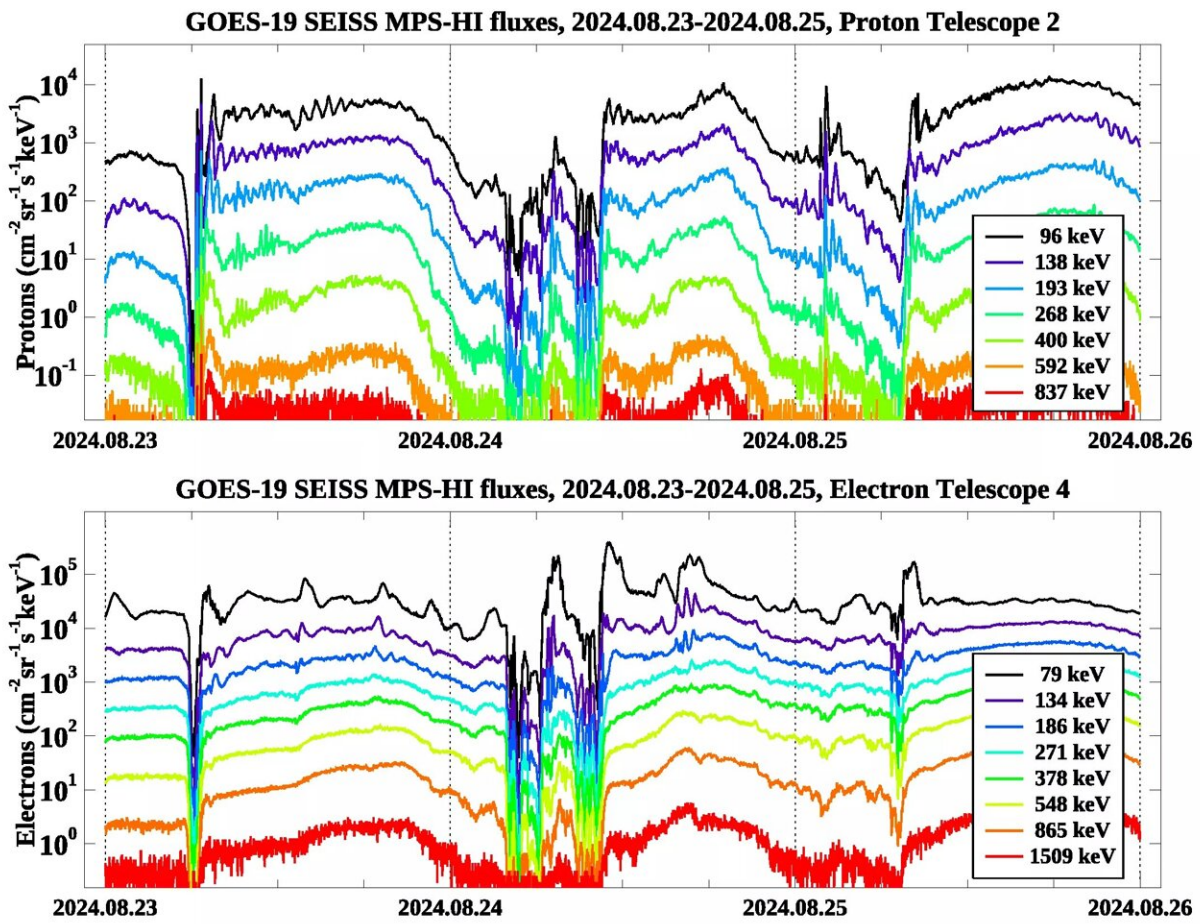
NOAA shares first data from GOES-19 SEISS instrument

September 5 2024



Credit: NOAA Headquarters

The Space Environment In-Situ Suite (SEISS) instrument onboard

NOAA's GOES-19 satellite is now sending radiation data back to Earth.

GOES-19 launched on June 25, 2024, and the SEISS sensors have been collecting data continuously since August 22, 2024. SEISS is a suite of sensors that monitors proton, electron, and heavy ion fluxes in the magnetosphere, which are observations used to support space weather monitoring and prediction.

These plots show a number of radiation belt disturbances occurring over the three-day time period from August 23–25, 2024. The radiation belts are regions of space around Earth filled with energetic electrons and protons that can damage or interfere with satellite electronics.

The GOES-19 SEISS Magnetospheric Particle Sensor—High Energy (MPS-HI) observed several large dropouts followed by rapid increases in the radiation belt electron and proton fluxes during these disturbances.

Following the rapid increases, MPS-HI observed periodic "drift echoes" (short duration flux enhancements), most clearly in the three lowest-energy proton channels (96 keV, 138 keV, and 193 keV traces), as these enhanced fluxes repeatedly drifted around the Earth and passed by the GOES-19 satellite.

After GOES-19 is assigned the operational role as NOAA's GOES East satellite in early 2025, NOAA's Space Weather Prediction Center will use GOES-19's SEISS data to issue solar radiation storm and radiation belt alerts, and improve energetic particle forecasts.

Provided by NOAA Headquarters

Citation: NOAA shares first data from GOES-19 SEISS instrument (2024, September 5) retrieved 5 September 2024 from https://phys.org/news/2024-09-noaa-seiss-instrument.html

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