

Recent PMSE Observations in the Antarctic at King Jorge Is. and Rothera

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PMSE observations have been carried out using the VHF radar at the Machu Picchu Peruvian site at King Jorge Is., Antarctic, since 1993. Results of the first two years of observation have been already published in the literature, including the discovery of a very large asymmetry in the strength of the echoes. Here we report additional observations carried since. These include observations around the expected maximum close to the Winter Solstice. The observations corroborate previous conclusions. More recently, during the summer of 1998, a VHF radar was build on board the Peruvian research vessel, Humbolt, with a 27 m by 21 meter COCO antenna. This radar has allowed us to make measurements ad higher latitudes including Rothera, concurrent with control measurements at Machu Picchu. The measurements were made during marginal conditions, close to the end of the PMSE season. These measurements were also concurrent with Falling Sphere observations of the mesopause and a D region Partial Reflection experiment both made at the BAS station in Rothera. The first should provide an important clue on the role of temperature and ice formation on the physical processes responsible for the PMSE. The latter should provide a calibration on the potential of HF Partial Reflection techniques for the detection of PMSE conditions.