

Flight Plan

STS-91

(L-1 Month Trajectory)

Mission Operations Directorate
Operations Division

Final
May 6, 1998

<u>EVENT</u>	<u>CDT</u>		
Launch	17:10	Tues	June 02, 1998
Mir Docking	11:59	Thurs	June 04, 1998
Mir Undocking	11:01	Mon	June 08, 1998
KSC Landing	13:03	Fri	June 12, 1998

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas

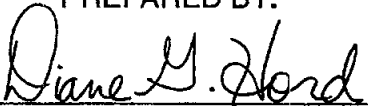


MISSION OPERATIONS DIRECTORATE

STS-91 FLIGHT PLAN

FINAL
May 6, 1998

PREPARED BY:

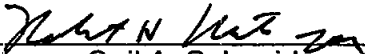


Diane G. Hord
Book Manager



Kathleen Kilpatrick
Timeliner

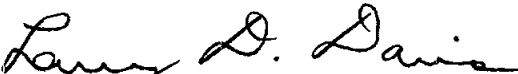
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FLIGHT PLAN
STS-91

LIST OF EFFECTIVE PAGES

FINAL 05/06/98

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3-12A	91/FIN	3-38A	91/FIN

* - Omit from flight book

3-38B	91/FIN	3-56B	91/FIN
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3-56A	91/FIN	7-6	* 91/FIN

STS-91 FLIGHT PLAN FABRICATED ITEMS

<u>Title</u>	<u>Ref. Page</u>	<u>Item No.</u>
STS-91 GENERIC DAP A CONFIGURATIONS (Top/Front)	CC 7-2	FLT PLN-1a/91/O/A
STS-91 GENERIC DAP B CONFIGURATIONS (Top/Back)	CC 7-3	FLT PLN-1aa/91/O/A
STS-91 FLIGHT SPECIFIC DAP A CONFIGURATION (Bottom/Front)	CC 7-4	FLT PLN-1b/91/O/A
STS-91 FLIGHT SPECIFIC DAP B CONFIGURATIONS (Bottom/Back)	CC 7-5	FLT PLN-1bb/91/O/A

* - Omit from flight book

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INTRODUCTION

The STS-91 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 Flight Plan, as part of the Flight Data File, meets the specifications of the Engineering Cycle version of the STS-91 Flight Initialization Data Pack.

The flight profile used for this Flight Plan is for a launch date of June 02, 1998, at 17:10 CDT (22:10 GMT). Orbiter inertial attitudes are expressed relative to a Mean of 1950 (M50) reference frame.

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

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

OVERVIEW TIMELINE

STS-91 FD3 DOCKING, JUNE 2, 1998, 22:10 GMT LAUNCH, ASCENDING LANDING (L-1 MONTH TRAJECTORY)

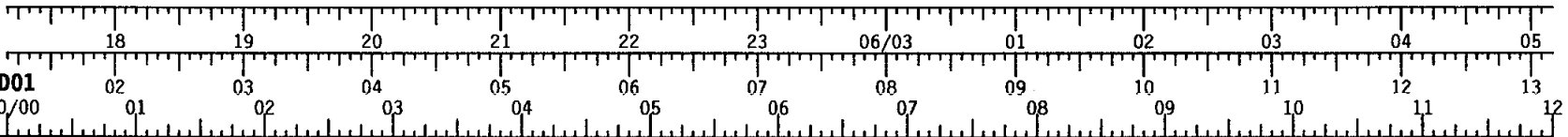
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MET	0/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS	PI	AMS ACT 1	SLEEP										MOD S/U	RRMD	SAMPLE ACT
Mir											SH ACT2	S/U & ACT		SLEEP	
MET	1/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					RENDEZVOUS					DOCKING	WELCOME/ GIFT EXCHANGE	M E A L	
Mir	SLEEP											TARGET, MED, FDF, H2O XFER			
↑ DO3 DOCK = 1/18:49															
MET	2/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					COLD STORAGE PCG DEWAR DCAM XFERS					PHOTO SURVEY SAMS, REKOMBK XFERS			
Mir											10 HOUR JOINT WORKDAY				
MET	3/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					RMS OPS					SPEKTR GAS RELEASE			
Mir											10 HOUR JOINT WORKDAY				
MET	4/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					EDU-M; ECC; BTR XFERS; PHOTO SURVEY					CREW CONF & FAREWELL			
Mir											10 HOUR JOINT WORKDAY				
MET	5/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					FINAL	HATCH	SPEKTR GAS RELEASE		XFER ITEM STOW				
Mir						FARE- WELL	CLOSING	UNDOCK				SLEEP			
↑ DO3 UNDOCK 5/17:51															
MET	6/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					SSCE BURN					PAO OPTY	M E A L		
Mir	SLEEP										OFF DUTY				
SLEEP															
MET	7/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					IMS OPS					M E A L	CREW PHOTO		
Mir	SLEEP										PAO OPTY	DSO 802 EDU ACT			
SLEEP															
MET	8/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					FCS C/O					CABIN STOW		RRMD D/A	
Mir	SLEEP												SH MOD TRON		
SLEEP															
MET	9/0	1	2	3	4	5	6	7	8	9	10	11	12		
STS		SLEEP					CABIN STOW					Deorbit Prep	Ent		
Mir	SLEEP														
↑ KSC LANDING (09/19:53) - ASC															

SUMMARY TIMELINE

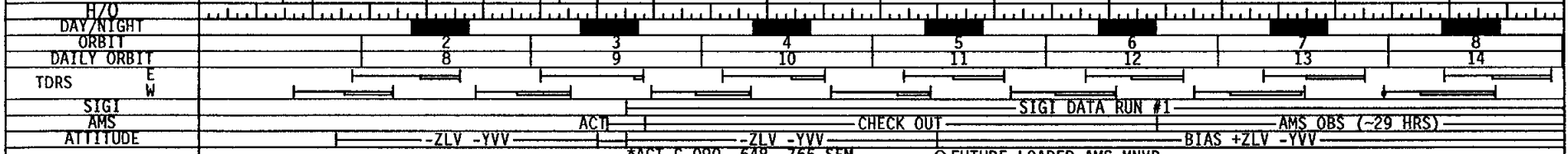
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CT 06/02/98
 DMT 06/03/98
 MET Day 000

FD01
 000/00



CDR PRECOURT		POST INSERTION	IP MC USIA	GA SET UP	PRE SLEEP	OMS BURN	NCIA	GA ACT */ SEM	PS LEE P	PR IV MED	PS LEE P	SVS VIDEO	SLEEP
PLT GORIE		POST INSERTION	AC FN TL RN	EL AR K LO N	PS LEE P	OMS BURN	- Z LV	ML NO AV R	GP RW RD N	PS LEE P	AP U HT R *		SLEEP
MS1 CHANG-DIAZ	L A U N C H	O M S - 2	SH ACT 1	AMS DDRS SETUP	AMS BUS PGSC SETUP	AMS ACT	AMS C/O	SA CT S	PS LEE P				SLEEP
MS2 LAWRENCE			TE HM	OC E T U P	SU NG I T O W	S I G I D /	OMS B U R N	C P C G A C T	T E P C	PRE SLEEP			SLEEP
MS3 KAVANDI		POST INSERTION	KU DPY & ACT	P I O N S T E R T	SH ACT 1	C N F G	R M S I N I T		PRE SLEEP				SLEEP
MS4 RYUMIN		POST INSERTION			V R S H A E D T I O P				PRE SLEEP				SLEEP



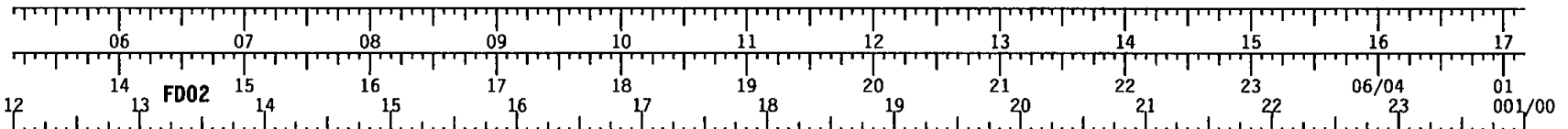
NOTES: *ACT G-090, -648, -765, SEM *SIGI INIT *DEACT & RECONFIG @ FUTURE LOADED AMS MNVR

TOTAL AMS OPERATING TIME = 107.5 HOURS

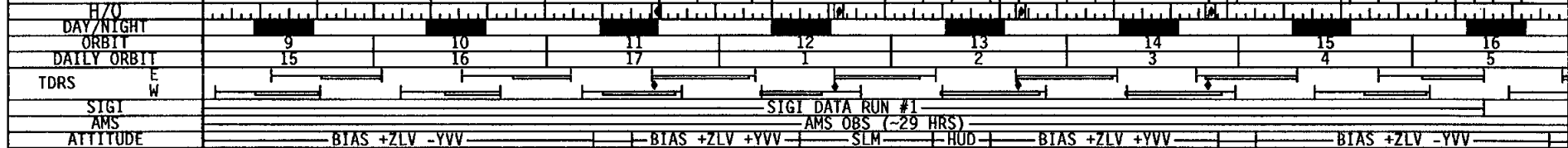
CT 06/03/98

DMT 06/03/98

MET Day 000



CDR PRECOURT	SVS SLEEP	POST SLEEP	NC2A OMS BURN	AMS MNV R	LOADS	EXERCISE	SIGI SLM	HUD MNV R	HUD CAL	AMS MNV R	H2O TERM	C/L CMR MOUNT	MEAL	NPCA +X RCS BURN	AMS MNV R	DSO 802 SETUP	H2O TERM	RNDZ TAGUP	PAO OPTY	H2O 4 INIT	+X RCS		
PLT GORIE	SLEEP	POST SLEEP	OMS BURN	H2O INITIAL SETUP	CRYO 02 SNSR	MP AUS RGS FE	RNDZ PGSC SETUP	RNDZ TOOLS C/O	C/L CMR MOUNT	MEAL	+X RCS BURN	OS SETUP	ODS RING EXT	RNDZ TAGUP	FILTER CLEAN	+X RCS							
MS1 CHANG-DIAZ	SLEEP	POST SLEEP	AMS DSK C/O			SH ACT 2	NS ETT WOP RK	XP FL4*	RNDZ PGSC SETUP	RNDZ TOOLS C/O	AMS DSK C/O	MEAL	EMU STOW	SVS SETUP & PWRUP	SVS C/O	SVS CAMR CNTL TEST	SVS PWRDN						
MS2 LAWRENCE	SLEEP	GIRA INSTALL	POST SLEEP	OMS BURN	ERGO SETUP	MCH DKS	STS AIR SAMPLE	STS SURF SAMPLE	H2O 2 INIT	HHL C/O	SHUCS OPS	SHUCS*	MEAL	H2O 3 INIT	SVS STOW	U MNS STOW EM	OS SETUP	ODS RING EXT	RNDZ TAGUP	PAO OPTY	SIGI TRM & D/L	SPIC GICOM	SPIC GICOM
MS3 KAVANDI	SLEEP	POST SLEEP	ERGO SETUP	CN FG	SH ACT 2	SH MODULE SETUP	LSLE ACT 1	RRMD S/U & ACT	MEAL	EMU STOW	SVS SETUP & PWRUP	PHANTOM TORSO ACT	SMPL HLD ACT 1,2 & 3										
MS4 RYUMIN	SLEEP	POST SLEEP	ESC BATT INIT	P/TV14 SETUP 1331	RME 1331 S/U & PURGE	RS MAM 1331	ESC BATT TERM	V SHE FTUP	RC MHE CK 1331	MEAL	RC MHE CK 1331	RC MHE CK 1331	P/TV04 SETUP PAO	PAO OPTY	RC MHE CK 1331	RC MHE CK 1331	PR EN TVD UZ 2P 0						



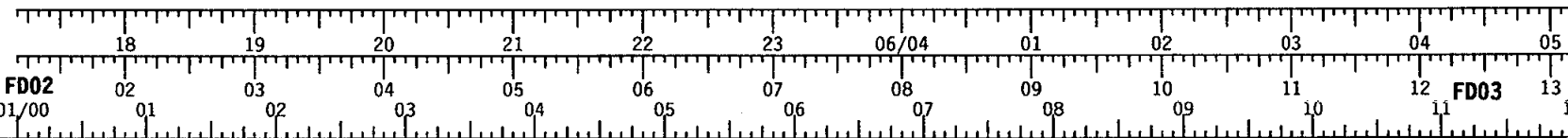
NOTES: *CNTLR SWAP *PGSC XFER TO FLT DECK *SHUCS VIDEO INIT

*SIGI
INIT
& AUTO

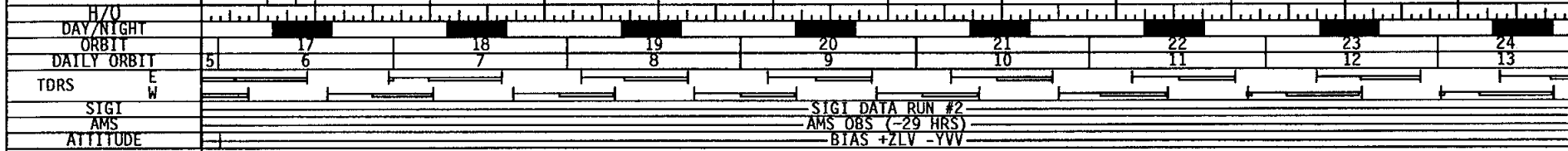
CT 06/03/98

DMT 06/04/98

MET Day 001



CDR PRECOURT	NC3 +X RCS	AMS MNV R	PRE SLEEP	PRIV MED	PRE SLEEP	SLEEP	PS OL SE T P	H2O 5 INIT	POST SLEEP
PLT GORIE	+X RCS	PS R L E E P	H2O T E R M	PRE SLEEP	SLEEP	POST SLEEP	GRP B PWUP		
MS1 CHANG-DIAZ			PRE SLEEP	OCA DNLK	PRE SLEEP	AMS DSK C/O	AMS DSK C/O	POST SLEEP	
MS2 LAWRENCE	MC DH DK KS	G S A M P L L H 2 O	PRE SLEEP		SLEEP	PS OL SE T P	D I L U M I T	POST SLEEP	
MS3 KAVANDI	S H C H KS	S C N F G	PRE SLEEP		SLEEP	POST SLEEP			
MS4 RYUMIN	P/TV20 SETUP RNDZ	R T E R M 1 3 3 1	PRE SLEEP		SLEEP	POST SLEEP			



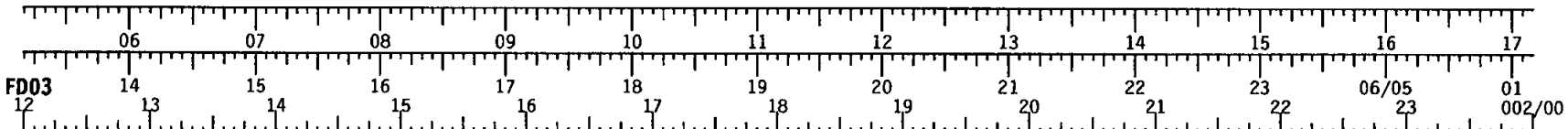
NOTES:

SIGI DATA RUN #2
AMS OBS (-29 HRS)
BIAS +ZLV -VVV

CT 06/04/98

DMT 06/04/98

MET Day 001



FD03

06/05 01 002/00

S T S - 9 1	CDR PRECOURT	POST SLEEP	RNDZ										FINAL APPROACH	SMI TNO SVS R:1	PRESSURE CKS	MIR SAFETY BRIEF	SSB TARI EF	DOCK TGT INST	TGT XHR H/O	MEAL								
	PLT GORIE	POST SLEEP	RNDZ PGSC SETUP	RNDZ										ODS PREP FOR INGR	BCPN SF MG U	GPWR P RDN	MIR SAFETY BRIEF	ESDI AV T	LMON DR	DS PCS U	MEAL							
	MS1 CHANG-DIAZ	PS D OLHEA T EIC C PIST	RNDZ PGSC SETUP	P/TV20 OPS RNDZ/DOCK										SHD ML PDA L	SHD HRE 2X	SPR P	SCLOS E	ODS PREP FOR EGRS	AMS DSK C/C	P/TV20 OPS RNDZ/DOCK	VTRVTR S/UP/B	SH OPEN	SRCH EG R	XPL F4*	MIR SAFETY BRIEF	FXDFE R	SCS H H N B F G	MEAL
	MS2 LAWRENCE	MCDH CUE K S	DTM R M	HTZ R M	H20 6 INIT	RNDZ	HTZ R M	VIEW MIR	RNDZ	RELAY	RNDZ	VIEW MIR	RNDZ	LC/ OOH	RNDZ	PRESSURE CKS		AIR DUCT INST	MIR SAFETY BRIEF	MCDH CUE K S	SIGI TRM D/L & INIT	MEAL						
	MS3 KAVANDI	CN PFG	SHML PDA L	ASHH K S	SHD ML PDA L	RNDZ										ODS PREP FOR INGR	P/TV22 S/U MIR PAO	MIR SAFETY BRIEF	SHD ML PDA L	SHD ML PDA L	MEAL							
	MS4 RYUMIN	POST SLEEP		VHF COMM ACT	AIR TO AIR										RME 1331 CWC INIT	AIR TO AIR	MIR SAFETY BRIEF	H20 XFER 6 BAGS	MEAL									
M I R - 2 5	MS5 THOMAS	SAMS ACT		AIR TO AIR										AIR	MIR SAFETY BRIEF	H20 XFER 6 BAGS	AIR	MED EQUIP XFER	MEAL									
	MIR-CDR MUSABAYEV	VHF COMM ACT	AIR TO AIR										RELAY	AIR TO AIR	P/TV SETUP MIR	MIR SAFETY BRIEF	SSB TARI EF	FXDFE R	DS PCS U	MEAL								
	MIR-ENG BUDARIN	OSC7 MNVR SA FIX										DA SCS L	FREE	SA TRK	PRESSURE CKS	AIR DUCT INST	MIR SAFETY BRIEF	SSB TARI EF	DOCK TGT INST	TGT XHR H/O	MEAL							

DOCKING *HATCH OPENING EXCHANGE

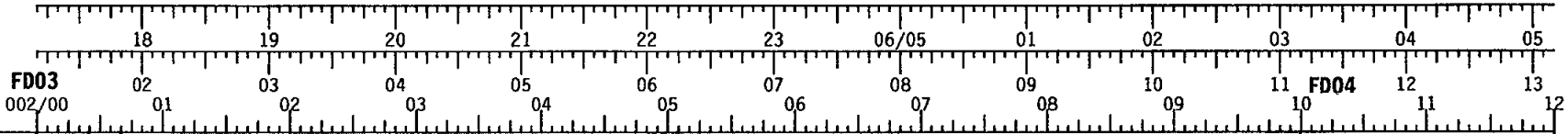
WELCOME / GIFT

H/O	[Timeline bar]																																
DAY/NIGHT	[Timeline bar]																																
ORBIT	24	25	26	27	28	29	30	31	32	[Timeline bar]																							
DAILY ORBIT	13	14	15	1	2	3	4	5	6	[Timeline bar]																							
TDRS	[Timeline bar]																																
RUS GSTDN	<ul style="list-style-type: none"> -PPK -ULD -DJS -KLP -PPK -ULD -DJS -KLP -PPK -SHK -ULD -DJS -KLP -SHK -ULD -DJS -KLP -SHK -DJS -KLP -SHK -DJS -KLP -SHK -DJS -KLP -SHK -DJS -KLP -SHK -DJS -KLP -SHK 																																

SIGI ATTITUDE RNDZ/DOCK SIGI DATA RUN #2 BIAS 105.1+140+0

NOTES *DOCKING 1/18:49 *PGSC XFER TO SHAB *VHF PWR OFF *GRAB AIR SAMPLE *GRAB AIR SAMPLE

CT 06/04/98
 DMT 06/05/98
 MET Day 002



STS-91	CDR PRECOURT	PRE SLEEP	PRE SLEEP	SLEEP						POST SLEEP		
	PLT GORTE	PRE SLEEP		SLEEP						POST SLEEP		
	MS1 CHANG-DIAZ	PRE SLEEP	OCA DNK	PRE SLEEP	SLEEP						AMS DSK C/O	POST SLEEP
	MS2 LAWRENCE	PRE SLEEP		SLEEP						POST SLEEP	POST SLEEP	
	MS3 KAVANDI	PRE SLEEP		SLEEP						POST SLEEP		
	MS4 RYUMIN	PRE SLEEP		SLEEP						POST SLEEP		
	MS5 THOMAS	PRE SLEEP		SLEEP						POST SLEEP		
MIR-25	MIR-CDR MUSABAYEV	PRE SLEEP	SLEEP (09:00)						POST SLEEP	POST SLEEP		
	MIR-ENG BUDARIN	PRE SLEEP	SLEEP (09:00)						*POST SLEEP			
H/O												
DAY/NIGHT												
ORBIT												
DAILY ORBIT												
TDRS												
RUS GSTDN												
STGT												
ATTITUDE												
NOTES												

020 1118 MIR PHOTO SURVEY

STS-91

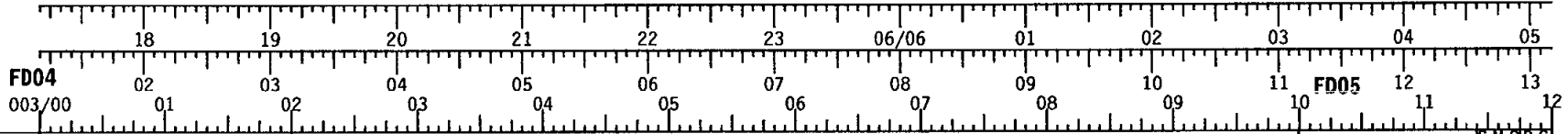
MIR-25



SIGI DATA RUN #3
 105.2+0+0
 *METABOLIC SAMPLING

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DMT		06/05/98		FD04		14		15		16		17		18		19		20		21		22		23		06/06			
MET		Day 002		12		13		14		15		16		17		18		19		20		21		22		23		003/00	
STS-91	CDR PRECOURT	POST SLEEP	DAILY PLAN	H2O 7 INIT	XFER	H2O 8 INIT	HT 2 O R M	H2O 8 INIT	SM I N O SV 4 R 2	XFER	HT 2 O R M	MEAL	XFER	EXERCISE	H2O 9 INIT	XFER	HT 2 O R M	PAO OPTY	XFER TAGUP	LM ON A V DR	PRE SLEEP	PM R E I D V							
	PLT GORIE	POST SLEEP	DAILY PLAN	XFER	COLD STOWAGE XFER	EXERCISE	XFER	MEAL	P/TV21 SETUP 1118	MIR PHOTO SURVEY*	XFER	FUEL CELL MON ACT	PAO OPTY	XFER TAGUP	PRE SLEEP														
	MS1 CHANG-DIAZ	POST SLEEP	DAILY PLAN	RRMD BIO BOX ACT*	XFER	MEAL	AMS DSK C/O	XFER	EXERCISE	PAO OPTY	XFER TAGUP	BIO BOX DEACT*	C N F G	P S R E E P															
	MS2 LAWRENCE	POST SLEEP	DAILY PLAN	M C M D H C D K I I K S U	COLD STOWAGE XFER	PCG DEWAR XFER	DCAM XFER	XFER	LC I / O O H	MEAL	XFER	EXERCISE	SIGI TRM D/L & INIT	M C M D H C D K I I K S U	S X M F P E L R *	PAO OPTY	XFER TAGUP	PRE SLEEP											
	MS3 KAVANDI	POST SLEEP	C S S C N H H K S F G F S	DAILY PLAN	RME III XFER ACT*	XFER	P/TV21 SETUP 1118	MIR PHOTO SURVEY*	XFER	MEAL	XFER	EXERCISE	P/TV22 S/U MIR	PAO OPTY	XFER TAGUP	S C S H H K S F	PRE SLEEP												
	MS4 RYUMIN	POST SLEEP	DAILY PLAN	REKOMB K OPS	EXERCISE	XFER	MEAL	REKOMB K OPS	REKOMB K XFER	XFER	PAO OPTY	XFER TAGUP	PRE SLEEP																
MS5 THOMAS	POST SLEEP	DAILY PLAN	T/M EXERCISE ON MIR	XFER	MEAL	S D E A M A S C T	SAMS DISASBLY & XFER	XFER	T/M EXERCISE ON MIR	PAO OPTY	XFER TAGUP	PRE SLEEP																	
MIR-25	MIR-CDR MUSABAYEV	DAILY PLAN	XFER	SM I N O SV 4 R 2	XFER	MEAL	XFER	T/M EXERCISE ON MIR	XFER	P/TV SETUP MIR	PAO OPTY	XFER TAGUP	PRE SLEEP																
	MIR-ENG BUDARIN	DAILY PLAN	RME III XFER ACT*	COLD STOWAGE XFER	PCG DEWAR XFER	DCAM XFER	T/M EXERCISE ON MIR	MEAL	MIR AIR SAMPLE	MIR SURF SAMPLE	XFER	S X M F P E L R *	PAO OPTY	XFER TAGUP	PRE SLEEP														
H2O DAY/NIGHT																													
ORBIT		40		41		42		43		44		45		46		47		48											
DAILY ORBIT		14		15		16		1		2		3		4		5		6											
TDRS		E		W		E		W		E		W		E		W		E		W		E		W		E			
RUS GSTDN		-DJS -KLP -PPK -ULD		-DJS -KLP -PPK -ULD		-DJS -KLP -PPK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD		-DJS -KLP -SHK -ULD			
SIGI ATTITUDE		105.2+0+0		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3		SIGI DATA RUN #3			
NOTES		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA		*SA,SB,SC *INIT E/W DATA			

CT 06/05/98
 DMT 06/06/98
 MET Day 003



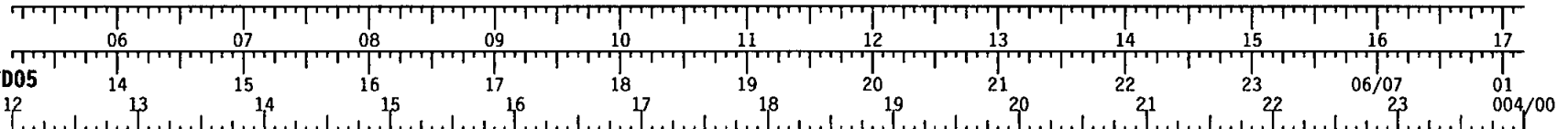
STS-91	CDR PRECOURT	PRE SLEEP	SVS VIDEO				SLEEP	POST SLEEP	SMG TNO SV4 R.4	PS L S E E P
	PLT GORIE	PRE SLEEP					SLEEP	POST SLEEP		DI UN MI PT
	MS1 CHANG-DIAZ	PRE SLEEP	OCA DNLK	PS R L E E P	AMS DSK C/O	SLEEP		AMS DSK C/O	POST SLEEP	
	MS2 LAWRENCE	PRE SLEEP					SLEEP	POST SLEEP	POST SLEEP	
	MS3 KAVANDI	PRE SLEEP					SLEEP	POST SLEEP		
	MS4 RYUMIN	PRE SLEEP					SLEEP	POST SLEEP		
	MS5 THOMAS	PRE SLEEP					SLEEP	POST SLEEP		
MIR-25	MIR-CDR MUSABAYEV	PRE SLEEP	SLEEP (09:00)					*POST SLEEP	POST SLEEP	SMG TNO SV4 R.4
	MIR-ENG BUDARIN	PRE SLEEP	SLEEP (09:00)					*POST SLEEP		
H/O		[Timeline bar with markers 48-55]								
DAY/NIGHT		[Timeline bar with markers 48-55]								
ORBIT		[Timeline bar with markers 48-55]								
DAILY ORBIT		[Timeline bar with markers 48-55]								
TDRS		[Timeline bar with markers 48-55]								
RUS GSTDN		[Timeline bar with markers 48-55]								
SIGI ATTITUDE		SIGI DATA RUN #4 105.2+0+0								
NOTES		⊖FUTURE LOADED 105.2 MNVR							*METABOLIC SAMPLING	

CT 06/06/98

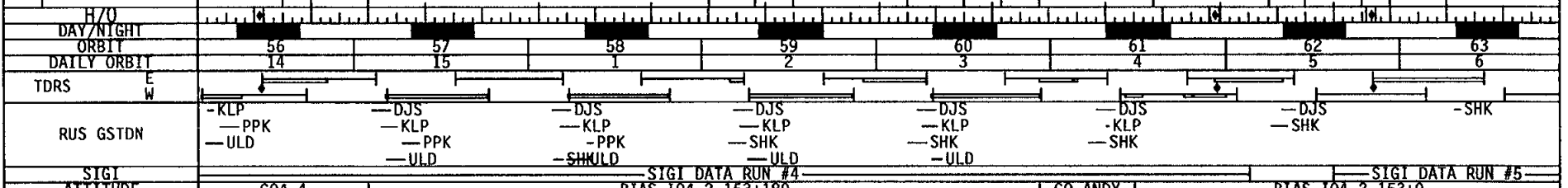
DMT 06/06/98

MET Day 003

FD05



STS-91	CDR PRECOURT	POST SLEEP	H2O 10 INIT	DAILY PLAN	SM I TV 4 SV R 2	H2O 11 INIT	EXERCISE	H2O 11 INIT	EXERCISE	H2O 11 INIT	EXERCISE	HT 2 O R M	XFER	PAO OPTY	MEAL	CREW PHOTO	PAO OPTY	STS MNVR LEAK CK	SM I TV 4 SV R 2	XFER	H2O 12 INIT	XFER	XFER TAGUP	LM ON A V DR	PRE SLEEP
	PLT GORIE	POST SLEEP	DE U E M R P M	DAILY PLAN	FD E C E M A S T	P/TV 21 SETUP 1118	MIR PHOTO SURVEY*	XFER	P/TV 22 S/U MIR	PAO OPTY	MEAL	CREW PHOTO	PAO OPTYS	P/TV 24 S/U LEAK	SPEKTR GAS RLS	EXERCISE	XFER	XFER TAGUP	HT 2 O R M	PRE SLEEP					
	MS1 CHANG-DIAZ	POST SLEEP	DAILY PLAN	RRMD CONFIG CHANGE	BIO BOX DEACT*	BIO BOX DEACT*	RRMD TABLE UPDATE	AMS DSK C/O	MEAL	CREW PHOTO	PAO OPTYS	P/TV 24 S/U LEAK	SPEKTR GAS RLS	RRMD BIO BOX ACT*	RRMD TABLE UPDATE	XFER TAGUP	PRE SLEEP								
	MS2 LAWRENCE	POST SLEEP	R M S *	DAILY PLAN	M C H D K S	R P S W A R D U P	R P S W A R D U P	R P S W A R D U P	RMS CHECKOUT	RSAD OPS	R P S W A R D U P	R P S W A R D U P	L C T / O O H	MEAL	CREW PHOTO	PAO OPTYS	P/TV 24 S/U LEAK	SPEKTR GAS RLS	XFER	SIGI TRM D/L & INIT	M C H D K S	S X M F P E R L *	XFER TAGUP	PRE SLEEP	
	MS3 KAVANDI	POST SLEEP	C N F G	DAILY PLAN	S C H K S	R P S W A R D U P	R P S W A R D U P	RMS CHECKOUT	RSAD OPS	R P S W A R D U P	R P S W A R D U P	PAO OPTY	MEAL	CREW PHOTO	PAO OPTYS	P/TV 24 S/U LEAK	SPEKTR GAS RLS	RRMD BIO BOX ACT*	XFER	R M E I I I M E M *	S C H K S	XFER TAGUP	S C N F G	PRE SLEEP	
	MS4 RYUMIN	POST SLEEP	DAILY PLAN	XFER	PAO OPTY	MEAL	CREW PHOTO	PAO OPTY	XFER	EXERCISE	XFER TAGUP	PRE SLEEP													
	MS5 THOMAS	POST SLEEP	DAILY PLAN	T/M EXERCISE ON MIR	STS AIR SAMPLE	STS SURF SAMPLE	PAO OPTY	MEAL	CREW PHOTO	PAO OPTY	XFER	T/M EXERCISE ON MIR	XFER TAGUP	PRE SLEEP											
MIR-25	MIR-CDR MUSABAYEV	DAILY PLAN	SM I TV 4 SV R 2	XFER	T/M EXERCISE ON MIR	XFER	P/TV SETUP MIR	PAO OPTY	MEAL	CREW PHOTO	PAO OPTY	P S M S T S / E I T T R U P	STS MNVR LEAK CK	SPEKTR GAS RLS	SM I TV 4 SV R 2	XFER	XFER TAGUP	PRE SLEEP							
	MIR-ENG BUDARIN	US CNDNSTE FLSH & SU	DAILY PLAN	HOT & SVO H2O SMPL*	PAO OPTY	MEAL	CREW PHOTO	PAO OPTY	SPEKTR GAS RLS	T/M EXERCISE ON MIR	R M E I I I M E M *	S X M F P E R L *	XFER TAGUP	PRE SLEEP											



SIGI ATTITUDE: G04.4, SIGI DATA RUN #4, BIAS 104.2-153+180, GO ANDY, SIGI DATA RUN #5, BIAS 104.2-153+0

NOTES: *RMS HTR ACT, *MSD 053, *DTO 1118 MIR WINDOWS, *SA, *SC, *LD, *LF, *METABOLIC, *REINIT E/W DATA

CT 06/06/98

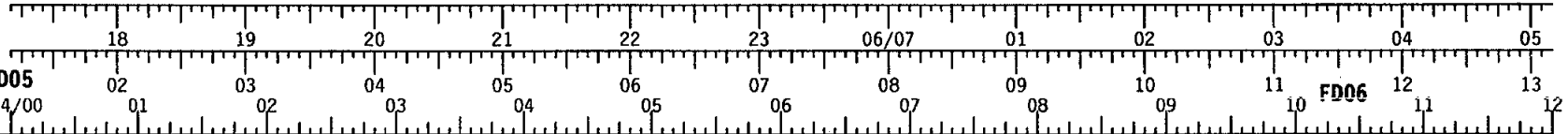
DMT 06/07/98

MET Day 004

FD05

004/00

FD06

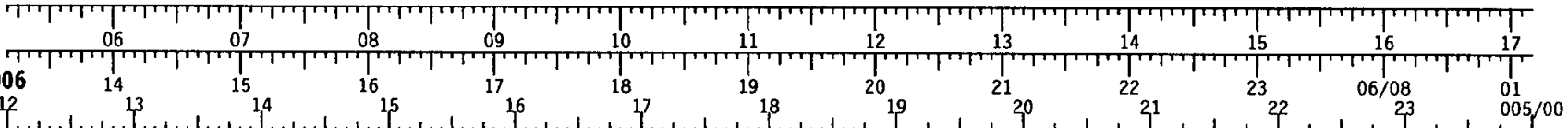


STS-91	CDR PRECOURT	P R E S L E E P	P P R A I M I V	PRE SLEEP		SLEEP		POST SLEEP		
	PLT GORIE			PRE SLEEP		SLEEP		POST SLEEP		
	MS1 CHANG-DIAZ	PRE SLEEP	O C A D N L K	PRE SLEEP		SLEEP		AMS D S K C / O	POST SLEEP	
	MS2 LAWRENCE			PRE SLEEP		SLEEP		POST SLEEP	A T U	
	MS3 KAVANDI	PRE SLEEP	P P R A I M I V	PRE SLEEP		SLEEP		POST SLEEP		
	MS4 RYUMIN			PRE SLEEP		SLEEP		POST SLEEP		
	MS5 THOMAS			PRE SLEEP		SLEEP		POST SLEEP		
MIR-25	MIR-CDR MUSABAYEV	PRE SLEEP				SLEEP (09:00)		*POST SLEEP	A T U	
	MIR-ENG BUDARIN	PRE SLEEP				SLEEP (09:00)		*POST SLEEP		
H/O DAY/NIGHT ORBIT		[Timeline with shaded sleep periods]								
DAILY ORBIT		6	7	8	9	10	11	12	13	14
TDRS		[Timeline with PPK and ULD markers]								
RUS GSTDN		[Timeline with PPK and ULD markers]								
SIGI ATTITUDE		SIGI DATA RUN #5 105.2-4+0								
NOTES		⊖ FUTURE LOADED I05.2 MNVR							*METABOLIC SAMPLING	

CT 06/07/98

DMT 06/07/98 FD06

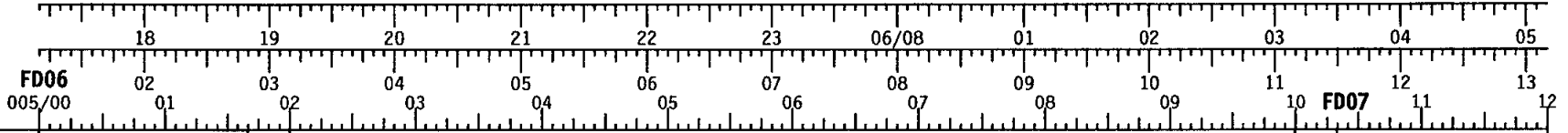
MET Day 004



STS-91	CDR PRECOURT	POST SLEEP	O2 RPRS INIT	DAILY PLAN	H20 13 INIT	XFER	H20 14 INIT	H20 14 INIT	SMI TV 4 R.2	XFER	H20 14 INIT	MEAL	XFER	O2 RPRS TERM	CREW CONF & FAREWELL	SMI TV 4 R.2	EXERCISE	PC	CTA B M P	H20 15 INIT	XFER TAGUP	LM ON AVI DRV	PM 20 00 M	HT 20 00 M	PS SLEEP
	PLT GORIE	POST SLEEP	DAILY PLAN	P/TV21 SETUP 1118	MIR PHOTO SURVEY*			XFER	MEAL	XFER	P/TV22 S/U MIR	CREW CONF & FAREWELL	XFER	EXERCISE	HR T CRM NCC FSS	XFER TAGUP	PRE SLEEP	PFRA 10 M	PS SLEEP						
	MS1 CHANG-DIAZ	POST SLEEP	DAILY PLAN	XFER			EXERCISE	XFER	MEAL	AMS DSK C/O	XFER	CREW CONF & FAREWELL	FILTER CLEAN	RRMD TABLE UPDATE	BIO OBS & CC*	BIO CONTG DEACT	XFER TAGUP	PRE SLEEP							
	MS2 LAWRENCE	POST SLEEP	MC DH DKS	DAILY PLAN	EXERCISE	EDU-M & ECC XFER	BTR XFER	MEAL	LC I/O H	XFER	CREW CONF & FAREWELL	O2 RPRS INIT	XFER	SIGI TRM & D/L	SHD IGV	SIGI	MDDK CHKS	SX MF PERL*	XFER TAGUP	PRE SLEEP					
	MS3 KAVANDI	POST SLEEP	DAILY PLAN	CH F G	SSC H K S	RRMD TABLE UPDATE	EXERCISE	XFER	MEAL	XFER	CREW CONF & FAREWELL	P/TV21 SETUP 1118	MIR PHOTO SURVEY*	RME III MEM*	BIO OBS & CC*	XFER TAGUP	SC H K S	SC N F G	PRE SLEEP						
	MS4 RYUMIN	POST SLEEP	DAILY PLAN	XFER	MIR PHOTO SURVEY*			EXERCISE	MEAL	XFER	CREW CONF & FAREWELL	XFER	MIR PHOTO SURVEY*	XFER	XFER TAGUP	PRE SLEEP									
	MS5 THOMAS	POST SLEEP	DAILY PLAN	T/M EXERCISE ON MIR	EDU-M & ECC XFER	BTR XFER	MEAL	XFER	CREW CONF & FAREWELL	XFER	T/M EXERCISE ON MIR	XFER TAGUP	PRE SLEEP												
	MIR-25	MIR-CDR MUSABAYEV	DAILY PLAN	XFER	T/M EXERCISE ON MIR	SMI TV 4 R.2	XFER	MEAL	XFER	P/TV SETUP MIR	CREW CONF & FAREWELL	SMI TV 4 R.2	XFER	XFER TAGUP	PRE SLEEP										
MIR-25	MIR-ENG BUDARIN	US/RUS CNDNSATE STOW	DAILY PLAN	XFER	EDU-M & ECC XFER	BTR XFER	MEAL	XFER	CREW CONF & FAREWELL	XFER	T/M EXERCISE ON MIR	RME III MEM*	SX MF PERL*	XFER TAGUP	PRE SLEEP										

H2O	[Timeline bar]																
DAY/NIGHT	[Timeline bar]																
ORBIT	71	72	73	74	75	76	77	78	79								
DAILY ORBIT	14	15	1	2	3	4	5	6	7								
TDRS	[Timeline bar]																
RUS GSTDN	-DJS	-KLP	-PPK	-ULD	-DJS	-KLP	-PPK	-ULD	-DJS	-KLP	-SHK	-ULD	-DJS	-KLP	-SHK	-DJS	-SHK
SIGI ATTITUDE	SIGI DATA RUN #5																
ATTITUDE	105.2-4+0				104.2-153+180				104.2-153+0								
NOTES	*DIO 1118 MIR INTERNAL																
	*LD *INIT CAL DATA *SIGI INIT & AUTO *LF *METABOLIC																

CT 06/07/98
 DMT 06/08/98
 MET Day 005

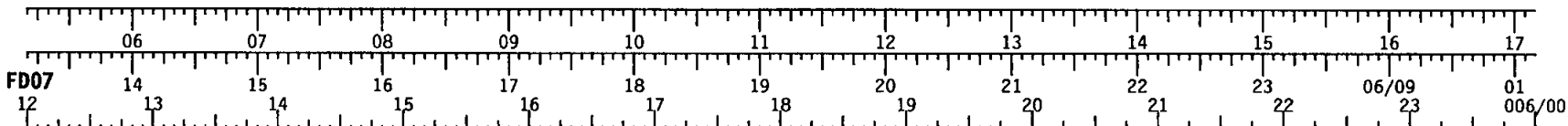


STS-91	CDR PRECOURT	PRE SLEEP	02 RPRS TERM	SLEEP	02 RPRS INIT	POST SLEEP					
	PLT GORIE	PRE SLEEP		SLEEP		POST SLEEP					
	MS1 CHANG-DIAZ	PRE SLEEP	OCA ONLK	PRE SLEEP	AMS DSK C/O	POST SLEEP					
	MS2 LAWRENCE	PRE SLEEP		SLEEP	POST SLEEP	PSI WOL H2O TISE 16 UT E INIT					
	MS3 KAVANDI	PRE SLEEP		SLEEP		POST SLEEP					
	MS4 RYUMIN	PRE SLEEP		SLEEP		POST SLEEP					
	MS5 THOMAS	PRE SLEEP		SLEEP		POST SLEEP					
MIR-25	MIR-CDR MUSABAYEV	PRE SLEEP		SLEEP (09:00)	POST SLEEP	POST SLEEP					
	MIR-ENG BUDARIN	PRE SLEEP		SLEEP (09:00)		*POST SLEEP					
H/O DAY/NIGHT ORBIT		[Timeline with shaded blocks]									
DAILY ORBIT		79	80	81	82	83	84	85	86	87	
TORS		7	8	9	10	11	12	13	14	15	
RUS GSTDN							PPK	PPK	PPK	PPK	DJS
SIGI ATTITUDE		-104.2-153+0					SIGI DATA RUN #6				
ATTITUDE							-105.2-4+0				
NOTES		⊖ FUTURE LOADED I05.2 MNVR					*METABOLIC SAMPLING				

CT 06/08/98

DMT 06/08/98

MET Day 005

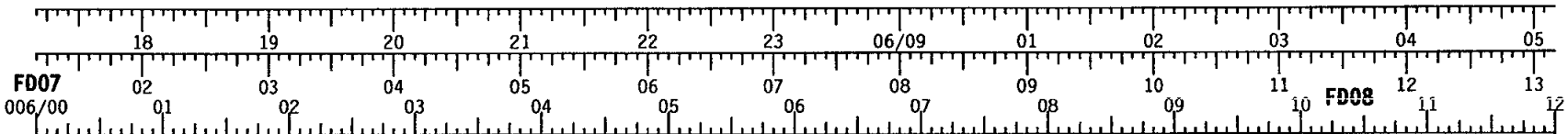


STS-91	CDR PRECOURT	H2O 17 MINIT	DAILY PLAN		SH TIE DN	LLNG SH T T L S	C/L CMR MOUNT	UNDCK TAGUP	STS MNVR UNDK	UNDOCK & FLYAROUND	DI AM PU	EXERCISE		OAA OMS BURN	AMN SVR	PRE SLEEP	PM REID V	PS LEEP		
	PLT GORIE	POST SLEEP	DAILY PLAN	XFL 4 R*	H2O RM	LLNG SH T T L S	C/L CMR MOUNT	RNDZ PGSC SETUP	UNDCK TAGUP	GRP B PWUP	UNDOCK & FLYAROUND	GPWR BDN	I MS MEM BATT C/O	XFER ITEM STOW	EXERCISE	OMS BURN		PRE SLEEP		
	MS1 CHANG-DIAZ	POST SLEEP	DAILY PLAN	RRMD TABLE UPDATE		FINAL	UNDK PREP HATCH CL	RNDZ PGSC SETUP	UNDCK TAGUP		UNDOCK & FLYAROUND	AMS DSK C/O	XFL 4 R*	SA HUT C/S	SHUCS OPS	EU MNUS T W	BIO OBS & CC*	BIO CONTG DEACT	SCH K S	PRE SLEEP
	MS2 LAWRENCE	POST SLEEP	DAILY PLAN	MDDK CHKS	SX MF PE L R*	AIR DUCT RMVL	UNDK PREP HATCH CL	CCTV CAMR PREP	UNDCK TAGUP	LC I O H	UNDOCK & FLYAROUND	DIS BL	VTRVTR S/UP/B	EXERCISE	SIGI TRM D/L & INIT	OMS BURN	MDDK CHKS	PRE SLEEP	PF RA IM V	
	MS3 KAVANDI	POST SLEEP	DAILY PLAN	BIO OBS & CC*	BIO CONTG DEACT	FAREWELL	UNDK PREP HATCH CL	P/TV23 S/U UNDK/FLY			P/TV23 OPS UNDK/FLY		BIO OBS & CC*	BIO BOX DEACT	EU MNUS T W	RRMD BIO BOX ACT*	RRMD TABLE UPDATE	SX MF PE L R*	PRE SLEEP	
	MS4 RYUMIN	POST SLEEP	DAILY PLAN	RME III STOW		FAREWELL	UNDK PREP HATCH CL	VHF COMM ACT	P 1/4	RME 1331 CWC TERM	1 S 3 M 3 P 1 L	UNDOCK & FLYAROUND	SPEKTR GAS RLS	1 C 3 K 3 1	EXERCISE	1 C 3 K 3 1		1 T 3 E R 3 1 M	PRE SLEEP	
	MS5 THOMAS	POST SLEEP	DAILY PLAN	CREAM RETRVL		FAREWELL	EXERCISE				UNDOCK & FLYAROUND	SPEKTR GAS RLS	XFER ITEM STOW	EDU-M MEDIA FEED	EXERCISE			PRE SLEEP		
MIR-25	MIR-CDR MUSABAYEV		DAILY PLAN			UNDK PREP HATCH CL	VHF COMM ACT		STS MNVR UNDK	UNDOCK	SPEKTR GAS RLS		PRE SLEEP			SLEEP (09:00)				
	MIR-ENG BUDARIN		DAILY PLAN	RME III STOW	SX MF PE L R*	AIR DUCT RMVL	S ON T L	UNDK PREP HATCH CL		FIX CSA	P/TV OPS UNDK		PRE SLEEP			SLEEP (09:00)				

H/O	06	07	08	09	10	11	12	13	14	15	16	17
DAY/NIGHT	87	88	89	90	91	92	93	94	95			
DAILY ORBIT	15	16	1	2	3	4	5	6	7			
TDRS	E	W										
RUS GSTDN		DJS -KLP -PPK -ULD		DJS -KLP -SHK -ULD		DJS -KLP -SHK -ULD		DJS -KLP -SHK -ULD		DJS -KLP -SHK -ULD		
SIGI												
AMS												
ATTITUDE			105.2-4+0			UNDOCK/FLYAROUND				+ZLV -YVV		AMS OBS (~19.5 HRS)
NOTES		⊕POST SLEEP *LD		*PGSC XFER TO FLT DECK *METABOLIC						*PGSC XFER TO SHAB *LE *LF		

***UNDOCKING 5/17:51** *LD

CT 06/08/98
 DMT 06/09/98
 MET Day 006



CDR PRECOURT	PRE SLEEP	SLEEP	POST SLEEP
PLT GORIE	PRE SLEEP	SLEEP	POST SLEEP
MS1 CHANG-DIAZ	P F R A I M V OCA DNLK PRE SLEEP	AMS DSK C/O SLEEP	AMS DSK C/O POST SLEEP
MS2 LAWRENCE	PRE SLEEP	SLEEP	POST SLEEP
MS3 KAVANDI	PRE SLEEP	SLEEP	POST SLEEP
MS4 RYUMIN	PRE SLEEP	SLEEP	POST SLEEP
MS5 THOMAS	PRE SLEEP	SLEEP	POST SLEEP
H/O	[Timeline scale]		
DAY/NIGHT	[Timeline scale]		
ORBIT	[Timeline scale]		
TDRS	[Timeline scale]		
SI	[Timeline scale]		
AMS	[Timeline scale]		
ATTITUDE	[Timeline scale]		
NOTES:	[Timeline scale]		

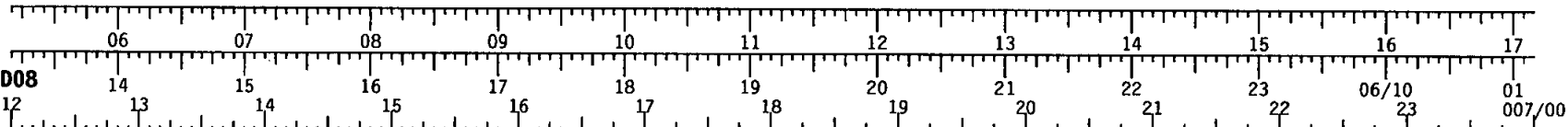
SI GI DATA RUN #7
 AMS OBS (-19.5 HRS)
 BIAS +ZLV -YVV

CT 06/09/98

DMT 06/09/98

MET Day 006

FD08



CDR PRECOURT	POST SLEEP	POPTY*	AMNSVR	AMNSVR	AMNSVR	AMNSVR	AMNSVR	AMNSVR	AMNSVR	PAO OPTY	MEAL	OFF DUTY	EXERCISE	OFF DUTY	PS SLEEP	PM SLEEP	PRE SLEEP
PLT GORIE	POST SLEEP	P/TV04 SETUP PAO	SSCE BURN #1	SSCE BURN #2	WCS*	PAO OPTY	MEAL	OFF DUTY	EXERCISE	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	PRE SLEEP
MS1 CHANG-DIAZ	POST SLEEP	SH CHK S	POPTY*	SHUCS OPS	LTA STRAP EVAL	PAO OPTY	MEAL	VC IPL AMS LDSK *C/O	OFF DUTY	EXERCISE	OFF DUTY	BIO OBS & CC*	BIO BOX DEACT	OD FTY	SH CHK S	PRE SLEEP	
MS2 LAWRENCE	POST SLEEP	DT UR PM	MDDK CHKS	FILTER CLEAN	GPS TEST	EXERCISE	MEAL	LC I/O H	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	SIGI TRM D/L & INIT	MDDK CHKS	PRE SLEEP	
MS3 KAVANDI	POST SLEEP	CN FG	BIO OBS & CC*	BIO CONTG DEACT	RRMD TABLE UPDATE	LTA STRAP EVAL	P/TV04 SETUP PAO	PAO OPTY	MEAL	OFF DUTY	EXERCISE	RRMD TABLE UPDATE	BIO OBS & CC*	BIO CONTG DEACT	SH CHK S	CN FG	PS SLEEP
MS4 RYUMIN	POST SLEEP	PS E/T VU 1P 14	SA MPL E	1C 3C 1K	1C 3C 1K	PAO OPTY	1C 3C 1K	MEAL	1C 3C 1K	OFF DUTY	1T 3R 1M	OFF DUTY	EXERCISE	OFF DUTY	PRE SLEEP		
MS5 THOMAS	POST SLEEP	EXERCISE	PAO OPTY	MEAL	OFF DUTY	EXERCISE	PRE SLEEP										

H/O DAY/NIGHT	[Timeline bar with day/night indicators]																
ORBIT	[Timeline bar with orbit indicators]																
TDRS	[Timeline bar with TDRS indicators]																
SIGI AMS	[Timeline bar with SIGI AMS indicators]																
ATTITUDE	[Timeline bar with attitude indicators]																
NOTES:	*LF *PORTUGAL *WCS COMPACTION *COSTA RICA *LF *LE																

CT 06/09/98
 DMT 06/10/98
 MET Day 007



CDR PRECOURT	PRE SLEEP		SVS VIDEO						SLEEP		POST SLEEP		
PLT GORIE	PRE SLEEP		SVS VIDEO						SLEEP		POST SLEEP		
MS1 CHANG-DIAZ	PRE SLEEP	OCA ONLK	PRE SLEEP	SVS VIDEO						AMS DSK C/O	POST SLEEP		
MS2 LAWRENCE	PRE SLEEP		SVS VIDEO						SLEEP		POST SLEEP		
MS3 KAVANDI	PRE SLEEP		SVS VIDEO						SLEEP		POST SLEEP		
MS4 RYUMIN	P R A I M V	PRE SLEEP		SVS VIDEO						SLEEP		POST SLEEP	
MS5 THOMAS	P S L E E P	P R A I M V	PRE SLEEP		SVS VIDEO						SLEEP		POST SLEEP
H/O DAY/NIGHT ORBIT													
TDRS E W													
SIGI AMS ATTITUDE													
NOTES:	SIGI DATA RUN #8 AMS OBS (-47 HRS) BIAS +2LV -YVV												

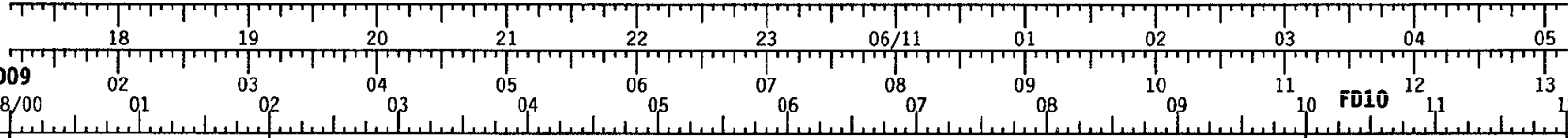
CT 06/10/98
 DMT 06/10/98 FD09
 MET Day 007

CDR PRECOURT	POST SLEEP		AMN SVR	GPS TESTS	AMN SVR		DSO 802 ACT		MEAL		CREW PHOTO	PAO OPTY		EXERCISE		PRE SLEEP		
PLT GORIE	DIUN MIT POST SLEEP	DTUE MRP		EXERCISE	IMS OPS & DATA XFER	SMEM DATA XFER	P/TV03 OPS MDDK		MEAL	CCR HO WICE	CREW PHOTO	PAO OPTY	P/TV12 SETUP 802	DSO 802 ACT	DSO 802 ACT	PRE SLEEP		
MS1 CHANG-DIAZ	POST SLEEP	BIO OBS & CC*	BIO CONTG DEACT	SVS SETUP & PWRUP	EXERCISE		DSO 802 ACT		MEAL	CCR HO WICE	AMS DSK C/O	CREW PHOTO	PAO OPTY	BIO BOX DEACT*	RRMD TABLE UPDATE	SH CHK S CNF G	PRE SLEEP	OCA DNLK
MS2 LAWRENCE	POST SLEEP	MDDK CHKS	IMS SETUP & OPS	P/TV12 SETUP 802	DSO 802 ACT	DSO 802 ACT			MEAL	CCR HO WICE	HL CM 100 H	CREW PHOTO	PAO OPTY	EXERCISE	SHUCS OPS	SIGI TRM D/L & INIT	MDDK CHKS	PRE SLEEP
MS3 KAVANDI	POST SLEEP	CNFG	SH CHK S	RRMD TABLE UPDATE	SVS SETUP & PWRUP	SVS CAMR CNTL TEST	SVS PWRDN		MEAL	CCR HO WICE	P/TV04 SETUP PAO	CREW PHOTO	PAO OPTY	DSO 802 ACT	DSO 802 ACT	PRE SLEEP	PR M	PRE SLEEP
MS4 RYUMIN	POST SLEEP		IMS OPS			RME 1331 STOW			MEAL			CREW PHOTO	PAO OPTY	EXERCISE				PRE SLEEP
MS5 THOMAS	POST SLEEP		EXERCISE						MEAL			CREW PHOTO	PAO OPTY		EDU-M MEDIA FEED	EXERCISE		PRE SLEEP
H/O DAY/NIGHT																		
ORBIT	118	119	120	121	122	123	124	125	126									
TDRS																		
SIGI AMS																		
ATTITUDE																		
NOTES:																		

CT 06/10/98
 DMT 06/11/98
 MET Day 008

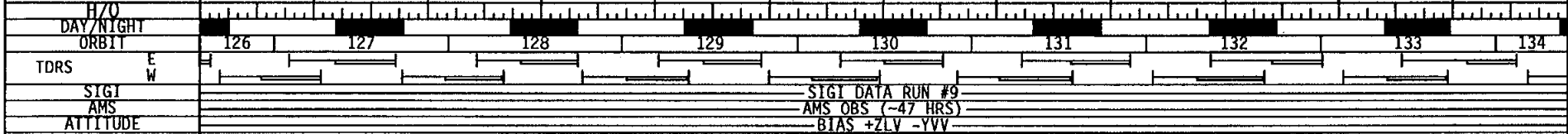
FD09
 008/00

FD10



CDR PRECOURT	PRE SLEEP	SLEEP		POST SLEEP
PLT GORIE	PRE SLEEP	SLEEP		POST SLEEP
MS1 CHANG-DIAZ	PRE SLEEP	AMS DSK C/O	SLEEP	AMS DSK C/O POST SLEEP
MS2 LAWRENCE	PRE SLEEP	SLEEP		POST SLEEP
MS3 KAVANDI	PRE SLEEP	SLEEP		POST SLEEP
MS4 RYUMIN	PRE SLEEP	SLEEP		POST SLEEP
MS5 THOMAS	PRE SLEEP	SLEEP		POST SLEEP

D I
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NOTES:

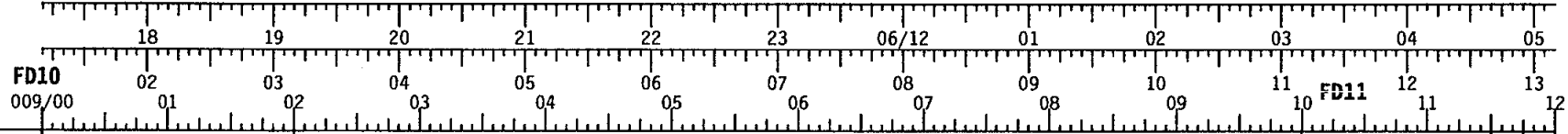
CT 06/11/98 06 07 08 09 10 11 12 13 14 15 16 17
 DMT 06/11/98 **FD10** 14 15 16 17 18 19 20 21 22 23 06/12 01
 MET Day 008 12 13 14 15 16 17 18 19 20 21 22 23 009/00

CDR PRECOURT	POST SLEEP			AMN SVR	FCS C/O	RCS HOT FIRE	AMN SVR	MEAL	CABIN STOW	PAO OPTY	D/O PREP BRIEF	ENTRY REVIEW	EXERCISE	CABIN STOW	LMP ON RAVI D	PRE SLEEP					
PLT GORIE	POST SLEEP	DTA UEP MRP	EXERCISE		FCS C/O	RCS HOT FIRE	CABIN STOW	MEAL	P/TVO4 SETUP PAO	PAO OPTY	D/O PREP BRIEF	ENTRY REVIEW	LCN DMGM*	CABIN STOW	LCN DMGM*	ERGO STOW	ODCN ALK	ODEACT	KU STOW	PRE SLEEP	
MS1 CHANG-DIAZ	OCA ONLK	POST SLEEP	SHUCS OPS	RRMD TABLE UPDATE	EXERCISE	CABIN STOW		MEAL	AMS DSK C/O	CABIN STOW	PAO OPTY	D/O PREP BRIEF	CABIN STOW	RSK ATTACH	PTD HOE ARANSCT OTOM	SDHEUCCST	SH MOD TRDN			PRE SLEEP	
MS2 LAWRENCE	POST SLEEP	MDDK CHKS	SIGI TRM D/L & INIT	GAS/SEM DEACT*	GSAT SWBIA	FCS C/O	RCS HOT FIRE	CABIN STOW	MEAL	TLCM I/O P/CH	PAO OPTY	D/O PREP BRIEF	ENTRY REVIEW	CABIN STOW	RSK ATTACH	CABIN STOW	ERGO STOW	MDDK CHKS	KU STOW	GSAMP LHZO	PRE SLEEP
MS3 KAVANDI	POST SLEEP	SHCHKS	EXERCISE		CABIN STOW			MEAL	CABIN STOW	PAO OPTY	D/O PREP BRIEF	CABIN STOW	SHCHKS	RRMD DEACT	SH MOD TRDN				SHCHKS	PRE SLEEP	
MS4 RYUMIN	POST SLEEP	EXERCISE						MEAL	CABIN STOW	PAO OPTY	D/O PREP BRIEF			CABIN STOW						PRE SLEEP	
MS5 THOMAS	POST SLEEP	EXERCISE						MEAL	CABIN STOW	PAO OPTY	D/O PREP BRIEF	CABIN STOW	EXERCISE	CABIN STOW						PRE SLEEP	

H/O																				
DAY/NIGHT																				
ORBIT	134	135	136	137	138	139	140	141	142											
TDRS	E	W																		
SIGI																				
AMS																				
ATTITUDE																				

NOTES: *APU HTR ACT *DEACT G-090,-648,-765,SEM *APU HEATER RECONFIG *EAST COAST COMM C/O *WEST COAST COMM C/O

CT 06/11/98
 DMT 06/12/98
 MET Day 009



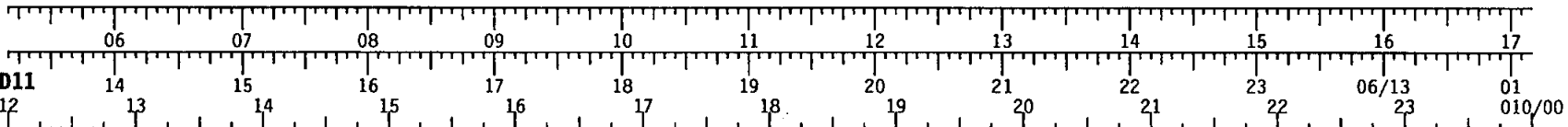
CDR PRECOURT	PRE SLEEP		SLEEP		POST SLEEP	PM RID V	PS OL SE TE P
PLT GORIE	PRE SLEEP		SLEEP		POST SLEEP		
MS1 CHANG-DIAZ	PRE SLEEP	AMS DSK C/O	SLEEP		AMS DSK C/O	ENTRY MONITORING *	POST SLEEP
MS2 LAWRENCE	PRE SLEEP		SLEEP		POST SLEEP		MC DH DK KS
MS3 KAVANDI	PRE SLEEP		SLEEP		POST SLEEP		
MS4 RYUMIN	PRE SLEEP		SLEEP		POST SLEEP		
MS5 THOMAS	PRE SLEEP		SLEEP		PS OL SE TE P	ENTRY MONITORING	POST SLEEP
H/O DAY/NIGHT ORBIT							
TDRS							
SIGI AMS	SIGI DATA RUN #10						
ATTITUDE	AMS OBS (-12 HRS) BIAS +ZLV -YVV			CALIBRATION		-ZLV -XVV	
NOTES:	Ø FUTURE LOADED -ZLV, -XVV						*MSD 002

CT 06/12/98

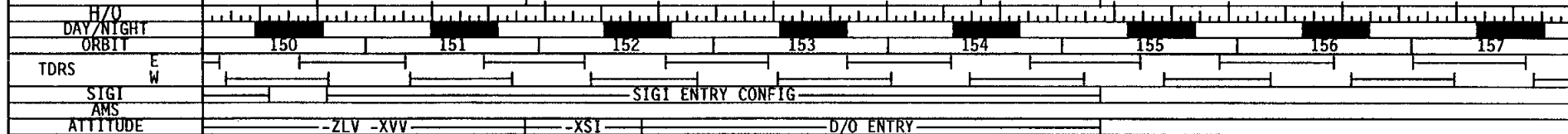
DMT 06/12/98

MET Day 009

FD11



CDR PRECOURT	POST SLEEP	SYNSPECT	CABIN STOW	ASIA-M RAXN PIR	DEORBIT PREP			
PLT GORIE	POST SLEEP	CABIN STOW	P/TV10 SETUP	GRPB PWUP	OST AOCW	DEORBIT PREP	D E O R B I T	
MS1 CHANG-DIAZ	POST SLEEP	CABIN STOW	SDC HEA ACT	AMS BUS PGSC STOW SH DEACT AS AVAIL	AMS DDRS STOW	DEORBIT PREP	K S C	
MS2 LAWRENCE		MCD DHE DKH KSM	CP CG	SE INE GTT IRU YP	P/TV07 SETUP	P/TV07 OPS SH DEACT	DEORBIT PREP	L A N D I N G
MS3 KAVANDI	POST SLEEP	CN FG	DES ST HOT TRU RUP 68 5	LS LE	SH DEACT	DEORBIT PREP	B U R N	
MS4 RYUMIN	POST SLEEP			VRS HAT FDO IWO		DEORBIT PREP	* *	
MS5 THOMAS	POST SLEEP					DEORBIT PREP		



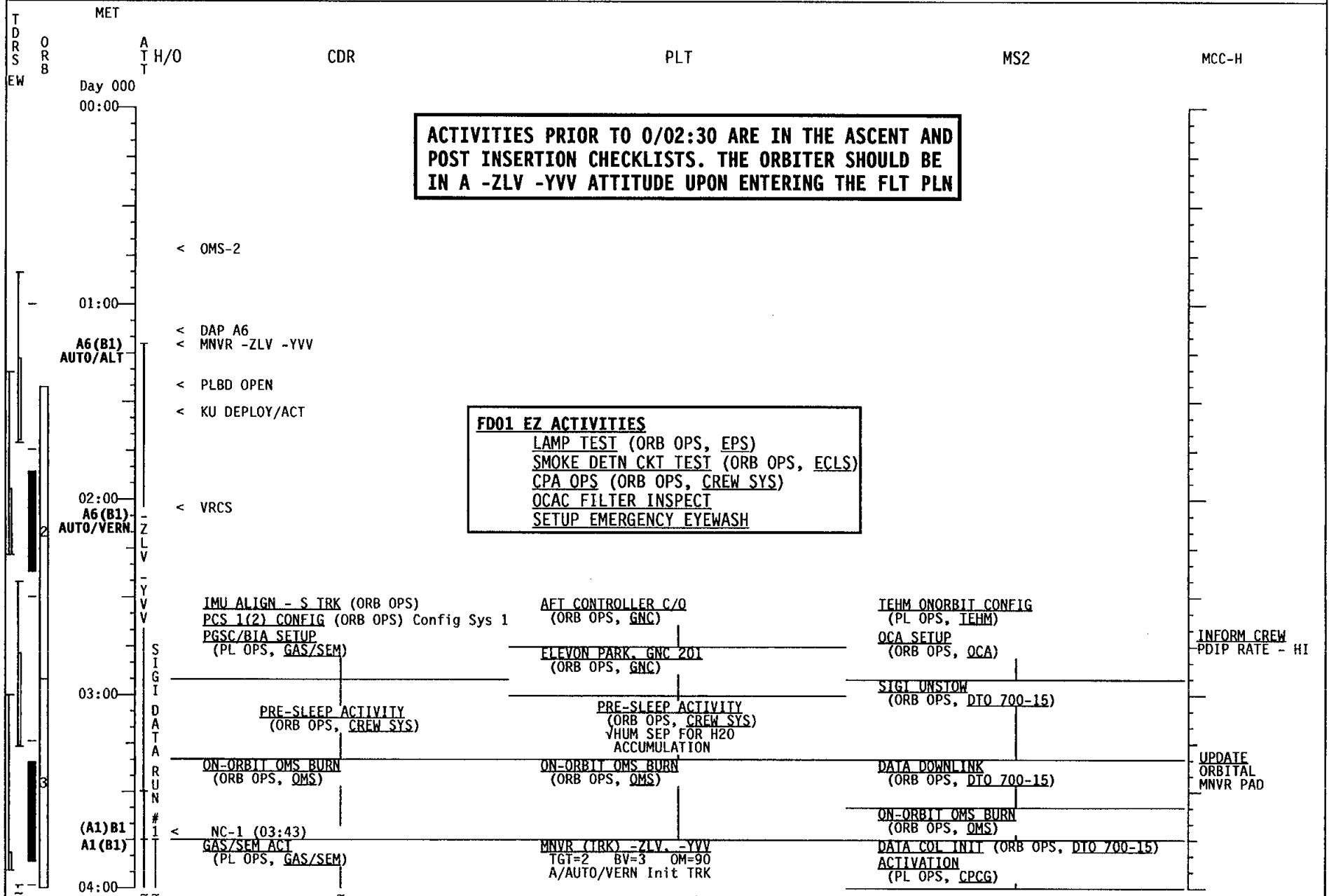
NOTES: *SIGI AUTO & TERM *MINI-CAM ENTRY VIDEO *AMS DEACT *D/O 09:18:49 *KSC LANDING 09:19:53

DETAILED TIMELINE

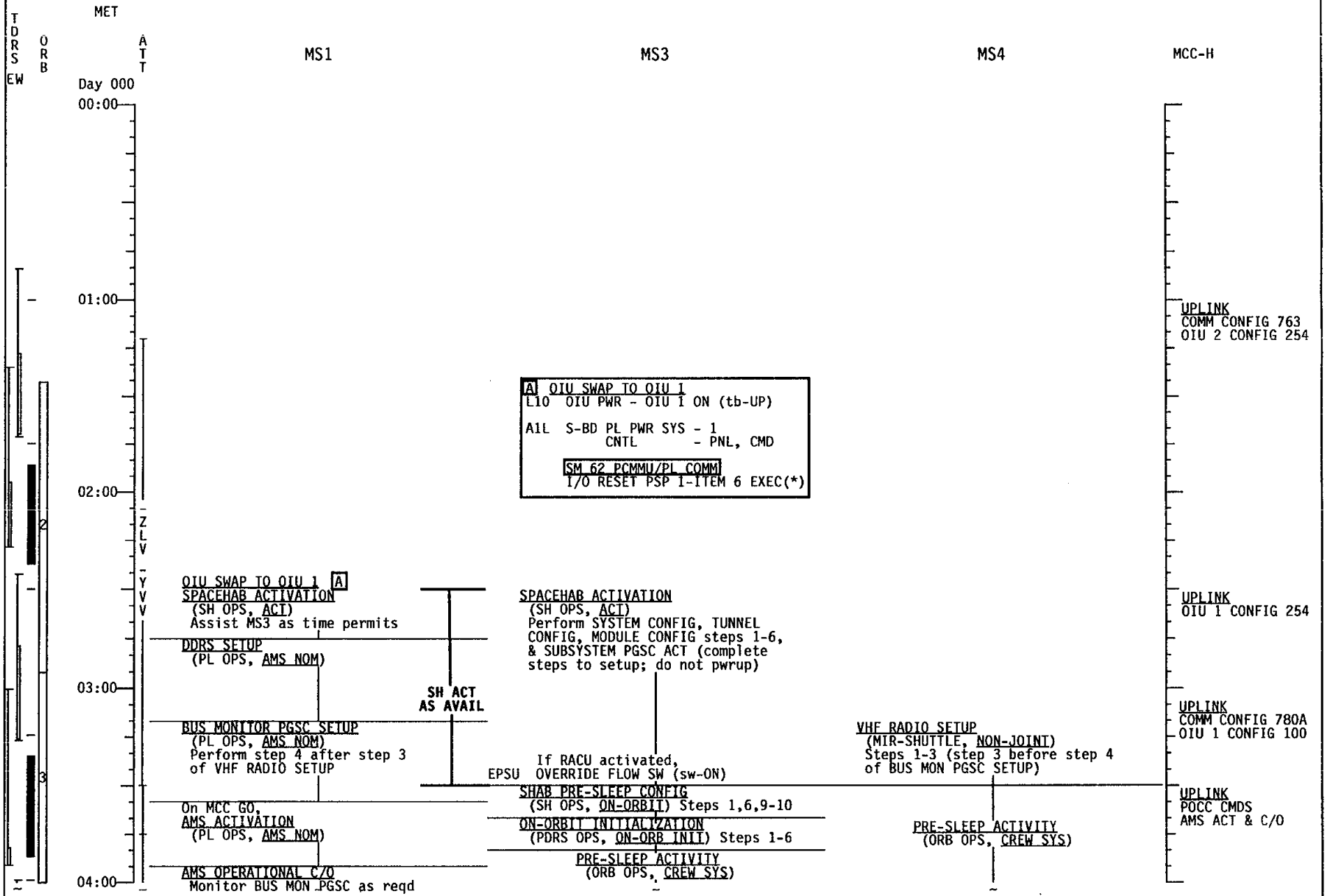
DETAILED
TIMELINE

DETAILED TIMELINE

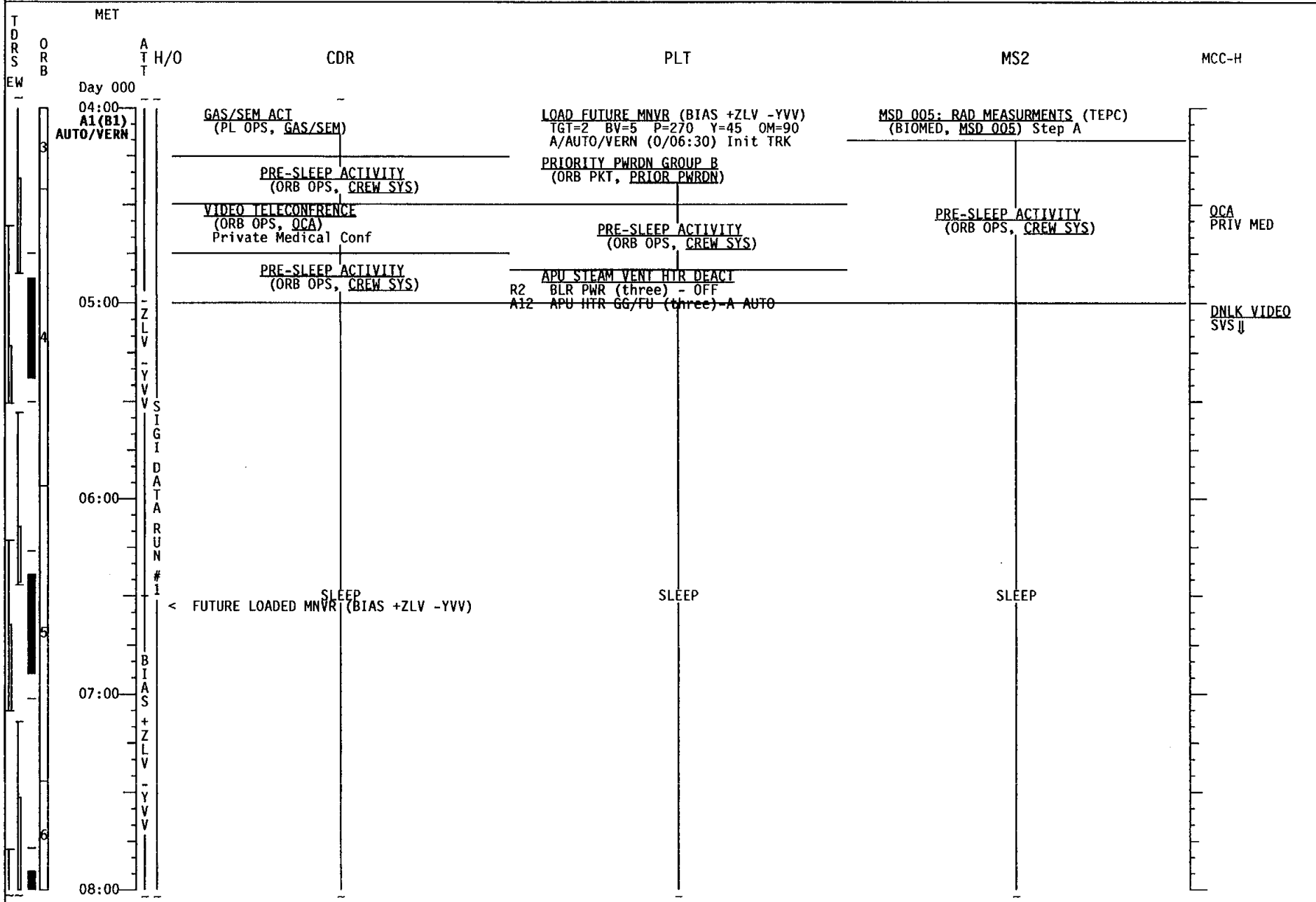
STS-91 (FD 01)



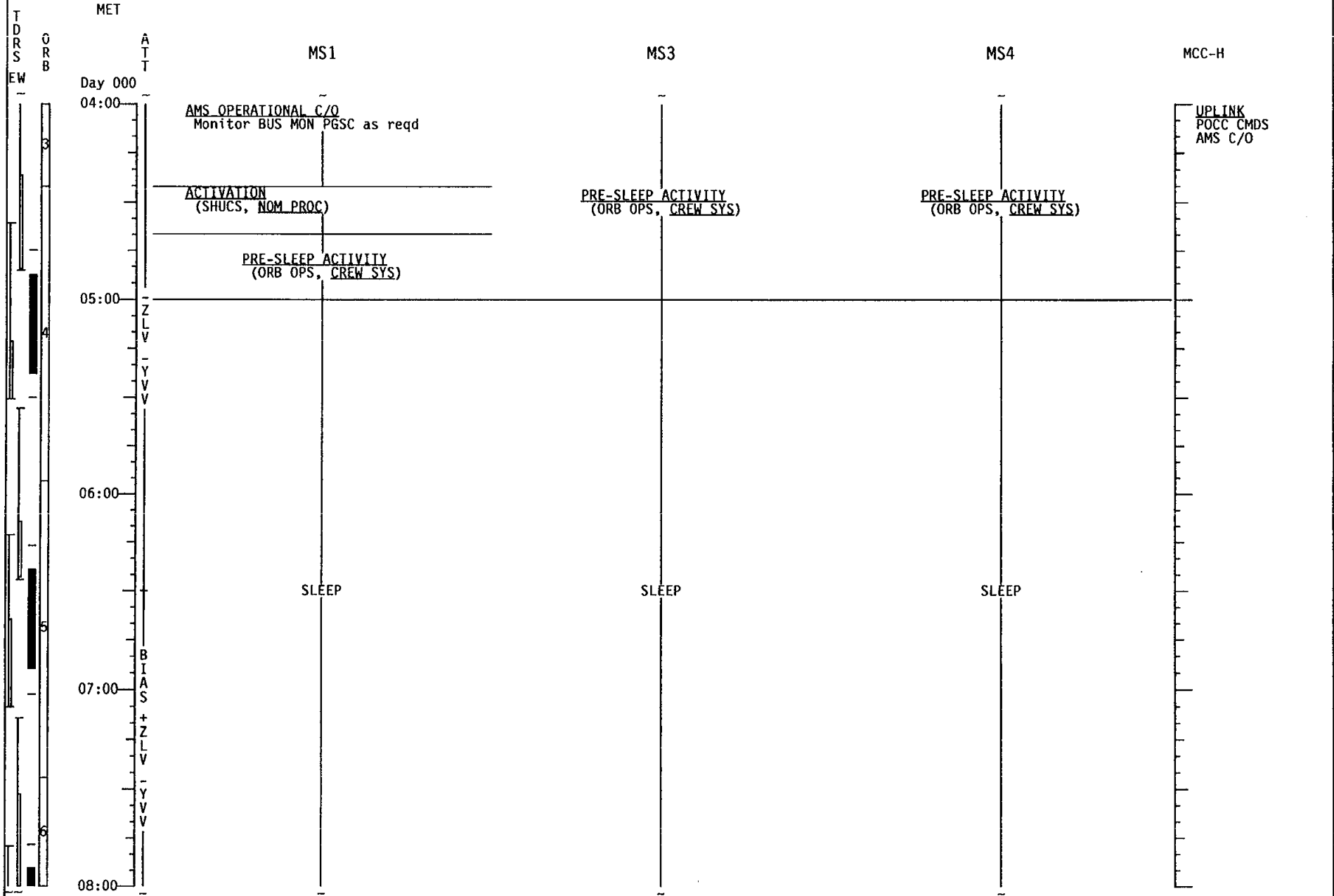
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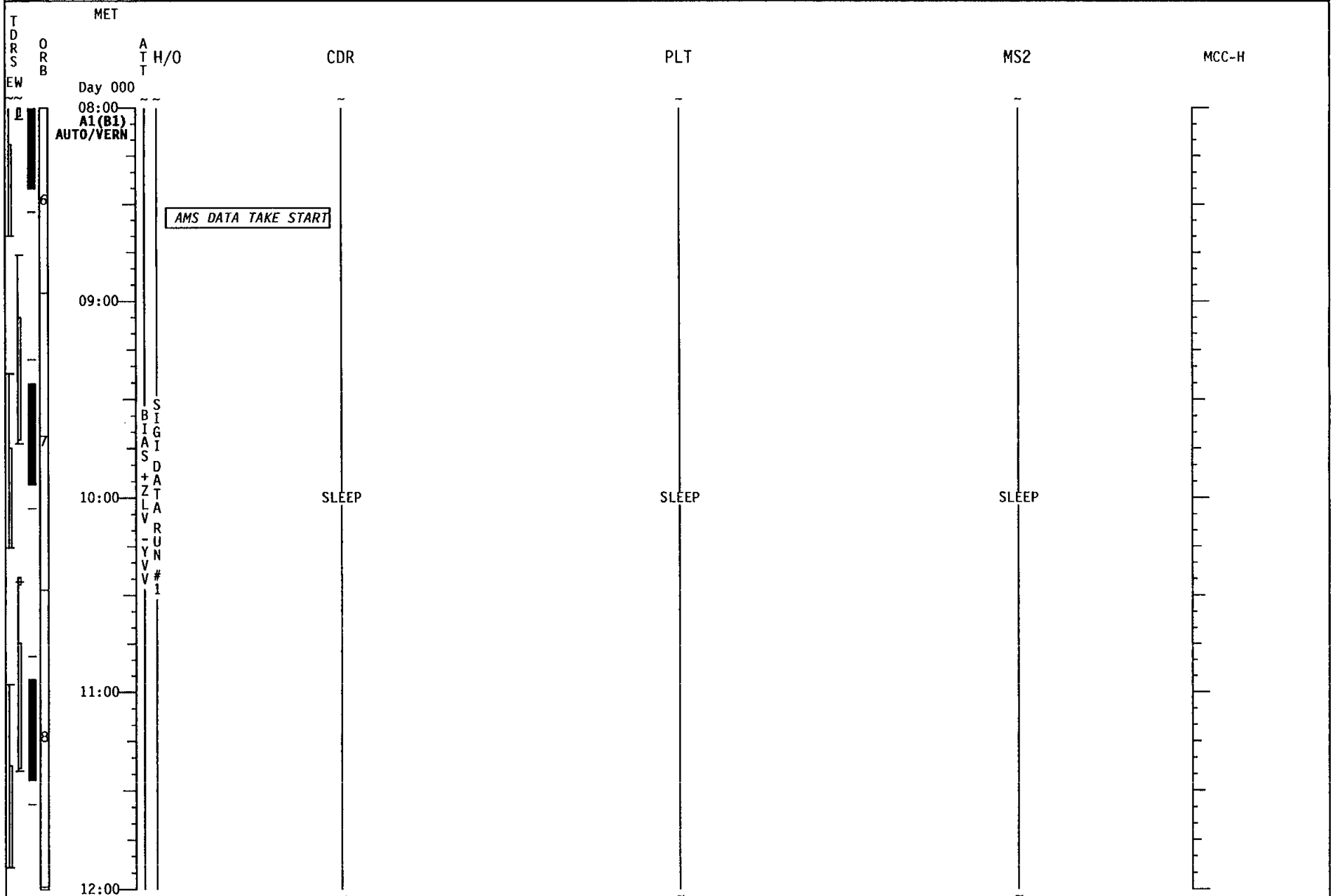
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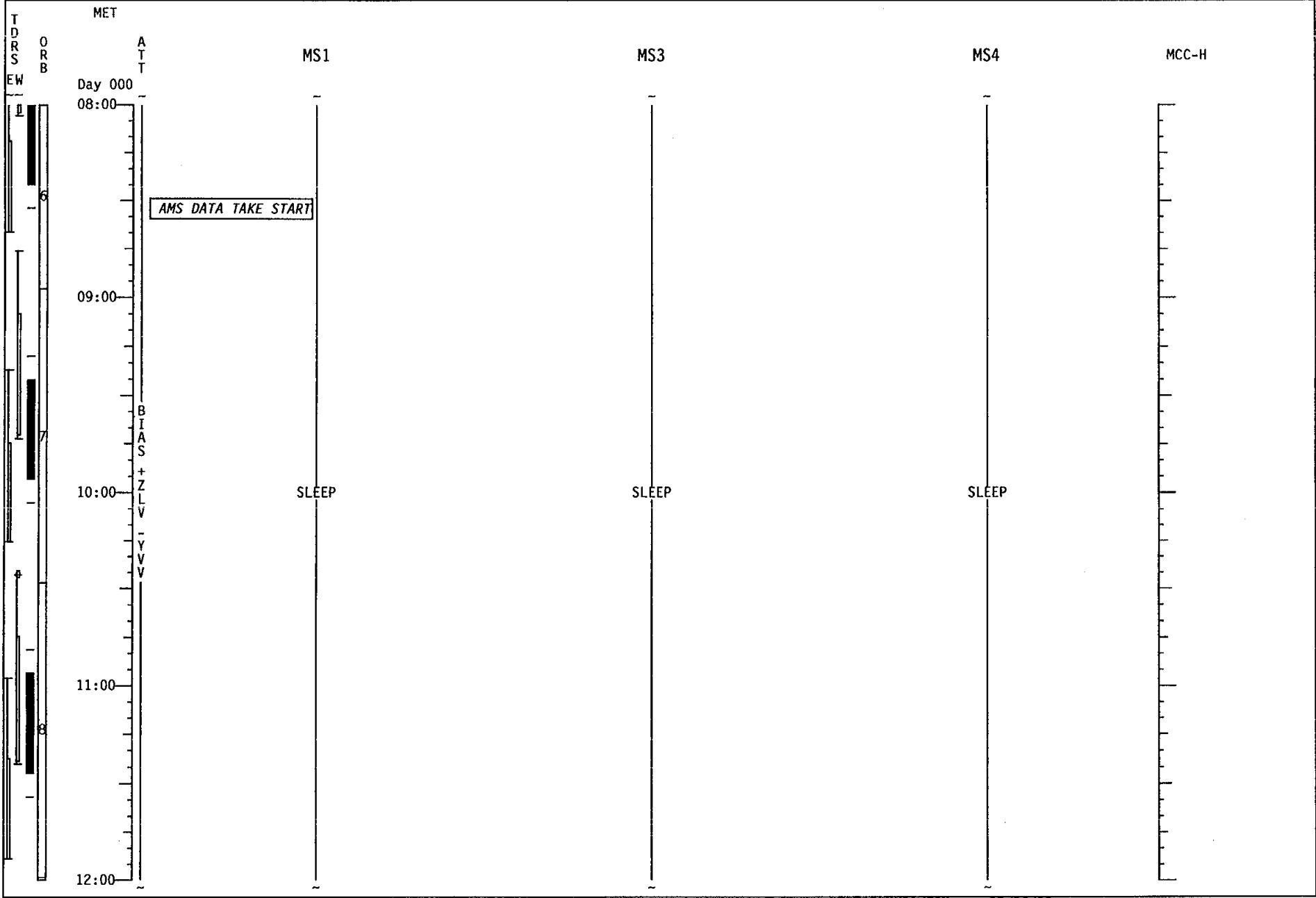
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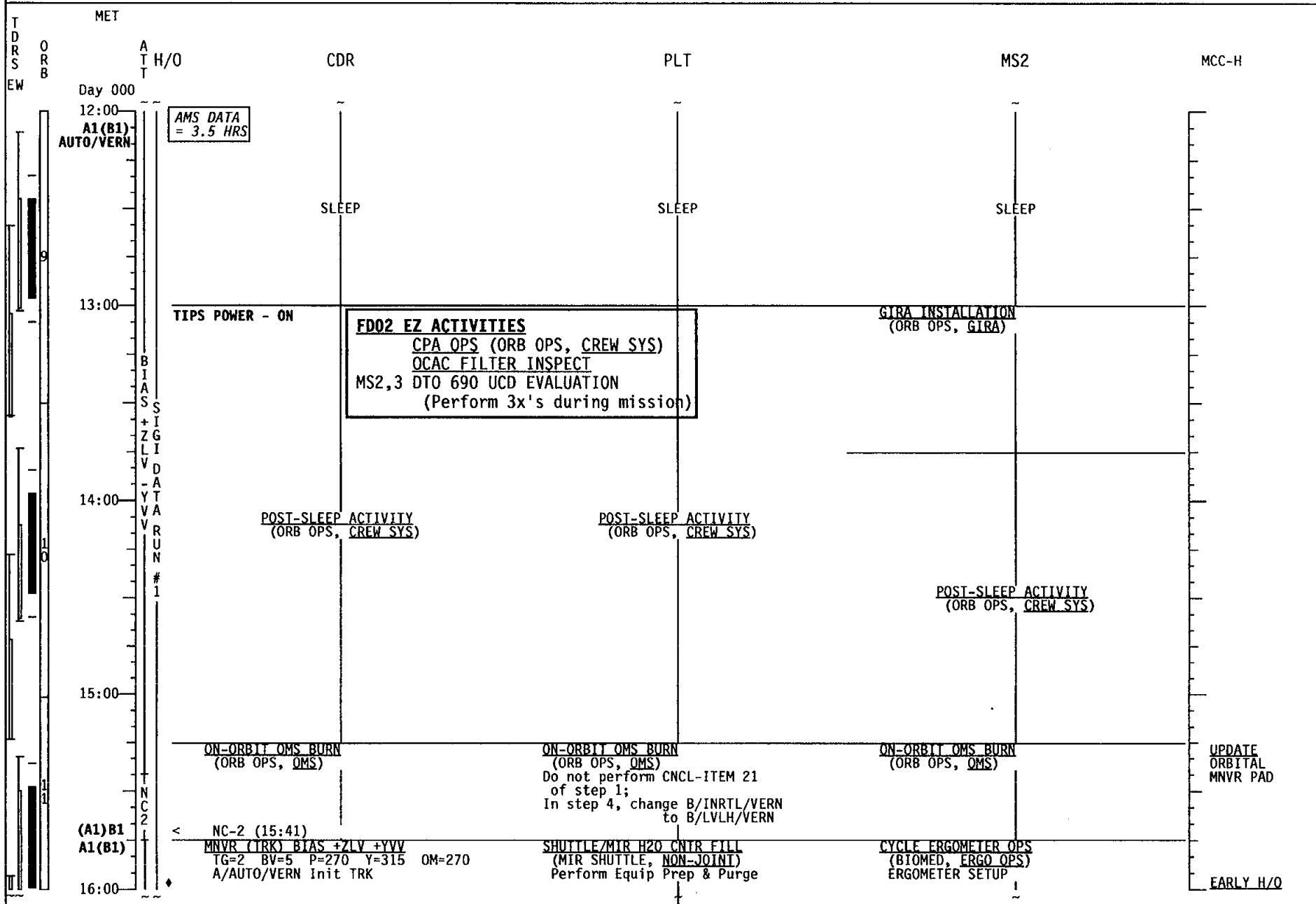
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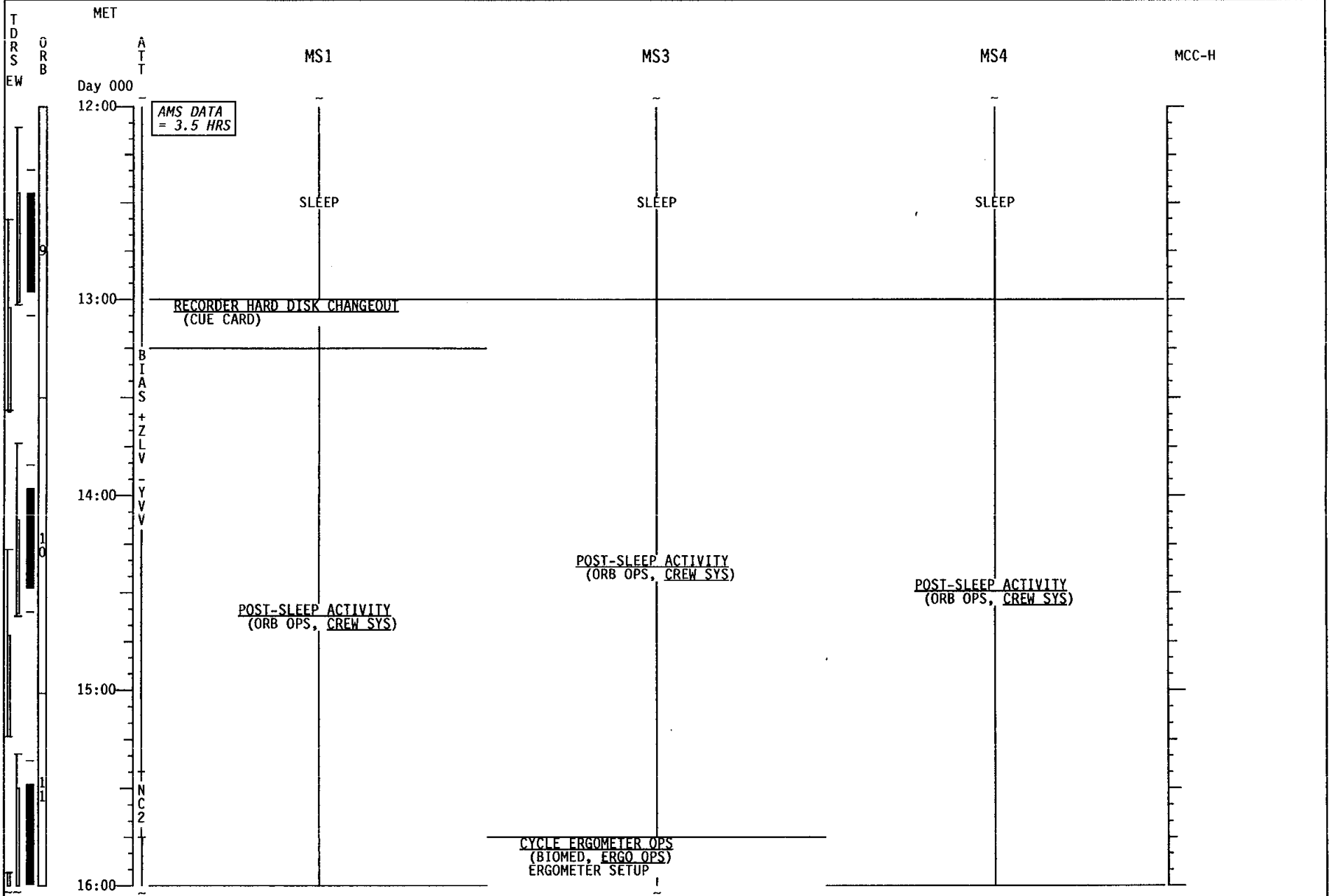
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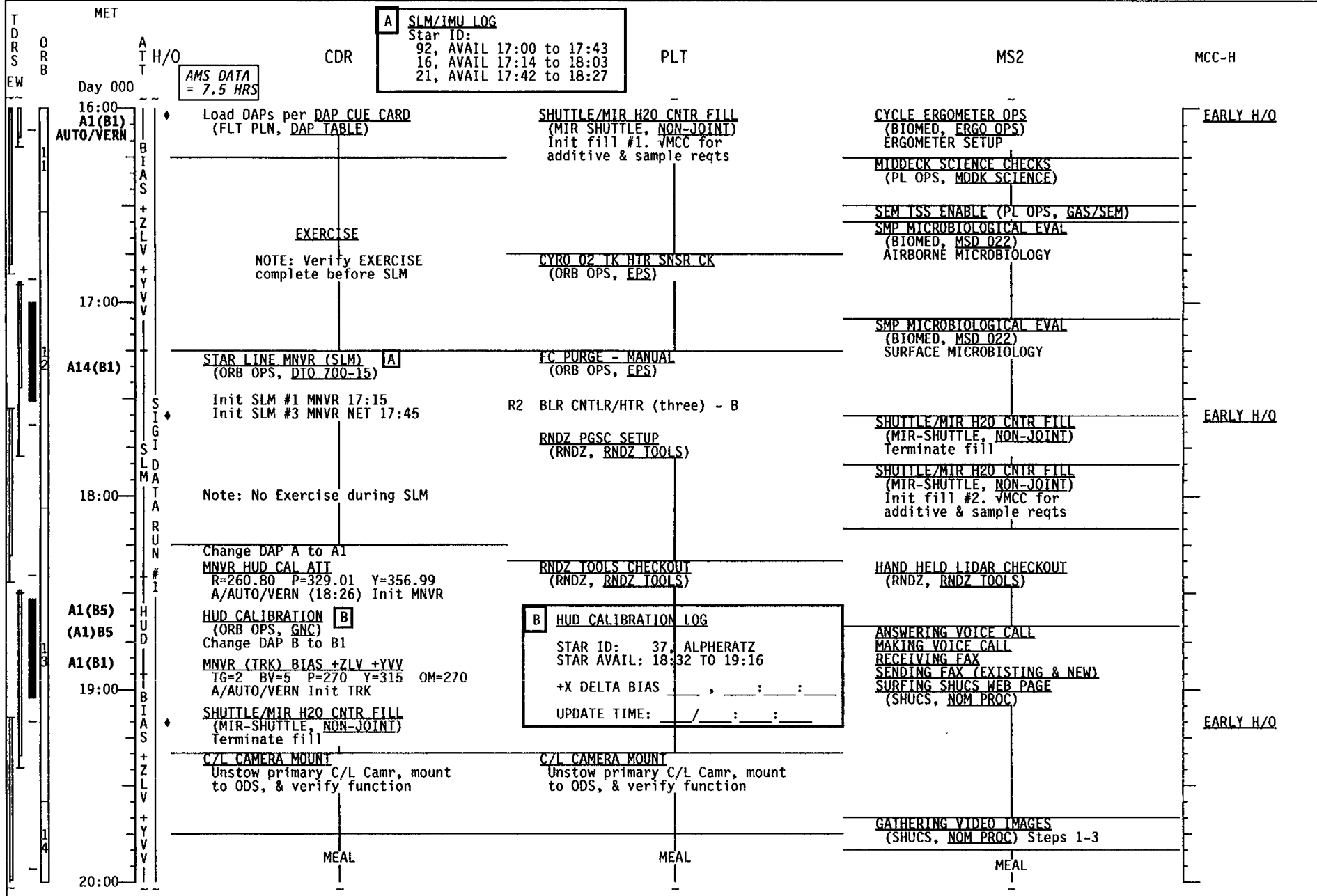
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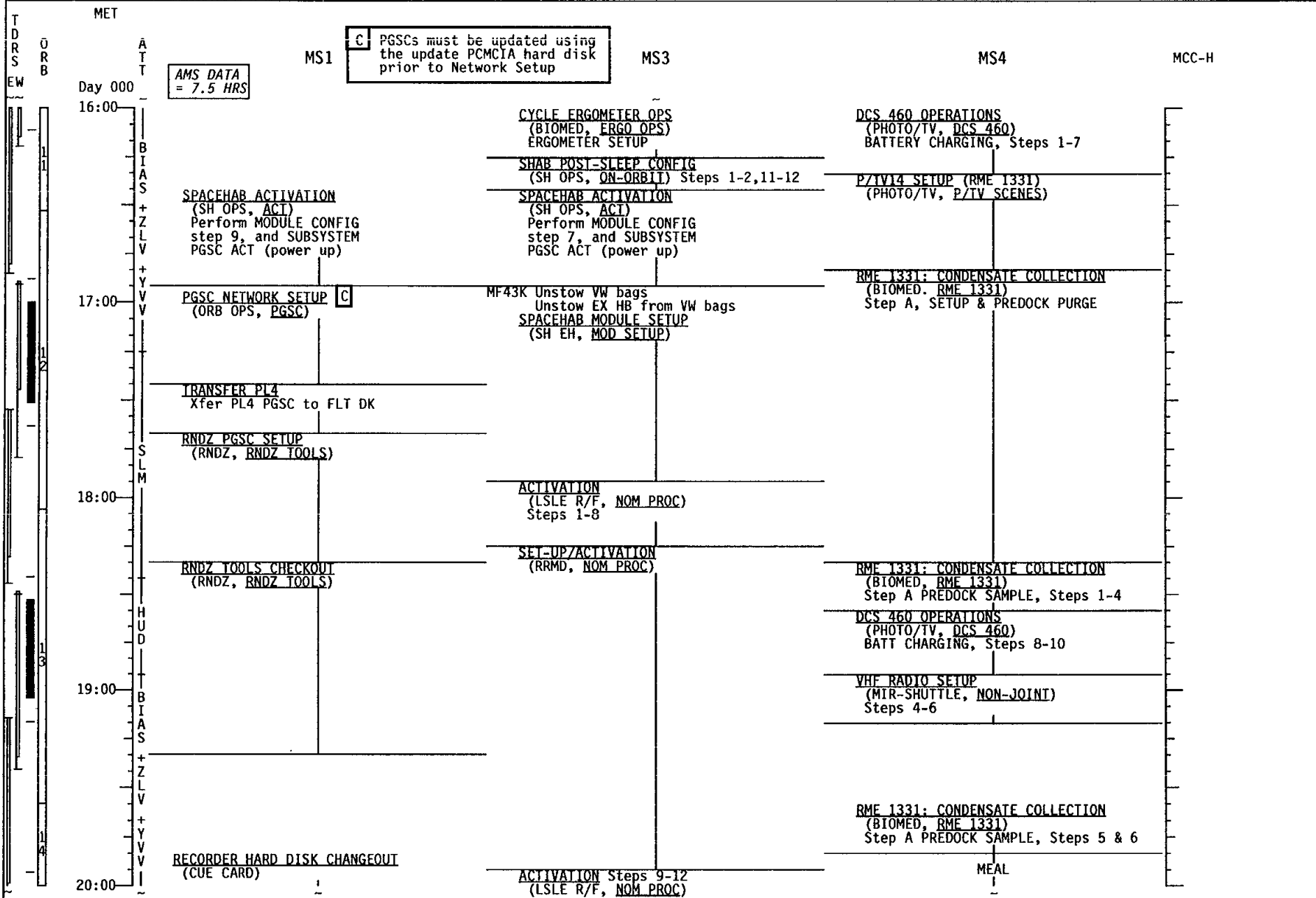
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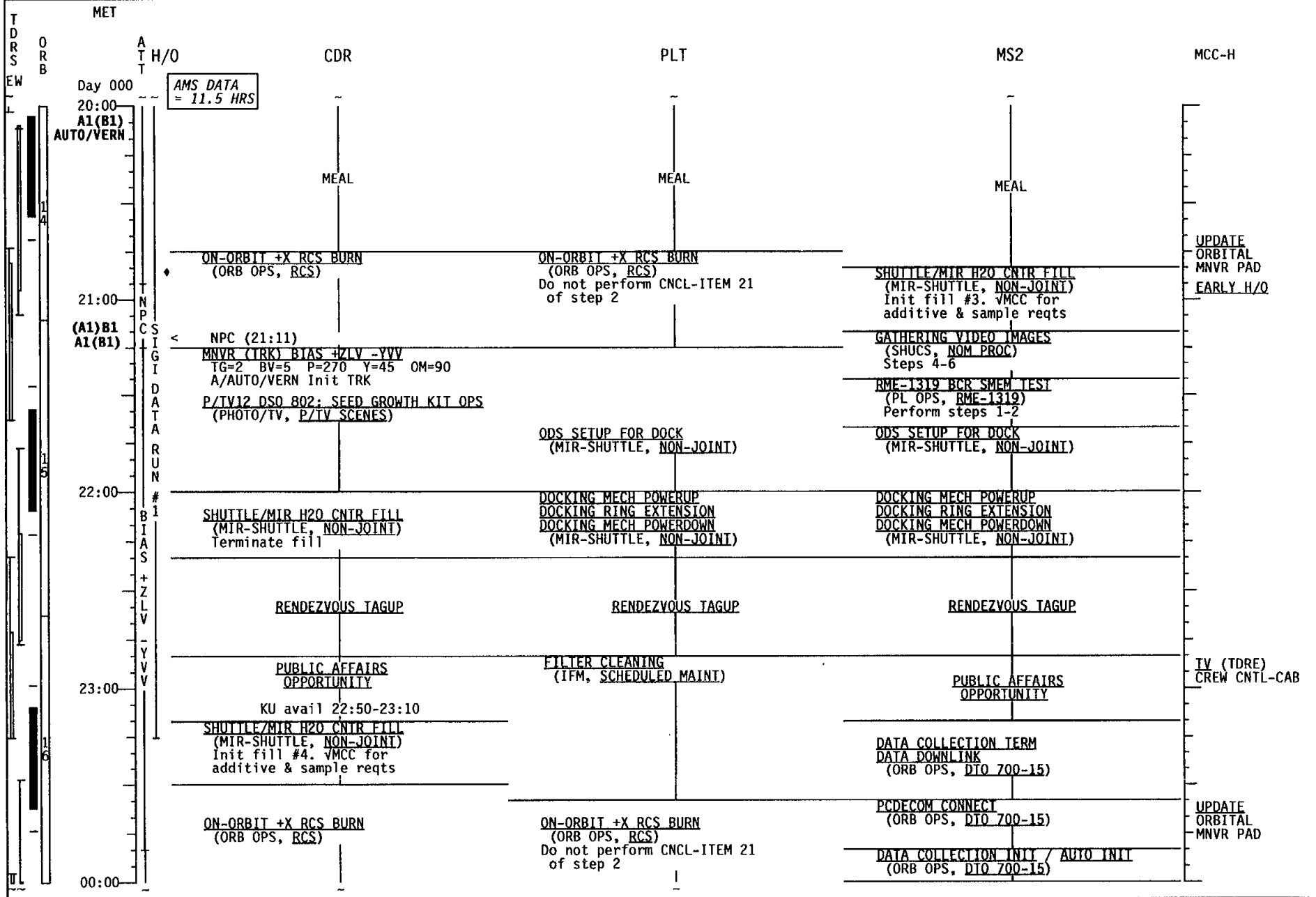
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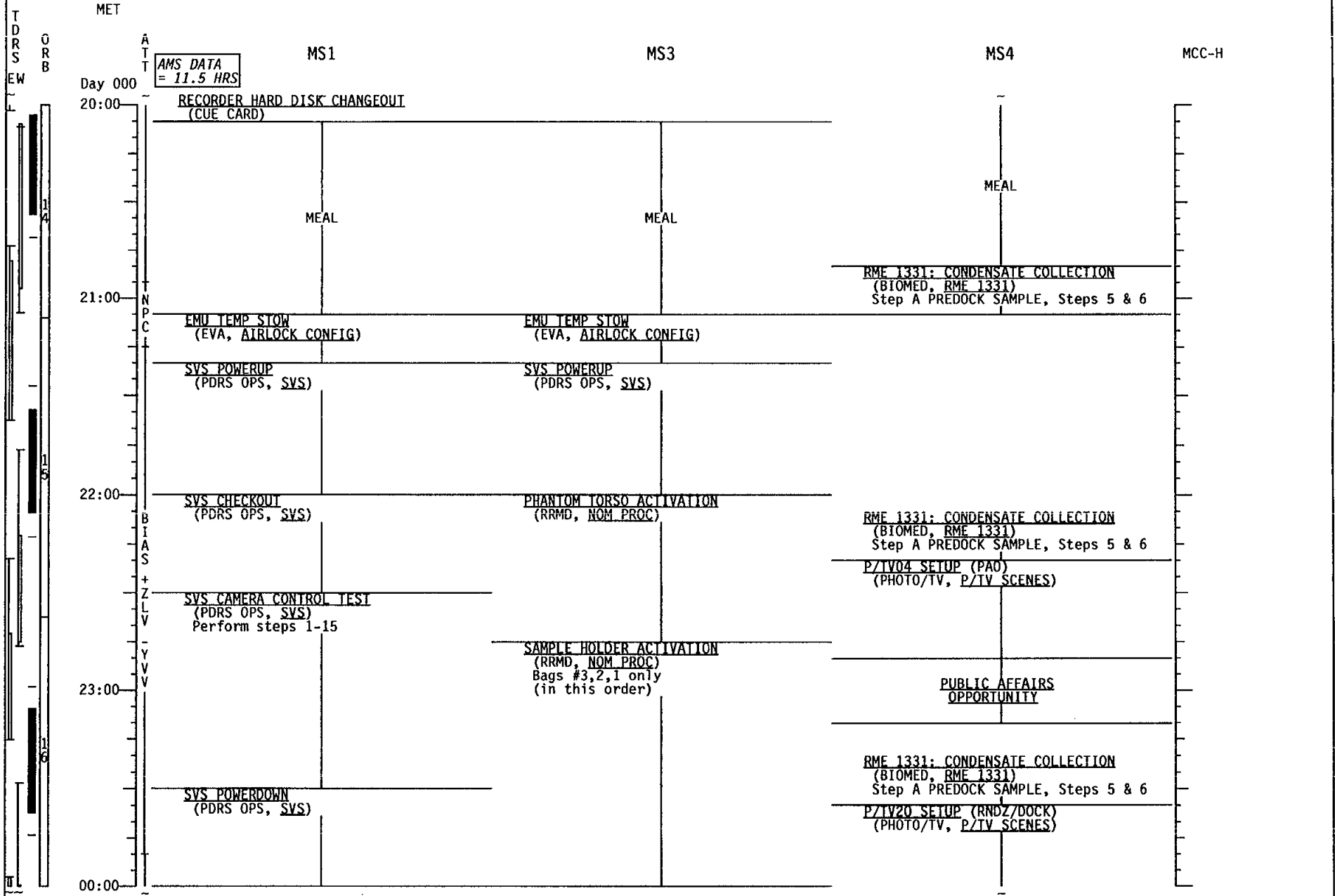
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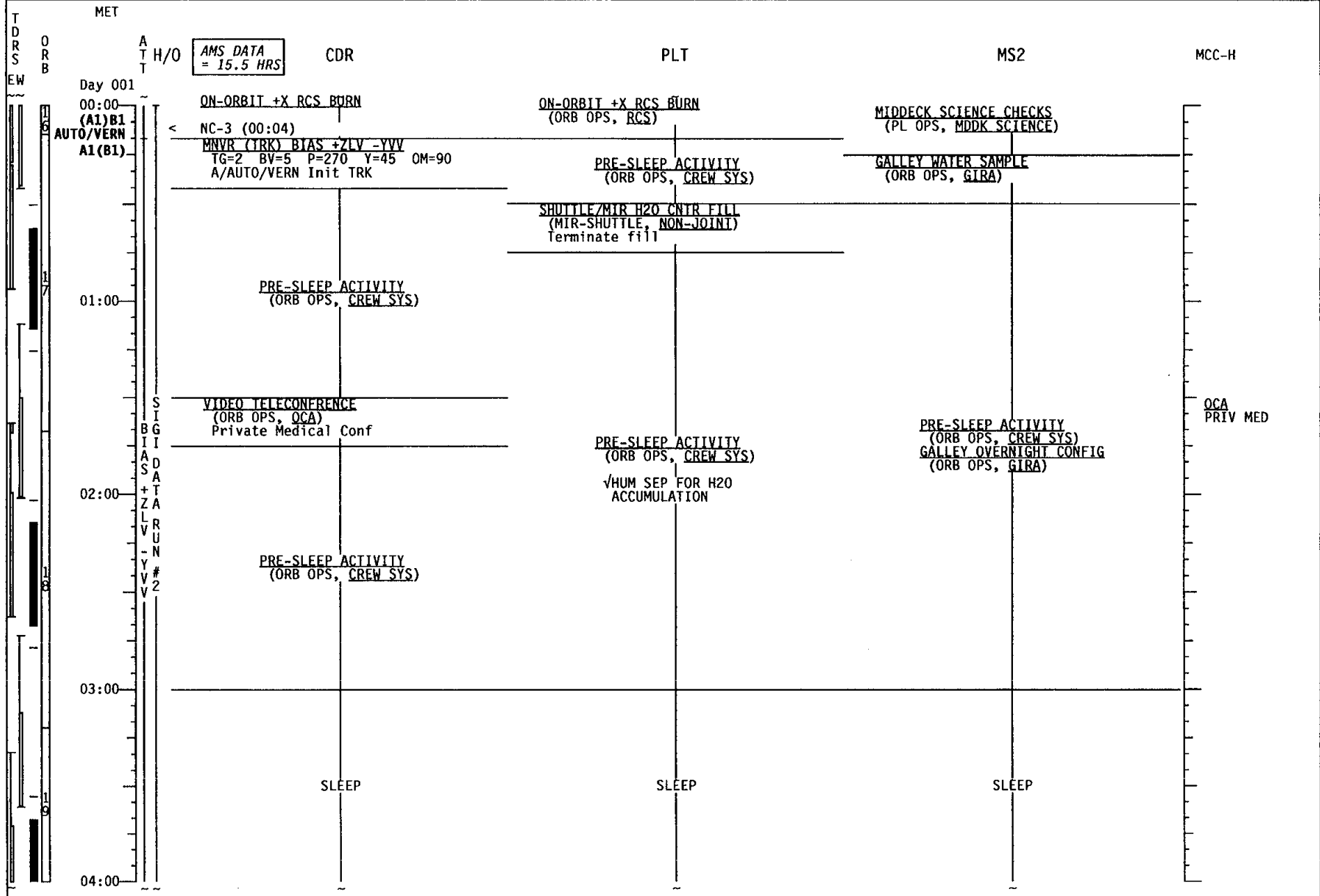
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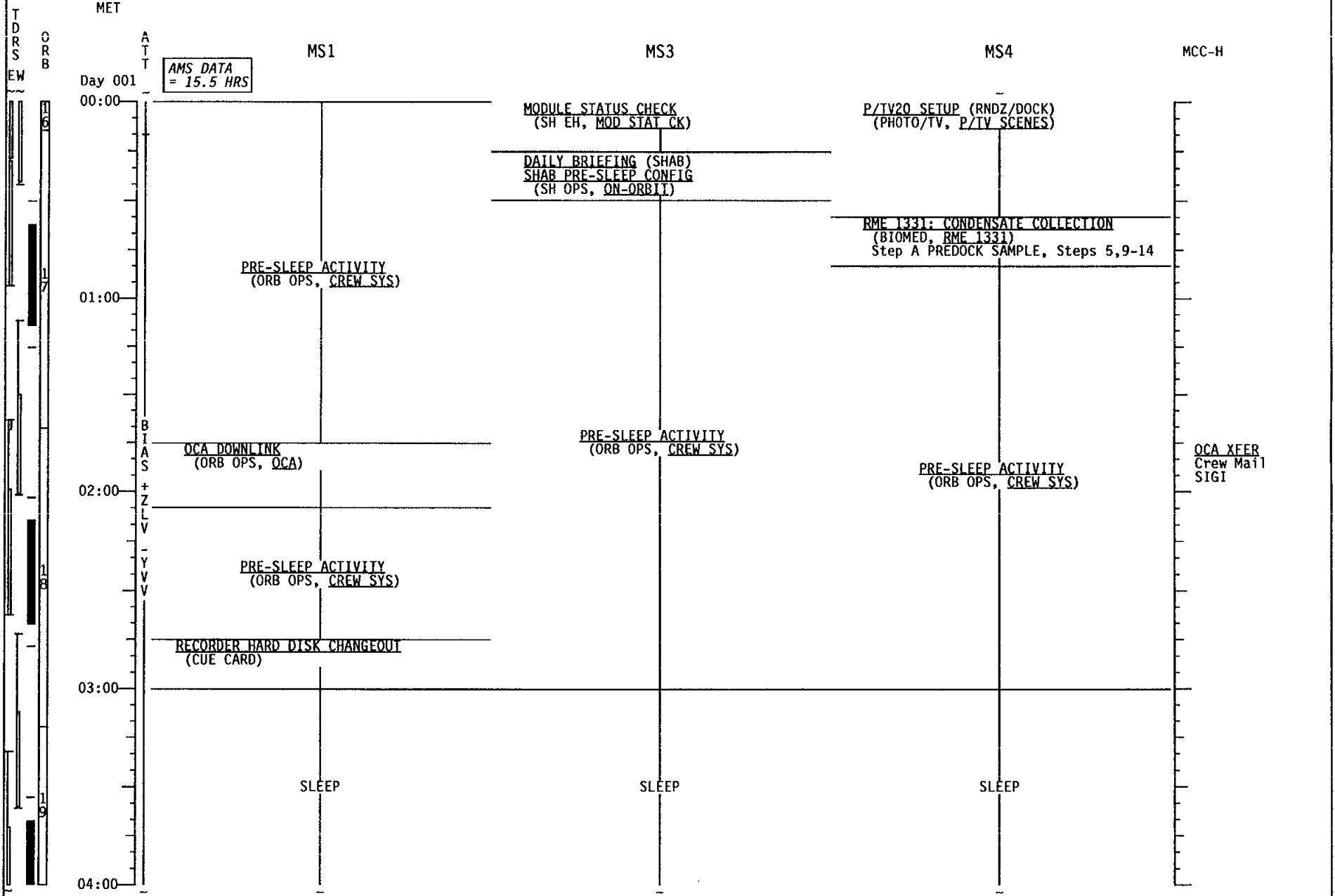
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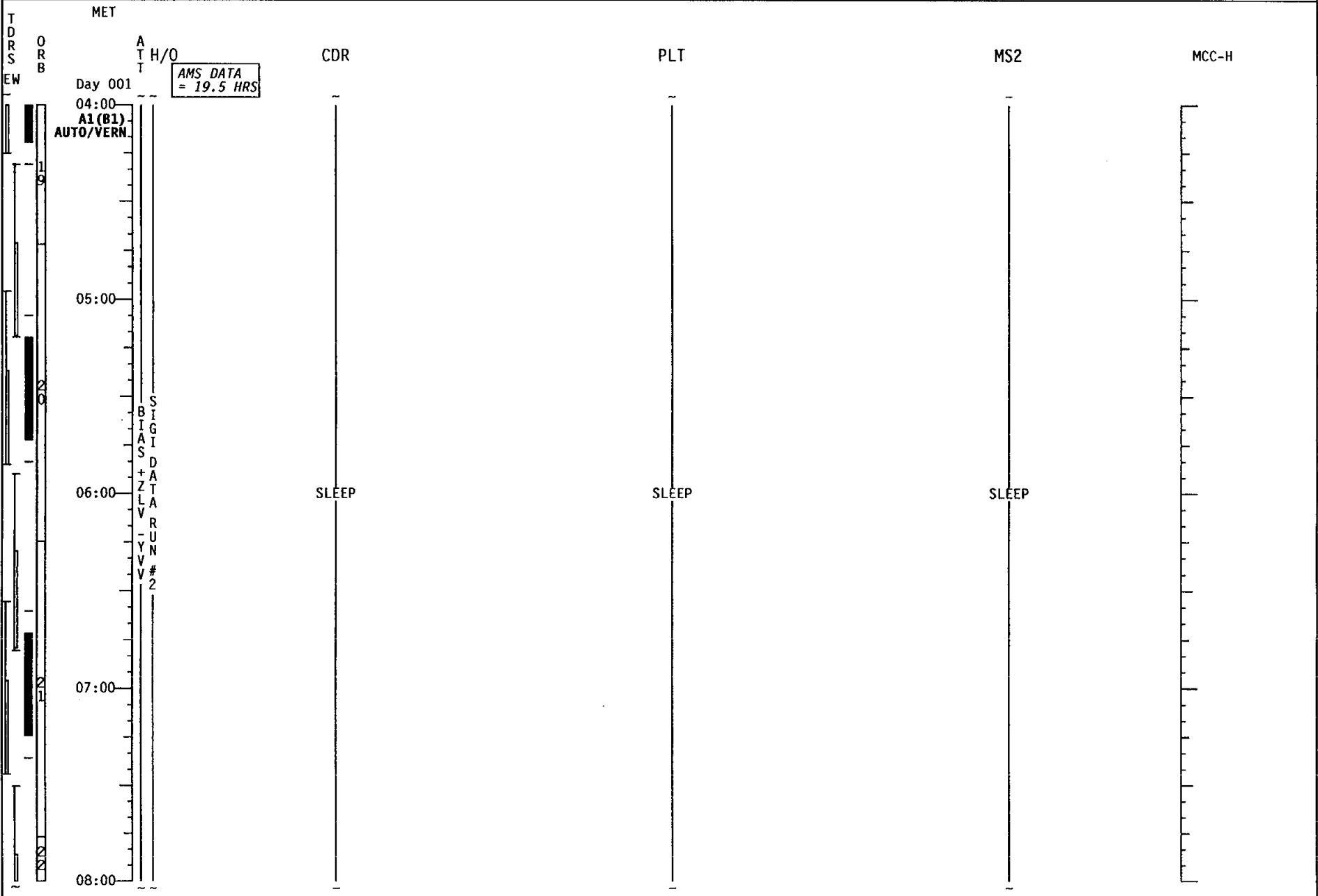
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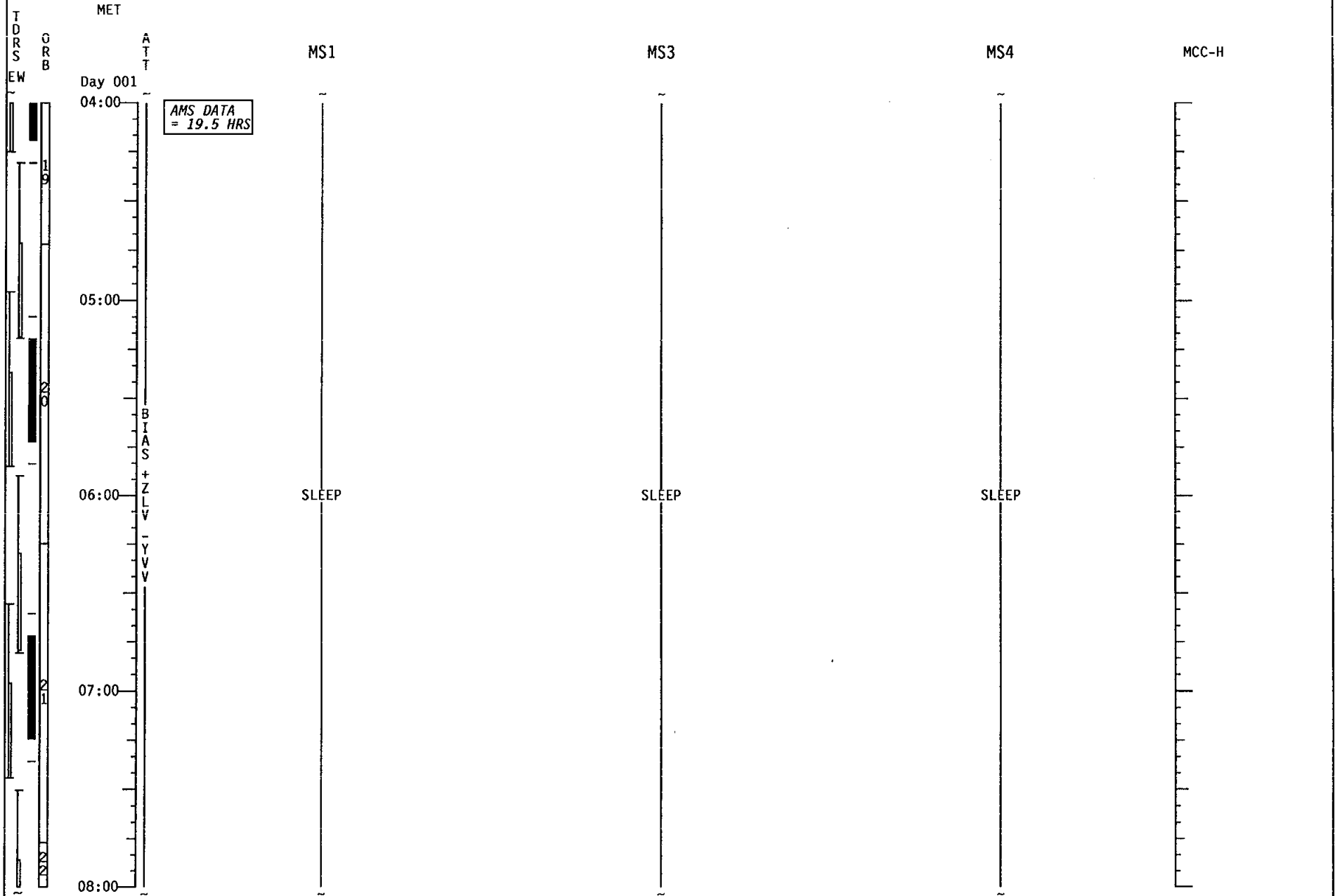
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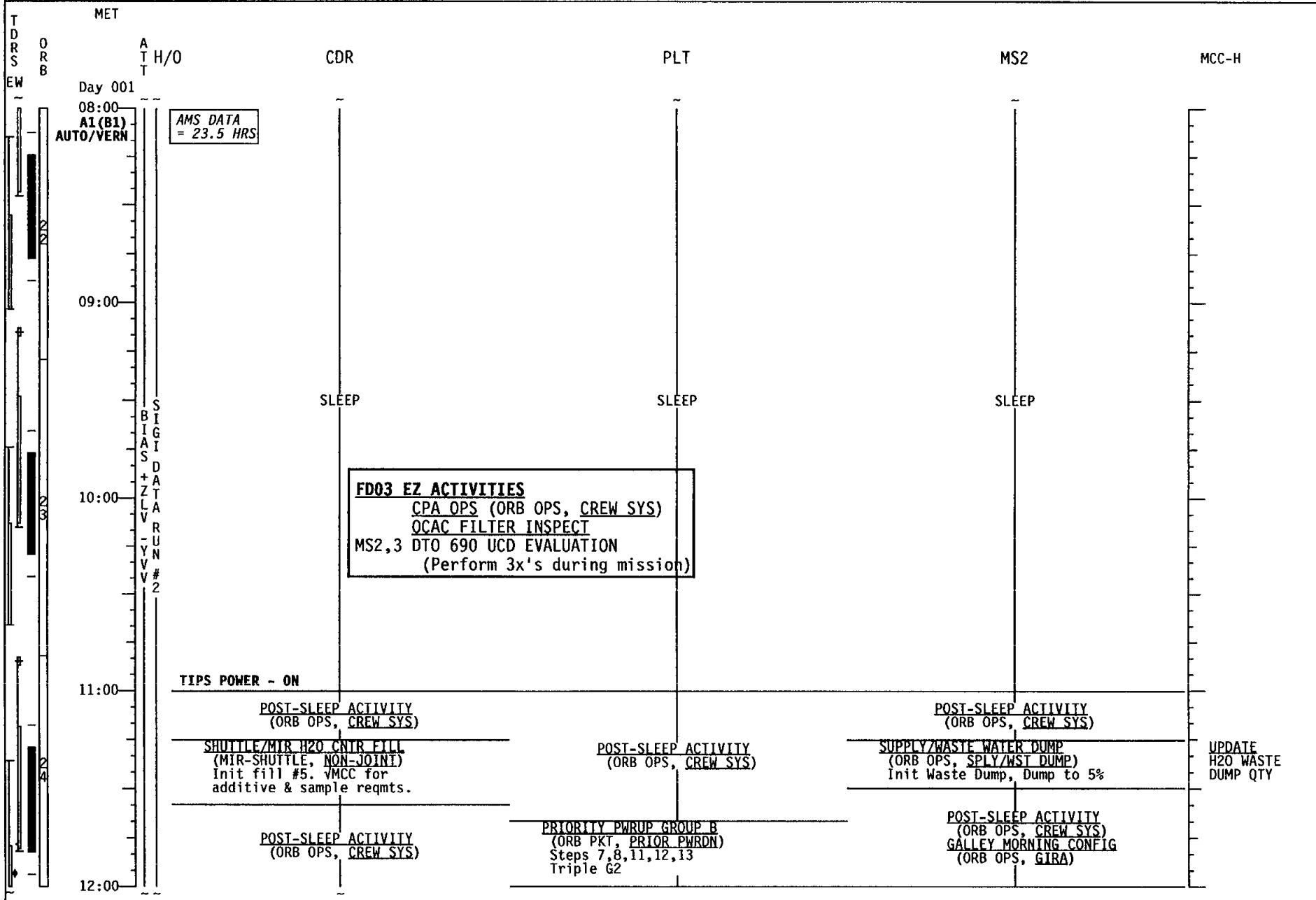
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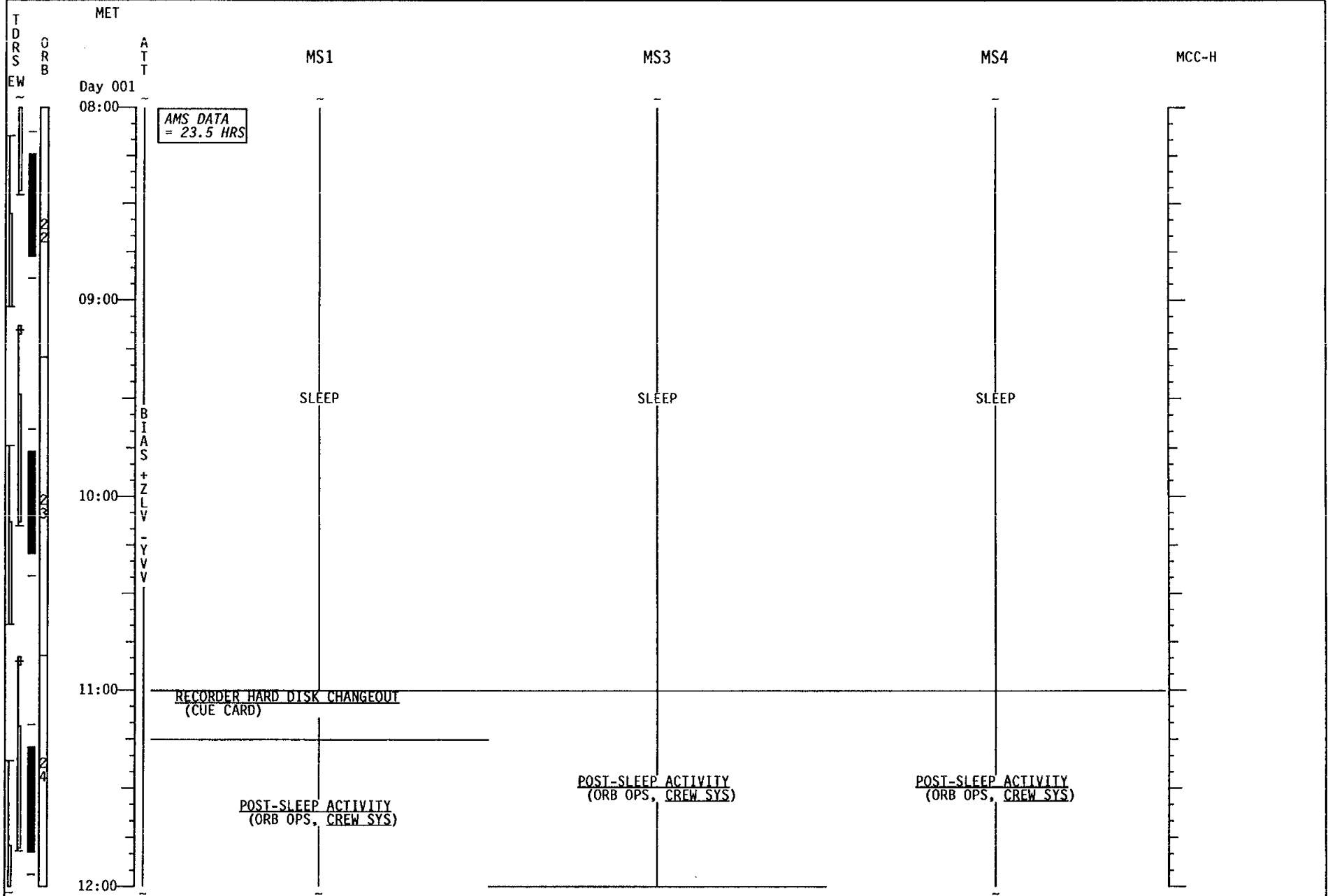
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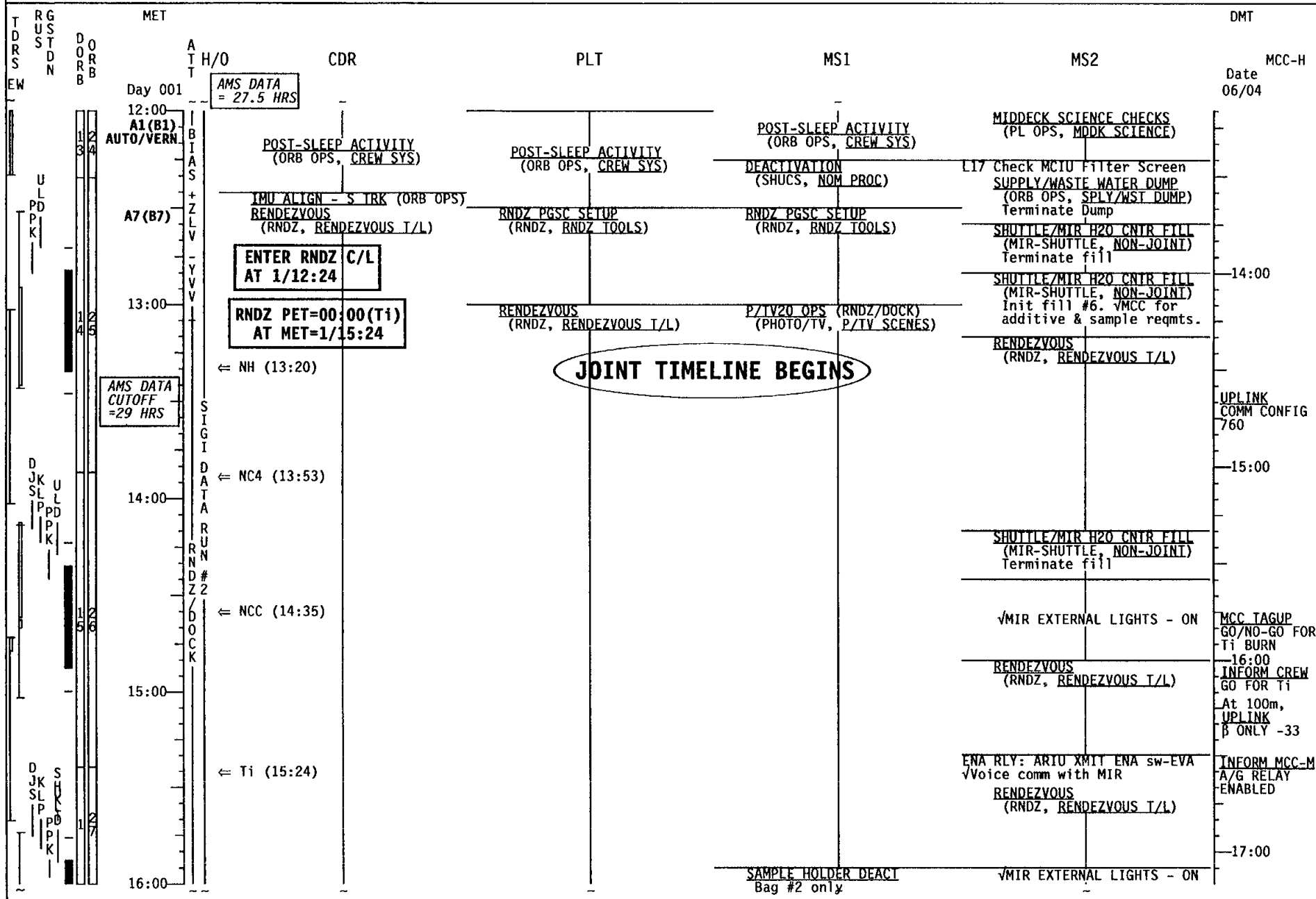
STS-91 (FD 03)



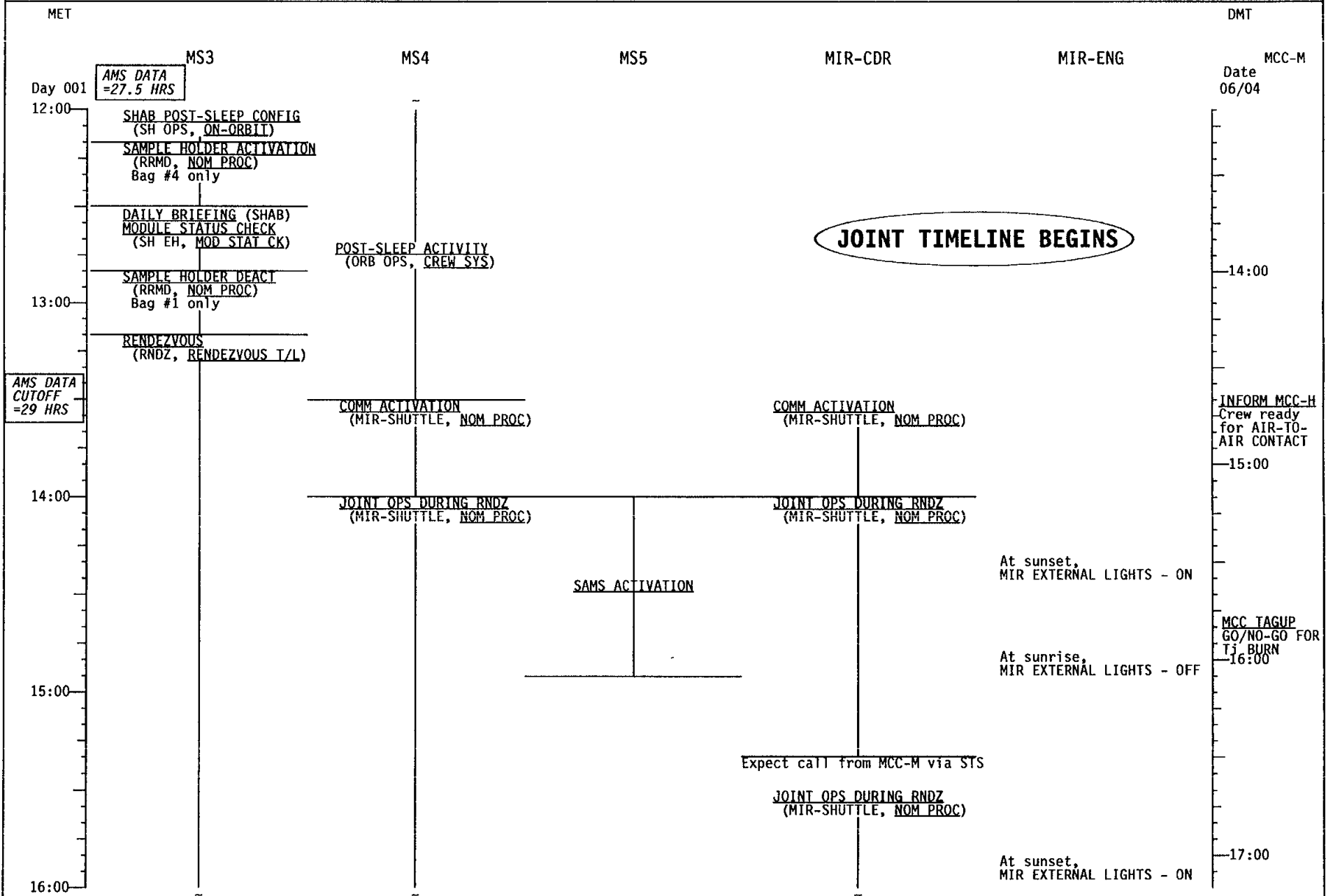
STS-91 (FD 03)



STS-91 (FD 03)

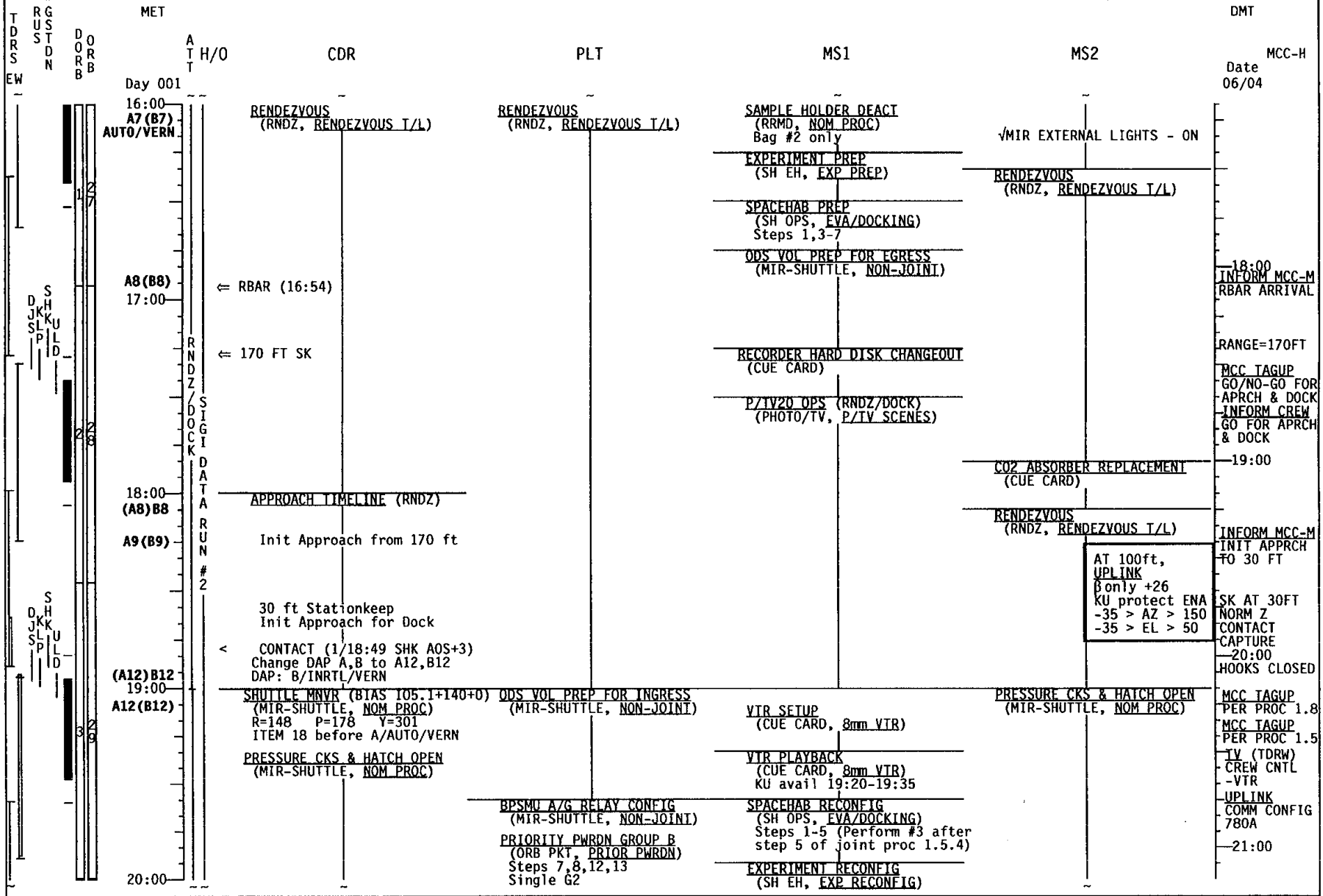


STS-91 (FD 03)

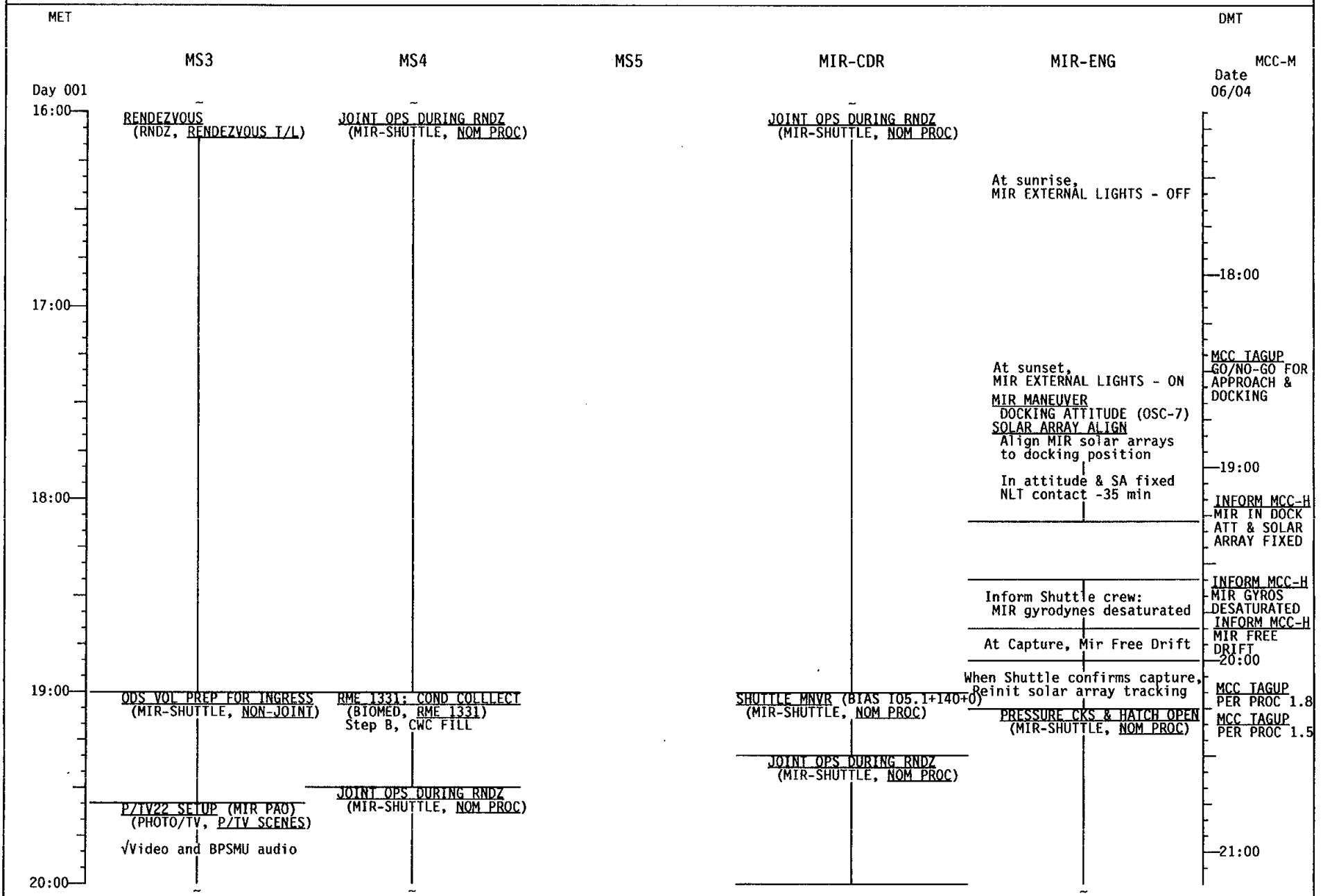


JOINT TIMELINE BEGINS

STS-91 (FD 03)



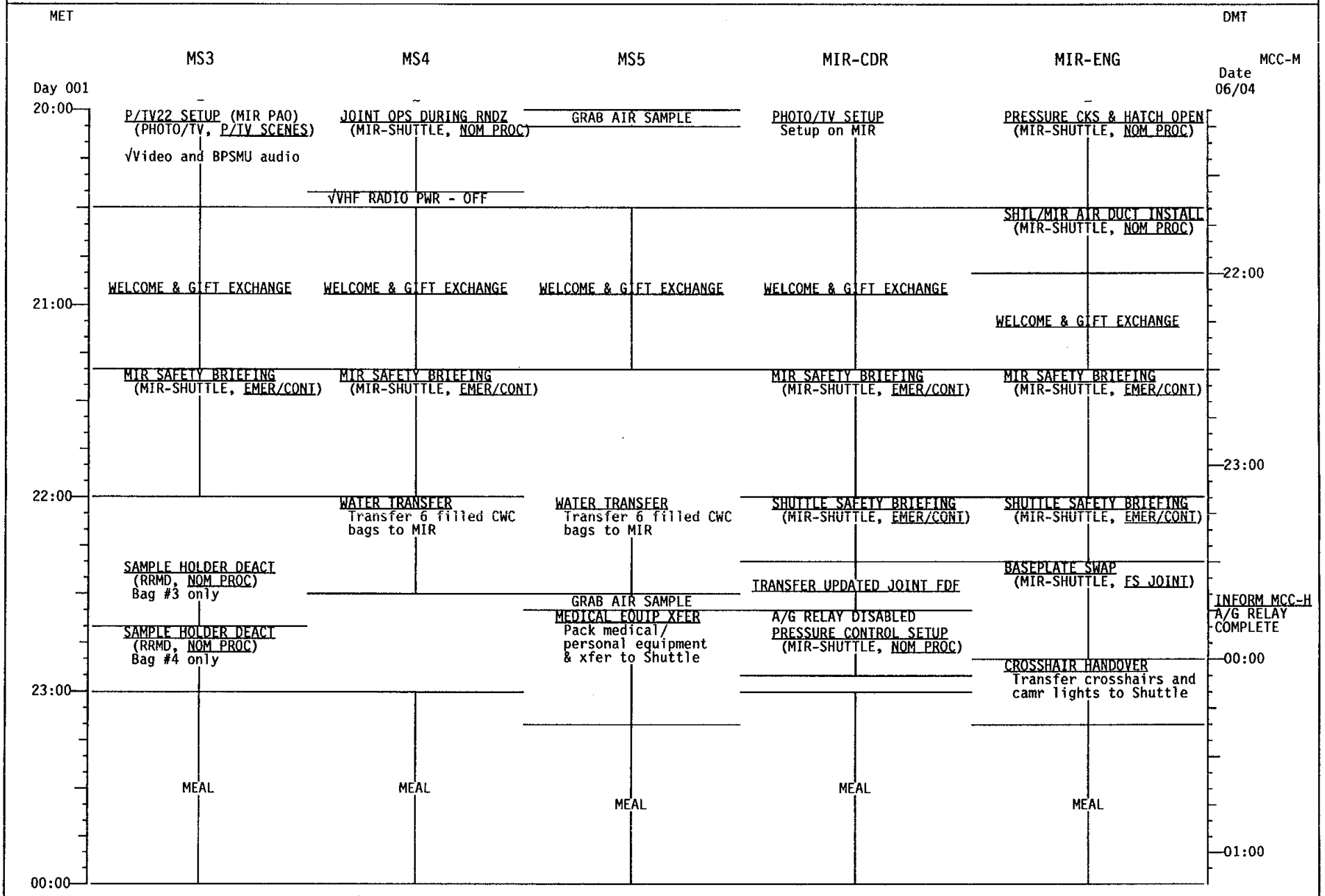
STS-91 (FD 03)



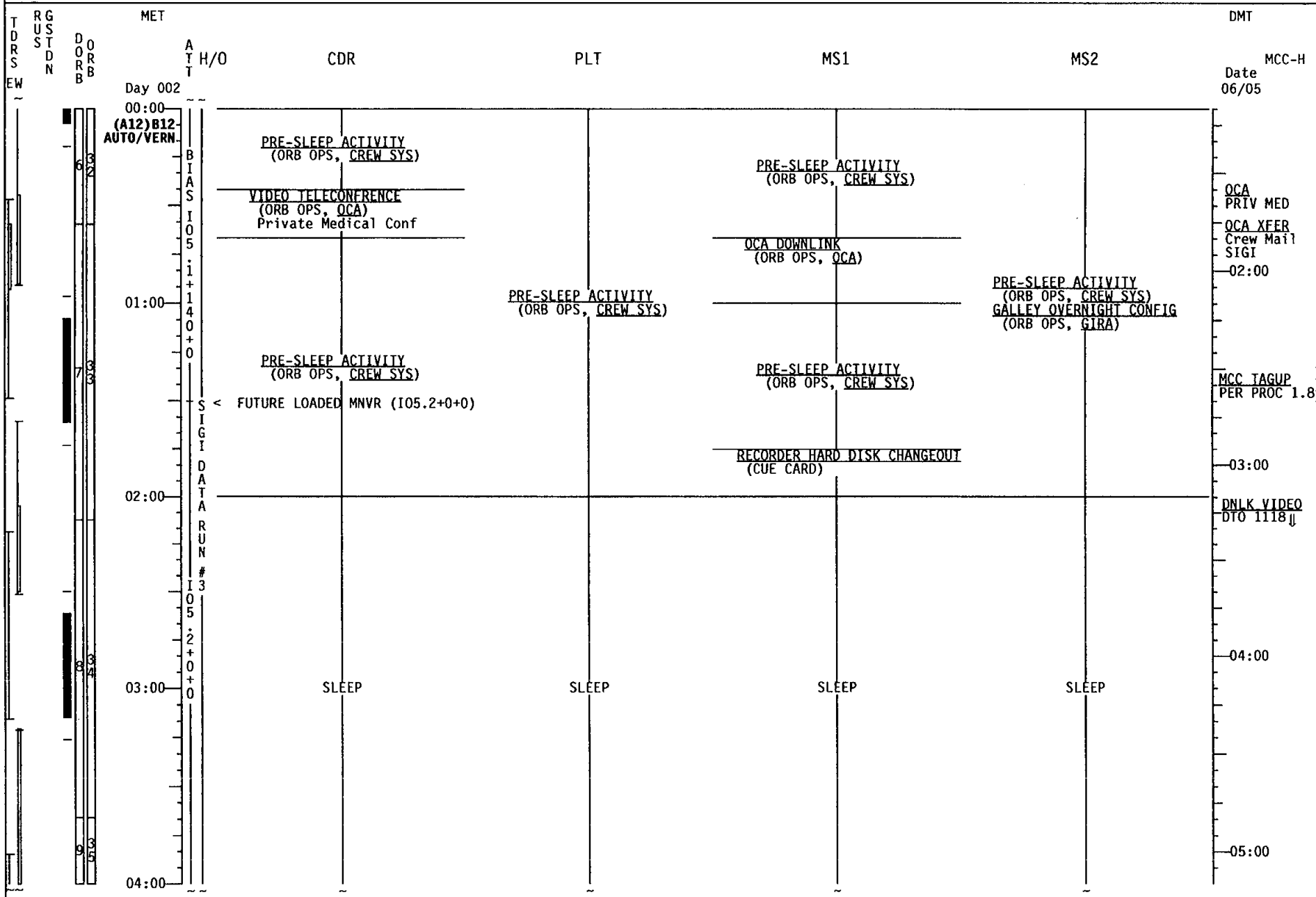
STS-91 (FD 03)

	MET	CDR	PLT	MS1	MS2	DMT	
	Day 001					Date 06/04	
TDRS RGUSTDN DORRB SHDKSLP SHDKS SHK	A/T H/O SIG I DATA RUN BIAS #2 105 :1 +1 140 +0 0 (A12)B12 531 62	PRESSURE CKS & HATCH OPEN (MIR-SHUTTLE, NOM PROC)	WELCOME & GIFT EXCHANGE KU avail 20:35-21:20	WELCOME & GIFT EXCHANGE WELCOME & GIFT EXCHANGE	EXPERIMENT RECONFIG (SH EH, EXP RECONFIG) TRANSFER PL4 Xfer PL4 PGSC to SHAB	PRESSURE CKS & HATCH OPEN (MIR-SHUTTLE, NOM PROC)	TV (TDRW) CREW CNTL -MIR 22:00
	20:00						
	21:00						
	22:00	MIR SAFETY BRIEFING (MIR-SHUTTLE, EMER/CONTI)	MIR SAFETY BRIEFING (MIR-SHUTTLE, EMER/CONTI)	MIR SAFETY BRIEFING (MIR-SHUTTLE, EMER/CONTI)	MIR SAFETY BRIEFING (MIR-SHUTTLE, EMER/CONTI)	23:00	
	22:00	SHUTTLE SAFETY BRIEFING (MIR-SHUTTLE, EMER/CONTI)	ESC EDIT Prepare DOCK & HATCH OPEN photos for DNK		MIDDECK SCIENCE CHECKS (PL OPS, MDDK SCIENCE)		
	23:00	BASEPLATE SWAP (MIR-SHUTTLE, ES JOINT)	LOAD FUTURE MNVR (105.2+0+0) R=276 P=322 Y=56 B/AUTO/VERN (2/01:30) Init MNVR	TRANSFER UPDATED JOINT FDF	DATA COLLECTION TERM DATA DOWNLINK DATA COLLECTION INIT AUTO INIT (ORB OPS, DTO 700-15)	INFORM CREW GO FOR PCS CNTRL SETUP INFORM MCC-M A/G2 RELAY ↓	
	23:00	TGT CVR & XHAIR HANDOVER Install dock target cover Collect crosshairs and all camr lights from Mir crew and temp stow in Shuttle	DSBL RLY: R AUD PWR - OFF PRESSURE CONTROL SETUP (MIR-SHUTTLE, NOM PROC)	MODULE STATUS CHECK (SH EH, MOD STAT CK)	DAILY BRIEFING (SHAB) SHAB PRE-SLEEP CONEIG (SH OPS, ON-ORBIT)	00:00	
	00:00	MEAL	MEAL	MEAL	MEAL	01:00	

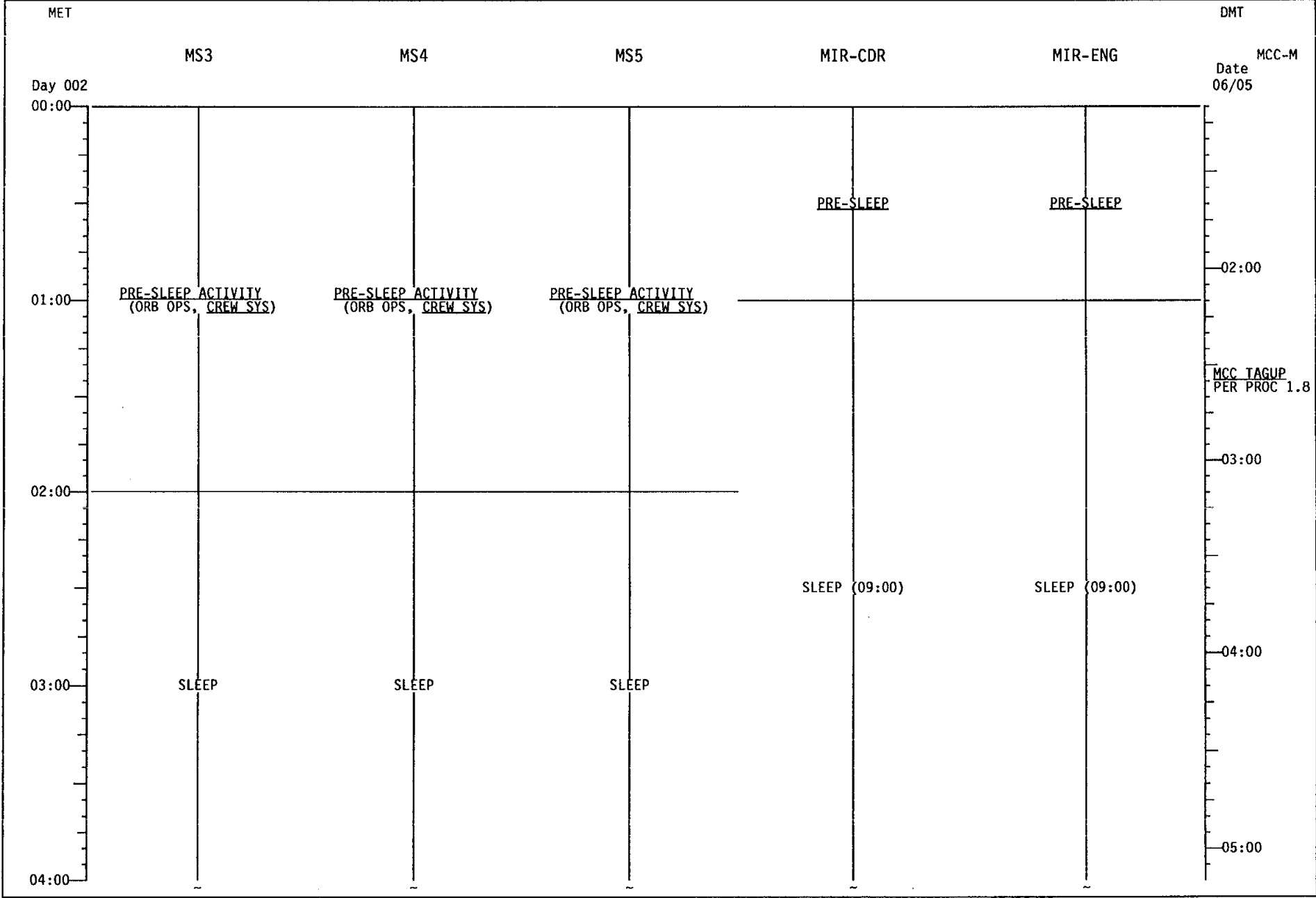
STS-91 (FD 03)



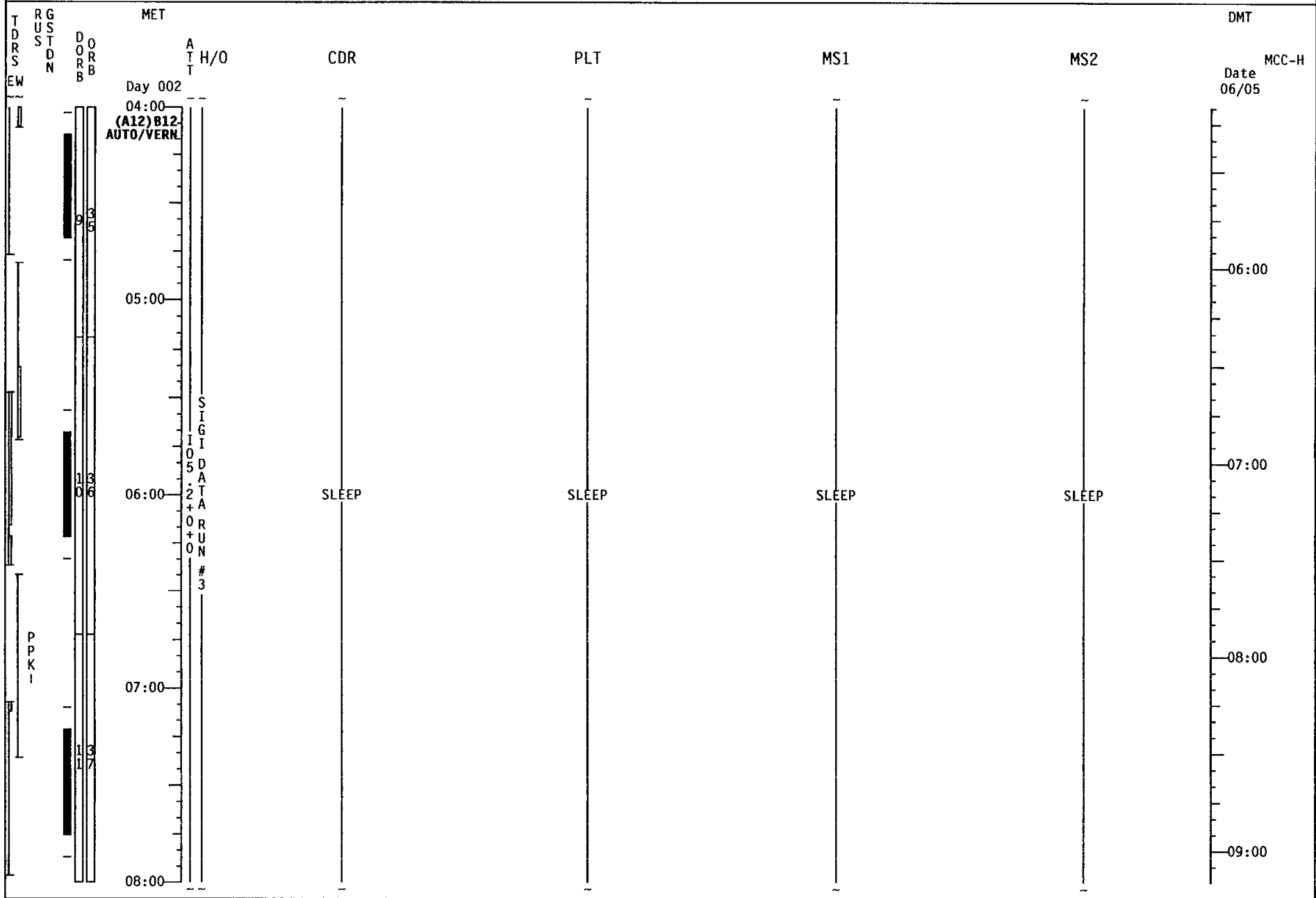
STS-91 (FD 03)



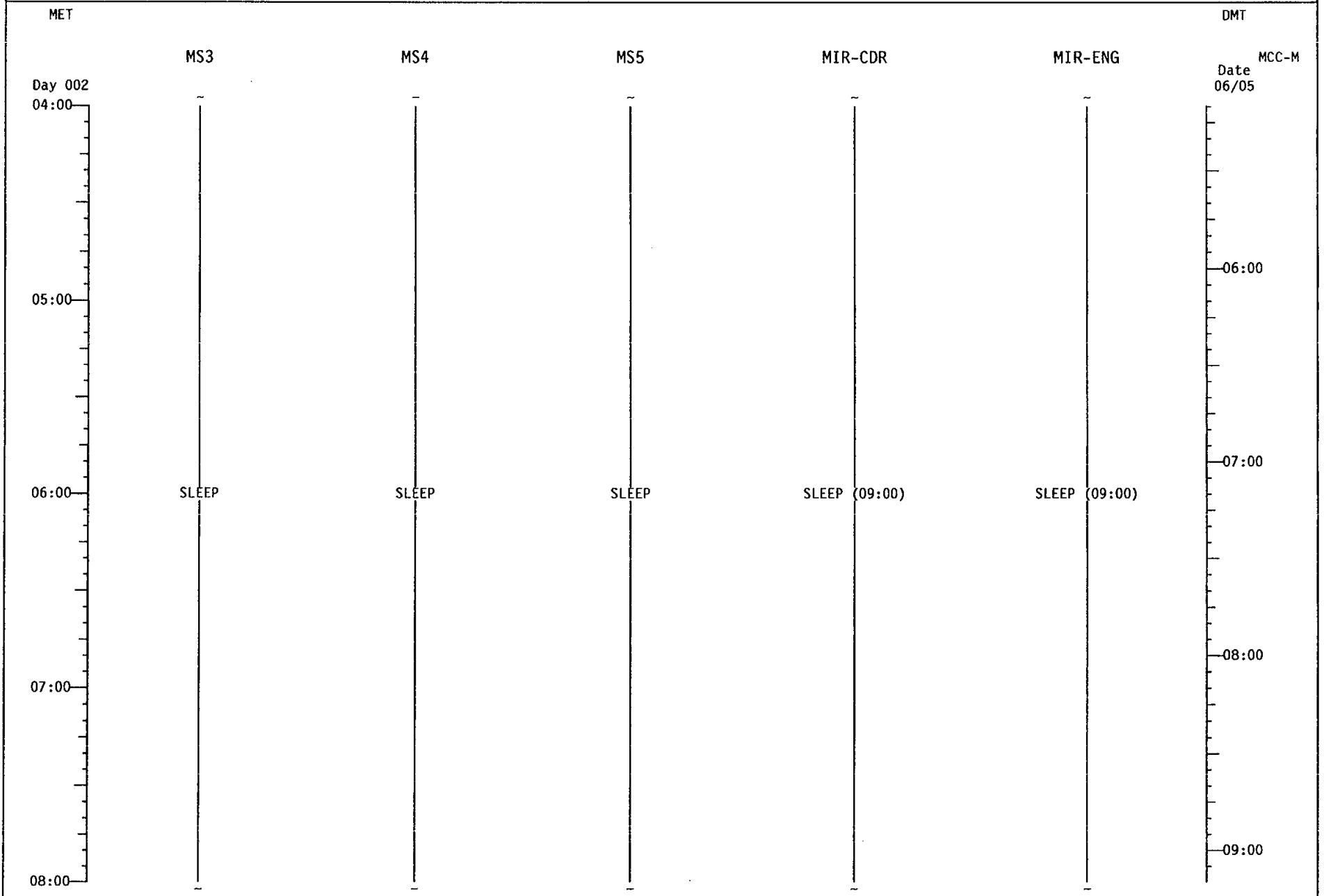
STS-91 (FD 03)



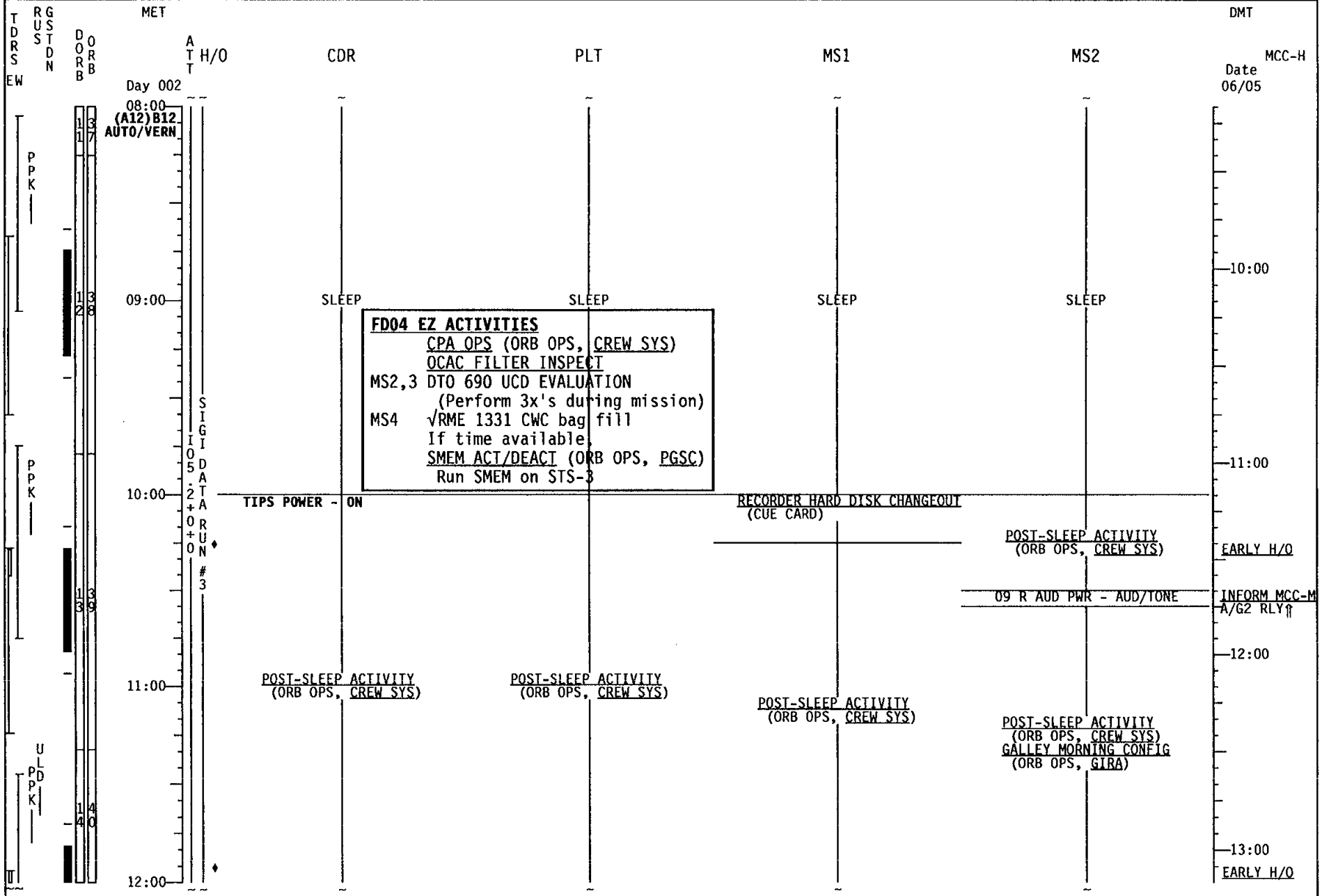
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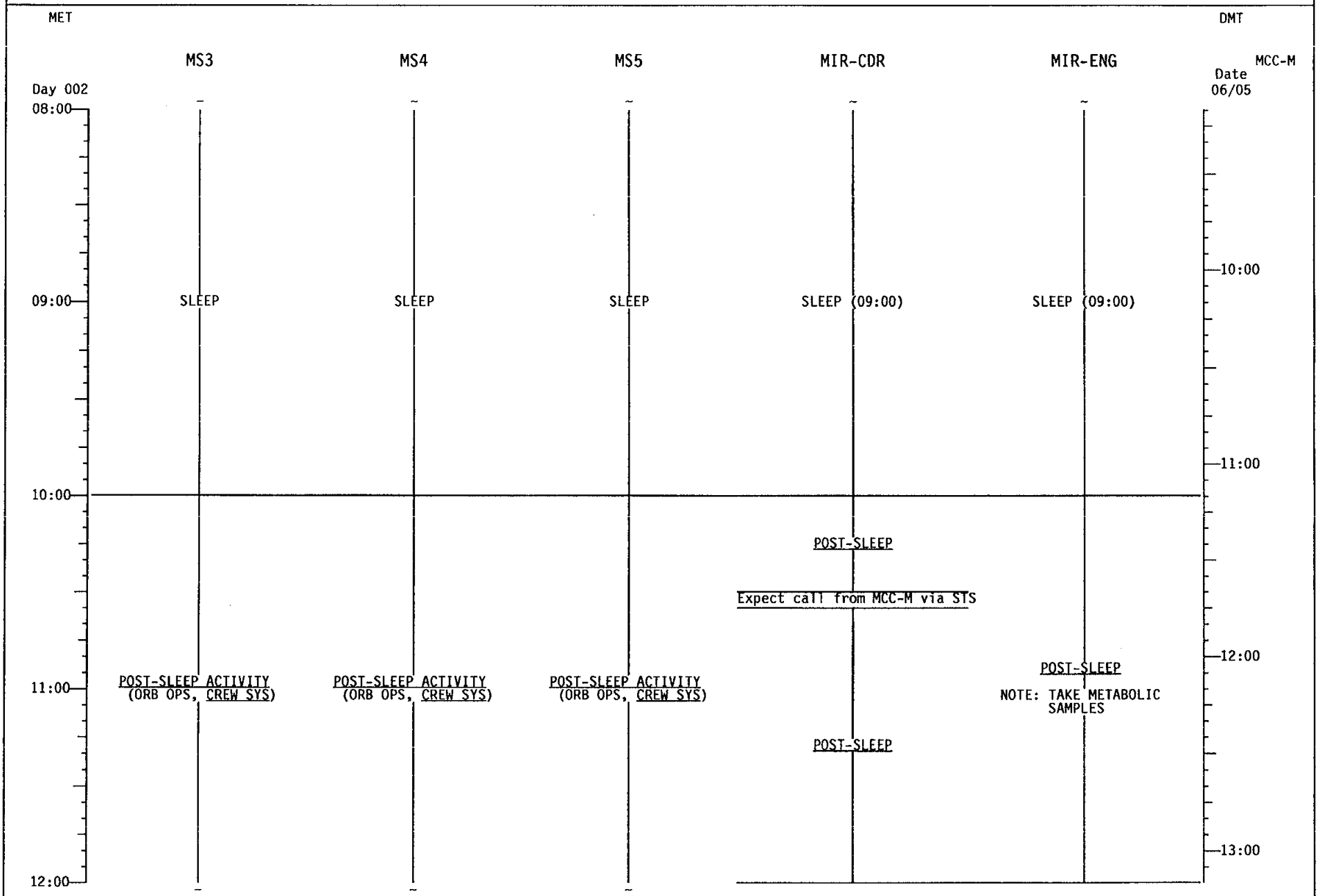
STS-91 (FD 03)



STS-91 (FD 04)



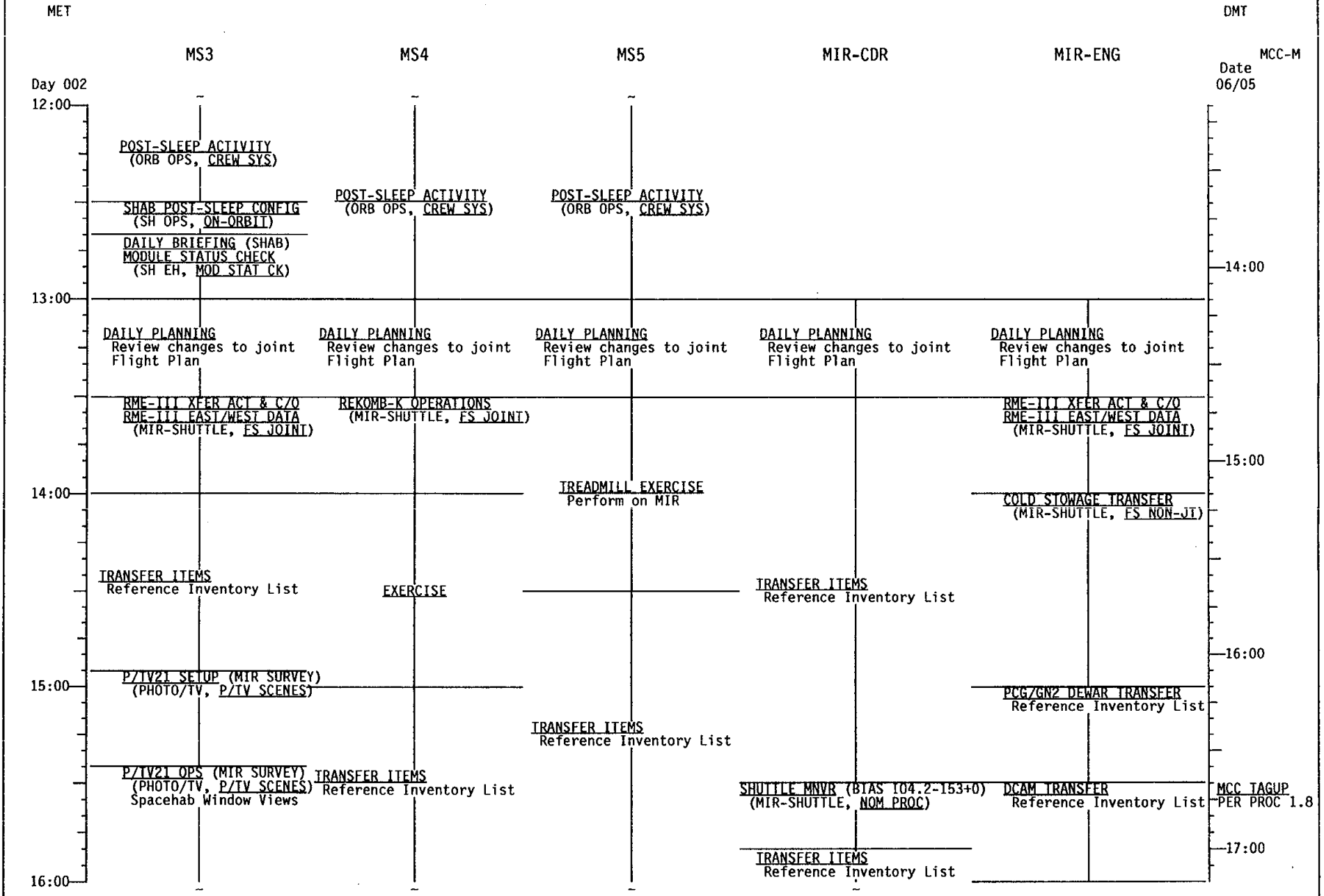
STS-91 (FD 04)



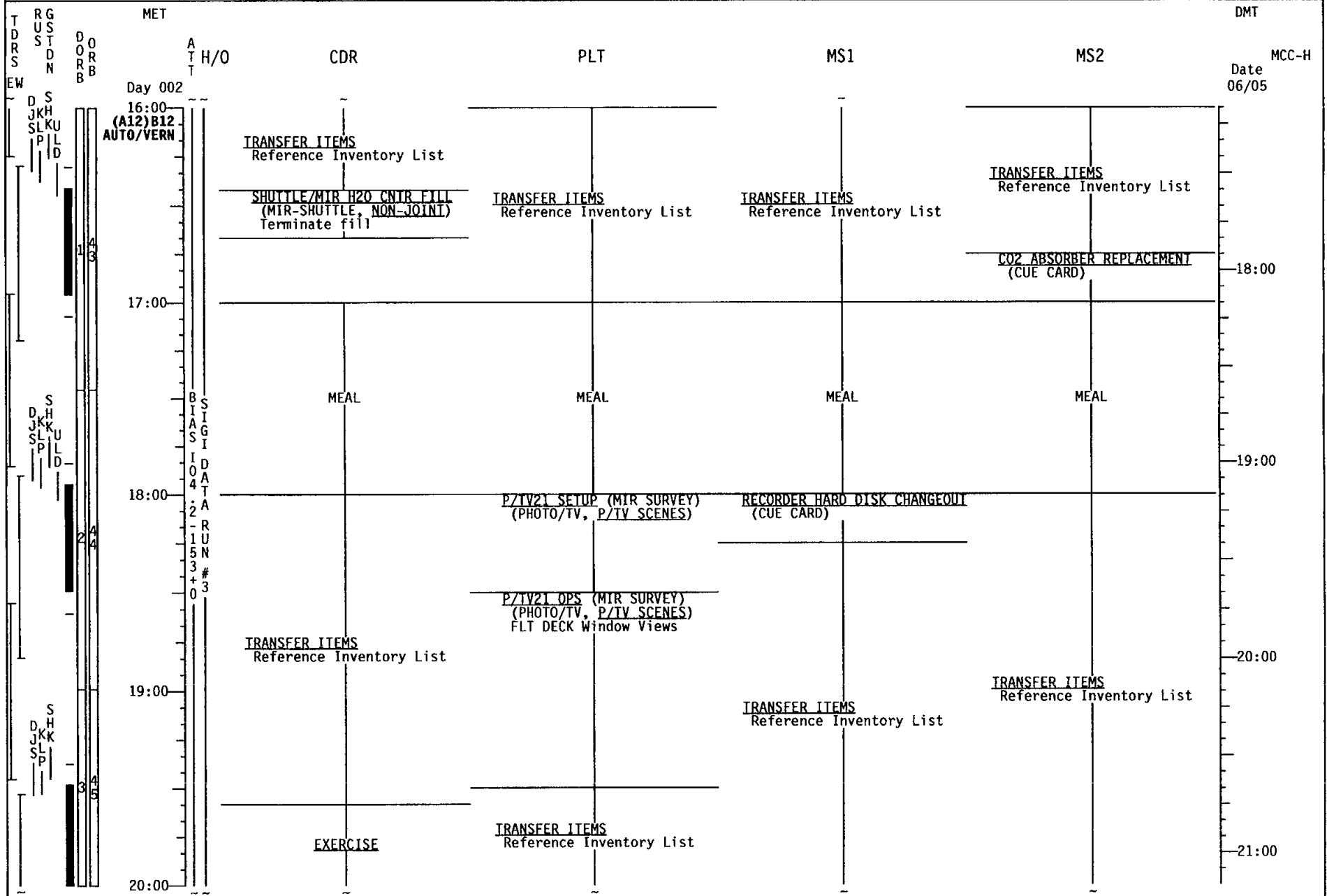
STS-91 (FD 04)

TDRS	RGSTDN	DORRB	MET	CDR	PLT	MS1	MS2	DMT
			Day 002					Date
			12:00					06/05
			(A12) B12 AUTO/VERN					
			13:00	<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>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS) GALLEY MORNING CONFIG (ORB OPS, GIRA)	
			14:00	<u>DAILY PLANNING</u> Review changes to joint Flight Plan	<u>DAILY PLANNING</u> Review changes to joint Flight Plan	<u>DAILY PLANNING</u> Review changes to joint Flight Plan	<u>DAILY PLANNING</u> Review changes to joint Flight Plan	14:00
			15:00	<u>SHUTTLE/MIR H2O CNTR FILL</u> (MIR-SHUTTLE, NON-JOINT) Init fill #7. VMCC for additive & sample reqmts.	<u>TRANSFER ITEMS</u> Reference Inventory List	<u>LONG/SHORT SAMPLE ACT</u> (RRMD, NOM PROC) Samples SA, SB, SC only KU avail: 13:38-14:37 14:41-15:15	<u>MIDDECK SCIENCE CHECKS</u> (PL OPS, MDDK SCIENCE) LI7 Check MCIU Filter Screen	EARLY H/O DNLK VIDEO RRMD (SA, SB, SC) 15:00
			16:00	<u>TRANSFER ITEMS</u> Reference Inventory List	<u>COLD STOWAGE TRANSFER</u> (MIR-SHUTTLE, ES NON-JI)		<u>COLD STOWAGE TRANSFER</u> (MIR-SHUTTLE, ES NON-JI)	
			17:00	<u>SHUTTLE/MIR H2O CNTR FILL</u> (MIR-SHUTTLE, NON-JOINT) Terminate fill			<u>PCG/GN2 DEWAR TRANSFER</u> Reference Inventory List	
			18:00	<u>SHUTTLE/MIR H2O CNTR FILL</u> (MIR-SHUTTLE, NON-JOINT) Init fill #8. VMCC for additive & sample reqts				
			19:00	<u>SHUTTLE MNVR</u> (BIAS 104.2-153+0) (MIR-SHUTTLE, NOM PROC) R=230 P=119 Y=316 B/AUTO/VERN Init MNVR	<u>EXERCISE</u>	<u>TRANSFER ITEMS</u> Reference Inventory List	<u>DCAM TRANSFER</u> Reference Inventory List	MCC TAGUP PER PROC 1.8
			20:00	<u>TRANSFER ITEMS</u> Reference Inventory List				17:00

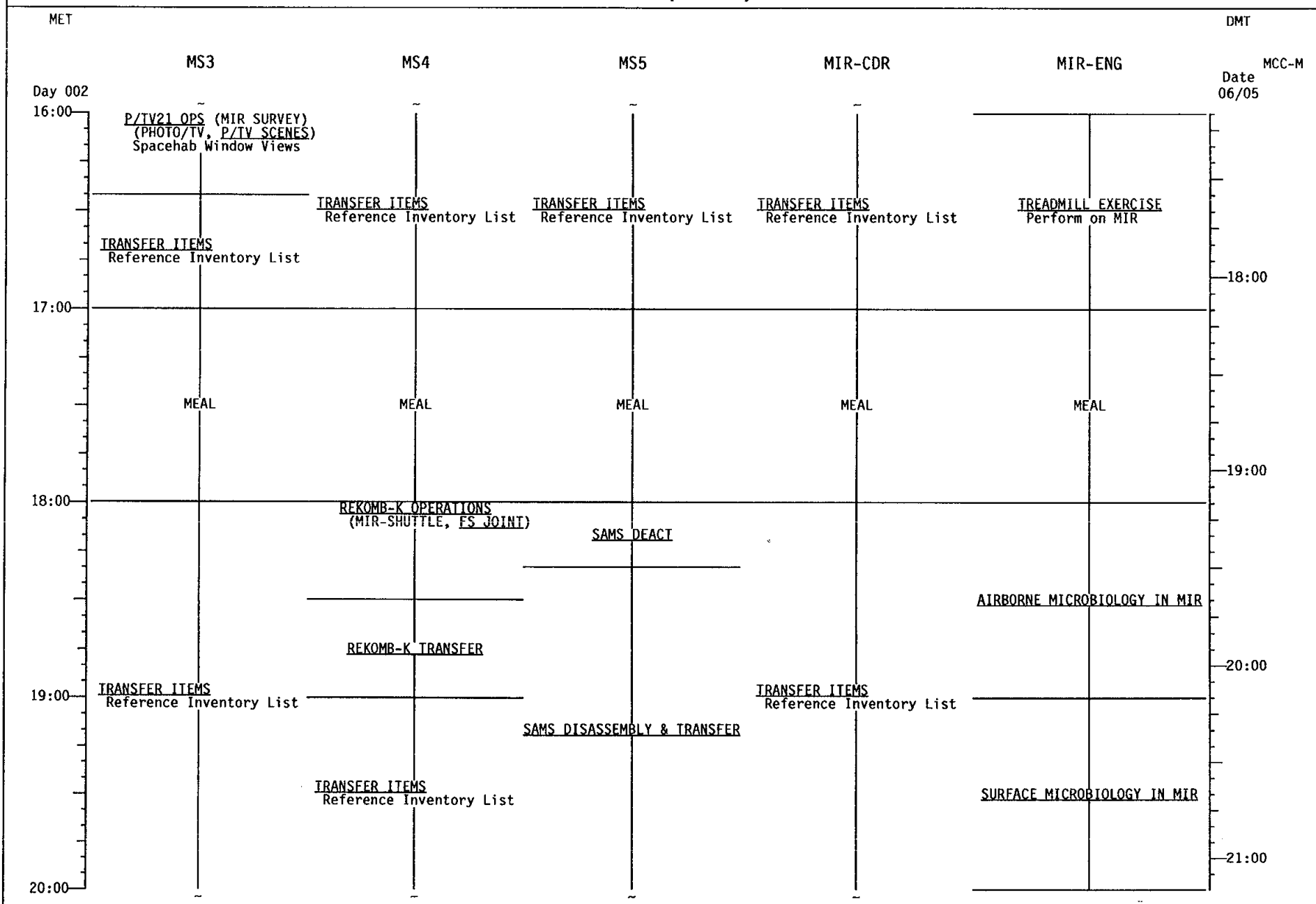
STS-91 (FD 04)



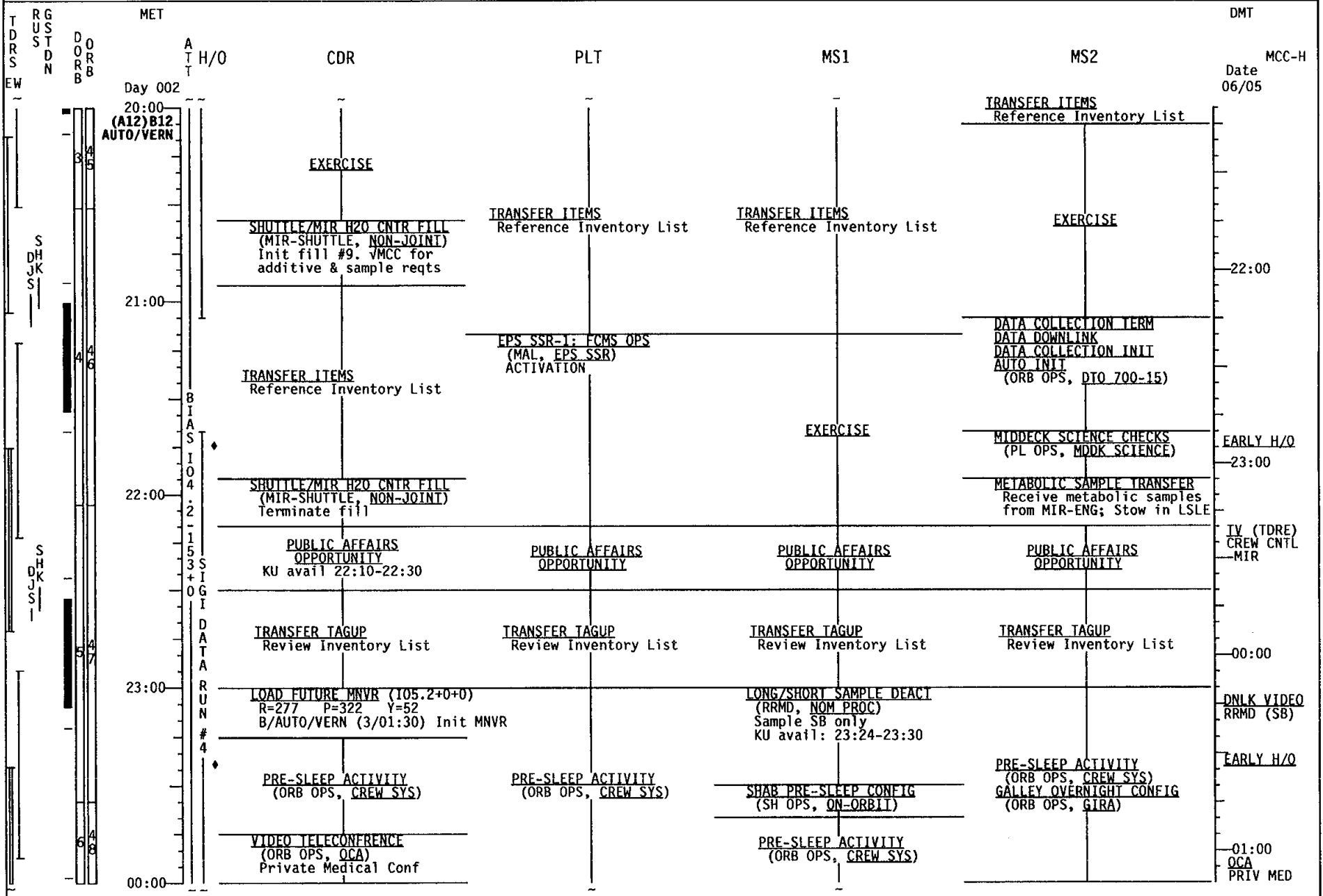
STS-91 (FD 04)



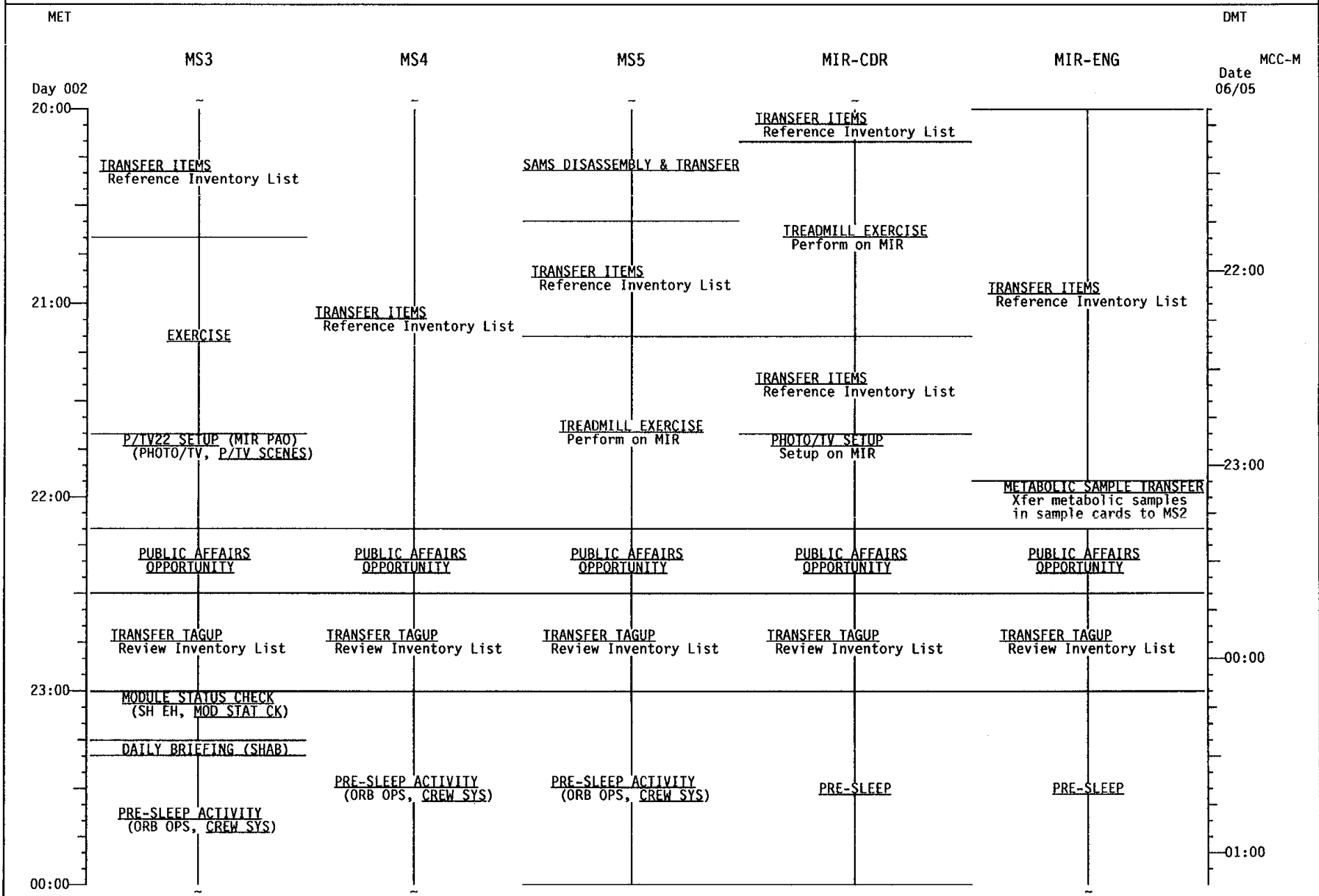
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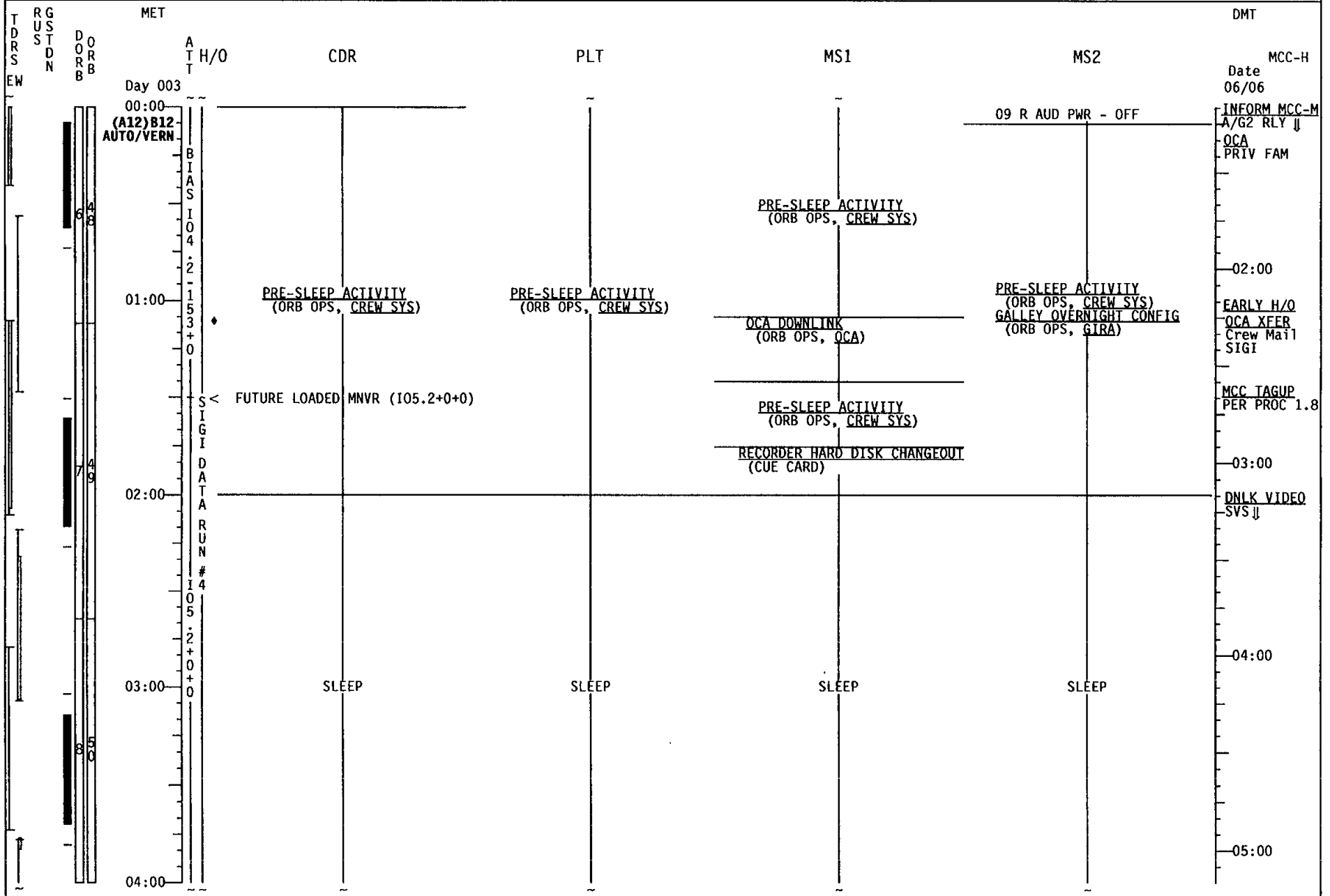
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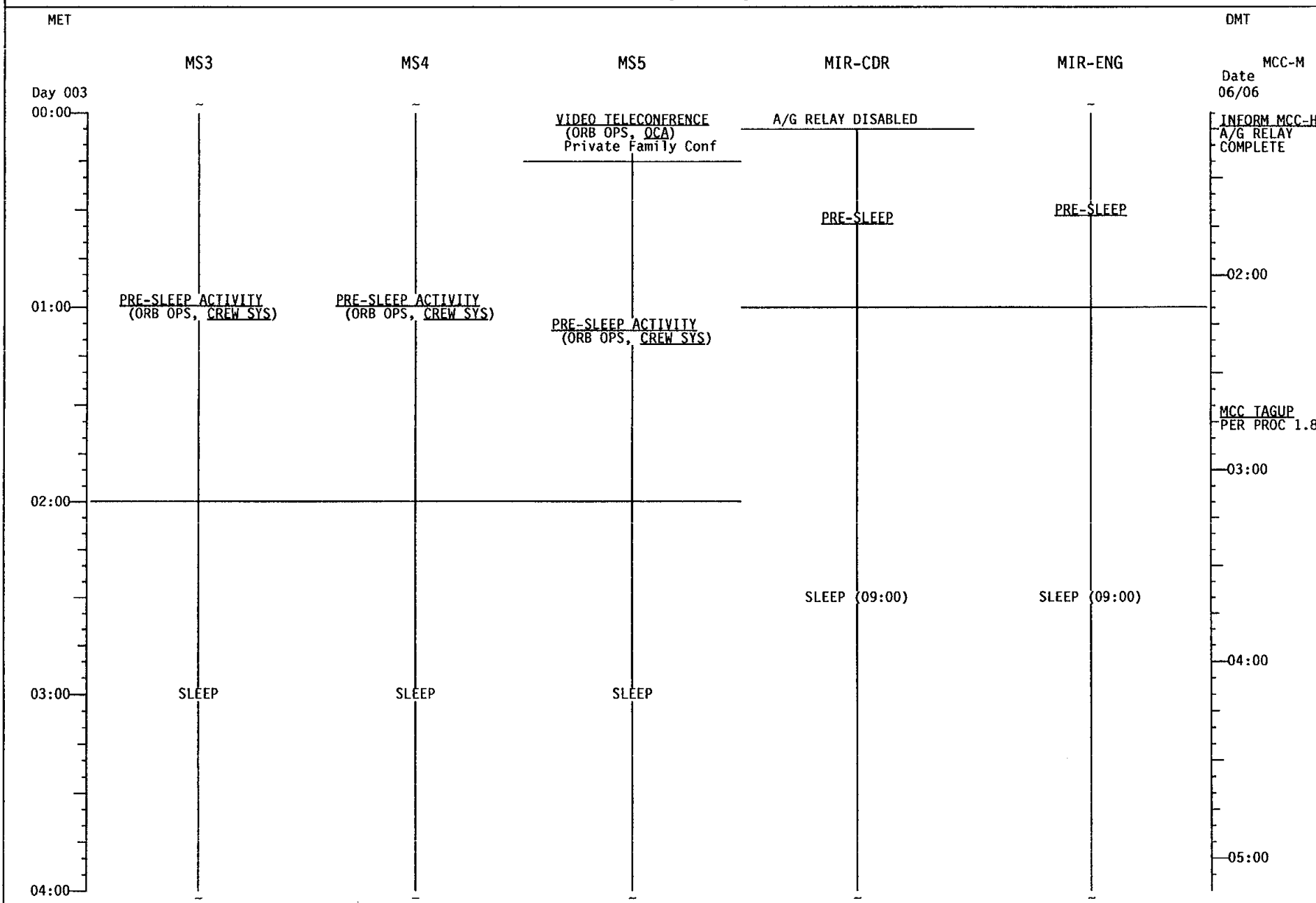
STS-91 (FD 04)



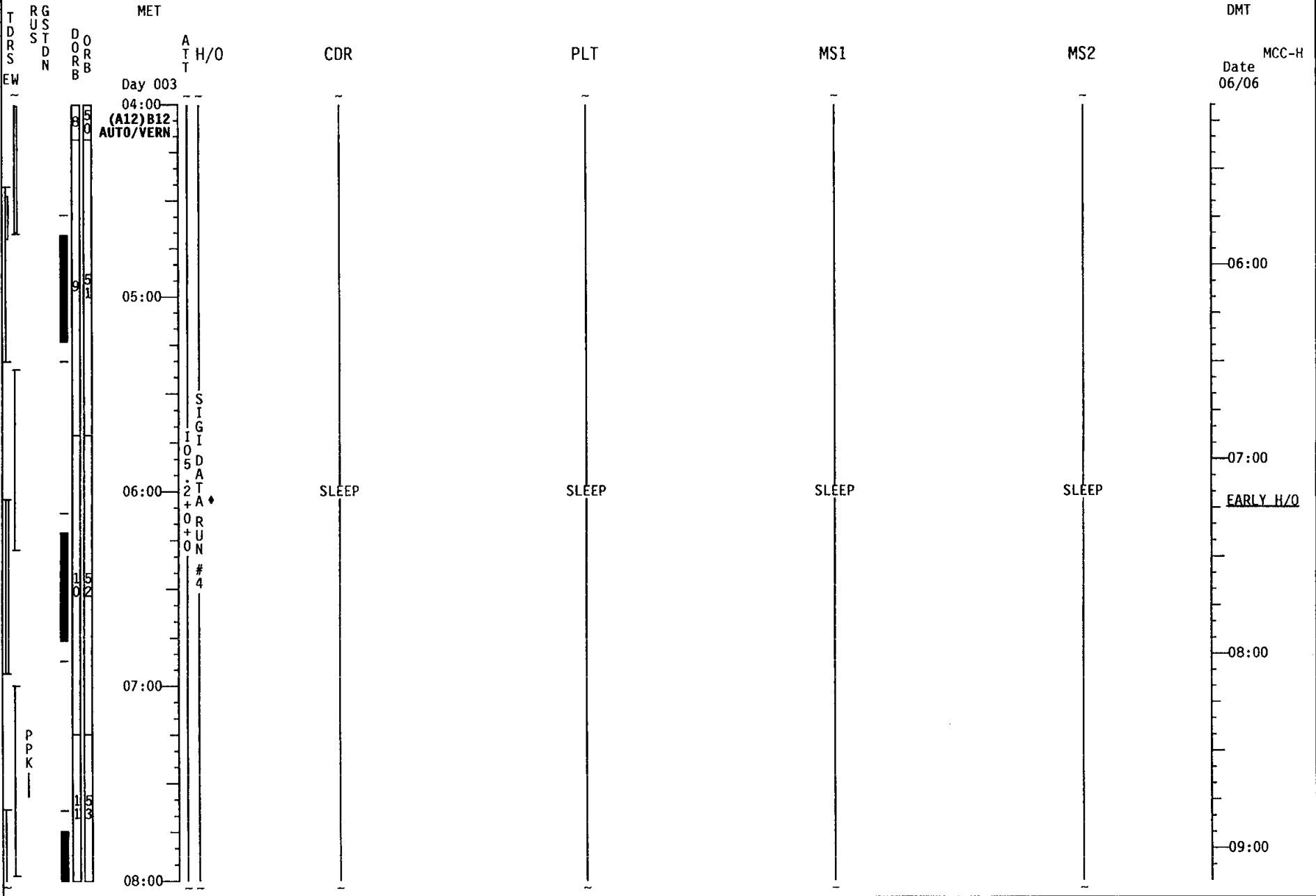
STS-91 (FD 04)



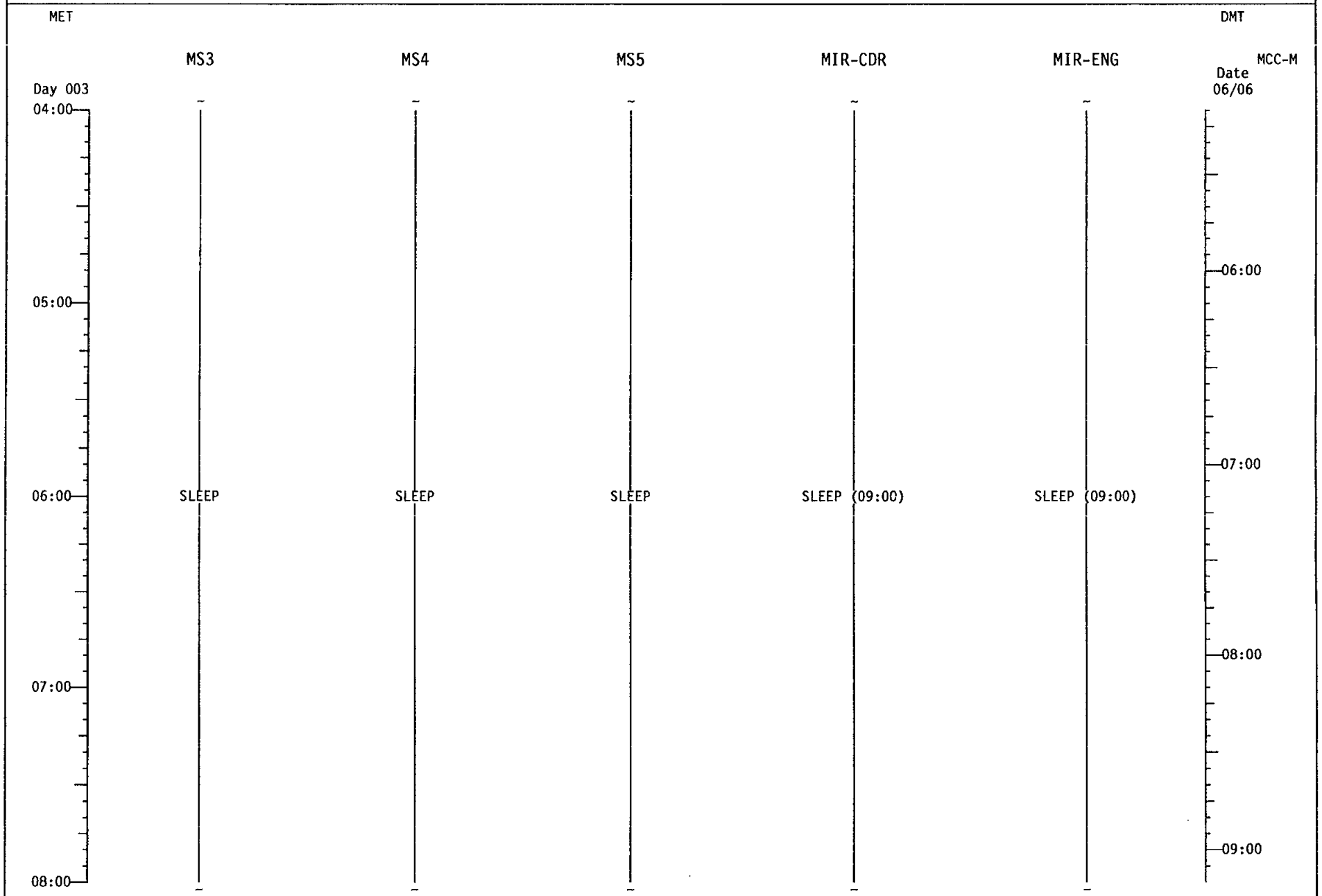
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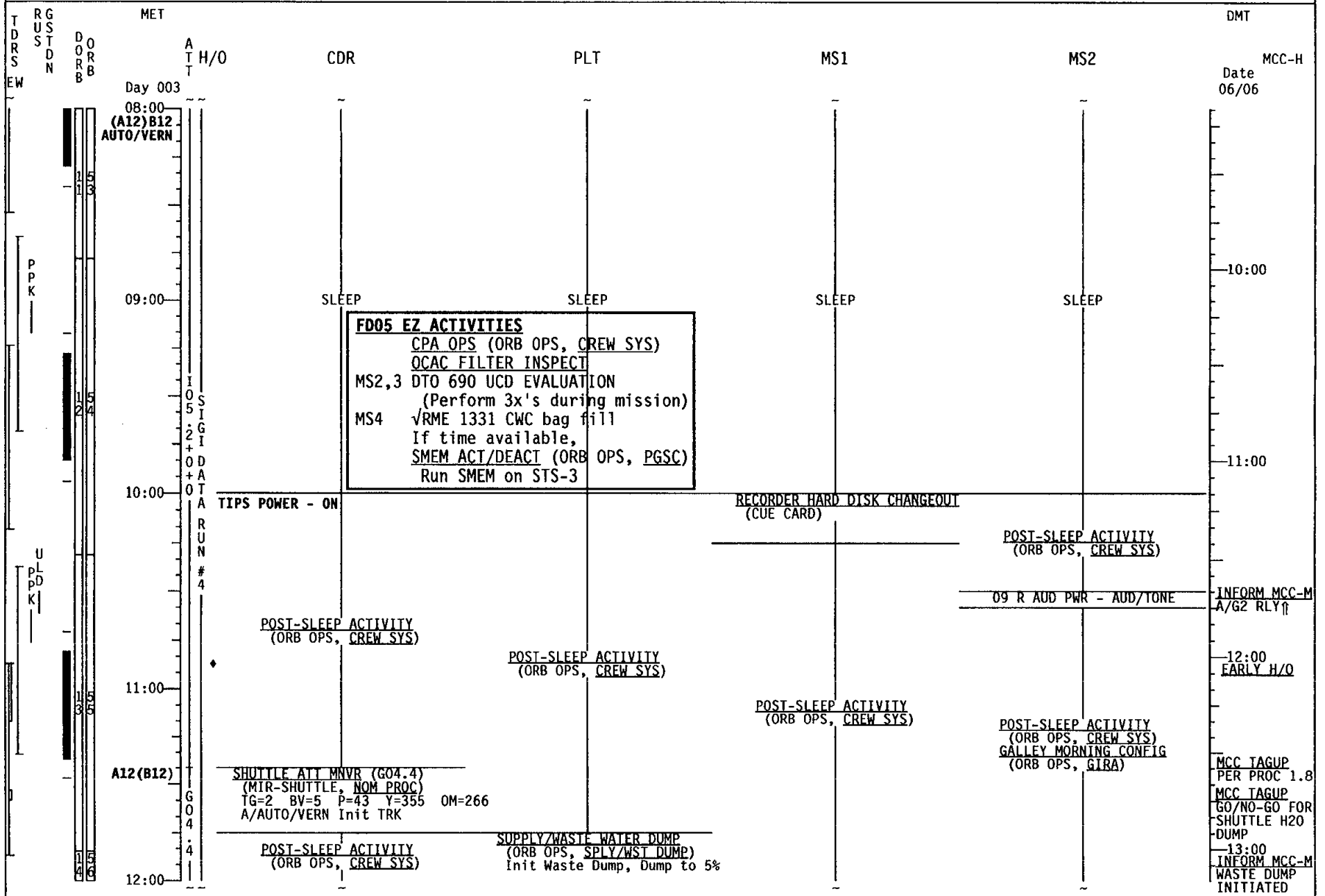
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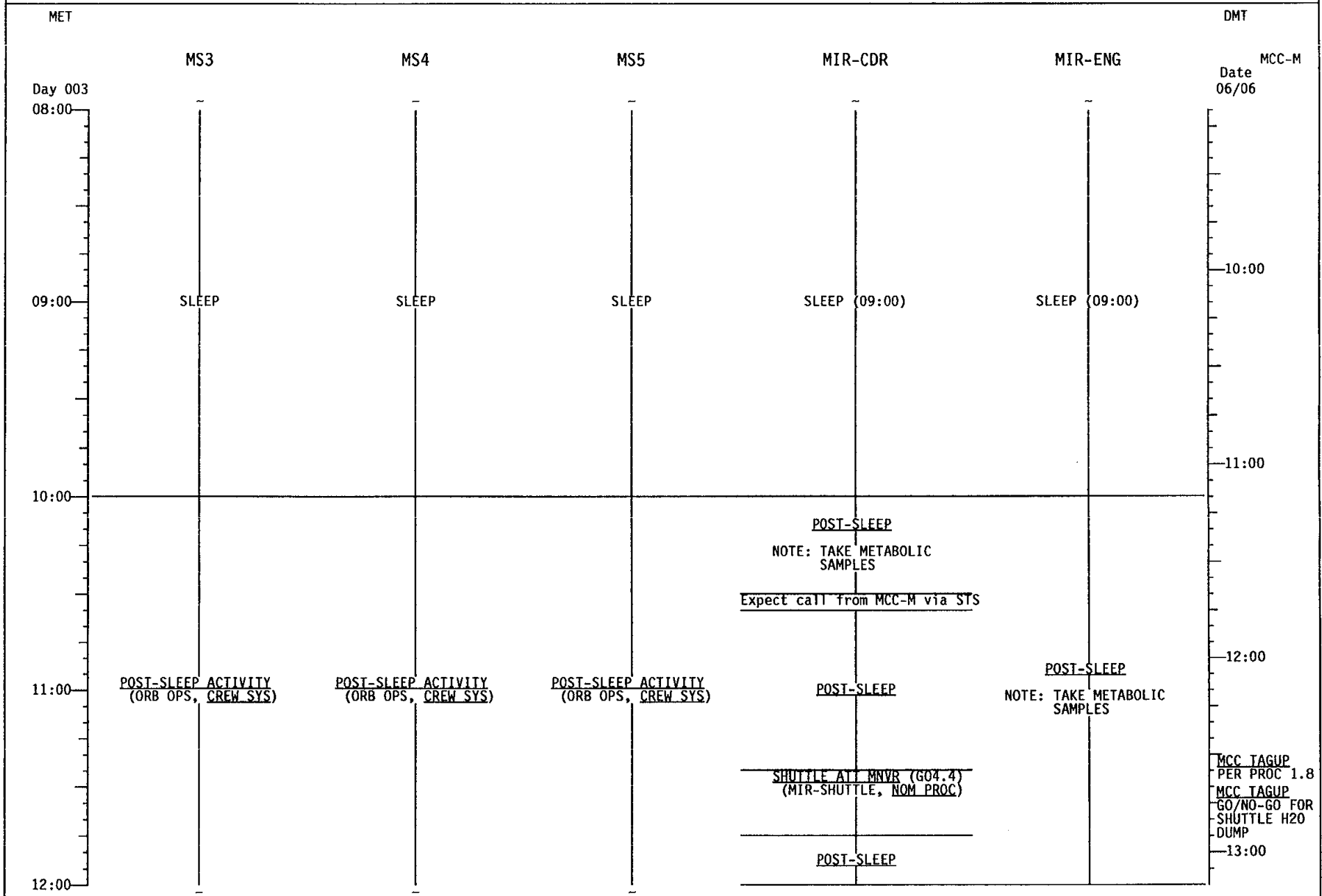
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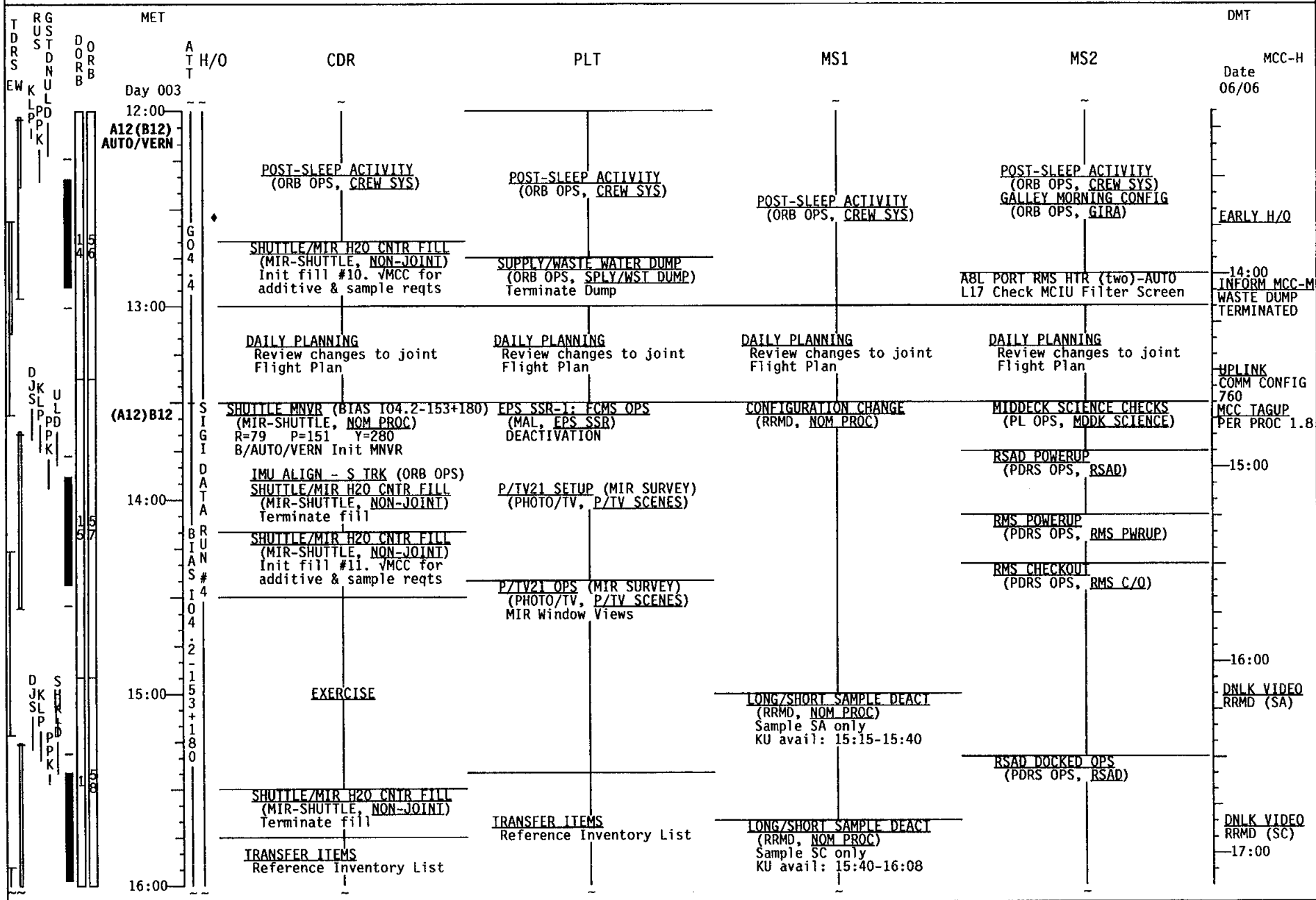
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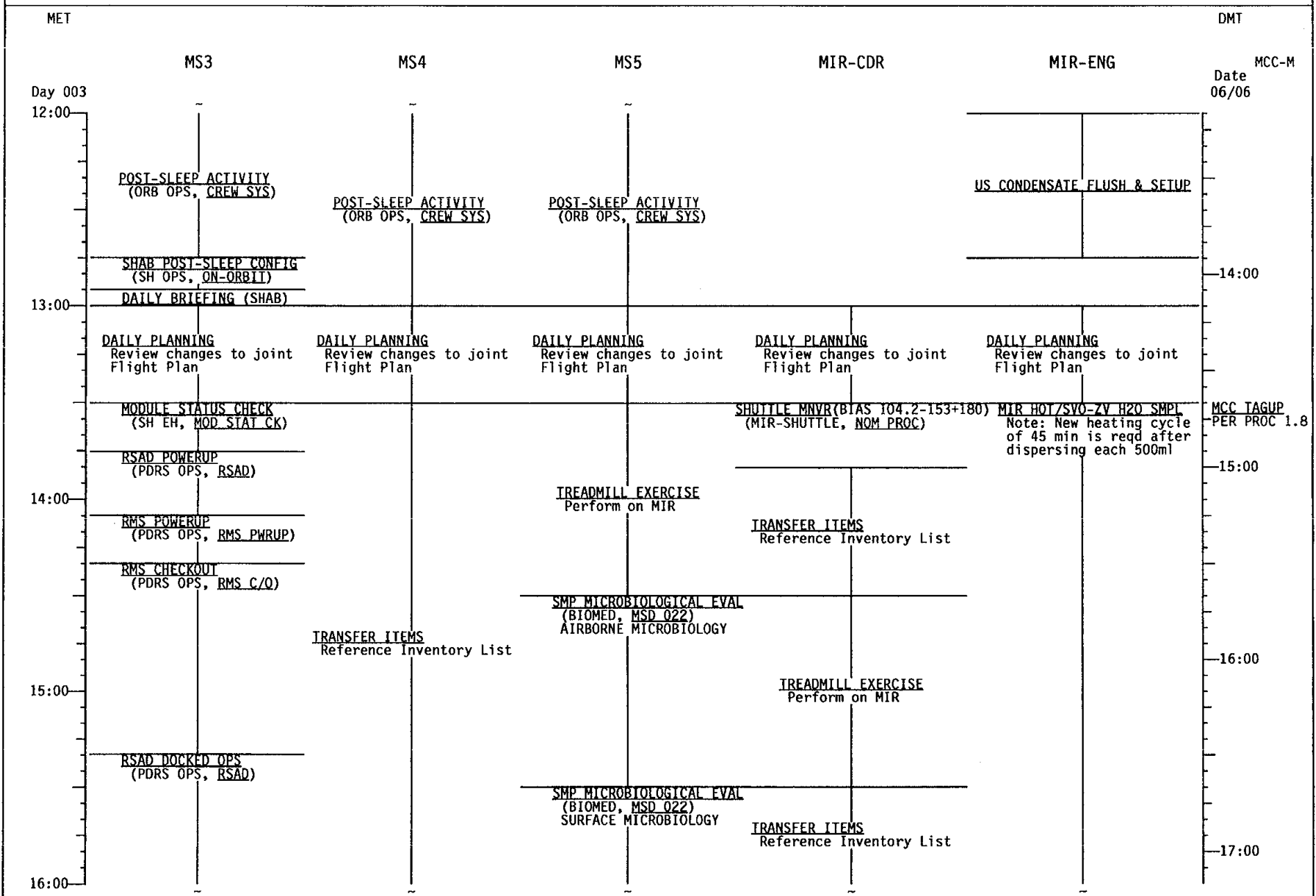
STS-91 (FD 05)



STS-91 (FD 05)



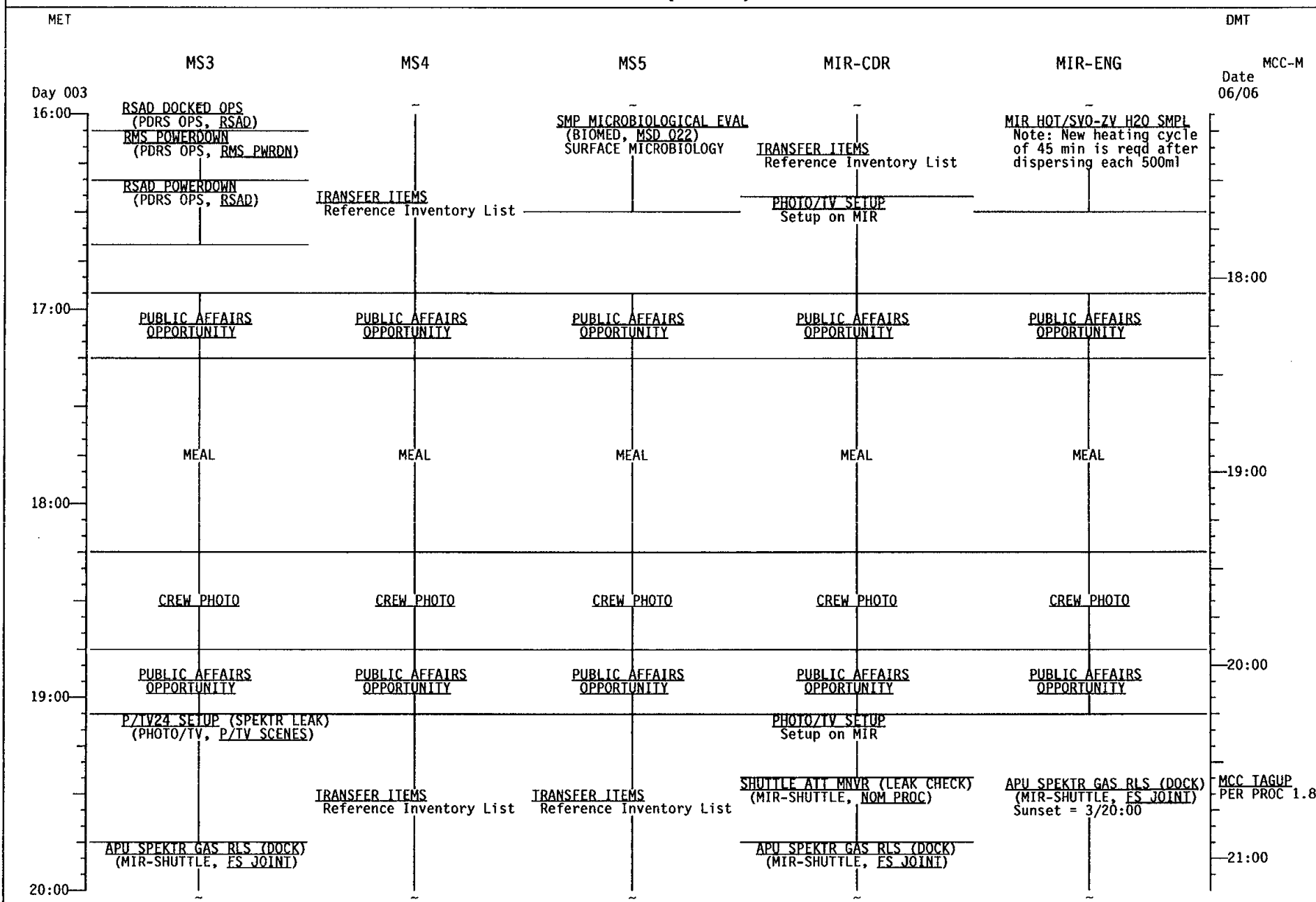
STS-91 (FD 05)



STS-91 (FD 05)

	MET	CDR	PLT	MS1	MS2	DMT
	Day 003					Date 06/06
16:00	(A12)B12 AUTO/VERN	TRANSFER ITEMS Reference Inventory List	TRANSFER ITEMS Reference Inventory List	LONG/SHORT SAMPLE DEACT (RRMD, NOM PROC) Sample SC only KU avail: 15:40-16:08	RSAD DOCKED OPS (PDRS OPS, RSAD) RMS POWERDOWN (PDRS OPS, RMS PWRDN)	
			P/TV22 SETUP (MIR PAO) (PHOTO/TV, P/TV SCENES)	UPDATE PGSC TIME TABLE (RRMD, NOM PROC)	RSAD POWERDOWN (PDRS OPS, RSAD)	OCA XFER RRMD UPDATE
17:00		PUBLIC AFFAIRS OPPORTUNITY KU avail 16:55-17:15	PUBLIC AFFAIRS OPPORTUNITY	RECORDER HARD DISK CHANGEOUT (CUE CARD)	CO2 ABSORBER REPLACEMENT (CUE CARD)	UPLINK COMM CONFIG 780A 18:00
		MEAL	MEAL	MEAL	MEAL	TV (TDRW) CREW CNTL-MIR
18:00						19:00
		CREW PHOTO	CREW PHOTO	CREW PHOTO	CREW PHOTO	
19:00		PUBLIC AFFAIRS OPPORTUNITY KU avail 18:45-19:05	PUBLIC AFFAIRS OPPORTUNITY	PUBLIC AFFAIRS OPPORTUNITY	PUBLIC AFFAIRS OPPORTUNITY	20:00 TV (TDRW) CREW CNTL-MIR
			P/TV24 SETUP (SPEKTR LEAK) (PHOTO/TV, P/TV SCENES)	P/TV24 SETUP (SPEKTR LEAK) (PHOTO/TV, P/TV SCENES)	P/TV24 SETUP (SPEKTR LEAK) (PHOTO/TV, P/TV SCENES)	
	A12(B12)	SHUTTLE ATT MNVR (LEAK CHECK) (MIR-SHUTTLE, NOM PROC) TG=2 BV=5 P=184 Y=277 OM=309 A/AUTO/VERN (19:25) Init TRK				MCC TAGUP PER PROC 1.8
20:00			APU SPEKTR GAS RLS (DOCK) (MIR-SHUTTLE, ES JOINT) Sunset = 3/20:00	APU SPEKTR GAS RLS (DOCK) (MIR-SHUTTLE, ES JOINT)	APU SPEKTR GAS RLS (DOCK) (MIR-SHUTTLE, ES JOINT)	21:00

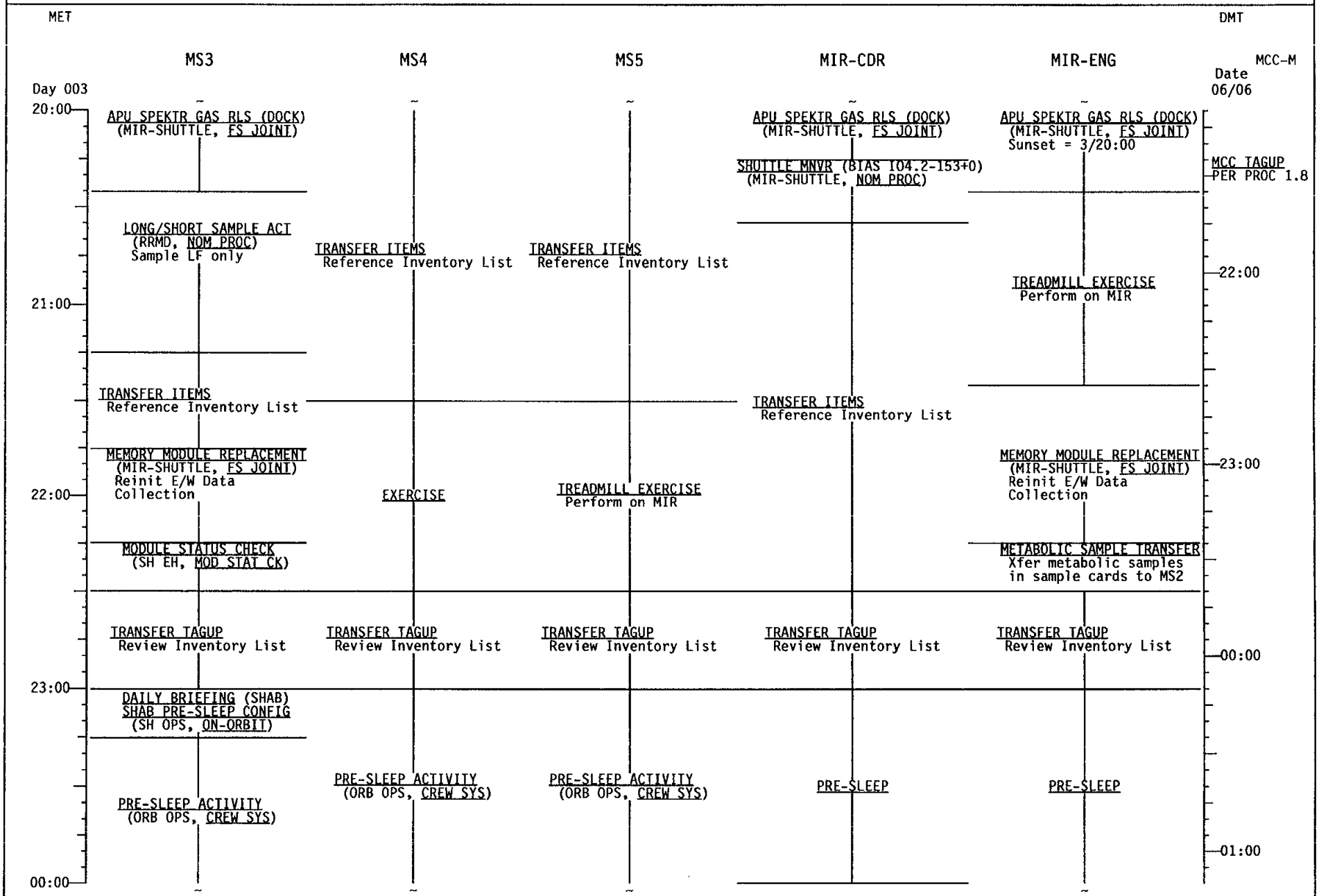
STS-91 (FD 05)



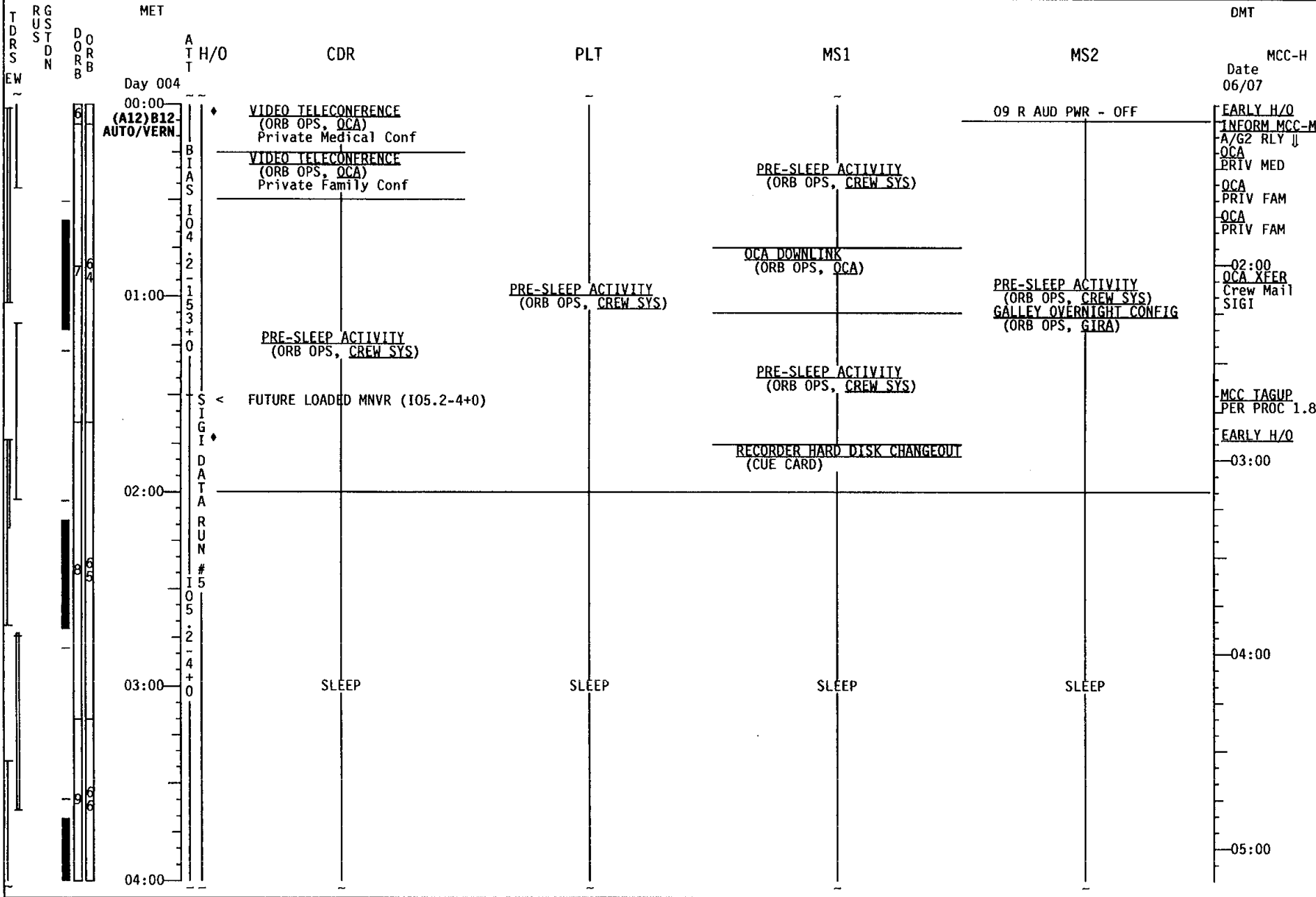
STS-91 (FD 05)

	MET	CDR	PLT	MS1	MS2	MCC-H
TDRS RG UST D DK EW J L H S P K '	Day 003 20:00 A12(B12) AUTO/VERN (A12)B12 4 6 1 5 2 0 4 2 1 5 3 + 0 3 1 6 3 00:00	H/O SHUTTLE MNVR (BIAS 104.2-153+0) (MIR-SHUTTLE, NOM PROC) R=227 P=117 Y=316 B/AUTO/VERN Init MNVR TRANSFER ITEMS Reference Inventory List SHUTTLE/MIR H2O CNTR FILL (MIR-SHUTTLE, NON-JOINT) Init fill #12. vMCC for additive & sample reqts TRANSFER ITEMS Reference Inventory List TRANSFER TAGUP Review Inventory List LOAD FUTURE MNVR (105.2-4+0) R=272 P=326 Y=48 B/AUTO/VERN (4/01:30) Init MNVR PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	APU SPEKTR GAS RLS (DOCK) (MIR-SHUTTLE, ES JOINT) Sunset = 3/20:00 EXERCISE TRANSFER ITEMS Reference Inventory List TRANSFER TAGUP Review Inventory List SHUTTLE/MIR H2O CNTR FILL (MIR-SHUTTLE, NON-JOINT) Terminate fill PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	APU SPEKTR GAS RLS (DOCK) (MIR-SHUTTLE, ES JOINT) LONG/SHORT SAMPLE ACT (RRMD, NOM PROC) Sample LD only UPDATE PGSC TIME TABLE (RRMD, NOM PROC) TRANSFER TAGUP Review Inventory List PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	APU SPEKTR GAS RLS (DOCK) (MIR-SHUTTLE, ES JOINT) TRANSFER ITEMS Reference Inventory List DATA COLLECTION TERM DATA DOWNLINK DATA COLLECTION INIT AUTO INIT (ORB OPS, DTO 700-15) MIDDECK SCIENCE CHECKS (PL OPS, MODK SCIENCE) METABOLIC SAMPLE TRANSFER Receive metabolic samples from MIR-ENG; Stow in LSLE TRANSFER TAGUP Review Inventory List PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS) GALLEY OVERNIGHT CONFIG (ORB OPS, GIRA)	Date 06/06 MCC TAGUP PER PROC 1.8 22:00 EARLY H/O OCA XFER RRMD UPDATE 23:00 EARLY H/O 00:00 01:00

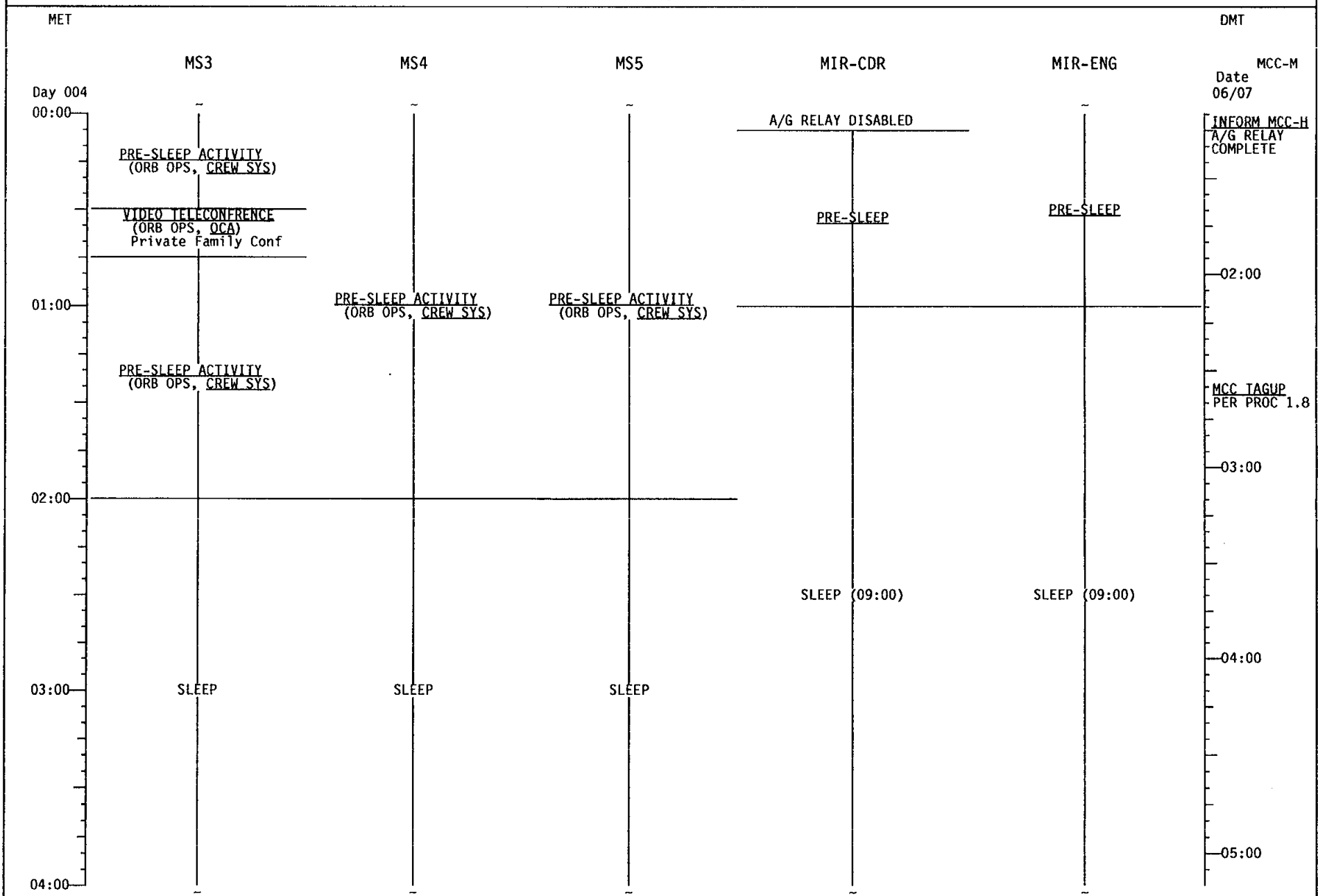
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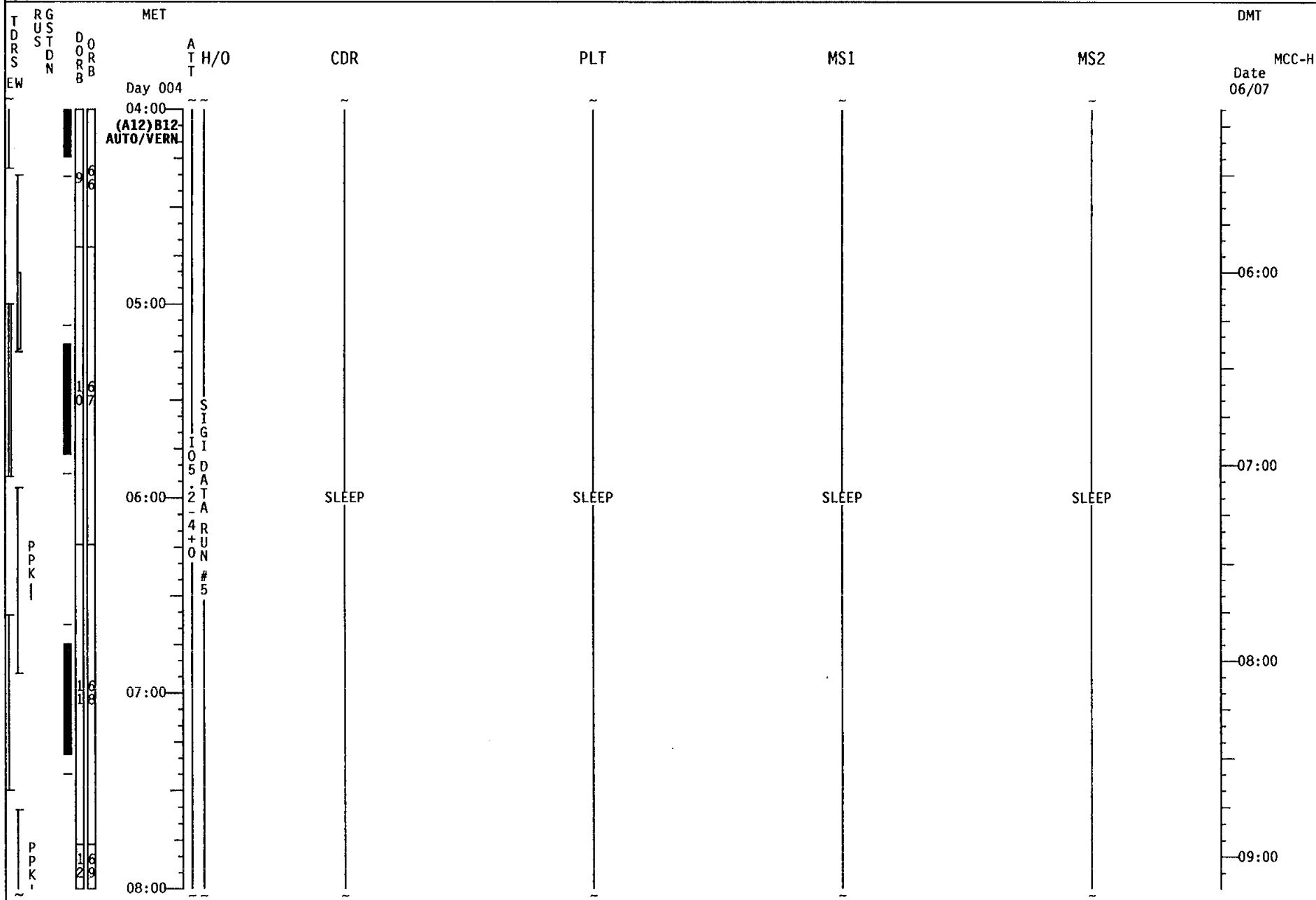
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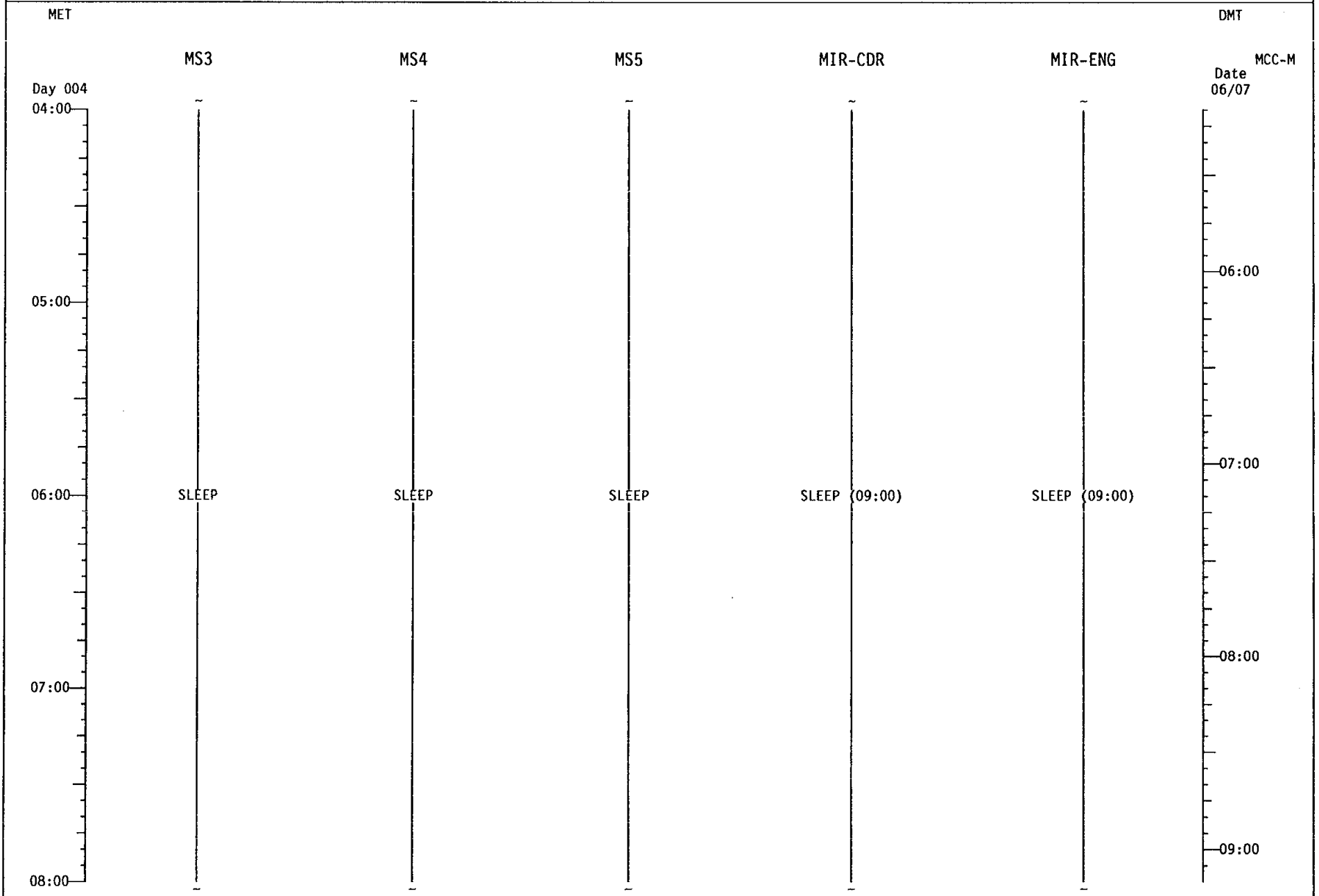
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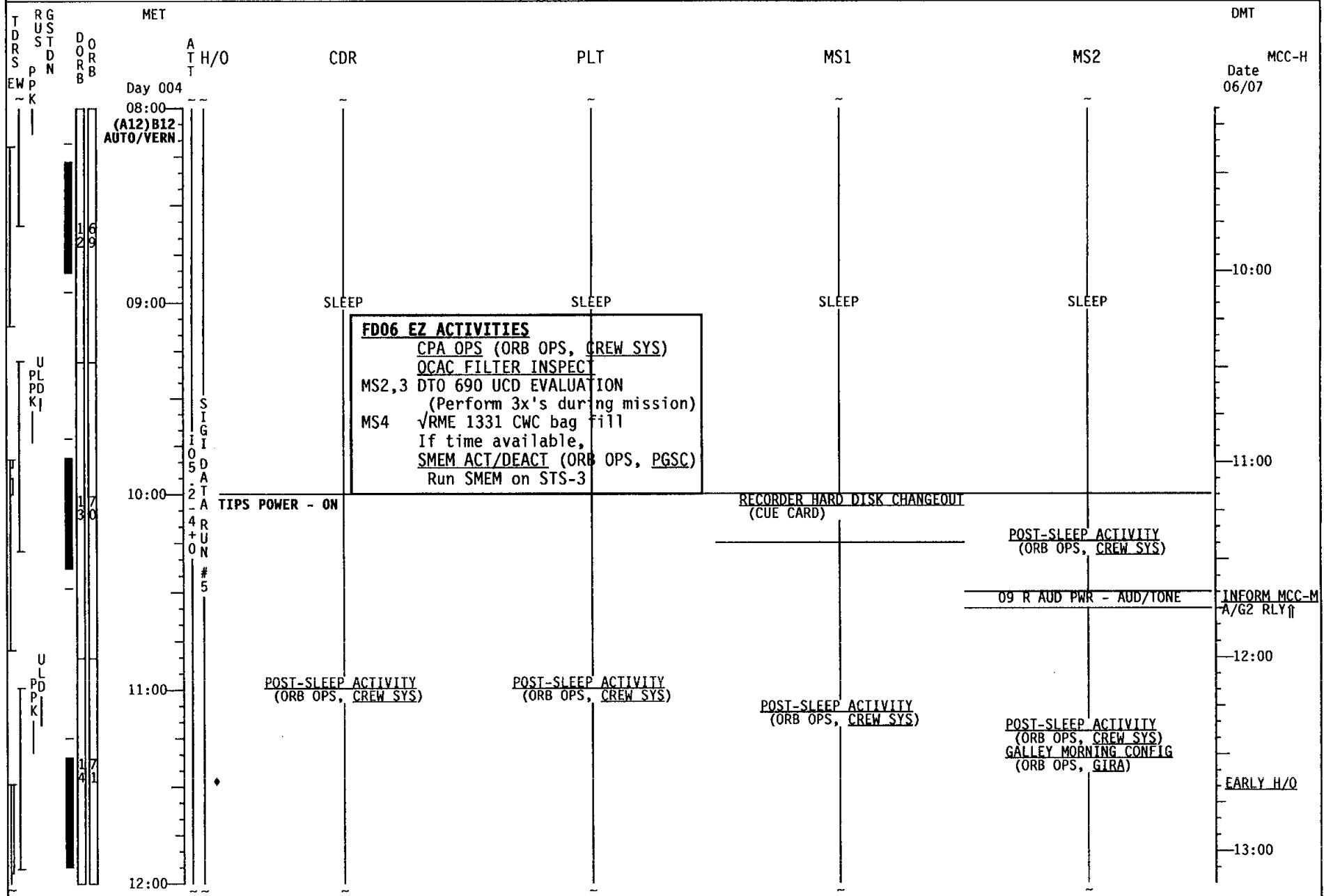
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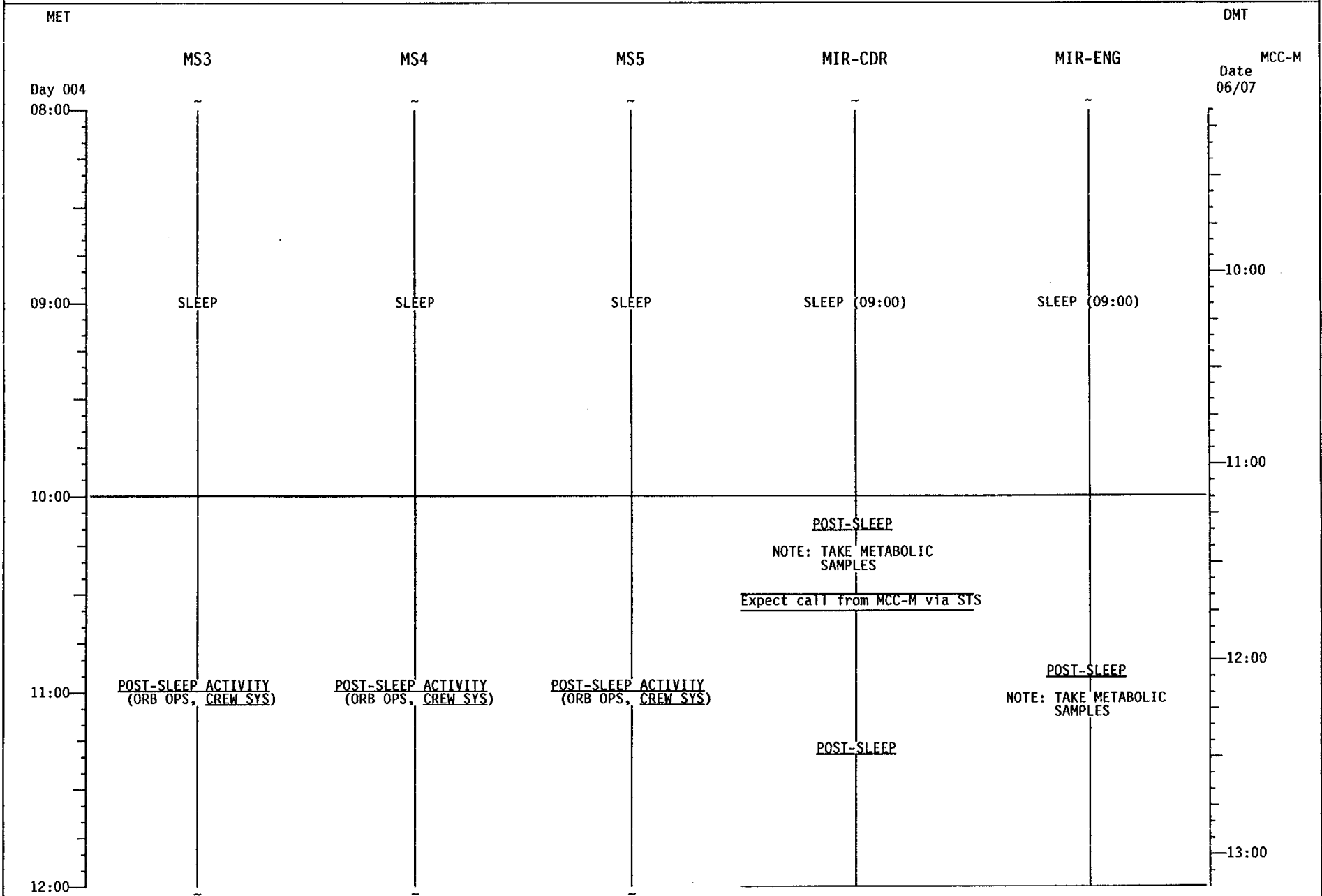
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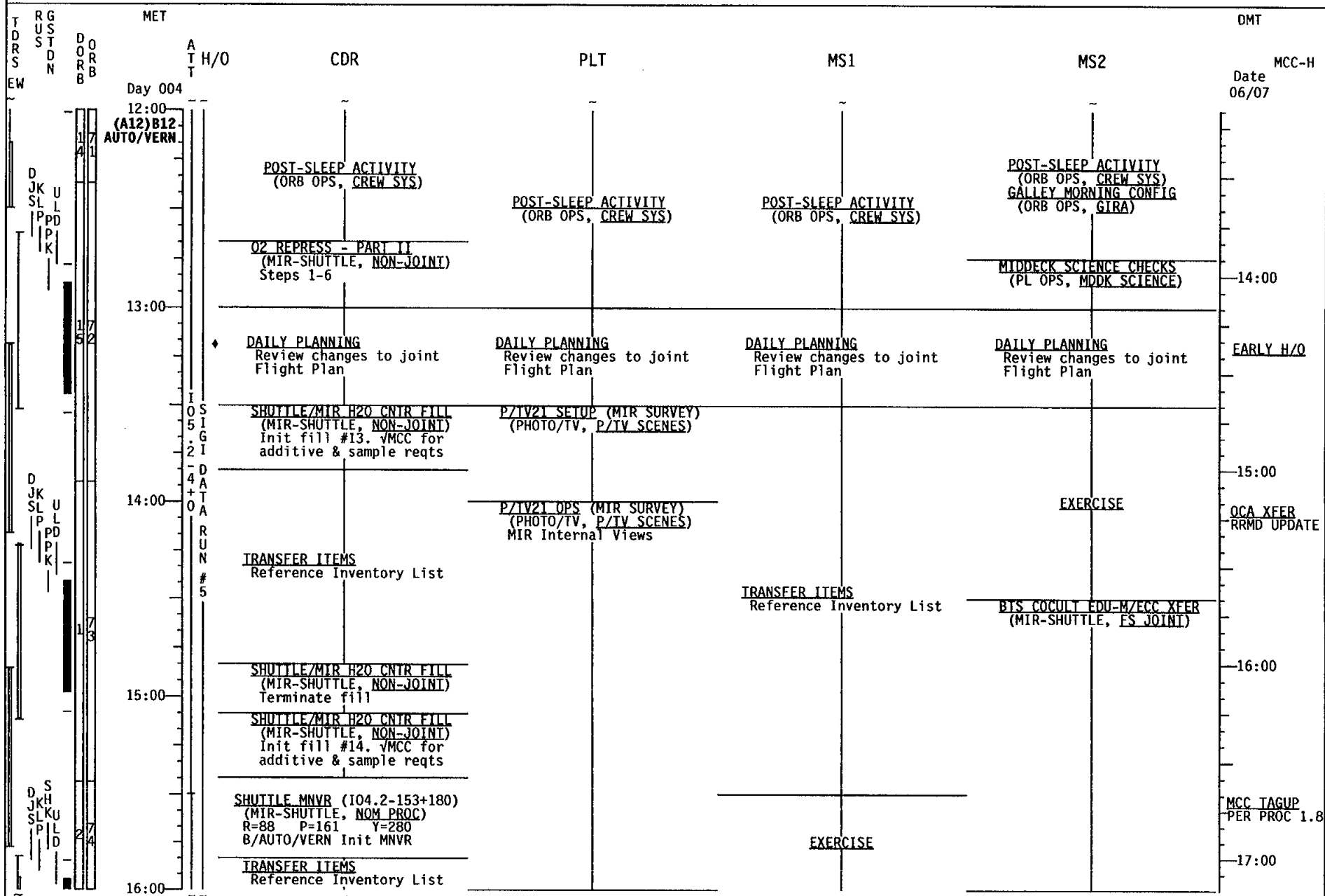
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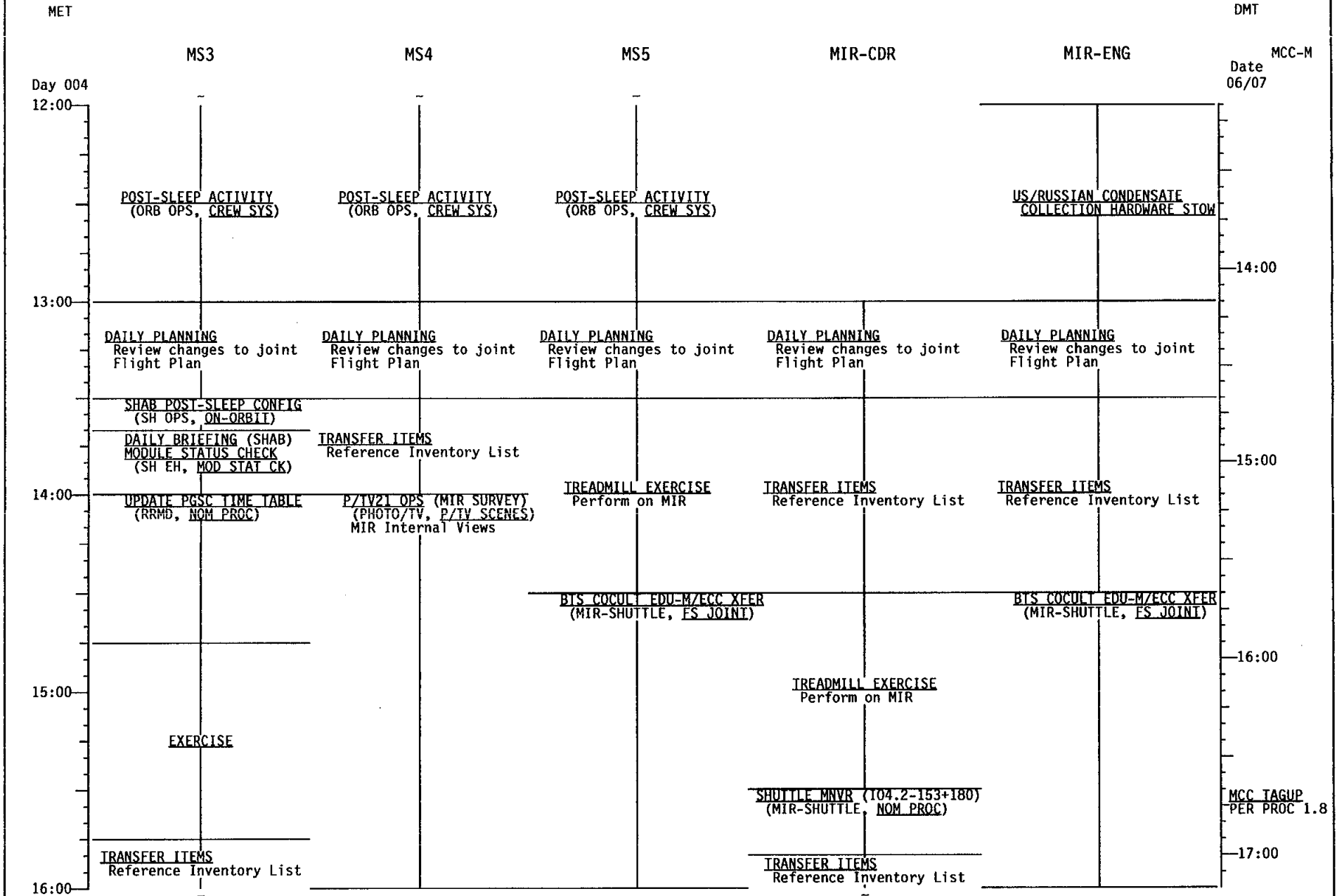
STS-91 (FD 06)



STS-91 (FD 06)



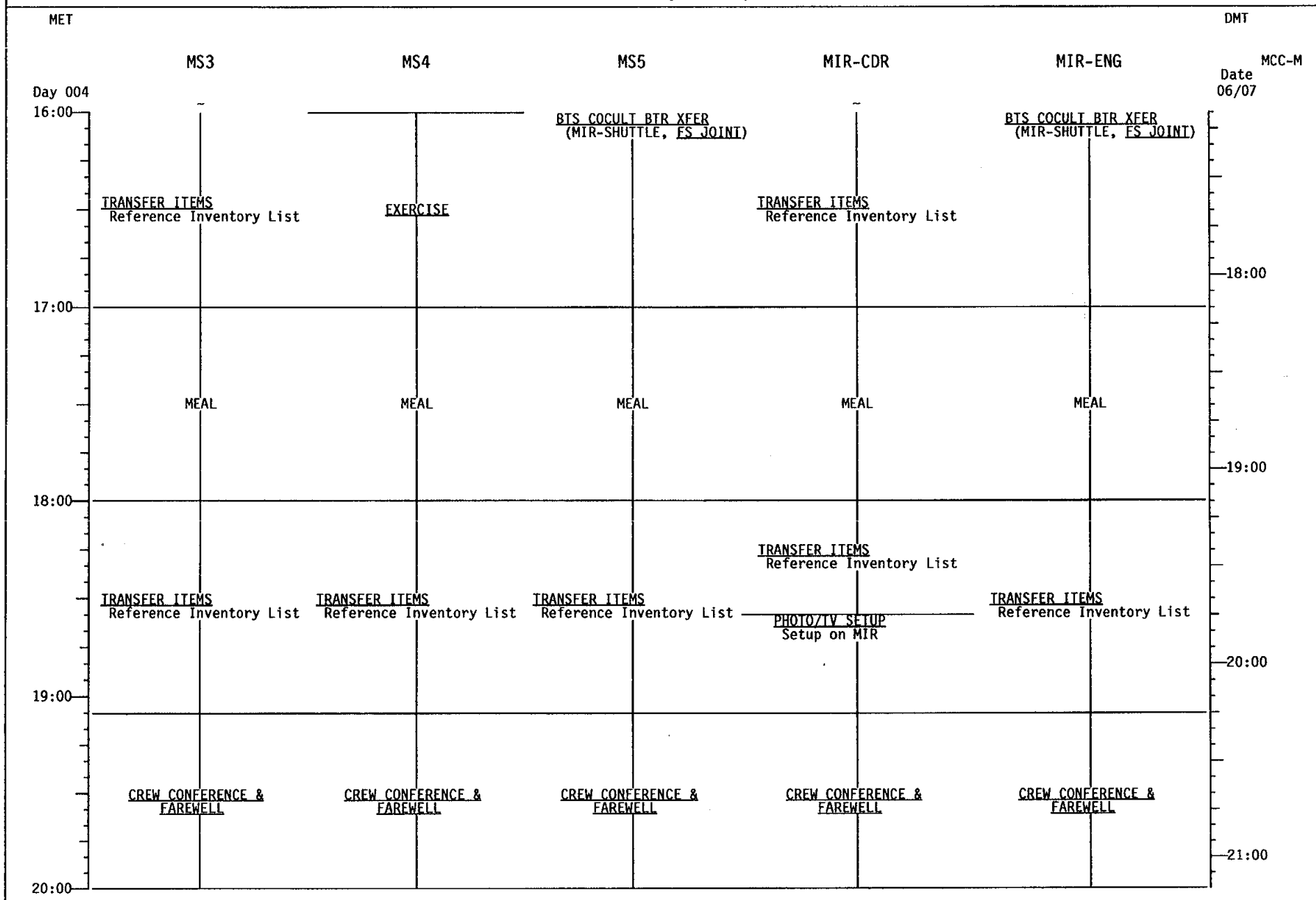
STS-91 (FD 06)



STS-91 (FD 06)

	MET	CDR	PLT	MS1	MS2	DMT
Date	MCC-H					Date
06/07	06/07					06/07
<div style="font-size: small; text-align: center;"> TDRS RG UST DN EW </div> <div style="font-size: small; text-align: center;"> DORRB 2 7 4 </div> <div style="font-size: small; text-align: center;"> SH D J K S P L K D L U D L U D L U </div> <div style="font-size: small; text-align: center;"> SH D J K S P L K D L U D L U </div>	Day 004 16:00 (A12)B12 AUTO/VERN 17:00 18:00 19:00 20:00	A T H/O TRANSFER ITEMS Reference Inventory List SHUTTLE/MIR H2O CNTR FILL (MIR-SHUTTLE, NON-JOINT) Terminate fill MEAL IMU ALIGN - S TRK (ORB OPS) TRANSFER ITEMS Reference Inventory List 02 REPRESS - PART II (MIR-SHUTTLE, NON-JOINT) Steps 8 & 10 CREW CONFERENCE & FAREWELL KU avail 19:05-20:00	PLT TRANSFER ITEMS Reference Inventory List MEAL TRANSFER ITEMS Reference Inventory List P/TV22 SETUP (MIR PAO) (PHOTO/TV, P/TV SCENES) CREW CONFERENCE & FAREWELL	MS1 EXERCISE TRANSFER ITEMS Reference Inventory List MEAL RECORDER HARD DISK CHANGEOUT (CUE CARD) TRANSFER ITEMS Reference Inventory List CREW CONFERENCE & FAREWELL	MS2 BTS COCULT BTR XFER (MIR-SHUTTLE, ES JOINT) MEAL CO2 ABSORBER REPLACEMENT (CUE CARD) TRANSFER ITEMS Reference Inventory List CREW CONFERENCE & FAREWELL	DMT UPLINK AUTO FC PURGE 18:00 19:00 20:00 21:00 TV (TDRW) CREW CNTL -MIR

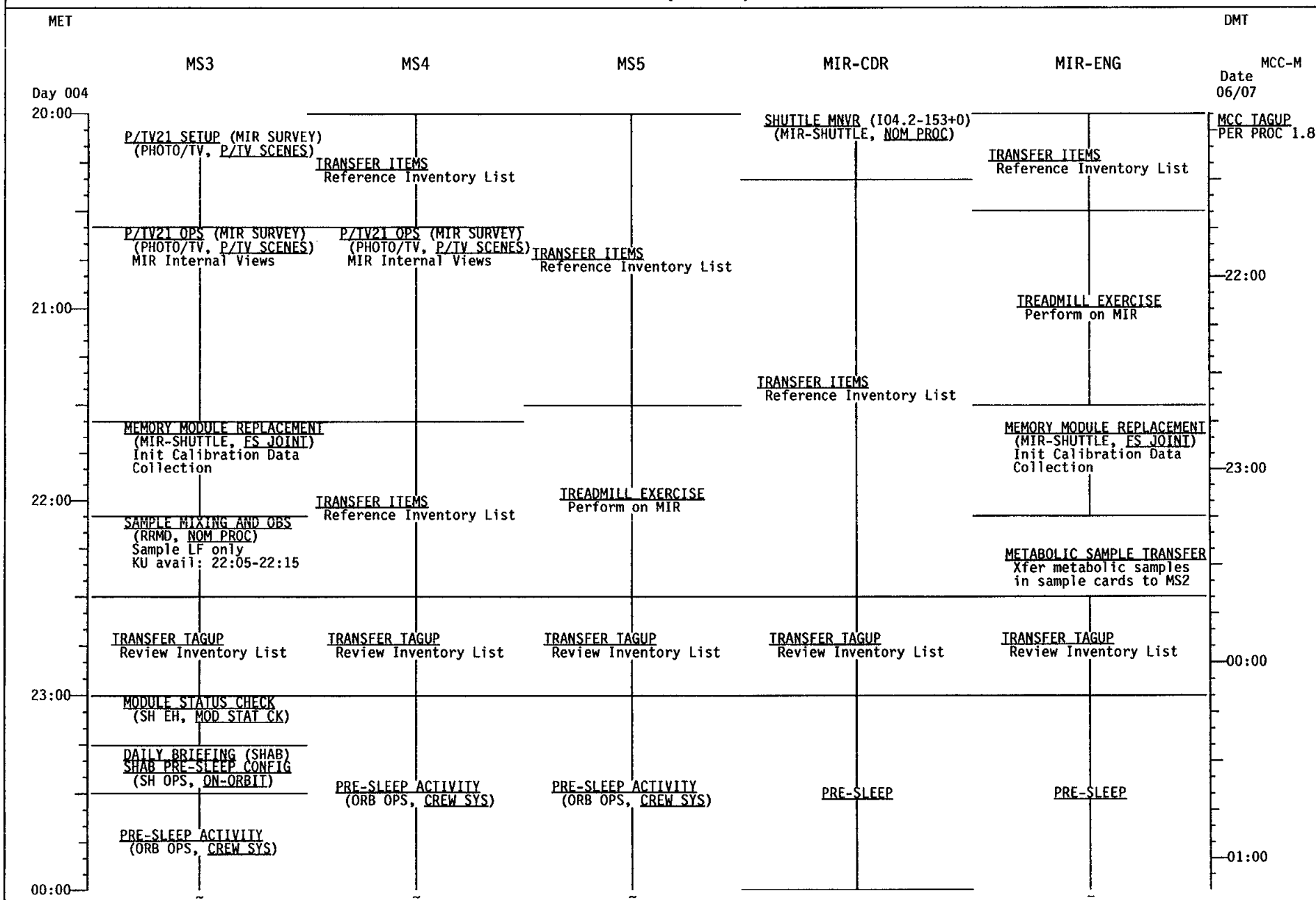
STS-91 (FD 06)



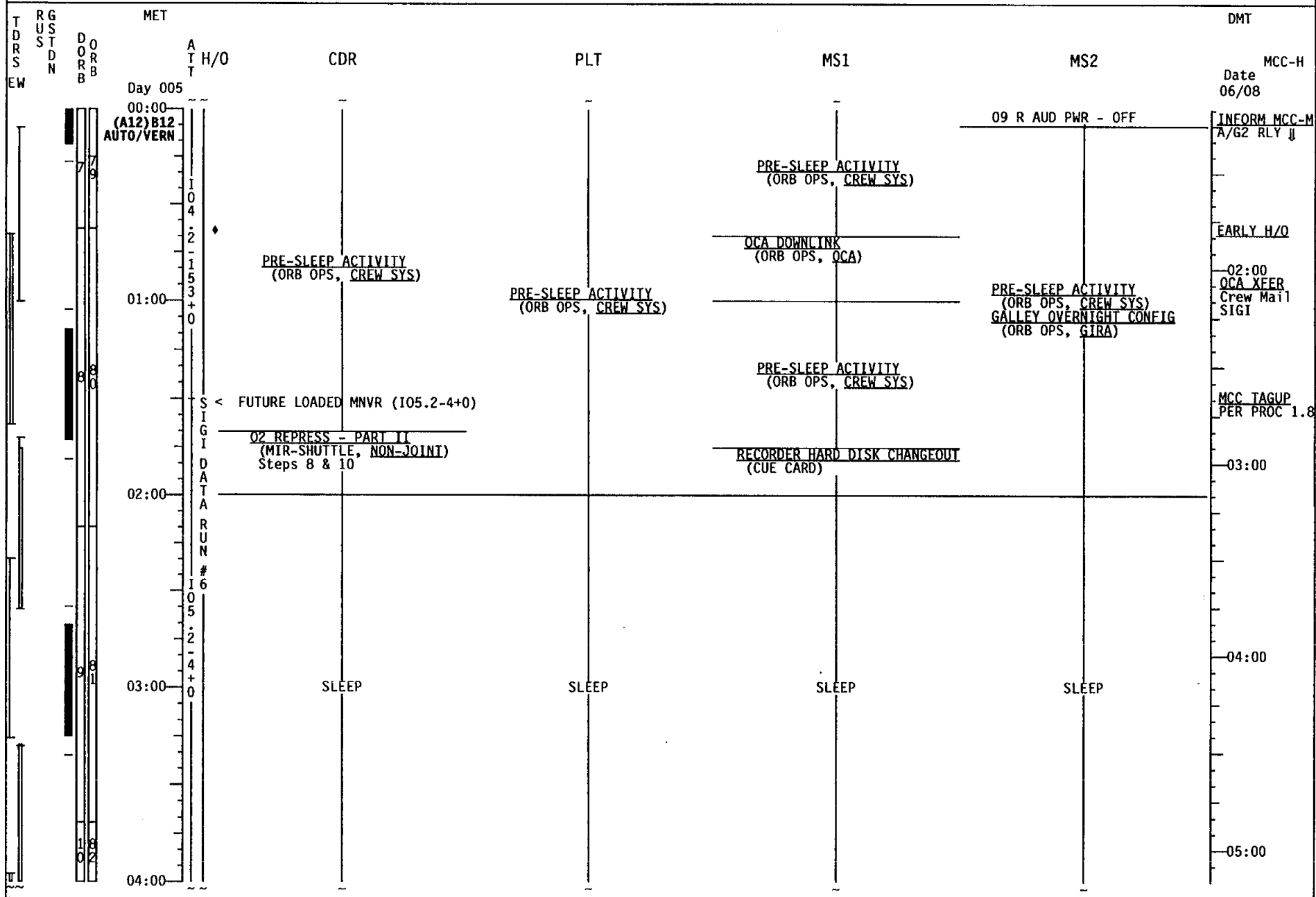
STS-91 (FD 06)

	MET	CDR	PLT	MS1	MS2	DMT
	Day 004					Date 06/07
TDRS RG UST D N EW DOR B SH JK S SH K S I G I D A T A R U N # 6 7 9	20:00 (A12)B12 AUTO/VERN 21:00 22:00 23:00 00:00	SHUTTLE MNVR (I04.2-153+0) (MIR-SHUTTLE, NOM PROC) R=223 P=113 Y=317 B/AUTO/VERN Init MNVR EXERCISE PCS 1(2) CONFIG Sys 2 (ORB OPS, ECLS) CABIN TEMP CNTL RECONFIG MD44F Pin CAB TEMP CNTL actuator link to secondary actuator L1 CABIN TEMP CNTLR - 2 SHUTTLE/MIR H2O CNTR FILL (MIR-SHUTTLE, NON-JOINT) Init fill #15. VMCC for additive & sample reqts TRANSFER TAGUP Review Inventory List LOAD FUTURE MNVR (I05.2-4+0) R=273 P=326 Y=44 B/AUTO/VERN (5/01:30) Init MNVR VIDEO TELECONFERENCE (ORB OPS, OCA) Private Medical Conf SHUTTLE/MIR H2O CNTR FILL (MIR-SHUTTLE, NON-JOINT) Terminate fill PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	TRANSFER ITEMS Reference Inventory List EXERCISE HEATER RECONFIG-CONFIG B (ORB OPS, EPS) RCS REG RECONFIG(ORB OPS, RCS) WCS HOSE BLOCK FILTER CHECK [A] TRANSFER TAGUP Review Inventory List PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS) VIDEO TELECONFERENCE (ORB OPS, OCA) Private Family Conf PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	FILTER CLEANING (IFM, SCHEDULED MAINT) UPDATE PGSC TIME TABLE (RRMD, NOM PROC) SAMPLE MIXING AND OBS (RRMD, NOM PROC) Sample LD only KU avail: 21:30-21:50 LONG/SHORT SAMPLE DEACT (RRMD, NOM PROC) If needed for LD KU avail: 21:50-22:15 TRANSFER TAGUP Review Inventory List <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> A NOTE Hose must be stowed in cradle to take switch to AUTO INHIBIT CRADLE - AUTO INHIBIT WCS hose block filter CRADLE - AUTO </div> PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	O2 REPRESS - PART II (MIR-SHUTTLE, NON-JOINT) Steps 1-6 TRANSFER ITEMS Reference Inventory List DATA COLLECTION TERM DATA DOWNLINK (ORB OPS, DTO 700-15) HARD DRIVE SWAP (ORB OPS, DTO 700-15) DATA COLLECT INIT/AUTO INIT (ORB OPS, DTO 700-15) MIDDECK SCIENCE CHECKS (PL OPS, MDDK SCIENCE) METABOLIC SAMPLE TRANSFER Receive metabolic samples from MIR-ENG; Stow in LSLE TRANSFER TAGUP Review Inventory List PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS) GALLEY OVERNIGHT CONFIG (ORB OPS, GIRA)	MCC TAGUP PER PROC 1.8 OCA XFER RRMD UPDATE 22:00 EARLY H/O DNLK VIDEO RRMD (LD) 23:00 DNLK VIDEO RRMD (LF) 00:00 EARLY H/O OCA PRIV MED OCA PRIV FAM 01:00

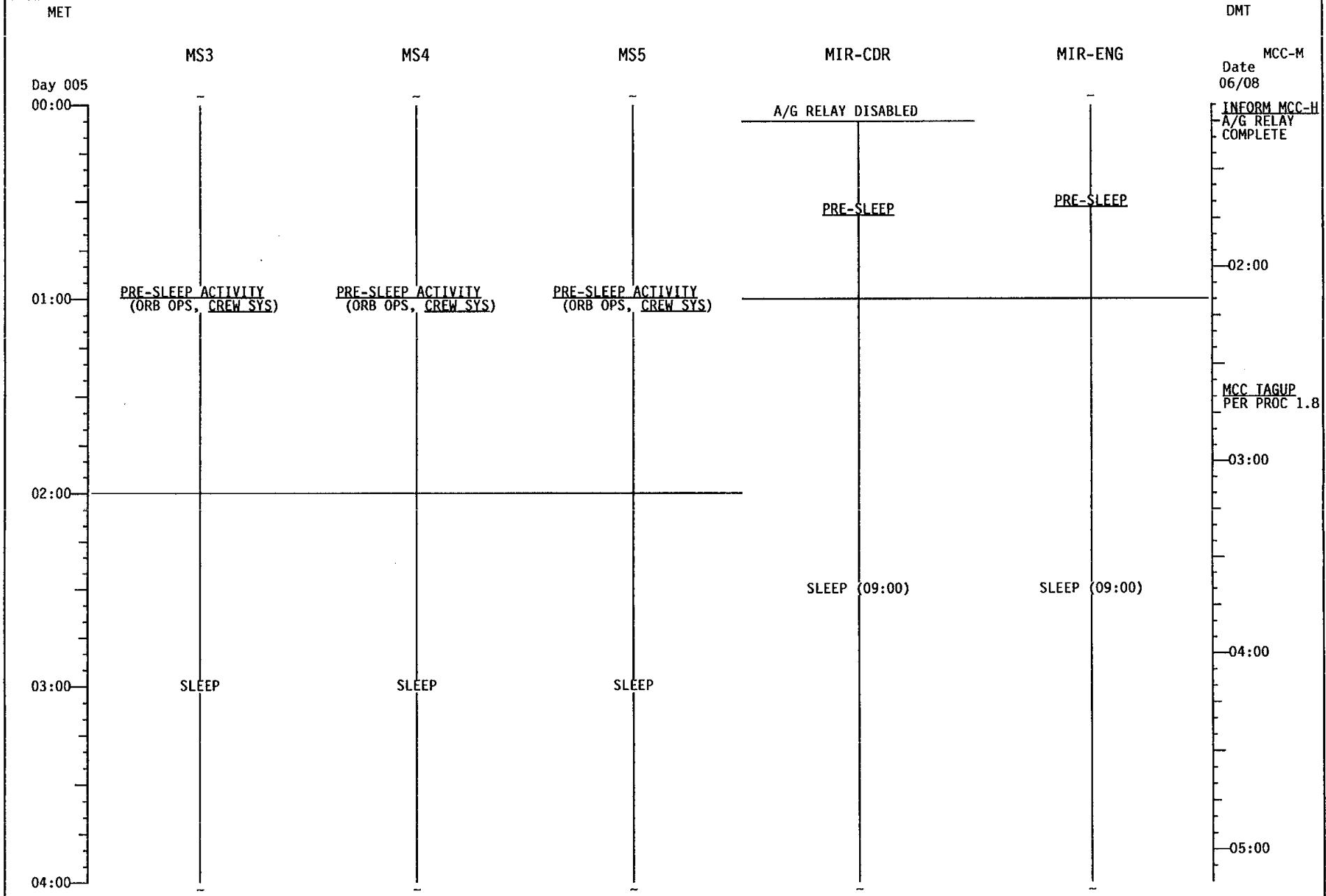
STS-91 (FD 06)



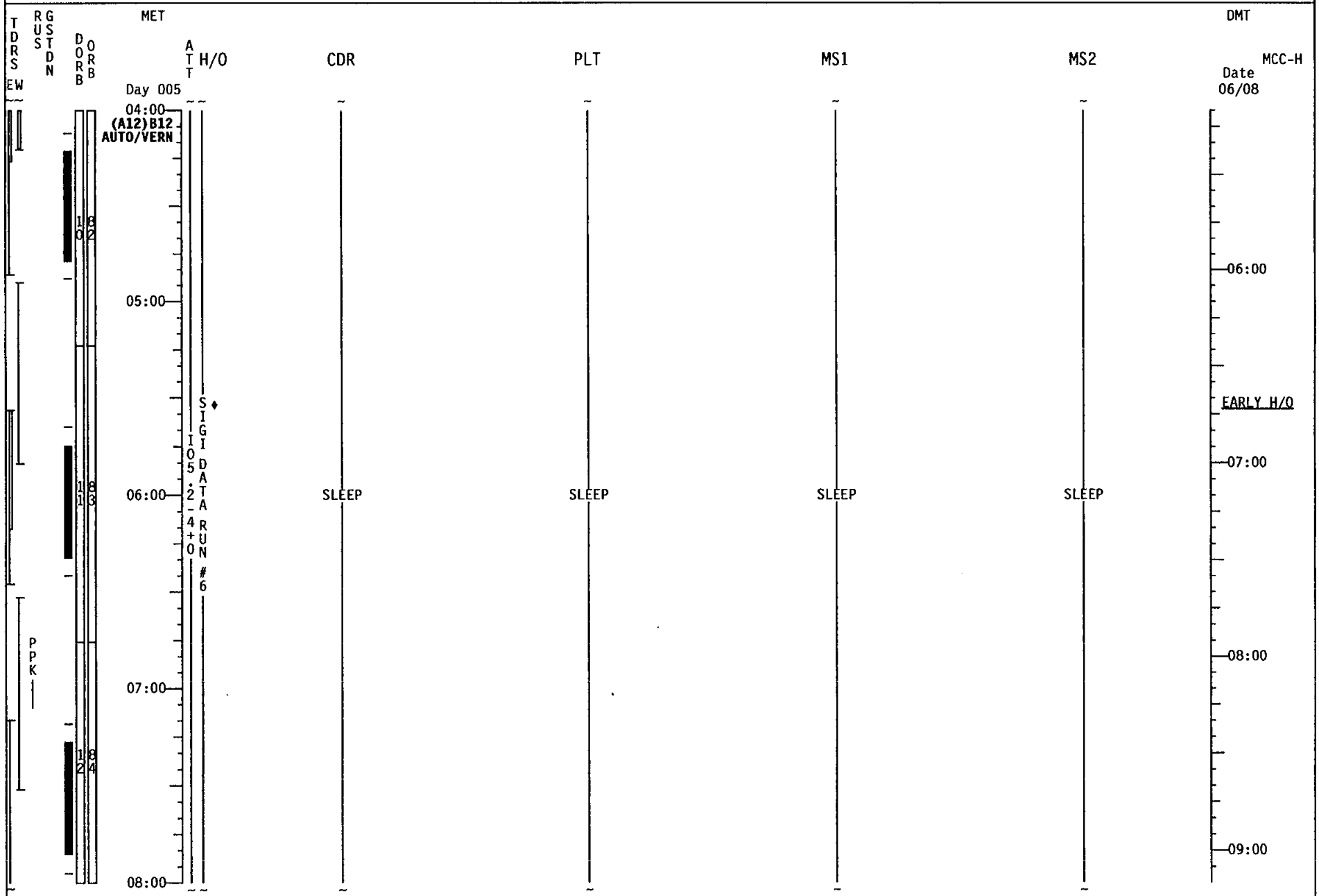
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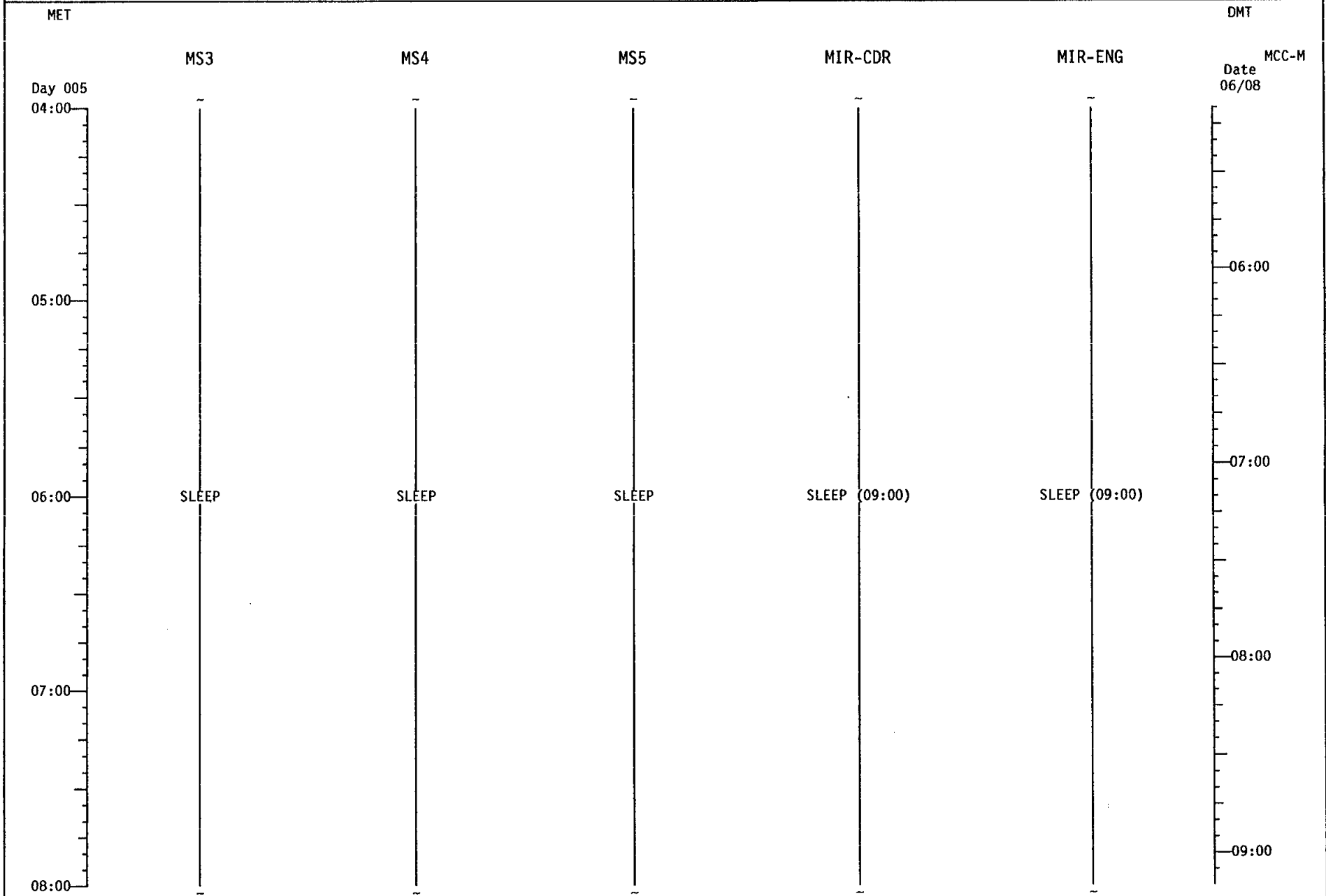
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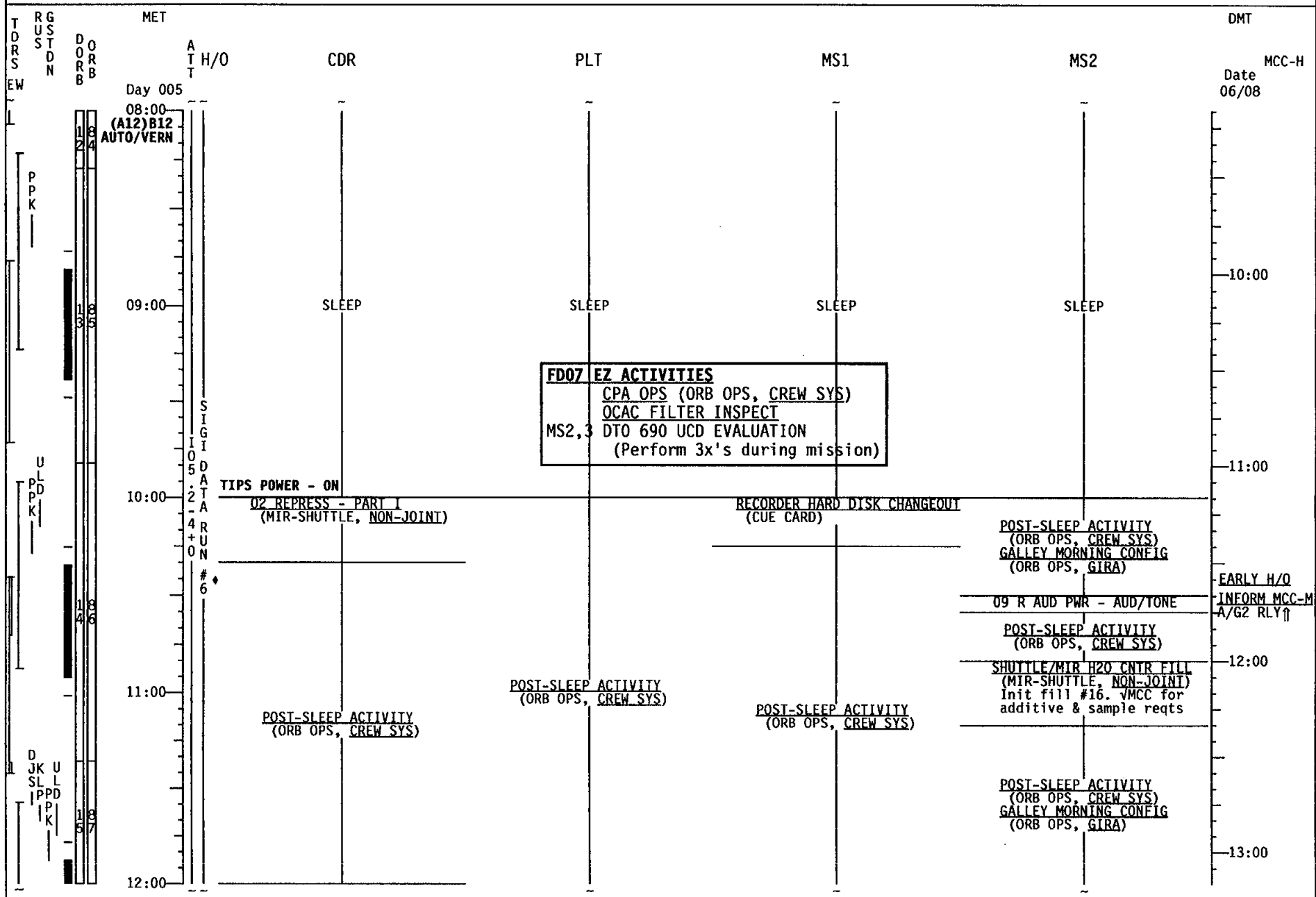
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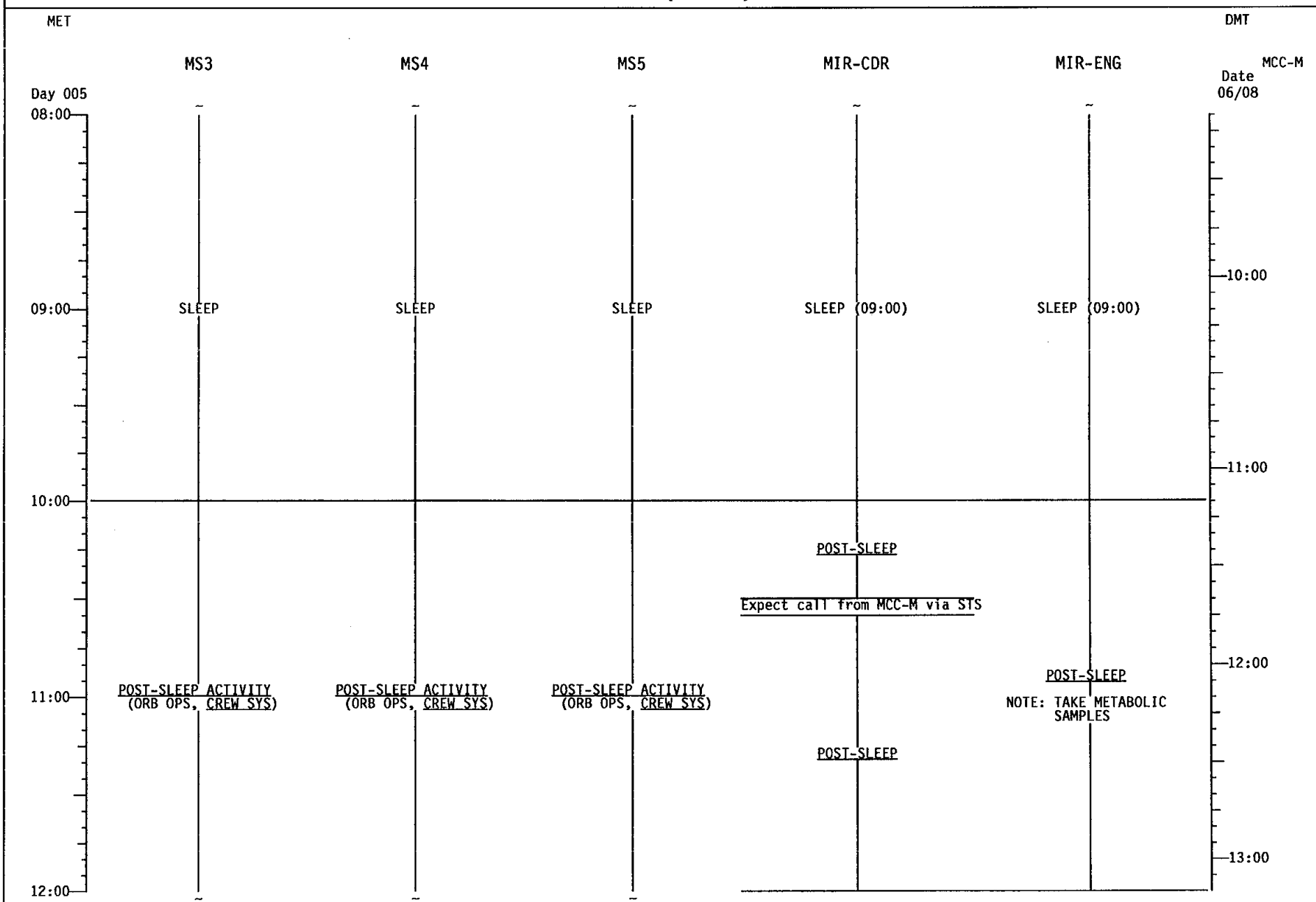
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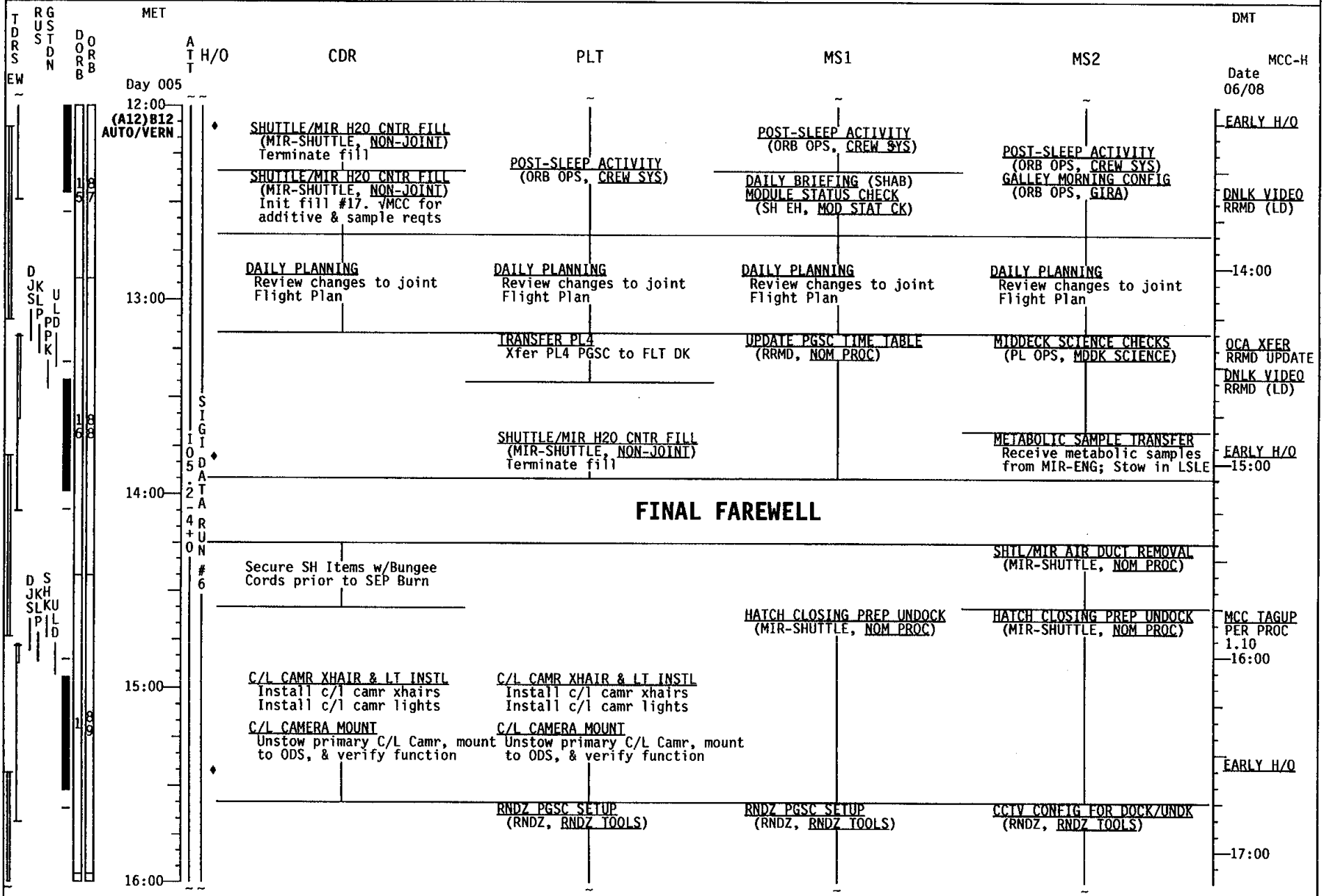
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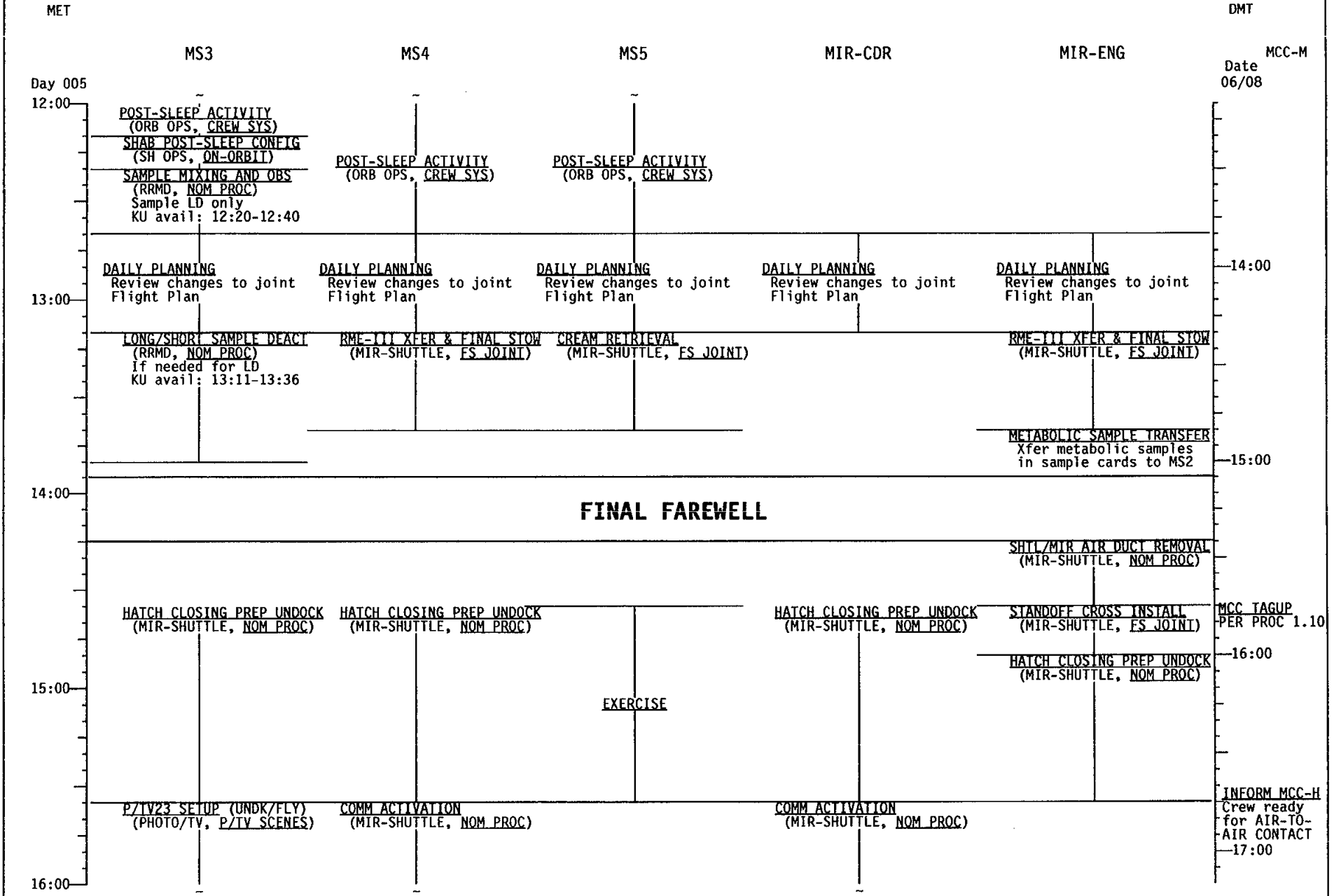
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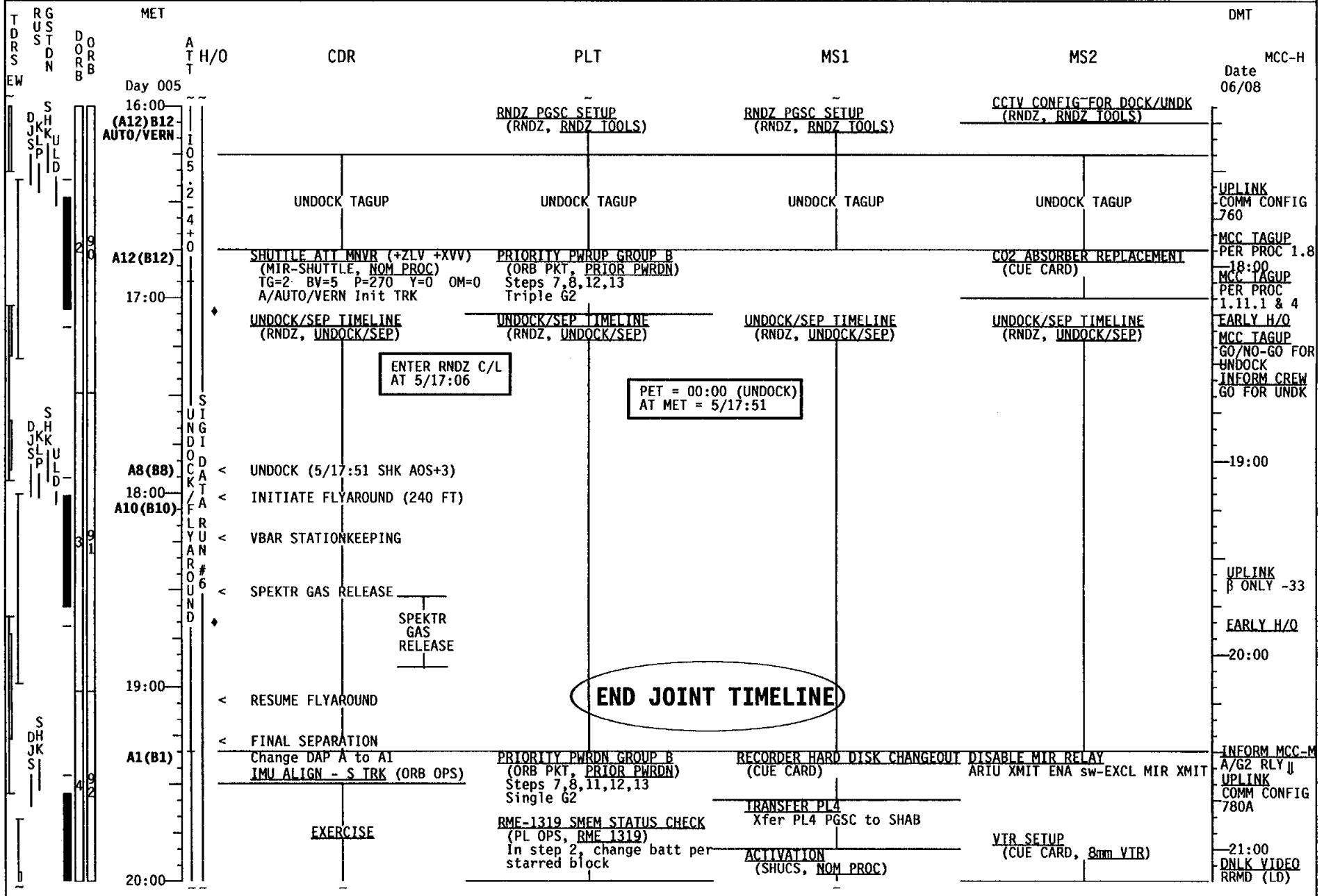
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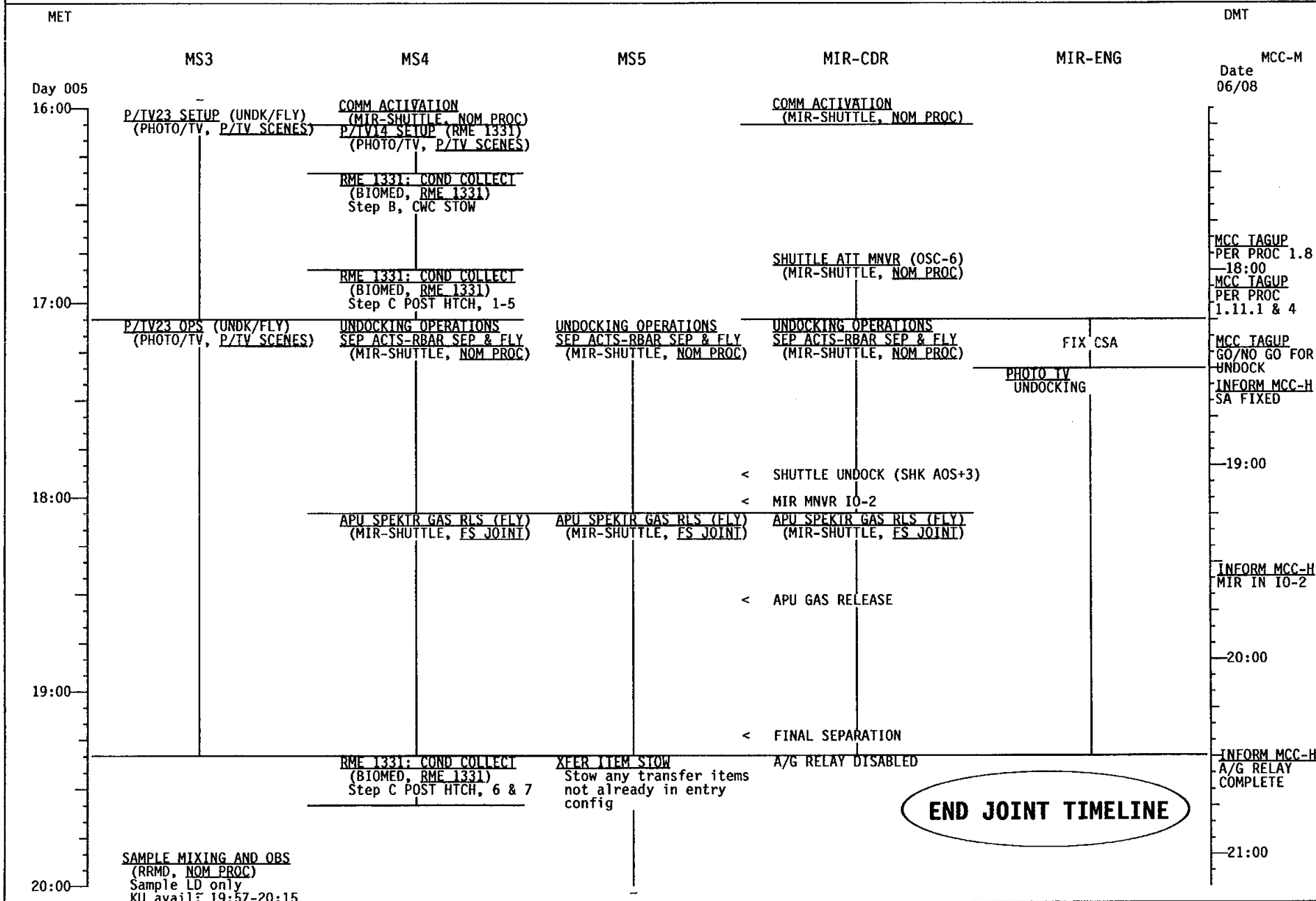
STS-91 (FD 07)



STS-91 (FD 07)

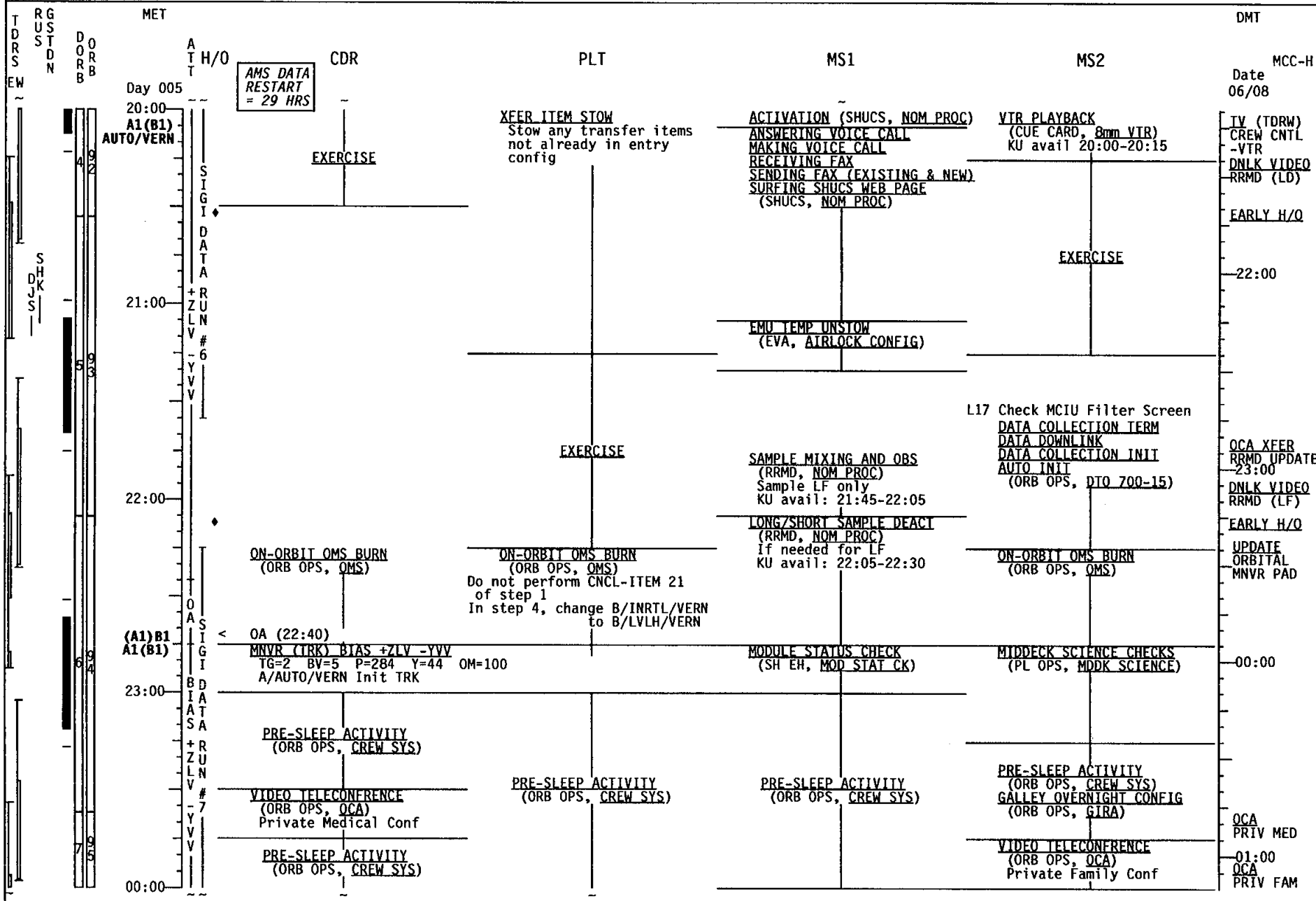


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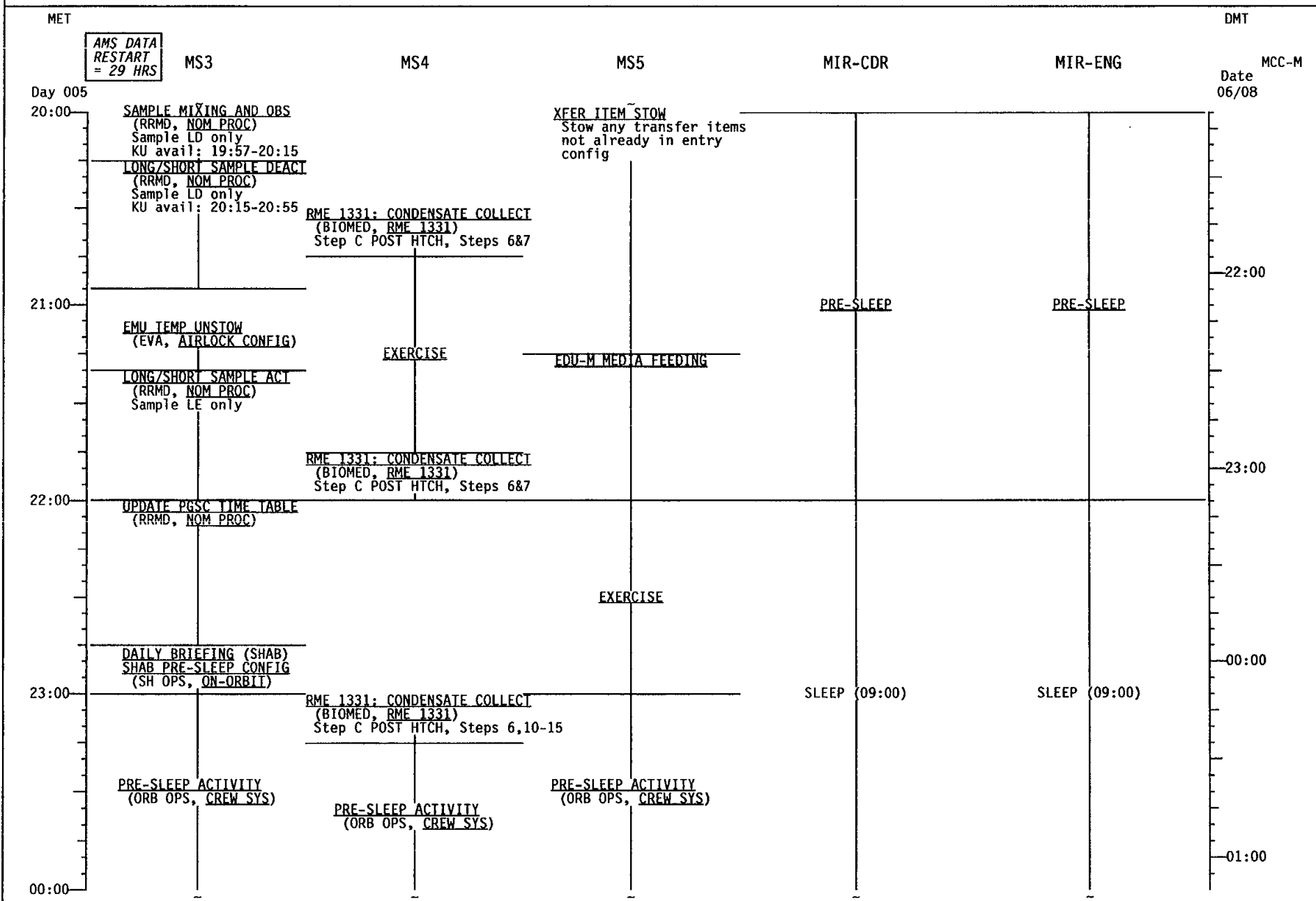


END JOINT TIMELINE

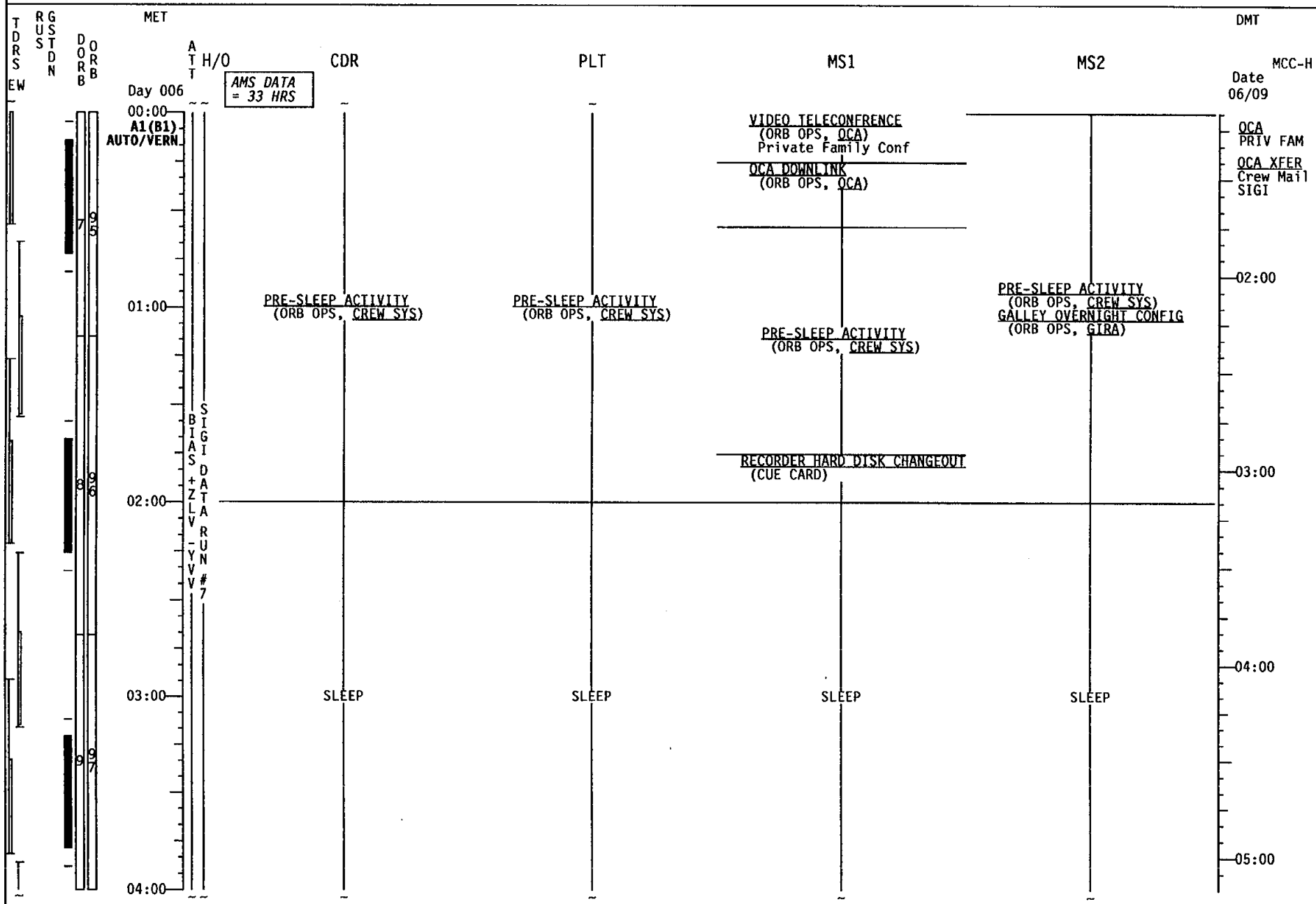
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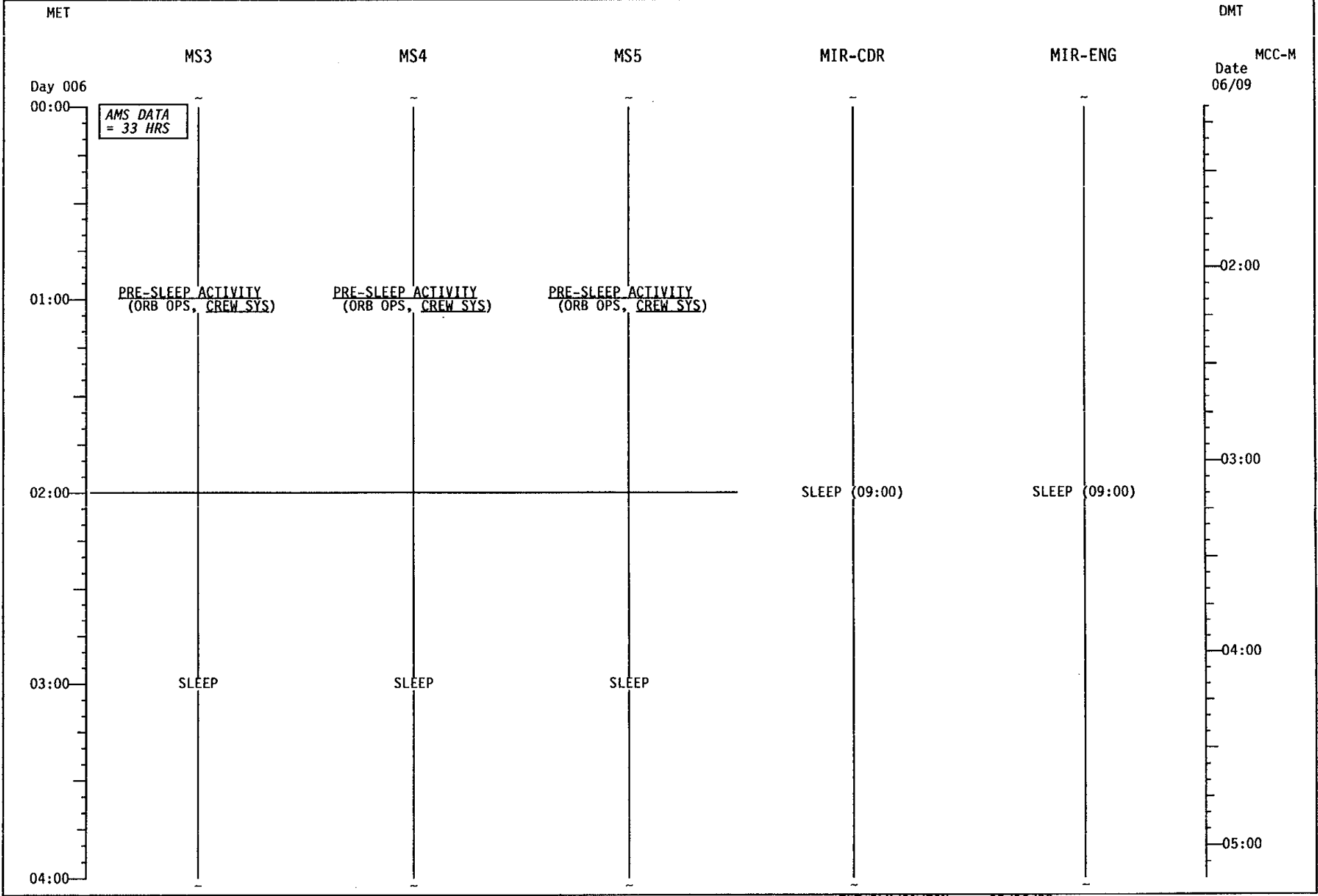
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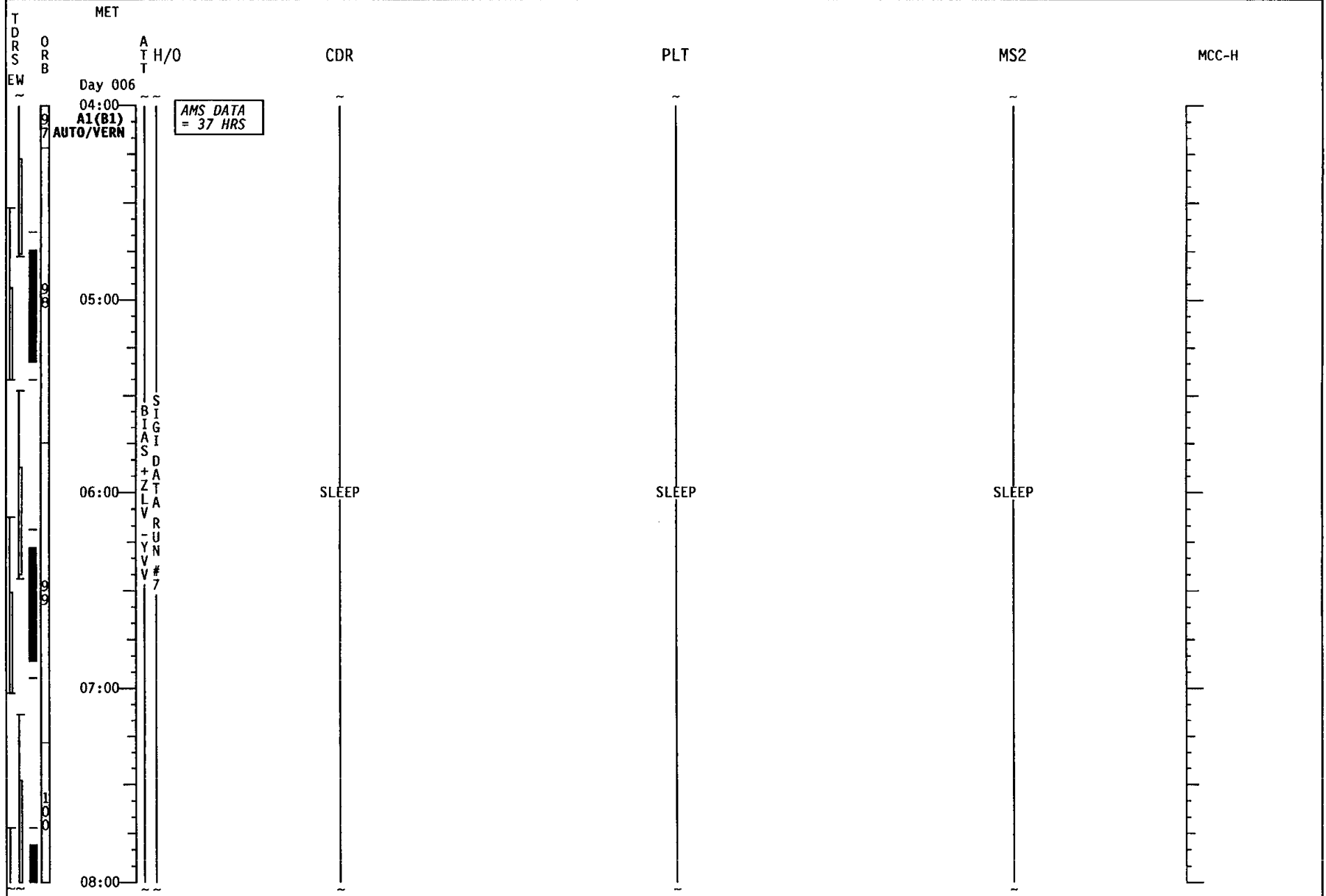
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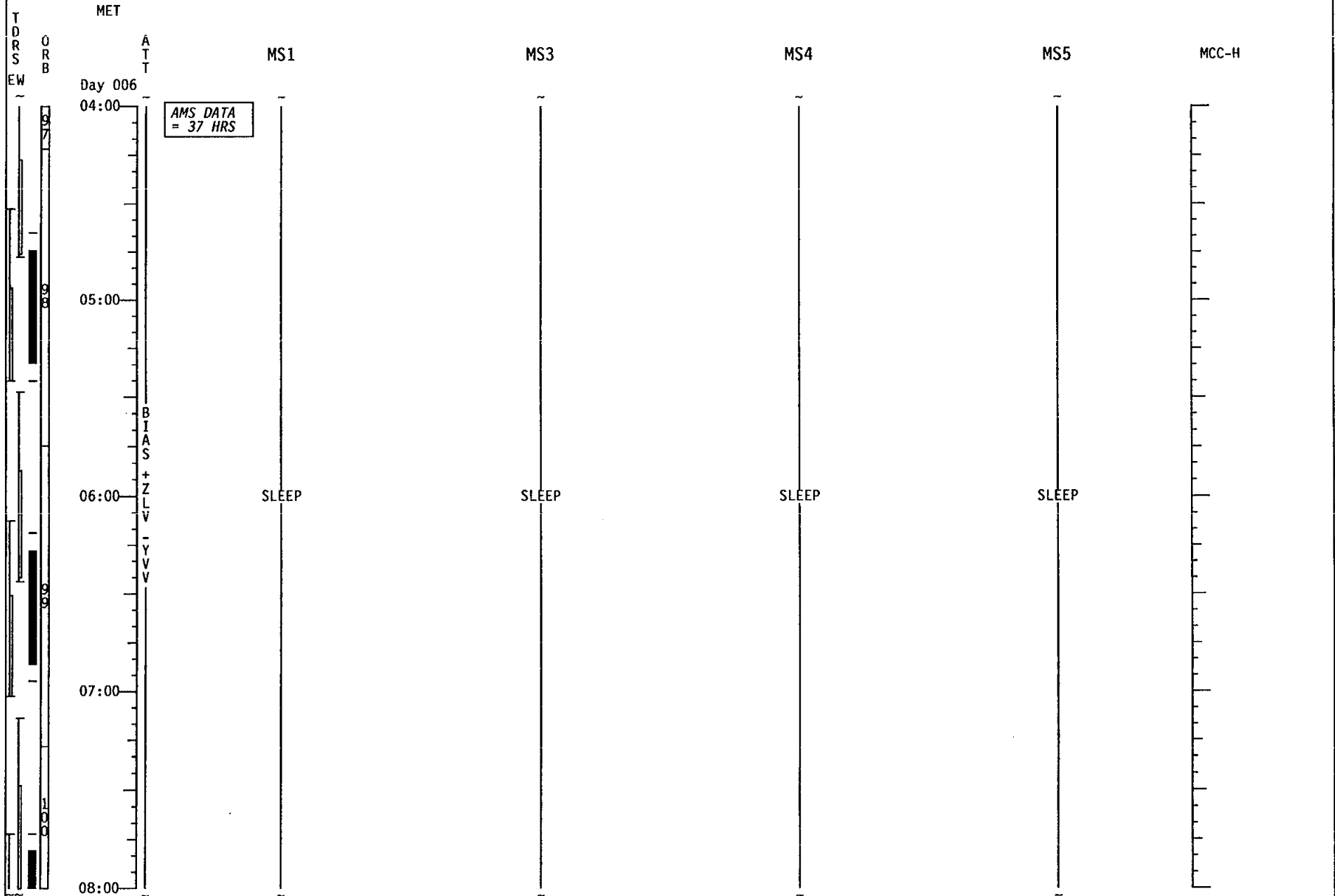
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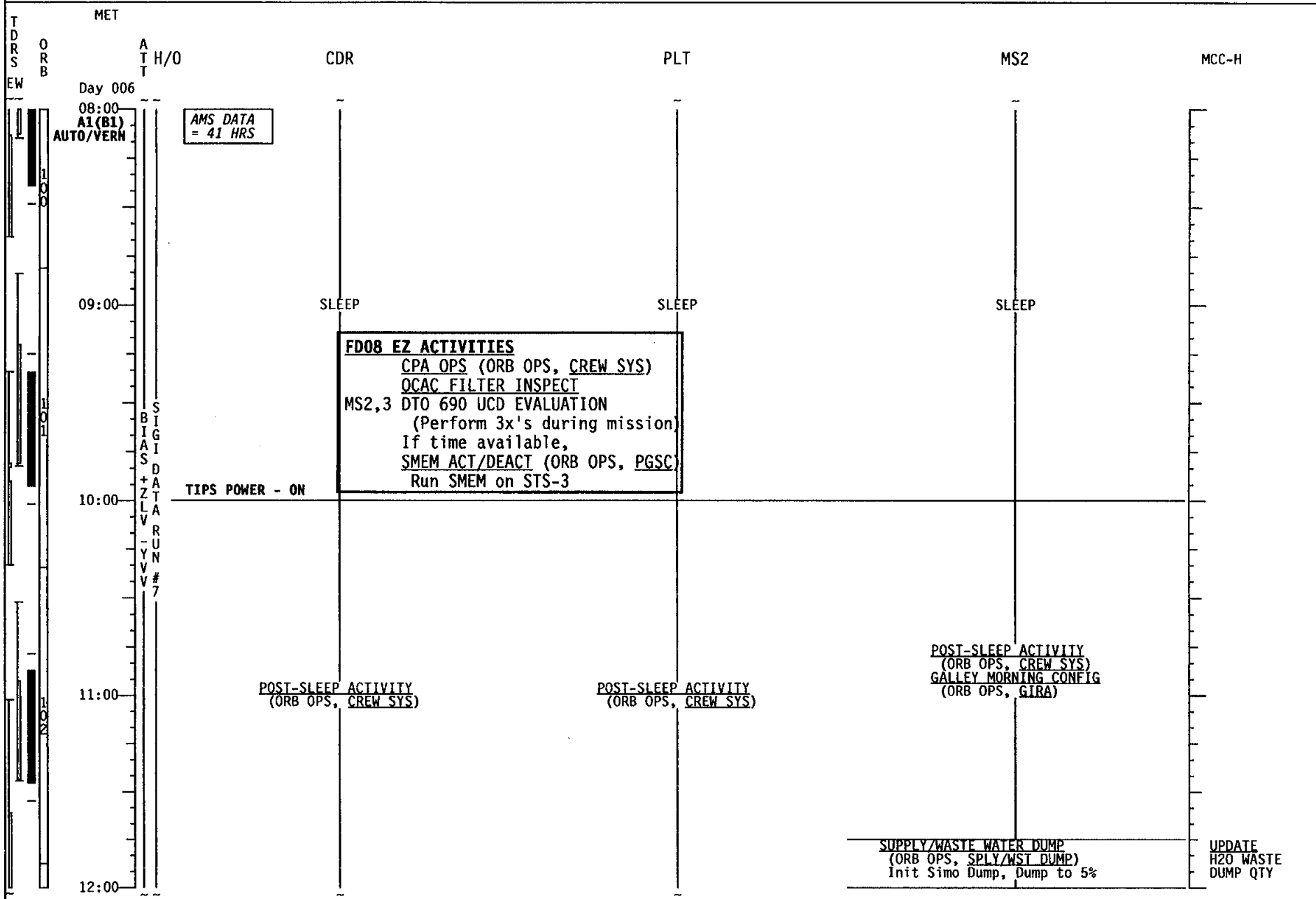
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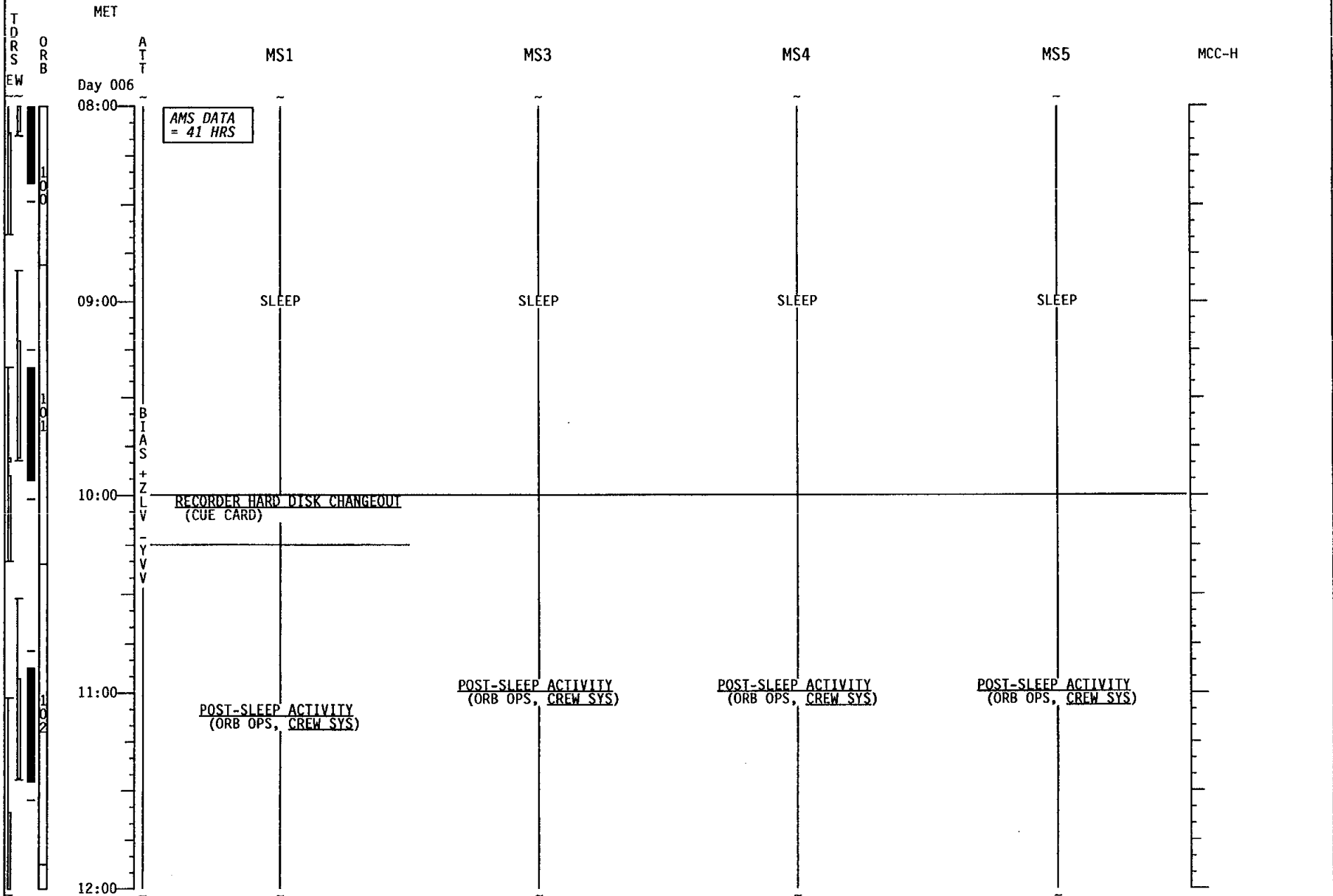
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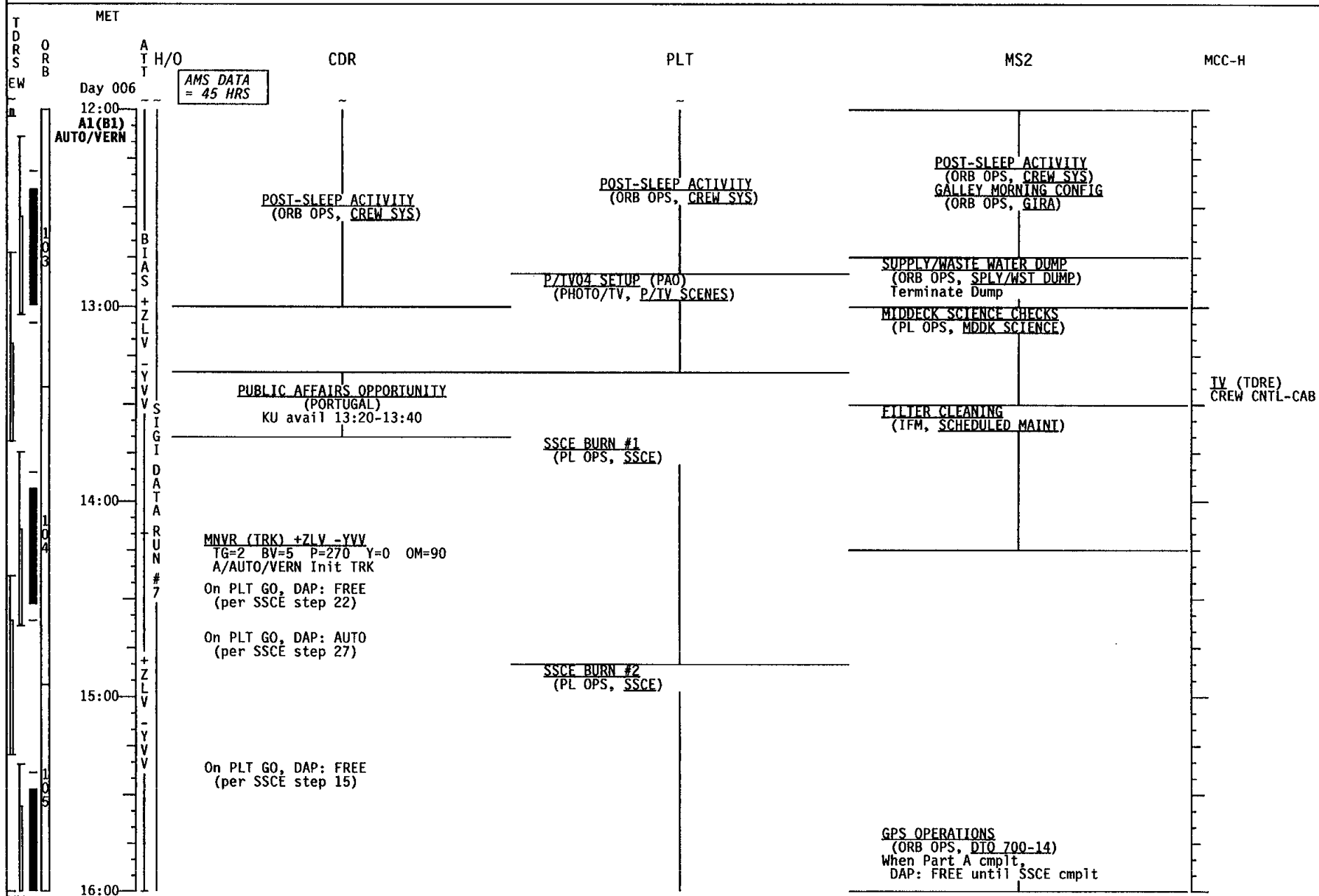
STS-91 (FD 08)



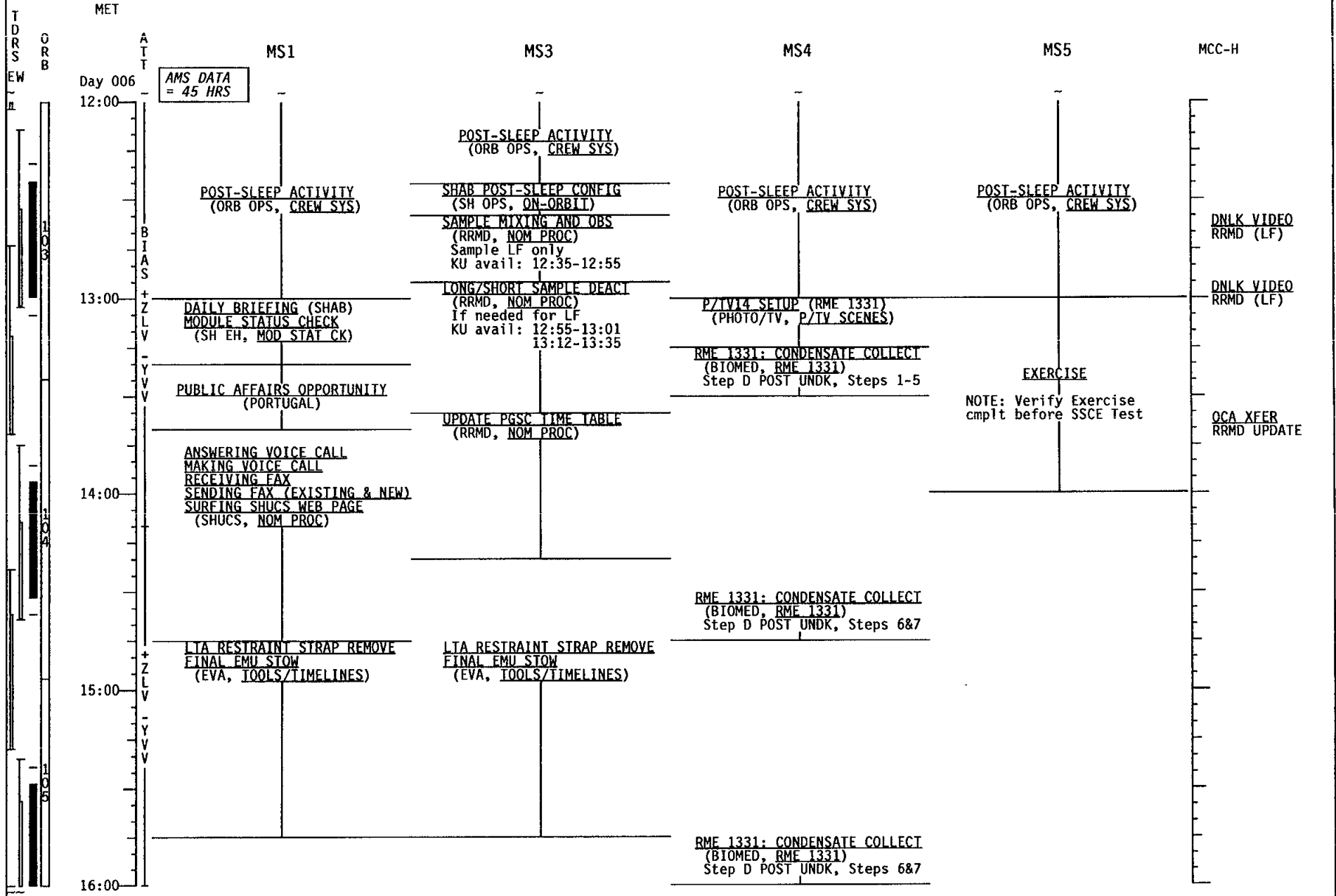
STS-91 (FD 08)



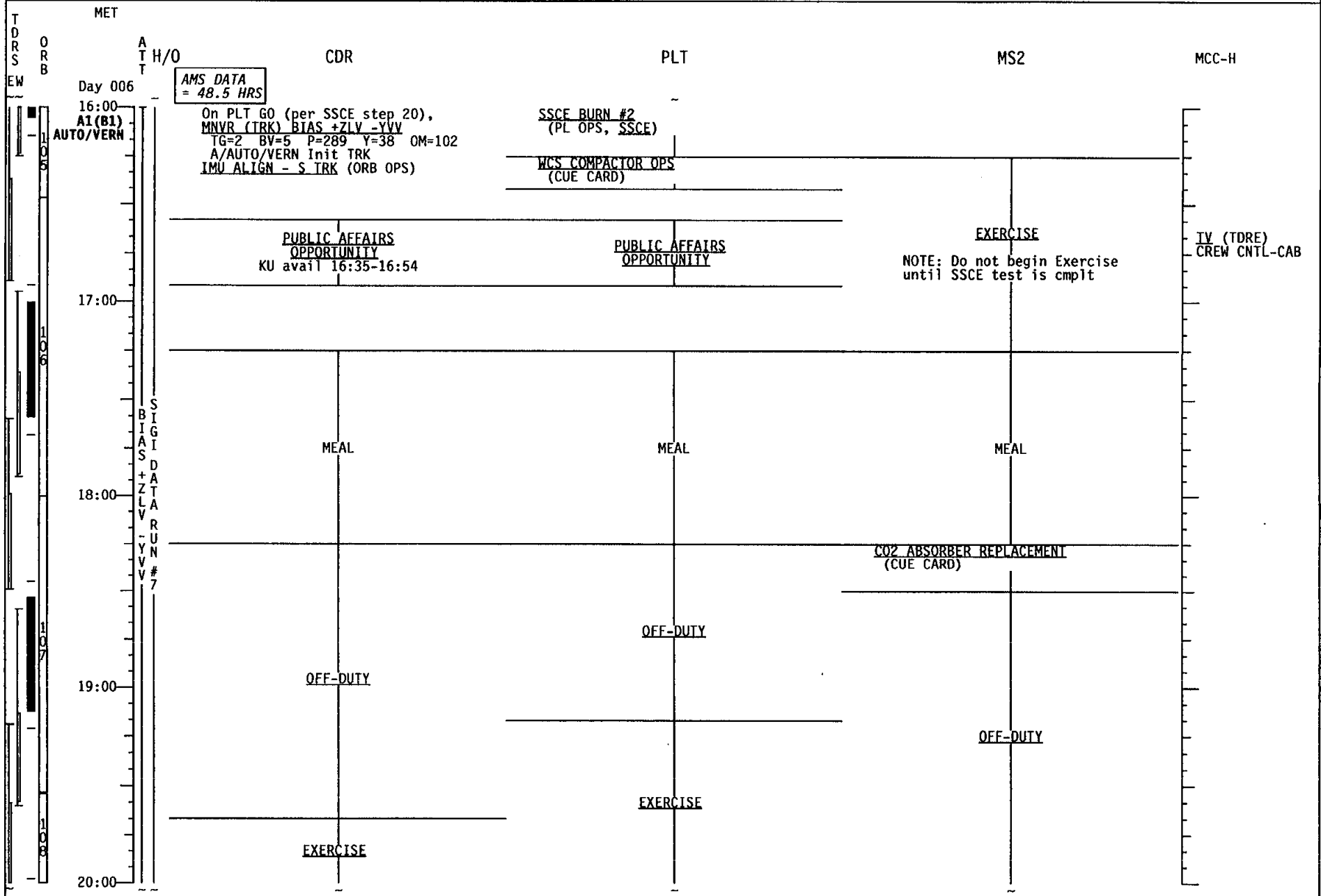
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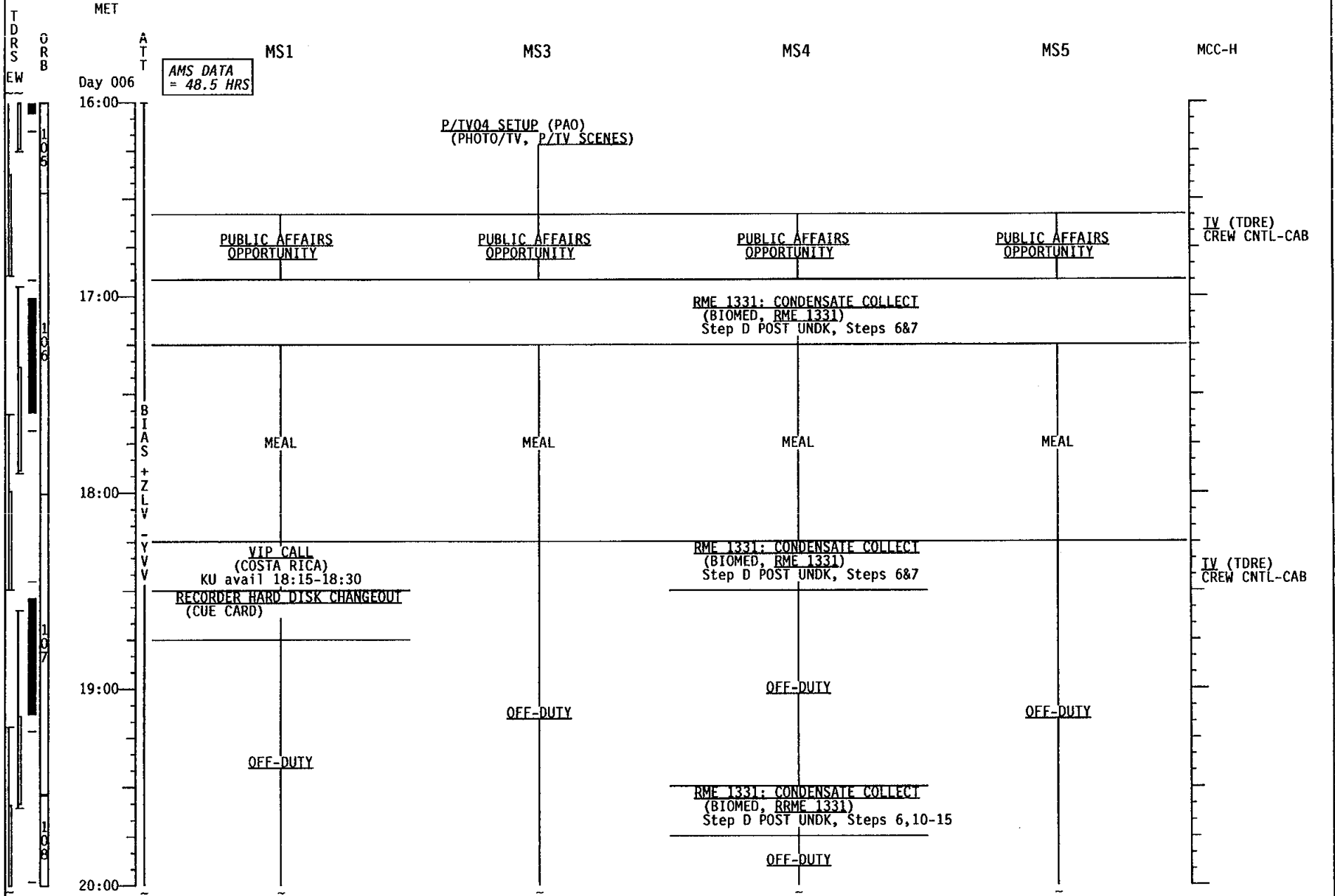
STS-91 (FD 08)



STS-91 (FD 08)

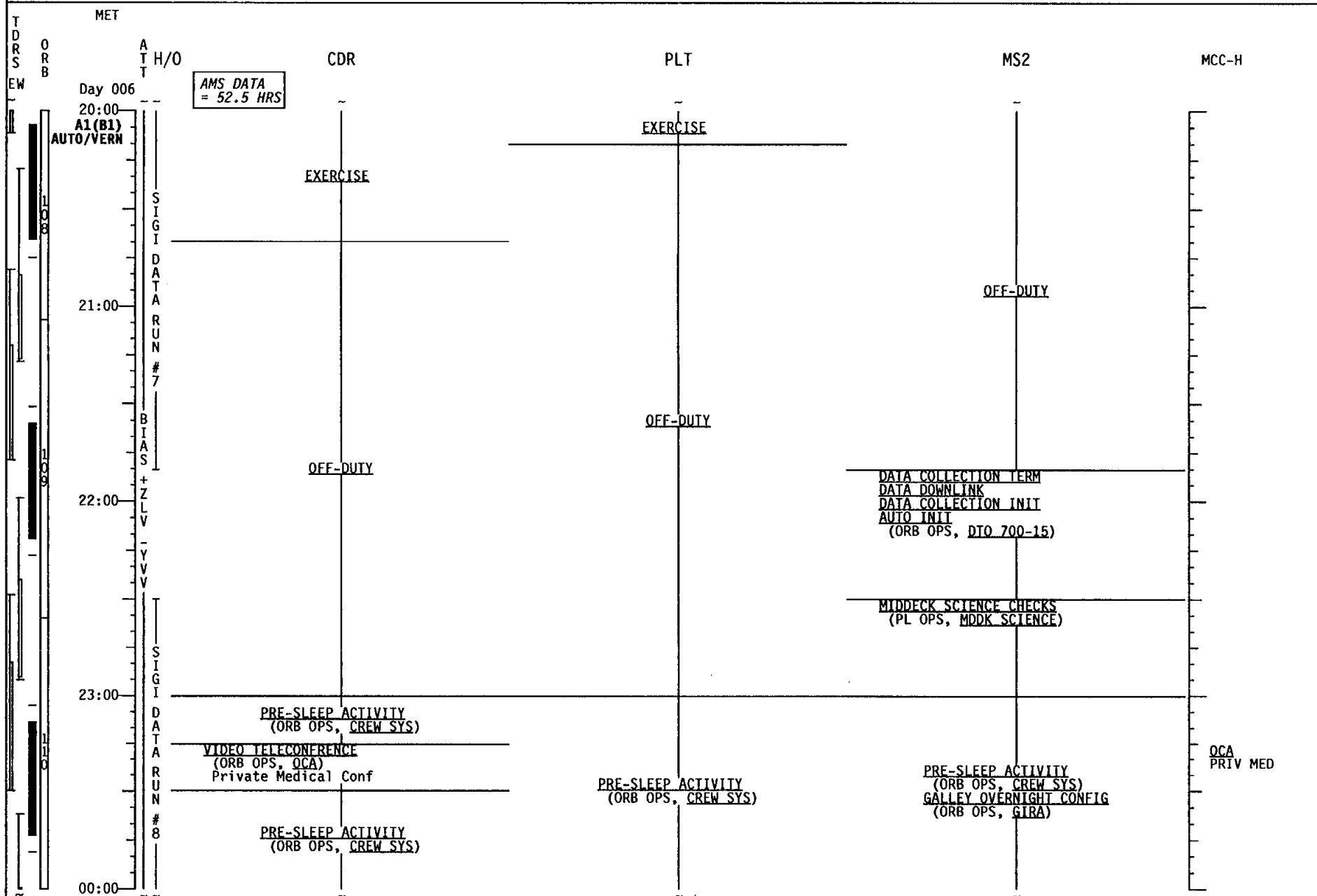


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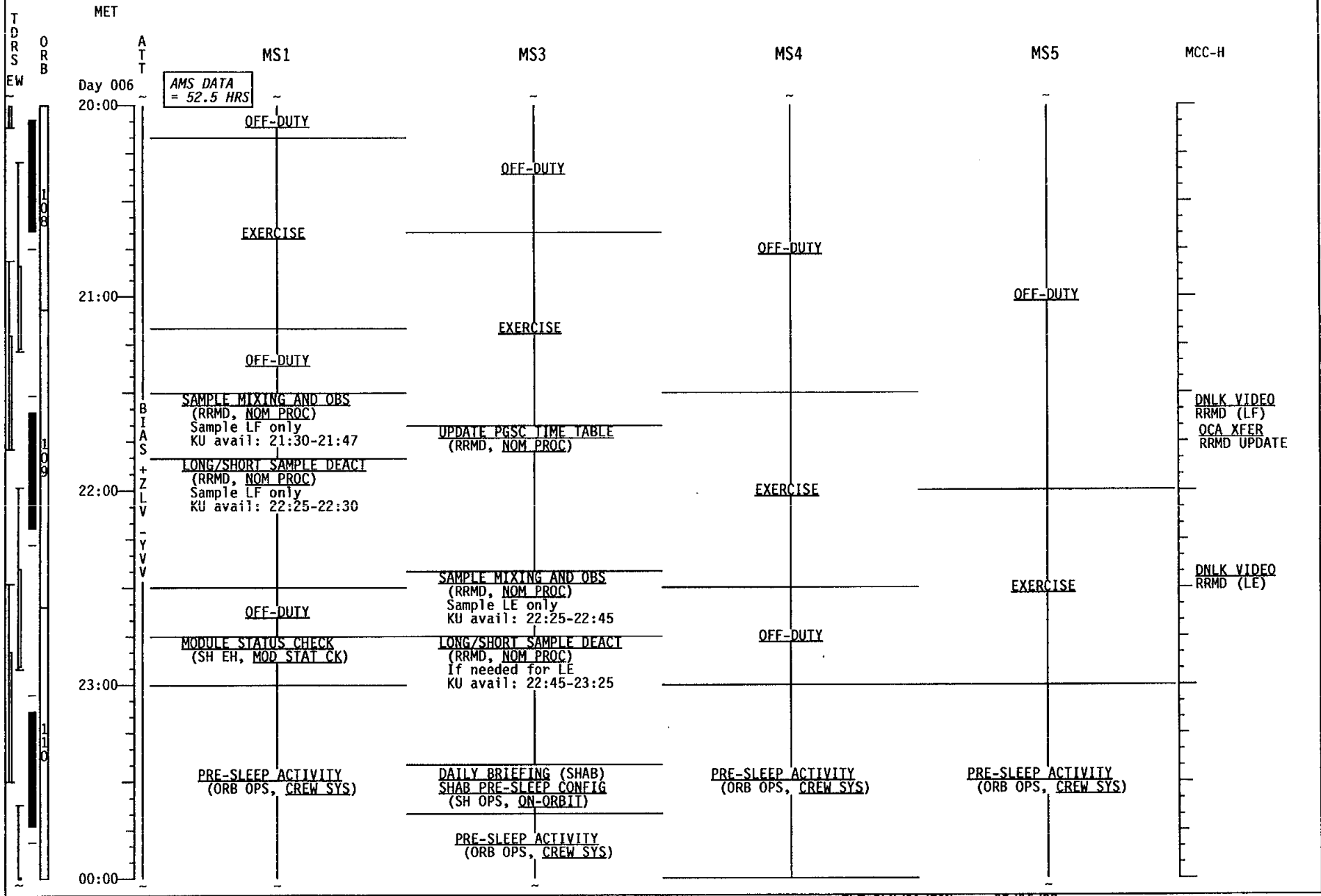


AMS DATA
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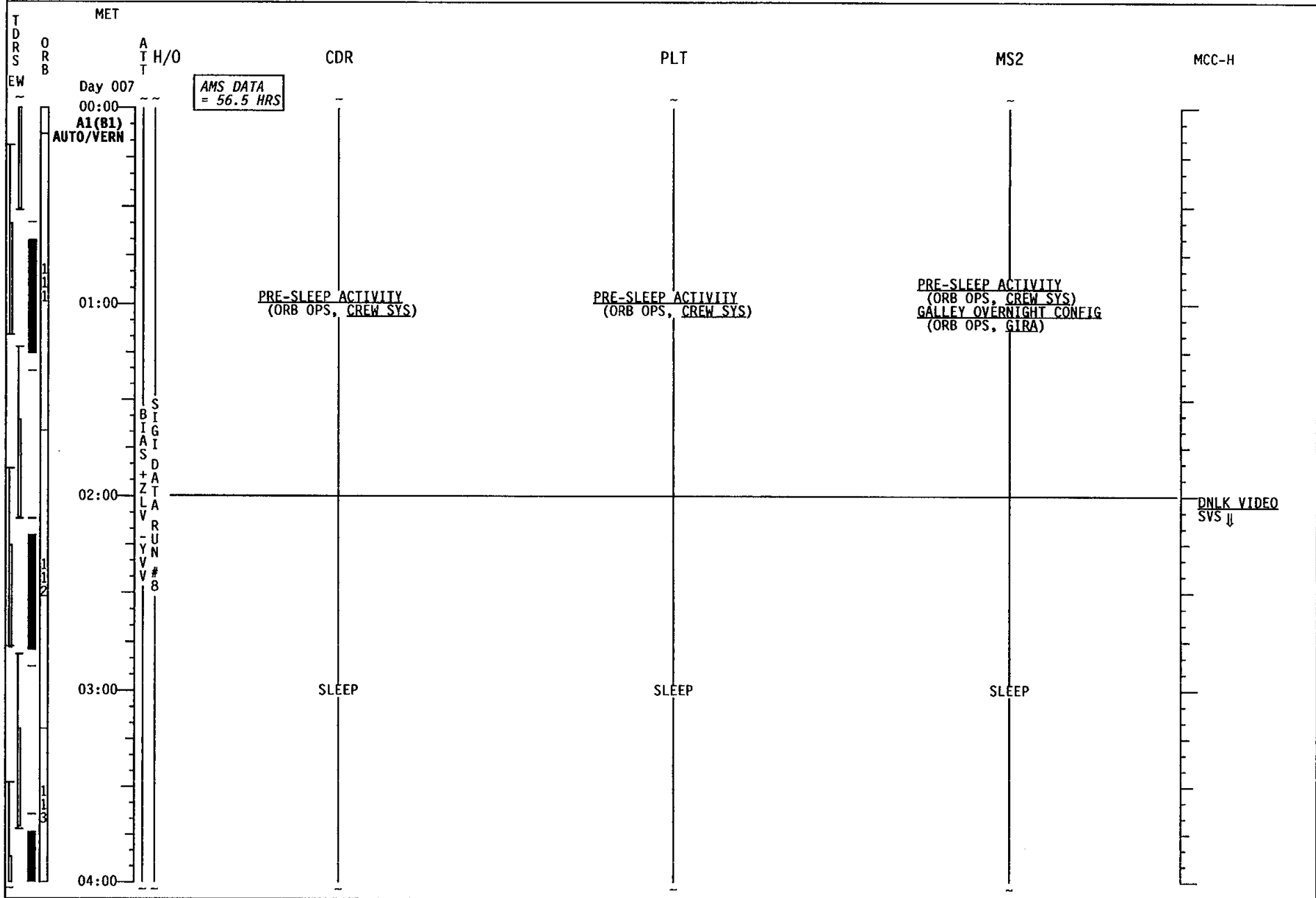
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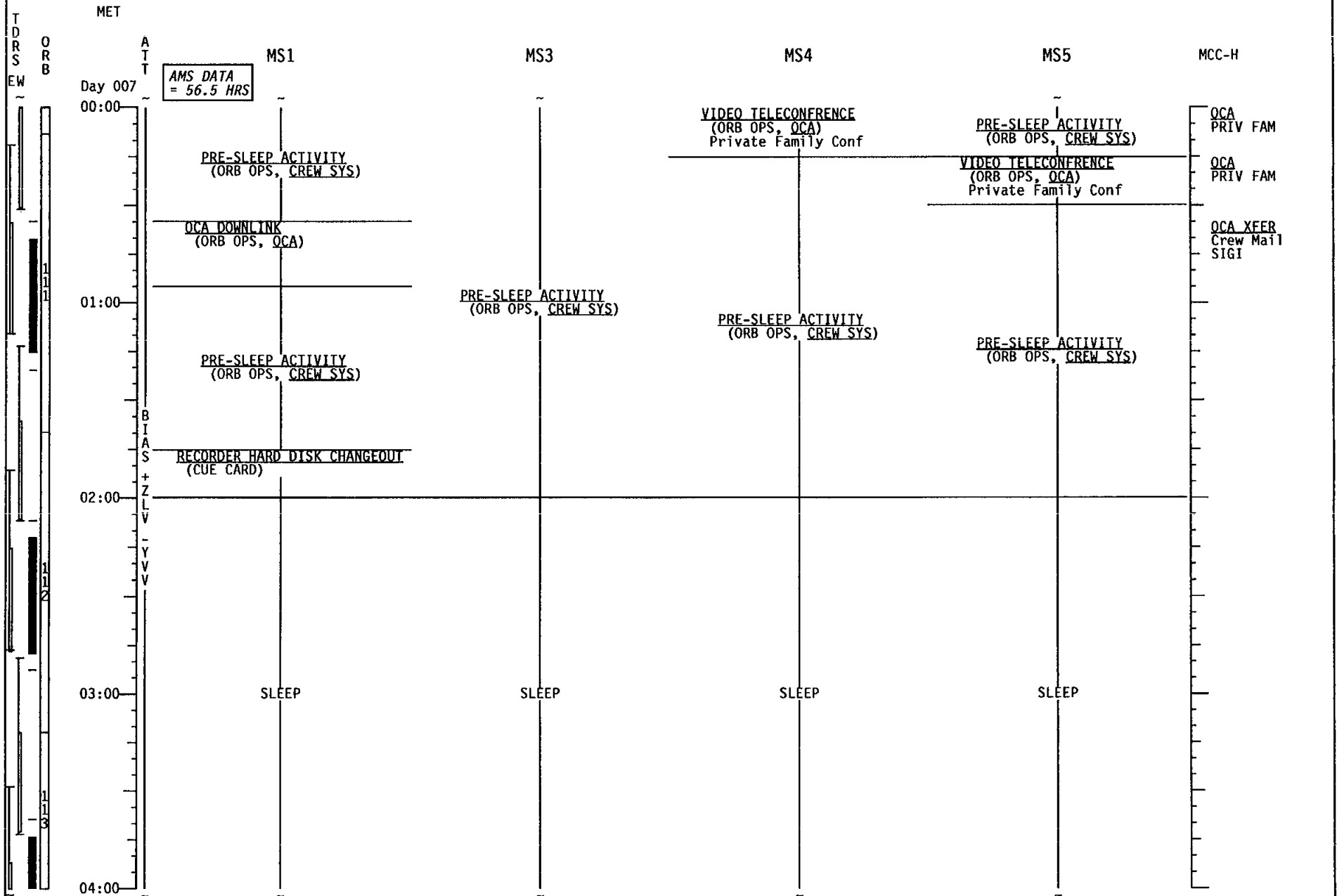
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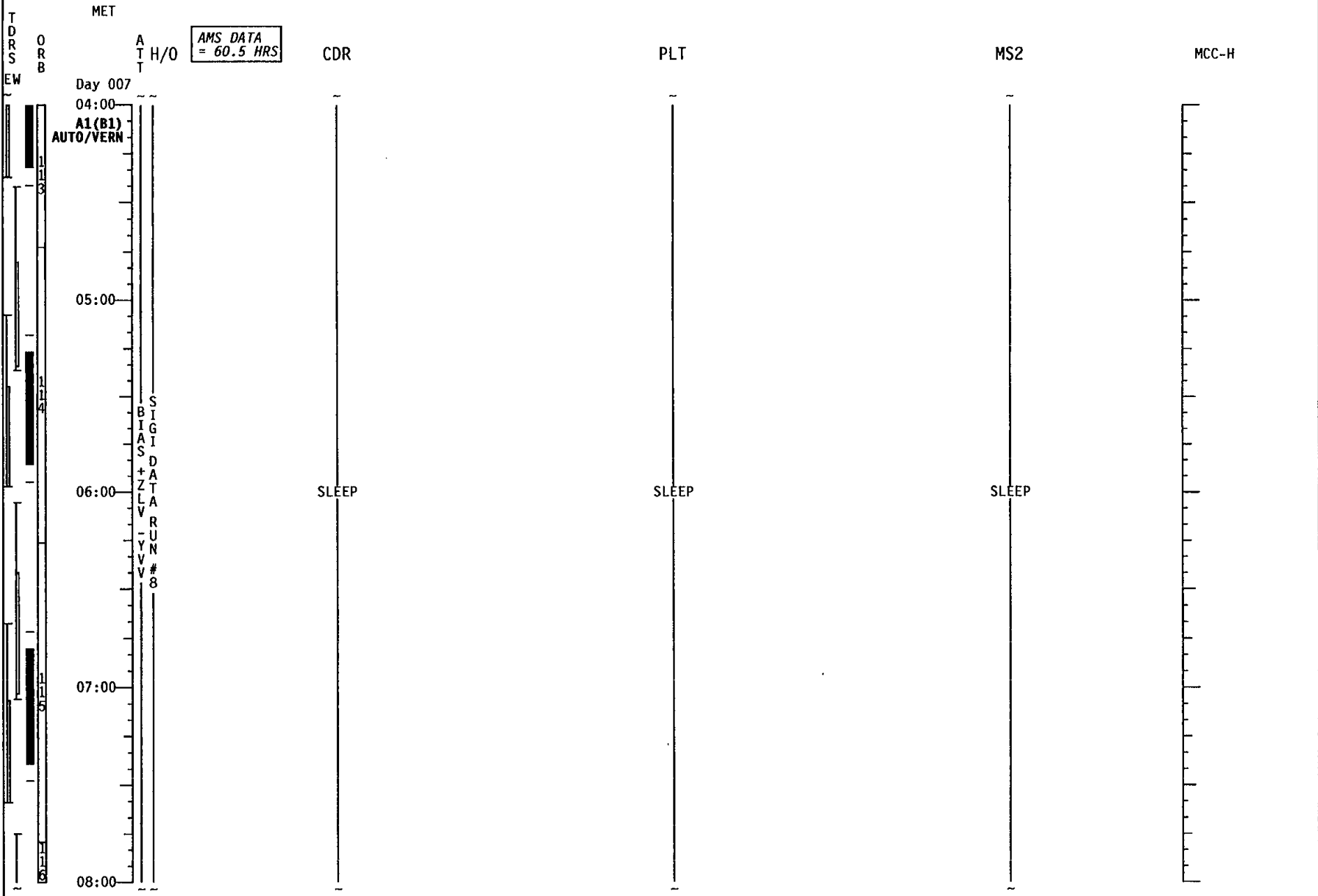
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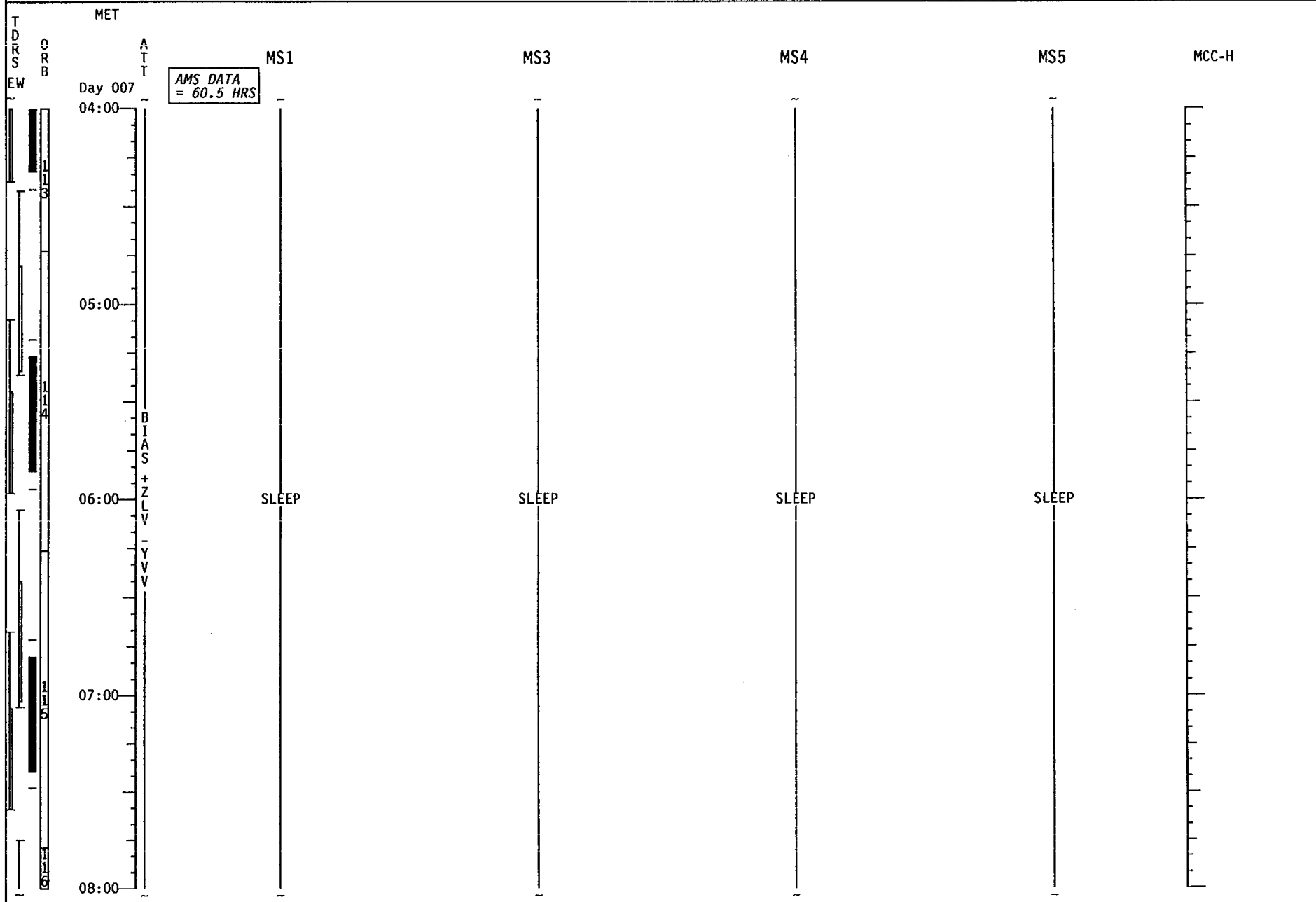
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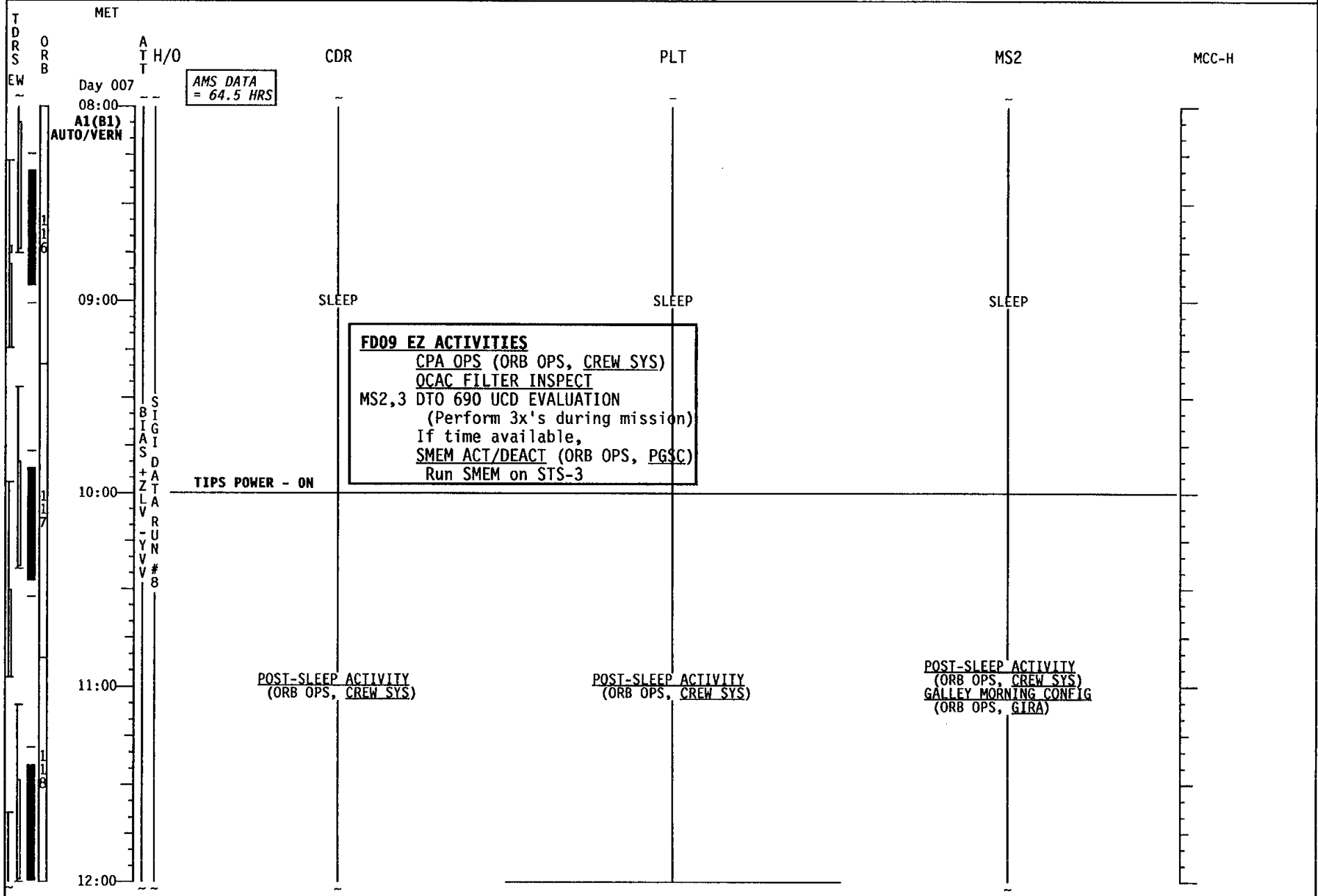
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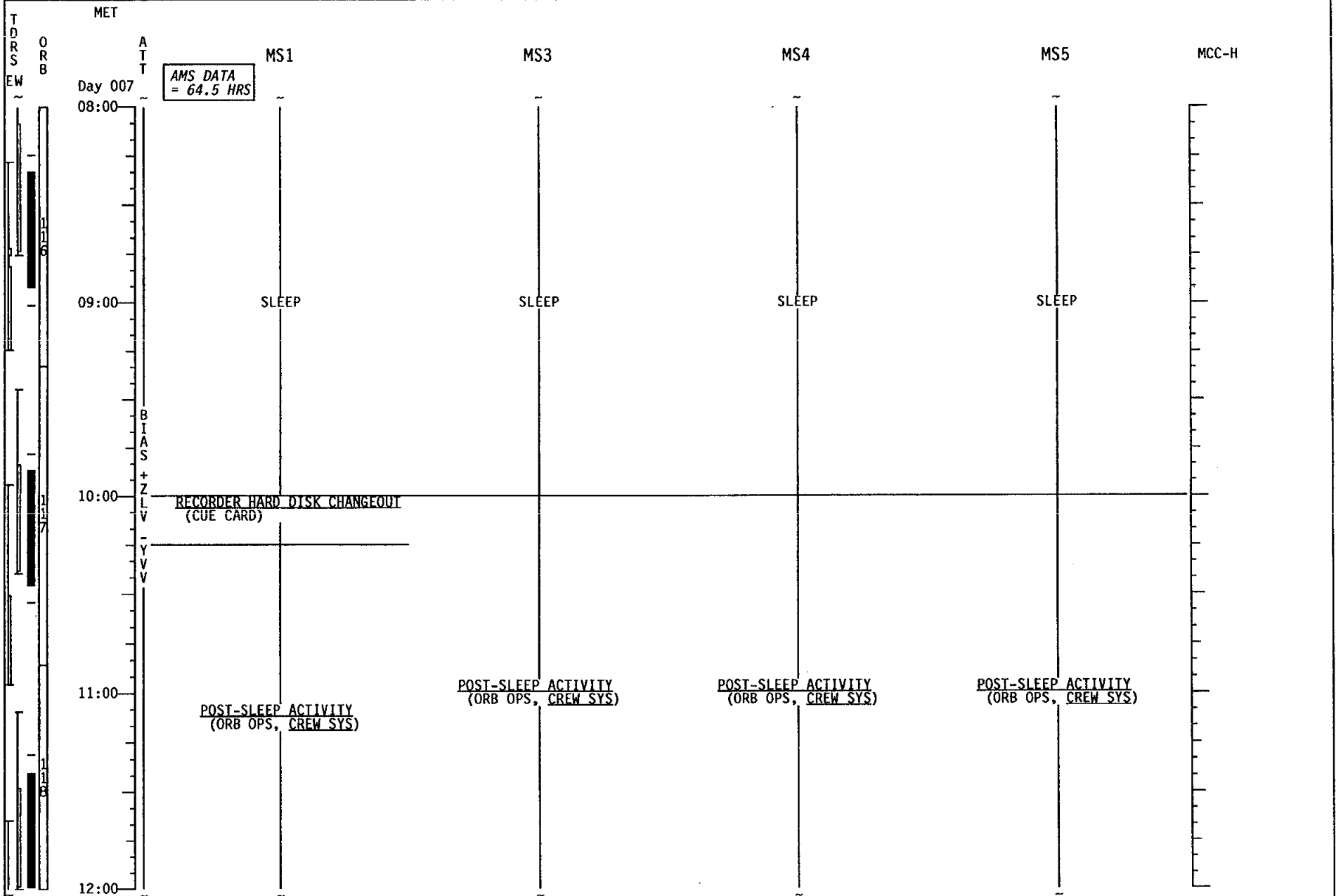
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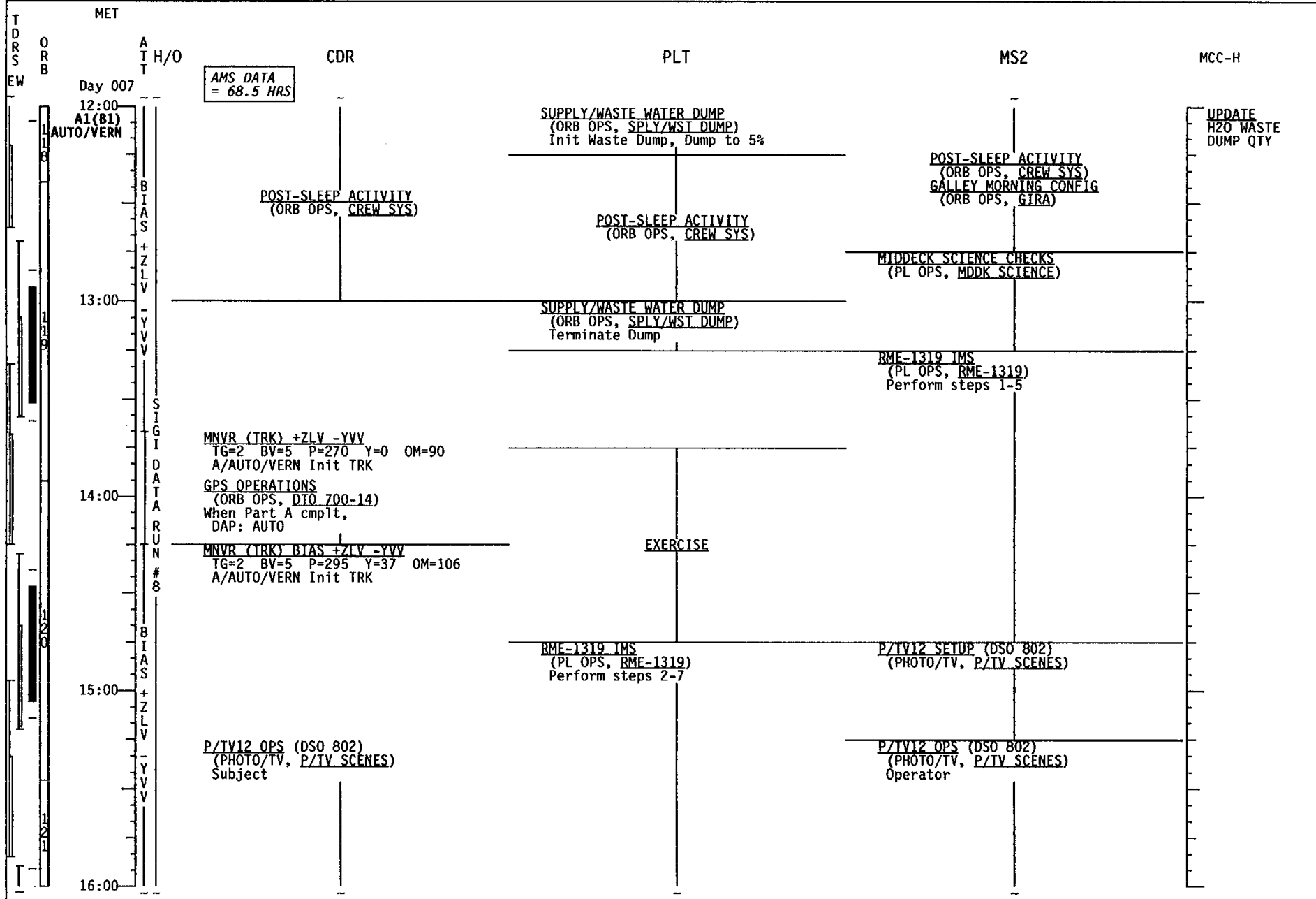
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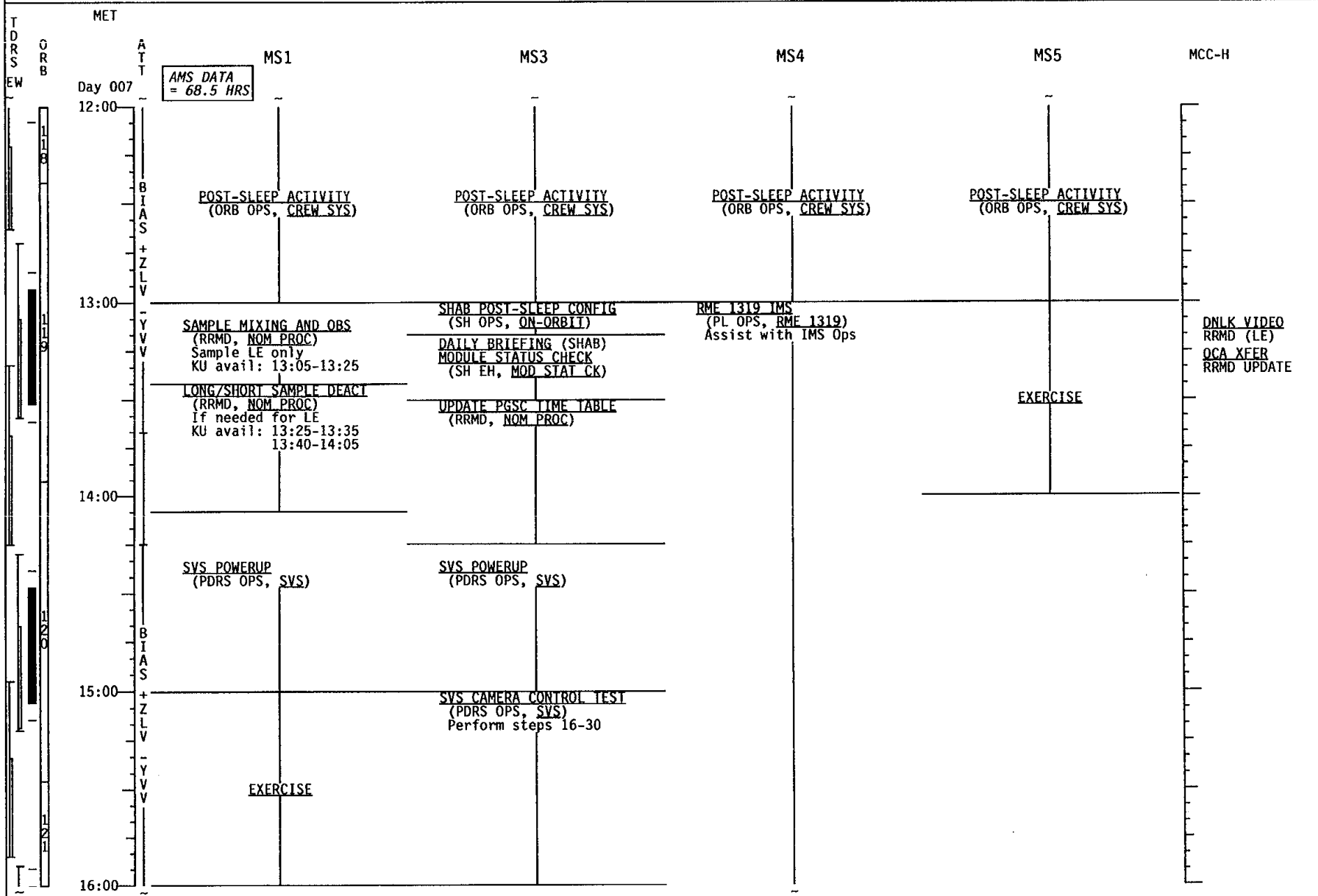
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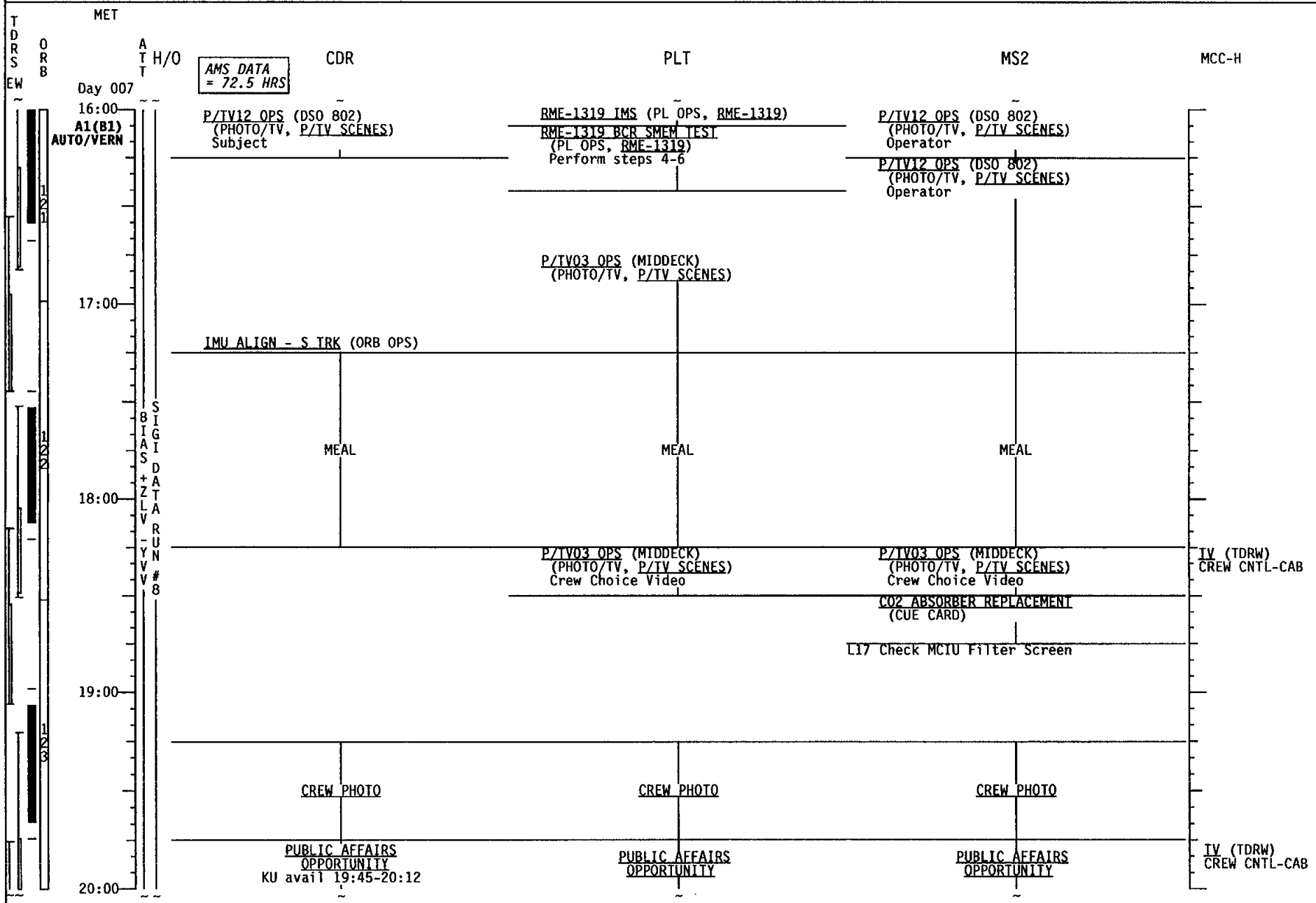
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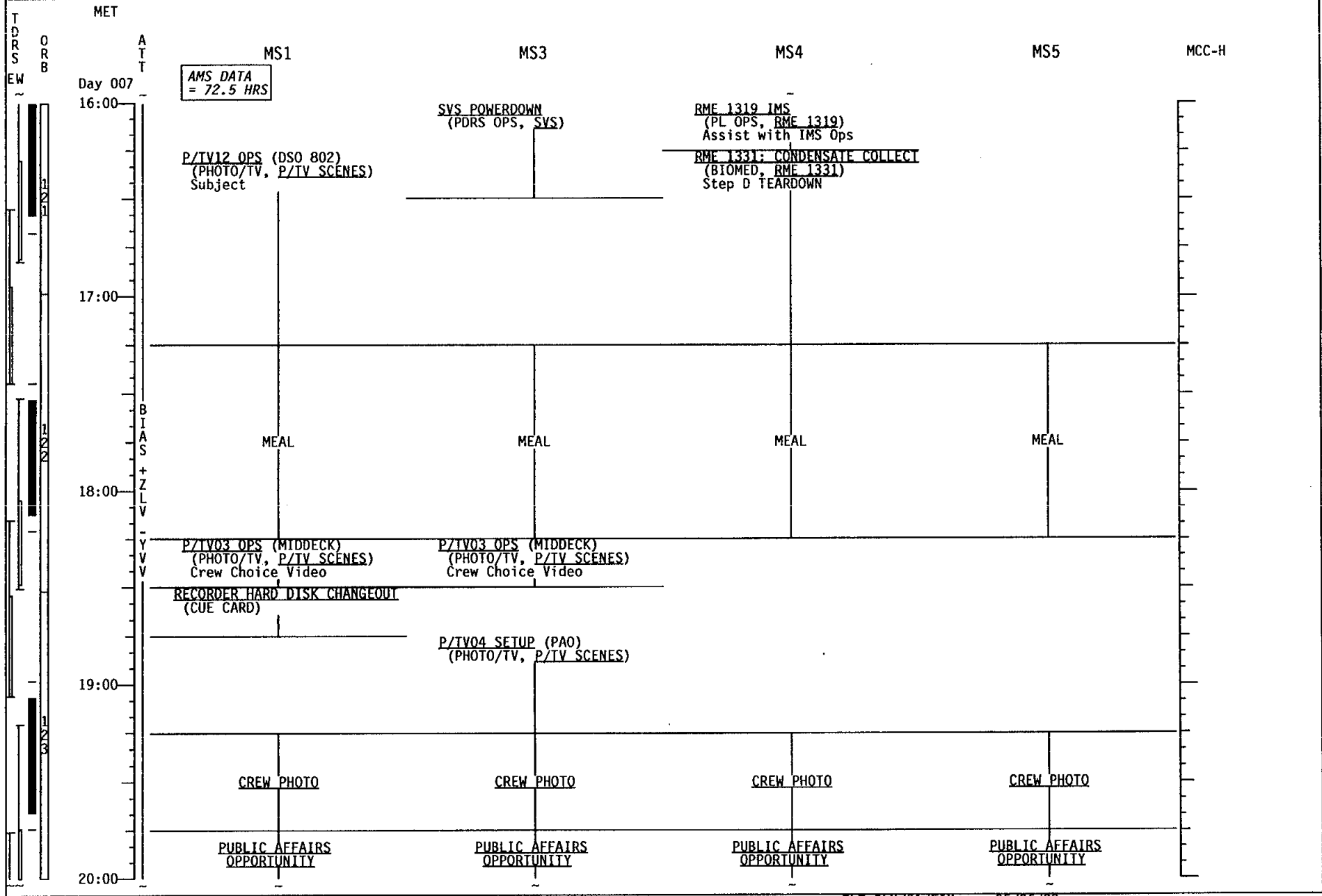
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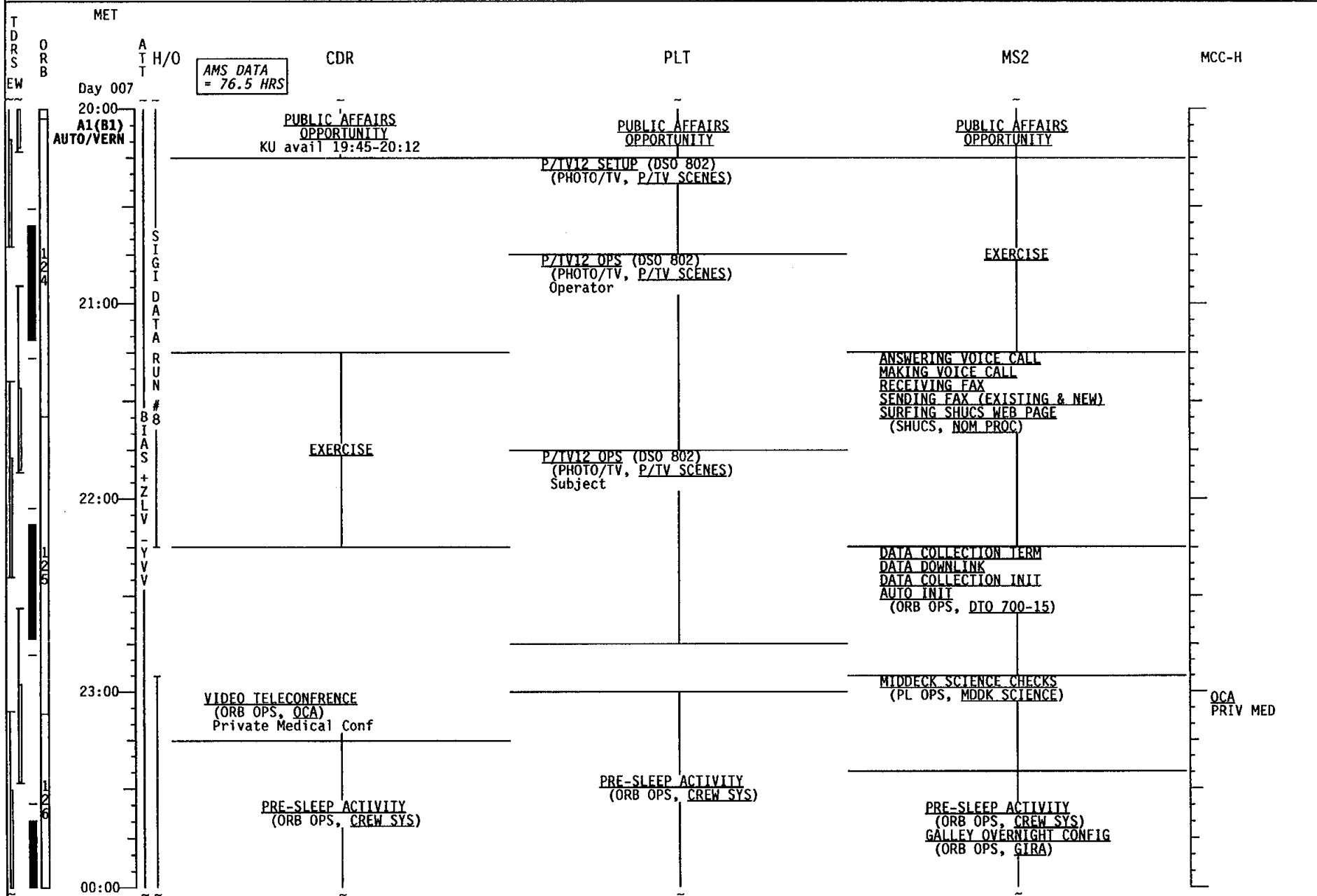
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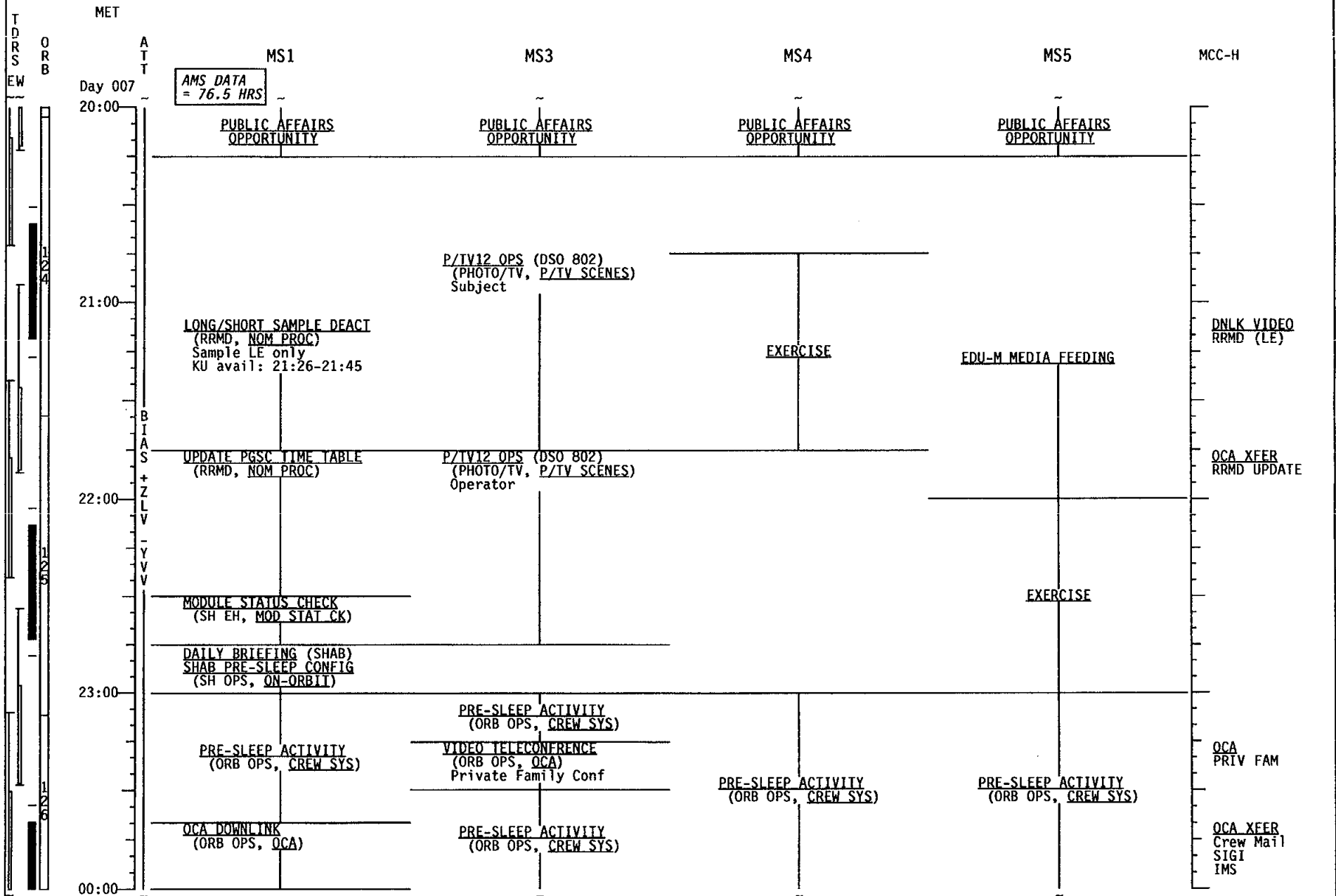
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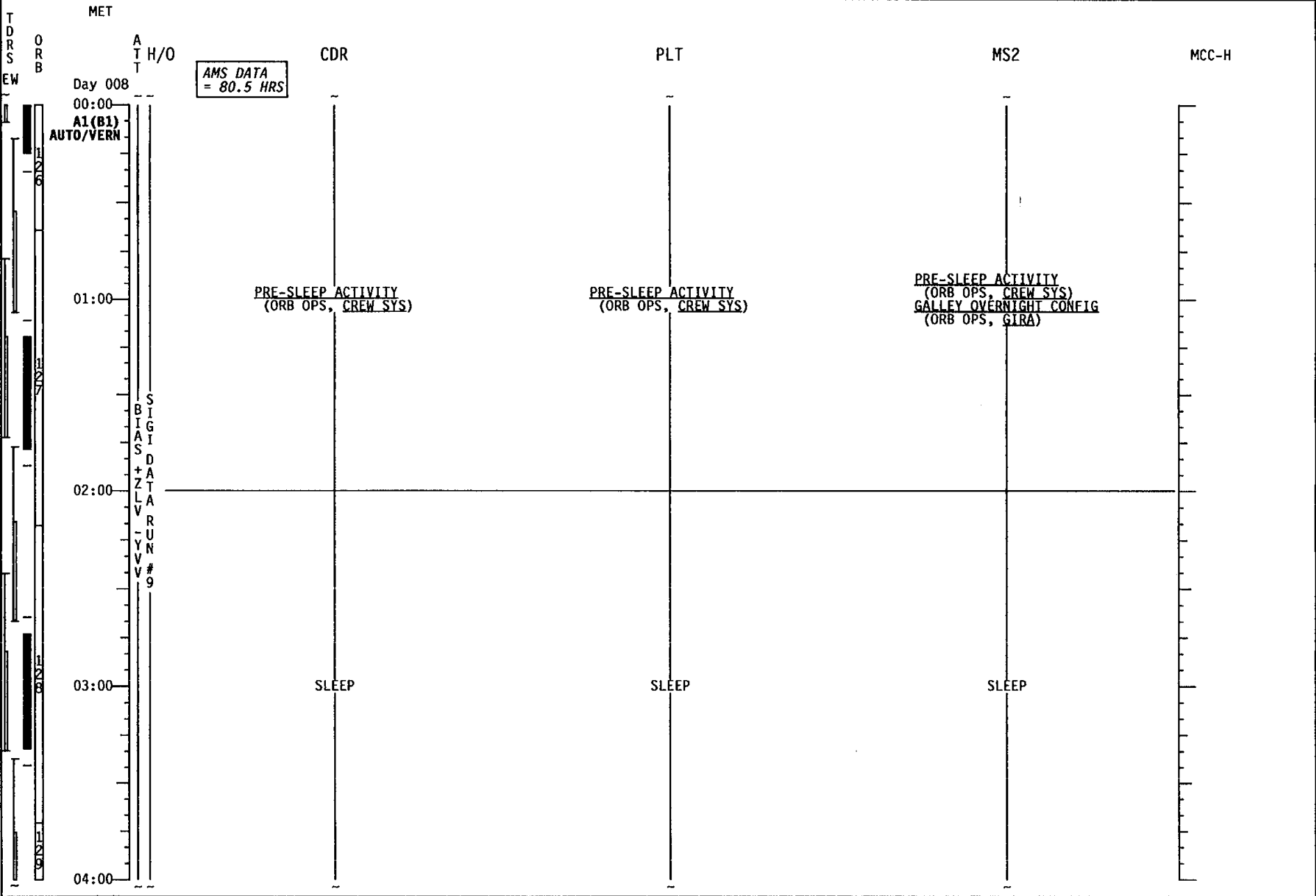
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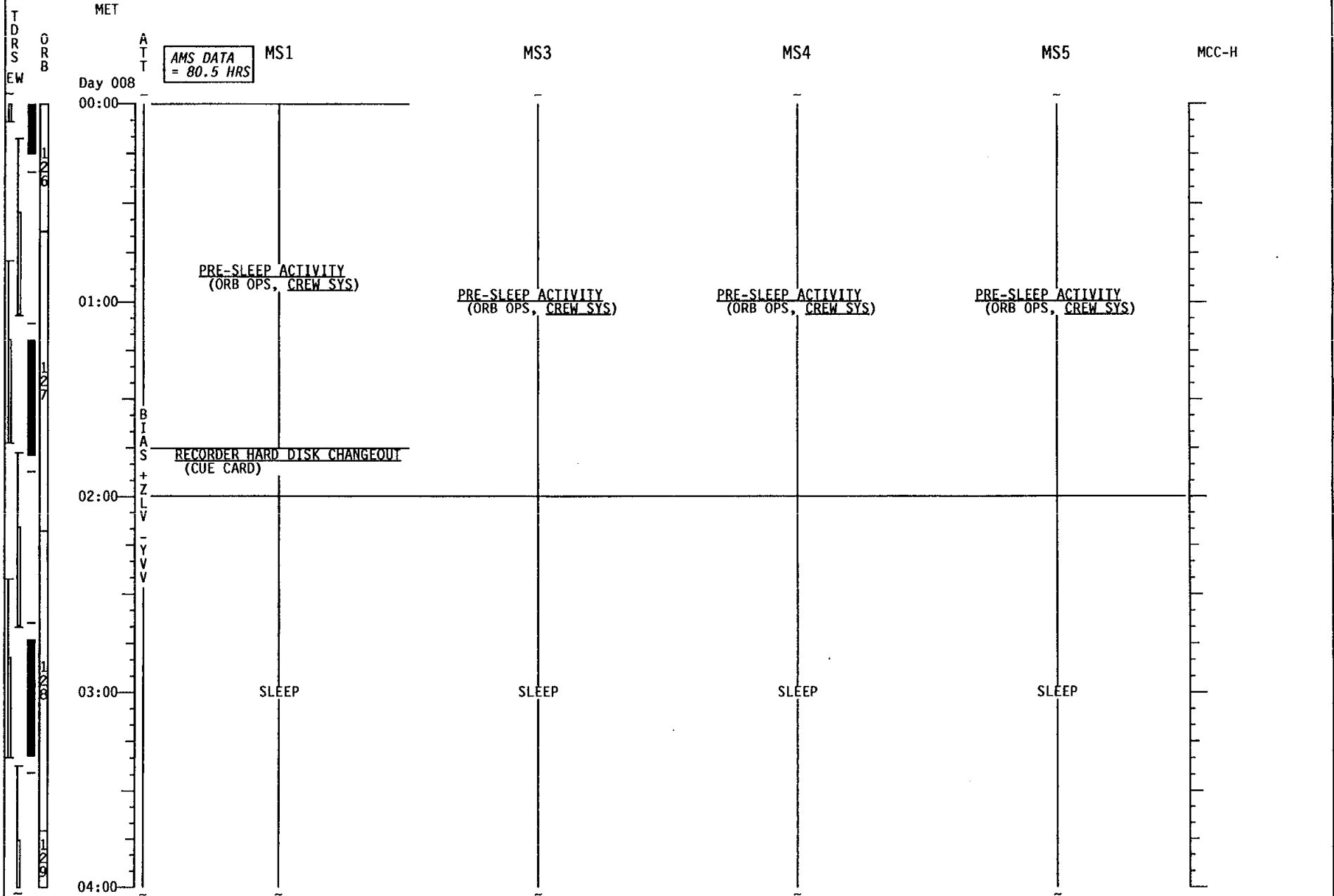
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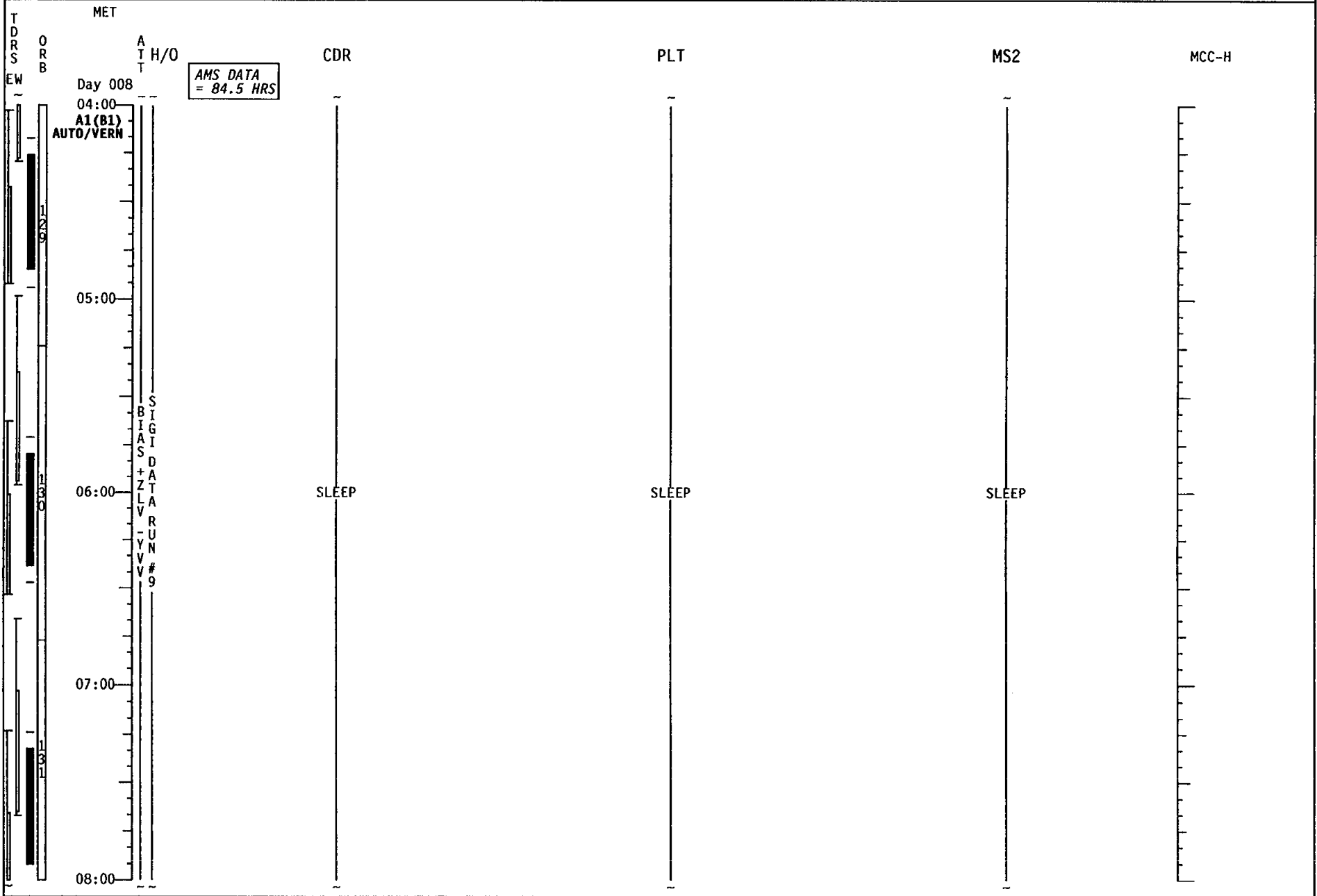
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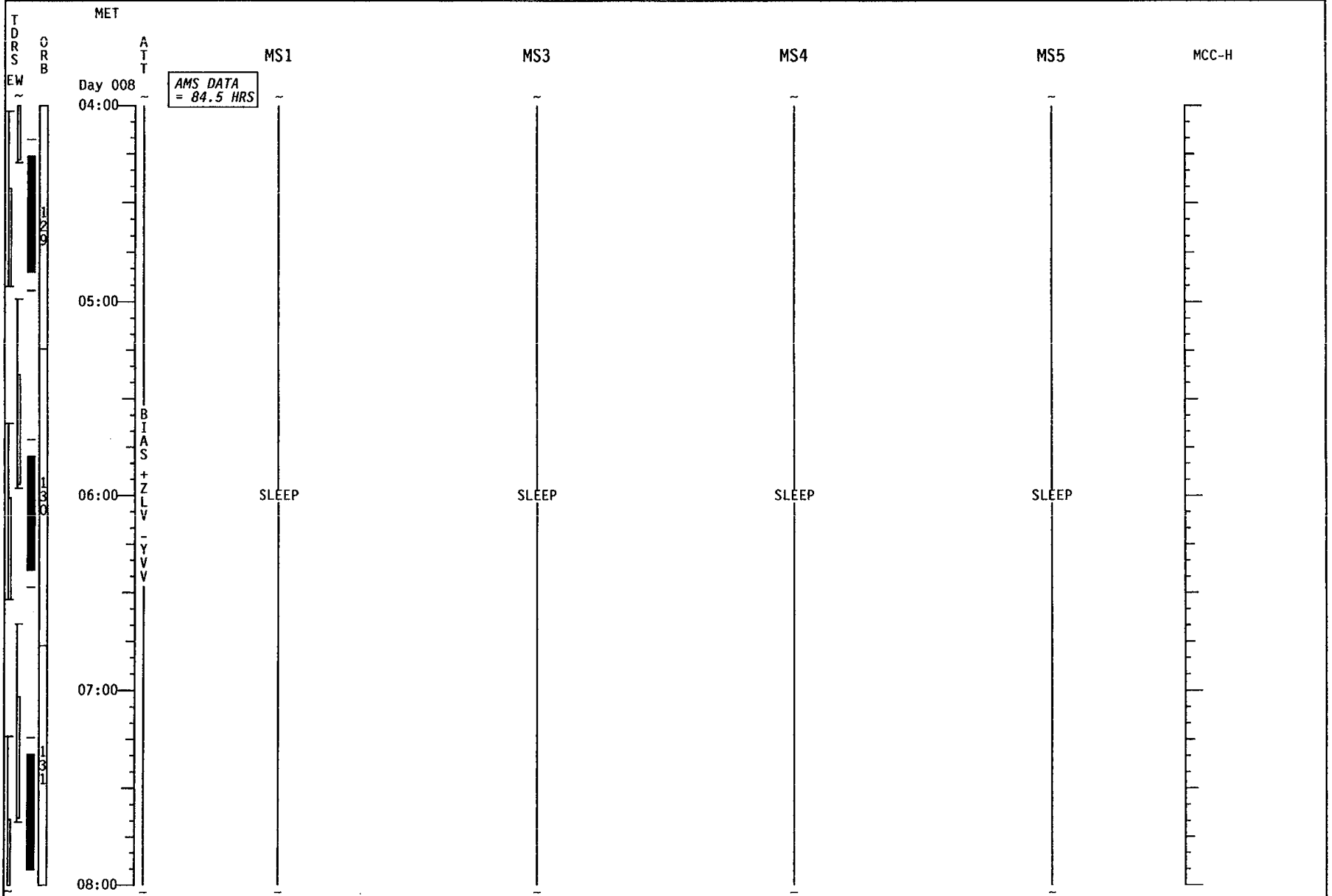
STS-91 (FD 09)



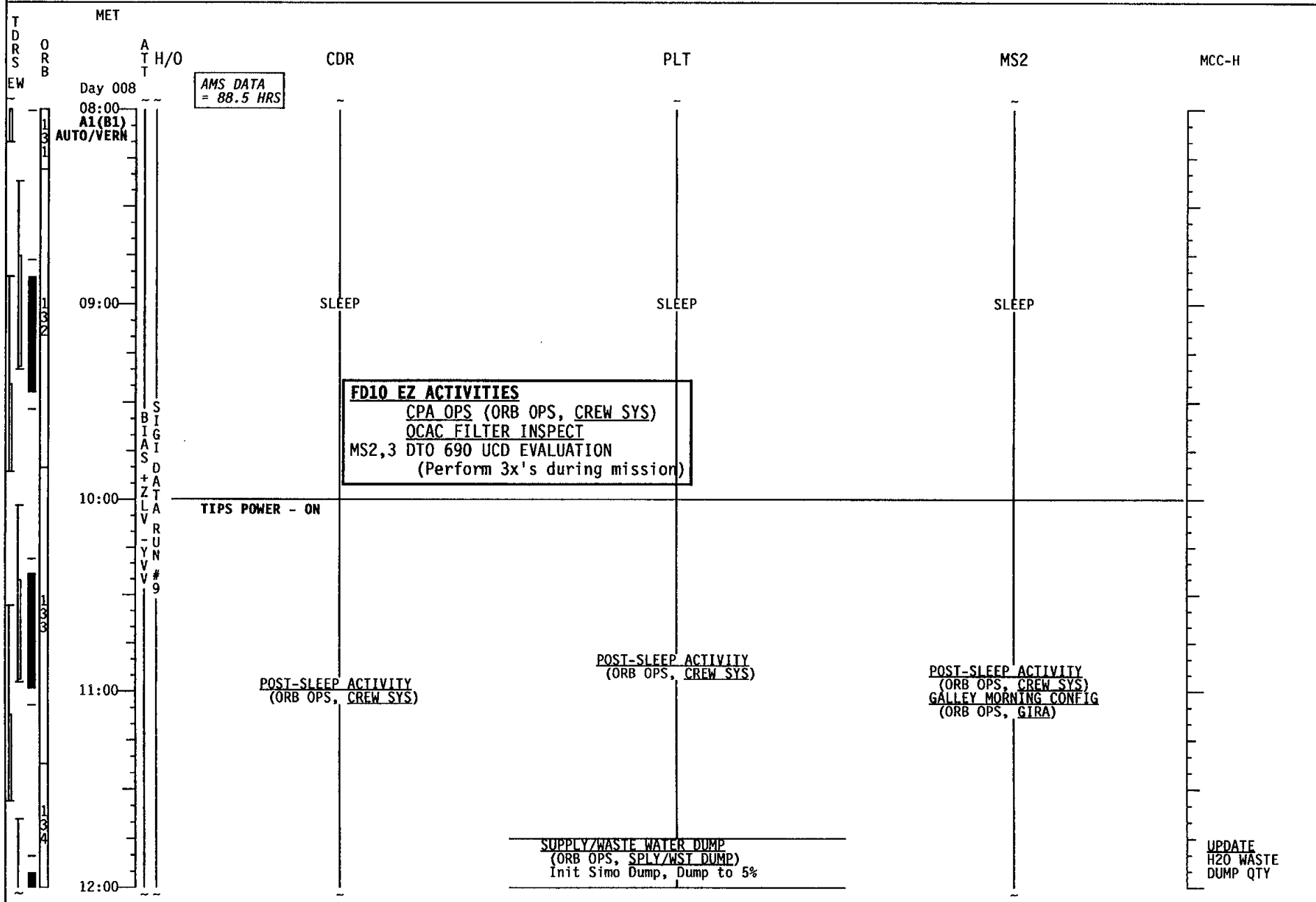
STS-91 (FD 09)



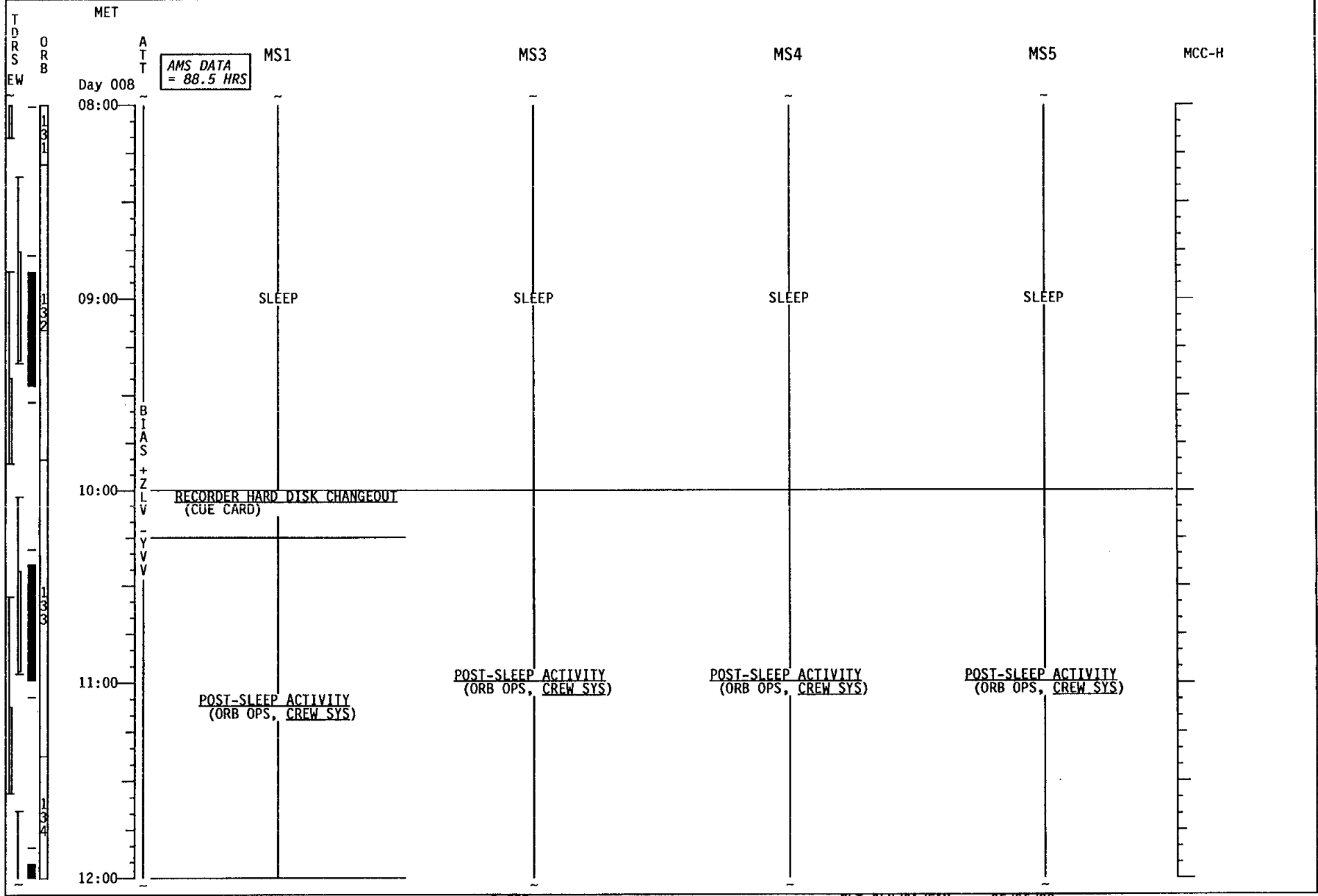
STS-91 (FD 09)



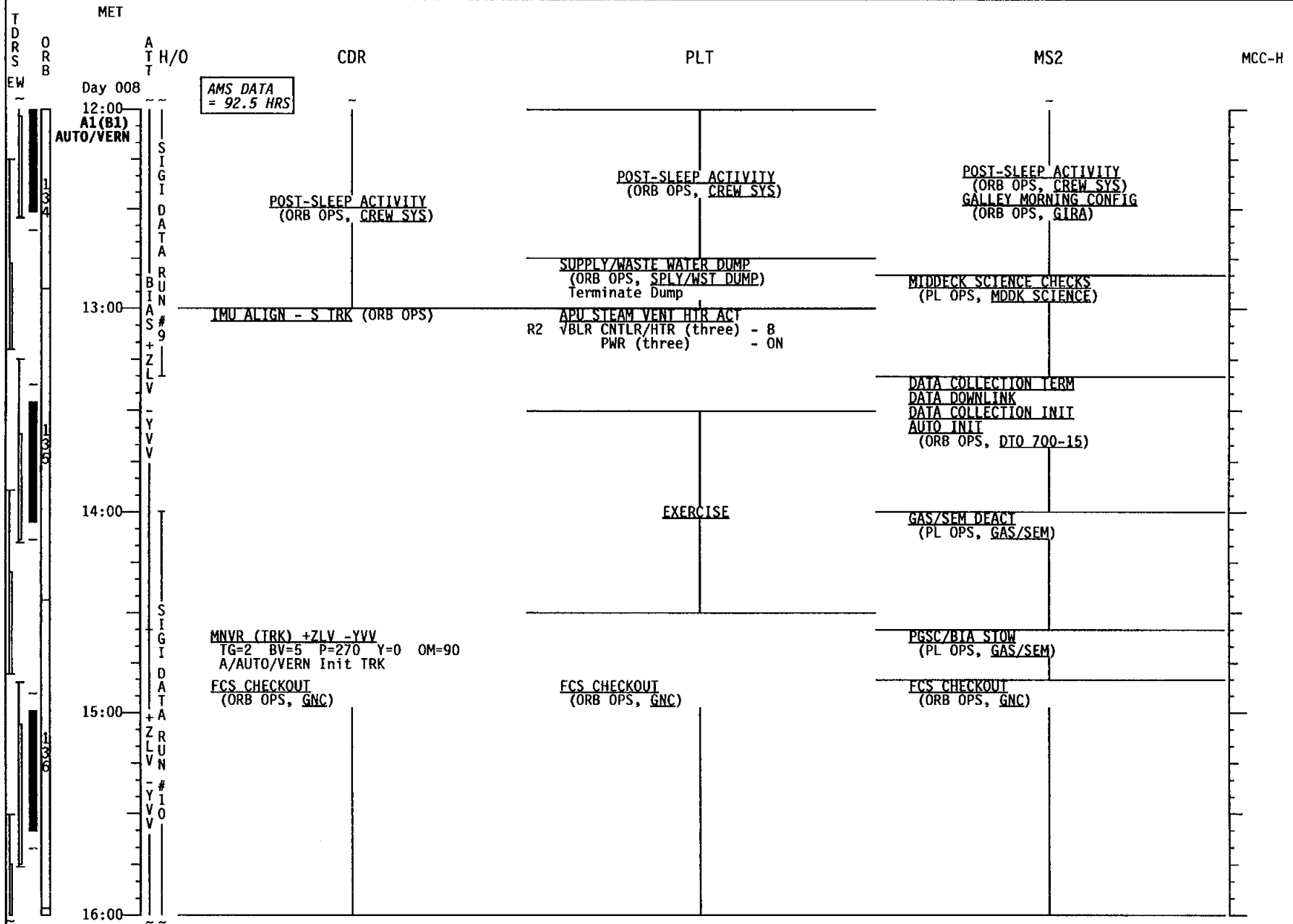
STS-91 (FD 10)



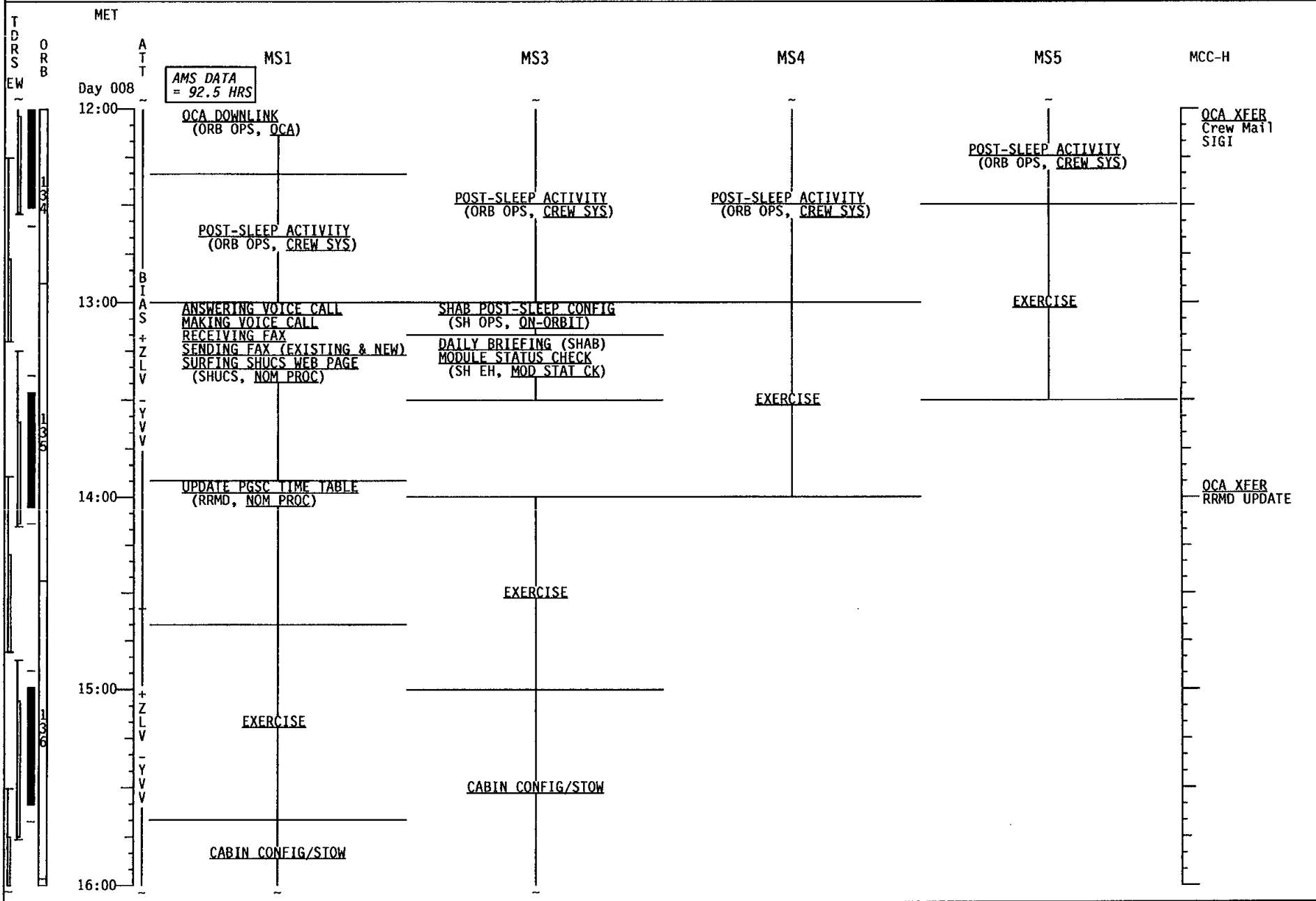
STS-91 (FD 10)



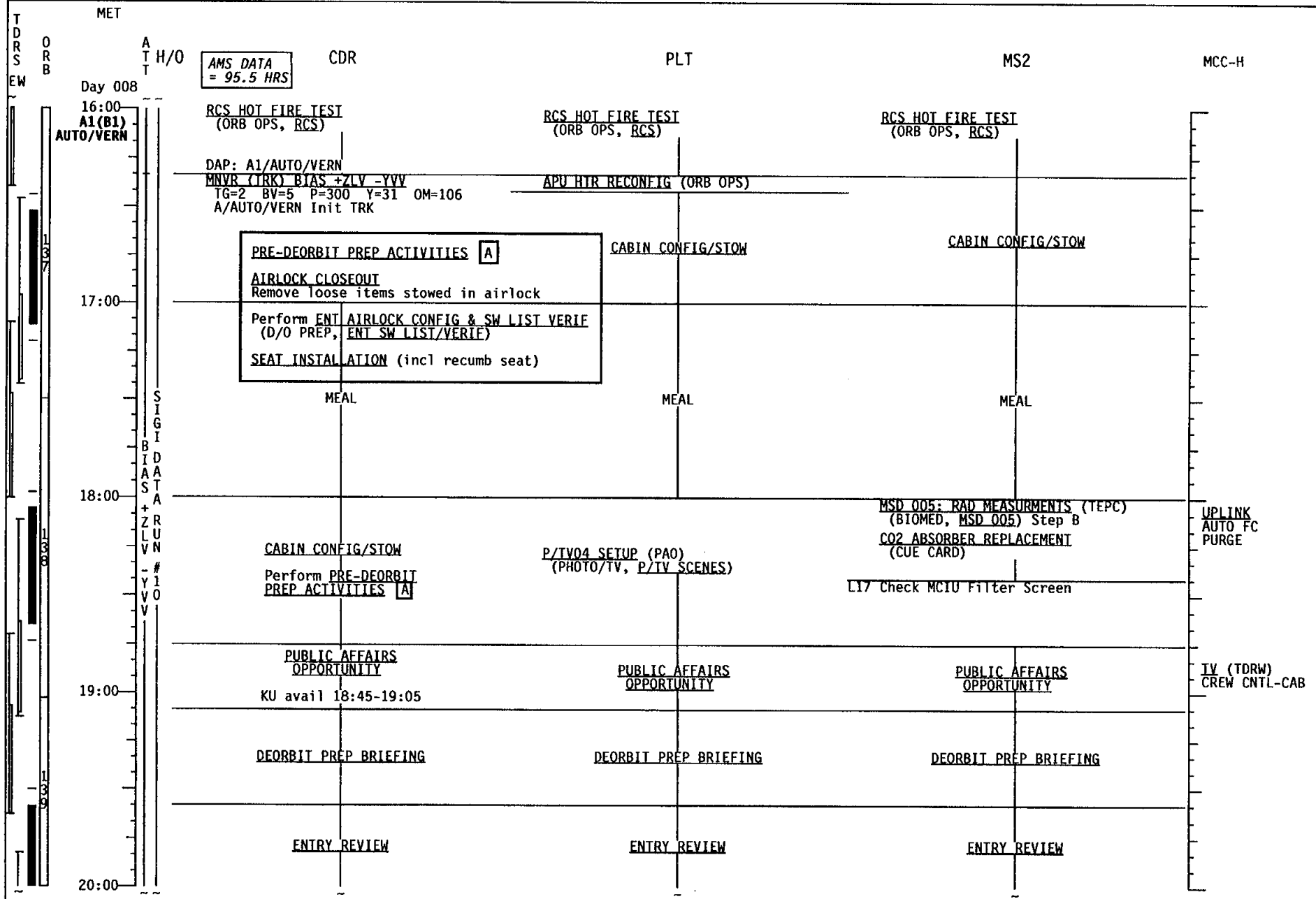
STS-91 (FD 10)



STS-91 (FD 10)



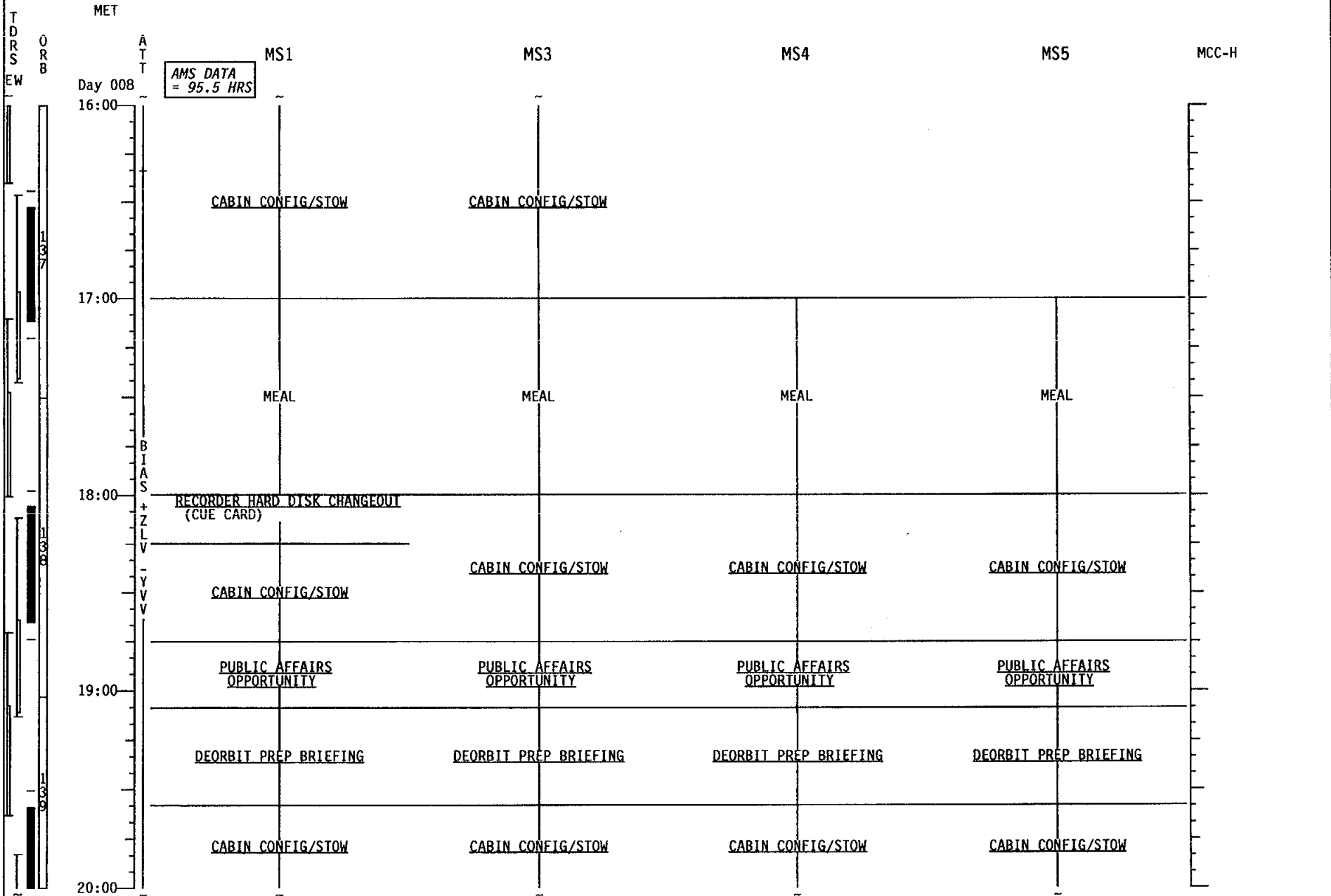
STS-91 (FD 10)



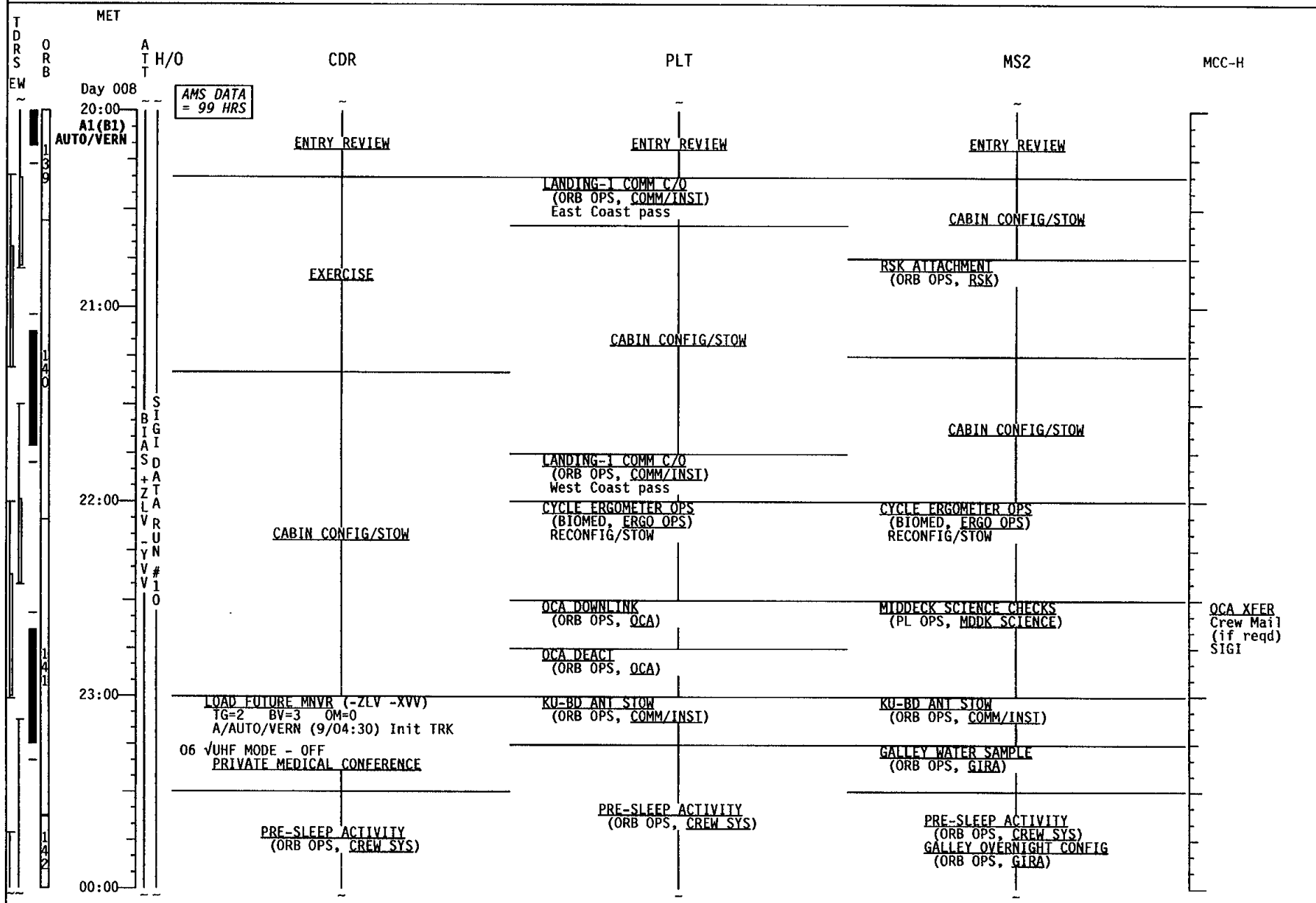
AMS DATA = 95.5 HRS

PRE-DEORBIT PREP ACTIVITIES [A]
AIRLOCK CLOSEOUT
 Remove loose items stowed in airlock
 Perform ENT AIRLOCK CONFIG & SW LIST VERIF (D/O PREP, ENT SW LIST/VERIF)
SEAT INSTALLATION (incl recumb seat)

STS-91 (FD 10)

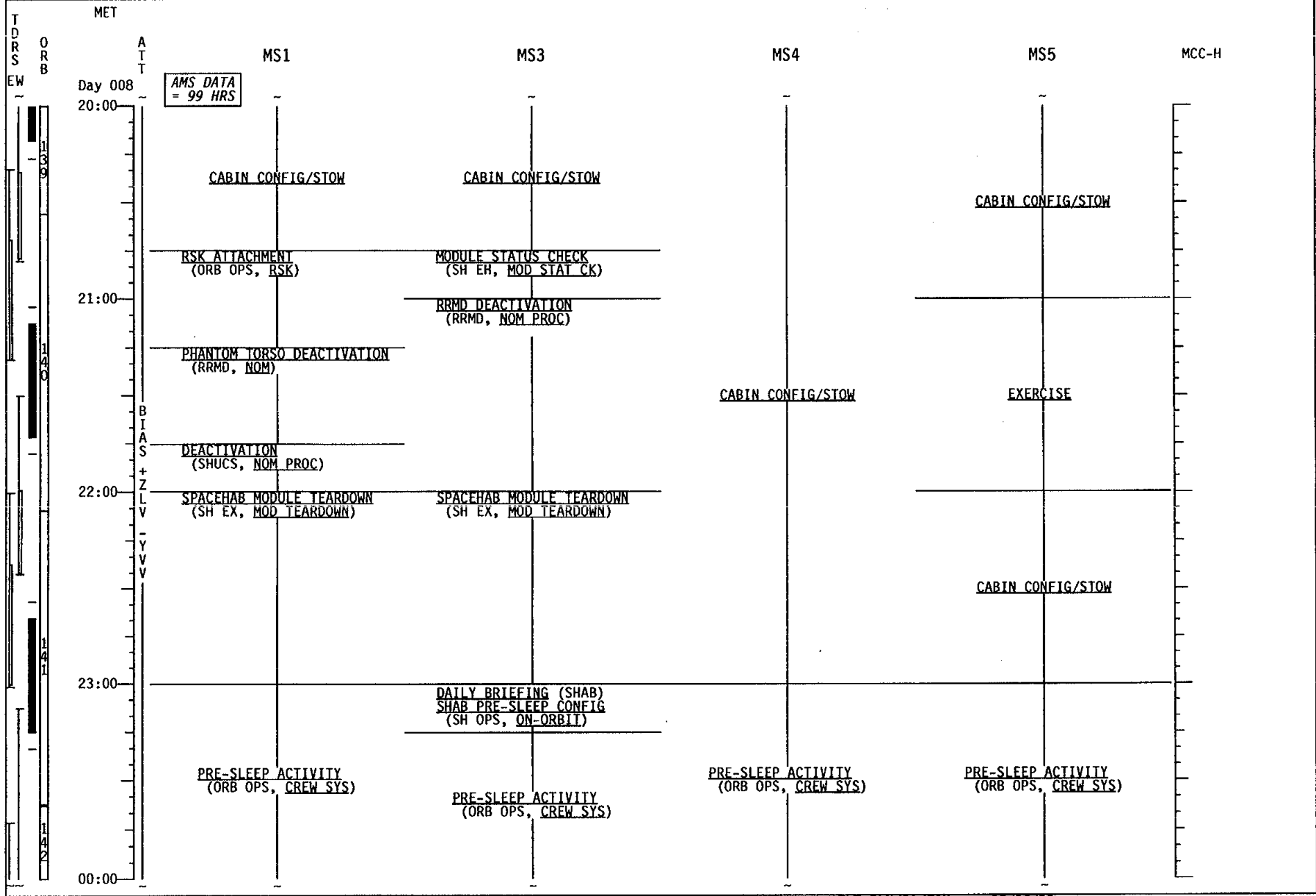


STS-91 (FD 10)

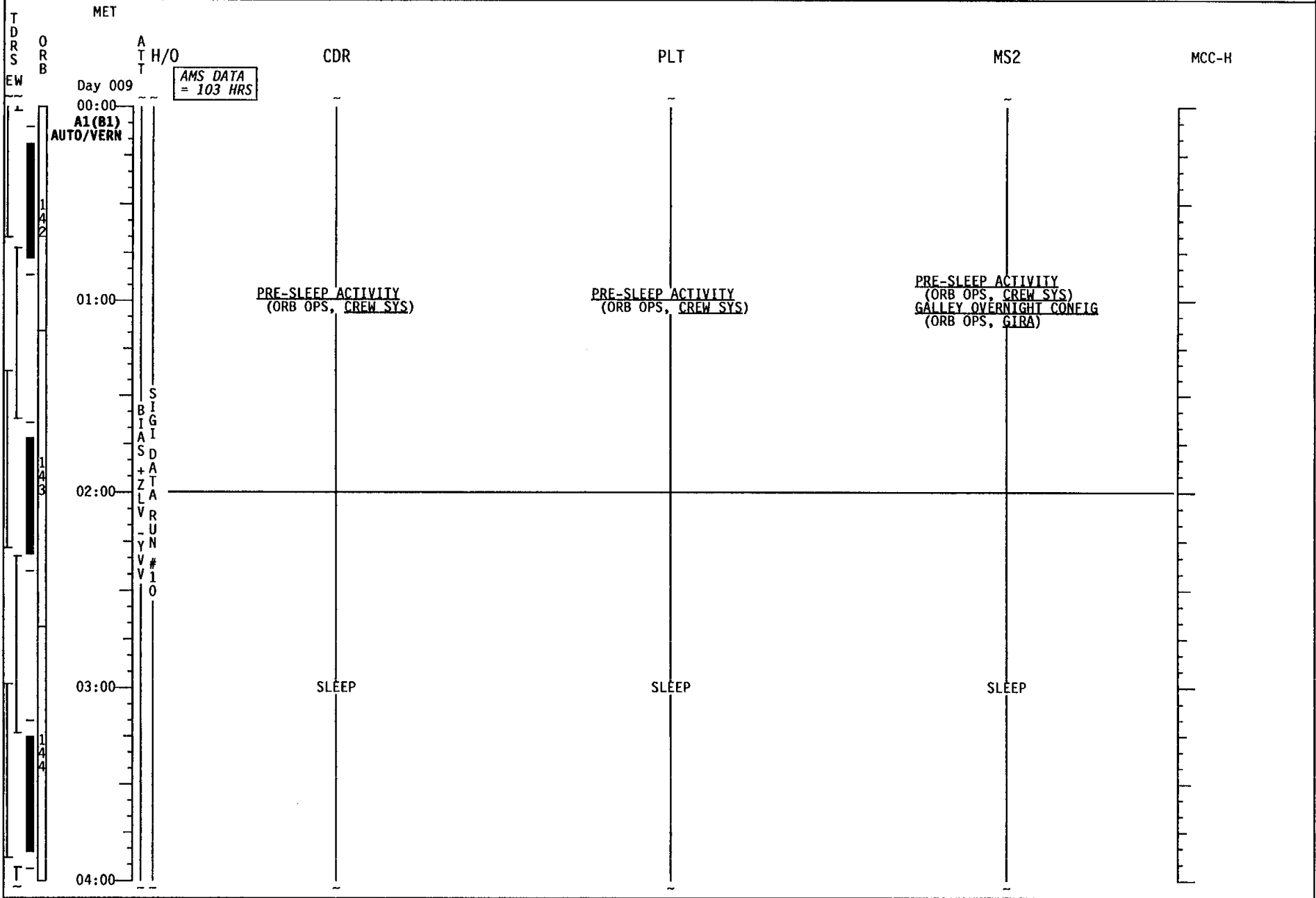


AMS DATA = 99 HRS

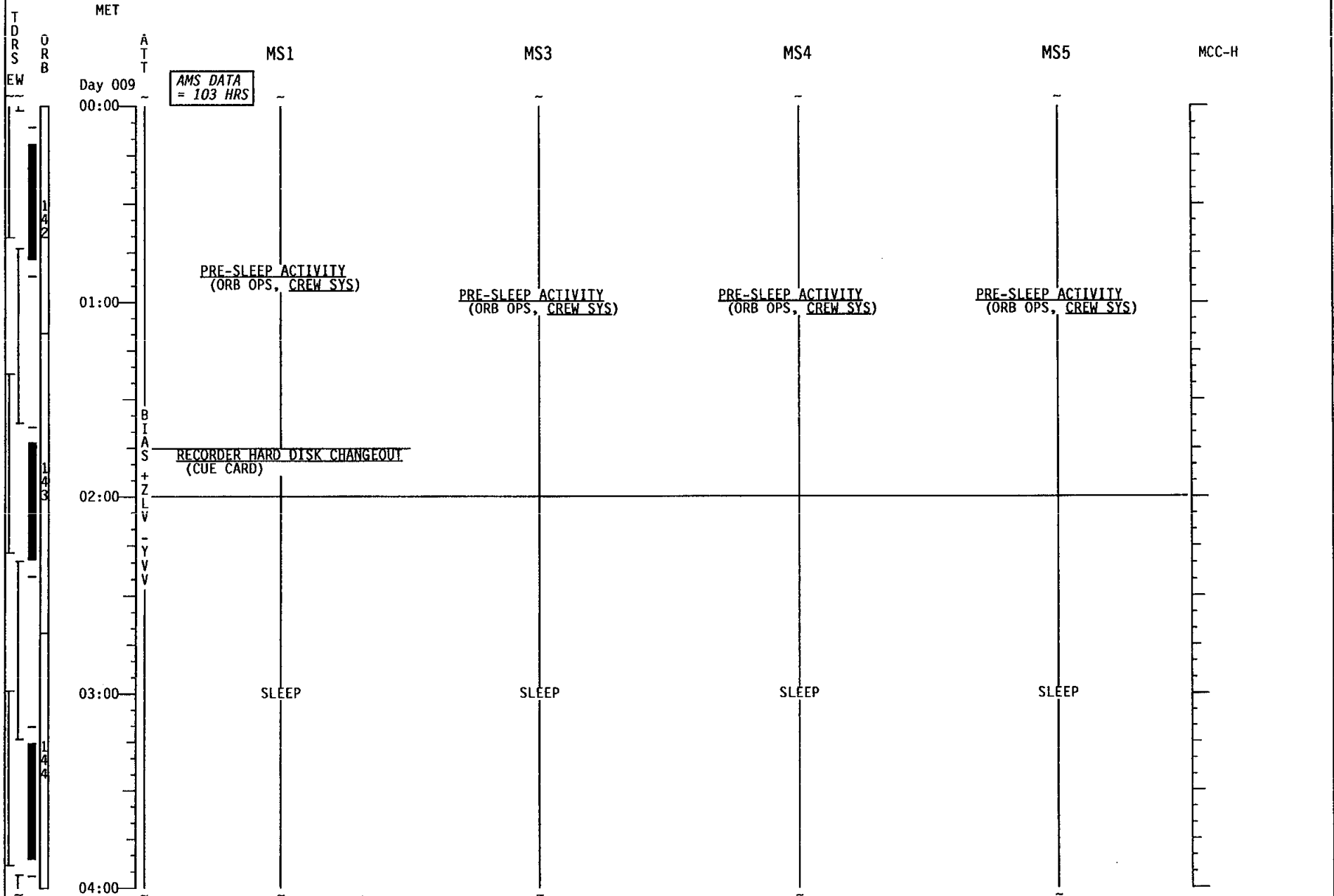
STS-91 (FD 10)



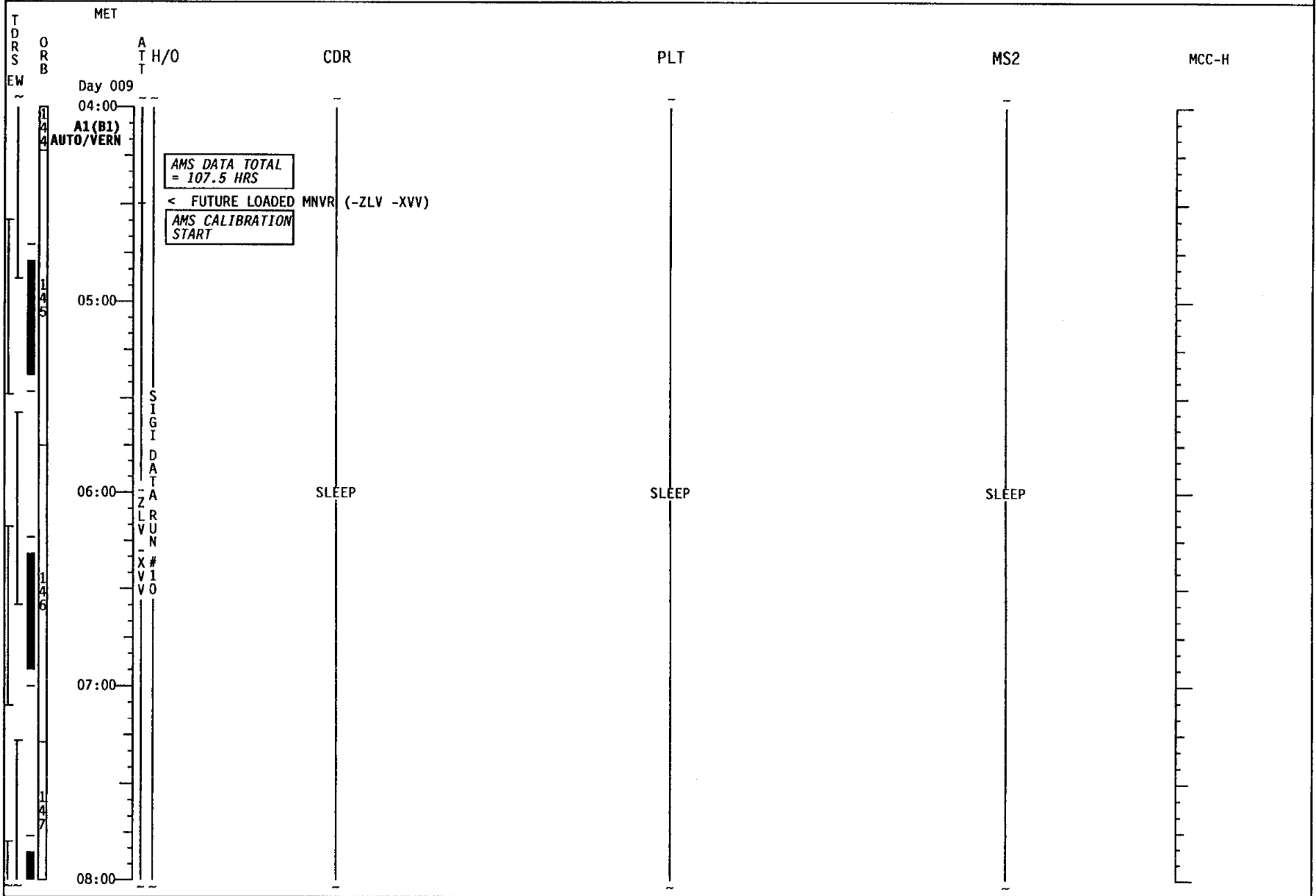
STS-91 (FD 10)



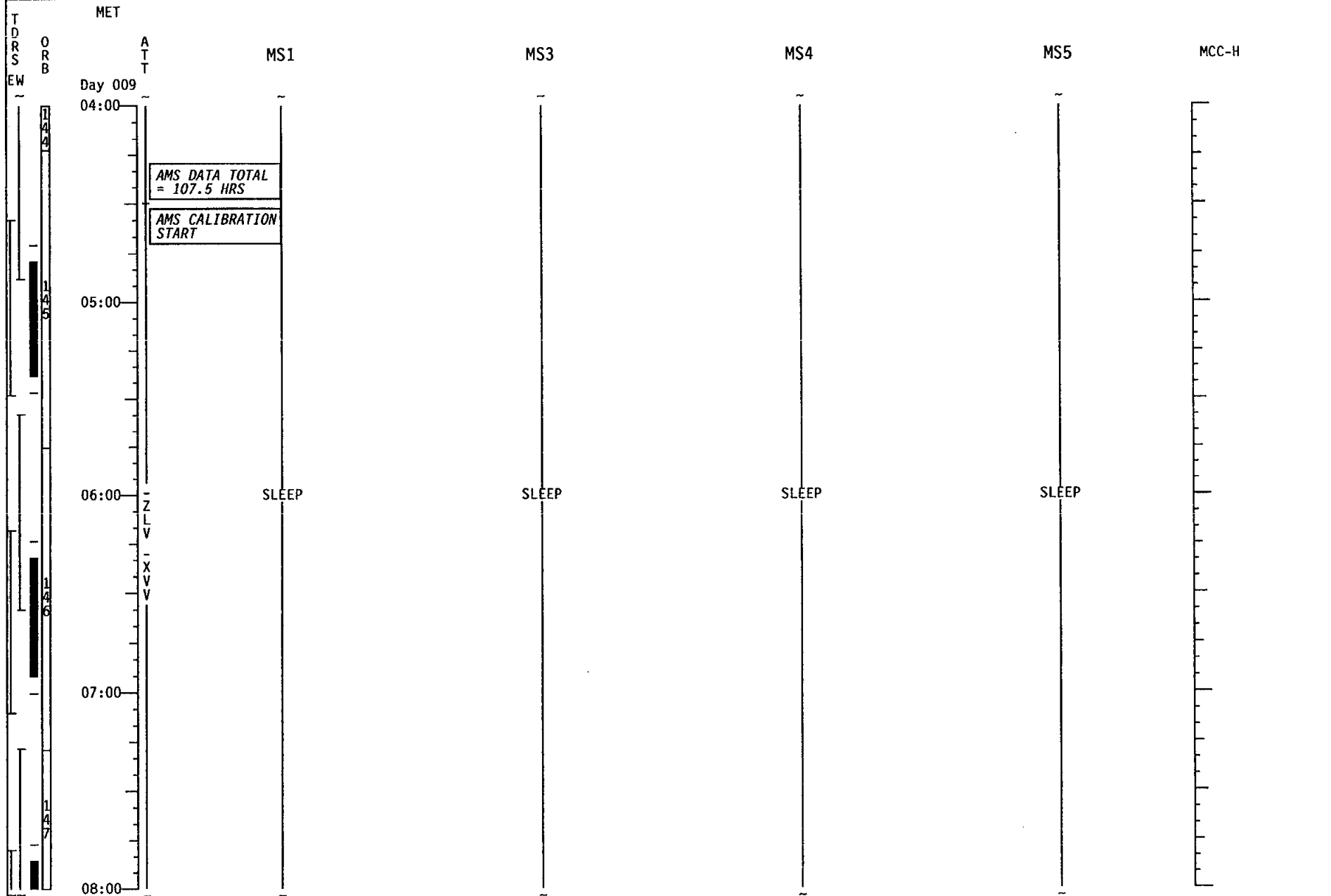
STS-91 (FD 10)



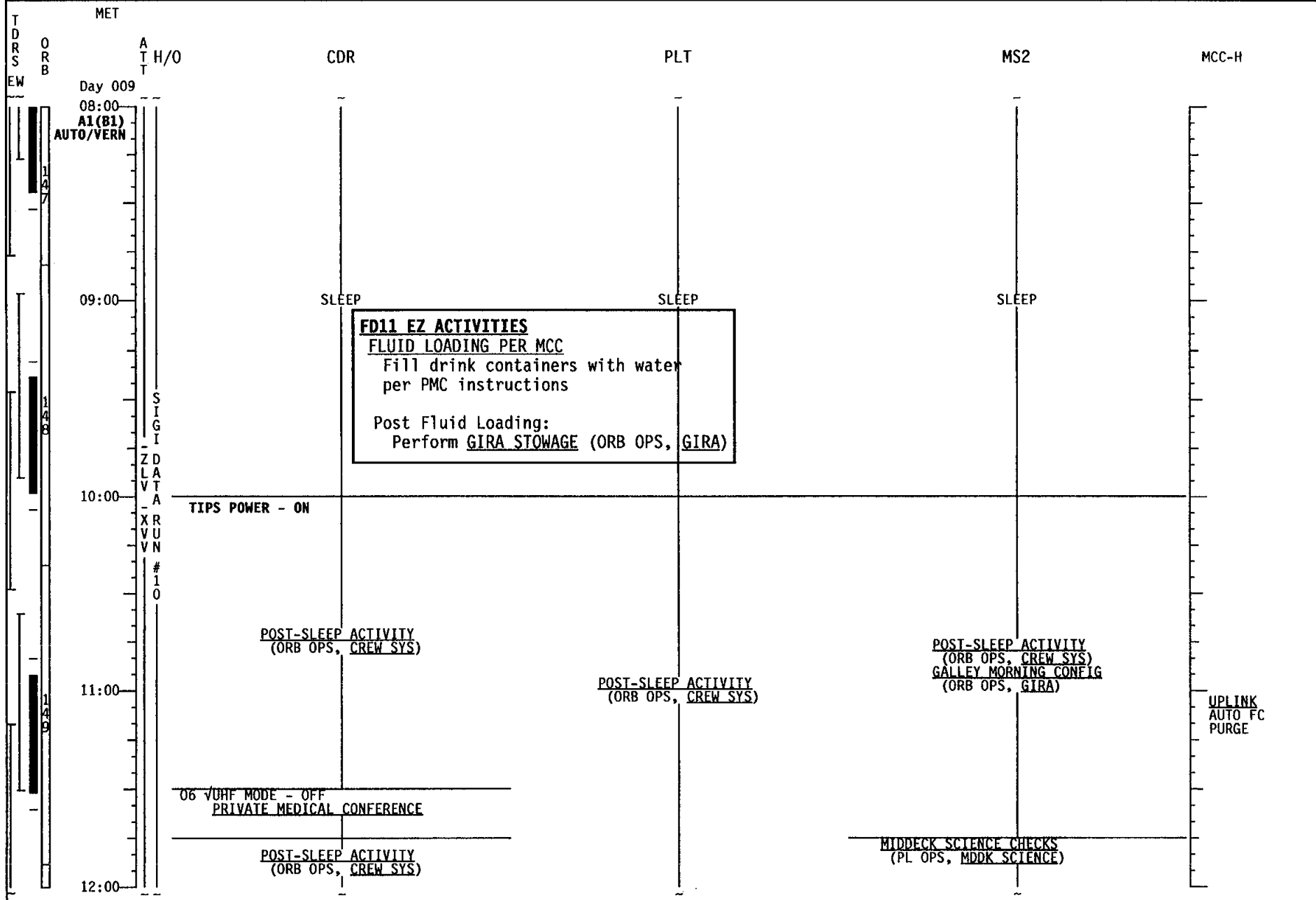
STS-91 (FD 10)



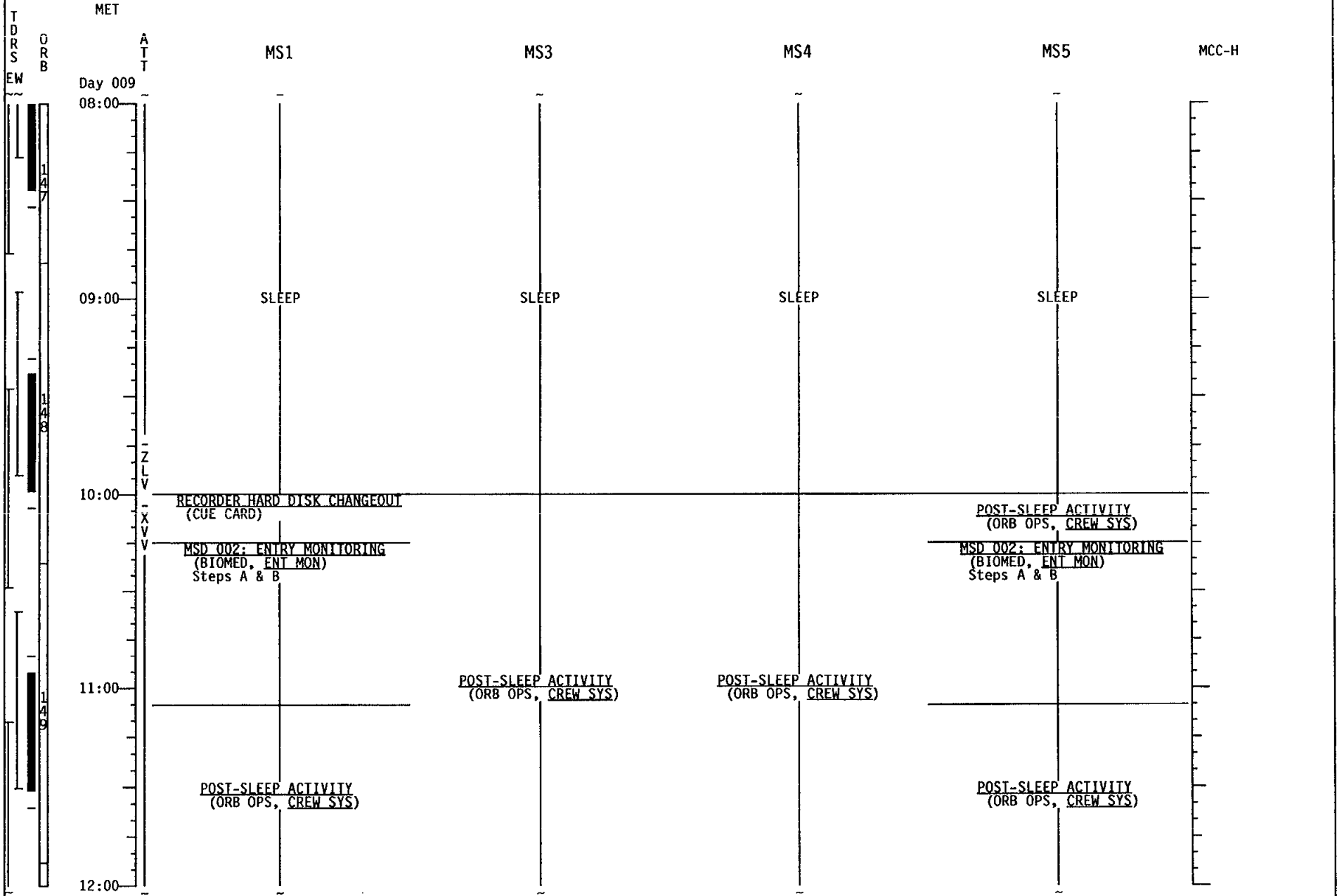
STS-91 (FD 10)



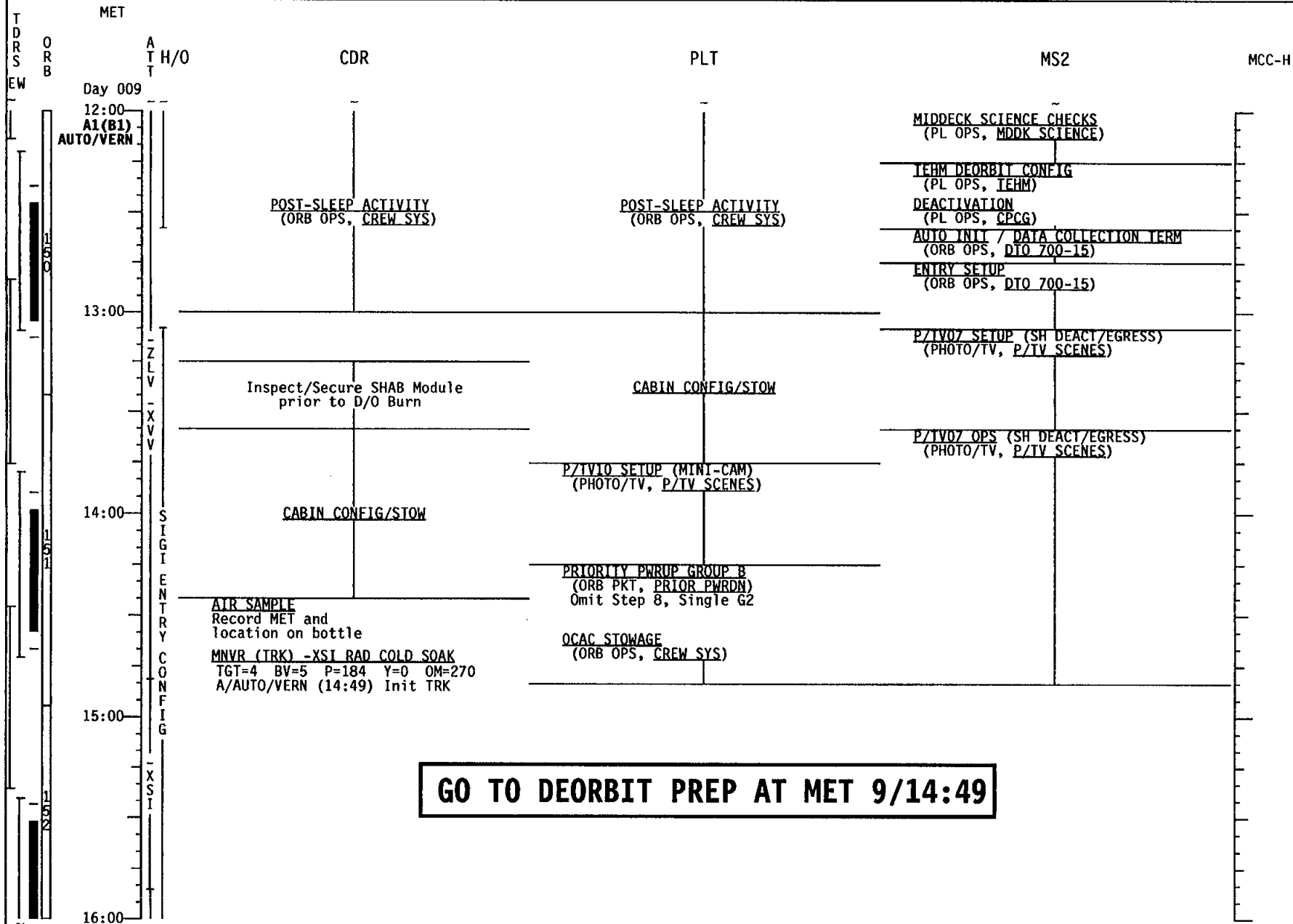
STS-91 (FD 11)



STS-91 (FD 11)

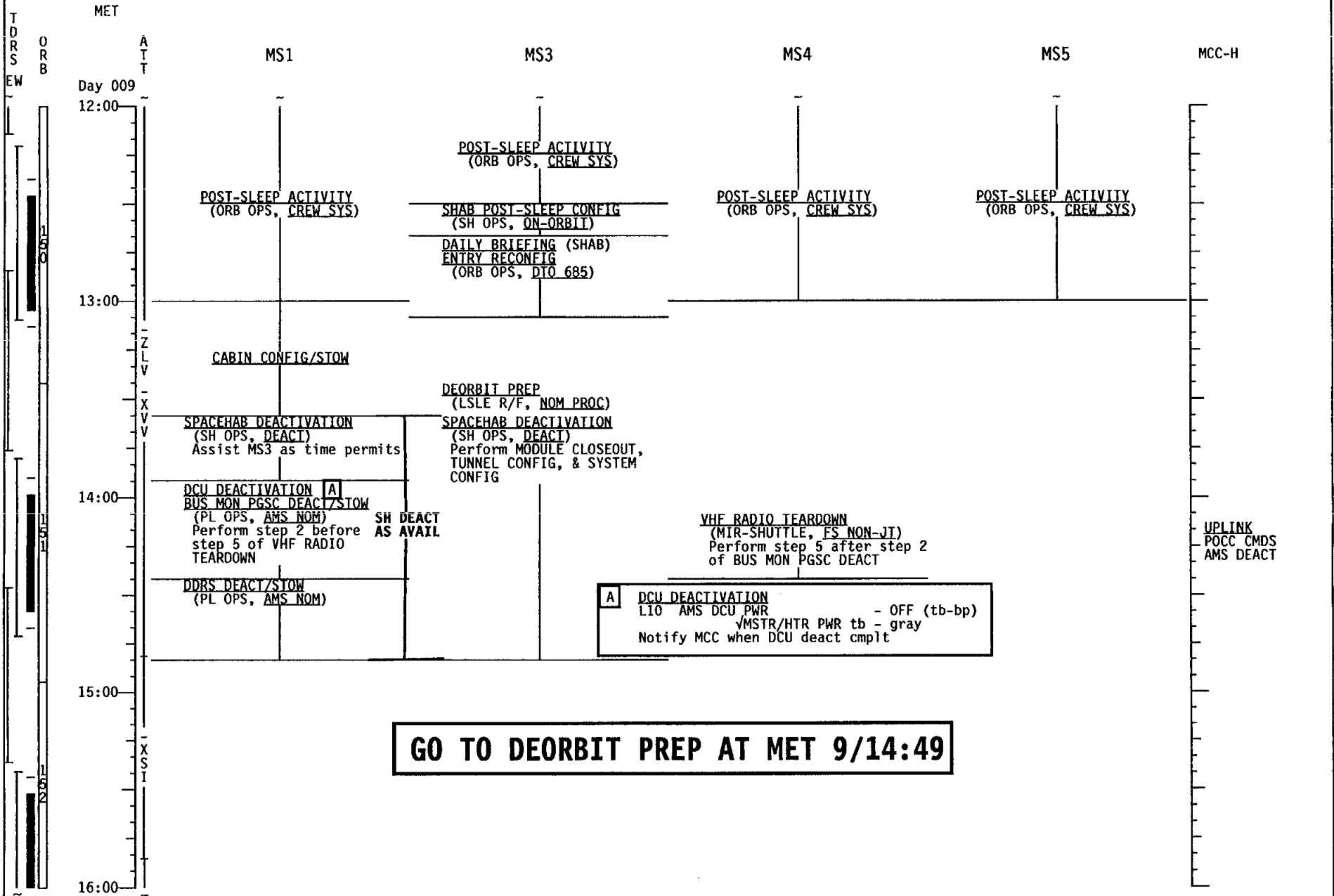


STS-91 (FD 11)



GO TO DEORBIT PREP AT MET 9/14:49

STS-91 (FD 11)



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DAP TABLE

DAP TABLE

DAP TABLE

<u>DAP</u>	<u>PURPOSE</u>	<u>DAP</u>	<u>PURPOSE</u>
A1	NOMINAL	B1	NOMINAL; OMS & RCS BURNS
A2	PTC	B2	LOSS OF VERNIS (TAIL ONLY)
A3	GG	B3	LOSS OF VERNIS (NOSE & TAIL)
A4	PRE/POST DEPLOY	B4	SSUS DEPLOY
A5	LOSS OF VERNIS (NOSE & TAIL)	B5	COAS CAL
A6	LOSS OF VERN (TAIL ONLY) MIN PROP VERN	B7	RENDEZVOUS
A7	RENDEZVOUS	B8	CORRIDOR
A8	CORRIDOR	B9	DOCKING
A9	DOCKING	B10	FLYAROUND
A10	FLYAROUND	B12	MATED STACK TIGHT CONTROL
A12	MATED STACK MNVRS & HOLD	B13	FAILED CAPTURE
A13	FAILED CAPTURE		
A14	SLM		

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

CNT ACC = 0 UNLOADED
 = 1-5 NOT USED

STS-91 GENERIC DAP A CONFIGURATIONS

	ITEM #	A1	A2	A3	A4	A5
PRI						
ROT RATE	10	0.2000	0.4000	0.2000	0.5000	0.2000
ATT DB	11	5.00	1.00	1.00	3.00	5.00
RATE DB	12	0.20	0.20	0.20	0.20	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10
COMP	14	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL
Y OPTION	16	ALL	ALL	TAIL	ALL	ALL
TRAN PLS	17	0.10	0.10	0.10	0.10	0.10
ALT						
RATE DB	18	0.200	0.200	0.200	0.200	0.070
JET OPT	19	ALL	ALL	ALL	ALL	ALL
# JETS	20	2	2	2	2	1
ON TIME	21	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00
VERN						
ROT RATE	23	0.2000	0.4000	0.0080	0.2000	0.2000
ATT DB	24	1.000	1.000	0.070	1.000	1.000
RATE DB	25	.020	.020	.010	.020	.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/ POST DEPLOY	LOSS OF VERN (N/T)

STS-91 FLIGHT SPECIFIC DAP A CONFIGURATIONS

	ITEM #	A6	A7	A8	A9	A10	A12	A13	A14
PRI									
ROT RATE	10	0.2000	0.2000	0.2000	0.0500	0.1300	0.1000	0.0500	0.1000
ATT DB	11	5.00	2.00	1.00	0.50	2.00	5.00	1.00	0.30
RATE DB	12	0.20	0.20	0.10	0.10	0.10	0.20	0.10	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10	0.04	0.10	0.10
COMP	14	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	TAIL	ALL	TAIL	TAIL	TAIL	TAIL	TAIL	ALL
Y OPTION	16	TAIL	ALL	TAIL	TAIL	TAIL	TAIL	TAIL	ALL
TRAN PLS	17	0.10	0.10	0.05	0.05	0.05	0.01	0.05	0.10
ALT									
RATE DB	18	0.070	0.100	0.200	0.200	0.200	0.070	0.200	0.070
JET OPT	19	TAIL	ALL	ALL	ALL	ALL	TAIL	ALL	TAIL
# JETS	20	1	2	2	2	2	3	2	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00	11.28	0.00	0.00
VERN									
ROT RATE	23	0.0500	0.0160	0.2000	0.0500	0.1300	0.1500	0.0500	0.0450
ATT DB	24	1.000	1.000	1.000	0.500	2.000	5.000	1.000	0.100
RATE DB	25	.020	.020	.020	.020	.020	.050	.020	.020
ROT PLS	26	0.010	0.010	0.010	0.050	0.050	0.002	0.050	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0	8	0	0
PURPOSE		FWD PROP SAVINGS	RNDZ	CORRIDOR	DOCKING	FLY AROUND	MATED STACK MNVRS & HOLD	FAILED CAPTURE	SLM

Note: **BOLD/ITALICS** = not l-Loaded

STS-91 GENERIC DAP B CONFIGURATIONS

	ITEM #	B1	B2	B3	B4	B5
PRI						
ROT RATE	30	0.5000	0.2000	0.2000	0.2000	0.2000
ATT DB	31	3.00	3.00	3.00	0.30	3.00
RATE DB	32	0.20	0.20	0.20	0.20	0.20
ROT PLS	33	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	ALL	TAIL	TAIL
Y OPTION	36	ALL	TAIL	ALL	TAIL	TAIL
TRAN PLS	37	0.10	0.02	0.02	0.02	0.02
ALT						
RATE DB	38	0.200	0.070	0.070	0.200	0.200
JET OPT	39	ALL	TAIL	ALL	ALL	ALL
# JETS	40	2	1	1	2	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08
DELAY	42	0.00	0.00	0.00	0.00	0.00
VERN						
ROT RATE	43	0.2000	0.2000	0.2000	0.0080	0.0160
ATT DB	44	1.000	1.000	1.000	0.100	0.033
RATE DB	45	.020	.020	.020	.010	.020
ROT PLS	46	0.002	0.002	0.002	0.002	0.002
COMP	47	.000	.000	.000	.000	.000
CNTL ACC	48	0	0	0	0	0
PURPOSE		NOM; OMS & RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (N & T)	SSUS DEPLOY	COAS CAL

STS-91 FLIGHT SPECIFIC DAP B CONFIGURATIONS

	ITEM #	B7	B8	B9	B10	B12	B13
PRI							
ROT RATE	30	0.5000	0.2000	0.0500	0.1300	0.0500	0.0500
ATT DB	31	2.00	1.00	0.50	2.00	5.00	1.00
RATE DB	32	0.20	0.10	0.10	0.10	0.20	0.10
ROT PLS	33	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	TAIL	TAIL	TAIL	TAIL
Y OPTION	36	ALL	TAIL	TAIL	TAIL	TAIL	TAIL
TRAN PLS	37	0.05	0.01	0.01	0.01	0.01	0.01
ALT							
RATE DB	38	0.100	0.200	0.200	0.200	0.070	0.200
JET OPT	39	ALL	ALL	ALL	ALL	TAIL	ALL
# JETS	40	2	2	2	2	3	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42	0.00	0.00	0.00	0.00	11.28	0.00
VERN							
ROT RATE	43	0.2000	0.2000	0.0500	0.1300	0.0500	0.0500
ATT DB	44	1.000	1.000	0.500	2.000	1.000	1.000
RATE DB	45	.020	.020	.020	.020	.050	.020
ROT PLS	46	0.002	0.002	0.020	0.020	0.002	0.020
COMP	47	.000	.000	.000	.000	.000	.000
CNTL ACC	48	0	0	0	0	8	0
PURPOSE		RNDZ	CORRIDOR	DOCKING	FLY- AROUND	MATED STACK TIGHT CONTROL	FAILED CAPTURE

Note: **BOLD/ITALICS** = not l-Loaded

The sections following this divider page will not be included in flight copies.

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ATTITUDE TIMELINE

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT	
1 000/01:00:00 MET 153/23:09:54 GMT	STS 91 Final A Launch June 2, 1998 153/22:09:54 Z					
2 000/01:12:00 MET 20:28 153/23:21:54 GMT 30:22	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV Post Insertion SOPA/SBband Comm Orb Therm - 4hr
3 000/03:30:00 MET 39:23 154/01:39:54 GMT 49:17	INRTL R= 56.00 MNVR P= 77.00 Y= 40.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 59 P 71	Posigrade TV Roll 180 LVLH R P Y 180/345/6	NC-1 (L OMS) TIG 00/03:43:12
4 000/03:45:00 MET 53:02 154/01:54:54 GMT 02:02:56	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV Post Insertion AMS Checkout
5 000/06:30:00 MET 45:00 154/04:39:54 GMT 54:54	TGT=2 BV=5 P=270.00 Y= 45.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 135 P 90	LVLH R= 0.00 P= 45.00 Y= 90.00	Bias +ZLV -YVV Nose South Deep Space AMS
6 000/15:25:00 MET 34:48 154/13:34:54 GMT 44:42	INRTL R=252.00 MNVR P= 48.00 Y=338.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 230 P 113	Posigrade TV Roll 0 4AMS LVLH R P Y 0/015/6	NC-2 (R OMS) TIG 00/15:40:40
7 000/15:45:00 MET 53:04 154/13:54:54 GMT 14:02:58	TGT=2 BV=5 P=270.00 Y=315.00 OM=270.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 225 P 90	LVLH R= 0.00 P= 45.00 Y=270.00	Bias +ZLV +YVV Nose North Deep Space AMS
8 000/17:15:00 MET 27:50 154/15:24:54 GMT 37:44	INRTL R=109.50 MNVR P=219.09 Y= 78.44 For AMS: MNVR NET 17:15	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 270 P 31	PAIR AOS 17:14 LOS 17:43 C16 LOS 18:03	SLM 1 -Z:16 -Y:92 (IMU)
9 000/17:40:00 MET 47:30 154/15:49:54 GMT 57:24	INRTL R= 15.13 MNVR P=328.50 Y= 3.98	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 85 P 59	SLM 1 & 2 AMS Deep Space 17:28 - 17:53	SLM 2 -Z:16
10 000/17:53:00 MET 18:00:54 154/16:02:54 GMT 10:48	INRTL R=107.44 MNVR P=334.37 Y= 20.12 For AMS: MNVR NET 17:45	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 360 P 45	C21 AOS 17:42 LOS 18:27	SLM 3 -Z:21
11 000/18:05:00 MET 20 154/16:14:54 GMT 15:14	INRTL R=107.05 MNVR P=333.29 Y= 23.91	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 1 P 41	SLM 3 & 4 AMS Deep Space 17:53 - 18:17	SLM 4 -Z:21
12 000/18:10:00 MET 154/16:19:54 GMT	 AMS LVLH NET 18:17	A1 LVLH VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 198 P 86	LVLH R=178.96 HOLD P=197.94 Y=283.93	Post SLM Hold AMS Deep Space

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

Attitude Timeline.

NET/GMT	MNVR OPTION	DAV	E/S	REF ATT/REMARKS	EVENT	
13 000/18:26:00 MET 33:52 154/16:35:54 GMT 43:46	INRTL R=260.80 MNVR P=329.01 Y=356.99 For AMS: MNVR NET 18:26	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 200 P 66	Cal Att AMS Deep Space 18:34 - 18:56 Sunrise = 19:02	HUD Cal C37 Bore-sited AOS 18:32 LOS 19:16
14 000/18:54:00 MET 56:00 154/17:03:54 GMT 05:54	TGT=2 BV=5 P=270.00 Y=315.00 OM=270.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 225 P 90	LVLH R= 0.00 P= 45.00 Y=270.00	Bias +ZLV +YV Nose North Deep Space AMS
15 000/20:55:00 MET 21:05:18 154/19:04:54 GMT 15:12	INRTL R=110.00 MNVR P=237.00 Y=339.00	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 312 P 100	Posigrade TV Roll 0 4AMS LVLH R P Y 0/010/0	NPC (+X RCS) TIG 00/21:10:44
16 000/21:15:00 MET 22:38 154/19:24:54 GMT 32:32	TGT=2 BV=5 P=270.00 Y= 45.00 OM= 90.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 135 P 90	LVLH R= 45.00 P= 0.00 Y= 89.97	Bias +ZLV -YV Nose South Deep Space AMS
17 000/23:50:00 MET 59:54 154/21:59:54 GMT 22:09:48	INRTL R=109.00 MNVR P=224.00 Y= 15.00	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 311 P 74	Posigrade TV Roll 0 4AMS LVLH R P Y 0/010/0	MC-3 (+X RCS) TIG 01/00:03:41
18 001/00:10:00 MET 17:30 154/22:19:54 GMT 27:24	TGT=2 BV=5 P=270.00 Y= 45.00 OM= 90.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 135 P 90	LVLH R= 0.00 P= 45.00 Y= 90.00	Bias +ZLV -YV Nose South Deep Space AMS
19 001/13:05:00 MET 14:57 155/11:14:54 GMT 24:51	INRTL R=245.00 MNVR P= 70.00 Y= 50.00	A7 AUTO DB AT 2.00 ALT DB RT 0.100	RATE 0.2000 DB AT 2.00 DB RT 0.100	SUN R 233 P 60	Posigrade TV Roll 0 4AMS LVLH R P Y 0/015/0	NH (2 OMS) TIG 01/13:20:00
20 001/13:25:00 MET 155/11:34:54 GMT		A7 LVLH DB AT 1.000 VERN DB RT 0.020	RATE 0.0160 DB AT 1.000 DB RT 0.020	EARTH R 180 P 125	LVLH R= 0.23 HOLD P= 34.77 Y= 0.09	LVLH Hold Between Burns
21 001/13:45:00 MET 49:04 155/11:54:54 GMT 58:58	INRTL R=106.00 MNVR P=230.00 Y= 0.00	A7 AUTO DB AT 2.00 ALT DB RT 0.100	RATE 0.2000 DB AT 2.00 DB RT 0.100	SUN R 316 P 84	Posigrade TV Roll 0 4AMS LVLH R P Y 0/015/0	MC-4 (2 OMS) TIG 01/13:52:30
22 001/14:00:00 MET 04:29 155/12:09:54 GMT 14:23	TGT=2 BV=1 P= 0.00 Y= 0.00 OM= 0.00	B7 AUTO DB AT 2.00 ALT DB RT 0.100	RATE 0.5000 DB AT 2.00 DB RT 0.100	EARTH R 323 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	-Z TGT TRACK S TRK NAV PASS
23 001/14:32:00 MET 15:05:20 155/12:41:54 GMT 13:15:14	TGT=2 BV=5 P=340.00 Y= 0.00 OM= 0.00	B7 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.0100 DB AT 1.000 DB RT 0.020	EARTH R 180 P 20	LVLH R= 0.00 P=290.00 Y= 0.00	-Z TGT TRACK
24 001/14:35:00 MET 155/12:44:54 GMT						NCC (Multiaxis) TIG 01/14:35:00 KU- RDR PASSIVE

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

Attitude Timeline

NET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
25 001/15:10:00 MET 12:25 155/13:19:54 GMT 22:19	INRTL R=105.00 MNVR P=236.00 Y= 1.00	A7 AUTO ALT	RATE 0.2000 DB AT 2.00 DB RT 0.100	SUN R 318 P 80	Posigrade TV Roll 0 4AMS LVLH R P Y 0/015/354	TI (L OMS) TIG 01/15:24:24
26 001/15:29:00 MET 33:05 155/13:38:54 GMT 42:59	TGT=2 BV=1 P= 0.00 Y= 0.00 OM= 0.00	B7 AUTO ALT	RATE 0.5000 DB AT 2.00 DB RT 0.100	EARTH R 146 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	-Z TGT TRACK
27 001/15:35:00 MET 53:31 155/13:44:54 GMT 14:03:25	TGT=2 BV=S P=350.00 Y= 0.00 OM= 0.00	A7 AUTO VERN	RATE 0.0090 DB AT 1.000 DB RT 0.020	EARTH R 180 P 10	LVLH R= 0.00 P=280.00 Y= 0.00	-Z TGT TRACK
28 001/15:54:00 MET 16:07:53 155/14:03:54 GMT 17:47	TGT=2 BV=5 P=340.00 Y= 0.00 OM= 0.00	A7 AUTO VERN	RATE 0.0120 DB AT 1.000 DB RT 0.020	EARTH R 180 P 20	LVLH R= 0.00 P=290.00 Y= 0.00	-Z TGT TRACK
29 001/16:09:00 MET 28:14 155/14:18:54 GMT 38:08	TGT=2 BV=5 P=310.00 Y= 0.00 OM= 0.00	A7 AUTO VERN	RATE 0.0260 DB AT 2.000 DB RT 0.020	EARTH R 180 P 50	LVLH R= 0.00 P=320.00 Y= 0.00	-Z TGT TRACK
30 001/16:29:00 MET 33:00 155/14:38:54 GMT 42:54	TGT=2 BV=5 P=285.00 Y= 0.00 OM= 0.00	A7 AUTO VERN	RATE 0.1040 DB AT 2.000 DB RT 0.020	EARTH R 180 P 75	LVLH R= 0.00 P=345.00 Y= 0.00	-Z TGT TRACK
31 001/16:40:00 MET 45:00 155/14:49:54 GMT 54:54	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A7 AUTO VERN	RATE 0.0500 DB AT 2.000 DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	Establish Rbar
32 001/16:53:00 MET 155/15:02:54 GMT	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	B7 AUTO PRI	RATE 0.5000 DB AT 2.00 DB RT 0.20			Start Tail Fwd Mnvr to Dock +ZLV -XVV
33 001/16:55:00 MET 59:00 155/15:04:54 GMT 08:54	*** MNVR INTERRUPT *** TGT=2 BV=5 P=270.00 Y= 0.00 OM=180.00	B7 AUTO PRI	RATE 0.5000 DB AT 2.00 DB RT 0.20	EARTH R 180 P 90	LVLH R=180.00 P=180.00 Y= 0.00	Docking Att Tail Fwd +ZLV -XVV
34 001/17:43:00 MET 155/15:52:54 GMT						Stationkeep 50m Final Approach KU to COMM @ RNG = 100 ft
35 001/18:49:00 MET 155/16:58:54 GMT					SHK AOS + 3 min Daily Orbit 3	DOCKING 1/18:49:00 FREE DRIFT
36 001/19:00:00 MET 16:41 155/17:09:54 GMT 26:35	INRTL R=148.00 MNVR P=178.00 Y=301.00	A12 AUTO VERN	RATE 0.1500 DB AT 5.000 DB RT 0.050	SUN R 240 P 155	001/22:06:30 Beta = 42.0	IO 5.1/140/0+10 SUN P=193 Y=339 OM=237

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REP ATT/REMARKS	EVENT
37 002/01:30:00 MET 02:26:22 155/23:39:54 GMT 156/00:36:16	INRTL R=276.00 MNVR P=322.00 Y= 56.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 222 P 10	002/08:15:00 Beta = 39.9	IO 5.2/0/0 SUN P=353 Y=353 OM=271
38 002/15:30:00 MET 16:23:56 156/13:39:54 GMT 14:33:50	INRTL R=230.00 MNVR P=119.00 Y=316.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 230 P 162	002/19:52:03 Beta = 37.5	IO4.2/-153/0+10 SUN P=192 Y=346 OM=105
39 003/01:30:00 MET 02:24:16 156/23:39:54 GMT 157/00:34:10	INRTL R=277.00 MNVR P=322.00 Y= 52.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 209 P 14	003/08:47:28 Beta = 35.1	IO 5.2/0/0 SUN P=348 Y=353 OM=272
40 003/11:25:00 MET 37:31 157/09:34:54 GMT 47:25	TGT=2 BV=5 P= 43.00 Y=355.00 OM=266.00	A12 RATE 0.1500 AUTO DB AT 5.000 VERN DB RT 0.050	EARTH R 353 P 43	LVLE R=264.59 P=278.67 Y= 42.52	GO 4.4 H2O Dump
41 003/13:30:00 MET 14:29:45 157/11:39:54 GMT 12:39:39	INRTL R= 79.00 MNVR P=151.00 Y=280.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 231 P 161	003/18:52:25 Beta = 33.0	IO4.2-153/180+5 SUN P=192 Y=345 OM=285
42 003/19:25:00 MET 36:34 157/17:34:54 GMT 46:28	TGT=2 BV=5 P=184.00 Y=277.00 OM=309.00	A12 RATE 0.1500 AUTO DB AT 5.000 VERN DB RT 0.050	EARTH R 270 P 97	LVLE R= 84.02 P=170.49 Y=317.37	GO Andy Docked Spektre Leak Check
43 003/20:15:00 MET 21:13:52 157/18:24:54 GMT 19:23:46	INRTL R=227.00 MNVR P=117.00 Y=316.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 232 P 161	003/18:52:25 Beta = 33.0	IO 4.2/-153/0+5 SUN P=192 Y=345 OM=105
44 004/01:30:00 MET 02:23:20 157/23:39:54 GMT 158/00:33:14	INRTL R=272.00 MNVR P=326.00 Y= 48.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 211 P 19	004/07:46:46 Beta = 30.6	IO 5.2/-4/0 SUN P=343 Y=350 OM=270
45 004/15:30:00 MET 16:19:31 158/13:39:54 GMT 14:29:25	INRTL R= 88.00 MNVR P=161.00 Y=280.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 238 P 160	004/19:24:46 Beta = 28.2	IO 4.2/-153/180 SUN P=191 Y=343 OM=285
46 004/20:00:00 MET 59:57 158/18:09:54 GMT 19:09:51	INRTL R=223.00 MNVR P=113.00 Y=317.00	B12 RATE 0.0500 AUTO DB AT 1.000 VERN DB RT 0.050	SUN R 238 P 159	004/19:24:46 Beta = 28.2	IO 4.2/-153/0 SUN P=191 Y=343 OM=105
47 005/01:30:00 MET 47:34 158/23:39:54 GMT 57:28	INRTL R=273.00 MNVR P=326.00 Y= 44.00	A12 RATE 0.1500 AUTO DB AT 5.000 VERN DB RT 0.050	SUN R 205 P 24	005/08:19:04 Beta = 25.8	IO 5.2/-4/0 SUN P=338 Y=350 OM=271
48 005/16:55:00 MET 17:04:19 159/15:04:54 GMT 14:13	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A12 RATE 0.1500 AUTO DB AT 5.000 VERN DB RT 0.050	EARTH R 180 P 90	LVLE R= 0.00 P= 0.00 Y= 0.00	Undocking Att Nose Pwd +ZLV +XVY

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

Attitude Timeline

NET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
49 005/17:51:00 MET 159/16:00:54 GMT				SEE AOS + 3 min Daily Orbit 3	UNDOCKING 5/17:51
50 005/18:02:00 MET 159/16:11:54 GMT	LVLH FREE ROTATION ROTR ABOUT +Y AXIS RATE=0.130	A10 LVLH DB AT 2.000 VERN DB RT 0.020	RATE 0.1300 DB AT 2.000 DB RT 0.020	LVLH R= 0.00 P= 0.00 Y= 0.00	Flyaround
51 005/18:14:00 MET 159/16:23:54 GMT		A10 LVLH DB AT 2.000 VERN DB RT 0.020	RATE 0.1300 DB AT 2.000 DB RT 0.020	EARTH R 0 HOLD P 176 LVLH R= 0.00 P= 93.60 Y= 0.00	+VBAR Station for Spktrre gas
52 005/19:04:00 MET 159/17:13:54 GMT	LVLH FREE ROTATION ROTR ABOUT +Y AXIS RATE=0.130	A10 LVLH DB AT 2.000 VERN DB RT 0.020	RATE 0.1300 DB AT 2.000 DB RT 0.020	LVLH R= 0.00 P= 93.60 Y= 0.00	Flyaround Continues
53 005/19:16:00 MET 159/17:25:54 GMT		A10 LVLH DB AT 2.000 VERN DB RT 0.020	RATE 0.1300 DB AT 2.000 DB RT 0.020	EARTH R 0 HOLD P 83 LVLH R= 0.00 P=197.20 Y= 0.00	SEP 2 (+X RCS) TIG 05/19:16:00
54 005/19:20:00 MET 34:35 159/17:29:54 GMT 44:29	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 90 LVLH R= 0.00 P= 0.00 Y= 90.00	+ZLV -YVV Nose South Deep Space AMS No bias MIR out
55 005/22:25:00 MET 34:38 159/20:34:54 GMT 44:32	INRTL R=265.00 MNVR P=240.00 Y= 29.00	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 155 P 51 Retrograde TV Roll 0 4AMS LVLH R P Y 180/165/354	Orb Adj (R OMS) Placeholder TIG 05/22:40:00
56 005/22:45:00 MET 53:13 159/20:54:54 GMT 21:03:07	TGT=2 BV=5 P=284.00 Y= 44.00 OM=100.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 135 P 80 LVLH R=135.86 P=269.02 Y= 79.98	Bias +ZLV -YVV Nose South Deep Space AMS
57 006/14:10:00 MET 13:50 160/12:19:54 GMT 23:44	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 90 LVLH R= 0.00 P= 0.00 Y= 90.00	SSCE Free Drift Nose South Deep Space AMS
58 006/16:00:00 MET 03:31 160/14:09:54 GMT 13:25	TGT=2 BV=5 P=289.00 Y= 38.00 OM=102.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 140 P 75 LVLH R=129.69 P=269.88 Y= 75.13	Bias +ZLV -YVV Nose South Deep Space AMS
59 007/13:40:00 MET 43:31 161/11:49:54 GMT 53:25	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 90.00	B1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 90 LVLH R= 0.00 P= 0.00 Y= 90.00	GPS Free Drift Nose South Deep Space AMS
60 007/14:15:00 MET 28:41 161/12:24:54 GMT 28:35	TGT=2 BV=5 P=295.00 Y= 37.00 OM=106.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 140 P 70 LVLH R=130.70 P=269.10 Y= 70.27	Bias +ZLV -YVV Nose South Deep Space AMS

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

Attitude Timeline

MET/GMT		MNVR OPTION	DAP		E/S	REV ATT/REMARKS	EVENT
61	008/14:35:00 MET 38:41	TGT-2 BV=5 P=270.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 90.00	FCS C/O RCS Hot Free Drift Nose South Deep Space AMS
	162/12:44:54 GMT 48:35	Y= 0.00 OM= 90.00					
62	008/16:20:00 MET 23:34	TGT-2 BV=5 P=300.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 145 P 65	LVLH R=123.45 P=271.18 Y= 54.62	Bias +ZLV -YV Nose South Deep Space AMS
	162/14:29:54 GMT 33:28	Y= 31.00 OM=106.00					
63	009/04:30:00 MET 44:28	TGT-2 BV=3 P= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XV EOM Thermal Conditioning
	163/02:39:54 GMT 54:22	Y= 0.00 OM= 0.00 FUTURE LOADED					
64	009/14:49:00 MET 56:59	TGT-4 RA= 79.872 BV=5 DEC= 23.119N P=184.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 180 P 176	INRTL R= 58.77 P=107.50 Y=291.63	-XSI Coldsoak
	163/12:58:54 GMT 13:06:53	Y= 0.00 OM=270.00					
65	009/15:51:00 MET 16:01:06	INRTL R=203.00 MNVR P=135.00 Y=309.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 215 P 162	IMU Pair -Z:26 -Y:50	D/O IMU Align AOS 15:43 LOS 16:31
	163/14:00:54 GMT 11:00						
66	009/16:07:00 MET 10:09	INRTL R= 91.00 MNVR P= 37.00 Y=347.00	B1 AUTO PRI	RATE 0.5000 DB AT 3.00 DB RT 0.20	SUN R 25 P 108	Verif Pair -Z:13 -Y:17	D/O IMU Verif AOS 16:01 LOS 16:24
	163/14:16:54 GMT 20:03						
67	009/16:15:00 MET 18:54	INRTL R= 12.00 MNVR P= 97.00 Y=324.00	TRN AUTO PRI	RATE 0.5000 DB AT 3.50 DB RT 0.20	SUN R 91 P 150	Sun P = 180 Y = 30 OM= 309	D/O Comm
	163/14:24:54 GMT 28:48						
68	009/18:38:00 MET 42:40	INRTL R= 73.00 MNVR P=236.00 Y= 18.00	TRN AUTO PRI	RATE 0.5000 DB AT 3.50 DB RT 0.20	SUN R 353 P 60	Retrograde TV Roll 180 LVLH R P Y 0/195/0	D/O BURM TIG 09/18:49:00
	163/16:47:54 GMT 52:34						

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

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FLIGHT PLAN NOTES

STS-91 FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV103/DISCOVERY
 Inclination: 51.6°
 Insertion Altitude: 173 nm
 Mir Docking Altitude: 204 nm
 Duration: 10 + 2 days
 (4 docked days)

B. SHUTTLE/MIR MISSION-9 (S/MM-09) OVERVIEW

The primary objectives of S/MM-09 are docking and retrieval of MS5 (Andy Thomas); transfer of science equipment and Russian materials; and performance of Risk Mitigation Experiments (RMEs) in support of Phase 1 program requirements. A single Spacehab module is used to transport transfer items and conduct microgravity and life science investigations. The second primary objective of STS-91 is operation of the Alpha Magnetic Spectrometer (AMS) payload, which will study antimatter.

C. MAJOR EVENTS

<u>EVENT</u>	<u>ORBIT</u>	<u>DAILY ORBIT</u>	<u>MET</u>	<u>CDT</u>	<u>ΔV (fps)</u>	<u>HP/HA (nm)</u>
Launch	--	--	00/00:00	17:10	--	--
OMS-2	1	--	00/00:44	17:54	115.0	172/103
NC1	3	--	00/03:43	20:53	123.0	173/171
NC2	11	17	00/15:41	08:51	51.6	202/172
NPC	15	4	00/21:11	14:21	2.0	202/172
NC3	16	5	01/00:04	17:14	3.0	202/173
NC4	26	15	01/13:53	07:03	38.0	204/192
Ti	27	1	01/15:24	08:34	9.0	206/195
Dock	29	3	01/18:49	11:59	--	
Undock	91	3	05/17:51	11:01	--	
Sep Burn	92	4	05/19:13	12:23		
Deorbit	154	--	09/18:49	11:59	--	--
Landing	155	--	09/19:53	13:03	--	--

D. LANDING OPPORTUNITIES

		<u>Landing Orbit</u>	<u>Site</u>	<u>Local Time</u>	<u>MET</u>
Nominal	Primary	155	KSC	13:03	9/19:53
	1 Rev Late	156	KSC	14:39	9/21:29
	Weather Alt	157	EDW	16:09	9/22:59
1 Day Late	Primary	170	KSC	12:00	10/18:50
	1 Rev Late	171	KSC	13:36	10/20:26
	Weather Alt	172	EDW	15:07	10/21:57
2 Day Late	Primary	186	KSC	12:33	11/19:23
	1 Rev Late	187	KSC	14:09	11/20:59
	Weather Alt	188	EDW	15:40	11/22:30

E. CREW

STS-91

CDR – Charles Precourt
PLT – Dominic Gorie
MS1 – Franklin Chang-Diaz
MS2 – Wendy Lawrence
MS3 – Janet Kavandi
MS4 – Valery Ryumin
MS5 (DN) – Andrew Thomas

Mir-25

CDR – Talgat Musabayev
ENG – Nikolai Budarin

F. COMMUNICATIONS

TDRS Support:

East (41° W), West (174° W), Z (275° W)

Backup Real-Time TV:

Merritt Island MIL(MLX)

Backup Comm for Russian use:

Wallops (WLP), Dryden (DFR)

Contingency GSTDN:

MIL*, Bermuda BDA*, WLP, DFR* , Northrup SAL*

Contingency RTS:

Hawaii (HTS), Vandenburg (VTS), Diego Garcia (DGS), Oak Hanger (OTS*),
New Hampshire (NHS), Guam (GTS), and Colorado (CTS)

*UHF capability

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

MIR

Altair:

West (16° W)

Ground Sites:

Shelkovo (SHK), Dzhusali (DJS), Kolpashevo (KLP), Ulan-Udeh (ULD),
Ussurisk (USK), Petropavlosk-Kamchatski (PPK), and St. Petersburg (SPB)

G. TELEVISION/PHOTOGRAPHY

The Closed Circuit Television (CCTV) systems provide four camcorders (two in shuttle, two in Spacehab) for in-cabin coverage. There will be four Payload Bay (PLB) TV cameras (three color, and one black and white), two Remote Manipulator System (RMS) TV Cameras, and one docking color TV camera (mounted on the airlock centerline). In addition, one Electronic Still Camera (ESC-II) will be flown.

H. RUSSIAN LOGISTICS AND TRANSFERS

The major transfer items going up are containers of food, water, hygiene supplies, batteries, current converters, cosmonaut family packs and psychological support packs, water containers (EDV), one gyrodyne, and one Air Pressurization Unit. The major items coming down are empty food containers, Andrew Thomas' Soyuz seat liner, film, Combustion Chamber, Cosmic Radiation Effects and Activation Monitor (CREAM), transport kits, cold stowage items, and other Phase I Experiments.

I. SPACEHAB

The single module will be accommodating soft stowage bags, lockers, rack mounted experiments, and supporting subsystems. The Spacehab environmental control system is designed to accommodate two crewmembers on a continuous basis. Additional crewmembers are accommodated for brief periods at the expense of reduced cabin air heat rejection capability. Payload summaries are given in the following paragraphs:

1. RUSSIAN CARGO

The Russian cargo items are located in the Spacehab module in soft stowage bags, lockers, and a Spacehab double rack. The crew will be required to detach these items from the module and transfer them to the docking tunnel where they will be transferred to the Mir.

2. LSLE

The LSLE freezer will be activated on FD2 and will be used for cold storage of Mir transfer samples. LSLE requires daily status checks.

J. SECOND PRIMARY PAYLOAD

ALPHA MAGNETIC SPECTROMETER (AMS)

The AMS is a major particle physics experiment that is intended to look for antimatter originating from outside our galaxy and give hints of the mysterious 'dark matter' that could make up most of the universe.

K. MIR SCIENCE

1. COCULT (MICROGRAVITY CO-CULTURE)

This experiment will demonstrate the ability to culture, subculture cells and tissues, and inoculate experiment-specific biotechnology hardware in the Mir environment. The COCULT EDU-M/ECC and BTR will be transferred to the shuttle middeck as a powered transfer.

2. COSMIC RADIATION EFFECTS AND ACTIVATION MONITOR (CREAM)

CREAM is a United States Air Force payload designed to measure cosmic ray fluxes at various predetermined points in the Russian Space Station Mir. CREAM will be transferred to the Shuttle.

L. SECONDARY SCIENCE

1. COMMERCIAL PROTEIN CRYSTAL GROWTH (CPCG)

The CPCG payload is designed to conduct experiments which will supply information on the scientific methods and commercial potential for growing large high-quality protein crystals in microgravity.

2. SOLID SURFACE COMBUSTION EXPERIMENT (SSCE)

SSCE is a combustion chamber experiment studying the burning process in microgravity.

3. SHUTTLE IONOSPHERIC MODIFICATION WITH PULSED LOCAL EXHAUST (SIMPLEX)

Simplex is an experiment of opportunity with no manifested hardware. The experiment utilizes orbiter OMS thruster firings to create ionospheric disturbances for observation by ground based radar sites. One radar site (Arecibo) will also use a low-level laser to observe the thruster firing. The objective of SIMPLEX is to determine the source of Very High Frequency (VHF) radar echoes.

4. GET-AWAY SPECIAL PAYLOAD G-090

The GAS payload G-090 is sponsored by Utah State University. The payload is split into four different experiments: Chemical Unit Process in Space, Nucleic Boiling in Space, Crystal Growth, and Seeds in Space (Popcorn).

5. GET-AWAY SPECIAL PAYLOAD G-648

The payload is sponsored by the Canadian Space Agency. The objective of the experiment is to manufacture organic thin films by the Physical Vapour Transport (PVT) method.

6. GET-AWAY SPECIAL PAYLOAD G-743

The payload is managed by the Broward Community College in Florida. The G-743 will fly a genotoxicology radiation and dosimetry experiment. This experiment is designed to determine the degree to which DNA, both in vivo and in vitro, is damaged by exposure to cosmic radiation in a microgravity environment.

7. GET-AWAY SPECIAL PAYLOAD G-765

The payload is sponsored by the Canadian Space Agency. The experiment is intended to study diffusion coefficients of crude oil, as well as test the form stability instrument, and capillary flow instrument.

8. SPACE EXPERIMENT MODULE-03 AND -05 (SEM)

These two modules accommodate small experiments designed and constructed by students.

M. RISK MITIGATION EXPERIMENTS (RMEs)

1. REAL TIME RADIATION MONITORING DEVICE (RRMD) (RME 1312)

The Real-Time Radiation Monitoring Device is used to monitor the cosmic radiation, especially charged particles, real time. The detector, which is made of a large silicon crystal, is a Linear Energy Transfer (LET) spectrometer and allows for the direct calculation of precisely absorbed radiation doses.

2. INVENTORY MANAGEMENT SYSTEM (IMS) (TEST 5) (RME 1319)

The objective of this experiment is to test the usage of the IMS Barcode reader in a microgravity environment. The IMS will be used on the ISS to keep track of the items on the International Space Station.

3. RADIATION MONITORING EXPERIMENT – III (RME–III) (RME 1320)

The experiment consists of a radiation recording and monitoring device that is placed on the Mir for the docked timeframe. During the docked timeframe the monitoring device orientation is changed before it is removed prior to hatch closure.

4. SHUTTLE CONDENSATE COLLECTION FOR ISS (SCCI) (RME 1331)

The objective of this RME is to collect and analyze condensate during a joint Shuttle/Mir mission. The condensate will be collected in a water collection device during the docked phase (shared environment) of the Shuttle/Mir mission. Also, one liter samples of condensate will be collected prior to docking and post docking to see what the affect of the Mir environment is on the shuttle condensate.

N. ON–ORBIT DETAILED TEST OBJECTIVE (DTOs)

1. KNEEBOARD SITUATION AWARENESS (DTO 685)

This DTO evaluates the usage of a touch screen strapped to the knee during ascent and entry.

2. URINE COLLECTION DEVICE (DTO 690)

This DTO evaluates the fit of several sizes and types of manual urine collection devices (UCDs) and their adapters (anatomical interface) in microgravity.

3. ORBITER SPACE VISION SYSTEM (SVS) FLIGHT UNIT TESTING (DTO 700–11)

This SVS uses views of targets on payloads and payload bay hardware to provide precise relative position, attitude, and rate cues in a concise graphical and digital format. This DTO will evaluate the operation and performance of SVS in conjunction with orbiter CCTV system in the on–orbit environment.

4. INTEGRATED GLOBAL POSITIONING SYSTEM/INERTIAL NAVIGATION SYSTEM (SIGI) (DTO 700–15)

The SIGI is intended to replace the shuttle onboard TACAN and, eventually, the HAINS Inertial Measurement Units. The SIGI DTO will mitigate the technical and schedule risks of applying this new technology to the shuttle navigation systems by evaluating the system's performance in space flight. The SIGI unit will be mounted in Avionics Bay 3B and will be commanded by the PGSC.

5. MICROMETEOROID/ORBITAL DEBRIS PHOTO AND VIDEO SURVEY OF MIR (DTO 1118)

This DTO will conduct a photographic and video survey of Mir from the shuttle to assess the overall condition of Mir, document shuttle approach and separation, assess relative motion and analyze plume impingement. Real–time or recorded video will be downlinked when practical.

O. ON–ORBIT DETAILED SUPPLEMENTAL OBJECTIVES (DSOs)

EDUCATION ACTIVITIES (DSO 802)

This DSO demonstrates various aspects of microgravity and space science on video to be used in educational activities and programs.

CUE CARD CONFIGURATION

CUE CARD
CONFIGURATION

CUE CARD CONFIGURATION

FAB USE ONLY

CC 7-2

FLT PLN/91/FIN

TOP

**PILE
VELCRO**

**PILE
VELCRO**

STS-91 GENERIC DAP A CONFIGURATIONS

	ITEM #	A1	A2	A3	A4	A5
PRI						
ROT RATE	10	0.2000	0.4000	0.2000	0.5000	0.2000
ATT DB	11	5.00	1.00	1.00	3.00	5.00
RATE DB	12	0.20	0.20	0.20	0.20	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10
COMP	14	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL
Y OPTION	16	ALL	ALL	TAIL	ALL	ALL
TRAN PLS	17	0.10	0.10	0.10	0.10	0.10
ALT						
RATE DB	18	0.200	0.200	0.200	0.200	0.070
JET OPT	19	ALL	ALL	ALL	ALL	ALL
# JETS	20	2	2	2	2	1
ON TIME	21	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00
VERN						
ROT RATE	23	0.2000	0.4000	0.0080	0.2000	0.2000
ATT DB	24	1.000	1.000	0.070	1.000	1.000
RATE DB	25	.020	.020	.010	.020	.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/ POST DEPLOY	LOSS OF VERN (N/T)

FLT PLN-1a/91/O/A

HINGE

TOP
HINGED AT BOTTOM OF
'STS 91 GENERIC DAP A CONFIGURATIONS'

HINGE

STS-91 GENERIC DAP B CONFIGURATIONS

	ITEM #	B1	B2	B3	B4	B5
PRI						
ROT RATE	30	0.5000	0.2000	0.2000	0.2000	0.2000
ATT DB	31	3.00	3.00	3.00	0.30	3.00
RATE DB	32	0.20	0.20	0.20	0.20	0.20
ROT PLS	33	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	ALL	TAIL	TAIL
Y OPTION	36	ALL	TAIL	ALL	TAIL	TAIL
TRAN PLS	37	0.10	0.02	0.02	0.02	0.02
ALT						
RATE DB	38	0.200	0.070	0.070	0.200	0.200
JET OPT	39	ALL	TAIL	ALL	ALL	ALL
# JETS	40	2	1	1	2	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08
DELAY	42	0.00	0.00	0.00	0.00	0.00
VERN						
ROT RATE	43	0.2000	0.2000	0.2000	0.0080	0.0160
ATT DB	44	1.000	1.000	1.000	0.100	0.033
RATE DB	45	.020	.020	.020	.010	.020
ROT PLS	46	0.002	0.002	0.002	0.002	0.002
COMP	47	.000	.000	.000	.000	.000
CNTL ACC	48	0	0	0	0	0
PURPOSE		NOM; OMS & RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (N & T)	SSUS DEPLOY	COAS CAL

FLT PLN-1aa/91/O/A

**HOOK
VELCRO**

**HOOK
VELCRO**

FAB USE ONLY

CC 7-4

FLT PLN/91/FIN

TOP
BACK OF 'STS-91 GENERIC DAP A CONFIGURATIONS'

**PILE
VELCRO**

**PILE
VELCRO**

STS-91 FLIGHT SPECIFIC DAP A CONFIGURATIONS

	ITEM #	A6	A7	A8	A9	A10	A12	A13	A14
PRI									
ROT RATE	10	0.2000	0.2000	0.2000	0.0500	0.1300	0.1000	0.0500	0.1000
ATT DB	11	5.00	2.00	1.00	0.50	2.00	5.00	1.00	0.30
RATE DB	12	0.20	0.20	0.10	0.10	0.10	0.20	0.10	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10	0.04	0.10	0.10
COMP	14	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	TAIL	ALL	TAIL	TAIL	TAIL	TAIL	TAIL	ALL
Y OPTION	16	TAIL	ALL	TAIL	TAIL	TAIL	TAIL	TAIL	ALL
TRAN PLS	17	0.10	0.10	0.05	0.05	0.05	0.01	0.05	0.10
ALT									
RATE DB	18	0.070	0.100	0.200	0.200	0.200	0.070	0.200	0.070
JET OPT	19	TAIL	ALL	ALL	ALL	ALL	TAIL	ALL	TAIL
# JETS	20	1	2	2	2	2	3	2	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00	11.28	0.00	0.00
VERN									
ROT RATE	23	0.0500	0.0160	0.2000	0.0500	0.1300	0.1500	0.0500	0.0450
ATT DB	24	1.000	1.000	1.000	0.500	2.000	5.000	1.000	0.100
RATE DB	25	.020	.020	.020	.020	.020	.050	.020	.020
ROT PLS	26	0.010	0.010	0.010	0.050	0.050	0.002	0.050	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0	8	0	0
PURPOSE		FWD PROP SAVINGS	RNDZ	CORRIDOR	DOCKING	FLY-AROUND	MATED STACK MNVRS & HOLD	FAILED CAPTURE	SLM

Note: **BOLD/ITALICS** = not l-loaded

FLT PLN-1b/91/O/A

HINGE

TOP
 BACK OF 'STS-91 GENERIC DAP B CONFIGURATIONS'
 HINGED AT BOTTOM OF
 'STS 91 FLIGHT SPECIFIC DAP A CONFIGURATIONS'

HINGE

STS-91 FLIGHT SPECIFIC DAP B CONFIGURATIONS

	ITEM #	B7	B8	B9	B10	B12	B13
PRI							
ROT RATE	30	0.5000	0.2000	0.0500	0.1300	0.0500	0.0500
ATT DB	31	2.00	1.00	0.50	2.00	5.00	1.00
RATE DB	32	0.20	0.10	0.10	0.10	0.20	0.10
ROT PLS	33	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	TAIL	TAIL	TAIL	TAIL
Y OPTION	36	ALL	TAIL	TAIL	TAIL	TAIL	TAIL
TRAN PLS	37	0.05	0.01	0.01	0.01	0.01	0.01
ALT							
RATE DB	38	0.100	0.200	0.200	0.200	0.070	0.200
JET OPT	39	ALL	ALL	ALL	ALL	TAIL	ALL
# JETS	40	2	2	2	2	3	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42	0.00	0.00	0.00	0.00	11.28	0.00
VERN							
ROT RATE	43	0.2000	0.2000	0.0500	0.1300	0.0500	0.0500
ATT DB	44	1.000	1.000	0.500	2.000	1.000	1.000
RATE DB	45	.020	.020	.020	.020	.050	.020
ROT PLS	46	0.002	0.002	0.020	0.020	0.002	0.020
COMP	47	.000	.000	.000	.000	.000	.000
CNTL ACC	48	0	0	0	0	8	0
PURPOSE		RNDZ	CORRIDOR	DOCKING	FLY- AROUND	MATED STACK TIGHT CONTROL	FAILED CAPTURE

Note: **BOLD/ITALICS** = not loaded

FLT PLN-1bb/91/O/A

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VELCRO**

**HOOK
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FLIGHT DATA FILE
Distribution
91 FLT PLN FSP FIN

** JSC **

AP3/BRANCH DISTRIBUTION (10)
AP3/PAO DISTRIBUTION (50)
AP5/SCHOER, R.K.
BT4/HAWTHORNE, VICKI
BT4/ROSE, HAROLD
BT4/SLATER, RICK
C44/HANCOCK, L.
CA/LEESTMA, D.C.
CA44/BERTRAND, O.J.
CB/CB FDF REP
CB/CHIEF
CB/FAMILY ESCORT MGR
DA2/STONE, B.R.
DAB/DYE, P.F.
DAB2/ACTION CENTER
DF/WOOD, C. (4)
DF22/DPS FDF REP (4)
DF24/INCO FDF REP (6)
DF42/EVA (4)
DF44/MAGH, A.F. (2)
DF44/ROBOTICS SECTION (5)
DF5/MMACS LEAD OFFICER (3)
DF54/BOOK MANAGER P/TV (2)
DF54/CREW SYSTEMS
DF55/BOOSTER (3)
DF62/GNC GROUP LEAD (3)
DF63/PROP SYS GROUP LEAD (3)
DF73/ELEC SYS GROUP LEAD (4)
DF73/LEAD EGIL
DF73/SYSTEMS LIBRARY
DF74/SAVOY, M.G.
DF82/EECOM (5)
DJ4/QUICK, T.K. (3)
DM2/FLIGHT DESIGN MANAGER
DM21/LOWES, F.B.
DM32/ORBIT FDO GROUP LEAD (7)
DM43/HEAD
DM43/LIBRARY (2)
DM46/ENTRY FDO
DM46/LSO
DO12/OPS SAFETY OFFICE
DO2/SALINAS, L.
DO35/FDF LIBRARY

DO352/TECH EDITOR
DO353/BOND/BLUE SHELF (10)
DO353/FDF FLIGHT LEAD
DO353/FDF MNGR/RESERVE (15)
DO4/BOOK MANAGER FLT PLN (20)
DO4/FAO TEAM (15)
DO4/POINTING
DO4/SHUTTLE FLT PLANNING (3)
DO44/HEAD
DO45/SECTION HEAD
DO5/PAYLOADS (10)
DO52/PAWLK, B.
DO55/FITCH, L.J.
DP/CHIEF
DT32/TEAM LEAD
DT34/CONTROL PROP (4)
DT35/DPS/NAV TRAIN LEAD (4)
DT35/RMS TRAINING GROUP (2)
DT36/SHUTTLE SYSTEMS (2)
DT36/SPENCER, J.
DT37/CARGO SYSTEMS (3)
DT37/ROWEN, G.C.
DT37/SHUTTLE COMMUNICATIONS (2)
DT45/THARP, D. (2)
EC/CTSD LIBRARY
EC3/ROTTER, H.A.
EC5/ANDERSON, S. (2)
EC5/CHANG, C.M.
EE2/RCA SUPPORT
EG/CRITELLI, S.
EG/LIBRARY
EG1/MCSWAIN, G.
ES3/CHANG, Y. PHD
ES32/SERNA, R.
ES62/DAVIS, R.
EV/111/LIBRARY
EV14-LTB/ASD-14-LIB
EV3/PHAN, C. (2)
GS45/FISK, LINDA
GS53/STI LIBRARY (3)
MA2/HARDEE, S.N.
MER/30 LIBRARY
MG/BANKS, W.R.
MO/P2/WOLFER, J.
MT2/ELLERBE, V.
MT3/CLARK, G.
MT3/MANAGER (3)
MV/MC CULLOUGH, C.E.
MV3/LIBRARY
MV3/OLIVER, P.
MV6/RMS INTEGRATION (3)
NC62/MARTINEZ, M. (2)
NS2/CHIEF

NS4/STEISLINGER, N.
NS44/LLOYD, S.
OA/WARD, D.K.
SD/CLIFTON, J. (4)
SD-KI/SCARLETT, J.
SD24/SURGEON (2)
SD26/PANDER, L. (5)
SD3/COVINGTON, CAROLE (4)
SD3/PUTCHA, L.
SD361/ROBINSON, S.H.
SM2/CARDENAS, J. (2)
SM2/MISSION MANAGER
SM3/BAHR, P.A.
SN3/CHRISTIANSEN, E.
SN3/HARDY, A.C.
SN5/EOL
SP33/HARRIS, C.D.
SP43/HEINOL, C.
SP44/KLOERIS, V.
USH-434C/ODRC GROUP
USH-436Q/CB SAIL REP
YA/LIBRARY (2)
ZR1/USAF TECHNICAL LIBRARY (5)
ZS8/ASSGND LEAD FORECASTER

** JSC OFFSITE **

LMIS-HOUSTON(OBS)
LOCKHEED-MARTIN-HOUSTON(OBS)
1812 SPACE PARK DRIVE
P.O. BOX 58487
HOUSTON, TX 77258
F9110F/PROJECT OFFICE
F9110F/PROJECT OFFICE (3)

HUGHES TRAINING
TSC/LIBRARY

LOCKHEED-MARTIN-HOUSTON
C102/STEPHENS, K.
C42/GIBSON, L.A.
C42/NEMETH, P.
C42/PICKETT, L.
C42/SHERRILL, L. (15)
C70/KEENER, J.F.
B31/BOLLWEIG, K.

MCDONNELL DOUGLAS-HST TWR 1
16055 SPACE CENTER BLVD
HOUSTON, TX 77062
B1/BROUSSARD, A.

BOEING AEROSPACE-HOUSTON
P O BOX 58747
HOUSTON, TX 77058
HF-10/TRAVLOS, J.A.
HF-10/WIBLE, L.
HS-22/FLIGHT MANAGER
HS-22/STAGE MANAGER
HS-43/OPERATIONS LEAD

BOEING-HOUSTON
ZC01/ASUNCION, C.
ZC01/BATTLE, H.H.
ZC01/CORONADO, D.J.
ZC01/CUNNINGHAM, N.
ZC01/WOODALL, J.W.
ZC01-555/DE VAULT, G.M.
ZC03-17/BRYAN, L.W.

** POUCH MAIL **

UNITED SPACE ALLIANCE-HOUSTON
R16D/KYLE, D.
R16D/MISSION ENGINEER
USH-422D/LIBRARY, PROPULS. SYS
USH-423E/TRAJECTORY LIBRARY
USH-423H/NAVIGATION LIBRARY (2)
USH-436Q/SAIL/GN&C
USH-444E/SPRIGGS, K. (4)
USH423-E/PROX OPS LIBRARY
USH423-E/RENDEZVOUS LIBRARY
USH423-H/KOCEN, M.
ZC01/BEATTY, C.C.
ZC01/DISTEFANO, F.J.
ZC01/JENKINS, L.W.
ZC20/MEREDITH, M.

BNA-DOWNEY
841-2, AC85/TAYLOR, B.N.
AA10/BUIS, A.
AA05/WOOLHOUSE, D.L.
AB95/PRESTON, K.L.
AC28/HARPER, L.