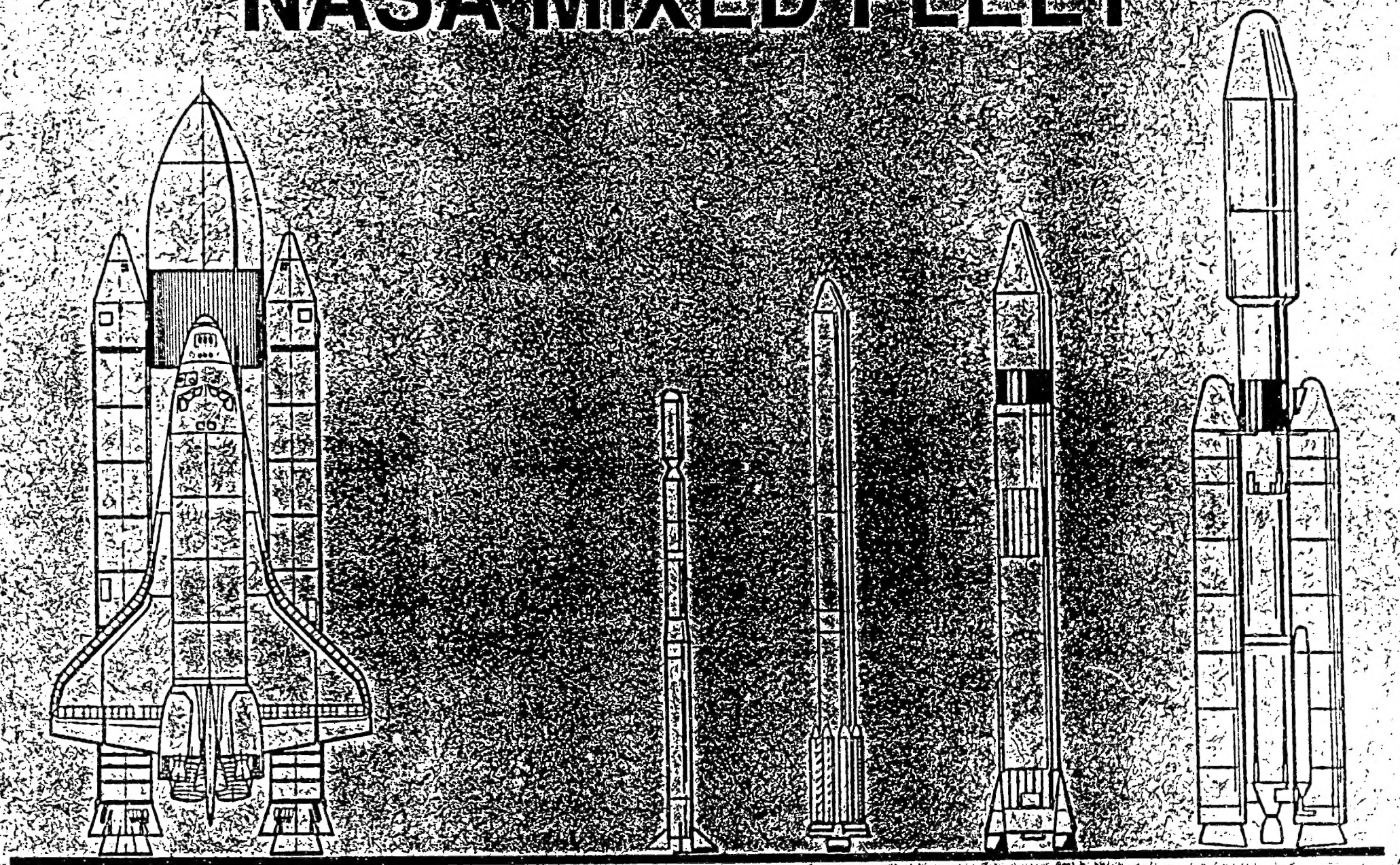
PAYLOAD FLIGHT ASSIGNMENTS
NASA MIXED FLEET



NASA

National Aeronautics and
Space Administration
Office of Space Flight
Washington, D.C.

AUGUST 1988

PAYLOAD FLIGHT ASSIGNMENTS

NASA MIXED FLEET

AUGUST 1988

SUBMITTED BY

JERRY L. FITTS
DIRECTOR, TRANSPORTATION SERVICES OFFICE

APPROVED BY

RICHARD H. TRULY
ASSOCIATE ADMINISTRATOR FOR SPACE FLIGHT

TABLE OF CONTENTS

MIXED FLEET MANIFEST NOTES

- THIS MANIFEST INCLUDES PAYLOAD ASSIGNMENTS FOR SHUTTLE AND EXPENDABLE LAUNCH VEHICLES (ELV).

- THE MANIFEST IS FOR PLANNING PURPOSES ONLY. FIRM SHUTTLE PAYLOAD ASSIGNMENTS ARE MADE DURING THE FORMAL INTEGRATION PROCESS AT APPROXIMATELY 19 MONTHS PRIOR TO LAUNCH.

- IN ORDER TO IDENTIFY REQUIREMENTS, SPACE SHUTTLE AND ELV FLIGHTS ARE PROJECTED THROUGH FISCAL 1993. THROUGHOUT THIS DOCUMENT, PENDING REQUIREMENTS ARE NOTED "FOR NASA PLANNING PURPOSES".

- SHUTTLE SECONDARY PAYLOADS ARE SHOWN ONLY FOR SHUTTLE FLIGHTS ON WHICH THEY ARE FORMALLY ASSIGNED.

- IT IS INTENDED THAT THIS MANIFEST WILL BE UPDATED ON A QUARTERLY BASIS.

MIXED FLEET MANIFEST NOTES

(CONTINUED)

- THE MANIFEST SUPPORTS THE COMMERCIAL SPACE INITIATIVE ANNOUNCED WITH THE NATIONAL SPACE POLICY, FEBRUARY 11, 1988, AS FOLLOWS:

  - THE INDUSTRIAL SPACE FACILITY (ISF) IS MANIFESTED AS A FULLY REIMBURSABLE PAYLOAD UNDER A PRE-EXISTING AGREEMENT.

  - THE SPACEHAB IS MANIFESTED CONSISTENT WITH THE NASA/SPACEHAB AGREEMENT SIGNED IN AUGUST 1988.

  - THE COMMERCIALLY DEVELOPED SPACE FACILITY (CDSF) WILL BE MANIFESTED WHEN THE GOVERNMENT'S LEASE ARRANGEMENTS ARE COMPLETE.

  ALL OF THE ABOVE ARE SUBJECT TO FURTHER NEGOTIATIONS WITH THE APPOPRIATE COMMERCIAL ORGANIZATIONS AND SPECIFIC MANIFESTING DECISIONS WILL DEPEND ON COMMERCIAL CUSTOMER DEMAND.

- FOR FURTHER INFORMATION PLEASE CONTACT:

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SECTION 2.0

SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS

(FOR PLANNING PURPOSES ONLY)

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS*	CREW ASSIGNMENT
26	88 SEPT DISCOVERY	28.5 160	5 4	TDRS-C	IUS	ADSF-2 PVTOS-2 IRCFE SE-82-04 PCG-II-I-1 IEF-2 HME-1 ARC-2 MLE-1 ELRAD SE-82-05	C:F. H. HAUCK (CAPT., USN) P:R. O. COVEY (LT. COL., USAF) MS:J. M. LOUNGE (M.S-ASTROPHYSICS) MS:G. D. NELSON (PH.D.-ASTRONOMY) MS:DAVID C. HILMERS (MAJ., USMC)
27	88 11 17 ATLANTIS	XX X	5 X	DOD	UNIQUE 2 DSCS 3		C:R. L. GIBSON (CDR., USN) P:GUY S. GARDNER (LT COL, USAF) MS:R. M. MULLANE (COL., USAF) MS:JERRY L. ROSS (LT. COL, USAF) MS:W. M. SHEPHERD (CDR., USN)
29	89 2 18 DISCOVERY	28.5 160	5 5	TDRS-D	IUS	SHARE SE-83-09 PCG-III-1 PM-1 CHROMEX IMAX SE-82-08 SSBUV-1	C:CAPT. M. L. COATS (CAPT., USN) P:JOHN E. BLAHA (COL., USAF) MS:JAMES F. BUCHLI (COL., USMC) MS:R. C. SPRINGER (COL., USMC) MS:JAMES P. BAGIAN (M.D.)

* SECONDARY PAYLOADS ARE SHOWN ONLY FOR FLIGHTS ON WHICH THEY ARE FORMALLY ASSIGNED.

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	CREW ASSIGNMENT
30	89 4 28 ATLANTIS	28.9 160	5 4	MAGELLAN	IUS		C:DAVID M. WALKER (CAPT., USN) P:RONALD J. GRABE (COL., USAF) MS:NORMAN E. THAGARD (M.D.) MS:MARY L. CLEAVE (PH.D.) MS:MARK C. LEE (MAJ., USAF)
28	89 7 1 COLUMBIA	XX X	5 X	DOD	UNIQUE Magnum		C:BREWSTER H. SHAW (COL., USAF) P:R. N. RICHARDS (CDR., USN) MS:DAVID C. LEESTMA (CDR., USN) MS:J. C. ADAMSON (LT. COL., USA) MS:MARK N. BROWN (MAJ., USAF)
33	89 8 10 DISCOVERY	XX X	X X	DOD	UNIQUE		
34	89 10 12 ATLANTIS	34.3 160	5 4	GALILEO	IUS-2 STA		
32	89 11 13 COLUMBIA	28.5 190	5 5	SYNCOM IV-5 LDEF-1R	UNIQUE UNIQUE		
36	89 12 11 DISCOVERY	XX X	X X	DOD	UNIQUE		

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	CREW ASSIGNMENT
31	90 2 1 ATLANTIS	28.5 320 to 330	5 5	HST	UNIQUE		
35	90 3 1 COLUMBIA	28.5 190	7 9	ASTRO-1 BBXRT	IG+2 PAL TAPS		
37	90 4 5 DISCOVERY	28.5 243	5 4	GRO	UNIQUE		
38	90 5 10 ATLANTIS	XX X	X X	DOD	UNIQUE		
40	90 6 7 COLUMBIA	42.0 129	7 8	SLS-1	LM		
39	90 7 19 DISCOVERY	55.0 140	7 7	CIRRIS (DOD) IBSS (DOD) TEAL RUBY (DOD)	PALLET SPAS UNIQUE		
41	90 9 10 COLUMBIA	33.4 175	7 7	STARLAB (DOD)	LM+1 PAL		
42	90 10 5 ATLANTIS	28.5 160	5 4	ULYSSES	IUS/PAM		

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	CREW ASSIGNMENT
43	90 11 8 DISCOVERY	28.5 160	5 4	TDRS-E	IUS		
44	90 12 20 COLUMBIA	57.0 135	7 9	ATLAS-1	IG+2 PAL		
45	91 1 31 ATLANTIS	28.5 160	7 7	TSS-1 GPS-1	MPESS+PAL PAM-D2		
46	91 2 28 DISCOVERY	XX X	X X	DOD	UNIQUE		
47	91 4 11 COLUMBIA	28.5 160	7 9	IML-1	LM		
48	91 5 2 ATLANTIS	28.5 160	5 7	WAMDII GPS-2 EURECA-1L	UNIQUE PAM-D2 EURECA-A		
49	91 7 11 COLUMBIA	44.0 160	7 7	S/L-J	LM		
50	91 8 15 ATLANTIS	28.5 160	5 7	SPACEHAB-1 LAGEOS-2 INMARSAT-1	UNIQUE IRIS PAM-D2		

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	CREW ASSIGNMENT
51	91 9 26 DISCOVERY	57.0 291	5 5	UARS	UNIQUE		
52	91 12 2 COLUMBIA	44.0 160	7 9	S/L-D2	LM + USS		
53	91 12 23 DISCOVERY	28.5 190	7 7	ASTRO-2 EURECA-1R	IG+2 PAL EURECA-A		
54	92 2 27 OV105	57.0 160	7 7	SRL-1	PAL+MPESS		
55	92 3 30 COLUMBIA	28.5 160	7 9*	USML-1	LM+MPESS		
56	92 4 23 ATLANTIS	28.5 160	5 7	SHEAL-2 GEOSTAR-1 ORFEUS	UNIQUE+SP PAM-D2 SPAS		
57	92 5 14 DISCOVERY	28.5 160	5 7	ACTS USMP-1	TOS MSL+MPESS		
58	92 6 11 OV105	28.5 160	7 7	ATLAS-2 SATCOM	IG+PAL PAM-D2		
59	92 7 2 COLUMBIA	42.0 129	7 9*	SLS-2	LM		

* PLANS TO EXTEND BEYOND 9 DAYS

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	CREW ASSIGNMENT
60	92 7 30 ATLANTIS	28.5 160	5 5	ISF-1	UNIQUE		
61	92 8 20 DISCOVERY	XX X	X X	DOD	UNIQUE		
62	92 9 17 OV105	XX X	X X	DOD	UNIQUE		
63	92 10 8 COLUMBIA	28.5 160	7 9*	IML-2	LM		
64	92 10 29 ATLANTIS	28.5 160	5 7	SPACEHAB-2 GEOSTAR-2	UNIQUE PAM-D2		
65	92 11 19 DISCOVERY	28.5 160	5 5	TDRS-F	IUS		
66	92 12 17 OV105	XX X	X X	DOD	UNIQUE		
67	93 1 14 COLUMBIA	28.5 160	7 9*	ATLAS-3 CRISTA	IG+PAL SPAS		
68	93 2 11 ATLANTIS	28.5 160	5 5	ISF-2	UNIQUE		

* PLANS TO EXTEND BEYOND 9 DAYS

*** SHUTTLE PAYLOAD FLIGHT ASSIGNMENTS ***
AUGUST 1988

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	CREW ASSIGNMENT
69	93 3 18 DISCOVERY	57.0 160	7 7	SRL-2	PAL+MPESS		
70	93 4 8 OV105	28.5 160	5 7	EURECA-2L USMP-2	EURECA-A MSL+MPESS		
71	93 5 13 ATLANTIS	XX X	X X	DOD	UNIQUE		
72	93 6 17 DISCOVERY	28.5 160	5 5	SFU-RETR. GEOSTAR-3	UNIQUE PAM-D2		
73	93 7 15 COLUMBIA	28.5 160	7 9*	USML-2	LM+MPESS		
74	93 8 5 OV105	28.5 160	5 7	SPACEHAB-3 AAFE	UNIQUE 2 PALLETS		
75	93 9 9 ATLANTIS	28.5 160	5 7	INMARSAT-2 GP-B1	PAM-D2 PALLET		

* PLANS TO EXTEND BEYOND 9 DAYS

SECTION 3.0

ELV PAYLOAD FLIGHT ASSIGNMENTS

(FOR PLANNING PURPOSES ONLY)

*** ELV PAYLOAD FLIGHT ASSIGNMENTS ***
AUG 1988 MANIFEST

DATE YR MO	CLASS	L A U N C H V E H I C L E TYPE	INCL	PAYLOAD ORBIT	LAUNCH SITE	PAYLOAD
88 09*	MEDIUM	ATLAS 63E	98.7	SS	WSMC	NOAA-H
89 05	MEDIUM	DELTA 184	99.0	SS	WSMC	COBE
89 05	MEDIUM	ATLAS 50E	98.7	SS	WSMC	NOAA-D
89 09*	INTERMEDIATE	ATLAS CENTAUR 68	28.5	GSO	ESMC	FLTSATCOM-F8
90 02	MEDIUM	DELTA	57.0	LEO	ESMC	ROSAT
90 02	SMALL	SCOUT S-218C	90.0	LEO	WSMC	TRANSIT-27
90 06	INTERMEDIATE	ATLAS CENTAUR	18.0	GTO	ESMC	CRRES
90 07	INTERMEDIATE	ATLAS CENTAUR	28.5	GSO	ESMC	GOES-I
90 08	SMALL	SCOUT S-210C	90.0	LEO	WSMC	TRANSIT-28
90 09	MEDIUM	ATLAS 34E	98.7	SS	WSMC	NOAA-I
91 05	LARGE	TITAN IV IUS	28.5	EO	ESMC	PLANETARY ALT.
91 06	SMALL	TBD	TBD	LEO	TBD	SMALL EXPL-01**
91 08	MEDIUM	DELTA	28.5	LEO	ESMC	EUVE

* Not Before This Date
** For NASA Planning Purposes

*** ELV PAYLOAD FLIGHT ASSIGNMENTS ***
AUG 1988 MANIFEST

DATE YR MO	CLASS	L A U N C H V E H I C L E TYPE	INCL	PAYLOAD ORBIT	LAUNCH SITE	PAYLOAD
91 09	SMALL	TBD	TBD	LEO	TBD	SMALL EXPL-02**
91 10	SMALL	SCOUT S-215C	TBD	LEO	SMR	CRRES
91 11	INTERMEDIATE	ATLAS CENTAUR	28.5	GSO	ESMC	GOES-J
91 12	MEDIUM	ATLAS 11E	98.7	SS	WSMC	NOAA-J
92 01	SMALL	TBD	TBD	LEO	TBD	SMALL EXPL-03**
92 05	INTERMEDIATE	ATLAS CENTAUR	28.5	GSO	ESMC	GOES-K
92 06	SMALL	TBD	TBD	LEO	TBD	SMALL EXPL-04**
92 07	MEDIUM	TBD	28.7	HE	ESMC	GEOTAIL
92 09*	INTERMEDIATE	TITAN III	28.5	EO	ESMC	MARS OBSERVER
92 12	MEDIUM	TBD	28.7	HE	ESMC	WIND
93 01	SMALL	TBD	TBD	LEO	TBD	SMALL EXPL-05**
93 03	MEDIUM**	TBD**	28.7	GSO	ESMC	MSAT**
93 04	MEDIUM	TITAN II**	98.7	SS	WSMC	NOAA-K
93 06	MEDIUM	TBD	90.0	HE	WSMC	POLAR

* Not Before This Date
** For NASA Planning Purposes

*** ELV PAYLOAD FLIGHT ASSIGNMENTS ***
AUG 1988 MANIFEST

DATE YR MO	CLASS	LAUNCH VEHICLE TYPE	INCL	PAYLOAD ORBIT	LAUNCH SITE	PAYLOAD
93 06	SMALL	TBD	TBD	LEO	TBD	SMALL EXPL-06**

** For NASA Planning Purposes

SECTION 4.0

PREVIOUS FLIGHTS

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
1	81 4 12 COLUMBIA	40.3 172	2 2	DFI	DFI PLT	OEX	C: JOHN W. YOUNG (USN, RET.) P: ROBERT L. CRIPPEN (CAPT, USN)
2	81 11 12 COLUMBIA	38.0 140	2 2	OSTA-1 DFI	PALLET DFI PLT	OEX IECM	C: JOE H. ENGLE (COL., USAF) P: RICHARD H. TRULY (CAPT., USN)
3	82 3 22 COLUMBIA	30.0 130	2 8	OSS-1 DFI	PALLET DFI PLT	IECM OEX SSIP(1) GAS TEST MLR EEVT	C: JACK R. LOUSMA (COL., USMC) P: C. G. FULLERTON (COL., USAF)
4	82 6 27 COLUMBIA	28.5 162	2 7	DOD 82-1 DFI	DFI PLT	OEX IECM MLR CFES NOSL SSIP(2) GAS(1)	C: T. K. MATTINGLY (CAPT., USN) P: H. W. HARTSFIELD (USAF, RET.)
5	82 11 11 COLUMBIA	28.5 160	4 5	SBS-C TELESAT-E	PAM-D PAM-D	GLOW SSIP(3) GAS(1)	C: VANCE D. BRAND (CIVILIAN) P: R. F. OVERMYER (COL., USMC) MS: JOSEPH ALLEN (PH.D.-PHYSICS) MS: W. B. LENOIR (PH.D.-SCIENCE)

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
1	81 4 12 COLUMBIA	40.3 172	2 2	DFI	DFI PLT	OEX	C: JOHN W. YOUNG (USN, RET.) P: ROBERT L. CRIPPEN (CAPT, USN)
2	81 11 12 COLUMBIA	38.0 140	2 2	OSTA-1 DFI	PALLET DFI PLT	OEX IECM	C: JOE H. ENGLE (COL., USAF) P: RICHARD H. TRULY (CAPT., USN)
3	82 3 22 COLUMBIA	30.0 130	2 8	OSS-1 DFI	PALLET DFI PLT	IECM OEX SSIP(1) GAS TEST MLR EEVT	C: JACK R. LOUSMA (COL., USMC) P: C. G. FULLERTON (COL., USAF)
4	82 6 27 COLUMBIA	28.5 162	2 7	DOD 82-1 DFI	DFI PLT	OEX IECM MLR CFES NOSL SSIP(2) GAS(1)	C: T. K. MATTINGLY (CAPT., USN) P: H. W. HARTSFIELD (USAF, RET.)
5	82 11 11 COLUMBIA	28.5 160	4 5	SBS-C TELESAT-E	PAM-D PAM-D	GLOW SSIP(3) GAS(1)	C: VANCE D. BRAND (CIVILIAN) P: R. F. OVERMYER (COL., USMC) MS: JOSEPH ALLEN (PH.D.-PHYSICS) MS: W. B. LENOIR (PH.D.-SCIENCE)

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
6	83 4 4 CHALLENGER	28.5 150	4 5	TDRS-A	IUS/2	CFES MLR,NOSL GAS(3)	C: P. J. WEITZ (CAPT, USN, RET.) P: KAROL J. BOBKO (COL., USAF) MS: D. PETERSON (COL, USAF, RET) MS: F. STOREY MUSGRAVE (M.D.)
7	83 6 18 CHALLENGER	28.5 160	5 6	SPAS-01 OSTA-2 TELESAT-F PALAPA-B1	 MPESS PAM-D PAM-D	CFES MLR GAS(7)	C: ROBERT L. CRIPPEN (CAPT, USN) P: F. H. HAUCK (CAPT., USN) MS: JOHN M. FABIAN (COL., USAF) MS: SALLY K. RIDE (PH.D.-PHYSICS) MS: NORMAN E. THAGARD (M.D.)
8	83 8 30 CHALLENGER	28.5 160	5 6	PDRS/PFTA OIM INSAT 1-B	 PAM-D	CFES RME GAS(4) SSIP(1)	C: RICHARD H. TRULY (CAPT., USN) P: D. C. BRANDENSTEIN (CDR, USN) MS: D. A. GARDNER (LT. CDR., USN) MS: G. S. BLUFORD (MAJ., USAF) MS: WILLIAM E. THORNTON (M.D.)
9	83 11 28 COLUMBIA	57.0 135	6 10	SPACELAB 1	LM+1P		C: JOHN W. YOUNG (USN, RET.) P: BREWSTER H. SHAW (MAJ., USAF) MS: OWEN K. GARRIOTT (PH.D.) MS: ROBERT A. PARKER (PH.D.) PS: ULF MERBOLD, ESA (PHYSICIST) PS: B. K. LICHTENBERG, MIT (PH.D)

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
10 41-B	84 2 3 CHALLENGER	28.5 165	5 8	SPAS-01A PALAPA B-2 WESTAR-6	 PAM-D PAM-D	ACES,IEF C-360c+b RME,MLR GAS(5) SSIP(1) IRT	C: VANCE D. BRAND (CIVILIAN) P: R. L. GIBSON (LT. CDR., USN) MS: BRUCE MCCANDLESS (CDR., USN) MS: ROBERT L. STEWART (MAJ., USA) MS: RONALD E. MCNAIR (PH.D.)
11 41-C	84 4 6 CHALLENGER	28.5 250	5 7	LDEF-1 SMM REPAIR	 FSS	RME,IMAX C-360b SSIP(1)	C: ROBERT L. CRIPPEN (CAPT, USN) P: FRANCIS R. SCOBEE (USAF, RET) MS: GEORGE D. NELSON (PH.D.) MS: TERRY J. HART (M.S.-ELEC ENG) MS: JAMES D. VAN HOFTEN (PH.D.)
12 41-D	84 8 30 DISCOVERY	28.5 160	6 6	OAST-1 SBS-D TELSTAR 3-C SYNCOM IV-2	MPESS PAM-D PAM-D	CFES III IMAX RME SSIP(1) CLOUDS	C: H. W. HARTSFIELD (USAF, RET.) P: M. L. COATS (LT. CDR., USN) MS: R. A. MULLANE (MAJ., USAF) MS: STEVEN A. HAWLEY (PH.D.) MS: JUDITH A. RESNIK (PH.D.) PS: C. WALKER (MCDONNELL DOUGLAS)
13 41-G	84 10 5 CHALLENGER	57.0 190	7 8	OSTA-3 ERBS LFC/ORS	PALLET MPESS	IMAX RME GAS(8) TLD APE CANEX	C: ROBERT L. CRIPPEN (CAPT, USN) P: JON A. MCBRIDE (CDR., USN) MS: KATHRYN D. SULLIVAN (PH.D.) MS: SALLY K. RIDE (PH.D.-PHYSICS) MS: D. C. LEESTMA (LT. CDR., USN) PS: MARC GARNEAU (NRCC, CANADA) PS: P. SCULLY-POWER (NAVY CIVIL.)

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
14 51-A	84 11 8 DISCOVERY	28.5 160	5 8	HS-376 RETV(2) TELESAT-H SYNCOM IV-1	2 PALLET PAM-D	DMOS RME	C: F. H. HAUCK (CAPT., USN) P: DAVID M. WALKER (CDR., USN) MS: ANNA L. FISHER (M.D.) MS: D. A. GARDNER (LT. CDR., USN) MS: JOSEPH P. ALLEN (PH.D.)
15 51-C	85 1 24 DISCOVERY	X X	5 X	DOD			C: T. K. MATTINGLY (CAPT., USN) P: L. J. SHRIVER (LT. COL, USAF) MS: J. F. BUCHLI (LT. COL., USMC) MS: E. S. ONIZUKA (MAJ., USAF) MS: GARY E. PAYTON (MAJ., USAF)
16 51-D	85 4 12 DISCOVERY	28.5 250	7 5	TELESAT-I SYNCOM IV-3	PAM-D	CFES III AFE PPE/SAS SSIP(2) GAS(2)	C: KAROL J. BOBKO (COL., USAF) P: DONALD E. WILLIAMS (CDR, USN) MS: M. RHEA SEDDON (M.D.) MS: JEFFREY A. HOFFMAN (PH.D.) MS: S. DAVID GRIGGS (CAPT., USNR) PS: C. WALKER (MCDONNELL DOUGLAS) PS: E. JAKE GARN (U.S. SENATE)
17 51-B	85 4 29 CHALLENGER	57.0 190	7 7	SPACELAB 3	LM+MPESS	GAS(2)	C: R. F. OVERMYER (COL., USMC) P: F. D. GREGORY (LT. COL, USAF) MS: DON L. LIND (PH.D.) MS: NORMAN E. THAGARD (M.D.) MS: WILLIAM E. THORNTON (M.D.) PS: L. VAN DEN BERG (EG&G CORP.) PS: T. WANG (JET PROPULSION LAB.)

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
18 51-G	85 6 17 DISCOVERY	28.5 190	7 7	SPARTAN-1 MORELOS-A ARABSAT-1B TELSTAR 3-D	MPESS PAM-D PAM-D PAM-D	FEE FPE ADSF HPTE GAS(6)	C: D. BRANDENSTEIN (CAPT., USN) P: J. O. CREIGHTON (CDR., USN) MS: SHANNON W. LUCID (PH.D.) MS: S. R. NAGEL (LT. COL., USAF) MS: JOHN M. FABIAN (COL., USAF) PS: SULTAN S. AL-SAUD (ARABSAT) PS: PATRICK BAUDRY (FRANCE)
19 51-F	85 7 29 CHALLENGER	50.0 207	7 7	SPACELAB 2	IG+3P	SAREX STTP CBDE	C: C. G. FULLERTON (COL., USAF) P: ROY D. BRIDGES (COL., USAF) MS: F. STORY MUSGRAVE (M.D.) MS: ANTHONY W. ENGLAND (PH.D.) MS: KARL G. HENIZE (PH.D.) PS: LOREN W. ACTON (LOCKHEED) PS: J-D. BARTOE (NAVY CIVILIAN)
20 51-I	85 8 27 DISCOVERY	28.5 190	5 8	AUSSAT-1 ASC-1 SYNCOM IV-4	PAM-D PAM-D	PVTOS SYNCOM- SALVAGE	C: JOE H. ENGLE (COL., USAF) P: R. O. COVEY (LT. COL., USAF) MS: JAMES VAN HOFTEN (PH.D.) MS: JOHN M. LOUNGE (M.S.) MS: WILLIAM F. FISHER (M.D.)
21 51-J	85 10 3 ATLANTIS	X X	5 X	DOD			C: KAROL BOBKO (COL., USAF) P: R. J. GRABE (LT. COL., USAF) MS: ROBERT STEWART (COL., USA) MS: DAVID HILMERS (MAJ., USMC) PS: WILLIAM A. PALES (MAJ., USAF)

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
22 61-A	85 10 30 CHALLENGER	57.0 175	8 7	SPACELAB D-1	LM	GLOMR	C: H. W. HARTSFIELD (USAF, RET.) P: STEVEN R. NAGEL (MAJ., USAF) MS: J. F. BUCHLI (LT. COL., USMC) MS: G. S. BLUFORD (LT. COL, USAF) MS: BONNIE J. DUNBAR (PH.D.) PS: R. FURRER (DFVLR) (GERMANY) PS: E MESSERSCHMID (DFVLR)(GERMAN PS: W. OCKELS (DFVLR) (DUTCH)
23 61-B	85 11 26 ATLANTIS	28.5 190	7 7	EASE/ACCESS MORELOS-B SATCOM KU-2 AUSSAT-2	MPESS PAM-D PAM-D2 PAM-D	GAS(1) CFES IMAX DMOS MPSE	C: B. H. SHAW (LT. COL., USAF) P: B. D. O'CONNOR (LT COL, USMC) MS: MARY L. CLEAVE (PH.D.) MS: S. C. SPRING (LT. COL., USA) MS: JERRY L. ROSS (MAJ., USAF) PS: RUDOLFO NERI VELA (MORELOS) PS: C. WALKER (MCDONNELL DOUGLAS)
24 61-C	86 1 12 COLUMBIA	28.5 175	7 5	MSL-2 SATCOM KU-1 GAS BRIDGE	MPESS PAM-D2	HH-G1 IR-IE HPCG IBSE CHAMP SSIP(3) GAS(13)	C: R. L. GIBSON (LT. CDR., USN) P: C. F. BOLDEN (MAJ., USMC) MS: F. R. CHANG-DIAZ (PH.D.) MS: STEVEN A. HAWLEY (PH.D.) MS: GEORGE D. NELSON (PH.D.) PS: ROBERT CENKER (RCA) PS: BILL NELSON (U.S. CONGRESSMAN

*** PREVIOUS SHUTTLE FLIGHTS ***

FLT	DATE ORBITER	INCL ALT	CRW DUR	PAYLOAD	CARRIER	SECONDARY PAYLOADS	CREW ASSIGNMENT
25 51-L	86 1 28 CHALLENGER	- -	7 -	SPARTAN-HALLEY TDRS-B	MPESS IUS/2	TIS FDE CHAMP RME SSIP(3)	C: FRANCIS R. SCOBEE (USAF, RET) P: MICHAEL J. SMITH (CDR., USN) MS: JUDITH A. RESNIK (PH.D.) MS: ELLISON ONIZUKA (MAJ., USAF) MS: RONALD E. MCNAIR (PH.D.) PS: GREGORY JARVIS (HUGHES) SFP: CHRISTA MCAULIFFE (TEACHER)

PREVIOUS SCOUT LAUNCH VEHICLE FLIGHTS

PROGRAM INITIATION DATE: 1959
LAUNCHES TO DATE: 112

FIRST FLIGHT: 1960
LAUNCH VEHICLE SUCCESSES: 98

LAST 20 FLIGHTS

LAUNCH DATE	LAUNCH VEHICLE	SPACECRAFT	FINAL PAYLOAD ORBIT ACHIEVED	NOTES
DEC 5, 1975	S-196	DAD		FAILURE
MAY 22, 1976	S-179	AIR FORCE	LEO	SUCCESS
JUN 18, 1976	S-193	GP-A	LEO	SUCCESS
SEP 1, 1976	S-197	NAVY	LEO	SUCCESS
OCT 27, 1977	S-200	NAVY	LEO	SUCCESS
APR 26, 1978	S-201	HCMM	LEO	SUCCESS
FEB 18, 1979	S-202	SAGE	LEO	SUCCESS
JUN 2, 1979	S-198	UK-6	LEO	SUCCESS
OCT 30, 1979	S-203	MAGSAT	LEO	SUCCESS
MAY 14, 1981	S-192	NOVA I	LEO	SUCCESS
JUN 27, 1983	S-205	HILAT	LEO	SUCCESS
OCT 11, 1984	S-208	NOVA-III	LEO	SUCCESS
AUG 2, 1985	S-209	SOOS-I	LEO	SUCCESS
DEC 12, 1985	S-207	AFITV	LEO	SUCCESS
NOV 13, 1986	S-199	AF POLAR BEAR	LEO	SUCCESS
SEP 16, 1987	S-209	SOOS-2	LEO	SUCCESS
MAR 25, 1988	S-206	SAN MARCO-DL	LEO	SUCCESS
APR 25, 1988	S-211	SOOS-III	LEO	SUCCESS
JUN 15, 1988	S-213	NOVA-II	LEO	SUCCESS
AUG 25, 1988	S-214	SOOS-IV	LEO	SUCCESS

PREVIOUS DELTA LAUNCH VEHICLE FLIGHTS

PROGRAM INITIATION DATE: 1959
LAUNCHES TO DATE: 182

FIRST FLIGHT: 1960
LAUNCH VEHICLE SUCCESSES: 170

LAST 20 FLIGHTS

LAUNCH DATE	LAUNCH VEHICLE	SPACECRAFT	FINAL PAYLOAD ORBIT ACHIEVED	NOTES
JUN 9, 1982	162	WESTAR-V	GSO	SUCCESS
JUL 16, 1982	163	LANDSAT-D	SS	SUCCESS
AUG 26, 1982	164	TELESAT-F	GSO	SUCCESS
OCT 28, 1982	165	RCA-E	GSO	SUCCESS
JAN 26, 1983	166	IRAS	SS	SUCCESS
APR 11, 1983	167	RCA-F	GSO	SUCCESS
APR 28, 1983	168	GOES-F	GSO	SUCCESS
MAY 26, 1983	169	EXOSAT	HE	SUCCESS
JUN 28, 1983	170	GALAXY-A	GSO	SUCCESS
JUL 28, 1983	171	TELSTAR-3A	GSO	SUCCESS
SEP 8, 1983	172	RCA-6	GSO	SUCCESS
SEP 22, 1983	173	GALAXY-B	GSO	SUCCESS
MAR 1, 1984	174	LANDSAT-D PRIME	SS	SUCCESS
AUG 16, 1984	175	AMPTE	HE	SUCCESS
SEP 21, 1984	176	GALAXY-C	GSO	SUCCESS
NOV 14, 1984	177	NATO-3D	GSO	SUCCESS
MAY 3, 1986	178	GOES-G		FAILURE
SEP 5, 1986	180	DOD-1	LEO	SUCCESS
FEB 26, 1987	179	GOES-H	GSO	SUCCESS
MAR 20, 1987	182	PALAPA B2P	GSO	SUCCESS
FEB 8, 1988	181	DOD-2	LEO	SUCCESS

PREVIOUS ATLAS CENTAUR VEHICLE FLIGHTS

PROGRAM INITIATION DATE: 1958
LAUNCHES TO DATE: 66

FIRST FLIGHT: MAY 8, 1962
LAUNCH VEHICLE SUCCESSES: 56

LAST 20 FLIGHTS

LAUNCH DATE	LAUNCH VEHICLE	SPACECRAFT	FINAL PAYLOAD ORBIT ACHIEVED	NOTES
AUG 8,1978	AC-51	PIONEER VENUS-2	HELIO	SUCCESS
NOV 13,1978	AC-52	HEAO B	LEO	SUCCESS
MAY 4, 1979	AC-47	FLTSATCOM-2	GSO	SUCCESS
SEP 20, 1979	AC-53	HEAO 3	LEO	SUCCESS
JAN 17, 1980	AC-49	FLTSATCOM-3	GSO	SUCCESS
OCT 30, 1980	AC-57	FLTSATCOM-4	GSO	SUCCESS
DEC 6, 1980	AC-54	INTELSAT V	GSO	SUCCESS
FEB 21, 1981	AC-42	COMSTAR D-4	GSO	SUCCESS
MAY 23, 1981	AC-56	INTELSAT V	GSO	SUCCESS
AUG 6, 1981	AC-59	FLTSATCOM-5	GSO	FAILURE
DEC 15, 1981	AC-55	INTELSAT V	GSO	SUCCESS
MAR 4, 1982	AC-58	INTELSAT V	GSO	SUCCESS
SEP 28, 1982	AC-60	INTELSAT V	GSO	SUCCESS
MAY 19, 1983	AC-61	INTELSAT V	GSO	SUCCESS
JUN 9, 1984	AC-62	INTELSAT V		FAILURE
MAR 22, 1985	AC-63	INTELSAT VA	GSO	SUCCESS
JUN 29, 1985	AC-64	INTELSAT VA	GSO	SUCCESS
SEP 28, 1985	AC-65	INTELSAT VA	GSO	SUCCESS
DEC 4, 1986	AC-66	FLTSATCOM-7	GSO	SUCCESS
MAR 26, 1987	AC-67	FLTSATCOM-6		FAILURE

SECTION 5.0

PAYLOAD REQUESTS

NOTES ABOUT DATES IN THIS SECTION:

1. REQUEST DATE: THE PAYLOAD ORGANIZATION'S REQUESTED LAUNCH DATE.

2. FLIGHT DATE: IF MANIFESTED, IT IS THE PAYLOAD'S LAUNCH DATE AS SHOWN IN THE MANIFEST. IF NOT YET MANIFESTED, NO DATE IS GIVEN.

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
AAFE	2 PALLETS	93 06	93 08 5	SHUTTLE
ACE (DOD)	UNIQUE	91 06		SHUTTLE
ACTS	TOS	92 05	92 05 14	SHUTTLE
ASP	HH-G	88 11		SHUTTLE
ASTRO-1	IG+2 PALLETS	89 11	90 03 1	SHUTTLE
ASTRO-2	IG+2 PALLETS	91 01	91 12 23	SHUTTLE
ATLAS-1	IG+2 PALLETS	90 09	90 12 20	SHUTTLE
ATLAS-2	IG+1 PALLET	92 09	92 06 11	SHUTTLE
ATLAS-3	IG+1PALLET+SPAS	92 11	93 01 14	SHUTTLE
ATLAS-4	IG+1 PALLET	93 11		SHUTTLE
ATLAS-5**	IG+1 PALLET	94 11		SHUTTLE
AXAF	UNIQUE	95 12		SHUT./TITAN IV**
BBXRT-1	TAPS	89 11	90 03 01	SHUTTLE
BIOPLATFORM-1**	N/A	95 01		MEDIUM**
BIOPLATFORM-2**	N/A	95 06		MEDIUM**
BIOPLATFORM-3**	N/A	96 01		MEDIUM**
BIOPLATFORM-4**	N/A	96 06		MEDIUM**
BIOPLATFORM-5**	N/A	97 01		MEDIUM**

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
BIOPLATFORM-6**	N/A	97 06		MEDIUM**
BIOPLATFORM-7 **	N/A	98 01		MEDIUM**
BIOPLATFORM-8**	N/A	98 06		MEDIUM**
CAPL	HH-G	90 02		SHUTTLE
CASSINI**	CENTAUR**	96 04		TITAN IV**
CIRRIS (DOD)	PALLET	89 03	90 07 19	SHUTTLE
COBE	N/A	89 05	89 05	DELTA
COLD-SAT**	N/A	95 12		MEDIUM**
CRAF**	CENTAUR**	95 08		TITAN IV**
CRRES	N/A	90 06	90 06	ATLAS/CENTAUR
CRRES-1	N/A	91 10	91 10	SCOUT
CRISTA	ASTRO-SPAS	92 11	93 01 14	SHUTTLE
CSI-1 (MAST)	SPACELAB PALLET	91 04		SHUTTLE
CTM	HH-G	89 06		SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
DOD-1	UNIQUE	88 10	88 11 17	SHUTTLE
DOD-2	UNIQUE	89 03	89 07 1	SHUTTLE
DOD-3	UNIQUE	89 08	89 08 10	SHUTTLE
DOD-4	UNIQUE	89 12	89 12 11	SHUTTLE
DOD-5	UNIQUE	90 05	90 05 10	SHUTTLE
DOD-6	UNIQUE	90 11	91 02 28	SHUTTLE
DOD-7	UNIQUE	91 03		SHUTTLE
DOD-8	UNIQUE	92 02	92 08 20	SHUTTLE
DOD-9	UNIQUE	92 05	92 09 17	SHUTTLE
DOD-10	UNIQUE	92 12	92 12 17	SHUTTLE
DOD-11	UNIQUE	93 05	93 05 13	SHUTTLE
DOD-12	UNIQUE	93 10		SHUTTLE
DOD-13	UNIQUE	94 05		SHUTTLE
DOD-14	UNIQUE	94 12		SHUTTLE
DOD-15	UNIQUE	95 05		SHUTTLE
DOD-16	UNIQUE	95 12		SHUTTLE
DOD-17	UNIQUE	96 05		SHUTTLE
DOD-18	UNIQUE	96 12		SHUTTLE

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
DOD-19	UNIQUE	97 05		SHUTTLE
DOD-20	UNIQUE	97 12		SHUTTLE
DOD-21	UNIQUE	98 05		SHUTTLE
DOM-1	UNIQUE	91 07		SHUTTLE
DOM-2	UNIQUE	93 07		SHUTTLE
DOM-3	UNIQUE	95 07		SHUTTLE
DOM-4	UNIQUE	97 07		SHUTTLE
EOIM-3/TEMP-2A3	MPESS	89 11		SHUTTLE
EURECA-1L	EURECA-A	90 09	91 05 2	SHUTTLE
EURECA-1R	EURECA-A	91 03	91 12 23	SHUTTLE
EURECA-2L	EURECA-A	93 01	93 04 8	SHUTTLE
EURECA-2R	EURECA-A	93 06		SHUTTLE
EURECA-3L	EURECA-A	95 06		SHUTTLE
EURECA-3R	EURECA-A	95 12		SHUTTLE
EUVE	N/A	91 08	91 08	DELTA
FLTSATCOM-F8	N/A	89 09	89 09*	ATLAS-CENTAUR

* Not Before This Date

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
FTS-DTF	UNIQUE	91 03		SHUTTLE
GALILEO	IUS-2 STAGE	89 10	89 10 12	SHUTTLE
GEOSTAR-1	PAM-D2	92 01	92 04 23	SHUTTLE
GEOSTAR-2	PAM-D2	92 10	92 10 29	SHUTTLE
GEOSTAR-3	PAM-D2	93 06	93 06 17	SHUTTLE
GEOTAIL	TBD	92 07	92 07	MEDIUM
GOES-I	N/A	90 07	90 07	ATLAS-CENTAUR
GOES-J	N/A	91 11	91 11	ATLAS-CENTAUR
GOES-K	N/A	92 05	92 05	ATLAS-CENTAUR
GOES-L	N/A	95 07		ATLAS-CENTAUR**
GOES-M	N/A	95 12		ATLAS-CENTAUR**
GP-B1	PALLET	92 06	93 09 9	SHUTTLE
GP-B2**	N/A	95 01		MEDIUM**
GPS-1	PAM-D2	91 01	91 01 31	SHUTTLE
GPS-2	PAM-D2	94 04	91 05 2	SHUTTLE
GRO	UNIQUE	90 01	90 04 5	SHUTTLE
HC-10	UNIQUE	88 10		SHUTTLE
HC-11	UNIQUE	88 05		SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
HC-12	UNIQUE	89 02		SHUTTLE
HC-13	UNIQUE	89 06		SHUTTLE
HC-14	UNIQUE	89 11		SHUTTLE
HC-15	UNIQUE	90 06		SHUTTLE
HC-16	UNIQUE	90 11		SHUTTLE
HC-17	UNIQUE	91 06		SHUTTLE
HC-18	UNIQUE	91 11		SHUTTLE
HPE	HH-G	89 02		SHUTTLE
HST	UNIQUE	89 06	90 02 1	SHUTTLE
HST-REVISIT	PALLET+FSS	92 06		SHUTTLE
HST-REVISIT	PALLET+FSS	95 06		SHUTTLE
IBSS (DOD)	SPAS	89 06	90 07 19	SHUTTLE
IML-1	LM	90 06	91 04 11	SHUTTLE
IML-2	LM	92 11	92 10 8	SHUTTLE
IML-3	LM	94 11		SHUTTLE
IML-4**	LM	96 11		SHUTTLE
INMARSAT-1	PAM-D2	88 06	91 08 15	SHUTTLE
INMARSAT-2	PAM-D2	89 03	93 09 9	SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
INTELSAT VI-1	UNIQUE	89 10		SHUTTLE
INTELSAT VI-2	UNIQUE	90 04		SHUTTLE
INTELSAT VI-5	UNIQUE	91 01		SHUTTLE
ISF-1	UNIQUE	91 07	92 07 30	SHUTTLE
ISF-2	UNIQUE	91 11	93 02 11	SHUTTLE
ISF-3	UNIQUE	92 03		SHUTTLE
ISF-4**	UNIQUE	92 07		SHUTTLE
ISF-5**	UNIQUE	92 11		SHUTTLE
ISF-6**	UNIQUE	93 03		SHUTTLE
ISF-7**	UNIQUE	93 07		SHUTTLE
ISF-8**	UNIQUE	93 11		SHUTTLE
ISF-9**	UNIQUE	94 03		SHUTTLE
ISF-10**	UNIQUE	94 07		SHUTTLE
ISF-11**	UNIQUE	94 11		SHUTTLE
ISF-12**	UNIQUE	95 03		SHUTTLE
ISF-13**	UNIQUE	95 07		SHUTTLE
ISF-14**	UNIQUE	95 11		SHUTTLE
LADD (DOD)	MPESS+3 GAS	91 02		SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
LAGEOS-2	IRIS	90 06	91 08 15	SHUTTLE
LDEF RETR	UNIQUE	89 07	89 11 13	SHUTTLE
LIFESAT-01**	TBD	93 01		MEDIUM**
LIFESAT-02**	TBD	94 06		MEDIUM**
LIFESAT-03**	TBD	94 06		MEDIUM**
LIFESAT-04**	TBD	95 01		MEDIUM**
LIFESAT-05**	TBD	95 06		MEDIUM**
LIFESAT-06**	TBD	96 01		MEDIUM**
LIFESAT-07**	TBD	96 06		MEDIUM**
LIFESAT-08**	TBD	97 01		MEDIUM**
LIFESAT-09**	TBD	97 06		MEDIUM**
LIFESAT-10**	TBD	98 01		MEDIUM**
LIFESAT-11**	TBD	98 06		MEDIUM**
LITE-1	PALLET	93 02		SHUTTLE
LUNAR OBSERVER**	TBD**	95 10*		INTERMEDIATE**
MAGELLAN	IUS	89 04	89 04 28	SHUTTLE
MAPS-3	MPESS	91 07		SHUTTLE
MAPS-4	MPESS	92 11		SHUTTLE

* Not Before This Date
** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
MAPS-5	MPESS	95 04		SHUTTLE
MARS OBSERVER	TOS	92 09	92 09*	TITAN III
MRA-1	MSL	88 06		SHUTTLE
MRA-2	MSL	88 12		SHUTTLE
MRA-3	MSL	89 06		SHUTTLE
MRA-4	MSL	89 12		SHUTTLE
MRA-5	MSL	90 06		SHUTTLE
MRA-6	MSL	90 12		SHUTTLE
MRA-7	MSL	91 06		SHUTTLE
MSAT**	TBD	93 03	93 03	MEDIUM**
MSL-03	MPESS	89 04		SHUTTLE
MSL-04	MPESS	90 04		SHUTTLE
MSL-05	MPESS	91 04		SHUTTLE
MSL-06	MPESS	92 04		SHUTTLE
MSL-07	MPESS	93 04		SHUTTLE
MSL-08	MPESS	94 04		SHUTTLE
MSL-09	MPESS	95 04		SHUTTLE

* Not Before This Date
** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
NOAA-D	N/A	89 05	89 05	ATLAS E
NOAA-H	N/A	88 09	88 09	ATLAS E
NOAA-I	N/A	90 09	90 09	ATLAS E
NOAA-J	N/A	91 12	91 12	ATLAS E
NOAA-K	N/A	93 04	93 04	TITAN II**
NOAA-L	N/A	94 07		TITAN II**
NOAA-M	N/A	95 11		TITAN II**
OAST-2**	SPACELAB PALLET	95 04		SHUTTLE
OAST-3**	SPACELAB PALLET	96 04		SHUTTLE
OAST-4**	SPACELAB PALLET	97 04		SHUTTLE
OAST-5**	SPACELAB PALLET	98 04		SHUTTLE
OAST-6**	SPACELAB PALLET	99 04		SHUTTLE
OAST-LS1**	SPACELAB PALLET	95 10		SHUTTLE
OAST-LS2**	SPACELAB PALLET	96 10		SHUTTLE
OAST-LS3**	SPACELAB PALLET	97 10		SHUTTLE
OAST-LS4**	SPACELAB PALLET	98 10		SHUTTLE
OAST-LS5**	SPACELAB PALLET	99 10		SHUTTLE
OMV-1	N/A	94 04		SHUTTLE
ORFEUS	ASTRO-SPAS	91 05	92 04 23	SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
OSL**	TBD**	95 10		MEDIUM**
PLANETARY ALT	IUS	91 05	91 05	TITAN IV
PMG	HH-G	89 08		SHUTTLE
PO**	TBD**	96 06		INTERMEDIATE**
POLAR	TBD	93 06	93 06	MEDIUM**
POP	TBD**	95 10		SHUT./TITAN IV**
RADARSAT**	N/A	94 06		MEDIUM**
RCA 3001	PAM-D	90 06		SHUTTLE
RCA 4004	PAM-D2	89 09		SHUTTLE
RCA 4006	PAM-D2	91 06		SHUTTLE
ROSAT	N/A	90 02	90 02	DELTA
S/L-D2	LM + USS	90 10	91 12 02	SHUTTLE
S/L-D3	LM + USS	92 10		SHUTTLE
S/L-J	LM	90 10	91 07 11	SHUTTLE
SATCOM	PAM-D2	91 07	92 06 11	SHUTTLE
SDS-1	HH-G	89 06		SHUTTLE
SDS-2	HH-G	90 01		SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
SFH	HH-M	91 02		SHUTTLE
SFU-RETR.	UNIQUE	93 06	93 06 17	SHUTTLE
SHARE	UNIQUE	89 02	89 02 18	SHUTTLE
SHEAL-2	UNIQUE	91 05	92 04 23	SHUTTLE
SIRTF**	TBD**	99 06		INTERMEDIATE**
SKYNET-4A	PAM-D2	86 06		SHUTTLE
SKYNET-4B	PAM-D2	86 12		SHUTTLE
SLS-1	LM	90 03	90 06 7	SHUTTLE
SLS-2	LM	91 06	92 07 2	SHUTTLE
SLS-3	LM	93 10		SHUTTLE
SLS-4**	LM	95 06		SHUTTLE
SMALL EXPL-01**	N/A	91 06	91 06	SMALL
SMALL EXPL-02**	N/A	91 09	91 09	SMALL
SMALL EXPL-03**	N/A	92 01	92 01	SMALL
SMALL EXPL-04**	N/A	92 06	92 06	SMALL
SMALL EXPL-05**	N/A	93 01	93 01	SMALL
SMALL EXPL-06**	N/A	93 06	93 06	SMALL
SMALL EXPL-07**	N/A	94 01		SMALL

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
SMALL EXPL-08**	N/A	94 06		SMALL
SMALL EXPL-09**	N/A	95 01		SMALL
SMALL EXPL-10**	N/A	95 06		SMALL
SMM-RETR**	FSS	90 07		SHUTTLE
SOHO	TBD**	95 03		MEDIUM**
SPACEHAB-1	UNIQUE	91 06	91 08 15	SHUTTLE
SPACEHAB-2	UNIQUE	92 10	92 10 29	SHUTTLE
SPACEHAB-3	UNIQUE	93 07	93 08 5	SHUTTLE
SPACEHAB-4	UNIQUE	93 12		SHUTTLE
SPACEHAB-5	UNIQUE	94 06		SHUTTLE
SPACEHAB-6	UNIQUE	94 12		SHUTTLE
SPARTAN-02	MPESS	89 01		SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
SRAD/TPITS	PALLET	90 02		SHUTTLE
SRL-1	PALLET+MPESS	91 07	92 02 27	SHUTTLE
SRL-2	PALLET+MPESS	92 11	93 03 18	SHUTTLE
SRL-3**	PALLET+MPESS	95 04		SHUTTLE
SP. STA-1	UNIQUE	95 01		SHUTTLE
SP. STA-2	UNIQUE	95 04		SHUTTLE
SP. STA-3	UNIQUE	95 07		SHUTTLE
SP. STA-4	UNIQUE	95 09		SHUTTLE
SP. STA-5	UNIQUE	95 11		SHUTTLE
SP. STA-6	UNIQUE	96 01		SHUTTLE
SP. STA-7	UNIQUE	96 03		SHUTTLE
SP. STA-8	UNIQUE	96 05		SHUTTLE
SP. STA-9	UNIQUE	96 07		SHUTTLE
SP. STA-10	UNIQUE	96 10		SHUTTLE
SP. STA-11	UNIQUE	96 11		SHUTTLE
SP. STA-12	UNIQUE	97 01		SHUTTLE
SP. STA-13	UNIQUE	97 02		SHUTTLE
SP. STA-14	UNIQUE	97 04		SHUTTLE

** For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
SP. STA-15	UNIQUE	97 05		SHUTTLE
SP. STA-16	UNIQUE	97 07		SHUTTLE
SP. STA-17	UNIQUE	97 08		SHUTTLE
SP. STA-18	UNIQUE	97 10		SHUTTLE
SP. STA-19	UNIQUE	97 11		SHUTTLE
SP. STA-20	UNIQUE	98 01		SHUTTLE
SSBUV-1	UNIQUE	88 06		SHUTTLE
SSBUV-2	UNIQUE	89 02		SHUTTLE
SSBUV-3	UNIQUE	89 11		SHUTTLE
SSBUV-4	UNIQUE	90 07		SHUTTLE
STARLAB (DOD)	LM+1 PAL	90 06	90 09 10	SHUTTLE
STP - SPARTAN-1	UNIQUE - SPARTA	89 05		SHUTTLE
STP - SPARTAN-2	UNIQUE - SPARTA	90 05		SHUTTLE
STP - SPARTAN-3	UNIQUE - SPARTA	91 05		SHUTTLE
STP - SPARTAN-4	UNIQUE - SPARTA	92 05		SHUTTLE
STP - SPARTAN-5	UNIQUE - SPARTA	93 05		SHUTTLE
STP - SPARTAN-6	UNIQUE - SPARTA	94 05		SHUTTLE
STP - SPARTAN-7	UNIQUE - SPARTA	95 05		SHUTTLE

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
SYNCOM IV-5	UNIQUE	89 07	89 11 13	SHUTTLE
TDRS-C	IUS	88 06	88 09	SHUTTLE
TDRS-D	IUS	89 02	89 02 18	SHUTTLE
TDRS-E	IUS	90 03	90 11 8	SHUTTLE
TDRS-F	IUS	91 08	92 11 19	SHUTTLE
TDRS-G	IUS	91 12		SHUTTLE
TDRS-H**	IUS**	92 11		SHUTTLE
TEAL RUBY (DOD)	UNIQUE	88 12	90 07 19	SHUTTLE
TRANSIT-27	N/A	90 02	90 02	SCOUT
TRANSIT-28	N/A	90 08	90 08	SCOUT
TSS-1	MPESS+1 PAL	90 10	91 01 31	SHUTTLE
TSS-2**	MPESS+1 PAL	92 10		SHUTTLE
TSS-3**	MPESS+1 PAL	94 10		SHUTTLE
UARS	UNIQUE	90 09	91 09 26	SHUTTLE
ULYSSES	IUS/PAM	90 10	90 10 5	SHUTTLE
USML-1	LM+MPESS	92 03	92 03 30	SHUTTLE
USML-2	LM+MPESS	93 07	93 07 15	SHUTTLE
USML-3	LM+MPESS	95 11		SHUTTLE

**For NASA Planning Purposes

*** PAYLOAD REQUESTS ***

PAYLOAD	CARRIER	REQUEST DATE	FLIGHT DATE	TYPE/CLASS
USML-4**	LM+MPESS	97 11		SHUTTLE
USMP-1	MSL&MPESS	91 06	92 05 14	SHUTTLE
USMP-2	MSL&MPESS	92 06	93 04 8	SHUTTLE
USMP-3	MSL&MPESS	93 06		SHUTTLE
WAMDII	UNIQUE	90 12	91 05 2	SHUTTLE
WIND	TBD	92 12	92 12	MEDIUM
XTE	FSS	93 11		SHUTTLE

** For NASA Planning Purposes

SECTION 6.0

PAYLOAD/ACRONYMS

PAYLOAD/ACRONYM LIST

PAYLOAD/ACRONYM	NAME	DESCRIPTION
AAFE	Aeroassist Flight Experiment	Entry vehicle that will simulate the atmospheric flight phase of an Aeroassisted Orbital Transfer Vehicle (AOTV) returning from geosynchronous orbit and provide environmental and design data for an AOTV.
AC	Atlas Centaur	Intermediate Class Expendable Launch Vehicle.
ACE	Agile Control Experiment	Demonstrates line of sight stabilization for scalable optical structure in space.
ACES	Acoustic Containerless Experiment System	Technical demonstration to obtain early microgravity tests of gas transport phenomena in a 3-axis levitation furnace.
ACTS	Advanced Communications Technology Satellite	Flight verification of high risk communications technology to support future communications systems
ADSF	Automatic Directional Solidification Furnace	Technology demonstration of directional solidification of magnetic materials, immiscibles, and IR detection materials.
AF Polar Bear	Air Force Polar Bear	Study atmospheric effects on electromagnetic propagation.
AFE	American Flight Echocardiograph	Collects quantitative in-flight data on cardiovascular changes in the crew.
AFITV	Air Force Instrumented Test Vehicle	Anti-satellite target vehicle.
ALT	Altitude	Orbit altitude in nautical miles.

AMPTE	Active Magnetosphere Particle Tracer Experiment	Satellite to study transfer of mass from the solar wind to the magnetosphere.
ANS	Astronomical Netherlands Satellite	Study the sky in ultraviolet and x-ray from above the atmosphere.
APE	Aurora Photography Experiment	Enhance understanding of the geographic extent and dynamics of the aurora.
ARABSAT	Arab Satellite	Communications satellite of the Arab Satellite Communications Organization.
ARC	Aggregation of Red Cells	Studies aggregation of red cells and blood viscosity under low-g conditions.
ASC	American Satellite Company	A satellite to provide commercial communication service to continental United States, Hawaii, Alaska, and Puerto Rico.
ASP	Attitude Sensor Package	Foreign Reimbursable Hitchhiker-G payload.
ASTRO	Astronomy	Program designed to obtain ultraviolet (UV) data on astronomical objects using a UV telescope.
ATLAS	Atmospheric Laboratory for Applications and Science	Measures long term variability in the total energy radiated by the sun and determines the variability in the solar spectrum.
AUSSAT	Australian Communication Satellite	Direct broadcast communication satellite which provides services to continental Australia and off-shore territories.
AXAF	Advanced X-Ray Astronomy Facility	A major free flying X-Ray observatory using a high resolution telescope. Designed to operate in orbit for 15 years.

BBXRT	Broad Band X-Ray Telescope	A BBXRT utilizing a two-axis pointing system -- flies in an attached mode on Shuttle.
B/U	Back-up	
BIOPLATFORM	BIOPLATFORM	A free-flyer platform used to conduct life science experiments; also it is recoverable through reentry.
C	Commander	Member of the Shuttle flight crew in command of the flight.
C360	Cinema 360	35mm motion picture camera for the purpose of photographing crew and mission activities.
CANEX	Canadian Experiment	Experiment package flown with Canadian payload specialist on mission 41-G.
CANEX-2	Canadian Experiment	Canadian Payload Specialist will conduct Canadian experiments in support of Space Station.
CAPL	Capillary Pump Loop Experiment	Experiment to quantify behavior of a full-scale capillary pumped loop heat transfer system in microgravity.
CASSINI	Saturn Orbiter/Titan Probe	Complements CRAF mission. Advance the knowledge of early history of the solar system through the study of physically and chemically primitive objects. Mission includes a rendevous with Saturn to study the planet, its rings, and its moons.
CBDE	Carbonated Beverage Dispenser Evaluation	Pepsico, Inc. experiment to evaluate packaging and dispensing techniques for space flight consumption of carbonated beverages.
CFES	Continuous Flow Electrophoresis System	Demonstrate the technology of pharmaceutical processing in space.

CHAMP	Comet Halley Active Monitoring Program	Observe Comet Halley on STS flights.
CIRRIS	Cryogenic Infrared Radiance Instrument for Shuttle	Collects infrared data to support Strategic Defense Initiative program.
CLOUDS	Structures Photography Experiments	Cloud formation, dissipation and opaqueness observations.
COBE	Cosmic Background Explorer	Determine the spectrum anistropy of cosmic microwave background.
COLD-SAT	Cyrogenic On Orbit Liquid Depot-Storage and Transfer	Zero g cryogenic fluids transfer experiment.
COMSTAR		Communications satellite for COMSAT.
CRAF	Comet Rendevous Asteroid Fly-by	Explore two primitive bodies to gather new information on the origin and evolution of the solar system, prebiotic chemical evolution and the origin of life, and astrophysical plasma dynamics and processes.
CRRES	Combined Release and Radiation Effects Satellite	Satellite involving Active Plasma Experiments and the study of radiation effects of various spacecraft components.
CRRES 1	Combined Release and Radiation Effects Satellite	Active Plasma Experiments to support CRRES mission.
CRISTA	Cryogenic Infrared Spectrometer Telescope For Atmosphere	A U.S./German Joint Aeronomy Payload intended to explore the variability of the atmosphere and to provide measurements that will complement those provided by UARS.

CRW	Crew	The Shuttle flight crew for a particular mission.
CSI (MAST)	Controls Structure Interaction	Experiments which are part of the OAST Control of Flexible Structures program. Project to deploy structures in a micro-gravity environment from the Shuttle.
CTM	Collapsible Tube Mast	Foreign Reimbursable Hitchhiker-G payload.
DAD	Dual Air Density	Measure global density of upper atmosphere and lower exosphere.
DFI PLT	Development Flight Instrumentation Pallet	A pallet used to accommodate the DFI used on the first four Shuttle flights.
DMOS	Diffusive Mixing of Organic Solutions	Grow crystals of organic compounds for research programs for the 3M Corporation's Science Research Laboratory.
DOD	Department of Defense	
DOM	German Orbiting Laboratory	Program sponsored by the German Federal Ministry of Research (BMFT) to explore near earth space for scientific and technological research, complementing the German Spacelab-D program and contributing to Space Station-Columbus preparation. DOM carrier, derived from SPAS design is a reusable multipurpose platform designed for a minimum of 5 missions.
DUR	Duration	Mission duration of each Shuttle flight.
EASE/ACCESS	Experimental Assembly of Structures in EVA/Assembly Concept for Construction of Erectable Space Structures	Measures the human factors while assembling structures in space during Extra Vehicular Activity.
EEVT	Electrophoresis Equipment Verification Test	Technology demonstration of apparatus to evaluate the effects of electrophoresis on biological cells in 0-g.

ELRAD	Earth-Limb Radiance Equipment	Obtain measurements of earth-limb radiance for various positions of the sun from near limb up to 9 degrees below earth horizon.
ELV	Expendable Launch Vehicle	
EO	Escape orbit	
EOIM-3/TEMP-2A2	Evaluation of Oxygen Interaction with Materials	Determines effects of atomic oxygen degradation on 1100 candidate materials.
	Two Phase Mounting Plate Experiment	Operates a mechanically pumped two phase heat acquisition; transport and rejection system in microgravity.
EOS	Electrophoresis Operations in Space	Commercial joint endeavor activity (with McDonnell Douglas).
ERBS	Earth Radiation Budget Satellite	Collects global earth radiation budget data.
ESMC	Eastern Space and Missle Center	USAF organization Headquartered at Patrick AFB, Florida.
EURECA	European Retrievable Carrier	Platform placed in orbit for six months offering conventional services to experimenters.
EUVE	Extreme Ultraviolet Explorer	Produce definitive sky map and catalog of extreme ultraviolet portion of electromagnetic spectrum (100-1000 angstroms).
EXOSAT	ESA X-Ray Satellite	Provides continuous observations of x-ray sources.
FDE	Fluid Dynamics Experiment	A package of six experiments flown on the middeck that involve simulating the behavior of liquid propellants in low gravity.
FEE	French Echocardiograph Equipment	Obtains on-orbit cardiovascular system data.

FLT	Flight	The flight sequence number for Shuttle missions.
FLTSATCOM	Fleet Communication Satellite	U.S. Navy communications satellite.
FPE	French Postural Experiment	Studies sensory-motor adaptations in weightlessness.
FSC	Fleet Satellite Communications	U.S. Navy Communications Satellite (same as FLTSATCOM).
FSS	Flight Support System	Support systems used for revisit missions.
FTS-DTF	Flight Telerobotic Servicer-Demonstration Test Flight	The demonstration flight of a Telerobotic System being developed for the Space Station to assist in attached payload assembly and maintenance, in-situ platform and satellite servicing, space station maintenance, servicing, assembly and inspection.
GALAXY	GALAXY	Hughes communications satellite.
GALILEO	GALILEO	Investigates the chemical compostion and physical state of Jupiter's atmosphere and satellites.
GAS BRIDGE	Get Away Special Bridge	Structure in the payload bay that can hold up to twelve GAS canisters.
GEOSTAR	GEOSTAR	Interactive radiodetermination satellite.
GEOTAIL	GEOTAIL	Explore Geotail of the Earth Plasma Physics.
GLOMR	Global Low Orbit Message Relay	Packet data relay satellite.
GLOW	GLOW	Atmospheric luminosities investigation.

GOES	Geostationary Operational Environmental Satellite	NOAA Weather Satellites.
GP	Gravity Probe	Scientific probe to test Einstein's Theory of Relativity.
GP-B1	Gravity Probe-B1	A prototype test of the Gravity Probe-B mission to test Einstein's General Theory of Relativity. The mission will include on-orbit testing of precision gyroscopes and support systems.
GP-B2	Gravity Probe-B2	Free flying payload to verify aspects of Einstein's relativity theory using sensitive, superconducting gyroscopes.
GPS	Global Positioning System	DOD navigation and positioning system satellites.
GRO	Gamma Ray Observatory	Investigate extraterrestrial gamma-ray sources.
GSO	Geosynchronous orbit	
GTO	Geosynchronous Transfer Orbit	
HC	Hughes Communications	Series of commercial communications satellites.
HCMM	Heat Capacity Mapping Mission	Produce thermal maps for discrimination of rock types, mineral resources, plant temperatures, soil moisture, snow fields, and water runoff.
HE	High Eccentricity Orbit	
HEAO	High Energy Astronomical Observatory	Satellite to study energetic radiation from space.
HELIO	Heliocentric	

HH-G	Hitchhiker-Goddard	A Shuttle cargo bay, payload carrier system for small experiments.
HILAT		Evaluate propagation effects of disturbed plasmas on radar and communications systems.
HME	Handheld Microgravity Experiment	Provide for middeck experiments of limited scope in order to allow for low-cost, timely testing of concepts or procedures, or the early acquisition of data; specific objectives to be established for each flight.
HPCG	Handheld Protein Crystal Growth Middeck Experiment	Develop techniques to produce in low-G protein crystals of sufficient size and quality to permit molecular analysis by diffraction techniques.
HPE	Heat Pipe Experiment	Foreign Reimbursable Hitchhiker-G payload.
HPTE	High Precision Tracking Experiment	Demonstrates ability to propagate a low power laser beam through the atmosphere.
HRSO	High Resolution Solar Observatory	Solar Optical Telescope to determine physical processes at work on the Sun.
HS-376 RET	HS-376 Retrieval	Salvage of HS-376 communication satellites launched on the tenth shuttle mission.
HST	Hubble Space Telescope	Observes the universe to gain information about its origin, evolution and disposition of stars, galaxies, etc.
IBSE	Initial Blood Storage Equipment	Evaluates changes in blood tissue during various storage conditions.
IBSS	Infrared Background Signature Survey	Obtains infrared measurements on rocket plumes, shortwave infrared Earth-limb, Shuttle environment, and chemical release from payload bay while detached in proximity to the Orbiter.

IECM	Induced Environment Contamination Monitor	A package of ten instruments designed to fly in the Orbiter payload bay on a special pallet to check for contamination in and around the Orbiter. It also has the capability to be operated on the end of the RMS outside of the payload bay.
IEF	Isoelectric Focussing Experiment	Gather experimental data on the extent of electro-osmosis in space.
IG	Igloo	Spacelab Igloo.
IMAX	IMAX, Inc. of Toronto, Ontario, Canada	Produces motion pictures of orbiter launch, inflight operations and landings suitable for viewing in IMAX theaters such as the Smithsonian.
IML	International Microgravity Laboratory	Series of microgravity missions devoted to material and life sciences studies.
INCL	Inclination	Orbit inclination in degrees.
INMARSAT	International Maritime Satellite Organization	PAM-DII class communications satellite to be used for international maritime communications services.
INSAT	Indian Satellite	Communication and meteorological satellite for the government of India.
INTELSAT	International Telecommunications Satellite	International telecommunications satellite network for the International Telecommunications Satellite Organization.
IRAS	Infrared Astronomical Satellite	All sky survey for objects that emit infrared radiation.
IRCFE	Infrared Communications Flight Experiment	Demonstrates the feasibility of using diffuse infrared light as a carrier for STS crew communications.

IR-IE	Infra-Red Imaging Equipment	Infrared video camera used to measure temperature gradients on the orbiter surface.
IRIS	Italian Research Interim Stage	Italian upper stage for use on the Shuttle.
IRT	Integrated Rendezvous Radar Target	A target for testing of Shuttle orbiter rendezvous techniques and capabilities in orbit.
ISC	International Space Corporation	Commercial joint endeavor activity.
ISF	Industrial Space Facility	Commercially-owned, man-tended orbiting facility for research and manufacturing activities.
ITA	Instrumentation Technology Associates	Commercial joint endeavor activity.
ITV	Instrumented Test Vehicle	Target for Anti Satellite.
IUS	Inertial Upper Stage	Upper stage system for Shuttle and Titan.
LADD	Lens Antenna Deployment Demonstration	To demonstrate repeated deployment of a membrane antenna including reliability, flatness etc.
LAGEOS	Laser Geodynamics Satellite	Spherical satellite covered with retroreflectors which are illuminated by ground-based lasers to determine precise measurements of the Earth's crustal movements. Satellite is totally passive.
LANDSAT	Land Satellite	Earth resources monitoring satellite.
LDEF	Long Duration Exposure Facility	Free-flying satellites providing accommodations for experiments requiring long-duration exposure to the space environment.

LEO	Low Earth Orbit	
LFC	Large Format Camera	Acquire synoptic, high-resolution images of the Earth's surface.
LIFESAT	Life Sciences Satellite	Life science flights with micro-g as the primary objective.
LITE	Lidar In-Space Technology Experiment	Project to demonstrate the Laser Detection and Ranging (Lidar) solid state system from space.
LM	Long Module	Spacelab Crew Module.
LO	Lunar Observer	Geological, elemental, gravity, and magnetic field mapping of moon.
MAGELLAN	Magellan	Spacecraft designed to globally map the surface of Venus.
MAGSAT	Magnetic Field Satellite	Map the magnetic field of the earth.
MAPS/FILE	Measurement of Air Pollution From Satellites	An atmospheric survey that identifies specific chemical compounds
MLE	Mesoscale Lightning Experiment	Record and observe the visual characteristics of large scale lightning as seen from space using onboard TV cameras.
MLR	Monodisperse Latex Reactor	Produces monodisperse latex particles in the two to forty micron range.
MO	Mars Observer	Spacecraft to study Mars' surface, climate, gravitational, and magnetic fields.
MORELOS	MORELOS	Mexican communication satellite system.

MPESS	Mission Peculiar Experiment Support Structure	Experiment carrier.
MPSE	Mexican Payload Specialist Experiment	Experiment performed by a Mexican payload specialist on the Shuttle flight which deployed the MORELOS satellite.
MRA	Microgravity Research Associates	Commercial joint endeavor activity with MRA.
MS	Mission Specialist	A member of Shuttle flight crew primarily responsible for payload activity.
MSAT	Mobile Satellite	Satellite for developing advanced ground technologies and techniques for mobil communications via satellite.
MSL	Materials Science Laboratory	A payload which remains attached to the Shuttle to perform materials processing experiments in low-g.
N/A	Not Applicable	
NATO	North Atlantic Treaty Organization	Communication satellite for NATO.
NOAA	National Oceanic and Atmospheric Administration	Series of operational environmental satellites in polar orbit.
NOSL	Night/Day Optical Survey of Lightning	Optical survey of lightning.
NOVA	NOVA	Advanced Navy Navigation Satellite (OSCAR type).
OAST	Office of Aeronautics and Space Technology	Series of payloads sponsored by the Office of Aeronautics and Space Technology.

OAST-1	Office of Aeronautics and Space Technology-1	A payload which remained attached to the Shuttle to demonstrate a large light-weight solar array capable of being restowed in flight.
OEX	Orbiter Experiments	Series of engineering experiments on the Shuttle.
OIM	Oxygen Interaction with Materials	Tests which obtained quantitative rates of oxygen interaction with materials used on the Orbiter and advanced payloads.
OMV	Orbital Maneuvering Vehicle	A deployable retrievable vehicle to be flown on the STS to retrieve or insert payloads in orbits different from the orbiter.
ORBTR	Orbiter	The name of the Shuttle Orbiter used on a particular mission; e.g., Columbia, Challanger, Discovery or Atlantis.
ORFEUS	Orbiting and Retrievable Far and Extreme Ultraviolet Spectrometer	A German developed payload to explore the distribution and character of absorbing material in the solar neighborhood and through the galatic plane, to perform direct observations of the direct interstellor component, and to study mass motions in hot stellar chromo spheres, coronea and active separation in the high gravity atmosphere of White Dwarfs.
ORS	Orbiter Refueling System	An experiment to demonstrate the STS's ability to perform on-orbit satellite refueling.
OSCAR	OSCAR	U.S. Navy Navigational Satellite.
OSL	Orbiting Solar Laboratory	Will provide detailed data on our nearest star, the sun, to augment our studies of distant stars and cosmic processes.

OSS-1	Office of Space Science	Contamination monitor, microabrasion foil experiment, vehicle charging and potential experiment, Shuttle-Spacelab induced atmosphere, solar flare x-ray polarimeter, solar ultraviolet spectral irradiance monitor, plant growth unit, thermal canister experiment, and plasma diagnostics package.
OSTA-1	Office of Space and Terrestial Applications	Shuttle attached payload using the SIR-A radar to obtain high resolution images of earth.
OSTA-2	Office of Space and Terrestial Applications	Microgravity experiments.
OSTA-3	Office of Space and Terrestrial Applications	Acquire photographic and radar images of the Earth's surface.
OV 105	Orbital Vehicle 105	Replacement orbiter for NASA Shuttle fleet.
P	Pilot	A member of the Shuttle crew whose primary responsibility is to pilot the Orbiter.
PAL	Pallet	Spacelab Pallet.
PALAPA	Indonesian Communication Satellite	Synchronous satellite communication system for the Republic of Indonesia.
PAM	Payload Assist Module	An upper stage system used on the Shuttle and the Delta ELV.
PCG-II	Protein Crystal Growth	PCG activity in controlled temperature module.
PDRS/PFTA	Payload Deployment and Retrieval System/Payload Flight Test Article	First object to be deployed and retrieved by the remote manipulator system and is used to test reaction of RMS joints.
PIONEER VENUS		Remote sensing and direct measurements of Venus and its surrounding environment.

PLANETARY ALT	Planetary Alternative	Reserve capability to back-up launch of Galileo or Ulysses missions on Titan-IV.
PMG	Plasma Motor Generator	Measures hollow cathode current couplings to/thru ionosphere; measures induced voltage in 200 meter wire in low earth orbit.
PO	Planetary Observer	Spacecraft to study Martian upper atmosphere and ionosphere.
POLAR	POLAR	Polar Auroral Plasma Physics.
POP	Polar Orbiting Platform	U.S. platforms will orbit space station and perform remote sensing experiments.
PPE	Phase Partitioning Experiment	Study separation behavior of two phase system generated by the mixture in water of polyglucose and polyethylene glycol.
PS	Payload Specialist	A member of the Shuttle crew with primary responsibility for a particular payload or experiment.
PVTOS	Physical Vapor Transport of Organic Solids	Commercial joint endeavor activity with 3M.
RADARSAT	Radar Satellite	Remote free flyer sensing satellite will monitor land, sea and ice for five years over the poles (U.S./Canadian/U.K.).
RCA	RCA American Communications, Inc, (now GE American Communications, Inc.)	Series of communications satellites.
RME	Radiation Monitoring Equipment	Measures gamma radiation levels in the Shuttle environment
ROSAT	Roentgen Satellite	NASA/West German cooperative satellite for studying X-Rays.

S	Scout	Small Class Expendable Launch Vehicle.
SAGE	Strategic Aerosol and Gas Experiment	Map vertical profiles of the Ozone, aerosol, nitrogen Rayleigh molecular extinction around the globe.
SAN MARCO-DL	SAN MARCO-DL	NASA/Italian earth physics cooperative satellite
SAREX	Shuttle Amateur Radio Experiment	Space to ground voice and slow scan TV
SAS	Space Adaptation Syndrome	Measures vestibular function, motion sickness susceptibility and spatial orientation ability during prolonged weightlessness
SAS	Small Astronomy Satellite	Study x-ray sources within and beyond the Milky Way galaxy.
SATCOM		RCA communications satellite.
SBS	Satellite Business Systems	All digital domestic communication system servicing large industry, the government, etc.
SDS	Solar Disk Sextant	Studies solar pulsations, oblateness, and size.
SE	Student Experiment	Experiments for the Shuttle Student Involvement Projects.
SFH	Super Fluid Helium On Orbit Transfer Demonstration	Demonstrates the feasibility of on-orbit transfer of superfluid helium using thermomechanical techniques.
SFP	Space Flight Participant	
SFU-RET	Space Flyer Unit-Retrieval	A reusable, retrievable unmanned free flyer to be launched on the Japanese H-II rocket and retrieved by Shuttle.

SHARE	Space Station Heat Pipe Advanced Radiator Element	Demonstrates and quantifies the thermal performance of a high capacity, 50 foot, space constructible, heat pipe radiator element.
SHEAL-2	Shuttle High Energy Astrophysics Laboratory	Obtains images, spectra and timing data on celestial x-ray sources and the spectrum at the 30 ft. X-ray background.
SIRTF	Space Infrared Telescope Facility	Will span the infrared part of the spectrum with a thousand-fold increase in sensitivity.
SKYNET	SKYNET	United Kingdom military communication satellite.
S/L D2, D3	Spacelab D2, D3	Second and third in a series of German Spacelab Missions. Objectives include microgravity research and technology preparation for Space Station use. Significant NASA participation planned on D2 and projected for D3.
S/L-J	Spacelab J	Combined Japanese/NASA Spacelab mission objectives include life sciences and microgravity research and technology.
SLS	Space Life Sciences Laboratory	Investigates the effects of weightlessness exposure using both man and animal specimens.
SMALL EXPL	Small Explorer	Payloads being designed to fly on Small Class ELV
SMM-RET	Solar Maximum Mission Retrieval	A mission for retrieval of the SMM satellite.
SMR	San Marco Range	
SMRM	Solar Maximum Repair Mission	Conducts a technology demonstration of the STS capability to rendezvous, service, checkout and deploy.
SOHO	Solar Heliospheric Observatory	Provides optical measurements as well as plasma field and energetic particle observations of the sun system for studies of the solar interior, atmosphere and solar wind.

SOOS	Stacked OSCAR on Scout	Two OSCAR satellites (U.S. Navy Navigation Satellite).
SPACEHAB	SPACEHAB	Commercially-owned pressurized module for conducting experiments in a man-tended environment.
SPACELAB 1		Demonstrate Spacelab's capabilities for multidisciplinary research.
SPACELAB 2		Demonstrate Spacelab's capabilities for multidisciplinary research and verify system performance.
SPACELAB 3		Dedicated materials processing mission emphasizing 0-g research.
SPACELAB D-1	Spacelab D-1	First dedicated German Spacelab mission.
SPARTAN- 1	Spartan	X-ray astronomy, medium energy survey mission.
SPARTAN-HALLEY	SPARTAN-HALLEY	Search for molecules containing nitrogen, carbon or sulfur and observes the UV spectrum between 2100 and 3400A.
SPAS	Shuttle Pallet Satellite	Payload Carrier developed by Germany.
SPAS-01	German Shuttle Pallet Satellite	Demonstrates the utilization of the MBB platform and systems as a carrier for science experiments.
SP STA	Space Station	Series of flights to complete a Phase One Space Station.
SRAD/TPITS	Shuttle Radiator Assembly Demonstration/Two Phase Integrated Thermal System	Evaluate on-orbit thermal performance of a representative portion of an integrated two-phase thermal bus and on-orbit constructability of Space Station radiator elements using Remote Manipulator System and Extra Vehicular Activity techniques. This experiment combines experiments JSC 3B, JSC 3C and GSFC 2C identified in the (Thermal Energy Management Processes) Space Station flight experiment program.

SRL	Space Radar Laboratory	Series of flights to acquire radar images of the Earth's surface. The images will be used for making maps, interpreting geological features, and resource studies.
SS	Sun Synchronous	
SSBUV	Shuttle Solar Backscatter Ultra-Violet Instrument	Series of flights to measure ozone characteristics of the atmosphere.
SSIP	Shuttle Student Involvement Projects	
STARLAB	Starlab	DOD Spacelab experiments.
STP-SPARTAN	Space Test Program	Deployment and retrieval of Spartan spacecraft which carries USAF STP experiments.
STTP	Life Sciences Space Technology Training Program	Develop and encourage interest on the part of college students in space biology and medicine.
SYNCOM	Hughes Geosynchronous Communication Satellite	Provides communication services from geosynchronous orbit principally to the US government.
TAPS	Two Axis Pointing System	
TBD	To Be Determined	
TDRS	Tracking and Data Relay Satellite	Series of NASA tracking, data and communications satellites to replace the ground based network.
TEAL RUBY		Spacecraft with IR sensor to collect data on Airborne Vehicle Detection Background Phenomenology.
TELESAT	Canadian Telecommunication Satellite	Communication satellite built for Telesat Canada to provide voice and TV coverage to trans-Canada network of Earth stations.

TELSTAR	AT & T Communications Satellite	AT&T COMSTAR replacement - provides communication services to the continental US, Alaska, Hawaii, and Puerto Rico.
TIS	Teacher in Space	Middeck locker supporting the Space Flight Participant Program's teacher in space.
TLD	Thermoluminescent Dosimeter	Obtains gamma ray measurements of the Shuttle environment.
TOS	Transfer Orbit Stage	
TRANSIT	TRANSIT	Navy navigation satellite.
TSS	Tethered Satellite System	System capable of deploying and retrieving satellite attached by a wire tether from distances up to 100 KM from the orbiter.
UARS	Upper Atmosphere Research Satellite	Satellite to study physical processes acting within and upon the stratosphere, mesosphere, and lower thermosphere.
UK	United Kingdom	
ULYSSES	Formerly ISPM (International Solar Polar Mission)	Investigates the properties of the heliosphere (sun and its environment).
USML	United States Microgravity Laboratory	Series of flights of a microgravity materials processing laboratory attached to the Shuttle.
USMP	United States Microgravity Payload	Conduct materials processing experiments in the microgravity environment available in the Orbiter Cargo Bay while in low earth orbit.
USS	Unique Support Structures	

WAMDII	Wide Angle Michelson Doppler Imaging Interferometer	Set of instruments which study upper atmospheric winds from the Shuttle.
WESTAR	Western Union Telegraph Communication Satellite	A C-band satellite to replenish and expand the Westar system (Western Union domestic communication system).
WFF	Wallops Flight Facility	
WIND	WIND	Satellite to measure solar wind input to magnetosphere.
WSMC	Western Space and Missle Center	A USAF organization with Headquarters at Vandenberg Air Force Base.
XTE	X-Ray Timing Explorer	A Spacecraft to be used in Earth orbit to investigate the physical nature of compact X-Ray sources by studying fluctuations in X-Ray brightness over timescales ranging from microseconds to years. The XTE payload will be launched on the Shuttle and changed out with the EUVE payload which will have been previously launched on an explorer platform using a Delta rocket.

HUMAN INTELLIGENCE