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High Altitude Balloon Project - Measuring Tropospheric and Stratospheric Infrasound

Previous airborne measurements have been done in 2014 and 2015 over the southern United States, leaving the question of stratospheric infrasound in the rest of the world open. This provides an opportunity to listen for infrasound above the Arctic Circle in an area with a developed network of ground stations, which will be used to compare with the stratospheric results. Infrasound, temperature, pressure, wind velocity and direction will be measured with two independent sensor boxes. All data obtained will be analyzed with software used in the IMS and software developed at the Swedish Institute of Space Physics, with help from Dr. Kero. This will be compared with data from previous measurements in collaboration with Dr. Bowman, a student of the High Altitude Student Payload flights in the United States, and Professor Yamamoto, Kochi University of Technology, who provides the group with microphones developed by SAYAInc in collaboration with JAXA. In the future, a deeper understanding of low frequency sounds at stratospheric altitudes may help in examining the weather conditions and geological activity on other planets, especially on Mars as the pressure in the Earth's stratosphere is at the same order of magnitude as the atmospheric pressure on the Martian surface.

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