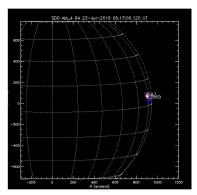


Newsletter Cosmic Rays / July 2016

July 2016 has been a quiet month in the sense of solar activity. A number of only 30 CMEs has been spotted, with only 1 CME with angular width 90° < da < 180° resulting into distinct modulation of the galactic cosmic rays (source: http://sidc.oma.be/cactus/catalog.php). Although July was a very active month in the production rate of solar flares (SFs). A number of 64 SFs were spotted, the most energetic one being a M7.6 one on 23/07/2016 at 05:00 UT (start time) from the AR 12567, N05W73 (Fig. 1). This solar flare was the most energetic solar flare of 2016 (up to now).



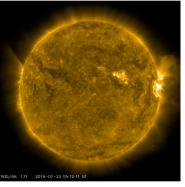


Figure 1: The M7.6 SF of 23/07/2016 at 05:16 UT peak time (from http://www.lmsal.com/solarsoft and http://sdo.gsfc.nasa.gov/data/aiahmi/)

The interaction of high speed solar wind streams with Earth's magnetosphere had as a result two geomagnetic storms on July 7-9 and 24-25 (both G1) and the arrival of a CME on July 20 triggered also a G1 geomagnetic storm. The results of these events, as well as disturbances on July 11-12 and 28-29 without storm effects, were spotted on the cosmic ray intensity as a series of Forbush decreases during this month, recorded at Athens Neutron Monitor Station (cut-off rigidity 8.53 GV) with amplitudes varied from 2.5% to 3.5% (Fig. 2).

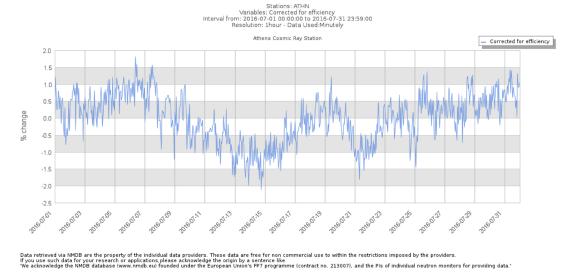


Figure 2: Hourly corrected for pressure and efficiency values of the cosmic ray intensity recorded at Athens Neutron Monitor Station from 01-31/07/2016 (From the multi station data service of Athens NM Station).

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