

Flight Plan

STS-112/9A

(FDO Provided L-7 Week Trajectory)

Mission Operations Directorate
Operations Division

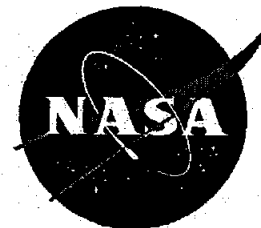
For the latest working copy of the Flight Plan, visit
<http://mod.jsc.nasa.gov/do4/flightplan/fp.cfm?id=112>
For the ISS OSTPV format of the Flight Plan,
R_9A_Final_Part 1 and R_9A_Final_Part 2

Final
August 22, 2002

EVENT	MET	GMT			CENTRAL		
Launch	00/00:00	Sat	09/28/02	23:17	Sat	18:17	CDT
ISS Docking	01/20:18	Mon	09/30/02	19:35	Mon	14:35	CDT
S1 Install	02/18:00	Tue	10/01/02	17:17	Tue	12:17	CDT
EVA 1	02/19:00	Tue	10/01/02	18:17	Tue	13:17	CDT
S1 Activation	03/00:45	Wed	10/02/02	00:02	Tue	19:02	CDT
EVA 2	04/18:45	Thu	10/03/02	18:02	Thu	13:02	CDT
EVA 3	06/18:45	Sat	10/05/02	18:02	Sat	13:02	CDT
Undock	08/18:06	Mon	10/07/02	17:23	Mon	12:23	CDT
Landing	10/19:12	Wed	10/09/02	18:29	Wed	13:29	CDT

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



Verify this is the correct version for the pending operation (training, simulation, or flight).
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MISSION OPERATIONS DIRECTORATE

STS-112 FLIGHT PLAN


FINAL
August 22, 2002

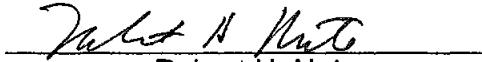
PREPARED BY:



Neisha T. Lopez
Book Manager, Lead FAO

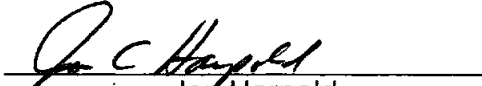

David H. Korth
Lead Ops Planner

APPROVED BY:


Linda P. DeLapp
Shuttle and Station
Operations Planning Group


Robert H. Nute
Chief, Flight Planning Branch


Larry Davis
Chief, Operations Division


Jon Harpold
Director of Operations

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Lead RPE	DO4/A. Faust	281-244-1297

FLIGHT PLAN
STS-112

LIST OF EFFECTIVE PAGES

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STS-112 FLIGHT PLAN FABRICATED ITEMS

<u>Title</u>	<u>Ref. Page</u>	<u>Item No.</u>
STS-112 DAP A1 - A8 CONFIGURATIONS (FRONT TOP)	CC 8-2	FLT PLN-1a/112/O/A
STS-112 DAP B1 - B8 CONFIGURATIONS (FRONT BOTTOM)	CC 8-3	FLT PLN-1aa/112/O/A
STS-112 DAP A9 - A15 CONFIGURATIONS (BACK TOP)	CC 8-4	FLT PLN-1b/112/O/B
STS-112 DAP B9 - B15 CONFIGURATIONS (BACK BOTTOM)	CC 8-5	FLT PLN-1bb/112/O/B

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INTRODUCTION

The STS-112 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, EVA, Deorbit Prep, and Entry Checklists. The detailed rendezvous and undocking timelines and procedures are contained in the Rendezvous Checklist.

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

- NSTS-07700 Vol III, Flight Definition and Requirements Document
- NSTS-17462-112, STS-112 Flight Requirements Document
- NSTS-37326, Shuttle Crew Scheduling Constraints

The STS-112 Flight Plan is based on the Flight Dynamics Officer (FDO) Provided launch minus 7 week profile (August 2002) and a launch date of September 28, 2002 at 23:17 GMT. Orbiter inertial attitudes are expressed relative to a mean of 1950 (M50) reference frame.

The following SCSC Exceptions have been submitted in order to mission objectives:

- Sleep Shift prior to critical event day
- Off Duty based on extended crew day

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

<http://mod.jsc.nasa.gov/do4/flightplan/fp.cmf?id=112>

OVERVIEW TIMELINE

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STS-112 ISS 9A Overview

Timeline 11+1+2 (Launch September 28, 2002 GMT 271/23:17:42)

		FD02																						
GMT	9/29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 000/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS		PI	S/Us	Pre Sleep	Sleep										Post Sleep	EMU & RMS C/O				Meal	7	Prep		
ISS		Pre Sleep	9.5 hr Sleep (shift 2 hr later)										Post Sleep	OFF DUTY				Meal	OFF DUTY					
Orb Att		-ZLV -XVV																				BIAS +ZLV		

		FD03																						
GMT	9/30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 001/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS	Prep	Pre Sleep	Sleep (shift 2 hrs early)										Post Sleep	RNDZ				Hatch Open				EVA		
ISS	OFF	Pre Sleep	8.5 hr Sleep (shift 0.5 hr later)										Post Sleep	DP	RNDZ				Hatch Open				PREP	
Orb Att		-ZLV -XVV										-ZLV+YVV				RNDZ				BIAS -XLV +ZVV				

		FD04																						
GMT	10/1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 002/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS	Prep	Rvw	Pre Sleep	Sleep										Post Sleep	ISS EVA Prep & P/B				EVA 1 (6:30)					
ISS	Prep	DP	Pre Sleep	8.5 hr Sleep (shift 0.5 hr later)										Post Slp	SSRMS St Installation				Meal	SSRMS EVA				
Orb Att		BIAS -XLV +ZVV																						

		FD05																										
GMT	10/2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
MET 003/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
STS			Post EVA	Pre Sleep	Sleep (shift 1 hr late)										Post Sleep	Off Duty	N2\$	Meal	EVA Prep				*					
ISS		*	Pre Sleep	8.5 hr Sleep (shift 1 hr late)										Post Slp	*	Off Duty	XFR	Meal	Transfer									
Orb Att		LVLH TEA				BIAS -XLV +ZVV																						

		FD06																						
GMT	10/3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 004/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS	Rvw	Pre Sleep	Sleep										Post Sleep	ISS EVA Prep & P/B				EVA 2 (6:30)						
ISS	Rvw	*	Pre Sleep	8.5 hr Sleep										Post Slp	*	ZCG				Meal	SSRMS EVA			
Orb Att		BIAS -XLV +ZVV																						

		FD07																						
GMT	10/4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 005/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS		Post EVA	Pre Sleep	Sleep (shift 1 hr late)										Post Sleep	EVA Prep				Meal	Transfer				@ O2
ISS		*	Pre Sleep	8.5 hr Sleep										Post Slp	Prep	O2	TVIS R & R	Meal	TVIS R & R				@ O2	
Orb Att		BIAS -XLV +ZVV										Bias -XLV+YVV				BIAS -XLV +ZVV								

		FD08																						
GMT	10/5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 006/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS	Rvw	Pre Sleep	Sleep										Post Sleep	ISS EVA Prep & P/B				EVA 3 (6:30)						
ISS	Rvw	*	Pre Sleep	8.5 hr Sleep										Post Slp	*					Meal	SSRMS EVA			
Orb Att		BIAS -XLV +ZVV																						

		FD09																							
GMT	10/6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
MET 007/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
STS		Post EVA	Pre Sleep	Sleep (shift 1 hr late)										Post Sleep	Off Duty				Meal	@	EMU#	\$			
ISS		*	Pre Sleep	8.5 hr Sleep										Post Slp	*	Off Duty				Meal	Transfer				\$
Orb Att		BIAS -XLV +ZVV																							

		FD10																						
GMT	10/7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 008/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS	Rdz	Pre Sleep	Sleep										Post Sleep	Egress				Undk/Fly				SHIMR	PAO	
ISS		*	Pre Sleep	8.5 hr Sleep										Post Slp	*	Egress				Undk				
Orb Att		BIAS -XLV +ZVV										Undock/Fly				BIAS +ZLV-XVV								+YVV

		FD11																						
GMT	10/8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 009/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS		Pre Sleep	Sleep (shift 1 hr early)										Post Sleep	FCS#	SHIMMER				*	Meal	Cabin Stow			
Orb Att		-ZLV +YVV				-ZLV -XVV										Bias -ZLV -XVV				-ZLV -XVV				

		FD12																						
GMT	10/9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MET 010/	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS		Pre Sleep	Sleep										Post Slp	IMU	D/O Prep				Entry					
Orb Att		-XVV				-ZLV -YVV										-XSI/ENTRY								

TIG 10/18:07 ^ # KSC Landing 10/19:12 (GMT 282/18:29)

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SUMMARY TIMELINE AND ISS SHORT TERM PLAN

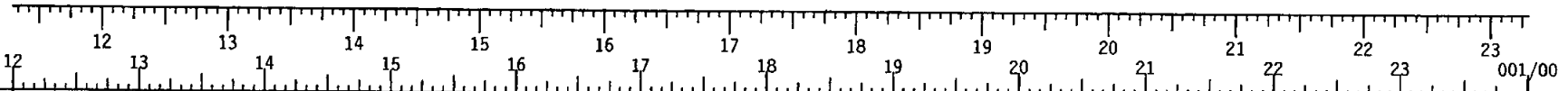
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GMT 09/28/02 09/29 01 02 03 03 04 05 06 07 08 08 09 10 11 12
 β = 44.2 000/00 01 02 03 04 05 06 07 08 09 10 11 12
 MET Day 000

CDR ASHBY	ASCENT	POST INSERTION	MEL UPK AFT CO	OMS BURN NCI	MZLV PMC A/G	PRE SLEEP	SLEEP	COMPLETED PRIOR TO DOCKING SSRMS C/O EMU C/O (2) REBA BATT CHARGE SAFER C/O SSAS C/O S1 DRY RUN (2) 9A TIMELINE REVIEW ETVCG ASSEMBLY (2) PGT & HLMT LT CHARGE 9A PREPACKING A/L PREPARATION PMA2 PRESSURIZATION										
PLT/IV MELROY	ASCENT	POST INSERTION	LD OA AP DS	OMS BURN	GP RW PR DN	PRE SLEEP	SLEEP											
MS1/EV1 WOLF	ASCENT	POST INSERTION	SEE S/U	TO EN PC P WR	OS CE AT CU P	PRE SLEEP	SLEEP											
MS2 MAGNUS	ASCENT	POST INSERTION	MC DK DK P /L	OMS BURN	GP RW PR DN	PRE SLEEP	SLEEP											
MS3/EV2 SELLERS	ASCENT	POST INSERTION	PGSC SETUP			PRE SLEEP	SLEEP											
MS4/IV YURCHIKHIN	ASCENT	POST INSERTION	GIRA INSTALL	PGSC SETUP		PRE SLEEP	SLEEP											
DAY/NIGHT ORBIT			2		3		4		5		6		7		8		9	
TDRS	47	[Timeline bars]																
ORB ATT	ASCENT	-ZLV +YVV		NC1	-ZLV -XVV													
NOTES	*RMS ON-ORBIT INIT																	

LUNCH
OMS - 2

GMT 09/29/02
 B = 42.7
 MET Day 000



CDR ASHBY	SLEEP	POST SLEEP	P/TV17 VIDEO SETUP	NC2 OMS BURN	-M ZN LV R	R P M W S R U P	RMS C/O	RMS PLB SURVEY	R P M W S R D N	FILTER CLEANING	NPC MULT AXIS RCS BURN	MEAL	OP SW VR S U P	OSVS C/O	P/TV19 CTR LINE CM	EXERCISE	
PLT/IV MELROY	SLEEP	POST SLEEP	P/TV17 VIDEO SETUP	OMS BURN	P S E T T V U 1 P 7		EMU C/O		P/TV18 WVS S/U	EVA PREP FOR XFER	P/TV06 S/U	MEAL	CRYO 02 SNSR CK		EXERCISE	-M ZN LV R	FUEL CELL MON
MS1/EV1 WOLF	SLEEP	POST SLEEP		EMU C/O PREP			EMU C/O		SAFER C/O	EVA PREP FOR XFER		MEAL	S I H N I S I M T M A E L R L	C O	S S H T I O M M W E R	EXERCISE	ODS RING EXT
MS2 MAGNUS	SLEEP	POST SLEEP	M C D K P / L	POST SLEEP	R P M W S R U P		RMS C/O	RMS PLB SURVEY	R P M W S R D N	MAGR UNSTOW & SETUP	O I U A C T	MEAL	OP SW VR S U P	OSVS C/O	OP SW VR S D N	XFER PREP	ODS RING EXT
MS3/EV2 SELLERS	SLEEP	POST SLEEP		EMU C/O PREP			EMU C/O		SAFER C/O	EVA PREP FOR XFER	ERG SETUP	MEAL	EXERCISE				
MS4/IV YURCHIKHIN	SLEEP	POST SLEEP (GIRA)		EMU C/O PREP			EMU C/O			EVA PREP FOR XFER	ERG SETUP	MEAL	H2O CWC S/U				EXERCISE

DAY/NIGHT ORBIT

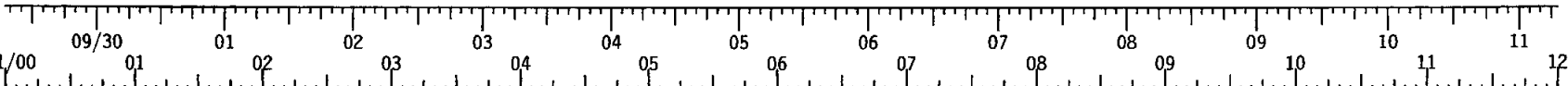
TDRS 47 171

ORB ATT -ZLV -XVV NC2 -ZLV -XVV BIAS +ZLV -XVV

NOTES

*MNVR FUTURE LOADED

GMT 09/29/02
 β = 40.9
 MET Day 001



CDR ASHBY	EXERCISE	NC3	-M ZLV VR	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP
		OMS BURN					
PLT/IV MELROY	FCPURGE	OMS BURN				PRE SLEEP	SLEEP
MS1/EV1 WOLF		RNDZ TOOLS C/O				PRE SLEEP	SLEEP
MS2 MAGNUS	MCKDKP/L	EXERCISE				PRE SLEEP	SLEEP
MS3/EV2 SELLERS		RNDZ TOOLS C/O				PRE SLEEP	SLEEP
MS4/IV YURCHIKHIN		EXERCISE				PRE SLEEP (GIRA)	SLEEP
DAY/NIGHT							
ORBIT							
TDRS 47							
171							
ORB ATT		NC3					
		MANUAL					
NOTES							

STS - 1 1 2	FD03	CDR ASHBY	POST SLEEP	-M Z N L V R	POST SLEEP	GR PR P B	NH	NC4	ISS RNDZ OPS	TI	APPROACH	HATCH LEAK CK	ODS PREP FOR INGR	HATCH OPEN	SHAH N D K E	SAR I E E F F Y	CX W F E R # 1	C I N C I T	02 P/B CONFIG
	PLT/IV MELROY	POST SLEEP	WDI A U M I T P T E	POST SLEEP	GR PR P B	DT E M R M		ISS RNDZ OPS		APPROACH	-M X N L V R	AT T H O	GR PR P B D N	EXERCISE	SHAH N D K E	SAR I E E F F Y	EMU RECONFIG	REBA C/O	
	MS1/EV1 WOLF	POST SLEEP						EXERCISE	P/TV20 SETUP (DOCK)	ISS RNDZ OPS	APPROACH	HATCH LEAK CK	ODS PREP FOR INGR	HATCH OPEN	SHAH N D K E	SAR I E E F F Y	EMU RECNG	REBA C/O	
	MS2/M2 MAGNUS	POST SLEEP			M P D L C K	M C I U		ISS RNDZ OPS	EXERCISE	ISS RNDZ OPS P/TV20 OPS (DOCK)	APPROACH	P S / T V 2 1	GR PR P B D N	PCS S/U	SHAH N D K E	SAR I E E F F Y	TEMP XFER	P/TV22 S/U	X O F P E R
	MS3/EV2 SELLERS	POST SLEEP						EXERCISE	EMU RMVL	ISS RNDZ OPS	APPROACH	PLBK ACT	DA OU C D K I O	PLBK OPS	POST RNDZ PGSC CONFG	SHAH N D K E	SAR I E E F F Y	EMU RECNG	REBA C/O
	MS4/IV YURCHIKHIN	POST SLEEP (GIRA)					COND CWC S/U		EXERCISE	P/TV20 SETUP (DOCK)	APPROACH				HATCH OPEN	SHAH N D K E	SAR I E E F F Y	EMU RCNFG	02 P/B CONFIG
ISS - 5	ISS CDR KORZUN	SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC	E V A R M	E V A R M	EXERCISE CEVIS	EXERCISE TVIS	MIDDAY-MEAL	PMA2 CFG	HATCH LK CK-ISS		HATCH OPEN	SHAH N D K E	SAR I E E F F Y	EMU RECNG	02 P/B CNFG	
	FE-1 WHITSON	SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC			EXERCISE RED	EXERCISE CEVIS	MIDDAY-MEAL					SHAH N D K E	SAR I E E F F Y	TEMP XFER	P/TV 121 S/U	
	FE-2 TRESCHEV	SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC	COFC AK 1M SMPL	C O M S / U	P/TV P/TV100	COX-MNT	MIDDAY-MEAL	P/TV OPS	DA OU C D K I O	IMS- FILE- PREP		SHAH N D K E	SAR I E E F F Y	VELO+RED		
STS	DAY/NIGHT	-ZLV -XVV		-ZLV +YVV		RNDZ				BIAS -XLV +ZVV									
S	ORB ATT	25	26	27	28	29	30	31	32										
S	DAILY ORBIT	14	15	16	1	2	3	4	5										
S	TDRS	47																	
S	TDRS	171																	
NOTES	@LAB PL STATCK UF-2 *VERIFY CONFIG X *DOCKING *C&T-DOCKED COMM-CK * 1/20:18 REBA C/O REBA C/O REBA INSTAL																		

GMT 273

STS-112/9A JOINT MSN SHORT TERM PLAN

MET Day 001 12 13 14 15 NH 16 NC4 17 TI 18 19 20 21 22 23 002/00
 β = 39.2
 GMT 09/30/02 12 13 14 15 16 17 18 19 20 21 22 23

I S S	DAY/NIGHT	14	15	16	1	2	3	4	5
	DAILY ORBIT								
	TDRS ISS KU ISS S-BD								

D O C K I N G *

C&T-UHF1-ACT
 C&T-AUDIO-CNFG
 DPC-MORNING
 PPS-PWR DWN & RCVRY
 C&T-VIDEO-CNFG
 C&T-CVIU-P/U
 C&DH-INH VALID-CK
 ACS-ATT-CCDB-INC

C&T-KU MASK-ENA
 ACS-PRE-ARVL-CNFG
 PPS-P6 SA-FTHR
 C&T-H/L AUDIO-CNFG
 PPS-SA-AUTO-TRK
 C&DH-DOCK-CNFG
 ACS-POST-ARVL-CNFG
 ACS-ST/CMG ATT-H/O
 IATCS-LTL STPT-CHNG
 C&T-KU RNDZ MASK-DIS
 ACS-MOM MGMT-ACT
 C&T-UHF1-DEACT
 C&T-AUDIO-DCNFG
 ISS-GPS-SHUTDOWN
 ISS-GPS-STARTUP
 CDRA ACT
 ACS-CCDB PARAM-U/D

IC&T-UHF1-ACT
 IC&T-AUDIO-CNFG
 IDPC-MORNING
 IPPPS-PWR DWN & RCVRY
 HC&T-VIDEO-CNFG
 HC&T-CVIU-P/U
 IC&DH-INH VALID-CK
 IACS-ATT-CCDB-INC
 IACS-ATT-CCDB-INC
 IC&T-KU MASK-ENA
 IACS-PRE-ARVL-CNFG
 IPPPS-P6 SA-FTHR
 IC&T-H/L AUDIO-CNFG
 IPPPS-SA-AUTO-TRK
 IC&DH-DOCK-CNFG
 IACS-POST-ARVL-CNFG
 IACS-ST/CMG ATT-H/O
 HIATCS-LTL STPT-CHNG
 IC&T-KU RNDZ MASK-DIS
 IACS-MOM MGMT-ACT
 IC&T-UHF1-DEACT
 IC&T-AUDIO-DCNFG
 IISS-GPS-SHUTDOWN
 IISS-GPS-STARTUP
 ICDRA ACT
 IACS-CCDB PARAM-U/D

U P R

СЗП-АБ-FULL CHRГ
 ELEKTRON DEACT
 C-COCB-CHTP CM-ΦГБ
 ISS-MODE PROX-XTION
 СУДН-ОГНИ-ОН

C-COCB-FTHR
 Φ-COCB-FTHR
 C-COCB-MODE
 Φ-COCB-MODE
 ISS-MODE STND-XTION
 СЗП-АБ-PARTIAL CHRГ

ICЗП-АБ-FULL CHRГ
 IELEKTRON DEACT
 IC-COCB-CHTP CM-ΦГБ
 IISS-MODE PROX-XTION
 ICУДН-ОГНИ-ОН
 IC-COCB-FTHR
 IΦ-COCB-FTHR
 IC-COCB-MODE
 IΦ-COCB-MODE
 IISS-MODE STND-XTION
 ICЗП-АБ-PARTIAL CHRГ

M C C

DPC-MORNING
 GO TI
 C&T-COMM CNFG-VERIFY
 GO FOR APPROACH
 GO FOR DOCK
 DOCKING
 ACS-MOM MGMT-ACT

IDPC-MORNING
 IGO TI
 IC&T-COMM CNFG-VERIFY
 IGO FOR APPROACH
 IGO FOR DOCK
 IDOCKING
 IACS-MOM MGMT-ACT

P

ARCT1-SYS-NOMPWR

ARCT1-SYS

L

RS GND
 ISS ATT
 XPOP
 RNDZ
 LVLH TEA

NOTES

*VERIFY CONFIG X

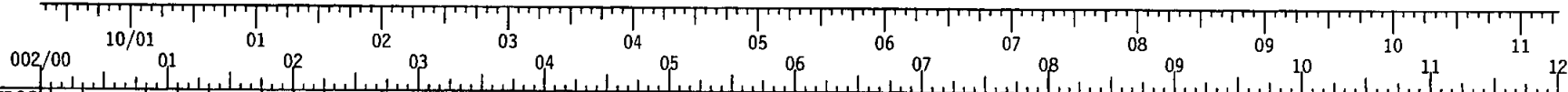
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GMT 273

GMT 09/30/02

B = 37.3

MET Day 002



STATION	Activity	00	01	02	03	04	05	06	07	08	09	10	11	12
STS-112	CDR ASHBY	FD03 CT WE CR #M 1 SSRMS S1 TAGUP C I W N L N C I U M I O A/L EVA PROC RVW JNT A/L EVA PROC RVW CT WE CR #M 2 PMC OCA							PRE SLEEP				SLEEP	
	PLT/IV MELROY	EMU TO A/L CK	E LK PREP	JNT A/L-EVA PROC RVW					PRE SLEEP				SLEEP	
	MS1/EV1 WOLF	TOOL CONFIG	E LK PREP	JNT A/L-EVA PROC RVW					PRE SLEEP				SLEEP	
	MS2/M2 MAGNUS	SSRMS S1 TAGUP	S G M P I R D / P L K E	JNT A/L-EVA PROC RVW					PRE SLEEP				SLEEP	
	MS3/EV2 SELLERS	TOOL CONFIG	E LK PREP	JNT A/L-EVA PROC RVW					PRE SLEEP				SLEEP	
	MS4/IV YURCHIKHIN	EMU TO A/L CK	E LK PREP	JNT A/L-EVA PROC RVW					PRE SLEEP (GIRA)				SLEEP	SVS
ISS-5	ISS CDR KORZUN		E LK PREP	JNT A/L EVA RVW	DPC	PRESLEEP ISS	COFC ИПД SMPL		PRE SLEEP ISS				SLEEP ISS	
	FE-1 WHITSON	SSRMS S1 TAGUP	®	JNT A/L EVA RVW	DPC	PRESLEEP-ISS							SLEEP ISS	
	FE-2 TRESCHEV	EXERCISE CEVIS		JNT A/L EVA RVW	DPC	PRESLEEP-ISS							SLEEP ISS	
STS	DAY/NIGHT	[Day/Night Cycle]												
	ORB ATT	BIAS -XLV +ZVV												
STS	ORB1	32	33	34	35	36	37	38	39	40				
	DAILY ORBIT	5	6	7	8	9	10	11	12	13				
STS	TDRS	47	[TDRS Schedule]											
	171	[TDRS Schedule]												
	NOTES	*REBA C/O @S1 PRE GRPL@XFER BRIEF *REBA C/O *VELO+RED												

GMT 273 STS-112/9A JOINT MSN SHORT TERM PLAN

MET Day 002 002/00 01 02 03 04 05 06 07 08 09 10 11 12
 β = 37.3
 GMT 09/30/02 10/01 01 02 03 04 05 06 07 08 09 10 11

I S S	DAY/NIGHT	[Day/Night Cycle]											
	DAILY ORBIT	5	6	7	8	9	10	11	12	13			
S D B	TDRS	[TDRS Schedule]											
	ISS KU ISS S-BD	[ISS KU/S-BD Schedule]											
R S C	DPC-EVENING EPS-PCU-ACT SSRMS-PWRDN SOS1 PREP FOR MATE C&DH-MSS-BERTH-PPL	[DPC-EVENING] [EPS-PCU-ACT] [SSRMS-PWRDN] [SOS1 PREP FOR MATE] [C&DH-MSS-BERTH-PPL]											
		[Empty Row]											
P L	DPC-EVENING	[DPC-EVENING]											
	ARCT1-SYS-NOMPWR	[ARCT1-SYS-NOMPWR]											
	RS GND	[RS GND]											
	ISS ATT	[ISS ATT] [LVLH TEA]											
	NOTES	*PWRDN											

ISOS1 PREP FOR MATE
 IC&DH-MSS-BERTH-F
 ARCT1-SY!

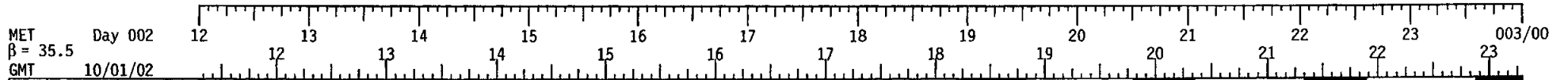
GMT 274
 GMT 10/01/02
 P = 35.5
 MET Day 002

003/00

		12	13	14	15	16	17	18	19	20	21	22	23										
STS-112	CDR ASHBY	POST SLEEP	PMC A/G	POST SLEEP	P/S TV2/U	OP SWR SUP	VGR PLE	MCI U	PR LA	VIEW S1 HIGH HOVER	VW S1 INSTL	SMS	PC RL LO ASE	OP SWR SDN	P/TV23	P/TV23 EVA OPS	EXERCISE	P/TV23 EVA OPS					
	PLT/IV MELROY	POST SLEEP			EVA IHT PAD				10.2 DEP				14.7 REP			IVA SUPPORT EVA 1 EVA 1 (6:30)							
	MS1/EV1 WOLF	POST SLEEP			LEH				STS P/B 02 EVA PREP	EMU PG	EMU PRE BREATH	C/L DPSS	PEGRS	EVA 1 SETUP	ZENITH TRAY MATE	SASA DEPLOY	CETA CART LL	S1 NADIR ETVCG INSTL					
	MS2/M2 MAGNUS	POST SLEEP			MP/DLCK	GSRIPL	UNBRTH	HOVER	S1 INSTL DTO 264	PRE MNVR	SPOS	RTL	1ST CAP	2ND CAP	BRAKE	BOLT LOAD	SGRPN	SRMFG	SSRMS SUPPORT EVA1				
	MS3/EV2 SELLERS	POST SLEEP			EVA CAM S/U				STS P/B 02 EVA PREP	EMU PG	EMU PRE BREATH	C/L DPSS	PEGRS	EVA 1 SETUP	RAD BEAM LL RLS	SASA DEPLOY	RAD BEAM LL RLS	S1 NADIR ETVCG INSTL	DLA				
	MS4/IV YURCHIKHIN	POST SLEEP (GIRA)			LEH	CWC XFER (2)			STS P/B 02 EVA PREP				COM	IVA SUPPORT EVA 1	CINCI #3	IVA SUPPORT EVA 1	CTWR #3	EXERCISE	CINCI #4	IVA SUPPORT EVA 1			
ISS-5	ISS CDR KORZUN	SLEEP ISS	POSTSLEEP-ISS	DPC	PREP WORK			STS P/B 02 EVA PREP						MIDDAY-MEAL		COX-MNT	VELO+RED	EXER CISE TVIS					
	FE-1 WHITSON	SLEEP ISS	POSTSLEEP-ISS	DPC	PREP WORK	GSRIPL	HOVER	S1 INSTL DTO 264	PRE MNVR	SPOS	RTL	1ST CAP	2ND CAP	BRAKE	BOLT LOAD	SGRPN	SRMFG	SSRMS SUPPORT EVA1					
	FE-2 TRESCHEV	SLEEP ISS	POSTSLEEP-ISS	DPC	PREP WORK			DC1-SMK DTCR-R&R						MIDDAY-MEAL	NTXN FE2 DATA CLCT		EXERCISE TVIS	VELO+RED					
STS	DAY/NIGHT	[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]		[Shaded]					
	ORB ATT	BIAS -XLV +ZVV																					
STS	ORBIT	40	41	42	43	44	45	46	47	48													
	DAILY ORBIT	13	14	15	1	2	3	4	5	6													
STS	TDRS	47																					
	171																						
NOTES		①LAB PL STATCK UF-2 ♥UNBRTH										*VIEW S1 UNGRAPPLE *CHECK					①CETA CART ♦NADIR TRA						

GMT 274

STS-112/9A JOINT MSN SHORT TERM PLAN



ISS	DAY/NIGHT	13	14	15	16	17	18	19	20	21	22	23
	DAILY ORBIT											
ISS	TDRS											
	ISS KU											
	ISS S-BD											

ISS	C&T-COMM-EVA CNFG C&T-VIDEO-CNFG SSRMS POWERUP A/L-10.2 PSI OP-INIT IATCS-RFCA STPT-CHNG DPC-MORNING EVA INHIBIT PAD C&DH-S1 ACTIVATION PPS-PCU WARNING-ENA SOS1 SSAS NOM 1,5 EPS-EVA-SAFING ISS-RAP DPRS-INH/ENA A/L-10.2 PSI OP-TERM A/L-10.2 PSI OP-CLN ACS-MP PPL-INC EPS-CNTCR 1/4-PWRDN SOS1 SSAS NOM MATE C&DH-MSS-BERTH-PPL EPS-CNTCR 1/4-PWRUP EPS-CNTCR 2/3-PWRDN	IC&T-COMM-EVA CNFG IC&T-VIDEO-CNFG ISSRMS POWERUP A/L-10.2 PSI OP-INIT IATCS-RFCA STPT-CHNG DPC-MORNING EVA INHIBIT PAD IC&DH-S1 ACTIVATION HPPS-PCU WARNING-ENA SOS1 SSAS NOM 1,5 EPS-EVA-SAFING ISS-RAP DPRS-INH/ENA A/L-10.2 PSI OP-TERM A/L-10.2 PSI OP-CLN ACS-MP PPL-INC EPS-CNTCR 1/4-PWRDN SOS1 SSAS NOM MATE IC&DH-MSS-BERTH-PPL EPS-CNTCR 1/4-PWRUP EPS-CNTCR 2/3-PWRDN
-----	--	--

MCC	DPC-MORNING EVA INHIBIT PAD C&DH-S1 ACTIVATION SOS1 SSAS NOM 1,5 MCC GO FOR A/L DPRS EPS-CNTCR 1/4-PWRDN SOS1 SSAS NOM MATE EPS-CNTCR 1/4-PWRUP EPS-CNTCR 2/3-PWRDN	DPC-MORNING EVA INHIBIT PAD IC&DH-S1 ACTIVATION SOS1 SSAS NOM 1,5 MCC GO FOR A/L DPRS EPS-CNTCR 1/4-PWRDN SOS1 SSAS NOM MATE EPS-CNTCR 1/4-PWRUP EPS-CNTCR 2/3-PWRDN
-----	---	--

P	ARCT1-SYS-NOMPWR	
---	------------------	--

RS GND	
ISS ATT	LVLH TEA

NOTES

*POWERUP

ARCT1-SYS

GMT 274

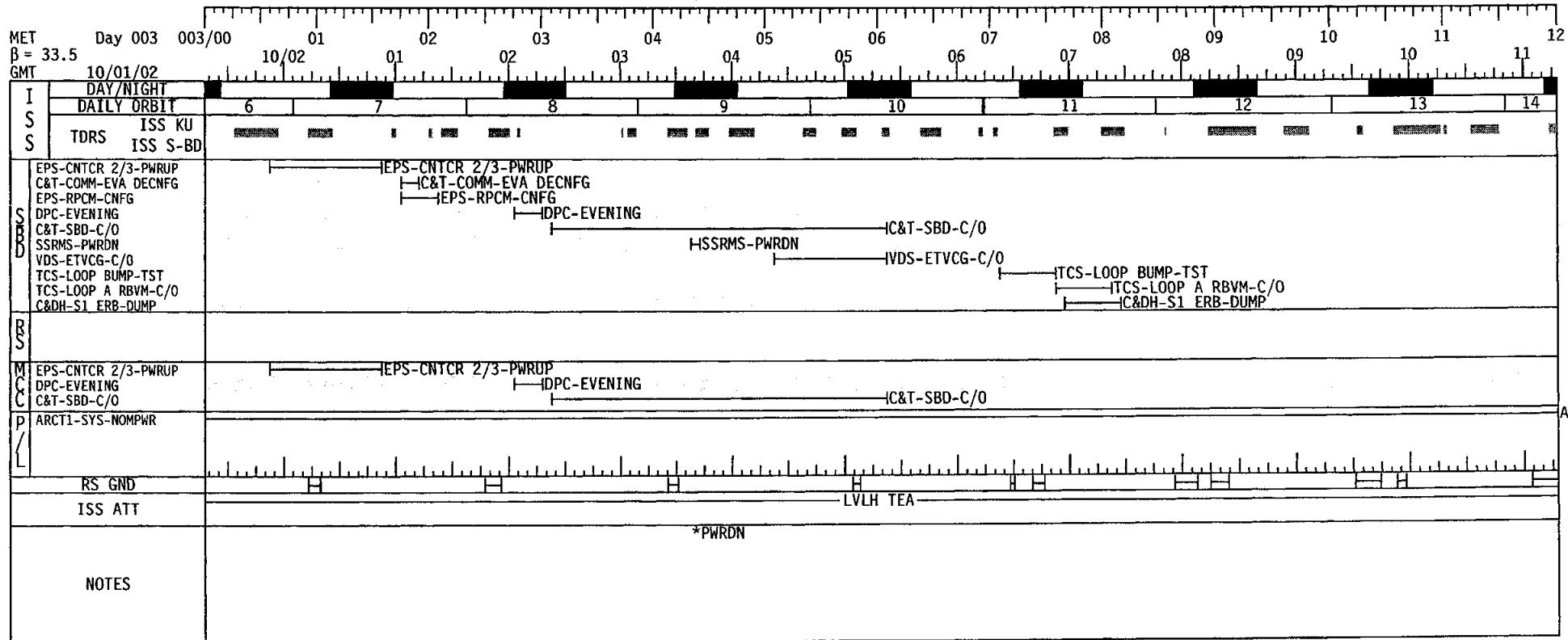
10/01/02

Day 003

		003/00		10/02		01		02		03		04		05		06		07		08		09		10		11		12	
STS - 1 1 2	CDR ASHBY	P/TV23 EVA OPS		RP MWSRDN	CWC XFER (2)	I O L N L U M	PRE SLEEP				PMC OCA	PRE SLEEP				SLEEP													
	PLT/IV MELROY	IVA SUPPORT EVA 1				C M D F G	POST W/O H2O, METOX		E B M A U T T *	PRE SLEEP				SLEEP															
	MS1/EV1 WOLF	CETA CART LL	EVA 1 CLEAN UP	I P N G P R S	C / L R P	POST W/O H2O, METOX		PRE SLEEP				SLEEP																	
	MS2/M2 MAGNUS	SSRMS SUPPORT EVA1		EXERCISE		M P M D L G K C K	PRE SLEEP				SLEEP																		
	MS3/EV2 SELLERS	NADIR TRAY MATE	EVA 1 CLEAN UP	I P N G P R S	C / L R P	POST W/O H2O, METOX		PRE SLEEP				SLEEP																	
	MS4/IV YURCHIKHIN	C T W E C R # M 4	IVA SUPPORT EVA 1		POST W/O H2O, METOX		B S A I #	PRE SLEEP (GIRA)				SLEEP SVS																	
ISS - 5	ISS CDR KORZUN	EXER CISE TVIS	PREP WORK	PLAN REVW	POST W/O H2O, METOX		DPC	PRESLEEP-ISS				SLEEP-ISS																	
	FE-1 WHITSON	SSRMS SUPPORT EVA1		PLAN REVW	⊕	PREP WORK	DPC	PRESLEEP-ISS				SLEEP-ISS																	
	FE-2 TRESCHEV	VELO+RED	PLAN REVW	IMS-FILE-PREP	PREP WORK	DPC	PRESLEEP-ISS				SLEEP-ISS																		
STS	DAY/NIGHT	[Bar chart showing day/night cycle]																											
	ORB ATT	[Bar chart showing orbit parameters]																											
STS	ORB	48	49	50	51	52	53	54	55	56	BIAS -XLV +ZVV																		
	DAILY ORBIT	6	7	8	9	10	11	12	13	14																			
STS	TDRS	47	171	[Bar chart showing TDRS activity]																									
	NOTES	*IVA SUPPORT EVA 1 ⊕NTXN-FE1 DATA-CLCT *RECHARGE BATTERIES IN SHUTTLE #includes recharge of REBA, PGT, Helmet Light																											

GMT 274

STS-112/9A JOINT MSN SHORT TERM PLAN



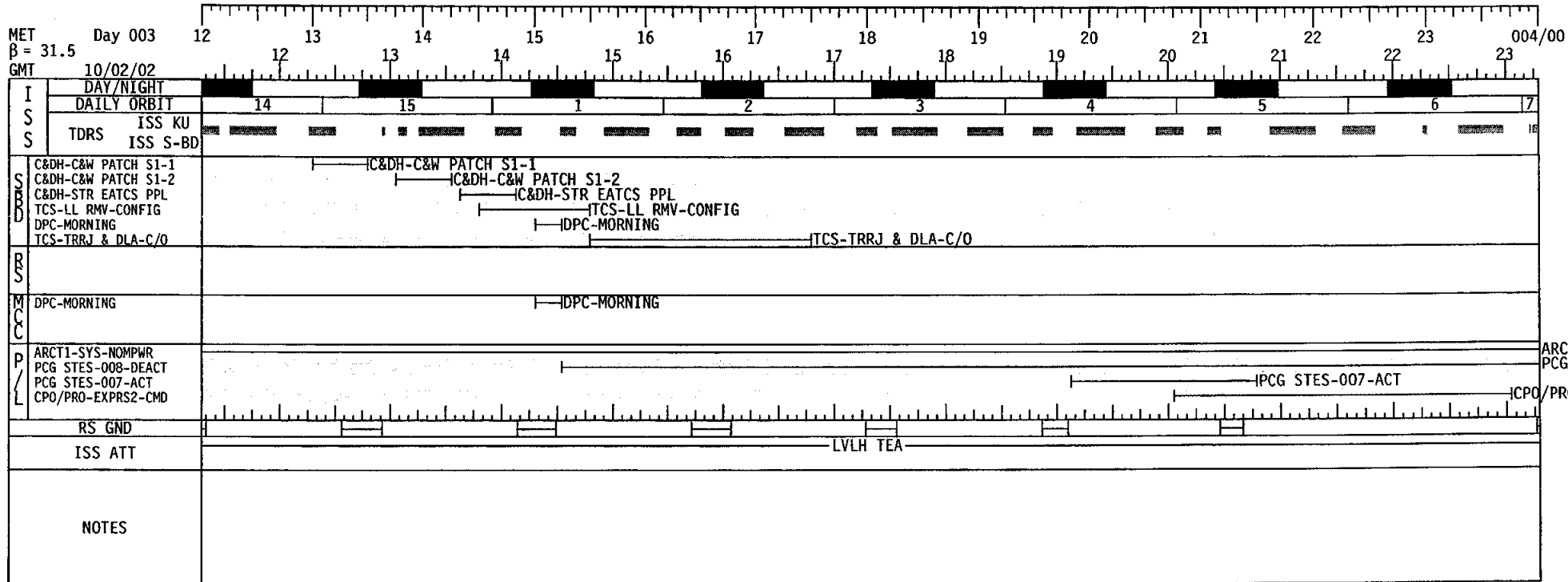
ARCT1-SY:

GMT 275 10/02/02
 GMT = 31.5
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STS	NAME	Time (GMT)																								
		12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	
STS-112	CDR ASHBY	SLEEP	POST SLEEP		DPC	POST SLEEP	OFF DUTY	N2 XFER INIT	MCI	MEAL	CTWCR#5	CINCI#6	EXERCISE	XFER OPS	PS/TU	PAO SPT										
	PLT/IV MELROY	SLEEP	POST SLEEP		PFC	POST SLEEP	OFF DUTY	EXERCISE	MEAL	XFER OPS	E_LK PREP	XFER OPS														
	MS1/EV1 WOLF	SLEEP	POST SLEEP				OFF DUTY	EMU H20 RCHRG	MEAL	TOOL CONFIG	E_LK PREP	EXERCISE	XFER OPS	PEAVOENT												
	MS2/M2 MAGNUS	SLEEP	POST SLEEP			MP/DLCK	OFF DUTY	PCG-STES 07/08 XFER	MEAL	STELSYS CBOSS XFER	EXERCISE	XFER OPS	XTFAFRURP	XBFRREF	PEAVOENT											
	MS3/EV2 SELLERS	SLEEP	POST SLEEP	PFC	POST SLEEP		OFF DUTY	EMU H20 RCHRG	MEAL	TOOL CONFIG	E_LK PREP	EVA CAM S/U	EXERCISE	XFER OPS	PEAVOENT											
	MS4/IV YURCHIKHIN	SLEEP	POST SLEEP (GIRA)				OFF DUTY	N2 XFER INIT	CINCI#5	MEAL	EXERCISE	CTWCR#6	CINCI#7	XFER OPS	CTWCR#7	CWC XFER (3)										
ISS-5	ISS CDR KORZUN	SLEEP-ISS	POSTSLEEP ISS	PREP WORK	DPC	COX-MNT	OFF DUTY	PCG-STES 07/08 XFER	⊕	MIDDAY-MEAL	EVA ARM	EVA ARM	XFER OPS	EXERCISE CEVIS	VELO+RED											
	FE-1 WHITSON	SLEEP-ISS	POSTSLEEP ISS	PREP WORK	DPC	P/TV100	OFF DUTY	EXERCISE TVIS	MIDDAY-MEAL	STELSYS CBOSS XFER	⊗	XFER OPS			♥											
	FE-2 TRESCHEV	SLEEP-ISS	POSTSLEEP ISS	PREP WORK	DPC	▲	OFF DUTY	XFER OPS	⊕	MIDDAY-MEAL	IMS-FILE-PREP	XFER OPS	⊗	VELO+RED	EXERCISE CEVIS											
STS	DAY/NIGHT	[Visual representation of day/night cycle]																								
STS	ORB ATT	BIAS -XLV +ZVV																								
	DAILY ORBIT	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
	TDRS	47	171																							
NOTES	▲LAB PL STATCK UF-2 ▲PCG STES-VIDEO-S/U ▲PCG STES-008-DEACT ▲CAB TEMP ⊕RUSSIAN PAO EVENT *PWRB Nudes recharge REBA, PGT, and Helmet Light ⊗PCG STES-007-ACT ♥EXPRS2-ELC																									

GMT 275

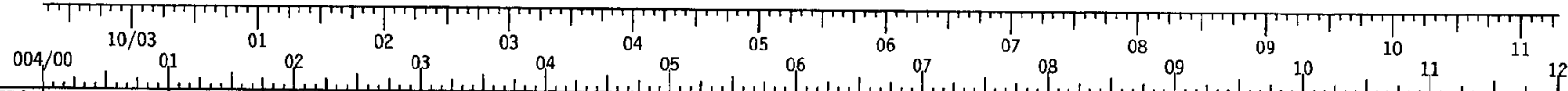
STS-112/9A JOINT MSN SHORT TERM PLAN



GMT 275

GMT 29.4 10/02/02

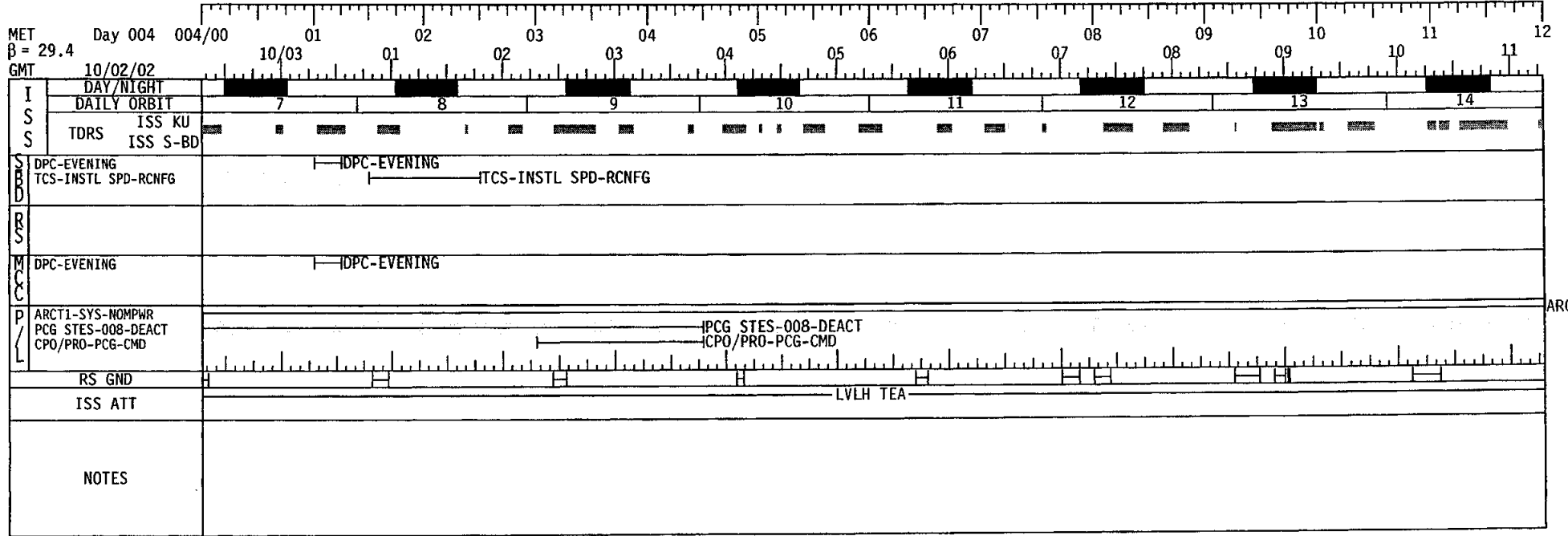
MET Day 004



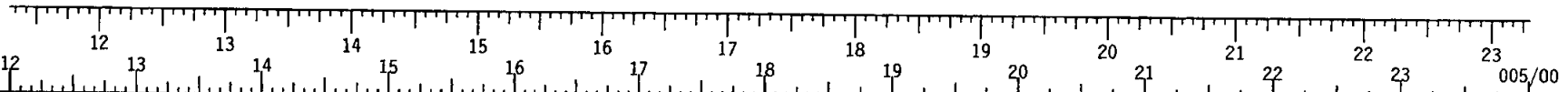
STS	Crew Member	Activity		Meal	Remarks	Sleep			
		Start	End						
S T S - 1 1 2	CDR ASHBY	004/00	004/00	PMC OCA					
	PLT/IV MELROY	004/00	004/00						
	MS1/EV1 WOLF	004/00	004/00						
	MS2/M2 MAGNUS	004/00	004/00						
	MS3/EV2 SELLERS	004/00	004/00						
	MS4/IV YURCHIKHIN	004/00	004/00						
I S S - 5	ISS CDR KORZUN	004/00	004/00	DPC	OFF DUTY				
	FE-1 WHITSON	004/00	004/00	DPC	OFF DUTY				
	FE-2 TRESCHEV	004/00	004/00	DPC	OFF DUTY				
STS	DAY/NIGHT	[Shaded bars indicating day/night cycle]							
S T S	ORB ATT	BIAS -XLV +ZVV							
	DAILY ORBIT	64	65	66	67	68	69	70	71
S T S	TDRS	47	8	9	10	11	12	13	14
		171	[Timeline diagram showing TDRS events]						
NOTES		*CWC XFER (3)							

GMT 275

STS-112/9A JOINT MSN SHORT TERM PLAN



GMT 276
 10/03/02
 MET Day 004

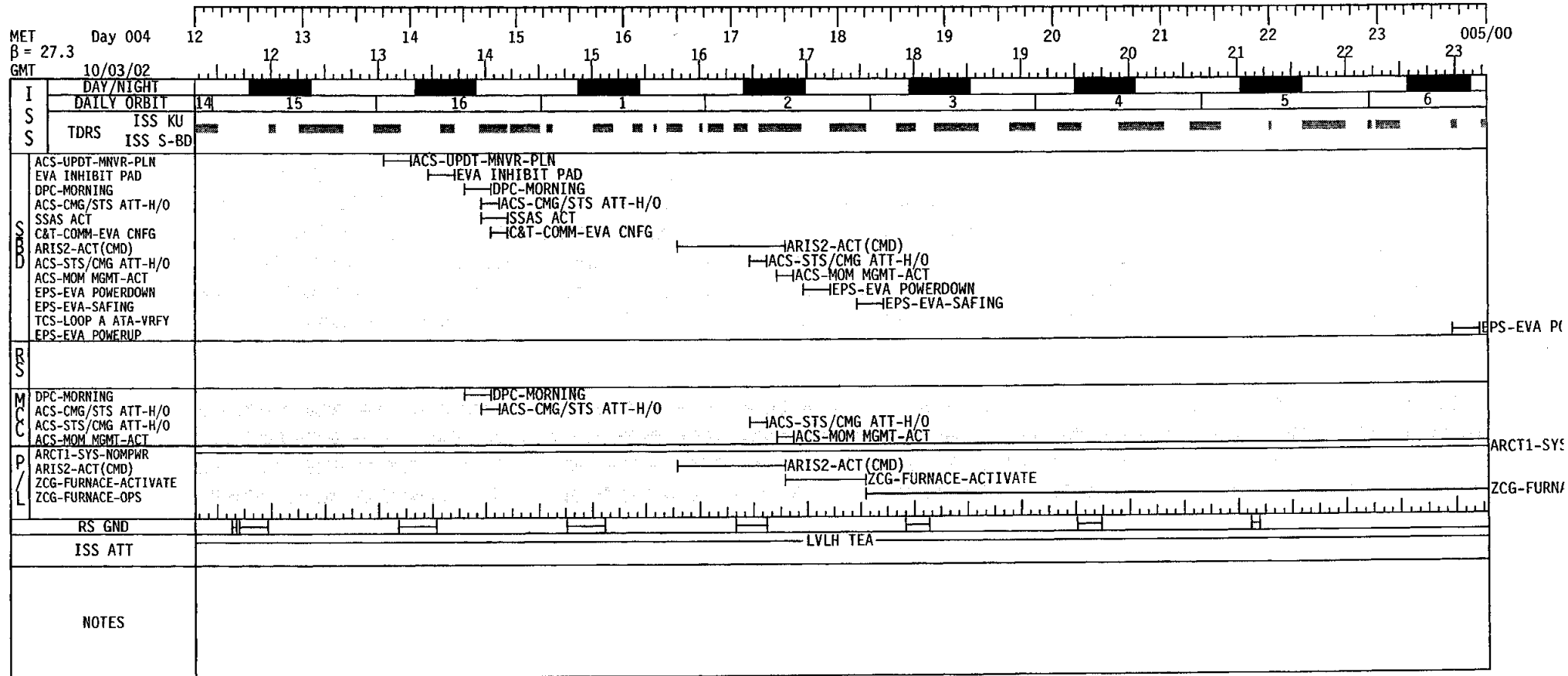


STS-112	CDR ASHBY	POST SLEEP	PMC A/G	POST SLEEP	ATT HO	BIAS -XLV -ZVV MNVR	REBOOST CONFIG 3	-XLV +ZVV MNVR	ATT HO	FILTER CLEAN	PES /V/TAU V 2 3	P/TV23 EVA OPS			EXERCISE	
	PLT/IV MELROY	POST SLEEP	LEH	EVA IHT PAD	STS P/B 02 EVA PREP				14.7 REP	IVA SUPPORT EVA 2 EVA 2 (6:30)						
	MS1/EV1 WOLF	POST SLEEP	STS P/B 02 EVA PREP				EMU PG	EMU PRE BREATH	C/L DPSS	PEGRS	EVA 2 SETUP	Z-P6 AND PVR SPDS	CETA CART LL	LAB INSTALL CAMERA	SPD INSTALL RBVM	
	MS2/M2 MAGNUS	POST SLEEP	DPC	POST SLEEP	MP/D/DL/K/K	EXERCISE	XFER OPS			SSRMS SUPPORT EVA2						
	MS3/EV2 SELLERS	POST SLEEP	STS P/B 02 EVA PREP				EMU PG	EMU PRE BREATH	C/L DPSS	PEGRS	EVA 2 SETUP	Z1-LAB LOOP A	CONNECT ATA UMBLICAL	LAB INSTALL CAMERA	SPD INSTALL RBVM	
	MS4/IV YURCHIKHIN	POST SLEEP (GIRA)	LEH	STS P/B 02 EVA PREP				C I W N C I T # 8	IVA SUPPORT EVA 2	C T W E R C R # 8	EXERCISE		C I W N C I T # 9	IVA SUPPORT EVA 2	C T W E R C R # 9	
ISS-5	ISS CDR KORZUN	SLEEP ISS	POSTSLEEP-ISS	PREP WORK	DPC	STS P/B 02 EVA PREP				C I W N C I T # 8	MIDDAY-MEAL	XFER OPS	*	EXERCISE TVIS	VELO+RED	
	FE-1 WHITSON	SLEEP ISS	POSTSLEEP ISS	PREP WORK	DPC	⊕	⊕	EXERCISE RED	XFER OPS	EXERCISE CEVIS	MIDDAY-MEAL	SSRMS SUPPORT EVA2				
	FE-2 TRESCHEV	SLEEP ISS	POSTSLEEP-ISS	PREP WORK	DPC	ZCG S/U	ZCG AUTOCLAVE CONFIG	XFER OPS	ZCG FURN ACT	Ⓜ	MIDDAY-MEAL	COX-MNT	▼	XFER OPS	VELO+RED	EXERCISE TVIS

STS	DAY/NIGHT	BIAS -XLV +ZVV		REBOOST		BIAS -XLV +ZVV					
S	ORB ATT	71	72	73	74	75	76	77	78	79	
T	DAILY ORBIT	14	15	16	1	2	3	4	5	6	
S	TDRS	47									
	171										
	NOTES	⊕ARIS2-GUIDE-REMOVE ⬇LAB PL STATCK 9A				ⓂZCG-MONITOR *CHECK		▼ZCG-MONITOR		*NTXN-CDR-CLCT & BKUP ΔCWC INIT	

GMT 276

STS-112/9A JOINT MSN SHORT TERM PLAN

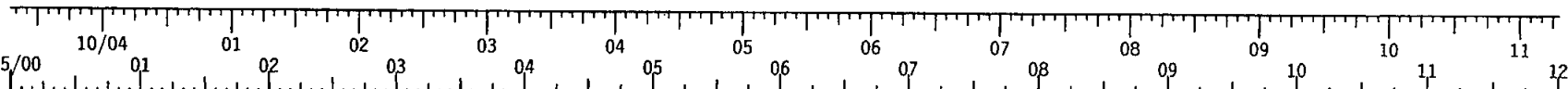


GMT 276

GMT 10/03/02

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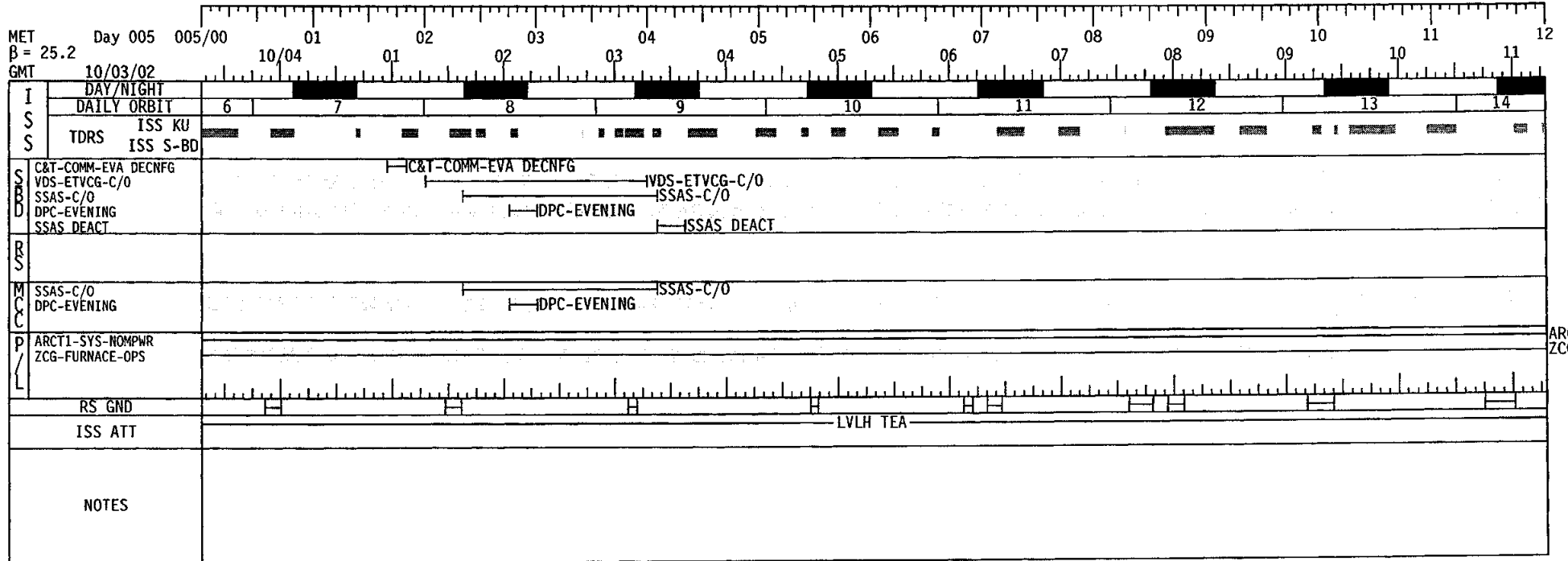
MET Day 005



STS	Crew	Activities		C/M/D/F/G	Post-EVA	Sleep	Remarks			
		Pre-EVA	EVA							
STS-111	CDR ASHBY	P/TV23 EVA OPS	CWC XFER (2)		PRE SLEEP	PRE SLEEP	SLEEP			
	PLT/IV MELROY	IVA SUPPORT EVA 2			POST W/O H2O W/METOX	PRE SLEEP	SLEEP			
	MS1/EV1 WOLF	* LL RLS EVA2 CLEAN UP	I P N G R S R R S	C / L	POST W/O H2O W/METOX	PRE SLEEP	SLEEP			
	MS2/M2 MAGNUS	SSRMS SUPPORT EVA2	X T F A G R U P	M A D / L K C K		PRE SLEEP	SLEEP			
	MS3/EV2 SELLERS	* LL RLS EVA2 CLEAN UP	I P N G R S R R S	C / L	POST W/O H2O W/METOX	PRE SLEEP	SLEEP			
	MS4/IV YURCHIKHIN	IVA SUPPORT EVA 2			POST W/O H2O W/METOX	PRE SLEEP (GIRA)	SLEEP			
ISS-5	ISS CDR KORZUN	XFER OPS	PLAN REVW		POST W/O H2O W/METOX	P W R O R E P K	DPC PRESLEEP-ISS SLEEP-ISS			
	FE-1 WHITSON	SSRMS SUPPORT EVA2	X T F A G R U P		PLAN REVW	PREP WORK	DPC PRESLEEP-ISS SLEEP-ISS			
	FE-2 TRESCHEV	XFER OPS	IMS-FILE-PREP		PLAN REVW	PREP WORK	DPC PRESLEEP-ISS SLEEP-ISS			
STS	DAY/NIGHT	[Day/Night Cycle Diagram]								
	ORB ATT	[Orbit Attitude Diagram]								
STS	ORBIT	79	80	81	82	83	84	85	86	87
	DAILY ORBIT	6	7	8	9	10	11	12	13	14
STS	TDRS	47								
		171								
NOTES		*SPD INSTALL RBVM ⊕XFER BRIEF #includes recharge of REBA, PGT, Helmet Light †SPD INSTALL RBVM ⊙CWC TERM								

GMT 276

STS-112/9A JOINT MSN SHORT TERM PLAN



GMT 277 10/04/02
 MET Day 005 12 13 14 15 16 17 18 19 20 21 22 23 006/00

STS-112	CDR ASHBY	SLEEP	POST SLEEP	DPC	PS O2 RECNG	02 IN IT	EXERCISE	DT UE MR PM	PWR DUMP	COND CWC DUMP	-M XN LVR	MEAL	M C I U	XFER OPS	CP RH EO WT O	CREW CONF	XFER OPS	OT 2 ERM	02 RCNFG
	PLT/IV MELROY	SLEEP	POST SLEEP	P O P S V 2 4	ATT H/O	M D N U M P	W I N S T I T E	XFER OPS	I M U	EXERCISE	P F W I L L	MEAL	E_LK PREP	PS /TU 21	CP RH EO WT O	CREW CONF	XFER OPS	RCS REG	* B
	MS1/EV1 WOLF	SLEEP	POST SLEEP	A B S E N T #	E M U *	EMU H2O RCHRG	EVA CAM S/U	M T X T M	TOOL CONFIG	PWR FILL (1)		MEAL	E_LK PREP	XFER OPS	CP RH EO WT O	CREW CONF	XFER OPS	EXERCISE	
	MS2/M2 MAGNUS	SLEEP	POST SLEEP	M P D L C K K		EXERCISE	XFER OPS		PGBA TRANSFER			MEAL	XFER OPS	CP RH EO WT O	CREW CONF	XFER OPS	X T F A E R U P	X B F R E I R E F	
	MS3/EV2 SELLERS	SLEEP	POST SLEEP	A S P R N	E M U *	EMU H2O RCHRG	EXERCISE	TOOL CONFIG				MEAL	E_LK PREP	XFER OPS	CP RH EO WT O	CREW CONF	XFER OPS	P S A T #	
	MS4/IV YURCHIKHIN	SLEEP	POST SLEEP (GIRA)	C S W C A P	02 RECNG	02 IN IT	C I W N C I T	XFER OPS	C T W E R # 1 0	PGBA TRANSFER	C I W N C I T # 1 1	MEAL	C T W E R # 1 1	CWC XFER (2)	CP RH EO WT O	CREW CONF	EXERCISE	02 RCNFG	
ISS-5	ISS CDR KORZUN	SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC		TVIS R&R				MIDDAY-MEAL	TVIS R&R	CP RH EO WT O	CREW CONF	TVIS R&R		* ®		
	FE-1 WHITSON	SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC		TVIS R&R				MIDDAY-MEAL	TVIS R&R	CP RH EO WT O	CREW CONF	TVIS R&R	O T 2 E R M	X T F A E R U P		
	FE-2 TRESCHEV	SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC	COX MNT					MIDDAY-MEAL	TVIS R&R	CP RH EO WT O	CREW CONF	TVIS R&R		I M S - F I L E - P R E P		
STS	DAY/NIGHT	BIAS -XLV +ZVV			BIAS -XLV +YVV			BIAS -XLV +ZVV											
STS	ORB ATT	87	88	89	90	91	92	93	94	95									
	DAILY ORBIT	14	15	1	2	3	4	5	6	7									
	TDRS	47																	
	171																		

NOTES: *LAB PL STATCK 9A #includes recharge REBA, PGT, and Helmet Light *BATT INSTALL *WCS COMPACT @HTR CONF) *EVAP AREA

GMT 277

STS-112/9A JOINT MSN SHORT TERM PLAN

MET Day 005 12 13 14 15 16 17 18 19 20 21 22 23 006/00
 B = 22.9
 GMT 10/04/02

I S S	DAY/NIGHT	12	13	14	15	16	17	18	19	20	21	22	23
	DAILY ORBIT	14	15	1	2	3	4	5	6	7			
	TDRS ISS KU ISS S-BD												

S B R	DPC-MORNING PPS-SA-FTHR ACS-CMG/STS ATT-H/O TCS-TRRJ PNTG-C/O PPS-SA-AUTO-TRK PPS-SA-NOM CNFG ACS-STS/CMG ATT-H/O ACS-MOM MGMT-ACT TCS-S1 RAD-DEPLOY	DPC-MORNING PPS-SA-FTHR ACS-CMG/STS ATT-H/O TCS-TRRJ PNTG-C/O PPS-SA-AUTO-TRK PPS-SA-NOM CNFG ACS-STS/CMG ATT-H/O ACS-MOM MGMT-ACT TCS-S1 RA
	RS	

M C P	DPC-MORNING ACS-CMG/STS ATT-H/O PPS-SA-AUTO-TRK ACS-STS/CMG ATT-H/O ACS-MOM MGMT-ACT	DPC-MORNING ACS-CMG/STS ATT-H/O PPS-SA-AUTO-TRK ACS-STS/CMG ATT-H/O ACS-MOM MGMT-ACT
	ARCT1-SYS-NOMPWR ZCG-FURNACE-OPS	ZCG-FURNACE-OPS

RS GND	
ISS ATT	LVH TEA

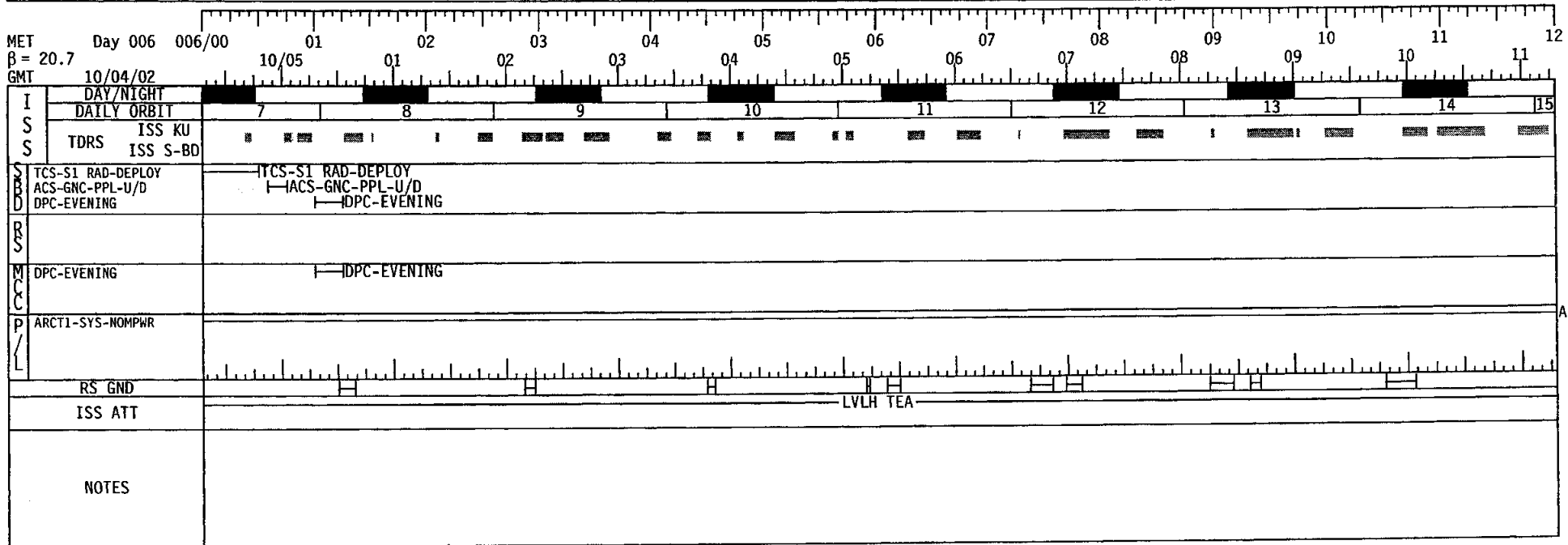
NOTES

GMT 277
 GMT 10/04/02
 β = 20.7
 MET Day 006

		006/00 10/05 01 02 03 04 05 06 07 08 09 10 11 12												
S T S - 1 1 2	CDR ASHBY	JNT A/L-EVA PROC RVW	DPC	PMC	OCA	PRE SLEEP							SLEEP	
	PLT/IV MELROY	JNT A/L-EVA PROC RVW				PRE SLEEP							SLEEP	
	MS1/EV1 WOLF	JNT A/L-EVA PROC RVW				PRE SLEEP							SLEEP	
	MS2/M2 MAGNUS	JNT A/L-EVA PROC RVW	MADLR	MP	ADLCK	PRE SLEEP							SLEEP	
	MS3/EV2 SELLERS	JNT A/L-EVA PROC RVW				PRE SLEEP							SLEEP	
	MS4/IV YURCHIKHIN	JNT A/L-EVA PROC RVW	P/TV24 RAD DEPLOY				PRE SLEEP (GIRA)							SLEEP
I S S - 5	ISS CDR KORZUN	JNT A/L-EVA PROC RVW	DPC	PRE	AV	PREP WORK	PRE SLEEP-ISS							SLEEP ISS
	FE-1 WHITSON	JNT A/L-EVA PROC RVW	DPC	PRE	AV	PREP WORK	PRE SLEEP-ISS							SLEEP ISS
	FE-2 TRESCHEV	JNT A/L-EVA PROC RVW	DPC	PRE	AV	PREP WORK	PRE SLEEP-ISS							SLEEP ISS
S T S	DAY/NIGHT	[Day/Night Cycle]												
S T S	ORB ATT	BIAS -XLV +ZVV												
S T S	ORBIT	95	96	97	98	99	100	101	102					
S T S	DAILY ORBIT	7	8	9	10	11	12	13	14	15				
S T S	TDRS	47	[TDRS Schedule]											
S T S	171	[TDRS Schedule]												
NOTES														

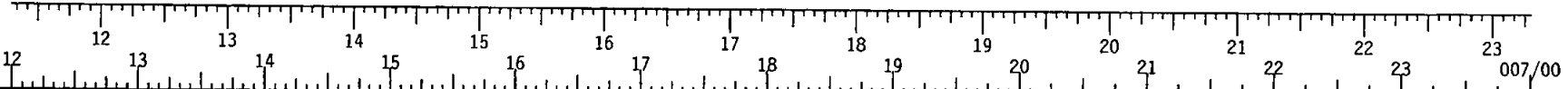
GMT 277

STS-112/9A JOINT MSN SHORT TERM PLAN



ARCT1-SYS

GMT 278
 GMT 10/05/02
 P = 18.4
 MET Day 006



S T S - 1 1 2	CDR ASHBY	POST SLEEP	PMC A/G	POST SLEEP	ATT HO	BIAS -XLV -ZVV MNVR	REBOOST CONFIG 3	-XLV +ZVV MNVR	ATT HO	FILTER CLEANING	PES / TAU V 2 3	P/TV23 EVA OPS			CINW C I T # 1 2	EXERCISE	CINW C I T # 1 2	P/TV23 EVA OPS	
	PLT/IV MELROY	POST SLEEP	LEH	EVA IHT PAD	10.2 DEP	STS P/B 02 EVA PREP				14.7 REP	IVA SUPPORT EVA 3								
	MS1/EV1 WOLF	POST SLEEP	STS P/B 02 EVA PREP				EMU PG	EMU PRE BREATH	C/L DPSS	PEPGRS	EVA 3 SETUP	IUA R&R	CONNECT S1-S0 FLD JP	RMV PORT KEEL PIN	RMV STBD KEEL PIN	TRRJ SPDS			
	MS2/M2 MAGNUS	POST SLEEP	MP/DL/K/K	POST SLEEP	EXERCISE	XFER OPS				SSRMS SUPPORT EVA3									
	MS3/EV2 SELLERS	POST SLEEP	STS P/B 02 EVA PREP				EMU PG	EMU PRE BREATH	C/L DPSS	PEPGRS	EVA 3 SETUP	IUA R&R	CONNECT S1-S0 FLD JP	RMV PORT KEEL PIN	RMV STBD KEEL PIN	TRRJ SPDS			
	MS4/IV YURCHIKHIN	POST SLEEP (GIRA)	LEH	STS P/B 02 EVA PREP				EXERCISE			IVA SUPPORT EVA 3				CINW C I T # 1 3				
I S S - 5	ISS CDR KORZUN	SLEEP ISS	POSTSLEEP-ISS	DPC	STS P/B 02 EVA PREP				MIDDAY-MEAL	ITCS SAMP MTL	ITCS SAMP LTL	EXERCISE TVIS	VELO+RED						
	FE-1 WHITSON	SLEEP ISS	POSTSLEEP-ISS	DPC	PREP WORK	HMS DEFIB C/O	⊗	XFER OPS	EXERCISE TVIS	EXERCISE RED	SSRMS SUPPORT EVA3								
	FE-2 TRESCHEV	SLEEP ISS	POSTSLEEP-ISS	DPC	PREP WORK	XFER OPS		RED+VELO	XFER OPS	MIDDAY-MEAL	COX-MNT	EXERCISE TVIS							
STS	DAY/NIGHT	[SHADING]		[SHADING]		[SHADING]		[SHADING]		[SHADING]		[SHADING]		[SHADING]		[SHADING]			
S T S	ORB ATT	BIAS -XLV +ZVV		REBOOST				BIAS -XLV +ZVV											
	DAILY ORBIT	103	104	105	106	107	108	109	110										
	TDRS	47	1	2	3	4	5	6	7										
NOTES	©LAB PL STATCK 9A										*CHECK								

*TRRJ BOLT
 @SFU CONF
 ♦IVA SUPPORT

GMT 278 **STS-112/9A JOINT MSN SHORT TERM PLAN**

MET Day 006 12 13 14 15 16 17 18 19 20 21 22 23 007/00
 β = 18.4
 GMT 10/05/02 12 13 14 15 16 17 18 19 20 21 22 23

ISS	DAY/NIGHT	[Bar chart showing day/night cycle]							
	DAILY ORBIT	15	1	2	3	4	5	6	7
	TDRS ISS KU ISS S-BD	[Bar chart showing TDRS and ISS activity]							

D	DPC-MORNING EVA INHIBIT PAD ACS-CMG/STS ATT-H/O ACS-UPDT-MNVR-PLN SSAS ACT C&T-COMM-EVA CNFG HMS-DEFIB-C/O ACS-MOM MGMT-ACT ACS-STS/CMG ATT-H/O EPS-EVA POWERDOWN CONNECT S1-S0 FLD JP	IDPC-MORNING EVA INHIBIT PAD ACS-CMG/STS ATT-H/O ACS-UPDT-MNVR-PLN ISSAS ACT IC&T-COMM-EVA CNFG IHMS-DEFIB-C/O IACS-MOM MGMT-ACT IACS-STS/CMG ATT-H/O EPS-EVA POWERDOWN ICONNECT S1-S0 FLD JP

S		
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M	DPC-MORNING ACS-CMG/STS ATT-H/O ACS-MOM MGMT-ACT ACS-STS/CMG ATT-H/O	IDPC-MORNING IACS-CMG/STS ATT-H/O IACS-MOM MGMT-ACT IACS-STS/CMG ATT-H/O

P	ARCT1-SYS-NOMPWR	
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	RS GND	
	ISS ATT	LVLH TEA

	NOTES	
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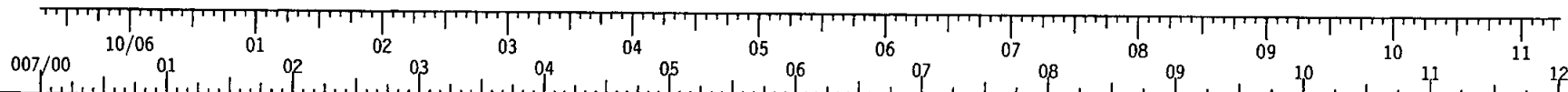
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GMT 278

GMT 10/05/02

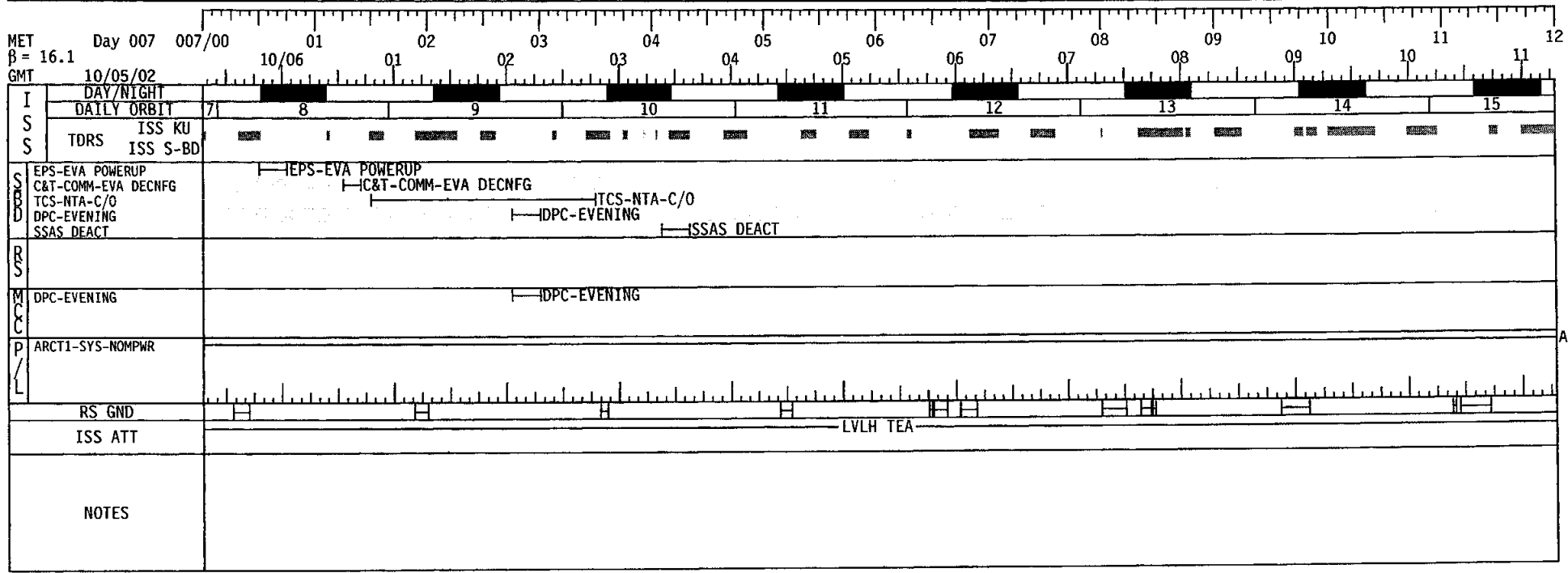
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MET Day 007



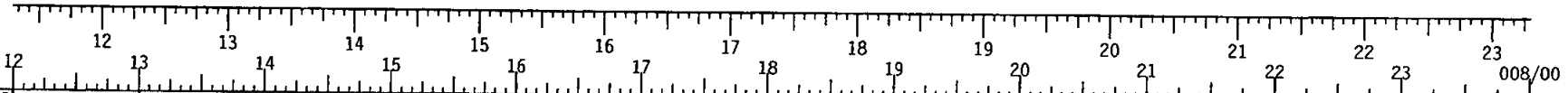
		FD08		P/TV23 EVA OPS		IO LN LUM	CT WE CRM #14	CWC XFER (3)	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP
S T S - 1 1 2	CDR ASHBY	P/TV23 EVA OPS		IO LN LUM	CT WE CRM #14	CWC XFER (3)	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP		
	PLT/IV MELROY	IVA SUPPORT EVA 3		C M D F G	POST W/H2O W/METOX	PRE SLEEP	SLEEP					
	MS1/EV1 WOLF	SC 1 /A SM 3 P S	EVA3 CLEAN UP	I P N G R S	C /L R P	POST W/H2O W/METOX	PRE SLEEP	SLEEP				
	MS2/M2 MAGNUS	SSRMS SUPPORT EVA3		T A G U P	B R I G A D L C K	PRE SLEEP	SLEEP					
	MS3/EV2 SELLERS	SC F O N F I G	EVA3 CLEAN UP	I P N G R S	C /L R P	POST W/H2O W/METOX	PRE SLEEP	SLEEP				
	MS4/IV YURCHIKHIN	CT WE CRM #13	C I N C I T #14	IVA SUPPORT EVA 3	POST W/ H2O W/METOX	PRE SLEEP (GIRA)	SLEEP ISS External Survey					
I S S - 5	ISS CDR KORZUN	PLAN REVW	PW RO ER PK	POST W/H2O W/METOX	PRESLEEP-ISS	SLEEP-ISS						
	FE-1 WHITSON	SSRMS SUPPORT EVA3		T A G U P	PLAN REVW	PREP WORK	DPC	PRESLEEP-ISS	SLEEP-ISS			
	FE-2 TRESCHEV	IMS- FILE- PREP	PLAN REVW	PREP WORK	DPC	PRESLEEP-ISS	SLEEP-ISS					
S T S	DAY/NIGHT	[Shaded bars indicating day/night cycle]										
	ORB ATT	BIAS -XLV +ZVV										
S T S	ORBIT	111	112	113	114	115	116	117	118			
	DAILY ORBIT	7	8	9	10	11	12	13	14	15		
	TDRS	47										
		171										
	NOTES	*TRRJ BOLTS ⊕IVA SUPPORT EVA 3 ♣VELO+RED										

GMT 278 STS-112/9A JOINT MSN SHORT TERM PLAN



ARCT1-SYS

GMT 279
 GMT 10/06/02
 = 13.8
 MET Day 007

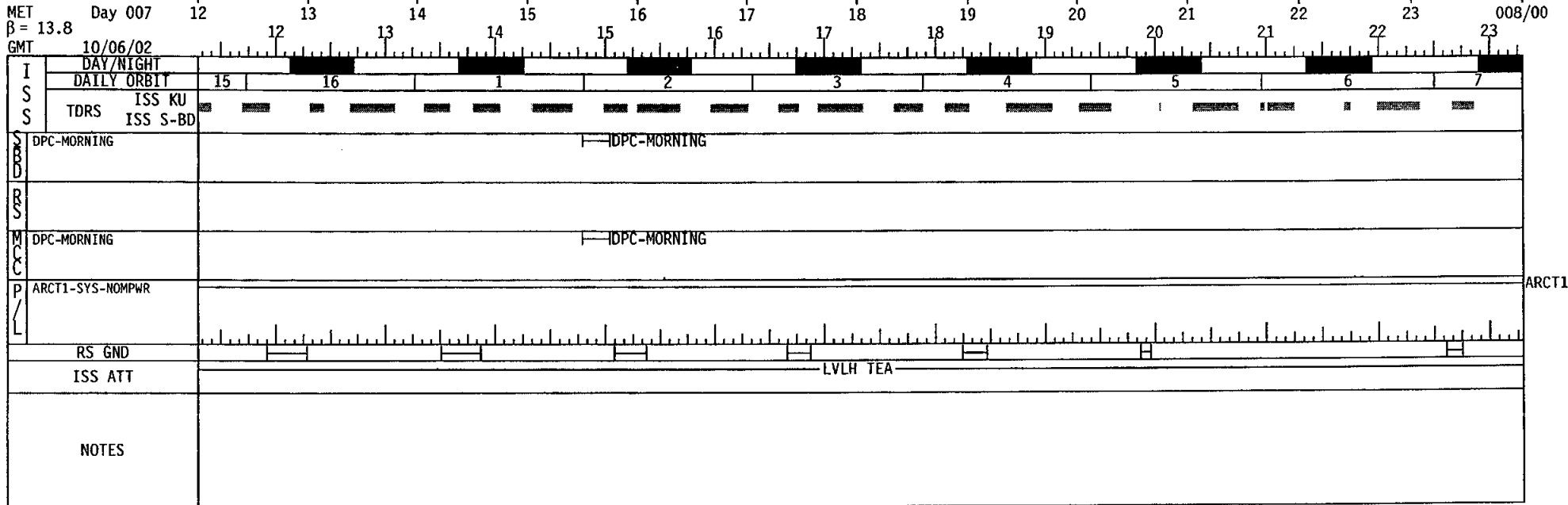


STS-112	FD09		CDR ASHBY		SLEEP	POST SLEEP		MILITUM	OFF DUTY				MEAL	N2 XFER TERM	RNDZ TOOLS C/O		EXERCISE	
	PLT/IV MELROY		SLEEP	POST SLEEP		OFF DUTY				MEAL	EVA SUIT RECONFIG	EXFMR	EXERCISE		SXFER	XOFS		
ISS-5	MS1/EV1 WOLF		SLEEP	POST SLEEP		PFC	OFF DUTY				MEAL	EVA SUIT RECONFIG	EXFMR	MTXTM	XFER OPS			
	MS2/M2 MAGNUS		SLEEP	POST SLEEP	PFC	POST SLEEP	MPD/KC	OFF DUTY				MEAL	CGBA XFER	EXERCISE		XFER OPS		
ISS-5	MS3/EV2 SELLERS		SLEEP	POST SLEEP		OFF DUTY				MEAL	EVA SUIT RECONFIG	RNDZ TOOLS C/O		XFER OPS	EXERCISE			
	MS4/IV YURCHIKHIN		SLEEP	POST SLEEP (GIRA)		OFF DUTY				MEAL	CINCI #15	N2 XFER TERM	XFER OPS	CTWNCRCI #15	CTWNCRCI #16	EXERCISE		CTWNCRCI #16
ISS-5	ISS CDR KORZUN		SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC	OFF DUTY				VELO+RED	MIDDAY-MEAL	COX-MNT	EVAR M	EVAR M	EVAR DATA DNLD /STW	SXFER	*
	FE-1 WHITSON		SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC	OFF DUTY				MIDDAY-MEAL	CGBA XFER	EXERCISE RED		♦			
	FE-2 TRESCHEV		SLEEP-ISS	POSTSLEEP-ISS	PREP WORK	DPC	OFF DUTY				EXERCISE TVIS	MIDDAY-MEAL	RED+VELO					
STS	DAY/NIGHT		BIAS -XLV +ZVV															
STS	ORB ATT		ORBIT															
	DAILY ORBIT		118	119	120	121	122	123	124	125	126							
	TDRS		47	171														
NOTES		⊕LAB PL STATCK 9A																

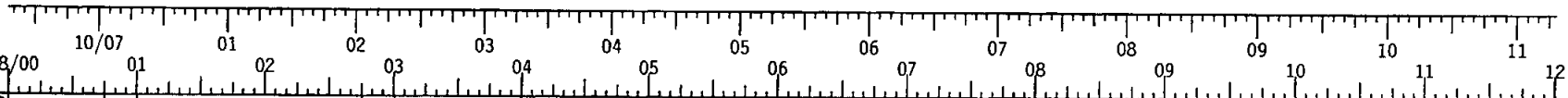
*EXERCISE T
 ♦EXERCISE T

GMT 279

STS-112/9A JOINT MSN SHORT TERM PLAN



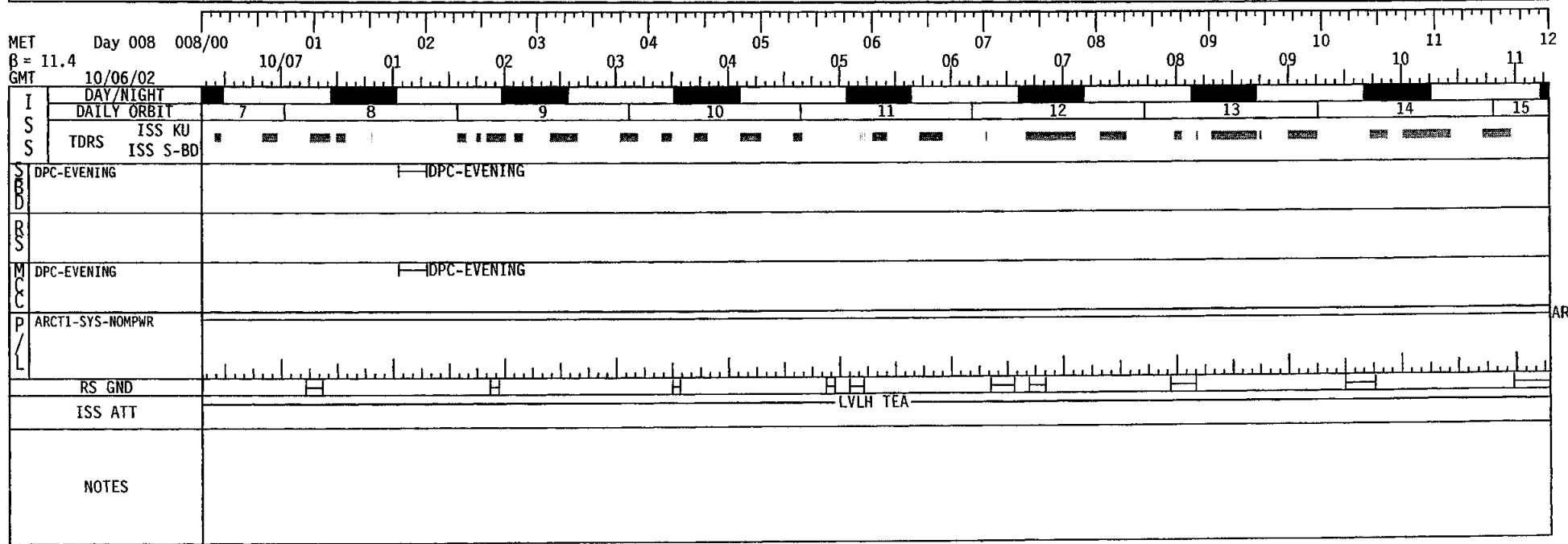
GMT 279
 GMT 10/06/02
 β = 11.4
 MET Day 008



STS - 1 1 2	FD09	CDR ASHBY	02 TRDWN	P W I R L L	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP	FD10	
	PLT/IV MELROY	XFER OPS	I O L N L U M	PRE SLEEP			SLEEP			
	MS1/EV1 WOLF	EXERCISE		PRE SLEEP			SLEEP			
	MS2/M2 MAGNUS	M D L G K C K	X T F A L E G E R U R P	X B F R E I E F	PRE SLEEP			SLEEP		
	MS3/EV2 SELLERS	EXER CISE	CWC XFER (2)		PRE SLEEP			SLEEP		
	MS4/IV YURCHIKHIN	02 TRDWN			PRE SLEEP (GIRA)			SLEEP	ISS External Survey	
ISS - 5	ISS CDR KORZUN	EXERCISE TVIS	PLAN REWV	PREP WORK	DPC		PRESLEEP-ISS	SLEEP ISS		
	FE-1 WHITSON	EXERCISE TVIS	PLAN REWV	PREP WORK	DPC		PRESLEEP-ISS	SLEEP ISS		
	FE-2 TRESCHEV	IMS- FILE- PREP	PLAN REWV	PREP WORK	DPC		PRESLEEP-ISS	SLEEP ISS		
STS	DAY/NIGHT	[Day/Night bar]								
	ORB ATT	BIAS -XLV +ZVV								
S T S	ORBIT	126	127	128	129	130	131	132	133	134
	DAILY ORBIT	7	8	9	10	11	12	13	14	15
	TDRS	47								
		171								
	NOTES									

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STS-112/9A JOINT MSN SHORT TERM PLAN



ARCTI-SYS

STN	12	13	14	15	16	17	18	19	20	21	22	23								
STS-112	CDR ASHBY	POST SLEEP		DPC	PS OL SET	M C I U	H C A L T O C S H E	HATCH LEAK CHECK	- M X N L V R	UNDOCK OPS	Final SEP	FLYAROUND (One Lap)	- M X N V V R	EXERCISE	PFC	- M Z N I M I U	PE A V O E N T	C O M M 1	S T I E M R O M	
	PLT/IV MELROY	POST SLEEP					EXERCISE	H 2 O	G P R W P R U B	UNDOCK OPS	FLYAROUND	G P R W P R D N	PLBK ACT	L O P M S B	M T O R K N	SHIMR MOON OBS			COND CWC DUMP	
	MS1/EV1 WOLF	POST SLEEP			EXERCISE		H C A L T O C S H E	HATCH LEAK CHECK	PS / T T V U 2 P O	UNDOCK OPS	FLYAROUND	PS / T U V O 2	S I H N I S I T M R L R	S A C T I M B	L O P M S B	SHIMR MOON OBS	D E A C T	S S H T I O M W R	E R C U N F G	POST EVA ENT PREP
	MS2/M2 MAGNUS	POST SLEEP		M P D L K C K	PS / T U V 2 4		P/TV24 OPS		G P R W P R U B	UNDOCK OPS	P/TV20 OPS (UNDOCK)	G P R W P R D N		I O L F L U M			PS / T U V O 2	PE A V O E N T	EXERCISE	M P D L K C K
	MS3/EV2 SELLERS	POST SLEEP			U A N U D D I K I O		EXERCISE			UNDOCK OPS	FLYAROUND	S O R	O I E A C T	POST RNDZ PGSC CONFG				PE A V O E N T	E R C U N F G	POST EVA ENT PREP
	MS4/IV YURCHIKHIN	POST SLEEP (GIRA)						EXERCISE		UNDOCK OPS	FLYAROUND			POST RNDZ PGSC CONFG	PFC			PE A V O E N T		
ISS-5	ISS CDR KORZUN	SLEEP ISS	POSTSLEEP-ISS	PREP WORK	DPC		EXERCISE TVIS		PMA2 DEPART CONFIG		MIDDAY-MEAL		OFF DUTY		VELO+RED					
	FE-1 WHITSON	SLEEP ISS	POSTSLEEP-ISS	PREP WORK	DPC		EXERCISE TVIS	EXERCISE RED	UNDOCK OPS	Δ	MIDDAY-MEAL		OFF DUTY							
	FE-2 TRESCHEV	SLEEP ISS	POSTSLEEP-ISS	PREP WORK	DPC	C&DH-PCS SWAP	EXERCISE TVIS		UNDOCK OPS		MIDDAY-MEAL		OFF DUTY		VELO+RED	OFF DUTY				
STS	DAY/NIGHT			BIAS -XLV +ZVV				UNDOCK		FLYAROUND		MOON		BIAS -ZLV +YVV						
STS	ORB ATT	134	135	136	137	138	139	140	141	8										
	DAILY ORBIT	15	1	2	3	4	5	6	7											
STS	TDRS	47																		
		171																		
NOTES	*VERIFY CONFIG X *ATT H/O ΔLAB PL STATCK 9A@PLBK OPS *MPM STOW ▼CDRA DEACT SPPT ©COND CWC T/D *8/18:06																			

GMT 280 STS-112/9A JOINT MSN SHORT TERM PLAN

MET Day 008 12 13 14 15 16 17 18 19 20 21 22 23 009/00
 B = 9.1
 GMT 10/07/02

ISS	DAY/NIGHT	15	1	2	3	4	5	6	7	8
	DAILY ORBIT									
	TDRS ISS KU ISS S-BD									

DERS	ACS-GNC-PPL-INC									
	C&DH-INH VALID-CK									
RS	ISS-MODE-PROX-OPS									
	C-COCB-CHTP CM-ΦTB									
MCC	DPC-MORNING									
	C&T-COMM CNFG-VERIFY									
P/L	ARCT1-SYS-NOMPWR									
	RS GND									

ISS	ISS-MODE-PROX-OPS									
	C-COCB-CHTP CM-ΦTB									
MCC	DPC-MORNING									
	C&T-COMM CNFG-VERIFY									
P/L	ARCT1-SYS-NOMPWR									
	RS GND									

ISS	ISS-MODE-PROX-OPS									
	C-COCB-CHTP CM-ΦTB									
MCC	DPC-MORNING									
	C&T-COMM CNFG-VERIFY									
P/L	ARCT1-SYS-NOMPWR									
	RS GND									

ISS	ISS-MODE-PROX-OPS									
	C-COCB-CHTP CM-ΦTB									
MCC	DPC-MORNING									
	C&T-COMM CNFG-VERIFY									
P/L	ARCT1-SYS-NOMPWR									
	RS GND									

ISS	ISS-MODE-PROX-OPS									
	C-COCB-CHTP CM-ΦTB									
MCC	DPC-MORNING									
	C&T-COMM CNFG-VERIFY									
P/L	ARCT1-SYS-NOMPWR									
	RS GND									

ISS	ISS-MODE-PROX-OPS									
	C-COCB-CHTP CM-ΦTB									
MCC	DPC-MORNING									
	C&T-COMM CNFG-VERIFY									
P/L	ARCT1-SYS-NOMPWR									
	RS GND									

ISS ATT LVLH TEA UNDOCK XPOP

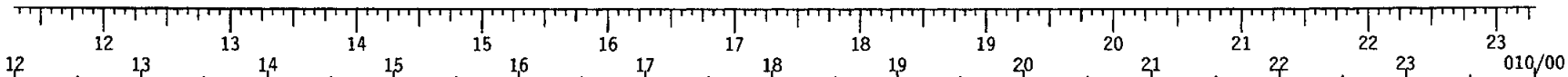
*VERIFY CONFIG X

*GMT 17:24 (MET 18:06)

GMT 10/07/02 10/08 01 02 03 04 05 06 07 08 09 10 11 12
 B = 6.7
 MET Day 009 009/00 01 02 03 04 05 06 07 08 09 10 11 12

FD10 CDR ASHBY	PMC OCA	PRE SLEEP - M Z N L V V R	PRE SLEEP SLEEP	FD11 POST SLEEP				
PLT/IV MELROY	COND CWC DUMP	PRE SLEEP	SLEEP	POST SLEEP				
MS1/EV1 WOLF	PRE SLEEP	SLEEP	POST SLEEP					
MS2 MAGNUS	PRE SLEEP	SLEEP	POST SLEEP					
MS3/EV2 SELLERS	PRE SLEEP	SLEEP	POST SLEEP					
MS4/IV YURCHIKHIN	PRE SLEEP (GIRA)	SLEEP	POST SLEEP (GIRA)					
DAY/NIGHT								
ORBIT	142	143	144	145	146	147	148	149
TDRS 47 171								
ORB ATT								
NOTES	-ZLV -XVV							

GMT 10/08/02
 β = 4.3
 MET Day 009



CDR ASHBY FD11	POST SLEEP	POST SLEEP	FCS C/O	RCS HF	MOON TRK	SM HO IO MN MO EBS	-M XN VVR	SHIMMER LIMB OBS	-M ZN LVR	PILOT OPS	MEAL	L-1 COMM CHK	D/O PREP BRIEF	COMM 2	CABIN STOW	PEAVOENT	CABIN STOW	EXERCISE	L-1 COMM CHK
	POST SLEEP	PS POL USE P LITER	FILTER CLEANING	FCS C/O	RCS HF	P/TV05 S/U	CABIN STOW	PILOT OPS	EXERCISE	MEAL	D/O PREP BRIEF	CABIN STOW	PS/TU V02	PEAVOENT	CABIN STOW	P/TV06 DEACT (SSV)	ERG STOW		
	POST SLEEP	PS/HN/SA TI/HT/IT VM/MT/M 2ER/RLR	SHIMMER LIMB OBS	SM HO IO MN MO EBS	SHIMMER LIMB OBS	DEACT	SSHTO MW MER	EXERCISE	CABIN STOW	MEAL	D/O PREP BRIEF	CABIN STOW	PEAVOENT	CABIN STOW					
	POST SLEEP	MC DK P/L	FCS C/O	RCS HF	EXERCISE	CABIN STOW	MEAL	D/O PREP BRIEF	CABIN STOW	PEAVOENT	CABIN STOW	MC DK P/L							
	POST SLEEP	CABIN STOW	EXERCISE	CABIN STOW	MEAL	D/O PREP BRIEF	CABIN STOW	PEAVOENT	CABIN STOW	OCA S/U MF	PGSC STOW								
	POST SLEEP (GIRA)	CABIN STOW	EXERCISE	CABIN STOW	MEAL	D/O PREP BRIEF	CABIN STOW	PEAVOENT	CABIN STOW	ERG STOW									
DAY/NIGHT ORBIT	150	151	152	153	154	155	156	157											
TDRS	47	171																	
ORB ATT	-ZLV -XVV MOON B+ZLV-XVV @FES H2O DUMP INIT -ZLV +YVV																		
NOTES	◆RAD OUT NORM W/FES ◎KU BAND STOW ▼KU BAND STOW																		

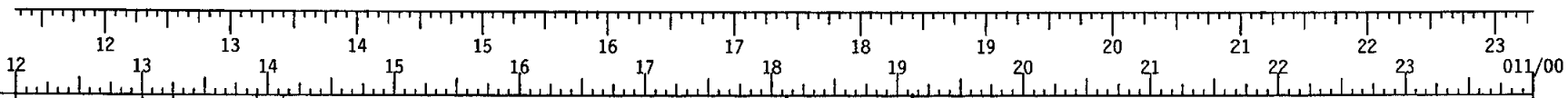
GMT 10/08/02 010/00 10/09 01 02 03 04 05 06 07 08 09 10 11 12
 β = 1.9
 MET Day 010

CDR ASHBY	PMCA/G	PRE SLEEP	PRE SLEEP	SLEEP	POST SLEEP
PLT/IV MELROY		PRE SLEEP		SLEEP	POST SLEEP
MS1/EV1 WOLF		PRE SLEEP		SLEEP	POST SLEEP
MS2 MAGNUS		PRE SLEEP		SLEEP	POST SLEEP
MS3/EV2 SELLERS		PRE SLEEP		SLEEP	POST SLEEP
MS4/IV YURCHIKHIN		PRE SLEEP (GIRA)		SLEEP	POST SLEEP (GIRA)

DAY/NIGHT											
ORBIT	157	158	159	160	161	162	163	164	165		
TDRS	47										
ORB ATT	171										

NOTES

GMT 10/09/02
 β = -0.5
 MET Day 010



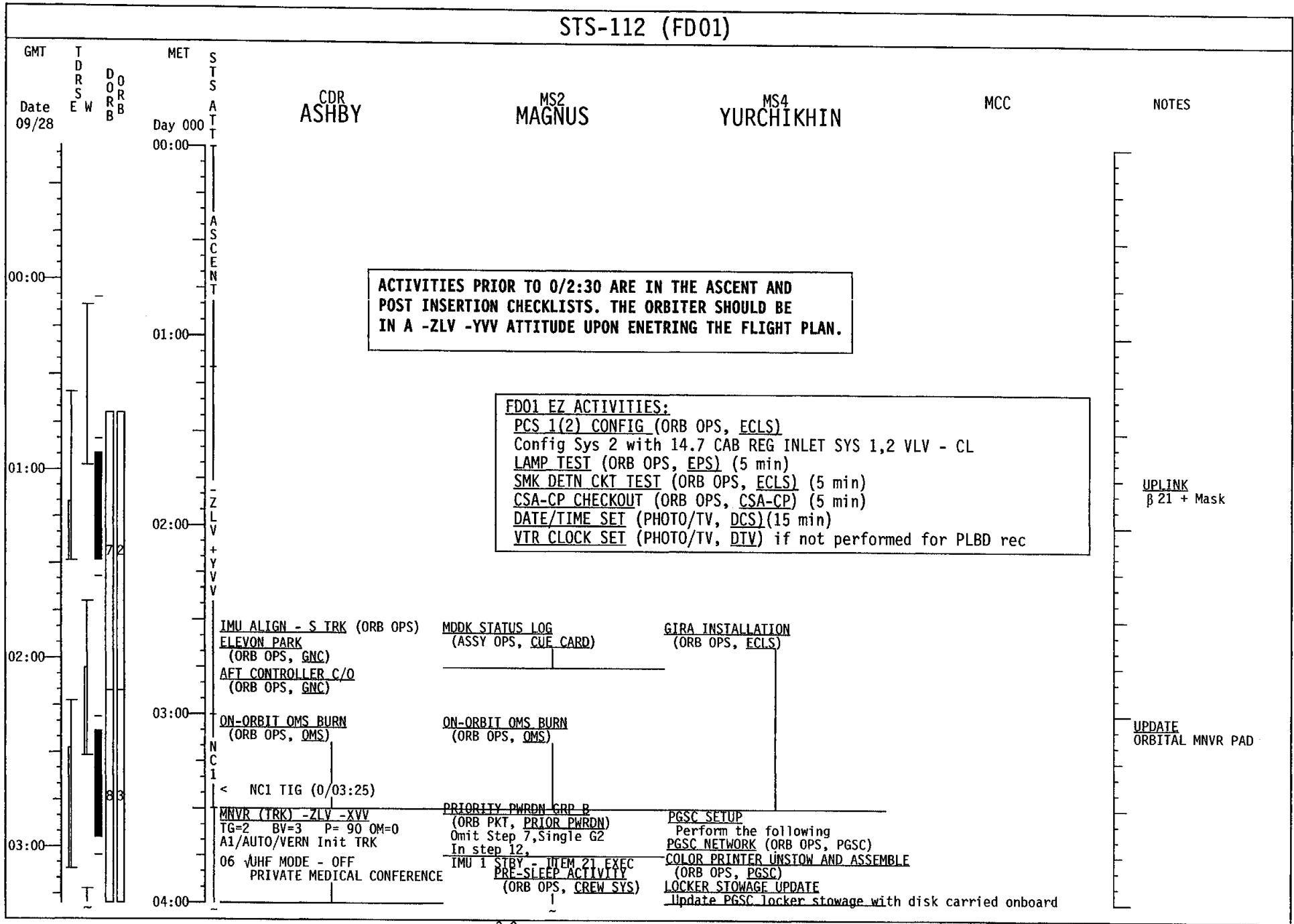
FD12	CDR ASHBY	POST SLEEP	PMC A/G	IMU ALIGN /VERIF	D/O PREP	D E O R B I T *	L A N D I N G *		
	PLT/IV MELROY	POST SLEEP	GP RW PR BUP	AI R	D/O PREP				
	MS1/EV1 WOLF	POST SLEEP	TEPC*		D/O PREP				
	MS2 MAGNUS	POST SLEEP	GP RW PR BUP	MDK 700-14 ENT S/U	D/O PREP				
	MS3/EV2 SELLERS	POST SLEEP		OSCT AOCW	D/O PREP				
	MS4/IV YURCHIKHIN	POST SLEEP (GIRA)		GSITROAW PRTSTW	D/O PREP				
DAY/NIGHT									
ORBIT	165	166	167	168	169	170	171	172	173
TDRS	47	171							
ORB ATT									
NOTES	<div style="text-align: right;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">*KSC TIG 10/18:07</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 20px;">*KSC LDG 10/19:12</div> </div>								

DETAILED TIMELINE

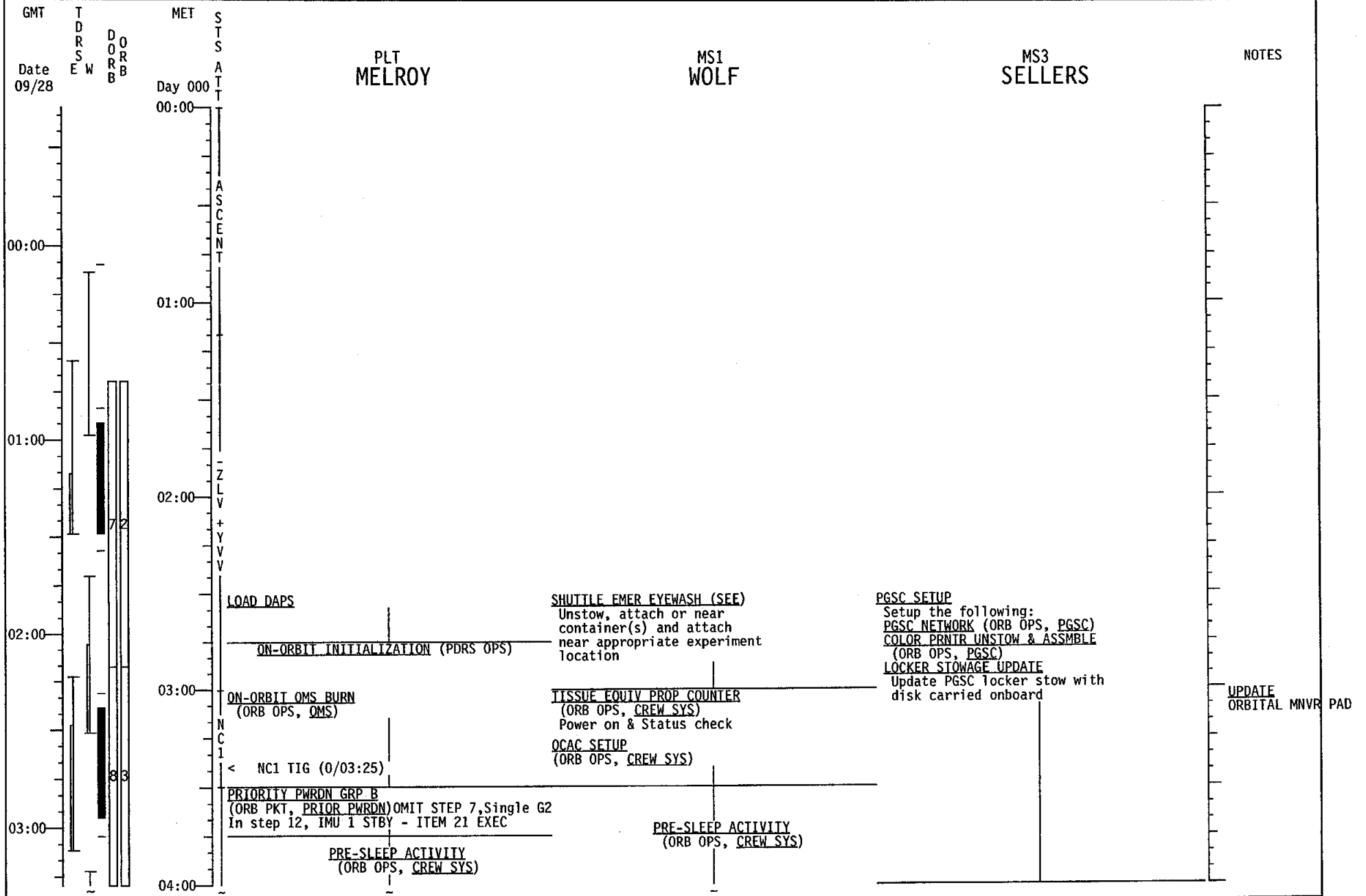
**DETAILED
TIMELINE**

DETAILED TIMELINE

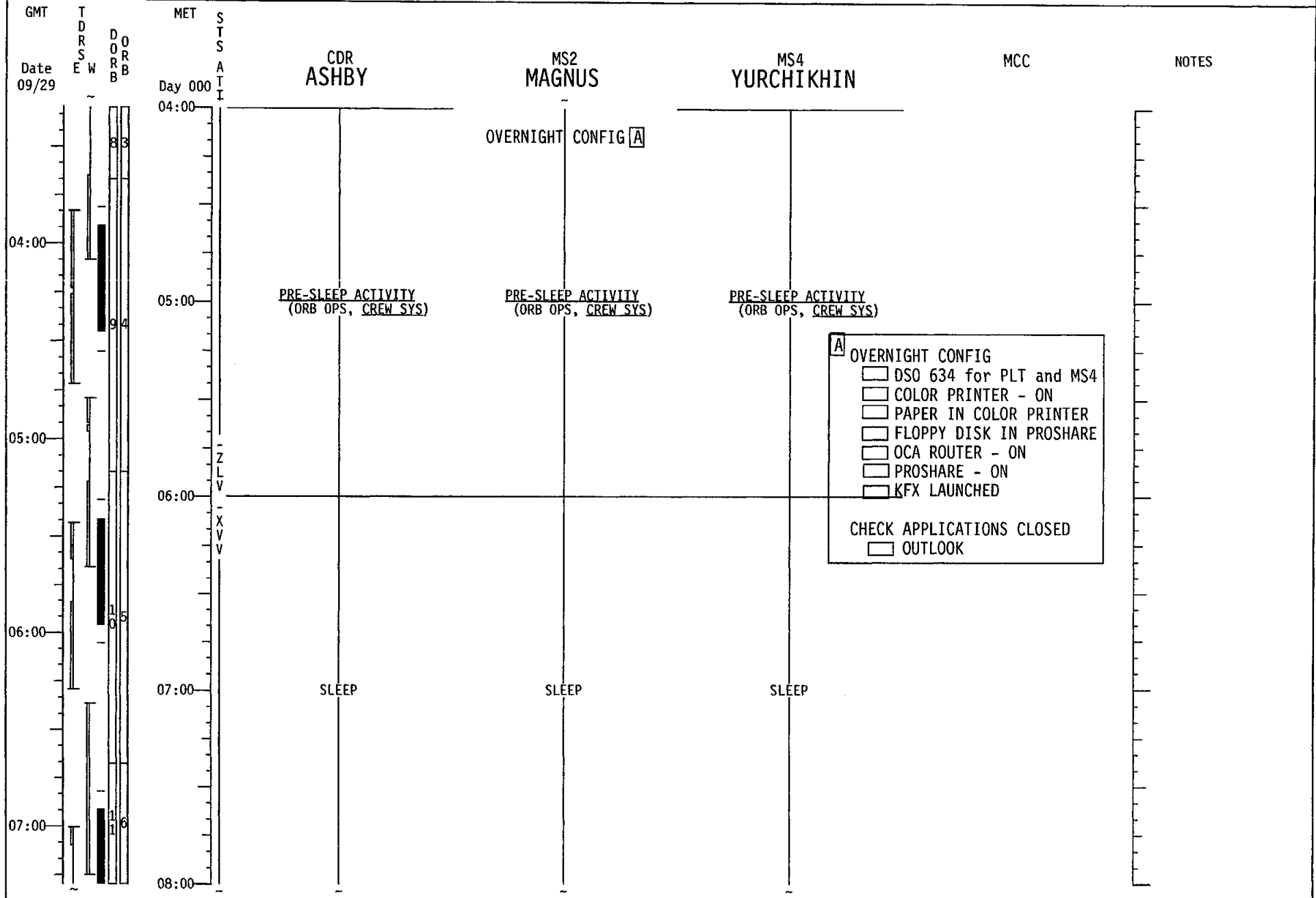
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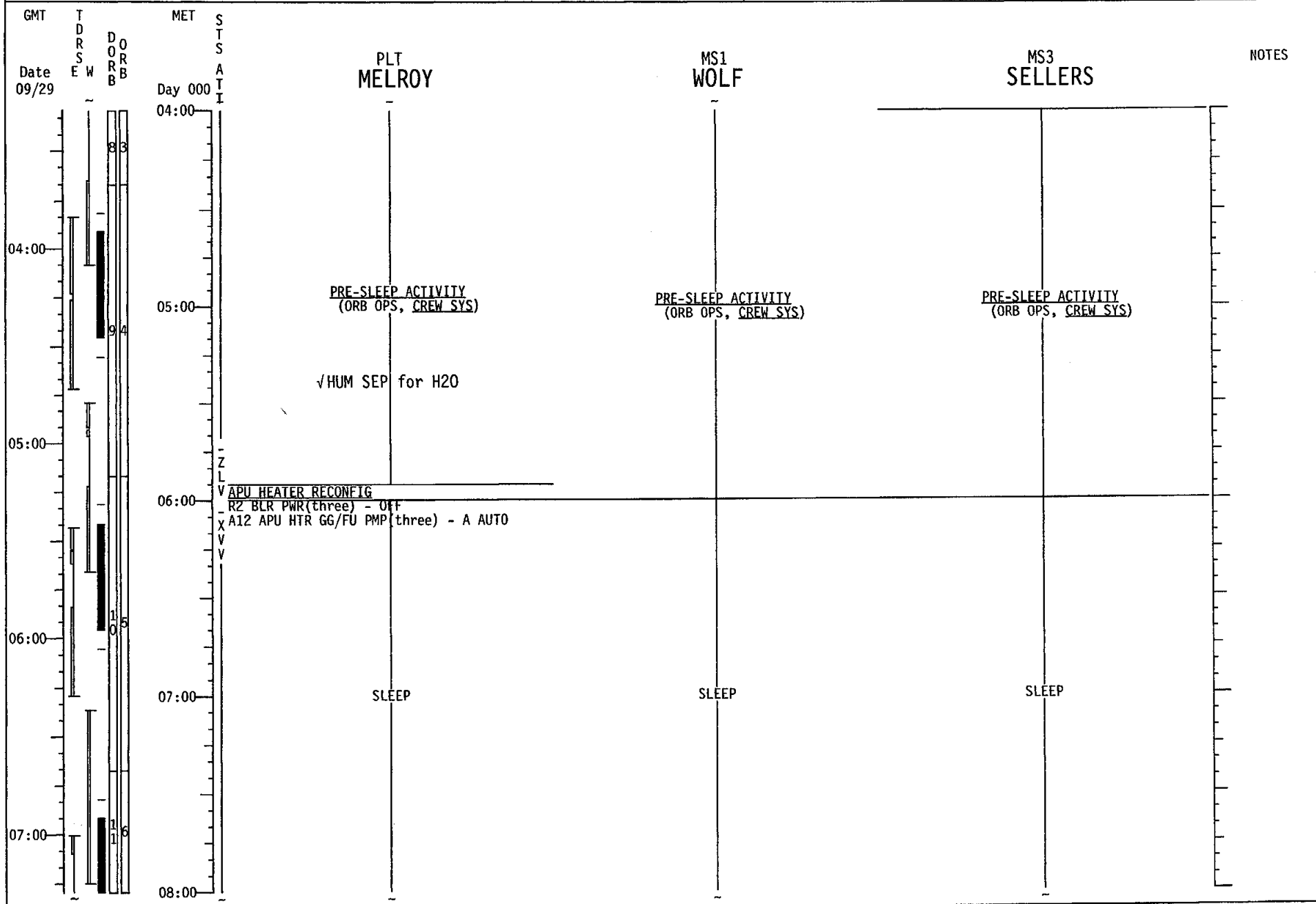
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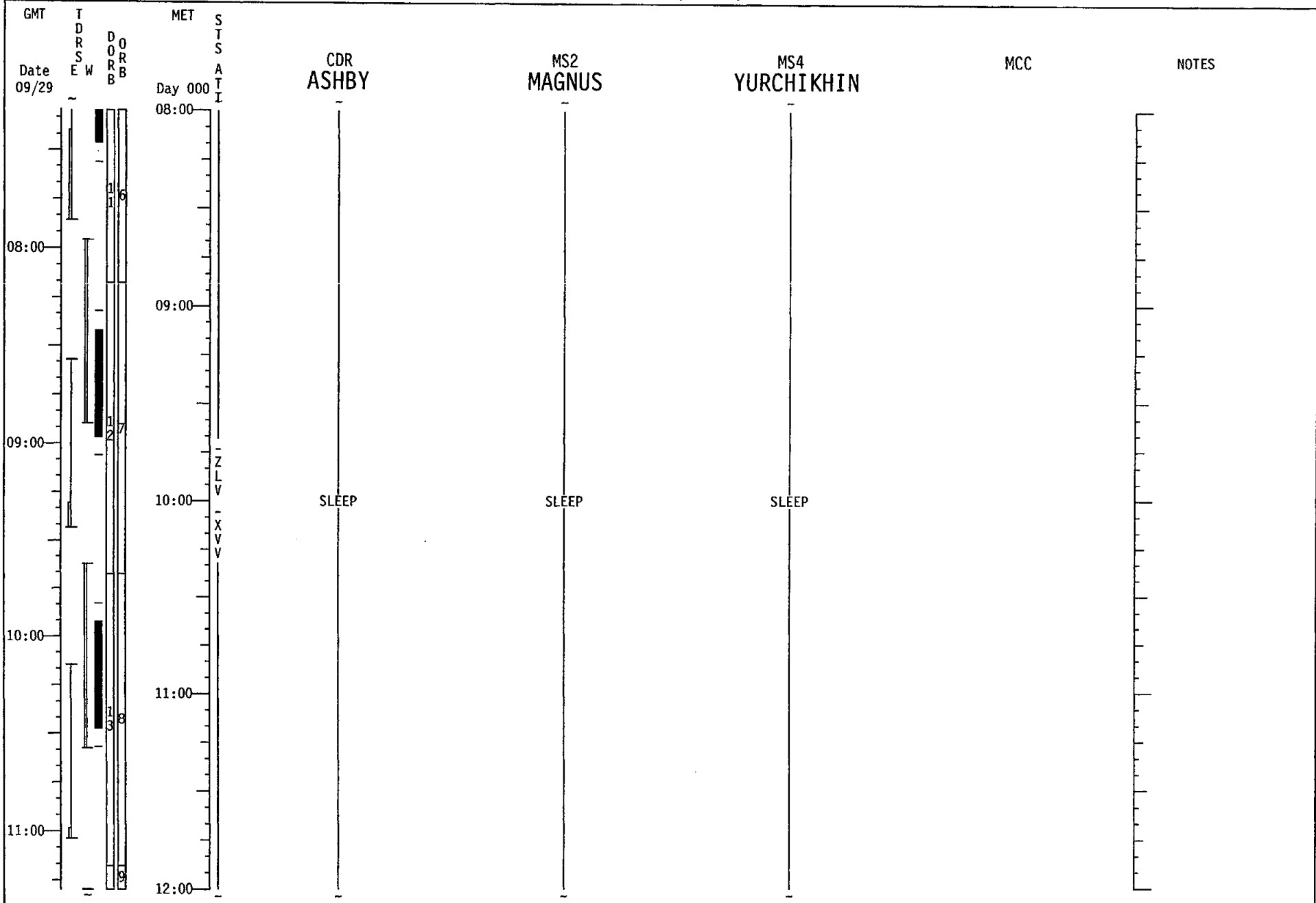
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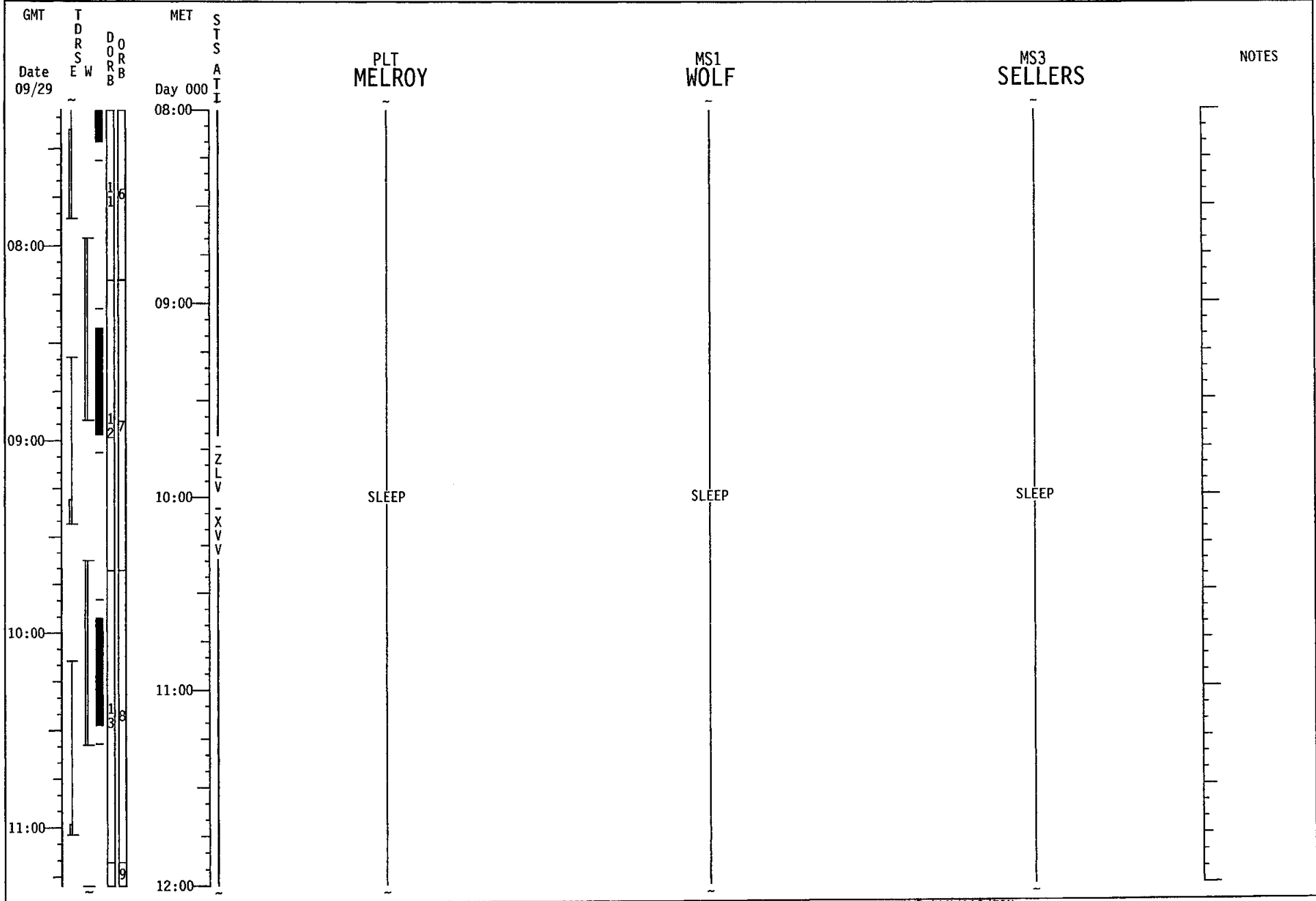
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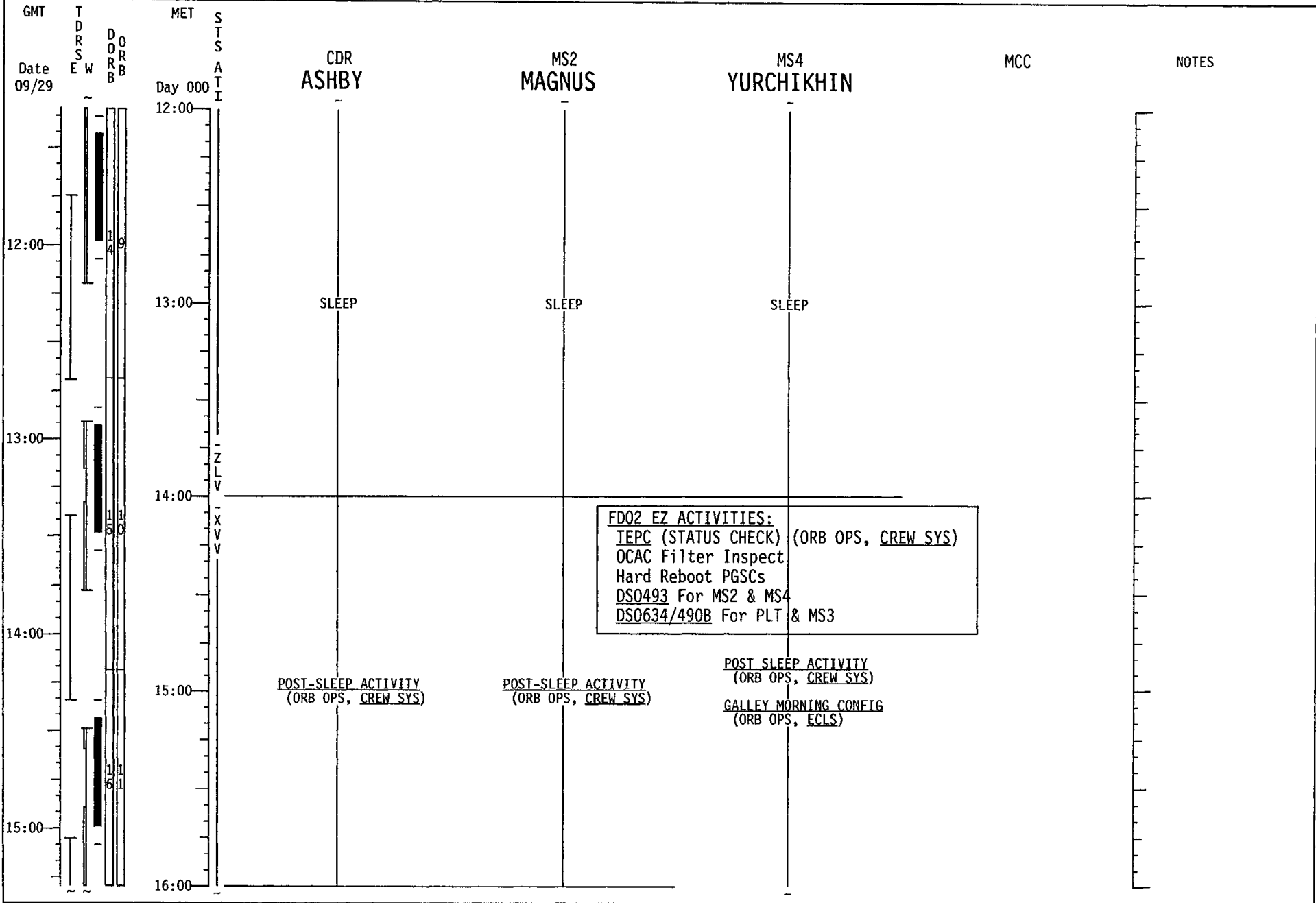
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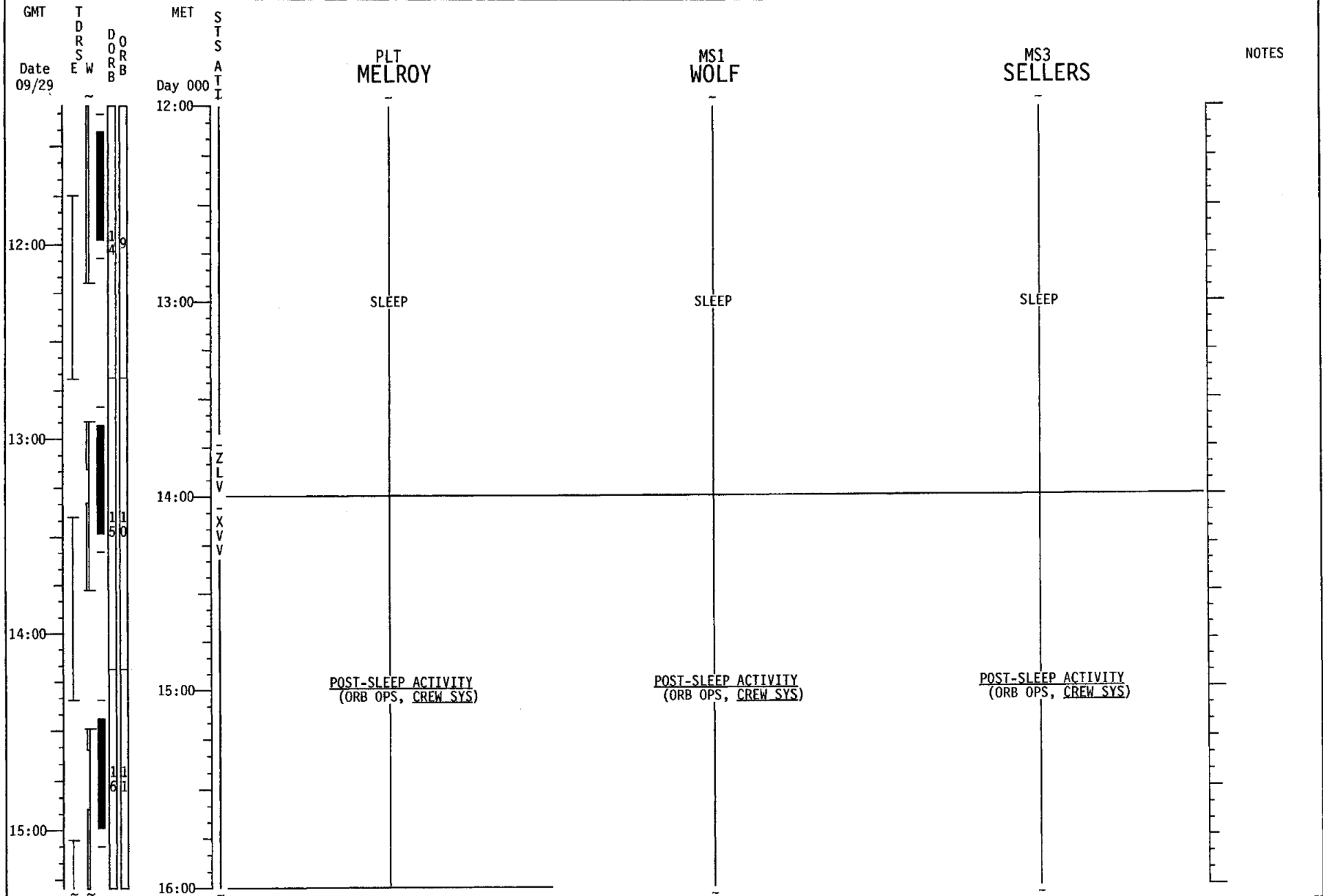
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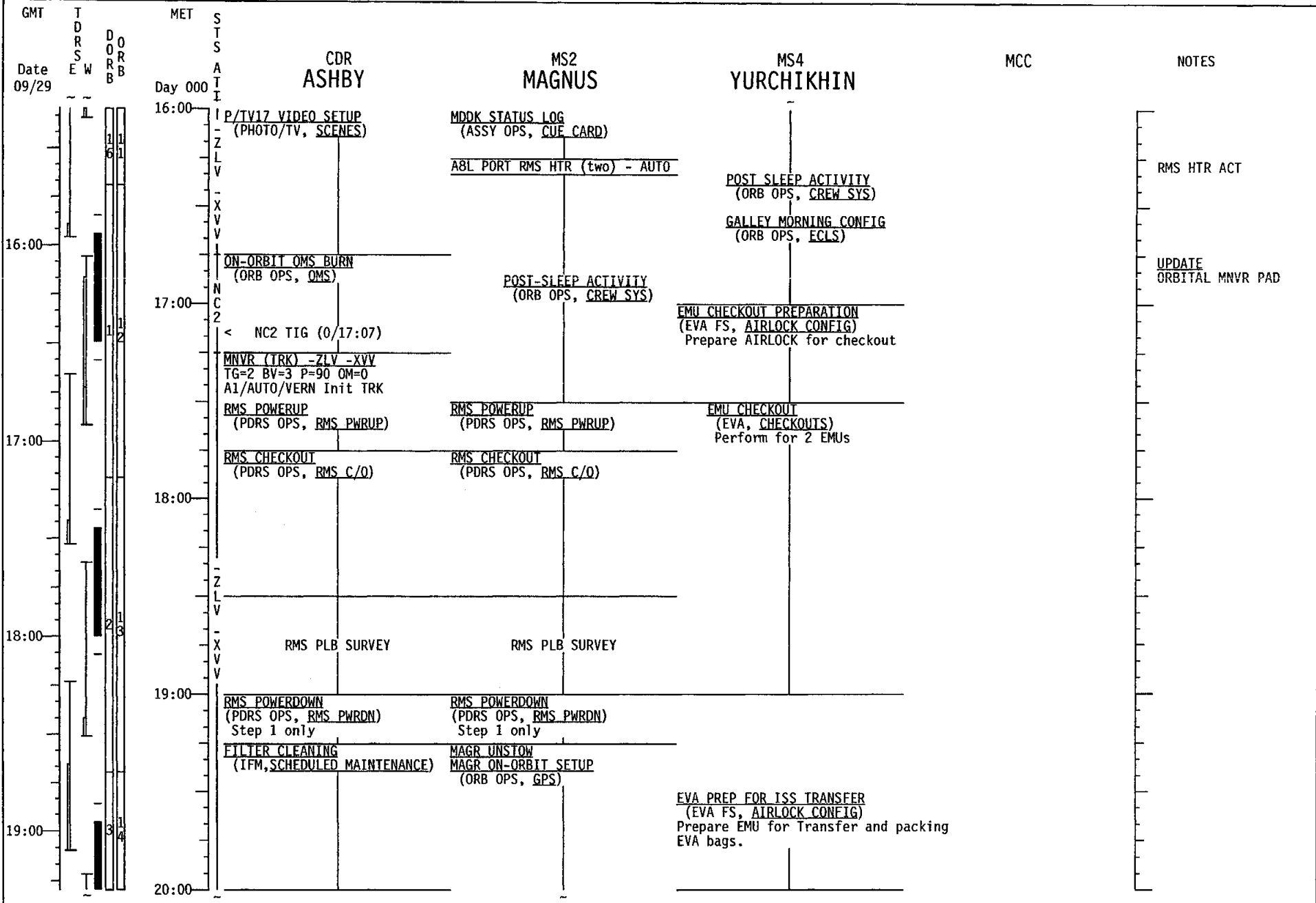
STS-112 (FD02)



STS-112 (FD02)



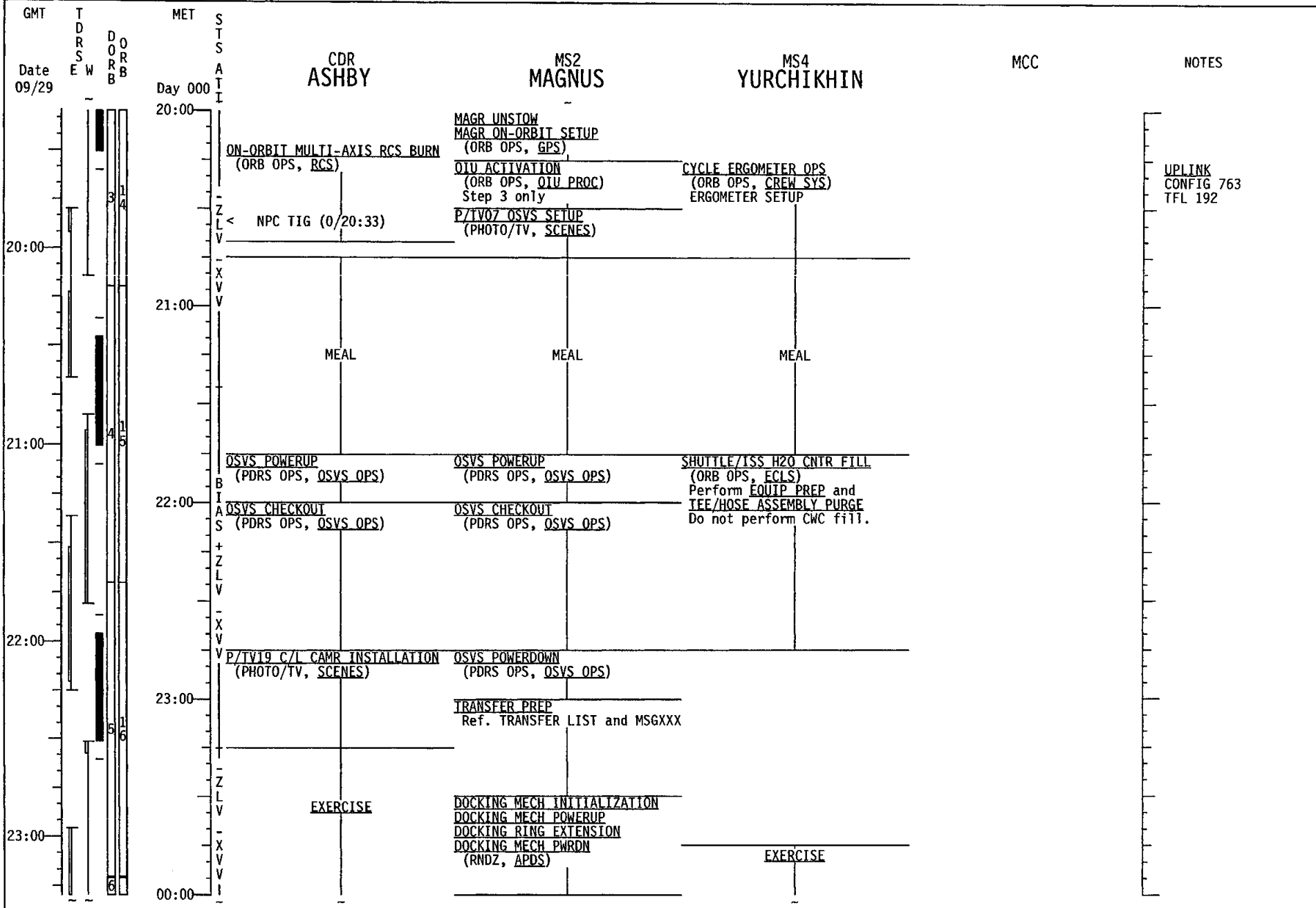
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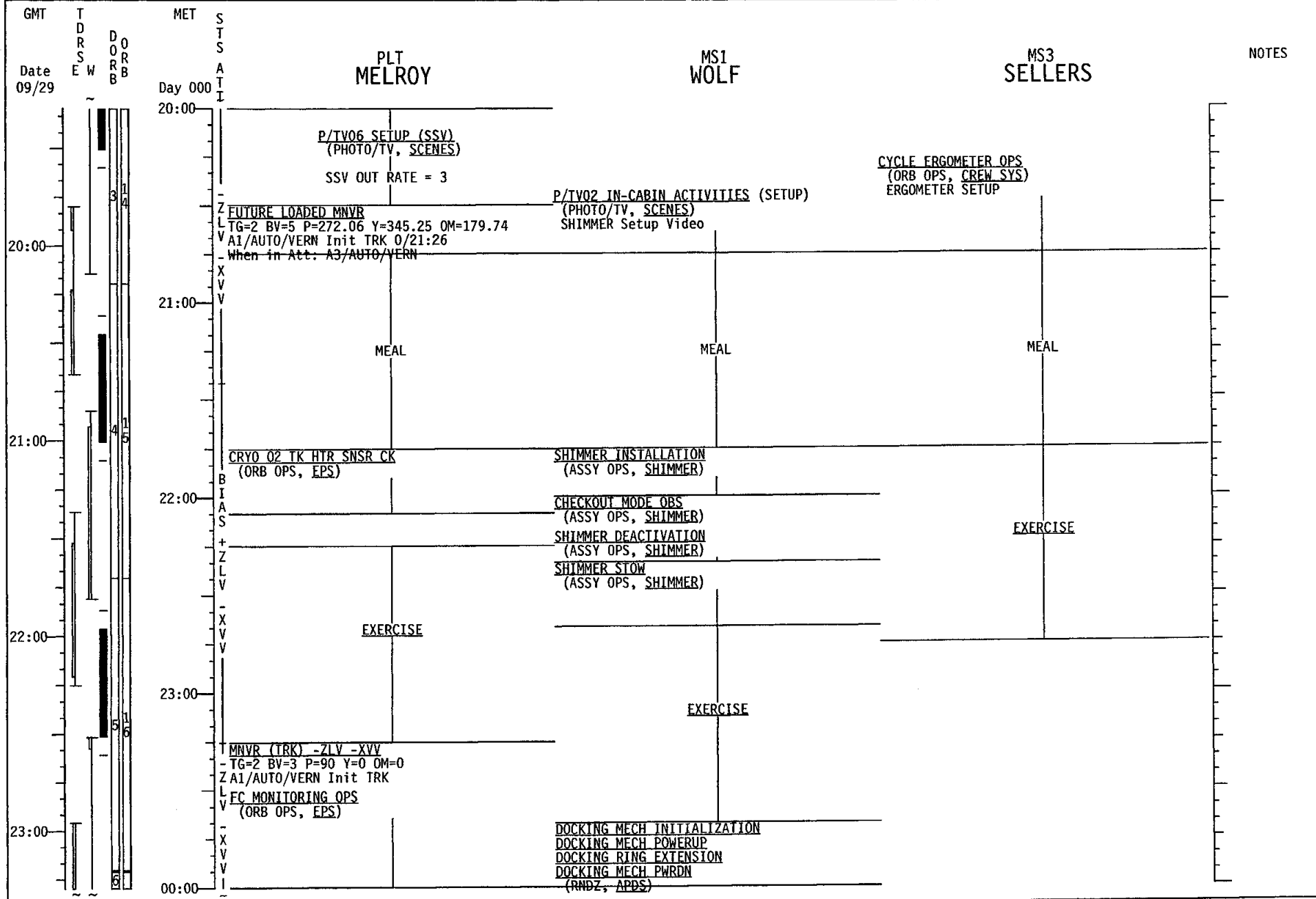
STS-112 (FD02)

GMT Date 09/29	T D R S E W	D O R B	MET Day 000	S T S A T I T I L I T Y	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
16:00					P/TV17 VIDEO SETUP (PHOTO/TV, SCENES)			
						POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
16:00					ON-ORBIT OMS BURN (ORB OPS, OMS)			UPDATE ORBITAL MNVR PAD
						EMU CHECKOUT PREPARATION (EVA FS, AIRLOCK CONFIG) Prepare AIRLOCK for checkout	EMU CHECKOUT PREPARATION (EVA FS, AIRLOCK CONFIG) Prepare AIRLOCK for checkout	
17:00					NC2 TIG (0/17:07)			
					P/TV17 VIDEO SETUP (PHOTO/TV, SCENES)			
					EMU CHECKOUT (EVA, CHECKOUTS) Perform for 2 EMUs	EMU CHECKOUT (EVA, CHECKOUTS) Perform for 2 EMUs	EMU CHECKOUT (EVA, CHECKOUTS) Perform for 2 EMUs	
17:00								
18:00								
18:00								
19:00					P/TV18 EVA CAMR SETUP (WVS) (PHOTO/TV, SCENES) Perform Steps 1-2 Only	SAFER CHECKOUT (EVA, CHECKOUTS) Stow switch guard in foam	SAFER CHECKOUT (EVA, CHECKOUTS) Stow switch guard in foam	
					EVA PREP FOR ISS TRANSFER (EVA FS, AIRLOCK CONFIG) Prepare EMU for Transfer and packing EVA bags.	EVA PREP FOR ISS TRANSFER (EVA FS, AIRLOCK CONFIG) Prepare EMU for Transfer and packing EVA bags.	EVA PREP FOR ISS TRANSFER (EVA FS, AIRLOCK CONFIG) Prepare EMU for Transfer and packing EVA bags.	
19:00								
20:00								

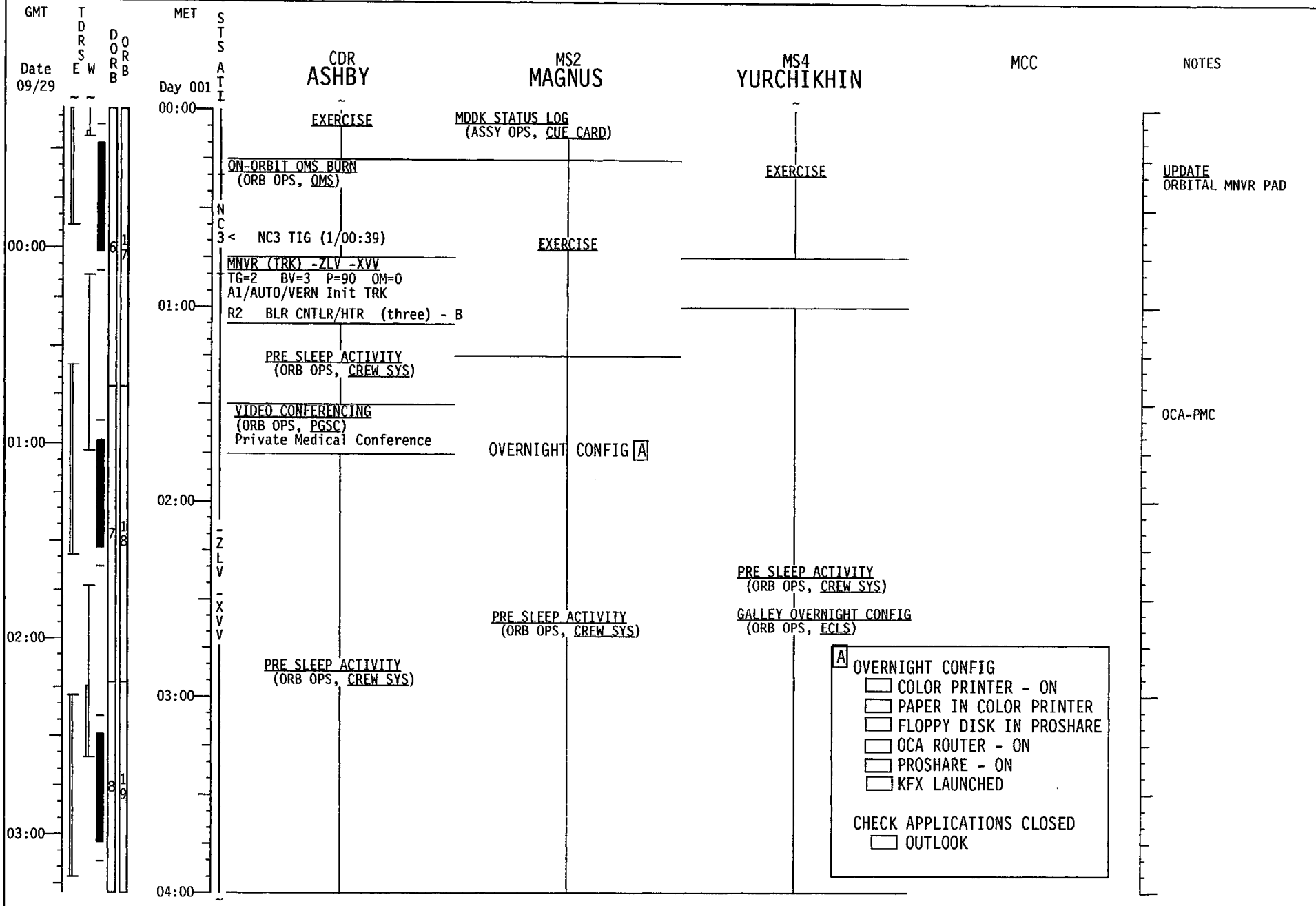
STS-112 (FD02)



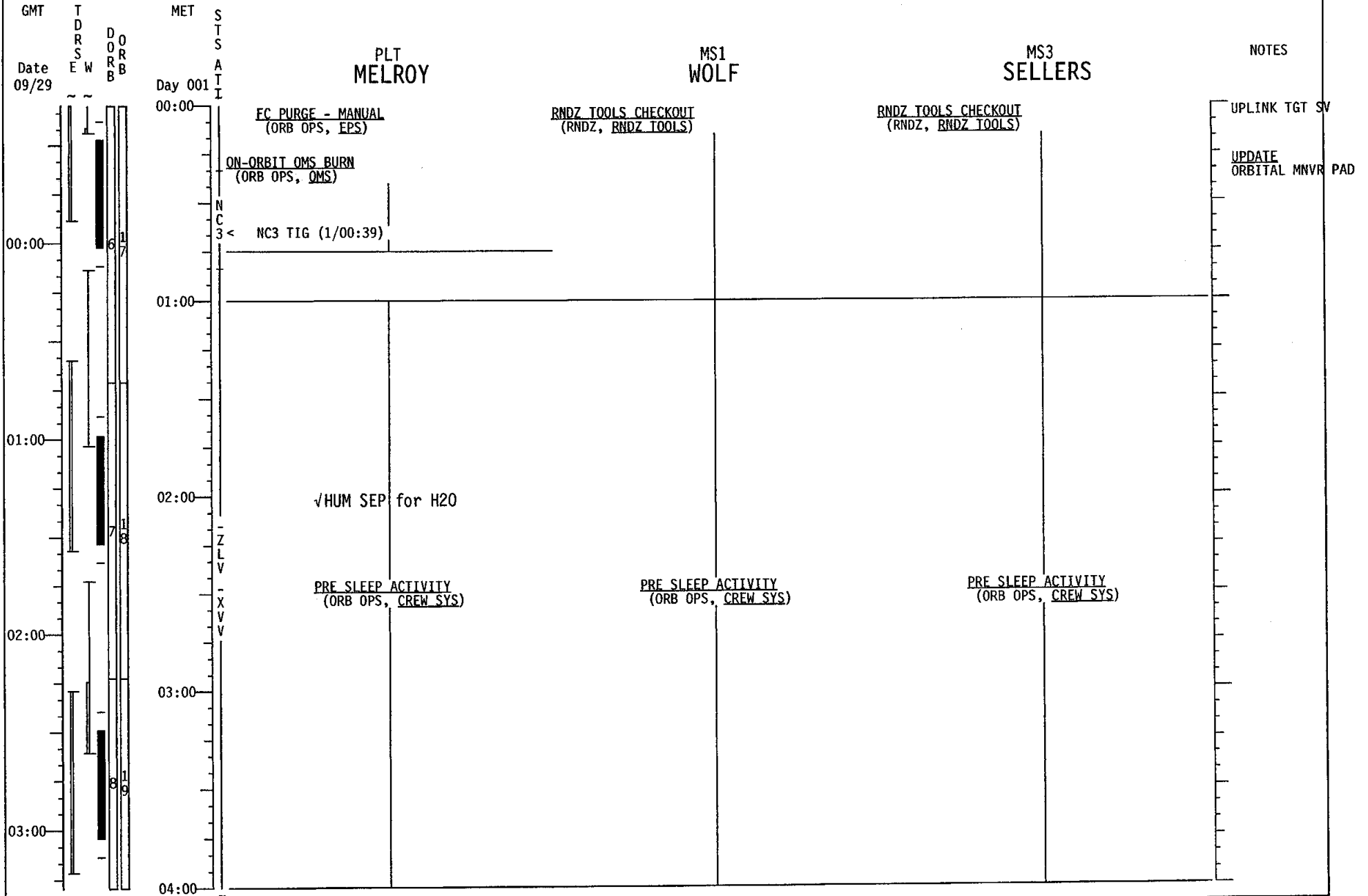
STS-112 (FD02)



STS-112 (FD02)



STS-112 (FD02)



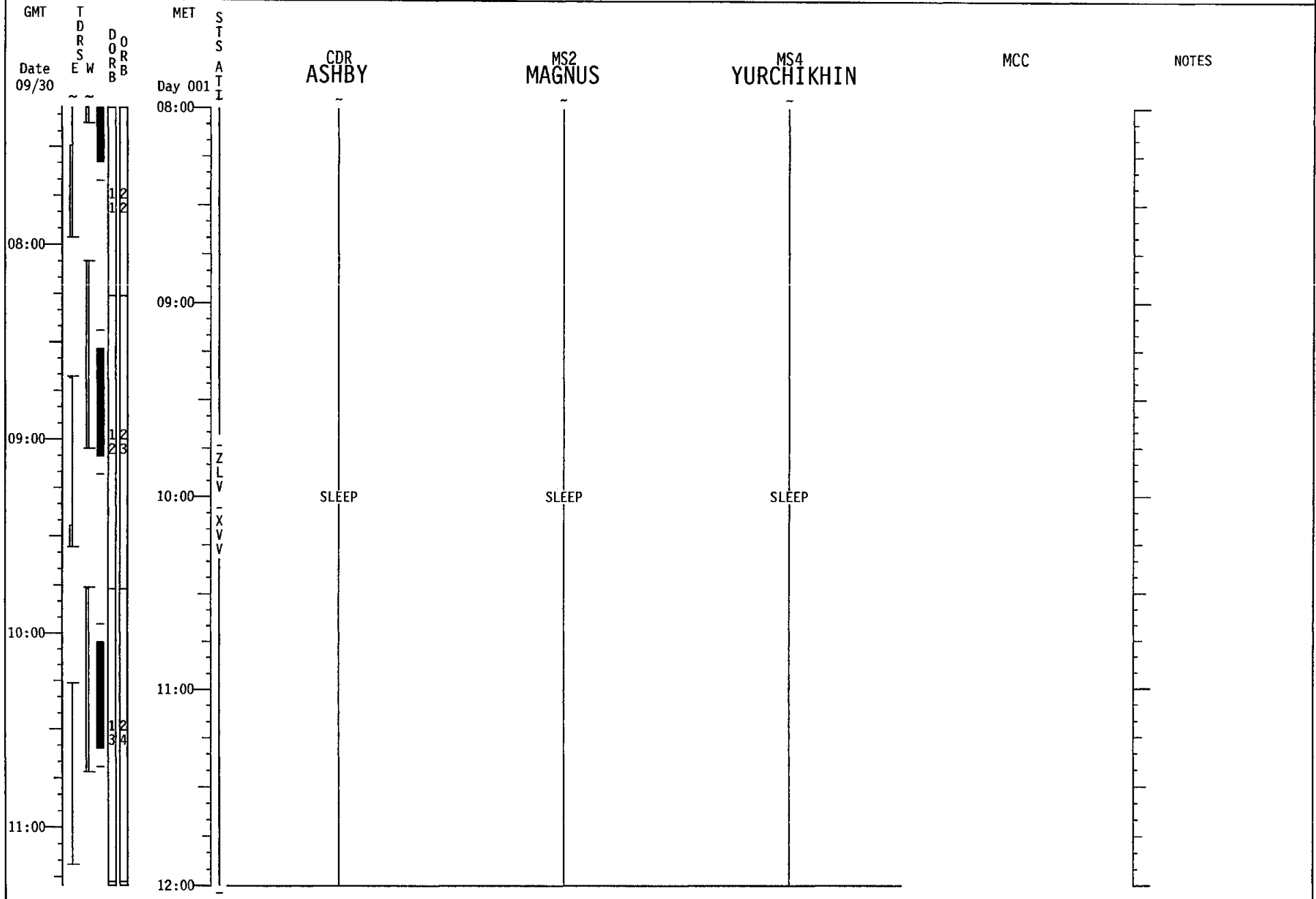
STS-112 (FD02)

GMT Date 09/30	TDRSEW DORBB	MET Day 001	STA ATT	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<p>SLEEP</p>	<p>SLEEP</p>	<p>SLEEP</p>		

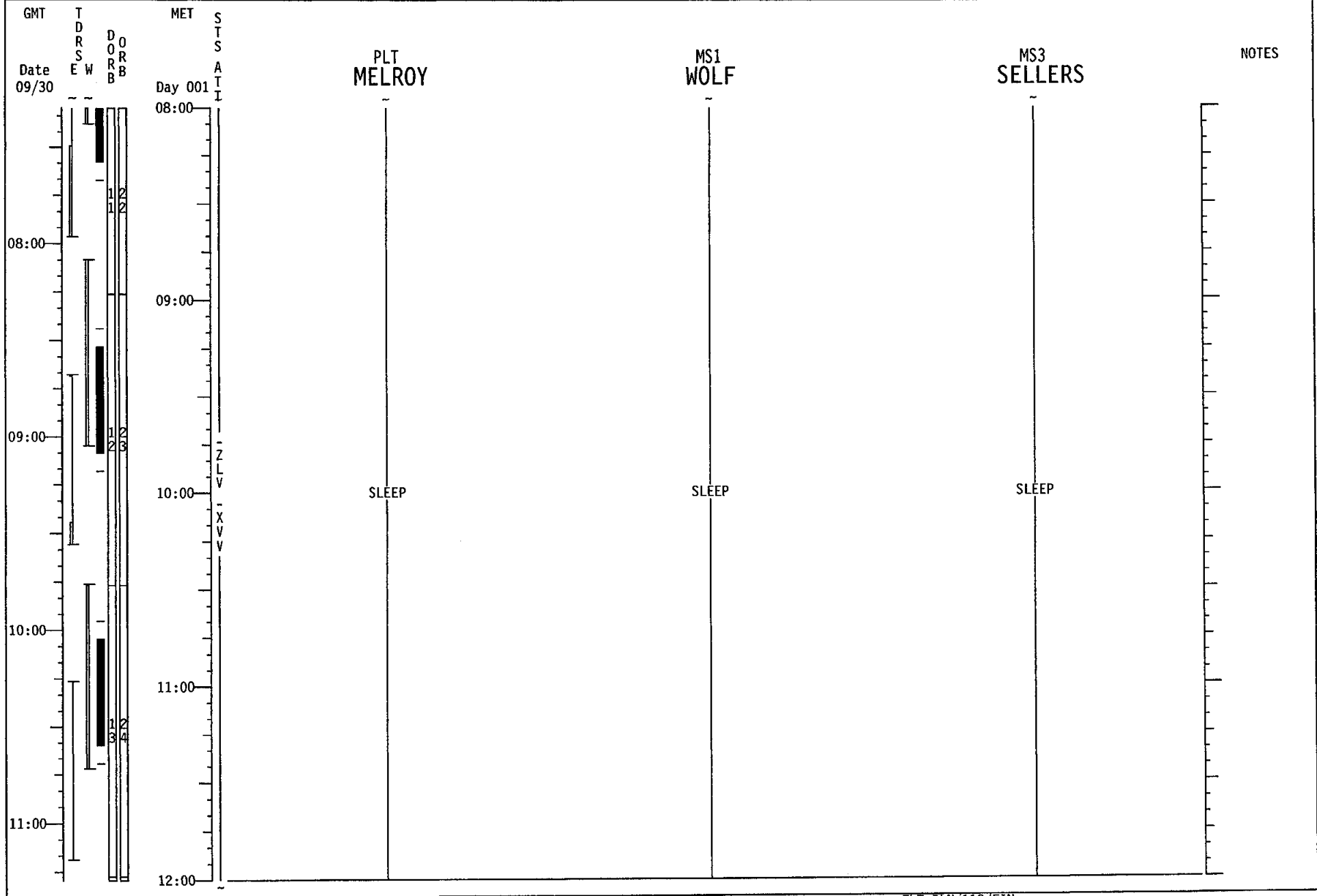
STS-112 (FD02)

GMT	TDRS E W	DORB	MET Day 001	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
09/30			04:00					
04:00		8 11 9						
			05:00					
05:00		9 2 0						
			06:00	Z L V	SLEEP	SLEEP	SLEEP	
06:00		1 2 0 1		X V V				
			07:00					
07:00		1 2 1 2						
			08:00					

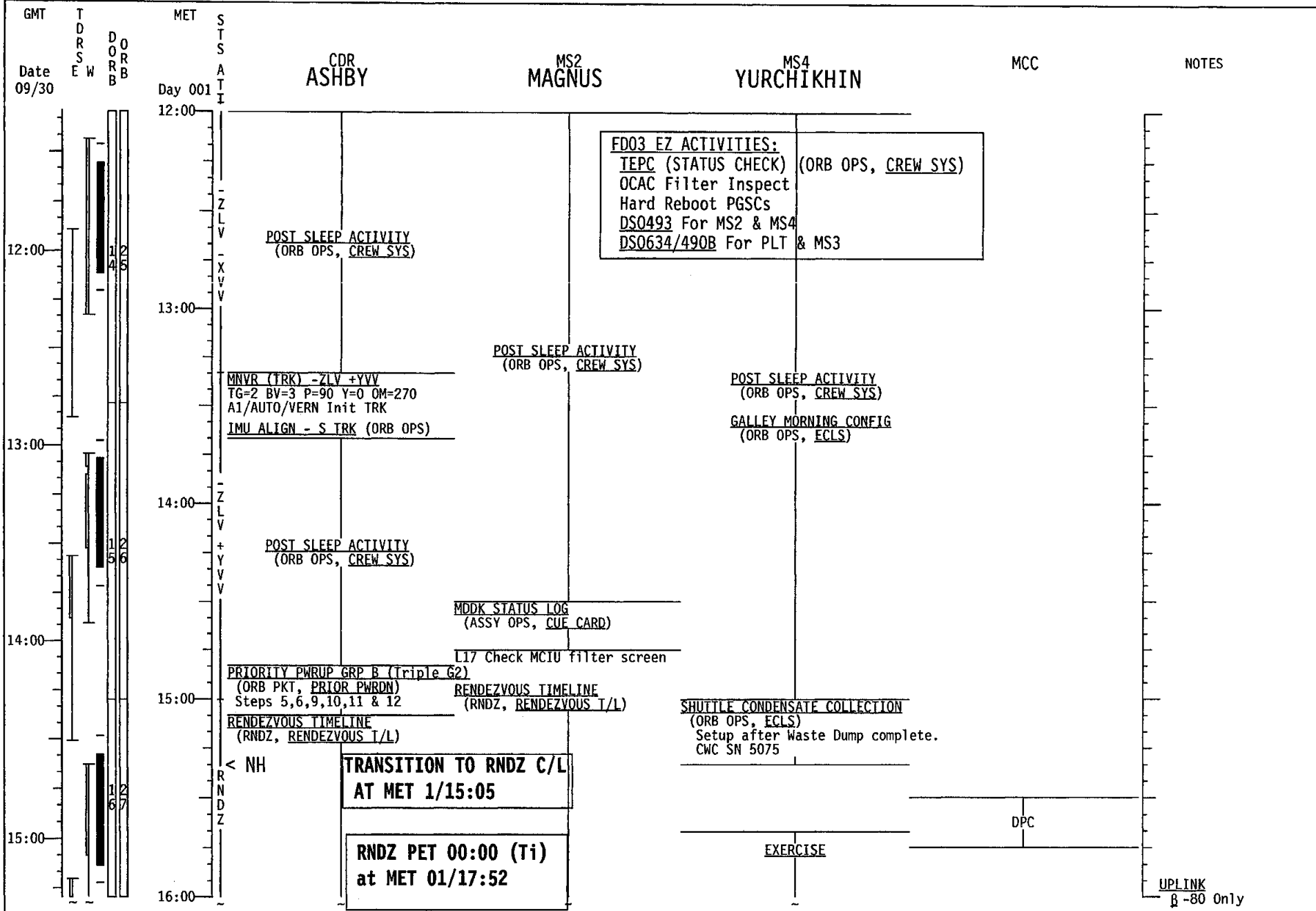
STS-112 (FD02)



STS-112 (FD02)



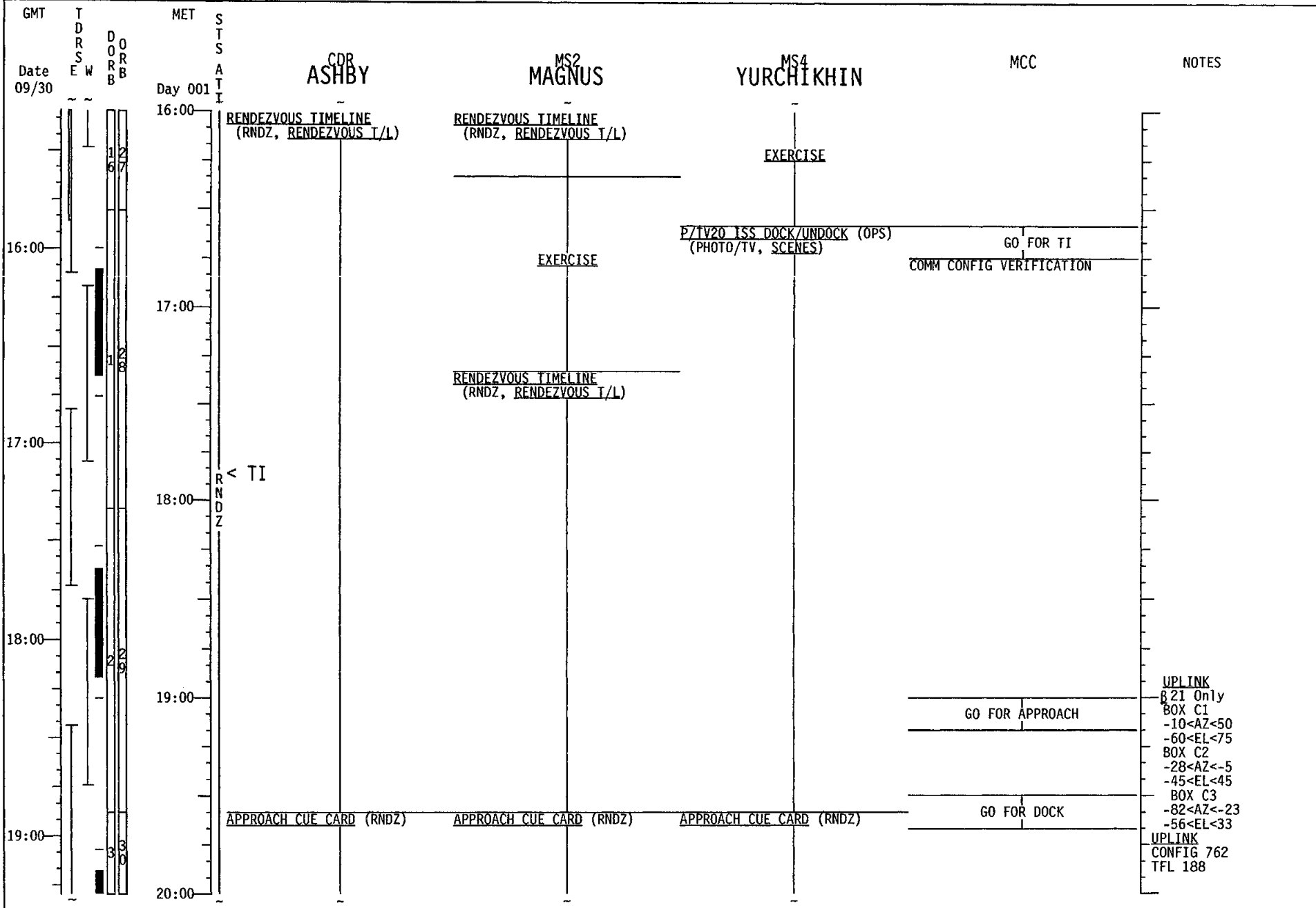
STS-112 (FD03)



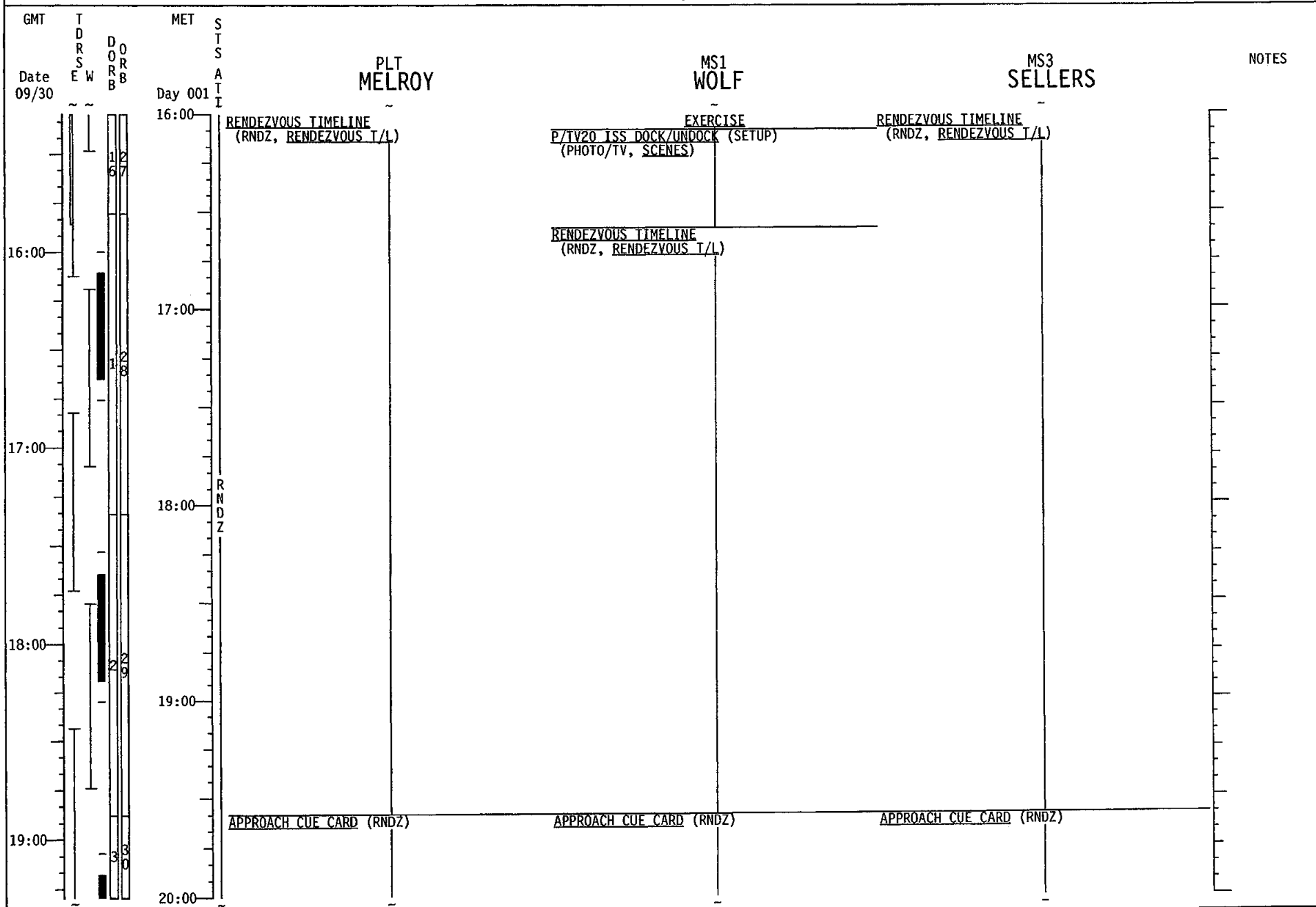
STS-112 (FD03)

GMT	TDRS E W	DORRB A B	MET Day 001	STS A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
12:00				Z L V				
12:00		12 4 5		X V V	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)			
13:00						POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	
13:00					SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Waste Dump Dump Waste Tank to 5%			UPDATE H2O WASTE DUMP QTY
14:00		12 5 6		Z L V + Y V V	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)			
14:00							EXERCISE	
15:00					PRIORITY PWRUP GRP B (Triple G2) (ORB PKT, PRIOR PWRDN) Steps 5,6,9,10,11 & 12			
15:00					SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Terminate Waste Dump			
15:00		12 6 7		R N D Z	RENDEZVOUS TIMELINE (RNDZ, RENDEZVOUS T/L)	EXERCISE	EMU REMOVAL (EVA, AIRLOCK CONEIG) Move EMUs to middeck	
15:00					RNDZ PET 00:00 (Ti) at MET 01/17:52			
16:00							RENDEZVOUS TIMELINE (RNDZ, RENDEZVOUS T/L)	

STS-112 (FD03)



STS-112 (FD03)



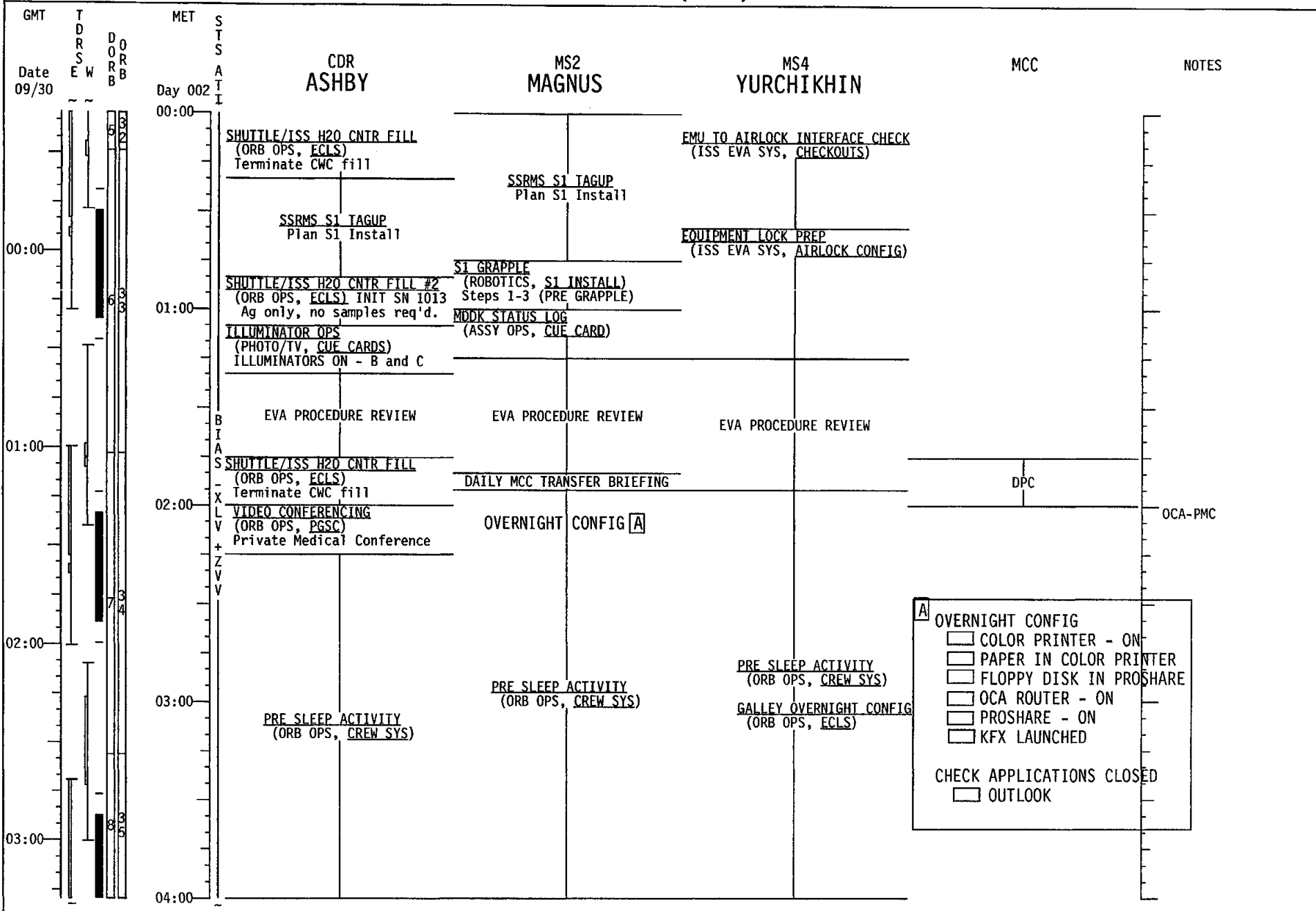
STS-112 (FD03)

GMT	TDRS EW	DORB	MET	STS ATT	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
Date 09/30			Day 001						
			20:00	RNDZ	APPROACH CUE CARD (RNDZ)	APPROACH CUE CARD (RNDZ)	APPROACH CUE CARD (RNDZ)		
					RETURN TO FLIGHT PLAN				
			20:00		POST DOCKING HATCH LEAK CHECK (JOINT OPS, INGRESS STATION)	P/TV21 ISS INTERNAL OPS (SETUP) (PHOTO/TV, SCENES) Ingress Video/Photo Setup		DOCKING	
			21:00		OPS VOL PREP FOR INGRESS (JOINT OPS, INGRESS STATION)	PRIORITY PWRDN GRP B (Single G2) (ORB PKT, PRIOR PWRDN) Steps 5,6,7,9,10,11,12 In step 12, IMU 1 STBY - ITEM 21 EXEC			
			21:00		HATCH OPEN & DUCT INSTALL (JOINT OPS, INGRESS STATION)	06 S TRK PWR - 7 - OFF PCS SETUP - SHUTTLE (JOINT OPS, COMM/DATA)	HATCH OPEN & DUCT INSTALL (JOINT OPS, INGRESS STATION)	MOMENTUM MANAGER	
			22:00	BIAS					
				XLV	WELCOME	WELCOME	WELCOME		
				+ZV	SAFETY BRIEF	SAFETY BRIEF	SAFETY BRIEF		
			22:00		CWC TRANSFER (16 BAGS) Transfer 16 CWC bags from ISS to STS. Ref. TRANSFER LIST items X and Y.	CREW PREP	POST DOCKING EVA RECONFIG (EVA FS, AIRLOCK CONFIG)		
			23:00		SHUTTLE/ISS H2O CNTR FILL #1 (ORB OPS, ECLS) INIT Use SN 1010 Ag only, samples req'd.				
					CONFIG FOR P/B ON SHUTTLE 02 (JOINT OPS, MATED OPS)	P/TV22 S1 INSTALLATION (SETUP) (PHOTO/TV, SCENES) Drag-thru V10 to RWS	CONFIG FOR P/B ON SHUTTLE 02 (JOINT OPS, MATED OPS)		
			23:00			TRANSFER OPS Item: SODF			
			00:00						

STS-112 (FD03)

GMT Date 09/30	TDRS E W	DORB O R B	MET Day 001	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
			20:00	APPROACH CUE CARD (RNDZ) SSV OUT RATE = 2	APPROACH CUE CARD (RNDZ)	APPROACH CUE CARD (RNDZ)	
				RETURN TO FLIGHT PLAN			
			20:00	MNVR (TRK) BIAS -XLV +ZVV TG=2 BV=5 P=156 Y=353 OM=0 A12/AUTO/VERN Init TRK H/Q ATT CNTL ORB TO CMGTA (JOINT OPS, MATED OPS)	POST DOCKING HATCH LEAK CHECK (JOINT OPS, INGRESS STATION)	ACTIVATION (CUE CARD, PLAYBACK)	
			21:00	PRIORITY PWRDN GRP B (Single G2) (ORB PKT, PRIOR PWRDN) Steps 5,6,7,9-11&12 In step 12, IMU 1 STBY - ITEM 21 EXEC 06 S TRK PWR -Z - OFF	ODS VOL PREP FOR INGRESS (JOINT OPS, INGRESS STATION)	HARDLINE AUDIO CONFIG (ISS) (JOINT OPS, COMM/DATA) Steps 1,2,6,7	
			21:00	EXERCISE	HATCH OPEN & DUCT INSTALL (JOINT OPS, INGRESS STATION)	PLBK (CUE CARD, PLAYBACK) KU TDRE (21:00 - 21:20) PGSC NETWORK RCNEG Configure PGSCs for docked timeframe. P/TV18 EVA CAMR SETUP (WVS) (PHOTO/TV, SCENES) Steps 3,4 and 5	
			22:00	WELCOME	WELCOME	WELCOME	
			22:00	SAFETY BRIEF	SAFETY BRIEF	SAFETY BRIEF	
			22:00	POST DOCKING EVA RECONFIG (EVA FS, AIRLOCK CONFIG)	POST DOCKING EVA RECONFIG (EVA FS, AIRLOCK CONFIG)	POST DOCKING EVA RECONFIG (EVA FS, AIRLOCK CONFIG)	
			23:00	REBA INSTALLATION (ISS EVA SYS, BATTERY OPS)	REBA INSTALLATION (ISS EVA SYS, BATTERY OPS)	REBA INSTALLATION (ISS EVA SYS, BATTERY OPS)	
			00:00	REBA POWERED HARDWARE CHECKOUT (ISS EVA SYS, CHECKOUTS)	REBA POWERED HARDWARE CHECKOUT (ISS EVA SYS, CHECKOUTS)	REBA POWERED HARDWARE CHECKOUT (ISS EVA SYS, CHECKOUTS)	

STS-112 (FD03)



STS-112 (FD03)

GMT	T D R S E W	D O R B	MET	S T S A T	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 09/30			Day 002					
00:00		5 2			REBA POWERED HARDWARE-CHECKOUT (ISS EVA SYS, CHECKOUTS)	REBA POWERED HARDWARE-CHECKOUT (ISS EVA SYS, CHECKOUTS)	REBA POWERED HARDWARE-CHECKOUT (ISS EVA SYS, CHECKOUTS)	
					EMU TO AIRLOCK INTERFACE CHECK (ISS EVA SYS, CHECKOUTS)	EVA TOOL CONFIG (EVA, TOOLS/TIMELINES)	EVA TOOL CONFIG (EVA, TOOLS/TIMELINES)	
00:00		6 3			EQUIPMENT LOCK PREP (ISS EVA SYS, AIRLOCK CONFIG)	EQUIPMENT LOCK PREP (ISS EVA SYS, AIRLOCK CONFIG)	EQUIPMENT LOCK PREP (ISS EVA SYS, AIRLOCK CONFIG)	
01:00								
01:00				B I A S	EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	
02:00		7 4		X L V				
02:00				+ Z V V				
03:00		8 01			PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	
03:00								
04:00								

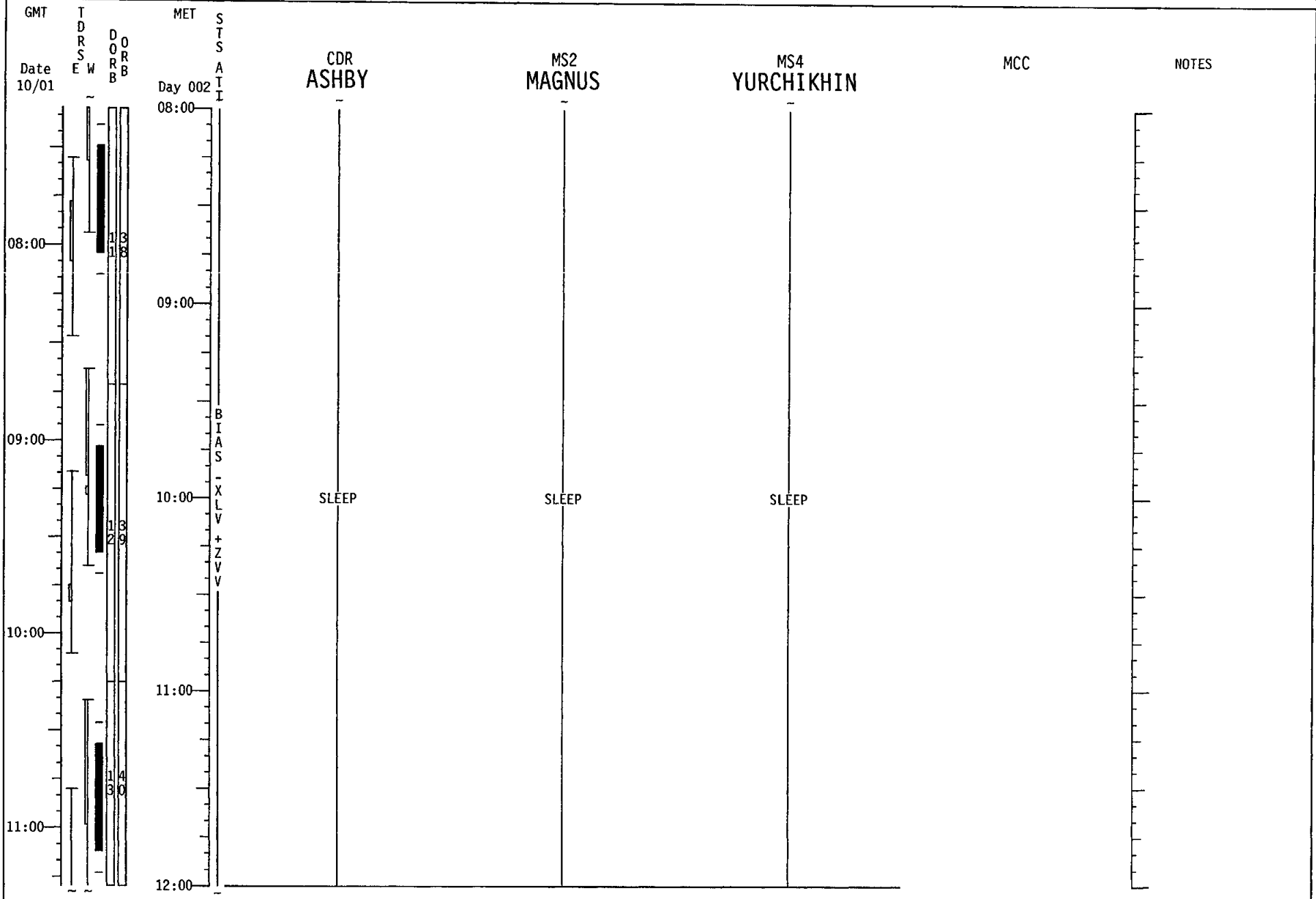
STS-112 (FD03)

GMT Date 10/01	TDRS EW	DORB	MET Day 002	STA TI	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
04:00		835	04:00						
05:00		936	05:00						
06:00		11307	06:00	B I A S - X L V + Z V V	SLEEP	SLEEP	SLEEP		
07:00			07:00						
08:00			08:00						

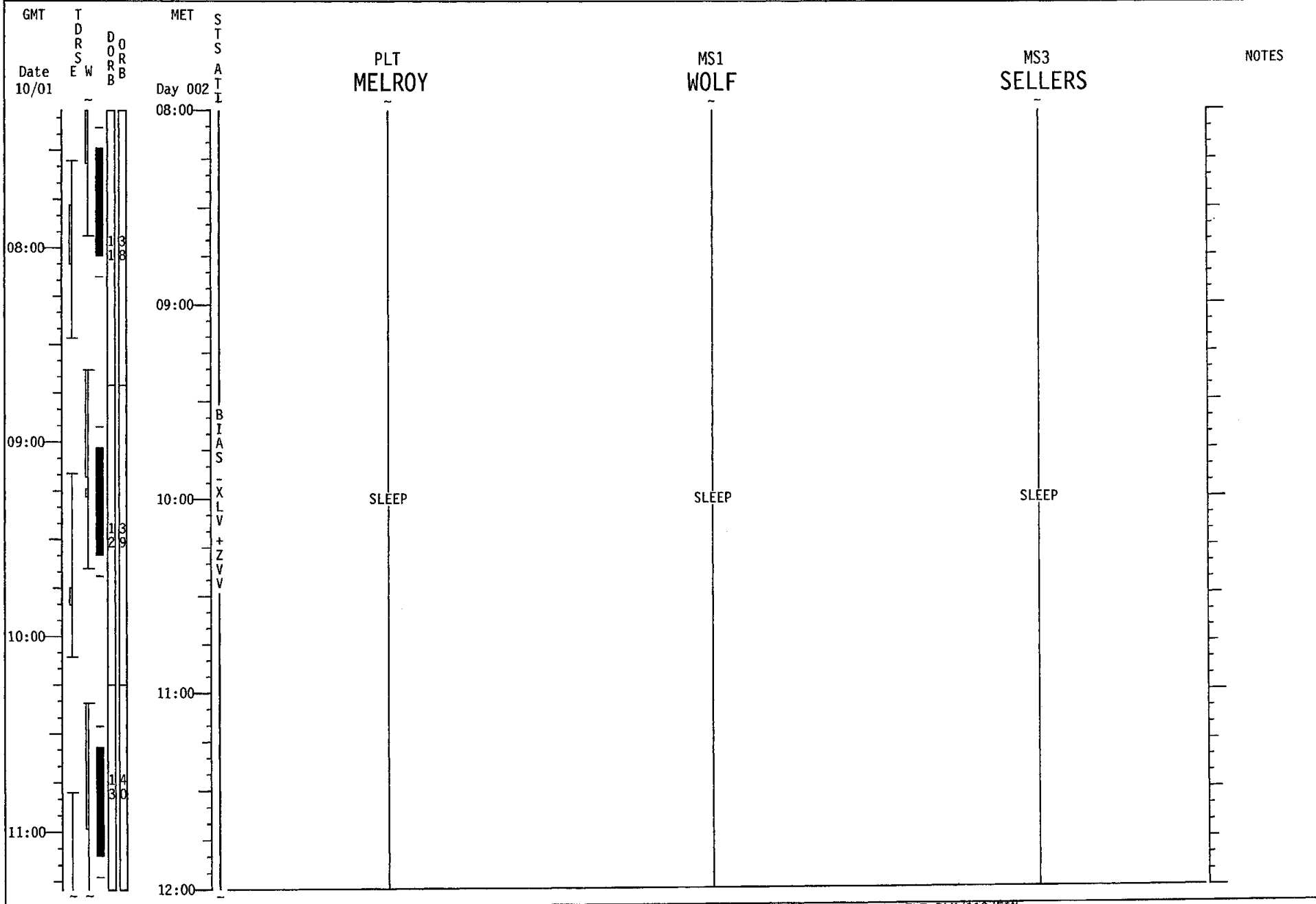
STS-112 (FD03)

GMT	T D R S E W	D O R B	MET	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 10/01			Day 002					
04:00								
05:00								
06:00					SLEEP	SLEEP	SLEEP	
07:00								
08:00								

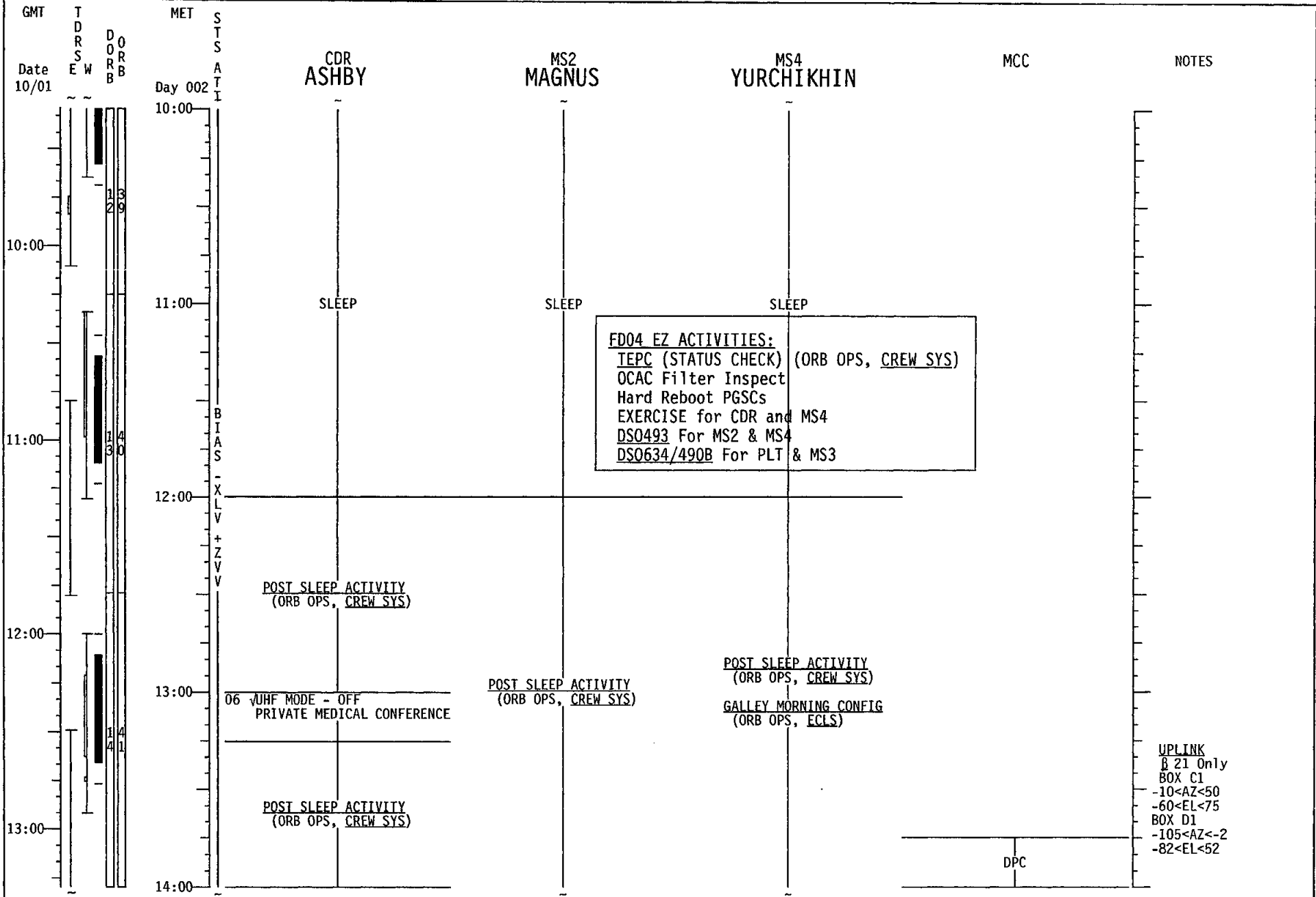
STS-112 (FD03)



STS-112 (FD03)

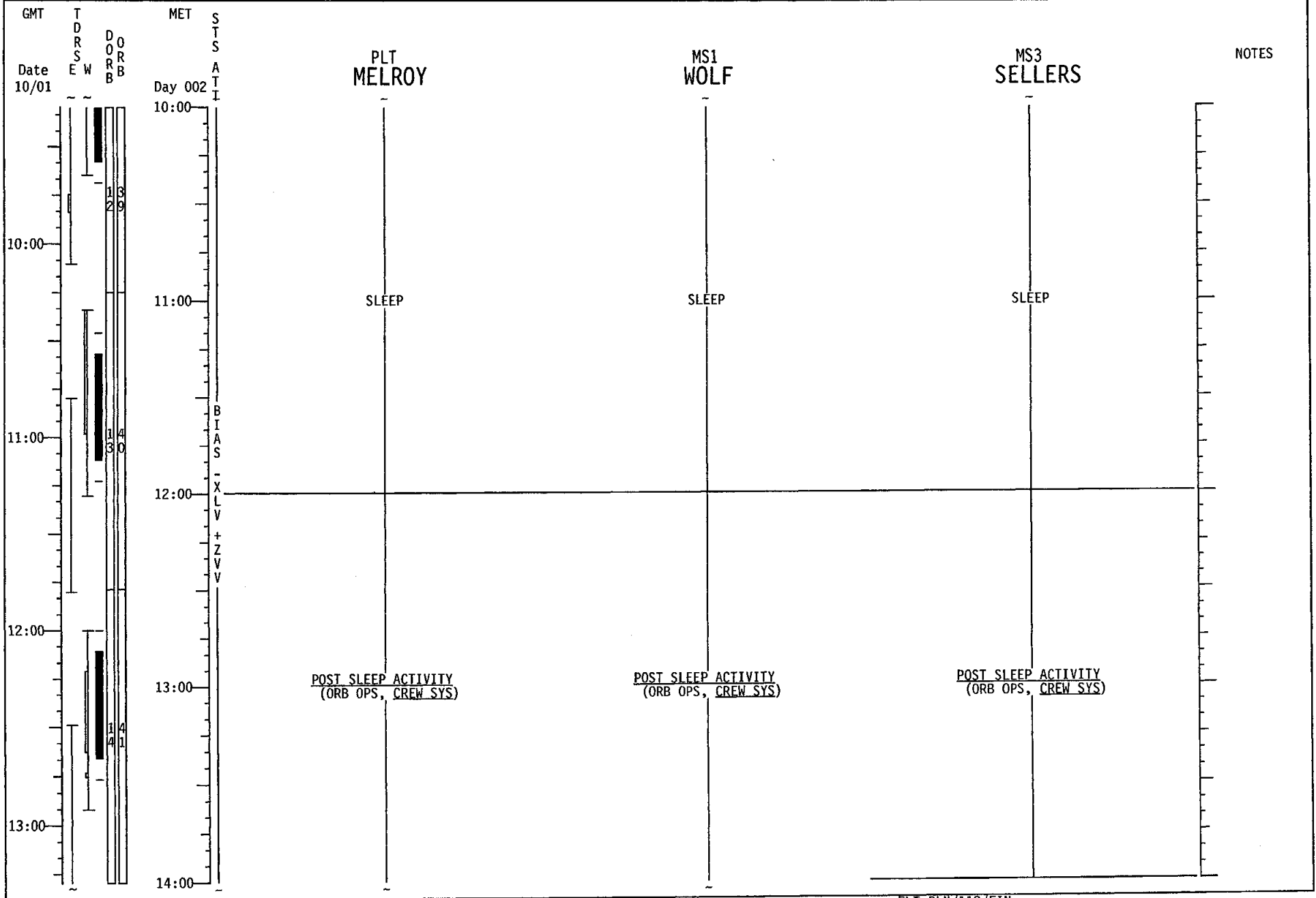


STS-112 (FD04)



UPLINK
 B 21 Only
 BOX C1
 -10<AZ<50
 -60<EL<75
 BOX D1
 -105<AZ<-2
 -82<EL<52

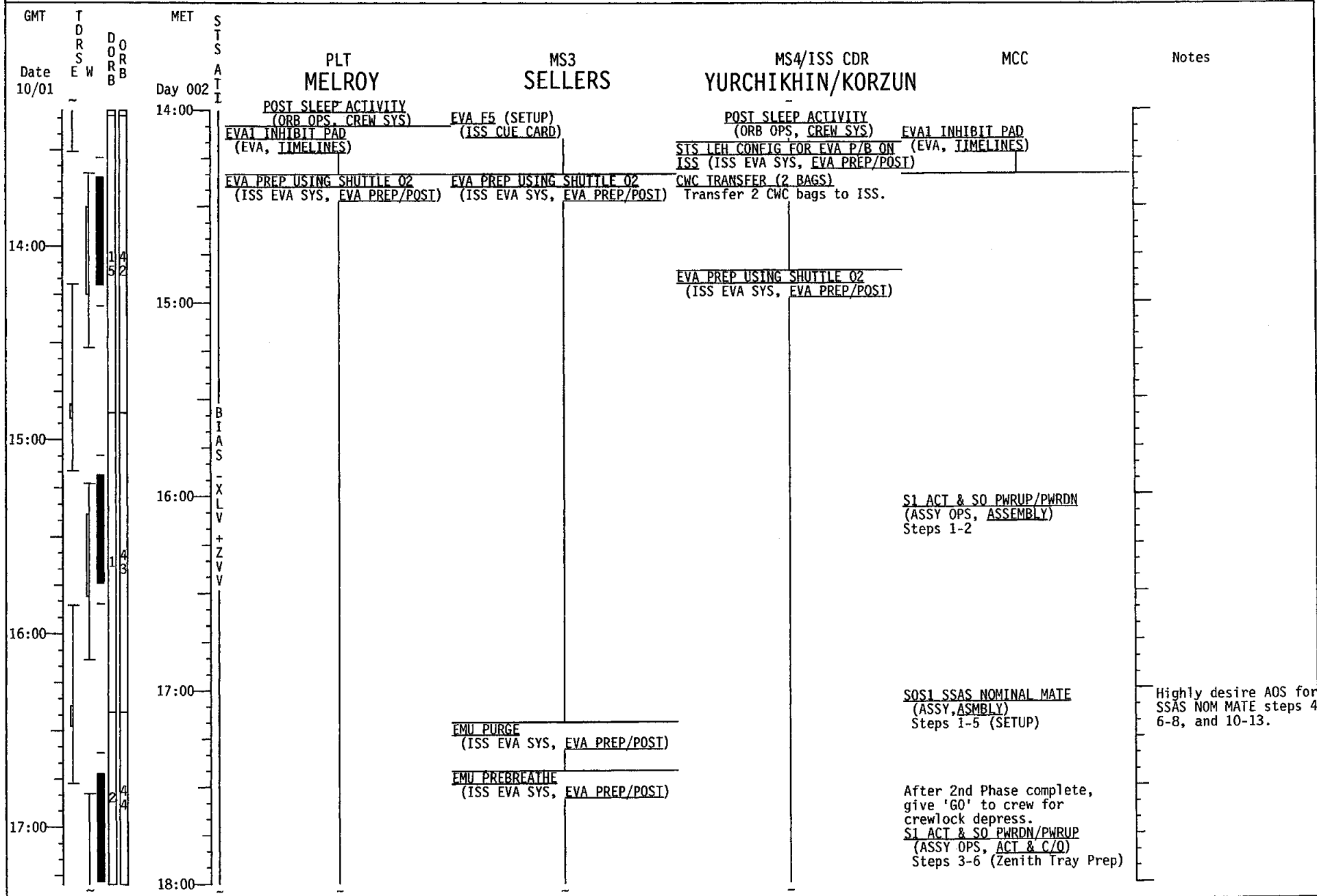
STS-112 (FD04)



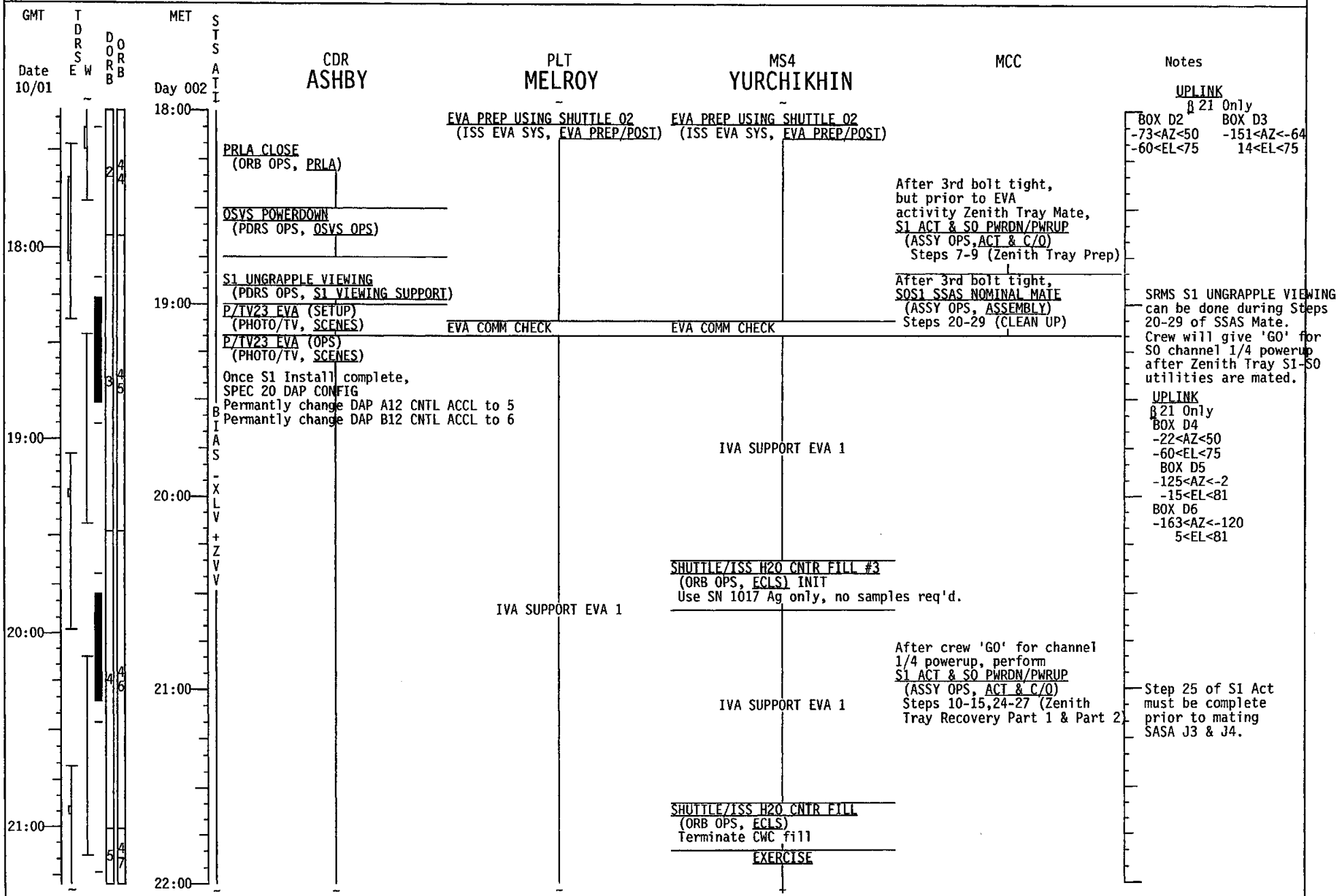
STS-112 (FD04)

GMT	T D R S E W	D O R B	MET	S T S A T I	CDR ASHBY	MS2/FE-1 MAGNUS/WHITSON	MS1 WOLF	MCC	Notes
Date 10/01			Day 002						
14:00					P/TV22 S1 INSTALLATION (SETUP) (PHOTO/TV, SCENES)	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	EVAL INHIBIT PAD	
					OSVS POWERUP (PDRS OPS, OSVS OPS)	MDDK STATUS LOG (ASSY OPS, CUE CARD)	STS LEH CONFIG FOR EVA P/B ON ISS (ISS EVA SYS, EVA PREP/POST)		
14:00					S1 GRAPPLE VIEWING (PDRS OPS, S1 VIEWING SUPPORT)		EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)		
					L17 Check MCIU filter screen	S1 GRAPPLE (ROBOTICS, S1 INSTALL) Steps 4-6 (GRAPPLE)			
15:00					S1 UNBERTH (ROBOTICS, S1 INSTALL) Steps 3-6 (PRLA RELEASE)	S1 UNBERTH (ROBOTICS, S1 INSTALL) Steps 1-2 (SETUP)			Highly desire Unberth during daylight
					S1 HIGH HOVER VIEWING (PDRS OPS, S1 VIEWING SUPPORT)	S1 UNBERTH (ROBOTICS, S1 INSTALL) Steps 7-10 (LOW TO HIGH HOVER)	10.2 DEPRESS		
15:00									
						S1 INSTALL (ROBOTICS, S1 INSTALL) Steps 1-4			No exercise during install
16:00					S1 INSTALL VIEWING (PDRS OPS, S1 VIEWING SUPPORT)	Step 5 (DTO 264) on MCC 'GO'		S1 ACT & SO PWRUP/PWRDN (ASSY OPS, ASSEMBLY) Steps 1-2	
						S1 INSTALL (ROBOTICS, S1 INSTALL) Step 6 (SRMS view mnvr) then, perform Step 7 (PRE-INSTALL MNVR)			'GO' for EMU PURGE if S1 @ PRE-INSTALL.
16:00					S1 INSTALL Steps 8-9 (SVS SETUP)	S1 INSTALL Steps 8-9 (SVS SETUP)			
						S1 INSTALL Step 10 (SVS POSITIONING)			
17:00						S1 INSTALL Step 11 (RTL MNVR & 1st STAGE)	EMU PURGE (ISS EVA SYS, EVA PREP/POST)	SOS1 SSAS NOMINAL MATE (ASSY, ASMBLY) Steps 1-5 (SETUP)	Highly desire AOS for SSAS NOM MATE steps 4, 6-8, and 10-13.
					SOS1 SSAS NOMINAL MATE (ASSY OPS, ASSEMBLY) Steps 6-10 (1st STAGE CAPTURE)		EMU PREBREATHE (ISS EVA SYS, EVA PREP/POST)		No exercise during SOS1 mate
17:00					S1 INSTALL Step 12 (LIMP MODE for 2nd STAGE)				After 2nd Phase complete, give 'GO' to crew for crewlock depress.
					SOS1 SSAS NOMINAL MATE (ASSY OPS, ASSEMBLY) Steps 11-15 (2nd & 3rd STAGE CAPTURE)			S1 ACT & SO PWRDN/PWRUP (ASSY OPS, ACT & C/O) Steps 3-6 (Zenith Tray Prep)	
18:00									

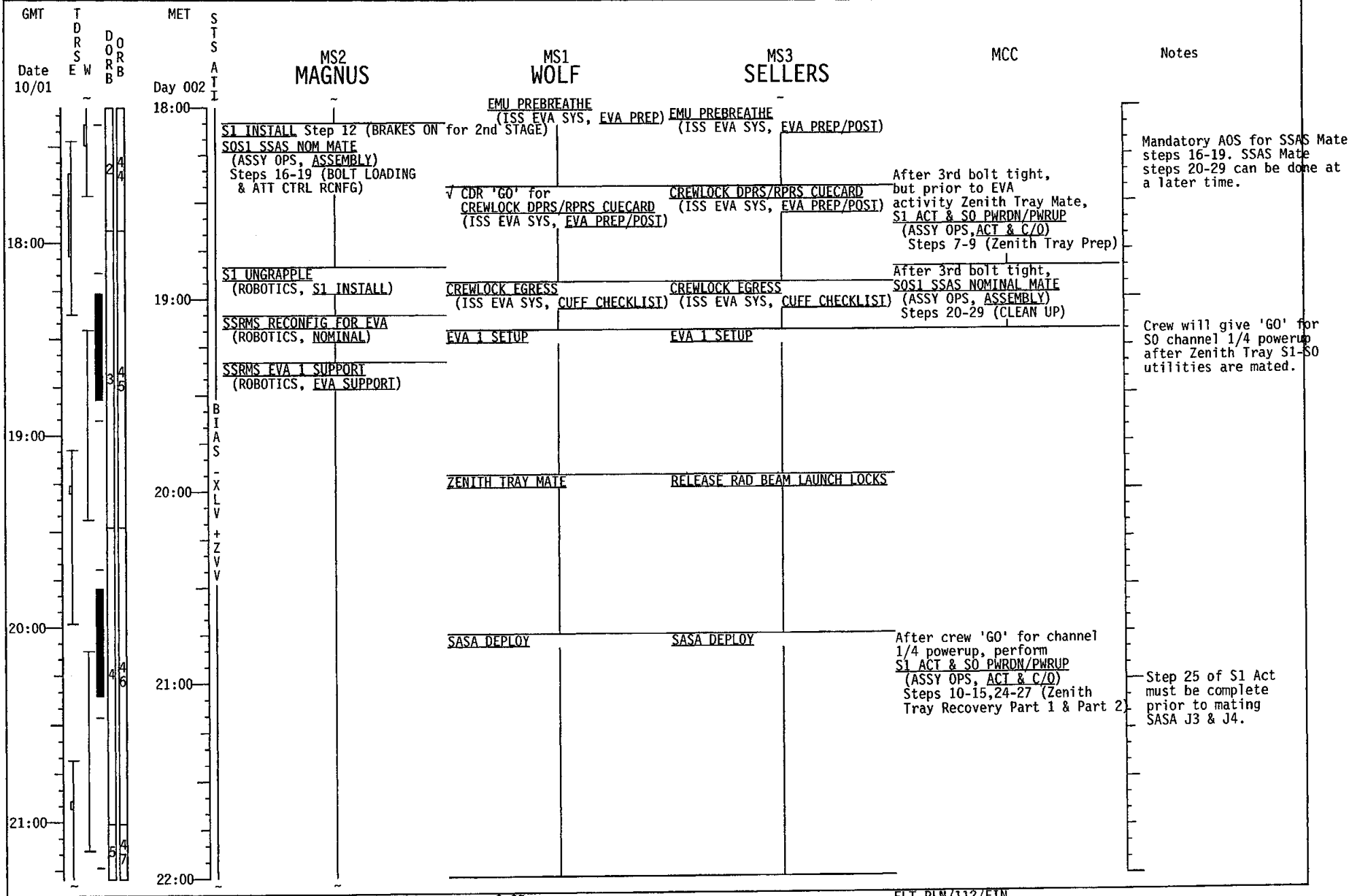
STS-112 (FD04)



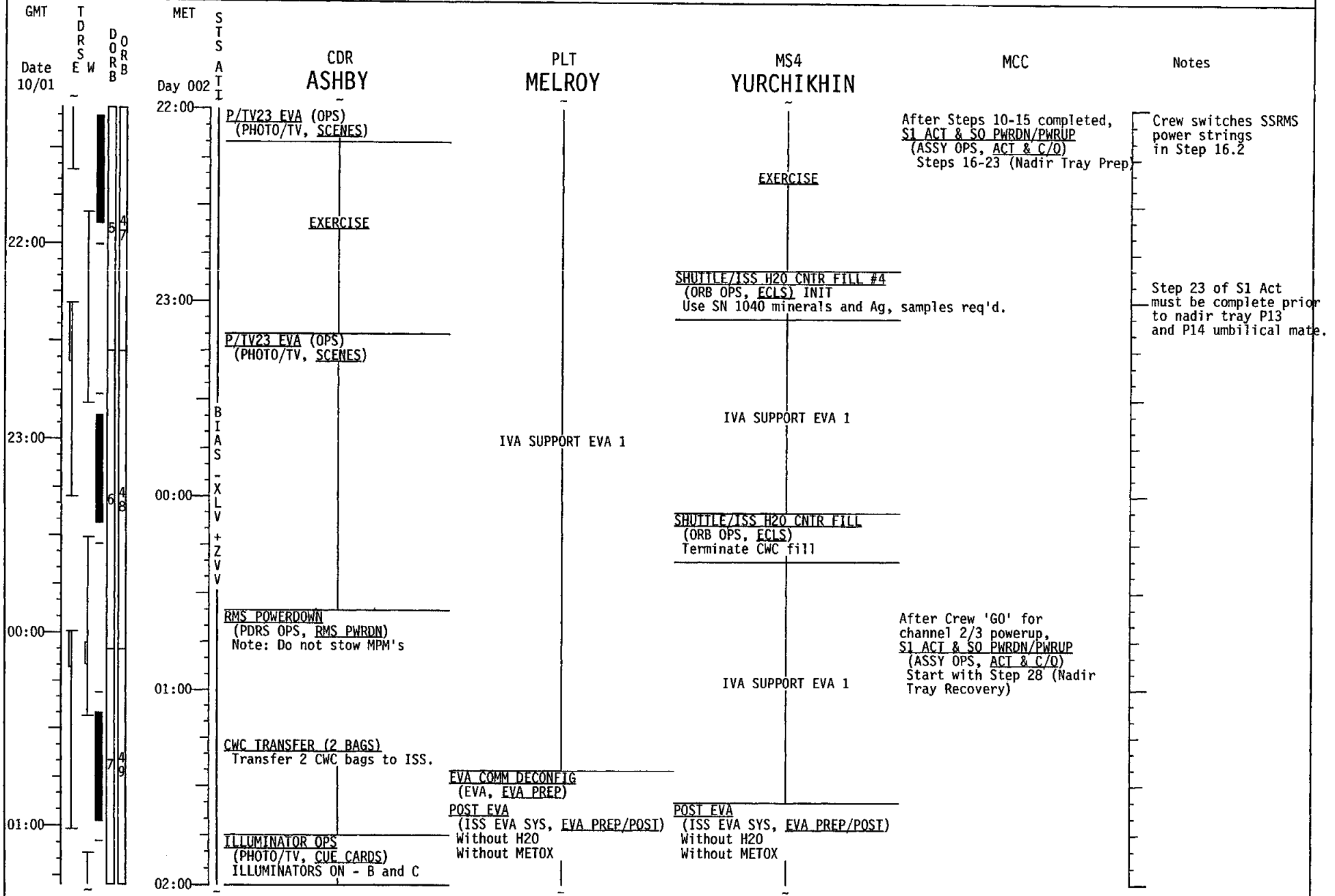
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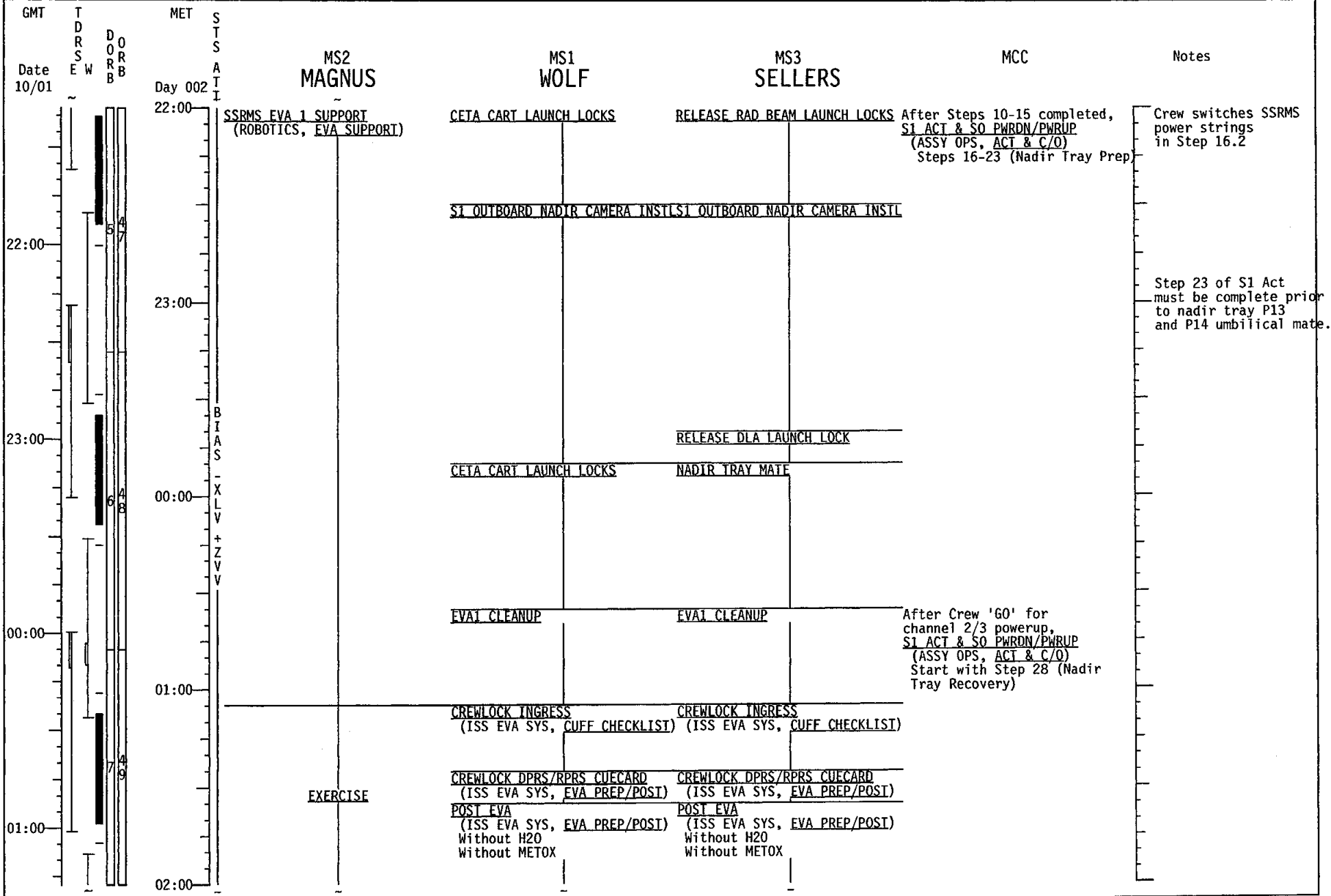
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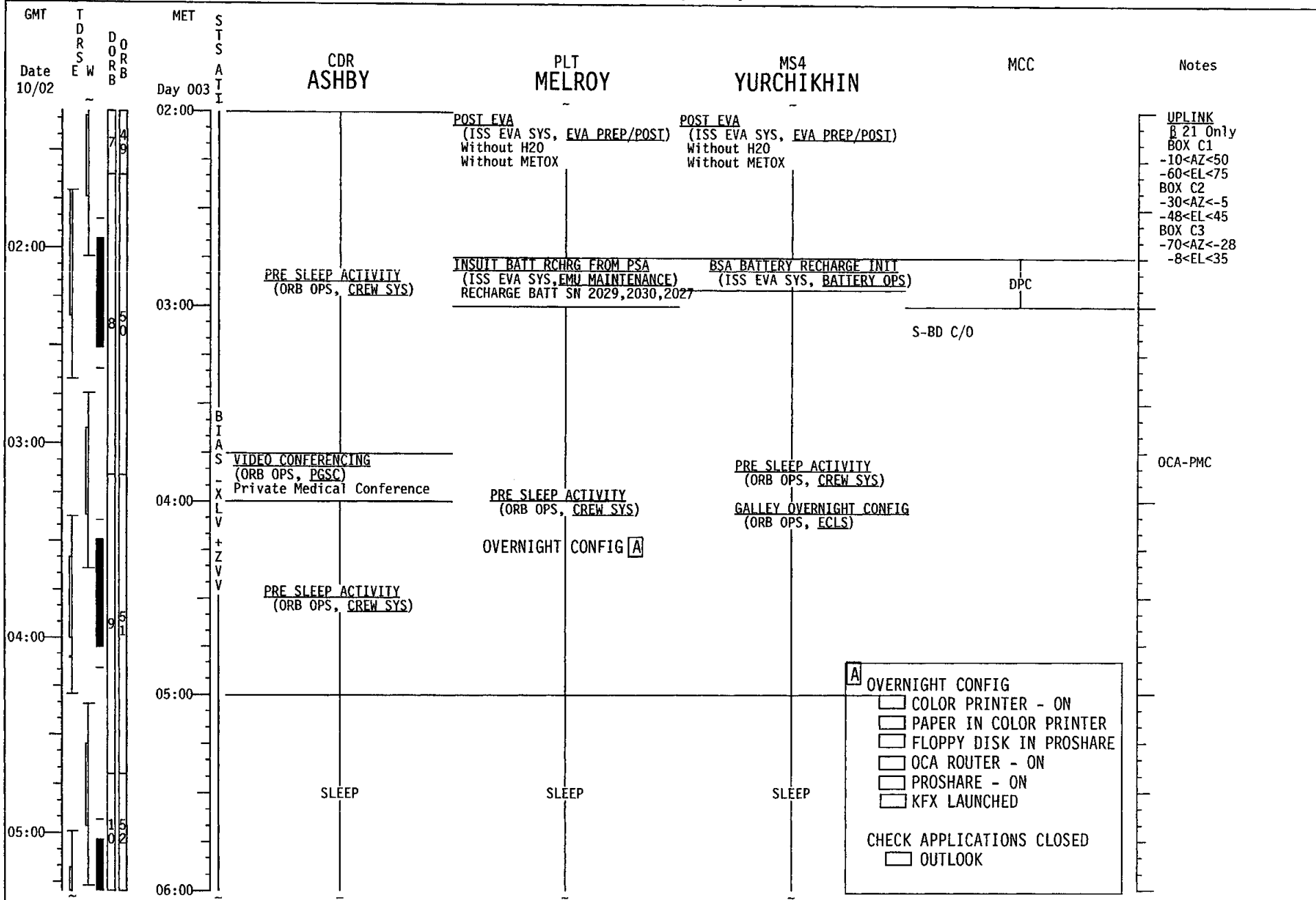
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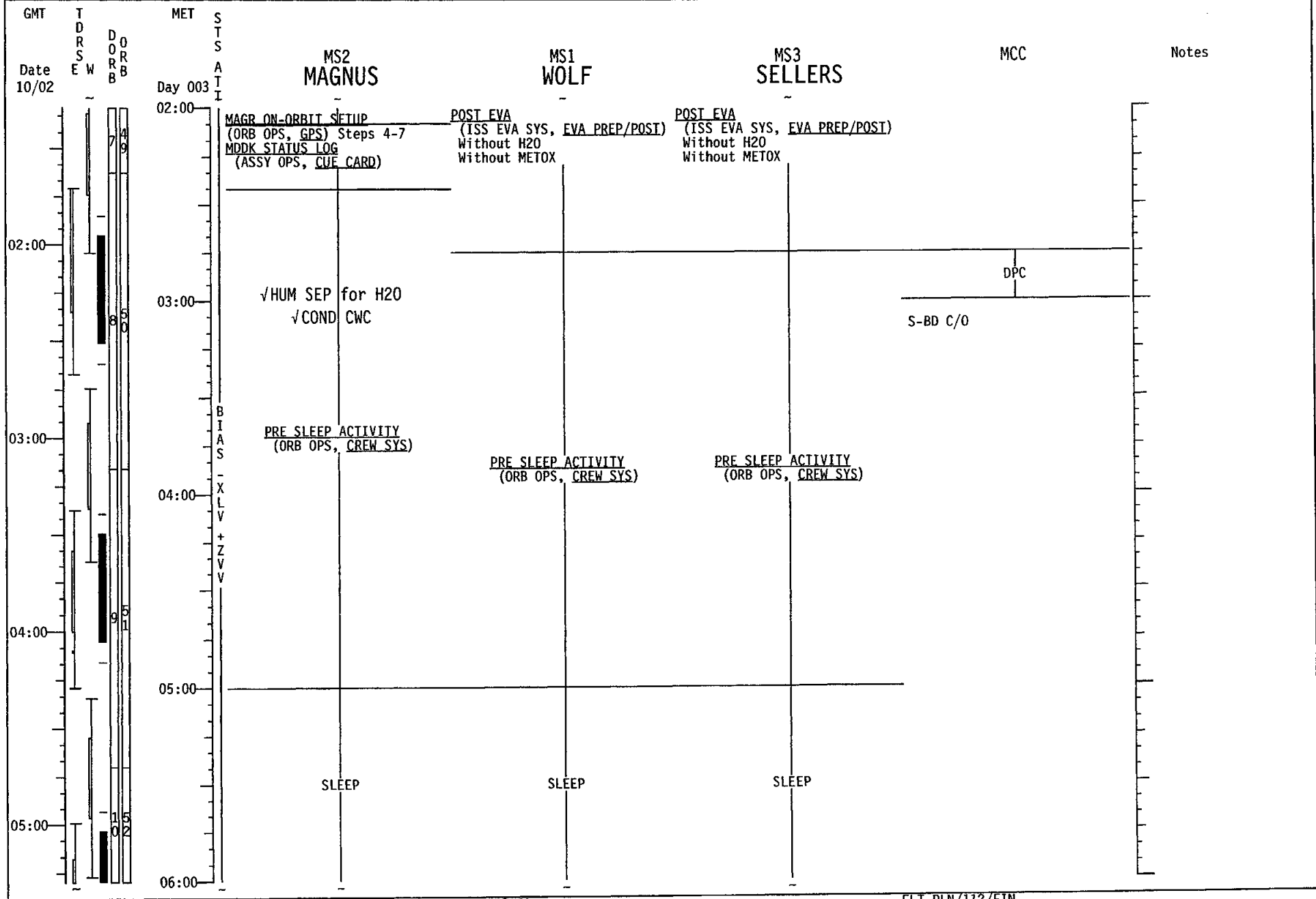
STS-112 (FD04)



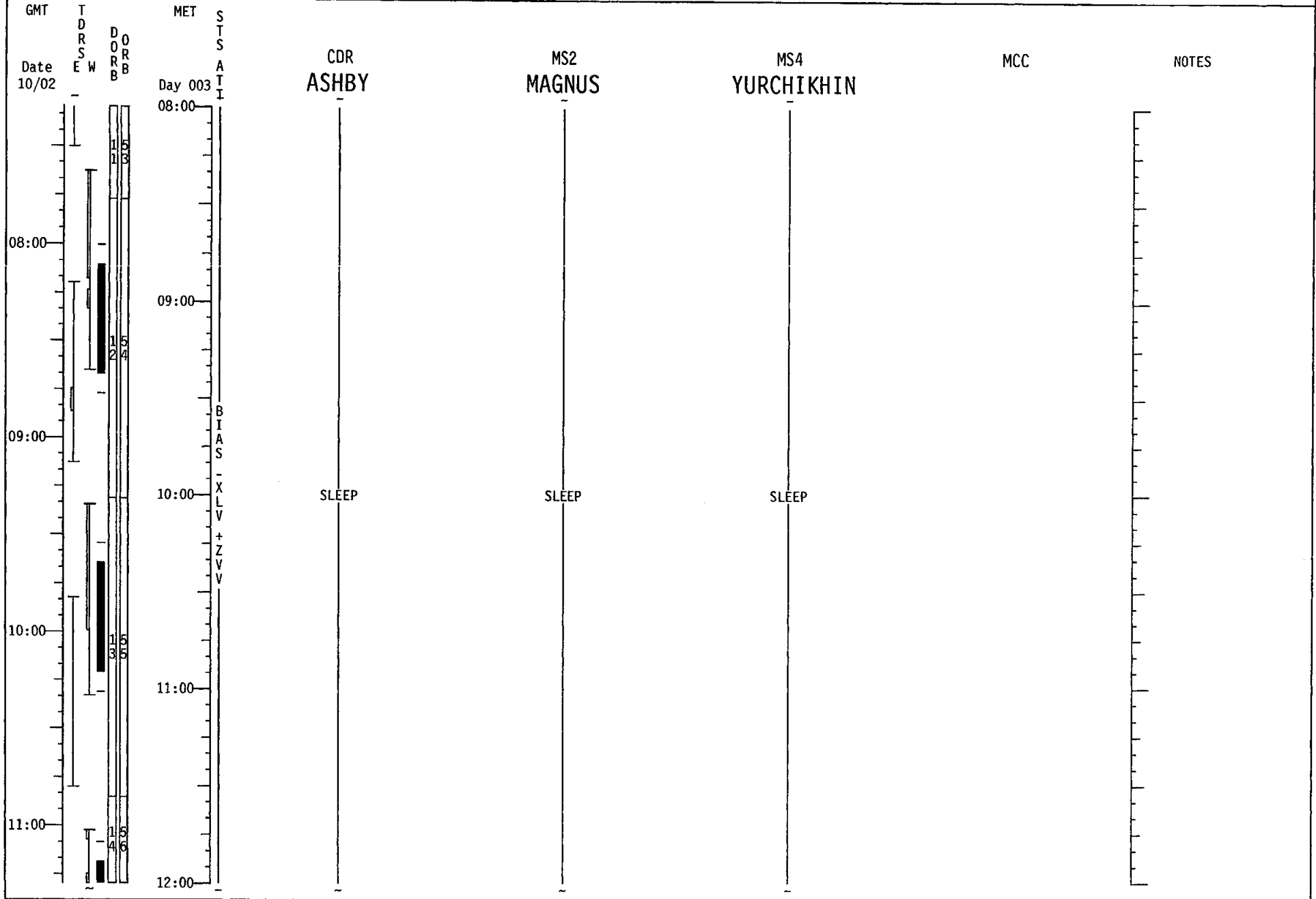
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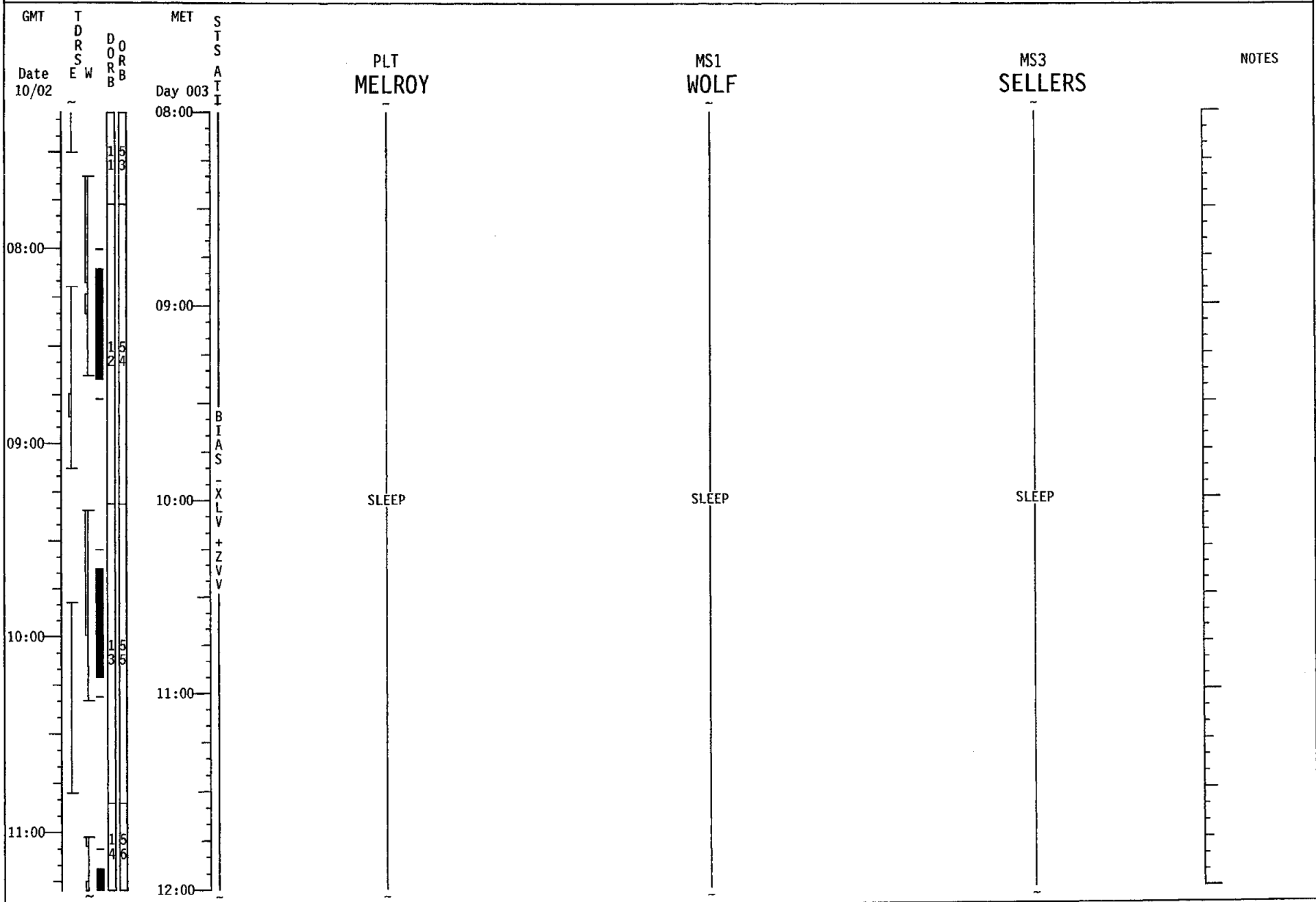
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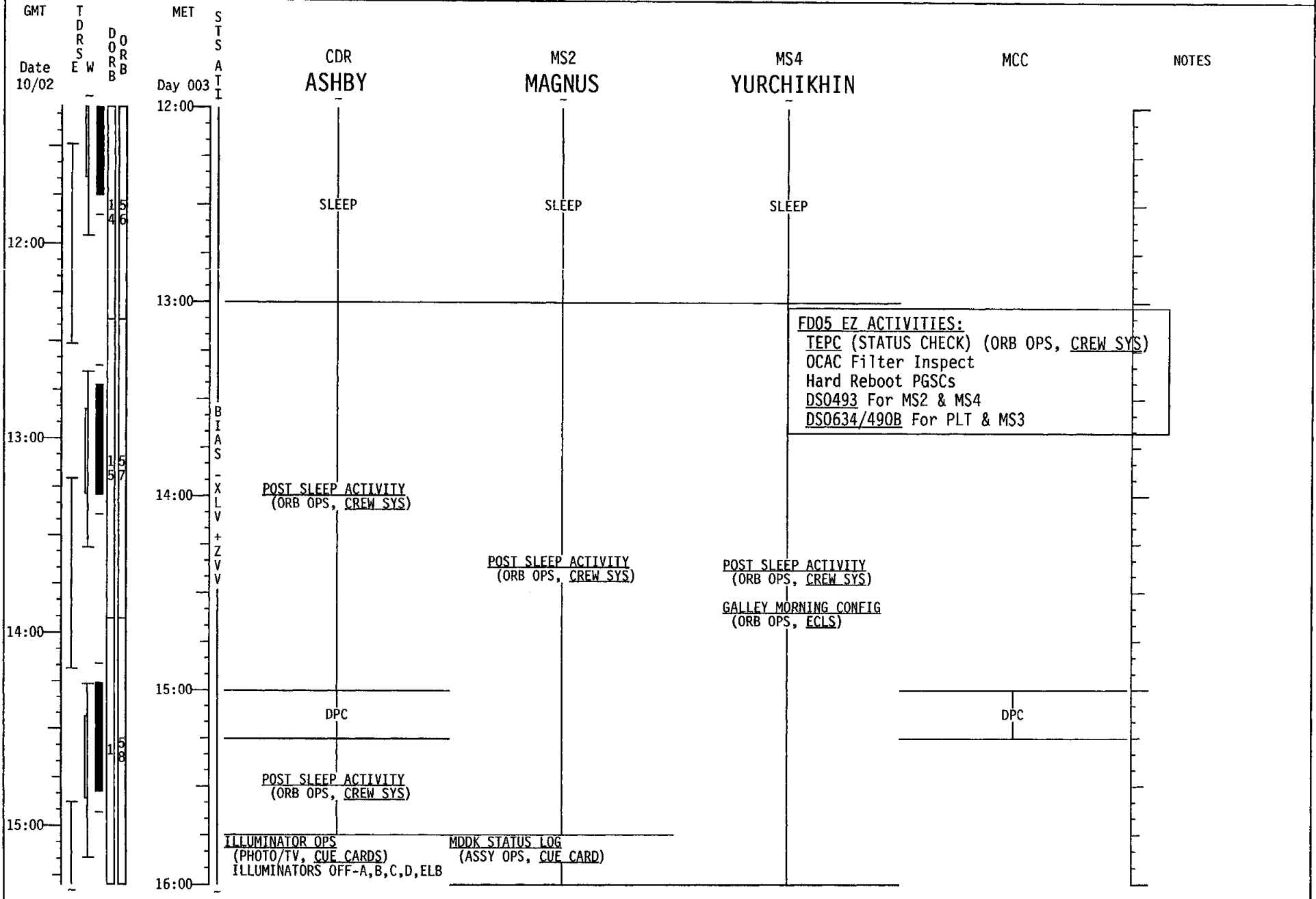
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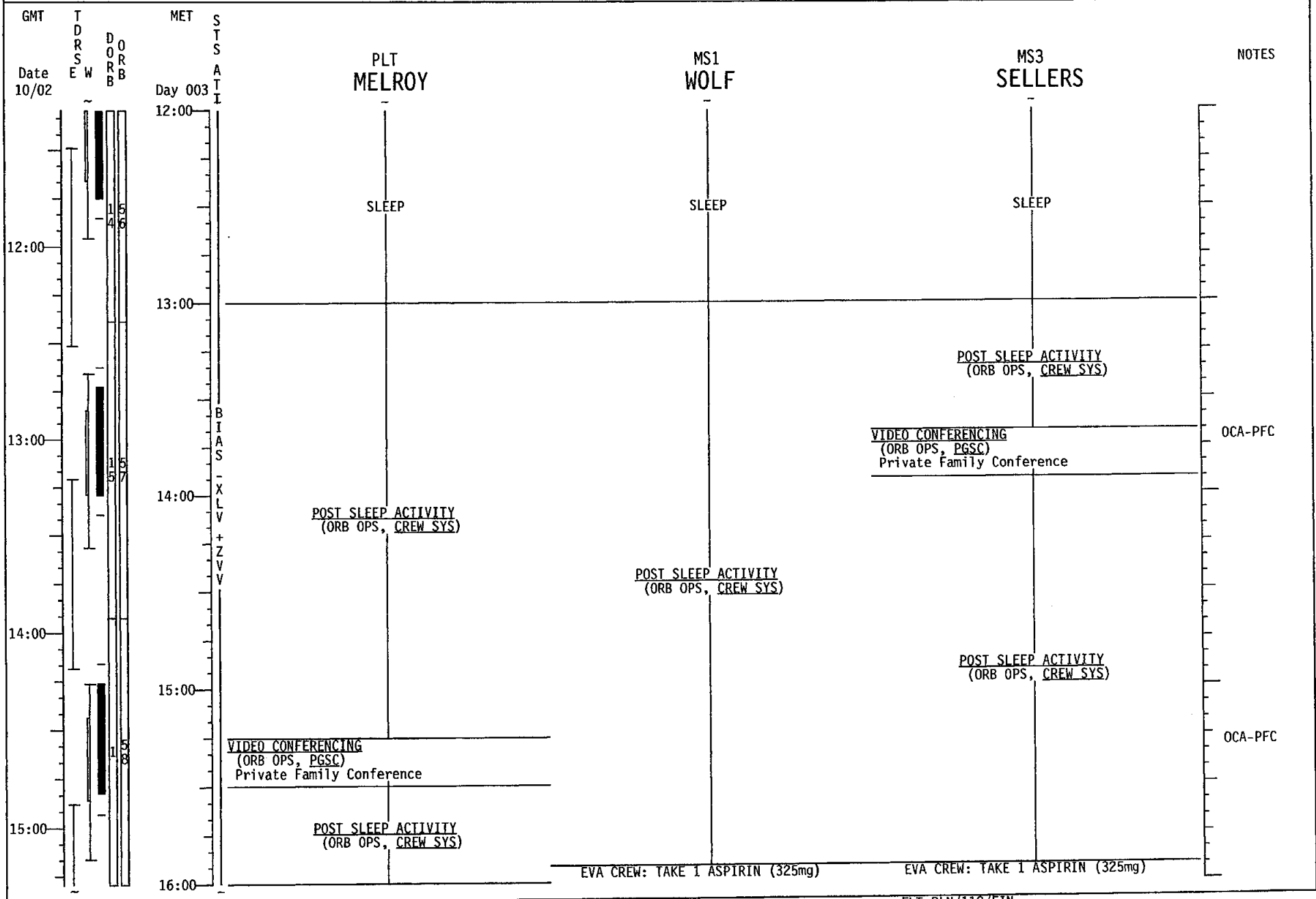
STS-112 (FD04)



STS-112 (FD05)



STS-112 (FD05)



STS-112 (FD05)

GMT	TDRSEW	DORB	MET	S	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
Date 10/02			Day 003	16:00					
					OFF DUTY	OFF DUTY	OFF DUTY		
				17:00					
				18:00	SHUTTLE/ISS NITROGEN TRANSFER STES007 TRANSFER MDDK TO ISS SHUTTLE/ISS NITROGEN TRANSFER (JOINT OPS, MATED OPS) (ASSY OPS, TRANSFER) (JOINT OPS, MATED OPS) Setup and Initiate Setup and Initiate				
				19:00	CABIN TEMP CNTRL RECONFIG 2(1) (ORB OPS, ECLS) L17 Check MCIU filter screen		SHUTTLE/ISS H2O CNTR FILL #5 (ORB OPS, ECLS) INIT Use SN 1045 minerals & Ag, no samples req'd. PAO EVENT (RUSSIAN)		
				20:00	MEAL	MEAL	MEAL		

STS-112 (FD05)

GMT Date 10/02	T D R S E W	D O R B	M E T Day 003	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
16:00		1						
16:00		2			OFF DUTY	OFF DUTY	OFF DUTY	
17:00		3						
17:00		4						
18:00		5						
18:00		6			EXERCISE	EMU CCC/BATTERY REPLACEMENT (ISS EVA SYS, EMU MAINTENANCE)	EMU CCC/BATTERY REPLACEMENT (ISS EVA SYS, EMU MAINTENANCE) Put used L10H in EMU SYS Xfer bag and install METOX.	
18:00		7				EMU WATER RECHARGE (ISS EVA SYS, EMU MAINTENANCE) PWR #1013	EMU WATER RECHARGE (ISS EVA SYS, EMU MAINTENANCE)	
18:00		8				EMU POWERDOWN (ISS EVA SYS, EMU MAINTENANCE)	EMU POWERDOWN (ISS EVA SYS, EMU MAINTENANCE) BSA BATTERY RECHARGE TERMINATE (ISS EVA SYSTEMS, BATTERY OPS)	
19:00		9			MEAL	MEAL	MEAL	
19:00		10						
20:00								

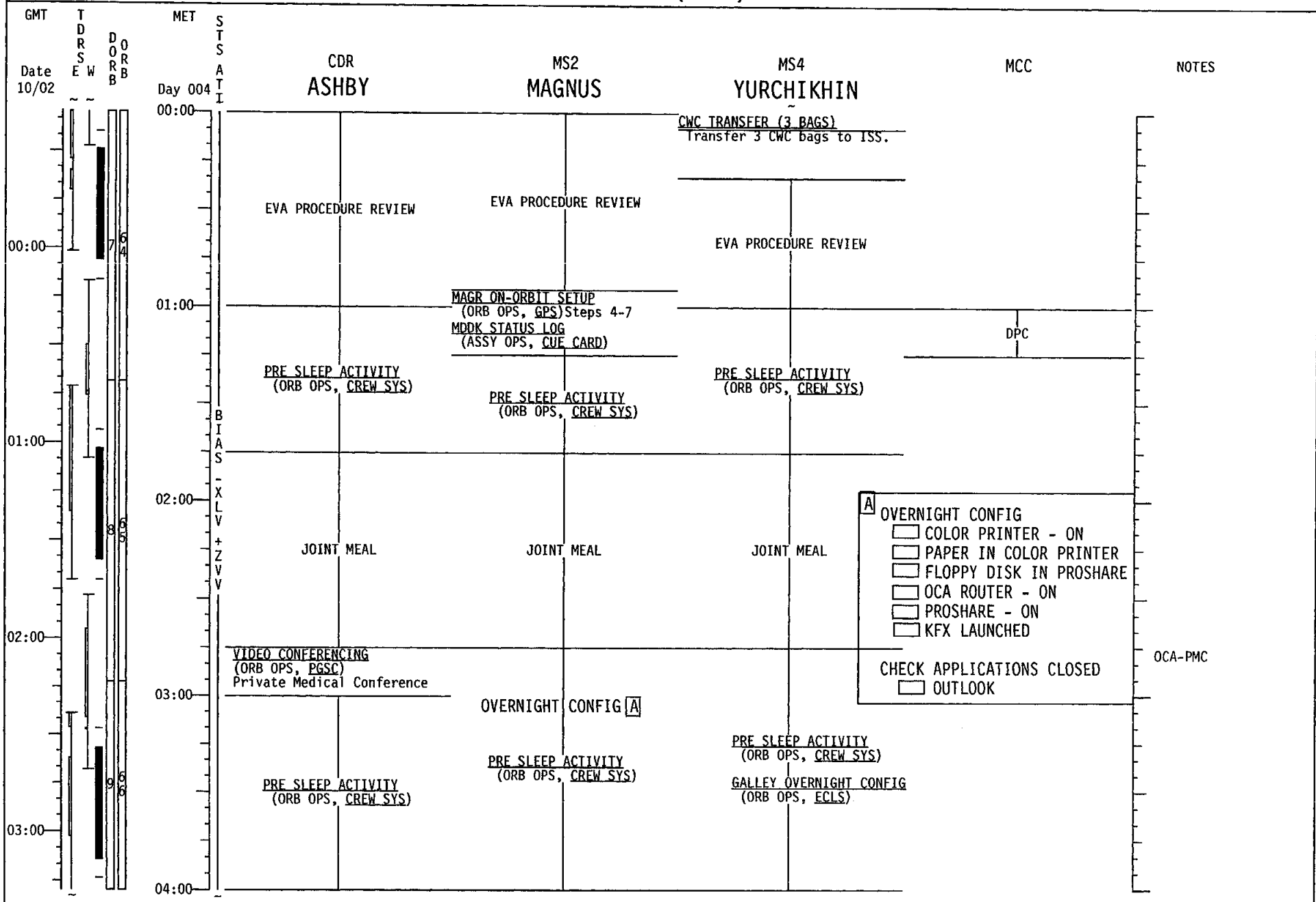
STS-112 (FD05)

GMT Date 10/02	T D R S E W	D O R B	MET Day 003	STS A T T I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
					SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill	STELSYS TRANSFER TO CRYODEWAR (ASSY OPS, TRANSFER)	MEAL		
					SHUTTLE/ISS H2O CNTR FILL #6 (ORB OPS, ECLS) INIT Use SN 1046 minerals & Ag, no samples req'd.				
20:00							EXERCISE		
					EXERCISE				
21:00									
						EXERCISE			
21:00									
					TRANSFER OPS Ref. TRANSFER LIST & MSGXXX		SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		
22:00									
						TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	SHUTTLE/ISS H2O CNTR FILL #7 (ORB OPS, ECLS) INIT Use SN 1017 minerals & Ag, no samples req'd.		
							TRANSFER OPS Ref. TRANSFER LIST & MSGXXX		
22:00									
						TRANSFER TAGUP	SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		
					P/TV21 ISS INTERNAL OPS (SETUP) (PHOTO/TV, SCENES)		CWC TRANSFER (3 BAGS) Transfer 3 CWC bags to ISS.		
						DAILY MCC TRANSFER BRIEFING			
					PAO EVENT	PAO EVENT			
23:00									
00:00									

STS-112 (FD05)

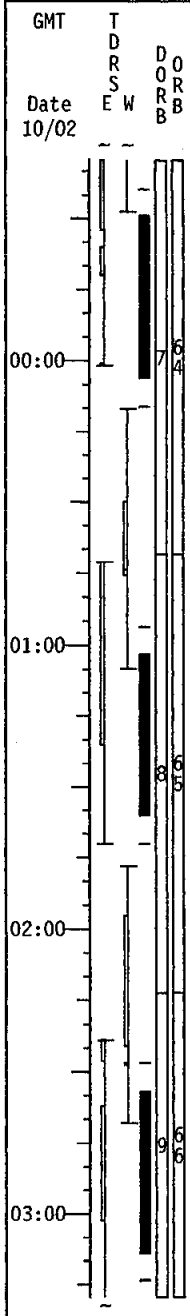
GMT	T D R S E W	D O O R B	MET	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 10/02			Day 003					
20:00					<u>TRANSFER OPS</u> Ref. TRANSFER LIST & MSGXXX	<u>EVA TOOL CONFIG</u> (EVA, <u>TOOLS/TIMELINES</u>)	<u>EVA TOOL CONFIG</u> (EVA, <u>TOOLS/TIMELINES</u>)	
20:00								
21:00					<u>EQUIPMENT LOCK PREP</u> (ISS EVA SYS, <u>AIRLOCK CONFIG</u>)	<u>EQUIPMENT LOCK PREP</u> (ISS EVA SYS, <u>AIRLOCK CONFIG</u>)	<u>EQUIPMENT LOCK PREP</u> (ISS EVA SYS, <u>AIRLOCK CONFIG</u>)	
21:00								
21:00					<u>TRANSFER OPS</u> Ref. TRANSFER LIST & MSGXXX		<u>EVA F5 (SETUP)</u> (ISS CUE CARD)	
22:00						<u>EXERCISE</u>		
22:00							<u>EXERCISE</u>	
23:00						<u>TRANSFER OPS</u> Ref. TRANSFER LIST & MSGXXX		
23:00							<u>TRANSFER OPS</u> Ref. TRANSFER LIST & MSGXXX	
23:00						<u>PAO EVENT</u>	<u>PAO EVENT</u>	
00:00								

STS-112 (FD05)



STS-112 (FD05)

GMT Date 10/02	TDRS E W	DORRB	MET Day 004	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
00:00					EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	
01:00					<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS) ✓COND CWC	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
02:00					JOINT MEAL	JOINT MEAL	JOINT MEAL	
03:00					<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
04:00								

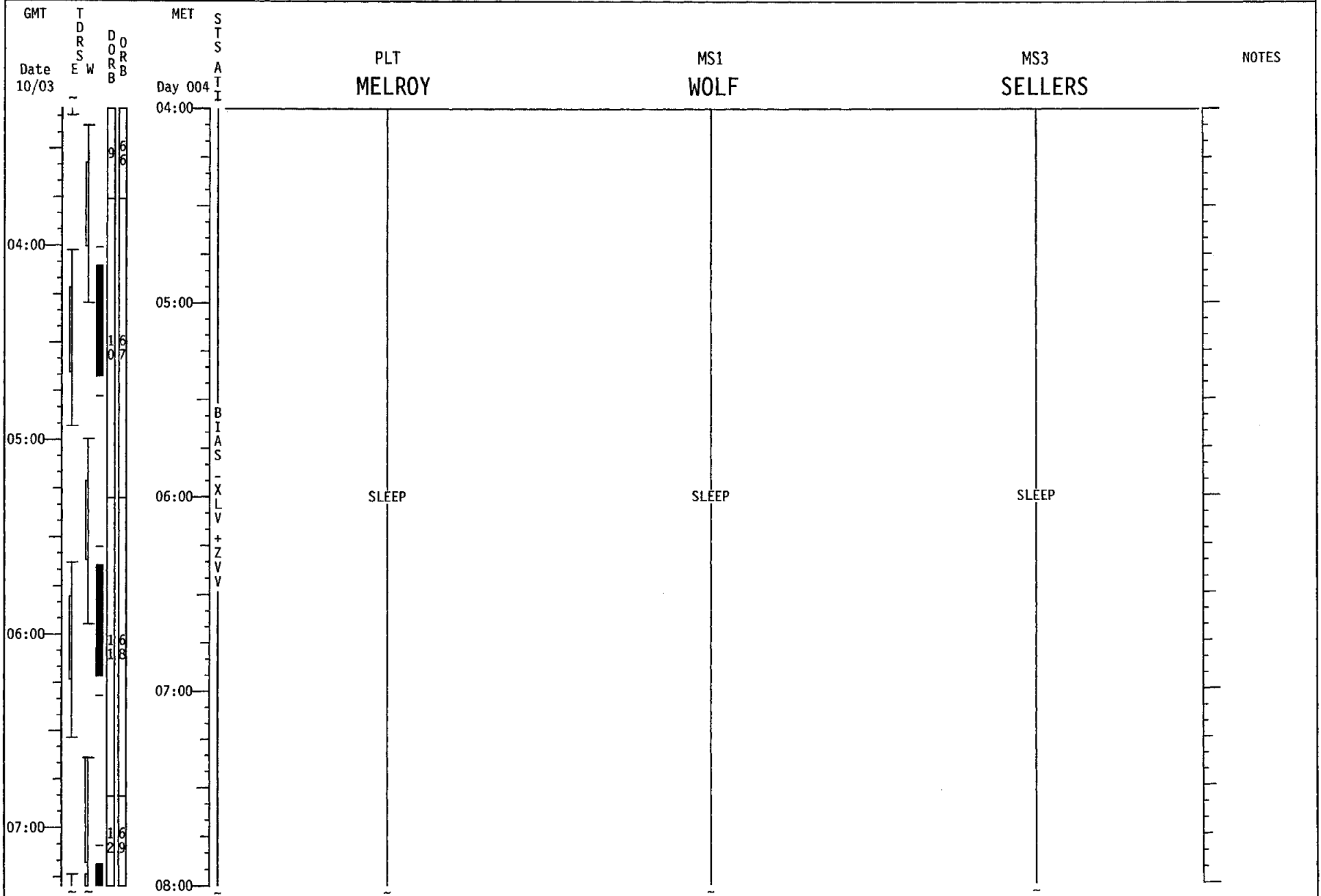


S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS
00:00	EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW
01:00	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS) ✓COND CWC	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)
02:00	JOINT MEAL	JOINT MEAL	JOINT MEAL
03:00	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)
04:00			

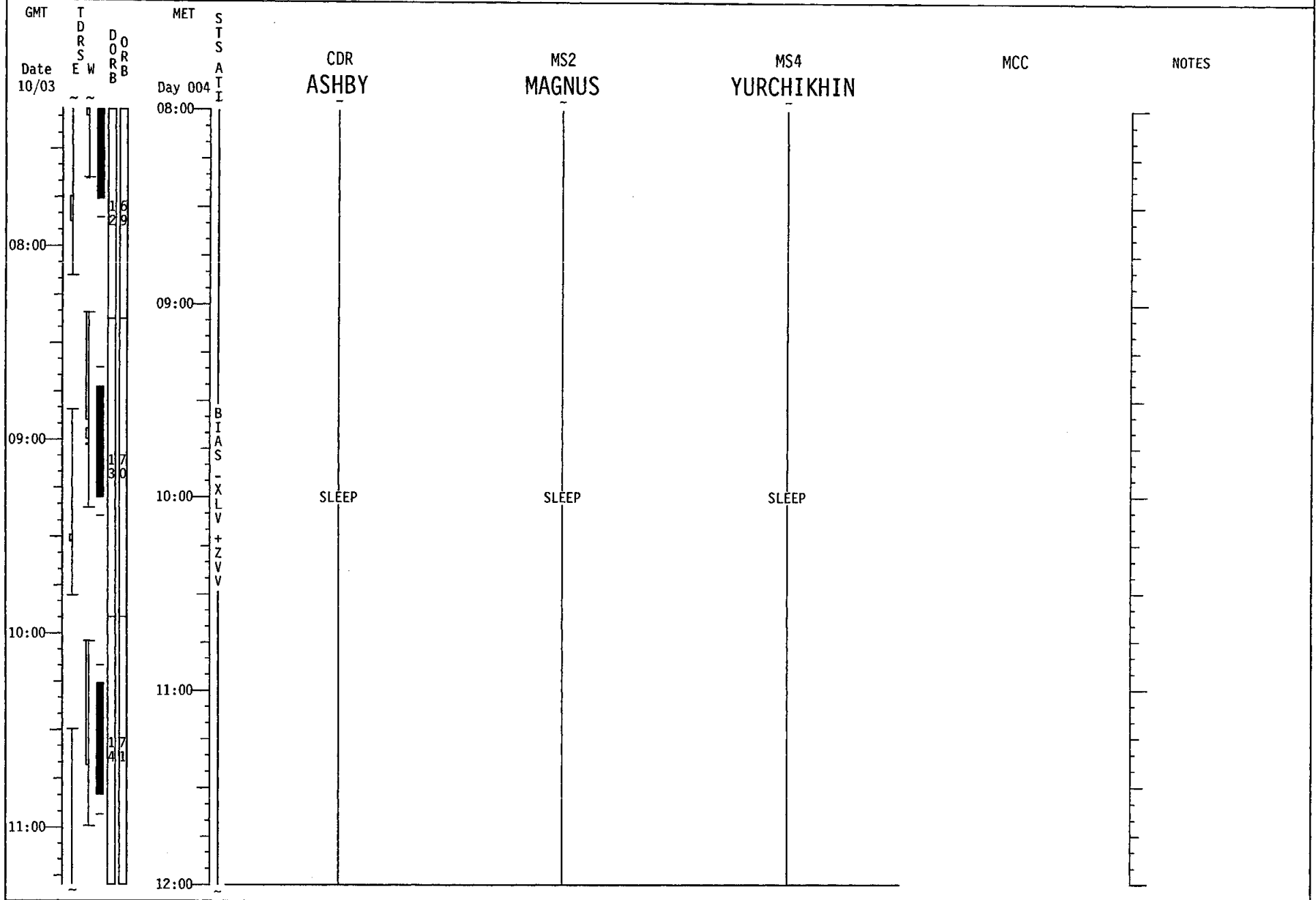
STS-112 (FD05)

GMT Date 10/03	T D R S E W	D O R R B B	MET Day 004	S T S A T I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
04:00		9.6	04:00						
04:00		10.6	05:00						
05:00		10.7	06:00	B I A S - X L V + Z V V	SLEEP	SLEEP	SLEEP		
06:00		11.8	07:00						
07:00		12.9	08:00						

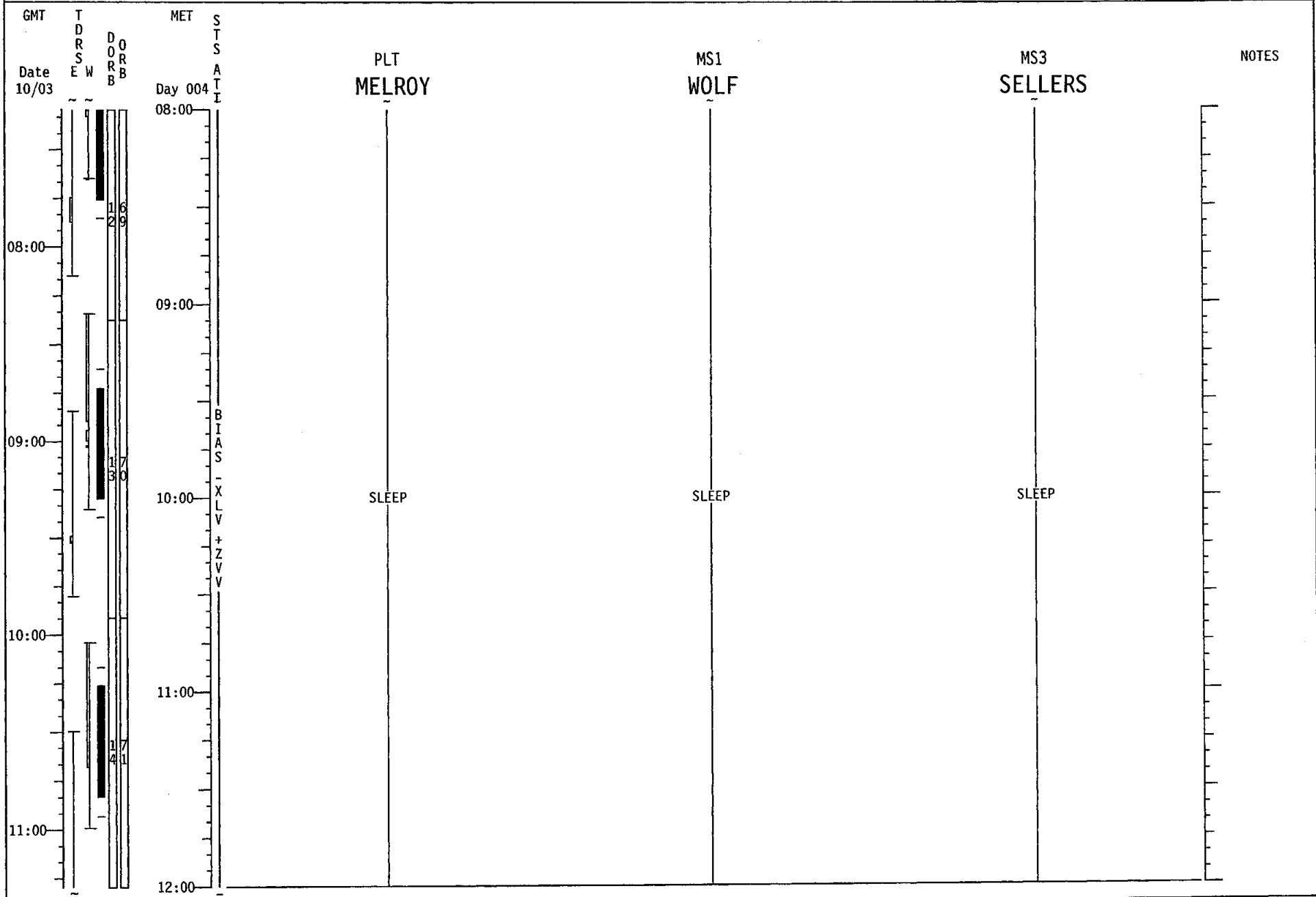
STS-112 (FD05)



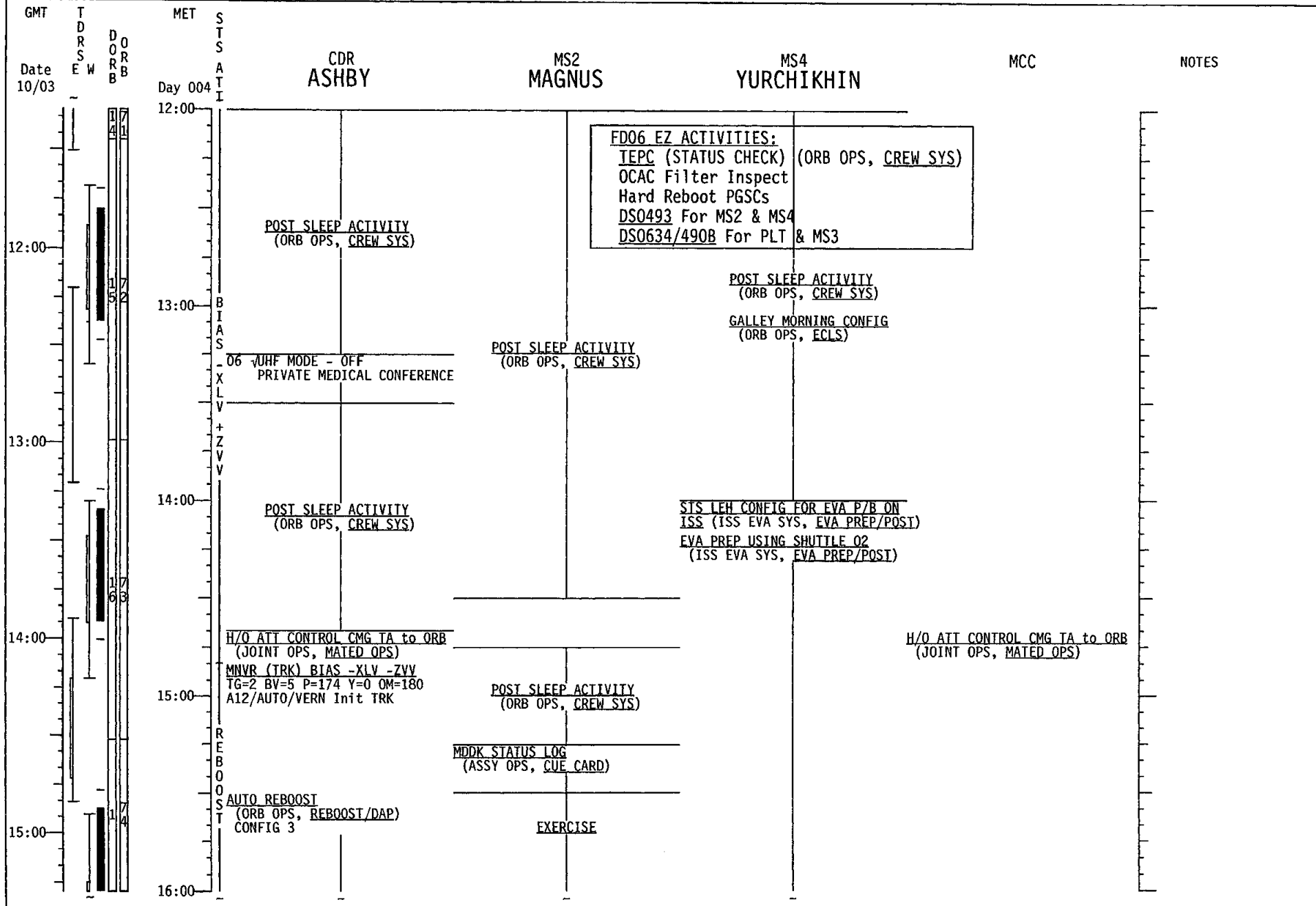
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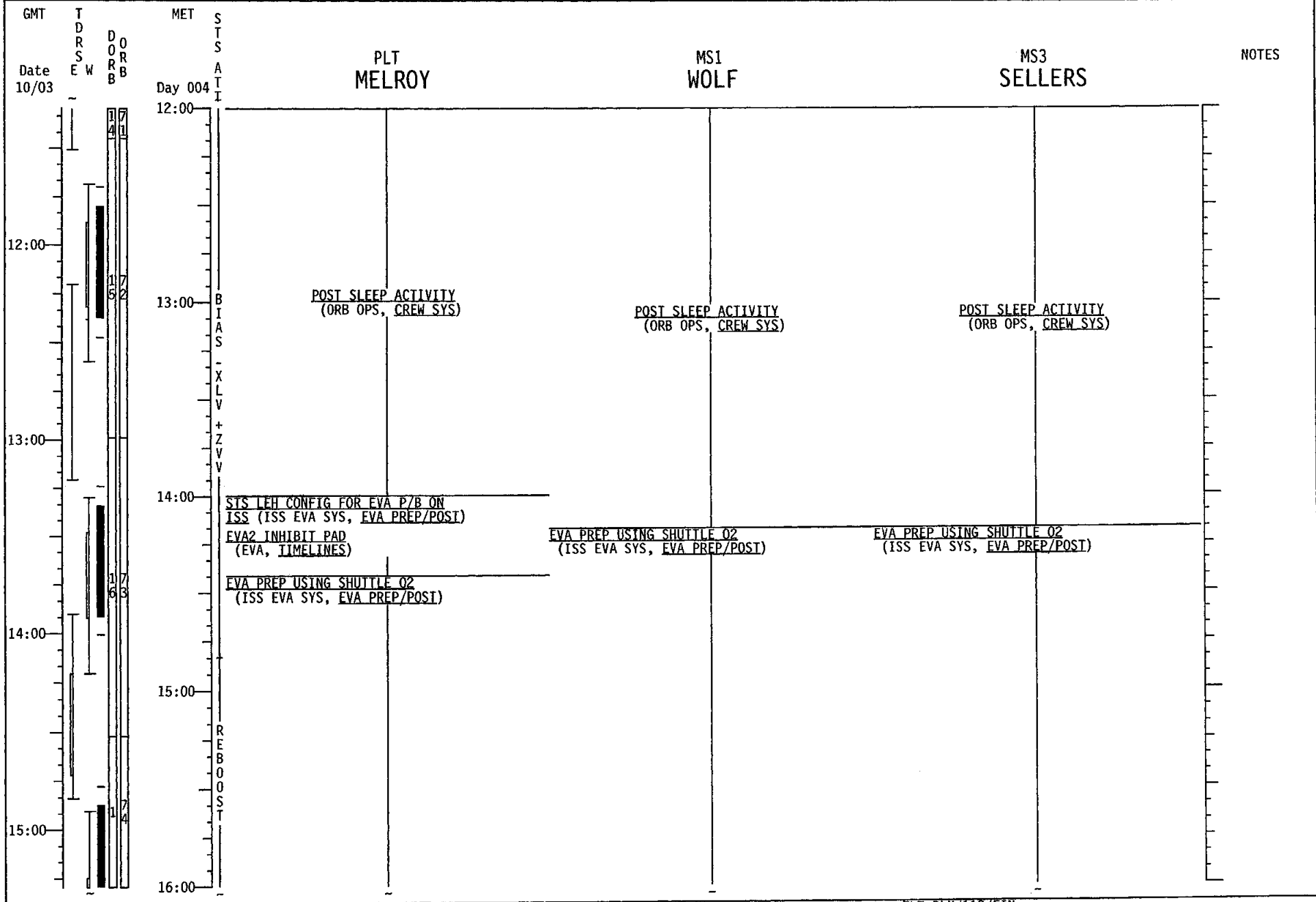
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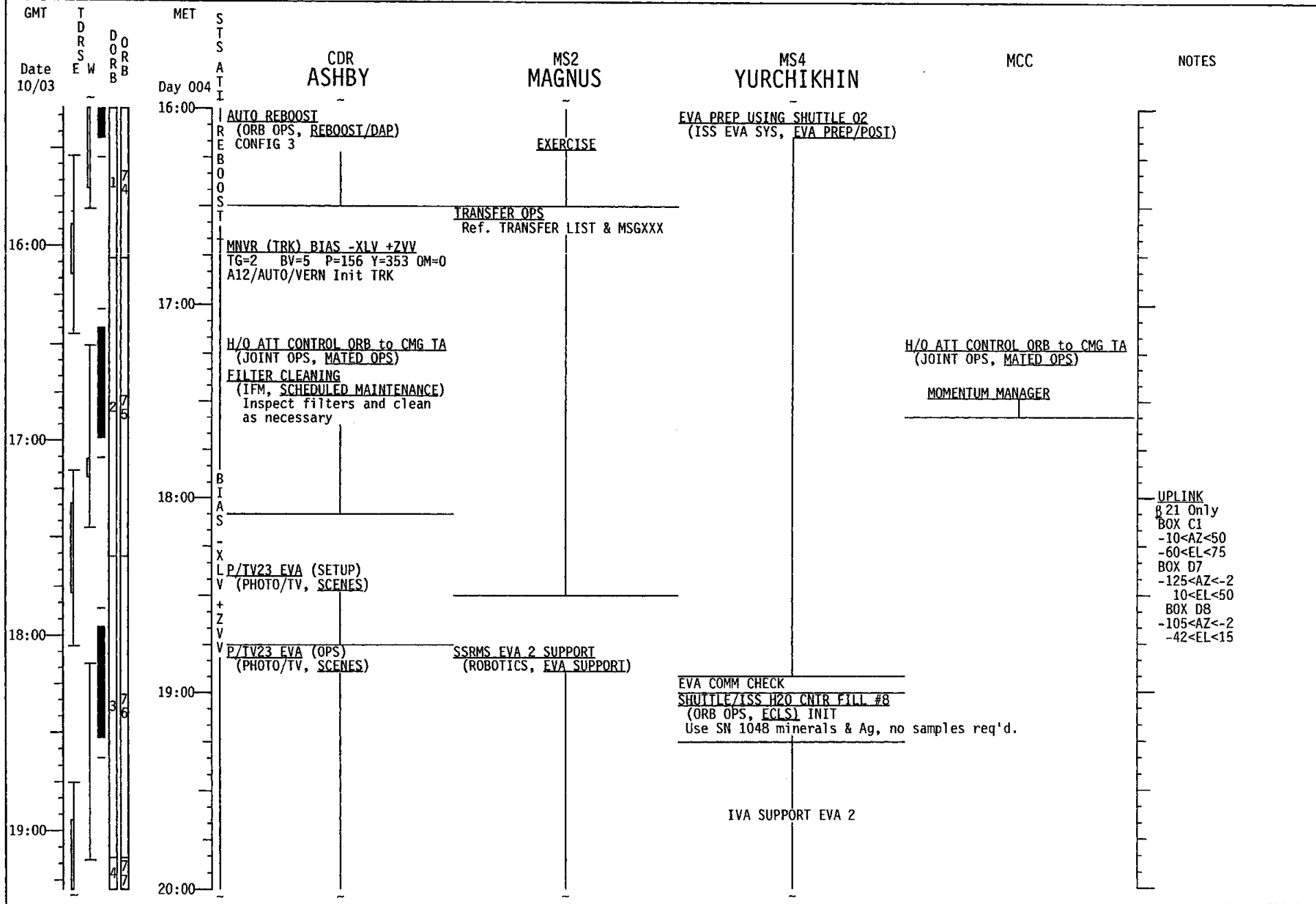
STS-112 (FD06)



STS-112 (FD06)



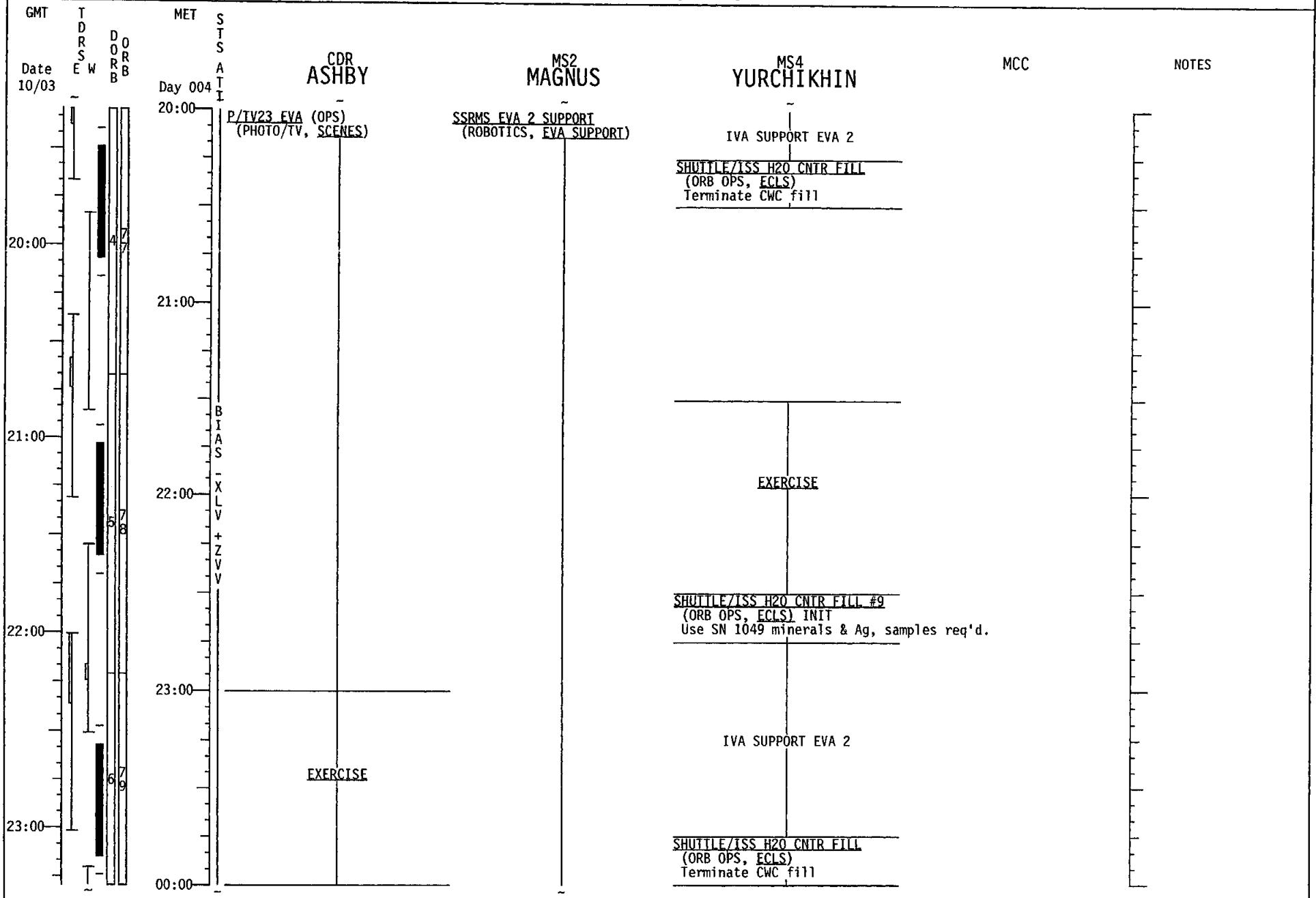
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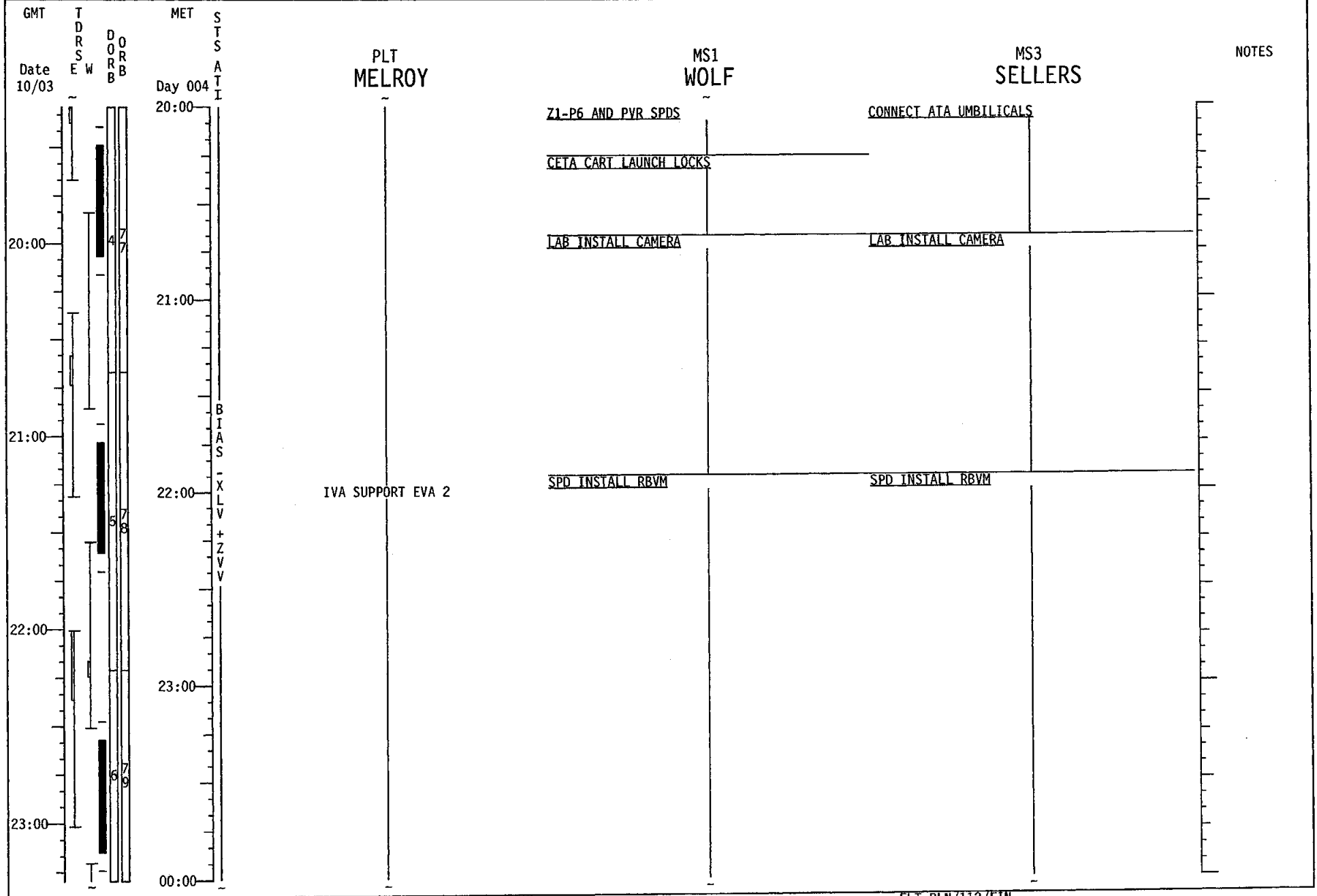
STS-112 (FD06)

GMT Date 10/03	T D R S E W	D O R R B	MET Day 004	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
			16:00	EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)	EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)	EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)	
			17:00		EMU PURGE (ISS EVA SYS, EVA PREP/POST)	EMU PURGE (ISS EVA SYS, EVA PREP/POST)	
			17:00		EMU PREBREATHE (ISS EVA SYS, EVA PREP/POST)	EMU PREBREATHE (ISS EVA SYS, EVA PREP/POST)	
			18:00		CREWLOCK DPRS/RPRS CUECARD (ISS EVA SYS, EVA PREP/POST)	CREWLOCK DPRS/RPRS CUECARD (ISS EVA SYS, EVA PREP/POST)	
			18:00		CREWLOCK EGRESS (ISS EVA SYS, CUFF CHECKLIST)	CREWLOCK EGRESS (ISS EVA SYS, CUFF CHECKLIST)	
			19:00	EVA COMM CHECK	EVA 2 SETUP	EVA 2 SETUP	
			19:00	IVA SUPPORT EVA 2	Z1-P6 AND PVR SPDS	Z1 TO LAB LOOP A	
			20:00				

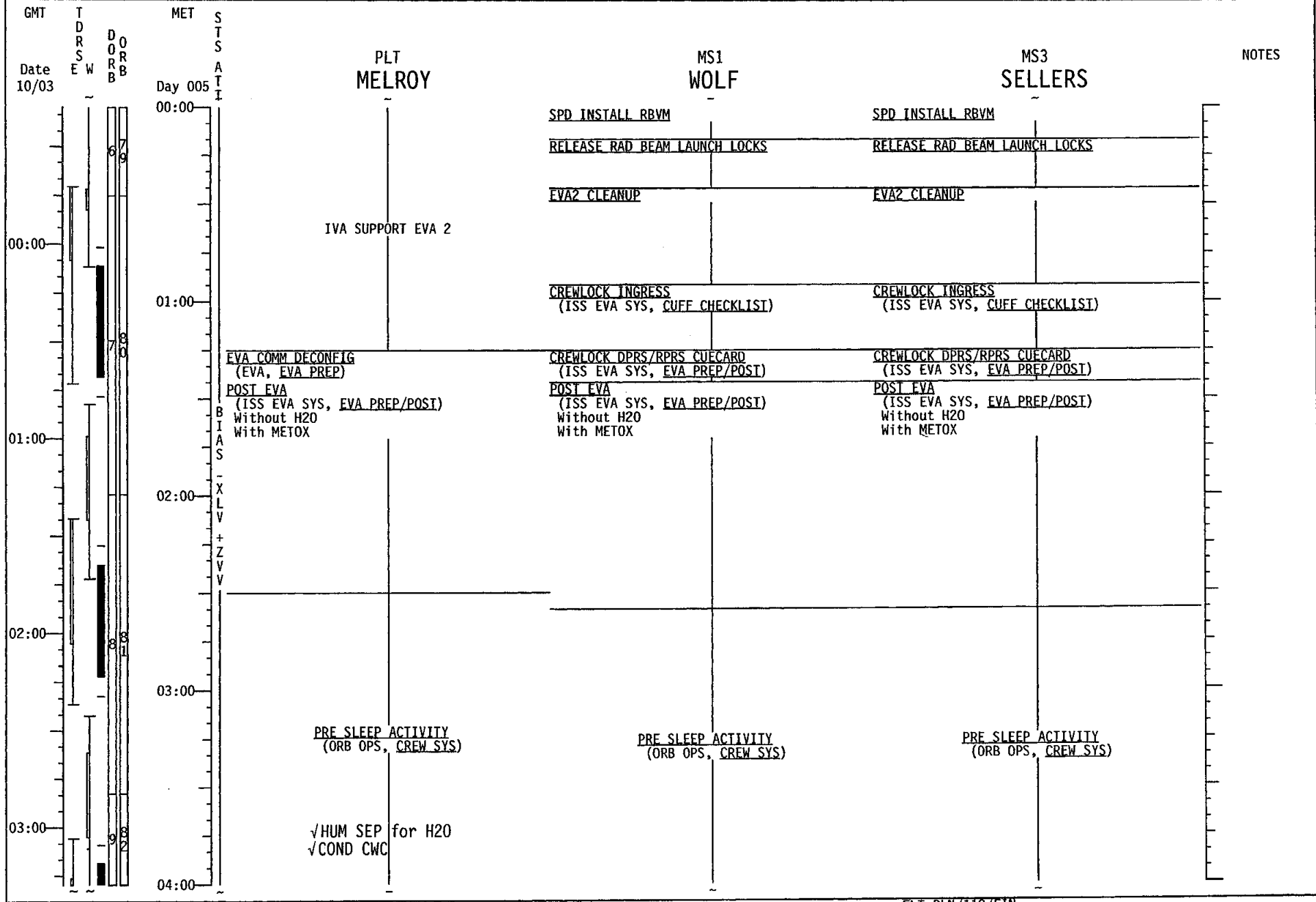
STS-112 (FD06)



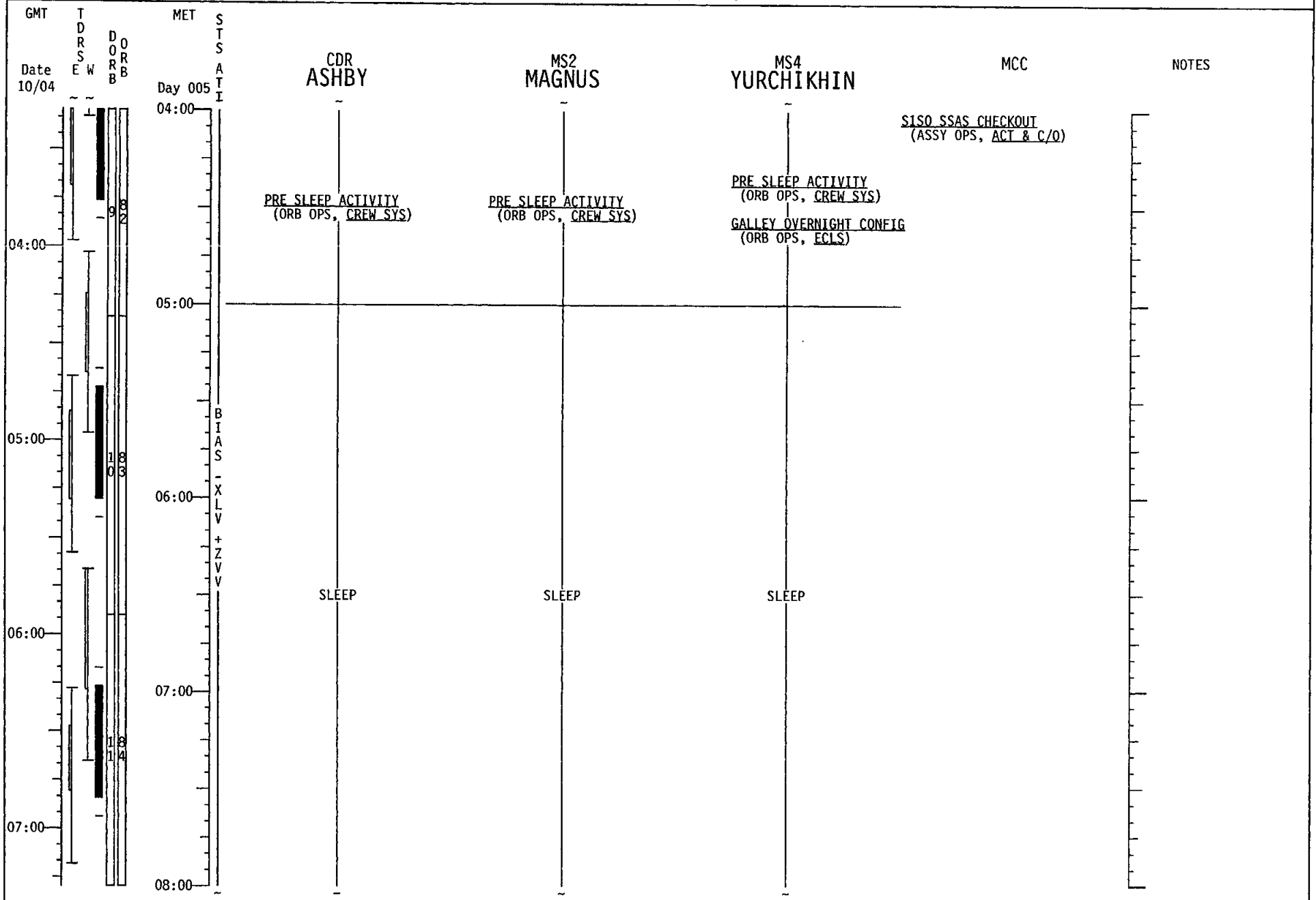
STS-112 (FD06)



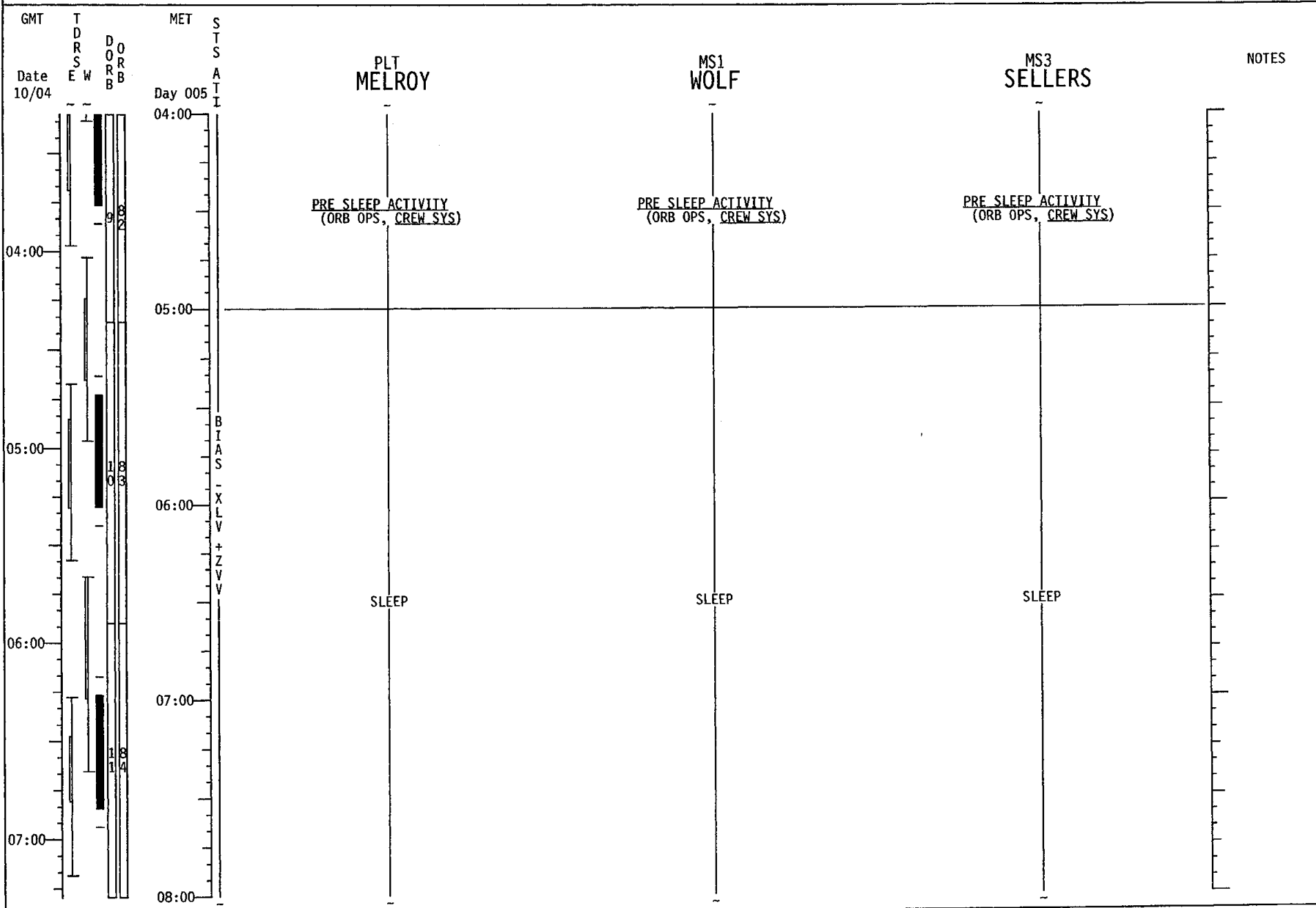
STS-112 (FD06)



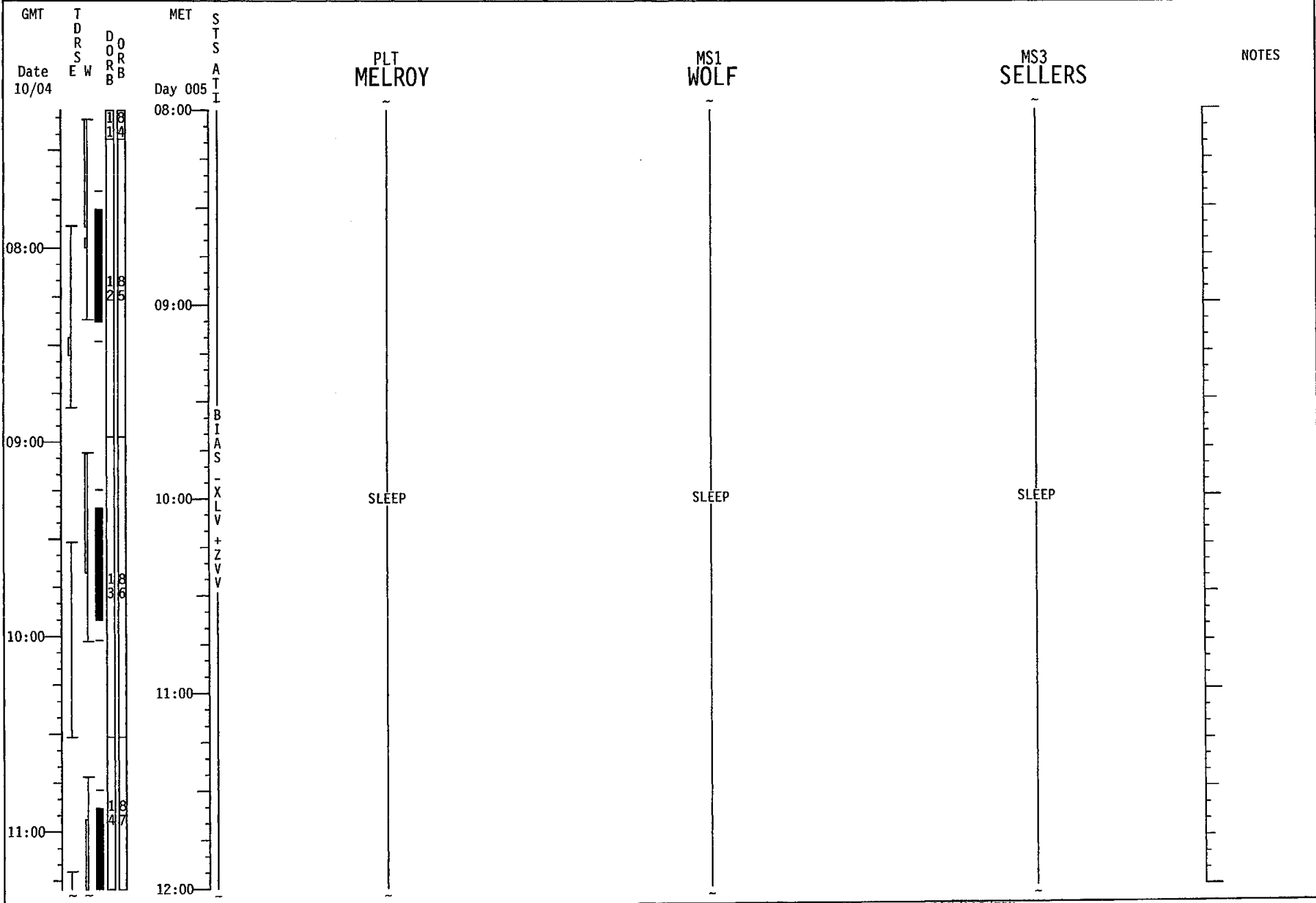
STS-112 (FD06)



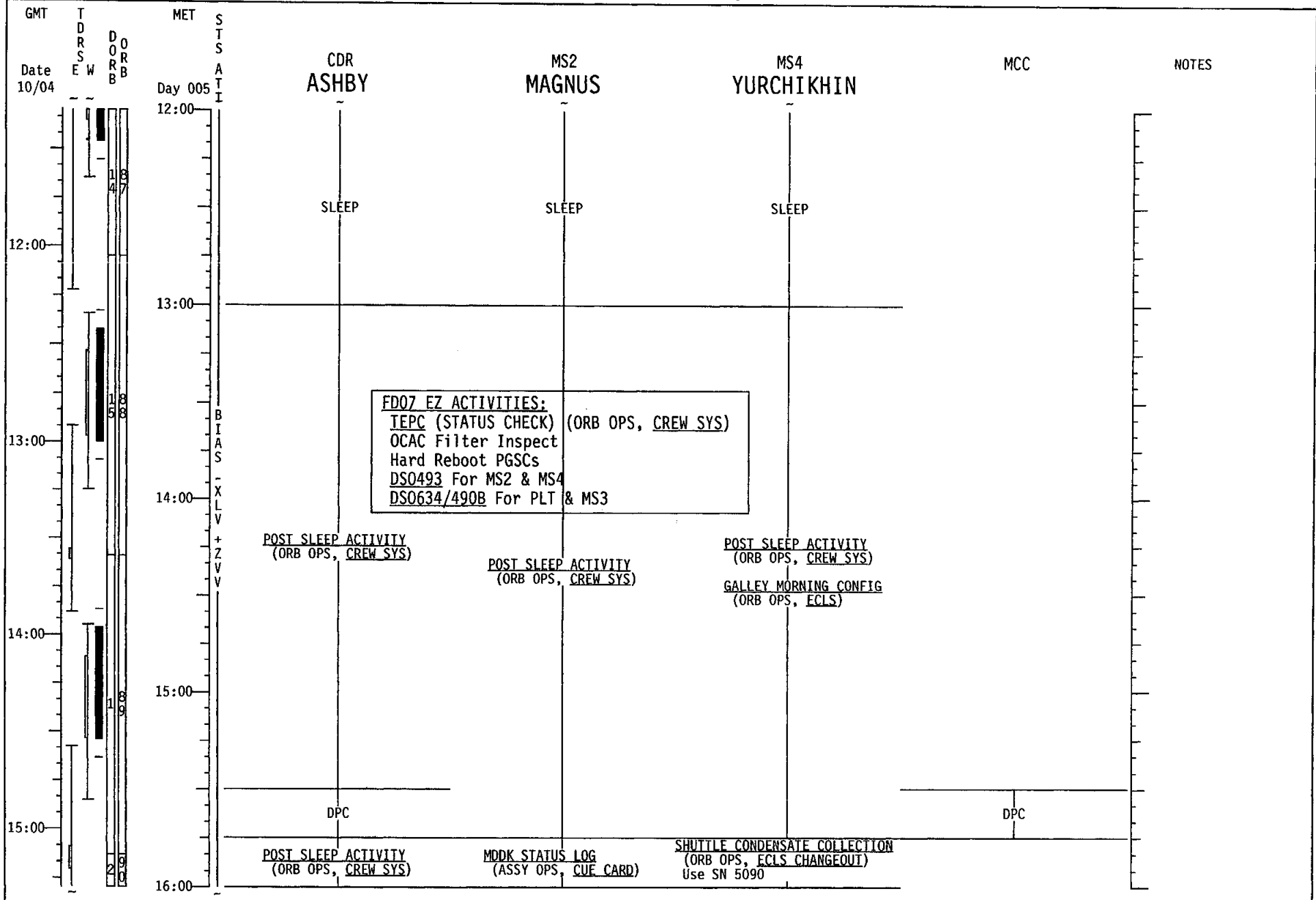
STS-112 (FD06)



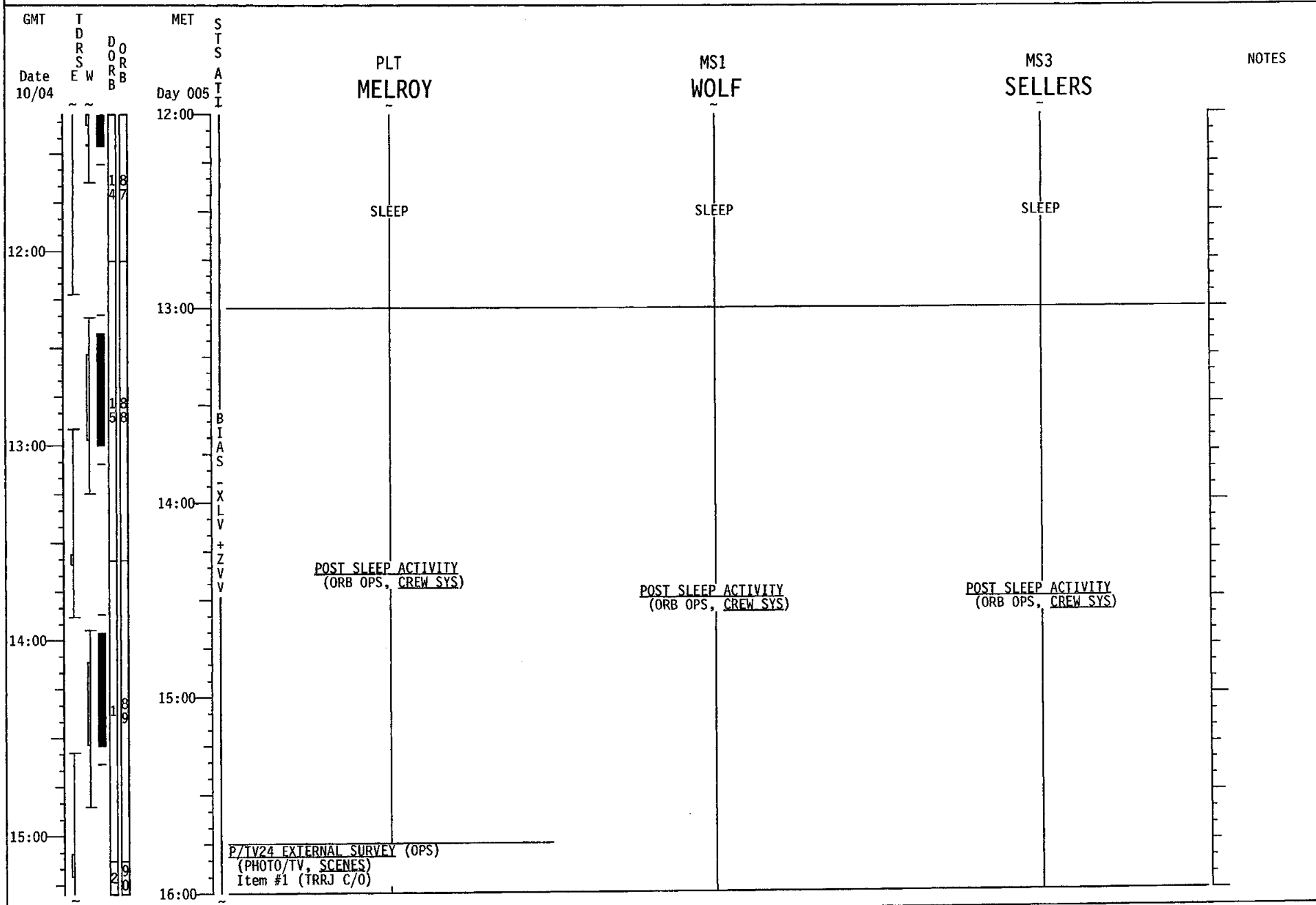
STS-112 (FD06)



STS-112 (FD07)



STS-112 (FD07)



STS-112 (FD07)

GMT	T D R S E W	D O R B	MET	S T S	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
Date 10/04			Day 005						
16:00					RECONFIG FROM P/B ON SHUTTLE O2 TO O2 TRANSFER (JOINT OPS, MATED OPS)		RECONFIG FROM P/B ON SHUTTLE O2 TO O2 TRANSFER (JOINT OPS, MATED OPS)		H/O ATT CONTROL CMG TA to ORB (JOINT OPS, MATED OPS)
						EXERCISE			
16:00					O2 TRANSFER TO HIGH PRESSURE TANK (JOINT OPS, MATED OPS) Steps 1 & 2		O2 TRANSFER TO HIGH PRESSURE TANK (JOINT OPS, MATED OPS) Steps 1 & 2		
							SHUTTLE/ISS H2O CNTR FILL #10 (ORB OPS, ECLS) INIT Use SN 1007 Ag only, no samples req'd.		
17:00					EXERCISE	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX		
17:00									
					+ SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Terminate Waste Dump				
18:00					PWR OVERBOARD DUMP (ORB OPS, ECLS) PWR SN 1005 followed by SN 1013.		SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		SA SUN TRACK
						PGBA TRANSFER MDDK TO ISS (ASSY OPS, TRANSFER)	PGBA TRANSFER MDDK TO ISS (ASSY OPS, TRANSFER)		
					CWC OVERBOARD DUMP (ORB OPS, ECLS) Dump COND CWC SN 5075.				
18:00									
					MNVR (TRK) -XLV +ZVV BTG=2 BV=5 P=156 Y=353 OM=0 IA12/AUTO/VERN Init TRK				
19:00					MEAL	MEAL	MEAL		
							SHUTTLE/ISS H2O CNTR FILL #11 (ORB OPS, ECLS) INIT Use SN 1012 Ag only, no samples req'd.		
19:00									
20:00									

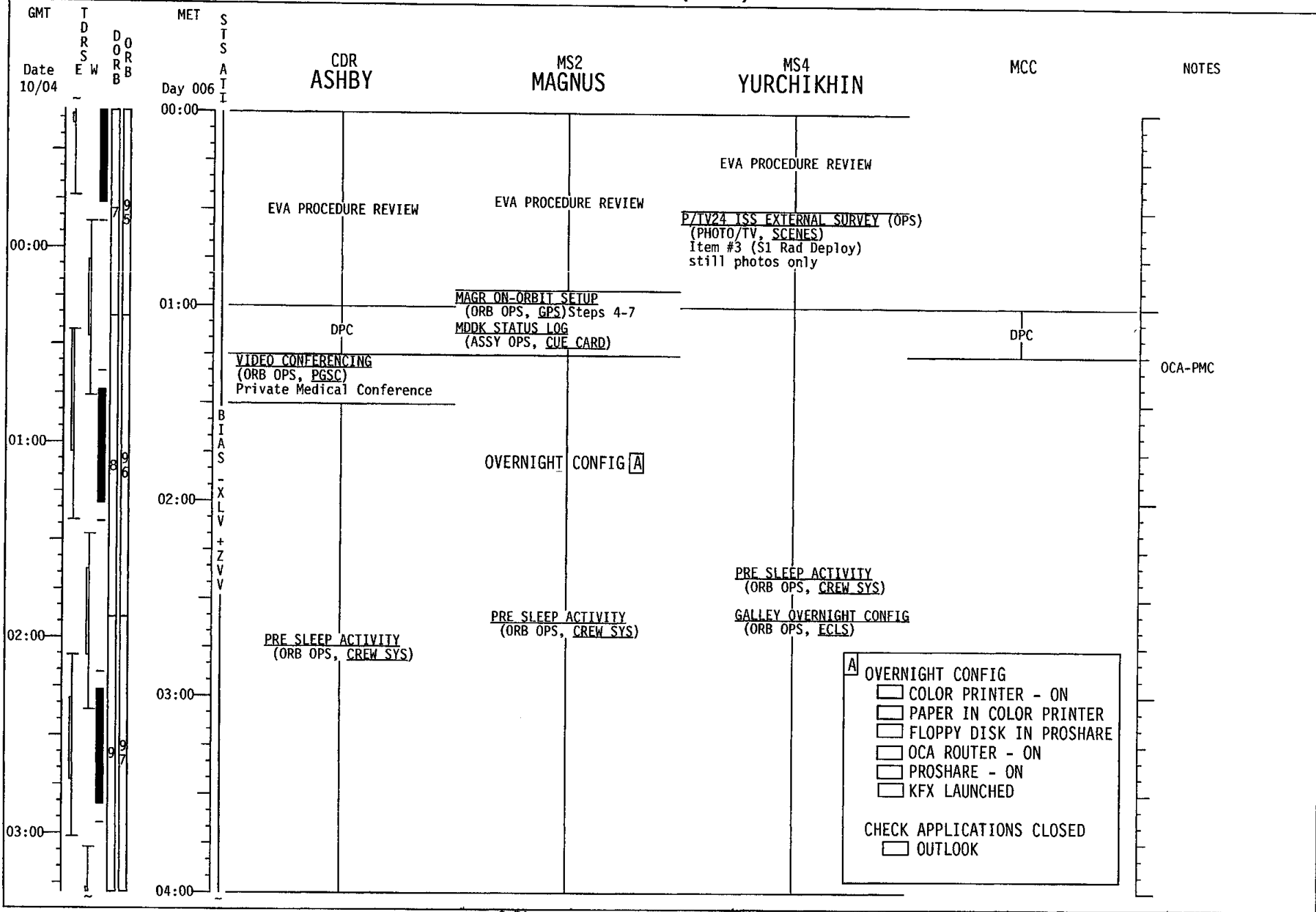
STS-112 (FD07)

GMT Date 10/04	T D R S E W	D O R B	M E T Day 005	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
16:00				H/O ATT CONTROL CMG TA to ORB (JOINT OPS, MATED OPS)	EVA CREW: TAKE 1 ASPIRIN (325mg) BSA BATTERY RECHARGE TERMINATE (ISS EVA SYSTEMS, BATTERY OPS)	EVA CREW: TAKE 1 ASPIRIN (325mg)	
16:00		29		MNVR (TRK) BIAS -XLV +YV TG=2 BV=5 P=156 Y=0 OM=270 AI2/AUTO/VERN Init TRK SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS) Initiate Waste Dump	EMU CCC/BATT REPLACE Batt SN 2029,2030 EMU WATER RECHARGE (ISS EVA SYS, EMU MAINTENANCE) Note: Must be complete prior to start of PWR OVERBOARD DUMP PWR SN 1005	EMU CCC/BATT REPLACE (ISS EVA SYS, EMU MAINTENANCE) EMU WATER RECHARGE (ISS EVA SYS, EMU MAINTENANCE)	UPDATE H2O WASTE DUMP QTY
				TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	EVA E5 (SETUP) (ISS CUE CARD) Use EVA 28mm lens for rad photos		
17:00						EXERCISE	
17:00					METOX REGERATION TERMINATE (ISS EVA SYS, EMU MAINTENANCE)		
18:00		39		EMU ALIGN - S TRK (ORB OPS)	EVA TOOL CONFIG (EVA, TOOLS/TIMELINES)	EVA TOOL CONFIG (EVA, TOOLS/TIMELINES)	
				EXERCISE			
18:00							
19:00		49		EMU WATER RECHARGE BAG FILL (ORB OPS, ECLS) PWR SN 1005	EMU WATER RECHARGE BAG FILL (ORB OPS, ECLS) PWR SN 1013		
19:00				MEAL	MEAL	MEAL	
20:00							

STS-112 (FD07)

GMT	TDRS E W	DORB	MET	SATS	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 10/04			Day 005					
20:00					MEAL	MEAL	MEAL	
					EQUIPMENT LOCK PREP (ISS EVA SYS, AIRLOCK CONFIG)	EQUIPMENT LOCK PREP (ISS EVA SYS, AIRLOCK CONFIG)	EQUIPMENT LOCK PREP (ISS EVA SYS, AIRLOCK CONFIG)	
21:00					P/TV21 ISS INTERNAL OPS (SETUP) (PHOTO/TV, SCENES)	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	
					CREW PHOTO	CREW PHOTO	CREW PHOTO	
22:00					CREW CONFERENCE	CREW CONFERENCE	CREW CONFERENCE	
					TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	
23:00					RCS REGULATOR RECONFIGURE (ORB OPS, RCS)	EXERCISE		
					WCS COMPACTOR OPS (DUAL-VANE) (CUE CARD)			
00:00					HEATER RECONFIG-Config B (ORB OPS, EPS)		EMU BATT RCHG ERM PSA UTY QUIT (ISS EVA SYS, BATTERY OPS)	

STS-112 (FD07)



A OVERNIGHT CONFIG

- COLOR PRINTER - ON
- PAPER IN COLOR PRINTER
- FLOPPY DISK IN PROSHARE
- OCA ROUTER - ON
- PROSHARE - ON
- KFX LAUNCHED

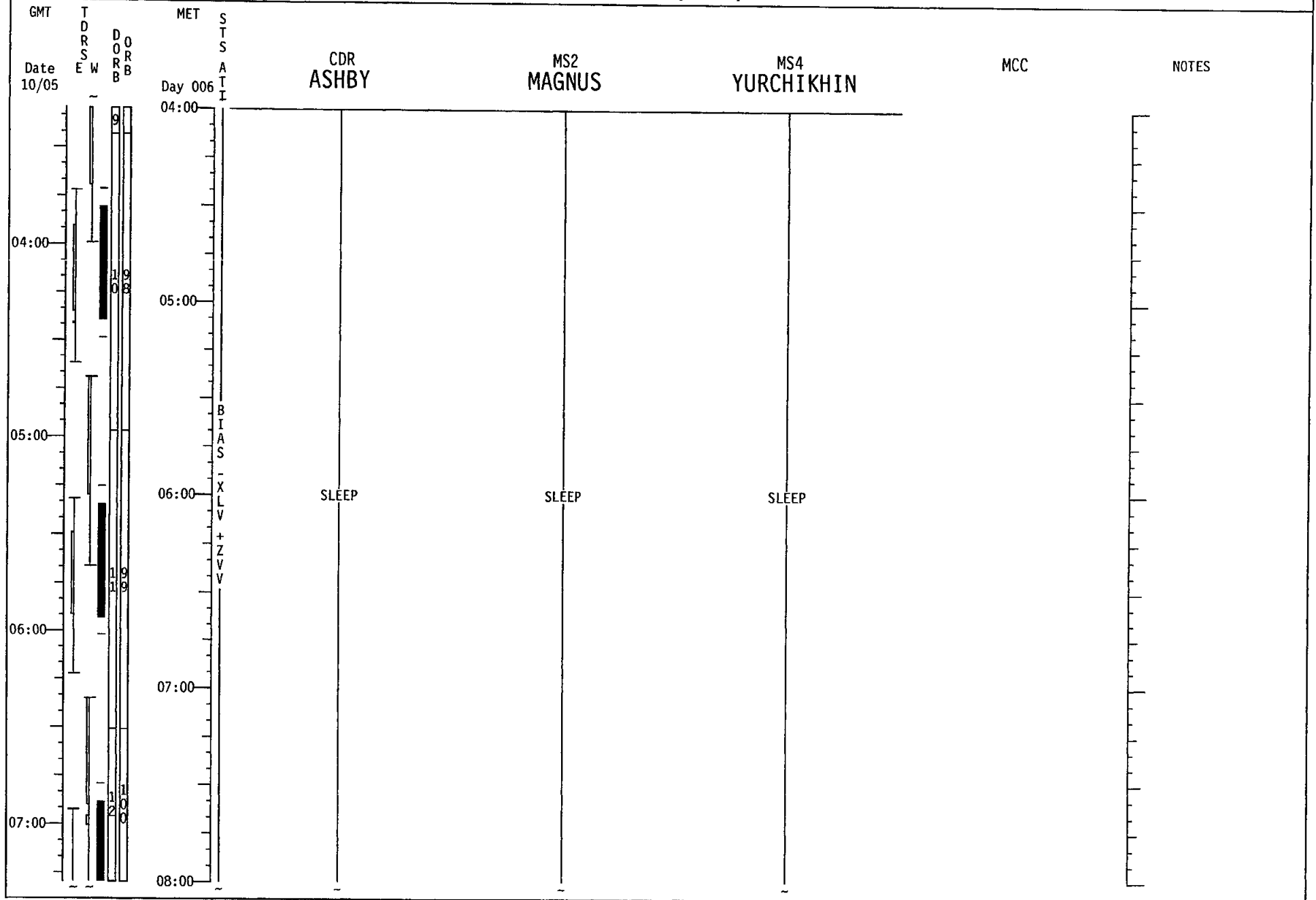
CHECK APPLICATIONS CLOSED

- OUTLOOK

STS-112 (FD07)

GMT Date 10/04	T D R S E W	D O R B	MET Day 006	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
00:00		7 5	00:00		EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	EVA PROCEDURE REVIEW	
01:00		8 6	01:00	B I A S				
02:00			02:00	- X L V + Z V V	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS) ✓ COND CWC	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
03:00		9 7	03:00					
04:00			04:00					

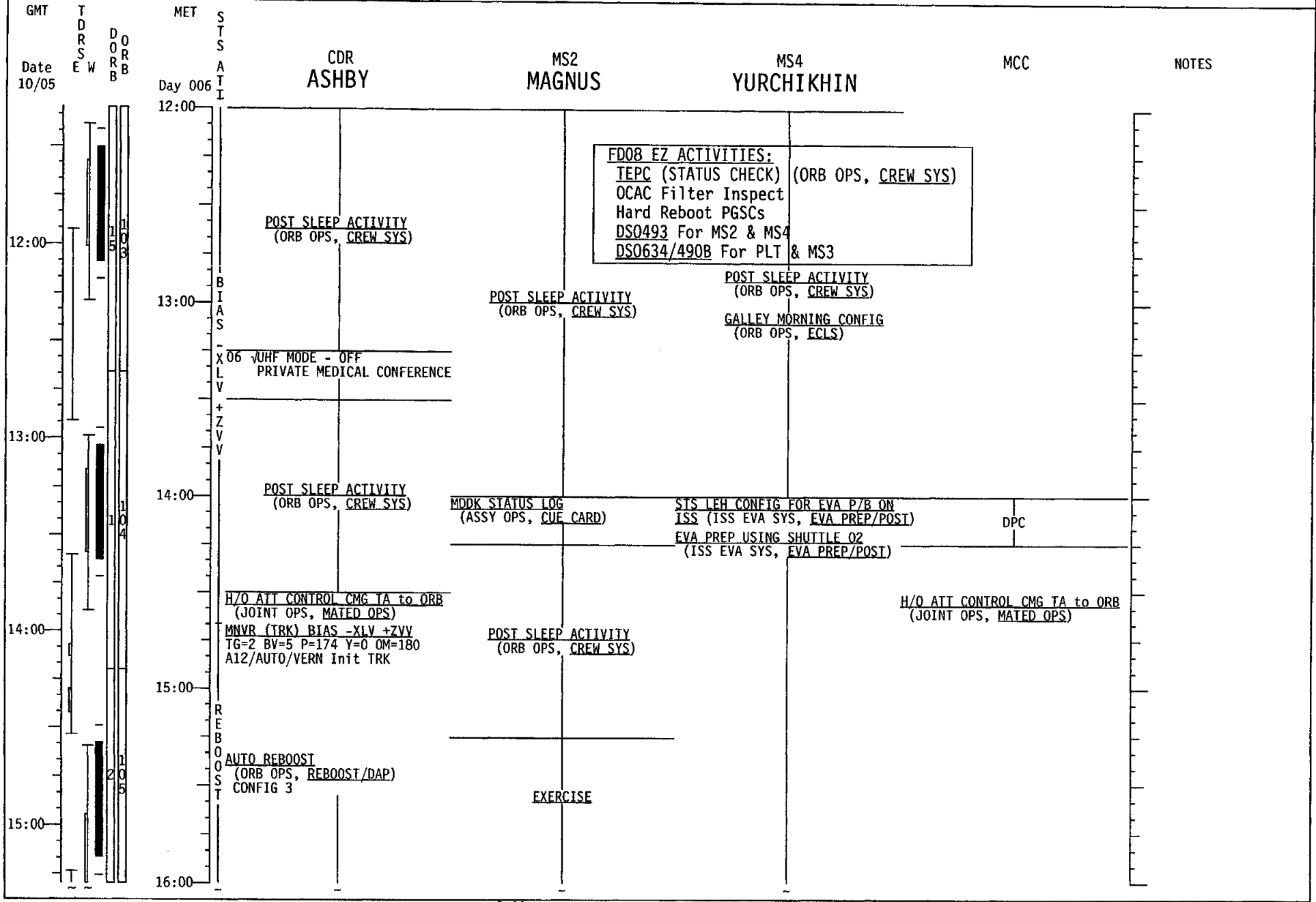
STS-112 (FD07)



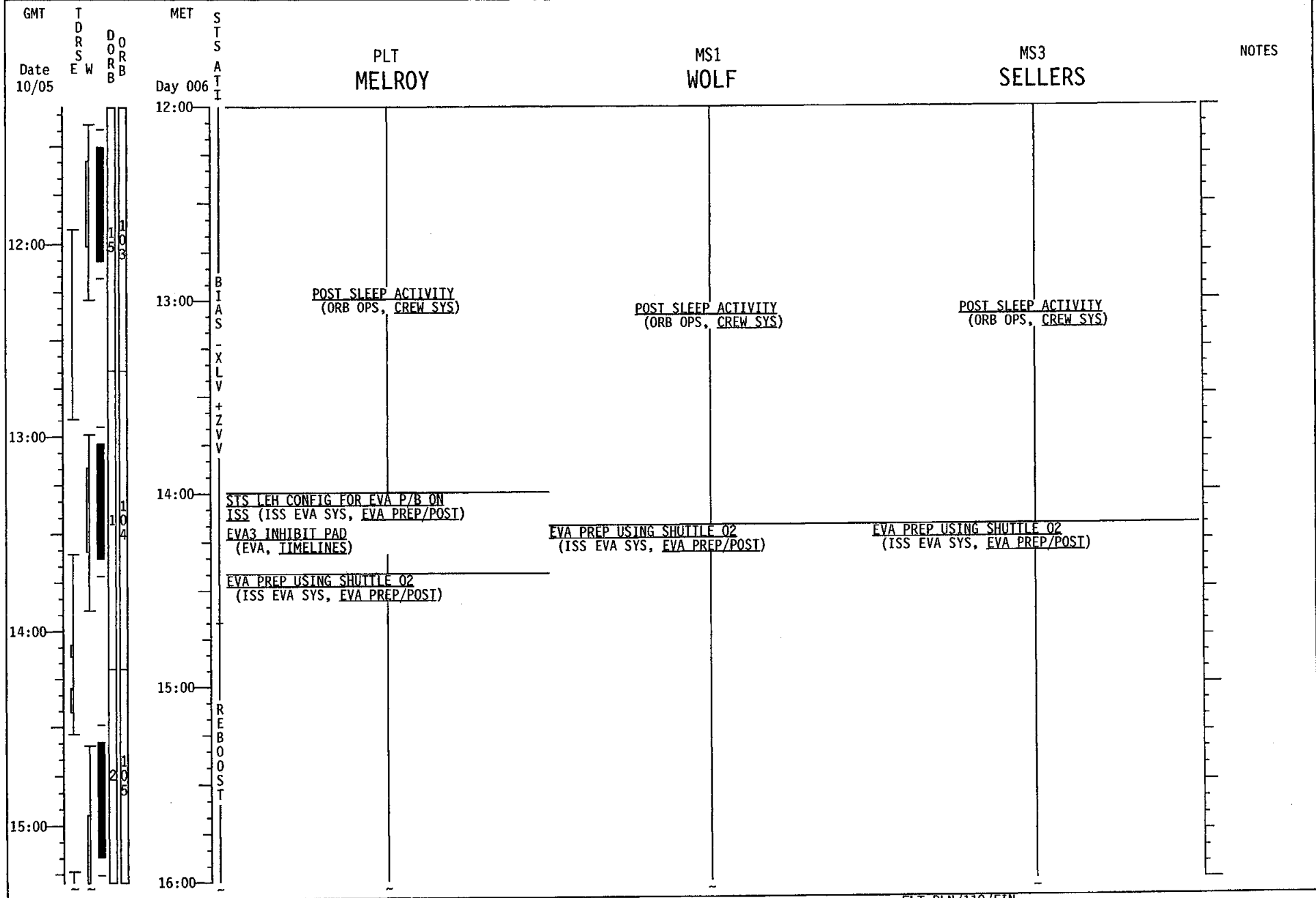
STS-112 (FD07)

GMT	TDRS E W	DORR B B	MET Day 006	STA T I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
10/05			08:00						
08:00			09:00						
09:00			10:00	BIAS -XLV +ZVV	SLEEP	SLEEP	SLEEP		
10:00			11:00						
11:00			12:00						

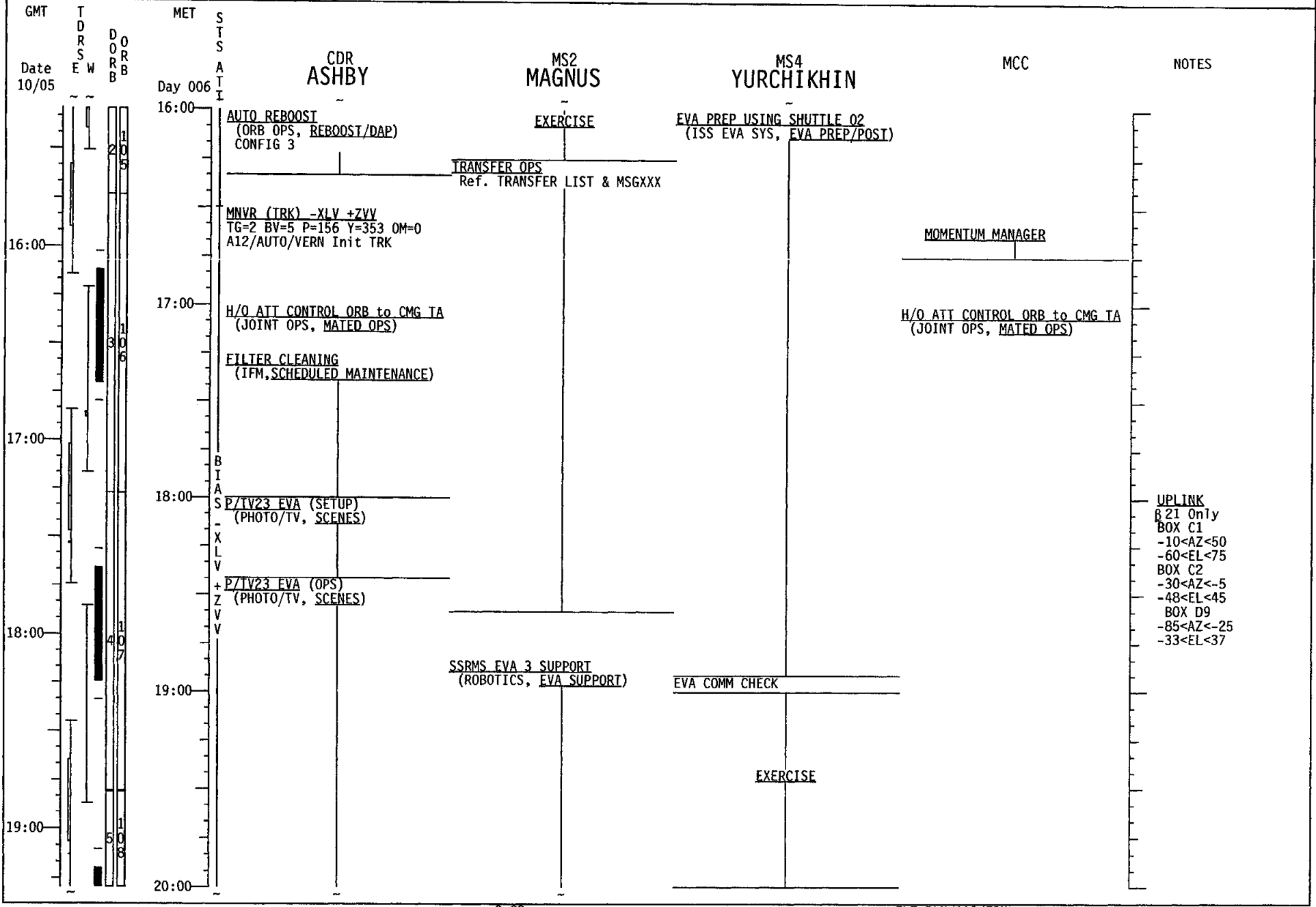
STS-112 (FD08)



STS-112 (FD08)



STS-112 (FD08)

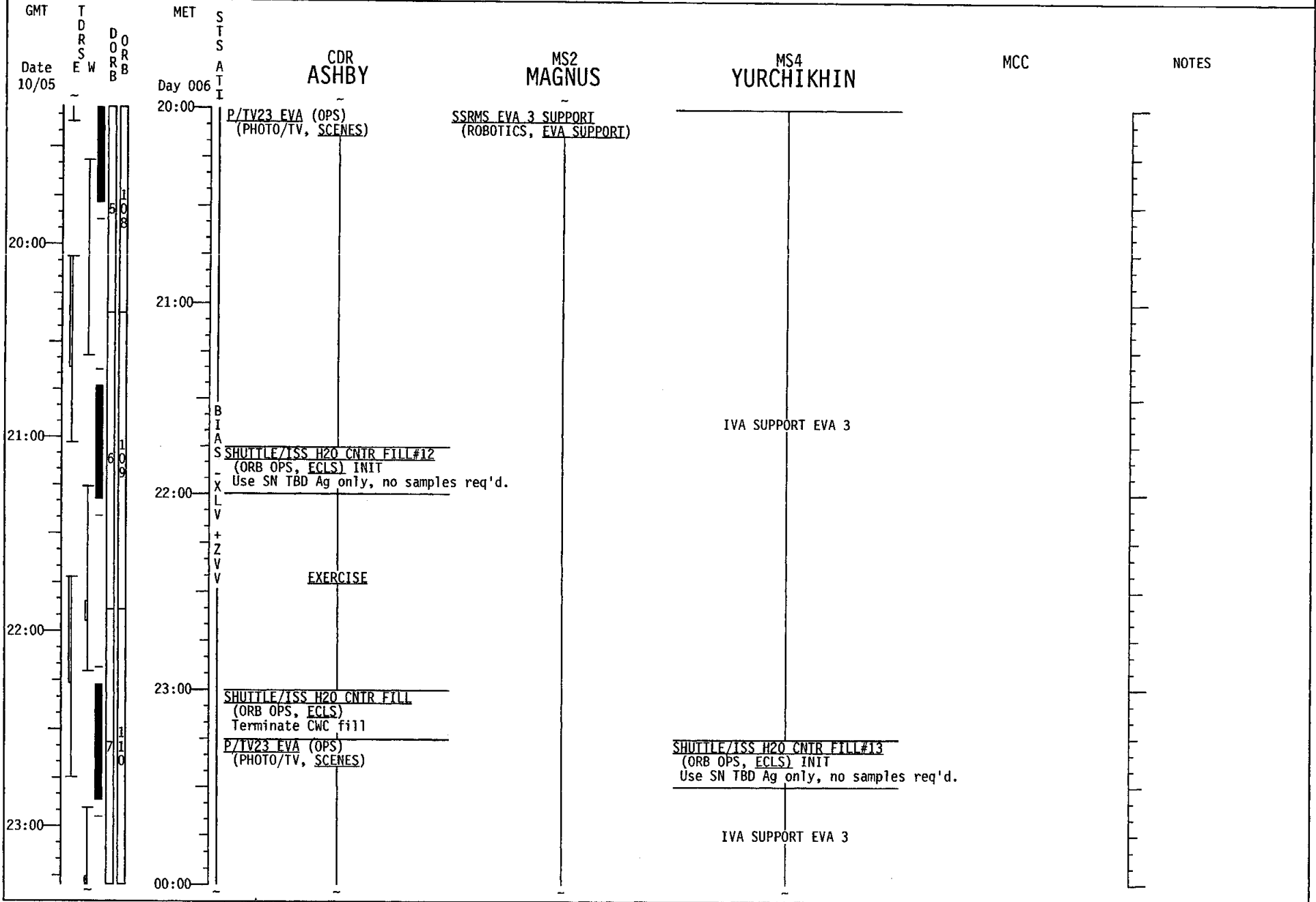


UPLINK
 B 21 Only
 BOX C1
 -10<AZ<50
 -60<EL<75
 BOX C2
 -30<AZ<-5
 -48<EL<45
 BOX D9
 -85<AZ<-25
 -33<EL<37

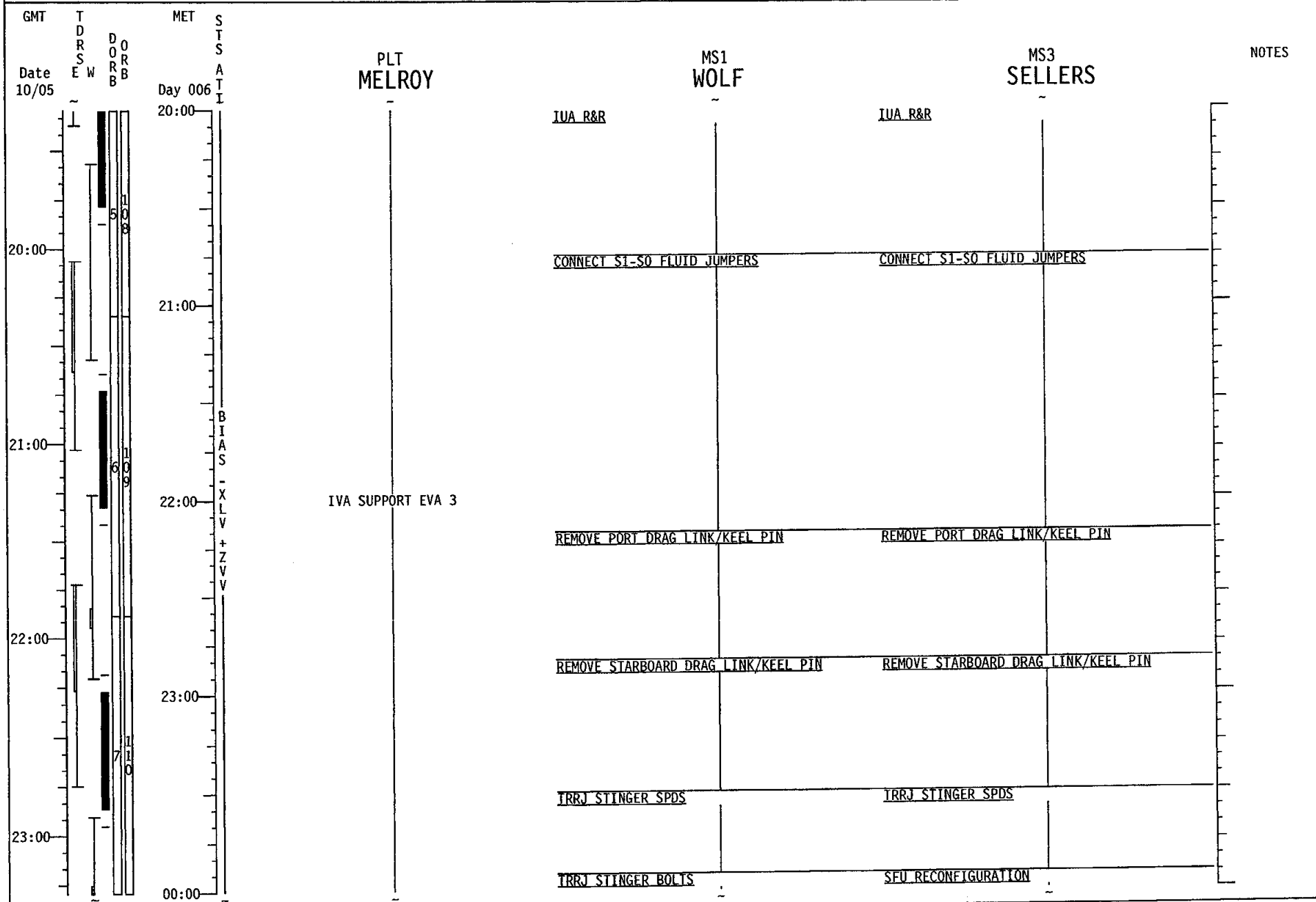
STS-112 (FD08)

GMT	T D R S E W	D O R B	MET	S T S	A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 10/05			Day 006						
16:00		2 5				EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)	EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)	EVA PREP USING SHUTTLE 02 (ISS EVA SYS, EVA PREP/POST)	
16:00									
17:00		3 6					EMU PURGE (ISS EVA SYS, EVA PREP/POST)	EMU PURGE (ISS EVA SYS, EVA PREP/POST)	
17:00							EMU PREBREATHE (ISS EVA SYS, EVA PREP/POST)	EMU PREBREATHE (ISS EVA SYS, EVA PREP/POST)	
18:00				B I A S					
18:00				X L V			CREWLOCK DPRS/RPRS CUECARD (ISS EVA SYS, EVA PREP/POST)	CREWLOCK DPRS/RPRS CUECARD (ISS EVA SYS, EVA PREP/POST)	
18:00		4 7		Z V V					
18:00							CREWLOCK EGRESS (ISS EVA SYS, CUFF CHECKLIST)	CREWLOCK EGRESS (ISS EVA SYS, CUFF CHECKLIST)	
19:00						EVA COMM CHECK	EVA 3 SETUP	EVA 3 SETUP	
19:00						IVA SUPPORT EVA 3	IUA R&R	IUA R&R	
19:00		5 8							
20:00									

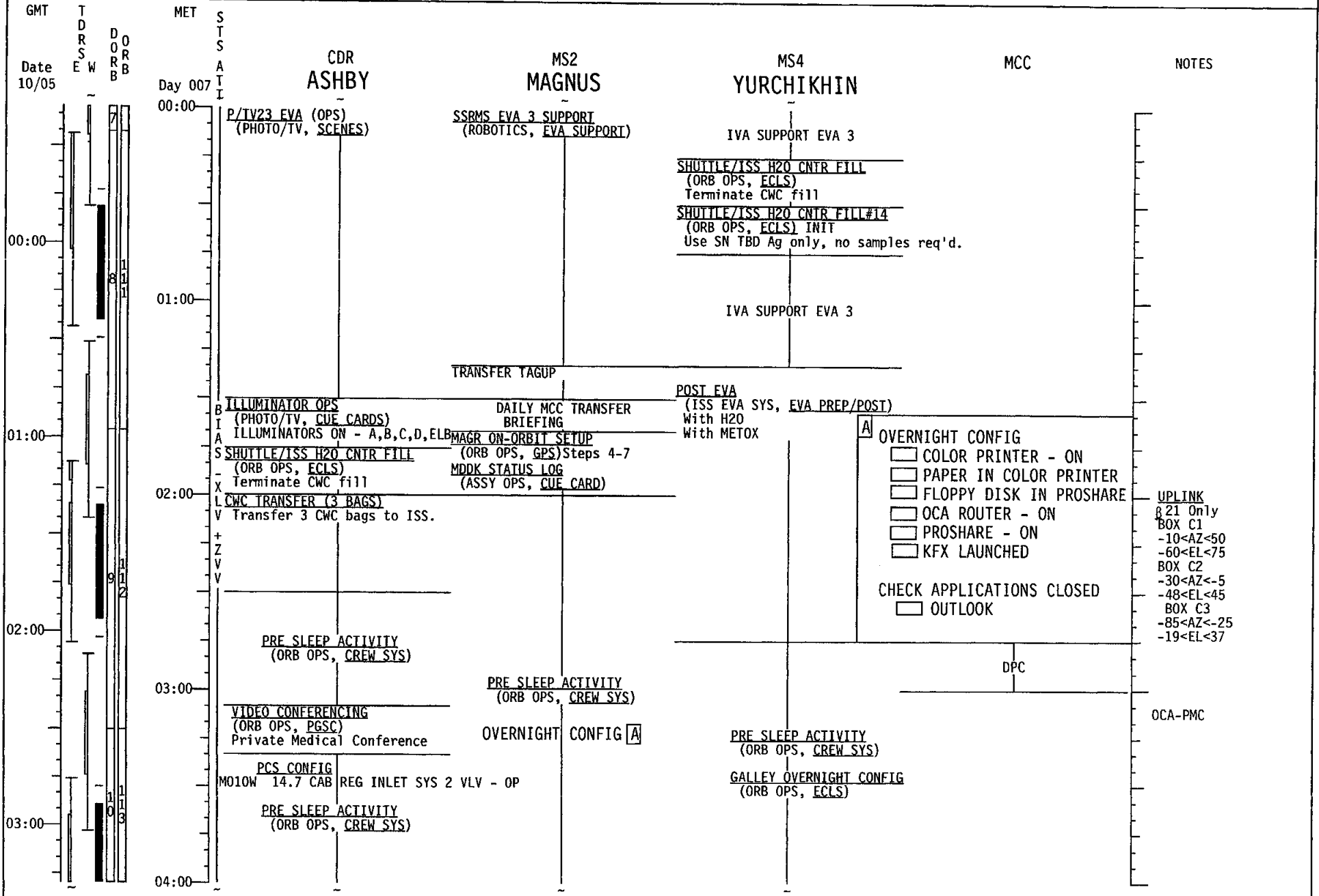
STS-112 (FD08)



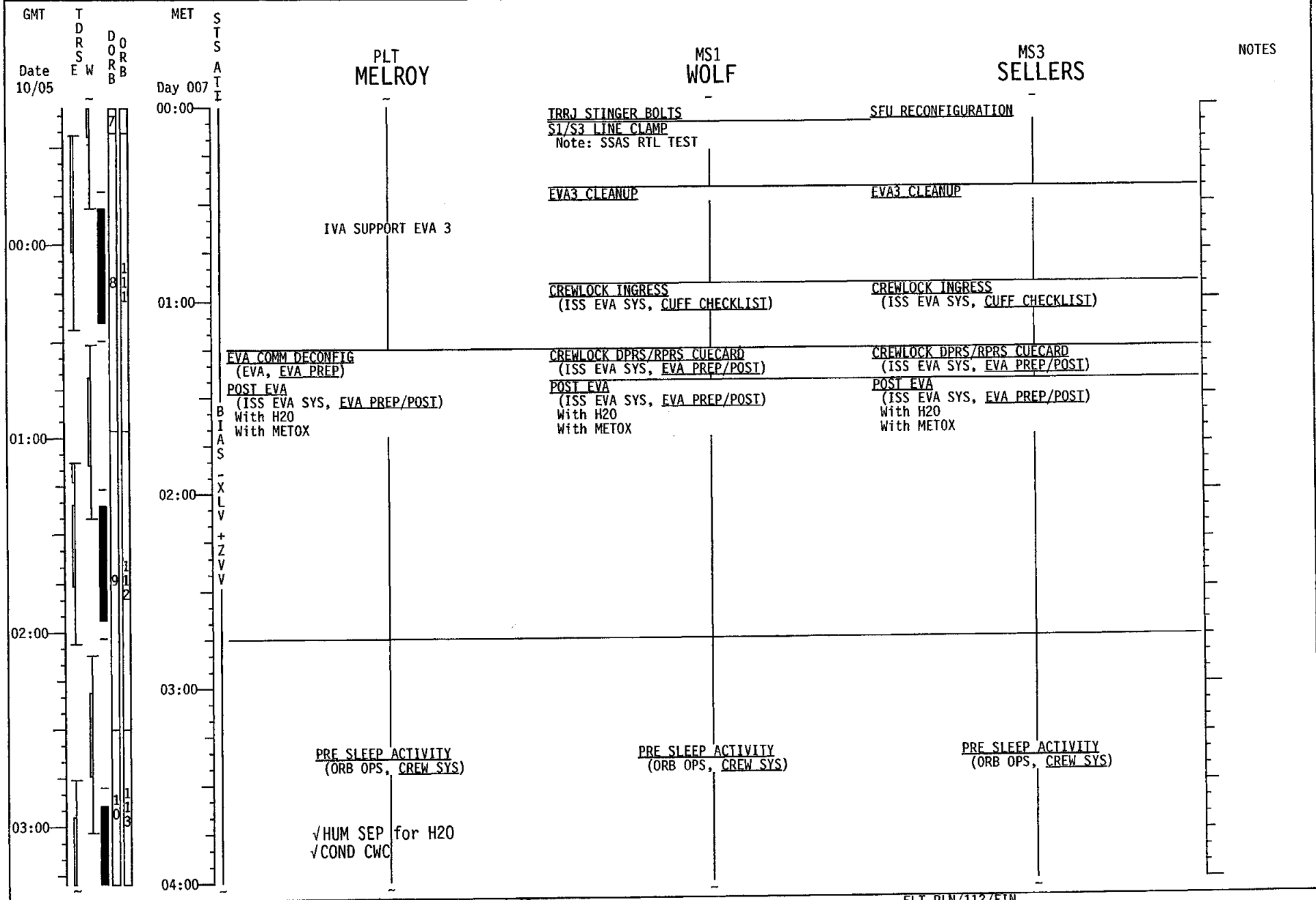
STS-112 (FD08)



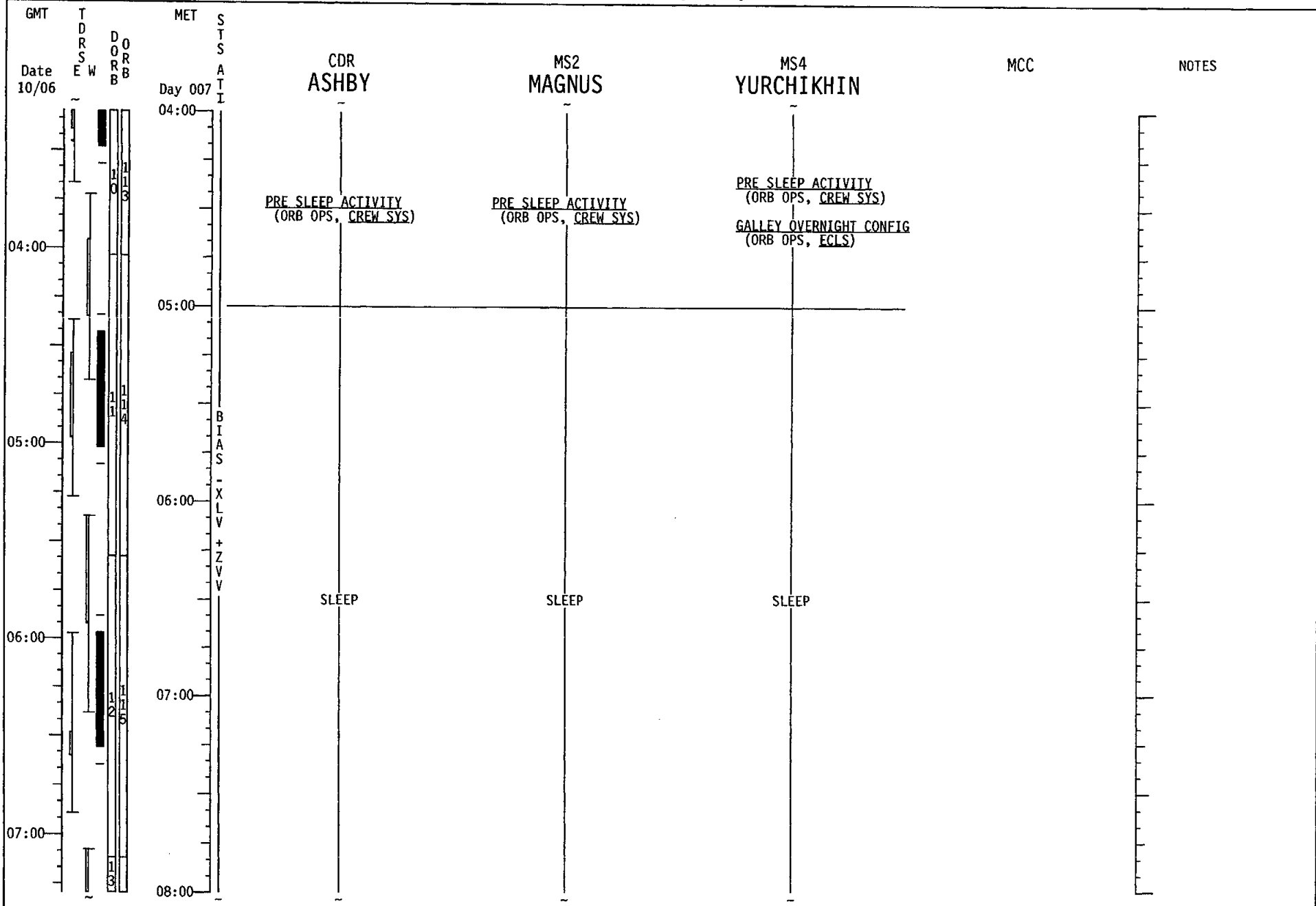
STS-112 (FD08)



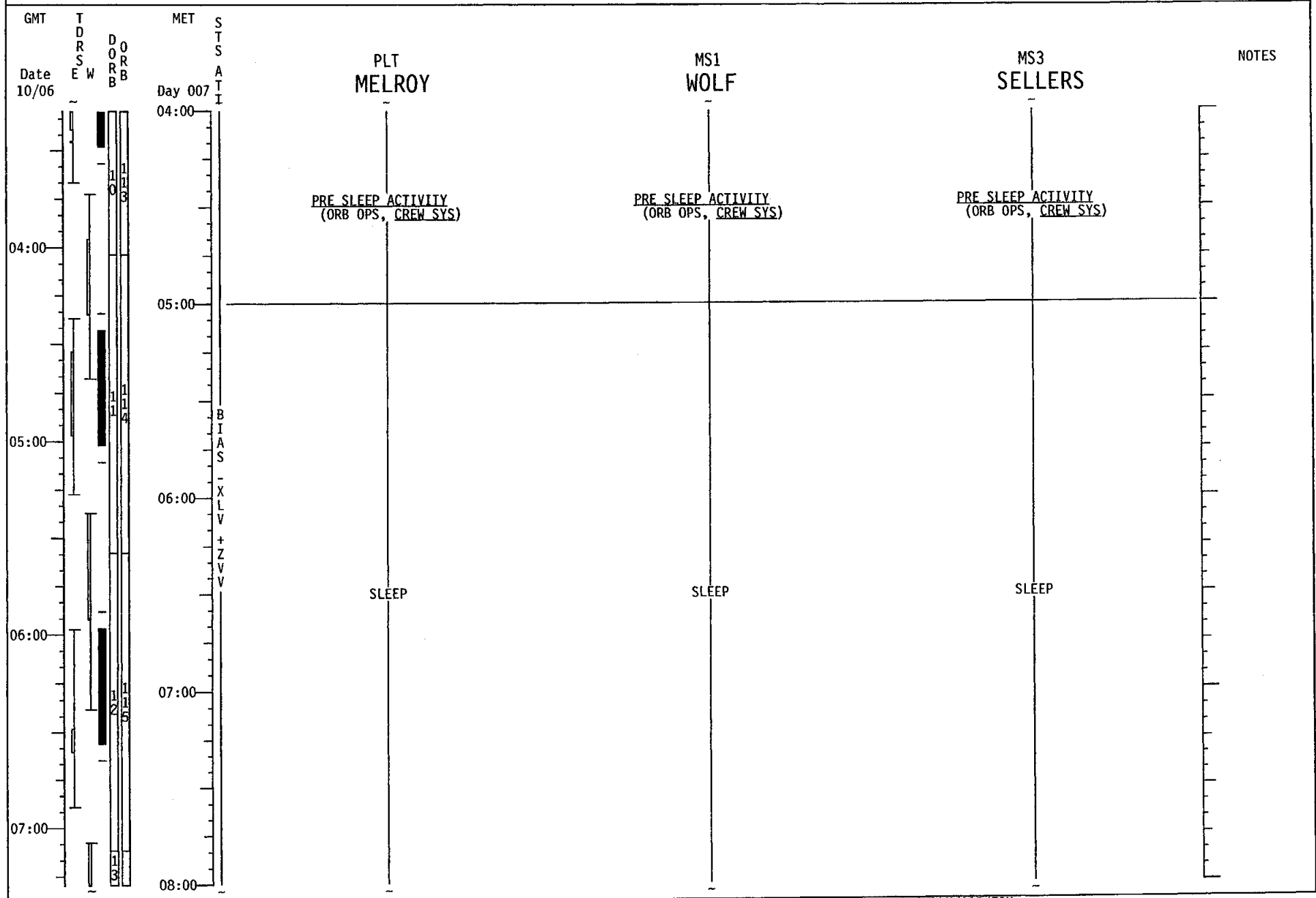
STS-112 (FD08)



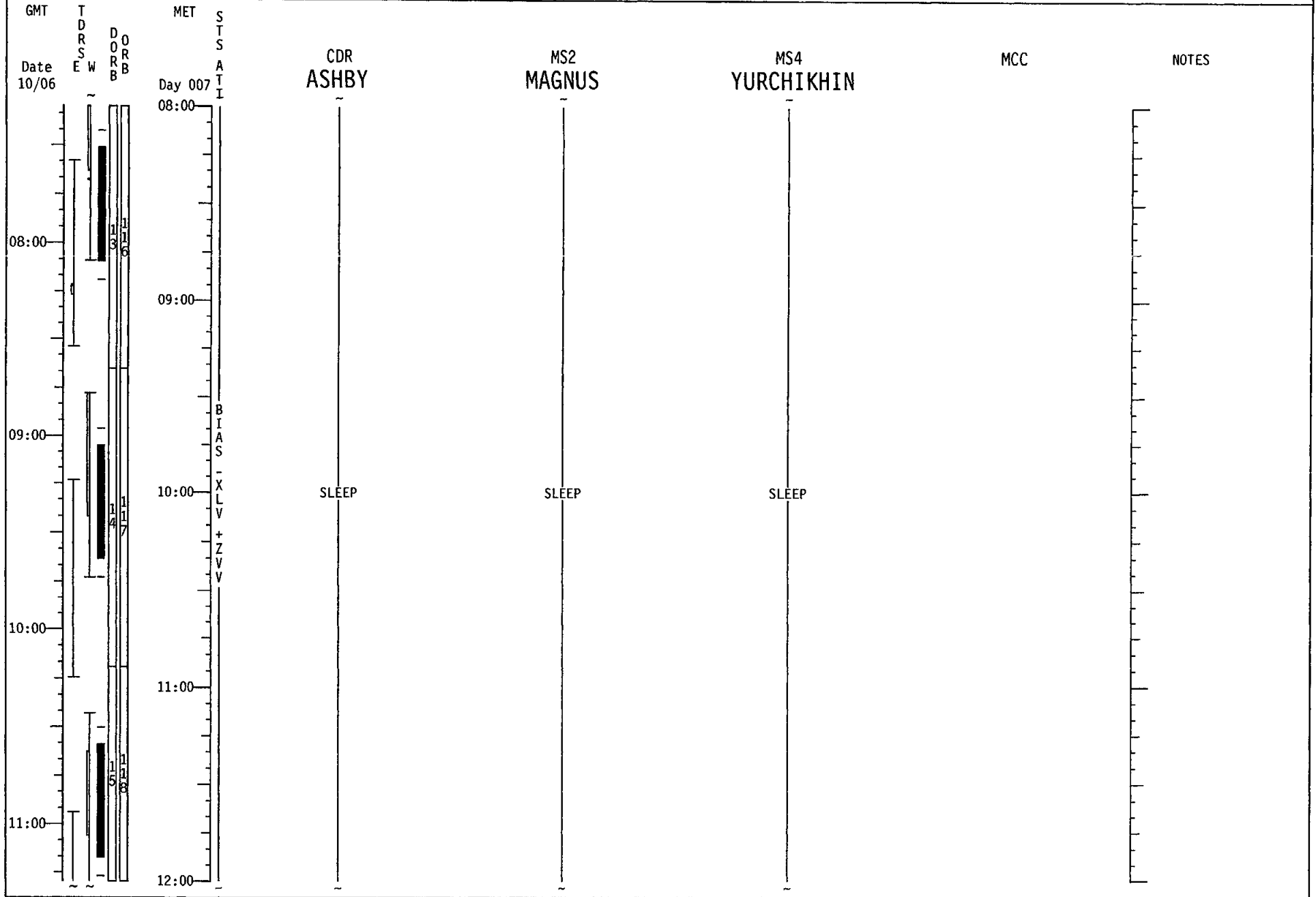
STS-112 (FD08)



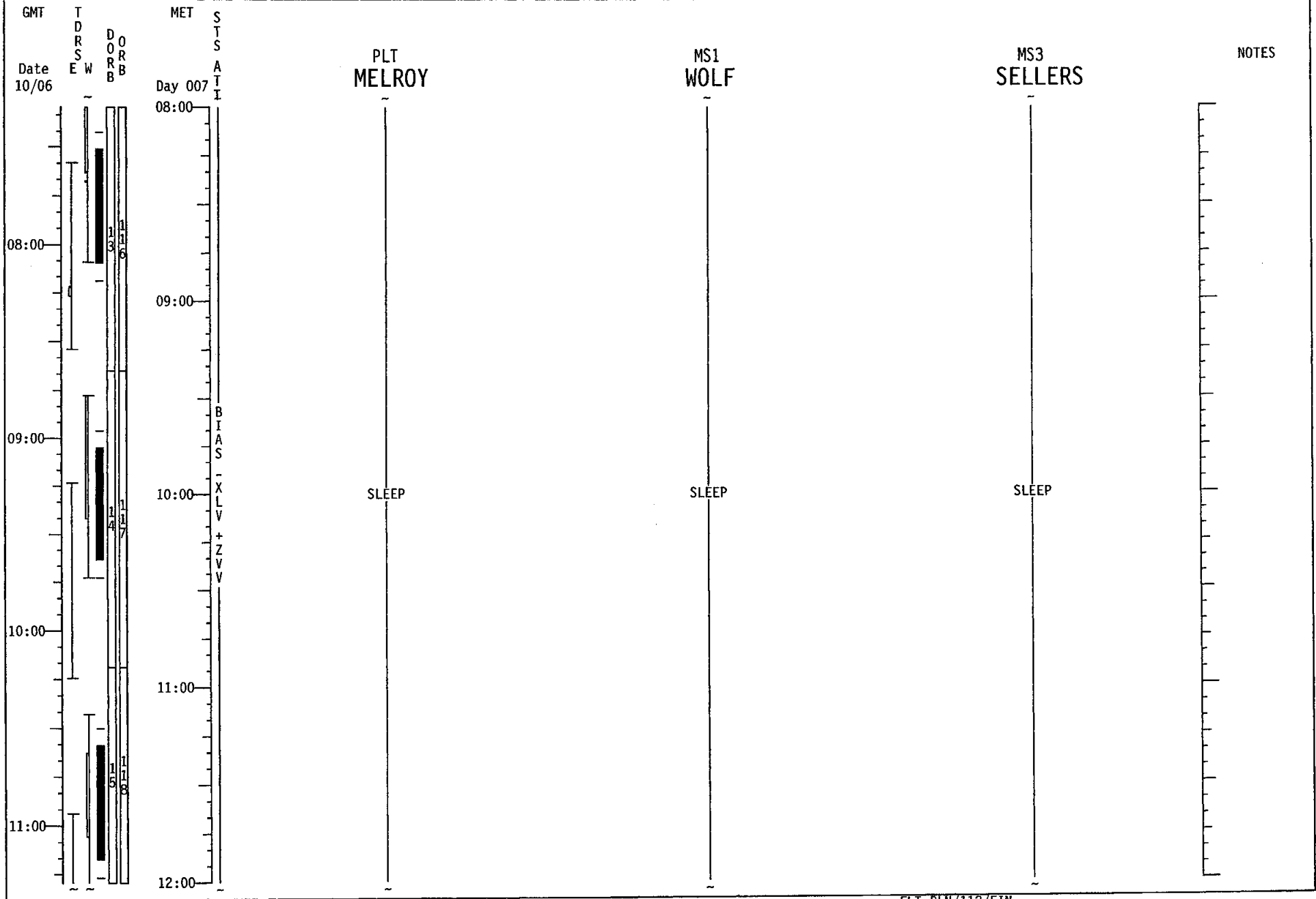
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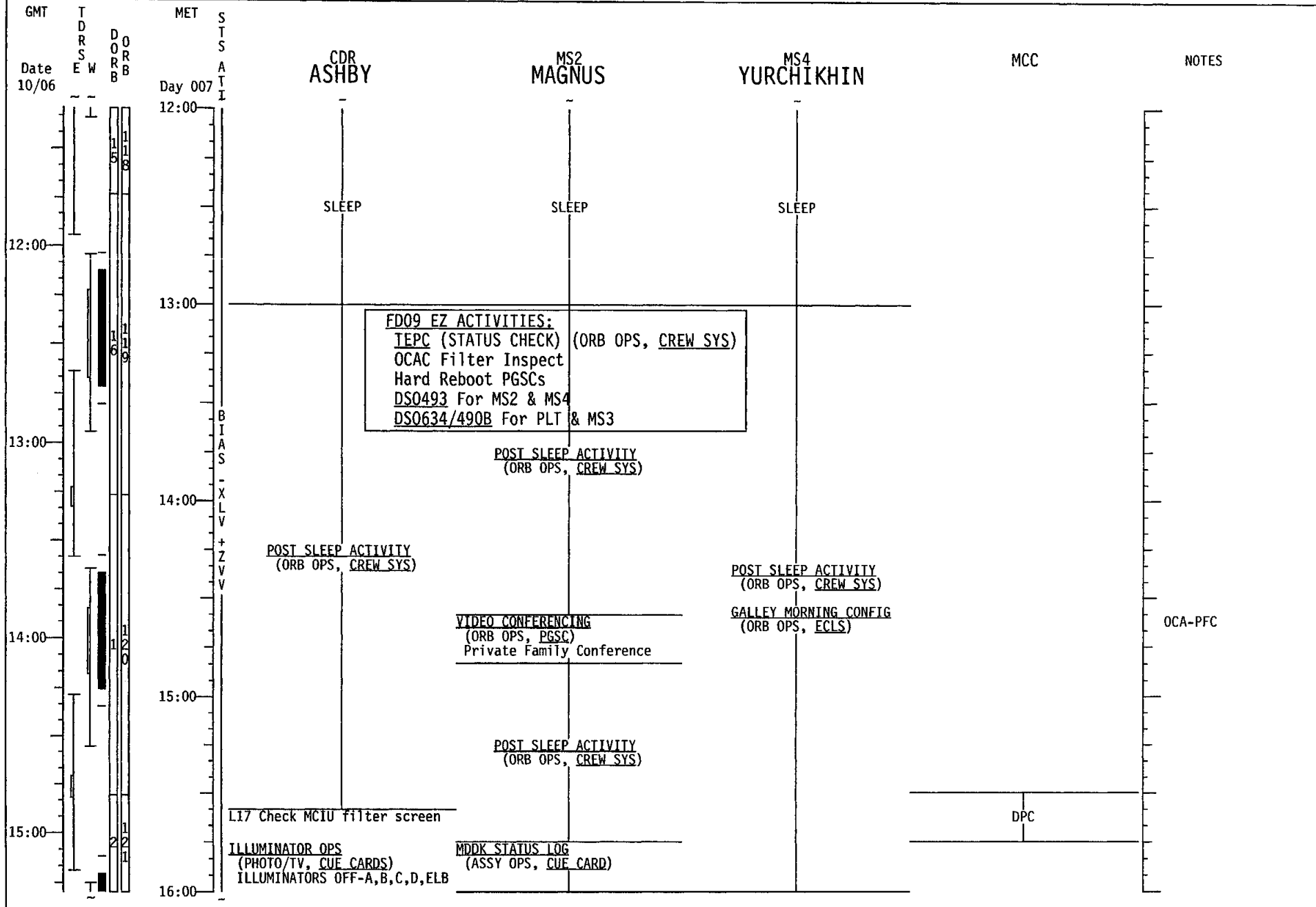
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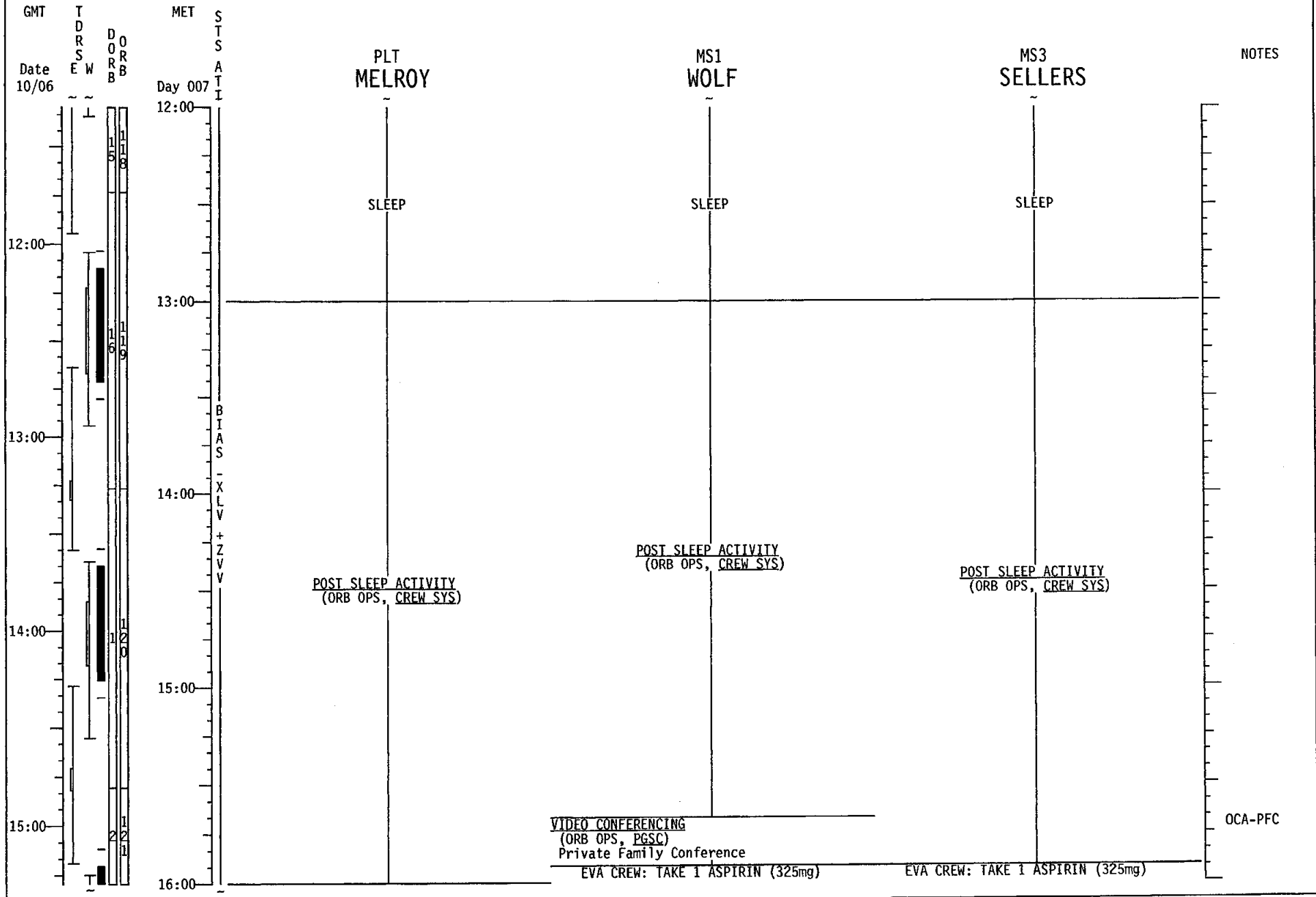
STS-112 (FD08)



STS-112 (FD09)



STS-112 (FD09)



STS-112 (FD09)

GMT Date 10/06	TDRSEW DORRB	MET Day 007	STA I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div> </div>	<div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div>	<div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div>	<div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div>	<div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">16:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">17:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">18:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">19:00</div> <div style="margin-bottom: 10px;">20:00</div> </div>

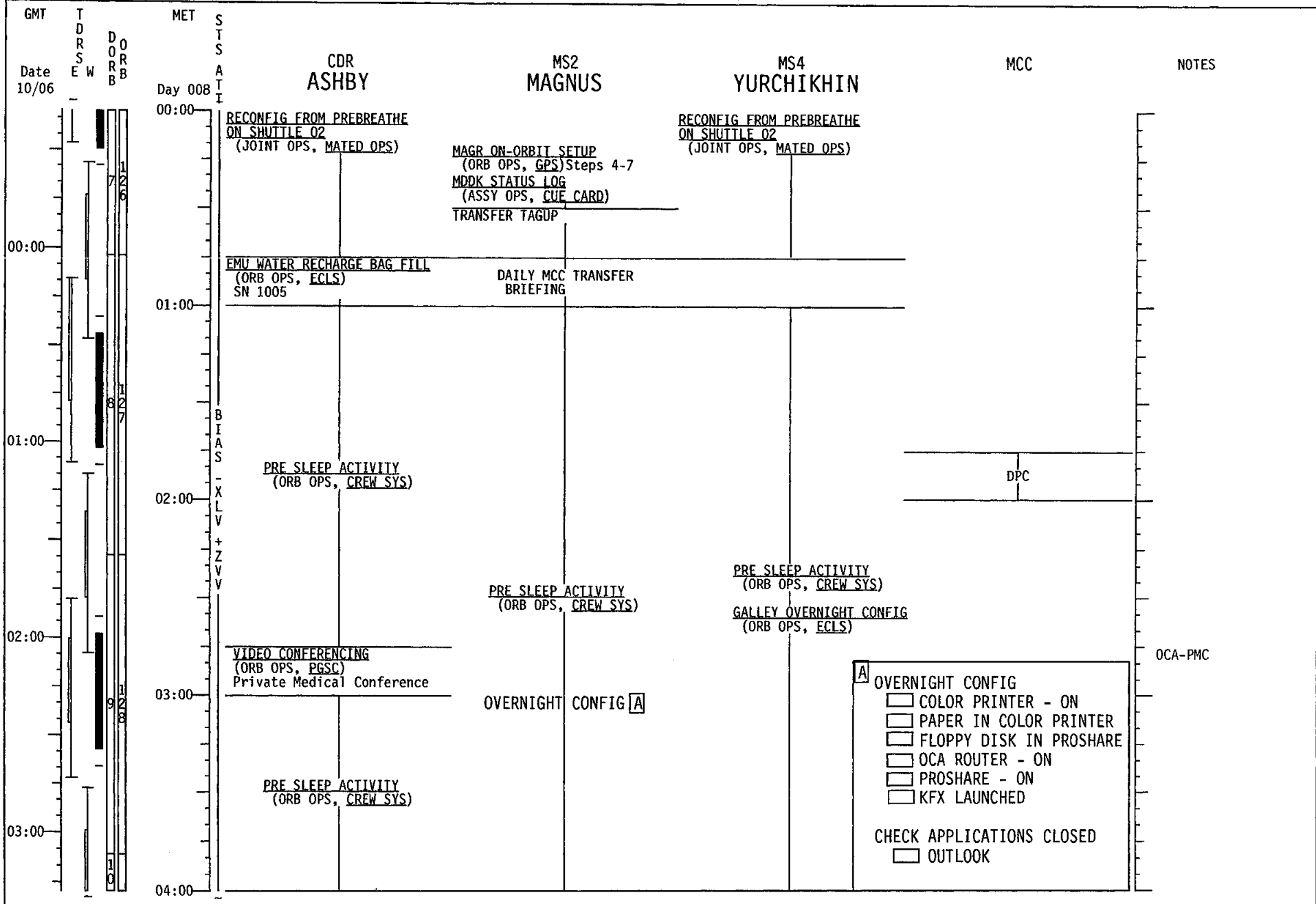
STS-112 (FD09)

GMT Date 10/06	TDRS E W	DOORB B	MET Day 007	STS A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
16:00								
17:00								
18:00					OFF DUTY	OFF DUTY	OFF DUTY	
19:00								
20:00								

STS-112 (FD09)

GMT Date 10/06	TDRSEW DORRB	MET Day 007	STS ATTI	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
20:00				MEAL	MEAL	MEAL		
21:00				SHUTTLE/ISS NITROGEN TRANSFER TERM (JOINT OPS, MATED OPS)	CGBA TRANSFER MDDK TO ISS (ASSY OPS, POWERED)	SHUTTLE/ISS H2O CNTR FILL#15 (ORB OPS, ECLS) INIT Use SN 1023 minerals & Ag, samples req'd.		
21:00			B I A S			SHUTTLE/ISS NITROGEN TRANSFER TERM (JOINT OPS, MATED OPS)		
22:00			X L V	RNDZ TOOLS CHECKOUT (RNDZ, RNDZ TOOLS)	EXERCISE	TRANSFER OPS Ref. TRANSFER LIST & MSGXXX		UPLINK TGT SV
22:00			+ Z V V			SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		
22:00					TRANSFER OPS Ref. TRANSFER LIST & MSGXXX	SHUTTLE/ISS H2O CNTR FILL#16 (ORB OPS, ECLS) INIT Use SN 1024 minerals & Ag, samples req'd.		
23:00				EXERCISE		EXERCISE		
23:00						SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		
00:00								

STS-112 (FD09)



STS-112 (FD09)

GMT Date 10/06	T D R S E W	D O O R B	MET Day 008	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
			00:00		TRANSFER OPS Ref. TRANSFER LIST & MSGXXX		EXERCISE	
			00:00			EXERCISE	CWC TRANSFER (2 BAGS) Transfer 2 CWC bags to ISS.	
			01:00		ILLUMINATOR OPS (PHOTO/TV, CUE CARDS) ILLUMINATORS ON - A,B,C,D,ELB			
			02:00		PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	
			03:00					
			04:00					

STS-112 (FD09)

GMT Date 10/07	TDRS E W	DOORB B	MET Day 008	STS A T I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES	
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">04:00</div> <div style="margin-bottom: 10px;">05:00</div> <div style="margin-bottom: 10px;">06:00</div> <div style="margin-bottom: 10px;">07:00</div> <div style="margin-bottom: 10px;">08:00</div> </div>

CDR
ASHBY

MS2
MAGNUS

MS4
YURCHIKHIN

MCC

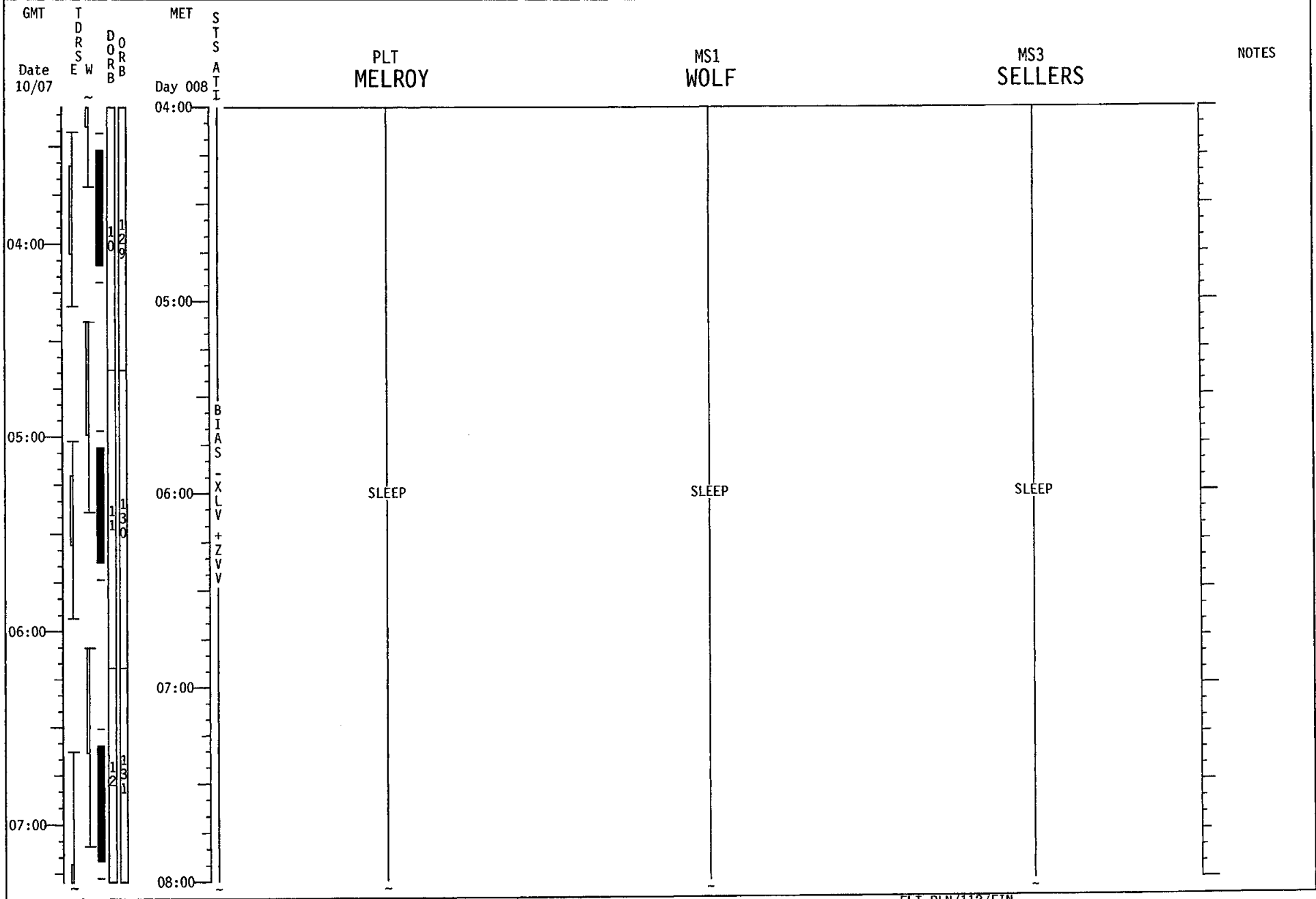
NOTES

SLEEP

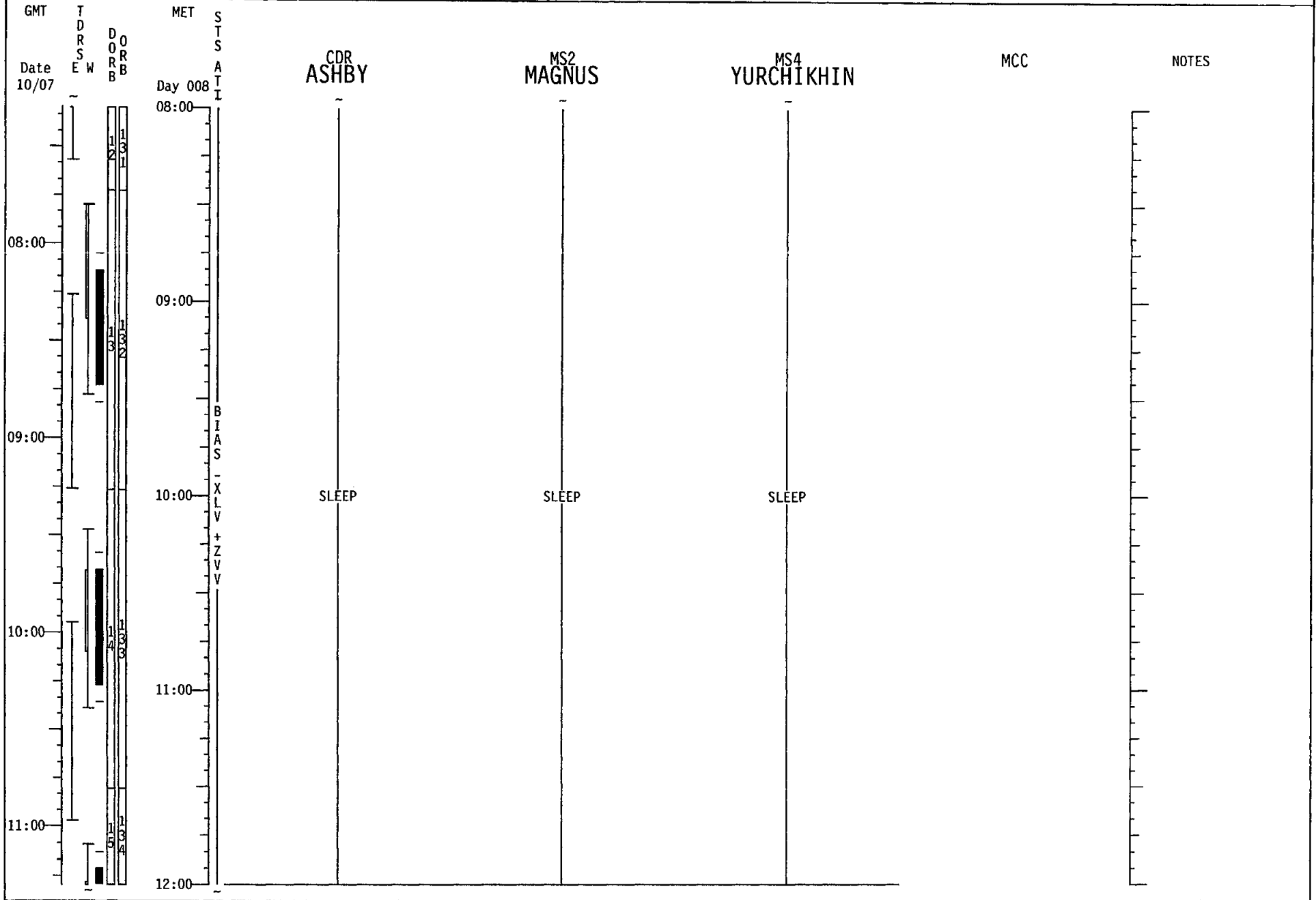
SLEEP

SLEEP

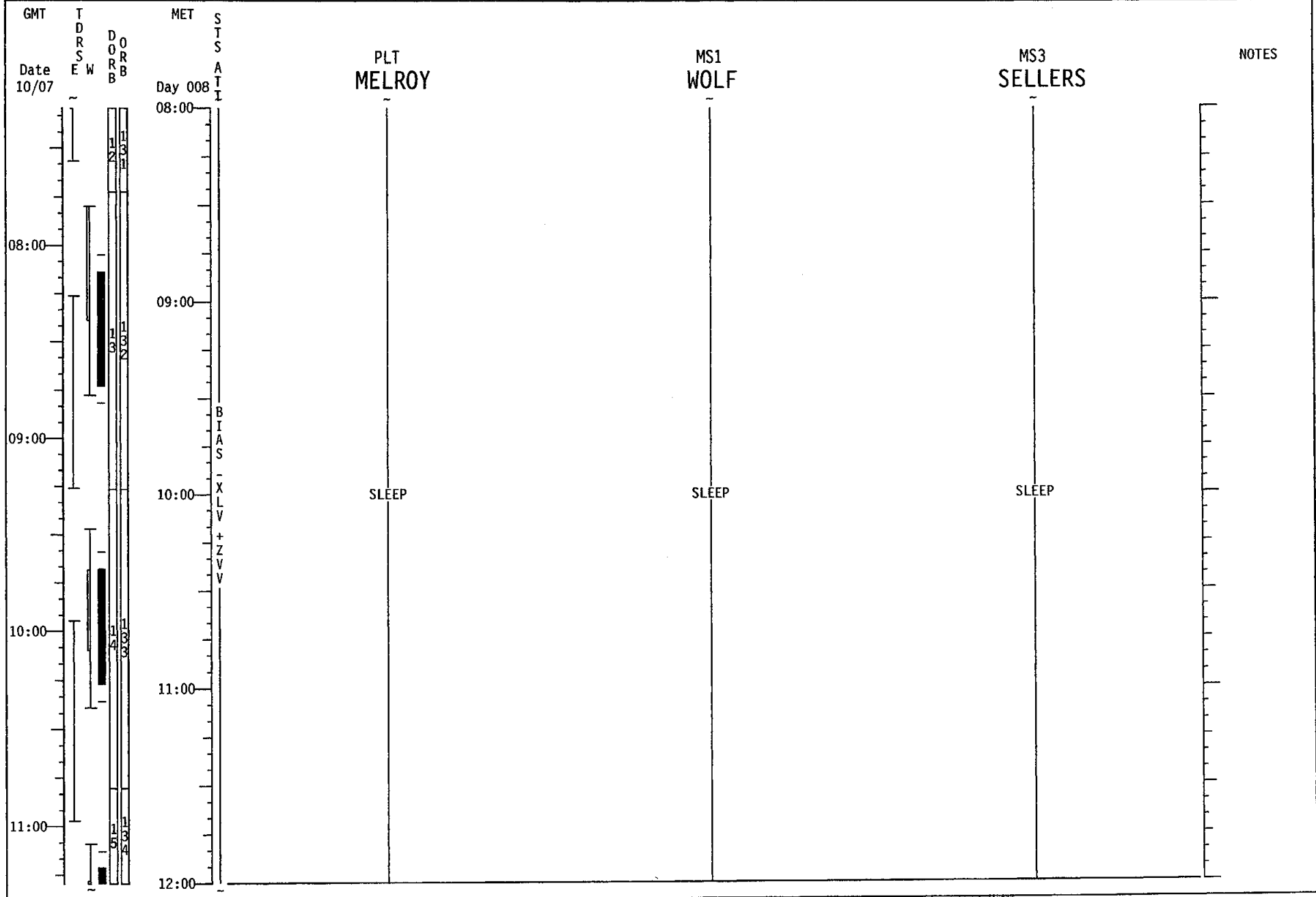
STS-112 (FD09)



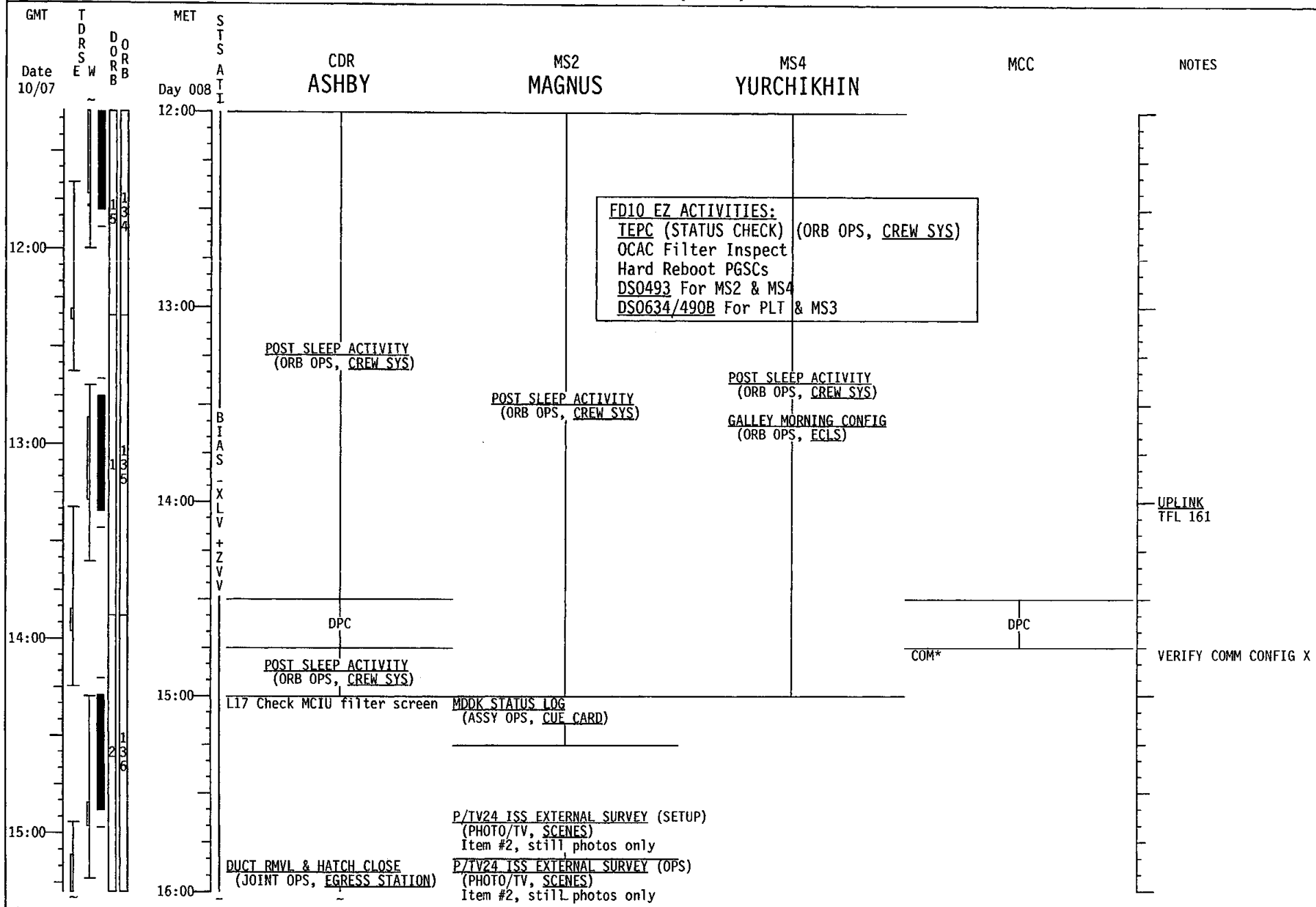
STS-112 (FD10)



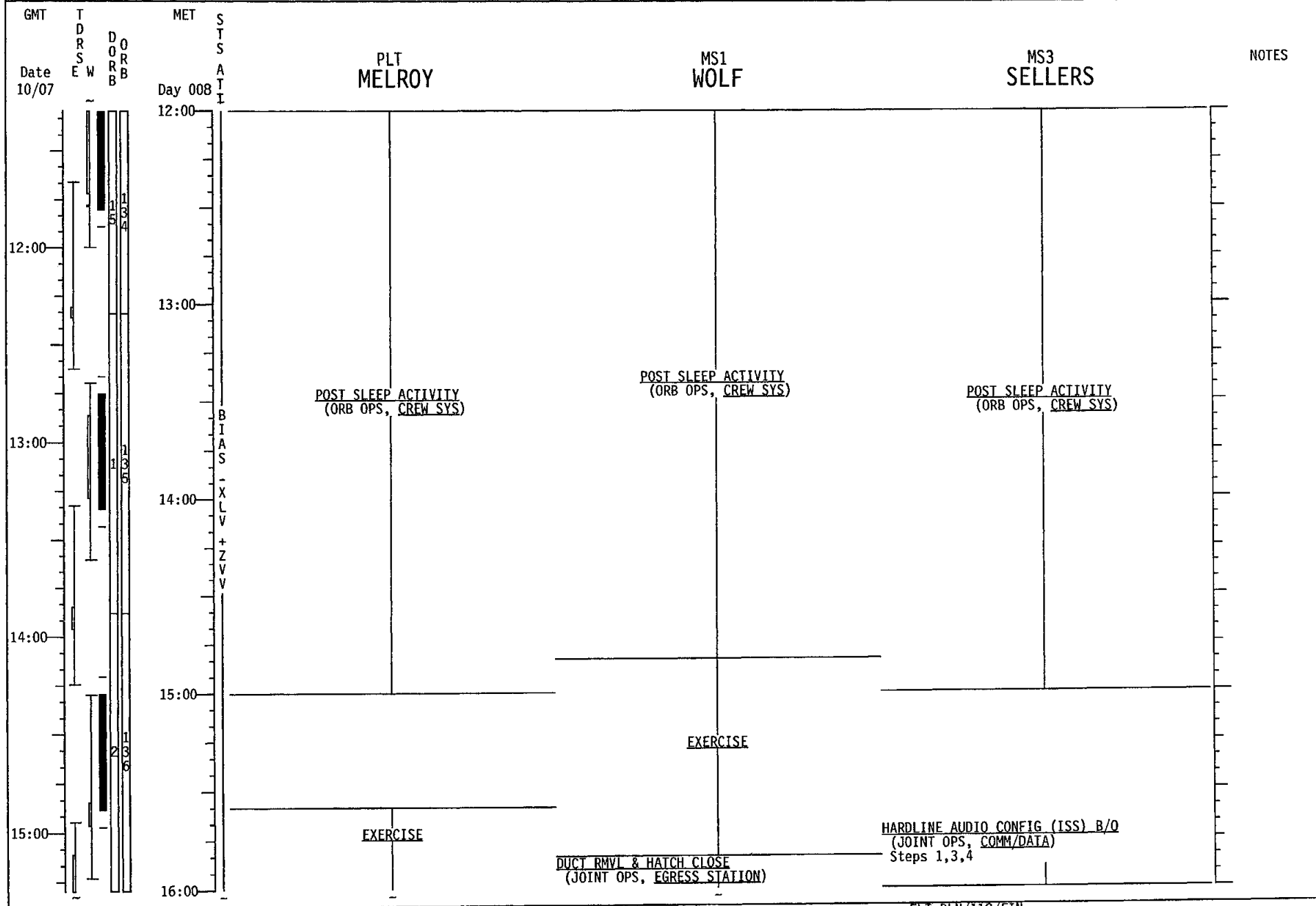
STS-112 (FD10)



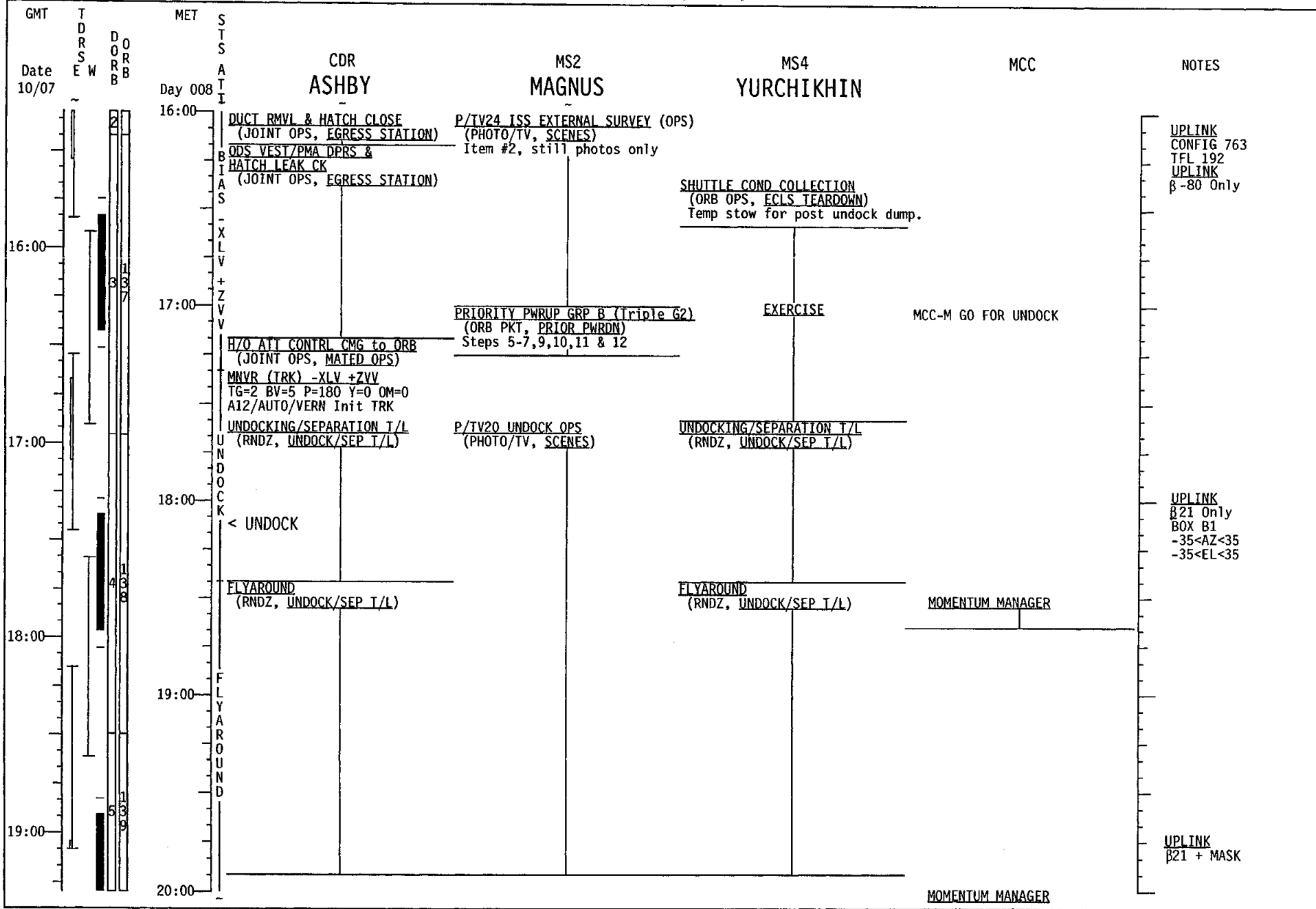
STS-112 (FD10)



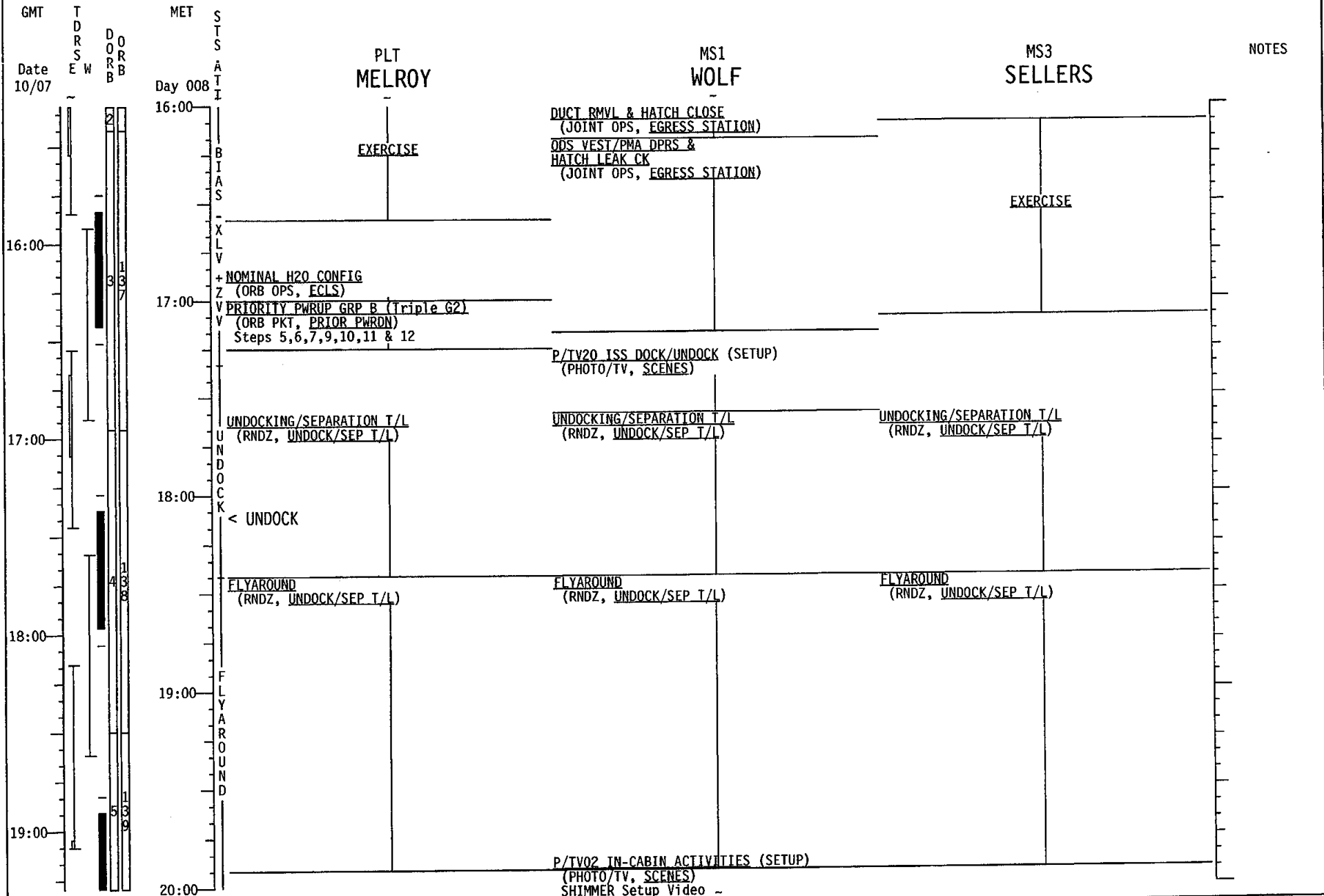
STS-112 (FD10)



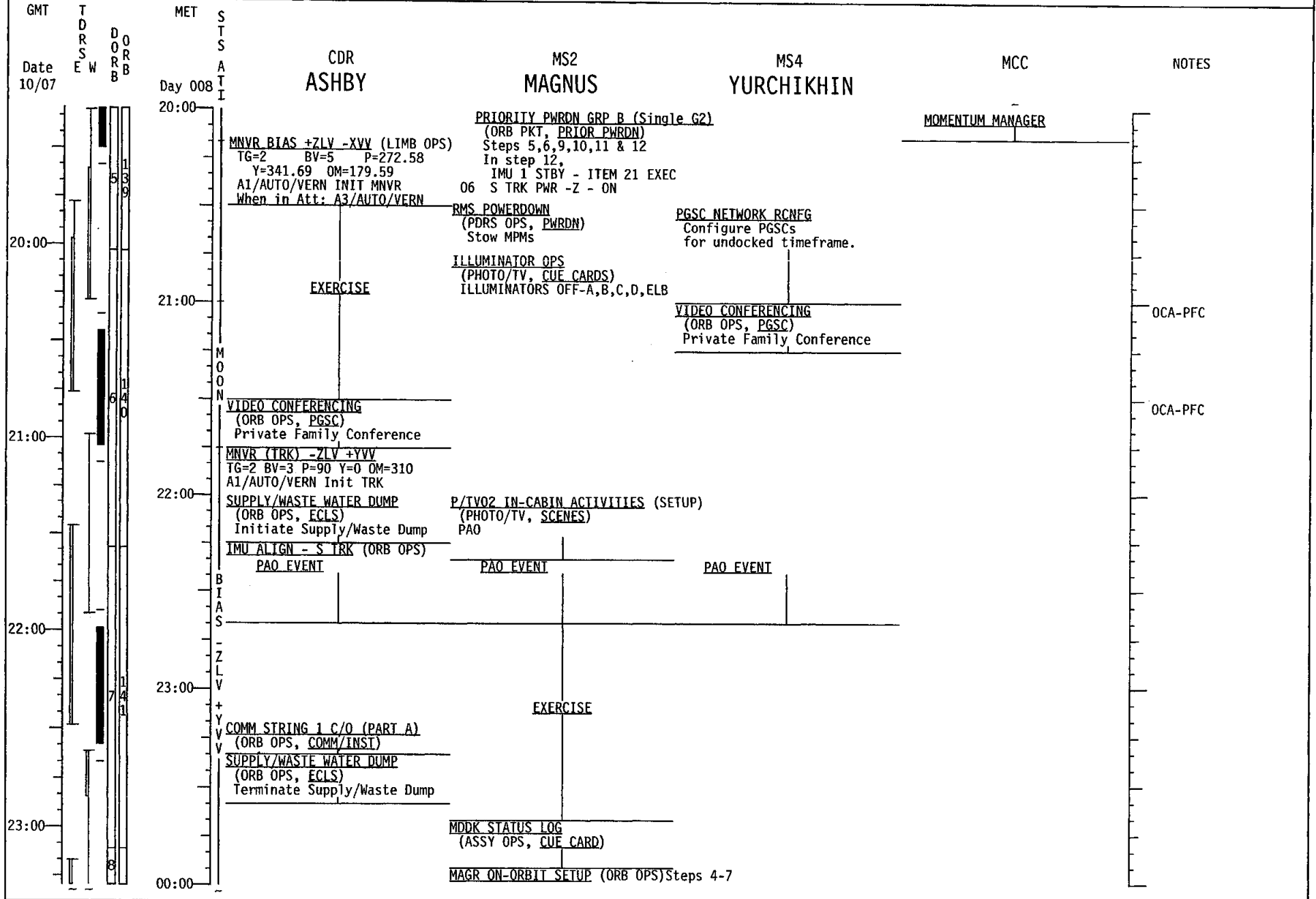
STS-112 (FD10)



STS-112 (FD10)



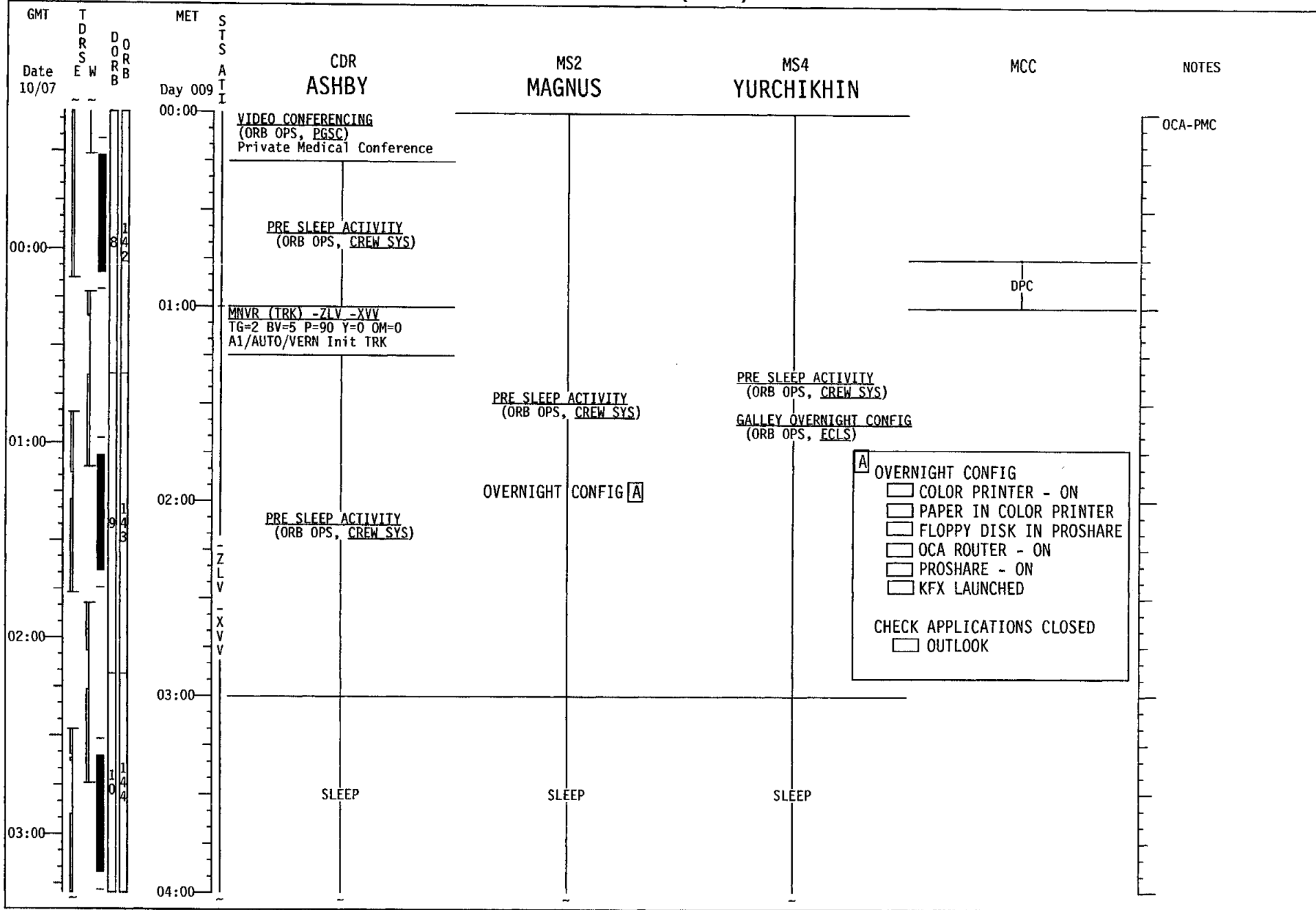
STS-112 (FD10)



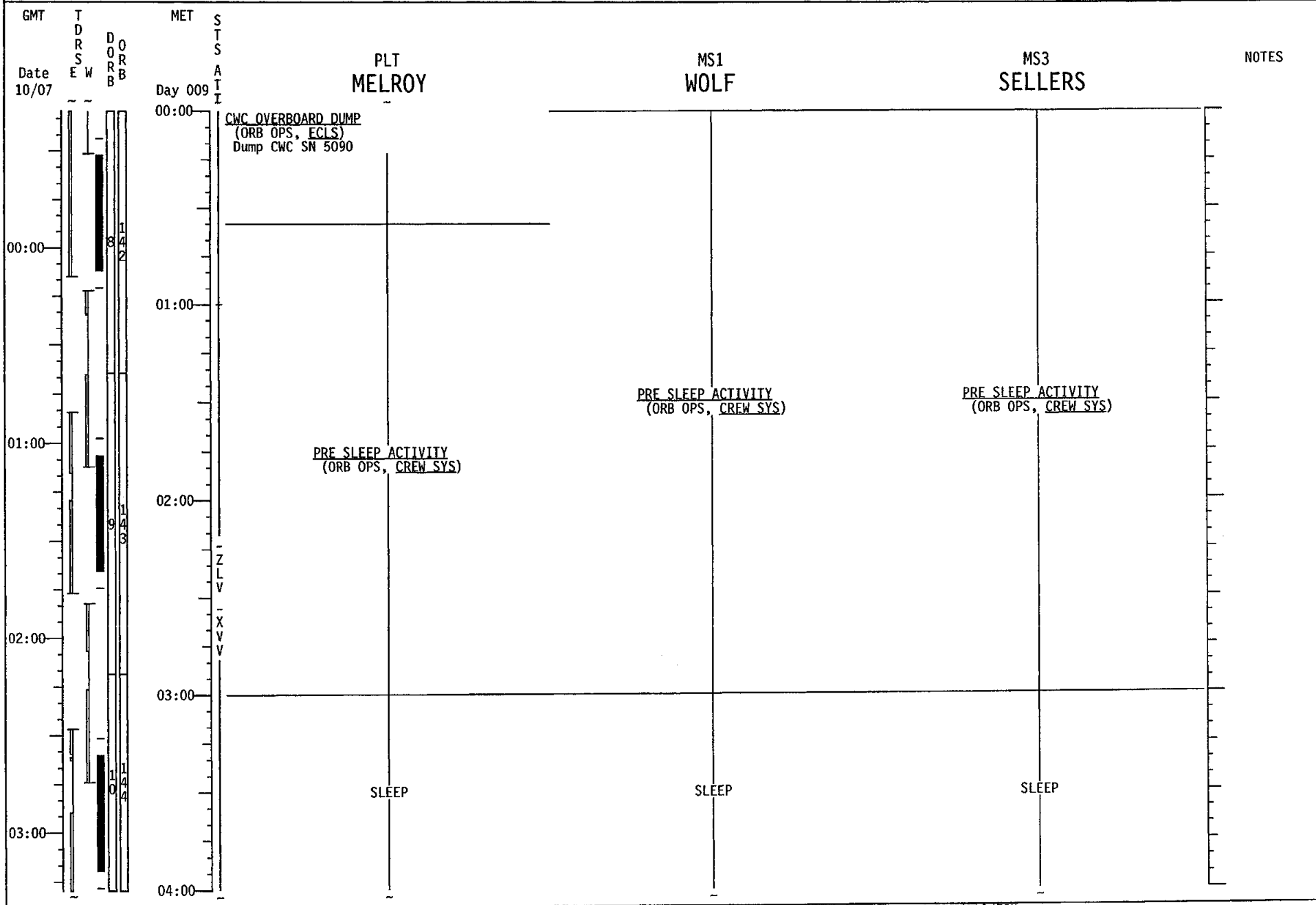
STS-112 (FD10)

GMT	TDRS EW	DORB	MET	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 10/07			Day 008		<u>PRIORITY PWRDN GRP B (Single G2)</u> (ORB PKT, PRIOR PWRDN) Steps 5,6,9,10,11 & 12 In step 12, IMU 1 STBY - ITEM 21 EXEC	<u>P/TV02 IN-CABIN ACTIVITIES (SETUP)</u> (PHOTO/TV, SCENES) SHIMMER Setup Video	<u>SSOR DEACTIVATION (JOINT OPS, COMM/DATA)</u>	
			20:00		06 S TRK PWR -Z - ON] <u>ACTIVATION</u> (CUE CARD, PLAYBACK)	<u>SHIMMER INSTALLATION</u> (ASSY OPS, SHIMMER)	<u>QIU DEACTIVATION (ORB OPS, QIU PROC)</u> MCC will deact PSP expect BCE BYP PSP msg	<u>UPLINK PSP DEACT</u>
			20:00		<u>PLBK (CUE CARD, PLAYBACK)</u> KU TDRW (20:20 - 21:00)	<u>SHIMMER ACTIVATION</u> (ASSY OPS, SHIMMER)	<u>PGSC NETWORK RCNEG</u> Configure PGSCs for undocked timeframe.	
			20:00		<u>SHIMMER LIMB OBSERVATION</u> (ASSY OPS, SHIMMER)	<u>SHIMMER LIMB OBSERVATION</u> (ASSY OPS, SHIMMER)		
			21:00		<u>MNVR (TRK) MOON</u> TG=5 BV=5 P=0 Y=277.76 OM=169.40 RA=223.26 DEC= -15.33 A1/AUTO/VERN INIT TRK	<u>SHIMMER MOON OBSERVATION</u> (ASSY OPS, SHIMMER)		
			21:00	M O O N	<u>SHIMMER MOON OBSERVATION</u> (ASSY OPS, SHIMMER)			
			22:00			<u>SHIMMER DEACTIVATION</u> (ASSY OPS, SHIMMER)		
			22:00			<u>SHIMMER STOW</u> (ASSY OPS, SHIMMER)		
			22:00	B I A S			<u>PAO EVENT</u>	
			22:00			<u>POST EVA 3 EMU RECONFIG</u> (EVA FS, AIRLOCK CONFIG)	<u>POST EVA 3 EMU RECONFIG</u> (EVA FS, AIRLOCK CONFIG)	
			23:00	Z L V		<u>POST EVA ENTRY PREP</u> (EVA, POST EVA ENTRY PREP)	<u>POST EVA ENTRY PREP</u> (EVA, POST EVA ENTRY PREP)	
			23:00	+ Y V V				
			23:00		<u>CWC OVERBOARD DUMP</u> (ORB OPS, ECLS) Dump CWC SN 5090			
			00:00					

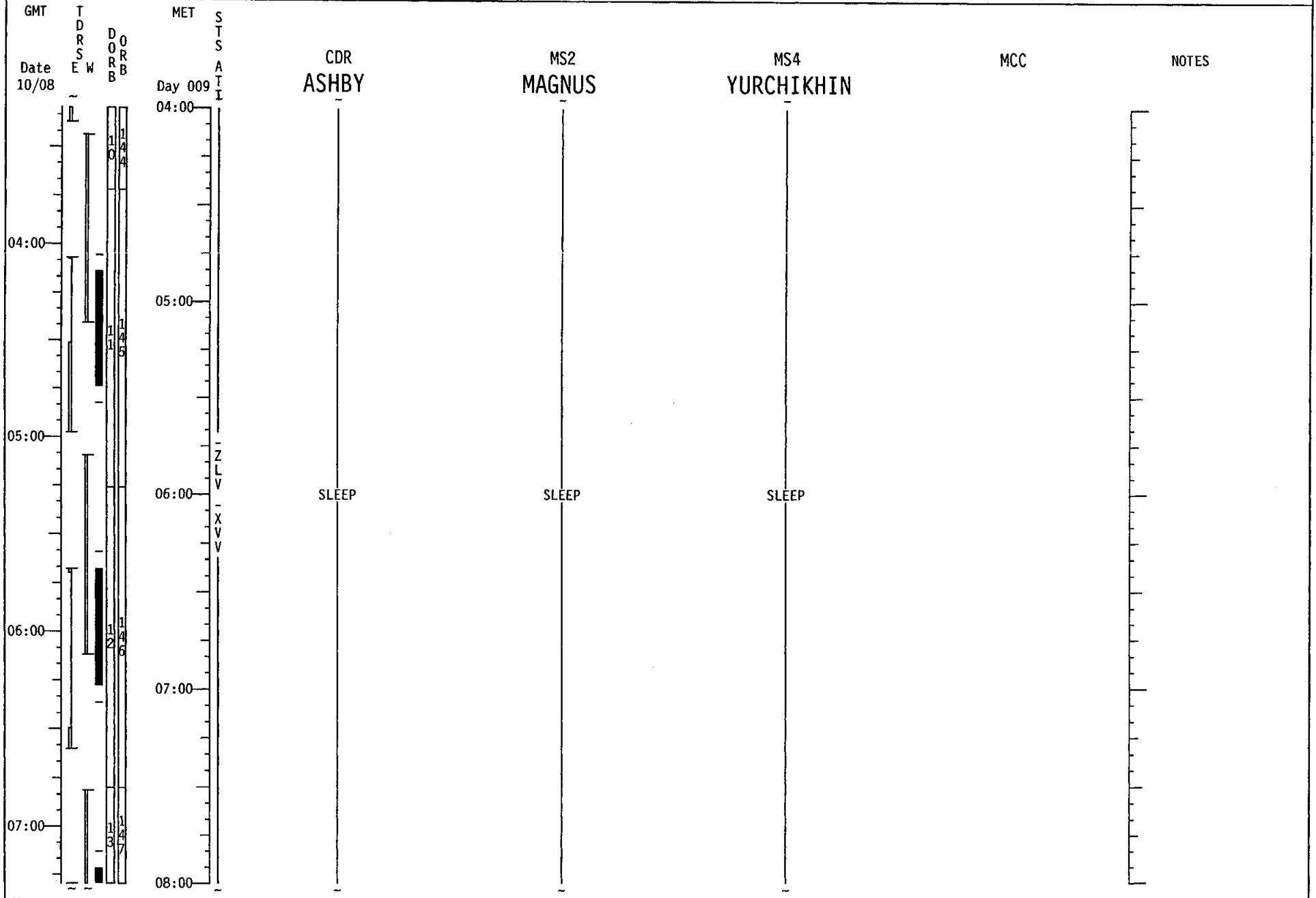
STS-112 (FD10)



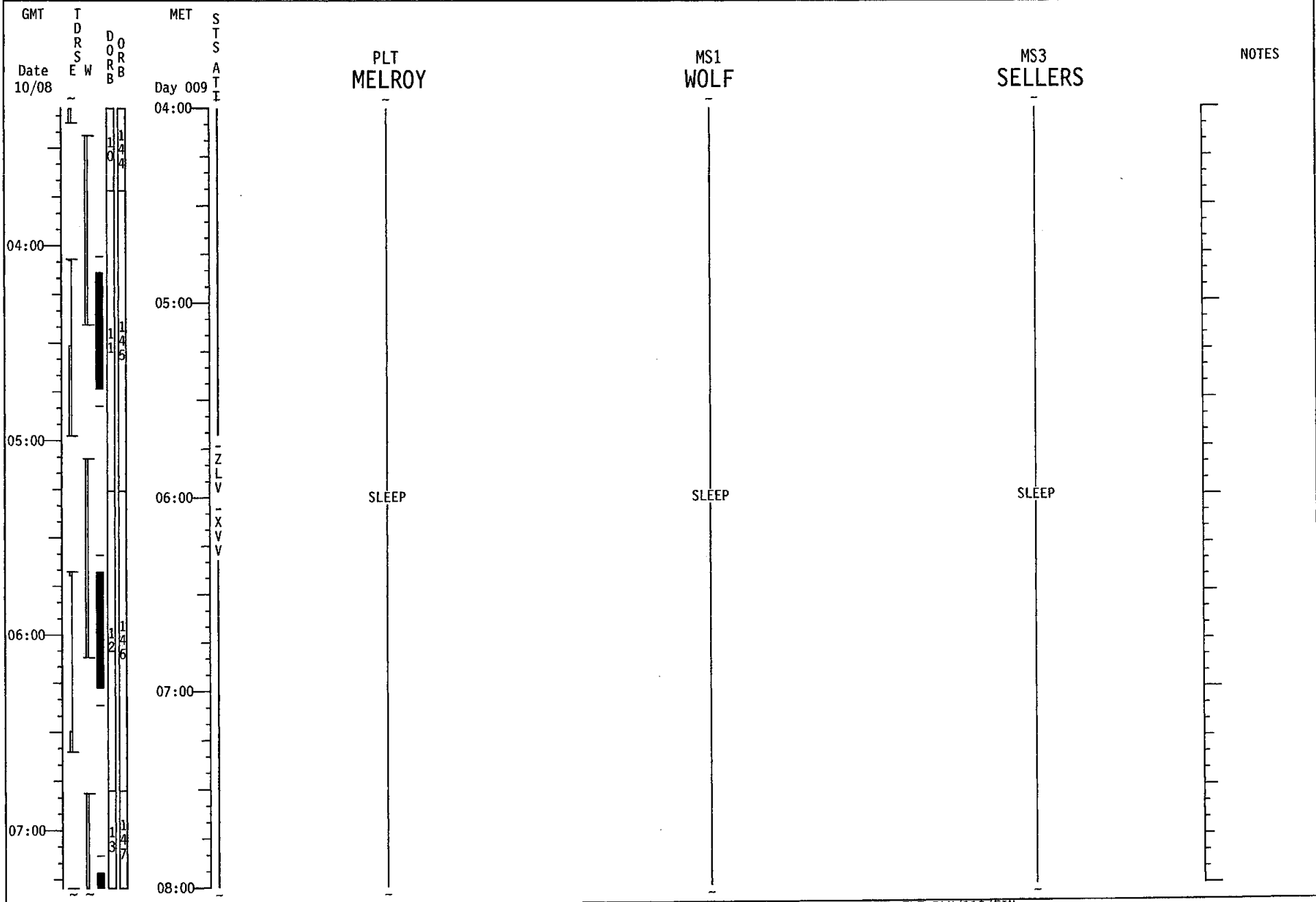
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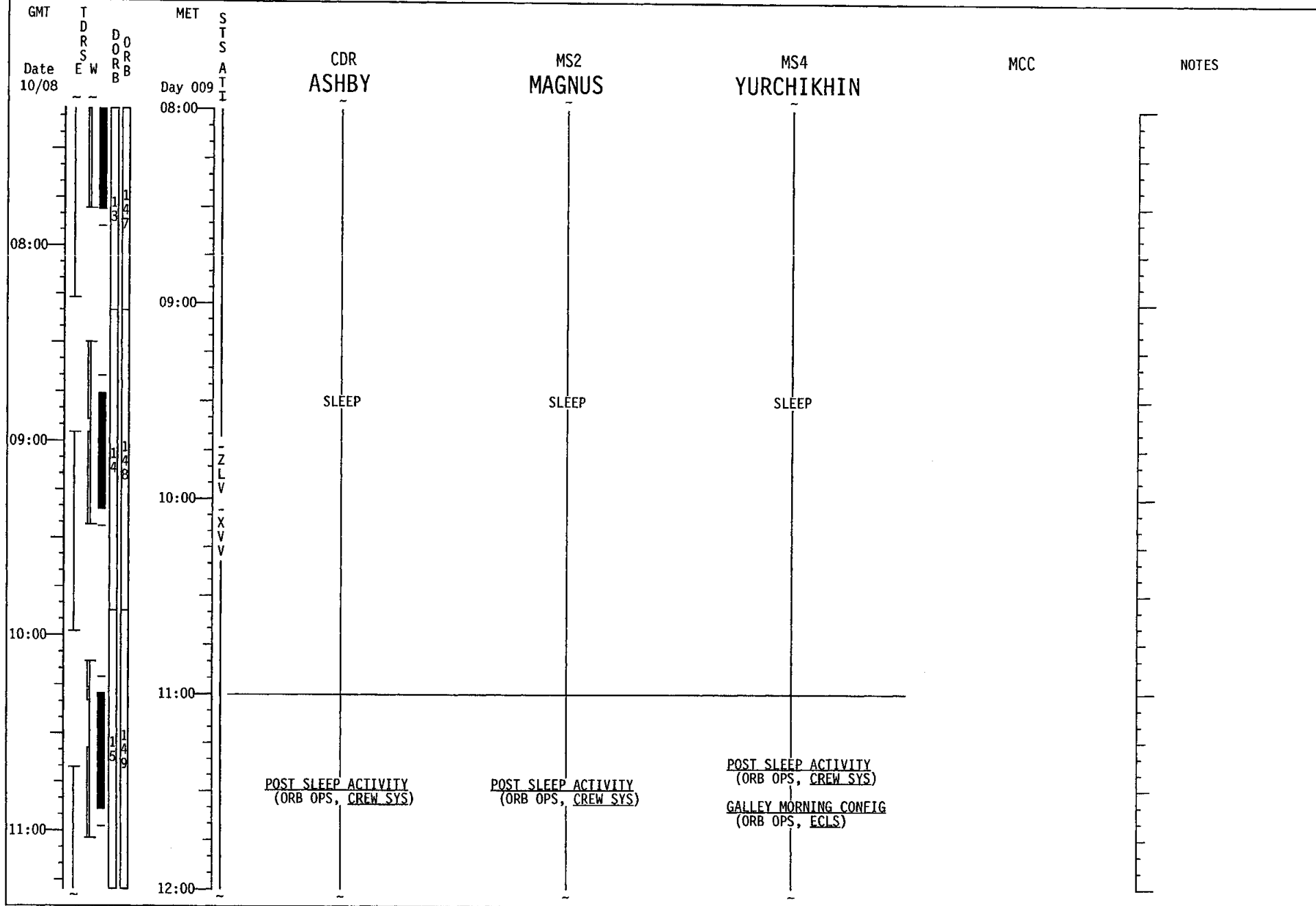
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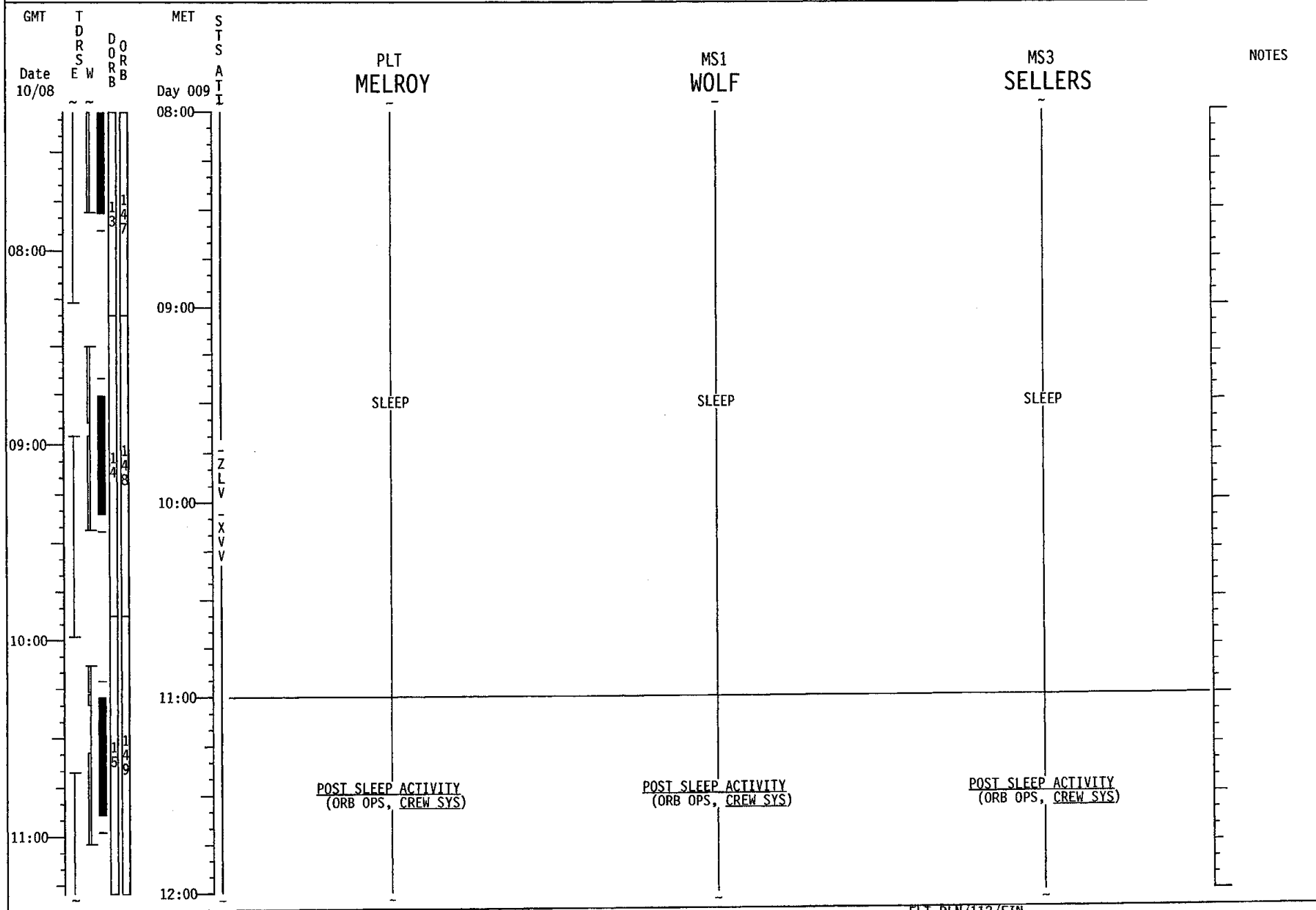
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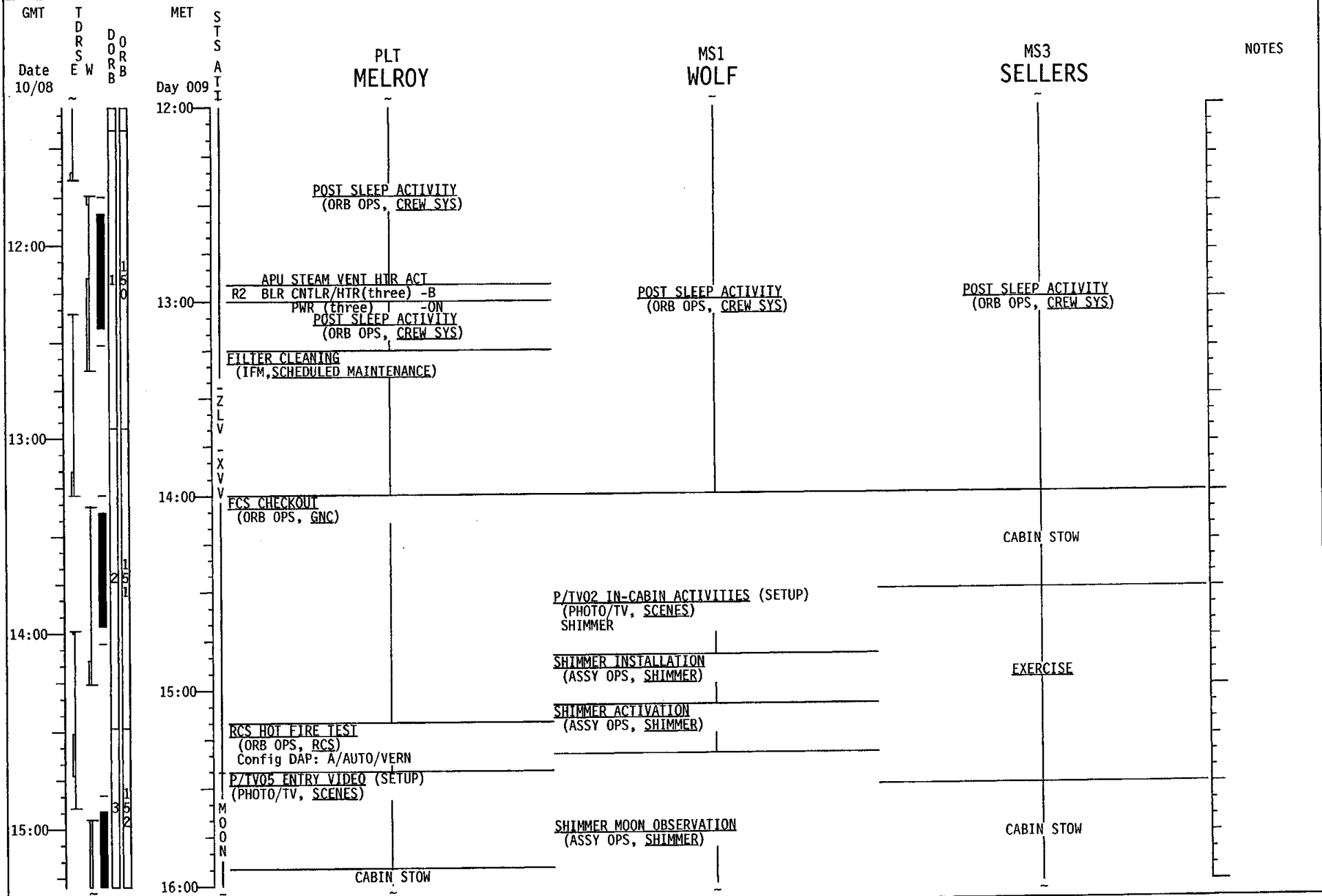
STS-112 (FD10)



STS-112 (FD10)



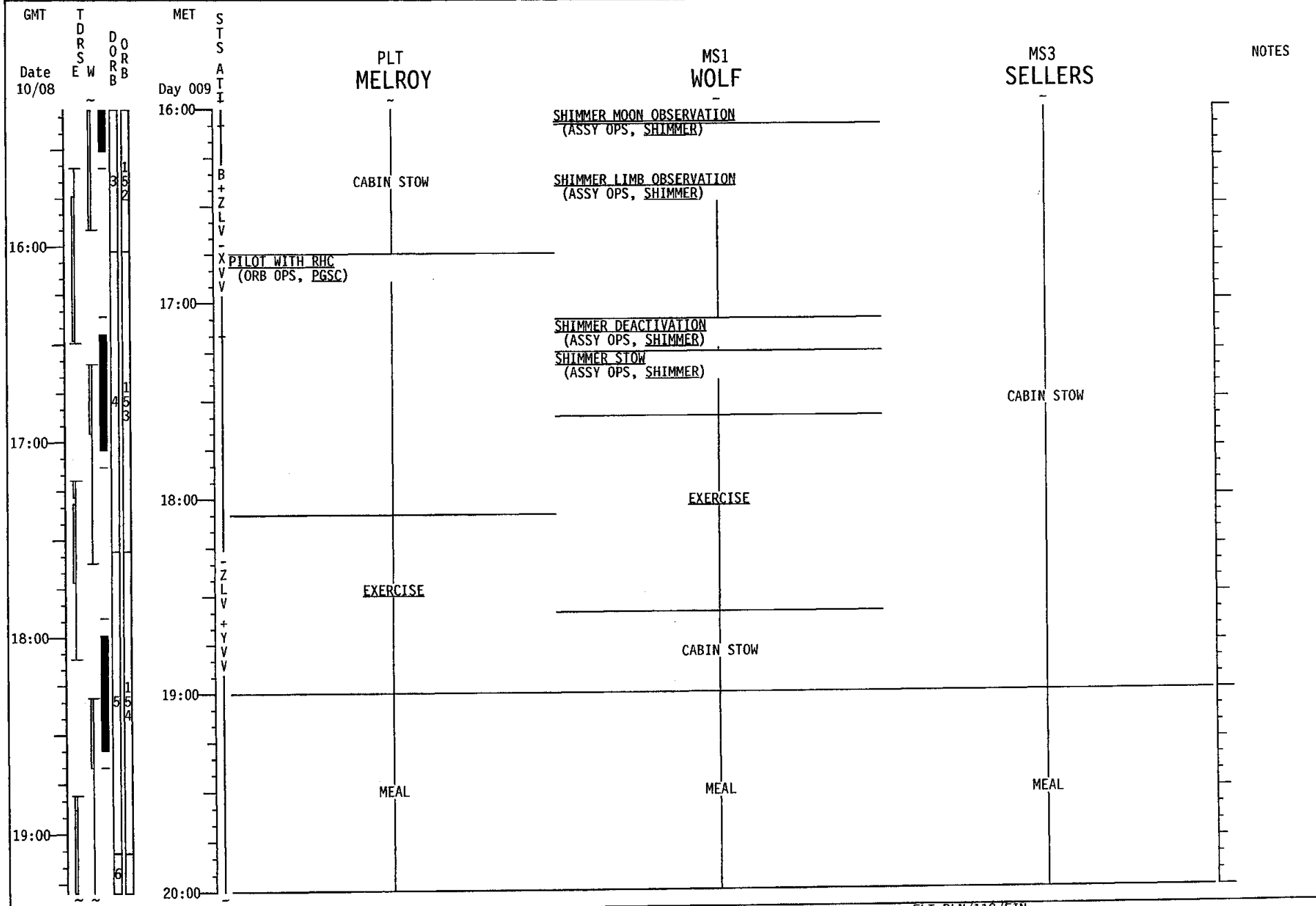
STS-112 (FD11)



STS-112 (FD11)

GMT	TDRSEW	DORBB	MET	S S A T I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
Date 10/08			Day 009						
16:00		1			SHIMMER MOON OBSERVATION (ASSY OPS, SHIMMER)	EXERCISE			
		2			MNVR BIAS +ZLV -XVV (LIMB OPS) TG=2 BV=5 P=272.59 Y=341.62 OM=179.58 + A1/AUTO/VERN INIT MNVR Z When in Att: A3/AUTO/VERN				
16:00		3			SHIMMER LIMB OBSERVATION (ASSY OPS, SHIMMER)				
		4							
17:00		5			MNVR (TRK) -ZLV +YVV TG=2 BV=3 P=90 Y=0 OM=270 A1/AUTO/VERN Init TRK				
		6			PILOT WITH RHC (ORB OPS, PGSC)	CABIN STOW	CABIN STOW		
17:00						CABIN STOW			
18:00									
18:00					SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) Perform step 1				
19:00					MEAL				
19:00						MEAL	MEAL		
19:00					LANDING-1 COMM C/O (ORB OPS, COMM/INST)				
20:00									

STS-112 (FD11)



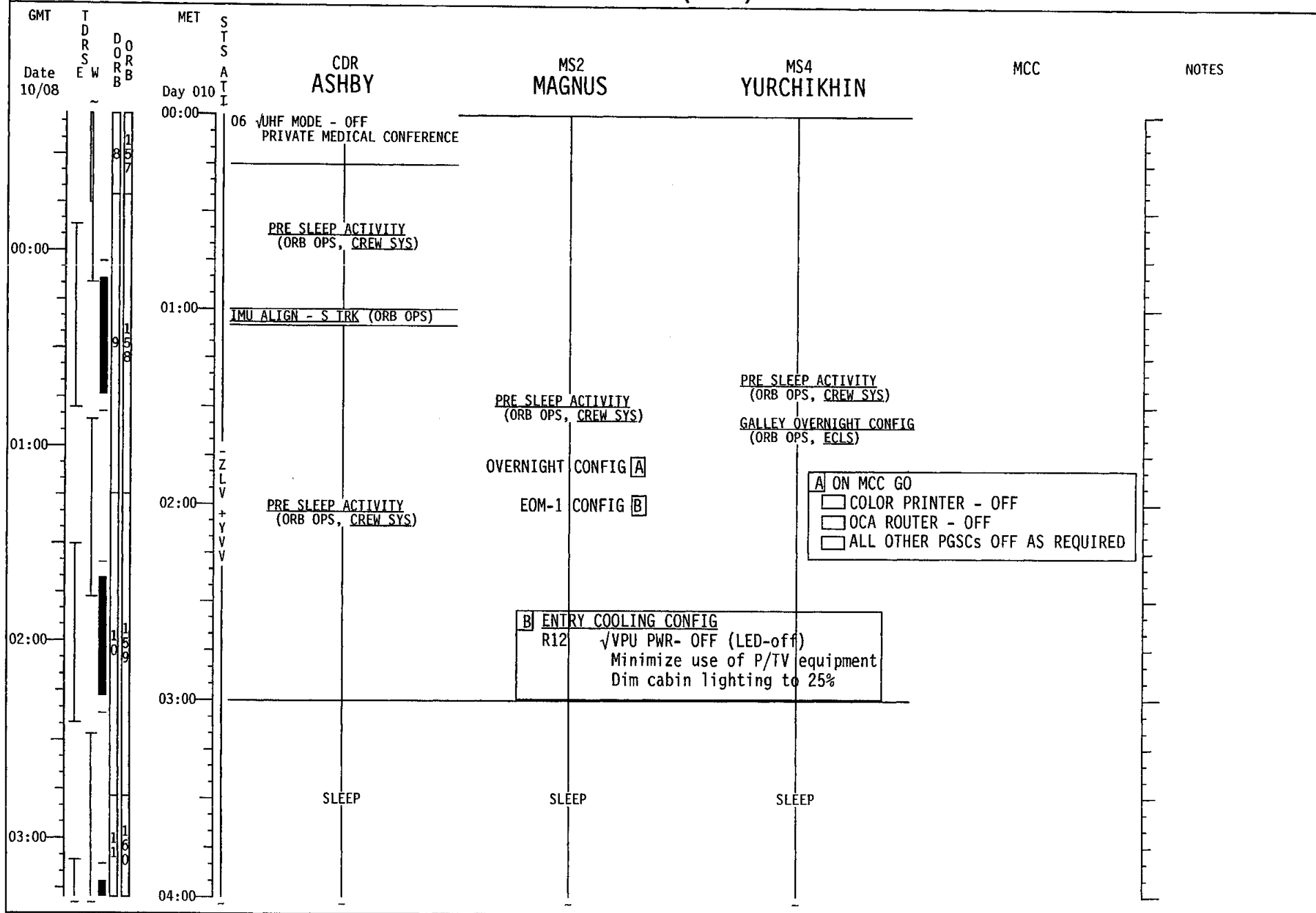
STS-112 (FD11)

GMT	T D R S E W	D O O R B B	MET	S T S A T I	CDR ASHBY	MS2 MAGNUS	MS4 YURCHIKHIN	MCC	NOTES
Date 10/08			Day 009						
			20:00		D/O PREP BRIEF	D/O PREP BRIEF	D/O PREP BRIEF		
					COMM STRING 1 C/O (PART B) (ORB OPS, COMM/INST)				
20:00					CABIN STOW	CABIN STOW	CABIN STOW		
			21:00		PAO EVENT	PAO EVENT	PAO EVENT		
21:00					CABIN STOW				
			22:00	Z L V + Y V V	SUPPLY WATER DUMP USING FES (ORB OPS, ELLS) Perform Step 2 w/FES reqd				
					CABIN STOW	CABIN STOW	CABIN STOW		
22:00					EXERCISE				
			23:00		LANDING-1 COMM C/O (ORB OPS, COMM/INST)				
						KU-BD ANT STOW (ORB OPS) MODEM MFX ACT (ORB OPS) MAGR ON-ORBIT SETUP (ORB OPS, GPS) Steps 4-7 MDDK STATUS LOG (ASSY OPS, CUE CARD)	CYCLE ERGOMETER OPS (ORB OPS, CREW SYS) RECONFIG/STOW		
23:00					CABIN STOW				
			00:00						

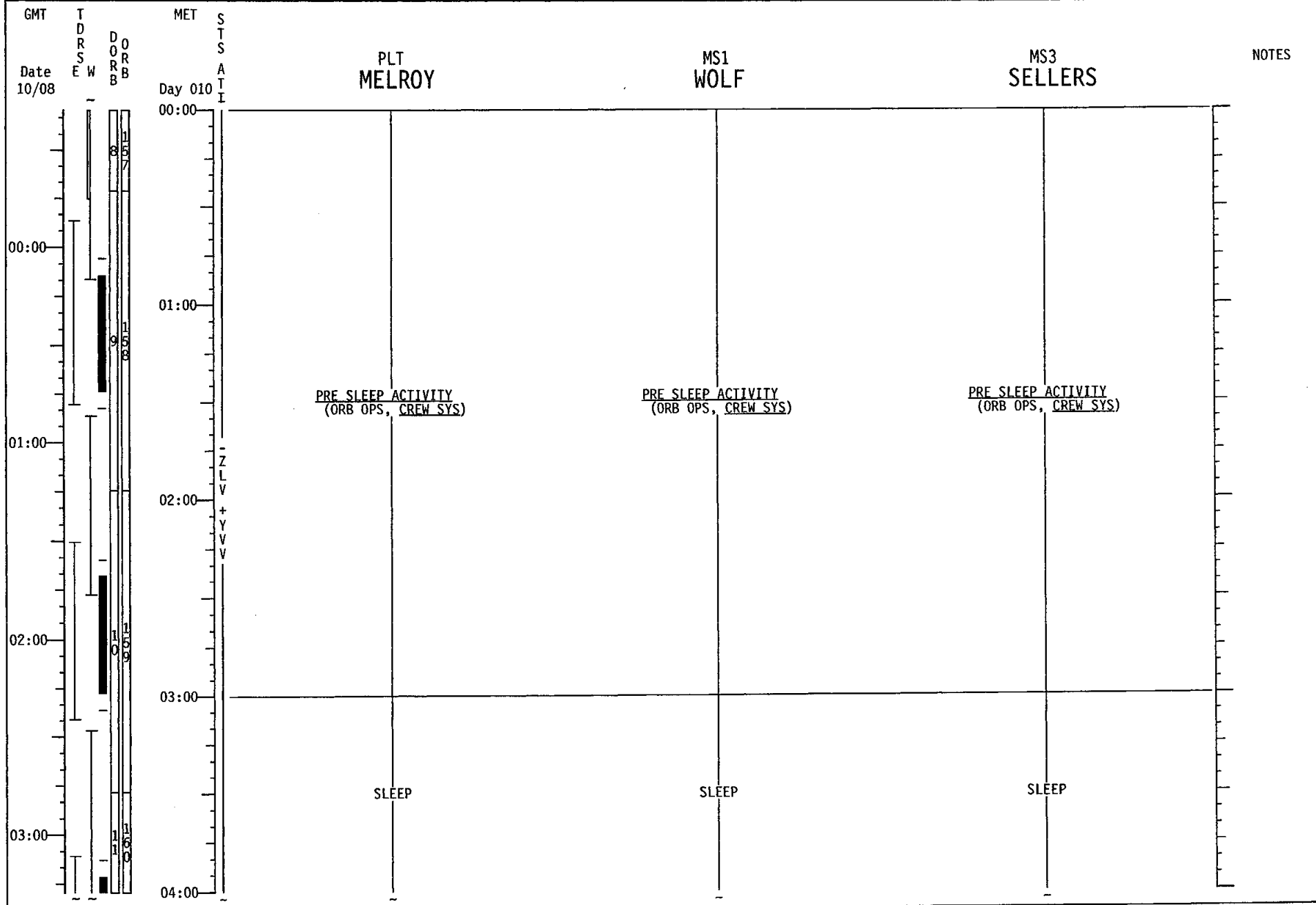
STS-112 (FD11)

GMT	T D R S E W	D O R B	MET	S T S A T I	PLT MELROY	MS1 WOLF	MS3 SELLERS	NOTES
Date 10/08			Day 009					
20:00					D/O PREP BRIEF	D/O PREP BRIEF	D/O PREP BRIEF	
20:00					CABIN STOW			
21:00					P/TVO2 IN-CABIN ACTIVITIES (SETUP) (PHOTO/TV, SCENES) PAO			
21:00					PAO EVENT	PAO EVENT	PAO EVENT	
21:00								
22:00					CABIN STOW			
22:00								
22:00						CABIN STOW		
23:00					P/TVO6 SSV (DEACT) (PHOTO/TV, SCENES)			
23:00								UPLINK TFL 161
23:00					CYCLE ERGOMETER OPS (ORB OPS, CREW SYS) RECONFIG/STOW			
23:00								
00:00								
								OCA S-BAND MODEM (MFX) ACTIVATION (ORB OPS, OCA)
								KU-BD ANT STOW (ORB OPS) MODEM MFX ACT (ORB OPS)
								PGSC STOW Stow STS PGSCs except for OCA ROUTER

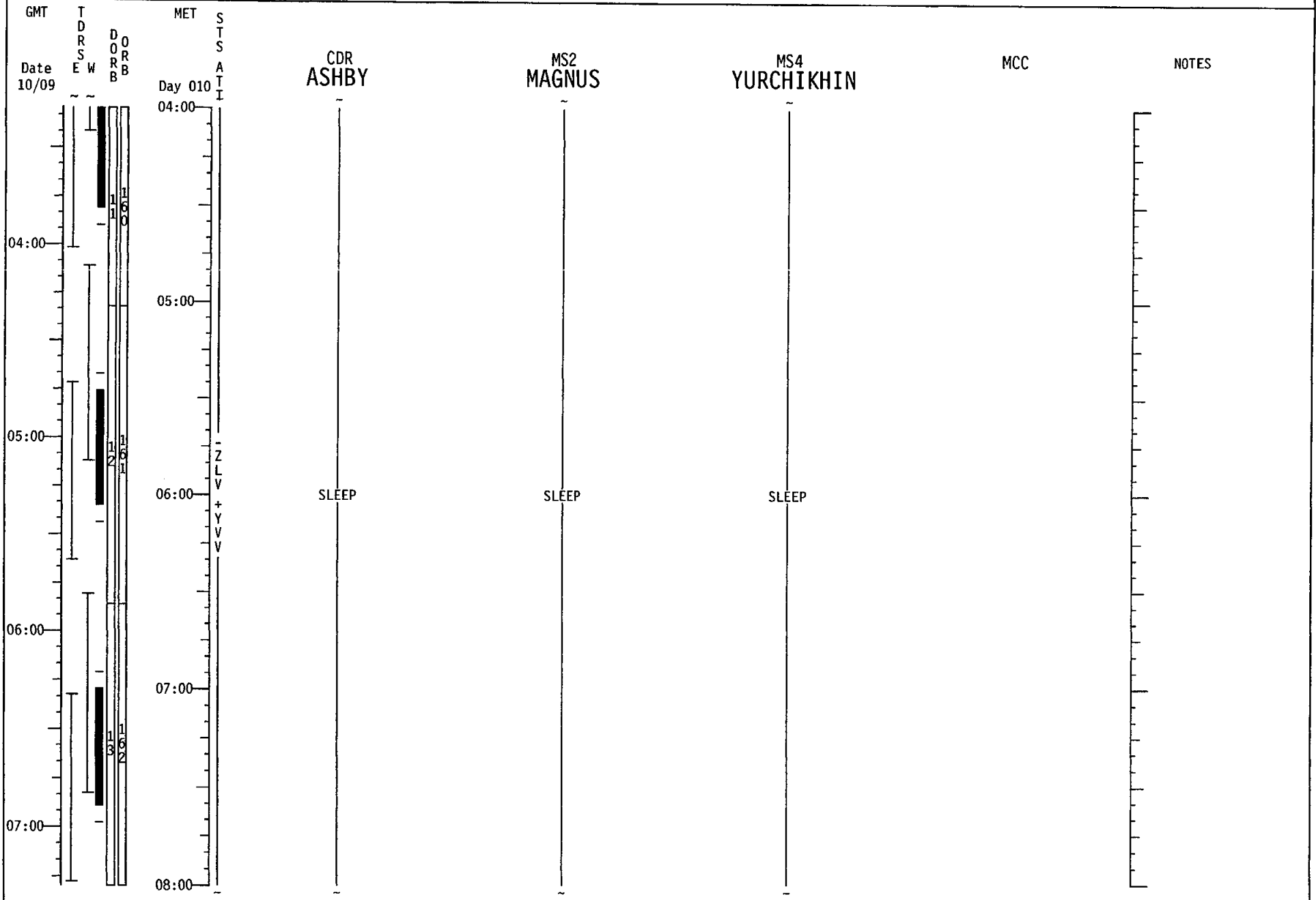
STS-112 (FD11)



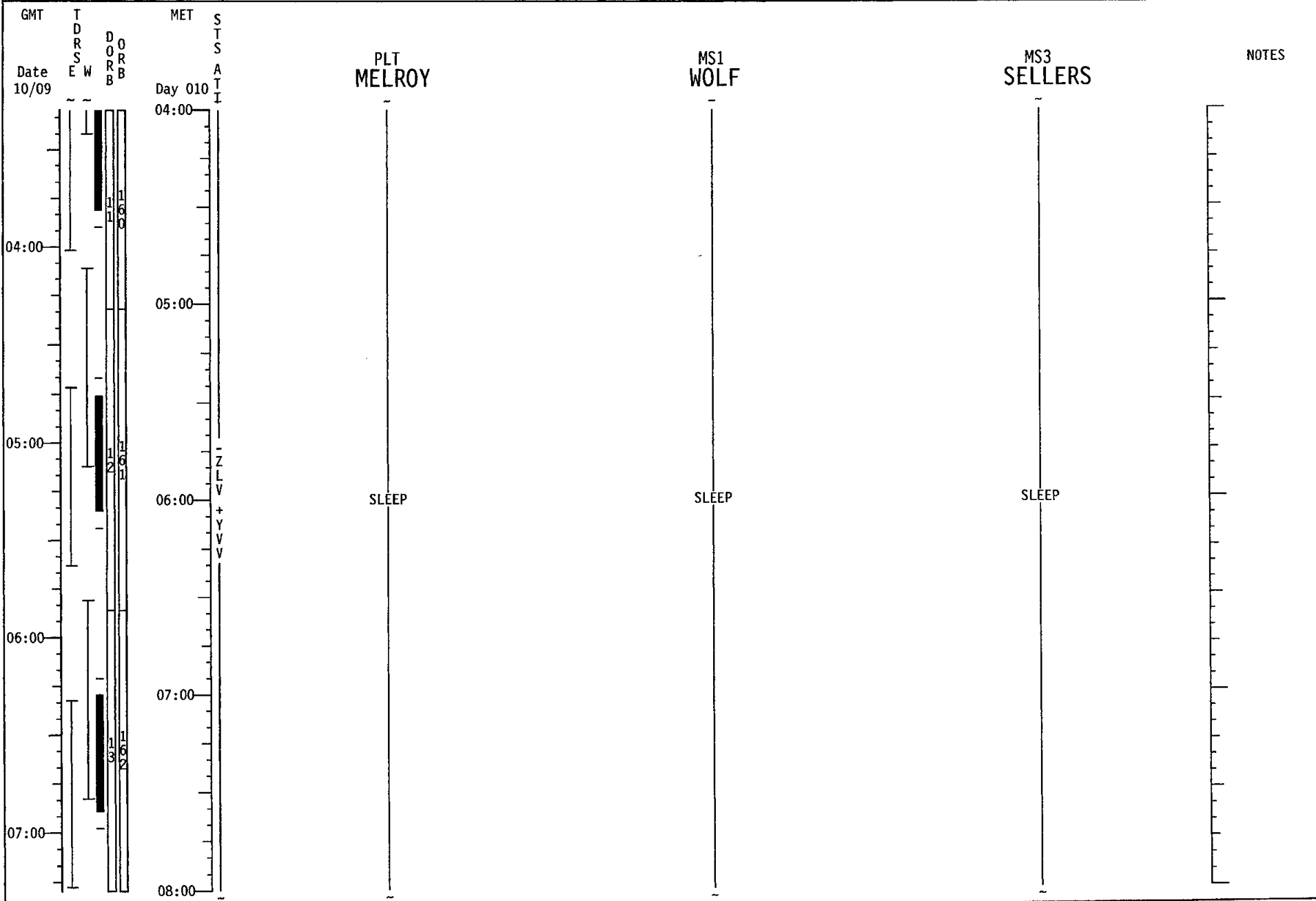
STS-112 (FD11)



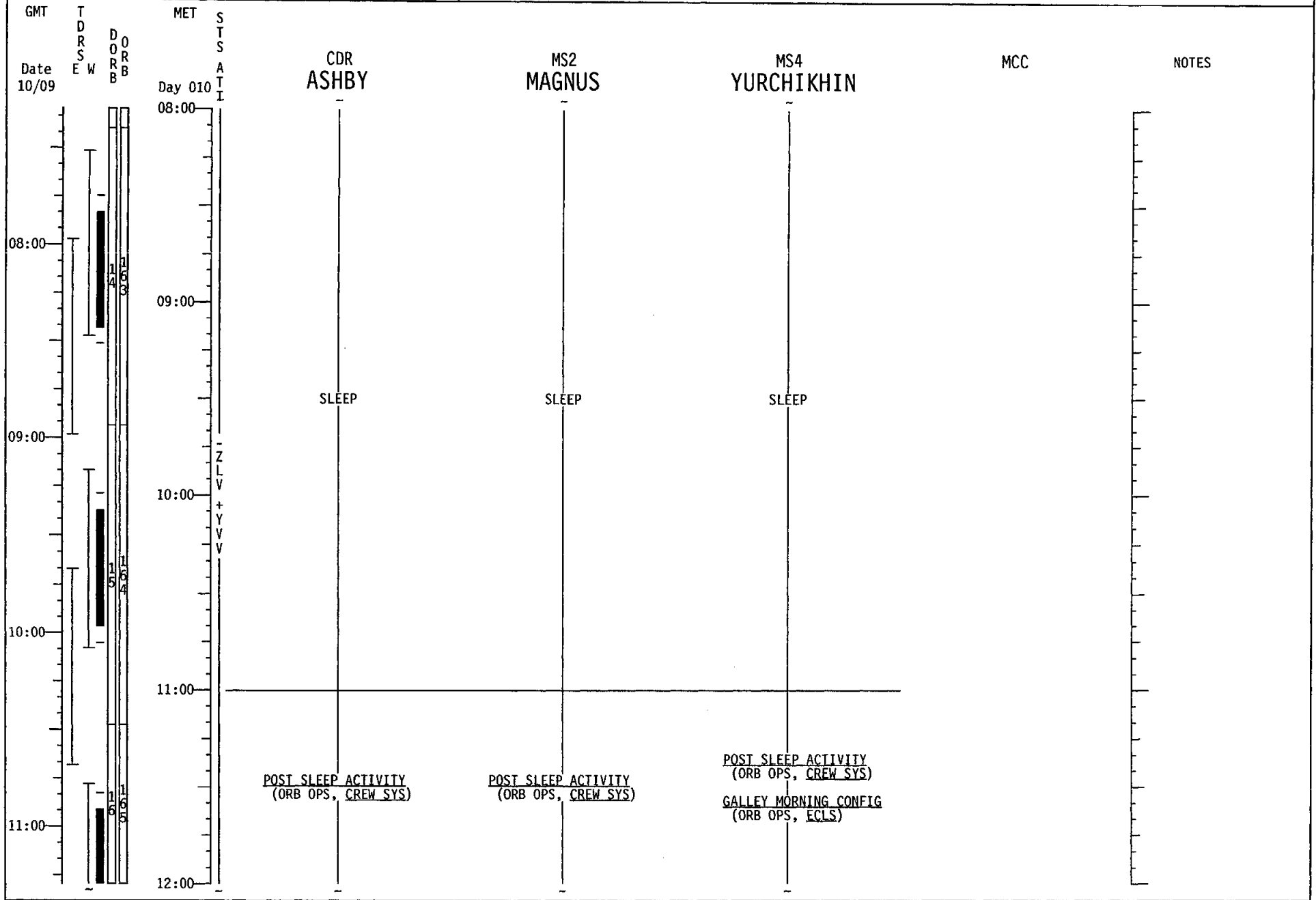
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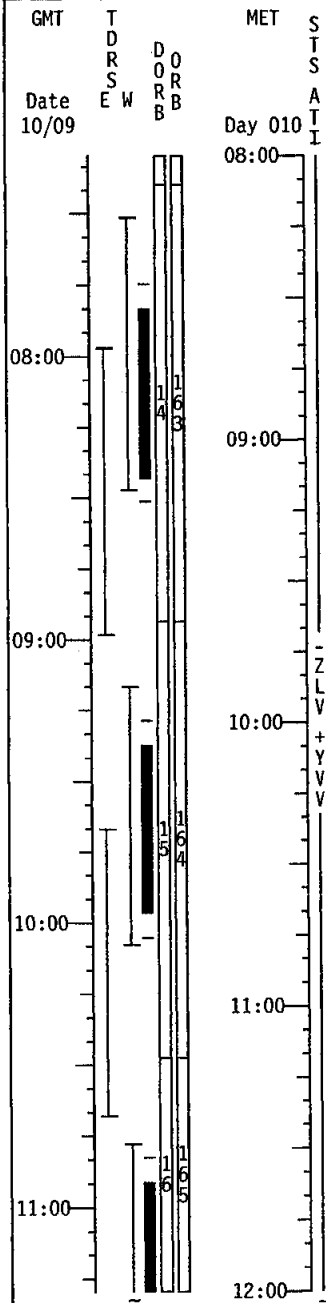
STS-112 (FD11)



STS-112 (FD11)



STS-112 (FD11)



PLT
MELROY

MS1
WOLF

MS3
SELLERS

NOTES

A IMU STAR ALIGN

ID: -Y: 12, CANOPUS
MET (10/13:23 TO 10/14:13)

-Z: 62, EL NATH
MET (10/13:10 TO 10/13:55)

ANG DIFF: 82.3

DUAL S TRKR 2nd ATTITUDE
ALIGNMENT (SINGLE S TRKR)
-Z: 12 -Y: 62

R	125	R	41	209
P	16	P	16	1
Y	3	Y	348	3

REQD ID:

-Y: _____, -Z: _____, ANG ERR _____

ANG: 1 2 3

ΔX () _____ () _____ () _____

ΔY () _____ () _____ () _____

ΔZ () _____ () _____ () _____

EXECUTION TIME: ___/___:___:___ MET

POST SLEEP ACTIVITY
(ORB OPS, CREW SYS)

B IMU STAR VERIFICATION

ID: -Y: 57, ACAMAR
MET (10/13:14 TO 10/14:03)

-Z: 55, ALPHARD
MET (10/13:35 TO 10/14:25)

ANG DIFF: 89.9

DUAL S TRKR 2nd ATTITUDE
ALIGNMENT (SINGLE S TRKR)
-Z: 57 -Y: 55

R	126	R	38	227
P	303	P	303	282
Y	44	Y	29	42

REQD ID:

-Y: _____, -Z: _____, ANG ERR _____

ANG: 1 2 3

ΔX () _____ () _____ () _____

ΔY () _____ () _____ () _____

ΔZ () _____ () _____ () _____

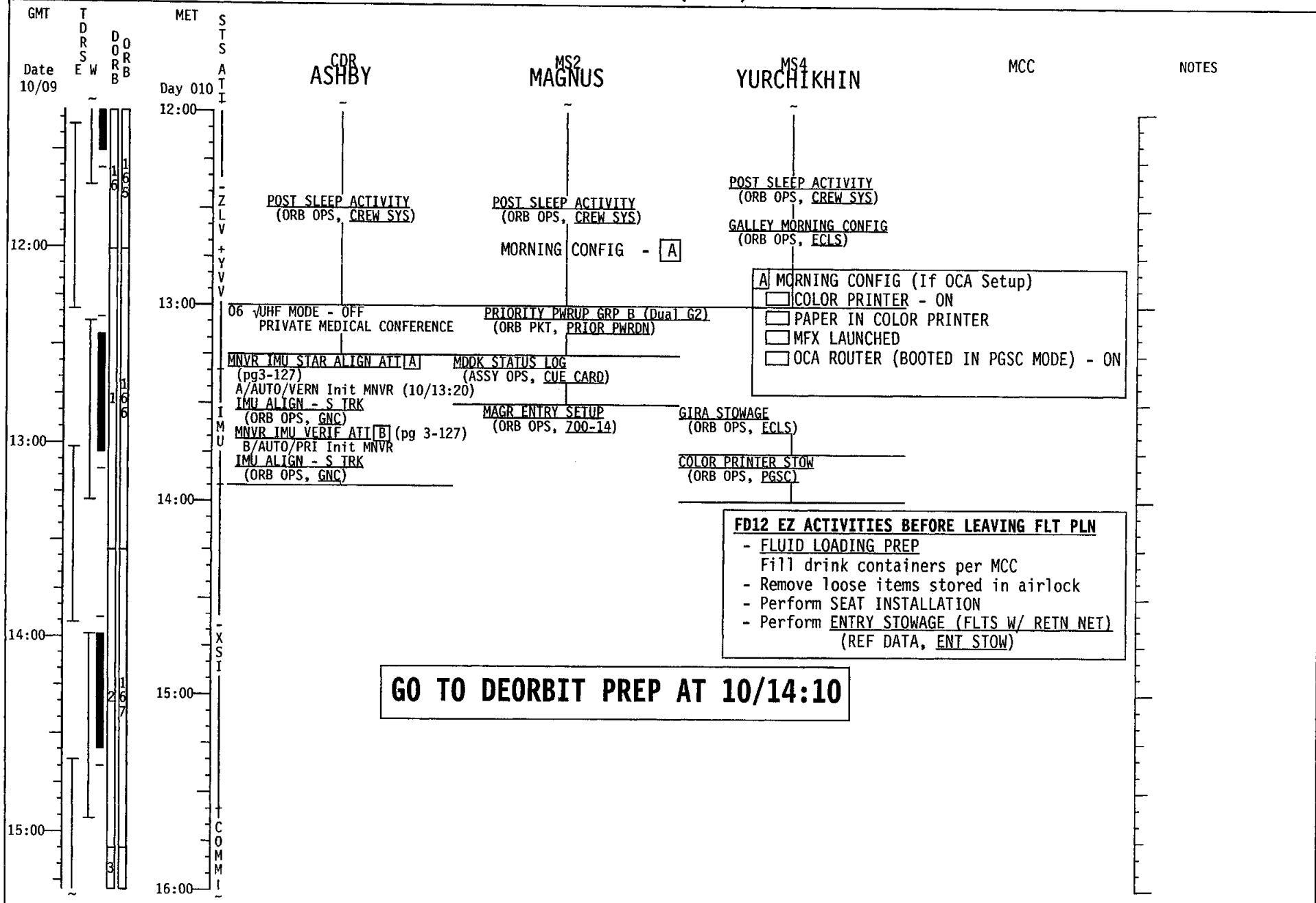
If any ΔX , ΔY , OR $\Delta Z > 0.1$ Check MCC

EXECUTION TIME: ___/___:___:___ MET

POST SLEEP ACTIVITY
(ORB OPS, CREW SYS)

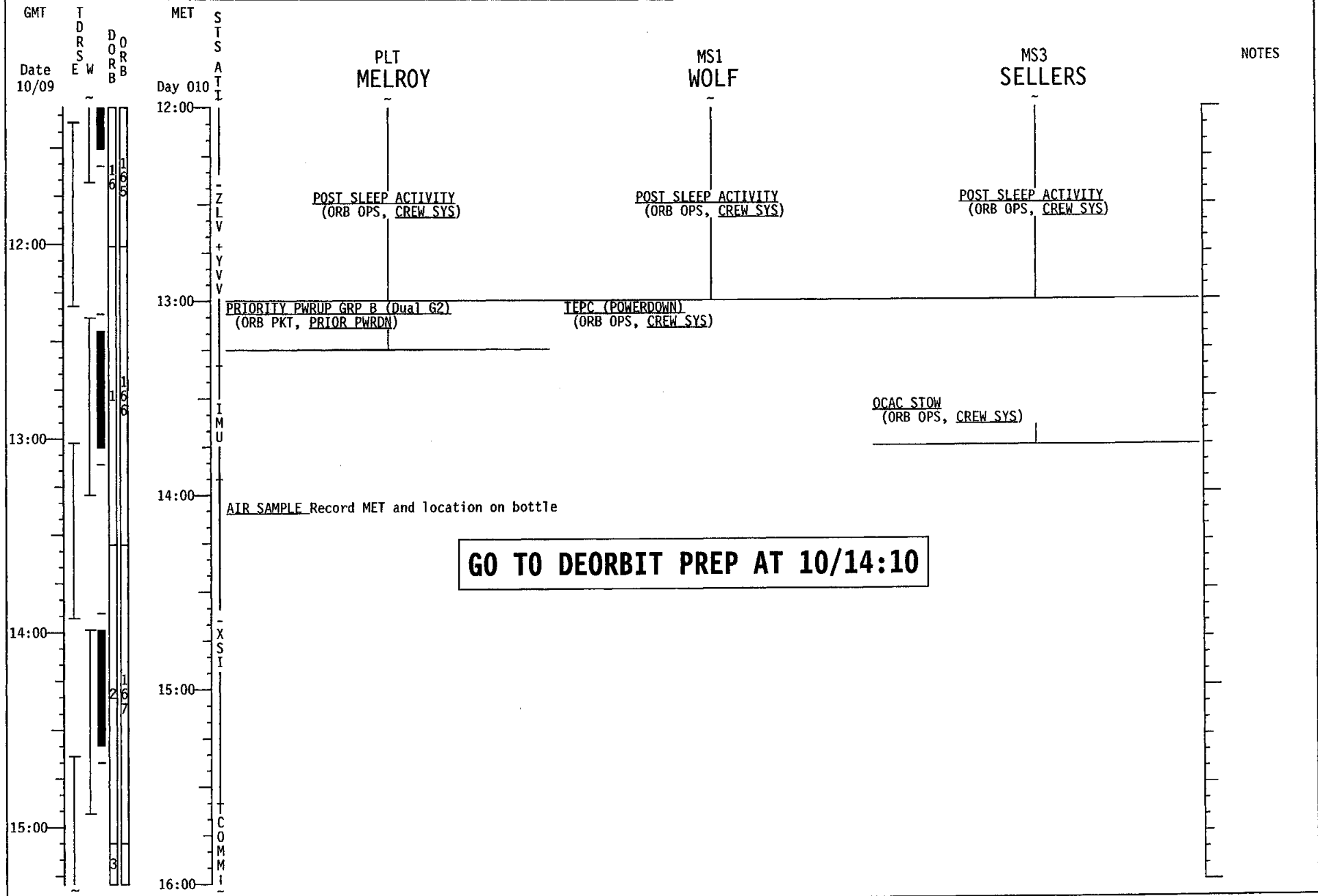
POST SLEEP ACTIVITY
(ORB OPS, CREW SYS)

STS-112 (FD12)



GO TO DEORBIT PREP AT 10/14:10

STS-112 (FD12)



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STS-112 DAP TABLE

STS-112
DAP TABLE

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<u>DAP</u>	<u>PURPOSE</u>
A1	- NOMINAL
A2	- PTC
A3	- GG
A4	- PRE/POST DEPLOY
A5	- LOSS OF VERN (ALL)
A6	- LOSS OF VERN (TAIL ONLY)
A7	- RENDEZVOUS
A8	- TERMINAL PHASE
A9	- PROX OPS/FLYAROUND
A10	- DOCKING
A11	- AUTO REBOOST
A12	- MATED MNVRS & HOLD (VRCS)
A13	- SHUTTLE A/L DEPRESS ATTITUDE CONTROL
A14	- SSRMS S1 INSTALL
A15	-

<u>DAP</u>	<u>PURPOSE</u>
B1	- NOM OMS RCS BURNS
B2	- LOSS OF VERN (TAIL ONLY)
B3	- LOSS OF VERN (ALL)
B4	- SSUS DEPLOY
B5	- COAS/HUD CAL
B6	-
B7	- RENDEZVOUS
B8	- TERMINAL PHASE
B9	- PROX OPS/FLYAROUND
B10	- DOCKING
B11	-
B12	- MATED MNVRS & HOLD (PRCS)
B13	-
B14	-
B15	-

DAPs FOR MATED OPS ARE BASED ON ANALYSIS FROM GNC, PDRS, AND DRAPER LABS

UNIV PTG	
TGT ID	= 1 Orbiting Vehicle = 2 Earth ctr = 3 Earth tgt Input LAT (± 90) LON (± 180 , + = Earth) 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

CNTL ACC = 0 UNLOADED RMS
 = 1 VRCS MATED CONTROL
 = 2 ALT PRCS MATED CONTROL
 = 3 A/L DEPRESS VRCS MATED CONTROL
 = 4 A/L DEPRESS ALT PRCS MATED CONTROL
 = 5-9 NOT USED

STS-112 DAP A1 THROUGH A8 CONFIGURATIONS

	ITEM #	A1	A2	A3	A4	A5	A6	A7	A8
PRI									
ROT RATE	10(50)	0.2000	0.4000	0.2000	0.5000	0.2000	0.2000	0.2000	0.0500
ATT DB	11(51)	5.00	1.00	0.30	3.00	5.00	5.00	2.00	2.00
RATE DB	12(52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13(53)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
COMP	14(54)	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	15(55)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
Y OPTION	16(56)	ALL	ALL	TAIL	ALL	ALL	TAIL	ALL	ALL
TRAN PLS	17(57)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ALT									
RATE DB	18(58)	0.200	0.200	0.070	0.200	0.070	0.070	0.100	0.100
JET OPT	19(59)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
# JETS	20(60)	2	2	1	2	1	1	2	2
ON TIME	21(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22(62)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN									
ROT RATE	23(63)	0.2000	0.4000	0.0080	0.2000	0.0500	0.0500	0.0160	0.0500
ATT DB	24(64)	1.000	1.000	0.070	1.000	1.000	1.000	1.000	1.000
RATE DB	25(65)	.020	.020	.010	.020	.020	.020	.020	.020
ROT PLS	26(66)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.050
COMP	27(67)	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28(68)	0	0	0	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/POST DEPLOY	LOSS OF VERN (ALL)	LOSS OF VERN (TAIL ONLY)	RNDZ	TERMINAL PHASE

STS-112 DAP A9 THROUGH A15 CONFIGURATIONS

	ITEM #	A9	A10	A11	A12	A13	A14	A15
PRI								
ROT RATE	10(50)	0.1300	0.0500	0.1000	0.1000	0.1000	0.0500	0.1000
ATT DB	11(51)	1.00	0.50	15.0000	5.00	5.00	5.00	40.00
RATE DB	12(52)	0.10	0.10	0.20	0.20	0.20	0.20	0.20
ROT PLS	13(53)	0.10	0.10	0.10	0.04	0.04	0.04	0.003
COMP	14(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	15(55)	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL
Y OPTION	16(56)	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL
TRAN PLS	17(57)	0.05	0.05	0.10	0.01	0.01	0.01	0.01
ALT								
RATE DB	18(58)	0.100	0.100	0.070	0.070	0.070	0.120	0.200
JET OPT	19(59)	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL
# JETS	20(60)	2	2	3	3	3	3	2
ON TIME	21(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22(62)	0.00	0.00	12.00	11.04	11.04	11.04	0.00
VERN								
ROT RATE	23(63)	0.1300	0.0500	0.1000	0.1000	0.1000	0.0500	0.0200
ATT DB	24(64)	1.000	0.500	5.000	3.000	3.000	5.000	5.000
RATE DB	25(65)	.020	.020	.050	.050	.080	.150	.050
ROT PLS	26(66)	0.050	0.050	0.010	0.002	0.002	0.002	0.001
COMP	27(67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28(68)	0	0	1,2,5,6*	1,5**	7,8***	1-6****	7
PURPOSE		PROX OPS/ FLYAROUND	DOCKING	AUTO REBOOST	MATED MNVRS & HOLD (VRCS)	SHUTTLE A/L DEPRESS ATTITUDE CONTROL	SSRMS S1 INSTALL	

BOLD-ITALIC indicate a change from the I-load

*1 for VERN and 2 for ALT pre-install, 5 for VERN and 6 for ALT post-install

**1 pre-install, 5 post-install

***7 for VERN post-install, 8 for ALT post-install

****reference loads constraints matrix

STS-112 DAP B1 THROUGH B8 CONFIGURATIONS

	ITEM #	B1	B2	B3	B4	B5	B6	B7	B8
PRI									
ROT RATE	30(50)	0.5000	0.2000	0.2000	0.2000	0.2000	0.5000	0.5000	0.0500
ATT DB	31(51)	3.00	3.00	3.00	0.30	3.00	3.00	2.00	2.00
RATE DB	32(52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33(53)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34(54)	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	35(55)	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL	ALL
Y OPTION	36(56)	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL	ALL
TRAN PLS	37(57)	0.10	0.02	0.02	0.02	0.02	0.02	0.05	0.05
ALT									
RATE DB	38(58)	0.200	0.070	0.070	0.100	0.200	0.200	0.100	0.100
JET OPT	39(59)	ALL	TAIL	ALL	ALL	ALL	ALL	ALL	ALL
# JETS	40(60)	2	1	1	2	2	2	2	2
ON TIME	41(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42(62)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN									
ROT RATE	43(63)	0.2000	0.2000	0.2000	0.0080	0.0160	0.2000	0.2000	0.0500
ATT DB	44(64)	1.000	1.000	1.000	0.100	0.033	1.000	1.000	1.000
RATE DB	45(65)	.020	.020	.020	.010	.020	.020	.020	.020
ROT PLS	46(66)	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.020
COMP	47(67)	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48(68)	0	0	0	0	0	0	0	0
PURPOSE		NOM OMS RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (ALL)	SSUS DEPLOY	COAS/HUD CAL		RNDZ	TERMINAL PHASE

STS-112 B9 THROUGH B15 DAP CONFIGURATIONS

	ITEM #	B9	B10	B11	B12	B13	B14	B15
PRI								
ROT RATE	30(50)	0.1300	0.0500	0.5000	0.1000	0.5000	0.5000	0.1000
ATT DB	31(51)	1.00	0.50	3.00	5.00	3.00	3.00	40.00
RATE DB	32(52)	0.10	0.10	0.20	0.20	0.20	0.20	0.200
ROT PLS	33(53)	0.04	0.04	0.04	0.04	0.04	0.04	0.003
COMP	34(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	35(55)	TAIL	TAIL	ALL	TAIL	ALL	ALL	TAIL
Y OPTION	36(56)	TAIL	TAIL	ALL	TAIL	ALL	ALL	TAIL
TRAN PLS	37(57)	0.01	0.01	0.02	0.01	0.02	0.02	0.01
ALT								
RATE DB	38(58)	0.100	0.100	0.200	0.070	0.200	0.200	0.200
JET OPT	39(59)	TAIL	TAIL	ALL	TAIL	ALL	ALL	TAIL
# JETS	40(60)	2	2	2	3	2	2	2
ON TIME	41(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42(62)	0.00	0.00	0.00	11.04	0.00	0.00	0.00
VERN								
ROT RATE	43(63)	0.1300	0.0500	0.2000	0.1000	0.2000	0.2000	0.2000
ATT DB	44(64)	1.000	0.500	1.000	3.000	1.000	1.000	5.000
RATE DB	45(65)	.020	.020	.020	.050	.020	.020	.050
ROT PLS	46(66)	0.020	0.020	0.002	0.002	0.002	0.002	0.001
COMP	47(67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48(68)	0	0	0	2,6*	0	0	7
PURPOSE		PROX OPS/ FLYAROUND	DOCKING		MATED MNVRS & HOLD (PRCS)			

BOLD-ITALIC indicate a change from I-load or prior flight DAP configuration
 *2 pre S1 install, 6 post S1 install

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ATTITUDE TIMELINE

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Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
1 000/00:38:00 M 271/23:55:42 G	M50 (CALC) INRTL R = 108.00 MNVR P = 120.00 PYR Y = 35.00 MNVR TRN/AUTO/PRI HOLD (same)	RATE 0.5000 DB AT 3.50 DB RT 0.20 SUN R 229 P 67 $\beta = 44$	+X PYR R = 0.48 P = 15.99 Y = 359.83 LVLH 000/00:38:01 M 271/23:55:43 G	OMS-2 Posi Heads Up Dv = 97.1 TIG 00/00:38:01
2 000/01:12:00 M 19:44 272/00:29:42 G 37:26	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 90.00 MNVR A6/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 5.00 DB RT 0.070 EARTH R 0 P 90 $\beta = 44$	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV +YVV SOPA and PLBD Opening
3 000/03:08:00 M 19:56 272/02:25:42 G 37:38	M50 (CALC) INRTL R = 136.00 MNVR P = 86.00 PYR Y = 69.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 224 P 95 $\beta = 43$	+X PYR R = 359.81 P = 15.85 Y = 0.11 LVLH 000/03:25:03 M 272/02:42:45 G	NC 1 Posi Heads Up Dv = 177.5 TIG 00/03:25:03
4 000/03:20:00 M 34:37 272/02:37:42 G 52:19	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 43$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Overnight Att
5 000/16:50:00 M 17:00:22 272/16:07:42 G 18:04	M50 (CALC) INRTL R = 116.00 MNVR P = 107.00 PYR Y = 25.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 231 P 75 $\beta = 41$	+X PYR R = 359.78 P = 14.67 Y = 12.97 LVLH 000/17:07:23 M 272/16:25:05 G	NC 2 R-OMS Posi Heads Up Dv = 8.00 TIG 00/17:07:23
6 000/17:15:00 M 26:15 272/16:32:42 G 43:57	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 41$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV NPC Multi Axis RCS Burn Dv = 3.8 TIG:20:33 20:32-LVLH DAP
7 000/21:26:37 M 40:23 272/20:44:19 G 58:05	COE (CALC) TGT = 2 P = 272.06 BV = 5 Y = 345.25 OM = 179.74 MNVR A1/AUTO/VERN HOLD A3/AUTO/VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 195 P 88 $\beta = 41$	+X PYR R = 165.25 P = 181.99 Y = 359.74 LVLH 000/21:45:00 M 272/21:02:42 G	Bias +ZLV -XVV Mnvr to SHIMMER Limb view ORB R = 165.25 LVLH P = 181.99 Y = 359.74
8 000/23:15:00 M 28:46 272/22:32:42 G 46:28	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 41$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
9 001/00:18:00 M 27:15 272/23:35:42 G 44:57	M50 (CALC) INRTL R = 112.00 MNVR P = 120.00 PYR Y = 31.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 225 P 66 $\beta = 40$	+X PYR R = 0.56 P = 16.10 Y = 359.67 LVLH 001/00:38:57 M 272/23:56:39 G	NC 3 Posi Heads Up Dv = 29.7 TIG 01/00:38:57
10 001/01:45:00 M 53:02 273/01:02:42 G 10:44	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 40$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Overnight Att

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Attitude Timeline

MET/GMT	ORBITER			REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β			
11 001/13:20:00 M 27:30 273/12:37:42 G 45:12	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 39$	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVW Waste Dump Mnv and SOPA	
12 001/15:20:00 M 273/14:37:42 G				NH Burn Dv = 0 1/15:20:00	
13 001/16:03:00 M 15:08 273/15:20:42 G 32:50	M50 (CALC) INRTL R = 211.00 MNVR P = 256.00 PYR Y = 295.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 321 P 80 $\beta = 38$	+X PYR R = 359.51 P = 15.88 Y = 359.90 LVLH 001/16:19:37 M 273/15:37:19 G	NC 4 Posi Heads Up Dv = 145.4 TIG 01/16:19:37	
14 001/16:29:25 M 38:49 273/15:47:07 G 56:31	LVLH TRACK TGT = 2 P = 0.00 BV = 1 Y = 0.00 OM = 0.00 MNVR B7/AUTO/ALT HOLD (same)	RATE 0.2554 DB AT 2.00 DB RT 0.200 EARTH R 270 P 0 $\beta = 38$	LVLH R= 0.00 P=270.00 Y= 0.00	-Z Target Track	
15 001/16:41:00 M 17:14:20 273/15:58:42 G 16:32:02	LVLH TRACK TGT = 2 P = 340.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A7/AUTO/VERN HOLD (same)	RATE 0.0100 DB AT 1.000 DB RT 0.020 EARTH R 180 P 20 $\beta = 38$	LVLH R= 0.00 P=290.00 Y= 0.00	-Z Target Track	
16 001/17:17:00 M 39:13 273/16:34:42 G 56:55	LVLH TRACK TGT = 2 P = 0.00 BV = 1 Y = 0.00 OM = 0.00 MNVR A7/AUTO/VERN HOLD (same)	RATE 0.0150 DB AT 1.000 DB RT 0.020 EARTH R 0 P 0 $\beta = 38$	LVLH R= 0.00 P=270.00 Y= 0.00	-Z Target Track	
17 001/17:43:00 M 48:45 273/17:00:42 G 06:27	M50 (CALC) INRTL R = 207.00 MNVR P = 250.00 PYR Y = 308.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 323 P 75 $\beta = 38$	+X PYR R = 0.39 P = 15.44 Y = 347.23 LVLH 001/17:52:36 M 273/17:10:18 G	TI L-OMS Posi Heads Up Dv = 8.80 TIG 01/17:52:36	
18 001/17:52:58 M 56:13 273/17:10:40 G 13:55	LVLH TRACK TGT = 2 P = 350.00 BV = 5 Y = 0.00 OM = 0.00 MNVR B7/AUTO/ALT HOLD (same)	RATE 0.5000 DB AT 2.00 DB RT 0.200 EARTH R 180 P 10 $\beta = 38$	LVLH R= 0.00 P=280.00 Y= 0.00	-Z Target Track	
19 001/18:03:00 M 19:02:31 273/17:20:42 G 18:20:13	LVLH TRACK TGT = 2 P = 300.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A7/AUTO/VERN HOLD (same)	RATE 0.0140 DB AT 1.000 DB RT 0.020 EARTH R 180 P 60 $\beta = 38$	LVLH R= 0.00 P=330.00 Y= 0.00	-Z Target Track	
20 001/19:07:00 M 17:00 273/18:24:42 G 34:42	LVLH TRACK TGT = 2 P = 270.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A8/AUTO/VERN HOLD (same)	RATE 0.0500 DB AT 1.000 DB RT 0.020 EARTH R 180 P 90 $\beta = 38$	LVLH R= 0.00 P= 0.00 Y= 0.00	+ZLV +XVW Establish RBAR after NC 4	

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Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
21 001/19:30:00 M 41:40 273/18:47:42 G 59:22	LVLH TRACK TGT = 2 P = 179.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/PRI HOLD (same)	RATE 0.1300 DB AT 5.00 DB RT 0.20 EARTH R 0 P 179 β = 38	LVLH R= 0.00 P= 91.00 Y= 0.00	+Rbar to +Vbar
22 001/20:18:00 M 273/19:35:42 G	FREE DRIFT Config DAP:A12 For Att Cntrl			Docking ISS LVLH YPR (0,0,0)
23 001/20:32:00 M 36:00 273/19:49:42 G 53:42	COE (CALC) TGT = 2 P = 156.00 BV = 5 Y = 353.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 343 P 155 β = 37	ISS YPR R = 352.35 P = 23.81 Y = 356.89 LVLH 001/20:14:00 M 273/19:31:42 G	BIAS -XLV +ZVV Roll Bias LVLH TEA ORB R = 2.86 LVLH P = 114.16 Y = 353.61
24 004/14:50:00 M 15:19:49 276/14:07:42 G 37:31	COE (CALC) TGT = 2 P = 174.00 BV = 5 Y = 0.00 OM = 180.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 174 β = 26	+X PYR R = 180.00 P = 84.00 Y = 0.00 LVLH 004/15:30:00 M 276/14:47:42 G	Bias -XLV -ZVV Reboost Config 3 ORB R = 180.00 LVLH P = 84.00 Y = 0.00
25 004/16:40:00 M 17:09:49 276/15:57:42 G 16:27:31	COE (CALC) TGT = 2 P = 156.00 BV = 5 Y = 353.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 343 P 155 β = 26	ISS YPR R = 352.35 P = 23.81 Y = 356.89 LVLH 004/16:40:00 M 276/15:57:42 G	Bias -XLV +ZVV Mnvr back to Roll Bias LVLH TEA ORB R = 2.86 LVLH P = 114.16 Y = 353.61
26 005/16:15:00 M 30:02 277/15:32:42 G 47:44	LVLH TRACK TGT = 2 P = 156.00 BV = 5 Y = 0.00 OM = 270.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 156 β = 22	LVLH R= 90.00 P= 90.00 Y= 24.00	Bias -XLV +YVV SIMO & COND CWC Dump and SOPA Mnvr
27 005/18:55:00 M 19:10:02 277/18:12:42 G 27:44	COE (CALC) TGT = 2 P = 156.00 BV = 5 Y = 353.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 343 P 155 β = 21	ISS YPR R = 352.35 P = 23.81 Y = 356.89 LVLH 005/18:50:00 M 277/18:07:42 G	Bias -XLV +ZVV Mnvr Back to Roll Bias LVLH TEA ORB R = 2.86 LVLH P = 114.16 Y = 353.61
28 006/14:40:00 M 15:09:49 278/13:57:42 G 14:27:31	COE (CALC) TGT = 2 P = 174.00 BV = 5 Y = 0.00 OM = 180.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 174 β = 17	+X PYR R = 180.00 P = 84.00 Y = 0.00 LVLH 006/16:28:00 M 278/15:45:42 G	Bias -XLV -ZVV Reboost Config 3 ORB R = 180.00 LVLH P = 84.00 Y = 0.00
29 006/16:30:00 M 59:49 278/15:47:42 G 16:17:31	COE (CALC) TGT = 2 P = 156.00 BV = 5 Y = 353.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 343 P 155 β = 17	ISS YPR R = 352.35 P = 23.81 Y = 356.89 LVLH 006/16:00:00 M 278/15:17:42 G	Bias -XLV +ZVV Mnvr Back to Roll Bias LVLH TEA ORB R = 2.86 LVLH P = 114.16 Y = 353.61
30 008/17:20:00 M 24:10 280/16:37:42 G 41:52	COE (CALC) TGT = 2 P = 180.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 180 β = 8	+X PYR R = 0.00 P = 90.00 Y = 0.00 LVLH 008/18:06:00 M 280/17:23:42 G	UNDOCKING -XLV +ZVV LVLH TEA 8/18:06:00 ORB R = 0.00 LVLH P = 90.00 Y = 0.00

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Attitude Timeline

MET/GMT	ORBITER			REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β			
31 008/18:26:00 M 280/17:43:42 G	LVLH FREE ROTATION ROTR ABOUT +Y AXIS RATE=0.130 MNVR A9/LVLH/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 $\beta = 7$	LVLH R= 0.00 P= 90.00 Y= 0.00	Flyaround Twice Orb Rate 1+ Rev	
32 008/19:23:34 M 280/18:41:16 G	 HOLD A9/LVLH/VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 91 $\beta = 7$	LVLH R= 0.00 HOLD P=179.02 Y= 0.00	Sep Burn @ approx 008/19:35:00 3.0 fps 2nd -RBAR xing	
33 008/20:10:00 M 23:28 280/19:27:42 G 41:10	COE (CALC) TGT = 2 P = 272.58 BV = 5 Y = 341.69 OM = 179.59 MNVR A1/AUTO/VERN HOLD B5/AUTO/VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 198 P 88 $\beta = 7$	+X PYR R = 161.69 P = 182.45 Y = 359.60 LVLH 008/20:35:00 M 280/19:52:42 G	Bias +ZLV -XVV SHIMMER Limb 20:33-20:51 21:51-22:23 ORB R = 161.69 LVLH P = 182.45 Y = 359.60	
34 008/21:00:00 M 06:56 280/20:17:42 G 24:38	INRTL TRACK TGT = 5 P = 0.00 BV = 5 Y = 277.76 OM = 169.40 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 256 P 67 $\beta = 7$	INRTL R=310.85 P=231.53 Y= 24.94 RA= 212.500 DEC= -9.000S	SHIMMER MOON OPS	
35 008/21:45:00 M 58:02 280/21:02:42 G 15:44	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 310.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 7$	LVLH R= 0.00 P=180.00 Y= 50.00	BIAS -ZLV +YVV PAO Event, SOPA and SIMO Dump REGION C	
36 009/01:00:00 M 04:10 281/00:17:42 G 21:52	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 6$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Overnight Att	
37 009/15:25:00 M 35:03 281/14:42:42 G 52:45	INRTL TRACK TGT = 5 P = 0.00 BV = 5 Y = 277.76 OM = 267.81 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 300 P 72 $\beta = 3$	INRTL R= 32.22 P=114.63 Y= 29.73 RA= 223.265 DEC= -15.332S	SHIMMER MOON OPS NOTE: Crew can mnvr early	
38 009/16:05:00 M 18:46 281/15:22:42 G 36:28	COE (CALC) TGT = 2 P = 272.59 BV = 5 Y = 341.62 OM = 179.58 MNVR A1/AUTO/VERN HOLD B5/AUTO/VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 198 P 88 $\beta = 3$	+X PYR R = 161.62 P = 182.46 Y = 359.60 LVLH 009/18:10:00 M 281/17:27:42 G	Bias +ZLV -XVV SHIMMER Limb 16:22-16:49 ORB R = 161.62 LVLH P = 182.46 Y = 359.60	
39 009/17:10:00 M 24:04 281/16:27:42 G 41:46	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 3$	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV LVLH track for SOPA and Overnight Thermal Conditioning	
40 010/13:20:00 M 32:22 282/12:37:42 G 50:04	INRTL R = 125.00 MNVR P = 16.00 Y = 3.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 207 P 155 $\beta = 0$	-Y:12 13:23-14:13 -Z:62 13:10-13:55	IMU ALIGN PAIR AOS:13:23 PAIR LOS:13:55	

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Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
41 010/13:40:00 M 46:50 282/12:57:42 G 13:04:32	INRTL R = 126.00 MNVR P = 303.00 Y = 44.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 35 P 128 $\beta = 0$	-Y:57 13:14-14:03 -Z:55 13:35-14:25	IMU VERIF PAIR AOS:13:35 PAIR LOS:14:03
42 010/13:55:00 M 14:00:18 282/13:12:42 G 18:00	TGT= 4 BV = 5 P = 184.00 Y = 0.00 OM = 90.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 180 P 176 $\beta = 0$	INRTL R=129.57 P=356.39 Y= 10.98 RA= 194.131 DEC= -6.043S	-XSI ColdSoak
43 010/15:30:00 M 34:09 282/14:47:42 G 51:51	INRTL R = 98.00 MNVR P = 323.00 Y = 11.00 MNVR A5/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 5.00 DB RT 0.070 SUN R 91 P 150 $\beta = -1$		Comm. Attitude
44 010/18:00:00 M 04:46 282/17:17:42 G 22:28	M50 (CALC) INRTL R = 146.33 MNVR P = 192.98 PYR Y = 334.21 MNVR TRN/AUTO/PRI HOLD (same)	RATE 0.5000 DB AT 3.50 DB RT 0.20 SUN R 5 P 21 $\beta = -1$	ISS PYR R = 0.00 P = 170.00 Y = 0.00 LVLH 010/18:07:00 M 282/17:24:42 G	D/O Burn KSC Dual OMS TIG 10/18:07:00 Heads Down Retrograde DV = TBD
45 010/19:12:00 M 282/18:29:42 G				KSC Landing 010/19:12:00

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FLIGHT PLAN NOTES

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV104/Atlantis
 Launch Window: 10 min
 Inclination: 51.6°
 Insertion Altitude: 122 nm
 Rendezvous Altitude: 215 nm
 Duration: 11 + 1 + 2 days

B. CREW

CDR/RMS – Jeff Ashby	ISS CDR – Valerie Korzun
PLT/IV/RMS – Pam Melroy	FE-1 – Peggy Whitson
MS1/EV1 – Dave Wolf	FE-2 – Sergei Treschev
MS2/SSRMS – Sandy Magnus	
MS3/EV2 – Piers Sellers	
MS4/EV3 – Fyodor Yurchikhin	

C. MAJOR EVENTS

<u>EVENT</u>	<u>FD</u>	<u>MET</u>	<u>LOCAL DATE</u>	<u>LOCAL TIME</u>	<u>GMT</u>
Launch	01	00/00:00	9/28/02	18:17	271/23:17
OMS-2	01	00/00:38	9/28/02	18:55	271/23:55
NC1	01	00/03:25	9/28/02	21:42	272/02:42
NC2	02	00/17:07	9/29/02	11:24	272/16:24
NPC	02	00/20:33	9/29/02	14:50	272/19:50
NC3	02	01/00:39	9/29/02	18:56	272/23:56
NC4	03	01/16:19	9/30/02	10:36	273/15:36
Ti	03	01/17:52	9/30/02	12:09	273/17:09
ISS Docking	03	01/20:18	9/30/02	14:35	273/19:35
ISS Ingress	03	01/21:30	9/30/02	15:47	273/20:47
EVA 1	04	02/18:50	10/01/02	13:07	274/18:07
S1 Activation	04	03/00:45	10/01/02	19:02	275/00:02
EVA 2	06	04/18:55	10/03/02	13:12	276/18:12
EVA 3	08	06/18:45	10/05/02	13:02	278/18:02
Egress ISS	10	08/15:50	10/07/02	10:07	280/15:07
Undock	10	08/18:06	10/07/02	12:23	280/17:23
Sep	10	08/19:35	10/07/02	13:52	280/18:52
Deorbit	12	10/18:07	10/09/02	12:24	282/17:24
Landing	12	10/19:12	10/09/02	13:29	282/18:29

FLIGHT PLAN NOTES

D. LANDING OPPORTUNITIES

		<u>Landing Orbit No.</u>	<u>Site</u>	<u>CDT</u>	<u>MET</u>
Nominal	Primary 1 Rev Late Weather Alt	TBD	TBD	TBD	TBD
EOM +1	Primary 1 Rev Late Weather Alt				

E. COMMUNICATIONS

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

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

Shuttle

TDRS Support: East (47°), West (171°), Z (-275°)
 Ground Sites: MIL, DFR, and WLP
 Contingency RTS: DGS, GTS, HTS, OTS, CTS, VTS, and NHS

ISS

TDRS Support: East (47°), West (171°), Z (-275°)
 US Ground Sites: MIL, WLP, DFR
 Russian Ground Sites: DJS, PPK, ULD, BRN, SPB, KLP, ULD, SHK, and USK

F. PAYLOADS

1. LAUNCH PACKAGE (LP) 9A

The LP consists of the CE in the payload bay and the middeck items. The 9A CE consists of the Integrated Truss Segment (ITS) Starboard 1 (S1) preintegrated with a standard Tracking and Data Relay Satellite System (TDRSS) transponder, Audio Communication System (ACS) baseband signal processor, S-band communication equipment, Thermal Radiator Rotary Joint (TRRJ), three External Active Thermal Control System (EATCS) radiators, Direct Current (DC)-to-DC Converter Unit (DDCU), Remote Power Controller Module (RPCM), and Crew Equipment Translation Aid (CETA) cart. The CE occupies the majority of the payload bay and is attached in the payload bay by four active longeron trunnion latches and two active keel trunnion latches. Also part of the LP are the ISS Utilization payloads, which consist of six unpowered and three powered experiments.

The Return Complement (RC) consists of the middeck return items and ISS Utilization payloads. The RC of ISS Utilization payloads consist of 10 unpowered and two powered ISS Utilization payloads.

G. SECONDARY PAYLOADS

1. Spatial Heterodyne Imager for Mesospheric Radicals (SHIMMER):

The SHIMMER consists of a telescope, interferometer, imaging optics, and Charge Coupled Device (CCD) camera all housed in a single enclosure. The SHIMMER will be used to evaluate a powerful new technique for Ultraviolet (UV) remote sensing, referred to as Spatial Heterodyne Spectroscopy (SHS). The SHIMMER instrument will make global maps of the vertical density distribution of the atmospheric trace gas hydroxyl (OH) in the altitude region between 40 and 90 km. The SHIMMER hardware is stowed in two standard middeck lockers for launch and entry and is removed for on-orbit operations. The SHIMMER will be mounted to the Orbiter side hatch window during on-orbit operations using a payload-provided mounting bracket and light baffle.

H. PAYLOADS OF OPPORTUNITY

1. RAM BURN OBSERVATION (RAMBO)

The objective of the RAMBO payload is to help calibrate the RAMBO satellite. This requires retrograde, posigrade, and out-of-plane burns. The location of the RAMBO satellite is classified, therefore no pre mission planning needs to be done for this payload.

I. ON ORBIT DETAILED TEST OBJECTIVES (DTOs)

1. VALIDATION OF SSRMS DYNAMIC INPUT TO SHUTTLE ATTITUDE CONTROL SYSTEM (DTO 264)

Confirmation of ground test verification and engineering margin adequacy is needed for the SSRMS operation while Shuttle is mated to ISS. This will assure stable Shuttle control system performance, and acceptable loads on the SSRMS induced by the Shuttle jet firings. The SSRMS is a dynamically complex mechanism and control system, and confirmation of the SSRMS dynamic characteristics is needed in the zero-g of space to assure successful operation and that engineering constraints are not excessive based on "as-built" SSRMS characteristics.

2. SINGLE STRING GLOBAL POSITIONING SYSTEM (DTO 700-14)

The purpose of this experiment is to demonstrate the performance and operations of the GPS during orbiter ascent, entry, and landing phases utilizing a modified military GPS receiver processor and the existing orbiter GPS antennas.

J. ON ORBIT DETAILED SUPPLEMENTAL OBJECTIVES (DSOs)

1. BIOAVAILABILITY AND PERFORMANCE EFFECTS OF PROMETHAZINE DURING SPACE FLIGHT (DSO 490B)

All participants will don the Actiwatch activity monitor as soon as possible on orbit, and will wear the Actiwatch and will record sleep times throughout the mission. Before the first Promethazine (PMZ) dose, participants will collect a saliva sample; thereafter, saliva samples will be collected and a Stanford Sleepiness Score (SSS) completed at 1, 2, 4, 8, 24, 36 and 48 hr post-PMZ. This protocol will be repeated each time PMZ is taken. Participants who do not take PMZ will wear the Actiwatch and record sleep times throughout the mission. However, if a participant elects to take PMZ pre-sleep, saliva samples should be collected pre-dose, just before sleep, immediately upon wake-up, 1 hr after wake-up, and at 24, 36, and 48 hr post-dose.

2. MONITORING LATENT VIRUS REACTIVATION AND SHEDDING IN ASTRONAUTS (DSO 493)

The objective of this DSO is to determine the frequency of induced reactivation of latent viruses, latent virus shedding, and clinical disease after exposure to the physical, physiological, and psychological stressors associated with space flight.

Space flight – induced alterations in the immune response will become increasingly important on long-duration missions, with one focus being the potential for reactivation and dissemination (shedding) of latent viruses. An example of a latent virus is herpes simplex type-1 (HSV-1), which infects 70 to 80 percent of adults. Its manifestation is classically associated with the presence of cold sores, pharyngitis, and tonsillitis, and is usually acquired through contact with the saliva, skin, or mucous membranes of an infected individual. However, many recurrences are asymptomatic, resulting in shedding of the virus. Twenty subjects have been studied for Epstein-Barr virus. Three additional viruses will be focused upon with an increase in subject allotment.

3. SLEEP-WAKE ACTIGRAPHY AND LIGHT EXPOSURE DURING SPACEFLIGHT (DSO 634)

Subjects will don the Actilight watch as soon as possible upon entering orbit and will wear it continuously throughout the mission on their non-dominant wrists outside of their clothing/sleeve. The Actilight watch can be temporarily removed for activities such as EVAs. Subjects will also complete a short log within 15 min of final awakening every morning in-flight.

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FLIGHT PLAN WALKTHROUGH WITH RATIONALE

FLIGHT PLAN
WALKTHROUGH

Generic Items

- Transfer a total of 16 Condensate Water Containers (CWCs) (using CWCs already manifested on ISS). Approximately two CWCs are filled each docked day.
- An estimate of 35 required man-hr for 9A generic transfer. Powered payloads, EVA, water, and transfer briefings are in addition to the generic transfer time needed.
- All nominal EVAs are performed using the ISS Airlock with both ISS and shuttle crewmembers performing SSRMS and Airlock tasks. The shuttle crew is prime for all EVA tasks. MCC-H is prime for ISS commanding activities.
- The crew day is increased on EVA days to accommodate all of the activities required to support a 6.5-hr EVA timeline. One hr is taken out of the following day to make up for the long EVA day. The result of this philosophy requires two exception requests pertaining to the SCSC sleep shifting guideline (no sleep shift prior to critical event day).
- Prior to launch the ISS crew will prepare for the 9A mission by performing the following: set up the RWS and SSRMS; check out the airlock, S0 SSAS, an EMU suit; assemble the two External Television Camera Groups (ETVCGs); prepare for transfer activities and study the 9A timeline/procedures.

Flight Day 1

- The shuttle crew performs minimal activities before going to sleep at MET 0/6:00.
- The ISS crew has off duty and sleep shifts in preparation for shuttle docking.

Flight Day 2

- Shuttle crew performs middeck ISS payload status checks; checkouts of the shuttle robotics arm, EMU suits, and rendezvous tools; and prepares for transfer.
- The shuttle RMS is left powered on in preparation of the S1 installation activities on FD 04.
- The secondary payload SHIMMER is checked out and DTO 700-14/MAGR is setup.
- The shuttle crew goes to bed 2 hr earlier in support of tomorrow's rendezvous activities.
- ISS crew has off duty and completes any sleep shifting required.

Flight Day 3

- A shuttle wastewater dump is scheduled in the crew morning prior to docking.
- Docking occurs late in the crew afternoon. Hatches are opened approximately 2 hr after docking.
- The first two CWCs are filled after the hatches are open. The CWCs used for water transfer are from ISS, so no fills can be done prior to hatch opening.
- The EMU suits and airlock are prepared for tomorrow's EVA activities.
- A setup of the shuttle O2 configuration for the EVA pre breathe protocol is scheduled late in the crew day.
- An SSRMS tagup is scheduled between MS2 and FE-1 to allow the prime SSRMS operators preparation time for tomorrow morning's S1 truss installation. The shuttle CDR will participate, as time is available for him. After the tagup, the SSRMS operators will move the SSRMS to the pre-grapple position in preparation of tomorrow's S1 truss installation.
- An EVA procedure review is scheduled for all crewmembers prior to pre sleep. The procedure review gives the crews time to review tomorrow's EVA plan.
- The shuttle illuminators are turned on overnight in support of MCC SVS activities.
- Prior to crew wakeup on FD 04, MCC-H completes the S1 SSAS Prep for Mate activities.

Flight Day 4 (EVA 1 6:30)

- The shuttle crew has 2 hr of post sleep scheduled prior to start of S1 installation activities and EVA preparations.
- O2 from shuttle will be used for the pre-breathe activity.
- During the 4.5 hour EVA preparation, the S1 truss is installed by the SSRMS with the shuttle RMS used for viewing purposes of the installation.
- Once three of the SSAS bolts are fully loaded, the IV crew may use the ergometer exercise equipment. Also, the S1 truss will support EVA crew loads once three of the SSAS bolts are fully loaded.

- ISS power (channel 1/4) must be powered down prior to the EVA crew connecting the zenith side power umbilicals. MCC-H powers channel 1/4 on and channel 2/3 is powered down prior to the EVA crew connecting the nadir side umbilicals. A checkout will be performed by MCC-H after each string is powered on. Channel 1/4 will be checked out prior to channel 2/3 being powered off.
- The EVA crew will deploy the S-band antenna while MCC is checking out channel 1/4 and powering down string 2.
- Other EVA tasks performed this day are release of the radiator beam launch locks, SASA deploy, ETVCG outboard nadir installation, and release of the CETA cart launch locks.
- The ETVCG will be left in the airlock until the EVA crew installs it. The ETVCG hardware is thermal sensitive and will not survive for an extended amount of time without heater power.
- The ETVCG heater power is on the channel 1/4 power string. Once channel 1/4 is powered back on, the ETVCG will receive power. Its operational power is on channel 2/3.
- The post EVA activities are kept to minimum after the EVA. What is not completed, such as water recharge, will be done tomorrow.
- The shuttle RMS is powered off after EVA 1 and will remain off until FD 06.
- Once the EVA is complete, MCC-H will perform checkouts for the S-Band antennae, ETVCG, S1 EDM, and EATCS pump.
- Two CWC are filled and transferred to ISS during the day.
- The shuttle illuminators are turned on overnight in support of MCC SVS activities.
- A minimum 2 hr pre sleep is scheduled for the shuttle crew. The crews will go to bed an hour later than the night before because of the long EVA day. A sleep duration of 8 hr is scheduled.

Flight Day 5

- The crew wakeup time is one hr later than on FD 04 because of the extended FD 04, EVA day.
- The shuttle crew off duty is scheduled during the docked timeframe. There is no time available in the undock timeframe for all shuttle crewmembers to receive off duty. The off duty time is not to be shortened or deleted except for mission critical tasks.
- Two private family conferences for the shuttle crew are scheduled during the post sleep. The family conferences are scheduled on days with off duty.
- Shuttle nitrogen (N2) transfer to ISS is started in later morning and will be terminated on FD 09.
- MSFC payloads, PCG-STES 007 and 008 and the STELSYS CBOSS, are transferred this day.
- MS2 is prime shuttle crewmember in charge of transfer activities.
- The EVA crewmembers perform activities in preparation for EVA 2, such EMU water recharge, tool configuration, and airlock preparation.
- A PAO event for the EVA crew is scheduled after lunch.
- Mid-mission shuttle maintenance tasks are performed this day.
- Three CWCs are filled and transferred to ISS. Including the three CWCs transferred today, a total of seven CWCs have been transferred.
- An EVA procedure review is scheduled for both crews prior to pre sleep this evening.

Flight Day 6 (EVA 2 6:30)

- The shuttle crew has 2 hr of post sleep scheduled prior to the start of EVA preparations.
- O2 from shuttle will be used for the pre-breathe activity.
- A one hr shuttle configuration 3 reboost is scheduled during while EVA prep is in progress.
- MCC-H performs S1 SASS checkout in the morning. The checkout will be completed prior to the EVA crew performing the RTL Plunger checkout EVA task.
- During EVA2 the following activities are scheduled: Z1 to P6 and PVR SPDS, Z1 to Lab loop A umbilicals, ATA umbilical, ETVCG starboard installation, SPD installation on RBVM, and the last of the launch lock release bolts.
- The post EVA activities are kept to minimum after the EVA. What is not completed, such as water recharge, will be done tomorrow.
- Two CWCs and a PWR (for EMU suit water recharge) are filled and transferred to ISS.
- The ISS crew will perform the MSFC payload, ZCG activities this day. ZCG has a microgravity constraint for 24 hr once activated.

- A minimum 2 hr pre sleep is scheduled for the shuttle crew. The crews will go to bed one hr later than the night before because of the long EVA day. A sleep duration of 8 hr is scheduled.
- Overnight, MCC will checkout the starboard ETVCG that was installed in EVA 2.

Flight Day 7

- The crew wakeup time is one hr later than on FD 06 because of the extended FD 06, EVA day.
- After a full post sleep, a shuttle water dump is scheduled. Wastewater followed by PWR and condensate CWC water will be dumped. The shuttle has a limited duration of 3 hr for being out of the ISS power generating attitude. The majority of the water dump time is allocated for wastewater with the condensate water being completed as time is available.
- MCC will perform the TRRJ pointing checkout in the morning. The PLT will set up the video recorder to record the TRRJ checkout prior to the start of the checkout.
- The shuttle crew reconfigures and initiates an oxygen (O2) transfer to the high pressure gas tanks (HPGTs) in the morning. O2 will be transferred for approximately 8 hr.
- The ISS crew will perform the ISS TVIS Remove and Replace (R&R) most of the day. Due to spatial constraints, minimal transfer can occur during the R&R and the crew can't use TVIS for exercising during the R&R.
- The EVA crew performs EVA 3 preparation activities in the morning and transfer in the afternoon.
- The MSFC payload, PGBA, is transferred to ISS by the Shuttle crew.
- Two CWCs and a PWR (for EMU water recharge) are filled and transferred to ISS.
- The crew photo and conference are scheduled in the afternoon.
- Once the O2 transfer is completed, a reconfiguration to the Shuttle O2 pre breathe protocol is done late in the afternoon.
- A few hours after the TRRJ pointing checkout is completed, MCC will deploy the S1 radiator. The MS4 will take pictures of the radiator during the deploy.
- An EVA procedure review is scheduled for all crewmembers prior to pre sleep this evening.

Flight Day 8 (EVA 3 6:30)

- The shuttle crew has two hours of post sleep scheduled prior to the start of EVA preparations.
- O2 from shuttle will be used for the pre-breathe activity.
- Time for a one hour long shuttle configuration 3 reboost is scheduled during the EVA prep timeframe. Currently this second reboost not required by ISS but crew time is being reserved for it.
- The ISS crew completes the defibulator checkout in the morning.
- The EVA 3 tasks are a mixture of category two and three tasks. The EVA 3 tasks are: IUA R&R, S1 to S0 fluid jumper connections, removal of port and starboard keel pins, last of the TRRJ SPDs, TRRJ bolts, and S1 to S1 clamps.
- All of the post EVA activities are completed this day with the exception of the batteries being charged.
- Three CWCs are filled and transferred to ISS. The total number of CWC filled and transferred including the 3 from this day are 14.
- The shuttle illuminators are turned on overnight in support of an ISS external survey done by MCC.
- A minimum 2 hr pre sleep is scheduled for the shuttle crew. The crews will go to bed an hour later than the night before because of the long EVA day. A sleep duration of 8 hr is scheduled.
- MCC will perform the GPRV checkout overnight.

Flight Day 9

- After a full post sleep, the shuttle crew has 4 hr of off duty scheduled. Shuttle crew off duty is scheduled during the docked timeframe. There is no time available in the undock timeframe for all shuttle crewmembers to receive off duty. Off duty time is not to be shortened or deleted except for mission critical tasks.
- Two private family conferences for the shuttle crew are scheduled during the post sleep. The family conferences are scheduled on days with off duty.
- All activities except for hatch closure are completed this afternoon.
- The last of the transfer items are taken over to ISS including the shuttle SAFERs.
- The EMUs are reconfigured in support of leaving a good EMU suit for an ISS crewmember. Once

EMUs are reconfigured, one will be left on ISS and the other brought back on the shuttle.

- The MSFC payload, CGBA, is transferred to ISS.
- The last two CWCs and PWR are filled and transferred to ISS. A total of 16 CWCs are transferred to ISS.
- A rendezvous tools checkout is scheduled. The checkout is done in preparation for undock the next day.
- A teardown of the shuttle O2 configuration for the EVA pre breathe protocol is scheduled late in the crew day.

Flight Day 10

- After a full post sleep, the shuttle crew closes the hatches and completes the undock activities.
- After flyaround, the shuttle crew will perform SHIMMER data takes.
- A wastewater and condensate CWC water dump are scheduled after the SHIMMER data gathering is complete.
- A shuttle crew only PAO event is scheduled in the afternoon.
- The last two family conferences are scheduled for the shuttle crew.

Flight Day 11

- Shuttle crew prepares for landing tomorrow by performing cabin stow and EOM checkouts
- SHIMMER data takes are scheduled in the morning and a PAO event is in the afternoon

Flight Day 12

- DTO 700-14/MAGR entry setup is completed prior to deorbit prep.
- Shuttle lands.

CUE CARD CONFIGURATION

CUE CARD
CONFIG

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CONFIG**

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STS-112 DAP A1 THROUGH A8 CONFIGURATIONS

	ITEM #	A1	A2	A3	A4	A5	A6	A7	A8
PRI									
ROT RATE	10(50)	0.2000	0.4000	0.2000	0.5000	0.2000	0.2000	0.2000	0.0500
ATT DB	11(51)	5.00	1.00	0.30	3.00	5.00	5.00	2.00	2.00
RATE DB	12(52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13(53)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
COMP	14(54)	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	15(55)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
Y OPTION	16(56)	ALL	ALL	TAIL	ALL	ALL	TAIL	ALL	ALL
TRAN PLS	17(57)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ALT									
RATE DB	18(58)	0.200	0.200	0.070	0.200	0.070	0.070	0.100	0.100
JET OPT	19(59)	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
# JETS	20(60)	2	2	1	2	1	1	2	2
ON TIME	21(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22(62)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN									
ROT RATE	23(63)	0.2000	0.4000	0.0080	0.2000	0.0500	0.0500	0.0160	0.0500
ATT DB	24(64)	1.000	1.000	0.070	1.000	1.000	1.000	1.000	1.000
RATE DB	25(65)	.020	.020	.010	.020	.020	.020	.020	.020
ROT PLS	26(66)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.050
COMP	27(67)	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28(68)	0	0	0	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/POST DEPLOY	LOSS OF VERN (ALL)	LOSS OF VERN (TAIL ONLY)	RNDZ	TERMINAL PHASE

FLT PLN-1a/112/O/A

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'STS-112 A1 THROUGH A8 DAP CONFIGURATIONS'

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STS-112 DAP B1 THROUGH B8 CONFIGURATIONS

	ITEM #	B1	B2	B3	B4	B5	B6	B7	B8
PRI									
ROT RATE	30(50)	0.5000	0.2000	0.2000	0.2000	0.2000	0.5000	0.5000	0.0500
ATT DB	31(51)	3.00	3.00	3.00	0.30	3.00	3.00	2.00	2.00
RATE DB	32(52)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33(53)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34(54)	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	35(55)	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL	ALL
Y OPTION	36(56)	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL	ALL
TRAN PLS	37(57)	0.10	0.02	0.02	0.02	0.02	0.02	0.05	0.05
ALT									
RATE DB	38(58)	0.200	0.070	0.070	0.100	0.200	0.200	0.100	0.100
JET OPT	39(59)	ALL	TAIL	ALL	ALL	ALL	ALL	ALL	ALL
# JETS	40(60)	2	1	1	2	2	2	2	2
ON TIME	41(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42(62)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN									
ROT RATE	43(63)	0.2000	0.2000	0.2000	0.0080	0.0160	0.2000	0.2000	0.0500
ATT DB	44(64)	1.000	1.000	1.000	0.100	0.033	1.000	1.000	1.000
RATE DB	45(65)	.020	.020	.020	.010	.020	.020	.020	.020
ROT PLS	46(66)	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.020
COMP	47(67)	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48(68)	0	0	0	0	0	0	0	0
PURPOSE		NOM OMS RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (ALL)	SSUS DEPLOY	COAS/HUD CAL		RNDZ	TERMINAL PHASE

FLT PLN-1aa/112/O/A



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STS-112 DAP A9 THROUGH A15 CONFIGURATIONS

	ITEM #	A9	A10	A11	A12	A13	A14	A15
PRI								
ROT RATE	10(50)	0.1300	0.0500	0.1000	0.1000	0.1000	0.0500	0.1000
ATT DB	11(51)	1.00	0.50	15.0000	5.00	5.00	5.00	40.00
RATE DB	12(52)	0.10	0.10	0.20	0.20	0.20	0.20	0.20
ROT PLS	13(53)	0.10	0.10	0.10	0.04	0.04	0.04	0.003
COMP	14(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	15(55)	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL
Y OPTION	16(56)	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL
TRAN PLS	17(57)	0.05	0.05	0.10	0.01	0.01	0.01	0.01
ALT								
RATE DB	18(58)	0.100	0.100	0.070	0.070	0.070	0.120	0.200
JET OPT	19(59)	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL	TAIL
# JETS	20(60)	2	2	3	3	3	3	2
ON TIME	21(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22(62)	0.00	0.00	12.00	11.04	11.04	11.04	0.00
VERN								
ROT RATE	23(63)	0.1300	0.0500	0.1000	0.1000	0.1000	0.0500	0.0200
ATT DB	24(64)	1.000	0.500	5.000	3.000	3.000	5.000	5.000
RATE DB	25(65)	.020	.020	.050	.050	.080	.150	.050
ROT PLS	26(66)	0.050	0.050	0.010	0.002	0.002	0.002	0.001
COMP	27(67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28(68)	0	0	1,2,5,6*	1,5**	7,8***	1-6****	7
PURPOSE		PROX OPS/ FLYAROUND	DOCKING	AUTO REBOOST	MATED MNVRS & HOLD (VRCS)	SHUTTLE A/L DEPRESS ATTITUDE CONTROL	SSRMS S1 INSTALL	

BOLD-ITALIC indicate a change from the I-load
 *1 for VERN and 2 for ALT pre-install, 5 for VERN and 6 for ALT post-install
 **1 pre-install, 5 post-install
 ***7 for VERN post-install, 8 for ALT post-install
 ****reference loads constraints matrix

FLT PLN-1b/112/O/B

HINGE

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 BACK OF 'STS-112 B1 THROUGH B8 DAP CONFIGURATIONS'
 HINGED AT BOTTOM OF
 'STS-112 A8 THROUGH A 15 DAP CONFIGURATIONS'

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STS-112 B9 THROUGH B15 DAP CONFIGURATIONS

	ITEM #	B9	B10	B11	B12	B13	B14	B15
PRI								
ROT RATE	30(50)	0.1300	0.0500	0.5000	0.1000	0.5000	0.5000	0.1000
ATT DB	31(51)	1.00	0.50	3.00	5.00	3.00	3.00	40.00
RATE DB	32(52)	0.10	0.10	0.20	0.20	0.20	0.20	0.200
ROT PLS	33(53)	0.04	0.04	0.04	0.04	0.04	0.04	0.003
COMP	34(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	35(55)	TAIL	TAIL	ALL	TAIL	ALL	ALL	TAIL
Y OPTION	36(56)	TAIL	TAIL	ALL	TAIL	ALL	ALL	TAIL
TRAN PLS	37(57)	0.01	0.01	0.02	0.01	0.02	0.02	0.01
ALT								
RATE DB	38(58)	0.100	0.100	0.200	0.070	0.200	0.200	0.200
JET OPT	39(59)	TAIL	TAIL	ALL	TAIL	ALL	ALL	TAIL
# JETS	40(60)	2	2	2	3	2	2	2
ON TIME	41(61)	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42(62)	0.00	0.00	0.00	11.04	0.00	0.00	0.00
VERN								
ROT RATE	43(63)	0.1300	0.0500	0.2000	0.1000	0.2000	0.2000	0.2000
ATT DB	44(64)	1.000	0.500	1.000	3.000	1.000	1.000	5.000
RATE DB	45(65)	.020	.020	.020	.050	.020	.020	.050
ROT PLS	46(66)	0.020	0.020	0.002	0.002	0.002	0.002	0.001
COMP	47(67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48(68)	0	0	0	2,6*	0	0	7
PURPOSE		PROX OPS/ FLYAROUND	DOCKING		MATED MNVRS & HOLD (PRCS)			

BOLD-ITALIC indicate a change from I-load or prior flight DAP configuration
 *2 pre S1 install, 6 post S1 install

FLT PLN-1bb/112/O/B

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FLIGHT DATA FILE
Distribution
112 FLT PLN FSP FIN

** JSC **

AP3/BRANCH DISTRIBUTION (10)
AP3/PAO DISTRIBUTION (50)
AP5/SCHOER, R.K.
BT4/ROSE, HAROLD
BT4/SLATER, RICK
C44/HANCOCK, L.
CB/CB PDF REP (2)
CB/CHIEF, ASTRONAUT OFF.
CB/FAMILY ESCORT MGR
DA2/HARBOLD, J.C.
DA82/ACTION CENTER
DAB3/MOD LIB UPDATE TASK (4)
DF22/DPS FDF REP (3)
DF24/INCO FDF REP (3)
DF25/LEAD ODIN (5)
DF5/MMACS LEAD OFFICER (3)
DF53/OSO LIBRARY MGR. (2)
DF62/GNC GROUP LEAD (3)
DF63/PROP GROUP LEAD (4)
DF64/ADCO (5)
DF73/ELEC SYS GROUP LEAD (4)
DF73/LEAD EGIL (3)
DF73/SYSTEMS LIBRARY
DF82/EECOM (5)
DF82/LEAD EECOM (3)
DF83/ECLSS (5)
DF84/LEAD THOR (5)
DM/DM CONSOLE LIBRARY (2)
DM2/FLIGHT DESIGN MANAGER
DM21/LOWES, F.B.
DM3/LEAD TOPO
DM32/LEAD FDO (3)
DM32/ORBIT FDO GROUP LEAD (7)
DM43/HEAD
DM46/ENTRY FDO
DM46/LSO
DO12/OPS SAFETY OFFICE
DO13/FULLER, S.M.
DO13/HSG-H LIBRARY (3)
DO13/HSG-M LIBRARY (3)
DO13/HSG-MTLO
DO13/MSR LIBRARY (2)
DO13/TTI LIBRARY (2)

DO35/ZULAUF, T.R.
DO352/TECH EDITOR
DO353/PDF FLIGHT LEAD
DO353/PDF MNGR/RESERVE (25)
DO4/BOOK MANAGER FLT PLN (20)
DO4/FAO TEAM (20)
DO4/LEAD FAO
DO4/POINTING (4)
DO4/SHUTTLE FLT PLANNING (3)
DO44/HEAD
DO45/LIBRARY (3)
DO45/SECTION HEAD
DO5/LEAD ACO/PLO (15)
DT32/TEAM LEAD
DT34/CONTROL PROP
DT35/DPS/NAV LIBRARY (3)
DT36/SHUTTLE SYSTEMS (2)
DT37/CARGO SYSTEMS
DT37/SHUTTLE COMMUNICATIONS (2)
DT37A/PAYLOAD TRAINING GROUP (2)
DX22/LEAD ROBO (3)
DX22/ROBOTICS SECTION (6)
DX25/RMS TRAINING GROUP (2)
DX32/PERSON, S. (4)
DX33/CREW SYSTEMS
DX34/MISSION LEAD (2)
EC/CTSD LIBRARY
EC3/ROTTER, H.A.
EC5/CHANG, C.M.
EC6/PETERSON, S.L. (2)
EG/CRITELLI, S.
ES3/CHANG, Y. PHD
ES62/DAVIS, R.
EV/111/LIBRARY
EV/2/LM SUPPORT, B-44
EV14-LIB/ASD-14-LIB
EV55/PASS FSW T&O
GP23/STIC (3)
GP26/TURNEY, LINDA
GP45/SCENELISTING
J30J/ODRC GROUP
MER/30 LIBRARY
MO/P2/WOLFER, J.
MT2/PAYLOAD PIM'S
MT3/BANKS, W.R.
MT3/MANAGER (3)
MV6/RMS INTEGRATION (3)
NC4/LEAD
NS44/LLOYD, S.
OC/CONSOLE SUPPORT (2)
OC/LAUNCH PACKAGE MANAGER (2)
SD2/COLEMAN, S. (2)
SD2/WILKE, T. (5)

SD3/PUTCHA, L.
SK-KI/LEE, L. (2)
SN3/CHRISTIANSEN, E.
SN3/GOLIGHTLY, M.J.
SN5/EOL
SP33/HARRIS, C.D.
ZR1/USAF TECHNICAL LIBRARY (3)
ZS8/ASSGND LEAD FORECASTER

** JSC OFFSITE **

HUGHES TRAINING
TSC/LIBRARY

LOCKHEED-MARTIN-HOUSTON
C102/SPRAGGINS, A.
C33/JONES, J.
C70/KEENER, J.F.

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

BOEING-HOUSTON
13100 SPACE CENTER BLVD.
HOUSTON, TX 77059
HS-22/FLIGHT/STAGE MANAGER
HS-22/OPERATIONS LEAD
HS4-30/CAMPBELL, M.L.
HZ1-10/WILLIAMS, C.
MC HS2-20/GATICA, R.
ZC01/ASUNCION, C.
ZC01/CORONADO, D.J.
ZC01-555/DE VAULT, G.M.
ZC20/SHARP, S.L.

** POUCH MAIL **

FALCON AFB
22 SOPS/CCE
300 O'MALLEY STE 61
SCHRIEVER AFB, CO 80912-3061
LAUNCH OPERATIONS OFF

NASA GRC
500-203/TUTTLE, K.L.

SPACE CENTER HOUSTON
1601 NASA ROAD 1
HOUSTON, TX 77058
ATTN: MBO'S - MAILCODE AP5
AP5/FUHRMAN, N.

UNITED SPACE ALLIANCE-HOUSTON
USH-423E/TRAJECTORY LIBRARY
USH-482L/MISSION ENGINEER
USH-483L/PROX OPS LIBRARY
USH-483L/RENDEZVOUS LIBRARY (3)
USH-485L/KOCEN, M.
USH-626L/TRAVLOS, J.A.
USH-636X/SAIL/GN&C
ZC01/JENKINS, L.W.
ZC01/KAGAWA, R.

BNA-DOWNEY
AAO5/WOOLHOUSE, D.L.
AD60/MC MILLAN, B.J.
FC94/IMPASTATO, J.

NASA HEADQUARTERS
ME/PERRY, C.F. (2)
ME/POSEY, G.
MZD/MILLER, H.
PM/MC CULLA, J.W.
UO/DOARN, C.
US/ZWIERKO, R.

NASA KSC
F264/LINTEREUR, P.
FA-31/MCBREARTY, J.C.
KSC/KSC TECH LIBRARY-D (2)
PH-M1/WEAVER, C.