

Public solar cycle system





Overview

What are solar cycle predictions?

Solar cycle predictions are used by various agencies and many industry groups. The solar cycle is important for determining the lifetime of satellites in low-Earth orbit, as the drag on the satellites correlates with the solar cycle, especially as represented by F10.7cm.

Does SWPC continually update the Solar Cycle 25 NOAA/NASA/ISES panel prediction?

In this section we describe the procedure that SWPC has implemented to continually update the Solar Cycle 25 NOAA/NASA/ISES Panel prediction that was released in 2019. As noted in Section 1, this updated prediction was released publicly in October 2023 as an experimental product on NOAA's Space Weather Prediction Testbed (SWPT).

What is a solar cycle?

solar cycle, period of about 11 years in which fluctuations in the number and size of sunspots and solar prominences are repeated. Sunspot groups have a magnetic field with a north and a south pole, and, in each 11-year rise and fall, the same polarity leads in a given hemisphere while the opposite polarity leads in the other.

Why is the solar cycle important?

The solar cycle is important for determining the lifetime of satellites in low-Earth orbit, as the drag on the satellites correlates with the solar cycle, especially as represented by F10.7cm. A higher solar maximum decreases satellite life and a lower solar maximum extends satellite life.



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Solar Cycle Progression and Forecast

Dec 4, 2025 · The purpose of the predictions is to provide future statistical estimates of sunspot number, solar radio 10.7 cm flux (F10.7), and the geomagnetic planetary

Solar Cycle Progression , SPACE WEATHER PREDICTION ...

Nov 2, 2025 · The predicted progression for the current solar cycle (Cycle 25) is given by the magenta line, with associated uncertainties shown by the shaded regions. This prediction is ...

Solar cycle , Definition, Length, & Facts

Solar cycle, period of about 11 years in which fluctuations in the number and size of sunspots and solar prominences are repeated. Solar cycle 25 ...

Understanding Solar Cycles: Patterns and Predictions

Feb 27, 2025 · It was found that for each solar cycle, the degree distribution follows a power law, indicating that solar flares tend to appear in correlated active zones rather than being evenly ...

Solar Cycle Progression Updated Prediction ...

Jan 18, 2024 · In October 2023, NOAA/SWPC released an experimental solar cycle prediction product on the Space Weather Prediction Testbed (SWPT) website. This product will be ...

Observation-Based Iterative Map for Solar Cycles. I. Nature of Solar

Apr 28, 2025 · Distinguishing between the two mechanisms is crucial for predicting solar cycles. Here we reduce the solar dynamo process responsible for the solar cycle to a one-dimensional ...

NASA SVS , The Solar Cycle

Sep 14, 2020 · Solar Cycle 25 has begun. The Solar Cycle 25 Prediction Panel announced solar minimum occurred in December 2019, marking the transition into a new solar cycle. In a press ...

Solar Cycle Prediction at NOAA's Space Weather Prediction ...

Jun 11, 2025 · Over the past few decades, long-term solar activity predictions at NOAA/SWPC have relied heavily on a series of international panels convened near the beginning of each ...

Solar Cycle Progression Update (Experimental Interactive ...

Dec 2, 2025 · The solar cycle is important for determining the lifetime of satellites in low-Earth orbit, as the drag on the satellites correlates with the solar cycle, especially as represented by ...

NASA SVS , The Solar Cycle

Sep 14, 2020 · Solar Cycle 25 has begun. The Solar Cycle 25 Prediction Panel announced solar



minimum occurred in December 2019, marking ...

Solar cycle , Definition, Length, & Facts , Britannica

Solar cycle, period of about 11 years in which fluctuations in the number and size of sunspots and solar prominences are repeated. Solar cycle 25 began in 2019 and will reach maximum in ...

Solar Cycle progression , Solar activity , SpaceWeatherLive

Nov 24, 2025 · Solar Cycle progression These charts on this page resemble the progress of the solar cycle. The charts are updated every month by the SWPC with the latest ISES ...

Solar Cycle progression , Solar activity

Nov 24, 2025 · Solar Cycle progression These charts on this page resemble the progress of the solar cycle. The charts are updated every month by ...

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