Product: Forecast Discussion
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Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center

Solar Activity

.24 hr Summary...Solar activity over the past 24hrs was at high levels. Region 1613 (S23E31) developed into a Delta configuration early in the day and became eruptive, producing multiple M-class x-ray flares with associated CMEs, the largest flare was a M6 at 13/0204 UTC and an M2/Sn at 2054 UTC associated with a 220 sfu Tenflare. The observed CMEs had narrow SE trajectories and therefore, are not expected to be Earthward. There are currently six numbered active regions on the solar disk. Region 1610 (S24W23) was classified yesterday with a Beta Gamma magnetic classification and an area of 550 millionths. Today, the region has decreased in size but remained an Eki type spot group and retained its magnetic configuration. Region 1611 (N12W00) is also classified as having a Beta Gamma magnetic classification. A filament eruption was observed at around 13/1000 UTC near N20W03 with a heliographic extent of 8 degrees.

.Forecast...Solar activity is expected to be at moderate levels on days one, two, and three (14 Nov, 15 Nov, 16 Nov). Activity is expected to originate from Regions 1613, 1610, or 1611. A chance for high levels exists due to activity from Region 1613.

Energetic Particle

.24 hr Summary...The greater than 10 MeV proton flux at geosynchronous orbit has continued to decrease since the enhancement late on Nov 8 to late on Nov 11. The proton flux never crossed alert threshold levels. The greater than 2 MeV electron flux at geosynchronous orbit remained below threshold levels.

.Forecast...A slight chance for a greater than 10 MeV proton enhancement is possible with high activity possible from Region 1613. The greater than 2 MeV electron flux is expected to increase with the expectation of a Coronal Hole High Speed Stream (CH HSS).

Solar Wind

.24 hr Summary...Solar wind speed, as measured by the ACE spacecraft, reached a peak speed of 504 km/s at 13/0111 UTC. Total IMF reached 22.8 nT at 13/0053 UTC. This is a reflection of the onset of CME effects from Nov 9 and 10 CMEs as well as CH HSS effects that may have already been realized at ACE. Over the period, solar wind speeds decreased to around 360 km/s. The Wang Sheeley Arge Model which feeds the ENLIL Solar Wind Prediction Model has verified well over the past few days, with the exception of the transient CMEs.

.Forecast...A solar sector boundary crossing is expected before the arrival of negative coronal hole high speed stream (CH HSS) effects from CH65 becoming visible midday 14 Nov, lasting until late on 15 Nov.

Geospace

.24 hr Summary...The geomagnetic field has been at quiet to active levels for the past 24 hours. A sudden impulse was observed prior to the period at 12/2316 UTC (16 nT, as measured by the Boulder USGS magnetometer) and resulted in subsequent geomag effects early into the period. Based on their location in the nighttime sector, European stations observed larger initial deviations. With the lack of significant negative Bz, high latitude stations around the globe failed to experience localized effects significantly greater than the mid latitudes.

.Forecast...The geomagnetic field is expected to begin at active levels on day 1 (14 Nov) as CME effects are expected to subside. Quiet to unsettled levels are expected on days 1 and 2 (14, 15 Nov) due to onset of effects from a negative polarity coronal hole (CH65). On day 3 (16 Nov), conditions are expected to return to mostly quiet levels. Protons have a slight chance of reaching alert threshold on days one, two, and three (14 Nov, 15 Nov, 16 Nov).