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Study of wave processes in the region of the subauroral upper atmosphere and lower thermosphere

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Wave processes in the upper atmosphere and ionosphere cover a wide range of phenomena important for fields such as geophysics, radiophysics and plasma physics. One of the main types of waves that are responsible for energy and momentum transfer are internal gravity waves. The generation of such waves predominantly occurs in the lower atmosphere or at its boundary during active meteorological processes and orographic terrain features. Propagating upward, they transfer energy and momentum from lower to higher layers of the atmosphere. Thus, internal gravity waves play an important role in the thermodynamic equilibrium of the entire atmosphere, affecting the heat balance and mid-zonal circulation.

In contrast to low and middle latitudes, wave processes in high-latitude regions are characterized by a special diversity. The study of the characteristics of these processes can provide additional information on the occurring phenomena. Therefore, the study of wave processes in the upper atmosphere and ionosphere is of interest not only from a practical point of view, but also for fundamental scientific tasks.

This report presents the parameters of internal gravity waves registered with the help of an infrared digital all-sky camera installed at the Maimaga optical polygon.

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