

# SPECTRUM

Northern Cross Science Foundation Newsletter

April 2010

## LOOKING UP

### April 1, Thursday

#### General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to follow

### April 10, Saturday

#### **Observatory Training**

7:00 p.m.

Harrington Beach

### April 15, Thursday

#### Board Meeting

7:30 p.m.

Home of Joyce Jentges

### April 23, Friday

#### **Public Viewing**

6:00 p.m.

Harrington Beach

### April 24, Saturday

#### **National Astronomy Day**

2:00 p.m.

Harrington Beach

### May 6, Thursday

#### General Meeting

7:00 p.m. - Astronomy 101

7:30 p.m. - Main Program

Business Meeting to follow

## Space Station Imaging *by Ernie Mastroianni*

When the International Space Station is in sunlight, it is almost always casting a shadow somewhere on earth, so opportunities to observe a solar transit are common. You just have to be at the right place at the right time.

A Java applet on a website run by Ed Morana accurately predicts solar transits down to the second, up to 11 days in advance, over a 100 mile radius of any given latitude and longitude (<http://pictures.ed-morana.com/ISSTransits/predictions/index.html>).

Using NASA data on the orbital elements of the space station, it generates a list of coordinates that can be plugged into Google Earth. Using my Whitefish Bay home as the central point, I was only a couple weeks into my search before finding a transit with a centerline over the University of Wisconsin-Milwaukee. But the space station orbit changes over time and NASA updates orbital data twice a week. By the morning of the March 17 transit, the centerline had drifted to the Marcus Amphitheater.



#### **ISS100317a:**

The International Space Station transits the sun's face on March 17, 2010 as seen from Milwaukee. The station was 325 miles away when this photo was taken. This is a cropped version of the original. At left is sunspot number 1054. Ernie Mastroianni photo.

I use a J.M.B. Identi-View solar filter for all solar imaging and viewing, but choosing the right combination of camera and lens was tricky. With a 500mm lens and a 2X teleconverter on my Nikon D300, the sun filled only a

small portion of the frame. I thought the space station might be too small to resolve. With the Nikon on my Questar, the sun filled the frame but the vibration of the shutter flapping at five frames a second made the image too blurry. And my Nikon will buffer only 40 frames before bogging down. If my timing was off by a couple seconds, I could miss the flyby.



#### **Mastroianni setup:**

Ernie Mastroianni poses with the equipment used to take the ISS transit photo. Ernie is set up behind the Marcus Amphitheater on the Summerfest grounds near Lake Michigan.

But my Imaging Source firewire camera attached to my 500mm lens magnified the sun slightly larger than the full frame, which was ideal. And the camera, tethered to my MacBook, gave me about 15 frames per second with a buffer of thousands of frames. And with no mirror flap, the setup was vibration-free. The luck of the Irish gave me clear skies and steady seeing on St. Patrick's Day. I mounted the lens and camera on my heavy-duty Losmandy G11 equatorial mount. I polar aligned by leveling the tripod, manually adjusting the latitude to 43 degrees and aiming the mount to north using aiming points found by looking at Google Earth. I ended up being very close to true north, and the slight drift was not a factor for a shoot lasting less than a second.

*(continued on pg 4)*

## March Meeting Minutes

By Don Miles

The March business meeting of the Northern Cross Science Foundation was held at the Unitarian Church North in Mequon. In lieu of President Joyce Jentges & Vice-President Jeff Setzer's absence, Secretary Kevin Bert opened the meeting at 7:30 p.m. and thanked 24 members and guests for attending. Kevin asked for standard reports.

Treasurer Gene DuPree reports a balance of \$5,313 in the clubs' checking account and \$678 in the observatory account.

Secretary Kevin Bert reminded everybody that the NCRAL convention is April 16th & 17th in Bloomington/Normal IL. Kevin also mentioned that the annual star party (WOW) which is held at Hartman Creek State Park in Wau-paca WI was now accepting pre-registrations and this year's dates will be July 8th thru the 10th. Mention was also made that Jeff Setzer will be camping at the same site starting July 2nd thru to the end of WOW, and wanted to invite anybody interested to join the "Pre" WOW group.

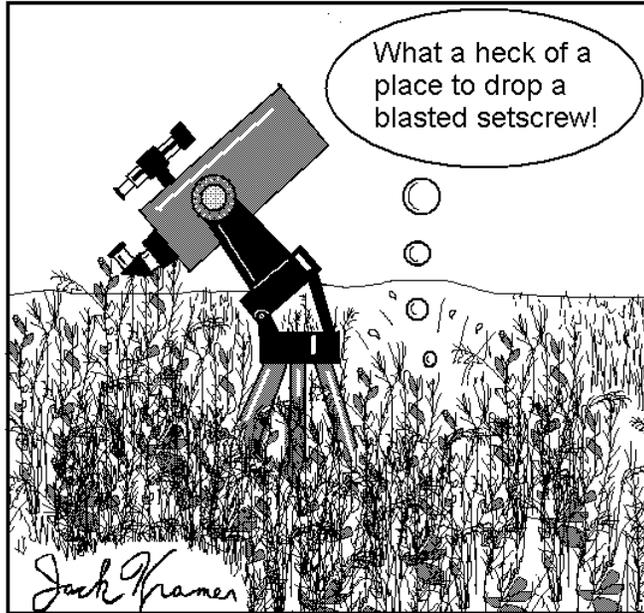
Observatory Director Dan Bert

said that the park (Harrington Beach) had recently installed a light shield on a problem light that had been visible from the observatory, and that seems to have taken care of the problem. Dan also mentioned there will be another training session for the operation of the observatory/telescope April 10, and will be given by Kevin Bert. If interested, please call Kevin to confirm the time.

Under new business, Becca Setzer men-

tioned the "Globe at Night" program, which she explained is a global measurement of light pollution by having volunteers report visible stars overhead from March 3rd thru the 16th, and handed out information to all interested.

Charlotte DuPree mentioned the recent Pike Lake Ski & Hike event was a huge success with the park counting over 300 cars at the event.



Under upcoming events, Kevin Bert reminded everybody that he and Dan will open the observatory (weather permitting) the nights of the Messier Marathon (March 12th & 13th) for any non-marathoners wishing to come out. Kevin also mentioned an ISAN (International Sidewalk Astronomy Night) event at Bayshore Town Center the night of March 20th starting at 7pm, and the "Swap & Sell" at the Aviation Heritage Center in Sheboygan on March 27th from 10am to 3pm.

With no further new business, Kevin closed the meeting at 9:10pm.

## Things to See In the April Night Sky By Don Miles

**Mercury:** Mercury (mag 0.1) will be setting in the western sky just after the sun early in the month, and will be visually furthest from the sun on the 8th. After that, Mercury will again slip towards the sun on its way between us and the sun.

**Venus:** Brilliant Venus (mag -3.6) also trails the sun, and sets shortly after the sun. Venus moves easterly thru Cancer through the month and will pass very close to the Pleiades cluster on the 27th.

**Mars:** Mars (mag. 0.3) is highest in the sky at sunset, and will set around 3am. Mars will drift eastward thru Cancer throughout the month and will pass very close to the Beehive cluster around the 15th. The telescopic view of Mars will only get worse as spring wears on, so take a look sooner than later (if you can). You can easily pick out Mars with ordinary binoculars by looking for the orange-ish star between the eastern of the "head" stars in Gemini and the bottom star of the sickle in Leo.

**Saturn:** Saturn will also be high in the sky at sunset, but sets around sunrise. Saturn will transit (be directly overhead) about midnight. The current position of the rings (tiltwise) is the best they'll be until fall. Saturn is also easy to find with binoculars if you look for a brighter yellowish star below the star Denebola (which is the left-most bright star in the constellation Leo). If you can hold them still (lean against a tree trunk, etc.), you'll be able to see the rings, and usually see at least Titan (the brightest of Saturn's moons).

**Neptune:** Neptune (mag 8.0) is a morning object technically, but is so washed out by the rising sun that it will be difficult even with a clear eastern horizon.

**Jupiter, & Uranus:** Both are still too close to the sun to be easily seen. They (along with Neptune) are pulling away from the sun, but are still too close.

**Moon:**

April 6th: Last Quarter  
April 14th: New Moon  
April 21st: First Quarter  
April 28th: Full Moon

**Special Events:**

The Lyrid meteor showers "peak" on the morning of the 22nd. There will be a first quarter moon just rising, but with a predicted peak rate of only 15/hr, there won't be many missed.



## April General Meeting

### 101 Class

The April 101 class by Kevin Bert is entitled:

#### "The Planets for 2010"

As the weather warms up the observing season starts for most telescope enthusiasts. Find out what the planets have in store for you this year.

#### The Featured Constellation

##### "Cancer"



### Main Program

#### "Charles Messier and His List"

Our April speaker will be Jeff Setzer. He will discuss the life of Charles Messier and the creation of his now famous list of objects. This timely subject comes on the heels of last month's Messier Marathon.



## CURRENT CLACK

### New Members

NCSF welcomes New Club Members

Bob Schatzman

Terry Litts

### Leaders for Public Viewing

April 23

#### Public Viewing

Leaders needed

April 24

#### National Astronomy Day

Jeff Setzer

### Star Parties

#### NCRAL Convention

April 16 -18

Bloomington - Normal, IL

[www.ncral2010.org](http://www.ncral2010.org)

#### Wisconsin Observers Weekend

July 8 -10

Hartman Creek State Park, WB

[www.new-star.org](http://www.new-star.org)

#### Northwoods Starfest

August 13 - 15

[www.cvastro.org](http://www.cvastro.org)

#### Prairie Skies

September 30 - October 3

Kankakee, IL

[www.prairieskies.org](http://www.prairieskies.org)

## March Events

Friday & Saturday, March 12 & 13th

### Messier Marathon

Charlotte DuPree reported that the event was cancelled due to cloudy skies

Saturday, March 20th

### Sidewalk Astronomy Night

Jeff Setzer reported that this Bayshore event was also cancelled due to cloudy skies.

### Jim and Gwen Plunkett Observatory



Observatory Director:  
Dan Bert: 262-375-2239

### Observatory Notes

A light shield has been installed at the Harrington Beach Park entrance on the pole mounted fixture next to the woodshed. This will eliminate the glare that was visible from this fixture in the upper parking lot viewing area.

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

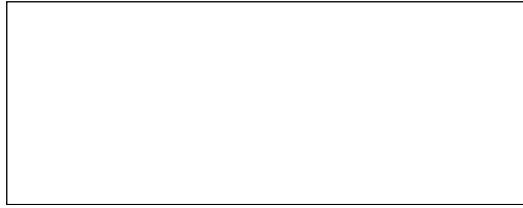
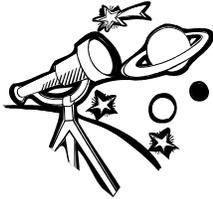
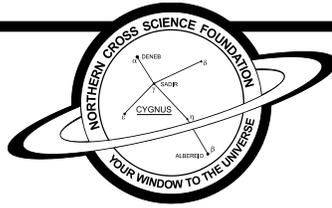
### Anagram

It is curious to note that the letters in the word *Astronomer* can be re-arranged to spell:

#### "Moon Starer"



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## 2010 BOARD OF DIRECTORS

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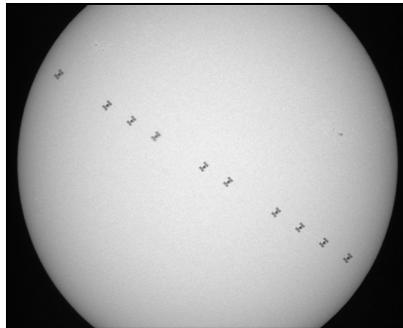
### Newsletter Editor & Publisher

Rick & Mickey Kazmierski  
262-305-1895 / rickkaz@charter.net

*(continued from pg 1)*

Focusing was tricky, and I spent several minutes going back and forth on the best focus by looking at a sunspot and waiting for moments of best seeing.

The predicted transit was to be at 2:46 in the afternoon at 21 seconds into the minute. I started recording images 15 seconds before the predicted transit and let it run for 600 frames, using an exposure time of 1/1400 of a second. When the recording was completed, I opened up frame 150, and there was the space station in crisp focus and surprisingly detailed. I captured 10 frames with station against the sun. The ISS transit prediction program also generates data on lunar phenomena, and the next one will be on March 24 centered over Sheridan Park in Cudahy. If it's clear, I may have another shot to show by the time you read this in the Spectrum.



#### ISSsequence:

The International Space Station transits the sun's face on March 17, 2010. This is a composite of the 10 frames in which the station was captured, using an Imaging Source DMK firewire camera. The gaps reflect moments that the camera did not record a frame, perhaps due to buffer overload. It took less than half a second for the station to cross

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

## SPECTRUM

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The NCSF supports the International Dark sky association.



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