

SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

WEEKLY SPACE WEATHER NEWS

Periode: January 1st – 7th 2016

SOLAR ACTIVITY

In average, Solar activity last week can be considered as fairly quiet. There were eight active regions (NOAA 12472, 12473, 12475, 12476, 12477, 12478, 12479, dan 12480), but there is only three of them remain visible lately. NOAA 12473 became the largest and the most active region this week and produced several C-class flares. The strongest flare ever recorded last week was C1.8 that erupted on January 6th at 11:31 UT. In total, there were 3 C-class flares: two flare from NOAA 12473 and one flare from 12480. One halo CME was detected by space probe, occurred on January 6th at 13:25 UT with angular width of 360 degrees. Those CME can be considered as moderate-velocity ejection because their median velocity were 676 km/s. Currently, a bright region is observed in the east limb (former NOAA 12470) and expected to influence Solar activity next week. So the whole activity of the Sun is predicted to be eruptive.

GEOMAGNETIC ACTIVITY

Geomagnetic activity during the week, from 1-7 January 2016 has encountered moderate storm that peaked on January 1st 2016 at 00:00 UT. Dst index reached -117 nT and Kp index was 6 at that time. The local response from magnetometer in Pare-pare also showed a disturbance in moderate storm level has occurred with K index reached 6. The storm was caused by particle from CME on 28 Desember 2015 has hit the Earth. Coinciding with the moderate storm, a substorm has also occurred and lasted for 33 hours. The substorm begin on 31 Desember 2015 at 03:00 UT and finished at 12:00 UT at the next day. The geomagnetic condition has returned to normal/quiet condition on 2 January 2016 and remain so. Although, there was small weak disturbance on 6 January 2016 that showed in the Dst Index that reached -49 nT and the Kp index = 4 which means an active condition. But since the disturbance has only occurred for an hour, so the local response of the K index was 3, which means the geomagnetic condition for Indonesia's region was still quiet.

IONOSPHERIC CONDITIONS

There was negative ionospheric storm on January 1, 2016. Nevertheless, in other days, ionospheric conditions for this week were minor to quiet. On January 1, 2016, there was decrement of critical frequencies of F/F2 layers (foF2) less than 30% from its median values almost whole day from 07:00 LT until 04:00 LT next days. But, in others days, the duration of the decrement was only a couple of minutes. There was no increment of minimum frequency that causes SWF. Strong Spread-F phenomena that cause fading occurred on January 03, 2016 at 01:15 LT in duration up to 3 hours. There was also an occurrence of Sporadic-E layers during night time and day time with foEs up to 5 – 10 MHz. For this week, based on the observations using GISTM in Bandung, ionospheric scintillation was quiet. The range of TEC value was 43 - 58 TECU and could affect the Error positioning parameters into slightly to moderate disturbance conditions. But on January 01, 2016 the TEC value was 24 TECU at 15:00 LT and 27 TECU at 16:00 LT. From foF2 and TEC data, there was Radio Blackout in extreme condition on January 01, 2016.

*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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