

SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

WEEKLY SPACE WEATHER NEWS

Periode: December 11th – 17th 2015

SOLAR ACTIVITY

In average, Solar activity last week can be considered as somewhat eruptive. There were nine active regions (NOAA 12463, ..., 12471), but there is only three of them remain visible lately. NOAA 12470 became the largest and the most active region this week with area of about 600 millionth hemisphere and produced several C-class flares. The strongest flare ever recorded last week was C7.8 that erupted on December 12th at 13:36 UT from east limb, possibly the seed of NOAA 12470. In total, there were 20 C-class flares occurred at NOAA 12462, 12465, 12466, 12468, 12469, and 12470. Two halo CME was detected by space probe, occurred on December 16th at 09:24 UT and at 14:24 with angular width of 114 degrees and 172 degrees respectively. Those CME can be considered as moderate-velocity ejection because their median velocity were 391 and 347 km/s. The former CME might be related to the eruption of NOAA 12468 a couple of minutes before the ejection. Currently, a bright region is observed in the east limb and expected to influence Solar activity next week. However, the whole activity of the Sun is predicted to be as eruptive as the last week.

GEOMAGNETIC ACTIVITY

Geomagnetic activity at this week was on active level at December 14th and 15th, with minimum Dst index reached -59 nT. While in higher latitude, Kp index was 5 (minor storm). Geomagnetic disturbance on polar region indicated by increase of AE index which has reached 2000 nT at December 14th ~1 UT. The geomagnetic disturbances caused by high speed solar stream due to geoeffective coronal hole around December 10th. On December 14th, solar wind speed increased to 600km/s and its density also went up to 50 cm⁻³. There was 2 *Coronal Mass Ejection* (CME) events on December 16th with initial speed was about 350-400 km/s. Both CMEs has taken place on eastern limb of the sun but from the CACTus image it was showed there was faint halo, so it might effected oto earth on 19 -20 December 2015.

IONOSPHERIC CONDITIONS

Ionospheric conditions for this week was quiet to minor.

Ionospheric condition was in minor level ocured on December 12, 2015 due to the depression of critical frequency of F/F2 layer (*foF2*) with duration in couple of minutes. There was no increament of minimum frequency that cause SWF. There wasn't also spread-F fenomena that cause fading. In general, ionosphere was in Quiet conditions.

Based on the observations using GISTM in Bandung. it was noted also that the scintillation was quiet. The range of TEC value was 46 - 66 TECU and could affect the Error positioning parameters into slightly to moderate disturbance conditions.

*For daily space weather information and forecast, please refer to our **Space Weather Information and Forecast Services (SWIFtS)** official website at swifts.sains.lapan.go.id or please e-mail us for request by facsimile*



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