

OPTICAL EMISSION IN THE ATMOSPHERE CAUSED BY ROCKET LAUNCH

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During auroral observations in Frantz Jozeph Land, (Heis Island, geog. lat. 80.55 , long. 58.00) on 23 December 1987 an atmospheric phenomenon was registered by optical instruments (all-sky TV and photographic cameras) which obviously had human made features. It represented a bright circular shaped luminous object with light greenish color which appeared at 11.14 UT at the southern horizon and rapidly expanded and in five minutes reached the zenith of Heis Island. The analysis of optical data from another stations showed that the same phenomenon was seen in three all-sky camera frames made with one minute interval from Cheluskin (geog. lat. 77.35 , long. 104.30) which is located at a distance about 800 km from Heis Island. The optical data from two points made it possible to make triangulation to get actual horizontal dimensions of the object, its altitude, velocity and direction of expansion and propagation. It has been calculated on the bases of five consequent all-sky camera frames from Heis Island and three ones from Cheluskin that the height of luminosity was about 700 km, expansion velocity - about 4 km per second, the velocity of propagation of the center of the circle was about 5 km per second. When the northern edge of luminosity reached Heis Island the horizontal dimensions of the circle was about 2000 km in diameter. A line connecting the centers of the circles mapped for different times was propagating from south-west to north-east and pointed to the place a slightly southward from Arkhangelsk city (geog. lat. 64.58 , long. 40.50) where Plesetsk rocket range is located. So we conclude that the phenomenon was the result of powerful rocket bunch from Plesetsk.