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Search for >30 MeV Neutrons from the 2010 June 12 Impulsive Flare

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Hard X-ray bremsstrahlung, gamma-ray lines, and >100 MeV gamma-ray emission were observed by Fermi during a 50 s burst from the M2-class X-ray flare (Ackermann et. 2012). The neutron-capture line was also observed (25 gamma/cm2 indicating that tens of MeV neutrons were produced at the Sun. From this measurement we estimate that the neutron fluence at Earth would have been about 5 neutrons/cm2 (Murphy et al. 2012). We present the results of a search for solar neutrons following the flare in the data taken by the neutron detector (SEDA) onboard the International Space Station. A careful analysis of the data is required because only about 10 solar neutrons should have been detected.

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