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Traveling ionospheric disturbances over California after a Minuteman-II missile launch on 8 July 2000

M. Hawarey

Department of Geodesy and Photogrammetry Engineering, Institute of Geodesy, Istanbul Technical University, Istanbul, Turkey (Mosab_Hawarey@Alumni.Purdue.EDU / Phone: +90-212-2853825 / Fax: +90-212-2856587)

In this paper, the GPS data collected by more than 130 permanent GPS stations that belong to the Southern California Integrated GPS Network (SCIGN) around the launch of a Minuteman-II missile on 8 July 2000 (UTC) are processed to reveal traveling ionospheric disturbances (TID's) all over the network about 15 minutes after the launch. The initial perception was that these TID's have been excited by the launch itself. However, these TID's seem to travel towards the air force base from where the launch took place not away from it, keeping in mind the assumption of having these TID's occurring at one certain altitude. Although the overall analysis rules out any extra-terrestrial sources like solar flares or seismic sources like earthquakes, we are merely stating that these TID's have occurred after the launch. There is apparent coherence of the TID's for about 45 minutes and the propagation speed of TID's is calculated to be approximately equal to 1230 m/sec. While the usual assumption for TID's is that they occur around an altitude of 350 km, such sound speed can only occur at much higher altitudes. Further research is recommended to try to identify and pinpoint the source of the TID's, which may be indeed excited by the launch.