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NC999967

COSMIC BACKGROUND EXPLORER (COBE)

(Emergency Support)

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　　　　　　　　　　　　　　　　　LV/Range: Delta 5920/WTR

Launch Date:　October 15, 1989 (Launched November 1989)
Projected SC Life/DSN Support:　1 year/1 year

Project Responsibility:　Goddard Space Flight Center (GSFC)

Source:　SIRD
Sponsor: OSO

A.　MISSION DESCRIPTION

The Cosmic Background Explorer (COBE) Mission will measure the diffuse radiation from the universe in the wavelength band 1 micron to 9.6 mm.　The band includes the 3°K cosmic background radiation, the known relic of the primeval cosmic explosion.　It is also expected to contain the radiation produced at the time of the formation of the first galaxies or stars in the universe.　The mission will provide the most comprehensive observations to date of the radiative energy content of the universe, a data set essential for the further iteration of theory and observation in cosmological research.

B.　FLIGHT PROFILE

The COBE satellite will be launched from the Western Space and Missile Center (EWSMC) via the Delta into a circular parking orbit of about 300 km. COBE will be placed into a 900-km altitude circular orbit.

C.   COVERAGE

1.   Coverage Goals

Coverage will be provided by the DSN for COBE emergencies that would prevent communications via the normal channels of TDRSS. Emergency support will be provided by the DSN 26-meter subnetwork.

2.   Network Support

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

System	Goldstone	Canberra	Madrid
	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 Support

D.   FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

System	Uplink (MHz)	Downlink (MHz)	Polarization
S-band TLM	--	2287.5	LCP
S-band CMD	2106.4	--	LCP
S-band TRK	2106.4	2287.5	LCP

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 BiØ-L
Subcarrier Frequency	1024 kHz
Bit Rates	1000, 4096, 655.36 kb/s
Coding	Convolutional
Record	Analog

(2)   Command

Format	PCM/PSK/PM
Bit Rate	2000 Hz
Subcarrier Frequency	16000 Hz
Subcarrier Waveform	Sine

(3)   Support

Uplink Power	Up to 2 kW
Antenna Rate	Moderate
Antenna Angle Data	Required
Antenna Autotrack	Yes
Doppler Rates	Up to 70 Hz/s
Range Format	Sine
Recording	
. Analog	Yes
. Digital	No

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