



Some atmospheric and magnetospheric effects possibly related to the Vitim bolide impact

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Sensors aboard US Department of Defence satellites detected the impact of a bolide on 24 September 2002 at 16:49 UT. The bolide had disappeared at an altitude of 30 km above the Vitim river, Siberia (58.21N, 113.46E). The total radiated energy was 8.6×10^{11} Joules. An unusual infrasonic event with a 30-minute duration has been detected by the Apatity infrasonic array at Kola Peninsula (67.3N, 33.3E) on September 24, 2002 at 22:20 UT. The infrasonic signal had been detected by three spatially separated microbarographs operating in the passband from 0.0001 to 1 Hertz at a distance of 4000 km from the source. Estimates of the local infrasound velocity and the direction of the signal arrival seem to be in agreement with the acoustic travel velocity and the source azimuth. We cannot exclude that the Vitim bolide (or mini-comet) effects were as well appeared at some other atmospheric and magnetospheric phenomena, e.g. in magnetic disturbances at high latitude stations, cosmic radionoise absorption, variations of air conductivity. These effects are compared with some other similar effects related to different bolides like Tunguska and Brazilian ones. A possible nature of the effects is discussed.

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