

December 2015 has been a more active month in the sense of solar activity. A number of 99 CMEs have been spotted, with 5 CMEs with angular width $90^\circ < da < 180^\circ$ and 2 CMEs with $180^\circ < da < 270^\circ$ and 1 halo CME resulting into distinct modulation of the galactic cosmic rays (source: <http://sidc.oma.be/cactus/catalog.php>). December was also a more active month in the production rate of solar flares (SFs). A number of 126 solar flares were spotted with 120 C- and 6 M-class SFs, the most energetic one being a M4.7 on 23/12/2015 at 00:23UT (start time) from the AR 12473, S21E65 (Fig. 1).

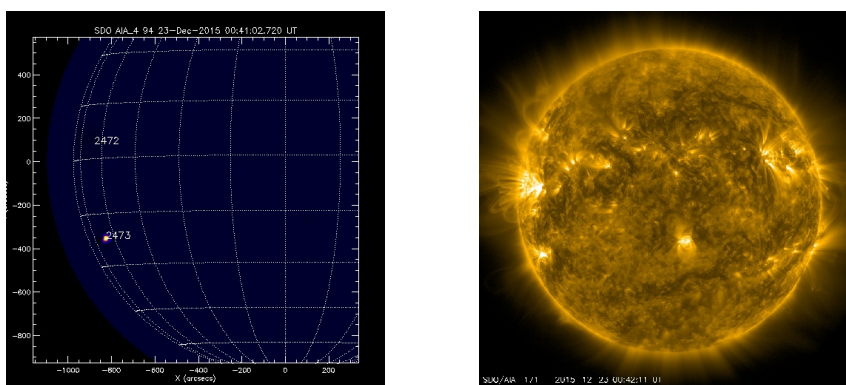


Figure 1: The M4.7 solar flare of 23/12/2015 at 00:40 peak time (from <http://www.lmsal.com/solarsoft> and <http://sdo.gsfc.nasa.gov/data/aiahmi/>)

The interaction of a high speed stream of solar wind with Earth's magnetosphere on December 6-7 and December 10-11 had as a result two minor G1 geomagnetic storms. The arrival of a pair of CMEs on December 19 triggered a G1 geomagnetic storm which rised up on December 20 to a G2 geomagnetic storm. In the last days of 2015 another G1 geomagnetic storm produced as a result of the CME arrival which produced on December 28th. The results of these events were spotted on the cosmic ray intensity as a series of Forbush decreases. The first one started on December 19 and the second one on December 31 recorded at Lomnický Stit Neutron Monitor (LMKS) Station with amplitude of 3.5% and 4.5% respectively. Hourly values of the cosmic ray intensity from the LMKs NM station (cut-off rigidity 3.84 GV) are illustrated in Fig. 2.

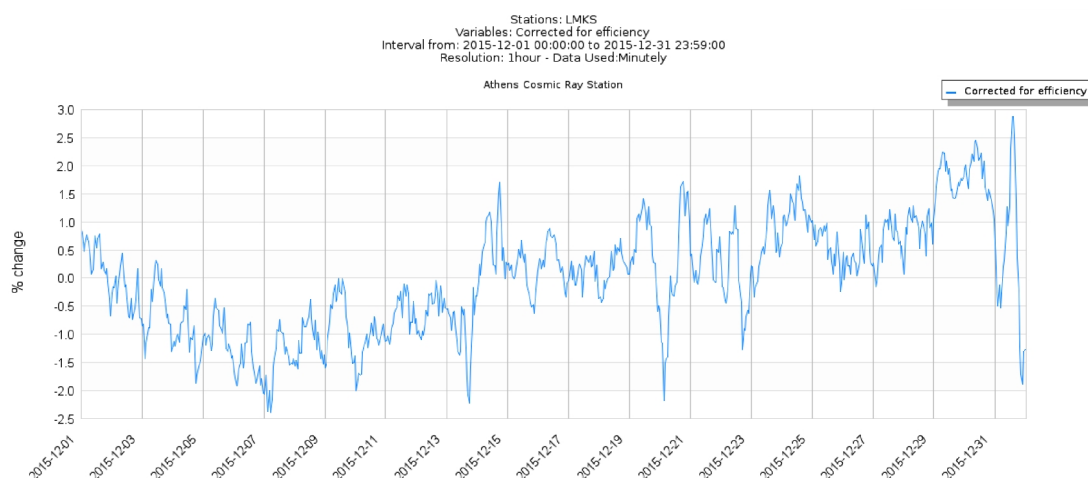


Figure 2: Corrected for pressure and efficiency hourly values of the Lomnický Stit Neutron Monitor Station from 01-31/12/2015 (From multi station service of Athens NM Station).

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