

STS 51-B SCHEDULE

Flight of *Challenger*



NASA-JSC

FLIGHT DESIGN AND DYNAMICS DIVISION

MISSION OPERATIONS DIRECTORATE

APRIL 1985

STS 51-B

PROFILE SUMMARY

- NOMINAL LAUNCH TIME: 16:00 GMT
- LAUNCH WINDOW DURATION: 60 MINUTES
- ORBIT INCLINATION: 57.0 DEGREES
- INITIAL ORBIT ALTITUDE: 190 N.MI
- NOMINAL LANDING TIME AT KSC15: 8:58 AM EDT
- MISSION DURATION: 165 HOURS

CARGO

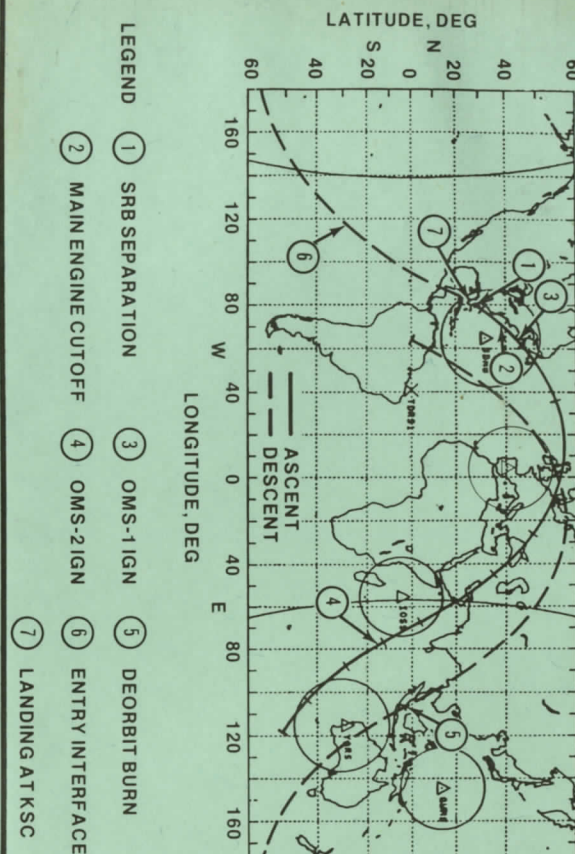
- SPACELAB-3
- GAS (NUSAT)
- GAS (GLOMR)

CREW

- COL. ROBERT OVERMYER, COMMANDER
- COL. FREDERICK GREGORY, PILOT
- DR. DON LIND, MISSION SPECIALIST
- DR. NORMAN THAGARD, MISSION SPECIALIST
- DR. WILLIAM THORNTON, MISSION SPECIALIST
- DR. LODEWIJK VAN DEN BERG, PAYLOAD SPECIALIST
- DR. TAYLOR WANG, PAYLOAD SPECIALIST



ASCENT AND DESCENT GROUNDTRACKS



FLIGHT 51-B EVENTS TIMELINE			
MAJOR EVENTS	*MISSION ELAPSED TIME	**CENTRAL DAYLIGHT TIME	ORB. TIME NO.
FLIGHT DAY 1			
ASCENT	MIN:SEC	HR:MIN	
SRB IGNITION	0:00	11:00 AM	1
BEGIN PITCHOVER	0:07	11:00 AM	1
MAX DYNAMIC PRESSURE	0:57	11:01 AM	1
SRB SEPARATION	2:07	11:02 AM	1
MAIN ENGINE CUTOFF	8:40	11:09 AM	1
EXTERNAL TANK SEP	8:53	11:09 AM	1
OMS-1 (137 SEC, 228 FPS)	10:35	11:11 AM	1
OMS-2 (147 SEC, 242 FPS)	46:15	11:46 AM	1
ONORBIT	HR:MIN		
PAYLOAD BAY DOORS OPEN	1:25	12:25 PM	2
SPACELAB ACTIVATION	2:10	1:10 PM	2
THE FOLLOWING SPACELAB-3 EXPERIMENTS WILL BE PERFORMED (SEE CHART FOR FREQUENCY)			
- MATERIALS PROCESSING - FLUID EXPERIMENT SYSTEM (FES) - VAPOR CRYSTAL GROWTH (VCG) - MERCURY IODIDE CRYSTAL GROWTH - ENVIRONMENTAL OBSERVATION - ATMOSPHERIC TRACE MOLECULES SPECTROSCOPY (ATMOS) - VERY WIDE FIELD CAMERA (VWFC) - FLUID MECHANICS - GEOPHYSICAL FLUID FLOW CELL (GFFC) - LIFE SCIENCES - AMES RESEARCH CENTER (ARC) - URINE MONITORING INVESTIGATION (UMI) - AUTOGENIC FEEDBACK TRAINING (AFT)			
FLIGHT DAY 2			
THE SAME SPACELAB-3 EXPERIMENTS WILL BE PERFORMED AS DAY 1 PLUS			
- ENVIRONMENTAL OBSERVATION - AURORAL IMAGING EXPERIMENT (AURORA) - FLUID MECHANICS - DROP DYNAMICS MODULE (DDM) - TERMINATION OF VWFC			
FLIGHT DAY 3			
SAME AS DAY 2 PLUS			
ENVIRONMENTAL OBSERVATION STUDIES OF THE IONIZATION OF SOLAR AND GALACTIC COSMIC RAY HEAVY NUCLEI (IONS)			

FLIGHT 51-B EVENTS TIMELINE (Concluded)			
MAJOR EVENTS	*MISSION ELAPSED TIME	**CENTRAL DAYLIGHT TIME	ORB. TIME NO.
FLIGHT DAY 4			
SAME AS DAY 3			
FLIGHT DAY 5			
SAME AS DAY 4 PLUS			
TERMINATION OF AFT			
FLIGHT DAY 6			
SAME AS DAY 5 PLUS			
TERMINATION OF GFFC			
FLIGHT DAY 7			
BEGIN SPACELAB-3 DEACTIVATION	150:35	5:35 PM	99
NUSAT DEPLOY	153:50	8:50 PM	101
GLOMR DEPLOY	154:10	9:10 PM	102
SPACELAB-3 DEACTIVATED	158:50	1:50 AM	105
CLOSE PAYLOAD BAY DOORS	161:15	4:15 AM	106
DESCENT			
DEORBIT BURN (180 SEC, 318 FPS)	163:58	6:58 AM	108
ENTRY INTERFACE	164:28	7:28 AM	108
BEGIN S-BAND BLACKOUT	164:51	7:51 AM	108
END S-BAND BLACKOUT	164:47	7:47 AM	109
ENTRY/TAEM INTERFACE	164:53	7:53 AM	109
LANDING (KSC)	164:58	7:58 AM	109
FOOTNOTES			
*REFERENCED TO SRB IGNITION			
**FOR 11:00 A.M. CDT LIFTOFF			
CARGO DEFINITIONS			
SPACELAB-3			
FES	FLUID EXPERIMENT SYSTEM		
VCGS	VAPOR CRYSTAL GROWTH SYSTEM		
MICG	MERCURIC IODIDE CRYSTAL GROWTH		
DDM	DROP DYNAMICS MODULE		
DDP	DYNAMICS OF ROTATING & OSCILLATING FREE DROPS		
GFFC	GEOPHYSICAL FLUID FLOW CELL		
ATMOS	ATMOSPHERIC TRACE MOLECULES SPECTROSCOPY		
RAHF	RESEARCH ANIMAL HOLDING FACILITY		
ARC	AMES RESEARCH CENTER		
DEMS	DYNAMIC-ENVIRONMENT MEASURING SYSTEM		
BTS	BIOTELEMETRY SYSTEM		
UMI	URINE MONITORING INVESTIGATION		
AFT	AUTOGENIC FEEDBACK TRAINING		
IONS	IONIZATION STATES OF SOLAR & GALACTIC COSMIC RAY HEAVY NUCLEI		
VWFC	VERY WIDE FIELD CAMERA		
NUSAT	NORTHERN UTAH SATELLITE		
GLOMR	GLOBAL LOW ORBIT MESSAGE RELAY		

SPACELAB 3 MISSION EXPERIMENT TIMELINE OVERVIEW

