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SPACE WEATHER
Current conditions

Solar wind
speed: **564.1** km/sec
density: **0.6** protons/cm³
[explanation](#) | [more data](#)
Updated: Today at 0407 UT

X-ray Solar Flares
6-hr max: **A0** 2220 UT Dec06
24-hr: **A0** 2220 UT Dec06
[explanation](#) | [more data](#)
Updated: Today at: 2355 UT

Daily Sun: 06 Dec 08



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

Sunspot number: 0
[What is the sunspot number?](#)
Updated 05 Dec. 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= 0** quiet
24-hr max: **Kp= 3** quiet
[explanation](#) | [more data](#)

Current Auroral Oval:

 **What's up in Space**

December 6, 2008

NORTHERN LIGHTS: Did you sleep through the [auroras](#) of November? Next time get a wake-up call: [Spaceweather PHONE](#).



AURORA WATCH: High-latitude sky watchers should be alert for auroras tonight. A solar wind stream is buffeting Earth's magnetic field, sparking Northern Lights as far south as Michigan: [gallery](#).

COLORADO SUPERBOLIDE: Last night, Dec. 6th at 1:28 a.m. MST, a meteor of stunning brightness lit up the skies of Colorado. Astronomer Chris Peterson photographed [the event](#) using a dedicated all-sky meteor camera in the town of Guffey, near Colorado Springs:



"In seven years of operation, this is the brightest fireball I've ever recorded," says Peterson. "I estimate the terminal explosion at magnitude -18, more than 100 times brighter than a full Moon."

Fireballs this bright belong to a rare category of meteors called [superbolides](#). They are caused by small asteroids measuring a few to 10 meters in diameter and massing hundreds of metric tons. Superbolides trigger seismic detectors on the ground, produce waves of infrasound that can travel thousands of miles, and they are tracked by military satellites scanning Earth for nuclear explosions. Recent examples include the [El Paso fireball](#) of 1997 and the Slovenian Superbolide of 2007.

Last night's fireball is on the low end of the superbolide scale. Nevertheless, it was still a beauty and likely peppered the ground with meteorites when it exploded. Sighting reports are [welcomed](#); they could help guide the tracking and recovery of debris.

TUMBLING TOOLBAG: The space station's famous sidekick, the [ISS Toolbag](#), is circling Earth and producing flashes of light bright enough to record using off-the-shelf digital cameras. [Peter Rosén](#) sends this report from downtown Stockholm, Sweden:

"I photographed the toolbag when it passed above the moon on Dec. 3rd. It was invisible to the naked eye, but my camera (a [Canon 40D](#)) detected it in a series of 4 second exposures. The toolbag must be rotating as the light seems to flash and disappear." (continued below)

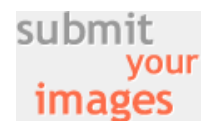
Cool links:

archives

December

6

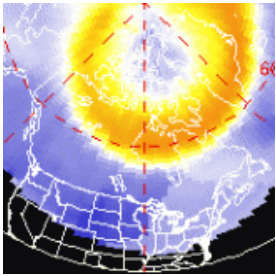
2008



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Switch to: [Europe, USA, New Zealand, Antarctica](#)
 Credit: NOAA/POES
[What is the auroral oval?](#)

Interplanetary Mag. Field

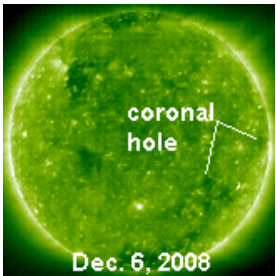
B_{total} : 3.8 nT

B_z : 1.2 nT south

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

Updated: Today at 0407 UT

Coronal Holes:



Earth is inside a solar wind stream flowing from the indicated coronal hole. Credit: SOHO Extreme UV Telescope

SPACE WEATHER NOAA Forecasts



Updated at: 2008 Dec 06 2201 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 Dec 06 2201 UTC

Mid-latitudes

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



Photo details: Canon 40D, 85mm lens, f/1.2, ISO 100, 26 x 4 sec

He combined 26 images to create [this composite](#). "The other paths are from airplanes; the short interruptions in their lights are caused by the lag between shots." Longer "black-outs" in the path of the toolbag appear to be genuine, a result of tumbling and flashing.

Readers, the toolbag and the ISS are making a series of evening passes over Europe and North America this weekend. Check the [Simple Satellite Tracker](#) for flyby times.

UPDATED: [Great Conjunction Photo Gallery](#)

NEW: [Dec. 2008 Aurora Gallery](#)
 [Previous Decembers: [2007](#), [2006](#), [2005](#), [2001](#), [2000](#)]

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 December 6, 2008 there were **1008** potentially hazardous asteroids.

Dec. 2008 Earth-asteroid encounters:

Asteroid	Date(UT)	Miss Distance	Mag.	Size
2008 WY94	Dec. 5	3.2 LD	19	35 m
2008 WG14	Dec. 5	4.8 LD	17	49 m
2008 XK	Dec. 6	1.7 LD	17	15 m
2008 XC1	Dec. 13	4.3 LD	16	102 m
2006 VB14	Dec. 14	36 LD	15	795 m
2008 EV5	Dec. 23	8.4 LD	13	435 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.

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SEVERE	01 %	01 %
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High latitudes

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

[LINK](#) [NOAA Space Weather Prediction Center](#)

The official U.S. government space weather bureau

[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](#) [STEREO](#)

3D views of the sun from NASA's Solar and Terrestrial Relations Observatory

[LINK](#) [Daily Sunspot Summaries](#)

from the NOAA Space Environment Center

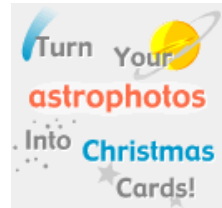
[LINK](#) [Current Solar Images](#)

from the National Solar Data Analysis Center

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