

FLIGHT DATA FILE**Flight Plan****STS-69**BRANCH CHIEF
R.H. NUTE
DO4
BOND

1

(FRR Trajectory)**Mission Operations Directorate
Operations Division****Final
May 30, 1995**

<u>EVENT</u>	<u>CDI</u>		
Launch	09:33	Thur	July 20
Spartan-201 Release	10:08	Fri	July 21
Spartan-201 Grapple	08:48	Sun	July 23
WSF Release	04:06	Mon	July 24
WSF Grapple	09:40	Wed	July 26
EVA (EDFT-02)	02:52	Sat	July 29
KSC Landing	07:02	Mon	July 31

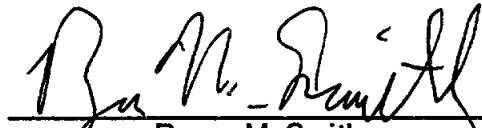
National Aeronautics and
Space AdministrationLyndon B. Johnson Space Center
Houston, Texas

MISSION OPERATIONS DIRECTORATE

STS-69 FLIGHT PLAN

FINAL
May 30, 1995

PREPARED BY:



Roger M. Smith
Book Manager

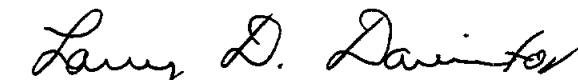
APPROVED BY:




Ben E. Ferguson
Lead, Flight Planning and
Pointing Group



Robert H. Nute
Chief, Flight Planning Branch



Earl W. Thompson
Chief, Operations Division



Brock R. Stone
Assistant Director,
Space Shuttle Operations

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482#:	FLT PLN-1424*	FLT PLN-1733	FLT PLN-1758A	MULTI-1150
	FLT PLN-1710	FLT PLN-1745A	FLT PLN-1759	MULTI-1160
	FLT PLN-1714*	FLT PLN-1755		MULTI-1166A
	FLT PLN-1732	FLT PLN-1757A		

Exemption #: 73

* Previously implemented for another flight.

AREAS OF TECHNICAL RESPONSIBILITY

Book Manager/Lead FAO	DO4/Roger Smith	244-1166
Lead Timeliner	DO4/Diana Gray	244-1144
Lead Pointer	DO4/Bill Kirscher	244-5659

FLIGHT PLAN
STS-69

LIST OF EFFECTIVE PAGES

	FINAL	05/30/95	
Sign Off	* 69/FIN	3-13	69/FIN
ii	* 69/FIN	3-14	69/FIN
iii	* 69/FIN	3-15	69/FIN
iv	* 69/FIN	3-16	69/FIN
v	* 69/FIN	3-17	69/FIN
vi	* 69/FIN	3-18	69/FIN
vii	69/FIN	3-19	69/FIN
viii	69/FIN	3-20	69/FIN
1-1	69/FIN	3-21	69/FIN
1-2	69/FIN	3-22	69/FIN
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* - Omit from flight book

3-61	69/FIN
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7-9	* 69/FIN
7-10	* 69/FIN

* - Omit from flight book

STS-69 FLIGHT PLAN FABRICATED ITEMS

<u>Title</u>	<u>Ref. Page</u>	<u>Item No.</u>
DAP A, DAP B TOC	6-2	FLT PLN-1a/69/O/B
(Blank)	6-2	FLT PLN-1b/69/O/A
DAP A	6-3	FLT PLN-2a/69/O/A
DAP A1	6-3	FLT PLN-2b/69/O/A
A1	6-3	FLT PLN-3a/69/O/A
DAP A2	6-3	FLT PLN-3b/69/O/A
A2	6-4	FLT PLN-4a/69/O/A
DAP A3	6-4	FLT PLN-4b/69/O/A
A3	6-4	FLT PLN-5a/69/O/A
DAP A4	6-4	FLT PLN-5b/69/O/A
A4	6-5	FLT PLN-6a/69/O/A
DAP A5	6-5	FLT PLN-6b/69/O/A
A5	6-5	FLT PLN-7a/69/O/A
DAP A6	6-5	FLT PLN-7b/69/O/A
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DAP A7	6-6	FLT PLN-8b/69/O/A
A7	6-6	FLT PLN-9a/69/O/A
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A8	6-7	FLT PLN-10a/69/O/A
DAP A9	6-7	FLT PLN-10b/69/O/A
A9	6-7	FLT PLN-11a/69/O/A
DAP A10	6-7	FLT PLN-11b/69/O/B
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DAP A11	6-8	FLT PLN-12b/69/O/B
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A12	6-9	FLT PLN-14a/69/O/A
DAP A13	6-9	FLT PLN-14b/69/O/A
A13	6-9	FLT PLN-15a/69/O/A
DAP A14	6-9	FLT PLN-15b/69/O/B
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A15	6-10	FLT PLN-17a/69/O/B
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B1	6-11	FLT PLN-19a/69/O/A
DAP B2	6-11	FLT PLN-19b/69/O/A
B2	6-12	FLT PLN-20a/69/O/A
DAP B3	6-12	FLT PLN-20b/69/O/A
B3	6-12	FLT PLN-21a/69/O/A
DAP B4	6-12	FLT PLN-21b/69/O/A
B4	6-13	FLT PLN-22a/69/O/A
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B5	6-13	FLT PLN-23a/69/O/A
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FLT PLN-30b/69/O/A
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FLT PLN-31b/69/O/A
FLT PLN-32a/69/O/B
FLT PLN-32b/69/O/A
FLT PLN-33/69/O/A

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INTRODUCTION

This Flight Plan is the Flight Data File article that contains the on-orbit timeline for the STS-69 mission. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, EVA, Rendezvous, RMA Deploy, Deorbit Prep, and Entry Checklists. For continuity, the summary level timeline includes the entire flight.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive, and the requirements of the STS-69 Flight Requirements Document.

The Flight Plan, as part of the Flight Data File, is based upon the Flight Readiness Review (FRR) STS-69 Flight Initialization Data Pack, Change 1. FRR trajectory assumes a launch date of July 20, 1995, at 14:33 GMT.

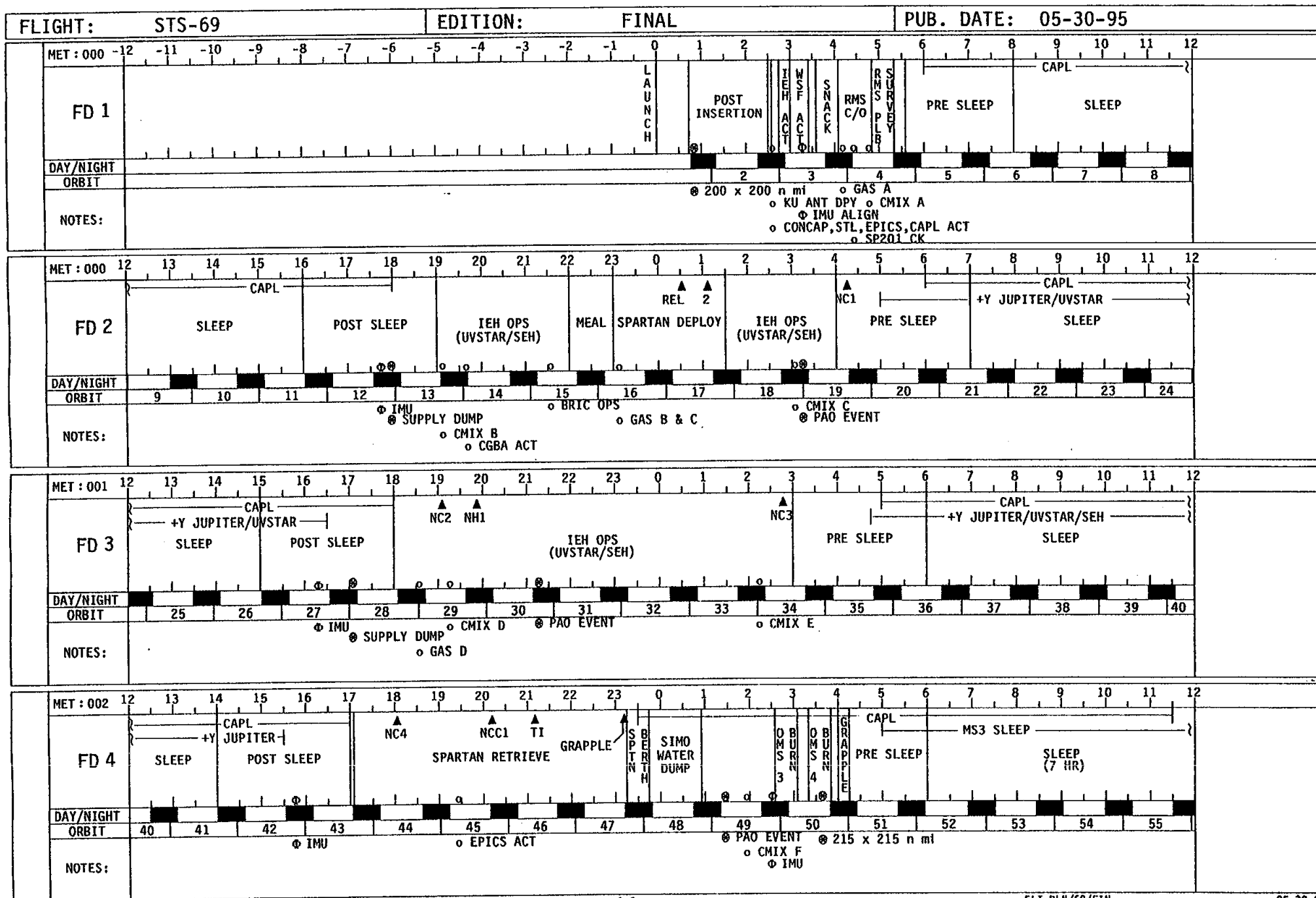
Orbiter inertial attitudes are expressed relative to a Mean of 1950 (M50) reference frame.

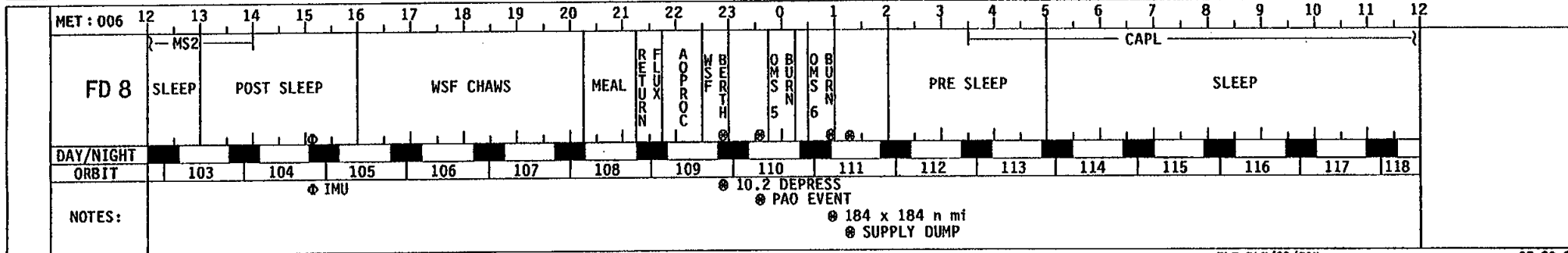
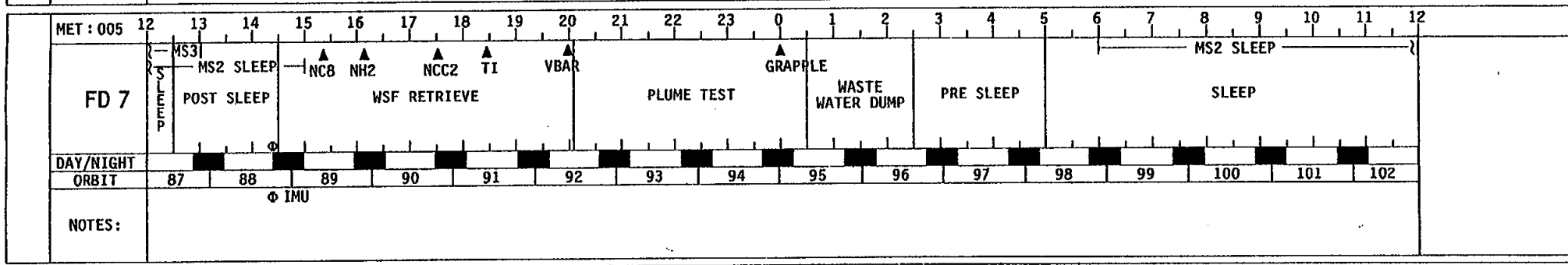
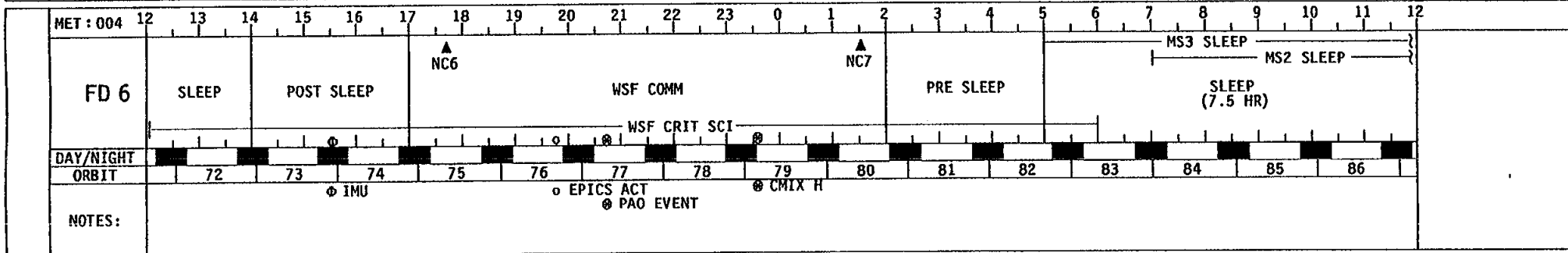
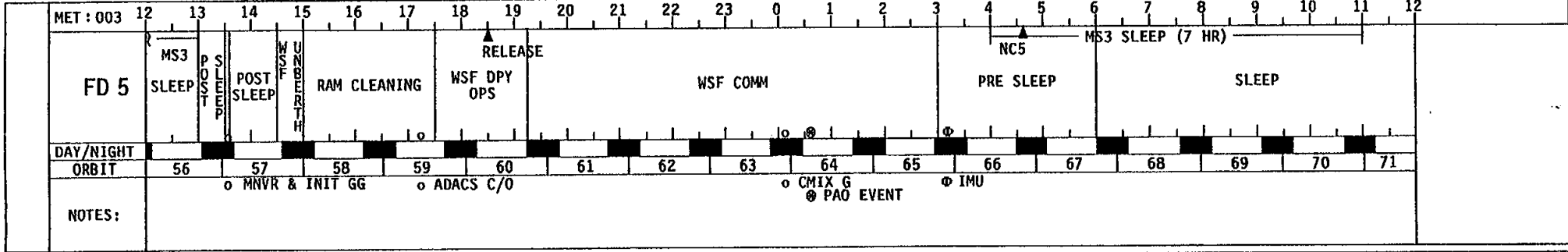
JSC-22359, Crew Scheduling Constraints (Appendix K, CPMP), Basic, Rev B, January 1992, has been used to build the timelines contained in this Flight Plan. The following Appendix K Exemption has been approved for this mission:

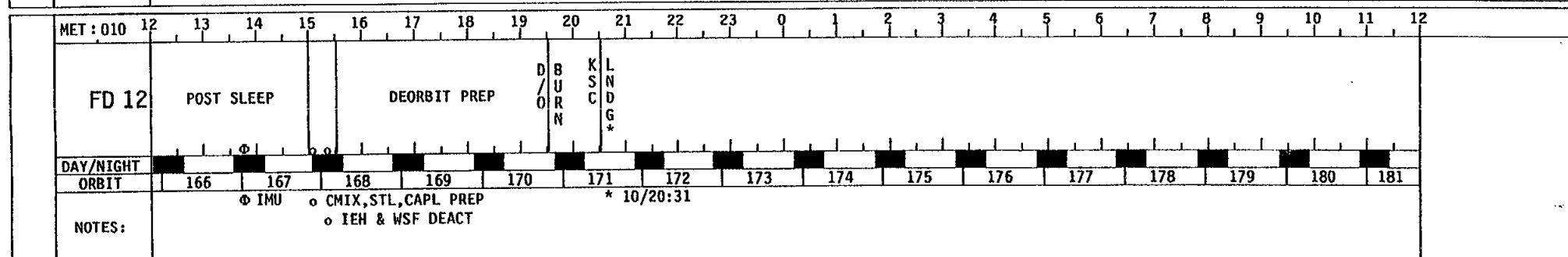
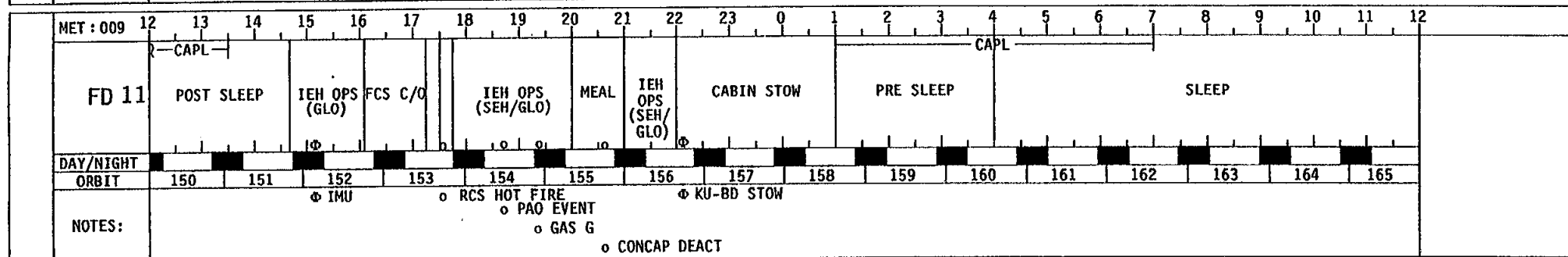
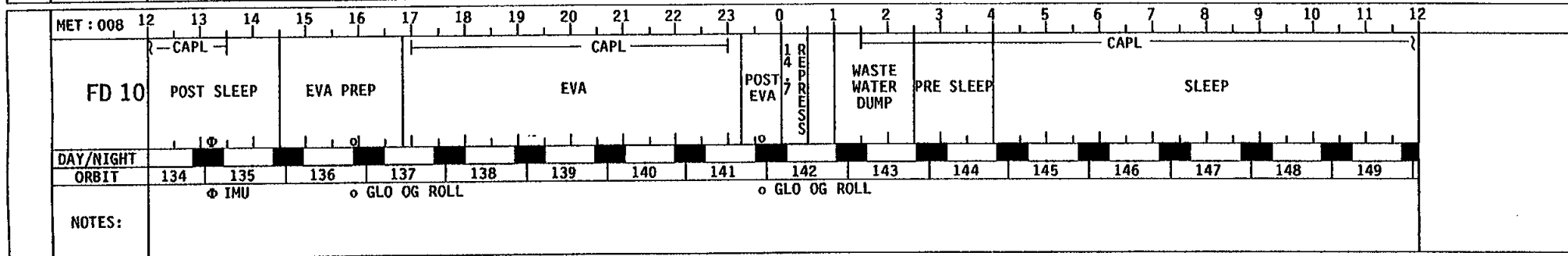
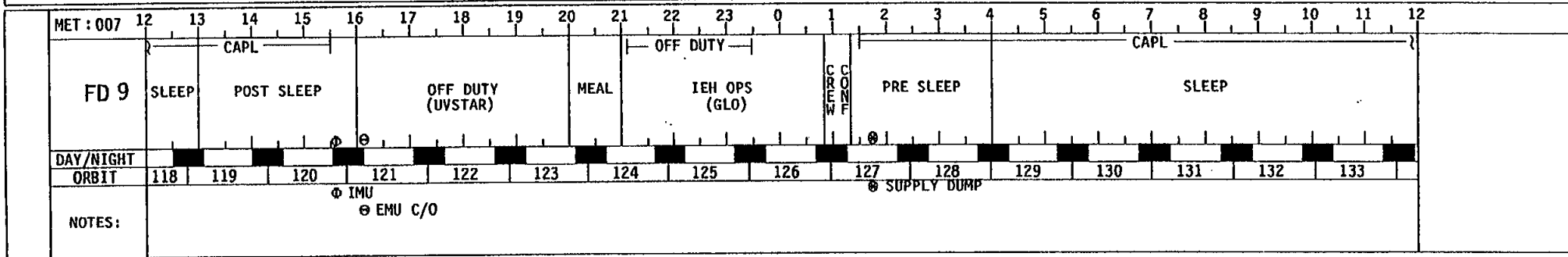
- #73 - Less than 2 hr continuous postsleep on flight day 5 for CDR, PLT, MS1, MS2
- Less than 2 hr postsleep on flight day 5 for MS3
- Less than 2 hr presleep on flight day 6 for MS2
- Less than 2 hr postsleep on flight day 6 for MS3

OVERVIEW TIMELINE

OVERVIEW TIMELINE








SUMMARY TIMELINE


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GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE		
201:14:33/ 202:02:33	000:00:00/ 000:12:00	201:09:33/ 201:21:33	1/201 CDT	-0.9		JULY 20, 1995	STS-69	FINAL	05-30-95		
CDT :201 FD :01 MET :000											
CDR		POST INSERTION	LOAD DAP	IMU MNVR	-XLV MNVR	SNACK	AFT CNTRL	PRE SLEEP	COMF	PRE SLEEP	SLEEP
PLT		POST INSERTION	POST	PLBD MNVR	STILL	SNACK	CS RYS OR	PRE SLEEP	AR PUC	PRE SLEEP	SLEEP
MS1	LAUNCH	OMS-2	POST INSERTION	PLBD OPS	KU-BD	SNACK	GAS GRP	CMIX A		PRE SLEEP	SLEEP
MS2	INSERTION		POST INSERTION	WCA SAC FRT	RMS PWR UP	SNACK	RMS C/O	RMS PLB SURVEY	RMS PWR DN	PRE SLEEP	SLEEP
MS3			POST INSERTION	WCA SAC FRT	RMS PWR UP	SNACK	RMS C/O	RMS PLB SURVEY	RMS PWR DN	PRE SLEEP	SLEEP
DAY/NIGHT											
ORBIT											
TDRS											
CONT COVERAGE											
ATT											
CAPL											
NOTES:											


GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
202:02:33/ 202:14:33	000:12:00/ 001:00:00	201:21:33/ 202:09:33	2/202 GMT	0.2		JULY 20, 1995	STS-69	FINAL	05-30-95					
CDT :201	22	23	0	1	2	3	4	5	6	7	8	9	0	MET:001
FD :01	12	13	14	15	16	17	18	19	20	21	22	23	0	
MET :000														
CDR	SLEEP		POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
PLT	SLEEP		POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
MS1	SLEEP		POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
MS2	SLEEP		POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
MS3	SLEEP		POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
DAY/NIGHT ORBIT	9	10	11	12	13	14	15	16						
SAA														
TDRS E W														
CONT COVERAGE	-GTS	--DKR	-GTS	--DKR	-GTS	--DKR	-GTS	--DKR	-GTS	--DKR	-GTS	--DKR	-GTS	--DKR
ATTITUDE		-XLV +ZVV		-DKR		-ZLV BIAS +YVV		-ZSI		-ZSI		-ZSI		-ZSI
CAPL		CAPL												
IEH														
NOTES:														

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
202:14:33/ 203:02:33	001:00:00/ 001:12:00	202:09:33/ 202:21:33	2/202 GMT	1.5		JULY 21, 1995	STS-69	FINAL	05-30-95
CDT :02	FD :02	MET :001							
CDR	REL SEP1 SEP2 SPARTAN DEPLOY	EXERCISE (DSO 624)	ZSI MNVR MULTI AXIS RCS BURN	PRE SLEEP	CONV PRE SLEEP	PRE SLEEP	SLEEP		
PLT	SPARTAN DEPLOY	ZSI MNVR +Y STAR PAO SUPPORT	SETUP GLO MULTI AXIS RCS BURN	PRE SLEEP	CONV PRE SLEEP	PRE SLEEP	SLEEP		
MS1	SPARTAN DEPLOY	EXERCISE (DSO 624) CMIX C	PL CHECKS	PRE SLEEP		PRE SLEEP	SLEEP		
MS2	SPARTAN DEPLOY	RMS PWRDN FILTER CLEANING P/TVO3 SETUP PAO	PAO EVENT	PRE SLEEP		PRE SLEEP	SLEEP		
MS3	SPARTAN DEPLOY	RMS PWRDN FILTER CLEANING	EXERCISE	PRE SLEEP		PRE SLEEP	SLEEP		
DAY/NIGHT	[Day/Night Cycle Bar]								
ORBIT	[Orbit Cycle Bar]								
SAA	[SAA Cycle Bar]								
TDRS	[TDRS Cycle Bar]								
CONT COVERAGE	[Coverage Bar: HTS-BDA, VTS-DKR, GDS, GTS-MIL, DGS, IOS, GTS-HTS]								
ATTITUDE	[Attitude Bar: SPTN DPY, SEP 2, ZSI, +Y STAR, NC1, ZSI, +Y JUP/PROTECT]								
CAPL	[CAPL Bar]								
IEH	[IEH Bar: SEH, UVSTAR, JUPITER]								
NOTES:	<p>■ WSB 3 SWAP ▶ CONCAP TLM ENA @BIAS -ZLV +XVV SPTN NOMINAL REL (D1) WIN OPEN: 00:35 CLOSE: 00:51 @UVSTAR PROTECT ATT UVSTAR PROT MNVR INIT DEU EQUIVALENT MNVRS TO +Y JUPITER AND UVSTAR PROTECT ATTITUDES PERFORMED EACH ORBIT BEGINNING ORBIT 21 THROUGH ORBIT 26</p>								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
203:02:33/ 203:14:33	001:12:00/ 002:00:00	202:21:33/ 203:09:33	3/203 GMT	2.9		JULY 21, 1995	STS-69	FINAL	05-30-95	
CDT :202 FD :02 MET :001	12 22 23 14	0 CDT:203 1 15FD:03 16	2 17	3 18	4 19	5 20	6 21	7 22	8 23	9 0 MET:002
CDR	SLEEP	POST SLEEP	DSO 483 IMU MNVR ZLV MNVR	POST SLEEP		NC2 MULT AXIS RCS BURN NH1 MULT AXIS RCS BURN	DSO 492B	MEAL	RNDZ REVIEW	CGA TERM
PLT	SLEEP	POST SLEEP	DSO 483	POST SLEEP	SLAMMD	MULT AXIS RCS BURN	EXERCISE (DSO 608)	MEAL	RNDZ REVIEW	ZSI MNVR
MS1	SLEEP	POST SLEEP	DSO 483	POST SLEEP	PL CHECKS	GAS GRP D	EXERCISE (DSO 624)	MEAL	RNDZ REVIEW	OSVS
MS2	SLEEP	POST SLEEP	DSO 483	POST SLEEP	KCA OPS	KCA TEST	EXERCISE (DSO 624)	MEAL	RNDZ REVIEW	OSVS
MS3	SLEEP	POST SLEEP	DSO 483	POST SLEEP	SD PLM YP IN IT	RMS HTR SD PLM YP TERM	CMIX D	MEAL	RNDZ REVIEW	
DAY/NIGHT	[Day/Night Cycle Diagram]									
ORBIT	[Orbit Diagram]									
TDRS	[TDRS Diagram]									
CONT COVERAGE	[Coverage Diagram]									
ATTITUDE	[Attitude Diagram]									
CAPL	[CAPL Diagram]									
IEH	[IEH Diagram]									
NOTES:	<p> @DSO 483 BACK PAIN @HTR RECONFIG @DTO 831 MPD @GAP SETS 2-4 @-ZLV BIAS -YVV @DTO 914 SLAMMD @DSO 492B BLOOD ANALYZER @DTO 700-10 @RMS HTR ACT/MCIU FILTER CK @+Y STAR ATTITUDE @MNV +Y STAR Δ CONCAP TLM DSBL @+Y STAR MNVR INIT Δ CONCAP TLM ENA @BIAS -ZLV -XVV </p>									

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
203:14:33/ 204:02:33	002:00:00/ 002:12:00	203:09:33/ 203:21:33	3 /203 GMT	4.4		JULY 22, 1995	STS-69	FINAL	05-30-95
CDT :023									
FD :03									
MET :002									
CDR	EXERCISE (DSO 624)		Δ NCS RCS BURN	PRE SLEEP	PRE SLEEP	PRE SLEEP	SLEEP		
PLT	MNVRS ZSI MNVRS	MNVRS ZSI MNVRS	RCS BURN	PRE SLEEP	PRE SLEEP	PRE SLEEP	SLEEP		
MS1	OSVS	MPD EVAL	PL CHECKS	PRE SLEEP			SLEEP		
MS2	OSVS	MPD EVAL	RMS PWRDN	PRE SLEEP			SLEEP		
MS3	EXERCISE	MPD EVAL	RMS PWRDN CMIX E	PRE SLEEP			SLEEP		
DAY/NIGHT	[Night]		[Night]	[Night]	[Night]	[Night]	[Night]	[Night]	[Night]
ORBIT	32	33	34	35	36	37	38	39	40
TDRS	[E W]		[E W]	[E W]	[E W]	[E W]	[E W]	[E W]	[E W]
CONT COVERAGE	HTS-BDA VTS-DKR GDS CTS MIL		GDS CTS MIL HTS	HTS VTS GDS	GTS HTS	HTS	IOS GTS HTS	GTS	GTS
ATTITUDE	+Y STAR -ZSI		+Y STAR -NC3	+Y STAR -ZSI	JUPITER PROTECT!		+Y JUP/PROT/-ZSI		
CAPL	[]		[]	[]	[]		[]		
IEH	UVSTAR		UVSTAR	SEH	JUPITER	JUPITER	JUPITER	JUPITER	JUPITER
	SEH		UVSTAR	SEH	UVSTAR	SEH	UVSTAR	SEH	UVSTAR
NOTES:	⊙DTO 700-10 ⊙DTO 831 MPD				⊙+Y JUPITER ATT		⊙+Y JUPITER MNVR INIT		
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> DEU EQUIVALENT MNVRS PERFORMED TWICE PER ORBIT BEGINNING ORBIT 36 THROUGH ORBIT 41. REFERENCE DETAILED TIMELINE </div>								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
204:02:33/ 204:14:33	002:12:00/ 003:00:00	203:21:33/ 204:09:33	4/204 GMT	5.9		JULY 22, 1995	STS-69	FINAL	05-30-95				
CDT :0203 FD :03 MET :002	12 22 13 23	14 FD:04	15	16	17	18	19	20	21	22	23	0	MET:003
CDR	SLEEP	POST SLEEP	IMU MNV ZLV MNV	POST SLEEP	TG R2 POL LES	NC4	NCC	TI	ZLV MNVR	SPTN BERTH	PG MR RP DB OW N		
PLT	SLEEP	POST SLEEP	IMU MNV ZLV MNV	POST SLEEP						SPTN BERTH			
MS1	SLEEP	POST SLEEP	IMU MNV ZLV MNV	POST SLEEP	PL CHECKS	RMS HTR	EXERCISE (DSO 624)	P/TV07 SETUP SPTN	MEAL	SPTN BERTH	SD TU MM OP J M T		
MS2	SLEEP	POST SLEEP	IMU MNV ZLV MNV	POST SLEEP	KCA OPS					SPTN BERTH	RMS P W R D N		
MS3	SLEEP	POST SLEEP	IMU MNV ZLV MNV	POST SLEEP			EXERCISE		MEAL	SPTN BERTH	RMS P W R D N		
DAY/NIGHT ORBIT	[Bar chart showing day/night and orbit cycles from 40 to 48]												
TDRS	[Bar chart showing TDRS coverage from 40 to 48]												
CONT COVERAGE	[Bar chart showing coverage for GTS, DKR, MIL, BDA, DKS, IOS, CTS, VTS, GDS, CTS]												
ATTITUDE	[Bar chart showing attitude for +Y JUP/PROT/-ZSI, IMU, BIAS -ZLV -XVV, SPARTAN RNDZ, -ZLV BIAS +YVV]												
CAPL IEH	[Bar chart showing CAPL and JUPITER coverage]												
NOTES:	◎DSO 483 BACK PAIN ◎BIAS -ZLV,-XVV ◎RMS HTR ACT/MCIU FILTER CK ▼ EPICS DEACT ◎DTO 831 MPD ■ EXERCISE (DSO 608) ▼ CONCAP TLM DSBL												


GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE			
204:14:33/ 205:02:33	003:00:00/ 003:12:00	204:09:33/ 204:21:33	4/204 GMT	7.4		JULY 23, 1995	STS-69	FINAL	05-30-95			
CDT :020 FD :04 MET :003	0 10 11 12 13 14 15 16 17 18 19 20 21 12											
CDR	EXERCISE (DSO 624)		IMU MNV R	OMS 3 OMS BURN	PRE SLEEP	OMS 4 OMS BURN	PRE SLEEP	CONF MED	PRE SLEEP	-ZLV MNV R	PRE SLEEP	SLEEP (7 HR)
PLT	EXERCISE (DSO 608)		INSI MNV R	SLAMMD PS/TT VUOP 8 GLO	OMS BURN	OMS BURN	PRE SLEEP	ZSI MNV R	PRE SLEEP			SLEEP (7 HR)
MS1	CGBA TER	P/TV03 SETUP PAO	SDIU MMOP TER	PAO SUPPORT	P/TV05 SETUP WSF	PL CHECKS	PRE SLEEP	WSF GRAPPLE	PRE SLEEP			SLEEP (7 HR)
MS2		WSF PREDPY PREP		EXERCISE (DSO 624)			PRE SLEEP	WSF GRAPPLE	PRE SLEEP			SLEEP (7 HR)
MS3	STEP AMP TAN	WSF PREDPY PREP		PAO EVENT	CMIX F		PRE SLEEP					SLEEP
DAY/NIGHT	[Day/Night Cycle Diagram]											
ORBIT	48 49 50 51 52 53 54 55											
TORS	[TORS Diagram]											
CONT COVERAGE	VTS-DKR, GDS, CTS, MIL, HTS, BDA, DGS, GTS, HTS, IOS, DKS											
ATTITUDE	-ZLV BIAS +YVV, IMU, OMS 3 & 4, ZSI, -ZLV -XVV											
CAPL	[CAPL Diagram]											
IEH	SEH											
NOTES:	* AUTO FC PURGE @ DTO 914 SLAMMD * ZLV, -XVV * HTR RECONFIG * WSF GG ATTITUDE * GAP SET 5 * SPTN POST RNDZ * CONCAP TLM ENA											

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
205:02:33 / 205:14:33	003:12:00 / 004:00:00	204:21:33 / 205:09:33	5 / 205 GMT	9.1		JULY 23, 1995	STS-69	FINAL	05-30-95
CDT :204 FD :04 MET :003									MET:004


CDR	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	WSF DPY OPS	WSF DPY OPS	WSF DPY OPS	MEAL	MEAL	MEAL	EXERCISE (DSO 624)
PLT	SLEEP	POST SLEEP	WSF DPY OPS/PSA		WSF DPY OPS	EXERCISE (DSO 608)	EXERCISE (DSO 608)	MEAL	MEAL	MEAL	SLAMMD
MS1	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	WSF DPY OPS	WSF DPY OPS	WSF DPY OPS	MEAL	MEAL	MEAL	EXERCISE
MS2	SLEEP	POST SLEEP	Ram Cleaning (2.5 hr)		ADACS C/O	ADACS C/O	ADACS C/O	MEAL	MEAL	MEAL	WSF MONITOR
MS3	SLEEP	POST SLEEP	WSF DPY OPS/PSA		WSF DPY OPS	WSF DPY OPS	WSF MONITOR	MEAL	MEAL	MEAL	EXERCISE

DAY/NIGHT ORBIT	56	57	58	59	60	61	62	63
TDRS	[Timeline bars for TDRS coverage]							
CONT COVERAGE	[Timeline bars for coverage: DKR, GTS, IOS, DGS, MIL, BDA, HTS, VTS, GDS, CTS, BDA, MIL, VTS, DKR, GDS]							
ATTITUDE	[Timeline bars for attitude: -ZLV, -XVV, BIAS, -XLV, -YVV, -XLV, +ZVV]							
MBE OPS	[Timeline bars for MBE OPS: SEP MON, DEGAS, FLUX]							


NOTES:	<p>WSF GG MNVR INIT</p> <p>Δ CONCAP TLM DSBL</p> <p>Δ CONCAP TLM ENA</p> <p>⊙ -XLV, +ZVV ⊙ DSO 483 BACK PAIN</p> <p>Δ OPEN VENT VLV ⊙ GAP SET 1 ⊙ DTO 914 SLAMMD</p> <p>WSF RELEASE WINDOW</p> <p>OPEN: SR + 00:15</p> <p>CLOSE: SS - 00:15 (NOMINAL)</p> <p>SR - 00:15 (CONTINGENCY)</p>									
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GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
205:14:33/ 206:02:33	004:00:00/ 004:12:00	205:09:33/ 205:21:33	5 /205 GMT	10.8		JULY 24, 1995	STS-69	FINAL	05-30-95
CDT :205 FD :05 MET :004									
CDR	REL WIN 5	NC5 RCS BURN	PRE SLEEP	PRE SLEEP	SLEEP				
PLT	P/TV03 SETUP PAO	RCS BURN	PRE SLEEP	PRE SLEEP	SLEEP				
MS1	EXERCISE (DSO 624)	PRE SLEEP			SLEEP				
MS2	EXERCISE (DSO 624)	WSF MONITOR	PRE SLEEP		SLEEP				
MS3	CMIX G	PRE SLEEP			SLEEP (7 HR)			POST SLEEP	
DAY/NIGHT ORBIT	64	65	66	67	68	69	70	71	
TDRS E W									
CONT COVERAGE	-GTS -MIL -HTS-BDA	-VTS -GDS -DGS -GTS -MIL -HTS	-IOS -GTS -HTS -VTS -GDS	-IOS -DGS -GTS -HTS	-DGS -GTS -HTS	-HTS	-GTS	-DKR	-GTS
ATTITUDE		-XLV +ZVV					-IOS -GTS -XLV +ZVV		
MBE OPS	RUN 1	TERM/INIT				RUN 2		TERM	
NOTES:		Δ CONCAP TLM DSBL Δ CONCAP TLM ENA							SLACK IN MBE SCHEDULING = 17 MIN (NON-CRITICAL SCI)

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
206:02:33 / 206:14:33	004:12:00 / 005:00:00	205:21:33 / 206:09:33	6 / 206 GMT	12.5		JULY 24, 1995	STS-69	FINAL	05-30-95				
CDT :205 FD :05 MET :004	12 22 23	0 CDT:206 14FD:06 15	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0					MET:005				
CDR	SLEEP	POST SLEEP	DSO 4833 POST SLEEP	POST SLEEP		NC6 MULT AXIS RCS BURN	EXERCISE (DSO 624)	PAO EVENT	MEAL	DSO 492B			
PLT	SLEEP	POST SLEEP	DSO 4833 POST SLEEP	POST SLEEP		PSM EITD VUD OPK 2	MULT AXIS RCS BURN	POM PI TSD V O 2	SLAMMD	P/TV03 SETUP PAO	PAO SUPPORT	MEAL	EXERCISE (DSO 608)
MS1	SLEEP	POST SLEEP	DSO 4833 POST SLEEP	POST SLEEP	PL CHECKS	FILTER CLEANING	ECC C/O	FD REVIEW	P/TV02 SETUP CREW	MEAL	CREW CHOICE D/L	REVIEW DSO 492B	DSO 492B SUBJECT
MS2	SLEEP	POST SLEEP	DSO 4833 KCA OPS	POST SLEEP			WSF MONITOR			MEAL		REVIEW DSO 492B	
MS3		WSF MONITOR			ST PE AMP	EXERCISE (DSO 624)	ECC C/O	FD REVIEW		MEAL	WSF MONITOR		
DAY/NIGHT	[Day/Night Cycle]												
ORBIT	71	72	73	74	75	76	77	78	79				
TDRS	[TDRS Coverage]												
CONT COVERAGE	[Coverage Details]												
ATTITUDE	-XLV +ZVV												
MBE OPS	--INIT* RUN 3* TERM/INIT* RUN 4* TERM/INIT*												
NOTES:	<p>*BEGIN CREW MONITORING OF WSF CRITICAL SCIENCE MET 4/12:00</p> <p>◎DSO 483 BACK PAIN ∇ CONCAP TLM DSBL ◎GAP SET 6 ■ PCS CONFIG ◎DSO 492B BLOOD ANALYZER</p> <p> ∇ CONCAP TLM ENA △ EPICS DEACT ◎CABIN TEMP CNTL RECONF ■ HTR CONFIG ▶ DSO 492B SUBJECT</p> <p> ◎DT0 914 SLAMMD</p> <p> ◎DT0 672 EMU CUFF C/L</p>												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
206:14:33/ 207:02:33	005:00:00/ 005:12:00	206:09:33/ 206:21:33	6/206 GMT	14.2		JULY 25, 1995	STS-69	FINAL	05-30-95
CDT :206 FD :06 MET :005	0 10 11 12 13 14 15 16 17 18 19 20 11 21 12								
CDR	DSO 492B	NC7 MULT AXIS RCS BURN	PRE SLEEP	CONF PRIV FAM	PRE SLEEP	SLEEP (7.5 HR)			
PLT	EXERCISE (DSO 608)	MULT AXIS RCS BURN	PRE SLEEP		SLEEP (7.5 HR)				
MS1	EXERCISE (DSO 624)	PL CHECKS	PRE SLEEP		SLEEP (7.5 HR)				
MS2	EXERCISE (DSO 624)		WSF MONITOR		PRE SLEEP	SLEEP			
MS3	WSF MONITOR		PRE SLEEP		SLEEP				
DAY/NIGHT	[Day/Night Cycle Diagram]								
ORBIT	79 80 81 82 83 84 85 86 87								
TDRS	[TDRS Coverage Diagram]								
CONT COVERAGE	-DGS -GTS -CTS -MIL -HTS -VTS -GDS -IOS -DGS -GTS -HTS -GTS -DKR								
ATTITUDE	-XLV +ZVV								
MBE OPS	5* TERM/INIT* RUN 6* TERM* INIT RUN 7 TERM CHAMS/MBE SHUTDN								
NOTES:	@DSO 492B BLOOD ANALYZER ▶ DSO 492B SUBJECT Δ CONCAP TLM DSBL Δ CONCAP TLM ENA *END CREW MONITORING OF WSF CRITICAL SCIENCE MET 5/06:00								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE		
207:02:33/ 207:14:33	005:12:00/ 006:00:00	206:21:33/ 207:09:33	7/206 CDT	16.0		JULY 25, 1995	STS-69	FINAL	05-30-95		
CDT :206 FD :06 MET :005	22 23	0 1	2 3	4 5	6 7	8 9	0 MET:006				
CDR	SLEEP (7.5 HR)	POST SLEEP	POST SLEEP	WSF RETRIEVE	PLUME TEST						
PLT	SLEEP (7.5 HR)	POST SLEEP	POST SLEEP	WSF RETRIEVE	PLUME TEST						
MS1	SLEEP (7.5 HR)	POST SLEEP	POST SLEEP	KCA OPS	POST SLEEP	PL CHECKS	EXERCISE (DSO 624)	P/TVO5 SETUP WSF	MEAL	WSF RETRIEVE	PLUME TEST
MS2		SLEEP	POST SLEEP	POST SLEEP	WSF RETRIEVE	PLUME TEST					
MS3	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	ST PE AM RP T AN	WSF RETRIEVE	PLUME TEST				
DAY/NIGHT											
ORBIT	87	88	89	90	91	92	93	94			
TDRS	E	W									
CONT COVERAGE	-GTS	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR
ATT	-XLV +ZVV										
CAPL											
NOTES:											

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
207:14:33 / 208:02:33	006:00:00 / 006:12:00	207:09:33 / 207:21:33	7 / 207 GMT	17.8		JULY 26, 1995	STS-69	FINAL	05-30-95
CDT :207 FD :07 MET :006									
CDR	PLUME TEST ZLV MNV R PG WR RP DB DOWN								
PLT	PLUME TEST								
MS1	PLUME TEST WAS PI E I N I T								
MS2	PLUME TEST GRAPPLE V								
MS3	PLUME TEST APA DWP ARC C SOA FC FIT								
DAY/NIGHT	[Day/Night Cycle Diagram]								
ORBIT	95 96 97 98 99 100 101 102								
TDRS	[TDRS Coverage Diagram]								
CONT COVERAGE	GTS --MIL --DGS --GDS --VTS --IOS --DGS --GTS --HTS --DGR --GTS								
ATTITUDE	-ZLV BIAS +YVV -XLV -YVV								
CAPL	EL								
IEH									
NOTES:	▽ CONCAP TLM DSBL ▽ CONCAP TLM ENA ⊙ AUTO FC PURGE ⊙ -XLV, -YVV								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE							
208:02:33 / 208:14:33	006:12:00 / 007:00:00	207:21:33 / 208:09:33	8 / 208 GMT	19.6		JULY 26, 1995	STS-69	FINAL	05-30-95							
CDT :207 FD :07 MET :006	12	22	23	0	CDT:208	1	2	3	4	5	6	7	8	9	0	MET:007
CDR	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	CHAWS NIGHT OPS 1	CHAWS DAY OPS 1	CHAWS NIGHT OPS 1	EXERCISE (DSO 624)	MEAL	MEAL	MEAL	10.2 DEPRESS	10.2 DEPRESS	OMS BURN	
PLT	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	CHAWS NIGHT OPS 2	CHAWS DAY OPS 2	CHAWS NIGHT OPS 3	EXERCISE (DSO 608)	MEAL	MEAL	MEAL	10.2 DEPRESS	10.2 DEPRESS	OMS BURN	
MS1	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	CHAWS NIGHT OPS 1	CHAWS DAY OPS 1	CHAWS NIGHT OPS 2	CHAWS MONITOR	MEAL	MEAL	MEAL	10.2 DEPRESS	10.2 DEPRESS	OMS BURN	
MS2	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	CHAWS NIGHT OPS 1	CHAWS DAY OPS 1	CHAWS NIGHT OPS 2	CHAWS DAY OPS 2	CHAWS NIGHT OPS 3	MEAL	MEAL	10.2 DEPRESS	10.2 DEPRESS	OMS BURN	
MS3	SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	CHAWS NIGHT OPS 1	CHAWS DAY OPS 1	CHAWS NIGHT OPS 2	CHAWS DAY OPS 2	CHAWS NIGHT OPS 3	MEAL	MEAL	10.2 DEPRESS	10.2 DEPRESS	OMS BURN	
DAY/NIGHT																
ORBIT																
TDRS																
CONT COVERAGE																
ATTITUDE																
CAPL																
IEH																
NOTES:	@DSO 483 BACK PAIN ∇ CONCAP TLM DSBL @DSO 483 BACK PAIN ∇ CONCAP TLM ENA @-XLV, -YVV @DTO 831 MPD ▶ RMS TO CHAWS @-XLV, BIAS +YVV @-XLV BIAS -ZVV @GAP SET 7 ▶ RMS TO RETURN FLUX ∇ EPICS DEACT															

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
208:14:33/ 209:02:33	007:00:00/ 007:12:00	208:09:33/ 208:21:33	8/208 GMT	21.4	●	JULY 27, 1995	STS-69	FINAL	05-30-95
CDT :208 FD :08 MET :007									
CDR	OMS 5 BURN	OMS 6 BURN	-ZLV MNV BR	CONCAP TLM DSBL CONCAP TLM ENA	PRE SLEEP	PRE SLEEP			SLEEP
PLT	OMS 5 BURN	OMS 6 BURN	PRE SLEEP	PRE SLEEP					SLEEP
MS1	AIRLOCK	EXERCISE (DSO 624)	PRE SLEEP						SLEEP
MS2	EXERCISE (DSO 624)		PRE SLEEP						SLEEP
MS3	AIRLOCK	EXERCISE	PRE SLEEP						SLEEP
DAY/NIGHT	[Day/Night Cycle Diagram]								
ORBIT	[Orbit Diagram]								
TORS	[TORS Diagram]								
CONT COVERAGE	[Coverage Diagram]								
ATTITUDE	[Attitude Diagram]								
CAPL	[CAPL Diagram]								
IEH	[IEH Diagram]								
NOTES:	⊕ -ZLV BIAS +YVV ⊕ -XLV, +ZVV Δ CONCAP TLM DSBL Δ CONCAP TLM ENA								


GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
209:02:33 / 209:14:33	007:12:00 / 008:00:00	208:21:33 / 209:09:33	9 / 209 GMT	23.3	●	JULY 27, 1995	STS-69	FINAL	05-30-95				
CDT :208 FD :09 MET :007	12 22	23 0	CDT:209 1	2	3	4	5	6	7	8	9	0 MET:008	
CDR	SLEEP	POST SLEEP				OFF DUTY	MEAL			GLO PRCS TEST	GLO PF TEST	GLO VRCS TEST	
PLT	SLEEP	POST SLEEP	1M OA 2N T	POST SLEEP	MNV R +Y STAR	OFF DUTY	MEAL			GLO PRCS TEST	GLO PF TEST	GLO VRCS TEST	+XLV MNV R
MS1	SLEEP	POST SLEEP		DON HOLTER		EMU C/O	M P I D D E C K	OFF DUTY	MEAL				P O L C H E C K S
MS2	SLEEP	POST SLEEP	KCA OPS	PS O L S E T E P				OFF DUTY	MEAL			EXERCISE (DSO 624)	
MS3	SLEEP	POST SLEEP		ST P E A M R P I T A N	P L C H E C K S	EMU C/O	M P I D D E C K	OFF DUTY	MEAL				P O L C H E C K S
DAY/NIGHT	[ORBIT GRAPH]												
ORBIT	118	119	120	121	122	123	124	125	126				
TDRS	[TDRS GRAPH]												
CONT COVERAGE	-DKR, -BDA, -DGR, -IOS, -MIL, -GDS, -VTS, -HTS, -GTS, -MIL, -VTS, -GDS, -HTS, -GDS												
ATTITUDE	-XLV +ZVV, +Y STAR, +Y STAR, +Y STAR, +Y STAR, PF TEST, PRCS TEST, PF TEST												
CAPL	CAPL, EL, UVSTAR, UVSTAR, UVSTAR, UVSTAR, PRCS, IPFI, IVRCS												
IEH													
NOTES:	@DSO 482 CARDIAC RHYTHM DURING EVA ▽ CONCAP TLM DSBL ▽ CONCAP TLM ENA @DSO 494 PULMONARY O2 EXCHANGE @+XLV -YVV @+ZLV, -YVV @+XLV -YVV @+ZLV, -YVV												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
209:14:33 / 210:02:33	008:00:00 / 008:12:00	209:09:33 / 209:21:33	9 / 209 GMT	25.2	●	JULY 28, 1995	STS-69	FINAL	05-30-95
CDT :209 FD :09 MET :008									
CDR	GLO PF TEST	CREW CONF	P/T VO 4	OPS	PRE SLEEP	PRE SLEEP			SLEEP
PLT	GLO PF TEST	CREW CONF	P/T VO 4	OPS	PRE SLEEP				SLEEP
MS1	PL CHECKS	CREW CONF	P/T VO 4	OPS	PRE SLEEP				SLEEP
MS2		CREW CONF	P/T VO 4	OPS	PRE SLEEP				SLEEP
MS3	PULMONARY EXCHANGE	CREW CONF	P/T VO 4	OPS	PRE SLEEP	PRE SLEEP			SLEEP
DAY/NIGHT	[Day/Night Cycle Bar]								
ORBIT	126	127	128	129	130	131	132	133	134
TDRS	[TDRS Coverage Bar]								
CONT COVERAGE	MIL	-DGS	GDS	-IOS	-DGS	-GTS	-HTS	-GTS	-DKR
ATTITUDE		-HTS	-VTS	-GTS	-HTS	-IOS	-XLV +ZVV	-GTS	-DKR
CAPL		-XLV BIAS +YVV					CAPL		
IEH	IPF1							EL	
NOTES:	@DSO 494 PULMONARY O2 EXCHANGE @-XLV +ZVV ▽ CONCAP TLM DSBL @-XLV, BIAS +YVV ▽ CONCAP TLM ENA								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
210:02:33 / 210:14:33	008:12:00 / 009:00:00	209:21:33 / 210:09:33	10/210 GMT	27.0	●	JULY 28, 1995	STS-69	FINAL	05-30-95	
CDT :209 FD :10 MET :008									MET:009	
CDR	POST SLEEP	POST SLEEP		GLO OG ROLL TEST		EXERCISE (DSO 624)		MEAL		
PLT	POST SLEEP	POST SLEEP	EVA PREP	EMU PURGE/PB			EVA SUPPORT		POST EVA	
MS1	POST SLEEP	POST SLEEP	DOFF HOLTER	EVA PREP	EMU PURGE/PB			EVA	POST EVA	
MS2	POST SLEEP	POST SLEEP		FILTER CLEANING			EVA SUPPORT			
MS3	POST SLEEP	POST SLEEP	EVA PREP	EMU PURGE/PB			EVA		POST EVA	
DAY/NIGHT ORBIT	134	135	136	137	138	139	140	141		
TDRS										
CONT COVERAGE	-DKR	-DGS	-MIL -BDA -DKR	-DGS	-MIL -BDA -DKR	-DGS	-DKR -IOS -DGS	-GDS -CTS -MIL -HTS-BDA -VTS-DKR	-GDS -CTS -MIL -HTS -VTS	-GTS -MIL -DGS -CTS
ATTITUDE	-XLV +ZVV	-ZLV BIAS +YVV		-OG TEST		+ZSI		-ZLV -YVV		IOG TEST
CAPL	CAPL						CAPL			
IEH	EL									
NOTES:	@DSO 483 BACK PAIN ▶ CONCAP TLM DSBL @-ZLV BIAS +YVV ▶ CONCAP TLM ENA ▶ FC PURGE HTR ON @+XLV BIAS -YVV @DSO 482 CARDIAC RHYTHM DURING EVA @MANUAL @RMS HTR ACT @ ECC DONNING (DTO 672)								@-ZLV, -YVV	@+XLV BIAS -YVV

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
210:14:33/ 211:02:33	009:00:00/ 009:12:00	210:09:33/ 210:21:33	10/210 GMT	28.9	●	JULY 29, 1995	STS-69	FINAL	05-30-95
CDT :210 FD :10 MET :009									
CDR	147 REPPRESS ZLV MNYV BR	PRE SLEEP	PROV MED	PRE SLEEP	ZLV MNYV BR	PRE SLEEP			SLEEP
PLT	POST EVA			PRE SLEEP					SLEEP
MS1	POST EVA DON HOLTER	PULMONARY O2 EXCHANGE ERMOUG BIAITIT	EVA QUEST	PRE SLEEP					SLEEP
MS2	147 REPPRESS CHECKS	PL WALSMITH INIT	STOP AMTC ENVAIG	PRE SLEEP	WALSMITH TERM	PRE SLEEP			SLEEP
MS3	POST EVA PULMONARY	O2 EXCHANGE ERMOUG BIAITIT	EVA QUEST	PRE SLEEP					SLEEP
DAY/NIGHT									
ORBIT	142	143	144	145	146	147	148	149	
TDRS	E W								
CONT COVERAGE	HTS VTS GDS	GTS HTS VTS	GTS HTS	HTS	HTS IOS GTS	IOS GTS	GTS	DKR	
ATTITUDE		DGS IOS	IOS DGS	DGS	GTS		GTS	DKR	
CAPL									
IEH									
NOTES:	GLO OG ROLL TEST ▶ CONCAP TLM ENA @DSO 482 CARDIAC RHYTHM DURING EVA @DSO 494 PULMONARY O2 EXCHANGE @-ZLV BIAS +YVV @-XLV +ZVV ▶ CONCAP TLM DSBL								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
211:02:33 / 211:14:33	009:12:00 / 010:00:00	210:21:33 / 211:09:33	11/211 GMT	30.7		JULY 29, 1995	STS-69	FINAL	05-30-95
CDT :210									
FD :11									
MET :009									MET:010
CDR	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
PLT	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
MS1	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
MS2	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
MS3	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP
DAY/NIGHT	[Day/Night Cycle Diagram]								
ORBIT	[Orbit Diagram]								
TDRS	[TDRS Coverage Diagram]								
CONT COVERAGE	[Coverage Diagram]								
ATTITUDE	[Attitude Diagram]								
CAPL	[CAPL Diagram]								
IEH	[IEH Diagram]								
NOTES:	<p> @DSO 483 BACK PAIN @-ZLV BIAS +YVV ■ RAD OUT HI ▽ CONCAP TLM DSBL ▴ APU HTR ACT ■ RAD OUT NORM W/FES @+XLV -YVV @-ZLV BIAS +YVV @+ZLV, -YVV @GAP SETS 8,9 ■ APU HTR RECONFIG @+ZLV, -YVV @DSO 482 CARDIAC RHYTHM DURING @+ZLV, -YVV @-ZSI MNVR INIT ■ FC PURGE HTR ON Δ CONCAP TLM DSBL @D70 700-8 GPS Δ CONCAP TLM ENA @-ZLV BIAS +YVV @D70 653 MKI ROWING MACHINE @-ZSI ATTITUDE </p>								

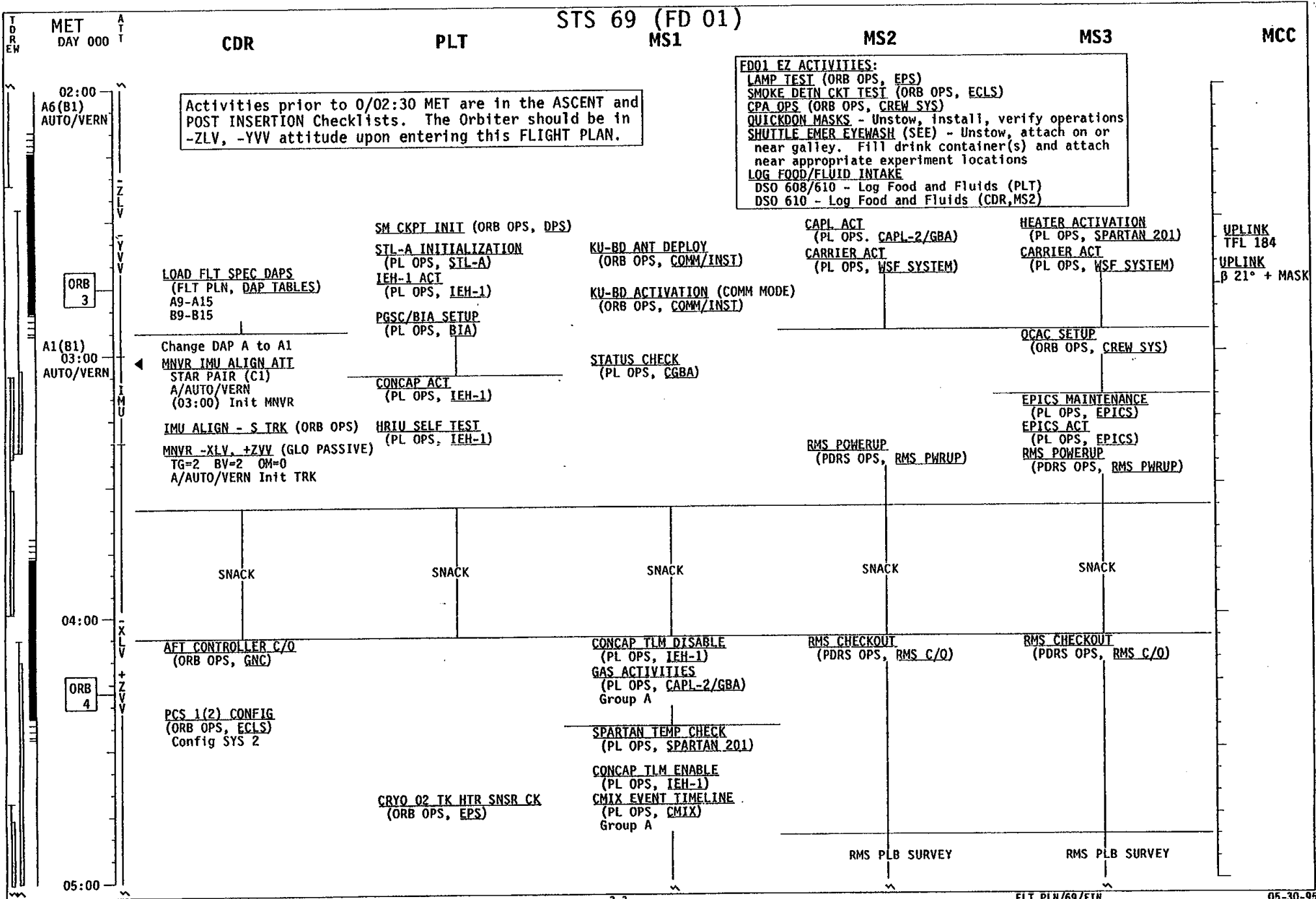
GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
211:14:33 / 212:02:33	010:00:00 / 010:12:00	211:09:33 / 211:21:33	11/211 GMT	32.4		JULY 30, 1995	STS-69	FINAL	05-30-95
CDT :211 FD :11 MET :010	0 10 11 12 13 14 15 16 17 18 19 20 21 12								
CDR	CABIN STOW	PRE SLEEP	PRE SLEEP	PRE SLEEP	SLEEP				
PLT	CABIN STOW	PRE SLEEP	PRE SLEEP	SLEEP					
MS1	CABIN STOW	PRE SLEEP	PRE SLEEP	SLEEP					
MS2	CABIN STOW	PRE SLEEP	PRE SLEEP	SLEEP					
MS3	CABIN STOW	PRE SLEEP	PRE SLEEP	SLEEP					
DAY/NIGHT	[Day/Night Cycle Bar]								
ORBIT	158 159 160 161 162 163 164 165								
TDRS	[TDRS Coverage Bar]								
CONT COVERAGE	-GTS -HTS -VTS -GTS -HTS -IOS -DGS -GTS -HTS -DKR -GTS -DKR -GTS -DKR								
ATTITUDE	-ZLV BIAS +YVV -ZLV -YVV								
CAPL	CAPL								
IEH	IFESI								
NOTES:	■ RAD OUT HI ⊗ -ZLV, -YVV ■ RAD OUT NORM W/FES								

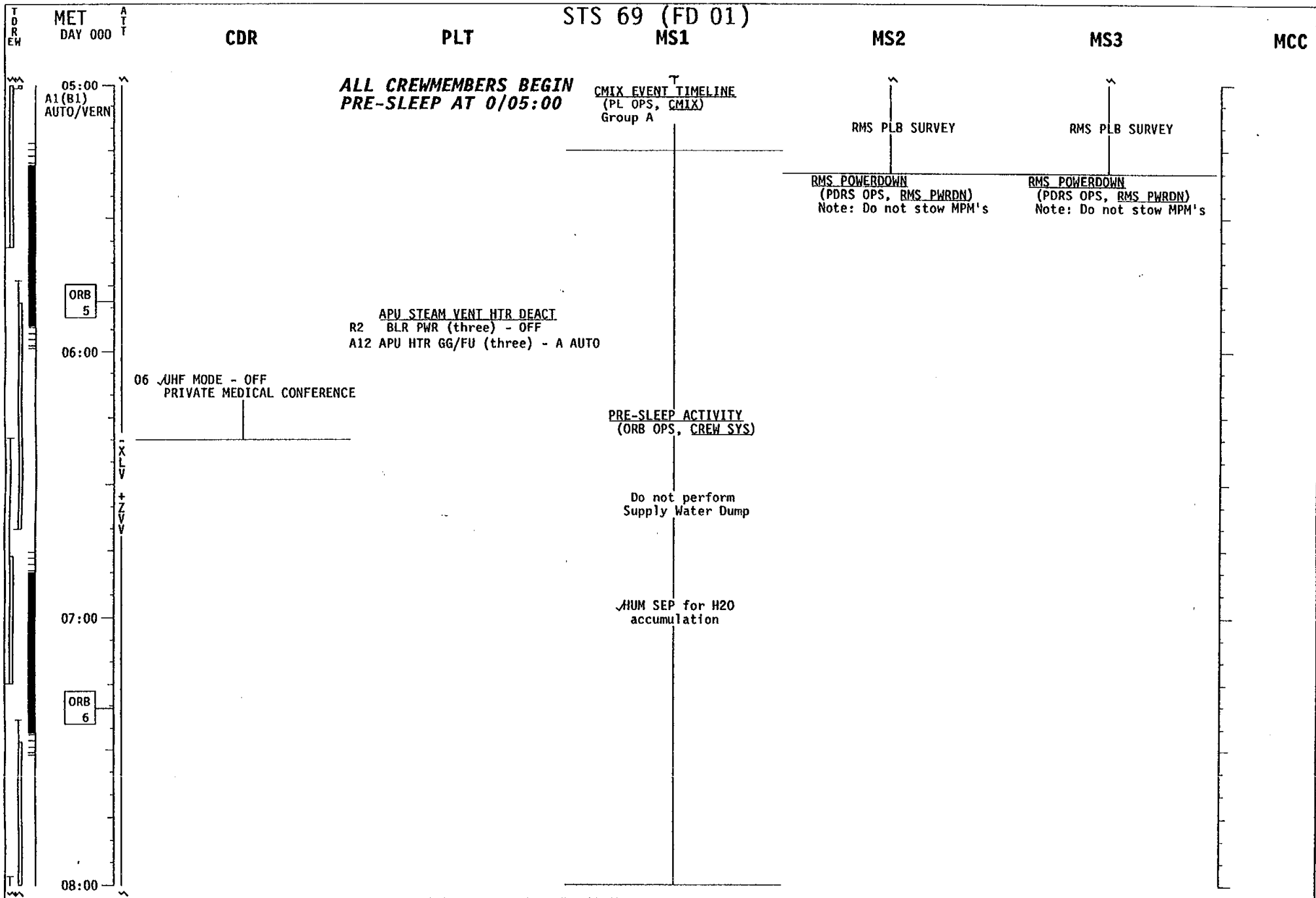
GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE									
212:02:33/ 212:14:33	010:12:00/ 011:00:00	211:21:33/ 212:09:33	12/211 CDT	34.1	☉	JULY 30, 1995	STS-69	FINAL	05-30-95									
CDT :211 FD :12 MET :010	12	22	13	23	0	CDT:212	1	2	3	4	5	6	7	8	9	0	MET:011	
CDR	POST SLEEP	DSO 4333 POST SLEEP	IMU MNVR -ZLV MNVR	POST SLEEP	PRONF MND	-XSI MNVR	DEORBIT PREP	IMU MNVR IMU ALIGN PLBD OPS	DEORBIT PREP									
PLT	POST SLEEP	DSO 4333	POST SLEEP		SLE MND	HE MND			DEORBIT PREP									
MS1	POST SLEEP	DSO 4333	POST SLEEP						DEORBIT PREP									
MS2	POST SLEEP	DSO 4333	POST SLEEP		WST DEACT				DEORBIT PREP									
MS3	POST SLEEP	DSO 4333	POST SLEEP		ST PE AMP TAN	SEC NO TTN NRF YIG	BIA STOW	DEORBIT PREP	IMU ALIGN PLBD OPS	DEORBIT PREP								
DAY/NIGHT	ORBIT		166	167	168	169	170	171	172	173								
TDRS	E W																	
CONT COVERAGE			-DKR	-DGS	-MIL -BDA -DKR	-IOS -DGS	-MIL -BDA -DKR	-IOS -DGS	-BDA -DKR	-VTS -CTS -MIL	-IOS -DGS	-VTS -DKR	-GDS -CTS -MIL	-HTS -BDA	-VTS -DKR	-GDS -CTS -MIL	-HTS -DGS	-GTS -HTS -GDS
ATT			-ZLV	-YVV	-ZLV BIAS	+YVV	IMU/VERIF	-XSI	COMM	BURN	ENTRY							
CAPL																		
NOTES:	◎ AUTO FC PURGE △ CMIX ENTRY PREP ◎ DSO 483 BACK PAIN ▶ CAPL DEACT ◎ -ZLV BIAS +YVV																	
	* DEORBIT BURN 10/19:29 * KSC LANDING 10/20:29 ○ DEORBIT PREP																	

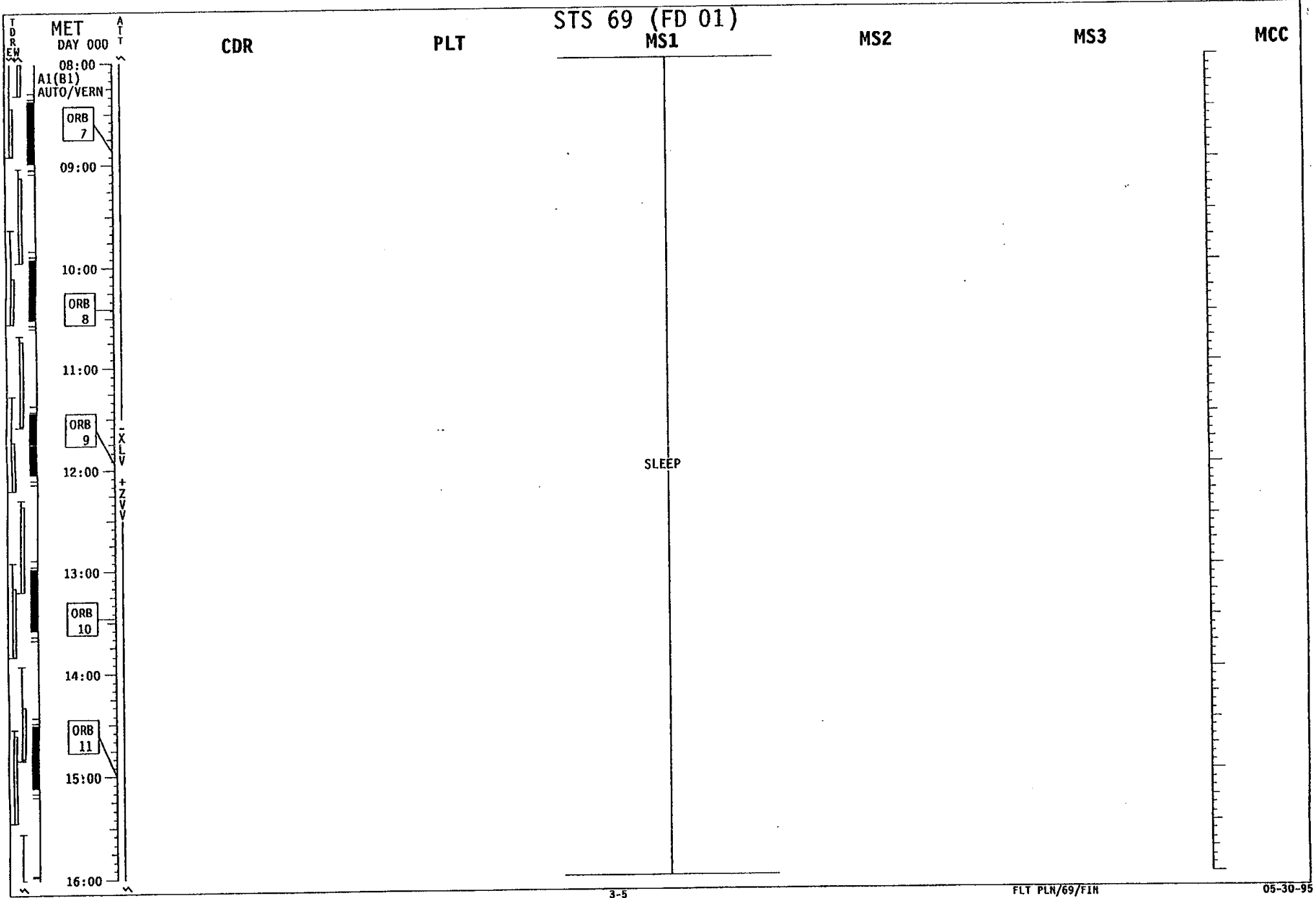
DETAILED TIMELINE

**DETAILED
TIMELINE**

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MET
DAY 000

A
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STS 69 (FD 02)
MS1

CDR

PLT

MS2

MS3

MCC

16:00
A1(B1)
AUTO/VERN

ORB
12

17:00

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

◀ MNVR -ZLV, BIAS +YVV (H2O DUMP)
TG=2 BV=3 OM=250
A/AUTO/VERN
(17:30) Init TRK

IMU ALIGN - S TRK (ORB OPS)
Steps 2-6

18:00

ORB
13

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

KCA SETUP
(ORB OPS, DTO 679)
Reference GPS ACT
(ORB OPS, DTO 700-8),
SETUP, for PGSC setup
if req'd

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Initiate Supply Dump

UPDATE
H2O SPLY
DUMP QTY
TK A & B

KCA OPERATIONS
(ORB OPS, DTO 679)
Prep CONCAP files
Config PDIP DIGITAL CAM
RATE HIGH

KCA XFER
SPOC UPDATES
FAMILY MAIL
CONCAP, DTO
TEST FILES

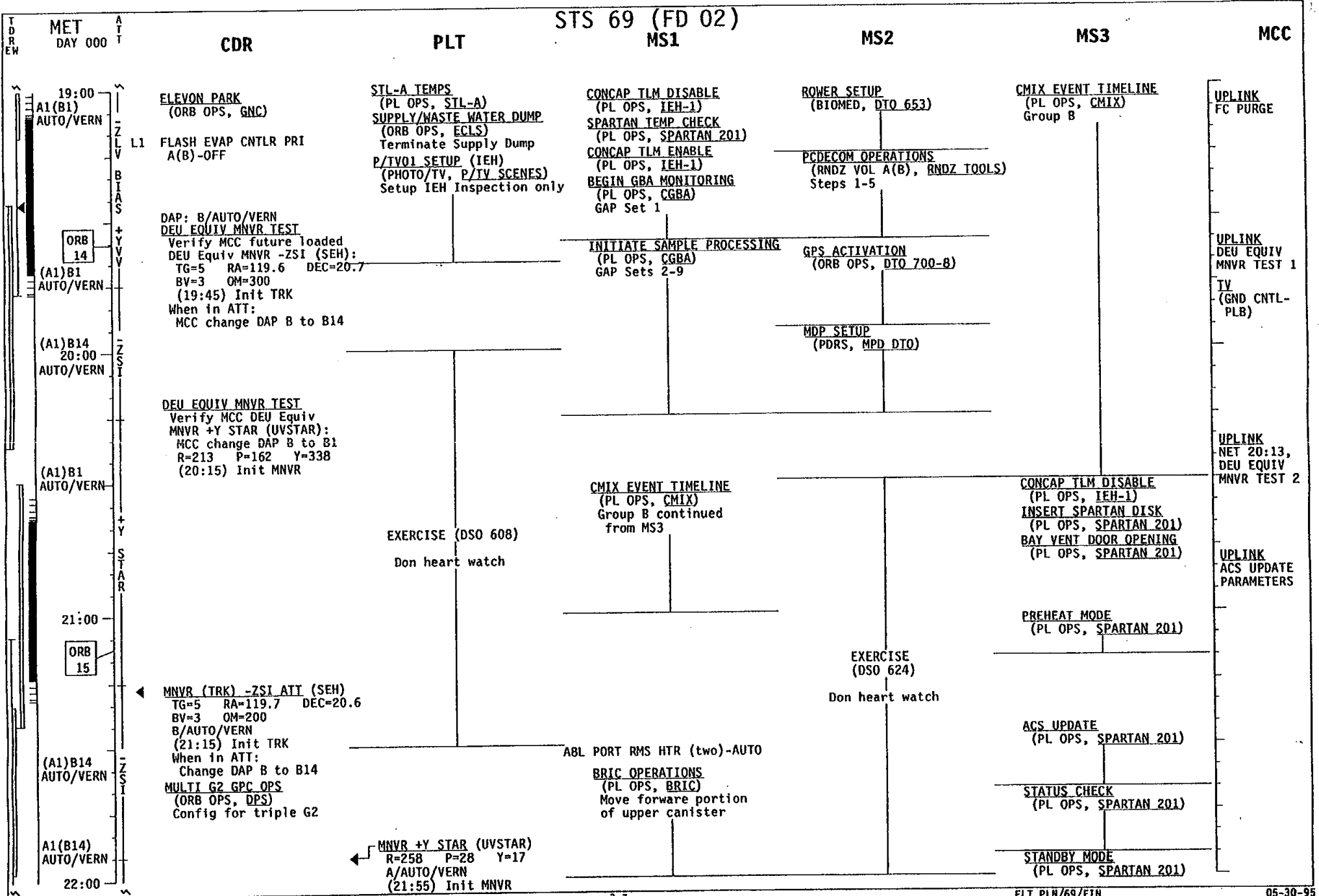
19:00

**ALL CREWMEMBERS END
POST-SLEEP AT 0/19:00**

FDO2 EZ ACTIVITIES:
CPA OPS (ORB OPS, CREW SYS)
QCAC FILTER INSPECT
CYCLE ERGOMETER NOM OPS (BIOMED, ERGO NOM OPS) Step A
MEM OPS/486 (ORB OPS FS, DTO 656) as time permits
SLAMMD (BIOMED, DTO 914) as time permits (ALL CREW)
LOG FOOD/FLUID INTAKE + EXERCISE
DSO 608/610 - Log Food, Fluids and Exercise (PLT)
DSO 610/624 - Log Food, Fluids and Exercise (CDR,MS2)
DSO 624 - Log Exercise (MS1)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)



STS 69 (FD 02)

MET DAY 000

CDR

PLT

MS1

MS2

MS3

MCC

ATT
STAR
ZSI
SPRTN
DPY

22:00
A1(B14)
AUTO/VERN

ORB
16

23:00
(A1)B14
AUTO/VERN

(A1)B1
AUTO/VERN

001
00:00

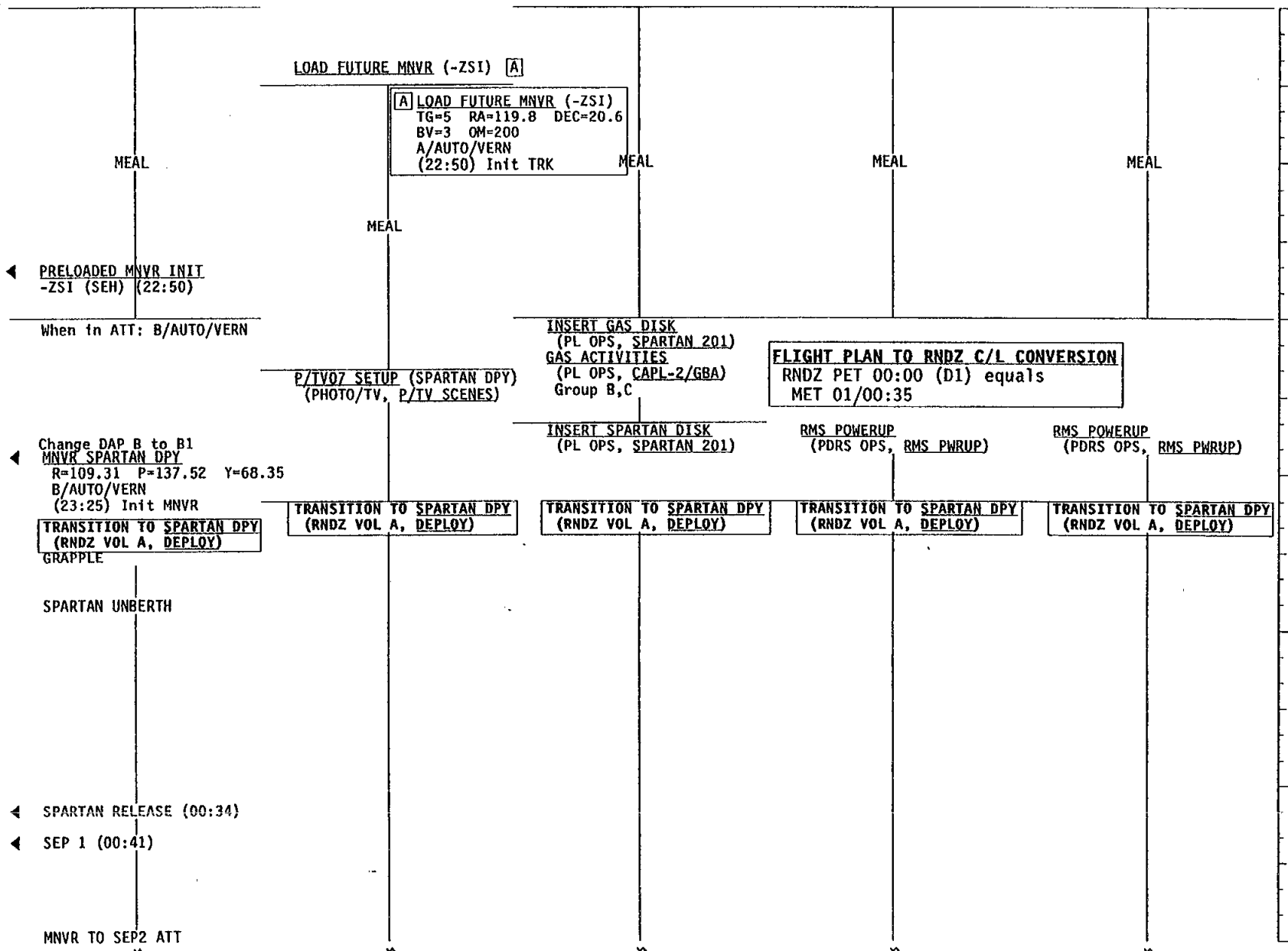
A9(B1)
ORB
17

A10(B9)
AUTO/VERN

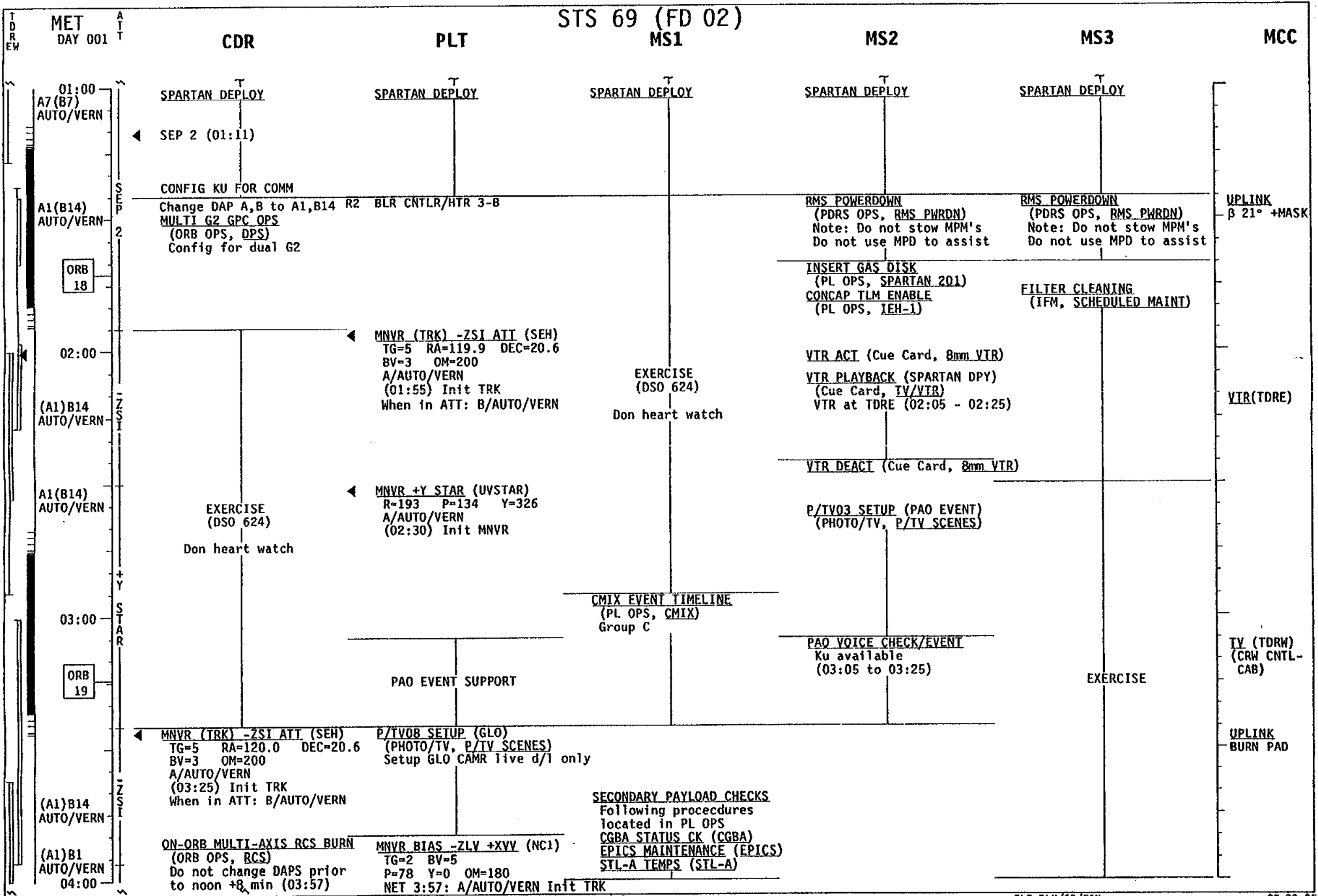
(A7)B9
AUTO/VERN
FREE/VERN

(A7)B8
AUTO/VERN
A7(B8)
A7(B7)

01:00



FLIGHT PLAN TO RNDZ C/L CONVERSION
RNDZ PET 00:00 (D1) equals MET 01/00:35



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D
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MET
DAY 001

A
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STS 69 (FD 02)

CDR

PLT

MS1

MS2

MS3

MCC

04:00
(A1)B1
AUTO/VERN

ON-ORB MULTI-AXIS RCS BURN

ON-ORB MULTI-AXIS RCS BURN

ALL CREWMEMBERS BEGIN
PRE-SLEEP AT 1/04:00

◀ NC1 TIG (04:15)

A1(B1)
AUTO/VERN

N
C
1

ORB
20

06 JHF MODE - OFF
PRIVATE MEDICAL CONF

A1(B14)
AUTO/VERN

◀ Change DAP B to B14
MNVR (TRK) -ZSI ATT (SEH)
TG=5 RA=120.0 DEC=20.6
BV=3 OM=20
A/AUTO/VERN
(04:55) Init TRK
When in ATT: B/AUTO/VERN

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
Supply H2O Dump

(A1)B14
AUTO/VERN

N
C
1

A1(B14)
AUTO/VERN

◀ TOPPING FES STARTUP
(ORB OPS, ECLS)
MNVR +Y JUPITER (UVSTAR)
R=160.1 P=190.5 Y=22.7
A/AUTO/VERN
(05:35) Init MNVR

LOAD FUT MNVR [A]

JHM SEP for H2O
accumulation

[A] LOAD FUTURE MNVR (UVSTAR PROTECT)
TG=5 RA=150 DEC=-80
BV=3 OM=160
A/AUTO/VERN (06:25) Init TRK

06:00

J
U
P
I
T
E
R

ORB
21

◀ PRELOADED MNVR INIT
UVSTAR PROTECT (06:25)

07:00

U
V
S
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A
R

A
D
D
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I
O
N

STS 69 (FD 02)

CDR

PLT

MS1

MS2

MS3

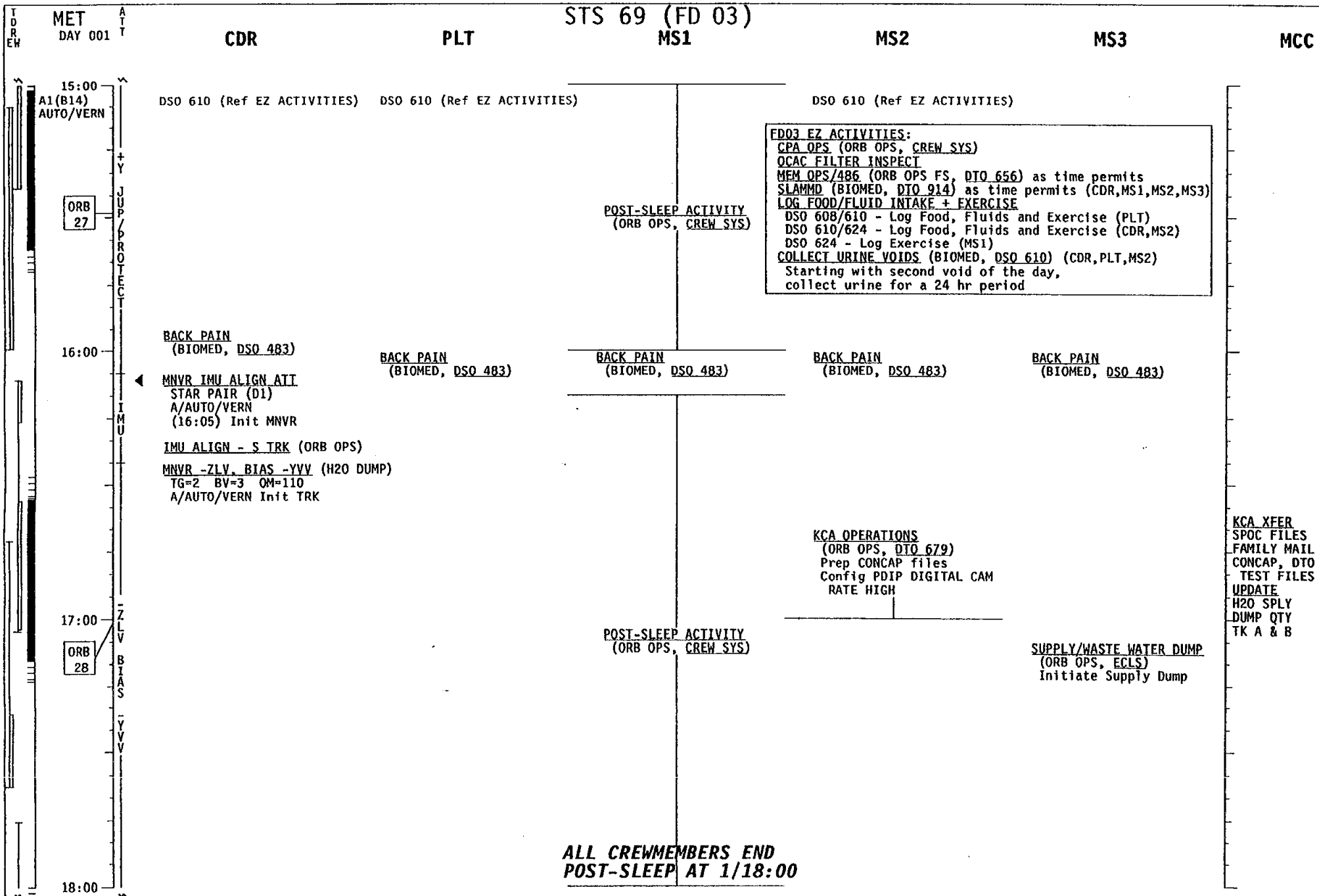
MCC

MET DAY 001
 07:00
 A1(B14)
 AUTO/VERN
 ORB 22
 08:00
 ORB 23
 09:00
 ORB 24
 10:00
 11:00
 ORB 25
 12:00
 13:00
 ORB 26
 14:00
 15:00

DEU EQUIV MNVR INIT SCHEDULE

MNVR INIT	FUTURE LOADED	MNVR	UPLINK
1/07:10		+Y JUPITER	Init MNVR
1/08:00	YES	UVSTAR PROTECT	Init TRK
1/08:40		+Y JUPITER	Init MNVR
1/09:40	YES	UVSTAR PROTECT	Init TRK
1/10:10		+Y JUPITER	Init MNVR
1/11:00	YES	UVSTAR PROTECT	Init TRK
1/11:50		+Y JUPITER	Init MNVR
1/12:30	YES	UVSTAR PROTECT	Init TRK
1/13:15		+Y JUPITER	R=209.9 P=10.5 Y=337.3 Init MNVR
1/14:00	YES	UVSTAR PROTECT	TG=5 RA=290 DEC=75 BV=3 OM=210 Init TRK
1/14:50		+Y JUPITER	Init MNVR

SLEEP



STS 69 (FD 03)

MET DAY 001

CDR

PLT

MS1

MS2

MS3

MCC

DSO 610 (Ref EZ ACTIVITIES) DSO 610 (Ref EZ ACTIVITIES)

DSO 610 (Ref EZ ACTIVITIES)

FD03 EZ ACTIVITIES:
 CPA OPS (ORB OPS, CREW SYS)
 OCAC FILTER INSPECT
 MEM OPS/486 (ORB OPS FS, DTO 656) as time permits
 SLAMMD (BIOMED, DTO 914) as time permits (CDR,MS1,MS2,MS3)
 LOG FOOD/FLUID INTAKE + EXERCISE
 DSO 608/610 - Log Food, Fluids and Exercise (PLT)
 DSO 610/624 - Log Food, Fluids and Exercise (CDR,MS2)
 DSO 624 - Log Exercise (MS1)
 COLLECT URINE VOIDS (BIOMED, DSO 610) (CDR,PLT,MS2)
 Starting with second void of the day,
 collect urine for a 24 hr period

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

MNVR IMU ALIGN ATT
STAR PAIR (D1)
A/AUTO/VERN
(16:05) Init MNVR

IMU ALIGN - S TRK (ORB OPS)
 MNVR -ZLV, BIAS -YVV (H2O DUMP)
 TG=2 BV=3 OM=110
 A/AUTO/VERN Init TRK

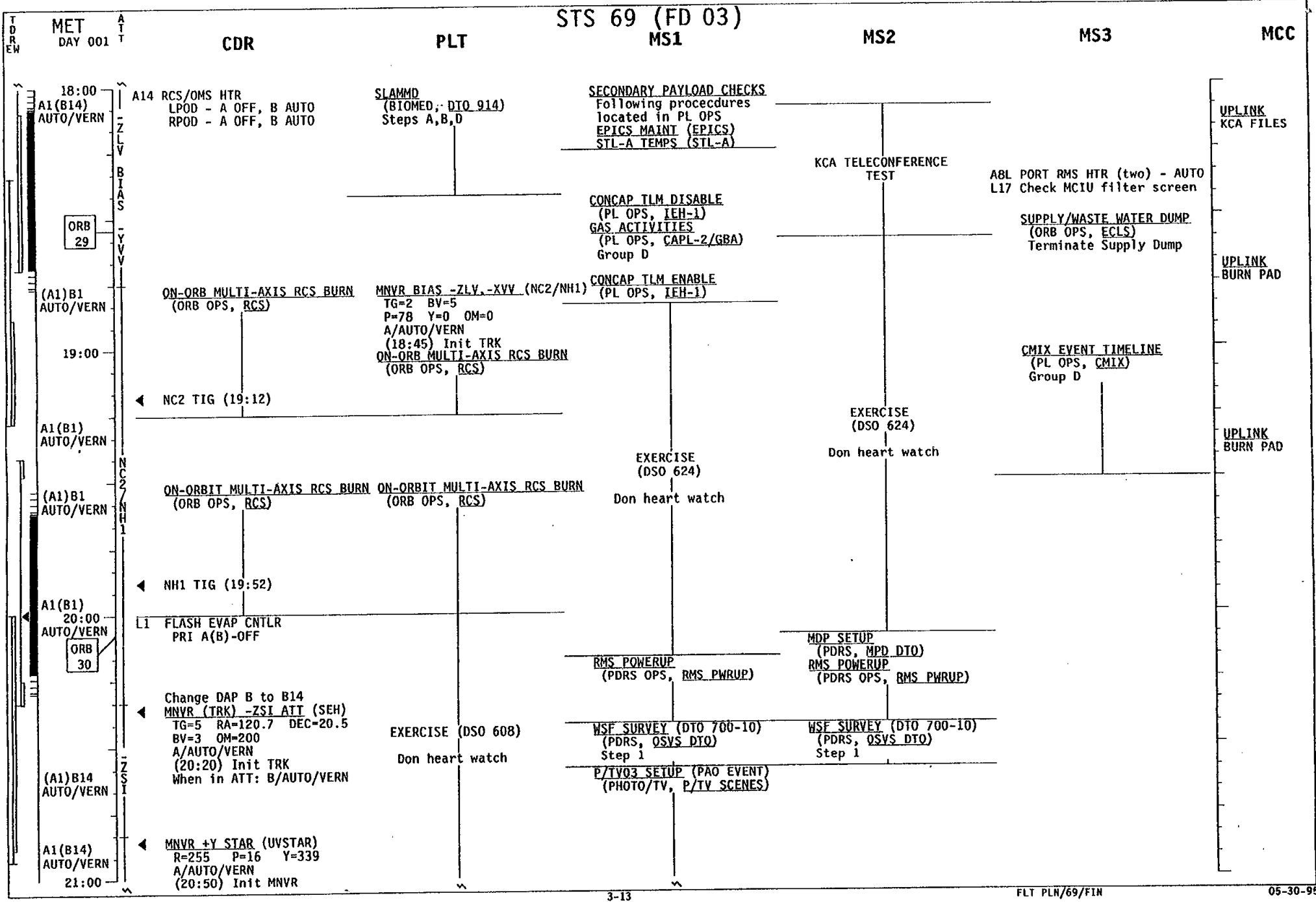
KCA OPERATIONS
(ORB OPS, DTO 679)
 Prep CONCAP files
 Config PDIP DIGITAL CAM
 RATE HIGH

KCA XFER
 SPOC FILES
 FAMILY MAIL
 CONCAP, DTO
 TEST FILES
 UPDATE
 H2O SPLY
 DUMP QTY
 TK A & B

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
 Initiate Supply Dump

ALL CREWMEMBERS END
POST-SLEEP AT 1/18:00



TDR
EWMET
DAY 001

ATT

STS 69 (FD 03)

CDR

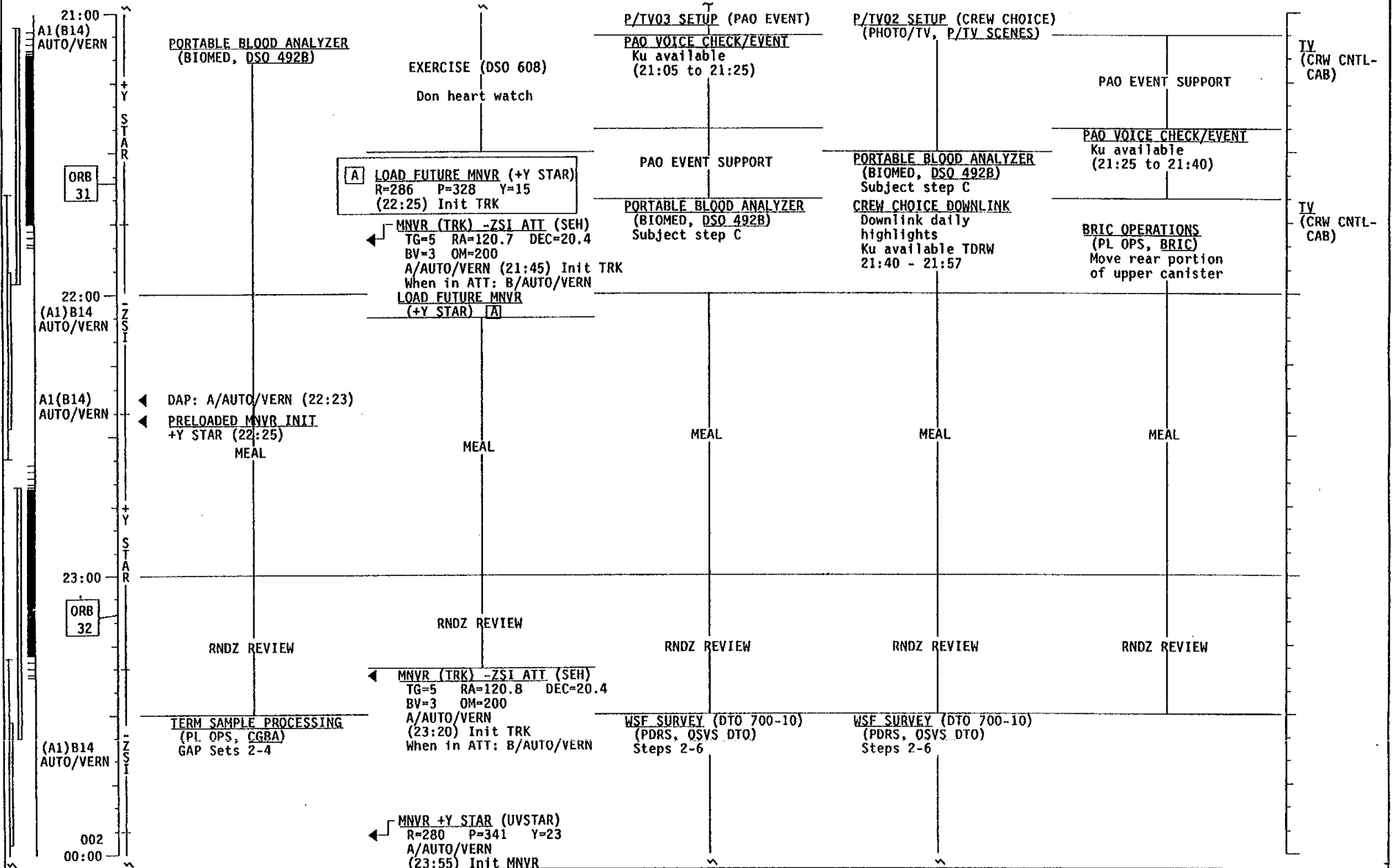
PLT

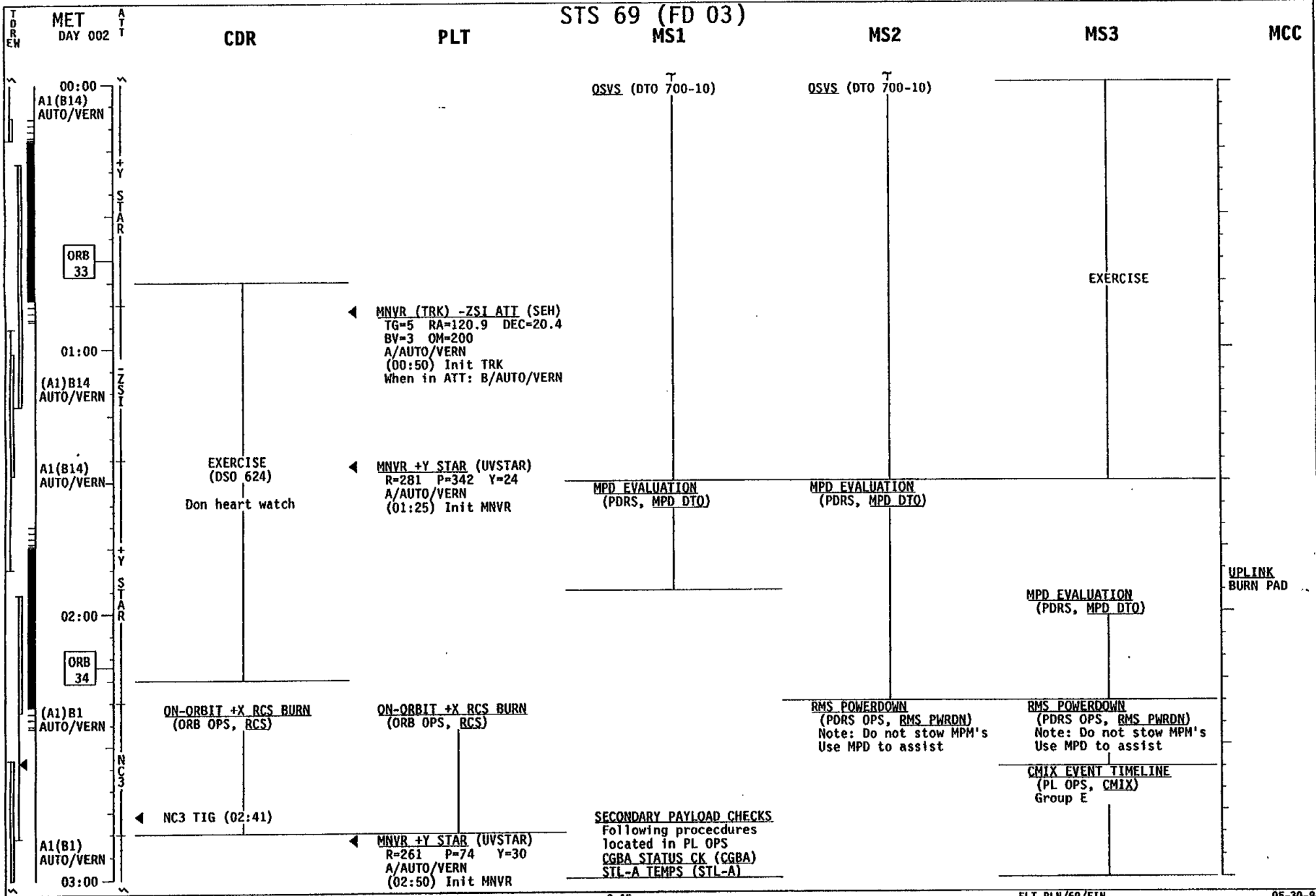
MS1

MS2

MS3

MCC





03:00
 A1(B1)
 AUTO/VERN
 +Y
 STAR
 A1(B14)
 AUTO/VERN
 ORB 35
 (A1)B14
 AUTO/VERN
 04:00
 -Z
 SI
 (A1)B1
 AUTO/VERN
 05:00
 UV
 STAR
 PROTECT
 06:00

**ALL CREWMEMBERS BEGIN
 PRE-SLEEP AT 2/03:00**
P/TV08 SETUP (GLO)
 (PHOTO/TV, P/TV SCENES)
 Setup GLO CAMR live d/1 only

Change DAP B to B14
 MNVR (TRK) -ZSI ATT (SEH)
 TG=5 RA=121.0 DEC=20.4
 BV=3 OM=340
 A/AUTO/VERN
 (03:35) Init TRK
 When in ATT: B/AUTO/VERN

06 JHF MODE - OFF
 PRIVATE MEDICAL CONFERENCE

PRE-SLEEP ACTIVITY
 (ORB OPS, CREW SYS)

Do not perform
 Supply H2O Dump

Change DAP B to B1
 MNVR UVSTAR PROT
 R=342.4 P=340.5 Y=23.2
 B/AUTO/VERN (04:50) INIT MNVR

LOAD DEU EQUIV MNVRS [A]

[A] LOAD DEU EQUIV MNVRS
 Future load +Y JUPITER (UVSTAR)
 R=160.1 P=190.5 Y=22.70
 B/AUTO/VERN (6:05) Init MNVR

STS 69 (FD 03)

CDR

PLT

MS1

MS2

MS3

MCC

MET
DAY 002

06:00
(A1)B1
AUTO/VERN

ORB
37

07:00

DEU EQUIV MNVR INIT SCHEDULE			
MNVR INIT	FUTURE LOADED	MNVR	UPLINK
2/07:05	YES	-ZSI	R=86.6 P=209.9 Y=323.5 Init MNVR When in ATT: Change DAP B to B14
2/07:35		+Y JUPITER	Change DAP B to B1 Init MNVR
2/08:15	YES	UVSTAR PROTECT	R=232.0 P=172.5 Y=331.4 Init MNVR
2/09:10		+Y JUPITER	R=160.1 P=190.5 Y=22.7 Init MNVR
2/10:10	YES	-ZSI	R=86.5 P=209.6 Y=323.4 Init MNVR When in ATT: Change DAP B to B14
2/10:35		+Y JUPITER	Change DAP B to B1 Init MNVR
2/11:30	YES	UVSTAR PROTECT	R=258.9 P=121.6 Y=3.1 Init MNVR
2/12:20		+Y JUPITER	R=160.1 P=190.5 Y=22.7 Init MNVR
2/13:00	YES	UVSTAR PROTECT	R=280.0 P=345.4 Y=341.5 Init MNVR
2/13:45		+Y JUPITER	R=209.9 P=10.5 Y=337.3 Init MNVR

ORB
38

08:00

09:00

ORB
39

10:00

11:00

ORB
40

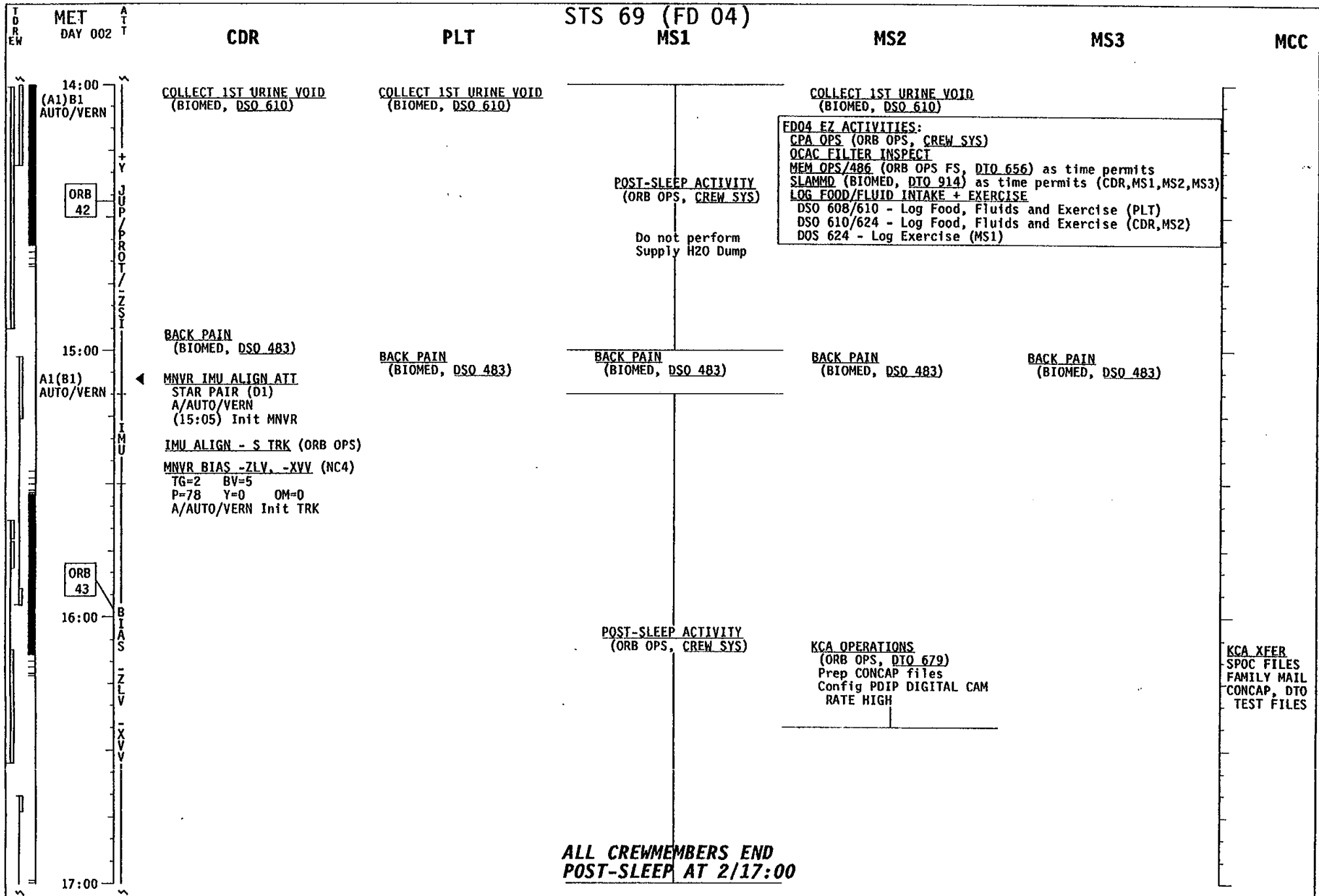
12:00

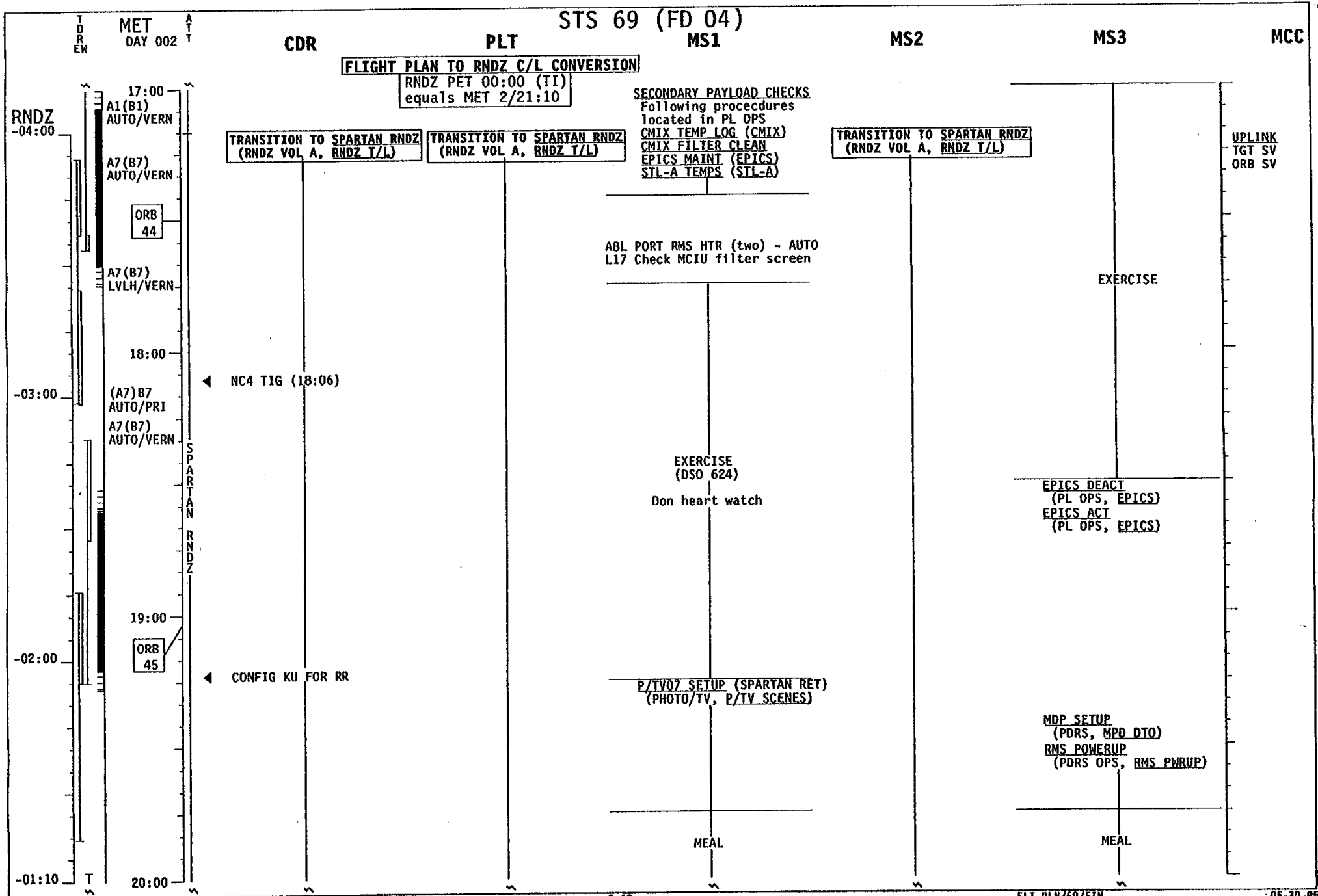
ORB
41

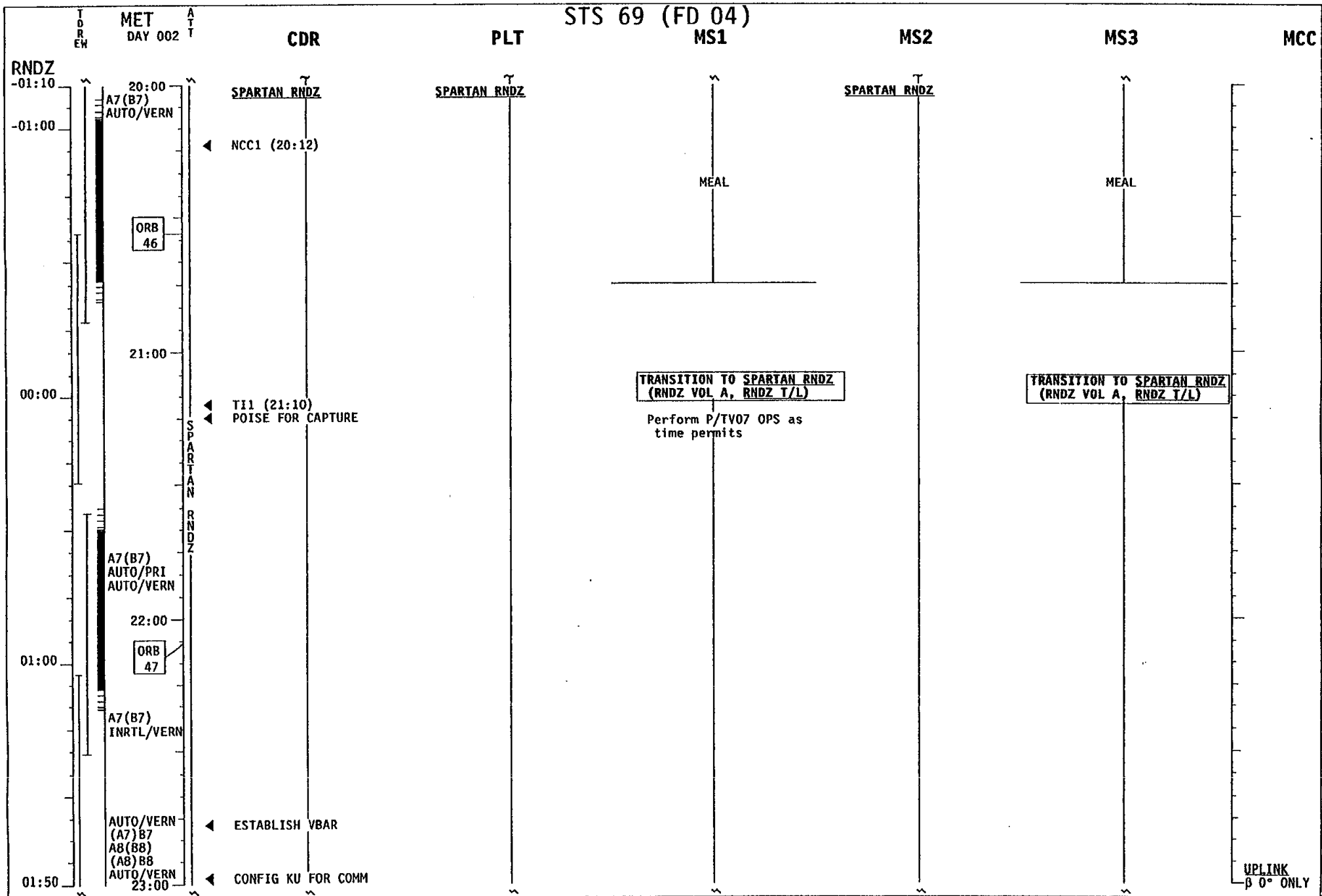
13:00

14:00

SLEEP







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DAY 003

A
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STS 69 (FD 04)

CDR

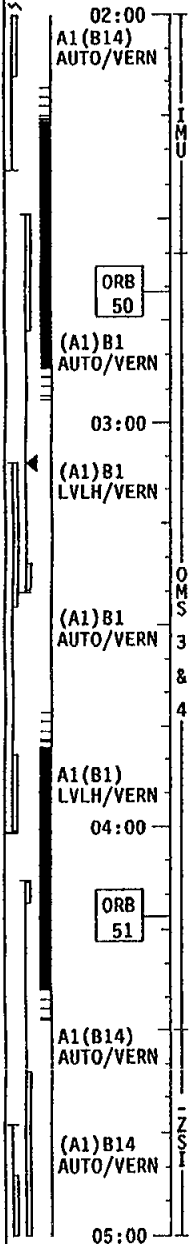
PLT

MS1

MS2

MS3

MCC



MNVR IMU ALIGN ATT
STAR PAIR (D1)
A/AUTO/VERN
(02:00) Init MNVR

IMU ALIGN - S TRK (ORB OPS)

ON-ORBIT OMS BURN
(ORB OPS, OMS)

← OMS 3 TIG (03:01)

DAP: B/LVLH/VERN

ON-ORBIT OMS BURN
(ORB OPS, OMS)

← OMS 4 TIG (03:45)

DAP: A/LVLH/VERN

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

SLAMMD
(BIOMED, DTG 914)
Steps A,B,D

P/TV08 SETUP (GLO)
(PHOTO/TV, P/TV SCENES)
Setup GLO CAMR live d/1 only

ON-ORBIT OMS BURN
(ORB OPS, OMS)

ON-ORBIT OMS BURN
(ORB OPS, OMS)

Change DAP B to B14
MNVR (TRK) -ZSI ATT (SEH)
TG=5 RA=122.0 DEC=20.2
BV=3 OM=200
A/AUTO/VERN
(04:30) Init TRK
When in ATT: B/AUTO/VERN

P/TV05 SETUP (WSF GRAPPLE)
(PHOTO/TV, P/TV SCENES)

SECONDARY PAYLOAD CHECKS
Following procedures
located in PL OPS
CGBA STATUS CK (CGBA)
STL-A TEMPS (STL-A)

**ALL CREWMEMBERS BEGIN
PRE-SLEEP AT 3/03:00**

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

WSF GRAPPLE
(PDRS, WSF DEPLOY)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EXERCISE
(DS0 624)
Don heart watch

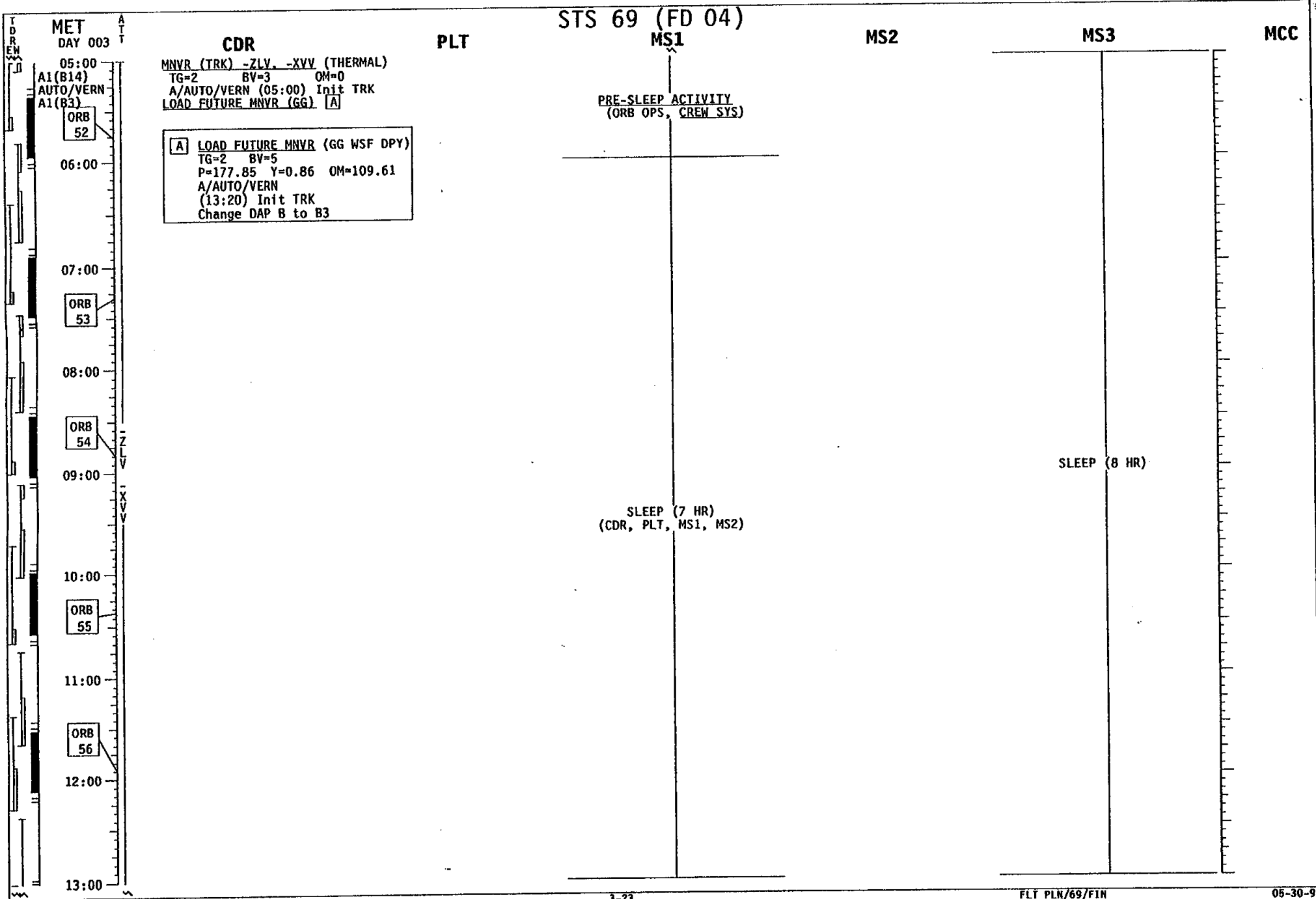
WSF GRAPPLE
(PDRS, WSF DEPLOY)

CMIX EVENT TIMELINE
(PL OPS, CMIX)
Group F

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

UPDATE
OMS3 MNVR
PAD

UPDATE
OMS4 MNVR
PAD



[A] LOAD FUTURE MNVR (GG WSF DPY)
TG=2 BV=5
P=177.85 Y=0.86 OM=109.61
A/AUTO/VERN
(13:20) Init TRK
Change DAP B to B3

T
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MET
DAY 003

A
T

STS 69 (FD 05)
MS1

CDR

PLT

MS2

MS3

MCC

13:00
A1(B3)
AUTO/VERN

ORB
57

(A3)B3
AUTO/VERN
FREE/VERN

14:00

B
I
A
S

A11(B11)
FREE/VERN

ORB
58

A12(B11)
15:00
FREE/VERN

16:00

[A] FUTURE LOADED MNVR (GG)
TG=2 BV=5
P=177.85 Y=0.86 OM=109.61
A/AUTO/VERN
(13:20) Init TRK

◀ PRELOADED MNVR INIT [A]
GG (13:20)
When in ATT: B/AUTO/VERN
Change DAP A to A3

GG FREE DRIFT
(ORB OPS, RCS)
Step 2
GG Init (13:30)
Expected rates:
R = 0.003 ± 0.003 deg/sec
P = 0.022 ± 0.003 deg/sec
Y = -0.061 ± 0.003 deg/sec
Install DAP switch guards

[B] CO2 RMVL SYS DEACT

M051F CNTLR 1 MODE - STBY (hold 3 sec)
Wait 6 sec
✓CNTLR 1 OPER lt - off
✓FAIL lt - on

M054G Install two fresh LiOH canisters
Temp stow used LiOH canister #1
for later use
Bag and temp stow used charcoal
canister for later use

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
As soon as possible:
WCS VAC VLV-CL
CO2 RMVL SYS DEACT [B]

**ALL CREWMEMBERS PERFORM
POST-SLEEP AS TIME
PERMITS THRU MET 3/16:30**

FD05 EZ ACTIVITIES:
CPA OPS (ORB OPS, CREW SYS)
OCAC FILTER INSPECT
MEM OPS/486 (ORB OPS FS, DTO 656) as time permits
SLAMMD (BIOMED, DTO 914) as time permits (CDR,MS1-3)
LOG FOOD/FLUID INTAKE + EXERCISE
DSO 608 - Log Fluids and Exercise (PLT)
DSO 624 - Log Exercise (CDR,MS1,MS2)

IJEMS ACT
(PL OPS, WSF SYSTEM)

TRANSITION TO RMA DPY C/L

Do not perform
Supply H2O Dump

RME 1311
(PL OPS, RMS/DTQ)

TRANSITION TO RMA DPY C/L

P/TV05 OPS

TRANSITION TO RMA DPY C/L
UNBERTH PREP

WSF UNBERTH

WSF UNBERTH

◀ WSF UNBERTH

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

FF ACTIVATION
FF CHECKOUT

◀ MNVR RMS TO RAM CLEANING

FF ACTIVATION
FF CHECKOUT

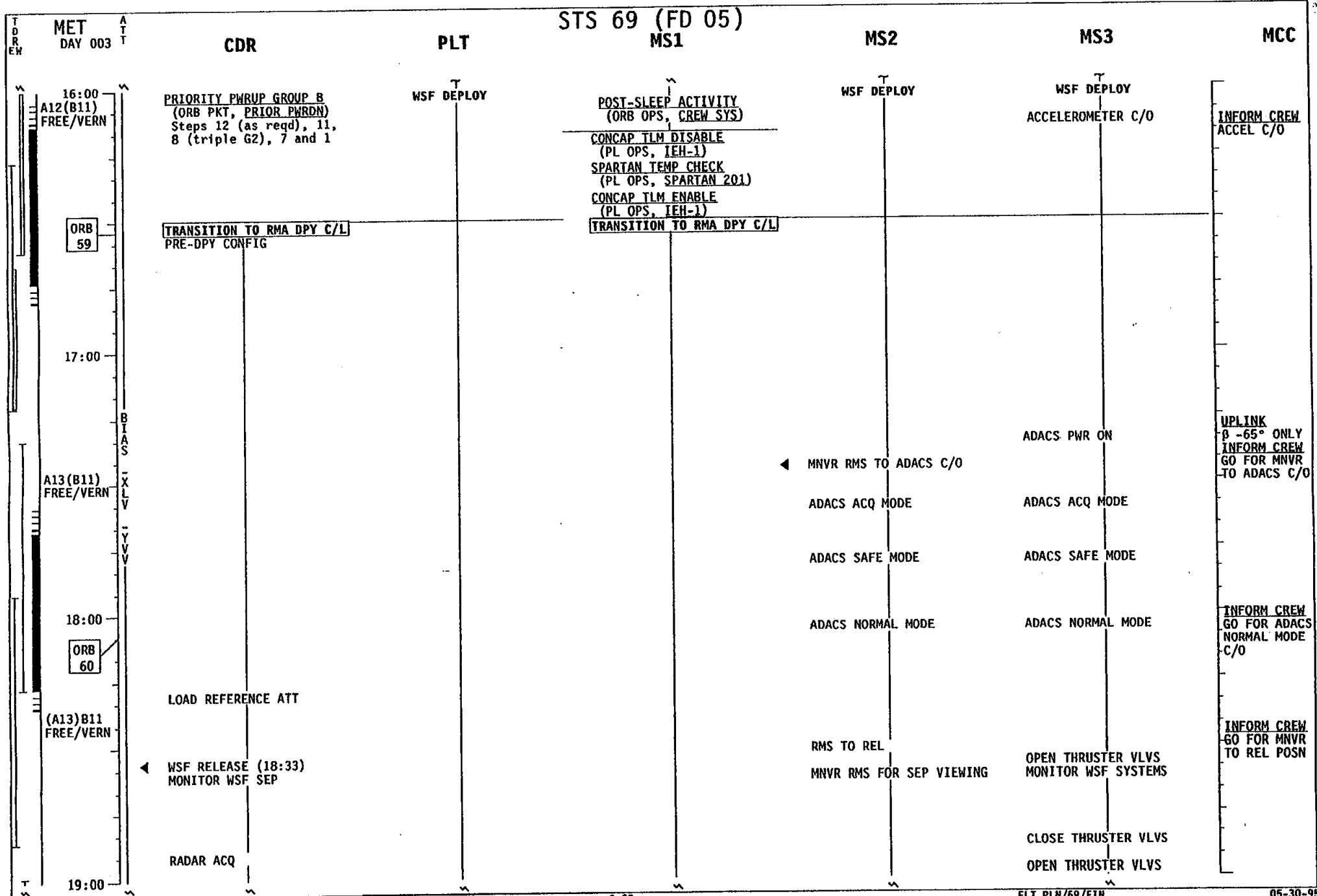
VIDEO CHECKOUT

UPLINK
β 21° ONLY
INFORM CREW
GO FOR
UNBERTH

INFORM CREW
GO FOR MNVR
TO RAM CLEAN

INFORM CREW
POCC RCING
GPS DATA
INFORM CREW
INSTRUMENT
ACT

INFORM CREW
RHEED CAL,
MASS SPECS
OPS



T
D
R
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MET
DAY 003

A
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STS 69 (FD 05)

CDR

PLT

MS1

MS2

MS3

MCC

WSF DEPLOY

WSF DEPLOY

WSF DEPLOY

WSF DEPLOY

WSF DEPLOY

VERIFY THRUSTER VLVS CLOSED

TRANSITION TO FLIGHT PLAN

RMS POWERDOWN

(PDRS OPS, RMS PWRDN)
Note: Do not stow MPM's
Use MPD to assist if MNVR
to PRECRADLE req'd

RMS POWERDOWN

(PDRS OPS, RMS PWRDN)
Note: Do not stow MPM's
Use MPD to assist if MNVR
to PRECRADLE req'd

SECONDARY PAYLOAD CHECKS L17 Check MCIU filter screen
Following procedures
located in PL OPS
CMIX TEMP LOG (CMIX)
CMIX FILTER CLEAN (CMIX)
EPICS MAINT (EPICS)
STL-A TEMPS (STL-A)

EXERCISE (DSO 608)

Don heart watch

A CO2 RMVL SYS ACT
Perform CO2 RMVL SYS CNTLR CONFIG
(ACT 2/DEACT 1) (ORB OPS, ECLS)
and modify CHARCOAL CANISTER REPLACEMENT
as follows:
MD54G a. Remove two LiOH canisters,
rebag and stow
b. Reinstall used LiOH canister #1
in slot A and unbag
Reinstall used charcoal canister
in slot B

WSF MONITOR

UPLINK
β 21° +MASK

Change DAP A,B to A1,B1
On MCC Go:
MNVR (TRK) -XLV, +ZVV
(WSF COMM)
TG=2 BV=2 OM=0
Init TRK A/AUTO/VERN

CO2 RMVL SYS ACT **A**

WCS VAC VLV-OP

IJEMS DEACT
(PL OPS, WSF SYSTEM)

19:00
(A13)B11
FREE/VERN

ORB
61

20:00

A1(B1)
AUTO/VERN

21:00

ORB
62

22:00

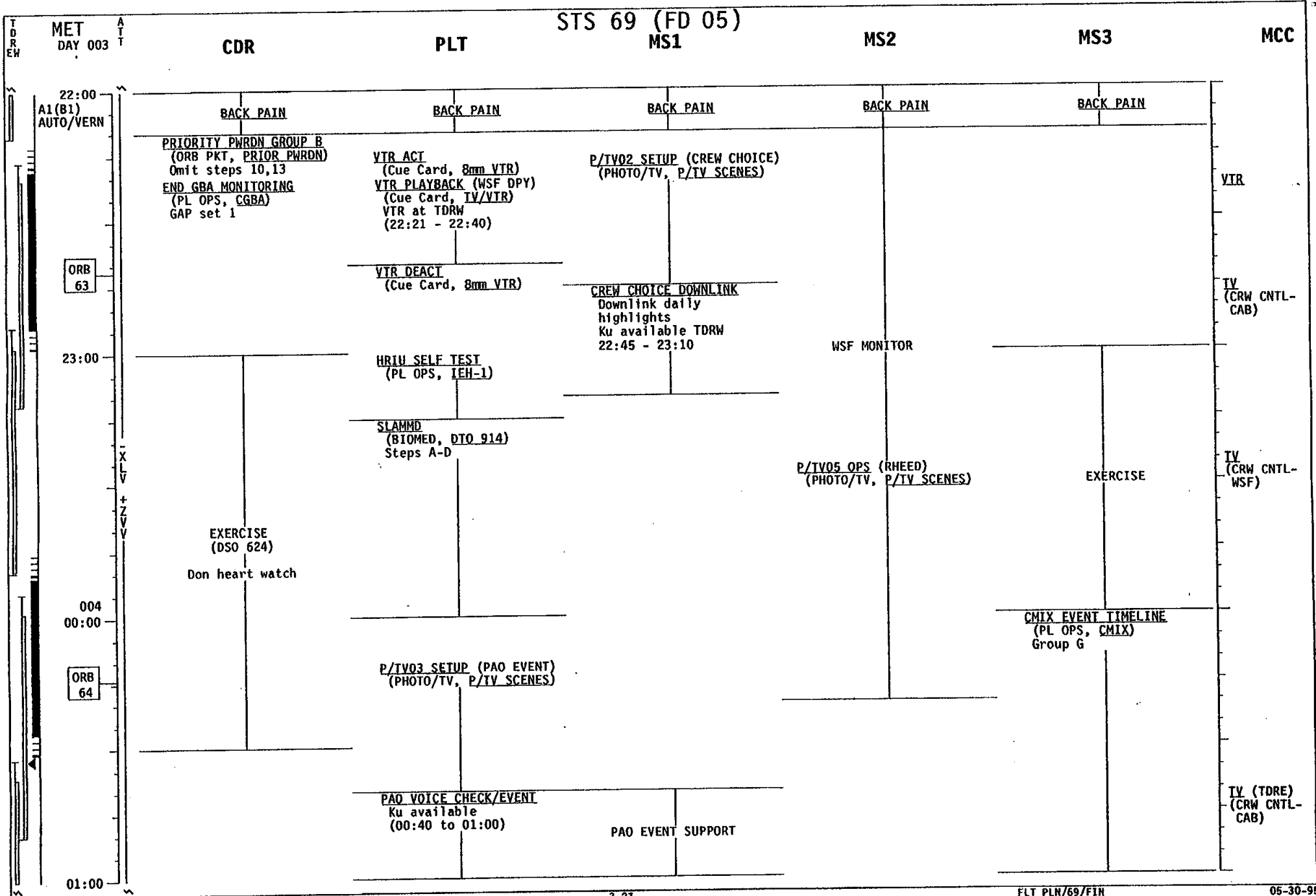
MEAL

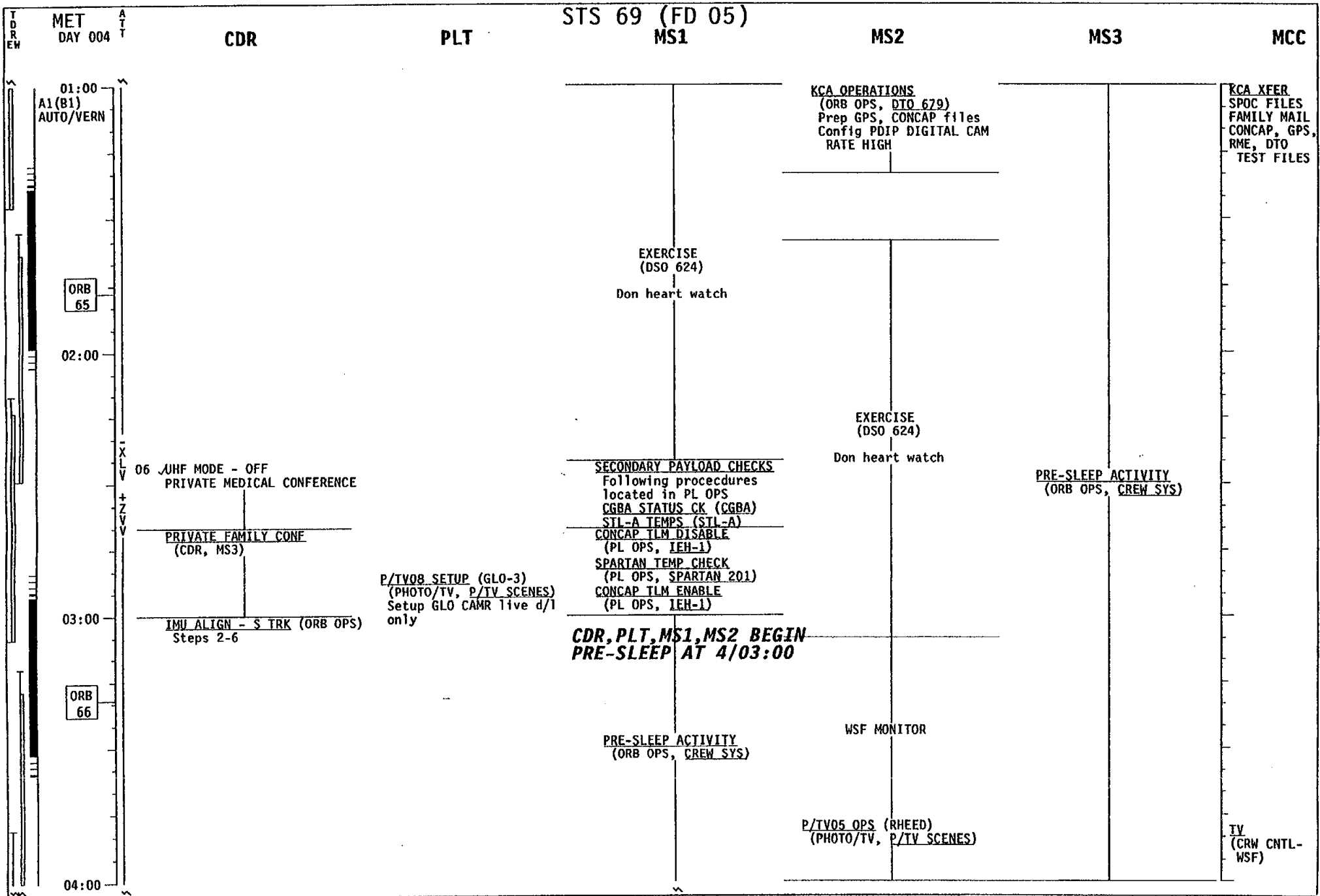
MEAL

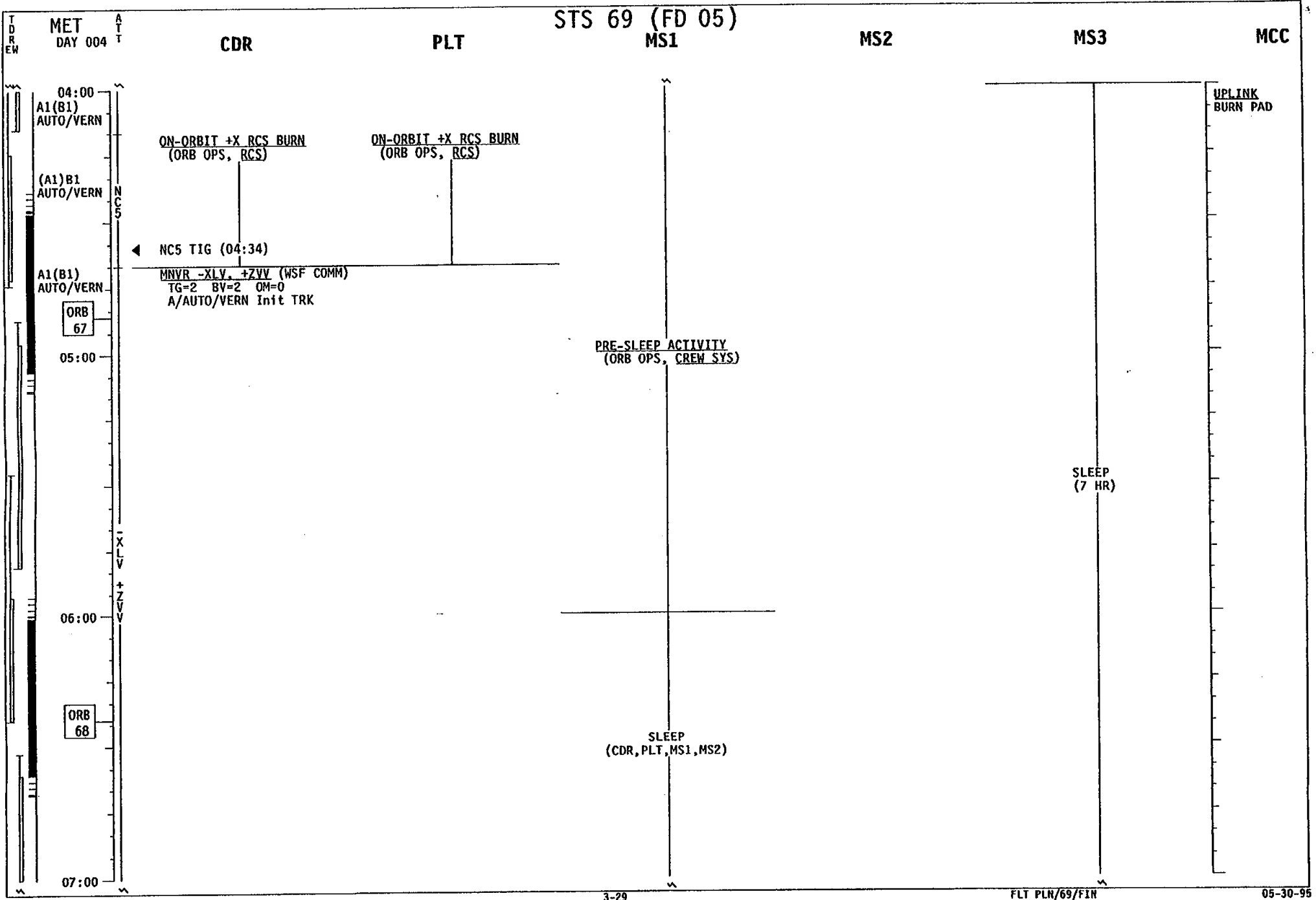
MEAL

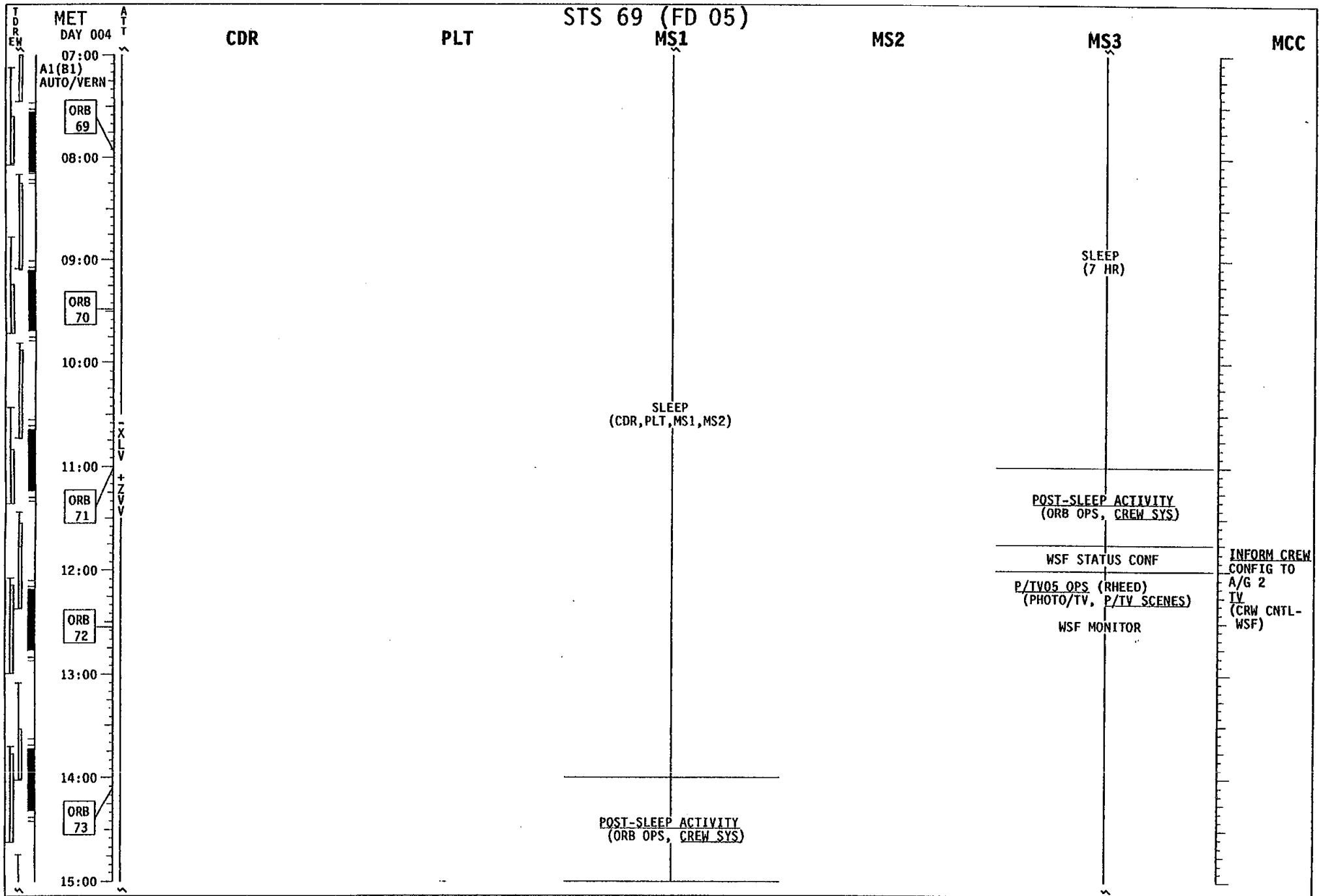
MEAL

MEAL









T
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R
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MMET
DAY 004A
T
TSTS 69 (FD 06)
MS1

MS2

MS3

MCC

CDR

PLT

MS1

BACK PAIN
(BIOMED, DSO 483)BACK PAIN
(BIOMED, DSO 483)BACK PAIN
(BIOMED, DSO 483)BACK PAIN
(BIOMED, DSO 483)

FD06 EZ ACTIVITIES:
 CPA OPS (ORB OPS, CREW SYS)
 QCAC FILTER INSPECT
 MEM OPS/486 (ORB OPS FS, DIO 656) as time permits
 SLAMMD (BIOMED, DIO 914) as time permits (CDR,MS1,MS2,MS3)
 LOG FOOD/FLUID INTAKE + EXERCISE
 DSO 608 - Log Fluids and Exercise (PLT)
 DSO 624 - Log Exercise (CDR,MS1,MS2)
 BACK PAIN (BIOMED, DSO 483) (MS3)

KCA OPERATIONS
 (ORB OPS, DIO 679)
 Prep CONCAP files
 Config PDIP DIGITAL CAM
 RATE HIGH

KCA XFER
 SPOC FILES
 FAMILY MAIL
 CONCAP, DIO
 TEST FILES

IMU ALIGN - S TRK (ORB OPS)
 Steps 2-6

POST-SLEEP ACTIVITY
 (ORB OPS, CREW SYS)

WSF MONITOR

**CDR, PLT, MS1, MS2 END
 POST-SLEEP AT 4/17:00**

SECONDARY PAYLOAD CHECKS
 Following procedures
 located in PL OPS
 CMIX TEMP LOG (CMIX)
 CMIX FILTER CLEAN
 EPICS MAINT (EPICS)
 STL-A TEMPS (STL-A)

CONCAP TLM DISABLE
 (PL OPS, IEH-1)
 SPARTAN TEMP CHECK
 (PL OPS, SPARTAN 201)
 CONCAP TLM ENABLE
 (PL OPS, IEH-1)

WSF MONITOR

EXERCISE
 (DSO 624)

Don heart watch

P/TV02 SETUP (CGBA, EPICS, STL-A)
 (PHOTO/TV, P/TV SCENES)

FILTER CLEANING
 (IFM, SCHEDULED MAINTENANCE)
 Inspect filters and clean
 as necessary
 Check WCS hose block filter
 for debris

UPLINK
 BURN PAD

15:00
A1(B1)
AUTO/VERNORB
74

16:00

17:00

ORB
75

18:00

-X
L
V
+
Z
V
V

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DAY 004A
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STS 69 (FD 06)

CDR

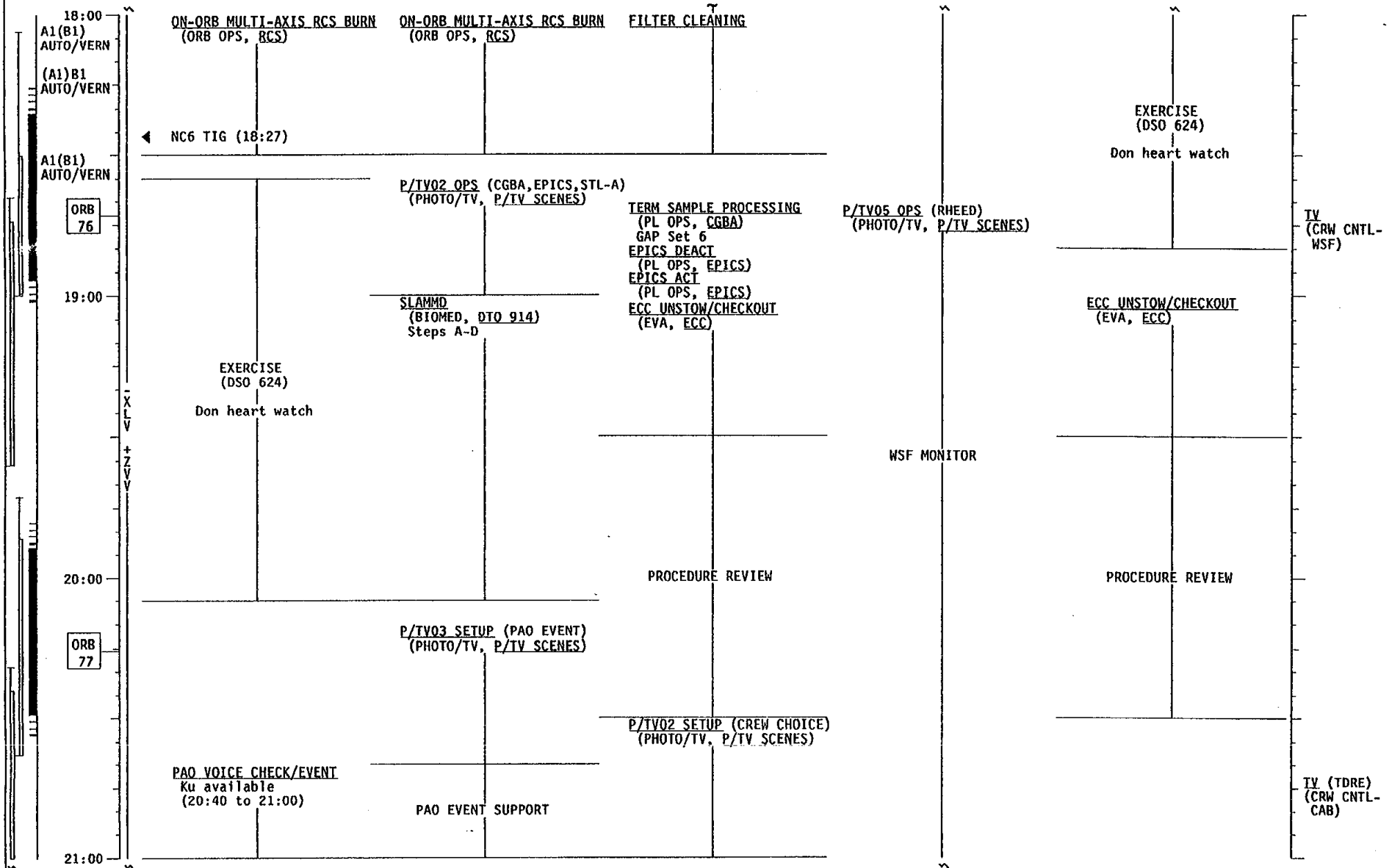
PLT

MS1

MS2

MS3

MCC



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MET
DAY 004

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STS 69 (FD 06)
MS1

CDR

PLT

MS2

MS3

MCC

21:00
A1(81)
AUTO/VERN

ORB
78

22:00

X
L
V
+
Z
V
V

23:00

ORB
79

005
00:00

MEAL

MEAL

MEAL

WSF MONITOR

MEAL

PCS 1(2) CONEIG
(ORB OPS, ECLS)
Config SYS 2
CABIN TEMP CNTL RECONFIG
MD44F Pin CAB TEMP CNTL act link
to secondary act
L1 CABIN TEMP CNTLR - 2

CREW CHOICE DOWNLINK
Downlink daily
highlights
Ku available
(22:05 to 22:35)

RCS REGULATOR RECONFIGURE
(ORB OPS, RCS)
Do not reconfig OMS POD HTRS

HEATER RECONFIG-Config B
(ORB OPS, EPS)

HRIU SELF TEST
(PL OPS, IEH-1)

MEAL

TV (TDRE)
(CRW CNTL-
CAB)

RNDZ REVIEW

RNDZ REVIEW

RNDZ REVIEW

RNDZ REVIEW

WSF MONITOR

PORTABLE BLOOD ANALYZER
(BIOMED, DSO 492B)

CMIX EVENT TIMELINE
(PL OPS, CMIX)
Group H

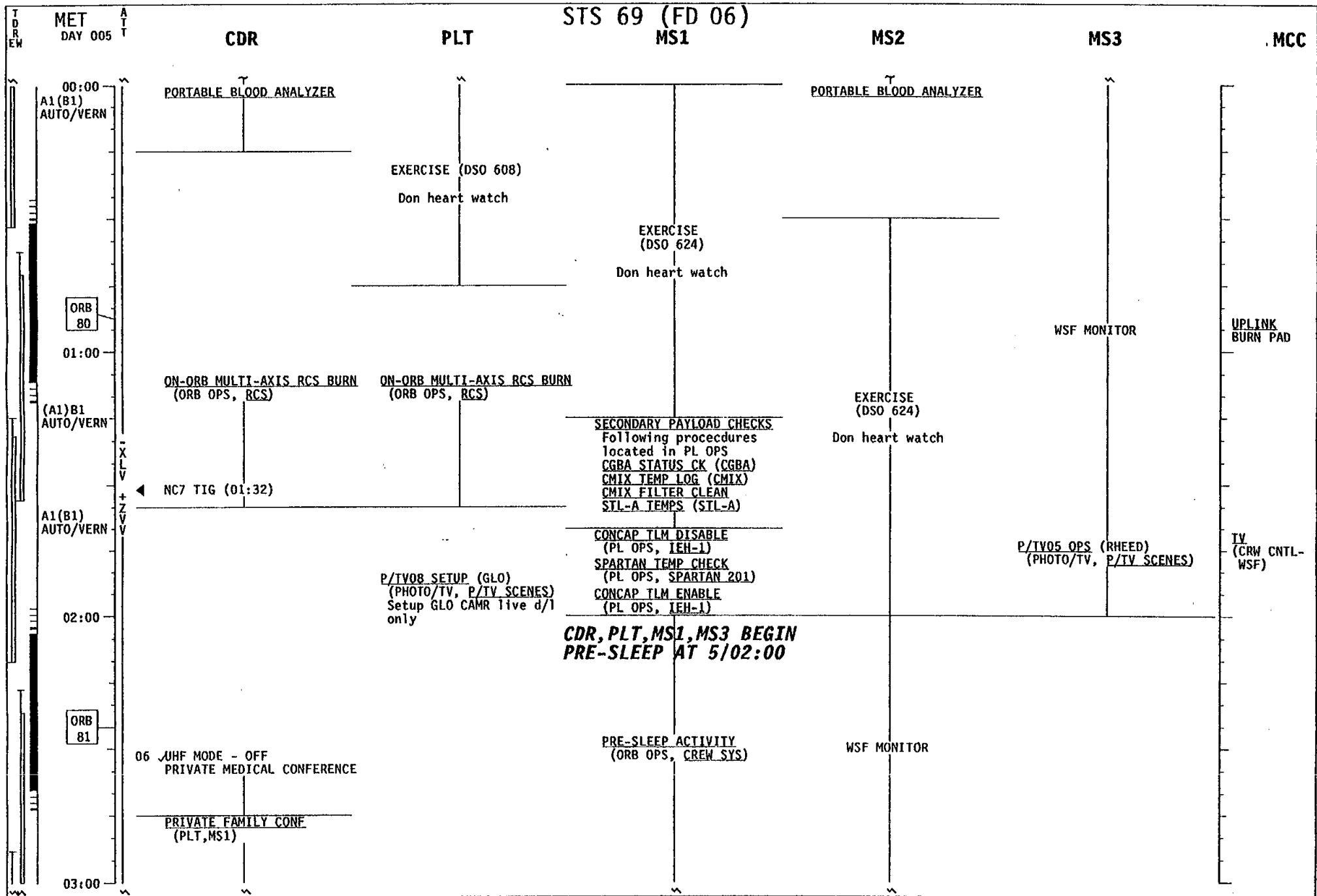
EXERCISE (DSO 608)
Don heart watch

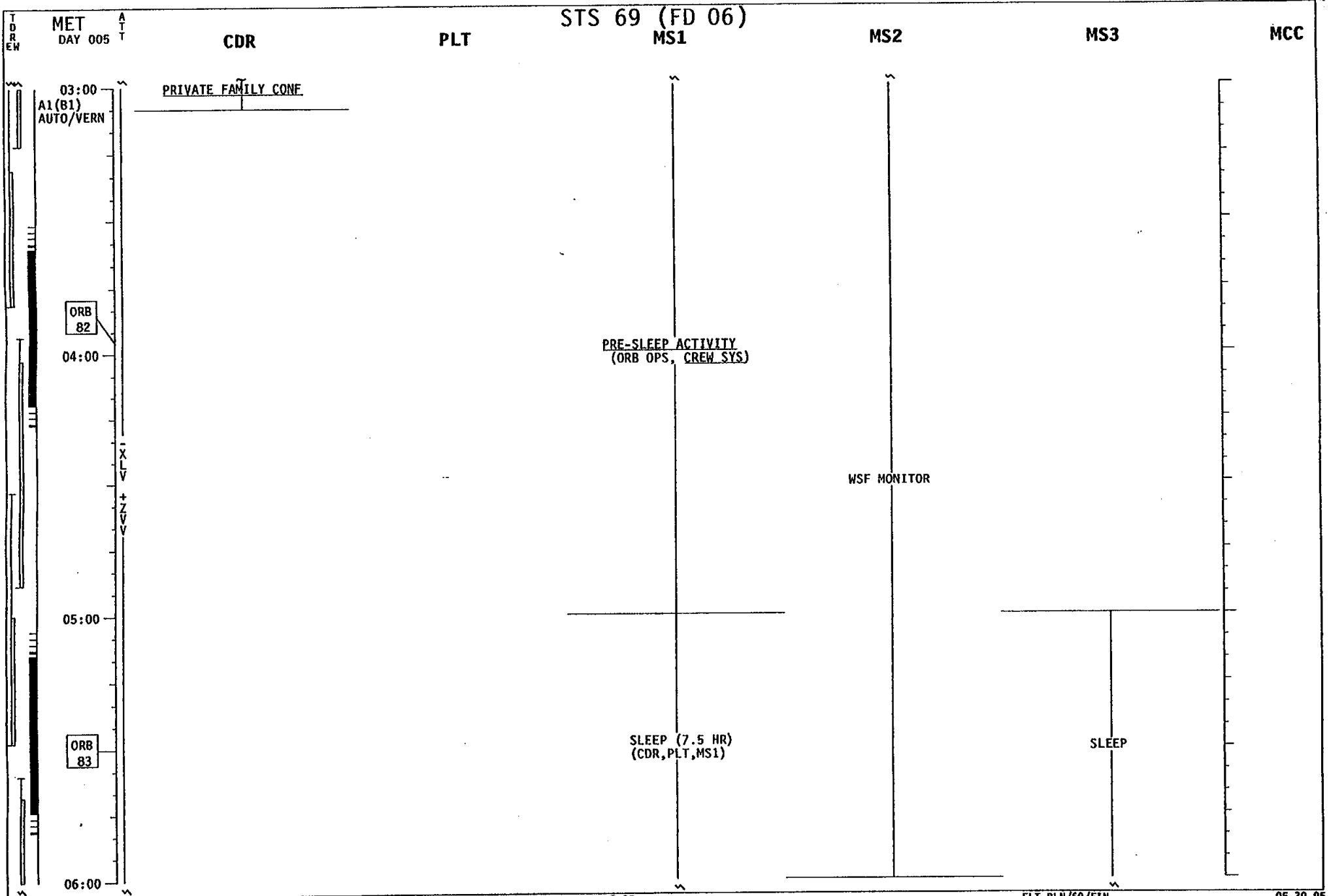
PORTABLE BLOOD ANALYZER
(BIOMED, DSO 492B)
Subject step c

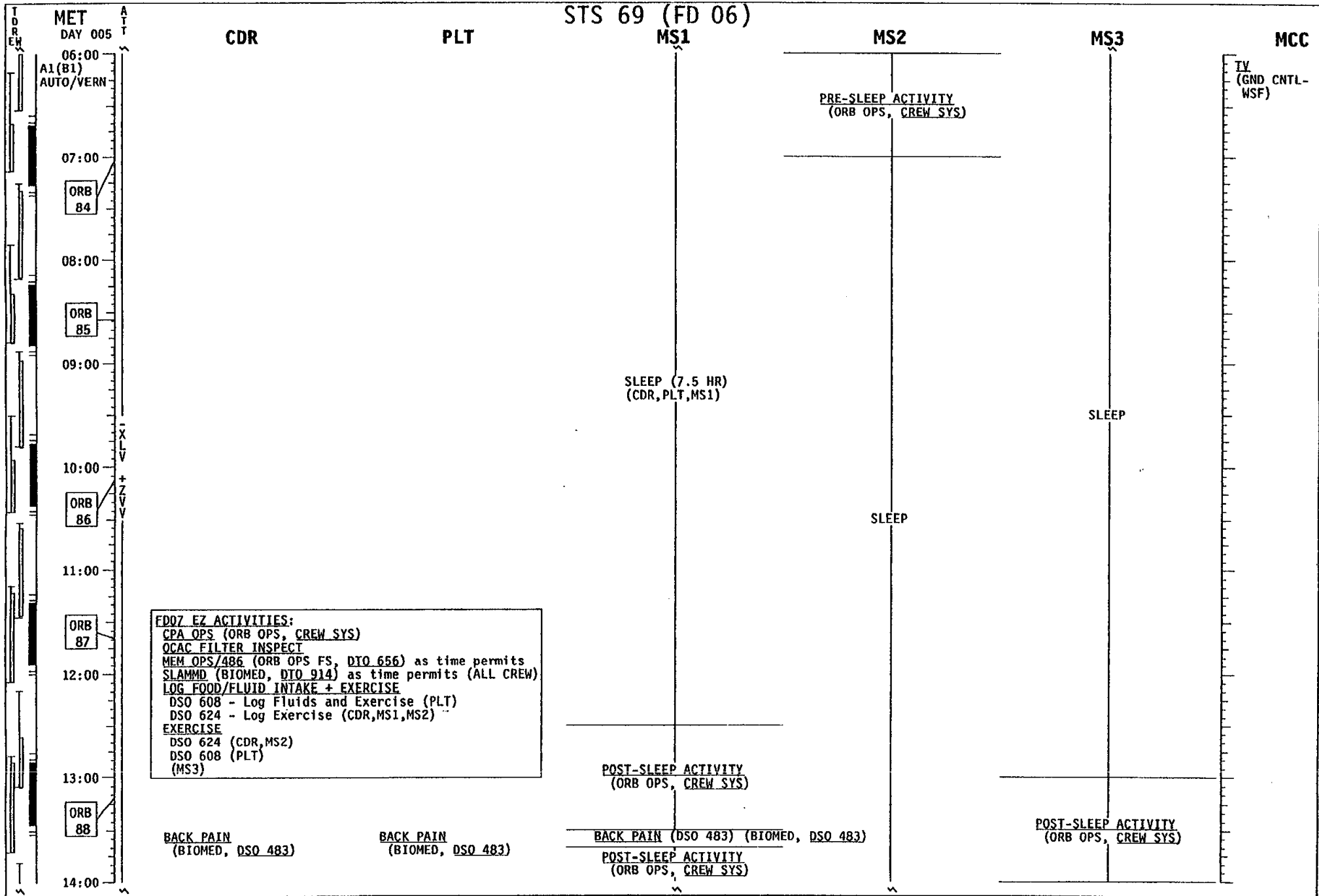
PORTABLE BLOOD ANALYZER
(BIOMED, DSO 492B)
Subject step C

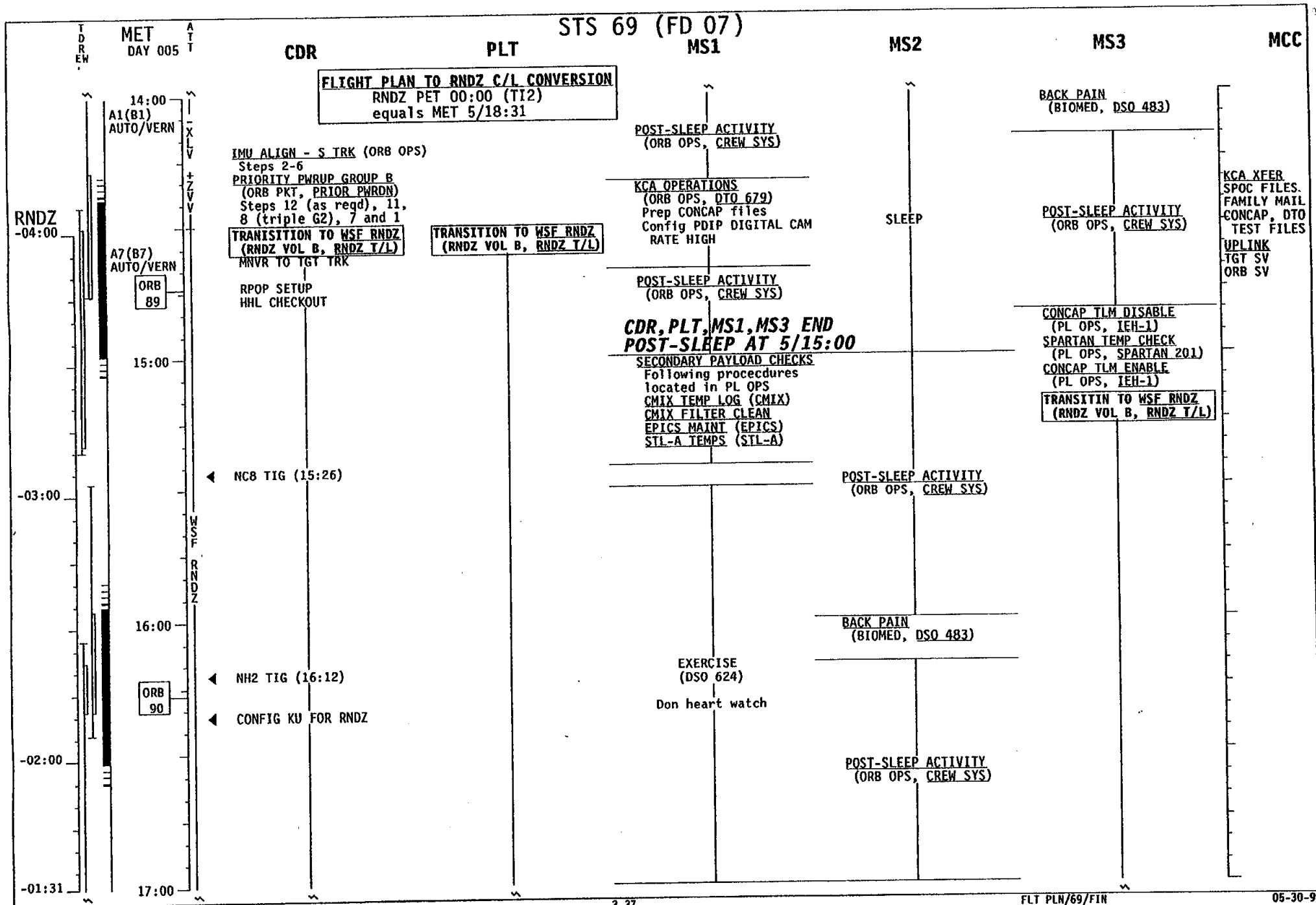
P/TV05 OPS (RHEED)
(PHOTO/TV, P/TV SCENES)

TV
(CRW CNTL-
WSF)

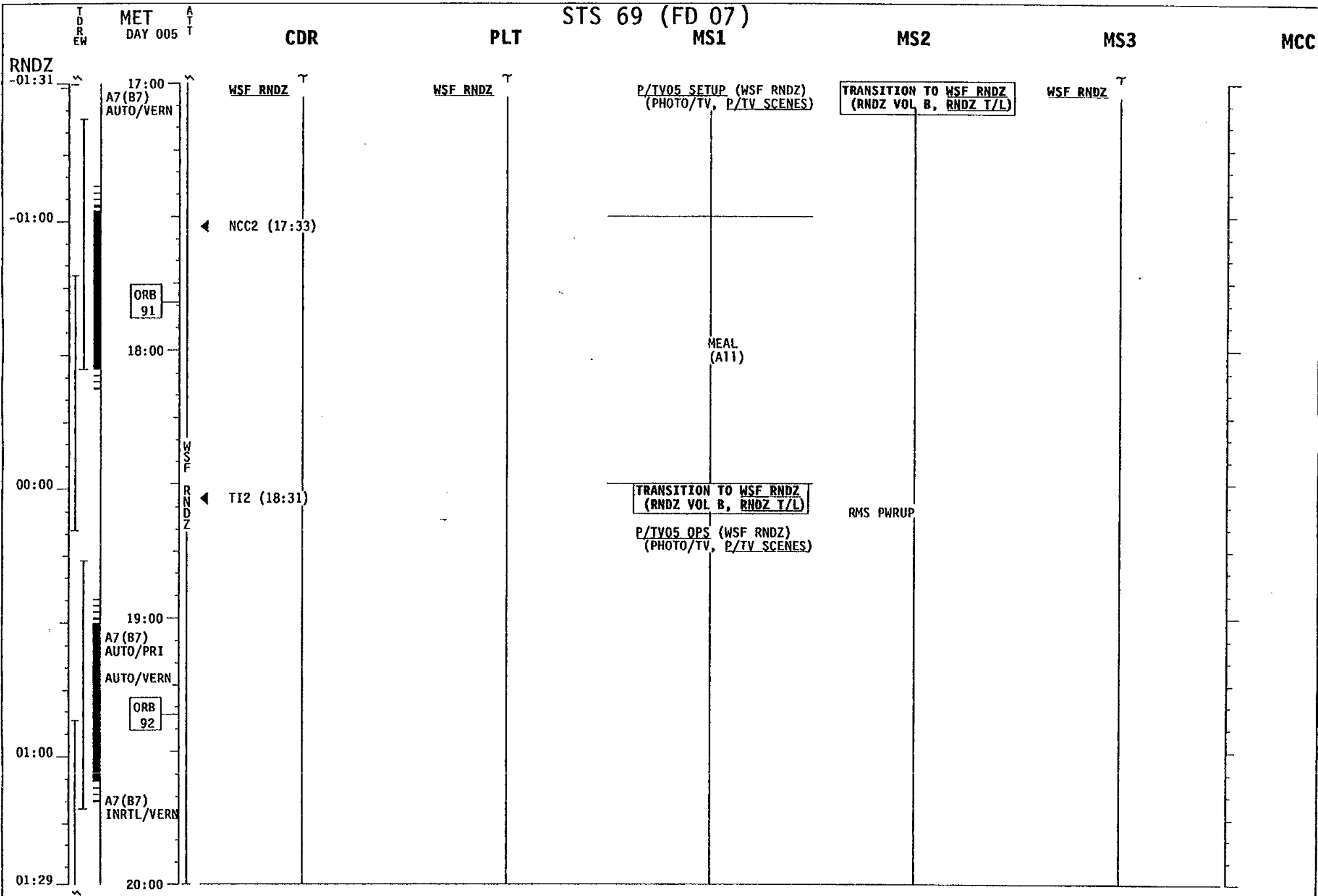


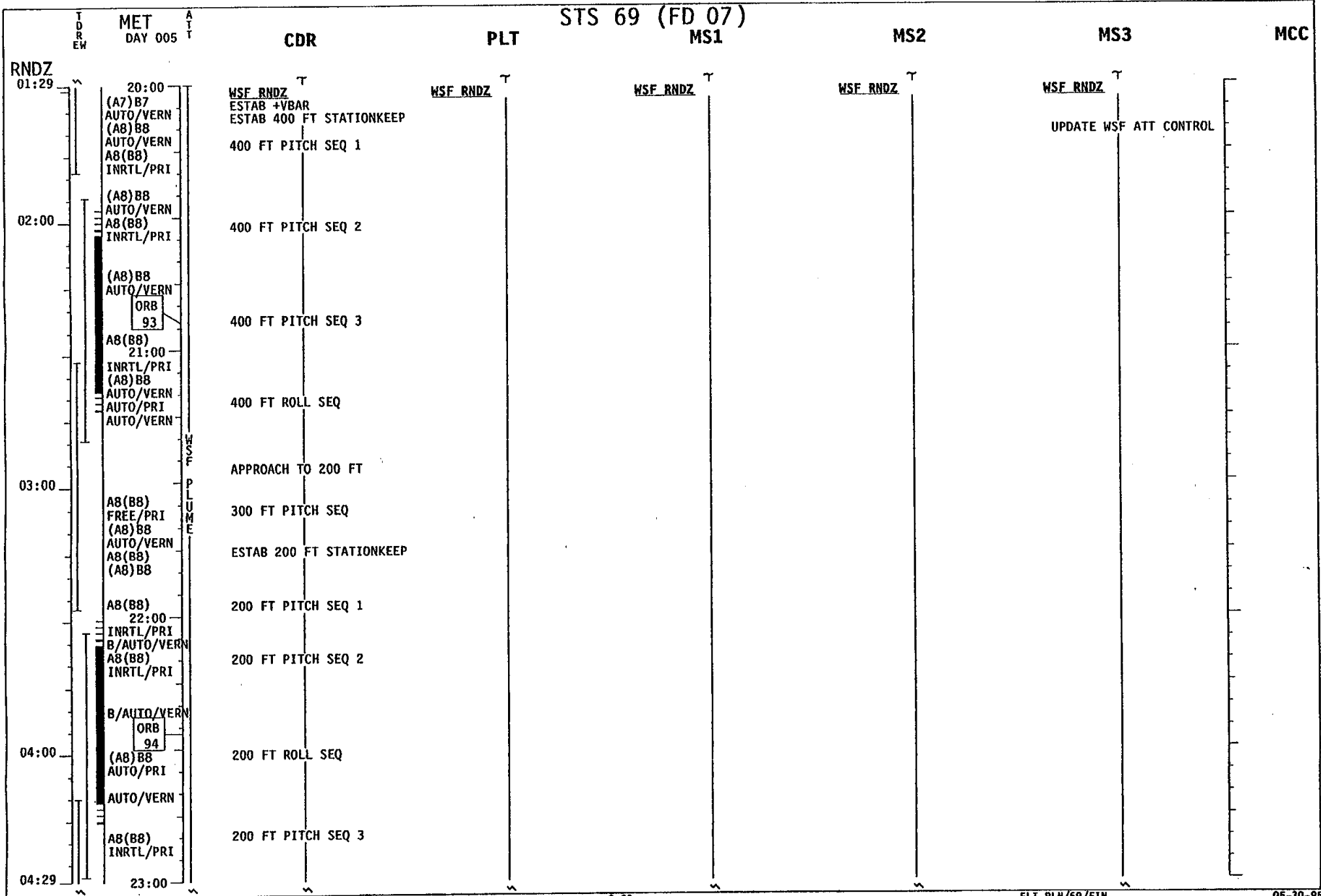


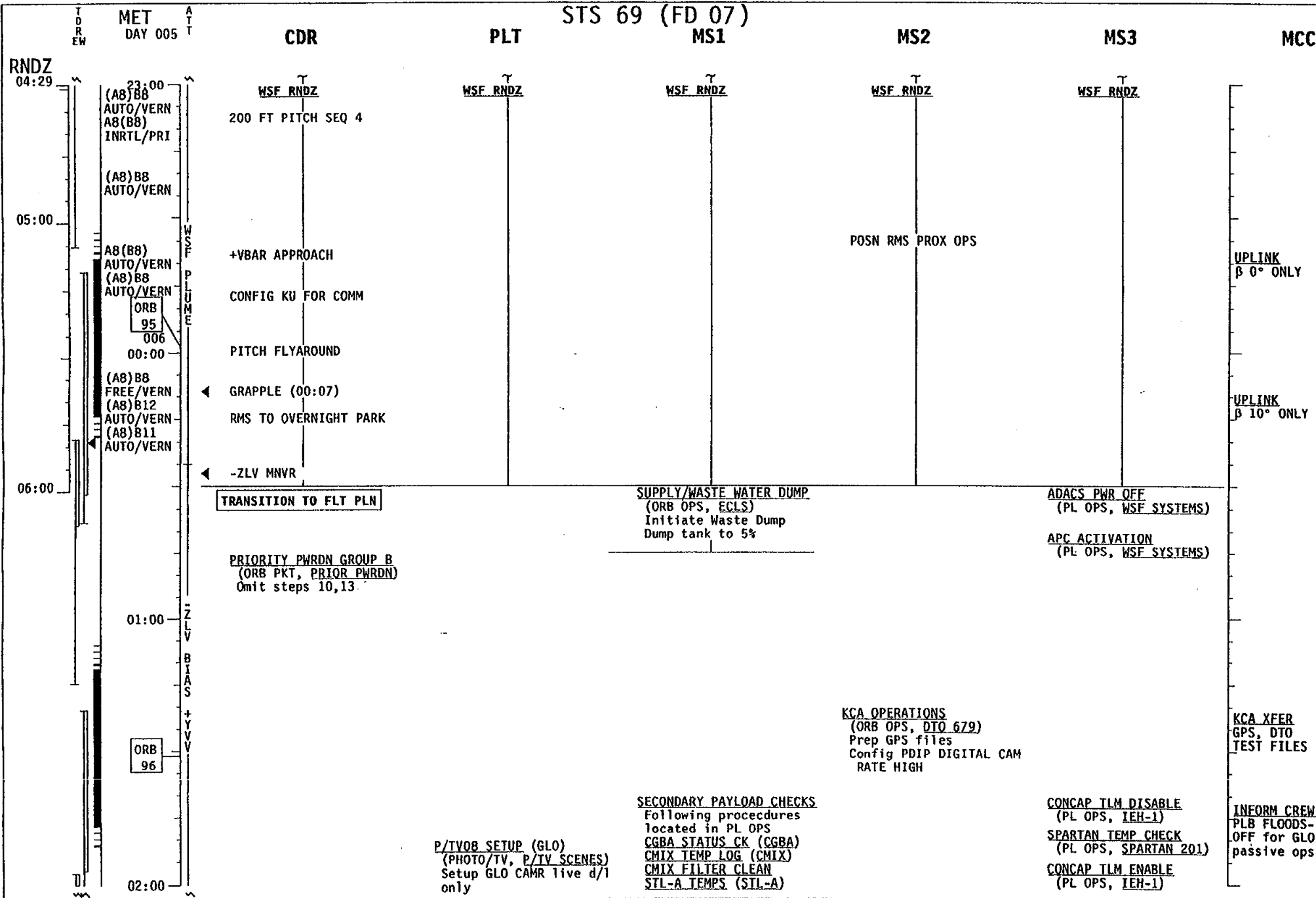




STS 69 (FD 07)







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MET
DAY 006

A
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CDR

PLT

STS 69 (FD 07)

MS1

MS2

MS3

MCC

**CDR, PLT, MS1, MS3 BEGIN
PRE-SLEEP AT 6/02:00**

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Terminate Waste Dump

MNVR -XLV, -YVV (WSF OVERNIGHT)

TG=2 BV=2 OM=90
B/AUTO/VERN Init TRK
When in ATT:
Change DAP B to B10

02:00
(AB)B11
AUTO/VERN

(AB)B10
AUTO/VERN

03:00

ORB
97

06 JHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

PRIVATE FAMILY CONE
(MS2)

04:00

ORB
98

05:00

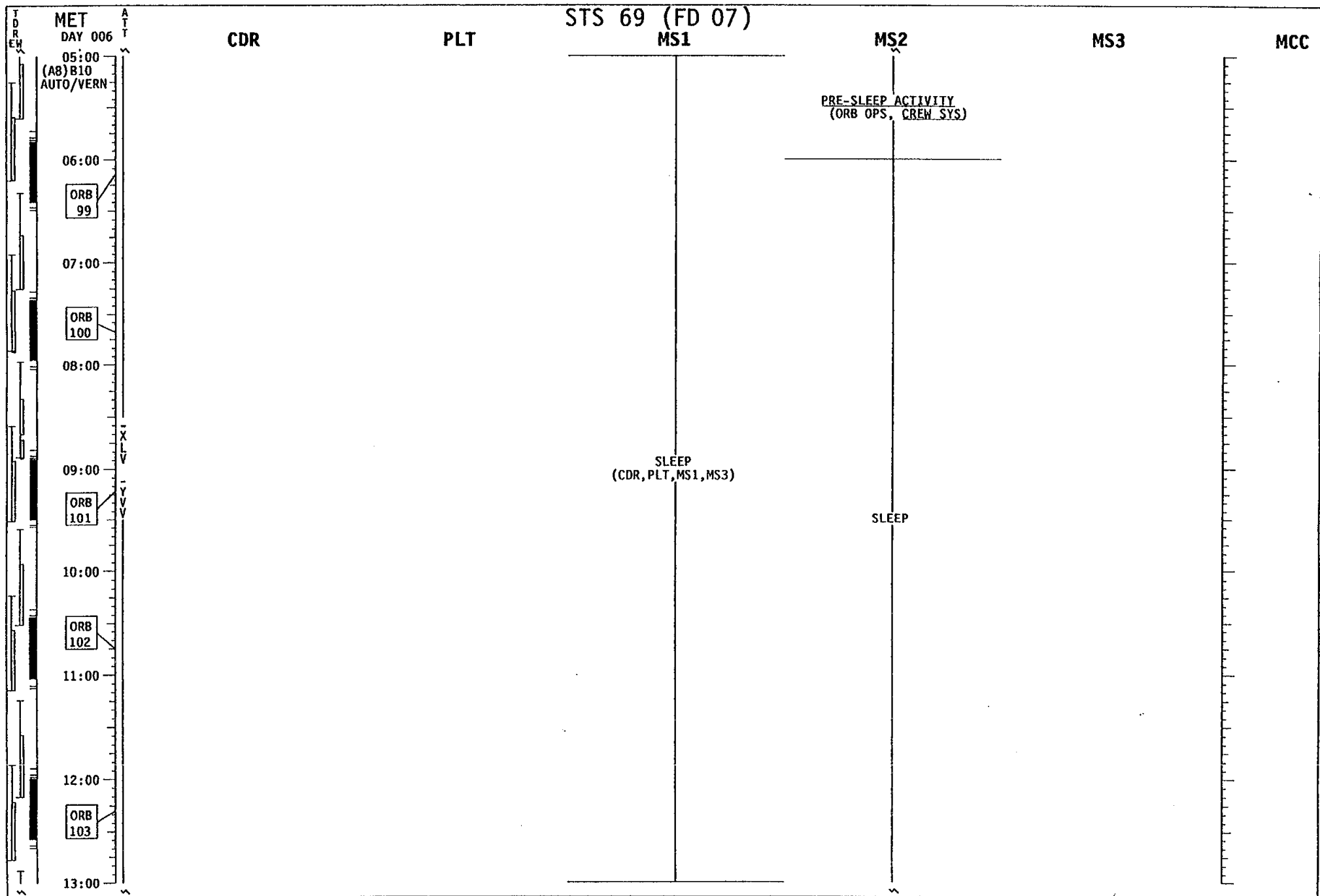
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

UPLINK
FC PURGE

TV
(CRW CNTL-
CAB)

TV
(GND CNTL-
PLB)



T
D
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W

MET
DAY 006

A
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STS 69 (FD 08)
MS1

MS2

MS3

MCC

CDR

PLT

MS1

MS2

MS3

MCC

13:00
(A8)B10
AUTO/VERN

FDOB EZ ACTIVITIES:
 CPA OPS (ORB OPS, CREW SYS)
 QCAC FILTER INSPECT
 MEM OPS/486 (ORB OPS FS, DTO 656) as time permits
 LOG FOOD/FLUID INTAKE + EXERCISE
 DSO 608 - Log Fluids and Exercise (PLT)
 DSO 624 - Log Exercise (CDR,MS1,MS2)
 EXERCISE
 DSO 624 (MS1)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SLEEP

ORB
104

14:00

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

INSTALL FRESH CHARCOAL CANISTER
MD54G Remove old charcoal
canister from slot B
Install fresh charcoal
canister

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

(A8)B11
AUTO/VERN

Change DAP B to B11
MNVR IMU ALIGN ATT
STAR PAIR (A1)
B/AUTO/VERN
Init MNVR at SS

KCA OPERATIONS
(ORB OPS, DTO 679)
Prep CONCAP files
Config PDIP DIGITAL CAM
RATE HIGH

BACK PAIN
(BIOMED, DSO 483)

KCA XFER
SPOC FILES
FAMILY MAIL
CONCAP, DTO
TEST FILES

15:00

IMU ALIGN - S TRK (ORB OPS)

MNVR -XLY, -YVV (CHAWS)
TG=2 BV=2 OM=90
B/AUTO/VERN Init TRK

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

ORB
105

SECONDARY PAYLOAD CHECKS
Following procedures
located in PL OPS
CMIX TEMP LOG (CMIX)
CMIX FILTER CLEAN
EPICS MAINT (EPICS)
STL-A TEMPS (STL-A)
APE SETUP
(PL OPS, CHAWS)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

**ALL CREWMEMBERS END
POST-SLEEP AT 6/16:00**

16:00

T
D
R
E
W

MET
DAY 006

A
T
T

STS 69 (FD 08)

CDR

PLT

MS1

MS2

MS3

MCC

16:00
(A8)B11
AUTO/VERN

ORB
106

17:00

CHAWS NIGHT OPS 1
(PL OPS, CHAWS)
SS = 16:37
SR = 17:12

HRIU SELF TEST
(PL OPS, IEH-1)

APE SETUP

L17 Check MCIU filter screen

CONCAP TLM DISABLE
(PL OPS, IEH-1)
SPARTAN TEMP CHECK
(PL OPS, SPARTAN 201)
CONCAP TLM ENABLE
(PL OPS, IEH-1)
CHAWS NIGHT OPS 1
(PL OPS, CHAWS)
SS = 16:37
SR = 17:12

MDP SETUP
(PDRS, MPD DTO)
MNVR TO CHAWS
(PL OPS, CHAWS)
CHAWS NIGHT OPS 1
(PL OPS, CHAWS)
SS = 16:37
SR = 17:12

CHAWS DAY OPS 1
(PL OPS, CHAWS)
SS = 18:09

EXERCISE (DSO 608)
Don heart watch

CHAWS MONITOR

CHAWS DAY OPS 1
(PL OPS, CHAWS)
SS = 18:09

CHAWS DAY OPS 1
(PL OPS, CHAWS)
SS = 18:09

CHAWS PITCHOVER
(PL OPS, CHAWS)

CHAWS PITCHOVER
(PL OPS, CHAWS)

CHAWS PITCHOVER
(PL OPS, CHAWS)

18:00

CHAWS NIGHT OPS 2
(PL OPS, CHAWS)
SR = 18:44

CHAWS NIGHT OPS 2
(PL OPS, CHAWS)
SR = 18:44

CHAWS NIGHT OPS 2
(PL OPS, CHAWS)
SR = 18:44

ORB
107

EXERCISE
(DSO 624)
Don heart watch

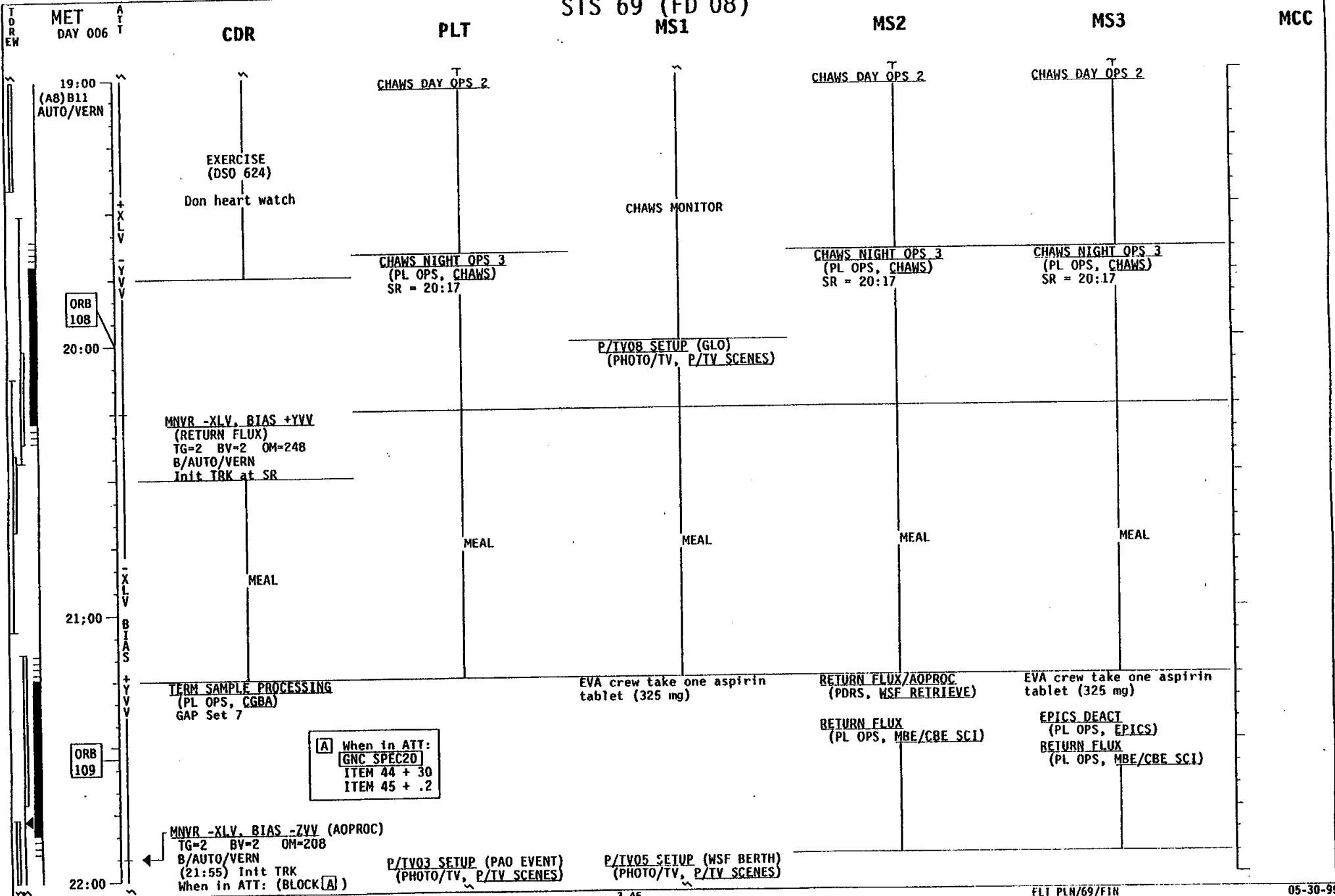
CHAWS DAY OPS 2
(PL OPS, CHAWS)
SS = 19:42

CHAWS DAY OPS 2
(PL OPS, CHAWS)
SS = 19:42

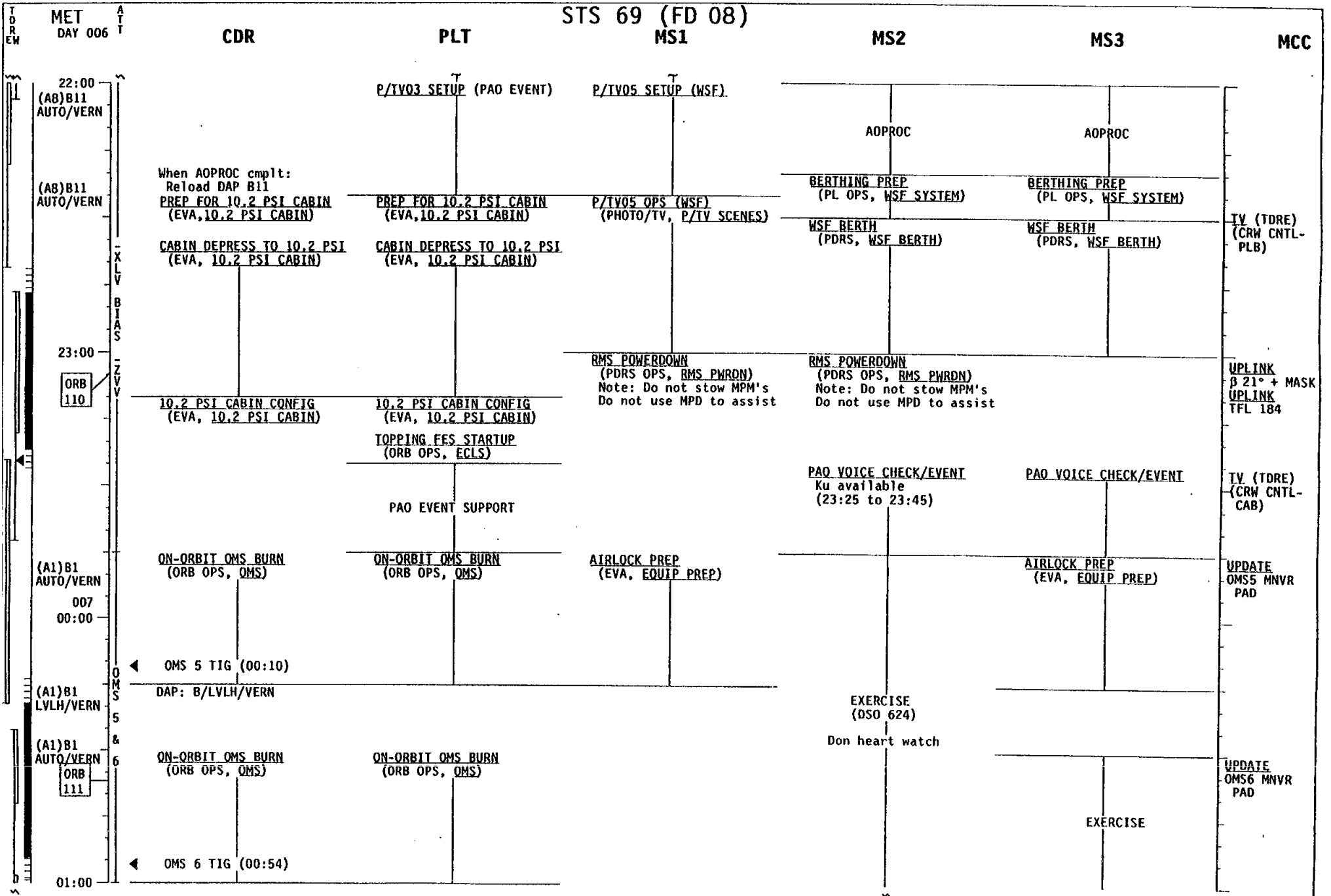
CHAWS DAY OPS 2
(PL OPS, CHAWS)
SS = 19:42

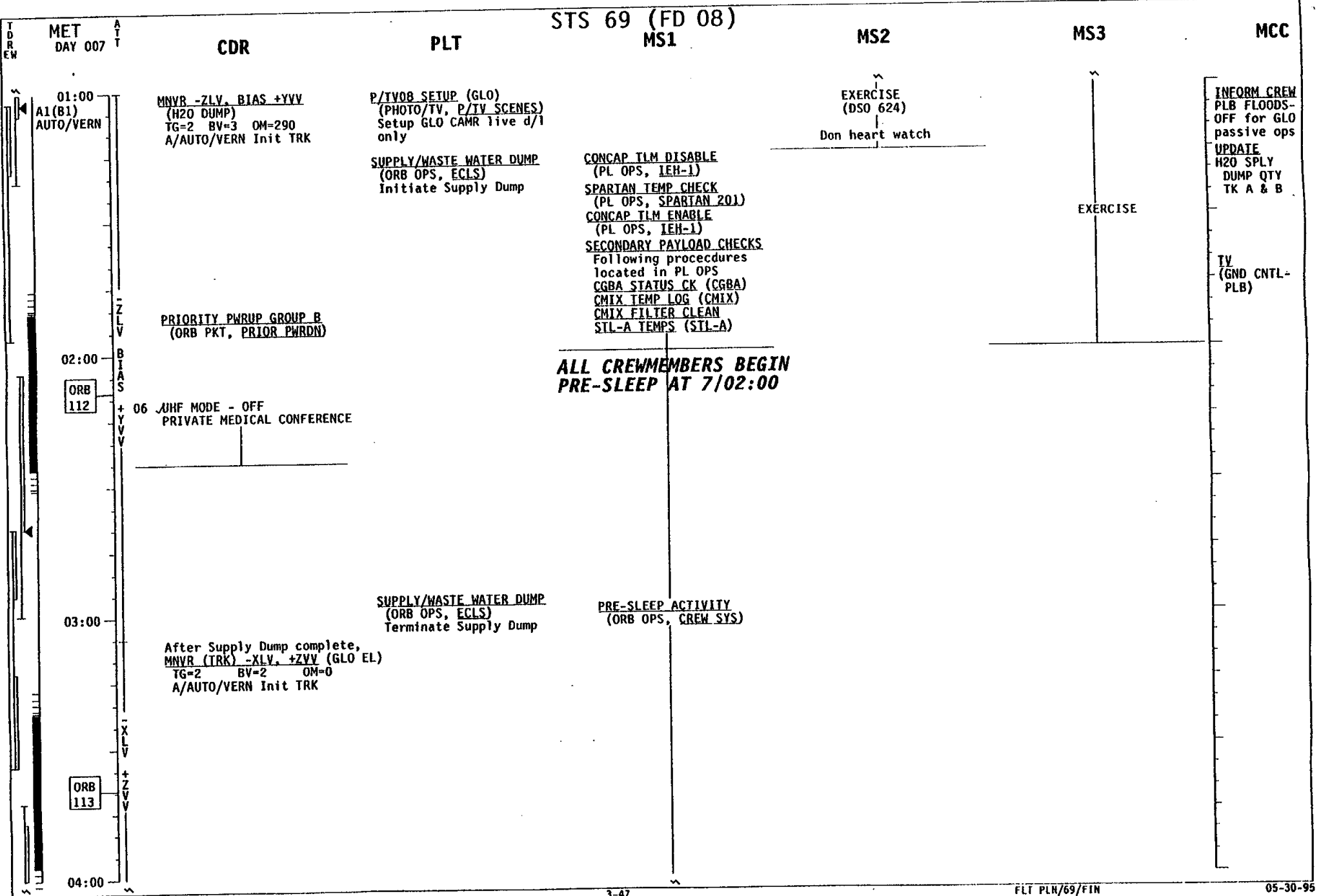
19:00

STS 69 (FD 08)



[A] When in ATT:
GNC SPEC20
ITEM 44 + 30
ITEM 45 + .2





STS 69 (FD 08)
MS1

MET
DAY 007

CDR

PLT

MS2

MS3

MCC

01:00
A1(B1)
AUTO/VERN

MNVN -ZLV, BIAS +YVV
(H2O DUMP)
TG-2 BV-3 OM-290
A/AUTO/VERN Init TRK

P/TVO8 SETUP (GLO)
(PHOTO/TV, P/TV SCENES)
Setup GLO CAMR live d/1
only

EXERCISE
(DSO 624)

Don heart watch

INFORM CREW
PLB FLOODS-
OFF for GLO
passive ops
UPDATE
H2O SPLY
DUMP QTY
TK A & B

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Initiate Supply Dump

CONCAP TLM DISABLE
(PL OPS, IEH-1)
SPARTAN TEMP CHECK
(PL OPS, SPARTAN 201)
CONCAP TLM ENABLE
(PL OPS, IEH-1)
SECONDARY PAYLOAD CHECKS
Following procedures
located in PL OPS
CGBA STATUS CK (CGBA)
CMIX TEMP LOG (CMIX)
CMIX FILTER CLEAN
STL-A TEMPS (STL-A)

EXERCISE

TV
(GND CNTL-
PLB)

PRIORITY PWRUP GROUP B
(ORB PKT, PRIOR PWRDN)

02:00
ORB
112

06 JHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

ALL CREWMEMBERS BEGIN
PRE-SLEEP AT 7/02:00

03:00

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Terminate Supply Dump

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

After Supply Dump complete,
MNVN (TRK) -XLV, +ZVV (GLO EL)
TG-2 BV-2 OM-0
A/AUTO/VERN Init TRK

ORB
113

04:00

T
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R
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STS 69 (FD 08)

MET
DAY 007

CDR

PLT

MS1

MS2

MS3

MCC

04:00
A1(B1)
AUTO/VERN

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

05:00

ORB
114

06:00

ORB
115

07:00

08:00

ORB
116

09:00

ORB
117

10:00

11:00

ORB
118

12:00

SLEEP

STS 69 (FD 08)

CDR

PLT

MS1

MS2

MS3

MCC

MET
DAY 007

12:00
A1 (B1)
AUTO/VERN

ORB
119

13:00

ORB
120

14:00

15:00

ORB
121

16:00

SLEEP

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

10.2 PSI MAINTENANCE
(EVA, 10.2 PSI CABIN)

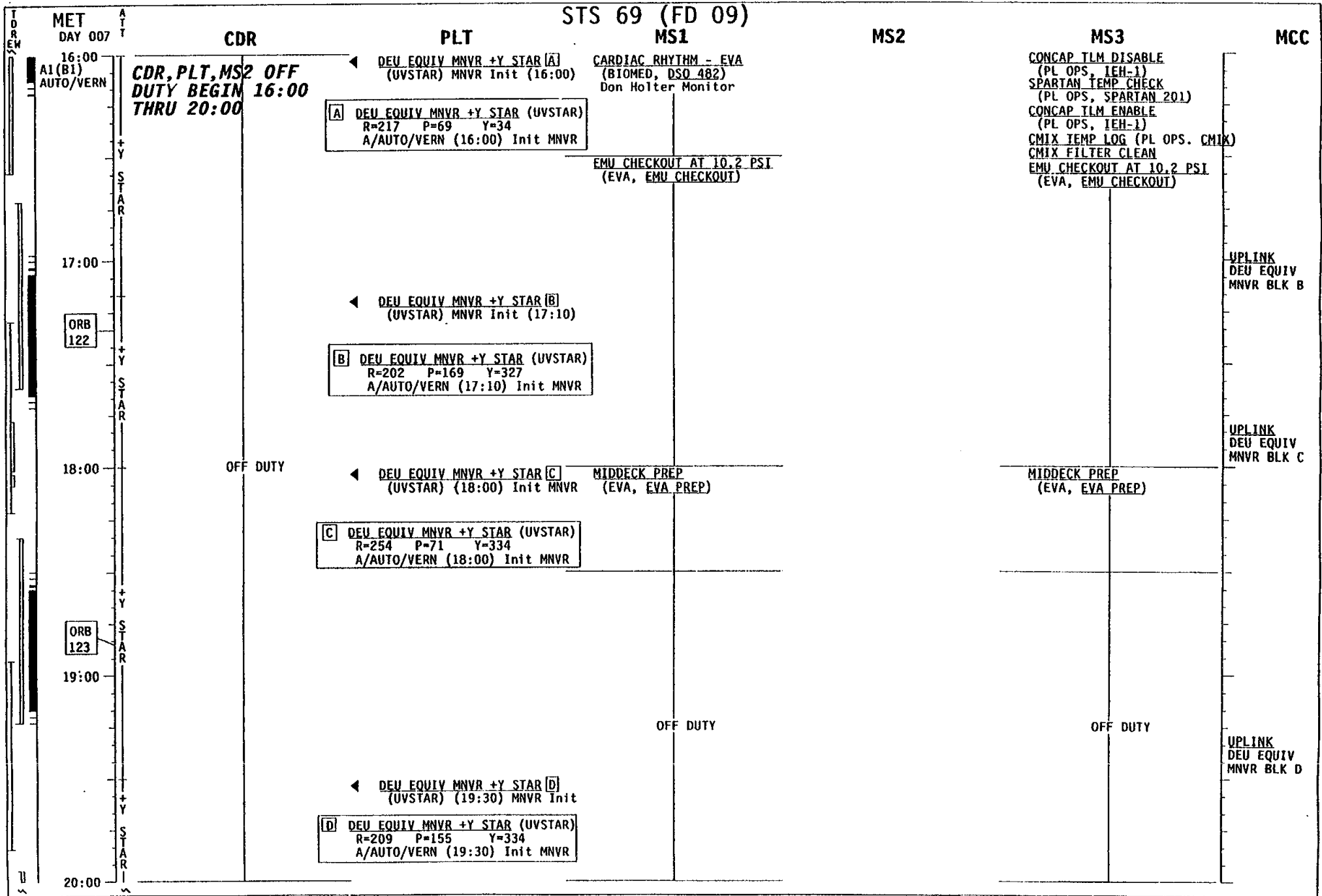
FD09 EZ ACTIVITIES:
 CPA OPS (ORB OPS, CREW SYS)
 OCAC FILTER INSPECT
 MEM OPS/486 (ORB OPS FS, DTO 656) as time permits
 BACK PAIN (BIOMED, DSO 483) (ALL CREW)
 LOG FOOD/FLUID INTAKE + EXERCISE
 DSO 482/624 - Log Exercise and Significant Activity (MS1)
 DSO 608/610 - Log Food, Fluids and Exercise (PLT)
 DSO 610/624 - Log Food, Fluids and Exercise (CDR,MS2)
EXERCISE
 DSO 624 (CDR,MS1)
 DSO 608 (PLT)
 (MS3)

KCA OPERATIONS
 (ORB OPS, DTO 679)
 Prep CONCAP files
 Config PDIP DIGITAL CAM
 RATE HIGH

IMU ALIGN - S TRK
(ORB OPS)
Steps 2-6

**ALL CREWMEMBERS END
POST-SLEEP AT 7/16:00**

KCA XFER
 SPOC FILES
 FAMILY MAIL
 CONCAP, DTO
 TEST FILES
 UPLINK
 DEU EQUIP
 MNVR BLK A
 (PG 3-50)



<p>20:00</p> <p>A1(B1) AUTO/VERN</p> <p>ORB 124</p> <p>+</p> <p>STAR</p> <p>21:00</p> <p>P/IVO8 SETUP (GLO) (PHOTO/TV, P/TV SCENES)</p> <p>PULM 02 XCHNG (BIOMED, DSO 494)</p> <p>← MNVR +ZLV, -YVV (GLO PRCS) TG=2 BV=5 P=270 Y=0 OM=90 A/AUTO/VERN (21:20) INIT TRK GLO PRCS TEST (NOSE & TAIL) (ORB OPS, GLO-3) Start time = 21:42</p> <p>(A15)B2 AUTO/VERN</p> <p>ORB 125</p> <p>22:00</p> <p>(A15)B2 LVLH/ALT</p> <p>AUTO/VERN</p> <p>← MNVR +XLV, -YVV (GLO FLUOR) TG=2 BV=5 P=350 Y=0 OM=90 B/AUTO/VERN (22:20) Init TRK GLO-3 FLUORESCENCE (ORB OPS, GLO-3) Start time = 22:33</p> <p>GLO-3 FLUORESCENCE (ORB OPS, GLO-3) Start time = 22:33</p> <p>(A15)B2 LVLH/ALT</p> <p>(A15)B2 AUTO/VERN</p> <p>23:00</p> <p>← MNVR +ZLV, -YVV (GLO VRCS) TG=2 BV=5 P=270 Y=0 OM=90 B/AUTO/VERN (22:55) INIT TRK</p>	<p>MEAL</p> <p>MEAL</p> <p>MEAL</p> <p>MEAL</p> <p>MEAL</p>	<p>MEAL</p> <p>L17 Check MCIU filter screen</p> <p>PULM 02 XCHNG (BIOMED, DSO 494)</p> <p>OFF DUTY</p> <p>EXERCISE (DSO 624) Don heart watch</p>	<p>MEAL</p> <p>OFF DUTY</p>	<p>MEAL</p> <p>TV (CRW CNTL- PLB)</p>
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TDR
EMMET
DAY 007A
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STS 69 (FD 09)

CDR

PLT

MS1

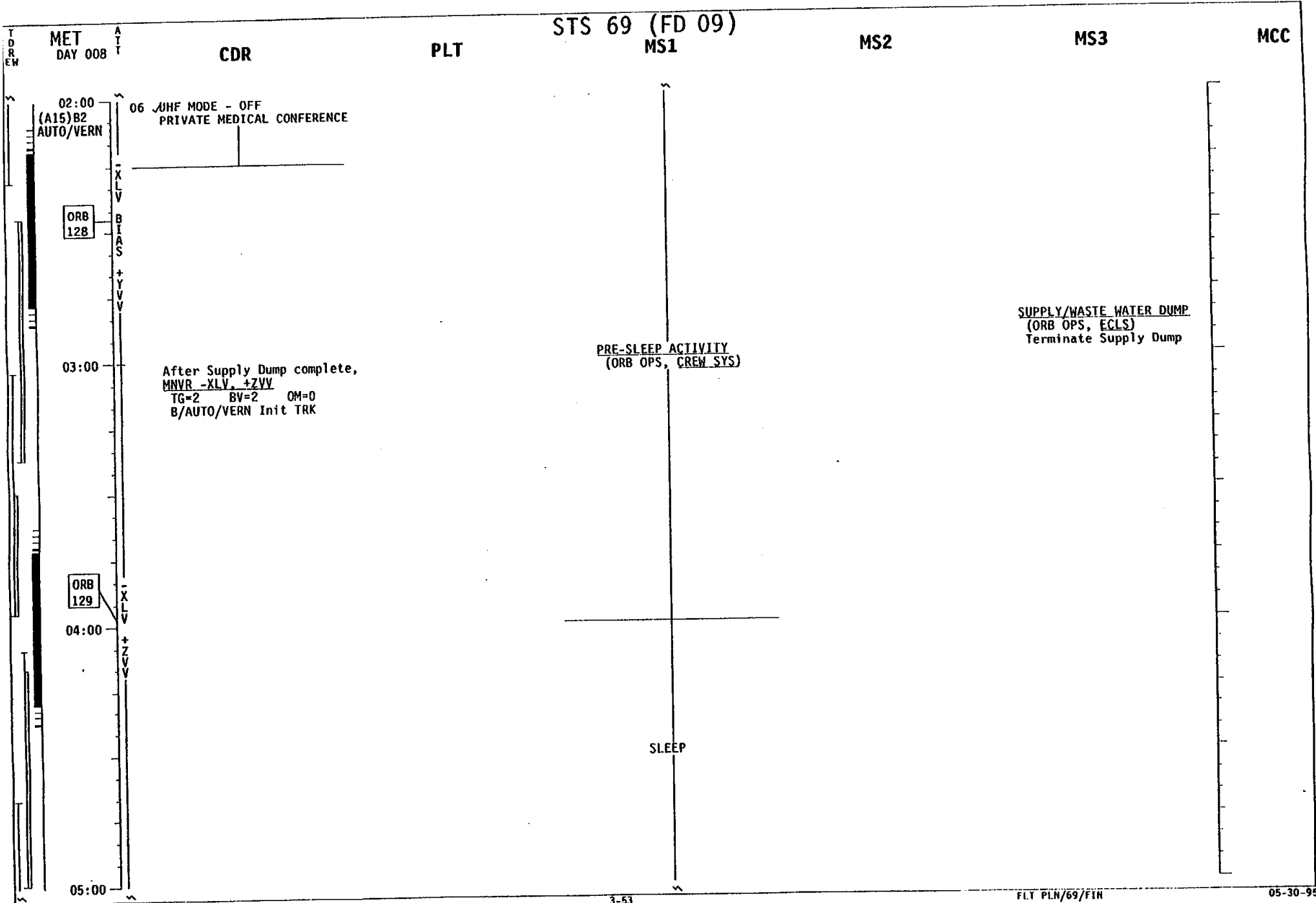
MS2

MS3

MCC

23:00 (A15)B2 AUTO/VERN	V R C S	GLO-3 VRCS TEST (ORB OPS, GLO-3) Start time = 23:15	GLO-3 VRCS TEST (ORB OPS, GLO-3)	OFF DUTY	EXERCISE (DSO 624) Don heart watch	OFF DUTY
		(A15)B2 AUTO/ALT ORB 126				
(A15)B2 LVLH/ALT	T E S T		◀ MNVR +XLV, -YVV (GLO FLUOR) TG=2 BV=5 P=350 Y=0 OM=90 B/AUTO/VERN (23:40) Init TRK	PULM O2 XCHNG (BIOMED, DSO 494)		
(A15)B2 AUTO/VERN		GLO-3 FLUORESCENCE (ORB OPS, GLO-3) Start time = 00:04	GLO-3 FLUORESCENCE (ORB OPS, GLO-3)	SECONDARY PAYLOAD CHECKS Following procedures located in PL OPS CGBA STATUS CK (CGBA) CMIX TEMP LOG (CMIX) CMIX FILTER CLEAN EPICS MAINT (EPICS) STL-A TEMPS (STL-A)		PULM O2 XCHNG (BIOMED, DSO 494)
008 00:00	P F		◀ MNVR -XLV, BIAS +YVV (COMM, H2O DUMP) TG=2 BV=2 OM=290 B/AUTO/VERN (00:30) Init TRK	P/TV03,04 SETUP (PHOTO/TV, P/TV SCENES) CREW CONF, PORTRAIT		CONCAP TLM DISABLE (PL OPS, IEH-1) SPARTAN TEMP CHECK (PL OPS, SPARTAN 201) CONCAP TLM ENABLE (PL OPS, IEH-1)
(A15)B2 LVLH/ALT AUTO/VERN	T E S T				10.2 PSI MAINTENANCE (EVA, 10.2 PSI CABIN)	
ORB 127						
01:00	X L V					
	B I A S	CREW CONF	CREW CONF	CREW CONF	CREW CONF	CREW CONF
	+ Y V V	P/TV04 OPS (CREW PORTRAIT) (PHOTO/TV, P/TV SCENES)	P/TV04 OPS (CREW PORTRAIT) (PHOTO/TV, P/TV SCENES)	P/TV04 OPS (CREW PORTRAIT) (PHOTO/TV, P/TV SCENES)	P/TV04 OPS (CREW PORTRAIT) (PHOTO/TV, P/TV SCENES)	P/TV04 OPS (CREW PORTRAIT) (PHOTO/TV, P/TV SCENES)
			P/TV08 SETUP (GLO) (PHOTO/TV, P/TV SCENES) Setup GLO CAMR live d/1 only	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Supply Dump
02:00						

TV (TDRW)
(CRW CNTL-
CAB)UPDATE
H2O SPLV
DUMP QTY
TK A & BINFORM CREW
PLB FLOODS-
OFF for GLO
passive ops
TV
(GND CNTL-
PLB)



STS 69 (FD 09)
MS1

MET
DAY 008

CDR

PLT

MS2

MS3

MCC

02:00

(A15)B2
AUTO/VERN

06 JHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

ORB
128

03:00

After Supply Dump complete,
MNVR -XLV, +ZVV
TG=2 BV=2 OM=0
B/AUTO/VERN Init TRK

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Terminate Supply Dump

ORB
129

04:00

SLEEP

05:00

STS 69 (FD 09)

MET
DAY 008

CDR

PLT

MS1

MS2

MS3

MCC

05:00
(A15)B2
AUTO/VERN

ORB
130

06:00

07:00

ORB
131

08:00

ORB
132

09:00

ORB
133

10:00

11:00

ORB
134

12:00

13:00

SLEEP

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

T
D
R
E
W

MET
DAY 008

A
I
T

STS 69 (FD 10)
MS1

MS2

MS3

MCC

CDR

PLT

MS1

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

10.2 PSI MAINTENANCE
(EVA, 10.2 PSI CABIN)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

IMU ALIGN - S TRK (ORB OPS)
Steps 2-6
MNVR -ZLV, BIAS +YVY (GLO FC)
TG=2 BV=3 OM=285
B/AUTO/VERN Init TRK

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

R11U FC PURGE HTR - ON

FD10 EZ ACTIVITIES:

CPA OPS (ORB OPS, CREW SYS)
QCAC FILTER INSPECT
MEM OPS/486 (ORB OPS FS, DTO 656) as time permits
LOG FOOD/FLUID INTAKE + EXERCISE
DSO 482/624 - Log Exercise and Significant Activity (MS1)
DSO 608/610 - Log Food, Fluids and Exercise (PLT)
DSO 610/624 - Log Food, Fluids and Exercise (CDR,MS2)
EXERCISE
DSO 624 (MS2)
DSO 608 (PLT)

CARDIAC RHYTHM - EVA
(BIOMED, DSO 482)
Doff Holter Monitor

On MCC GO:
FC PURGE - MANUAL (GLO)
(ORB OPS, EPS)
Steps 2-3

EVA PREP
(EVA, EVA PREP)

KCA OPERATIONS
(ORB OPS, DTO 679)
Prep CONCAP files
Config PDIP DIGITAL CAM
RATE HIGH

KCA XEER
SPOC FILES
FAMILY MAIL
CONCAP, DTO
TEST FILES

CONCAP TLM DISABLE
(PL OPS, IEH-1)
SPARTAN TEMP CHECK
(PL OPS, SPARTAN 201)

Don Dosimeters (DSO 489)

PRE EVA PL CONFIG
(PL OPS, EVA PL CONFIG)

CONCAP TLM ENABLE
(PL OPS, IEH-1)
SECONDARY PAYLOAD CHECKS
Following procedures
located in PL OPS
CMIX TEMP LOG (CMIX)
CMIX FILTER CLEAN
EPICS MAINT (EPICS)
STL-A TEMPS (STL-A)

ABL PORT RMS HTR (two)-AUTO

FILTER CLEANING
(IFM, SCHEDULED MAINT)

TV
(CRW CNTL-
PLB)

13:00

(A15)B2
ORB
135

AUTO/VERN

14:00

-ZLV

BIAS

+YVY

ORB
136

15:00

**ALL CREWMEMBERS END
POST-SLEEP AT 8/15:00**

P/TV08 SETUP (GLO)
(PHOTO/TV, P/TV SCENES)

MNVR +XLV, BIAS -YVY (GLO OG ROLL)

TG=2 BV=1 OM=120
B/AUTO/VERN
(15:40) Init TRK

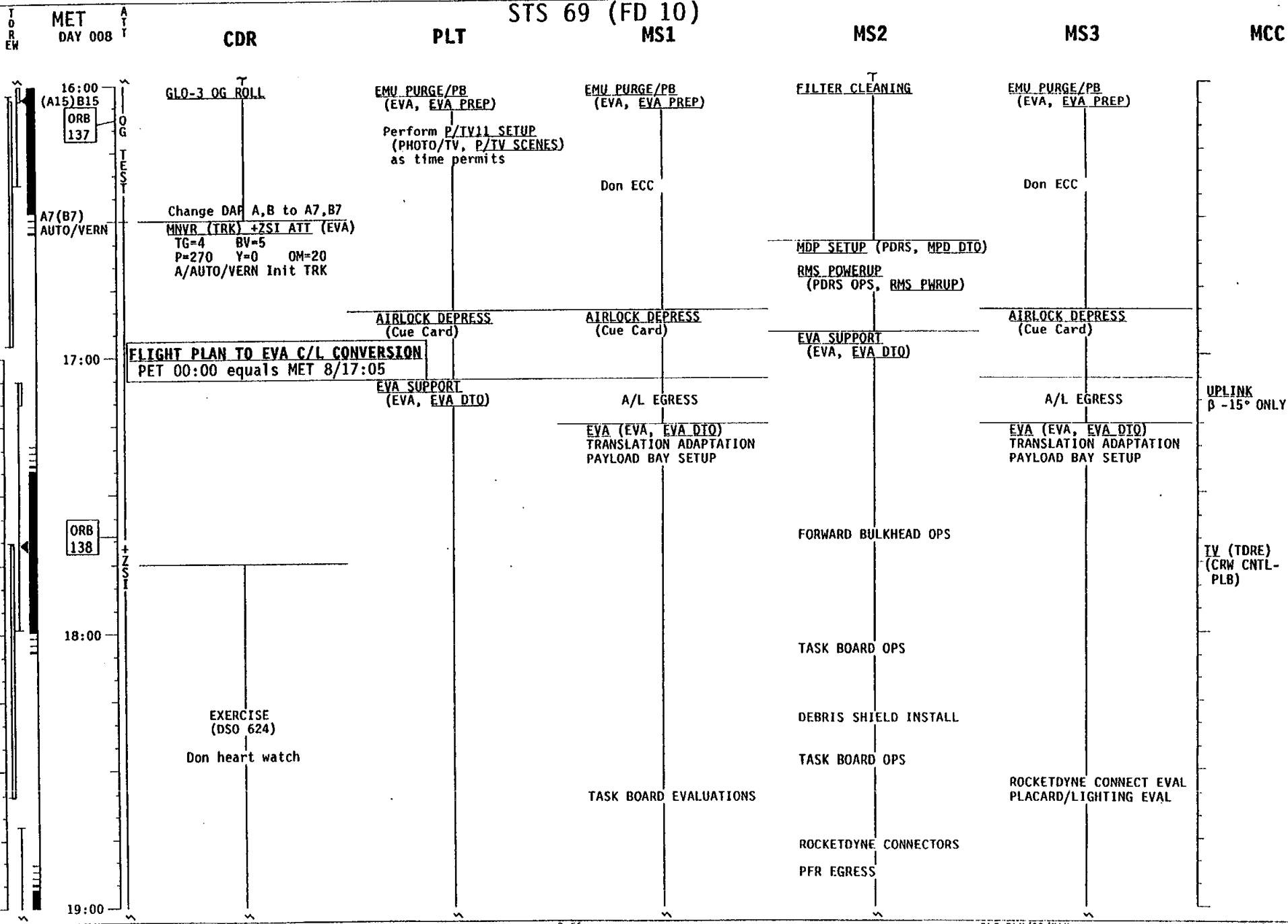
GLO-3 OG ROLL
(ORB OPS, GLO-3)

Start time = 16:00

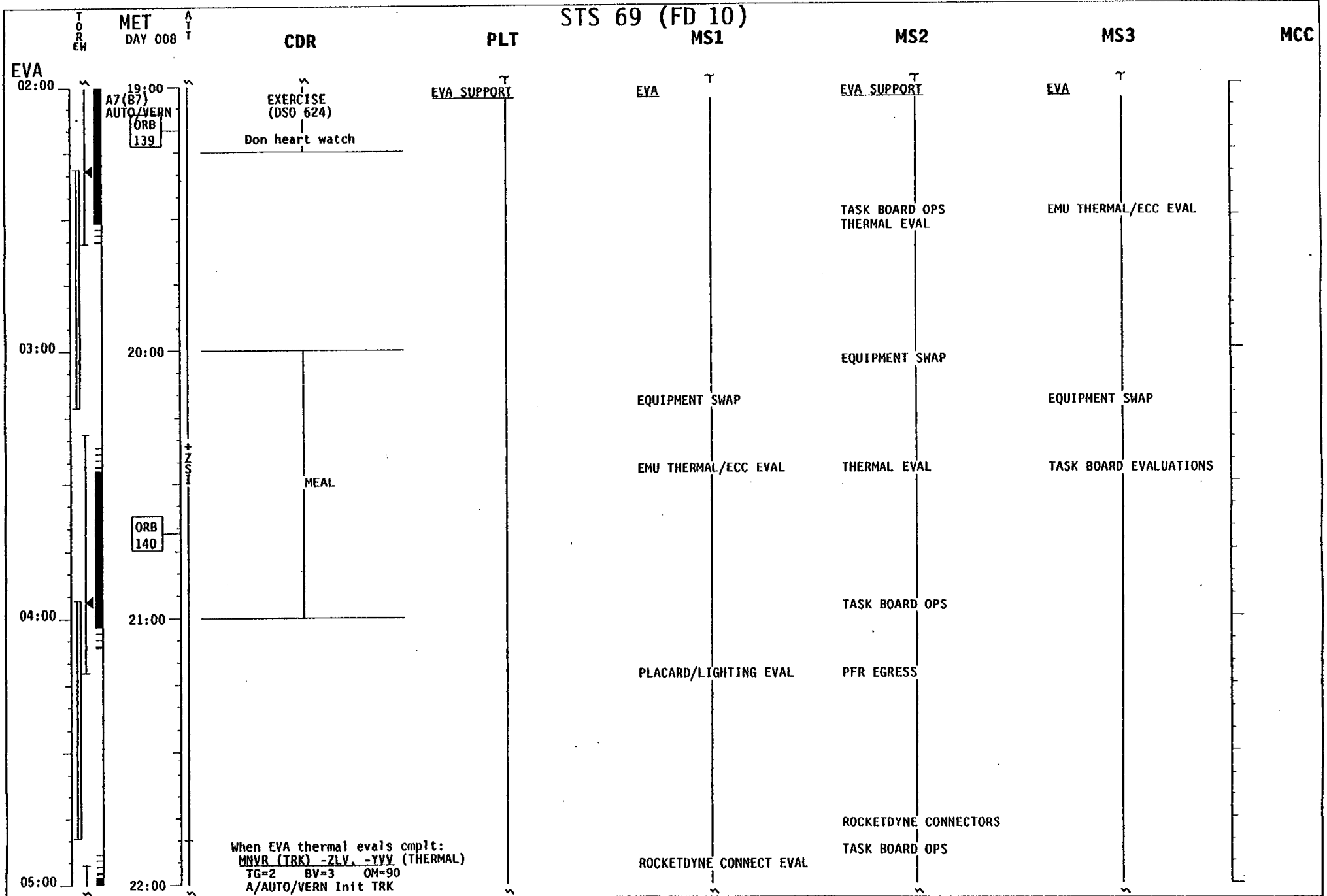
(A15)B15
AUTO/VERN
16:00

O
G
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S
T

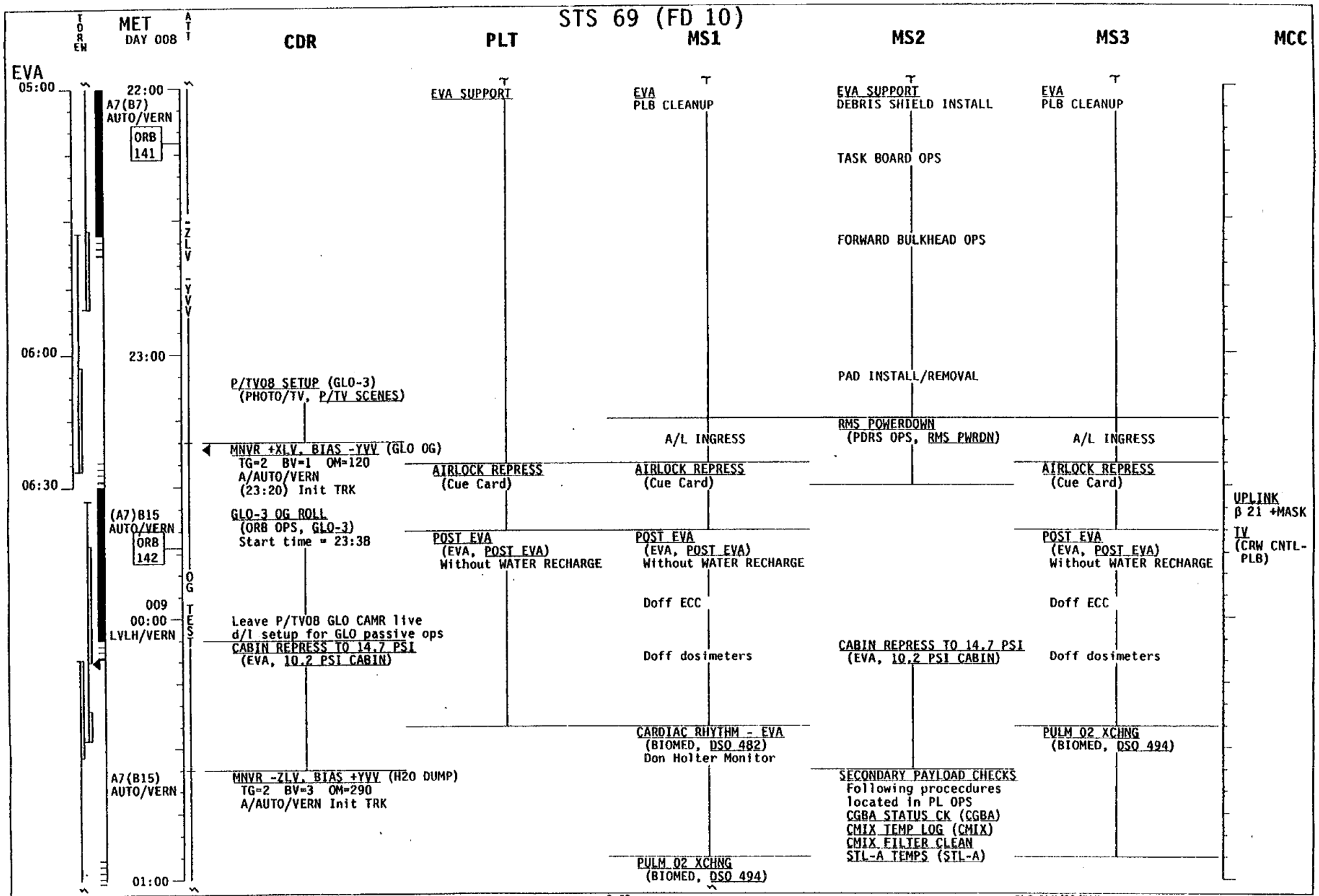
STS 69 (FD 10)



STS 69 (FD 10)



When EVA thermal evals cmlt:
 MNVR (TRK) -ZLV, -YVV (THERMAL)
 TG=2 BV=3 OM=90
 A/AUTO/VERN Init TRK



T
D
R
E
W

MET
DAY 009

A
T

STS 69 (FD 10)

CDR

PLT

MS1

MS2

MS3

MCC

**ALL CREWMEMBERS BEGIN
PRE-SLEEP AT 9/01:00**

PULM O2 XCHNG
(BIOMED, DSO 494)

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Initiate Waste Dump
Dump tank to 5%
CONCAP TLM DISABLE
(PL OPS, IEH-1)

EMU BATT RECHARGE
(EVA, EMU MAINT/RCHRG)
Init charge for both EMUs
POST EVA QUESTIONNAIRE
(EVA, EVA DIO PROCS)
Part 1

SPARTAN TEMP CHECK
(PL OPS, SPARTAN 201)
POST EVA PL CONFIG
(PL OPS, EVA PL CONFIG)

EMU BATT RECHARGE
(EVA, EMU MAINT/RCHRG)
Init charge for both EMUs
POST EVA QUESTIONNAIRE
(EVA, EVA DIO PROCS)
Part 1

TV
(GND CNTL-
PLB)

CONCAP TLM ENABLE
(PL OPS, IEH-1)

01:00

A7 (B15)
AUTO/VERN

ORB
143

02:00

06 JHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

ORB
144

After Waste Dump complete,
MNVR -XLV, +ZVV (GLO EL)
TG-2 BV-2 OM-0
A/AUTO/VERN Init TRK

03:00

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Terminate Waste Dump

04:00

T
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E
H

MET
DAY 009

A
T
T

STS 69 (FD 10)
MS1

CDR

PLT

MS2

MS3

MCC

04:00

A7 (B15)

ORB
145

AUTO/VERN

05:00

ORB
146

06:00

07:00

ORB
147

08:00

ORB
148

09:00

10:00

ORB
149

11:00

ORB
150

12:00

SLEEP

STS 69 (FD 11)
MS1

MET
DAY 009

CDR

PLT

MS2

MS3

MCC

DSO 610 (Ref EZ Activities) DSO 610 (Ref EZ Activities)

DSO 610 (Ref EZ Activities)

FD11 EZ ACTIVITIES:
 CPA OPS (ORB OPS, CREW SYS)
 QCAC FILTER INSPECT
 MEM OPS/486 (ORB OPS FS, DTQ 656) as time permits
 LOG FOOD/FLUID INTAKE + EXERCISE
 DSO 482/624 - Log Exercise and Significant Activity (MS1)
 DSO 608/610 - Log Food, Fluids and Exercise (PLT)
 DSO 610/624 - Log Food, Fluids and Exercise (CDR,MS2)
 COLLECT URINE VOIDS (BIOMED, DSO 610) (CDR,PLT,MS2)
 Starting with second void of the day,
 collect urine for a 24 hr period

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

BACK PAIN
(BIOMED, DSO 483)

EVA crew take one aspirin
tablet (325 mg)

KCA OPERATIONS
(ORB OPS, DTQ 679)
Prep CONCAP files
Config PDIP DIGITAL CAM
RATE HIGH

EVA crew take one aspirin
tablet (325 mg)

KCA XFER
SPOC FILES
FAMILY MAIL
CONCAP,DTQ
TEST FILES

IMV ALIGN - S TRK (ORB OPS)
Steps 2-6

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

MNVR -ZLV, BIAS +YVY (GLO FES)
TG=2 BV=5
P=270 Y=0 OM=290
A/AUTO/VERN Init TRK

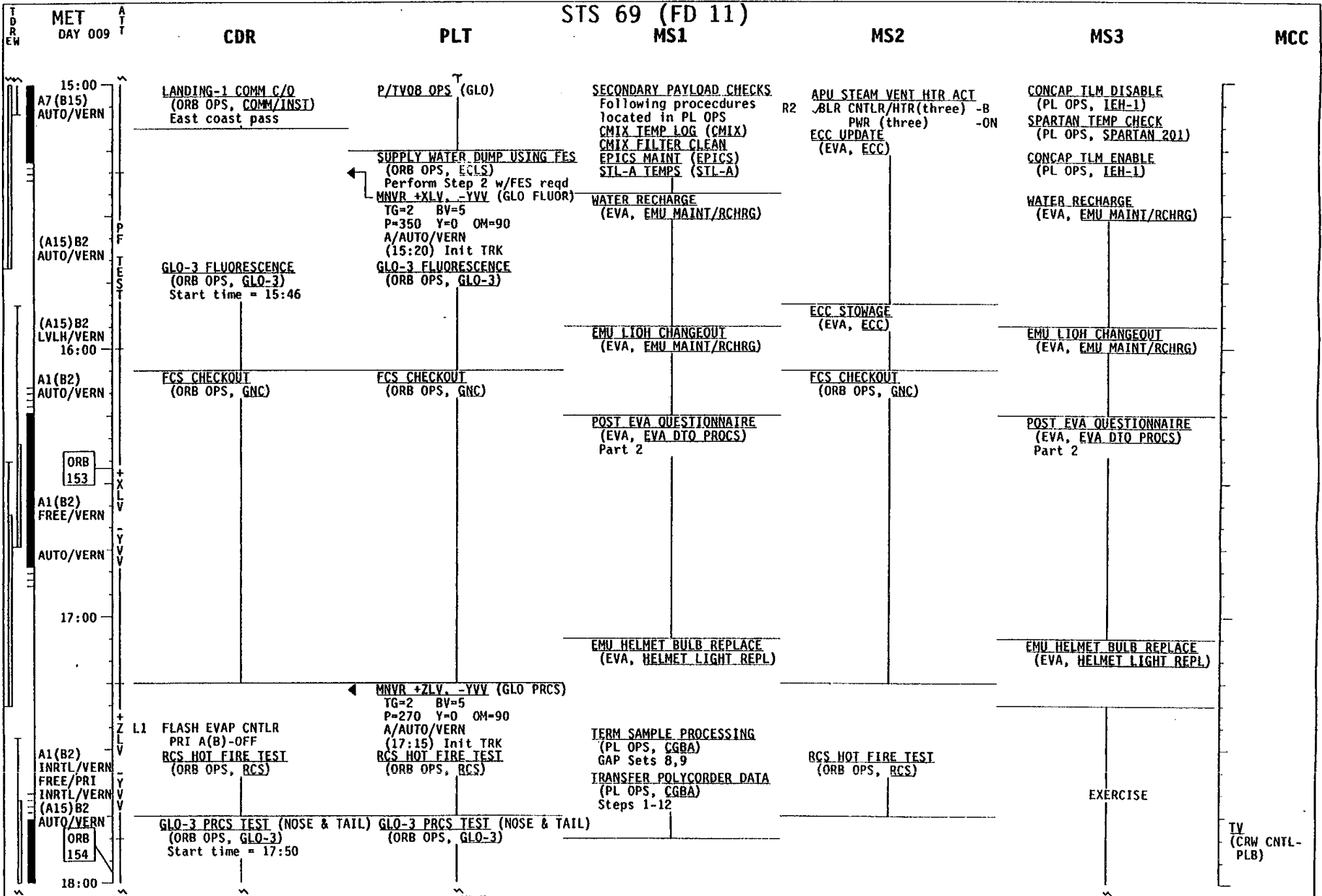
P/TVOB SETUP (GLO)
(PHOTO/TV, P/TV SCENES)

SUPPLY WATER DUMP USING FES (GLO)
(ORB OPS, ECLS) step 1
P/TVOB OPS (GLO)
(PHOTO/TV, P/TV SCENES)

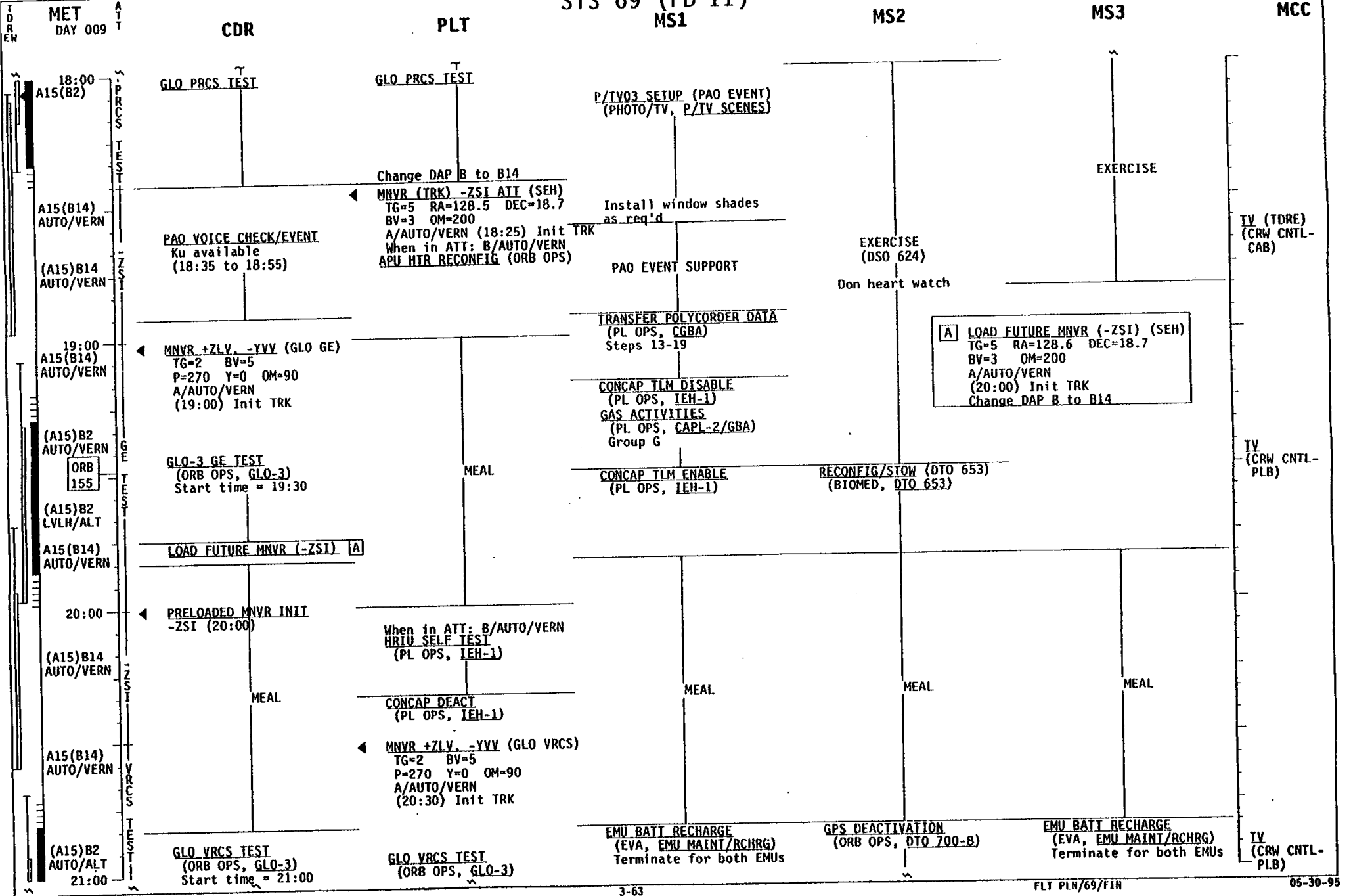
**ALL CREWMEMBERS END
POST-SLEEP AT 9/15:00**

TV
(CRW CNTL-
PLB)

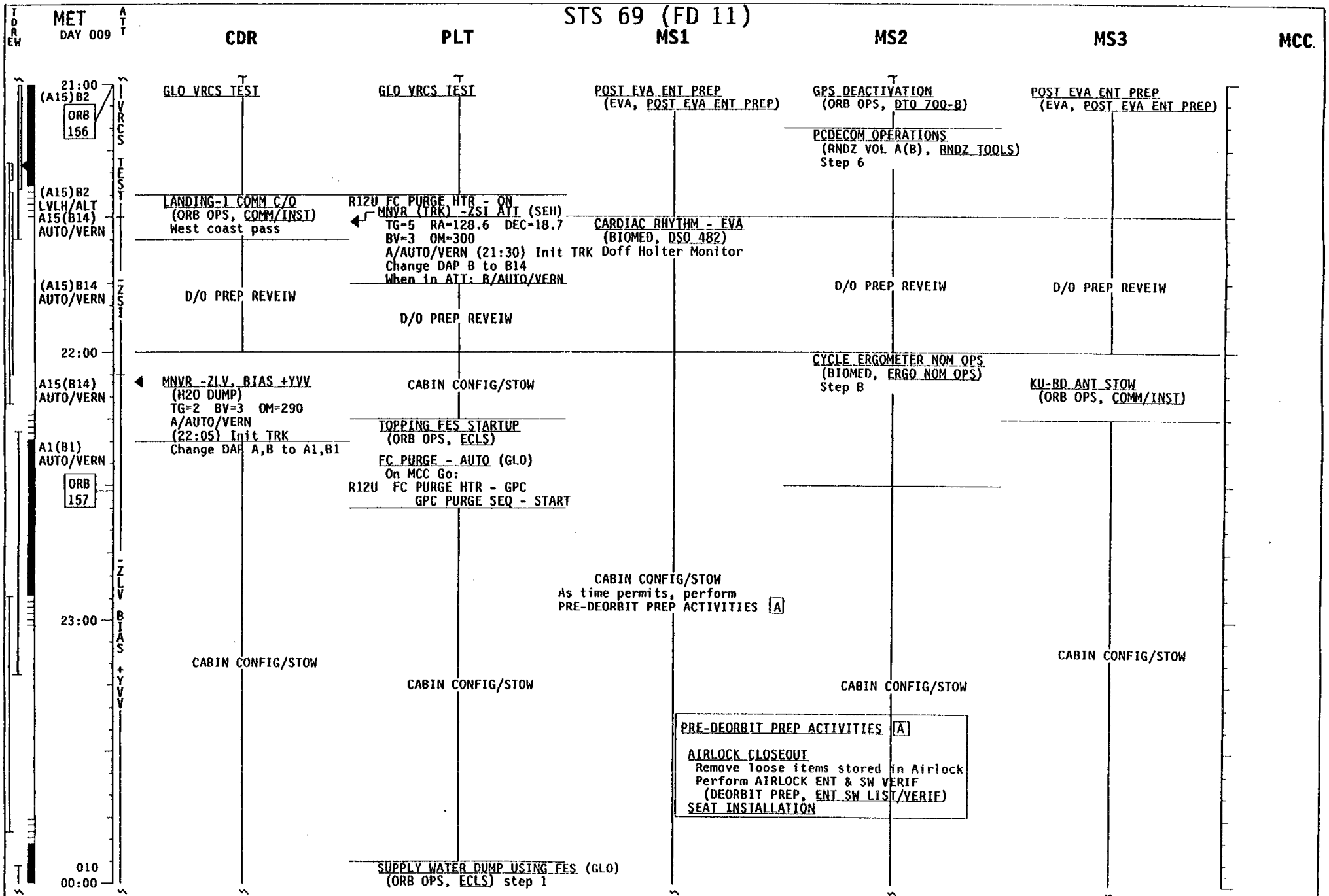
15:00



STS 69 (FD 11)



A LOAD FUTURE MNVR (-ZSI) (SEH)
 TG=5 RA=128.6 DEC=18.7
 BV=3 OM=200
 A/AUTO/VERN
 (20:00) Init TRK
 Change DAP B to B14



T
D
R
E
W

STS 69 (FD 11)

MET
DAY 010

CDR

PLT

MS1

MS2

MS3

MCC

00:00

A1(B1)
ORB
158

AUTO/VERN

SUPPLY WATER DUMP USING FES (GLO)

CABIN CONFIG/STOW

CABIN CONFIG/STOW

CABIN CONFIG/STOW

SUPPLY WATER DUMP USING FES
(ORB OPS, ECLS)
Perform Step 2 w/FES reqd

CABIN CONFIG/STOW

CABIN CONFIG/STOW

CABIN CONFIG/STOW

SECONDARY PAYLOAD CHECKS
Following procedures
located in PL OPS
CGBA STATUS CK (CGBA)
CMIX TEMP LOG (CMIX)
CMIX FILTER CLEAN
STL-A TEMPS (STL-A)

QCAC STOW
(ORB OPS, CREW SYS)

SPARTAN TEMP CHECK
(PL OPS, SPARTAN 201)

UPDATE
H2O SPLY
DUMP QTY
TK A & B

01:00

**ALL CREWMEMBERS BEGIN
PRE-SLEEP AT 10/01:00**

SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Initiate Supply Dump

Z
L
V
B
I
A
S
+
Y
V
V

ORB
159

06 JHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

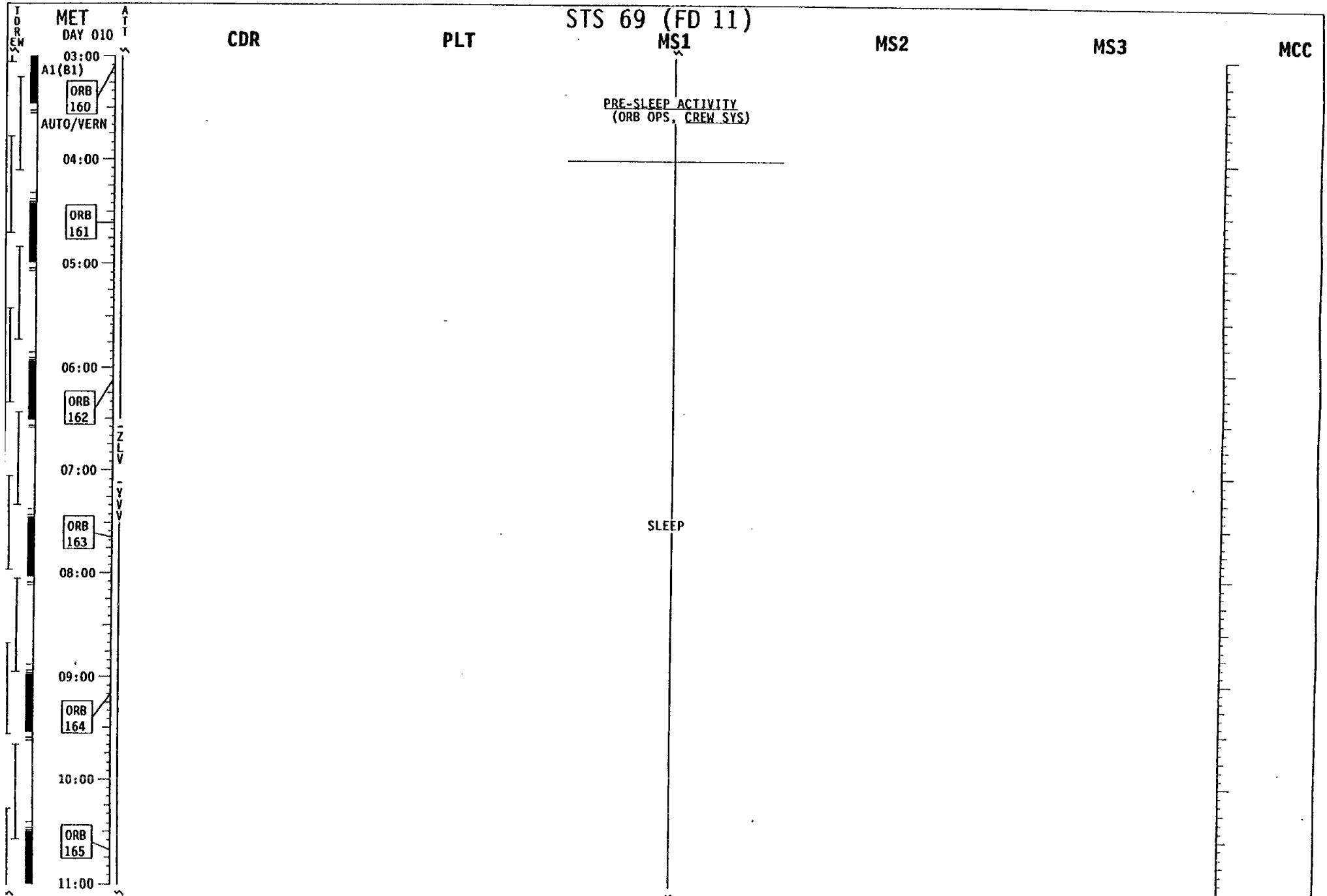
02:00

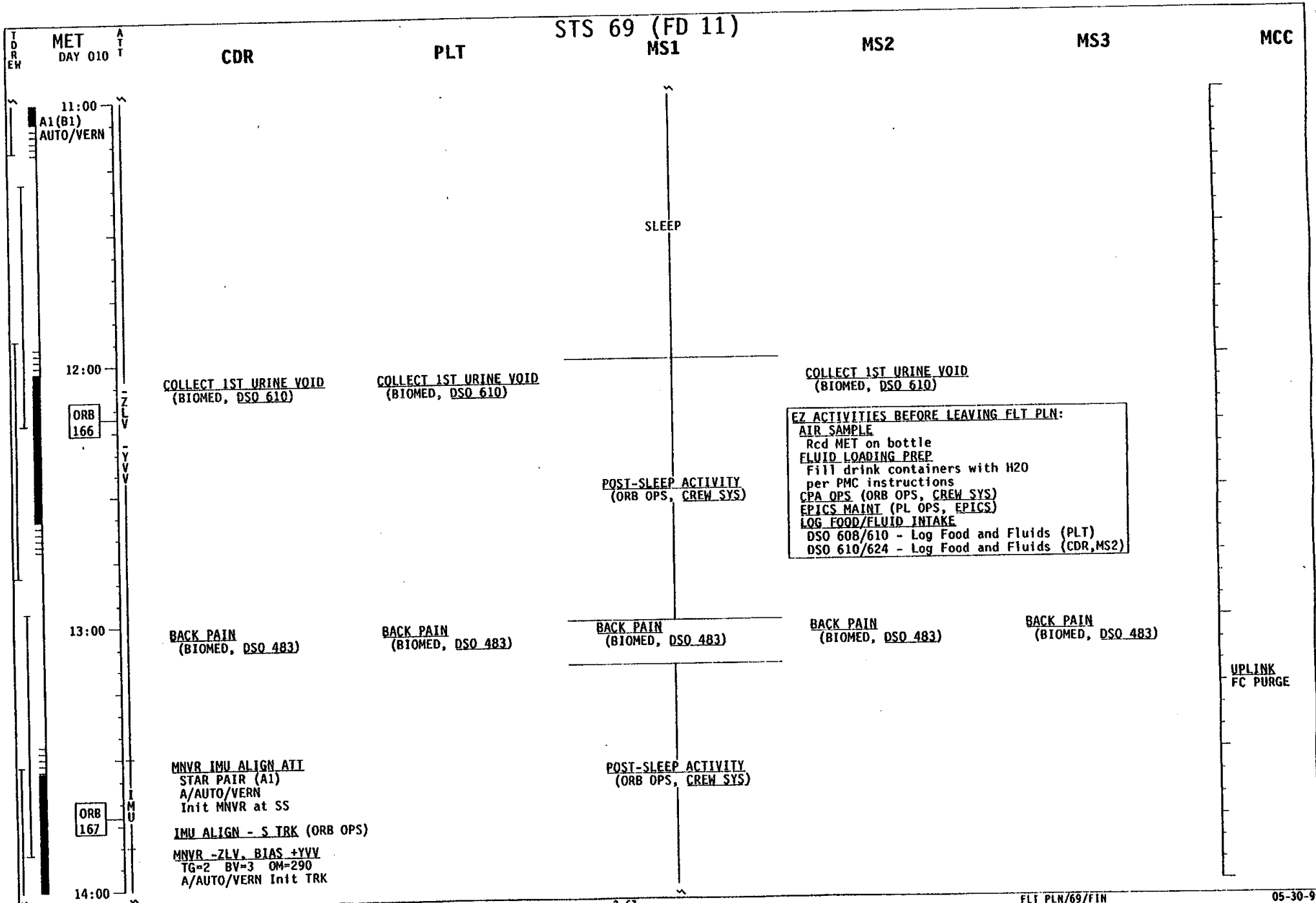
SUPPLY/WASTE WATER DUMP
(ORB OPS, ECLS)
Terminate Supply Dump

After Supply Dump complete,
MNVR (TRK) -ZLV, -YVV (THERMAL)
TG=2 BV=3 OM=90
A/AUTO/VERN Init TRK

03:00

Z
L
V
Y
V
V





T
D
R
E
W

MET
DAY 010

A
T
T

STS 69 (FD 12)

CDR

PLT

MS1

MS2

MS3

MCC

14:00
A1(B1)
AUTO/VERN

Z
L
V
B
I
A
S
+
Y
V
V

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SPARTAN TEMP CHECK
(PL OPS, SPARTAN 201)

15:00

06 JHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

STL-A ENTRY PREP
(PL OPS, STL-A)

**ALL CREWMEMBERS END
POST-SLEEP AT 10/15:00**

CMIX ENTRY PREP
(PL OPS, CMIX)

CAPL DEACT
(PL OPS, CAPL-2/GBA)
WSF DEACT
(PL OPS, WSF SYSTEM)

REENTRY CONFIG
(PL OPS, SPARTAN 201)

ORB
168

◀ MNVR (TRK) -XSL ATT
TG=4 BV=5
P=184 Y=0 OM=290
A/AUTO/VERN
(15:15) Init TRK

IEH-1 DEACT
(PL OPS, IEH-1)

PGSC/BIA STOW
(PL OPS, BIA)

GO TO DEORBIT PREP 10/15:29

UPLINK
TFL 161

16:00

X
S
I
M
U
V
E
R
I
F

ORB
169

17:00

DAP TABLE

DAP TABLE

DAP TABLE

STS-69 DAP A - GENERIC

	ITEM #	A1	A2	A3	A4	A5	A6	A7	A8
PRI									
ROT RATE	10 (50)	0.2000	0.4000	0.2000	0.5000	0.2000	0.2000	0.2000	0.2000
ATT DB	11 (51)	5.00	1.00	1.00	3.00	5.00	5.00	2.00	2.00
RATE DB	12 (52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13 (53)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
COMP	14 (54)	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	15 (55)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
Y OPTION	16 (56)	ALL	ALL	TAIL	ALL	ALL	TAIL	ALL	ALL
TRAN PLS	17 (57)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05
ALT									
RATE DB	18 (58)	0.200	0.200	0.200	0.200	0.070	0.070	0.200	0.200
JET OPT	19 (59)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
# JETS	20 (60)	2	2	2	2	1	1	2	2
ON TIME	21 (61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22 (62)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN									
ROT RATE	23 (63)	0.2000	0.4000	0.0080	0.2000	0.2000	0.2000	0.2000	0.2000
ATT DB	24 (64)	1.000	1.000	0.070	1.000	1.000	1.000	1.000	1.000
RATE DB	25 (65)	.020	.020	.010	.020	.020	.020	.020	.020
ROT PLS	26 (66)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
COMP	27 (67)	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28 (68)	0	0	0	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/POST DEPLOY	LOSS OF VERNS (NOSE & TAIL)	LOSS OF VERNS (TAIL ONLY)	RNDZ	PROX OPS

4-2

FLT PLN/69/FIN

STS-69 DAP A - FLIGHT SPECIFIC

	ITEM #	A9	A10	A11	A12	A13	A14	A15
PRI								
ROT RATE	10 (50)	0.1000	0.1000	0.1000	0.1000	0.1000	0.2000	0.3000
ATT DB	11 (51)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
RATE DB	12 (52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13 (53)	0.04	0.04	0.04	0.04	0.04	0.10	1.00
COMP	14 (54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	15 (55)	ALL	ALL	ALL	ALL	ALL	ALL	TAIL
Y OPTION	16 (56)	ALL	ALL	ALL	ALL	ALL	ALL	TAIL
TRAN PLS	17 (57)	0.05	0.05	0.10	0.10	0.10	0.10	0.75
ALT								
RATE DB	18 (58)	0.200	0.200	0.100	0.100	0.100	0.070	0.200
JET OPT	19 (59)	ALL	ALL	ALL	ALL	ALL	TAIL	TAIL
# JETS	20 (60)	2	2	2	2	2	1	2
ON TIME	21 (61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22 (62)	2.90	4.70	4.50	7.00	7.00	0.00	0.00
VERN								
ROT RATE	23 (63)	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
ATT DB	24 (64)	3.000	3.000	3.000	3.000	3.000	1.000	1.000
RATE DB	25 (65)	.200	.200	.040	.040	.040	.020	.020
ROT PLS	26 (66)	0.010	0.010	0.002	0.002	0.002	0.010	0.050
COMP	27 (67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28 (68)	1	1	1	2	3	0	0
PURPOSE		SPTN LOW HOVER	SPTN RELEASE CAPTURE, EXTENDED PARK	WSF HOVER, CHAWS DEEP WAKE	WSF RAM CLEAN	WSF ADACS C/O	UVSTAR LOSS OF VERN	GLO VRCS, PRCS, GE, FE

Note: **BOLD/ITALICS** indicate a change from the I-load.

STS-69 DAP B - GENERIC

	ITEM #	B1	B2	B3	B4	B5	B7	B8
PRI								
ROT RATE	30 (50)	0.5000	0.2000	0.2000	0.2000	0.2000	0.5000	0.2000
ATT DB	31 (51)	3.00	3.00	3.00	0.30	3.00	2.00	2.00
RATE DB	32 (52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33 (53)	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34 (54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	35 (55)	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL
Y OPTION	36 (56)	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL
TRAN PLS	37 (57)	0.10	0.02	0.02	0.02	0.02	0.05	0.01
ALT								
RATE DB	38 (58)	0.200	0.070	0.070	0.200	0.200	0.200	0.200
JET OPT	39 (59)	ALL	TAIL	ALL	ALL	ALL	ALL	ALL
# JETS	40 (60)	2	1	1	2	2	2	2
ON TIME	41 (61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42 (62)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN								
ROT RATE	43 (63)	0.2000	0.2000	0.2000	0.0080	0.0160	0.2000	0.2000
ATT DB	44 (64)	1.000	1.000	1.000	0.100	0.033	1.000	1.000
RATE DB	45 (65)	.020	.020	.020	.010	.020	.020	.020
ROT PLS	46 (66)	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP	47 (67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48 (68)	0	0	0	0	0	0	0
PURPOSE		NOM OMS & RCS BURNS	LOSS OF VERNS (TAIL ONLY)	LOSS OF VERNS (NOSE & TAIL)	SSUS DEPLOY	COAS CAL	RNDZ	PROX OPS

4-4

FLT PLN/69/FIN

STS-69 DAP B - FLIGHT SPECIFIC

	ITEM #	B9	B10	B11	B12	B13	B14	B15
PRI								
ROT RATE	30 (50)	0.0500	0.1000	0.1000	0.1000	0.2000	0.5000	0.1000
ATT DB	31 (51)	1.00	40.00	3.00	3.00	3.00	3.00	1.00
RATE DB	32 (52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33 (53)	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34 (54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	35 (55)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL
Y OPTION	36 (56)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL
TRAN PLS	37 (57)	0.01	0.02	0.02	0.02	0.02	0.02	0.02
ALT								
RATE DB	38 (58)	0.100	0.100	0.100	0.100	0.070	0.200	0.100
JET OPT	39 (59)	ALL	TAIL	ALL	ALL	TAIL	ALL	TAIL
# JETS	40 (60)	2	2	2	2	1	2	2
ON TIME	41 (61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42 (62)	4.70	5.80	5.80	5.80	0.00	0.00	0.00
VERN								
ROT RATE	43 (63)	0.1000	0.2000	0.2000	0.2000	0.2000	0.0400	0.1000
ATT DB	44 (64)	1.000	40.000	2.000	3.000	1.000	0.100	1.000
RATE DB	45 (65)	.020	.040	.040	.040	.020	.020	.020
ROT PLS	46 (66)	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP	47 (67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48 (68)	1	4	4	1	0	0	0
PURPOSE		SPTN DEADBAND COLLAPSE	WSF OVERNIGHT PARK	WSF RELEASE, CHAWS, PARK	WSF CAPTURE	SEH LOSS OF VERNs	SEH	GLO OG ROLL

Note: **BOLD/ITALICS** indicates a change from the I-load.

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ATTITUDE TIMELINE

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
1 000/01:12:00 MET 22:26 201/15:45:00 GMT 55:26	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A6 AUTO DB AT 5.00 ALT DB RT 0.070	RATE 0.2000 EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV POST INS
2 000/03:00:00 MET 07:14 201/17:33:00 GMT 40:14	INRTL R=170.00 MNVR P=298.00 Y= 40.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 325 P 53	STAR PAIR C1 -Y: 88 -Z: 87	IMU ALIGN
3 000/03:20:00 MET 33:58 201/17:53:00 GMT 18:06:58	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 108 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV
4 000/17:30:00 MET 41:01 202/08:03:00 GMT 14:01	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=250.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 360 P 90	LVLH R=180.00 P= 0.00 Y= 70.00	-ZLV BIAS +YVV PROTECTS UVSTAR
5 000/19:45:00 MET 52:51 202/10:18:00 GMT 25:51	TGT=4 BV=3 P= 90.00 Y= 0.00 OM=300.00	RA= 119.643 DEC= 20.652N B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 360 P 90	INRTL R= 56.60 P=108.42 Y= 13.04	-ZSI SEH OPS NOON: 0/20:10
6 000/20:15:00 MET 28:00 202/10:48:00 GMT 11:01:00	INRTL R=213.00 MNVR P=162.00 Y=338.00	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 208 P 90		+Y DEEP SPACE UVSTAR OPS TGT 132
7 000/21:15:00 MET 29:41 202/11:48:00 GMT 12:02:41	TGT=4 BV=3 P= 90.00 Y= 0.00 OM=200.00	RA= 119.705 DEC= 20.640N B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 360 P 90	INRTL R=111.28 P=358.71 Y= 29.27	-ZSI SEH OPS NOON: 0/21:42
8 000/21:55:00 MET 22:08:16 202/12:28:00 GMT 41:16	INRTL R=258.00 MNVR P= 28.00 Y= 17.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 198 P 108		+Y DEEP SPACE UVSTAR OPS TGT 113
9 000/22:50:00 MET 23:03:16 202/13:23:00 GMT 36:16	TGT=4 BV=3 P= 90.00 Y= 0.00 OM=200.00	RA= 119.771 DEC= 20.628N A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 360 P 90	INRTL R=111.36 P=358.52 Y= 29.28	-ZSI SEH OPS NOON: 0/23:14
10 000/23:25:00 MET 36:40 202/13:58:00 GMT 14:09:40	INRTL R=109.31 MNVR P=137.52 Y= 68.35	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 270 P 37		SPARTAN DEPLOY REL: 1/00:34
11 001/00:55:00 MET 01:07:14 202/15:28:00 GMT 40:14	TGT=2 BV=5 P= 80.00 Y= 0.00 OM=180.00	A7 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 0 P 80	LVLH R=180.00 P=350.00 Y= 0.00	BIAS -ZLV +XVV SEP 2
12 001/01:55:00 MET 02:03:34 202/16:28:00 GMT 36:34	TGT=4 BV=3 P= 90.00 Y= 0.00 OM=200.00	RA= 119.900 DEC= 20.603N A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 360 P 90	INRTL R=111.51 P=358.16 Y= 29.28	-ZSI SEH OPS NOON: 1/02:18

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
13 001/02:30:00 MET 42:25 202/17:03:00 GMT 15:25	INRTL R=193.00 MNVR P=134.00 Y=326.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 218 P 113		+Y DEEP SPACE UVSTAR OPS TGT 125
14 001/03:25:00 MET 37:25 202/17:58:00 GMT 18:10:25	TGT=4 RA= 119.962 BV=3 DEC= 20.592N P= 90.00 Y= 0.00 CM=200.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=111.59 P=357.98 Y= 29.28	-ZSI SEH OPS NOON: 1/03:49
15 001/04:00:00 MET 10:40 202/18:33:00 GMT 43:40 TIG1/04:15	TGT=2 BV=5 P= 78.00 Y= 0.00 CM=180.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 78	LVLH R=180.00 P=348.00 Y= 0.00	NC1 MULTI AXIS
16 001/04:55:00 MET 05:08:56 202/19:28:00 GMT 41:56	TGT=4 RA= 120.024 BV=3 DEC= 20.580N P= 90.00 Y= 0.00 CM= 20.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 0 P 90	INRTL R= 68.33 P=177.80 Y=330.72	-ZSI SEH OPS NOON: 1/05:21
17 001/05:35:00 MET 43:32 202/20:08:00 GMT 16:32	INRTL R=160.10 MNVR P=190.50 Y= 22.70	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 37		+Y JUPITER BAY SOUTH
18 001/06:25:00 MET 26:14 202/20:58:00 GMT 59:14	TGT=5 RA= 150.000 BV=3 DEC= -80.000S P= 90.00 Y= 0.00 CM=160.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 251 P 39	INRTL R=174.68 P=190.56 Y= 20.60	UVSTAR PROTECT
19 001/07:10:00 MET 11:14 202/21:43:00 GMT 44:14	INRTL R=160.10 MNVR P=190.50 Y= 22.70	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 37		+Y JUPITER BAY SOUTH
20 001/08:00:00 MET 01:13 202/22:33:00 GMT 34:13	TGT=5 RA= 150.000 BV=3 DEC= -80.000S P= 90.00 Y= 0.00 CM=160.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 251 P 39	INRTL R=174.66 P=190.60 Y= 21.04	UVSTAR PROTECT.
21 001/08:40:00 MET 41:13 202/23:13:00 GMT 14:13	INRTL R=160.10 MNVR P=190.50 Y= 22.70	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 37		+Y JUPITER BAY SOUTH
22 001/09:40:00 MET 41:13 203/00:13:00 GMT 14:13	TGT=5 RA= 150.000 BV=3 DEC= -80.000S P= 90.00 Y= 0.00 CM=160.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 251 P 38	INRTL R=174.64 P=190.65 Y= 21.53	UVSTAR PROTECT
23 001/10:10:00 MET 11:13 203/00:43:00 GMT 44:13	INRTL R=160.10 MNVR P=190.50 Y= 22.70	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 37		+Y JUPITER BAY SOUTH
24 001/11:00:00 MET 01:13 203/01:33:00 GMT 34:13	TGT=5 RA= 150.000 BV=3 DEC= -80.000S P= 90.00 Y= 0.00 CM=160.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 250 P 38	INRTL R=174.63 P=190.69 Y= 21.87	UVSTAR PROTECT

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** PYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
25 001/11:50:00 MET 51:13 203/02:23:00 GMT 24:13	INRTL R=160.10 MNVR P=190.50 Y= 22.70	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 37		+Y JUPITER BAY SOUTH
26 001/12:30:00 MET 31:13 203/03:03:00 GMT 04:13	TGT=5 RA= 150.000 BV=3 DEC= -80.000S P= 90.00 Y= 0.00 OM=160.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 250 P 37	INRTL R=174.62 P=190.73 Y= 22.28	UVSTAR PROTECT
27 001/13:15:00 MET 29:59 203/03:48:00 GMT 04:02:59	INRTL R=209.90 MNVR P= 10.50 Y=337.30	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 266 P 143		+Y JUPITER BAY NORTH
28 001/14:00:00 MET 01:15 203/04:33:00 GMT 34:15	TGT=5 RA= 290.000 BV=3 DEC= 75.000N P= 90.00 Y= 0.00 OM=210.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 280 P 143	INRTL R=195.25 P= 11.16 Y=337.64	UVSTAR PROTECT
29 001/14:50:00 MET 51:15 203/05:23:00 GMT 24:15	INRTL R=209.90 MNVR P= 10.50 Y=337.30	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 266 P 143		+Y JUPITER BAY NORTH
30 001/16:05:00 MET 16:54 203/06:38:00 GMT 49:54	INRTL R= 2.00 MNVR P= 27.00 Y=291.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 247 P 164	STAR PAIR D1 -Y: 20 -Z: 17	IMU ALIGN
31 001/16:25:00 MET 36:21 203/06:58:00 GMT 07:09:21	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=110.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 90	LVLH R=180.00 P= 0.00 Y=290.00	-ZLV BIAS -YVW H2O DUMP PROTECTS SPTN
32 001/18:45:00 MET 54:12 203/09:18:00 GMT 27:12 TIG 1/19:12	TGT=2 BV=5 P= 78.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 78	LVLH R= 0.00 P=192.00 Y= 0.00	NC2 MULTI AXIS
33 001/19:25:00 MET 203/09:58:00 GMT TIG 1/19:52	TGT=2 BV=5 P= 78.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 78	LVLH R= 0.00 P=192.00 Y= 0.00	NH1 MULTI AXIS
34 001/20:20:00 MET 34:00 203/10:53:00 GMT 11:07:00	TGT=4 RA= 120.666 BV=3 DEC= 20.457N P= 90.00 Y= 0.00 OM=200.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=112.41 P=356.09 Y= 29.34	-ZSI SEH OPS NOON: 1/20:41
35 001/20:50:00 MET 21:02:21 203/11:23:00 GMT 35:21	INRTL R=255.00 MNVR P= 16.00 Y=339.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 215 P 144		+Y DEEP SPACE UVSTAR OPS TGT 114
36 001/21:45:00 MET 57:21 203/12:18:00 GMT 30:21	TGT=4 RA= 120.725 BV=3 DEC= 20.445N P= 90.00 Y= 0.00 OM=200.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=112.48 P=355.93 Y= 29.34	-ZSI SEH OPS NOON: 1/22:13

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** PYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
37 001/22:25:00 MET 38:36 203/12:58:00 GMT 13:11:36	INRTL R=286.00 MNVR P=328.00 Y= 15.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 197 P 90		+Y DEEP SPACE UVSTAR OPS TGT 116
38 001/23:20:00 MET 33:36 203/13:53:00 GMT 14:06:36	TGT=4 RA= 120.791 BV=3 DEC= 20.432N P= 90.00 Y= 0.00 QM=200.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=112.55 P=355.77 Y= 29.35	-ZSI SEH OPS NOON: 1/23:45
39 001/23:55:00 MET 002/00:08:25 203/14:28:00 GMT 41:25	INRTL R=280.00 MNVR P=341.00 Y= 23.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 199 P 90		+Y DEEP SPACE UVSTAR OPS TGT 128
40 002/00:50:00 MET 01:03:25 203/15:23:00 GMT 36:25	TGT=4 RA= 120.853 BV=3 DEC= 20.420N P= 90.00 Y= 0.00 QM=200.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=112.62 P=355.61 Y= 29.35	-ZSI SEH OPS NOON: 2/01:17
41 002/01:25:00 MET 38:32 203/15:58:00 GMT 16:11:32	INRTL R=281.00 MNVR P=342.00 Y= 24.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 198 P 90		+Y DEEP SPACE UVSTAR OPS TGT 130
42 002/02:20:00 MET 25:46 203/16:53:00 GMT 58:46 TIG 2/02:46	INRTL R=243.38 MNVR P=154.95 Y=338.29	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 175 P 92		NC3 +X RCS
43 002/02:50:00 MET 57:49 203/17:23:00 GMT 30:49	INRTL R=261.00 MNVR P= 74.00 Y= 30.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 167 P 90		+Y DEEP SPACE UVSTAR OPS TGT 118
44 002/03:35:00 MET 49:09 203/18:08:00 GMT 22:09	TGT=4 RA= 120.967 BV=3 DEC= 20.398N P= 90.00 Y= 0.00 QM=340.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R= 54.49 P=138.41 Y=350.86	-ZSI SEH OPS SR 2/03:57 SS 2/04:49
45 002/04:50:00 MET 05:04:15 203/19:23:00 GMT 37:15	INRTL R=342.40 MNVR P=340.52 Y= 23.16	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 137 P 90		UVSTAR PROTECT UVSTAR TGT 111
46 002/06:05:00 MET 16:16 203/20:38:00 GMT 49:16	INRTL R=160.10 MNVR P=190.50 Y= 22.70	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 36		+Y JUPITER BAY SOUTH
47 002/07:05:00 MET 12:56 203/21:38:00 GMT 45:56	INRTL R= 86.60 MNVR P=209.90 Y=323.50	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90		-ZSI SEH OPS NOON: 2/07:24
48 002/07:35:00 MET 42:56 203/22:08:00 GMT 15:56	INRTL R=160.10 MNVR P=190.50 Y= 22.70	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 36		+Y JUPITER BAY SOUTH

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** PYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
49 002/08:15:00 MET 22:23 203/22:48:00 GMT 55:23	INRTL R=231.99 MNVR P=172.47 Y=331.43	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 194 P 90		UVSTAR PROTECT UVSTAR TGT 126
50 002/09:10:00 MET 17:23 203/23:43:00 GMT 50:23	INRTL R=160.10 MNVR P=190.50 Y= 22.70	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 36		+Y JUPITER BAY SOUTH
51 002/10:10:00 MET 17:56 204/00:43:00 GMT 50:56	INRTL R= 86.50 MNVR P=209.60 Y=323.40	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90		-ZSI SEH OPS NOON: 2/10:28
52 002/10:35:00 MET 42:56 204/01:08:00 GMT 15:56	INRTL R=160.10 MNVR P=190.50 Y= 22.70	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 36		+Y JUPITER BAY SOUTH
53 002/11:30:00 MET 38:33 204/02:03:00 GMT 11:33	INRTL R=258.92 MNVR P=121.57 Y= 3.11	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 154 P 90		UVSTAR PROTECT UVSTAR TGT 112
54 002/12:20:00 MET 28:33 204/02:53:00 GMT 03:01:33	INRTL R=160.10 MNVR P=190.50 Y= 22.70	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 264 P 36		+Y JUPITER BAY SOUTH
55 002/13:00:00 MET 14:19 204/03:33:00 GMT 47:19	INRTL R=280.04 MNVR P=345.42 Y=341.50	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 206 P 128		UVSTAR PROTECT UVSTAR TGT 129
56 002/13:45:00 MET 51:50 204/04:18:00 GMT 24:50	INRTL R=209.90 MNVR P= 10.50 Y=337.30	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 266 P 144		+Y JUPITER BAY NORTH
57 002/15:05:00 MET 16:54 204/05:38:00 GMT 49:54	INRTL R= 2.00 MNVR P= 27.00 Y=291.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 250 P 164	STAR PAIR D1 -Y: 20 -Z: 17	IMU ALIGN
58 002/15:30:00 MET 44:49 204/06:03:00 GMT 17:49 TIG 2/18:06	TGT=2 BV=5 P= 78.00 Y= 0.00 CM= 0.00	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 78	LVLH R= 0.00 P=192.00 Y= 0.00	BIAS -ZLV -XV NC4 +X RCS RETRO
59 002/18:07:00 MET 09:36 204/08:40:00 GMT 42:36 TI TIG 2/21:10	TGT=2 BV=1 P= 0.00 Y= 0.00 CM= 0.00	B7 RATE 0.5000 AUTO DB AT 2.00 PRI DB RT 0.20	EARTH R 0 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	+XLV -ZV SPARTAN TRACK
60 002/22:50:00 MET 23:05:00 204/13:23:00 GMT 38:00	TGT=2 BV=2 P=180.00 Y= 0.00 CM= 0.00	A8 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 104 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZV SPARTAN GRAPPLE

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
61 002/23:15:00 MET 24:06 204/13:48:00 GMT 57:06	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=290.00	A10 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 70.00	-ZLV BIAS +YVV H2O DUMP PROTECTS UVSTAR
62 003/01:25:00 MET 33:04 204/15:58:00 GMT 16:06:04	TGT=4 RA= 121.873 BV=3 DEC= 20.218N P= 90.00 Y= 0.00 OM=260.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R= 72.41 P= 64.91 Y= 33.28	-ZSI SEH OPS NOON 3/01:48
63 003/02:00:00 MET 09:32 204/16:33:00 GMT 42:32	INRTL R= 2.00 MNVR P= 27.00 Y=291.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 251 P 163	STAR PAIR D1 -Y: 20 -Z: 17	IMU ALIGN
64 003/02:40:00 MET 53:14 204/17:13:00 GMT 26:14	INRTL R=243.00 MNVR P=178.00 Y= 32.00 TIG 3/03:01	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 166 P 34		OMS 3 BURN
65 003/03:02:00 MET 204/17:35:00 GMT		B1 RATE 0.2000 LVLH DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 78	LVLH R=180.17 HOLD P=347.72 Y=359.60	LVLH HOLD BETWEEN BURNS
66 003/03:25:00 MET 32:02 204/17:58:00 GMT 18:05:02	INRTL R=119.00 MNVR P= 1.00 Y=323.00 TIG 3/03:45	B1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 16 P 152		OMS 4 BURN
67 003/03:46:00 MET 204/18:19:00 GMT		B1 RATE 0.2000 LVLH DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 76	LVLH R=180.10 HOLD P=345.55 Y= 0.33	LVLH HOLD AFTER BURNS
68 003/04:30:00 MET 39:01 204/19:03:00 GMT 12:01	TGT=4 RA= 122.001 BV=3 DEC= 20.192N P= 90.00 Y= 0.00 OM=200.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=113.76 P=353.04 Y= 29.59	-ZSI SEH OPS NOON: 3/04:52
69 003/05:00:00 MET 13:55 204/19:33:00 GMT 46:55	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV UVSTAR S. HEMI (SLEEP)
70 003/13:20:00 MET 30:52 205/03:53:00 GMT 04:03:52	TGT=2 BV=5 P=177.85 Y= 0.86 OM=109.61	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 22 P 178	LVLH R=250.38 P= 90.09 Y=357.69	BIAS -XLV PLB N GG OFFSET
71 003/13:40:00 MET 42:11 205/04:13:00 GMT 15:11	TGT=2 BV=5 P=177.82 Y= 0.18 OM= 83.48	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 5 P 178	LVLH R=276.52 P= 90.43 Y=357.85	BIAS -XLV PLB N GG (FREE)
72 003/14:50:00 MET 44 205/05:23:00 GMT 44	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 92.00	A11 RATE 0.2000 FREE DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 180	LVLH R=268.00 P= 90.00 Y= 0.00	RAM CLEANING GG (FREE)

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
73 003/17:25:00 MET 30	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 86.00 RELEASE 3/18:33	A12 RATE 0.2000 FREE DB AT 1.000 VERN DB RT 0.020	EARTH R 194 P 180	LVLH R=274.00 P= 90.00 Y= 0.00	ADACS C/O GG(FREE) WSF RELEASE
205/07:58:00 GMT 30					
74 003/20:45:00 MET 52:10	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV -Z TO WSF
205/11:18:00 GMT 25:10					
75 004/04:15:00 MET 21:00	INRTL R=110.57 MNVR P=344.27 Y=347.51	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 14 P 124		NC5 +X RCS
205/18:48:00 GMT 54:00					
76 004/04:40:00 MET 55:00	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 157 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV -Z TO WSF
205/19:13:00 GMT 28:00					
77 005/14:30:00 MET	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A7 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 336 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-Z TGT TRACK (LVLH EQUIV) WSF RNDZ
207/05:03:00 GMT					
78 005/15:10:00 MET 21:40	INRTL R= 66.00 MNVR P=163.00 Y=355.00	A7 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 353 P 70		NC8 OMS POSIGRADE
207/05:43:00 GMT 54:40 TIG 5/15:25					
79 005/15:30:00 MET 32:06	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	B7 RATE 0.5000 AUTO DB AT 2.00 PRI DB RT 0.20	EARTH R 299 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-Z TGT TRACK (LVLH EQUIV) WSF RNDZ
207/06:03:00 GMT 05:06					
80 005/17:50:00 MET 57:30	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00	A7 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-Z TGT TRACK (LVLH EQUIV) -REAR WSF RNDZ
207/08:23:00 GMT 30:30					
81 005/18:15:00 MET 19:12	INRTL R=294.00 MNVR P=342.00 Y= 4.00	A7 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 187 P 110		TI OMS RETROGRADE
207/08:48:00 GMT 52:12 TIG 5/18:31					
82 005/18:32:00 MET 34:28	TGT=2 BV=1 P= 0.00 Y= 0.00 OM= 0.00	B7 RATE 0.5000 AUTO DB AT 2.00 PRI DB RT 0.20	EARTH R 72 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	-Z TGT TRACK (LVLH EQUIV) -VBAR WSF RNDZ
207/09:05:00 GMT 07:28					
83 005/19:25:00 MET 32:30	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A7 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	-Z TGT TRACK (LVLH EQUIV) +REAR WSF RNDZ
207/09:58:00 GMT 10:05:30					
84 005/19:50:00 MET 57:30	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A7 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 53 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-Z TGT TRACK (LVLH EQUIV) VBAR WSF RNDZ
207/10:23:00 GMT 30:30					

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

5-8

FLT PLN/69/FIN

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
85 005/20:05:00 MET 207/10:38:00 GMT	Reference RNDZ C/L for maneuver details				WSF PLUME SEE RNDZ C/L
86 005/23:30:00 MET 37:30 207/14:03:00 GMT 10:30	TGT=2 BV=5 P=270.00 Y= 0.00 CM= 0.00	B8 AUTO DB AT 2.00 PRI DB RT 0.20	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	PITCH TERMINATE WSF GRAPPLE GRAPPLE 6/00:07
87 006/00:25:00 MET 40:00 207/14:58:00 GMT 15:13:00	TGT=2 BV=3 P= 90.00 Y= 0.00 CM=290.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 70.00	-ZLV BIAS +YVV PAO EVENT H2O DUMP UVSTAR PROTECT
88 006/02:25:00 MET 38:49 207/16:58:00 GMT 17:11:49	TGT=2 BV=2 P=180.00 Y= 0.00 CM= 90.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 39 P 180	LVLH R=270.00 P= 90.00 Y= 0.00	-XLV -YVV WSF OVERNT PARK
89 006/14:50:00 MET 15:03:38 208/05:23:00 GMT 36:38	INRTL R=344.00 MNVR P=321.00 Y=352.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 146 P 109	STAR PAIR A1 -Y: 43 -Z: 28	IMU ALIGN
90 006/15:10:00 MET 24:41 208/05:43:00 GMT 57:41	TGT=2 BV=2 P=180.00 Y= 0.00 CM= 90.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 44 P 180	LVLH R=270.00 P= 90.00 Y= 0.00	-XLV -YVV WSF CHAWS
91 006/17:45:00 MET 18:00:00 208/08:18:00 GMT 33:00	TGT=2 BV=1 P= 0.00 Y= 0.00 CM= 90.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 32 P 0	LVLH R= 90.00 P=270.00 Y= 0.00	+XLV -YVV WSF CHAWS PITCHOVER
92 006/20:15:00 MET 30:00 208/10:48:00 GMT 11:03:00	TGT=2 BV=2 P=180.00 Y= 0.00 CM=248.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 145 P 180	LVLH R=112.00 P= 90.00 Y= 0.00	-XLV BIAS +YVV WSF RETURN FLUX
93 006/21:55:00 MET 58:20 208/12:28:00 GMT 31:20	TGT=2 BV=2 P=180.00 Y= 0.00 CM=208.00	B11 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 106 P 180	LVLH R=152.00 P= 90.00 Y= 0.00	-XLV BIAS -ZVV WSF AOPROC
94 006/23:55:00 MET 007/00:07:49 208/14:28:00 GMT 40:49	INRTL R=340.00 MNVR P=265.00 Y= 77.00 TIG 7/00:10	B1 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 221 P 34		OMS 5 BURN
95 007/00:12:00 MET 208/14:45:00 GMT		B1 LVLH DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 70	LVLH HOLD R= 0.22 P=199.85 Y=359.91	LVLH HOLD BETWEEN BURNS
96 007/00:40:00 MET 45:32 208/15:13:00 GMT 18:32	INRTL R= 37.00 MNVR P=102.00 Y=285.00 TIG 7/00:55	B1 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 323 P 142		OMS 6 BURN

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REP ATT/REMARKS	EVENT
97 007/01:00:00 MET 06:20 208/15:33:00 GMT 39:20	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=290.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 70.00	-ZLV BIAS +YVV WATER DUMPS
98 007/03:05:00 MET 14:06 208/17:38:00 GMT 47:06	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 61 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV GLO EL UVSTAR SOUTH
99 007/16:00:00 MET 09:34 209/06:33:00 GMT 42:34	INRTEL R=217.00 MNVR P= 69.00 Y= 34.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 209 P 90		+Y DEEP SPACE UVSTAR OPS TGT 115
100 007/17:10:00 MET 19:38 209/07:43:00 GMT 52:38	INRTEL R=202.00 MNVR P=169.00 Y=327.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 223 P 90		+Y DEEP SPACE UVSTAR OPS TGT 136
101 007/18:00:00 MET 10:48 209/08:33:00 GMT 43:48	INRTEL R=254.00 MNVR P= 71.00 Y=334.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 154 P 141		+Y DEEP SPACE UVSTAR OPS TGT 138
102 007/19:30:00 MET 39:09 209/10:03:00 GMT 12:09	INRTEL R=209.00 MNVR P=155.00 Y=334.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 209 P 90		+Y DEEP SPACE UVSTAR OPS TGT 133
103 007/21:20:00 MET 34:12 209/11:53:00 GMT 12:07:12	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 90.00	+ZLV -YVV GLO PRCS TEST ATT 1
104 007/21:45:00 MET 48:45 209/12:18:00 GMT 21:45	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 45.00	A15 AUTO DB AT 5.00 ALT DB RT 0.200	RATE 0.2000 EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 45.00	PRCS TEST ATT 2
105 007/21:55:00 MET 58:45 209/12:28:00 GMT 31:45	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A15 AUTO DB AT 5.00 ALT DB RT 0.200	RATE 0.2000 EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	PRCS TEST ATT 3
106 007/22:05:00 MET 07:30 209/12:38:00 GMT 40:30	TGT=2 BV=5 P=270.00 Y= 0.00 OM=330.00	A15 AUTO DB AT 5.00 ALT DB RT 0.200	RATE 0.2000 EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=330.00	PRCS TEST ATT 4
107 007/22:15:00 MET 17:30 209/12:48:00 GMT 50:30	TGT=2 BV=5 P=270.00 Y= 0.00 OM=300.00	A15 AUTO DB AT 5.00 ALT DB RT 0.200	RATE 0.2000 EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=300.00	PRCS TEST ATT 5
108 007/22:20:00 MET 33:06 209/12:53:00 GMT 13:06:06	TGT=2 BV=5 P=350.00 Y= 0.00 OM= 90.00	B2 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 180 P 10	LVLH R= 90.00 P=270.00 Y= 10.00	+XLV -YVV GLO PF TEST SET UP ATT

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
109 007/22:55:00 MET 23:01:40 209/13:28:00 GMT 34:40	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	B2 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 90.00	+ZLV -YVV GLO VRCS TEST ATT 1
110 007/23:16:35 MET 19:05 209/13:49:35 GMT 52:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 60.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 60.00	VRCS TEST ATT 2
111 007/23:19:35 MET 22:05 209/13:52:35 GMT 55:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 30.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 30.00	VRCS TEST ATT 3
112 007/23:22:35 MET 25:05 209/13:55:35 GMT 58:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	VRCS TEST ATT 4
113 007/23:25:35 MET 28:05 209/13:58:35 GMT 14:01:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM=330.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=330.00	VRCS TEST ATT 5
114 007/23:28:35 MET 31:05 209/14:01:35 GMT 04:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM=300.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=300.00	VRCS TEST ATT 6
115 007/23:40:00 MET 53:06 209/14:13:00 GMT 26:06	TGT=2 BV=5 P=350.00 Y= 0.00 OM= 90.00	B2 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 10	LVLH R= 90.00 P=270.00 Y= 10.00	BIAS +XLV -YVV GLO PF TEST SET UP ATT
116 008/00:30:00 MET 44:51 209/15:03:00 GMT 17:51	TGT=2 BV=2 P=180.00 Y= 0.00 OM=290.00	B2 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 312 P 180	LVLH R= 70.00 P= 90.00 Y= 0.00	-XLV BIAS +YVV WATER DUMP CREW CONF
117 008/03:00:00 MET 05:50 209/17:33:00 GMT 38:50	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	B2 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 354 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV UVSTAR S HEMI
118 008/13:15:00 MET 24:19 210/03:48:00 GMT 57:19	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=285.00	B2 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 75.00	-ZLV BIAS +YVV GLO FC PURGE
119 008/15:40:00 MET 54:07 210/06:13:00 GMT 27:07	TGT=2 BV=1 P= 0.00 Y= 0.00 OM=120.00	B2 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 355 P 0	LVLH R=120.00 P=270.00 Y= 0.00	+XLV BIAS -YVV GLO OG ROLL TST SETUP ATT
120 008/16:00:00 MET 10:00 210/06:33:00 GMT 43:00	TGT=2 BV=1 P= 0.00 Y= 0.00 OM= 0.00	B15 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 126 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	+XLV -ZVV GLO OG TEST ROLL MNVR

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** PYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT	
121 008/16:30:00 MET 43:30 210/07:03:00 GMT 16:30	TGT=4 BV=5 P=270.00 Y= 0.00 OM= 20.00 RA= 127.436 DEC= 19.001N	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 180 P 90	INRTL R=295.21 P=349.38 Y= 33.92	+ZSI EVA
122 008/21:50:00 MET 59:20 210/12:23:00 GMT 32:20	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV
123 008/23:20:00 MET 27:49 210/13:53:00 GMT 14:00:49	TGT=2 BV=1 P= 0.00 Y= 0.00 OM=120.00	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 124 P 0	LVLH R=120.00 P=270.00 Y= 0.00	+XLV BIAS -YVV GLO OG ROLL TST SETUP ATT
124 008/23:38:00 MET 48:00 210/14:11:00 GMT 21:00	TGT=2 BV=1 P= 0.00 Y= 0.00 OM= 0.00	B15 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 284 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	+XLV -ZVV GLO OG TEST ROLL MNVR
125 009/00:35:00 MET 44:06 210/15:08:00 GMT 17:06	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=290.00	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 70.00	-ZLV BIAS +YVV H2O DUMP PROTECTS UVSTAR
126 009/02:45:00 MET 54:06 210/17:18:00 GMT 27:06	TGT=2 BV=2 P=180.00 Y= 0.00 OM= 0.00	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 70 P 180	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV
127 009/14:30:00 MET 39:06 211/05:03:00 GMT 12:06	TGT=2 BV=5 P=270.00 Y= 0.00 OM=290.00	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=290.00	+ZLV BIAS +YVV GLO FES TEST
128 009/15:20:00 MET 33:44 211/05:53:00 GMT 06:06:44	TGT=2 BV=5 P=350.00 Y= 0.00 OM= 90.00	A7 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 10	LVLH R= 90.00 P=270.00 Y= 10.00	+XLV -YVV GLO PF TEST
129 009/17:15:00 MET 21:40 211/07:48:00 GMT 54:40	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 90.00	+ZLV -YVV GLO PRCS TEST ATT 1
130 009/17:55:00 MET 58:45 211/08:28:00 GMT 31:45	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 45.00	A15 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 45.00	PRCS TEST ATT 2
131 009/18:05:00 MET 08:45 211/08:38:00 GMT 41:45	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A15 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	PRCS TEST ATT 3
132 009/18:15:00 MET 17:30 211/08:48:00 GMT 50:30	TGT=2 BV=5 P=270.00 Y= 0.00 OM=330.00	A15 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=330.00	PRCS TEST ATT 4

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** PYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
133 009/18:25:00 MET 38:40 211/08:58:00 GMT 09:11:40	TGT=4 RA= 128.494 BV=3 DEC= 18.749N P= 90.00 Y= 0.00 OM=200.00	A15 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=114.29 P=350.81 Y= 35.60	-ZSI SEH OPS NOON: 9/18:49
134 009/19:00:00 MET 08:01 211/09:33:00 GMT 41:01	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	A15 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 90.00	+ZLV -YVV GLO GE TEST
135 009/20:00:00 MET 07:27 211/10:33:00 GMT 40:27	TGT=4 RA= 128.559 BV=3 DEC= 18.733N P= 90.00 Y= 0.00 OM=200.00	A15 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R=114.22 P=350.92 Y= 35.71	-ZSI SEH OPS NOON: 9/20:20
136 009/20:30:00 MET 37:47 211/11:03:00 GMT 10:47	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	A15 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 90.00	+ZLV -YVV GLO VRCS TEST ATT 1
137 009/20:57:35 MET 21:00:05 211/11:30:35 GMT 33:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 60.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 60.00	VRCS TEST ATT 2
138 009/21:00:35 MET 03:05 211/11:33:35 GMT 36:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 30.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 30.00	VRCS TEST ATT 3
139 009/21:03:35 MET 06:05 211/11:36:35 GMT 39:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	VRCS TEST ATT 4
140 009/21:06:35 MET 09:05 211/11:39:35 GMT 42:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM=330.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=330.00	VRCS TEST ATT 5
141 009/21:09:35 MET 12:05 211/11:42:35 GMT 45:05	TGT=2 BV=5 P=270.00 Y= 0.00 OM=300.00	A15 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y=300.00	VRCS TEST ATT 6
142 009/21:30:00 MET 39:48 211/12:03:00 GMT 12:48	TGT=4 RA= 128.620 BV=3 DEC= 18.718N P= 90.00 Y= 0.00 OM=300.00	A15 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 360 P 90	INRTL R= 49.42 P=103.78 Y= 13.01	-ZSI SEH OPS NOON: 9/21:51
143 009/22:05:00 MET 15:53 211/12:38:00 GMT 48:53	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=290.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 70.00	-ZLV BIAS +YVV H2O DUMP PROTECTS UVSTAR
144 010/02:35:00 MET 48:20 211/17:08:00 GMT 21:20	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV

*** ALL ATTITUDES IN MEAN OF 1950 ***
*** FYR EULER SEQUENCE ***

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
145 010/13:30:00 MET 38:05 212/04:03:00 GMT 11:05	INRTL R=344.00 MNVR P=321.00 Y=352.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 148 P 111	STAR PAIR A1 -Y: 43 -Z: 28	IMU ALIGN
146 010/13:50:00 MET 14:00:17 212/04:23:00 GMT 33:17	TGT=2 EV=3 P= 90.00 Y= 0.00 OM=290.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 70.00	-ZLV BIAS +YVV
147 010/15:15:00 MET 21:23 212/05:48:00 GMT 54:23	TGT=4 RA= 129.342 EV=5 DEC= 18.541N P=184.00 Y= 0.00 OM=290.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 180 P 176	INRTL R= 23.37 P= 22.48 Y=311.13	-XSI
148 010/16:30:00 MET 38:16 212/07:03:00 GMT 11:16	INRTL R=344.00 MNVR P=310.00 Y= 25.00	A1 RATE 0.2000 AUTO DB AT 5.00 PRI DB RT 0.20	SUN R 149 P 80	ALIGN STAR PAIR -Y: 14 -Z: 26	D/O IMU ALIGN
149 010/16:50:00 MET 55:18 212/07:23:00 GMT 28:18	INRTL R=142.00 MNVR P= 3.00 Y=326.00	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 355 P 157	VERIF STAR PAIR -Y: 57 -Z: 40	D/O IMU VERIF
150 010/17:05:00 MET 08:40 212/07:38:00 GMT 41:40	INRTL R= 48.00 MNVR P= 24.00 Y=310.00	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 180 P 176		COMM ATT COLD SOAK ATT
151 010/19:15:00 MET 20:37 212/09:48:00 GMT 53:37	INRTL R= 65.00 MNVR P=177.00 Y= 66.00 TIG 10/19:31	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 261 P 25		D/O BURN

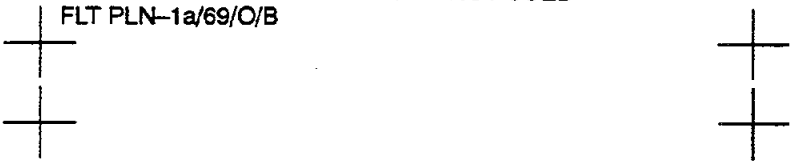
*** ALL ATTITUDES IN MEAN OF 1950 ***
*** PYR EULER SEQUENCE ***

DAP BOOK



<u>DAP</u>	<u>PURPOSE</u>	<u>DAP</u>	<u>PURPOSE</u>
A1	- NOMINAL	B1	- NOMINAL; OMS & RCS BURNS
A2	- PTC	B2	- LOSS OF VERN (TAIL ONLY)
A3	- GG	B3	- LOSS OF VERN (NOSE & TAIL)
A4	- PRE/POST DEPLOY	B4	- SSUS DEPLOY
A5	- LOSS OF VERN (NOSE & TAIL)	B5	- COAS CAL
A6	- LOSS OF VERN (TAIL ONLY)	B7	- RENDEZVOUS
A7	- RENDEZVOUS	B8	- PROX OPS
A8	- PROX OPS	B9	- SPARTAN DEADBAND
A9	- SPARTAN LOW HOVER		COLLAPSE
A10	- SPARTAN RELEASE CAPTURE, EXTENDED PARK	B10	- WSF OVERNIGHT PARK
A11	- WSF HOVER, CHAWS DEEP WAKE	B11	- WSF RELEASE, CHAWS, PARK
A12	- WSF RAM CLEAN	B12	- WSF CAPTURE
A13	- WSF ADACS C/O	B13	- SEH LOSS OF VERNS
A14	- UVSTAR LOSS OF VERN	B14	- SEH
A15	- GLO VRCS, PRCS, GE, FE	B15	- GLO OG ROLL

CNT ACC = 0 UNLOADED
= 1-4 SPTN, WSF ON RMS
= 5 NOT USED



FLT PLN-1a/69/O/B

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FLT PLN-1b/69/O/A

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DAP A

DAP A1

PURPOSE:

NOMINAL

FLT PLN-2a/69/O/A

FLT PLN-2b/69/O/A

A1

A1

DAP A2

A1

PURPOSE:

PTC

DAP A 0.1	1	PRI
0.2 0 0 0	10	ROT RATE
- 5.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
ALL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.2 0 0	18	RATE DB
ALL	19	JET OPT
2	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.2 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

FLT PLN-3a/69/O/A

FLT PLN-3b/69/O/A

A2

(reduced copy)



A2

DAP A 0 2	1	PRI
0.4 0 0 0	10	ROT RATE
- 1.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
ALL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.2 0 0	18	RATE DB
ALL	19	JET OPT
2	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.4 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

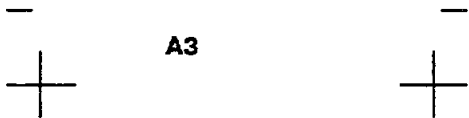
FLT PLN-4a/69/O/A

A2

DAP A3

PURPOSE:
GG

FLT PLN-4b/69/O/A



A3



A3

DAP A 0 3	1	PRI
0.2 0 0 0	10	ROT RATE
- 1.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
TAIL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.2 0 0	18	RATE DB
ALL	19	JET OPT
2	20	#JETS
- 0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.0 0 8 0	23	ROT RATE
- 0.0 7 0	24	ATT DB
0.1 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

FLT PLN-5a/69/O/A

DAP A4

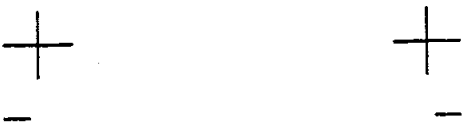
PURPOSE:
PRE/POST DEPLOY

FLT PLN-5b/69/O/A



A4

(reduced copy)



A4

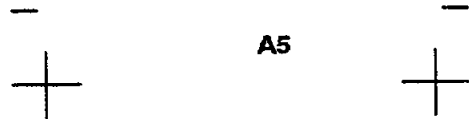
A4
DAP A5

DAP A 0.4	1	PRI
0.5 0 0 0	10	ROT RATE
- 3.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
ALL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.2 0 0	18	RATE DB
ALL	19	JET OPT
2	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.2 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

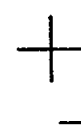
PURPOSE:
LOSS OF VERNIS
(NOSE & TAIL)

FLT PLN-6a/69/O/A

FLT PLN-6b/69/O/A



A5



A5

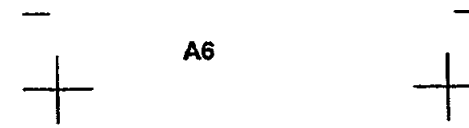
A5
DAP A6

DAP A 0.5	1	PRI
0.2 0 0 0	10	ROT RATE
- 5.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
ALL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.0 7 0	18	RATE DB
ALL	19	JET OPT
1	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.2 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

PURPOSE:
LOSS OF VERNIS
(TAIL ONLY)

FLT PLN-7a/69/O/A

FLT PLN-7b/69/O/A



A6

(reduced copy)



A6

DAP A7

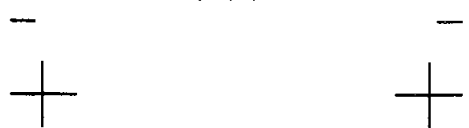
A6

DAP A 0 6	1	PRI
0.2 0 0 0	10	ROT RATE
- 5.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
TAIL	15	P OPTION
TAIL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.0 7 0	18	RATE DB
TAIL	19	JET OPT
1	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.2 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

PURPOSE:
RENDEZVOUS

FLT PLN-8a/69/O/A

FLT PLN-8b/69/O/A



A7

A7

A7

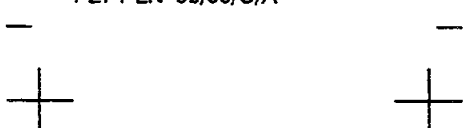
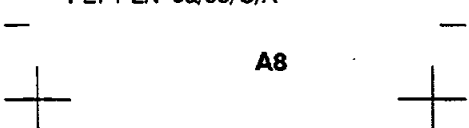
DAP A8

DAP A 0 7	1	PRI
0.2 0 0 0	10	ROT RATE
- 2.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
ALL	16	Y OPTION
0.1 0	17	TRAN PLS
		ALT
0.2 0 0	18	RATE DB
ALL	19	JET OPT
2	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.2 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

PURPOSE:
PROX OPS

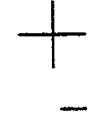
FLT PLN-9a/69/O/A

FLT PLN-9b/69/O/A



A8

(reduced copy)



A8

DAP A 0 8	1	PRI
0.2 0 0 0	10	ROT RATE
- 2.0 0	11	ATT DB
0.2 0	12	RATE DB
0.1 0	13	ROT PLS
0.0 0	14	COMP
ALL	15	P OPTION
ALL	16	Y OPTION
0.0 5	17	TRAN PLS
		ALT
0.2 0 0	18	RATE DB
ALL	19	JET OPT
2	20	#JETS
0.0 8	21	ON TIME
- 0.0 0	22	DELAY
		VERN
0.2 0 0 0	23	ROT RATE
- 1.0 0 0	24	ATT DB
0.2 0	25	RATE DB
0.0 1 0	26	ROT PLS
0.0 0	27	COMP
0	28	CNTL ACC

FLT PLN-10a/69/O/A

A8

DAP A9

PURPOSE:

SPARTAN LOW HOVER

FLT PLN-10b/69/O/A



A9



A9

DAP A10

PURPOSE:

SPARTAN RELEASE,
CAPTURE, EXTENDED
PARK

FLT PLN-11b/69/O/B

DAP A 0 9	1/3	PRI
0.1 0 0 0	10/50	ROT RATE
- 3.0 0	11/51	ATT DB
0.2 0	12/52	RATE DB
0.0 4	13/53	ROT PLS
0.0 0	14/54	COMP
ALL	15/55	P OPTION
ALL	16/56	Y OPTION
0.0 5	17/57	TRAN PLS
		ALT
0.2 0 0	18/58	RATE DB
ALL	19/59	JET OPT
2	20/60	#JETS
0.0 8	21/61	ON TIME
- 2.9 0	22/62	DELAY
		VERN
0.2 0 0 0	23/63	ROT RATE
- 3.0 0 0	24/64	ATT DB
2.0 0	25/65	RATE DB
0.0 1 0	26/66	ROT PLS
0.0 0	27/67	COMP
1	28/68	CNTL ACC

FLT PLN-11a/69/O/A



A10



(reduced copy)



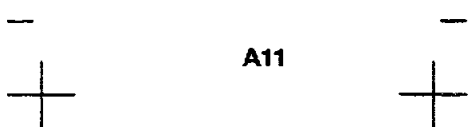
A10

A10
DAP 11

DAP A 1 0 1/3 PRI
0.1 0 0 0 10/50 ROT RATE
- 3.0 0 11/51 ATT DB
0.2 0 12/52 RATE DB
0.0 4 13/53 ROT PLS
0.0 0 14/54 COMP
 ALL 15/55 P OPTION
 ALL 16/56 Y OPTION
0.0 5 17/57 TRAN PLS
 ALT
0.2 0 0 18/58 RATE DB
 ALL 19/59 JET OPT
 2 20/60 #JETS
0.0 8 21/61 ON TIME
- 4.7 0 22/62 DELAY
 VERN
0.2 0 0 0 23/63 ROT RATE
- 3.0 0 0 24/64 ATT DB
0.2 0 0 25/65 RATE DB
0.0 1 0 26/66 ROT PLS
0.0 0 27/67 COMP
 1 28/68 CNTL ACC
 FLT PLN-12a/69/O/A

PURPOSE:
 WSF HOVER, CHAWS DEEP
 WAKE

FLT PLN-12b/69/O/B



A11



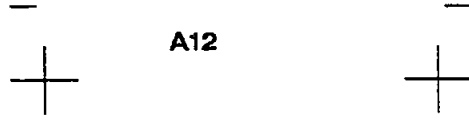
A11

A11
DAP A12

DAP A 1 1 1/3 PRI
0.1 0 0 0 10/50 ROT RATE
- 3.0 0 11/51 ATT DB
0.2 0 12/52 RATE DB
0.0 4 13/53 ROT PLS
0.0 0 14/54 COMP
 ALL 15/55 P OPTION
 ALL 16/56 Y OPTION
0.1 0 17/57 TRAN PLS
 ALT
0.1 0 0 18/58 RATE DB
 ALL 19/59 JET OPT
 2 20/60 #JETS
0.0 8 21/61 ON TIME
- 4.5 0 22/62 DELAY
 VERN
0.2 0 0 0 23/63 ROT RATE
- 3.0 0 0 24/64 ATT DB
0.4 0 25/65 RATE DB
0.0 0 2 26/66 ROT PLS
0.0 0 27/67 COMP
 1 28/68 CNTL ACC
 FLT PLN-13a/69/O/B

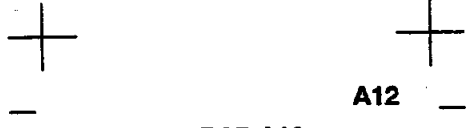
PURPOSE:
 WSF RAM CLEAN

FLT PLN-13b/69/O/B



A12

(reduced copy)



A12

DAP A13

DAP A 1 2	1/3	PRI
<u>0.1 0 0 0</u>	10/50	ROT RATE
<u>- 3.0 0</u>	11/51	ATT DB
<u>0.2 0</u>	12/52	RATE DB
<u>0.0 4</u>	13/53	ROT PLS
<u>0.0 0</u>	14/54	COMP
<u>ALL</u>	15/55	P OPTION
<u>ALL</u>	16/56	Y OPTION
<u>0.1 0</u>	17/57	TRAN PLS
		ALT
<u>0.1 0 0</u>	18/58	RATE DB
<u>ALL</u>	19/59	JET OPT
<u>2</u>	20/60	#JETS
<u>- 0.0 8</u>	21/61	ON TIME
<u>- 7.0 0</u>	22/62	DELAY
		VERN
<u>0.2 0 0 0</u>	23/63	ROT RATE
<u>- 3.0 0 0</u>	24/64	ATT DB
<u>0.4 0</u>	25/65	RATE DB
<u>0.0 0 2</u>	26/66	ROT PLS
<u>0.0 0</u>	27/67	COMP
<u>2</u>	28/68	CNTL ACC

FLT PLN-14a/69/O/A

PURPOSE:
WSF ADACS C/O

FLT PLN-14b/69/O/A



A13

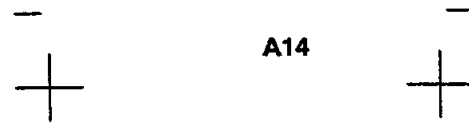
A13

DAP A 1 3	1/3	PRI
<u>0.1 0 0 0</u>	1/50	ROT RATE
<u>- 3.0 0</u>	11/51	ATT DB
<u>0.2 0</u>	12/52	RATE DB
<u>0.0 4</u>	13/53	ROT PLS
<u>0.0 0</u>	14/54	COMP
<u>ALL</u>	15/55	P OPTION
<u>ALL</u>	16/56	Y OPTION
<u>0.1 0</u>	17/57	TRAN PLS
		ALT
<u>0.1 0 0</u>	18/58	RATE DB
<u>ALL</u>	19/59	JET OPT
<u>2</u>	20/60	#JETS
<u>0.0 8</u>	21/61	ON TIME
<u>- 7.0 0</u>	22/62	DELAY
		VERN
<u>0.2 0 0 0</u>	23/63	ROT RATE
<u>- 3.0 0 0</u>	24/64	ATT DB
<u>0.4 0</u>	25/65	RATE DB
<u>0.0 0 2</u>	26/66	ROT PLS
<u>0.0 0</u>	27/67	COMP
<u>3</u>	28/68	CNTL ACC

FLT PLN-15a/69/O/A

PURPOSE:
UVSTAR LOSS OF VERN

FLT PLN-15b/69/O/B



A14

(reduced copy)

A14

DAP A 1 4	1/3	PRI
0.2 0 0 0	10/50	ROT RATE
- 3.0 0	11/51	ATT DB
0.2 0	12/52	RATE DB
0.1 0	13/53	ROT PLS
0 0 0	14/54	COMP
ALL	15/55	P OPTION
ALL	16/56	Y OPTION
0.1 0	17/57	TRAN PLS
		ALT
0.0 7 0	18/58	RATE DB
TAIL	19/59	JET OPT
1	20/60	#JETS
0.0 8	21/61	ON TIME
- 0.0 0	22/62	DELAY
		VERN
0.2 0 0 0	23/63	ROT RATE
- 1.0 0 0	24/64	ATT DB
0.2 0	25/65	RATE DB
0.0 1 0	26/66	ROT PLS
0.0 0	27/67	COMP
0	28/68	CNTL ACC

FLT PLN-16a/69/O/A

A15

A15

DAP A 1 5	1/3	PRI
0.3 0 0 0	10/50	ROT RATE
- 3.0 0	11/51	ATT DB
0.2 0	12/52	RATE DB
1.0 0	13/53	ROT PLS
0.0 0	14/54	COMP
TAIL	15/55	P OPTION
TAIL	16/56	Y OPTION
0.7 5	17/57	TRAN PLS
		ALT
0.2 0 0	18/58	RATE DB
TAIL	19/59	JET OPT
2	20/60	#JETS
0.0 8	21/61	ON TIME
- 0.0 0	22/62	DELAY
		VERN
0.2 0 0 0	23/63	ROT RATE
- 1.0 0 0	24/64	ATT DB
0.2 0	25/65	RATE DB
0.0 5 0	26/66	ROT PLS
0.0 0	27/67	COMP
0	28/68	CNTL ACC

FLT PLN-17a/69/O/B

A14

DAP A15

PURPOSE:

GLO VRCS, PRCS, GE, FE

FLT PLN-16b/69/O/A

A15

FLT PLN-17b/69/O/A

(reduced copy)



DAP B

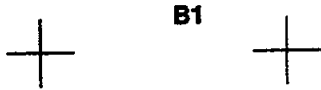


DAP B1

PURPOSE:

NOMINAL; OMS &
RCS BURNS

FLT PLN-18a/69/O/A



B1

FLT PLN-18b/69/O/A



B1



B1

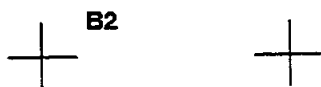
DAP B2

PURPOSE:

LOSS OF VERNERS
(TAIL ONLY)

2	DAP B 0 1
30	<u>0.5 0 0 0</u>
31	- <u>3.0 0</u>
32	<u>0.2 0</u>
33	<u>0.0 4</u>
34	<u>.0 0 0</u>
35	ALL
36	ALL
37	<u>0.1 0</u>
38	<u>0.2 0 0</u>
39	ALL
40	2
41	<u>0.0 8</u>
42	- <u>0.0 0</u>
43	<u>0.2 0 0 0</u>
44	- <u>1.0 0 0</u>
45	<u>.0 2 0</u>
46	<u>0.0 0 2</u>
47	<u>.0 0 0</u>
48	0

FLT PLN-19a/69/O/A



B2

FLT PLN-19b/69/O/A



(reduced copy)

FLT PLN/69/FIN



B2

2	DAP B 0 2
30	<u>0.2 0 0 0</u>
31	- <u>3.0 0</u>
32	<u>0.2 0</u>
33	<u>0.0 4</u>
34	<u>.0 0 0</u>
35	TAIL
36	TAIL
37	<u>0.0 2</u>
38	<u>0.0 7 0</u>
39	TAIL
40	1
41	<u>0.0 8</u>
42	- <u>0.0 0</u>
43	<u>0.2 0 0 0</u>
44	- <u>1.0 0 0</u>
45	<u>.0 2 0</u>
46	<u>0.0 0 2</u>
47	<u>.0 0 0</u>
48	0

FLT PLN-20a/69/O/A



B3



B3

2	DAP B 0 3
30	<u>0.2 0 0 0</u>
31	- <u>3.0 0</u>
32	<u>0.2 0</u>
33	<u>0.0 4</u>
34	<u>.0 0 0</u>
35	ALL
36	ALL
37	<u>0.0 2</u>
38	<u>0.0 7 0</u>
39	ALL
40	1
41	<u>0.0 8</u>
42	- <u>0.0 0</u>
43	<u>0.2 0 0 0</u>
44	- <u>1.0 0 0</u>
45	<u>.0 2 0</u>
46	<u>0.0 0 2</u>
47	<u>.0 0 0</u>
48	0

FLT PLN-21a/69/O/A



B4



B2

DAP B3

PURPOSE:

LOSS OF VERNIS
(NOSE & TAIL)

FLT PLN-20b/69/O/A



B3

DAP B4

PURPOSE:

SSUS DEPLOY

FLT PLN-21b/69/O/A



(reduced copy)



B4

2	DAP B 0 4
30	<u>0.2 0 0 0</u>
31	<u>- 0.3 0</u>
32	<u>0.2 0</u>
33	<u>0.0 4</u>
34	<u>0.0 0</u>
35	TAIL
36	TAIL
37	<u>0.0 2</u>
38	<u>0.2 0 0</u>
39	ALL
40	2
41	<u>0.0 8</u>
42	<u>- 0.0 0</u>
43	<u>0.0 0 8 0</u>
44	<u>- 0.1 0 0</u>
45	<u>0.1 0</u>
46	<u>0.0 0 2</u>
47	<u>0.0 0</u>
48	0

FLT PLN-22a/69/O/A



B5



B5

2	DAP B 0 5
30	<u>0.2 0 0 0</u>
31	<u>- 3.0 0</u>
32	<u>0.2 0</u>
33	<u>0.0 4</u>
34	<u>0.0 0</u>
35	TAIL
36	TAIL
37	<u>0.0 2</u>
38	<u>0.2 0 0</u>
39	ALL
40	2
41	<u>0.0 8</u>
42	<u>- 0.0 0</u>
43	<u>0.0 1 6 0</u>
44	<u>- 0.0 3 3</u>
45	<u>0.2 0</u>
46	<u>0.0 0 2</u>
47	<u>0.0 0</u>
48	0

FLT PLN-23a/69/O/A



B7



B4

DAP B5

PURPOSE:

COAS CAL

FLT PLN-22b/69/O/A



B5

DAP B7

PURPOSE:

RENDEZVOUS

FLT PLN-23b/69/O/A



(reduced copy)



B7

2	DAP B 0 7
30	0.5 0 0 0
31	- 2.0 0
32	0.2 0
33	0.0 4
34	.0 0 0
35	ALL
36	ALL
37	0.0 5
38	0.2 0 0
39	ALL
40	2
41	0.0 8
42	- 0.0 0
43	0.2 0 0 0
44	- 1.0 0 0
45	.0 2 0
46	0.0 0 2
47	.0 0 0
48	0

FLT PLN-24a/69/O/A



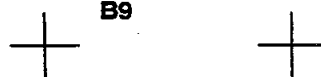
B8



B8

2	DAP B 0 8
30	0.2 0 0 0
31	- 2.0 0
32	0.2 0
33	0.0 4
34	.0 0 0
35	ALL
36	ALL
37	0.0 1
38	0.2 0 0
39	ALL
40	2
41	0.0 8
42	- 0.0 0
43	0.2 0 0 0
44	- 1.0 0 0
45	.0 2 0
46	0.0 0 2
47	.0 0 0
48	0

FLT PLN-25a/69/O/A



B9



B7

DAP B8

PURPOSE:

PROX OPS

FLT PLN-24b/69/O/A



B8

DAP B9

PURPOSE:

SPARTAN
DEADBAND
COLLAPSE

FLT PLN-25b/69/O/A



(reduced copy)



B9

2/4	DAP B 0 9
30/50	<u>0.0 5 0 0</u>
31/51	- <u>1.0 0</u>
32/52	<u>0.2 0</u>
33/53	<u>0.0 4</u>
34/54	<u>.0 0 0</u>
35/55	ALL
36/56	ALL
37/57	<u>0.0 1</u>
38/58	<u>0.1 0 0</u>
39/59	ALL
40/60	<u>2</u>
41/61	<u>0.0 8</u>
42/62	- <u>4.7 0</u>
43/63	<u>0.1 0 0 0</u>
44/64	- <u>1.0 0 0</u>
45/65	<u>.0 2 0</u>
46/66	<u>0.0 0 2</u>
47/67	<u>.0 0 0</u>
48/68	<u>1</u>

FLT PLN-26a/69/O/A



B10



B10

2/4	DAP B 1 0
30/50	<u>0.1 0 0 0</u>
31/51	<u>4 0 0 0</u>
32/52	<u>0.2 0</u>
33/53	<u>0.0 4</u>
34/54	<u>.0 0 0</u>
35/55	ALL
36/56	ALL
37/57	<u>0.0 2</u>
38/58	<u>0.1 0 0</u>
39/59	TAIL
40/60	<u>2</u>
41/61	<u>0.0 8</u>
42/62	- <u>5.8 0</u>
43/63	<u>0.2 0 0 0</u>
44/64	<u>4 0 0 0 0</u>
45/65	<u>.0 4 0</u>
46/66	<u>0.0 0 2</u>
47/67	<u>.0 0 0</u>
48/68	<u>4</u>

FLT PLN-27a/69/O/A



B11



B9

DAP B10

PURPOSE:

WSF Overnight Park

FLT PLN-26b/69/O/A



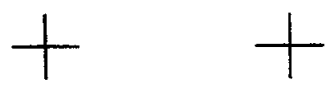
B10

DAP B11

PURPOSE:

WSF RELEASE,
CHAWS, PARK

FLT PLN-27b/69/O/B



(reduced copy)



B11

2/4	DAP B 1 1
30/50	<u>0.1 0 0 0</u>
31/51	<u>- 3.0 0</u>
32/52	<u>0.2 0</u>
33/53	<u>0.0 4</u>
34/54	<u>.0 0 0</u>
35/55	ALL
36/56	ALL
37/57	<u>0.0 2</u>
38/58	<u>0.1 0 0</u>
39/59	ALL
40/60	<u>2</u>
41/61	<u>0.0 8</u>
42/62	<u>- 5.8 0</u>
43/63	<u>0.2 0 0 0</u>
44/64	<u>- 2.0 0 0</u>
45/65	<u>.0 4 0</u>
46/66	<u>0.0 0 2</u>
47/67	<u>.0 0 0</u>
48/68	<u>4</u>

FLT PLN-28a/69/O/A



B12



B12

2/4	DAP B 1 2
30/50	<u>0.1 0 0 0</u>
31/51	<u>- 3.0 0</u>
32/52	<u>0.2 0</u>
33/53	<u>0.0 4</u>
34/54	<u>.0 0 0</u>
35/55	ALL
36/56	ALL
37/57	<u>0.0 2</u>
38/58	<u>0.1 0 0</u>
39/59	ALL
40/60	<u>2</u>
41/61	<u>0.0 8</u>
42/62	<u>- 5.8 0</u>
43/63	<u>0.2 0 0 0</u>
44/64	<u>- 3.0 0 0</u>
45/65	<u>.0 4 0</u>
46/66	<u>0.0 0 2</u>
47/67	<u>.0 0 0</u>
48/68	<u>1</u>

FLT PLN-29a/69/O/A



B13



B11

DAP B12

PURPOSE:
WSF CAPTURE

FLT PLN-28b/69/O/A



B12

DAP B13

PURPOSE:
SEH LOSS OF
VERNS

FLT PLN-29b/69/O/A



(reduced copy)



B13

2/4	DAP B 1 3
30/50	<u>0.2 0 0 0</u>
31/51	<u>- 3.0 0</u>
32/52	<u>0.2 0</u>
33/53	<u>0.0 4</u>
34/54	<u>0.0 0 0</u>
35/55	ALL
36/56	ALL
37/57	<u>0.0 2</u>
38/58	<u>0.0 7 0</u>
39/59	TAIL
40/60	1
41/61	<u>0.0 8</u>
42/62	<u>- 0.0 0</u>
43/63	<u>0.2 0 0 0</u>
44/64	<u>- 1.0 0 0</u>
45/65	<u>0.2 0</u>
46/66	<u>0.0 0 2</u>
47/67	<u>0.0 0 0</u>
48/68	0

FLT PLN-30a/69/O/A



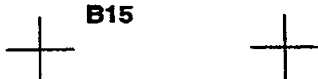
B14



B14

2/4	DAP B 1 4
30/50	<u>0.5 0 0 0</u>
31/51	<u>- 3.0 0</u>
32/52	<u>0.2 0</u>
33/53	<u>0.0 4</u>
34/54	<u>0.0 0</u>
35/55	TAIL
36/56	TAIL
37/57	<u>0.0 2</u>
38/58	<u>0.2 0 0</u>
39/59	ALL
40/60	2
41/61	<u>0.0 8</u>
42/62	<u>- 0.0 0</u>
43/63	<u>0.0 4 0 0</u>
44/64	<u>- 0.1 0 0</u>
45/65	<u>0.2 0</u>
46/66	<u>0.0 0 2</u>
47/67	<u>0.0 0 0</u>
48/68	0

FLT PLN-31a/69/O/B



B15



B13

DAP B14

PURPOSE:

SEH

FLT PLN-30b/69/O/A



B14

DAP B15

PURPOSE:

GLO OG ROLL

FLT PLN-31b/69/O/A



(reduced copy)



B15

B15

2/4	DAP B 15
30/50	0.1000
31/51	-1.00
32/52	0.20
33/53	0.04
34/54	0.00
35/55	ALL
36/56	ALL
37/57	0.02
38/58	0.100
39/59	TAIL
40/60	2
41/61	0.08
42/62	-0.00
43/63	0.1000
44/64	-1.000
45/65	0.20
46/66	0.002
47/67	0.00
48/68	0

FLT PLN-32a/69/O/B

FLT PLN-32b/69/O/A



UNIV PTG	
TGT ID	= 1 Orbiting Vehicle = 2 Earth ctr = 3 Earth tgt Input LAT (± 90) LON (± 180 , + = East) ALT (-3444.0 to 20000.0 nm)
	= 4 Sun ctr = 5 Celestial tgt Input RA (0-359.99) DEC (± 90)
	= 11-110 Nav Stars
BODY VECT	= 1 +X* = 2 -X* = 3 -Z* = 4 -Y Star Tracker* = 5 Optional Input P (0-359.99) Y (270-359.99, 0-90)
* input OM →	OM (0-359.99)
MON AXIS	= 1 +X = 2 -X

FLT PLN-33/69/O/A

FLT PLN-33/69/O/A is mounted on the back of the DAP Book

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FLIGHT PLAN NOTES

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV105/Endeavour
 Inclination: 28.45°
 Insertion Altitude: 200 X 200 nm
 Duration: 11 + 2 days

B. MAJOR EVENTS

<u>EVENT</u>	<u>ORBIT</u>	<u>MET</u>	<u>DATE</u>	<u>CDT</u>	<u>ΔV (fps)</u>	<u>HA/HP (nm)</u>
Launch	--	00/00:00	07/20/95	09:33	--	--
OMS-2	1	00/00:45	07/20/95	10:18	292.9	201/200
Spartan Release	17	01/00:35	07/21/95	10:08	--	201/200
Spartan Grapple	47	02/23:15	07/23/95	08:48	--	202/199
OMS-3*	50	03/05:01	07/23/95	12:34	24.0	215/199
OMS-4*	50	03/03:45	07/23/95	13:18	27.0	215/215
WSF Release	60	03/18:33	07/24/95	04:06	--	216/215
WSF Grapple*	95	06/00:07	07/26/95	09:40	--	217/214
OMS-5	110	07/00:10	07/27/95	09:43	54.5	216/183
OMS-6	111	07/00:55	07/27/95	10:28	57.2	183/183
D/O Burn	170	10:19:31	07/31/95	06:02	305	--
Landing	171	10:20:29	07/31/95	07:02	--	--

*Time of event differs from OCF Trajectory Cycle time.

C. LANDING OPPORTUNITIES

		<u>Landing Orbit</u>	<u>Site</u>	<u>Local Time</u>	<u>MET</u>
		<u>No.</u>			
Nominal	Primary	171	KSC	07:02 EDT	10/20:29
	1 Rev Late	172	KSC	08:38 EDT	10/22:05
	Weather Alt	172	NOR	06:32 MDT	10/21:59
1 Day Late	Primary	187	KSC	07:24 EDT	11/19:51
	1 Rev Late	188	EDW	05:51 EDT	11/20:45
	Weather Alt	188	NOR	06:54 MDT	11/22:21
2 Days Late	Primary	203	KSC	07:45 EDT	12/21:12
	1 Rev Late	204	EDW	06:13 MDT	12/22:40

D. CREW

CDR - Dave Walker (Red Dog)
 PLT - Ken Cockrell (Cujo)
 MS1 - Jim Voss (Dogface)
 MS2 - Jim Newman (Pluto)
 MS3 - Mike Gernhardt (Underdog)

FLIGHT PLAN NOTES

E. COMMUNICATIONS

TDRS Support: East (41° W), West (174° W)
Backup Real-Time TV: GDS(GDX), MIL(MLX)
Contingency GSTDN: MIL(MLX), BDA(BDX), DKR (UHF only), and GDS(GDX)
Contingency RTS: HTS, GTS, VTS, IOS, CTS, DGS, OTS, and IOS also has UHF capability

Lead time for site callup: GSTDN - 2 hr, RTS - 4 hr

F. PAYLOADS

1. Wake Shield Facility (WSF) - 2

The WSF payload consists of an RMS-deployable free flyer experiment platform, a cross-bay carrier structure, and two "smart" canisters mounted on the carrier. The WSF is controlled by either the crew using a PGSC or the ground using the WSF-provided communications link. While deployed, the free flyer creates a wake which provides a high vacuum environment essential to Molecular Beam Epitaxy (MBE) and Chemical Beam Epitaxy (CBE) thin film growth. During free flight, WSF uses processing equipment to grow GaAs and GaAsSi thin films within this vacuum wake. The WSF MBE growths are extremely sensitive to contamination so they are scheduled (7 total) after WSF has separated from the orbiter. WSF-trained crewmembers will be available for required support during the 18-hour critical science period during free flight. During retrieval proximity operations WSF will be used for the plume impingement experiment. Post-retrieval, the Charge Hazards and Wake Studies (CHAWS) experiment will be conducted.

2. SPARTAN-201

This payload consists of two main elements: the SPARTAN free flyer and the SPARTAN flight support structure. The two instruments which are carried on SPARTAN free flyer are the Ultraviolet Coronal Spectrometer (UVCS) and the White Light Coronagraph (WLC). These experiment will investigate the physical conditions of the solar corona. SPARTAN will be deployed and retrieved via the remote manipulator system (RMS). All housekeeping and science data will be recorded on board the deployed spacecraft.

3. International Extreme Ultraviolet Hitchhiker 1 (IEH-1)

IEH-1 consists of a hitchhiker carrier designed for cross-bay mounting in the payload bay. There are three experiments mounted on the carrier:

- a. Solar Extreme Ultraviolet Hitchhiker (SEH)
SEH is designed to obtain absolute solar EUV and Far UV fluxes needed to interpret emissions from stellar targets that are measured by IEH-1. SEH is mounted on the side of the HH-M bridge and is contained in an extended GAS can with a Hitchhiker Motorized Door Assembly (HMDA). SEH support electronics are mounted in the second can. Maneuvering the orbiter to the required sun-pointing attitude is the only crew activity required.

- b. **UV Spectrograph Telescope for Astronomical Research (UVSTAR)**
UVSTAR will spectrally resolve images and atomic emission lines from a variety of stellar sources including Io plasma torus at Jupiter, hot stars, and the Earth's atmosphere. UVSTAR is mounted on top of the carrier. The associated electronics are mounted on the side of the carrier. Maneuvering the orbiter to the required attitude is the only crew activity required.
- c. **GLO-3**
An Extreme Ultraviolet (EUV) imager and spectrograph will make measurements in the 115 to 1159 nanometer spectral range. The sensors, in addition to a coaligned video camera, can pivot and observe orbiter surfaces, contaminating events, and air glow in a plane parallel to the orbiter's X-Y plane. GLO will also obtain data passively throughout the mission. The GLO instrument package is mounted on a scan platform on the top of the carrier. The associated electronics are mounted on the side of the carrier. The crew will perform a variety of activities in support of some GLO data takes.

4. **Capillary Pumped Loop/GAS Bridge Assembly (CAPL/GBA)**

The CAPL/GBA consists of the CAPL experiment mounted to the top of the GBA and up to six GAS experiment canisters mounted in standard side-mount positions on the GBA. The CAPL experiment will study the behavior of a full-scale capillary pumped loop heat transfer system in the microgravity environment. A unique feature of the CAPL is that all the pumping is done by capillary forces, with no mechanical moving parts. The CAPL is a prototype of the thermal control system planned for use on the Earth Observing System (EOS) platform. Following activation, no crew activity is required in support of CAPL.

There will be five GAS can payloads mounted on the GBA for STS-69:

- a. **G-056**
A California Institute of Technology payload designed to detect gamma-ray bursts from celestial sources, and to detect the possible occurrence of optical transients coincident with the bursts. The crew will only be required to perform activation and deactivation of the payload.
- b. **G-645**
A Mill Creek Township School District (Erie, Pennsylvania) experiment that will investigate the performance of electrorheological fluid filled beams used as structural dampers in the space environment. The crew will only be required to perform activation and deactivation of the payload.
- c. **G-702**
Sponsored by NASA Lewis Research Center. The objective is to increase the understanding of smoldering combustion in a long-term, microgravity environment. This experiment will focus on one-dimensional smoldering of polyurethane foam. The crew will verify activation of the payload, initiate testing, and deactivate the payload.
- d. **G-726**
A Utah State University payload that will measure the influence of gravity on the structural damping of a three-bay truss. The damping of the truss is inferred by the rate of decay of experiment vibrations. The crew will verify activation of the payload, initiate and terminate a low-g testing period, as well as deactivate the payload.

- e. **Thermal Energy Storage 2 (TES-2)**
A NASA Lewis Research Center experiment to develop a melt/freeze behavior database for TES phase change materials. It is intended to lead to performance enhancements for solar-dynamic power system heat receivers. The crew will only be required to verify experiment status and perform activation and deactivation of the payload.

5. **EDFT-02 (EVA DTO 671, Test 10)**

EDFT-02 consists of elements from DTO 671. The objectives of EDFT-02 are to assess EVA tools and support equipment functionality, and usage techniques that are critical to ISSA assembly and maintenance. Another objective is to expand ground and flight crew experience base.

DTO 671 - EVA hardware for future scheduled EVA missions, Test 10
The primary objective of this DTO is to test, in the space environment, vehicle interfaces for EVA hardware and techniques for future EVA activity. Crew activities involve operating various tools and connectors on a task board on the starboard side of the PLB. The EV crewmembers will perform the activities both free floating and restrained in an Articulating PFR.

6. **STL/NIH-C (Config A)**

The objective of STL/NIH-C is to validate models of muscle, bone, and endothelial biochemical and functional loss induced by microgravity stress. STL/NIH-C will evaluate cytoskeleton, metabolism, membrane integrity, and protease activity in target cells. In addition, STL will test tissue loss pharmaceuticals for efficacy. The crew is required to activate a time tag at the beginning and end of the mission.

7. **Commercial Materials Dispersion Apparatus Instruments Technology Associates Experiments (CMIX)**

The objective of CMIX is to collect data on scientific methods and commercial potential of biomedical and fluid science applications. CMIX is a collection of experiments housed within a Commercial Refrigerator Incubator Module (CRIM). The CRIM contains four Materials Dispersion Apparatus (MDA) minilab units designed to mix a variety of fluids and/or fluids and solids in the microgravity environment. In addition, the CMIX payload contains Bioprocessing Modules (BPMs) and Liquid Mixing Assemblies (LMAs) designed to mix fluids in support of immune cell response experiments in microgravity. The crew will activate and deactivate the MDAs, BPMs, and LMAs, as well as perform required photography.

8. **Commercial Generic Bioprocessing Apparatus (CGBA), Config A**

CGBA, configuration A, consists of Generic Bioprocessing Apparatus (GBA), Commercial Refrigerator Incubator Module (CRIM) and a stowage locker. The GBA module is a self-contained mixing and heating module used to process biological fluid samples in microgravity. Crew activities consist of mixing samples, incubating samples in the GBA, transferring data to the PGSC, and photographing fluid samples. The CRIM will be used to store temperature sensitive biological samples.

9. Electrolysis Performance Improvement Concept Study Experiment (EPICS)

EPICS is a self-contained system designed to study the electrolysis of water in the microgravity environment. A recombiner cell is used to eliminate the need for an external water feed. The equipment is mounted in the place of two middeck lockers. The crew is required to initiate and terminate three 2-day test periods.

10. Biological Research In Canisters (BRIC), Block 2

This middeck payload is designed to investigate the effects of spaceflight on small arthropod animal and plant specimens. The only crew activity required is to remove a canister from a middeck locker and place it in an N2 freezer.

11. Midcourse Space Experiment (MSX) – Payload of Opportunity

Orbiter thruster firings will be used as a sensor calibration and evaluation target for the space-based ultraviolet, inferred, and visible sensors on the MSX. The MSX satellite is scheduled to be in a 99-degree inclination orbit at approximately 485 nm.

12. Auroral Photography Experiment (APE) – B

The objective of APE-B is to photograph and record spectra of the aurora phenomena. It consists of a camera, image intensifier, and spectrograph. On STS-69, APE-B will only be used during the orbital night portions of CHAWS activities following WSF retrieval. Shuttle glow phenomena connected with WSF Langmuir probe sweeps will be recorded.

G. ON-ORBIT DTOs

1. DTO 415 – Water Spray Boiler Electrical Heater Capability

This DTO will collect data to verify performance of WSB APU water feedline heater modification. The data will also be used to verify and enhance WBS models. No crew activity is required.

2. DTO 653 – Evaluation of MK 1 Rowing Machine

This DTO will evaluate the MK 1 rowing machine as an alternative to the shuttle treadmill. Noise and vibration associated with the MK 1 are anticipated to be significantly less than in the case of the treadmill. Additionally, inflight simulated rowing is anticipated to provide total body exercise including aerobic and anaerobic conditioning. Heart rate will be recorded to determine the effectiveness of changes in the resistive settings of the device.

3. DTO 656 – PGSC Single Event Upset Monitoring

The purpose of this DTO is to determine the susceptibility of the Payload and General Support Computer's random access memory (RAM) to single event upset caused by cosmic radiation. The DTO software runs in the background of the spare PGSC, when available, and collects data on cosmic ray hits.

4. DTO 667 - Portable Inflight Landing Operations Trainer (PILOT)

This DTO consists of a laptop PC with landing software and a spare rotational hand controller (essentially a landing simulator). The DTO will attempt to verify that the simulator can assist the CDR and PLT in maintaining a high level of proficiency for approach and landing on EDO missions. The CDR and PLT will perform PILOT as the timeline permits.

5. DTO 671 - EVA hardware for future scheduled EVA missions, Test 10

See item F.5, 7-5.

6. DTO 672 - EMU Electronic Cuff Checklist

This DTO flight tests an electronic version of the EVA cuff checklist. The unit provides a high resolution display that will allow EVA crewmembers access to a larger amount of information than is possible with the current paper version. Crew activities include wearing the electronic cuff checklist during the scheduled EVA, then evaluating its overall performance and usability.

7. DTO-679 - Ku-band Communications Adapter Demonstration

This DTO will demonstrate the capability of the Ku-band Communications Adapter (KCA) to provide high-speed bi-directional computer communications via the shuttle Ku-band system. The KCA will be able to support both shuttle operations (IFM procedures and daily mail traffic) and payload users.

8. DTO 700-8 - Global Positioning System Development Flight Test

This DTO will demonstrate the performance and operation of the Global Positioning System (GPS) during orbiter ascent, on-orbit, entry, and landing phases. The GPS will estimate the orbiter position, velocity, measurement discreties and attitude.

9. DTO 700-10 - Orbiter Space Vision System (OSVS) Flight Video Taping

The purpose of this DTO is to record camera video of special targets under varying on-orbit conditions to support OSVS development. On STS-69, the targets will be mounted on the WSF.

10. DTO 831 - Manipulator Position Display (MPD) as an Aid to RMS Operators

This DTO will perform on-orbit evaluations of the MPD as situational awareness cues for RMS operations. Displays will be run on a PGSC and will be placed in the scan pattern of the RMS operator for already planned RMS operations.

11. DTO 833 - EMU Thermal Comfort Evaluations

Thermal modifications and potential modifications to the Extravehicular Mobility Unit (EMU) will be evaluated in a cold attitude during the planned EVA using orbit temperature data gathering devices. A secondary objective is to support development of an improved thermal model of the EMU.

12. DTO 914 – Space Linear Acceleration Mass Measurement Device Evaluation (SLAMMD)

The SLAMMD hardware is a new design of flight mass measuring hardware that minimizes weight, mass, volume, and interfaces and optimizes accuracy and reliability of results obtained in microgravity. The new design will be compatible with shuttle, space station, Mir, and spacelab. The long term goal of SLAMMD is for use in future metabolic studies.

13. DTO 1210 – EVA Operations Procedures/Training

Differences between training facilities/techniques and the actual EVA environment will be captured and applied with this DTO by performing dedicated EVAs with special scenarios and equipment. EVA activity will evaluate thermal effects on task performance, the Electronic Cuff Checklist (ECC), and improved EVA hardware.

H. ON-ORBIT DSOs

1. DSO 482 – Cardiac Rhythm Disturbances During EVA

The purpose of this experiment is to record the presence of cardiac dysrhythmias during preflight EVA training, inflight EVA, and inflight normal daily activities. The subject crewmember will wear a Holter monitor and harness for 24 hours on EVA day and for 24 hours within 2 days of landing.

2. DSO 483 – Back Pain Pattern In Microgravity

Back pain is a common symptom experienced by astronauts during space flight. The objective of this DSO is to collect back pain and height change information on a daily basis.

3. DSO 485 – Inter Mars Tissue Equivalent Proportional Counter (ITEPC)

This DSO consists of two units each consisting of a spectrometer, radiation detector, data storage board and support electronics mounted on an Adaptive Payload Carrier (APC) to the sidewall in the payload bay. The purpose of this experiment is to demonstrate the ability of the hardware to withstand the radiation environment and to gather data on the radiation environment for future EVAs, as well as single event upset data. The payload is activated during Post Insertion and deactivated during Deorbit Prep.

4. DSO 489 – EVA Dosimetry Evaluation

The current location of the Crew Passive Dosimeter (CPD) in the EMU may be shielded by the upper torso portion of the Liquid Cooled Garment and may not give accurate exposure measurements. This investigation places dosimeters in other areas of the body to determine the reliability of the CPD measurements. The placement of these dosimeters will be referenced from the EVA prep procedure in the EVA Checklist.

5. DSO 491 - Characterization of Microbial Transfer Among crewmembers During Space Flight

In order to minimize the spreading of infectious agents during space flight, a better understanding of microbial dissemination within the shuttle environment is necessary. The dissemination of normal crew microbiota will be studied by tracking a specific target organism through samples obtained preflight and postflight from participating crewmembers. No inflight crew activities are required.

6. DSO 492B - In-Flight Evaluation of a Portable Clinical Blood Analyzer (PCBA)

This DSO will test the functional parameters of the PCBA in microgravity. Analytic capability and fluid movement by testing controls will be validated. Blood sample collection, application, and accuracy analyzed for glucose will be compared to glucometers.

7. DSO 494 - Influence of Microgravity and EVA on Pulmonary Oxygen Exchange

Russian studies suggest that microgravity impairs pulmonary oxygen exchange. EVA may be a compounding factor. This DSO seeks to determine if an operationally significant impairment is present. The subject crewmembers will breathe 10.2 psia cabin air through a tube into a Pulse Oximeter/Capnograph System, which will record test data, before and after the EVA.

8. DSO 604 - Visual-Vestibular Integration as a Function of Adaptation (OI-3B)

The objective of this DSO is to investigate visual-vestibular and perceptual adaptive responses as a function of longer missions and to determine the operational impact on performance of entry, landing, and egress procedures. There are no in-flight activities required.

9. DSO 608 - Effects of Space Flight on Aerobic and Anaerobic Metabolism During Exercise

Changes in energy metabolism, shifts in fuel utilization, and decreases in muscle mass after extended duration space flight may limit a crewmember's ability to do physical work, both in-flight and postflight. The crewmembers will keep a daily log of their fluid intake.

10. DSO 610 - In-Flight Assessment of Renal Stone Risk

This DSO aims to define the major metabolic factors contributing to kidney stone formation in orbit. Previous post-flight urine analysis reveals significant changes in the urinary excretion of stone-forming salts or inhibitors of stone formation. Such changes increase the risk of developing kidney stones. On this mission, three crewmembers will collect urine samples on various flight days and complete a daily food, fluid, and exercise log. Post-flight analysis will contribute to the development of countermeasures against kidney stone formation.

11. DSO 624 - Cardiorespiratory responses to Submaximal Exercise

This experiment will evaluate the changes in aerobic capacity using submaximal exercise testing to correlate preflight and in-flight crew activities with postflight aerobic performance. This data will be used to assist in the development of optimal exercise prescriptions as countermeasures to prevent decrements in the nominal cardiorespiratory response. Crewmembers will don a heart watch prior to exercise and will maintain a daily exercise log.

12. DSO 901 - Documentary Television

The purpose of DSO 901 is to provide live television or VTR dumps of crew activities, orbiter operations, payload deployment/retrieval operations, Earth views, and rendezvous/proximity operations.

13. DSO 902 - Documentary Motion Picture

The purpose of DSO 902 is to provide documentary and public affair motion picture photography of the orbiter's basic capabilities and key flight objectives. Documentation shall include launch, crew activities, payload deployment/retrieval, landing, and unscheduled activities of special interest.

14. DSO 903 - Documentary Still Photography

The purpose of DSO 903 is to provide still photography of crew activities, orbiter operations, payload deployment/retrieval and operations, Earth views, and unscheduled items of interest.

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