



[South Pole, Feb 2007: First light for the South Pole Telescope!](#)



South Pole, January 3, 2007: The Reflector Is Up - The lift begins. [\[more\]](#)

Photo Credit: Tom Crawford.

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- ▶ FOR COLLABORATORS



First light achieved with the 10-m South Pole Telescope, February 16, 2007.

Last night the 10-meter South Pole Telescope with its camera operating at millimeter wavelengths and cooled to 1/4 degree above absolute zero achieved first light. Maps of Jupiter at wavelengths at 2 mm and 3 mm were obtained by scanning the telescope across the planet. These maps showed the telescope, camera and optics are working as designed. First light with the SPT is a major milestone for the project and is a fitting conclusion to a remarkably productive summer season for the South Pole Station. We now look forward to fully characterizing the instrument and beginning cosmological observations.

The efforts of a large team are responsible for the success of the SPT. The team includes members from nine academic institutions, the National Science Foundation's Office of Polar Programs, the U.S Antarctic Program, General Dynamics/VertexRSI, and the Raytheon Polar Support Company. We are grateful for all their support.

We are extremely thankful for the excellent and professional help of the wonderful people at the NSF Amundsen-Scott South Pole Station.

Thank you,
the SPT team



The South Pole Telescope is funded through the National Science Foundation Office of Polar Programs.

- [SPT Collaboration ▶](#)
- [U Chicago](#)
- [UC Berkeley](#)
- [U Illinois UC](#)
- [Case WR U](#)
- [JPL](#)
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SPACE WEATHER Current conditions

Solar wind
speed: 366.1 km/sec
density: 3.8 protons/cm³
[explanation](#) | [more data](#)
Updated: Today at 1626 UT

X-ray Solar Flares
6-hr max: AO 1625 UT
Jul06
24-hr: AO 1625 UT Jul06
[explanation](#) | [more data](#)
Updated: Today at: 1625 UT

Daily Sun: 06 Jul 08



The sun is blank--no sunspots.
Credit: SOHO/MDI

Sunspot number: 0
[What is the sunspot number?](#)
Updated 03 July 2008_

Far side of the Sun:



This [holographic image](#) reveals no sunspots on the far side of the sun.
Image credit: SOHO/MDI

Planetary K-index
Now: Kp= 1 [quiet](#)
24-hr max: Kp= 2 [quiet](#)
[explanation](#) | [more data](#)

What's up in Space

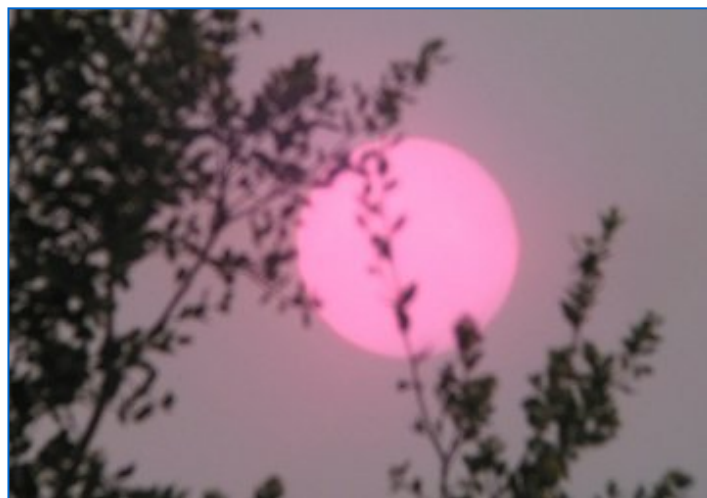
July 6, 2008

AURORA ALERTS: Did you miss the Northern Lights of June 25th? Next time get a wake-up call from [Space Weather PHONE](#).



EVENING PLANETS: Tonight, after sunset, go outside and look west. Saturn, Mars and the crescent Moon are gathering in the form of a scalene triangle: [sky map](#). If you have a [backyard telescope](#), scan the vertices for the rings of Saturn, the little red disk of Mars and a panorama of lunar mountains and craters; it's a nice way to wrap up the weekend.

LAVENDER SUN: When the sun turns purple, watch out. Something is on fire. "Tonight as the sun was setting in the smoke from the Santa Barbara [Gap fire](#), it turned a purplish color," says John Boyd, who sends this picture from southern California:



Purple suns appear when the air is filled with smoky particles measuring about 1 micron (10⁻⁶ m) across. Such particles scatter red light strongly, while allowing bluer light to pass through. This filtering action in [the smoke](#) over Santa Barbara produced a lavender hue reminiscent of the great [Alberta muskeg fires](#) of September 1950.

These colorful suns are beautiful, says Boyd, "but I hope the firefighters, who are doing a great job at protecting the homes here, will be able to put out the fire soon." [\[update\]](#)

SOUTH POLE AURORAS: Imagine walking a mile to work every day in pitch-black dark with air temperatures routinely dipping below -90 F. It might be worth it if you could look up and see this:

Cool links:

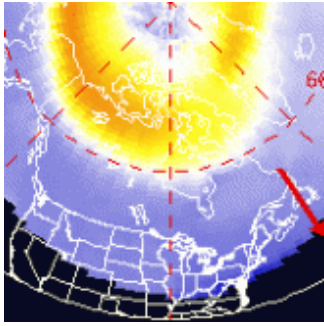
[archives](#)



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Current Auroral Oval:



Switch to: [Europe](#), [USA](#), [New Zealand](#), [Antarctica](#)

Credit: NOAA/POES
[What is the auroral oval?](#)

Interplanetary Mag. Field

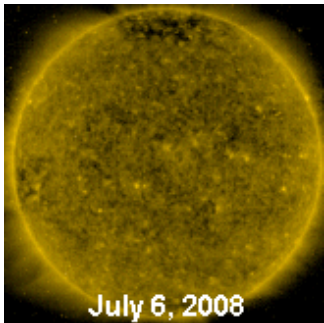
B_{total} : 3.2 nT

B_z : 0.8 nT south

[explanation](#) | [more data](#)

Updated: Today at 1627 UT

Coronal Holes:



There are no coronal holes on the Earth-facing side of the sun. Credit: SOHO Extreme UV Telescope

**SPACE WEATHER
 NOAA
 Forecasts**



Updated at: 2008 Jul 05
 2203 UTC

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: 2008 Jul 05



Photo details: [Canon Rebel XTi 400D](#), ISO 1600, 10mm lens, 10s, f4.0

The picture comes from Earth's south pole where "we had a nice display of aurora australis on July 5th," says J. Dana Hrubes, science leader of the Amundsen-Scott Station. Just before he took the picture, the interplanetary magnetic field (IMF) near Earth tipped south, opening [a crack](#) in our planet's magnetosphere. Solar wind poured in and fueled the auroras. "That's Jupiter shining just above the silhouette of the [South Pole Telescope](#)," he points out.

Every day, Hrubes walks a mile from the main station to the telescope. "This gives me plenty of time to gaze at the sky. The temperature was -84 F when I took [today's pictures](#) and I have taken photos down to a temperature of -110.7 F, which is my personal all time low in early August, 2005. You have to take photos as quickly as possible; you never know what is going to freeze first, your camera or your fingers." (Note to cold-weather photographers: Hrubes uses a [Canon 400D](#).)

"We are now getting into the coldest months, July and August, where we will see temperatures below -100 F," he continues. "These are actual static temperatures, not wind chills. Furthermore, the elevation of the site is nearly 10,000 feet and we experience physiological altitudes between 10,500 ft and 12,200 ft during winter." Many people would be put off by such conditions, but not Hrubes. "In four years at the Pole, I have racked up more than 3,000 miles of walking. I am lucky to have a great walk like this to my job 7 days a week."

[2008 Noctilucent Photo Gallery](#)

[\[NLC Tutorial\]](#) [\[Night-sky Cameras\]](#)



Near-Earth Asteroids

noctilucent
clouds
 GALLERY



Need a
solar
 Telescope?



sponsors

2203 UTC

Mid-latitudes

	0-24 hr	24-48 hr
ACTIVE	10 %	05 %
MINOR	01 %	01 %
SEVERE	01 %	01 %

High latitudes

	0-24 hr	24-48 hr
ACTIVE	15 %	10 %
MINOR	00 %	00 %
SEVERE	01 %	01 %

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 July 6, 2008 , there were **960** potentially hazardous asteroids.

July 2008 Earth-asteroid encounters:

Asteroid	Date(UT)	Miss Distance	Mag.	Size
2003 YE45	July 13	16.5 LD	15	1.4 km
2008 BT18	July 14	5.9 LD	13	1.0 km
2003 LC5	July 15	62 LD	16	1.4 km

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.



Essential Links

LINK

[NOAA Space Weather Prediction 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.

LINK

[Atmospheric Optics](#)

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

LINK

[Solar and Heliospheric Observatory](#)

Realtime and archival images of the Sun from SOHO.

LINK

[Daily Sunspot Summaries](#)

From the NOAA Space Environment Center

LINK

[Current Solar Images](#)

from the National Solar Data Analysis Center

[more links...](#)

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on the **moon**

