

Flight Plan

STS-117

(OCFR2 Flight Cycle Trajectory)

Mission Operations Directorate Operations Division

Basic

For the latest working copy of the Flight Plan, visit
<http://mod.jsc.nasa.gov/do4/flightplan/main/fp.cfm?id=117>

November 13, 2006

EVENT	FD	MET	LOCAL DATE	CST	GMT
Launch	01	0/00:00	12/07/2006	20:36	342/02:36
OBSS Survey	02	0/17:55	12/08/2006	14:30	342/20:30
Ti	03	1/17:01	12/09/2006	13:35	343/19:35
ISS Docking	03	1/19:40	12/09/2006	16:55	343/22:15
EVA 1	04	2/17:45	12/10/2006	14:20	344/20:20
S3/4 SA Deploy	05	3/15:30	12/11/2006	12:05	345/18:05
EVA 2	06	4/16:55	12/12/2006	13:30	346/19:30
P6 2B SA Retract	07	5/15:00	12/13/2006	11:35	347/17:35
EVA 3	08	6/16:55	12/14/2006	17:12	348/16:55
Undock	10	8/18:45	12/16/2006	15:20	350/21:20
Landing	12	10/19:12	12/18/2006	15:47	352/21:47

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



Verify this is the correct version for the pending operation (training, simulation or flight).
Electronic copies of FDF books are available. URL: <http://mod.jsc.nasa.gov/do3/FDF/index.html>


MISSION OPERATIONS DIRECTORATE

FLIGHT PLAN
STS-117BASIC
November 13, 2006

PREPARED BY:



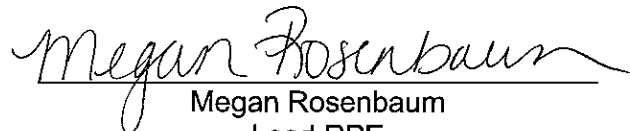
 Terri Blatt
Book Manager, Lead FAO



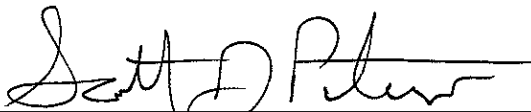
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Lead Timeliner



 Loi Nguyen
Lead Ops Planner



 Megan Rosenbaum
Lead RPE



 Scott Patano
Lead Pointer

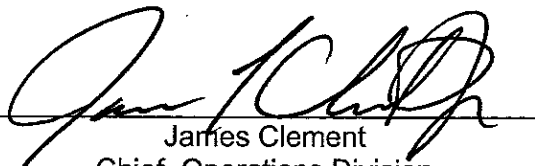
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Director of Operations

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Lead RPE	DO4/M. Rosenbaum	281-244-1066

FLIGHT PLAN
STS-117

LIST OF EFFECTIVE PAGES

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iv.....	* 117/BAS	3-4	117/BAS
v	* 117/BAS	3-5	117/BAS
vi.....	* 117/BAS	3-6	117/BAS
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2-21	117/BAS	3-31	117/BAS
2-22	117/BAS	3-32	117/BAS
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2-39	117/BAS	3-49	117/BAS
2-40	117/BAS	3-50	117/BAS

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3-51	117/BAS	3-108	117/BAS
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3-81	117/BAS	4-4	* 117/BAS
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3-91	117/BAS	5-4	* 117/BAS
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INTRODUCTION

The STS-116 Flight Plan is the Flight Data File article that contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry Checklists. The detailed rendezvous and undocking timelines and procedures are contained in the Rendezvous Checklist. The detailed EVA task timelines and procedures are contained in the EVA Checklist.

This Flight Plan satisfies the mission requirements specified in the following documents:

- NSTS-07700 Vol III, Flight Definition and Requirements Document
- NSTS-17462-116, STS-116 Flight Requirements Document
- NSTS-37326, Shuttle Crew Scheduling Constraints
- NSTS-21504, ISS 12A.1 Mission Integration Plan

The timeline formats used in this Flight Plan are based on JSC-19933, Timeline Format Definitions and Standard Notes, Rev C, May 1990.

The STS-117 Flight Plan is based on a launch date of December 7, 2006 at 20:36 CST. Orbiter inertial attitudes are expressed relative to a mean of 1950 (M50) reference frame.

The following SCSC Exceptions have been submitted in order to meet Category 1 objectives:

None

The Flight Plan and other related mission information are available on the following Space Shuttle Flight Planning web site:

<http://mod.jsc.nasa.gov/do4/flightplan/main/fp.cfm?id=117>

OVERVIEW TIMELINE

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STS-117 ISS 13A (launch with PVR)

Overview Timeline 11+1+2 (3 EVAs)

GMT L/O 342/02:35

		GMT	15	16	17	18	19	20	21	22	23	343/0	1	2	3	4	5	6	7	8	9	10	11	12	13	14											
		MET	12	13	14	15	16	17	18	19	20	21	22	23	01/0	1	2	3	4	5	6	7	8	9	10	11	12	13	14								
FD 01	STS												PI		RMS C/O																						
	ISS												-ZLV +YVV		-ZLV -XVV																						
	Orb Att												Launch ^																								
FD 02	STS												RCC Surveys, EVA Prep		Meal		RCC Srvys, RNDZ Prep																				
	ISS												-ZLV -XVV																								
	Orb Att												-ZLV -XVV																								
FD 03	STS												RNDZ		Hatch Open		EVA prep/xfers, S3/4 Handoff		EVA 1 Rvw		Campout																
	ISS												-ZLV -XVV		RNDZ		LVLH TEA																				
	Orb Att												-ZLV -XVV		RNDZ		LVLH TEA																				
		^ DOCKING (19:40)																																			
FD 04	STS												Pre EVA		EVA 1 (SAW Prep)		Pst EVA w/Prep																				
	ISS												S3/S4 Inst		PVR DPLY		LVLH TEA																				
	Orb Att												-ZLV -XVV		RNDZ		LVLH TEA																				
FD 05	STS												SAW Deploys		Meal		Water dump EVA prep		O ₂ d.		SSRMS Walkoff		EVA 2 Rvw		Campout												
	ISS												LVLH TEA		SAW DPLY		Dump		LVLH TEA																		
	Orb Att												LVLH TEA		SAW DPLY		Dump		LVLH TEA																		
		← MT XLAT 2-3 →																																			
FD 06	STS												Pre EVA		EVA 2 (SARJ Prep)		Pst EVA w/Prep																				
	ISS												OBSS Handoff		PVR DPLY		LVLH TEA																				
	Orb Att												-ZLV -XVV		RNDZ		LVLH TEA																				
		← SARJ C/O & MT XLAT 3-4 →																																			
FD 07	STS												P6 2B Retract EVA prep		Meal		P6 2B Retract EVA prep		EVA 3 Rvw		Campout																
	ISS												LVLH TEA		SAW DPLY		Dump		LVLH TEA																		
	Orb Att												LVLH TEA		SAW DPLY		Dump		LVLH TEA																		
FD 08	STS												Pre EVA		EVA 3		Pst EVA																				
	ISS												Simo Dump		(H2 Vent R&R and EAS Jettison)		Walkoff		LVLH TEA																		
	Orb Att												LVLH TEA		STS Dump		Walkoff		LVLH TEA																		
		← WS #1 Inspect →																																			
FD 09	STS												Off-Duty, PFCs		Meal		Off		Water Dump		Crew Conf & photo		RNDZ Prep														
	ISS												LVLH TEA		Dump		LVLH TEA																				
	Orb Att												LVLH TEA		Dump		LVLH TEA																				
FD 10	STS												Meal		Flyaround		Simo Dump																				
	ISS												LVLH TEA		Flyaround		Simo Dump		LVLH TEA																		
	Orb Att												LVLH TEA		Undock/Flyaround		Dump		-ZLV -XVV																		
		^ UNDOCKING																																			
FD 11	STS												Off Duty		FCS C/O, Pilot Ops		Brief		Meal		Cabin Stow																
	ISS												LVLH TEA		FCS C/O, Pilot Ops		Brief		Meal		LVLH TEA																
	Orb Att												LVLH TEA		FCS C/O, Pilot Ops		Brief		Meal		LVLH TEA																
FD 12	STS												D/O Prep		Ent																						
	ISS												LVLH TEA		D/O Prep		Ent		LVLH TEA																		
	Orb Att												LVLH TEA		D/O Prep		Ent		LVLH TEA																		

^KSC Land 10/19:12

Last Updated: 02 November 2006

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SUMMARY TIMELINE AND ISS SHORT TERM PLAN

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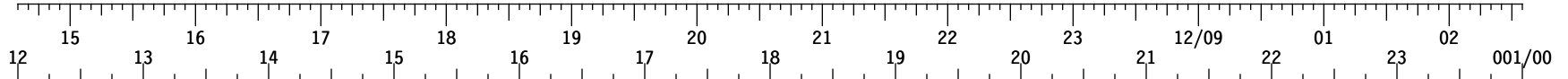
FD01

GMT 12/08/06 (342)
 Day 000

		03		04		05		06		07		08		09		10		11		12		13		14		12			
S T S - 1 1 7	CDR STURCKOW			POST INSERTION	AFT I MU	ELV P R K	LOAD DAPS	OMS BURN	NC1	-Z Y V V	S S E T U P	PRE SLEEP	PMC A/G	PRE SLEEP														MNVR	
	PLT/R2/M1 ARCHAMBAULT			POST INSERTION	M C I U *	R P M S R U P	RMS C/O	OMS BURN	R S M U S R P L E Y	U P L I N K *	P M W R D N	G P R R P R D N	PRE SLEEP*																
	MS1/EV3/R1 FORRESTER			POST INSERTION	R M S *	R P M S R U P	RMS C/O		R S M U S R P L E Y		G I R A I N S T A L L		PRE SLEEP																
	MS2/EV4/M2 SWANSON			POST INSERTION							P G S C S E T U P (P A R T I)	G P R R P R D N	U M B W E L L D / L	PRE SLEEP															
	MS3/EV2/R1 OLIVAS			POST INSERTION							P / T V 0 1 V I D E O S E T U P	H V D H I D L E O		PRE SLEEP															
	MS4/EV1 REILLY			POST INSERTION	O S C E A T C U P	SEE S E T U P	T E P C O N	W L E S A C T			P G S C S E T U P (P A R T I)			PRE SLEEP															
S T S	DAY/NIGHT	[Bar chart showing day/night cycle]																											
	ORBIT	[Bar chart showing orbit parameters]																											
	DAILY ORBIT	[Bar chart showing daily orbit parameters]																											
	TDRS	W -171	[Bar chart showing TDRS parameters]																										
	E -46	[Bar chart showing TDRS parameters]																											
	Z -275	[Bar chart showing TDRS parameters]																											
ORB ATT	ASC	OMS2	-ZLV +YVV	NC1	-ZLV -YVV	DEU MNVR	-ZLV -YVV																						
NOTES	*FILTER CK *ON-ORBIT INIT *RMS OPS CODES *HUM SEP *RECONFIG																												

FD02

GMT 12/08/06 (342)
 Day 000



S T S - 1 1 7	CDR STURCKOW	SLEEP	POST SLEEP	NC2^ OMS BURN	MS SURVEY	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	MS NT V B D	FILTER CLEANING	CRYO 02 SNSR CK	MN NO V S R E	NPC^ XFER PREP	FX P R E P S E E P	X F R E E F	MEAL	M P O R T	P/TV01 VIDEO SETUP	SETUP C/L CAMR	MS NR V R V E Y	PS ET T B U P 1
	PLT/R2/M1 ARCHAMBAULT	SLEEP	POST SLEEP*	OMS BURN	POST SLEEP	OBSS UNBRTH SRVY	FLAT FIELD	STBD WIND SRVY	NOSE CAP SRVY	MEAL	PORT WING SRVY											
	MS1/EV3/R1 FORRESTER	SLEEP	POST SLEEP	OMS*	POST SLEEP	RP M S R U P	OBSS UNBRTH SRVY	FLAT FIELD	STBD WIND SRVY	NOSE CAP SRVY	MEAL	PORT WING SRVY	OBSS BERTH									
	MS2/EV4/M2 SWANSON	SLEEP	POST SLEEP					FC P R G *	EMU C/O PREP	STBD WIND SRVY	NOSE CAP SRVY	MEAL	CWC S/U	SETUP C/L CAMR	FCMS OPS							
	MS3/EV2/R1 OLIVAS	SLEEP	POST SLEEP					OD S V O L	EMU C/O PREP	EMU C/O	EVA PREP FOR XFER	MEAL	PORT WING SRVY	OBSS BERTH								
	MS4/EV1 REILLY	SLEEP	POST SLEEP		PGSC SETUP (PART II)	POST SLEEP	ERG SETUP		EMU C/O	EMU C/O	EVA PREP FOR XFER	MEAL	P/TV01 VIDEO SETUP									
S T S	DAY/NIGHT	[Day/Night Cycle]																				
	ORBIT	[Orbit Cycle]																				
	DAILY ORBIT	[Daily Orbit Cycle]																				
	TDRS	[TDRS Cycle]																				
ORB ATT	-ZLV -YVV NC2 BIAS -ZLV +XVV STBD SURVEY NOSE CAP SURVEY BIAS -ZLV -XVV PORT SURVEY																					
NOTES	*HUM SEP *HTR *HTR RCNFG *HTR ACT *DUMP INIT *MANUAL *DUMP TERM *HTR DEACT *CNTLR SWAP																					

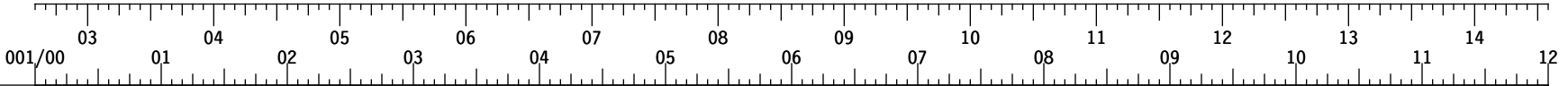
FD02

GMT 12/09/06 (343)

B-26

MET

Day 001



S T S - 1 1 7	CDR STURCKOW	P/TV01 SETUP	M C N O V M R M	PRE SLEEP	SET EXP	NC3^ OMS BURN	SC ENT TR C	-ZLVV	F M U N T V R	R P M C E A / G	PRE SLEEP	SLEEP
	PLT/R2/M1 ARCHAMBAULT	1/4 PRE SLEEP	1/4 HHL C/O	RNDZ TOOLS C/O							PRE SLEEP*	SLEEP
	MS1/EV3/R1 FORRESTER	CREW CABIN SRVY	R P M S W R R I N G D N	ODS R I N G E X T							PRE SLEEP	SLEEP
	MS2/EV4/M2 SWANSON	PRE SLEEP	M L E S	LDRI DNK	SET EXP	OMS BURN	SC ENT TR C				PRE SLEEP	SLEEP
	MS3/EV2/R1 OLIVAS	CREW CABIN SRVY		RNDZ TOOLS C/O							PRE SLEEP	SLEEP
	MS4/EV1 REILLY	P/TV01 VIDEO SETUP		ODS R I N G E X T							PRE SLEEP	SLEEP
S T S	DAY/NIGHT	[Bar chart showing day/night cycle]										
	ORBIT	17	18	19	20	21	22	23	24	25		
	DAILY ORBIT	6	7	8	9	10	11	12	13	14		
	TDRS	W -171	[Timeline bars for W -171]									
	E -46	[Timeline bars for E -46]										
	Z -275	[Timeline bars for Z -275]										
	ORB ATT	[Timeline bars for ORB ATT]										
	NOTES	*MAINT INIT *MAINT TERM *HUM SEP										

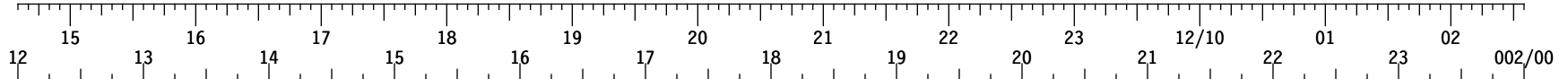
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GMT 12/09/06 (343)

B-26

MET

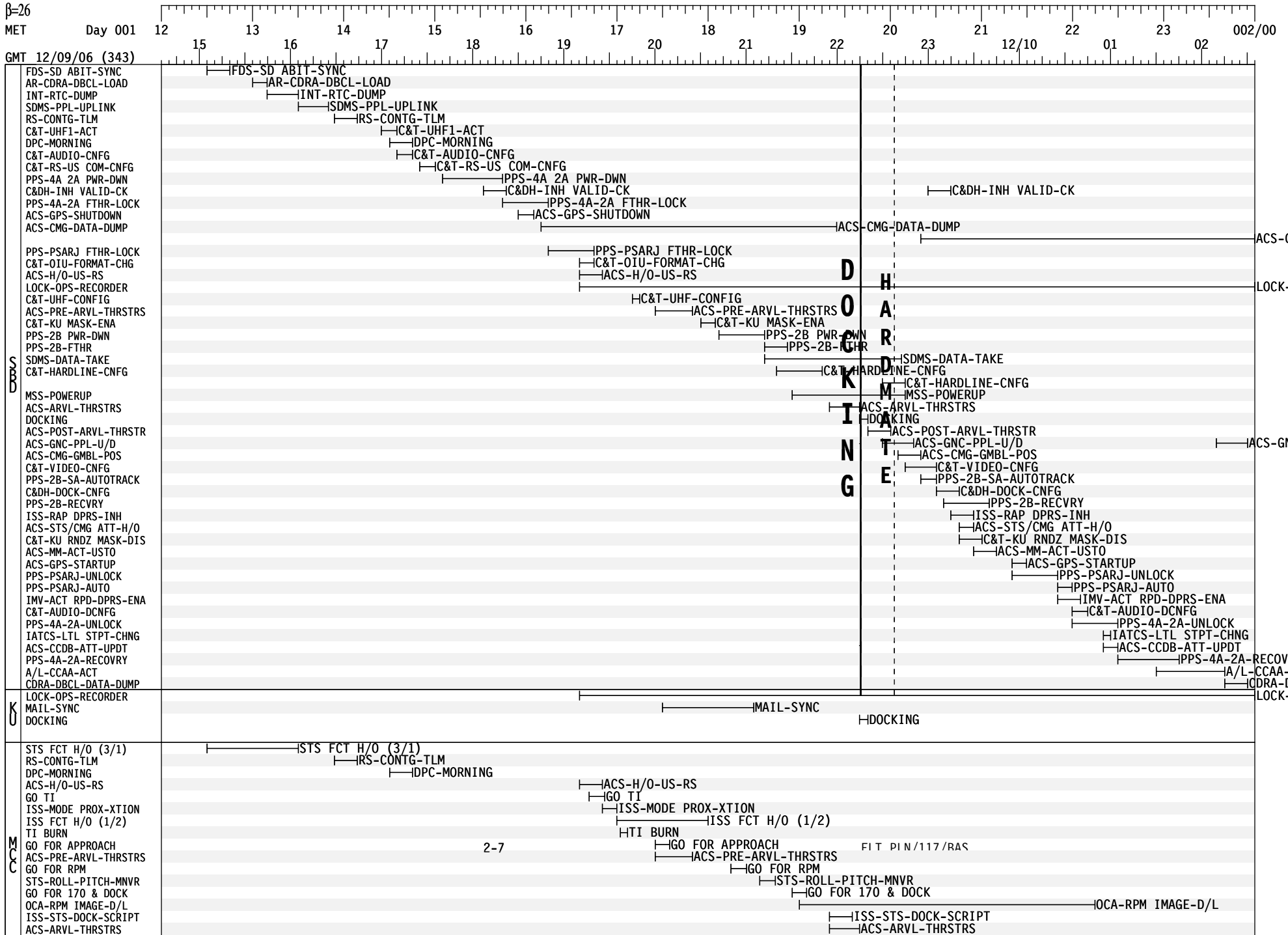
Day 001



S T S - 1 1 7	CDR STURCKOW	MNVR SLEEP	SIMU INIT	POST SLEEP	SIMU TERM	ISS RNDZ OPS				APPROACH T/L				HATCH LEAK CK - STS	ODS PREP FOR INGR	INGRS HATCH OPEN	SFTY CBRIEF	P/B SETUP W/STS 02	EXERCISE		
	PLT/R2/M1 ARCHAMBAULT	SLEEP	MCIU*	POST SLEEP	GRWRPRUB	ISS RNDZ OPS				APPROACH T/L				MTEVAR	GRWRPRBN	H/O	GRAPL	SFTY CBRIEF	S3/S4 UNBERTH	S3/S4 HAND OFF	
	MS1/EV3/R1 FORRESTER	SLEEP		POST SLEEP		OIU*	EPREK	EMU RMVL	EXERCISE	P/TV 02 OPS				DAOUCKIO	GRWRPRBN	GRAPL	SFTY CBRIEF	S3/S4 UNBERTH	S3/S4 HAND OFF		
	MS2/EV4/M2 SWANSON	SLEEP		POST SLEEP	GRWRPRUB	POST SLEEP	EXERCISE	ISS RNDZ OPS		APPROACH T/L				PCS SETUP - STS	POST RNDZ PGSC CNFG	SFTY CBRIEF	PST DK EVA XFR/RCNFG	REBA*	RCBO	E_LK PREP	
	MS3/EV2/R1 OLIVAS	SLEEP		POST SLEEP		P/TV 02 S/U	P/TV 02 OPS		EXERCISE	P/TV 02 OPS				POLYSBK	P/TV 05 S/U	P/TV 04 S/U	SFTY CBRIEF	PST DK EVA XFR/RCNFG	REBA*	RCBO	E_LK PREP
	MS4/EV1 REILLY	SLEEP		POST SLEEP		COND CWC S/U	EPREK	EMU RMVL	EXERCISE	APPROACH T/L				HATCH LEAK CK - STS	ODS PREP FOR INGR	INGRS HATCH OPEN	SFTY CBRIEF	PST DK EVA XFR/RCNFG	REBA*	RCBO	E_LK PREP
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	SLEEP	POST SLEEP	PREP WORK	DPC	WCNCNDRAFMAG	VRFY P/TV S/U	EXERCISE RED	MIDDAY-MEAL	PREP	4FOLMM	DWLD	DCHSRG	AATSVRLST	RPM	HATCH CK-ISS	INGRS HATCH OPEN	SFTY CBRIEF	EXERCISE TVIS	EVA DCS CNFG	
	FE-1 TIUPH	SLEEP	POST SLEEP	PREP WORK	DPC		VRFY P/TV S/U	VELO + HC	MIDDAY-MEAL	PREP	8FOLMM					EXERCISE TVIS	SFTY CBRIEF	COX	PWROERPK		
	FE-2 WILLIAMS	SLEEP	POST SLEEP	PREP WORK	DPC	RCS*		EXERCISE TVIS	MIDDAY-MEAL	PREP	MTIIMEEOR	HTIMER	P/TV DOCK VIDEO			EXERCISE RED	SFTY CBRIEF	P/B SETUP W/STS 02	PREP WORK		
S T S	DAY/NIGHT	[Timeline bars for Day/Night]																			
	ORBIT	[Timeline bars for Orbit]																			
	DAILY ORBIT	14	15	16	1	2	3	4	5	6											
	TDRS	W -171	[Timeline bars for TDRS]																		
	E -46	[Timeline bars for TDRS]																			
	Z -275	[Timeline bars for TDRS]																			
ORB ATT	-ZLV +YVV RNDZ APRCH DOCK BIAS -XLV -ZVV																				
SSRMS	*FILTER CK *ACT *ACT SPPT *CABLE CNCT WS2 PDGF2 *HTR *INSTALL																				
NOTES																					

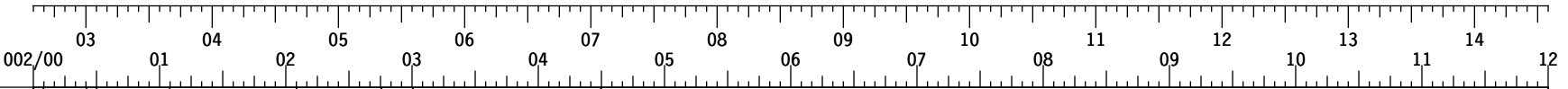
***1/19:40**

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



FD03

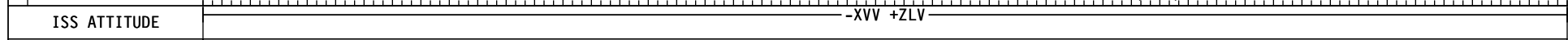
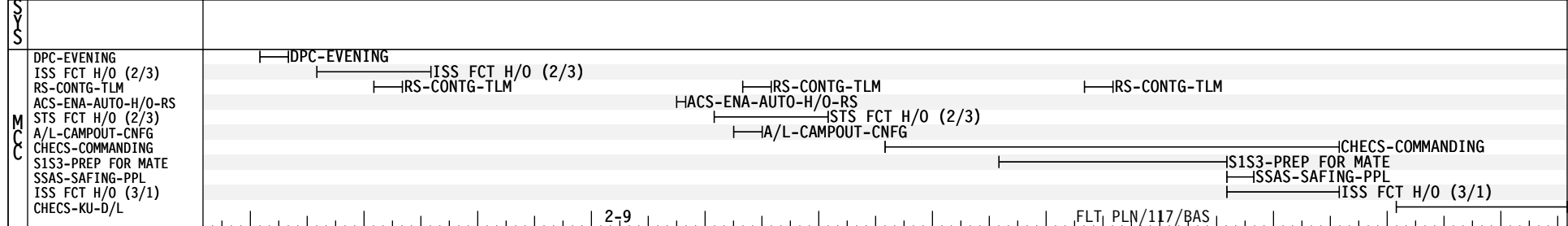
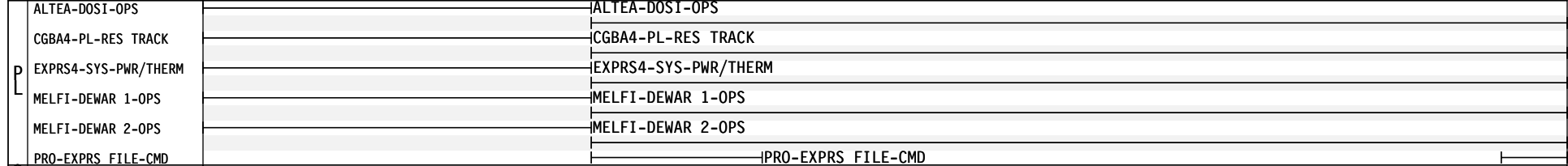
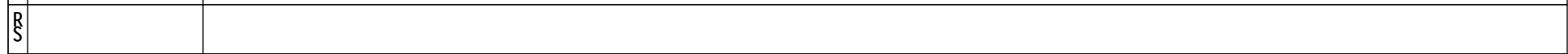
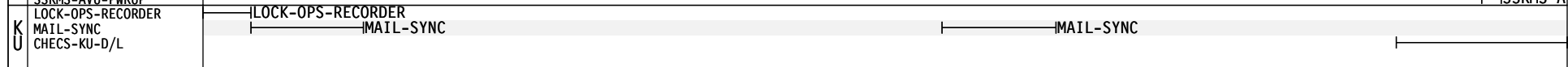
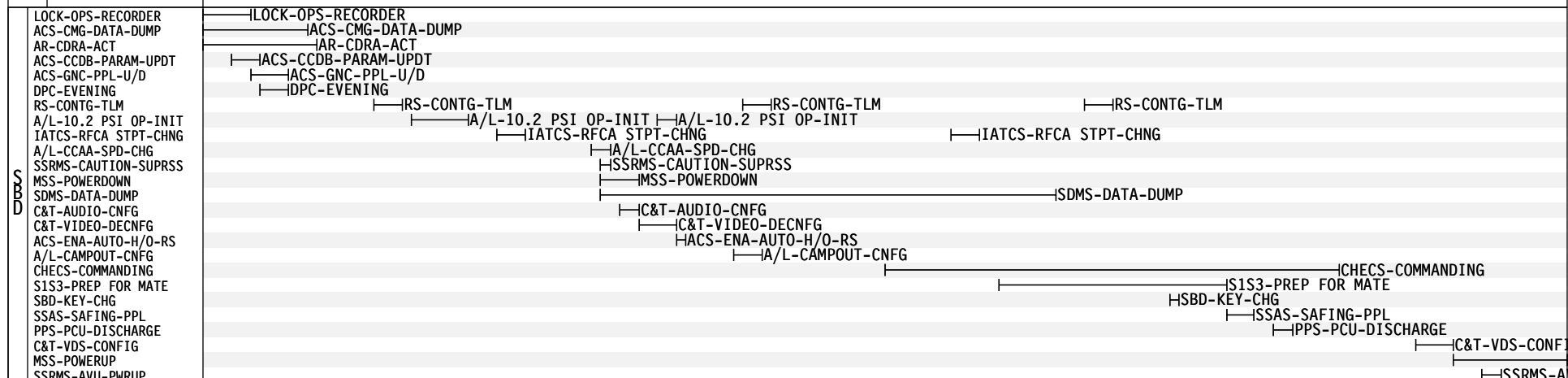
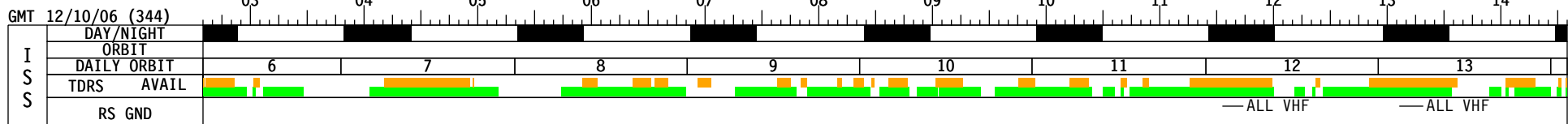
GMT 12/10/06 (344)
 Day 002
 MET



S T S - 1 1 7	CDR STURCKOW	FE S/G	FE S/#	EVA 1 PROC REVIEW	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP	
	PLT/R2/M1 ARCHAMBAULT	SHO SAF RNF MD S	SUG 3 NRNI / 4 ASE P TW LL	EVA 1 PROC REVIEW	PRE SLEEP			SLEEP	
	MS1/EV3/R1 FORRESTER		SUG 3 NRNI / 4 ASE P TW LL	EVA 1 PROC REVIEW	PRE SLEEP			SLEEP	
	MS2/EV4/M2 SWANSON		PRE SLEEP	EVA 1 PROC REVIEW	PRE SLEEP			SLEEP	
	MS3/EV2/R1 OLIVAS	PRE SLEEP		EVA 1 PROC REVIEW	PRE SLEEP	MASK PB/TOOL CONFIG	PB/10.2 DPRS	PRE SLEEP	
	MS4/EV1 REILLY	PRE SLEEP		EVA 1 PROC REVIEW	PRE SLEEP	MASK PB/TOOL CONFIG	PB/10.2 DPRS	PRE SLEEP	
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	PREP WORK	DPC PREP WORK	EVA 1 PROC REVIEW	PRE SLEEP			SLEEP	
	FE-1 TIUPH	PREP WORK	DPC PREP WORK	EVA 1 PROC REVIEW	PRE SLEEP			SLEEP	
	FE-2 WILLIAMS	SHO SAF RNF MD S	EX DPC PREP WORK	EVA 1 PROC REVIEW	PRE SLEEP			SLEEP	
S T S	DAY/NIGHT	[Timeline bar]							
	ORBIT	33	34	35	36	37	38	39	40
	DAILY ORBIT	6	7	8	9	10	11	12	13
	TDRS	W -171							
	E -46								
	Z -275								
	ORB ATT	BIAS -XLV -ZVV							
	SSRMS	-S3/4 H/O	WS2 PDGF2						
	NOTES	#HTR DEACT @DEACT							

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)

β=27
 MET Day 002 002/00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 12

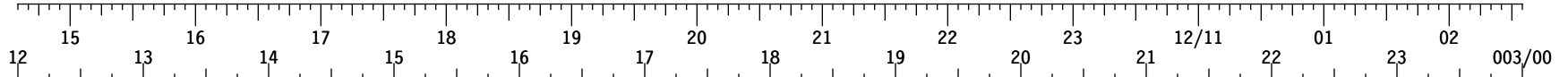


CEO

*PWRDN *PWRUP

FD04

GMT 12/10/06 (344)
 Day 002
 MET



S T S - 1 1 7	CDR STURCKOW	SLEEP	POST SLEEP	PMC A/G	POST SLEEP	MT NEVA R	POST SLEEP	CWC - STS	C IWN C I T			P/TV 07 S/U	CTW CRM 1	CXW FER	P/TV SPRT							
	PLT/R2/M1 ARCHAMBAULT	SLEEP	POST SLEEP		SSRMS S3/S4 INSTL			MNVR TO RTL	L I M P				U G N R P L	SSRMS EVA 1 PARK	SSRMS SUPPORT				PVR DPLY			
	MS1/EV3/R1 FORRESTER	SLEEP	POST SLEEP				M C I U *	A V U *	A V U *	1 - C A P	3 - C A P	S I S 3 SSAS BOLTING	EVA 1 (6:30)									
															I V A SPRT							
															PREPARE SAW/PVR DEPLOY							
	MS2/EV4/M2 SWANSON	SLEEP	POST SLEEP		HYG BRK/HATCH CLS	EVA PREP SUPPORT			14.7 REPR			EXERCISE		MEAL		C IWN C I T	C TW CRM 2	CXW FER	PVR DPLY			
MS3/EV2/R1 OLIVAS	SLEEP	POST SLEEP	HYG BRK/PREBREATHE	CAMPOUT EVA PREP			E P M U R G E	EMU PREBREATHE	C L K DPRS		P D P S	SORTIE EGRESS & S/U	REL AFT/FWD SABB RES		REL PVR CINCH/WINCH	RMV MLI	RGDZ AJIS STRTS (4)	U A S N F A S T B B	SARJ PREP (LOCKS)	SORTIE C/U & INGRS		
MS4/EV1 REILLY	SLEEP	POST SLEEP	HYG BRK/PREBREATHE	CAMPOUT EVA PREP			E P M U R G E	EMU PREBREATHE	C L K DPRS		P D P S	E & S / U	S1-S3 NT UTIL	S3 MDM SHRD RMVL	S1-S3 ZT UTIL	KEEL PIN ROTATE	INST SARJ DLA 2	REL 1A/3A SABGA RES	U F S N W S D B B	SARJ PREP (LOCKS)	SORTIE C/U & INGRS	
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	SLEEP	POST SLEEP		HYG BRK/HATCH CLS	EVA PREP SUPPORT			14.7 REPR			EXERCISE TVIS		MIDDAY-MEAL		EXERCISE RED						
	FE-1 TYUPH	SLEEP	POST SLEEP		DPC	PREP WORK		EXERCISE TVIS				MIDDAY-MEAL		VELO + HC								
	FE-2 WILLIAMS	SLEEP	POST SLEEP		DPC	P W R O R P K	SSRMS S3/S4 INSTL			MNVR TO RTL	L I M P	3 - C A P	S I S 3 SSAS BOLTING	U G N R P L	SSRMS EVA 1 PARK	SSRMS SUPPORT				PVR DPLY		
S T S	DAY/NIGHT	41		42		43		44		45		46		47		48						
	ORBIT	14		15		1		2		3		4		5		6						
	DAILY ORBIT	14		15		1		2		3		4		5		6						
	TDRS	W -171		E -46		Z -275																
	ORB ATT	BIAS -XLV -ZVV										BIAS -XLV -ZVV										
SSRMS											WS2 PDGF2											

NOTES

*TGT ACQ
 *PWRUP
 *FILTER CK

|— No Unisolated Exercise —|No ERGO|

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)

β-28
003/00
MET Day 002
12
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12/11
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I S S	DAY/NIGHT														
	ORBIT														
	DAILY ORBIT	14	15	16	17	18	19	20	21	22	23	01	02		
	TDRS AVAIL														
S	RS GND														
		ALL VHF													

B S D	PPS-PCU WARN-SUPP	PPS-PCU WARN-SUPP													
	C&T-VIDEO-CNFG	C&T-VIDEO-CNFG													
K	EVA-HYGIENE-BREAK	EVA-HYGIENE-BREAK													
	ACS-INH-AUTO-H/O-RS	ACS-INH-AUTO-H/O-RS													
R	SSRMS-CAUTION-ENABLE	SSRMS-CAUTION-ENABLE													
	C&T-AUDIO-CNFG	C&T-AUDIO-CNFG													
P	C&T-UHF1-ACT	C&T-UHF1-ACT													
	RS-CONTG-TLM	RS-CONTG-TLM													
S	DPC-MORNING	DPC-MORNING													
	A/L-RAP DPRS-ENA	A/L-RAP DPRS-ENA													
M	C&T-COMM-EVA CNFG	C&T-COMM-EVA CNFG													
	ACS-AH-MNVR-USTO	ACS-AH-MNVR-USTO													
C	S1S3-SSAS NOM-MATE	S1S3-SSAS NOM-MATE													
	ISS-RAP DPRS-INH	ISS-RAP DPRS-INH													
X	ACS-MM-ACT-USTO	ACS-MM-ACT-USTO													
	ISS-RAP DPRS-ENA	ISS-RAP DPRS-ENA													
C	ACS-GNC-PPL-U/D	ACS-GNC-PPL-U/D													
	A/L-CCAA-SPD-CHG	A/L-CCAA-SPD-CHG													
C	C&T-WETA-ACT	C&T-WETA-ACT													
	EMU-P/B-VRIV-OP	EMU-P/B-VRIV-OP													
C	S3-ACTIVATION	S3-ACTIVATION													
	A/L-10.2 PSI OP-TERM	A/L-10.2 PSI OP-TERM													
C	C&T-WETA-SCAN	C&T-WETA-SCAN													
	EPS-3A CHANNEL-ACT	EPS-3A CHANNEL-ACT													
C	EPS-1A CHANNEL-ACT	EPS-1A CHANNEL-ACT													
	PPS-SB SARJ-INIT ACT	PPS-SB SARJ-INIT ACT													
C	PPS-ECU1A-ACT/BRS RL	PPS-ECU1A-ACT/BRS RL													
	PPS-ECU3A-ACT/BRS RL	PPS-ECU3A-ACT/BRS RL													
C	EPS-1A2 BATT-W/U	EPS-1A2 BATT-W/U													
	PPS-PVR-DPLY	PPS-PVR-DPLY													

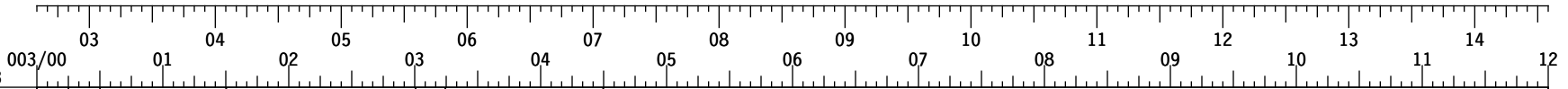
K	CHECS-KU-D/L	CHECS-KU-D/L													
	MAIL-SYNC	MAIL-SYNC													

P	ALTEA-DOSI-OPS	ALTEA-DOSI-OPS													
	CGBA4-PL-RES TRACK	CGBA4-PL-RES TRACK													
S	EXPRS4-SYS-PWR/THERM	EXPRS4-SYS-PWR/THERM													
	MELFI-DEWAR 1-OPS	MELFI-DEWAR 1-OPS													
S	MELFI-DEWAR 2-OPS	MELFI-DEWAR 2-OPS													
	PRO-EXPRS FILE-CMD	PRO-EXPRS FILE-CMD													

C	CHECS-KU-D/L	CHECS-KU-D/L													
	RS-CONTG-TLM	RS-CONTG-TLM													
C	DPC-MORNING	DPC-MORNING													
	S1S3-SSAS NOM-MATE	S1S3-SSAS NOM-MATE													
C	NO-EXERCISE	NO-EXERCISE													
	NO-ERGOMETER-EXER	NO-ERGOMETER-EXER													
C	ISS FCT H/O (1/2)	ISS FCT H/O (1/2)													
	S3-ACTIVATION	S3-ACTIVATION													
C	EVA 1 IVA SUPPORT	EVA 1 IVA SUPPORT													
	NO PRCS/NO IRED-EXER	NO PRCS/NO IRED-EXER													
C	STS FCT H/O (1/2)	STS FCT H/O (1/2)													
		NO PRCS/NO IRED-EXER													

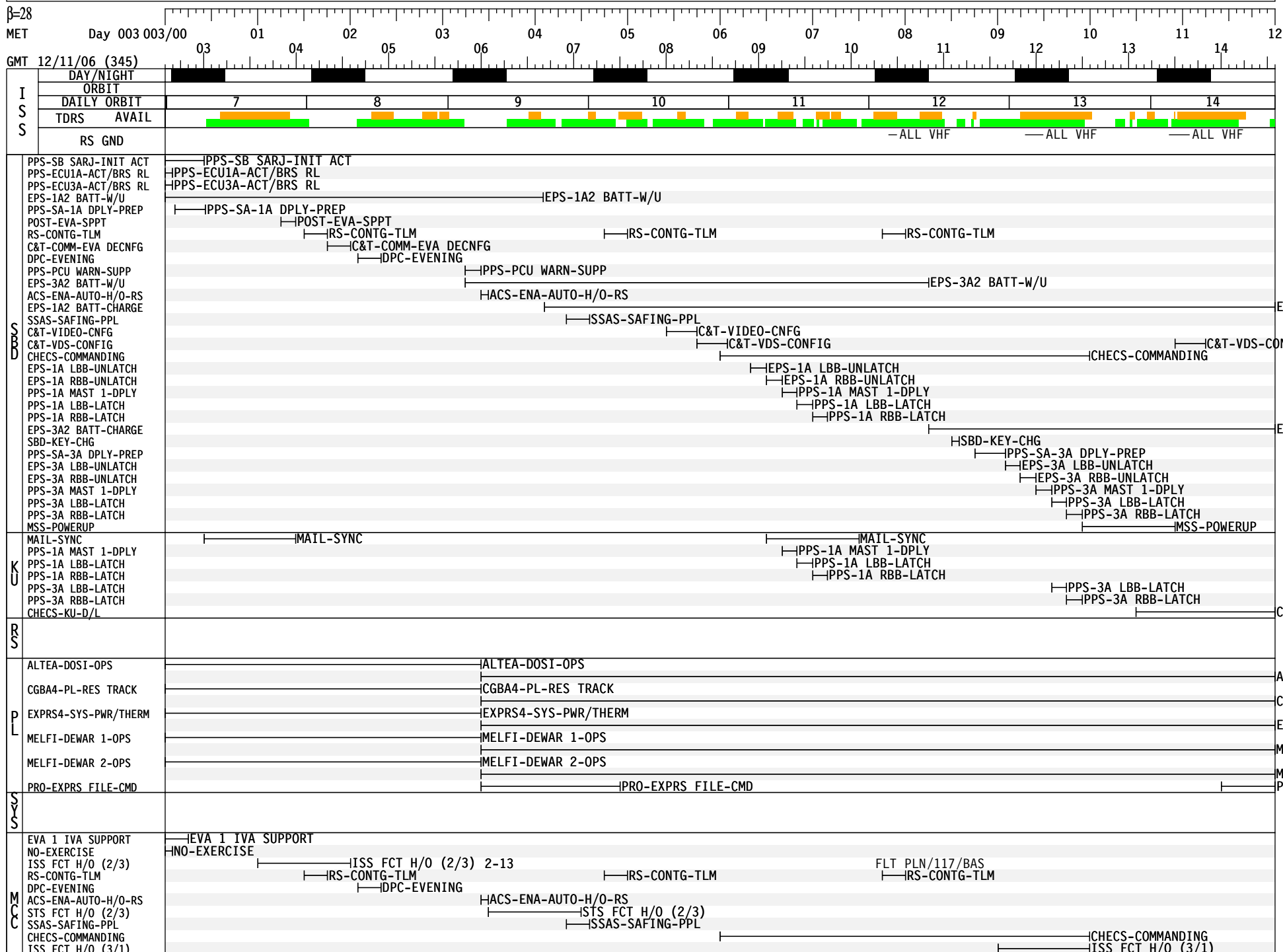
FD04

GMT 12/11/06 (345)
 Day 003
 MET

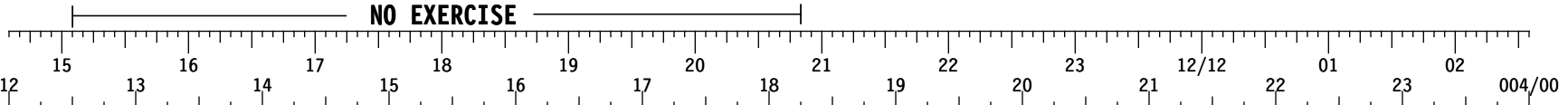


S T S - 1 1 7	CDR STURCKOW	PS /P TR VT	EXERCISE	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP		
	PLT/R2/M1 ARCHAMBAULT		EXERCISE	1 4 . 7 *		PRE SLEEP	SLEEP		
	MS1/EV3/R1 FORRESTER	IS VP AR T	POST EVA W/H2O METOX	BSA INIT		PRE SLEEP	SLEEP		
	MS2/EV4/M2 SWANSON		POST EVA W/H2O METOX	EB MA UT T *		PRE SLEEP	SLEEP		
	MS3/EV2/R1 OLIVAS	*P R P S	POST EVA W/H2O, METOX			PRE SLEEP	SLEEP		
	MS4/EV1 REILLY	⊕P R P S	POST EVA W/H2O, METOX			PRE SLEEP	SLEEP		
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	PREP	POST EVA W/H2O, METOX	PS RL EE EP	DPC	PRE SLEEP	SLEEP		
	FE-1 TIUPH	COX	PREP WORK	PS RL EE EP	DPC	PRE SLEEP	SLEEP		
	FE-2 WILLIAMS	A V U E R *	PREP WORK	PS RL EE EP	DPC	PRE SLEEP	SLEEP		
S T S	DAY/NIGHT	[Bar chart showing day/night cycle]							
	ORBIT	[Bar chart showing orbit parameters]							
	DAILY ORBIT	49	50	51	52	53	54	55	56
	TDRS	W -171	E -46	Z -275	BIAS -XLV -ZVV				
	ORB ATT								
SSRMS	WS2 PDGF2								
NOTES	*SORTIE C/U & INGRS *INIT ⊕SORTIE C/U & INGRS *PWRDN *MAINT								

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



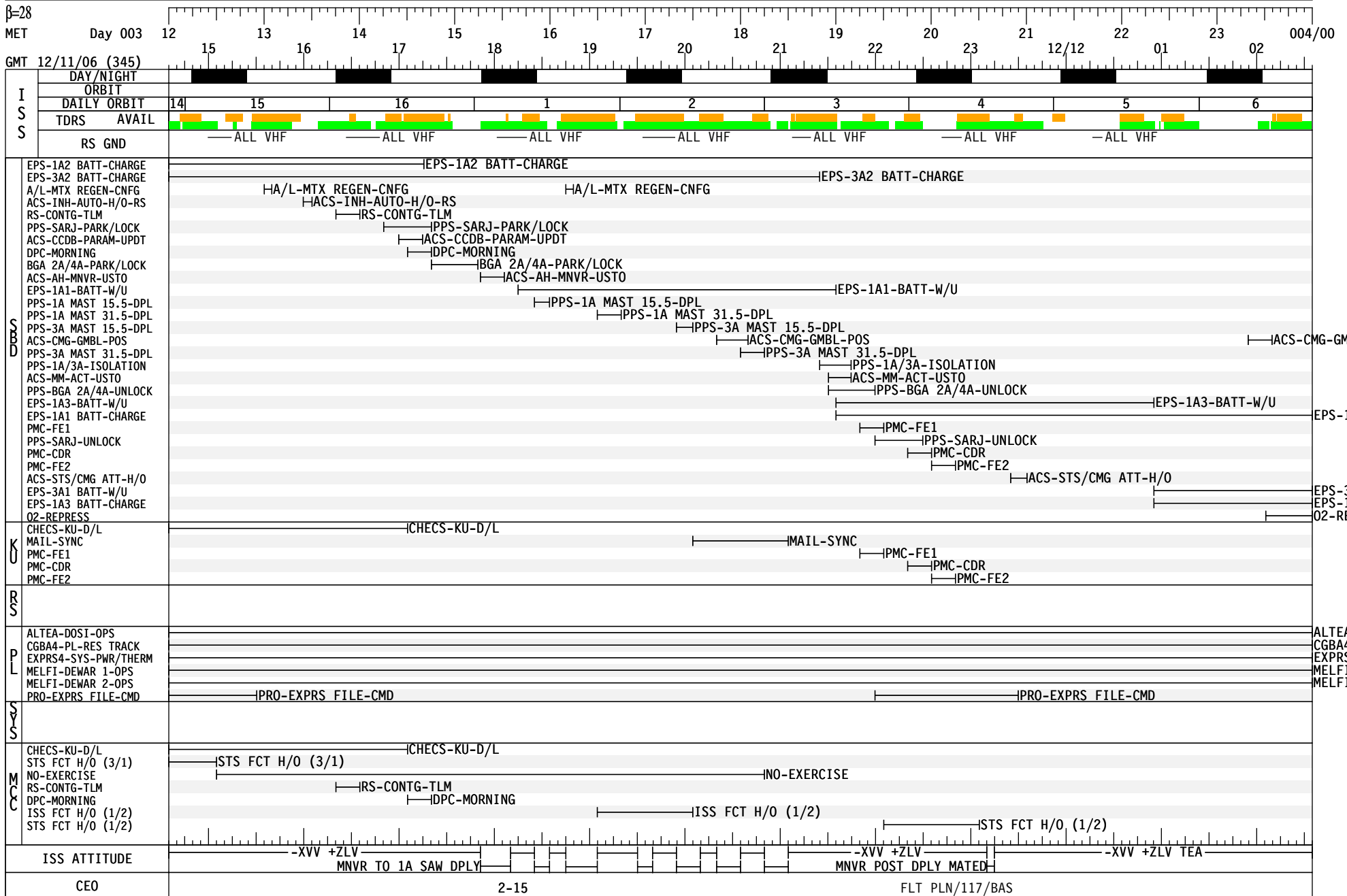
FD05



GMT 12/11/06 (345)
 Day 003
 MET

STS-117	CDR STURCKOW	SLEEP	POST SLEEP	CIN 3	MNA 1	CTW 3	CXFC 3	MNA 3	-ZYLV	SIM INIT	MEAL	WCS	STPEN 1	MNEVA 1	H/O	XFER OPS	FOOD	PSA 1	PEA 1	EXERCISE
	PLT/R2/M1 ARCHAMBAULT	SLEEP	POST SLEEP	SMRV 1	VRFY 1	1A49%	1A00%	MNVR 1	VRFY 1	3A49%	3A00%	MEAL	WAS 1	EXERCISE	WALK-OFF PDGF 2-TO-3	PEA 1	RMS MNVR OBSS H/O	FOOD	XFER OPS	
	MS1/EV3/R1 FORRESTER	SLEEP	POST SLEEP	1A49%	1A00%	3A49%	3A00%	MEAL	PMDIS	E_LK PREP	EVA TOOL CONFIG	EXERCISE	FOOD	PEA 1	RMS MNVR OBSS H/O	PRE SLEEP				
	MS2/EV4/M2 SWANSON	SLEEP	POST SLEEP	PMDIS	XFER OPS	BASA	EMU SWAP	MEAL	E_LK PREP	EVA TOOL CONFIG	FOOD	EXERCISE	PEA 1	PRE SLEEP						
	MS3/EV2/R1 OLIVAS	SLEEP	POST SLEEP	ASPRN	XFER OPS	BASA	EMU SWAP	MEAL	MCIU	XFER OPS	FOOD	XFER OPS	BATT	EXERCISE	XFER OPS					
	MS4/EV1 REILLY	SLEEP	POST SLEEP	ASPRN	1A49%	1A00%	3A49%	3A00%	MEAL	FOOD XFER	FOOD	XFER OPS	EXERCISE	XFER OPS	PEA 1	XFER OPS				
EXP-14	ISS CDR LOPEZ-ALEGRIA	SLEEP	POST SLEEP	PREP WORK	DPC	PLCK	METX	MIDDAY-MEAL	PMC CDR	EXERCISE TVIS	EXERCISE RED									
	FE-1 TIUPH	SLEEP	POST SLEEP	PREP WORK	DPC	METX	MIDDAY-MEAL	PMCFE1	COX	EXERCISE RED	VELO + HC									
	FE-2 WILLIAMS	SLEEP	POST SLEEP	SMRV 1	VRFY 1	1A49%	1A00%	MNVR 1	VRFY 1	3A49%	3A00%	MIDDAY-MEAL	PSMTD 1	PMCFE2	WALK-OFF PDGF 2-TO-3	EXERCISE TVIS				
STS	DAY/NIGHT	[Timeline bars for Day/Night]																		
	ORBIT	[Timeline bars for Orbit]																		
	DAILY ORBIT	14	15	16	1	2	3	4	5	6										
	TDRS	W -171	[Timeline bars for TDRS]																	
	ORB ATT	BIAS -XLV -ZVV 1A SAW DEPLOY 3A SAW DEPLOY BIAS -XLV +YVV BIAS -XLV -ZVV																		
SSRMS	WS2 PDGF2 2-3 W/O WS2 PDGF3																			
NOTES	*1A CAMERA CONFIG *TERM *1A CAMERAS *3A CAMERA CONFIG *3A CAMERAS *TERM *FILTER CK *TERM																			

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)

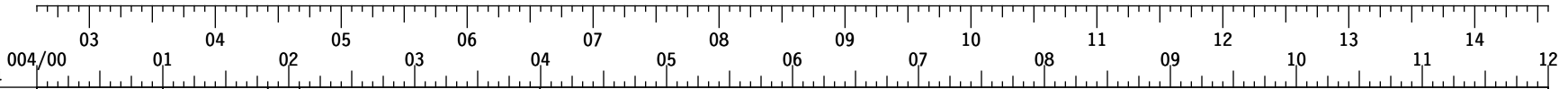


*REPRESS INIT

NOTES

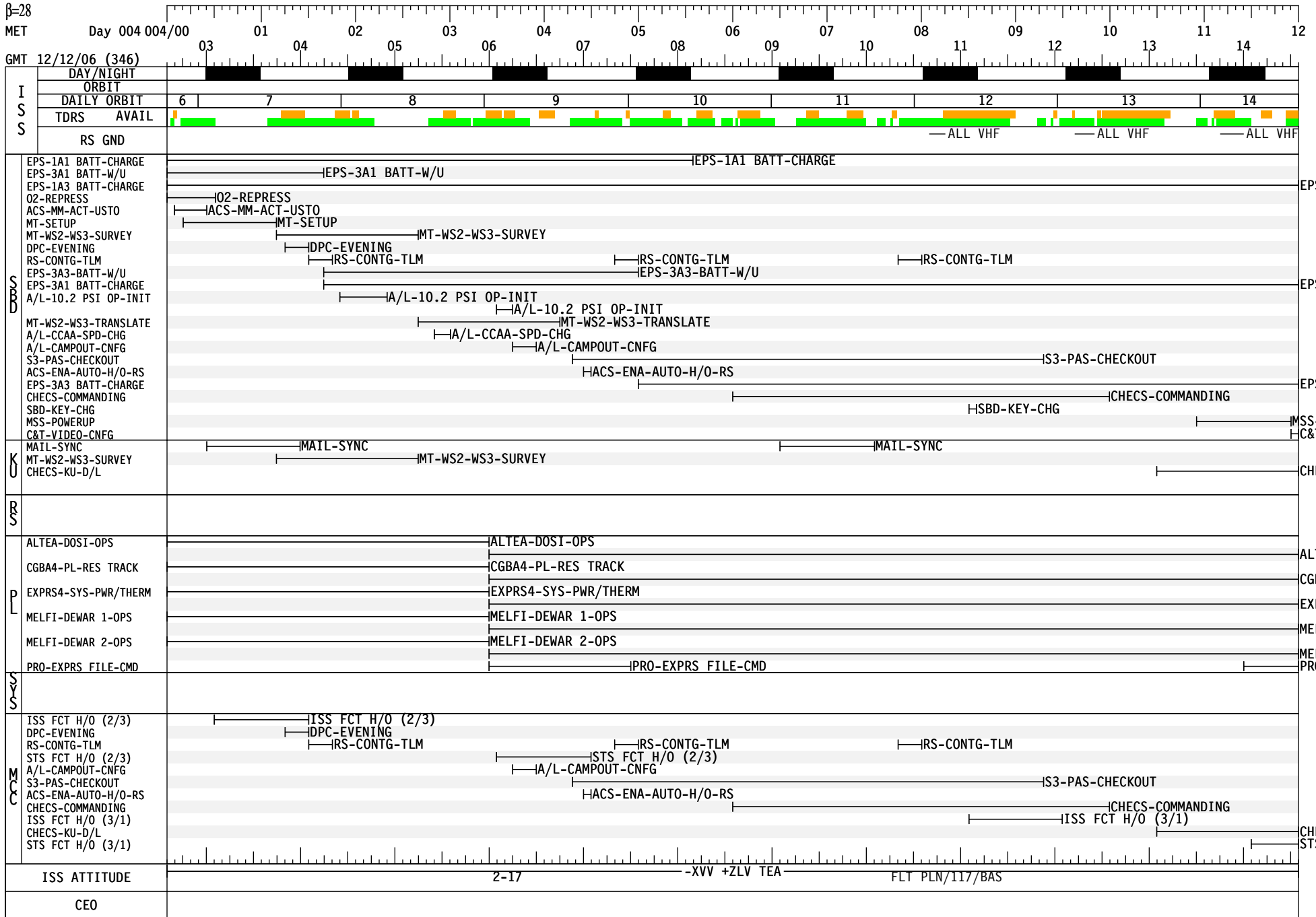
FD05

GMT 12/12/06 (346)
 0-28
 MET Day 004



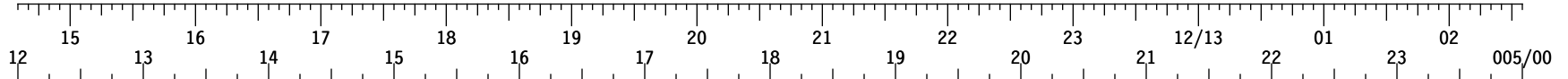
S T S - 1 1 7	CDR STURCKOW	EVA 2 PROC REVIEW	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP				
	PLT/R2/M1 ARCHAMBAULT	EVA 2 PROC REVIEW	PRE SLEEP			SLEEP				
	MS1/EV3/R1 FORRESTER	EVA 2 PROC REVIEW	PRE SLEEP	MASK PB/TOOL CONFIG	PB/10.2 DPRS	PRE SLEEP	SLEEP			
	MS2/EV4/M2 SWANSON	EVA 2 PROC REVIEW	PRE SLEEP	MASK PB/TOOL CONFIG	PB/10.2 DPRS	PRE SLEEP	SLEEP			
	MS3/EV2/R1 OLIVAS	EVA 2 PROC REVIEW	PRE SLEEP			SLEEP				
	MS4/EV1 REILLY	EVA 2 PROC REVIEW	PRE SLEEP			SLEEP				
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	EVA 2 PROC REVIEW	PRE SLEEP	DPC	SLEEP					
	FE-1 TIUPVH	EVA 2 PROC REVIEW	PRE SLEEP	DPC	SLEEP					
	FE-2 WILLIAMS	EVA 2 PROC REVIEW	PRE SLEEP	DPC	SLEEP					
S T S	DAY/NIGHT	[Timeline with shaded day/night blocks]								
	ORBIT	64	65	66	67	68	69	70	71	72
	DAILY ORBIT	6	7	8	9	10	11	12	13	14
	TDRS	W -171	E -46	Z -275	[Timeline with TDRS activity bars]					
	ORB ATT	BIAS -XLV -ZVV								
SSRMS	WS2 PDGF3	2-3 XLATE SRVY	XLATE WS3	WS3 PDGF3						
NOTES										

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



FD06

GMT 12/12/06 (346)
 Day 004
 MET



S T S - 1 1 7	CDR STURCKOW	POST SLEEP	PMC A/G	POST SLEEP	MRL* PSL* OLTEP*	MCI* SEIU*	EP/TV 07 S/U	HFS RS OOR MM S	U H R S N / G O R R S P	R V T I R E C W T	F E E L S *	C I W N C I T 4	EXERCISE	C T W E R M 4	C X W F C E R	MEAL						
	PLT/R2/M1 ARCHAMBAULT	POST SLEEP			M G N R V P L	SSRMS OBSS GRPL	SSRMS OBSS UNBRT	SSRMS OBSS MNVR H/O	HFS RS OOR MM S	U H R S N /	R V T I R E C W T	SSRMS PARK					SSRMS SUPPORT					
	MS1/EV3/R1 FORRESTER	POST SLEEP	HYG BRK/ PREBREATHE		CAMPOUT EVA PREP			EP MUR UR GE	EMU PREBREATHE	C_LK DPRS				SORTIE EGRESS & S/U	DPLY SARJ BR	INST SARJ DLA 1	SARJ (LOCKS) (RES)	EVA 3 GET AHEADS	SORTIE C/U & INGRS	P R P R S	PST EVA H20	
	MS2/EV4/M2 SWANSON	POST SLEEP	HYG BRK/ PREBREATHE	A/L REP	CAMPOUT EVA PREP			EP MUR UR GE	EMU PREBREATHE	C_LK DPRS				SORTIE EGRESS & S/U	DPLY SARJ BR		SARJ (LOCKS) (RES)	EVA 3 GET AHEADS	SORTIE C/U & INGRS	P R P R S	PST EVA H20	
	MS3/EV2/R1 OLIVAS	POST SLEEP	HYG BRK/ HATCH CLS		EVA PREP SUPPORT				14.7 REPR								P/TV SUPPORT				PST EVA H20	
MS4/EV1 REILLY	POST SLEEP			EXERCISE									EVA 2 (6:30)								PST EVA H20	
													IVA SUPPORT									
													DLAs & SARJ PREP									
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	POST SLEEP	HYG BRK/ HATCH CLS		EVA PREP SUPPORT			14.7 REPR					EXERCISE TVIS	MIDDAY-MEAL			EXERCISE RED				PST EVA H20	
	FE-1 TIUPNH	POST SLEEP	DPC	PREP WORK									EXERCISE TVIS	MIDDAY-MEAL	CWC FILL INIT		C T W E R M		VELO + HC		COX	
	FE-2 WILLIAMS	POST SLEEP	DPC	P W R O E R P K	M G N R V P L	SSRMS OBSS GRPL	SSRMS OBSS UNBRT	SSRMS OBSS MNVR H/O	U H N /	G O R R S P		SSRMS PARK										
S T S	DAY/NIGHT																					
	ORBIT	72	73	74	75	76	77	78	79	80												
	DAILY ORBIT	14	15	1	2	3	4	5	6	7												
	TDRS	W -171																				
		E -46																				
	Z -275																					
	ORB ATT												BIAS -XLV -ZVV									
	SSRMS	WS3 PDGF3			H/O OBSS						WS3 PDGF3											
	NOTES				*HTR ACT			*DUMP INIT														
					*FILTER CK																	

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)

β-28
MET Day 004
12 13 14 15 16 17 18 19 20 21 22 23 12/13 01 02 005/00

I S S	DAY/NIGHT	14	15	16	17	18	19	20	21	22	23	01	02	
	ORBIT													
	DAILY ORBIT	14	15	1	2	3	4	5	6	7				
	TDRS AVAIL	[Color-coded bars representing TDRS availability]												

D P R S	RS GND	-ALL VHF												
	EPS-1A3 BATT-CHARGE	-EPS-1A3 BATT-CHARGE												
	EPS-3A1 BATT-CHARGE	-EPS-3A1 BATT-CHARGE												
	EPS-3A3 BATT-CHARGE	-EPS-3A3 BATT-CHARGE												
	C&T-VIDEO-CNFG	-C&T-VIDEO-CNFG												
	EVA-HYGIENE-BREAK	-EVA-HYGIENE-BREAK												
	C&T-VDS-CONFIG	-C&T-VDS-CONFIG												
	C&T-UHF1-ACT	-C&T-UHF1-ACT												
	C&T-AUDIO-CNFG	-C&T-AUDIO-CNFG												
	ACS-INH-AUTO-H/O-RS	-ACS-INH-AUTO-H/O-RS												

K U	CHECS-KU-D/L	-CHECS-KU-D/L												
	MAIL-SYNC	-MAIL-SYNC												

P L	ALTEA-DOSI-OPS	-ALTEA-DOSI-OPS												
	CGBA4-PL-RES TRACK	-CGBA4-PL-RES TRACK												
S S	PRO-EXPRS FILE-CMD	-PRO-EXPRS FILE-CMD												

M C	CHECS-KU-D/L	-CHECS-KU-D/L												
	STS FCT H/O (3/1)	-STS FCT H/O (3/1)												
	DPC-MORNING	-DPC-MORNING												
	ISS FCT H/O (1/2)	-ISS FCT H/O (1/2)												

ISS ATTITUDE	-XVV +ZLV TEA												
CEO													

NOTES	<div style="display: flex; justify-content: space-between;"> 2-19 FLT PLN/117/BAS </div>												
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ALTEA-DOSI-OPS
 CGBA4-PL-RES TRACK
 EXPRS4-SYS-PWR/THERM
 MELFI-DEWAR 1-OPS
 MELFI-DEWAR 2-OPS
 PRO-EXPRS FILE-CMD

EVA 2 IVA SUPPORT

FD06

GMT 12/13/06 (347)

0-28

MET

Day 005

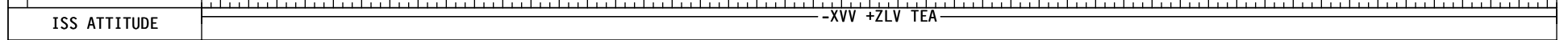
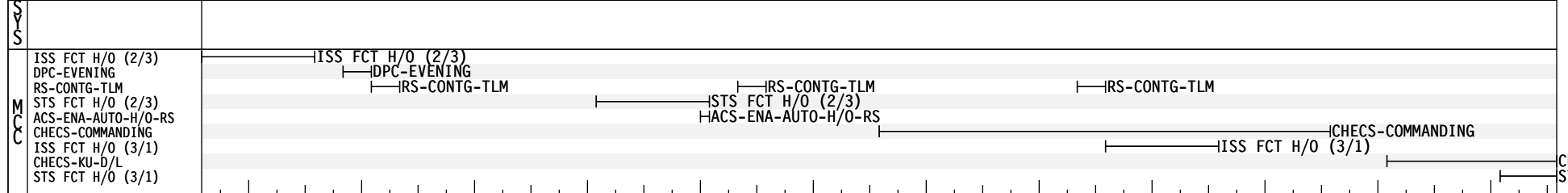
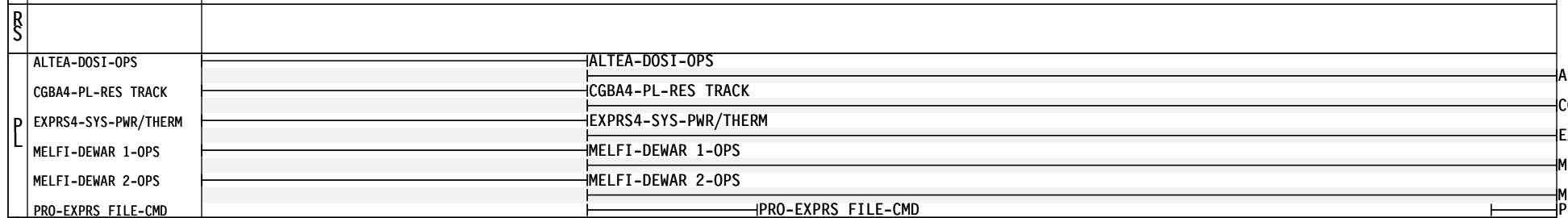
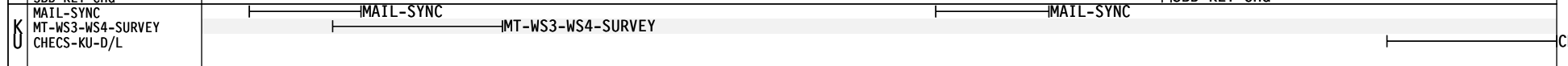
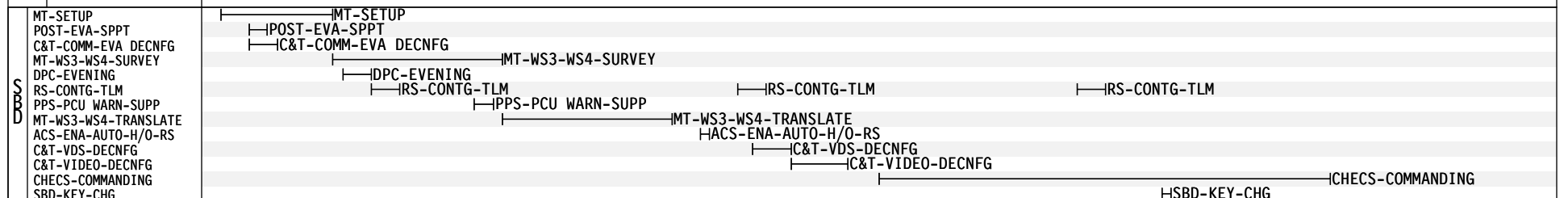
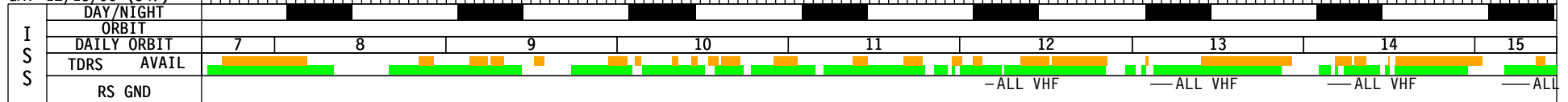


S T S - 1 1 7	CDR STURCKOW		1 4 · 7 *	PRE SLEEP	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP		
	PLT/R2/M1 ARCHAMBAULT	EXERCISE					PRE SLEEP	SLEEP		
	MS1/EV3/R1 FORRESTER	PST EVA H20					PRE SLEEP	SLEEP		
	MS2/EV4/M2 SWANSON	PST EVA H20					PRE SLEEP	SLEEP		
	MS3/EV2/R1 OLIVAS	PST EVA H20					PRE SLEEP	SLEEP		
	MS4/EV1 REILLY	PST EVA H20					PRE SLEEP	SLEEP		
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	PST EVA H20	P W R O R E R P K	DPC			PRE SLEEP	SLEEP		
	FE-1 TIUPNH	COX	PREP WORK	DPC			PRE SLEEP	SLEEP		
	FE-2 WILLIAMS	EXERCISE	PREP WORK	DPC			PRE SLEEP	SLEEP		
S T S	DAY/NIGHT	[Timeline with shaded blocks]								
	ORBIT	80	81	82	83	84	85	86	87	88
	DAILY ORBIT	7	8	9	10	11	12	13	14	15
	TDRS	W -171	[Timeline with shaded blocks]							
	E -46	[Timeline with shaded blocks]								
	Z -275	[Timeline with shaded blocks]								
	ORB ATT	BIAS -XLV -ZVV								
	SSRMS	WS3 PDGF3	3-4 XLATE SRVY	XLATE WS4	WS4 PDGF3					
	NOTES	*MAINT *HTR DEACT *DUMP TERM								

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)

β-28
 MET Day 005 005/00

GMT 12/13/06 (347)



CEO

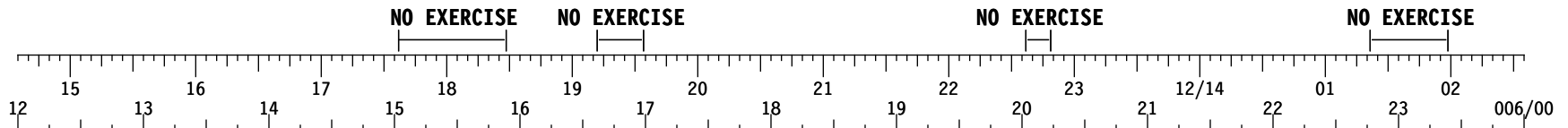
NOTES

2-21

FLT PLN/117/BAS

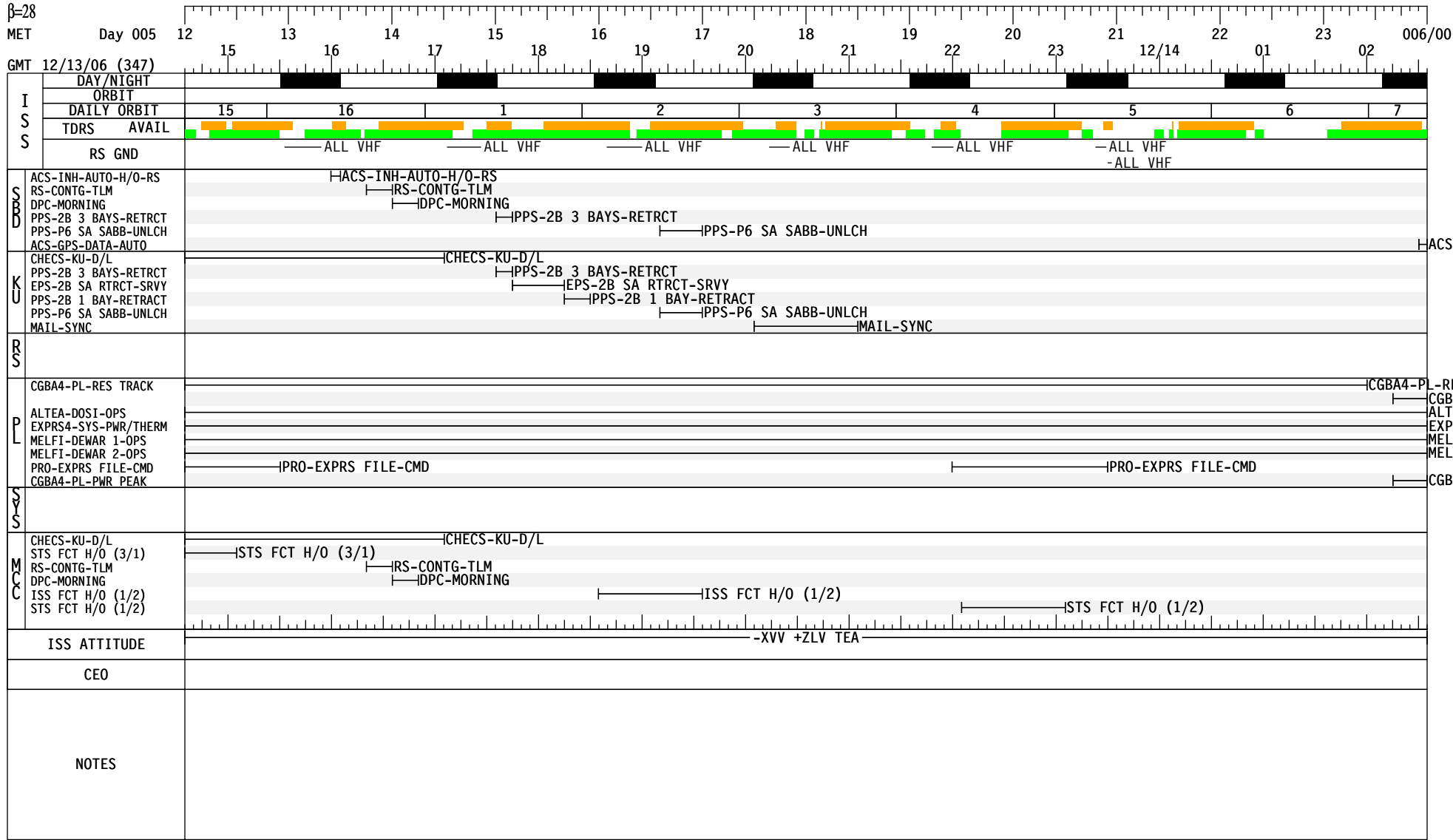
FD07

GMT 12/13/06 (347)
 Day 005



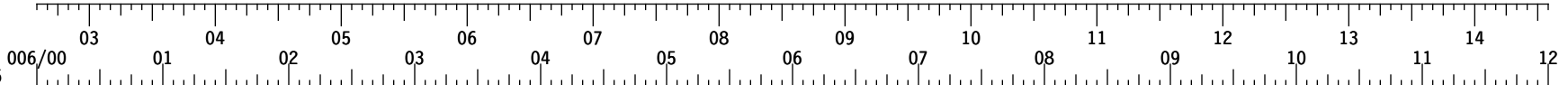
S T S - 1 1 7	CDR STURCKOW	POST SLEEP		MCIN CUI* 5	CFER 5	CFER	COND CWC C/O	CFER OPS	EXERCISE	MEAL	CFER OPS	PWR FILL		PE AV OE NT	EVA3 PROC RVW		
	PLT/R2/M1 ARCHAMBAULT	POST SLEEP					CFER OPS	CONTINGENCY INSPECTION		FOCUSED LOCATION	MEAL	CFER OPS	EXERCISE	CFER OPS	PE AV OE NT	EVA3 PROC RVW	
	MS1/EV3/R1 FORRESTER	POST SLEEP		ASPRN 3 BAY	RTRCT SRVEY	TO 1 BAY	SABB UNLCH	CFER OPS	CONTINGENCY INSPECTION		FOCUSED LOCATION	MEAL	CFER OPS	EXERCISE	CFER OPS	PE AV OE NT	EVA3 PROC RVW
	MS2/EV4/M2 SWANSON	POST SLEEP		ASPRN 3 BAY	POST EVA 2 TOOL CNFG	EMU SWAP	BMI AEN TTS TOT /XL	CFER OPS	CONTINGENCY INSPECTION		FOCUSED LOCATION	MEAL	CFER OPS	EXERCISE		PE AV OE NT	EVA3 PROC RVW
	MS3/EV2/R1 OLIVAS	POST SLEEP		ASPRN 3 BAY	POST EVA 2 TOOL CNFG	EMU SWAP	BMI AEN TTS TOT /XL	CFER OPS	EXERCISE	CFER OPS	MEAL	E_LK PREP	EVA TOOL CONFIG	CFER OPS	PS AET UP	PE AV OE NT	EVA3 PROC RVW
	MS4/EV1 REILLY	POST SLEEP		ASPRN 3 BAY	RTRCT SRVEY	TO 1 BAY	SABB UNLCH	EXERCISE	CFER OPS	MEAL	E_LK PREP	EVA TOOL CONFIG	CFER OPS	CFER OPS	PE AV OE NT	EVA3 PROC RVW	
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	POST SLEEP	PREP WORK	DPC				EXERCISE RED	MIDDAY-MEAL		EXERCISE TVIS		EXER	PE AV OE NT	EVA3 PROC RVW		
	FE-1 TIUPMH	POST SLEEP	PREP WORK	DPC				EXERCISE TVIS	MIDDAY-MEAL		VELO + HC	COX	PE AV OE NT	EVA3 PROC RVW			
	FE-2 WILLIAMS	POST SLEEP	PREP WORK	DPC	ASPRN 3 BAY	RTRCT SRVEY	TO 1 BAY	SABB UNLCH	VELO + HC	MIDDAY-MEAL		CG BA *	PE AV OE NT	EVA3 PROC RVW			
S T S	DAY/NIGHT																
	ORBIT	88	89	90	91	92	93	94	95	96							
	DAILY ORBIT	15	16	1	2	3	4	5	6	7							
	TDRS	W -171	[Timeline bars]														
		E -46	[Timeline bars]														
	Z -275	[Timeline bars]															
	ORB ATT	BIAS -XLV -ZVV															
	SSRMS	*FILTER CK WS4 PDGF3															
	NOTES																

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



FD07

GMT 12/14/06 (348)
 Day 006
 MET

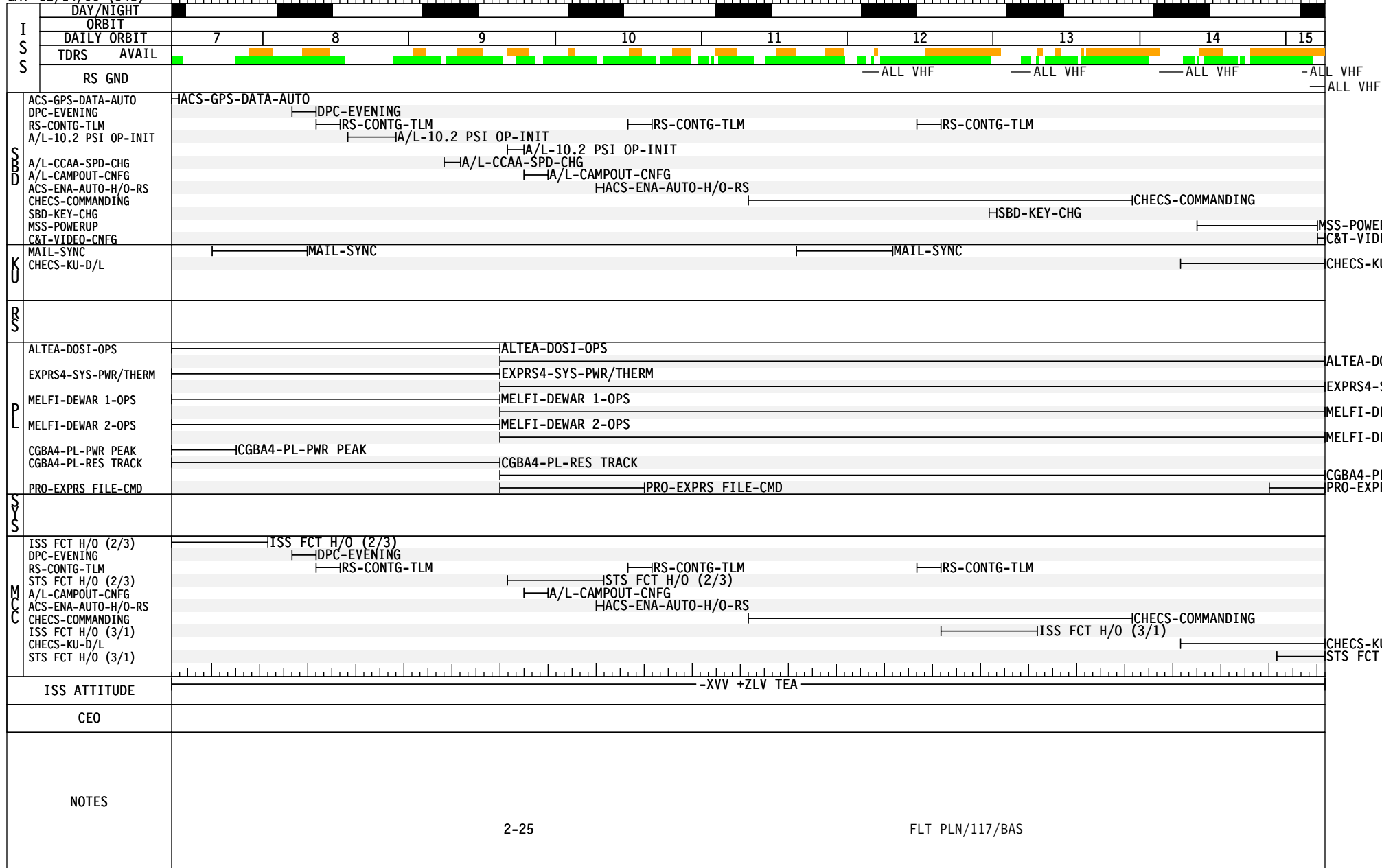


S T S - 1 1 7	CDR STURCKOW	EVA3 PROC RVW	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP				
	PLT/R2/M1 ARCHAMBAULT	EVA3 PROC RVW	PRE SLEEP			SLEEP				
	MS1/EV3/R1 FORRESTER	EVA3 PROC RVW	PRE SLEEP			SLEEP				
	MS2/EV4/M2 SWANSON	EVA3 PROC RVW	PRE SLEEP			SLEEP				
	MS3/EV2/R1 OLIVAS	EVA3 PROC RVW	PRE SLEEP	MASK PB/TOOL CONFIG	PB/10.2 DPRS	PRE SLEEP	SLEEP			
	MS4/EV1 REILLY	EVA3 PROC RVW	PRE SLEEP	MASK PB/TOOL CONFIG	PB/10.2 DPRS	PRE SLEEP	SLEEP			
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	EVA3 PROC RVW	P W R O R E R P K	DPC	PRE SLEEP	SLEEP				
	FE-1 TIUPVH	EVA3 PROC RVW	P W R O R E R P K	DPC	PRE SLEEP	SLEEP				
	FE-2 WILLIAMS	EVA3 PROC RVW	P W R O R E R P K	DPC	PRE SLEEP	SLEEP				
S T S	DAY/NIGHT	[Timeline with day/night bars]								
	ORBIT	96	97	98	99	100	101	102	103	104
	DAILY ORBIT	7	8	9	10	11	12	13	14	15
	TDRS	W -171	E -46	Z -275	[Timeline with TDRS bars]					
	ORB ATT	BIAS -XLV -ZVV								
SSRMS	WS4 PDGF3									
NOTES										

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)

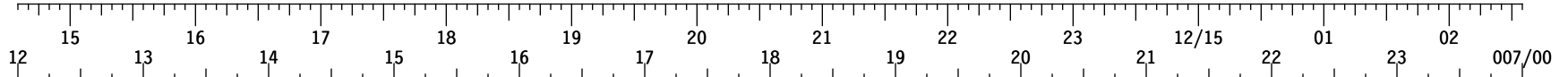
β=28
 MET Day 006 006/00 03 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

GMT 12/14/06 (348) 03 04 05 06 07 08 09 10 11 12 13 14 15



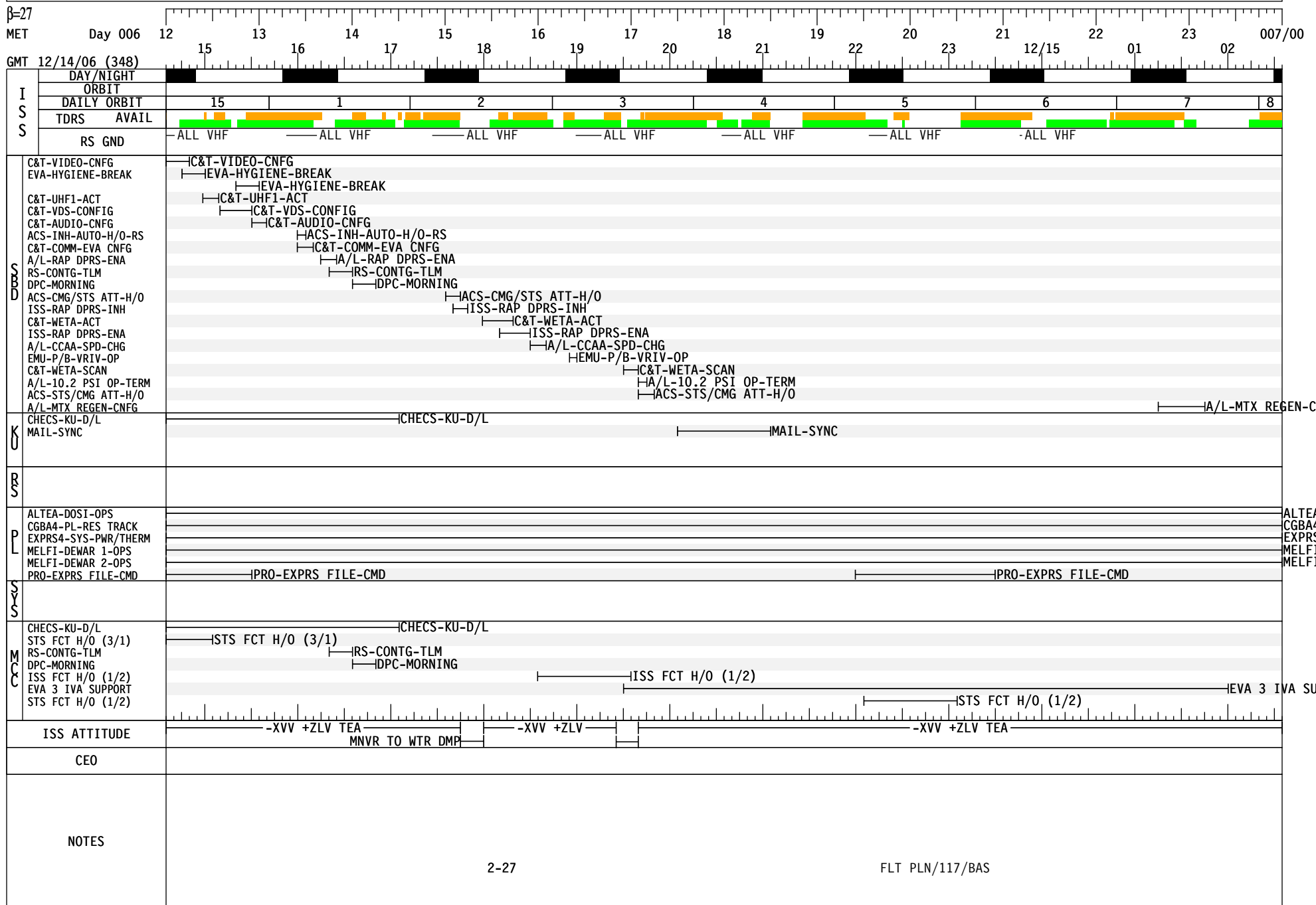
FD08

GMT 12/14/06 (348)
 Day 006
 MET



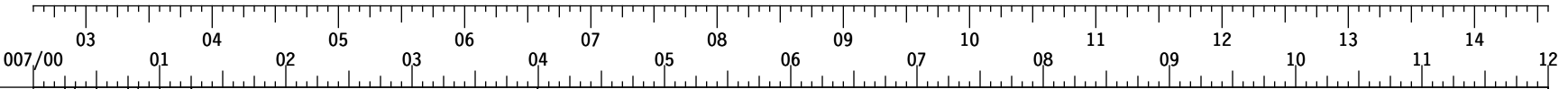
S T S - 1 1 7	CDR STURCKOW	POST SLEEP	PMC A/G	POST SLEEP	PC RL L A S E	EXERCISE	P/TV 07 S/U	SIMON	M T E R M I N A L H /	P/TV SUPPORT				C O M M 1	
	PLT/R2/M1 ARCHAMBAULT	POST SLEEP			H/O	M S I M O R O	SIMON	M C I U *	EXERCISE	SSRMS SUPPORT				WALKOFF MBS TO LAB	
	MS1/EV3/R1 FORRESTER	POST SLEEP			EXERCISE		EVA 3 (6:30) IVA SUPPORT VENT R&R & EAS JETTISON				PST EVA H20 MTX				
	MS2/EV4/M2 SWANSON	POST SLEEP	HYG BRK/HATCH CLS	EVA PREP SUPPORT		14.7 REPR	FE E S *	EXERCISE	FE E S *	MEAL	WALKOFF MBS TO LAB				
	MS3/EV2/R1 OLIVAS	POST SLEEP	HYG BRK/PREBREATHE	CAMPOUT EVA PREP	EP M U R G E	EMU PREBREATHE	C_LK DPRS	PS E & D R R S U P T S E	H20/H2 VENT VLV C/O	MMOD SHIELD BOLT REL	SORTIE C/U & INGRS		P R P S	PST EVA H20 MTX	
	MS4/EV1 REILLY	POST SLEEP	HYG BRK/PREBREATHE	CAMPOUT EVA PREP	EP M U R G E	EMU PREBREATHE	C_LK DPRS	PS E & D R R S U P T S E	H20/H2 VENT VLV C/O	MMOD SHIELD BOLT REL	SORTIE C/U & INGRS		P R P S	PST EVA H20 MTX	
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	POST SLEEP	HYG BRK/HATCH CLS	EVA PREP SUPPORT		14.7 REPR	EXERCISE RED		MIDDAY-MEAL	EXERCISE TVIS		PST EVA H20 MTX			
	FE-1 TIUPNH	POST SLEEP	PREP WORK	DPC	EXERCISE TVIS		EXERCISE RED		MIDDAY-MEAL	VELO + HC		COX			
	FE-2 WILLIAMS	POST SLEEP	PREP WORK	DPC	EXERCISE TVIS		EXERCISE RED		SSRMS SUPPORT						
S T S	DAY/NIGHT ORBIT	[Timeline bars for Day/Night Orbit]													
	DAILY ORBIT	104	105	106	107	108	109	110	111	112					
	TDRS	W -171	E -46	Z -275	[Timeline bars for TDRS]										
	ORB ATT	BIAS -XLV -ZVV				BIAS -XLV +YVV				BIAS -XLV -ZVV					
SSRMS	WS4 PDGF3														
NOTES	*FILTER CK *HTR ACT *DUMP INIT LAB W/O														

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



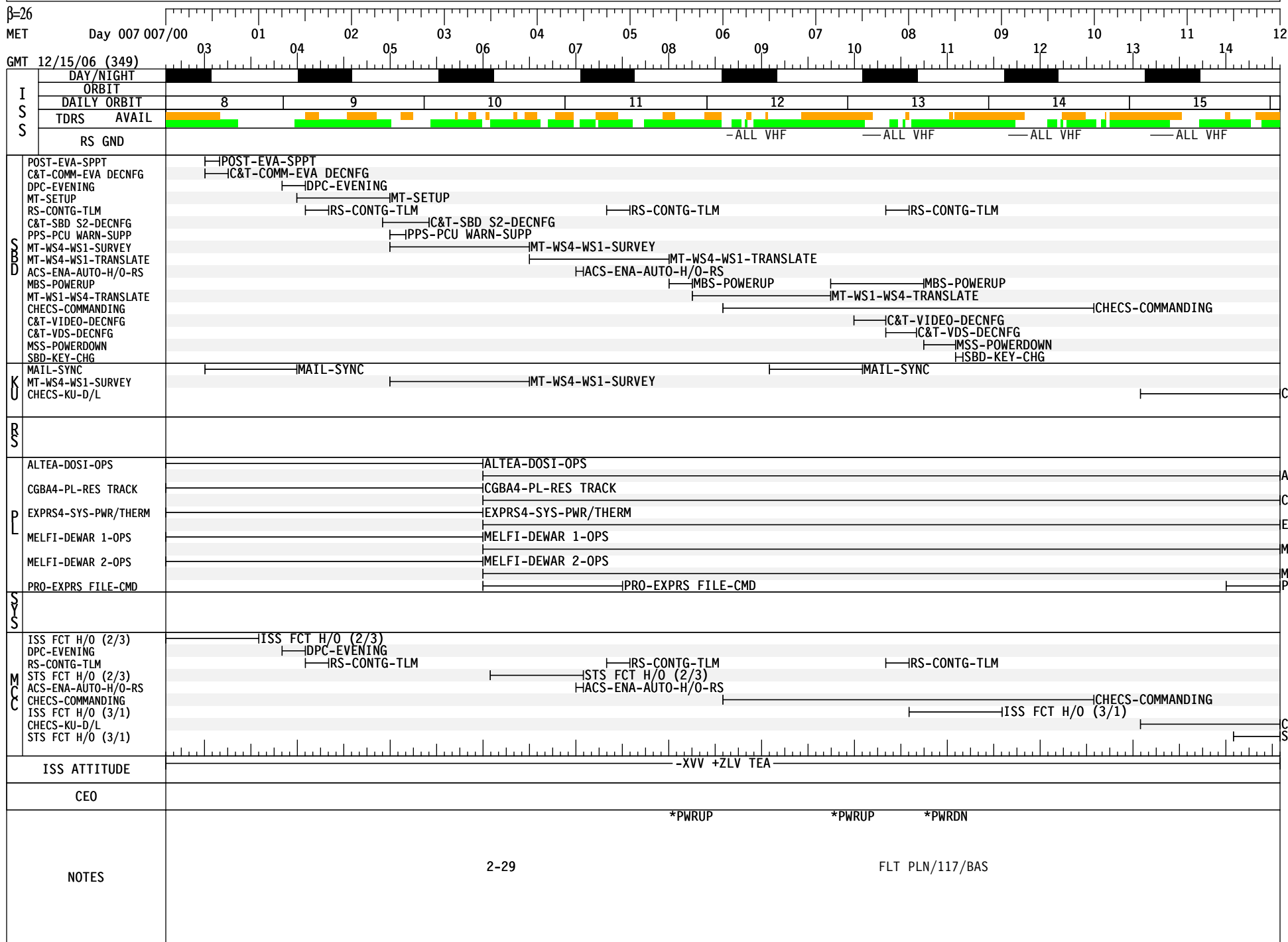
FD08

GMT 12/15/06 (349)
 0-26
 MET Day 007



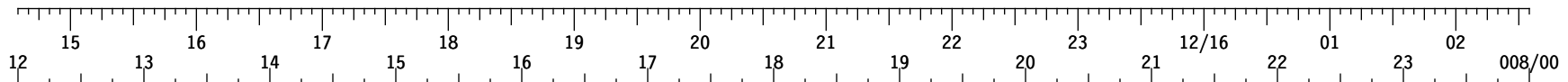
S T S - 1 1 7	CDR STURCKOW	14 7	PMC OCA	PRE SLEEP	SLEEP
	PLT/R2/M1 ARCHAMBAULT	WALKOFF MBS TO LAB		PRE SLEEP	SLEEP
	MS1/EV3/R1 FORRESTER	PST EVA H20 MTX		PRE SLEEP	SLEEP
	MS2/EV4/M2 SWANSON	WALKOFF MBS TO LAB		PRE SLEEP	SLEEP
	MS3/EV2/R1 OLIVAS	PST EVA H20 MTX		PRE SLEEP	SLEEP
	MS4/EV1 REILLY	PST EVA H20 MTX		PRE SLEEP	SLEEP
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	PST EVA H20 MTX	P W R O R E R P K	PRE SLEEP	SLEEP
	FE-1 TIUPH	PREP WORK	DPC	PRE SLEEP	SLEEP
	FE-2 WILLIAMS	PREP WORK	DPC	PRE SLEEP	SLEEP
S T S	DAY/NIGHT	[Timeline with shaded blocks]			
	ORBIT	112	113	114	115
	DAILY ORBIT	8	9	10	11
	TDRS	W -171	E -46	Z -275	
	ORB ATT	BIAS -XLV -ZVV			
SSRMS	LAB	MT 4-1 SRVY	MT XLATE WS1	MT XLATE WS4	LAB
NOTES	*DUMP TERM *MAINT *HTR DEACT				

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



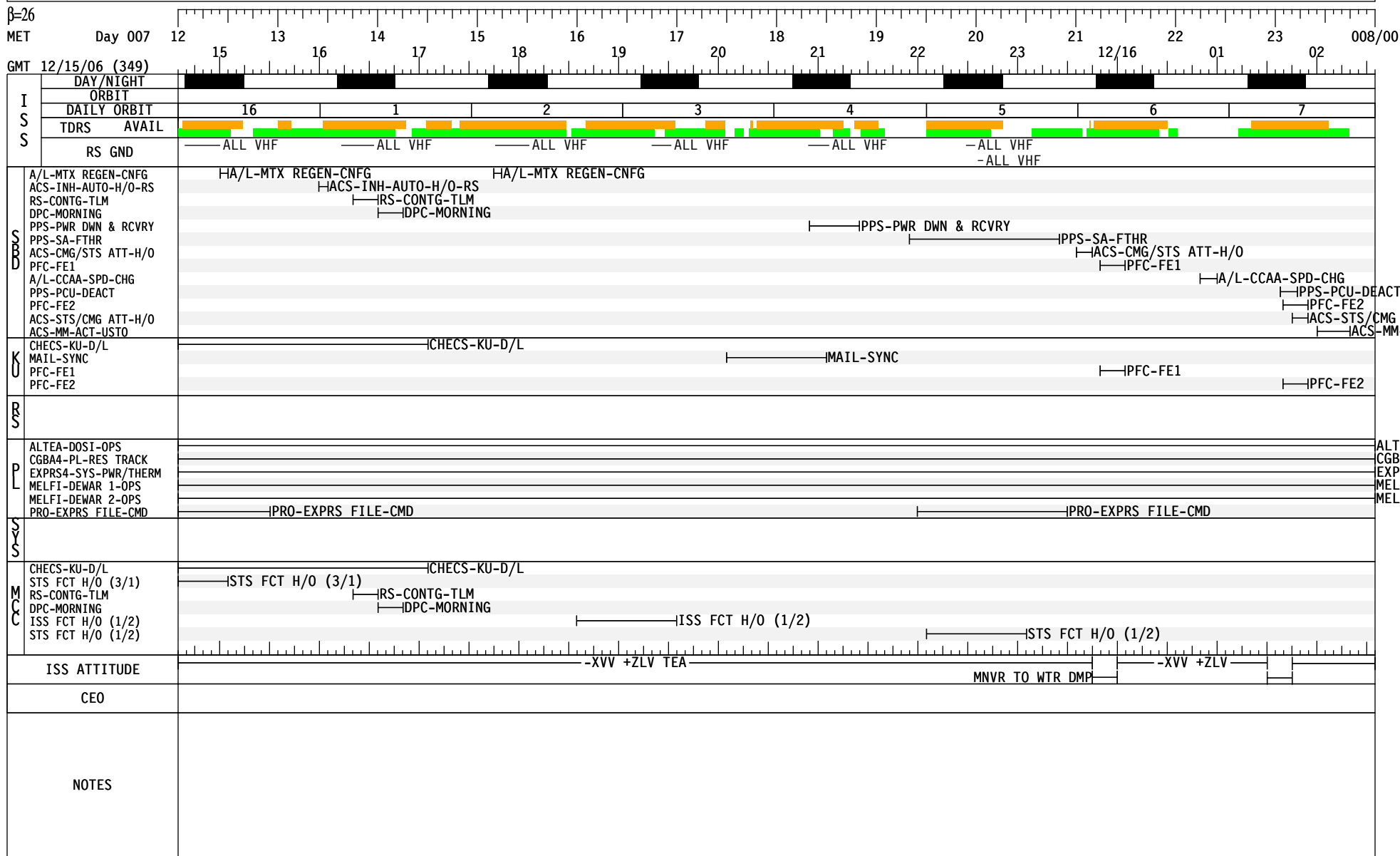
FD09

GMT 12/15/06 (349)
 Day 007
 MET



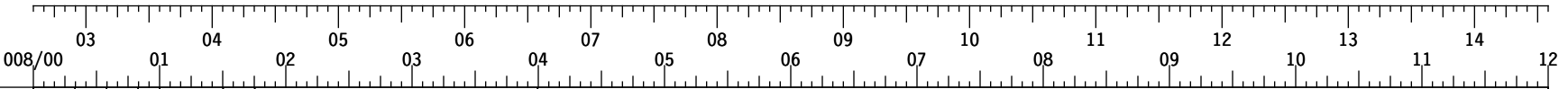
STS-117	CDR STURCKOW		POST SLEEP				OFF DUTY		OFF DUTY		MEAL		OFF DUTY		H/O		+ZVLV		SIMO INIT		SIMO TERM		CREW TO	
	PLT/R2/M1 ARCHAMBAULT		POST SLEEP		OFF DUTY		PFC OCA		OFF DUTY		MEAL		OFF DUTY		MCIU*		EXERCISE		MTEVA		H/O		CREW TO	
EXP-14	ISS CDR LOPEZ-ALEGRIA		POST SLEEP		PREP WORK		DPC		P L L C K		M E T X *		EXERCISE TVIS		EXERCISE RED		MIDDAY-MEAL		02 RECONFIG TO XFER		02 *		CREW TO	
	FE-1 TIUPH		POST SLEEP		PREP WORK		DPC						EXERCISE TVIS		MIDDAY-MEAL		PFC		VELO + HC		COX		CREW TO	
STS	FE-2 WILLIAMS		POST SLEEP		PREP WORK		DPC				EXERCISE RED		MIDDAY-MEAL		NUTR DCB RETRN		EXERCISE TVIS		PFC		CREW TO			
	DAY/NIGHT ORBIT		120		121		122		123		124		125		126		127							
DAILY ORBIT		16		1		2		3		4		5		6		7								
TDRS		W -171		E -46		Z -275																		
ORB ATT								BIAS -XLV -ZVV								BIAS -XLV -ZVV		BIAS -XLV +YVV						
SSRMS										LAB														
NOTES								*TERM		*DISABLE				*ENABLE				*FILTER CK				*INIT		

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



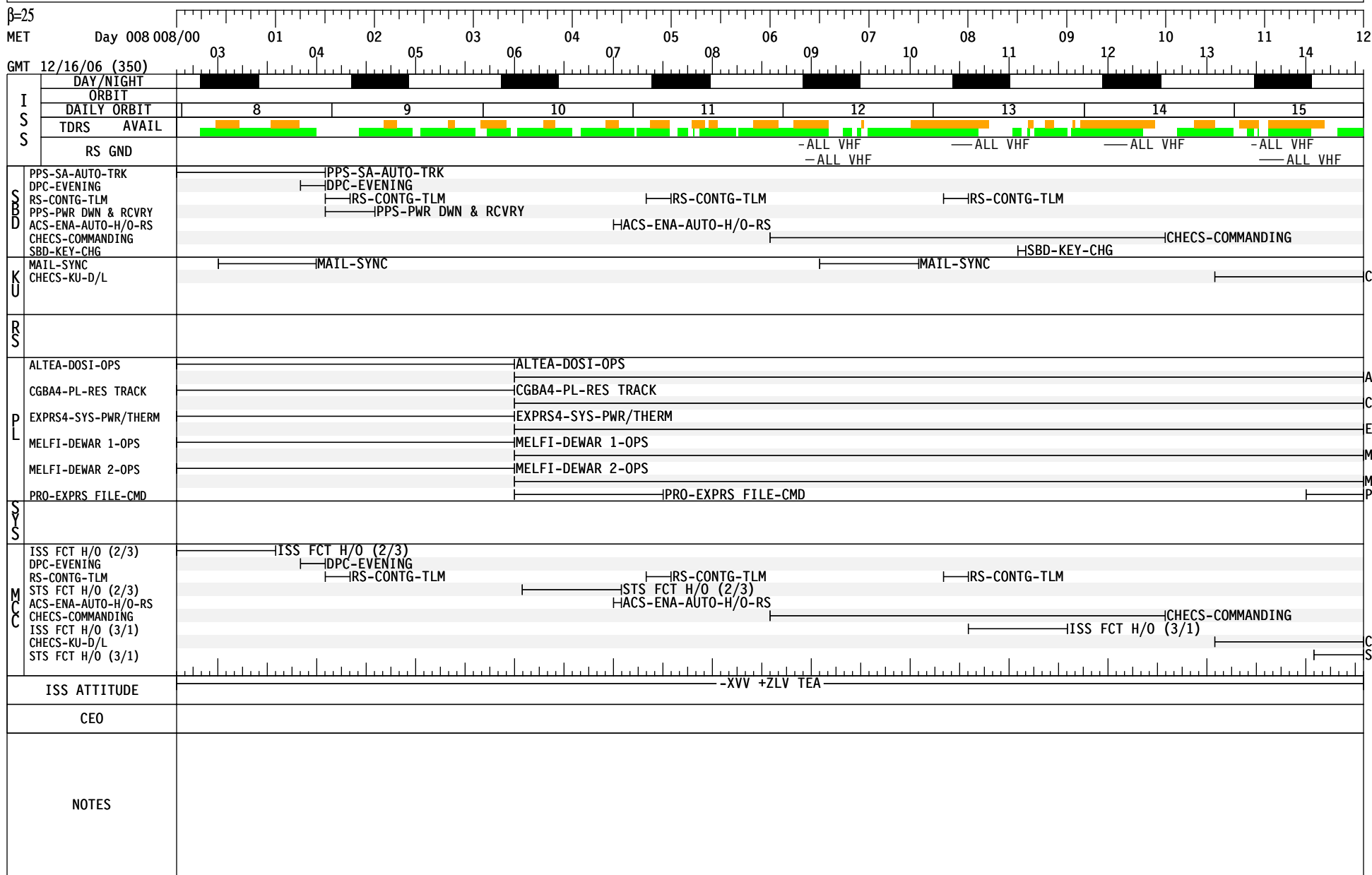
FD09

GMT 12/16/06 (350)
 B-25
 MET Day 008



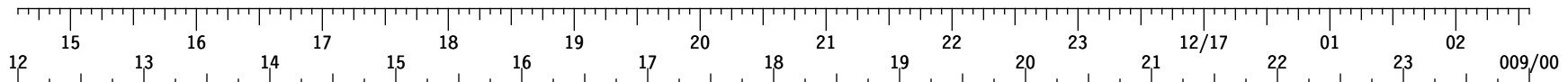
S T S - 1 1 7	CDR STURCKOW	CREW CONF	14.7* COMM 2	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP		
	PLT/R2/M1 ARCHAMBAULT	CREW CONF				PRE SLEEP	SLEEP		
	MS1/EV3/R1 FORRESTER	CREW CONF	EXERCISE			PRE SLEEP	SLEEP		
	MS2/EV4/M2 SWANSON	CREW CONF	RNDZ TOOLS C/O			PRE SLEEP	SLEEP		
	MS3/EV2/R1 OLIVAS	CREW CONF	RNDZ TOOLS C/O			PRE SLEEP	SLEEP		
	MS4/EV1 REILLY	CREW CONF				PRE SLEEP	SLEEP		
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	CREW CONF	EXERCISE PREP WORK	DPC		PRE SLEEP	SLEEP		
	FE-1 TIUPH	CREW CONF	PREP WORK	DPC		PRE SLEEP	SLEEP		
	FE-2 WILLIAMS	CREW CONF	PREP WORK	DPC		PRE SLEEP	SLEEP		
S T S	DAY/NIGHT	[Timeline with shaded sleep periods]							
	ORBIT	[Timeline with shaded orbit periods]							
	DAILY ORBIT	128	129	130	131	132	133	134	135
	TDRS	W -171	E -46	Z -275	[Timeline with shaded TDRS periods]				
	ORB ATT	BIAS -XLV -ZVV							
SSRMS	*MAINT			LAB					
NOTES									

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



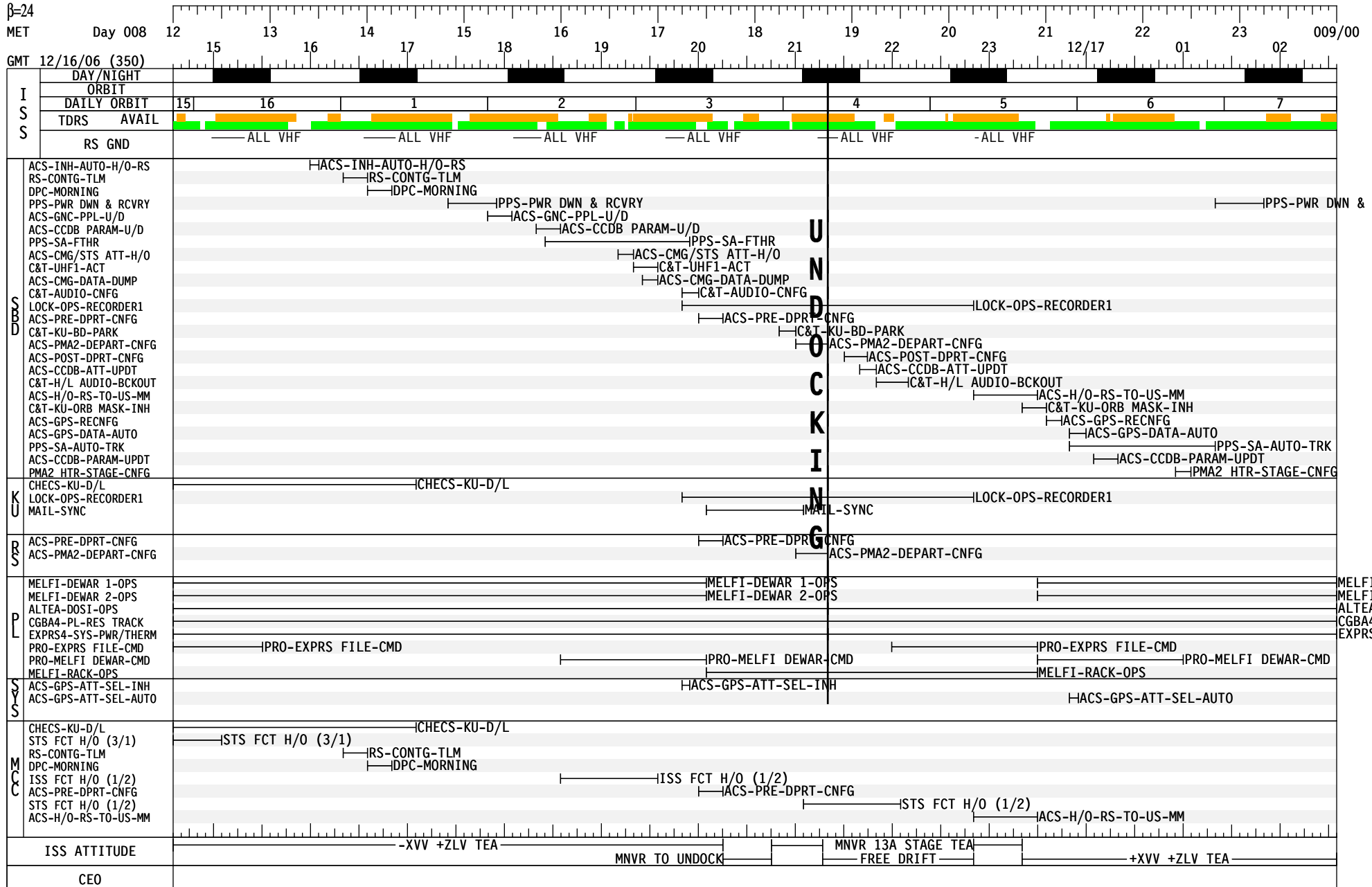
FD10

GMT 12/16/06 (350)
 Day 008



S T S - 1 1 7	CDR STURCKOW	POST SLEEP			EXERCISE	FWA REL EL	EGRS HATCH CLOSE	HATCH LEAK CHECK	- + X Z L V V V	UNDOCK OPS	FLYAROUND	SEP	SEP	C T O N D	M S I N I M O R O	S I M O I N I T	MEAL		1 4 - 7 *	S I M O T E R M	- - Z X L V V V												
	PLT/R2/M1 ARCHAMBAULT	POST SLEEP			XFER OPS	FWA REL EL	F E L S *	H / O	G P R W P R U P	F E L S *	UNDOCK OPS	FLYAROUND	SEP	G P R W P R B D N		MEAL		EXERCISE															
	MS1/EV3/R1 FORRESTER	POST SLEEP			XFER OPS	FWA REL EL		M C I U *	G P R W P R U P	EXERCISE	UNDOCK OPS	FLYAROUND	SEP	S D S E O A R C T		MEAL	O B S S B E R T H	R P M W S R D N															
	MS2/EV4/M2 SWANSON	POST SLEEP			XFER OPS	FWA REL EL		EXERCISE	SETUP C/L CAMR	UNDOCK OPS	FLYAROUND	SEP		G P R W P R B D N	H C A B T	MEAL		POST EVA ENT PREP															
	MS3/EV2/R1 OLIVAS	POST SLEEP		EXERCISE	XFER OPS	FWA REL EL			P/TV03 S/U	UNDOCK OPS	FLYAROUND	SEP			MEAL	O B S S B E R T H	R P M W S R D N	POST EVA ENT PREP															
	MS4/EV1 REILLY	POST SLEEP			O2 SYS TEARDOWN	FWA REL EL	EGRS HATCH CLOSE	HATCH LEAK CHECK	SETUP C/L CAMR	UNDOCK OPS	FLYAROUND	SEP		EMU INSTL		MEAL		EXERCISE															
E X P - 1 4	ISS CDR LOPEZ-ALEGRIA	POST SLEEP	PREP WORK	DPC	O2 SYS TEARDOWN	FWA REL EL	EGRS HATCH CLOSE	HATCH LEAK CHECK		P M A 2 C N C		MIDDAY-MEAL				EXERCISE RED	EXERCISE TVIS																
	FE-1 TIUPH	POST SLEEP	PREP WORK	DPC		FWA REL EL		EXERCISE TVIS				MIDDAY-MEAL				VELO + HC	COX																
	FE-2 WILLIAMS	POST SLEEP	PREP WORK	DPC		FWA REL EL		EXERCISE RED	EXERCISE TVIS			MIDDAY-MEAL																					
S T S	DAY/NIGHT	[Timeline bars for Day/Night]																															
	ORBIT	[Timeline bars for Orbit]																															
	DAILY ORBIT	15	136	137	138	139	140	141	142	143																							
	TDRS	W -171	[Timeline bars for TDRS]																														
	E -46	[Timeline bars for E -46]																															
	Z -275	[Timeline bars for Z -275]																															
ORB ATT	BIAS -XLV -ZVV																			-XLV +ZVV	FLYAROUND	SEP	BIAS -ZLV +YVV					-ZLV -XVV					
SSRMS																				LAB													
NOTES																				*HTR ACT	*FILTER CK	*ACT											*MAINT

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



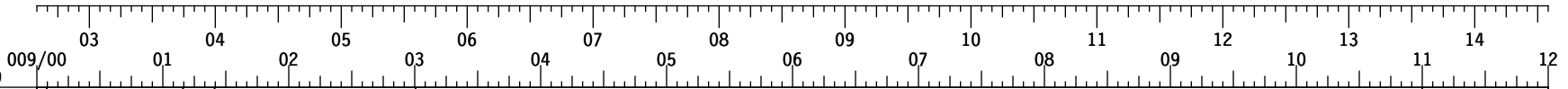
2-35

FLT PLN/117/BAS

NOTES

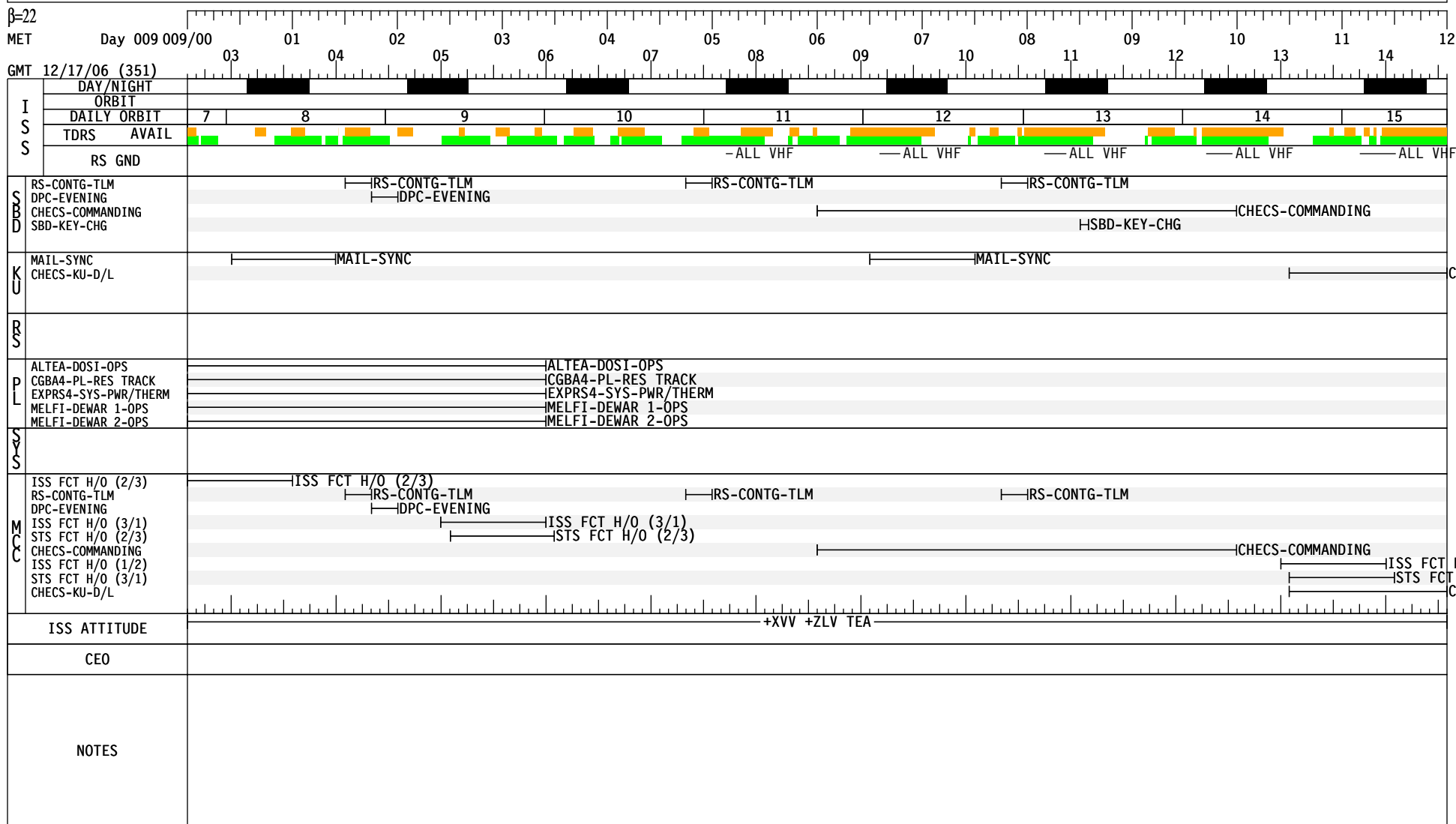
FD10

GMT 12/17/06 (351)
 0-22
 MET Day 009



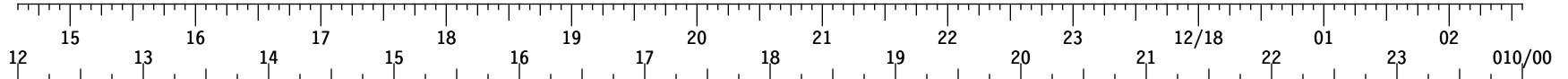
S T S - 1 1 7	CDR STURCKOW	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP					POST SLEEP
	PLT/R2/M1 ARCHAMBAULT	PRE SLEEP			SLEEP					POST SLEEP
	MS1/EV3/R1 FORRESTER	PRE SLEEP			SLEEP					POST SLEEP
	MS2/EV4/M2 SWANSON	PRE SLEEP			SLEEP					POST SLEEP
	MS3/EV2/R1 OLIVAS	PRE SLEEP			SLEEP					POST SLEEP
	MS4/EV1 REILLY	PRE SLEEP			SLEEP					POST SLEEP
S T S	DAY/NIGHT	[Day/Night Cycle Bar]								
	ORBIT	143	144	145	146	147	148	149	150	151
	DAILY ORBIT	7	8	9	10	11	12	13	14	15
	W -171	[Waveform]								
	TDRS E -46 Z -275	[Waveform]								
ORB ATT	-ZLV -XVV									
NOTES										

STS-117/13A JOINT MISSION STP (see OSTPV for latest version)



FD11

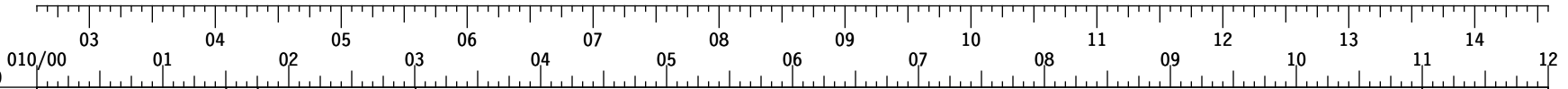
GMT 12/17/06 (351)
 Day 009



S T S - 1 1 7	CDR STURCKOW	POST SLEEP	OFF DUTY	FILTER CLEANING	FCS C/O	RFI SRE HOT	PILOT OPS	D/O BRIEF	PEAVO ENT	MEAL	L-1 COMM CHK	CABIN STOW	L-1 COMM CHK	EXERCISE	14-7*	CABIN STOW
	PLT/R2/M1 ARCHAMBAULT	POST SLEEP	W/B* OFF DUTY	CABIN STOW	FCS C/O	RFI SRE HOT	PILOT OPS	D/O BRIEF	PEAVO ENT	MEAL	CABIN STOW	EXERCISE	CABIN STOW	OSTO ACW		
	MS1/EV3/R1 FORRESTER	POST SLEEP	OFF DUTY	EXERCISE	CABIN STOW			D/O BRIEF	PEAVO ENT	MEAL	CABIN STOW			KU STOW	ERG STOW	
	MS2/EV4/M2 SWANSON	POST SLEEP	OFF DUTY	CABIN STOW	FCS C/O	RFI SRE HOT	PILOT OPS	D/O BRIEF	PEAVO ENT	MEAL	CABIN STOW	EXERCISE	CABIN STOW	WDL EASCT	PGSC STOW PART I	
	MS3/EV2/R1 OLIVAS	POST SLEEP	OFF DUTY	CABIN STOW	EXERCISE	CABIN STOW	PSDAE IOTG UIPTAL	D/O BRIEF	PEAVO ENT	MEAL	EVS NIE TDT REU YOP	SD SE VACT	CABIN STOW			
	MS4/EV1 REILLY	POST SLEEP	OFF DUTY	CABIN STOW			EXERCISE	D/O BRIEF	PEAVO ENT	MEAL	CABIN STOW			ERG STOW		
S T S	DAY/NIGHT	[Day/Night Cycle]														
	ORBIT	151	152	153	154	155	156	157	158	159						
	DAILY ORBIT	15	1	2	3	4	5	6	7	8						
	TDRS	W -171	[TDRS Schedule]													
		E -46	[TDRS Schedule]													
	Z -275	[TDRS Schedule]														
	GND	-MLA -MLA -MLA -WSS -DFR -MLA														
	ORB ATT	-ZLV -XVV														
	NOTES	*HEATER ACT										*MAINT				

FD11

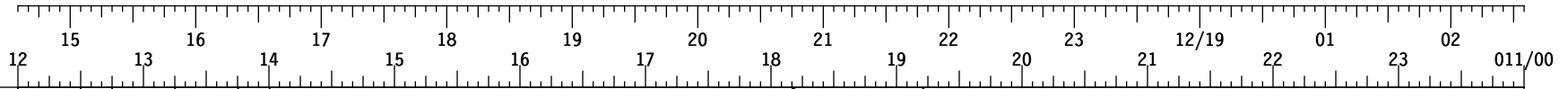
GMT 12/18/06 (352)
 Day 010
 MET



S T S - 1 1 7	CDR STURCKOW	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP					POST SLEEP	
	PLT/R2/M1 ARCHAMBAULT	PRE SLEEP			SLEEP					POST SLEEP	
	MS1/EV3/R1 FORRESTER	PRE SLEEP			SLEEP					POST SLEEP	
	MS2/EV4/M2 SWANSON	PRE SLEEP			SLEEP					POST SLEEP	
	MS3/EV2/R1 OLIVAS	PRE SLEEP			SLEEP					POST SLEEP	
	MS4/EV1 REILLY	PRE SLEEP			SLEEP					POST SLEEP	
S T S	DAY/NIGHT	[Bar chart showing day/night cycles]									
	ORBIT	159	160	161	162	163	164	165	166	167	
	DAILY ORBIT	8	9	10	11	12	13	14	15	16	
	TDRS	W -171	[Bar]		[Bar]		[Bar]		[Bar]		[Bar]
		E -46	[Bar]		[Bar]		[Bar]		[Bar]		[Bar]
		Z -275	[Bar]		[Bar]		[Bar]		[Bar]		[Bar]
	GND	-DFR		-DFR -MLA		-WSS -DFR -MLA		-WSS -DFR -MLA		-WSS -DFR	
	ORB ATT						-ZLV -XVV				
	NOTES										

FD12

GMT 12/18/06 (352)
 MET Day 010

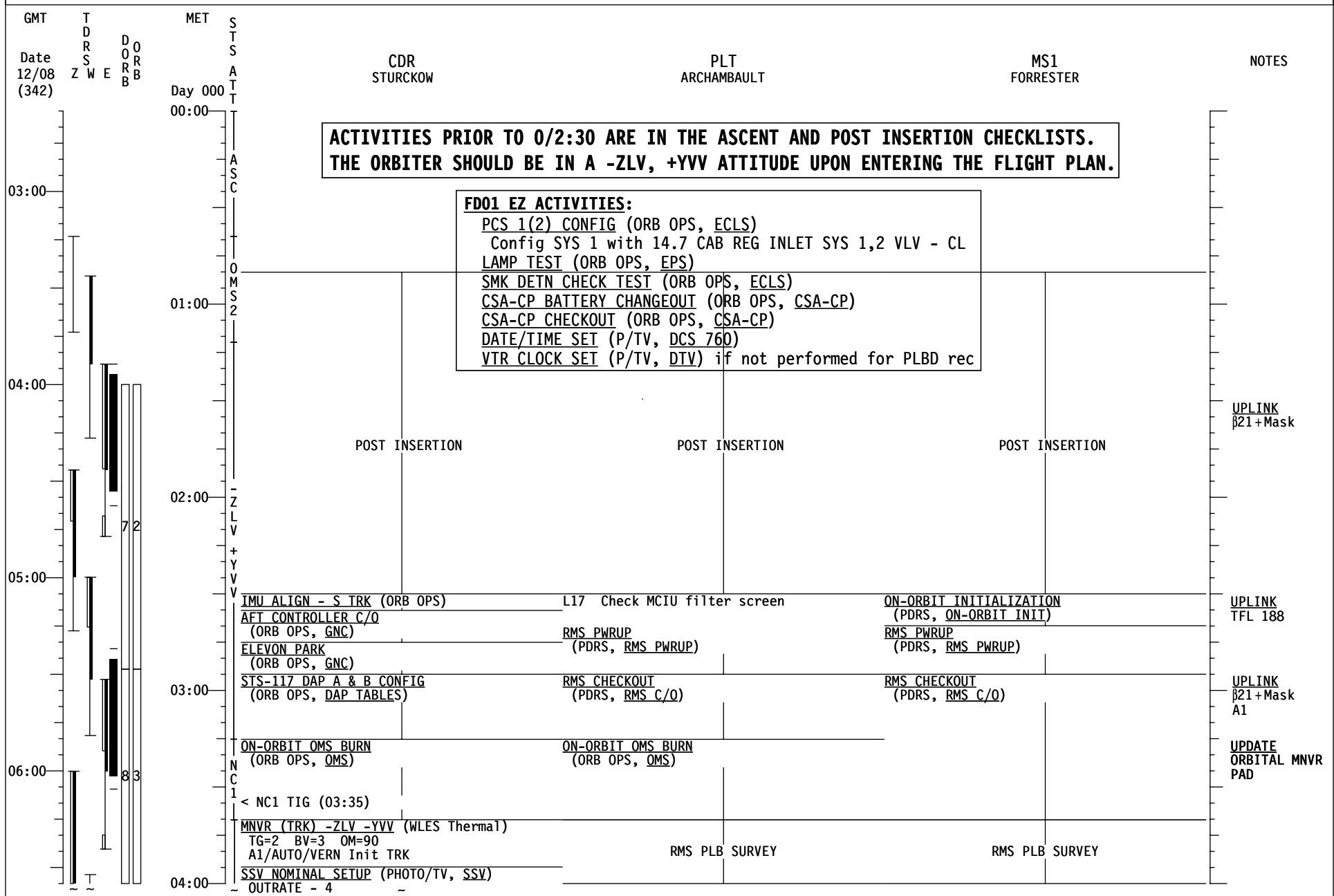


STS-117	CDR STURCKOW	POST SLEEP	PMC A/G	POST SLEEP	IMU ALIGN & VERIF	T-RX KSI	DEORBIT PREP	D/O TIG*	KSC LANDING*		
	PLT/R2/M1 ARCHAMBAULT	POST SLEEP		POST SLEEP	GP RW PR UP		DEORBIT PREP				
	MS1/EV3/R1 FORRESTER	POST SLEEP		POST SLEEP	GP RW PR UP	GS IT ROW	DEORBIT PREP				
	MS2/EV4/M2 SWANSON	POST SLEEP		POST SLEEP		PGSC STOW PART II	DEORBIT PREP				
	MS3/EV2/R1 OLIVAS	POST SLEEP		POST SLEEP			DEORBIT PREP				
	MS4/EV1 REILLY	POST SLEEP		POST SLEEP		STP AEW MPR PC DN	DEORBIT PREP				
STS	DAY/NIGHT	[Day/Night Cycle]									
	ORBIT	167	168	169	170	171	172	173	174	175	
	DAILY ORBIT	16	1	2	3	4	5	6	7	8	
	TDRS	W -171	E -46	Z -275							
	GND							-MLA	-WSS -MLA	-WSS -DFR	-WSS -DFR
ORB ATT	-ZLV -XVV	IMU	-XSI	COMM	D/O	ENTRY					
NOTES	*D/O TIG 10/18:10 *KSC LANDING 10/19:12										

DETAILED TIMELINE

DETAILED
TIMELINE

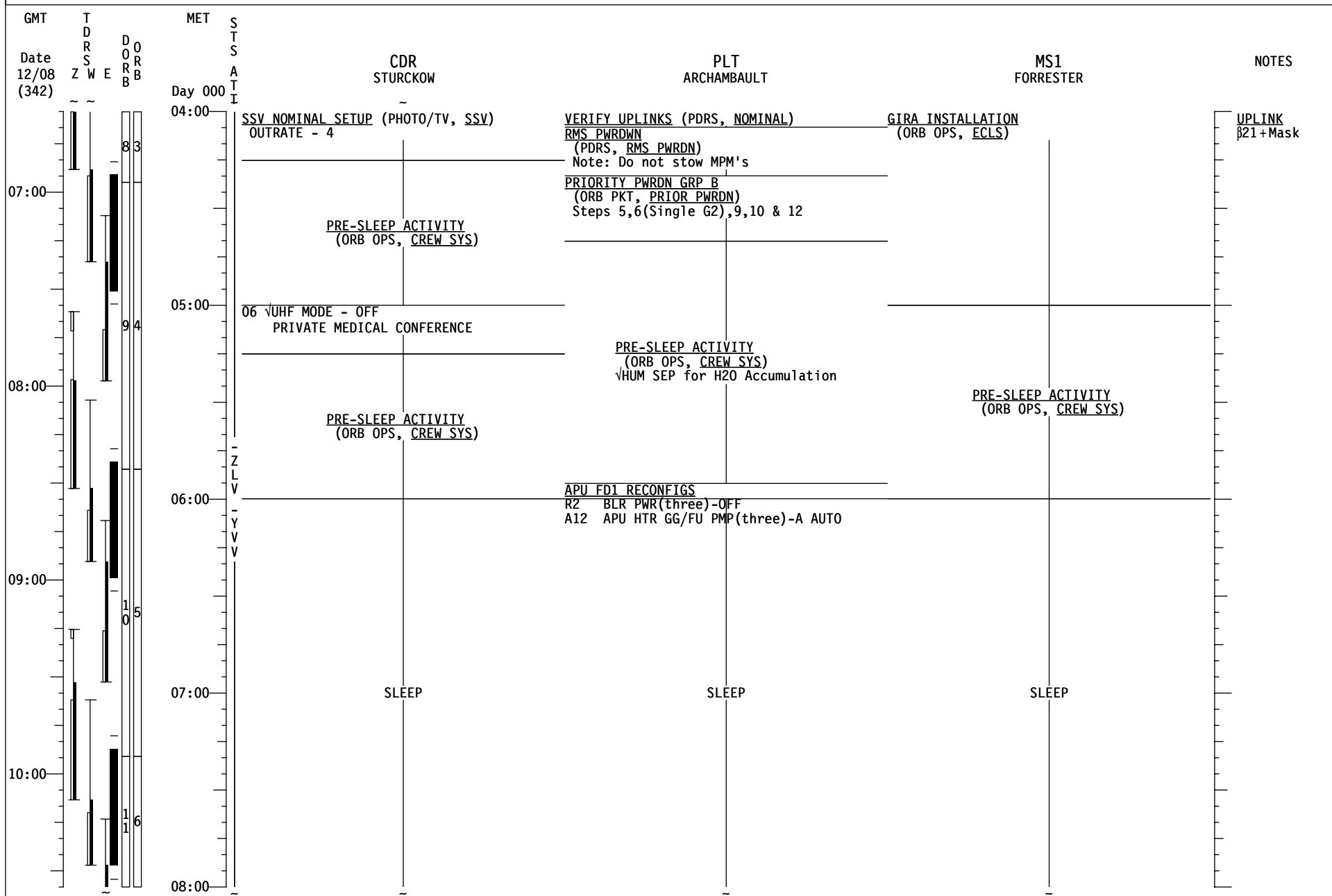
STS-117 (FD01)



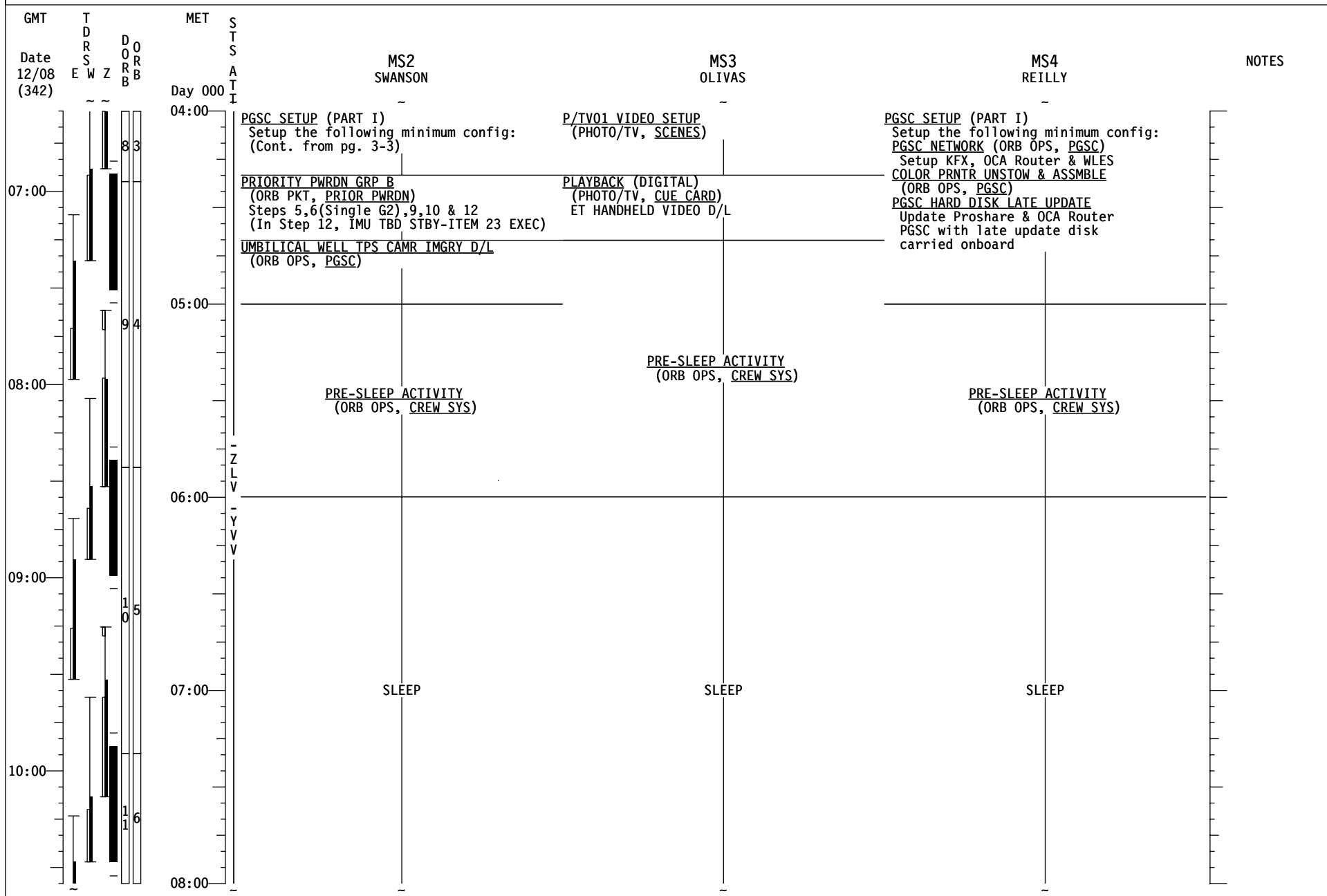
STS-117 (FD01)

GMT	TDRS E W Z	DORB D O R B	MET Day 000	STS A T T	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
00:00			00:00	A S C				
01:00			01:00	O M S 2	POST INSERTION	POST INSERTION	POST INSERTION	
02:00			02:00	Z L V				
03:00			03:00	+ Y V V	<u>PGSC SETUP (PART I)</u> Setup the following minimum config: <u>PGSC NETWORK (ORB OPS, PGSC)</u> Setup KFX, OCA Router, & WLES <u>COLOR PRNTR UNSTOW & ASSMBLE</u> (ORB OPS, PGSC) <u>PGSC HARD DISK LATE UPDATE</u> Update Proshare & OCA Router PGSC with late update disk carried onboard	<u>P/TVO1 VIDEO SETUP</u> (PHOTO/TV, SCENES)	<u>OCAC SETUP</u> (ORB OPS, CREW SYS) <u>SHUTTLE EMER EYEWASH (SEE)</u> Unstow, attach on or near galley Fill one drink container, label for SEE Use only and attach on or near galley	
04:00			04:00	N C 1			<u>TISSUE EQUIVALENT PROPORTIONAL COUNTER (TEPC)</u> (ORB OPS, CREW SYSTEMS) Power On <u>ACTIVATION & CHECK OUT</u> (ORB OPS, WLE SENSORS) Perform after Late Update Disk	
05:00			05:00				<u>PGSC SETUP (PART I)</u> Setup the following minimum config: (Cont. on pg. 3-5)	
06:00			06:00					

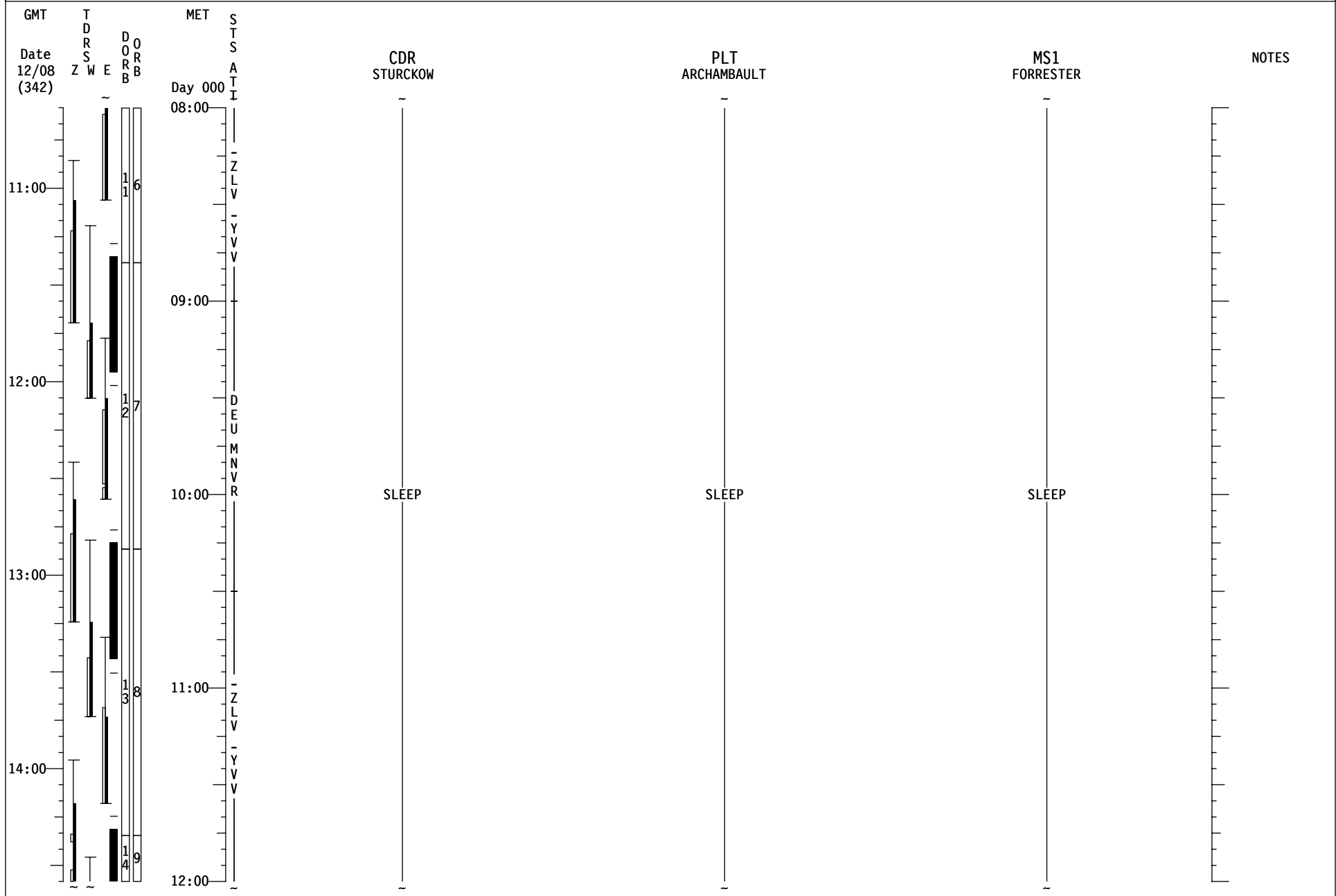
STS-117 (FD01)



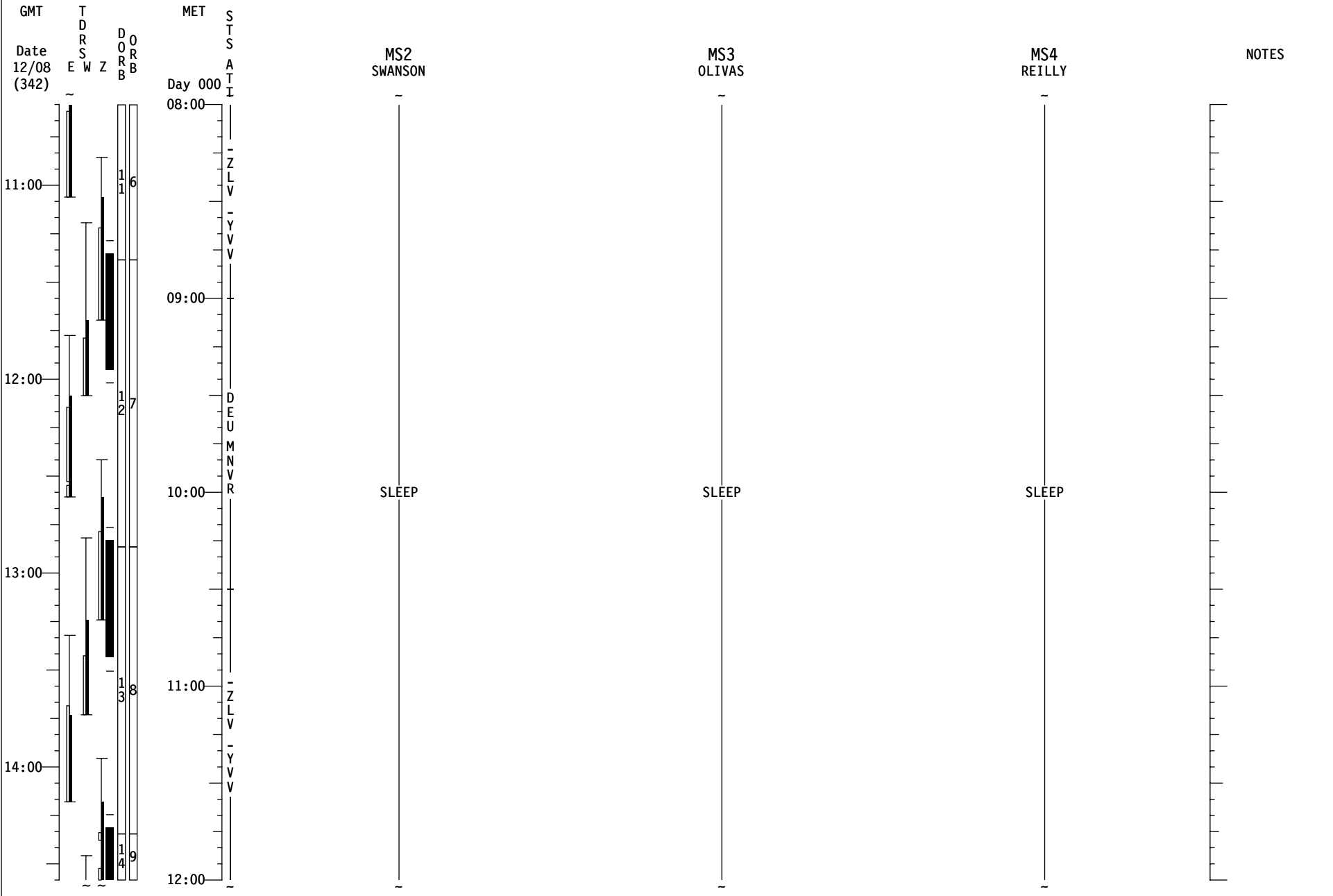
STS-117 (FD01)



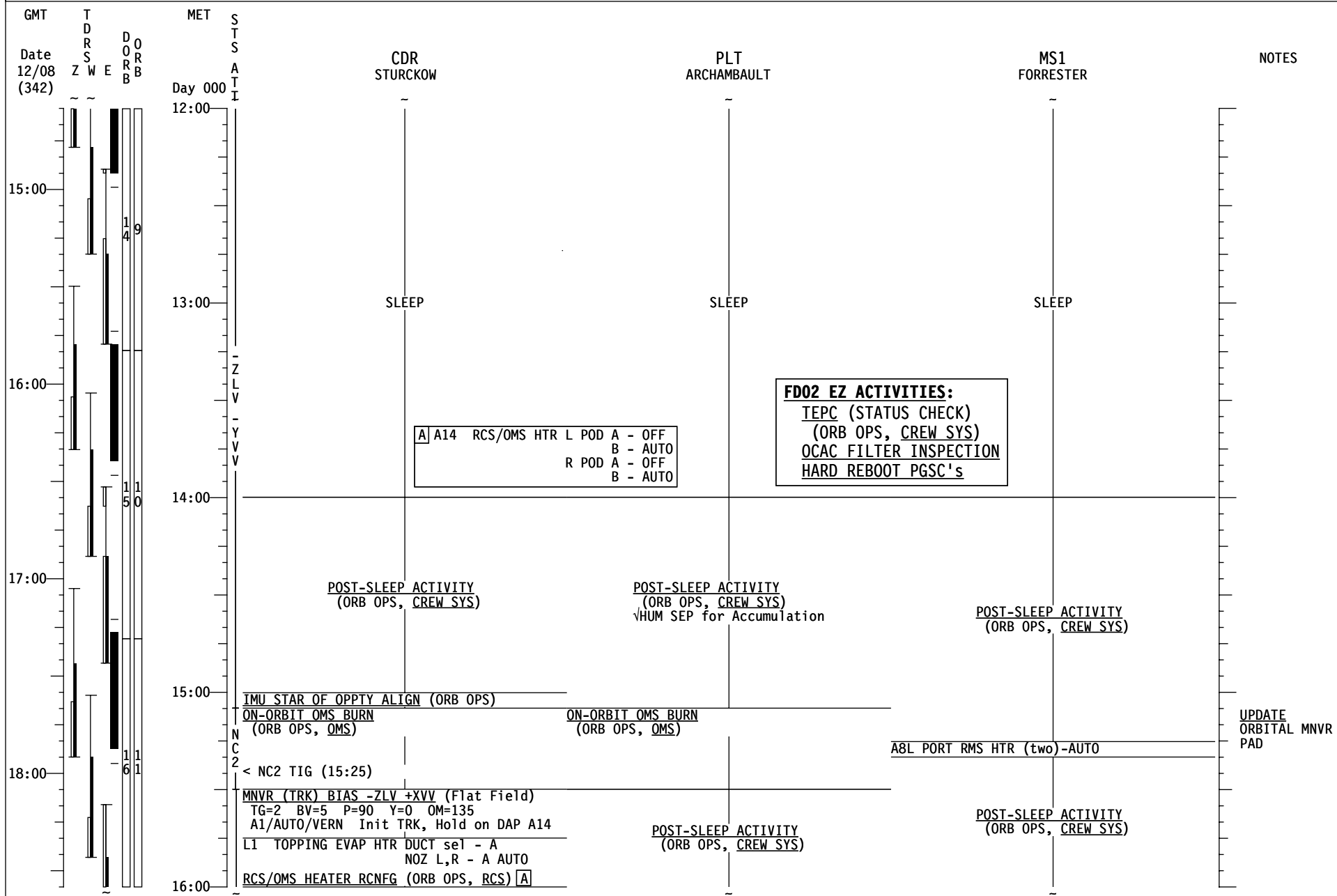
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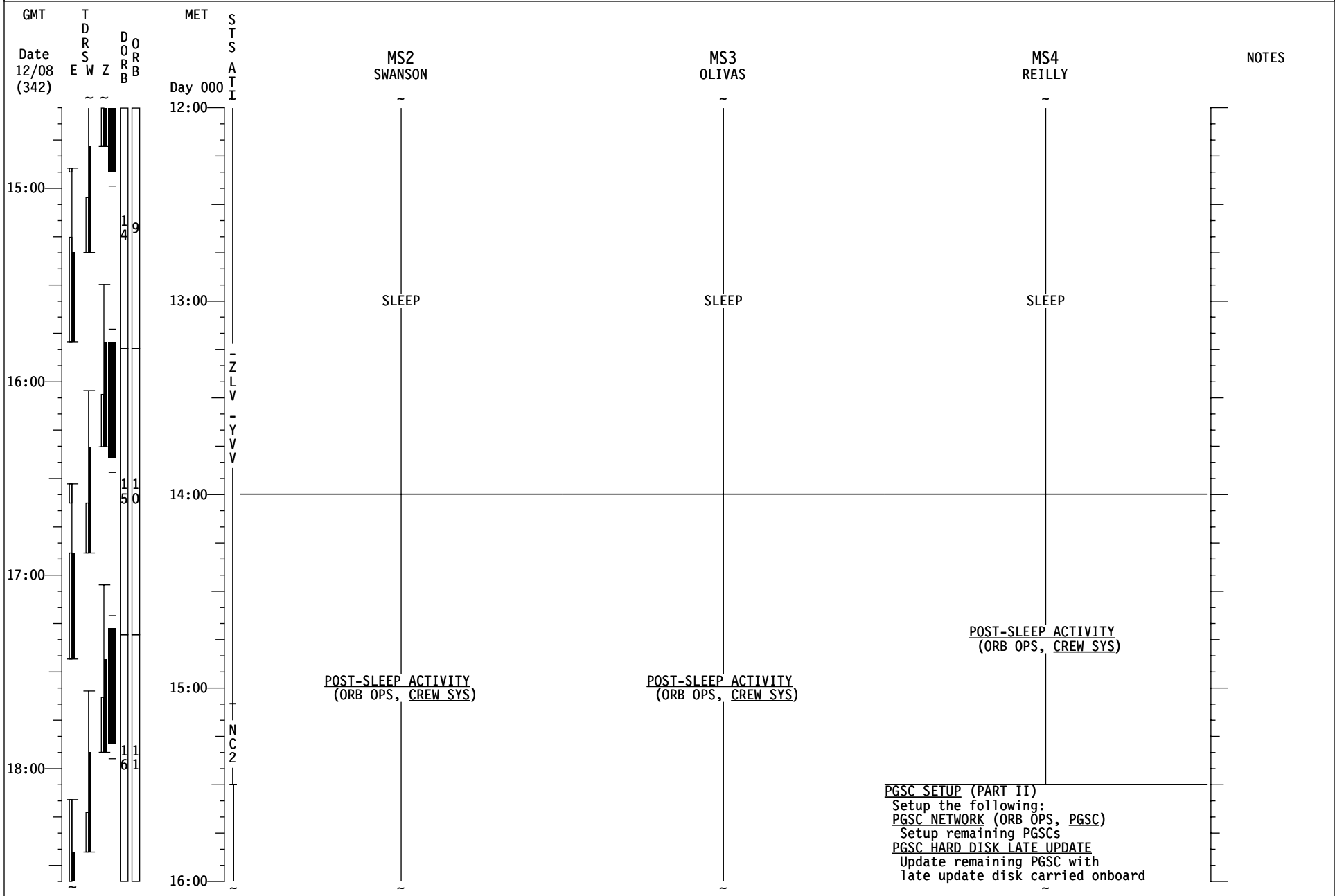
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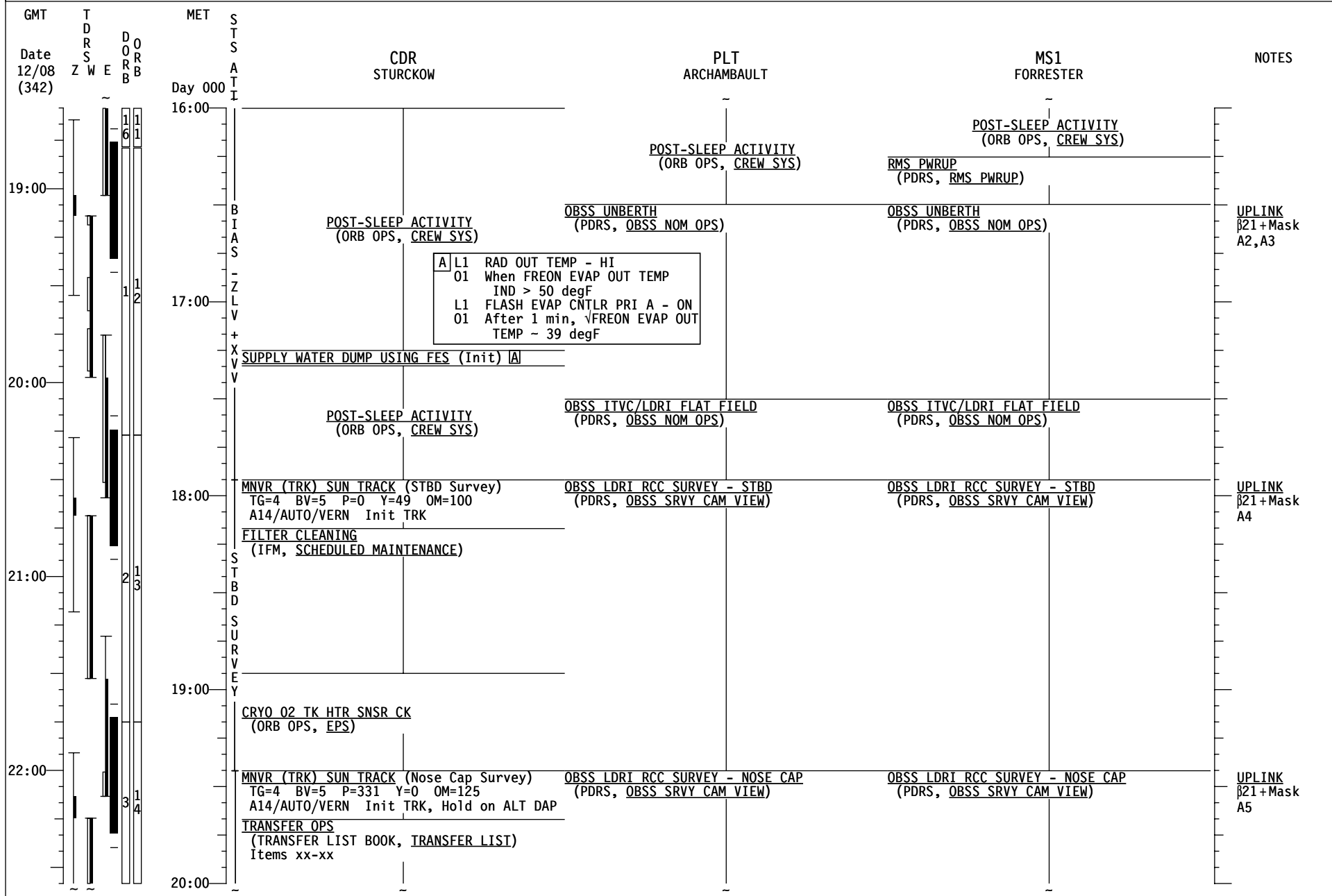
STS-117 (FD02)



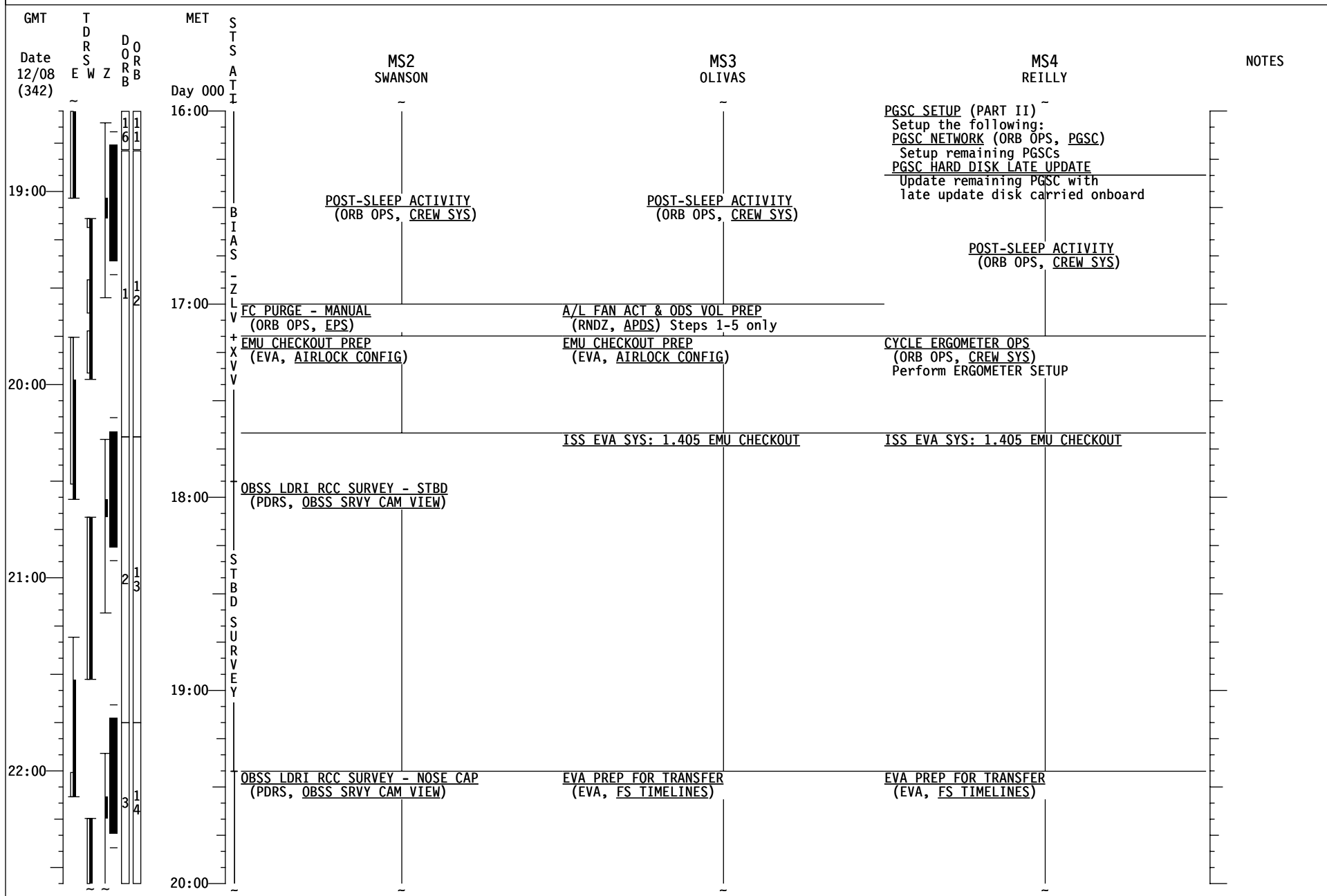
STS-117 (FD02)



STS-117 (FD02)



STS-117 (FD02)



STS-117 (FD02)

GMT	TDRS ZSW E	DORB	MET	STS A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
Date 12/08 (342)			Day 000					
20:00					TRANSFER OPS (TRANSFER LIST BOOK, TRANSFER LIST) Items xx-xx	OBSS LDRI RCC SURVEY - NOSE CAP (PDRS, OBSS SRVY CAM VIEW)	OBSS LDRI RCC SURVEY - NOSE CAP (PDRS, OBSS SRVY CAM VIEW)	
23:00					SUPPLY WATER DUMP USING FES (Term) [A]	[A] L1 RAD CNTLR OUT TEMP - NORM FLASH EVAP CNTLR PRI A - OFF		
					TRANSFER OPS (TRANSFER LIST BOOK, TRANSFER LIST) Items xx-xx			
					TRANSFER BRIEF Call down status to MCC			
					A L1 TOPPING EVAP HTR DUCT sel - OFF NOZ L,R - OFF			
00:00					MEAL	MEAL	MEAL	
					MNVR (TRK) SUN TRACK (Port Survey) TG=4 BV=5 P=0 Y=334 OM=90 A14/AUTO/VERN Init TRK	OBSS LDRI RCC SURVEY - PORT (PDRS, OBSS SRVY CAM VIEW)	OBSS LDRI RCC SURVEY - PORT (PDRS, OBSS SRVY CAM VIEW)	UPLINK β21+Mask A2
					P/TVO1 VIDEO SETUP (PHOTO/TV, SCENES)			
01:00								
					C/L CAMR INSTALL (PHOTO/TV, C/L CAMR)			
					POST C/L CAMR INSTALL A/L FAN BYPASS (RNDZ, APDS)			
02:00					MNVR (TRK) BIAS -ZLV -XVV (Crew Cabin Survey) TG=2 BV=5 P=90 Y=0 OM=12 A14/AUTO/VERN Init TRK		OBSS BERTH (PDRS, OBSS NOM OPS)	
					R2 BLR CNTLR/HTR (three) - B P/TVO1 VIDEO SETUP (PHOTO/TV, SCENES)			
00:00								

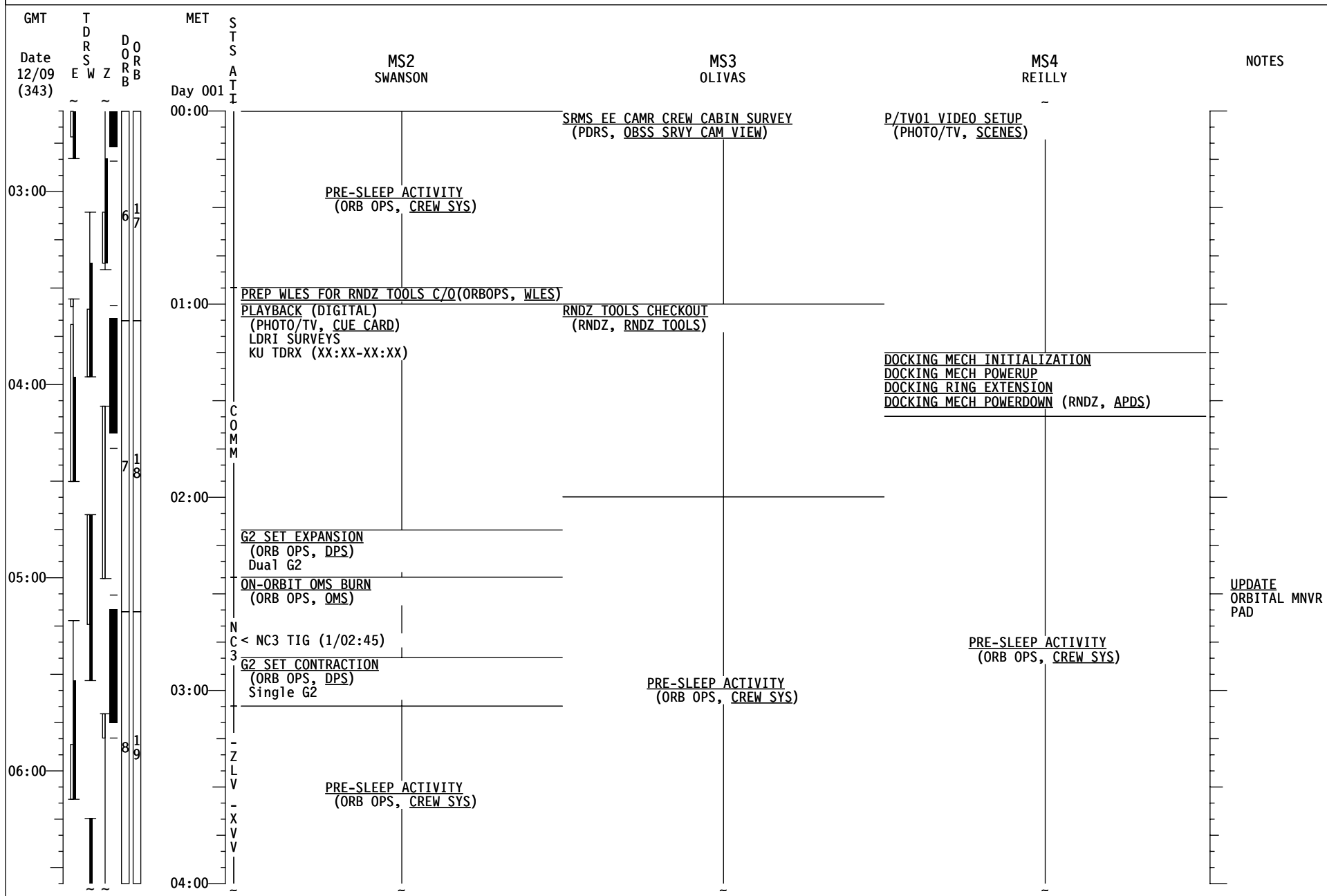
STS-117 (FD02)

GMT	T D R S E W Z	D O R B B	MET	S T S A T T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/08 (342)			Day 000					
20:00				N O S E C A P S U R V E Y	OBSS LDRI RCC SURVEY - NOSE CAP (PDRS, OBSS SRVY CAM VIEW)	EVA PREP FOR TRANSFER (EVA, FS TIMELINES)	EVA PREP FOR TRANSFER (EVA, FS TIMELINES)	
23:00								
00:00					MEAL	MEAL	MEAL	
01:00				P O R T S U R V E Y	SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Perform EQUIP PREP and WATER TRANSFER HOSE PURGE Do not perform CWC FILL #1 until after Docking.	OBSS LDRI RCC SURVEY - PORT (PDRS, OBSS SRVY CAM VIEW)	P/TV01 VIDEO SETUP (PHOTO/TV, SCENES)	
02:00					EC/L CAMR INSTALL (PHOTO/TV, C/L CAMR) POST C/L CAMR INSTALL A/L FAN BYPASS (RNDZ, APDS)			
					FC MONITORING SYS (FCMS) OPS (ORB OPS, EPS)	OBSS BERTH (PDRS, OBSS NOM OPS)		
00:00								

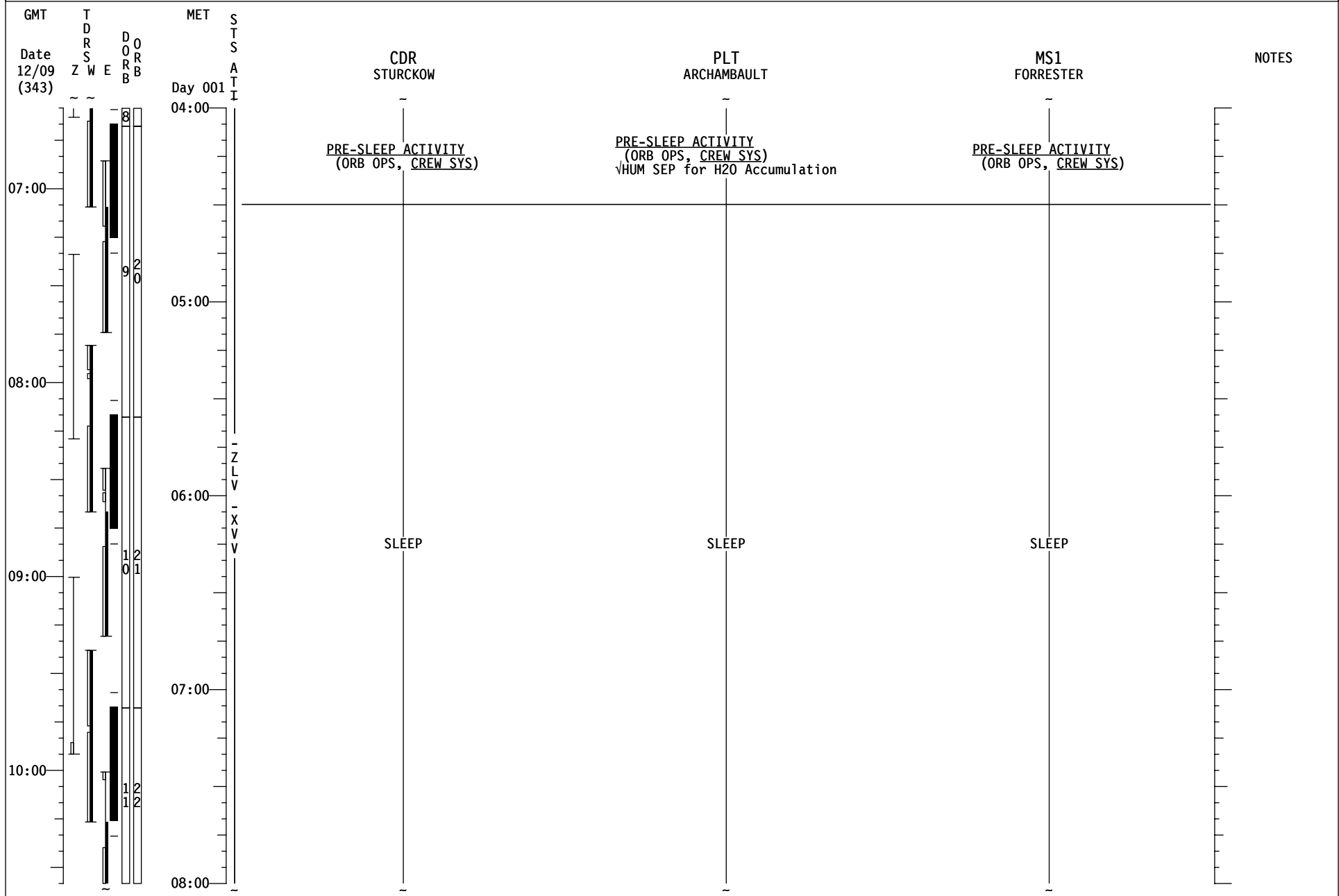
STS-117 (FD02)

GMT	TDRS ZSW E	DORB DORB	MET Day 001	STS A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
00:00					P/TV01 VIDEO SETUP (PHOTO/TV, SCENES)	MO10W 14.7 CAB REG INLET SYS 1-OP	SRMS EE CAMR CREW CABIN SURVEY (PDRS, OBSS SRVY CAM VIEW)	UPLINK β21+Mask A6,A7
03:00						PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
						MO10W 14.7 CAB REG INLET SYS 1-CL HANDHELD LIDAR C/O (RNDZ, RNDZ TOOLS)		
01:00					MNVR (TRK) SUN TRACK (LDRI Downlink) TG=4 BV=5 P=114 Y=0 OM=20 A1/AUTO/VERN (1/00:55) Init TRK	RNDZ TOOLS CHECKOUT (RNDZ, RNDZ TOOLS)	RMS PWRDWN (PDRS, RMS PWRDN) Note: Do not stow MPM's	UPLINK TFL 192 UPLINK β21+Mask
04:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		DOCKING MECH INITIALIZATION DOCKING MECH POWERUP DOCKING RING EXTENSION DOCKING MECH POWERDOWN (RNDZ, APDS)	
02:00								UPLINK TFL 188
05:00					G2 SET EXPANSION (ORB OPS, DPS) Dual G2			
					ON-ORBIT OMS BURN (ORB OPS, OMS)			UPDATE ORBITAL MNVR PAD
					NC < NC3 TIG (1/02:45)			
03:00					G2 SET CONTRACTION (ORB OPS, DPS) Single G2	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS) √HUM SEP for H2O Accumulation	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
06:00					MNVR (TRK) -ZLV -XVV TG=2 BV=3 OM=0 A1/AUTO/VERN Init TRK			
					FUTURE LOADED MNVR (Simo Dump) TG=2 BV=3 OM=270 A1/AUTO/VERN (1/12:15) Init TRK			
					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
					06 √UHF MODE - OFF PRIVATE MEDICAL CONFERENCE			
04:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			

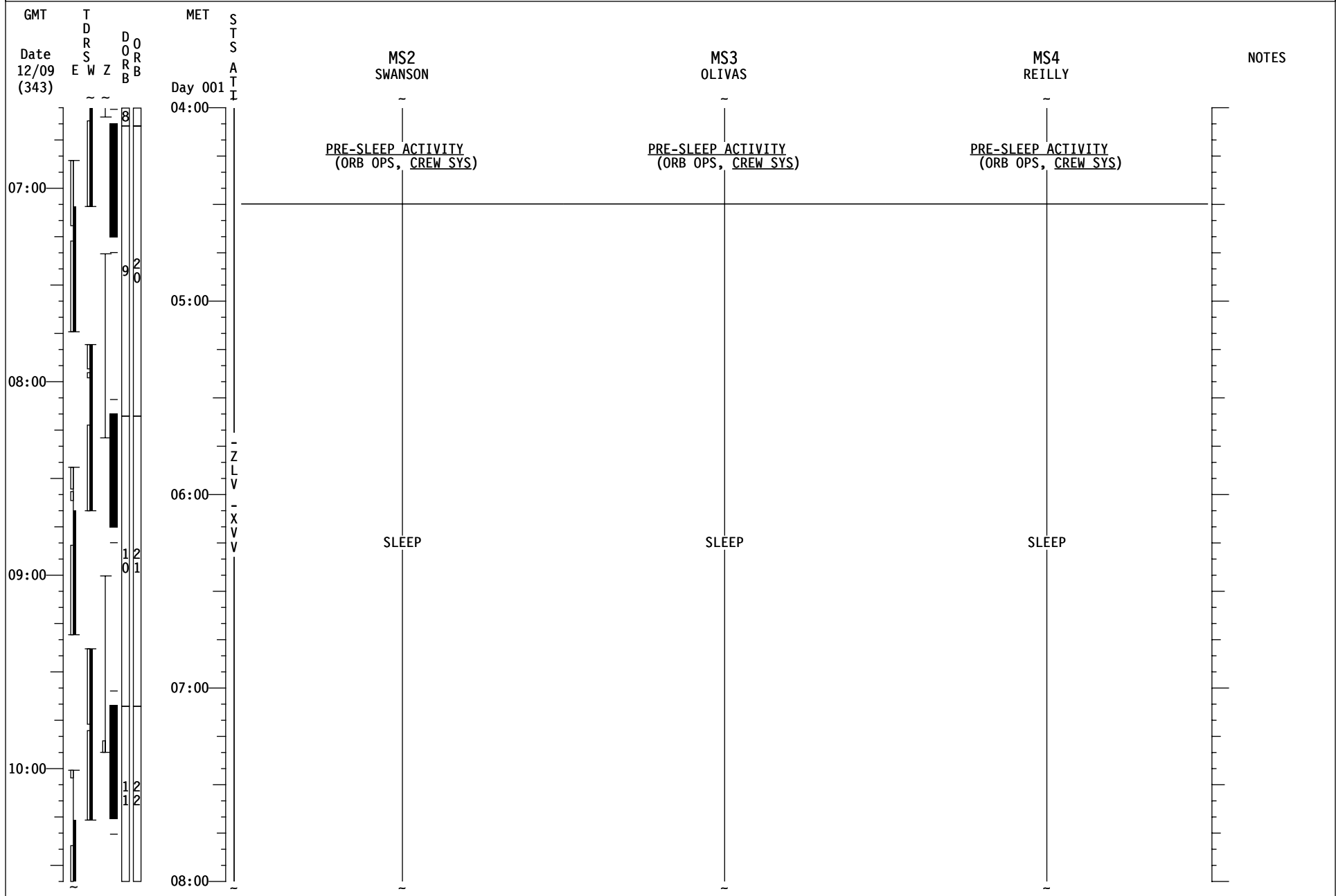
STS-117 (FD02)



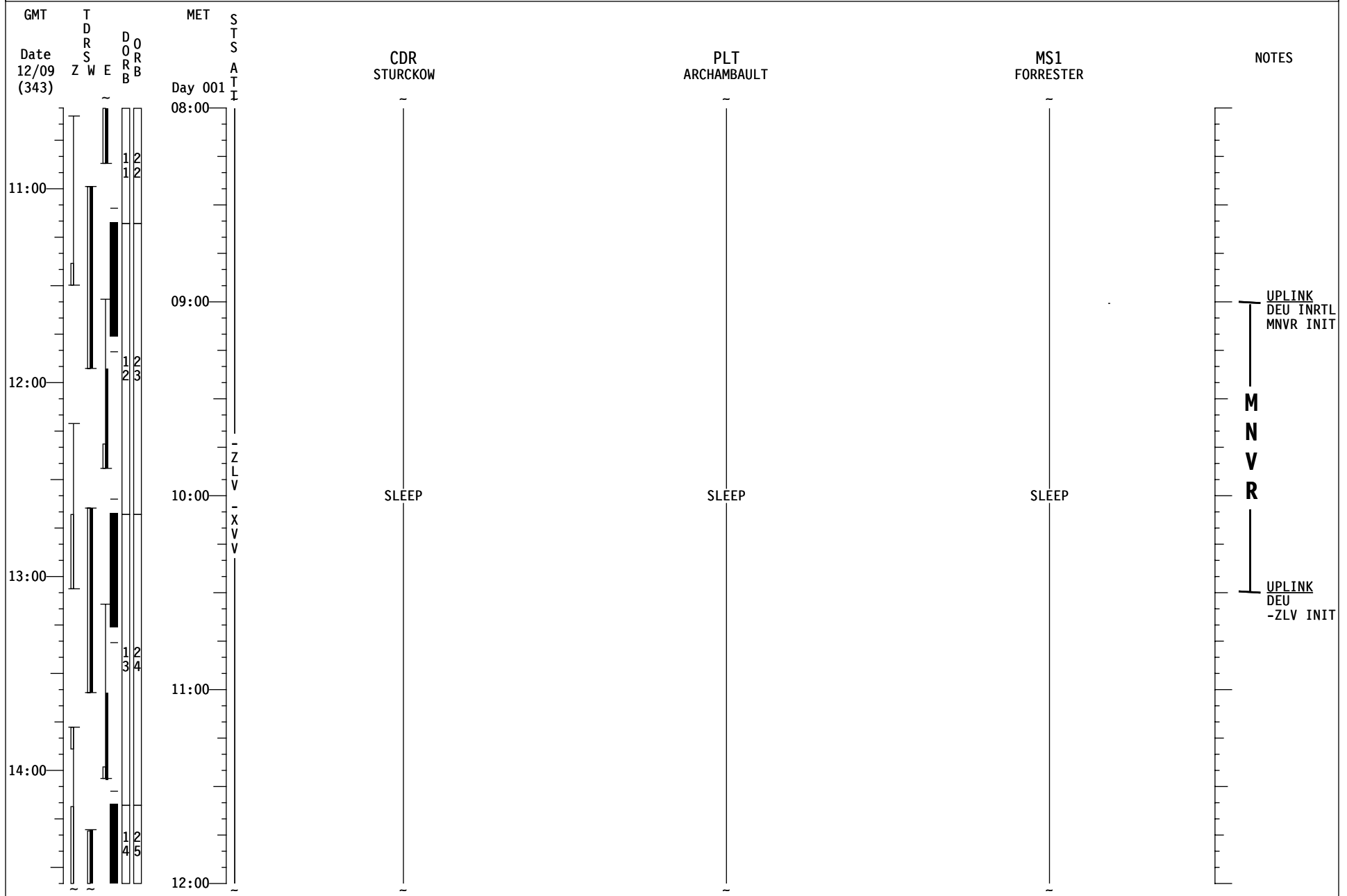
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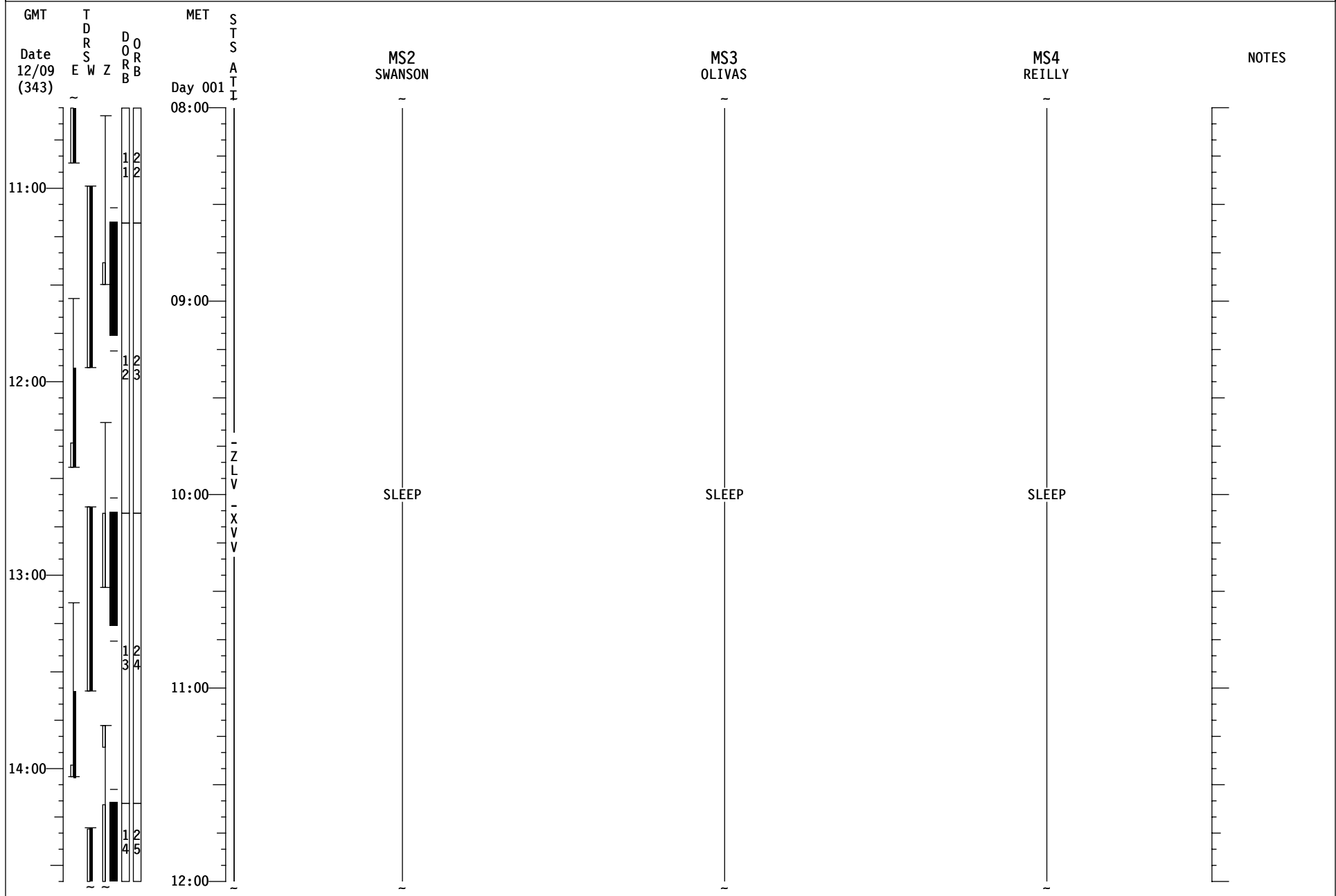
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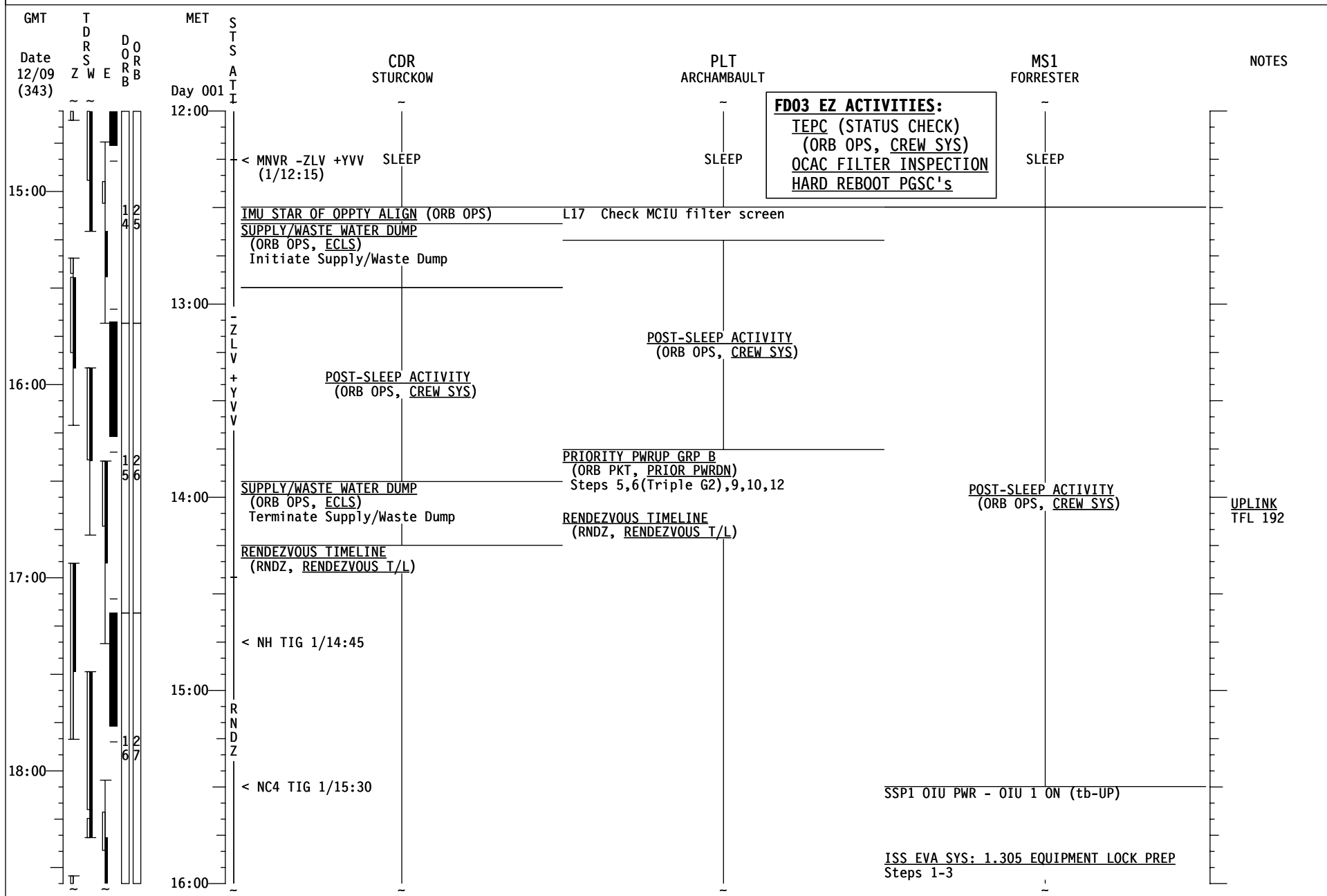
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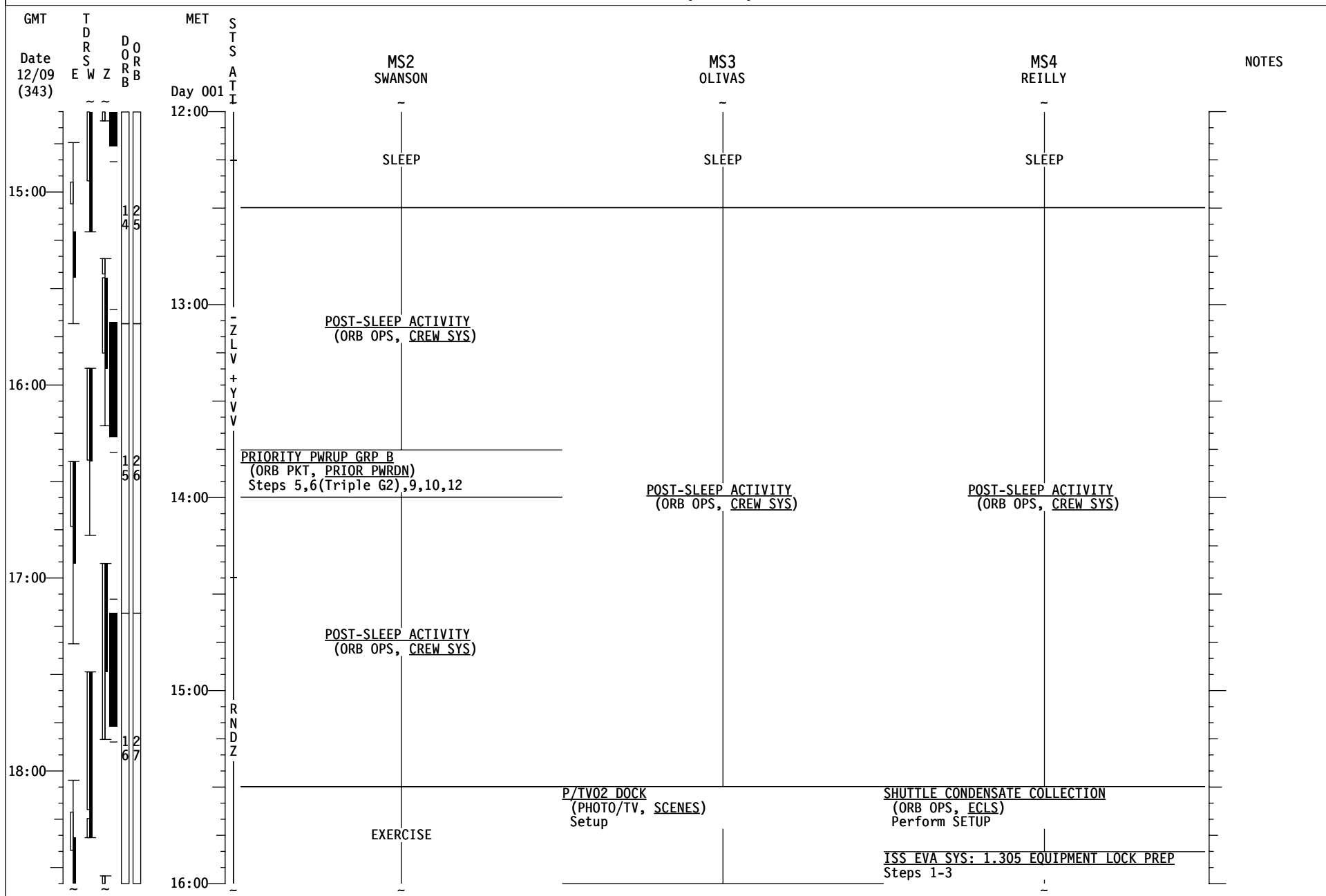
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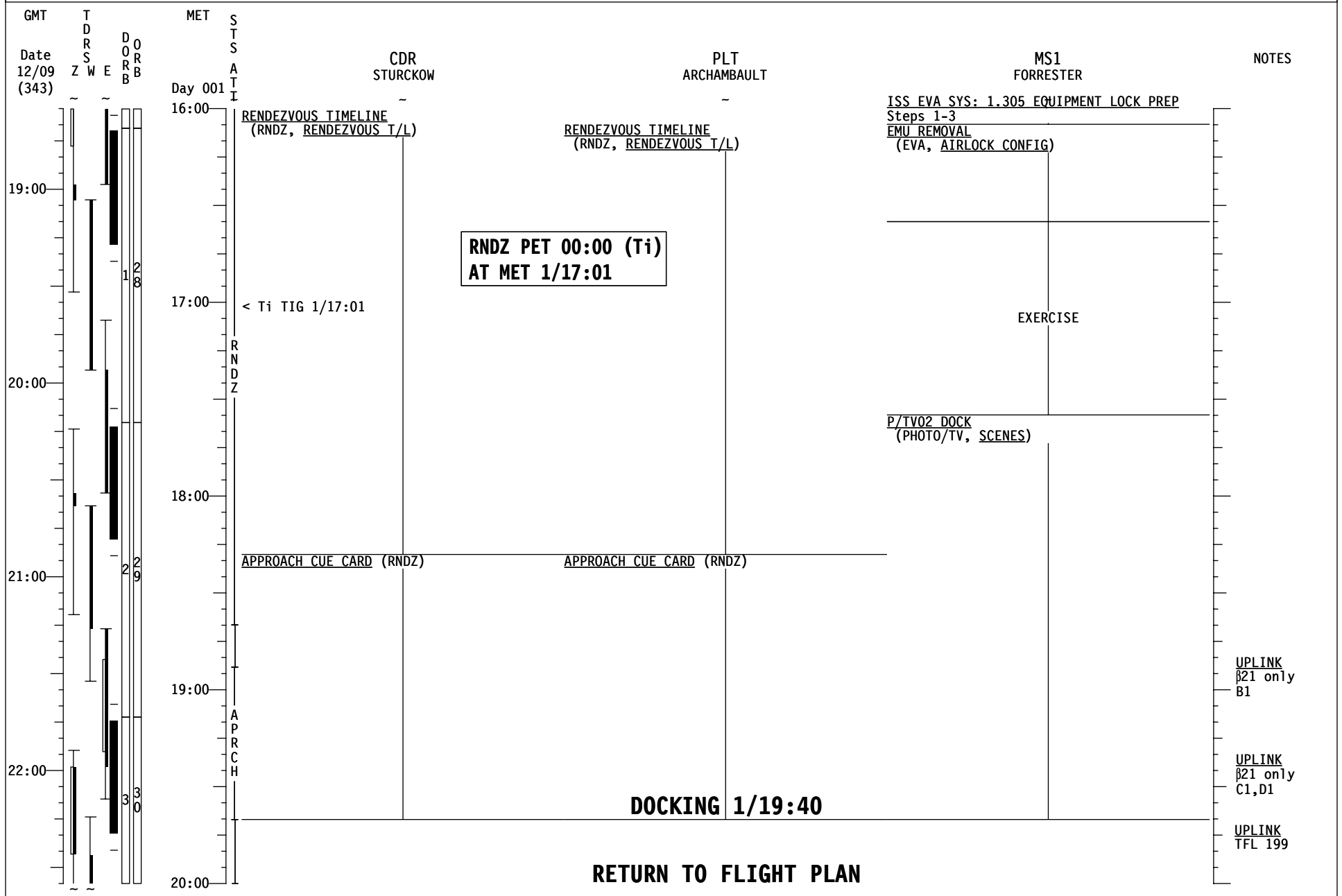
STS-117 (FD03)



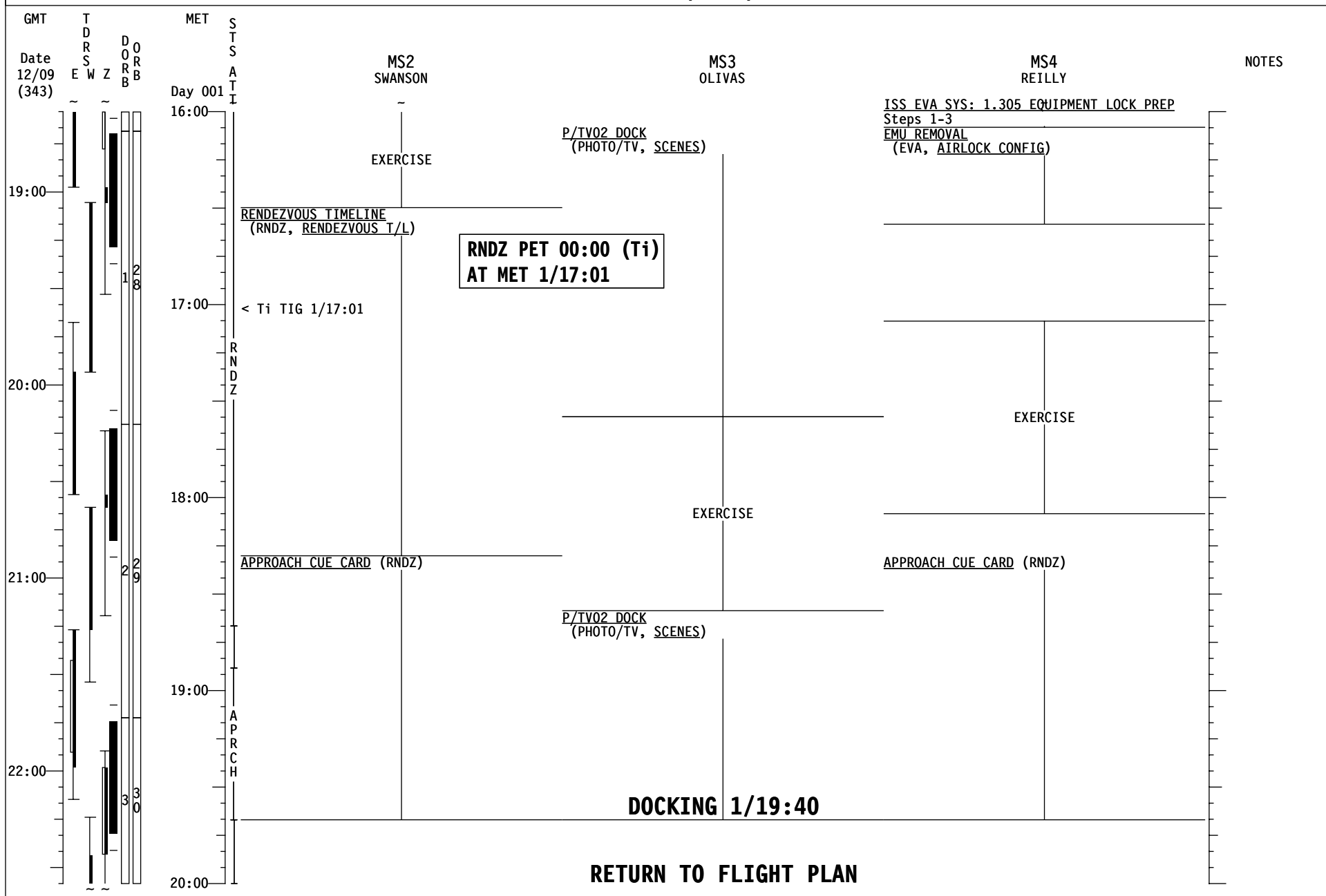
STS-117 (FD03)



STS-117 (FD03)



STS-117 (FD03)



STS-117 (FD03)

GMT	TDRS ZSW E	DORB	MET	S T S A T	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
Date 12/09 (343)			Day 001					
20:00					<u>POST DOCKING HATCH LEAK CHECK</u> (RNDZ, APDS)	√DAP A/LVLH/VERN MNVR (TRK) BIAS -XLV -ZVV [A] TG=2 BV=5 P=154 Y=45 OM=174 Init TRK, DAP: FREE >2 sec Then: DAP: a12/AUTO/VERN	A8L PORT RMS HTR (two)-AUTO JOINT OPS: 6.103 HARDLINE AUDIO CONFIG (ISS) Steps 1,2,6,7	
23:00					<u>A/L PREP FOR INGRESS - BYPASS CONFIG</u> (RNDZ, APDS)	PRIORITY PWRDN GRP B (ORB PKT, PRIOR PWRDN) Steps 6(Single G2) & 12 06 S TRK PWR -Z - OFF	PRIORITY PWRDN GRP B (ORB PKT, PRIOR PWRDN) Steps 6(Single G2) & 12 06 S TRK PWR -Z - OFF	
						<u>JOINT OPS: 3.111 H/O ATT CONTROL</u> ORB TO CMG IA		
21:00					<u>JOINT OPS: 2.106 HATCH OPEN AND DUCT INSTALL</u> (Bypass config)		RMS PWRUP (PDRS, RMS PWRUP)	
00:00						S3/S4 GRAPPLE (PDRS, NOM S3/S4 OPS)	S3/S4 GRAPPLE (PDRS, NOM S3/S4 OPS)	
					WELCOME	WELCOME	WELCOME	
					SAFETY BRIEFING	SAFETY BRIEFING	SAFETY BRIEFING	
22:00					<u>L 3.120 PREBREATHE USING SHUTTLE</u> V O2 SETUP	S3/S4 UNBERTH (PDRS, NOM S3/S4 OPS)	S3/S4 UNBERTH (PDRS, NOM S3/S4 OPS)	UPLINK β21 C1,D2
01:00								
23:00								
02:00					EXERCISE	S3/S4 HANDOFF (PDRS, NOM S3/S4 OPS)	S3/S4 HANDOFF (PDRS, NOM S3/S4 OPS)	
00:00								

[A] Note time of DAP: AUTO, MET 1/____:____
At 10 & 20 min after AUTO,
DAP: FREE >2 sec, then DAP: AUTO

STS-117 (FD03)

GMT	TDRS E W Z	DORB	MET	S T S A T T	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/09 (343)			Day 001					
20:00						PLAYBACK (DIGITAL) (PHOTO/TV, CUE CARD) KU TDRS-E (20:20-20:35)	POST DOCKING HATCH LEAK CHECK (RNDZ, APDS)	
23:00		30			JOINT OPS: 6.107 PCS SETUP-SHUTTLE		A/L PREP FOR INGRESS - BYPASS CONFIG (RNDZ, APDS)	
21:00					POST RNDZ PGSC CONFIG Configure PGSCs per EVA/RMS Usage Chart	P/TV05 ISS INTERNAL OPS (HC) (PHOTO/TV, SCENES) Setup	JOINT OPS: 2.106 HATCH OPEN AND DUCT INSTALL (Bypass config)	
00:00		41			WLES RCNFG PST DOCK (ORB OPS, WLES)	P/TV04 INGRESS/EGRESS (PHOTO/TV, SCENES) Setup		
					WELCOME	WELCOME	WELCOME	
					SAFETY BRIEFING	SAFETY BRIEFING	SAFETY BRIEFING	
22:00					POST-DOCKING EVA TRANSFER/RECNG (EVA, AIRLOCK CNFG)	POST-DOCKING EVA TRANSFER/RECNG (EVA, AIRLOCK CNFG)	POST-DOCKING EVA TRANSFER/RECNG (EVA, AIRLOCK CNFG)	
01:00								
23:00		52			ISS EVA SYS: 1.307 REBA INSTALLATION	ISS EVA SYS: 1.307 REBA INSTALLATION	ISS EVA SYS: 1.307 REBA INSTALLATION	
					ISS EVA SYS: 1.403 REBA POWERED HARDWARE CHECK	ISS EVA SYS: 1.403 REBA POWERED HARDWARE CHECK	ISS EVA SYS: 1.403 REBA POWERED HARDWARE CHECK	
02:00					ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP	ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP	ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP	
00:00		63						

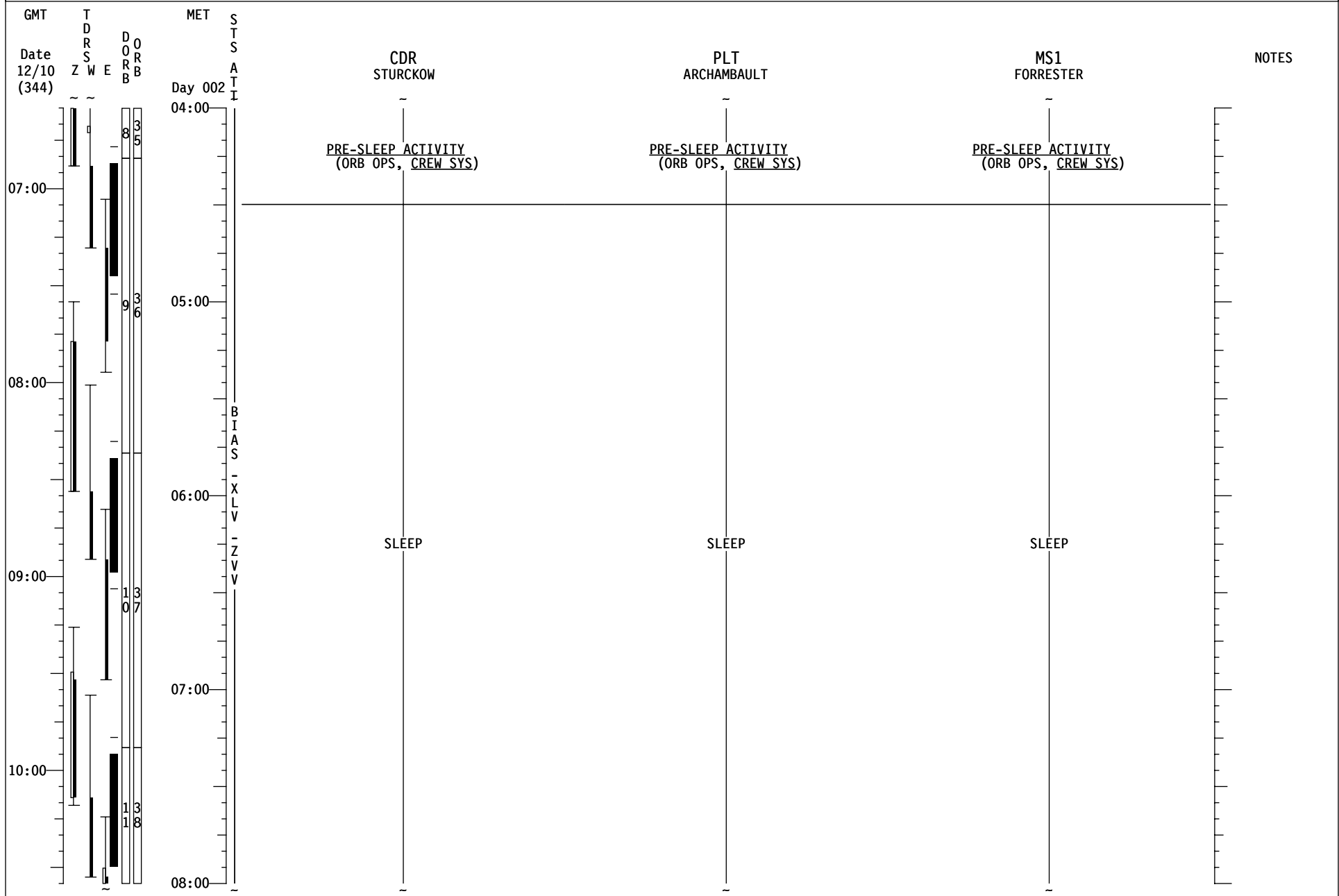
STS-117 (FD03)

GMT Date 12/10 (344)	TDRS ZSW E DORB	MET Day 002	STS A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
			00:00	L1 FLASH EVAP CNTLR PRI A - OFF	<u>ROBOTICS: 1.101 S3/S4 HANDOFF</u>		
			03:00	L1 TOPPING EVAP HTR DUCT sel - OFF NOZ L,R - OFF	<u>S3/S4 UNGRAPPLE</u> (PDRS, <u>NOM S3/S4 OPS</u>)	<u>S3/S4 UNGRAPPLE</u> (PDRS, <u>NOM S3/S4 OPS</u>)	
			01:00		<u>INSTALL VIEWING POSITION</u> (PDRS, <u>NOM S3/S4 OPS</u>)	<u>INSTALL VIEWING POSITION</u> (PDRS, <u>NOM S3/S4 OPS</u>)	
			04:00	<u>EVA 1 PROCEDURE REVIEW</u> REF: <u>EVA 1 BRIEFING CARD</u> (EVA, <u>FS TIMELINES</u>)	<u>EVA 1 PROCEDURE REVIEW</u> REF: <u>EVA 1 BRIEFING CARD</u> (EVA, <u>FS TIMELINES</u>)	<u>EVA 1 PROCEDURE REVIEW</u> REF: <u>EVA 1 BRIEFING CARD</u> (EVA, <u>FS TIMELINES</u>)	
			02:00				
			05:00	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, <u>CREW SYS</u>)			
			03:00	06 <u>UHF MODE - OFF</u> PRIVATE MEDICAL CONFERENCE	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, <u>CREW SYS</u>)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, <u>CREW SYS</u>)	
			06:00	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, <u>CREW SYS</u>)			
			04:00				

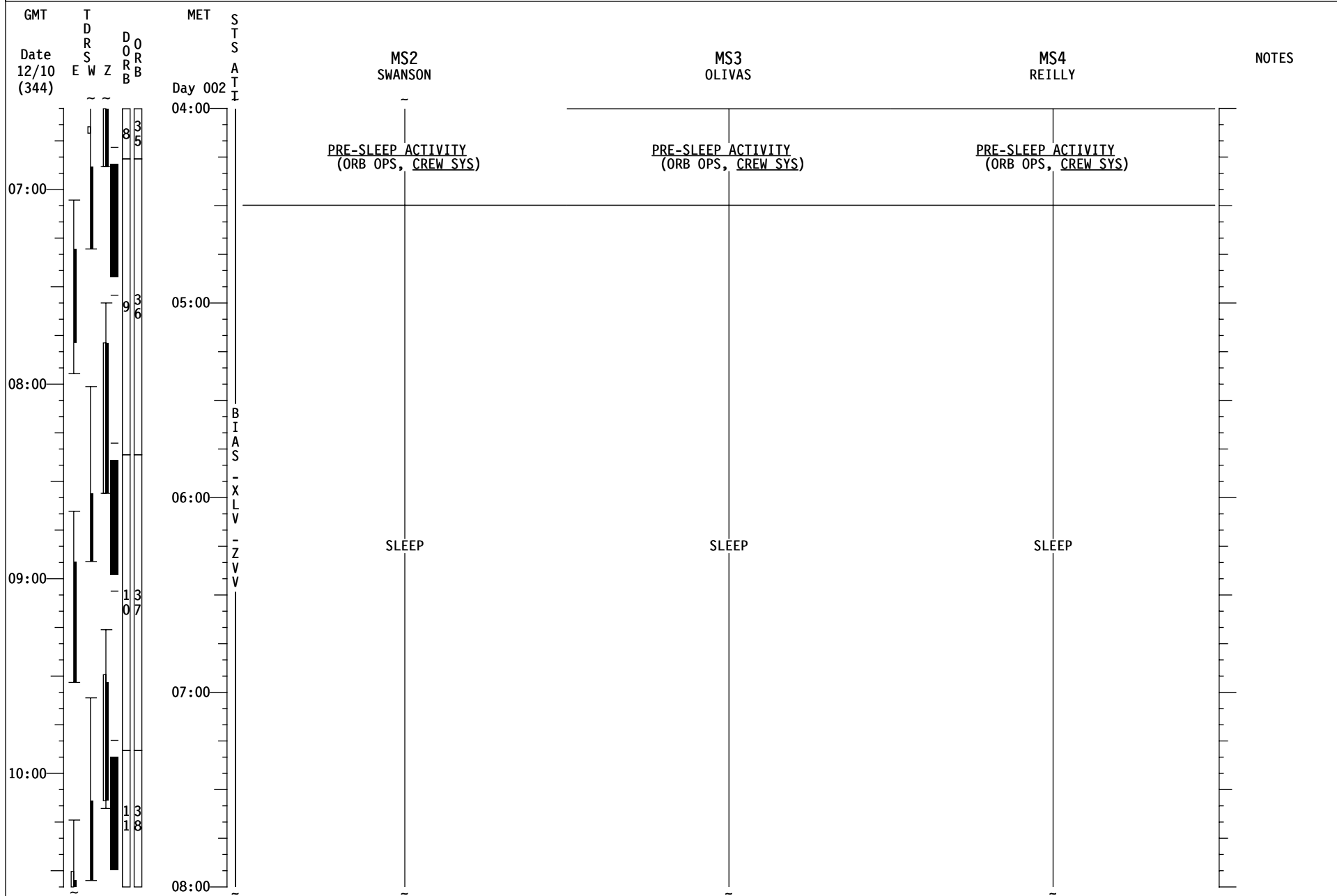
STS-117 (FD03)

GMT Date 12/10 (344)	T D R S E W Z	D O R B	MET Day 002	S T S A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
			00:00					
			03:00		PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
			01:00		M069M LEH 02 8-CL EVA 1 PROCEDURE REVIEW REF: EVA 1 BRIEFING CARD (EVA, FS TIMELINES)	EVA 1 PROCEDURE REVIEW REF: EVA 1 BRIEFING CARD (EVA, FS TIMELINES)	EVA 1 PROCEDURE REVIEW REF: EVA 1 BRIEFING CARD (EVA, FS TIMELINES)	
			04:00					
			02:00					
			05:00			PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
			03:00		PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	ISS EVA SYS: 2.305 10.2 PSIA CAMPOUT MASK PREBREATHE INIT Steps 1-17 REF: PRE EVA1 TOOL CONFIG (EVA, TIMELINES)	ISS EVA SYS: 2.305 10.2 PSIA CAMPOUT MASK PREBREATHE INIT Steps 1-17 REF: PRE EVA1 TOOL CONFIG (EVA, TIMELINES)	
			06:00					
			04:00			ISS EVA SYS: 2.310 A/L CONFIG FOR OVERNIGHT 10.2 PSIA CAMPOUT	ISS EVA SYS: 2.310 A/L CONFIG FOR OVERNIGHT 10.2 PSIA CAMPOUT	

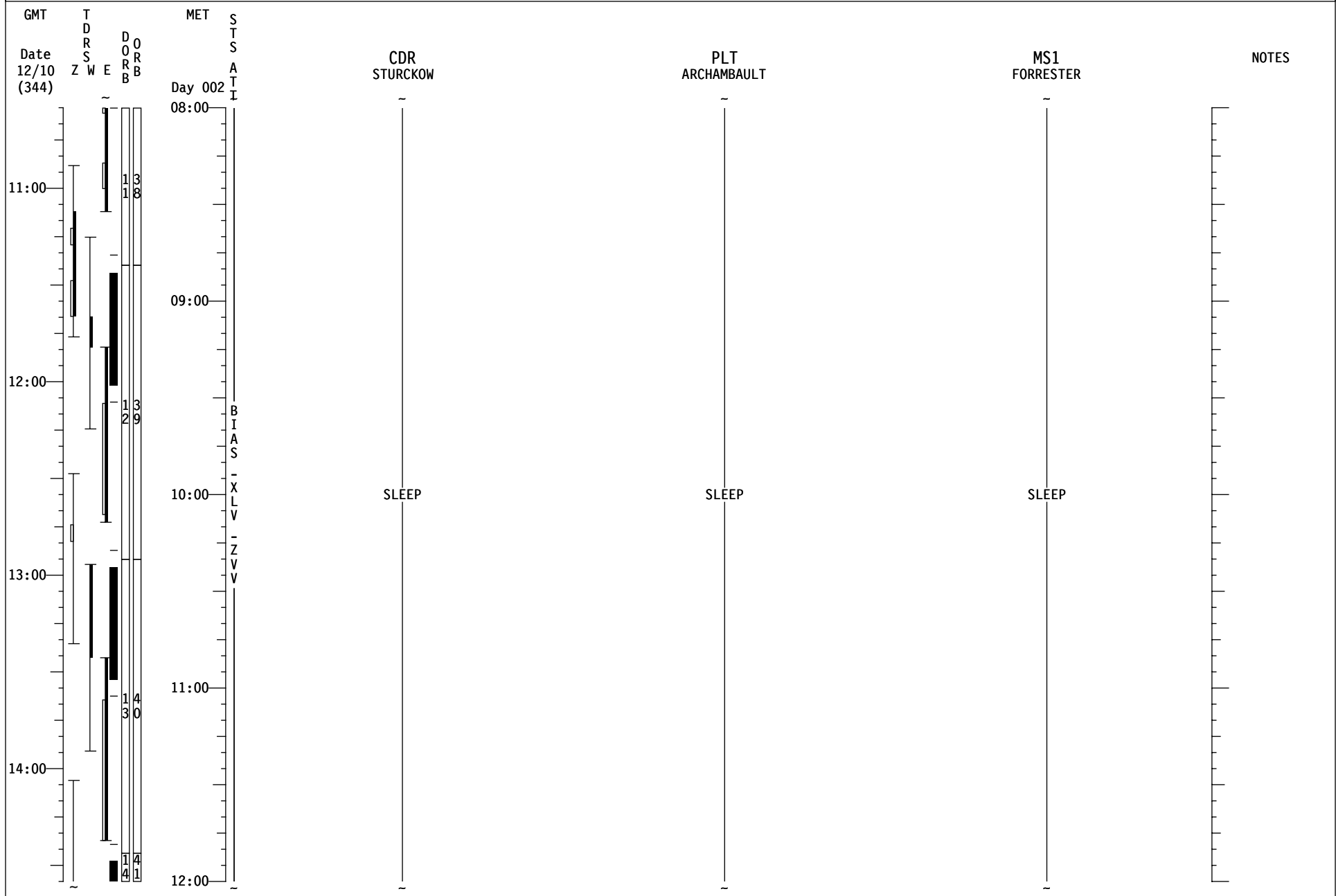
STS-117 (FD03)



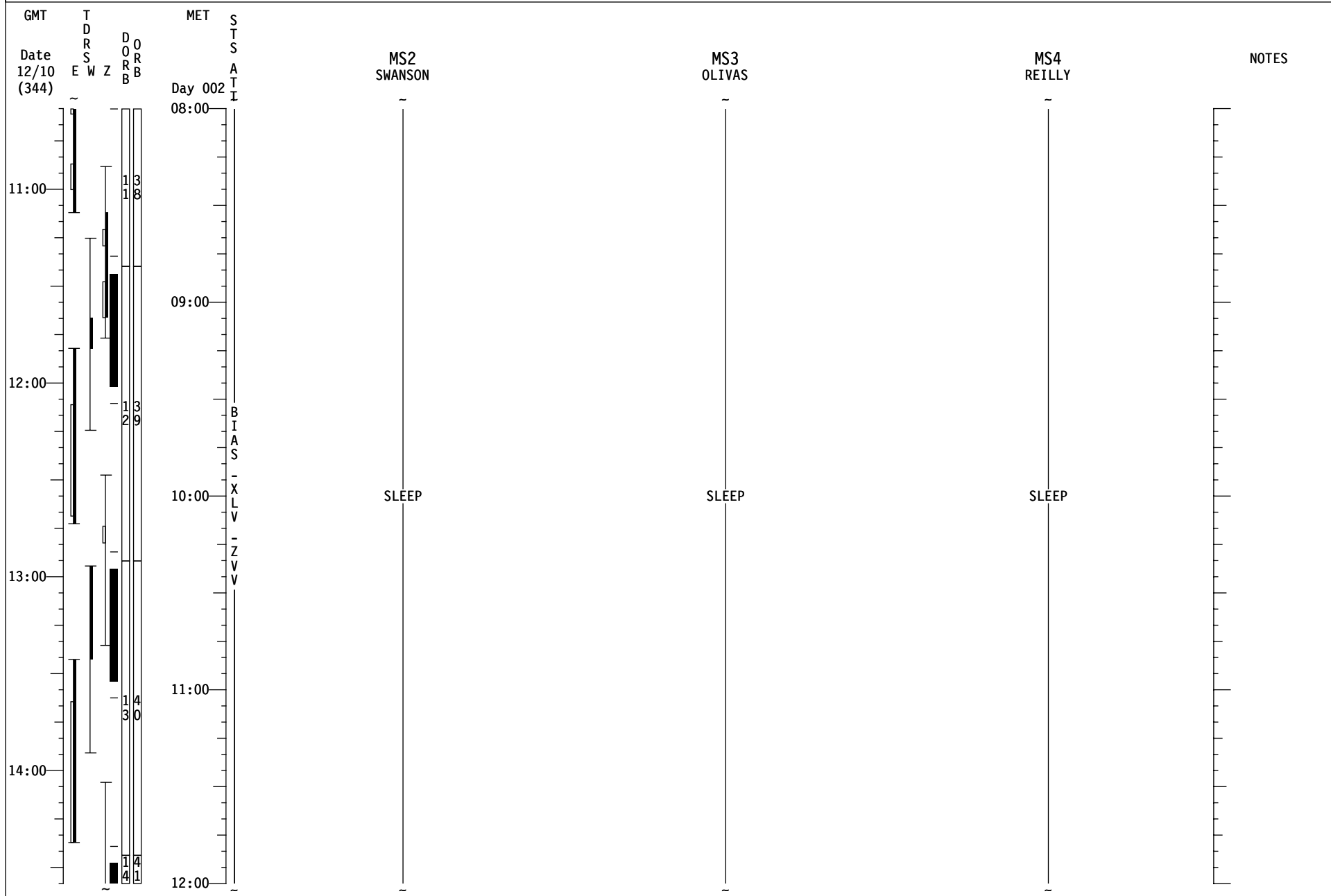
STS-117 (FD03)



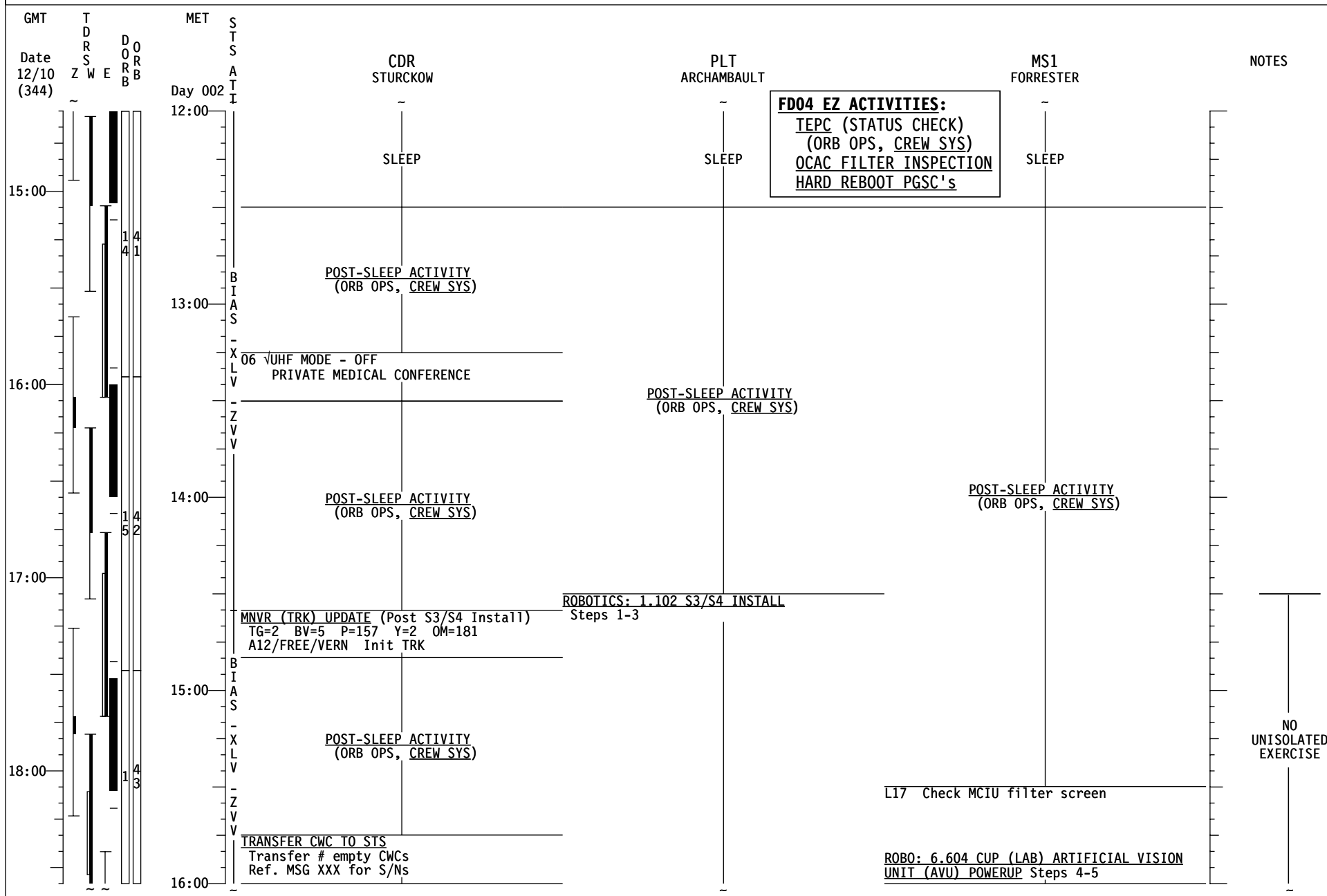
STS-117 (FD03)



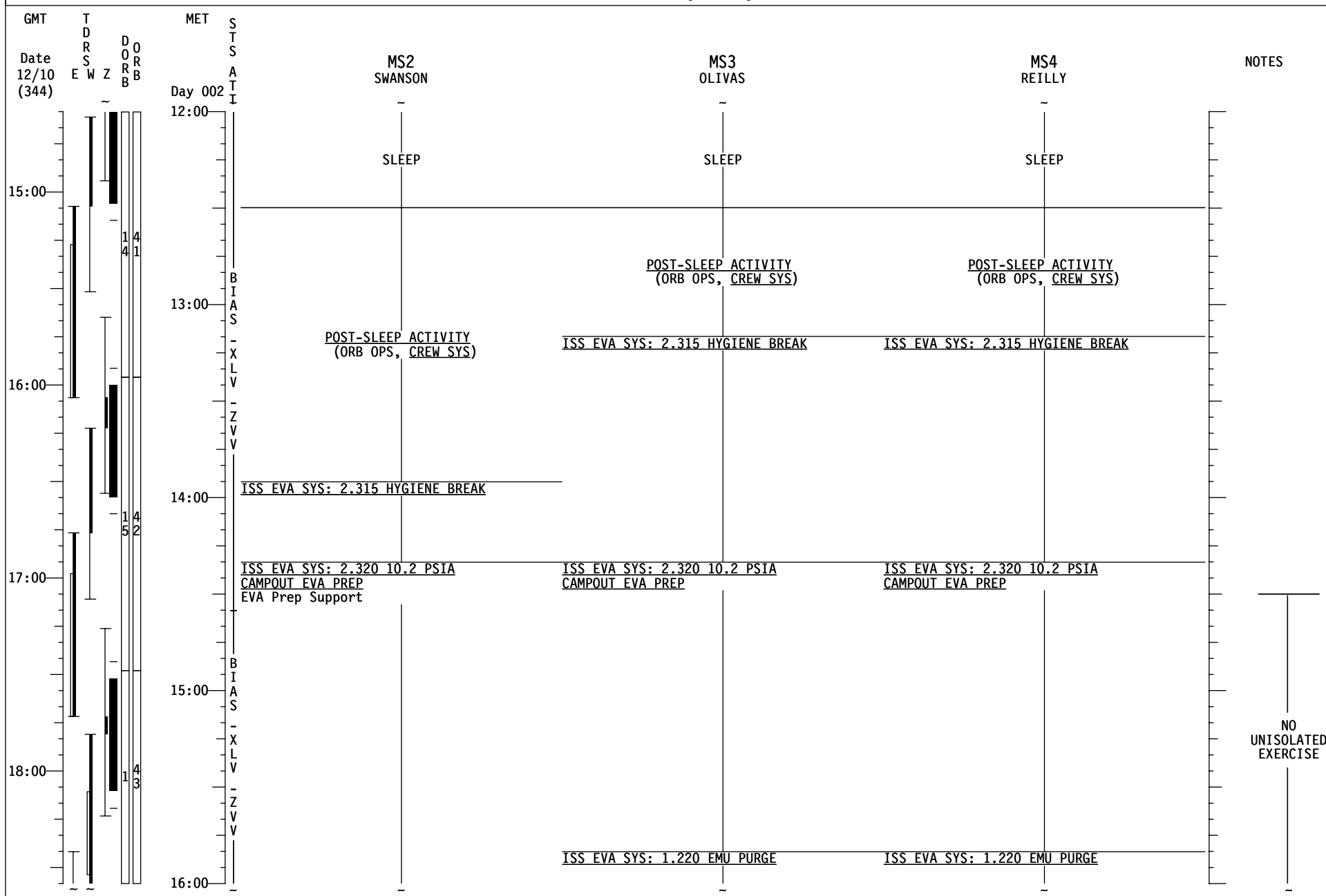
STS-117 (FD03)



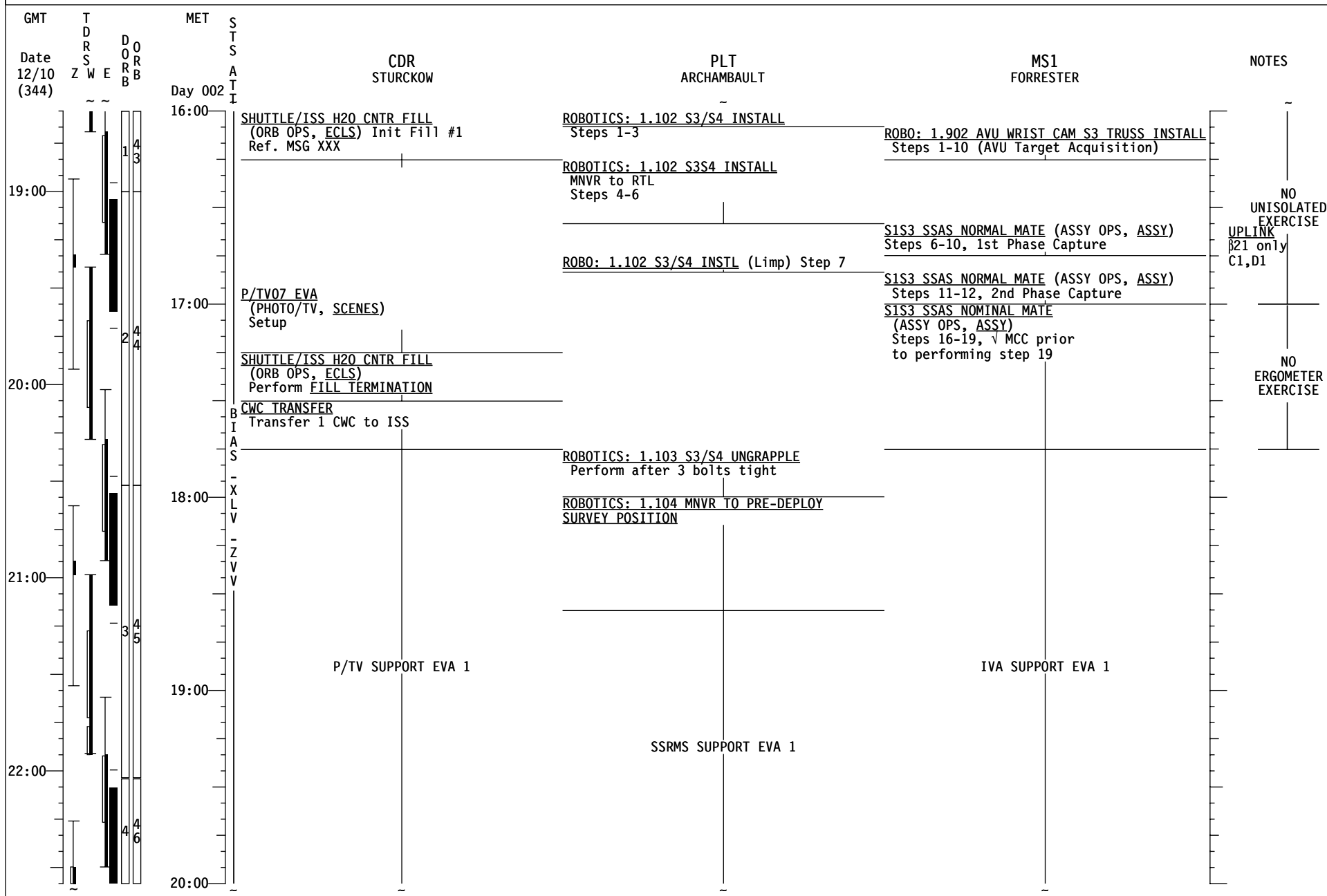
STS-117 (FD04)



STS-117 (FD04)



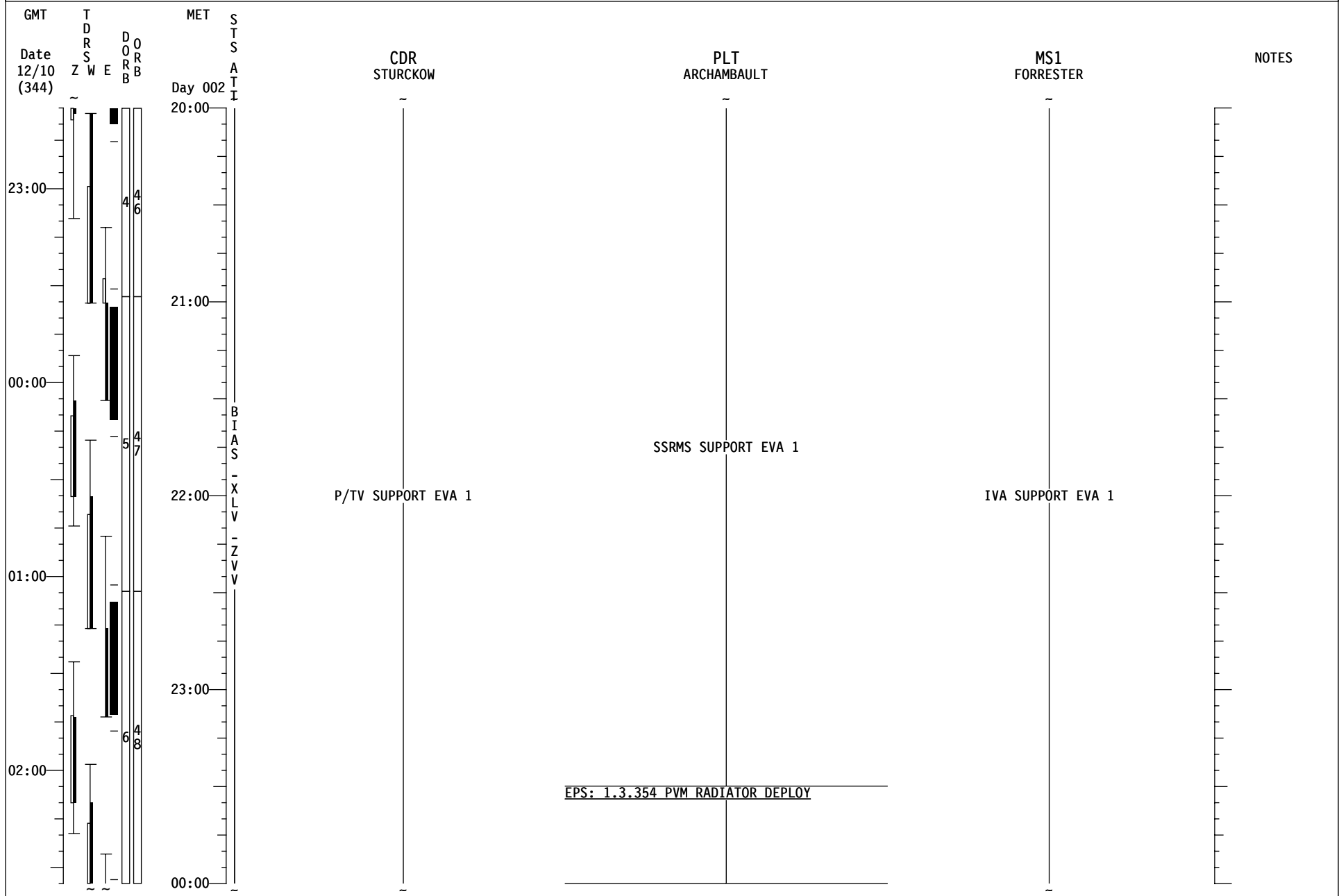
STS-117 (FD04)



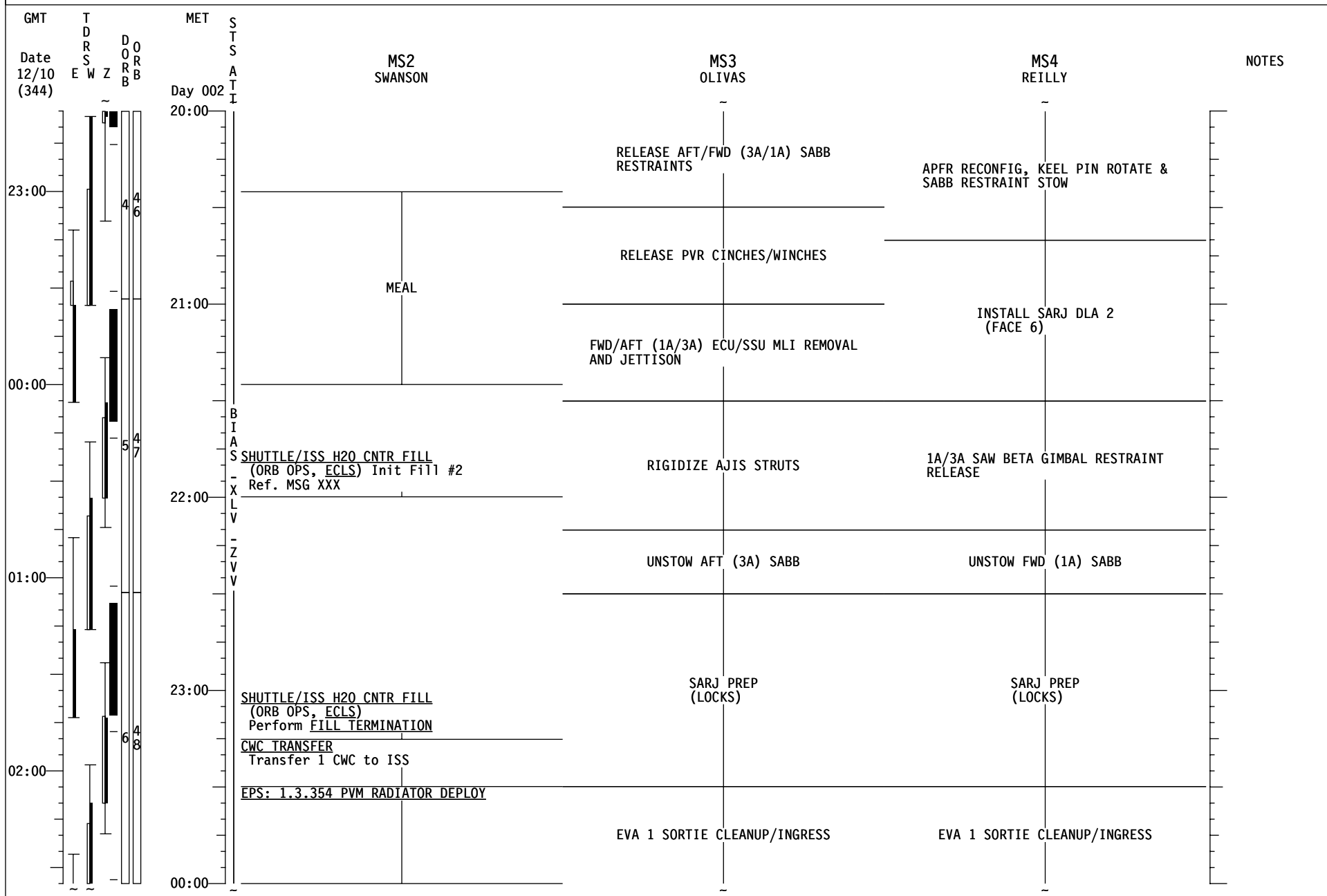
STS-117 (FD04)

GMT	TDRS E W Z	DORB D O R B	MET Day 002	STS A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
16:00					ISS EVA SYS: 2.320 10.2 PSIA CAMPOUT EVA PREP EVA Prep Support	ISS EVA SYS: 1.220 EMU PURGE ISS EVA SYS: 1.225 EMU PREBREATHE	ISS EVA SYS: 1.220 EMU PURGE ISS EVA SYS: 1.225 EMU PREBREATHE	
19:00								NO UNISOLATED EXERCISE
20:00								NO ERGOMETER EXERCISE
21:00					EXERCISE			
18:00						EVA 1 SORTIE EGRESS/SETUP	EVA 1 SORTIE EGRESS/SETUP	
							S1-S3 NADIR TRAY UTILITIES (FACE 6)	
19:00						RELEASE AFT/FWD (3A/1A) SABB RESTRAINTS	REMOVE S3 MDM SHROUD	
22:00							S1-S3 ZENITH TRAY UTILITIES (FACE 6)	
20:00							APFR RECONFIG, KEEL PIN ROTATE & SABB RESTRAINT STOW	

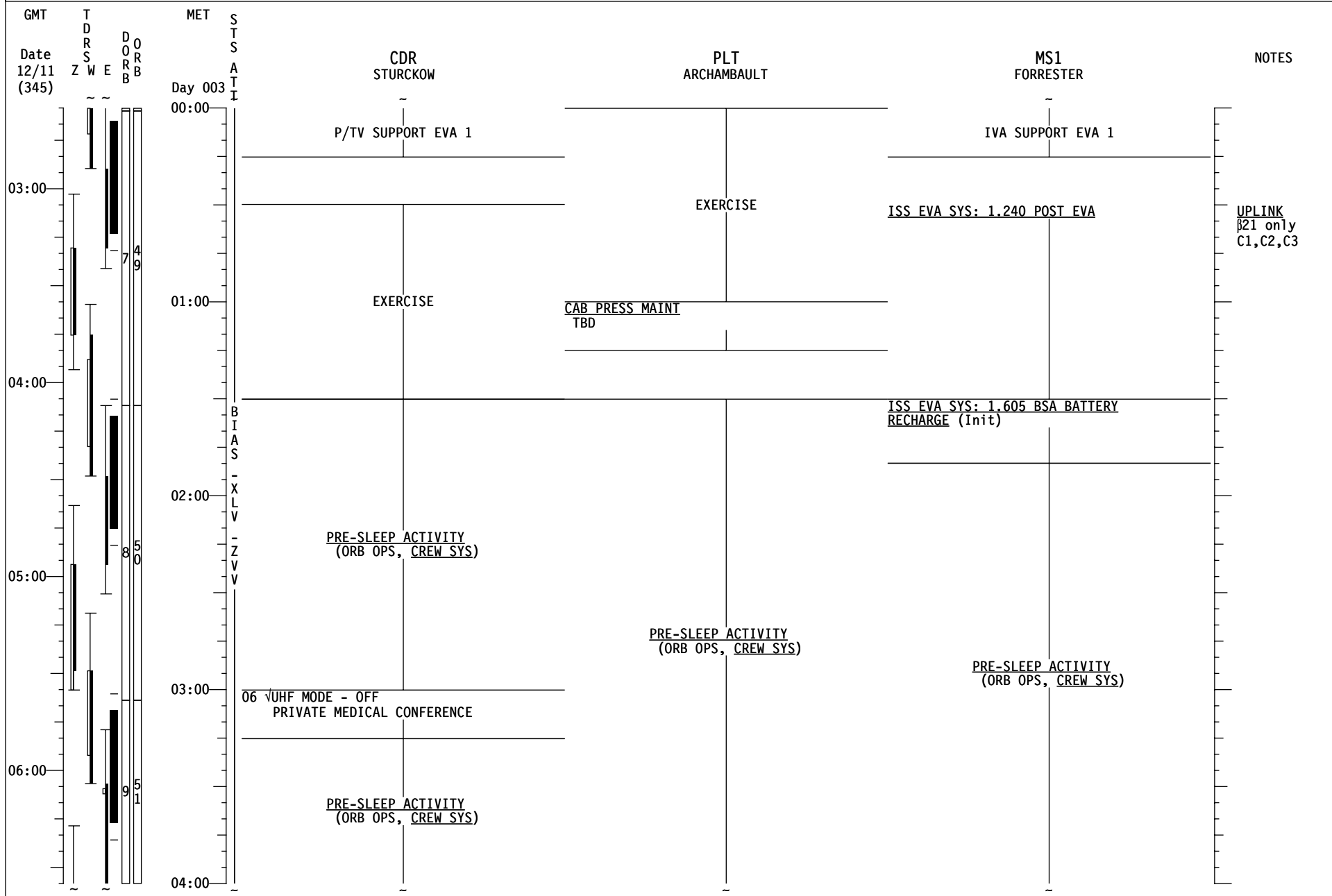
STS-117 (FD04)



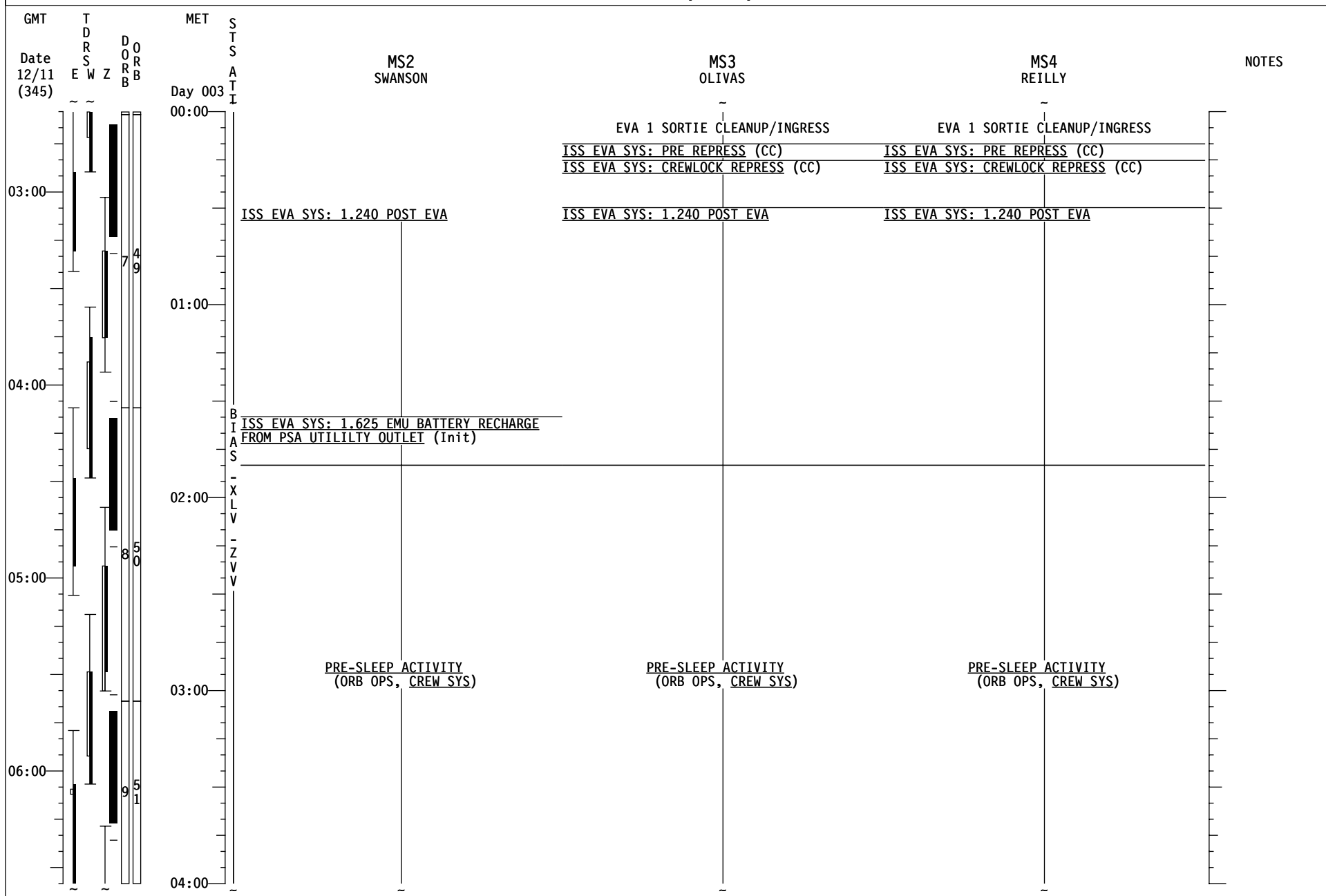
STS-117 (FD04)



STS-117 (FD04)



STS-117 (FD04)



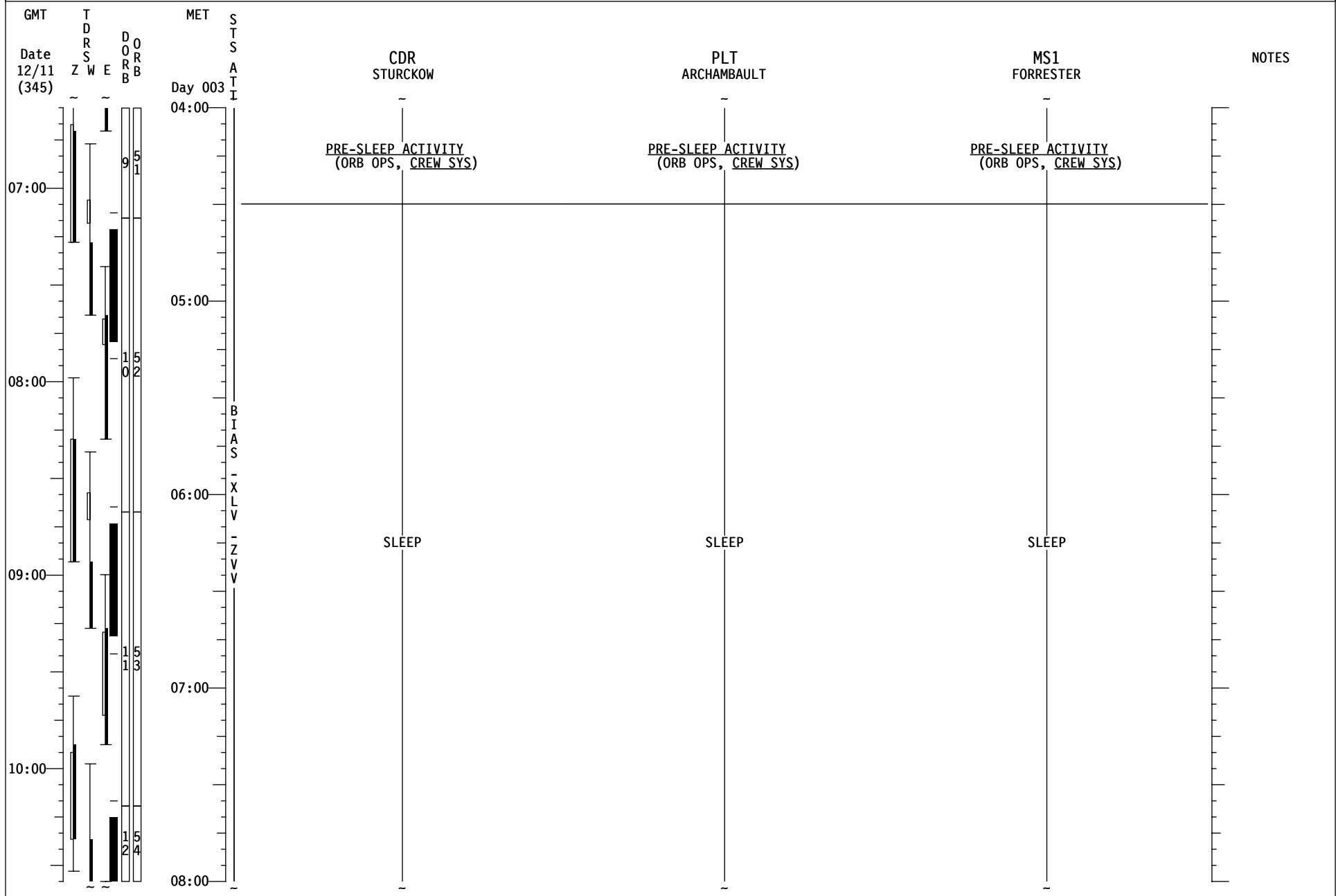
ISS EVA SYS: 1.625 EMU BATTERY RECHARGE FROM PSA UTILILTY OUTLET (Init)

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

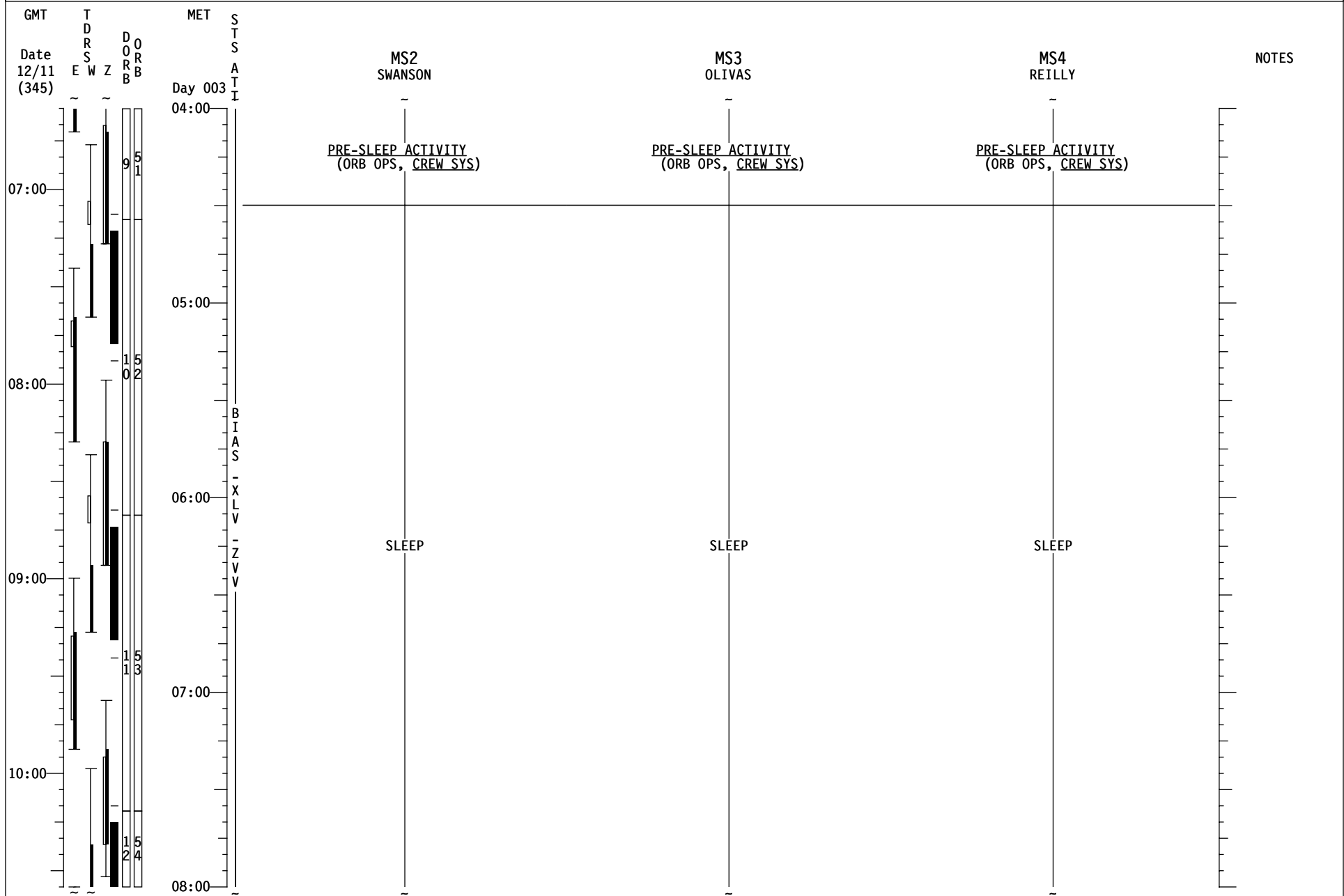
PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

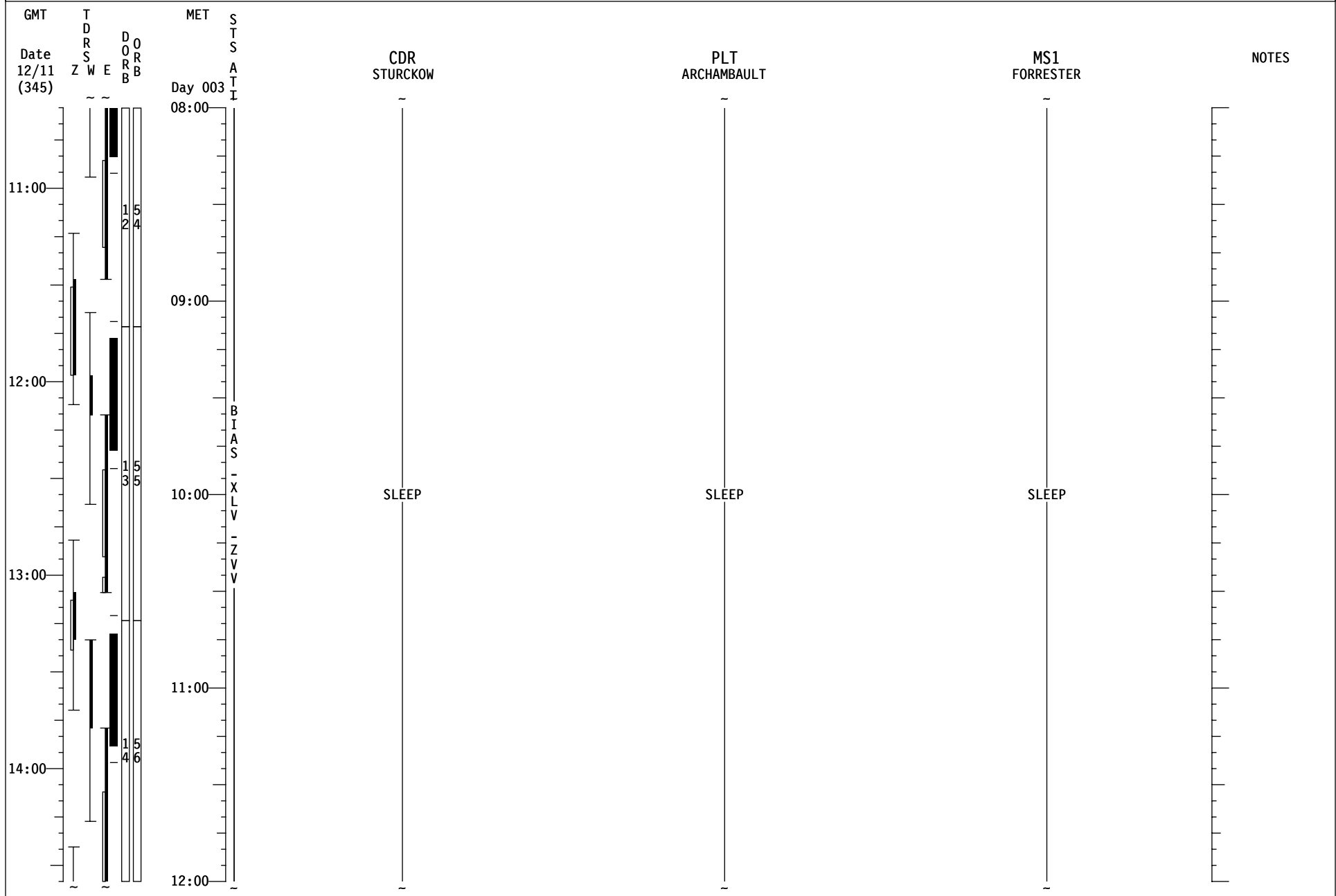
STS-117 (FD04)



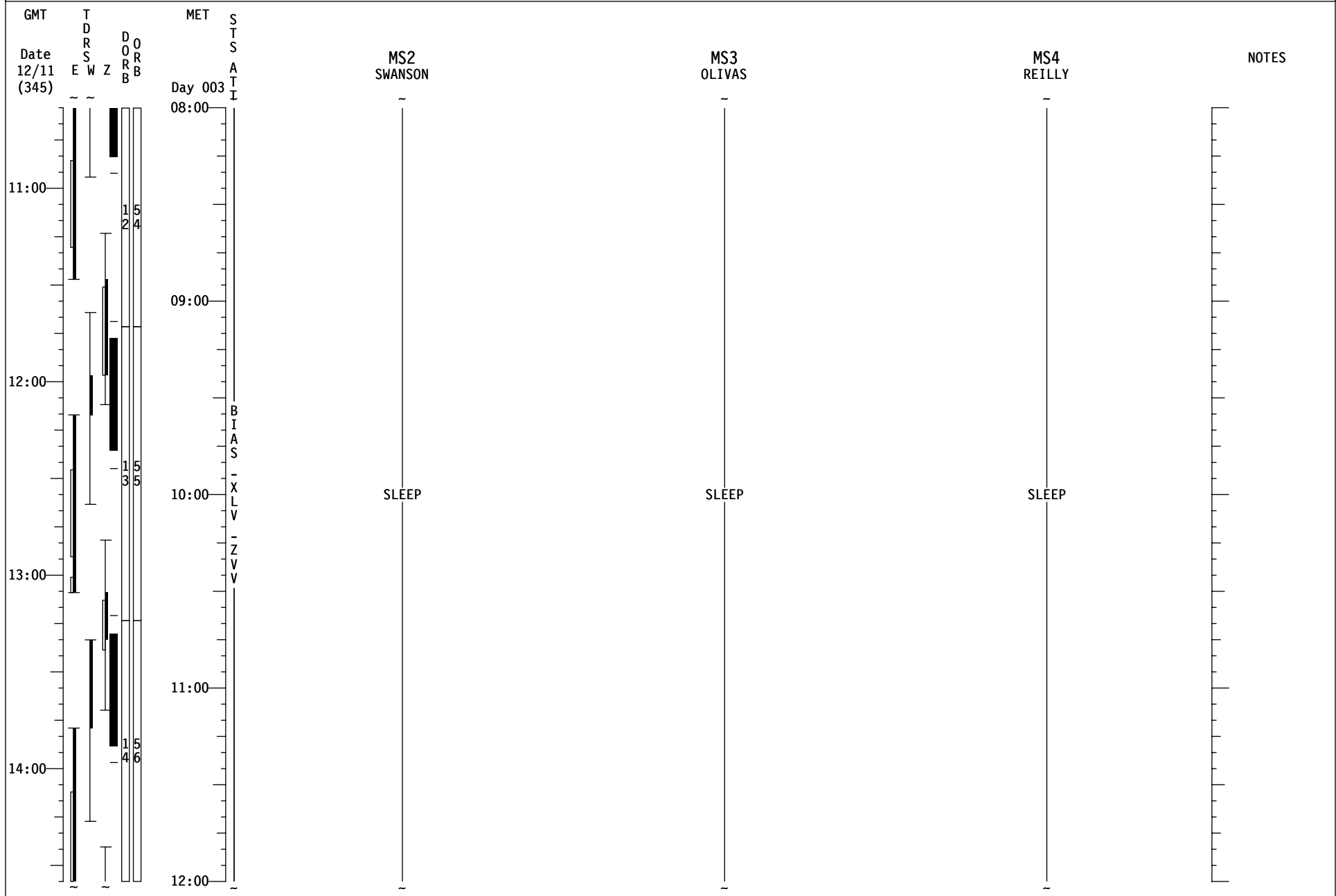
STS-117 (FD04)



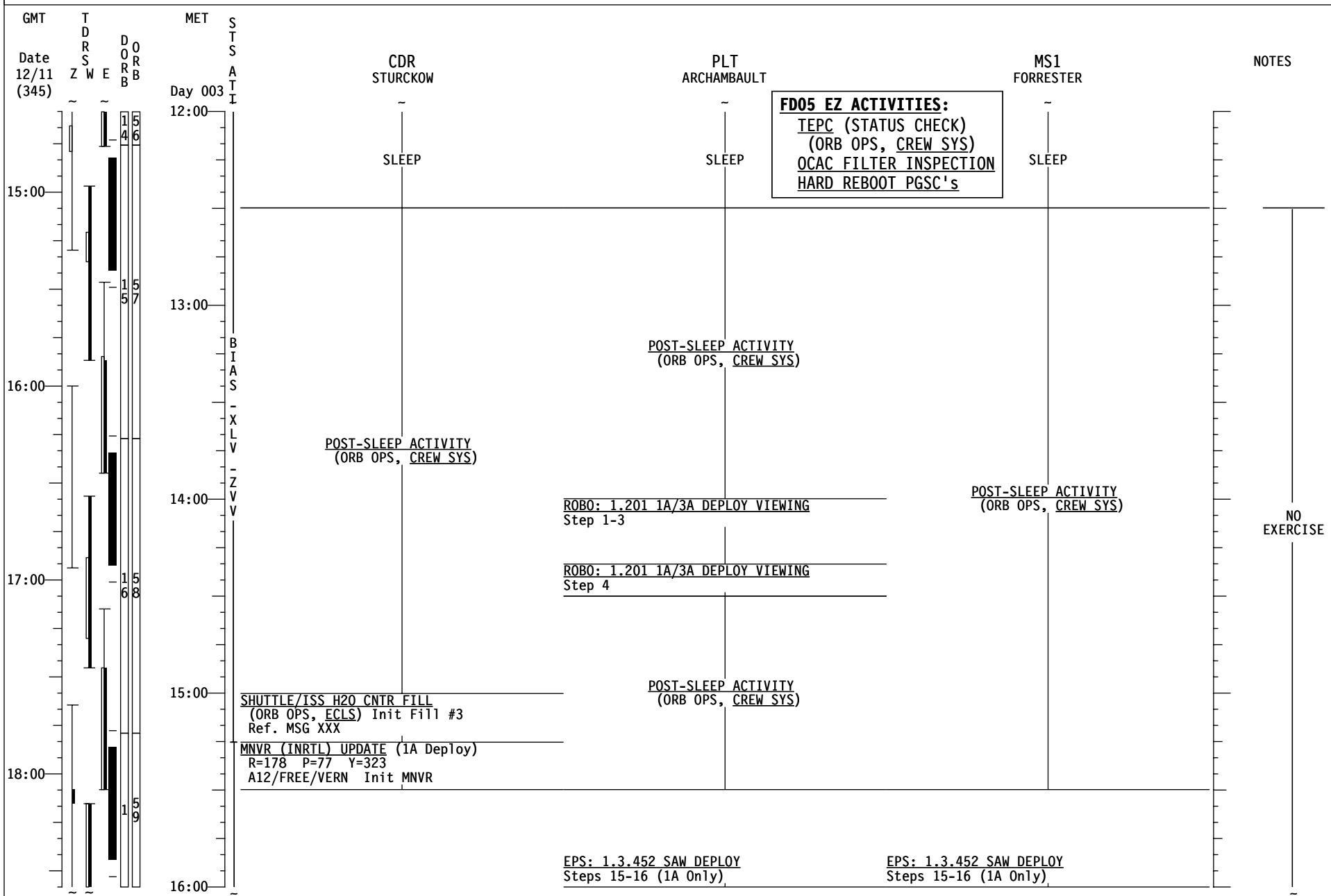
STS-117 (FD04)



STS-117 (FD04)

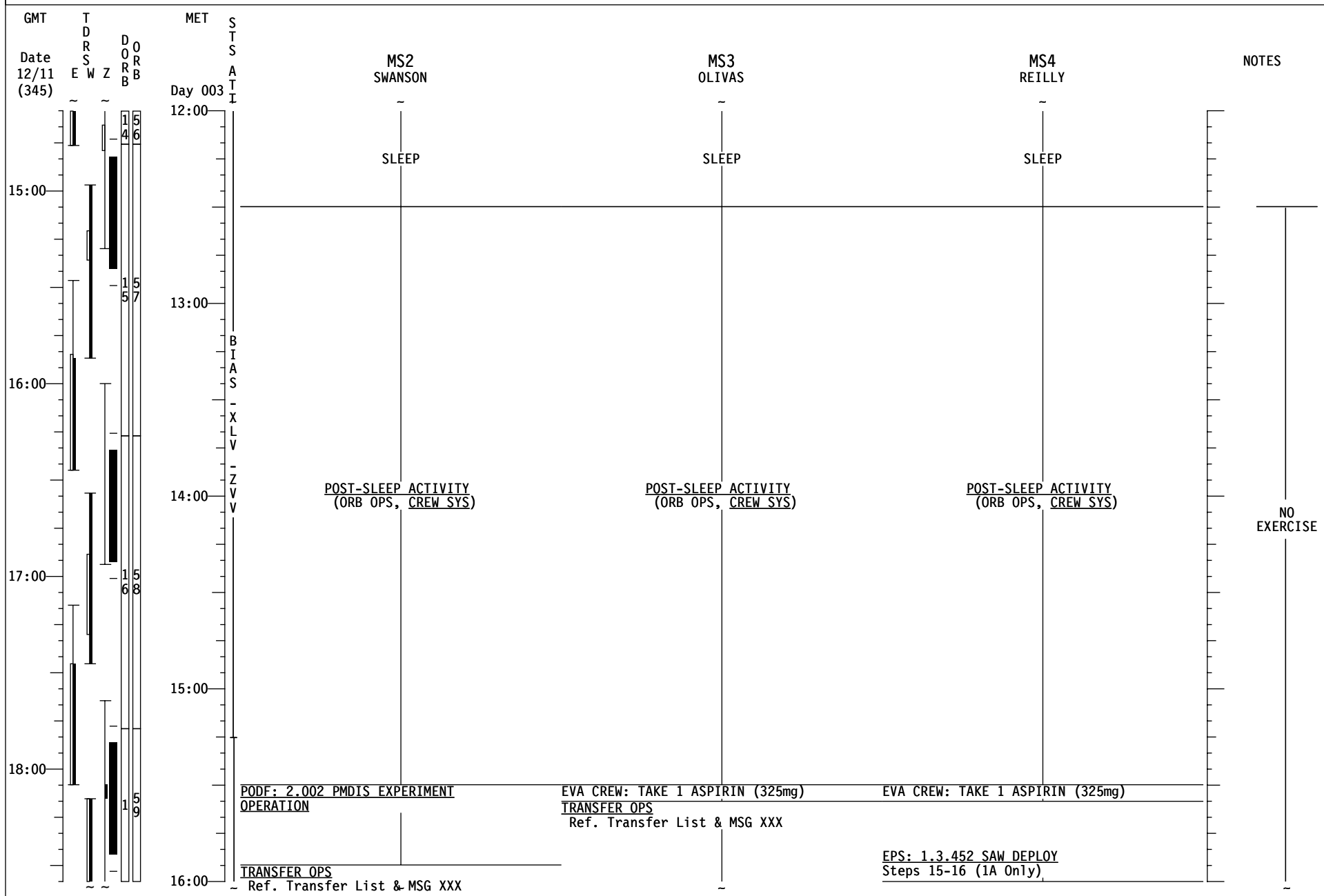


STS-117 (FD05)

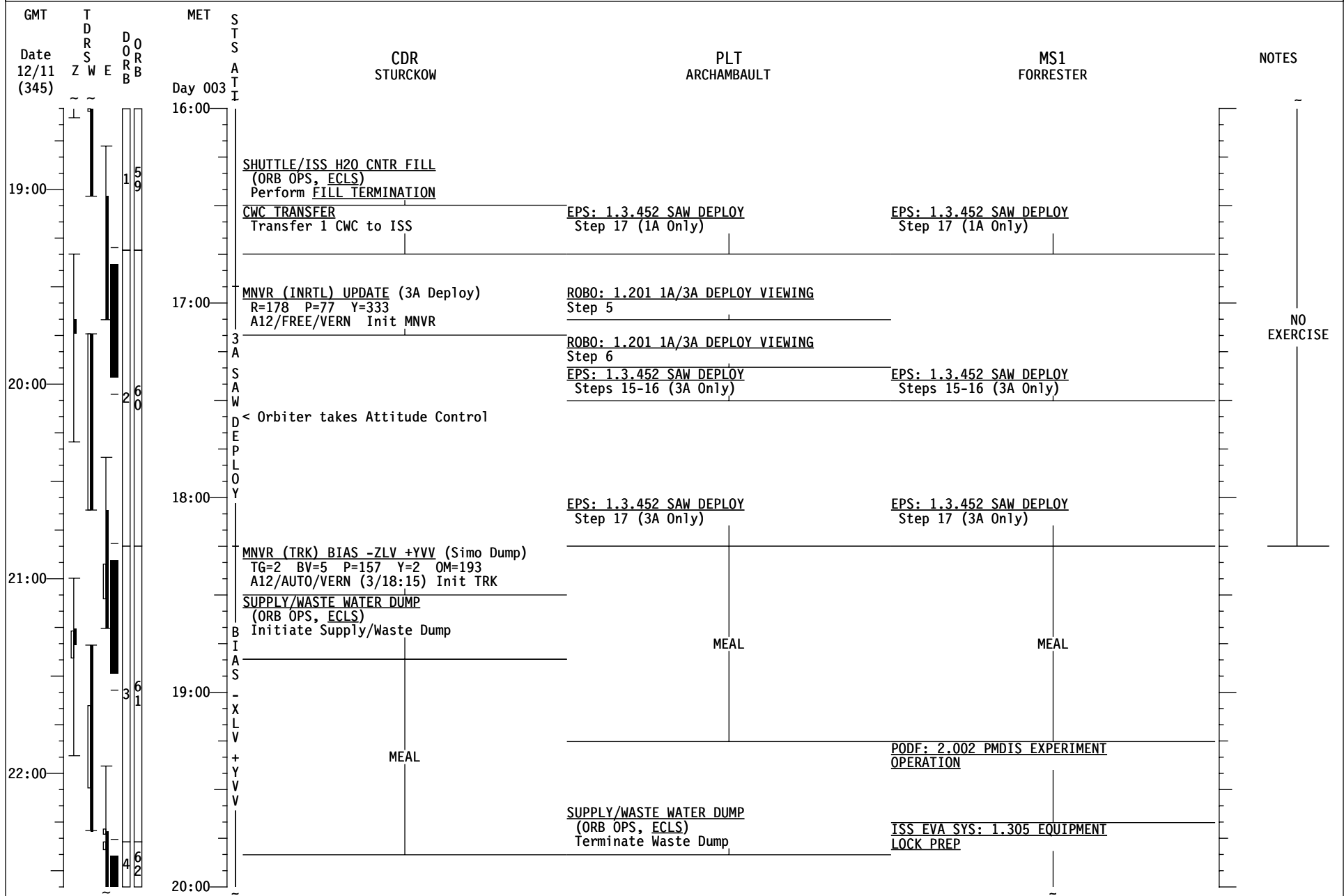


FD05 EZ ACTIVITIES:
 TEPC (STATUS CHECK)
 (ORB OPS, CREW SYS)
 OCAC FILTER INSPECTION
 HARD REBOOT PGSC's

STS-117 (FD05)



STS-117 (FD05)



STS-117 (FD05)

GMT	TDRS E W Z	DORB D O R B	MET Day 003	STS A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
16:00					<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX		
19:00		159					<u>EPS: 1.3.452 SAW DEPLOY</u> Step 17 (1A Only)	
17:00				3 A S A W				<u>NO EXERCISE</u>
20:00		260			<u>D ISS EVA SYS: 1.605 BSA BATTERY RECHARGE (Term)</u>	<u>ISS EVA SYS: 1.605 BSA BATTERY RECHARGE (Term)</u>		
					<u>P ISS EVA EMU SWAP (EVA, EVA FS)</u>	<u>ISS EVA EMU SWAP (EVA, EVA FS)</u>		
18:00				Y			<u>EPS: 1.3.452 SAW DEPLOY</u> Step 17 (3A Only)	
21:00		631		B I A S	MEAL	MEAL	MEAL	
19:00				X L V				
22:00				+ Y V V		L17 Check MCIU filter screen		
						<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	FOOD TRANSFER	
		462			<u>ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP</u>		FOOD REPACK	
20:00								

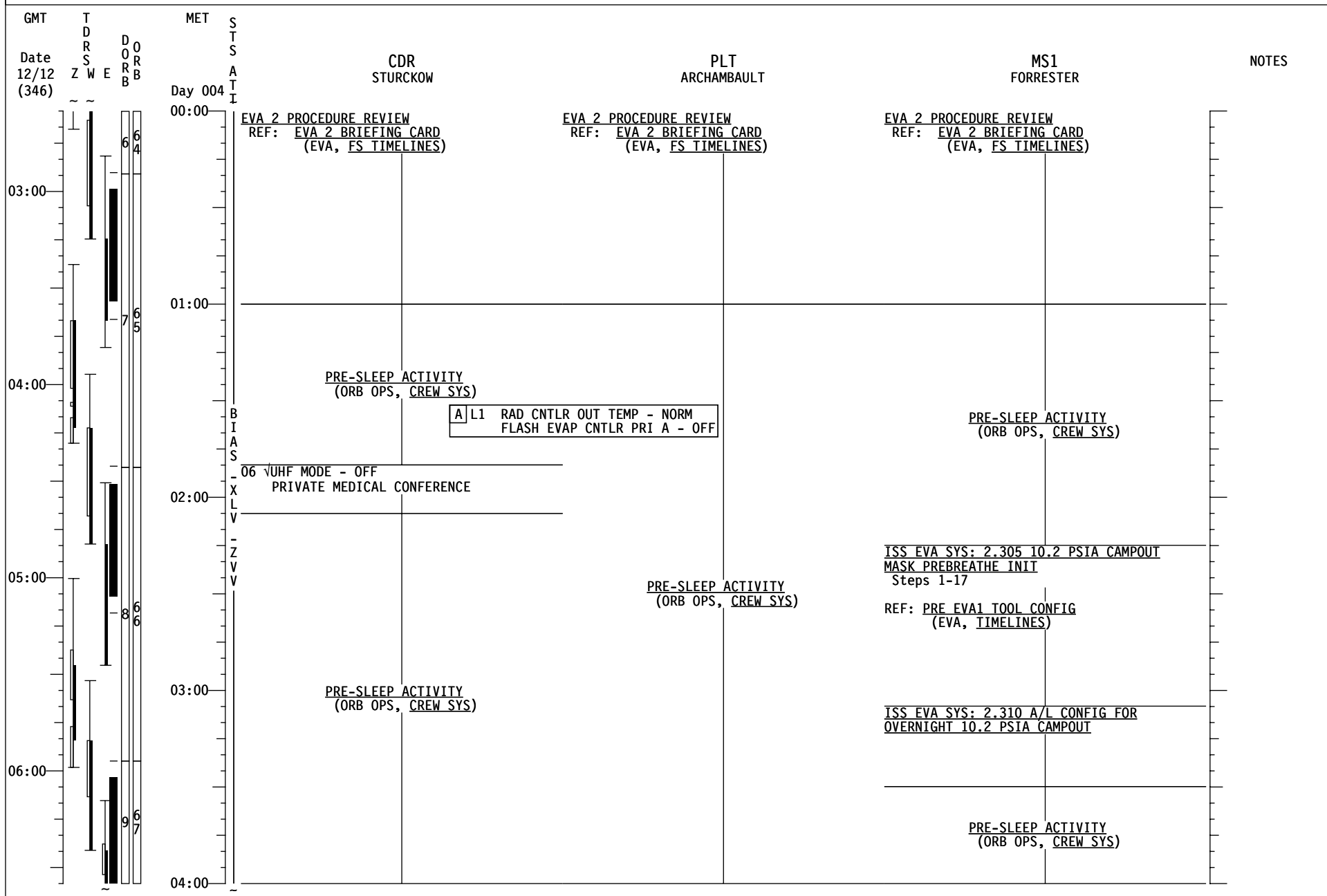
STS-117 (FD05)

GMT	T D R S W E Z W E	D O R B D O R B	MET Day 003	S T S A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
20:00					WCS CRADLE - AUTO INHIBIT Inspect hose block filter, change if req'd WCS CRADLE - AUTO		ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP	
23:00					SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Terminate Supply Dump	EXERCISE	PRE EVA 2 TOOL CONFIG (EVA, TIMELINES)	
					MNVR (TRK) BIAS -XLV -ZVV (TEA) TG=2 BV=5 P=157 Y=2 OM=181 A12/AUTO/VERN (3/20:35) Init TRK			
					When in ATT and rates dampened: JNT OPS: 3.111 H/O ATT CNTRL ORB TO CMG IA			
21:00					TRANSFER OPS Ref. Transfer List & MSG XXX	ROBOTICS: 1.202 - CONFIGURE FOR WS 2-3 TRANSLATE & OBSS HANDOFF		
00:00							EXERCISE	
					FOOD REPACK			
22:00					DIGITAL PAO CC (PHOTO/TV, SONY PD100)		FOOD REPACK	
01:00					PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	
						OBSS UNBERTH (PDRS, OBSS NOM OPS) Steps 1,2	OBSS UNBERTH (PDRS, OBSS NOM OPS) Steps 1,2	
23:00						FOOD REPACK		
02:00					EXERCISE	TRANSFER OPS Ref. Transfer List & MSG XXX	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
00:00								

STS-117 (FD05)

GMT	TDRSZ	DORB	MET	STS	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/11 (345)	E W Z	D O R B	Day 003	ISS				
20:00				ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP		TRANSFER OPS Ref. Transfer List & MSG XXX	TRANSFER OPS Ref. Transfer List & MSG XXX	
23:00				PRE EVA 2 TOOL CONFIG (EVA, TIMELINES)				
00:00				FOOD REPACK	FOOD REPACK	TRANSFER OPS Ref. Transfer List & MSG XXX		
01:00				EXERCISE			EXERCISE	
				B I A S				
				X L V				
				Z V V	PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	EXERCISE	PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	
23:00						TRANSFER OPS Ref. Transfer List & MSG XXX	TRANSFER OPS Ref. Transfer List & MSG XXX	
02:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
00:00								

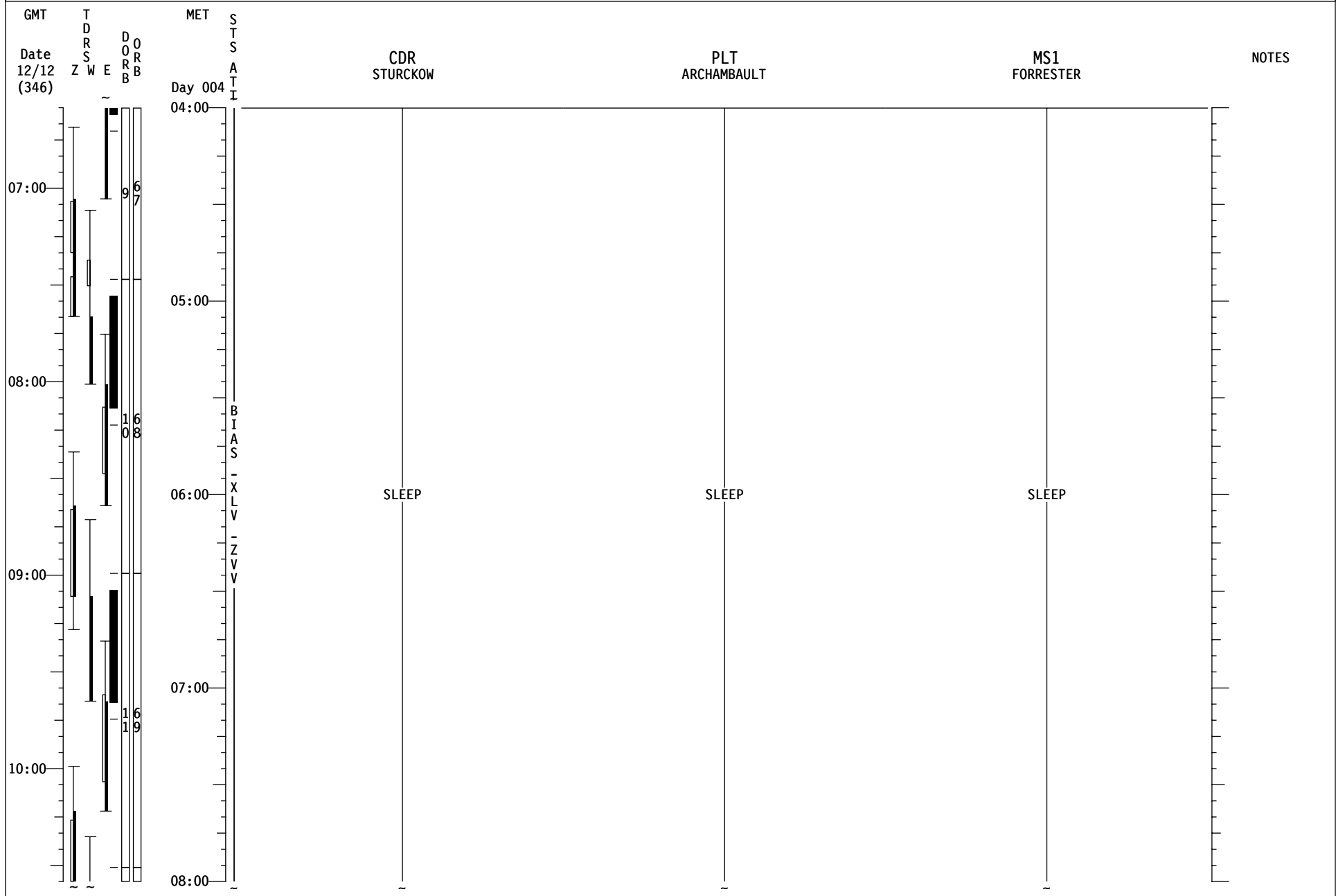
STS-117 (FD05)



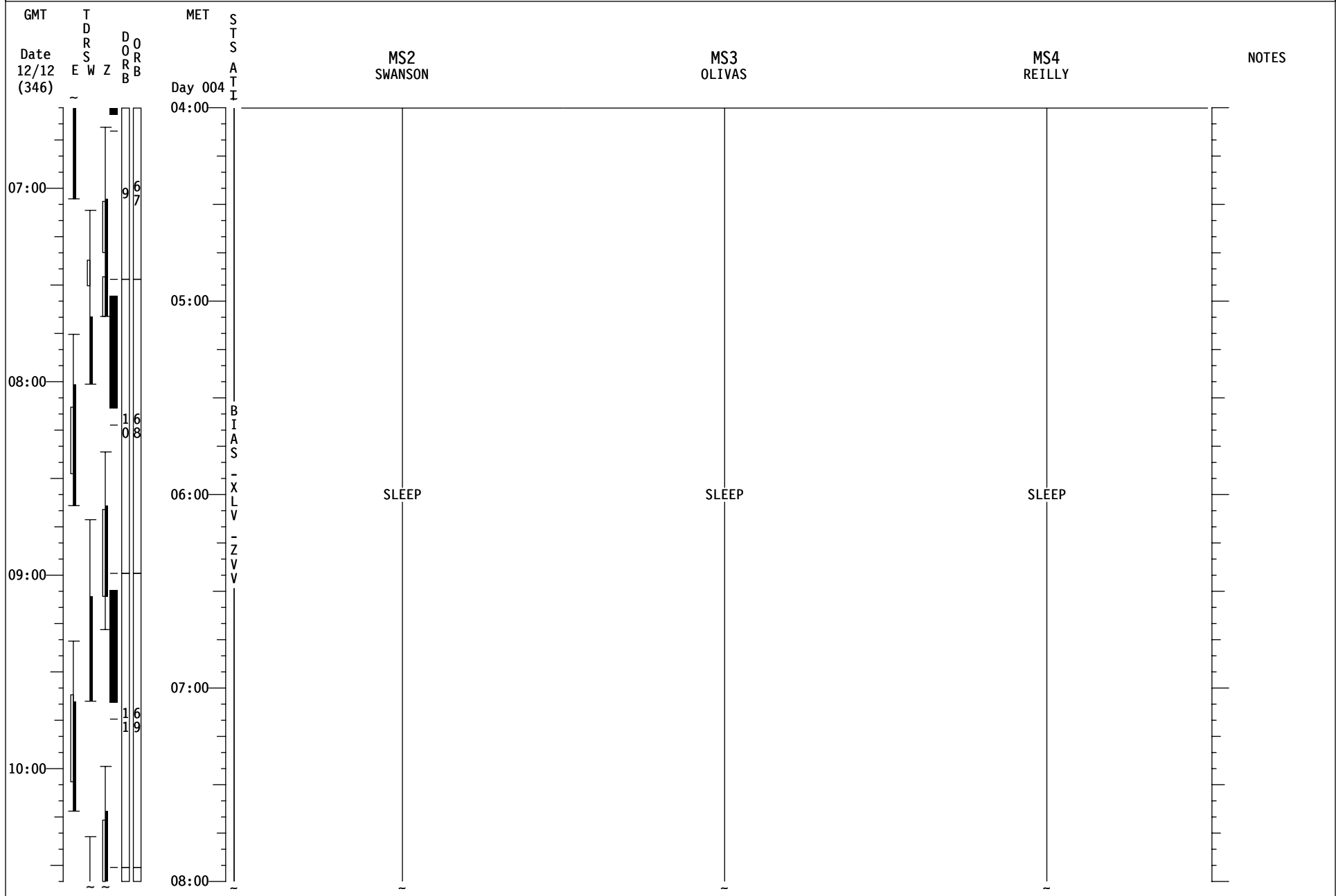
STS-117 (FD05)

GMT	TDRS E W Z	DORB B B	MET Day 004	S T S A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
00:00					EVA 2 PROCEDURE REVIEW REF: EVA 2 BRIEFING CARD (EVA, FS TIMELINES)	EVA 2 PROCEDURE REVIEW REF: EVA 2 BRIEFING CARD (EVA, FS TIMELINES)	EVA 2 PROCEDURE REVIEW REF: EVA 2 BRIEFING CARD (EVA, FS TIMELINES)	
03:00								
04:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
05:00					Z ISS EVA SYS: 2.305 10.2 PSIA CAMPOUT V MASK PREBREATHE INIT V Steps 1-17 REF: PRE EVA1 TOOL CONFIG (EVA, TIMELINES)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
06:00					ISS EVA SYS: 2.310 A/L CONFIG FOR OVERNIGHT 10.2 PSIA CAMPOUT			
04:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			

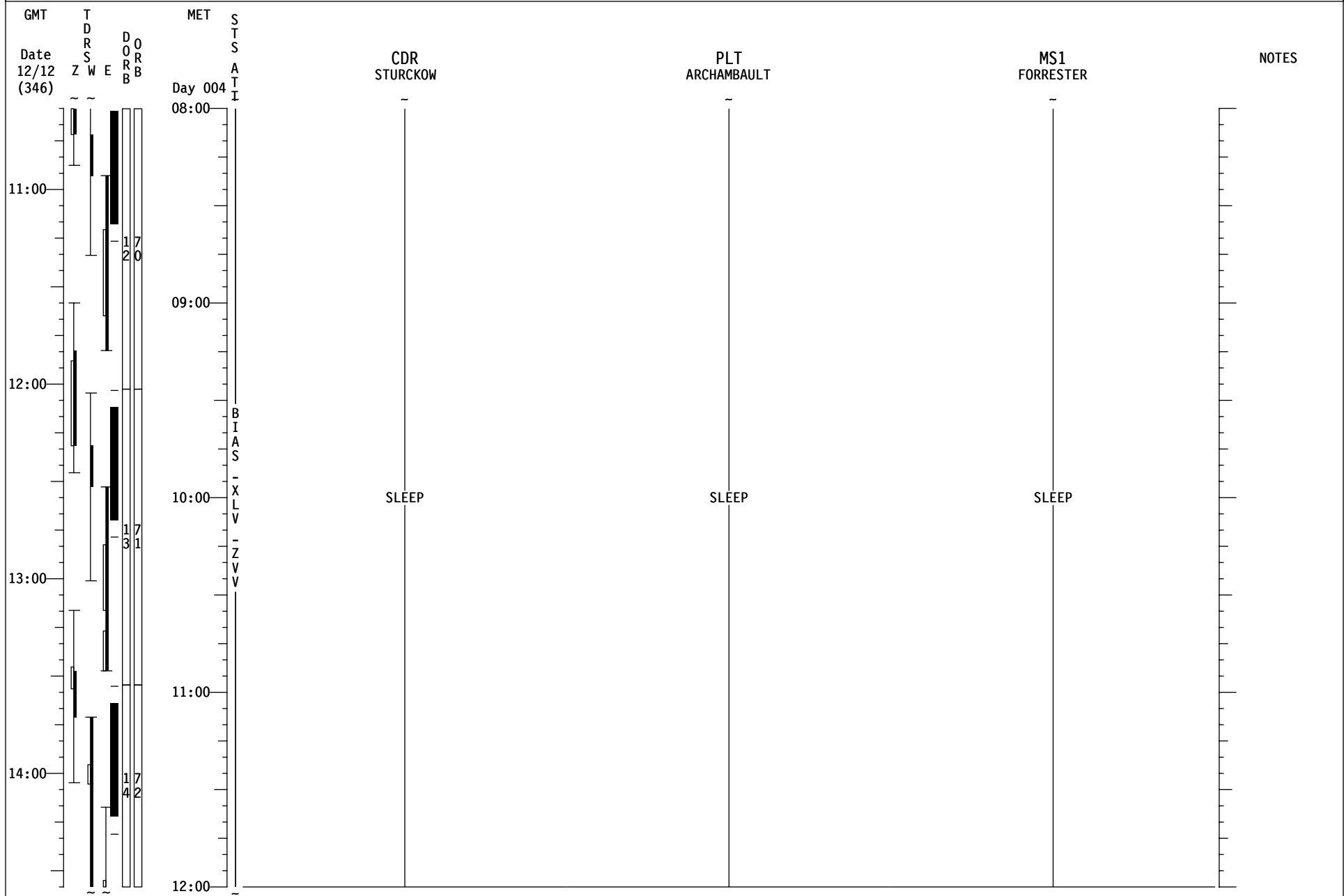
STS-117 (FD05)



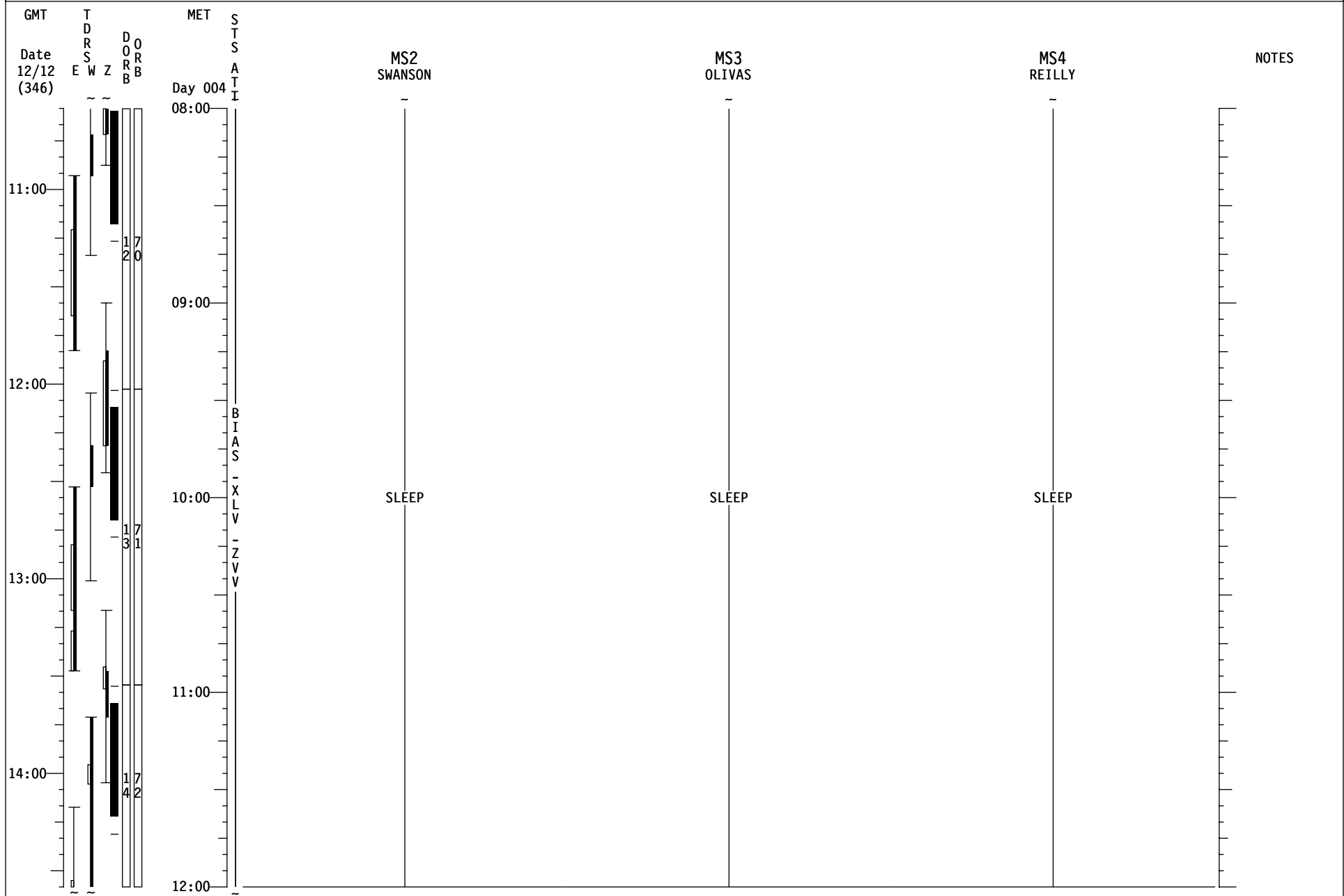
STS-117 (FD05)



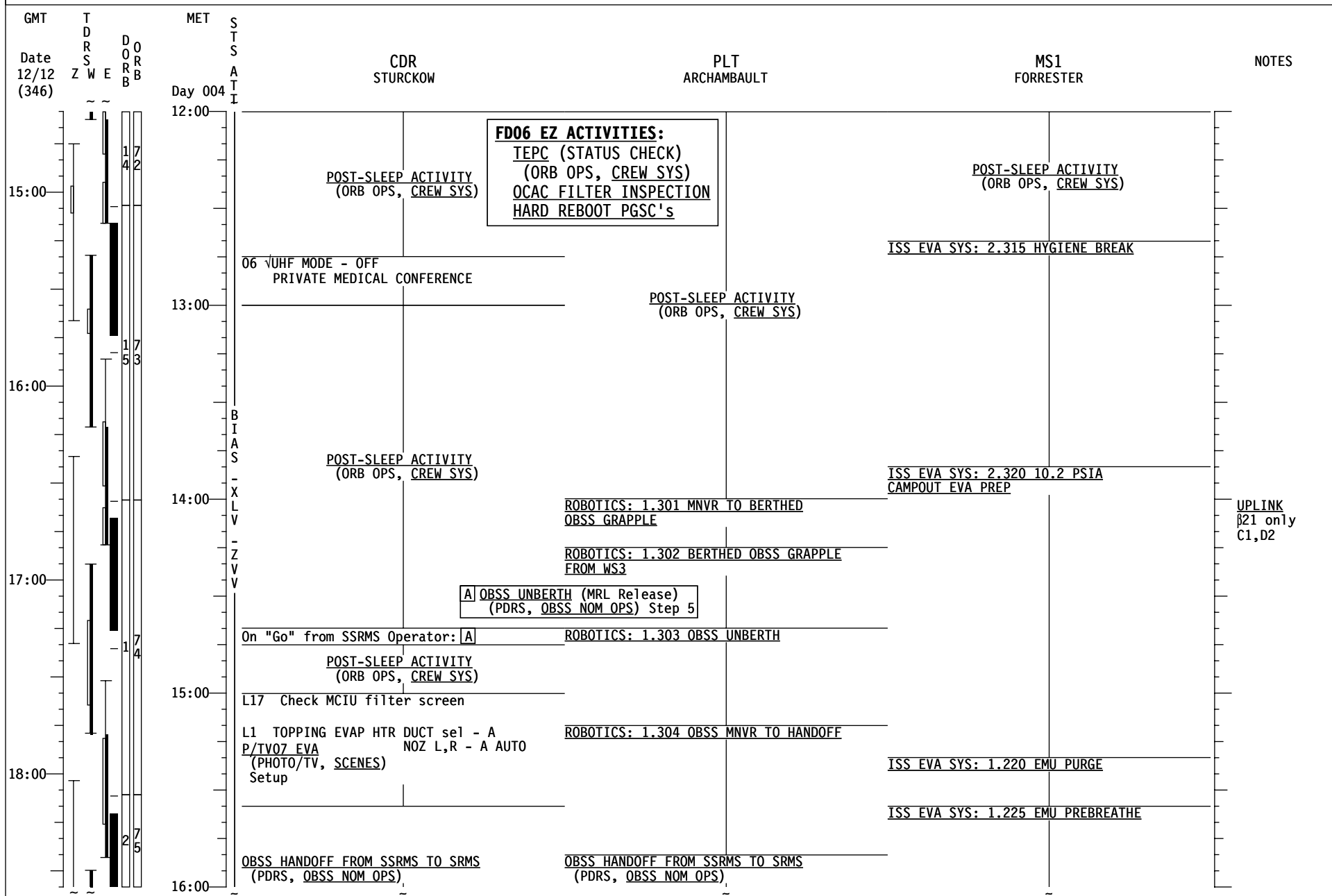
STS-117 (FD05)



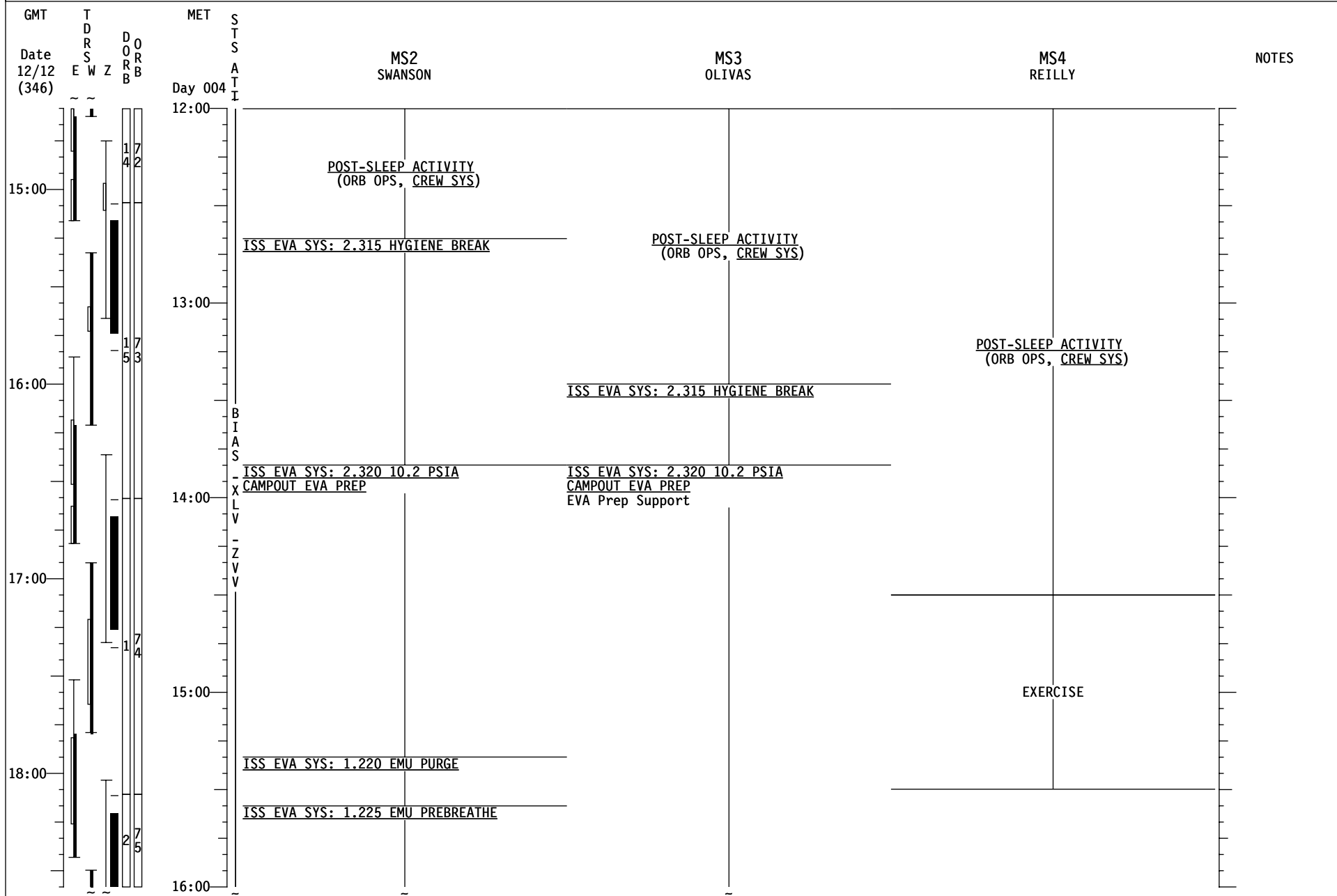
STS-117 (FD05)



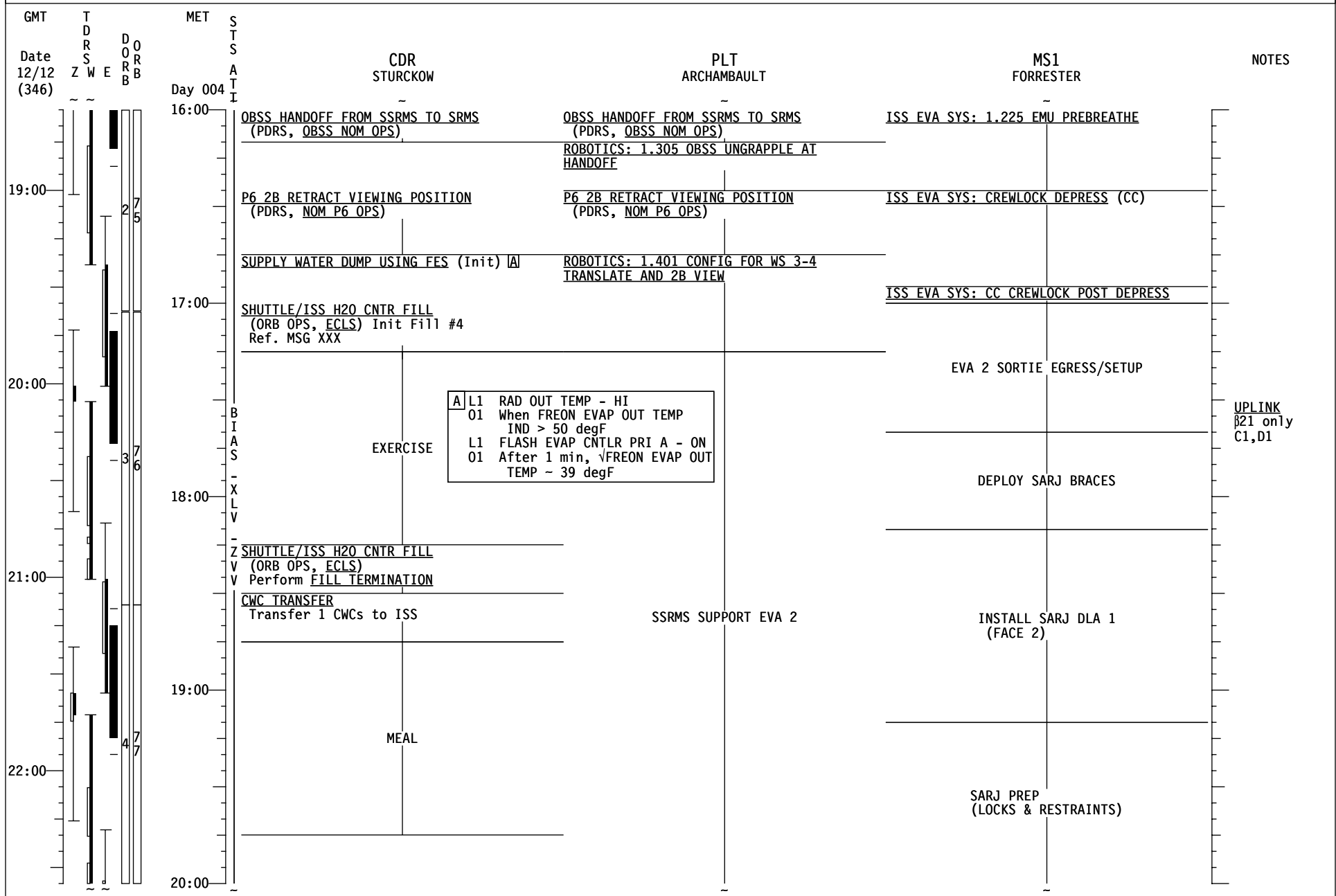
STS-117 (FD06)



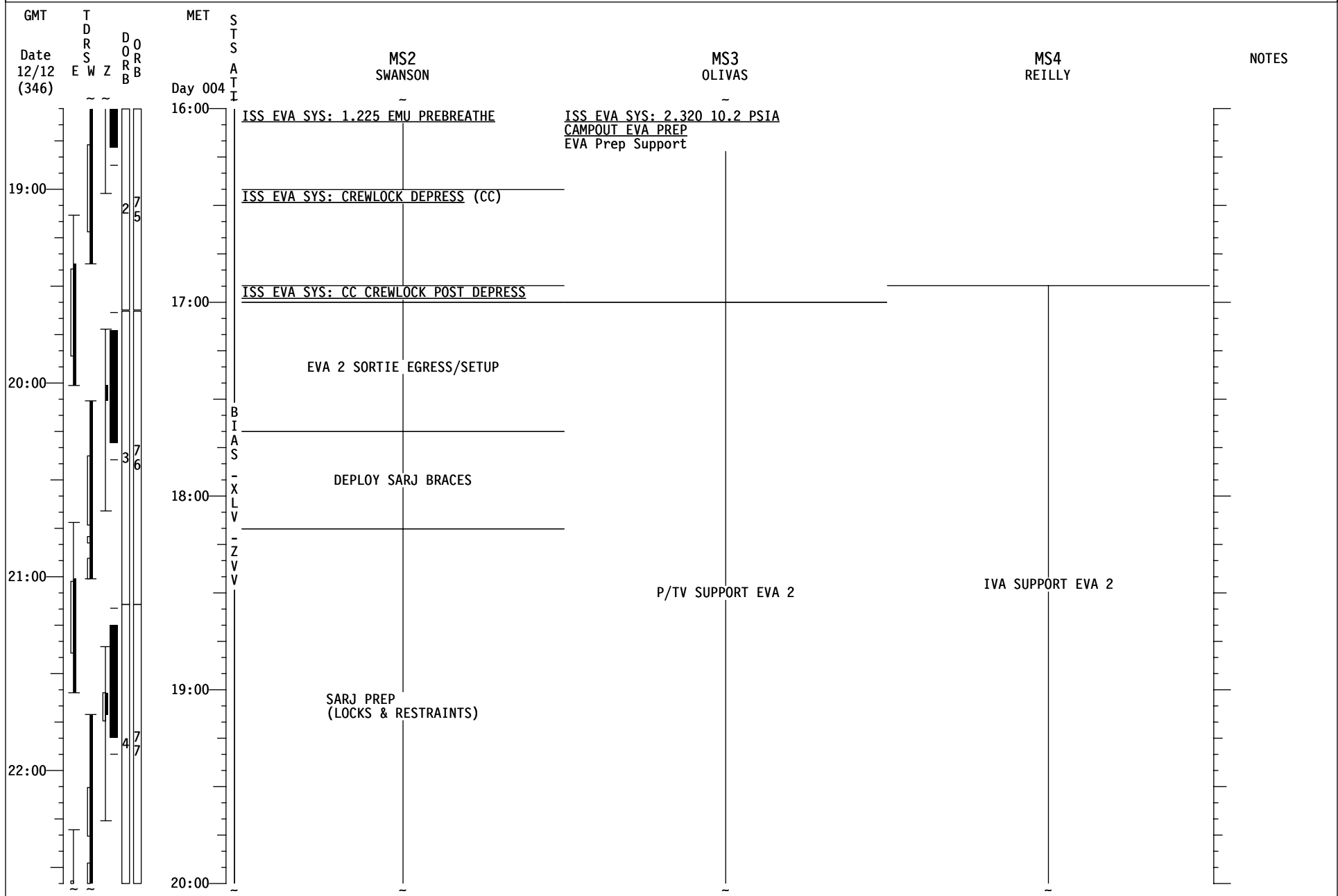
STS-117 (FD06)



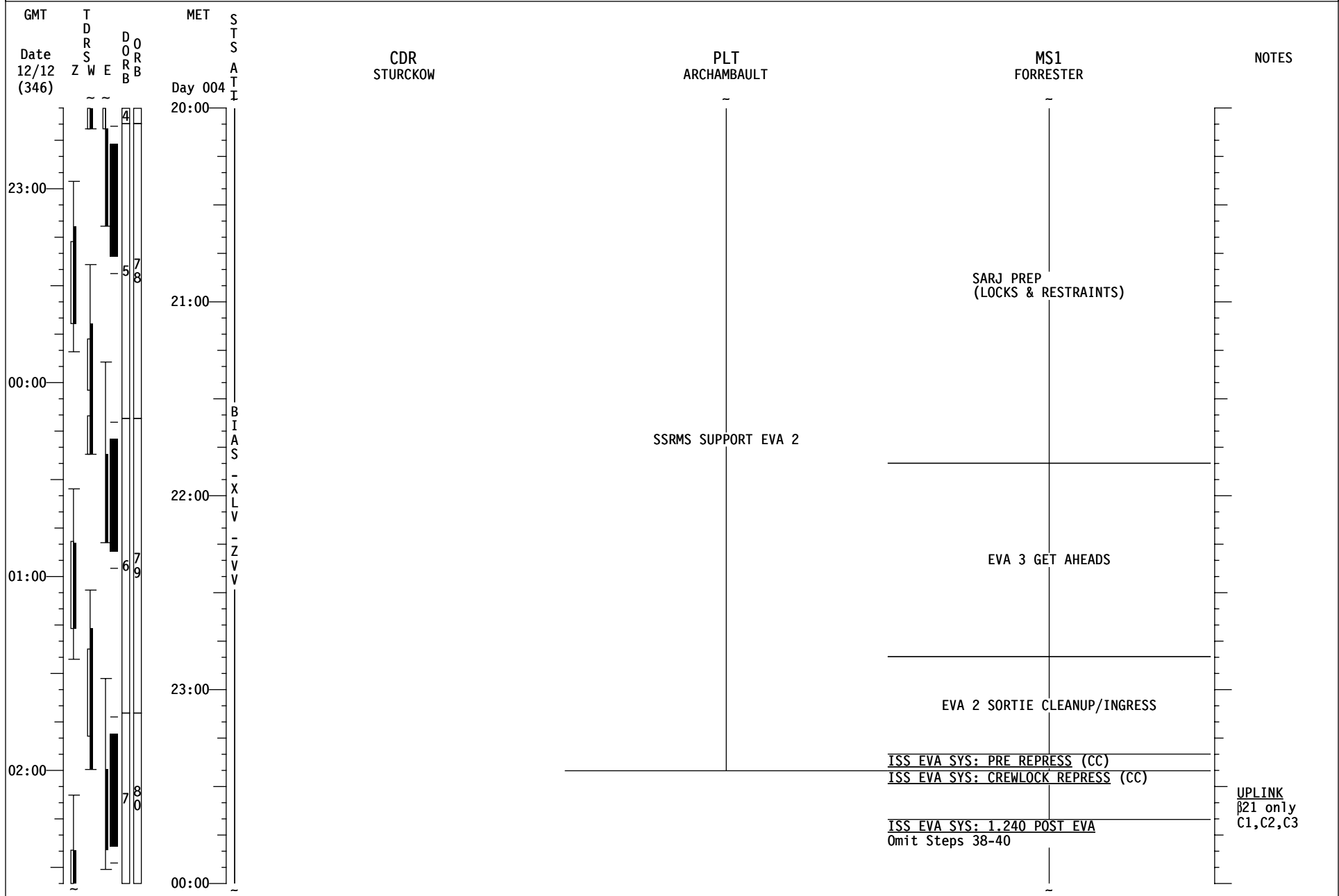
STS-117 (FD06)



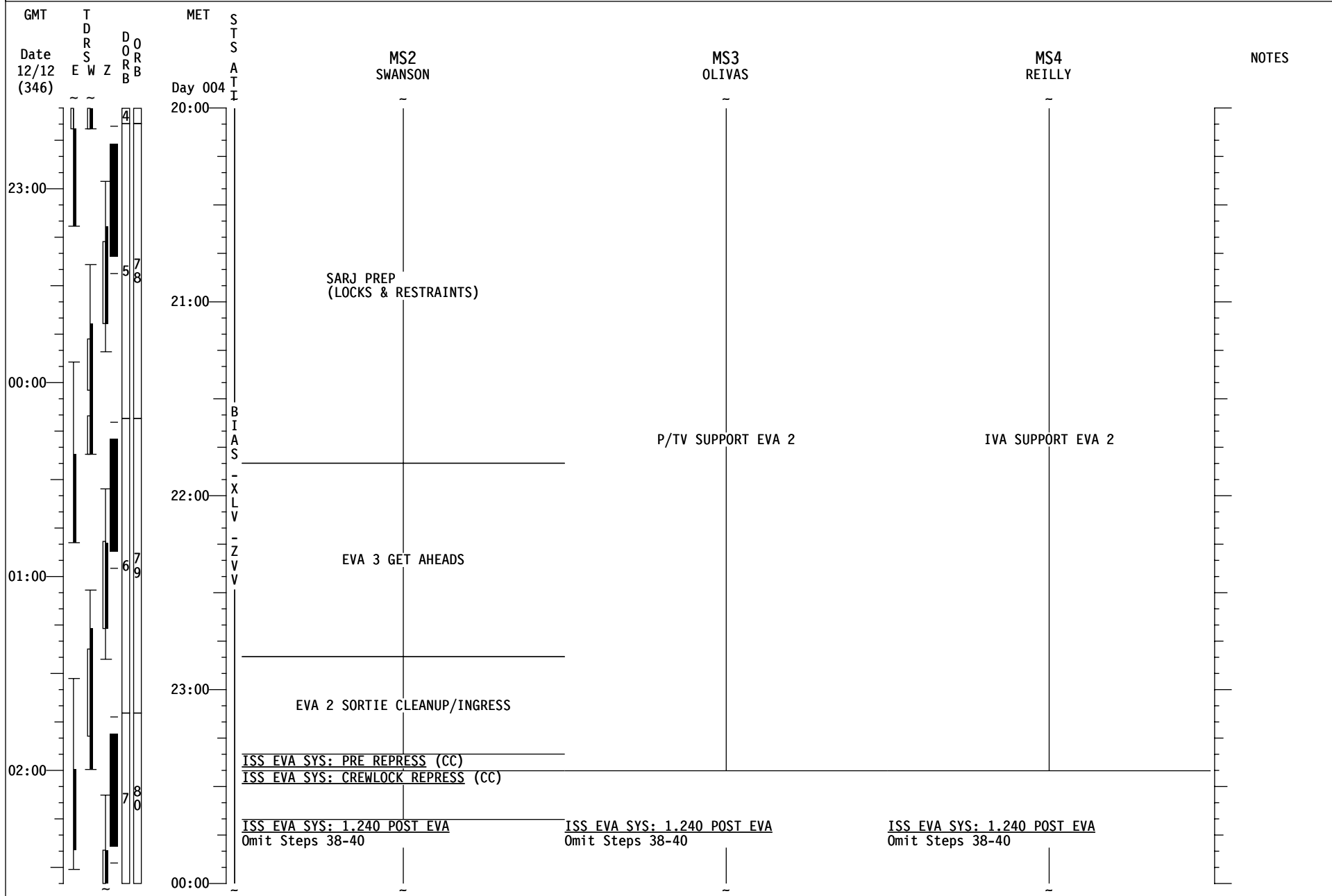
STS-117 (FD06)



STS-117 (FD06)



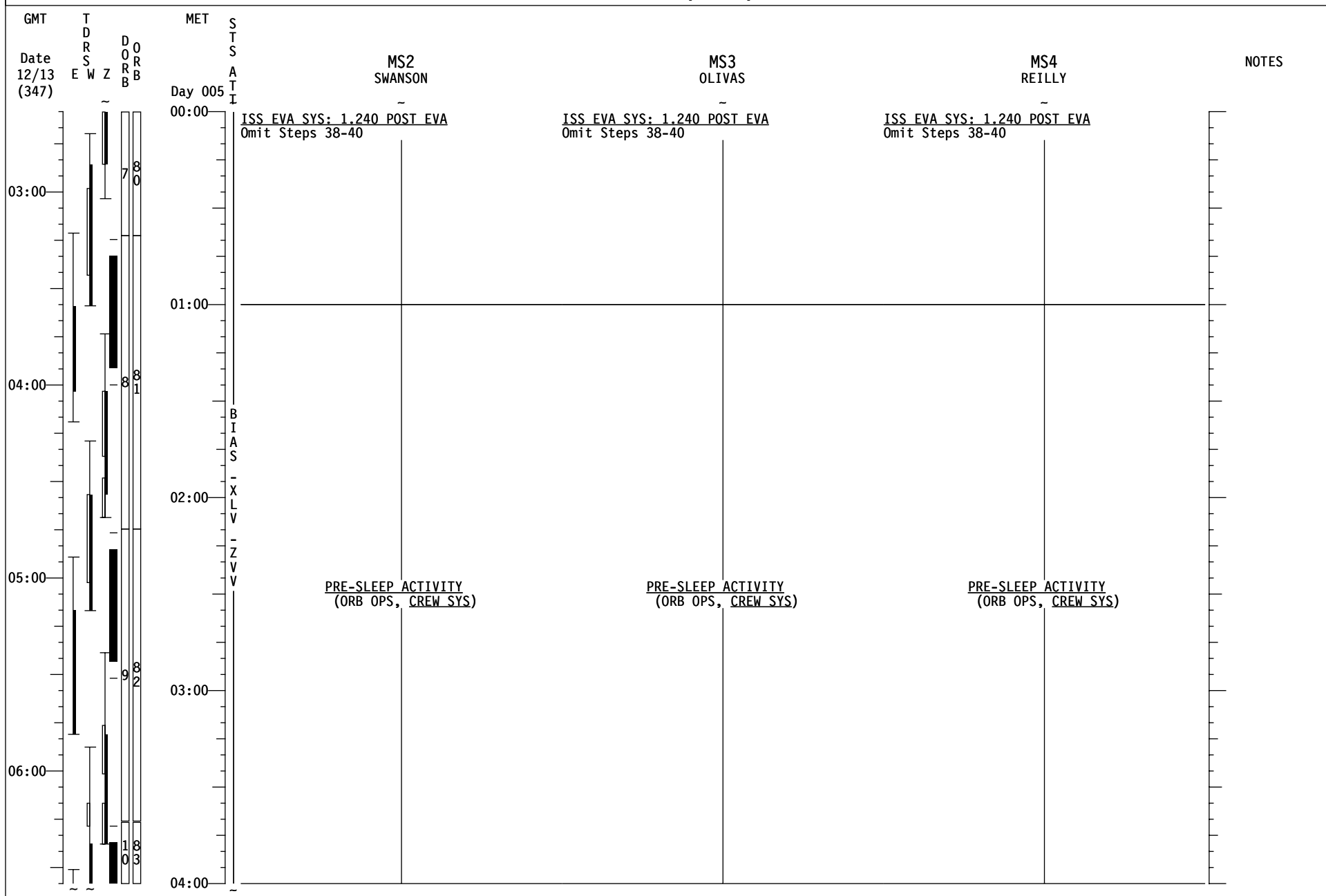
STS-117 (FD06)



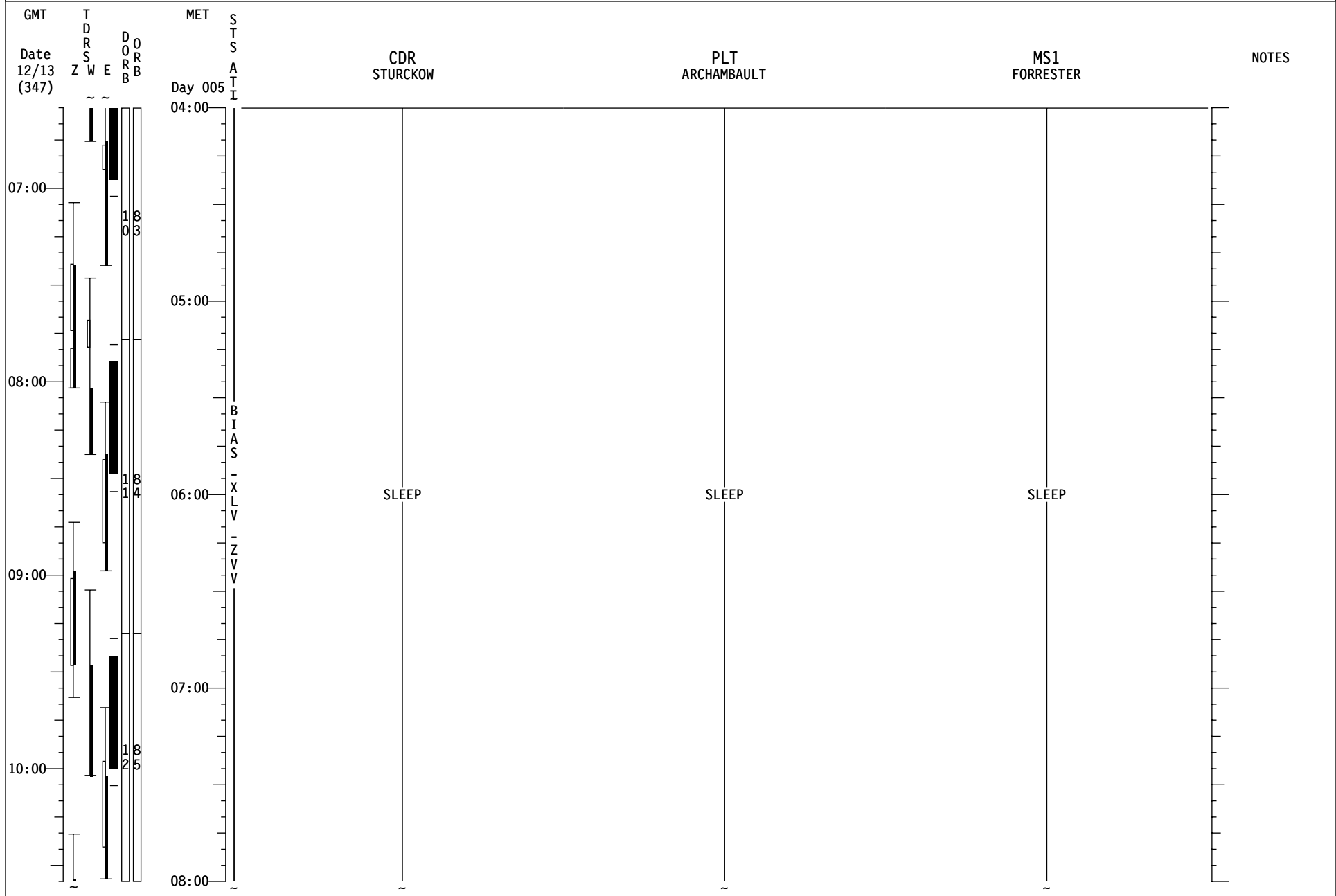
STS-117 (FD06)

GMT	TDRS ZSW E	DORB ORB	MET Day 005	STS ATTI	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
			00:00				ISS EVA SYS: 1.240 POST EVA Omit Steps 38-40	
03:00		780			CAB PRESS MAINT TBD	EXERCISE		
			01:00		SUPPLY WATER DUMP USING FES (Term) L1 RAD CNTLR OUT TEMP - NORM FLASH EVAP CNTLR PRI A - OFF			
04:00		818			PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
			02:00		L1 TOPPING EVAP HTR DUCT sel - OFF NOZ L,R - OFF			
					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
05:00					06 UHF MODE - OFF PRIVATE MEDICAL CONFERENCE	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
		928	03:00		PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
06:00		103						
			04:00					

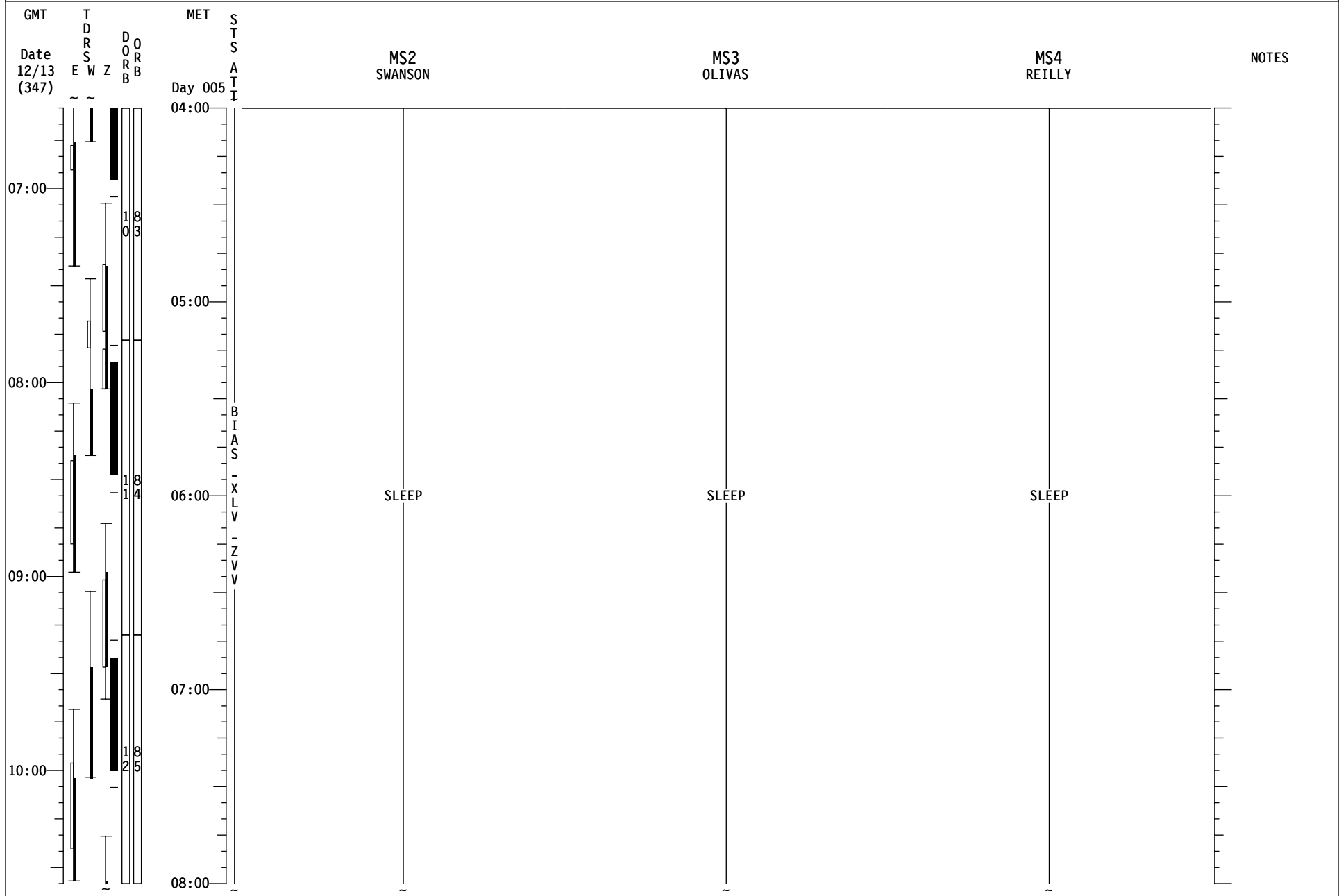
STS-117 (FD06)



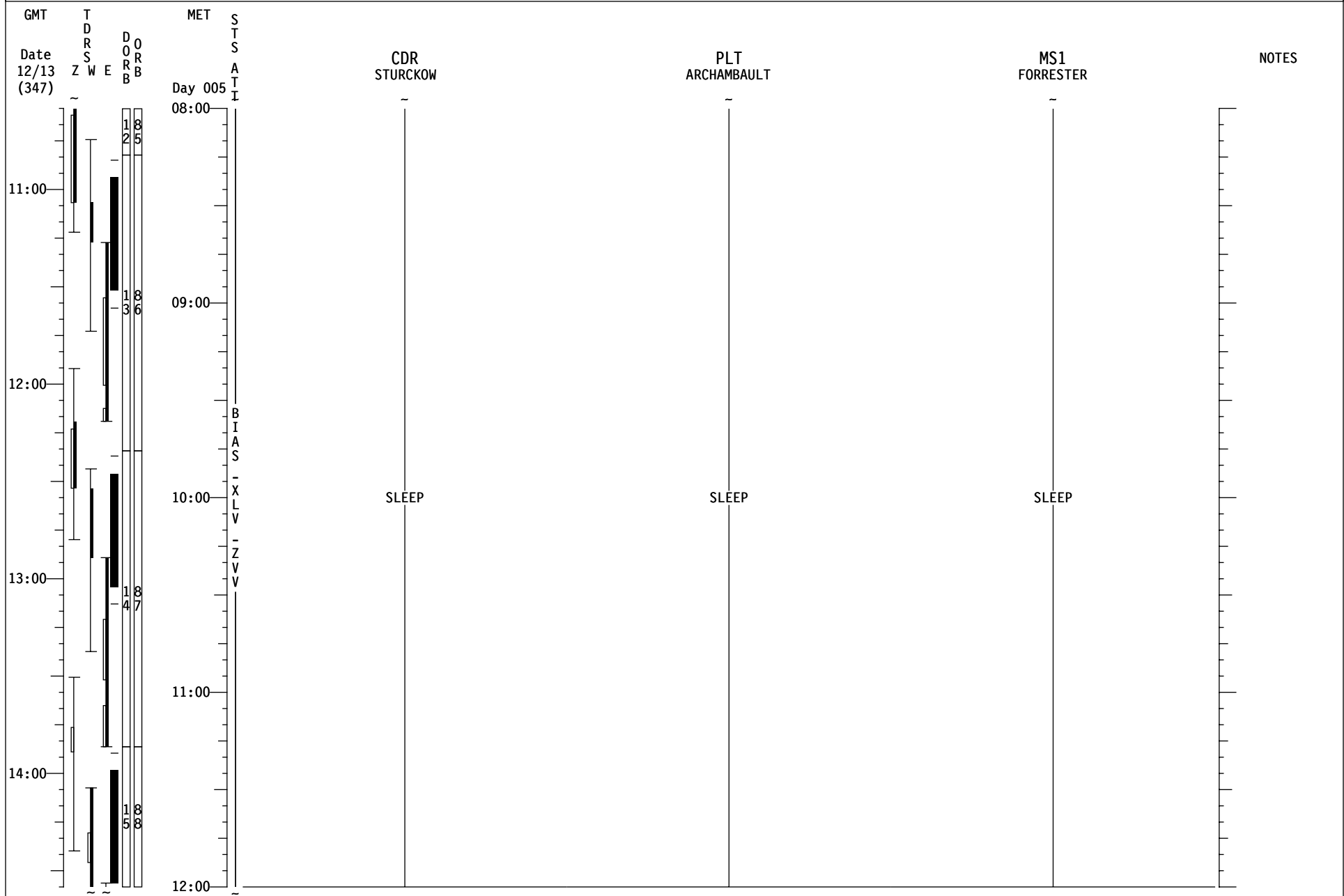
STS-117 (FD06)



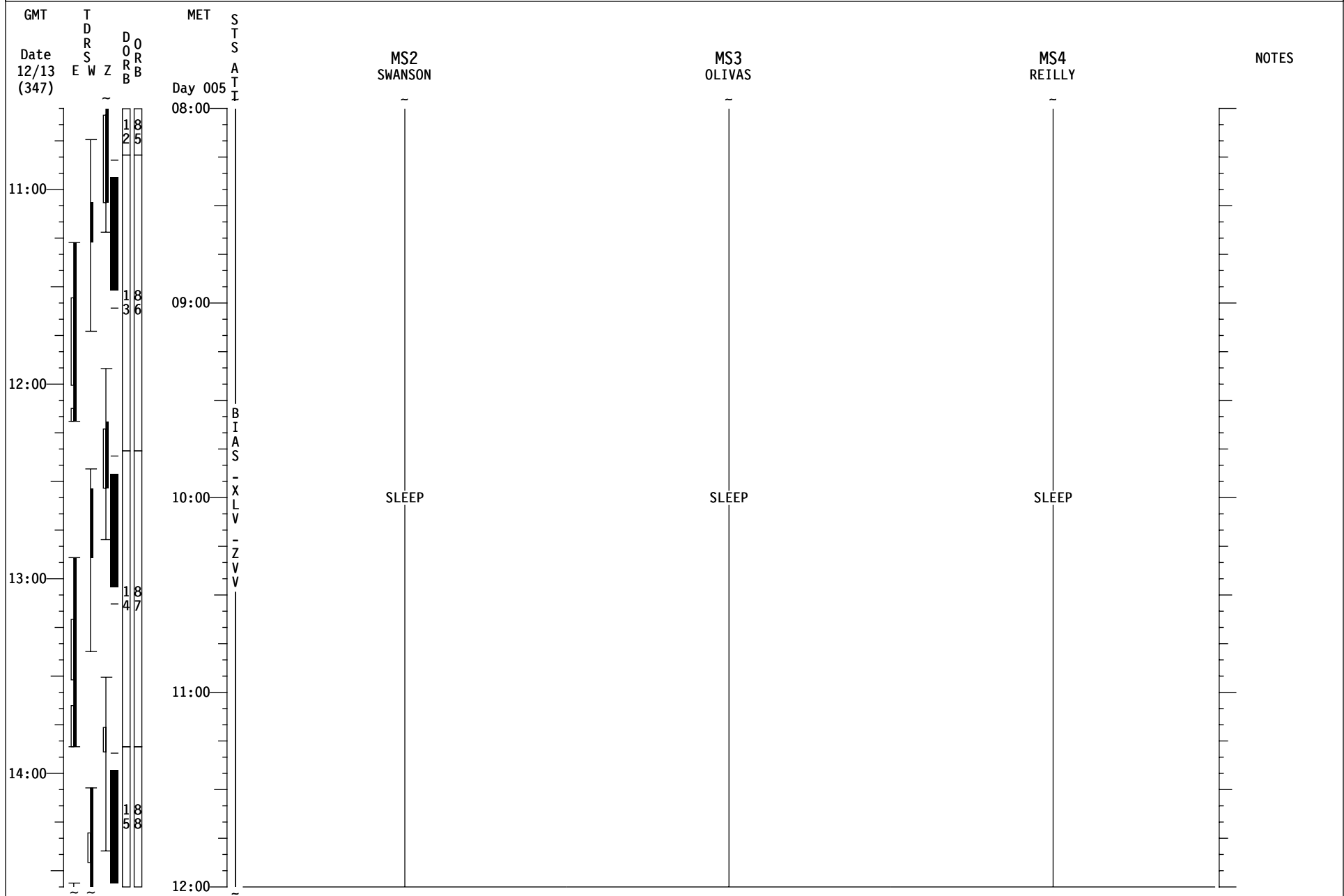
STS-117 (FD06)



STS-117 (FD06)



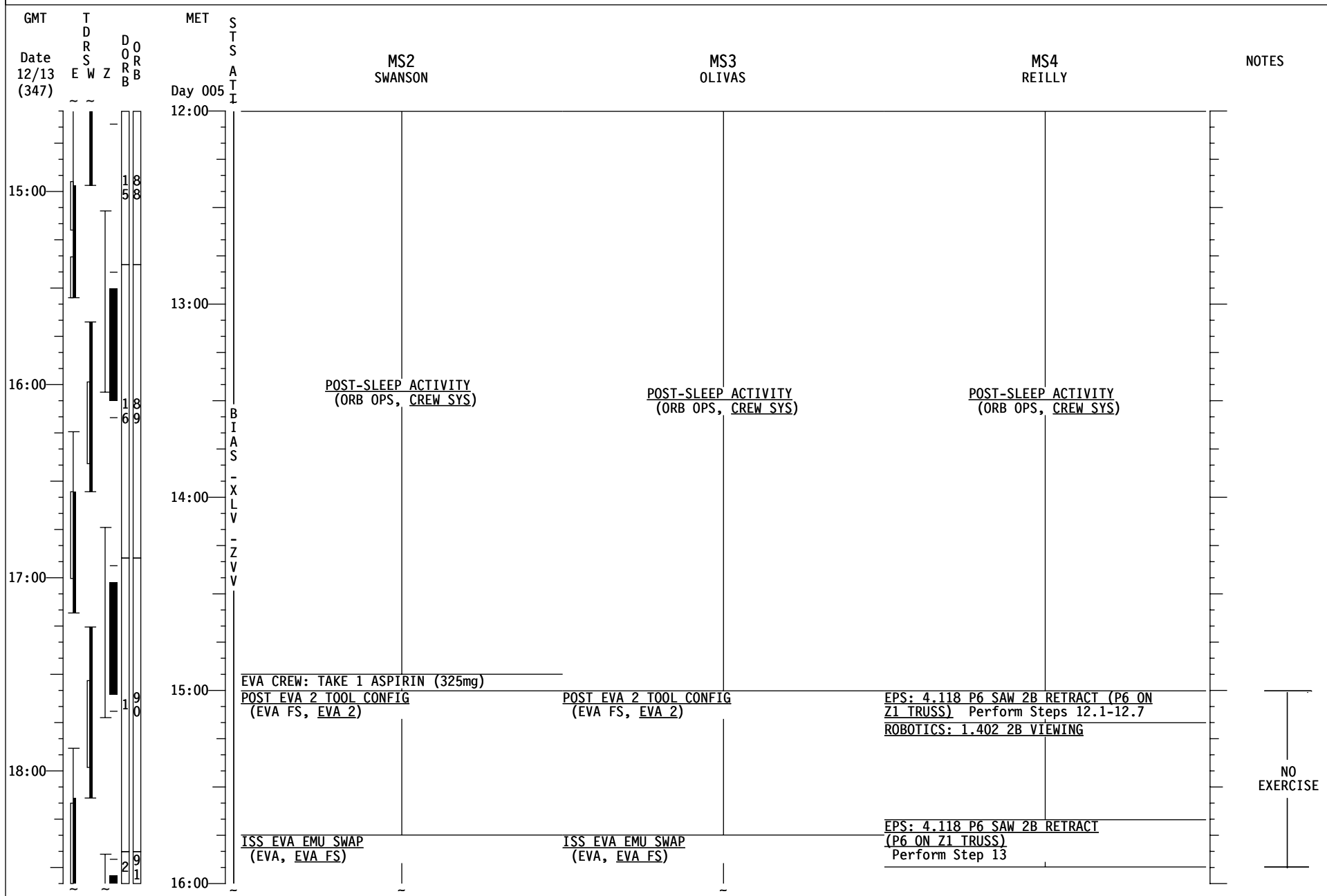
STS-117 (FD06)



STS-117 (FD07)

GMT Date 12/13 (347)	TDRS ZSW E DORB	MET Day 005	STS A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
						FD07 EZ ACTIVITIES: <u>TEPC (STATUS CHECK)</u> <u>(ORB OPS, CREW SYS)</u> <u>OCAC FILTER INSPECTION</u> <u>HARD REBOOT PGSC's</u>	
				<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
				L17 Check MCIU filter screen			
				<u>SHUTTLE/ISS H2O CNTR FILL</u> (ORB OPS, ECLS) Init Fill #5 Ref. MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>EVA CREW: TAKE 1 ASPIRIN (325mg)</u> <u>EPS: 4.118 P6 SAW 2B RETRACT (P6 ON Z1 TRUSS)</u> Perform Steps 12.1-12.7 <u>ROBOTICS: 1.402 2B VIEWING</u>	
				<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX			NO EXERCISE
						<u>EPS: 4.118 P6 SAW 2B RETRACT</u> <u>(P6 ON Z1 TRUSS)</u> Perform Step 13	

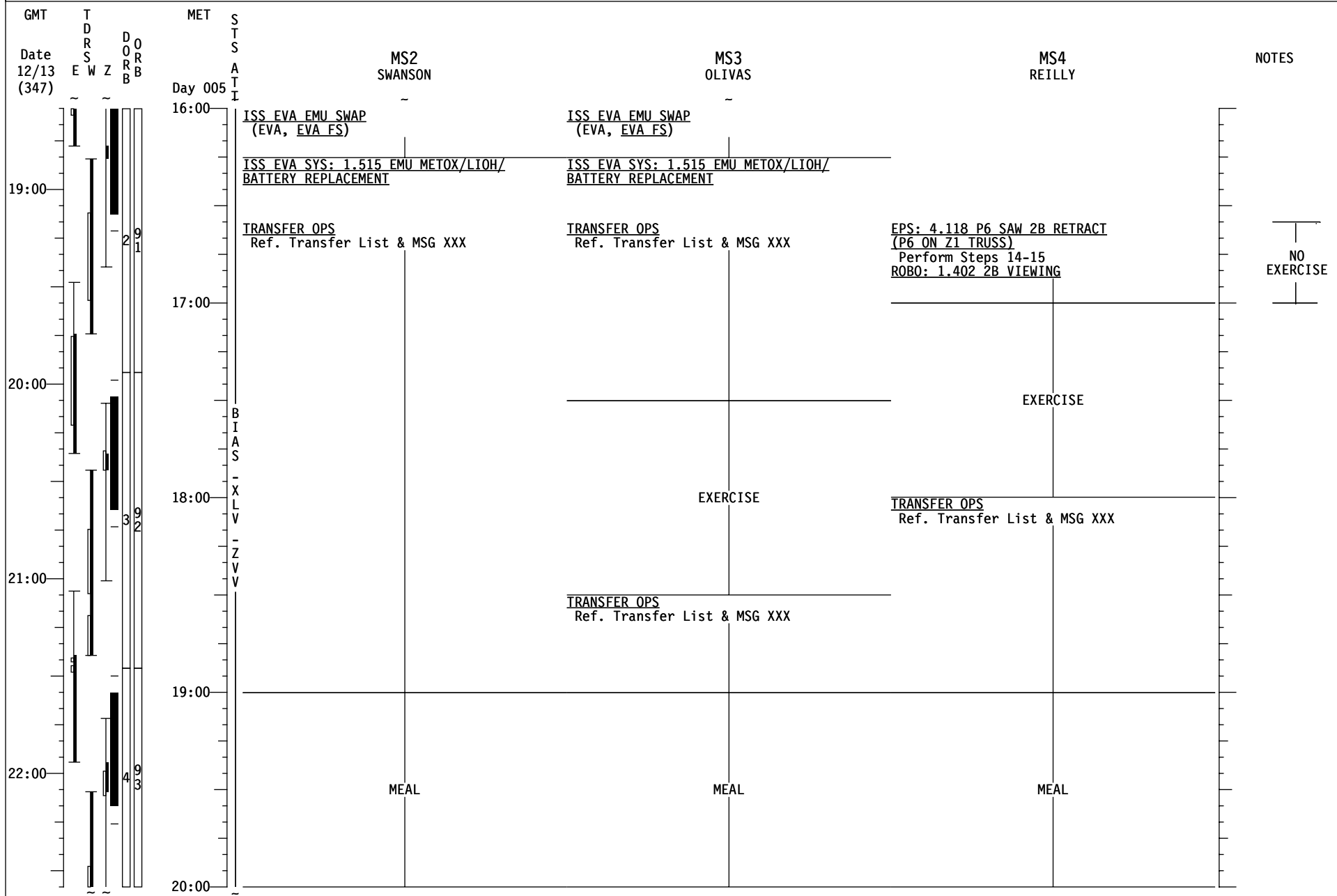
STS-117 (FD07)



STS-117 (FD07)

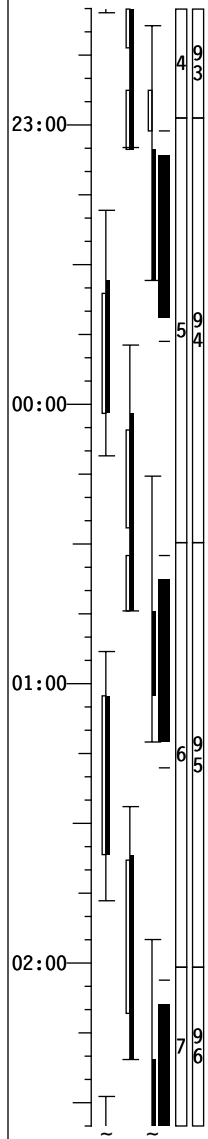
GMT	T D R S E Z W E D O R B B	MET	S T S A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
Date 12/13 (347)		Day 005					
16:00				<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX		
19:00				<u>SHUTTLE/ISS H2O CNTR FILL</u> (ORB OPS, ECLS) Perform <u>FILL TERMINATION</u>			
				<u>CWC TRANSFER</u> Transfer 2 CWCs to ISS			
							EPS: 4.118 P6 SAW 2B RETRACT (P6 ON Z1 TRUSS) Perform Steps 14-15 ROBO: 1.402 2B VIEWING
17:00				<u>SHUTTLE CONDENSATE COLLECTION</u> (ORB OPS, ECLS) Perform <u>CHANGEOUT</u> Using CWC S/N XXX Ref. MSG XXX			
				<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX			<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX
20:00							
							NO EXERCISE
18:00							
				EXERCISE			
21:00							
22:00				MEAL	MEAL	MEAL	
20:00							

STS-117 (FD07)

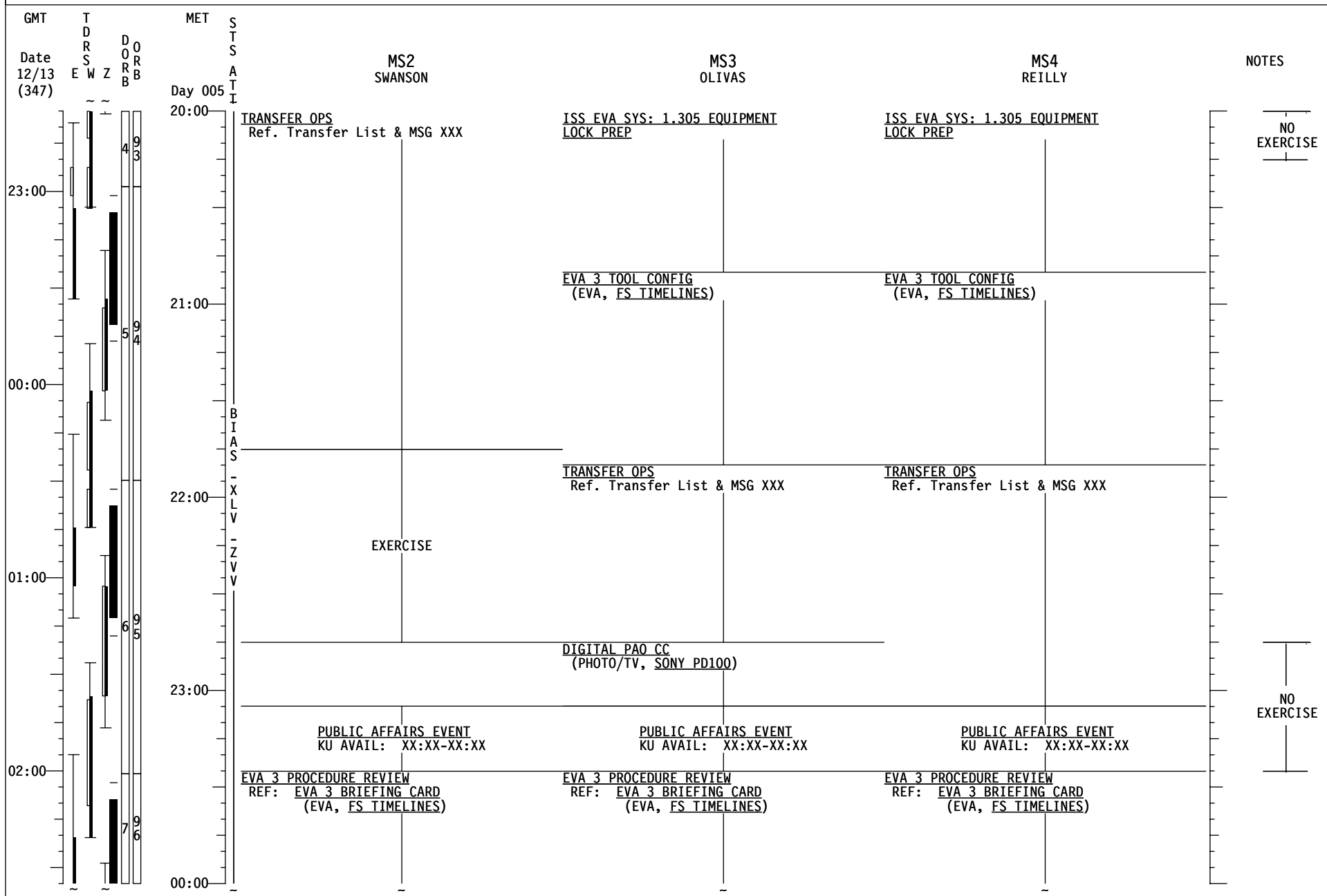


STS-117 (FD07)

GMT	T D R S E Z W E	D O R B B B	MET Day 005	S T S A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
20:00					<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	NO EXERCISE
21:00					<u>PWR FILL</u> (ORB OPS, ECLS) Retrieve 5 PWRs S/Ns XXX from TBD Ref. MSG XXX			
00:00						EXERCISE		
22:00						<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	EXERCISE	
01:00							<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	
23:00								NO EXERCISE
02:00					<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX	<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX	<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX	
00:00					<u>EVA 3 PROCEDURE REVIEW</u> REF: EVA 3 BRIEFING CARD (EVA, FS TIMELINES)	<u>EVA 3 PROCEDURE REVIEW</u> REF: EVA 3 BRIEFING CARD (EVA, FS TIMELINES)	<u>EVA 3 PROCEDURE REVIEW</u> REF: EVA 3 BRIEFING CARD (EVA, FS TIMELINES)	



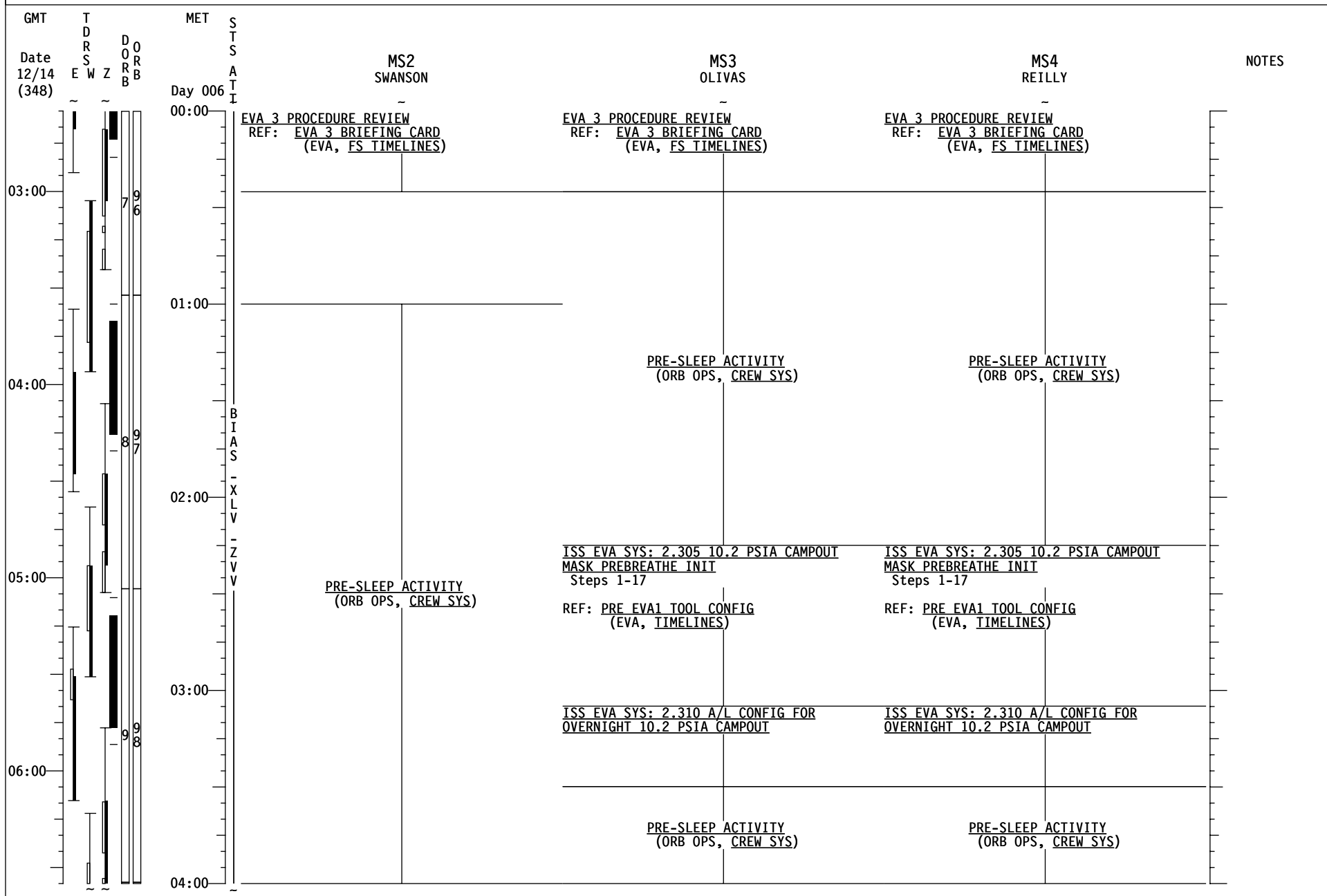
STS-117 (FD07)



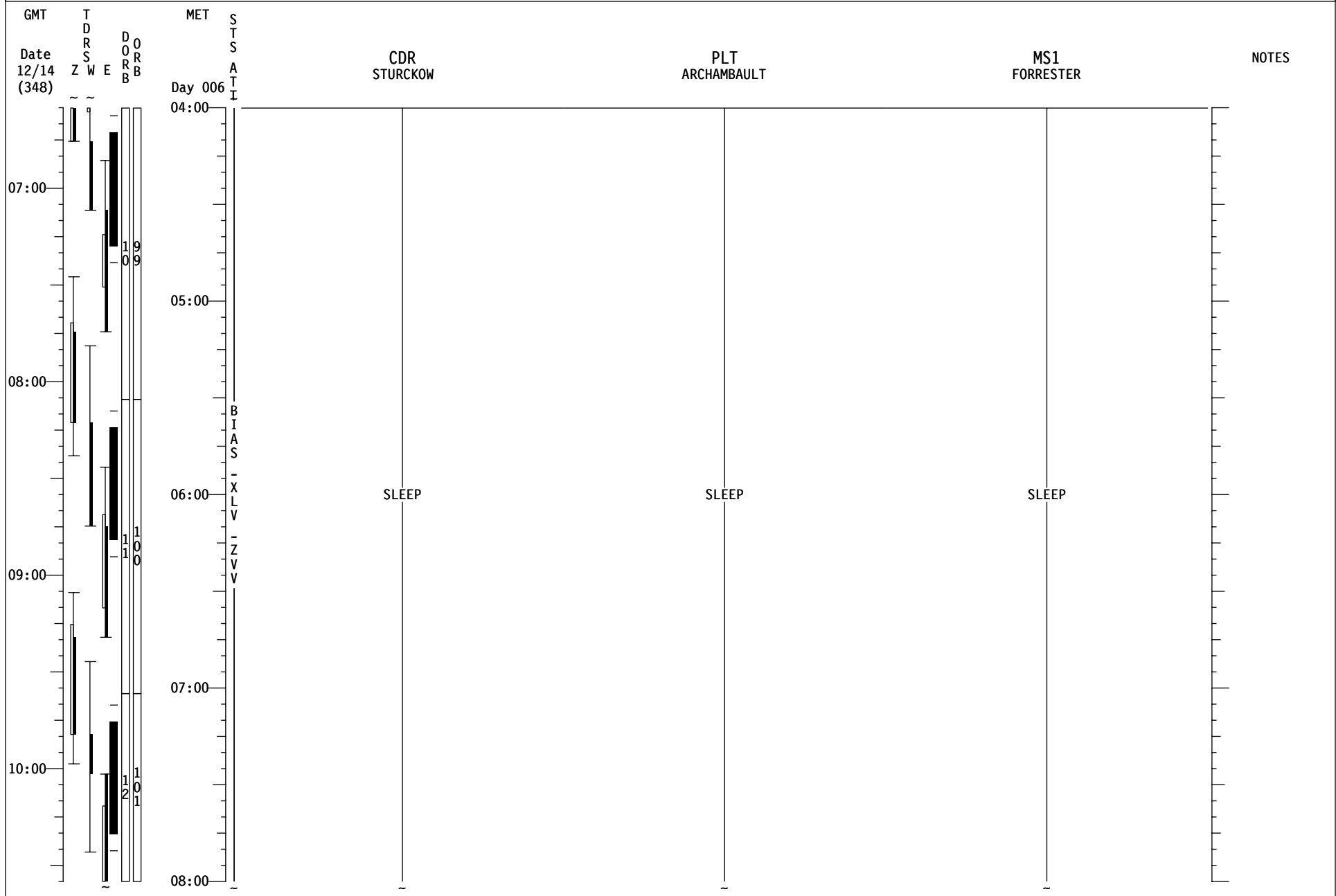
STS-117 (FD07)

GMT	TDRS ZSW E	DORB DORB	MET Day 006	STS A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
00:00					EVA 3 PROCEDURE REVIEW REF: EVA 3 BRIEFING CARD (EVA, FS TIMELINES)	EVA 3 PROCEDURE REVIEW REF: EVA 3 BRIEFING CARD (EVA, FS TIMELINES)	EVA 3 PROCEDURE REVIEW REF: EVA 3 BRIEFING CARD (EVA, FS TIMELINES)	
03:00								
04:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
05:00						PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
06:00					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
04:00								

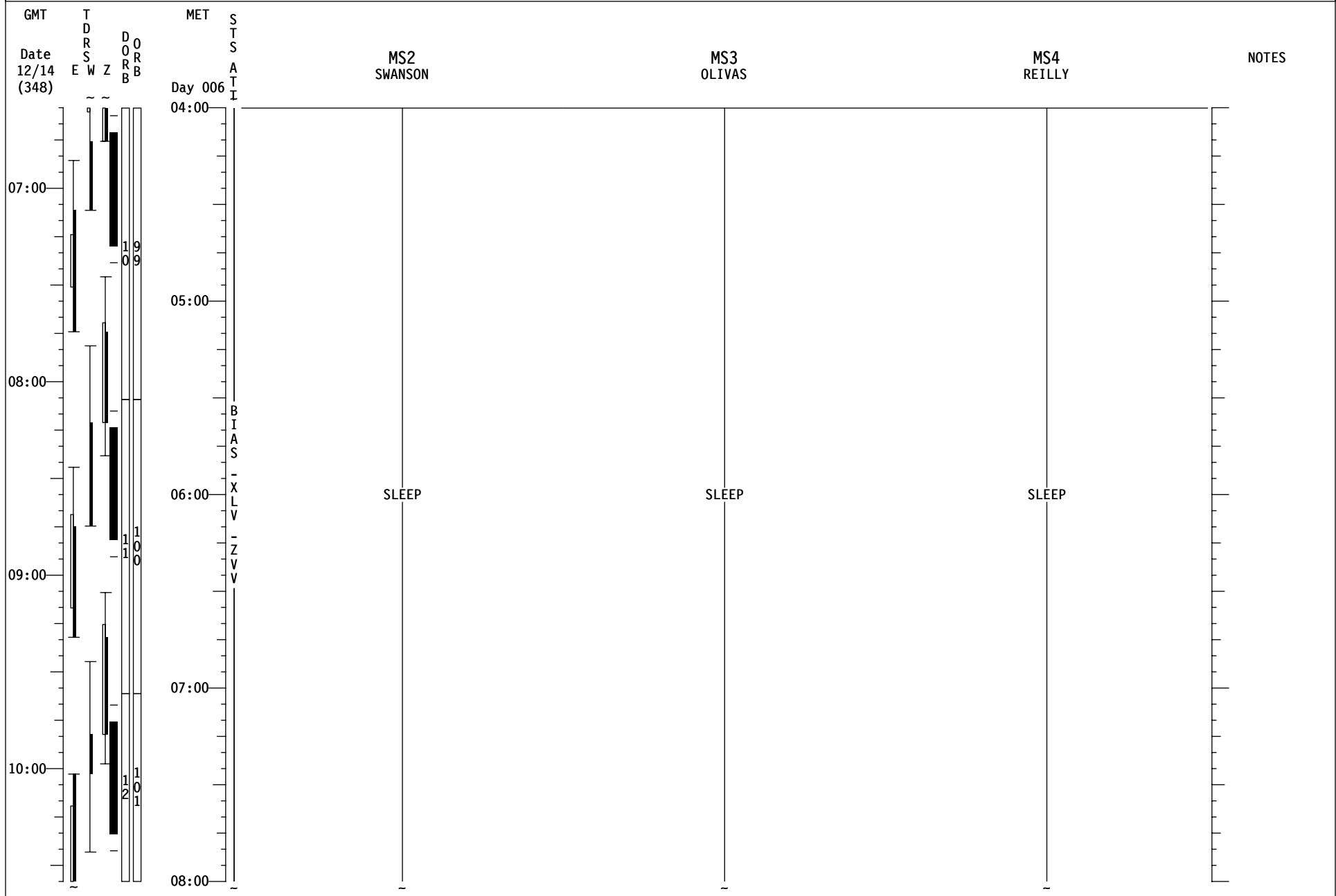
STS-117 (FD07)



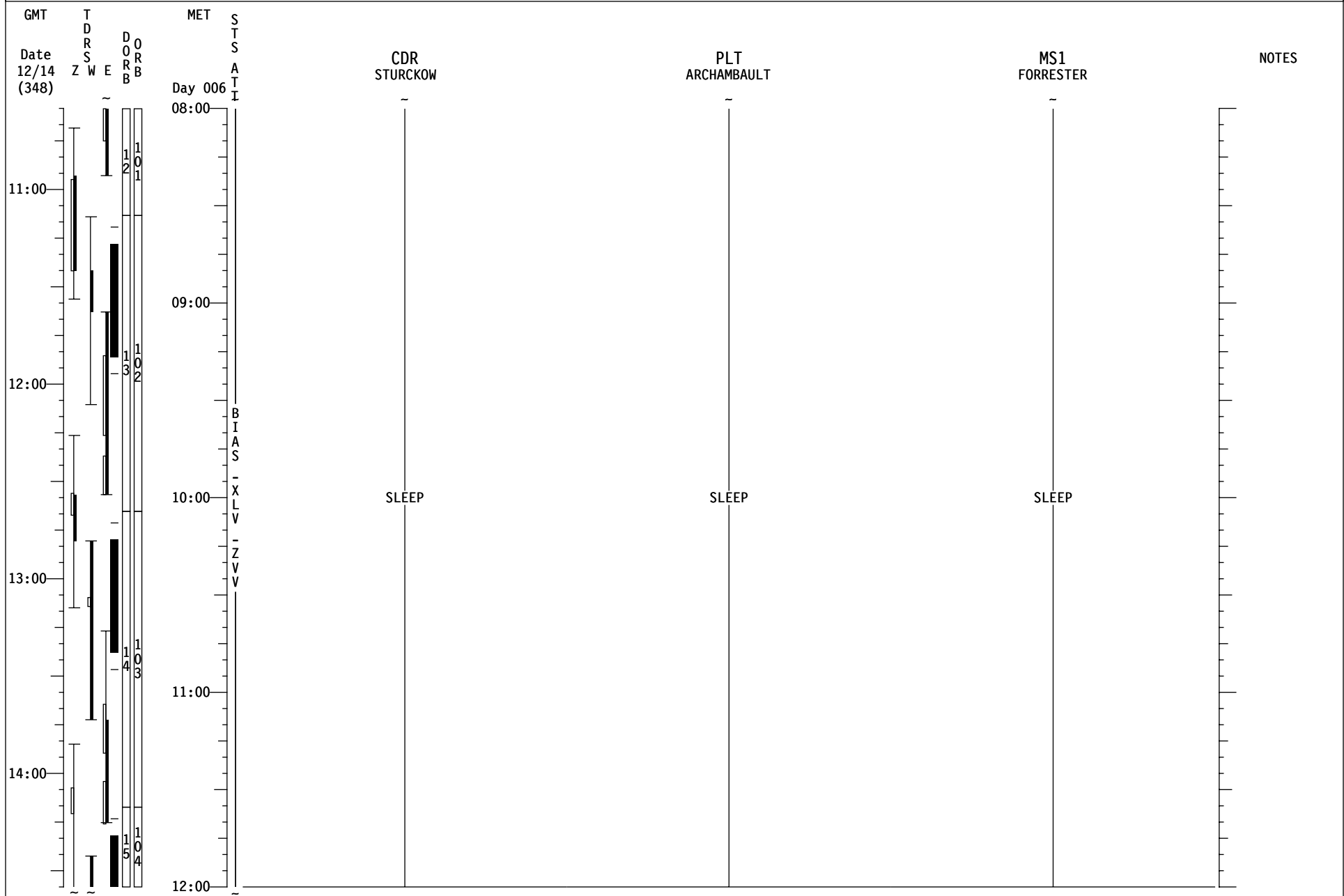
STS-117 (FD07)



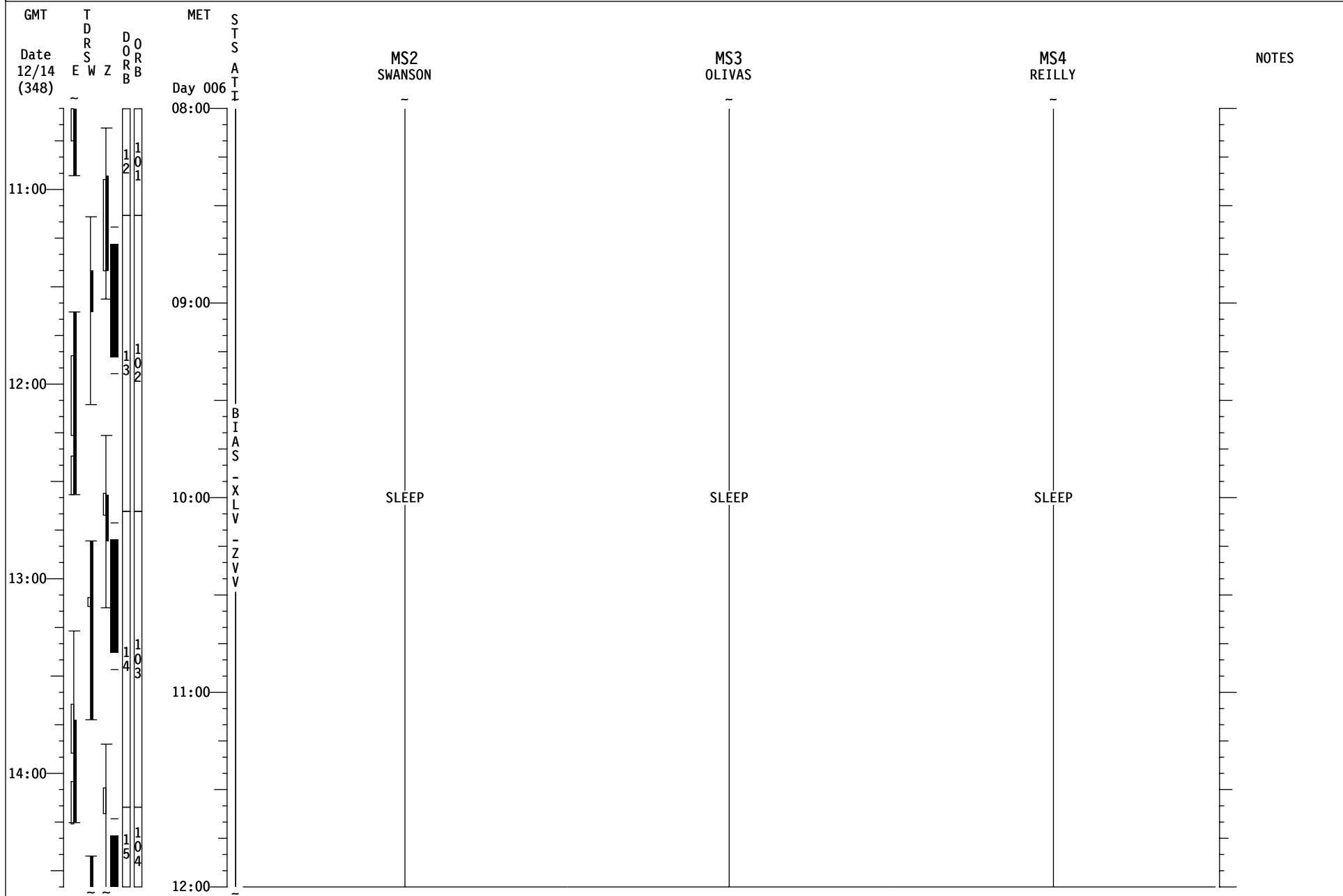
STS-117 (FD07)



STS-117 (FD07)



STS-117 (FD07)

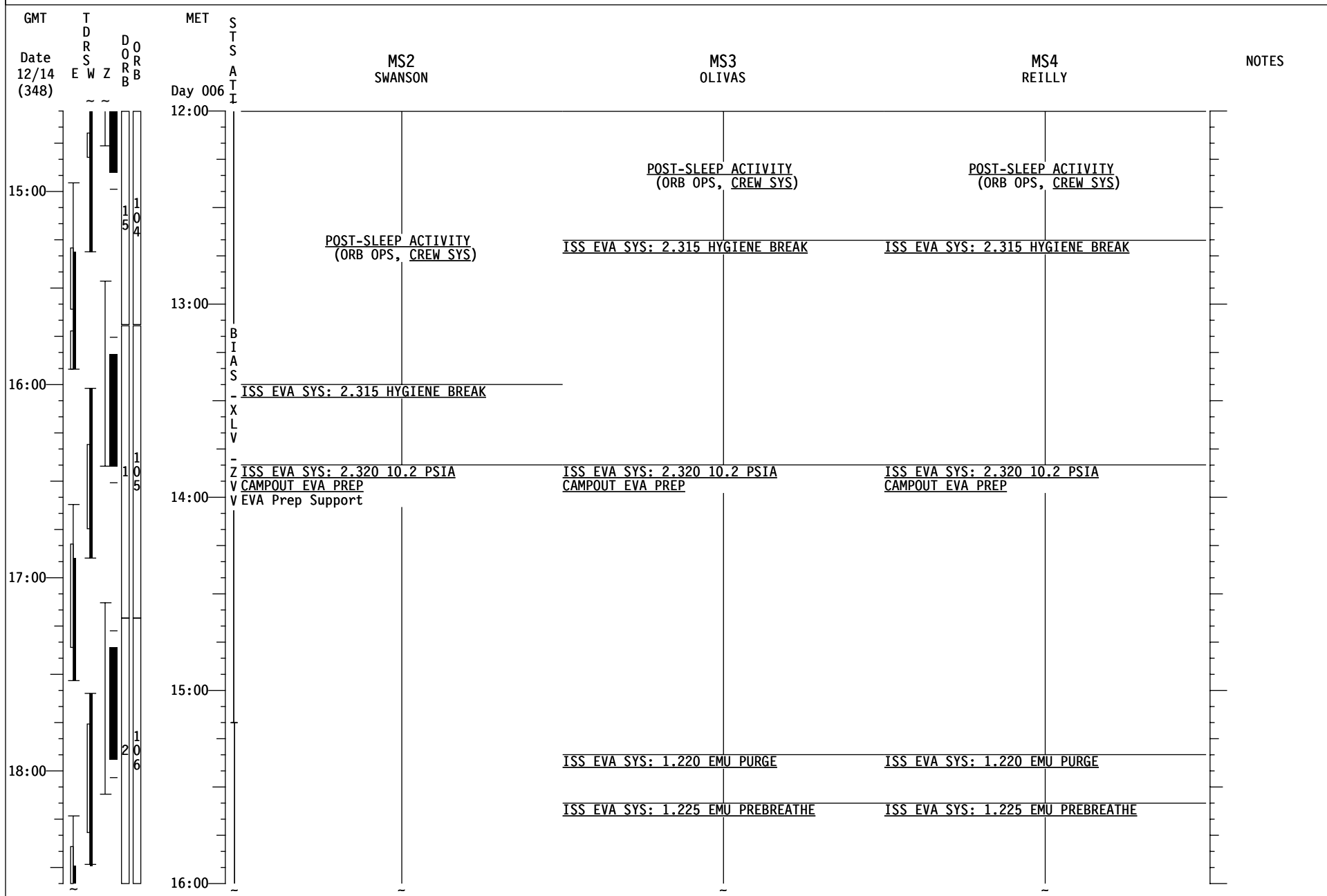


STS-117 (FD08)

GMT	T D R S Z W E	D O R B B B	MET Day 006	S T S A T T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
12:00								
15:00					POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
					06 VUHF MODE - OFF PRIVATE MEDICAL CONFERENCE			
16:00						POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
17:00					POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
					PRLA CLOSE (ORB OPS, PRLA)			
18:00					EXERCISE	JOINT OPS: 3.110 H/O ATT CONTROL CMG TA TO ORB MNVR (TRK) BIAS -XLV +YVV (Simo Dump) TG=2 BV=5 P=157 Y=2 OM=193 A12/AUTO/VERN (6/15:10) Init TRK		
						SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Supply/Waste Dump		
						L17 Check MCIU filter screen	EXERCISE	
16:00								

FD08 EZ ACTIVITIES:
TEPC (STATUS CHECK)
(ORB OPS, CREW SYS)
QCAC FILTER INSPECTION
HARD REBOOT PGSC's

STS-117 (FD08)

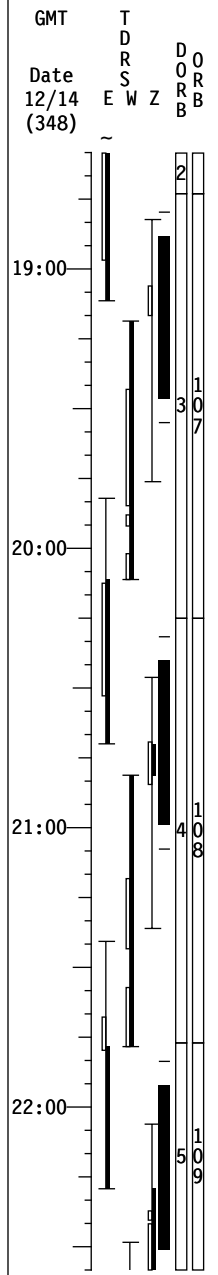


STS-117 (FD08)

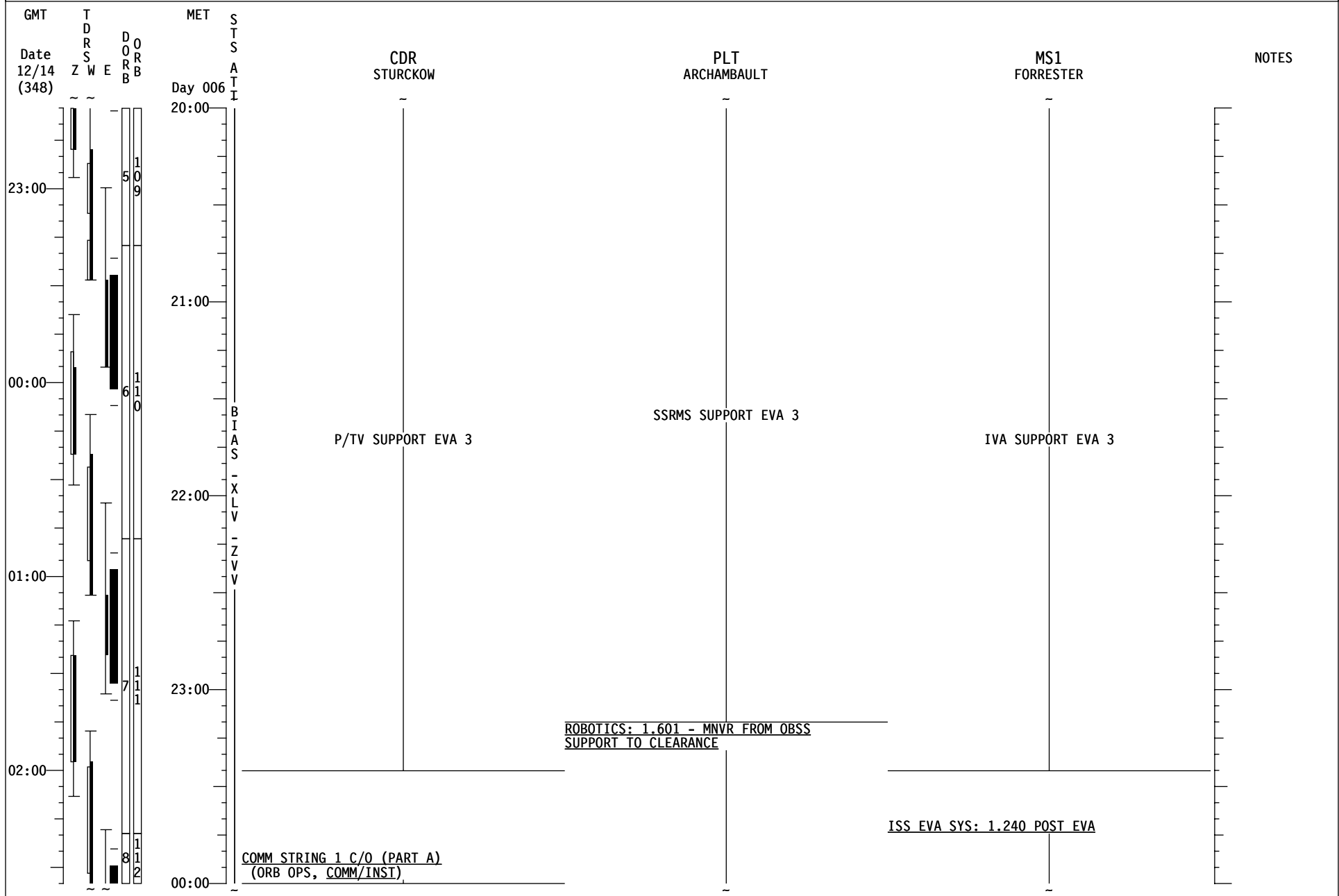
GMT	T D R S E Z W E D O R B	MET Day 006	S T S A T T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
16:00						EXERCISE	
19:00				<u>P/TV07 EVA</u> (PHOTO/TV, SCENES) Setup	EXERCISE		
				<u>SUPPLY/WASTE WATER DUMP</u> (ORB OPS, ECLS) Terminate Supply/Waste Dump			UPLINK β21 only C1,D1
17:00				<u>MNVR (TRK) BIAS -XLV -ZVV (TEA)</u> TG=2 BV=5 P=157 Y=2 OM=181 A12/AUTO/VERN (6/16:50) Init TRK			
				<u>JOINT OPS: 3.111 H/O ATT CONTROL</u> <u>ORB TO CMG TA</u>			
20:00							
21:00				P/TV SUPPORT EVA 3	SSRMS SUPPORT EVA 3	IVA SUPPORT EVA 3	
18:00							
19:00							
22:00							
20:00							

STS-117 (FD08)

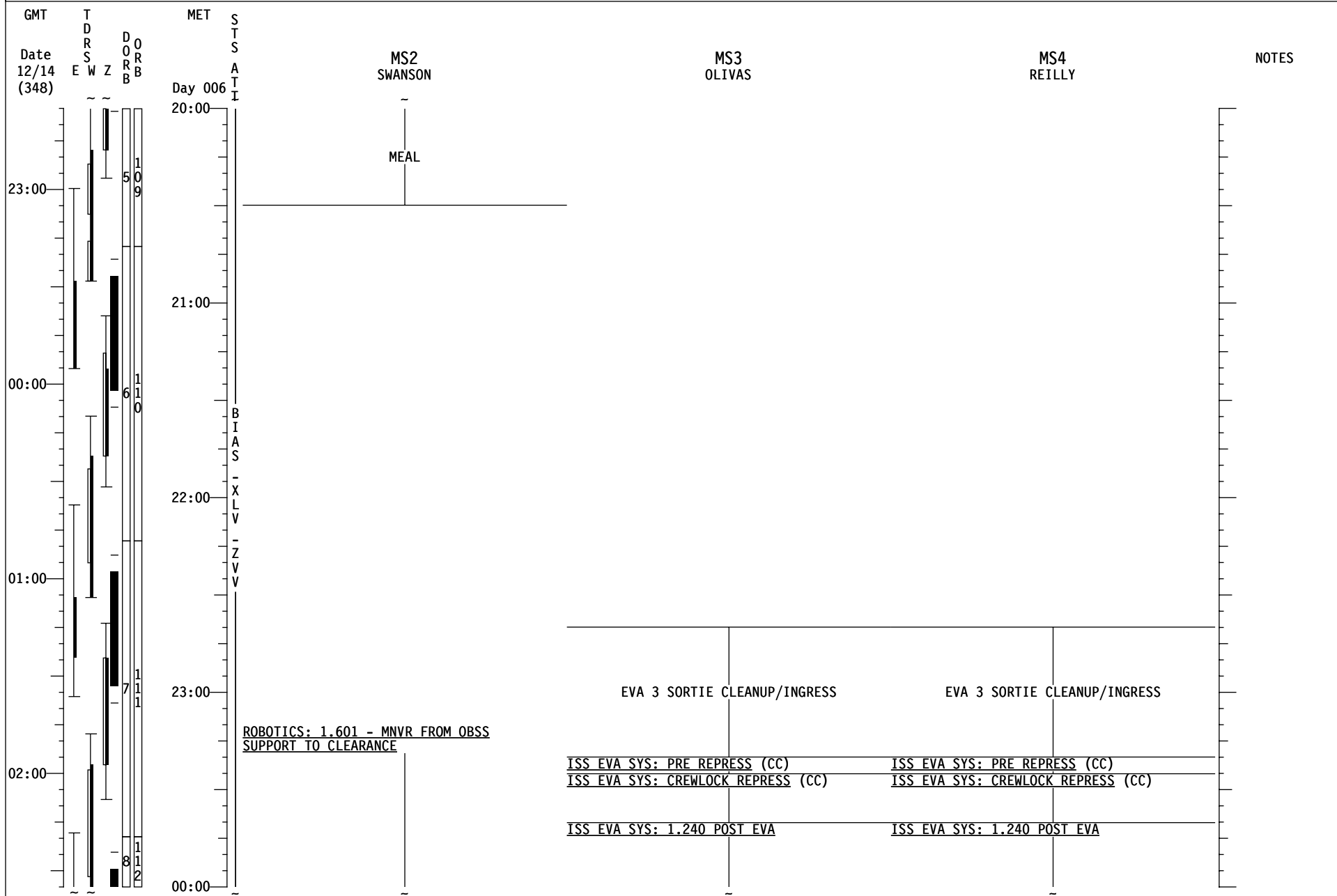
GMT	TDRS E W Z	DORB D O R B	MET Day 006	STS A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
16:00					ISS EVA SYS: 2.320 10.2 PSIA CAMPOUT EVA PREP EVA Prep Support	ISS EVA SYS: 1.225 EMU PREBREATHE	ISS EVA SYS: 1.225 EMU PREBREATHE	
19:00						ISS EVA SYS: CREWLOCK DEPRESS (CC)	ISS EVA SYS: CREWLOCK DEPRESS (CC)	
17:00					L1 TOPPING EVAP HTR DUCT sel - A NOZ L,R - A AUTO	ISS EVA SYS: CC CREWLOCK POST DEPRESS	ISS EVA SYS: CC CREWLOCK POST DEPRESS	
20:00						EVA 3 SORTIE SETUP/EGRESS	EVA 3 SORTIE SETUP/EGRESS	
18:00					EXERCISE	H20/H2 VENT VALVE CHANGEOUT	H20/H2 VENT VALVE CHANGEOUT	
21:00					V SUPPLY WATER DUMP USING FES (Init) - L1 RAD OUT TEMP-HI Z 01 When FREON EVAP OUT TEMP ind>50 degF L1 FLASH EVAP CNTLR PRI A-ON V 01 After 1 min, √FREON EVAP OUT TEMP-39 degF			
19:00						MT/CETA PATH	MT/CETA PATH	
22:00					MEAL	S4 MMOD SHIELD BOLT RELEASE	S4 MMOD SHIELD BOLT RELEASE	
20:00								



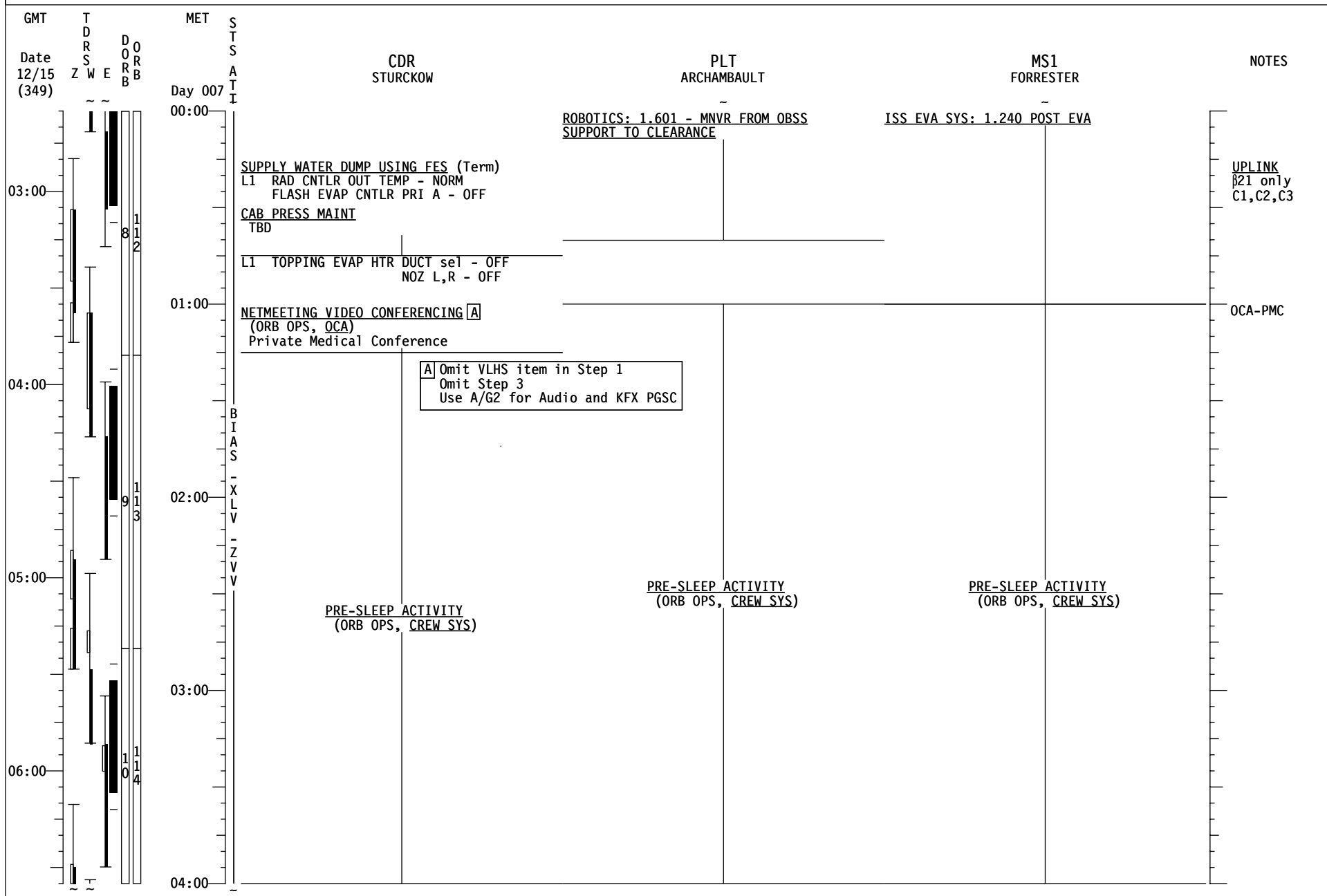
STS-117 (FD08)



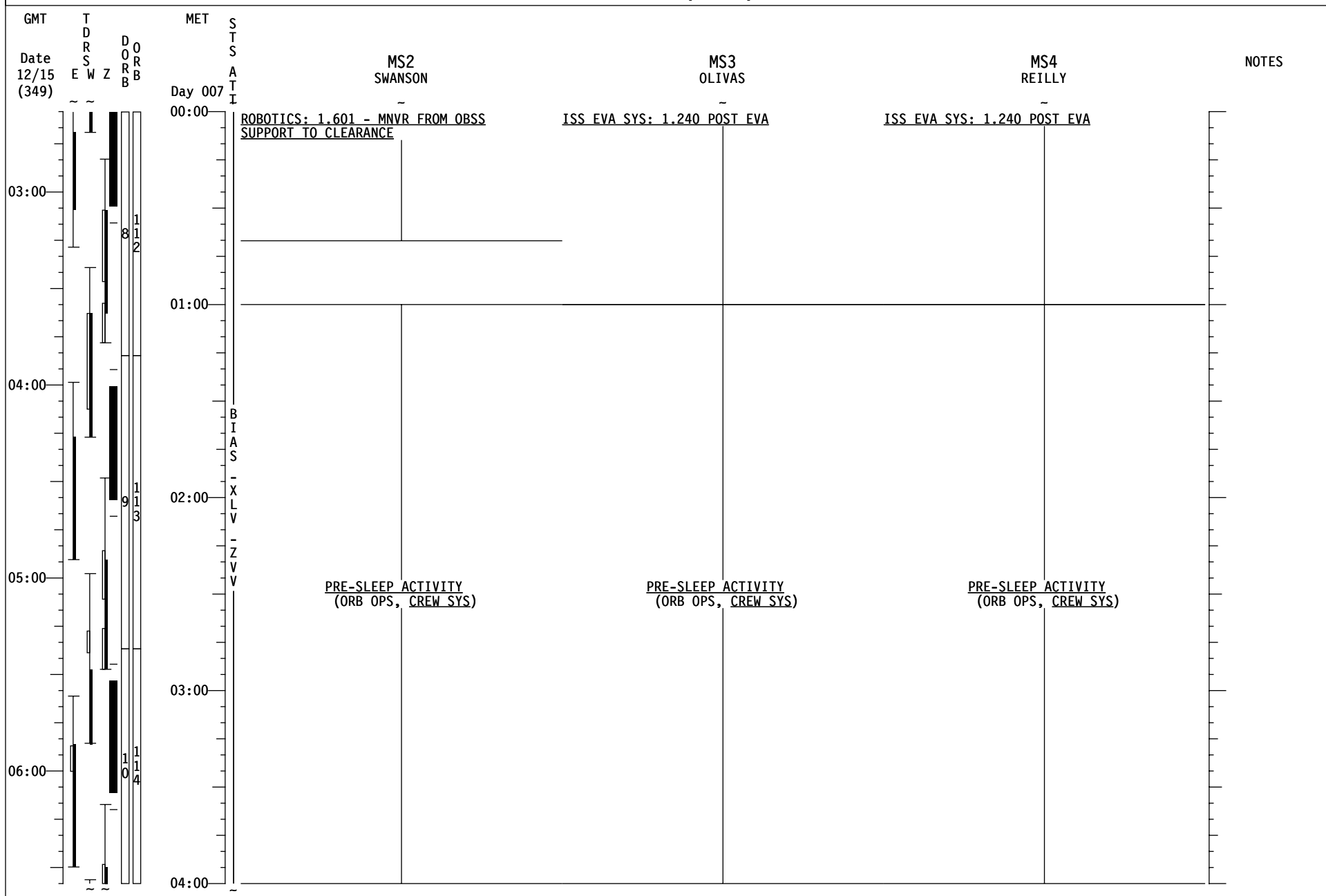
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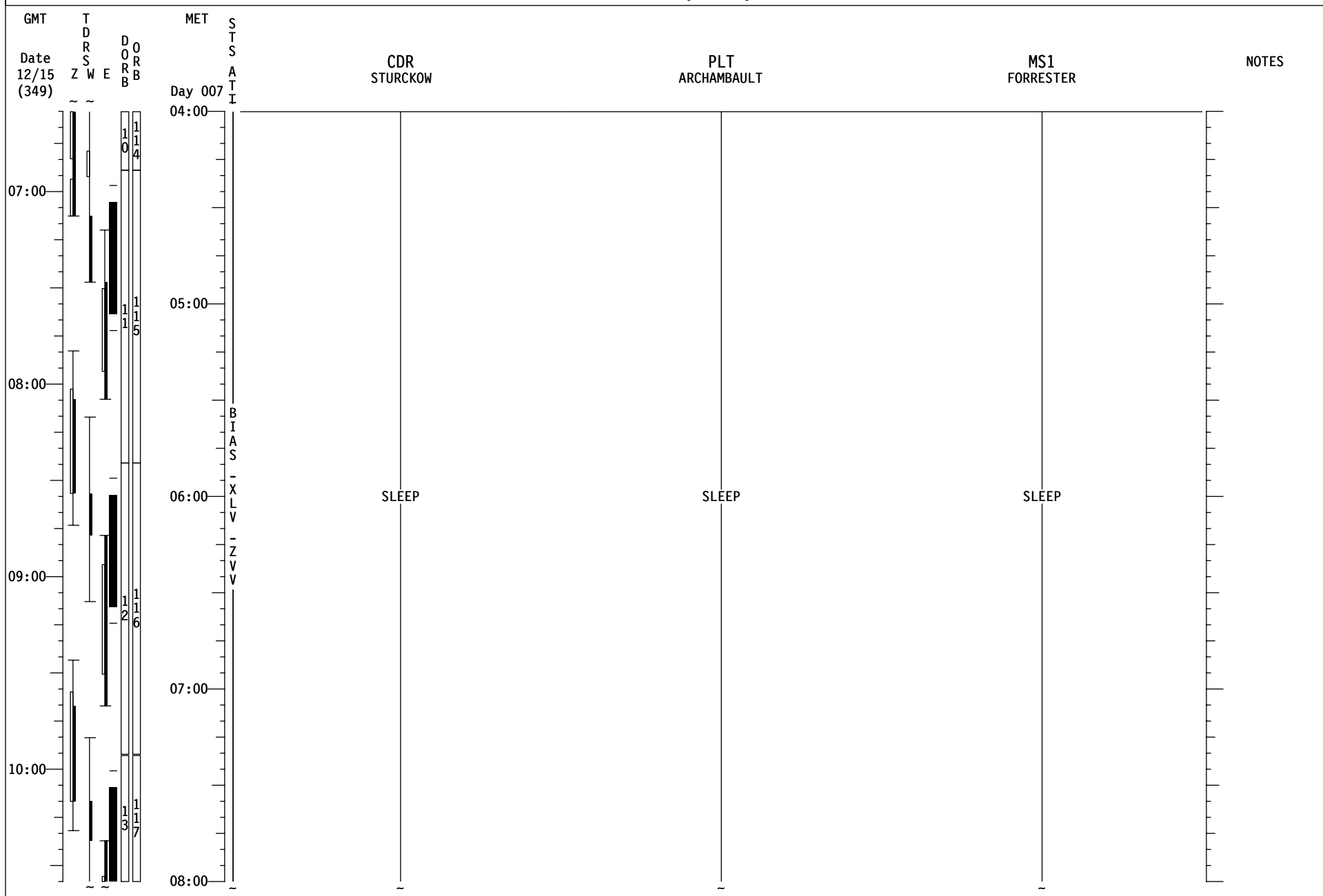
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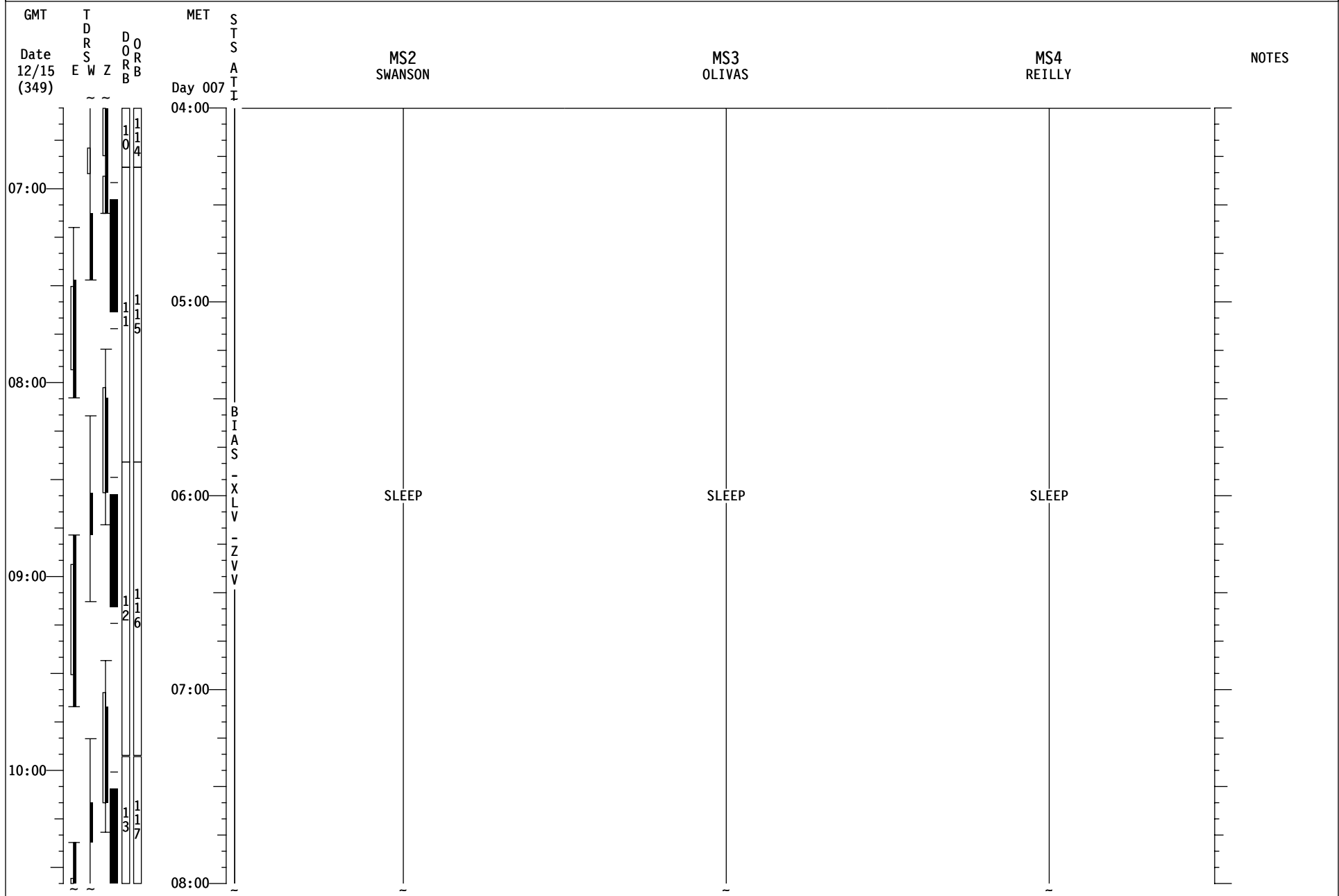
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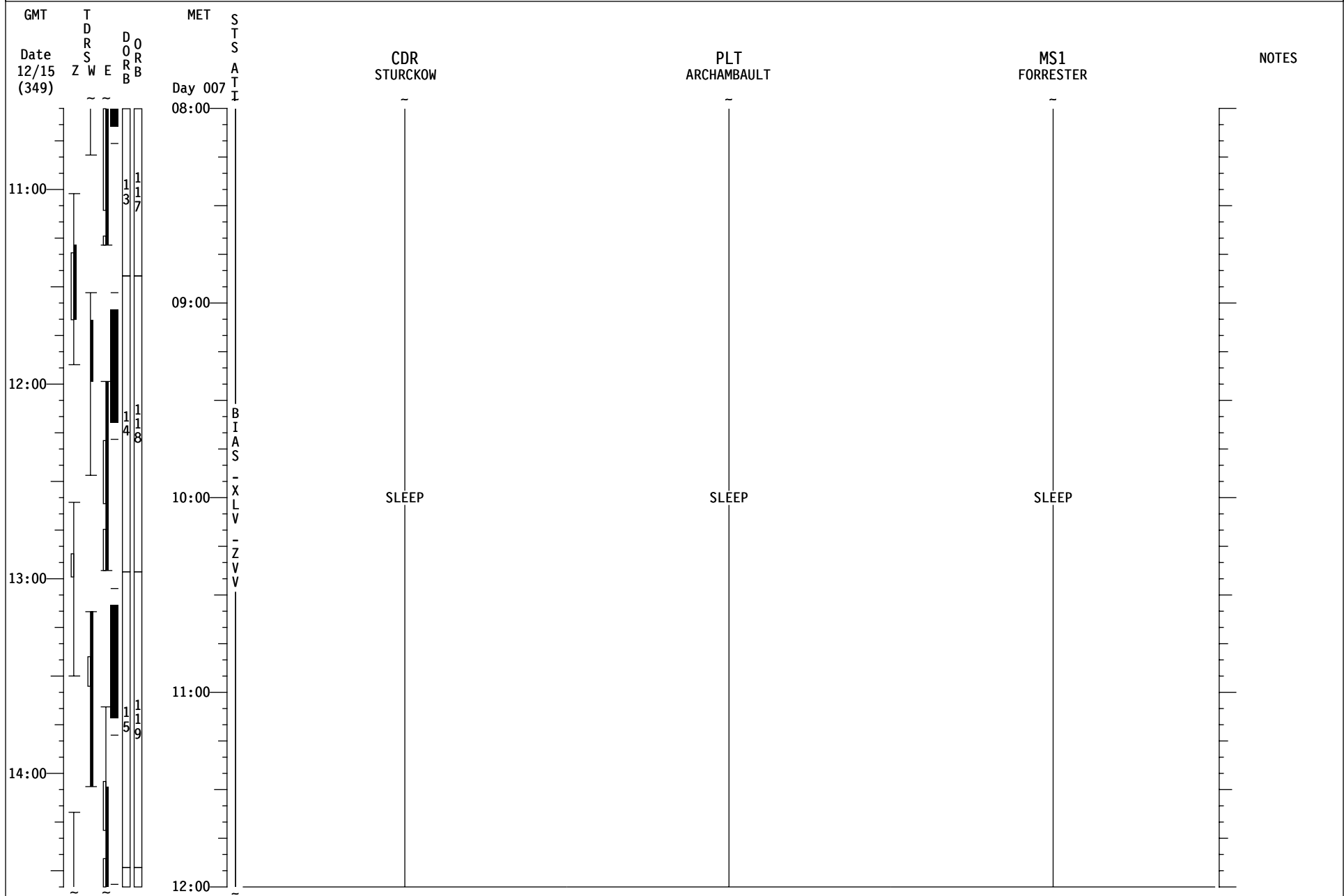
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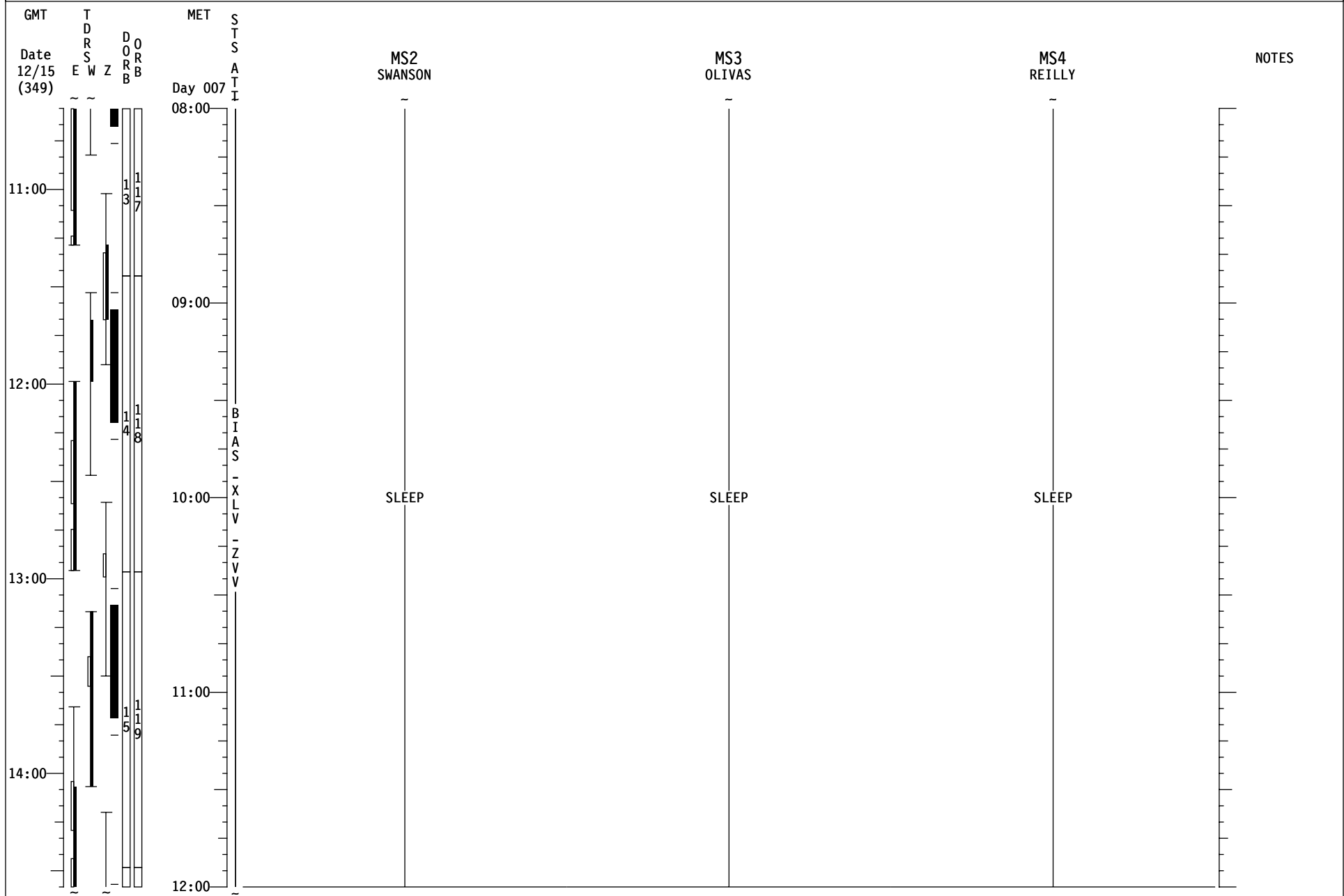
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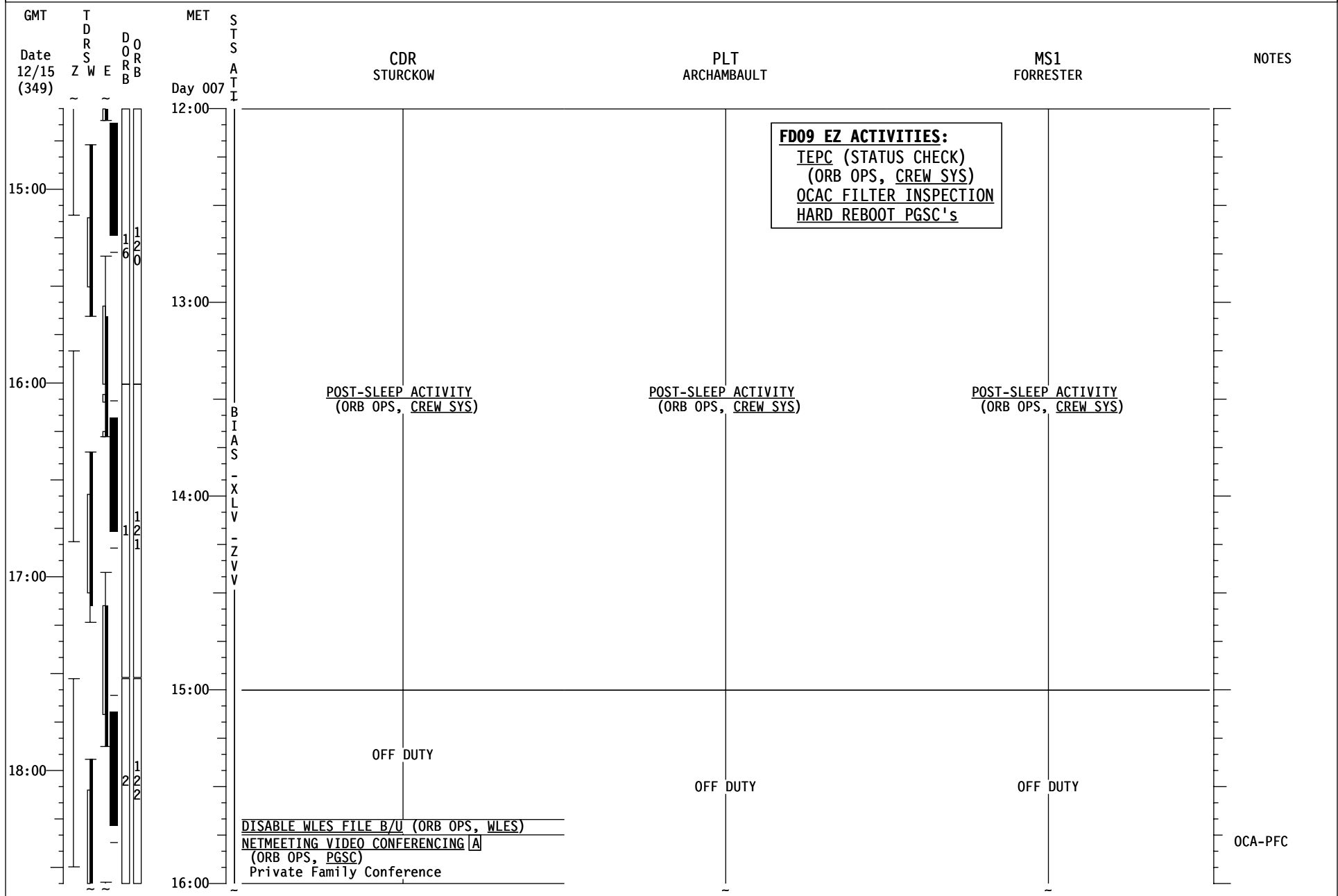
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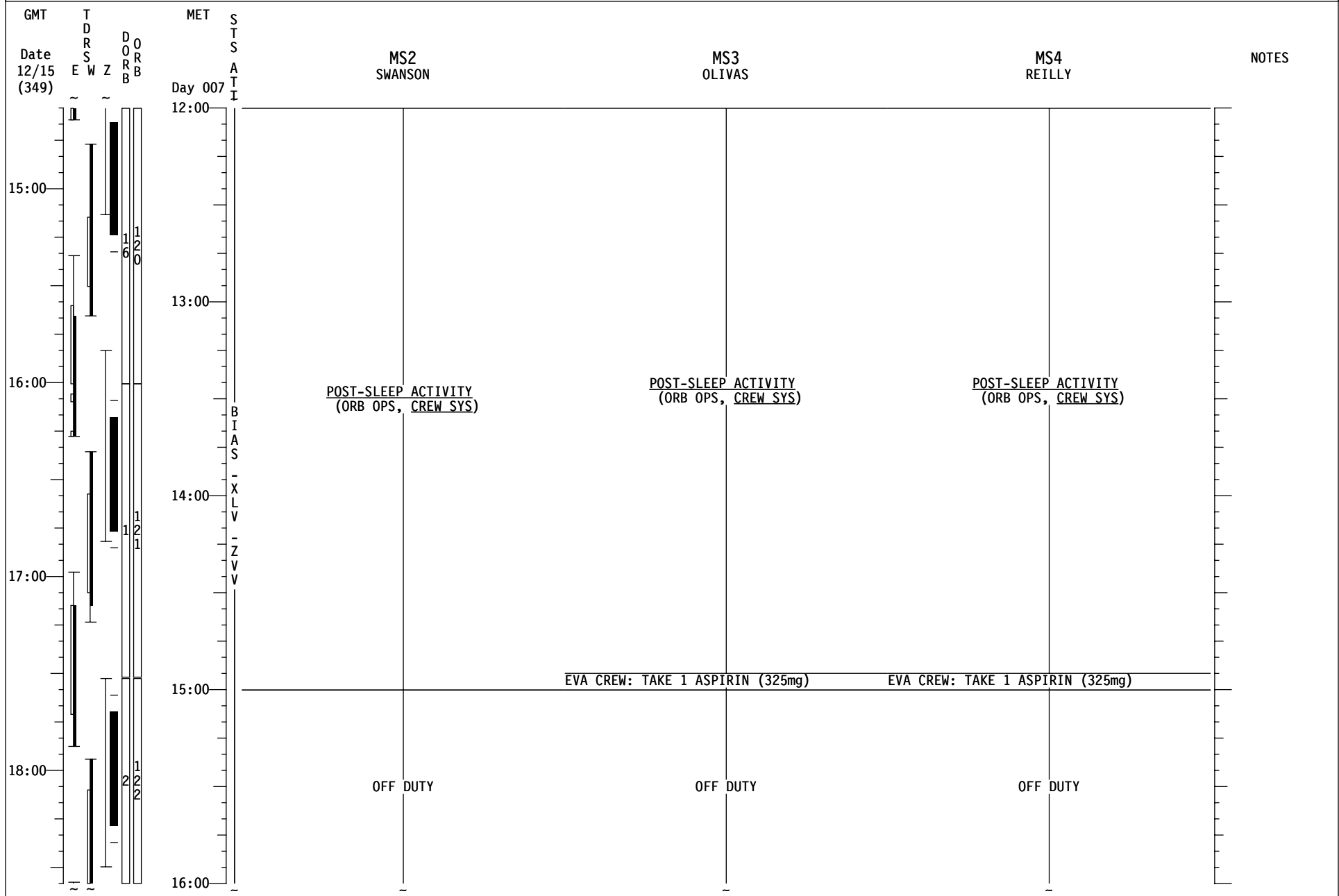
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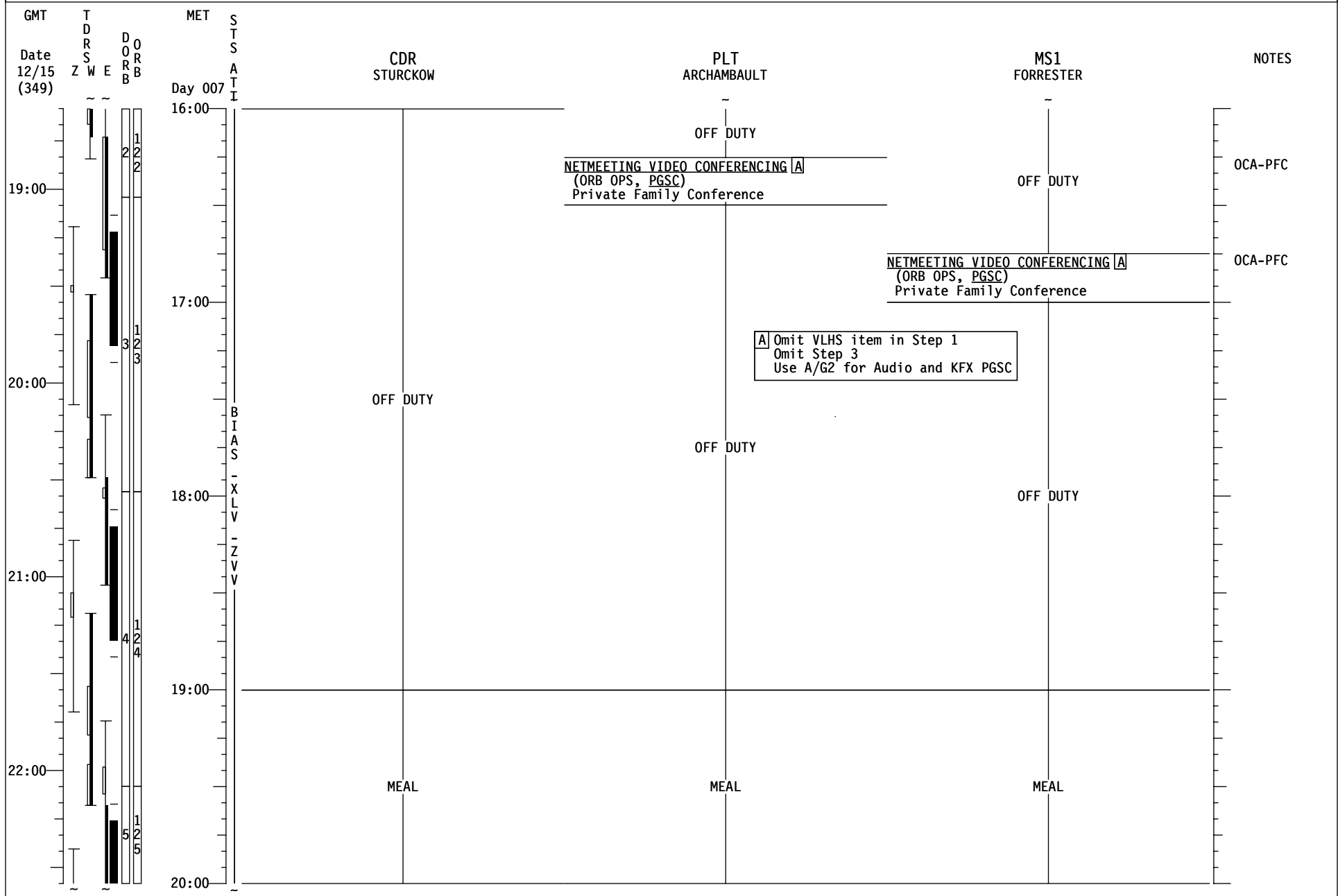
STS-117 (FD09)



STS-117 (FD09)

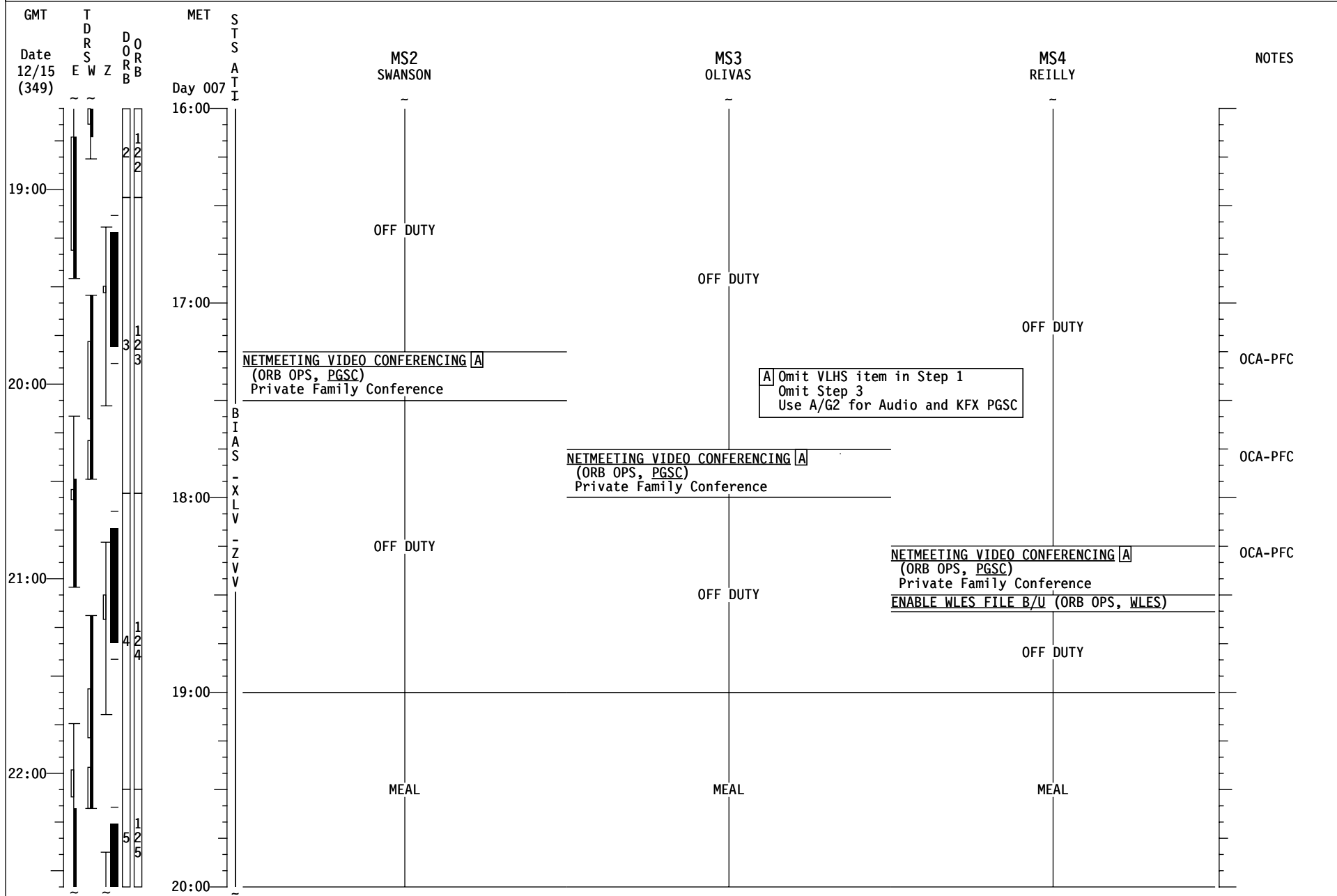


STS-117 (FD09)



[A] Omit VLHS item in Step 1
Omit Step 3
Use A/G2 for Audio and KFX PGSC

STS-117 (FD09)



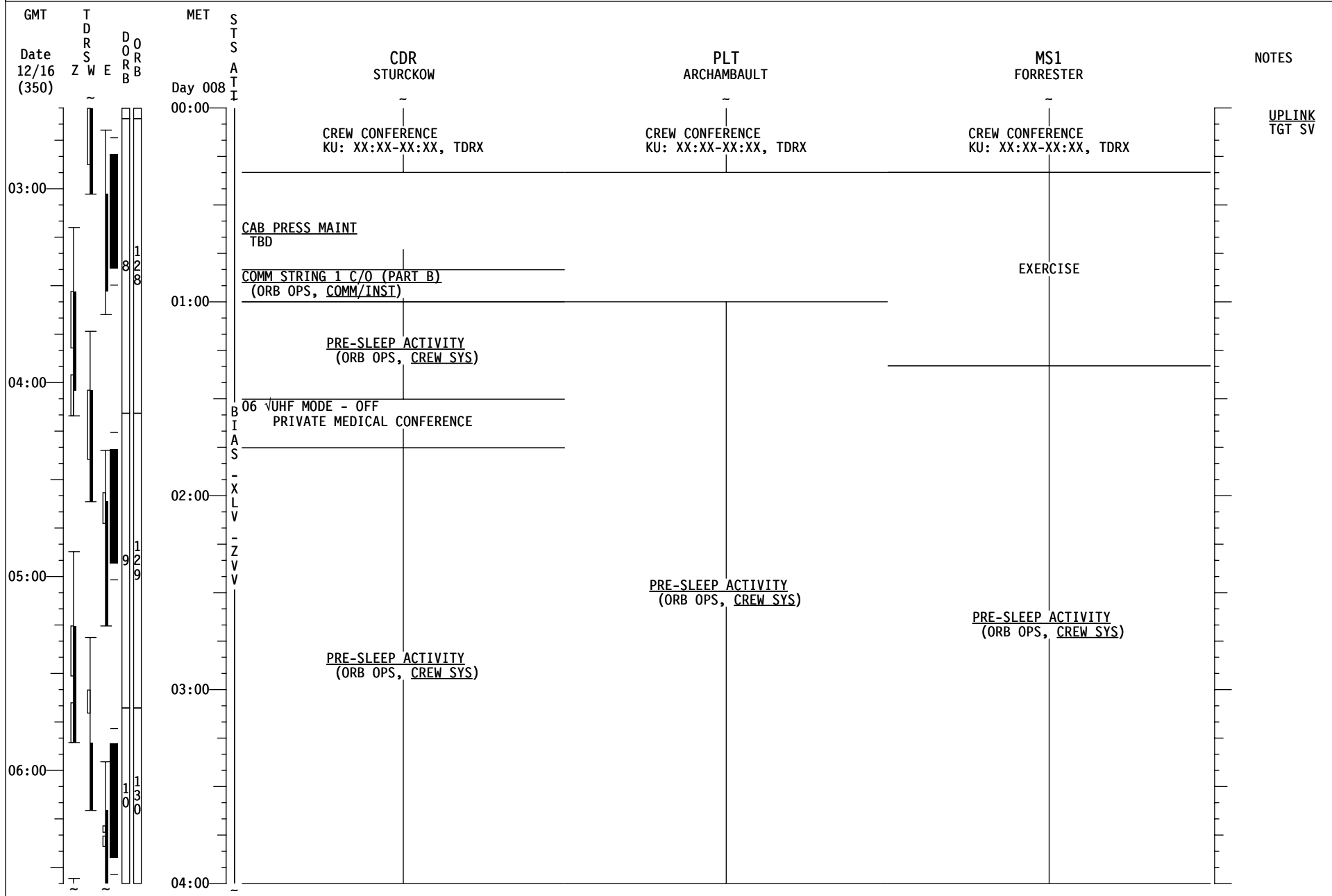
STS-117 (FD09)

GMT	TDRS ZSW E	DORB	MET	STS ATTI	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
Date 12/15 (349)			Day 007					
20:00				B I A S	OFF DUTY	OFF DUTY	OFF DUTY	
23:00				X L V				
21:00				Z V V	<u>JOINT OPS: 3.110 H/O ATT CONTROL</u> L17 Check MCIU filter screen <u>POST EVA TRANSFER AND RECONFIG</u> <u>CMG TA TO ORB</u> (EVA FS, EVA)			
00:00					<u>MNVR (TRK) BIAS -ZLV +YVV (Simo Dump)</u> TG=2 BV=5 P=157 Y=2 OM=193 A12/AUTO/VERN (7/21:10) Init TRK <u>SUPPLY/WASTE WATER DUMP</u> (ORB OPS, ECLS) Initiate Supply/Waste Dump			
01:00				B I A S				
22:00				X L V		EXERCISE		
02:00				+ Y V V				
23:00				B I A S	<u>SUPPLY/WASTE WATER DUMP</u> (ORB OPS, ECLS) Terminate Supply/Waste Dump			
02:00				X L V		<u>MNVR (TRK) BIAS -XLV -ZVV (TEA)</u> TG=2 BV=5 P=157 Y=2 OM=181 A12/AUTO/VERN (7/22:55) Init TRK When in ATT and rates dampened: <u>JNT OPS: 3.111 H/O ATT CNTRL ORB TO CMG TA</u>		
02:00				Z V V	CREW PHOTO	CREW PHOTO	CREW PHOTO	
00:00					CREW CONFERENCE KU: XX:XX-XX:XX, TDRX	CREW CONFERENCE KU: XX:XX-XX:XX, TDRX	CREW CONFERENCE KU: XX:XX-XX:XX, TDRX	

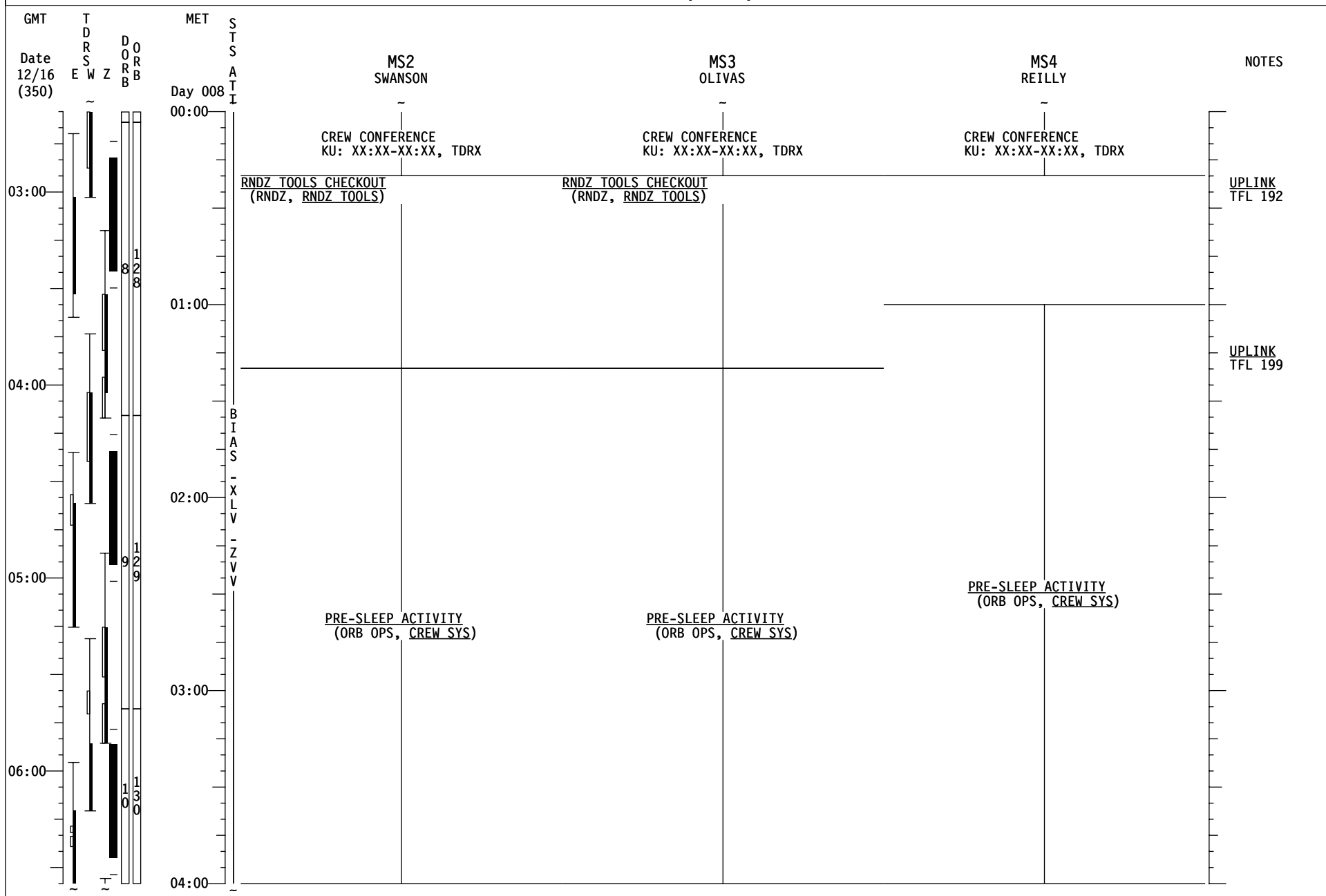
STS-117 (FD09)

GMT	TDRS E W Z	DORB DORB	MET	STS ATTI	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/15 (349)			Day 007					
20:00				B I A S	OFF DUTY	OFF DUTY	OFF DUTY	
23:00				- X L V				
				- Z V				
21:00				V	PREP WLES LAPTOP FOR TRANSFER (ORB OPS, WLE SENSORS)	POST EVA TRANSFER AND RECONFIG (EVA FS, EVA)		
00:00				B I A S	SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Supply/Waste Dump		EXERCISE	
				- X L V				
01:00				+ Y V V	EXERCISE		JOINT OPS: 3.123 O2 TRANSFER SETUP (POST PREBREATHE USING SHUTTLE O2)	
23:00				B I A S		DIGITAL PAO CC (PHOTO/TV, SONY PD100)		
				- X L V				
02:00				S	PREP WLES FOR RNDZ TOOLS C/O(ORBOPS, WLES)		JOINT OPS: 3.116 HIGH PRESSURE TANK O2 XFER (Init) Steps 1 & 2	
				- X L V	CREW PHOTO	CREW PHOTO	CREW PHOTO	
				- Z V V	CREW CONFERENCE KU: XX:XX-XX:XX, TDRX	CREW CONFERENCE KU: XX:XX-XX:XX, TDRX	CREW CONFERENCE KU: XX:XX-XX:XX, TDRX	
00:00				-				

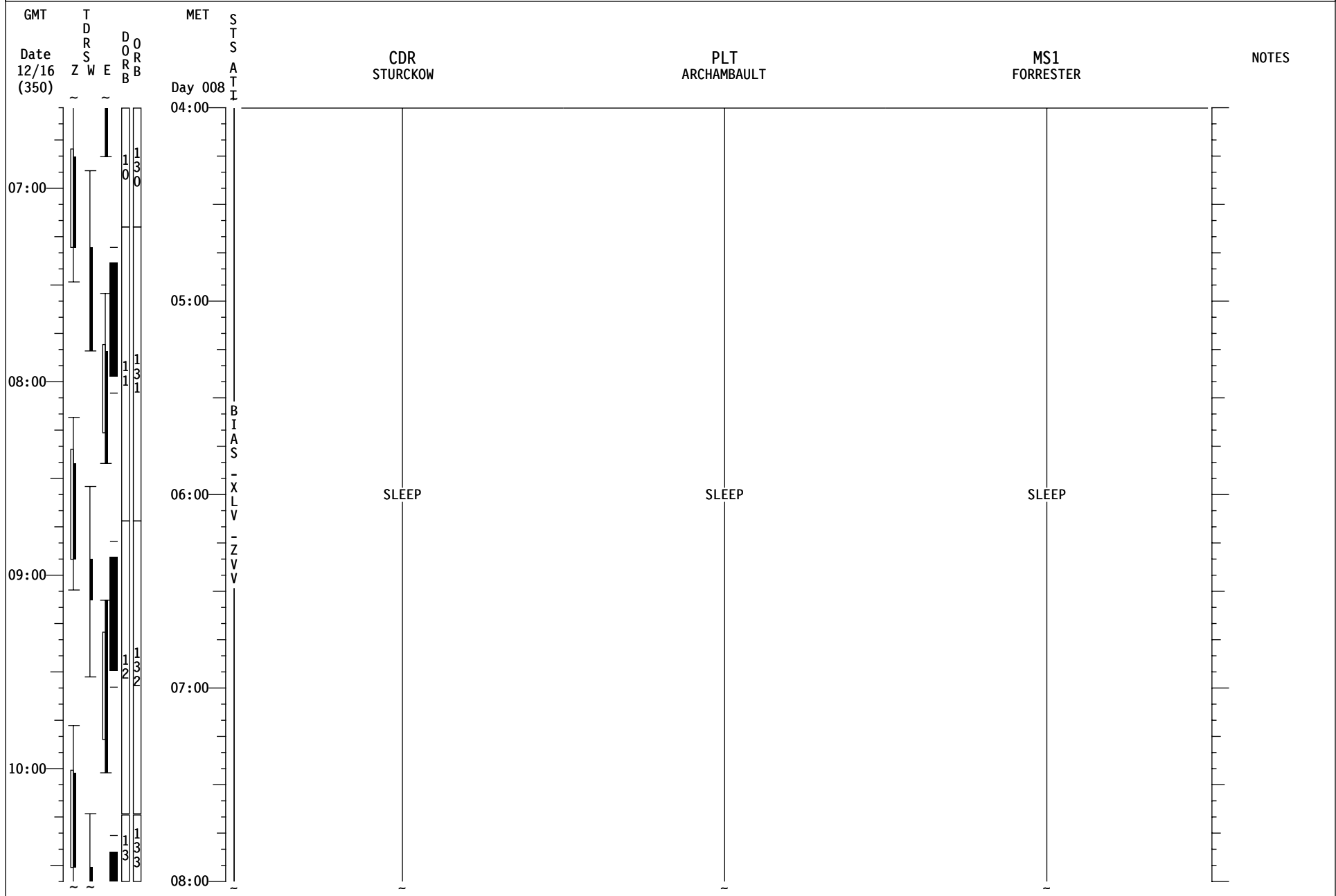
STS-117 (FD09)



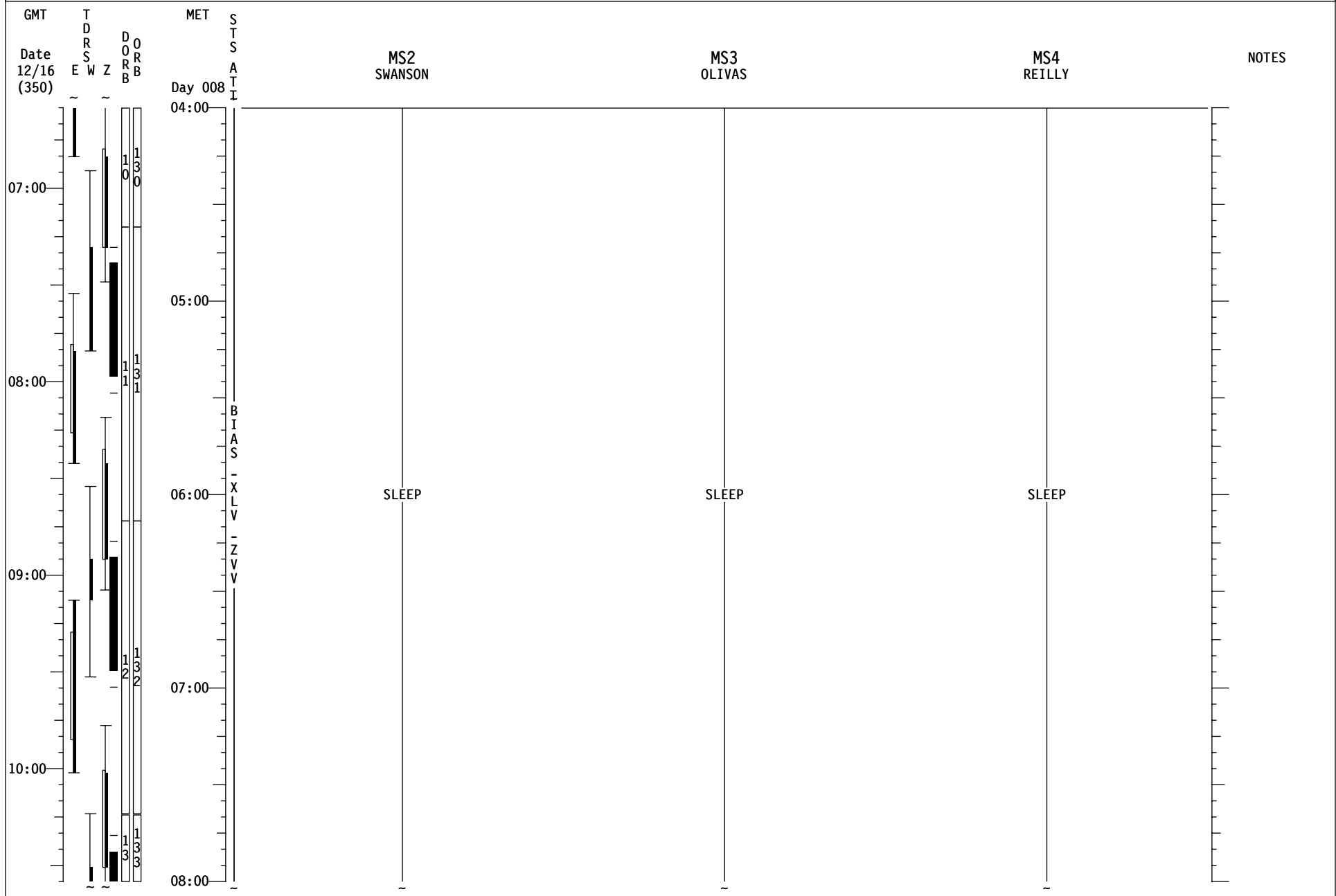
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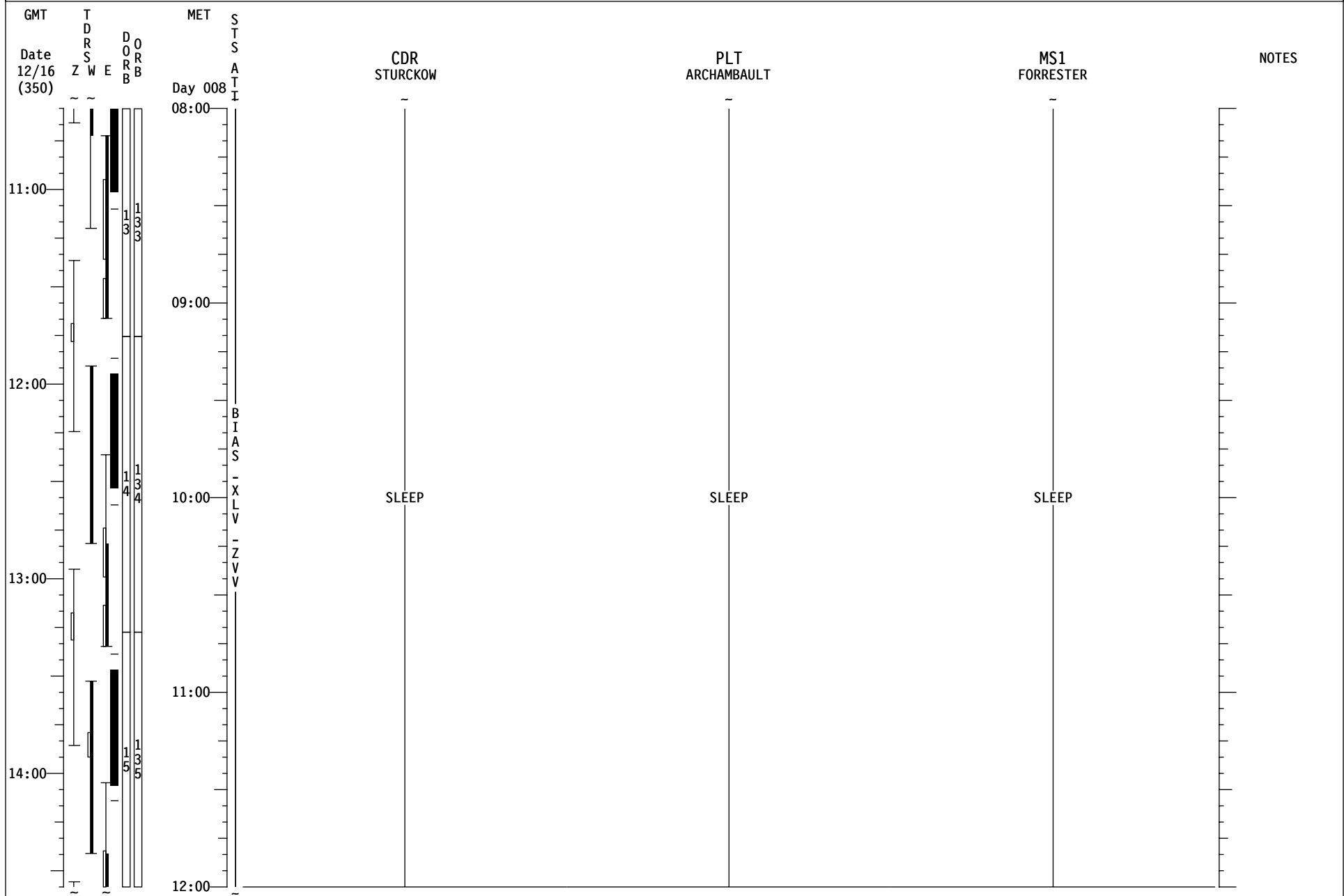
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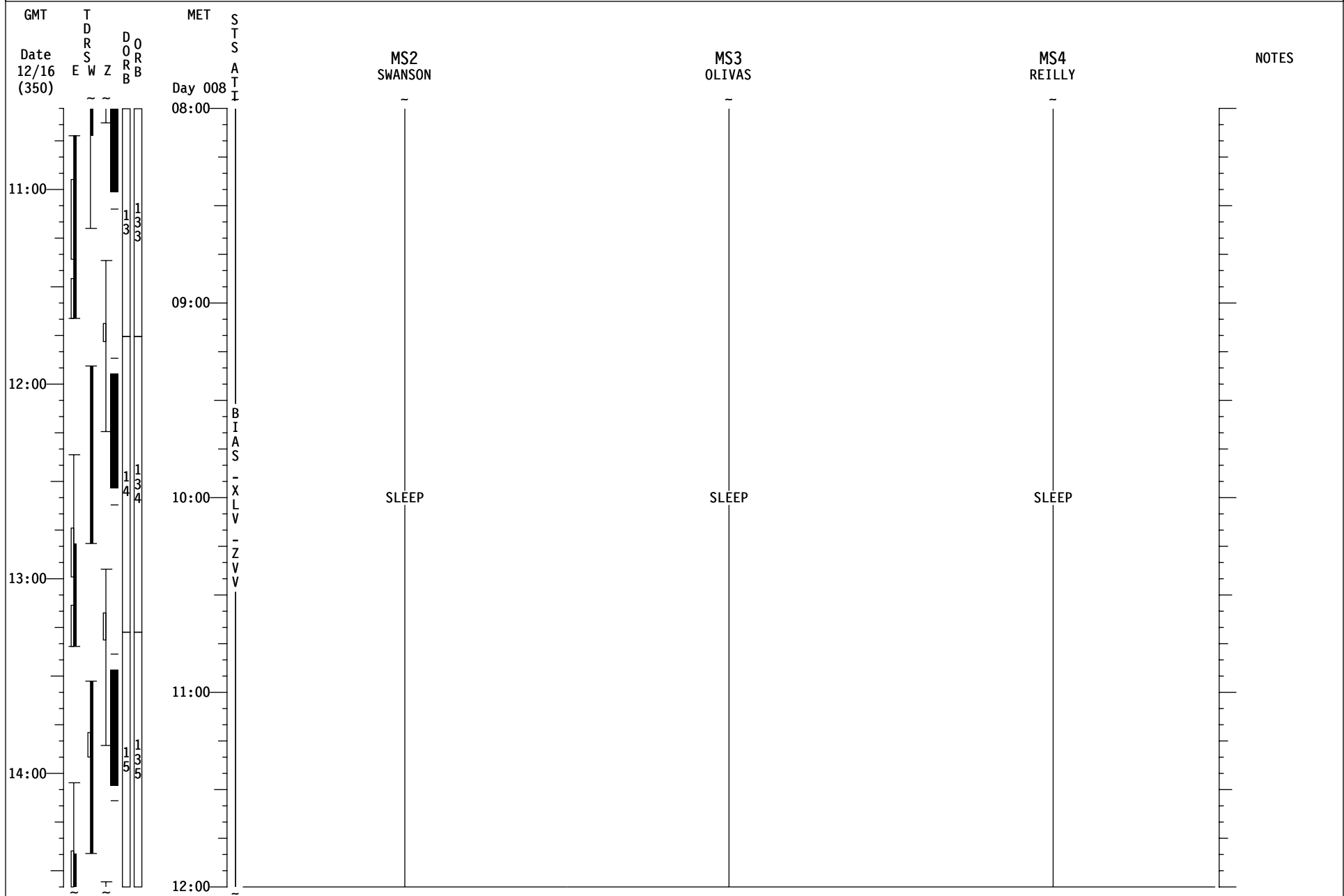
STS-117 (FD09)



STS-117 (FD09)



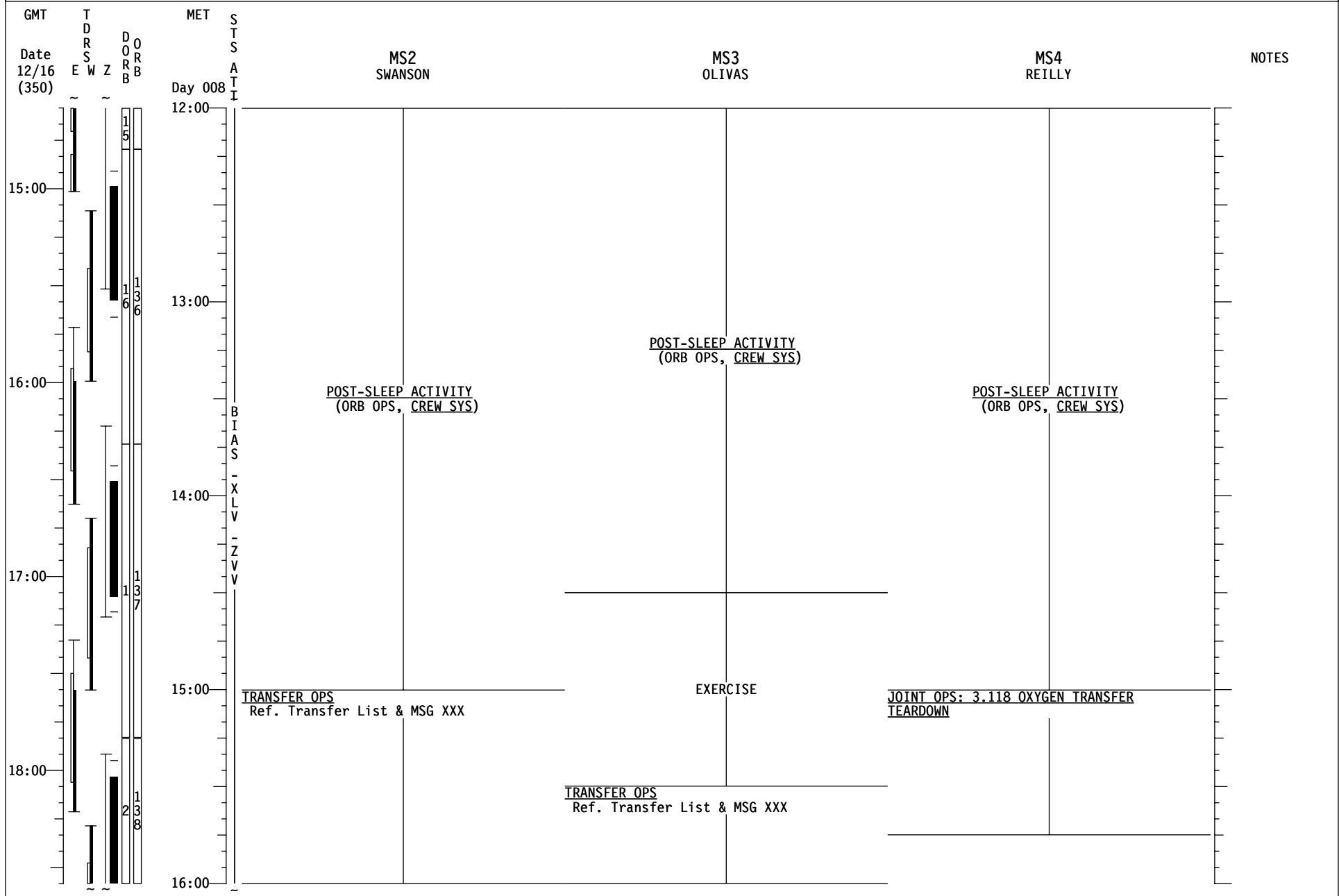
STS-117 (FD09)



STS-117 (FD10)

GMT Date 12/16 (350)	TDRS ZSW E	DORR B B	MET Day 008	STS A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
						<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> FD10 EZ ACTIVITIES: TEPC (STATUS CHECK) (ORB OPS, CREW SYS) QCAC FILTER INSPECTION HARD REBOOT PGSC's </div>		
					<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
						<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	
					EXERCISE			

STS-117 (FD10)



STS-117 (FD10)

GMT	T D R S E Z W E	D O R B B B	MET Day 008	S T S A T T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
16:00					FAREWELL	FAREWELL	FAREWELL	
19:00		1 3 8 2 3 8			4.103 DUCT REMOVAL & HATCH CLOSE (BYPASS CONFIG)	L1 TOPPING EVAP HTR DUCT sel - A NOZ L,R - A AUTO		
						JOINT OPS: 3.110 H/O ATT CONTROL CMG TA TO ORB	L17 Check MCIU filter screen	UPLINK TFL 192
17:00					X 4.104 ODS VEST/PMA DPRS & HATCH L LEAK CHECK	06 S TRK -Z - ON PRIORITY PWRUP GRP B (ORB PKT, PRIOR PWRDN) Steps 6(Triple G2) & 12	06 S TRK -Z - ON PRIORITY PWRUP GRP B (ORB PKT, PRIOR PWRDN) Steps 6(Triple G2) & 12	
20:00		1 3 9 3 3 9					EXERCISE	
					MNVR (TRK) -XLV +ZVV (Undock) TG=2 BV=5 P=180 Y=0 OM=0 A12/AUTO/VERN (8/17:40) Init TRK	√MCC for FES activation L1 FLASH EVAP CNTLR PRI A(B) - ON		
18:00					X UNDOCKING AND SEPARATION L V (RNDZ, UNDOCK/SEP T/L)	UNDOCKING AND SEPARATION L V (RNDZ, UNDOCK/SEP T/L)	UNDOCKING AND SEPARATION L V (RNDZ, UNDOCK/SEP T/L)	
21:00						UNDOCK 8/18:45		
					SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	
19:00		1 4 0 4 4 0						
22:00								UPLINK β21 only B1
20:00					SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	
					< SEP 1 8/20:00			

STS-117 (FD10)

GMT	TDRS E W Z	DORB	MET	STS A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/16 (350)			Day 008					
16:00					FAREWELL	FAREWELL	FAREWELL	
19:00		138		B I A S			4.103 DUCT REMOVAL & HATCH CLOSE (BYPASS CONFIG)	
				- X L L V			4.104 ODS VEST/PMA DPRS & HATCH LEAK CHECK	
17:00				- Z V V	EXERCISE			
20:00		139			C/L CAMR INSTALL (PHOTO/TV, C/L CAMR) Perform step 1 only	P/TV03 UNDOCK (PHOTO/TV, SCENES) Setup	C/L CAMR INSTALL (PHOTO/TV, C/L CAMR) Perform step 1 only	
18:00				X L L V	UNDOCKING AND SEPARATION (RNDZ, UNDOCK/SEP T/L)	P/TV03 UNDOCK (PHOTO/TV, SCENES)	UNDOCKING AND SEPARATION (RNDZ, UNDOCK/SEP T/L)	
21:00				+ Z V V		UNDOCK 8/18:45		
					SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)		SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	
19:00		140		F L Y A R O U N D				
22:00					SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	
20:00					< SEP 1 8/20:00			

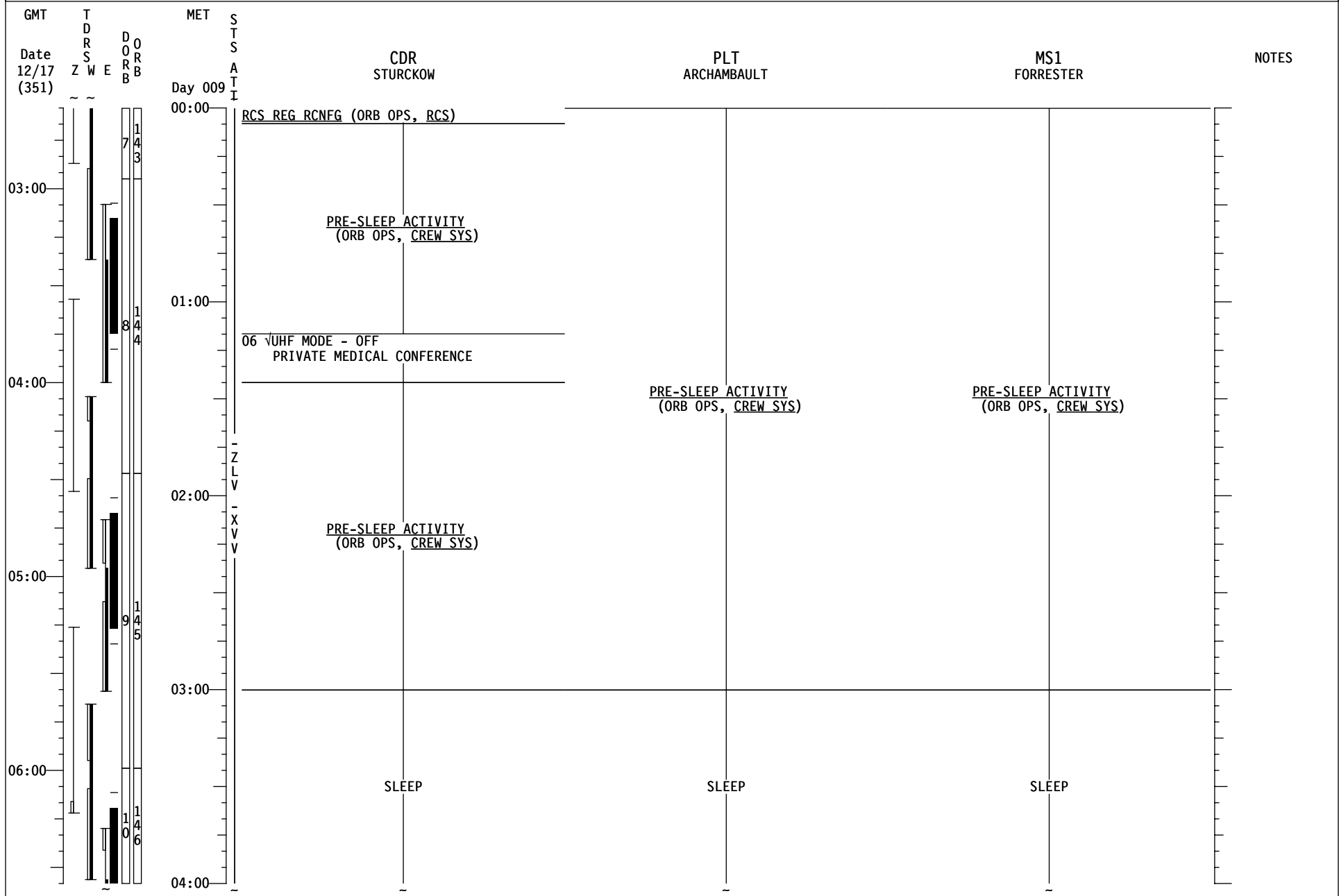
STS-117 (FD10)

GMT	TDRS ZSW E	DORB	MET	STS	CDR	PLT	MS1	NOTES
Date 12/16 (350)			Day 008	ATTI	STURCKOW	ARCHAMBAULT	FORRESTER	
20:00				SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)		SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	
23:00				< SEP 2 8/20:28 SHUTTLE CONDENSATE COLLECTION (ORB OPS, ECLS) Perform TEARDOWN		PRIORITY PWRDN GRP B (ORB PKT, PRIOR PWRDN) Steps 5,6(Single G2),9,10 & 12	JOINT OPS: 6.106 SSOR DEACTIVATION	UPLINK β21 + Mask
				MNVR (TRK) BIAS -ZLV +YVV (Simo Dump) TG=2 BV=3 OM=310 A1/AUTO/VERN (8/20:45) Init TRK				UPLINK TFL 188
21:00				SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Supply/Waste Dump				
00:00					MEAL	MEAL		
					MEAL			
22:00							OBSS BERTH (PDRS, OBSS NOM OPS)	
01:00							RMS PWRDN (PDRS, RMS PWRDN)	
23:00						EXERCISE		
					CAB PRESS MAINT TBD			
02:00					SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Terminate Supply/Waste Dump			
					MNVR (TRK) -ZLV -XVV TG=2 BV=3 OM=0 A1/AUTO/VERN (8/23:45) Init TRK			
00:00								

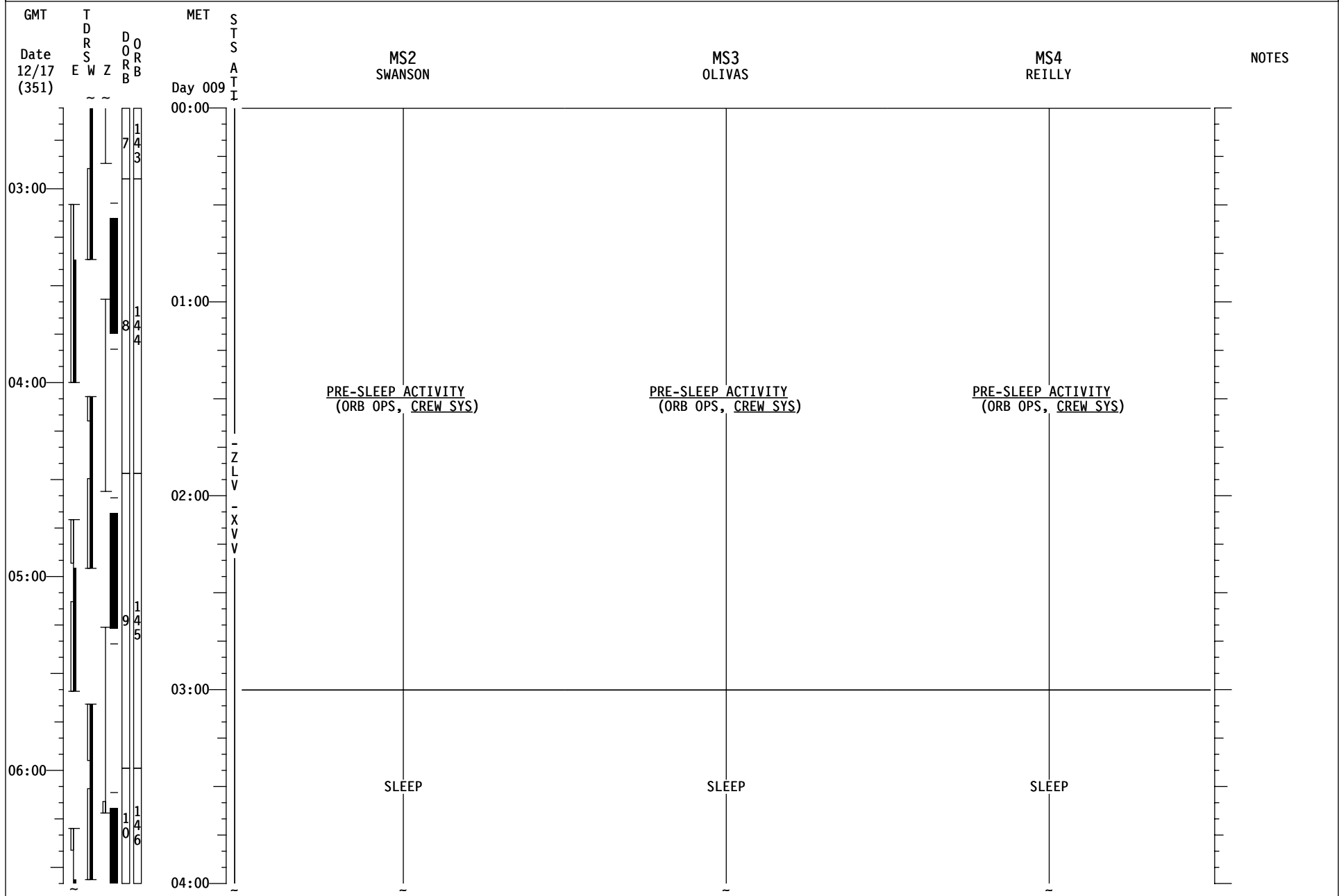
STS-117 (FD10)

GMT	TDRS E W Z	DORB D O R B	MET Day 008	STS A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
20:00				SEP	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	SEP/FLYAROUND (RNDZ, UNDOCK/SEP T/L)	
23:00				SEP	< SEP 2 8/20:28 PRIORITY PWRDN GRP B (ORB PKT, PRIOR PWRDN) Steps 5,6(Single G2),9,10 & 12		EMU INSTALLATION (EVA, AIRLOCK CONFIG)	
21:00					HEATER RECONFIG-CONFIG B (ORB OPS, EPS) CABIN TEMP CONTROLLER RECNFG 2(1) (ORB OPS, ECLS) WLES RCNFG PST UNDOCK (ORB OPS, WLES)			
00:00						MEAL		
22:00				B I A S	MEAL	OBSS BERTH (PDRS, OBSS NOM OPS)	MEAL	
01:00				Z L V				
				+ Y V V		RMS PWRDN (PDRS, RMS PWRDN)		
23:00				V	POST EVA ENT PREP (EVA, POST EVA ENT PREP)	POST EVA ENT PREP (EVA, POST EVA ENT PREP)		
02:00							EXERCISE	
00:00								

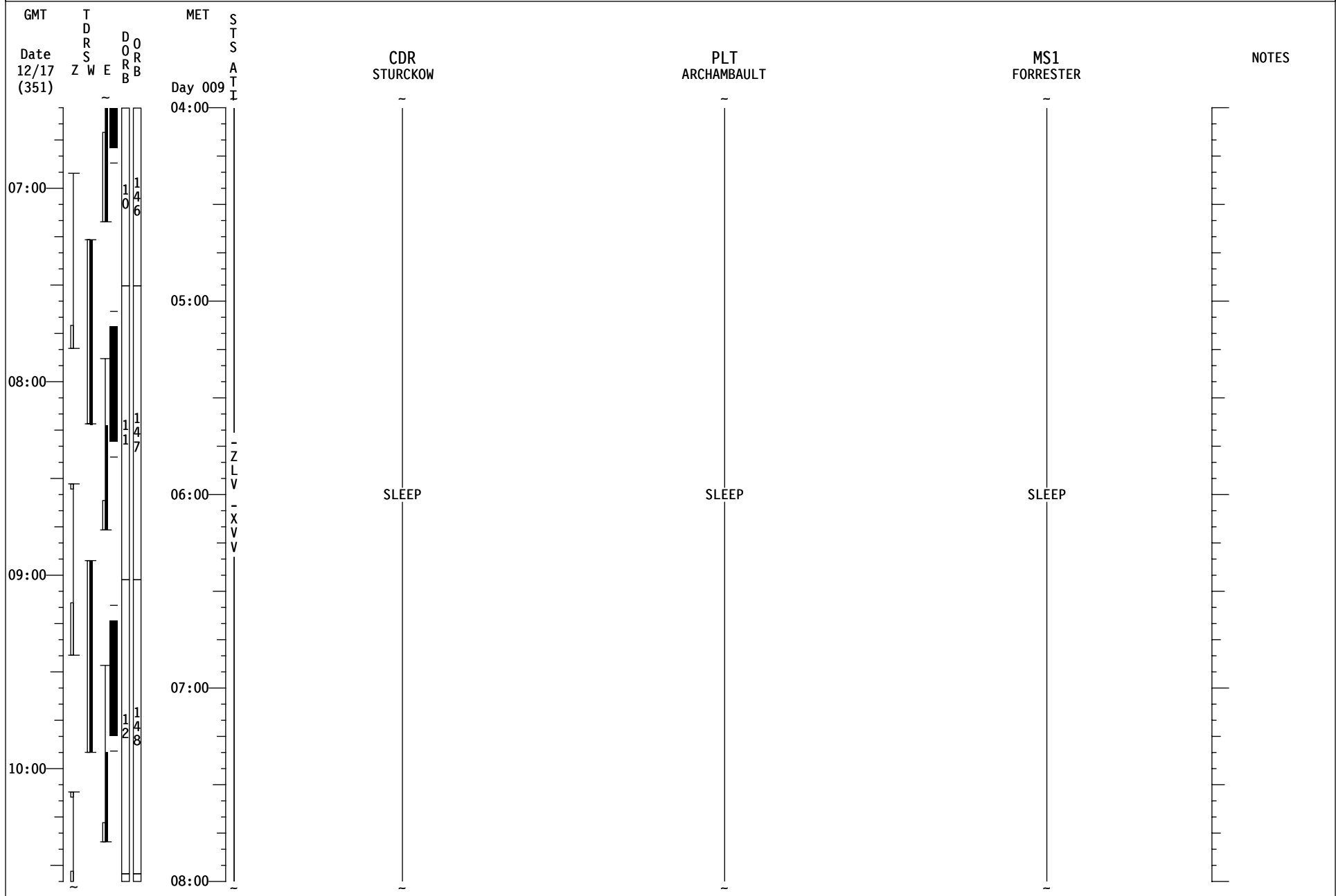
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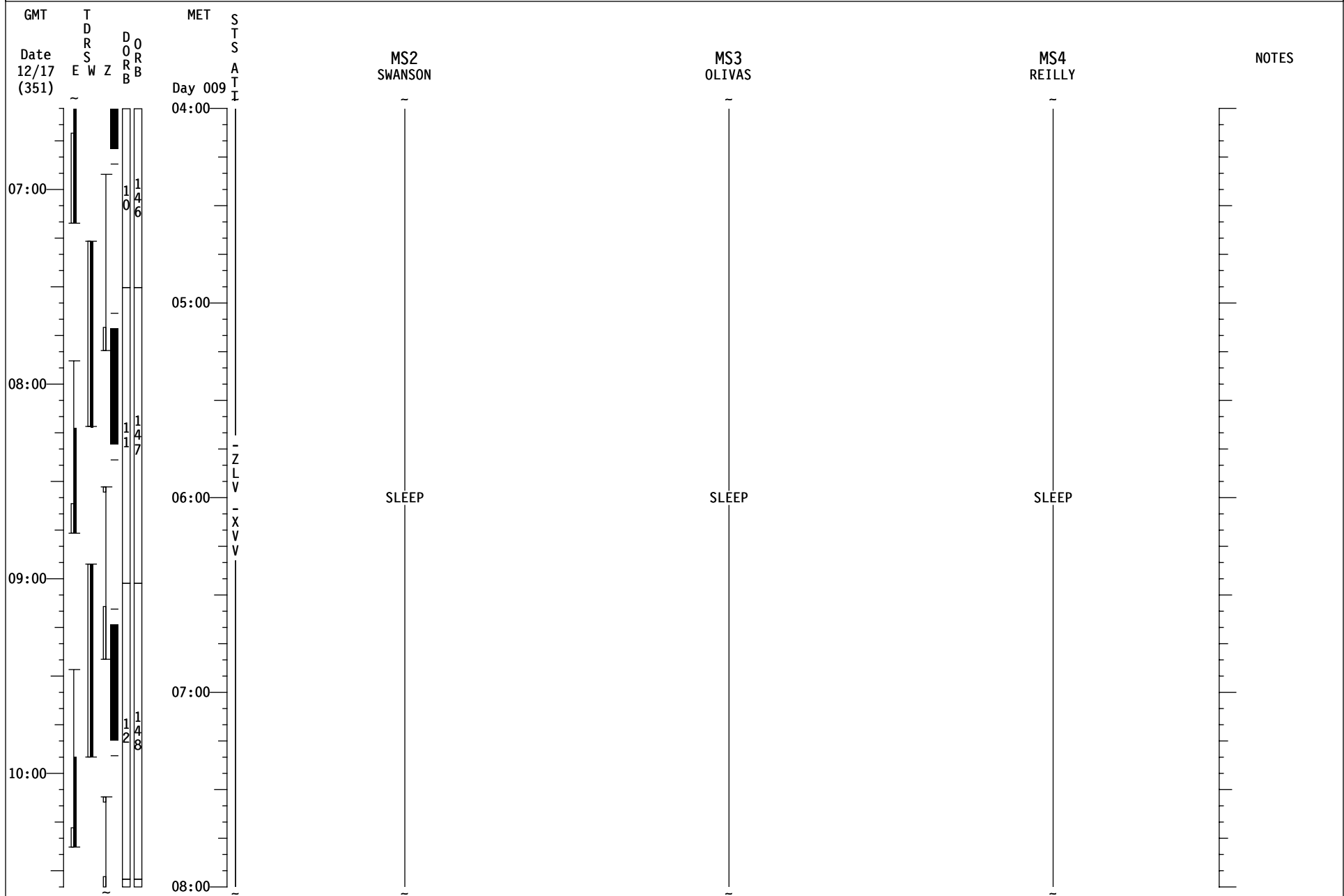
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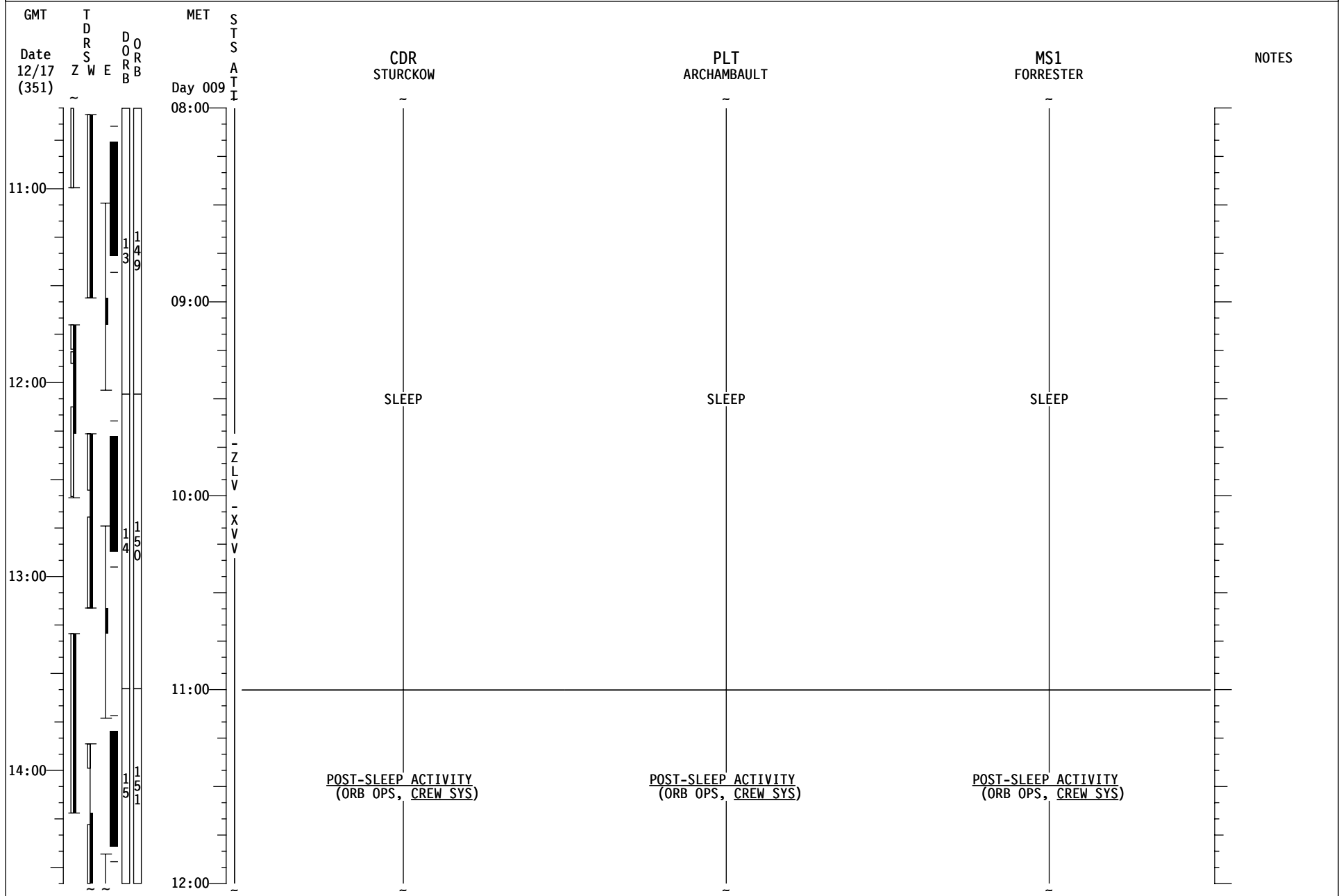
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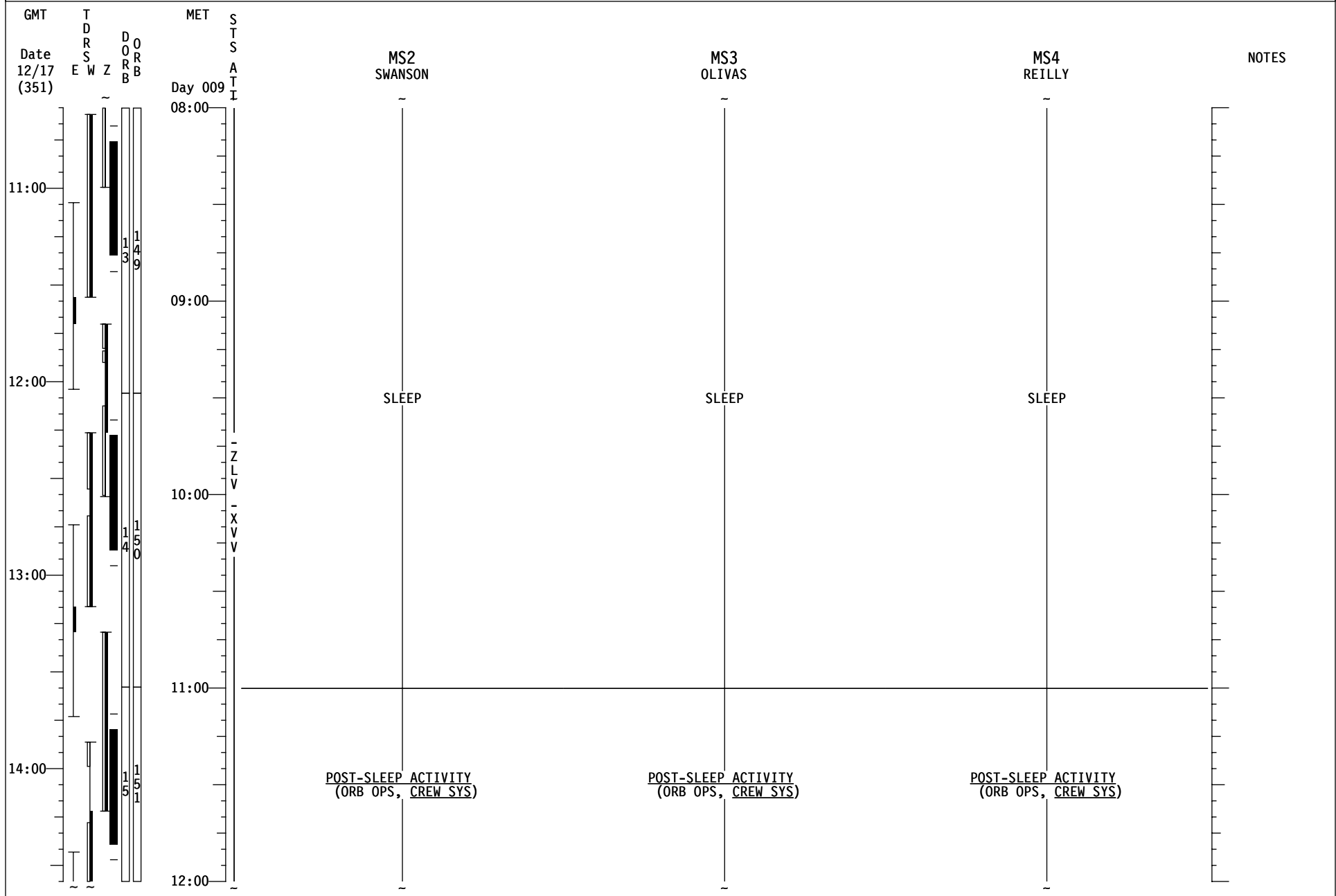
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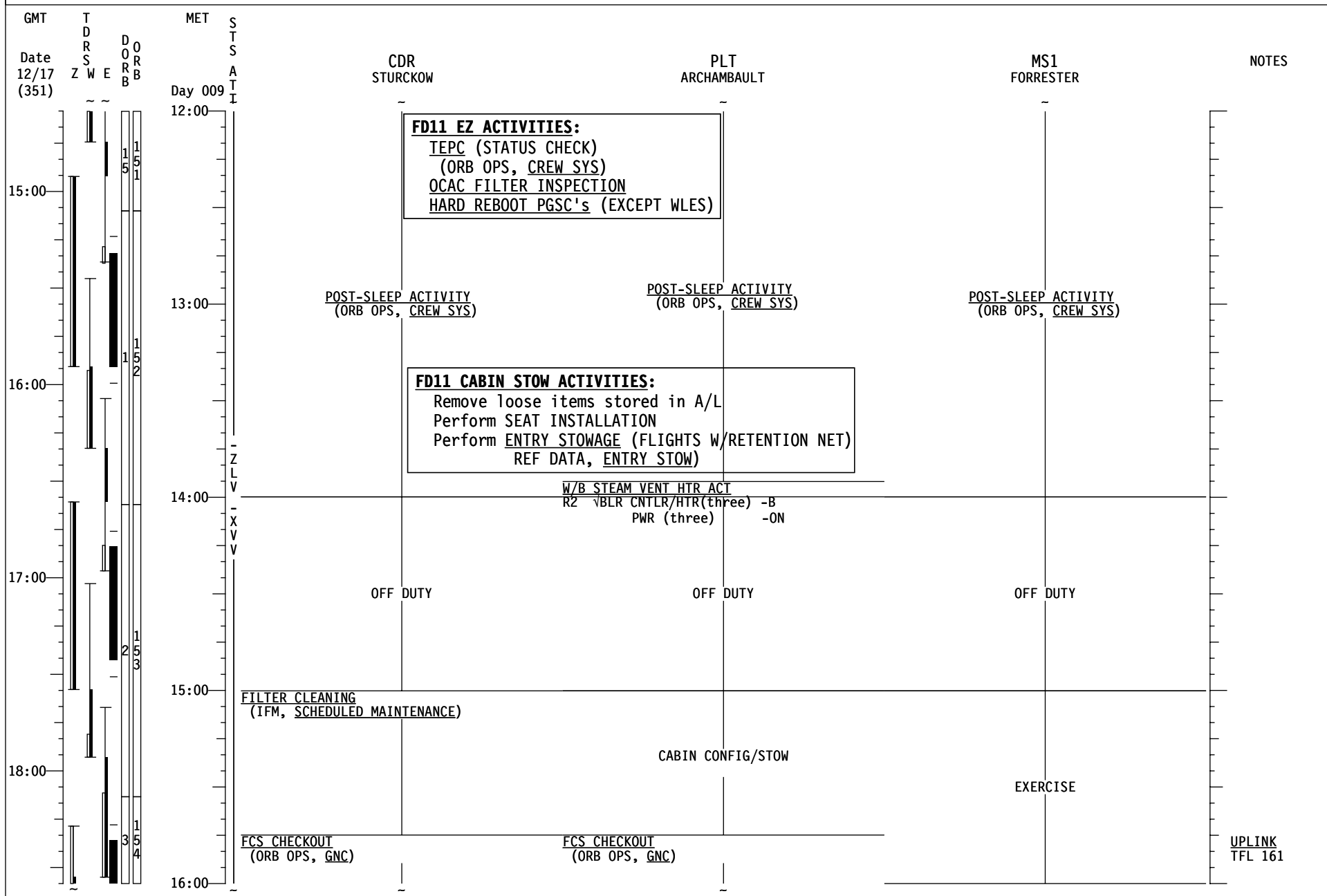
STS-117 (FD11)



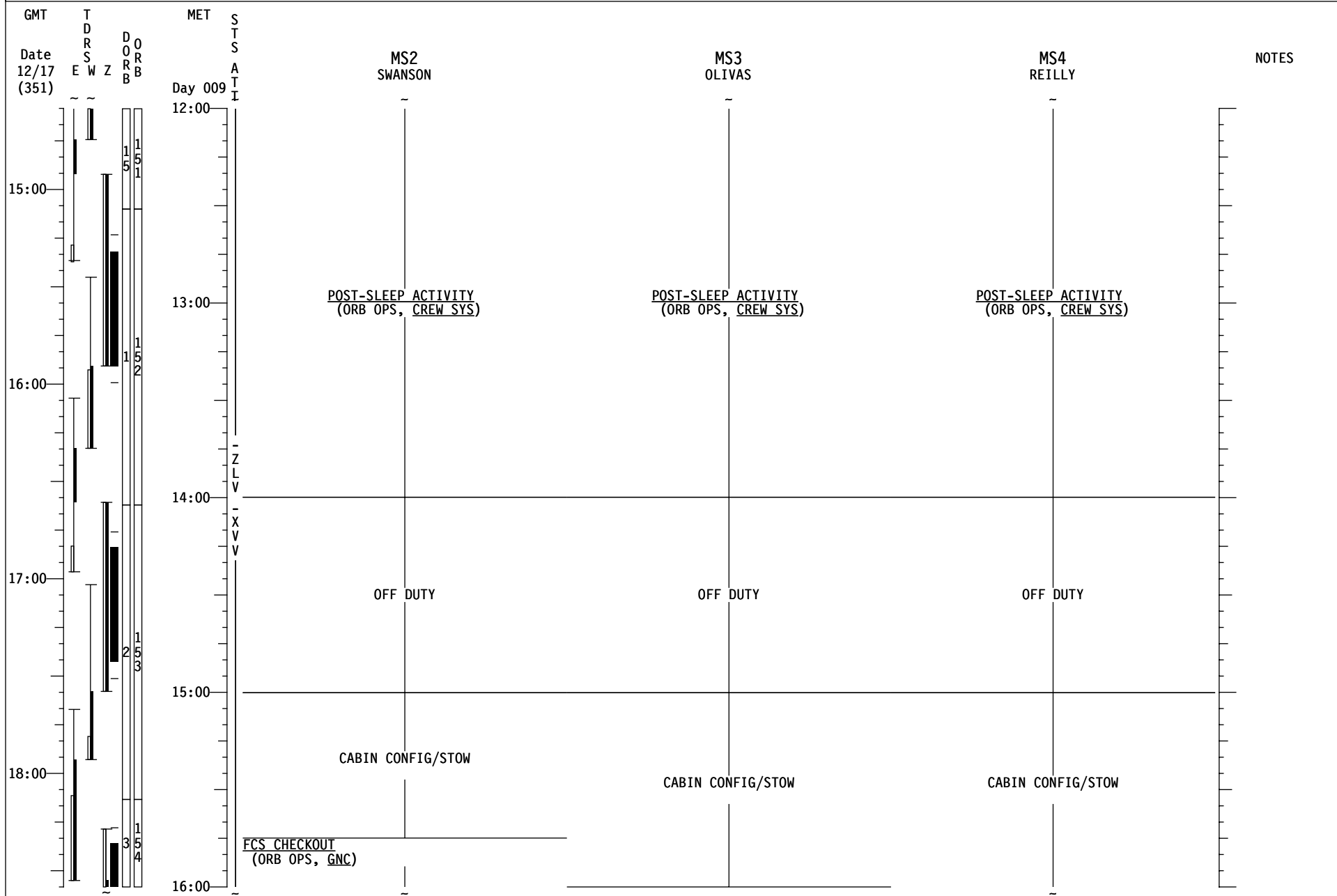
STS-117 (FD11)



STS-117 (FD11)

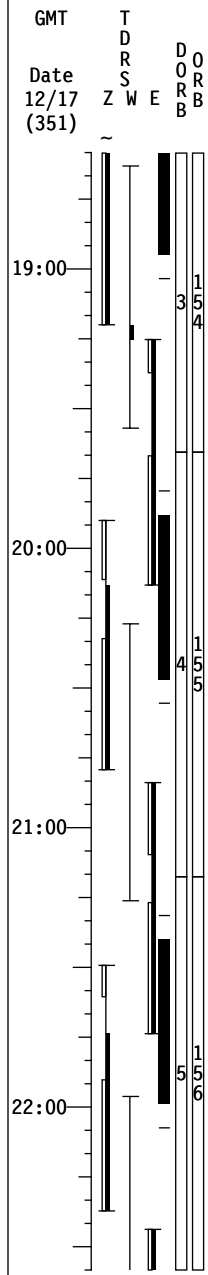


STS-117 (FD11)



STS-117 (FD11)

GMT	T D R S E Z W E	D O R B B B	MET Day 009	S T S A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
16:00								
					<u>FCS CHECKOUT</u> (ORB OPS, <u>GNC</u>)	<u>FCS CHECKOUT</u> (ORB OPS, <u>GNC</u>)		
17:00					<u>RCS HOT FIRE TEST</u> (ORB OPS, <u>RCS</u>)	<u>RCS HOT FIRE TEST</u> (ORB OPS, <u>RCS</u>)	CABIN CONFIG/STOW	<u>UPLINK</u> TFL 184
					<u>PILOT WITH RHC</u> (ORB OPS, <u>PGSC</u>)	<u>PILOT WITH RHC</u> (ORB OPS, <u>PGSC</u>)		
18:00				Z L V				
				X V V	DEORBIT PREP BRIEFING	DEORBIT PREP BRIEFING	DEORBIT PREP BRIEFING	
19:00					<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX	<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX	<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX	
20:00								
21:00								
22:00					MEAL	MEAL	MEAL	
20:00								



STS-117 (FD11)

GMT	TDRSZ	MET	STS	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/17 (351)		Day 009	Day 009				
16:00							
19:00					EXERCISE	CABIN CONFIG/STOW	
17:00							
20:00					CABIN CONFIG/STOW	EXERCISE	
18:00					DIGITAL PAO CC (PHOTO/TV, SONY PD100)		
21:00				DEORBIT PREP BRIEFING	DEORBIT PREP BRIEFING	DEORBIT PREP BRIEFING	
19:00				PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	PUBLIC AFFAIRS EVENT KU AVAIL: XX:XX-XX:XX	
22:00				MEAL	MEAL	MEAL	
20:00							

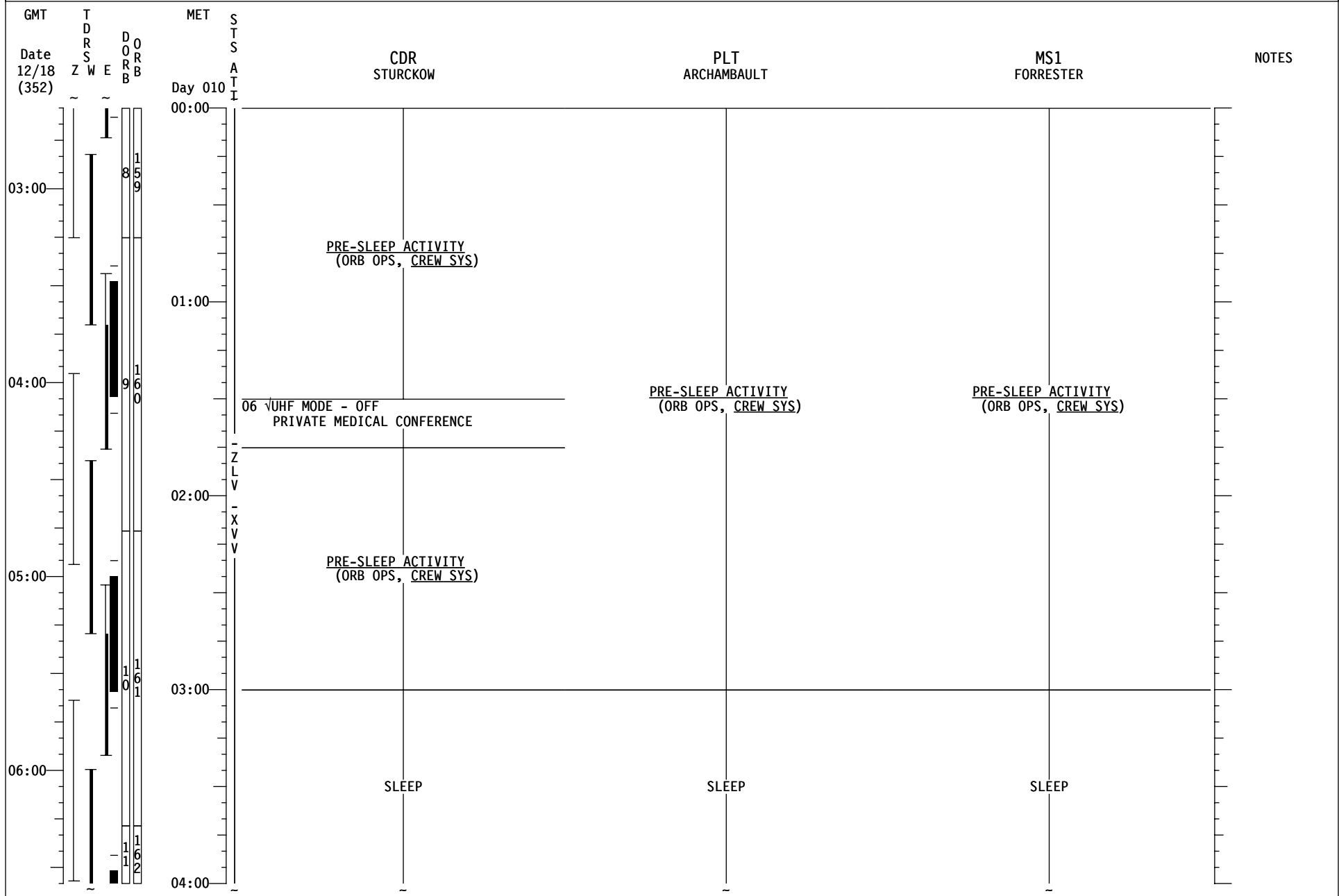
STS-117 (FD11)

GMT	T D R S E Z W E	D O R B B	MET Day 009	S T S A T I	CDR STURCKOW	PLT ARCHAMBAULT	MS1 FORRESTER	NOTES
20:00					LANDING-1 COMM C/O (ORB OPS, COMM/INST)			
23:00					CABIN CONFIG/STOW	CABIN CONFIG/STOW		
00:00					CABIN CONFIG/STOW			
01:00					LANDING-1 COMM C/O (ORB OPS, COMM/INST)		CABIN CONFIG/STOW	
02:00					EXERCISE	EXERCISE		
03:00					CAB PRESS MAINT TBD	CABIN CONFIG/STOW		
04:00					CABIN CONFIG/STOW			
05:00								KU-BD ANT STOW (ORB OPS, COMM/INST) Deactivate CCTV
06:00								CYCLE ERGOMETER OPS (ORB OPS, CREW SYS) Perform RECONFIG/STOW
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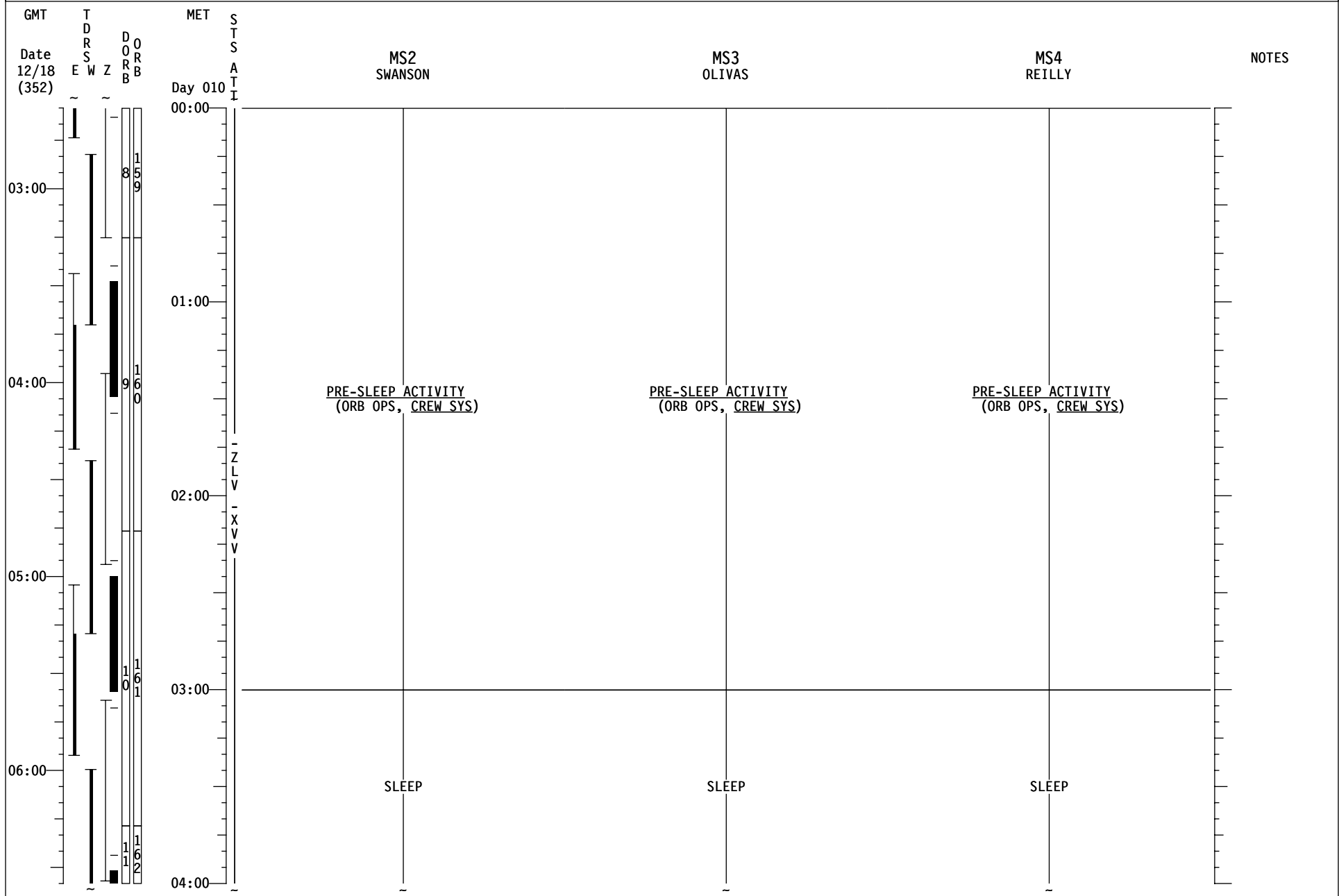
STS-117 (FD11)

GMT	TDRS E W Z	DORB	MET	STS A T I	MS2 SWANSON	MS3 OLIVAS	MS4 REILLY	NOTES
Date 12/17 (351)			Day 009					
20:00		5				ENTRY VIDEO SETUP (PHOTO/TV, MINI-CAM)		
23:00		6			CABIN CONFIG/STOW	SSV DEACTIVATION (PHOTO/TV, SSV)		
00:00		7			EXERCISE			
01:00		8			CABIN CONFIG/STOW	CABIN CONFIG/STOW	CABIN CONFIG/STOW	
02:00		9			DEACTIVATION & TEARDOWN (ORB OPS, WLE SENSORS)		CYCLE ERGOMETER OPS (ORB OPS, CREW SYS) Perform RECONFIG/STOW	
00:00					PGSC DEACT (ORB OPS, PGSC) Stow all STS PGSCs except for OCA router and WinDecom			

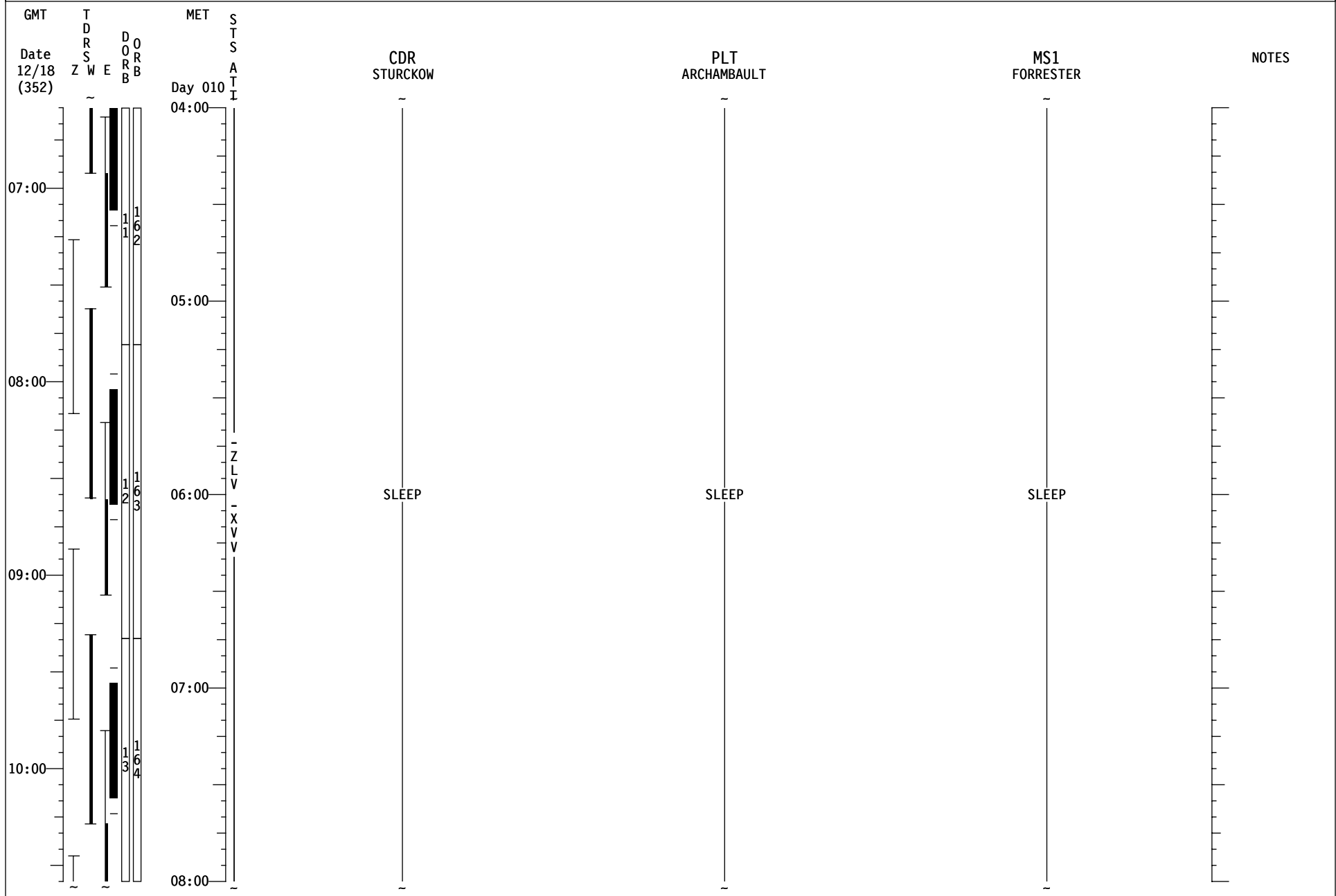
STS-117 (FD11)



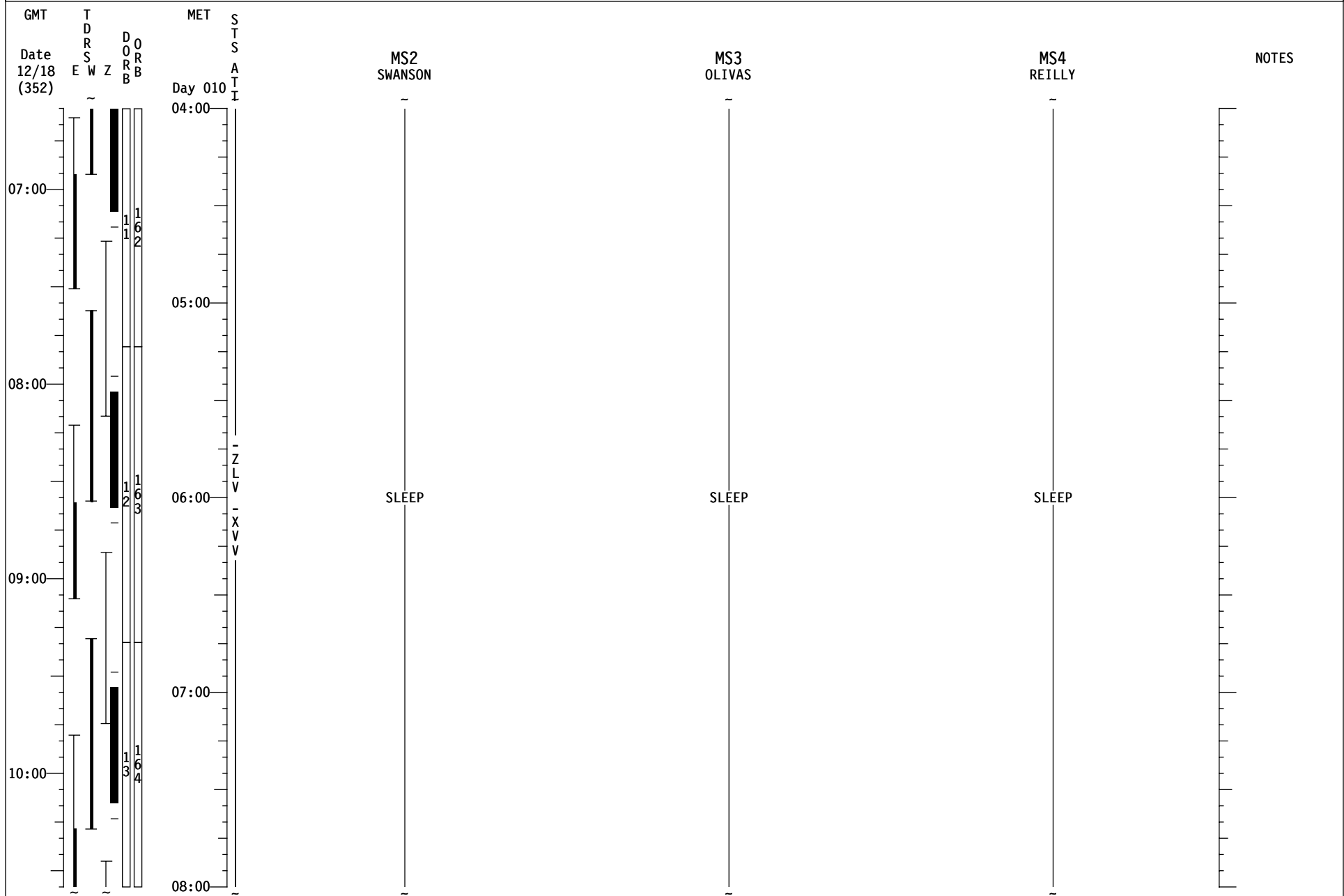
STS-117 (FD11)



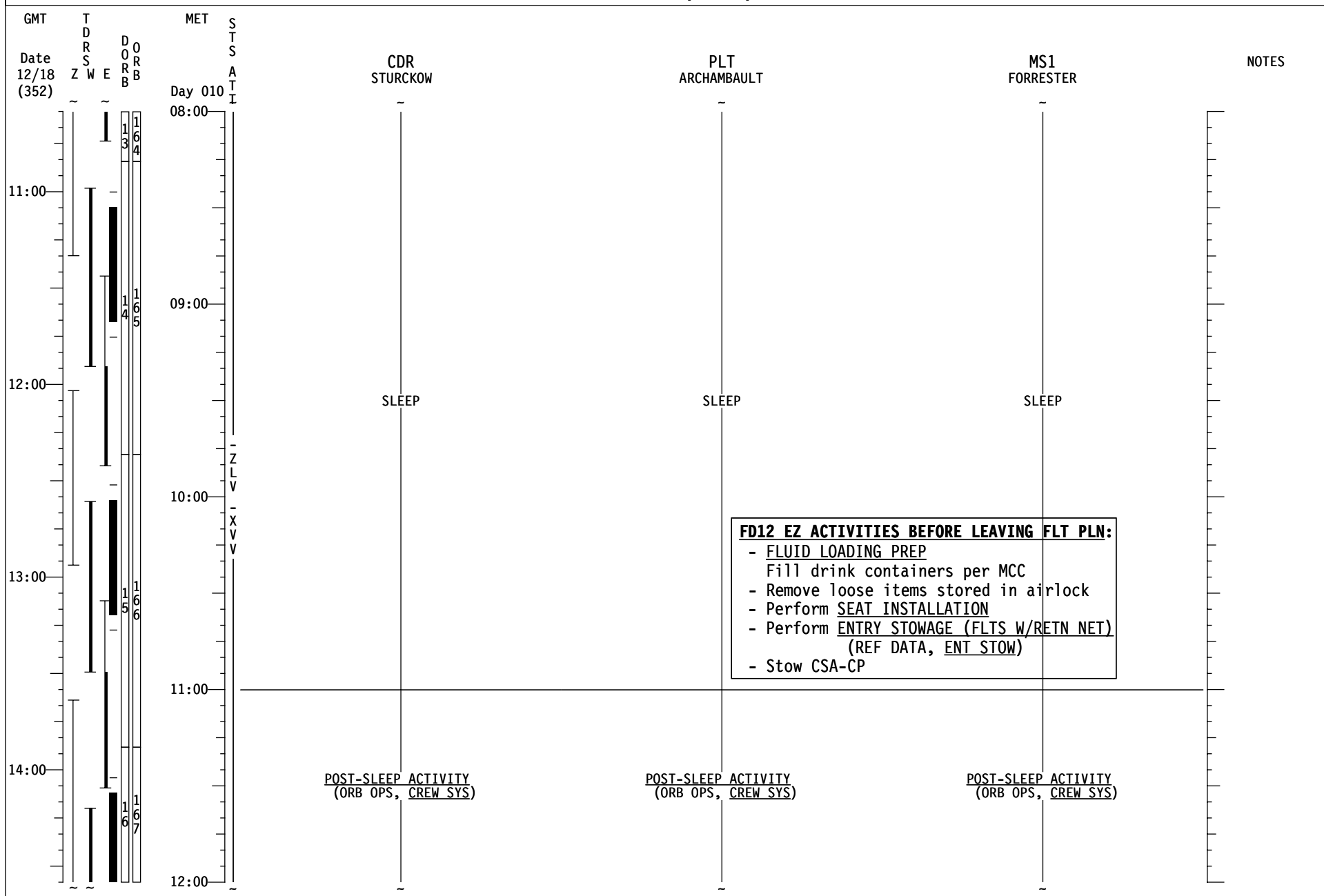
STS-117 (FD11)



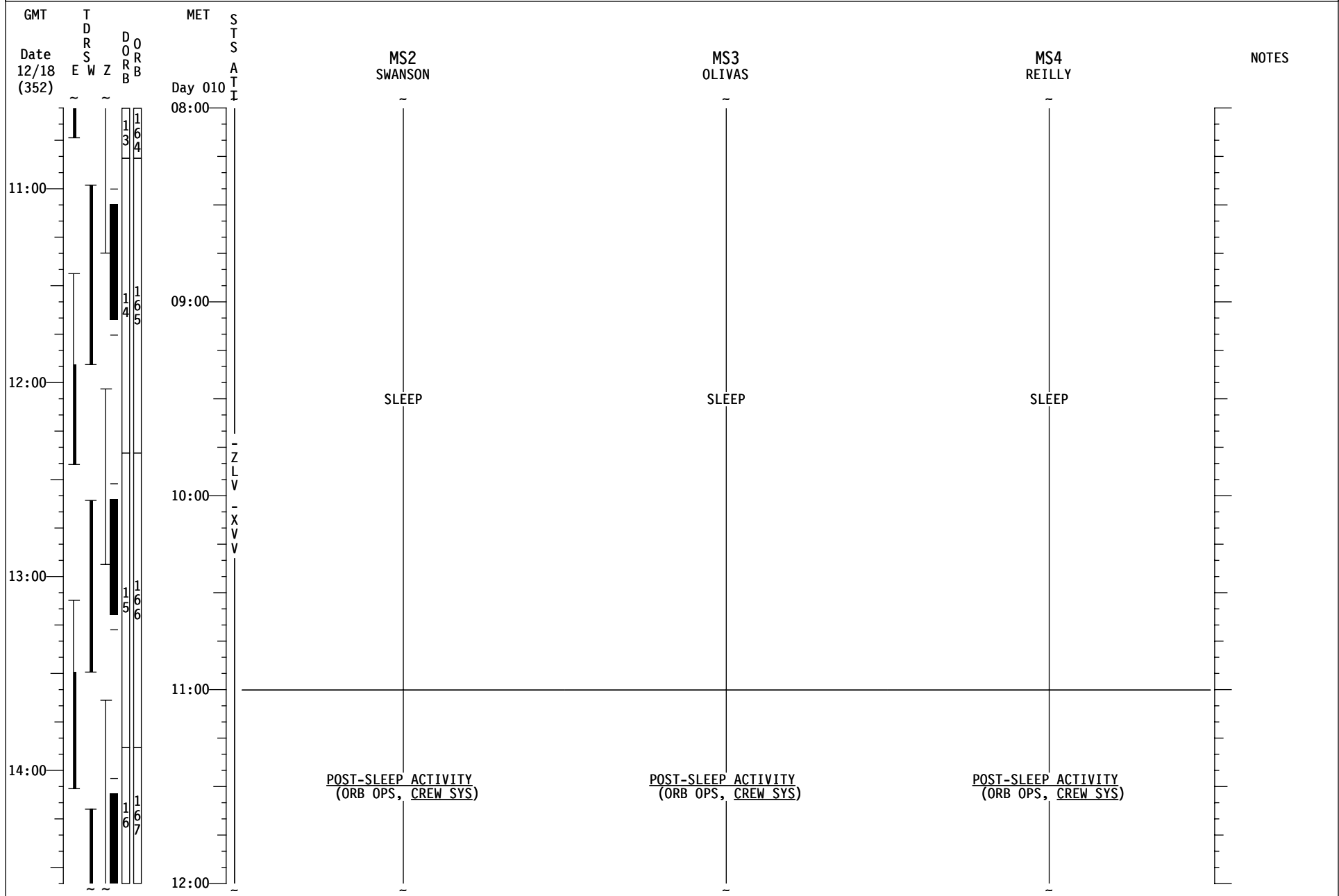
STS-117 (FD11)



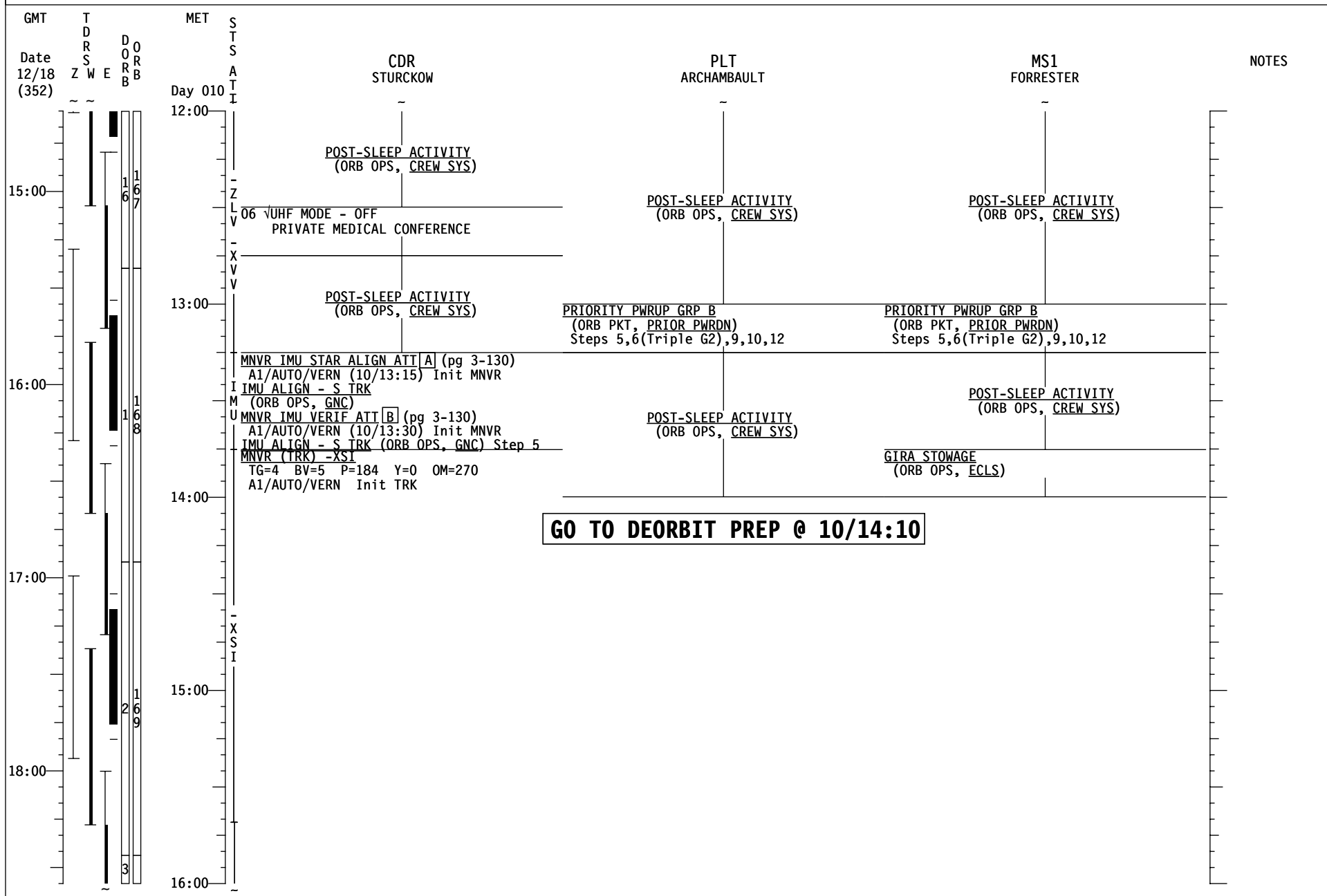
STS-117 (FD12)



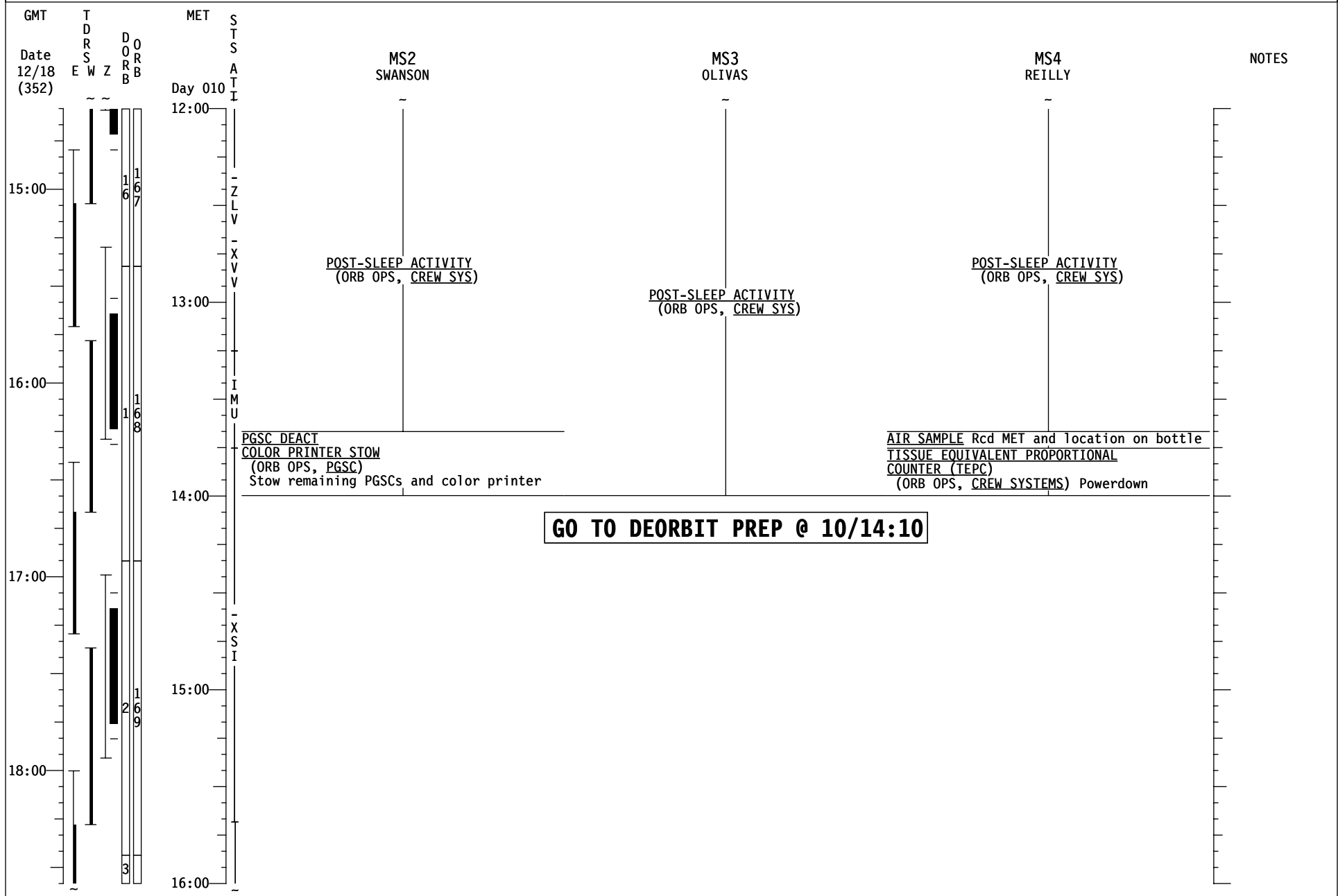
STS-117 (FD12)



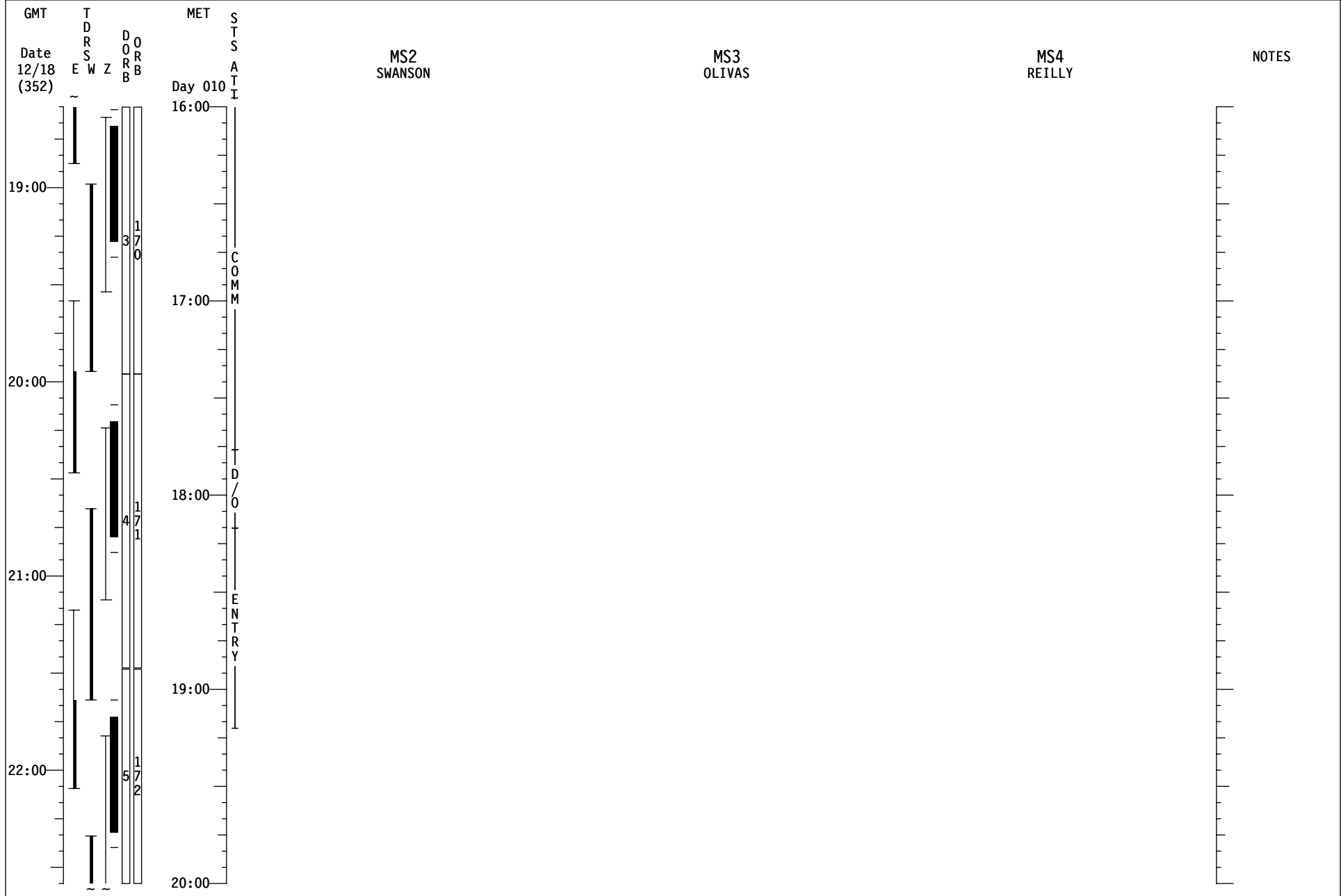
STS-117 (FD12)



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STS-117 (FD12)



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ATTITUDE TIMELINE

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TIMELINE

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Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
1 000/00:39:00 M 342/03:14:48 G	M50 (CALC) INRTL R = 359.00 MNVR P = 103.00 PYR Y = 320.00 MNVR TRN/AUTO/PRI HOLD (same)	RATE 0.5000 DB AT 3.50 DB RT 0.20 SUN R 293 P 26 $\beta = 23$	+X PYR R = 359.80 P = 11.84 Y = 359.72 LVLH 000/00:39:00 M 342/03:14:48 G	OMS-2 Posigrade Heads Up TIG 0/00:39:00
2 000/01:12:00 M 19:56 342/03:47:48 G 55:44	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A5/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 5.00 DB RT 0.070 EARTH R 0 P 90 $\beta = 23$	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV PLBD Opening
3 000/03:15:00 M 25:08 342/05:50:48 G 06:00:56	M50 (CALC) INRTL R = 163.00 MNVR P = 76.00 PYR Y = 324.00 MNVR B1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 140 P 39 $\beta = 23$	+X PYR R = 180.07 P = 347.77 Y = 0.24 LVLH 000/03:35:00 M 342/06:10:48 G	NC-1 Posigrade Heads Down TIG 0/03:35
4 000/03:40:00 M 47:33 342/06:15:48 G 23:21	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 90.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 24$	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV Nose North WLES Thermal
5 000/09:00:00 M 342/11:35:48 G				DEU MNVR
6 000/15:05:00 M 15:10 342/17:40:48 G 50:58	M50 (CALC) INRTL R = 167.00 MNVR P = 79.00 PYR Y = 323.00 MNVR B1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 135 P 37 $\beta = 25$	+X PYR R = 180.16 P = 347.77 Y = 0.08 LVLH 000/15:25:00 M 342/18:00:48 G	NC-2 Posigrade Heads Down TIG 0/15:25
7 000/15:30:00 M 33:49 342/18:05:48 G 09:37	LVLH TRACK TGT = 2 P = 90.00 BV = 5 Y = 0.00 OM = 135.00 MNVR A1/AUTO/VERN HOLD A14/AUTO/VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 25$	LVLH R=180.00 P= 0.00 Y=315.00	Bias -ZLV +XVV OBSS Unberth followed by Flat Field Survey
8 000/17:55:00 M 18:00:35 342/20:30:48 G 36:23	TGT= 4 BV = 5 P = 0.00 Y = 49.00 OM = 100.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 90 P 49 $\beta = 25$	INRTL R=152.80 P=171.44 Y=334.28 RA= 254.602 DEC= -22.691S	STBD Wing Survey
9 000/19:25:00 M 30:31 342/22:00:48 G 06:19	TGT= 4 BV = 5 P = 331.00 Y = 0.00 OM = 125.00 MNVR A14/AUTO/VERN HOLD A14/AUTO/ALT	RATE 0.2000 DB AT 3.000 DB RT 0.200 SUN R 180 P 29 $\beta = 25$	INRTL R=117.40 P= 93.03 Y=320.32 RA= 254.670 DEC= -22.698S	Nose Cap Survey
10 000/20:00:00 M 342/22:35:48 G				NPC Multi-Axis

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
11 000/21:55:00 M 58:56 343/00:30:48 G 34:44	TGT= 4 BV = 5 P = 0.00 Y = 334.00 OM = 90.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 3.000 DB RT 0.200 SUN R 270 P 26 β = 25	INRTL R= 57.79 P= 67.61 Y=301.13 RA= 254.784 DEC= -22.709S	PORT Wing Survey
12 000/23:25:00 M 33:37 343/02:00:48 G 09:25	LVLH TRACK TGT = 2 P = 90.00 BV = 5 Y = 0.00 OM = 12.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 3.000 DB RT 0.200 EARTH R 0 P 90 β = 25	LVLH R= 0.00 P=180.00 Y=348.00	Bias -ZLV -XVV OBSS Berth followed by RMS Survey of Crew Cabin
13 001/00:55:00 M 01:06:13 343/03:30:48 G 42:01	TGT= 4 BV = 5 P = 114.00 Y = 0.00 OM = 20.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 0 P 114 β = 25	INRTL R=291.54 P=349.39 Y= 6.56 RA= 254.921 DEC= -22.722S	LDRI Ku Comm
14 001/02:25:00 M 38:38 343/05:00:48 G 14:26	M50 (CALC) INRTL R = 217.00 MNVR P = 205.00 PYR Y = 14.00 MNVR B1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 26 P 99 β = 25	+X PYR R = 180.38 P = 347.86 Y = 0.34 LVLH 001/01:16:00 M 343/03:51:48 G	NC-3 Posigrade Heads Down TIG 1/02:45 One rev later than burn plan
15 001/03:05:00 M 19:59 343/05:40:48 G 55:47	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 β = 25	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
16 001/12:15:00 M 22:30 343/14:50:48 G 58:18	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 β = 26	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV Waste Dump Future Load
17 001/14:25:00 M 36:06 343/17:00:48 G 11:54	M50 (CALC) INRTL R = 23.00 MNVR P = 235.00 PYR Y = 32.00 MNVR A7/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 2.00 DB RT 0.100 SUN R 215 P 129 β = 26	+X PYR R = 0.11 P = 12.55 Y = 0.22 LVLH 001/14:45:00 M 343/17:20:48 G	NH Placeholder Posigrade Heads Up TIG 1/14:45
18 001/14:50:00 M 343/17:25:48 G	 HOLD A7/AUTO/ALT	RATE 0.2000 DB AT 2.00 DB RT 0.100 EARTH R 180 P 123 β = 26	LVLH R= 0.12 HOLD P= 32.90 Y= 0.20	LVLH Hold for NC-4
19 001/15:25:00 M 28:24 343/18:00:48 G 04:12	M50 (CALC) INRTL R = 337.00 MNVR P = 54.00 PYR Y = 328.00 MNVR A7/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 2.00 DB RT 0.100 SUN R 325 P 51 β = 26	+X PYR R = 0.30 P = 11.79 Y = 359.51 LVLH 001/15:30:00 M 343/18:05:48 G	NC-4 Posigrade Heads Up TIG 1/15:30
20 001/15:35:00 M 39:03 343/18:10:48 G 14:51	LVLH TRACK TGT = 2 P = 0.00 BV = 5 Y = 0.00 OM = 0.00 MNVR B7/AUTO/ALT HOLD A7/AUTO/VERN	RATE 0.5000 DB AT 2.00 DB RT 0.100 EARTH R 180 P 0 β = 26	LVLH R= 0.00 P=270.00 Y= 0.00	-Z Target Track Sunset 16:06

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
21 001/15:40:00 M 16:30:00 343/18:15:48 G 19:05:48	LVLH TRACK TGT = 2 P = 339.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A7/AUTO/VERN HOLD (same)	RATE 0.0070 DB AT 1.000 DB RT 0.020 EARTH R 180 P 21 $\beta = 26$	LVLH R= 0.00 P=291.00 Y= 0.00	-Z Target Track
22 001/16:30:00 M 48:31 343/19:05:48 G 24:19	LVLH TRACK TGT = 2 P = 349.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A7/AUTO/VERN HOLD (same)	RATE 0.0090 DB AT 1.000 DB RT 0.020 EARTH R 180 P 11 $\beta = 26$	LVLH R= 0.00 P=281.00 Y= 0.00	-Z Target Track
23 001/16:49:00 M 52:39 343/19:24:48 G 28:27	M50 (CALC) INRTL R = 337.00 MNVR P = 55.00 PYR Y = 328.00 MNVR A7/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 2.00 DB RT 0.100 SUN R 325 P 51 $\beta = 26$	+X PYR R = 359.55 P = 12.15 Y = 359.96 LVLH 001/17:01:00 M 343/19:36:48 G	Ti Posigrade Heads Up TIG 1/17:01
24 001/17:05:00 M 08:52 343/19:40:48 G 44:40	LVLH TRACK TGT = 2 P = 358.00 BV = 5 Y = 0.00 OM = 0.00 MNVR B7/AUTO/ALT HOLD A7/AUTO/VERN	RATE 0.5000 DB AT 2.00 DB RT 0.100 EARTH R 180 P 2 $\beta = 26$	LVLH R= 0.00 P=272.00 Y= 0.00	-Z Target Track
25 001/17:09:00 M 18:18:34 343/19:44:48 G 20:54:22	LVLH TRACK TGT = 2 P = 310.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A7/AUTO/VERN HOLD (same)	RATE 0.0115 DB AT 1.000 DB RT 0.020 EARTH R 180 P 50 $\beta = 26$	LVLH R= 0.00 P=320.00 Y= 0.00	-Z Target Track
26 001/18:19:00 M 32:20 343/20:54:48 G 21:08:08	LVLH TRACK TGT = 2 P = 270.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A8/AUTO/VERN HOLD A9/AUTO/VERN	RATE 0.0500 DB AT 1.000 DB RT 0.020 EARTH R 180 P 90 $\beta = 26$	LVLH R= 0.00 P= 0.00 Y= 0.00	Establish RBAR Ti +01:18
27 001/18:40:00 M 42:00 343/21:15:48 G 17:48	COE (CALC) TGT = 2 P = 180.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/ALT HOLD A9/AUTO/VERN	RATE 0.7500 DB AT 2.00 DB RT 0.100 EARTH R 263 P 180 $\beta = 26$	+X PYR R = 0.00 P = 90.00 Y = 0.00 LVLH 001/18:34:00 M 343/21:09:48 G	RPM ORB R = 0.00 LVLH P = 90.00 Y = 0.00
28 001/18:42:00 M 44:00 343/21:17:48 G 19:48	COE (CALC) TGT = 2 P = 90.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/ALT HOLD A9/AUTO/VERN	RATE 0.7500 DB AT 1.00 DB RT 0.100 EARTH R 0 P 90 $\beta = 26$	+X PYR R = 0.00 P = 180.00 Y = 0.00 LVLH 001/18:36:00 M 343/21:11:48 G	RPM ORB R = 0.00 LVLH P = 180.00 Y = 0.00
29 001/18:44:00 M 46:00 343/21:19:48 G 21:48	COE (CALC) TGT = 2 P = 0.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/ALT HOLD A9/AUTO/VERN	RATE 0.7500 DB AT 1.00 DB RT 0.100 EARTH R 235 P 0 $\beta = 26$	+X PYR R = 0.00 P = 270.00 Y = 0.00 LVLH 001/18:38:00 M 343/21:13:48 G	RPM ORB R = 0.00 LVLH P = 270.00 Y = 0.00
30 001/18:46:00 M 48:00 343/21:21:48 G 23:48	COE (CALC) TGT = 2 P = 270.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/ALT HOLD A9/AUTO/VERN	RATE 0.7500 DB AT 1.00 DB RT 0.100 EARTH R 180 P 90 $\beta = 26$	+X PYR R = 0.00 P = 0.00 Y = 0.00 LVLH 001/18:40:00 M 343/21:15:48 G	RPM ORB R = 0.00 LVLH P = 0.00 Y = 0.00

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
31 001/18:53:00 M 19:04:40 343/21:28:48 G 40:28	LVLH TRACK TGT = 2 P = 179.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/ALT HOLD A9/AUTO/VERN	RATE 0.1300 DB AT 2.00 DB RT 0.100 EARTH R 0 P 179 β = 26	LVLH R= 0.00 P= 91.00 Y= 0.00	TORVA
32 001/19:40:00 M 343/22:15:48 G				Docking 1/19:40
33 001/20:00:00 M 29:19 343/22:35:48 G 23:05:07	COE (CALC) TGT = 2 P = 154.00 BV = 5 Y = 45.00 OM = 174.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 66 P 129 β = 27	ISS YPR R = 48.05 P = 18.06 Y = 193.03 LVLH 001/20:20:00 M 343/22:55:48 G	Bias -XLV -ZVV Mated TEA Pre S3/4 Install ORB R = 163.05 LVLH P = 59.82 Y = 317.32
34 001/22:45:00 M 344/01:20:48 G	COE (CALC) TGT = 2 P = 154.00 BV = 5 Y = 45.00 OM = 174.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 66 P 129 β = 27	ISS YPR R = 48.05 P = 18.06 Y = 193.03 LVLH 001/23:05:00 M 344/01:40:48 G	Bias -XLV -ZVV Overnight Park Handoff Position (4 CMG Case) ORB R = 163.05 LVLH P = 59.82 Y = 317.32
35 002/14:35:00 M 42:14 344/17:10:48 G 18:02	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 181.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 27	ISS YPR R = 2.17 P = 22.99 Y = 181.85 LVLH 002/14:35:00 M 344/17:10:48 G	Bias -XLV -ZVV Mated TEA Post S3/4 Install ORB R = 178.30 LVLH P = 66.96 Y = 358.55
36 003/15:15:00 M 33:24 345/17:50:48 G 18:09:12	M50 (CALC) INRTL R = 178.00 MNVR P = 77.00 PYR Y = 323.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 SUN R 120 P 36 β = 28	ISS YPR R = 357.95 P = 19.71 Y = 269.83 XPOP 003/16:05:00 M 345/18:40:48 G	1A SAW Deploy XPOP
37 003/15:50:00 M 345/18:25:48 G				Free Drift Deploy 1A SAW to 49 percent
38 003/16:00:00 M 345/18:35:48 G	M50 (CALC) INRTL R = 178.00 MNVR P = 77.00 PYR Y = 323.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 SUN R 120 P 36 β = 28	ISS YPR R = 357.95 P = 19.71 Y = 269.83 XPOP 003/16:05:00 M 345/18:40:48 G	Return to Att 1A SAW Deploy XPOP
39 003/16:30:00 M 345/19:05:48 G				Free Drift Deploy 1A SAW to 100 percent
40 003/16:55:00 M 56:40 345/19:30:48 G 32:28	M50 (CALC) INRTL R = 178.00 MNVR P = 77.00 PYR Y = 333.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 SUN R 115 P 45 β = 28	ISS YPR R = 347.98 P = 19.85 Y = 270.05 XPOP 003/17:30:00 M 345/20:05:48 G	3A SAW Deploy XPOP

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
41 003/17:20:00 M 345/19:55:48 G				Free Drift Deploy 3A SAW to 49 percent
42 003/17:35:00 M 345/20:10:48 G	M50 (CALC) INRTL R = 178.00 MNVR P = 77.00 PYR Y = 333.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 SUN R 115 P 45 β = 28	ISS YPR R = 347.98 P = 19.85 Y = 270.05 XPOP 003/17:30:00 M 345/20:05:48 G	Return to Att Orb Att Cntrl 3A SAW Deploy XPOP
43 003/18:00:00 M 345/20:35:48 G				Free Drift Deploy 3A SAW to 100 percent
44 003/18:15:00 M 32:07 345/20:50:48 G 21:07:55	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 193.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 28	ISS YPR R = 2.17 P = 22.99 Y = 193.85 LVLH 003/18:15:00 M 345/20:50:48 G	Bias -XLV +YVV Water Dump 13 Deg Retro Inside Envelope ORB R = 167.25 LVLH P = 67.13 Y = 3.24
45 003/20:35:00 M 37:00 345/23:10:48 G 12:48	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 181.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 28	ISS YPR R = 2.17 P = 22.99 Y = 181.85 LVLH 003/20:35:00 M 345/23:10:48 G	Bias -XLV -ZVV Mated TEA Post 1/3A Deploy ORB R = 178.30 LVLH P = 66.96 Y = 358.55
46 006/15:10:00 M 12:00 348/17:45:48 G 47:48	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 193.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 26	ISS YPR R = 2.17 P = 22.99 Y = 193.85 LVLH 006/15:10:00 M 348/17:45:48 G	Bias -XLV +YVV Water Dump 13 Deg Retro Inside Envelope ORB R = 167.25 LVLH P = 67.13 Y = 3.24
47 006/16:50:00 M 52:00 348/19:25:48 G 27:48	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 181.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 26	ISS YPR R = 2.17 P = 22.99 Y = 181.85 LVLH 006/16:50:00 M 348/19:25:48 G	Bias -XLV -ZVV Mated TEA Post 1/3A Deploy ORB R = 178.30 LVLH P = 66.96 Y = 358.55
48 007/21:10:00 M 12:00 349/23:45:48 G 47:48	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 193.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 24	ISS YPR R = 2.17 P = 22.99 Y = 193.85 LVLH 007/21:10:00 M 349/23:45:48 G	Bias -XLV +YVV Water Dump 13 Deg Retro Inside Envelope ORB R = 167.25 LVLH P = 67.13 Y = 3.24
49 007/22:55:00 M 57:00 350/01:30:48 G 32:48	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 2.00 OM = 181.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 5 P 157 β = 24	ISS YPR R = 2.17 P = 22.99 Y = 181.85 LVLH 007/22:55:00 M 350/01:30:48 G	Bias -XLV -ZVV Mated TEA Post 1/3A Deploy ORB R = 178.30 LVLH P = 66.96 Y = 358.55
50 008/17:40:00 M 18:09:46 350/20:15:48 G 45:34	COE (CALC) TGT = 2 P = 180.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 135 P 180 β = 23	ISS YPR R = 0.00 P = 0.00 Y = 0.00 LVLH 008/17:40:00 M 350/20:15:48 G	-XLV +ZVV Mnvr To Undock ORB R = 0.00 LVLH P = 90.00 Y = 0.00

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
51 008/18:45:00 M 350/21:20:48 G				Undock 8/18:45
52 008/19:25:00 M 36:32 350/22:00:48 G 12:20	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A9/AUTO/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 22$	LVLH R= 0.00 P=180.00 Y= 0.00	TORF
53 008/19:36:33 M 48:05 350/22:12:21 G 23:53	LVLH TRACK TGT = 2 P = 0.00 BV = 1 Y = 0.00 OM = 0.00 MNVR A9/AUTO/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 88 P 0 $\beta = 22$	LVLH R= 0.00 P=270.00 Y= 0.00	TORF
54 008/19:48:06 M 59:38 350/22:23:54 G 35:26	LVLH TRACK TGT = 2 P = 270.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 180 P 90 $\beta = 22$	LVLH R= 0.00 P= 0.00 Y= 0.00	TORF SEP-1 TIG 20:00 PYR (0,0,0)
55 008/19:59:39 M 20:11:11 350/22:35:27 G 46:59	LVLH TRACK TGT = 2 P = 180.00 BV = 2 Y = 0.00 OM = 0.00 MNVR A9/AUTO/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 43 P 180 $\beta = 22$	LVLH R= 0.00 P= 90.00 Y= 0.00	TORF
56 008/20:12:00 M 23:32 350/22:47:48 G 59:20	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A9/AUTO/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 22$	LVLH R= 0.00 P=180.00 Y= 0.00	SEP-2 TIG 20:28
57 008/20:45:00 M 49:10 350/23:20:48 G 24:58	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 310.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 22$	LVLH R= 0.00 P=180.00 Y= 50.00	Bias -ZLV +YVV Simo Dump
58 008/23:45:00 M 49:10 351/02:20:48 G 24:58	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 22$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
59 010/13:15:00 M 23:24 352/15:50:48 G 59:12	INRTL R = 142.00 MNVR P = 164.00 Y = 313.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 92 P 38 $\beta = 18$	-Y:70 Algieba 13:06-13:54 -Z:50 Avior 13:19-14:09	IMU Align Pair AOS 13:19 Pair LOS 13:54
60 010/13:30:00 M 36:07 352/16:05:48 G 11:55	INRTL R = 320.00 MNVR P = 333.00 Y = 300.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 336 P 48 $\beta = 18$	-Y:20 Arcturus 13:14-14:09 -Z:51 Atria 13:32-14:21	IMU Verif Pair AOS 13:32 Pair LOS 14:09 Planar Sep 72.3

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
61 010/13:45:00 M 57:08 352/16:20:48 G 32:56	TGT= 4 BV = 5 P = 184.00 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 180 P 176 β = 18	INRTL R= 52.95 P=274.45 Y= 63.12 RA= 265.437 DEC= -23.380S	-XSI
62 010/15:41:00 M 51:10 352/18:16:48 G 26:58	INRTL R = 174.00 MNVR P = 273.00 Y = 36.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 90 P 149 β = 17		Comm
63 010/17:46:00 M 50:58 352/20:21:48 G 26:46	M50 (CALC) INRTL R = 305.00 MNVR P = 310.00 PYR Y = 13.00 MNVR TRN/AUTO/PRI HOLD (same)	RATE 0.5000 DB AT 3.50 DB RT 0.20 SUN R 339 P 123 β = 17	+X PYR R = 0.08 P = 191.94 Y = 0.18 LVLH 010/18:06:00 M 352/20:41:48 G	Deorbit Burn TIG 18:06

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FLIGHT PLAN NOTES

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV-104 Atlantis
 Launch Window: 10 minutes from Pad A
 Inclination: 51.6°
 Insertion Altitude: 122 nautical miles
 Rendezvous Altitude: 181 nautical miles
 Duration: 11+1+2

B. SHUTTLE AND STATION CREW

CDR/R2 – Frederick Sturckow
 PLT/R2/M1 – Lee Archambault
 MS1/EV3/R1 – Patrick Forrester
 MS2/EV4/M2 – Steven Swanson
 MS3/EV2/R1 – John Olivas
 MS4/EV1 – James Reilly
 ISS CDR – Michael Lopez-Alegria
 FE-1 – Mikhail Tyurin
 FE-2/M2 – Sunita Williams

C. MAJOR EVENTS

<u>EVENT</u>	<u>FD</u>	<u>MET</u>	<u>GMT</u>	<u>CST</u>
Launch	01	00/00:00	342/02:35	20:35 (12/07/06)
OMS-2	01	00/00:37	342/03:12	21:12 (12/07/06)
NC-1	01	00/03:34	342/06:09	00:09 (12/08/06)
NC-2	02	00/15:25	342/18:00	12:00 (12/08/06)
OBSS Survey	02	00/17:55	342/20:30	14:30 (12/08/06)
NPC	02	00/19:59	342/22:34	16:34 (12/08/06)
NC-3	02	01/01:15	343/03:50	21:50 (12/08/06)
NC-4	03	01/15:29	343/18:04	12:04 (12/09/06)
Ti	03	01/17:01	343/19:36	13:36 (12/09/06)
ISS Docking	03	01/19:40	343/22:15	16:15 (12/09/06)
S3/S4 Unberth	03	01/22:00	344/00:35	06:35 (12/09/06)
EVA 1	04	02/17:45	344/20:20	14:20 (12/09/06)
PVR Deploy	04	02/23:30	345/02:05	20:05 (12/10/06)
S4 1A SAW Deploy	05	03/15:50	345/18:25	12:25 (12/11/06)
S4 3A SAW Deploy	05	03/17:20	345/19:55	13:55 (12/11/06)
EVA 2	06	04/16:55	346/19:30	13:30 (12/12/06)
P6 2B Retract	07	05/15:00	347/17:35	11:35 (12/13/06)
EVA 3	08	06/16:55	348/19:30	13:30 (12/14/06)
Undock	10	08/18:45	350/21:20	15:20 (12/16/06)
Sep	10	08/20:00	350/22:35	16:35 (12/01606)
Deorbit	12	10/18:10	352/20:45	14:45 (12/18/06)
Landing	12	10/19:12	352/21:47	15:47 (12/18/06)

FLIGHT PLAN
NOTES

D. LANDING OPPORTUNITIES

		<u>Landing Orbit #</u>	<u>Site</u>	<u>TIG MET</u>	<u>Landing MET</u>	<u>Landing GMT</u>	<u>Landing CST</u>
Nominal	Primary	171	KSC	10/18:10	10/19:12	352/21:47	15:47, 12/18/06
	1 Rev	172	KSC	10/19:45	10/20:47	352/23:23	17:23, 12/18/06
	Late Weather Alt	173	EDW	10/21:15	10/22:17	353/00:53	18:53, 12/18/06
EOM +1	Primary	187	KSC	11/18:30	11/19:32	353/22:08	16:08, 12/19/06
	1 Rev	188	KSC	11/20:06	11/21:08	353/23:53	17:53, 12/19/06
	Late Weather Alt	189	EDW	11/21:35	11/22:37	354/01:13	19:13, 12/19/06
EOM +2	Primary	202	KSC	12/17:15	12/18:17	354/20:53	14:53, 12/20/06
	1 Rev	203	KSC	12/18:50	12/19:52	354/22:28	16:28, 12/20/06
	Late Weather Alt	204	EDW	12/20:20	12/21:22	354/23:58	17:58, 12/20/06

E. COMMUNICATIONS

The Summary Timeline contains several databands for ground site and TDRS events. The TDRS band reflects the three TDRS satellites that will be used for Orbiter coverage (East, West, and Z) and their longitudinal position. The data shown contain Ku-band coverage (unshaded bars) as well as TDRS SHO schedule (solid bars). The SHO schedule depicts early, normal, and midpass handovers and closed or extended Z satellite coverage.

The GND band contains the AOS/LOS of the US ground sites used for the L-1 Comm Checks and for deorbit and landing comm. MLA and DFA are for Kennedy Space Center and Edwards Air Force Base respectively, and WSS is for White Sands Space Harbor (which is needed on wave-off opportunities only).

The RS band contains the AOS/LOS of the Russian ground sites used by the FGB and SM. The data displayed is a summation of AOS/LOS times of all the ground sites on each respective pass.

Shuttle

TDRS Support: East (-46°), West (-171°), and Z (-275°)

Ground Sites: MLA, WLP, WSS, and DFR

Contingency RTS: DGS, GTS, HTS, OTS, CTS, VTS, and NHS

ISS

TDRS Support: East (-46°), West (-174°), and Z (-275°)

US Ground Sites: MIL, WLP, and DFR

Russian Ground Sites: DJS, PPK, BRN, SPB, KLP, ULD, SHK, USK

F. PAYLOADS

LAUNCH PACKAGE (LP) 13A

The primary objective of this flight is to deliver and integrate the completion of ISS Stage 13A with the S3/S4 Integrated Truss Segment (ITS). The S4 Photovoltaic (PV) Module (PVM) contains two beta gimbal/PV array assemblies, two Beta Gimbal Transition Structures (BGTSSs), one Integrated Equipment Assembly (IEA) - Type I, and associated cabling. The cargo element (CE) also includes 6 battery sets, 4 Payload Attachment Systems (PAS), and Solar Array Rotating Joint (SARJ). The CE occupies the majority of the payload bay and is attached in the payload bay by four active longeron trunnion latches and two active keel trunnion latches.

The RC hardware consists of middeck return items only. The middeck return items will include ISS hardware, EVA tools, utilization hardware, support equipment that was launched in the Orbiter middeck, and the CGBA CSI Hab that will be transferred near the end of the Docked timeframe.

Structural dynamic characterization of the ISS using the EWIS, which is located on the S4 truss segment, and the Structural Dynamic Measurement System (SDMS), which is located on the inboard truss elements of the ISS, will be performed to support the validation process of structural dynamic models.

G. SECONDARY PAYLOADS

1. Perceptual Motor Deficits In Space/Test of Reaction and Adaptation Capabilities (PMDIS/TRAC)

The PMDIS objective is to determine if perceptual motor deficits observed in previous missions are simply due to postural instability or actually represent central nervous system deficits.

The equipment is a laptop computer with touchscreen, joystick, and reaction switches, mounted on a lap-table tray. PMDIS and TRAC present the crewmember with visual stimuli, and measure the response accuracy and score. The equipment will be unstowed from the Destiny Lab and PMDIS measurements made before docking. After docking, two Shuttle crew members will perform the experiment separately, and the TRAC measurements will be made.

H. PAYLOADS OF OPPORTUNITY

1. DTO 805 Crosswind Landing Performance (DTO of Opportunity)

The purpose is to demonstrate the capability to perform a manually controlled landing in the presence of a crosswind.

I. SHORT DURATION BIOASTRONAUTICS INVESTIGATIONS (SDBIS)

1. Test of Midodrine as a Countermeasure Against Postflight Orthostatic Hypotension (SDBI 1503S)

To date, available countermeasures have not eliminated postflight orthostatic hypotension. This study is designed to evaluate a new pharmacological countermeasure for protection from postflight orthostatic hypotension. This experiment will measure the efficacy of midodrine in reducing the incidence and/or severity of orthostatic hypotension in returning astronauts. Efficacy will be evaluated with an expanded tilt test.

Protocol B will evaluate the efficacy of a 10 mg midodrine pill taken in-flight, between Deorbit TIG and landing. This investigation is cross-referenced as SMO 006S.

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STS-117 KU BAND ANTENNA MASKING PLAN

STS-117 KU BAND ANTENNA MASKING PLAN

KU BAND ANT
MASKING

APPROX. MET (ALL TIMES APPROXIMATE)	MODE	EVENT	DESCRIPTION
~00/01:30	Beta 21 + Mask	Ku Activation	Standard mode used for Orbiter with all payloads within PLB envelope
~00/02:55	Beta 21 + Mask with box: A1: $26 \leq AZ \leq 110$ $-90 \leq EL \leq -30$	RMS Checkout	Protection for SRMS
~00/04:00	Beta 21 + Mask	RMS back in pre-cradle	Standard mode used for Orbiter with all payloads within PLB envelope
~00/16:30	Beta 21 + Mask with boxes: A2: $-27 \leq AZ \leq 110$ $-90 \leq EL \leq 0$ A3: $-81 \leq AZ \leq 110$ $-67 \leq EL \leq -10$	OBSS unberth	Protects SRMS for OBSS unberth operations
~00/17:55	Beta 21 + Mask with box: A4: $-122 \leq AZ \leq 110$ $-90 \leq EL \leq 45$	STBD Survey	Protection for SRMS during STBD Survey
~00/19:25	Beta 21 + Mask with box: A5: $-32 \leq AZ \leq 110$ $-50 \leq EL \leq 30$	Nose Cap Survey	Protection for SRMS during Nose Cap Survey NOTE: Do not initiate until SRMS in NOSE CAP ACAS Start
~00/21:55	Beta 21 + Mask with box: A2: $-27 \leq AZ \leq 110$ $-90 \leq EL \leq 0$	Port Survey/OBSS Berth	Protection for SRMS during Port Survey and OBSS Berth
~01/00:00	Beta 21 + Mask with boxes: A6: $-93 \leq AZ \leq 110$ $-90 \leq EL \leq 32$ A7: $-149 \leq AZ \leq 44$ $132 \leq EL \leq 83$	SRMS EE Crew Cabin (Upper Surface) Survey	Protects SRMS for Crew Cabin Survey
~01/01:00	Beta 21 + Mask	LDRI Downlink	SRMS back in pre-cradle. Standard mode used for Orbiter with all payloads within PLB envelope
~01/18:50	Beta 21 Only with box: B1: $-35 \leq AZ \leq 45$ $-35 \leq EL \leq 40$	RNDZ at 765 ft	Protection for ISS during RNDZ

APPROX. MET (ALL TIMES APPROXIMATE)	MODE	EVENT	DESCRIPTION
~01/19:20	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ D1: $-86 \leq AZ \leq -8$ $-33 \leq EL \leq 38$	Prox Ops at 105 ft through docking	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Standard docking configuration
~01/22:00	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ D2: $-86 \leq AZ \leq 6$ $-89 \leq EL \leq 38$	S3/S4 Unberth, Overnight Park, and Install Configuration	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during entire installation timeframe
~02/16:35	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ D1: $-86 \leq AZ \leq -8$ $-33 \leq EL \leq 38$	EVA 1 S3/S4 Install Configuration with EVA 1	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during entire EVA timeframe
~03/00:30	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ C2: $-32 \leq AZ \leq -8$ $-28 \leq EL \leq 38$ C3: $-86 \leq AZ \leq -27$ $-8 \leq EL \leq 35$	Post EVA 1 S3/S4 Install Configuration	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during standard operations
~04/14:00	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ D2: $-86 \leq AZ \leq 6$ $-89 \leq EL \leq 38$	OBSS Handoff S3/S4 Install Configuration, OBSS Handoff Ops, and start of EVA 2	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during OBSS Handoff and EVA start

APPROX. MET (ALL TIMES APPROXIMATE)	MODE	EVENT	DESCRIPTION
~04/17:30	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ D1: $-86 \leq AZ \leq -8$ $-33 \leq EL \leq 38$	EVA 2 S3/S4 Install Configuration with EVA 2	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during entire EVA timeframe
~04/23:30	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ C2: $-32 \leq AZ \leq -8$ $-28 \leq EL \leq 38$ C3: $-86 \leq AZ \leq -27$ $-8 \leq EL \leq 35$	Post EVA 2 S3/S4 Install Configuration	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during standard operations
~06/16:30	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ D1: $-86 \leq AZ \leq -8$ $-33 \leq EL \leq 38$	EVA 3 S3/S4 Install Configuration with EVA 3	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during entire EVA timeframe
~07/00:30	Beta 21 Only with boxes: C1: $-13 \leq AZ \leq 46$ $-66 \leq EL \leq 75$ C2: $-32 \leq AZ \leq -8$ $-28 \leq EL \leq 38$ C3: $-86 \leq AZ \leq -27$ $-8 \leq EL \leq 35$	Post EVA 3 S3/S4 Install Configuration	Protection for ISS structure, including the S0 truss and MBS structure, and potential direct transmission into (or reception from) the ISS Ku dish Protection for SRMS, SSRMS, and S3/S4 during standard operations
~08/19:25	Beta 21 Only with boxes: B1: $-35 \leq AZ \leq 45$ $-35 \leq EL \leq 40$	Post Undock, ORB at approximately 105 ft	ISS Protection within 8° corridor inside of 765 ft but greater than 105 ft Docking through Sep 2
~08/20:30	Beta 21 + Mask	Post Sep 2 configuration	Standard mode used for Orbiter with all payloads within PLB envelope



FLIGHT PLAN

**STS
117**