

# SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

## WEEKLY SPACE WEATHER NEWS

Periode: Desember 2<sup>nd</sup> – December 8<sup>th</sup> 2016

### SOLAR ACTIVITY

Within the past week, the Sun was in quiet condition, even though there was a slight increase becoming eruptive due to activities of NOAA 2615 in the mid-week. Within this period, NOAA 2615 which currently is going to the backside have produced 5 C-class flares and several B-class flare. The most powerful flare was just C1.8 class, occurred on December 4<sup>th</sup> at 17:55 UT. No halo/partial halo CME as well as type II radio bursts were observed in the past few days. In addition to NOAA 2615, there were three other active regions (NOAA 2612, 2614, 2616) which were not eruptive.

Based on the current observations, there is no indication of the emergence of a new eruptive area from the far side of the sun. Thus, the solar activity next week is expected to remain at the level of quiet.

### GEOMAGNETIC ACTIVITY

Geomagnetic activities during Desember 2<sup>nd</sup> – December 8<sup>th</sup>, 2016 was at quiet level. Local K index maximum from Kototabang Station reached 3 on 4 and 5 Desember 2016, Dst index minimum was -19 nT on Desember 2016. While to high and mid latitude region the geomagnetic condition was active on 8 Desember 2016 shown by Kp index maximum reached 4 for the last 9 hours of the day. Solar wind speed increased to the weekend and reached 600 km/sec. The condition may proceed since the growth of geoeffective coronal holes that elongated from Solar South pole to northern part of solar equator. Substorm during the weekend begin its activity on 6 Desember 2016 with intensity less than 1000 nT and occurred for 3 hours. After that event a few substorm occurred with lower intensity and duration. Then, on 7-8 Desember 2016 substorm frequency occurrences begin to increase with higher intensity and duration.

### IONOSPHERIC CONDITIONS

In this week, the ionospheric condition were between quiet to moderate level disturbance.

The disturbances occurred on Desember 7, 2016 due to the depression of  $f_oF_2$  critical frequencies ( $f_oF_2$ ) more than 30% from its median values. The depression occurred in post midnight until early morning with duration more than 1 hours. The depression of  $f_oF_2$  could disturbing the radiowave propagation over the ionosphere which known as the Radio Blackout. There was increment of minimum frequencies ( $f_{min}$ ) which is a source of *Shortwave Fadeout (SWF)* disturbance. However there was no occurrence of *Spread-F* in several days that could be a source of Fading disturbances. The Sporadic-E also reported occurred in several days during day and nighttime. The occurrences of Sporadic-E could be a positive impact especially when the depression of  $f_oF_2$  occurred. Based on the observations using GISTM over Biak and Bandung, the *scintillation (S4)* condition for this week were in quiet. These conditions of *scintillation* could lead quiet levels of *loss of lock*. The value of W index in this week were -1. Those values could affecting to the error positioning parameters into the normal scale of 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](http://swifts.sains.lapan.go.id) or please e-mail us for request by facsimile*



Space Science Center  
Deputy of Space and Atmospheric Science  
Indonesian National Institute of Aeronautics and Space (LAPAN)  
Jl. Dr. Djundjunan 133 Bandung 40173  
Ph../Fax. (022) 6012602/6014998  
E-mail: [swifts@lapan.go.id](mailto:swifts@lapan.go.id)