### Note:

The Annual NCSF Banquet form is enclosed in this Newsletter. If you receive the Newsletter digitally, you will find the form as an attached .pdf file which can be printed. The form is also available on the Club's website at [www.ncsf.info](http://www.ncsf.info). Mail the completed form to Gene DuPree by January 21st.

See You There.

## Things to See In the January 2011 Night Sky By Don Miles

**Neptune, Jupiter & Uranus:** This group still trails the sun, and Neptune is the first to set at about 8:30 early in the month and by about 6:30 at the end of the month. Neptune (mag 8.0) is still best viewed around 6pm, and the pair of Jupiter (mag -2.3) and Uranus (mag 5.9) are best viewed around 8pm. Jupiter starts the month almost 1/2 of a degree (about the width of a full moon) below Uranus, but will continue to move eastward and increase that distance to almost 4 degrees by months end. The trio will eventually become morning objects late this winter as the Earth continues making its way around the sun on the shorter "inside lane". After being "behind" the Sun for a couple of weeks, they will then appear to be ahead of the sun to become morning objects.

**Saturn:** Look for Saturn (mag. 0.7) rising in the East in the constellation Virgo at about 12:30pm, and will be highest in the sky as the Sun rises. The views will only get better as we get closer to spring when we are both on the same side of the Sun. This will make Saturn highest in the sky around midnight, and give us almost a whole night of warm viewing. It's an amaz-

ing sight whenever you get a chance to view it.

**Venus & Mercury:** Look for brilliant Venus (mag. -4.5) about 3:30am in the constellation Libra early in the month, but will move into Ophiuchus by months end. Venus will have moved as far to the west from of the Sun ("maximum western elongation") by the 8th, after which Venus will again slide towards the Sun on its way around the back side. Mercury (mag -0.3) is in Sagittarius and rises about an hour before the Sun. Mercury will also reach its maximum western elongation, but for Mercury it happens on the 9th, so this will be the best time to see it for a while.

**Mars:** Is directly on the "back" side of the Sun, so is not feasible to observe, and won't be until about mid June.

**Moon:**

January 4th: New Moon

January 12th: First Quarter

January 19th: Full Moon

January 26th: Last Quarter

Special Events:

There is one main event to watch for this month, and it is the Quadrantid meteor showers. They'll peak the night of the 3rd (a Monday), and into the morning of the 4th. The debris path is very concentrated, so the window of peak activity is pretty narrow. This peak happens at about 7pm locally, and puts Midwesterners away from the "front" side of the Earth as we go thru the greatest debris. We should still get a fairly good show after midnight because the moon won't be a factor, but by the time we are on the "front" side and facing into the debris stream, the peak will have passed.



The peak rates are predicted to be ~120/hr, and we may see only half that. Even sixty per hour is nothing to pass up, and remember...these are only predictions. Predictions have been wrong in the past, and we may get a wonderful show. Dress warm.

# January General Meeting

## Pre-Program Activities

Participants are encouraged to bring their telescopes at 7:00pm. During that time, NCSF volunteers will help set them up in the side and back of the meeting room.

## Main Program...Jeff Setzer

At 7:30 we will start the program with a 20-minute new video called:

### "Journey To The Stars"

from the **Hayden Planetarium of New York City**



The video will be followed by a 20-minute talk on basic telescope use

After a very short (15-minute) business meeting, the remainder of the night will be for additional telescope help between the NCSF volunteers and clinic participants.

(Saturn's Rings cont'd from pg 1)

The problem is that both scenarios would produce an equal mix of rock and ice in Saturn's rings — not the nearly 95 percent ice seen today.

Canup studied what happened in the period just after Saturn (and the solar system's other planets) coalesced from a primordial disk of gas and dust 4.5 billion years ago. In previous work, she had shown that moon after moon would be born around the infant gas giants, each growing until the planet's gravitational tug pulled it in to its destruction. Moons would have stopped forming when the disk of gas and dust was all used up.

In the new study, Canup calculated that a moon the size of Titan — Saturn's largest at some 5,000 kilometers across — would begin to separate into layers as it migrated inward. Saturn's tidal pull would cause much of the moon's ice to melt and then refreeze as an outer mantle. As the moon spiraled into the planet, Canup's calculations show, the icy layer would be stripped off to form the rings.

A moon so large would have produced rings several orders of magnitude more massive than today's, Canup says. That, in turn, would have provided a source of ice for new, small moons spawned from the rings' outer edge. Such a process, she says, could explain why Saturn's inner moons are icy, out to and including the 1,000-kilometer-wide Tethys, while moons farther from the planet contain more rock.

"Once you hear it, it's a pretty simple idea," says Canup. "But no one was thinking of making a ring a lot more massive than the current ring, or losing a satellite like Titan. That was the conceptual break."

"It's a big deal," agrees Luke Dones, also of the Southwest Research Institute, who has

worked on the comet-makes-rings theory. "It never occurred to me that the rings could be so much more massive than they are now."

Another recent study supports the notion that today's rings are the remnants of massive ancient rings of pure ice. In a paper in press at Icarus, Larry Esposito, a planetary scientist at the University of Colorado at Boulder, calculates that more massive rings are less likely to be polluted by dust, and hence could still be as pristine as they appear today even after 4.5 billion years.

Some questions still linger about Canup's model, says Dones, like why some of Saturn's inner icy moons have more rock in them than others.

The theory will be put to the test in 2017, when NASA's Cassini mission finishes its grand tour of Saturn by making the best measurements yet of the mass of the rings. Researchers can use those and other details to better tease out how the rings evolved over time.

### Jim and Gwen Plunkett Observatory



Observatory Director:  
Dan Bert: 262-375-2239

## CURRENT CLACK

### New Member

NCSF Welcomes New Club Members

**Nick Kazmierski**

### Leaders for Public Viewing

January 8

#### **Candlelight Ski & Hike**

Harrington Beach

Gene and Charlotte DuPree

January 22

#### **Candlelight Ski & Hike**

Horicon Marsh

Gene and Charlotte DuPree

February 5

#### **Candlelight Ski & Hike**

Harrington Beach

Gene and Charlotte DuPree

February 12

#### **Candlelight Ski & Hike**

Pike Lake

Gene and Charlotte DuPree

### Board Notes

At the December board meeting, executive officers were elected. Our 2011 list of officers is as follows;

President - Joyce Jenten

Vice President - Jeff Setzer

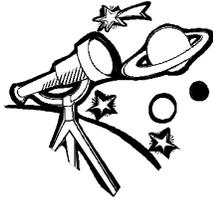
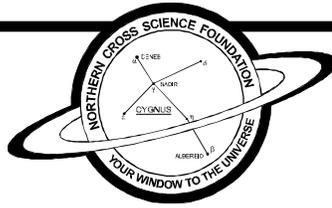
Secretay - Kevin Bert

Treasurer - Gene DuPree

The board voted to keep the February Christmas party at at the Fox and Hounds this year. Time constraints would have made it difficult to change the location this year. The subject will be addressed again next fall.

Monthly Meeting Location  
Unitarian Church North  
13800 N. Port Wash. Rd.  
Mequon, WI 53097

SPECTRUM  
 5327 Cascade Drive  
 West Bend, WI 53095



## 2011 BOARD OF DIRECTORS

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### One Starry Night

An astronomer and his wife go on a camping trip. After a good dinner and a bottle of wine, they retire for the night, and go to sleep.



Some hours later, the wife wakes up and nudges her faithful husband. "Darling, look up at the sky and tell me what you see."

"I see millions and millions of stars," replies our astronomer.

"And what do you deduce from that?"

The astronomer ponders for a minute.

"Well, astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I deduce that the time is approximately a quarter past three. Meteorologically, I suspect that we will have a beautiful day tomorrow. Theologically, I can see that God is all powerful, and that we are a small and insignificant part of the universe. What does it tell you, dear?"

His wife is silent for a moment... then shouts "you idiot!!" someone has stolen our tent!"

Our club has a "Discussion Group on Google"  
 See our website: <http://www.ncsf.info/> for details.

## SPECTRUM

Is published by the Northern Cross Science Foundation, Inc. A nonprofit organization based the state of southeastern Wisconsin and is a Member of the North-Central Region of the Astronomical League.



The NCSF supports the International Dark sky association.



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