

# SPACE WEATHER INFORMATION AND FORECAST SERVICES

(SWIFtS)

## WEEKLY SPACE WEATHER NEWS

Periode: March, 31<sup>st</sup> – April, 6<sup>th</sup> 2017

### SOLAR ACTIVITY

For the past week, Solar activity were at eruptive to active level. Most of those activities were caused by development of active region NOAA 2644 which rapidly developed earlier of the week. This active region produced several M-class flares earlier on 2nd-3rd of April, which produced up to M5.7 and M5.8 consecutively. This flare also associated with type II CME. Two active regions NOAA 2644 & 2645 showed continous development for the early week, NOAA 2644 which has produced 6 M-class flare and NOAA 2645 which has beta-gamma-delta configuration. Earlier of the week showed five active regions, four have spots, NOAA 2644, 2645, 2648, and 2649 and one h-alpha plage (NOAA 2647). All regions increased on all their physical characteristics included magnetic configuration, except NOAA 2649 which is a new region. NOAA 2644 and 2645 have beta-gamma-delta configuration with quite high number of sunspots and broad area. During the middle of the week, the activity decline to eruptive, with NOAA 2644 went to west limb and continued to the far-side. NOAA 2645 continued to produced several C-class flares until the last of the week, and there were serveral other active regions left NOAA 2648 still with spots and two other h-alpha plages (NOAA 2647, NOAA 2649).

### GEOMAGNETIC ACTIVITY

Geomagnetic activities during March, 31<sup>st</sup> – April, 6<sup>th</sup> 2017 were in active to minor storm level. Geomagnetic minor storm occurred in the beginning of the week on 31 March 2017 minimum Dst index was -53 nT at 07:00 UT and Kp index reached 4. After that geomagnetic activity decreased to active level which means the geomagnetic was on recovery phase until it return to quiet level on April 3<sup>rd</sup>, 2017. Another minor geomagnetic storm occurred on 4 March 2017 with minimum Dst index was -66 nT. Maximum Kp index reached 5 which which confirmed that geomagnetic minor storm was monitored at high and mid latitude as well as in low latitide and equator region. The minor storm might caused as mixed of high speed stream from geoeffective coronal holes, the arrival of particle from CME and also driven by the IMF that turn to South in quite long duration. IMF condition reached -15 nT on April 4<sup>th</sup> 2017. The highest intensity of substorm was 1000 nT occurred on March 31<sup>st</sup> 2017 and April 4<sup>th</sup> 2017 which were coincided with the occurrence of minor storm. Electron flux was in very high level in the beginning of the week and return to low level on 4 April 2017 until today.

### IONOSPHERIC CONDITIONS

Ionosphere conditions in this week were in quiet to minor condition.

The minor level disturbances in the ionosphere was occured due to the depression of critical frequencies of F/F2 layers (*foF2*). The *foF2* depressions were impacted to the radiowave propagation over the ionosphere which known as the MUF Depression. Although the *foF2* experienced depression, the minimum frequencies (*fmin*) of the ionosphere in this week were in quiet condition. 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 error positioning conditions were generally in normal level condition with W index 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](http://swifts.sains.lapan.go.id) or please e-mail us for request by facsimile*



Space Science Center  
Deputy of Space and Atmospherics 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)