



# spaceweather.com

News and information about the Sun-Earth environment

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## SPACE WEATHER Current conditions

### Solar wind

speed: **423.1** km/sec  
 density: **0.6** protons/cm<sup>3</sup>  
[explanation](#) | [more data](#)  
 Updated: Today at 1336 UT

### X-ray Solar Flares

6-hr max: **A0** 1335 UT Mar22  
 24-hr: **A0** 1335 UT Mar22  
[explanation](#) | [more data](#)  
 Updated: Today at: 1335 UT

### Daily Sun: 22 Mar 09

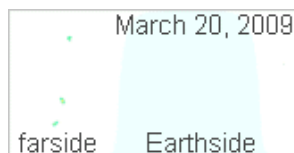


The sun is blank-no sunspots.  
 Credit: SOHO/MDI

### Sunspot number: 0

[What is the sunspot number?](#)  
 Updated 21 Mar. 2009

### Far side of the Sun:

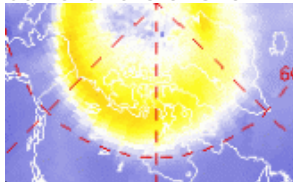


This [holographic image](#) reveals no sunspots on the far side of the sun.  
 Image credit: SOHO/MDI

### Planetary K-index

Now: **Kp= 0** quiet  
 24-hr max: **Kp= 3** quiet  
[explanation](#) | [more data](#)

### Current Auroral Oval:



<http://spaceweather.com/>

## What's up in Space

March 22, 2009

**AURORA ALERT:** Did you sleep through the [Northern Lights](#)? Next time get a wake-up call: [Spaceweather PHONE](#).



**DEEP SOLAR MINIMUM:** Where have all the sunspots gone? As of yesterday, March 21st, the sun has been blank on 85% of the days of 2009. If this rate of spotlessness continues, 2009 will match 1913 as the blankest year of the past century. A flurry of new-cycle sunspots in Oct. 2008 prompted some observers to declare that solar minimum was ending, but since then the calm has returned. We are still in the pits of a deep solar minimum.

**ISS GETS NEW WINGS:** The International Space Station's solar arrays are the largest deployable space assemblies ever built. On March 20th, astronauts unfurled a pair on the starboard side of the outpost, adding more than 8000 sq. feet of light-collecting surface area to the station's profile. Hours later, the ISS flew over Europe where amateur astronomers photographed the new additions:



Ralf Vandebergh took this picture from his backyard observatory in the Netherlands. "As the ISS flew overhead, I manually tracked it using my 10-inch Newtonian reflector. Note the shuttle with its payload bay doors open. The Canadian robotic arm, which helped install the arrays, is also visible."

Dirk Ewers of Germany also photographed the [new wings](#). "I caught them only one hour deployment," he says. "It is a great addition to the station - not only for the power, but also for viewers on Earth." [The movie](#) he made using a 5-inch telescope is a must-see. ([DivX required](#).)

**more images:** [from Quintus Oostendorp](#) of Vaassen, the Netherlands; [from Pawel Warchal](#) of Cracow, Poland; [from Ralf Vandebergh](#) of the Netherlands; [from Janusz Krysiak](#) of Koluszki, Poland; [from Martin Wagner](#) of Sonnenbuehl, Germany; [from Rob](#)

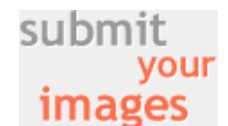
Cool links:

### archives

March

22

2009

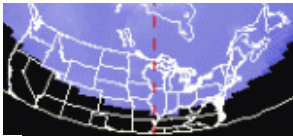


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3/22/2009

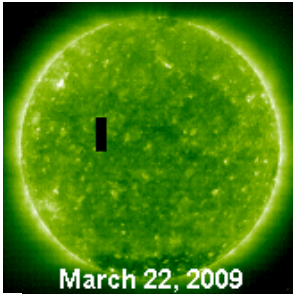


Switch to: [Europe](#), [USA](#), [New Zealand](#), [Antarctica](#)  
Credit: NOAA/POES  
[What is the auroral oval?](#)

### Interplanetary Mag. Field

$B_{total}$ : 3.6 nT  
 $B_z$ : 0.1 nT north  
[explanation](#) | [more data](#)  
Updated: Today at 1337 UT

### Coronal Holes:



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

### SPACE WEATHER NOAA Forecasts



Updated at: 2009 Mar 21 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: 2009 Mar 21 2201 UTC

### Mid-latitudes

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

### High latitudes

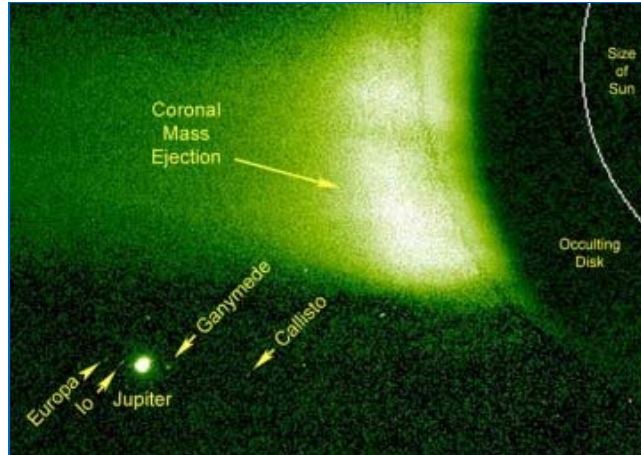
	0-24 hr	24-48 hr

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[Carew](#) of Melbourne Australia; [from Mike Tyrrell](#) of Northwich, Cheshire, UK; [from Dave Gallant](#) of Thunder Bay, Ontario, Canada;

**NEAR THE EDGE OF THE SUN:** Imagine looking up at noon and seeing a planet with four moons just 0.1° from the edge of the blinding sun. Impossible? NASA's STEREO-B spacecraft did it this week. Click on the image below to launch a movie of Jupiter and the Galilean satellites in close "solar conjunction."



[5 MB Quicktime movie](#) | [labeled still frame](#) | [Zoom in on Jupiter](#)

During the 30-hour movie, Io, Europa, Ganymede and Callisto circle Jupiter as a massive CME billows overhead. STEREO-B recorded the action on March 15th and 16th using an occulting disk to block the solar glare. This arrangement allowed STEREO's cameras to photograph moons of Jupiter eight thousand billion ( $8 \times 10^{12}$ ) times dimmer than the adjacent sun.

STEREO's coronagraph (occulting disk+camera) is designed to monitor faint but powerful activity in the sun's outer atmosphere. The CME is a good example. With a limiting magnitude of +6.5, it can also see stars, planets, moons and comets so close to the edge of the sun, it seems impossible. In fact, it happens all the time. Browse the [STEREO gallery](#) for examples.

## [March 2009 Aurora Gallery](#)

[previous Marches: [2008](#), [2007](#), [2006](#), [2005](#), [2004](#), [2003](#), [2002](#)]

## [Comet Lulin Photo Gallery](#)

[[Comet Hunter Telescope: review](#)] [[Comet Lulin finder chart](#)]

## [Explore the Sunspot Cycle](#)



### 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 March 22, 2009 there were **1046** potentially hazardous asteroids.



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ACTIVE	10 %	10 %
MINOR	01 %	01 %
SEVERE	01 %	01 %

### March 2009 Earth-asteroid encounters:

Asteroid	Date(UT)	Miss Distance	Mag.	Size
<a href="#">2009 DS43</a>	Mar. 1	6.9 LD	18	32 m
<a href="#">2009 DD45</a>	Mar. 2	0.2 LD	11	35 m
<a href="#">2009 DN4</a>	Mar. 3	8.1 LD	21	27 m
<a href="#">2009 EA</a>	Mar. 4	7.4 LD	19	24 m
<a href="#">2009 EW</a>	Mar. 6	0.9 LD	16	23 m
<a href="#">161989 Cacus</a>	Mar. 7	70.5 LD	16	1.7 km
<a href="#">2009 EH1</a>	Mar. 8	1.6 LD	18	12 m
<a href="#">2009 ET</a>	Mar. 9	9.5 LD	21	15 m
<a href="#">2009 DV43</a>	Mar. 10	8.5 LD	18	80 m
<a href="#">2009 EU</a>	Mar. 11	3.5 LD	18	21 m
<a href="#">1998 OR2</a>	Mar. 12	69.8 LD	14	3.3 km
<a href="#">2009 DR3</a>	Mar. 14	7.2 LD	16	225 m
<a href="#">2009 FR</a>	Mar. 16	6.7 LD	19	22 m
<a href="#">2009 FJ</a>	Mar. 16	4.9 LD	17	46 m
<a href="#">2009 FW4</a>	Mar. 17	2.8 LD	16	53 m
<a href="#">2009 FH</a>	Mar. 18	0.2 LD	14	21 m
<a href="#">2009 FK</a>	Mar. 19	1.0 LD	17	9 m
<a href="#">2009 DO111</a>	Mar. 20	1.2 LD	13	117 m
<a href="#">2009 FX4</a>	Mar. 23	6.1 LD	19	37 m
<a href="#">2009 FD</a>	Mar. 27	1.6 LD	13	160 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.



## Essential Links

[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

[LINK](#) [Science Central](#)

[more links...](#)

### [Solar Panel Installation](#)

Professional system installers DJH Construction, Inc.  
djhconstruction.com

3/22/2009

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