N92-13112

INTERNATIONAL SOLAR TERRESTRIAL PHYSICS PROGRAM (ISTP) POLAR MISSION

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  L/V Range: Delta II 7925/WTR

<u>Launch Date</u>:   July 1993
<u>Projected SC Life/DSN Support</u>: 24 months Prime (1-year ext.)/3 years

<u>Project Responsibility</u>:   GSFC

Source: Prelim. SIRD (GSFC) August 1987, and Draft 1 SIRD, August 1989
Sponsor: NASA-OSO

A.   MISSION DESCRIPTION

The polar spacecraft will be launched from WTR into a 2 earth radii by 9 earth radii POLAR orbit, with apogee near the North Pole.

B.   COVERAGE

The DSN will provide all ISTP/GGS support as specified below.

The POLAR spacecraft will carry a NASA standard users transponder, and will communicate in S-band with the POLAR ground facilities via a spacecraft HGA and the DSN S-band service. Four support intervals per day (approximately 45 minutes each in duration) will be required for receiving tape recorder playback data, and up to 12 hours per day for the first month and 3.6 hours per day thereafter will be needed for receiving real-time wide-band data. Real-time telemetry for spacecraft and instrument performance monitoring will be received on a subcarrier simultaneous with the tape recorder playback on the main carrier. Spacecraft commanding is required throughout this period with (TBD) of ranging and range-rate support.

The 26-meter subnet stations located at the DSN locations in Canberra, Goldstone, and Madrid are designated prime support stations, with the 34-meter facilities used for backup support.

C.   FREQUENCY ASSIGNMENTS

System	Uplink	Downlink
S-Band CMD	2085.688 MHz	---
S-Band TLM	---	2265.0 MHz
S-Band TRK	2085.688 MHz	2265.0 MHz

D.   SUPPORT PARAMETERS

(1)   Telemetry
    Real time   55.65 kb/s   PCM(NRZ-L), Conv, R-S, PSK, PM
    on a 1.28 MHz sinewave subcarrier

    Subcarrier
    Playback   512 kb/s or
    256 kb/s   PCM(NRZ-L), Conv, R-S, PM

(2)   Command
    Format   PCM/PSK/PM
    Bit rate   1000 b/s
    Subcarrier Frequency   16 kHz
    Subcarrier Waveform   Sine

(3)   Ranging   DSN Standard