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EARTH RADIATION BUDGET SATELLITE (ERBS)

(Emergency Support)

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LV/Range: Delta/WTR

Launch Date: October 5, 1984
Projected SC Life/DSN Support: 7 years/7 years

Project Responsibility: Goddard Space Flight Center

Source: SIRD May 1982
Sponsor: OSO

A. MISSION DESCRIPTION

The primary purpose of the Earth Radiation Budget Satellite (ERBS) project is to study the Earth's atmospheric processes and their relationship to the Earth's climate.

B. FLIGHT PROFILE

The ERBS satellite was launched by the STS shuttle. Following deployment from the shuttle, a hydrazine propulsion system maneuvered the satellite into a circular orbit. Orbit parameters are: 610 km x 610 km x 57 degrees, with a period of 99.6 minutes.

The ERS spacecraft was launched in 1984 from the Western Test Range (WTR) on a two-stage Delta launch vehicle and placed into a constant local time circular orbit with a nominal altitude of 610 km and an inclination of

57 deg. This project support is expected to be ongoing for a minimum of 7 years

C. COVERAGE

1. Coverage Goals

The DSN will support ERBS during emergency situations in the event the standard TDRSS to White Sands data link is inoperative. Emergency support will be provided by the DSN's 26-meter antenna subnetwork.

2. Network Support

The support provided by the DSN is indicated in the following table:

<u>System</u>	<u>Goldstone</u>				<u>Canberra</u>				<u>Madrid</u>		
	12	14	15	16	42	43	45	46	61	63	66
S-band TLM				E				E			E
S-band CMD				E				E			E
S-band TRK				E				E			E

NOTE: E = Emergency

D. FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

<u>System</u>	<u>Uplink (MHz)</u>	<u>Downlink (MHz)</u>	<u>Polarization</u>
S-band TLM	--	2287.5	RCP
S-band CMD	2106.4	--	RCP
S-band TRK	2106.4	2287.5	RCP

E. SUPPORT PARAMETERS

The support parameters for the telemetry, command, and support systems are listed below:

(1) Telemetry

Data Streams	2
Format	PCM/PSK/PM
Subcarrier Frequency	1024 kHz

Bit Rates	1.0, 1.6, 12.8, 32, or 128 kb/s
Coding	Bi \emptyset -L
Record	Analog

(2) Command

Format	PCM (NRZ-L) PSK/PM
Subcarrier Frequency	16 kHz
Bit Rate	1 kb/s

(3) Support

Uplink Power	2 kW
Antenna Rate	Moderate
Antenna Angle Data	Required
Antenna Autotrack	Required
Doppler Rates	Required
Range Format	SINE
Recording	
. Analog	Required
. Digital	Not required

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