

Flight Plan

STS-104 / 7A

(STS-104 Modified FRR Trajectory)

**Mission Operations Directorate
 Operations Division**

For the latest working copy of the Flight Plan, visit
<https://mod.jsc.nasa.gov/do4/flightplan>

**Final
 May 15, 2001**

<u>EVENT</u>		<u>MET</u>		<u>CENTRAL</u>	<u>GMT</u>
Launch	0	00:00	Thu	06/14/01 15:10	165/20:10
Docking	1	18:20	Sat	06/16/01 09:30	167/14:30
ISS Ingress (FD3)	1	19:55	Sat	06/16/01 11:05	167/16:05
ISS Egress (FD3)	2	00:30	Sat	06/16/01 15:40	167/20:40
EVA 1 (Airlock Install)	2	17:05	Sun	06/17/01 08:15	168/13:15
ISS Ingress (FD4)	3	01:45	Sun	06/17/01 16:55	168/21:55
ISS Egress (FD6)	5	00:40	Tue	06/19/01 15:50	170/20:50
EVA 2 (ONTO Install)	5	17:10	Wed	06/20/01 08:20	171/13:20
ISS Ingress (FD7)	6	00:40	Wed	06/20/01 15:50	171/20:50
EVA 3 (ONTO Install)	7	18:40	Fri	06/22/01 09:50	173/14:50
ISS Egress (FD10)	8	16:45	Sat	06/23/01 07:55	174/12:55
Undocking	8	19:05	Sat	06/23/01 10:15	174/15:15
Separation	8	20:25	Sat	06/23/01 11:35	174/16:35
Deorbit Burn	10	18:36	Mon	06/25/01 09:46	176/14:46
KSC Landing	10	19:40	Mon	06/25/01 10:50	176/15:50

National Aeronautics and
 Space Administration

Lyndon B. Johnson Space Center
 Houston, Texas



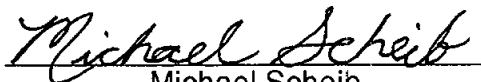
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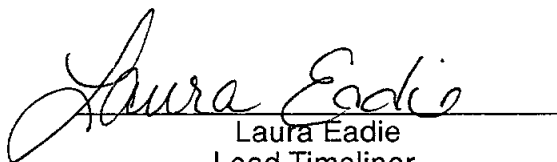
STS-104 FLIGHT PLAN

FINAL
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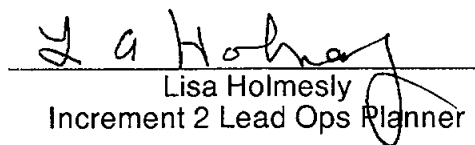
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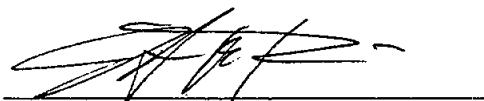


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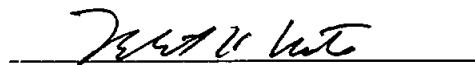


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FLIGHT PLAN
STS-104

LIST OF EFFECTIVE PAGES

FINAL 05/15/01

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3-69	104/FIN	3-123	104/FIN
3-70	104/FIN	3-124	104/FIN
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STS-104 FLIGHT PLAN FABRICATED ITEMS

<u>Title</u>	<u>Ref. Page</u>	<u>Item No.</u>
STS-104 DAP A1 THROUGH A8 CONFIGURATIONS	CC 8-2	FLT PLN-1a/104/O/A
STS-104 DAP B1 THROUGH B8 CONFIGURATIONS	CC 8-3	FLT PLN-1aa/104/O/A
STS-104 DAP A9 THROUGH A15 CONFIGURATIONS	CC 8-4	FLT PLN-1b/104/O/B
STS-104 DAP B9 THROUGH B15 CONFIGURATIONS	CC 8-5	FLT PLN-1bb/104/O/B

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INTRODUCTION

The STS–104 Flight Plan is the Flight Data File article that contains the on–orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry Checklists. The detailed rendezvous and undocking timelines and procedures are contained in the Rendezvous Checklist. The detailed EVA task timelines and procedures are in the EVA Checklist.

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

- NSTS–07700 Vol III, Flight Definition and Requirements Document
- NSTS–17462–104, STS–104 Flight Requirements Document
- NSTS–37326, Shuttle Crew Scheduling Constraints (Rev A)

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

The STS–104 Flight Plan was based on a Flight Readiness Review (FRR) profile with a launch date of June 14, 2001, at 20:10 GMT. Orbiter inertial attitudes are expressed relative to a mean of 1950 (M50) reference frame.

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

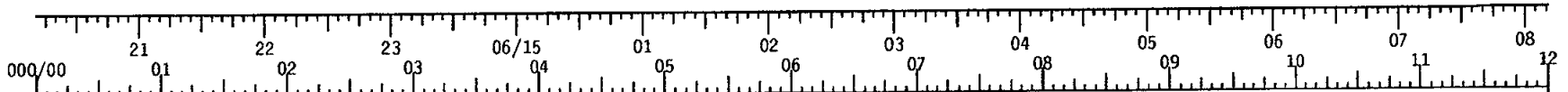
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OVERVIEW TIMELINE

SUMMARY TIMELINE

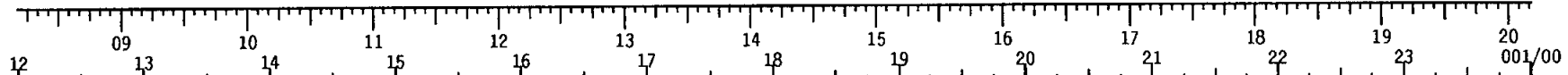
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 MET Day 000



FD01 CDR/R2 S. LINDSEY		POST INSERTION	AFT CO	ELEV PK	NCL OMS BURN	-ZLV -XVV	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP	
PLT/IV C. HOBAUGH	L A U N C H	POST INSERTION	TEPC PWR		OMS BURN		GRWRDN	PRE SLEEP	HTR RCNFG	PRE SLEEP	SLEEP
MS1/EV1 M. GERNHARDT		POST INSERTION	SEE S/U		GIRA INSTALL		ICB CACT		PRE SLEEP	SLEEP	
MS2/R1 J. KAVANDI		POST INSERTION	APCU ACT *	RMS *	OMS BURN	PRE SLEEP	GRWRDN	PRE SLEEP	APCU DECT *	DSO 634 *	SLEEP
MS3/EV2 J. REILLY		POST INSERTION	PGSC SETUP		MWIS S/U			PRE SLEEP		SLEEP	
ORB ATT DAY/NIGHT		ASCENT	-ZLV -YVV		NCL					-ZLV -XVV	
ORBIT		2	3	4	5	6	7	8	9		
TDRS 47 171											
NOTES				*LTA HTR ACT *ON-ORBIT INIT			*LTA HTR DEACT * INITIAL SETUP				

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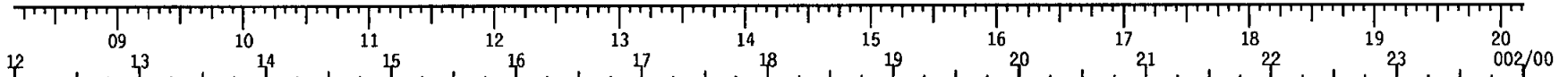


CDR/R2 S. LINDSEY	SLEEP	DSO 493	POST SLEEP	DIU ACT	LOAD DAPS	OMS BURN	RMS C/O	MINN VRT H20	WANS SITE	WTAE SRTE	-ZLV -XVV	RMS PWRD N	APCU DCT*	MEAL	CTWE CR#1	OSVS P/U	OSVS C/O	OSVS P/D	NPC +X RCS BURN	-ZLV -XVV	FILTER CLEAN	FC PRG	FM CON ICT#2 TOR	EXE R C I S E
	PLT/IV C. HOBAUGH	SLEEP	DSO 493	POST SLEEP	CRYO 02 SNSR CK	ERGO S/U	EMU C/O 1,2						H2O CWC S/U FILL #1	MEAL	EMU C/O 3	P/TV06 S/U SSV	EXERCISE	P/TV20 S/U (RNDZ)						
MS1/EV1 M. GERNHARDT	SLEEP		POST SLEEP	REBA -I	A/L PREP	EMU C/O 1,2						CC S/AO -C PCAL	MEAL	EMU C/O 3	EMU PREP	PAU TDI VIO 08 S/U	PP G/T VCS S/U	P/TV19 CTR LINE CM	ODS RING EXT			EXERCISE		
MS2/R1 J. KAVANDI	SLEEP	6 3 4	POST SLEEP	APCU ACT*	FRED SETUP	OMS BURN	RMS PWR UP	RMS C/O	WASTE DUMP SURVEY	PLB SURVEY		RMS PWR D N	MEAL	P/TV07 OSVS S/U	OSVS P/U	OSVS C/O	OSVS P/D	+X RCS BURN	RNDZ PGSC S/U	ODS RING EXT	RNDZ TOOLS C/O	P/TV20 S/U (RNDZ)		
MS3/EV2 J. REILLY	SLEEP		POST SLEEP	HL/ P G T I	A/L PREP	EMU C/O 1,2						HL/ P G T I	MEAL	EMU C/O 3	HL/ P G T I	EXERCISE	RNDZ PGSC S/U			RNDZ TOOLS C/O				
ORB ATT DAY/NIGHT	-ZLV -XVV																							
ORBIT	9 10 11 12 13 14 15 16 17																							
TDRS 47 171	[Activity bars for TDRS 47 and 171]																							
NOTES	* LTA HEATER ACT											*LTA HTR DEACT												

GMT 06/15/01 21 22 23 06/16 01 02 03 04 05 06 07 08
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 MET Day 001

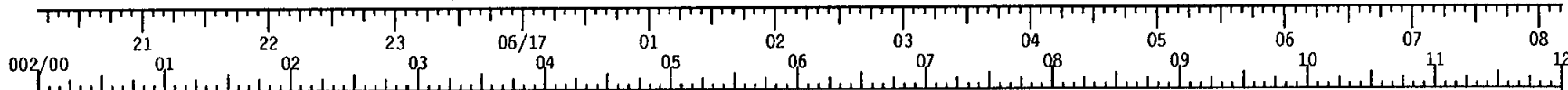
CDR/R2 S. LINDSEY	EXERCISE	+X RCS BURN	NCS -ZLV -XVV	PMC OCA	FUT LD MNV	PRE SLEEP	SLEEP (7.5)	SIM O I N I T
PLT/IV C. HOBAUGH	P/TV20 S/U (RNDZ)	+X RCS BURN	CT WE CR #M 2			PRE SLEEP	SLEEP (7.5)	PS OL SE TE P DSO 493
MS1/EV1 M. GERNHARDT	P/TV18 WVS S/U					PRE SLEEP	SLEEP (7.5)	POST SLEEP
MS2/R1 J. KAVANDI	EXERCISE					PRE SLEEP	SLEEP (7.5)	DSO 6 3 4 PS OL SE TE P
MS3/EV2 J. REILLY	P/TV18 CAM S/U	HL P G T				PRE SLEEP	SLEEP (7.5)	POST SLEEP
ORB ATT	-ZLV -XVV							
DAY/NIGHT	17 18 19 20 21 22 23 24 25							
TDRS 47 171								
NOTES								

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STS	FD03		NH		NC4		TI		VBAR K0		H/O		H/A		S/B		EVA1 PROC RVW		A/L INST DRY RUN									
	CDR/R2 S. LINDSEY	DSO 493	P/O	SW	LA	S/R	E/T	M/P	G/R	P/R	U/B	ISS RNDZ OPS	APPROACH T/L	-XZLVV	H/O	A/T	G/R	P/R	U/B	PREP	H/A	S/B	EVA1 PROC RVW	A/L INST DRY RUN				
STS	PLT/IV C. HOBAUGH	POST SLEEP										ISS RNDZ OPS	APPROACH T/L										EVA1 PROC RVW	MDDK EQUIP XFER	CWC XFER (2)	EMU XFER	A/S	MEX DUE KIR P
	MS1/EV1 M. GERNHARDT	POST SLEEP	VHF SU	EVA TOOL SETUP	EXERCISE	P/TV20 S/U	P/TV20/ICBC OPS 1																EVA1 PROC RVW	SAFER XFER	EVA TOOL S/U	EMU INSTL	MDDK PREP	
	MS2/R1 J. KAVANDI	POST SLEEP	XFER PREP	EXERCISE	XFER PREP	ISS RNDZ OPS																	EVA1 PROC RVW		A/L INST DRY RUN			
	MS3/EV2 J. REILLY	POST SLEEP	VHF SU	EVA TOOL SETUP	EXERCISE	ISS RNDZ OPS																	EVA1 PROC RVW	EMU XFER	EVA TOOL S/U	EMU INSTL	MDDK PREP	
	ISS CDR Y.USACHEV	POST SLEEP	DPC	WORK PREP	EXERCISE	EXERCISE	COC6 AK IM SMPL	PMA2 CFG															EVA1 PROC RVW	MDDK EQUIP XFER	COC6 AK IM SMPL			
ISS	FE-1 J. VOSS	POST SLEEP	DPC	WORK PREP	EXERCISE	EXERCISE																EVA1 PROC RVW	AVURWS R&R CK	A/L INST DRY RUN				
	FE-2 S. HELMS	POST SLEEP	DPC	WORK PREP	DAILY STATUS CK	EXERCISE																EVA1 PROC RVW	AVURWS R&R CK	A/L INST DRY RUN				
STS	DAY/NIGHT	[Timeline bars for Day/Night]																										
	ORBIT	[Timeline bars for Orbit]																										
STS	DAILY ORBIT	[Timeline bars for Daily Orbit]																										
	TDRS	[Timeline bars for TDRS]																										
ORB ATT	-ZLV +YVV -NH -Z TGT TRK -TI -Z TGT TRK -BIAS -XLV +ZVV																											
ISS ATT	-BIAS +ZLV +XVV TEA +ZLV +XVV -FREE -BIAS +ZLV +XVV TEA																											
NOTES	*VERIFY CONFIG 1 * 1/18:20 *VERIFY CONFIG 2																											

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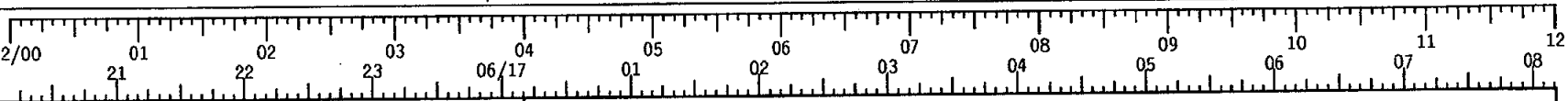
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			CDR/R2 S. LINDSEY	PLT/IV C. HOBAUGH	MS1/EV1 M. GERNHARDT	MS2/R1 J. KAVANDI	MS3/EV2 J. REILLY	ISS CDR Y. USACHEV	FE-1 J. VOSS	FE-2 S. HELMS	DAY/NIGHT	ORBIT	DAILY ORBIT	TDRS	ORB ATT	ISS ATT	NOTES					
S	T	S	CDR/R2 S. LINDSEY	PLT/IV C. HOBAUGH	MS1/EV1 M. GERNHARDT	MS2/R1 J. KAVANDI	MS3/EV2 J. REILLY	ISS CDR Y. USACHEV	FE-1 J. VOSS	FE-2 S. HELMS	DAY/NIGHT	ORBIT	DAILY ORBIT	TDRS	ORB ATT	ISS ATT	NOTES					
			ISS CDR Y. USACHEV	FE-1 J. VOSS	FE-2 S. HELMS	DAY/NIGHT	ORBIT	DAILY ORBIT	TDRS	ORB ATT	ISS ATT	NOTES										
			ISS CDR Y. USACHEV	FE-1 J. VOSS	FE-2 S. HELMS	DAY/NIGHT	ORBIT	DAILY ORBIT	TDRS	ORB ATT	ISS ATT	NOTES										
*MDDK PREP @MDDK PREP †XFR TG																						

STS-104/7A JOINT MSN SHORT TERM PLAN

FD03

MET Day 002 002/00

GMT 06/16/01

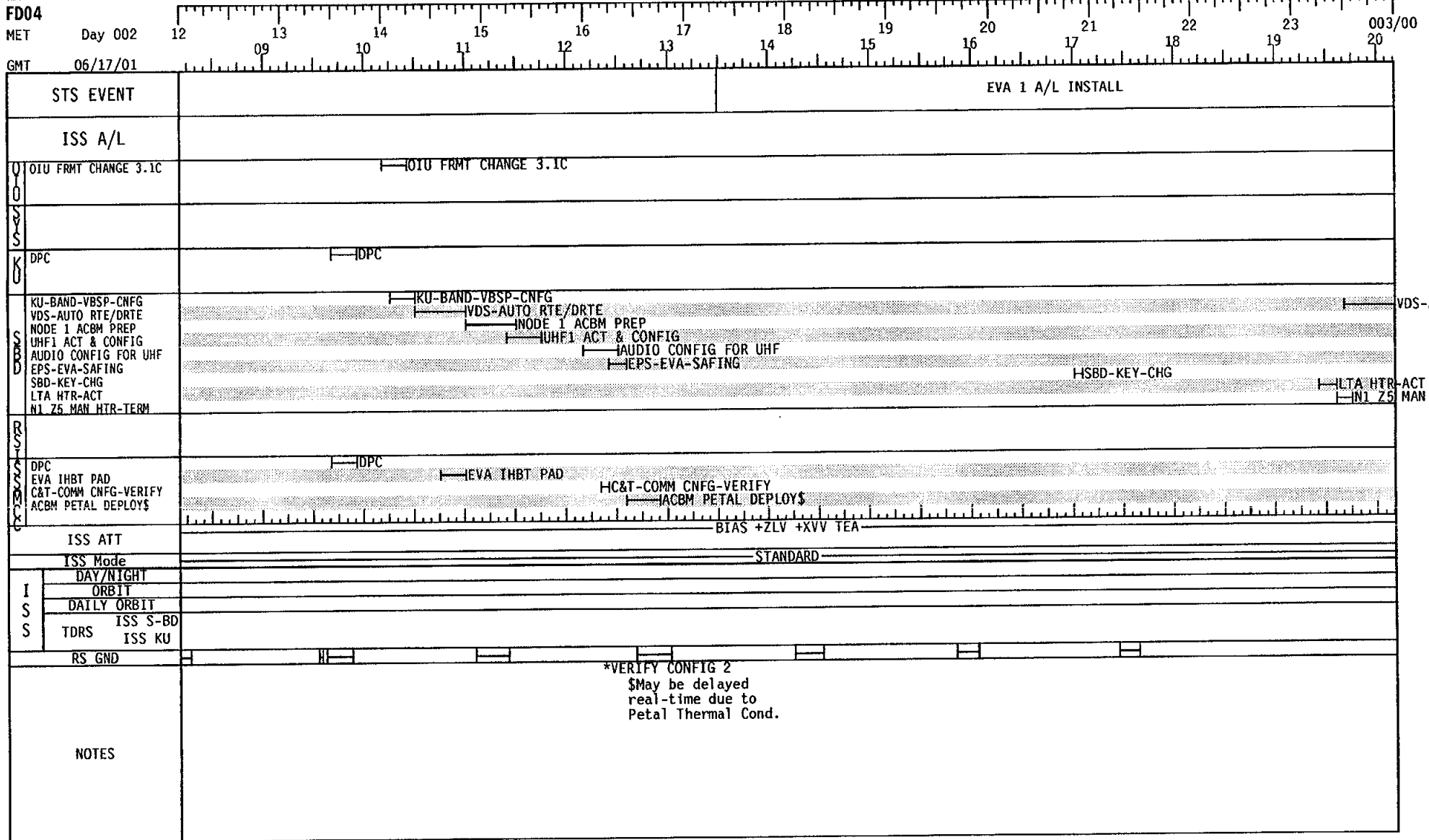


STS EVENT		*	PRE SLEEP	
ISS A/L				
DPC	----- DPC			
ACS-MP PPL-UPDATE ACS-MP PPL-INCORP	----- ACS-MP PPL-UPDATE ----- ACS-MP PPL-			
SSRMS-AVU-OPS DPC	----- SSRMS-AVU-OPS ----- DPC			
ISS ATT	----- BIAS +ZLV +XVV TEA			
ISS Mode	----- STANDARD			
DAY/NIGHT				
ORBIT				
DAILY ORBIT				
TDRS ISS S-BD ISS KU				
RS GND	----- *10.2 CAB DEPR -----			
NOTES				

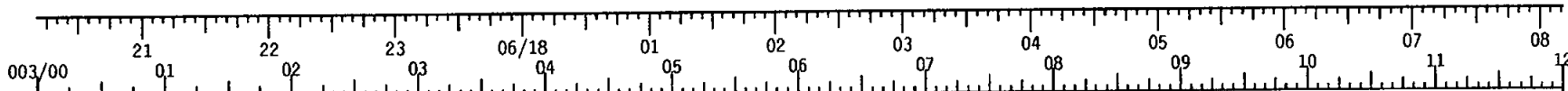
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	PLT/IV C. HOBAUGH	DSO 493	POST SLEEP	EVA PREP	EMU PURGE & P/B	EVA 1 (7:00) IVA EVA 1 SUPPORT																
	MS1/EV1 M. GERNHARDT		POST SLEEP	EVA PREP	EMU PURGE & P/B	ALDEP	PDOP/STEG	EVA SETUP	PCBM COVER REMOVE	LTA JMPR RMV	EVA 1 CLEANUP	INGRESS	WAIT IN AIRLOCK	EGRESS	SCITBMSPECT	MV TO POSN	MATE AL/N1 JMPR	EVA 1 CLEANUP				
	MS2/R1 J. KAVANDI	634	POST SLEEP	RMS HTR	OSVSUP	ORMWRUP	PAD INSTL	RMS EVA SUPPORT				VIEW AIRLOCK UNBERTH	VIEW AIRLOCK INSTALL			RPMSRDN	OPSWRSDN					
	MS3/EV2 J. REILLY		POST SLEEP	EVA PREP	EMU PURGE & P/B	ALDEP	PDOP/STEG	EVA SETUP	TOWEL BAR INSTL	LTA JMPR RMV	EVA 1 CLEANUP	INGRESS	WAIT IN AIRLOCK	EGRESS	SCITBMSPECT	MV TO POSN	WKST S/U (ONTO)	EVA 1 CLEANUP				
I S S	ISS CDR Y. USACHEV		POST SLEEP	DPC	WORK PREP	DAILY STATUS CK	CB-IT-MO-MAINT	COM	MEAL			EXERCISE			APVWRDN	PPS#						
	FE-1 J. VOSS		POST SLEEP	DPC	WORK PREP	IMAX S/U	EXERCISE	PDPTASL	AVU*	MEAL			VERIF	AVU OPS	SSRMS OPS	CPT R1	CPT R2	ABCLQTS	CBM BOLT LOAD			
	FE-2 S. HELMS		POST SLEEP	DPC	WORK PREP	PSWASAP	PCS S/U	EXERCISE	SURVY	ACBM RING VIEW	SM SNRVR	MEAL			GRAPL	MNVR TO PRE-INSTL	AVU OPS	MNVR TO RTL POSN	LIMF	BRAKE	ILHRS	STOW*
S T S	DAY/NIGHT																					
	ORBIT		41	42	43	44	45	46	47	48												
S T S	DAILY ORBIT		14	15	1	2	3	4	5	6												
	TDRS	47 171																				
ORB ATT		BIAS -XLV +ZVV																				
ISS ATT		BIAS +ZLV +XVV TEA																				
NOTES		@CFO CNKY *VESBY CONENGaged real-time due to Petal Thermal Cond:P/U * DEACTIVATION #ENA *SSRMS																				

STS-104/7A JOINT MSN SHORT TERM PLAN



GMT 06/17/01
 BETA ANG = +13
 MET Day 003



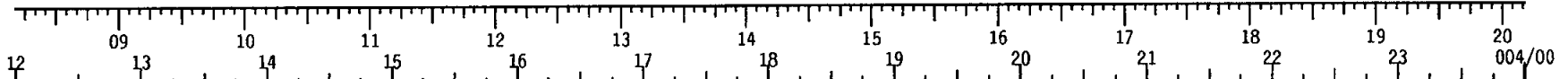
		DA	ICBC	14.7	M	I	I					
		PA	STAT	RPRSS	W	S	I	IN	NG	PRE	SLEEP	
		1			S	M	V	TR	RE	IS		
		2						IS	IS	MS		
STS	FD04 CDR/R2 S. LINDSEY											
	PLT/IV C. HOBAUGH	NR	AR	POST EVA W/O				RE				
	MS1/EV1 M. GERNHARDT	NR	AR	POST EVA W/O				BA				
	MS2/R1 J. KAVANDI	IP	AR	EXERCISE	PRE SLEEP			IN	XT	XB		
	MS3/EV2 J. REILLY	NR	AR	POST EVA W/O				HL				
ISS	ISS CDR Y. USACHEV	VEST	OP	VESTIBULE OUTFIT 1				DPC	PRE SLEEP	SLEEP		
	FE-1 J. VOSS	VEST	OP	VESTIBULE OUTFIT 1				LE	PRE SLEEP	SLEEP		
	FE-2 S. HELMS	A/L	P1	EXERCISE	PRE SLEEP	P1	DPC	PRE SLEEP	SLEEP			
STS	DAY/NIGHT											
	ORBIT	48	49	50	51	52	53	54	55	56		
	DAILY ORBIT	6	7	8	9	10	11	12	13	14		
TDRS	47											
	171											
ORB ATT	BIAS -XLV +ZVV											
ISS ATT	BIAS +ZLV +XVU TEA											
NOTES	*N1 STBD HATCH											

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FD04
 MET Day 003 003/00 01 02 03 04 05 06 07 08 09 10 11 12
 GMT 06/17/01 21 22 23 06/18 01 02 03 04 05 06 07 08

STS EVENT	*	
ISS A/L		VESTIBULE OUTFIT 1
Q O S S		IOIU FRMAT CHNGE 3C
K D P C		IDPC
S D R I S S E C C		PPS-SA-SUN-TRK UHF1 DEACTIVATION AUDIO UHF DECONFIG C&T-POST EVA-CNFG
D P C		IDPC
I S S		BIAS +ZLV +XVV TEA
I S S		STANDARD
I S S		DAY/NIGHT ORBIT DAILY ORBIT ISS S-BD TDRS ISS KU
R S G N D		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
N O T E S		*EVA 1 A/L INSTALL

GMT 06/18/01
 BETA ANG = +11
 MET Day 003



ST	Activity	12	13	14	15	16	17	18	19	20	21	22	23	24		
STS	CDR/R2 S. LINDSEY	FD05 DSO 493	POST SLEEP	H/O ATT	BIAS +ZLV +XVV	REBOOST CONFIG 4	-XLV +ZVV	H/O ATT	VESTIBULE OUTFIT 2	C I W N C I # 5	PAO	MEAL	C T W E C R # M 5	O2 & N2 OTFT N1 A/L	O2 SYSTEM PURGE	N2 SYSTEM PURGE
	PLT/IV C. HOBAUGH	DSO 493	POST SLEEP	PS // T V 2 2	P/TV02 S/U	P/TV02 OPS		P P A T O S V O 2 / U	PAO	MEAL	C O M M 1	XFER OPS	REPLACE NPRV/IMV *	C I W N C I # 6		C T W E C R # M 6
	MS1/EV1 M. GERNHARDT		POST SLEEP	A S P R N T	REBA -T	IMAX S/U	EXERCISE (DTO 262)		PAO	MEAL		EMU H2O RCHG BAG FIL	B A T T - T	EMU L I O H C/O	EMU H2O RCHG	
	MS2/R1 J. KAVANDI	6 3 4	POST SLEEP			VESTIBULE OUTFIT 2	EXERCISE		VESTIBULE OUTFIT 2		MEAL		O2 & N2 OTFT N1 A/L	O2 SYSTEM PURGE		N2 SYSTEM PURGE
	MS3/EV2 J. REILLY		POST SLEEP	H L S P R N T *		EXERCISE	XFER OPS	CSA-CP RSPLY	PAO	MEAL		EMU H2O RCHG BAG FIL	C W C X F E R (3)	EMU L I O H C/O	EMU H2O RCHG	
ISS	ISS CDR Y. USACHEV		SLEEP	POST SLEEP	D P C W P O R E P K	VESTIBULE OUTFIT 2	F 1 4 C K	EXERCISE	L T S @ A/L M D M A C T	MEAL		O2 & N2 OTFT N1 A/L	REPLACE NPRV/IMV *	XFER OPS	EXRCSE	
	FE-1 J. VOSS		SLEEP	POST SLEEP	D P C W P O R E P K	DAILY STATUS C K	L I E P A E K * @	EXERCISE	VESTIBULE OUTFIT 2	MEAL		U O P T T I O	L I A A C U / P S L D O	O2 SYSTEM PURGE		N2 SYSTEM PURGE
	FE-2 S. HELMS		SLEEP	POST SLEEP	D P C W O R K P R E P	XFER OPS	EXERCISE	L T S @ A/L M D M A C T	MEAL		U O P T T I O	L I A A C U / P S L D O	O2 SYSTEM PURGE		N2 SYSTEM PURGE	
STS	DAY/NIGHT															
	ORBIT	56	57	58	59	60	61	62	63	64						
S	DAILY ORBIT	14	15	16	1	2	3	4	5	6						
	TDRS	47 171														
	ORB ATT	BIAS -XLV +ZVV			BIAS +ZLV +XVV			BIAS -XLV +ZVV			BIAS +ZLV +XVV TEA					
	ISS ATT	BIAS +ZLV +XVV TEA			BIAS +XLV -ZVV			BIAS +ZLV +XVV			BIAS +ZLV +XVV TEA					
	NOTES	*TERM *OVERNIGHT LEAK CHECK COMPLETE @N1 STBD HATCH						@A/L LIGHT ACT ^C/O			* NODE STBD FWD & AFT ^C/O					

STS-104/7A JOINT MSN SHORT TERM PLAN

FD05
 MET Day 003 12 13 14 15 16 17 18 19 20 21 22 23 004/00
 GMT 06/18/01 09 10 11 12 13 14 15 16 17 18 19 20

STS EVENT	POST SLEEP	*							
ISS A/L		VESTIBULE OUTFIT 2	VESTIBULE OUTFIT 2	VESTIBULE OUTFIT 2		O2 & N2 OTFT N1 A/L	REPLACE NPRV/IMV *		
DAILY PLANNING CONF	DAILY PLANNING CONF								
A/L PWRUP & RPCM C/O A/L PCA ACT ITCS-RFCA-ACT FDS-CABIN SD-ACT CCAA ACTIVATION A/L-PRIME HTR-ACT SBD-KEY-CHG ACS-N1 IMV VLV-RCNFG	A/L PWRUP & RPCM C/O A/L PCA ACT ITCS-RFCA-ACT FDS-CABIN SD-ACT CCAA ACTIVATION A/L-PRIME HTR-ACT SBD-KEY-CHG ACS-N1 IMV VLV-RCNFG								
DAILY PLANNING CONF A/L SYS ACT & C/O	DAILY PLANNING CONF								
ISS ATT	BIAS +ZLV +XVV TEA	BIAS +XLV -ZVV	STANDARD			BIAS +ZLV +XVV TEA			
ISS Mode	STANDARD								
DAY/NIGHT									
ORBIT									
DAILY ORBIT									
TDRS									
ISS S-BD									
ISS KU									
RS GND	*MNVR -XLV +ZVV *A/L PWRUP & CHECKOUT RPCMS								
NOTES									

S T S	FD05	N2 SYSTEM PURGE		PMC OCA	PRE SLEEP	SLEEP				
	CDR/R2 S. LINDSEY						ISS EXTERNAL SURVEY →			
	PLT/IV C. HOBAUGH	CWC XFER (2)	PRE SLEEP		SLEEP					
	MS1/EV1 M. GERNHARDT	RPLC PPRV /MPEV	PRE SLEEP		SLEEP					
	MS2/R1 J. KAVANDI	N2 SYSTEM PURGE		XTXB FAFR EGEI RURE P F	PRE SLEEP	SLEEP				
MS3/EV2 J. REILLY	PRE SLEEP		SLEEP							
I S S	ISS CDR Y.USACHEV	EXRCSE	RPLC PPRV /MPEV	REPORT PREP	TASK* XTFA SEG RUP	DPC	PRE SLEEP	SLEEP		
	FE-1 J. VOSS	N2 SYSTEM PURGE		N1 MPEV IMV LK CK	PRE SLEEP		SLEEP			
	FE-2 S. HELMS	N2 SYSTEM PURGE		DPC	PRE SLEEP		SLEEP			
S T S	DAY/NIGHT	[Day/Night Cycle]								
	ORBIT	64	65	66	67	68	69	70	71	72
S	DAILY ORBIT	6	7	8	9	10	11	12	13	14
	TDRS	47 171	[TDRS Schedule]							
ORB ATT		BIAS -XLV +ZVV								
ISS ATT		BIAS +ZLV +XVW TEA								
NOTES		*ASSEM TASK SUM								

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FD05

MET Day 004 004/00 01 02 03 04 05 06 07 08 09 10 11 12
 GMT 06/18/01 21 22 23 06/19 01 02 03 04 05 06 07 08

STS EVENT	PRE SLEEP	SLEEP
ISS A/L		
DAILY PLANNING CONF	DAILY PLANNING CONF	
C&DH-A/L ERB-DUMP C&DH-A/L MDM PPL-U/L C&DH-INT MDM PPL-U/L	C&DH-A/L ERB-DUMP C&DH-A/L MDM PPL-U/L C&DH-INT MDM PPL-U/L	
DAILY PLANNING CONF	DAILY PLANNING CONF	
ISS ATT		BIAS +ZLV +XVV TEA
ISS Mode		STANDARD
DAY/NIGHT		
ORBIT		
DAILY ORBIT		
TDRS ISS S-BD ISS KU		
RS GND		H H H H
NOTES		

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		12	13	14	15	16	17	18	19	20	21	22	23	24								
STS	CDR/R2 S. LINDSEY	DSO 493	POST SLEEP			FILTER CLEANING	H/O ATT	DTO 261	-XV LVV	SIN VV	GENERATOR	CAUTION	STEEROM	HRCNFG	-XZLVV	H/O ATT	MEAL	PAO	COMM 2	CTWRM 8	EXERCISE	EVA 2 PROCEDURE RVW
	PLT/IV C. HOBAUGH	DSO 493	POST SLEEP			CINWICIT #7	P/TV24 S/U	P/TV24 OPS	CTWRM #7	CFER OPS	PS/TUVO2	EXERCISE			MEAL	PAO	P/TV18 CAM S/U			EVA 2 PROCEDURE RVW		
	MS1/EV1 M. GERNHARDT		POST SLEEP	PFC	POST SLEEP	EVA TOOL S/U	MDDK PREP	SUNSET ROW	SCAFER	EVA H/W C/O	RSA ACT	ISS EVA PREP DRY RUN			MEAL	IRU ACT & C/O			COM ACT & C/O	UIA ACT	BCA ACT	EVA 2 PROCEDURE RVW
	MS2/R1 J. KAVANDI	634	POST SLEEP			RELOCATE IV HATCH						MEAL	CINWICIT #8	EXERCISE			P/TV22 S/U	EVA 2 PROCEDURE RVW				
	MS3/EV2 J. REILLY		POST SLEEP			EVA TOOL S/U	MDDK PREP	SUNSET ROW	SCAFER	EVA H/W C/O	RSA ACT	ISS EVA PREP DRY RUN			MEAL	IRU ACT & C/O			COM ACT & C/O	UIA ACT	BCA ACT	EVA 2 PROCEDURE RVW
ISS	ISS CDR Y. USACHEV		POST SLEEP	DPC	WORK PREP	EXERCISE			XFER OPS			MEAL	PAO	*	⊕	EVA 2 PROCEDURE RVW						
	FE-1 J. VOSS		POST SLEEP	DPC	WORK PREP	RPLC PPRV /PEV	IV PEV LK CK	RELOCATE IV HATCH			EVA EQUIP XFER	MEAL	EXERCISE			EVA 2 PROCEDURE RVW						
	FE-2 S. HELMS		POST SLEEP	DPC	WORK PREP	DAILY STATUS CK			RELOCATE IV HATCH			EVA EQUIP XFER	MEAL	EXERCISE			EVA 2 PROCEDURE RVW					
STS	DAY/NIGHT	72		73		74		75		76		77		78		79		80				
	ORBIT	14		15		1		2		3		4		5		6		7				
STS	DAILY ORBIT	47		171																		
	TDRS																					
	ORB ATT	BIAS -XLV +ZVV		FREE		BIAS -XLV +YVV		FREE		BIAS -XLV +ZVV		BIAS +ZLV +YVV TEA										
	ISS ATT	BIAS +ZLV +XVV TEA				#TEMP						*FDS-DUCT SD-INSTALL		⊕PCP-DUCT-INSTALL								
	NOTES																					

STS-104/7A JOINT MSN SHORT TERM PLAN

FD06

MET Day 004 12 13 14 15 16 17 18 19 20 21 22 23 005/00
 GMT 06/19/01 09 10 11 12 13 14 15 16 17 18 19 20

STS EVENT	POST SLEEP	
ISS A/L	RELOCATE IV HATCH	*
ISS SBD	ACS-N1 IMV VLV-RCNFG SBD-KEY-CHG	ACS-N1 IMV VLV-RCNFG HSBD-KEY-CHG
ISS SBD	BIAS +ZLV +XVV TEA	FREE STANDARD
ISS SBD	BIAS +ZLV +YVV TEA	*
ISS SBD	ISS Mode	*
ISS SBD	DAY/NIGHT	*
ISS SBD	ORBIT	*
ISS SBD	DAILY ORBIT	*
ISS SBD	TDRS ISS S-BD	*
ISS SBD	ISS KU	*
ISS SBD	RS GND	*PAO OPPTY
ISS SBD	NOTES	*

GMT 06/19/01 21 22 23 06/20 01 02 03 04 05 06 07 08 09 10 11 12
 BETA ANG = +5 005/00 01 02 03 04 05 06 07 08 09 10 11 12
 MET Day 005

S T S	FD06	CWC XFER (2)	ING TRSM	PREP	10.2 DEPRESS	CNFG	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP
	PLT/IV C. HOBAUGH	PI/N BIT	PRE SLEEP			PT/E BRM	PRE SLEEP		SLEEP	
	MS1/EV1 M. GERNHARDT	PI/N BIT	PGT C/O	PRE SLEEP		PT/E BRM	PRE SLEEP		SLEEP	
	MS2/R1 J. KAVANDI	PS R L E E P	XB FR E I R E F	ING TRSM	PREP	10.2 DEPRESS	CNFG	PRE SLEEP		SLEEP
	MS3/EV2 J. REILLY	PI/N BIT	PGT C/O	PRE SLEEP			PT/E BRM	PRE SLEEP		SLEEP
I S S	ISS CDR Y.USACHEV	XB FR E I R E F	EXERCISE		REPORT DPC PREP	02 N2 XFR TRM	PRE SLEEP		SLEEP	
	FE-1 J. VOSS	IV HATCH LK CK			PRE SLEEP		SLEEP			
	FE-2 S. HELMS	A/L VIDEO CC C/O		DPC	PRE SLEEP		SLEEP			
S T S	DAY/NIGHT	[Timeline bars for Day/Night]								
	ORBIT	80	81	82	83	84	85	86	87	
	DAILY ORBIT	7	8	9	10	11	12	13	14	
TDRS	47	[Timeline bars for TDRS]								
	ORB ATT	171	[Timeline bars for ORB ATT]							
	ISS ATT	BIAS -XLV +ZVV BIAS +ZLV +YVV TEA								
	NOTES									

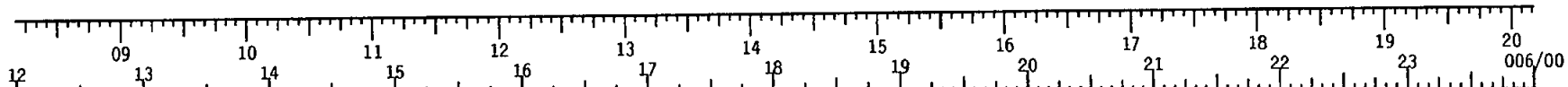
STS-104/7A JOINT MSN SHORT TERM PLAN

FD06

MET Day 005 005/00 01 02 03 04 05 06 07 08 09 10 11 12
 GMT 06/19/01 21 22 23 06/20 01 02 03 04 05 06 07 08

STS EVENT	+	⊕	PRE SLEEP	SLEEP
ISS A/L			IV HATCH LK CK	
O D S K S B D S R S S C				
ACS-MP PPL-UPDATE A/L MAN HTR OPS INIT ACS-MP PPL-INCORP			--- IACS-MP PPL-UPDATE	--- A/L MAN HTR OPS INIT --- IACS-MP PPL-INCORP
ISS ATT			BIAS +ZLV +YVV TEA	
ISS Mode			--- STANDARD ---	
DAY/NIGHT				
ORBIT				
DAILY ORBIT				
TDRS ISS S-BD				
ISS KU				
RS GND				
NOTES	*ISS EGRESS ⊕10.2 CAB DEPR			

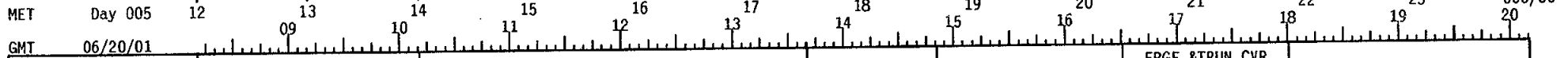
GMT 06/20/01
 BETA ANG = +3
 MET Day 005



STATION	NAME	12	13	14	15	16	17	18	19	20	21	22	23	24				
STS	CDR/R2 S. LINDSEY FD07 DSO 493	POST SLEEP	PMC - A/G	POST SLEEP	IP HAD T	PEV/TAS/UB	EXERCISE	CINW/CIT #9	ICBC #8	CTW/CRM #9	MEAL	ICBC #9	CINW/CIT #10	SLPCR/HTR #10	CTE/CRM #10	14.7 RPRSS	H/O ATT	-XLV -ZVV
	PLT/IV C. HOBAUGH DSO 493	POST SLEEP	EVA PREP	EMU PURGE & P/B	EVA2 (5:30) IVA EVA 2 SUPPORT										AR/PLRSS	POST EVA W/H2O		
	MS1/EV1 M. GERNHARDT	POST SLEEP	EVA PREP	EMU PURGE & P/B	ALDEP	ALDEP	PDOP/TEG	EVA S/U	ONTO 1 INSTALL	ONTO 4 INSTALL	FRGF & TRUN CVR INSTL	EVA CLEAN-UP	IPNRGR/SREP	AR/PLRSS	POST EVA W/H2O			
	MS2/R1 J. KAVANDI DSO 634	POST SLEEP	RMSVSTRPU	EXERCISE	RMWRUP	A/LEGRS POSN	RMS EVA SUPPORT										RMSWRDN	OPSWRDN
	MS3/EV2 J. REILLY	POST SLEEP	EVA PREP	EMU PURGE & P/B	ALDEP	PDOP/TEG	EVA S/U	ONTO 1 INSTALL	ONTO 4 INSTALL	EVA CLEAN-UP	IPNRGR/SREP	AR/PLRSS	POST EVA W/H2O					
ISS	ISS CDR Y. USACHEV	POST SLEEP	DPC WORK PREP	CR LPRS	EXERCISE	CDW	IVA EVA SUPPORT	02 ACT	MEAL	IVA EVA SUPPORT	N2 ACT	IVA EVA SUPPORT	EXERCISE					
	FE-1 J. VOSS	POST SLEEP	DPC WORK PREP	CR LPRS	EXERCISE	SSRMS OPS	MEAL	SSRMS OPS	ORCA INSTALL									
	FE-2 S. HELMS	POST SLEEP	DPC WORK PREP	DAILY STATUS CK	EXERCISE	SVGNR/RTA/MEOP/SDIL	OUNNTB/PORT	H/O POSN & UNGRPL	OGNR/RTA/OPAL	OUNNTB/ORT	H/O POSN & UNGRPL	MEAL	SSRMS STOW	DRT/VE	VP/IDD	ORCA INSTALL		
STS	DAY/NIGHT	[Timeline bars]																
	ORBIT	88	89	90	91	92	93	94	95									
STS	DAILY ORBIT	15	1	2	3	4	5	6	7									
	TDRS	47	171	[Timeline bars]														
ORB ATT		BIAS -XLV +ZVV																
ISS ATT		BIAS +ZLV +YVV TEA																
NOTES		*VERIFY CONFIG 3																

STS-104/7A JOINT MSN SHORT TERM PLAN

FD07



STS EVENT	POST SLEEP		ONTO 1 INSTALL	ONTO 4 INSTALL	FRGF & TRUN CVR INSTL		
ISS A/L						ORCA INSTALL	
S B D	UHF1 ACT & CONFIG AUDIO CONFIG FOR UHF EPS-EVA POWERDOWN EPS-EVA-SAFING SBD-KEY-CHG A/L MAN HTR OPS TERM PPS-SA-SUN-TRK EPS-EVA POWERUP					HSBD-KEY-CHG	A/L MAN HTR OPS TERM PPS-SA-SUN-TRK EPS-EVA POWE
R E V I S I O N	EVA IHBT PAD C&T-COMM CNFG-VERIFY					HC&T-COMM CNFG-VERIFY	BIAS +ZLV +YVV TEA
I S S	ISS ATT					STANDARD	
I S S	ISS Mode						
I S S	DAY/NIGHT						
I S S	ORBIT						
I S S	DAILY ORBIT						
I S S	TDRS						
I S S	ISS S-BD						
I S S	ISS KU						
I S S	RS GND					*VERIFY CONFIG 3	
I S S	NOTES						

GMT 06/20/01 21 22 23 06/21 01 02 03 04 05 06 07 08
 BETA ANG = 0 006/00 01 02 03 04 05 06 07 08 09 10 11 12
 MET Day 006

S T S	CDR/R2 S. LINDSEY	REBOOST CONFIG 3	-XLV +ZVV	H/O ATT	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP		
	PLT/IV C. HOBAUGH	POST EVA W/H2O	R E B A I	B A T T - I	PRE SLEEP		SLEEP			
	MS1/EV1 M. GERNHARDT	POST EVA W/H2O	EMU L1OH C/O		PRE SLEEP		SLEEP			
	MS2/R1 J. KAVANDI		I I N T G R E R E I S M S	CWC XFER (1)	PRE SLEEP		SLEEP			
	MS3/EV2 J. REILLY	POST EVA W/H2O	EMU L1OH C/O	H L / P G T *	PRE SLEEP		SLEEP			
I S S	ISS CDR Y. USACHEV	PL IDC QUEST	02 N2 XFR	REPORT PREP	DPC	PRE SLEEP	SLEEP			
	FE-1 J. VOSS	ORCA INSTALL	EXERCISE	DPC	PRE SLEEP	SLEEP				
	FE-2 S. HELMS	ORCA INSTALL	EXERCISE	DPC	PRE SLEEP	SLEEP				
S T S	DAY/NIGHT	[Shaded bars indicating day/night cycle]								
	ORBIT	95	96	97	98	99	100	101	102	103
S T S	DAILY ORBIT	7	8	9	10	11	12	13	14	15
	TDRS	47 171	[Timeline bars for TDRS]							
ORB ATT		BIAS -XLV +ZVV								
ISS ATT		BIAS +ZLV +YVV TEA								
NOTES		*EXERCISE *INIT								

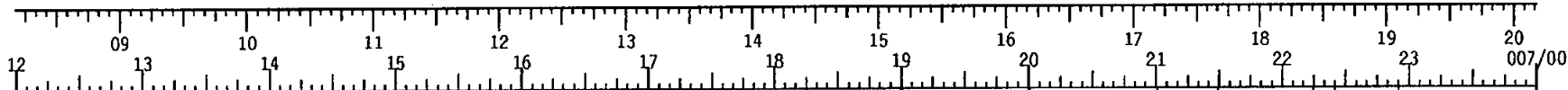
STS-104/7A JOINT MSN SHORT TERM PLAN

FD07
 MET Day 006 006/00 01 02 03 04 05 06 07 08 09 10 11 12
 GMT 06/20/01 21 22 23 06/21 01 02 03 04 05 06 07 08

STS EVENT		*	PRE SLEEP	SLEEP
ISS A/L	ORCA INSTALL			
ISS ATT			BIAS +ZLV +YVV TEA	
ISS Mode			STANDARD	
DAY/NIGHT				
ORBIT				
DAILY ORBIT				
TDRS	ISS S-BD			
	ISS KU			
RS GND				H H H H
NOTES		*MNVR -XLV +ZVV		

00
 01
 02
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 11
 12

GMT 06/21/01
 BETA ANG = -2
 MET Day 006



S T S	FD08		POST SLEEP			RAM DEPLOY		EXERCISE		CWC XFER (1)		EVA 3 PROCEDURE RVW		MEAL		CREW PHOTO		CREW CONF		H/O A/T T BIAS +ZLV +XVV		REBOOST CONFIG 4	
	DSO 493	DSO 493			HL/P/G/T*	REBATT	BATT-T	PFC	SAFER XFER	EXERCISE	EMU H2O RCHG BAG FIL	METOX*	PS//TUVO2	EMU TO A/L I/F CK	EVA 3 PROCEDURE RVW	MEAL	CREW PHOTO	CREW CONF	OFF DUTY				
S T S	MS1/EV1 M. GERNHARDT		POST SLEEP			ASPERN	EVA EQUIP XFER	EMU PREP	EMU XFER	LS TTRAP	SAFER C/O	EVA TOOL S/U	E-LK PREP		EMU TO A/L I/F CK	EVA 3 PROCEDURE RVW	MEAL	CREW PHOTO	CREW CONF	OFF DUTY	EXERCISE		
	MS2/R1 J. KAVANDI		POST SLEEP			XFER OPS			EXERCISE			EVA 3 PROCEDURE RVW		MEAL	CREW PHOTO	CREW CONF	PALC ATYBK	OFF DUTY	PLAYBK OPS				
	MS3/EV2 J. REILLY		POST SLEEP			ASPERN	EVA EQUIP XFER	EMU PREP	EMU XFER	LS TTRAP	SAFER C/O	EVA TOOL S/U	E-LK PREP		EMU TO A/L I/F CK	EVA 3 PROCEDURE RVW	MEAL	CREW PHOTO	CREW CONF	EXERCISE	OFF DUTY		
I S S	ISS CDR Y.USACHEV		POST SLEEP		DPC	WORK PREP	EXERCISE			OFF DUTY			EVA 3 PROCEDURE RVW		MEAL	CREW PHOTO	CREW CONF	EXERCISE		OFF DUTY			
	FE-1 J. VOSS		POST SLEEP		DPC	WORK PREP	DAILY STATUS CK	EXERCISE			OFF DUTY			EVA 3 PROCEDURE RVW		MEAL	CREW PHOTO	CREW CONF	OFF DUTY	EXERCISE			
	FE-2 S. HELMS		POST SLEEP		DPC	WORK PREP	XFER OPS			OFF DUTY			EXERCISE		EVA 3 PROCEDURE RVW		MEAL	CREW PHOTO	CREW CONF	OFF DUTY			
S T S	DAY/NIGHT		ORBIT		DAILY ORBIT		TORS		ORB ATT		ISS ATT		NOTES										
	103	104	105	106	107	108	109	110	111	BIAS -XLV +ZVV		BIAS +ZLV +XVV											
	15	16	1	2	3	4	5	6	7	BIAS +ZLV +YVV TEA		BIAS +XLV -ZVV											
	47	171	*TERM		*INSTALL																		

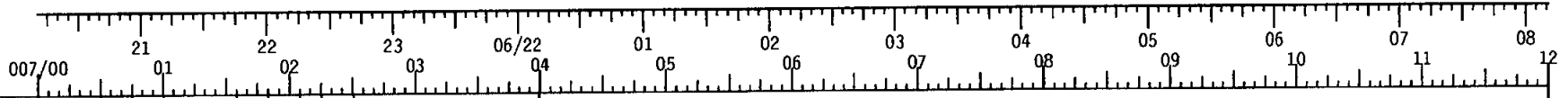
STS-104/7A JOINT MSN SHORT TERM PLAN

FD08

MET Day 006 12 13 14 15 16 17 18 19 20 21 22 23 007/00
 GMT 06/21/01 09 10 11 12 13 14 15 16 17 18 19 20

STS EVENT	POST SLEEP	*	MEAL	CREW PHOTO	⊕
ISS A/L					
DAILY PLANNING CONF	DAILY PLANNING CONF				
SBD-KEY-CHG				SBD-KEY-CHG	
DAILY PLANNING CONF	DAILY PLANNING CONF				
ISS ATT	BIAS +ZLV +YVV TEA				BIAS +XLV -ZVV
ISS Mode	STANDARD				
DAY/NIGHT					
ORBIT					
DAILY ORBIT					
TDRS	ISS S-BD				
	ISS KU				
RS GND				*EVA 3 PROCEDURE RVW	⊕CREW CONFERENCE
NOTES					

GMT 06/21/01
 BETA ANG = -4
 MET Day 007



S T S	FD08		S I N I T		P R E S L E E P		S T E M R L O M		- X L V		+ Z V V		H / O A T T		P M C O C A		P R E S L E E P		S L E E P															
	CDR/R2	S. LINDSEY	-XLV	+YVV	PRE SLEEP	PRE SLEEP	ST	IR	LV	OM	-X	+Z	H/O	A/T	PMC	OCA	PRE SLEEP	PRE SLEEP	SLEEP	SLEEP														
S T S	PLT/IV	C. HOBAUGH	OFF DUTY		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		PRE SLEEP		SLEEP															
	MS1/EV1	M. GERNHARDT	OFF DUTY		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		PRE SLEEP		SLEEP															
	MS2/R1	J. KAVANDI	OFF DUTY		X T F A I R E R U R E P	X B F R E I R E P	P/TV22 S/U	P/TV22 S/U	PRE SLEEP	PFC	PRE SLEEP	PFC	PRE SLEEP	PFC	PRE SLEEP	PFC	PRE SLEEP	PFC	PRE SLEEP	PFC	SLEEP													
	MS3/EV2	J. REILLY	OFF DUTY		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		P/TV18 CAM S/U		PRE SLEEP		SLEEP															
	ISS CDR	Y.USACHEV	OFF DUTY	PL IDC QUEST	OD FU FT Y	REPORT PREP	DPC	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	SLEEP													
I S S	FE-1	J. VOSS	*	OFF DUTY	X T F A I R E R U R E P	OFF DUTY	DPC	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	SLEEP													
	FE-2	S. HELMS	OD FU FT Y	EXERCISE	OD FU FT Y	DPC	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	DPC	PRE SLEEP	SLEEP													
S T S	DAY/NIGHT	[Timeline with shaded blocks]																																
	ORBIT	111	112				113				114				115				116				117				118				119			
	DAILY ORBIT	7	8				9				10				11				12				13				14				15			
TDRS	47	[Timeline with shaded blocks]																																
ORB ATT	171	[Timeline with shaded blocks]																																
ISS ATT		BIAS -XLV +YVV										BIAS -XLV +ZVV																						
		BIAS +XLV -ZVV										BIAS +ZLV +YVV TEA																						
NOTES		*EXERCISE																																

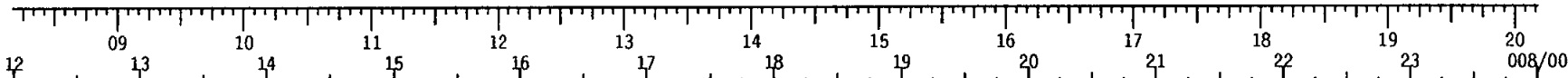
STS-104/7A JOINT MSN SHORT TERM PLAN

FD08
 MET Day 007 007/00 01 02 03 04 05 06 07 08 09 10 11 12
 GMT 06/21/01 21 22 23 06/22 01 02 03 04 05 06 07 08

STS EVENT			* PRE SLEEP		SLEEP
ISS A/L					
ISS					
DAILY PLANNING CONF	----- DAILY PLANNING CONF				
ACS-MP PPL-UPDATE ACS-MP PPL-INCORP	----- ACS-MP PPL-UPDATE				
ISS					
DAILY PLANNING CONF	----- DAILY PLANNING CONF				
ISS ATT	----- BIAS +XLV -ZVV		----- BIAS +ZLV +YVV TEA		
ISS Mode	----- STANDARD				
ISS	DAY/NIGHT				
	ORBIT				
	DAILY ORBIT				
TDRS	ISS S-BD				
	ISS KU				
RS GND	----- *MNVR -XLV +ZVV				
NOTES					

PPL-

GMT 06/22/01
 BETA ANG = -6
 MET Day 007



STATION	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
STS	FD09 CDR/R2 S. LINDSEY DSO 493	POST SLEEP	PMC-A/G	POST SLEEP	IHADBT	PE/TA 21B	EXERCISE	PE/TA 21B	ICBC3D OPS 10-11	MEAL	P/TV 21B OPS ONTO 02 ACT	ICBC3D OPS 12-13	ONTO 3 ACT	SLP HTR			
	PLT/IV C. HOBAUGH DSO 493	POST SLEEP	CABREQ	EVA PREP	10.2 DPRS	EMURGE	EMU PREBREATHE	CL DPRS	PEGRSDPR	EVA-3 (5:25) IVA EVA 3 SUPPORT				PREPRESS			
	MS1/EV1 M. GERNHARDT	POST SLEEP		EVA PREP		EMURGE	EMU PREBREATHE	CL DPRS	PEGRSDPR	EVA3 SETUP	ONTO 2 INSTALL	ONTO 3 INSTALL	LAB LTA CBL STOW	EVA CLEAN-UP	PREPRESS		
	MS2/R1 J. KAVANDI 634	POST SLEEP		EXERCISE	RMS HTR	OSVSPUR	XOPRES	NNADIR	RMS EVA SUPPORT				RMS PWDN	OSVSPWRDN			
	MS3/EV2 J. REILLY	POST SLEEP		EVA PREP		EMURGE	EMU PREBREATHE	CL DPRS	PEGRSDPR	EVA3 SETUP	ONTO 2 INSTALL	ONTO 3 INSTALL	FRGF COVER INSTALL	EVA CLEAN-UP	PREPRESS		
ISS	ISS CDR Y. USACHEV	POST SLEEP		EVA PREP		EXERCISE VELO		MEAL	ONTO 02 ACT		ONTO 3 ACT			SSRMS OPS			
	FE-1 J. VOSS	POST SLEEP	DPC WPREKP	P/TV114 IMAX 22-25	EXERCISE	SSRMS OPS	MEAL	SSRMS OPS	IMAX 3D PACK & XFER	SSRMS OPS	IMAX 3D PACK & XFER			SSRMS OPS	IMAX 3D PACK & XFER		
	FE-2 S. HELMS	POST SLEEP	DPC WPREKP	EXERCISE	P/TV114 IMAX 22-25	DAILY STATUS CK	VP I/DU EO	ONTO2 GRAPL	MEAL	ONTO3 GRAPL	H/O POSN & UNGRPL	ONTO3 GRAPL	H/O POSN & UNGRPL	STOW*	DI/DU	LAB	
STS	DAY/NIGHT	[Day/Night Cycle]															
	ORBIT	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	
STS	DAILY ORBIT	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
	TDRS	47	171														
ORB ATT	BIAS -XLV +ZVV																
ISS ATT	BIAS +ZLV +YVV TEA																
NOTES	*CONFIG *VERIFY CONFIG X *SSRMS *SSRMS %RWS CUP %RWS P/																

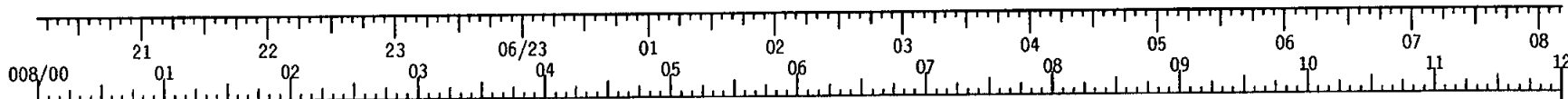
STS-104/7A JOINT MSN SHORT TERM PLAN

FD09

MET Day 007 12 13 14 15 16 17 18 19 20 21 22 23 008/00
 GMT 06/22/01 09 10 11 12 13 14 15 16 17 18 19 20

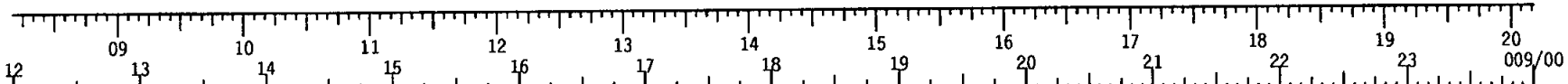
STS EVENT	POST SLEEP	ONTO 2 INSTALL	ONTO 3 INSTALL	
ISS A/L				
ISS				
S				
K				
S				
B	A/L MAN HTR OPS INIT UHF1 ACT & CONFIG AUDIO CONFIG FOR UHF A/L-10.2 OPS-TERM EPS-EVA POWERDOWN EPS-EVA-SAFING SBD-KEY-CHG A/L MAN HTR OPS TERM			
R	A/L MAN HTR OPS INIT UHF1 ACT & CONFIG AUDIO CONFIG FOR UHF A/L-10.2 OPS-TERM EPS-EVA POWERDOWN EPS-EVA-SAFING HSB-D-KEY-CHG A/L MAN HTR OPS			
E	EVA IHBT PAD C&T-COMM CNFG-VERIFY			
V	EVA IHBT PAD C&T-COMM CNFG-VERIFY BIAS +ZLV +YVV TEA			
E	ISS ATT BIAS +ZLV +YVV TEA			
S	ISS Mode STANDARD			
I	DAY/NIGHT			
S	ORBIT			
S	DAILY ORBIT			
S	TDRS ISS S-BD ISS KU			
S	RS GND			
S	*VERIFY CONFIG X			
NOTES				

GMT 06/22/01
 BETA ANG = -8
 MET Day 008



S T S	FD09	CDR/R2 S. LINDSEY	PCG-STES (009)	PRE SLEEP	PMC OCA	PRE SLEEP	SLEEP		
		PLT/IV C. HOBAUGH	POST EVA W/H2O W/H2O	02 REPRESS		PRE SLEEP	ISS EXTERNAL SURVEY → SLEEP		
		MS1/EV1 M. GERNHARDT	POST EVA W/H2O W/H2O	BSA BATT		PRE SLEEP	SLEEP		
		MS2/R1 J. KAVANDI	PCG-STES (010)	XTX FAFR EGER RUIR P	EIF	PRE SLEEP	SLEEP		
		MS3/EV2 J. REILLY	POST EVA W/H2O W/H2O			PRE SLEEP	SLEEP		
	I S S		ISS CDR Y. USACHEV	SSRMS OPS	EXERCISE	COM	REPORT PREP	DPC PREP	PRE SLEEP
		FE-1 J. VOSS	IMAX 3D PACK & XFER	PCG-STES (009)	XT FA EG RU P	EXERCISE		PRE SLEEP	SLEEP
		FE-2 S. HELMS	PCG-STES (010)	EXERCISE		DPC		PRE SLEEP	SLEEP
S T S	DAY/NIGHT	[Timeline bars for Day/Night]							
	ORBIT	127	128	129	130	131	132	133	134
	DAILY ORBIT	8	9	10	11	12	13	14	15
	TDRS	47							
	ORB ATT	BIAS -XLV +ZVV							
	ISS ATT	BIAS +ZLV +YVV TEA							
	NOTES	*RWS P/D	*EVA COM *VERIFY CONFIG 2						

GMT 06/23/01
 BETA ANG = -9
 MET Day 008

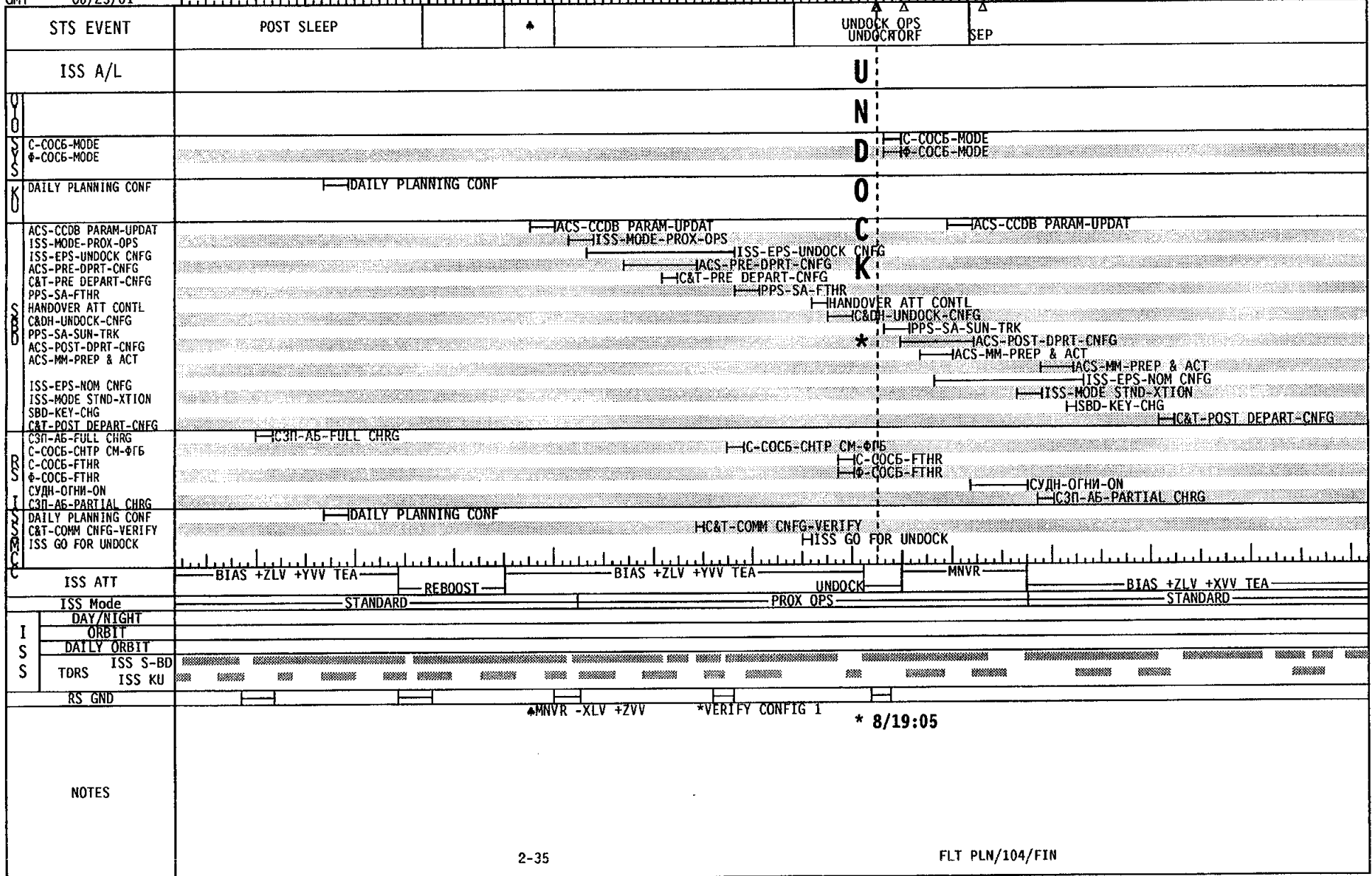


STS	Crew	12		13		14		15		16		17		18		19		20		21		22		23		24	
		09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	08	09	10
STS	CDR/R2 S. LINDSEY	FD10 DSO 493	POST SLEEP	H/O ATT	BIAS +ZLV +XVV	REBOOST CONFIG 4	-XLV +ZVV	H/O ATT	FAREWELL	HATCH CLOSE	GPWR B UP	ODS LEAK CK	H/O ATT	UNDOCK	TORF	SEP	+ZLV +XVV	SINIMOT	GPWR B DN	FILTER CLEAN	OFF DUTY	STIEZLVM	-XLV -XVV	OFF DUTY	PAO		
	PLT/IV C. HOBAUGH	DSO 493	POST SLEEP	PCGC	EMU RECNFG	EVA EQUIP XFER	EXERCISE	FAREWELL	CTR LINE CM INST			MEAL		UNDOCK OPS		CRE/LM COVE		GPWR B DN	GPS OPS 2 TEST	P/TV09 SETUP	P/TV09		OFF DUTY	PAO			
	MS1/EV1 M. GERNHARDT		POST SLEEP	ASPRN	EMU H2O RCHG BAG FIL	EMU RECNFG	EVA EQUIP XFER	CWC XFER (2)		FAREWELL		P/TV20 SETUP		MEAL	UNDOCK OPS								OFF DUTY	PS/TU V02	PAO		
	MS2/R1 J. KAVANDI	634	POST SLEEP		RNDZ PGSC S/U	RNDZ TOOLS C/O		XFAE RUP	XBREI RUF	FAREWELL	HATCH CLOSE	GPWR B UP	ODS LEAK CK	OSVSPU	UNDOCK OPS		OSVSPD	ODIEUA CT		EXERCISE		RMW SRS DN		OFF DUTY	PAO		
	MS3/EV2 J. REILLY		POST SLEEP	ASPRN	RNDZ PGSC S/U	RNDZ TOOLS C/O	EMU XFER			FAREWELL			MEAL		* UNDOCK OPS		PLAYBK			OFF DUTY	EXERCISE		OFF DUTY	PFC	PAO		
ISS	ISS CDR Y. USACHEV		POST SLEEP	DPC	WORK PREP.		EXERCISE		FAREWELL	HATCH CLOSE	CM	MEAL		PMA2 DEPART					EXERCISE		XBREI RUF	REPORT PREP	DPC	PRE SLEEP			
	FE-1 J. VOSS		POST SLEEP	DPC	WORK PREP		O2 CNFG	N2 CNFG	XFAE RUP	ACL/LOSE		MEAL								EXERCISE			DPC	PRE SLEEP			
	FE-2 S. HELMS		POST SLEEP	DPC	WORK PREP	DAILY STATUS CK		EXERCISE		FAREWELL		MEAL							EXERCISE				DPC	PRE SLEEP			
STS	DAY/NIGHT																										
	ORBIT		135	136	137	138	139	140	141	142																	
STS	DAILY ORBIT		16	1	2	3	4	5	6	7																	
	TDRS	47 171																									
	ORB ATT		BIAS -XLV +ZVV			BIAS -XLV +ZVV		FLYAROUND			+ZLV +YVV																
	ISS ATT		BIAS +ZLV +YVV TEA	REBOOST		BIAS +ZLV +YVV TEA		MNVR			BIAS +ZLV +XVV TEA																
	NOTES					*MVIS DCT		*VERIFY CONFIG 1																			

* 8/19:05

STS-104/7A JOINT MSN SHORT TERM PLAN

FD10
 MET Day 008 12 13 14 15 16 17 18 19 20 21 22 23 009/00
 GMT 06/23/01 09 10 11 12 13 14 15 16 17 18 19 20

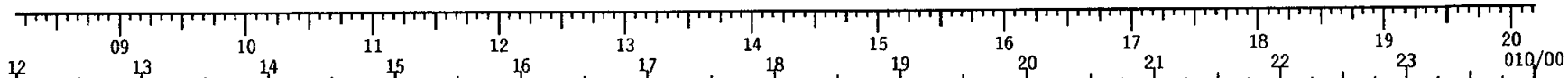


GMT 06/23/01
 BETA ANG = -11
 MET Day 009

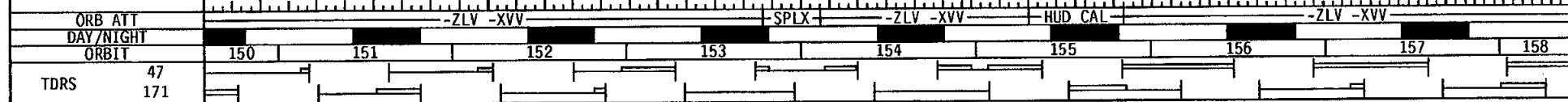
009/00 21 01 22 02 23 03 06/24 04 05 06 07 08 09 10 11 12

CDR/R2 S. LINDSEY	OFF DUTY	PFC/PMC OCA	PRE SLEEP	SLEEP	PS OL SE TE P 493					
PLT/IV C. HOBAUGH	EXERCISE	P C G C K	PRE SLEEP	SLEEP	PS OL SE TE P 493					
MS1/EV1 M. GERNHARDT	POST EVA ENT PREP		PRE SLEEP	SLEEP	POST SLEEP					
MS2/R1 J. KAVANDI	OFF DUTY		PRE SLEEP	SLEEP	PS OL SE TE P 6 3 4					
MS3/EV2 J. REILLY	POST EVA ENT PREP		PRE SLEEP	SLEEP	POST SLEEP					
ORB ATT	-ZLV -XVV									
DAY/NIGHT	[Shaded bars indicating day/night cycle]									
ORBIT	142	143	144	145	146	147	148	149	150	
TDRS	47	[TDRS bars]				171	[TDRS bars]			
NOTES										

GMT 06/24/01
 BETA ANG = -13
 MET Day 009

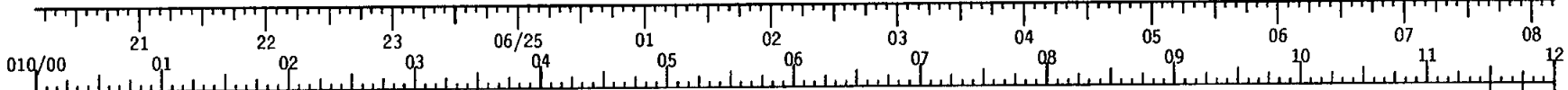


CDR/R2 S. LINDSEY PLT/IV C. HOBAUGH MS1/EV1 M. GERNHARDT MS2/R1 J. KAVANDI MS3/EV2 J. REILLY	FD11	POST SLEEP	APU HTR ACT	POST SLEEP	FCS C/O	RCS HF	-ZLV -XVV	CABIN STOW	SO IP MPT LY EX	-ZLV -XVV	PILOT OPS	MEAL	HUD CAL	HUD MNV R	-ZLV -XVV	D/O BRIEF	EXERCISE	CABIN STOW	L-1 COMM CHK
	POST SLEEP		FCS C/O	RCS HF	CABIN STOW	FILTER CLEAN	PILOT OPS	MEAL	HUD MNV R	HUD VER F	D/O BRIEF	P/TV05 SETUP ENTRY	EXERCISE	ERG STOW					
	POST SLEEP	P C G C K	CABIN STOW	EXERCISE	CABIN STOW	COMM CNFG	MEAL	CABIN STOW	D/O BRIEF	CABIN STOW	P/TV06 DEACT (SSV)								
	POST SLEEP		FCS C/O	RCS HF	FRED STOW	EXERCISE	CABIN STOW	MEAL	CABIN STOW	D/O BRIEF	CABIN STOW	ERG STOW							
	POST SLEEP		EXERCISE	CABIN STOW	MEAL	CABIN STOW	D/O BRIEF	CABIN STOW	OFF DUTY										



NOTES

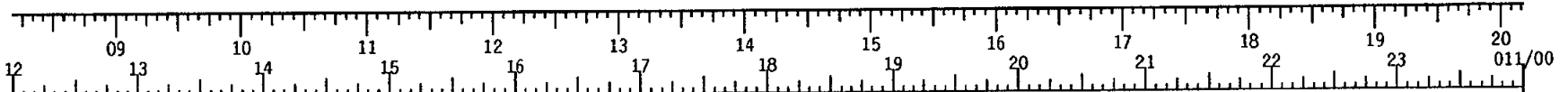
GMT 06/24/01
 BETA ANG = -15
 MET Day 010



CDR/R2 S. LINDSEY	FD11	P M C - A / G	PRE SLEEP	ET N E T M P R P Y	PRE SLEEP	SLEEP	DSO 493	P S O L S E E P			
PLT/IV C. HOBAUGH		K S U T - O M F X B W A C T D	PRE SLEEP			SLEEP	DSO 493	P S O L S E E P			
MS1/EV1 M. GERNHARDT		P C G C K	PRE SLEEP			SLEEP		POST SLEEP			
MS2/R1 J. KAVANDI			PRE SLEEP			SLEEP	6 3 4	6 3 4 *			
MS3/EV2 J. REILLY		OFF DUTY	PRE SLEEP			SLEEP		POST SLEEP			
ORB ATT DAY/NIGHT			-ZLV -XVV								
ORB			158	159	160	161	162	163	164	165	166
TDRS	47 171		[Timeline bars for TDRS 47 and 171]								
NOTES											

POST SI
*STOW

GMT 06/25/01
 BETA ANG = -16
 MET Day 010



FD12	CDR/R2 S. LINDSEY	POST SLEEP	P M C - A / G	G P R R U P B	I M U M N V R	I M U V E R I F	- X S I	D/O PREP	D E O R B I T B U R N	K S C L A N D I N G *	
	PLT/IV C. HOBAUGH	POST SLEEP		G P R R U P B	T E P C O F F	O C A C S T O W	G I R A S T O W	D/O PREP			
	MS1/EV1 M. GERNHARDT	POST SLEEP			P C G C K	I C B C D E A	A S I D I O	I C B C S T O W			D/O PREP
	MS2/R1 J. KAVANDI	POST SLEEP						A I R			D/O PREP
	MS3/EV2 J. REILLY	POST SLEEP				O C A D E A C T	P S T I N T E R				D/O PREP

ORB ATT	-ZLV	-XVV	IMU	-XSI	COMM	ENTRY
DAY/NIGHT						
ORBIT	166	167	168	169	170	171
TDRS	47	171				
						172
						173

NOTES

*10/19:40

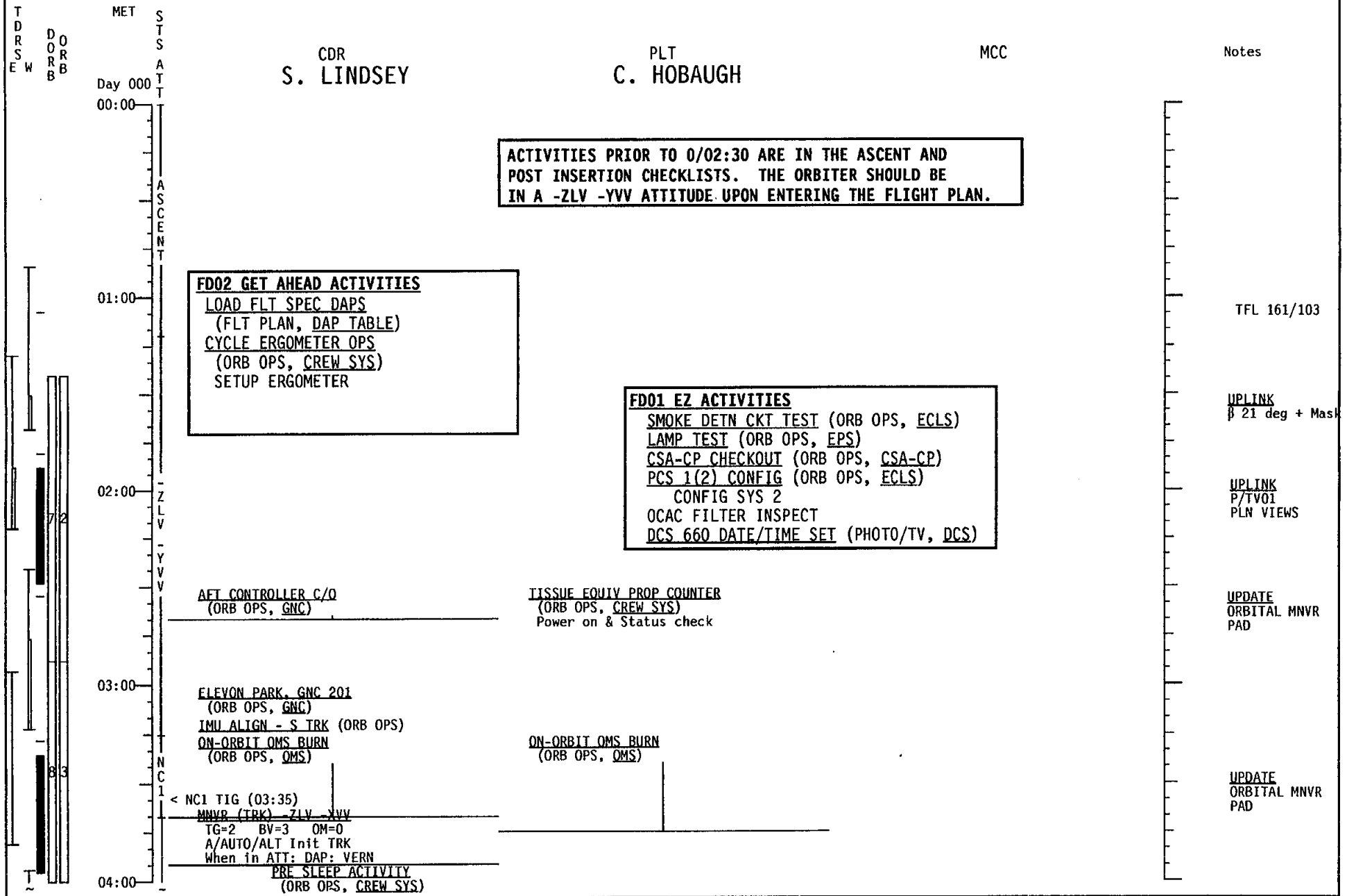
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DETAILED TIMELINE

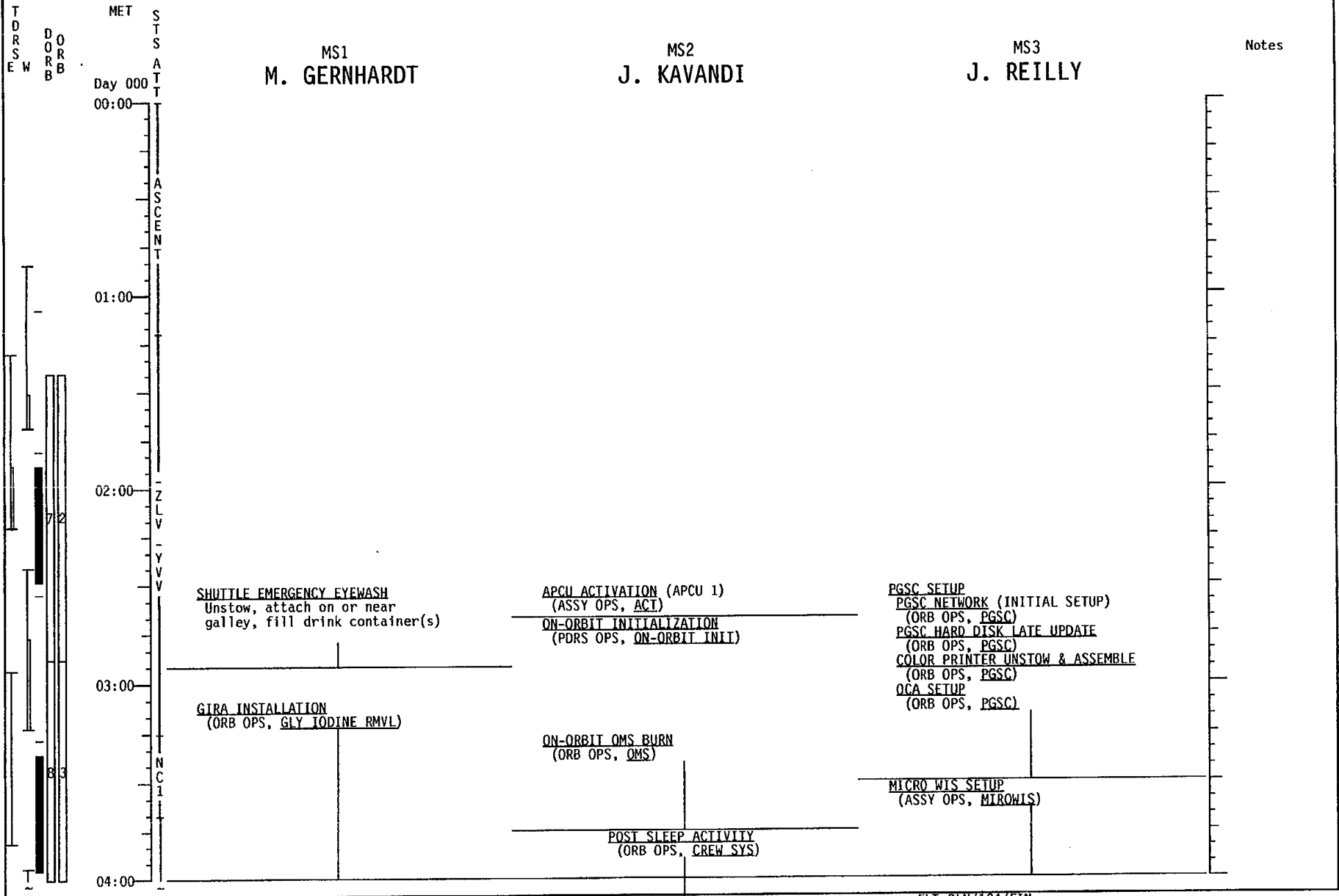
**DETAILED
TIMELINE**

DETAILED TIMELINE

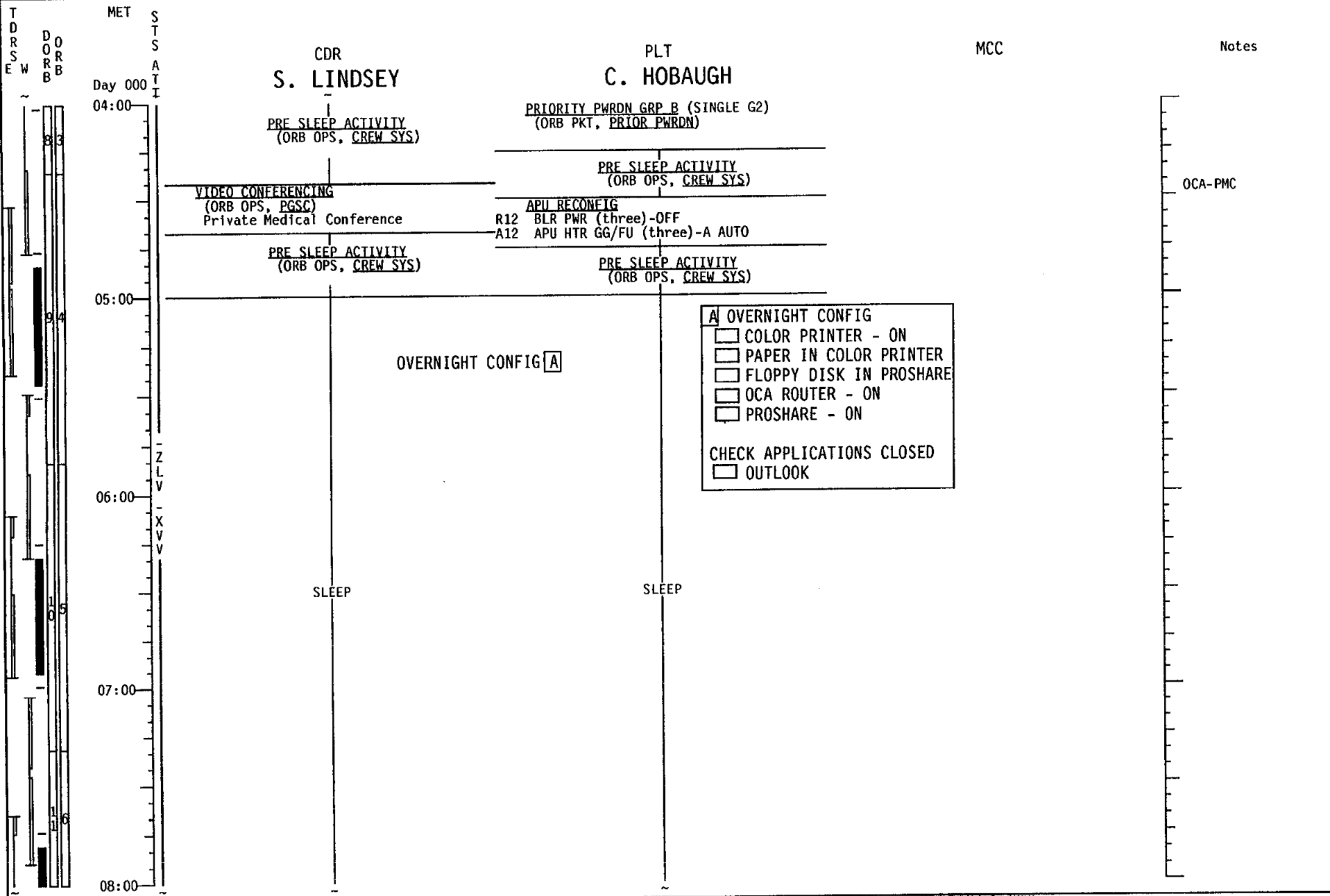
STS-104 (FD 01)



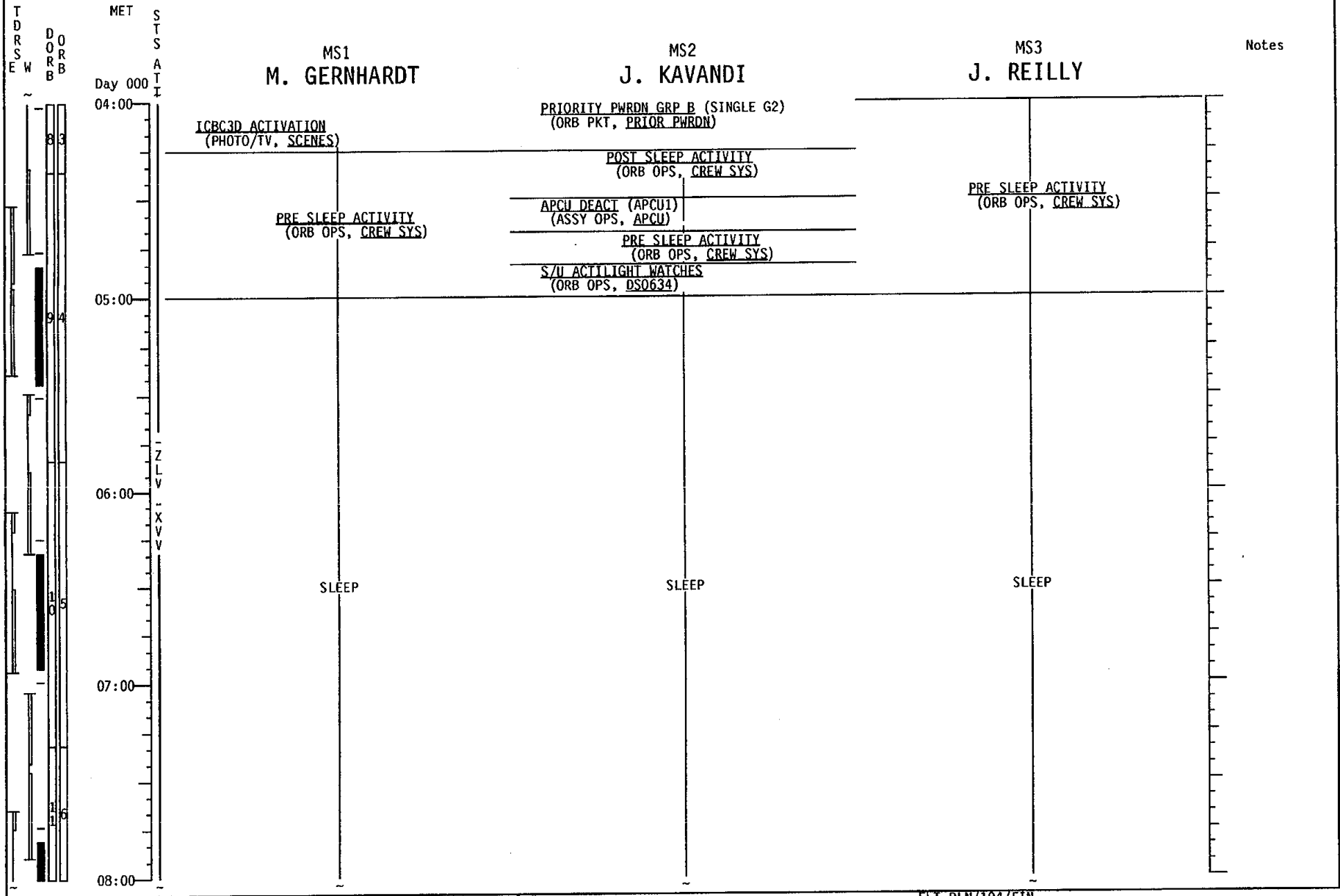
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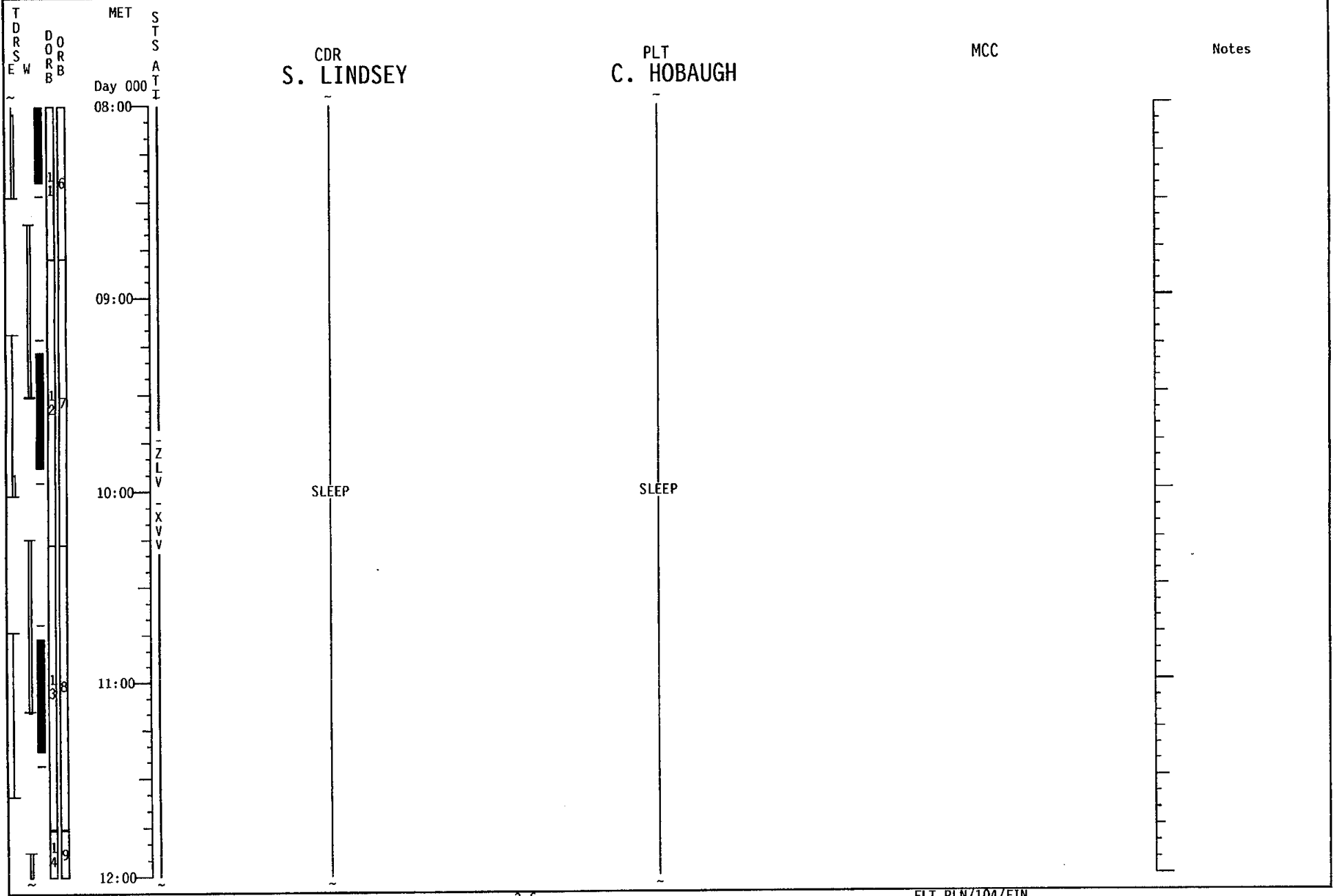
STS-104 (FD 01)



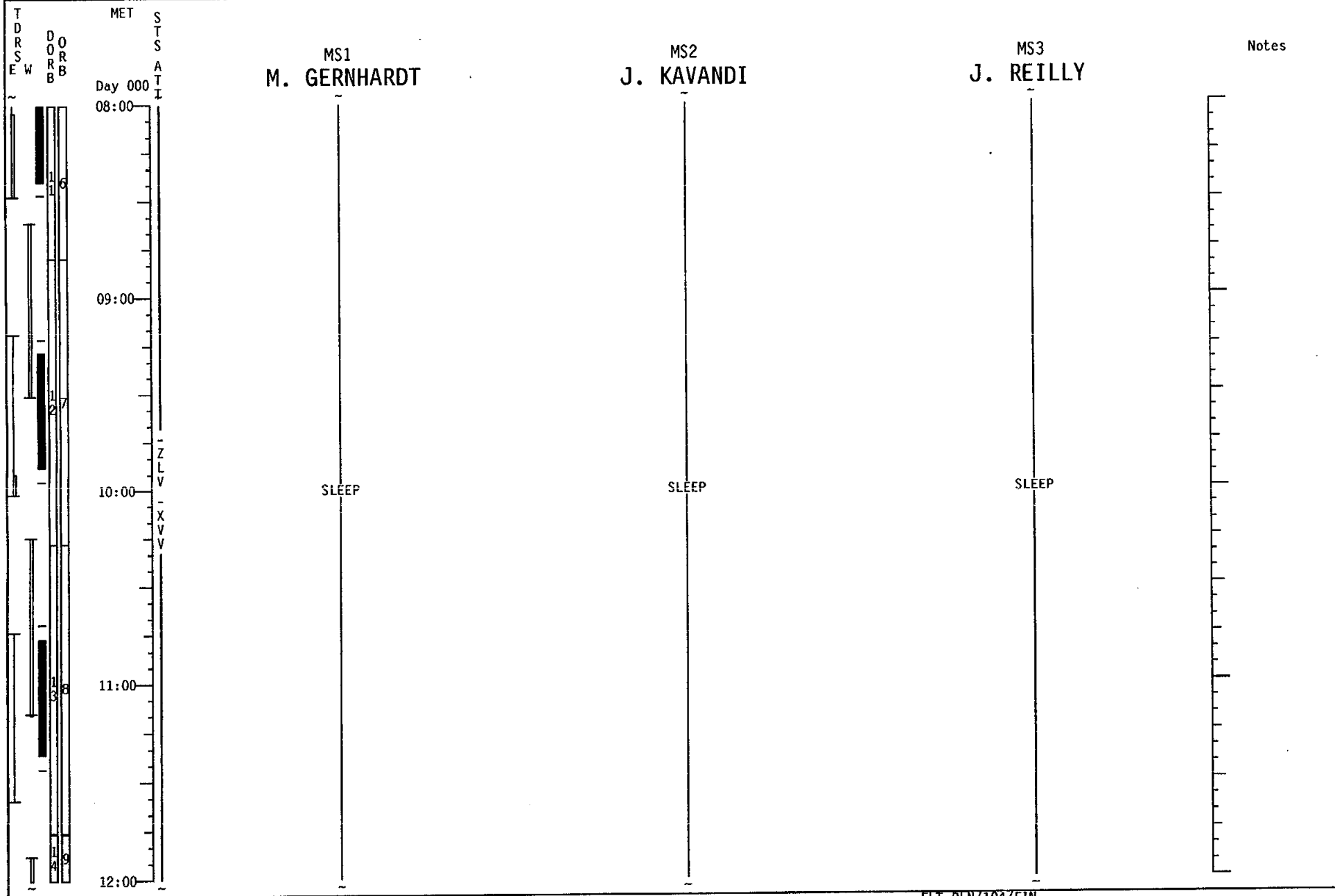
STS-104 (FD 01)



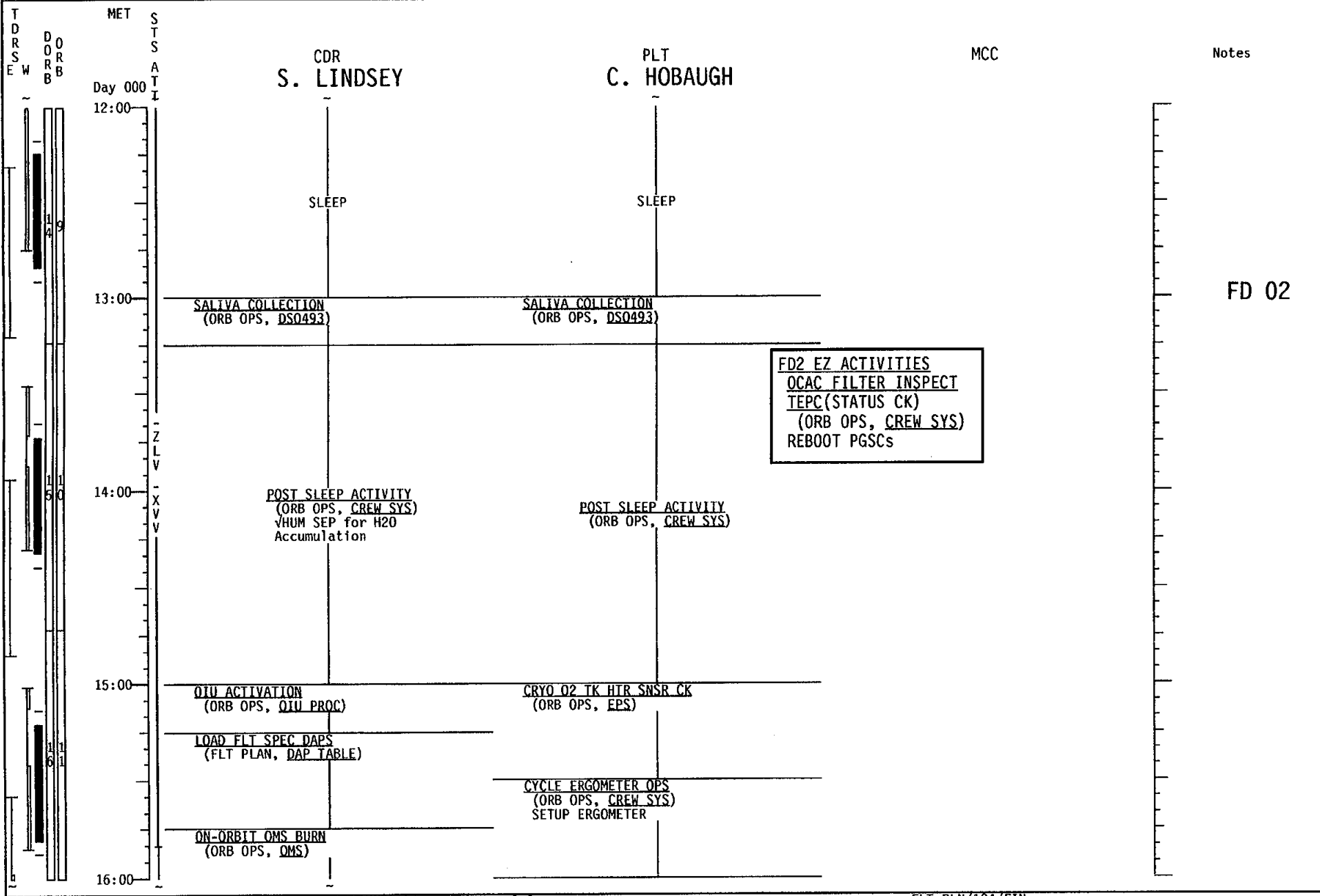
STS-104 (FD 01)



STS-104 (FD 01)



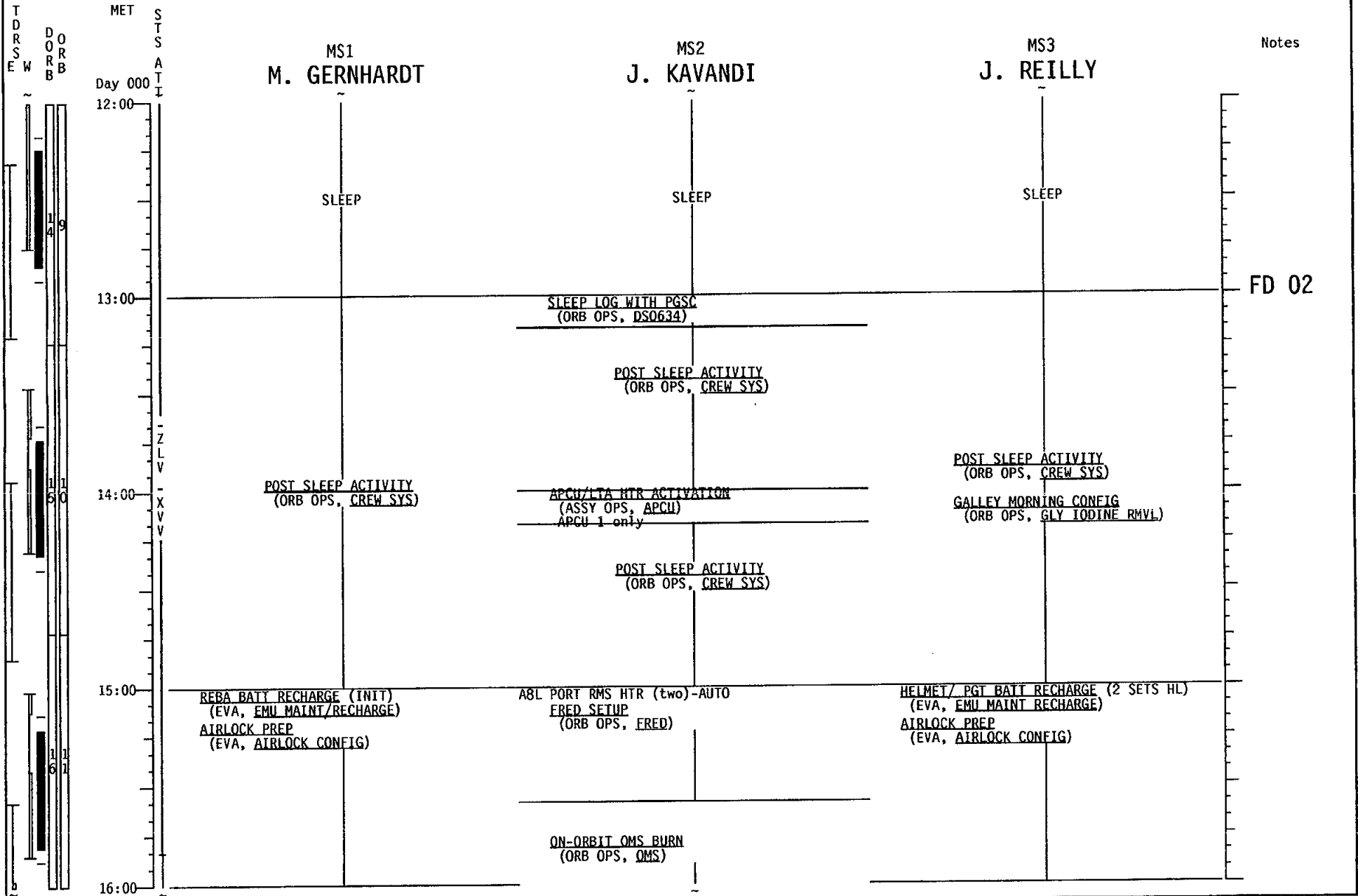
STS-104 (FD 01)



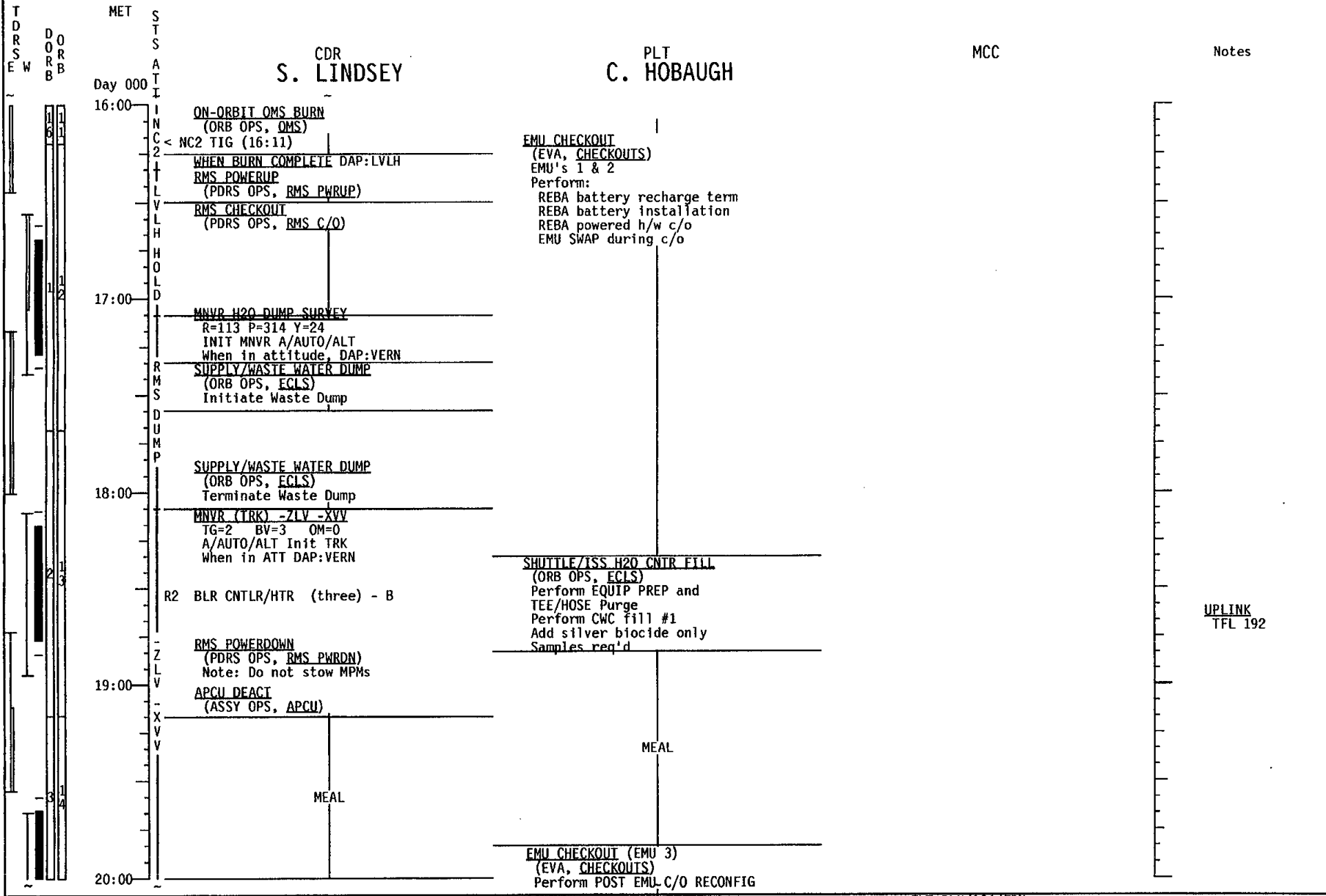
Notes

FD 02

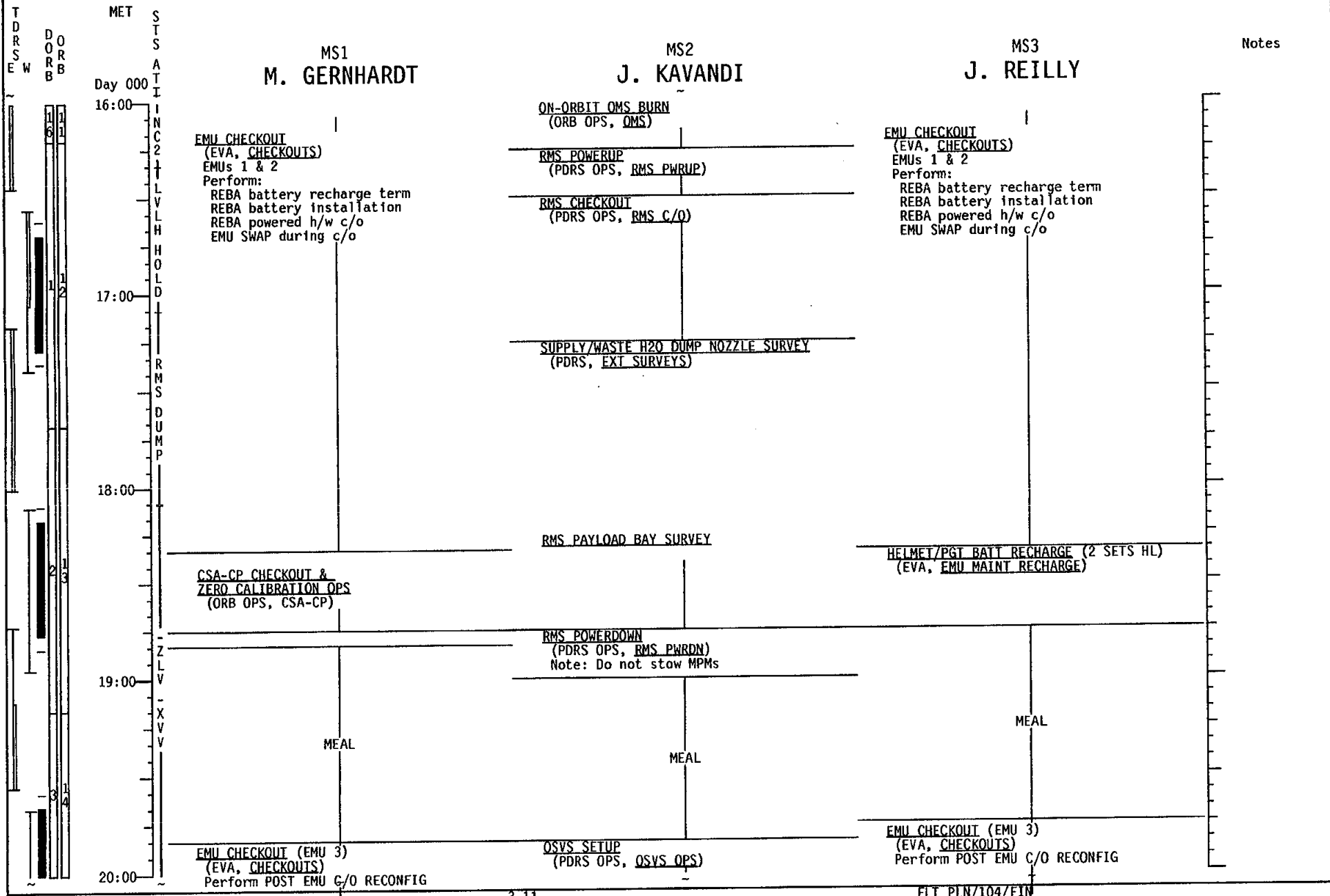
STS-104 (FD 01)



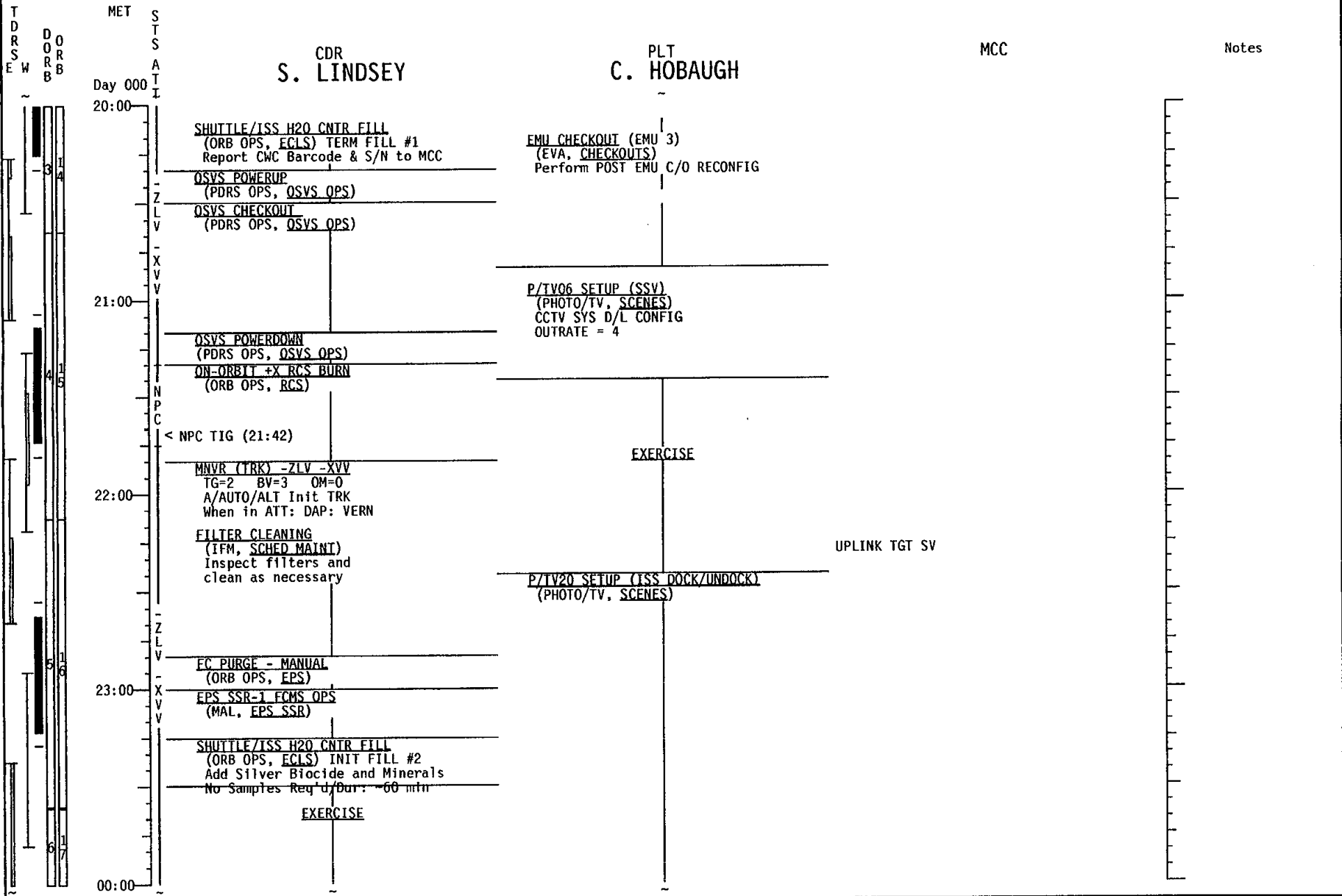
STS-104 (FD 02)



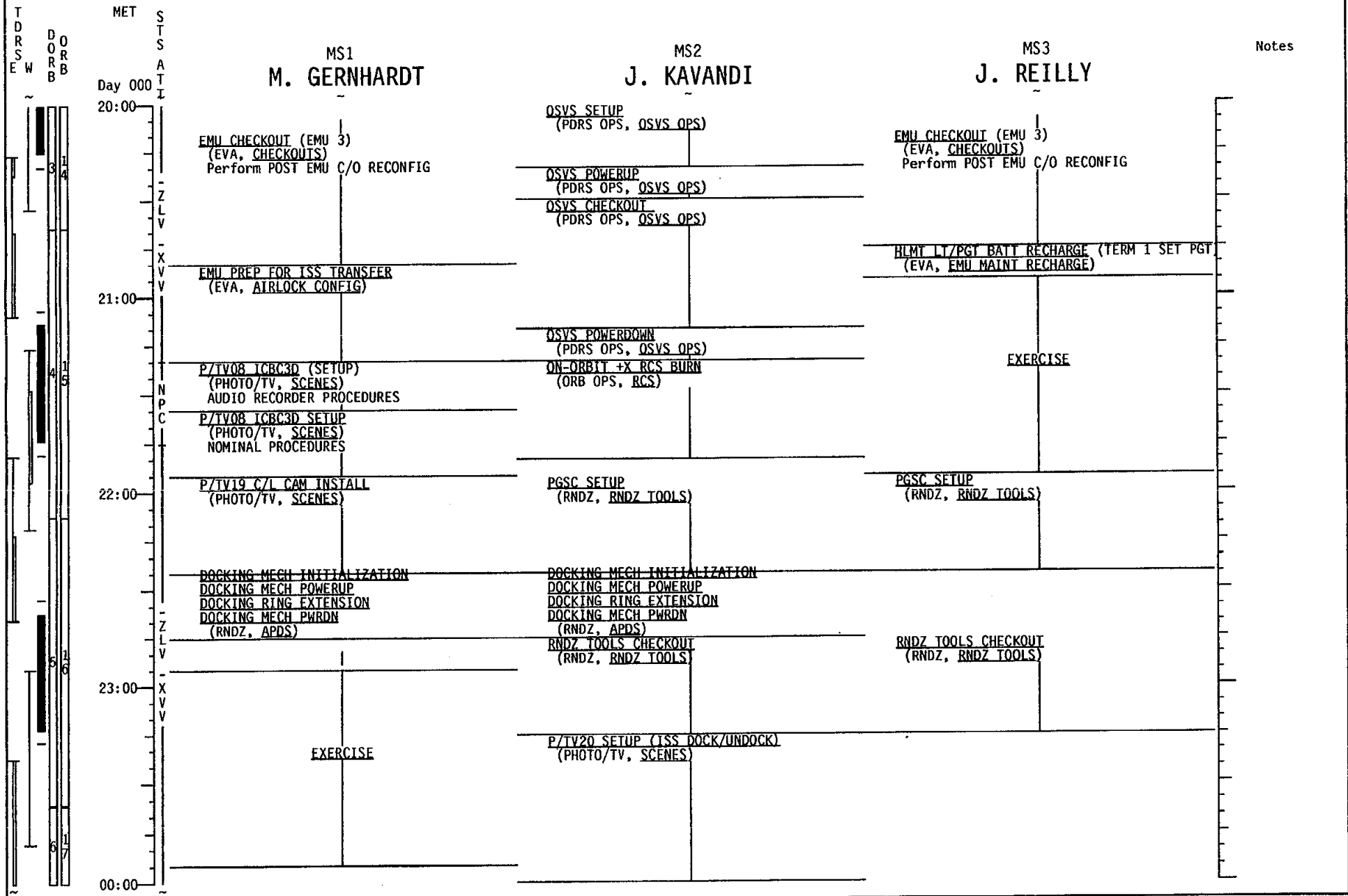
STS-104 (FD 02)



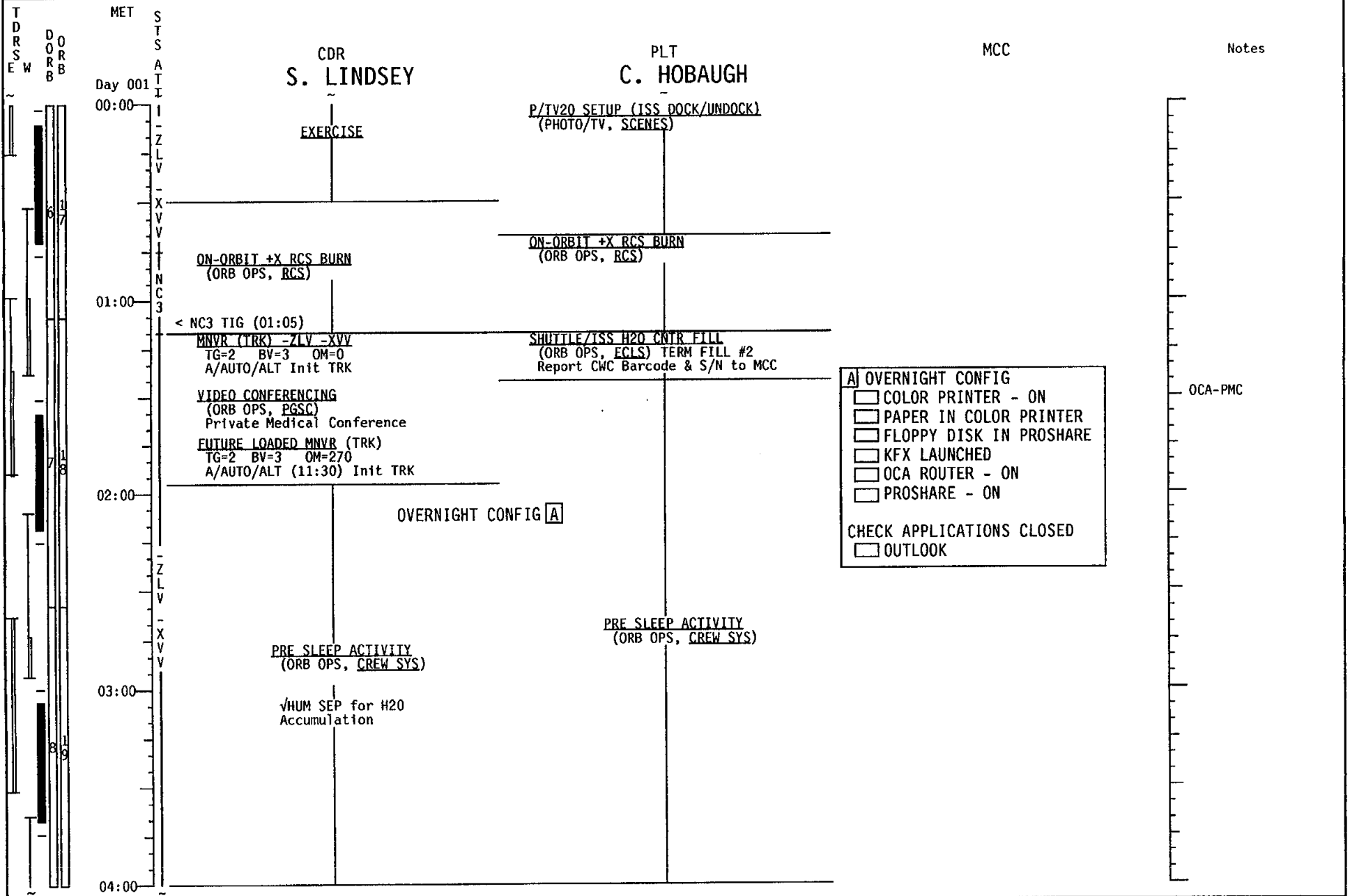
STS-104 (FD 02)



STS-104 (FD 02)



STS-104 (FD 02)



A] OVERNIGHT CONFIG

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

CHECK APPLICATIONS CLOSED

- OUTLOOK

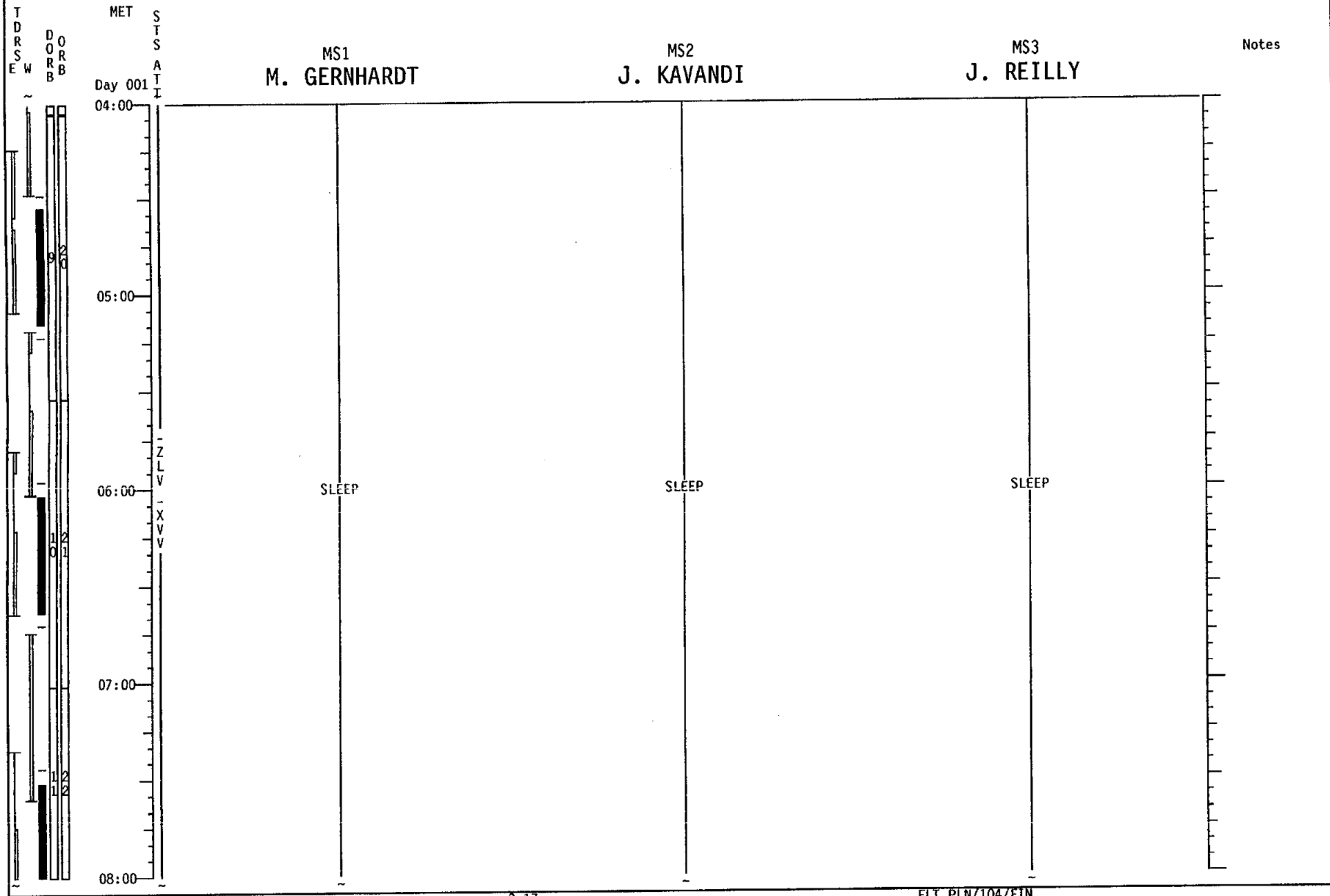
STS-104 (FD 02)

T D R S E W	D O R B	MET Day 001	STS A T T I Z L V X V V N C 3			Notes
			MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
		00:00	P/TV18 EVA CAMR SETUP (PHOTO/TV, SCENES) WVS SETUP & CHECKOUT		P/TV18 EVA CAMR SETUP (PHOTO/TV, SCENES) EVA STILL CAMERA S/U	
				EXERCISE		
		01:00			HLMT LT/PGT BATT RECHARGE (TERM 1 SET PGT (EVA, EMU MAINT RECHARGE)	
		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			GALLEY OVERNIGHT CONFIG (ORB OPS, GLY IODINE RMVL)	
		04:00				

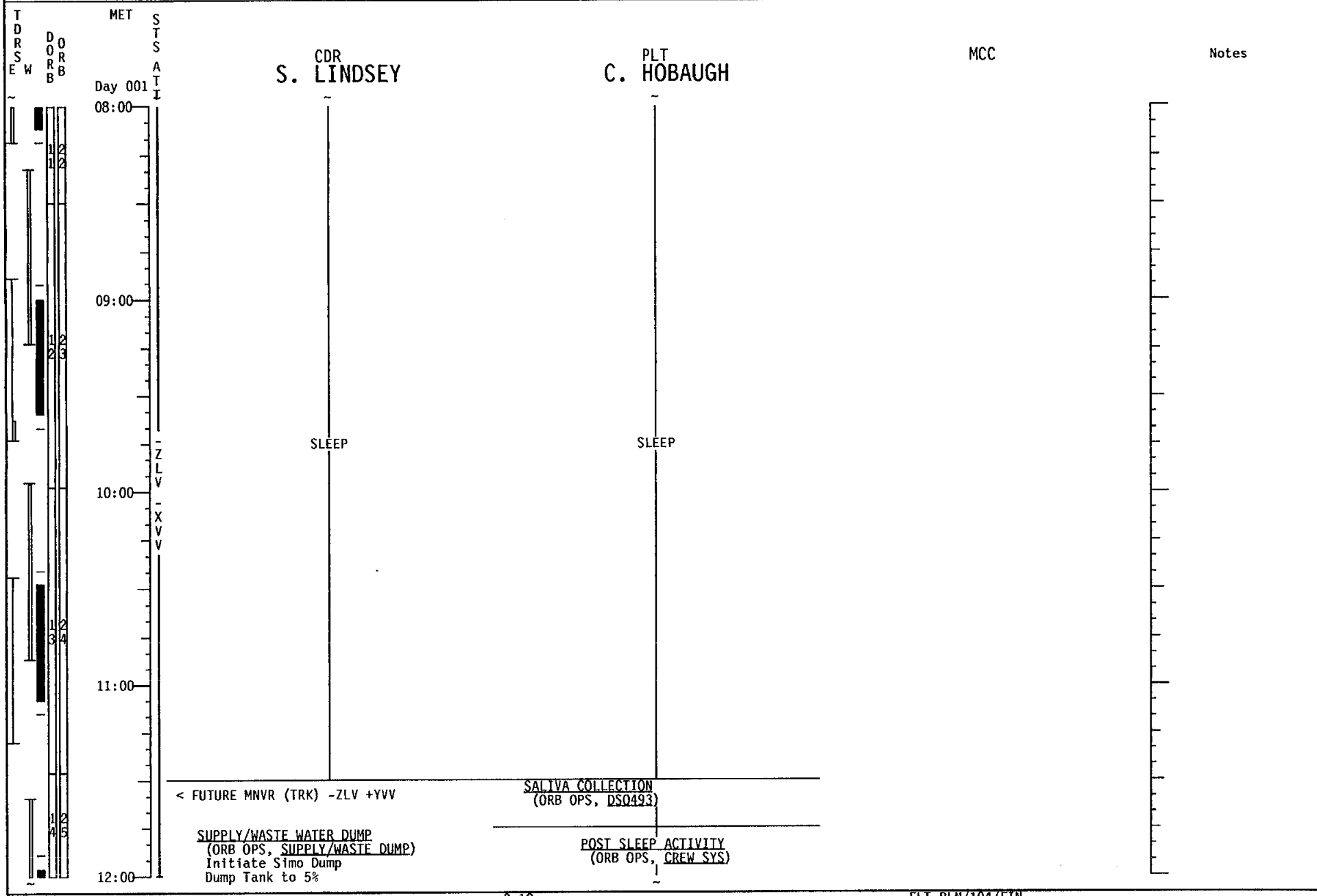
STS-104 (FD 02)

T D R S E W	MET Day 001	STS A T I	CDR S. LINDSEY	PLT C. HOBAUGH	MCC	Notes
<p>Vertical timeline with activity bars and labels: 92C, 112C1, 112</p>	<p>04:00</p> <p>05:00</p> <p>06:00</p> <p>07:00</p> <p>08:00</p>	<p>Z L V</p> <p>X V V</p>	<p>SLEEP</p>	<p>SLEEP</p>		<p>Vertical timeline for notes</p>

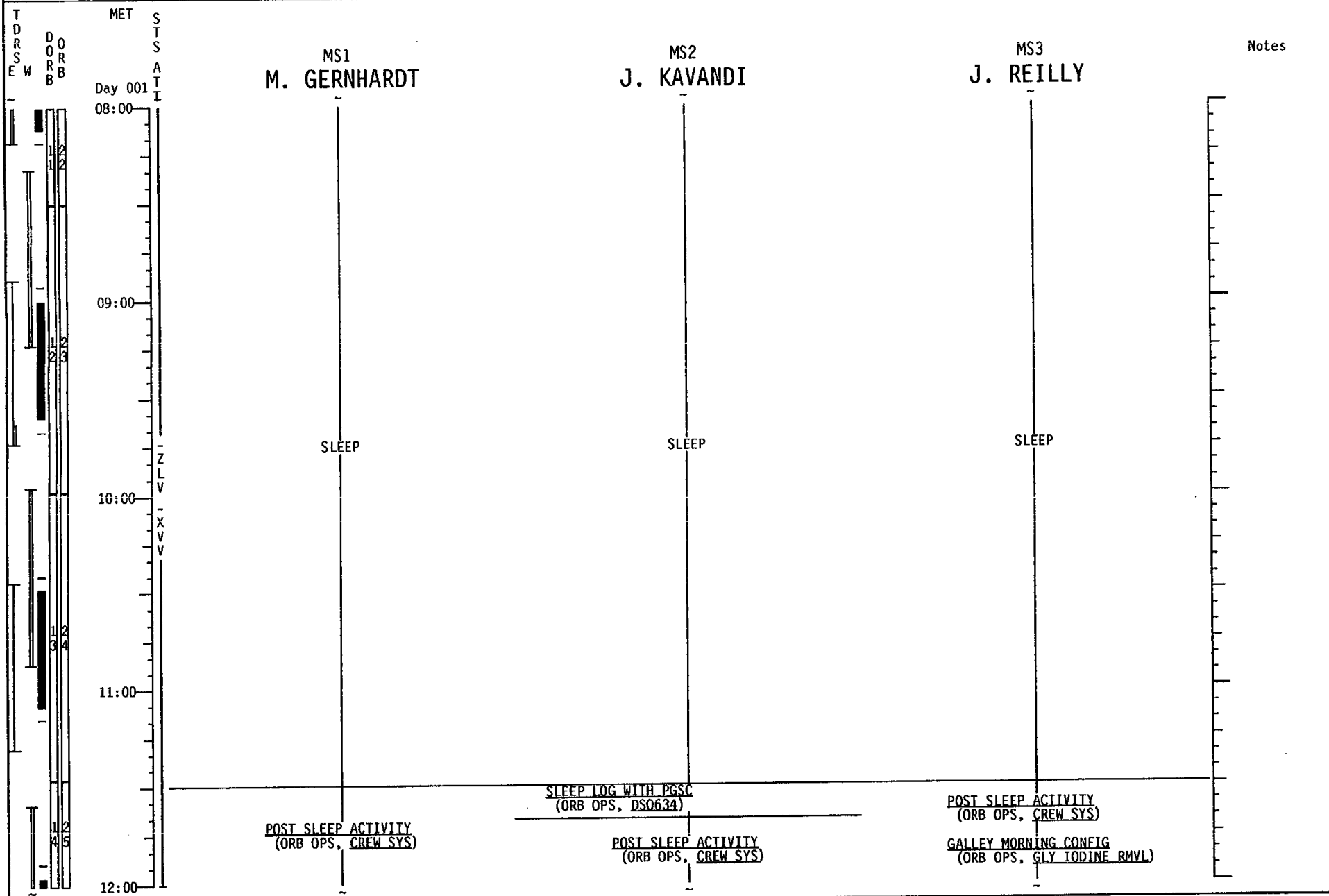
STS-104 (FD 02)



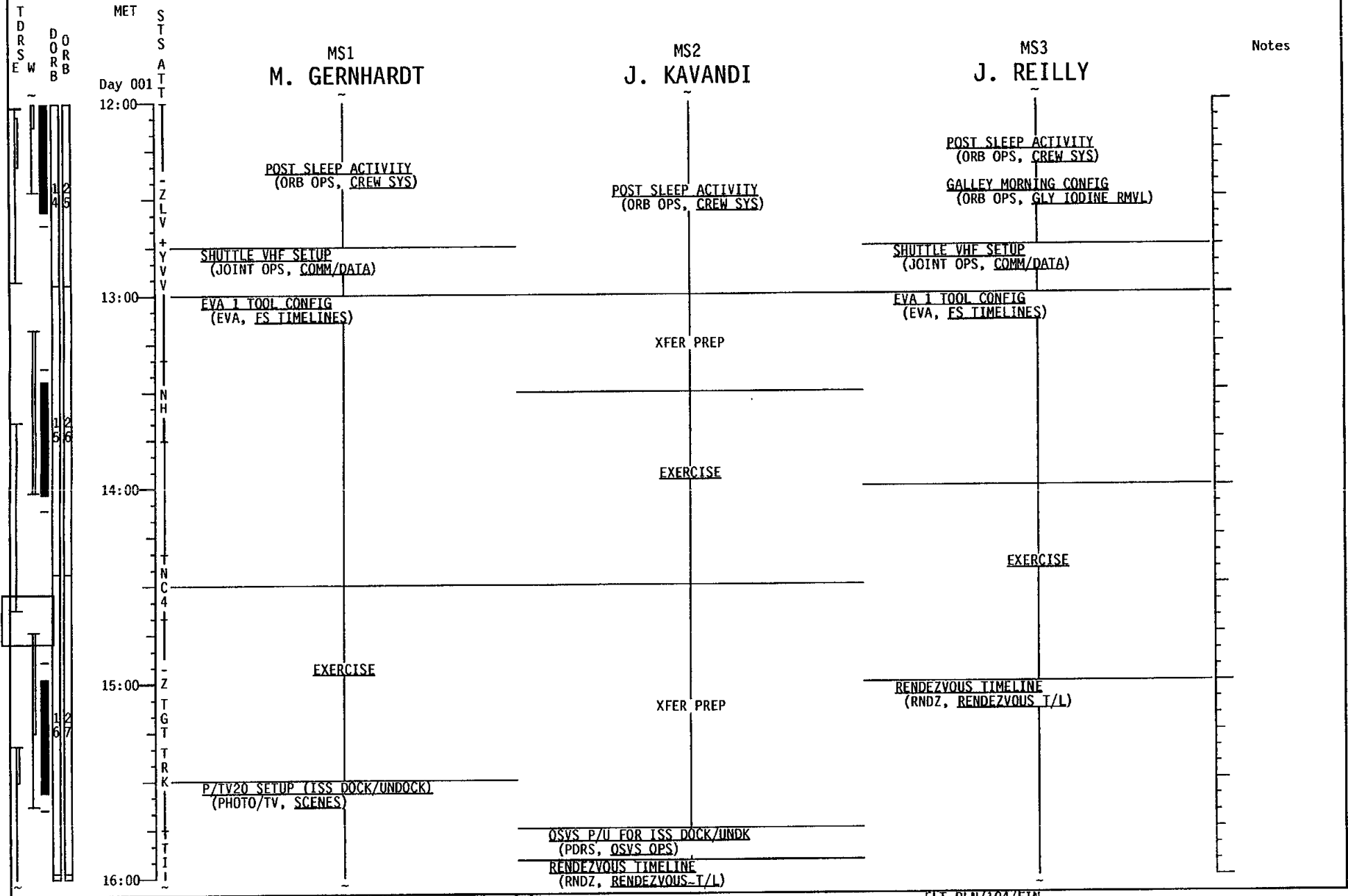
STS-104 (FD 02)



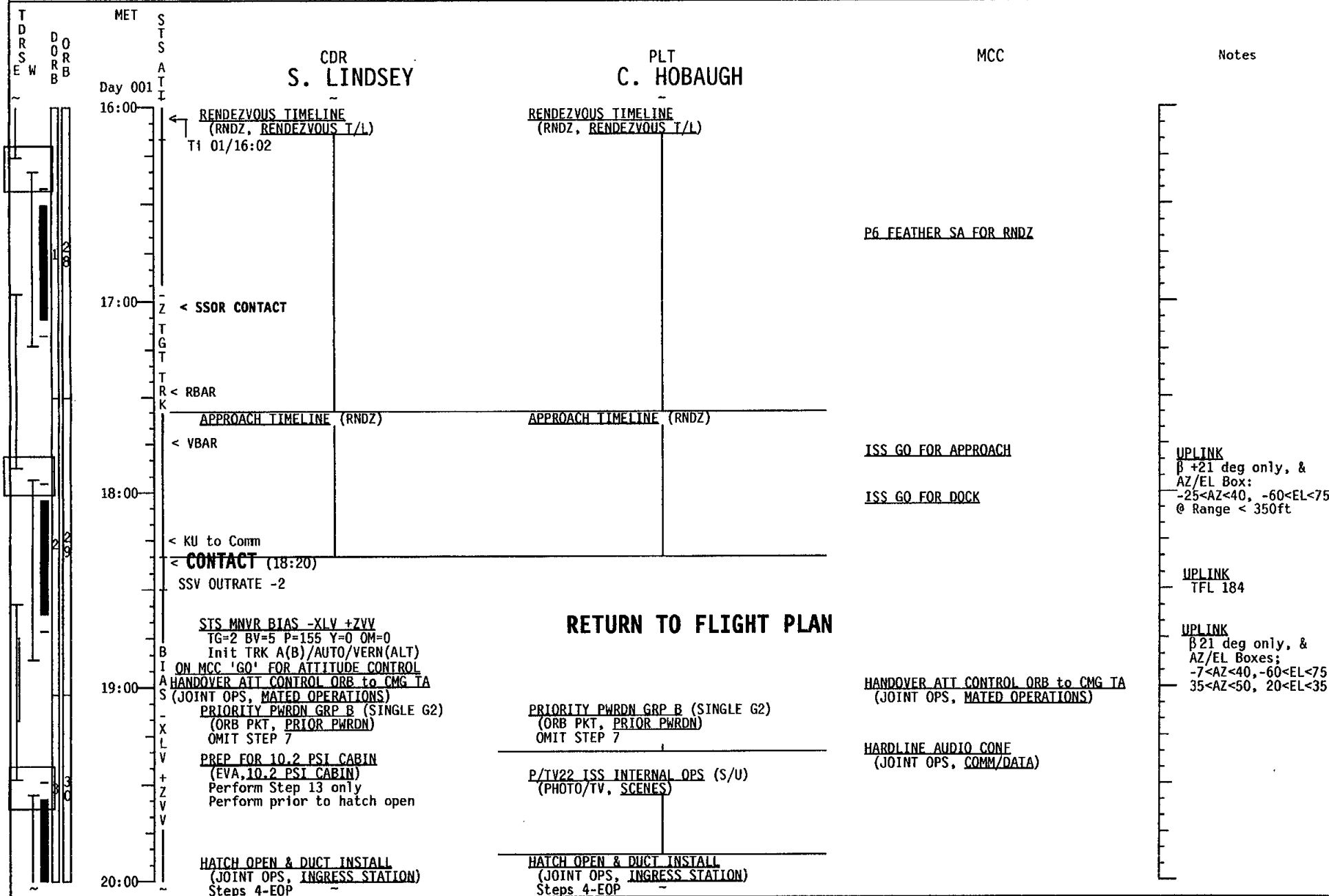
STS-104 (FD 02)



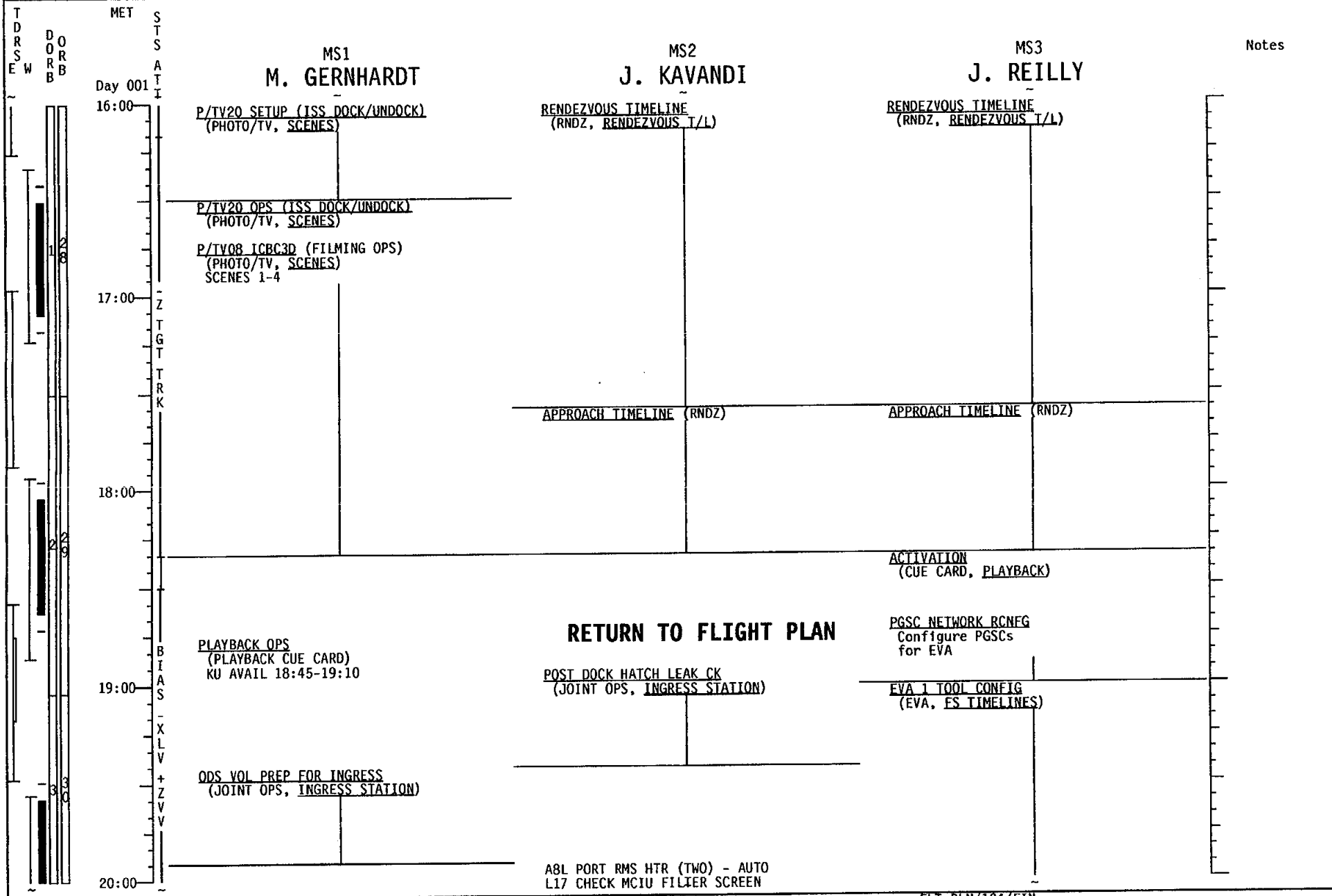
STS-104 (FD 03)



STS-104 (FD 03)



STS-104 (FD 03)



STS-104 (FD 03)

T D R S E W
 D O R B B
 MET
 Day 001
 20:00
 21:00
 22:00
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CDR
S. LINDSEY

PLT
C. HOBAUGH

MCC

Notes

HATCH OPEN & DUCT INSTALL
(JOINT OPS, INGRESS STATION)
Steps 4-EOP

HATCH OPEN & DUCT INSTALL
(JOINT OPS, INGRESS STATION)
Steps 4-EOP

WELCOME

WELCOME

SFTY BRF

SFTY BRF

EVA PROCEDURE REVIEW
REF: EVA1 BRIEFING CARD
(EVA, FS TIMELINE)

EVA PROCEDURE REVIEW
REF: EVA 1 BRIEFING CARD
(EVA, FS TIMELINES)

MIDDECK EQUIP TRANSFER
TRANSFER LIST for FD3

A/L TRAJECTORY DRY RUN
(ROBOTICS, ZA)
3.101 Node 1 Stbd ACBM Survey
3.102 Airlock Grapple Dry Run
3.103 Airlock Unberth Dry Run
3.104 Airlock Install Dry Run

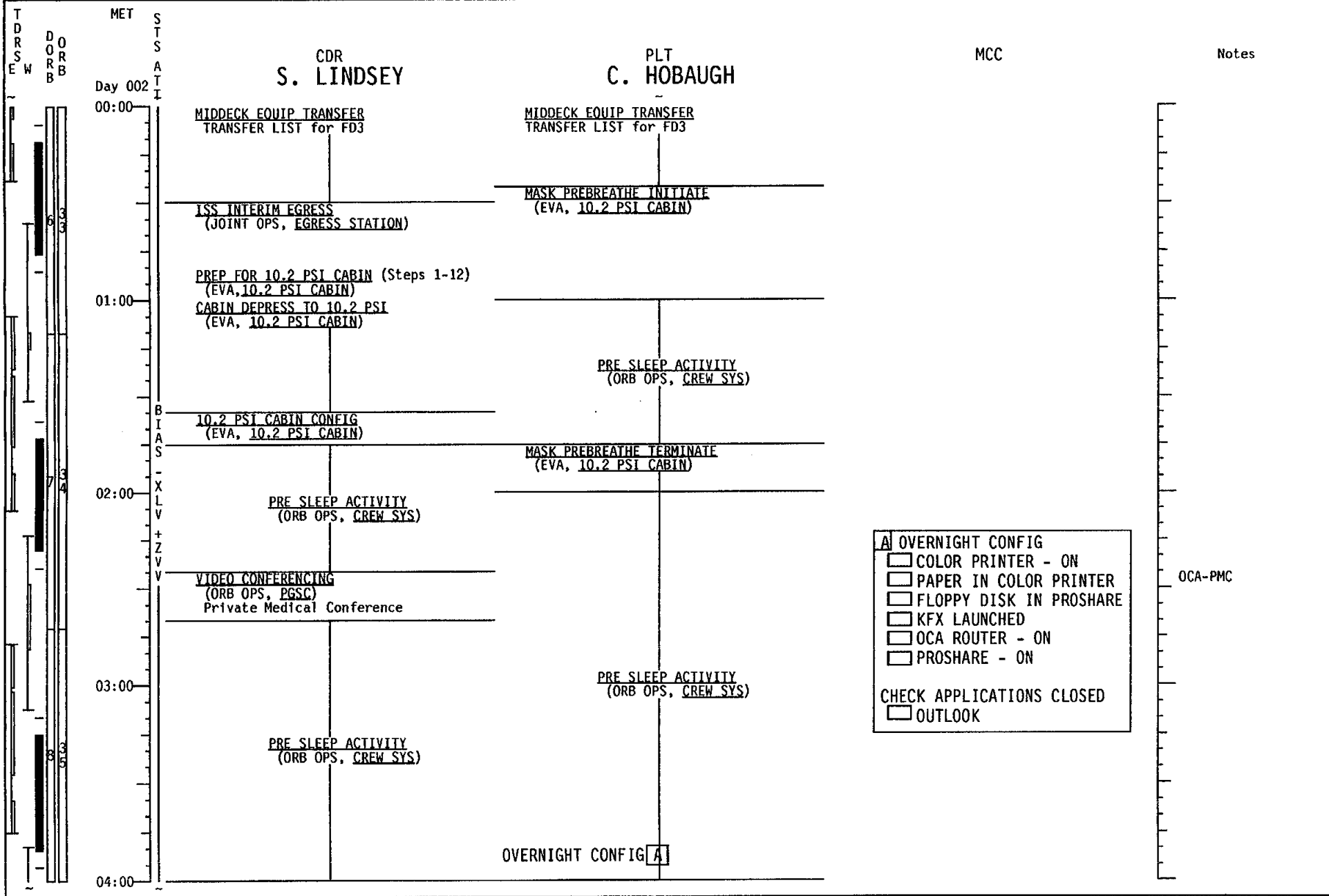
CWC TRANSFER (2 BAGS)
Transfer 2 CWC bags to ISS

EMU TRANSFER
TRANSFER LIST
EMU 3 TO ISS

EVA CREW: TAKE 1 ASPIRIN (325mg)

MIDDECK EQUIP TRANSFER
TRANSFER LIST for FD3

STS-104 (FD 03)



STS-104 (FD 03)

	MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	Notes	
MET Day 002 00:00 01:00 02:00 03:00 04:00	T D R S W D O R B B 6 3 3 7 3 4 8 3 6	S T S A T T I MIDDECK PREP (EVA, EVA PREP) EVA CREW: TAKE 1 ASPIRIN (325mg) MASK PREBREATHE INITIATE (EVA, 10.2 PSI CABIN) PGT CHECKOUT (EVA FS, TOOLS & STOWAGE) PRE SLEEP ACTIVITY (ORB OPS, CREW SYS) MASK PREBREATHE TERMINATE (EVA, 10.2 PSI CABIN) PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	MIDDECK EQUIP TRANSFER TRANSFER LIST for FD3 DAILY STS/ISS CREW XFER TAGUP ISS INTERIM EGRESS (JOINT OPS, EGRESS STATION) PREP FOR 10.2 PSI CABIN (EVA, 10.2 PSI CABIN) Steps 1 - 12 CABIN DEPRESS TO 10.2 PSI (EVA, 10.2 PSI CABIN) 10.2 PSI CABIN CONFIG (EVA, 10.2 PSI CABIN) DAILY TRANSFER BRIEFING WITH MCC PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	MIDDECK PREP (EVA, EVA PREP) EVA CREW: TAKE 1 ASPIRIN (325mg) MASK PREBREATHE INITIATE (EVA, 10.2 PSI CABIN) PGT CHECKOUT (EVA FS, TOOLS & STOWAGE) PRE SLEEP ACTIVITY (ORB OPS, CREW SYS) GALLEY OVERNIGHT CONFIG (ORB OPS, GLY IODINE RMVL) MASK PREBREATHE TERMINATE (EVA, 10.2 PSI CABIN) PRE SLEEP ACTIVITY (ORB OPS, CREW SYS) GALLEY OVERNIGHT CONFIG (ORB OPS, GLY IODINE RMVL)	

STS-104 (FD 03)

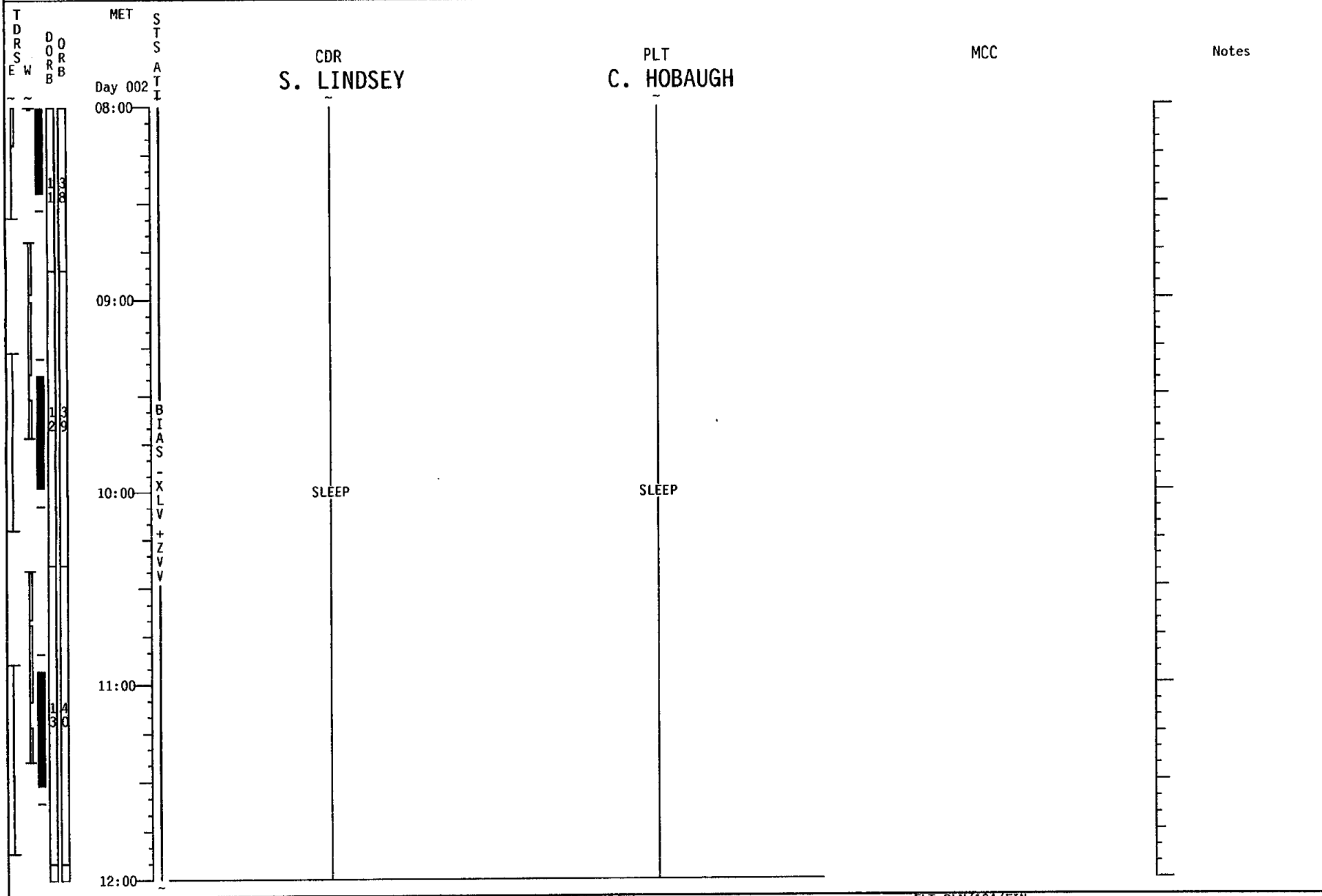
TDRSEW	MET Day 002	STS A T T	CDR S. LINDSEY	PLT C. HOBAUGH	MCC	Notes
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">DORB</div> <div style="margin-bottom: 5px;">8353</div> <div style="margin-bottom: 5px;">936</div> <div style="margin-bottom: 5px;">1307</div> <div style="margin-bottom: 5px;">138</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">04:00</div> <div style="margin-bottom: 5px;">05:00</div> <div style="margin-bottom: 5px;">06:00</div> <div style="margin-bottom: 5px;">07:00</div> <div style="margin-bottom: 5px;">08:00</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">B</div> <div style="margin-bottom: 5px;">I</div> <div style="margin-bottom: 5px;">A</div> <div style="margin-bottom: 5px;">S</div> <div style="margin-bottom: 5px;">-X</div> <div style="margin-bottom: 5px;">L</div> <div style="margin-bottom: 5px;">V</div> <div style="margin-bottom: 5px;">+Z</div> <div style="margin-bottom: 5px;">V</div> <div style="margin-bottom: 5px;">V</div> </div>	<p>SLEEP</p>	<p>SLEEP</p>		

STS-104 (FD 03)

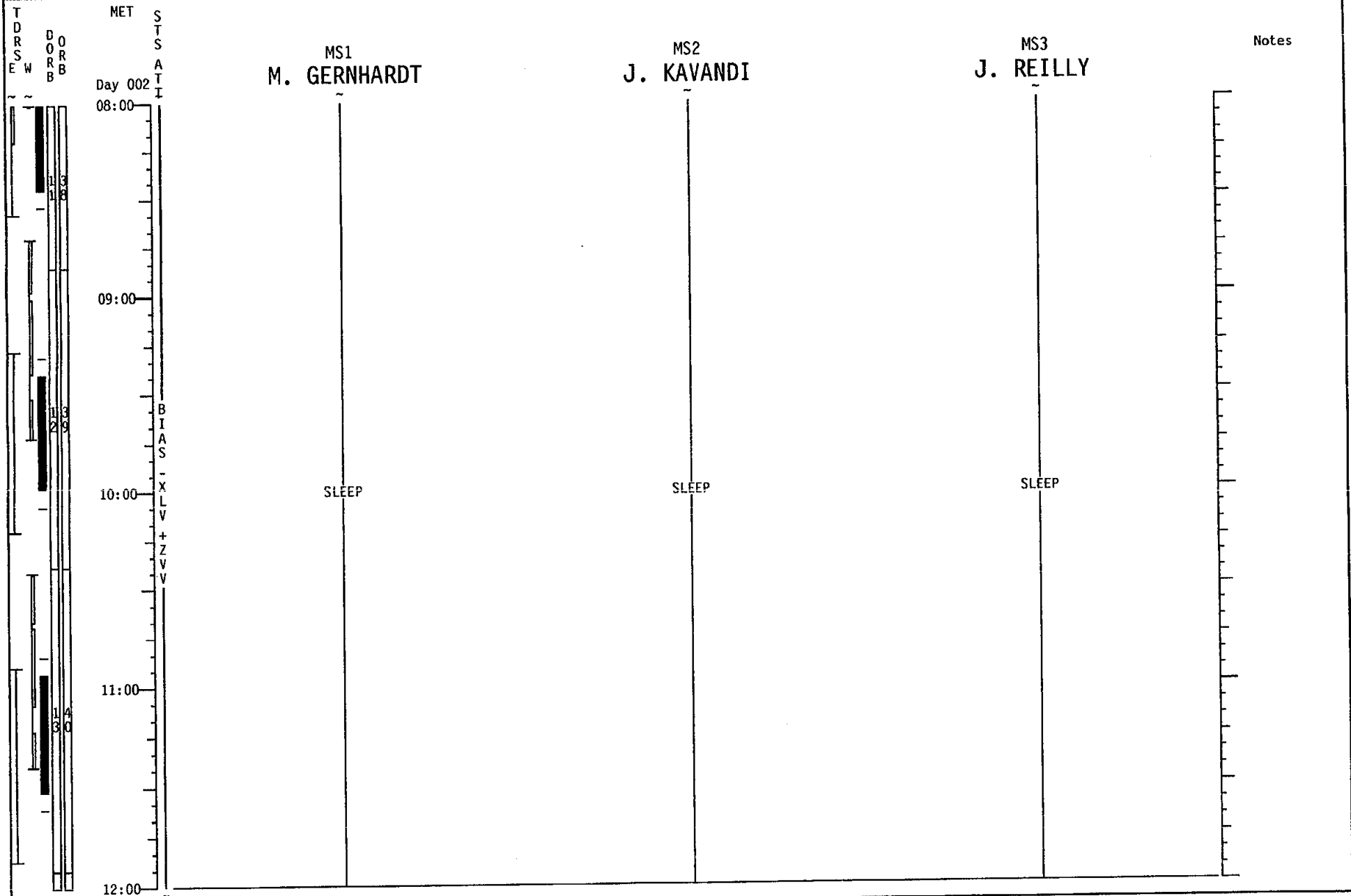
T D R S E W	D O O R B	MET Day 002	S T S A T I			Notes
			MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
		04:00				
		05:00				
		06:00	SLEEP	SLEEP	SLEEP	
		07:00				
		08:00				

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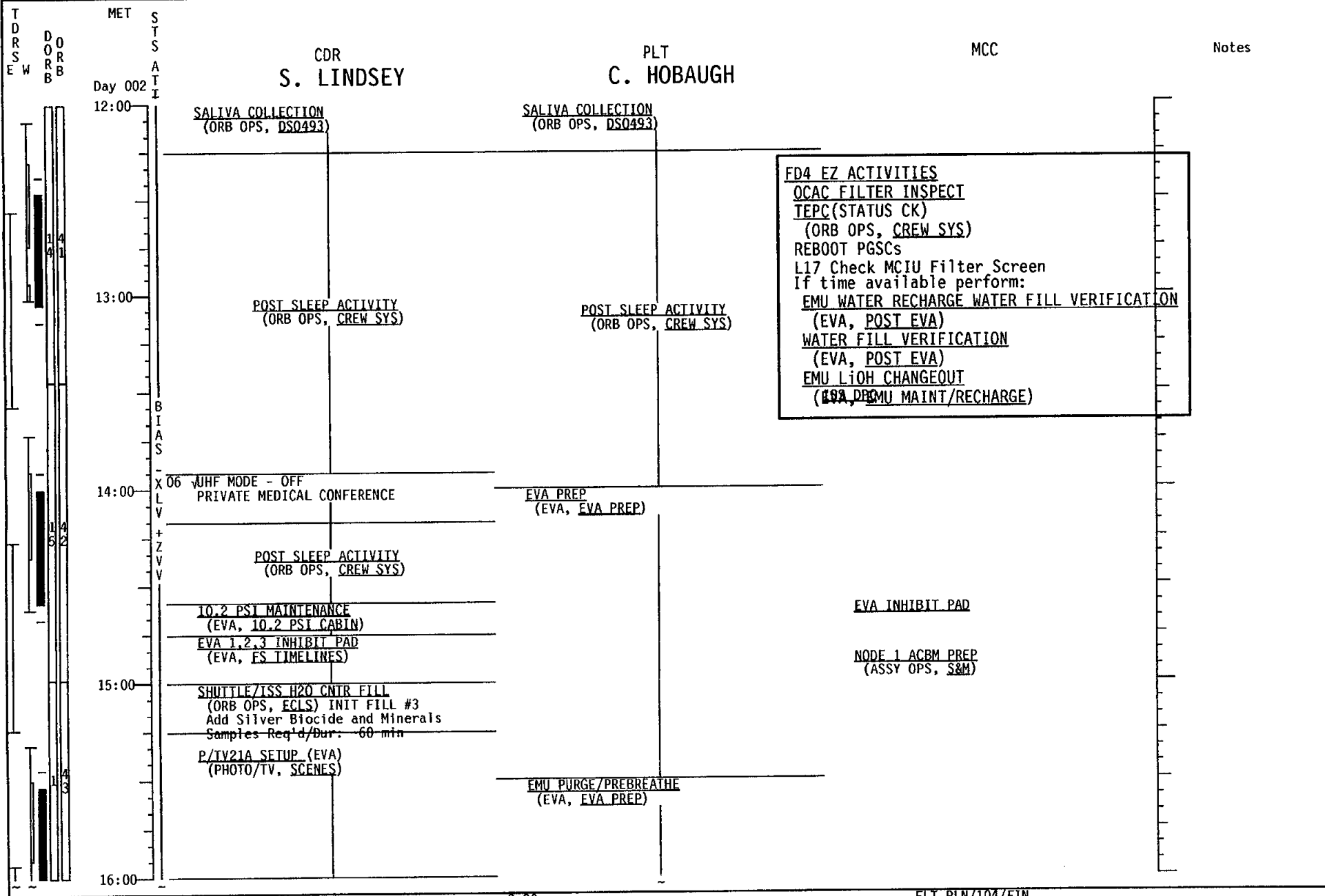
STS-104 (FD 03)



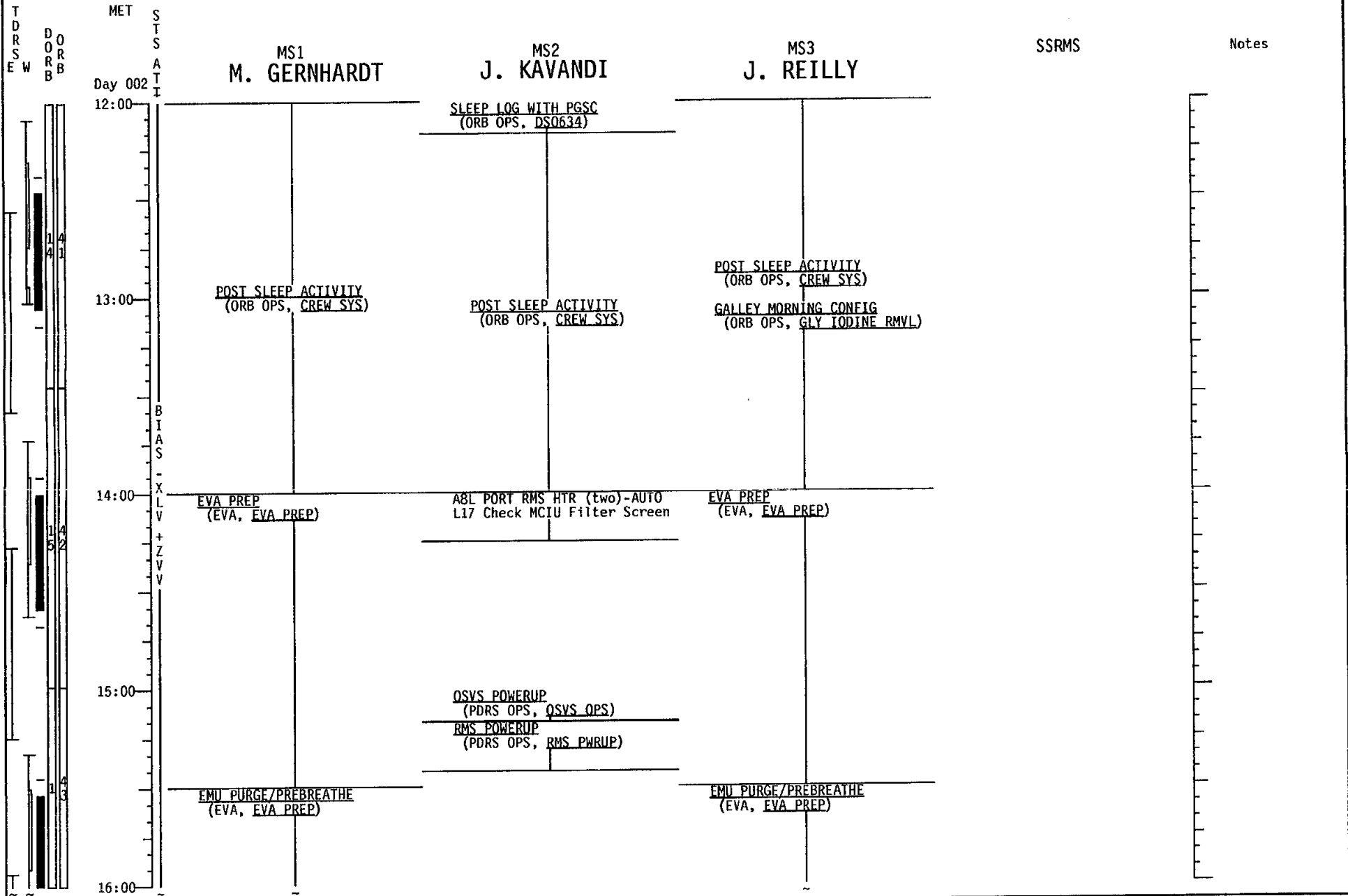
STS-104 (FD 03)



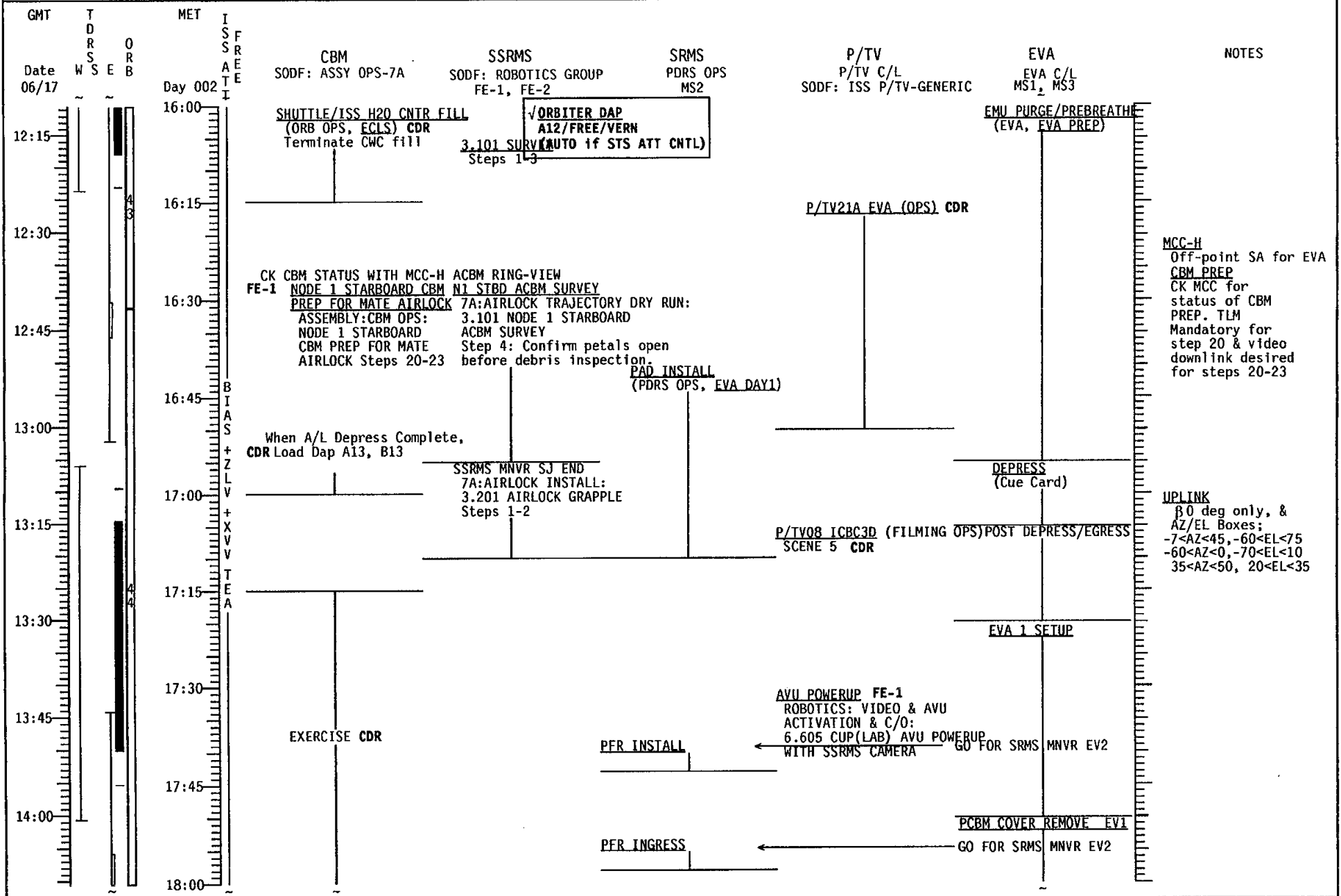
STS-104 (FD 04)



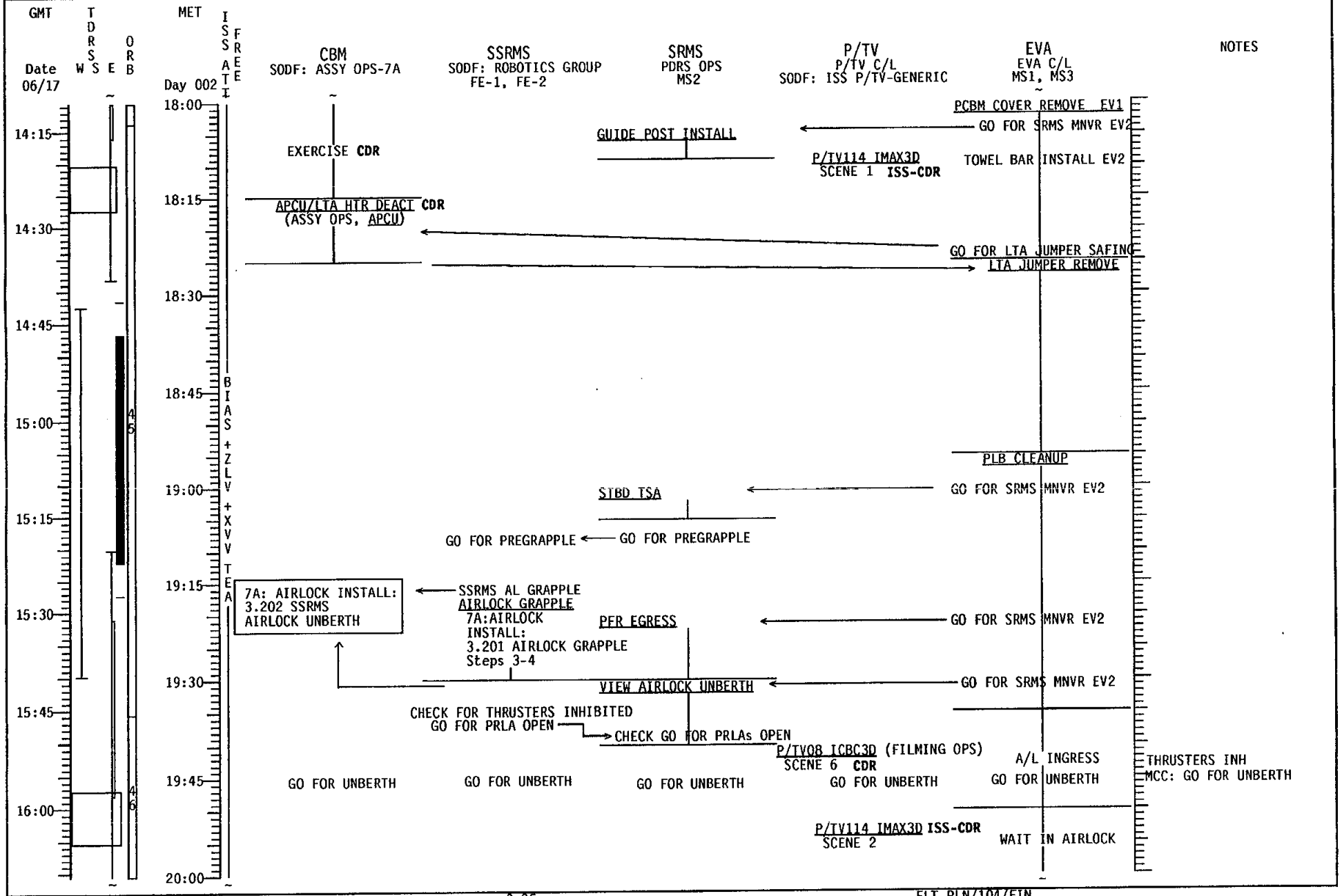
STS-104 (FD 04)



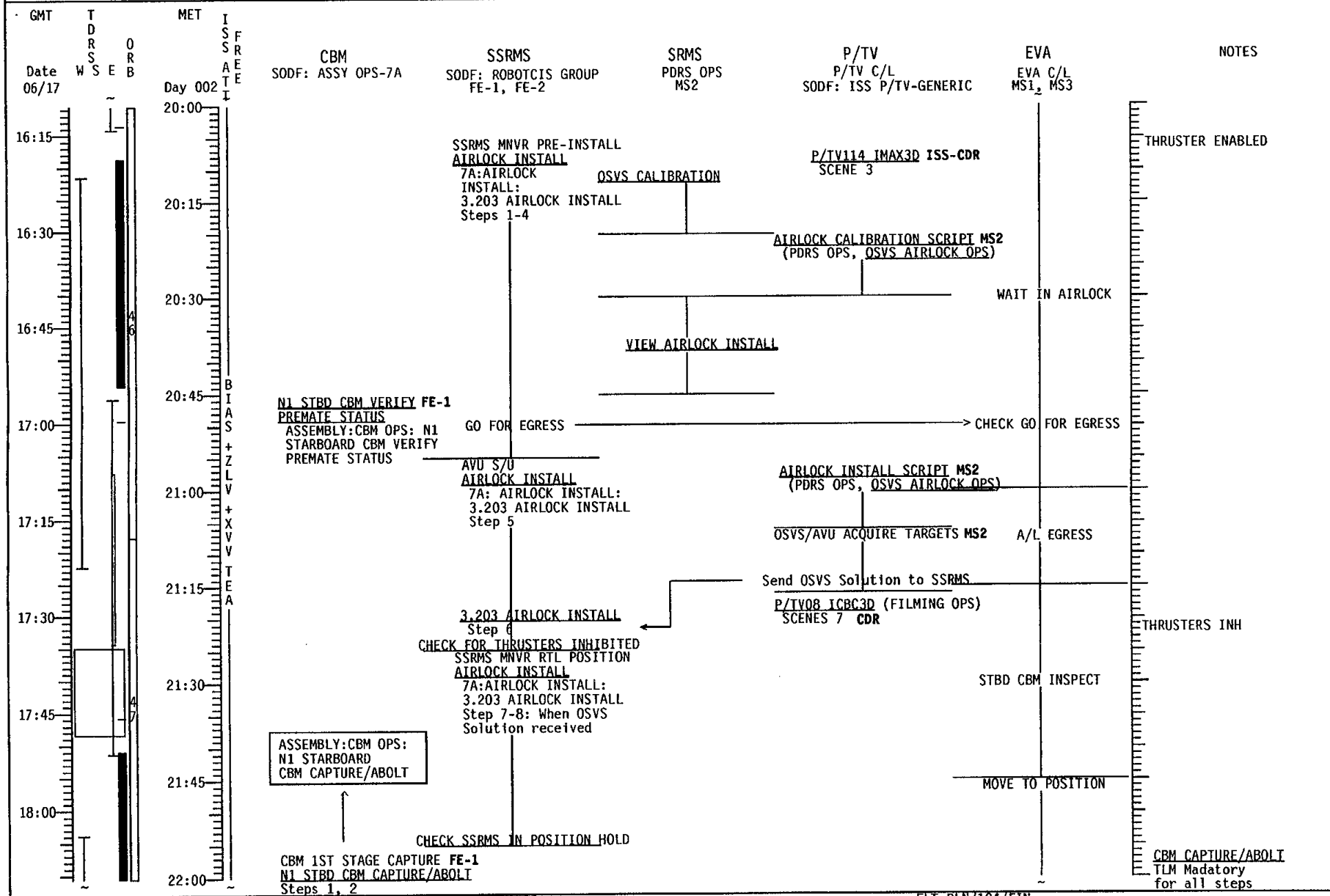
AIRLOCK INSTALL INTEGRATED C/L



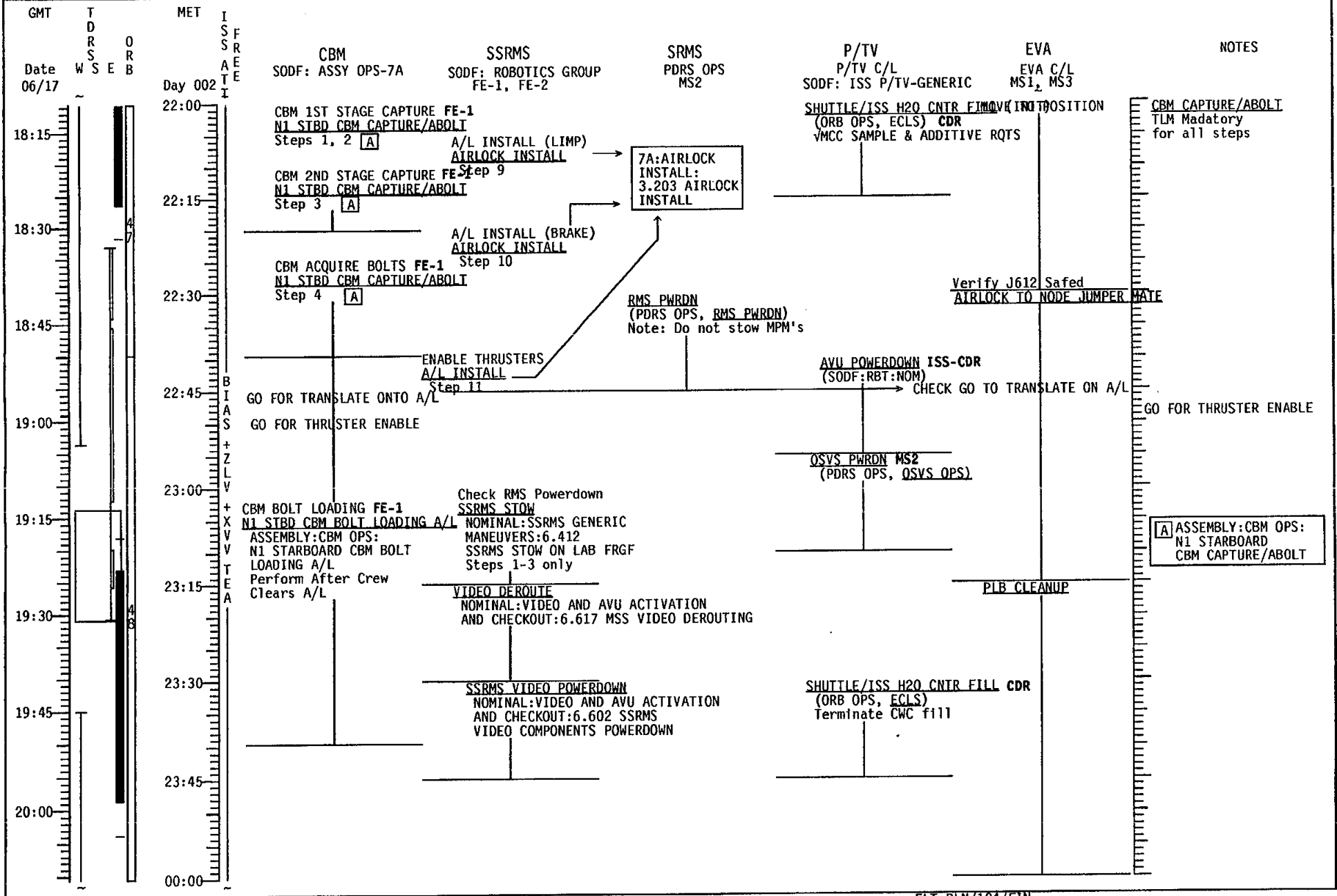
AIRLOCK INSTALL INTEGRATED C/L



AIRLOCK INSTALL INTEGRATED C/L

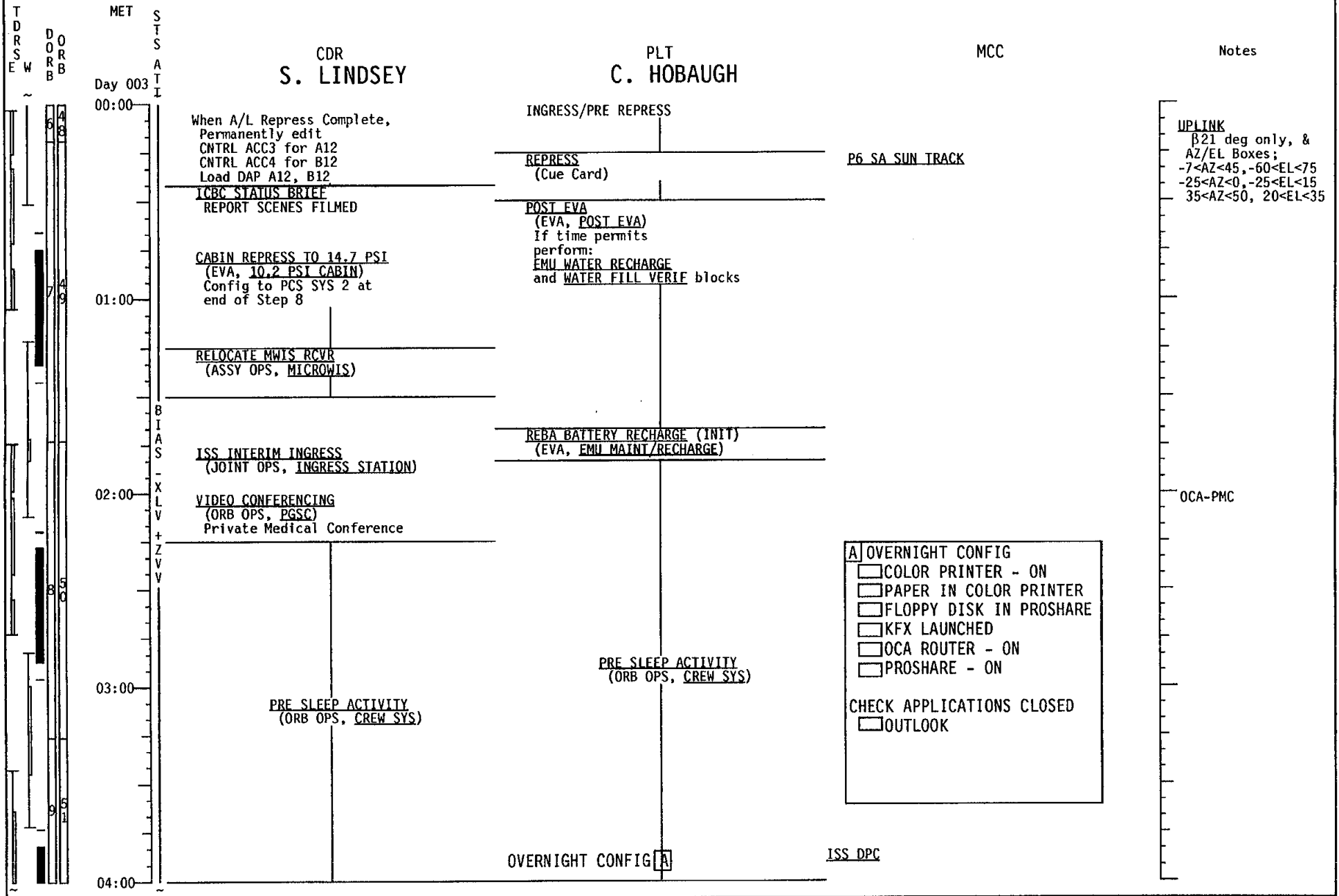


AIRLOCK INSTALL INTEGRATED C/L



[A] ASSEMBLY: CBM OPS:
N1 STARBOARD
CBM CAPTURE/ABOLT

STS-104 (FD 04)



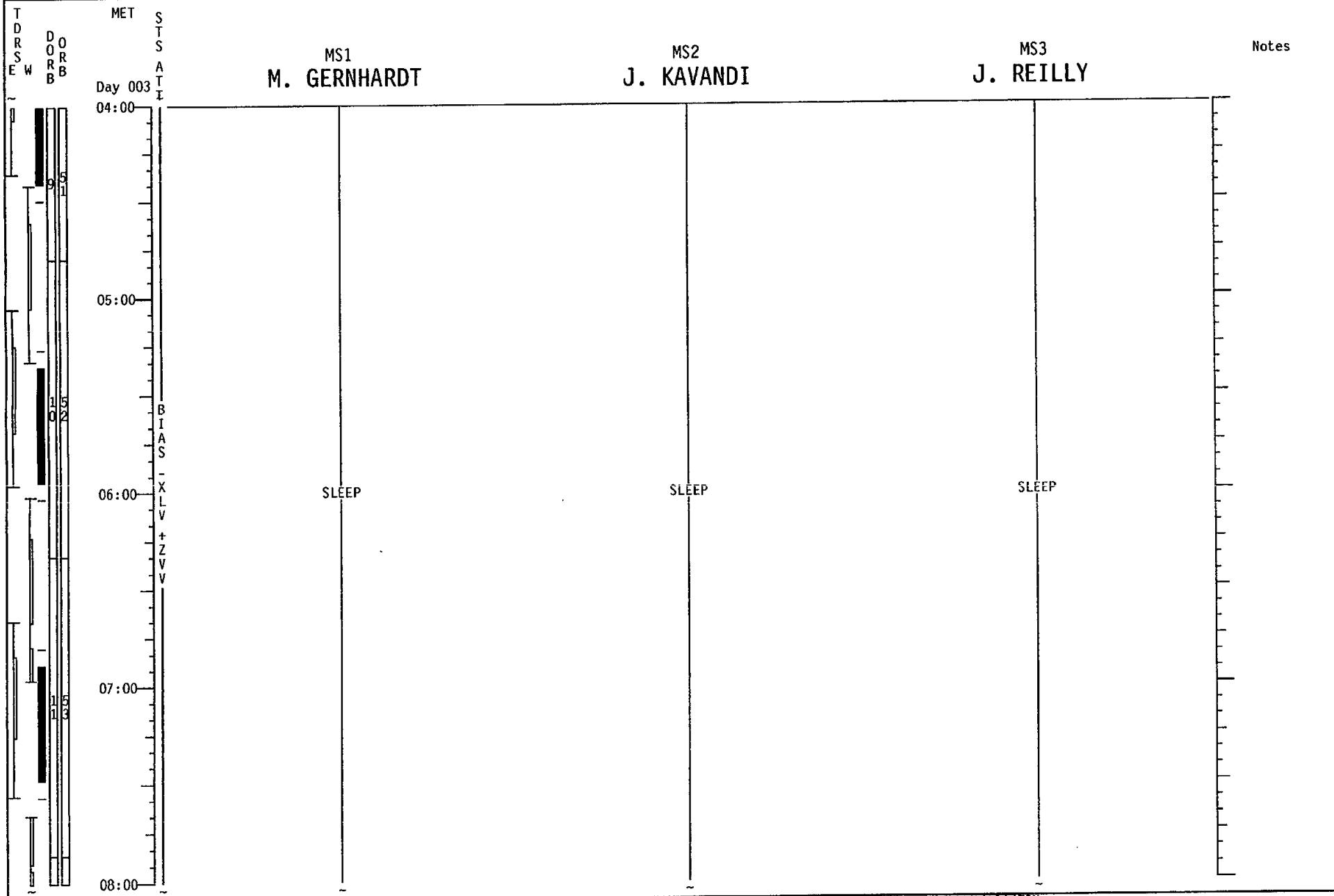
STS-104 (FD 04)

	MET Day 003	MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
T D R S W D O R B 6 7 8 9 10 11	S T S A T I B I A S - X L V + Z V V 00:00 01:00 02:00 03:00 04:00	INGRESS/PRE REPRESS REPRESS (Cue Card) POST EVA (EVA, POST EVA) If time permits perform: EMU WATER RECHARGE and WATER FILL VERIE blocks IN SUIT EMU BATT RECHRG/CHRG VERIE (INIT) (EVA, EMU MAINT/RECHARGE) PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	EXERCISE PRE SLEEP ACTIVITY (ORB OPS, CREW SYS) ISS INTERIM INGRESS (JOINT OPS, INGRESS STATION) DAILY STS/ISS CREW XFER TAGUP DAILY MCC TRANSFER BRIEFING PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	INGRESS/PRE REPRESS REPRESS (Cue Card) POST EVA (EVA, POST EVA) If time permits perform: EMU WATER RECHARGE and WATER FILL VERIE blocks HLMT LT/PGT BATT (INIT) (EVA, EMU MAINT/RECHARGE) PRE SLEEP ACTIVITY (ORB OPS, CREW SYS) GALLEY OVERNIGHT CONFIG (ORB OPS, GLY IODINE RMVL)	Notes

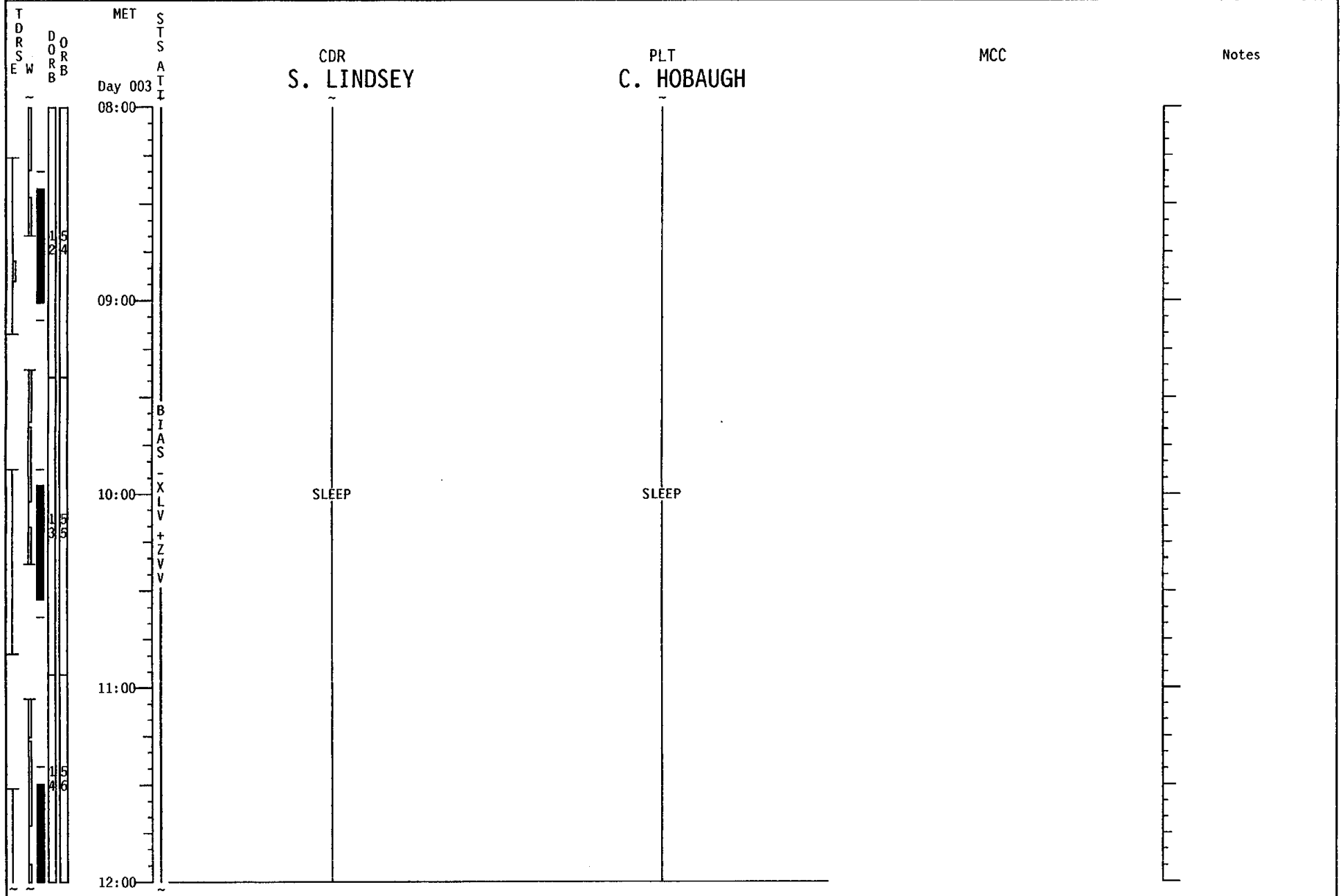
STS-104 (FD 04)

T D R S E W	D O R R B	MET Day 003	S T S A T I	CDR S. LINDSEY	PLT C. HOBAUGH	MCC	Notes
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> </div>	<p>ISS DPC</p>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> <div style="width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black; margin: 0 5px;"></div> </div>		
		04:00					
		05:00					
		06:00	B I A S - X L V + Z V V	SLEEP	SLEEP		
		07:00					
		08:00					

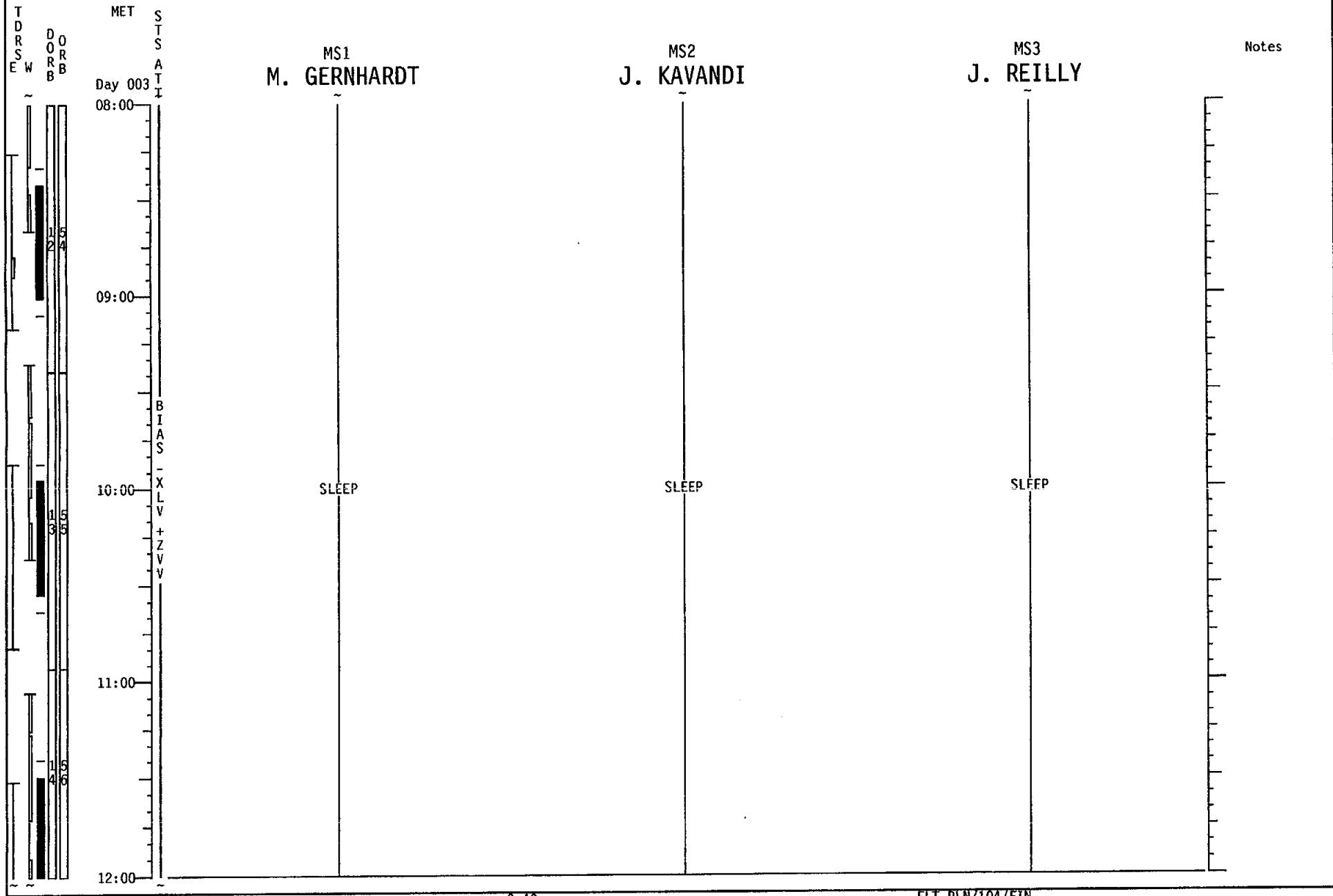
STS-104 (FD 04)



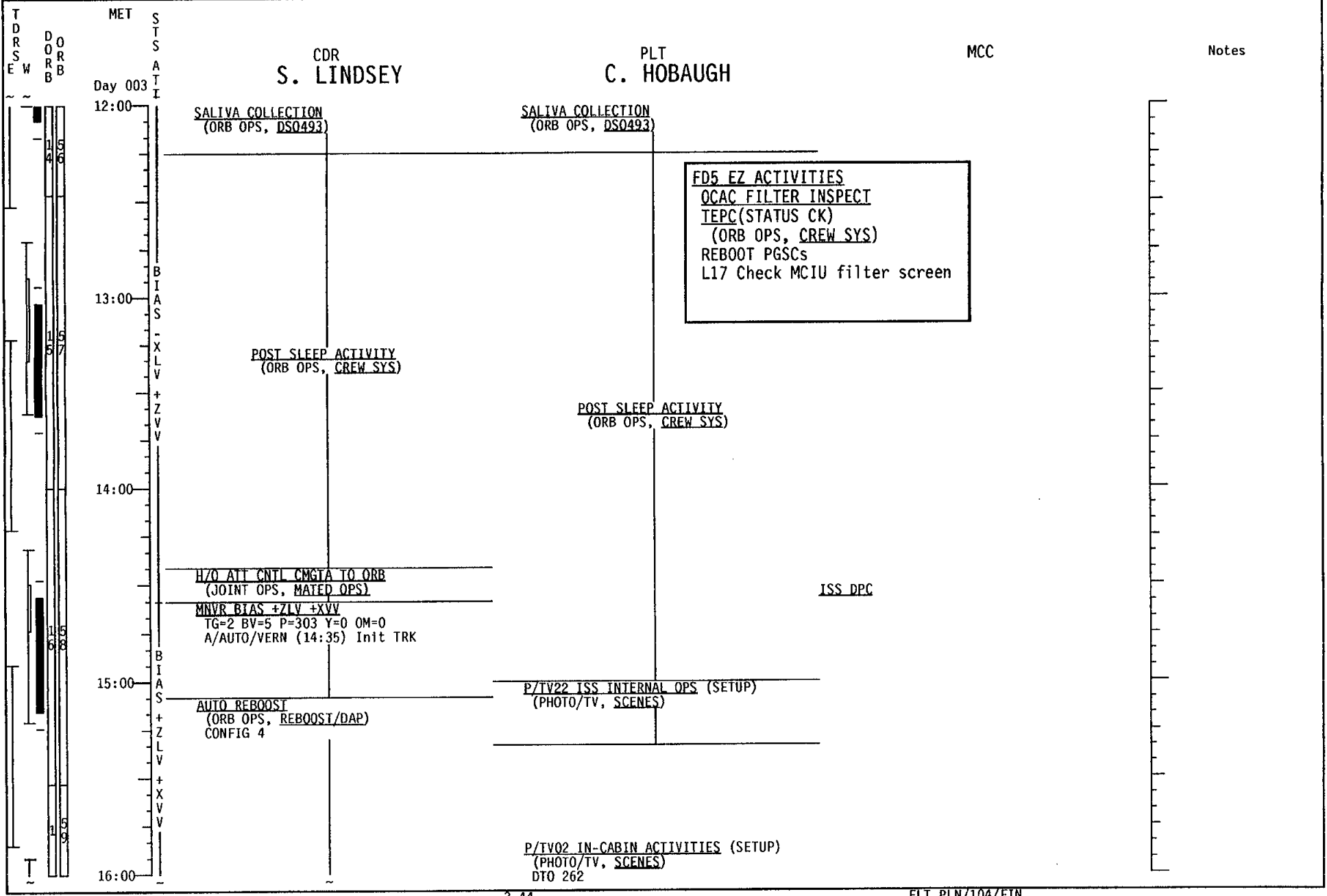
STS-104 (FD 04)



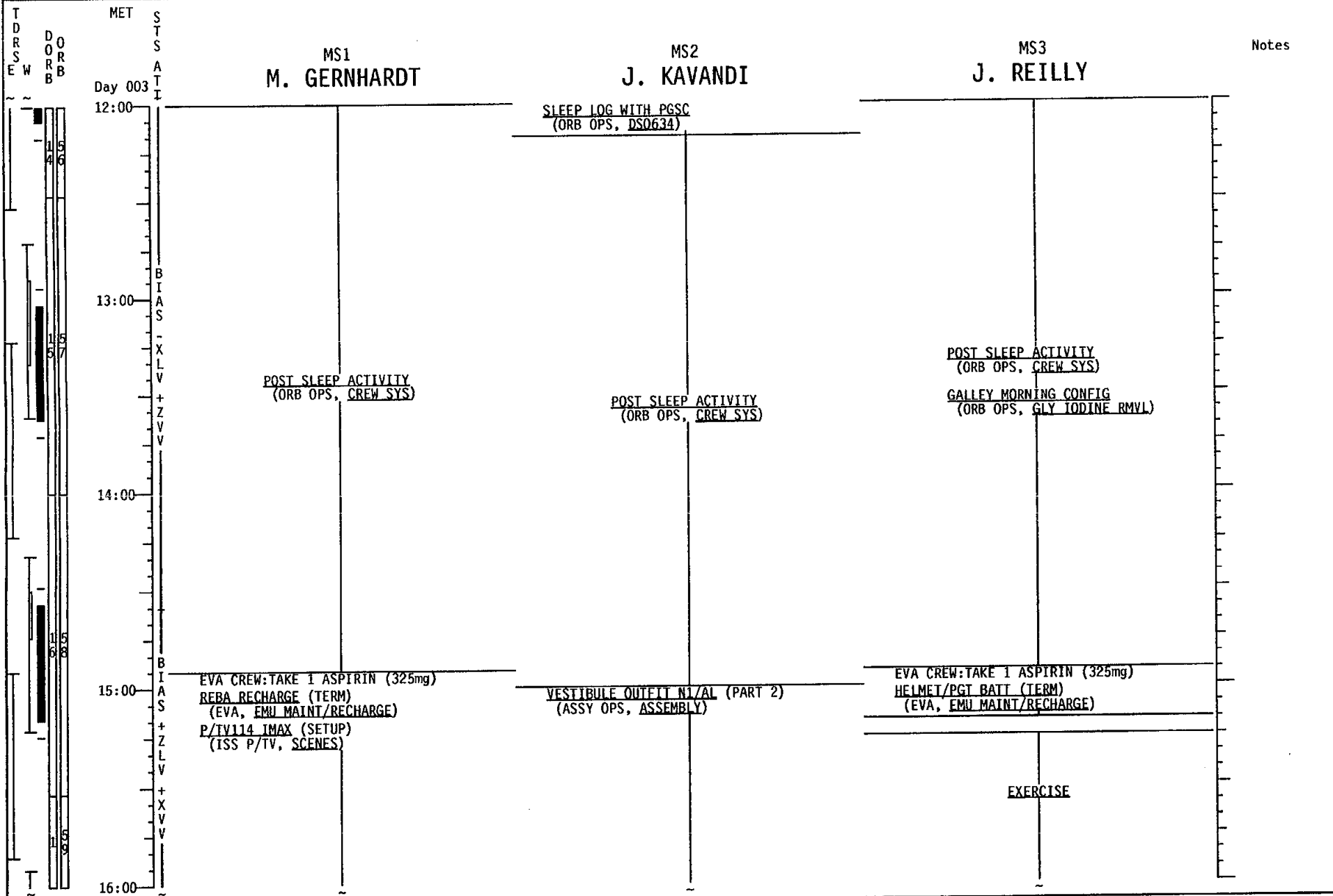
STS-104 (FD 04)



STS-104 (FD 05)



STS-104 (FD 05)



STS-104 (FD 05)

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CDR
S. LINDSEY

PLT
C. HOBAUGH

MCC

Notes

Day 003

16:00

AUTO REBOOST
(ORB OPS, REBOOST/DAP)
CONFIG 4

P/TV02 IN-CABIN ACTIVITIES (SETUP)
(PHOTO/TV, SCENES)
DTO 262

STS MNVR BIAS -XLV +ZVV
TG=2 BV=5 P=155 Y=0 OM=0
A/AUTO/VERN (16:10) Init TRK

P/TV02 IN-CABIN ACTIVITIES (OPS)
(PHOTO/TV, SCENES)
DTO 262

H/O ATT CNTL ORB TO CMGTA
(JOINT OPS, MATED OPS)

VESTIBULE OUTFIT N1/A1 (PART 2)
(ASSY OPS, ASSEMBLY)

17:00

18:00

SHUTTLE/ISS H2O CNTR FILL
(ORB OPS, ECLS) INIT FILL #5
Add Silver Biocide and Minerals
Samples Req'd/Qty: 60 min

P/TV02 IN-CABIN ACTIVITIES (SETUP)
(PHOTO/TV, SCENES)
PAO

A/L POWERUP & RPCM C/O
(ASSY OPS, ACT&C/O)

PAO OPPTY

PAO OPPTY

KU AVAIL: 18:20-18:46

KU AVAIL: 18:20-18:46

19:00

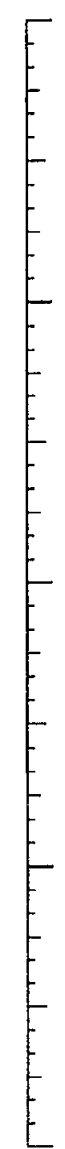
MEAL

MEAL

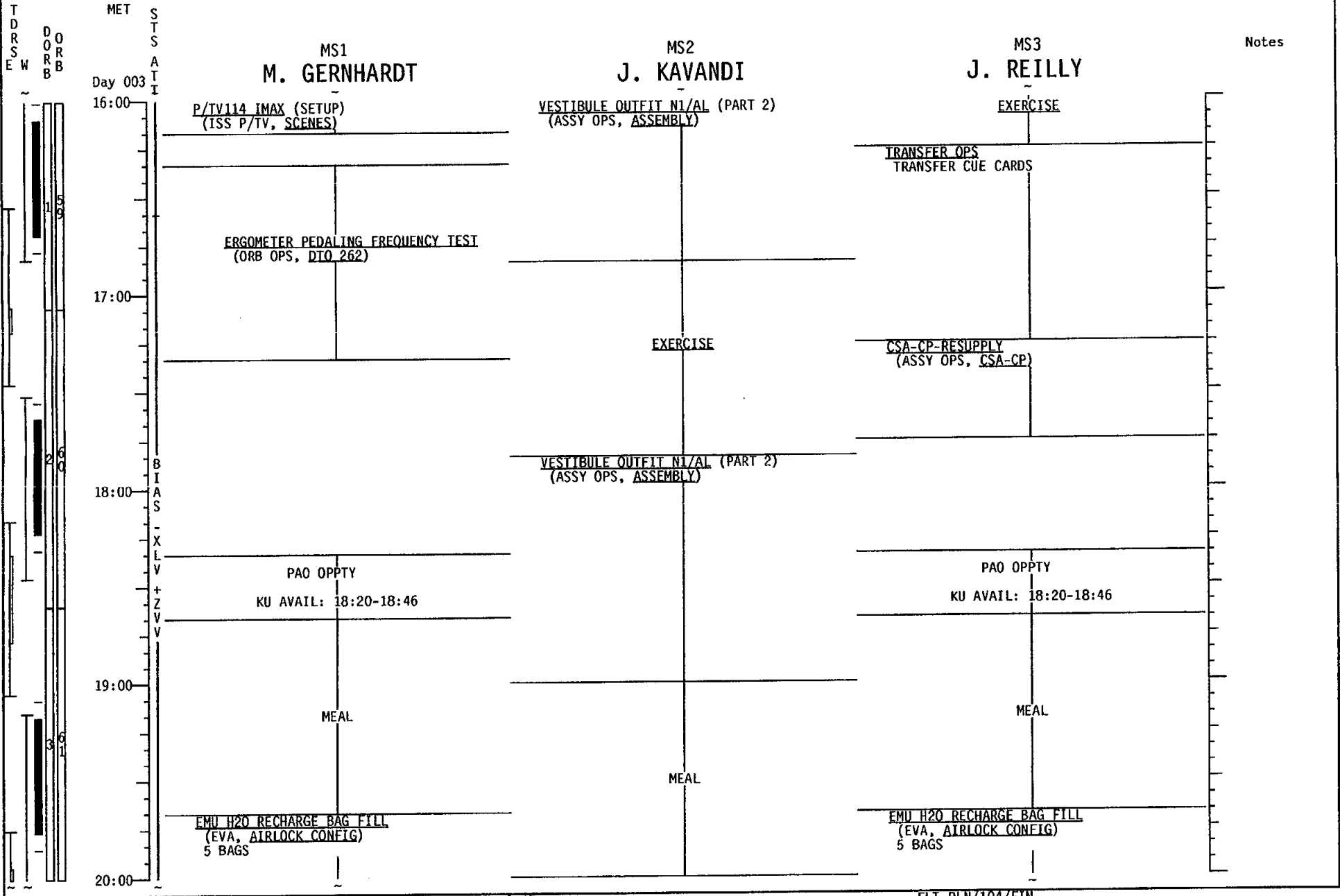
20:00

SHUTTLE/ISS H2O CNTR FILL
(ORB OPS, ECLS) TERM FILL #5
Report CWC Barcode & S/N to MCC

COMM STRING 1 C/O (PART A)
(ORB OPS, COMM/INST)



STS-104 (FD 05)



STS-104 (FD 05)

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CDR
S. LINDSEY

PLT
C. HOBAUGH

MCC

Notes

O2 & N2 SYSTEM OUTFIT - N1/AL
(ASSY OPS, ASSEMBLY)

TRANSFER OPS
TRANSFER CUE CARDS

O2 SYSTEM PURGE
(ECG, ACT&C/O)

AIRLOCK AFT NPRV REMOVE
REPLACE W/ IMV DUCT
(ASSY OPS, ASSEMBLY)
NODE STBD FWD &
A/L STBD

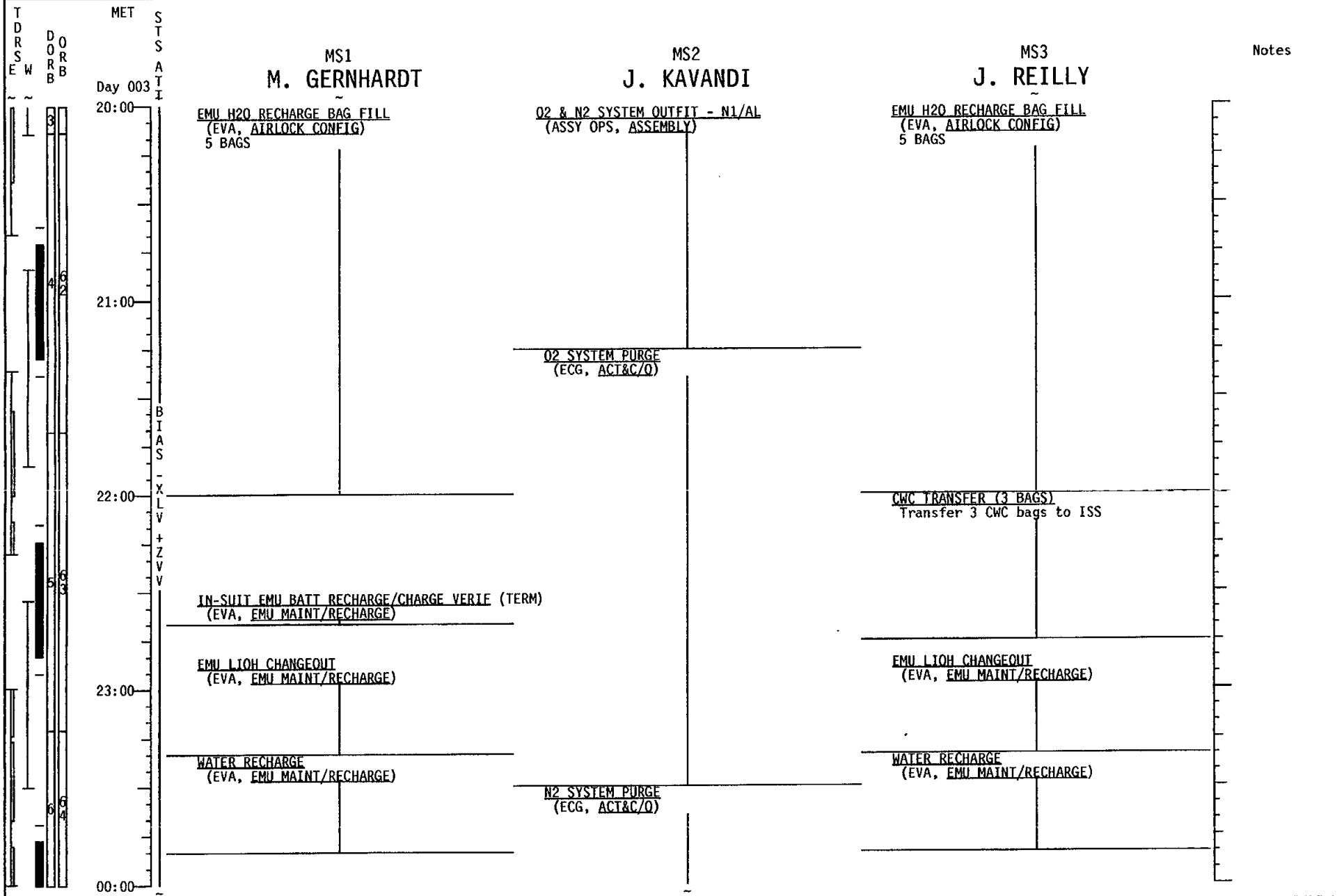
A/L SYS ACT & C/O
(ASSY OPS, ACT&C/O)

SHUTTLE/ISS H2O CNTR FILL
(ORB OPS, ECLS) INIT FILL #6
Add Silver Biocide and Minerals
Samples Req'd
Estimated Fill Duration: ~60min

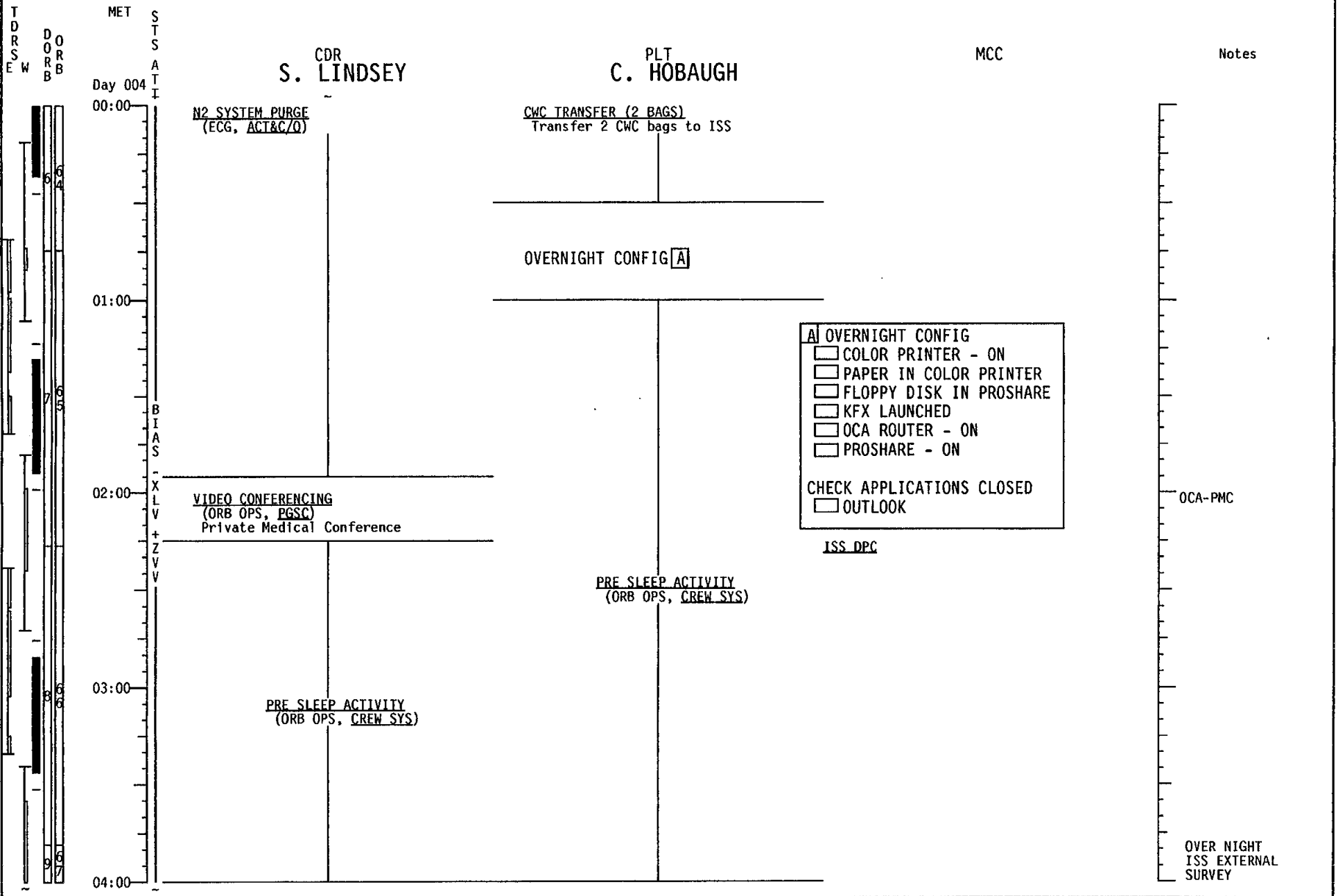
N2 SYSTEM PURGE
(ECG, ACT&C/O)

SHUTTLE/ISS H2O CNTR FILL
(ORB OPS, ECLS) TERM FILL #6
Report CWC Barcode & S/N to MCC

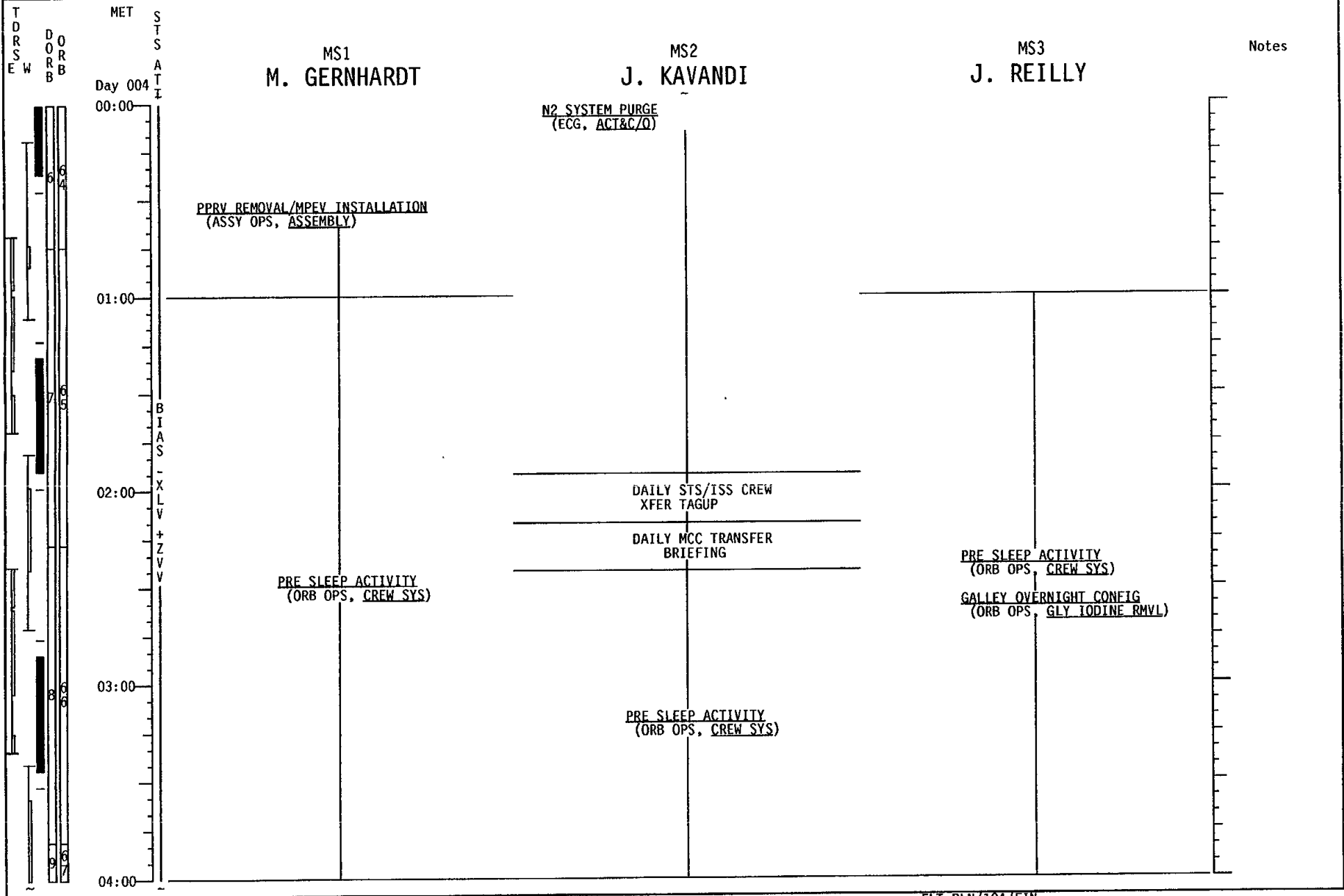
STS-104 (FD 05)



STS-104 (FD 05)



STS-104 (FD 05)



STS-104 (FD 05)

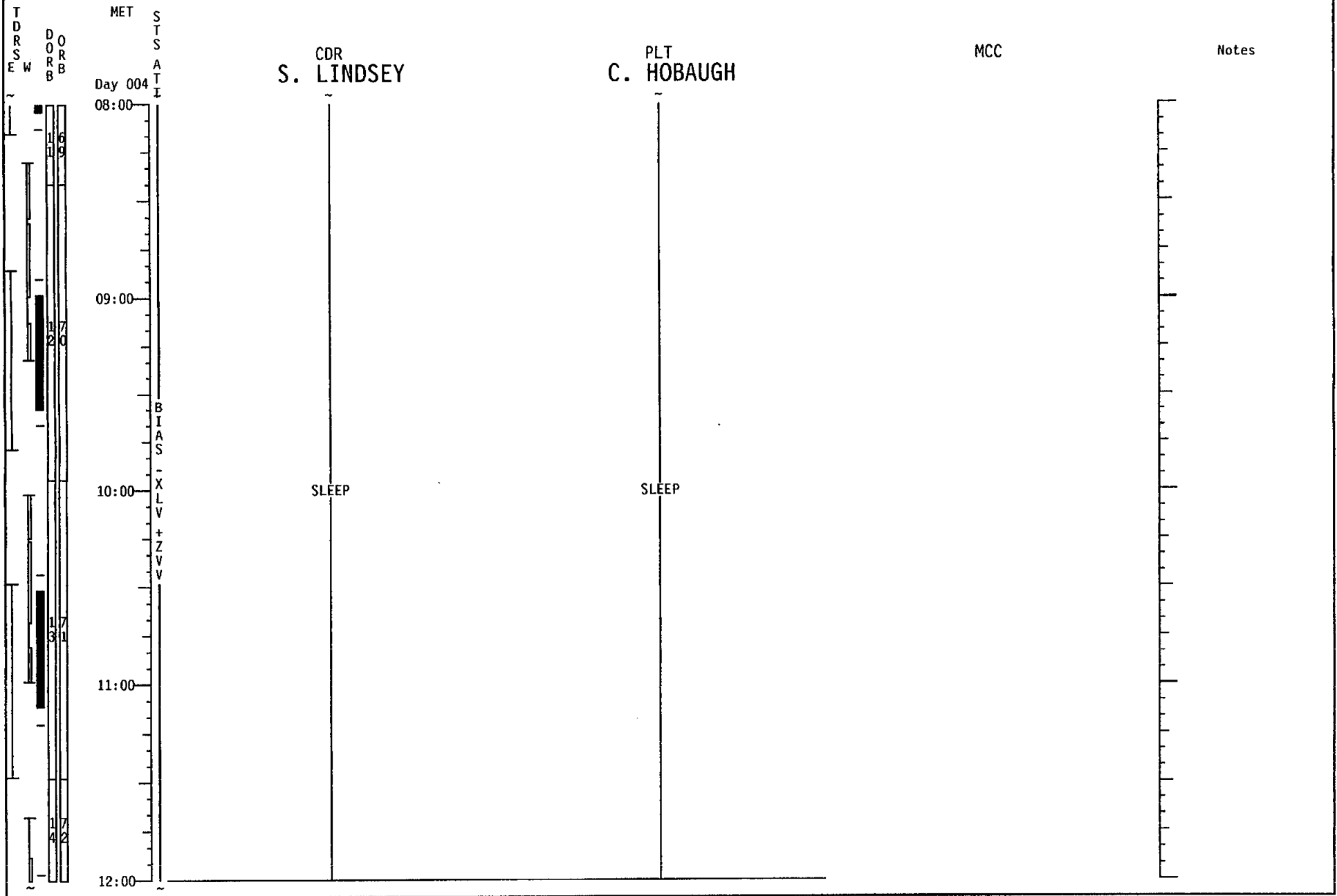
T D R S E W	MET Day 004	STS A T I	CDR S. LINDSEY	PLT C. HOBAUGH	MCC	Notes
<p>DOORB 04:00 05:00 06:00 07:00 08:00</p> <p>B I A S X L V + Z V V</p>	<p>Day 004</p> <p>04:00 05:00 06:00 07:00 08:00</p>		<p>SLEEP</p>	<p>SLEEP</p>		

STS-104 (FD 05)

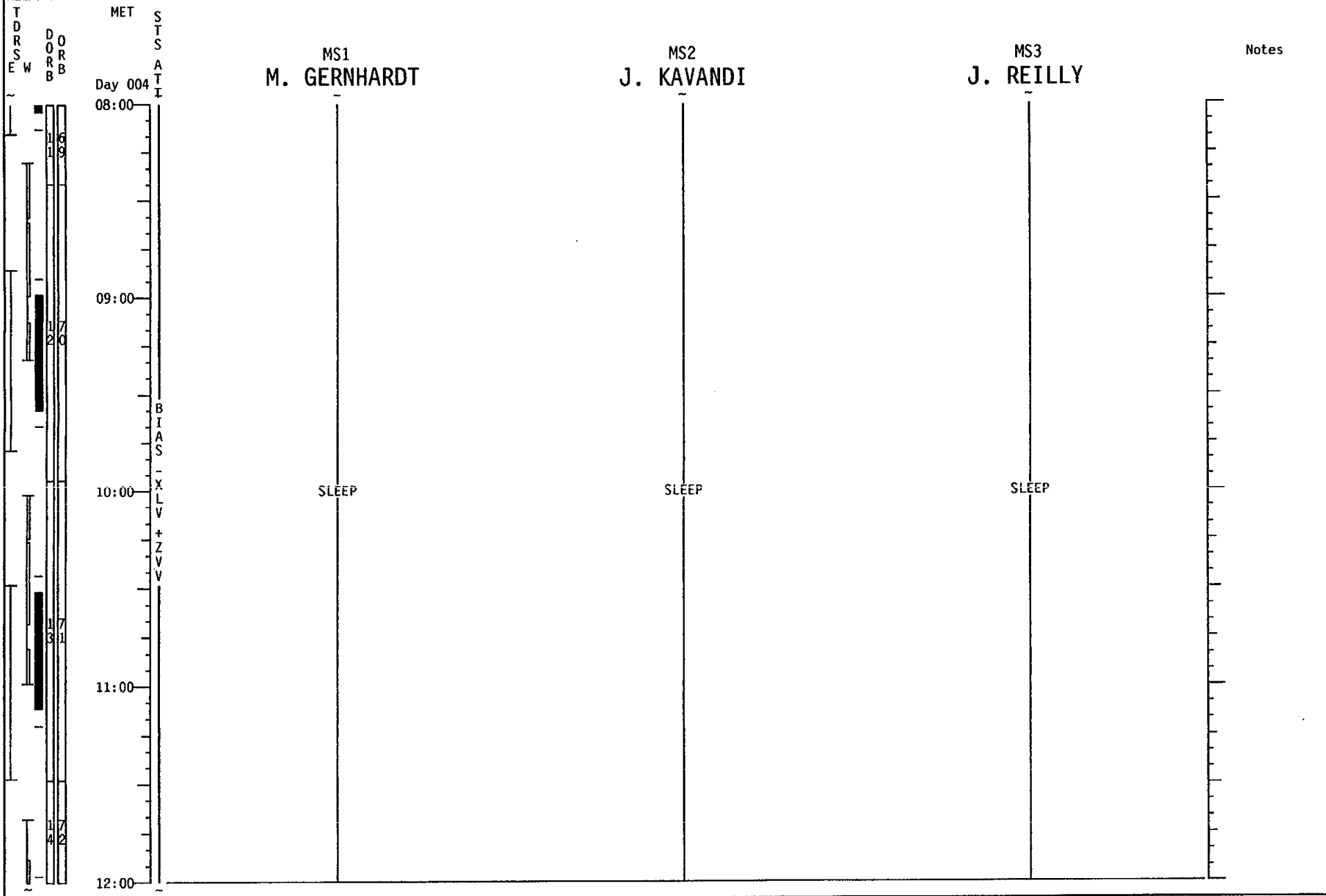
T D R S E W	D O R B	MET Day 004	S T S A T I			Notes
			MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
		04:00				
		05:00				
		06:00	SLEEP	SLEEP	SLEEP	
		07:00				
		08:00				

B
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V

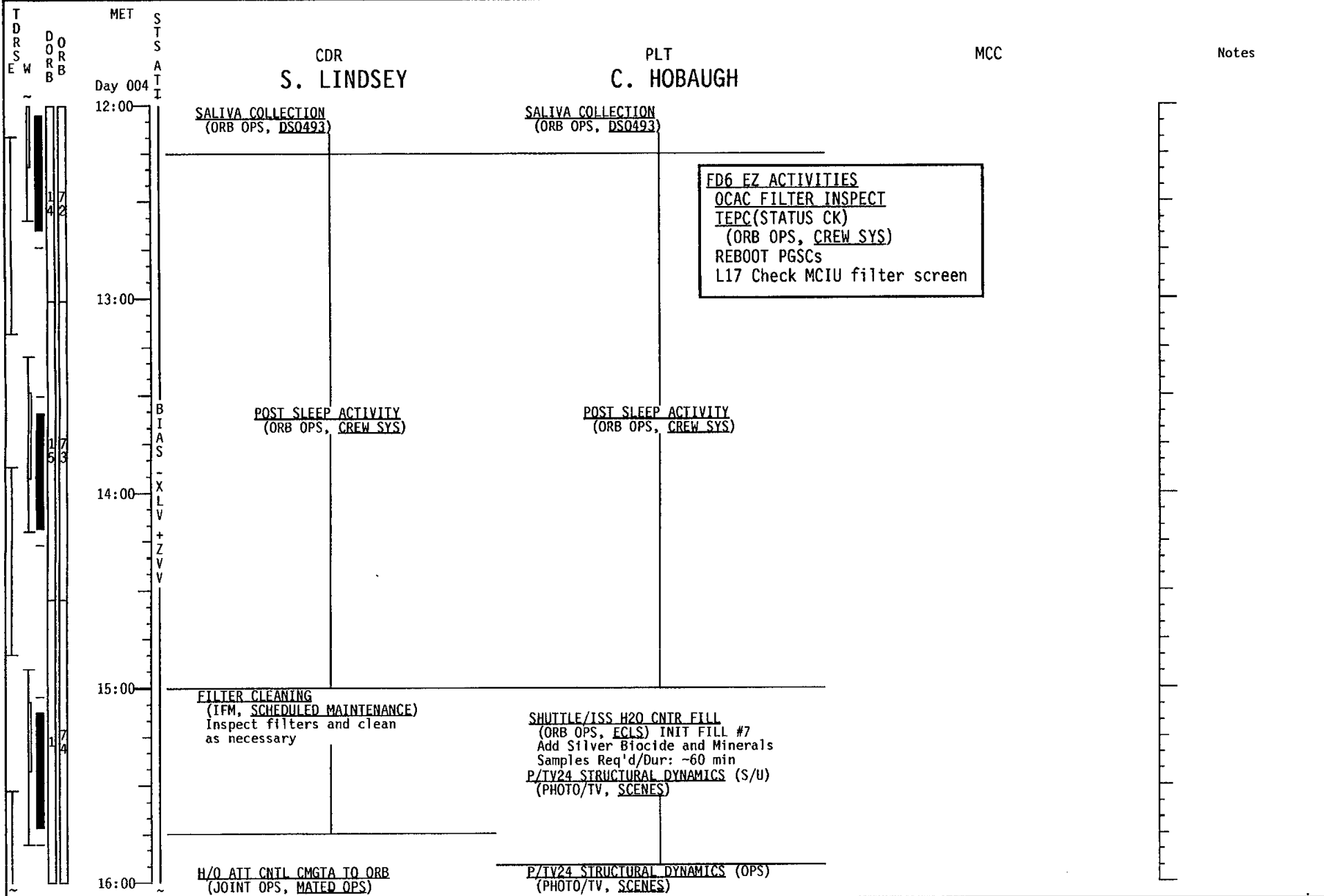
STS-104 (FD 05)



STS-104 (FD 05)



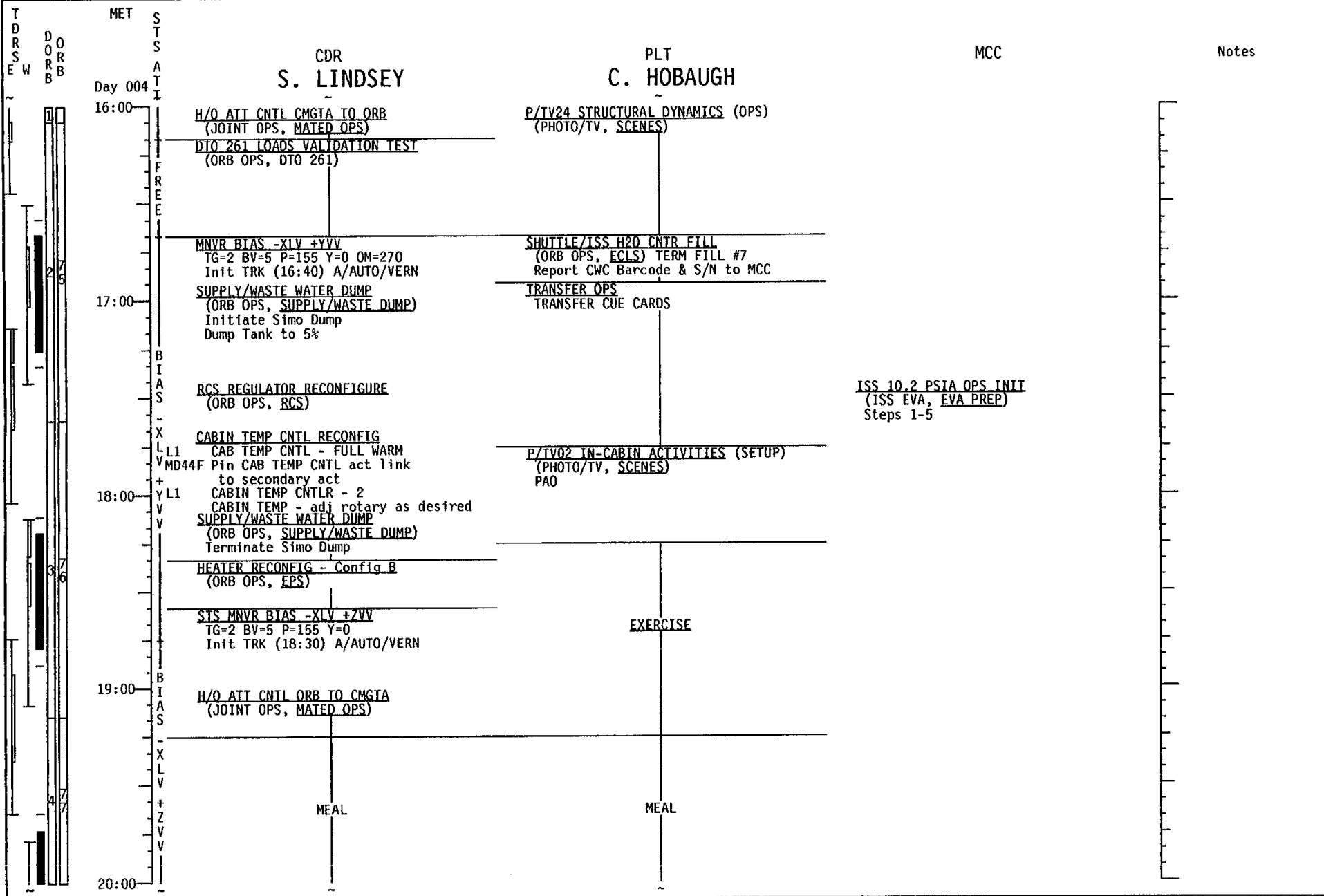
STS-104 (FD 06)



STS-104 (FD 06)

	MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	Notes
<p style="text-align: center;">T D R S E W O R B 1 4 2 1 7 3 1 7 4</p>	<p style="text-align: center;">MET Day 004</p>	<p style="text-align: center;">S T S A T I</p>		
12:00		SLEEP LOG WITH PGSC (ORB OPS, DS0634)		
13:00	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)			
14:00	VIDEO CONFERENCING (ORB OPS, PGSC) Private Family Conference	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST SLEEP ACTIVITY (ORB OPS, CREW SYS) GALLEY MORNING CONFIG (ORB OPS, GLY IODINE RMVL)	OCA-PFC
15:00	EVA 2 TOOL CONFIG (EVA, FS TIMELINES)	AIRLOCK HATCH RELOCATION (ASSY OPS, ASSEMBLY)	EVA 2 TOOL CONFIG (EVA, FS TIMELINES)	
16:00	MIDDECK PREP (EVA, EVA PREP)		MIDDECK PREP (EVA, EVA PREP)	

STS-104 (FD 06)



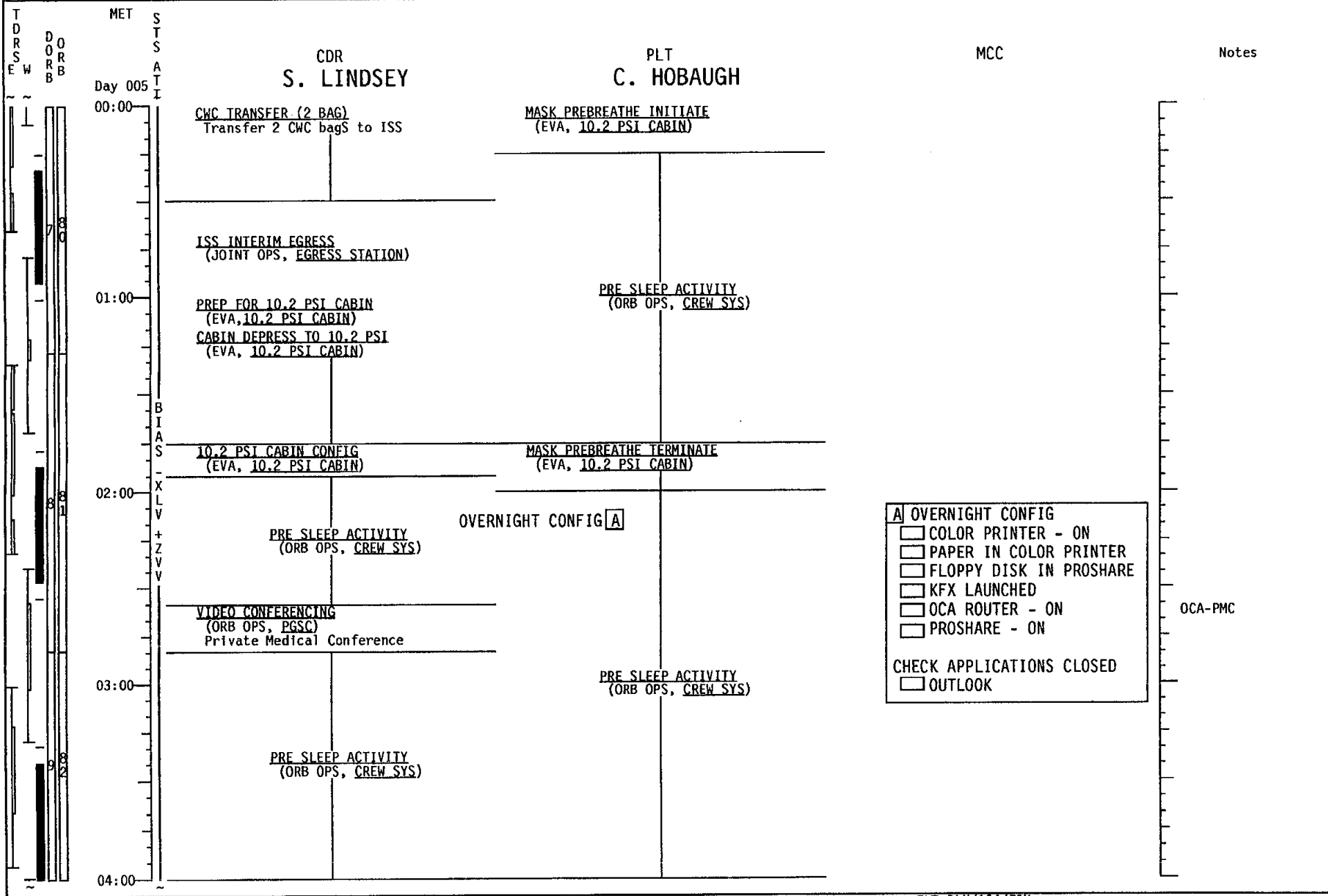
STS-104 (FD 06)

T D R S E W	D O R B	MET Day 004	S T S A T I T E	MCC	Notes
		20:00	<p>CDR S. LINDSEY</p> <p>MEAL</p>	<p>PLT C. HOBAUGH</p> <p>MEAL</p>	
			<p>PAO OPPTY KU AVAIL: 20:33-20:58</p>	<p>PAO OPPTY KU AVAIL: 20:33-20:58</p>	
		21:00			
			<p><u>COMM STRING 1 C/O (PART B)</u> (ORB OPS, COMM/INST)</p>		
			<p><u>SHUTTLE/ISS H2O CNTR FILL</u> (ORB OPS, ECLS) TERM FILL #8 Report CWC Barcode & S/N to MCC</p>		
		22:00			
			<p>EXERCISE</p>	<p><u>P/TV18 EVA CAMR SETUP</u> (PHOTO/TV, SCENES) EVA STILL CAMERA S/U</p>	
		23:00			
			<p><u>EVA 2 PROCEDURE REVIEW</u> REF: EVA2 BRIEFING CARD (EVA, ES TIMELINES)</p>	<p>EVA CREW: TAKE 1 ASPIRIN (325mg) <u>EVA 2 PROCEDURE REVIEW</u> REF: EVA2 BRIEFING CARD (EVA, ES TIMELINES)</p>	
		00:00			

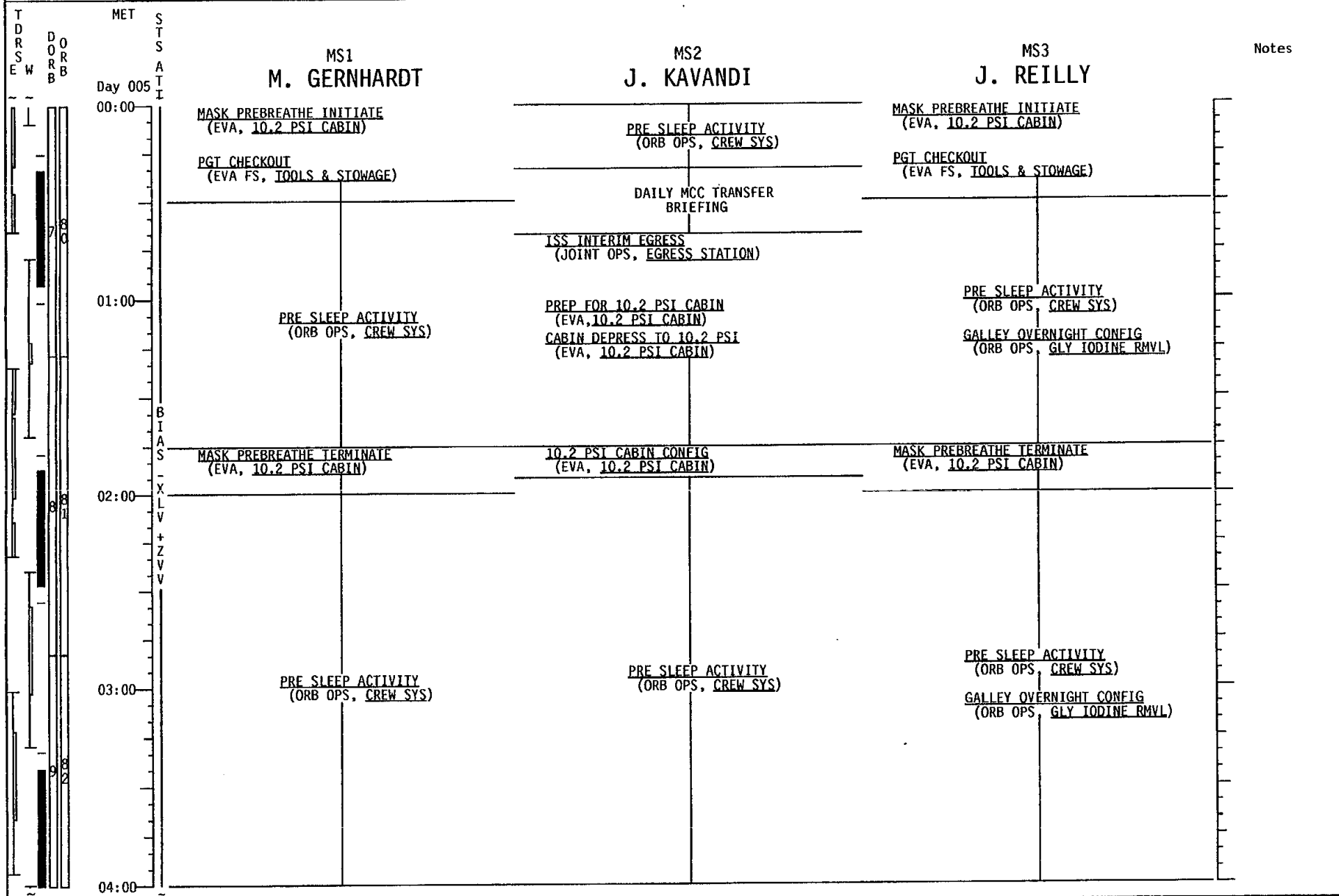
STS-104 (FD 06)

	MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
T D R S E W D O R B B B Day 004 20:00 21:00 22:00 23:00 00:00	S T S A T I MEAL IRU ACT & C/O (ASSY OPS, ACT & C/O) EMU/AIRLOCK COMM ACT & C/O (ASSY OPS, ACT & C/O) UJA ACT & C/O (ASSY OPS, ACT & C/O) BCA ACT & C/O (ASSY OPS, ACT & C/O) EVA CREW: TAKE 1 ASPIRIN (325mg) EVA 2 PROCEDURE REVIEW REF: EVA2 BRIEFING CARD (EVA, FS TIMELINES)	MEAL SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) INIT FILL #8 Add Silver Biocide and Minerals Samples Req'd/Dur: ~60 min EXERCISE P/TV22 SETUP (PHOTO/TV, SCENES) EVA 2 PROCEDURE REVIEW REF: EVA2 BRIEFING CARD (EVA, FS TIMELINES)	MEAL IRU ACT & C/O (ASSY OPS, ACT & C/O) EMU/AIRLOCK COMM ACT & C/O (ASSY OPS, ACT & C/O) UJA ACT & C/O (ASSY OPS, ACT & C/O) BCA ACT & C/O (ASSY OPS, ACT & C/O) EVA CREW: TAKE 1 ASPIRIN (325mg) EVA 2 PROCEDURE REVIEW REF: EVA2 BRIEFING CARD (EVA, FS TIMELINES)	Notes

STS-104 (FD 06)



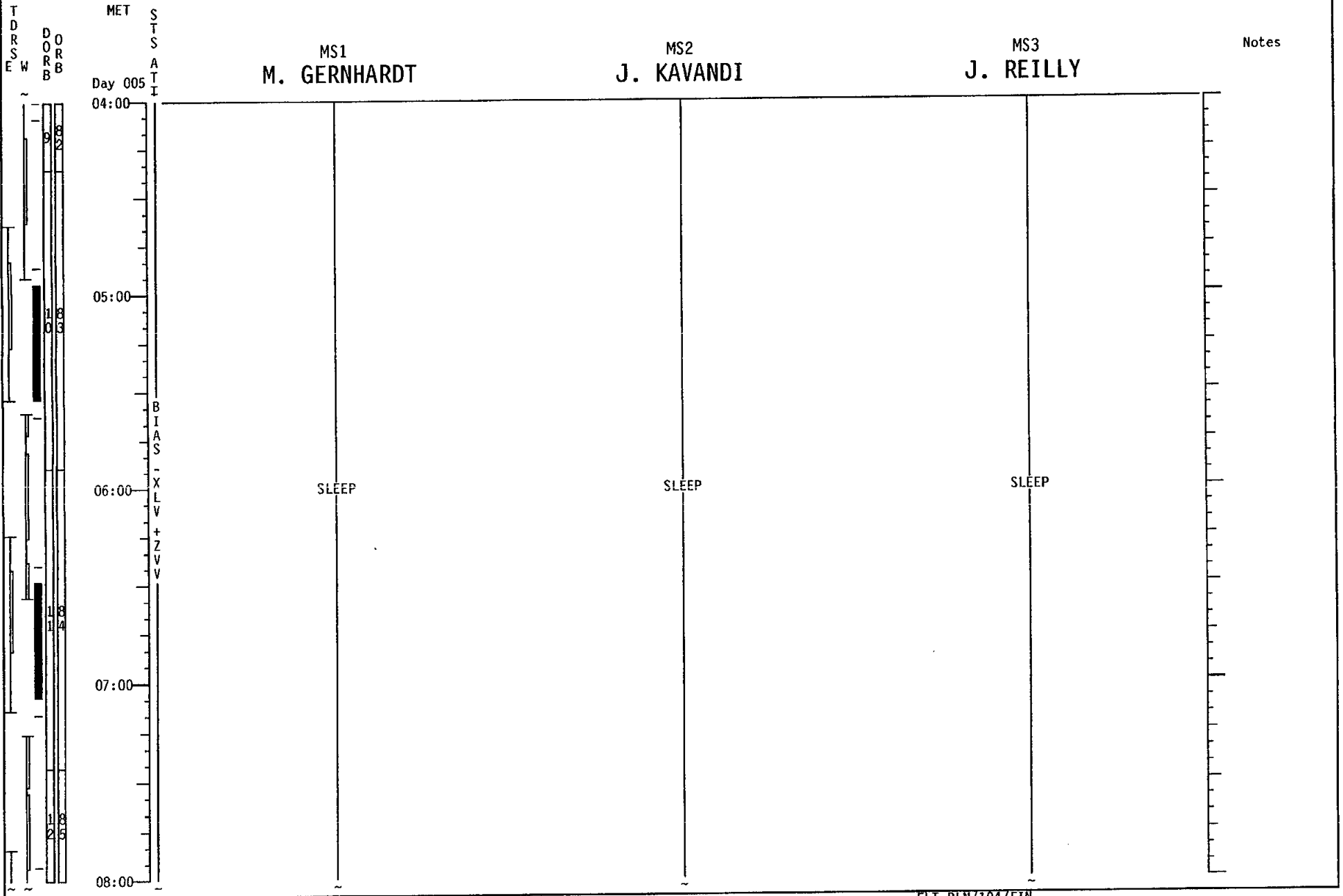
STS-104 (FD 06)



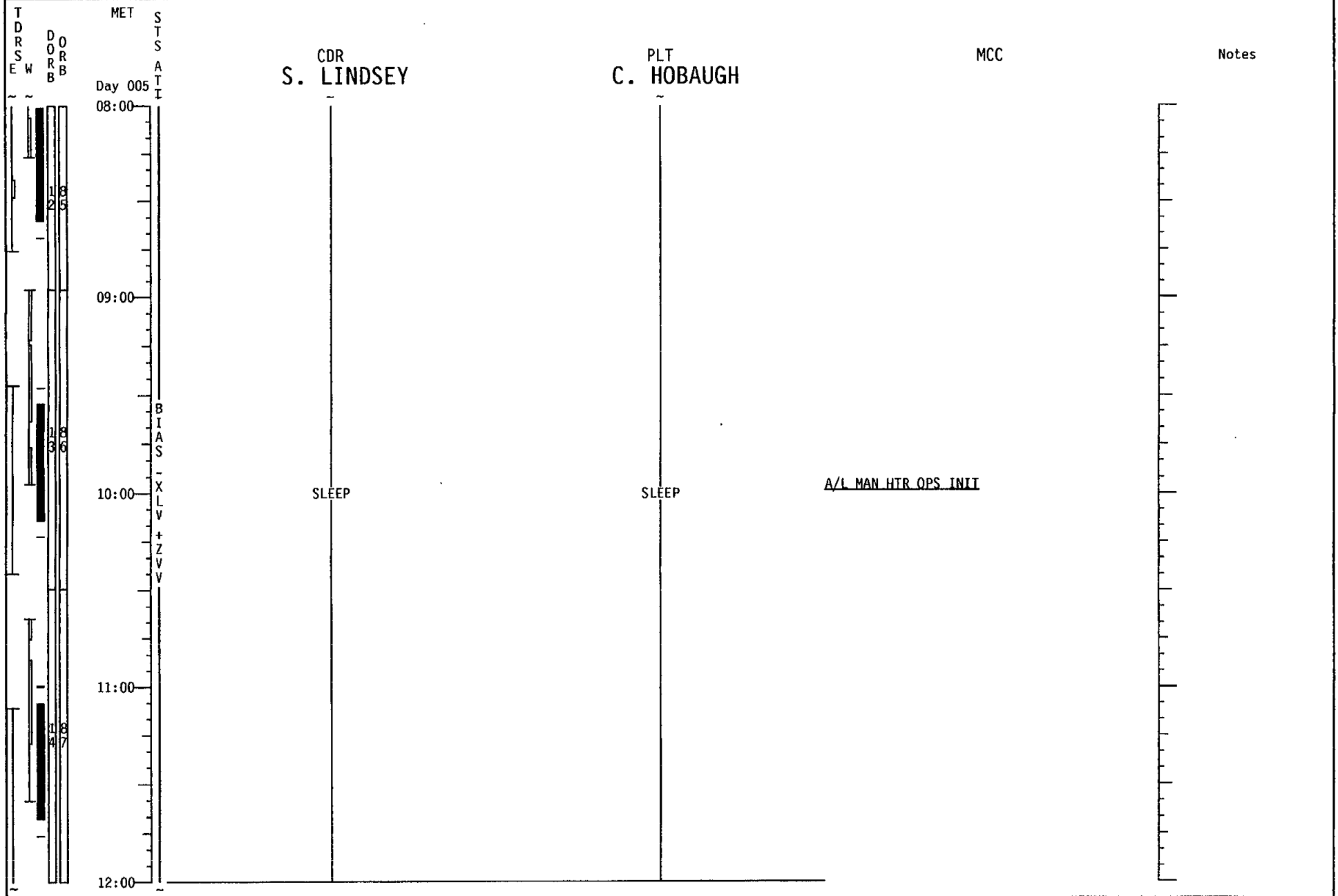
STS-104 (FD 06)

T D R S E W	D O R B	MET Day 005	STS A T T		Notes
			CDR S. LINDSEY	PLT C. HOBAUGH	
~	9 2 8	04:00			
	1 0 3	05:00			
	1 1 4	06:00	SLEEP	SLEEP	
	1 1 4	07:00			
	1 2 5	08:00			

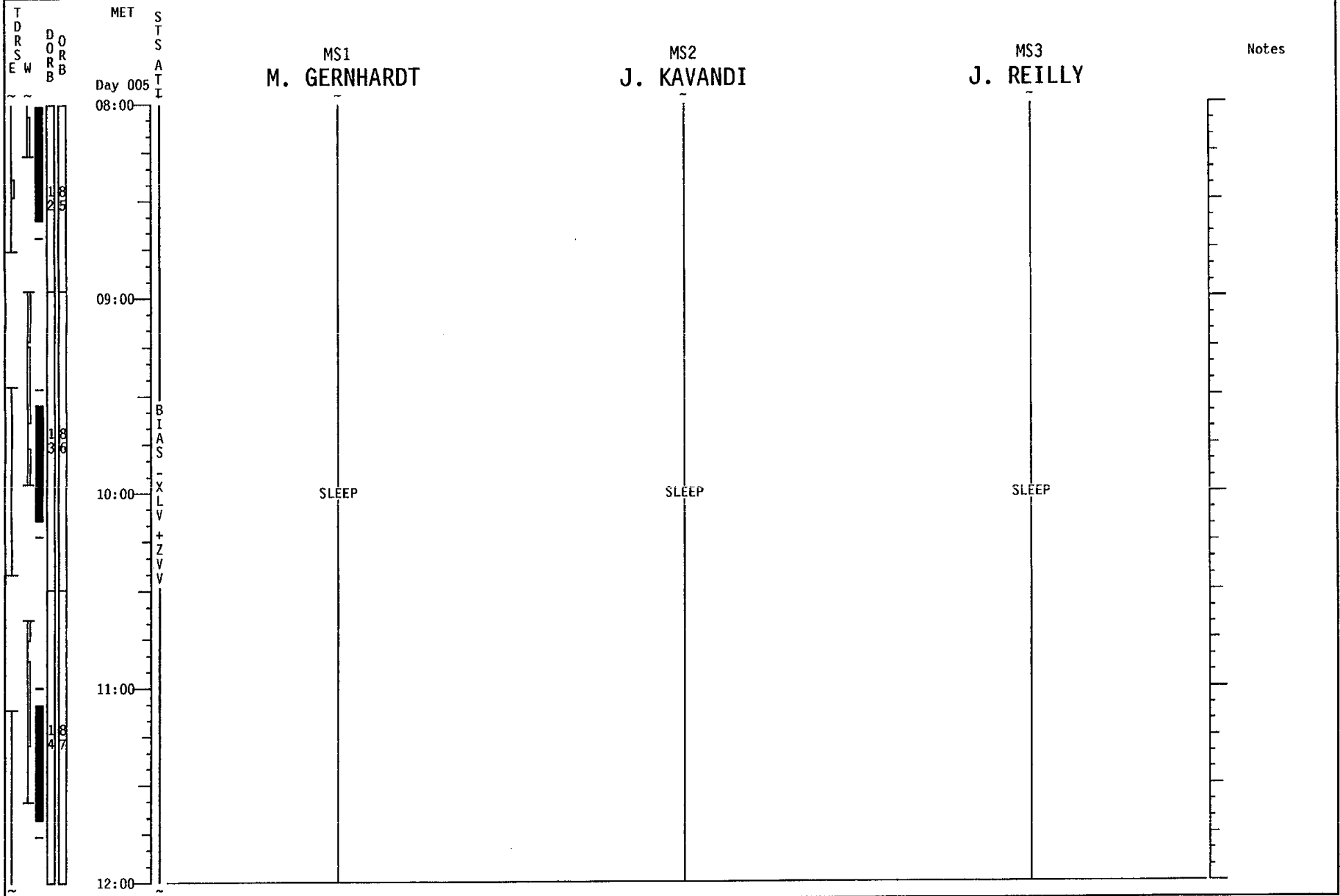
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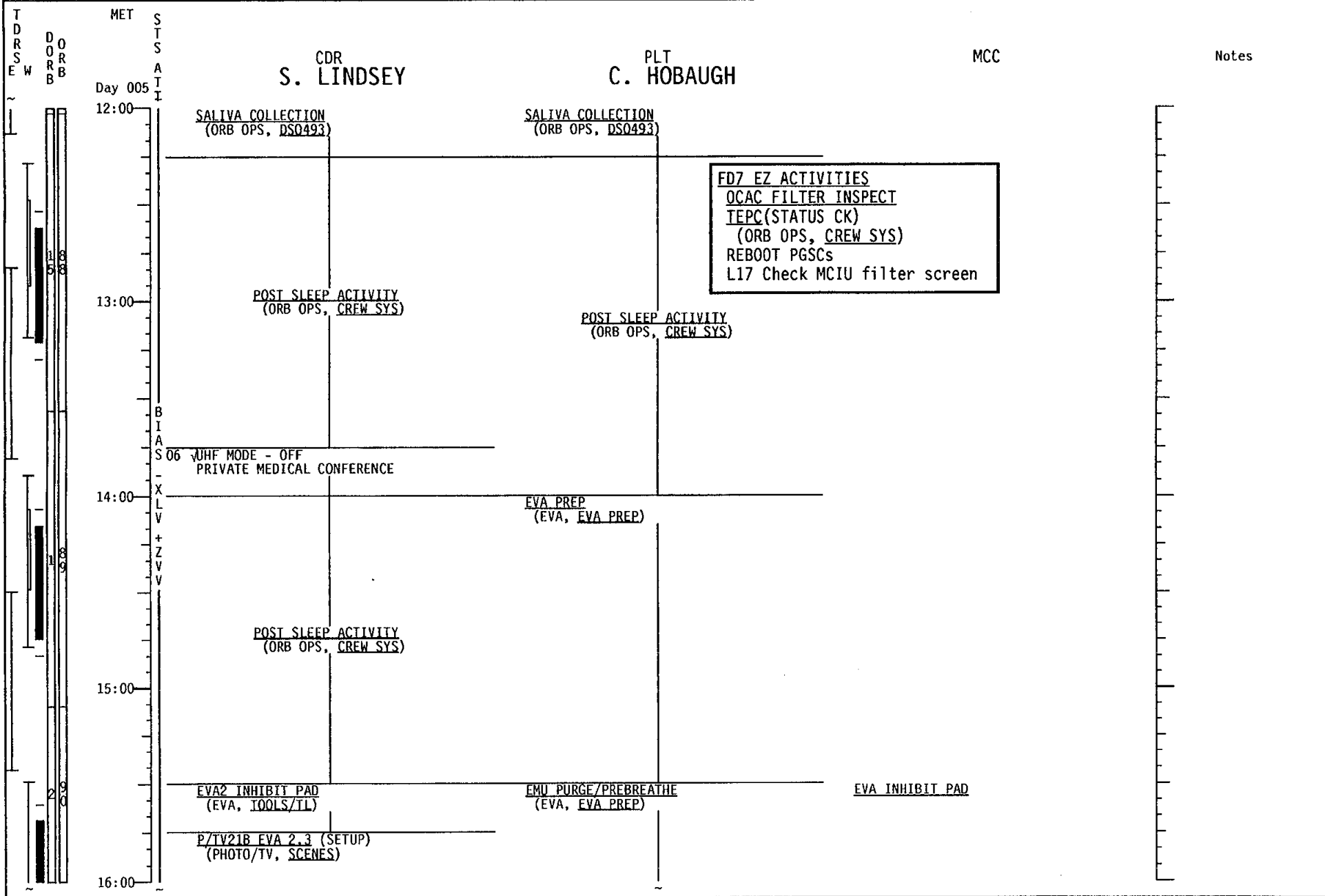
STS-104 (FD 06)



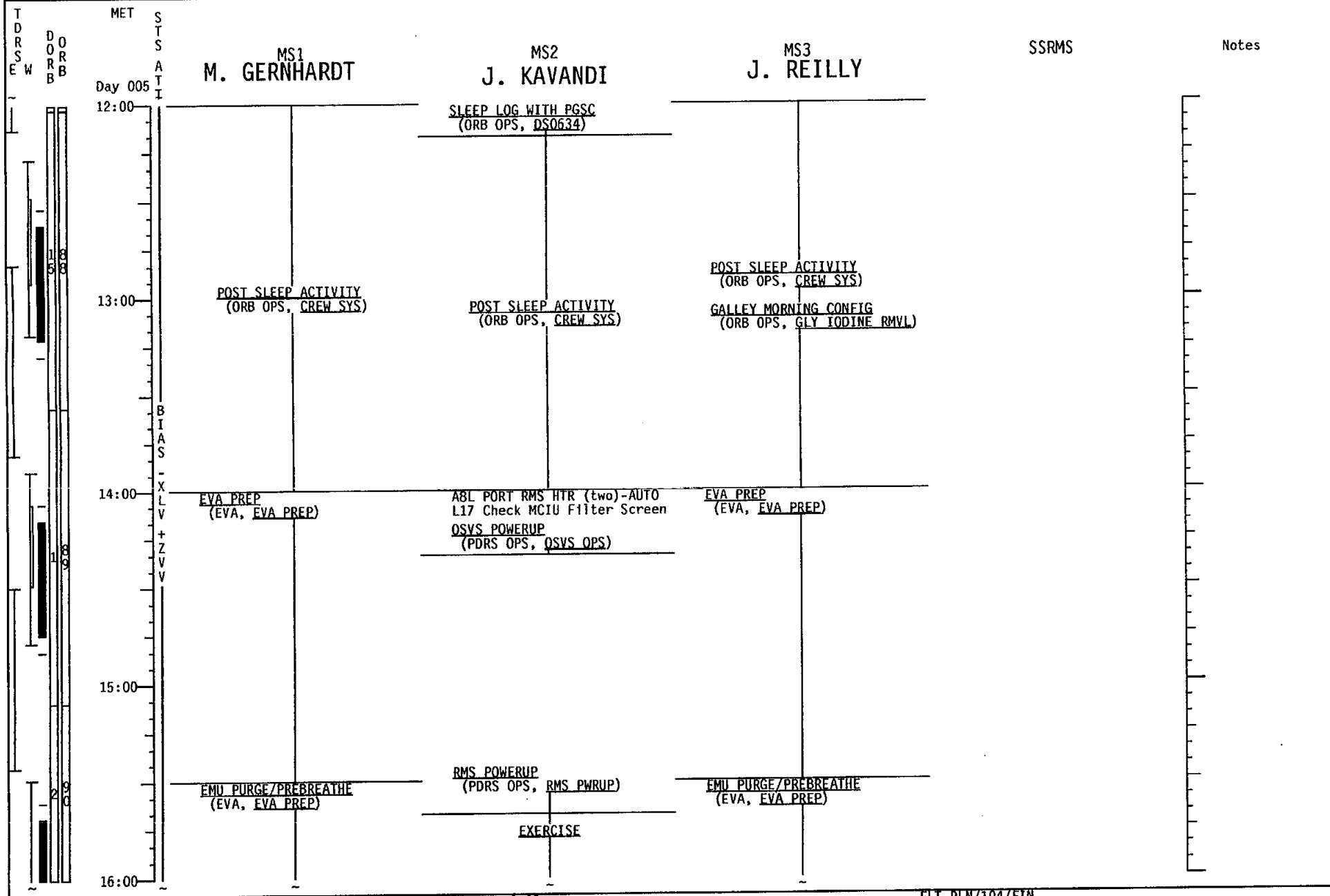
STS-104 (FD 06)



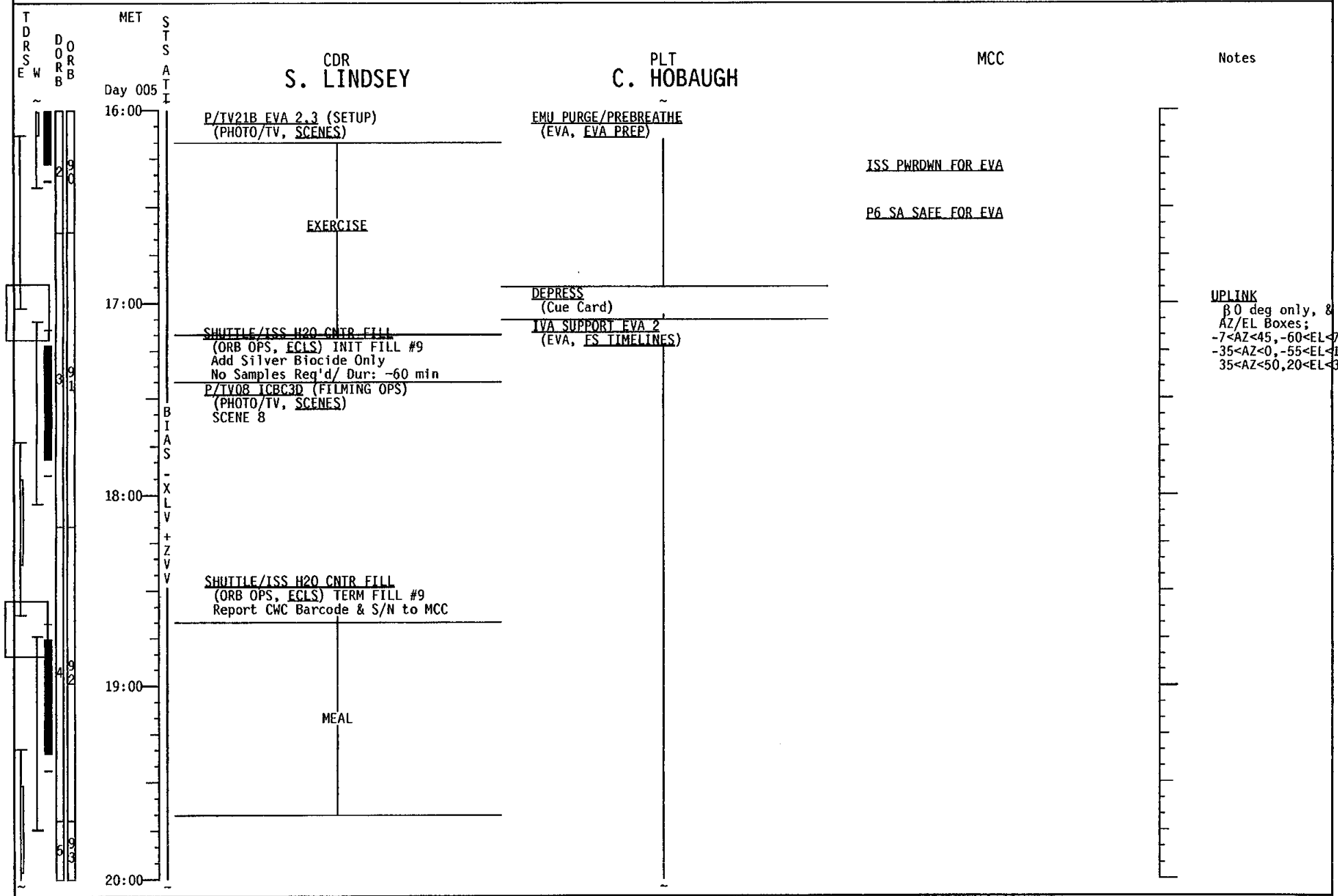
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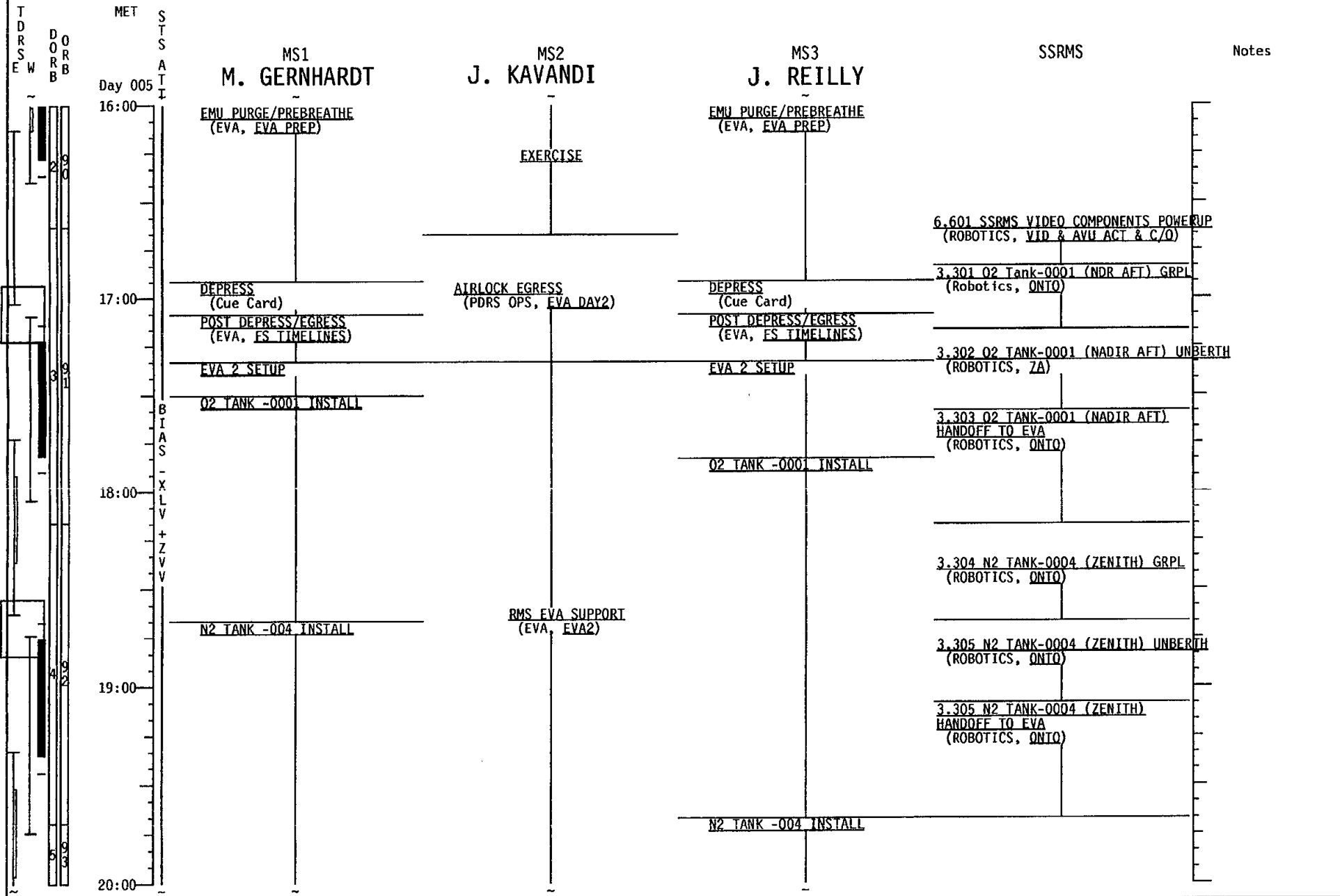
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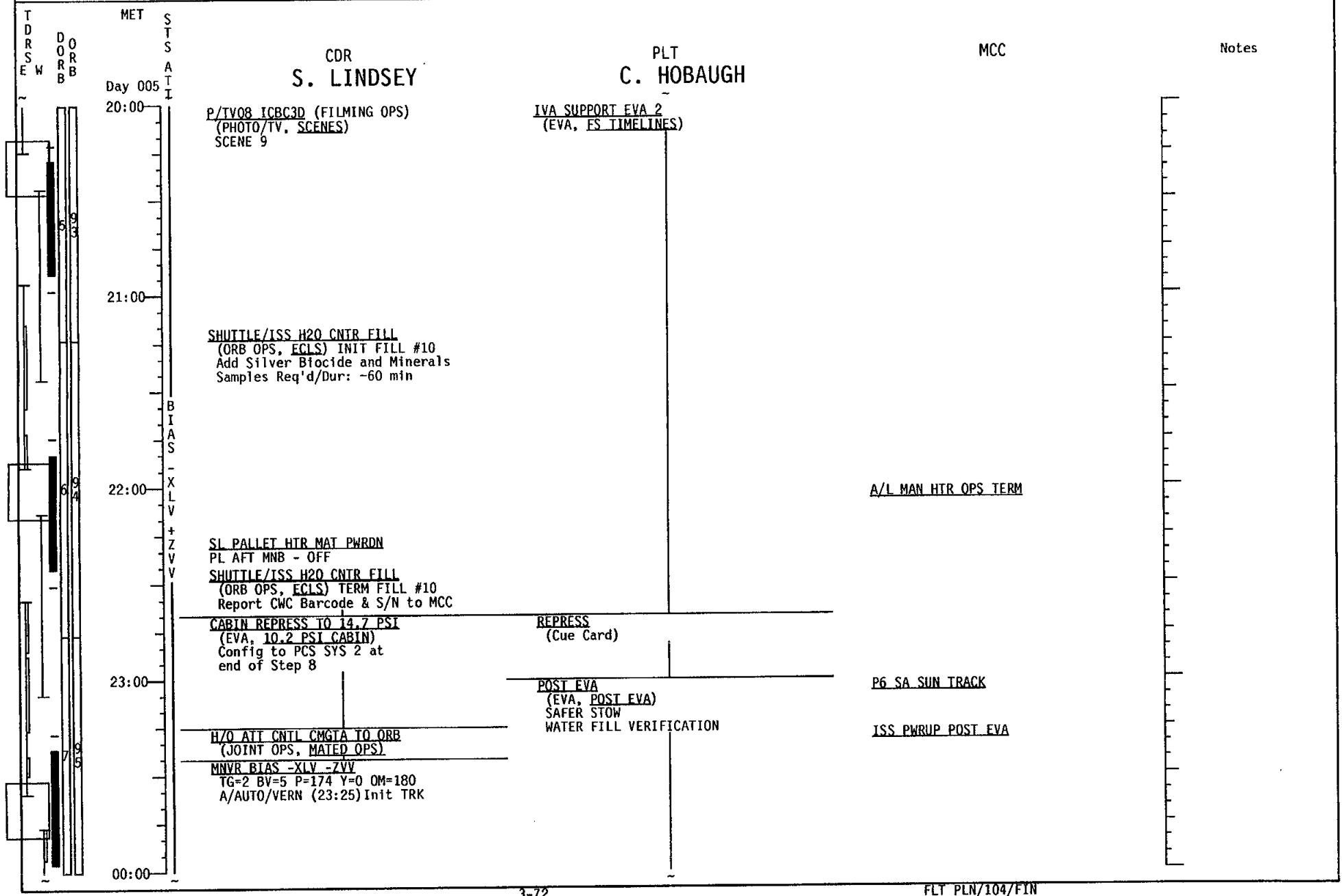
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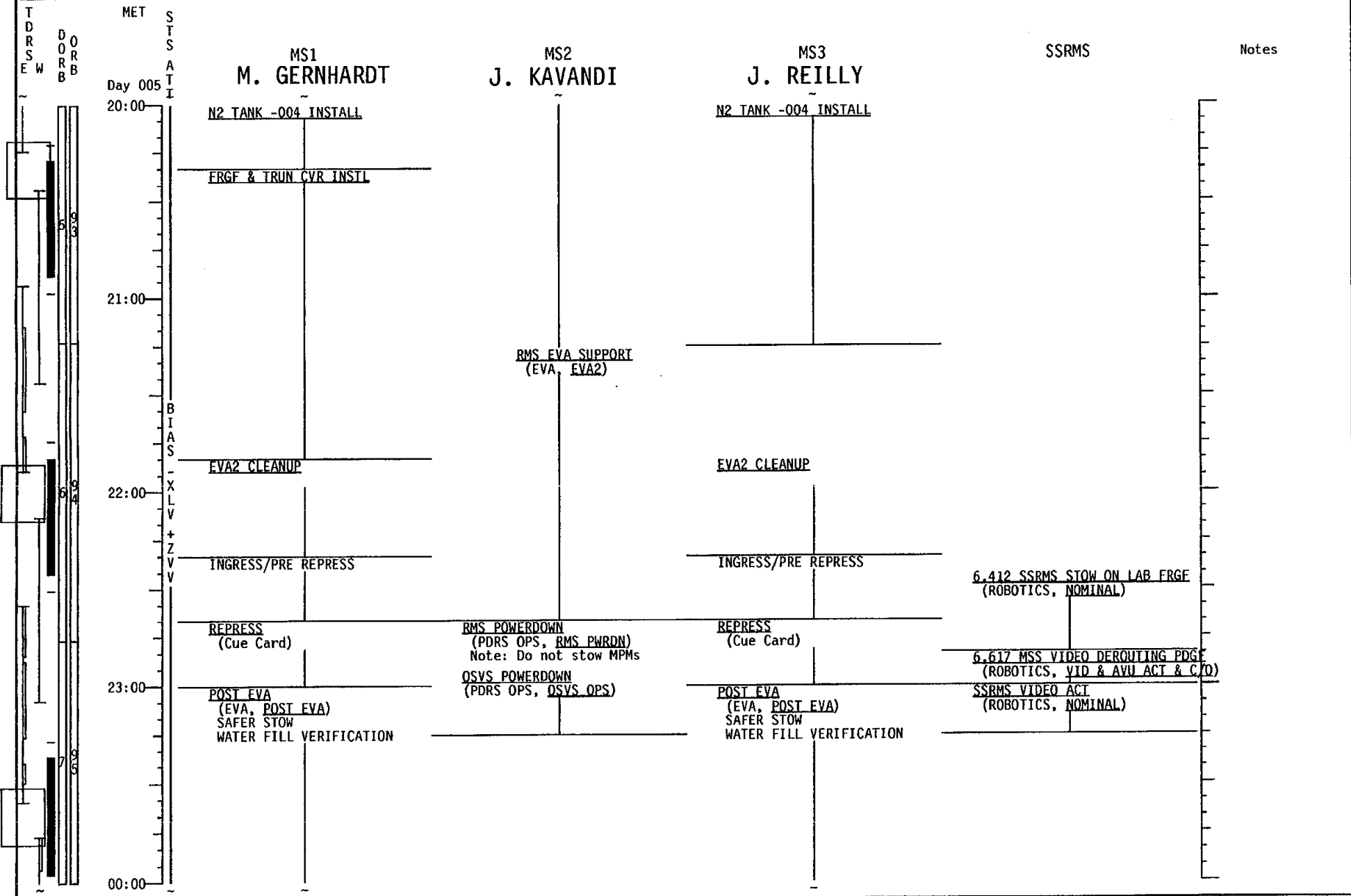
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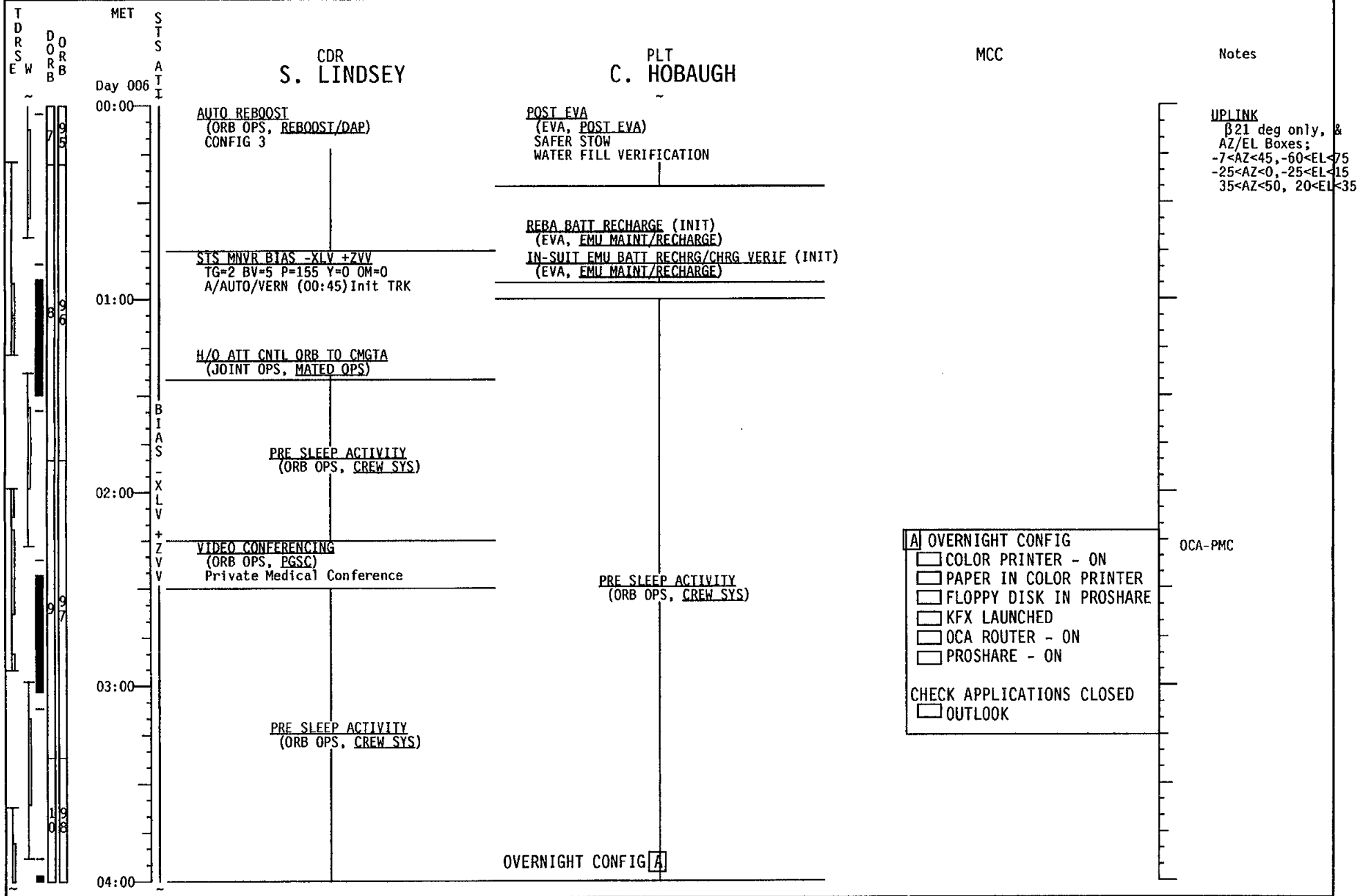
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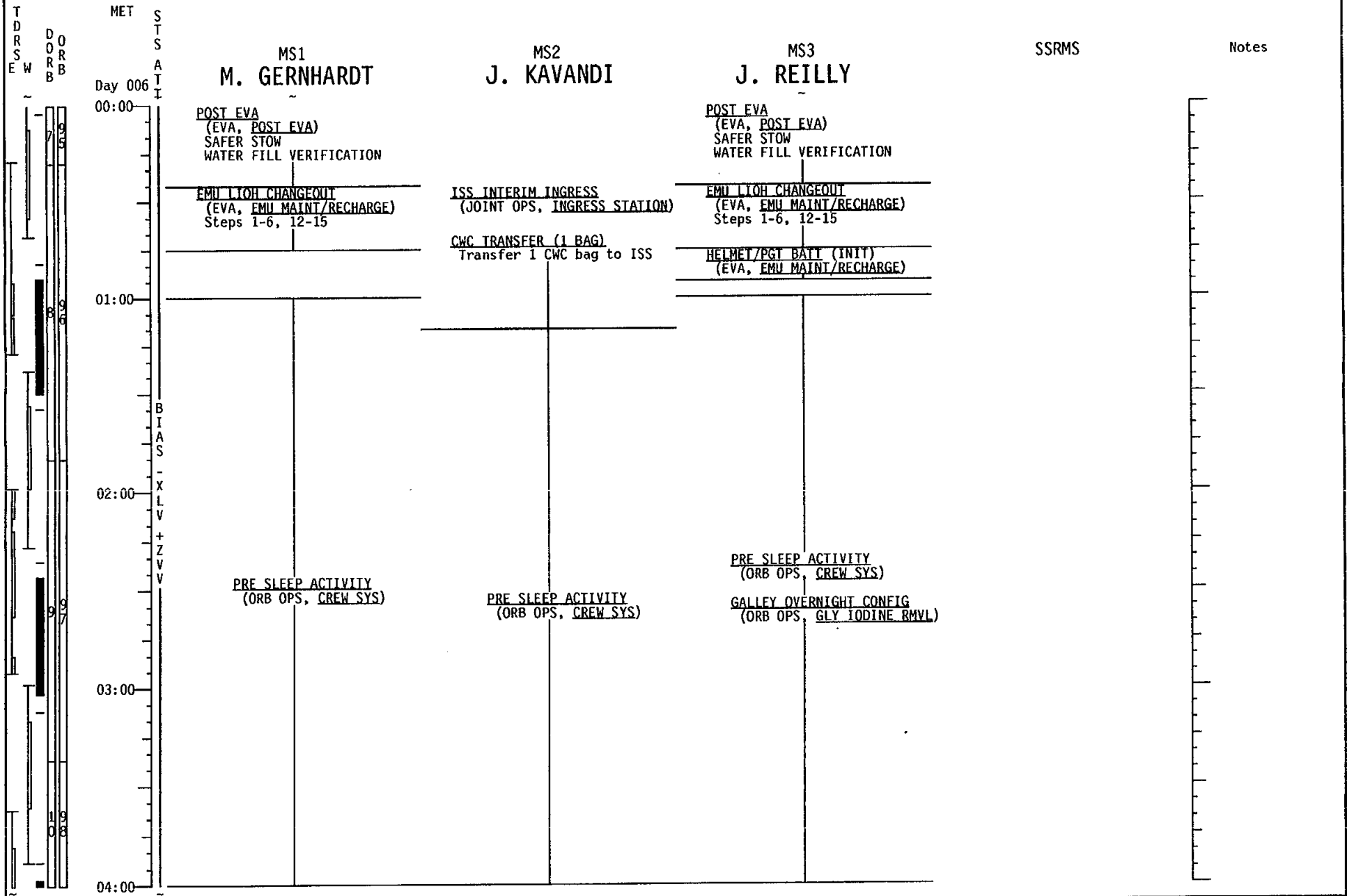
STS-104 (FD 07)



STS-104 (FD 07)



STS-104 (FD 07)



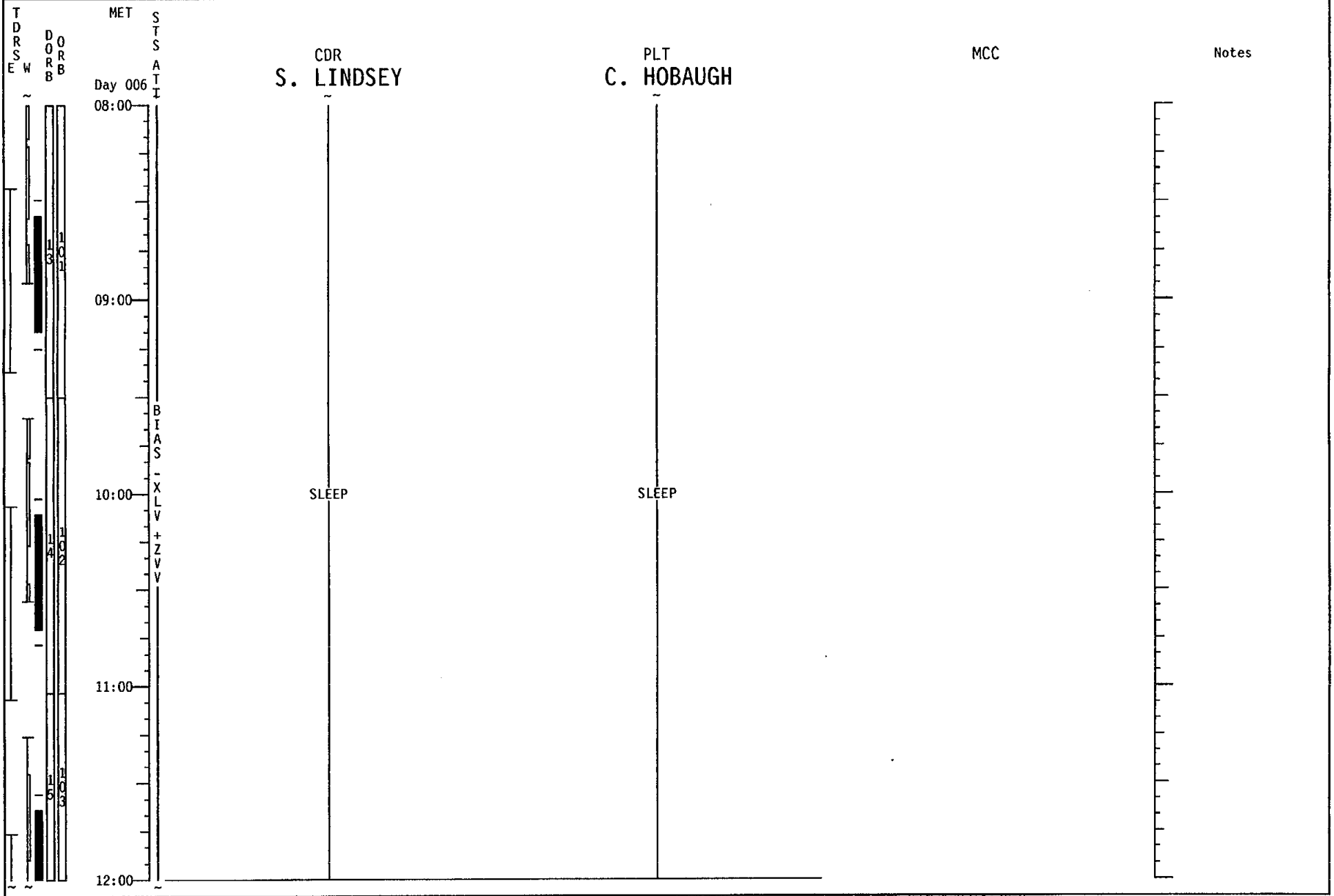
STS-104 (FD 07)

TDRS EW	DORB	MET Day 006	S T S A T I	CDR S. LINDSEY	PLT C. HOBAUGH	MCC	Notes
		<p>04:00</p> <p>05:00</p> <p>06:00</p> <p>07:00</p> <p>08:00</p>	<p>B I A S - X L V + Z V V</p>	<p>SLEEP</p>	<p>SLEEP</p>		

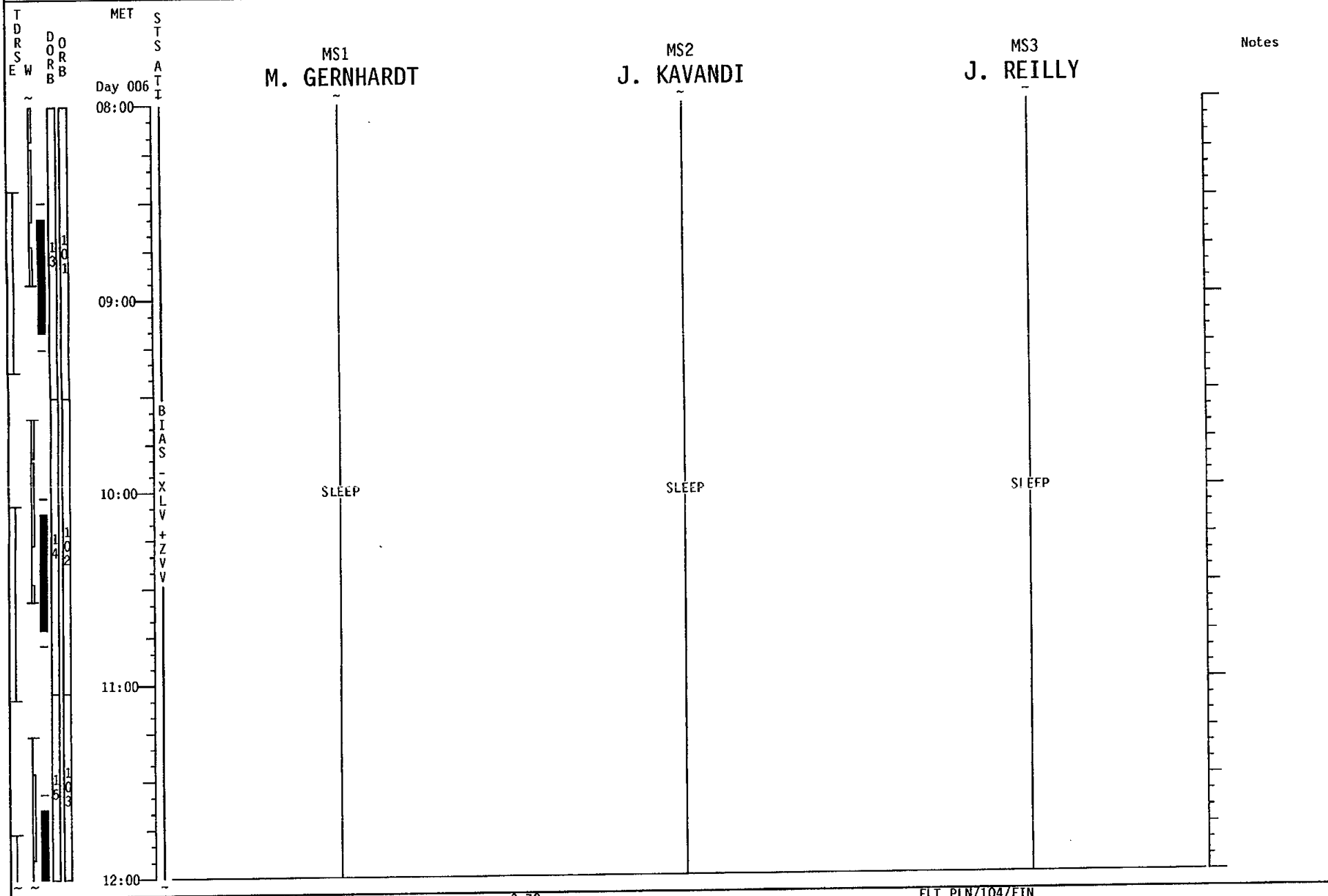
STS-104 (FD 07)

T D R S E W	MET Day 006	S T S A T I MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	Notes
<p>DOORB</p>	<p>04:00</p> <p>05:00</p> <p>06:00</p> <p>07:00</p> <p>08:00</p>	<p>SLEEP</p>	<p>SLEEP</p>	<p>SLEEP</p>	

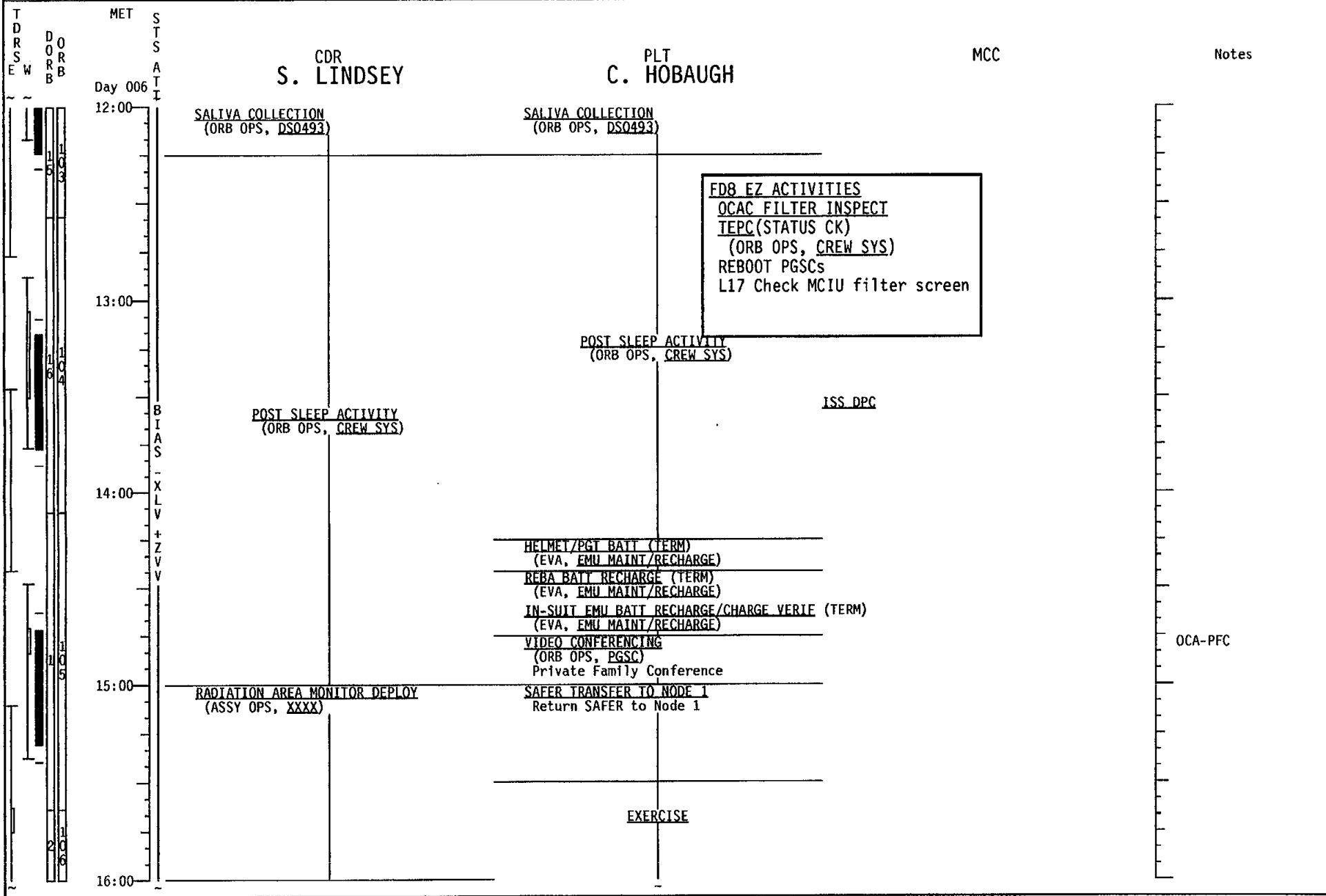
STS-104 (FD 07)



STS-104 (FD 07)



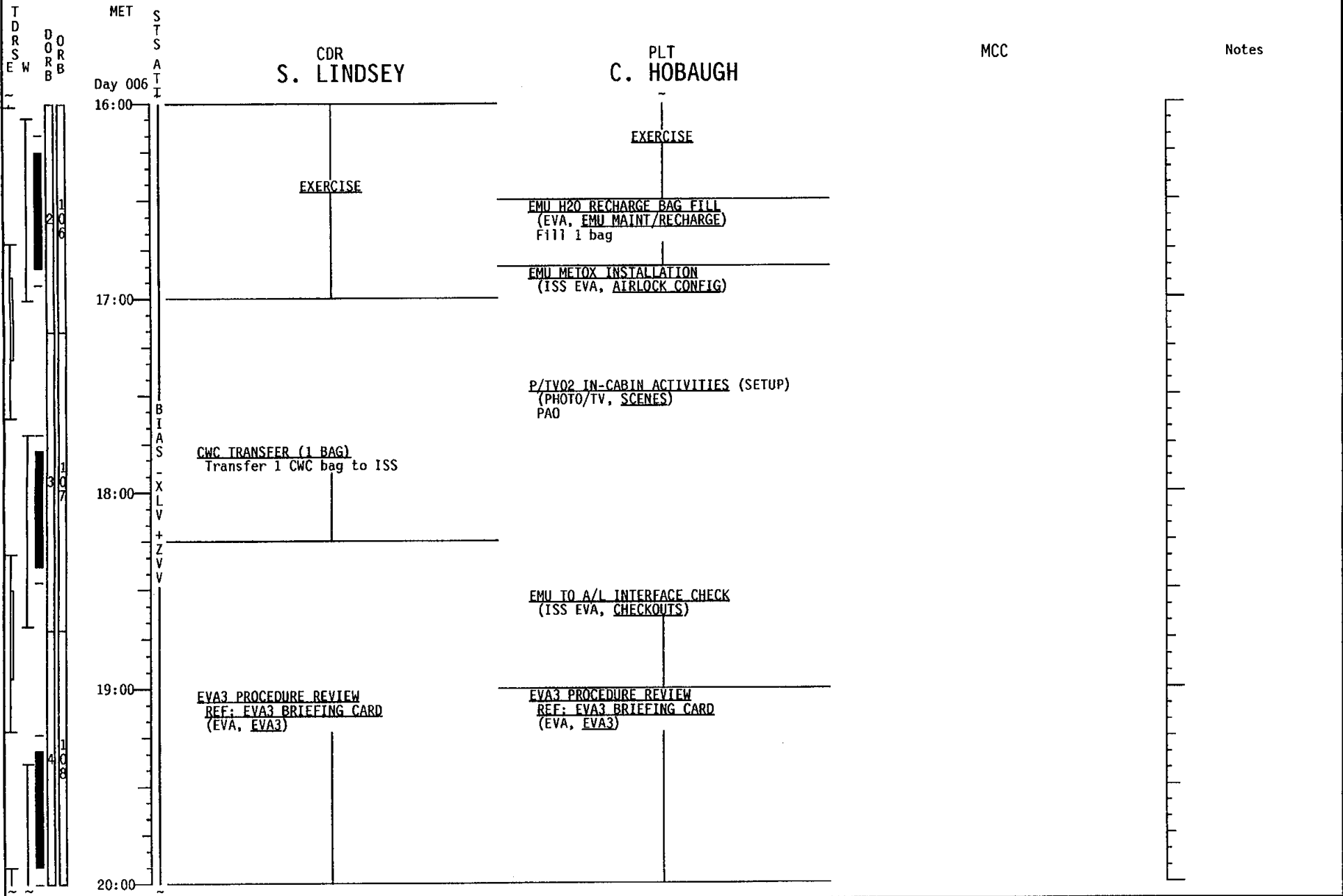
STS-104 (FD 08)



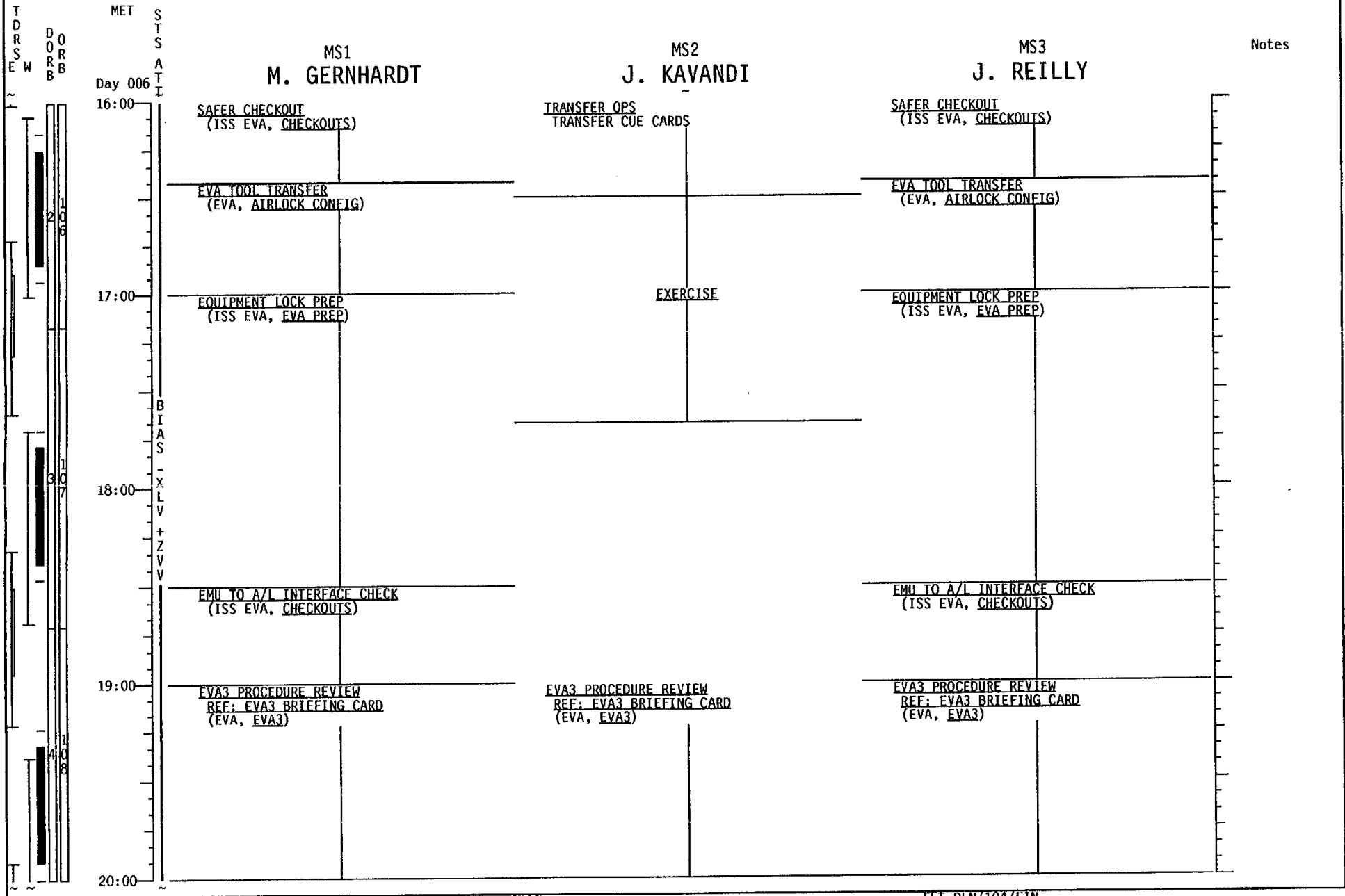
STS-104 (FD 08)

T D R S E W	D O R B	MET Day 006	S T S A T T			Notes
			MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
	1103	12:00		SLEEP LOG WITH PGSC (ORB OPS, DS0634)		
	1104	13:00	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)		
	1105	14:00	EVA CREW: TAKE 1 ASPIRIN (325mg) EVA EQUIP TRANSFER TRANSFER CUE CARDS	POST SLEEP ACTIVITY (ORB OPS, CREW SYS)	EVA CREW: TAKE 1 ASPIRIN (325mg) EVA EQUIP TRANSFER TRANSFER CUE CARDS	
	1105	15:00	EMU PREP FOR ISS TRANSFER (EVA, AIRLOCK CONFIG)	TRANSFER OPS TRANSFER CUE CARDS	EMU PREP FOR ISS TRANSFER (EVA, AIRLOCK CONFIG)	
	1106		EMU TRANSFER TRANSFER LIST		EMU TRANSFER TRANSFER LIST	
	2106	16:00	LTA RESTRAINT STRAP REMOVAL (ISS EVA, AIRLOCK CONFIG)		LTA RESTRAINT STRAP REMOVAL (ISS EVA, AIRLOCK CONFIG)	

STS-104 (FD 08)



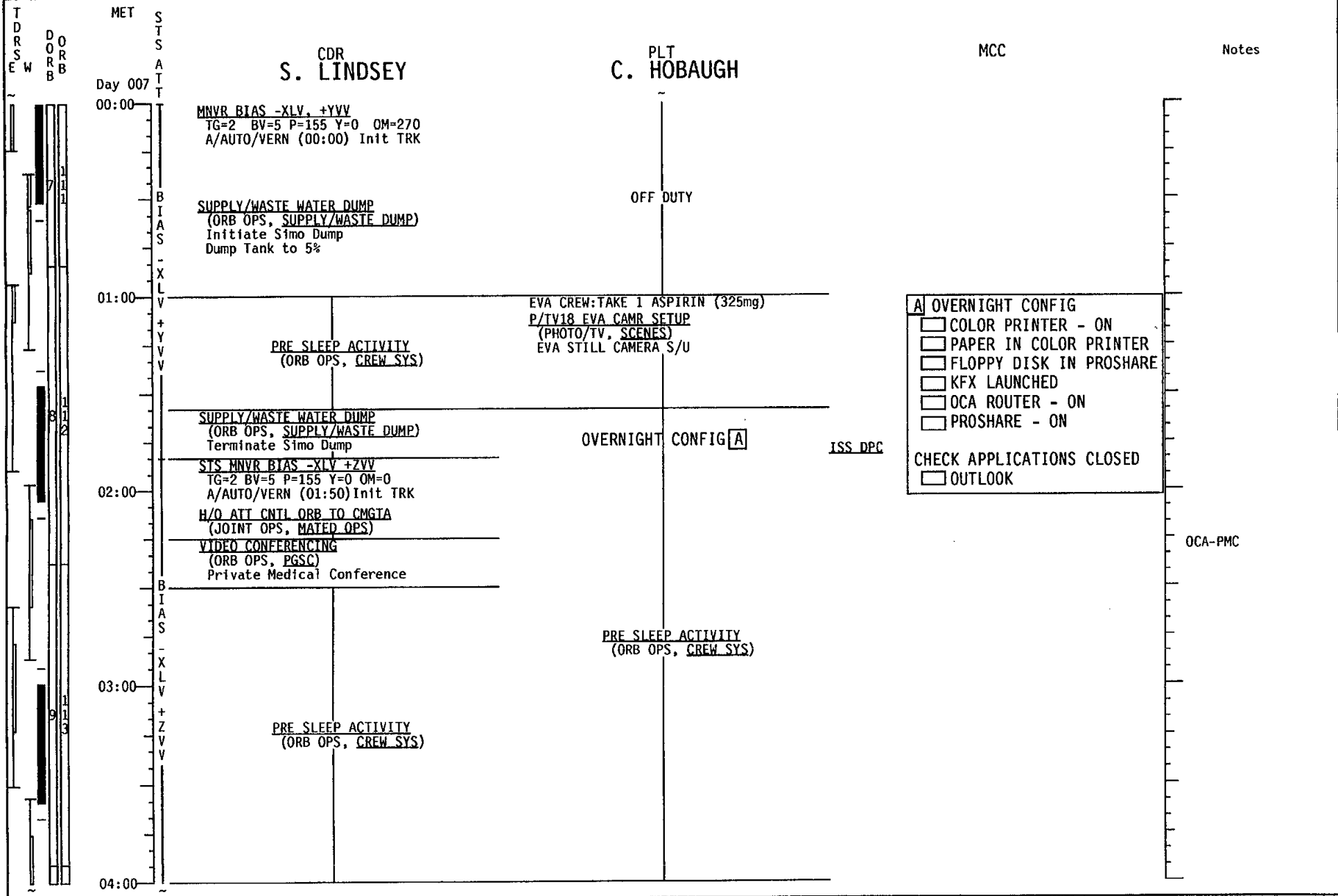
STS-104 (FD 08)



STS-104 (FD 08)

	MET	MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	Notes
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">T D R S E</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">D O O R B</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">E C O B I</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">S C O B I</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">H E L C</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">E E R</div> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">S T S</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">A T I</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">B I A S</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">- X L V</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">+ Z V V</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">B I A S</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">+ Z L V</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">+ X V V</div> </div>	<p>Day 006</p> <p>20:00</p> <p style="text-align: center;">MEAL</p> <p>21:00</p> <p style="text-align: center;">CREW PHOTO</p> <p style="text-align: center;">CREW CONF</p> <p style="text-align: center;">KU AVAIL: XX:XX-XX:XX</p> <p>22:00</p> <p style="text-align: center;">OFF DUTY</p> <p>23:00</p> <p style="text-align: center;">EXERCISE</p> <p>00:00</p>	<p>20:00</p> <p style="text-align: center;">MEAL</p> <p>21:00</p> <p style="text-align: center;">CREW PHOTO</p> <p style="text-align: center;">CREW CONF</p> <p style="text-align: center;">KU AVAIL: XX:XX-XX:XX</p> <p>22:00</p> <p style="text-align: center;">ACTIVATION (CUE CARD, PLAYBACK)</p> <p style="text-align: center;">OFF DUTY</p> <p>23:00</p> <p style="text-align: center;">OFF DUTY</p> <p style="text-align: center;">OPERATIONS (CUE CARD, PLAYBACK)</p> <p style="text-align: center;">KU AVAIL: 23:29-00:14</p> <p>00:00</p>	<p>20:00</p> <p style="text-align: center;">MEAL</p> <p>21:00</p> <p style="text-align: center;">CREW PHOTO</p> <p style="text-align: center;">CREW CONF</p> <p style="text-align: center;">KU AVAIL: XX:XX-XX:XX</p> <p>22:00</p> <p style="text-align: center;">EXERCISE</p> <p>23:00</p> <p style="text-align: center;">OFF DUTY</p> <p>00:00</p>	

STS-104 (FD 08)



STS-104 (FD 08)

T D R S E W	D O R B	MET Day 007	STS ATT			Notes
			MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	
		00:00	OFF DUTY	OFF DUTY	OFF DUTY	
		01:00	EVA CREW: TAKE 1 ASPIRIN (325mg)	DAILY STS/ISS CREW XFER TAGUP	EVA CREW: TAKE 1 ASPIRIN (325mg)	
				DAILY MCC TRANSFER BRIEFING		
				P/TV22 SETUP (PHOTO/TV, SCENES)		
		02:00	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)	
				VIDEO CONFERENCING (ORB OPS, PGSC) Private Family Conference	GALLEY OVERNIGHT CONFIG (ORB OPS, GLY IODINE RMVL)	OCA-PFC
		03:00		PRE SLEEP ACTIVITY (ORB OPS, CREW SYS)		
		04:00				

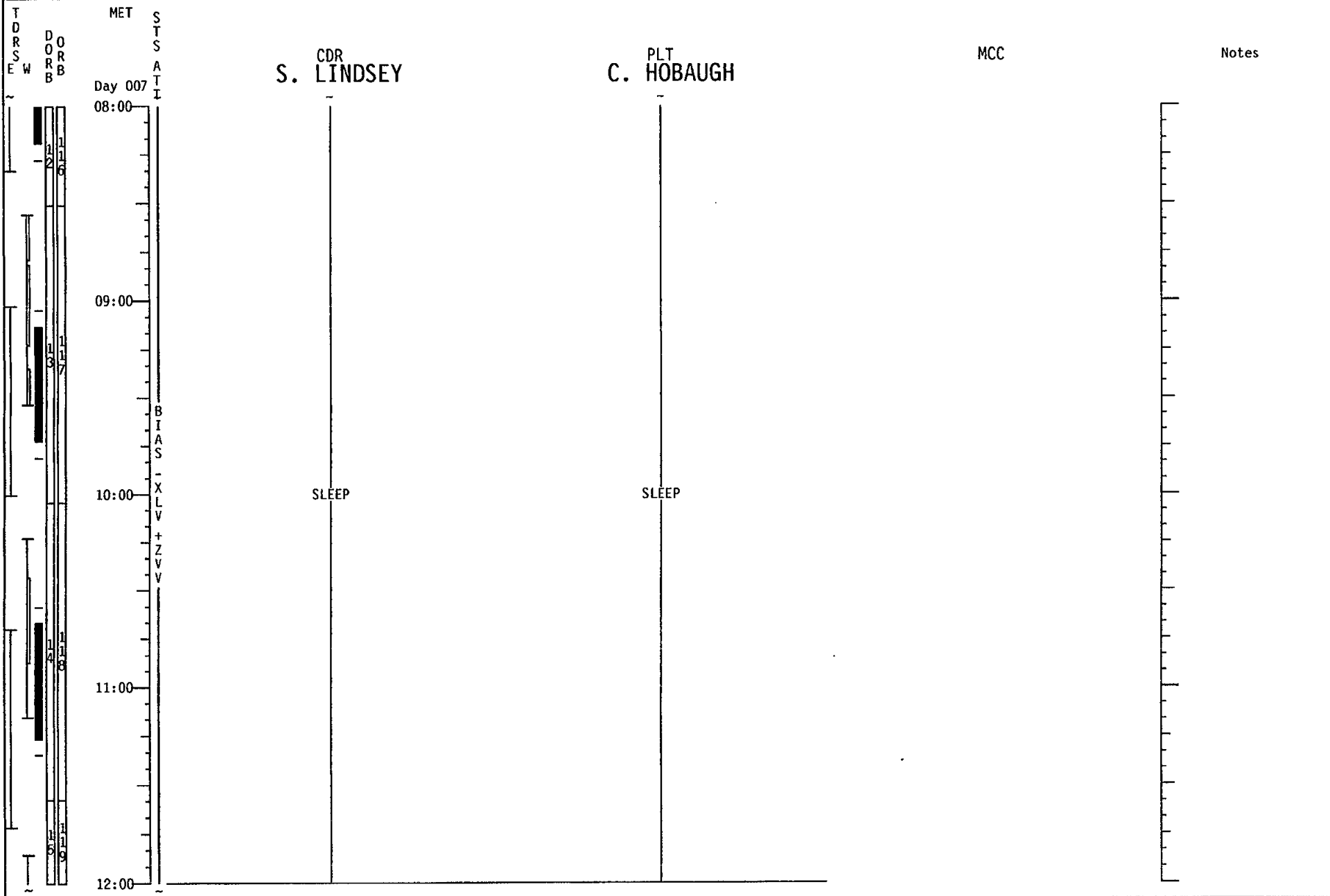
STS-104 (FD 08)

	MET	CDR S. LINDSEY	PLT C. HOBAUGH	MCC	Notes
<p style="font-size: small;">T D R S E W</p> <p style="font-size: small;">D O R B B</p> <p style="font-size: small;">1 1 1 1 2 2 2 2 3 3 3 3 4 4 4 4 5 5 5 5 6 6 6 6</p>	<p style="font-size: small;">S T S A T T I</p> <p>Day 007</p> <p>04:00</p> <p>05:00</p> <p style="font-size: small;">B I A S - X L V + Z V V</p> <p>06:00</p> <p>07:00</p> <p>08:00</p>	<p>SLEEP</p>	<p>SLEEP</p>		

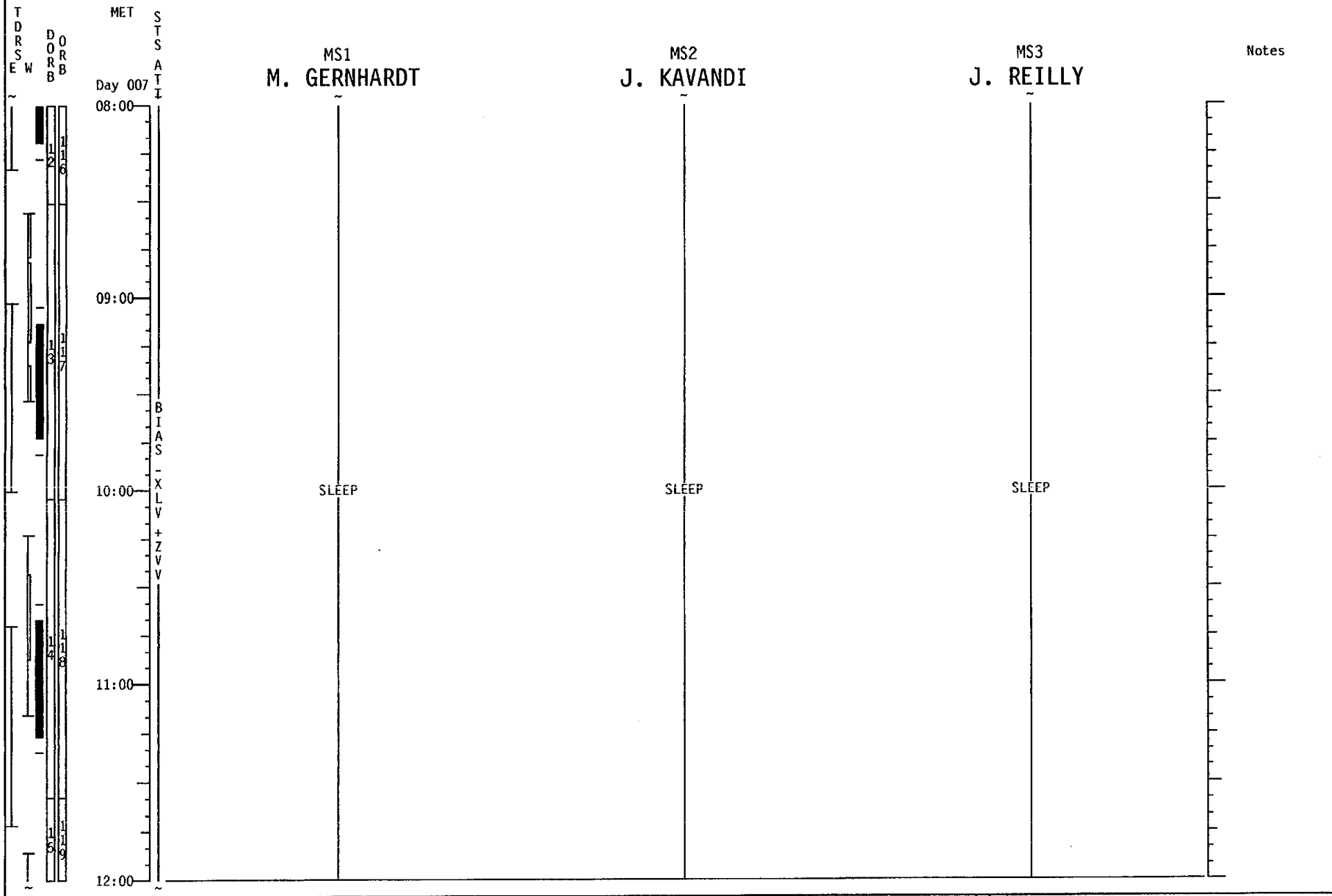
STS-104 (FD 08)

T D R S E W D O O R B	MET Day 007	S T S A T I M S1 M. GERNHARDT	M S 2 J. KAVANDI	M S 3 J. REILLY	Notes
	<p>04:00</p> <p>05:00</p> <p>06:00</p> <p>07:00</p> <p>08:00</p>	<p>SLEEP</p>	<p>SLEEP</p>	<p>SLEEP</p>	

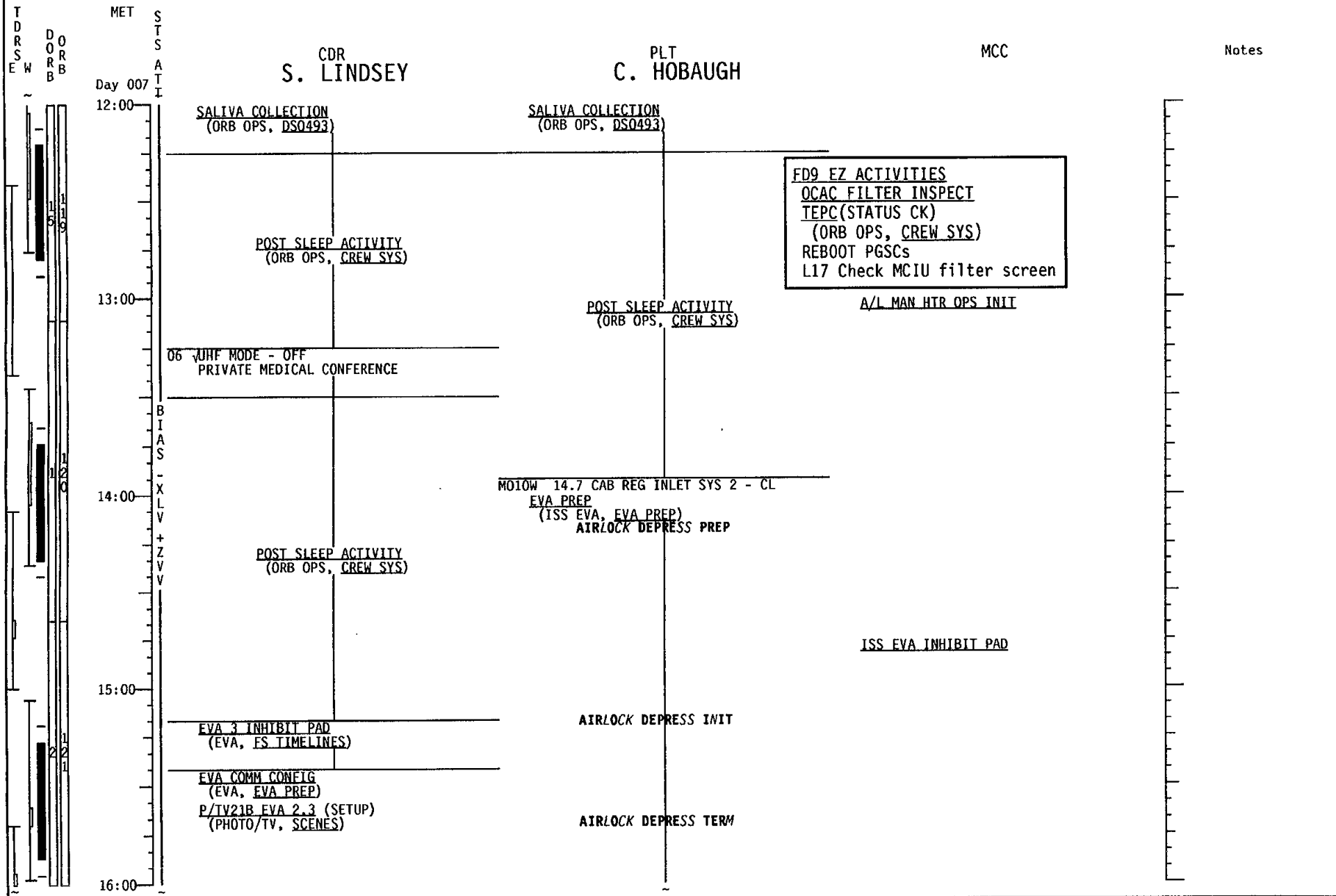
STS-104 (FD 08)



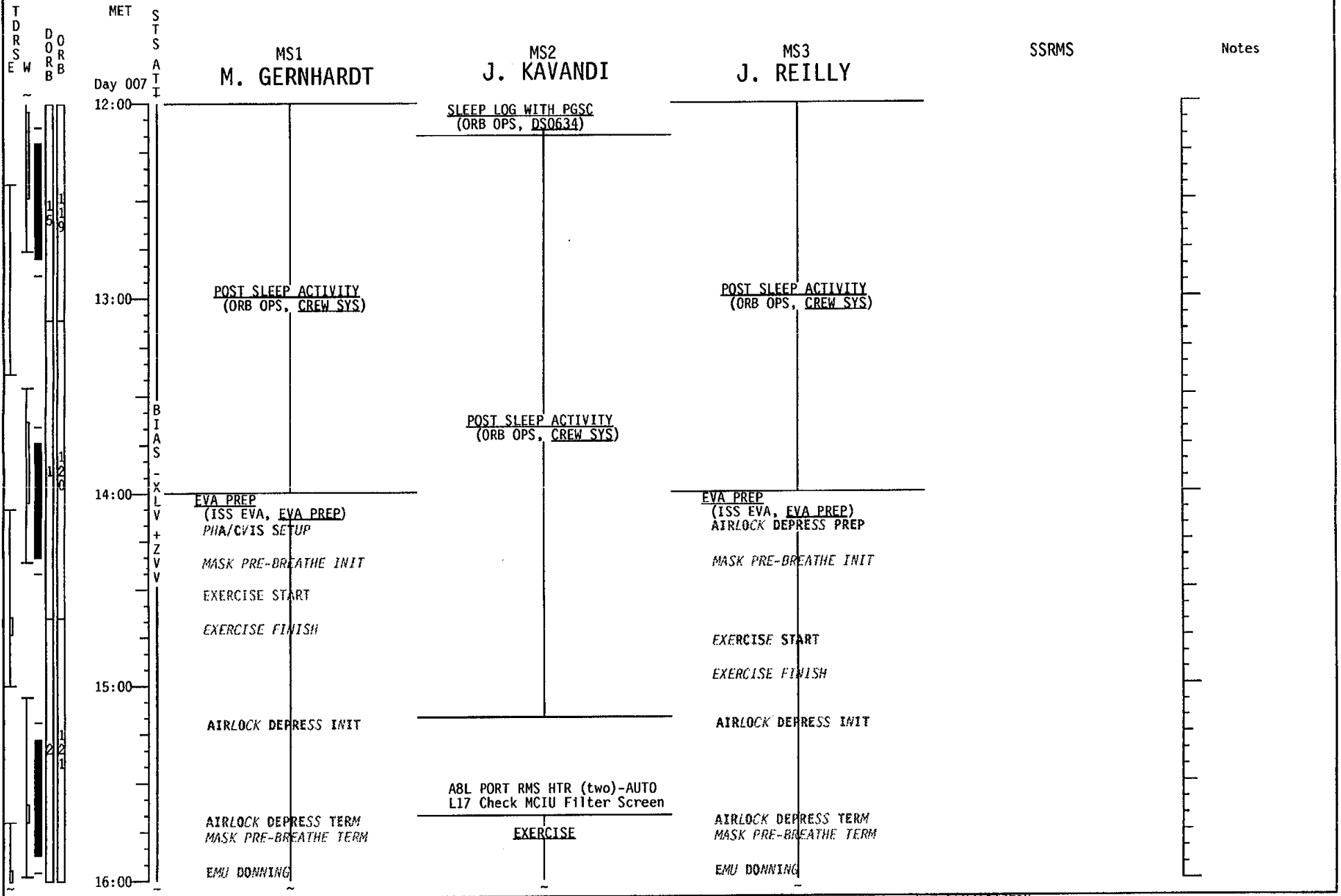
STS-104 (FD 08)



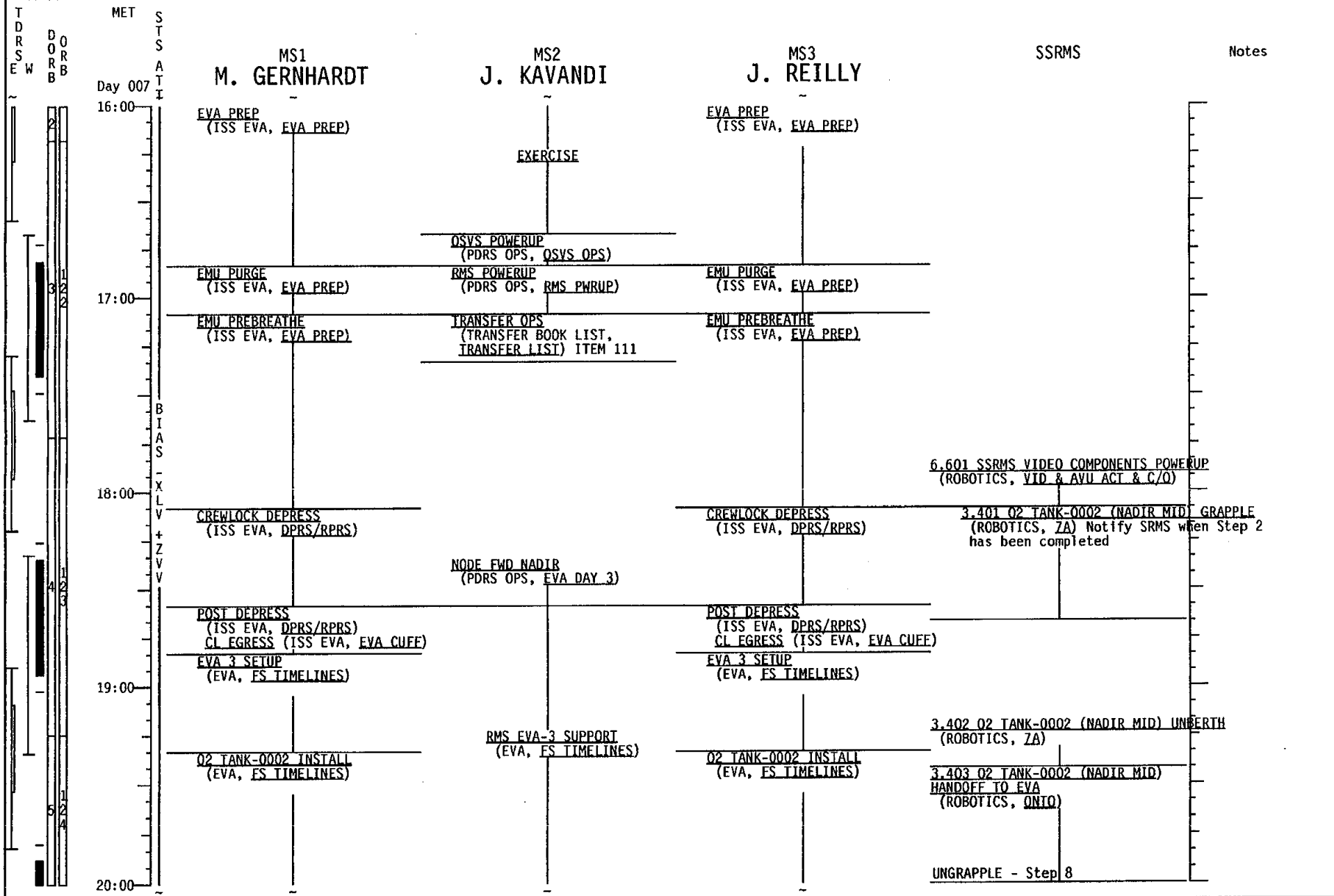
STS-104 (FD 09)



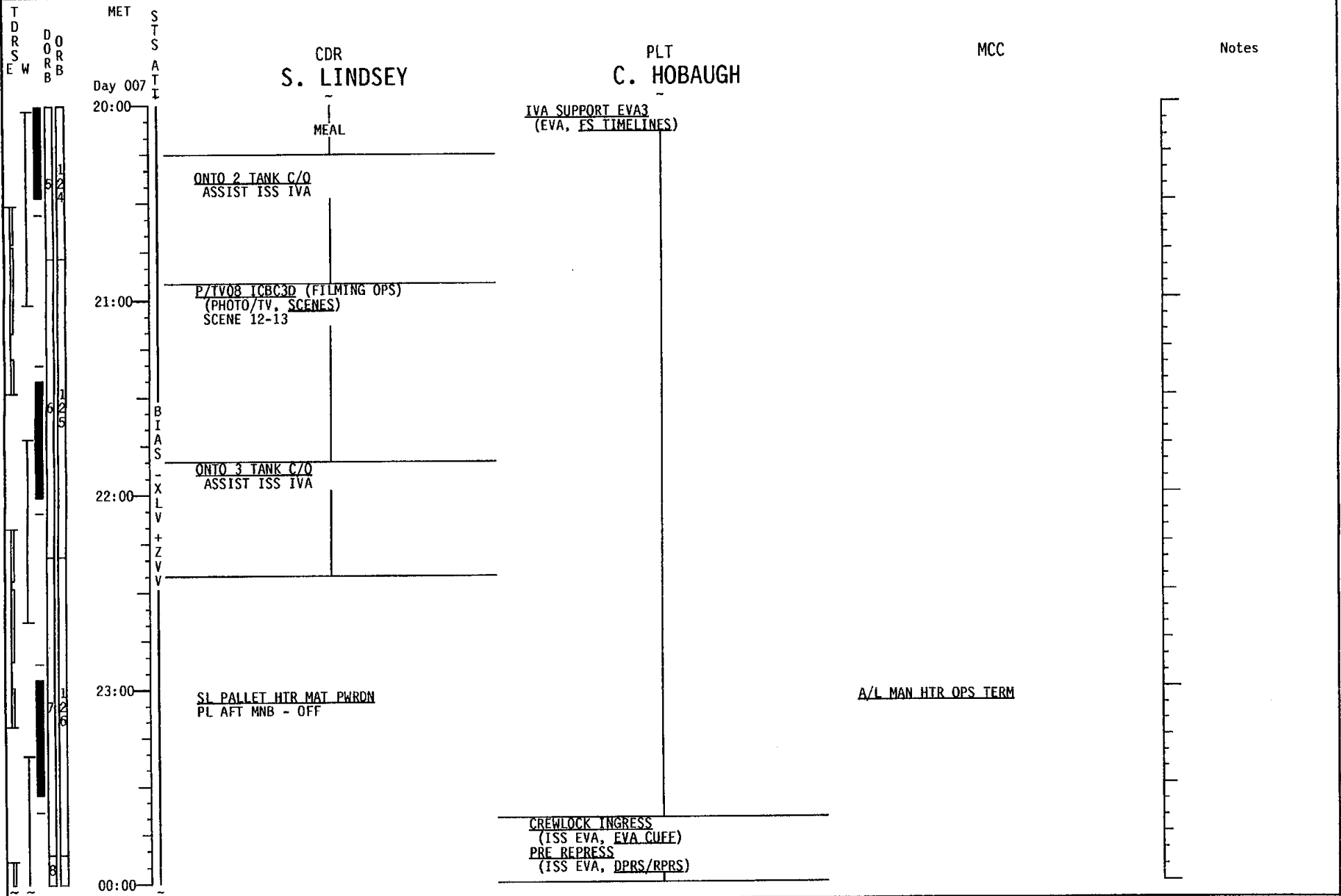
STS-104 (FD 09)



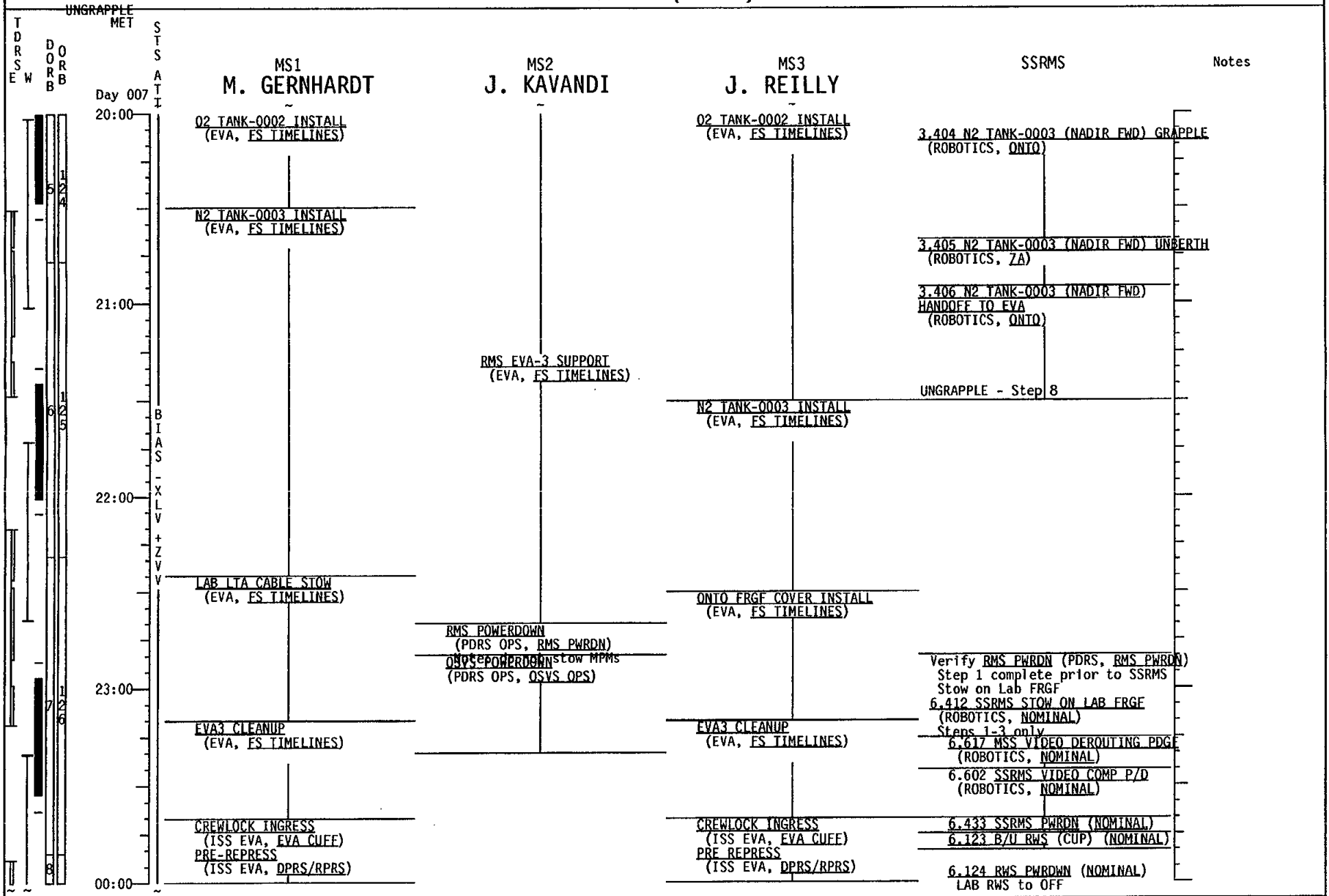
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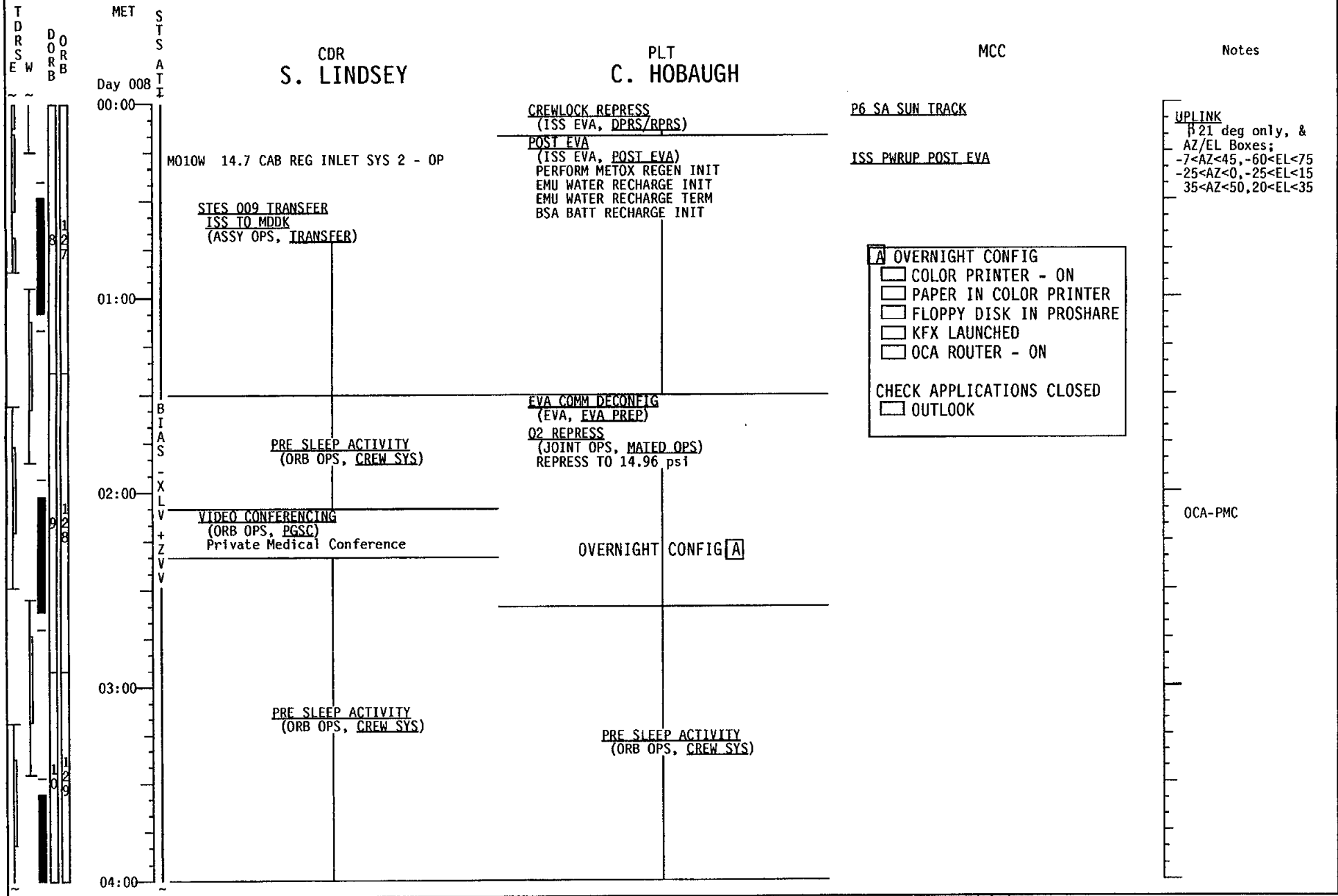
STS-104 (FD 09)



STS-104 (FD 09)



STS-104 (FD 09)



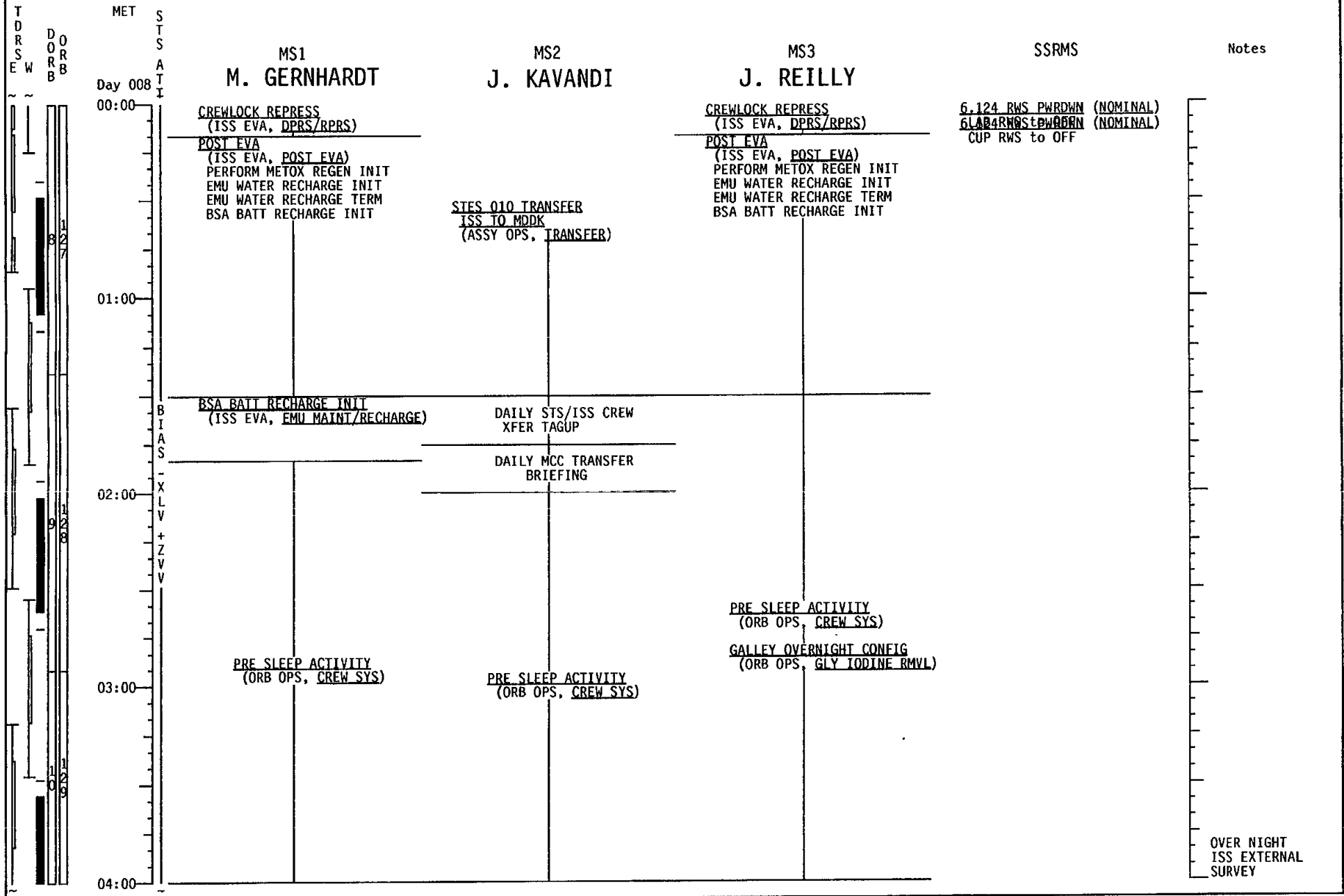
[A] OVERNIGHT CONFIG

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

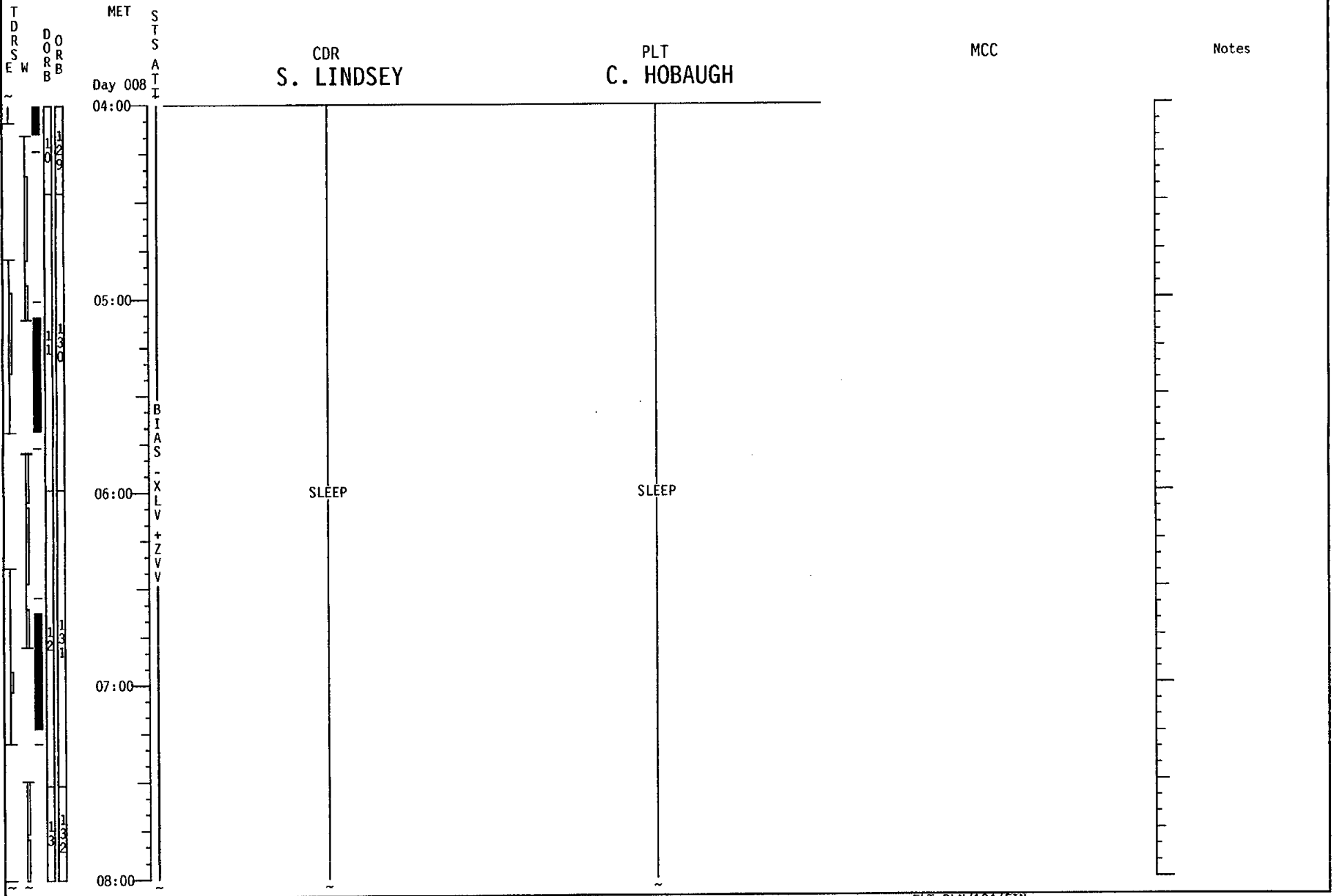
CHECK APPLICATIONS CLOSED

- OUTLOOK

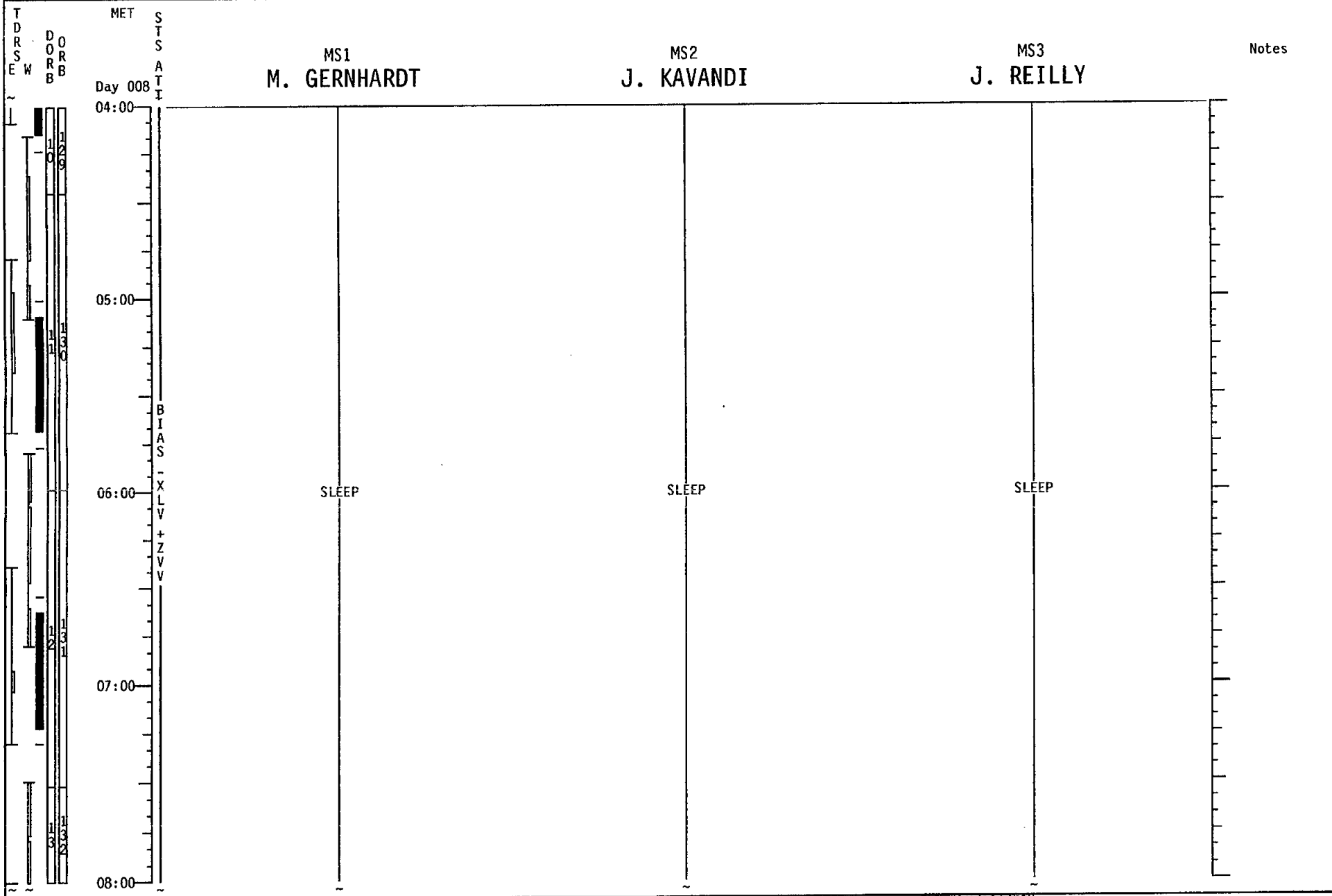
STS-104 (FD 09)



STS-104 (FD 09)



STS-104 (FD 09)



MS1
M. GERNHARDT

MS2
J. KAVANDI

MS3
J. REILLY

Notes

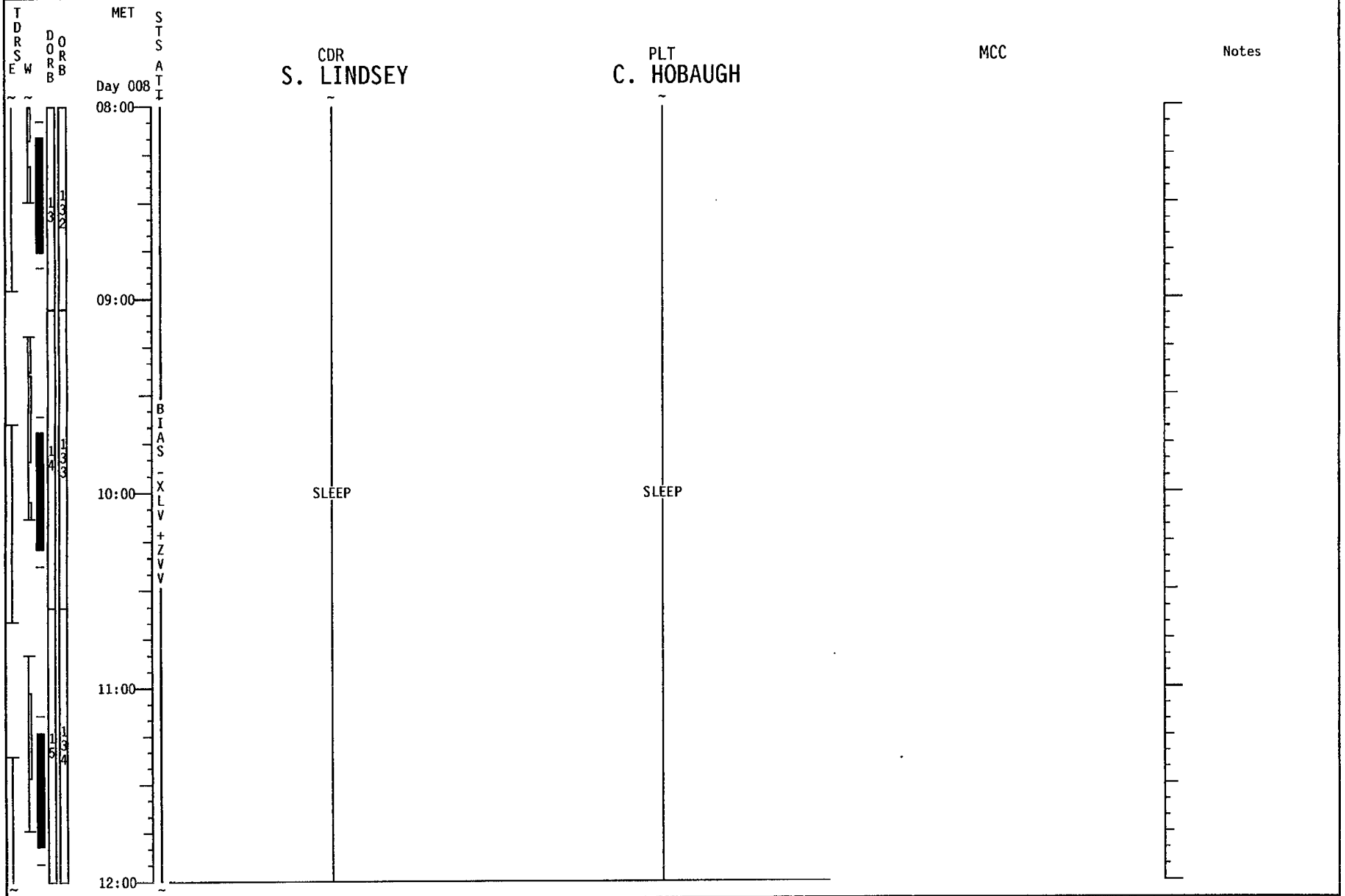
MET
Day 008
04:00
05:00
06:00
07:00
08:00

SLEEP

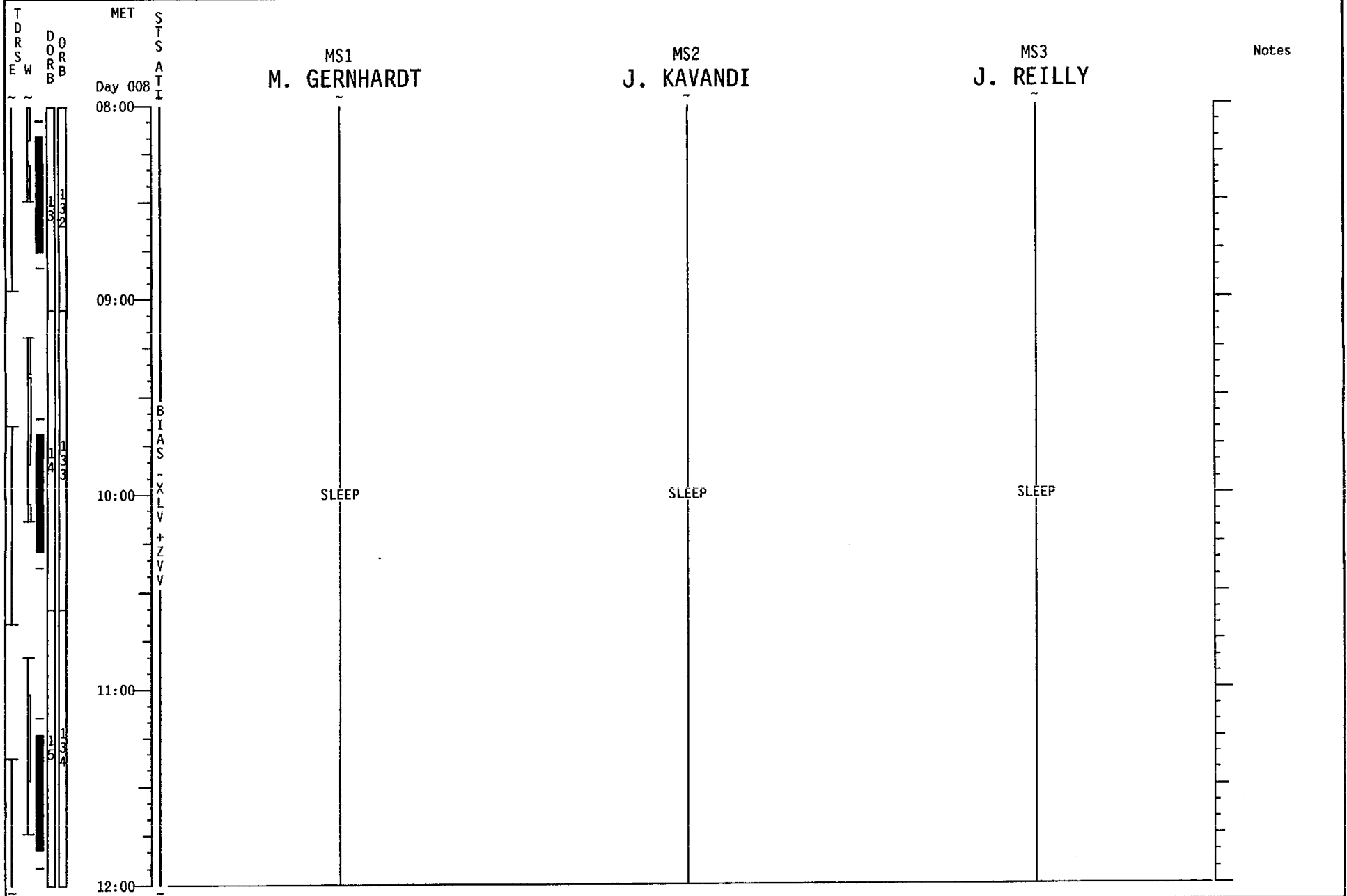
SLEEP

SLEEP

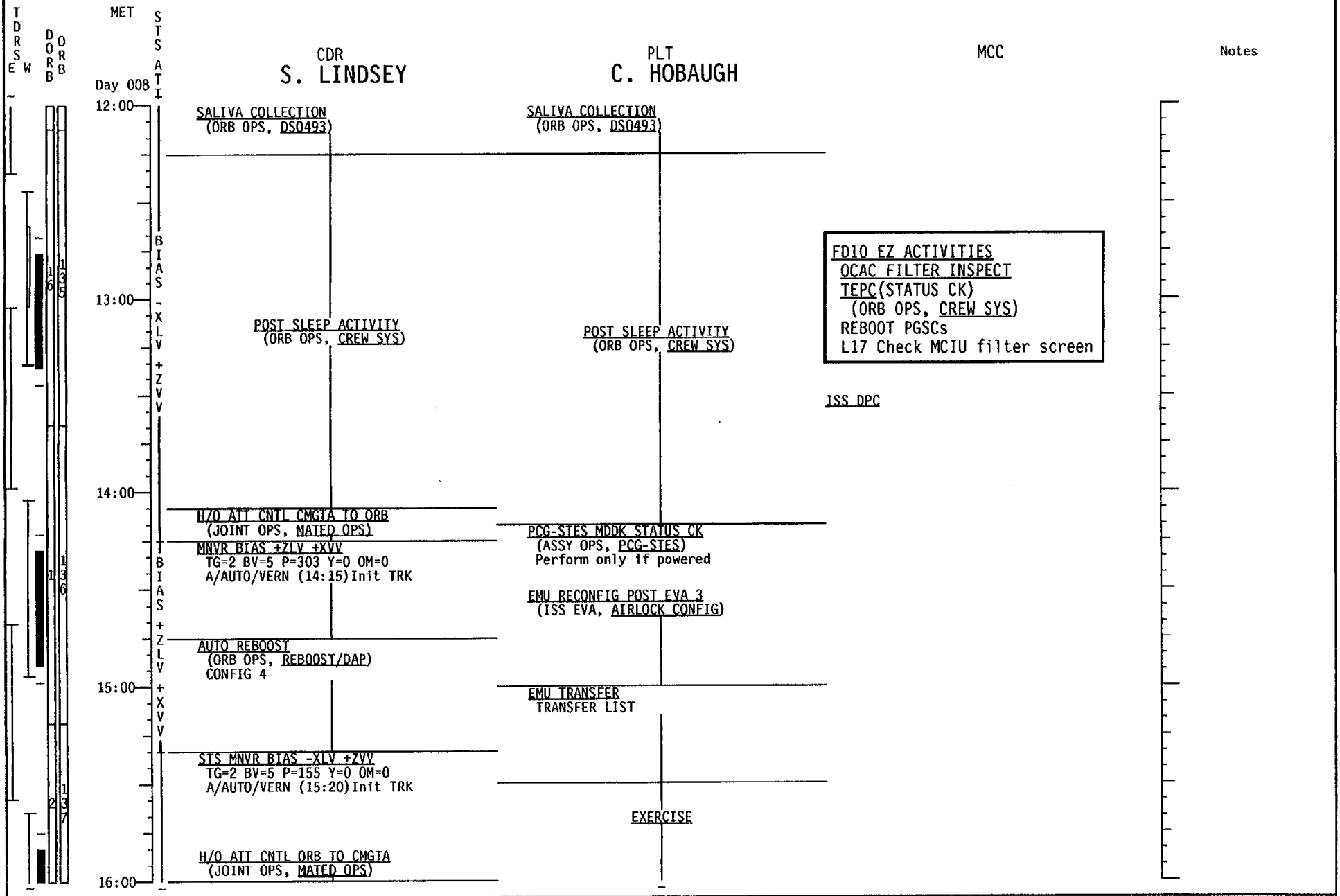
STS-104 (FD 09)



STS-104 (FD 09)



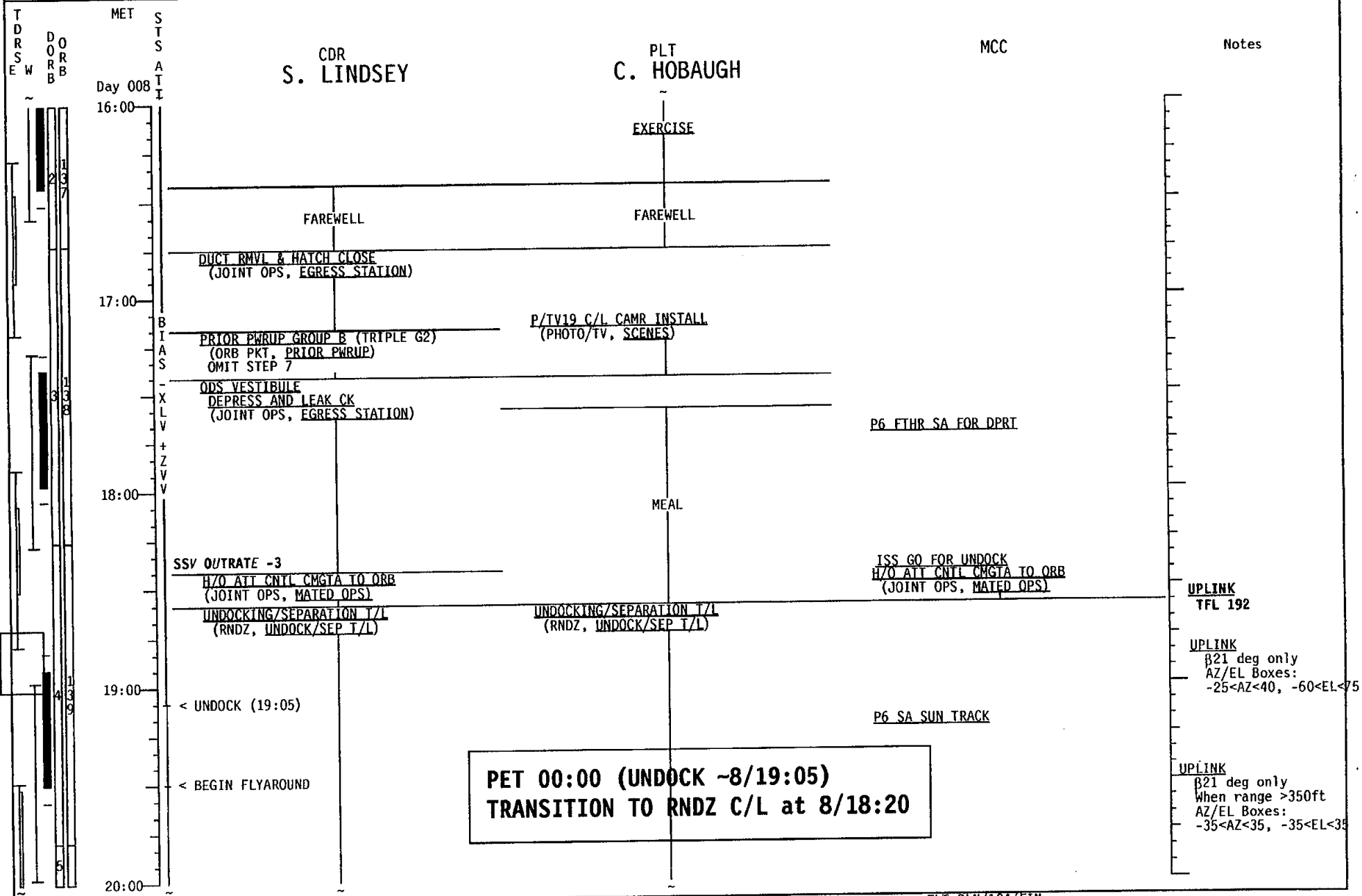
STS-104 (FD 10)



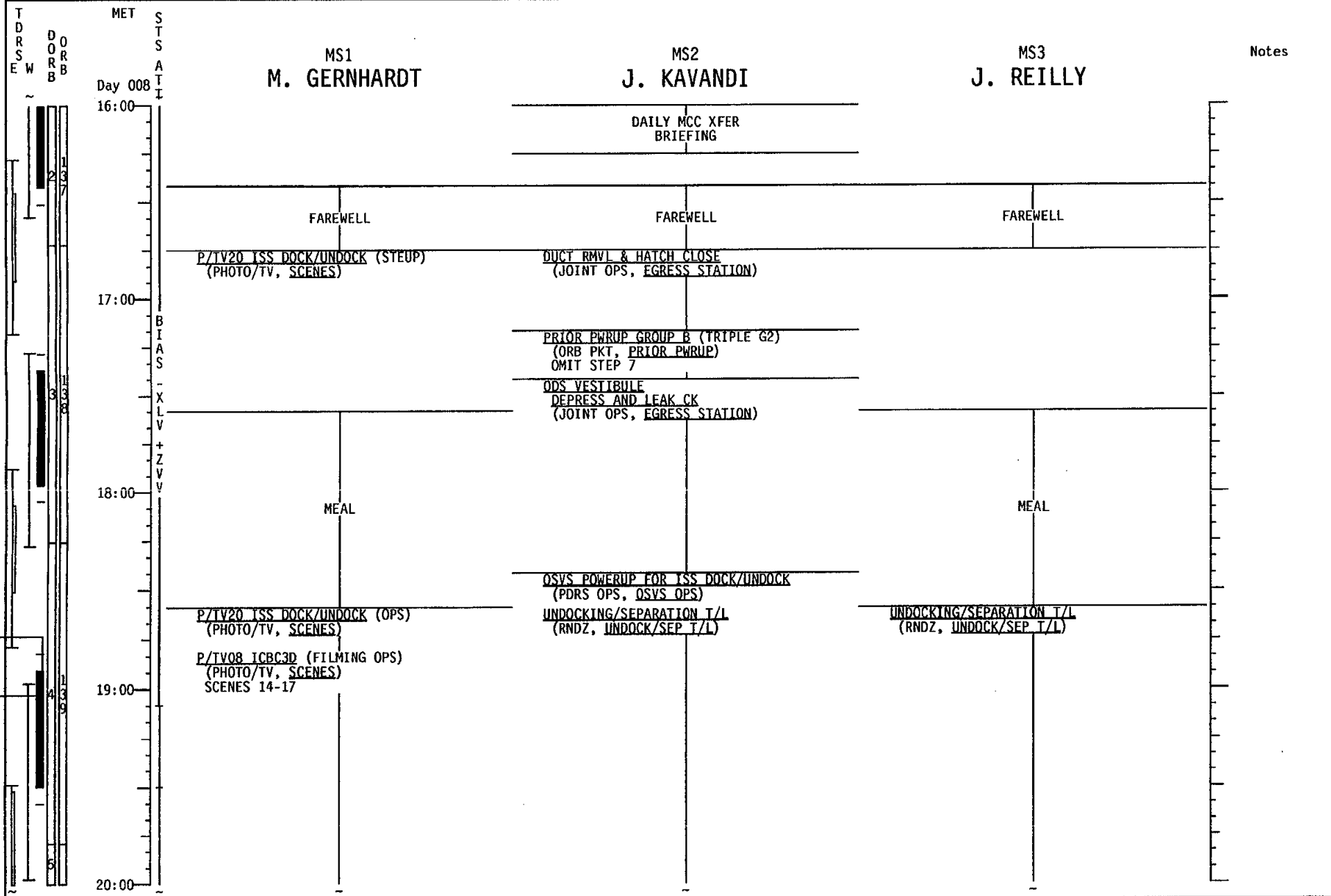
STS-104 (FD 10)

	MS1 M. GERNHARDT	MS2 J. KAVANDI	MS3 J. REILLY	Notes
MET Day 008 12:00 13:00 14:00 15:00 16:00 TDRS EW DORB 1136 1136 1237 S T S A T T B I A S - X L V + Z V V T B I A S + Z L V + X V V 1 1 1 2 3 7	<p style="text-align: center;"><u>POST SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)</p> <hr/> <p>EVA CREW: TAKE 1 ASPIRIN (325mg) EMU H2O RECHARGE BAG FILL (ISS EVA, AIRLOCK CONFIG) Fill 1 bag</p> <hr/> <p>EMU RECONFIG POST EVA 3 (ISS EVA, AIRLOCK CONFIG)</p> <hr/> <p>EMU TRANSFER TRANSFER LIST</p> <hr/> <p>CWC TRANSFER (2 BAGS) Transfer 2 CWC bags to ISS</p>	<p style="text-align: center;"><u>SLEEP LOG WITH PGSC</u> (ORB OPS, DS0634)</p> <hr/> <p style="text-align: center;"><u>POST SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)</p> <hr/> <p>PGSC SETUP (RNDZ, RNDZ TOOLS)</p> <hr/> <p>RNDZ TOOLS CHECKOUT (RNDZ, RNDZ TOOLS)</p> <hr/> <p>DAILY STS/ISS CREW XFER TAGUP</p>	<p style="text-align: center;"><u>POST SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)</p> <p style="text-align: center;"><u>GALLEY MORNING CONFIG</u> (ORB OPS, GLY IODINE RMVL)</p> <hr/> <p>EVA CREW: TAKE 1 ASPIRIN (325mg) PGSC SETUP (RNDZ, RNDZ TOOLS)</p> <hr/> <p>RNDZ TOOLS CHECKOUT (RNDZ, RNDZ TOOLS)</p> <hr/> <p>EMU TRANSFER TRANSFER LIST</p> <hr/> <p>MWIS DEACT (ASSY OPS, MICROWIS)</p>	

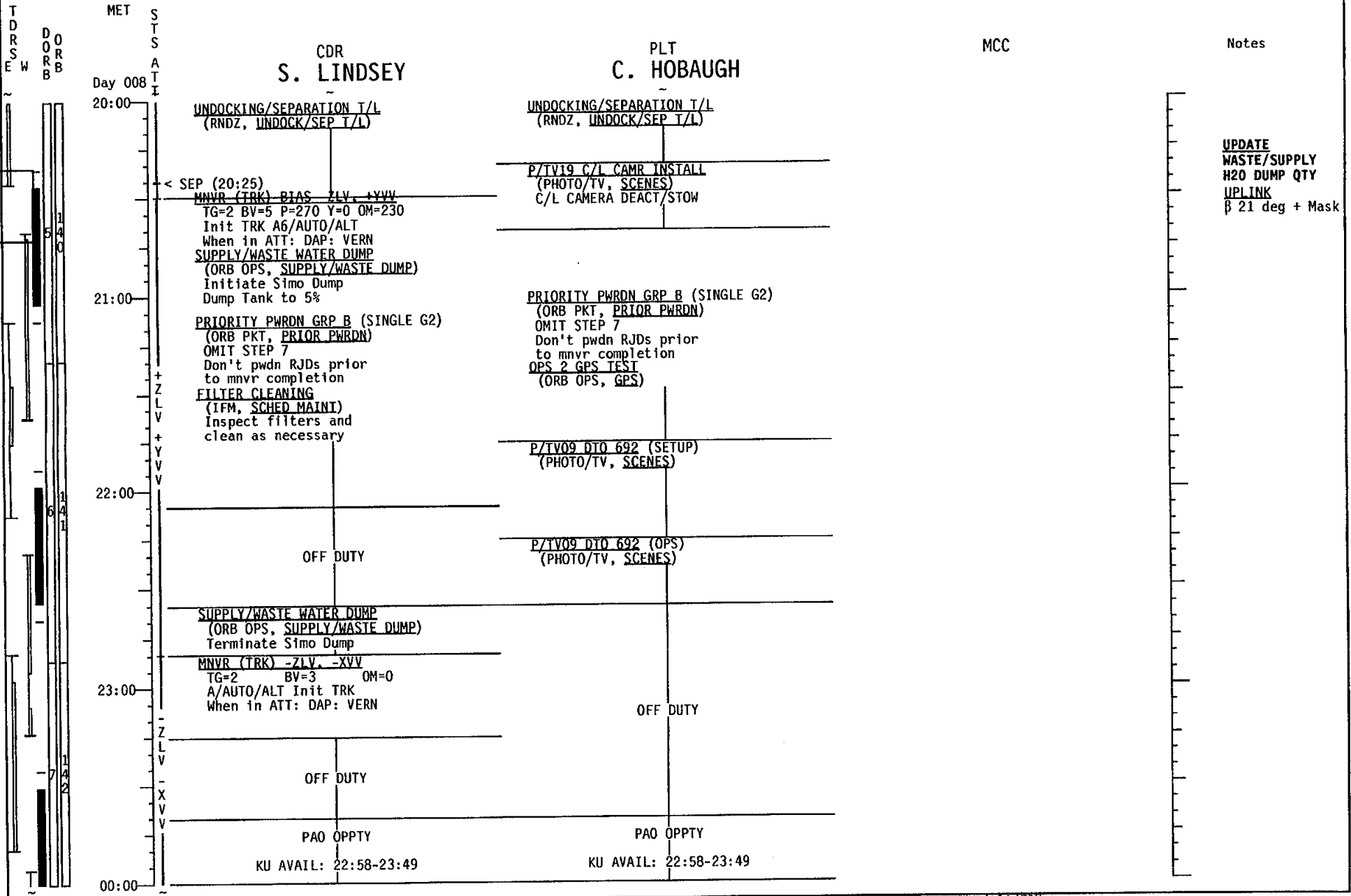
STS-104 (FD 10)



STS-104 (FD 10)

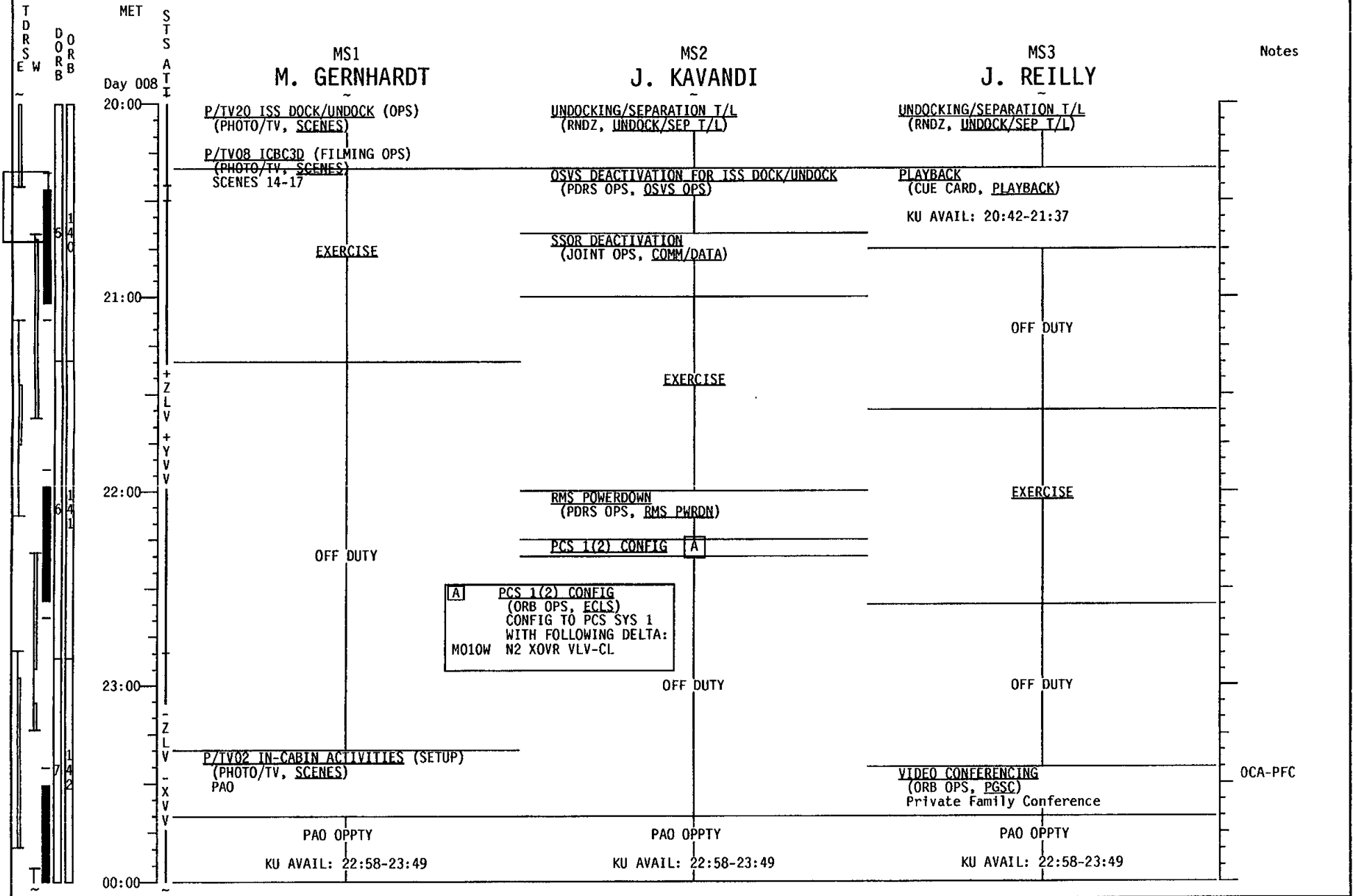


STS-104 (FD 10)



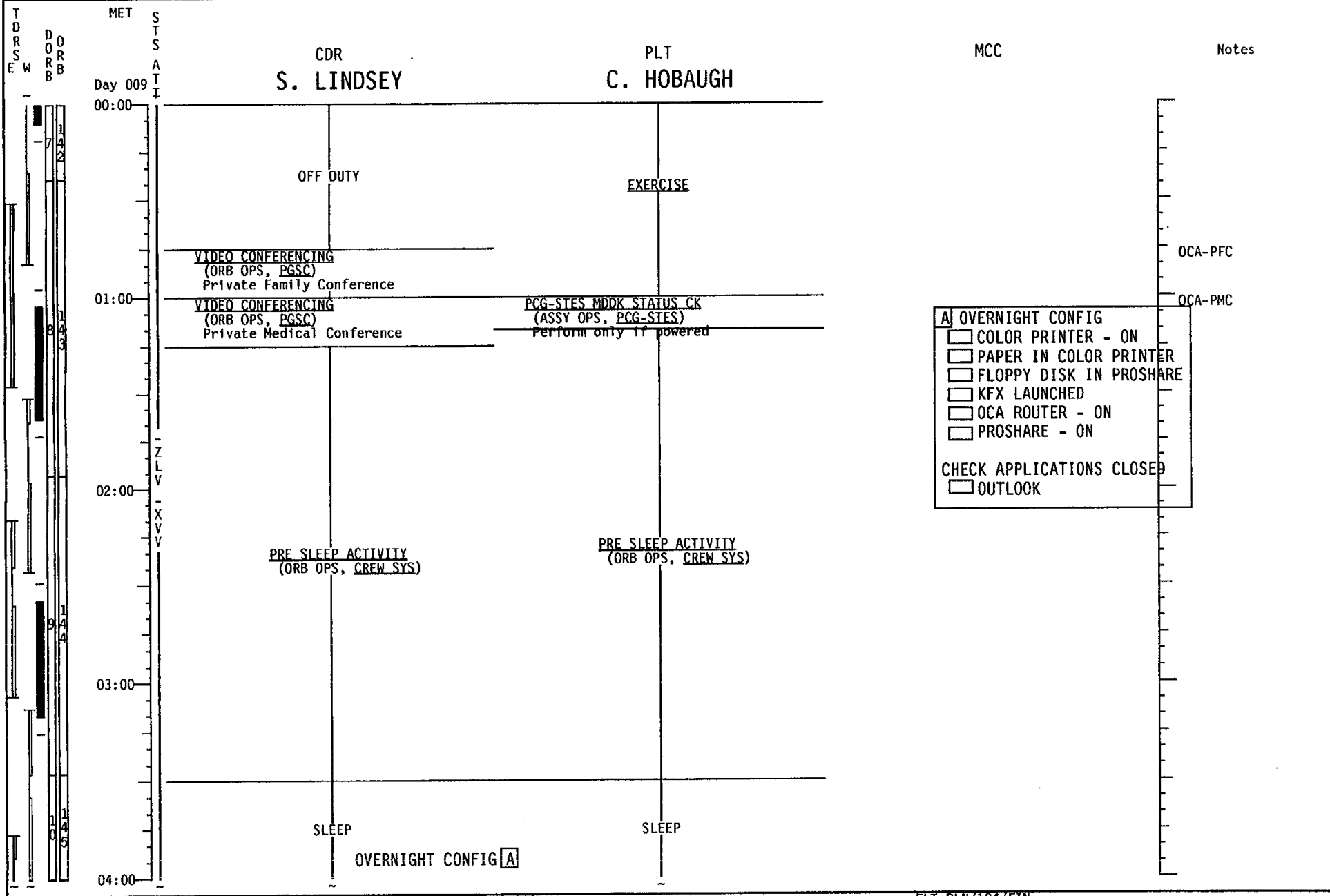
UPDATE
WASTE/SUPPLY
H2O DUMP QTY
UPLINK
β 21 deg + Mask

STS-104 (FD 10)



[A] PCS 1(2) CONFIG
 (ORB OPS, ECLS)
 CONFIG TO PCS SYS 1
 WITH FOLLOWING DELTA:
 M010W N2 XOVR VLV-CL

STS-104 (FD 10)



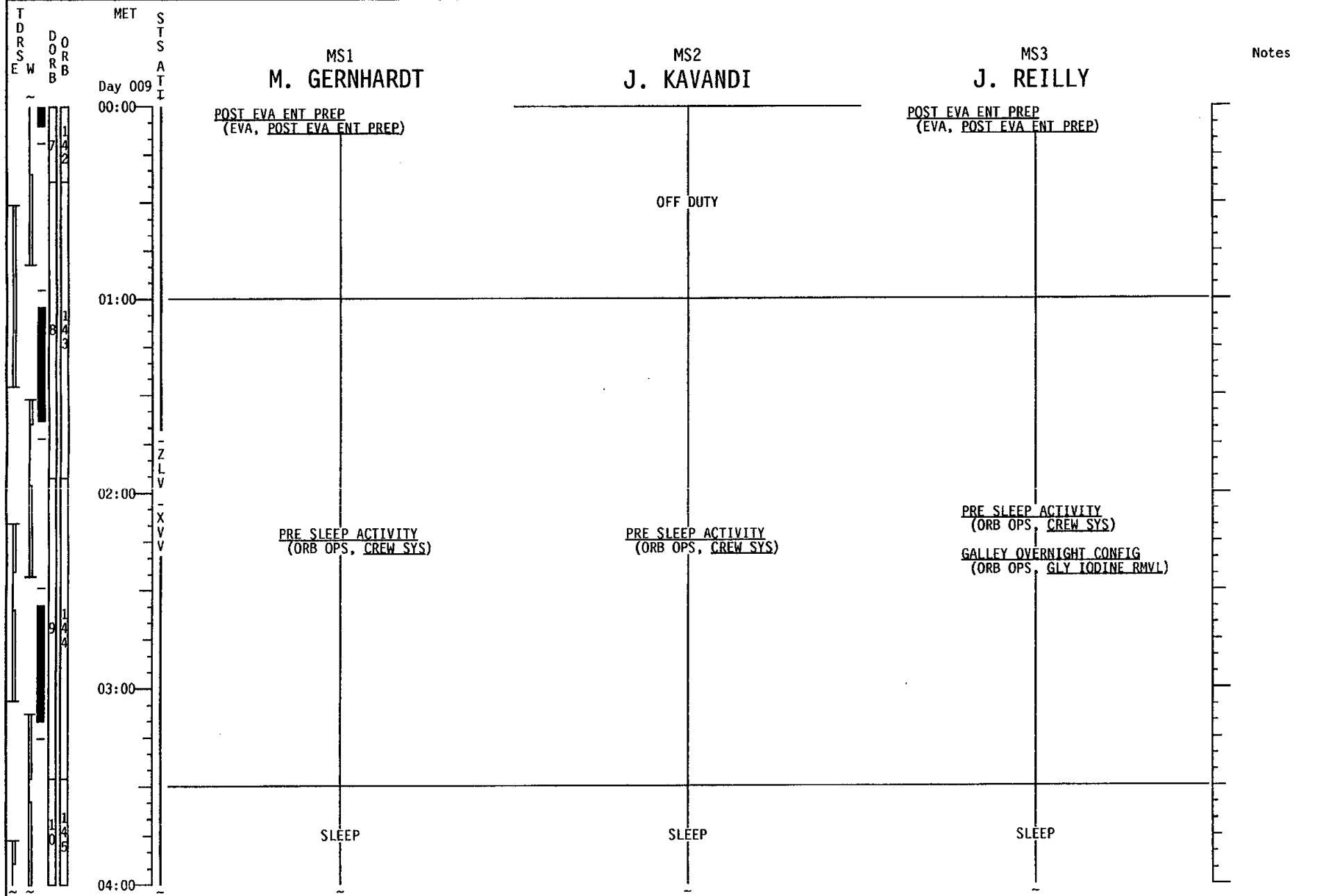
A] OVERNIGHT CONFIG

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

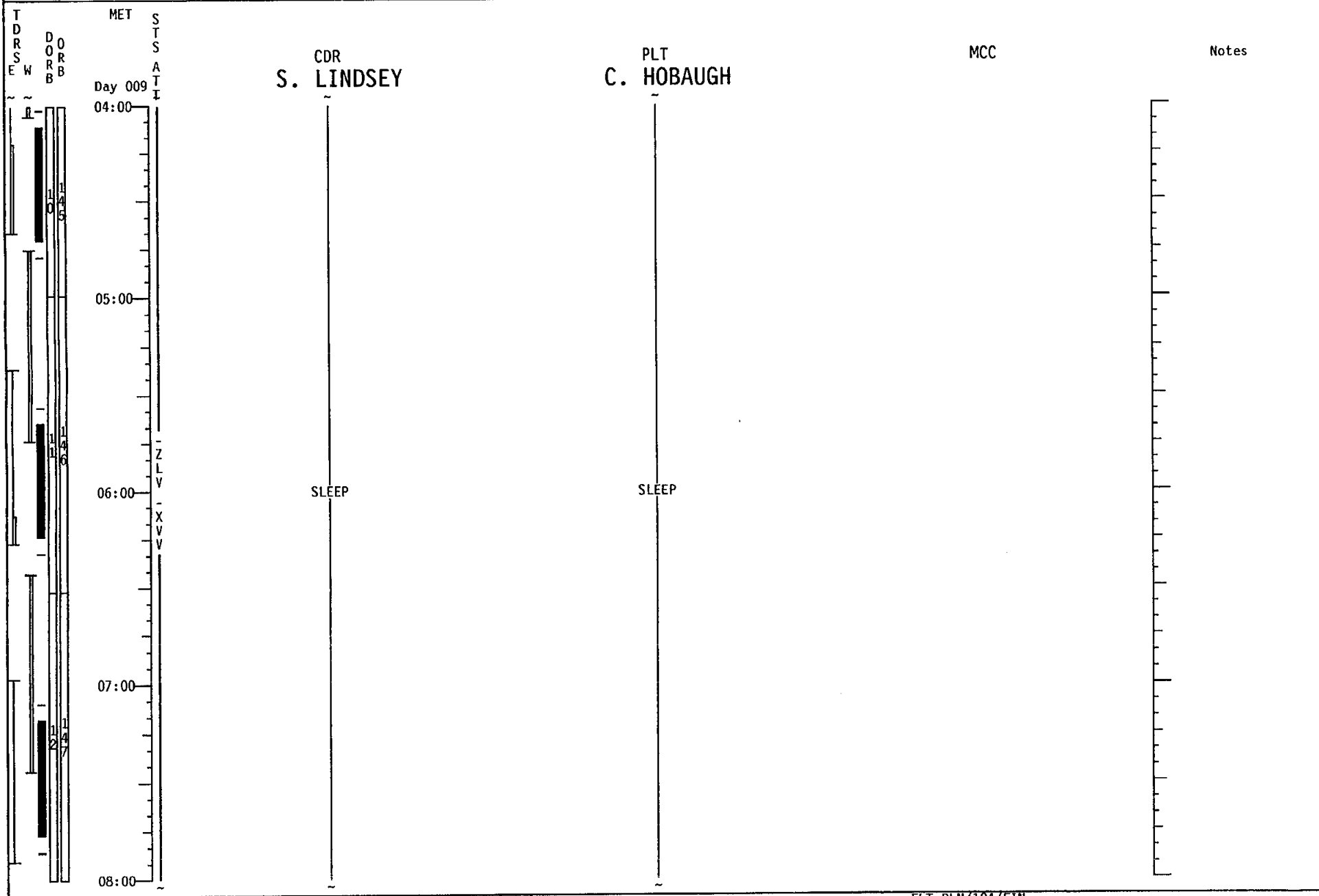
CHECK APPLICATIONS CLOSED

- OUTLOOK

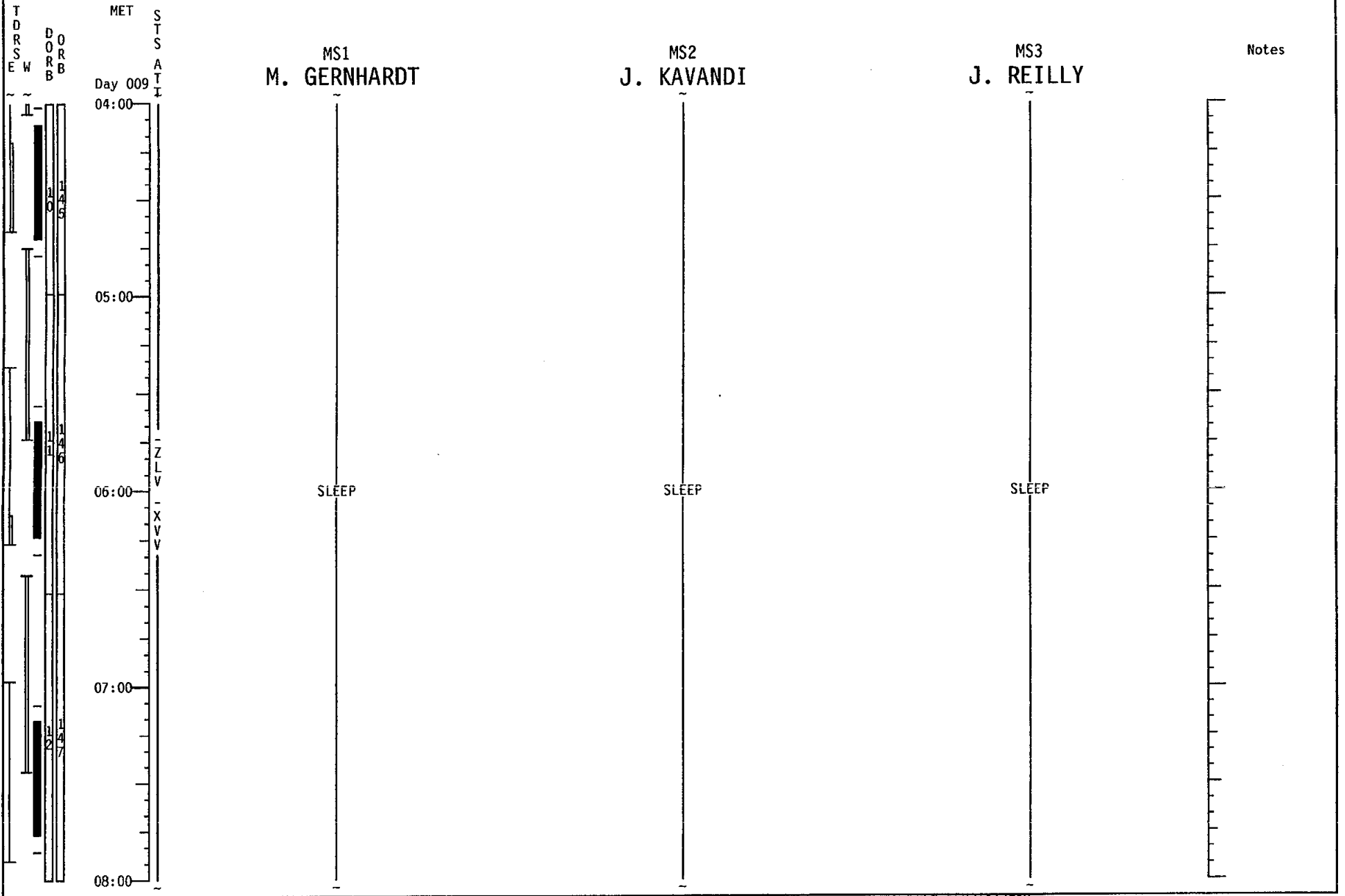
STS-104 (FD 10)



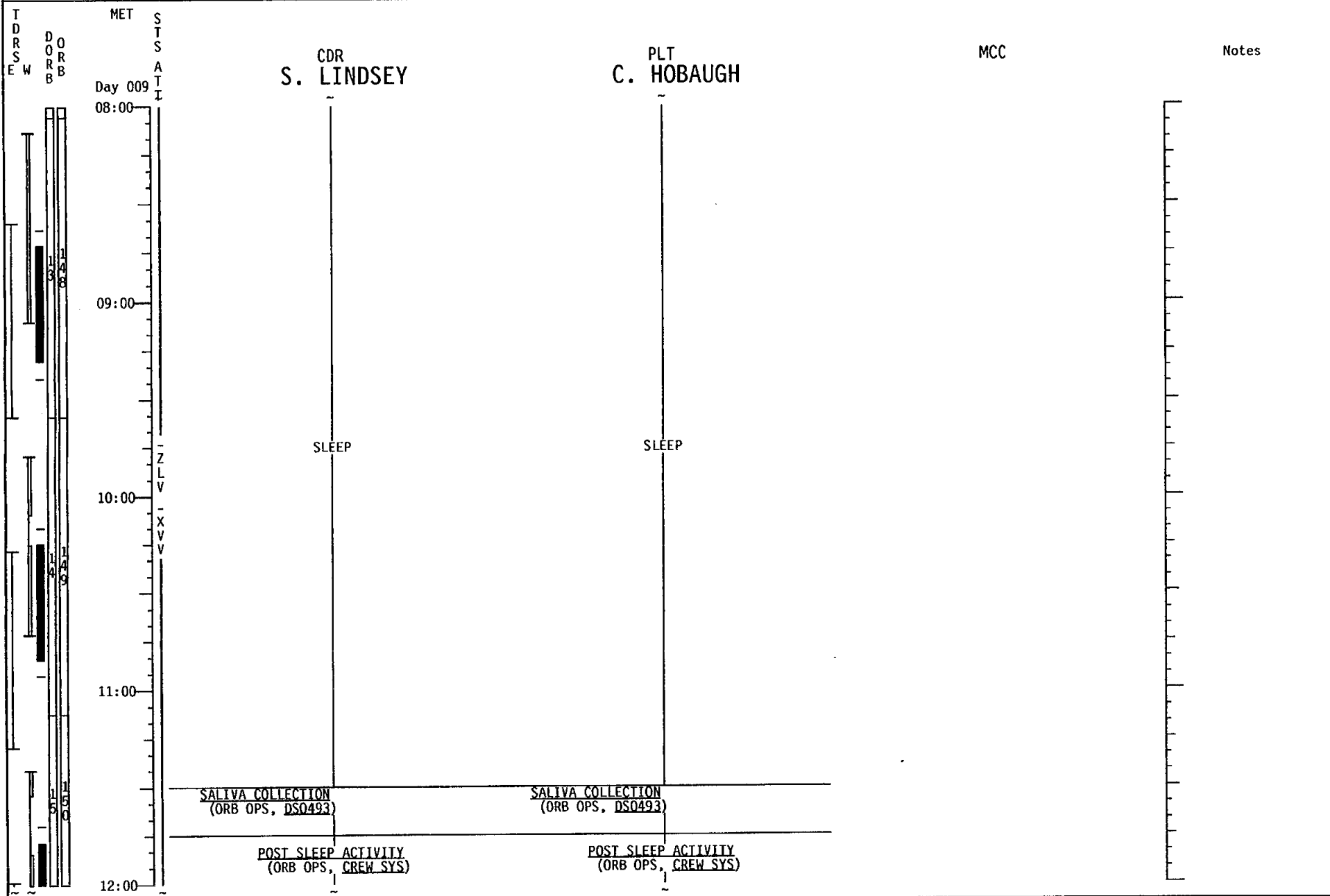
STS-104 (FD 10)



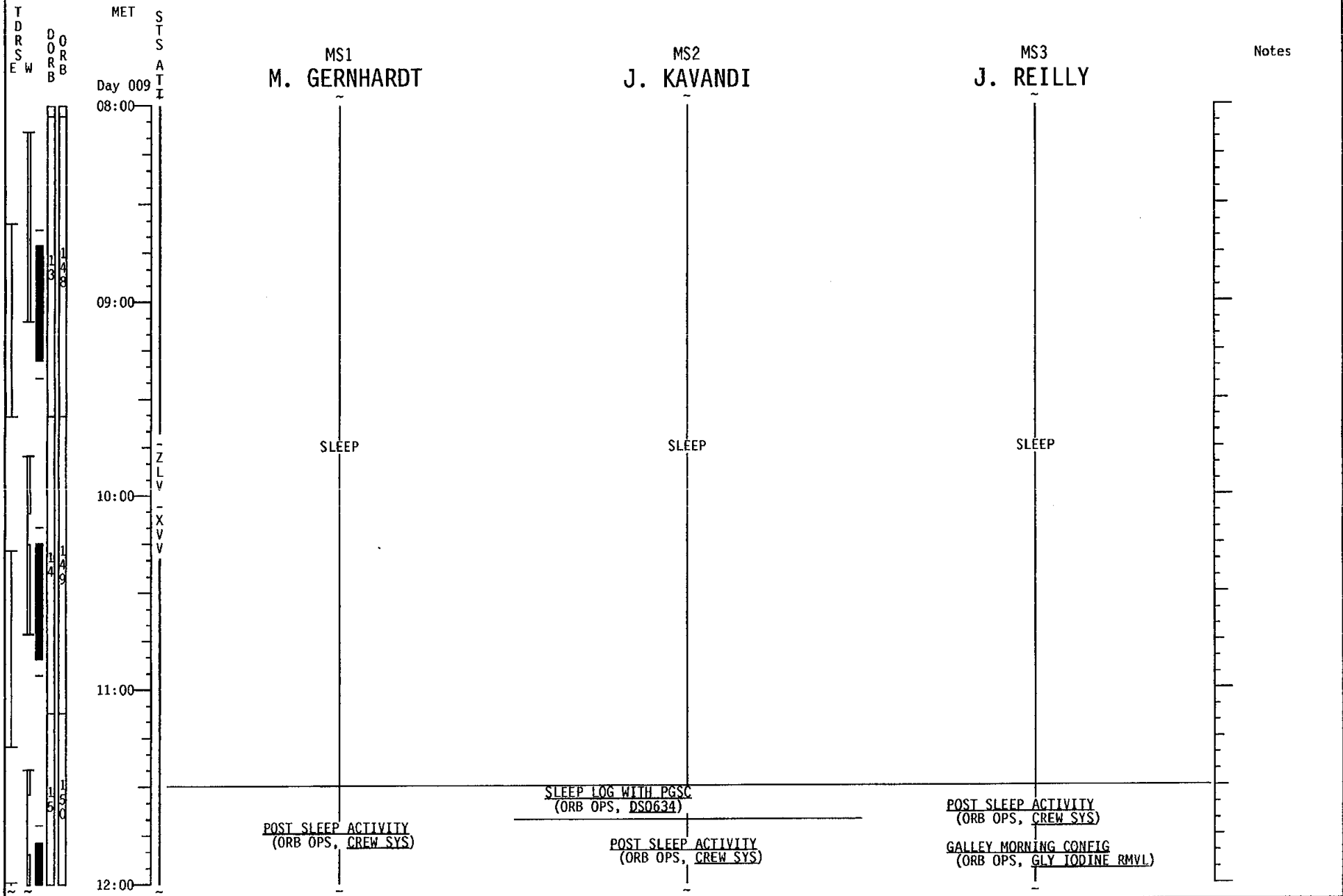
STS-104 (FD 10)



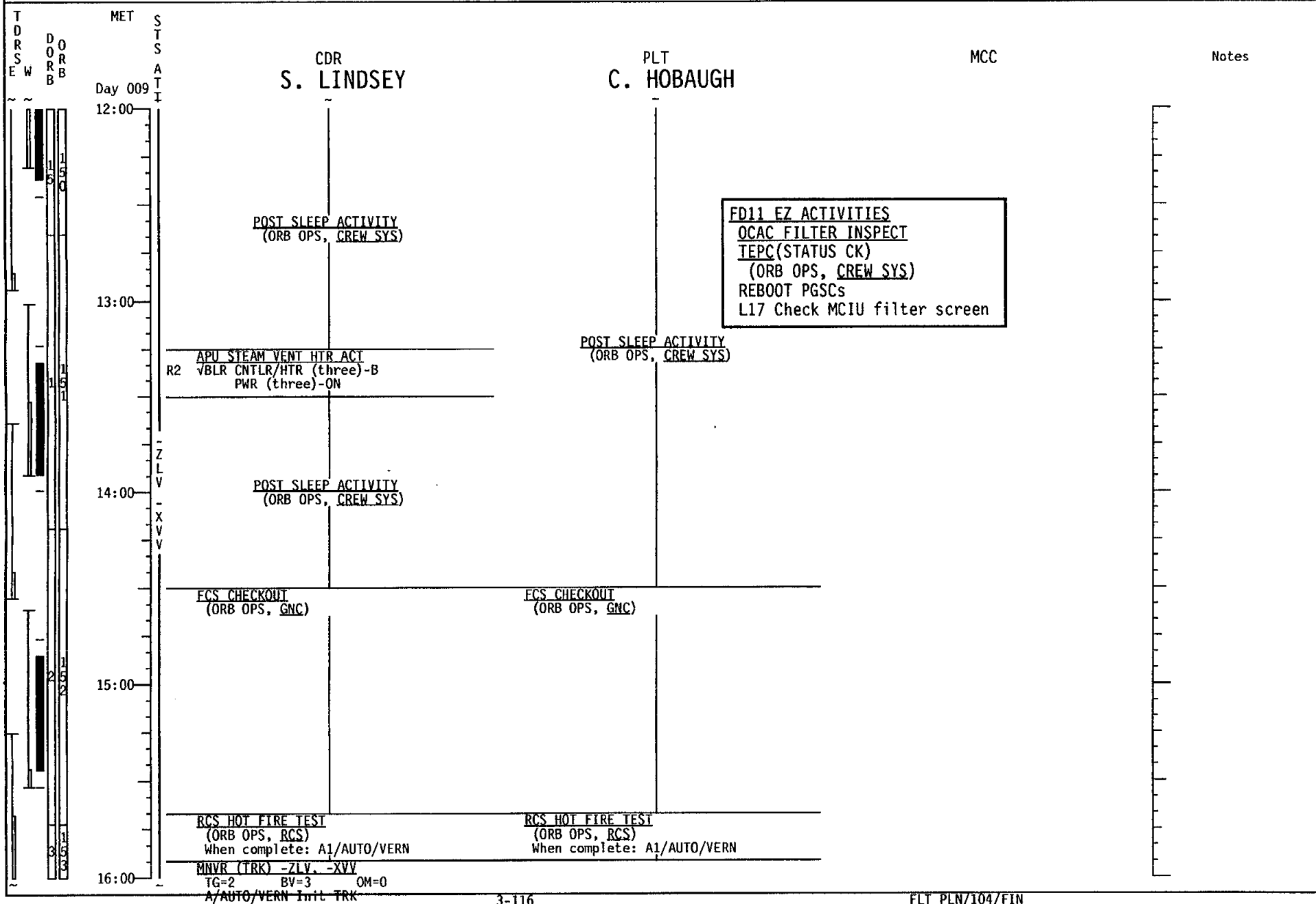
STS-104 (FD 10)



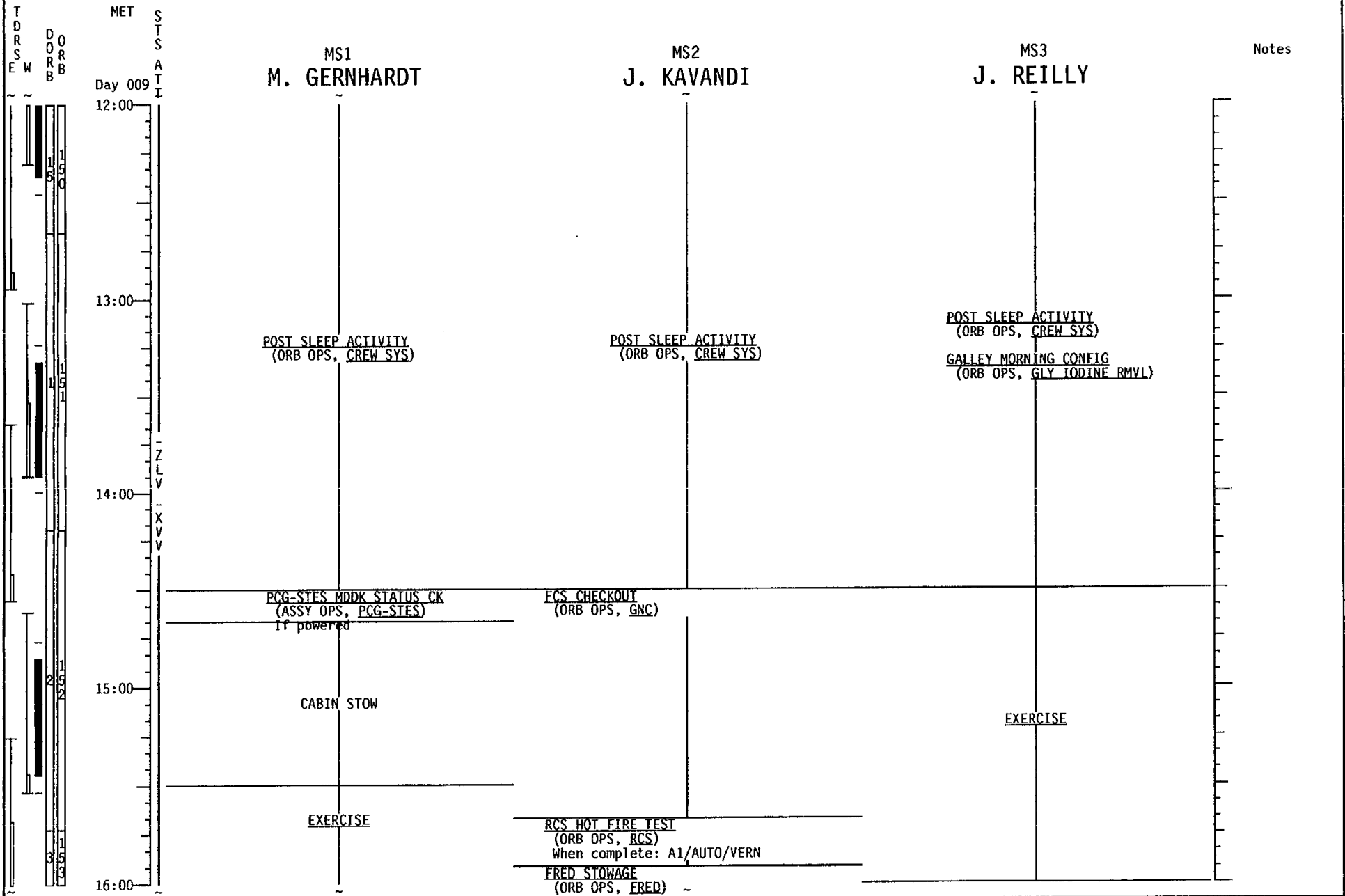
STS-104 (FD 10)



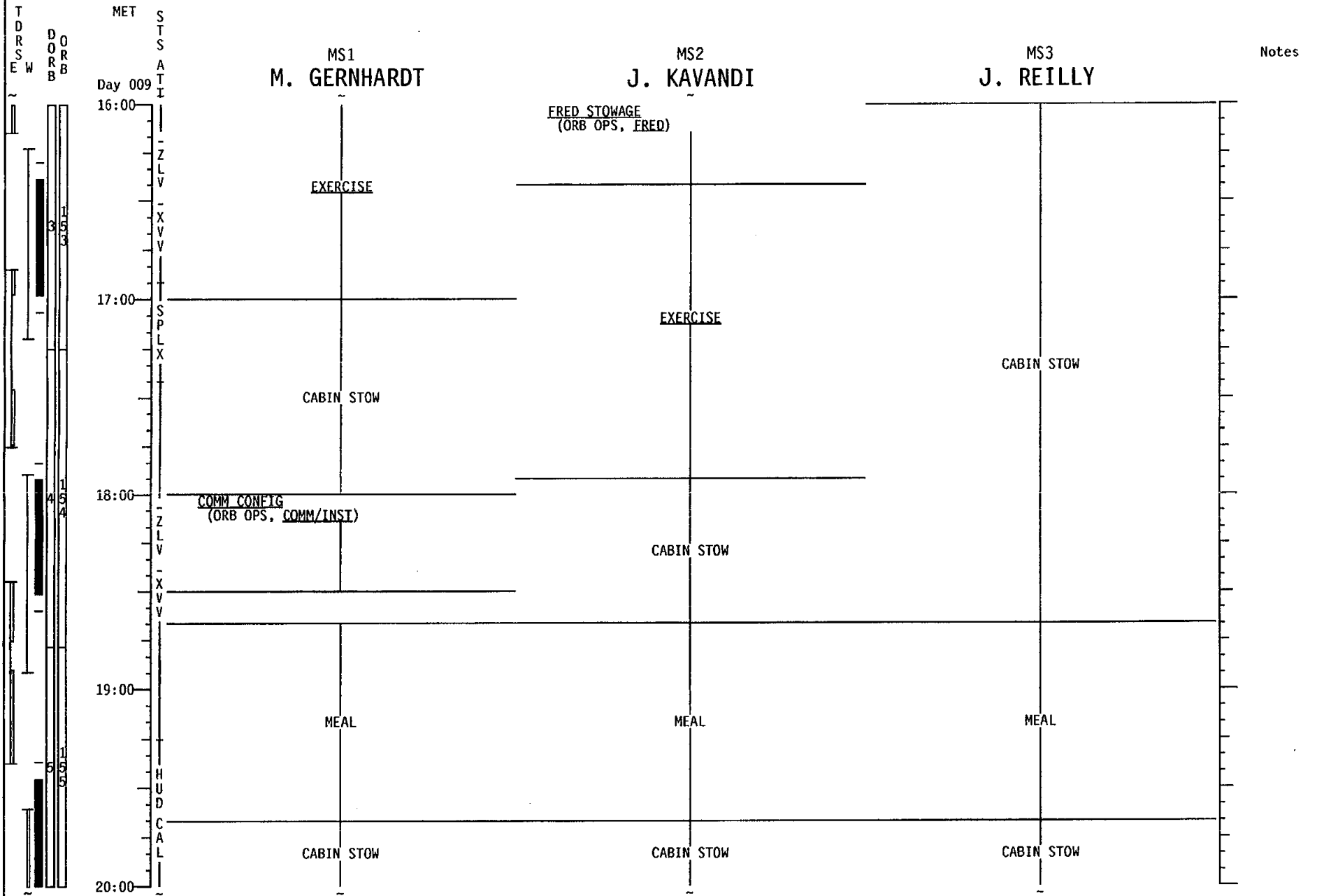
STS-104 (FD 11)



STS-104 (FD 11)



STS-104 (FD 11)



STS-104 (FD 11)

T D R S E W
 D O R B
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MET
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 21:00
 22:00
 23:00
 00:00

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 V
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 V
 V

CDR
S. LINDSEY

PLT
C. HOBAUGH

MCC

Notes

MNVR (TRK) -ZLV -XVV
 TG=2 BV=3 OM=0
 A/AUTO/VERN Init TRK

HUD VERIFICATION
 HUD CALIBRATION (ORB OPS)

D/O BRIEF

D/O BRIEF

P/TV 05 SETUP (ENTRY VIDEO)
 (PHOTO/TV, SCENES)

EXERCISE

EXERCISE

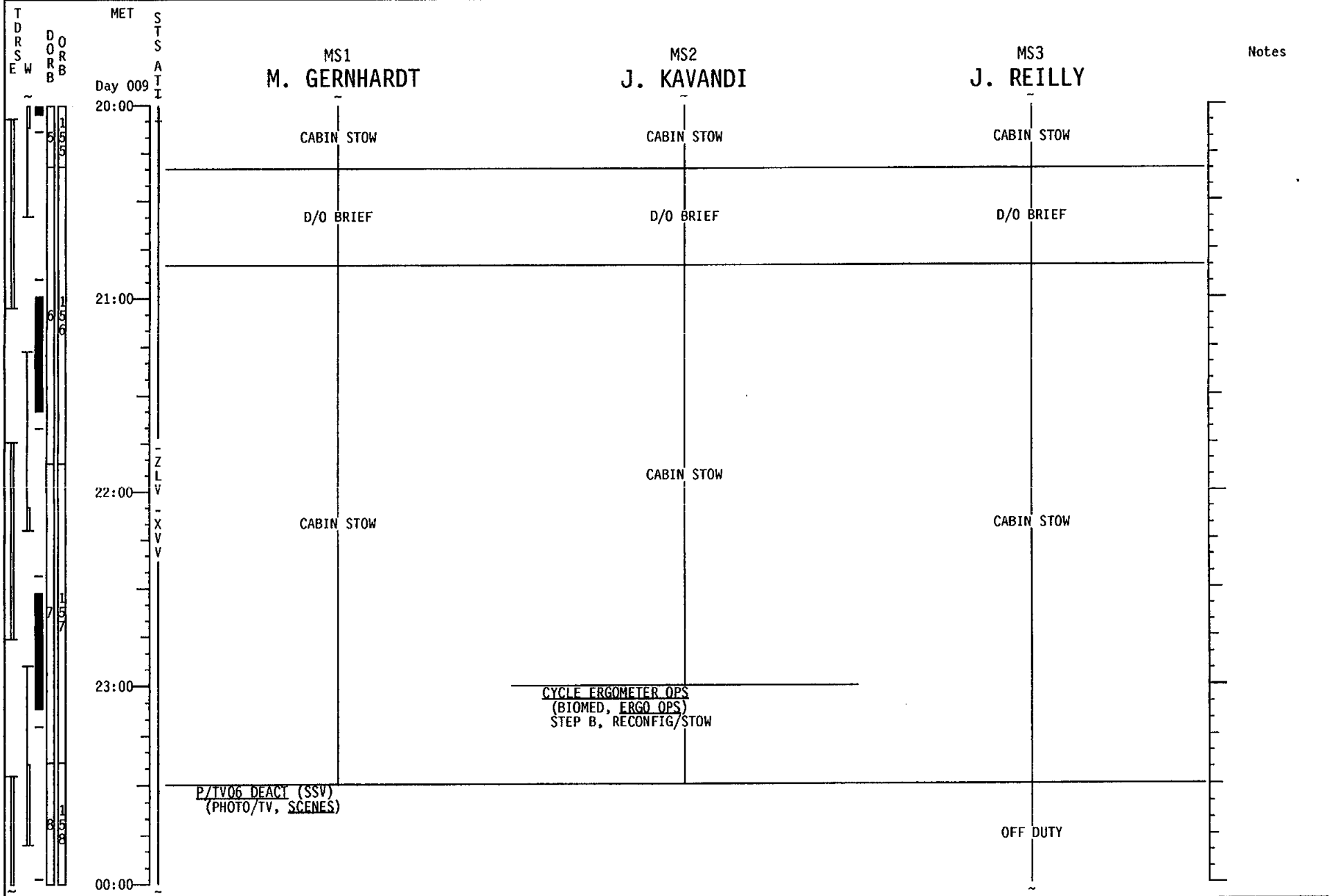
CABIN STOW

LANDING-1 COMM C/O
 (ORB OPS, COMM/INST)

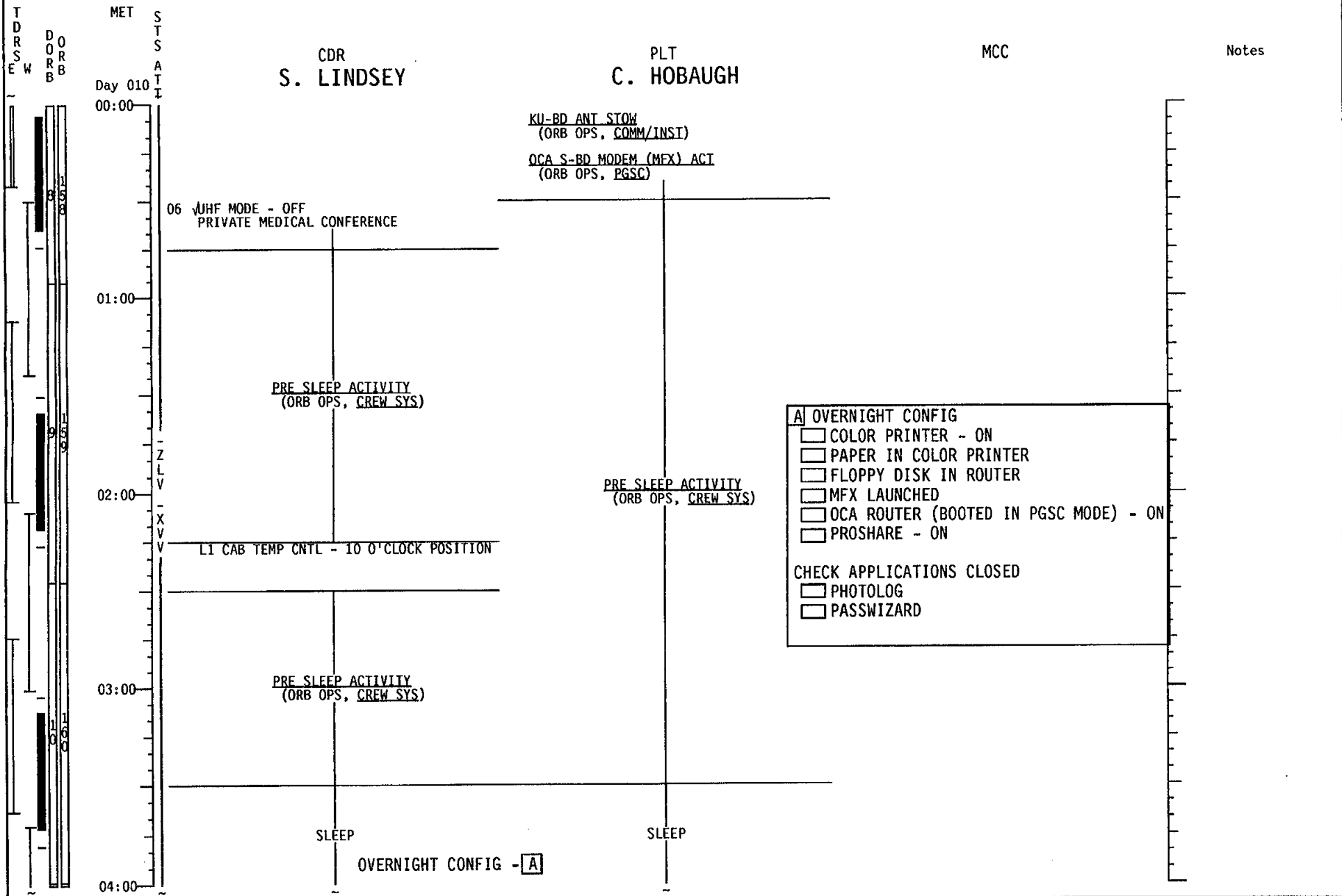
CYCLE ERGOMETER OPS
 (BIOMED, ERGO OPS)
 STEP B, RECONFIG/STOW

Notes

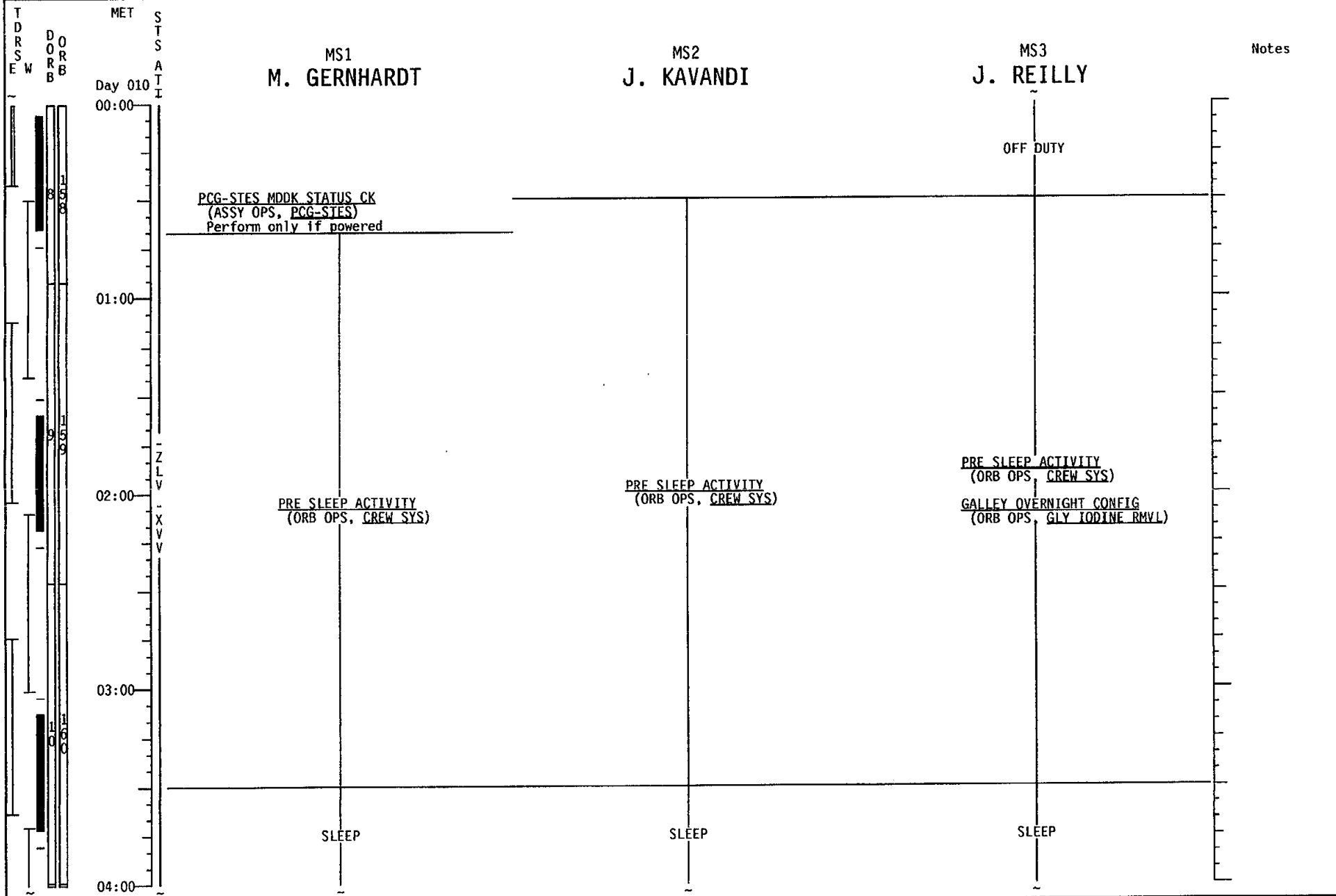
STS-104 (FD 11)



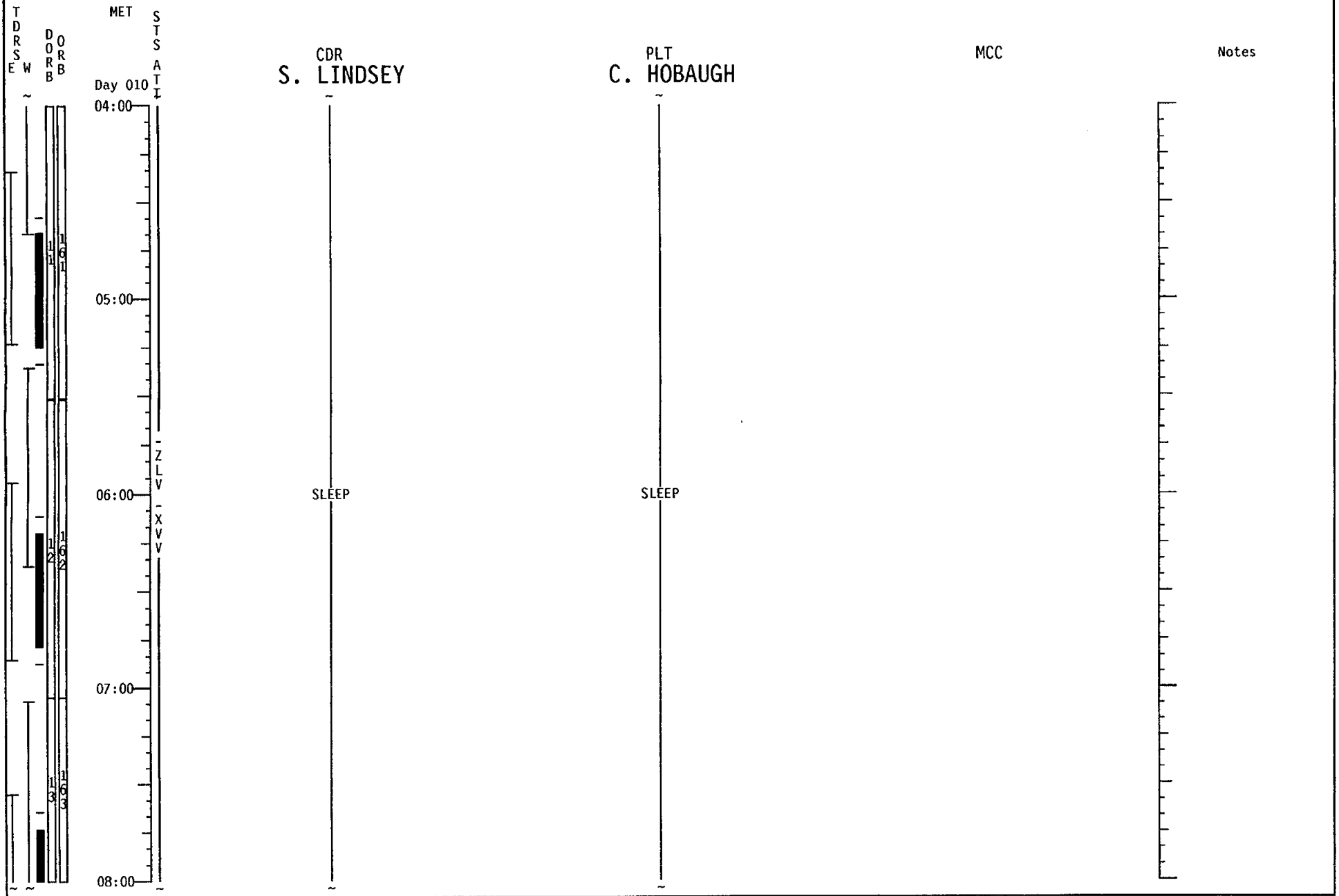
STS-104 (FD 11)



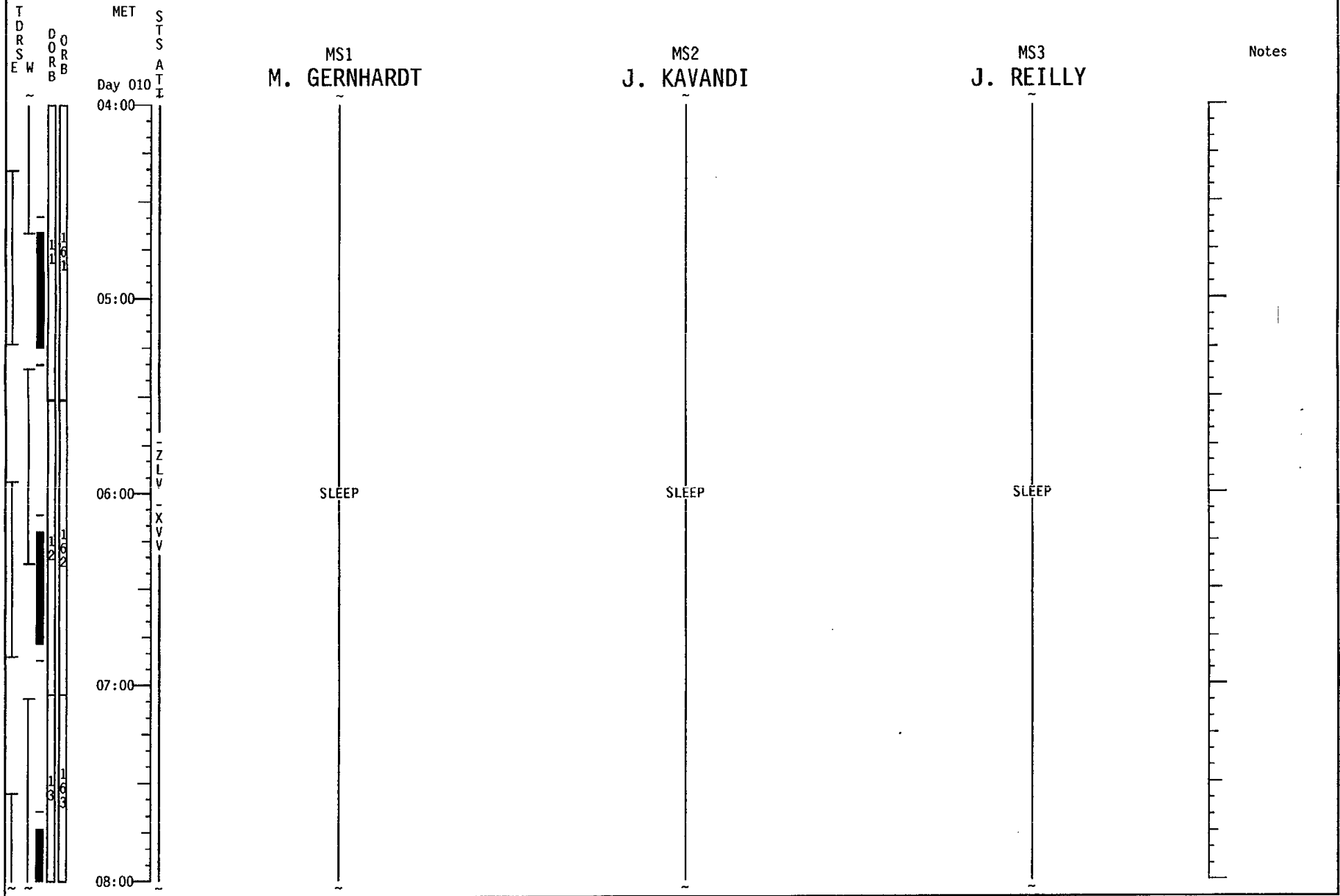
STS-104 (FD 11)



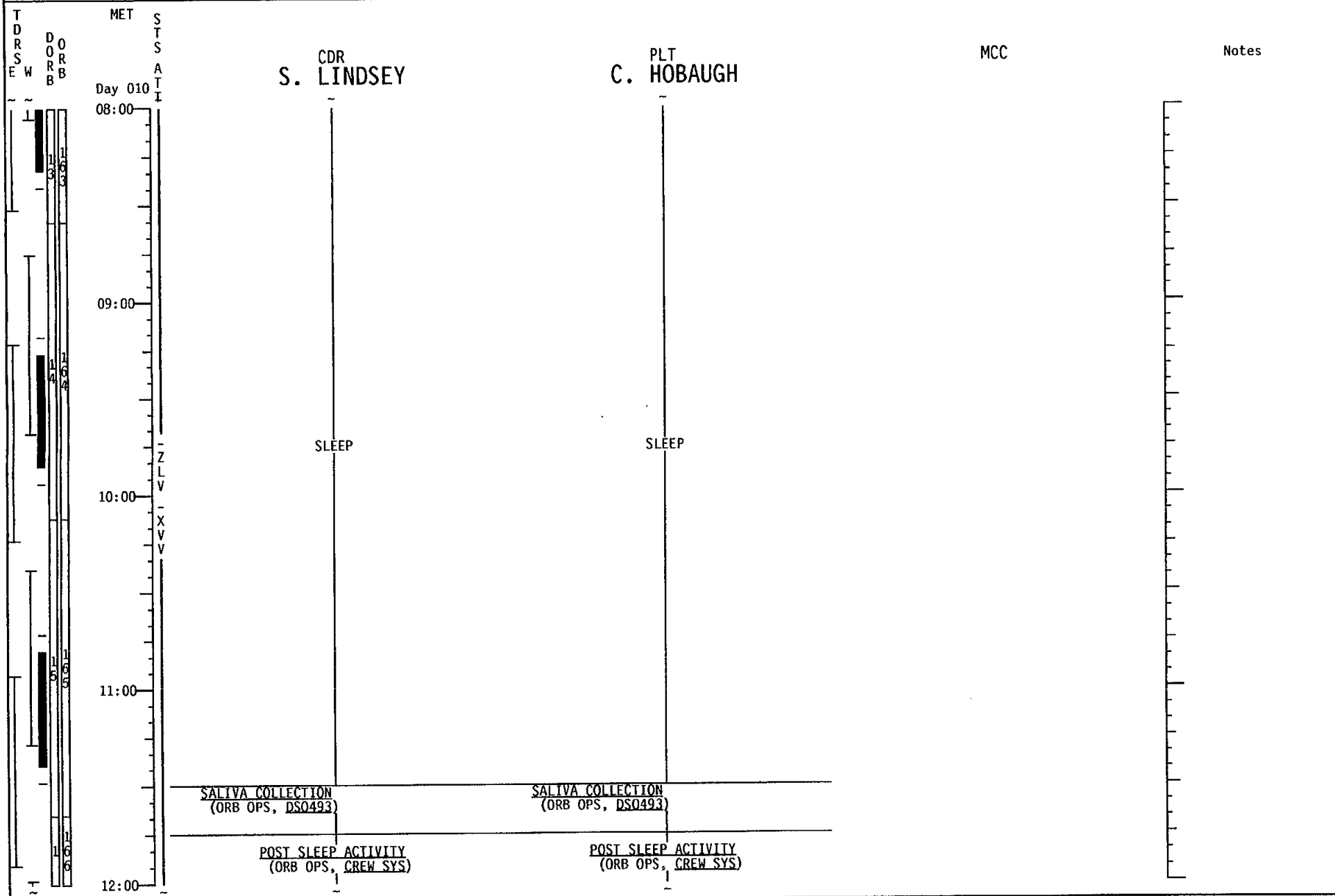
STS-104 (FD 11)



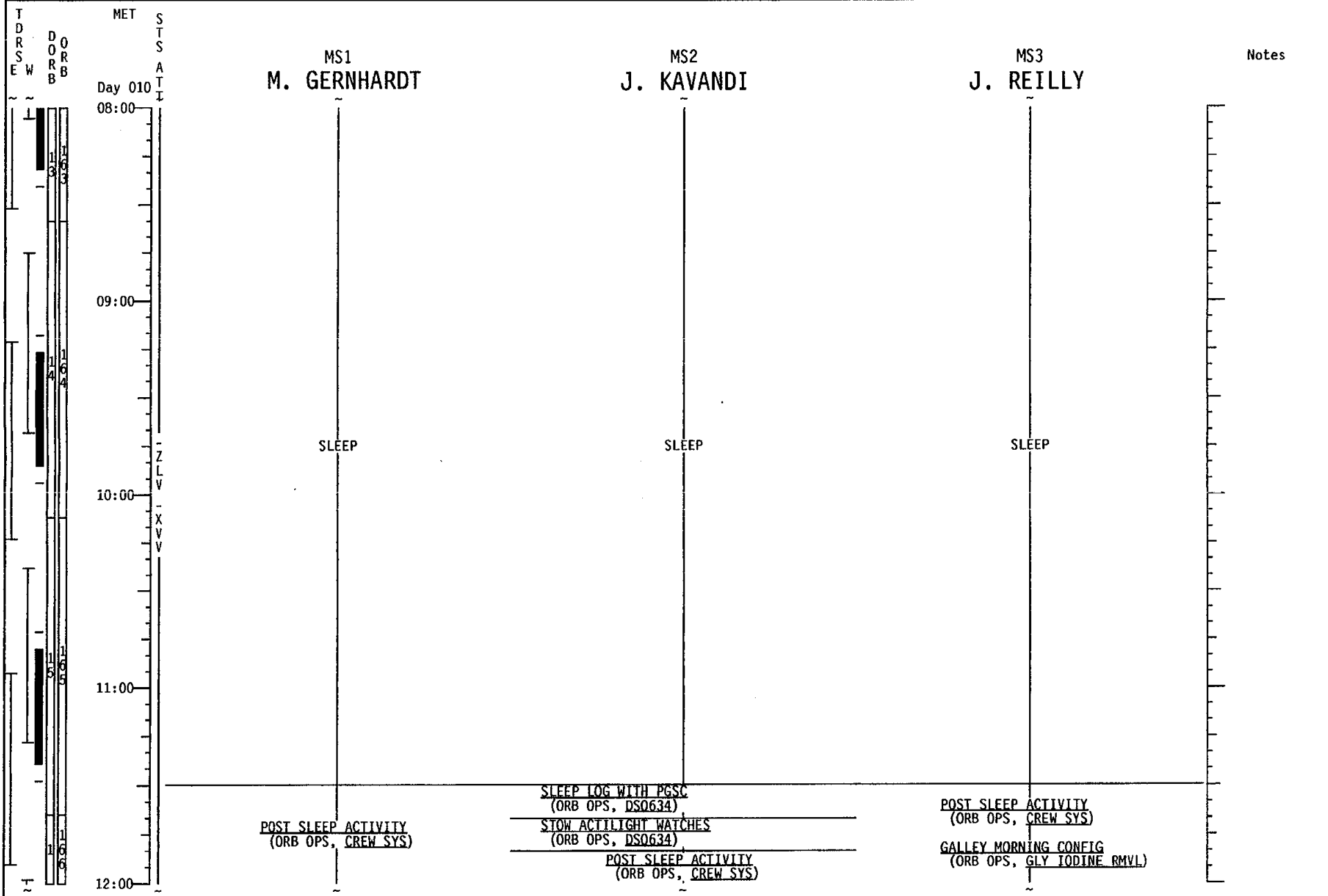
STS-104 (FD 11)



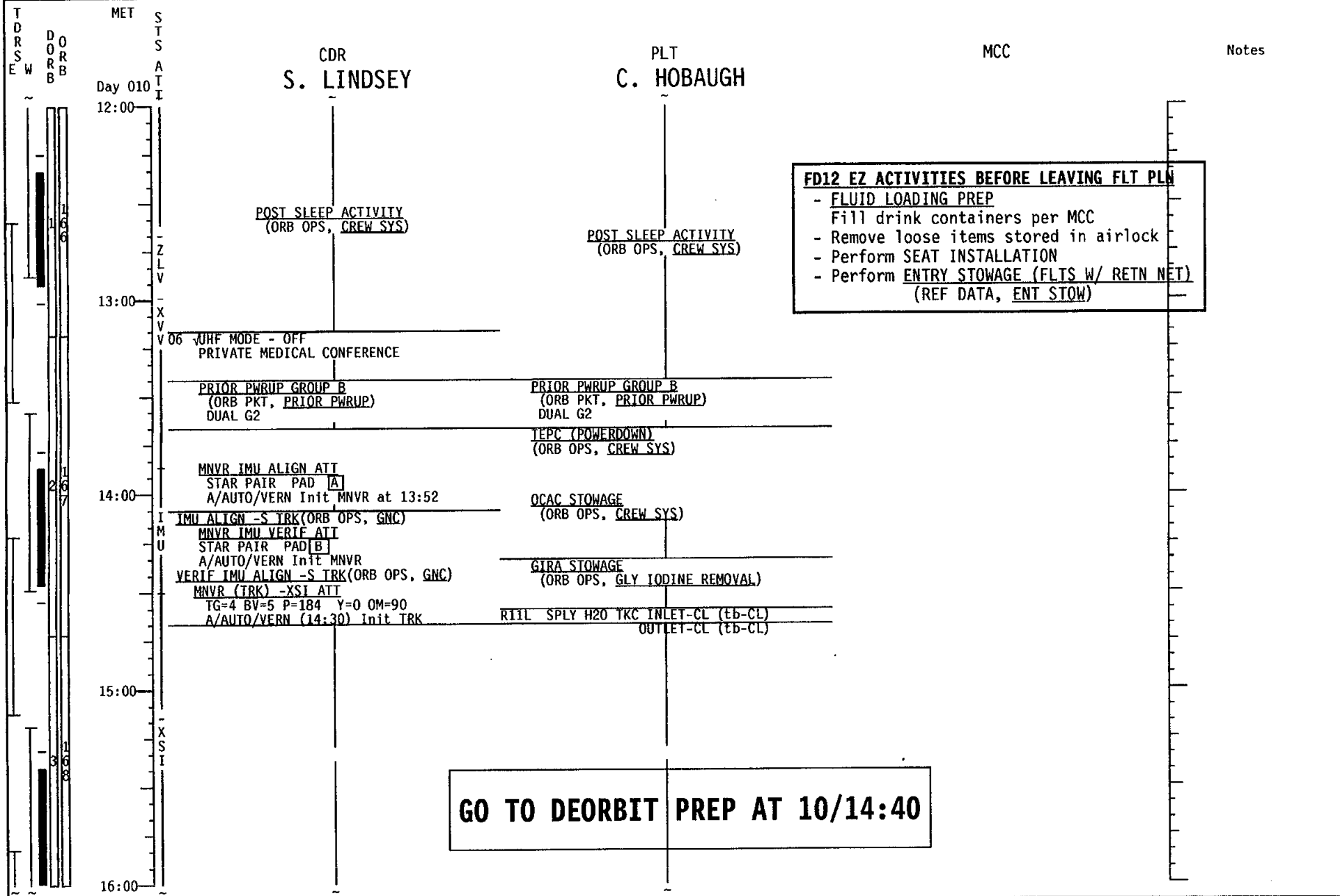
STS-104 (FD 11)



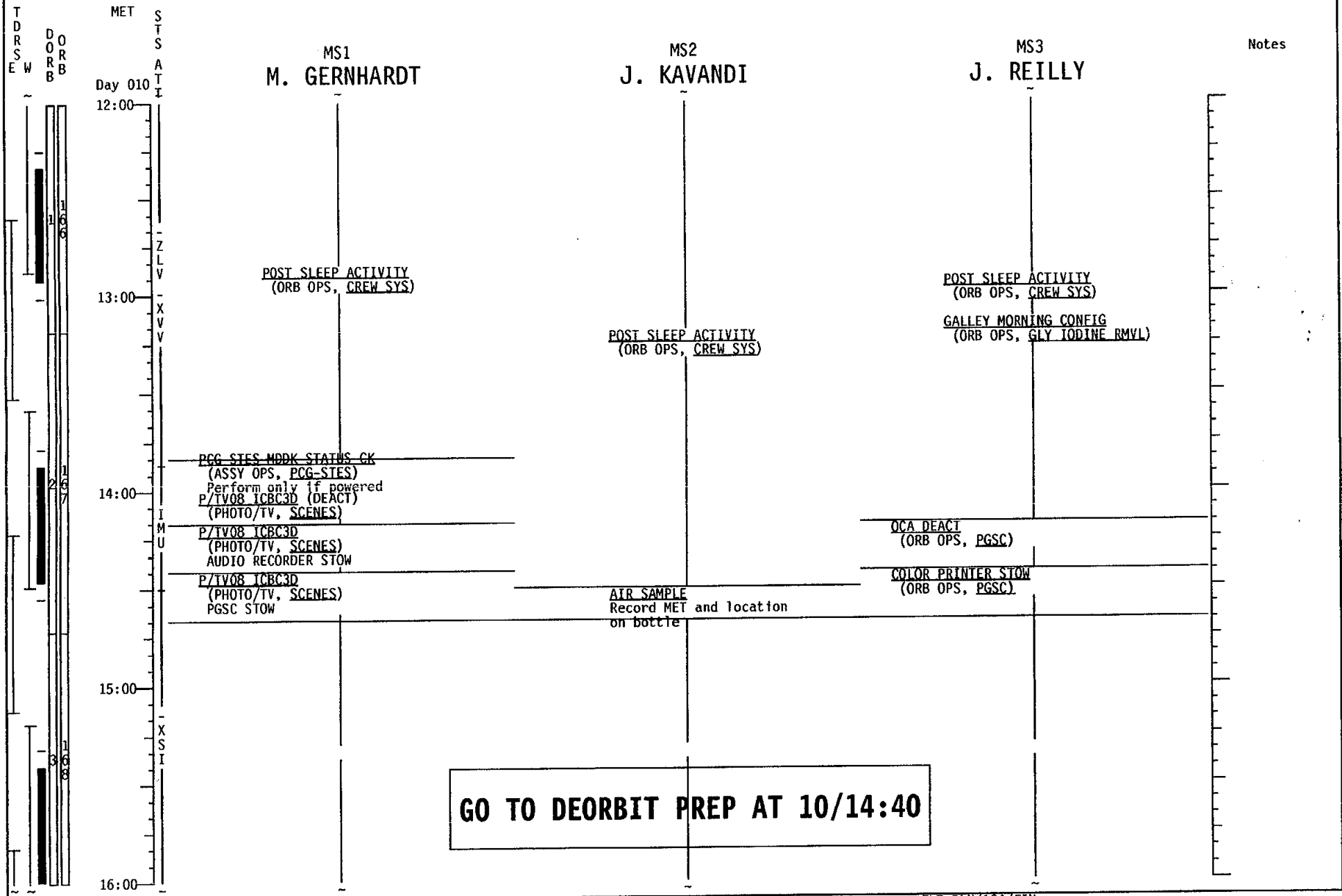
STS-104 (FD 11)



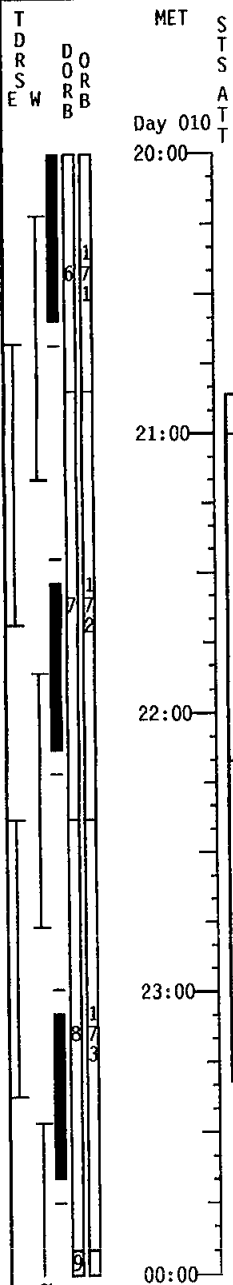
STS-104 (FD 12)



STS-104 (FD 12)



STS-104 (FD 12)



CDR
S. LINDSEY

PLT
C. HOBAUGH

MCC

Notes

A IMU STAR ALIGN

ID: -Y: 50, AVIOR
MET (10/13:52 TO 10/14:46)

-Z: 26, FORMALHAUT
MET (10/14:00 TO 10/14:49)

ANG DIFF: 85.3

DUAL S TRKR 2nd ATTITUDE
ALIGNMENT (SINGLE S TRKR)
-Z: 50 -Y: 26

R	203	R	124	281
P	135	P	145	126
Y	309	Y	302	295

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

ANG: 1 2 3

ΔX () _____ () _____ () _____

ΔY () _____ () _____ () _____

ΔZ () _____ () _____ () _____

EXECUTION TIME: ___/___:___:___ MET

B IMU STAR VERIFICATION

ID: -Y: 13, RIGEL
MET (10/14:18 TO 10/15:09)

-Z: 37, ALPHERATZ
MET (10/14:14 TO 10/15:05)

ANG DIFF: 82.4

DUAL S TRKR 2nd ATTITUDE
ALIGNMENT (SINGLE S TRKR)
-Z: 13 -Y: 37

R	183	R	100	266
P	58	P	71	50
Y	357	Y	350	346

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

ANG: 1 2 3

ΔX () _____ () _____ () _____

ΔY () _____ () _____ () _____

ΔZ () _____ () _____ () _____

If any ΔX , ΔY , OR ΔZ > 0.1 Check MCC

EXECUTION TIME: ___/___:___:___ MET

STS-104 DAP TABLE

I

STS-104
DAP TABLE

**STS-104
DAP TABLE**

<u>DAP</u>	<u>PURPOSE</u>	<u>DAP</u>	<u>PURPOSE</u>
A1	- NOMINAL	B1	- OMS/RCS BURNS
A2	- PTC	B2	- LOSS OF VERN (TAIL ONLY)
A3	- GG	B3	- LOSS OF VERN (ALL)
A4	- PRE/POST DEPLOY	B4	- SSUS DEPLOY
A5	- LOSS OF VERN (ALL)	B5	- COAS/HUD CAL
A6	- LOSS OF VERN (TAIL ONLY)	B6	-
A7	- RNDZ	B7	- RNDZ
A8	- TERMINAL PHASE	B8	- TERMINAL PHASE
A9	- PROX OPS/FLYAROUND	B9	- PROX OPS/FLYAROUND
A10	- DOCKING	B10	- DOCKING
A11	- AUTO REBOOST	B11	- MANUAL REBOOST
A12	- MATED STACK & RMS OPS	B12	- MATED STACK & RMS OPS
A13	- FAILED CAPTURE	B13	- FAILED CAPTURE
A14	-	B14	-
A15	-	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 CONTROL
 = 2 ALT PRCS CONTROL
 = 3 REBOOST
 = 4-9 NOT USED

STS-104 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-104 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	0.2000	0.1000
ATT DB	11(51)	1.00	0.50	10.00	5.00	5.00	5.00	40.00
RATE DB	12(52)	0.10	0.10	0.20	0.20	0.20	0.20	5.00
ROT PLS	13(53)	0.10	0.10	0.10	0.04	0.04	0.10	0.12
COMP	14(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	15(55)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	ALL
Y OPTION	16(56)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	ALL
TRAN PLS	17(57)	0.05	0.05	0.10	0.01	0.01	0.10	0.01
ALT								
RATE DB	18(58)	0.100	0.100	0.070	0.070	0.070	0.200	5.000
JET OPT	19(59)	TAIL	TAIL	TAIL	TAIL	TAIL	ALL	TAIL
# JETS	20(60)	2	2	3	3	3	2	1
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	11.60	11.04	11.04	0.00	0.00
VERN								
ROT RATE	23(63)	0.1300	0.0500	0.1000	0.1000	0.1000	0.2000	0.1000
ATT DB	24(64)	1.000	0.500	5.000	3.000	3.000	1.000	40.000
RATE DB	25(65)	.020	.020	.050	.050	.080	.020	.050
ROT PLS	26(66)	0.050	0.050	0.010	0.002	0.002	0.010	0.001
COMP	27(67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28(68)	0	0	1,2,3,4*	1,3**	5,6***	0	0
PURPOSE		PROX OPS/ FLY AROUND	DOCKING	AUTO REBOOST	MATED STACK & RMS OPS	VERN AND A/L DEPRESS	ALT AND A/L DEPRESS	

BOLD-ITALIC indicates a change from the I-load

*1(2) for VERN(ALT) Pre Airlock Installed, 3(4) for VERN(ALT) Post Airlock Installed

**1 for Pre Airlock Installed, 3 Post Airlock Installed

***5 for VERN, 6 for ALT

STS-104 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		OMS/RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (ALL)	SSUS DEPLOY	COAS/HUD CAL		RNDZ	TERMINAL PHASE

STS-104 DAP B9 THROUGH B15 CONFIGURATIONS

	ITEM #	B9	B10	B11	B12	B13	B14	B15
PRI								
ROT RATE	30(50)	0.1300	0.0500	0.5000	0.1000	0.1000	0.5000	0.1000
ATT DB	31(51)	1.00	0.50	3.00	5.00	40.00	3.00	40.00
RATE DB	32(52)	0.10	0.10	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	0.003
COMP	34(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	35(55)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	TAIL
Y OPTION	36(56)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	TAIL
TRAN PLS	37(57)	0.01	0.01	0.02	0.01	0.01	0.02	0.01
ALT								
RATE DB	38(58)	0.100	0.100	0.200	0.070	0.070	0.200	0.200
JET OPT	39(59)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	TAIL
# JETS	40(60)	2	2	2	3	3	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	11.04	0.00	0.00
VERN								
ROT RATE	43(63)	0.1300	0.0500	0.2000	0.1000	0.1000	0.2000	0.2000
ATT DB	44(64)	1.000	0.500	1.000	3.000	40.000	1.00	1.00
RATE DB	45(65)	.020	.020	.020	.050	.050	.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	2,4*	5,6**	0	8
PURPOSE		PROX OPS/ FLY AROUND	DOCKING		MATED STACK AND RMS OPS	A/L DEPRESS RATE DAMPING		

BOLD-ITALIC indicates a change from I-load

**2 for Pre Airlock Installed, 4 for Post Airlock Installed

***5 for VERN, 6 for ALT

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

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ATTITUDE TIMELINE

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ATTITUDE
TIMELINE

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT	
1 000/01:00:00 MET 165/21:10:35 GMT	STS 104 Flight Launch 14 JUN 2001 165/20:10:35 Z					
2 000/01:12:00 MET 19:48 165/21:22:35 GMT 30:23	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV PLBD Opening & SOPA
3 000/03:15:00 MET 25:28 165/23:25:35 GMT 36:03	INRTL R= 82.00 MNVR P= 54.00 Y= 17.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 27 P 88	LVLH EQUIV R : 180 P : 344 Y : 0	NC-1 Dual OMS Heads Down TIG 0/03:35:42 dv= 55.0 fps
4 000/03:40:00 MET 54:59 165/23:50:35 GMT 166/00:05:34	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00 WIA A/AUTO/VERN	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Crew Sleep
5 000/15:50:00 MET 16:04:46 166/12:00:35 GMT 15:21	INRTL R=269.00 MNVR P=224.00 Y=341.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 160 P 96	LVLH EQUIV R : 177 P : 344 Y : 9	NC-2 ROMS Heads Down TIG 0/16:11:40 dv= 8.0 fps
6 000/16:20:00 MET 166/12:30:35 GMT		A1 LVLH VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 1 P 108	LVLH R=176.48 HOLD P= 18.37 Y= 8.95	Hold after burn
7 000/17:05:00 MET 13:20 166/13:15:35 GMT 23:55	INRTL R=113.00 MNVR P=314.00 Y= 24.00 WIA A/AUTO/VERN	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	SUN R 353 P 46		RMS Dump Survey Init 17:40 Term 17:50 -VBAR @ 17:45
8 000/18:05:00 MET 14:29 166/14:15:35 GMT 25:04	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00 WIA A/AUTO/VERN	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Return to Att
9 000/21:20:00 MET 34:59 166/17:30:35 GMT 45:34	INRTL R=323.00 MNVR P=179.00 Y= 85.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 63 P 26	LVLH EQUIV R : 180 P : 348 Y : 0	NPC +X RCS Heads Down TIG 0/21:42:26 dv= 5.9 fps
10 000/21:45:00 MET 59:59 166/17:55:35 GMT 18:10:34	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00 WIA A/AUTO/VERN	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Return to att between burns
11 001/00:45:00 MET 59:59 166/20:55:35 GMT 21:10:34	INRTL R=274.00 MNVR P=233.00 Y=345.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 157 P 89	LVLH EQUIV R : 180 P : 348 Y : 0	NC-3 +X RCS Heads Down TIG 1/01:05:25 dv= 3.0 fps
12 001/01:10:00 MET 24:59 166/21:20:35 GMT 35:34	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00	A6 AUTO ALT	RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Crew Sleep

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

ATTITUDE
TIMELINE

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
13 001/11:30:00 MET 37:30 167/07:40:35 GMT 48:05	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=270.00 FUTURE LOAD	A6 AUTO ALT RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV Waste Dump
14 001/13:20:00 MET 30:52 167/09:30:35 GMT 41:27	INRTL R=269.00 MNVR P= 52.00 Y=350.00	A7 AUTO ALT RATE 0.2000 DB AT 2.00 DB RT 0.100	SUN R 201 P 114	LVLH EQUIV R : 0 P : 16 Y : 0	NH Dual OMS Heads Up TIG 1/13:42:03 dv= 174.1 fps
15 001/13:45:00 MET 167/09:55:35 GMT		A7 LVLH ALT RATE 0.2000 DB AT 2.00 DB RT 0.100	EARTH R 179 P 118	LVLH R= 0.36 HOLD P= 28.26 Y= 0.39	LVLH Hold Between Burns
16 001/14:20:00 MET 24:14 167/10:30:35 GMT 34:49	INRTL R= 91.00 MNVR P=232.00 Y= 0.00	A7 AUTO ALT RATE 0.2000 DB AT 2.00 DB RT 0.100	SUN R 340 P 75	LVLH EQUIV R : 0 P : 16 Y : 0	NC-4 Dual OMS Heads Up TIG 1/14:29:58 dv= 114.7 fps
17 001/14:40:00 MET 44:51 167/10:50:35 GMT 55:26	TGT=2 BV=1 P= 0.00 Y= 0.00 OM= 0.00 WIA A/AUTO/VERN	B7 AUTO ALT RATE 0.5000 DB AT 2.00 DB RT 0.100	EARTH R 90 P 0	LVLH R= 0.00 P=270.00 Y= 0.00	+XLV -ZVV -Z Tgt Track
18 001/14:45:00 MET 15:08:49 167/10:55:35 GMT 11:19:24	TGT=2 BV=5 P=350.00 Y= 0.00 OM= 0.00	A7 AUTO VERN RATE 0.0070 DB AT 1.000 DB RT 0.020	EARTH R 180 P 10	LVLH R= 0.00 P=280.00 Y= 0.00	-Z Tgt Track
19 001/15:45:00 MET 47:36 167/11:55:35 GMT 58:11	INRTL R= 94.00 MNVR P=241.00 Y= 0.00	A7 AUTO ALT RATE 0.2000 DB AT 2.00 DB RT 0.100	SUN R 339 P 72	LVLH EQUIV R : 3 P : 16 Y : 351	TI Left OMS Heads Up TIG 1/16:01:58 dv= 8.8 fps
20 001/16:10:00 MET 14:25 167/12:20:35 GMT 25:00	TGT=2 BV=5 P=355.00 Y= 0.00 OM= 0.00 WIA A/AUTO/VERN	B7 AUTO ALT RATE 0.5000 DB AT 2.00 DB RT 0.100	EARTH R 180 P 5	LVLH R= 0.00 P=275.00 Y= 0.00	-Z Tgt Track
21 001/16:19:00 MET 25:25 167/12:29:35 GMT 36:00	TGT=2 BV=5 P=350.00 Y= 0.00 OM= 0.00	A7 AUTO VERN RATE 0.0130 DB AT 1.000 DB RT 0.020	EARTH R 180 P 10	LVLH R= 0.00 P=280.00 Y= 0.00	-Z Tgt Track
22 001/16:26:00 MET 38:49 167/12:36:35 GMT 49:24	TGT=2 BV=5 P=340.00 Y= 0.00 OM= 0.00	A7 AUTO VERN RATE 0.0130 DB AT 1.000 DB RT 0.020	EARTH R 180 P 20	LVLH R= 0.00 P=290.00 Y= 0.00	-Z Tgt Track
23 001/16:39:00 MET 52:20 167/12:49:35 GMT 13:02:55	TGT=2 BV=5 P=320.00 Y= 0.00 OM= 0.00	A7 AUTO VERN RATE 0.0250 DB AT 1.000 DB RT 0.020	EARTH R 180 P 40	LVLH R= 0.00 P=310.00 Y= 0.00	-Z Tgt Track
24 001/16:53:00 MET 17:19:31 167/13:03:35 GMT 30:06	TGT=2 BV=5 P=285.00 Y= 0.00 OM= 0.00	A7 AUTO VERN RATE 0.0220 DB AT 1.000 DB RT 0.020	EARTH R 180 P 75	LVLH R= 0.00 P=345.00 Y= 0.00	-Z Tgt Track

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
25 001/17:20:00 MET 22:20 167/13:30:35 GMT 32:55	TGT=2 BV=5 P=271.00 Y= 0.00 OM= 0.00	A7 RATE 0.1000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 89	LVLH R= 0.00 P=359.00 Y= 0.00	-Z Tgt Track 1000ft Breaking Gate LOW Z
26 001/17:31:42 MET 52 167/13:42:17 GMT 27	TGT=2 BV=5 P=270.00 Y= 0.00 OM= 0.00	A8 RATE 0.1000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 180 P 90	LVLH R= 0.00 P= 0.00 Y= 0.00	+RBar Arrival 600ft
27 001/17:35:00 MET 167/13:45:35 GMT	LVLH FREE ROTATION ROTR ABOUT +Y AXIS RATE=0.130	A9 RATE 0.1300 LVLH DB AT 1.000 VERN DB RT 0.020		LVLH R= 0.00 P= 0.00 Y= 0.00	TORVA Transition from +Rbar to +Vbar
28 001/17:46:33 MET 167/13:57:08 GMT		B9 RATE 0.1300 LVLH DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 180	LVLH R= 0.00 HOLD P= 90.09 Y= 0.00	+Vbar Arrival 250ft Braking Gate
29 001/17:55:00 MET 167/14:05:35 GMT					Establish Approach Push to Dock
30 001/18:20:00 MET 167/14:30:35 GMT					Free Drift For Docking DOCKING / DO2 1/18:20:00
31 001/18:30:00 MET 34:09 167/14:40:35 GMT 44:44	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 RATE 0.1000 AUTO DB AT 3.000 VERN DB RT 0.080	EARTH R 0 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	BIAS -XLV +ZVV LVLH TEA Docking Day
32 003/14:35:00 MET 59:40 169/10:45:35 GMT 11:10:15	TGT=2 BV=5 P=303.00 Y= 0.00 OM= 0.00	A12 RATE 0.1000 AUTO DB AT 3.000 VERN DB RT 0.080	EARTH R 180 P 57	LVLH R= 0.00 P=327.00 Y= 0.00	BIAS +ZLV +XVV Reboost 1 Config 4
33 003/16:10:00 MET 34:40 169/12:20:35 GMT 45:15	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 RATE 0.1000 AUTO DB AT 3.000 VERN DB RT 0.080	EARTH R 360 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	BIAS -XLV +ZVV Crew Sleep
34 004/16:10:00 MET 170/12:20:35 GMT					Free Drift For DTO 261
35 004/16:40:00 MET 55:00 170/12:50:35 GMT 13:05:35	TGT=2 BV=5 P=155.00 Y= 0.00 OM=270.00	A12 RATE 0.1000 AUTO DB AT 3.000 VERN DB RT 0.080	EARTH R 0 P 155	LVLH R= 90.00 P= 90.00 Y= 25.00	BIAS -XLV +YVV Simo Dump
36 004/18:30:00 MET 45:00 170/14:40:35 GMT 55:35	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 RATE 0.1000 AUTO DB AT 3.000 VERN DB RT 0.080	EARTH R 0 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	BIAS -XLV +ZVV Crew Sleep

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

5-4

FLT PLN/104/FIN

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
37 005/23:25:00 MET 55:00 171/19:35:35 GMT 20:05:35	TGT=2 BV=5 P=174.00 Y= 0.00 OM=180.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 0 P 174	LVLH R=180.00 P= 84.00 Y= 0.00	BIAS -XLV -ZVV Reboost 2 Config 3
38 006/00:45:00 MET 01:15:00 171/20:55:35 GMT 21:25:35	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 0 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	BIAS -XLV +ZVV Crew Sleep
39 006/22:25:00 MET 49:40 172/18:35:35 GMT 19:00:15	TGT=2 BV=5 P=303.00 Y= 0.00 OM= 0.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 180 P 57	LVLH R= 0.00 P=327.00 Y= 0.00	BIAS +ZLV +XVV Reboost 3 Config 4
40 007/00:00:00 MET 26:15 172/20:10:35 GMT 36:50	TGT=2 BV=5 P=155.00 Y= 0.00 OM=270.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 360 P 155	LVLH R= 90.00 P= 90.00 Y= 25.00	BIAS -XLV +YVV Simo Dump SOPA
41 007/01:50:00 MET 02:05:00 172/22:00:35 GMT 15:35	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 0 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	BIAS -XLV +ZVV Crew Sleep
42 008/14:15:00 MET 39:40 174/10:25:35 GMT 50:15	TGT=2 BV=5 P=303.00 Y= 0.00 OM= 0.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 180 P 57	LVLH R= 0.00 P=327.00 Y= 0.00	BIAS +ZLV +XVV Reboost 4 Config 4
43 008/15:20:00 MET 44:40 174/11:30:35 GMT 55:15	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 360 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	BIAS -XLV +ZVV
44 008/19:05:00 MET 174/15:15:35 GMT	TGT=2 BV=5 P=155.00 Y= 0.00 OM= 0.00	A12 AUTO VERN RATE 0.1000 DB AT 3.000 DB RT 0.080	EARTH R 360 P 155	LVLH R= 0.00 P=115.00 Y= 0.00	UNDOCKING / DO4 BIAS -XLV +ZVV LVLH TEA 8/19:05:00
45 008/19:30:31 MET 174/15:41:06 GMT	LVLH FREE ROTATION ROTR ABOUT +Y AXIS RATE=0.130	A9 LVLH VERN RATE 0.1300 DB AT 1.000 DB RT 0.020		LVLH R= 0.00 P=115.00 Y= 0.00	Flyaround Twice Orb Rate 1+ Rev
46 008/20:25:00 MET 174/16:35:35 GMT		A9 LVLH VERN RATE 0.1300 DB AT 1.000 DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 HOLD P=179.97 Y= 0.00	+X Sep Burn 3.0 fps 2nd -RBAR xing
47 008/20:30:00 MET 45:00 174/16:40:35 GMT 55:35	TGT=2 BV=5 P=270.00 Y= 0.00 OM=230.00 WIA A/AUTO/VERN	A6 AUTO ALT RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 180 P 90	LVLH R=180.00 P=180.00 Y=310.00	BIAS +ZLV +YVV Simo Dump Region C
48 008/22:50:00 MET 23:05:00 174/19:00:35 GMT 15:35	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00 WIA A/AUTO/VERN	A6 AUTO ALT RATE 0.2000 DB AT 5.00 DB RT 0.070	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Crew Sleep

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
49 009/15:40:00 MET 175/11:50:35 GMT		A1 RATE 0.2000 INRT DB AT 1.000 VERN DB RT 0.020	SUN R 156 P 146	INRTL R=306.43 HOLD P= 66.85 Y=326.42	FCS Checkout & RCS HOT FIRE
50 009/16:00:00 MET 06:30 175/12:10:35 GMT 17:05	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
51 009/17:15:00 MET 39 175/13:25:35 GMT 26:14	INRTL R=300.00 MNVR P= 51.00 Y=337.00 TIG 17:20:17 *10s burn	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 167 P 132	LVLH EQUIV R : 0 P : 196 Y : 354	SIMPLEX LOMS Alice Springs AOS 17:19 LOS 17:22
52 009/17:25:00 MET 27:53 175/13:35:35 GMT 38:28	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.200	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
53 009/19:16:00 MET 26:35 175/15:26:35 GMT 37:10	INRTL R=330.00 MNVR P=348.00 Y=295.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 163 P 144	ALTAIR (22) AOS 19:24 LOS 20:08	HUD CAL Sunset 19:27
54 009/19:27:00 MET 175/15:37:35 GMT	Do IMU Align in HUD Attitude			Y:20 AOS 19:04 LOS 19:53 Z:100 AOS 19:27 LOS 20:12	IMU Align MUST COMPLETE BEFORE HUD CAL
55 009/19:43:00 MET 47:54 175/15:53:35 GMT 58:29	INRTL R=359.00 MNVR P= 36.00 Y=344.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 111 P 121	FOMALHAUT (26) AOS 19:35 LOS 20:24	HUD VERIF Sunrise 20:02
56 009/20:05:00 MET 13:17 175/16:15:35 GMT 23:52	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 0.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 360 P 90	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Crew Sleep
57 010/13:52:00 MET 14:06:52 176/10:02:35 GMT 17:27	INRTL R=203.00 MNVR P=135.00 Y=309.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 208 P 150	Pair AOS: 14:00 LOS: 14:46	IMU ALIGN -Y: 50 -Z: 26
58 010/14:12:00 MET 18:51 176/10:22:35 GMT 29:26	INRTL R=183.00 MNVR P= 58.00 Y=357.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 277 P 114	Pair AOS: 14:19 LOS: 15:05	IMU VERIF -Y: 13 -Z: 37
59 010/14:30:00 MET 35:52 176/10:40:35 GMT 46:27	TGT=4 RA= 93.522 BV=5 DEC= 23.406N P=184.00 Y= 0.00 OM= 90.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 180 P 176	INRTL R=232.92 P= 87.94 Y=296.73	-XSI RAD COLD SOAK
60 010/16:11:00 MET 21:26 176/12:21:35 GMT 32:01	INRTL R=356.00 MNVR P= 87.00 Y=323.00	A5 RATE 0.2000 AUTO DB AT 5.00 ALT DB RT 0.070	SUN R 90 P 151		Comm Attitude OPS 3 Transition

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
61						
010/18:05:00 MET	INRTL R= 51.00	TRN	RATE 0.5000	SUN	LVLH R= 0	D/O BURN
10:19	MNVR P=244.00	AUTO	DB AT 3.50	R 28	EQUIV P= 196	Dual OMS
	Y= 29.00	PRI	DB RT 0.20	P 39	Y= 0	Heads Down
176/14:15:35 GMT						Retrograde
20:54						
	TIG: 10/18:36:00					

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

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FLIGHT PLAN NOTES

I

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV104/Atlantis
 Launch Window: 5 min
 Inclination: 51.6°
 Insertion Altitude: 105 nm
 ISS RNDZ Altitude: 205 nm
 Duration: 11 + 1 + 2 days

B. SHUTTLE AND STATION CREW

SHUTTLE CREW		STATION CREW	
CDR/RMS	- Mike Lindsey	ISS CDR	- Yuri Usachev
PLT/IV	- Charlie Hobaugh	FE2	- Jim Voss
MS1/EV1	- Mike Gernhardt	FE1	- Susan Helms
MS2/RMS	- Janet Kavandi		
MS3/EV2	- Jim Reilly		

C. MAJOR EVENTS

<u>EVENT</u>	<u>FD</u>	<u>MET</u>	<u>HOU DATE</u>	<u>CDT</u>	<u>GMT</u>	<u>DV (FT/S)</u>	<u>HP/HA</u>
LAUNCH	01	00/00:00	06/14/01	15:10	165/20:10	—	—
OMS 2	01	00/00:39	06/14/01	15:49	165/20:49	96.4	85/167
NC1	01	00/03:35	06/14/01	18:45	165/23:45	55.0	115/125
NC2	02	00/16:11	06/15/01	07:21	166/12:21	8.0	114/128
NPC	02	00/21:43	06/15/01	12:53	166/17:53	5.9	114/127
NC3	02	01/01:05	06/15/01	16:15	166/21:15	3.0	113/129
NH	03	01/13:42	06/16/01	04:52	167/09:52	174.1	127/211
NC4	03	01/14:30	06/16/01	05:40	167/10:40	114.7	191/212
TI	03	01/16:02	06/16/01	07:12	167/12:12	8.8	195/213
DOCKING	03	01/18:20	06/16/01	09:30	167/14:30	—	197/213
INGRESS 1	03	01/19:55	06/16/01	11:05	167/16:05	—	—
EGRESS 1	03	02/00:30	06/16/01	15:40	167/20:40	—	—
EVA1	04	02/17:05	06/17/01	08:15	168/13:15	—	—
INGRESS 2	04	03/01:45	06/17/01	16:45	168/21:45	—	—
EGRESS 2	06	05/00:40	06/19/01	15:50	170/20:50	—	—
EVA 2	07	05/17:10	06/20/01	08:20	171/13:20	—	—
INGRESS 3	07	06/00:40	06/20/01	15:50	171/20:50	—	—
EVA 3	09	07/18:40	06/22/01	09:50	173/14:50	—	—
EGRESS 3	10	08/16:45	06/23/01	07:55	174/12:55	—	—
UNDOCKING	10	08/19:05	06/23/01	10:15	174/15:15	—	197/210
FINAL SEP	10	08/20:25	06/23/01	11:35	174/16:35	3.0	194/208
DEORBIT	12	10/18:36	06/25/01	09:46	176/14:46	—	—
LANDING	12	10/19:40	06/25/01	10:50	176/15:50	—	—

D. LANDING OPPORTUNITIES

		<u>Landing Orbit No.</u>	<u>Site</u>	<u>Local Time</u>	<u>MET</u>
Nominal	Primary	171	KSC	10:50	10/19:40
	1 Rev Late	172	KSC	12:26	10/21:16
	Weather Alt	173	EDW	13:56	10/22:46
1 Day Late	Primary	186	KSC	09:48	11/18:38
	1 Rev Late	187	KSC	11:24	11/20:14
	Weather Alt	188	EDW	12:55	11/21:45
2 Day Late	Primary	202	KSC	10:22	12/19:12
	1 Rev Late	203	KSC	11:58	12/20:48
	Weather Alt	204	EDW	13:29	12/22:19

E. COMMUNICATIONS

The Summary Timeline contains several databands for ground site and TDRS events. The TDRS band reflects the three TDRS satellites that will be used for orbiter coverage, (East, West, and Z) and their longitudinal position. The data shown contains 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 are a summation of AOS/LOS times of all the ground sites on each respective pass.

Shuttle

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

ISS

TDRS Support: East (41°, 47°), West (171°, 174°), and Z (-275°)
 Ground Sites: MIL, WLP, and DFR
 Contingency RTS: DJS, PPK, BRN, SPB, KLP, ULD, SHK, USK

F. PAYLOADS

1. LAUNCH PACKAGE (LP) 7A

The Flight 7A LP consists of the Airlock, which is composed of Crew Lock and the Equipment Lock, and four O2/N2 Tank Orbital Replacement Units (ORUs) (ONTOs) located on a Spacelab Logistics Double Pallet (SLDP) train. Also part of the LP located in the payload bay is a Station Power Distribution Unit (SPDU), the IMAX Cargo Bay Camera 3D (ICBC3D), and two Assembly Power Converter Units (APCUs).

The External Airlock stowage bags and middeck lockers will contain both Intravehicular Activity (IVA) and Extravehicular Activity (EVA) hardware that will be used for assembly, activation, and checkout, and includes items such as EVA tools and atmosphere sampling equipment. Middeck stowage will also include IMAX3D film and support hardware, and ICBC3D support hardware.

The APCUs convert orbiter voltage to station-quality voltage and route it to the SPDU, which powers the Airlock Launch-to-Activation (LTA) heaters. The SPDU is mounted on an Adaptive Payload Carrier (APC) in the payload bay. The ICBC3D is mounted on a GAS beam sidewall carrier.

2. 7A RETURN COMPLEMENT (RC)

Upon return of the nominal mission, the RC will consist mainly of flight support equipment stored in the middeck and payload bay. The RC in the payload bay consists of:

- a. SLDP train
- b. Four ONTO adapters
- c. SPDU with APC
- d. Two APCUs
- e. ICBC3D with GAS beam

The GAS beam includes attach hardware, latches, and mounting plates used to mount the ICBC3D to the payload bay.

The RC in the middeck consists of crew return equipment, Environmental Control Life Support System (ECLSS) equipment, equipment stowed in the middeck, the IMAX3D camera and support hardware, the ICBC3D support hardware, and external airlock shuttle stowage bags.

G. PAYLOAD OF OPPORTUNITY

1. SHUTTLE IONOSPHERIC MODIFICATION WITH PULSED LOCALIZED EXHAUST (SIMPLEX)

The SIMPLEX experiment utilizes orbiter OMS thruster firings to create ionospheric disturbances for observation by ground radar sites. One radar site (Arecibo) will also use a low-level laser to observe thruster firings. The objective of SIMPLEX is to determine the source of Very High Frequency (VHF) radar echoes.

H. ON-ORBIT DETAILED SUPPLEMENTAL OBJECTIVES (DSOs)

1. 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 spaceflight.

Spaceflight 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 the 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-Bar virus. Three additional viruses will be focused upon with an increase in subject allotment.

2. SPACE-WAKE ACTIGRAPHY AND LIGHT EXPOSURE DURING SPACEFLIGHT (DSO 634)

This experiment will use state-of-the-art ambulatory technology (Actilight Watches) to monitor sleep-wake activity and light exposure patterns obtained in flight. These data should help us better understand the effects of spaceflight on sleep, as well as aid in the development of effective countermeasures for both short and long duration spaceflight.

The success and effectiveness of manned spaceflight depends on the ability of crewmembers to maintain a high level of cognitive performance and vigilance while operating and monitoring sophisticated instrumentation. Astronauts, however, commonly experience sleep disruption, together with misalignment of circadian phase during spaceflight. Both of these conditions are associated with insomnia and impairment of alertness and cognitive performance.

Each crewmember is allotted an Actilight Watch and personal sleep logbook for monitoring purposes. Subjects will don the Actilight watch as soon as possible upon entering orbit, and will wear it continuously throughout the mission on their nondominant wrist. 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; subjects will wear the Actilight Watch continuously and complete the sleep log for 1 week at L-90, 60, and 30 days, from L-11 to L-0 days, and from R+0 to R+7 days.

I. ON-ORBIT DETAILED TEST OBJECTIVES (DTOs)

1. ISS ON-ORBIT LOADS VALIDATION (DTO 261)

Verification of approximately 20 load-significant modal frequencies, damping rates, and deflections will be accomplished by excitation, measurement, and analysis of the structural dynamics of the ISS via various loading events (attitude control firings, EVA, reboost, docking, etc.). Successful testing mode matching, and model correlation provides for reduced uncertainty of critical loads seen during mated configurations; precise tailoring of operations; accurate knowledge of fatigue life consumption; and growth control of potential model errors and the consequent inability to match modes. Instrumentation required includes IWIS, OCA network interface, Payload Bay CTVCs, and Video Recorders for CTVCs.

2. ON-ORBIT BICYCLE ERGOMETER LOADS MEASUREMENT (DTO 262)

Uncertainty in combined shuttle/ISS natural frequencies requires some conservatism in the application of the measured bicycle ergometer loads. The purpose of this DTO is to reduce this conservatism, and thus reduce predicted structural loads from crew exercise on the ergometer by measuring joined shuttle/ISS natural frequencies by using the bicycle ergometer as the natural frequency excitation source.

This test should only be performed according to the flight rules that allow/inhibit use of the bicycle ergometer. Shuttle and ISS reaction jet attitude control systems should be deactivated and other substantial sources of structural dynamic excitation should reasonably be avoided. A video camera view of the bicycle ergometer speedometer is required during crewmember exercise. A GMT time tag on the video frame is required to correlate the ergometer speed with the structural response data measured by ISS. Time tag accuracy within 30 seconds is adequate. If a PGSC is used to record ergometer speed, no photo/tv requirements exist; however, GMT time tagging of the PGSC recorded data within 30 seconds accuracy is requested.

3. INTERNATIONAL SPACE STATION (ISS) WASTE COLLECTION SUBSYSTEM (WCS) REFURBISHMENT (DTO 692)

The Extended Duration Orbiter (EDO) WCS was originally designed for orbiter EDO flights. With the cancellation of the EDO WCS program for shuttle, the EDO WCS has been provided to ISS. EDO WCS experienced several anomalies during disassembly when flown on the orbiter. Corrections to these anomalies need to be made prior to permanent installation on the ISS. A shuttle mission provides the

ideal conditions for evaluation of the design changes prior to permanent installation on the ISS.

4. 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.

FLIGHT PLAN WALKTHROUGH (WITH RATIONALE)

I

FLIGHT PLAN WALKTHROUGH (WITH RATIONALE)

FLIGHT PLAN
WALKTHROUGH

Flight Day 1

- Standard FD01 activities, including NC1 burn
- Setups completed for PGSCs (OCA, network, color printer)
- ONTO Heater Mats activated for prevention of condensation on the inside of A/L (PL Bus activation during Post Insertion)
- APCU 1 is activated for the A/L LTA Heaters, and subsequently deactivated 2 hr later for overnight. Due to problems with automatic cycling of the heaters on a previous flight, they will be cycled manually until FD2, at which time a determination will be made if they can be left on automatic or manual cycling until airlock install
- ICBC activation for heaters prior to PLBD open + 7 hr
- Microwis setup and activation ASAP on FD01
- DSO 634, Sleep–Wake Actigraphy: unstow and donning of actilight watch
- If time permits, get ahead tasks for a busy FD02, include DAP Loading and Ergometer setup
- Crew goes to sleep 5 hr after launch to support early docking on FD03 and to support the nominal EOM landing time

Flight Day 2

- Standard FD02 activities
- REBA battery recharge and Helmet Light and PGT are initiated early in the day.
- Ergometer setup
- APCU 1 is activated in post sleep and deactivated 5 hr later. At this point it will be determined if this manual action needs to continue or not at 5 hr intervals
- DSO 493, Monitoring Latent Virus Reactivation and Shedding, and DSO 634 are performed each morning immediately after crew wakeup, on FD02 thru FD12
- Checkouts of the three EMUs on orbiter and other EVA setup and config tasks in support of the EVA on FD04. This includes the Wireless Video System (WVS)
- Other FD02 checkouts include RMS (using FRED) and OSVS
- First waste dump performed following RMS C/O. Associated maneuvers and a Waste Nozzle Survey are also performed
- Compound–Specific Analyzer – Combustion Products (CSA–CP) is checked out and calibrated
- Initial setup of the CWC equipment. Two CWC bags will be filled by FD03 before Docking so they can be transferred on FD03
- Perform RNDZ prep activities including , rendezvous tools and PGSC setup, Centerline Camera Install and ODS Ring Extension. RNDZ burns NC–2, NPC, and NC–3 are scheduled
- Various Photo/TV setups are completed to prepare for Rendezvous and EVA. This includes Still camera for EVA and Sequential Still Video (P/TV06) is set up
- ICBC PGSC and Audio Recorder setup
- OIU activated
- The EMUs are removed from the Airlock to facilitate transfers after docking.
- The crew will sleep shift one hour earlier and will sleep 7.5 hr to support docking the following morning

Flight Day 3

The primary highlights for the day are orbiter rendezvous and dock with station, hatch opening, airlock install dry run, critical transfers, and prep for EVA–1 including 10.2 orbiter cabin depress. The day starts with a future loaded maneuver to the waste/supply dump attitude. During the rendezvous timeframe, MS2 is preparing the transfer items for FD3 transfer post docking. MS1 and MS3 are setting up tools for EVA–1

- Orbiter docks to station PMA–2 on the US Lab forward port. Docking is not required to occur over a Russian Ground Site. There are no lighting constraints
- After docking, a leak check will be performed and the ODS will be prepared for ingress
- The orbiter maneuvers the stack into the nominal docked LVLH attitude. Once in attitude, attitude control will be handed over to station. Station will maintain attitude control during the entire

docked timeframe using the Lab CMGs. However, orbiter will perform any maneuvers that may be required

- The PGSC Network is reconfigured for nominal ops
- An R&R on the AVUs is done in the station
- After docking, the EVA crewmembers have additional time for EVA 1 tool setup. The entire station and orbiter crews participate in a 1-hr EVA procedure review. EMU 3 is transferred to station and station EMU 2 is transferred to orbiter. Two SAFERS are transferred from the station to orbiter
- Airlock Install Dry Run is performed by CDR/R2, MS2/R1, Voss (FE-1), and Helms (FE-2). This is a dry run of SSRMS trajectory to be performed during the airlock install on FD4. MS2 powers up the RMS, calibrates OSVS, and runs an airlock calibration script
- Middeck transfer of critical items such as:
 - One EMU, SODF, SVS HDs, and IMAX film from the orbiter to station.
 - One EMU and two SAFERS from station to orbiter
- After about 4 hr of hatch open time, the hatch between the vehicle is again closed. EV and IV crew performs prebreathe on the mask. Orbiter depress to 10.2 psi in prep for EVA1 on FD04
- MS2 (Kavandi) tallies the FD3 transfers, confers with station CDR (Usachev), and calls the MCC with these findings

Flight Day 4

After post sleep activities MS2/R1 will power up the OSVS and the RMS while EVA crewmembers begin EVA prep and CDR initiates CWC fill #3

The highlight for the day is EVA-1 to unberth the airlock from the orbiter cargo bay and install it on station Node 1 starboard ACBM

EVA crewmembers have almost an hour and a half for the EMU purge and prebreathe and airlock depress. MS2/R1 will install the PAD

Concerns have arisen from STS-100/6A that 2 screws and a connector collar came loose when the ECS Antenna Connector cable was disconnected. The concerns are that this debris may lodge in the sealing surface of the CBM, latches or bolts and thus obstructing CBM ops or the seal itself. The debris may also lodge between the CBM cover and the hatch, thus jamming the hatch latch mechanism. For this reason, the starboard hatch latch will be cycled to the test position early on FD4. If the latch doesn't function properly (complete travel), the first EVA-1 task will be to remove 8 pip pins on the latch. If it is successful, EVA-1 is performed nominally; however, the EV crew will confirm no debris in the Node 1 starboard sealing surface before the airlock is moved via the SSRMS from the pre-install position

Once airlock depress complete, EVA crewmembers egress and begin EVA setup

During the Joint Airlock installation the CDR will deactivate the APCU and handle the ICBC3D operations

The EV crew prepares the airlock for unberthing from the payload bay by removing Passive Common Berthing Mechanism (PCBM) thermal and contamination covers and disconnecting the launch-to-activation (LTA) heater cable

The EV crew is also preparing the worksite for the ONTO installation which will occur during EVA-2 on FD7, by installing the towel bar and some guideposts

The SRMS provides for EV transport to the airlock ONTO worksite and later for additional camera views during the airlock unberthing and installation

The SSRMS is used to unberth, transport and install the airlock onto the Node 1 starboard Active Common Berthing Mechanism (ACBM) interface

During airlock unberthing, the EV crew ingresses the orbiter airlock and waits on SCU power

After receiving GO to egress, the EV crew will egress the airlock and travel over to the starboard CBM to inspect for debris prior to the SSRMS maneuver from pre-install position

When the SSRMS is in the RTL position, the station crew commands the CBMs for acquiring bolts to mate the airlock to Node 1. Once the bolts are acquired, the EV crew will translate on the airlock and connect an airlock-to-Node 1 jumper cable which will provide for airlock thermal protection

The SRMS and SSRMS are then stowed and powered down

When finished cleaning up in the payload bay, EVA crewmembers ingress orbiter airlock and begin repress while station crew pressurizes the vestibule between the station and the airlock.

Meanwhile station airlock preingress setup is performed

Post-EVA is performed without the water recharge, unless time permits; otherwise this is done on FD05

After POST EVA is complete, and the airlock is cleared, CDR and MS2 open the hatch to the station

The REBA, EMU batteries, Helmet Light and PGT begin recharging

After the vestibule is pressurized the station crew performs vestibule outfitting part 1. This includes removing CBM center disk and PCBM thermal blanket; ingressing the airlock to install internal airlock heater lines for redundancy; and installing the 1553B bus, LB-A and PWR-AL RPDA 1A4A lines to operate the airlock internal heaters

The vestibule is checked for leaks overnight

Flight Day 5

The highlights for FD5 include a station reboost, vestibule outfitting part 2, activation ingress and checkout of the station airlock, O2 and N2 Node 1 Airlock outfitting, O2 and N2 system purges, replacing of valves, and transfers

In Post Sleep, CDR, PLT, and MS2 perform DSO 493 and DSO 634

The workday begins with termination of the REBA and Helmet Light and PGT charging; the overnight leak check is completed; MS1 sets up IMAX cameras for FD5 filming; the CDR performs a station reboost and vestibule outfitting part 2 is begun by MS2 and station CDR. FE-1 opens the Node 1 starboard hatch

Vestibule Outfit consists of removing four CBM CPAs, installing ACBM to PCBM ground straps, installing all remaining Node 1 to airlock vestibule utility connections (except the O2/N2 lines), and ventilation (IMV) duct and water lines for MTL and LTL cooling loops

MS1 is schedule to perform his exercise with DTO 262 procedures, while PLT is performing the related Photo/TV ops. CDR inits CWC fill #5

After lunch, a PAO event is scheduled for the orbiter crew in the Destiny

Station O2 and N2 system outfitting will be done by both orbiter and station crewmembers. This involves installing O2 and N2 supply and recharge lines. This is followed by replacing the Node STBD NPRVs with IMVs (forward and aft)

CWC fill #6 will also be done this afternoon

The station crew will complete the activation and checkout of the airlock systems, which includes lighting of the airlock, MDM activation, activating the ECLS systems, setting up the laptops and performing the audio checkout, necessary to providing C&W to the crew while in the airlock

When this is complete, the O2 and N2 systems will be purged and pressurized.

The orbiter crew will replace the Node hatch PPRV with MPEV, and the station crew will perform a Node 1 MPEV IMV leak check

The EV crew is filling 5 EMU Payload Water Reservoirs (PWRs) to be used for EVAs from the station airlock. This includes retrieving the bags from station, filling them, and transferring them back to station

If the EMU H2O Recharge wasn't done last night, it will be done today

Also specifically scheduled for today is the CSA-CP Resupply

Flight Day 6

There are several important tasks on the plate for FD06. These include, DTO 261, ISS EVA Prep Dry Run, relocation of the IV hatch, EVA preparatory activities for EVA-2, EVA hardware checkout for station airlock EVA, and hatch closing and 10.2 orbiter cabin depress

The day for the orbiter crew beings with filter cleaning, CWC fill, EVA tool setup Middeck Prep, and SAFER checkout for EVA-2

The station crew 1 replaces the PPRV with orbiter PEV valves and performs a PEV leak check

- The primary task for the morning is the relocation of the IV Hatch (MS2, FE-1, FE-2) from its launch position (airlock to Node 1 interface) to the position between the Equipment Lock and the

Crew Lock. The hatch was launched in this position to provide weight and cost savings by not having to fly another hatch. A leak check is performed overnight

- Also in the morning, the CDR and PLT are involved in DTO 261, an ISS On Orbit Loads Validation test in which PRCS jets will be fired. The orbiter assumes attitude control for this DTO. To take advantage of the orbiter being in control, a simo waste supply dump is performed after the DTO is complete. PLT is working the cameras during the DTO. No exercise on orbiter or station is allowed during the PRCS firings
- ISS EVA Prep Dry Run is being performed by the EV crew. This is to test all systems including the CEVIS in preparation for the Exercise/Prebreathe Protocol to be performed prior to the EVA out of the station airlock on FD09
- Later, after IV hatch relocation, EMU 3 is transferred from the Node Temp stowage to the station Airlock for EVA hardware checkout
- After lunch, the primary activity is the checkout of EVA hardware in the station airlock. This activity must be continuous with the exception of the first two parts, SCU install and PSA Act
- CDR, PLT, and station CDR have a PAO Event
- The station CDR installs the FDS-Duct and PCP Duct
- The entire station and orbiter crew get together to review the EVA procedures for tomorrow's EVA
- The EV and IV crew don the masks and begin prebreathe and checkout the PGT
- CDR transfers two CWCs filled today and closes the hatches between orbiter and station
- The orbiter is depressed to 10.2 PSI to end the day
- The station crew performs a checkout of the airlock video system

Flight Day 7

- Prime undertaking this day is EVA2, involving installation of ONTOs 1 and 4
- SRMS is used to assist the EVA and provide camera views, while the SSRMS is used to transfer the ONTOs from the orbiter payload bay to the install position
 - EVA2 begins with SSRMS grapple of ONTO1. EV1 releases ONTO1 (O2 tank 0001, port aft) from SLDP while EV2 removes Joint A/L MLI at ONTO1 installation location
 - EV1 and EV2 receive ONTO1 from SSRMS (handoff) and soft dock it to Joint A/L. EV1 then performs the first part of ONTO1 hard dock
 - Next, EV1 opens the ONTO access panel door and releases the O2 line QD from the dummy QD while EV2 preps the MLI for ONTO4 installation
 - EV1 vents the O2 line for 5 sec, and then connects the line to the Joint Airlock QD. On IV GO, EV1 opens ONTO isolation valve for 5 sec, and then closes. On EV1 GO, IV verifies the pressure integrity of the ONTO/A/L interface in O2 ACT
 - During this pressure check, EV1 completes ONTO1 hard dock, and translates back to the PLB in prep for ONTO4 installation
 - On IV GO, EV2 re-opens ONTO1 isolation valve and closes/latches tank door
 - If the guidepost for ONTO4 was not previously installed on EVA1, it is to be installed at this time, prior to ONTO4 install. Once GP4 is installed, the same procedures for ONTO1 are repeated for ONTO4 (N2 tank 0004, stbd aft)
 - Release Joint A/L EV hatch thermal covers consisting of 6 pip pins, and install GP2 and GP3 if not previously performed on EVA1
 - EV crew installs Joint A/L trunnion covers (3) and the FRGF cover
- During ONTO installation ICBC3D ops are carried out by CDR. IMAX-3D external filming is done by the station crew
- After EVA cleanup activities the orbiter is repressed to 14.7 psi and the orbiter crew ingresses the station, leaving the hatch open until undock. The OSVS, SRMS, and SSRMS are stowed and powered down
- A placeholder for a Config 3 reboost is held here. The orbiter assumes attitude control
- Prior to hatch closing, the CWCs filled during the day are transferred
- While the orbiter crew is performing post-EVA duties, the station crew is installing the Oxygen Recharge Compressor Assembly (ORCA)

Flight Day 8

- Today is an overall transfer day, final EVA preparatory activities for the EVA 3, Crew Media Conference, a station reboost, and some off-duty for both crews
- In the morning, EV1 and EV2 transfer the 2 prime EMUs to station and return a SAFER bag (including 2 SAFERS and a spare IVA battery) to the node
- CDR deploys the Radiation Monitor
- Various EVA equipment is transferred from the middeck to the station airlock and checked-out. EVA tools are setup, the Equipment Lock is prepped, and an EMU to A/L interface check is performed
- IV fills the remaining PWR and installs METOX which must be done prior to the Equipment Lock Prep
- Both crews participate in EVA3 Procedure Review
- Following lunch, the crew take joint photo, and have a crew media conference
- The remainder of the day is used for Off Duty in combination with regular activities, such as Exercise
- A Config 4 Reboost placeholder is kept late in the day. This must be about 24 hours after the last reboost which is scheduled late on FD7. Orbiter assumes attitude handover control. The opportunity is taken while in orbiter attitude control to maneuver to an attitude for a simo waste/supply dump
- Before sleep, MS2 and FE-1 tagup on the days transfer accomplishments and MS2 reports to MCC. IMAX-3D is setup for early morning FD9 filming

Flight Day 9

- EVA3 is the main objective for today, in which the remaining two ONTOs (2 and 3) are installed onto the station Airlock
- At the day's start, the EV and IV crew, and a station IV crew perform the EVA Prep in the station and station airlock
- The EVA Prep utilizes the Exercise / Prebreathe Protocol. The PLT and MS3 prep the airlock for 10.2 depress while MS1 sets up the CEVIS. Both EV crew don masks and begin prebreathing. Then they take turns for 11 minutes each exercising on the CEVIS. The airlock is closed and depress is begun to 10.2 psi. After 10.2, the EV crew terminate the pre-breathe, doff the masks, and don the EMUs
- IMAX3D is setup the night before and filming of EVA Prep occurs this morning
- Then the EV crew begins EMU purge and prebreathe
- The C/L is depressed and EVA3 (ONTOs 2 and 3 Installation – first EVA from Joint A/L) commences with egress from C/L and EV1 translating to PLB via the RMS. Meanwhile, EV2 installs the Orlan comm. cable onto the Joint A/L and closes ONTO4 isolation valve in prep for ONTO3 installation
- ICBC3D ops again take place during ONTO installation
- Installation of ONTO2 (O2 tank 0002, port fwd) and ONTO3 (N2 tank, stbd fwd) are the same as ONTOs 1 and 4, except at the completion of ONTO3 install:
 - EV1 opens ONTO3 isolation valve and EV2 opens ONTO4 isolation valve (which was closed for ONTO3 install)
 - The IV checks out the newly installed ONTOs after each is installed
 - The Spacelab Pallet Heater mats are powered down by the CDR
- After ONTO install and activation, the lab LTA cable is stowed, FRGF/trunnion covers installed and EVA cleanup completed, the C/L is repressured and post-EVA activities begin
- OSVS, SRMS, and SSRMS are stowed and powered down
- IMAX3D is packed up and ready to transfer for return
- At the end of the day, PCG-STES 009 and 010 are transferred from station to orbiter middeck and stowed above Vol D. These were brought up on 6A and are manifested for return on 7A unpowered. If enough power is available on the orbiter, they will be connected to orbiter power upon transfer; in which case, both must be transferred simultaneously
- After POST EVA, MS1 kicks off BSA Battery charging which will be terminated after undocking by the station crew

- MS2 and FE-1 meet for another transfer tagup and MS2 reports to MCC

Flight Day 10

The primary event for today is orbiter undocking from the station

- The first task of the day is to perform Auto Reboost of the stack (Config 4). Prior to the maneuver to reboost attitude, attitude control will be handed over from the station to the orbiter. Upon completion of reboost, attitude control is handed back to the CMGs
- Orbiter crew prepares for Undock later today by performing RNDZ PGSC setup and Tool C/O
- If PCG-STES is powered, a status check is done in the morning and evening each day until landing
- EMU and EVA equipment is transferred, followed by a final transfer brief with subsequent call to MCC. One EMU used in EVA3 is left on station, while one is brought back. The SAFERS remain on station
- One more PWR is filled to be left on station
- MicroWis is deactivated
- Crews say Farewell, close the hatch between vehicles, install the centerline camera and perform an ODS leak check. Centerline camera is installed and OSVS is powered up
- Undock, one rev flyaround and sep with flyaround P/TV and ICSC3D filming
- After the sep burn, centerline camera is removed, and OIU is deactivated
- Orbiter maneuvers to a dump attitude for a simo waste/supply sump
- PLT performs the GPS OPS 2 Test (DTO 700-14) and the Photo/TV ops for DTO 692, station WCS Refurbishment
- EV crew closes out the EVA activities Post EVA Entry Prep (PEEP).
- The remainder of the day is Off Duty for orbiter crew, followed by a 20 min PAO event, and standard orbiter activities

Flight Day 11

- FCS C/O, RCS Hotfire, Deorbit Briefing
- IMU align and HUD calibration and verif
- L-1 Comm check
- Cabin Stow
- PILOT ops
- PCG-STES status check, if powered
- SSV Deact
- Ergometer stowed
- Ku Stow
- MFX is activated
- Photo/TV Setup for Entry video

Flight Day 12

- Landing day
- DSO 634 stow
- OCAC stow
- PGSCs deactivated, color printer stowed
- ICBC deact, PGSC and Audio equipment stowed
- IMU align and verify
- Maneuver to tail sun attitude
- Deorbit Prep and landing at KSC

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STS-104 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

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'STS-104 DAP A1 THROUGH A8 CONFIGURATIONS'

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STS-104 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		OMS/RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (ALL)	SSUS DEPLOY	COAS/HUD CAL		RNDZ	TERMINAL PHASE

FLT PLN-1aa/104/O/A

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BACK OF 'STS-104 DAP A1 THROUGH A8 CONFIGURATIONS'

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STS-104 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	0.2000	0.1000
ATT DB	11(51)	1.00	0.50	10.00	5.00	5.00	5.00	40.00
RATE DB	12(52)	0.10	0.10	0.20	0.20	0.20	0.20	5.00
ROT PLS	13(53)	0.10	0.10	0.10	0.04	0.04	0.10	0.12
COMP	14(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	15(55)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	ALL
Y OPTION	16(56)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	ALL
TRAN PLS	17(57)	0.05	0.05	0.10	0.01	0.01	0.10	0.01
ALT								
RATE DB	18(58)	0.100	0.100	0.070	0.070	0.070	0.200	5.000
JET OPT	19(59)	TAIL	TAIL	TAIL	TAIL	TAIL	ALL	TAIL
# JETS	20(60)	2	2	3	3	3	2	1
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	11.60	11.04	11.04	0.00	0.00
VERN								
ROT RATE	23(63)	0.1300	0.0500	0.1000	0.1000	0.1000	0.2000	0.1000
ATT DB	24(64)	1.000	0.500	5.000	3.000	3.000	1.000	40.000
RATE DB	25(65)	.020	.020	.050	.050	.080	.020	.050
ROT PLS	26(66)	0.050	0.050	0.010	0.002	0.002	0.010	0.001
COMP	27(67)	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28(68)	0	0	1,2,3,4*	1,3**	5,6***	0	0
PURPOSE		PROX OPS/ FLY AROUND	DOCKING	AUTO REBOOST	MATED STACK & RMS OPS	VERN AND A/L DEPRESS	ALT AND A/L DEPRESS	

BOLD-ITALIC indicates a change from the I-load

*1(2) for VERN(ALT) Pre Airlock Installed, 3(4) for VERN(ALT) Post Airlock Installed

**1 for Pre Airlock Installed, 3 Post Airlock Installed

***5 for VERN, 6 for ALT

FLT PLN-1b/104/O/B

HINGE

TOP
 BACK OF 'STS-104 DAP B1 THROUGH B8 CONFIGURATIONS'
 HINGED AT BOTTOM OF
 'STS-104 DAP A9 THROUGH A15 CONFIGURATIONS'

HINGE
 STS-104 DAP B9 THROUGH B15 CONFIGURATIONS

	ITEM #	B9	B10	B11	B12	B13	B14	B15
PRI								
ROT RATE	30(50)	0.1300	0.0500	0.5000	0.1000	0.1000	0.5000	0.1000
ATT DB	31(51)	1.00	0.50	3.00	5.00	40.00	3.00	40.00
RATE DB	32(52)	0.10	0.10	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	0.003
COMP	34(54)	.000	.000	.000	.000	.000	.000	.000
P OPTION	35(55)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	TAIL
Y OPTION	36(56)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	TAIL
TRAN PLS	37(57)	0.01	0.01	0.02	0.01	0.01	0.02	0.01
ALT								
RATE DB	38(58)	0.100	0.100	0.200	0.070	0.070	0.200	0.200
JET OPT	39(59)	TAIL	TAIL	ALL	TAIL	TAIL	ALL	TAIL
# JETS	40(60)	2	2	2	3	3	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	11.04	0.00	0.00
VERN								
ROT RATE	43(63)	0.1300	0.0500	0.2000	0.1000	0.1000	0.2000	0.2000
ATT DB	44(64)	1.000	0.500	1.000	3.000	40.000	1.00	1.00
RATE DB	45(65)	.020	.020	.020	.050	.050	.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	2,4*	5,6**	0	8
PURPOSE		PROX OPS/ FLY AROUND	DOCKING		MATED STACK AND RMS OPS	A/L DEPRESS RATE DAMPING		

BOLD-ITALIC indicates a change from I-load
 **2 for Pre Airlock Installed, 4 for Post Airlock Installed
 ***5 for VERN, 6 for ALT

FLT PLN-1bb/104/O/B

**HOOK
VELCRO**

**HOOK
VELCRO**

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FLIGHT DATA FILE
Distribution
104 FLT PLN FS FIN

** JSC **

AP/LEAD PAO
CB/CHIEF, ASTRONAUT OFF.
CB/FLIGHT CREW (7)
DA2/STONE, B.R.
DA8/LEAD ISS FD (4)
DA8/LEAD STS FD (4)
DA82/ACTION CENTER
DF23/LEAD CATO (3)
DF24/INCO FDF REP (6)
DF25/LEAD DPS (3)
DF25/LEAD ODIN (3)
DF52/LEAD MMACS (3)
DF53/LEAD OSO (3)
DF62/LEAD GNC (3)
DF63/LEAD PROP (3)
DF64/ADCO (3)
DF74/PHALCON LIBRARY (5)
DF83/LEAD ECLSS (3)
DF84/THOR LIBRARY (3)
DM3/LEAD RNDZ (3)
DM3/LEAD TOPO (3)
DO13/HSG-H LIBRARY (3)
DO13/HSG-M LIBRARY (2)
DO13/HSG-MTLO
DO13/MSR LIBRARY (2)
DO13/TTI LIBRARY (2)
DO35/FULLER, Y.L.
DO353/FDF MNGR/RESERVE (15)
DO4/FAO TEAM (30)
DO4/LEAD FAO (15)
DO4/LEAD OPS PLANNER (6)
DO4/NUTE, R.H.
DO4/POINTING (3)
DO4/SHUTTLE FLT PLANNING (3)
DO45/LIBRARY (2)
DO45/SCHEIB, M.
DO5/LEAD ACO/PLO (6)
DT32/TEAM LEAD
DT34/CONTROL PROP
DT35/DPS/NAV LIBRARY (3)
DT36/SHUTTLE SYSTEMS
DT37/CARGO SYSTEMS
DT37/SHUTTLE COMMUNICATIONS

DX22/LEAD PDRS (4)
DX22/ROBOTICS SECTION (4)
DX25/RMS TRAINING GROUP (3)
DX32/PERSON, S. (4)
DX34/PHOTO/TV
GP23/STIC (3)
MER/30 LIBRARY
MT3/IPT
NC62/MORAN, S. (2)
OM2/CONSOLE SUPPORT (2)
OV/LEAD ISS GC
OV/LEAD SHUTTLE GC
SD24/SURGEON (3)
ZR1/USAF TECHNICAL LIBRARY (3)

** JSC OFFSITE **

LOCKHEED-MARTIN-HOUSTON
C42/DYKE-EIZHBLATH, J. (9)

BOEING-HOUSTON
13100 SPACE CENTER BLVD.
HOUSTON, TX 77059
HS-22/FLIGHT/STAGE MANAGER
HS-22/OPERATIONS LEAD

** POUCH MAIL **

NASA KSC
KSC/KSC TECH LIBRARY-D (2)
TA-E-A/CREW QUARTERS
XA-E1/GRINTER, K.

** U.S. MAIL **

BOEING-HUNTINGTON BEACH
5301 BOLSA AVENUE
HUNTINGTON BEACH, CA 92647
HO19-F754/GOOSSENS, M.H.

BOEING-CALIFORNIA
5301 BOLSA AVE. BLDG 17-7
7D-45 HUNTINGTON BEACH
CA 92647-2099
HO17-D415/MUHAR, M.M.
HO17-D416/GARAY, L.
HO17-D307/WARD, J.
HO19-E7522/FERGUS, E.M.

=====
Total 220
(05/21/01 - SIMONCA)

NOTE
* FOR CHANGES *
* IN DISTRIBUTION *
* OR ADDRESS CORRECTIONS *
* CONTACT THE *
* PROCEDURES MANAGEMENT *
* OFFICE AT MAILCODE DO35 *
* OR (281) 244-1184 *
