INTERNATIONAL SOLAR TERRESTRIAL PHYSICS (ISTP) PROGRAM

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Mission	Agency	Launch Date	L/V	Range
GEOTAIL	(ISAS)	July 1992	NASA Medium ELV	ETR
WIND	(NASA)	December 1992	NASA Medium ELV	ETR
POLAR	(NASA)	July 1993	NASA Medium ELV	WTR
SOHO	(ESA)	March 1995	NASA Intermediate ELV	ETR
CLUSTER(4)	(ESA)	December 1995	Ariane	CSG

Project Responsibility: GSFC (NASA/ISAS/ESA Cooperative)

Source: GEOTAIL - SIRD March 1990

WIND and POLAR - SIRD Draft 2, May 1990

SOHO - Preliminary SIRD, Issue 2, August 1989

CLUSTER - Preliminary SIRD, August 1987

Sponsor: OSO/ISAS/ESA

A. PROGRAM DESCRIPTION

The International Solar Terrestrial Physics (ISTP) Program is a large, multi-national program involving three space agencies and up to eight spacecraft. NASA, together with the Institute of Space and Astronautical Science (ISAS) and the European Space Agency (ESA), has agreed in principle to coordinate their efforts in investigating the Sun and the Earth. Each agency is planning to construct and operate different spacecraft as part of this cooperative venture: Geotail provided by ISAS, Solar Heliospheric Observatory (Soho) and Cluster (four spacecraft) contributed by ESA, and Wind and Polar by NASA.

B. GENERAL DESCRIPTION

NASA contributions to the various ISTP missions are specified in two major initiatives:

(1) Collaborative Solar Terrestrial Research (COSTR) Initiative

(2) Global Geospace Science (GGS) Initiative

The COSTR Initiative will combine resources and scientific communities on an international scale to undertake the development of instruments and their appropriate support elements, along with ground-based theory investigations in the context of a comprehensive program of solar-terrestrial physics. This program will study the overall balance and nature of solar-terrestrial interaction of the GEOSPACE region. These joint NASA-ESA-ISAS missions will carry instruments operated by an international team of principal investigators. The missions will be launched by various launchers and supported by the international ground-based networks and systems.

Specifically, COSTR defines the NASA contribution in terms of instruments, launch vehicle, and launch tracking and operations support for the Geotail, Soho, and Cluster missions.

The objective of the GGS Initiative is to undertake the development of two spacecraft and their appropriate support elements, and ground-based and theoretical investigations in the context of a comprehensive program of solar-terrestrial physics. This program in solar-terrestrial physics research will measure, model, and quantitatively assess the processes in the Sun-Earth interaction chain by the use of simultaneous spacecraft placed in complementary orbits.

Specifically, GGS defines the complete requirements which will be filled by the Wind and Polar missions.

The ESA contributions to the ISTP are defined in the ESA Solar Terrestrial Science Programme (STSP).