

SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

WEEKLY SPACE WEATHER NEWS

Periode: 4-10 December 2015

SOLAR ACTIVITY

In average, Solar activity last week can be considered as somewhat eruptive. There were eight active regions with relatively small area and low complexity (NOAA 12458, 12459, 12462, ..., 12467). The strongest flare ever recorded last week was C6.7 that erupted on December 8th at 19:14 UT during the separation of NOAA 12464 and the emergence of NOAA 12466. There were 15 C-class flares occurred at NOAA 12462, 12463, 12464, and 12466. One halo CME was detected by space probe, occurred on December 7th at 15:12 UT with angular width of 146 degrees and median velocity of 664 km/s. This non-geoeffective event was caused by eruption of prominence located at the east limb of the Sun. Next week, several new active regions are expected to emerge especially in the east hemisphere which is populated by some hot spots as observed by SDO/AIA. However, the whole activity of the Sun is predicted to be as eruptive as the last week.

GEOMAGNETIC ACTIVITY

Geomagnetic activity during the week, from 4-10 December 2015 was mostly in quiet level. Lowest Dst index was happened on 6 December 2015 which was -40 nT, with maximum K index from Parepare stasiun was 3. While in the higher latitude region, Kp index reached 5 on 9 December 2015 which means there was minor storm level disturbance at that time. That condition was confirmed by Ae index that was reach <1500 nT, showed a substorm's occurrence. The disturbance might be caused by high speed solar stream that originated from geoeffective coronal hole. In general, substorm has occurred several times during the week, with intensity varied between 1500-500 nT. The electron flux were on low level during first days of the week, but at on 8-10 December 2015 its began to increase and reached high level.

IONOSPHERIC CONDITIONS

Ionospheric conditions for this week was quiet to moderate.

Ionospheric condition was in moderate occurred in December 6 to 7, 2015. Moderate category for Ionospheric condition occurred due to the depression of critical frequency of F_2 layer (f_oF_2) with duration up to 1 hour at 04:00 LT (UT+7). This depression could affect to the HF (High Frequency; 3-30 MHz) radio communication which known as *Radio Blackout* in certain frequencies. Beside the depression of f_oF_2 , the *Spread-F* also occurred at December, 7th, 2015 with duration up to 1 hour. In other days, ionosphere were in Quiet conditions.

Based on the observations using GISTM in Bandung, it was noted also that the scintillation was quiet to moderate condition. The moderate condition occurred in December 6, 2015 at 20:00 LT (UT+7) with duration up to 3 hours. Scintillation condition could be a disturbance in satellite acquiring process and affecting the Loss of Lock to the moderate condition. The peak of TEC value for this week was 65.45 TECU and could affect the Error positioning parameters into the 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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