

# SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

## WEEKLY SPACE WEATHER NEWS

Periode: 08 April – 14 April 2016

### SOLAR ACTIVITY

For this past week, Solar activity was eruptive due to several C-class flares occurred mostly from NOAA 2529. In between 8th to 9th, there were reported C-class flares occurred, one on 8th and eight on 9th, all from NOAA 2529. On 10th there were two C-class flares reported and on 11th there were three C-class flares reported, all from NOAA 2529. On 12th 2 C-class flares occurred from NOAA 2529 with the strongest (C1.5) with long duration type. On 13th the reported C-class was the one that occurred from NOAA 2529 on 12th April peaking at 07:51 UT. The latest C-class flare was C1.3 on 14th, 17:59:00.

For this past week NOAA 2529 is the largest region that produced the C-class flares. Two active regions stay on the Sun disk for this week, (NOAA 2529 & 2530), while the new active region (NOAA 2531) just appear from the east limb around 13th. In between 9th -13th several type III radio bursts event detected, with most of the occurrence happened between 11th - 13th. Several CMEs occurred, with the most occurrence happened in between 12th - 13th with one partial halo occurred on 13th.

### GEOMAGNETIC ACTIVITY

Geomagnetic activities for this week, from April, 8<sup>th</sup> – 14<sup>th</sup> 2016 preceded with a recovery phase because of minor storm that peaked on 8 April 2016 at 00:00 UT, Dst index reached -59 nT. Kp index at that time was 4, means active level on recovery phase. In 1 day the geomagnetic activities return in to its quiet state until April, 11<sup>th</sup> 2016. On 12 April 2016 the geomagnetic activities began to be disturb which drop the Dst index into -53 nT which means a minor storm was taking place. The peak of the minor storm was on 13 April 2016 at 06:00 UT, Kp index was 5. The minor storm might caused by hisgh speed stream from a geoeffective coronol holes at western part of solar disk. When the geomagnetic still on its recovery phase from the minor storm, there was another disturbance on 14 April 2016 at 07:00 UT that preceded with a weak shock that suddenly raised the solar wind speed from 450 km/sec to 500 km/sec and density become 20/cm<sup>3</sup>. Dst index drop instantly to -52 nT at 21:00 UT. To this week end the disturbance is still in progress although it has decreased and begin to recover. Substorm that occurred on 10 – 11 April 2016 has a weak intensity and short duration, but substorm that happened on 12 April 2016 which was correlated with minor storm has a longer duration and the intensity reach < 1500 nT and still on going.

### IONOSPHERIC CONDITIONS

In this week, ionospheric condition were quiet to minor level disturbance..

Quiet conditions occurred almost all weeks except at 13rd April 2016 which has minor level. The disturbances occurred due to the depression of F/F2 critical frequencies (foF/F2) with duration from 30 minute in post midnight time. Those conditions impacting the HF radio communication which defined as Radio Blackout. There was no increment of minimum frequencies (fmin) which is a source of Shortwave Fadeout (SWF) disturbance, neither the occurrence of Spread-F which is a source of Fading. Based on the observations using GISTM over Biak, the scintillation (s4) condition for this week were in quiet except at 8 - 10 April 2016, scintillation in moderate condition with  $0.25 > S4 > 0.5$  in duration up to 4 hours. These conditions of scintillation could lead levels of loss of lock disturbances conditions but still in slightly level.. The maximum values of Total Electron Content (TEC) for this week were between 48 to 56 TECU which tends to decrease from last week. However those values could affecting to the error positioning parameters into 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](http://swifts.sains.lapan.go.id) or please e-mail us for request by facsimile*



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