

Επιτάχυνση φορτισμένων σωματιδίων στο γεωδιάστημα και επιπτώσεις σε διαστημικά συστήματα

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HELLENIC REPUBLIC

**National and Kapodistrian
University of Athens**

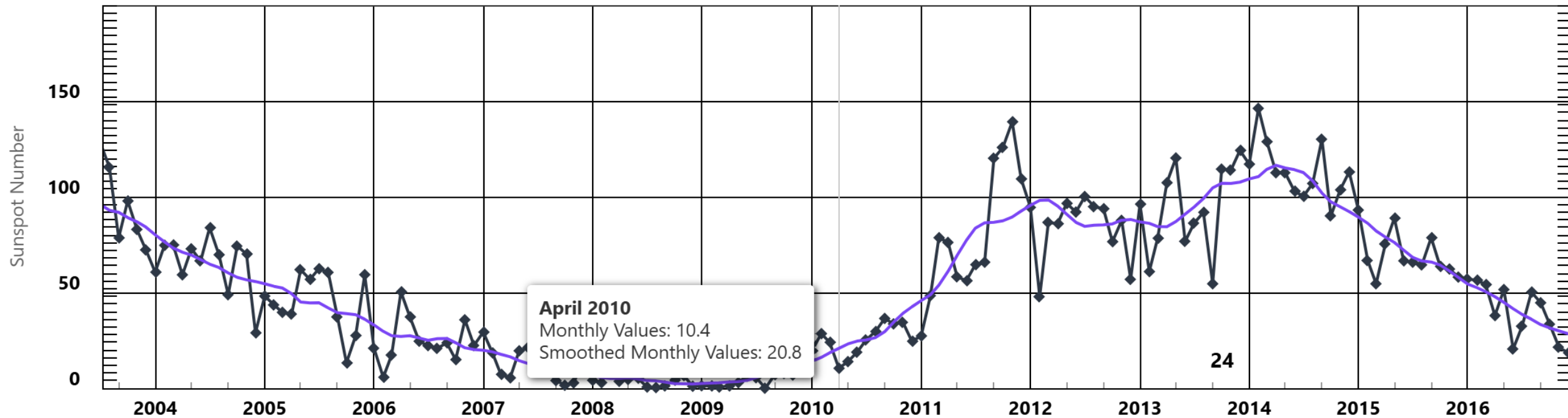
— EST. 1837 —

The **Galaxy 15 satellite anomaly** occurred on **5 April 2010 at 09:48 UTC**. It later became known as a “zombie satellite” incident because **the spacecraft stopped responding to ground control but kept operating in orbit**



Solar Activity

Solar Cycle Sunspot Number Progression



Source: NOAA



NASA **OMNIWeb Data Explorer** to plot solar wind parameters (IMF B_z , solar wind speed) and geomagnetic indices (Kp, Dst, AE) for selected intervals

<https://omniweb.gsfc.nasa.gov/form/dx1.html> (1-hour time resolution)

https://omniweb.gsfc.nasa.gov/form/omni_min_def.html (1 & 5 min time resolution)

5 April 2010 (20100403 – 20100406)





SuperMAG provides easy access to validated ground magnetic field perturbations

<https://supermag.jhuapl.edu/>





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It provides improved geomagnetic indices for substorm and storm intensity (SML and SMR), and also solar wind parameters.

Interactive (plots are customizable) and user-friendly



NOAA Space Weather Prediction Center (SWPC)

Nowcasts

GOES Electron Flux (real-time)

<https://www.swpc.noaa.gov/products/goes-electron-flux>



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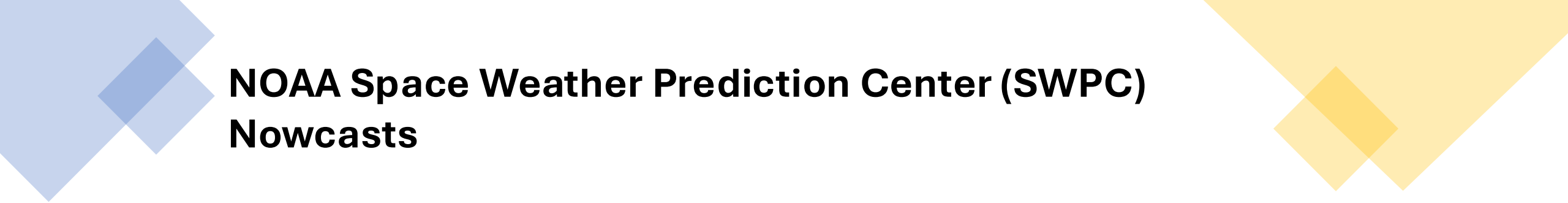
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GOES X-Ray Flux (real-time)

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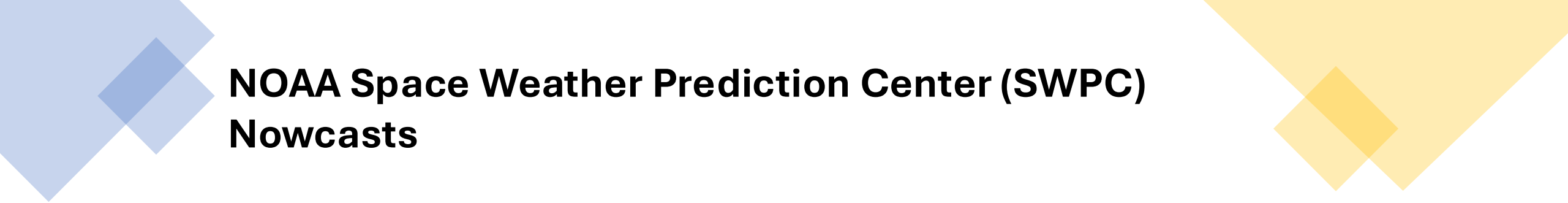
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SOHO LASCO Coronagraph

<https://www.swpc.noaa.gov/products/lasco-coronagraph>





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Magnetosphere condition (velocity, density, pressure)

<https://www.swpc.noaa.gov/products/geospace-magnetosphere-movies>





NOAA Space Weather Prediction Center (SWPC) Forecasts

**ENLIL Solar Wind Prediction
based on SOHO LASCO Coronagraph images**

<https://www.swpc.noaa.gov/products/wsa-enlil-solar-wind-prediction>



NOAA Space Weather Prediction Center (SWPC) Forecasts

SWPC Aurora Forecast

<https://www.swpc.noaa.gov/products/aurora-30-minute-forecast>





NOAA Space Weather Prediction Center (SWPC) Forecasts

SWPC Aurora Forecast

<https://www.swpc.noaa.gov/products/aurora-30-minute-forecast>

SWPC Relativistic Electron Forecast

<https://www.swpc.noaa.gov/products/relativistic-electron-forecast-model>





Swedish Space Weather Center

<https://spaceweather.irf.se/>



Swedish Space Weather Center

<https://spaceweather.irf.se/>

Very good value for:

Substorm forecast

<https://spaceweather.irf.se/forecast/ae/>





Particle Data

NASA Coordinated Data Analysis Web (CDAWeb)

<https://cdaweb.gsfc.nasa.gov/>



Space Weather Data Portal

<https://lasp.colorado.edu/space-weather-portal/>



Useful websites

<https://www.swpc.noaa.gov/products/geospace-geomagnetic-activity-plot>

<https://www.swpc.noaa.gov/products/3-day-geomagnetic-forecast>

<https://spaceweather.gfz.de/>

<https://amda.irap.omp.eu/>

<https://www.gfz.de/en/section/space-physics-and-space-weather/data-products-and-services>

