

C/NOFS Observations of AC Electric Field Fields Associated with Equatorial Spread-F

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The Vector Electric Field Investigation (VEFI) on the C/NOFS equatorial satellite provides a unique data set in which to acquire detailed knowledge of irregularities associated with the equatorial ionosphere and in particular with spread-F depletions. We present vector AC electric field observations, primarily gathered within the ELF band (1 Hz to 250 Hz) on C/NOFS that address a variety of key questions regarding how plasma irregularities, from meter to kilometer scales, are created and evolve. The data will be used to explore the anisotropy/isotropy of the waves, their wavelength and phase velocity, as well as their spectral distributions. When analyzed in conjunction with the driving DC electric fields and detailed plasma number density measurements, the combined data reveal important information concerning the instability mechanisms themselves. We also present high resolution, vector measurements of intense lower hybrid waves that have been detected on numerous occasions by the VEFI burst memory VLF electric field channels.