Difference in manifestations of Vitim and Tungus bolides

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The Tungus bolide fell down on 30.06.1908 at 0017 UT. The explosion power was 12.5-40 megatons of TNT. Trees were fallen down over the area of 1885 km^2. At ~0515 UT several microbarographs in England detected very similar trains of damping oscillations with the period of 2-3 minutes and amplitude of ~100 mcb.
The Vitim bolide fell down on 24.09.2002 at 1649 UT. The explosion power was 0.2-200 tons of TNT, i.e. at least by five orders lower than that of the Tungus bolide. Nobody observed fallen trees or any other dramatic signatures. At ~2240 UT the neutron monitor barograph in Apatity detected a negative impulse in the atmospheric pressure with the amplitude of ~100 mcb and duration of ~20 min. Three microbarographs in Apatity having the base of ~300 m were reported to register this impulse with a phase shift of about 1 s, which permitted to determine the velocity and direction of the pressure impulse [O.I.Shumilov et al., *Lett. ZhETPh, 77*, 121-123, 2003]. Not one of the barographs in Irkutsk, Yakutsk, Tixie, Norilsk, and Oulu revealed any similar impulse. It should be noted that the observation error of the three Apatity microbarographs is ~100 s, so that the detected shift of 1 s is unreliable. Simultaneously with the Apatity pressure impulse, the medium wave radioreflection set in observatory Tumanny of the Murmansk region detected a perturbation in the lower ionosphere [V.D.Tereshchenko et al., Report at the 27^{th} Apatity Seminar, 2004]; besides, a bay-like geomagnetic field variation in the auroral zone was registered. It should be mentioned that the day of 24.09.2002 was extremely quiet so that the solitary impulse could be taken for a signal from the bolide. Neighboring days were rather disturbed. For instance, the day of 15.09.2002 in Apatity was characterized by permanent pressure variations with the amplitude of about 100 mcb and period ~1 hour. In general, electron number density fluctuations of the lower ionosphere up to tens per cent with the period of ~10 minutes are very typical and commonly associated with inner gravitation waves generated in the auroral zone due to heating of the atmosphere by auroral electrojets. It is possible that the variation detected over Tumanny was such a wave.