

SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

WEEKLY SPACE WEATHER NEWS

Periode: September, 30th – October, 6th 2016

SOLAR ACTIVITY

For the last week, the sun has been in quiet level. During those period, there were only 3 active regions on the solar disk: NOAA 2597, 2598, and 2599. All regions were stable in maintaining their low magnetic activity. According to software package CACTus in the last week several CMEs were detected with one of them was halo CMEs. A filament eruption located near equator was erupted and followed by a CMEs. Solar activity for the next week is predicted to be in quiet to less eruptive level.

For the past week, flux of high energy proton was far below threshold so that the activity level is quiet. It is predicted still on the same quiet level.

GEOMAGNETIC ACTIVITY

Geomagnetic activities during September, 30th to October, 6th 2016 were in active level with 1 time minor storm occurrence. Active level condition based on Dst index might caused by high speed stream from geoeffective coronal hole . Minor storm level occurred on 4 October 2016 with Dst index minimum was -49 nT on 4 October 2016 at 04:00 UT, with maximum Kp index was 5 at the same day. K index from Agam was 5 on 4 October 2016 around 10:00 – 12:00 in local time. It showed that geomagnetic disturbance propagate from high latitude to low latitude. Substorm occurrence during the week were quite active with intensity <1500 nT and decreased to <1000 nT on 5 October 2016.

IONOSPHERIC CONDITIONS

The conditions Ionosphere in this week were vary from quiet to strong disturbance.

The strong disturbances in the ionosphere occurred at 29th September, moderate disturbances occurred at 24th and 27st September 2016, others were quiet. The disturbances occurred due to a depression of critical frequencies of F/F2 layers (f_oF_2). The f_oF_2 depressions impacting the radiowave propagations over the ionosphere which known as the Radio Blackout. Although the f_oF_2 experienced one day depression, the minimum frequencies (f_{min}) of the ionosphere in this week were in normal conditions. There was no increment of f_{min} that could be a source of disturbance in the HF radio communication which known as Shortwave Fadeout (SWF). The occurrences of *Spread-F* were noted appear in high scale on several days at 23rd, 27th, and 29th September 2016. This occurrences of *Spread-F* could be a source of *Fading* disturbances for HF Radio communication. Beside the *Spread-F*, the *E-Sporadic* also reported always occurred during all days with values of the critical frequency (f_oE_s) could reach above the f_oF_2 values. This occurrences of *E-Sporadic* 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 (S_4) condition for this week were vary from quiet to strong level. The strong scintillation occurred at 24th September 2016 for 15 minutes, and the moderate scintillation occurred at 26th September 2016 for 2 hours over Bandung station. The quiet to moderate level of scintillation didn't impact to the *loss of lock* disturbance but the strong level impact the loss of lock in slight level. The maximum average value of W index in this week were less than equals 2. Those values indicated that the error positioning parameters could be in to the slight 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 or please e-mail us for request by facsimile*



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