

Infrasound Signals observed at I53US and I55US

by

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Data have been collected from the CTBT infrasound site I53US at Windless Bight, Antarctica since mid-February 2001 to the present. Data from I55US at Fairbanks, Alaska has been collected, in abbreviated form, since mid-July 2002. The two sites differ in signal content since I53US is remote and isolated while I55US is near a populated area. In addition to the man-made signals present in the I55US data there are also several unique types of natural infrasound. These include strong microbarom wave trains produce by winter storms in the Gulf of Alaska. I53US is located near Mt. Erebus, an active volcano, and observes occasional infrasound associated with the small eruptions. We will review the principal coherent signals observed at each site. In particular we will review some of the characteristics of the microbarom background observed at each site.

Microbaroms are a class of atmospheric infrasound that is characterized by narrow-band, nearly sinusoidal, waveforms with periods near 5 seconds. These waves are generated by marine storms and are observed at infrasound sites across the globe. Their generation mechanism is still not completely understood. We have exploited the narrow-band feature of the microbarom signals to extract statistical measures of the mean packet length. We find the distribution of packet lengths is quite broad with packet lengths diminishing monotonically with length and a mean near 10 cycles. In addition we have investigated the coherence of the microbarom wave field across the two arrays and have found that the spatial coherence diminishes with distance consistent with earlier findings.