

N85-34166

Title: Theoretical and Experimental Beam Plasma Physics: TEBPP

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Short Description: The TEBPP consists of a package of five instruments to measure electric and magnetic fields, plasma density and temperature, neutral density, photometric emissions, and energetic particle spectra during firings of the particle injector (SEPAC) electron beam. The package is deployed on a maneuverable boom (or RMS) and is used to measure beam characteristics and induced perturbations in the near field (<10 m) and mid field (10 m - 100 m) along the electron beam. The TEBPP package will be designed to investigate induced oscillations and induced electromagnetic mode waves, neutral and ion density and temperature effects, and beam characteristics as a function of axial distance.

Instrument Characteristics:

Mass: 36 kgm
Volume: .1 cubic meters
Power: .07 kW
Data rate: 4 Mbs

General Comments:

Heritage is from instrument package being designed for flight on Space Plasma Lab (1992).

TEBPP package will be designed to be deployed and maneuvered at the end of an RMS.

The 4 Mbs data rate may be sampled to accommodate lower (64 kbs) data rate restrictions.

Instruments may also be useful for other active experiments or for monitoring ambient environment of the Space Station.

Source of Information: PDR documents

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