

PEM028-08

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Electrostatic Solitary Waves (ESWs) observed by Kaguya monopole antennas near the Moon

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In KAGUYA (SELENE) LRS[1], WFC-L [2] observes waveforms of plasma waves in 100Hz-100kHz and a lot of electrostatic solitary waves (ESWs) have been observed. Some results have been reported [3]. Although orthogonal dipole antennas are generally used in the observations, sometimes a pair of monopole antennas were used. We reports observations mainly by the latter antennas.

Propagation velocities, potentials, spatial scales, and so on of ESWs can be evaluated through analyses of waveforms observed by the monopole mode. The ESW waveforms have often components perpendicular to the background magnetic field and the potential structure is perpendicular to the background magnetic field. These values are evaluated after fitting the observed data to the ideal two-component ESW fields. The propagation velocities, the sign of the potential, potential depth, and so on of some examples received regions reported in [3] will be reported.

References

[1] Takayuki Ono, Atsushi Kumamoto, Yasushi Yamaguchi, Atsushi Yamaji, Takao Kobayashi, Yoshiya Kasahara, and Hiroshi Oya, Instrumentation and observation target of the Lunar Radar Sounder (LRS) experiment on-board the SELENE spacecraft, *Earth Planets Space*, 60, 321-332, 2008.

[2] Y. Kasahara, Y. Goto, K. Hashimoto, T. Imachi, A. Kumamoto, T. Ono, and H. Matsumoto, Plasma Wave Observation Using Waveform Capture in the Lunar Radar Sounder on board the SELENE Spacecraft, *Earth, Planets and Space*, 60, 341-351, 2008.

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