

# **Flight Data File Crew Activity Plan STS-8**

## **Cycle 4.1 Trajectory**

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Mission Operations Directorate  
Operations Division

Final, Revision A  
August 10, 1983



National Aeronautics and  
Space Administration

**Lyndon B. Johnson Space Center**  
Houston, Texas

FLIGHT DATA FILE

CONTROL

Ascent Checklist  
Post Insertion Book  
Crew Activity Plan  
Deorbit Preparation Book  
Entry Checklist

SUPPORT

Cue Cards  
EVA Checklist  
Flight Maps and Charts  
Orbit Operations Checklist  
Payload Deploy Checklist\*  
Payload Operations Checklist\*  
PDRS Operations Checklist\*  
Photo/TV Checklist  
Rendezvous/Proximity Operations Book\*

OFF-NOMINAL

Ascent Pocket Checklist  
Orbit Pocket Checklist  
Entry Pocket Checklist  
Ascent/Entry Systems Procedures  
Contingency Deorbit Preparation Book  
Contingency EVA Operations Book  
In-Flight Maintenance Checklist  
Medical Checklist  
Payload Systems Data and Malfunction Procedures\*  
Systems Malfunction Procedures

REFERENCE

Data Processing System Dictionary  
Reference Data  
Systems Data Book

\*If required

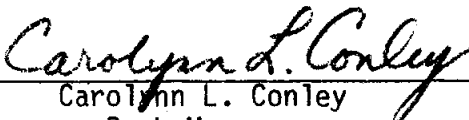
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MISSION OPERATIONS DIRECTORATE


STS-8 CREW ACTIVITY PLAN


FINAL, REVISION A  
August 10, 1983

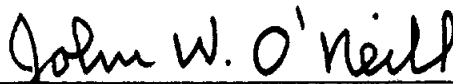
PREPARED BY:


  
\_\_\_\_\_  
Carolynn L. Conley  
Book Manager

APPROVED BY:

  
\_\_\_\_\_  
John F. Whiteley  
Head, Flight Activity  
Planning Section

  
\_\_\_\_\_  
Ted A. Guillory  
Chief, Flight Activity Branch

  
\_\_\_\_\_  
J. W. O'Neill  
Chief, Operations Division

  
\_\_\_\_\_  
Eugene F. Kranz  
Director, Mission Operations

This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes must be submitted on standard JSC Form 482 to DH4/R. D. Snyder, Bldg 4, Rm 352, 713-483-2868.

Comments concerning this document may be addressed to DH4/Carolynn L. Conley, Bldg 4, Rm 348B, 713-483-3486.

Changes to the distribution list should be submitted in writing to DH4/Lisa Saunders, Bldg 4, Rm 373, 713-483-5224.

## ACKNOWLEDGMENTS

The following individuals contributed significantly in preparing the STS-8 Crew Activity Plan:

<u>AREA</u>	<u>NAME</u>	<u>PHONE NO.</u>
Nominal Timeline	Phil Engelauf	483-3486
Flight Day 3 Deployment	Carolynn Conley	483-3486
Waveoff Timeline	Karen M. Alig	483-3466
High Priority Mission	Cheevon Lau	483-4471
Attitude and Pointing	Mark Riggio	483-2201
Master Data Base	Nancy Harris	483-3466
Editing (Kentron)	Mildred Cherry	483-3844
Word Processing (Kentron)	B. Evans M. Hagan D. Prange J. Roberts P. Romero T. Walker	

CHANGE CONTROL RECORD

STS-8 Crew Activity Plan

CONTROL NO.	FDF EDITION INCORPORATED*		DISAPPROVED OR OTHER DISPOSITION
	TITLE	DATE	
	FINAL	06/29/83	
FDF (8)-265A	FINAL, REVISION A	08/10/83	
CAP (ALL)-78	FINAL, REVISION A	08/10/83	
CAP (8)-79A	FINAL, REVISION A	08/10/83	
CAP (8)-80A	FINAL, REVISION A	08/10/83	
CAP (8)-81	FINAL, REVISION A	08/10/83	
CAP (8)-82	FINAL, REVISION A	08/10/83	
CAP (8)-83	FINAL, REVISION A	08/10/83	
CAP (8)-84A	FINAL, REVISION A	08/10/83	
CAP (8)-85	FINAL, REVISION A	08/10/83	
CAP (8)-86	FINAL, REVISION A	08/10/83	
CAP (8)-87	FINAL, REVISION A	08/10/83	
CAP (8)-88	FINAL, REVISION A	08/10/83	
CAP (8)-89	FINAL, REVISION A	08/10/83	
CAP (8)-90	FINAL, REVISION A	08/10/83	
CAP (8)-91	FINAL, REVISION A	08/10/83	
CAP (8)-92	FINAL, REVISION A	08/10/83	
CAP (8)-93A	FINAL, REVISION A	08/10/83	
CAP (8)-94A	FINAL, REVISION A	08/10/83	
CAP (8)-95	FINAL, REVISION A	08/10/83	
CAP (8)-96	FINAL, REVISION A	08/10/83	
CAP (8)-97	FINAL, REVISION A	08/10/83	
CAP (8)-98A	FINAL, REVISION A	08/10/83	
CAP (8)-99A	FINAL, REVISION A	08/10/83	
CAP (8)-100	FINAL, REVISION A	08/10/83	
CAP (8)-101	FINAL, REVISION A	08/10/83	
CAP (ALL)-102	FINAL, REVISION A	08/10/83	

\*482 changes incorporated into current edition only are identified by change bars.

STS-8 CREW ACTIVITY PLAN

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REV A 08/10/83

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4-5.....	STS-8/FIN A	7-5.....	STS-8/FIN A
4-6.....	STS-8/FIN A	7-6.....	STS-8/FIN A
4-7.....	STS-8/FIN A	7-7.....	STS-8/FIN A
4-8.....	STS-8/FIN A	7-8.....	STS-8/FIN A
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## INTRODUCTION

The STS-8 Crew Activity Plan is the flight data file article that contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry checklists. For continuity, the entire flight is shown in the summary level timeline.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive (Ref. 1) and the requirements of the STS-8 Flight Requirements Document (Rev. D, Change 3, August 8, 1983).

The flight profile (Cycle 4.1 trajectory data, Ref. 3) used for this Crew Activity Plan is for a launch date of August 30, 1983.

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TIMELINE FORMAT SYMBOL NOMENCLATURE

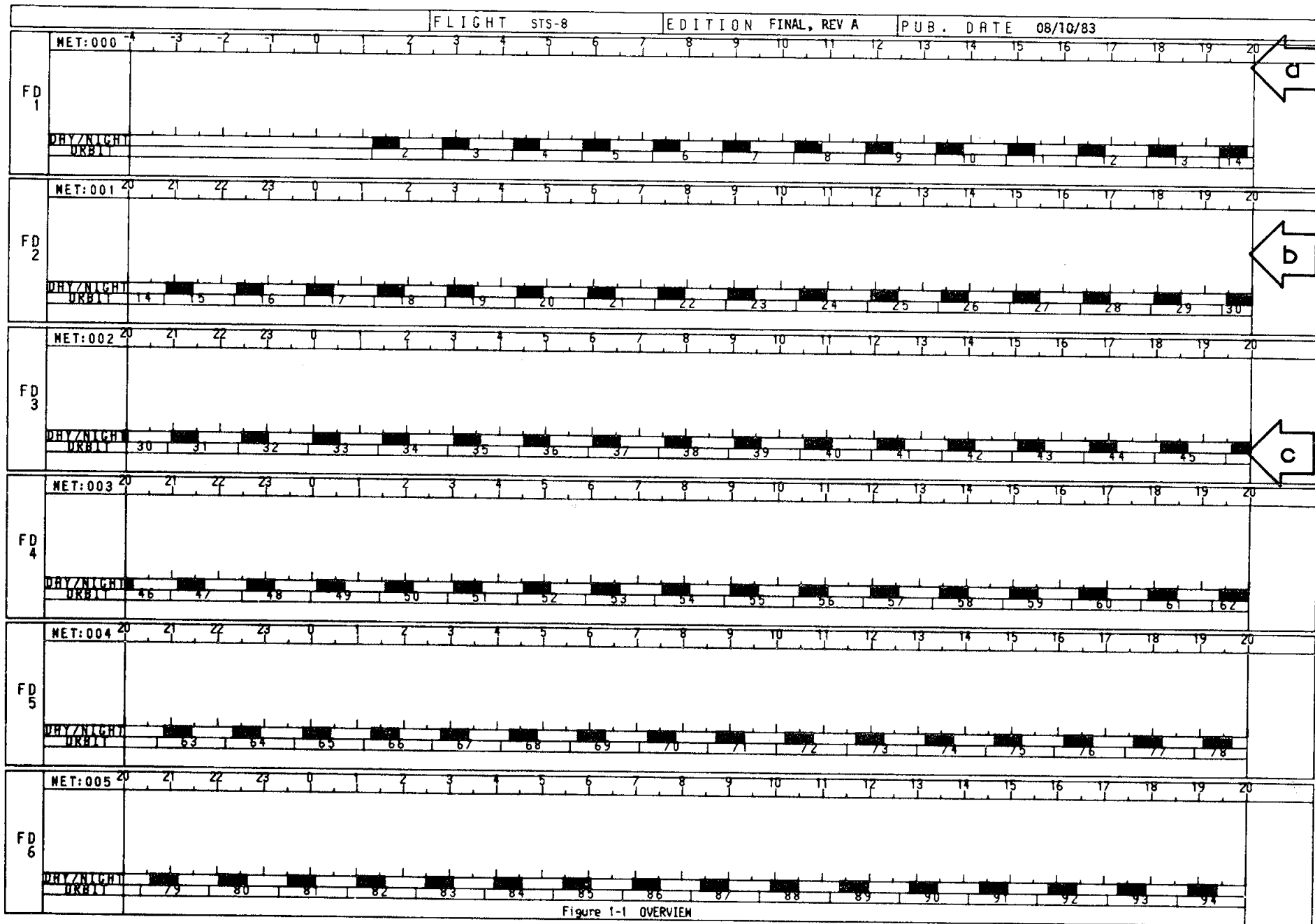


Figure 1-1 OVERVIEW

## A. FORMAT SYMBOL NOMENCLATURE

### 1. Overview Timeline

The following letters (a-c) refer to those highlighted in Figure 1-1.

- a. **TIMESCALE** - The time reference used on this format is cumulative Mission Elapsed Time (MET) expressed in hours. MET is referenced to liftoff, which occurs at 0/00:00:00 (days, hours, minutes, seconds).
- b. **ACTIVITY COLUMN** - This column presents an overview of activities scheduled during the flight. For clarity of presentation, only major activities are presented and activity durations are sometimes lengthened. Abbreviated activity titles can be found in the Abbreviations/Acronyms section of this CAP.
- c. **ORBIT and DAY/NIGHT**
  - 1) **Orbit** - Indicates which orbit the spacecraft is in by numerical sequence. The beginning of an orbit occurs when the Orbiter crosses the Earth's equator going from the southern to the northern hemisphere (ascending node). The succession of orbits is numbered in this column starting with Orbit 1 for launch.
  - 2) **Day/Night** - The orbital day/night intervals are delineated with black bars indicating when the Orbiter is in darkness.

### 2. Summary Level Timeline (12-Hr Timespan)

The following letters (a-j) refer to those highlighted in Figure 1-2.

- a. **TIMESCALES** - Two time references are presented in this section of the summary timeline format: Greenwich Mean Time (GMT) and Mission Elapsed Time (MET). MET is referenced to liftoff, beginning at 0/00:00:00 (days, hours, minutes, seconds).
- b. **CREWMAN (CDR, PLT, MS1, MS2)** - This is the crewman column of the format, where titles of scheduled activities are shown for the commander (CDR), pilot (PLT), and two mission specialists (MS1 & MS2) at the appropriate times in the flight. The third mission specialist (MS3) is not indicated.

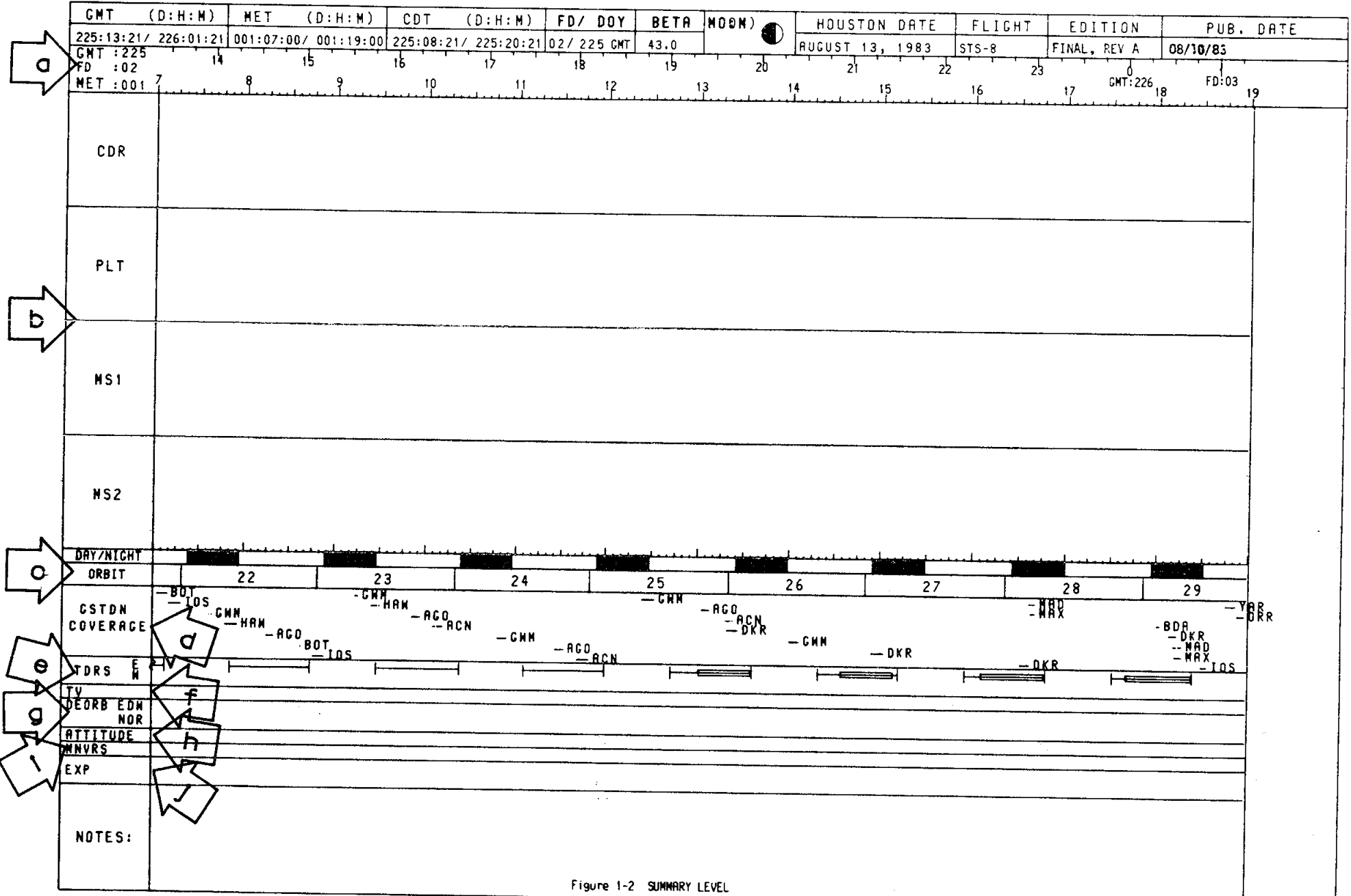


Figure 1-2 SUMMARY LEVEL

c. DAY/NIGHT and ORBIT

- 1) Day/Night - The orbital day/night intervals are delineated with black bars indicating when the Orbiter is in darkness.
  - 2) Orbit - Indicates which orbit the spacecraft is in by numerical sequence. The beginning of an orbit occurs when the Orbiter crosses the Earth's equator going from the southern to the northern hemisphere (ascending node). The succession of orbits is numbered in this column starting with Orbit 1 for launch.
- d. GSTDN COVERAGE - The GSTDN communication coverage periods are identified in this area with a horizontal line indicating when communication is available; the GSTDN site is identified to the right of the line.
- e. TDRS - The TDRS communication coverage periods are identified in this area, with a horizontal line indicating when there is a line-of-sight between TDRS and the Orbiter. The boxed areas indicate when there is Ku-Band communication. This is based upon Orbiter attitude and also blockage specified in Ref. 12.
- f. TV - Identifies periods of CCTV activity (indicated by a '—'). Real-time TV downlink periods are labeled 'TV', VTR recording periods are labeled 'VTR', and VTR dumps to the ground are labeled 'DMP'.
- g. DEORB - Time of ignition for deorbit opportunities to Edwards AFB (EDW) or Northrup Strip (NOR) are identified in this area.
- h. ATTITUDE - The attitude of the vehicle (-ZLV, IMU, etc.) is shown in this column.
- i. MNVRS - An upward-pointing arrow (↑) is placed at the time an attitude maneuver occurs.
- j. EXP - Identifies operating periods for CFES and other experiments.





### 3. Detailed Level Timeline (5-Hr Timespan)

The following letters (a-i) refer to those highlighted in Figure 1-3.

- a. TDRS - The TDRS communication coverage periods are identified in this area, with a vertical line indicating when there is a line-of-sight between TDRS and the Orbiter. The boxed areas indicate when there is Ku-Band communication. This is based upon Orbiter attitude and also blockage specified in Ref. 12.
- b. GSTDN COVERAGE - In this column the GSTDN sites and their acquisition periods are identified.
- c. DAY/NIGHT CYCLE - In this column a solid bar indicates the period when the Orbiter and Earth are in darkness. A slashed line indicates when the Orbiter is in daylight but the Earth beneath the Orbiter is still in darkness (terminator).
- d. ORBIT - Indicates which orbit the spacecraft is in by numerical sequence. Orbit 1 begins at liftoff with subsequent orbits starting when the Earth's equator is crossed (ascending node).
- e. In the timescale a DAP A and DAP B CONFIG reference will be included. A number is associated with both DAPs A and B; each number indicates a particular DAP configuration either DAP A or DAP B. The DAP reference without parentheses indicates the 'active' DAP for that time period on the page. Table 1-1 and Table 1-2, respectively, identify the various configurations for DAP A and DAP B that are used in the STS-8 timeline.
- f. ATTITUDE - Indicates Orbiter attitude.
- g. MET TIMESCALE - This format is a 5-hour format with 5-minute tick marks on the vertical timescale referenced to Mission Elapsed Time (MET) with liftoff occurring at 0/00:00:00.
- h. CREWMAN COLUMNS - The activities for the CDR, PLT, MS1, and MS2 are scheduled in this area.
- i. MCC COLUMN - Any uplinks, commands or updates required are scheduled at the appropriate time in this column. TV coverage is also identified in this column.

TABLE 1-1

DAP A CONFIGURATIONS

	A1*	A2	A3	A4	A5	A6	A7	A8	A9
<u>TRANSLATION</u>									
PULSE ft/sec	0.1	0.1	0.1	0.1	0.1	0.1	0.25	0.25	0.1
<u>ROTATION</u>									
DSC RT NORM °/sec	0.2	0.4	0.2	0.2	0.4	0.2	0.8	0.2	0.1
VERN °/sec	0.2	0.4	0.2	0.008	0.2	0.2	0.25	0.2	0.1
PULSE NORM °/sec	0.1	0.1	0.3	0.1	0.4	0.1	0.1	0.05	0.04
VERN °/sec	0.01	0.01	0.01	0.01	0.2	0.01	0.01	0.01	0.01
COMP NORM °/sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VERN °/sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>DEADBAND</u>									
ATT NORM (deg)	5.0	1.0	5.0	1.0	5.0	5.0	0.2	1.0	3.0
VERN (deg)	1.0	1.0	1.0	0.07	1.0	1.0	0.1	1.0	5.0
RATE NORM °/sec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
VERN °/sec	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.2
<u>JET OPT</u>									
P	1	1	3	1	1	3	1	1	3
Y	1	1	3	3	1	3	1	1	3
<u>CNTL ACCEL</u>									
	0	0	0	0	0	0	0	0	1

\*I-loaded OPS-2 DAP Configuration

TABLE 1-2

DAP B CONFIGURATIONS

	B1*	B2	B3	B4	B5	B6	B7	B8	B9
<u>TRANSLATION</u>									
PULSE ft/sec	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
<u>ROTATION</u>									
DSC RT NORM °/sec	0.500	0.200	0.200	0.200	0.200	0.200	0.100	0.100	0.100
VERN °/sec	0.200	0.200	0.200	0.008	0.160	0.066	0.100	0.100	0.100
PULSE NORM °/sec	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
VERN °/sec	0.002	0.002	0.002	0.002	0.002	0.002	0.010	0.010	0.025
COMP NORM °/sec	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERN °/sec	.000	.000	.000	.000	.000	.000	.000	.000	.000
<u>DEADBAND</u>									
ATT NORM (deg)	3.00	3.00	3.00	0.30	3.00	3.00	3.00	3.00	3.00
VERN (deg)	1.000	1.000	1.000	0.100	0.033	1.00	3.000	1.000	0.500
RATE NORM °/sec	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
VERN °/sec	0.020	0.020	0.020	0.010	.020	.020	.200	.100	.010
<u>JET OPT</u>									
P	1	3	1	1	3	1	3	3	3
Y	1	3	1	3	3	1	3	3	3
<u>CNTL ACCEL</u>									
	0	0	0	0	0	0	1	1	1

\*I-loaded OPS-2 DAP Configuration

TABLE 1-2 (CONCLUDED)

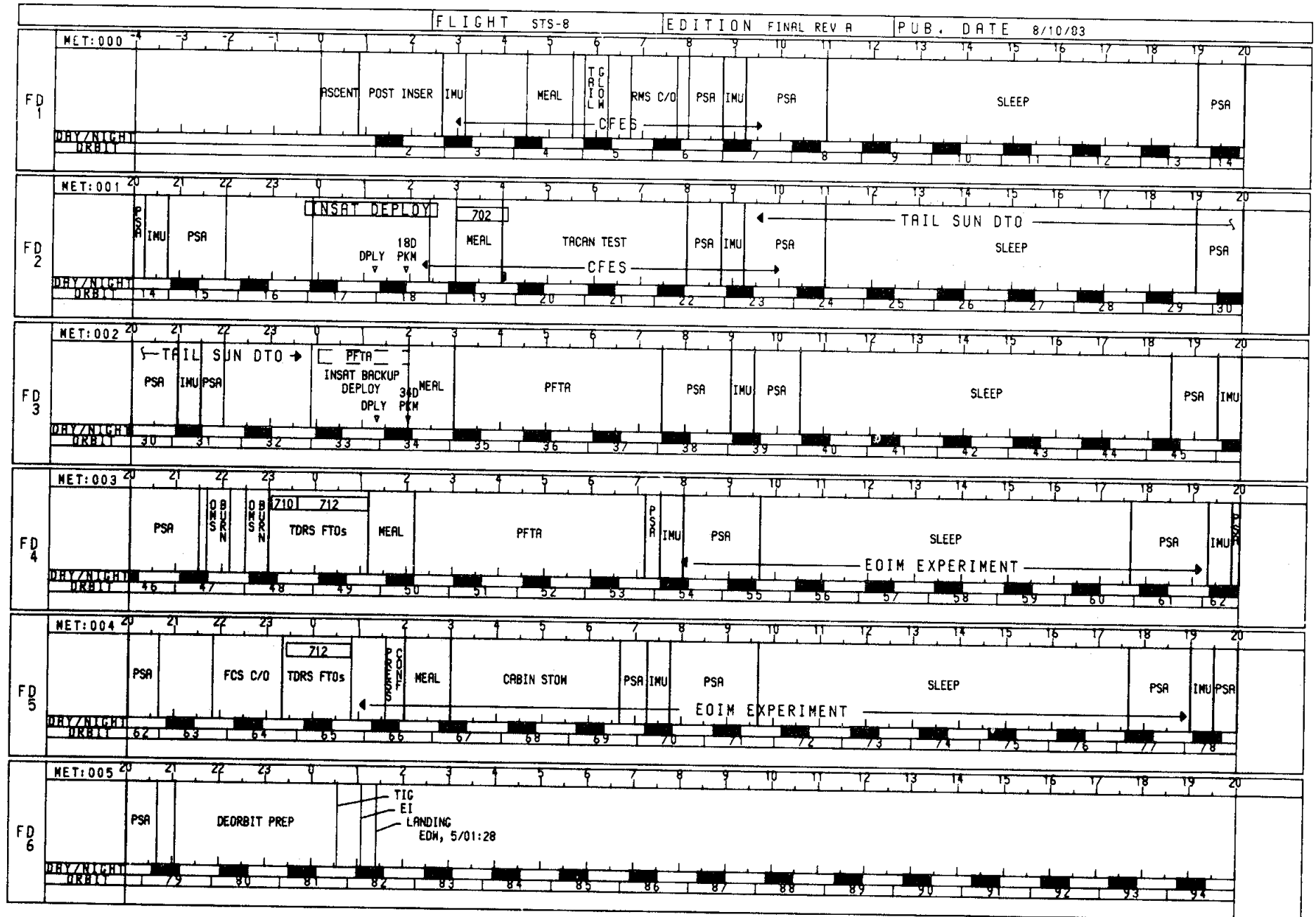
DAP B CONFIGURATIONS

	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19
<u>TRANSLATION</u>										
PULSE ft/sec	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
<u>ROTATION</u>										
DSC RT NORM °/sec	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
VERN °/sec	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.008	0.008	0.008
PULSE NORM °/sec	0.04	0.04	0.16	0.31	0.04	0.04	0.04	0.04	0.04	0.04
VERN °/sec	0.025	0.025	0.010	0.010	0.100	0.100	0.100	0.100	0.050	0.025
COMP NORM °/sec	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERN °/sec	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
<u>DEADBAND</u>										
ATT NORM (deg)	3.00	3.00	10.00	10.00	3.00	3.00	3.00	3.00	3.00	3.00
VERN (deg)	0.500	0.500	5.000	5.000	1.000	5.000	5.000	0.500	0.500	0.500
RATE NORM °/sec	0.20	0.20	0.50	0.50	0.20	0.20	0.20	0.20	0.20	0.20
VERN °/sec	.010	.010	0.200	0.200	0.050	0.200	0.200	0.050	0.030	.010
<u>JET OPT</u>										
P	3	3	3	3	3	3	3	3	3	3
Y	3	3	3	3	3	3	3	3	3	3
<u>CNTL ACCEL</u>	3	2	1	1	1	1	4	4	4	4

\*I-loaded OPS-2 DAP Configuration

STS-8 OVERVIEW

# OVERVIEW



SUMMARY TIMELINE

SUMMARY  
TIMELINE



# SUMMARY TIMELINE

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
242:06:15 / 242:18:15	000:00:00 / 000:12:00	242:01:15 / 242:13:15	01 / 242 GMT	36.4	☾	AUGUST 30, 1983	STS-8	FINAL REV A	8/10/83				
GMT : 242	7	8	9	10	11	12	13	14	15	16	17	18	
FD : 01													
MET : 000	0	1	2	3	4	5	6	7	8	9	10	11	12
CDR		POST INSERTION	UNSTOM CABIN EQUIP	MEAL	MEAL	MEAL	MEAL	PRE SLEEP ACT	PRE SLEEP ACT	SLEEP			
PLT	LAUNCH OMS 1	OMS 2	POST INSERTION	UNSTOM CABIN EQUIP	MEAL	MEAL	MEAL	PRE SLEEP ACT	PRE SLEEP ACT	SLEEP			
MS1		POST INSERTION	UNSTOM CABIN EQUIP	MEAL	MEAL	MEAL	MEAL	PRE SLEEP ACT	PRE SLEEP ACT	SLEEP			
MS2		POST INSERTION	CFES ACT/ZERO CK	MEAL	MEAL	MEAL	MEAL	PRE SLEEP ACT	PRE SLEEP ACT	SLEEP			
DAY/NIGHT													
ORBIT		2	3	4	5	6	7	8	9				
GSTDN COVERAGE		YAR HAW BDA DCR ACN BOT	BUC CDS GDX MIL ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	GMM HAW ACN BOT	
TDRS E M													
TV													
DEDRB EDW		↑ 00:49 ↑ 01:24		↑ 03:59									
NOR		↑ 00:51	↑ 02:27	↑ 04:02									
ATTITUDE	ASCENT	-ZLV	IMU	-ZLV NOSE FWD	TAIL GLOW	-ZLV NOSE FWD	IMU	-ZLV NOSE FWD					
MNVRS													
EXP			INCB	CFES	GLOW	RMS C/O	INCB	INSAT	CFES	INCB			
NOTES:			<ul style="list-style-type: none"> <li>● AFT STATION</li> <li>● Y-POP (NOSE FWD)</li> </ul>		<ul style="list-style-type: none"> <li>● APU HTR RECONFIC</li> <li>● Y-POP (NOSE FWD)</li> <li>● TV/01 MIDDECK EXP</li> </ul>			<ul style="list-style-type: none"> <li>● Y-POP (NOSE FWD)</li> <li>● DSO 432 CARRY-ON INCUBATOR</li> </ul>					
			<ul style="list-style-type: none"> <li>● DSO 432 CARRY-ON INCUBATOR</li> <li>● DSO 301 EDIM DFI PALLET ACT</li> </ul>		<ul style="list-style-type: none"> <li>● 35MM/02 GLOW EXPERIMENTS</li> <li>● TV/01 MIDDECK EXP</li> </ul>			<ul style="list-style-type: none"> <li>● DSO 432 CARRY-ON INCUBATOR</li> <li>● DSO 432 CARRY-ON INCUBATOR</li> <li>● DSO 432 CARRY-ON INCUBATOR</li> </ul>				<ul style="list-style-type: none"> <li>● DSO 724 KU-BD SIDE LOBE</li> </ul>	

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE							
242:18:15/ 243:06:15	000:12:00/ 001:00:00	242:13:15/ 243:01:15	01/ 242 GMT	36.8		AUGUST 30, 1983	STS-8	FINAL REV A	8/10/83							
GMT : 242	19	20	21	22	23	0	1	2	3	4	5	6				
FD : 01						GMT:243	18	19	20	21	22	23	0			
MET : 000	12	13	14	15	16	17	18	19	20	21	22	23	0			
CDR	SLEEP						POST SLEEP ACT	I M U R V N M Z L V M N V R	POST SLEEP ACT	FILTER RPT	MED DSO	70MM/01 PAM DEPLOY	16MM/01 PAM DEPLOY	DSO 0408 NEAR VISION ACUITY		
PLT	SLEEP						POST SLEEP ACT	INCUBATOR	POST SLEEP ACT	MED DSO	70MM/01 PAM DEPLOY	16MM/01 PAM DEPLOY	DSO 0408 NEAR VISION ACUITY			
MS1	SLEEP						POST SLEEP ACT		POST SLEEP ACT	MED DSO	TV/02 INSAT DEPLOY	TV ACT	DSO 0408 NEAR VISION ACUITY			
MS2	SLEEP						POST SLEEP ACT		POST SLEEP ACT	MED DSO	TV/02 INSAT DEPLOY	TV ACT	DSO 0408 NEAR VISION ACUITY			
DAY/NIGHT																
ORBIT	9	10	11	12	13	14	15	16								
GSTDN COVERAGE	-GMM	-AGO	-DRR	-DGR	-MAD	-DGR	-MAD	-MAX	-DGR	-MAD	-MAX	-YARR	-ORR	-IOS	-YARR	-MAD
TDRS																
TV																
DEORB EDW NOR																
ATTITUDE	-ZLV NOSE FWD															
MNVR	IMU															
EXP	INSAT															
NOTES:	<ul style="list-style-type: none"> <li>FC PURGE HTR OFF</li> <li>FC PURGE HTR ON</li> <li>MANUAL</li> <li>Y-POP (NOSE FWD)</li> <li>DSO 432 CARRY-ON INCUBATOR</li> <li>START TRACKING (MIL)</li> <li>70MM/01 PAM DEPLOY</li> <li>16MM/01 PAM DEPLOY</li> <li>DSO 0408 NEAR VISION ACUITY</li> <li>TV/02 INSAT DEPLOY</li> <li>TV/02 INSAT DEPLOY</li> <li>END TRACKING (BDR)</li> </ul>															



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
243:18:15 / 244:06:15	001:12:00 / 002:00:00	243:13:15 / 244:01:15	02 / 243 GMT	37.0		AUGUST 31, 1983	STS-8	FINAL REV A	8/10/83
GMT : 243	19	20	21	22	23	0	1	2	3
FD : 02	12	13	14	15	16	17	18	19	20
MET : 001	21	22	23	24	25	26	27	28	29
	30	31	32	33	34	35	36	37	38
	39	40	41	42	43	44	45	46	47
	48	49	50	51	52	53	54	55	56
	57	58	59	60	61	62	63	64	65
	66	67	68	69	70	71	72	73	74
	75	76	77	78	79	80	81	82	83
	84	85	86	87	88	89	90	91	92
	93	94	95	96	97	98	99	100	101
	102	103	104	105	106	107	108	109	110
	111	112	113	114	115	116	117	118	119
	120	121	122	123	124	125	126	127	128
	129	130	131	132	133	134	135	136	137
	138	139	140	141	142	143	144	145	146
	147	148	149	150	151	152	153	154	155
	156	157	158	159	160	161	162	163	164
	165	166	167	168	169	170	171	172	173
	174	175	176	177	178	179	180	181	182
	183	184	185	186	187	188	189	190	191
	192	193	194	195	196	197	198	199	200
	201	202	203	204	205	206	207	208	209
	210	211	212	213	214	215	216	217	218
	219	220	221	222	223	224	225	226	227
	228	229	230	231	232	233	234	235	236
	237	238	239	240	241	242	243	244	245
	246	247	248	249	250	251	252	253	254
	255	256	257	258	259	260	261	262	263
	264	265	266	267	268	269	270	271	272
	273	274	275	276	277	278	279	280	281
	282	283	284	285	286	287	288	289	290
	291	292	293	294	295	296	297	298	299
	300	301	302	303	304	305	306	307	308
	309	310	311	312	313	314	315	316	317
	318	319	320	321	322	323	324	325	326
	327	328	329	330	331	332	333	334	335
	336	337	338	339	340	341	342	343	344
	345	346	347	348	349	350	351	352	353
	354	355	356	357	358	359	360	361	362
	363	364	365	366	367	368	369	370	371
	372	373	374	375	376	377	378	379	380
	381	382	383	384	385	386	387	388	389
	390	391	392	393	394	395	396	397	398
	399	400	401	402	403	404	405	406	407
	408	409	410	411	412	413	414	415	416
	417	418	419	420	421	422	423	424	425
	426	427	428	429	430	431	432	433	434
	435	436	437	438	439	440	441	442	443
	444	445	446	447	448	449	450	451	452
	453	454	455	456	457	458	459	460	461
	462	463	464	465	466	467	468	469	470
	471	472	473	474	475	476	477	478	479
	480	481	482	483	484	485	486	487	488
	489	490	491	492	493	494	495	496	497
	498	499	500	501	502	503	504	505	506
	507	508	509	510	511	512	513	514	515
	516	517	518	519	520	521	522	523	524
	525	526	527	528	529	530	531	532	533
	534	535	536	537	538	539	540	541	542
	543	544	545	546	547	548	549	550	551
	552	553	554	555	556	557	558	559	560
	561	562	563	564	565	566	567	568	569
	570	571	572	573	574	575	576	577	578
	579	580	581	582	583	584	585	586	587
	588	589	590	591	592	593	594	595	596
	597	598	599	600	601	602	603	604	605
	606	607	608	609	610	611	612	613	614
	615	616	617	618	619	620	621	622	623
	624	625	626	627	628	629	630	631	632
	633	634	635	636	637	638	639	640	641
	642	643	644	645	646	647	648	649	650
	651	652	653	654	655	656	657	658	659
	660	661	662	663	664	665	666	667	668
	669	670	671	672	673	674	675	676	677
	678	679	680	681	682	683	684	685	686
	687	688	689	690	691	692	693	694	695
	696	697	698	699	700	701	702	703	704
	705	706	707	708	709	710	711	712	713
	714	715	716	717	718	719	720	721	722
	723	724	725	726	727	728	729	730	731
	732	733	734	735	736	737	738	739	740
	741	742	743	744	745	746	747	748	749
	750	751	752	753	754	755	756	757	758
	759	760	761	762	763	764	765	766	767
	768	769	770	771	772	773	774	775	776
	777	778	779	780	781	782	783	784	785
	786	787	788	789	790	791	792	793	794
	795	796	797	798	799	800	801	802	803
	804	805	806	807	808	809	810	811	812
	813	814	815	816	817	818	819	820	821
	822	823	824	825	826	827	828	829	830
	831	832	833	834	835	836	837	838	839
	840	841	842	843	844	845	846	847	848
	849	850	851	852	853	854	855	856	857
	858	859	860	861	862	863	864	865	866
	867	868	869	870	871	872	873	874	875
	876	877	878	879	880	881	882	883	884
	885	886	887	888	889	890	891	892	893
	894	895	896	897	898	899	900	901	902
	903	904	905	906	907	908	909	910	911
	912	913	914	915	916	917	918	919	920
	921	922	923	924	925	926	927	928	929
	930	931	932	933	934	935	936	937	938
	939	940	941	942	943	944	945	946	947
	948	949	950	951	952	953	954	955	956
	957	958	959	960	961	962	963	964	965
	966	967	968	969	970	971	972	973	974
	975	976	977	978	979	980	981	982	983
	984	985	986	987	988	989	990	991	992
	993	994	995	996	997	998	999	1000	1001
	1002	1003	1004	1005	1006	1007	1008	1009	1010
	1011	1012	1013	1014	1015	1016	1017	1018	1019
	1020	1021	1022	1023	1024	1025	1026	1027	1028
	1029	1030	1031	1032	1033	1034	1035	1036	1037
	1038	1039	1040	1041	1042	1043	1044	1045	1046
	1047	1048	1049	1050	1051	1052	1053	1054	1055
	1056	1057	1058	1059	1060	1061	1062	1063	1064
	1065	1066	1067	1068	1069	1070	1071	1072	1073
	1074	1075	1076	1077	1078	1079	1080	1081	1082
	1083	1084	1085	1086	1087	1088	1089	1090	1091
	1092	1093	1094	1095	1096	1097	1098	1099	1100
	1101	1102	1103	1104	1105	1106	1107	1108	1109
	1110	1111	1112	1113	1114	1115	1116	1117	1118
	1119	1120	1121	1122	1123	1124	1125	1126	1127
	1128	1129	1130	1131	1132	1133	1134	1135	1136
	1137	1138	1139	1140	1141	1142	1143	1144	1145
	1146	1147	1148	1149	1150	1151	1152	1153	1154
	1155	1156	1157	1158	1159	1160	1161	1162	1

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
244:06:15 / 244:18:15	002:00:00 / 002:12:00	244:01:15 / 244:13:15	03 / 244 GMT	36.9	☉	SEPTEMBER 1, 1983	STS-8	FINAL REV A	8/10/83					
GMT : 244	7	8	9	10	11	12	13	14	15	16	17	18		
FD : 03														
MET : 002	0	1	2	3	4	5	6	7	8	9	10	11	12	
CDR	PFTA	MEAL		PFTA				PRE SLEEP ACT		IMU	PRE SLEEP ACT	SLEEP		
PLT		MEAL	TV ACT				EXERCISE				PRE SLEEP ACT	SLEEP		
MS1	RMS/ FCS TEST	RMS/ PRCS INTER	MEAL	RMS/ PRCS	LSS TEST	AUTO SEQ	BERTH	DIR UNBER	CNTL SYS EVAL	DIR BERTH		PRE SLEEP ACT	SLEEP	
MS2	MED DSO	MEAL PREP	MEAL		ACCEL DETECTION (MONITORING)			EXERCISE		MED DSO	PRE SLEEP ACT	PRE SLEEP ACT	PRE SLEEP ACT	SLEEP
DAY/NIGHT	[Day/Night Cycle]													
ORBIT	[Orbit Cycle]													
GSTDN COVERAGE	[Coverage Data]													
TDRS	[TDRS Data]													
TV	[TV Data]													
DEORB EDM NDR	[Deorb Data]													
ATTITUDE	[Attitude Data]													
NNVRS	[NNVRS Data]													
EXP	[EXP Data]													
NOTES:	<ul style="list-style-type: none"> <li>• DTO 503 PDRS PAYLOAD HANDLING</li> <li>• DSO 0414 OPHTHALMOLOGY</li> <li>• TV/03 PFTA OPS</li> <li>• DSO 405 ACCEL DETECTION SENSITIVITY (MONITOR MS3)</li> <li>• DSO 0409 MICROBIOLOGY SCREENING</li> <li>• DTO 702/710 S-BD/KU-BD TEST</li> <li>• DTO 502 CABIN ATMOSPHERE VERF</li> <li>• DTO 702/710 S-BD/KU-BD TEST</li> <li>• Y-POP (NOSE FWD)</li> </ul>													

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
244:18:15 / 245:06:15	002:12:00 / 003:00:00	244:13:15 / 245:01:15	03 / 244 GMT	36.6	●	SEPTEMBER 1, 1983	STS-8	FINAL REV A	8/10/83					
GMT : 244	19	20	21	22	23	0	18	19	20					
FD : 03														
MET : 002	12	13	14	15	16	17	18	19	20					
CDR	SLEEP						POST SLEEP ACT	IMU ALIGN (ROLL)	POST SLEEP ACT	DMS BURN	KU-BD ACQ	FILTER RPT		
PLT	SLEEP						POST SLEEP ACT		DMS BURN	DMS BURN	KU-BD ACQ	MED DSO	AUTO MNVRS	
MS1	SLEEP						POST SLEEP ACT		MED DSO	OVS BURN	EXERCISE			
MS2	SLEEP						POST SLEEP ACT		MED DSO	OVS BURN	MED DSO	H RPT CHECK	16MM S/U	TV SCHEDULE
DAY/NIGHT	[Day/Night Cycle]													
ORBIT	41	42	43	44	45	46	47	48						
GSTDN COVERAGE	-GMM	-RCO -DKR -RCN	-GMM	-DKR -HAD -MAX	-YAR -ORR	-BDA -DKR -HAD -MAX	-MIL -MLX -BDA -DKR -HAD	-ORR	-MIL -MLX -BDA -DKR -HAD	-ORR	-HAW -BUC -GDS	-BDA -DKR -RCN -BOT	-YAR	
TDRS	[TDRS Schedule]													
TV	[TV Schedule]													
DEORB EDW NOR	[Deorbit Schedule]													
ATTITUDE	-ZLV NOSE FWD													
MNVR	[Maneuver Schedule]													
EXP	[Explosion Schedule]													
NOTES:	<ul style="list-style-type: none"> <li>● TV/09 ANIMAL ENCL</li> <li>● 16MM/05 EXERCISE</li> <li>● 16MM/05 EXERCISE</li> <li>● DTO 710 KU-BD COMM LINK</li> <li>● DTO 710 KU-BD/TDRS</li> </ul>													

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
245:06:15 / 245:18:15	003:00:00 / 003:12:00	245:01:15 / 245:13:15	04 / 245 GMT	36.1	☉	SEPTEMBER 2, 1983	STS-8	FINAL REV A	8/10/83	
GMT : 245										
FD : 04										
MET : 003										
CDR	MED DSO	EXERCISE	MEAL		PFTA				PRE SLEEP ACT	SLEEP
PLT	KU-BD ROLL	KU-BD ROLL	MEAL		TV ACT				PRE SLEEP ACT	SLEEP
MS1	KU-BD ROLL	KU-BD ROLL	MEAL		RMS/ FCS TEST	CNTL SYS EVAL	RMS/ PRCS INTER		PRE SLEEP ACT	SLEEP
MS2	MEAL PREP	TV ACT	MEAL		EXERCISE				PRE SLEEP ACT	SLEEP
DAY/NIGHT	[Day/Night Cycle]									
ORBIT	49	50	51	52	53	54	55	56		
GSTDN COVERAGE	[Coverage Data]									
TORS	[TORS Data]									
TV	[TV Data]									
DEORB EDW NOR	[Deorb Data]									
ATTITUDE MNVRS	[Attitude Data]									
EXP	[Exp Data]									
NOTES:	<ul style="list-style-type: none"> <li>• DTO 712 KU-BD COMM &amp; TRACKING</li> <li>• TV/09 ANIMAL ENCL</li> <li>• Y-POP (NOSE FWD)</li> <li>• DTO 712 KU-BD COMM &amp; TRACKING</li> <li>• TV/03 PFTA OPS</li> <li>• DTO 503 &amp; 762 RMS DYNAMIC INTERACTION</li> <li>• 70MM/02 RMS/PFTA OPS</li> <li>• TV/03 PFTA OPS</li> <li>• 16MM/04 RMS/PFTA OPS</li> <li>• BIOFEEDBACK (MONITOR MS3)</li> <li>• 16MM/06 BIOFEEDBACK</li> <li>• 16MM/06 BIOFEEDBACK</li> <li>• DSO 301 EVAL OX INTERACTION</li> </ul>									

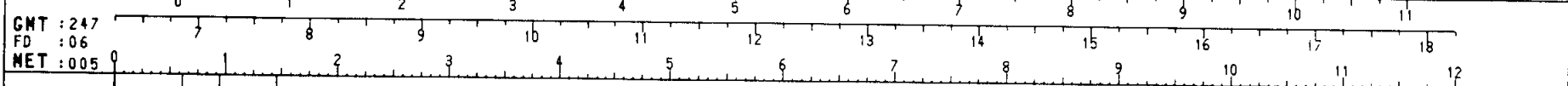
GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETR	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
245:18:15 / 246:06:15	003:12:00 / 004:00:00	245:13:15 / 246:01:15	04 / 245 GMT	35.4		SEPTEMBER 2, 1983	STS-8	FINAL REV A	8/10/83				
GMT: 245	19	20	21	22	23	0	1	2	3	4	5	6	
FD: 04						GMT: 246	FD: 05						
MET: 003	12	13	14	15	16	17	18	19	20	21	22	23	0
CDR	SLEEP						POST SLEEP ACT	IMU ALIGN (ROLL)	TV ACT	FCS C/O	K U - B D		
PLT	SLEEP						POST SLEEP ACT	MED DSO	FCS C/O	K U - B D			
MS1	SLEEP						POST SLEEP ACT	MED DSO	EXERCISE				
MS2	SLEEP						POST SLEEP ACT	EXERCISE	TACAN TEST				
DAY/NIGHT	[Day/Night Cycle Bar]												
ORBIT	57	58	59	60	61	62	63	64	65	GDS			
GSTDN COVERAGE	-CWM	-DKR	-DKR	-DKR	-DKR	-MLX	-MLX	-MLX	-MLX	-MLX	-MLX	-MLX	-MLX
TDRS	[TDRS Coverage Diagram]												
TV	[TV Coverage Diagram]												
DEORB EDM NOR	[Deorbit Diagram]												
ATTITUDE	[Attitude Diagram]												
EXP	[Expansion Diagram]												
NOTES:	<ul style="list-style-type: none"> <li>DSO 0414 OPHTHALMOSCOPY</li> <li>DSO 0408 NEAR VISION ACUITY</li> <li>TV/10 EARTH VIEWS</li> <li>APU HTR ACT</li> <li>DSO 0414 OPHTHALMOSCOPY</li> <li>TV/10 EARTH VIEWS</li> <li>DTO 771 ON-ORBIT TACAN NAV</li> <li>DSO 301 EVAL OX INTERACTION</li> <li>DSO 0408 NEAR VISION ACUITY</li> <li>DSO 0414 OPHTHALMOSCOPY</li> <li>DSO 0408 NEAR VISION ACUITY</li> <li>Y-POP (NOSE FND)</li> <li>TV/09 ANIMAL ENCL</li> <li>DTO 712 KU-BD COMM &amp; TRACKING</li> </ul>												





GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
246:18:15/ 247:06:15	004:12:00/ 005:00:00	246:13:15/ 247:01:15	05/ 246 GMT	33.4	●	SEPTEMBER 3, 1983	STS-8	FINAL REV A	8/10/83	
TIC										
GMT: 246 FD : 05 MET : 004										
CDR	SLEEP		POST SLEEP ACT		KUB BBD STOM	IMU ALIGN (ROLL)	MAX ROUN D BYP	POST SLEEP ACT	PLBD OPS	DEORBIT PREP
PLT	SLEEP		POST SLEEP ACT		IMU CHECK	POST SLEEP ACT		PLBD OPS	DEORBIT PREP	
MS1	SLEEP		POST SLEEP ACT					DEORBIT PREP		
MS2	SLEEP		POST SLEEP ACT		D P SN SHLD	POST SLEEP ACT	WEN DIF C	DEORBIT PREP		
DAY/NIGHT										
ORBIT	73	74	75	76	77	78	79	80	81	
GSTDN COVERAGE	-GMM	-DKR	-DKR -MAD	-DKR -MAD	-YAR -ORR	-YAR -ORR	-YAR -ORR	-YAR -ORR	-YAR -ORR	-YAR -ORR
TDRS										
TV										
DEORB EDM NOR							↑ 19:58	↑ 21:29	↑ 23:03	
ATTITUDE	-XLV PLB FWD			IMU		-XSI	IMU	BURN ATT		
NNVRS										
EXP	EOTM									
● DSO 301 EVAL OX INTERACTION ■ HI LOAD HTR ON ● DSO 301 EOIM DFI PALLET DEACT ■ FES CNTLR CHECK										

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
247:06:15 / 247:18:15	005:00:00 / 005:12:00	247:01:15 / 247:13:15	06 / 247 GMT	32.2	●	SEPTEMBER 4, 1983	STS-8	FINAL REV A	8/10/83



CDR	DEORBIT PREP			
PLT	DEORBIT PREP	DEORBIT BURN	ENTRY INTERFACE	EDM LANDING (5/01:28)
MS1	DEORBIT PREP			
MS2	DEORBIT PREP			

DAY/NIGHT	[Day/Night Cycle]									
ORBIT	81	82	83	84	85	86	87	88	89	
GSTDN COVERAGE	-RCN -BOT	-MLX -MTC -RCN -BOT	-GMM -HAM -RCN -BOT	-GMM -HAM	-BOT -IOS	-RCO -IOS	-HAM -RCO -RCN	-GMM -RCO	-RCN -DKR	-GMM
TDRS E	[TDRS Coverage]									
TV	[TV Coverage]									
DEORB EDM	↑ 00:37									
NOR	↑ 00:39									
ALTITUDE	[Altitude Profile]									
MNRS	[MNRs]									
EXP	[Exp]									

DETAILED TIMELINE

DETAILED  
TIMELINE

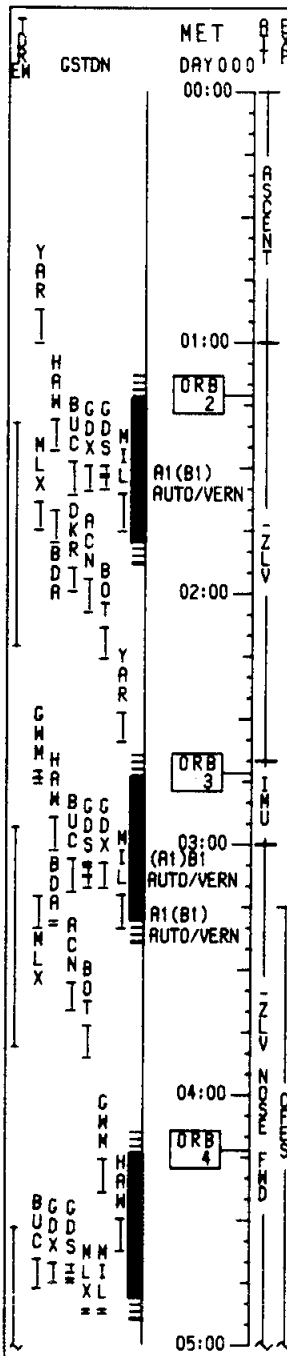
DETAILED  
TIMELINE

STS-8 DETAILED

CDR/PLT

MS1/MS2

MCC



**IMU ALIGN LOG**

STAR ID: -Y: 27, DENEH  
-Z: 54, DIPHDA  
ANG DIF: 83.7

STARS AVAIL: 02:44 TO 03:13

DUAL S TRKR	SINGLE S TRKR
ALIGN ATT	ALIGN ATT
R +206.5	-Y: 54 -Z: 27
P + 80.7	R +299 +113
Y + 45.4	P + 75.1 + 99.4
	Y + 31.1 + 43.1

REOD ID: -Y \_\_\_ -Z \_\_\_ ANG ERR \_\_\_ , \_\_\_ 3

ANG: ΔX ( ) , \_\_\_ ( ) , \_\_\_ ( ) , \_\_\_

ΔY ( ) , \_\_\_ ( ) , \_\_\_ ( ) , \_\_\_

ΔZ ( ) , \_\_\_ ( ) , \_\_\_ ( ) , \_\_\_

EXECUTION TIME: \_\_\_ / \_\_\_ : \_\_\_ : \_\_\_

ACTIVITIES PRIOR TO 0/02:30 MET ARE IN THE ASCENT & POST INSERTION CHECKLISTS

ORBITER ATTITUDE WHEN ENTERING CAP IS  
-ZLV NOSE FWD

**COAS CALIBRATION LOG**

STAR ID: -Z 54, DIPHDA  
STAR AVAIL UNTIL: 03:33

-Z Δ BIAS \_\_\_ , \_\_\_ : \_\_\_

UPDATE TIME: \_\_\_ / \_\_\_ : \_\_\_ : \_\_\_

019 ✓COAS PWR-OFF Mount COAS-AFT  
LOAD PCMMU FORMAT (ORB OPS)  
Load 103/161

<p>MMNR IMU ALIGN/COAS CAL ATT R=206.5 P=80.7 Y=45.4 A/AUTO/VERN (02:44) Init MMNR</p> <p>IMU ALIGN - S TRK (ORB OPS)</p> <p>COAS CALIBRATION (ORB OPS)</p> <p>MMNR (TRK) -ZLV, NOSE FWD TG=2 BV=3 OM=180 A/AUTO/VERN Init TRK</p>	<p>UNSTOW CABIN EQUIP</p>	<p>UNSTOW CABIN EQUIP</p>
--	---------------------------	---------------------------

PCS 1(2) CONEIG (ORB OPS)

AFT CONTROLLER C/O  
(ORB OPS, GNC)  
MEDICAL DSO

LAMP & FIRE SUPPR TEST  
(ORB OPS, EPS)  
CELL ATTACH - INCUBATOR  
(MED C/L, MED DSOs)  
MEDICAL DSO

ON MCC CUE  
R2 APU FUEL PUMP/VLV COOL B-OFF  
CNTLR PWR(three) -OFF

FOOD WARMER ACT (CUE CARD)  
MEDICAL DSO

MEAL PREP (CUE CARD)

DFI PALLET POWER ON  
R1 PAYLOAD AFT MN B - ON  
CABIN TV ASSEMBLY  
(PHOTO/TV, TV SCENES)

MEDICAL DSO

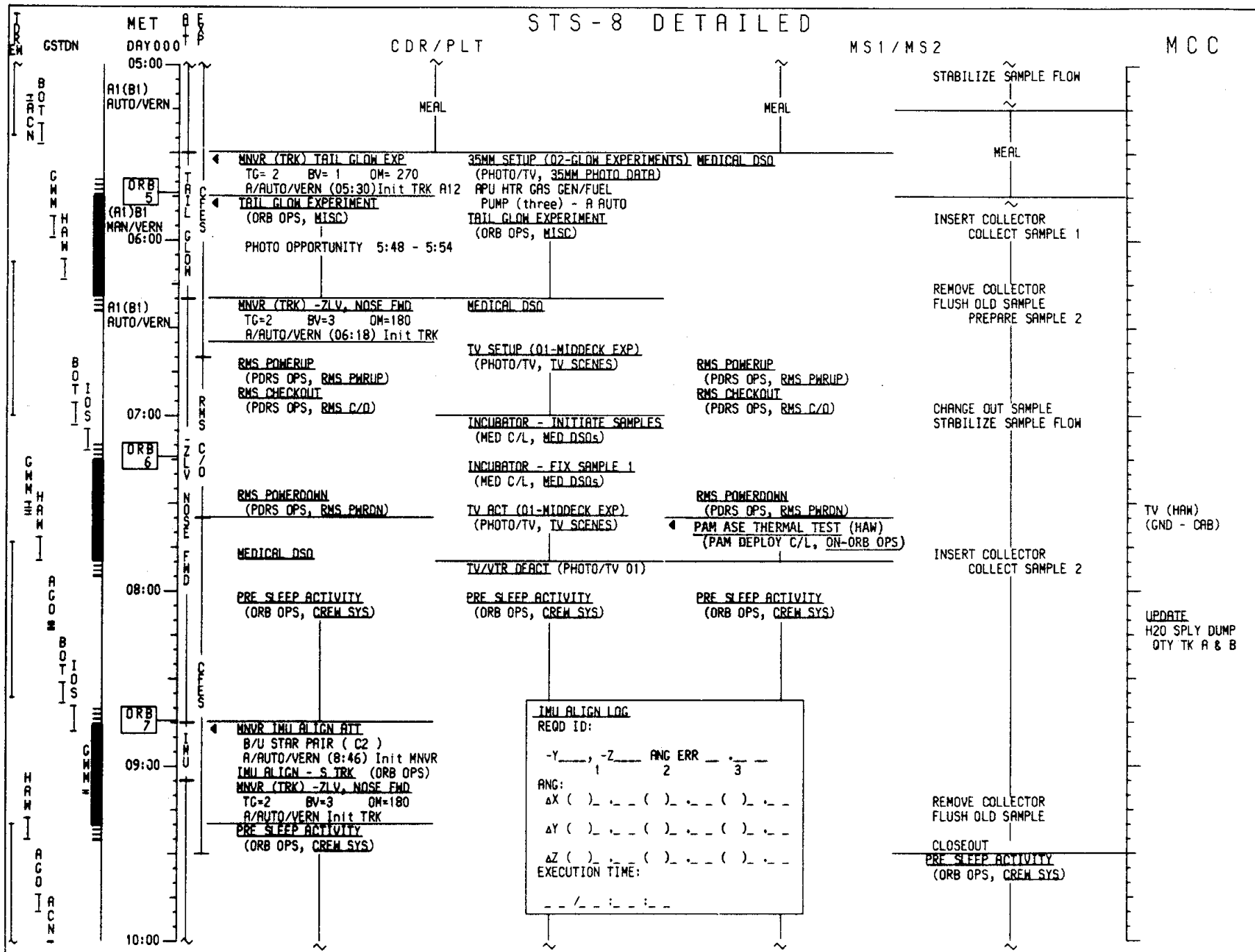
CEES (CUE CARD)  
ACTIVATION  
SYSTEM STATUS CHECK

ZERO VOLTAGE CHECK

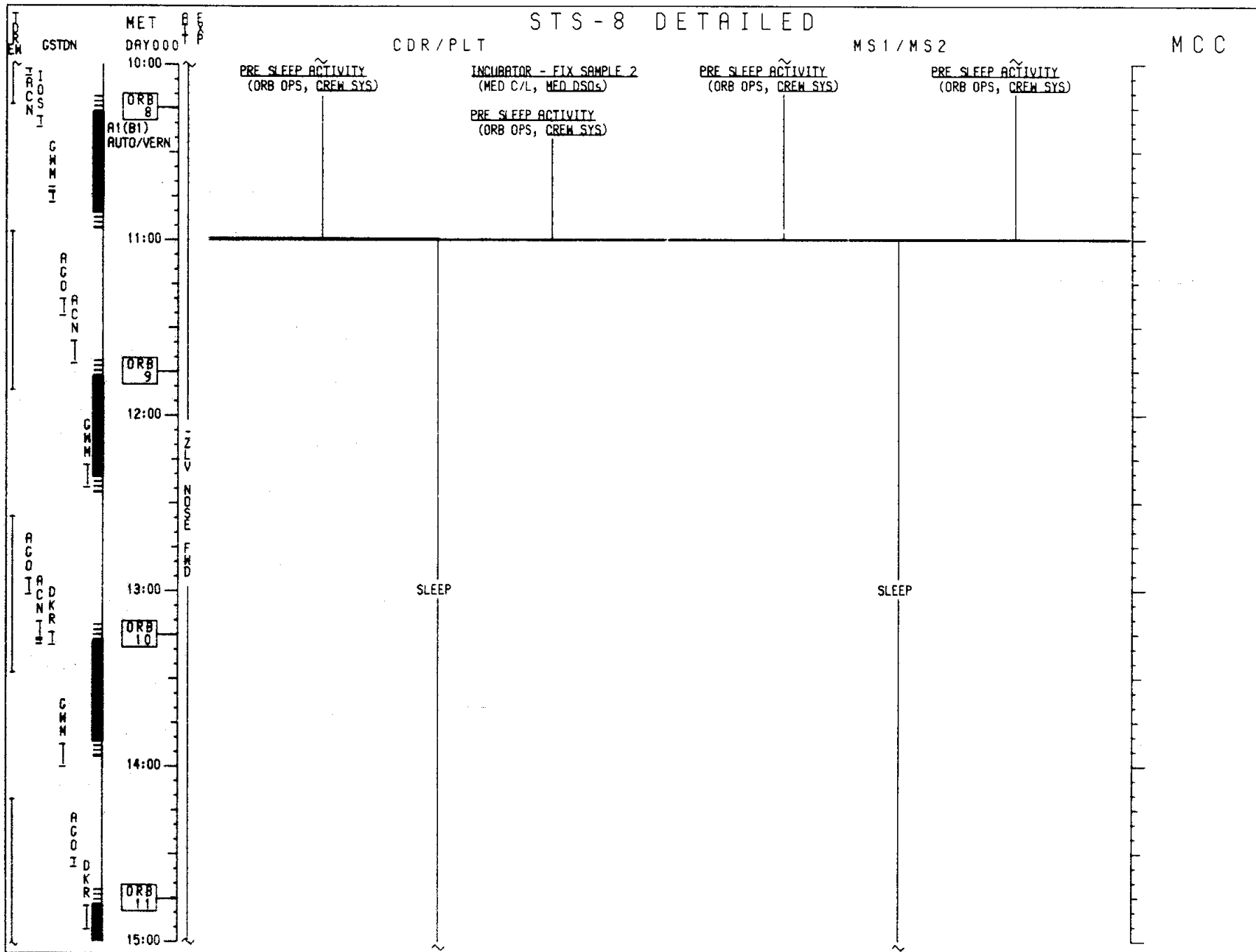
SEP VOLTAGE ON  
PREPARE SAMPLE 1

CHANGE OUT SAMPLE

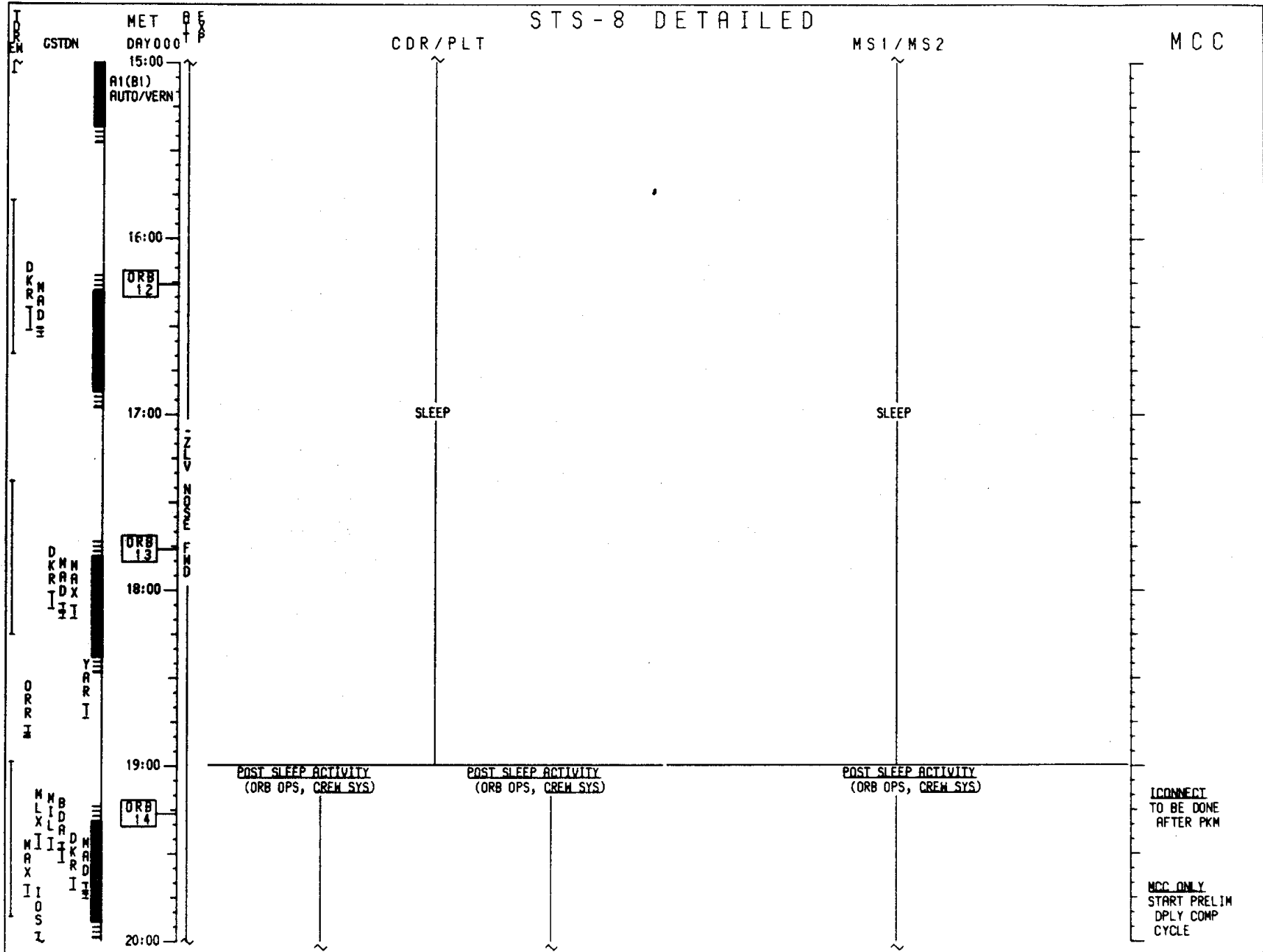
INFORM CREW  
GO FOR APU  
COOL OFF



# STS-8 DETAILED

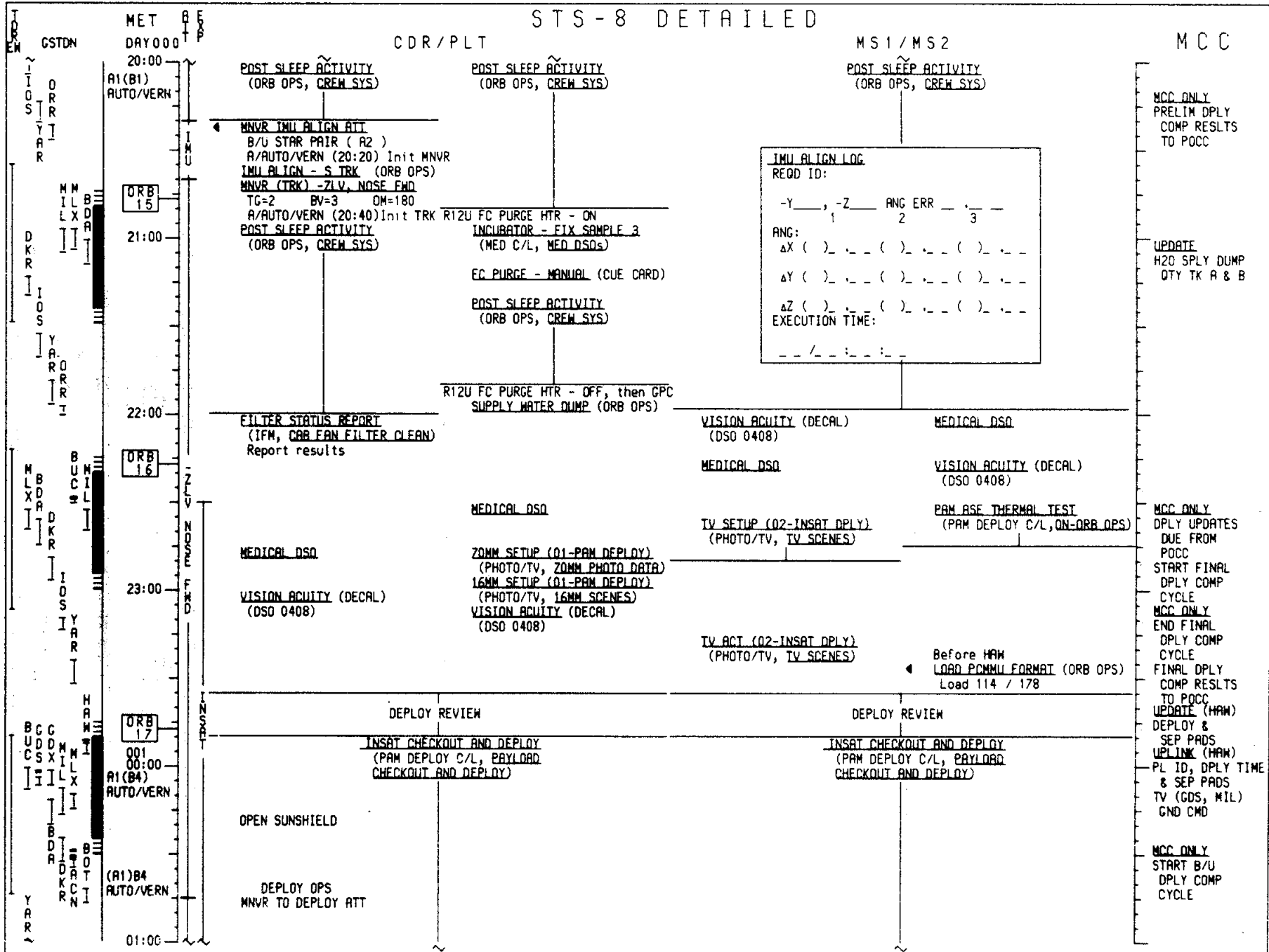


# STS-8 DETAILED

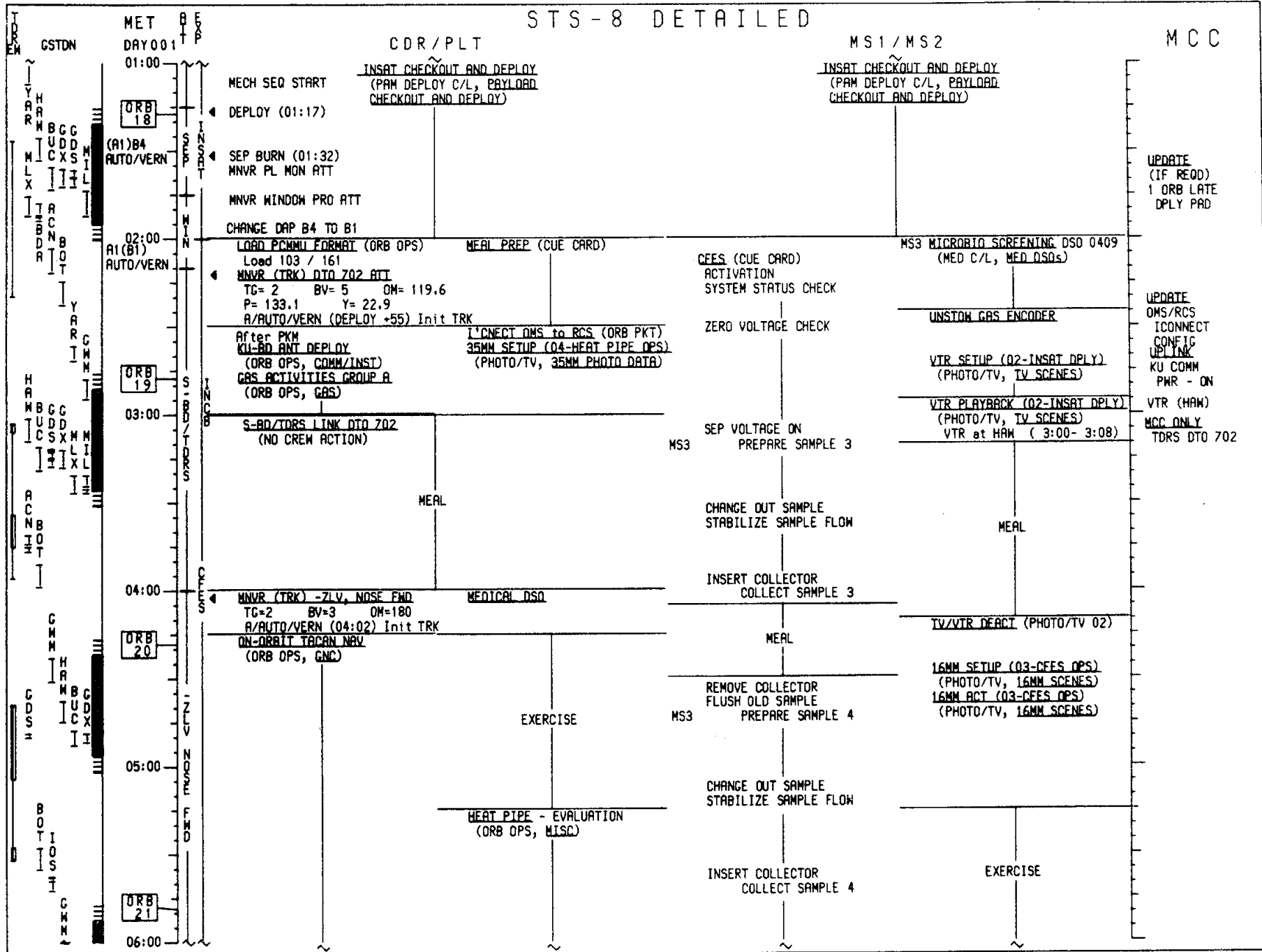




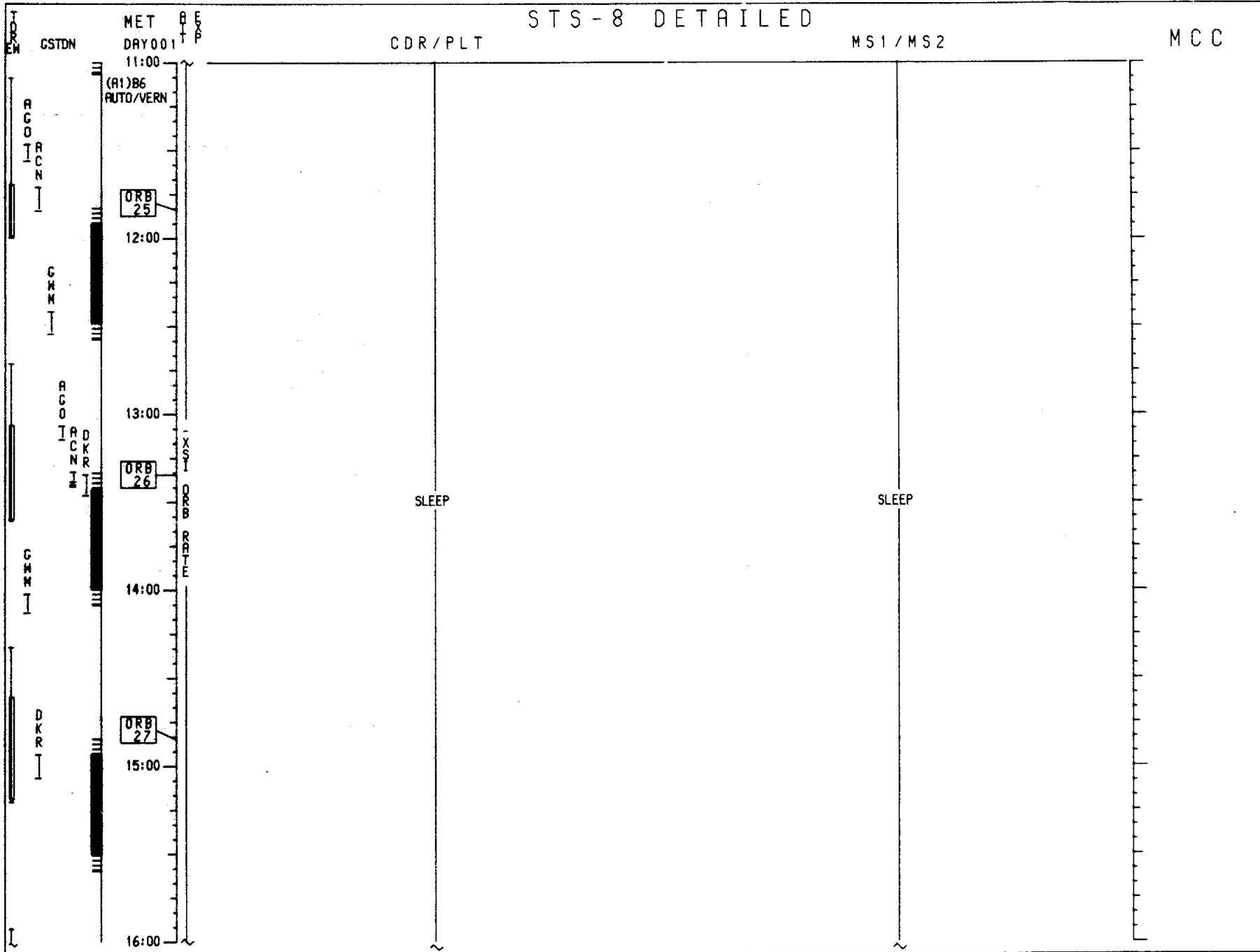
# STS-8 DETAILED



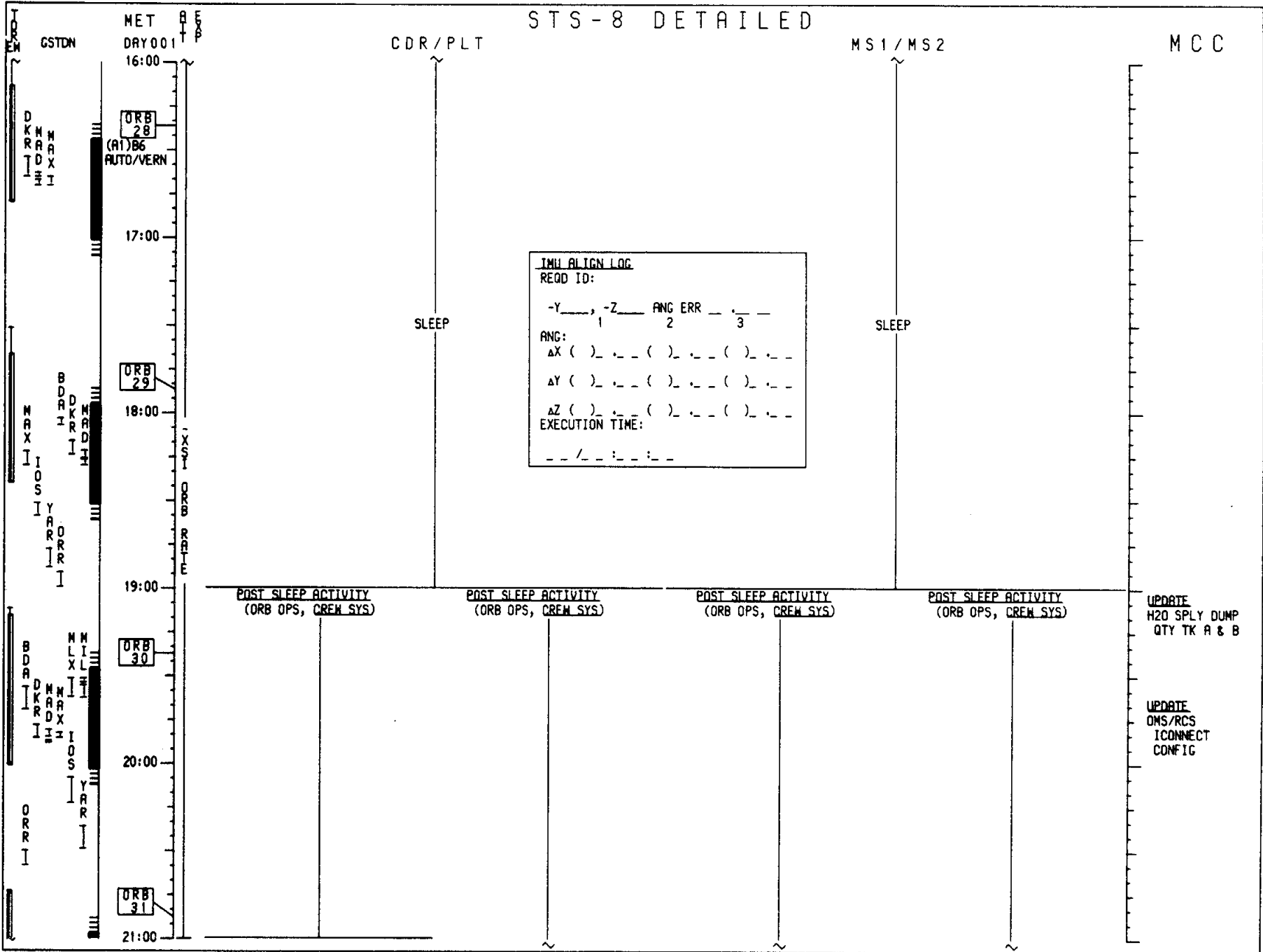
# STS-8 DETAILED

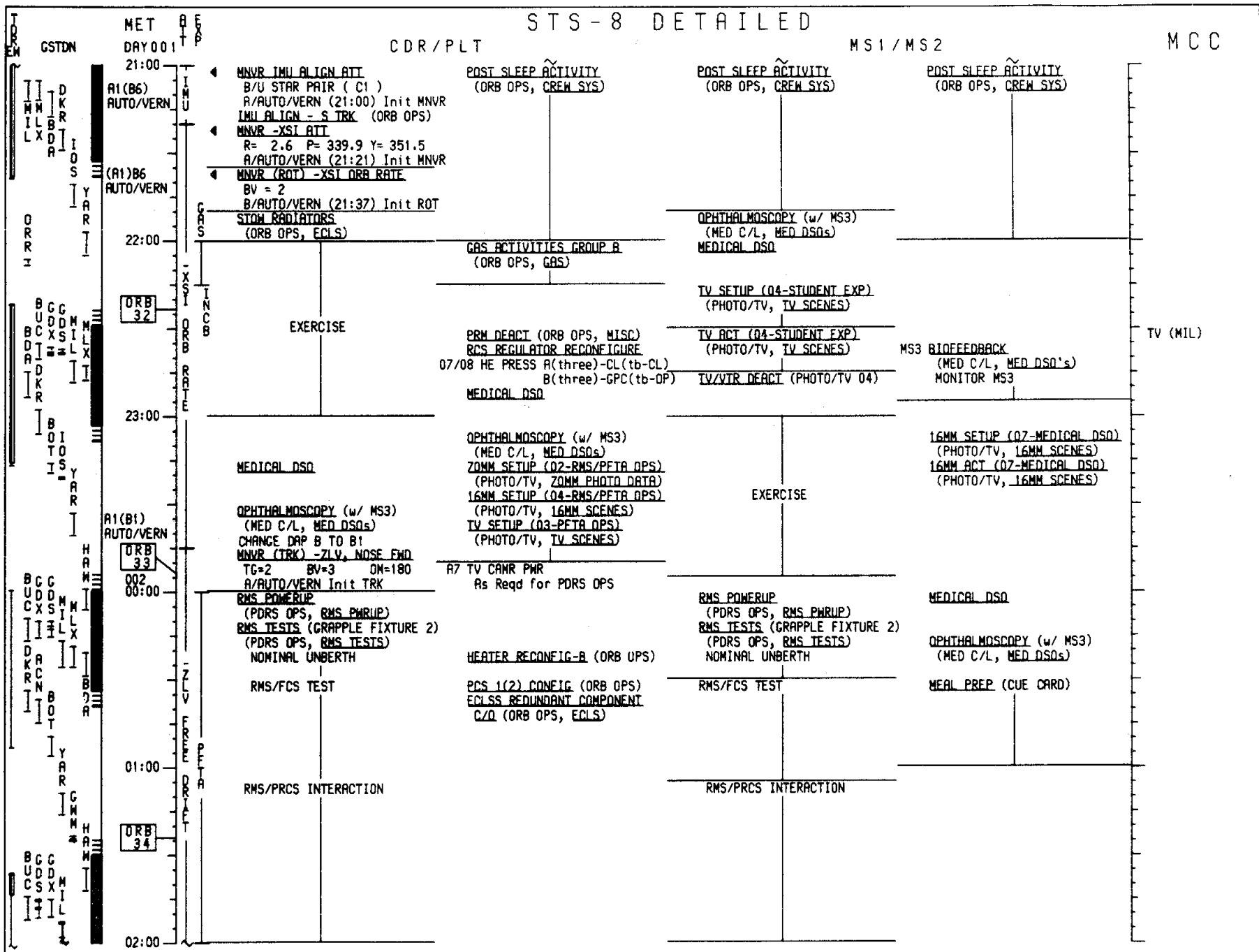






# STS-8 DETAILED



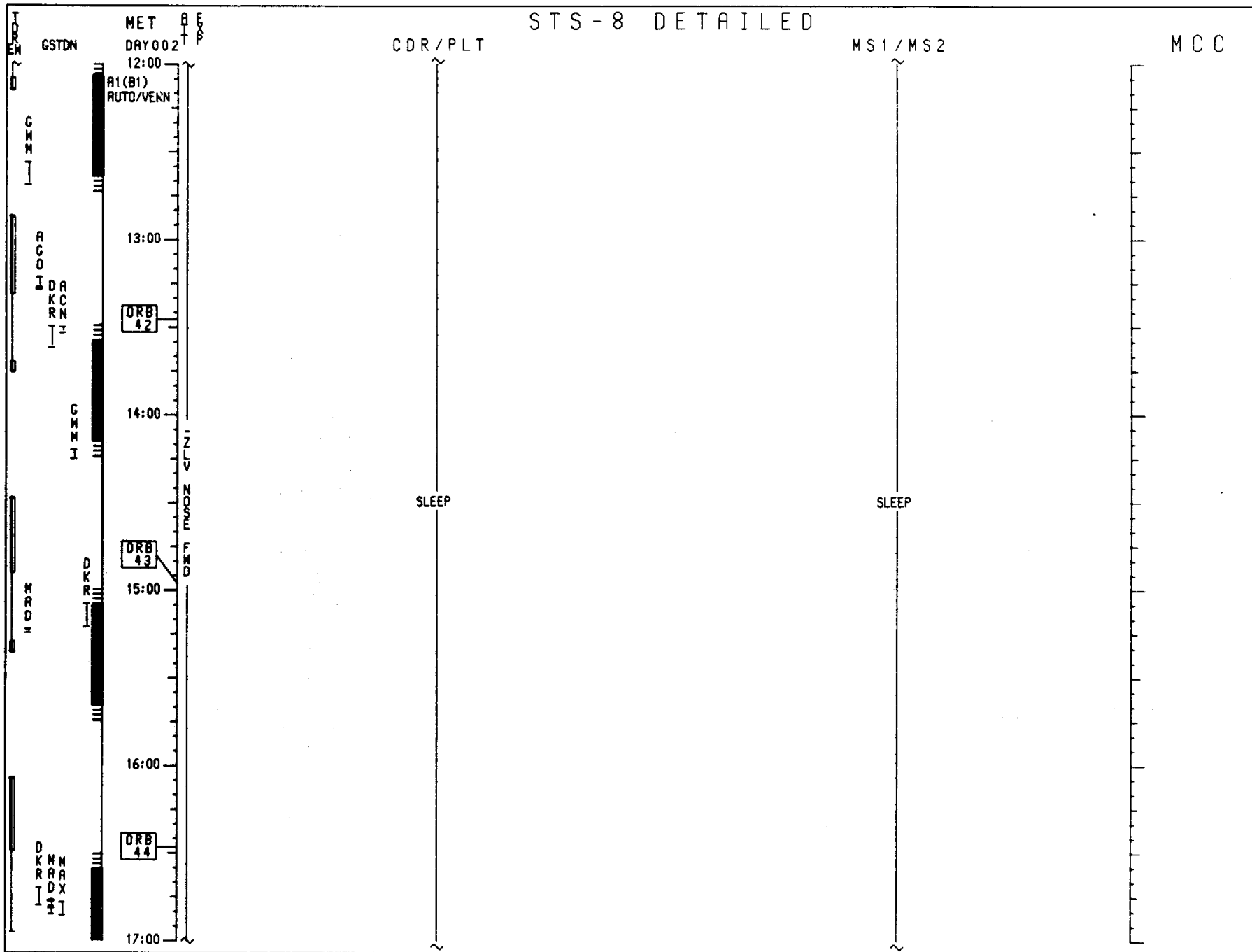








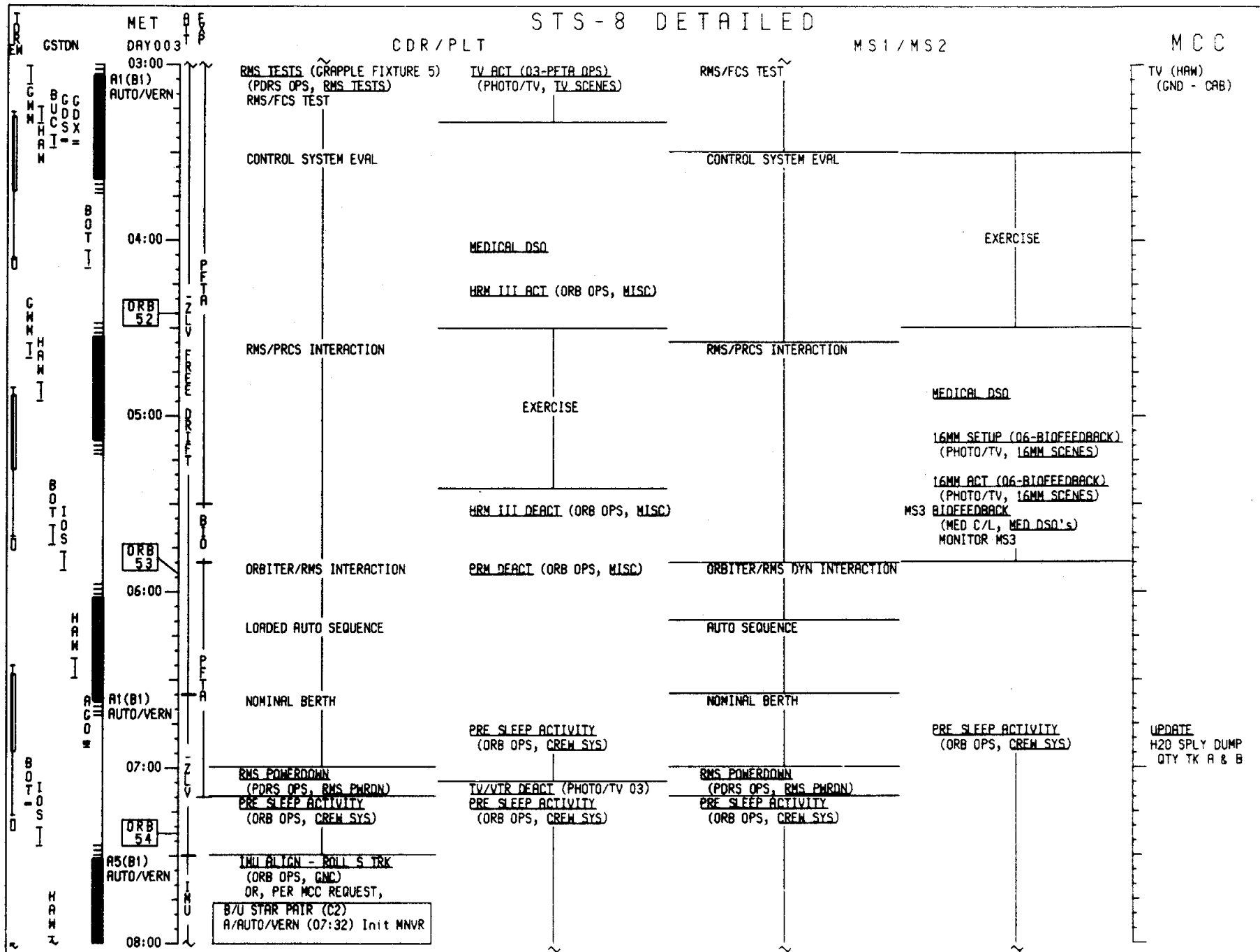
STS-8 DETAILED



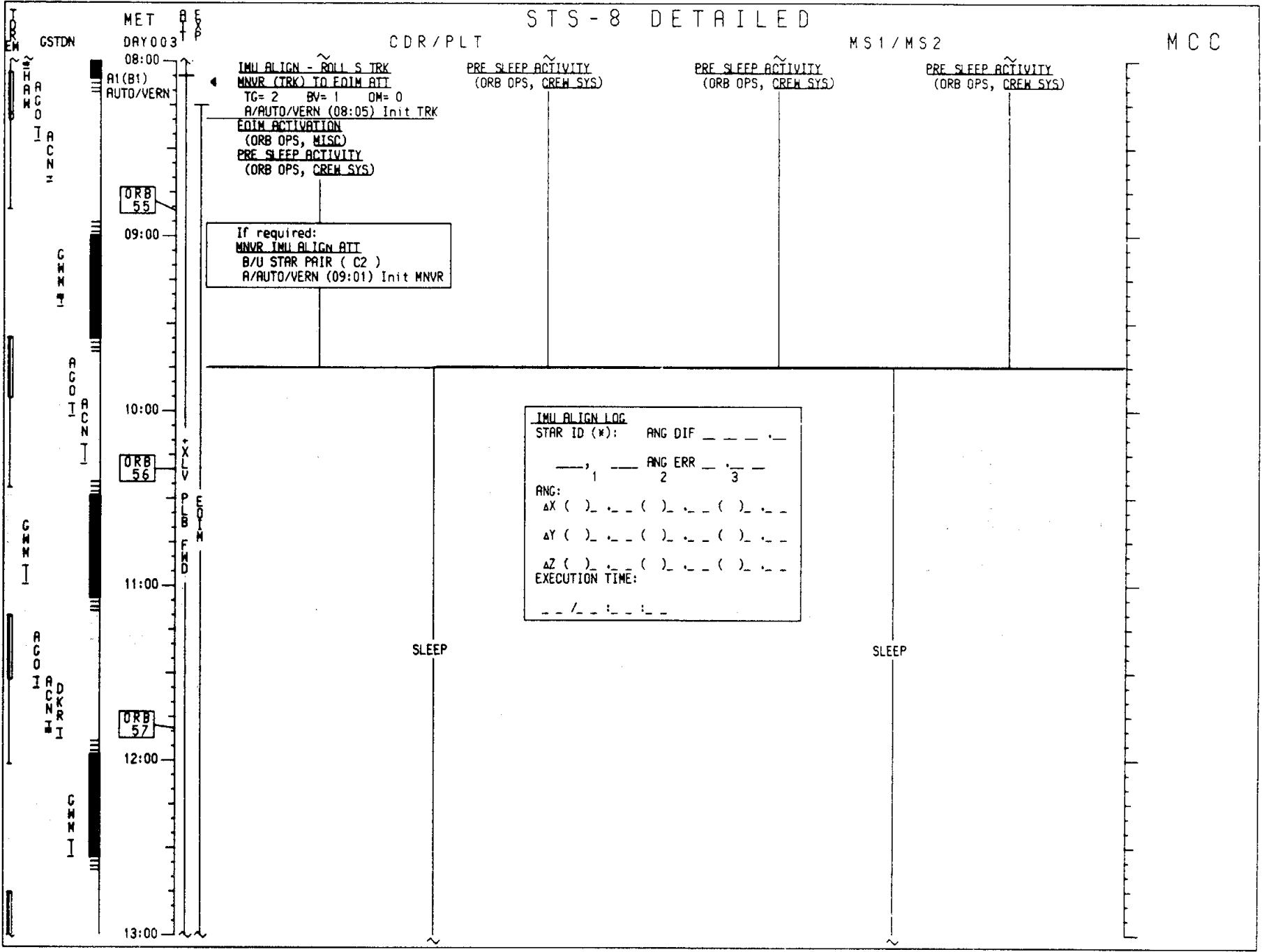


STS-8 DETAILED

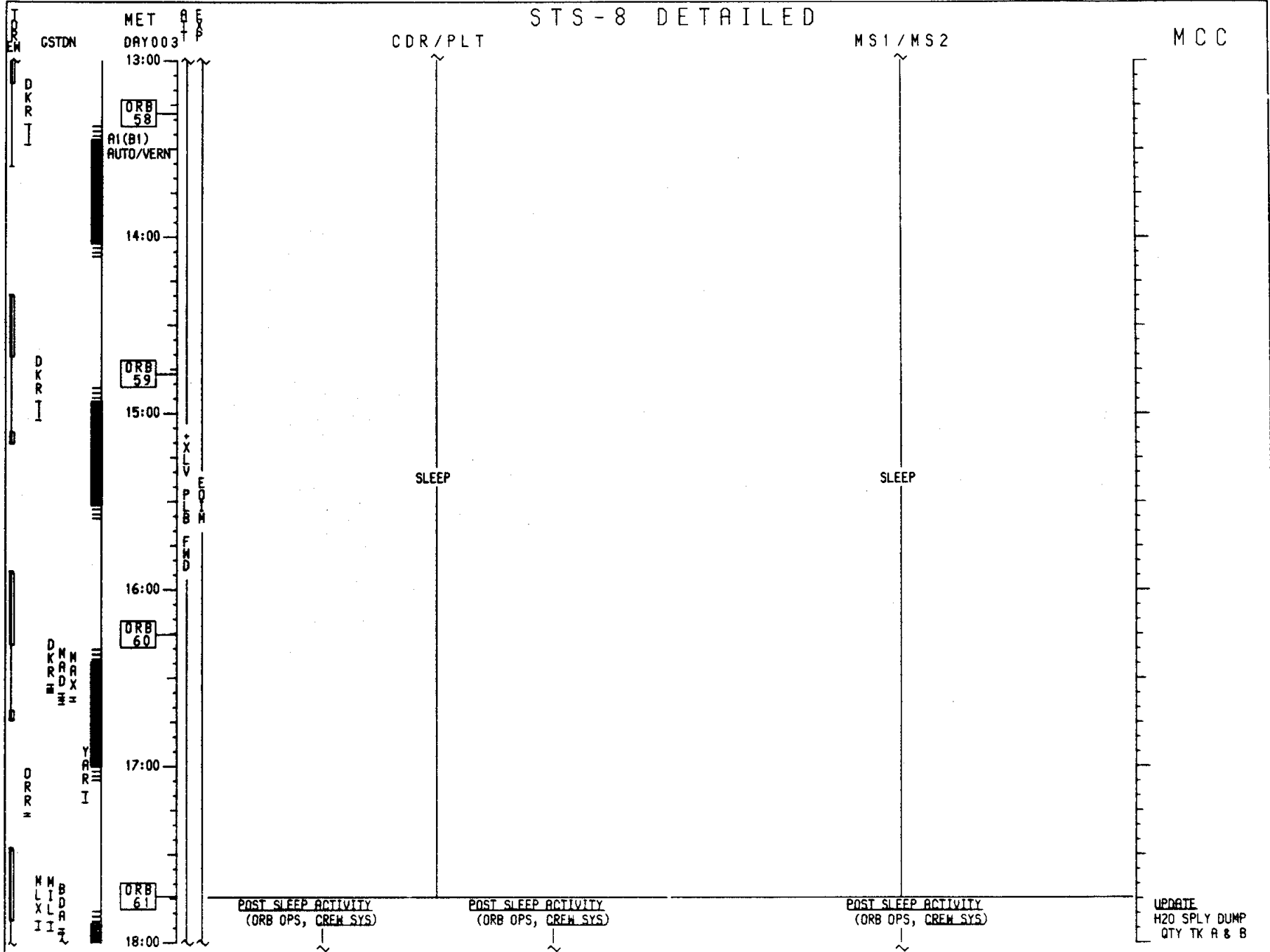
TIME	CDR/PLT	MS1/MS2	MCC
22:00	ON-ORBIT OMS BURN (ORB OPS, OMS)	ON-ORBIT OMS BURN (ORB OPS, OMS)	
22:00	MNVR OMS BURN ATT (2/22:10)		
22:42:00	TIG 2/22:42:00		
23:00	CONNECT OMS to RCS (ORB PKT) KU-BD MANUAL ACQ (ORB OPS, COMM/INST) Perform 2 acquisitions	MEDICAL DSO	UPDATE OMS/RCS ICONNECT CONFIG
23:00	FILTER STATUS REPORT (IFM, CAB FAN FILTER CLEAN) Report results	MEDICAL DSO	HRM III DEACT (ORB OPS, MISC)
23:00		EXERCISE	16MM SETUP (05-EXERCISE) (PHOTO/TV, 16MM SCENES) 16MM ACT (05-EXERCISE) (PHOTO/TV, 16MM SCENES) TV SETUP (09-ANIMAL ENCL) (PHOTO/TV, TV SCENES)
00:00	MNVR KU-BD ROLL ATT R= 3.6 P= 102.3 Y= 40.1 A/AUTO/VERN (23:50) Init MNVR		MCC ONLY TDRS DTO 712
00:00	KU-BD COMM & TRACK (+ROLL) (ORB OPS, COMM/INST) Step 1 TDRS AOS: 00:08	KU-BD COMM & TRACK (+ROLL) (ORB OPS, COMM/INST) Step 1	MEAL PREP (CUE CARD)
00:00	EXERCISE	KU-BD COMM & TRACK (-ROLL) (ORB OPS, COMM/INST) Step 1	TV ACT (09-ANIMAL ENCLOSURE) (PHOTO/TV, TV SCENES)
01:00	MNVR (TRK) -ZLV, NOSE FWD TC=2 BV=3 OM=180 A/AUTO/VERN Init TRK	TV SETUP (03-PFTA OPS) (PHOTO/TV, TV SCENES)	TV/VTR DEACT (PHOTO/TV 09)
02:00	MEAL	MEAL	
02:00	RMS POWERUP (PDRS OPS, RMS PHURP) RMS TESTS (GRAPPLE FIXTURE 5) (PDRS OPS, RMS TESTS) NOMINAL UNBERTH	ZOMM SETUP (02-RMS/PFTA OPS) (PHOTO/TV, ZOMM PHOTO DATA) 16MM SETUP (04-RMS/PFTA OPS) (PHOTO/TV, 16MM SCENES)	
02:00	RMS/FCS TEST	RMS POWERUP (PDRS OPS, RMS PHURP) RMS TESTS (GRAPPLE FIXTURE 5) (PDRS OPS, RMS TESTS) NOMINAL UNBERTH	
03:00		RMS/FCS TEST	



# STS-8 DETAILED



# STS-8 DETAILED



# STS-8 DETAILED

CDR/PLT

MS1/MS2

MCC

MET DAY 003

18:00  
19:00  
20:00  
21:00  
22:00  
23:00

CSTDN  
 A1(B1)  
 A5(B1)  
 A1(B1)  
 A1(B1)  
 A1(B1)  
 A1(B1)

AUTO/VERN  
 AUTO/VERN  
 AUTO/VERN  
 AUTO/VERN  
 AUTO/VERN

POST SLEEP ACTIVITY  
(ORB OPS, CREW SYS)

POST SLEEP ACTIVITY  
(ORB OPS, CREW SYS)

POST SLEEP ACTIVITY  
(ORB OPS, CREW SYS)

UPDATE  
OMS/RCS  
ICONNECT  
CONFIG

ORB 62

EDM DEACTIVATION  
(ORB OPS, MISC)  
IMU ALIGN - ROLL S TRK  
(ORB OPS, GNC)  
OR, PER MCC REQUEST,

B/U STAR PAIR (C2)  
A/AUTO/VERN (19:23) Init MNVR

MNVR (TRK) -ZLV, NOSE FWD  
TC=2 BV=3 OM=180  
A/AUTO/VERN Init TRK

TV SETUP (10-EARTH VIEWS)  
(PHOTO/TV, TV SCENES)

TV ACT (10-EARTH VIEWS)  
(PHOTO/TV, TV SCENES)

ORB 63

If required:  
MNVR IMU ALIGN ATT  
B/U STAR PAIR ( C2 )  
A/AUTO/VERN (20:52) Init MNVR

OPHTHALMOSCOPY (w/ MS3)  
(MED C/L, MED DSOs)  
VISION ACUITY (DECAL)  
MEDICAL DSO

HRM III ACT (ORB OPS, MISC)

OPHTHALMOSCOPY (w/ MS3)  
(MED C/L, MED DSOs)  
VISION ACUITY (DECAL)  
MEDICAL DSO

EXERCISE

ORB 64

APU STEAM VENT HTR ACT  
R2 BLR CNTLR PWR/HTR(three)-B  
CNTLR(three) -ON

TV/VTR DEACT (PHOTO/TV 10)  
ECS CHECKOUT  
(ORB OPS, GNC)

TV SETUP (09-ANIMAL ENCL)  
(PHOTO/TV, TV SCENES)

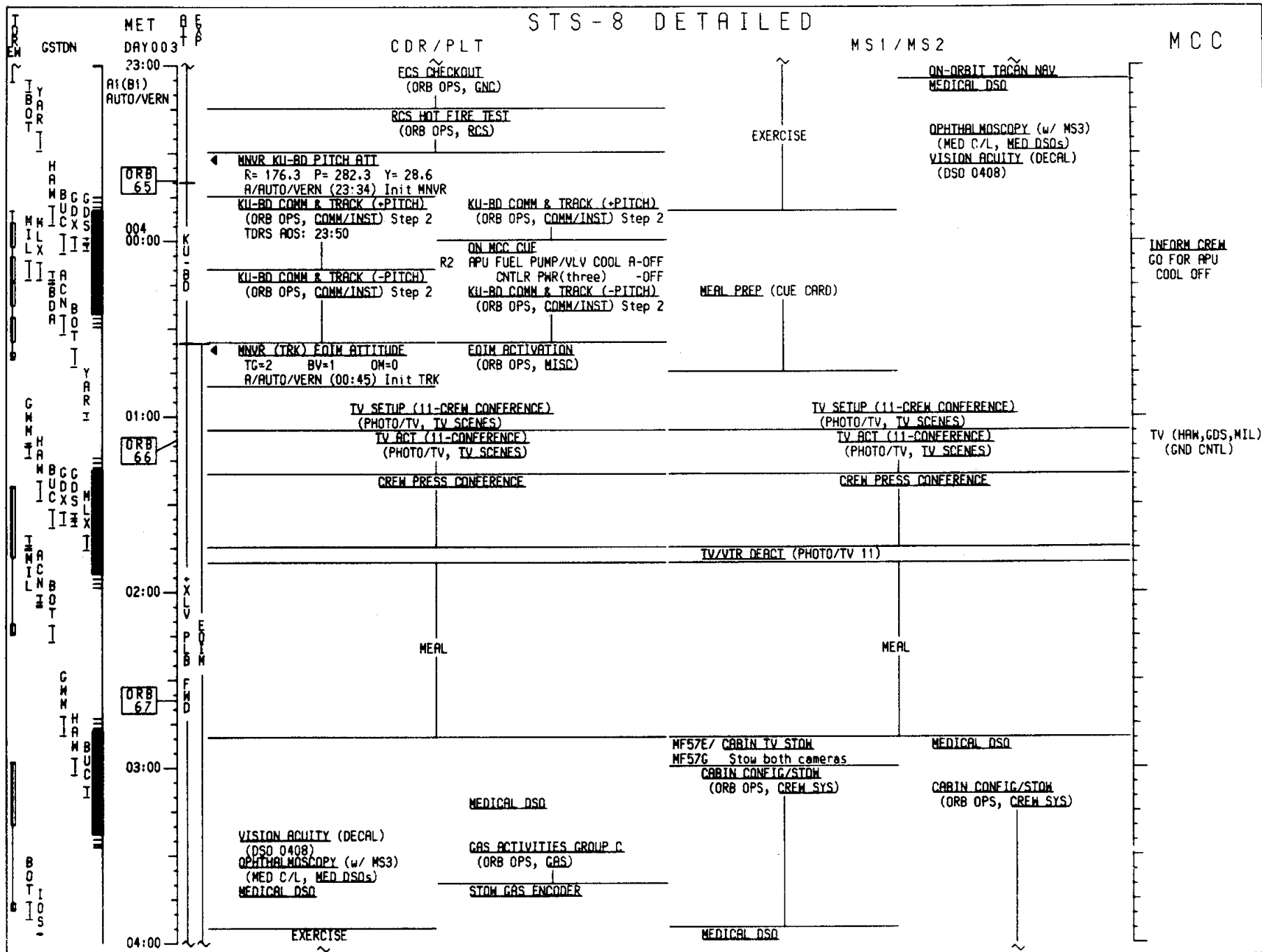
ON-ORBIT TACAN NAV  
(ORB OPS, GNC)

TV ACT (09-ANIMAL ENCLOSURE)  
(PHOTO/TV, TV SCENES)

TV/VTR DEACT (PHOTO/TV 09)  
HRM III DEACT (ORB OPS, MISC)

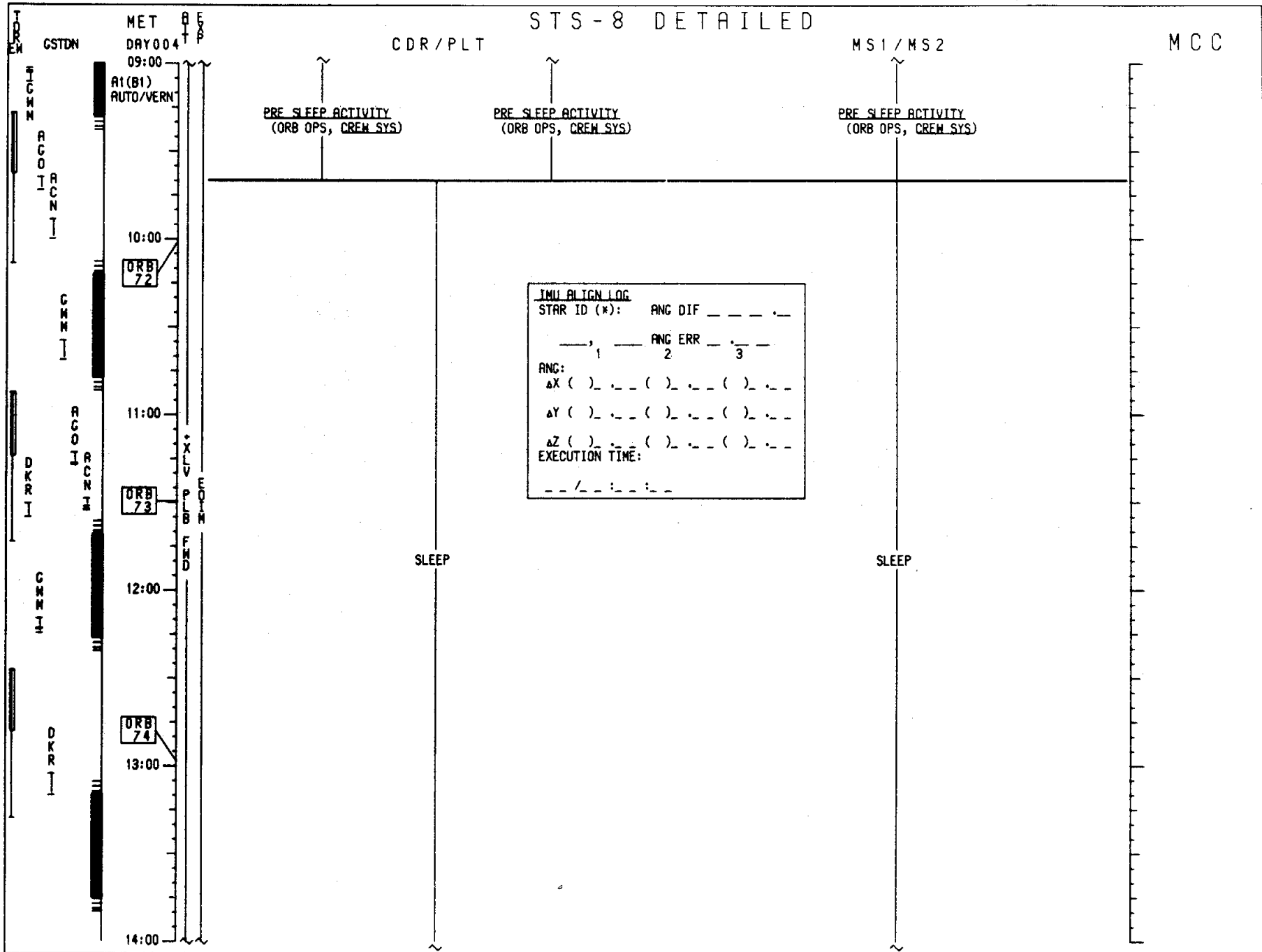
EXERCISE

IMU ALIGN LOG			
STAR ID (*):	ANG DIF	---	---
---	ANG ERR	---	---
ANG:	1	2	3
ΔX ( )	( )	( )	( )
ΔY ( )	( )	( )	( )
ΔZ ( )	( )	( )	( )
EXECUTION TIME:			
---	---	---	---

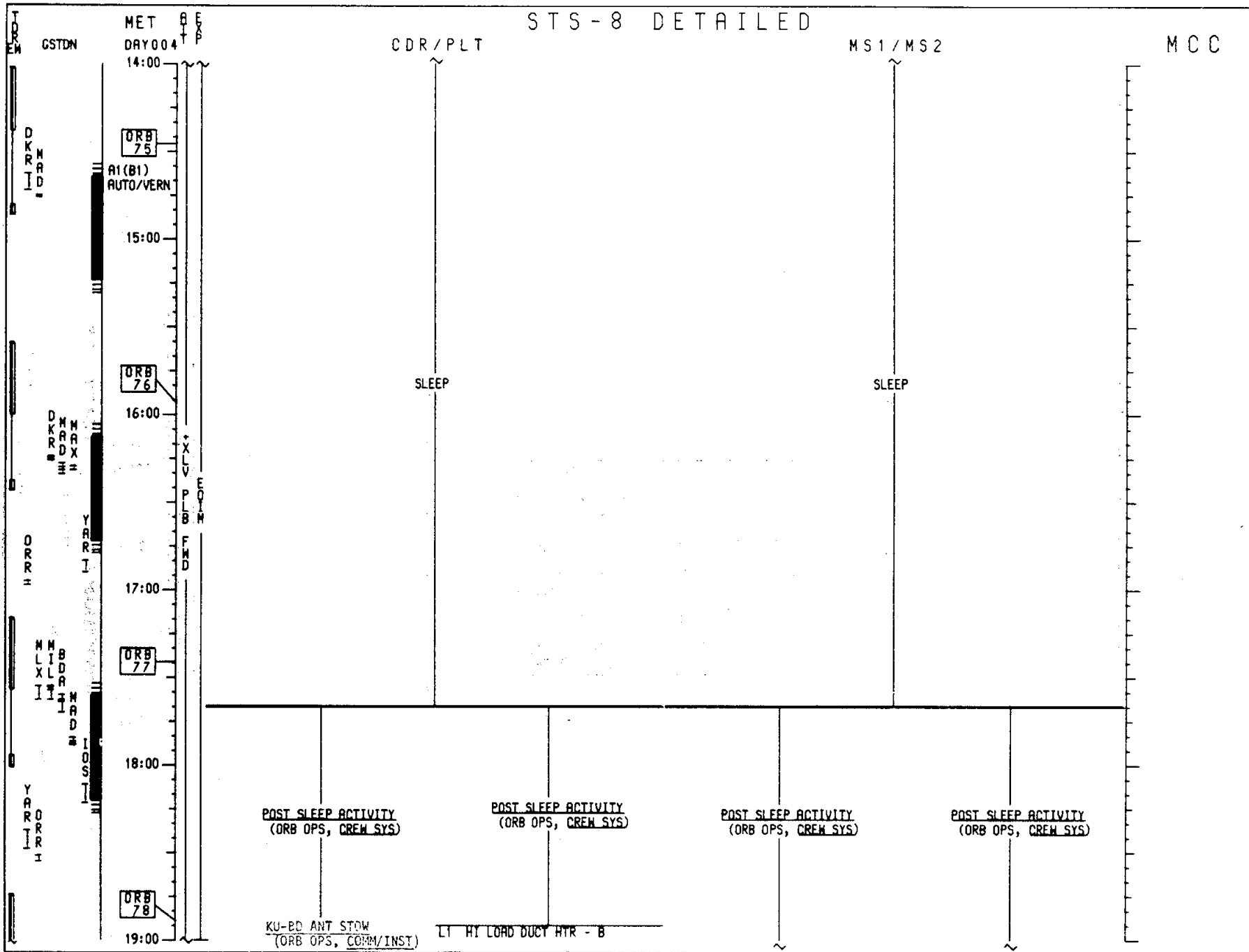




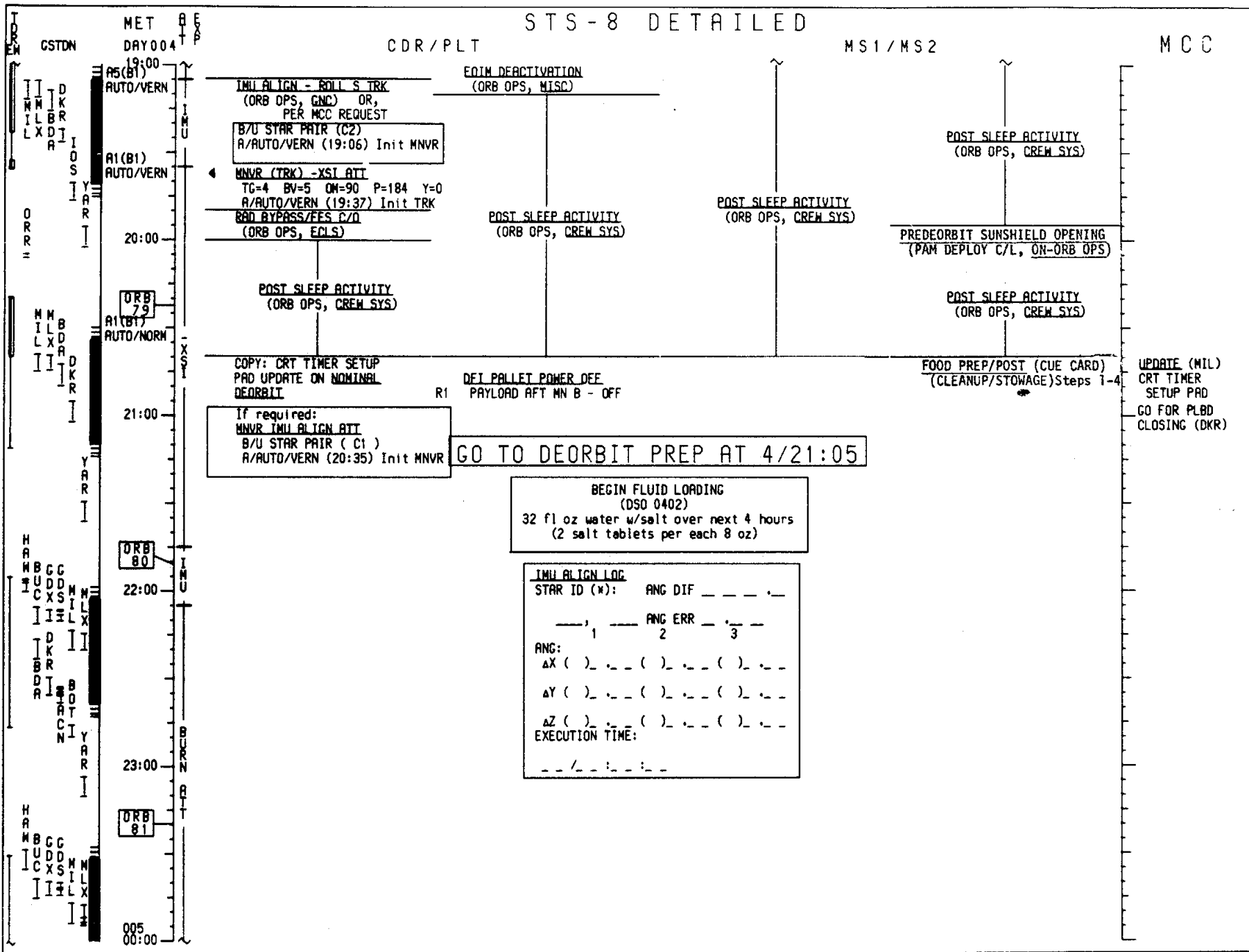




STS-8 DETAILED



# STS-8 DETAILED



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CONTINGENCY TIMELINES

INSAT 34D INJECTION..... 5A-1  
INSAT 34D INJECTION TIMELINE..... 5A-2  
HIGH PRIORITY MISSION..... 5B-1  
HIGH PRIORITY MISSION TIMELINE..... 5B-2  
WAVE OFF (1 DAY ENTRY)..... 5C-1  
WAVE OFF TIMELINE..... 5C-2

CONTINGENCY  
TIMELINES

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## INSAT 34D INJECTION

The INSAT 34D injection timeline is designed to accommodate delaying the INSAT/PAM-D deployment to the 34D opportunity. On FD2 after the INSAT no go, complete the day's nominal activities, with two changes: add an ASE TEMP CHECK at 1/07:55 MET (HAW) and maneuver back to a -ZLV (nose forward) attitude after the pre-sleep IMU alignment. The 34D timeline is entered at 1/19:00 MET on FD3.

Return to the nominal timeline at 2/04:30. Continue RMS activities. Complete 4-1/2 hours of RMS/PFTA tests using the 34D deploy menu (PDRS OPS C/L). The following activities should be scheduled:

- ECLSS Redundant Component Checkout
- PCS 1(2) Config

At 2/09:25, after the pre-sleep IMU alignment, go to a Tail Sun attitude (DTO 114) for 10 hours (until the FD4 post-sleep IMU alignment).







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## HIGH PRIORITY MISSION

The high priority mission is a 74-hour flight that lasts 4 flight days. The nominal timeline will be used through the deployment of INSAT on flight day 2, then the high priority mission timeline is used starting at 1/4:00 MET.

Flight Day 3 has a 4-hour modified RMS/PFTA block (DTO 0503 - PDRS Payload Handling Performance and DTO 0762 - Orbiter RMS Dynamic Interaction Test) instead of the nominal 11 hours. Grapple fixtures 2 and 5 will each be assigned a 1:50 block of time.

The following major experiments/activities and Detailed Test Objectives (DTOs) will be accomplished via the high priority mission:

### 1. Experiments/Activities

- INSAT deploy
- All six CFES runs
- ISAL (Investigation of STS Atmospheric Luminosities)
- Heat Pipe Evaluation
- Engineering Test of Carry-On Incubator
- GAS
- HRM and PRM
- 0114 OV099 Cold Canopy Test

### 2. TDRS DTOs

- 0702 S-BD/TDRS Communication Link Performance Test #2
- 0704 TDRSS Navigation Test
- 0710 KU-BD Communications Link Performance Test #2
- 0712 KU-BD Communications and Tracking Performance
- 0717 Orbiter S-BD and KU-BD/TDRSS Operations Proficiency Test #2



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE							
243:18:15/ 244:06:15	001:12:00/ 002:00:00	243:13:15/ 244:01:15	02/ 243 GMT	37.0	☉	AUGUST 31, 1983	STS-8	FINAL, REV A	08/10/83							
GMT: 243 FD : 02 MET : 001																
12	13	14	15	16	17	18	19	20	21	22	23	0				
CDR	SLEEP						POST SLEEP ACT	I M U M N V R	A U T O M N V R	R O T M N V R	POST SLEEP ACT	Z L V M N V R	R N S P H R U P	P F T A T E S T S		
PLT	SLEEP						POST SLEEP ACT	S T O W R A D		POST SLEEP ACT	R C S C A M R A	7 0 M M S / U	1 6 M M S / U	P F T A T E S T S	C A S S	M E D D S O
MS1	SLEEP						POST SLEEP ACT	P L B C A M R A		POST SLEEP ACT	P L B C A M R A	P F T A T E S T S	G R A P P L E F I X T U R E 5			
MS2	SLEEP						POST SLEEP ACT	M E D D S O		POST SLEEP ACT	T V S E T U P	T V A C T	E X E R C I S E			
DAY/NIGHT																
ORBIT	25	26	27	28	29	30	31	32	HAN							
GSTDN COVERAGE	-CWN	-RCO -ACN -DKR	-CWN	-DKR	-WAD -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX	-YAR -DKR -MAX		
TDRS																
TV																
DEORB EDW NOR																
ATTITUDE																
MNYS																
EXP																
NOTES:	<b>HIGH PRIORITY MISSION - F02/3</b>															
	RECONFIC Y-POP (NOSE FWD) DEACTIVATE: 0475 70MM/02 RMS/PFTA OPS DTG 503 & 762 RMS DYNAMIC INTERACTION 16MM/04 RMS/PFTA OPS TV/03 PFTA OPS TV/03 PFTA OPS															

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
244:06:15/ 244:18:15	002:00:00/ 002:12:00	244:01:15/ 244:13:15	03/ 244 GMT	36.9		SEPTEMBER 1, 1983	STS-8	FINAL REV A	08/10/83	
GMT : 244 FD : 03 MET : 002										
CDR	PFTA TESTS	MEAL	FCS C/O	EXERCISE	CABIN CONFIG/STOW	CABIN CONFIG/STOW	IMU ALIGN (ROLL)	PRE SLEEP ACT	PRE SLEEP ACT	SLEEP
PLT	EXERCISE	MEAL	FCS C/O		CABIN CONFIG/STOW			PRE SLEEP ACT		SLEEP
MS1	PFTA TESTS GRAPPLE FIXTURE 2	MEAL	CABIN CONFIG/STOW	EXERCISE	CABIN CONFIG/STOW		LAMP/SMOKE	PRE SLEEP ACT		SLEEP
MS2	MEAL PREP	MEAL		CABIN CONFIG/STOW			16MM S/U 35MM S/U	PRE SLEEP ACT		SLEEP
DAY/NIGHT										
ORBIT	33	34	35	36	37	38	39	40		
GSTDN COVERAGE	HAW - DXP - BUC - ACN - GDS - MIL - MLX - BOR	- BOT - YAR - GMM - HAM - ACN - BOT	- CDS - MIL - BDA - HAM - ACN - BOT	- CMM - HAW - BUC - GDS - MLX	- ACN - BOT - CMM - HAW - BUC - GDS - MLX	- BOT - LOS	- HAW - AGO - BOT - LOS - GMM - HRH	- AGO - ACN - LOS - GMM - HAW - AGO - ACN	- GMM - AGO	- GMM - AGO
TDRS										
TV										
DEORB EDW	↑ 01:04		↑ 02:40							
NOR	↑ 01:07		↑ 02:43							
ATTITUDE	-ZLV FREE DRIFT		-ZLV NOSE FWD			IMU		-ZLV NOSE FWD		
MNRS										
EXP	PFTA		HRM							
NOTES:	DTD 503 & 762 RMS DYNAMIC INTERACTION DEACTIVATE: G346, G348					APU HTR ACT CABIN CONFIG/STOW 16MM/13 ENTRY INTERFACE DTD 704 TDRS NAV INIT 35MM/03 ENTRY INTERFACE				
* DTD 702/710 S-80/KU-BD TEST										

GMT (D:H:M)	MET (D:H:M)	CST (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
244:18:15 / 245:06:15	002:12:00 / 003:00:00	244:12:15 / 245:00:15	03 / 244 GMT	36.6	●	SEPTEMBER 1, 1983	STS-8	FINAL, REV A	08/10/83				
TIG													
GMT :244	19	20	21	22	23	0	1	2	3				
FD :03						GMT:245	FD:04	19	20				
MET :002	12	13	14	15	16	17	18	19	20				
CDR	SLEEP					POST SLEEP ACT	K U I U D B S E M O	IMU ALIGN (ROLL)	M N V R	POST SLEEP ACT	P R I L A R S E M O	PLBD OPS	DEORBIT PREP
PLT	SLEEP					POST SLEEP ACT				POST SLEEP ACT		PLBD OPS	DEORBIT PREP
MS1	SLEEP					POST SLEEP ACT						DEORBIT PREP	
MS2	SLEEP					POST SLEEP ACT				POST SLEEP ACT			DEORBIT PREP
DAY/NIGHT	[Day/Night Cycle Diagram]												
ORBIT	41	42	43	44	45	46	47	48					
GSTDN COVERAGE	-GMM	-RCO -DKR -RCN	-GMM	-DKR -MAD -MAX	-YAR -ORR	-BDA -DKR -MAD -MAX	-MIL -MLX -BDA -DKR -MAD	-ORR	-MIL -MLX -BDA -DKR	-ORR	-HAW -BUC -GDS -MIL	-DKR -RCN -BOT -YAR	
TDRS	[TDRS Coverage Diagram]												
TV													
DEORB EDW NOR													
ATTITUDE	-ZLV NOSE FWD												
MNRS													
EXP	ISS OP												
NOTES:	<p><b>HIGH PRIORITY MISSION - FD 3/4</b></p> <p>■ HI LOAD MTR ON      ● FES CNTLR CHECK          ● DSO 301 EQIM OFI PALLET DEACT          ○ COPY TIMER PAD</p>												



GMT (D:H:M)	MET (D:H:M)	CST (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
245:06:15 / 245:18:15	003:00:00 / 003:12:00	245:00:15 / 245:12:15	04 / 245 GMT	36.1	☉	SEPTEMBER 2, 1983	STS-8	FINAL, REV A	08/10/83
GMT : 245 FD : 04 MET : 003									
CDR	DEORBIT PREP								
PLT	DEORBIT PREP	BURN	ENTRY INTERFACE	EDM LANDING (3/2:12)					
MS1	DEORBIT PREP	DEORBIT	ENTRY INTERFACE	EDM LANDING (3/2:12)					
MS2	DEORBIT PREP			EDM LANDING (3/2:12)					
DAY/NIGHT									
ORBIT									
GSTDN COVERAGE									
TDRS									
TV									
ATTITUDE									
MNVRS									
EXP									
NOTES: HIGH PRIORITY MISSION - FD 4									

WAVE OFF (1 DAY LATE ENTRY)

The Timeline provided in this section is designed to follow a Deorbit Prep Backout on FD6. It therefore assumes that the nominal timeline has already been accomplished.

Note that extra time is allowed prior to Pre-Sleep Activity to accommodate reconfiguration or troubleshooting.

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
247:06:15 / 247:18:15	005:00:00 / 005:12:00	247:01:15 / 247:13:15	06 / 247 GMT	32.2	☾	SEPTEMBER 4, 1983	STS-8	FINAL REV A	8/10/83				
GMT : 247	7	8	9	10	11	12	13	14	15	16	17	18	
FD : 06													
MET : 005	0	1	2	3	4	5	6	7	8	9	10	11	12
CDR	DEORBIT PREP	BACKOUT	SNACK	UNSTOW CABIN EQUIP	EXERCISE	PRE SLEEP ACT	IMU ALIGN (ROLL)	PRE SLEEP ACT			SLEEP		
PLT	DEORBIT PREP	BACKOUT	SNACK	UNSTOW CABIN EQUIP		EXERCISE		PRE SLEEP ACT			SLEEP		
MS1	DEORBIT PREP	BACKOUT	SNACK	UNSTOW CABIN EQUIP		CABIN CONFIG/STOW		PRE SLEEP ACT			SLEEP		
MS2	DEORBIT PREP	BACKOUT	SNACK	UNSTOW CABIN EQUIP		CABIN CONFIG/STOW		PRE SLEEP ACT			SLEEP		
DAY/NIGHT													
ORBIT	81	82	83	84	85	86	87	88	89				
GSTDN COVERAGE	-ACN -BOT	-MIX -WIL -ACN -BOT	-BOT -IOS	-GMM -HAM	-BOT -IOS	-HAW -AGO -ACN	-GMM -AGO	-ACN -GMM	-AGO -ACN -DKR	-GMM			
TORS	E	M											
TV													
DEORB EDM	↑ 00:37												
NOR	↑ 00:39												
ATTITUDE	BURN ATT		-ZLV NOSE FWD		IMU			-ZLV NOSE FWD					
HWYS													
EXP		ISS CL1											
NOTES:	WAVEOFF												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
247:18:15 / 248:06:15	005:12:00 / 006:00:00	247:13:15 / 248:01:15	06 / 247 GMT	30.9		SEPTEMBER 4, 1983	STS-8	FINAL REV A	8/10/83
TIC									
GMT: 247	19	20	21	22	23	24	25	26	27
FD: 06				FD: 07					
MET: 005	12	13	14	15	16	17	18	19	20
CDR	SLEEP			POST SLEEP ACT	IMU ALIGN (ROLL)	POST SLEEP ACT	PLBD OPS	DEORBIT PREP	
PLT	SLEEP			POST SLEEP ACT	POST SLEEP ACT	POST SLEEP ACT	PLBD OPS	DEORBIT PREP	DEORBIT BURN
MS1	SLEEP			POST SLEEP ACT			DEORBIT PREP		ENTRY INTERFACE
MS2	SLEEP			POST SLEEP ACT			DEORBIT PREP		EDW LANDING (5/23:36)
DAY/NIGHT	[Day/Night Cycle]								
ORBIT	89	90	91	92	93	94	95	96	97
GSTDN COVERAGE	-DKR	-DKR	-MAD	-MAD	-MAD	-MAD	-MAD	-MAD	-MAD
TDRS	[TDRS Coverage]								
TV	[TV Coverage]								
DEORB EDW NOR	[DEORB EDW NOR]								
ATTITUDE	[ATTITUDE]								
MNVR	[MNVR]								
EXP	[EXP]								
NOTES:	<p>HI LOAD HTR ON    FES CNTLR CHECK    DSO 301 EOIM OFI PALLET DEACT</p> <p><b>WAVEOFF</b></p>								

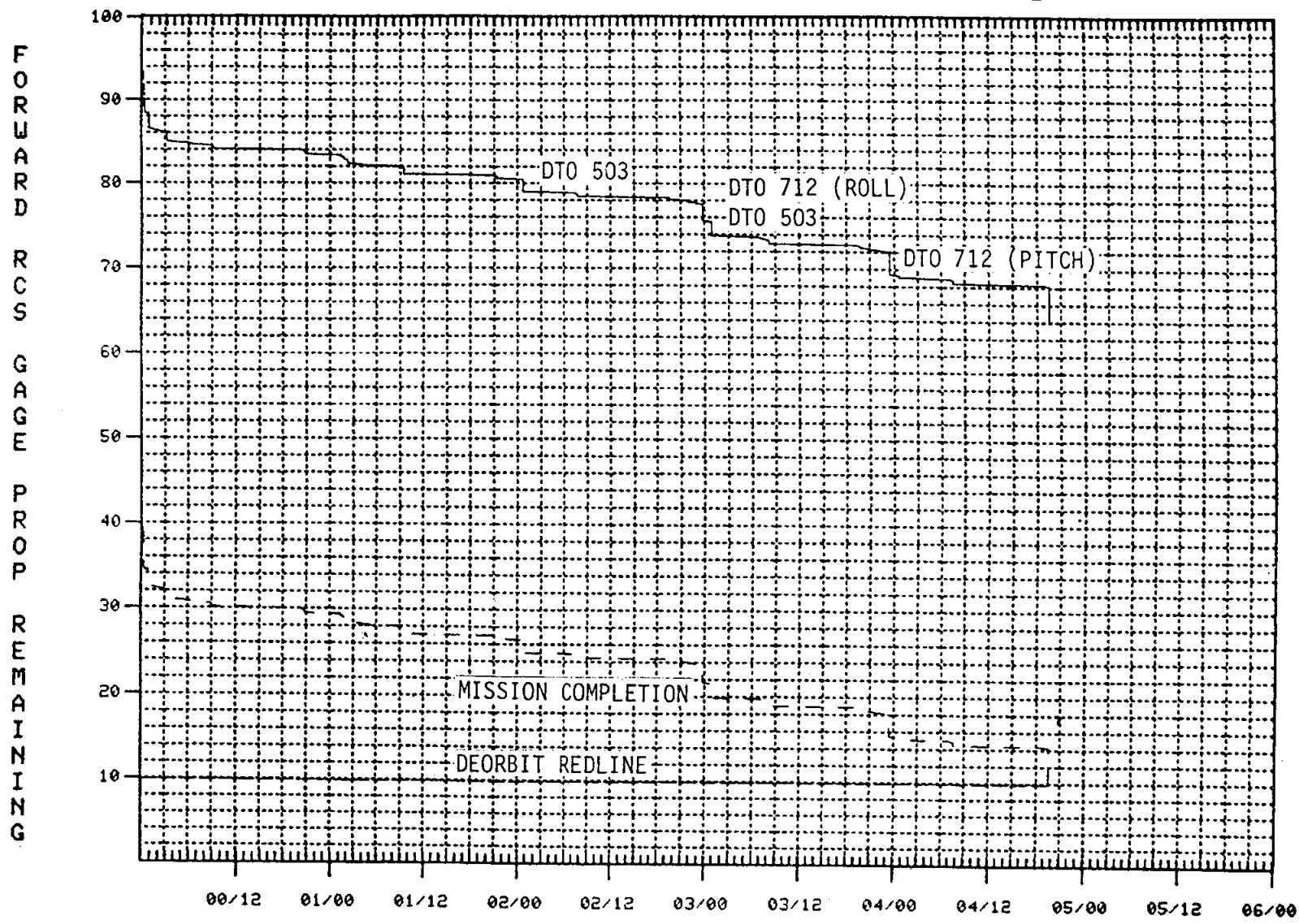
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5C-4

STS-8/FIN A

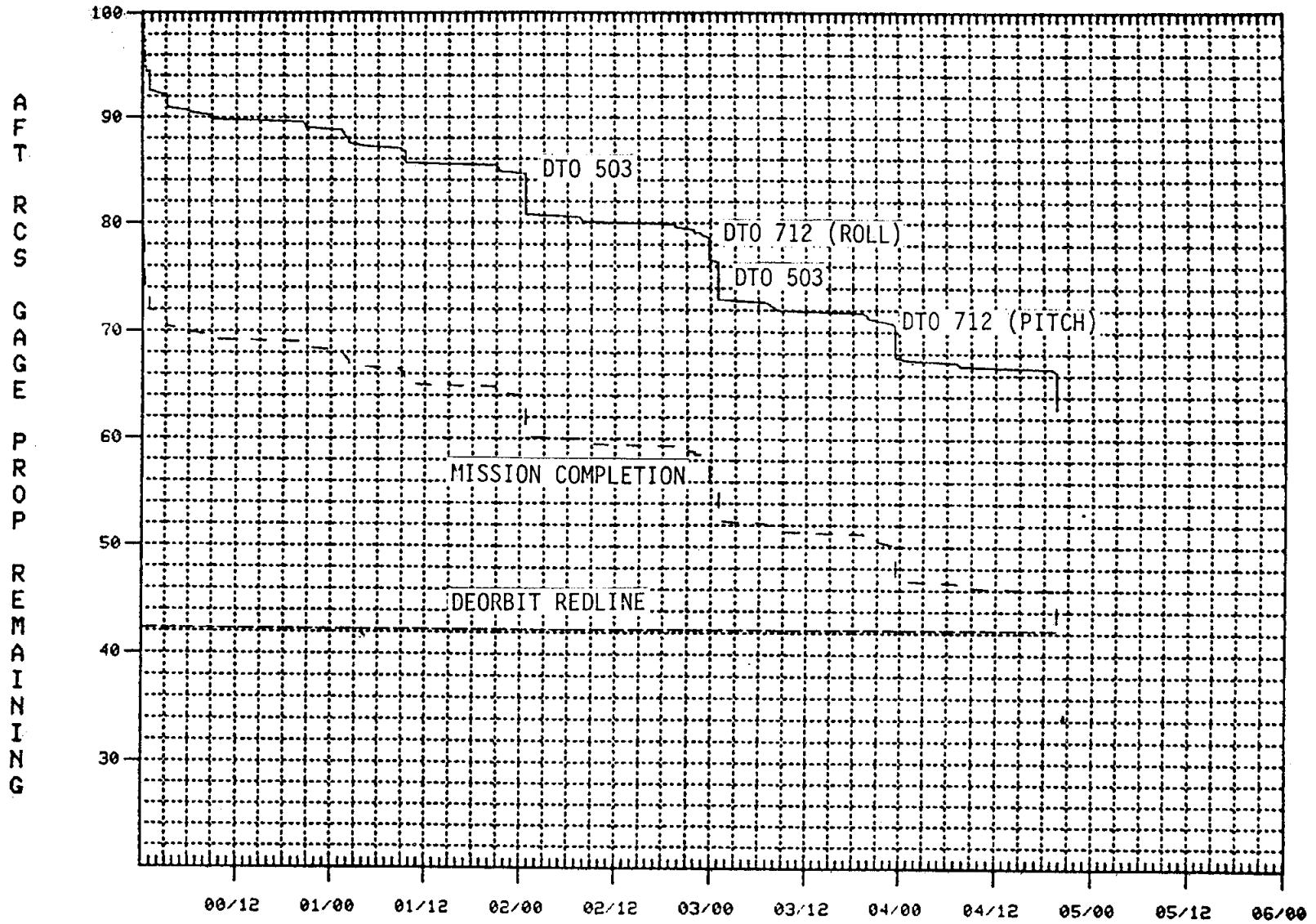
CONSUMABLES CURVES

### STS-8 FORWARD RCS PROP REMAINING(% GAGE)



MISSION ELAPSED TIME IN DAYS/HOURS

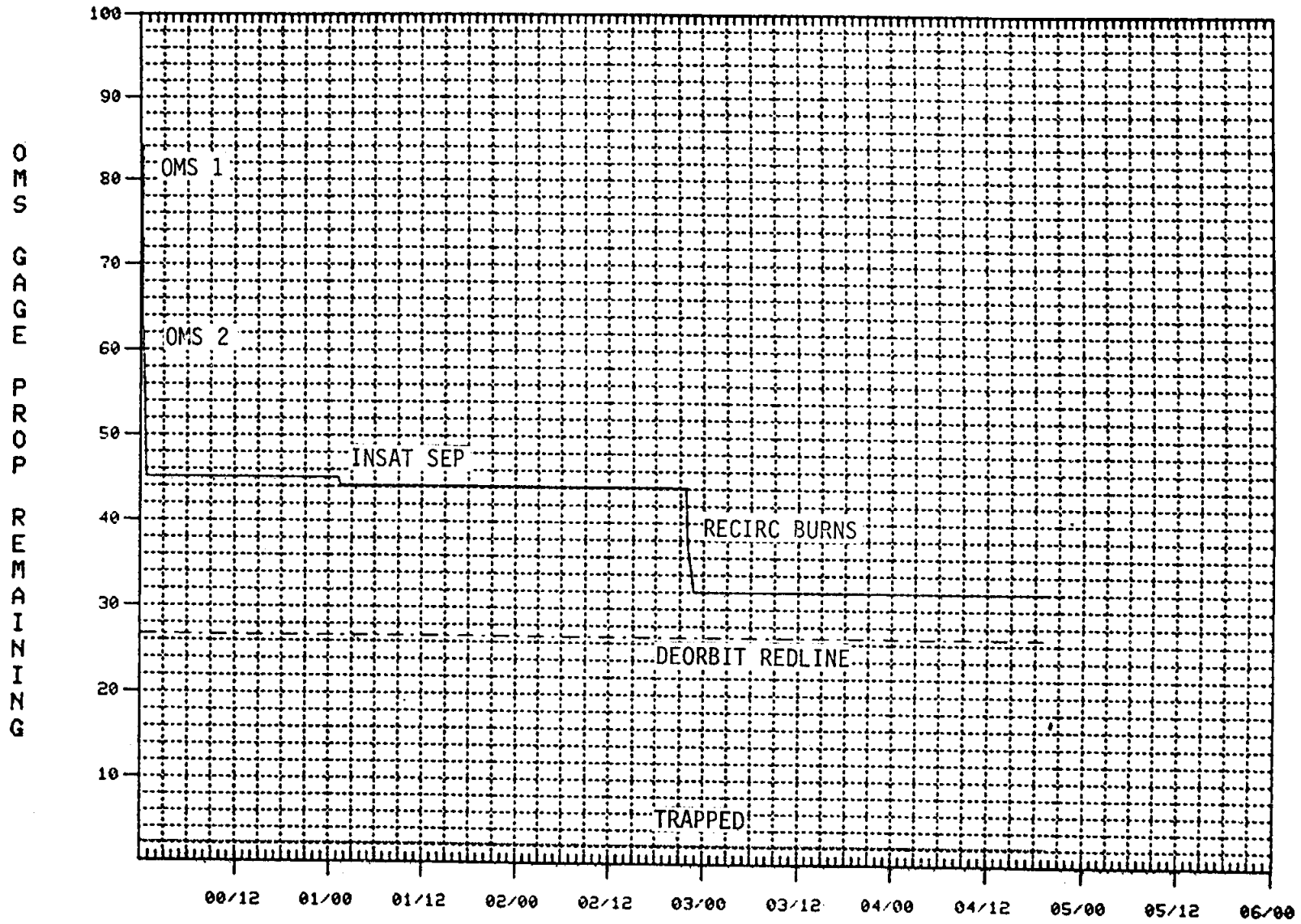
# STS-8 AFT RCS PROP REMAINING(% GAGE)



MISSION ELAPSED TIME IN DAYS/HOURS



# STS-8 OMS PROP REMAINING(% GAGE)



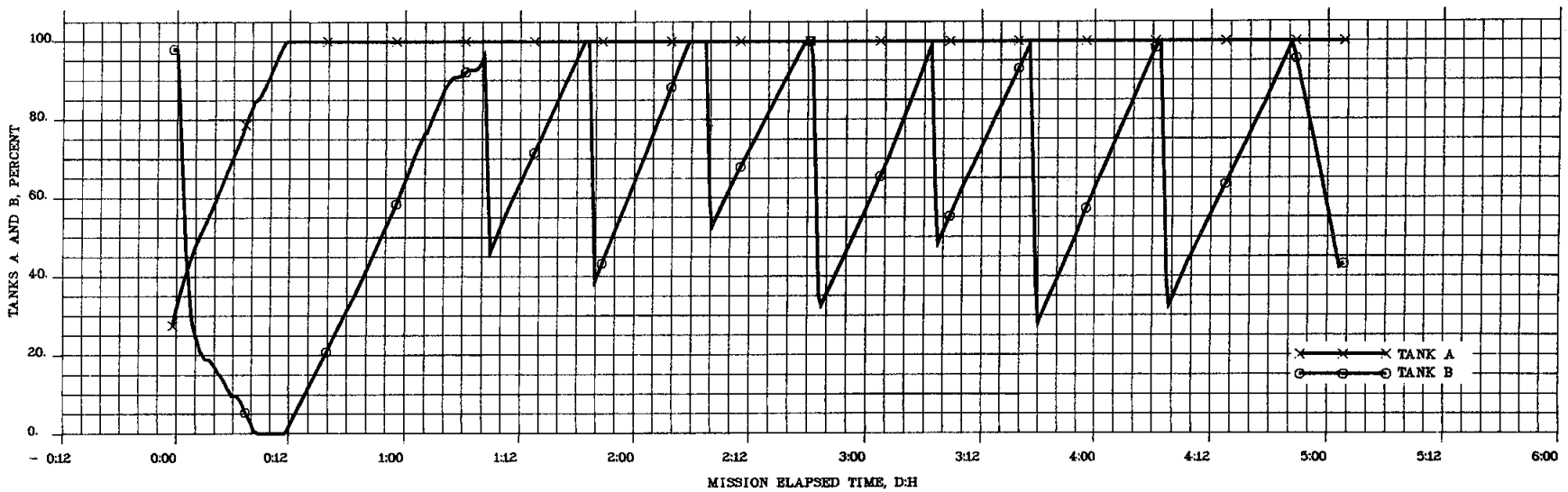
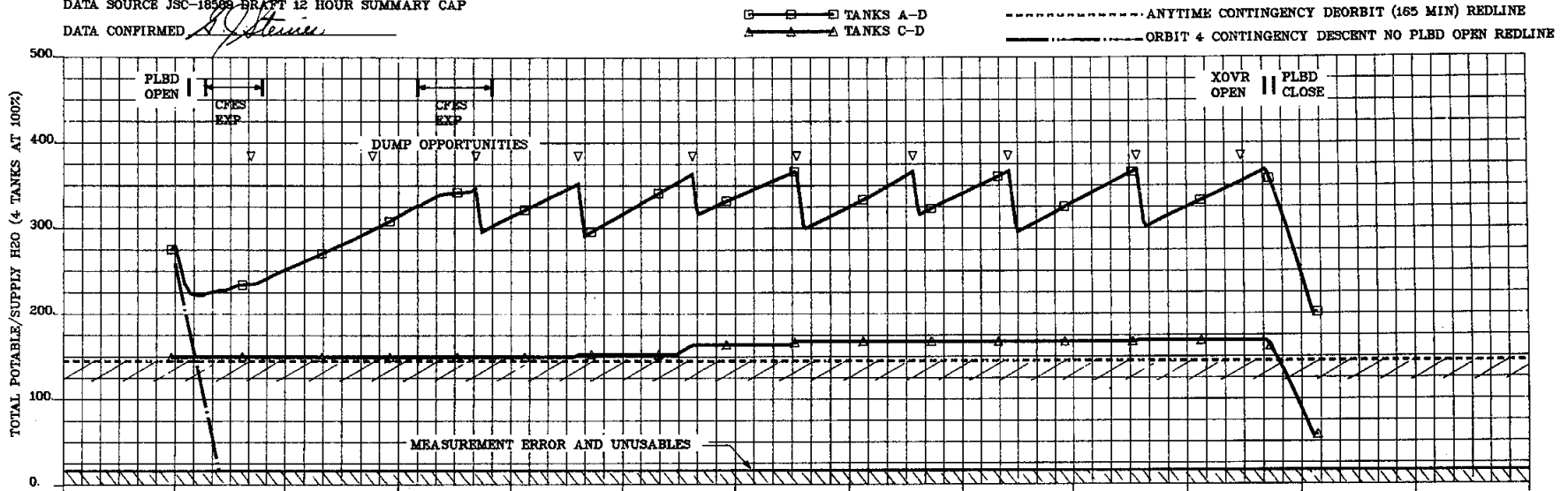
MISSION ELAPSED TIME IN DAYS/HOURS

G.F. WARNOCK, J.G. STEINKS FPB/MPAD/MDTSCO

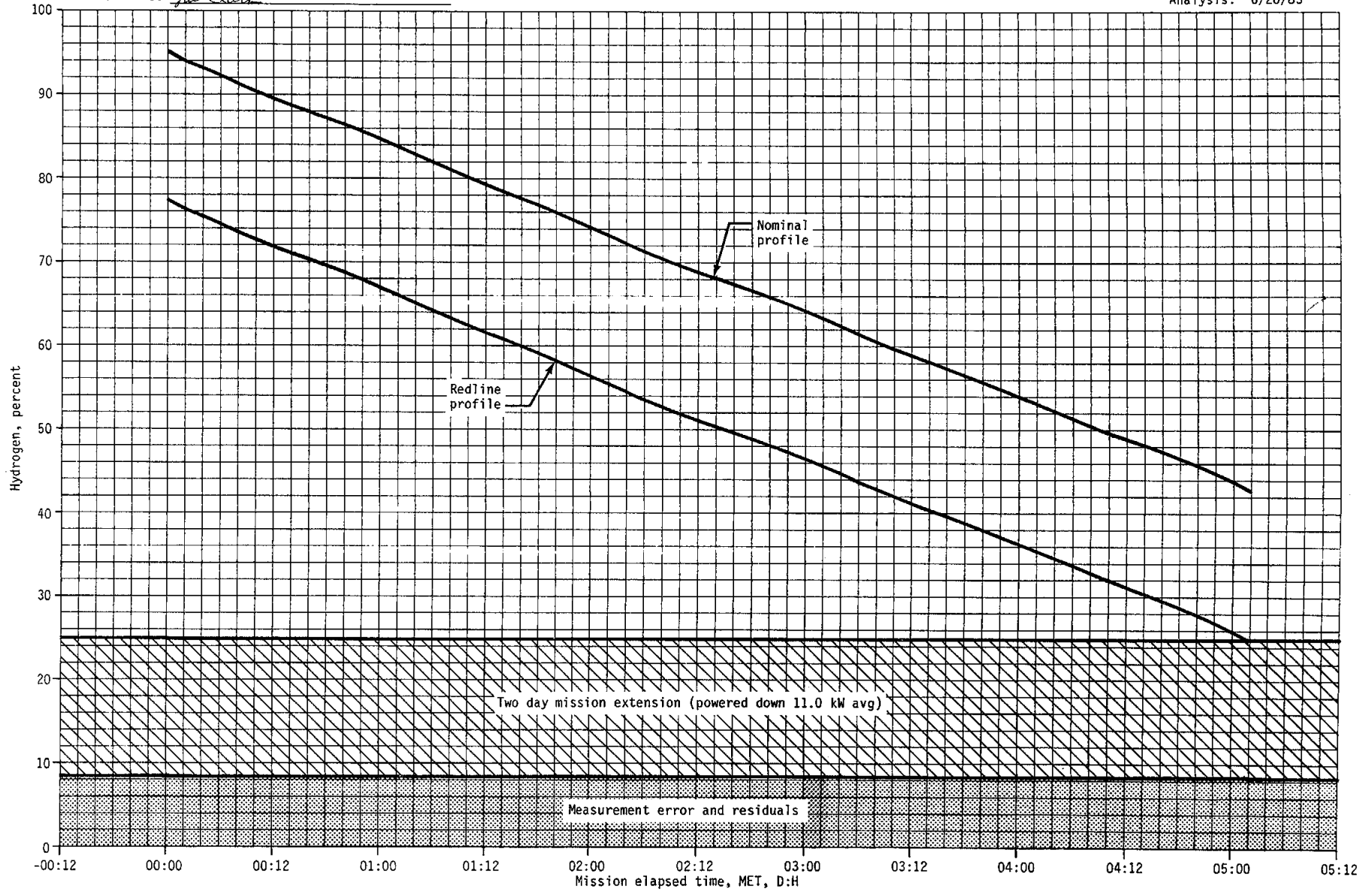
DATA SOURCE JSC-18599 DRAFT 12 HOUR SUMMARY CAP

DATA CONFIRMED *J.G. Steink*

TRAJECTORY: CYCLE 3  
CAP: DRAFT 12 HOUR SUMMARY  
ANALYSIS DATE: 7/12/83



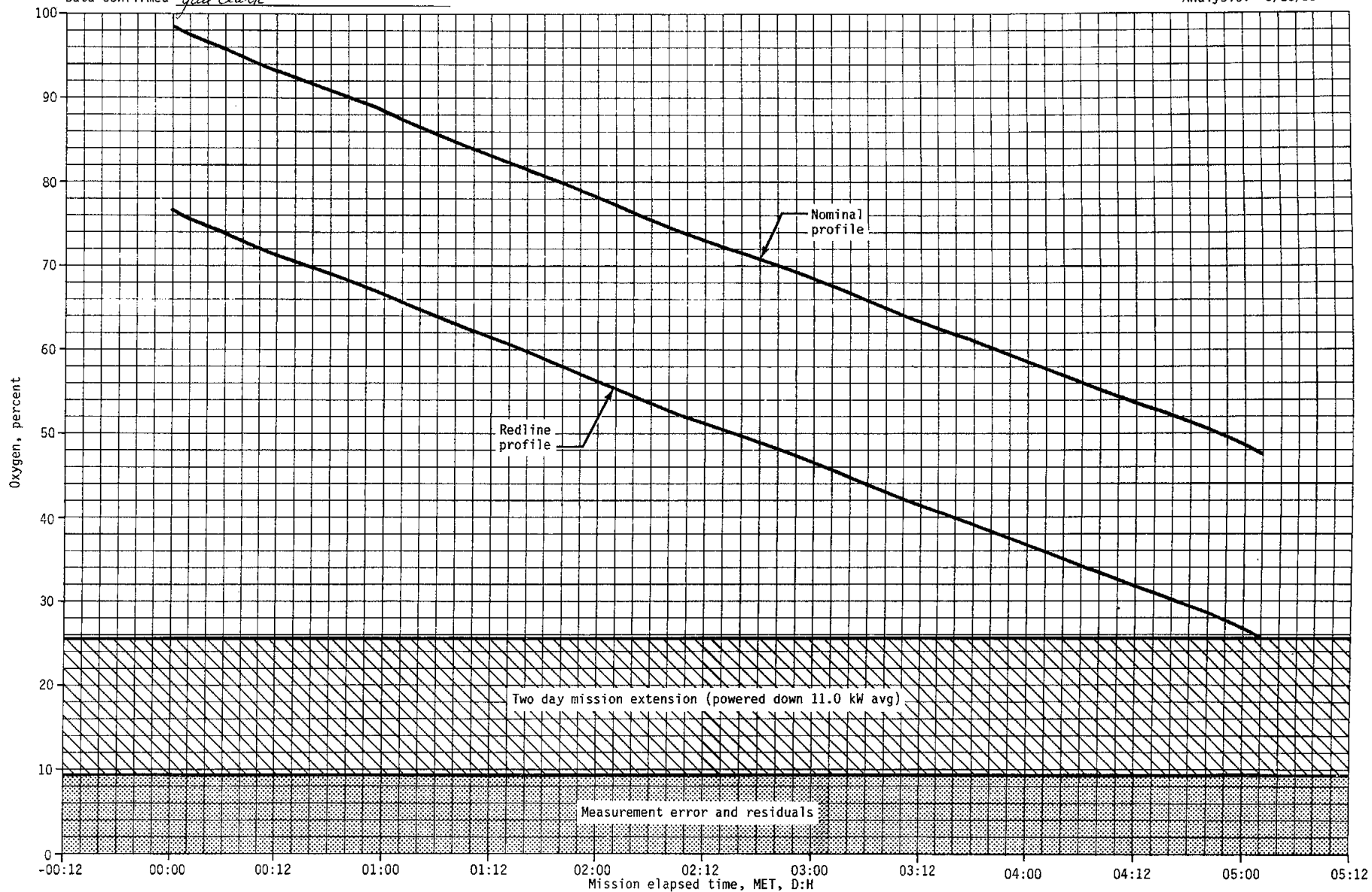
STS-8 SUPPLY WATER



STS-8 cryogenic hydrogen profile.

G. Clark, T. Cleghorn/FPB/MPAD  
Data Source JSC 18509 (CAP) 6/7/83 (Draft-12 HR SUM)  
Data confirmed *Paul Clark*

Trajectory: Cycle 3  
CAP: 12 HR SUM (Draft)  
Analysis: 6/20/83



STS-8 cryogenic oxygen profile.

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CREW ACTIVITY PLAN NOTES  
(CONSTRAINTS AND GUIDELINES)

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CAP NOTES

CREW ACTIVITY PLAN NOTES  
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

STS-8 will launch from KSC on August 30, 1983, into a 160.2-NM orbit at an inclination of 28.5°. The mission duration will be 5 days (~121 hrs). Landing will occur at EDW on September 4, 1983.

Landing opportunities are:

		<u>LANDING ORBIT NO.</u>	<u>SITE</u>	<u>LOCAL TIME</u>
Nominal	Primary	82	EDW	00:43 PDT
	Backup	None		
	Weather Alternate	82	NOR	01:46 MDT
1 Day Late	Primary	97	EDW	22:51 PDT
	Backup	98	EDW	00:25 PDT
	Weather Alternate	97	NOR	22:54 MDT

MAJOR EVENTS

LAUNCH (KSC) 30 August 1983  
MET (DD:HH:MM:SS) 0/00:00:00  
 Day of Year 242  
CDT/GMT (HH:MM/HH:MM) 01:15/06:15

MECO  
MET (DD:HH:MM:SS) 0/00:08:44  
ALT (nm) 59.7

OMS-1  
MET (DD:HH:MM:SS) 0/00:10:39  
 $\Delta V$  (fps) 238.1  
 $\Delta T$  (MM:SS) 02:24  
ORBIT ha/hp (nm) 160.0 x 51.7

OMS-2  
MET (DD:HH:MM:SS) 0/00:44:49  
 $\Delta V$  (fps) 194.2  
 $\Delta T$  (MM:SS) 01:59  
ORBIT ha/hp (nm) 160.2 x 160.2

INSAT/PAM DEPLOY (18D OPPORTUNITY)  
MET (DD:HH:MM:SS) 1/01:16:55

OMS SEPARATION BURN  
MET (DD:HH:MM) 1/01:31:55  
 $\Delta V$  (fps) 11  
ORBIT ha/hp (nm) 165.8 x 159.7

PAM PKM IGNITION  
(DD:HH:MM:SS) 1/02:01:55

ORBIT ADJUST BURN 1

MET (DD:HH:MM:SS)	2/21:56:39
$\Delta V$ (fps)	67.3
$\Delta T$ (MM:SS)	0:42
ORBIT ha/hp (nm)	166.2 x 120.9

ORBIT ADJUST BURN 2

MET (DD:HH:MM:SS)	2/22:42:00
$\Delta V$ (fps)	80.1
$\Delta T$ (MM:SS)	00:49
ORBIT ha/hp (nm)	121.4 x 120.6

DEORBIT BURN

MET (DD:HH:MM:SS)	5/00:37:00
$\Delta V$ (fps)	260.6
$\Delta T$ (MM:SS)	2:23
ORBIT ha/hp (nm)	118/-21

LANDING (EDW)

MET (DD:HH:MM:SS)	5/01:27:44
Day of year	247
CDT (HH:MM)	02:43

B. CREW

1. The crew will launch with an integrated harness restraint over Intravehicular Activity (IVA) clothing. Biomed sensors will be worn by the MS3 for launch and entry. Anti-G suits will be worn by all crewmembers for entry.
2. All crewmembers will launch wearing the Launch/Entry Helmets (LEH). After ascent, the Wireless Communication Control Units (WCCUs) are unstowed and distributed to the crew. Prior to seat ingress on entry day, the WCCUs are stowed and the LEHs are donned for entry until landing.
3. Activities for the fifth crewman, MS3, are not scheduled in this CAP.



## C. ORBITER SYSTEMS

### 1. Communications and Instrumentation

- a. The Operational Instrumentation (OI) system will nominally be managed from the ground through uplink RTC commands coordinated with the crew.
- b. The Modular Auxiliary Data System (MADS) will nominally be managed through uplink RTC commands and crew switch actions.
- c. There are 14 GSTDN sites available for on-orbit coverage: ORR, GDS, BUC, HAW, BDA, MIL, GWM, AGO, IOS, ACN, MAD, YAR, BOT, and DKR.
- d. There are 3 GSTDN sites available for real-time TV: GDS, MIL, and HAW.
- e. There are 2 GSTDN sites available for UHF voice only: YAR and BOT.
- f. There is 1 SGLS site available for on-orbit coverage: IOS.
- g. TDRS is assumed to be in position (67° W) for this edition of the Crew Activity Plan. It will be available for testing.

### 2. Guidance and Navigation

- a. The Orbiter state vector must be uplinked whenever down-track error in the on-board vector becomes greater than 20 nm, but is usually uplinked when errors are much greater than 5 nm. These are real-time calls.
- b. IMU alignments are scheduled approximately every 12 hours in morning and evening activities and prior to major events requiring low navigation uncertainty.
- c. The on-orbit avionics configuration is listed below.

GPC 1	- GNC OPS 2
GPC 2	- GNC OPS 2
GPC 3	- FD OPS 3 (OFF)
GPC 4	- SM OPS 2
GPC 5	- BFS (OFF)
IMUs (3)	- OPERATE
STAR TRACKERS (2)	- ON
MASS MEMORY UNITS (2)	- ON
FLIGHT CRITICAL MDMs (8)	- ON

### 3. Environmental Control and Life Support Subsystem (ECLSS)

- a. The CO<sub>2</sub> absorbers are installed for launch and entry and are alternately replaced as described in Ref 3.
- b. The four supply water tanks and one waste water tank are loaded for launch with volumes sufficient to meet a rev 3 launch day deorbit opportunity with PLBDs failed closed (TK A = 10%, TK B = 100%, TK C = 70%, TK D = 70%, Waste TK = 0%). If waste water production exceeds storage capacity, a real-time call will be made to perform a dump. Nine dumps are estimated to occur. Potential supply water dumps are scheduled, based upon predicted fuel cell water production. A real-time call will be made prior to each to inform the crew whether a dump is required, and to what level. Tanks A and B will be dumped to a level that will allow the tanks to be full prior to the next daily group of deorbit opportunities.

#### D. TEXT UPLINK SYSTEM

1. The teleprinter (TPR) will provide an on-orbit capability to receive and reproduce text-only data (such as procedures, weather data, and CAP updates or changes) from MCC during routine and off-nominal situations. The TPR uses S-Band. TPR uplink requires 1 to 2.5 minutes per message, depending upon the number of lines (up to 66). Activation includes powering up the unit during Post Insertion. The TPR will remain on continuously until deactivation prior to seat ingress on entry day.
2. The Text and Graphics System (TAGs) is basically a hard copy machine that operates via telemetry. The system provides the capability to transmit text material, maps, schematics, and photographs to the Orbiter through a two-way Ku-Band link using the TDRS. Transmission time for an 8- x 11- in. page can vary from just over 1 minute to just over 16 minutes depending on the hard-copy resolution desired. The hard-copier is installed on a dual coldplate in Avionics Bay 3B of the Orbiter.

#### E. TELEVISION/PHOTOGRAPHY

1. For in-cabin coverage the CCTV system provides 2 color cameras. The four payload bay cameras include: 1 black and white and 3 color cameras in the bay. The RMS cameras are black and white and color.
2. The video tape recorder (VTR) is available with 30-min cassettes.
3. 16mm, 35mm, and 70mm camera systems are available.

#### F. REMOTE MANIPULATOR SYSTEM

The RMS will be used to unberth and berth the Payload Flight Test Article (PFTA) and perform tests using PFTA grapple Fixtures 2 and 5.

## G. PAYLOADS

### 1. INSAT (Indian National Satellite)

The INSAT-IB payload is a deployable communications and meteorological spacecraft powered by a Payload Assist Module (PAM) solid rocket motor. Deployment opportunities are determined by constraints imposed on the right ascension of the descending node of the orbit. Normally, a deployment at the ascending node of orbit 18 is planned, followed 45 minutes later by a PAM Perigee Kick Motor (PKM) burn on the descending node of orbit 18. A backup deploy opportunity exists on orbit 34.

### 2. PFTA (Payload Flight Test Article)

The PFTA is a 15 foot long by 13.5 foot wide passive payload weighing approximately 7500 pounds designed to support testing of the PDRS, (DFOs 503 and 762). By using different grapple fixtures different moments of inertia can be obtained. Tests with the PFTA will increase understanding of the dynamic interaction between the Remote Manipulator System (RMS) and the Orbiter. PFTA operations are nominally scheduled for FD 3 and 4.

### 3. CFES (Continuous Flow Electrophoresis System)

The CFES provides a processing system that can segregate biological samples using a continuous separation process based on the relative motion of charged particles through an electric field (electrophoresis). Nominally, six samples of live cells will be processed during two experiment runs. The CFES payload is located on the Orbiter middeck. A low acceleration level is desired during CFES operations.

### 4. GAS (Get Away Special)

The GAS payload is a self-contained experiment package that requires minimal crew activity. Four GAS payloads have been defined for STS-8 (G346, G347, G348, and G475).

GAS payload G475 is designed to observe the crystal growth of artificial snow in a microgravity environment. G475 is a re-flight of a similar experiment flown on STS-6. The payload desires a Vernier Reaction Control System (VRCS) attitude control period for a minimum of 5 hours early in the flight.

GAS payload G346 seeks to resolve questions raised concerning the probability and incidence of cosmic rays inducing errors in memory-type integrated circuits when in a shuttle orbit. The experiment will operate for most of the flight.

GAS payload G348 will study the effects of atomic oxygen erosion using carbon and osmium as samples. The experiment will operate for most of the flight since the erosion rates will be measured as a function of time.

GAS payload G347 will measure the effects of the shuttle bay environment on various types of ultraviolet sensitive film. The experiment has no crew activity requirements.

5. RME (Radiation Monitoring Equipment)

The RME experiment is designed to measure radiation levels in the Orbiter middeck at various times throughout the flight. Experiment equipment includes the Handheld Radiation Monitor (HRM-III), a gamma and electron dosimeter, and the Pocket REM Meter (PRM), a neutron and proton dosimeter. The HRM-III will operate four times during the mission for durations of 55 minutes, while the PRM will operate twice for durations of 8 hours.

6. ISAL (Investigation of STS Atmospheric Luminosities)

The ISAL experiment attempts to determine the spectral content of the STS induced atmospheric luminosities which are relevant to many aspects of payload operations. Part 1 of the two part experiment will investigate the glow about the Orbiter tail and will include intensity measurements from different combinations of vernier thruster firings. Part 2 will measure the effects of oxygen interaction on various materials fixed to the upper arm of the RMS.

7. STUDENT EXPERIMENT (Biofeedback)

The purpose of this experiment is to determine the effectiveness of controlling a crewmember's body parameters in zero-g via biofeedback. Four different parameters to be monitored include skin conductance, skin surface temperature, heart rate, and respiration. A microcomputer will record all data for post flight analysis. Two sessions will be conducted on-orbit totalling approximately 40 minutes of crew time.

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not be included in flight copies.

DETAILED TEST OBJECTIVES (DTOs),  
DETAILED SUPPLEMENTARY OBJECTIVES (DSOs)

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TABLE 8-1 - STS-8 DTOs/DSOs..... 8-3

DTOs/DSOs

## INTRODUCTION

The following Table describes the scheduling data and rationale for on-orbit crew activity related DTOs/DSOs for STS-8. The current FRD (Ref. 1) was used for compiling this table.

DTOs/DSOs



TABLE 8-1  
 STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DTO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DTO 0114	OV-099 Cold Canopy Test	1/09:30	Attitude required, no other crew action Tail sun attitude required for up to 24 hours
DTO 0116	Crew Module Thermal Evaluation		No crew activity required
DTO 0117	Middeck Locker Temperature Survey		No crew activity required
DTO 0503	PDRS Payload Handling Performance	2/00:10 3/02:25	PFTA Grapple Fixture 2 PFTA Grapple Fixture 5
DTO 0602	Cabin Atmosphere Verification	1/07:35 2/07:10 Cabin Stow	One sample taken during CABIN STOW (FD5)
DTO 0702	S-Band/TDRS Communication Link Performance Test No. 2	1/03:00	During meal - attitude required, no other crew action

TABLE 8-1  
STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DTO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DTO 0704	TDRSS Navigation Test		No crew activity required Accomplished with normal Ku-Band and S-Band TDRS communication during crew sleep period
DTO 0710	Ku-Band Communications Link Performance Test No. 2	2/22:40 2/23:00	During OMS burn translation Two manual acquisitions
DTO 0712	Ku-Band Communications & Tracking Performance	3/00:05 3/23:45	720° ± Roll, Rate is .5 deg/sec 720° ± Pitch, Rate is .5 deg/sec
DTO 0717	Orbiter S-Band and Ku-Band/TDRSS Operations Proficiency Test No. 2	1/02:35 4/18:55	Deploy      Continuous operation on-orbit; Stow        crew activity required only to deploy and stow Ku-band
DTO 0762	Orbiter-RMS Dynamic Interaction Test	3/04:35	Use PFTA
DTO 0771	On-Orbit Tacan Navigation	1/04:15 3/21:55	Crew will change tacan channels several times during 3:45 test Some channels will be changed during the FCS checkout

TABLE 8-1  
 STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DSO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DSO 0101	Heat Pipe Evaluation	1/05:15	Data by photography
DSO 0301	Evaluation of Oxygen Interaction with Materials	0/04:00 3/08:20 3/19:10 4/00:35 4/19:00 4/20:45	Pallet on Act Deact Act Deact Pallet off Payload Bay into velocity vector attitude
DSO 0401	Validation of Predictive Tests and Countermeasures for Space Motion Sickness	Pre-sleep	
DSO 0402	Cardiovascular Deconditioning Countermeasure Assessment	FD 6	
DSO 0403	Head and Eye Motion Monitoring During Ascent and Entry	Ascent and Entry	

TABLE 8-1  
 STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DSO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DSO 0404	On-Orbit Head and Eye Tracking Tasks		Done by MS3
DSO 0405	Acceleration Detection Sensitivity	2/03:00	Done by MS3, MS2 assisting
DSO 0406	Kinesthetic Repeatability		Done by MS3
DSO 0407	Photographic Documentation of Body Fluid Shifts		Shopping list, done by MS3
DSO 0408	Near Vision Acuity	0/22:00 0/22:15 0/23:00 0/23:05 3/20:55 3/21:25 3/23:30 4/03:25	Twice per crewman

TABLE 8-1  
 STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DSO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DSO 0409	Microbiology Screening Test	1/02:00 2/06:00	
DSO 0410	Audiometry (with cabin noise)		Shopping list, done by MS3
DSO 0411	Simple Mass Measurement		Done by MS3
DSO 0412	Treadmill Photography		Done by MS3
DSO 0414	Ophthalmoscopy	1/21:50 1/23:05 1/23:30 2/00:15 3/20:45 3/21:15 3/23:20 4/03:30	Performed by MS3 twice on each crewman
DSO 0415	Tissue Pressure-tonometer		Done by MS3

TABLE 8-1  
STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DSO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DSO 0416	Ambulatory Monitoring with/without Skeletal Loading and Other Maneuvers		Done by MS3
DSO 0417	Inflight Countermeasures for Space Adaptation Syndrome with Objective Measures		Done by MS3
DSO 0418	Eye Hand Coordination		Done by MS3
DSO 0421	Verification of Middeck Animal Enclosure Module	Pre Sleep Post Sleep	Done by MS3
DSO 0422	Anatomical Observations		Done by MS3
DSO 0423	Study of Inflight Fluid Changes		Done by MS3

TABLE 8-1  
 STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DSO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DSO 0424	Evoked Potentials Demonstration		Done by MS3
DSO 0425	Intraocular Pressure		Done by MS3
DSO 0427	Soft Contact Lens Application		Done by MS3
DSO 0432	Engineering Test of Carry-on Incubator	0/03:55 0/07:00 0/07:15 0/10:00 0/20:55 1/08:00	Transfer to Orbiter power Initiate samples Sample 1 Sample 2 Sample 3 Sample 4
	Med DSO		Each crewman is scheduled 15 min twice per day as a subject for miscellaneous medical DSOs performed by MS3

TABLE 8-1  
 STS-8 ON-ORBIT CREW ACTIVITY RELATED DTOs/DSOs

DSO NUMBER	TITLE	SCHEDULED (D/HH:MM)	SCHEDULING REMARKS
DSO 0901	Documentary Television	FD 1 FD 2 FD 3 FD 4 FD 5	Middeck Experiments Insat Deploy Student Experiment, PFTA Operations PFTA Operations, Animal Enclosure Module Earth Views, Animal Enclosure Module
DSO 0902	Documentary Motion Picture Photography	FD 2 FD 3 FD 4 FD 6	PAM Deploy, CFES Operations RMS/PFTA Operations, Medical DSO Exercise, RMS/PFTA Operations, Biofeedback Entry Interface
DSO 0903	Documentary Still Photography		Shopping list



## TABLES

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TABLE 9-2 - CFES EXPERIMENT ACTIVATION AND OPERATION TIMES.....	9-3
TABLE 9-3 - RMS AND PFTA OPERATION TIMES - GRAPPLE FIXTURE 2.....	9-3
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TABLE 9-7 - INVESTIGATION OF STS ATMOSPHERIC LUMINOSITIES (ISAL) OPERATION TIMES.....	9-6
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TABLE 9-1  
INSAT DEPLOYMENT EVENTS AND TIMES  
(18D INJECTION)

EVENT	MET (D/HH:MM)	DEPLOY MINUS (HH:MM)
ASE TEMP CHECK	0/22:30	-02:47
INITIATE DEPLOY COUNTDOWN PREDEPLOY ORBITER CHECKS	1/00:02	-01:15
PREDEPLOY PAM CHECKS AND INSAT ACTIVATION	1/00:17	-01:00
BEGIN MNVR TO DEPLOY ATTITUDE	1/00:47	-00:30
MECHANICAL SEQUENCE START	1/01:02	-00:15
AT DEPLOY ATTITUDE ENABLE DEPLOY DAP		
AT DEPLOY RPM	1/01:05	-00:12
INSAT TO INTERNAL POWER	1/01:10	-00:07
TERMINAL SEQUENCE START	1/01:14	-00:03
DEPLOY INSAT	1/01:17	00:00
PAM RECONFIGURATION	1/01:20	+00:03
OMS SEP BURN	1/01:32	+00:15
PAM PERIGEE BURN	1/02:02	+00:45

TABLES

TABLE 9-2  
CFES EXPERIMENT ACTIVATION AND OPERATION TIMES

EVENT	APPROX MET (D/HH:MM)	DURATION (HH:MM)
CFES SAMPLES 1-2	0/03:15	06:15
CFES SAMPLES 3-6	1/02:05	08:00

TABLE 9-3  
RMS AND PFTA OPERATION TIMES - GRAPPLE FIXTURE 2

EVENT	APPROX MET (D/HH:MM)	DURATION (HH:MM)
RMS CHECKOUT	0/06:40	00:55
RMS POWERUP	2/00:00	00:10
NOMINAL UNBERTH	2/00:10	00:20
FCS/RMS TEST	2/00:30	00:35
RMS/PRCS INTERACTION	2/01:05	01:15
LSS VIBRATION DAMPING	2/03:20	01:00
AUTO MODE EVALUATION	2/04:20	00:25
NOMINAL BERTH	2/04:45	00:25
DIRECT DRIVE UNBERTH	2/05:10	00:25
CONTROL SYSTEM EVAL	2/05:35	01:05
DIRECT DRIVE BERTH	2/06:40	00:40
RMS POWERDOWN	2/07:20	00:10

TABLE 9-4  
 RMS AND PFTA OPERATION TIMES - GRAPPLE FIXTURE 5

EVENT	APPROX MET (D/HH:MM)	DURATION (HH:MM)
RMS POWERUP	3/02:15	00:10
NOMINAL UNBERTH	3/02:25	00:20
FCS/RMS TEST	3/02:45	00:45
CONTROL SYSTEM EVAL	3/03:30	01:05
RMS/PRCS INTERACTION	3/04:35	01:15
ORBITER/RMS DYNAMIC INTERACTION	3/05:50	00:20
AUTO MODE EVALUATION	3/06:10	00:25
NOMINAL BERTH	3/06:35	00:25
RMS POWERDOWN	3/07:00	00:10

TABLE 9-5  
GAS EXPERIMENT ACTIVATION AND OPERATION TIMES

GROUP		APPROX MET (D/HH:MM)	DURATION (HH:MM)
	GAS UNSTOW/SETUP	1/02:25	00:15
A	GAS G346 ACTIVATION	1/02:45	72:25
	G348 ACTIVATION		72:25
	G475 ACTIVATION		19:15
B	GAS G475 DEACTIVATION	1/22:00	--
C	GAS G346 DEACTIVATION	4/03:25	--
	GAS G348 DEACTIVATION		--
	GAS STOW	4/03:40	00:15

TABLE 9-6  
STUDENT EXPERIMENT OPERATION TIMES

EVENT	APPROX MET (D/HH:MM)	DURATION (HH:MM)
STUDENT EXPERIMENT	1/22:35	0:20
STUDENT EXPERIMENT	3/05:30	0:20

TABLE 9-7  
INVESTIGATION OF STS ATMOSPHERIC LUMINOSITIES (ISAL)  
OPERATION TIMES

EVENT	APPROX MET (D/HH:MM)	DURATION (HH:MM)
TAIL GLOW	0/05:50	00:30
RMS GLOW	4/04:20	00:20

TABLE 9-8  
RADIATION MONITORING EQUIPMENT (RME)  
ACTIVATION AND OPERATION TIMES

EVENT	APPROX MET (D/HH:MM)	DURATION (HH:MM)	
HRM	ACT	2/05:25	1:30
	DEACT	2/06:55	
	ACT	2/21:35	1:35
	DEACT	2/23:10	
PRM	ACT	3/04:15	1:15
	DEACT	3/05:30	
	ACT	3/20:45	1:35
	DEACT	3/22:20	
PRM	ACT	1/07:15	15:15
	DEACT	1/22:30	
	ACT	2/21:30	8:20
DEACT	3/05:50		

TABLE 9-9 STS-8 ATTITUDE TIMELINE

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
0/00:08:45	MNVR R+332.30 P+ 97.70 Y+351.10	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30	SUN T 63 P 43		MECO
0/00:08:57	ET SEP (4 fps -Z)	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30			
0/00:09:30 10:13	MNVR R+337.00 P+119.00 Y+345.00	* MAN *	DSC 0.500 DB AT 3.50 DB RT 0.30	SUN T 46 P 53		OMS 1 ATTITUDE
0/00:10:39	OMS 1 IGNITION	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30		DV=238 fps DT=2:25	OMS 1 IGNITION
0/00:13:21	MPS DUMP TERMINATED	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30			
0/00:20:00 24:41	MNVR R+ 28.00 P+262.00 Y+ 0.00	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30	SUN T 104 P 143		OMS 2 ATTITUDE
0/00:44:49	OMS 2 IGNITION	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30		DV=194 fps DT=1:55	OMS 2 IGNITION
0/00:55:00	DPS CONFIG TO GNC 2	A1 AUTO NORM	DSC 0.200 DB AT 5.00 DB RT 0.20			
0/01:10:00 16:40	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO NORM	DSC 0.200 DB AT 5.00 DB RT 0.20	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD (PLBD OPENING)
0/02:44:00 53:12	MNVR R+206.50 P+ 80.70 Y+ 45.40	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 75 P 151	-Y ST:27 -Z ST:54 2:48 - 3:21	IMU ALIGH/ COAS CAL
0/03:05:00 15:47	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
0/05:30:00 40:00	TRK TGT=2 BV=1( 0.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 0 P 0	LVLH R+270 P+270 Y+ 0	+XLV +Y FWD TAIL GLOW EXP

TABLE 9-9 STS-8 ATTITUDE TIMELINE

NET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
0/06:18:00 28:00	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
0/08:46:00 54:55	MNVR R+212.70 P+ 77.50 Y+ 44.10	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 77 P 148	-Y ST:27 -Z ST:54 8:50 - 9:22	IMU ALIGN
0/09:01:00 10:41	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
0/20:20:00 31:21	MNVR R+254.70 P+296.70 Y+ 13.10	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 133 P 260	-Y ST:20 -Z ST:51 20:17-21:01	IMU ALIGN
0/20:40:00 50:34	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
1/00:46:55 59:10	MNVR R+345.82 P+ 71.41 Y+345.15	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 90 P 23		INSAT DEPLOY ATTITUDE
1/01:16:55	INSAT DEPLOY	B4 AUTO VERN	DSC 0.008 DB AT 0.10 DB RT 0.01			
1/01:19:55 23:16	MNVR R+335.60 P+ 45.90 Y+ 14.70	B1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 110 P 40		OMS SEP ATT
1/01:31:55	OMS IGNITION	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		DV=11 fps DT=0:09	
1/01:34:55 35:55	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
1/01:45:55 58:52	TRK TGT=2 BV=5(244.00, 330.00) OM=341.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 112 P 213	LVLH R+341 P+ 26 Y+330	ORBITER WINDOW PROTECT ATT
1/02:01:55	STOP	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 29 P 222	INRTL R+148 P+148 Y+ 5	ATTITUDE HOLD FOR PKM (10 min)



TABLE 9-9 STS-8 ATTITUDE TIMELINE

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1/02:12:00 22:26	TRK TGT=2 BV=5(133.10, 22.90) OM=119.60	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 129 P 30	LVLH R+225 P+ 78 Y+310	DTO 702 ATT
1/04:02:00 08:53	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
1/08:54:00	LVLH ROT FREE ROTATION ABOUT +X AXIS RATE=0.200	A5 AUTO VERN	DSC 0.200 DB AT 0.07 DB RT 0.01		LVLH ROTR	IMU ALIGN LVLH ROTATION
1/09:19:00 24:00	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
1/09:30:00 42:30	MNVR R+304.70 P+339.70 Y+351.40	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 180 P 70		TAIL SUN
1/09:46:00	ROT BV=2(180.00, 0.00)	B6 AUTO VERN	DSC 0.066 DB AT 1.00 DB RT 0.02		ROT R+305 START P+340 ATT Y+351	TAIL SUN ROTATION
1/21:00:00 06:46	MNVR R+ 73.00 P+279.70 Y+322.10	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 119 P 119	-Y ST:54 -Z ST:27 20:59-21:32	IMU ALIGN
1/21:21:00 30:13	MNVR R+ 2.60 P+339.90 Y+351.50	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 180 P 3		TAIL SUN
1/21:37:00	ROT BV=2(180.00, 0.00)	B6 AUTO VERN	DSC 0.066 DB AT 1.00 DB RT 0.02		ROT R+ 3 START P+340 ATT Y+352	TAIL SUN ROTATION
1/23:45:00 58:10	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
2/09:04:00 12:38	MNVR R+212.70 P+ 77.50 Y+ 44.10	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 79 P 148	-Y ST:27 -Z ST:54 9:04 - 9:37	IMU ALIGN
2/09:25:00 35:59	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD

TABLE 9-9 STS-8 ATTITUDE TIMELINE

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
2/19:38:00	LVLH ROT FREE ROTATION ABOUT +X AXIS RATE=0.200	A5 AUTO VERN	DSC 0.200 DB AT 0.07 DB RT 0.01		LVLH ROTR	IMU ALIGN LVLH ROTATION
2/20:03:00 08:00	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	R1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
2/21:30:00 44:60	MNVR R+163.30 P+ 8.50 Y+ 23.20	B1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 139 P 243		ORBIT ADJUST 1 ATTITUDE
2/21:56:39	OMS IGNITION	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		DV=67.3 fps DT=45.5 sec	
2/22:10:00 24:50	MNVR R+317.80 P+224.40 Y+331.40	B1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 71 P 202		ORBIT ADJUST 2 ATTITUDE
2/22:42:00	OMS IGNITION	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		DV=80.1 fps DT=53.3sec	
2/23:50:00 3/00:01:03	MNVR R+ 3.60 P+102.30 Y+ 40.10	R1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 61 P 341		KU BAND ROLL ATT (DT0 712)
3/00:08:00	ROT BV=1( 0.00, 0.00)	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		ROT R+ 4 START P+102 ATT Y+ 40	+X ROLL
3/00:32:00	ROT BV=2(180.00, 0.00)	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		ROT R+ 4 START P+102 ATT Y+ 40	-X ROLL
3/00:56:00	STOP	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 61 P 341	INRTL R+ 4 P+102 Y+ 40	STOP -X ROTATION
3/01:05:00 17:05	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	R1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
3/07:32:00	LVLH ROT FREE ROTATION ABOUT +X AXIS RATE=0.200	A5 AUTO VERN	DSC 0.200 DB AT 0.07 DB RT 0.01			IMU ALIGN LVLH ROTATION

TABLE 9-9 STS-8 ATTITUDE TIMELINE

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
3/07:57:00 08:02:00	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
3/08:05:00 20:00	TRK TGT=2 BV=1( 0.00, 0.00) OM= 0.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 0 P 0	LVLH R+ 0 P+270 Y+ 0	EOIM ATT (+XLV BAY FWD)
3/19:23:00	LVLH ROT FREE ROTATION ABOUT +X AXIS RATE=0.200	A5 AUTO VERN	DSC 0.200 DB AT 0.07 DB RT 0.01			IMU ALIGN LVLH ROTATION
3/19:48:00 53:00	TRK TGT=2 BV=1( 0.00, 0.00) OM= 0.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 0 P 0	LVLH R+ 0 P+270 Y+ 0	EOIM ATT
3/19:55:00 20:10:00	TRK TGT=2 BV=3( 90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
3/21:50:00	DPS CONFIG TO GNC 8	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02			
3/22:15:00	FCS CHECKOUT APU START	A1 AUTO NORM	DSC 0.200 DB AT 5.00 DB RT 0.20			
3/22:20:00	APU SHUTDOWN	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02			
3/22:30:00	SENSOR TEST	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02			
3/22:35:00	DPS CONFIG TO GNC 2	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02			
3/23:15:00	RCS HOT FIRE TEST	A3 AUTO NORM	DSC 0.300 DB AT 5.00 DB RT 0.20		MAN PULSE	
3/23:20:00	RCS HOT FIRE TEST	A3 MAN VERN	DSC 0.200 DB AT 1.00 DB RT 0.02		MAN DISC	

TABLE 9-9 STS-8 ATTITUDE TIMELINE

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
3/23:34:00 47:09	MNVR R+176.30 P+282.30 Y+ 28.60	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 112 P 341		KU BAND PITCH ATT (DTO 712)
3/23:50:00	ROT BV=3( 0.00, 90.00)	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		ROT R+176 START P+282 ATT Y+ 29	+ PITCH ROTATION
4/00:14:00	ROT BV=4( 0.00, 270.00)	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20		ROT R+176 START P+282 ATT Y+ 29	- PITCH ROTATION
4/00:38:00	STOP	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 112 P 341	INRTL R+176 P+282 Y+ 29	STOP -PITCH
4/00:45:00 48:13	TRK TGT=2 BV=1( 0.00, 0.00) OM= 0.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 0 P 0	LVLH R+ 0 P+270 Y+ 0	EOIM ATT (+XLV BAY FWD)
4/07:15:00	LVLH ROT FREE ROTATION ABOUT +X AXIS RATE=0.200	A5 AUTO VERN	DSC 0.200 DB AT 0.07 DB RT 0.01			IMU ALIGN LVLH ROTATION
4/07:40:00 45:00	TRK TGT=2 BV=1( 0.00, 0.00) OM= 0.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 0 P 0	LVLH R+ 0 P+270 Y+ 0	EOIM ATT
4/19:06:00	LVLH ROT FREE ROTATION ABOUT +X AXIS RATE=0.200	A5 AUTO VERN	DSC 0.200 DB AT 0.07 DB RT 0.01			IMU ALIGN LVLH ROTATION
4/19:31:00 36:00	TRK TGT=2 BV=1( 0.00, 0.00) OM= 0.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 0 P 0	LVLH R+ 0 P+270 Y+ 0	EOIM ATT
4/19:37:00 50:52	TRK TGT=4 BV=5(184.00, 0.00) OM= 90.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 176 P 180	INRTL R +76 P+342 Y+349	TAIL SUN
4/20:52:00	DAP RECONFIG	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20			
4/21:50:00 53:42	MNVR R+168.90 P+ 1.50 Y+ 43.00	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 127 P 257	-Y ST:43 -Z ST:44 21:40-22:23	IMU ALIGN

TABLE 9-9 STS-8 ATTITUDE TIMELINE

MET	MNVR OPTION		DAF	E/S	REMARKS	EVENT
4/22:03:00 05:30	MNVR R+217.00 P+ 10.00 Y+347.60	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 152 P 135	-Y ST:36 -Z ST:27 21:52-22:24	IMU ALIGN VERIFICATION
4/22:18:00 21:28	MNVR R+158.00 P+ 84.00 Y+341.00	B1 AUTO NORM	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 82 P 213		DEORBIT BURN ATTITUDE
4/22:32:00	DPS CONFIG TO GNC 3	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30			
4/23:02:00	CONFIG RJD'S (VRCS OFF)	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30			
5/00:32:00	ACTIVATE SINGLE APU	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30			
5/00:37:00	DEORBIT IGNITION	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30		DV=261 fps DT=2:23	DEORBIT BURN
5/00:42:00 47:08	MNVR R+192.00 P+291.00 Y+ 28.00	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30	SUN T 119 P 321		EI-5 ATTITUDE
5/00:44:00	ACTIVATE REMAINING APU'S	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30			
5/00:52:47	EI-5	* AUTO *	DSC 0.500 DB AT 3.50 DB RT 0.30		LVLH R+ 1 P+ 39 Y+359	EI-5

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## ABBREVIATIONS/ACRONYMS

More complete compilations of abbreviations and acronyms are available in the Acronyms and Abbreviations Dictionary (Ref. 4).

ABBREVIATIONS/  
ACRONYMS

## ABBREVIATIONS/ACRONYMS

ABS	ABSORBER
ACIP	AERODYNAMIC COEFFICIENTS IDENTIFICATION PACKAGE
ACN	ASCENSION ISLAND (STDN SITE)
ACT	ACTIVATE/ACTIVATION
ADI	ATTITUDE DIRECTION INDICATOR
AEM	ANIMAL ENCLOSURE MODULE
AFT	AFT FLIGHT DECK
AGO	SANTIAGO, CHILE (STDN SITE)
ALN	ALIGNMENT
ANT	ANTENNA
AOA	ABORT ONCE AROUND
AOS	ACQUISITION OF SIGNAL
APU	AUXILIARY POWER UNIT
ATCS	ACTIVE THERMAL CONTROL SYSTEM
ATO	ABORT TO ORBIT
ATT	ATTITUDE
BDA	BERMUDA ISLAND, BWI (STDN SITE)
BHD	BULKHEAD
BOT	BOTSWANA (STDN SITE)
BUC	BUCKHORN, CALIFORNIA (STDN SITE)
BYP	BYPASS
CAL	CALIBRATION
CAMR	CAMERA
CCTV	CLOSED-CIRCUIT TV
CCU	CREWMAN COMMUNICATIONS UMBILICAL
CDR	COMMANDER
CFES	CONTINUOUS FLOW ELECTROPHORESIS



CHG	CHANGE
C/L	CHECKLIST
CL	CLOSE/CLOSED
CLN	CLEAN
C/O	CHECKOUT
COAS	CREWMAN OPTICAL ALIGNMENT SIGHT
COM	COMMUNICATIONS
CONFIG/CNFG	CONFIGURATION
CST	CENTRAL STANDARD TIME
CTLS	CONTROLS
C&W	CAUTION AND WARNING
DAP	DIGITAL AUTO PILOT
DB	DEADBAND
DEACT	DEACTIVATION
DED	DEDICATED
DEORB	DEORBIT
DEU	DISPLAY ELECTRONICS UNIT
DISP	DISPLAY
DKR	DAKAR, SENEGAL (STDN SITE)
DMP	DUMP
DPY/DPLY	DEPLOY
DSO	DETAILED SUPPLEMENTARY OBJECTIVE
DTO	DETAILED TEST OBJECTIVE
ECLS	ENVIRONMENTAL CONTROL LIFE SUPPORT SYSTEM
EDW	EDWARDS AFB, CALIFORNIA (DEORB OPT SITE)
EI	ENTRY INTERFACE
EMU	EXTRAVEHICULAR MOBILITY UNIT
ENA	ENABLE

ENT	ENTRY
EOIM	EVALUATION OF OXYGEN INTERACTION WITH MATERIALS
EVA	EXTRAVEHICULAR ACTIVITY
EX/EXER	EXERCISE
EXPT	EXPERIMENT
FC	FUEL CELL
FCS	FLIGHT CONTROL SYSTEM
FD	FLIGHT DAY; FLIGHT DECK; FREEZE DRIED
FDF	FLIGHT DATA FILE
FES	FLASH EVAPORATOR SYSTEM
FM	FREQUENCY MODULATION
FRD	FLIGHT REQUIREMENTS DOCUMENT
FWD	FORWARD
GAS	GETAWAY SPECIAL
GDS	GOLDSTONE, CALIFORNIA (STDN SITE, 1ST ANTENNA)
GDX	GOLDSTONE, CALIFORNIA (STDN SITE, 2ND ANTENNA)
GG	GRAVITY GRADIENT (ATTITUDE CONTROL MODE)
GMT	GREENWICH MEAN TIME
GNC	GUIDANCE NAVIGATION AND CONTROL
GPC	GENERAL PURPOSE COMPUTER
GRP	GROUP
GSTDN	GROUND SPACE TRACKING & DATA NETWORK
GWM	GUAM ISLAND, U.S. (STDN SITE)
HAW	HAWAII (KAUAI, STDN SITE)
HK	HOUSEKEEPING
HL	HI LOAD FLASH EVAPORATOR
HRM III	HANDHELD RADIATION MONITOR III
HTR	HEATER

HYD	HYDRAULIC
ICONNECT/ I'CONNECT	INTERCONNECT
IMU	INERTIAL MEASUREMENT UNIT
INH	INHIBIT
INRTL	INERTIAL
INSAT	INDIAN NATIONAL SATELLITE
IOS	INDIAN OCEAN (SGLS SITE)
ISAL	INVESTIGATION OF SHUTTLE ATMOSPHERIC LUMINOSITY
IVA	INTRAVEHICULAR ACTIVITY
KSC	KENNEDY SPACE CENTER
LEH	LAUNCH/ENTRY HELMET
LOS	LOSS-OF-SIGNAL
LVLH	LOCAL VERTICAL LOCAL HORIZONTAL
MAD	MADRID, SPAIN (STDN SITE, 1ST ANTENNA)
MADS	MODULAR AUXILIARY DATA SYSTEM
MAX	MADRID, SPAIN (STDN SITE, 2ND ANTENNA)
MCC	MISSION CONTROL CENTER
MD	MIDDECK
MDM	MULTIPLEXER/DEMULTIPLEXER
MECH	MECHANISM; MECHANICAL
MECO	MAIN ENGINE CUTOFF
MET	MISSION ELAPSED TIME
MIL	MERRITT ISLAND, FLORIDA (STDN SITE)
MILA	MERRITT ISLAND LAUNCH AREA
MLX	MERRITT ISLAND, FLORIDA (STDN SITE, 2ND ANTENNA)
MNVR	MANEUVER
MPS	MAIN PROPULSION SYSTEM

MSG	MESSAGE
MTVC	MANUAL THRUST VECTOR CONTROL
NAV	NAVIGATION
NOR	NORTHRUP STRIP
OI	OPERATIONAL INSTRUMENTATION
OMS	ORBITAL MANEUVERING SYSTEM
O/O	ON ORBIT
OPS	OPERATIONS; OPERATIONAL SEQUENCE
ORB	ORBITER
ORR	ORRORAL VALLEY, AUSTRALIA (STDN SITE)
PAM	PAYLOAD ASSIST MODULE
PCM	PULSE-CODE MODULATION
PCS	PRESSURE CONTROL SYSTEM
PDP	POST INSERTION DEORBIT PREP CHECKLIST
PERF	PERFORM; PERFORMANCE
PFTA	PAYLOAD FLIGHT TEST ARTICLE
PKM	PERIGEE KICK MOTOR
PL	PAYLOAD
PLBD	PAYLOAD BAY DOORS
PLD	PAYLOAD
PLT	PILOT
PM	PHASE MODULATION
PRCS	PRIMARY REACTION CONTROL SYSTEM
PREP	PREPARATION
PRM	POCKET REM METER
PRO	PROCEED
PRSD	POWER REACTANT SUPPLY AND DISTRIBUTION
PSA	PRE/POST SLEEP ACTIVITY

PTC	PASSIVE THERMAL CONTROL
PWRDN	POWERDOWN
RAD	RADIATOR
RCS	REACTION CONTROL SYSTEM
REF	REFERENCE
REFSMMAT	REFERENCE STABLE MEMBER MATRIX
RELMAT	RELATIVE MATRIX
RF	RADIO FREQUENCY
RHC	ROTATION HAND CONTROLLER
RMS	REMOTE MANIPULATOR SYSTEM
ROT	ROTATION/ROTA FIELD
RSET	RESET
RTC	REAL-TIME COMMAND
SAA	SOUTH ATLANTIC ANOMALY
S-BD	S-BAND
SEL	SELECT
SEP	SEPARATION
SEQ	SEQUENCE
SGLS	SPACE GROUND LINK SYSTEM/STATION (DOD)
SPC	STORED PROGRAM COMMAND
SPLY	SUPPLY
STBD	STARBOARD
STDN	SPACE TRACKING & DATA NETWORK
STS	SPACE TRANSPORTATION SYSTEM
ST/S TRKR	STAR TRACKER
STW	STOW
SW	SWITCH
SYS	SYSTEM

TAGS	TEXT AND GRAPHICS SYSTEM
TB	TALKBACK
TERM	TERMINATE; TERMINAL
THC	TRANSLATION HAND CONTROLLER
TIG	TIME OF IGNITION
TPR	TELEPRINTER
UHF	ULTRA HIGH FREQUENCY
VAC	VACUUM
VER	VERIFICATION
VRCS	VERNIER REACTION CONTROL SYSTEM
VTR	VIDEO TAPE RECORDER
VV	VELOCITY VECTOR
WB	WIDEBAND
WCS	WASTE COLLECTION SYSTEM
XFER	TRANSFER
X-POP	X BODY AXIS PERPENDICULAR TO ORBIT PLANE
YAR	YARRAGADEE (STDN SITE)
Y-POP	Y BODY AXIS PERPENDICULAR TO ORBIT PLANE
-ZLV	-Z LOCAL VERTICAL (-Z BODY AXIS TOWARDS EARTH)

REFERENCES

REFERENCES

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