

Measurement Output	Units	Estimated Accuracy	Sample Frequency	Output range	Main Focus for Data
DC Electric Field (High Precision, 1 s/sec)	mV/m	0.5 mV/m	1 sample/sec (3 components)	± 450 mV/m prior to $\mathbf{V \times B}$ removal	<ul style="list-style-type: none"> Large scale ESF drivers Large scale electrodynamics Gravity waves Integrated potential along orbit
DC Electric Field (Standard Precision, 16 s/sec)	mV/m	0.5 mV/m	16 sample/sec (3 components)	± 450 mV/m prior to $\mathbf{V \times B}$ removal	<ul style="list-style-type: none"> High spatial resolution (0.5 km) Electrodynamic ESF depletion physics, km scale instabilities, Alfvén waves
AC Electric Field Waveforms	mV/m	0.001 mV/m	512 s/sec (nominal) 2048, 4096, 8192 s/sec (Fast survey)	± 45 mV/m	<ul style="list-style-type: none"> Ionospheric Instabilities ESF irregularities, spectra
AC Electric Field VLF Spectrograms (0-16 kHz)	(mV/m) ² /Hz	-80 dB	1 spectrum/sec (nominal survey), 64 spec/sec (fast survey)	100 dB	<ul style="list-style-type: none"> Irregularity ΔE spectra Instability Physics Other wave modes
AC Electric Field Filter Bank (3Hz-8 kHz)	(mV/m) ² /Hz	-80 dB	1 spectrum every 0.75 sec	100 dB	<ul style="list-style-type: none"> Irregularity “Snapshots” for real-time space weather info
Relative Plasma Density	cm ⁻³	$\pm 5\%$	16 samples/sec	$10^2 - 10^7$ cm ⁻³	<ul style="list-style-type: none"> Physics of plasma depletions and km-scale instabilities
Plasma Density Fluctuation Waveform	cm ⁻³	$\pm 0.005\%$ (relative)	512 s/sec (nominal), 2048, 4096, 8192 s/sec (Fast)	$10^2 - 10^7$ cm ⁻³	<ul style="list-style-type: none"> Irregularity ΔN Spectra $\Delta E/\Delta N$ comparison
DC Magnetic Fields (1 s/sec)	nT	50 nT (absolute) 5 nT (relative)	1 sample/sec (3 component vector)	$\pm 45,000$ nT	<ul style="list-style-type: none"> Geomagnetic currents $\mathbf{V \times B}$ determination
AC Magnetic Fields (0.05 - 8Hz)	nT	0.1 nT	16 s/sec (3 component vector)	± 900 nT	<ul style="list-style-type: none"> ESF Magnetic perturbations Poynting flux, Alfvén waves
Optical Lightning Detector Levels	Counts		Count rates in 7 bins twice per sec in North, South directions		<ul style="list-style-type: none"> Correlate storms with ESF Thunderstorm related electric fields Causal link for explosive ESF
Burst Memory (all VEFI data)	Varied		1-8 channels up to 32 k s/sec per channel.		<ul style="list-style-type: none"> Full ESF instability spectra Interferometry Lightning generated E fields