

QUARTERLY REPORT ON PAST SPACE WEATHER

Q3 2021

16.6.2021 – 15.9.2021

SUNNSPOT NUMBERS

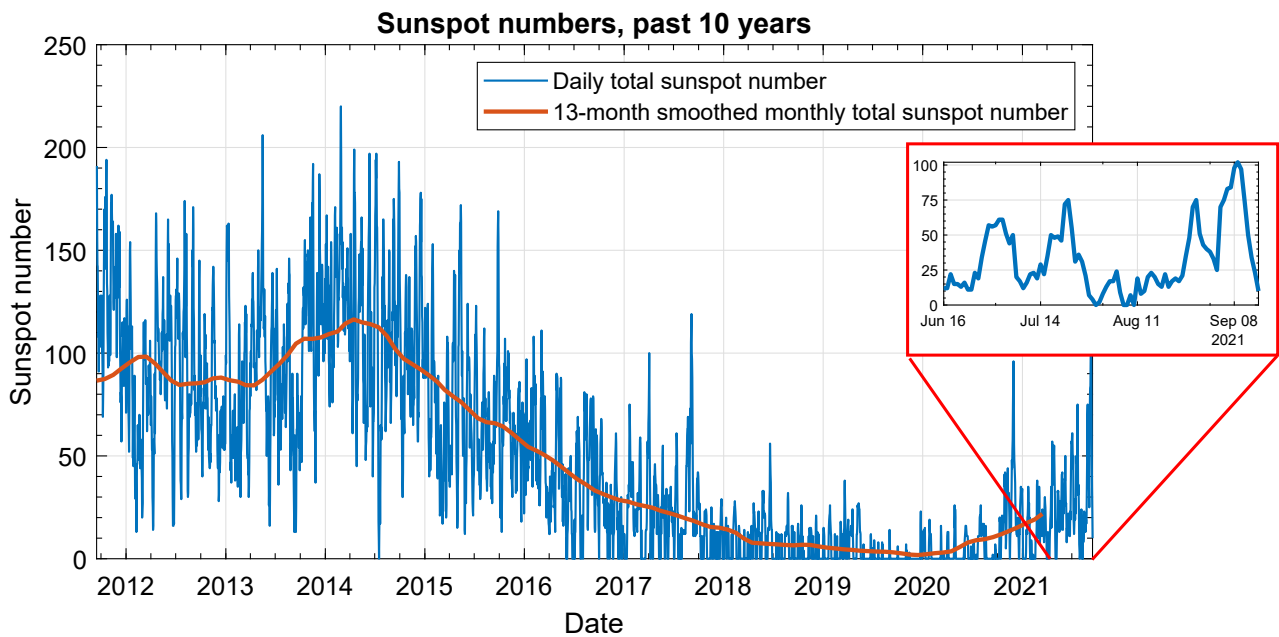


Figure 1: Sunspot numbers for the past 10 years and the last quarter. (Data from SILSO)

FLARES

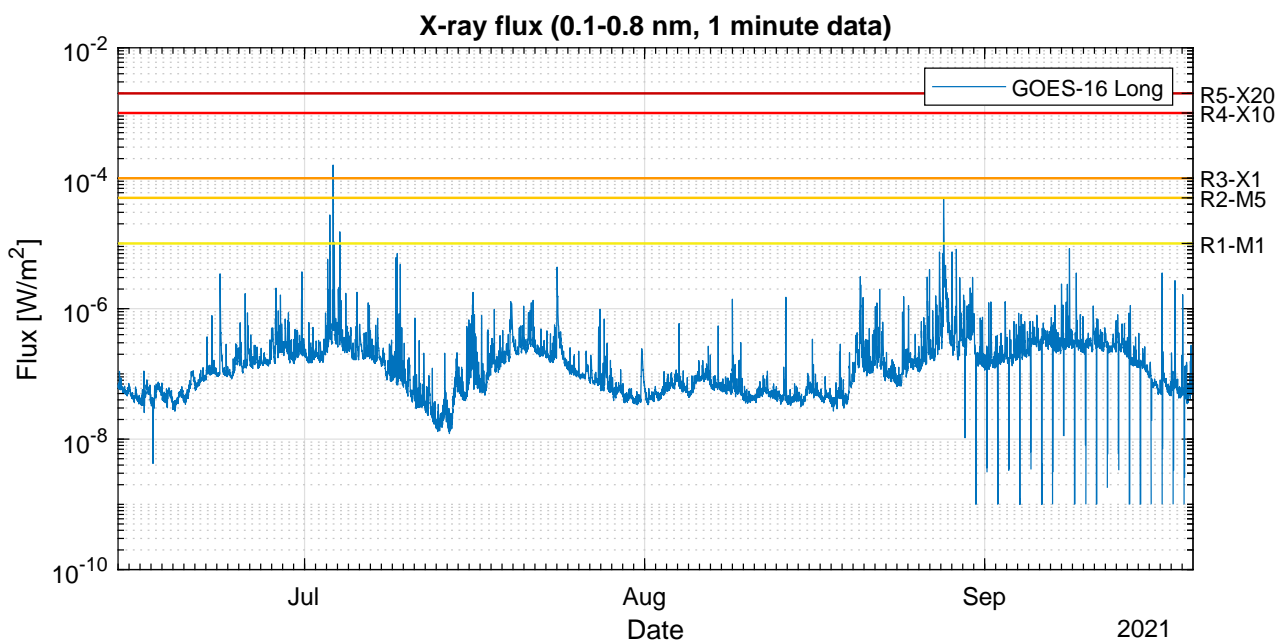


Figure 2: GOES X-ray flux (GOES – SWPC/NOAA) together with the NOAA Space weather scale thresholds for radio blackouts. (For more information on the NOAA Space Weather Scales, see <https://www.swpc.noaa.gov/noaa-scales-explanation>)

SOLAR ENERGETIC PARTICLES

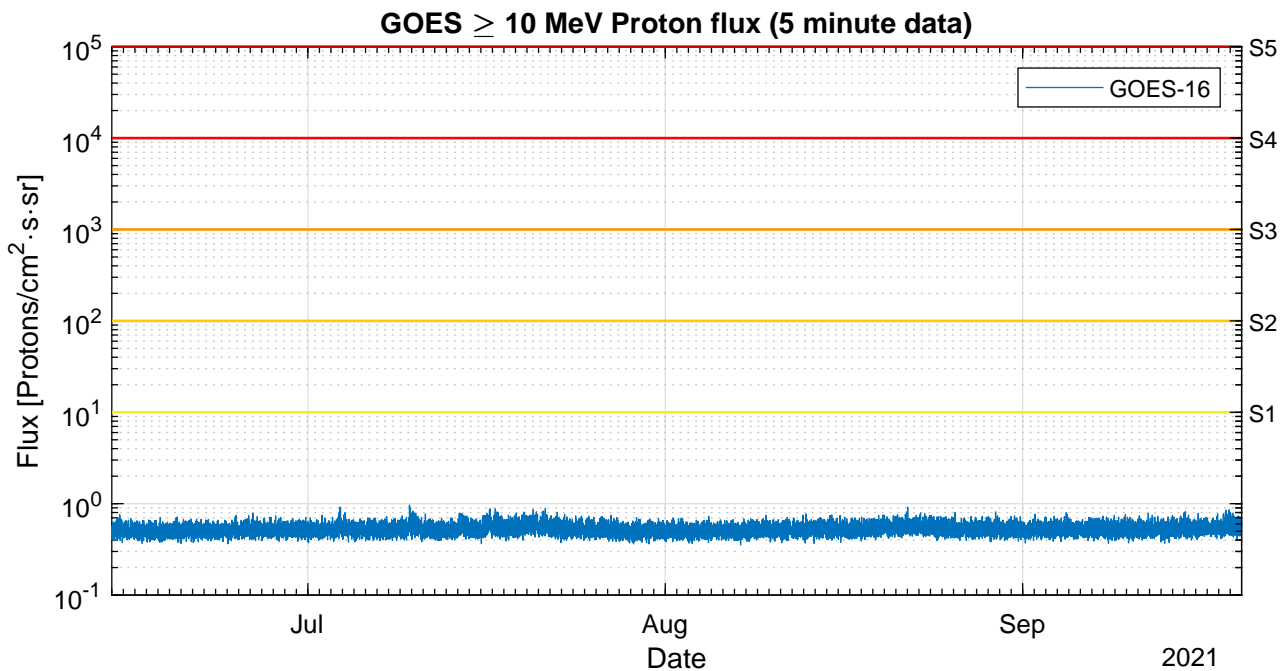


Figure 3: GOES proton flux (GOES - SWPC/NOAA) together with the NOAA Space weather scale thresholds for Solar Radiation Storms. (For more information on the NOAA Space Weather Scales, see <https://www.swpc.noaa.gov/noaa-scales-explanation>)

SOLAR WIND

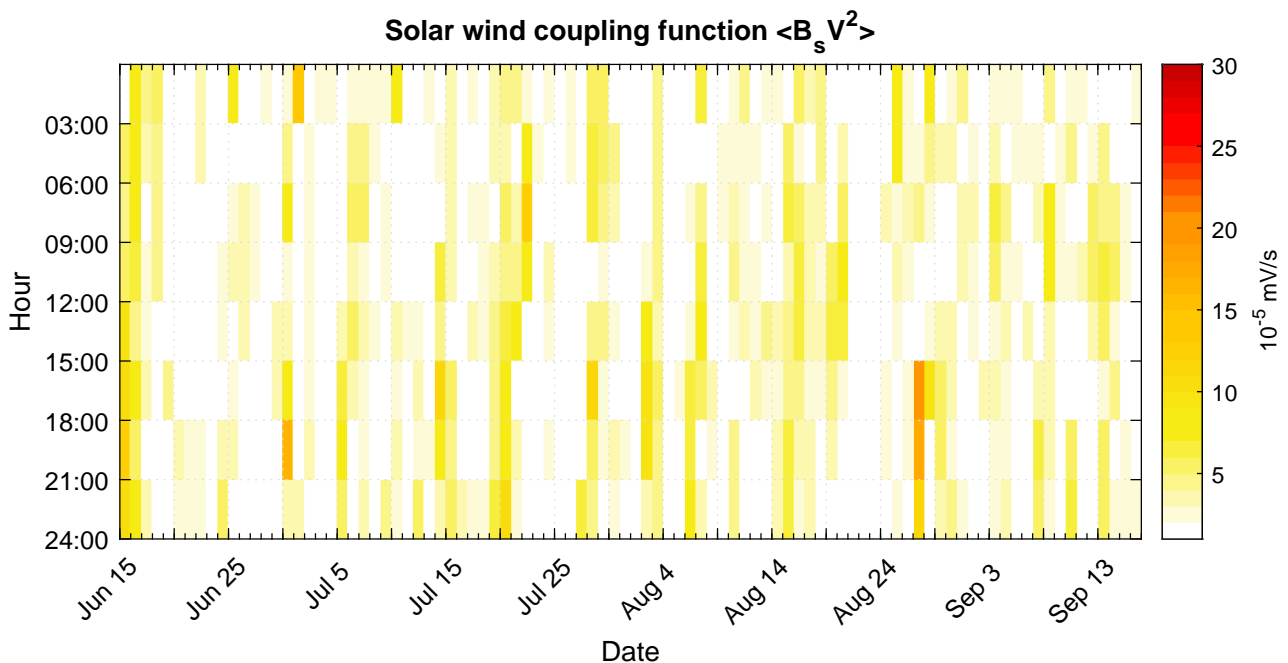


Figure 4: 3-hourly mean values of the Solar wind coupling function $\langle B_s V^2 \rangle$ based on ACE data. (NOAA/SWPC)

GEOMAGNETIC CONDITIONS

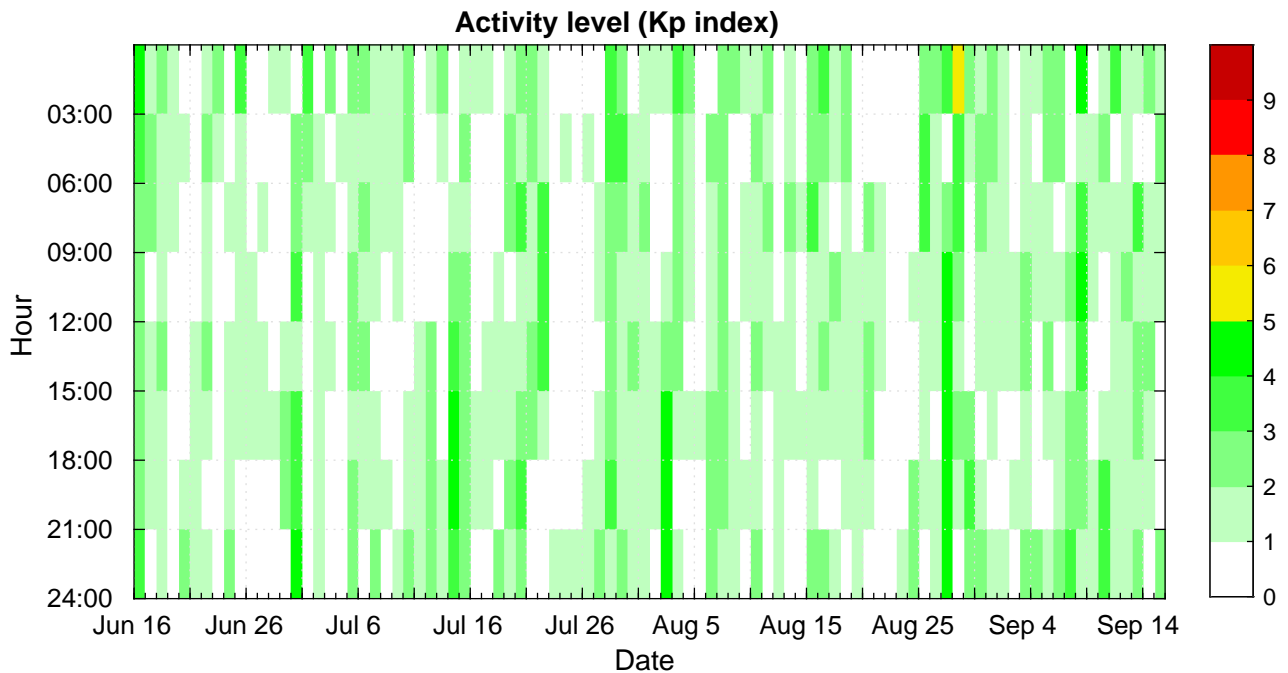


Figure 5: Kp index. (Data from GFZ Potsdam.)

CMES

This reporting period saw no major Earth-directed CMEs. Some minor CMEs did arrive at Earth on 2. August, 27. August and 10. September. Of these only the 27. August caused any significant geomagnetic activity with Kp raising to 5 for the first hours of 28. August.

(Source: Solar Influences Data analysis Center – RWC Belgium)

AKNOWLEDGEMENTS

Data from:

SILSO - <http://www.sidc.be/silso/>

GOES - <https://www.ngdc.noaa.gov/stp/satellite/goes/index.html>

DONKI - <https://kauai.ccmc.gsfc.nasa.gov/DONKI/>

DSCOVR/ACE – NASA/NOAA /SWCP - <https://www.ngdc.noaa.gov/dscovr/portal/index.html#/>

GFZ Potsdam - <https://www.gfz-potsdam.de/en/kp-index/>