

On 17 May 2012 neutron monitors from around the world recorded the first GLE event of solar cycle 24. The NMs situated at South Pole (SOPO and SOPB; the latter not shown) recorded the most intense fluxes during GLE71. Apatity NM (APTY) was the first NM that recorded the arrival of relativistic protons at Earth. The rapid rise as shown by the APTY NM intensity time-profile (Figure 1) indicates that relativistic protons had reasonable access to the Sun-Earth-connecting field lines.

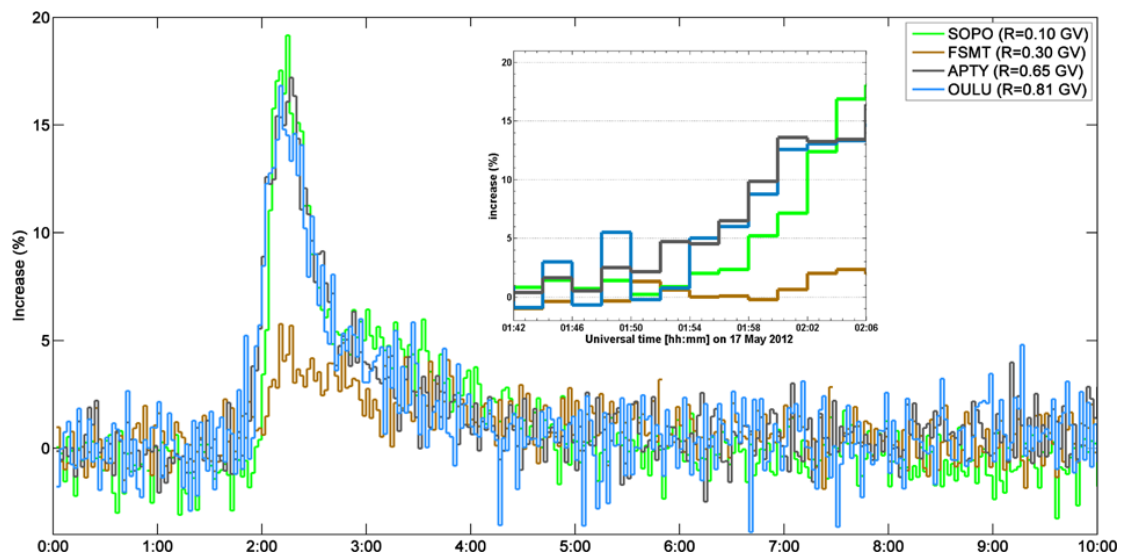


Figure 1: The ground-level enhancement of 17.05.2012 (GLE71) as it was recorded by the OULU (blue), APTY (gray), FSMT (brown), and SOPO (green) NMs. A zoom of the rising phase of GLE71 as this was recorded by the NMs (the same color code has been applied) from 01:42 to 02:06 UT; it is presented in the inset (from Papaioannou et al., 2014)

GLE71 was successfully recorded in real-time by the GLE Alert algorithm operated via NMDB at 02:13 UT. As it has already been reported in the literature (i.e. Papaioannou et al., 2014) The first NM station entering the station-alert mode was APTY. According to its real-time performance, APTY entered the station-alert mode at 01:59 UT while the first pre-alert point was marked at 01:55 UT. This agrees with the time profiles presented in Figure 1, because the APTY station was the first that recorded an abrupt enhancement in its count rate. The OULU NM, and consequently the FSMT NM, entered the station-alert mode at 02:10 UT and 02:13 UT, respectively, leading to a general alert at 02:13 UT.

Figure 2 presents the relevant figures of the post analysis for the development of the GLE Alert, available via <http://cosray.phys.uoa.gr> under the option: 'Archived GLEs'. It is noteworthy that the GLE Alert time in the post analysis precedes the one derived in real-time since the former is independent of the data flow of the seeder stations (see the relevant discussion in Papaioannou et al., 2014).

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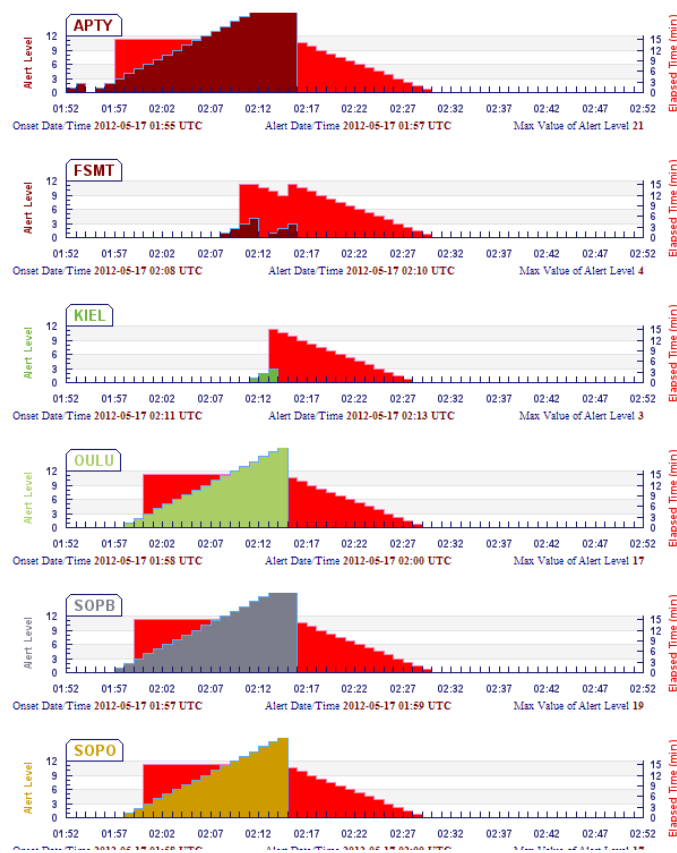
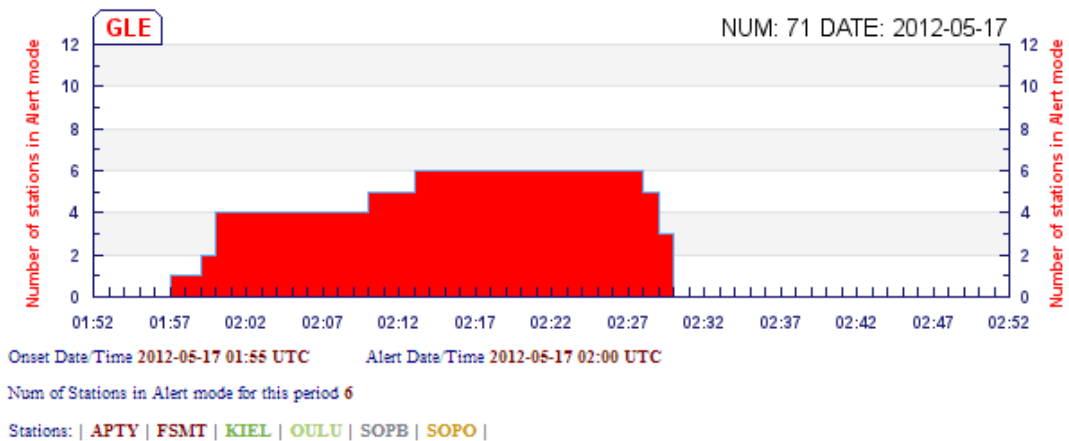


Figure 2: The evolution of the GLE Alert (top figure) and the individual NM stations that participated to the establishment of the GLE Alert, namely: APTY, FSTM, OULU, SOPO, SOPB and KIEL (bottom figure; 6 panels)

References:

Papaioannou A., Souvatzoglou G., Paschalis P., Gerontidou M., Mavromichalaki H., Solar Physics, 289, 423-436, 2014

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