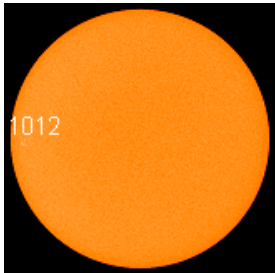


SPACE WEATHER
Current conditions

Solar wind
speed: **304.7** km/sec
density: **3.6** protons/cm³
[explanation](#) | [more data](#)
Updated: Today at 0746 UT

X-ray Solar Flares
6-hr max: **B2** 0545 UT Feb13
24-hr: **B2** 0545 UT Feb13
[explanation](#) | [more data](#)
Updated: Today at: 0740 UT

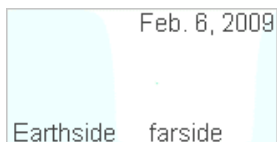
Daily Sun: 12 Feb 09



Emerging sunspot 1012 is a member of old Solar Cycle 23.
Credit: SOHO/MDI

Sunspot number: 11
[What is the sunspot number?](#)
Updated 12 Feb. 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= 2** quiet
[explanation](#) | [more data](#)

Current Auroral Oval:

 **What's up in Space**

February 13, 2009

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



VALENTINE'S AURORAS: Arctic sweethearts, take note. A solar wind stream is heading toward Earth and there is a 35% chance of geomagnetic activity when it arrives on Feb. 14th. Valentine's Day could end with a sweet display of Northern Lights: [gallery](#).

COLLIDING SATELLITES: For the first time ever, two large satellites have collided in Earth orbit. It happened on Tuesday, Feb. 10th, when [Kosmos 2251](#) crashed into [Iridium 33](#) approximately 800 km over northern Siberia. Both satellites were completely destroyed.



[Click to view a 2.3 MB animation](#)

U.S. Strategic Command is tracking hundreds of satellite fragments. In the 48+ hours since the collision, the debris swarm has spread around both orbits. Experts characterize the distribution as a pair of "clumpy rings"; one ring traces the orbit of Iridium 33, the other traces the orbit of Kosmos 2251.

This injection of debris substantially increases the population of space junk at altitudes near 800 km. Collisions are now more likely than ever. Fortunately, the International Space Station orbits Earth at a much lower altitude, 350 km, so it is in no immediate danger. The Hubble Space Telescope is not so safe at 610 km. In the days ahead, researchers will carefully study the make-up and dynamics of the debris cloud to estimate when bits will begin to drift down to lower altitudes.

LISTEN UP: The US Air Force Space Surveillance Radar is monitoring the skies above Texas for echoes from satellite fragments. [Try listening](#) on **Friday, Feb. 13th between 11:12 and 11:21 CST** (1712 - 1721 UT). That's when Iridium 33 would have passed over the radar intact had it not been shattered.

SOLAR ACTIVITY: Sunspot 1012 is crackling with [B-class](#) solar flares. Yesterday, Feb. 12th at 1625 UT, one such eruption propelled a "[solar tsunami](#)" through the sun's lower atmosphere. An ultraviolet telescope onboard NASA's STEREO-B spacecraft recorded the faint yet powerful wave:

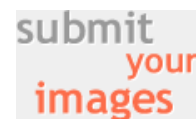
Cool links:

[archives](#)

February

13

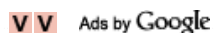
2009



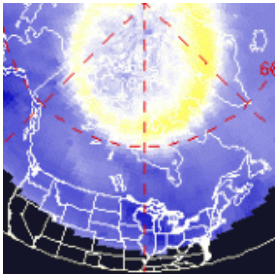
[Raw Minerals Now Free...](#)

RawMinerals Makeup Better Than Bare 100% Free 30-Days Supply...

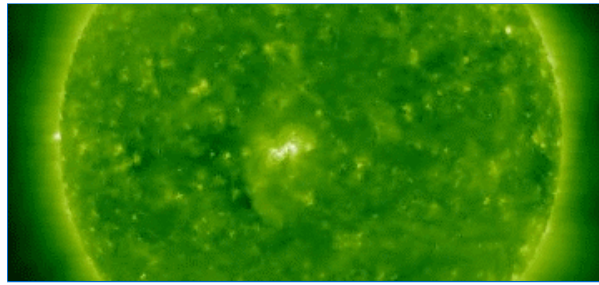
[RawMinerals.Limited-Pron](#)







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



The low latitude and magnetic polarity of this sunspot identify it as a member of old Solar Cycle 23. It is, in other words, a fossil, albeit a relatively active one. Stay tuned for more flares.



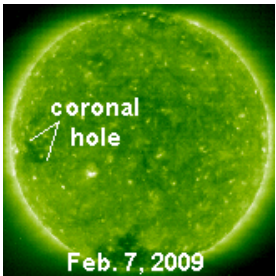
Interplanetary Mag. Field

B_{total} : 2.7 nT
 B_z : 0.8 nT north
[explanation](#) | [more data](#)
 Updated: Today at 0746 UT

Comet Lulin Photo Gallery

[[Comet Hunter Telescope](#)] [[NASA's story](#)] [[ephemeris](#)]

Coronal Holes:



A solar wind stream flowing from the indicated coronal hole should reach Earth on Feb. 13th or 14th. Credit: SOHO Extreme UV Telescope

February 2009 Aurora Gallery

[[Previous Februaries: 2008, 2007, 2006, 2004, 2003, 2002](#)]

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 February 13, 2009 there were **1025** potentially hazardous asteroids.

Feb. 2009 Earth-asteroid encounters:

Asteroid	Date(UT)	Miss Distance	Mag.	Size
2009 BK58	Feb. 2	1.7 LD	17	30 m
2009 BG81	Feb. 2	4.4 LD	19	12 m
2009 CC2	Feb. 2	0.5 LD	17	12 m
2009 BW2	Feb. 5	8.4 LD	20	40 m
2009 CP	Feb. 8	7.7 LD	19	20 m
2009 BE58	Feb. 10	8.6 LD	16	225 m
2006 AS2	Feb. 10	9.2 LD	15	370 m
2009 BL58	Feb. 11	4.8 LD	17	55 m
1999 AQ10	Feb. 18	4.4 LD	13	390 m
2009 CV	Feb. 23	4.8 LD	18	62 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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SPACE WEATHER NOAA Forecasts



Updated at: 2009 Feb 12 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 Feb 12 2201 UTC

Mid-latitudes

	0-24 hr	24-48 hr
ACTIVE	05 %	35 %
MINOR	01 %	15 %
SEVERE	01 %	05 %



sponsors



Essential Links

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

The official U.S. government space weather bureau

High latitudes

	0-24 hr	24-48 hr
ACTIVE	05 %	35 %
MINOR	01 %	15 %
SEVERE	01 %	10 %

[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...](#)



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