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## **2. ENCONTRO REGIONAL DE GEOFISICA**

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### **IN-SITU PLASMA BUBBLE OBSERVATIONS ASSOCIATED WITH EQUATORIAL SPREAD-F OVER NATAL**

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On 11 December, 1985, at 20:30 hrs local time, a SONDA III rocket, carrying a Langmuir Probe (LP) and a High Frequency Capacitance Probe (HFC) was launched from Natal to study the phenomenon of equatorial spread-F associated with plasma bubble formation. As expected, the rocket passed through regions of depleted electron density, known as plasma bubbles, which, under certain ambient physical conditions are known to be responsible for the generation of plasma irregularities giving rise to Spread-F traces on the ionograms. Both LP and HFC data showed the presence of two dominant plasma bubbles centered around the altitudes of about 370 km and 420 km. These plasma bubbles had vertical scale sizes of about 30 to 40 km. Their observation, though with reduced amplitudes, even during the rocket descent, indicates the large (a few hundred km) horizontal scale sizes of these bubbles. The general implications of these observations in the light of the existing theories on the bubble formation and development are reviewed and discussed here.