

NASA News

IF.5 #11

National Aeronautics and
Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

September 8, 1986
2:00 p.m. EDT

Azeezaly S. Jaffer
Headquarters, Washington, D.C.
(Phone: 202/453-1922)

RELEASE: 86-127

BOEING SELECTED FOR SPACE COMMERCIAL DEVELOPMENT AND UTILIZATION

NASA has selected Boeing Aerospace Company, Seattle, Wash., for contract negotiations to develop and implement a program to stimulate and sustain interest by United States companies in the utilization and application of aeronautics and space technology.

"Use of the microgravity environment of spaceflight for research leading to commercial development, production and application of technologies and materials needed on Earth is a key to the Nation's future in the world economic market. Boeing Aerospace Company has been chosen by NASA to help assure that the United States plays a major role in this initiative," said Isaac T. Gillam, NASA Assistant Administrator, Office of Commercial Programs.

The contract is expected to be 1 year in duration with two 1-year options. Estimated contract value will be approximately \$1 million annually. Beginning in October, the work will be carried out by Boeing Aerospace Operations Company, Cocoa Beach, Fla.

The program's goal is to encourage U.S. firms, with private investment, to join with NASA to explore the application and utilization of new and innovative technologies for the mutual benefit of both parties.

Boeing will be aided by Peat Marwick, Mitchell & Co., New York City, the Nation's largest management and accounting firm. Together, they will establish an office in Washington, D.C., to generate user/NASA agreements and participation through a three-phase approach:

* Outreach: Viable U.S. companies will be shown that the use and application of aeronautics and space technology in their firms could lead to more efficient and effective day-to-day operations and increased productivity.

- more -

* Assistance: Boeing and Peat Marwick will provide the technical and business services necessary to help commercial users prepare proposals acceptable to NASA.

* Closure: The Boeing team will act as an intermediary, familiar with the needs and procedures of both the firm and NASA, to bring about a final NASA/user understanding.

Boeing is committed to being a major user of the Space Station and has entered into an agreement with NASA calling for the firm to fly a series of microgravity experiments aboard the Space Shuttle. These experiments will involve the growth in space of crystals which promise to prove valuable in the production of semiconductor materials.

Both NASA and Boeing consider the proposed Space Station critical to the U.S. commercial space effort. The Space Station, expected to be placed in Earth orbit in the early 1990s, will contain laboratory and research facilities for commercial endeavors.

- end -

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SPACE SERVICES INC. TO USE NASA LAUNCH FACILITY

NASA and Space Services Inc. of America (SSI), a Houston-based aerospace company, have agreed to general terms on the use of NASA'S Wallops Flight Facility, Wallops Island, Va., for the launch of the expendable Conestoga booster.

SSI will reimburse NASA for all direct costs for launch operations support provided by NASA to SSI.

Under the agreement, SSI will be responsible for preparation and launching of the vehicles, including all required non-NASA resources, and NASA will participate as observers to the extent necessary to insure compliance with all range and safety requirements. Overall range control, safety and operation will be the responsibility of the Goddard Space Flight Center, Greenbelt, Md., which controls the Wallops Flight Facility.

In signing the agreement, Isaac T. Gillam IV, Assistant Administrator for the Office of Commercial Programs, said, "Here is a clear and early example of NASA's continued support and commitment to the President's commercial space policy."

"With some modification and the construction of a Conestoga gantry at one pad, the Wallops facility is ideal for our type of operation" said Donald K. "Deke" Slayton, President of SSI. "It's an exciting arrangement and we are looking forward to working with the NASA people at both Goddard and Wallops."

First flight of the Conestoga with a commercial payload could come as early as 1987 followed by two to three launches in 1988.

- end -

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202-453-8400

For Release:
October 3, 1986
2:30 p.m. EDT

STATEMENT BY DR. JAMES C. FLETCHER, NASA ADMINISTRATOR
PRESS BRIEFING; OCTOBER 3, 1986; NASA HEADQUARTERS

Good afternoon, ladies and gentlemen. I have a brief statement here and after that, Admiral Truly, Mr. Keller and I will be ready to take your questions.

NASA is announcing today that we plan to resume Shuttle flights on February 18, 1988. We are also announcing the major payloads we will fly aboard the Space Shuttle fleet and the order in which we will fly them during the 38 months following the resumption of Shuttle flights. Beyond those first three years, our projections are on a quarterly basis.

This Shuttle manifest is based on a flight rate goal that we believe is acceptable and prudent. It complies with White House policy that NASA will no longer launch commercial and foreign payloads except those that are Shuttle-unique or those that have national security or foreign policy implications. And it reflects the outstanding work of Admiral Truly and his team in accommodating such a wide variety of urgent competing demands in light of our two-year downtime, the reduced number of orbiters and our intentionally - reduced flight rate.

The manifest is the product of a major intergovernmental decision-making process that has been going on for the past several months. We worked very hard with the Department of Defense, the Department of State and other government agencies to achieve an optimum program to meet national needs.

That process focused on near-term requirements of the United States' national space program in light of the payload backlog resulting primarily from the two-year downtime in Shuttle missions.

The manifest represents an equitable balance among the many interests seeking access to space aboard the Shuttle. Achieving that balance was not an easy task. But, in the long run, all involved in this process, including NASA, believe it will serve the best interests of the United States at this critical juncture in our national space program.

The needs of the United States' Department of Defense, science community, commercial sector and our foreign customers had to be considered in the light of many factors. Those factors include national security interests, the new national policy to accelerate the development of a viable private expendable launch industry, and our present and projected national space flight capabilities. In addition, several constraints had to be taken into account. These constraints relate to orbiter capability and capacity, air and ground support equipment, orbiter turn-around time, launch windows for planetary missions and satellite replacement schedules.

During the intergovernmental discussions on the manifest, NASA sought to accommodate all of its customers who had signed up to fly aboard the Shuttle. Clearly, we were not able to do this because of the constraints I just mentioned. Nevertheless, we will continue to work with our customers to help them make other launch arrangements before 1995, when most contracts expire.

Another highlight of this manifest is the high priority assigned to major NASA science payloads. As you know, the Hubble Space Telescope, Ulysses and Galileo all had been scheduled for launch this year. As things stand now, they will be launched as expeditiously as possible.

The Space Telescope, one of NASA's highest priorities will be launched in 1988; Magellan, which will map Venus with a high-resolution radar, will be launched in 1989, as will ASTRO-1, a Shuttle-borne ultraviolet observatory. In 1987, we will allocate specific launch assignments to three planetary missions: Ulysses, which will study the Sun's northern polar regions for the first time; Galileo, which will make the first comprehensive survey of Jupiter and its moons; and the Mars Observer.

As you know, each of these must be launched within specific launch windows in time, because of specific Earth-Jupiter and Earth-Mars geometry. Thus, it was possible to accommodate only one mission per window.

Before the Challenger accident, roughly one-third of the Shuttle manifest was given over to Department of Defense missions; roughly another third to scientific missions; and the remainder to commercial satellites and foreign government missions.

For the seven-year period following resumption of Shuttle flights - that is, through 1994 - we will use 41 per cent of the Shuttle's capability to fill DOD needs; 47 per cent to fill NASA's needs and 12 per cent to accommodate commercial, foreign government and U.S. Government civil space needs. I would point out that in the first three years of operations, the DOD will

utilize considerable Shuttle capability to reduce its critical payload backlog; but, in the remaining four years, DOD's utilization trend will even out at approximately one-third of the Shuttle's capability.

As you are all aware, the Shuttle manifest must be a dynamic document. It will be reviewed constantly to reflect such factors as the NASA and DOD budgets, NASA's ability to meet our milestones for resuming operations and customer decisions.

Again, let me stress that Admiral Truly and his people have gone through an arduous and very difficult process to get us to this point. I commend them for their very good work.

NASA looks forward to a new era of Shuttle operations in space. We expect that era will be coming soon. And when it does, this nation will be proud to resume its grandest adventure of all - the exploration and development of humanity's final frontier.

At this point, one thing is clear. Our incurable urge to know the unknown will continue to move us forward to open new doors of discovery, opportunity and hope for people everywhere. The result will be greater knowledge and understanding of ourselves, our origins and our ultimate destiny.

And now, we'll be happy to take your questions.

NATIONAL SPACE TRANSPORTATION SYSTEM
Manifest

- o The attached manifest is a projection of anticipated flights of each Shuttle orbiter with specific major payload assignments. Secondary payloads will be assigned on a space-available basis at a later date.
- o The President's recent decision on space commercialization is reflected in this manifest. NASA shall no longer provide launch services for commercial and foreign payloads subject to exceptions for payloads that: (1) are Shuttle-unique; or (2) have national security or foreign policy implications. This manifest is being released with the expectation that current customers who are not included will voluntarily seek launch opportunities elsewhere. NASA intends to invite these customers to meet with NASA officials to discuss their transition.
- o Because of the two-year downtime and the reduced flight rate resulting from the loss of Challenger, a substantial backlog of payloads will exist for some time. This backlog will be reduced by utilizing the STS and ELV missions, military and civil.
- o The generic priorities for payload assignments were:
 - National Security
 - STS operational capability (TDRS), dedicated science payloads
 - Other science, and foreign and commercial
- o Other factors which influence the manifest include:
 - Difference in capability of specific orbiters
 - Turnaround of airborne support equipment
 - Planetary launch windows
 - The post-accident reassessment of Shuttle flight rate capability
 - The cancellation of the Shuttle/Centaur upper stage
 - The standdown of the Vandenberg Shuttle launch complex until 1992
- o The combined effect of these factors means that flight of most payloads are delayed more than the two-year downtime with some payloads being delayed for three or more years. Such large delays are primarily the result of manifesting constraints and the intense competition of many payloads for the limited flight opportunities.
- o As is shown in the accompanying manifest, the resumption of Shuttle flight operations is projected for the launch of the Discovery on February 18, 1988. The first several flights are spaced to allow adequate time to perform a detailed analysis and assessment of the flight performance of the redesigned solid rocket motor. The first mission payload will be a NASA Tracking, Data and Relay Satellite (TDRS). Another TDRS will be flown on the fourth mission, thereby establishing the TDRS network vital to space operations. Other early flights will carry important national security payloads and a major science payload--the Hubble Space Telescope and Astro-1 (Astrophysics Science).

The second twelve months of operations continue NASA's efforts to reduce the backlog of national security payloads and to support Magellan (Venus Radar Mapper) and a second planetary mission. This period also includes the first opportunity to fly a DOD Global Positioning System navigation satellite (GPS NAVSTAR). This 12 months will also see the launch of a major NASA Life Sciences Spacelab mission, as well as Astro 1 (Astrophysics Science) and the Gamma Ray Observatory.

- o The third year reflects the continuing effort to reduce the backlog of national security payloads, the flight of several science missions, another planetary mission, and the accommodation of additional GPS NAVSTAR satellites. Beyond the first 3 years, flights are projected by quarter only. The planetary missions referred to in the manifest include Ulysses, Galileo, and Mars Observer. Specific planetary assignments will be made in 1987. Manifest revisions will be issued periodically, as appropriate.

SPACE TRANSPORTATION SYSTEM

**SPACE SHUTTLE
PAYLOAD FLIGHT ASSIGNMENTS**

OCTOBER, 1986

NASA

National
Aeronautics and
Space
Administration

OFFICE OF SPACE FLIGHT

SPACE TRANSPORTATION SYSTEM

SPACE SHUTTLE

PAYLOAD FLIGHT ASSIGNMENTS

OCTOBER 1986 BASELINE

NOTE: THIS SCHEDULE REFLECTS THE FLIGHT ASSIGNMENTS AS OF 10-03-86.
CHANGES WILL BE NEGOTIATED WITH THE PAYLOAD ORGANIZATIONS
AFFECTED AND WILL BE INCLUDED IN THE NEXT UPDATE.

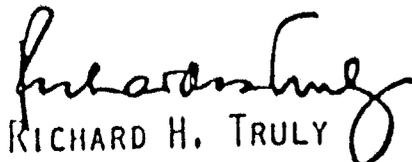
SUBMITTED BY



CHESTER M. LEE

DIRECTOR, STS CUSTOMER SERVICES

APPROVED:



RICHARD H. TRULY

ASSOCIATE ADMINISTRATOR FOR SPACE FLIGHT

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
 OCTOBER 1986 BASELINE

FLT	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS
26	88 2 18 DISCOVERY	28.5 160	5 4	TDRS-C	IUS	
27	88 5 26 ATLANTIS	0.0 0	0 0	DOD		
28	88 7 28 COLUMBIA	0.0 0	0 0	DOD		
29	88 9 22 DISCOVERY	28.5 160	5 4	TDRS-D	IUS	
30	88 11 17 ATLANTIS	28.5 320	5 7	HST		
31	89 1 19 COLUMBIA	28.5 190	7 7	ASTRO-1	IG+2P	
32	89 3 2 DISCOVERY	0.0 0	0 0	DOD		
33	89 4 25 ATLANTIS	28.5 110	5 4	MAGELLAN	IUS	

OCT86

3-OCT-86

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
 OCTOBER 1986 BASELINE

FLT	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS
34	89 6 2 DISCOVERY	0.0 0	0 0	DOD SPACELAB	LM	
35	89 6 21 COLUMBIA	28.5 160	5 7	GPS-1 GPS-2 MSL-3	PAM-D2 PAM-D2 MPRESS	
36	89 7 20 ATLANTIS	0.0 0	0 0	DOD		
37	89 9 1 DISCOVERY	0.0 0	0 0	DOD		
38	89 9 21 COLUMBIA	28.5 160	5 5	GPS-3 GPS-4 MSL-4	PAM-D2 PAM-D2 MPRESS	
39	89 11 1 ATLANTIS	28.5 110	5 4	PLANETARY OPPTY		
40	89 12 7 DISCOVERY	57.0 160	7 7	SLS-1	LM	
41	90 1 18 COLUMBIA	28.5 200	5 4	GRO		

OCT86

3-OCT-86

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
 OCTOBER 1986 BASELINE

FLT	DATE ORETR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS
42	90 2 15 ATLANTIS	0.0 0	0 0	DOD		
43	90 4 20 DISCOVERY	28.5 160	7 7	IML-1	LM	
44	90 5 4 COLUMBIA	28.5 160	5 7	GPS-5 PATHFINDER EOS-1 SHARE	PAM-D2	
45	90 5 31 ATLANTIS	0.0 0	0 0	DOD		
46	90 7 12 DISCOVERY	0.0 0	0 0	DOD		
47	90 7 26 COLUMBIA	28.5 160	5 7	GPS-6 SKYNET-4 MSL-5	PAM-D2 PAM-D2 MPRESS	
48	90 8 31 ATLANTIS	0.0 0	0 0	DOD		

OCT86

3-OCT-86

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
 OCTOBER 1986 BASELINE

FLT	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS
49	90 10 5 DISCOVERY	28.5 110	5 4	PLANETARY OPPTY		
50	90 10 25 COLUMBIA	28.5 160	5 7	GPS-7 INSAT-1D TSS-1	PAM-D2 PAM-D	
51	90 11 15 ATLANTIS	28.5 200	5 7	LDEF RETR SYNCOM IV-5		
52	91 1 17 DISCOVERY	57.0 160	7 7	ATLAS-1 COFS-1	1G+2P PALLET	
53	91 2 14 COLUMBIA	28.5 160	5 7	GPS-8 GPS-9 MSL-6 SSBUV-1	PAM-D2 PAM-D2 MPRESS	

OCT86

3-OCT-86

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
 OCTOBER 1986 BASELINE

FLT	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS
54	91 3 1 OV105	0.0 0	0 0	DOD		
55	91 4 4 ATLANTIS	28.5 160	5 7	GPS-10 SKYNET-4 EURECA	PAM-D2 PAM-D2	

OCTOBER 1986 BASELINE

YEAR	QTR	DOD	NASA	OTHER CIVIL
1991	1ST	GPS-8 GPS-9 DOD	ATLAS-1 COFS-1 MSL-6 SSBUV-1	
	2ND	GPS-10 GPS-11 DOD	SPARTAN-2 TDRS-E EOIM	SPACELAB-J SKYNET-4 EURECA INMARSAT II
	3RD	DOD GPS-12	SSBUV-2 HUBBLE REVISIT EOS-2	SATCOM SPACELAB-D2
	4TH	DOD	UARS	INTELSAT VI EURECA RETR

OCTOBER 1986 BASELINE

YEAR	QTR	DOD	NASA	OTHER CIVIL
1992	1ST	DOD DOD	SSBUV-3	INTELSAT VI
	2ND	DOD (V) GPS-13 DOD	SPARTAN-3 ACTS MSL-7	INMARSAT II
	3RD	DOD (V)	SSBUV-4 SLS-2 CRRES WIND * GEOTAIL *	INTELSAT VI SII-1
	4TH	DOD GPS-14	PLANETARY OPPTY SHEAL-2	GEOSTAR-1

* ELV LAUNCH UNDER CONSIDERATION

OCTOBER 1986 BASELINE

YEAR	QTR	DOD	NASA	OTHER CIVIL
1993	1ST	GPS-15	SRL-2 (V) SP STATION-1 LAGEOS-2	GOES-1 * SII-2 GEOSTAR-2 LANDSAT-6 (V)
	2ND	DOD DOD	SP STATION-2 POLAR (V) * SP STATION-3	
	3RD	DOD	SP STATION-4 MSL-8	SII-3 NOAA-K (V) *
	4TH	DOD DOD	SP STATION-5	

* ELV LAUNCH UNDER CONSIDERATION

OCTOBER 1986 BASELINE

YEAR	QTR	DOD	NASA	OTHER CIVIL
1994	1ST	DOD	SP STATION-6 SP STATION-7(V) ROSAT * EUVE * SPARTAN-5	
	2ND	GPS-16 DOD (V) DOD	SP STATION-8 MSL-9 SP STATION-9	GEOSTAR-3
	3RD	DOD GPS-17	SP STATION-10 SP STATION-11(V) ATLAS-2	
	4TH	DOD	SP STATION-12 HUBBLE REVISIT	

* ELV LAUNCH UNDER CONSIDERATION

PAYLOAD ACRONYM LIST

<u>ACRONYM</u>	<u>NAME/ORGANIZATION</u>	<u>PURPOSE/DESCRIPTION</u>
ACTS	Advanced Communication Technology Satellite NASA/OSSA	flight verification of high risk communications technology to support future communication systems. Geosynch Satellite using TOS upper stage ELV candidate
ASTRO	Ultraviolet Astronomy Telescope (formerly OSS-3) NASA/OSSA	three-mission program designed to obtain UV data on astronomical objects. Igloo plus two pallets
ATLAS	Atmospheric Laboratory for Applications and Science NASA/OSSA	measure long term variability in the total energy radiated by the sun and determine the variability in the solar spectrum. Igloo plus two pallets
CFMF	Cryogenic Fluid Management Facility NASA/OAST	re-usable research facility to establish technology base for 0-g cryogenic fluid management system. One Pallet
COBE	Cosmic Background Explorer NASA/OSSA	study the diffuse radiation of the universe. free flyer ELV candidate
COFS	Control Of Flexible Structures (see MAST) NASA/OAST	demonstrate structural integrity through deployment, retraction and restowage, and develop techniques for dis- tributed control and adaptive control methods. Pallet
CRRES	Combined Release and Radiation Effects Satellite NASA/DOD	study the upper atmosphere and ionosphere by releasing trace metal vapors. free flyer, using SSUS-A upper stage
DOD SPACELAB	DOD Spacelab	Spacelab mission for Strategic Defense Initiative

EOIM-III	Evaluation of Oxygen Interaction with Materials-III NASA/OSSA	expand and verify Space Station environmental interaction data base to support materials development and systems design. small payload mounted on longeron
EOS	Electrophoresis Operation in Space JEA with McDonnell Douglas	produce pharmaceuticals for large scale tests leading to FDA approval and commercial production. special cross-bay structure, approx. 6000 lbs.
EURECA	Europe Retrievable Carrier European Space Agency	platform placed in orbit for six months offering conventional services to experimenters. releasable/retrievable cross-bay structure.. approx 8500 lbs
EUVE	Extreme Ultraviolet Experiment NASA/OSSA	survey the sky in the EUV band (100 - 1,000 angstrom). Free flyer using MMS bus
GALILEO	GALILEO NASA/OSSA	investigates the chemical composition and physical state of Jupiter's atmosphere and satellites. Planetary probe, using IUS upper stage ELV candidate
GEOSTAR	Geostar Corporation	Commercial Radio Determination Satellite Service for civil and DOD use. Geosynch spacecraft using PAM-D
GEOTAIL	Element of Int'l Solar-Terrestrial Physics program	Studies Earth magnetosphere/Solar Wind interactions in equatorial 8 x 20 Earth radii orbit
GOES	Geostationary Operational Environmental Satellite NOAA	provides continuous weather coverage of the western hemisphere. Uses PAM-D2 upper stage
GPS	Global Positioning System DOD	DOD navigation and positioning system. Uses PAM-D2 upper stage
GRO	Gamma Ray Observatory NASA/OSSA	investigate extraterrestrial gamma-ray sources. Free flyer, mounts to Shuttle fittings, own propulsion, ELV candidate

HST	Hubble Space Telescope NASA/OSSA	observes the universe to gain information about its origin, evolution and disposition of stars, galaxies, etc. Dedicated mission, serviceable on later missions
IML	International Microgravity Laboratory NASA/OSSA	microgravity missions devoted to material sciences and life sciences studies. Spacelab Module Mission
INMARSAT II	International MARitime SATellite Inmarsat	maritime communication services .. Uses PAM-D
INSAT	Indian National SATellite System Govt of India	communication and meteorological satellite. Uses PAM-D
INTELSAT	International TELEcommunications SATellite INTELSAT	international telecommunications satellite network. Approx 32000 lbs
IRIS	Italian Research Interim Stage Govt of Italy	an expendable vehicle capable of placing payloads up to 950 kg into geosynchronous transfer orbit. LAGEOS deployed on demonstration flight smaller than PAM-D
LAGEOS	Laser Geodynamics Satellite NASA/OSSA	high precision geodetic measurements using 60 cm 407 kg sphere and laser interferometry. uses IRIS demo flight for transfer to 6000 km operating orbit
LANDSAT	Landsat NOAA	earth resources monitoring satellite for NOAA polar, sunsynchronous orbit candidate for ELV
LDEF RETR	Long Duration Exposure Facility Retrieval NASA/OAST	retrieve and return the LDEF to earth so results may be analyzed. Avoid uncontrolled reentry. Occupies about half of payload bay, approx 22,000 lbs
LITE	Lidar Imaging Test NASA/OAST	Technology Development for Laser imaging from space Pallet

MAGELLAN	Magellan NASA/OSSA	radar map of the surface of Venus. planetary probe using IUS upper stage
MARS OBSERVER	Mars Observer NASA/OSSA	return scientific data from Mars orbit. planetary probe using TOS upper stage
MAST	Structural Technology Demonstration (see COFS) NASA/OAST	demonstrate structural integrity through deployment, retraction and restowage, and develop techniques for dis- tributed control and adaptive control methods. Pallet
MSAT	Mobile SATellite NASA/OSSA	provides channel capacity for NASA technology validation experiments and accelerates introduction of commercial mobile satellite service in the U.S. Upper stage TBD
MSL	Materials Science Laboratory NASA/OSSA	performs materials processing experiments in low-g. MPESS cross-bay approx 7000 lbs
NOAA	National Oceanic and Atmospheric Administration	provides continuation of Polar Operational Meteorological Satellite System for the Department of Commerce (NOAA). ELV candidate
OMV	Orbital Maneuvering Vehicle NASA/OSF	supplements the STS capability for satellite payload delivery, retrieval and maneuvering. demo/verification flight prior to operation use
PLANETARY OPPTY	Planetary Opportunity NASA, ESA	Assignments for Galileo and Ulysses to be determined Use IUS upper stage
POLAR	Element of Int'l Solar- Terrestrial Physics program	Studies Earth magnetosphere/Solar Wind interactions in polar 3 x 20 Earth radii orbit
RADARSAT	RADARSATellite Govt of Canada	collaborative program designed to remotely monitor the oceans, ice and land over a five year period. free flyer with own propulsion, mounts to shuttle fittings
ROSAT	ROentgen SATellite ** NASA/DFVLR cooperative	conducts an all-sky survey of X-ray sources dedicated Shuttle flight, ELV candidate

SATCOM	SATellite COMMunications RCA Americom	communication services for US government, including NASA and DOD
SHARE (was TEMPS-III-A)	Space Station Heatpipe Advanced Radiator Experiment NASA/OSS	evaluate on-orbit thermal performance of a heat pipe radiator element designed for Space Station heat rejection system application. 50 ft. element mounts on longeron
SHEAL	Shuttle High Energy Astrophysics Laboratory NASA/OSSA	study of astronomical objects, obtaining images, spectra and timing data on celestial x-ray sources. cross-bay structures, approx. 10500 lbs
SII	Space Industries, Inc.	Man-tended Industrial Space Facility (ISF) Dedicated flight for emplacement(2) plus servicing flights
SKYNET	Skynet UK Ministry of Defense	United Kingdom military communication satellite Uses PAM-D2 upper stage
SLS	Space Life Sciences Laboratory NASA/OSSA	investigate the effects of weightlessness exposure using both man and animal specimens. Spacelab Module mission
SPACELAB D-2	Spacelab Mission D-2 DFVLR, West Germany	dedicated applications, science, and technology mission. Spacelab Module mission
SPACELAB J	Japanese Spacelab Mission (partial with US)	microgravity mission with emphasis on materials processing and life science experiments. Spacelab Module Mission
SP STATION	Space Station Flight NASA/OSS	Construction and operation of the Space Station. Specifics TBD
SPARTAN	Spartan NASA/OSSA	Short duration (48 hrs) free-flyer for high energy astrophysics, ultraviolet astronomy, and solar physics Mounts on cross-bay MPSS approx. 7000 lbs
SPL	Space Plasma Laboratory NASA/OSSA +International	Interactive investigation of electrical and magnetic properties of the upper Earth's atmosphere Igloo plus 2 pallets

SRL	Shuttle Radar Laboratory NASA/OSSA	acquires high resolution radar and photographic images of the Earth's land and oceanic surfaces. Pallet
SSBUV	Shuttle Solar Backscatter Ultra-Violet Instrument NASA/OSSA	measures ozone characteristics of the atmosphere. mounts on longeron, approx 1000 lbs
SYNCOM IV	GeoSYNchronous COMmunication Satellite Hughes Communications	provides communication services under lease to the US Navy. (LEASAT) 17000 lbs payload with own perigee stage
TDRS	Tracking and Data Relay Satellite NASA/OTDA	NASA Tracking and Communication Satellite. Geosynch spacecraft using IUS
TSS	Tethered Satellite System NASA/Italy Cooperative	demonstrate system capabilities by deploying and retrieving tethered satellite and measuring engineering data from payload on satellite. Pallet
UARS	Upper Atmospheric Research Satellite NASA/OSSA	study the physical processes acting within and upon the stratosphere, mesosphere and lower thermosphere. Dedicated flight, 57°, ELV candidate
ULYSSES	Ulysses European Space Agency	investigates the properties of the heliosphere (sun and its environment)(was ISPM [Int'l Solar Polar Missio]) Uses IUS
WAMDII	Wide Angle Michelson Doppler Imaging Interferometer NASA/OSSA	measures the global pattern of wind and air temperature TAPS(Two Axis Pointing System), cross-bay pointing system approx 7500 lbs
WIND	Element of Int'l Solar- Terrestrial Physics program NASA/International	studies upstream Solar Wind at distances to 250 Earth radii using lunar swingby Upper stage TBD

CARRIERS

ACRONYM	DEFINITION
IG & 1P	IGLOO AND 1 PALLET
IGLOO	SPACELAB EXPERIMENT STRUCTURE
IUS	INERTIAL UPPER STAGE
LM	LONG MODULE
MPES	MISSION PECULIAR EQUIPMENT SUPPORT STRUCTURE
PAM-D	PAYLOAD ASSIST MODULE-D
PAM-D2	PAYLOAD ASSIST MODULE-D2

NASA News

National Aeronautics and
Space Administration

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IMMEDIATE

KSC Release No. 26-86

SPACEPORT USA HAS BUSIEST MARCH IN HISTORY

KENNEDY SPACE CENTER, FLA. -- Attendance records at Spaceport USA, the Kennedy Space Center's visitors center, were broken for the second consecutive month in March when an estimated 250,000 people visited America's Spaceport.

More than 196,000 visitors boarded NASA buses during the month and were taken on a guided two hour tour of the space center. This number is significantly greater than the 150,000 guests who visited Spaceport USA during March 1985 and is the greatest number for March since public tours began in 1966. The previous March attendance high was set in 1983 when 190,671 people toured the space center.

Cumulative tour attendance for the year is also running at an a record level. The number of people who have opted for a tour in calendar year 1986 through March 31 is 456,830, compared to 360,886 for the same time period in 1985. The 1986 figure to date represents a 26.6 percent increase over the same period of 1985.

In addition to the increased tour and visitor attendance, more than 114,000 people viewed the IMAX space film, "The Dream is Alive," during the month. The film, which is shown in Spaceport USA's Galaxy Center, depicts what many astronauts say is "the next best thing to being in space."

Arnold Richman, chief of KSC's Visitors Services Branch, attributes Spaceport USA's rise in attendance to several factors. "Falling gasoline prices, a strengthening economy, thousands of spring breakers and gorgeous weather were all contributors to a great month," Richman said. "Spaceport USA is undoubtedly one of Florida's best values."

-more-

Spaceport USA is Florida's fourth most popular tourist attraction. It is operated by TW Services Inc. under contract with NASA. Besides the bus tours and IMAX film, Spaceport USA has actual flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits, and other space memorabilia on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

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April 1, 1986

NASA News

1F.6 #23 ✓

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Immediate

News Release No. 106 - 86

REMOTELY-CONTROLLED CAMERA RECORDS BALD EAGLE FAMILY LIFE

KENNEDY SPACE CENTER, Fla. - Whether gliding gracefully on broad-stretched wings or making power dives on unsuspecting prey, there are few sights in nature more dramatic than the American bald eagle at home in the wild. These are spectacles which few Americans are privileged to watch.

Only naturalists, wildlife managers and a few enterprising photographers have been able to witness eagle family life on the nest, a situation altered by photographs taken by a remotely-operated camera overlooking a Kennedy Space Center eagle nest.

The number of active southern bald eagle nests on the sprawling NASA Spaceport, originally acquired in the early 1960s for the Project Apollo voyages to the Moon, ranges from five to seven. The most visible nest is located in a tall pine tree to the west of the Kennedy Parkway between the Industrial Area and Launch Complex 39.

The adult birds have apparently adapted to the fire and thunder of rocket launches as well as the heavy automobile traffic on the center's major north-south highway. Nor do they seem to be disturbed by a large camera box placed on a pine tree branch overlooking their nest from a distance of less than five feet.

The remote camera installation has been used to some extent since the early 1980s but the photographic results from the breeding season just ended has produced the most spectacular coverage yet.

The 217 color photographs cover the period from Oct. 21, 1985 through March 18 of this year. They yield fascinating insights into the eagles' nesting behavior and the growth of a young eaglet from a down-covered chick to a robust fledgling able to make it on its own.

- more -

"This was our best season," commented Klaus Wilckens, the TGS Technology Inc. photographer who found time between 9 and 10:30 a.m. each working day to observe the nest and click the shutter if there was any visible action. TGS is the photographic contractor for the NASA Kennedy Space Center and the U. S. Air Force Eastern Space and Missile Center.

TGS technician Roland "Red" Williams, adapted a camera housing - normally used on Complex 39 launch structures - for service at the eagle nest located about 60 feet above the ground in the crotch of the tall pine tree.

The camera was a motor-driven F2 Nikon 35 millimeter with a 35 mm lens and a 250-exposure back. A six-volt battery in a weatherproof camera box disguised with camouflage paint was used to trip the shutter in single frames. Sound was deadened by foam insulation and moisture-absorbing crystals were placed in the box to control humidity. The box was sealed around the edges with silicone. The film was Vericolor Type S with a speed of ASA 100.

The control cable was housed in a protective conduit which extended down to the base of the tree and then underground and across a nearby drainage ditch. It then passed beneath Kennedy Parkway and emerged through a drainage grate in the median strip. It was from this vantage point that Wilckens conducted his daily vigil with powerful binoculars and tripped the shutter.

Those areas of the Spaceport not actively used for space operations are maintained for NASA by the U. S. Fish and Wildlife Service as the Merritt Island National Wildlife Refuge and the photographic effort was coordinated with wildlife officials on both the local and national level.

The camera box was erected in the tree on Aug. 12, 1985. It overlooked a nest about seven feet in diameter and approximately eight feet deep. It is generally flat on top with only a shallow depression in the center to shelter the egg and then the chick. The nests are used over and over again and there are records showing occupancy of this particular nest as early as 1964.

Wilckens' log records the first appearance of the adult birds at the nest on Oct. 21. Their first order of business was the repair of the nest and the erection of a raised barrier of twigs and small branches around the perimeter of the nest. A number of the photographs show the adult bird making nest repairs.

The single egg is first visible in a photograph taken on Nov. 15 and the down-covered hatchling made its debut in a shot taken on Jan. 2. The chick was only three to four inches long

when hatched and its growth was rapid; by the time the final picture was taken on March 18, the eaglet had acquired the 12 to 14 pound weight and 7-foot wingspan of its parents.

According to Dorn Whitmore, outdoor recreation planner for the Wildlife Refuge, the Kennedy Parkway eaglet was one of five known to be hatched here during the just-ended nesting season. Four other nests were active during the year and two of them produced two eaglets each. The five fledglings for the year compare with seven in 1985 and 10 in 1984. The survival rate of hatchlings reaching adulthood runs about 50 percent.

Whitmore said the long-term prospects for the survival of the bald eagle - an endangered species - on the refuge is good. "We have a lot of old tall trees close to water and we're trying to manage the habitat." He indicated that the five to seven active nests may be near the carrying capacity of the refuge.

Florida has been more fortunate than most states in retaining its eagles. Its estimated 350 breeding pairs represent the largest population in the United States with the exception of Alaska, which is estimated to have as many as 50,000 birds. Only 10 states are now believed to have more than 25 active nests.

But Florida's human population is growing and vigilance will be required if the nation's symbol is to remain a living presence in the state's skies.

"As Florida grows," predicted Whitmore, "additional waterfront areas will be developed. The long-term view in the state may be a decline."

The southern bald eagle is a sub-species found from Florida through North Carolina with a few wandering as far afield as Nebraska. Some are to be found in Florida on a year-round basis but peak populations are here in the winter when the food supply - consisting of fish and birds (cattle egrets, coot and ducks) is greatest.

Bald eagles are believed to live as long as 30 years in the wild and even longer in captivity. They mate for life; but if one dies, the survivor will accept a new mate.

Whatever the future may bring, the bald eagle is alive and well on the Kennedy Space Center and here - at least - its future looks bright.

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July 15, 1986

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M. Konjevich *mk*
SI-SRV-1

NASA News

1F.6 #23 ✓

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release.

Jim Ball
Kennedy Space Center
(Phone: 305/867-2468)

KSC RELEASE NO: 109-86

IMMEDIATE

CHECKOUT OF NEW WEATHER PROTECTION STRUCTURE AT PAD B SCHEDULED

KENNEDY SPACE CENTER, Fla. -- An assembled Space Shuttle vehicle is scheduled to be rolled out to Launch Pad 39-B to support verification testing of newly installed weather protection structures.

Orbiter Atlantis and the other STS elements currently stacked on Mobile Launcher Platform 1 in the Vehicle Assembly Building is slated to be transported to the pad no earlier than August 19 for the test operations.

About \$3.3 million in new structures designed to help shield Space Shuttle orbiters from winds and heavy rain have been installed at Pad B.

The system of sliding and folding doors and seals will cover previously exposed portions of the orbiter to greatly reduce the risk of damage to the Shuttle's fragile heat protection tiles.

Without the shielding, the tiles are susceptible to damage from hail and wind-blown debris. Heavy rains can erode the water-proofing on the tiles.

Rolling an assembled Shuttle vehicle out to the pad will allow checks of the structure clearances, verification of seal integrity, and validation of deployment procedures and timelines.

Shuttle operations managers and facility engineers scheduled the Pad B weather protection checkout to take advantage of having a fully assembled Shuttle available. Atlantis and the other Shuttle elements had been originally assembled to support planned testing of Shuttle/Centaur hardware at Pad A this summer.

- more -

KSC Release No. 109-86

Page 2

Existing weather protection systems at Pad 39-A are slated to be upgraded to the Pad B designs next year.

A considerable portion of the orbiter is shielded by the Rotating Service Structure (RSS) that closes in around the Space Shuttle while it is at the pad.

Protection to the lower portion of the orbiter has been provided by adding metal doors that slide together between the orbiter's belly and the external tank.

Other weather protection structures to provide a roof seal and enclose the space between the RSS and the external tank were checked out earlier this year.

The Space Shuttle is expected to remain on the launch pad until early September.

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July 22, 1986

M. Konjevich
SI-SRV-1

NASA News

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National Aeronautics and
Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Sept. 30, 1986

Jim Ball
Kennedy Space Center, FL
(305/867-2468)

KSC Release No. 124-86

NOTICE TO EDITORS/NEWS DIRECTORS

ATLANTIS ROLLOUT TO PAD 39-B SCHEDULED FOR OCTOBER 7

KENNEDY SPACE CENTER, Fla. -- Rollout of an assembled Space Shuttle vehicle to Pad 39-B is scheduled to occur early on Tuesday, October 7.

The rollout will initiate a seven-week test program that will include checkout of new weather protection structures, a variety of special measurements, launch team proficiency exercises, and emergency egress simulations.

First motion on the 4.2-mile journey from the Vehicle Assembly Building to the launch pad is scheduled to take place at 12:01 a.m. The transfer will take about six hours to complete.

The Pass and Identification Station at Gate 2 on State Road 3, Merritt Island, will open at 5 a.m. to badge news media representatives interested in covering the Atlantis rollout. Reporters and photographers who have permanent KSC badges may proceed directly to the Complex 39 Press Site at 5 a.m.

Photographers who wish to be in place for a sunrise picture must be at the Press Site by 6 a.m. for departure to the pad. Others who wish to view and photograph the Shuttle will be escorted out to the pad later in the day.

A press briefing on the planned Space Shuttle operations and test objectives during Atlantis' stay at the pad is scheduled for 10:30 a.m. at the KSC Press Site Auditorium.

To accommodate news media wanting to check on the progress of the Atlantis rollout, the KSC codaphone message (867-2525) will be updated shortly after midnight to verify that the operation has begun and the Public Information Office will open at 4:30 a.m. to handle telephone inquiries on the status of the rollout.

M. Konjevich
SI-SRV-1

NASA News

IF.6 #23

National Aeronautics and
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John F. Kennedy Space Center
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For Release:

Lisa Malone
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IMMEDIATE

KSC NEWS RELEASE NO. 125-86

NOTE TO EDITORS/NEWS DIRECTORS

KSC TO SPONSOR MINORITY BUSINESS APPRECIATION DAY ON OCT. 10

KENNEDY SPACE CENTER, Fla., -- Kennedy Space Center, in cooperation with the Brevard Small Business Assistance Council, will sponsor a Minority Business Appreciation Day on Friday, Oct. 10, 1986 in keeping with the National Minority Enterprise Development Week.

The Council will recognize and honor a minority-owned business as the "Brevard County Minority Business of the Year" at the annual conference to be held from 9:30 a.m. to 4 p.m. at the Cocoa Beach Hilton.

The "Brevard County Minority Business of the Year" is selected by the Council, which is made up of representatives from Brevard County businesses and government agencies. All nominees will receive an Award of Excellence certificate. The firm of the year award and nominee certificates will be presented at the noon luncheon.

Last year, Cherokee Enterprises, a Merritt Island construction firm, was named the "Brevard County Minority Business of the Year."

In addition to the awards, a panel session will be given on "How to do business with Brevard County governments and industries."

President Reagan has proclaimed the week of Oct. 5-11, 1986 as Minority Enterprise Development Week. This national celebration was initiated for the first time in 1983 and is intended to honor the nation's minority entrepreneurs and their contribution to our country's economic well-being.

- more -

Page 2

Norm Perry, KSC's Industry Assistance Officer said, "KSC has long recognized and encouraged the entrepreneurial spirit, and has gained from the abilities and talents of minority-owned businesses under contract to the Center."

News media representatives are invited to attend the event. Those planning to eat lunch should make arrangements in advance by calling the KSC News Center at 867-2468. The News Center is interested in knowing about media planning to cover the event.

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Oct. 1, 1986

M. Kenlevich
SI-SRV-1

NASA News

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National Aeronautics and
Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Diana Boles
(305) 867-2468

Immediate

KSC RELEASE NO. 128-86

NASA EXTENDS BAMS I, INC. CONTRACT FOR BASE OPERATIONS AT VAFB

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a \$1,093,192 contract extension to BAMS I, Inc. of Titusville, Fla., to provide base operations support services for KSC's Space Transportation System Resident Office at Vandenberg Air Force Base, California.

The contract award extends the period of performance from Oct. 1, 1986, through Sept. 30, 1987, bringing the total value of the contract to \$3,788,177.

Under the terms of the contract, BAMS I will continue to perform base operations services for NASA at Vandenberg AFB which include industrial, logistics, security, graphics and technical support.

The cost-plus-fixed-fee contract is one that is set aside for disadvantaged firms.

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October 8, 1986

M. Konjevich
SI-SRV-1

NASA News

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National Aeronautics and
Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
AC 305 867-2468

Lisa Malone
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For Release:

IMMEDIATE

KSC Release No. 131-86

1986 KSC PROCUREMENT BRIEFING TO INDUSTRY SCHEDULED

KENNEDY SPACE CENTER, Fla., -- Representatives of NASA's John F. Kennedy Space Center, Eastern Space & Missile Command/Patrick Air Force Base, and prime aerospace contractors will brief industry officials on opportunities for doing business with the government during a two-day conference scheduled for Oct. 22-23, 1986.

This is the second annual conference designed to increase industry's awareness of contract opportunities in the coming years. The first day of the conference will cover fiscal year 1987 and 1988 projects such as construction, supply, technology development and research.

The morning session of Oct. 23 will feature a panel discussion on Commercialization of Space. Members of the panel will be representatives from Arthur D. Little Inc., Rockwell International, Lockheed Space Operations Co., Boeing Aerospace Company, McDonnell Douglas Astronautics Co., and International Space Corp.

Attendees will be informed of some of the current activities in space commercialization. Those companies not currently involved in the aerospace field will be encouraged to explore the possible opportunities to participate in the program.

Industry representatives will have the opportunity for one-on-one counseling on the afternoon of Oct. 23 with technical specialists who made presentations the previous day.

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Spaceport U.S.A.'s Galaxy Theater is the location of the event. Seating capacity is limited to 500. For reservations contact, NASA/KSC, Industry Assistance Office, Mail Code SI-PRO-4, KSC, FL, 32899, (305) 867-7353 by close of business Tuesday, Oct. 21, 1986.

News media representatives wishing to cover the event should make arrangements by calling the KSC News Center at (305) 867-2468.

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Oct. 8, 1986

M. Konjevich
SI-SRV-1

NASA News

IF. 6 #23 ✓

National Aeronautics and
Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
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For Release:

Jim Ball
Kennedy Space Center, FL
(305/867-2468)

Oct. 13, 1986

KSC Release No. 132-86

KSC PURCHASES ORBITER COMPONENTS FOR NEW AVIONICS TEST FACILITY

KENNEDY SPACE CENTER, Fla. -- Contracts for the purchase of several key Space Shuttle orbiter electronic components were recently awarded by KSC for the development of an avionics test laboratory here.

The equipment will help complete a three-year effort to develop a low-cost, high-fidelity orbiter avionics simulator at the spaceport. The facility is expected to become operational by the end of the year.

Harris Corporation, Melbourne, Florida was awarded a \$749,583 contract to provide an orbiter Pulse Code Modulation Master Unit, a device which gathers data from orbiter instruments and flight computers and processes that data for transmission to the ground. The work will be performed by the firm's Government Aerospace Systems Division.

IBM Corporation was awarded a \$585,000 contract to provide an orbiter Mass Memory Unit simulator. A flight Mass Memory Unit is used to store computer programs for both operation and check-out of the ship.

IBM will also supply two Display Electronics Units, part of the system that generates data displays on the computer screens monitored by the Shuttle's flight crew.

These components, which will be built as exact copies of the hardware used in the Shuttle orbiters, will be installed along with other similar components and special computer equipment at a test laboratory housed in KSC's Vehicle Assembly Building.

The facility is known as the Kennedy Avionics Test Set (KATS) and will allow engineers to test and debug ground checkout software used between orbiter flights. It can also be used to checkout orbiter flight hardware and is expected to become an important training tool.

KSC engineers who have revised and updated computer programs used in the testing and checkout of the Shuttle during its ground turnaround period have previously had to verify these programs in the Shuttle Avionics Integration Lab (SAIL) facility at the Johnson Space Center in Houston.

The Space Shuttle avionics system consists of more than 300 major electronic "black boxes" located throughout the vehicle, connected to more than 300 miles of electrical wiring. Special computer programs operated at consoles in the Launch Control Center firing rooms are used during vehicle checkout to verify the Shuttle's flight readiness.

The KATS lab will be capable of being linked to at least one of the firing rooms to simulate many of the orbiter systems.

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M. Konjevich
SI-SRV-1

NASA News

IFG # 23
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National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
Area Code 305/867-2468

Immediate

NOTICE TO EDITORS/NEWS DIRECTORS:

KSC Release No. 134-86

FAIRGLEN ELEMENTARY STUDENTS TO CONTRIBUTE TO ORBITER REPLACEMENT

KENNEDY SPACE CENTER, Fla. - The students of Fairglen Elementary School in Sharpes, Fla. will make a substantial contribution to help replace the Space Shuttle Orbiter Challenger which was destroyed shortly after liftoff on Jan. 28.

A special assembly will be held at the school's athletic field at 10 a.m. on Tuesday, Oct. 28 for the presentation. Accepting the \$1,000 check on behalf of NASA will be KSC Deputy Director Thomas E. Utsman.

The money was raised by the Fairglen students at a "Jogathon" in May. The fund-raising event was sponsored by the school's student council.

News media representatives are invited to cover the special assembly and check presentation.

The school is located to the east of U. S. Highway 1 near the pedestrian overpass in the small community of Sharpes, located between Cocoa and Titusville.

News media representatives who wish additional information should contact Dick Young at Area Code 305/867-2468.

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Oct. 24, 1986

M. Konjevich
SI-SRV-1

NASA News

15.6 #23 ✓

National Aeronautics and
Space Administration

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Oct. 30, 1986

Jim Ball
Kennedy Space Center, FL
(305/867-2468)

KSC Release No. 136-86

DISCOVERY MOVE TO ORBITER FACILITY MARKS PROCESSING MILESTONE

KENNEDY SPACE CENTER, Fla. -- Today's move of the Discovery to the Orbiter Processing Facility marks a milestone in the Space Shuttle's return to flight.

The transfer initiates a planned 13-month modification and processing flow to complete a package of vehicle upgrades and prepare the ship for the next Space Shuttle mission, targeted for February 1988.

"It's the first act of putting Discovery into the process on the way to the pad," said KSC Center Director Forrest McCartney. "The next time Discovery leaves the Orbiter Processing Facility will be on the way for a stack, and then on to the launch pad for launch."

Actual flight servicing and the unique preparations for its mission are scheduled to begin about mid-September of next year after Discovery has completed an extended period of powered down modifications.

When the ship emerges from the processing hangar three months later, it will be buttoned up for flight and on its way back to the Vehicle Assembly Building for mating to an external tank and set of booster rockets.

Discovery will be outfitted to deliver a Tracking and Data Relay Satellite to orbit on a four day mission that will begin with liftoff from KSC's Pad 39-B and conclude with a landing on a lakebed runway at Edwards Air Force Base, California.

Among the modifications to be performed on the ship are the backlog of already approved vehicle upgrades and potential changes that may stem from the post 51-L Systems Design Review currently in progress.

One of the major items included in the approved modification program is a structural beefup of the orbiter wings, a performance enhancement based on analysis of flight experience.

Another significant, time-consuming modification involves the installation of a new thermal barrier system around the nose landing gear doors. The existing design has been susceptible to damage during cycling of the doors, resulting in increased maintenance.

Other modification activity centers on installation of new orbiter instrumentation, including instruments that gather performance data on the Shuttle brakes and the completion of work on special instruments that will be required in the future for Vandenberg AFB launches.

Discovery has been in the Vehicle Assembly Building's storage bay since early September while facility modification work was performed in Bay 1 of the Orbiter Processing Facility.

Discovery last flew in August 1985 on Shuttle mission 51-I, the orbiter's sixth flight since it joined the fleet in November 1983.

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M. Konjevich
SI-SRV-1

NASA News

National Aeronautics and
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Mitch Varnes
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For Release:
IMMEDIATE

KSC Release No. 146-86

SPACEPORT USA HAS BUSIEST NOVEMBER IN HISTORY

KENNEDY SPACE CENTER, FLA. -- November attendance at Spaceport USA, the Kennedy Space Center's visitors center, reached a record high this year when an estimated 123,000 people visited America's Spaceport.

The November attendance figure marks the sixth month this year that all-time visitor attendance records have been toppled, and is the highest of any November since the space center opened for public tours in 1966. The previous high for November was in 1983 when 111,276 people visited Spaceport USA. Four Space Shuttle launches, including that of STS-9 on November 28, occurred in 1983.

Cumulative visitor attendance for the year is also running at an unprecedented level. More than 1.9 million people have visited Spaceport USA through November. This number is 20 percent greater than the same time period in 1985 and a six percent increase over the first 11 months of 1981, which was the peak year in the visitors center's history. The launch of the first two Space Shuttle missions occurred in 1981.

Spaceport USA is Florida's fourth most popular tourist stop and draws an average of 1.8 million visitors annually. It is operated by TW Services, Inc. under a concession agreement with NASA. A nominal fee is charged for bus tours and for the IMAX film, "The Dream is Alive," but actual space flight hardware, audio-visual programs, NASA and contractor-sponsored exhibits, and other space memorabilia are on display for visitors at no charge. Spaceport USA is open to the public every day of the year except Christmas.

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Dec. 1, 1986

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M. Konjevich
SI-SRV-1

NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
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Diana Boles
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For Release:
December 10, 1986

KSC RELEASE NO. 147-86

APOLLO COMPUTER, INC. AWARDED CONTRACT BY NASA

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded a \$192,633 contract to Apollo Computer, Inc., Orlando, Fla. to provide computer workstations, software, training, and documentation for an Engineering Technical Base project designed to apply knowledge-based expert system techniques to the Pad B environmental control system.

Knowledge-based expert systems draw upon computer programs created around the experience and wisdom of specialists in specific disciplines. These programs can be used by computers to exercise the flexible reasoning processes normally attributed to human beings.

The project will be developed on an environmental control system simulator in the engineering development laboratory and contain knowledge of KSC's environmental control system. Engineers will access the information and compare present system operation with the expected operation.

The equipment will be delivered to KSC's Flight Crew Training Building and installed by the contractor.

The firm-fixed-price contract requires Apollo Computer, Inc. to complete all work within six weeks after notice to proceed.

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M. Konjevich
SI-SRV-1

NASA News

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

IFG #22

For Release:

Dick Young
Area Code 305/867-2468

Immediate

Release No. 149-86

NOTICE TO EDITORS/NEWS DIRECTORS:

YOUNG COSMONAUTS TO VISIT NASA LAUNCH CENTER

KENNEDY SPACE CENTER, Fla. - Ten Soviet Young Cosmonauts aged 14 to 18 will tour the Kennedy Space Center on Friday, Dec. 12. Their visit here is part of a two-week tour of American space facilities, schools, museums and cultural and historical sites which begins with their arrival at Dulles International Airport in Washington, D. C. on Dec. 9.

This is the second phase of an historic exchange between American Young Astronauts and Soviet Young Cosmonauts which was agreed upon by President Reagan and General Secretary Gorbachev at the Geneva Summit in November, 1985.

The Young Cosmonauts will be guests of the Young Astronaut Council and will meet with Young Astronauts at each of their stops. During their tour of KSC, they will be accompanied by representatives of the local Young Astronaut affiliate group at Clearlake Junior High School in Cocoa.

Their visit follows an earlier two-week tour of the Soviet Union by 10 American Young Astronauts in October.

Following their arrival at KSC at approximately 9:30 a.m., they will be welcomed by Lt. Gen. Forrest S. McCartney, center director. They will then embark upon a tour of the center which will include a viewing of the Apollo 11 simulation in the Flight Crew Training Building and a visit to the principal structures and facilities of Launch Complex 39.

Later in the day, they will have free time to view the exhibits and other attractions at Spaceport USA - KSC's visitors center. Their visit here will end following their participation in space demonstrations at Exploration Station at Spaceport USA.

- more -

The Young Cosmonauts will be accompanied by an official Soviet delegation which includes Vadimir Shaplyko, secretary of the Komsomol Central Committee and deputy to the Supreme Soviet of the Byelorussian SSR; Vladimir Soloviov, pilot cosmonaut of the USSR, who spent 237 days in space aboard Salyut 7 in 1984; Victor Yevseenkov, chief of section, Committee on Young Organization, and Yelena Kolesnikova, teacher, Moscow Teachers Training College.

News media representatives will have an opportunity to meet with the group during a press session to be held in the News Center's auditorium between 1:05 and 1:30 p.m. There will be an opportunity to photograph their visit to Pad A at Launch Complex 39 at approximately 1:45 p.m.

Media representatives who plan to participate in coverage of the Young Cosmonauts' visit should contact the News Center at Area Code 305/867-2468 for additional information.

Their tour of the United States is centered upon the following ares: Orlando, Fla., Dec. 12-14; Huntsville, Ala., Dec. 15-16; Houston, Texas, Dec. 17-18, and New York City, Dec. 19-21.

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Dec. 8, 1986

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M. Konjevich
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NASA News

National Aeronautics and
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John F. Kennedy Space Center
Kennedy Space Center, Florida 32899
AC 305 867-2468

Dec. 1F.6 #23 ✓

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For Release:
IMMEDIATE

KSC RELEASE NO. 153-86

KSC RECOGNIZES FIVE CONTRACTORS WITH SMALL BUSINESS AWARDS

KENNEDY SPACE CENTER, Fla. -- Five contractors recently were recognized by KSC Center Director Forrest McCartney for their outstanding accomplishments during fiscal year 1986 at the annual Small Business Awards Ceremony.

"America is made of small and large businesses producing quality work at a fair price," said McCartney. He added that it is our responsibility to recognize the accomplishments of those doing business with KSC.

Norman Perry, KSC's Industry Assistance Officer, hosted the NASA/KSC unique event and said, "All of our contractors do an outstanding job. These awards are a way to recognize the companies that go those few extra miles."

McDonnell Douglas Astronautics Company, KSC, Fla., was named "Large Business Contractor of the Year." McDonnell Douglas is responsible for processing Shuttle payloads. The company was recognized for exceeding its goals in utilizing small businesses and small-disadvantaged businesses and for their dynamic small business "outreach" program.

Santa Cruz Construction, Inc., Merritt Island, Fla., has won, for the second straight year, the "Small Business Minority Contractor of the Year" award. The company was cited for construction of a 500-car parking area south of Vehicle Assembly Building housing.

Joan F. Kennedy, Inc., Cape Canaveral, Fla., garnered the "Woman Owned Business Contractor of the Year" award for professionalism and expertise in installing the Orbiter Modification Refurbishment Facility paging and area warning system.

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The "Small Business Subcontractor of the Year" award went to BAMSI, Inc., Titusville, Fla., in recognition of support services for engineering, drafting, publications, information services, Technical Documentation Center and housekeeping at Vandenberg Air Force Base. This marks the third time BAMSI has received a small business award from KSC.

The coveted "Small Business Prime Contractor of the Year" award was earned by Hydro-Power, Inc. of Terre Haute, Ind. The company was cited for providing the 20-ton bridge crane for the SAEF-II payload processing facility in the industrial area.

Hydro-Power, Inc. has been nominated for national recognition in the "Small Business Prime Contractor of the Year" category. BAMSI, Inc. has been nominated for consideration in the national competition in the "Small Business Subcontractor of the Year" category.

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December 16, 1986

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For Release:

Barbara Selby
Headquarters, Washington, D.C.
(Phone: 202/453-8536)

December 3, 1986
4:00 P.M. EST

RELEASE NO: 86-167

NASA SELECTS PAYLOAD GROUND OPERATIONS CONTRACTOR

NASA today announced the selection of McDonnell Douglas Astronautics Co., Kennedy Space Center, Fla., for negotiations leading to the award of a contract to perform Payload Ground Operations at Kennedy, including KSC activities at Cape Canaveral Air Force Station, Fla.; Vandenberg Air Force Base, Calif.; Space Transportation System landing sites and work locations in or outside the United States.

The PGOC is a consolidation of work presently being performed under contracts with McDonnell Douglas, Boeing Aerospace, Computer Science Corp., EG&G Florida and Planning Research Corp.

The cost-plus-award-fee contract will have an initial period of 3 years, plus a single price option for an additional 3 years. Ultimately, follow-on awards could result in a total contract period of 15 years. McDonnell Douglas' proposed cost for the first 6 years is approximately \$327 million. The contract will be managed by Kennedy Space Center.

The purpose of the PGOC is to obtain a single, long-term contract for payload processing activities. The contractor will perform the activities necessary for payload/cargo processing and integration; Spacelab operations and integration; support to experiment integration activities; payload/cargo deintegration; NASA/Vandenberg payload operations; payload related facilities, systems and ground equipment operations; maintenance and sustaining engineering; customer accommodation and launch-site support functions; and payload related support operations and services.

The other proposer was Boeing Aerospace Operations, Cocoa Beach, Fla.

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Description of Materials NASA News Releases concerning Delta-178, GOES-G launch.

- 1) Goddard SFC - NASA News #86-49, Delta, rocket on an unbroken roll, April 17, 1986.
- Fact Sheet Collection* 2) Kennedy SC - NASA Facts #28-86, GOES-G, may 1, 1986.
- 3) Goddard SFC - NASA News #86-42, Search and REscue Experiment To Be Launch of NOAA's GOES-G, April 15, 1986.
- 4) Headquarters - NASA News #86-50, NASA to Launch New Weather Satellite for NOAA on May 1.
- Fact Sheet Collection* 5) Goddard SFC - NASA News #86-51, Fact Sheet, GOES-G.
- 11 11 6) Goddard SFC - NASA News #86-52, FAct Sheet, Delta 3914 Launch Vehicle Statistics, April 24, 1986.

ADDITION TO: Delta-178 (Prelaunch MOR #86-35 / Data Supplement #86-23)

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For Release:

April 17, 1986

RELEASE NO: 86-49

DELTA, ROCKET ON AN UNBROKEN ROLL

When the McDonnell Douglas-built Delta launch vehicle streaks into space from Cape Canaveral Air Force Station, FL not earlier than May 1, 1986 it will be stretching for an unbroken string of 44 successful launches started September 13, 1977.

With more than 25 years and 166 successful launches under its "belt", the Delta -- managed for NASA's Office of Space Transportation Operations by the Goddard Space Flight Center, Greenbelt, Maryland -- has a success rate of 94 percent, one of the best in the launch business.

The Delta's prime payload for the May 1 launch will be the National Oceanic and Atmospheric Administration's Geostationary Observational Environmental Satellite-G (GOES-G). Once in its 75 degrees west longitude orbit over Colombia, South America, the GOES-G will become GOES-East and begin its mission of weather reporting, investigating particle emissions from the Sun and studying the effects of solar activity on Earth's telecommunications systems.

The most recent mission for Delta was at Cape Canaveral Air Force Station, FL on November 14, 1984 when the rocket lifted the North Atlantic Treaty Organization III-D (NATO III-D) communications satellite into geosynchronous orbit.

(-more-)

The Delta success story began August 12, 1960, when a Delta (DM-19) boosted ECHO-1A -- the communications Earth satellite used for passive communications and air density experiments -- into a 1600 kilometer (994 mile) circular orbit.

The heaviest lifting job to date for the Delta was the 5,105 pound (2316 kg) Solar Maximum Mission (Solar Max) satellite -- for observing solar phenomena-- which a Delta 3910 launched February 14, 1980 into a circular orbit at an altitude of 357 statute miles (574 km).

(-end-)

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For Release:

Release No. 86-42

Noon, April 15, 1986

SEARCH AND RESCUE EXPERIMENT
TO BE LAUNCHED ON NOAA'S GOES-G

An experiment designed to speed the response time of COSPAS-SARSAT the international satellite search and rescue services will be flown on the National Oceanic and Atmospheric Administration's GOES-G spacecraft, scheduled for launch from Florida no earlier than May 1.

The experiment marks the first time search and rescue equipment will be flown on a spacecraft in geosynchronous orbit, according to officials at NASA's Goddard Space Flight Center, Greenbelt, Md., who are conducting the test. NASA will launch the spacecraft for NOAA from the Cape Canaveral Air Force Station launch complex. The launch window on May 1 runs from 6:18 P.M. to 7:21 P.M. EDT.

The NASA experiment, being conducted in coordination with Canada, France, Norway and the Soviet Union, will augment a satellite-aided search and rescue system that, since it began operating in September 1982, has been instrumental in saving more than 524 lives.

That system uses low-flying satellites, currently three from the Soviet Union and one from the United States, to pick up distress signals and relay them to rescue forces on the ground.

Those low-Earth satellites, in coordination with sophisticated equipment at ground stations in Canada, France, Great Britain, Norway, the Soviet Union and the United States, can detect and locate the site of a downed aircraft or a ship in distress. The spacecraft picks up the distress signal and relays it to the ground, where ground controllers and their equipment pinpoint the location, usually to within 5 or 10 miles (8-16 kilometers).

The receiver on the GOES (Geostationary Observational Environmental Satellite) will not assist in the location of a distress signal specifically. However, it will pick up distress signals and relay them to Earth, where rescue forces will be alerted so they can check out the location with low-flying polar-orbiting satellites. The Soviet spacecraft fly at an altitude of approximately 620 miles, (1000 kilometers) and the U.S. satellite is at 525 miles (850 kilometers).

The low-flying satellite's signals only can be picked up when the satellite is on a direct line of sight with a ground station and, because of the small number of ground stations distress signal might not be relayed from the low-Earth satellite for several hours. A signal repeater aboard GOES-G is expected to cut the time lag.

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The low-flying satellites are equipped with 121.5 and 406 Megahertz (MHz) receivers. The GOES-G receiver, however, will monitor only 406 MHz, a frequency coming into wider use. The 406 system also will fly on GOES-H, scheduled for launch later in the year.

The 406 transmitters are more sophisticated than the 121.5 ones. The 406 transmitters send out specific information about the plane's or ship's identity, its home airport or home port and, in some cases, the nature of the distress. As a result, even though the location cannot be determined from a satellite in geosynchronous orbit, the information received and then returned to Earth will greatly benefit ground rescue forces, alerting them to look for a distress signal. It also will act as a check to help reduce false alarms, which occur in more than 90 percent of the distress cases.

GOES-G, a satellite whose prime function is weather watching including hurricane and other severe storms, will become GOES East in orbit, where it will be located at 75 degrees west longitude (Colombia, South America). GOES-H, when it is launched, will be located at 135 degrees west longitude, over the Pacific southeast of Hawaii. Both will be over the Equator.

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NASA News

IFG #23A

National Aeronautics and
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John F. Kennedy Space Center

Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

James F. Kukowski
Headquarters, Washington, D.C.
(Phone: 202/453-1548)

Immediate

RELEASE NO: 86-50

NASA TO LAUNCH NEW WEATHER SATELLITE FOR NOAA ON MAY 1

The seventh Geostationary Environmental Satellite (GOES-G) will be launched aboard a Delta launch vehicle from NASA Launch Complex 17 at Cape Canaveral Air Force Station, Fla., no earlier than May 1, 1986.

The new meteorological satellite (GOES-7 in orbit), owned by the National Oceanic and Atmospheric Administration (NOAA), will be placed into geosynchronous orbit at 75 degrees west longitude. It will be designated GOES East and provide meteorological coverage over the eastern United States when it becomes operational about June 1.

A twin satellite, GOES-6, is presently in geostationary orbit and providing national service for the United States from 110 degrees west longitude. When GOES-7 becomes operational, GOES-6 will be moved to 135 degrees W. longitude and be designated GOES West to provide service for the western United States.

The advanced weather satellite weighs 1,851 pounds and requires the use of a "heavy duty" Delta 3914 launch vehicle. Launch is scheduled for 6:18 p.m. EDT.

Initially, the spacecraft will be placed into an elliptical orbit by the Delta rocket with an apogee of 30,225 miles and a perigee of 144 mi. On the fourth orbit of the Earth, a solid rocket motor attached to the GOES spacecraft will be fired by controllers located at the Goddard Space Flight Center, Greenbelt, Md., to transfer the satellite to a near-circular "drift" orbit. The satellite will then drift to its preassigned position over the equator. The satellite's onboard reaction control system motors will be fired to "tweak" the satellite into its desired geosynchronous position at 75 degrees W. longitude.

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GOES-G is one of five advanced GOES satellites built by Hughes Space and Communications Group, El Segundo, Calif.

The geosynchronous series of meteorological satellites has consisted of two Synchronous Meteorological Satellites (SMS); three virtually similar satellites designated GOES 1, 2 and 3; and the improved GOES 4, 5 and 6.

NOAA makes the weather data available to any nation, agency or organization willing to establish the necessary ground station to receive it. The data distribution is arranged so that any ground station can receive what it needs to prepare a local/regional weather forecast with descriptions of cloud cover, conditions over adjacent waters or mountains and other pertinent information.

The improved GOES carries two sophisticated telescope systems in a single unit called the Visible and Infrared Spin-Scan Radiometer Atmospheric Sounder (VAS). The VAS provides visible light and infrared imaging of the Earth's surface and vertical temperature-moisture content cross sections of the atmosphere. From the data, the altitude, temperature and water content of clouds can be determined and a three-dimensional picture of cloud distribution can be drawn. The results of the imaging system can be seen daily on television stations and in newspapers throughout the world.

Another major system aboard GOES is the Space Environment Monitor. It is used to monitor particle emission from the sun to assist in studying the effects of solar activity on Earth's telecommunications systems. The system serves as a "watchman" in space to warn of potential disruptions in radio communications.

A NASA experiment on board GOES-G will improve the Search and Rescue Satellite-Aided Tracking (SARSAT) experiment capability. Transponders aboard the satellite will relay data from search and rescue beacons and supplement SARSAT systems on U.S. polar orbiting weather satellites and on the Soviet Union's COSPAS system. The United States, Canada, France and the U.S.S.R. cooperate in the SARSAT/COSPAS experiment.

GOES satellites provide invaluable monitoring of dangerous weather phenomena. Cloud masses associated with typhoons, hurricanes, heavy rain storms, snow and blizzards can be tracked hourly while providing information on the storm's location and probable path. A unique example of GOES capabilities was the tracking of ash clouds from Mt. St. Helens when it erupted in 1980.

GOES spacecraft also can collect data from a system of up to 10,000 Earth platforms sensing the local environment at widely dispersed points. This includes data from river and rain gauges, seismometers, tide gauges, buoys, ships and automatic weather stations.

GOES-G is 85 inches in diameter, with an overall height of 143 in. After it jettisons the solid rocket booster motor case, GOES-G will have a mass of about 875 lb. with 223 lb. of hydrazine operating propellant. Small thrusters, powered by the hydrazine, provide orbital movement and attitude control for the life of the spacecraft.

GOES-G receives power from two nickel-cadmium batteries which are supplied electrical power by solar cells located on its spinning main body.

Goddard Space Flight Center provides project management for the GOES program. NOAA reimburses NASA for the cost of the Delta launch vehicle and for launch services. Launch operations are conducted by a NASA/contractor launch team under the direction of NASA's John F. Kennedy Space Center.

Launch will be conducted from Pad A, one of two pads at Delta Complex 17. It will be the first Delta launch from Complex 17 since Nov. 13, 1984.

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April 25, 1986

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