

MEMORANDUM

Lyndon B. Johnson Space Center



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SUBJ:

Preliminary Spacelab Mission Development (SMD) Test Crew Activity Plan

Enclosed is the Preliminary SMD III Crew Activity Plan. This plan includes only the STS activities required. An integrated timeline, with scheduled experiment activities, will be included in future editions.

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FLIGHT OPERATIONS DIRECTORATE

PRELIMINARY

SPACELAB
MISSION DEVELOPMENT TEST
SMD III
STS CREW ACTIVITY PLAN
JANUARY 28, 1977



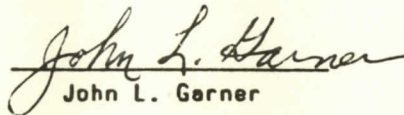
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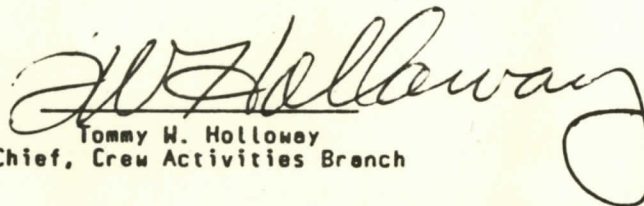
SPACELAB MISSION DEVELOPMENT TEST III
CREW ACTIVITY PLAN
PRELIMINARY

January 28, 1977

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SECTION 1
CREW ACTIVITY PLAN NOTES

1.0 INTRODUCTION

This document contains the planned sequence of crew activities for the third Spacelab Mission Development test (SMD III). SMD III is a 7 day simulation of a Shuttle flight with a Mission Specialist (MS) and two payload specialists (PS1 and PS2). The crew activity plan depicts the activities of a commander (CDR) and pilot (PLT) in addition to those of the MS, PS1 and PS2 for a total typical Shuttle flight crew complement of five; however, the CDR and PLT activities will not be simulated in SMD III.

1.1 CREW DESIGNATIONS

Crew designations for SMD III are as follows:

MS	W. Thornton, M.D.
PS1	W. Williams, Ph. D.
PS2	C. Alexander, Ph. D.

1.2 SIMULATION (FLIGHT) PROFILE

The SMD III Crew Activity Plan is based on a typical 7 day Shuttle flight profile developed by MPAD. Major events are:

Flight Event	Day	GMT	SMD III
Launch	1	1300	Start of SMD III
OMS 1	1	1311	
OMS 2	1	1345	
Spacelab Activation	1	1500	
Spacelab Deactivation	7	1245	
Deorbit Burn	7	1809	End of SMD III
Landing	7	1904	

Flight parameters are:

Altitude	160 N.M1
Inclination	55.0 degrees
Vehicle Attitude	Orb Rate (LVLH Y=0 P=0, R=0)

1.3 SMD III FACILITIES

Major facilities include a Spacelab mockup and Orbiter mid and aft-crew station mockup.

1.4 TYPICAL CREW DAY

The typical crew day for the MS, PS1 and PS2 consist of the following:

	HR:MIN
o Three meals	1:00 (each)
o Sleep periods	8:00
o Post sleep activities	:45
o Pre sleep activities	:45
o Time available for experimentation	11:30

All crewmen will be on a one shift crew work/rest cycle.

1.5 EXPERIMENT OPERATIONS

Experiments planned for SMD III are:

<u>SMD III EXPERIMENTS</u>	
<u>NO.</u>	<u>TITLE</u>
X03	RAT COLLAGEN
X05	BIOFEEDBACK
X08	INSULIN
X10	SOMATOMEDIN
X11	3-METHYL HISTIDINE
X12	PROTEOLYTIC ENZYMES
X13	MUSCLE DEGRADATION
X15	OTOLITH ACTIVITY
X21	HYPOTHALMIC STRUCTURE
X23	ANGIOTENSION
X27	LYMPHOID TISSUE
X39	BONE RESORPTION
X42	DROSOPHILA AGING
X49	DOPPLER FLOW
X50	CV ALTERATION
X51	MOTION SICKNESS
X57	NUCLEATE BOIL
X58	CP FUNCTION
X59	METABOLISM
X60	PYROGENS
X66	OTOLITH OUTPUT
X68	ERYTHROKINETICS
X74	IMMUNE RESPONSE
X75	BASAL METABOLISM
X76	(18) CV DYNAMICS
	(33) HEMOLYSIS
	(44) METABOLISM
X77	INFLIGHT ELECTROLYTES
X78	EARTH OBSERVATIONS

Scheduling requirements and data for each experiment are contained in section 3.0.

1.6 OTR OPERATIONS

OTR's planned for SMD III are:

<u>OTR</u>	
<u>NO.</u>	<u>TITLE</u>
001	MICROPROCESSER
002/04	MEDICAL KIT DEFINITION/REVIEW
003/12	MEDICAL MONITORING
005/06/07	POTABLE WATER/URINE MONITORING/WASTE MGT. SYS
008	VOLATILE METABOLITES
009	CONTAMINATION CONTROL
011	SURGICAL BENCH
013	CREW HEALTH STABILIZATION
014/15	BIO. SPECIMAN HOLDING FAC. (LMSC)
016/17	BIO. SPECIMAN HOLDING FAC. (MDAC)
018/19	PRIMATE AND SMALL VERTIBRA TRANSPORTER (GE)
020	HYGIENE/PERSONAL CLEANSING/HOUSEKEEPING

Scheduling requirements and data for each OTR are contained in section 3.0

1.7 COMMUNICATIONS

Changes to the crew activity plan and to the crew's checklists will be via a CRT and hardcopy device. An example of the format (51 characters per line and 26 lines) simulating the Orbiter CRT is shown in Figure 1.

Voice communication, experiment data, and TV will be restricted to TDRSS coverage.

SMD III DAY 2	CAP (CONTINUED)				DDD/HH:MM:SS
23	+	+	+	+	+
	-	PSA	-	PSA	-
	-	PSA	-	PSA	-
24	+	+	+	+	+
	-	MEAL	-	MEAL	-
	-	MEAL	-	MEAL	-
25	+	+	+	+	+
	-	-	-	-	-
	-	-	-	-	-
26	+	+	+	+	+
	-	-	-	-	-
	-	-	-	-	-
27	+	+	+	+	+
	-	-	-	-	-
	-	-	-	-	-
28	+	+	+	+	+
		MESSAGE LINE			
		MESSAGE LINE			
		SCRATCH PAD LINE			

FIGURE 1 UPLINK FORMAT

1.8 SHOPPING LIST

Activities that cannot be scheduled on the preflight crew activities plan will be on a crew shopping list and performed if time becomes available during the simulation.

2.0 SMD III TIMELINES

The following seven pages contain the Standard STS timeline with no P/L or CDR/PLT activities. At this time, the timeline is intended to reflect only STS activities.

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
187:0700/188:0700		1/187		July 6, 1977						SMD III		187:1200/188:1200		PRELIMINARY		January 28, 1977	
ORBIT		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MET		1	3	5	7	9	11	13	15	17	19	21	23				
CDR						MEAL					MEAL	PSA		SLEEP			
PLT		LAUNCH	SPACELAB			MEAL					MEAL	PSA		SLEEP			
CMN		PHASE	ACTIVATION			MEAL					MEAL	PSA		SLEEP			
PSI						MEAL					MEAL	PSA		SLEEP			
PSR						MEAL					MEAL	PSA		SLEEP			
DAY/NIGHT																	
EARTH TRACK																	
W/S&S																	
TDRS COVERAGE																	
DEORBIT OPPORTUNITIES		00:59			07:21		08:55										
ATT	REMO																
FNWRS	CONT.																
NOTES																	

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE		
188-0700/189-0700		2/188		July 7, 1977						SND III		188-1200/189-1200		PRELIMINARY		January 28, 1977		
ORBIT		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
MET		25	27	29	31	33	35	37	39	41	43	45	47					
CDR	PSA MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL
FLY	PSA MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL
NS	PSA MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL
PS1	PSA MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL
PS2	PSA MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL	MEAL
DRY/NIGHT																		
EARTH TRACE																		
W/SRA																		
TOPS COVERAGE																		
DEGRIT	23:																	
OPPORTUNITIES	34																	
ATT	REND																	
HWRS	CONT																	
NOTES																		

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
189:0700/190:0700		3/189		July 8, 1977						SMD III		189:1200/190:1200		PRELIMINARY		January 28, 1977	
ORBIT	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
MET																	
CDR	PSA	MEAL									MEAL	PSA					
PLT	PSA	MEAL									MEAL	PSA					
CMN	NS	MEAL									MEAL	PSA					
	PS1	MEAL									MEAL	PSA					
	PS2	MEAL									MEAL	PSA					
DAY/NIGHT																	
EARTH TRACE																	
W/SAG																	
TORS COVERAGE																	
DEARBIT OPPORTUNITIES																	
ATT REQ'D																	
MNVRS CONT.																	
NOTES																	

COT		FD/DCY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GHT		EDITION		PUBLICATION DATE	
190:0700/191:0700		4/190		July 9, 1977						SMD III		190:1200/191:1200		PRELIMINARY		January 28, 1977	
GRBIT		48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
MET		73 75 77 79 81 83 85 87 89 91 93 95															
CIN	CDR	PSA	MEAL				MEAL				MEAL	PSA			SLEEP		
	FLT	PSA	MEAL				MEAL				MEAL	PSA			SLEEP		
	NS	PSA	MEAL				MEAL				MEAL	PSA			SLEEP		
	FS1	PSA	MEAL				MEAL				MEAL	PSA			SLEEP		
	FS2						MEAL				MEAL	PSA			SLEEP		
DAY/NIGHT		73 75 77 79 81 83 85 87 89 91 93 95															
EARTH TRACE W/SAR		73 75 77 79 81 83 85 87 89 91 93 95															
TDRS COVERAGE W		73 75 77 79 81 83 85 87 89 91 93 95															
DEGRBIT OPPORTUNITIES		73 75 77 79 81 83 85 87 89 91 93 95															
ATT RECD		73 75 77 79 81 83 85 87 89 91 93 95															
MWRS CONT.		73 75 77 79 81 83 85 87 89 91 93 95															
NOTES		73 75 77 79 81 83 85 87 89 91 93 95															

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
191:0700/192:0700		5/191		July 10, 1977						SMD III		191:1200/192:1200		PRELIMINARY		January 28, 1977	
ORBIT		64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
MET		97	99	101	103	105	107	109	111	113	115	117	119				
COR	PSA MEAL				MEAL				MEAL	PSA							
FLT	PSA MEAL				MEAL				MEAL	PSA							
CIN	PSA MEAL				MEAL				MEAL	PSA							
PSI	PSA MEAL				MEAL				MEAL	PSA							
PS2	PSA MEAL				MEAL				MEAL	PSA							
DAY/NIGHT																	
EARTH TRACE																	
W/SRA																	
TORS COVERAGE																	
DEORBIT OPPORTUNITIES		100:50	102:25												117:03	118:37	
ATT	RECD																
MNVR	CONT.																
NOTES																	

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
192-0700/193-0700		6/192		July 11, 1977				PHASE		SMD III		192:1200/193:1200		PRELIMINARY		January 28, 1977	
ORBIT		80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
MET		121	123	125	127	129	131	133	135	137	139	141	143				
CMN	CDR	PSA	MEAL		MEAL						MEAL	PSA		SLEEP (7 HOURS)			PSA A L
	PLT	PSA	MEAL		MEAL						MEAL	PSA		SLEEP (7 HOURS)			PSA A L
	MS	PSA	MEAL		MEAL						MEAL	PSA		SLEEP (7 HOURS)			PSA A L
	PS1	PSA	MEAL		MEAL						MEAL	PSA		SLEEP (7 HOURS)			PSA A L
	PS2	PSA	MEAL		MEAL						MEAL	PSA		SLEEP (7 HOURS)			PSA A L
DAY/NIGHT																	
EARTH TRACE																	
W/SRA																	
TDRS COVERAGE W																	
DEORBIT OPPORTUNITIES																	
ATT READ																	
MNWRS CONT.																	
NOTES																	

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
193:0700/194:0700		7/193		July 12, 1977						SMD III		193:1200/194:1200		PRELIMINARY		January 28, 1977	
ORBIT		96	97	98	99	100											
MET		145	147	149	151	153	155	157	159	161	163	165	167				
CUR	MEAL																
FLT	MEAL																
MS	MEAL																
PS1	MEAL																
PS2	MEAL																
DAY/NIGHT																	
EARTH TRACE																	
W/SHA																	
TORS E																	
COVERAGW																	
DE ORBIT																	
OPPOST UNITS																	
ATT																	
REOD																	
MNVRS																	
CONT.																	
NOTES																	

EXPERIMENT

<u>NO.</u>	<u>TITLE</u>
X03	RAT COLLAGEN
X05	BIOFEEDBACK
X08	INSULIN
X10	SOMATOMEDIN
X11	3-METHYL HISTIDINE
X12	PROTEOLYTIC ENZYMES
X13	MUSCLE DEGRADATION
X15	OTOLITH ACTIVITY
X21	HYPOTHALMIC STRUCTURE
X23	ANGIOTENSION
X27	LYMPHOID TISSUE
X39	BONE RESORPTION
X42	DROSOPHILA AGING
X49	DOPPLER FLOW
X50	CV ALTERATION
X51	MOTION SICKNESS
X57	NUCLEATE BOIL
X58	CP FUNCTION
X59	METABOLISM
X60	PYROGENS
X66	OTOLITH OUTPUT
X68	ERYTHROKINETICS
X74	IMMUNE RESPONSE
X75	BASAL METABOLISM
X76	(18) CV DYNAMICS
	(33) HEMOLYSIS
	(44) METABOLISM
X77	INFLIGHT ELECTROLYTES
X78	EARTH OBSERVATIONS

EXPERIMENT NO. X 03			DATE: 01/19/77	
TITLE: RAT COLLAGEN				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X03	DAILY FEED & WATER			
X03	DAY 1 INJECTION	30	ONE	X
X03	DAYS 2, 4, & 6	30	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. FEED, WATER, COLLECT URINE AND FECES DAILY. 2. SACRIFICE 2 RATS ON DAYS 2, 4, & 6. 3. SURGICAL BENCH REQUIRED ON DAYS 2, 4 & 6. 4. DAY 2 SACRIFICE 24 HRS AFTER DAY 1 INJECTION.				

EXP-1

EXPERIMENT NO. X 05			DATE: 01/19/77	
TITLE: BIOFEEDBACK				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X05	THREE DAYS 1, 3, & 5 OR 2, 4 & 6	45	TWO	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. PS 1 IS SUBJECT AND REQUIRES 30 MIN. 2. MS WILL APPLY SENSORS AND REQUIRES 15 MIN.				

EXP-2

EXPERIMENT NO. X 08/10/68/74			DATE: 01/19/77		
TITLE: AM BLOOD DRAW					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
AM BLOOD DRAW	DAYS 2 & 6		THREE	X	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. PS1 & PS2 ARE TO REMAIN SUPINE IN BED AFTER AWAKENING AND UNTIL BLOOD SAMPLES HAVE BEEN COLLECTED. 2. SUBJECTS MUST HAVE AN OVERNIGHT FAST AND REMAIN FASTED UNTIL AFTER THE FIXATIVE SAMPLE HAS BEEN COLLECTED ON DAY 2. ON DAY 6 FASTING CONTINUES UNTIL THE END OF X 08. 3. MS SETS UP EQUIPMENT, DRAWS BLOOD, INJECTS ISOTOPE AND COLLECTS FIXATIVE SAMPLES ON PS1 & PS2. 4. PS2 DRAWS BLOOD FROM MS. 5. PS2 DOES BLOOD ANALYSIS.					

EXP-3

EXPERIMENT NO. X 08

DATE: 01/19/77

TITLE: INSULIN

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
X 08	DAY 6		THREE	X	X	X

	DRAW BLOOD AT TIME INDICATED AFTER GLUCOSE DRINK					
X 08	T + 0 DRINK GLUCOSE		THREE	X	X	X
X 08	T + 35 MIN		THREE	X	X	X
X 08	T + 100 MIN		THREE	X	X	X
X 08	T + 165 MIN		TWO		X	X
X 08	T + 230 MIN		THREE	X	X	X

SCHEDULING CRITERIA & CONSTRAINTS

1. X 08 IS A CONTINUATION OF THE DAY 6 AM BLOOD DRAW.
2. IN ADDITION TO THE AM BLOOD DRAW CONSTRAINTS, THE SUBJECTS MAY NOT EXERCISE PRIOR TO OR DURING TEST OR ENGAGE IN VIGOROUS ACTIVITIES.
3. PS1 SETS UP X 08 AND ADMINISTERS GLUCOSE DRINK.
4. PS2 DOES BLOOD ANALYSIS.

EXPERIMENT NO. X 10			DATE: 01/19/77	
TITLE: SOMATOMEDIN				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 10	FEED & WATER DAILY			
X 10	DAYS 2, 4, & 6	60	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. BLOOD DRAWS ACCOMPLISHED BY AM & PM BLOOD DRAWS. 2. DAYS 2, 4, & 6 SACRIFICE 5 RATS. 3. SURGICAL BENCH REQUIRED ON DAYS 2, 4, & 6.				

EXP-5

EXPERIMENT NO. X 11			DATE: 01/19/77	
TITLE: 3-METHYL HISTIDINE				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 11	DAILY FEED & WATER		ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. COLLECT ALIQUOTS OF RAT AND HUMAN URINES. 2. HUMAN VOIDS - AS NECESSARY. 3. SCHEDULE WITH 006 & X77.				

EXP-6

EXPERIMENT NO. X 12			DATE: 01/19/77	
TITLE: PROTEOLYTIC ENZYMES				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 12	DAILY FEED & WATER			
X 12	DAYS 2, 4, & 6	60	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. SACRIFICE 5 RATS ON DAYS 2, 4, & 6. 2. SURGICAL BENCH REQUIRED ON DAYS 2, 4, & 6.				

EXP-7

EXPERIMENT NO. X 13			DATE: 01/19/77	
TITLE: MUSCLE DEGRADATION				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 13	DAILY FEED & WATER			
X 13	DAYS 2 & 4	30	ONE	X
X 13	DAY 6	120	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. SACRIFICE RATS ON DAY 6. 2. SURGICAL BENCH REQUIRED ON DAYS 2, 4, & 6.				

EXP-8

EXPERIMENT NO. X 15			DATE: 01/19/77	
TITLE: OTOLITH ACTIVITY				
CAP TITLE X 15	FREQUENCY DAILY	DURATION (MINUTES) 45	CREW REQ'D ONE	MS PS1 PS2 X
SCHEDULING CRITERIA & CONSTRAINTS				

EXP-9

EXPERIMENT NO. X 21			DATE: 01/19/77	
TITLE: HYPOTHALAMIC STRUCTURE				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 21	DAILY FEED & WATER			
X 21	DAY 4	180	ONE	X
X 21	DAY 5	60	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. DAY 5 SACRIFICE 5 MICE. 2. SURGICAL BENCH REQUIRED ON DAYS 4 & 5.				

EXP-10

EXPERIMENT NO. X 23			DATE: 01/19/77	
TITLE: ANGIOTENSION				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 23	DAILY FEED & WATER			
X 23	DAY 4	45	ONE	X
X 23	DAY 6	120	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. SCHEDULE DAY 4 PROCEDURE APPROX. 2 HRS PRIOR TO LIGHTS OUT IN S/L. 2. DAY 6 SACRIFICE RATS. 3. SURGICAL BENCH REQUIRED ON DAYS 4 & 6.				

EXP-11

EXPERIMENT NO. X 27			DATE: 01/19/77	
TITLE: LYMPHOID TISSUE				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 27	DAILY FEED & WATER			
X 27	DAYS 2 & 6	150	TWO	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. DAYS 2 & 6 REQUIRE 75 MIN. EACH FOR PS1 & PS2. 2. DAYS 2 & 6, HARVEST TISSUE AND SACRIFICE 5 RATS. 3. SURGICAL BENCH REQUIRED ON DAYS 2 & 6.				

EXP-12

EXPERIMENT NO. X 39			DATE: 01/19/77	
TITLE: BONE RESORPTION				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 39	DAILY	30	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS				

EXP-13

EXPERIMENT NO. X 42			DATE: 01/19/77	
TITLE: DROSOPHILA AGING				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 42	DAY 1	45	ONE	X
X 42	DAY 2	15	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS				

EXP-14

EXPERIMENT NO. X 49			DATE: 01/19/77		
TITLE: DOPPLER FLOW					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X 49	DAY 1	30	ONE		X
X 49	DAY 7	45	TWO	X	X
SCHEDULING CRITERIA & CONSTRAINTS MID DECK OPERATION (LAUNCH & LANDING ONLY)					

EXPERIMENT NO. X 50			DATE: 01/19/77	
TITLE: C V ALTERATION				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 50	DAYS 3 & 5	180	TWO	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. MS IS OBSERVER AND REQUIRES 90 MIN. 2. PS1 IS SUBJECT AND REQUIRES 90 MIN.				

EXPERIMENT NO. X 51			DATE: 01/19/77	
TITLE: MOTION SICKNESS				
CAP TITLE X 51	FREQUENCY DAYS 1, 3, 5	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2 X
SCHEDULING CRITERIA & CONSTRAINTS				

EXPERIMENT NO. X 57			DATE: 01/19/77	
TITLE: NUCLEATE BOIL				
CAP TITLE X 57	FREQUENCY TIME AVAILABLE	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

EXPERIMENT NO. X 58			DATE: 01/19/77	
TITLE: C P FUNCTION				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 58	DAYS 1 & 5 (OR 6)	60	TWO	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. 30 MIN. EACH SESSION FOR MS & PS2. THE SESSIONS DO NOT HAVE TO BE SCHEDULED AT THE SAME TIME. 2. SCHEDULE WITH 001.				

EXPERIMENT NO. X 59

DATE: 01/19/77

TITLE: METABOLISM

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 59	DAILY	DAY 1-65 DAY 2-25 DAY 3-30 DAY 4-25 DAY 5-30 DAY 6-30 DAY 7-15		
SCHEDULING CRITERIA & CONSTRAINTS				

EXP-20

EXPERIMENT NO. X 60			DATE: 01/19/77	
TITLE: PYROGENS				
CAP TITLE X 60	FREQUENCY DAILY 1-6	DURATION (MINUTES) DAY 1-65 DAY 2-80 DAY 3-30 DAY 4-80 DAY 5-30 DAY 6-80	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

EXP-21

EXPERIMENT NO. X 66			DATE: 01/19/77	
TITLE: OTOLITH OUTPUT				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 66	DAYS 2, 3 & 5, 6	240	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. MS ASSISTS AS REQUIRED. 2. ACCESS TO SURGICAL BENCH CANNOT BE GAINED DURING THIS EXPERIMENT.				

EXP-22

EXPERIMENT NO. X 68			DATE: 01/19/77		
TITLE: ERYTHROKINETICS					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
PM BLOOD DRAW	DAY 2		THREE	X	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. IN ADDITION TO THE AM BLOOD DRAW, X 68 REQUIRES A PM BLOOD DRAW. 2. PS1 & PS2 MUST BE SUPINE FOR 30 MIN. PRIOR TO GIVING BLOOD SAMPLES. 3. BLOOD DRAWS MUST BE PRIOR TO THE EVENING MEAL. 4. MS SETS UP EQUIPMENT, DRAWS BLOOD, INJECTS ISOTOPE AND COLLECTS FIXATIVE SAMPLES ON PS1 & PS2. 5. PS2 DRAWS BLOOD FROM MS. 6. PS2 DOES BLOOD ANALYSIS.					

EXP-23

EXPERIMENT NO.			DATE: 01/19/77	
TITLE:				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

EXP-24

EXPERIMENT NO. X 75			DATE: 01/19/77	
TITLE: BASAL METABOLISM				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 75	DAYS 2 & 6	80	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. SCHEDULE X 75 WHEN PS1 IS WORKING AT THE SURGICAL BENCH.				

EXP-25

EXPERIMENT NO. X 76 (18)			DATE: 01/19/77	
TITLE: C V DYNAMICS				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 76 (18)				X
SCHEDULING CRITERIA & CONSTRAINTS 1. MS ASSISTS AS REQUIRED.				

EXP-26

EXPERIMENT NO. X 76 (33)			DATE: 01/19/77	
TITLE: HEMOLYSIS				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 76 (33)	EVERY 4 HOURS OF AWAKE PERIOD	5	ONE	X
X 76 (33)	LAST DAILY FILTER CHANGE	10	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS 1. CHANGE FILTER EVERY 4 HOURS OF AWAKE PERIOD.				

EXPERIMENT NO. X 76 (44)			DATE: 01/19/77	
TITLE: METABLOISM				
CAP TITLE X 76 (44)	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2 X
SCHEDULING CRITERIA & CONSTRAINTS 1. MS ASSISTS AS REQUIRED.				

EXP-28

EXPERIMENT NO. X 77			DATE: 01/19/77	
TITLE: INFLIGHT ELECTROLYTES				
CAP TITLE X 77	FREQUENCY DAILY AS NECESSARY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2 X
SCHEDULING CRITERIA & CONSTRAINTS 1. EXPERIMENT TO BE PERFORMED BY PS2 AFTER HUMAN VOIDS.				

EXP-29

EXPERIMENT NO. X 78			DATE: 01/19/77	
TITLE: EARTH OBSERVATIONS				
CAP TITLE X 78	FREQUENCY TIME AVAILABLE	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

OTR

NO.

TITLE

001	MICROPROCESSER
002/04	MEDICAL KIT DEFINITION/REVIEW
003/12	MEDICAL MONITORING
005/06/07	POTABLE WATER/URINE MONITORING/WASTE MGT. SYS
008	VOLATILE METABOLITES
009	CONTAMINATION CONTROL
011	SURGICAL BENCH
013	CREW HEALTH STABILIZATION
014/15	BIO. SPECIMAN HOLDING FAC. (LMSC)
016/17	BIO. SPECIMAN HOLDING FAC. (MDAC)
018/19	PRIMATE AND SMALL VERTIBRA TRANSPORTER (GE)
020	HYGIENE/PERSONAL CLEANSING/HOUSEKEEPING

OTR NO. 001			DATE: 01/19/77	
TITLE: MICROPROCESSOR				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
001	DAYS 3, 4, & 5	30	TWO	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. 15 MIN EACH SESSION 2. SCHEDULE WITH X 58.				

OTR NO. 002/004			DATE: 01/19/77	
TITLE: SHUTTLE MEDICAL KIT DEFINITION/REVIEW				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
002/004	AS REQUIRED	15		
SCHEDULING CRITERIA & CONSTRAINTS				

OTR-2

OTR NO. 005/06/07			DATE: 01/19/77	
TITLE: POTABLE WATER/URINE MONITORING/WASTE MANAGEMENT SYSTEMS				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
005/06//07	DAILY AS REQUIRED		THREE	X X X
SCHEDULING CRITERIA & CONSTRAINTS				

OTR NO. 008			DATE: 01/19/77	
TITLE: VOLATILE METABOLITES				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
008	DAYS 1, 2, 3, & 6	5	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS				

OTR-5

OTR NO. 009			DATE: 01/19/77	
TITLE: CONTAMINATION CONTROL				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
009	DAY 4	90	ONE	X
SCHEDULING CRITERIA & CONSTRAINTS				

OTR-6

OTR NO. 011		DATE: 01/19/77		
TITLE: SURGICAL BENCH				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
011	AS REQUIRED FOR EXPERIMENTS			
SCHEDULING CRITERIA & CONSTRAINTS				

OTR-7

OTR NO. 013		DATE: 01/19/77		
TITLE: CREW HEALTH STABILIZATION				
CAP TITLE 013	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

OTR NO. 014/15			DATE: 01/19/77	
TITLE: BIO. SPECIMAN HOLDING FAC (LMSC)				
CAP TITLE 014/15	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

OTR NO. 016/17			DATE: 01/19/77	
TITLE: BIO. SPECIMAN HOLDING FAC. (MDAC)				
CAP TITLE 016/17	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

OTR NO. 018/19			DATE: 01/19/77	
TITLE: PRIMATE & SMALL VERTIBRA TO TRANSPORTER (GG)				
CAP TITLE 018/19	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

OTR-11

OTR NO. 020			DATE: 01/19/77	
TITLE: HYGIENE/PERSONAL CLEANSING/HOUSEKEEPING				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
020	DAILY 2-7	10		
SCHEDULING CRITERIA & CONSTRAINTS				

OTR-12

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