

MEMORANDUM

Lyndon B. Johnson Space Center



REFER TO: CG5-77-76	DATE March 25, 1977	INITIATOR CG5/JLGarner:vn:3/24/77:4271	ENCL
TO: Distribution		CC	
FROM: CG5/Chief, Flight Activities Branch		SIGNATURE <i>I. W. Holloway</i> 3/25/77 I. W. Holloway	
SUBJ: Basic Integrated Spacelab Mission Development Test III (SMD III) Crew Activity Plan			
Enclosed is the Basic Integrated SMD III Crew Activity Plan. This plan includes the STS and the experiment activities required.			
JSC Form 1180 (Rev Jan 76)		INCREASED PRODUCTIVITY = LOWER COST	
		PAGE 1 OF _____	

FLIGHT OPERATIONS DIRECTORATE

BASIC

SPACELAB
MISSION DEVELOPMENT TEST
SMD III
INTEGRATED CREW ACTIVITY
PLAN

MARCH 15, 1977

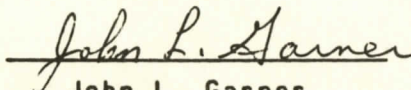


PREPARED BY
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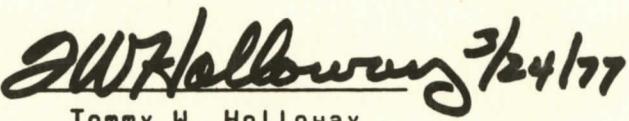
SPACELAB MISSION DEVELOPMENT TEST III
CREW ACTIVITY PLAN
BASIC

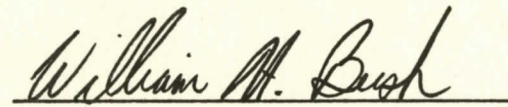
March 15, 1977

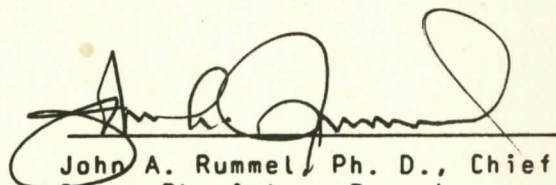
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TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction.....	1-1
1.1 Crew Designations.....	1-1
1.2 Simulation (Flight) Profile.....	1-1
1.3 SMD III Facilities.....	1-2
1.4 Typical Crew Day.....	1-2
1.5 Experiment Operations.....	1-3
1.6 OTR Operations.....	1-4
1.7 Communications.....	1-4
1.8 Shopping List.....	1-6
2.0 SMD III Timelines.....	2-1
3.0 Experiment Data Sheets.....	3-1
4.0 OTR Data Sheets.....	4-1

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>QTR</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 4.0

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.

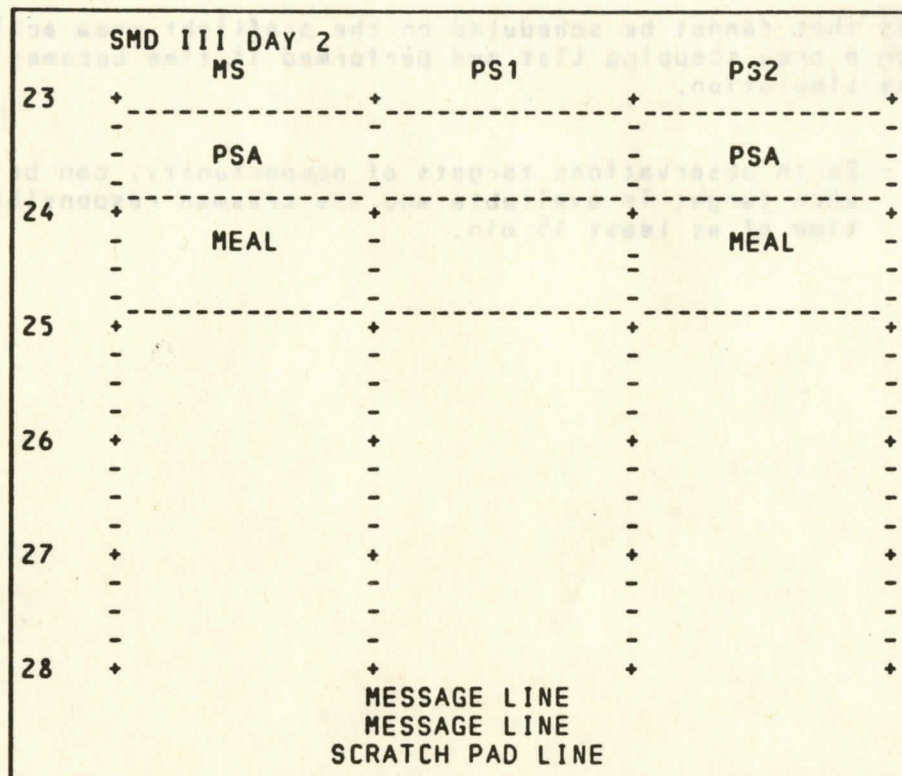


FIGURE 1 UPLINK FORMAT

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.

- X78 - Earth observations targets of opportunity, can be scheduled when target is available and the crewman responsible has free time of at least 15 min.

2.0 SMD III TIMELINES

The following pages contain the integrated timeline with no CDR/PLT activities scheduled. These timelines schedule the experiments and OTR's in sections 3 and 4.

One of the major scheduling constraints is the limited capability to down link data from the SMD III simulator to the ground. Table 1 contains a list of the patch panels and configurations with a description of the experiments and OTR's that can be down linked in parallel.

TABLE I.- DATA DOWNLINK CONFIGURATIONS (Concluded)

PATCH PANEL 8
CONFIG.

	DESCRIPTION
99	76 BACKGROUND
81	15 + 76 BACKGROUND
82	15 + 75 + 76 BACKGROUND
83	15 + OTR 1 + 76 BACKGROUND
84	50 + 76 BACKGROUND
85	50 + 75 + 76 BACKGROUND
86	50 + OTR 1 + 76 BACKGROUND

PATCH PANEL 9
CONFIG.

	DESCRIPTION
99	76 BACKGROUND
91	13 + 76 BACKGROUND
92	13 + 75 + 76 BACKGROUND
93	13 + OTR 1 + 76 BACKGROUND

[illegible]

CDT	FD/DOY	HOUSTON DATE	BETA ANGLE	MOON PHASE	FLIGHT	GMT	EDITION	PUBLICATION DATE									
188:0700/189:0700	2/188	July 7, 1977			SMD III	188:1200/189:1200	BASIC	March 15, 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	ORBITER CONFIGURATION KIT #				
CDR	PSA MEAL					MEAL				MEAL	PSA			SLEEP			
FLT	PSA MEAL					MEAL				MEAL	PSA			SLEEP			
HS	AM BLOOD DRAW	PSA MEAL	ANIMAL CARE	X15		X42 MEAL	X76 (44)		PM BLOOD DRAW	X13	MEAL	PSA		SLEEP			
PS1	AM BLOOD DRAW	PSA MEAL	ANIMAL CARE	X15	X75	MEAL	X27	X39 SUPINE	PM BLOOD DRAW	X15	MEAL	PSA		SLEEP			
PS2	AM BLOOD DRAW, ANALYSIS, PSA & MEAL	PSA MEAL	ANIMAL CARE	X10/12 X03		MEAL	X27	X77 SUPINE	PM BLOOD DRAW & ANALYSIS	X15	MEAL	PSA		SLEEP			
DRY/NIGHT																	
EARTH TRACE																	
W/SRR																	
TOPS COVERAGE																	
DEGRIT OPPORTUNITIES	23:34					31:31	33:04									46:09	
ATT	REDD																
MNVR	CONT.																
NOTES	• X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE																

2-5

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
189:0700/190:0700		3/189		July 8, 1977						SMO III		189:1200/190:1200		BASIC		March 15, 1977	
ORBIT	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
MET	49	51	53	55	57	59	61	63	65	67	69	71					
CDR	PSA	MEAL		MEAL							MEAL	PSA		SLEEP			
FLT	PSA	MEAL		MEAL							MEAL	PSA		SLEEP			
MS	PSA	MEAL	ANIMAL CARE (18)		MEAL	X42	X50	X51 SET UP	X58	X58	X58	PSA	S/L DN	SLEEP			
PS1	PSA	MEAL	ANIMAL CARE	X15	MEAL		X50	X51 SET UP		X39 ANAL	X58	PSA	S/L DN	SLEEP			
PS2	PSA	MEAL	ANIMAL CARE (18)	X66	MEAL	X66	MEAL	X76 (44)		X58	X58	PSA	S/L DN	SLEEP			
DAY/NIGHT																	
EARTH TRACE																	
TORS COVERAGE W																	
DEGRIT OPPORTUNITIES	47:																
ATT	REDD																
MNVR	CONT.																
• X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE																	
NOTES																	

CDT		FD/DOY		HOUSTON DATE		BETA ANGLE		MOON PHASE		FLIGHT		GMT		EDITION		PUBLICATION DATE	
190:0700/191:0700		4/190		July 9, 1977						SMD III		190:1200/191:1200		BASIC		March 15, 1977	
ORB	BIT	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															
CDR	PSA MEAL			MEAL						MEAL		PSA		SLEEP			
FLT	PSA MEAL			MEAL						MEAL		PSA		SLEEP			
NS	PSA MEAL	ANIMAL CARE		009		MEAL		X13		X57		S/L DN		MEAL		SLEEP	
PS1	PSA MEAL	ANIMAL CARE		X59/60		MEAL		X15		X21		X39 DRAW		X15		SLEEP	
PS2	PSA MEAL	ANIMAL CARE		X66		X66		MEAL		X76(44)		X03 X10/12		S/L DN		MEAL	
DAY/NIGHT		73 75 77 79 81 83 85 87 89 91 93 95															
EARTH TRACE W/SRA																	
TORS COVERAGE W																	
DECREBIT OPPORTUNITIES																	
ATT	REQD																
MNVR	CONT.																
NOTES		• X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE • X76 (33) FILTER CHANGE : X57 EQUIPMENT TURN ON : 009 SAMPLE : 009 SAMPLE															

CDT		FD/DCY		HOUSTON DATE		BETA ANGLE		MOON		FLIGHT		GMT		EDITION		PUBLICATION DATE																	
191:0700/192:0700		5/191		July 10, 1977				PHASE		SMD III		191:1200/192:1200		BASIC		March 15, 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									
CMN	COR	PSA	MEAL			MEAL										MEAL		PSA		SLEEP													
	FLT	PSA	MEAL			MEAL										MEAL		PSA		SLEEP													
	MS	PSA	MEAL	ANIMAL CARE		X75		MEAL		X51		X50		S/L DN		MEAL		PSA		SLEEP													
	PS1	PSA	MEAL	ANIMAL CARE		X15		MEAL		X51		X50		S/L DN		MEAL		PSA		SLEEP													
	PS2	PSA	MEAL	ANIMAL CARE		X77		X66		MEAL		X77		X76 (44)		MEAL		PSA		SLEEP													
DAY/NIGHT																																	
EARTH TRACE																																	
N/SRA																																	
TORS COVERAGE																																	
DEORBIT OPPORTUNITIES																																	
ATT RECD																																	
MNVRS																																	
CONT.																																	
NOTES																																	

[illegible]

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	BASIC	March 15, 1977		
ORBIT		96	97	98	99	100							
MET		145	147	149	151	153	155	157	159	161	163	165	167
CUR	MEAL												
PLT	MEAL												
MS	MEAL												
PS1	MEAL												
PS2	MEAL												
DRY/NIGHT													
EARTH TRACE													
W/SHA													
TORS E COVERAGE													
DEORBIT OPPORTUNITIES													
ATT REOD													
MNVRS CONT.													
		•X76 (33) FILTER CHANGE											
NOTES													

3.0 EXPERIMENT DATA SHEETS

<u>EXPERIMENT</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	

EXPERIMENT NO. X 03			DATE: 03/15/77	
TITLE: RAT COLLAGEN				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X03	DAILY FEED & WATER			
X03	DAY 1 INJECTION	15	ONE	X
X03	DAYS 2, 4, & 6	45	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 1, 2, 4 & 6. 4. DAY 2 SACRIFICE 24 HRS AFTER DAY 1 INJECTION.				

EXPERIMENT NO. X 05			DATE: 03/15/77		
TITLE: BIOFEEDBACK					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X05	THREE DAYS 1, 3, & 5	60	TWO	X	X
SCHEDULING CRITERIA & CONSTRAINTS 1. PS 1 IS SUBJECT AND REQUIRES 30 MIN. 2. MS WILL APPLY SENSORS AND REQUIRES 30 MIN. 3. X05 IS CONDUCTED ON FLIGHT DECK. 4. DATA DOWNLINK CONFLICT.					

EXPERIMENT NO. X 08/10/68/74

DATE: 03/15/77

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.

EXPERIMENT NO. X 08			DATE: 03/15/77		
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 + 30 MIN		THREE	X	X X
X 08	T + 60 MIN		THREE	X	X X
X 08	T + 120 MIN		THREE	X	X X
X 08	T + 180 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 10/12

DATE: 03/15/77

TITLE: SOMATOMEDIN

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 10	FEED, WATER & FREEZE URINE DAILY			
X 10	DAYS 2, 4, & 6	60	ONE	X
X X X	THREE			X X X
X X X	THREE			X X X
X X X	THREE			X X X
X X X	THREE			X X X
X X X	THREE			X X X

SCHEDULING CRITERIA & CONSTRAINTS

1. CREW BLOOD DRAWS ACCOMPLISHED BY AM & PM BLOOD DRAWS.
2. DAYS 2, 4, & 6 SACRIFICE 6 RATS.
3. SURGICAL BENCH REQUIRED ON DAYS 2, 4, & 6.

EXPERIMENT NO. X 11

DATE: 03/15/77

TITLE: 3-METHYL HISTIDINE

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 11	DAILY FEED & WATER			

SCHEDULING CRITERIA & CONSTRAINTS

1. COLLECT RAT AND HUMAN URINES.
2. HUMAN VOIDS - AS NECESSARY.
3. SCHEDULE WITH 006 & X77.

DATE: 03/15/77

0374 4111 11 11

GENERAL CHEMISTRY & LABORATORY

EXPERIMENT NO. X 13				DATE: 03/15/77	
TITLE: MUSCLE DEGRADATION					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X 13	DAILY FEED & WATER				
X 13	DAYS 2 & 4	45	ONE	X	
X 13	DAY 6	150	ONE	X	
SCHEDULING CRITERIA & CONSTRAINTS 1. SACRIFICE 2 RATS ON DAY 6. 2. SURGICAL BENCH REQUIRED ON DAYS 2, 4, & 6. 3. DAY 6 REQUIRES EQUIPMENT TURN ON AND WARM-UP FOR APPROXIMATELY 2 HOURS PRIOR TO RUNNING EXPERIMENT. 4. DATA DOWNLINK CONFLICT ON DAY 6. 5. PS 2 ASSIST AS REQUIRED ON DAY 6.					

EXPERIMENT NO. X 15			DATE: 03/15/77		
TITLE: OTOLITH ACTIVITY					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X 15	TWO TIMES A DAY	45 EA.	ONE		X
SCHEDULING CRITERIA & CONSTRAINTS 1. X15 REQUIRES THE SWING TO BE MOUNTED IN THE CENTER OF THE SPACELAB IN FRONT OF POD A. 2. DATA DOWNLINK CONFLICT.					

EXPERIMENT NO. X 21			DATE: 03/15/77		
TITLE: HYPOTHALAMIC STRUCTURE					
CAP TITLE	FREQUENCY	DURATION (MINUTUES)	CREW REQ'D	MS	PS1 PS2
X 21	DAILY FEED & WATER				
X 21	DAY 4	150	ONE		X
X 21	DAY 6	90	ONE		X
SCHEDULING CRITERIA & CONSTRAINTS 1. DAY 6 SACRIFICE 5 MICE. 2. SURGICAL BENCH REQUIRED ON DAYS 4 & 6.					

EXPERIMENT NO. X 23

DATE: 03/15/77

TITLE: ANGIOTENSION

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
X 23	DAILY FEED & WATER					
X 23	DAY 5	30	ONE		X	
X 23	DAY 6	120	ONE		X	

SCHEDULING CRITERIA & CONSTRAINTS

1. SCHEDULE DAY 5 PROCEDURE APPROX. 2 HRS PRIOR TO LIGHTS OUT IN S/L.
2. DAY 6 SACRIFICE 12 RATS.
3. SURGICAL BENCH REQUIRED ON DAYS 5 & 6.

EXPERIMENT NO. X 39

DATE: 03/15/77

TITLE: BONE RESORPTION

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
X 39	DAILY 2 THRU 6	30	ONE		X	
X 39	DAY 1 ACTIVATION	10	TWO	X	X	
X 39	DAY 1 INJECTION	20	ONE		X	
X 39	DAY 1 INJECTION + 6 HRS	45	ONE		X	
X 39	DAY 1 INJECTION + 12 HRS	45	ONE		X	
X 39	DAY 7 DEACTIVATION	10	TWO	X	X	

SCHEDULING CRITERIA & CONSTRAINTS

1. SURGICAL BENCH REQUIRED FOR EACH INJECTION AND BLOOD DRAW.
2. ACTIVITIES FOR EACH BLOOD DRAW
 - a. INJECT MONKEY - 10 MIN.
 - b. DRAW BLOOD - 10 MIN.
 - c. WAIT FOR CLOT - 45 MIN. PLUS
 - d. BLOOD WORK - 30 MIN.

EXPERIMENT NO. X 42

DATE: 03/15/77

TITLE: DROSOPHILA AGING

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
X 42	DAY 2	45	ONE	X		
X 42	DAY 3	20	ONE	X		

SCHEDULING CRITERIA & CONSTRAINTS

1. SURGICAL BENCH REQUIRED ON DAY 2.

EXPERIMENT NO. X 49

DATE: 03/15/77

TITLE: DOPPLER FLOW

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 49	DAY 1	45	TWO	X X
X 49	DAY 7	60	TWO	X X

SCHEDULING CRITERIA & CONSTRAINTS

1. MID DECK OPERATION (LAUNCH & LANDING ONLY)
2. PS 2 IS SUBJECT AND REQUIRES 30 MIN ON LAUNCH & LANDING.
3. MS IS OBSERVER AND REQUIRES 15 MIN. ON LAUNCH & 30 MIN. ON LANDING.

EXPERIMENT NO. X 50			DATE: 03/15/77	
TITLE: C V ALTERATION				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 50	DAYS 1, 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. 3. X 50 SHARES EQUIPMENT WITH 001 & X 58. 4. DATA DOWNLINK CONFLICT. 5. TILT TABLE REQUIRED. 6. MAY REQUIRE DARKENED SPACELAB.				

EXPERIMENT NO. X 51

DATE: 03/15/77

TITLE: MOTION SICKNESS

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
X 51	DAYS 1, 3, 5 & 6	30 SET-UP 65 RUN	TWO	X		X

SCHEDULING CRITERIA & CONSTRAINTS

1. MS IS OPERATOR, PS1 IS THE SUBJECT.
2. X 51 SHARES EQUIPMENT WITH X 66.
3. DATA IS HAND LOGGED.

EXPERIMENT NO. X 57

DATE: 03/15/77

TITLE: NUCLEATE BOIL

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 57	TIME AVAILABLE			
X 57	ACTIVATION	2	ONE	X or X
	EQUIP. WARM-UP	90		
X 57	OPERATION	120	ONE	X or X

SCHEDULING CRITERIA & CONSTRAINTS

1. X 57 EQUIPMENT IS LOCATED UNDER THE FLOOR IN FRONT OF X 39 PRIMATE CAGE.
2. EQUIPMENT REQUIRES 90 TO 120 MIN. WARM-UP PRIOR TO OPERATION.

EXPERIMENT NO. X 58			DATE: 03/15/77		
TITLE: C P FUNCTION					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X 58	DAYS 1, 3, & 5	90	TWO	X	X
SCHEDULING CRITERIA & CONSTRAINTS 1. 45 MIN. EACH SESSION FOR MS & PS2. 2. SCHEDULE CONSECUTIVELY FOR 90 MIN. 3. X 58 SHARES EQUIPMENT WITH 001, X 50, & X 75.					

EXPERIMENT NO. X 59/60

DATE: 03/15/77

TITLE: METABOLISM

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 59/60	DAILY FEED			
X 59/60	DAYS 2, 4, & 6	15	ONE	X

SCHEDULING CRITERIA & CONSTRAINTS

DATE: 03/15/77

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
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1. COMBINED WITH X 59.

EXPERIMENT NO. X 66

DATE: 03/15/77

TITLE: OTOLITH OUTPUT

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 66	DAYS 3, 4, & 5	240	ONE	X

SCHEDULING CRITERIA & CONSTRAINTS

1. ACCESS TO SURGICAL BENCH CANNOT BE GAINED DURING THIS EXPERIMENT.
2. X 66 SHARES EQUIPMENT WITH X 51.
3. DATA DOWNLINK CONFLICT.
4. X 66 IS SUSCEPTIBLE TO VIBRATION, MAY HAVE TO RESTRICT TRAFFIC.

EXPERIMENT NO. X 68

DATE: 03/15/77

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.

EXPERIMENT NO. X 74			DATE: 03/15/77		
TITLE: IMMUNE RESPONSE					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X 74	DAYS 2 & 6 (BLOOD DRAWS)		THREE	X	X X
SCHEDULING CRITERIA & CONSTRAINTS 1. BLOOD DRAWS FOR X 08, X 10, X 68, & X 74 WILL BE DONE AT THE SAME TIME.					

EXPERIMENT NO. X 75

DATE: 03/15/77

TITLE: BASAL METABOLISM

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 75	DAYS 2 & 5	90	TWO	X X

SCHEDULING CRITERIA & CONSTRAINTS

1. X 75 SHARES EQUIPMENT WITH 001 & X 58.
2. MASK HOSE IS APPROXIMATELY 10 FEET LONG.
3. ACCOMPLISH IN THE MORNING.
4. NO FOOD INTAKE OR EXERCISE FOR 2 HOURS PRIOR TO TEST.
5. CANNOT SCHEDULE WITH 001, X 50, & X 58.

EXPERIMENT NO. X 76 (18)

DATE: 03/15/77

TITLE: C V DYNAMICS

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
X 76 (18)	DAILY FEED, WATER, & DISPOSE OF URINE					
X 76 (18)	DAYS 2, 4, & 5	20	ONE			X
X 76 (18)	DAYS 1, 3, & 6	40	TWO	X		X

SCHEDULING CRITERIA & CONSTRAINTS

1. DAYS 2, 4, & 5 SERVICE PUMP & CATHETER PATENCY.
2. DAYS 1, 3, & 6 MICROSPHERE INJECTION.
3. ON DAYS 1, 3, & 6, SCHEDULE X 76 (18) BEFORE X 76 (44) LBNP.

EXPERIMENT NO. X 76 (33)

DATE: 03/15/77

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

SCHEDULING CRITERIA & CONSTRAINTS

1. CHANGE FILTER EVERY 4 HOURS OF AWAKE PERIOD.
2. LAST DAILY FILTER CHANGE REQUIRES TWO FILTERS.

EXPERIMENT NO. X 76 (44)			DATE: 03/15/77		
TITLE: METABOLISM					
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1 PS2
X 76 (44)	DAILY	120	ONE	X	OR X
SCHEDULING CRITERIA & CONSTRAINTS - ON DAYS 1, 3, & 6 SCHEDULE AFTER 76 (18) MICROSPHERE. - SCHEDULE X 76 (44) IN MID AFTERNOON. - DATA DOWNLINK CONFLICT.					

EXPERIMENT NO. X 77

DATE: 03/15/77

TITLE: INFLIGHT ELECTROLYTES

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 77	DAY 1 - 2 TIMES DAYS 2, 5, & 6	60	1	X
X 77	3 TIMES A DAY	90	1	X

SCHEDULING CRITERIA & CONSTRAINTS

1. EXPERIMENT TO BE PERFORMED BY PS2 AFTER HUMAN VOIDS.
2. RUN SAMPLES APPROXIMATELY EVERY 8 HOURS.

EXPERIMENT NO. X 78

DATE: 03/15/77

TITLE: EARTH OBSERVATIONS

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
X 78	TIME AVAILABLE	15 MIN PLUS	ONE	X

SCHEDULING CRITERIA & CONSTRAINTS

1. TARGET OF OPPORTUNITY.

4.0 OTR DATA SHEETS

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. SPECIMEN HOLDING FAC. (LMSC)
016/17	BIO. SPECIMEN HOLDING FAC. (MDAC)
018/19	PRIMATE AND SMALL VERTIBRA TRANSPORTER (GE)
020	HYGIENE/PERSONAL CLEANSING/HOUSEKEEPING

03/15/77

OTR NO. 001		DATE: 03/15/77	
TITLE: MICROPROCESSOR			
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D
001	DAYS 3, 4, & 5	30	TWO
SCHEDULING CRITERIA & CONSTRAINTS		1. 15 MIN EACH SESSION 2. 001 SHARES EQUIPMENT WITH X 58 & X 75.	

OTR NO. 002/004

DATE: 03/15/77

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 NO. 003/012		DATE: 03/15/77		
TITLE: MEDICAL MONITORING				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
003/012	AS REQUIRED			
SCHEDULING CRITERIA & CONSTRAINTS				

DATE: 03/15/77

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS	PS1	PS2
005/06//07	DAILY AS REQUIRED		THREE	X	X	X

SCHEDULING CRITERIA & CONSTRAINTS	
1. ACCOMPLISH DURING AN ANNUAL CARE SCHEDULING CRITERIA & CONSTRAINTS	

OTR NO. 008 TITLE: VOLATILE METABOLITES		DATE: 03/15/77			
CAP TITLE 008	FREQUENCY DAILY	DURATION (MINUTES) 1	CREW REQ'D ONE	MS PS1 PS2 ANY	
SCHEDULING CRITERIA & CONSTRAINTS 1. ACCOMPLISH DURING AM ANIMAL CARE.					

OTR NO. 009

DATE: 03/15/77

TITLE: CONTAMINATION CONTROL

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
009	DAY 4	90	THREE	X X X

SCHEDULING CRITERIA & CONSTRAINTS

1. MS WILL TAKE SAMPLES INCLUDING SAMPLES FROM PS1 & PS2.

OTR NO. 011

DATE: 03/15/77

TITLE: SURGICAL BENCH

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
011	AS REQUIRED FOR EXPERIMENTS			

SCHEDULING CRITERIA & CONSTRAINTS

OTR NO. 013

DATE: 03/15/77

TITLE: CREW HEALTH STABILIZATION

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
013	DAILY		ONE	X

SCHEDULING CRITERIA & CONSTRAINTS

1. MS VOICE TO GROUND CREW HEALTH STATUS.

OTR NO. 014/15

DATE: 03/15/77

TITLE: BIO. SPECIMAN HOLDING FAC (LMSC)

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
014/15				

SCHEDULING CRITERIA & CONSTRAINTS

OTR NO. 016/17

DATE: 03/15/77

TITLE: BIO. SPECIMAN HOLDING FAC. (MDAC)

CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
016/17				

SCHEDULING CRITERIA & CONSTRAINTS

OTR NO. 018/19		DATE: 03/15/77		
TITLE: PRIMATE & SMALL VERTIBRA TO TRANSPORTER (GG)				
CAP TITLE 018/19	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
SCHEDULING CRITERIA & CONSTRAINTS				

OTR NO. 020			DATE: 03/15/77	
TITLE: HYGIENE/PERSONAL CLEANSING/HOUSEKEEPING				
CAP TITLE	FREQUENCY	DURATION (MINUTES)	CREW REQ'D	MS PS1 PS2
020	AS REQUIRED		ALL	
SCHEDULING CRITERIA & CONSTRAINTS				

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