

SPACE WEATHER INFORMATION AND FORECAST SERVICES
(SWIFtS)

WEEKLY SPACE WEATHER NEWS

Periode: December, 30th 2016 – January, 5th 2017

SOLAR ACTIVITY

The Sun is entering the minimum activity phase and its activity last week was quiet without any C-class flare or stronger. Within a week, a couple active regions with small area and low complexity (NOAA 2622, 2623, 2624) emerged on the disk. There was no geoeffective coronal mass ejection that significantly disturbed space weather on Earth.

Next week, Solar activity is expected to remain quiet since there is no Earth-facing eruptive region.

GEOMAGNETIC ACTIVITY

Geomagnetic activities during December, 30th 2016 – January, 5th 2017 was on quiet level. Dst index minimum during the week was -26 nT on 1 Januari 2017 at 06 UT. Maximum Kp index was 4 on last hours of the weekend means there were geomagnetic disturbance on active level at high and mid latitude region that was caused by high speed stream from geoeffective coronal hole located on solar equator. While in the low latitude and equator region this geomagnetic disturbance has not too significant yet since the energy disturbance still propagating from high latitude to low latitude. Substorm occurrence along the week with highest intensity was less than 1000 nT but the duration was quite long.

IONOSPHERIC CONDITIONS

Ionosphere conditions in this week were in quiet to strong disturbances level.

The strong level disturbances in the ionosphere was occurred due to the depression of critical frequencies of F_2 layers (foF_2) for couple of days which is at 4th and 5th January 2017. The foF_2 depressions were impacted to the radiowave propagation over the ionosphere which known as the MUF Depression. Although the foF_2 experienced depression, the minimum frequencies ($fmin$) of the ionosphere in this week were in normal conditions. There was no increment of $fmin$ that could be a source of disturbance in the HF radio communication which known as *Shortwave Fadeout* (SWF). There was no occurrences of *Spread-F* which could be a source of *Fading* disturbances for HF Radio communication. The *E-Sporadic* reported always occurred every days in this week and with values of the critical frequency ($foEs$) can reach above the foF_2 values. Based on the observations using GISTM over Biak, the scintillation (s_4) condition for this week were quiet level. These conditions of scintillation could lead to the quiet until medium levels of *loss of lock*. Similar to the s_4 conditions, the error positioning conditions were in quiet levels conditions also with index W up to 1.

*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*



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