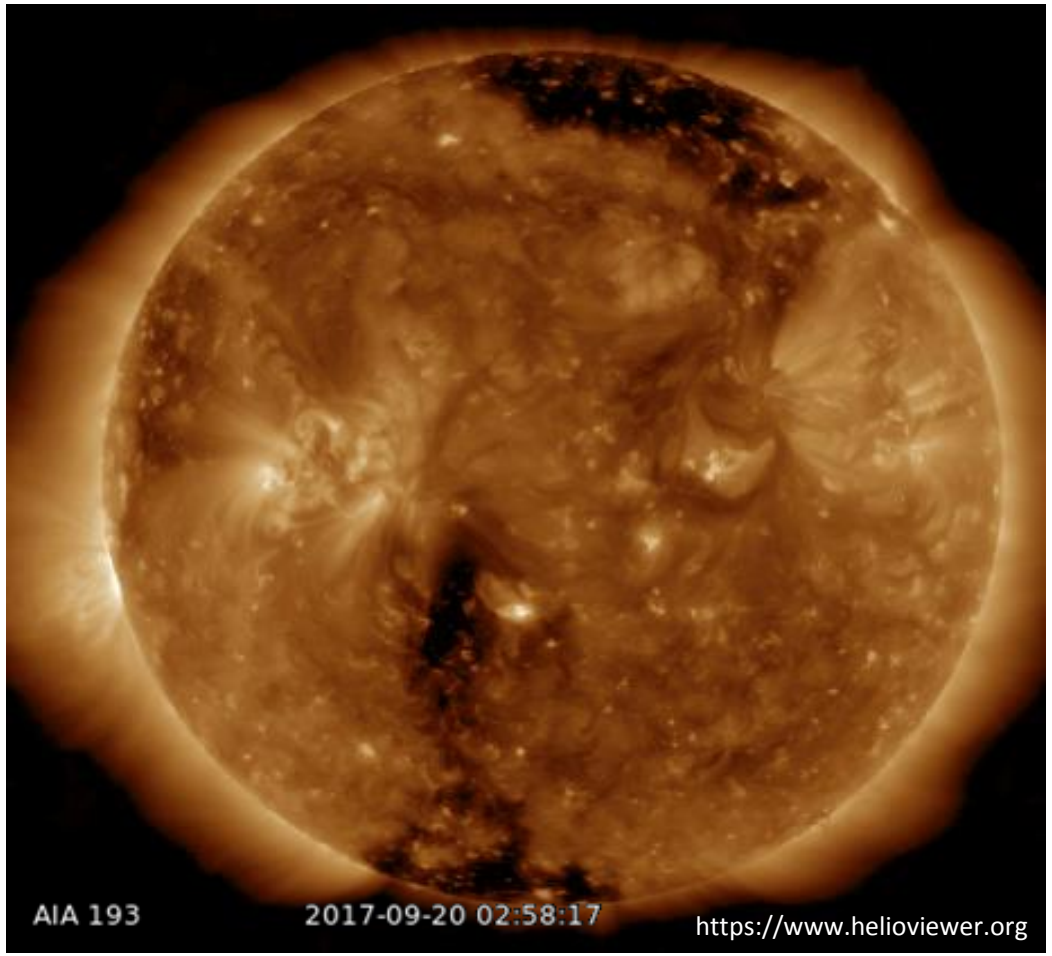
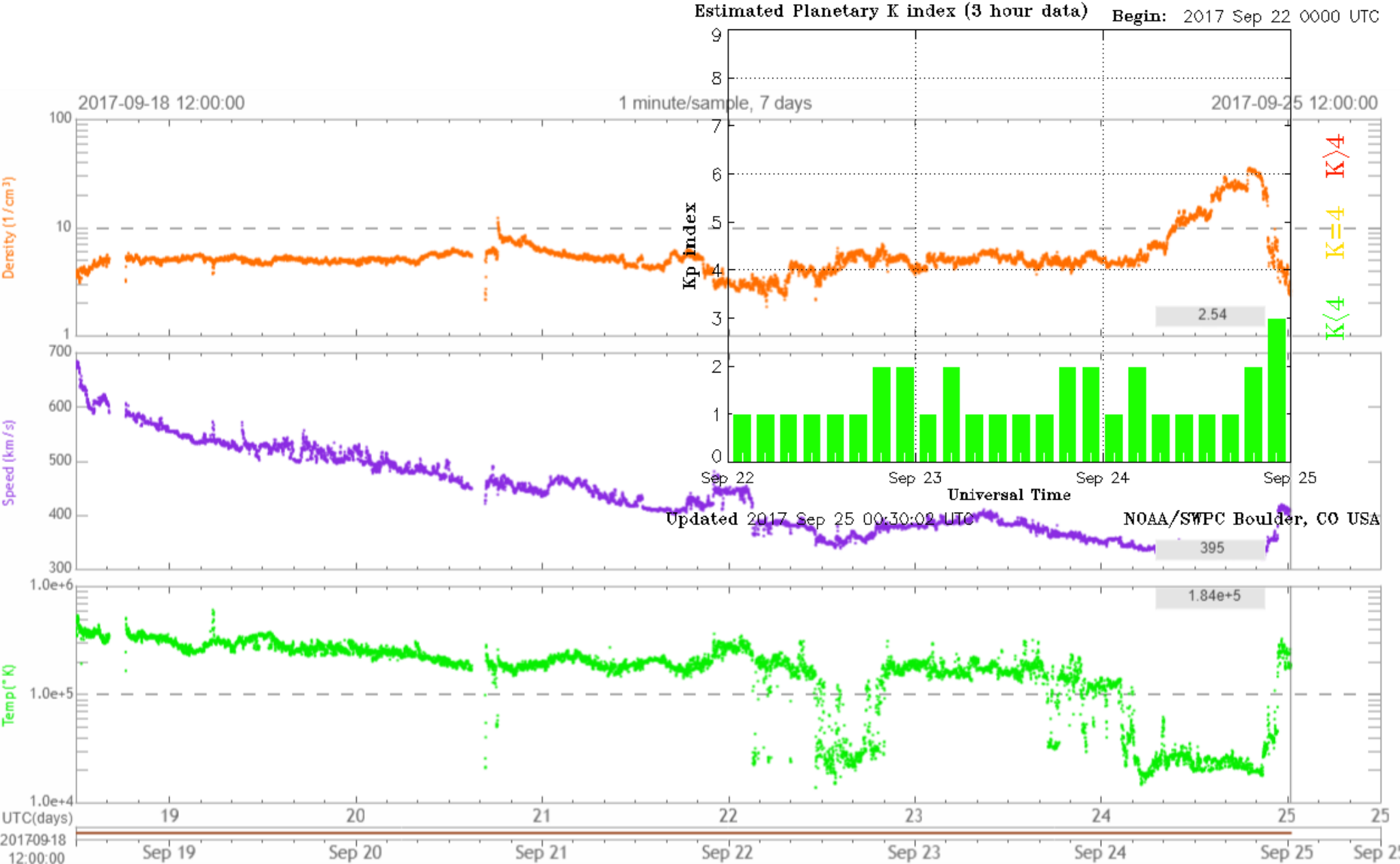
太陽圏物理
値週報告
2017.SEP18 ~ 2017.SEP25

- Comparatively quiet this week
- No C,M,X-Class solar flare
- Coronal holes

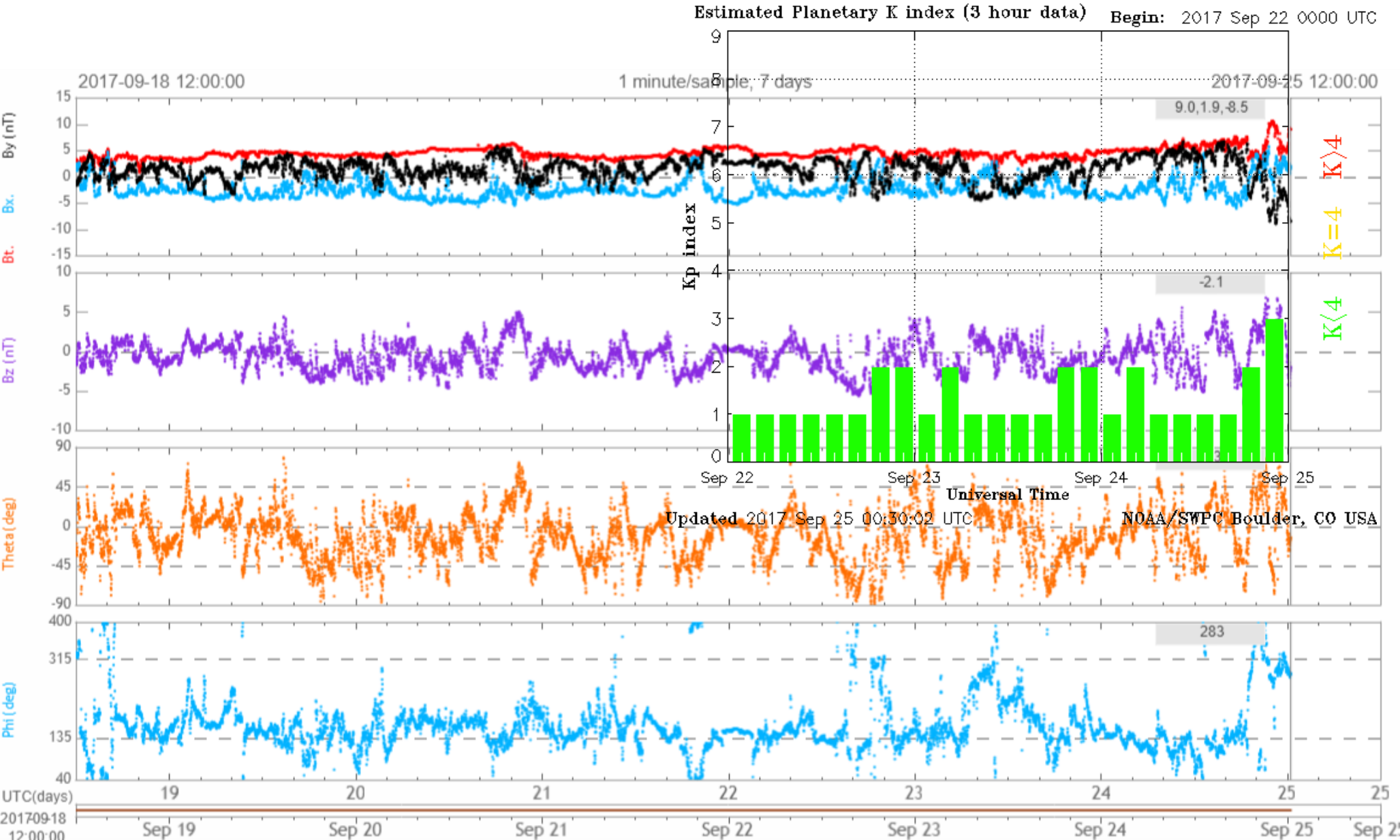


Solar wind data this week



http://www.swpc.noaa.gov/products/real-time-solar-wind

Solar wind data this week



http://www.swpc.noaa.gov/products/real-time-solar-wind

spaceweather.com 2017 SEP19

- **SOLAR WIND SPARKS AUORAS:** For the 5th day in a row, Earth is inside a stream of fast-moving solar wind. It arrived abruptly on Sept. 14th and has been sparking polar auroras ever since…

http://spaceweather.com/archive.php?day=19&month=09&year=2017&view=view

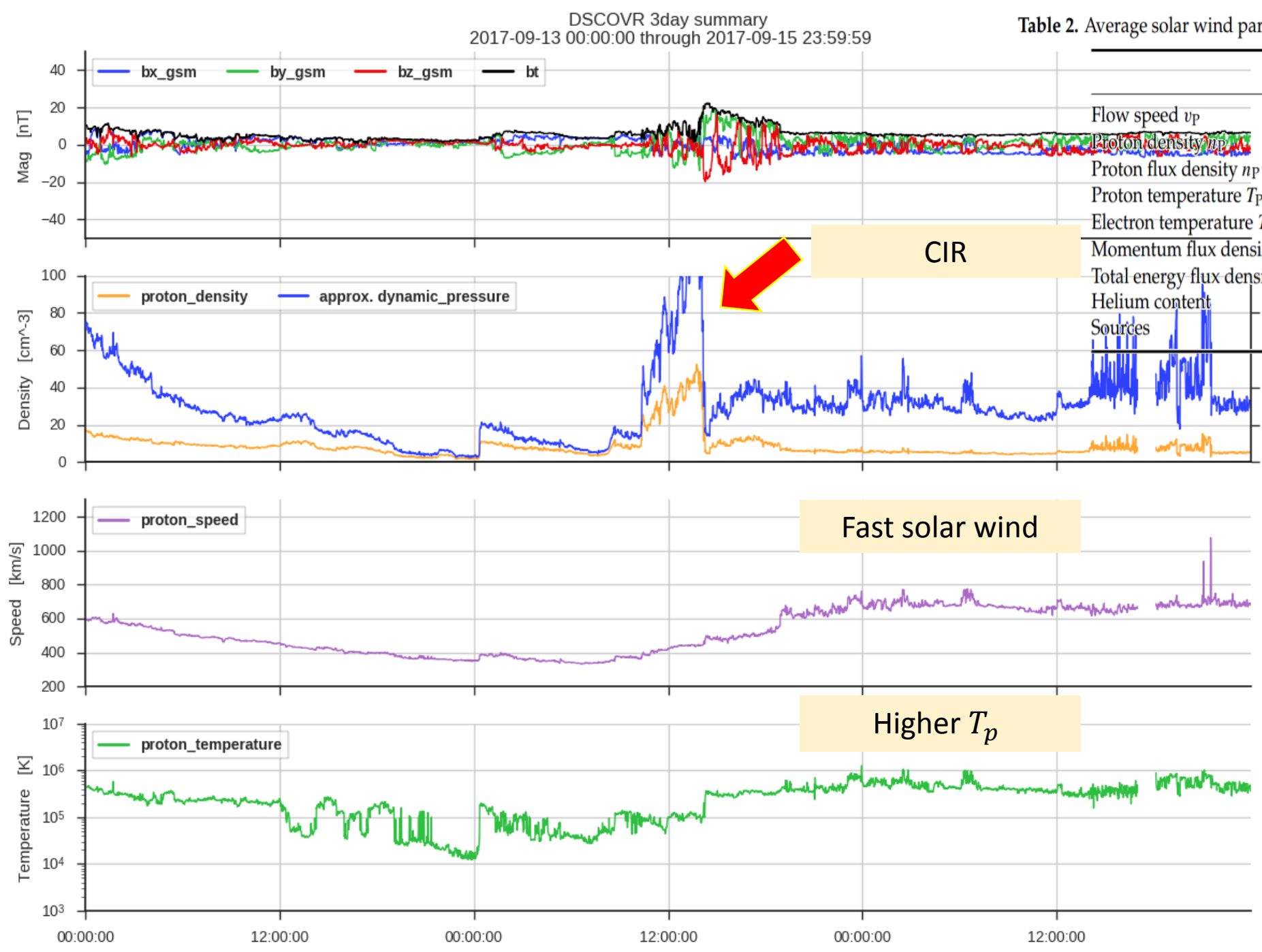


Table 2. Average solar wind parameters at 1 AU, for the time around solar activity minimum.

	Slow wind	Fast wind
Flow speed v_P	250–400 km s^{-1}	400–800 km s^{-1}
Proton density n_P	10.7 cm^{-3}	3.0 cm^{-3}
Proton flux density $n_P v_P$	3.7×10^8 cm^{-2} s^{-1}	2.0×10^8 cm^{-2} s^{-1}
Proton temperature T_P	3.4×10^4 K	2.3×10^5 K
Electron temperature T_e	1.3×10^5 K	1×10^5 K
Momentum flux density	2.12×10^8 dyn cm^{-2}	2.26×10^8 dyn cm^{-2}
Total energy flux density	1.55 erg cm^{-2} s^{-1}	1.43 erg cm^{-2} s^{-1}
Helium content	2.5%, variable	3.6%, stationary
Sources	Streamer belt	Coronal holes

https://www.cfa.harvard.edu/~scranmer/ITC/eaaa_solar_wind_schwenn.pdf

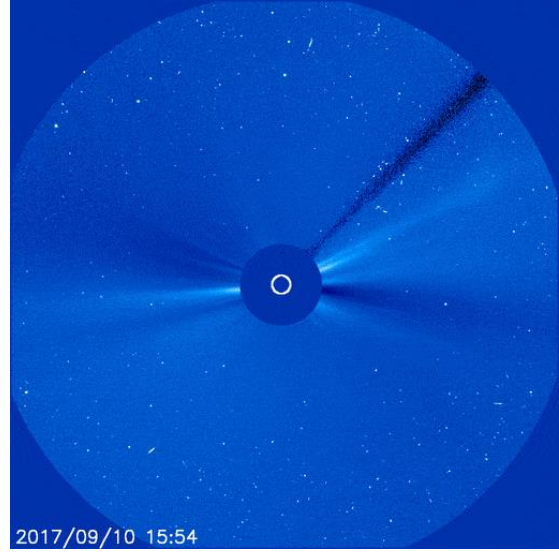
https://www.ngdc.noaa.gov/dscovr/portal/#/

DSCOVR 7day summary
2017-09-12 00:00:00 through 2017-09-18 23:59:59

Courtesy of NCEI, CO - ngdc.noaa.gov/dscovr

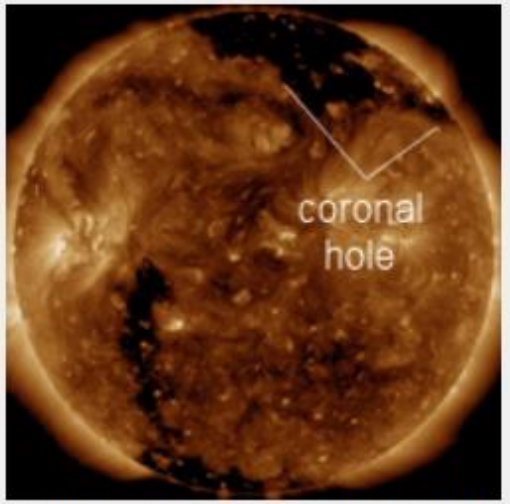
CME

Coronal Hole



http://spaceweather.com

Coronal Holes: 19 Sep 17



Earth is inside a stream of solar wind flowing from this northern coronal hole. Credit: NASA/SDO.

http://spaceweather.com

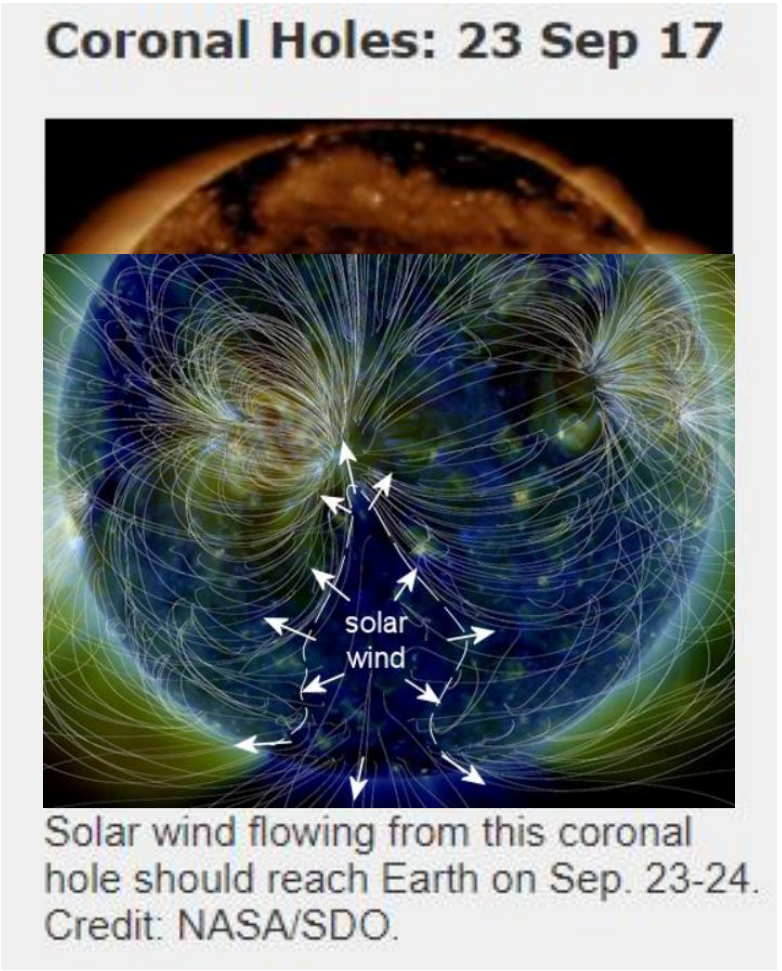
spaceweather.com 2017 SEP20

- AUTUMN IS AURORA SEASON: Summer is ending in the northern hemisphere. That's good news for sky watchers because autumn is aurora season. Statistics show that autumn brings a surplus of geomagnetically disturbed days–almost twice the annual average. At this time of year, even a gentle gust of solar wind can spark bright polar auroras. The autumnal equinox is only two days away. Let the light show begin! Free: Aurora Alerts

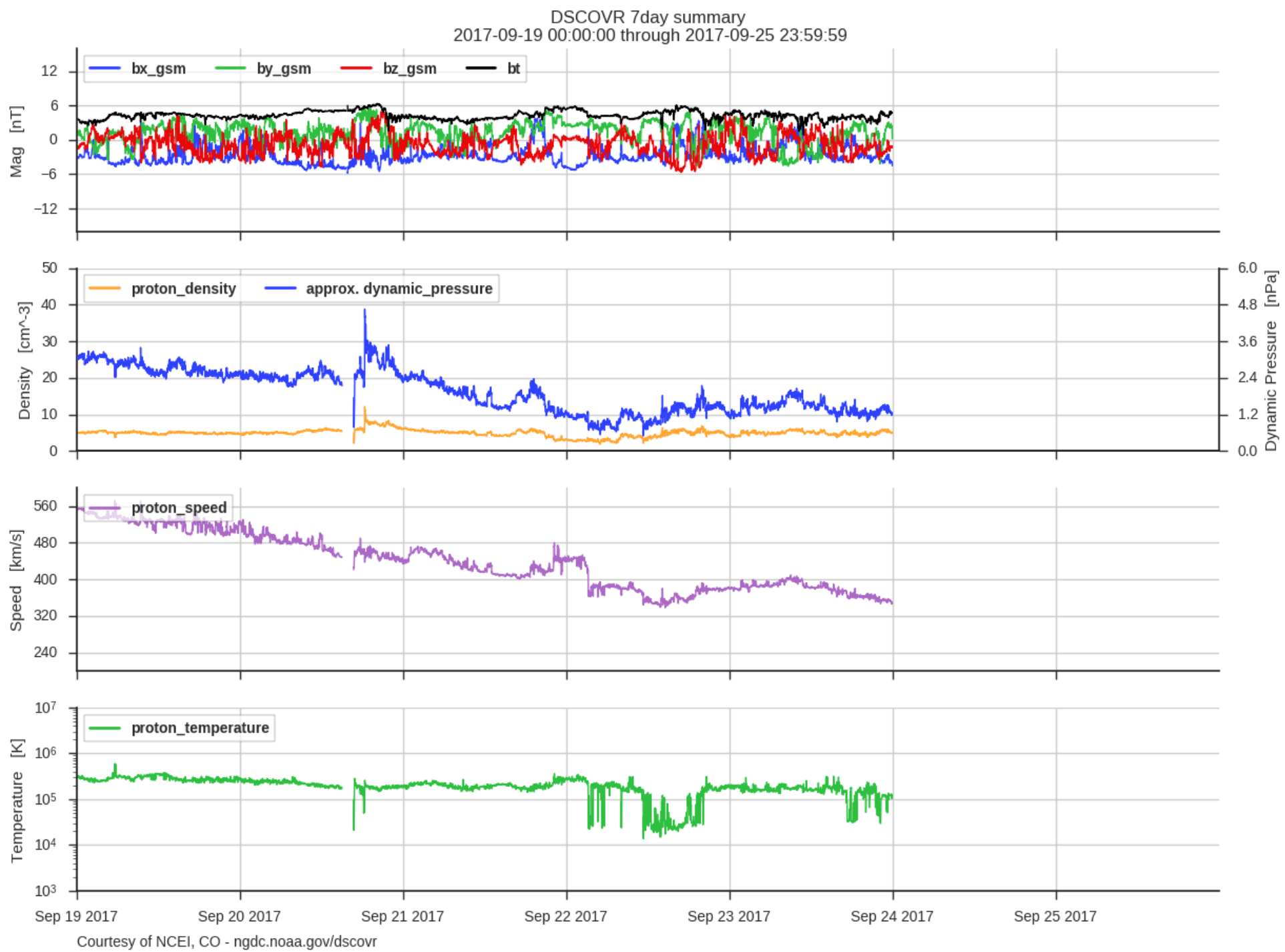
http://spaceweather.com/archive.php?day=19&month=09&year=2017&view=view

spaceweather.com 2017 SEP23

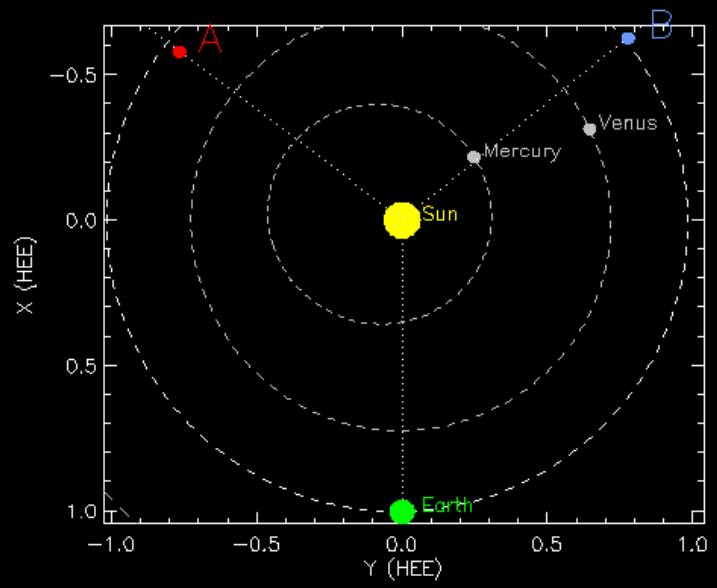
- SOLAR WIND STREAM APPROACHES EARTH: A hole in the sun's atmosphere is spewing solar wind toward Earth. This image from NASA's Solar Dynamics Observatory shows where solar magnetic fields have parted, allowing the gaseous material to escape…



http://spaceweather.com/archive.php?day=23&month=09&year=2017&view=view


DSCOVR 7day summary
2017-09-19 00:00:00 through 2017-09-25 23:59:59
bx_gsm
by_gsm
bz_gsm
bt
Mag [nT]
12
6
0
−6
−12
proton_density
approx. dynamic_pressure
Density [cm^-3]
50
40
30
20
10
0
Dynamic Pressure [nPa]
6.0
4.8
3.6
2.4
1.2
0.0
proton_speed
Speed [km/s]
560
480
400
320
240
proton_temperature
Temperature [K]
10^7
10^6
10^5
10^4
10^3
Sep 19 2017
Sep 20 2017
Sep 21 2017
Sep 22 2017
Sep 23 2017
Sep 24 2017
Sep 25 2017
Courtesy of NCEI, CO - ngdc.noaa.gov/dscovr

AR12673 is back !



https://www.helioviewer.org

https://stereo-ssc.nascom.nasa.gov/where.shtml

Reference

- http://spaceweather.com/
- http://www.swpc.noaa.gov/products/real-time-solar-wind
- https://www.ngdc.noaa.gov/dscovr/portal/#/
- https://www.helioviewer.org/
- https://stereo-ssc.nascom.nasa.gov/where.shtml