

On 10 September 2017, after a powerful solar flare with importance X8.2 started at 15:35UT as GOES registered, solar energetic particles were emitted in the interplanetary space and the most energetic particles having energies greater than 500MeV called GLE, were detected by several Neutron Monitor detectors around the World. So, the new GLE72 was recorded in real time by ANeMoS using the High resolution Neutron Monitor Database-NMDB. The Neutron Monitor situated at South Pole Bare (SOPB) recorded this event with the greatest amplitude, while Apatity (APTY) was the first station that recorded the arrival of high energy relativistic particles at the Earth. As it is shown in figure 1 seven (7) neutron monitor stations from those of the GLE ALERT Plus recorded a clear rapid rise in their intensity-time profiles. Other stations recorded also the GLE72 with smaller amplitude. In general, the neutron monitors having nominal cut-off rigidity up to 3.9 GV, corresponding to proton energy of 3.2 GeV, presented an increase in their count rate relative to that rate between 15:00 and 16:00 UT.

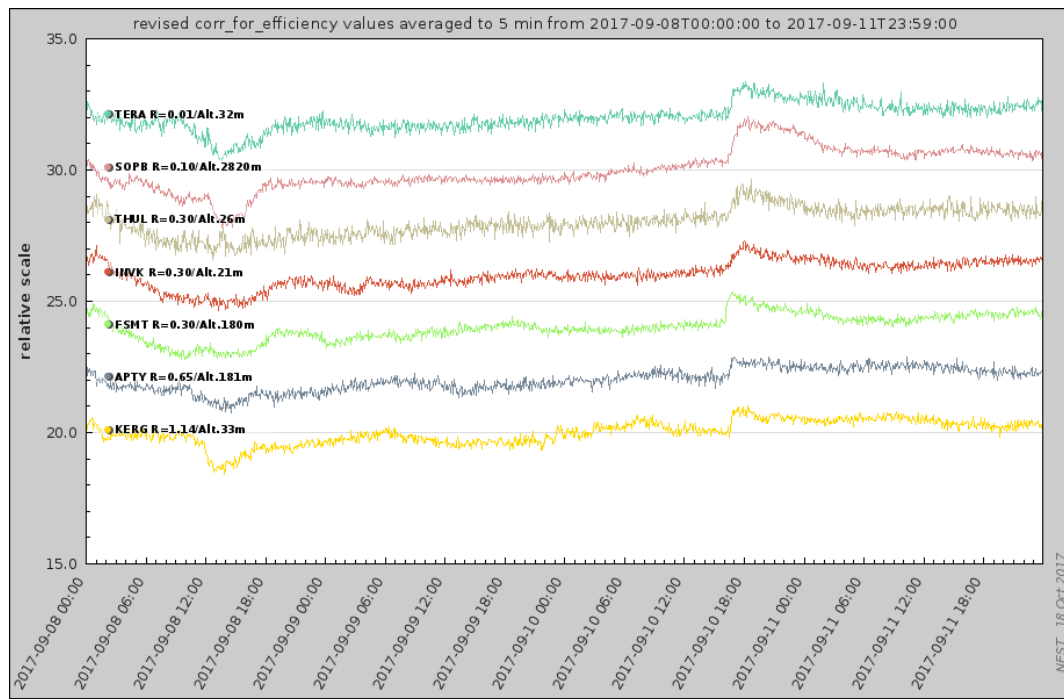


Figure 1. Intensity-time profiles of the ground level enhancement of 10.09.2017 (GLE72), as it was recorded by FSMT, SOPB, APTY, KERG, INVK, TERA and THUL neutron monitor stations.

GLE72 was successfully detected in real-time by the ANeMoS GLE Alert Plus System (<http://cosray.phys.uoa.gr>) provided to ESA-SSA Space radiation Expert Center (<http://swe.ssa.esa.int/web/guest/space-radiation>). E-mail notifications about this GLE Alert were issued on 10.09.2017 from 17:03 till 17:11UT and were sent to all subscribed users. A snapshot of the ANeMoS GLE72 Alert signal is illustrated in Figure 2 (left panel).

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The development of the GLE Alert in live as registered from individual Neutron Monitors that participated to the GLE Alert System, namely Apatity (APTY), Thule (THUL), Inuvik (INVK), South Pole Bare (SOPB), Kerguelen (KERG), Fort Smith (FSMT) and Terre Adelie (TERA) is also presented in Figure 2 (right panel).

According to this figure taken on live, the first NM station entering in Alert mode was FSMT at 16:18UT and ended at 16:39UT. After several minutes APTY at 16:47UT and then KERG at 16:53UT entered also in Alert mode. The three stations INVK, THUL and SOPB entered in Alert mode at 16:58 UT and the last station was TERA at 17:01UT.



Figure 2. Snapshots of the GLE72 Alert evolution in real-time (left panel) and of the individual NM stations that participated to the establishment of this Alert (right panel) kindly providing by Dr. Klaus Sievers.

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A post analysis of this event is given in Figure 3 and is available via <http://cosray.phys.uoa.gr> and (<http://swe.ssa.esa.int/web/guest/space-radiation>) under the option: 'Archived GLEs'. It is noteworthy that the GLE Alert time in the post analysis for each station presents small deviation from the corresponding one on live due to possible time delay between the time of the seeder station being in Alert and the time that the data were downloaded to the server. It is important to note that the NM station FRST did not contribute to the establishment of GLE Alert due to the fact that it entered in Alert mode very earlier in comparison with the other stations.

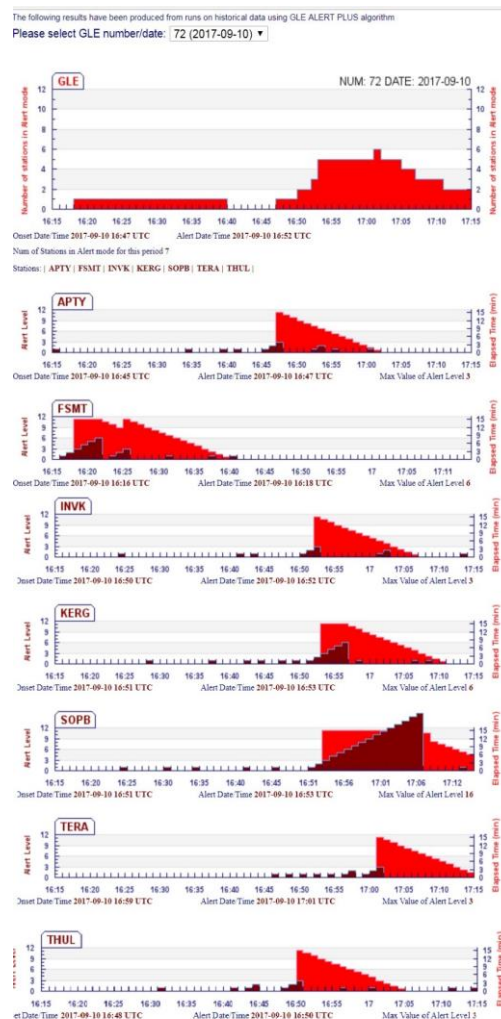


Figure 3. The evolution of the post analysis of the GLE Alert

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