

SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

WEEKLY SPACE WEATHER SUMMARY

Periode: 9th September – 15th September 2016

SOLAR ACTIVITY

Solar activity in quiet level for the past week. During those period, there were 5 active regions on the solar disk, named NOAA 2585, 2588, 2589, 2590 and 2591. The most complex magnetic configuration and the biggest sunspot area was NOAA 2485 with Beta-Delta configuration despite no flare bigger than B-class was produced. Almost all the active regions produced B-class flares except for NOAA 2590. There were also detected 5 type III solar radio bursts along these week. There were also several weak CMEs detected by SOHO/LASCO for the past week but mosf of them hurled to the east direction. Solar activity is predicted still in quiet level for the next week. For the past week, flux of high energy proton was far below threshold and predicted still on the same conditions.

GEOMAGNETIC ACTIVITY

Geomagnetic activities during September 9th – 15th were in active level, caused by fast stream accelerated from geoeffective coronal holes. Data from Agam observatory shows maximum K index value reached 4. This week's minimum Dst index was -40 nT while Kp index maximum was 3-. Substorms has occurred with maximum magnitude of AE index was below 1000 nT, started at September 14th and has taken 24 hours of duration. Solar wind's speed was getting slower, reached 300 km/s at the weekend. Electron flux gradually decreased, from its very high level to low level at September 15th, 2016.

IONOSPHERIC CONDITIONS

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

The moderate disturbances in the ionosphere occurred on 13th September, minor disturbances occurred on 15th September, 2016, on other days in this week were quit. The disturbances occurred due to a depression of critical frequencies of $F/F2$ layers ($foF/F2$). The $foF/F2$ depressions impacting the radiowave propagations over the ionosphere which known as the Radio Blackout. Although the $foF/F2$ experienced one day 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). The occurrences of *Spread-F* were noted appear in high scale on several days. 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 ($foEs$) could reach above the $foF/F2$ values. This occurances of *E-Sporadic* could be a positive impact especially when the depression of $foF/F2$ occurred. Based on the observations using GISTM over Biak, the scintillation ($S4$) condition for this week were between quiet to strong level. The strong level of scintilation occurred at 13th and 14th Septemebr 2016 and could impact to the *loss of lock* disturbance. The maximum average value of W index in this week were 3. Those values indicated that the error positioning parameters could be in to the medium 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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