Electric and Magnetic Field Measurements on Two Sounding Rockets and the C/NOFS Satellite in the Low Latitude Ionosphere at Sunset

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We present *in situ* measurements gathered simultaneously with electric field, magnetic field, and plasma density probes on two sounding rockets and the C/NOFS satellite in the low latitude ionosphere in the vicinity of Kwajalein Atoll. The coincident data were gathered during sunset conditions prior to a spread-F event. The sounding rocket apogees were 180 km and 330 km, while the C/NOFS altitude in this region was ~ 390 km. Electric field data from all three platforms display upwards vertical plasma drifts, while the zonal drifts change direction as a function of altitude and/or local time. The variable drifts provide evidence of a dynamic plasma environment which may contribute to the unstable conditions necessary for spread-F instabilities to form.