

speed: **445.2** km/sec density: **7.5** protons/cm<sup>3</sup>

density: **7.5** protons/cm explanation | more data Updated: Today at 1637 UT

X-ray Solar Flares 6-hr max: A0 1635 UT Aug15 24-hr: A0 1635 UT Aug15 explanation | more data Updated: Today at: 1635 UT

#### Daily Sun: 15 Aug 07



Sunspot 966 has faded away, leaving the sun blank. Credit: SOHO/MDI

Sunspot number: 14
What is the sunspot number?
Updated 13 Aug 2007

## Far side of the Sun:

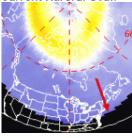


This holographic image reveals one possible sunspot on the far side of the sun. Image credit: SOHO/MDI

# Planetary K-index Now: Kp= 2 quiet 24-hr max: Kp= 3 quiet

24-hr max: **Kp= 3** quie explanation | more data

## Current Auroral Oval:



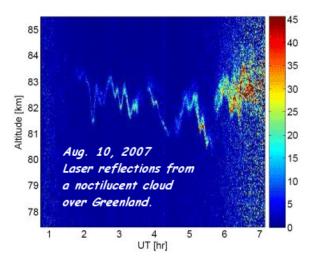
Switch to: <u>Europe</u>, <u>USA</u>, <u>New Zealand</u>, <u>Antarctica</u> Credit: NOAA/POES Updated: 2007 Aug 15 1542 UT

Where's Saturn? Is that a UFO--or the ISS? What's the name of that star? Get the answers from <a href="mysky">mysky</a>--a fun new astronomy helper from Meade.



**SOLAR CONJUNCTION:** This week, three planets are gathering around sun: Mercury, Saturn and Venus. Bright sunlight hides the event from human eyes, but <u>SOHO</u>'s <u>coronagraph</u>, which blocks the glare, has a great view: <u>today's image</u>. Mercury and Saturn are already "in conjunction"; Venus will join them on Aug. 16th.

NOCTILUCENT WAVES: On August 10th, scientists from SRI International at NSF's research facility in Sondrestrom, Greenland, shot a laser into a bank of noctilucent clouds (NLCs) passing overhead. "This is the best way to probe these mysterious clouds from the ground," says lidar team member Jeff Thayer of the University of Colorado. Their experiment revealed not only the clouds' height and thickness (80+ km high and ~1 km thick), but also some strange undulating waves:



"We believe the waves are caused by atmospheric gravity waves, or buoyancy waves, generated in the lower atmosphere and propagating vertically to the edge of space where <u>noctilucent clouds</u> are located," explains Thayer. When the waves reach the upper limit of Earth's atmosphere, "they can become unstable and crash – much like waves approaching and crashing on a beach."

"We have been 'pinging' NLCs from Greenland for more than 12 years, but every time it is exciting and novel," he says. During this particular observation, NASA's <u>AIM</u> satellite was flying overhead and observing the same waves from above. "The combined analysis will be extremely informative and exciting."

# 2007 Noctilucent Cloud Gallery

[Night-Sky Cameras] ["Noctilucent Cloud"--the song]

**AURORA WATCH:** On August 11th, a solar wind stream brushed against Earth's magnetic field. It was a gentle impact, but enough to produce this fantastic display:

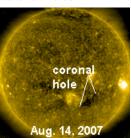


1 of 3 8/15/2007 9:48 AM

#### Interplanetary Mag. Field Btotal: 5.6 nT B<sub>z</sub>: **0.0** nT

explanation | more data Updated: Today at 1637 UT

#### Coronal Holes:



A solar wind stream flowing from the indicated coronal hole should reach Earth on Aug. 15th or 16th. Credit: SOHO Extreme Ultraviolet Telescope

# SPACE WEATHER NOAA **Forecasts**



Updated at: 2007 Aug 14 2203

FLARE	0-24 hr	24-48 hr	
CLASS M	01 %	01 %	
CLASS X	01 %	01 %	

# Geomagnetic Storms:

Probabilities for significant disturbances in Earth's magnetic field are given for three activity levels: active, minor storm, severe storm

Updated at: 2007 Aug 14 2203

#### Mid-latitudes

	0-24 hr 24-48 hr		
ACTIVE	15 %	25 %	
MINOR	05 %	05 %	
SEVERE	01 %	01 %	

High latitudes

i iigii iatitaaoo				
	0-24 hr 24-48 h			
ACTIVE	25 %	30 %		
MINOR	05 %	10 %		
SEVERE	01 %	05 %		



Brian Whittaker took the picture from an airplane 35,000 feet above the USA-Canada border near the Lake of the Woods. "This great display of green auroras lasted several hours," he says. "It was particularly beautiful in the northern USA where dramatic thunderstorms actively illuminated the horizon at an alarming frequency only to be supplemented by the occasional Perseid."

Another solar wind stream is due to arrive today or tomorrow. High-latitude sky watchers, be alert for auroras.

# 2007 Perseid Meteor Gallery Updated Aug. 14, 2007

# **Near-Earth Asteroids**

Potentially Hazardous Asteroids (PHAs) are space rocks larger than approximately 100m that can come closer to Earth than 0.05 AU. None of the known PHAs is on a collision course with our planet, although astronomers are finding new ones all the time.

On August 15, 2007 there were 878 potentially hazardous asteroids.

July 2007 Earth-asteroid encounters:

Asteroid	Date(UT)	Miss Distance	Mag.	Size
2007 FV42	July 2	53 LD	15	1.2 km
2007 MB4	July 4	7.6 LD	16	130 m
2007 DT103	July 29	9.3 LD	15	550 m

Notes: LD means "Lunar Distance." 1 LD = 384,401 km, the distance between Earth and the Moon. 1 LD also equals 0.00256 AU. MAG is the visual magnitude of the asteroid on the date of closest approach.





# **NOAA Space Environment Center**

The official U.S. government bureau for real-time monitoring of solar and geophysical events, research in solar-terrestrial physics, and forecasting solar and geophysical disturbances.

**Atmospheric Optics** 

The first place to look for information about sundogs, pillars, rainbows and related phenomena.

Solar and Heliospheric Observatory

Realtime and archival images of the Sun from SOHO.

LINK **Daily Sunspot Summaries** 

From the NOAA Space Environment Center



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from the National Solar Data Analysis Center

more links...

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