

Flight Plan

STS-115/12A (P3/P4 Truss)

STS-115/12A FRR (August 28, 2006) Trajectory

Mission Operations Directorate Operations Division

Final
July 5, 2006

For the latest working copy of the Flight Plan, visit
<http://mod.jsc.nasa.gov/do4/flightplan/main/fp.cfm?id=115>

EVENT	MET	GMT	CDT
Launch	00/00:00	240/19:59	14:59, (08/28/06)
Ti	01/16:41	242/12:40	07:40, (08/30/06)
ISS Docking	01/19:36	242/15:35	10:35, (08/30/06)
P3/P4 Unberth	01/22:20	242/18:19	13:19, (08/30/06)
P3/P4 Install	02/14:50	243/10:49	05:49, (08/31/06)
EVA 1	02/17:55	243/13:54	08:54, (08/31/06)
EVA 2	03/17:55	244/13:54	08:54, (09/01/06)
4A SAW Deploy	04/15:57	245/11:56	06:56, (09/02/06)
2A SAW Deploy	04/17:34	245/13:33	08:33, (09/02/06)
EVA 3	05/17:55	246/13:54	08:54, (09/03/06)
Undock	08/17:03	249/13:02	08:02, (09/06/06)
Deorbit	10/19:12	251/15:11	10:11, (09/08/06)
Landing	10/20:16	251/16:15	11:15, (09/08/06)

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



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

MISSION OPERATIONS DIRECTORATE

FLIGHT PLAN
STS-115

FINAL
July 05, 2006

PREPARED BY:



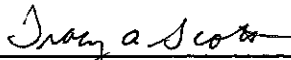
Douglas Bristol
Book Manager, Lead FAO



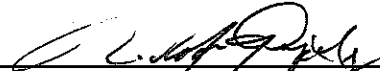
Telisha Harris
Lead Timeliner



Rick McKowen
Lead Pointer

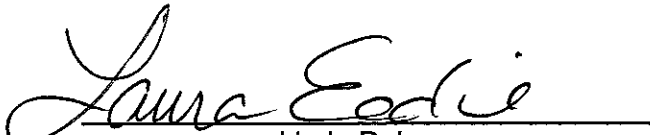


Tracy Scott
Lead Ops Planner

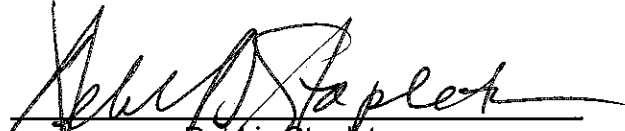


Rudy Gonzalez
Lead RPE

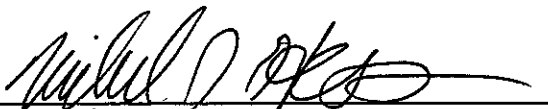
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Lead RPE	DO4/R. Gonzalez	281-244-1099

FLIGHT PLAN
STS-115

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* – Omit from flight book

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3-85	115/FIN	5-3	* 115/FIN
3-86	115/FIN	5-4	* 115/FIN
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3-93	115/FIN	6-3	* 115/FIN
3-94	115/FIN	6-4	* 115/FIN
3-95	115/FIN	6-5	* 115/FIN
3-96	115/FIN	6-6	* 115/FIN
3-97	115/FIN		
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* – Omit from flight book

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INTRODUCTION

The STS-115 Flight Plan is the Flight Data File article that contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry Checklists. The detailed rendezvous and undocking timelines and procedures are contained in the Rendezvous Checklist. The detailed EVA task timelines and procedures are contained in the EVA Checklist

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

- NSTS-07700 Vol III, Flight Definition and Requirements Document
- NSTS-17462-115, STS-115 Flight Requirements Document
- NSTS-21460, ISS-12A Mission Integration Plan
- NSTS-37326, Shuttle Crew Scheduling Constraints

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-115 Flight Plan Final is based on a launch date of August 28, 2006 at 14:59 CDT. Orbiter inertial attitudes are expressed relative to a mean of 1950 (M50) reference frame

The following SCSC Exceptions have been submitted in order to meet Category 1 objectives:
None

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

<http://mod.jsc.nasa.gov/do4/flightplan/main/fp.cfm?id=115>

OVERVIEW TIMELINE

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STS-115 ISS 12A Overview Timeline

11+1+2 (3 EVAs) August 28, 2006 Launch date (19:59 GMT)

		GMT	10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	
		MET	0/-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	00/0	1	2	3	4	5	6	7	8	9	10	11	12	13	
FD 01	STS													ASC	Post Insert	RMS C/O	SLEEP											
	Orb Att													ASC	-LV +Y	FD1 CNFG											NC-1	-ZLV -XVV
NC1 ^																												
FD 02	STS	SL P	EMU c/o, P/TV Setup										Meal	EMU C/O, RNDZ Prep										SLEEP				
	Orb Att	-ZLV -XVV	NC-2	UnBth, FF	STBD	NOSE	Meal	Port, BTH	RMS sv	P/B	-ZLV -YVV	STBD	NOSE	PORT	-ZLV +YVV	INRTL	NC-3	-ZLV -XVV										
NC2 ^																												
FD 03	STS	RNDZ										Hatch Open	S/P	P3/P4 Unberth/Handoff	EVA PROC R/W	Mask P/B	SLEEP											
	Orb Att	DUMP	RNDZ												EVA 1 Prep	D											Bias -XLV -ZVV	
NC3 ^																												
FD 04	STS	Campout EVA Prep										EVA 1					Post EVA	Mask P/B	SLEEP									
	Orb Att	P3/P4 Install										EVA 1					Post EVA	D								Bias -XLV -ZVV		
NC4 ^ Ti ^ DOCK ^																												
FD 05	STS	Campout EVA Prep										EVA 2					Post EVA	SLEEP										
	Orb Att	D										EVA 2					D								Dump	Bias -XLV -ZVV		
Bias -XLV -ZVV Dump Bias -XLV -ZVV																												
← Activate and Checkout SARJ →																												
FD 06	STS	Deploy Solar Array										Meal	EVA 3 Prep					EVA PROC R/W	Mask P/B	SLEEP								
	Orb Att	D	Deploy Solar Array										Meal	SSRMS LAB					D								Bias -XLV -ZVV	
^ SSRMS to LAB																												
FD 07	STS	Campout EVA Prep										EVA 3					Post EVA	SLEEP										
	Orb Att	D	EVA 3										D	Bias -XLV -ZVV														
Bias -XLV -ZVV																												
^ PV Rad Deploy MT to WS8 ^ ^ MT to WS4																												
FD 08	STS	OFF DUTY										Meal	Crew Conf & Photo	OBSS U/B	EVA Rtg	SLEEP												
	Orb Att	D	Meal										Meal	Xfer	SSRMS								D	Bias -XLV -ZVV				
Bias -XLV -ZVV																												
^ SSRMS to WS4																												
FD 09	STS	OBSS Port Xfer										Meal	Crew Conf & Photo	Transfer	O2 Tear Dr	SLEEP												
	Orb Att	D	Transfer										Meal	Transfer	D								Bias -XLV -ZVV					
Bias -XLV -ZVV																												
FD 10	STS	Hatch Close										UNDOCK	Meal	STBD	NOSE	Berth	SLEEP											
	Orb Att	Bias -XLV -ZVV	UNDOCK	UNDOCK										Cond Dump	D	Bias -XLV -ZVV												
Bias -XLV -ZVV UNDOCK STBD NOSE DUMP NC5																												
^ UNDOCKING NC5 ^																												
FD 11	STS	Filter Clean	FCS C/O	KCS	CBN STO	Meal	P/A	OFF DUTY	Cabin Stow	Pilot Ops	SLEEP																	
	Orb Att	NC6	-ZLV -XVV																									
Cond Dump ^NC6																												
FD 12	STS	IMU	Deorbit Prep										Entry	SLEEP														
	Orb Att	-XSI/ENTRY																										
Bias -XLV -ZVV																												
TIG ^ ^ KSC LANDING																												

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SUMMARY TIMELINE AND ISS SHORT-TERM PLAN

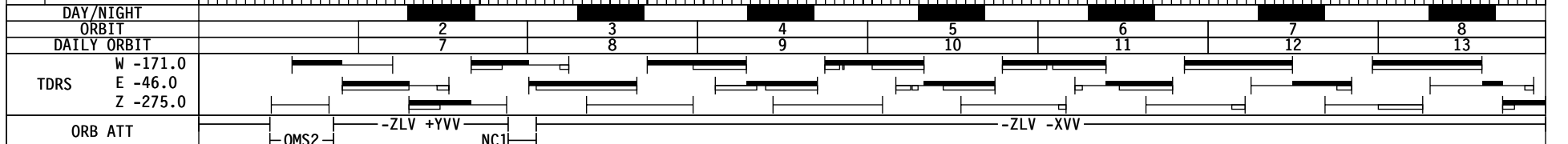
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FD01

GMT 08/28/06 (240) 20
 β = 18.27 000/00 01
 MET Day 000



STS-115	CDR JETT		POST INSERTION	NC1 OVS BURN	MZLN VRC	I-CR LNCT	GR PRDN	ELEV VON	AFT C/O	LOAD DAPS	PRE SLEEP	PMCT A/G/H	MNVR	SLEEP
	PLT FERGUSON	L	0	POST INSERTION	OVS BURN	R M W S R U P	RMS C/O	SEE SETUP			PRE SLEEP	A P W U T F C H I		SLEEP
	MS1 TANNER	A	M	POST INSERTION	GIRA INSTALL		P/TV01 VIDEO SETUP	SS S E T U P			PRE SLEEP	W A T C H		SLEEP
	MS2 BURBANK	U	-	POST INSERTION *	R M S *	R M W S R U P	RMS C/O	R P M W S R D N			PRE SLEEP	W A T C H		SLEEP
	MS3 PIPER	N	2	POST INSERTION	PGSC SETUP (PART I)	E V D I L D E O	U M B W E L L D /	O S C E L L C U P			PRE SLEEP	W A T C H		SLEEP
	MS4 MACLEAN	C H		POST INSERTION	PGSC SETUP (PART I)	W L E S A C T	ERGO SETUP				PRE SLEEP	W A T C H		SLEEP



NOTES

*ON-ORBIT INIT
 *PGSC KFX Setup

COMPLETED PRIOR TO STS ARRIVAL

- *MSS C/O at WS #7
- *SSRMS C/O
- *EMU C/O
- *SAFER C/O
- *SSAS C/O
- *P3/P4 DRY RUN
- *12A TIMELINE REVIEW

FD02

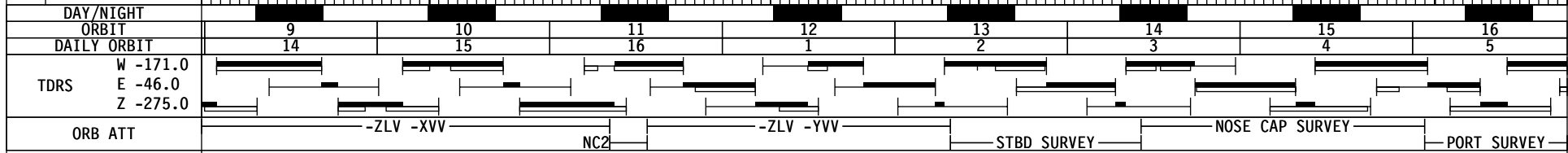
GMT 08/29/06 (241)

β = 15.75

MET Day 000

08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 001/00

S T S - 1 1 5	CDR JETT	SLEEP	POST SLEEP	HC RTA ECR TS RN BT	NC2 OMS BURN	M - NZ VL RV	POST SLEEP	CRYO 02 SNSR CK	H2O CWC SU & FILL #1	MS NT V B RD	CT WE CR M	OMS POD	MN NO VS RE	MEAL	FILTER CLEANING	MP NO VRT	EXERCISE
	PLT FERGUSON	SLEEP	POST SLEEP	OMS BURN			POST SLEEP	OBSS UNBERTH	FLAT FIELD	OBSS STBD SURVEY		NOSE CAP SURVEY	MEAL		OBSS PORT SURVEY		
	MS1 TANNER	SLEEP	POST SLEEP				P/TV01 VIDEO SETUP	EMU C/O PREP		EMU C/O	MEAL	EVA PREP FOR XFR-ISS	P/TV01 VIDEO SETUP				
	MS2 BURBANK	SLEEP	POST SLEEP				PGSC SETUP (PART II)	OBSS UNBERTH	FLAT FIELD	OBSS STBD SURVEY	NOSE CAP SURVEY	MEAL	OBSS PORT SURVEY				
	MS3 PIPER	SLEEP	POST SLEEP				PGSC SETUP (PART II)	POST SLEEP	EMU C/O PREP	EMU C/O	MEAL	EVA PREP FOR XFR-ISS	XFER PREP				
	MS4 MACLEAN	SLEEP	POST SLEEP					OBSS UNBERTH	FLAT FIELD	OBSS STBD SURVEY	NOSE CAP SURVEY	MEAL	OBSS PORT SURVEY				



NOTES

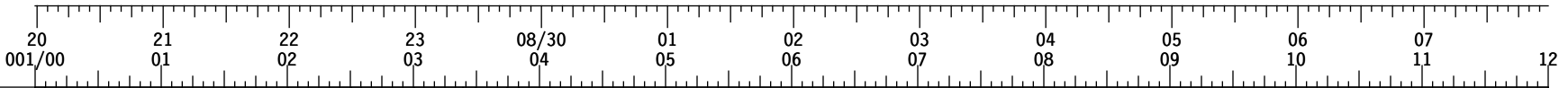
FD02

GMT 08/29/06 (241)

β = 13.25

MET

Day 001



STS-115	CDR JETT	OPS BOURBANK STVEY	PRE SLEEP	MNZL VLR	PRE SLEEP	PMCA/G	MNZL VRL	C/L CMR INSTL	PRE SLEEP	OMS BURN	NC3	MNZL VRL	IFL UO CTA NCR TE	PRE SLEEP	SLEEP
	PLT FERGUSON	OPS BOURBANK STVEY	OBSS BERTH	UPPR SURFACE SURVEY	FCMS C/O	PRE SLEEP	OMS BURN	PRE SLEEP	SLEEP						
	MS1 TANNER		PRE SLEEP	UPPR SURFACE SURVEY	C/L CMR INSTL	ODS RING EXT	LDRI DNLK	PRE SLEEP	SLEEP						
	MS2 BURBANK	OPS BOURBANK STVEY	OBSS BERTH	UPPR SURFACE SURVEY	WLES*	RNDZ TOOLS C/O	PRE SLEEP	SLEEP							
	MS3 PIPER	XFER PREP	BRIEF	PRE SLEEP	RNDZ TOOLS C/O	PRE SLEEP	SLEEP								
	MS4 MACLEAN	OPS BOURBANK STVEY	OBSS BERTH	UPPR SURFACE SURVEY	PRE SLEEP	ODS RING EXT	PRE SLEEP	SLEEP							

DAY/NIGHT	[Day/Night Cycle]																								
ORBIT	16	17	18	19	20	21	22	23	24																
DAILY ORBIT	5	6	7	8	9	10	11	12	13																
TDRS	W -171.0	[TDRS Data]																							
	E -46.0	[TDRS Data]																							
	Z -275.0	[TDRS Data]																							
ORB ATT	INRTL COMM - NC3 -ZLV -XVV																								

*RNDZ PREP

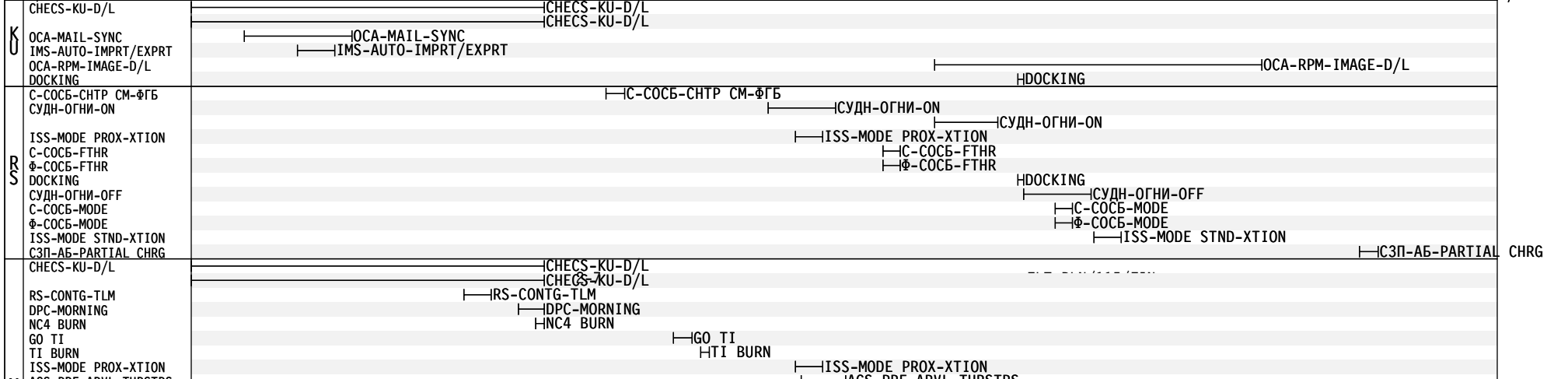
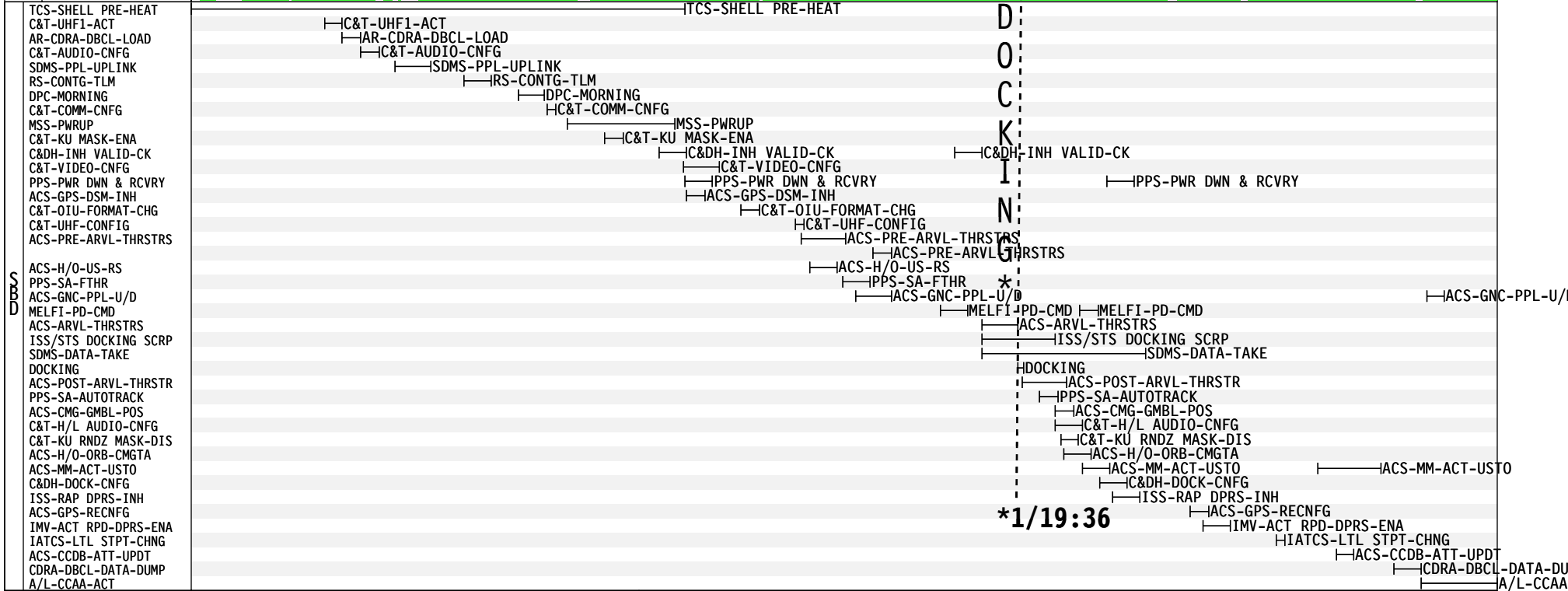
NOTES

FD03

STS-115/12A JOINT MISSION STP



I	DAY/NIGHT										
S	ORBIT	485	486	487	488	489	490	491	492	493	
S	DAILY ORBIT	13	14	15	1	2	3	4	5	6	
S	TDRS S-BD AVAIL	[Color-coded bars indicating availability]									



FD03

NO EXERCISE

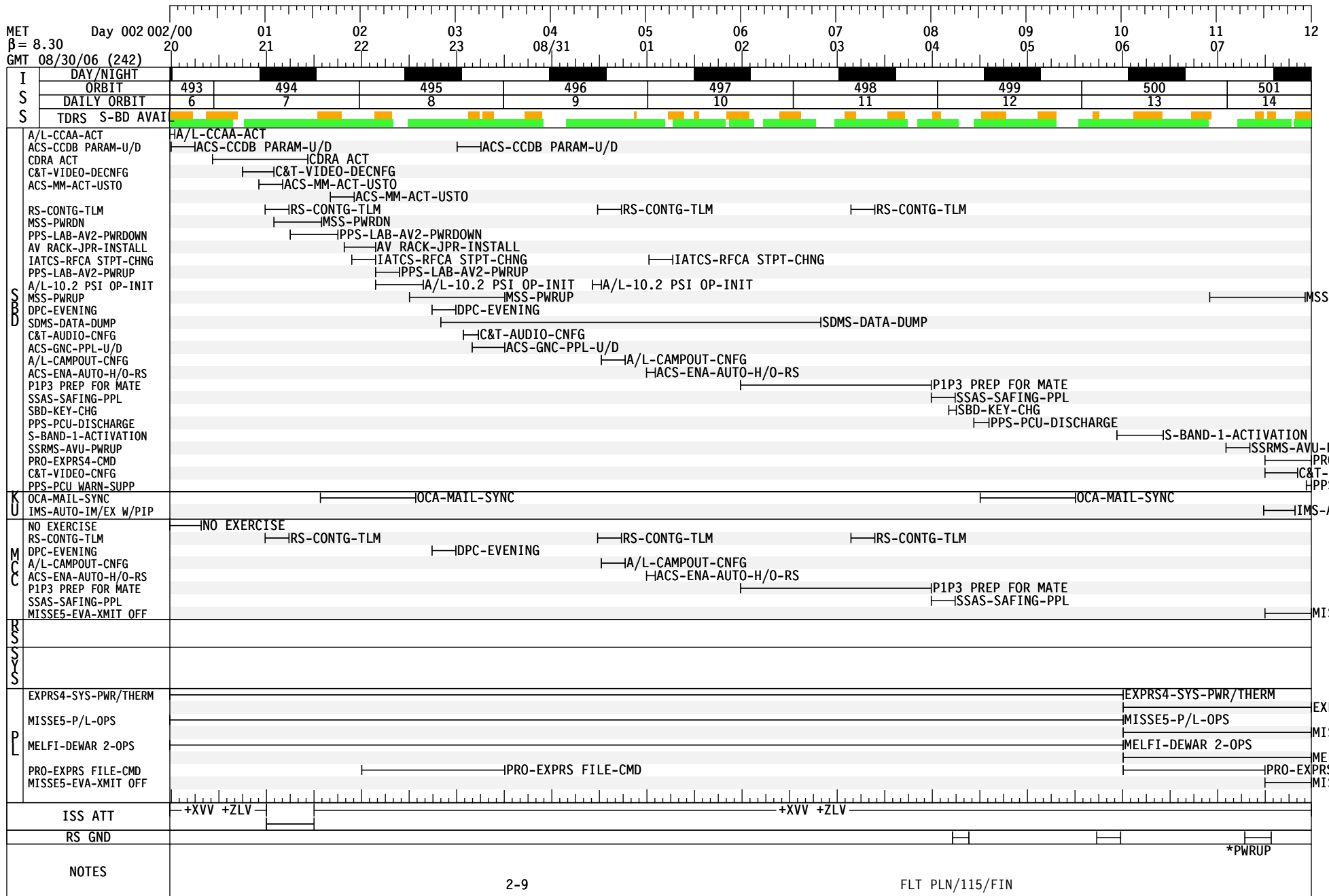
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 $\beta = 8.30$
 MET Day 002

20 002/00 21 01 22 02 23 03 08/31 04 01 05 02 06 03 07 04 08 05 09 06 10 07 11 12

S T S - 1 1 5	CDR JETT	02 P/B CONFIG	EVA 1 PROC REVIEW	PMC A/G	PRE SLEEP				SLEEP							
	PLT FERGUSON	PUGION 3 NR/LN / 4 PU/LM	PRE SLEEP	MUNPVD R A T	EXERCISE				PRE SLEEP				SLEEP			
	MS1/EV1 TANNER	PRE SLEEP		EVA 1 PROC REVIEW	PRE SLEEP		CAMPOUT MASK P/B 10.2 DPRS	PRE SLEEP		SLEEP (IN ISS A/L)						
	MS2/EV3 BURBANK	PUGION 3 NR/LN / 4 PU/LM	EVA CAMR S/U	EVA 1 PROC REVIEW	PRE SLEEP				SLEEP							
	MS3/EV2 PIPER	PRE SLEEP		EVA 1 PROC REVIEW	PRE SLEEP		CAMPOUT MASK P/B 10.2 DPRS	PRE SLEEP		SLEEP (IN ISS A/L)						
	MS4/EV4 MACLEAN			EVA CAMR S/U	EVA 1 PROC REVIEW	PRE SLEEP				SLEEP						
I S S	ISS CDR			COX MNT	PREP WORK	DPC	PRESLEEP-ISS				SLEEP - ISS					
	FE-1	ISWEIT SUP		EVA 1 PROC REVIEW	AVU HDD R&R	PW	DPC	PRESLEEP-ISS				SLEEP - ISS				
	FE-2	02 P/B CONFIG	COCIAA*	EVA 1 PROC REVIEW	AJIVPN RSTL	PW	*DPC	PRESLEEP-ISS				SLEEP - ISS				
DAY/NIGHT		[Timeline bars for Day/Night]														
ORBIT		32	33	34	35	36	37	38	39	40						
DAILY ORBIT		6	7	8	9	10	11	12	13	14						
TDRS		W -171.0	[Timeline bars for TDRS W]													
		E -46.0	[Timeline bars for TDRS E]													
		Z -275.0	[Timeline bars for TDRS Z]													
ORB ATT												BIAS -XLV +ZVV				
		*ACT SPPT				*CMS-EXER FILE-DWNLD				SVS						
NOTES																

FD03

STS-115/12A JOINT MISSION STP



FD04

GMT 08/31/06 (243)
 $\beta = 5.81$
 MET Day 002

NO
 EXERCISE | EXERCISE

NO PRCS
 NO IRED

003/00

S T S - 1 1 5	CDR JETT	SLEEP	POST SLEEP	PMC A/G	HYG BRK/HATCH CLS	CAMPOUT EVA PREP				EMURGE	EMU PRE BREATHE	C_LK DPRS	P/TVO7 EVA SETUP	P/TVO7 EVA OPS	MEAL	P/TVO7 EVA OPS			EXERCISE					
	PLT FERGUSON	SLEEP	POST SLEEP		EVAS*	PSOL	IFNF	MUFD	AVU*	AVU*	IPNAHDI	1-CAP	2-CAP	SSAS NOM MATE-3 BLT	DAP	CIN#2	AVU*	AVU*	CTCRM	CWC XFER (2)	MEAL	EXERCISE		
	MS1/EV1 TANNER	SLEEP (IN ISS A/L)	POST SLEEP	HYG BRK/PREBREATHE	A/L REPI	10.2 DPRS	CAMPOUT EVA PREP				EMURGE	EMU PRE BREATHE	C_LK DPRS	EVA 1 DEGRESS/SETUP	CNCT P1/P3 LWR UTILITY	RLS AFT BGA RSTRNT	ROTAT	UNSTW AFT SABB	SARJ PREP	CNCT P1/P3 UPR UTILITY	SARJ PREP	ECVLAN 1UP		
	MS3/EV2 PIPER	SLEEP (IN ISS A/L)	POST SLEEP	HYG BRK/PREBREATHE	CAMPOUT EVA PREP		EMURGE	EMU PRE BREATHE	C_LK DPRS	EVA 1 DEGRESS/SETUP	RLS AFT SABB RSTRNT	RLS FWD SABB RSTRNT	RLS FWD BGA RSTRNT	UNSTW FWD SABB	SARJ PREP			ECVLAN 1UP						
	MS2/EV3 BURBANK	SLEEP	POST SLEEP	POST SLEEP	SRMS EVA1 SUPPORT				C_LK DPRS	EVA1 IVA SPPT														
	MS4/EV4 MACLEAN	SLEEP	POST SLEEP		SSRMS P3/4 PRE INSTL	POST SLEEP	MNVR TO RTL	LIMP	UGN RPL	SSRMS UNGRPL TO UNLT	PST DK EVA XFR/RCNFG	REBA C/O	EVA 2 PREP TOOL CNFG	E_LK PREP	EXERCISE	PSLEE P								
I S S	ISS CDR	SLEEP - ISS		POSTSLEEP-ISS		PREP WORK	PIP/D	VELO + HC				MIDDAY-MEAL		COX MNT	EXERCISE TVIS		*							
	FE-1	SLEEP - ISS		POST SLEEP-ISS		SSRMS P3/4 PRE INSTL	PREP WORK	MNVR TO RTL	1-CAP	2-CAP	SSAS NOM MATE-3 BLT	UGN RPL	SSRMS UNGRPL TO UNLT	AVU*	AVU*	MIDDAY-MEAL	IWIS*	IMS EDIT	EXERCISE TVIS					
	FE-2	SLEEP - ISS		POST SLEEP-ISS	HYG BRK/HATCH CLS	CAMPOUT EVA PREP				EMURGE	EMU PRE BREATHE	C_LK DPRS	MIDDAY-MEAL		EVA 2 PREP TOOL CNFG	E_LK PREP	EXERCISE TVIS							

DAY/NIGHT	08		09		10		11		12		13		14		15		16		17		18		19		20		21		22		23	
ORBIT	40	41	42	43	44	45	46	47	48																							
DAILY ORBIT	14	15	16	1	2	3	4	5	6																							
TDRS	W -171.0	[Timeline]																														
	E -46.0	[Timeline]																														
	Z -275.0	[Timeline]																														
ORB ATT	BIAS -XLV +ZVV														BIAS -XLV +ZVV																	

NOTES

*DUMP INIT *COMM Config *TGT ACQ *PWRUP

*DUMP TERM *CLNUP *PWRDN

*DEACT

*COFC-AOK FAHK-ANLZ

FD04

STS-115/12A JOINT MISSION STP

MET Day 002 12 13 14 15 16 17 18 19 20 21 22 23 003/00
 β = 5.81
 GMT 08/31/06 (243) 08 09 10 11 12 13 14 15 16 17 18 19

I	DAY/NIGHT											
S	ORBIT	501	502	503	504	505	506	507	508	509		
S	DAILY ORBIT	14	15	16	1	2	3	4	5	6		
S	TDRS S-BD AVAIL	[Green bar indicating availability]										

PRO-EXPRS4-CMD
 PPS-PCU WARN-SUPP
 SPS-MBSU/DDCU-SOAK
 RS-CONTG-TLM
 MELFI-PD-CMD
 ACS-INH-AUTO-H/O-RS
 EVA-HYGIENE-BREAK
 C&T-UHF1-ACT
 C&T-AUDIO-CNFG
 ASSY-LOWER TRAY-PREP
 IATCS-RFCA STPT-CHNG
 ASSY-P6-PWRDWN-PREP
 ACS-THRUSTER-RECONFG
 A/L-RAPID DPRESS-ENA
 SSAS NOM MATE 1-5
 ACS-ATT-CCDB-INC
 ACS-MP-PPL-INC
 EVA1 INHIBIT PAD
 ACS-MOM MGMT-ACT
 ISS-RAP DPRS-INH
 ISS-RAP DPRS-ENA
 C&T-WETA-ACT
 PIP3 SSAS BOLTING
 PIP3-SSAS-BOLT&LATCH
 A/L-10.2 PSI OP-TERM
 C&T-WETA-SCAN
 ASSY-P6 4B-PWRDWN1
 ASSY-L/U TRAY-REC/PR
 CDH-2A PVCU-ACT
 EPS-2A CHANNEL-ACT
 SSAS-SAFING-PPL
 ASSY-SARJ DLA-NTRL
 ASSY-P6 4B-PWRDWN2
 PPS-ECU2A-ACT/BRS RL
 ASSY-SARJ DLA-ENGAGE
 ASSY-U TRAY-RECOVERY
 ASSY-P6 4B-RECOVERY
 PPS-ECU4A-ACT/BRS RL
 EPS-2A2 BATT-W/U
 CDH-4A PVCU-ACT
 EPS-4A CHANNEL-ACT
 UCCAS-1&2-HEATER-C/O

IPRO-EXPRS4-CMD
 IPPS-PCU WARN-SUPP
 IRS-CONTG-TLM
 MELFI-PD-CMD
 HACS-INH-AUTO-H/O-RS
 EVA-HYGIENE-BREAK
 EVA-HYGIENE-BREAK
 C&T-UHF1-ACT
 C&T-AUDIO-CNFG
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 IATCS-RFCA STPT-CHNG
 ASSY-P6-PWRDWN-PREP
 IACS-THRUSTER-RECONFG
 A/L-RAPID DPRESS-ENA
 ISSAS NOM MATE 1-5
 IACS-ATT-CCDB-INC
 IACS-MP-PPL-INC
 EVA1 INHIBIT PAD
 IACS-MOM MGMT-ACT
 IISS-RAP DPRS-INH
 ISS-RAP DPRS-ENA
 C&T-WETA-ACT
 PIP3 SSAS BOLTING
 PIP3-SSAS-BOLT&LATCH
 A/L-10.2 PSI OP-TERM
 C&T-WETA-SCAN
 ASSY-P6 4B-PWRDWN1
 ASSY-L/U TRAY-REC/PR
 CDH-2A PVCU-ACT
 EPS-2A CHANNEL-ACT
 ISSAS-SAFING-PPL
 ASSY-SARJ DLA-NTRL
 ASSY-P6 4B-PWRDWN2
 PPS-ECU2A-ACT/BRS RL
 ASSY-SARJ DLA-ENGAGE
 ASSY-U TRAY-RECOVERY
 ASSY-U TRAY-RECOVERY
 ASSY-U TRAY-RECOVERY
 ASSY-P6 4B-RECOVERY
 ASSY-P6 4B-RECOVERY
 PPS-ECU4A-ACT/BRS RL
 EPS-2A2 BATT-W/U
 CDH-4A PVCU-ACT
 EPS-4A CHANNEL-ACT
 UCCAS-1&2-HEATER-C/O

IPRO-EXPRS4-CMD
 IPPS-PCU WARN-SUPP
 IRS-CONTG-TLM
 MELFI-PD-CMD
 HACS-INH-AUTO-H/O-RS
 EVA-HYGIENE-BREAK
 EVA-HYGIENE-BREAK
 C&T-UHF1-ACT
 C&T-AUDIO-CNFG
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 IATCS-RFCA STPT-CHNG
 ASSY-P6-PWRDWN-PREP
 IACS-THRUSTER-RECONFG
 A/L-RAPID DPRESS-ENA
 ISSAS NOM MATE 1-5
 IACS-ATT-CCDB-INC
 IACS-MP-PPL-INC
 EVA1 INHIBIT PAD
 IACS-MOM MGMT-ACT
 IISS-RAP DPRS-INH
 ISS-RAP DPRS-ENA
 C&T-WETA-ACT
 PIP3 SSAS BOLTING
 PIP3-SSAS-BOLT&LATCH
 A/L-10.2 PSI OP-TERM
 C&T-WETA-SCAN
 ASSY-P6 4B-PWRDWN1
 ASSY-L/U TRAY-REC/PR
 CDH-2A PVCU-ACT
 EPS-2A CHANNEL-ACT
 ISSAS-SAFING-PPL
 ASSY-SARJ DLA-NTRL
 ASSY-P6 4B-PWRDWN2
 PPS-ECU2A-ACT/BRS RL
 ASSY-SARJ DLA-ENGAGE
 ASSY-U TRAY-RECOVERY
 ASSY-U TRAY-RECOVERY
 ASSY-U TRAY-RECOVERY
 ASSY-P6 4B-RECOVERY
 ASSY-P6 4B-RECOVERY
 PPS-ECU4A-ACT/BRS RL
 EPS-2A2 BATT-W/U
 CDH-4A PVCU-ACT
 EPS-4A CHANNEL-ACT
 UCCAS-1&2-HEATER-C/O

K R/T-KU-BD-MANAGEMENT
U OCA UNAVAILABLE

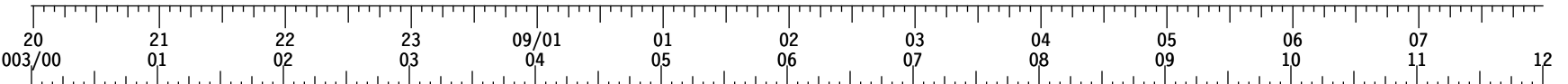
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 RS-CONTG-TLM
 A/L REPRESS
 ASSY-LOWER TRAY-PREP
 MISSE5-INHIBIT
 SSAS NOM MATE 1-5
 NO EXERCISE
 SSAS 2-3RD STAGE CAP
 SSAS-STAGE 3-CAP
 NO ERGOMETER EXER
 PIP3 SSAS BOLTING
 3-SSAS-BOLTS-CMPLT
 PIP3-SSAS-BOLT&LATCH
 DDCU-LA2A-DEACT
 NO PRCS/NO IRED-EXER
 LOWER-TRAY-CMPLT

MISSE5-EVA-XMIT OFF
 IRS-CONTG-TLM
 A/L REPRESS
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 ISSAS NOM MATE 1-5
 NO EXERCISE
 SSAS 2-3RD STAGE CAP
 SSAS-STAGE 3-CAP
 NO ERGOMETER EXER
 PIP3 SSAS BOLTING
 3-SSAS-BOLTS-CMPLT
 PIP3-SSAS-BOLT&LATCH
 DDCU-LA2A-DEACT
 LOWER-TRAY-CMPLT

MISSE5-EVA-XMIT OFF
 IRS-CONTG-TLM
 A/L REPRESS
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 ASSY-LOWER TRAY-PREP
 ISSAS NOM MATE 1-5
 NO EXERCISE
 SSAS 2-3RD STAGE CAP
 SSAS-STAGE 3-CAP
 NO ERGOMETER EXER
 PIP3 SSAS BOLTING
 3-SSAS-BOLTS-CMPLT
 PIP3-SSAS-BOLT&LATCH
 DDCU-LA2A-DEACT
 LOWER-TRAY-CMPLT

FD04

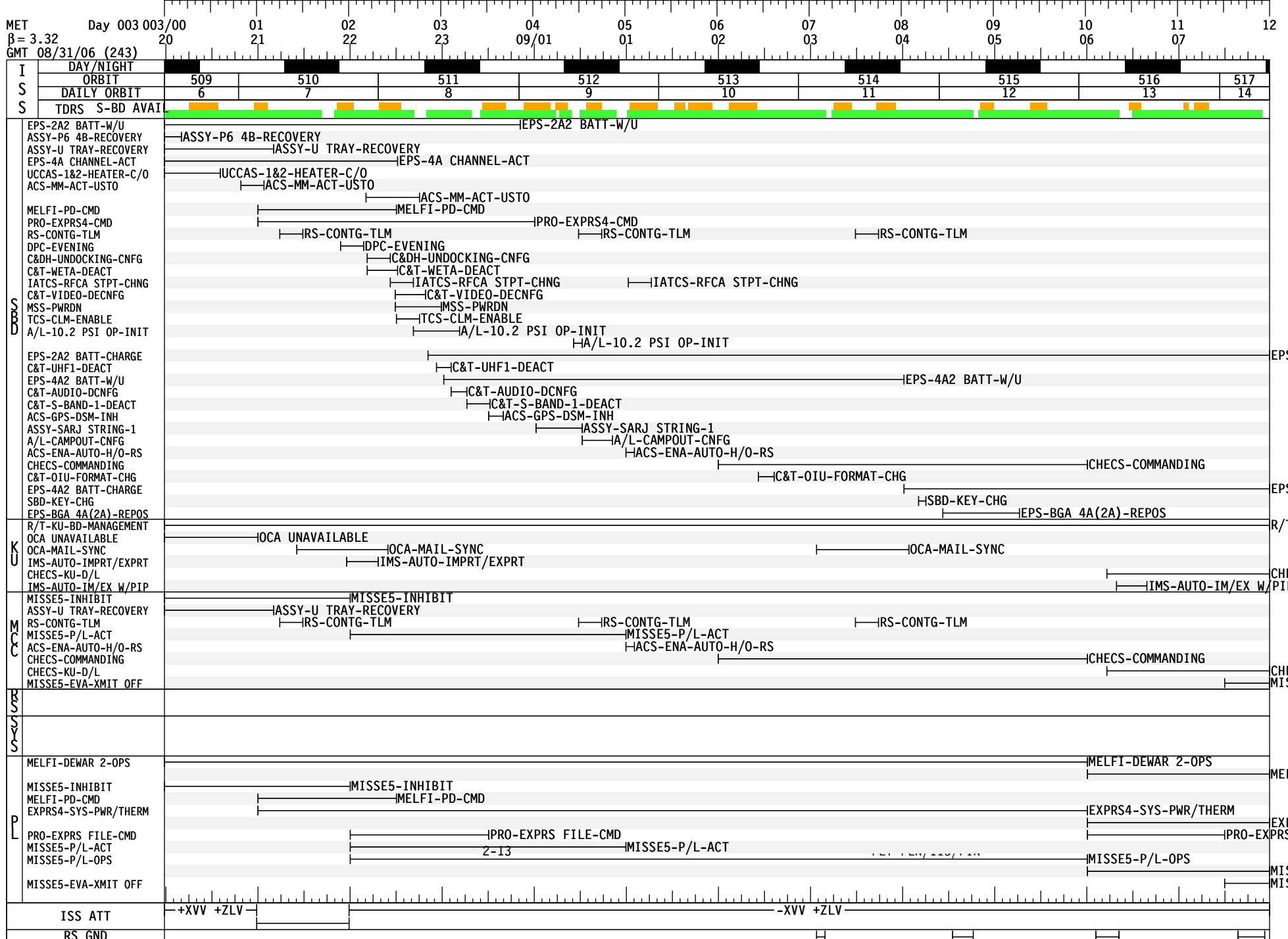
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 $\beta = 3.32$
 MET Day 003



STS-115	CDR JETT	PRRS	12A POST EVA 1	PSLEEP	PMC A/G	EVA 2 PROC REVIEW	PRE SLEEP	SLEEP		
	PLT FERGUSON	RMS*	COMM*	IONUM	MUNDRAT	DCHRG	PRE SLEEP	OSIISIIUVM-D4		
	MS1/EV1 TANNER	ECVLANUP	PRRS	12A POST EVA 1	760*	PRE SLEEP	EVA 2 PROC REVIEW	12A POST EVA 1		
	MS3/EV2 PIPER	ECVLANUP	PRRS	12A POST EVA 1		PRE SLEEP	EVA 2 PROC REVIEW	12A POST EVA 1		
	MS2/EV3 BURBANK	EVA1 IVA SPPT	PRE SLEEP	12A POST EVA 1	PRE SLEEP	EVA 2 PROC REVIEW	PSLEEP	CAMPOUT MASK P/B		
	MS4/EV4 MACLEAN	PRE SLEEP	12A POST EVA 1	PRE SLEEP	EVA 2 PROC REVIEW	PSLEEP	CAMPOUT MASK P/B	PRE SLEEP		
ISS	ISS CDR	PIP P/U	PREP WORK	DPC		PRE SLEEP ISS	SLEEP - ISS			
	FE-1	*	PREP WORK	DPC	EVA 2 PROC REVIEW	PRE SLEEP ISS	SLEEP - ISS			
	FE-2	⊕	PRRS	12A POST EVA 1	PW DPC	EVA 2 PROC REVIEW	PRE SLEEP ISS			
DAY/NIGHT		ORBIT		DAILY ORBIT		TDRS		ORB ATT		
		48	49	50	51	52	53	54	55	56
		6	7	8	9	10	11	12	13	14
		W -171.0		E -46.0		Z -275.0				
						BIAS -XLV -ZVV				
NOTES		*CMS-EXER FILE-DWNLD		⊕EXERCISE TVIS *CAM DISASSEMBLY				SVS		
		*Deconfig		*PWRDN						

FD04

STS-115/12A JOINT MISSION STP



NO PRCS
NO IRED

FD05

GMT 09/01/06 (244)
β = 0.87
MET Day 003

08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 004/00

S T S - 1 1 5	CDR JETT	SLEEP	POST SLEEP	PMCA/G	HYG BRK/HATCH CLS	CAMPOUT EVA PREP	EMURGE	EMU PREBREATHE	C_LK DPRS	EXERCISE	MEAL	P/TV07 EVA OPS					
	PLT FERGUSON	SLEEP	POST SLEEP			POST SLEEP	IOLFUM	IOFNAB	EXERCISE	CINWCT#3		CTWCM	CXWFCR	MEAL	XFER OPS		
	MS1/EV1 TANNER	SLEEP	POST SLEEP	DCS FMT		POST SLEEP						EVA2 IVA SPPT					
	MS3/EV2 PIPER	SLEEP	POST SLEEP	DCS FMT	EVA CAMR S/U	POST SLEEP			EXERCISE		SSRMS CAMERA VIEWING	MCO EHU TGT OK	EMU BATT INIT	SSRMS CAMERA VIEWING			
	MS2/EV3 BURBANK	SLEEP (IN ISS A/L)	POST SLEEP		HYG BRK/PREBREATHE	CAMPOUT EVA PREP	EMURGE	EMU PREBREATHE	C_LK DPRS	EVA 2 EGRESS/SETUP	RMV AFT SSU	SARJ PREP				DPLY SARJ BRACE	C/LINUGPR
	MS4/EV4 MACLEAN	SLEEP (IN ISS A/L)	POST SLEEP		HYG BRK/PREBREATHE	CAMPOUT EVA PREP	EMURGE	EMU PREBREATHE	C_LK DPRS	EVA 2 EGRESS/SETUP		SARJ PREP				DPLY SARJ BRACE	C/LINUGPR
I S S	ISS CDR	SLEEP - ISS		POSTSLEEP-ISS		PREP WORK	DPC	VELO + HC		MIDDAY-MEAL		ETD-CDR	COX MNT	EXERCISE TVIS			
	FE-1	SLEEP - ISS		POSTSLEEP-ISS		PREP WORK	DPC	EXERCISE-RED		MIDDAY-MEAL		XFER OPS					
	FE-2	SLEEP - ISS		POST SLEEP ISS	HYG BRK/HATCH CLS	CAMPOUT EVA PREP	EMURGE	EMU PREBREATHE	C_LK DPRS	EXERCISE TVIS	MIDDAY-MEAL	MCO EHU TGT OK	EMU BATT INIT	XFER OPS			
DAY/NIGHT		ORBIT		DAILY ORBIT		WDRS		ORB ATT		NOTES							
		56	57	58	59	60	61	62	63	64							
		14	15	1	2	3	4	5	6	7							
		W -171.0		E -46.0		Z -275.0											
		BIAS -XLV -ZVV															
		*COMM Config															

FD05

STS-115/12A JOINT MISSION STP

MET Day 003 12 13 14 15 16 17 18 19 20 21 22 23 004/00
beta = 0.87
GMT 09/01/06 (244) 08 09 10 11 12 13 14 15 16 17 18 19

Table with columns for Day/Night, Orbit (517-525), Daily Orbit (14-7), and TDRS S-BD AVAIL.

Main mission timeline grid with activity labels such as EPS-2A2 BATT-CHARGE, HACS-INH-AUTO-H/O-RS, C&T-UHF1-ACT, and ISS ATT.

ISS ATT -XVV +ZLV
RS GND
NOTES

FD05

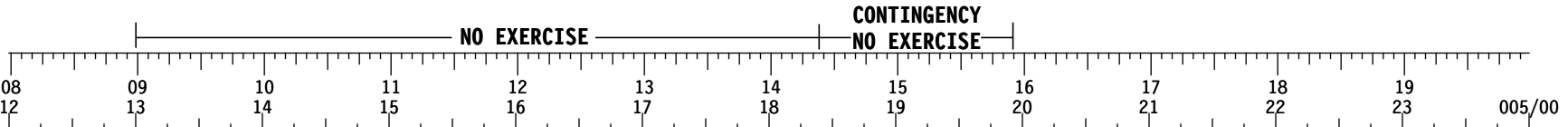
GMT 09/01/06 (244)
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 MET Day 004

NO UNISOLATED EXERCISE

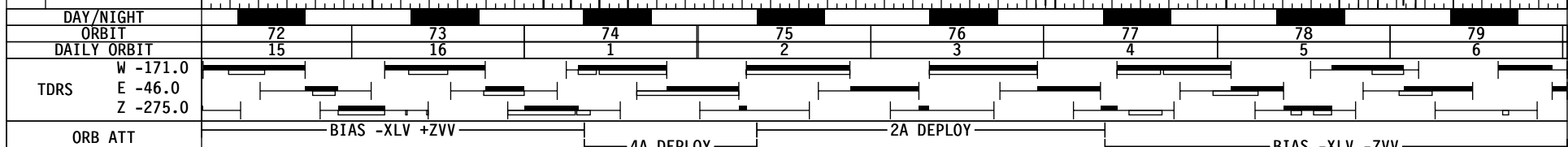
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S T S - 1 1 5	CDR JETT			P/TV 09 S/U	H/O	M/V	IN M/V	COM #4	CIN T	IN T	PMC A/G	PRE SLEEP	CT WERM	PRE SLEEP	H/O	PRE SLEEP	MU N P D R A T	SLEEP									
	PLT FERGUSON	X T F A R I E G I E R U I P I F	B R I E F	PRE SLEEP		S W A P	W I S I S	S O U T H E A S T				PRE SLEEP	W T E R A S T M E	COND CWC DUMP	PRE SLEEP		SLEEP										
	MS1/EV1 TANNER	EVA2 IVA SPPT		POST EVA W/H2O, MTX			12A EMU SWAP EVA2	7 6 0 *	PRE SLEEP			SLEEP															
	MS3/EV2 PIPER			POST EVA W/H2O, MTX			12A EMU SWAP EVA2	PRE SLEEP			SLEEP																
	MS2/EV3 BURBANK	C L I N N U G P R	P R P R S	POST EVA W/H2O, MTX			B I S N A I T	PRE SLEEP			SLEEP																
	MS4/EV4 MACLEAN	C L I N N U G P R	P R P R S	POST EVA W/H2O, MTX			B I S N A I T	PRE SLEEP			SLEEP																
I S S	ISS CDR				IMS EDIT	I C M O N S F	PW	DPC	PW	PRESLEEP-ISS			SLEEP - ISS														
	FE-1	I S W E I T S U P	J R N L	EXERCISE TVIS			PW	DPC	PW	PRESLEEP-ISS			SLEEP - ISS														
	FE-2	X T F A R I E G R U P					PW	DPC	PW	PRESLEEP-ISS			SLEEP - ISS														
DAY/NIGHT		[Bar chart showing day/night cycle]																									
ORBIT		[Bar chart showing orbit parameters]																									
DAILY ORBIT		[Bar chart showing daily orbit parameters]																									
TDRS		[Bar chart showing TDRS parameters]																									
ORB ATT		[Bar chart showing orbit attitude]																									
NOTES		WATER DUMP *Deconfig *CMS-EXER FILE-DWNLD *CAM DISASSEMBLY																									

FD06

GMT 09/02/06 (245)
 β = -3.99
 MET Day 004



STS-115	CDR JETT	SLEEP	LOG	POST SLEEP	MUNDRAT	4A-M*		4AASST*	MUNDRAT	2A-M*	2A-M*		M-NXVLRV	H/O	P/TV 05 S/U	MEAL	PEAVOENT	EXERCISE					
	PLT FERGUSON	SLEEP	LOG	POST SLEEP			FILTER INSPECT	MCS	CINWICIT#5			CTEWM	CWC XFER (2)	CINWICIT#6	FC*4D	SO SIVU-4D	CTEWM	PWR FILL #1	MEAL	CXFER	XFER OPS	PWR FILL #2	PWR FILL #3
	MS1/EV1 TANNER	SLEEP	LOG	POST SLEEP		4A-M*	PSOLSTEP	4AASST*		2A-M*	2A-M*					EXERCISE	MEAL		EMU H20 RCHRG	E_LK PREP	DCS FMT		
	MS2/EV3 BURBANK	SLEEP	LOG	POST SLEEP		4A-M*		4AASST*		2A-M*	2A-M*			EXERCISE	DCHSRG	MEAL	BSA TERM	EMU*	EMU H20 RCHRG	E_LK PREP	DCS FMT		
	MS3/EV2 PIPER	SLEEP		POST SLEEP	SRV RFRFY* SCRMFSG	POST SLEEP	4A-M*	POST SLEEP	4AASST*	CNFG*	VRFY*	2A-M*	2A-M*			MEAL	BSA TERM	EMU*		XFER OPS			
	MS4/EV4 MACLEAN	SLEEP	LOG	POST SLEEP		4A-M*		4AASST*	CNFG*	VRFY*	2A-M*	2A-M*				MEAL	WORAFC LFNKFG		SSRMS DBL WALK-LAB		VIEW		
ISS	ISS CDR	SLEEP - ISS		POST SLEEP - ISS	PWROPK	DPC	PWROPK	PIP/D					COX MNT	VELO + HC	MIDDAY-MEAL		PREP	PEAVOENT					
	FE-1	SLEEP - ISS		POST SLEEP - ISS	SRV RFRFY* SCRMFSG	PWROPK	PWROPK	IWIS*	4A-M*	PST SLP - ISS	4AASST*	CNFG*	VRFY*	2A-M*	2A-M*		MTX-T		MIDDAY-MEAL	WORAFC LFNKFG	SSRMS DBL WALK-LAB	VIEW	
	FE-2	SLEEP - ISS		POST SLEEP - ISS	PWROPK	DPC	PWROPK									EXERCISE-RED	MIDDAY-MEAL	PREP	PEAVOENT	EMU BATT TERM	EXERCISE TVIS		

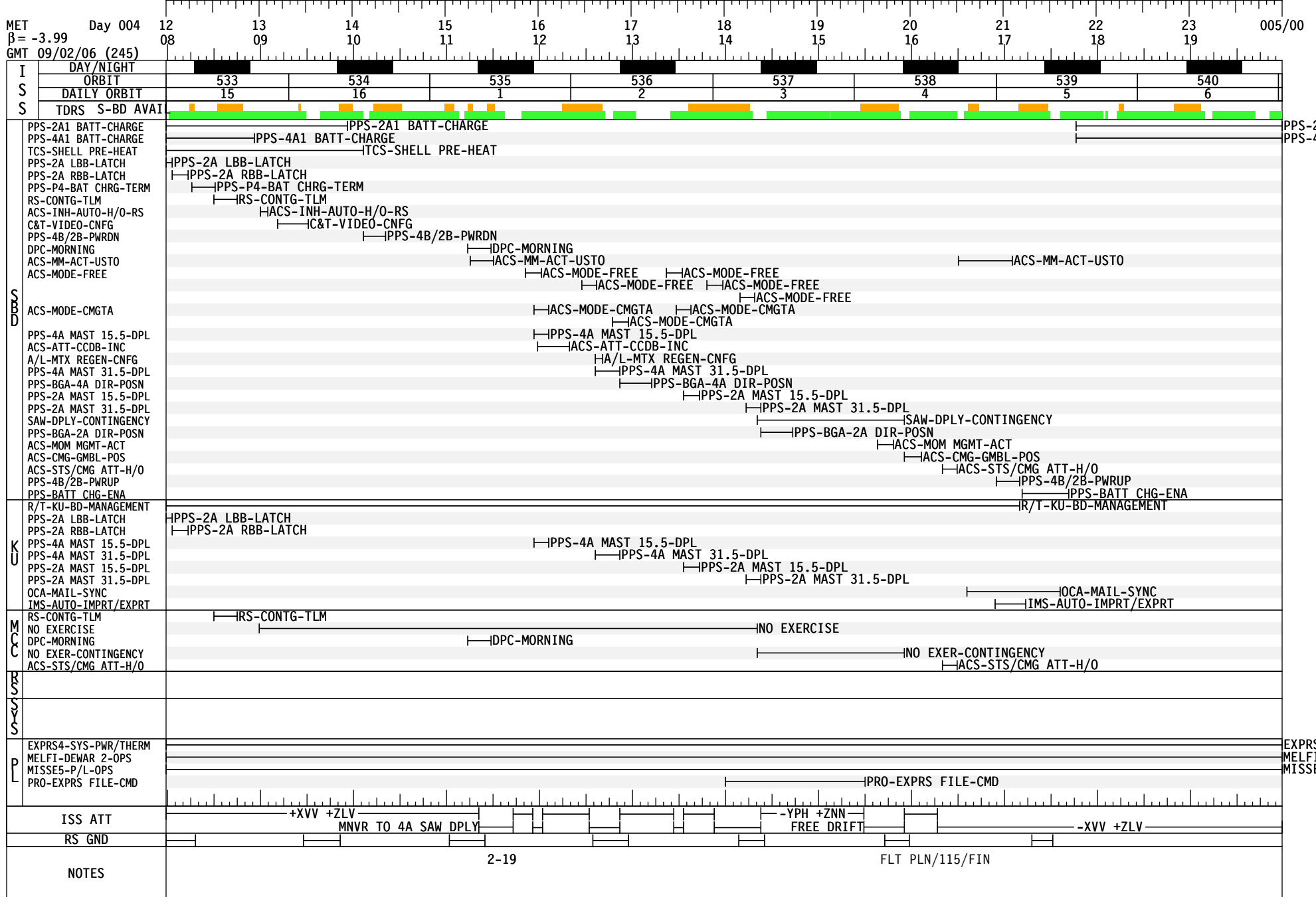


NOTES

*DEPLOY 49% *2A Cameras *DEPLOY 100% *PURGE-MANUAL *CLEANUP
 *DEACT *DEPLOY 100%
 *RWS and 4A Camera Config *DEPLOY 49%
 *2A Camera Config
 *2A Cameras
 *2A Camera Config

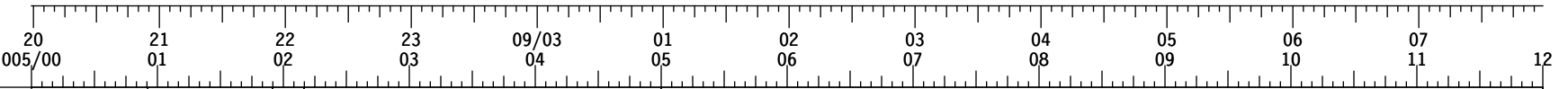
FD06

STS-115/12A JOINT MISSION STP

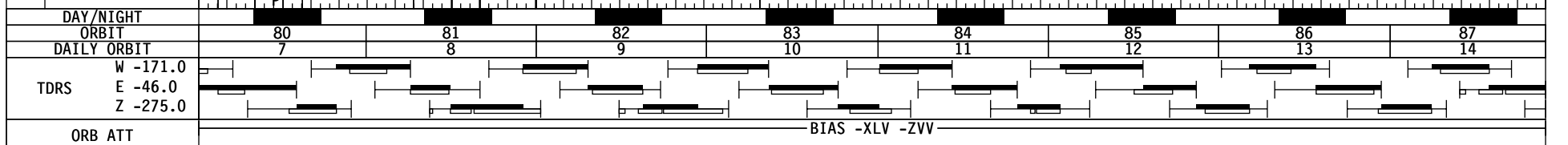


FD06

GMT 09/02/06 (245) 20
 $\beta = -6.44$ 005/00
 MET Day 005

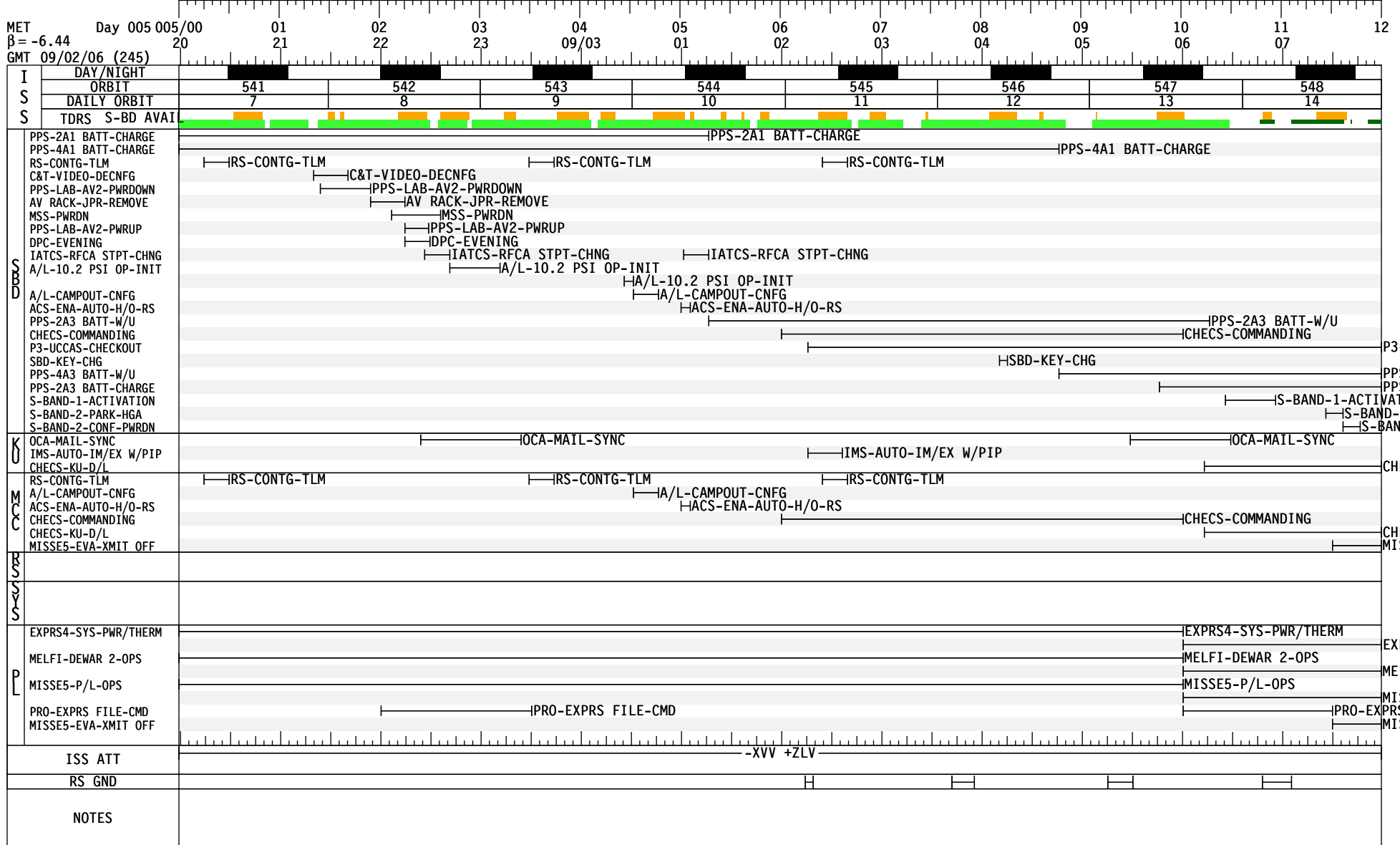


S T S - 1 1 5	CDR JETT		EVA 3 PROC REVIEW	PMC OCA	PRE SLEEP			SLEEP		
	PLT FERGUSON	PWR XFER (3)	EXERCISE		PRE SLEEP			SLEEP		
	MS1/EV1 TANNER	EVA TOOL CNFG	IR CAMR S/U	EVA 3 PROC REVIEW	PRE SLEEP	CAMPOUT MASK P/B	PRE SLEEP	SLEEP (IN ISS A/L)		
	MS2/EV3 BURBANK	EVA CAMR S/U		EVA 3 PROC REVIEW	PRE SLEEP			SLEEP		
	MS3/EV2 PIPER	EVA TOOL CNFG	X T B F A R I E G R U P	EVA 3 PROC REVIEW	PRE SLEEP	CAMPOUT MASK P/B	PRE SLEEP	SLEEP (IN ISS A/L)		
	MS4/EV4 MACLEAN	EXERCISE		EVA 3 PROC REVIEW	PRE SLEEP			SLEEP		
I S S	ISS CDR	EXERCISE TVIS		PIP P/U	PREP WORK	DPC	PREP WORK	PRESLEEP-ISS		SLEEP - ISS
	FE-1		EVA 3 PROC REVIEW	AV JPR RMV	DPC	PREP WORK	PRESLEEP-ISS		SLEEP - ISS	
	FE-2	IMS EDIT	X T B F A R I E G R U P	EVA 3 PROC REVIEW	PREP WORK	DPC	PREP WORK	PRESLEEP-ISS		SLEEP - ISS
DAY/NIGHT										
ORBIT										
DAILY ORBIT										
TDRS										
ORB ATT										
NOTES										



FD06

STS-115/12A JOINT MISSION STP



FD07

GMT 09/03/06 (246)
 β = -8.83
 MET Day 005

NO EXERCISE

NO PRCS
 NO IRED

006/00

		08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
STS-115	CDR JETT	SLEEP	POST SLEEP	PMC A/G	HYG BRK/HATCH CLS	CAMPOUT EVA PREP	EMURGE	EMU PRE BREATHE	C_LK DPRS	P/TV07 EVA SETUP	P/TV 09 S/U	PV RAD DEPLOY	MEAL	P/TV07 EVA OPS		EXERCISE	
	PLT FERGUSON	SLEEP	POST SLEEP	OSIS EVA-A2	POST SLEEP	IPAHDI B	CINWCT #7		CTE CRM	CINWCT #8	CTE CRM	PV RAD DEPLOY	MEAL	CWC XFER (2)	EXERCISE		
	MS1/EV1 TANNER	SLEEP (IN ISS A/L)	POST SLEEP	A/L REP	HYG BRK/PREBREATHE	10.2 DPRS	CAMPOUT EVA PREP	EMURGE	EMU PRE BREATHE	C_LK DPRS	PESGRTUP	EVA-P6 BGA-INSTL	RLS CNCH/WNCH	RMV&STW P3 KEEL PIN	P3 CLNUP	SASA R&R	SIGNASNTL MISSE 5
	MS3/EV2 PIPER	SLEEP (IN ISS A/L)	POST SLEEP	HYG BRK/PREBREATHE	CAMPOUT EVA PREP	EMURGE	EMU PRE BREATHE	C_LK DPRS	PESGRTUP	SASA R&R PREP	RLS CNCH/WNCH	RMV&STW P3 KEEL PIN	P3 CLNUP	SASA R&R	S-BND BSP & XPDR R&R		
	MS2/EV3 BURBANK	SLEEP	POST SLEEP					EXERCISE	EVA3 IV1 SPPT								
	MS4/EV4 MACLEAN	SLEEP	POST SLEEP					EXERCISE	EVA3 IV2 SPPT								
ISS	ISS CDR	SLEEP - ISS		POSTSLEEP-ISS		PWROPK	DPC	PWROPK	VELO + HC		EXERCISE TVIS		MIDDAY-MEAL	COX MNT			
	FE-1	SLEEP - ISS		POSTSLEEP-ISS		PWROPK	DPC	PWROPK			EXERCISE-RED		MIDDAY-MEAL			EXERCISE TVIS	
	FE-2	SLEEP - ISS		POST SLEEP ISS	HYG BRK/HATCH CLS	CAMPOUT EVA PREP	EMURGE	EMU PRE BREATHE	C_LK DPRS	P	MIDDAY-MEAL				EXERCISE TVIS		
DAY/NIGHT		88		89		90		91		92		93		94		95	
ORBIT		15		1		2		3		4		5		6		7	
DAILY ORBIT		15		1		2		3		4		5		6		7	
TDRS		W -171.0		E -46.0		Z -275.0											
ORB ATT										BIAS -XLV -ZVV							
NOTES																	

*COMM Config

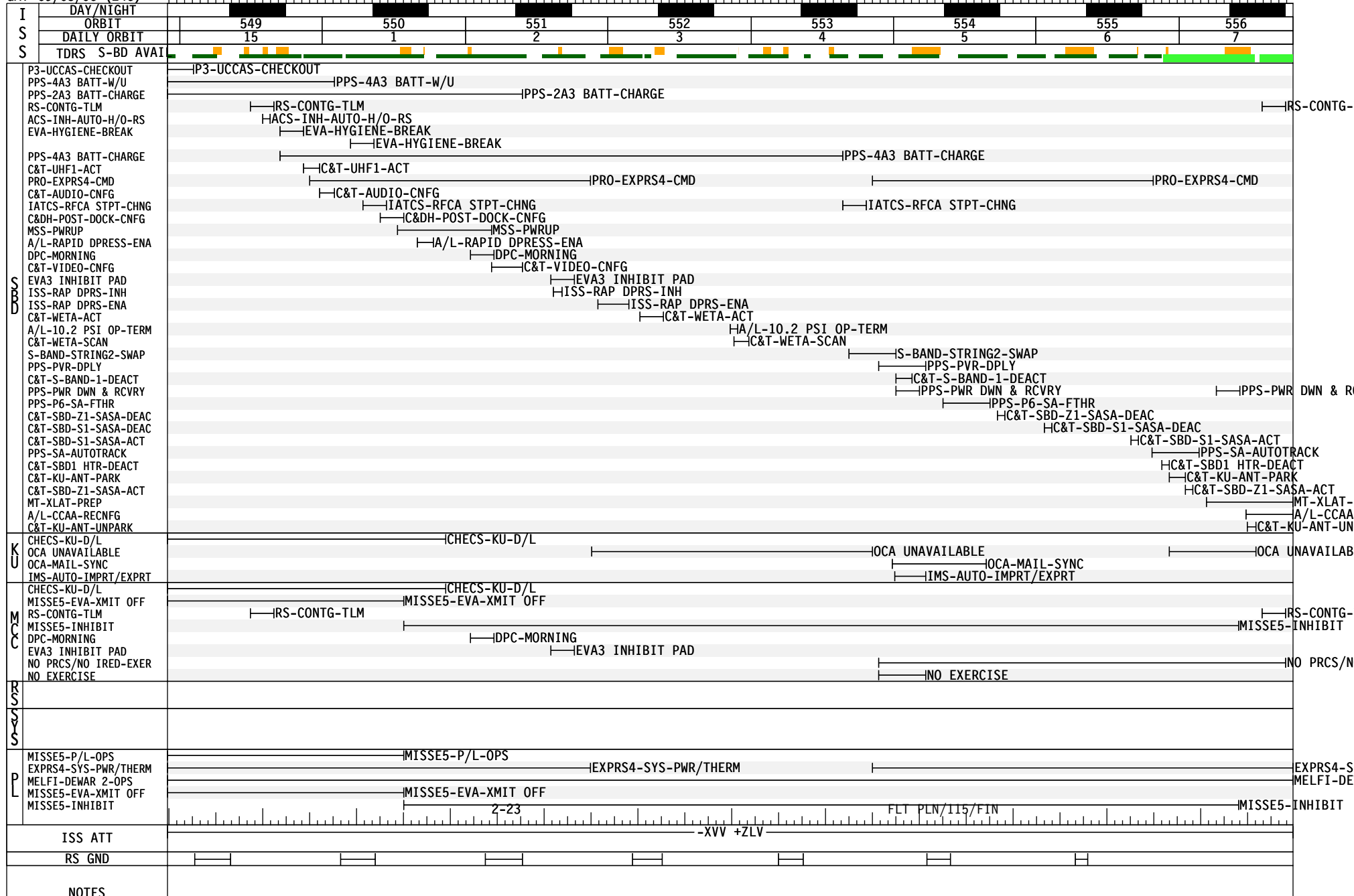
*EVA3 CLN
 @EVA3 CLN

FD07

STS-115/12A JOINT MISSION STP

MET Day 005 12 13 14 15 16 17 18 19 20 21 22 23 006/00
β = -8.83 08 09 10 11 12 13 14 15 16 17 18 19

GMT 09/03/06 (246)



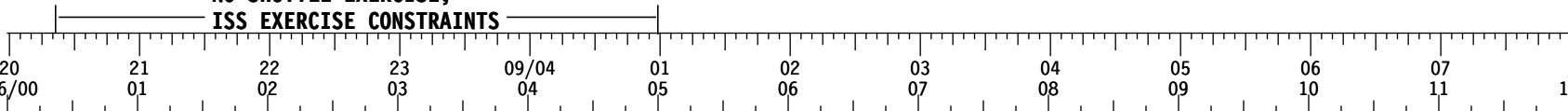
**NO SHUTTLE EXERCISE,
ISS EXERCISE CONSTRAINTS**

FD07

GMT 09/03/06 (246)

β = -11.19 006/00

MET Day 006



S T S - 1 1 5	CDR JETT				COLLUM*	ION PMCA/G		PRE SLEEP		SLEEP	
	PLT FERGUSON	OS IS UV - D4				PCS*	MISSE XFER	PRE SLEEP		SLEEP	
	MS1/EV1 TANNER	EC VL AN 3 UP P	PR RS				7 6 0 *	B I S N A I T *	PRE SLEEP		SLEEP
	MS3/EV2 PIPER	EC VL AN 3 UP P	PR RS					B I S N A I T *	PRE SLEEP		SLEEP
	MS2/EV3 BURBANK	EVA3 IV1 SPPT						M/R E L M T I V O O X H	PRE SLEEP		SLEEP
	MS4/EV4 MACLEAN	EVA3 IV2 SPPT						M/R E L M T I V O O X H	PRE SLEEP		SLEEP
I S S	ISS CDR						PREP WORK	DPC	PRESLEEP-ISS	SLEEP - ISS	
	FE-1		J R N L			IMS EDIT*	PREP WORK	DPC	PRESLEEP-ISS	SLEEP - ISS	
	FE-2						PREP WORK	DPC	PRESLEEP-ISS	SLEEP - ISS	
DAY/NIGHT		[Timeline bars for Day/Night]									
ORBIT		[Timeline bars for Orbit]									
DAILY ORBIT		[Timeline bars for Daily Orbit]									
TDRS		[Timeline bars for TDRS]									
ORB ATT		[Timeline bars for Orb Att]									
NOTES		*Open *CMS-EXER FILE-DWNLD *Deconfig *Includes recharge of REBA, *CONFIG PGT, Helmet Light *CAM DISASSEMBLY									

ISS EXTERNAL SURVEY

FD08

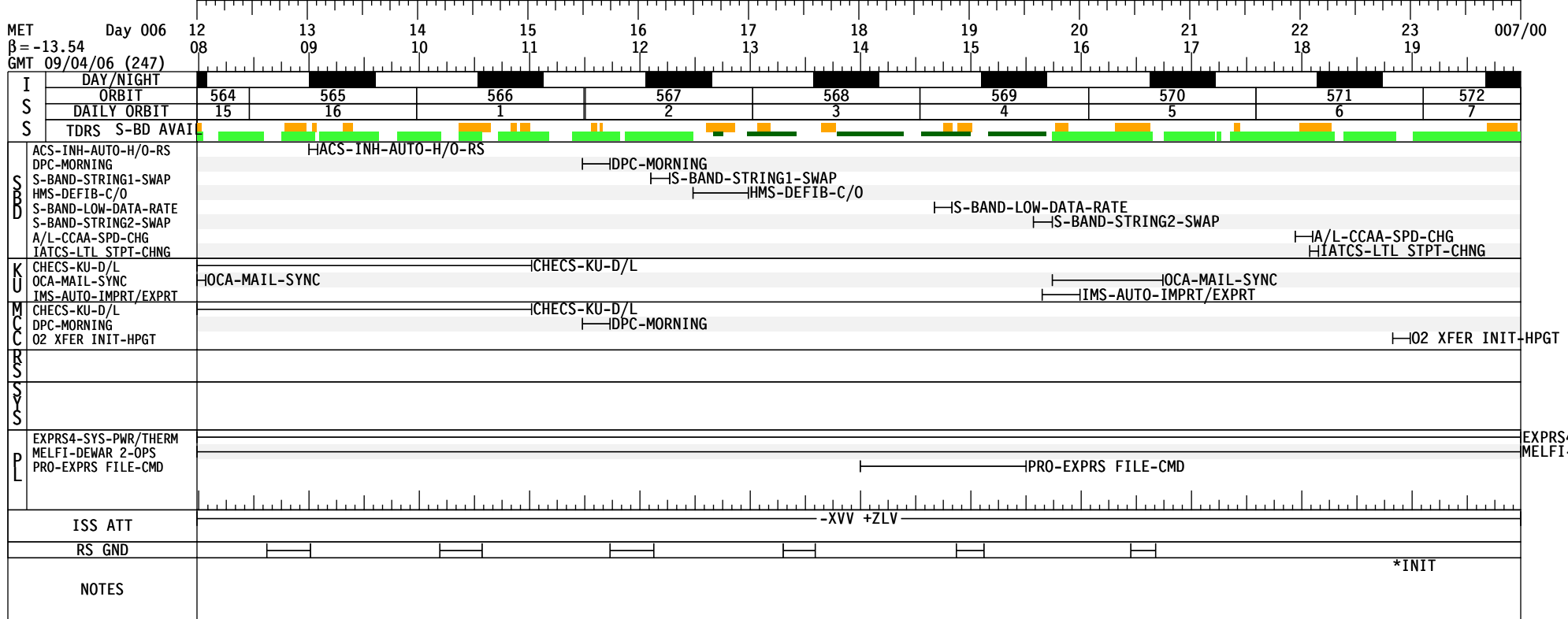
GMT 09/04/06 (247)
 β = -13.54
 MET Day 006

08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 007/00

STS-115	CDR JETT	SLEEP	LOG	POST SLEEP	OFF DUTY	PFC A/G	OFF DUTY	MEAL	CPH REO W T O	CREW CONF	O2 RECONFIG TO XFER	O2* #9	CIN CT #9	P/TV 08 S/U	
	PLT FERGUSON	SLEEP	LOG	POST SLEEP	I O L F L U M		OFF DUTY	MEAL	CPH REO W T O	CREW CONF		O B S S	OBSS UNBTH CAMR	O H B / S O S	
	MS1/EV1 TANNER	SLEEP	LOG	POST SLEEP	P/TV 05 S/U	OFF DUTY	PFC OCA	OFF DUTY	MEAL	CPH REO W T O	CREW CONF	PWR FILL #4	PWR FILL #5	EVA PREP FOR STS XFR	
	MS2/EV3 BURBANK	SLEEP	LOG	POST SLEEP	OFF DUTY	PFC OCA	OFF DUTY	MEAL	CPH REO W T O	CREW CONF	W L E S *	O B S S	OBSS UNBTH CAMR	O H B / S O S	
	MS3/EV2 PIPER	SLEEP	LOG	POST SLEEP	PFC OCA	POST SLEEP	OFF DUTY	MEAL	CPH REO W T O	CREW CONF	OBSS GRPL	OBSS UNBRT	SSRMS OBSS MNVR H/O	U N G R P	
	MS4/EV4 MACLEAN	SLEEP	LOG	POST SLEEP	OFF DUTY	PFC OCA	OFF DUTY	MEAL	CPH REO W T O	CREW CONF	OBSS GRPL	OBSS UNBRT	SSRMS OBSS MNVR H/O	U N G R P	
ISS	ISS CDR	SLEEP - ISS		POSTSLEEP-ISS	PREP WORK	DPC		COX MNT	MIDDAY-MEAL	CPH REO W T O	CREW CONF		EXERCISE TVIS	VELO + HC	
	FE-1	SLEEP - ISS		POSTSLEEP-ISS	PREP WORK	DPC	DEFIB C/O	EXERCISE-RED	EXERCISE TVIS	CSA-CP	MIDDAY-MEAL	CPH REO W T O	CREW CONF	XFER OPS	
	FE-2	SLEEP - ISS		POSTSLEEP-ISS	PREP WORK	DPC		EXERCISE TVIS	EXERCISE-RED	MIDDAY-MEAL	CPH REO W T O	CREW CONF	O2 RECONFIG TO XFER	O2* #9	EVA PREP FOR STS XFR
DAY/NIGHT		[Timeline bars for Day/Night]													
ORBIT		[Timeline bars for Orbit]													
DAILY ORBIT		[Timeline bars for Daily Orbit]													
TDRS		[Timeline bars for TDRS]													
ORB ATT		[Timeline bars for Orb Att]													
NOTES		*DISABLE FILE B/U *EXPRS4-ELC-PWRUP *INIT @ALTEA-EXPRS-ENABL *ENABLE FILE B/U ♦ALTEA-P/L-ACT													

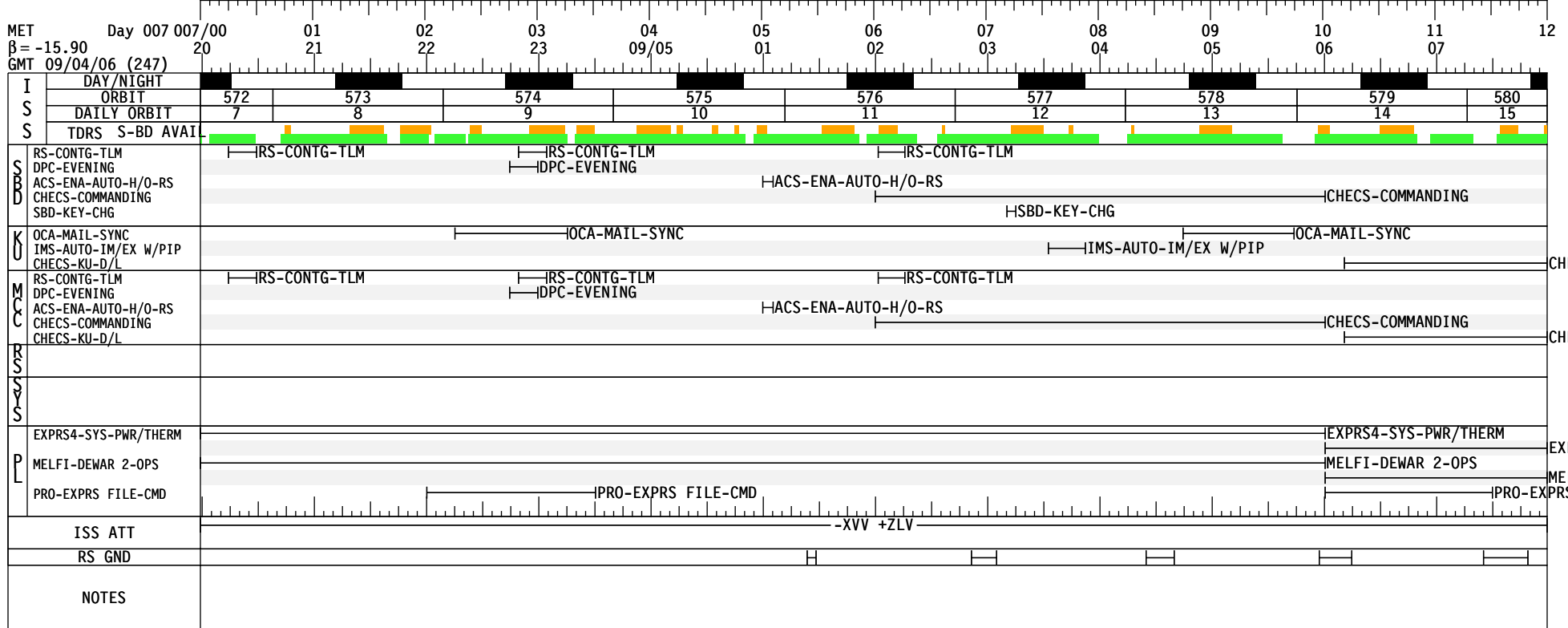
FD08

STS-115/12A JOINT MISSION STP



FD08

STS-115/12A JOINT MISSION STP



FD09

GMT 09/05/06 (248)

β = -18.21

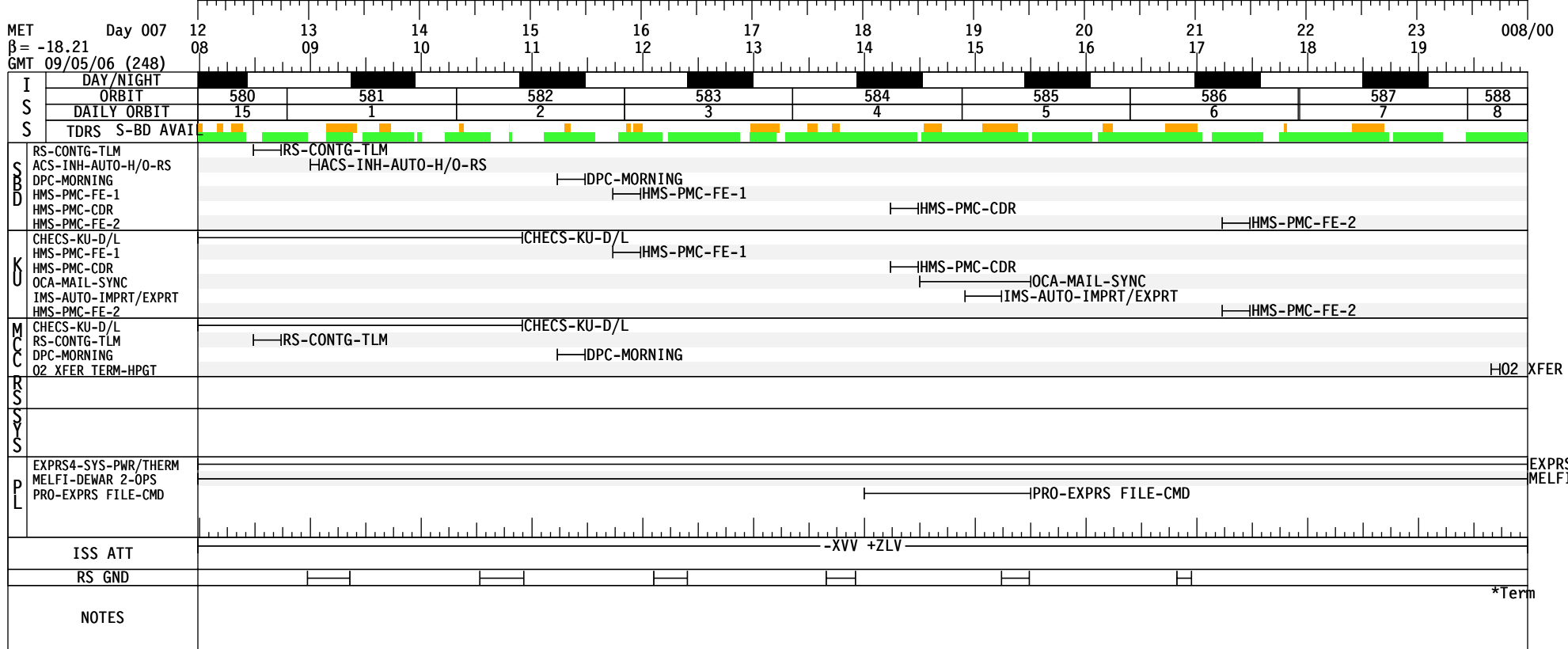
MET Day 007

08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 008/00

S T S - 1 1 5	CDR JETT	SLEEP	POST SLEEP		SWAP	CIN	CT	CX	PE	MEAL	PE	EXERCISE	RNDZ TOOLS C/O	02SYS *T/D	
	PLT FERGUSON	SLEEP	POST SLEEP		IOLFLUM	LDR I*	OBSS PORT SURVEY		CFER	MEAL	PE	CFER	EXERCISE	CFER	
	MS1/EV1 TANNER	SLEEP	POST SLEEP		XFER OPS		EXERCISE	P/TV 05 S/U	CFER	MEAL	PE	XFER OPS			
	MS2/EV3 BURBANK	SLEEP	POST SLEEP		OBSS PORT SURVEY		XFER OPS		MEAL	PE	XFER OPS	EXERCISE	WLES*	RNDZ TOOLS C/O	
	MS3/EV2 PIPER	SLEEP	POST SLEEP		MNVR SRVY SUPT	XFER OPS		EXERCISE	MEAL	PE	XFER OPS				
	MS4/EV4 MACLEAN	SLEEP	POST SLEEP		MNVR SRVY SUPT	OBSS PORT SURVEY		CFER	PE	MEAL	PE	XFER OPS		EXERCISE	
I S S	ISS CDR	SLEEP - ISS	POSTSLEEP-ISS	PW R E R P K	DPC	PW R E R P K	COX MNT		PMC	PREP	MIDDAY-MEAL	PE	EXERCISE TVIS	VELO + HC	
	FE-1	SLEEP - ISS	POSTSLEEP-ISS	PW R E R P K	DPC	PW R E R P K	PMC	EXERCISE-RED	XFER OPS		MIDDAY-MEAL	PE	POEMS SMPL RMV	EXERCISE TVIS	
	FE-2	SLEEP - ISS	POSTSLEEP-ISS	PW R E R P K	DPC	PW R E R P K	ITCS SAMP MTL	EXERCISE TVIS	EXERCISE-RED	MIDDAY-MEAL	PE	XFER OPS	PMC	02SYS *T/D	
DAY/NIGHT		[Bar chart showing day/night cycle]													
ORBIT		[Bar chart showing orbit parameters]													
DAILY ORBIT		[Bar chart showing daily orbit parameters]													
TDRS		[Bar chart showing TDRS parameters]													
ORB ATT		BIAS -XLV -ZVV													
NOTES		*ACT *RNDZ PREP *IMS EDIT *Term													

FD09

STS-115/12A JOINT MISSION STP

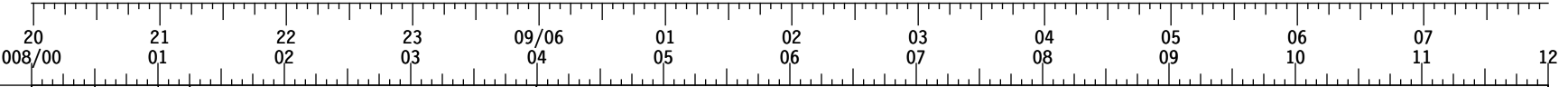


FD09

GMT 09/05/06 (248)

β = -20.46

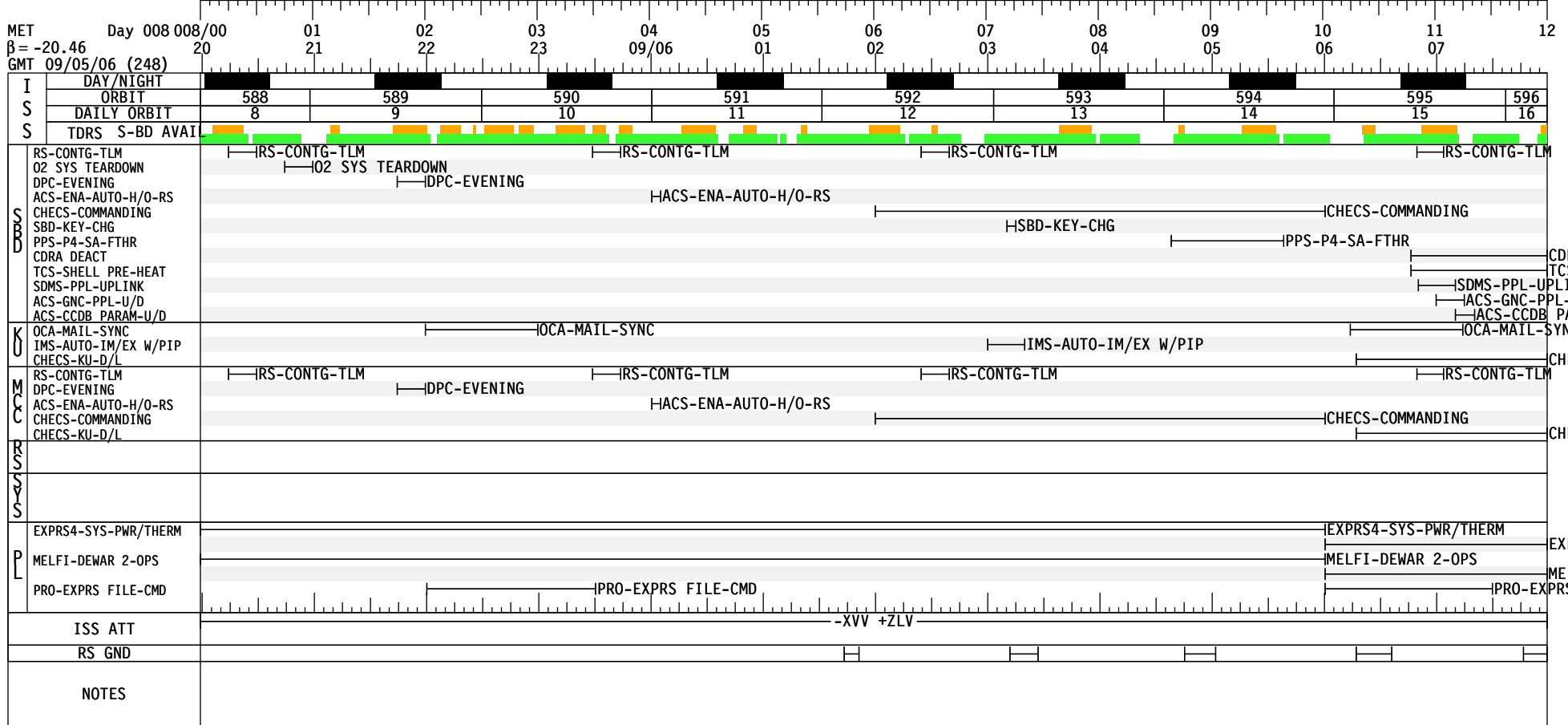
MET Day 008



S T S - 1 1 5	CDR JETT	02 SYS T/D		PMC A/G	PRE SLEEP	SLEEP				
	PLT FERGUSON	XFER OPS	I O L N L U M		PRE SLEEP	SLEEP				
	MS1/EV1 TANNER	XFER OPS	P S T E V T O U 4 P		PRE SLEEP	SLEEP				
	MS2/EV3 BURBANK	XFER OPS	0 2 *	PRE SLEEP	0 2 *	PRE SLEEP	SLEEP			
	MS3/EV2 PIPER	XFER OPS	X T F A R I E G R U P F		PRE SLEEP	SLEEP				
	MS4/EV4 MACLEAN	XFER OPS			PRE SLEEP	SLEEP				
I S S	ISS CDR			PREP WORK DPC	PRESLEEP-ISS	SLEEP - ISS				
	FE-1	* ⊕	J R N L	PREP WORK DPC	PRESLEEP-ISS	SLEEP - ISS				
	FE-2	02 SYS T/D	X T F A E G R U P	PREP WORK DPC	PRESLEEP-ISS	SLEEP - ISS				
DAY/NIGHT		[Timeline with day/night bars]								
ORBIT		127	128	129	130	131	132	133	134	135
DAILY ORBIT		8	9	10	11	12	13	14	15	16
TDRS		W -171.0	[Timeline with TDRS bars]							
		E -46.0	[Timeline with TDRS bars]							
		Z -275.0	[Timeline with TDRS bars]							
ORB ATT		BIAS -XLV -ZVV								
NOTES		*IMS EDIT *REPRESS TERM ⊕CMS-EXER FILE-DWNLD *REPRESS INIT				ISS EXTERNAL SURVEY				

FD09

STS-115/12A JOINT MISSION STP



FD10

GMT 09/06/06 (249)
 β = -22.67
 MET Day 008

08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 009/00

S T S - 1 1 5	CDR JETT	POST SLEEP		FWA REL	P/TV 04 EGRS OPS	ABU DO I O	S M V 3	GP R P R U P	M- N X L V R V	UNDOCK OPS	FLYAROUND PLACEHLDR	SEP	M- Z V L R V	S I N I M I O T	MEAL	S T I E N T M R V B O M R D	M N O V S R E	M- C I N Z O N V L N I R V D T
	PLT FERGUSON	POST SLEEP		FWA REL	H / O	R N F G *	I O L F L F M	GP R P R U P	UNDOCK OPS	FLYAROUND PLACEHLDR	SEP	GP R P R B N	P C S L S L O W S E 4	MEAL	L D R I *	OBSS STBD SURVEY	NOSE CAP SURVEY	OBSS BERTH
	MS1/EV1 TANNER	POST SLEEP		FWA REL	HATCH CLOSE	C/L CMR INSTL	P/TV 03 UNDC S/U	UNDOCK OPS	03 UNDC OPS	FLYAROUND PLACEHLDR	SEP	P D T E V A O C T	S C T S O / O N D R D	MEAL	PST ISS EVA ENT PREP	EXERCISE	C O M M 1	S D E V A C T
	MS2/EV3 BURBANK	POST SLEEP	02* POST SLEEP	FWA REL	02*	ODS LEAK CK	UNDOCK OPS	FLYAROUND PLACEHLDR	SEP	GP R P R B N	PST UNDC PGSC ENFG	W L E S *	MEAL	OBSS STBD SURVEY	NOSE CAP SURVEY	OBSS BERTH		
	MS3/EV2 PIPER	POST SLEEP		FWA REL	HATCH CLOSE	EMU INSTL	UNDOCK OPS	FLYAROUND PLACEHLDR	SEP	MEAL	PST ISS EVA ENT PREP	EXERCISE						
	MS4/EV4 MACLEAN	POST SLEEP		FWA REL	ODS LEAK CK	UNDOCK OPS	FLYAROUND PLACEHLDR	SEP	U P N L D B C K K	MEAL	OBSS STBD SURVEY	NOSE CAP SURVEY	OBSS BERTH					

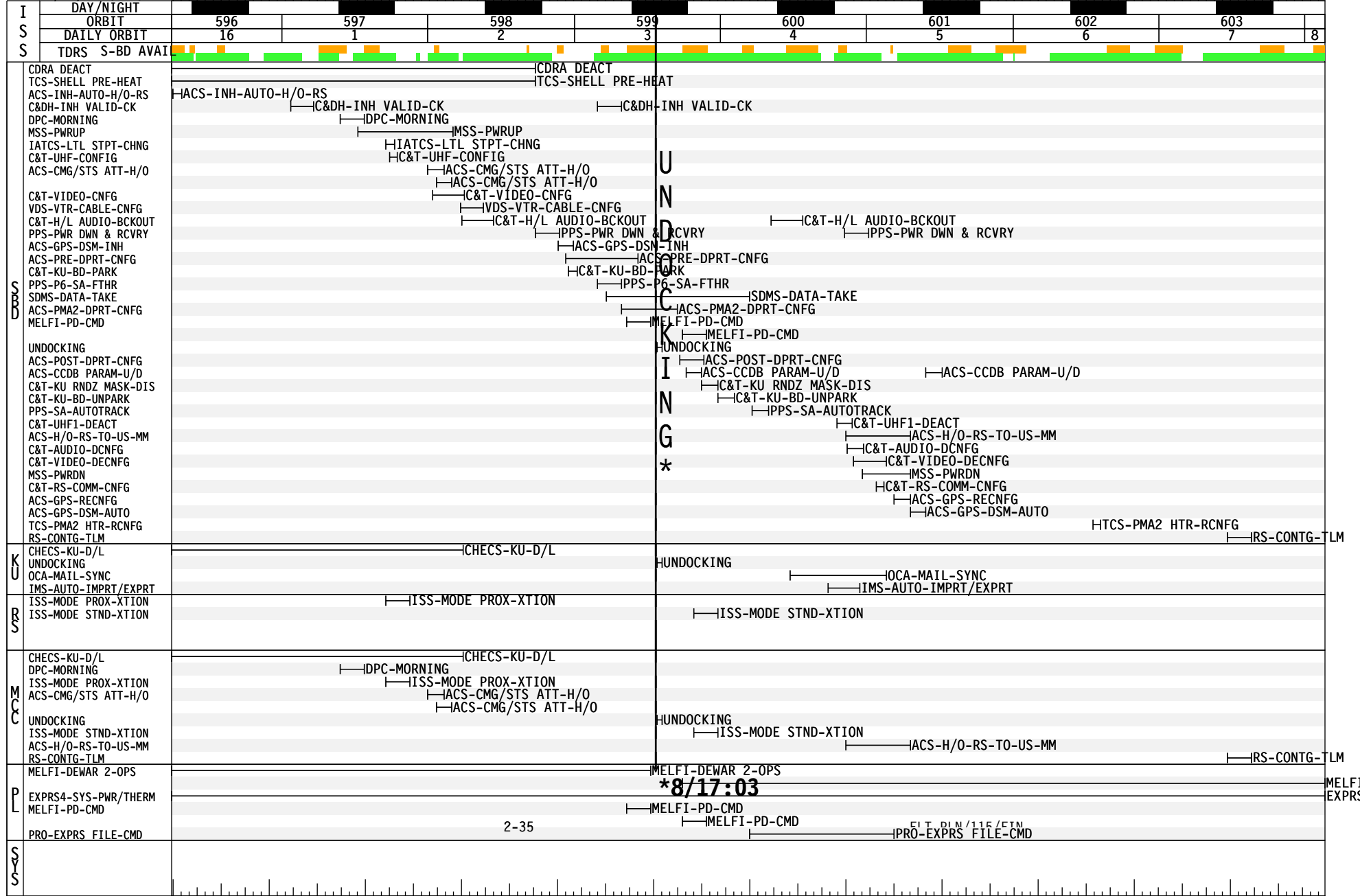
I S S	ISS CDR	SLEEP - ISS	PS-ISS	DPC	P R O A E R O L P K	FWA REL	P W O L E R P K	HATCH CLOSE	P R O T E C T I O N	V I S I O N S W I N D O W	PMA2 DEPART CONFIG	I W I S *	C D R A *	PMA2 DPRS	MIDDAY-MEAL	PLI M K N I A C K 2	PLT M K E R A C M 2	EXERCISE TVIS	VELO + HC
	FE-1	SLEEP - ISS	PS-ISS	DPC	P R O A E R O L P K	FWA REL	HATCH CLOSE	P R O T E C T I O N	V I S I O N S W I N D O W	PMA2 DEPART CONFIG	I W I S *	C D R A *	PMA2 DPRS	MIDDAY-MEAL	PLI M K N I A C K 2	PLT M K E R A C M 2	EXERCISE TVIS	VELO + HC	
	FE-2	SLEEP - ISS	PS-ISS	DPC	P R O A E R O L P K	FWA REL	HATCH CLOSE	P R O T E C T I O N	V I S I O N S W I N D O W	PMA2 DEPART CONFIG	I W I S *	C D R A *	PMA2 DPRS	MIDDAY-MEAL	PLI M K N I A C K 2	PLT M K E R A C M 2	EXERCISE TVIS	VELO + HC	

DAY/NIGHT	135		136		137		138		139		140		141		142		8	
ORBIT	16		1		2		3		4		5		6		7		8	
DAILY ORBIT	16		1		2		3		4		5		6		7		8	
TDRS	W -171.0		E -46.0		Z -275.0													
ORB ATT	BIAS -XLV -ZVV		UNDOCK/SEP		-ZLV +YVV		STBD SURVEY		-ZLV +YVV		NOSE CAP SURVEY							
NOTES	*REPRESS INIT		*SUPPLY H2O		*REPRESS TERM		*8/17:03		*DEACT		*DEACT SPPT		*RCNFG POST DOCK		*ACT		*PRE SLEEP	

FD10

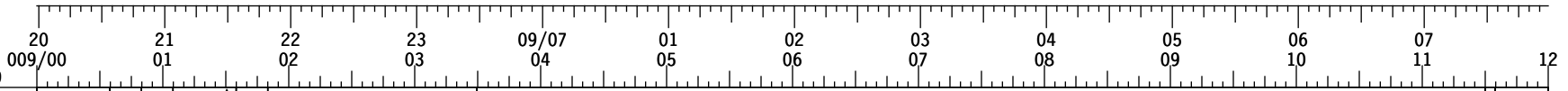
STS-115/12A JOINT MISSION STP

MET Day 008 12 13 14 15 16 17 18 19 20 21 22 23 009/00
beta = -22.67
GMT 09/06/06 (249) 08 09 10 11 12 13 14 15 16 17 18 19



FD10

GMT 09/06/06 (249)
 β = -24.88
 MET Day 009



STS-115	CDR JETT	PRE SLEEP	PMC A/G	CT O E N R D M	NCS RCS BURN	M - N Z V L R V	PRE SLEEP	SLEEP	LOG	POST SLEEP		
	PLT FERGUSON	PRE SLEEP		I M U	RCS BURN		PRE SLEEP	SLEEP	LOG	POST SLEEP		
	MS1 TANNER						PRE SLEEP	SLEEP	LOG	POST SLEEP		
	MS2 BURBANK	R P M W S R R D N					PRE SLEEP	SLEEP	LOG	POST SLEEP		
	MS3 PIPER	L D R I D N L K					PRE SLEEP	SLEEP	LOG	POST SLEEP		
	MS4 MACLEAN						PRE SLEEP	SLEEP	LOG	POST SLEEP		
DAY/NIGHT		[Day/Night bar]										
ORBIT		[Orbit bar]										
DAILY ORBIT		143	144	145	146	147	148	149	150			
TDRS		W -171.0	E -46.0	Z -275.0	[TDRS bar]							
ORB ATT		-ZLV +YVV NCS -ZLV -XVV										
GND		-DFR -DFR -DFR -MLA -DFR -MLA -DFR -MLA -DFR										
NOTES												

FD11

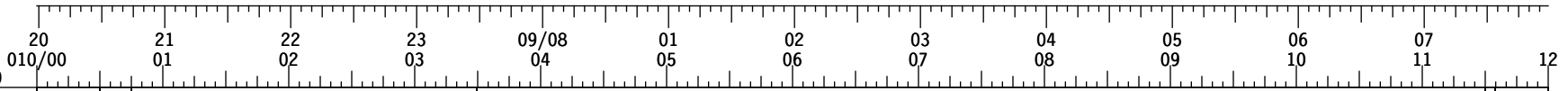
GMT 09/07/06 (250)
 $\beta = -27.04$
 MET Day 009

08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 010/00

STS-115	CDR JETT	POST SLEEP	M-NZ VLR	POST SLEEP	NC6 RCS BURN	M-NZ VLR	CABIN STOW	FCS C/O	RFCS SRE HOT	CABIN STOW	D/O BRIEF	MEAL	PEAV OENT	OFF DUTY	EXERCISE	PILOT SETUP	PILOT OPS		
	PLT FERGUSON	POST SLEEP	CION NIDT	POST SLEEP	CTOEN NDM	RCS BURN	APU HTR	FCS C/O	RFCS SRE HOT	EXERCISE	CSAT BOW N	D/O BRIEF	MEAL	PEAV OENT	OFF DUTY	FES* CABIN STOW	FES* CABIN STOW	PILOT OPS	
	MS1 TANNER	POST SLEEP			CABIN STOW		EXERCISE	CABIN STOW		PAO S/U	D/O BRIEF	MEAL	PEAV OENT	OFF DUTY	ENTRY VIDEO SETUP	CABIN STOW			
	MS2 BURBANK	POST SLEEP			CSAT BOW N	FILTER CLEANING	FCS C/O		RFCS SRE HOT	CABIN STOW		D/O BRIEF	MEAL	PEAV OENT	OFF DUTY	CABIN STOW	EXERCISE	COM M 2	PGSC STOW PART I
	MS3 PIPER	POST SLEEP			CABIN STOW		EXERCISE	CABIN STOW	D/O BRIEF	MEAL	PEAV OENT	OFF DUTY	LCOM 1M	OFF DUTY	CSAT BOW N	LCOM 1M	CABIN STOW		ESRT GO W
	MS4 MACLEAN	POST SLEEP			CABIN STOW		EXERCISE	CABIN STOW	D/O BRIEF	MEAL	PEAV OENT	OFF DUTY	CABIN STOW			WLEA SCT	ESRT GO W		
DAY/NIGHT		151		152		153		154		155		156		157		158			
ORBIT		1		2		3		4		5		6		7		8			
DAILY ORBIT		1		2		3		4		5		6		7		8			
TDRS		W -171.0		E -46.0		Z -275.0													
ORB ATT		BIAS -ZLV +YVV		NC6															
GND																			
NOTES																			

FD11

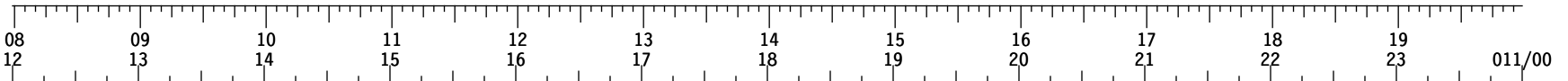
GMT 09/07/06 (250)
 $\beta = -29.13$
 MET Day 010



S T S - 1 1 5	CDR JETT	PILOT OPS	PMC A/G	PRE SLEEP	SLEEP	LOG	POST SLEEP
	PLT FERGUSON	PILOT OPS	ENTR RY*	PRE SLEEP	SLEEP	LOG	POST SLEEP
	MS1 TANNER	CABIN STOW		PRE SLEEP	SLEEP	LOG	PS OL SE TE P
	MS2 BURBANK	PGSC STOW PART I		PRE SLEEP	SLEEP	LOG	POST SLEEP
	MS3 PIPER	ES RT GO W	KS UT - O B W D	PRE SLEEP	SLEEP	LOG	POST SLEEP
	MS4 MACLEAN	ES RT GO W		PRE SLEEP	SLEEP	LOG	POST SLEEP
DAY/NIGHT		[Day/Night bar chart]					
ORBIT		[Orbit bar chart]					
DAILY ORBIT		[Daily Orbit bar chart]					
TDRS		[TDRS bar chart]					
ORB ATT		-ZLV -XVV					
GND		-DFR -DFR -DFR -MLA -DFR -MLA -DFR -DFR					
NOTES		*COOLING CONFIG					

FD12

GMT 09/08/06 (251)
 β = -31.13
 MET Day 010



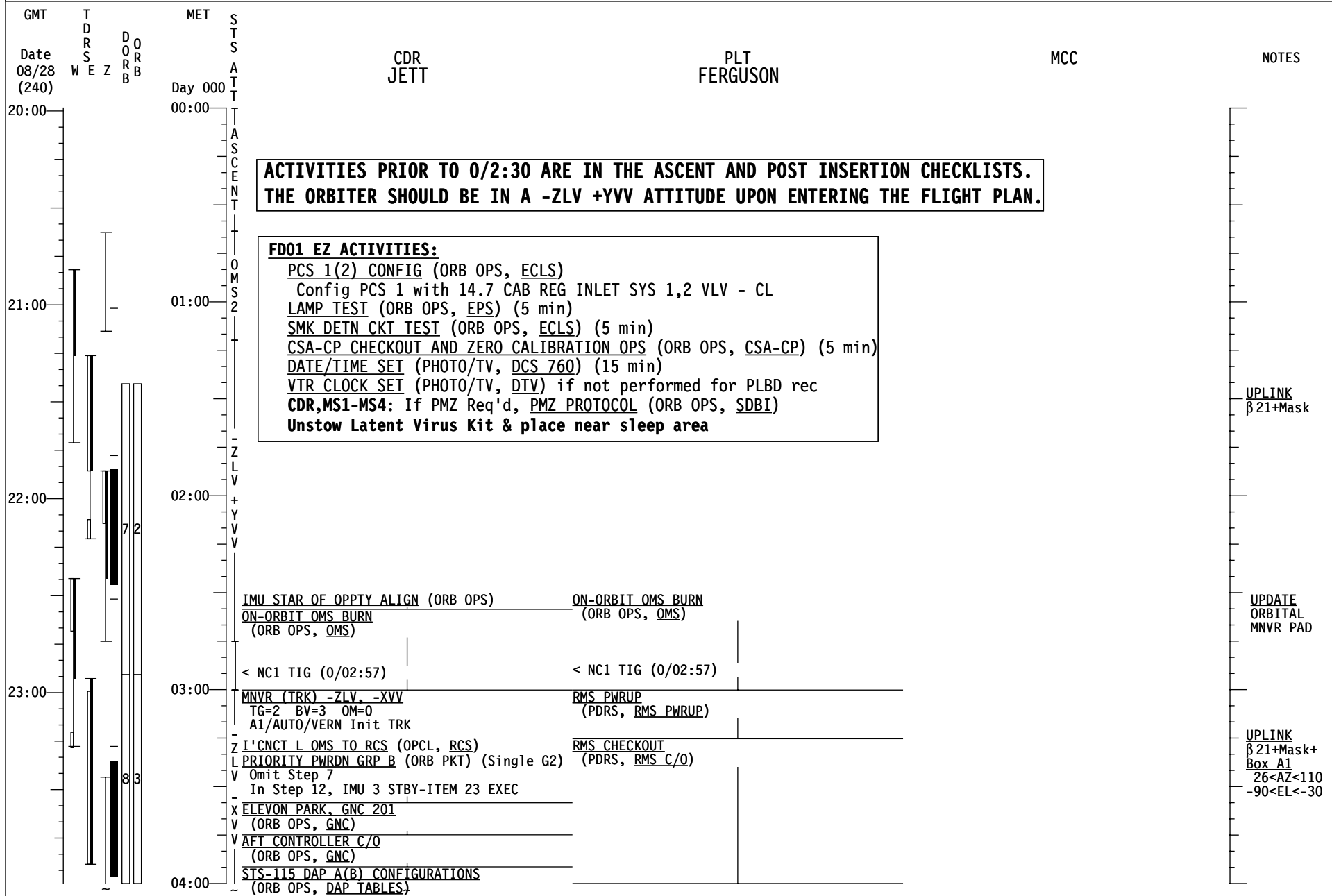
STS-115	CDR JETT	POST SLEEP	WATCH TPMCA/G	GP RR UP	IMU ALIGN & VERIF	M- NX VSI	DEORBIT PREP			
	PLT FERGUSON	POST SLEEP	WATCH PRUB	GP RR UP	POST SLEEP		DEORBIT PREP	D E O R B I T *	L A N D I N G *	
	MS1 TANNER	POST SLEEP	WATCH		GS IT RO AW		DEORBIT PREP			
	MS2 BURBANK	POST SLEEP	WATCH		PGSC TSTOW CPART H II		DEORBIT PREP			
	MS3 PIPER	POST SLEEP	WATCH TI CR		OS CT AO CW		DEORBIT PREP			
	MS4 MACLEAN	POST SLEEP	WATCH				DEORBIT PREP			
DAY/NIGHT										
ORBIT		166	167	168	169	170	171	172	173	174
DAILY ORBIT		16	1	2	3	4	5	6	7	8
TDRS										
ORB ATT		-ZLV -XVV			IMU	-XSI	COMM	ENTRY		
GND							MLA -MLA	-MLA	-DFR -MLA	-DFR
NOTES		<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">*KSC TIG 10/19:12</div> <div style="border: 1px solid black; padding: 5px;">*KSC LANDING 10/20:16</div> </div>								

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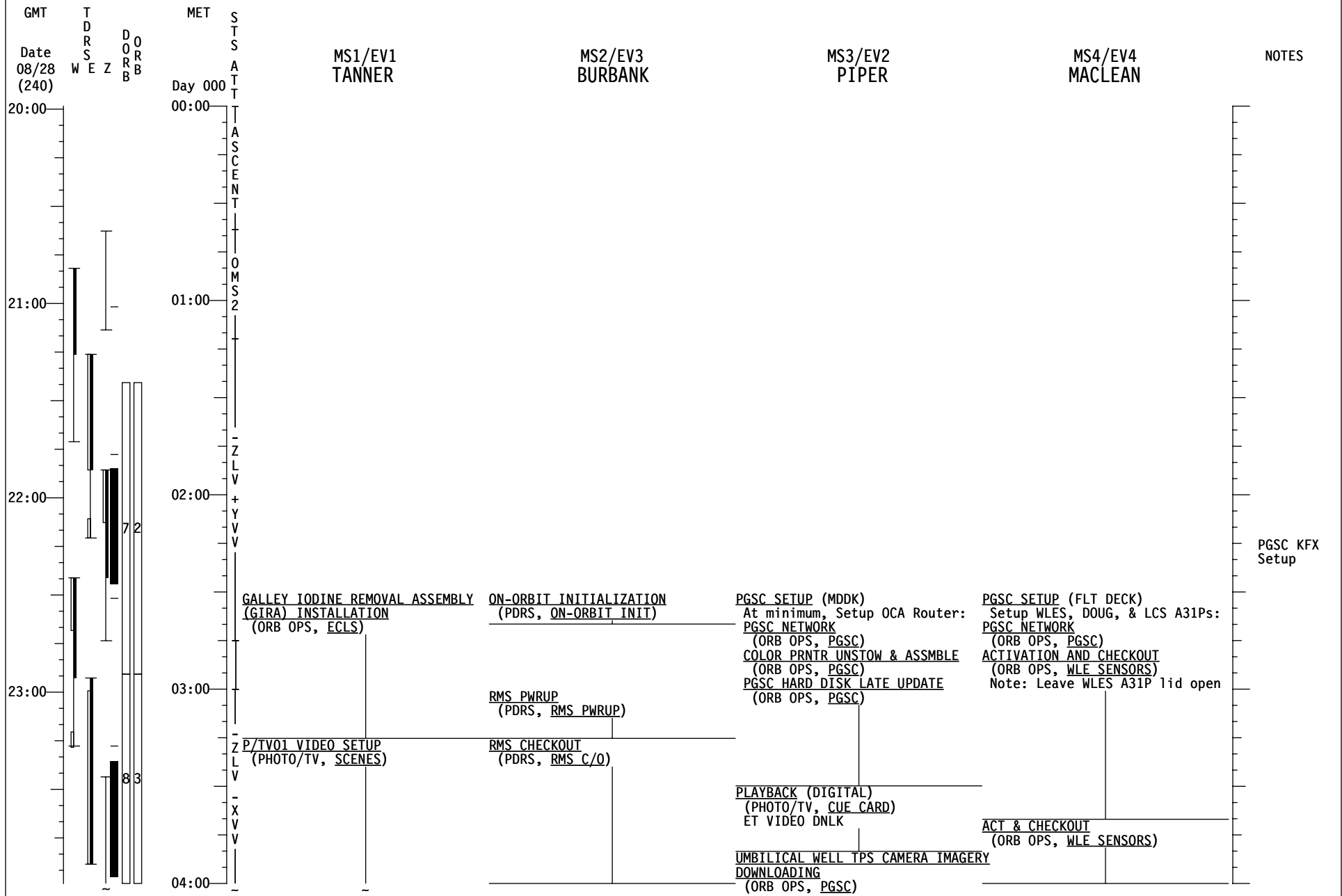
DETAILED TIMELINE

DETAILED
TIMELINE

STS-115 (FD01)

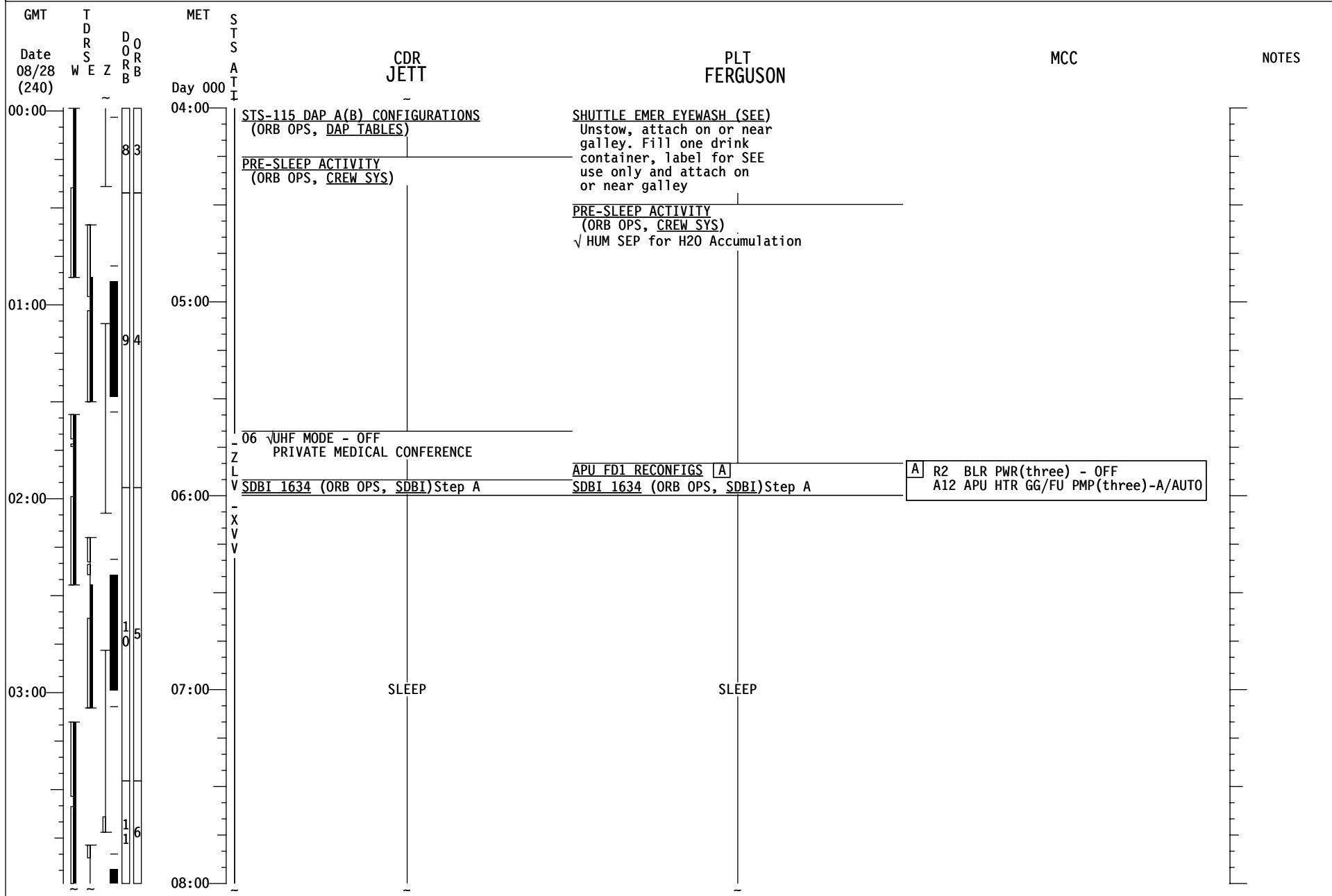


STS-115 (FD01)

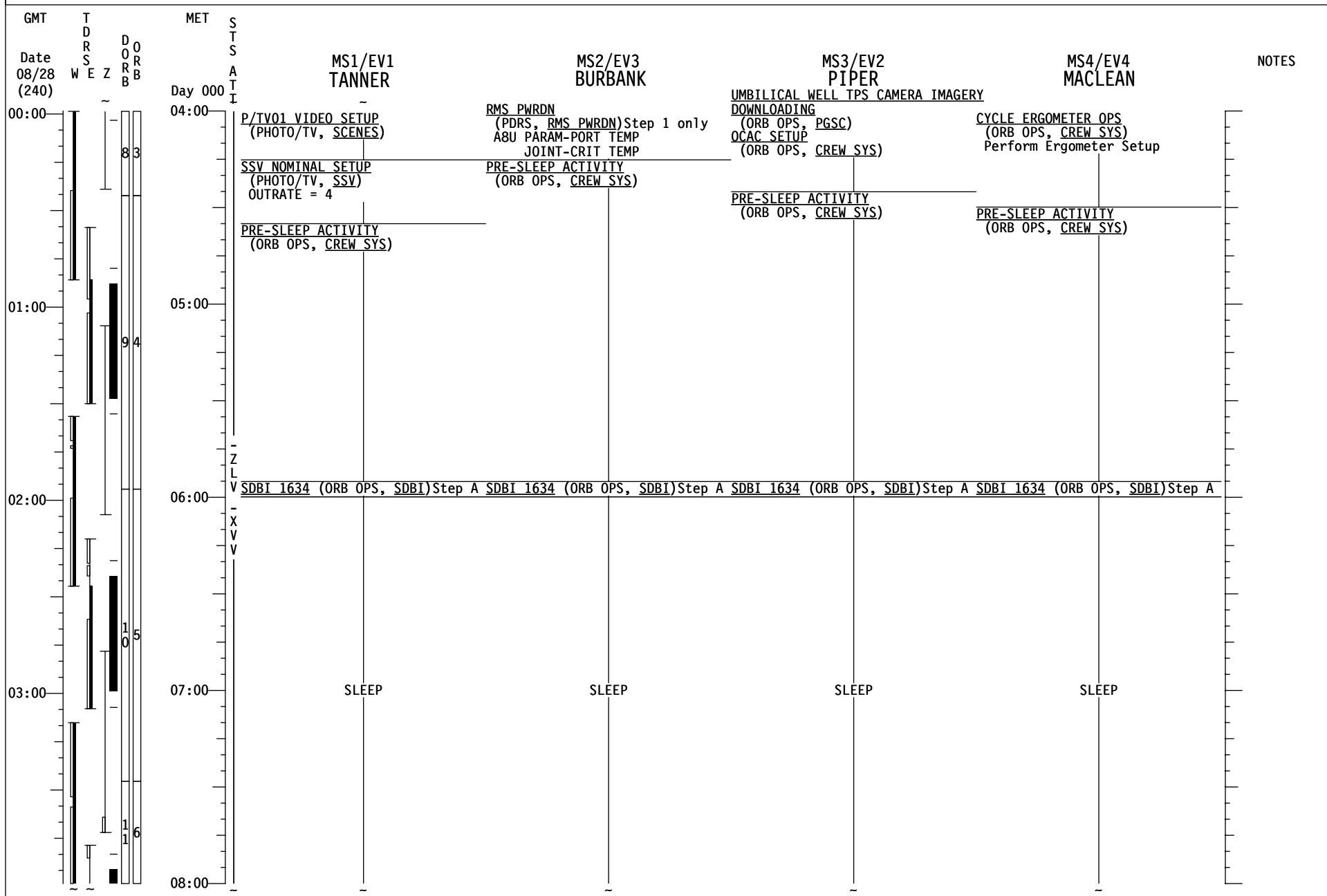


PGSC KFX Setup

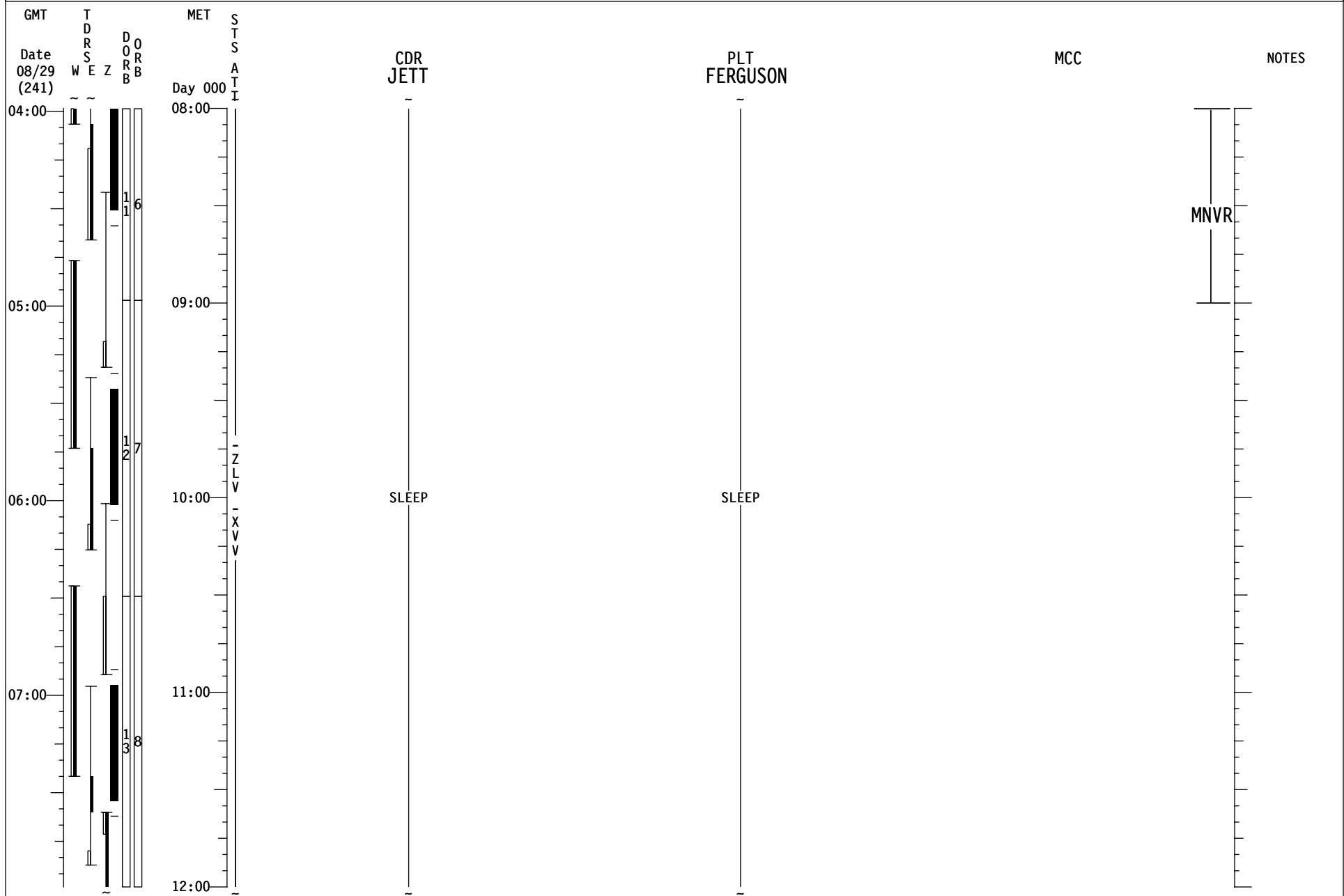
STS-115 (FD01)



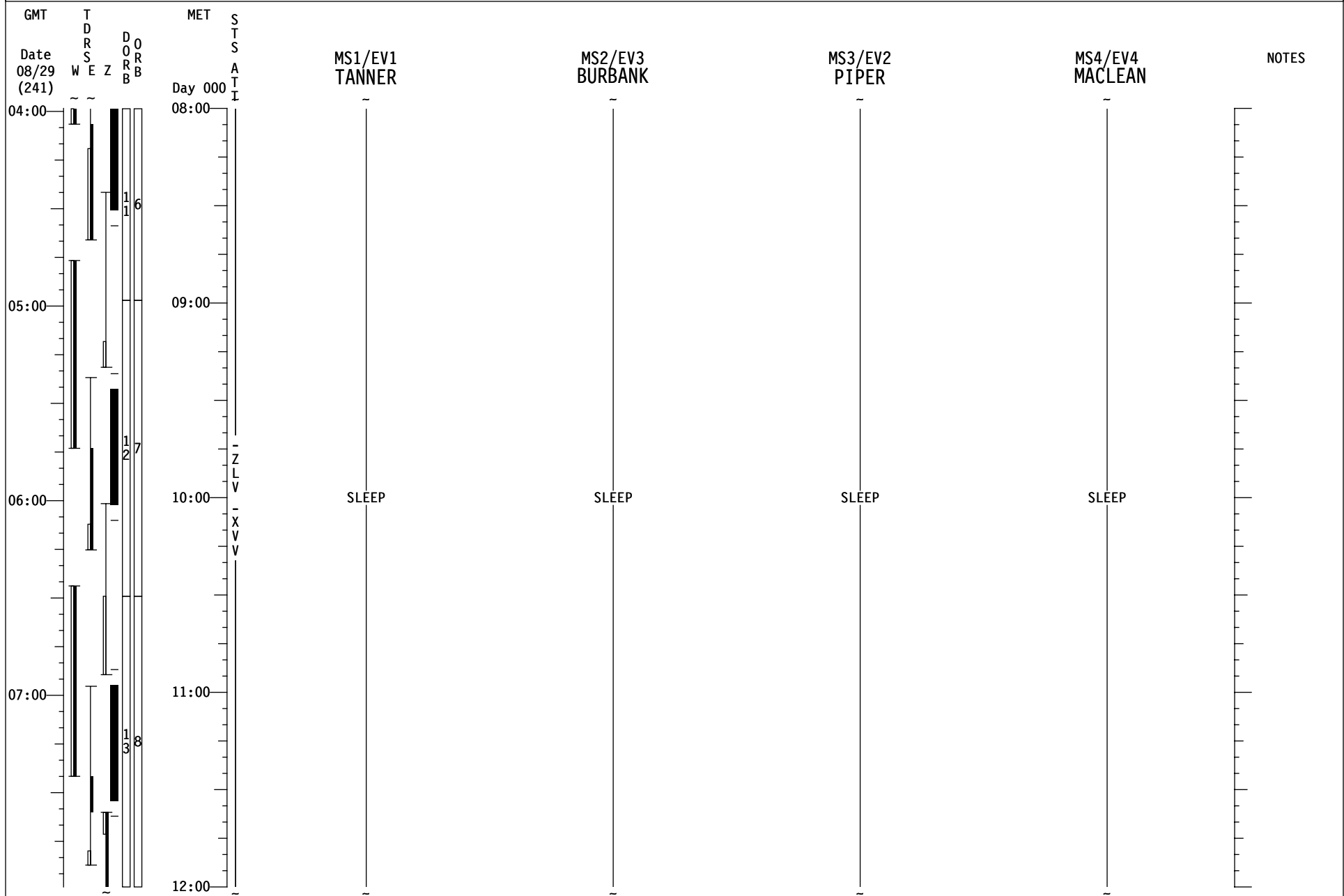
STS-115 (FD01)



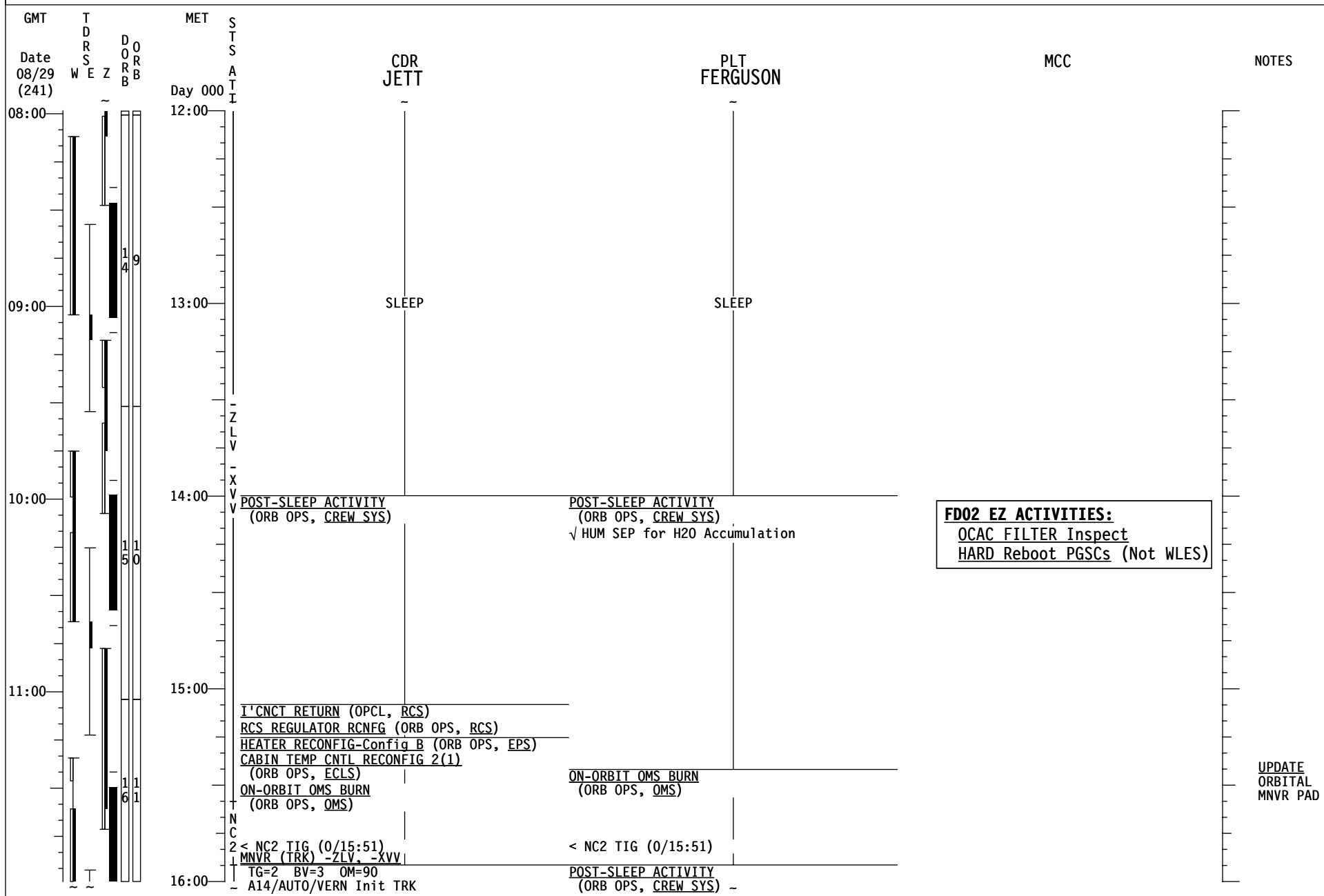
STS-115 (FD01)



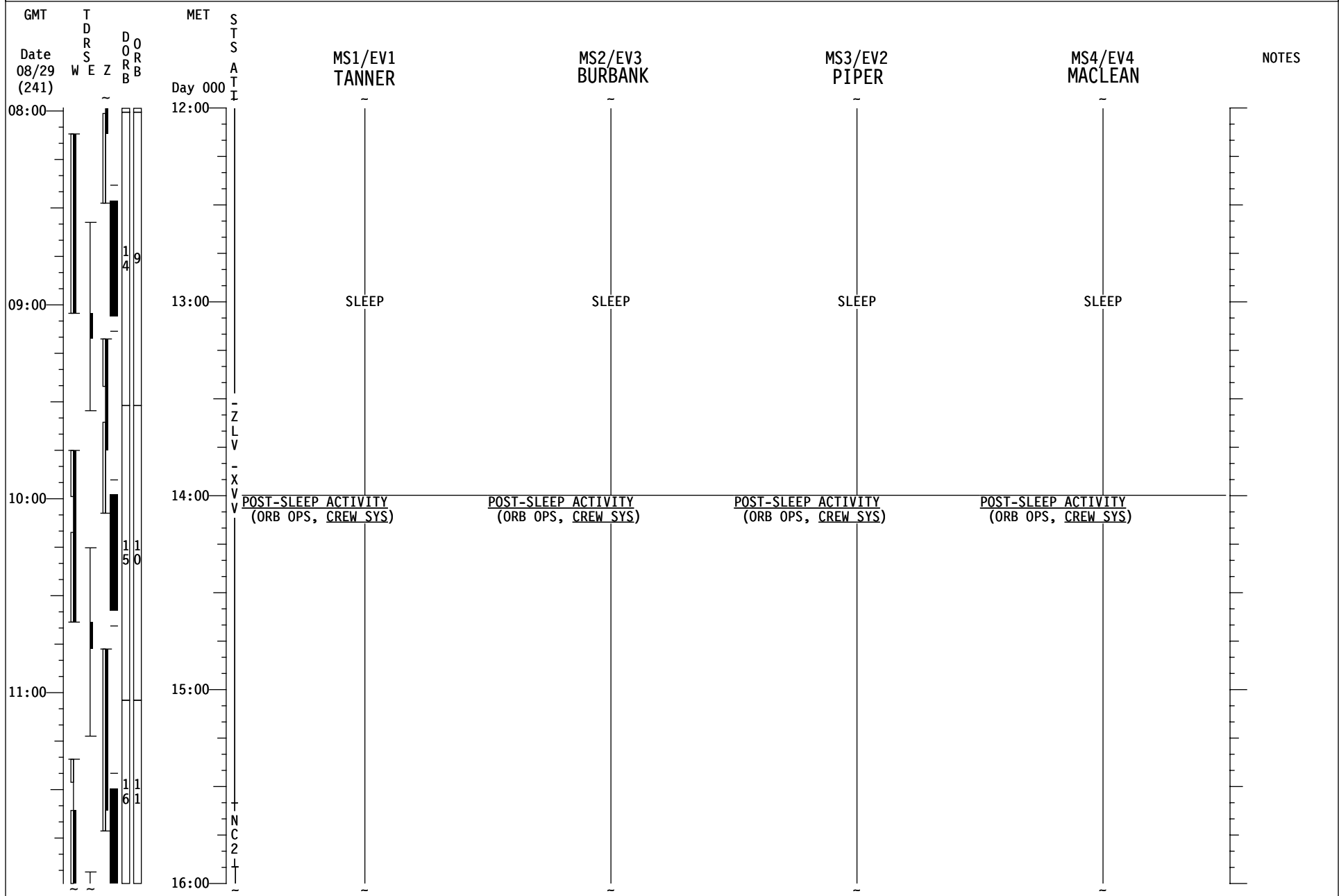
STS-115 (FD01)



STS-115 (FD02)



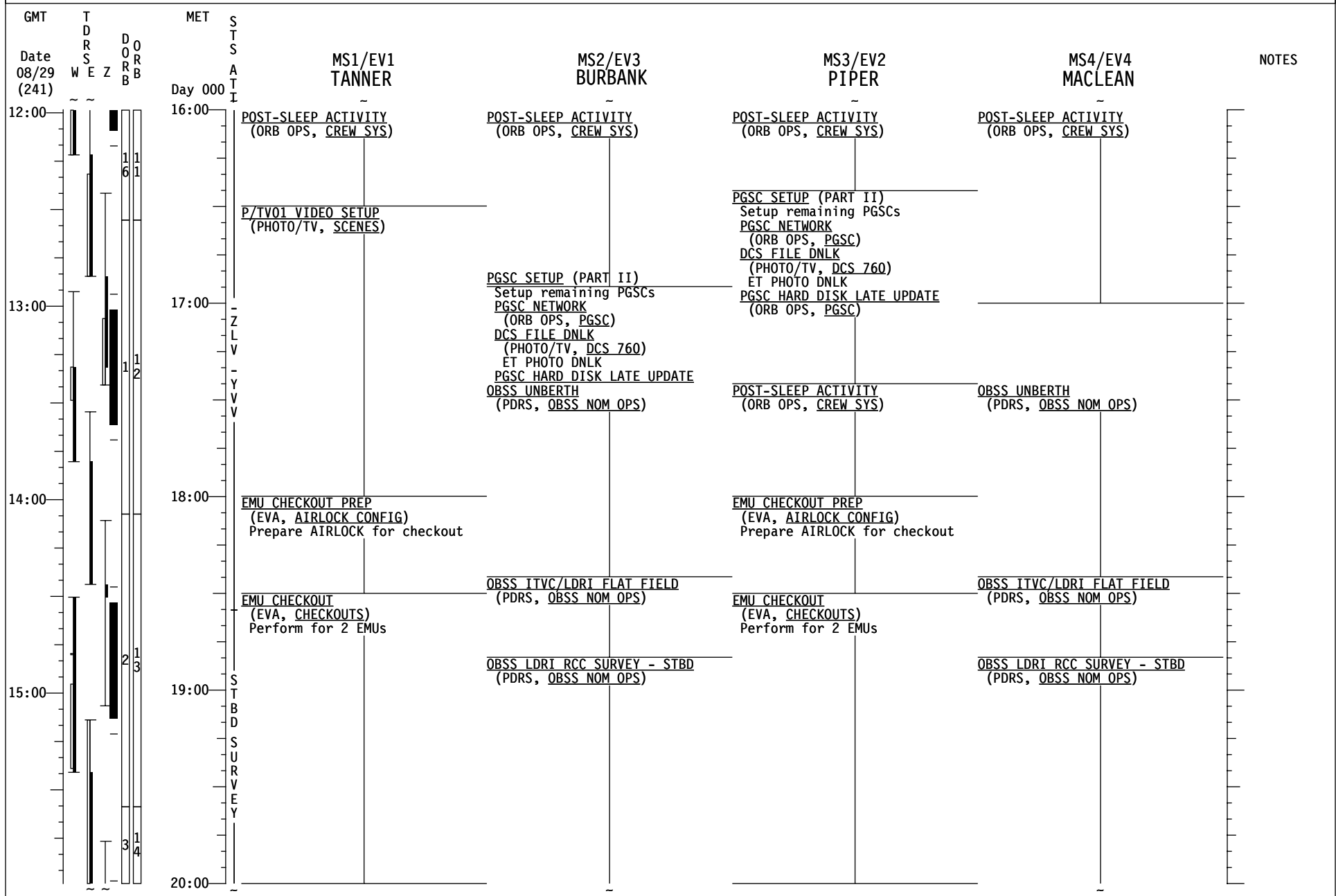
STS-115 (FD02)



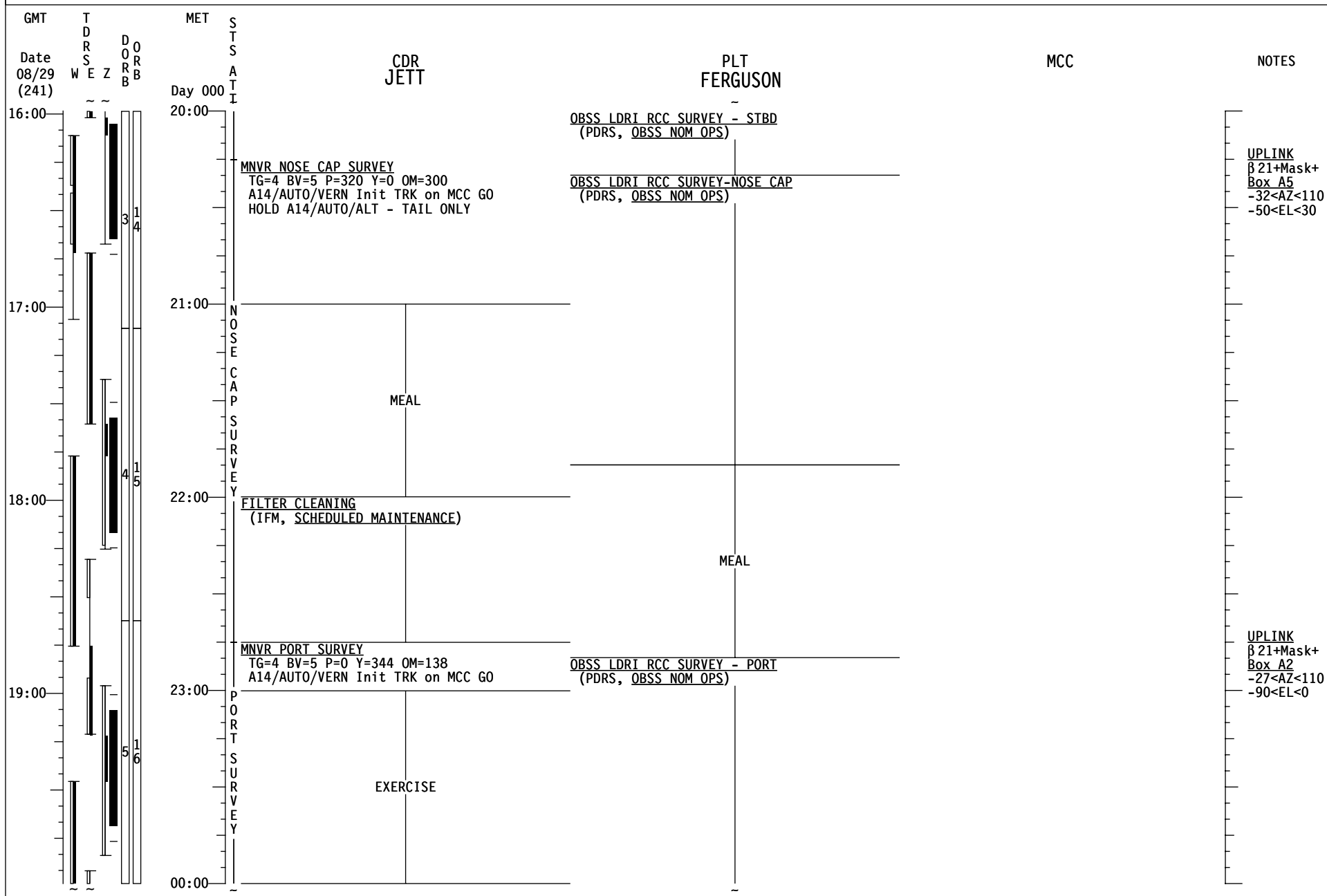
STS-115 (FD02)

GMT	TDRS W E Z	DORB D O R B	MET Day 000	S T S A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
12:00	~	~	16:00		MNVR (TRK) -ZLV, -XVV TG=2 BV=3 OM=90 A14/AUTO/VERN Init TRK POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
13:00	~	~	17:00	Z L V				DTV-ON
14:00	~	~	18:00	Y V	CRYO 02 TK HTR SNSR CK (ORB OPS, EPS)	OBSS UNBERTH (PDRS, OBSS NOM OPS)		UPLINK β 21+Mask+ Box A2 -27<AZ<110 -90<EL<0 Box A3 -81<AZ<110 -67<EL<-10
15:00	~	~	19:00	S T B D	R2 BLR CNTLR/HTR (three) - B			
	~	~	20:00	S U R E V E Y	SHUTTLE/ISS H2O CNTR FILL (Init #1) (ORB OPS, ECLS) Ref MSG XXX Perform EQUIP PREP and WATER TRANSFER HOSE PURGE Perform CWC Fill #1 Report CWC barcode & S/N to MCC	OBSS ITVC/LDRI FLAT FIELD (PDRS, OBSS NOM OPS)		UPLINK β 21+Mask+ Box A4 -122<AZ<110 -90<EL<45
	~	~			MNVR STBD SURVEY TG=4 BV=5 P=0 Y=49 OM=196 A14/AUTO/VERN Init TRK on MCC GO	OBSS LDRI RCC SURVEY - STBD (PDRS, OBSS NOM OPS)		
	~	~			SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill			
	~	~			P/TV08 EXTERNAL SRVY (S/U) (P/TV, SCENES) Step 1-Sunlit OMS POD			
	~	~			P/TV08 EXTERNAL SRVY (OPS) (P/TV, SCENES) Item 1			

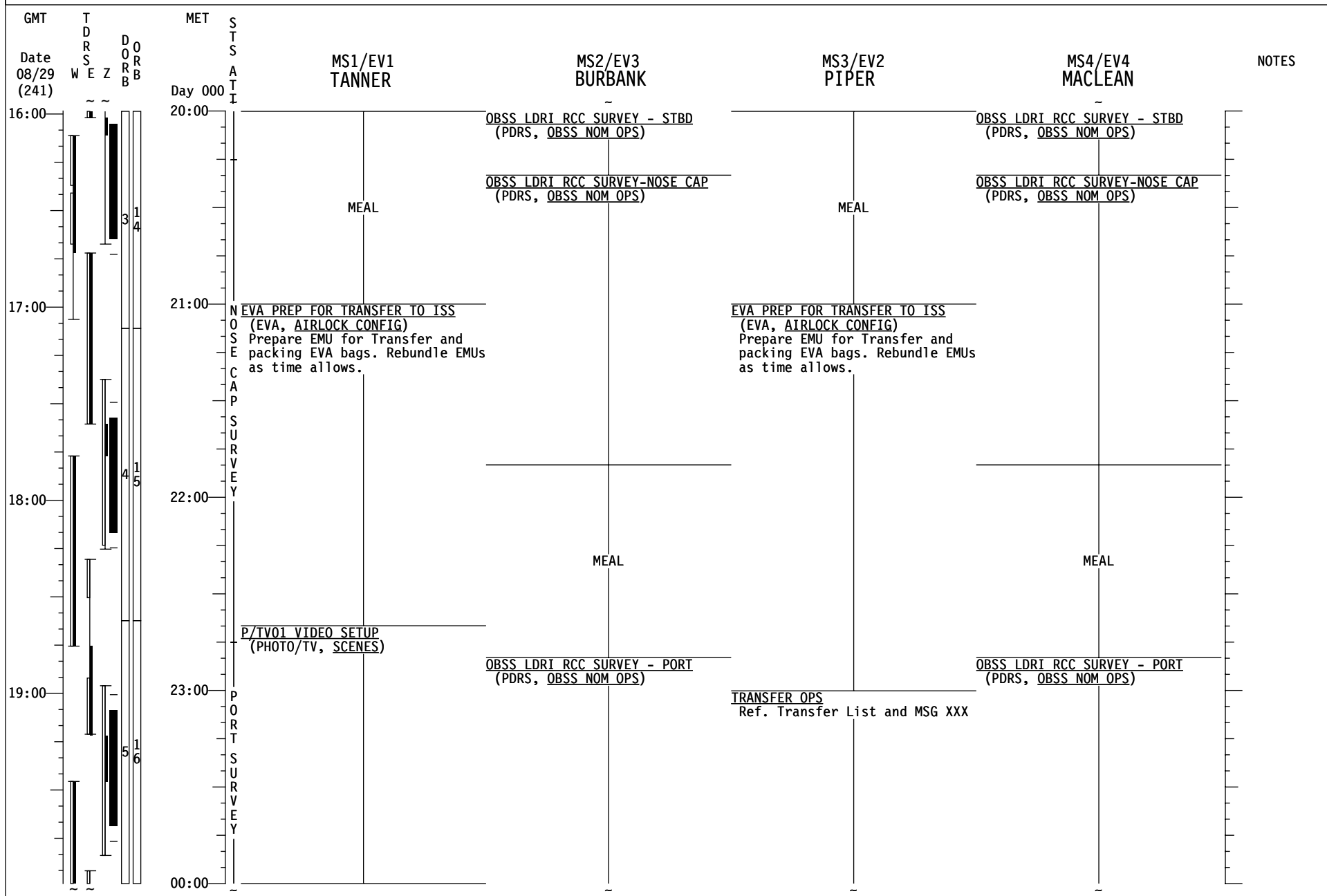
STS-115 (FD02)



STS-115 (FD02)



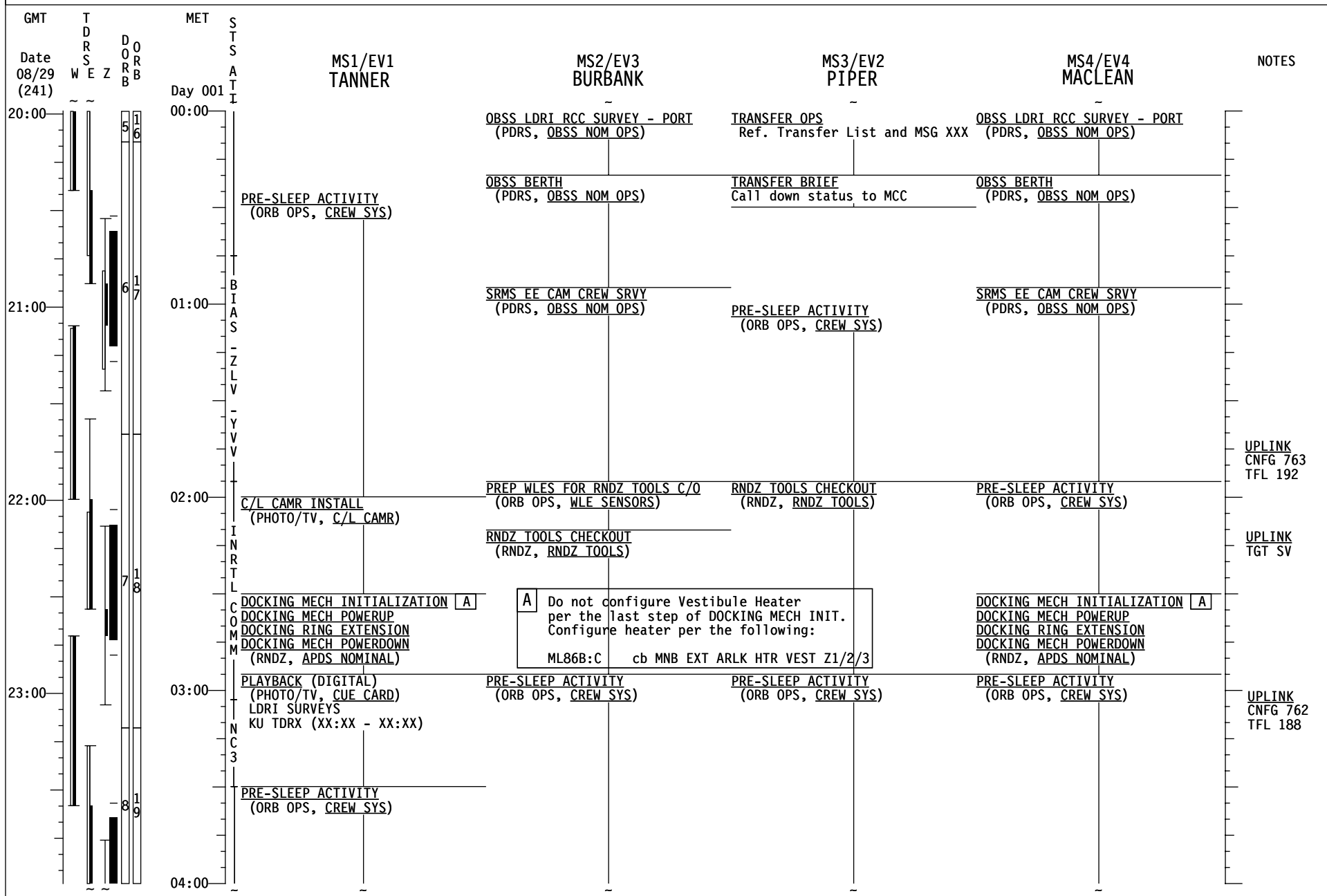
STS-115 (FD02)



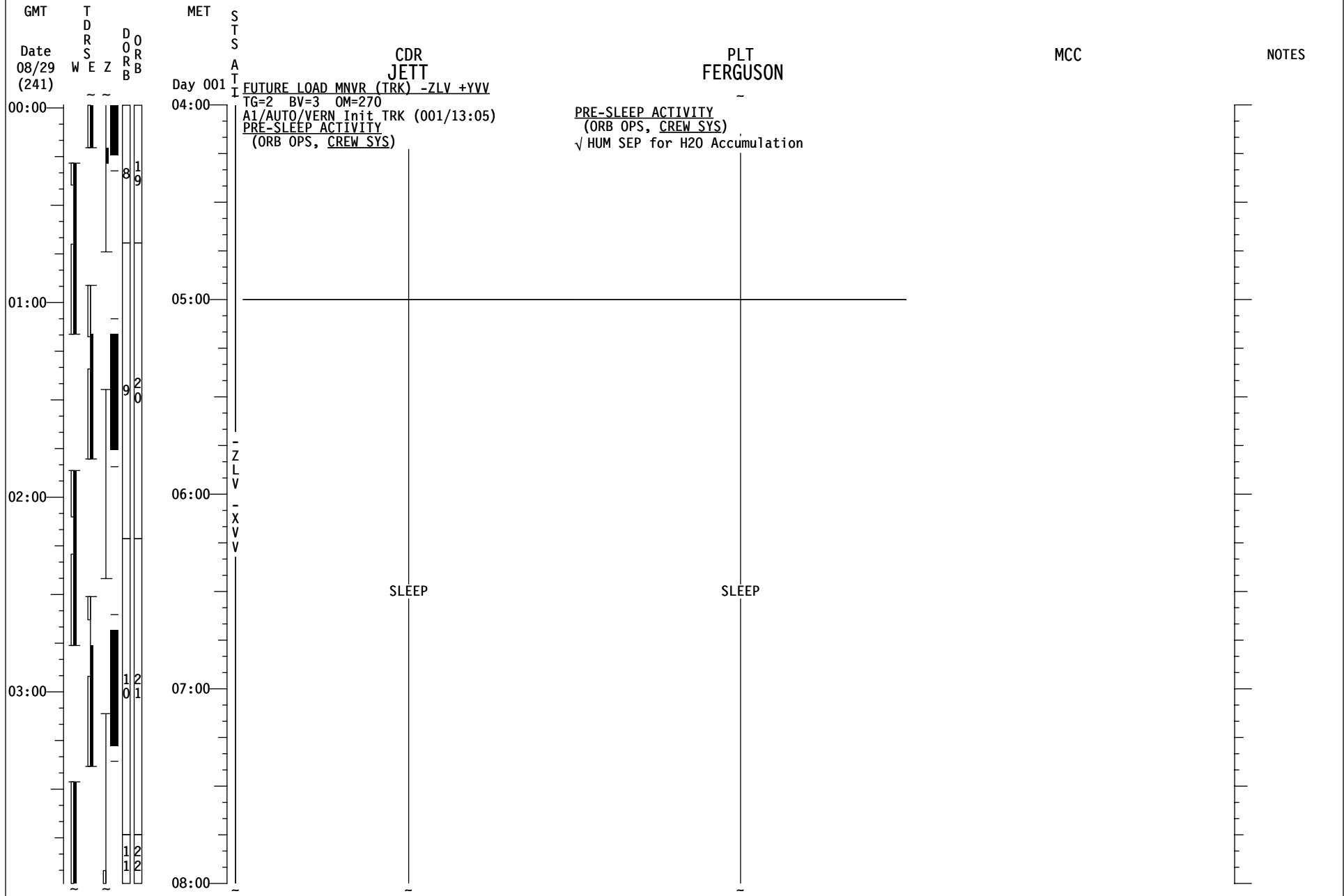
STS-115 (FD02)

GMT	TDRS W E Z	DORB 5 6 7 8 9	MET Day 001	STS A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
20:00			00:00		SHUTTLE O2 MAINTENANCE [A] PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	OBSS LDRI RCC SURVEY - PORT (PDRS, OBSS NOM OPS)	<div style="border: 1px solid black; padding: 5px;"> <p>A SHUTTLE O2 MAINTENANCE</p> <p>S66 ENVIRONMENT</p> <p>C5 OCAC PWR - OFF</p> <p>C5 DIRECT O2 - OP When CABIN PPO2 = 3.2 (-12 mins)</p> <p>C5 DIRECT O2 - CL OCAC PWR - ON</p> </div>	
						OBSS BERTH (PDRS, OBSS NOM OPS)		
21:00			01:00		MNVR (TRK) BIAS -ZLV, -YVV TG=2 BV=3 OM=130 A14/AUTO/VERN Init TRK	SRMS EE CAM CREW SRVY (PDRS, OBSS NOM OPS)		UPLINK β 21+Mask+ Box A6 -93<AZ<110 -90<EL<32 Box A7 -149<AZ<44 32<EL<83
					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
					- ZLV - YVV - 06 √UHF MODE - OFF PRIVATE MEDICAL CONFERENCE			
22:00			02:00		MNVR INRTL COMM ATT TG=4 BV=5 P=0 Y=90 OM=90 A1/AUTO/VERN Init TRK	FC MONITORING SYS (FCMS) OPS (ORB OPS, EPS)		UPLINK β 21+Mask
					C/L CAMR INSTALL (PHOTO/TV, C/L CAMR)			
					IMU STAR OF OPPTY ALIGN (ORB OPS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	√ HUM SEP for H2O Accumulation		
23:00			03:00		ON-ORBIT OMS BURN (ORB OPS, OMS)	ON-ORBIT OMS BURN (ORB OPS, OMS)		UPDATE ORBITAL MNVR PAD
					< NC3 TIG (01/03:24)	< NC3 TIG (01/03:24)		DTV-OFF
					MNVR (TRK) -ZLV, -XVV TG=2 BV=3 OM=0 A1/AUTO/VERN Init TRK	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
					I'CNCT R OMS TO RCS (OPCL, RCS)	√ HUM SEP for H2O Accumulation		
					FUTURE LOAD MNVR (TRK) -ZLV +YVV TG=2 BV=3 OM=270			
04:00					A1/AUTO/VERN Init TRK (001/13:05)			

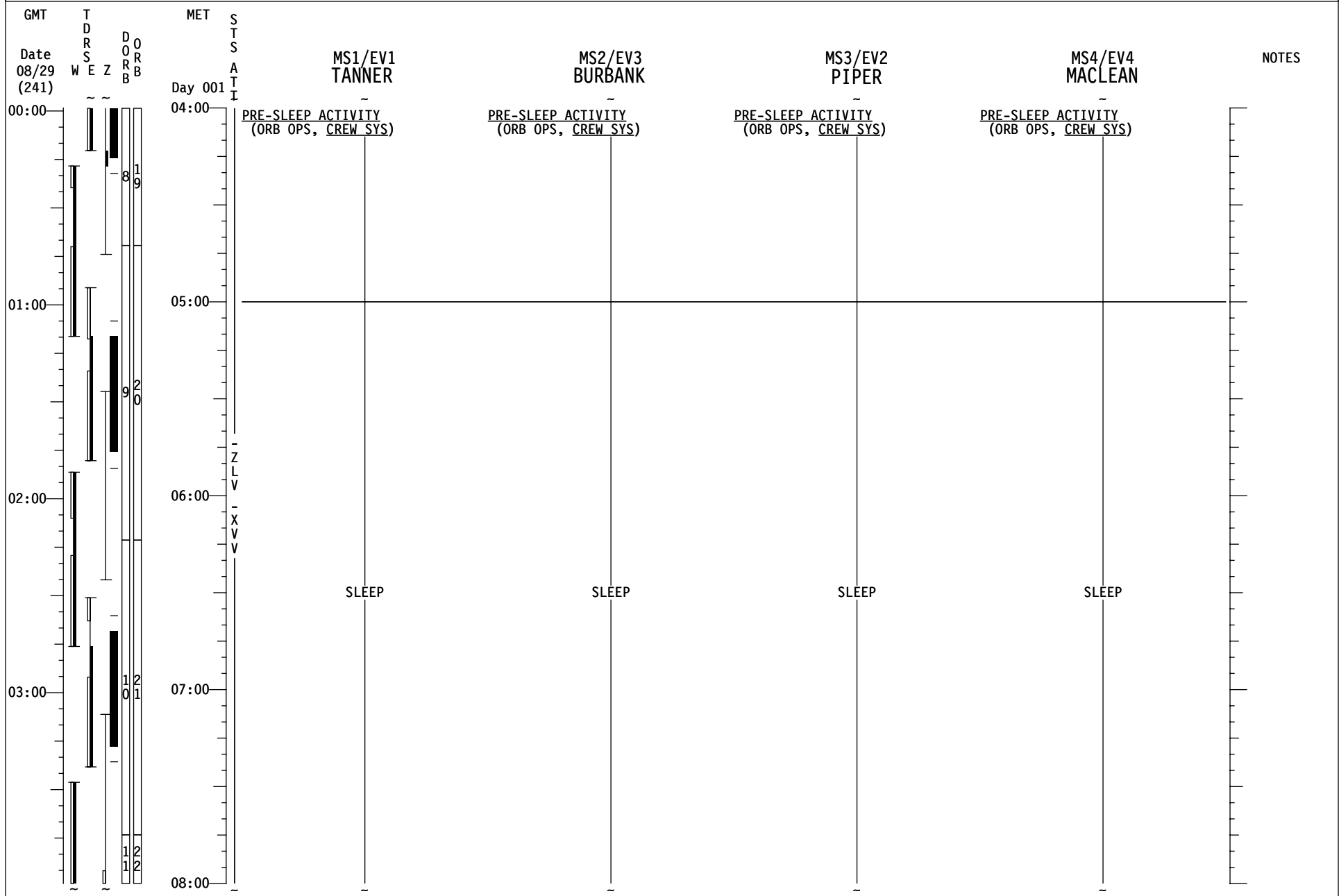
STS-115 (FD02)



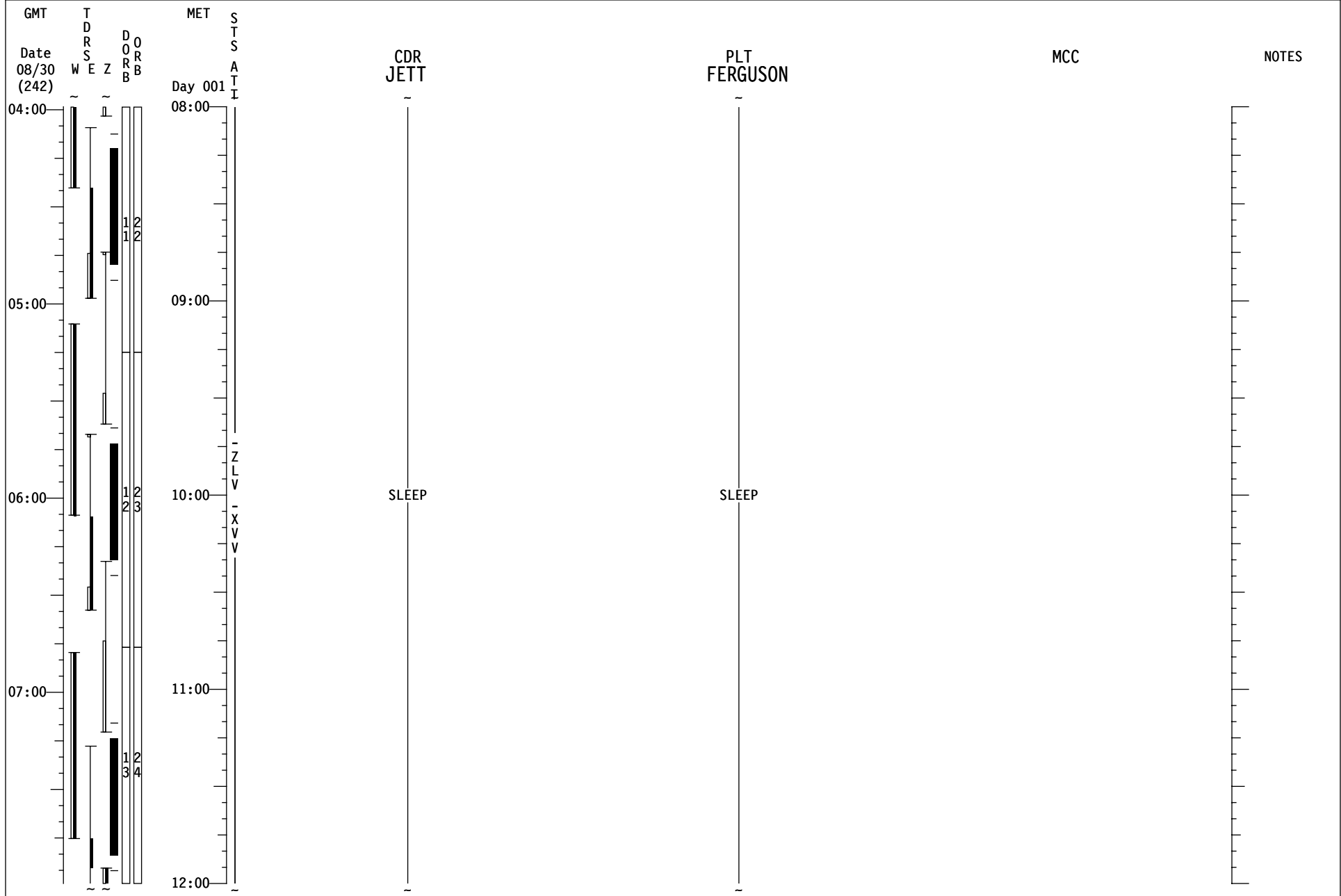
STS-115 (FD02)



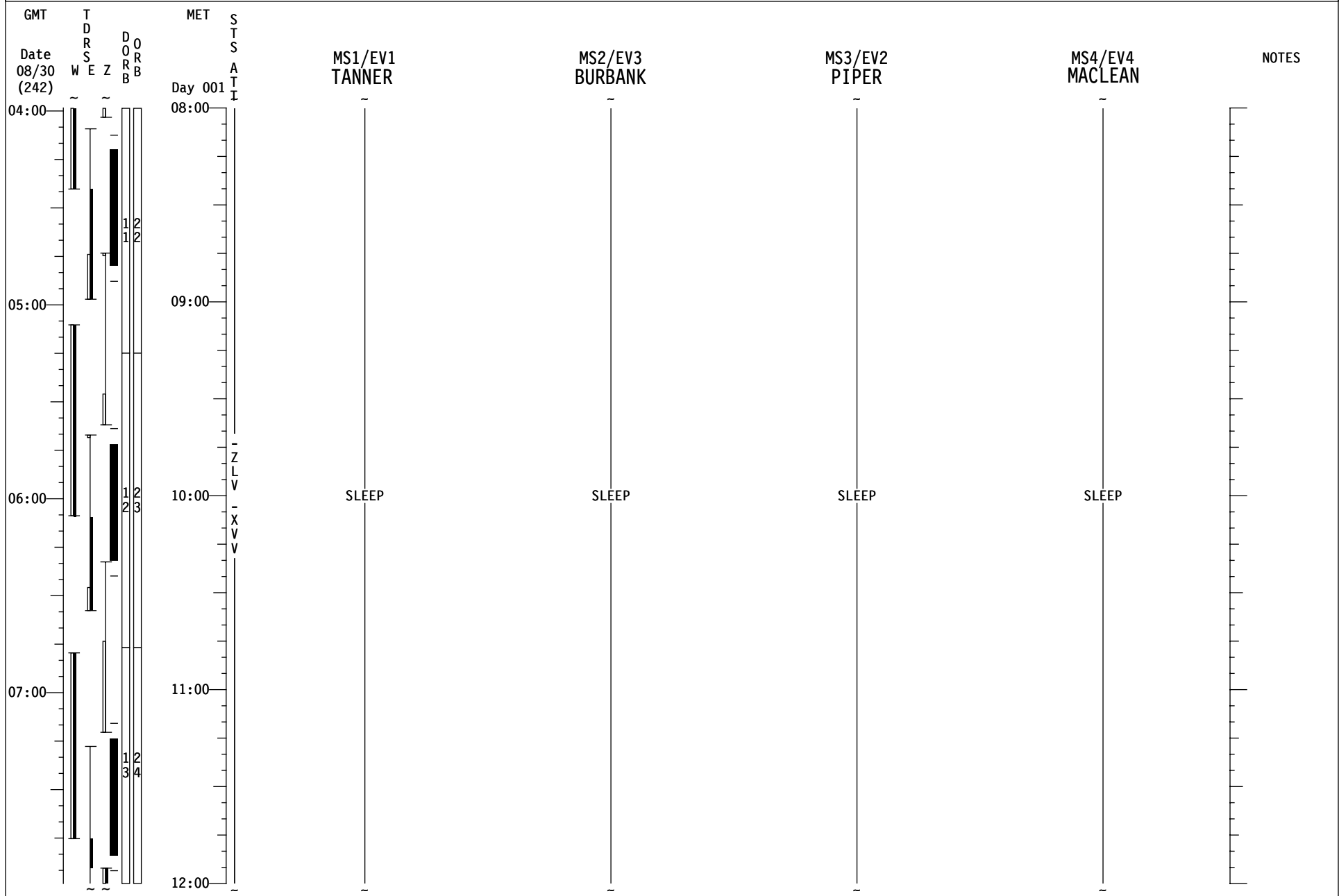
STS-115 (FD02)



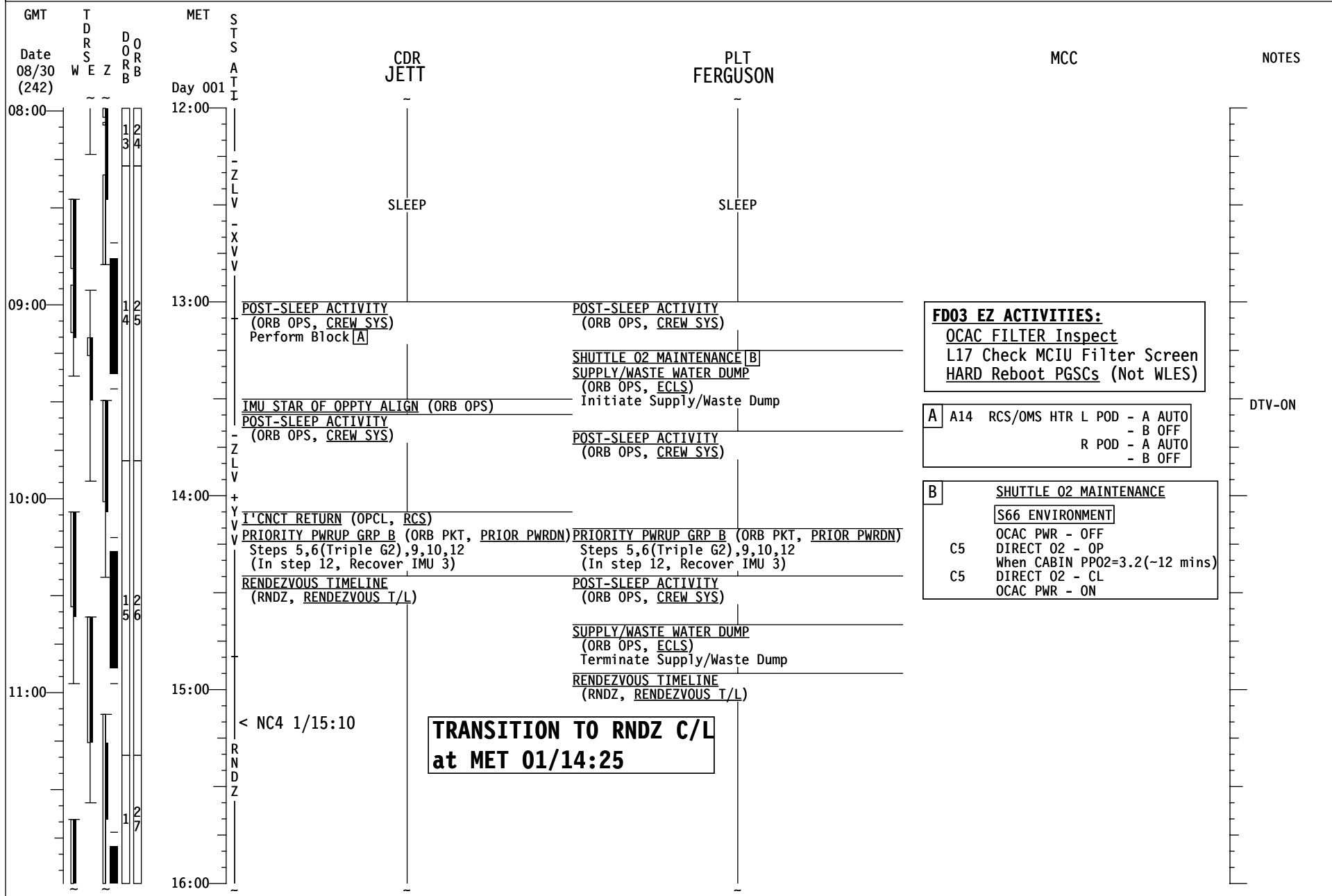
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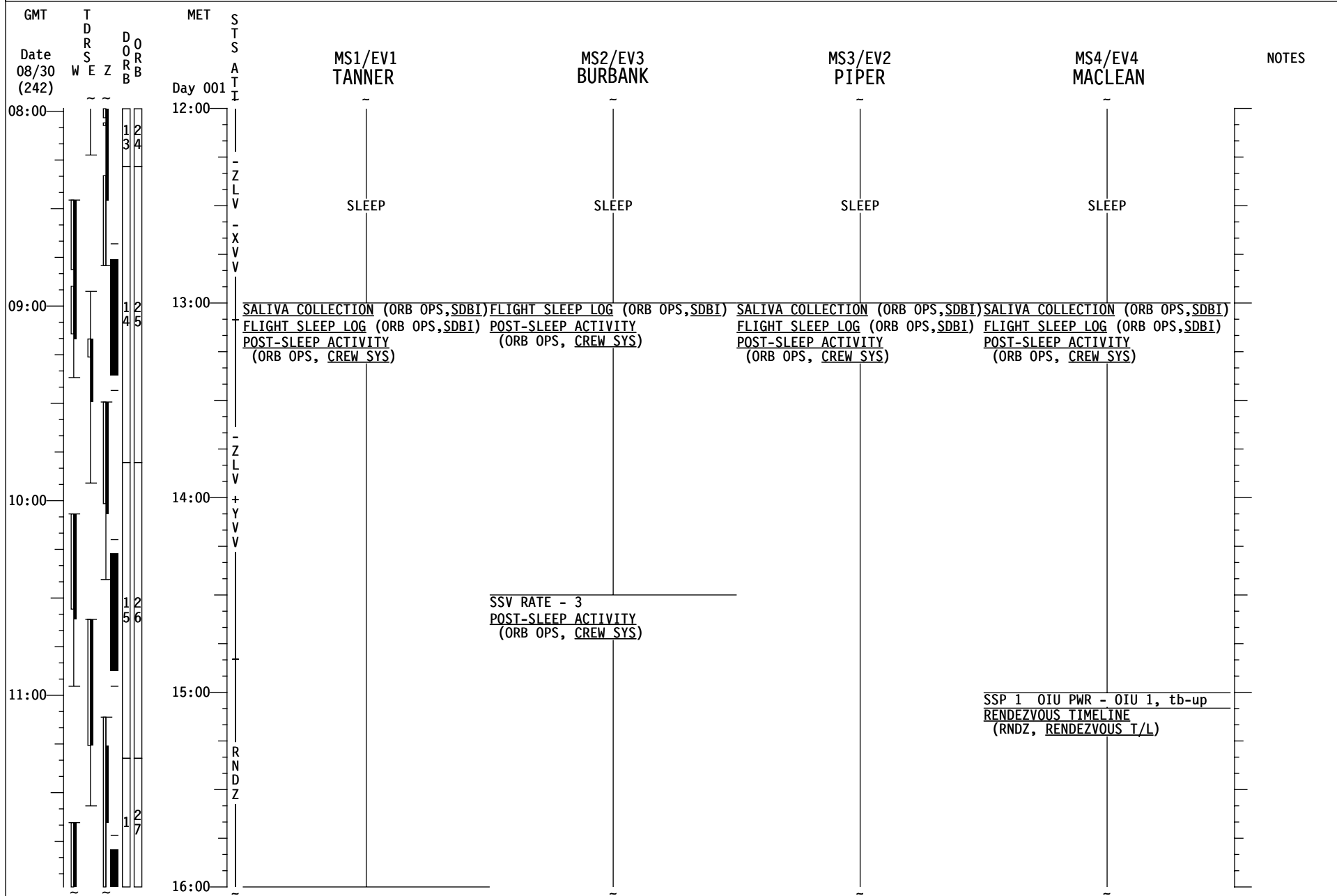
STS-115 (FD02)



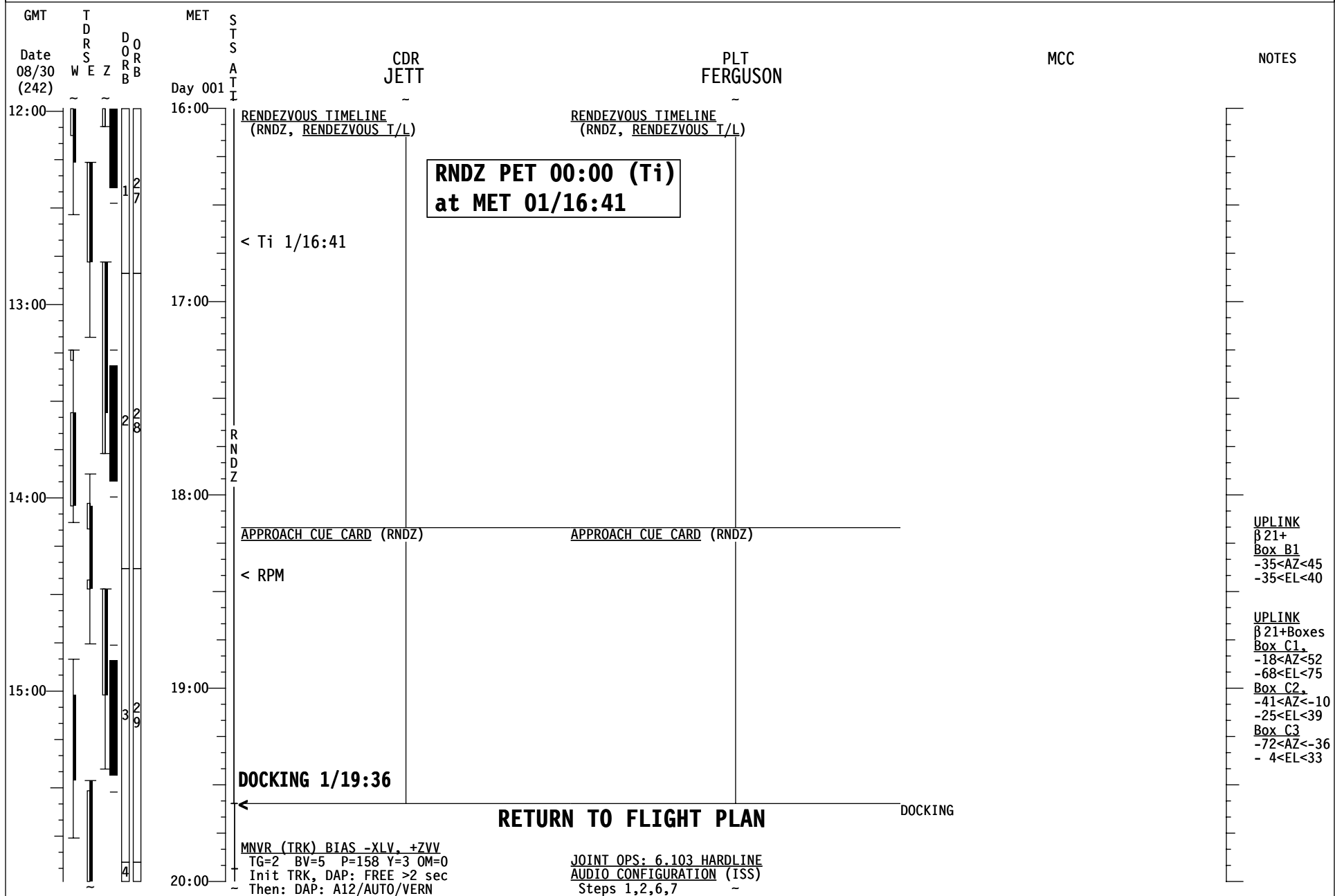
STS-115 (FD03)



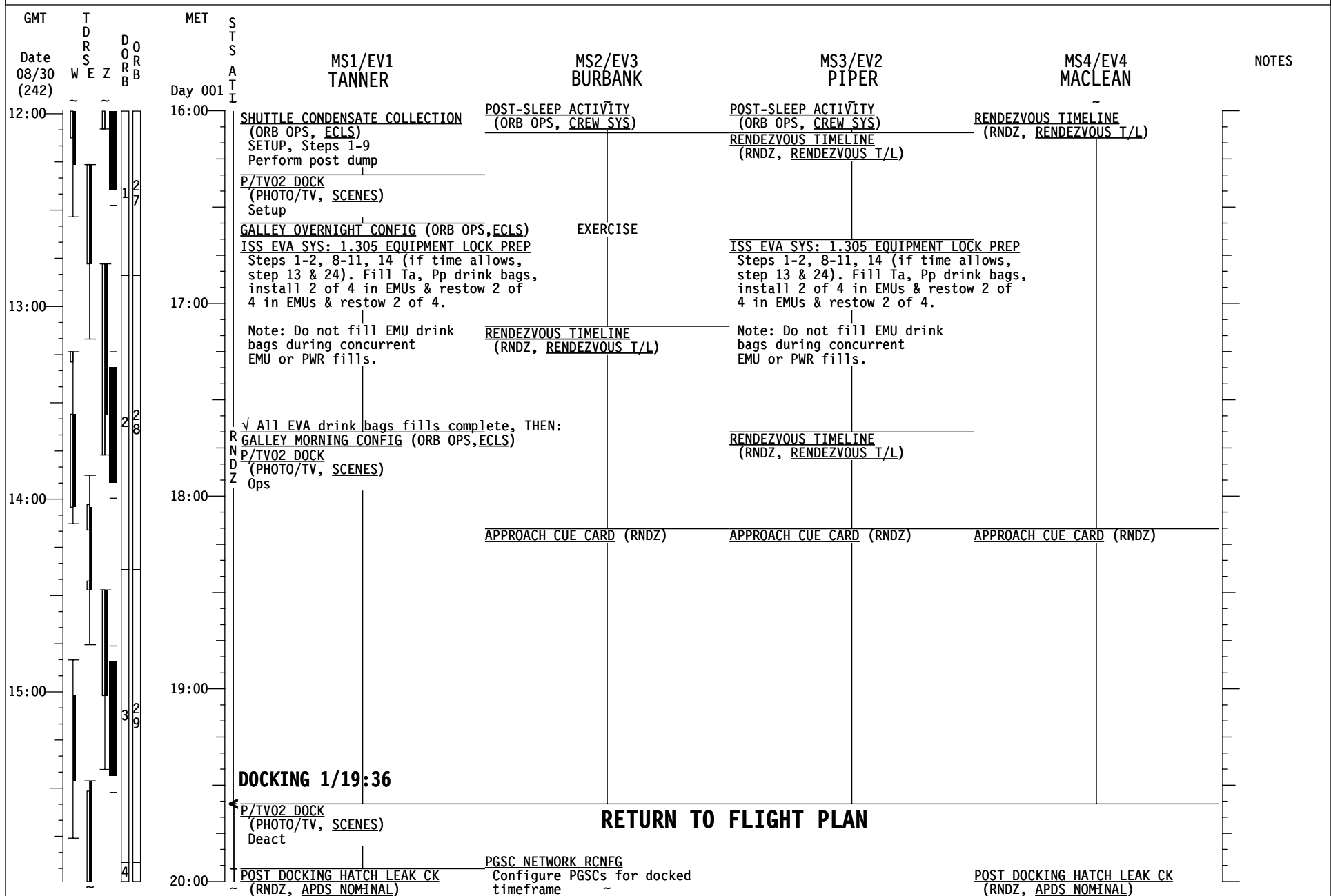
STS-115 (FD03)



STS-115 (FD03)



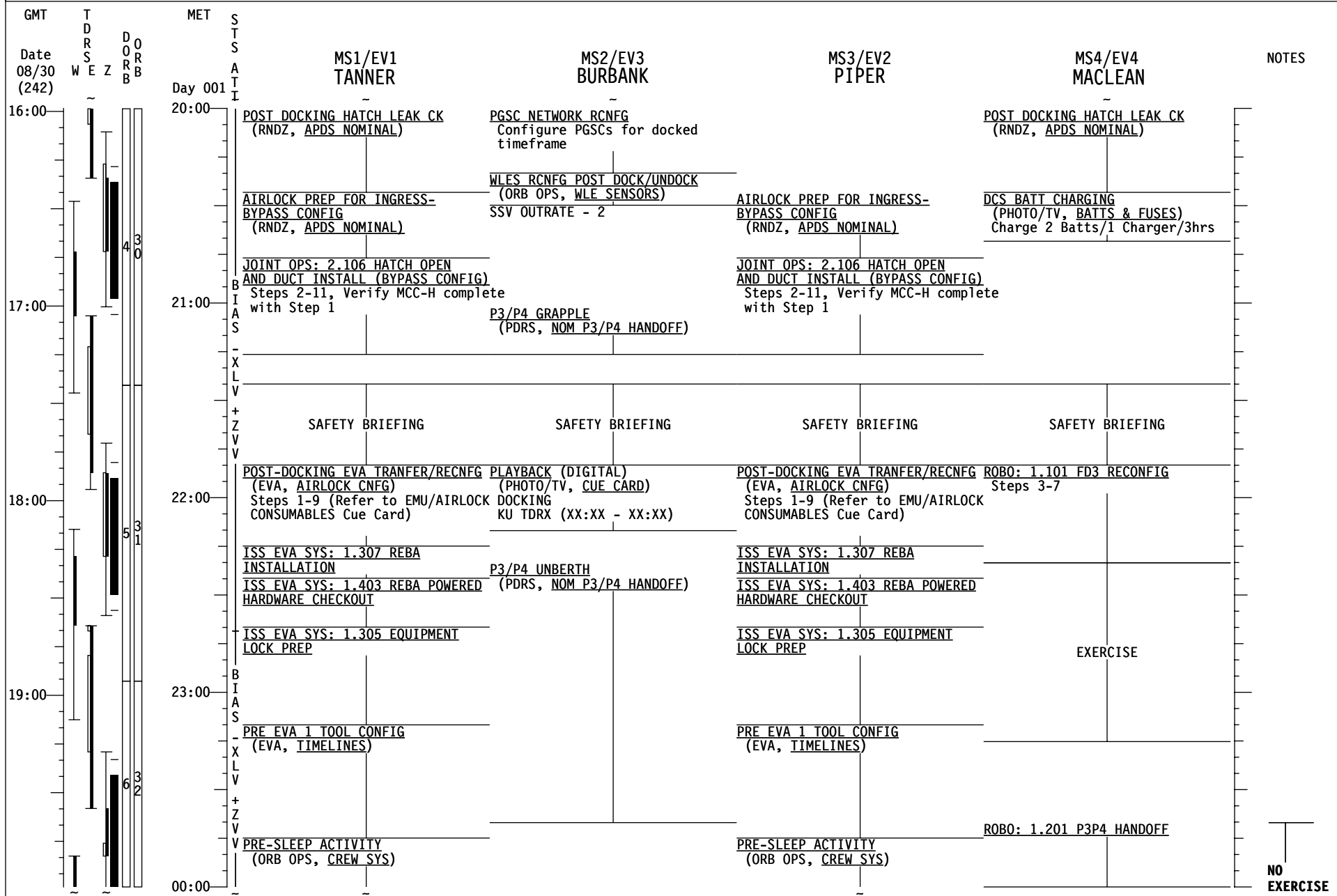
STS-115 (FD03)



STS-115 (FD03)

GMT	TDRS W E Z	DORB	MET	STS A T	CDR JETT	PLT FERGUSON	MCC	NOTES
Date 08/30 (242)			Day 001					
16:00				I	MNVR (TRK) BIAS -XLV, +ZVV TG=2 BV=5 P=158 Y=3 OM=0 Init TRK, DAP: FREE >2 sec Then: DAP: A12/AUTO/VERN PRIORITY PWRDN GRP B (ORB PKT) (Single G2) Steps 6,12 In Step 12, IMU 3 STBY-ITEM 23 EXEC 06 S TRK PWR -Z - OFF	JOINT OPS: 6.103 HARDLINE AUDIO CONFIGURATION (ISS) Steps 1,2,6,7 PRIORITY PWRDN GRP B (ORB PKT) (Single G2) Steps 6,12 In Step 12, IMU 3 STBY-ITEM 23 EXEC 06 S TRK PWR -Z - OFF		
					JOINT OPS: 3.111 HANDOVER ATTITUDE CONTROL ORBITER TO CMG TA			UPLINK CNFG 760 TFL 184
17:00				B I A S		P3/P4 GRAPPLE (PDRS, NOM P3/P4 HANDOFF)		
				X L V	P/TV04 INGRESS/EGRESS (PHOTO/TV, SCENES) Setup			
				+ Z V V	SAFETY BRIEFING	SAFETY BRIEFING		
18:00					P/TV06 P3/P4 INSTALLATION (PHOTO/TV, SCENES) Setup	P/TV05 ISS INTERNAL SETUP (PHOTO/TV, SCENES) Setup		
						P3/P4 UNBERTH (PDRS, NOM P3/P4 HANDOFF)		UPLINK β 21+Boxes Box D1 -18<AZ<-70 -68<EL<75 Box C2 -41<AZ<-10 -25<EL<39 Box C3 -72<AZ<-36 -4<EL<33
19:00				B I A S	UPDATE ATTITUDE AFTER ISS MNVR COMPLETE Change P=161, Y=8, OM=5 A12/FREE/VERN Init TRK			
				X L V	SODF & HDD TRANSFER Ref. Transfer List, Item #XXX			
				+ Z V V	JOINT OPS: 3.120 PREBREATHE USING SHUTTLE O2 SETUP			
00:00								NO EXERCISE

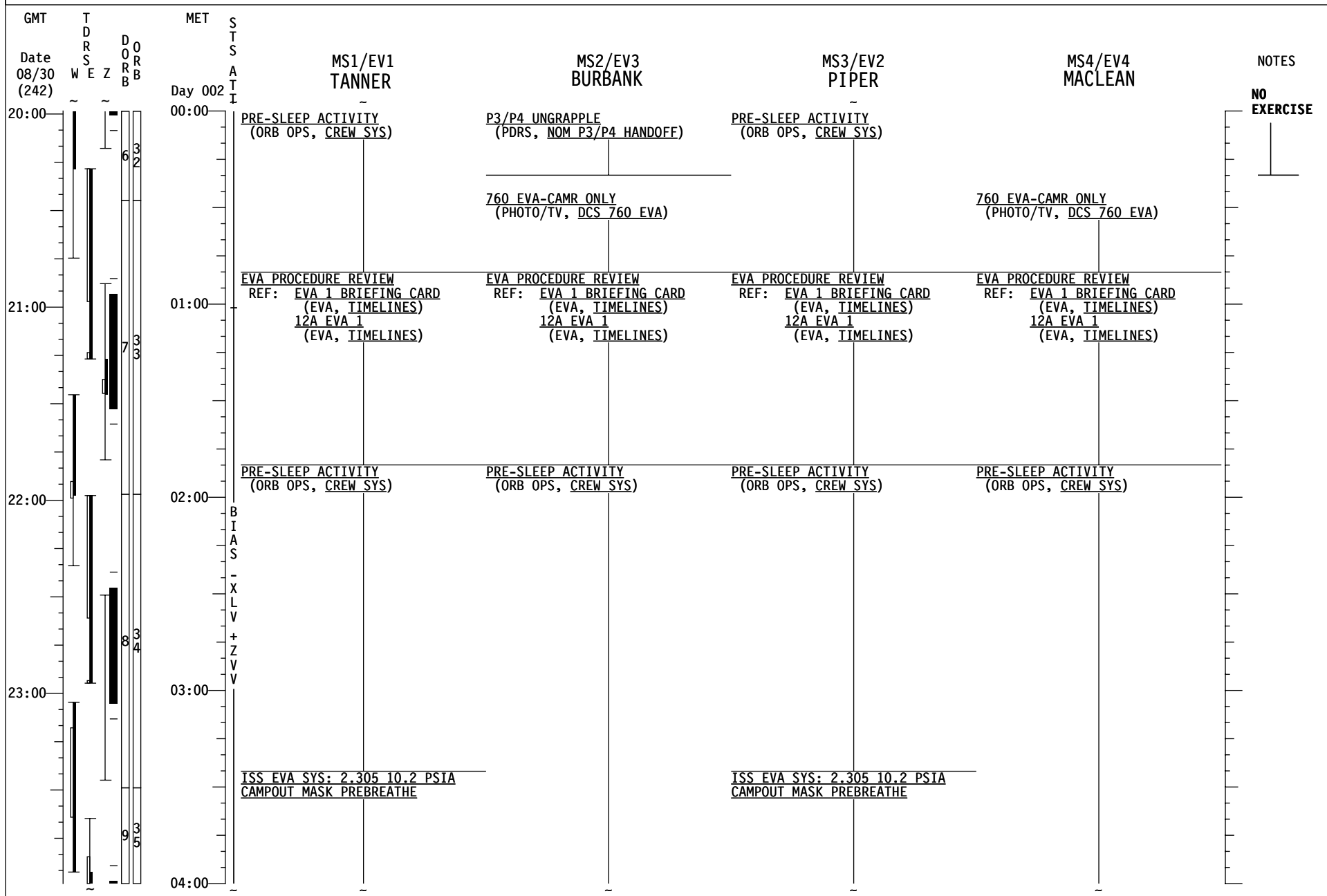
STS-115 (FD03)



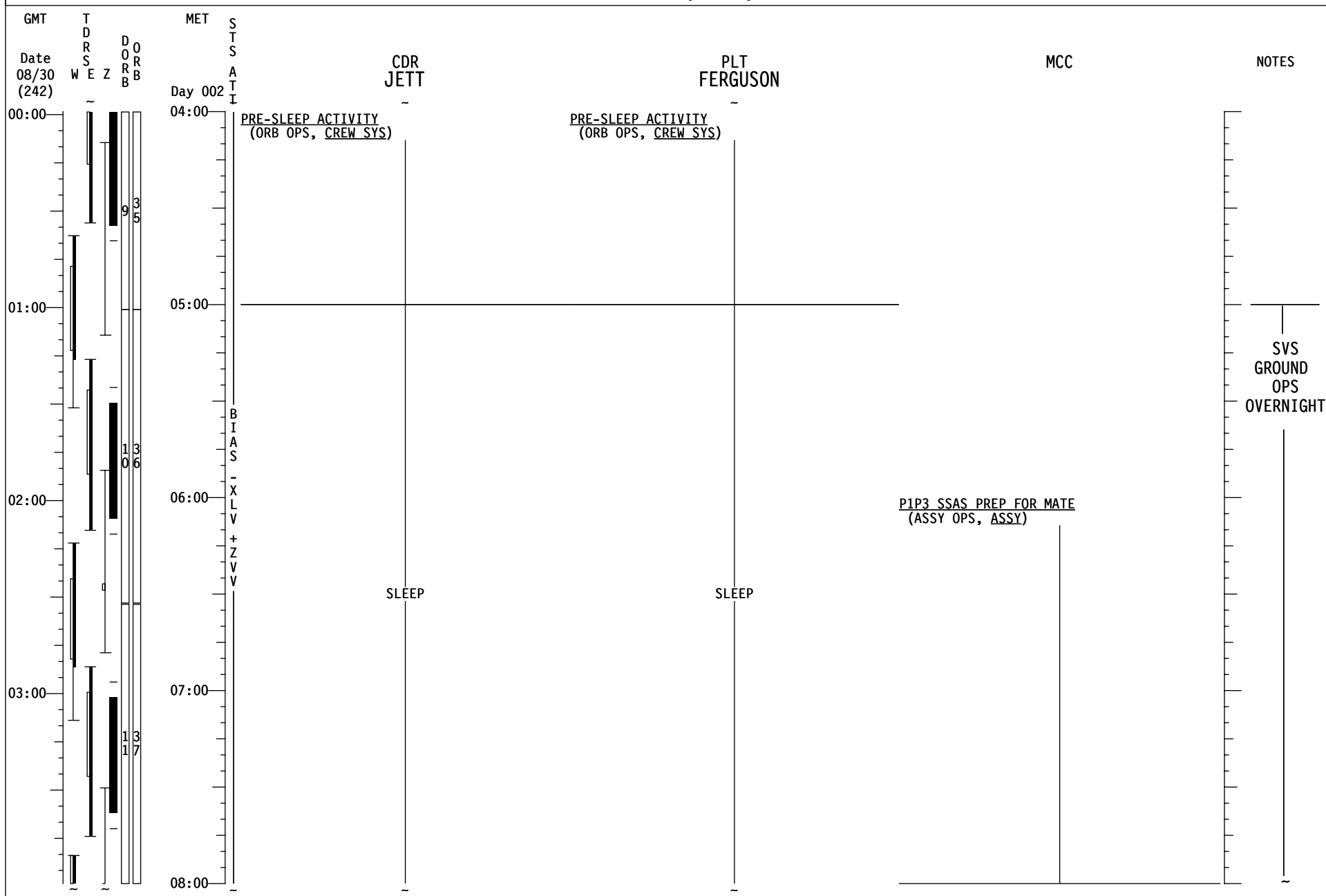
STS-115 (FD03)

GMT	TDRS WSEZ	DORB 632	MET Day 002	STS A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
20:00								
					JOINT OPS: 3.120 PREBREATHE USING SHUTTLE O2 SETUP	P3/P4 UNGRAPPLE (PDRS, NOM P3/P4 HANDOFF)		NO EXERCISE
						TV (ILLUMINATOR OPS) (PHOTO/TV, CUE CARDS) ILLUMINATORS ON - RSC, ELBOW, B and C		
						PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
21:00					EVA PROCEDURE REVIEW REF: EVA 1 BRIEFING CARD (EVA, TIMELINES) 12A EVA 1 (EVA, TIMELINES)	UPDATE ATTITUDE AFTER ISS MNVR COMPLETE Change P=160, Y=353, OM=4 A12/FREE/VERN Init TRK		
						EXERCISE		
22:00					06 UHF MODE - OFF PRIVATE MEDICAL CONFERENCE			
					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
						PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		DTV-OFF
23:00								
04:00								

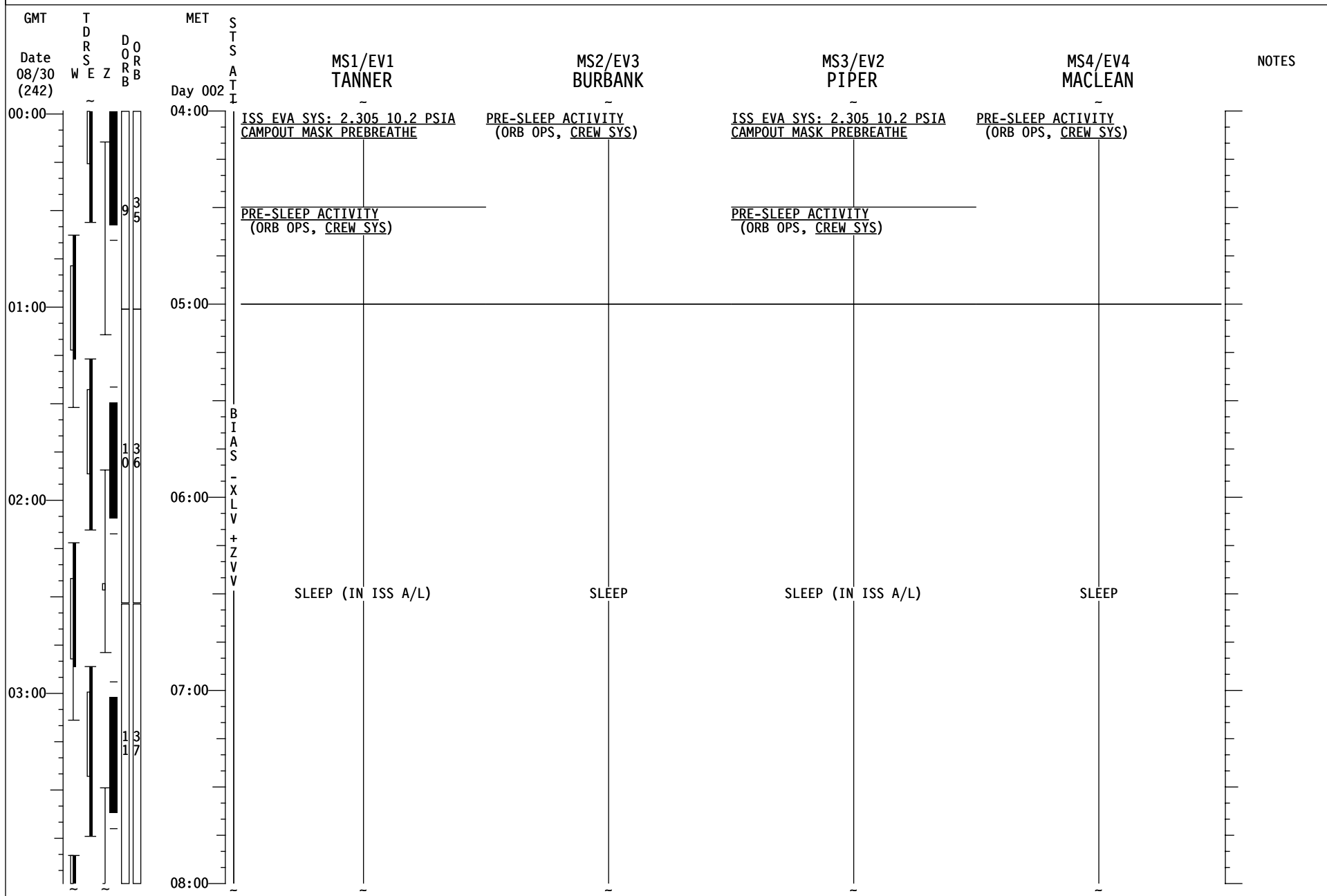
STS-115 (FD03)



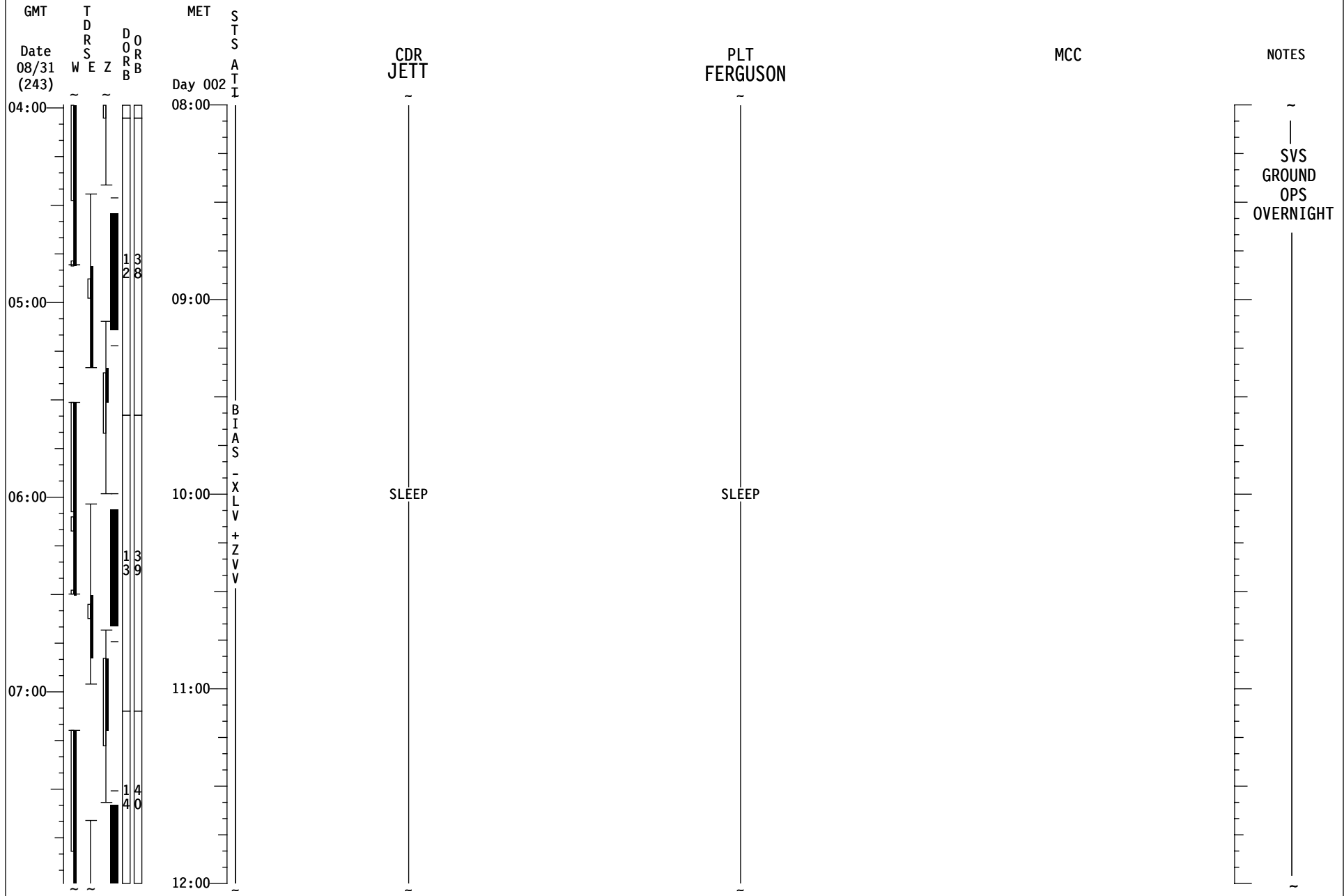
STS-115 (FD03)



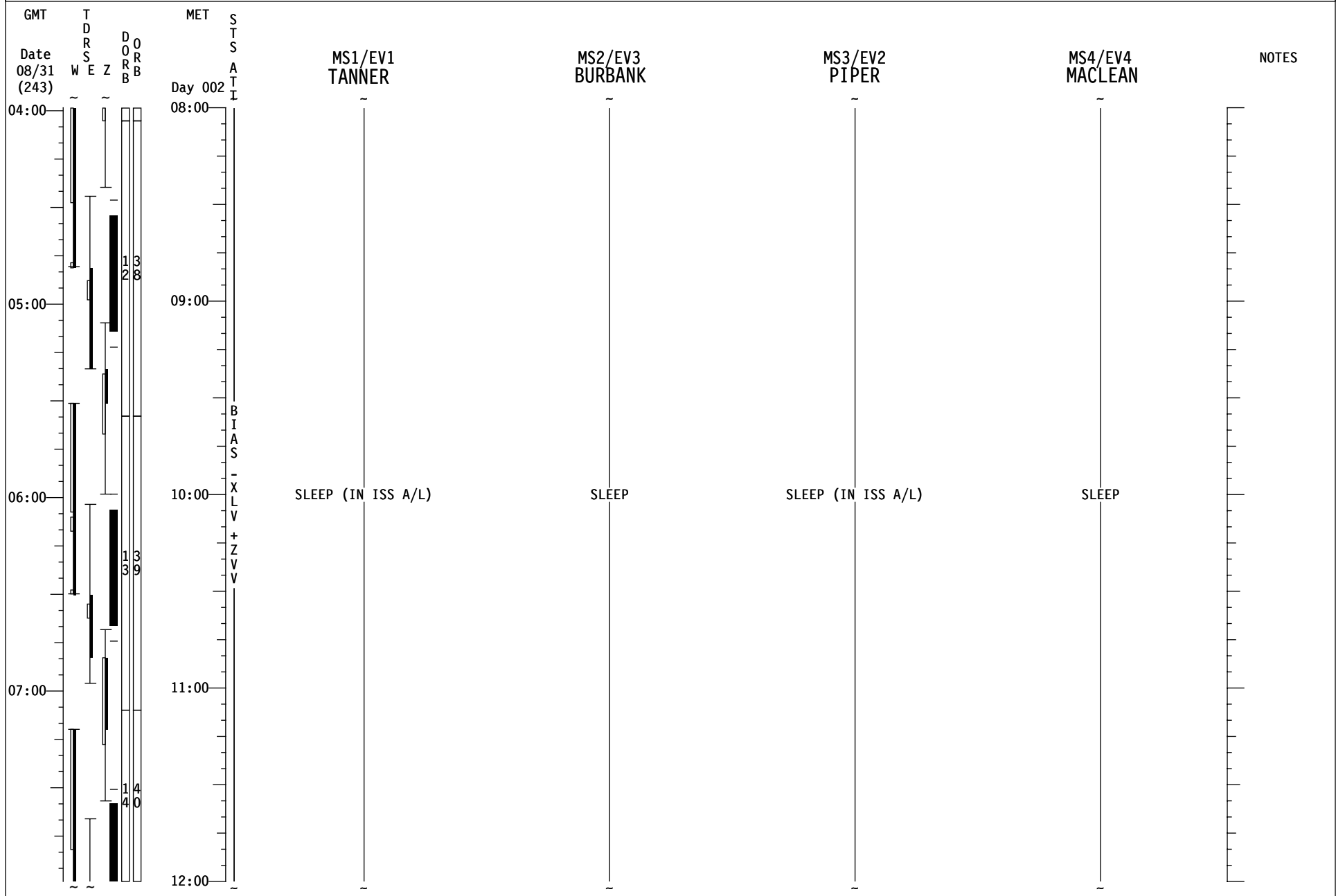
STS-115 (FD03)



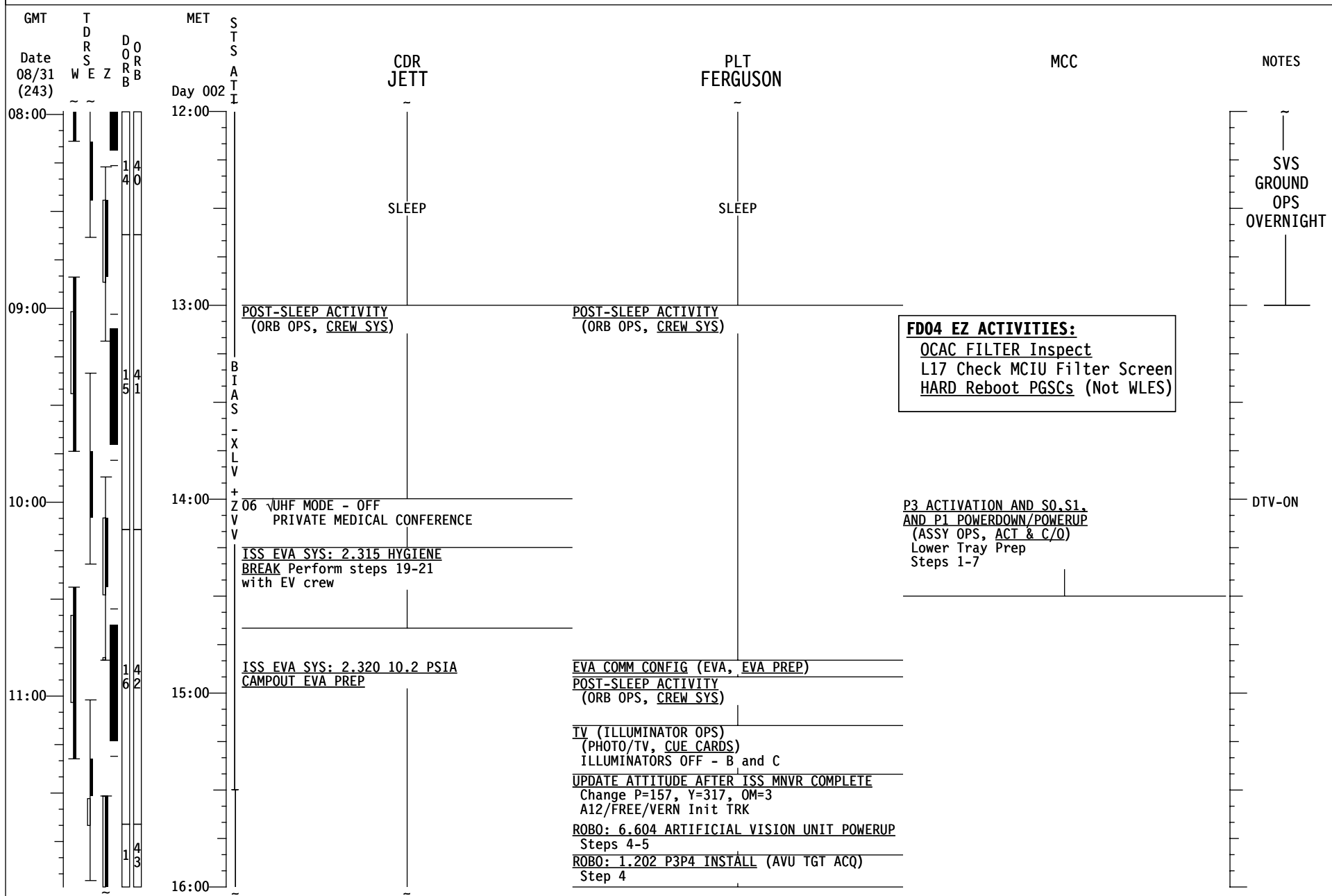
STS-115 (FD03)



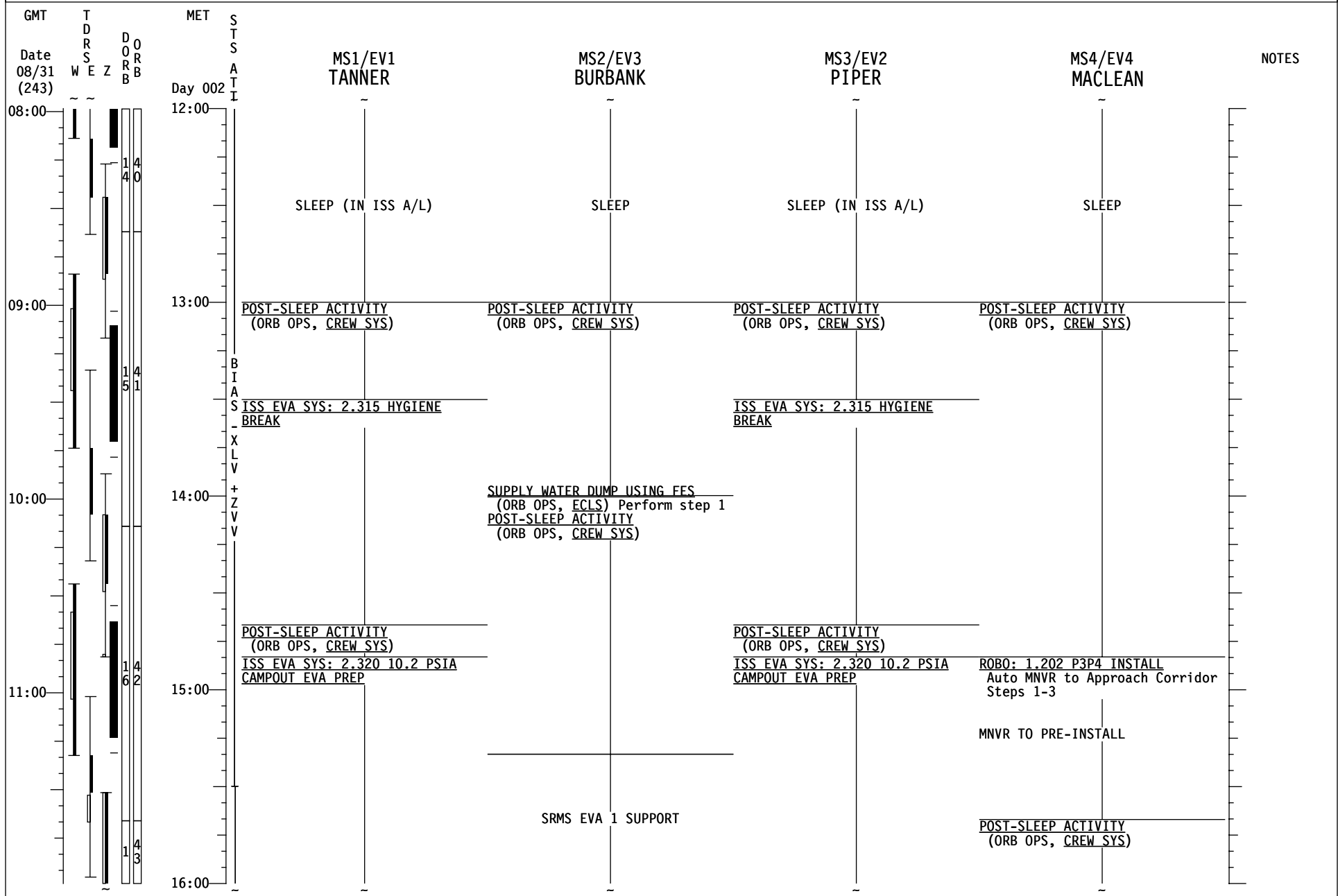
STS-115 (FD03)



STS-115 (FD04)



STS-115 (FD04)



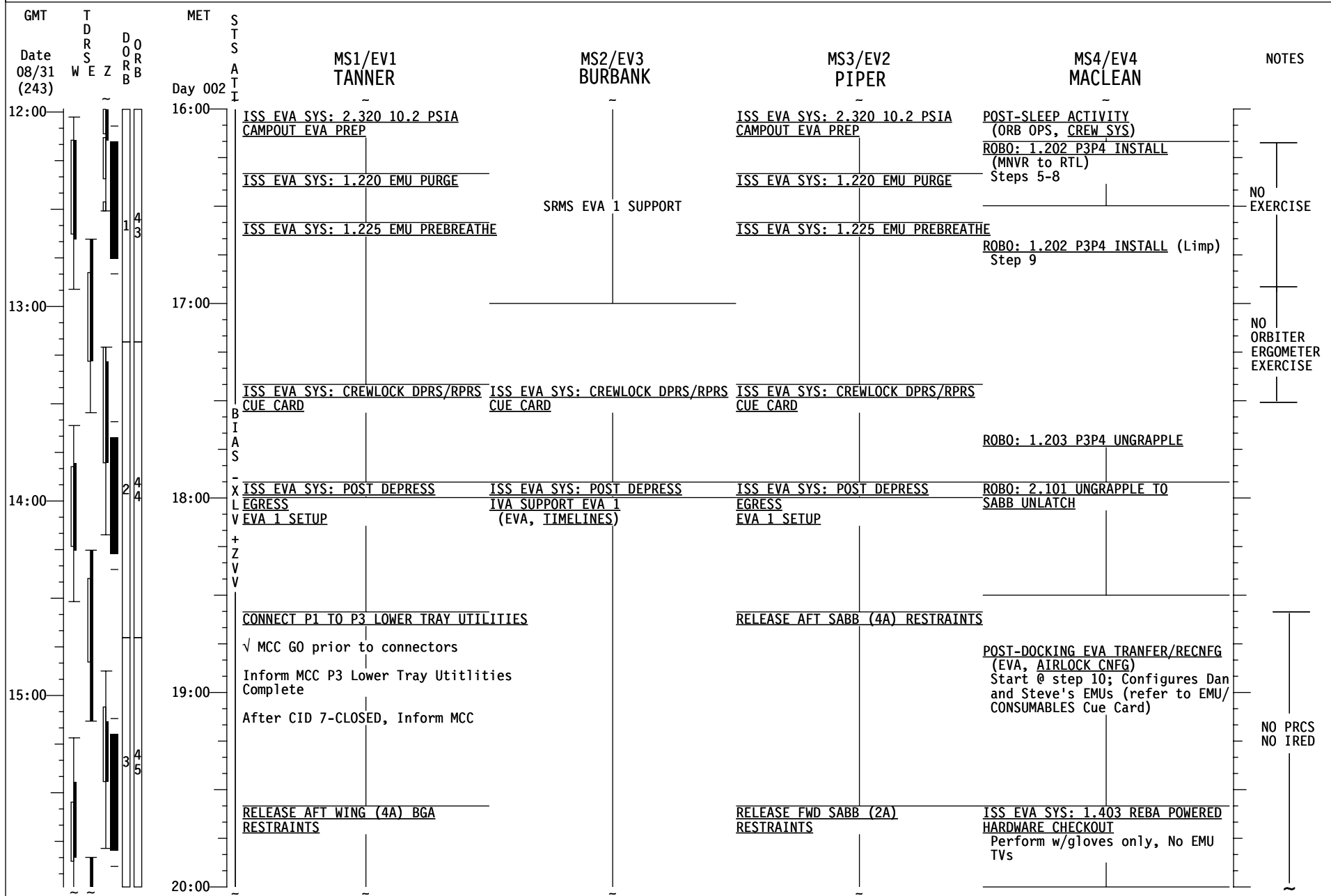
STS-115 (FD04)

GMT	TDRS WSEZ	DORB	MET Day 002	STS CDR JETT	PLT FERGUSON	MCC	NOTES
12:00				ISS EVA SYS: 2.320 10.2 PSIA CAMPOUT EVA PREP	EVA 1 INHIBIT PAD (EVA, TIMELINES)		
				ISS EVA SYS: 1.220 EMU PURGE			NO EXERCISE
				ISS EVA SYS: 1.225 EMU PREBREATHE	P1P3 SSAS NOMINAL MATE (ASSY OPS) Steps 6-10, 1st Stage Capture		
13:00					P1P3 SSAS NOMINAL MATE (ASSY OPS, ASSY) Steps 11-15, 2nd Stage Capture When complete, give MCC "GO" for LOWER TRAY PREP Steps 9-10	P3 ACTIVATION AND SO.S1. AND P1 POWERDOWN/POWERUP (ASSY OPS, ACT & C/O) Lower Tray Prep Steps 9-10	NO ORBITER ERGOMETER EXERCISE
				ISS EVA SYS: CREWLOCK DPRS/RPRS CUE CARD	After any 3 of 4 SSAS bolts complete, Give EV "GO" for Post Depress/Egress		A
14:00				X ISS EVA SYS: POST DEPRESS	Permanently edit DAPS, DAP A12-CNTL ACCL 3 DAP B12-CNTL ACCL 4		
				L SUPPLY WATER DUMP USING FES (ORB OPS, ECLS) V Perform Step 2 w/FES reqd	SHUTTLE/ISS H2O CNTR FILL (Init #2) (ORB OPS, ECLS) Ref MSG XXX Perform EQUIP PREP and WATER TRANSFER HOSE PURGE Perform CWC Fill #2 Report CWC barcode & S/N to MCC		
				P/TV07 EVA (PHOTO/TV, SCENES) Setup	ROBO: 1.202 P3P4 INSTALL (AVU CLNUP) Step 10 ROBO: 6.609 CUP(LAB) ARTIFICIAL VISION UNIT (AVU) POWERDOWN	P3 ACTIVATION AND SO.S1. AND P1 POWERDOWN/POWERUP (ASSY OPS, ACT & C/O) Lower Tray Prep Steps 11-13	
15:00				P/TV07 EVA (Ops) (PHOTO/TV, SCENES) Perform during EVA as time permits			
					SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		NO PRCS NO IRED
				CWC TRANSFER Transfer 2 CWC bags to ISS.		P3 ACTIVATION AND SO.S1. AND P1 POWERDOWN/POWERUP (ASSY OPS, ACT & C/O) Lower Tray Recovery Steps 15-34 Upper Tray Prep Steps 35-44	P4 CH. 2A ACT START
20:00							

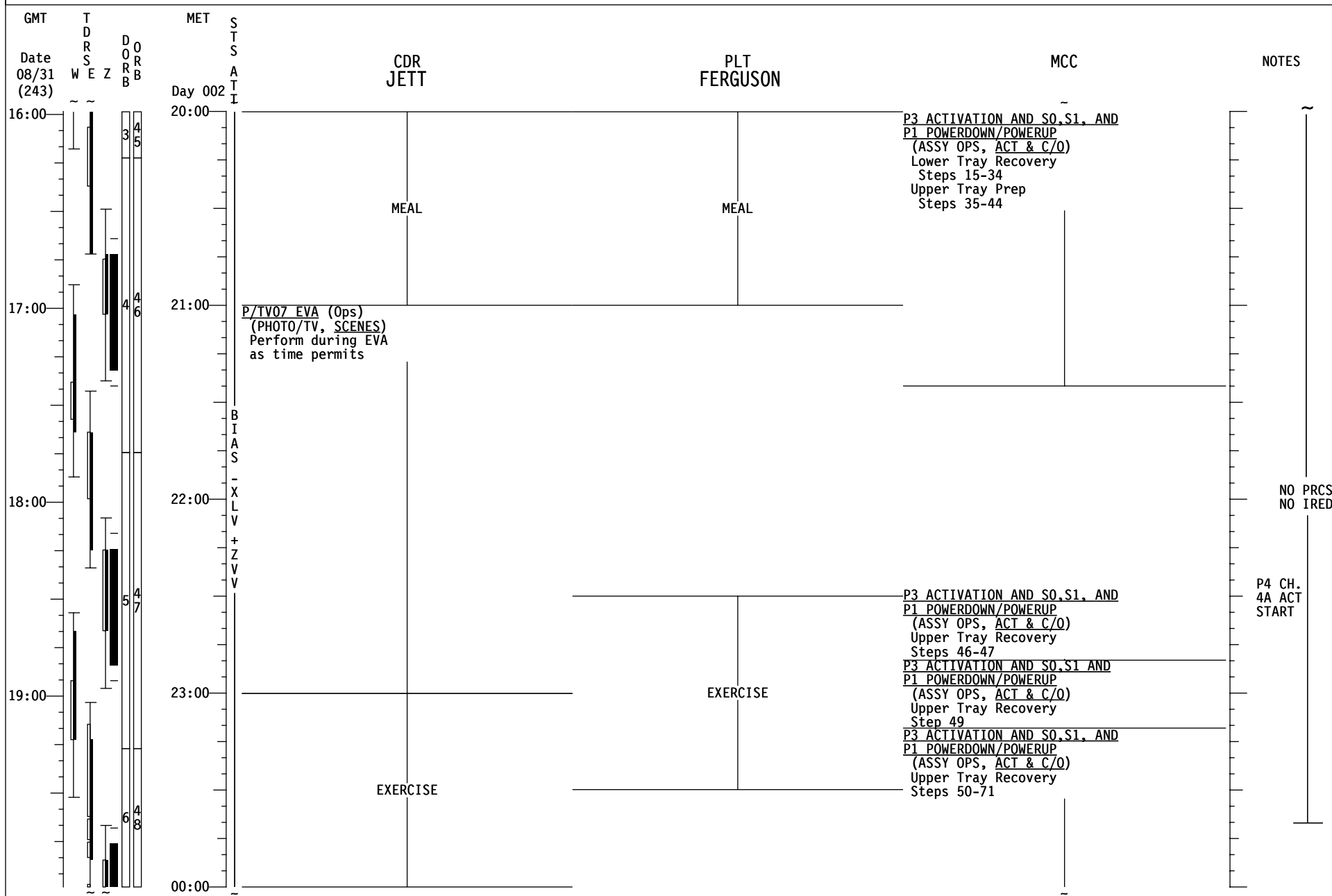
A UPLINK

- β 0+Boxes
- Box D1
- 18<AZ<70
- 68<EL<75
- Box C2
- 41<AZ<-10
- 25<EL<39
- Box C3
- 72<AZ<-36
- 4<EL<33

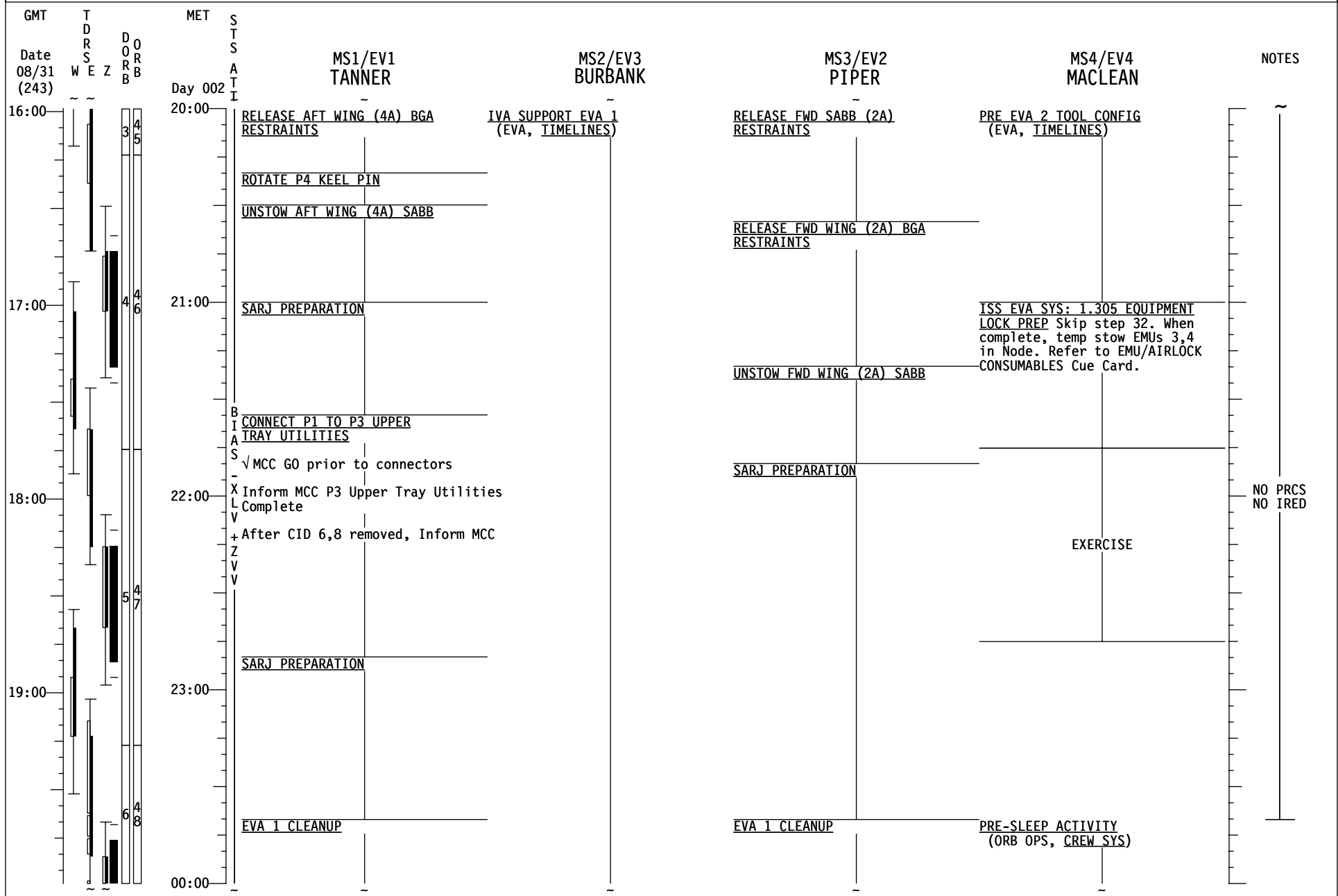
STS-115 (FD04)



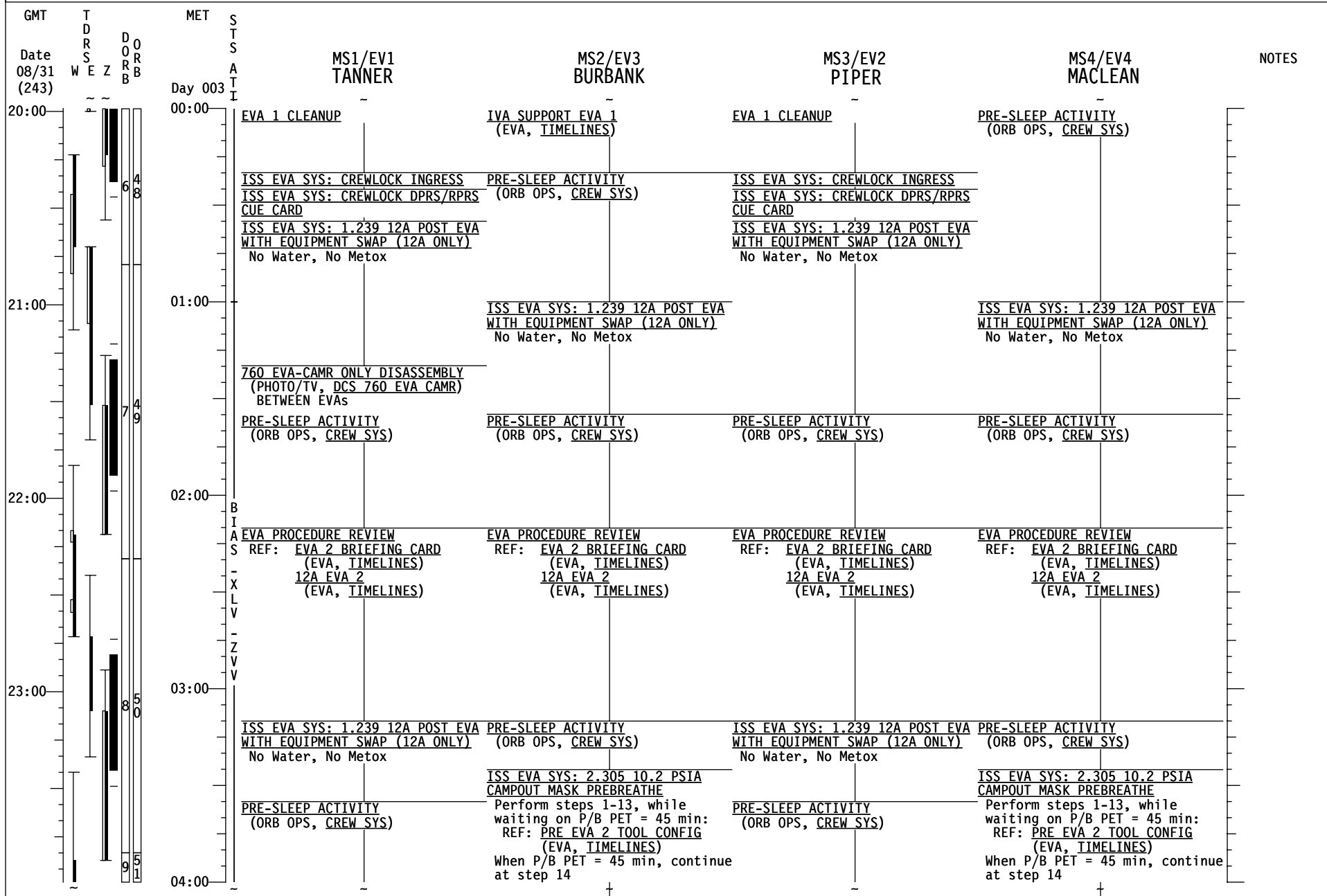
STS-115 (FD04)



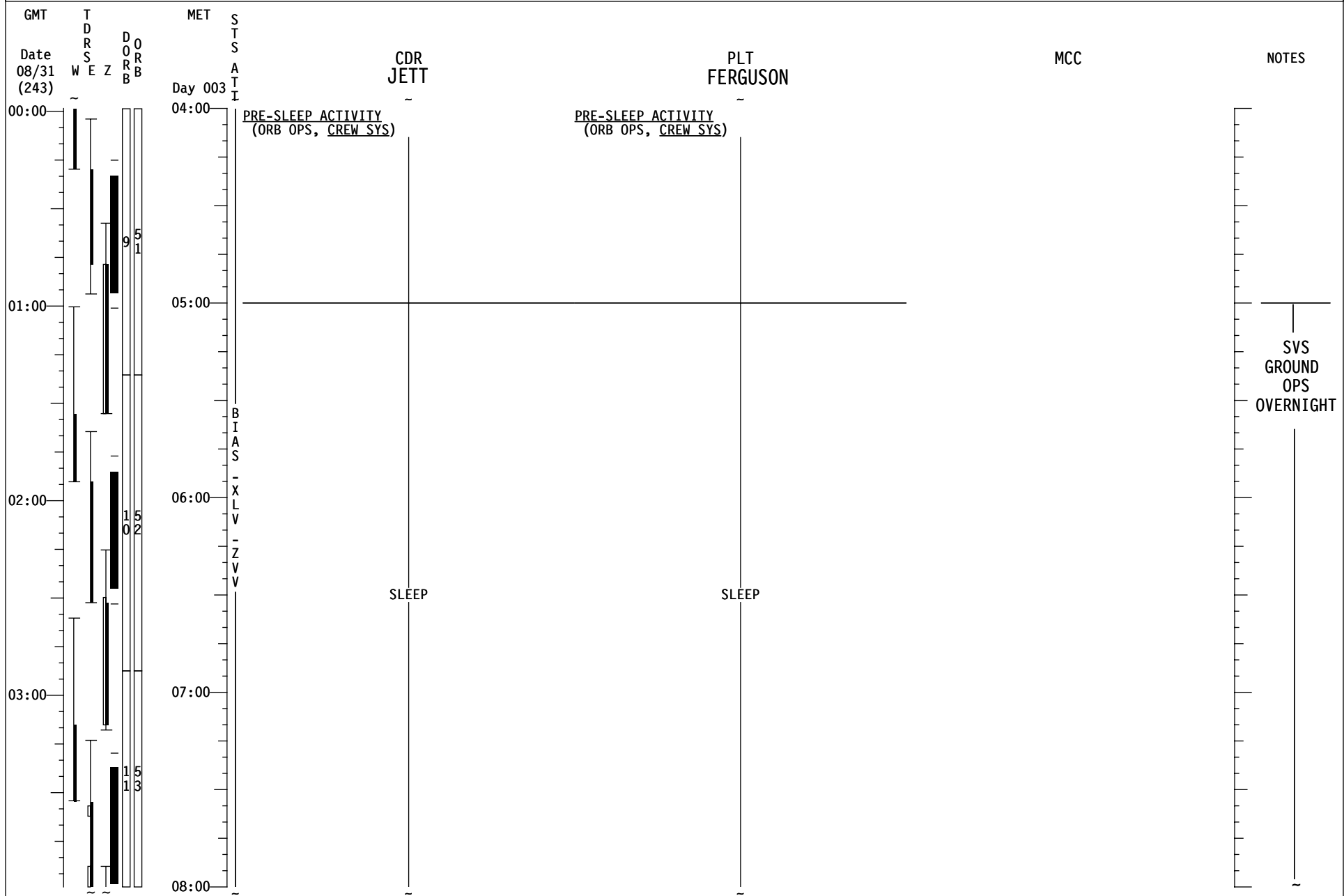
STS-115 (FD04)



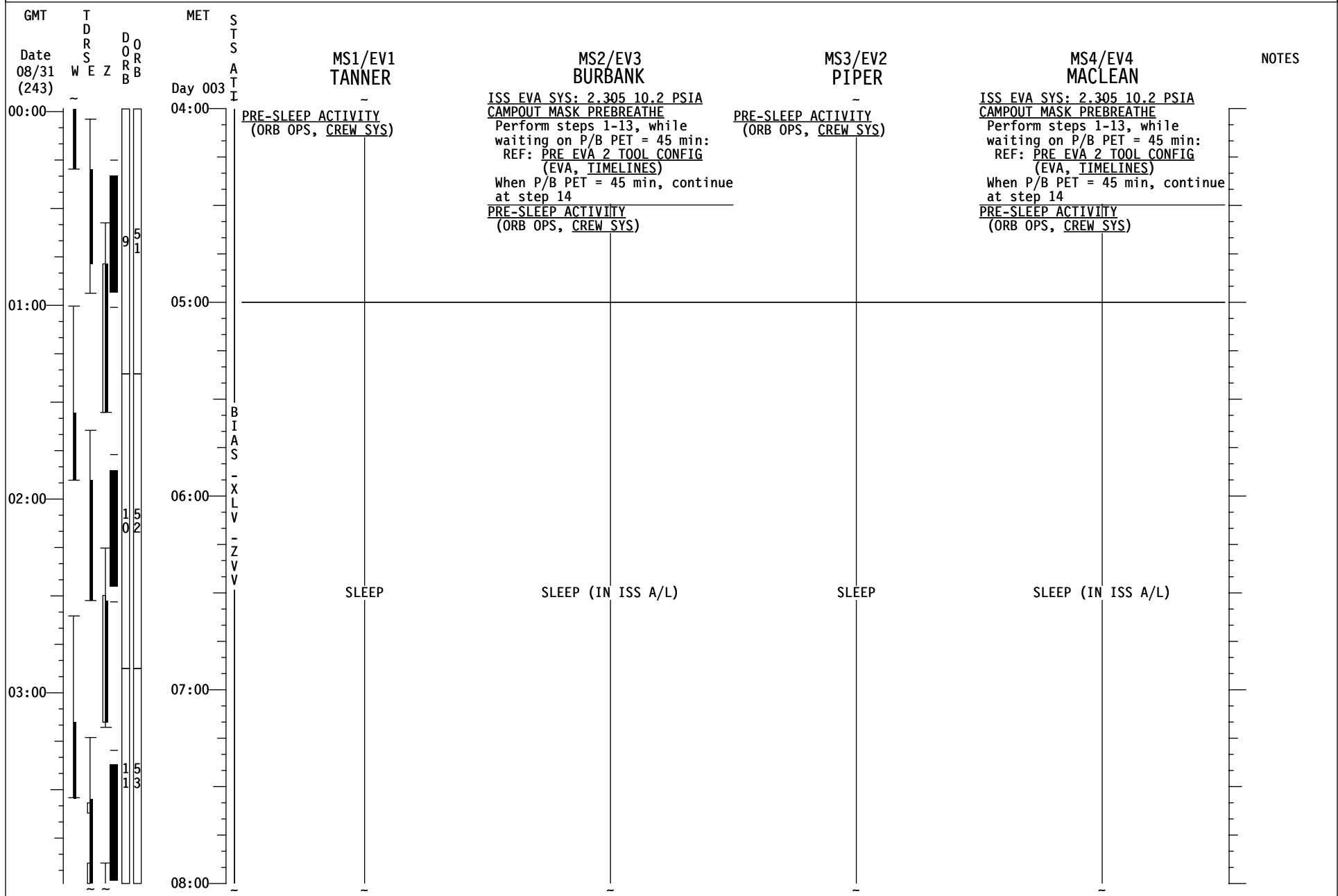
STS-115 (FD04)



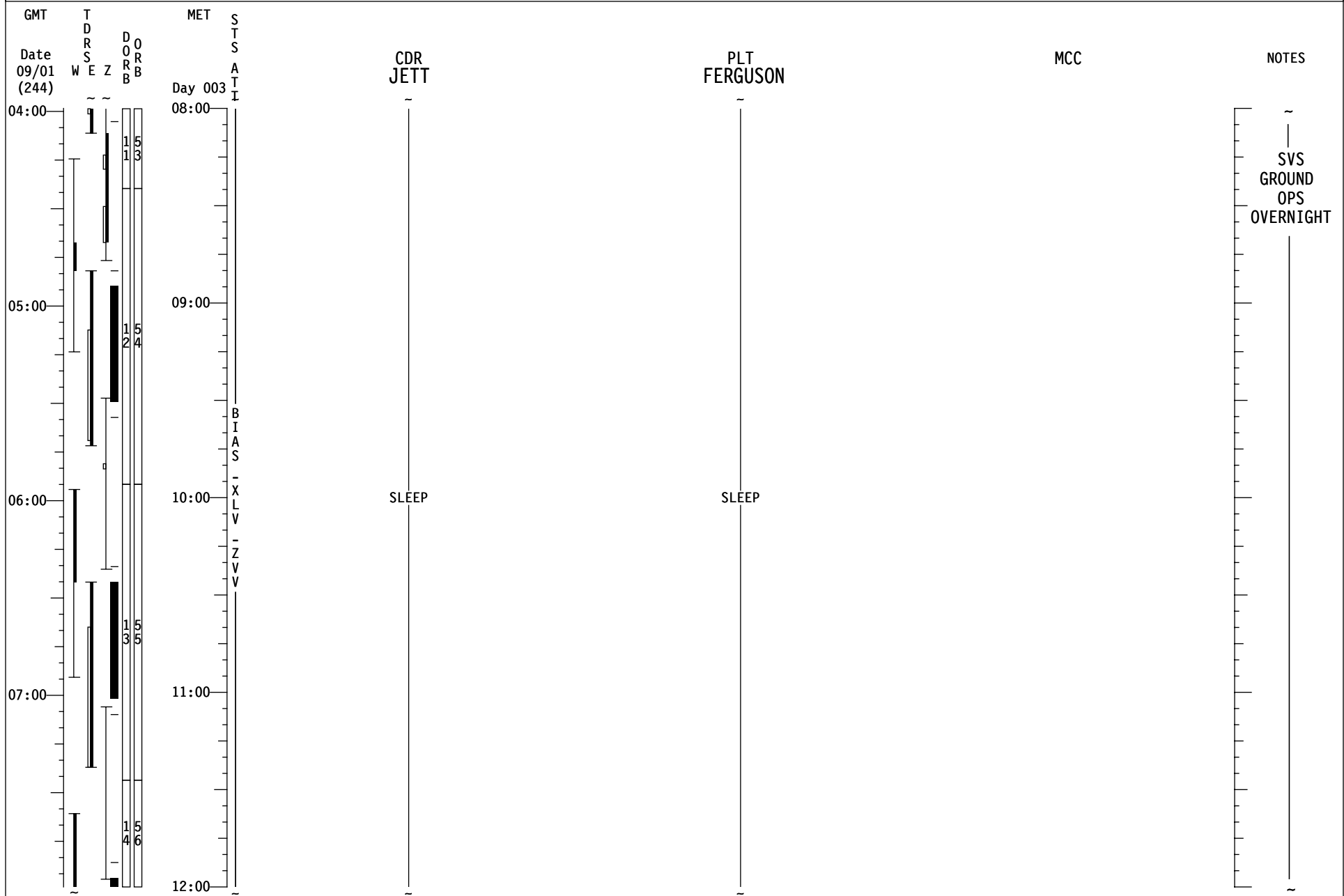
STS-115 (FD04)



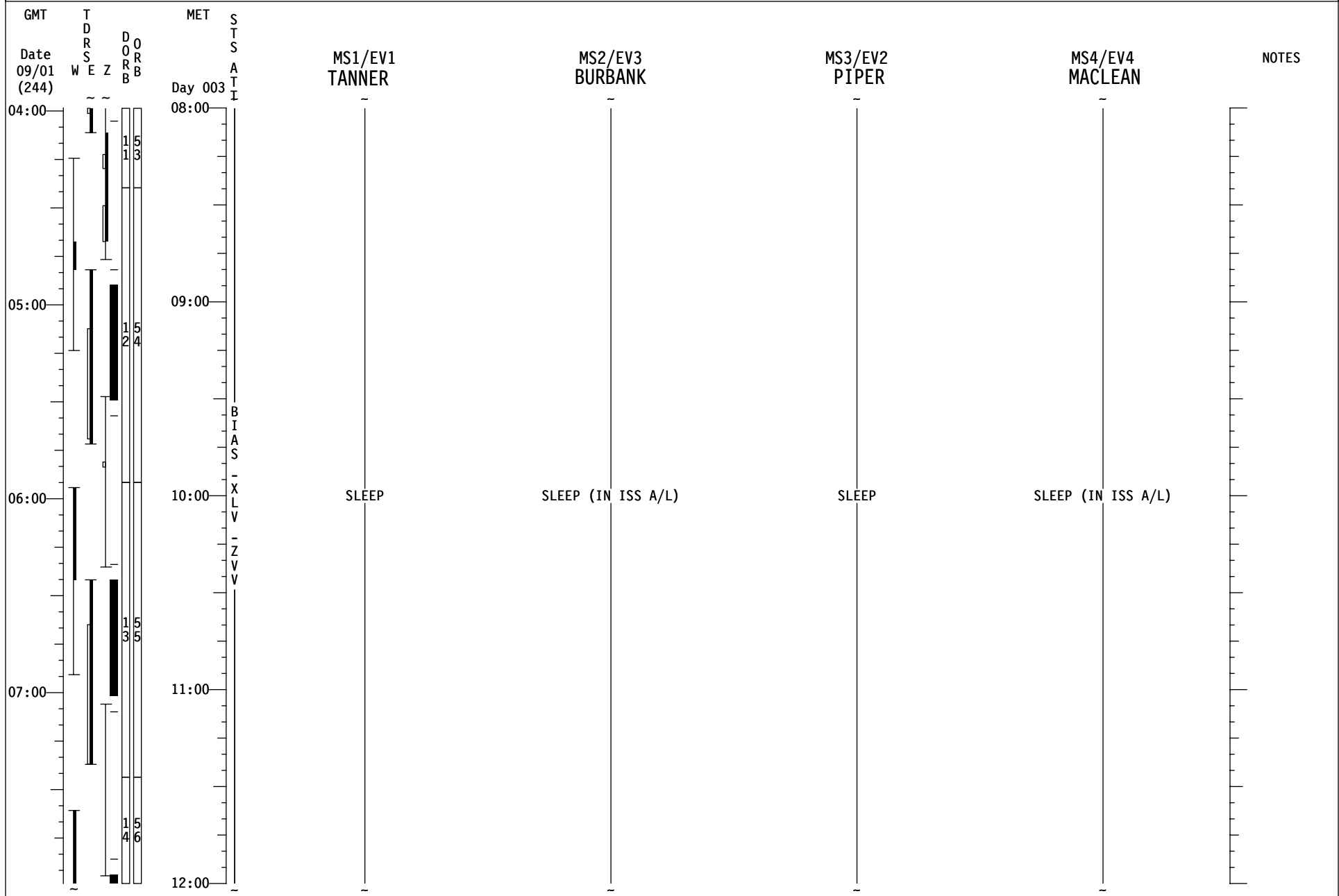
STS-115 (FD04)



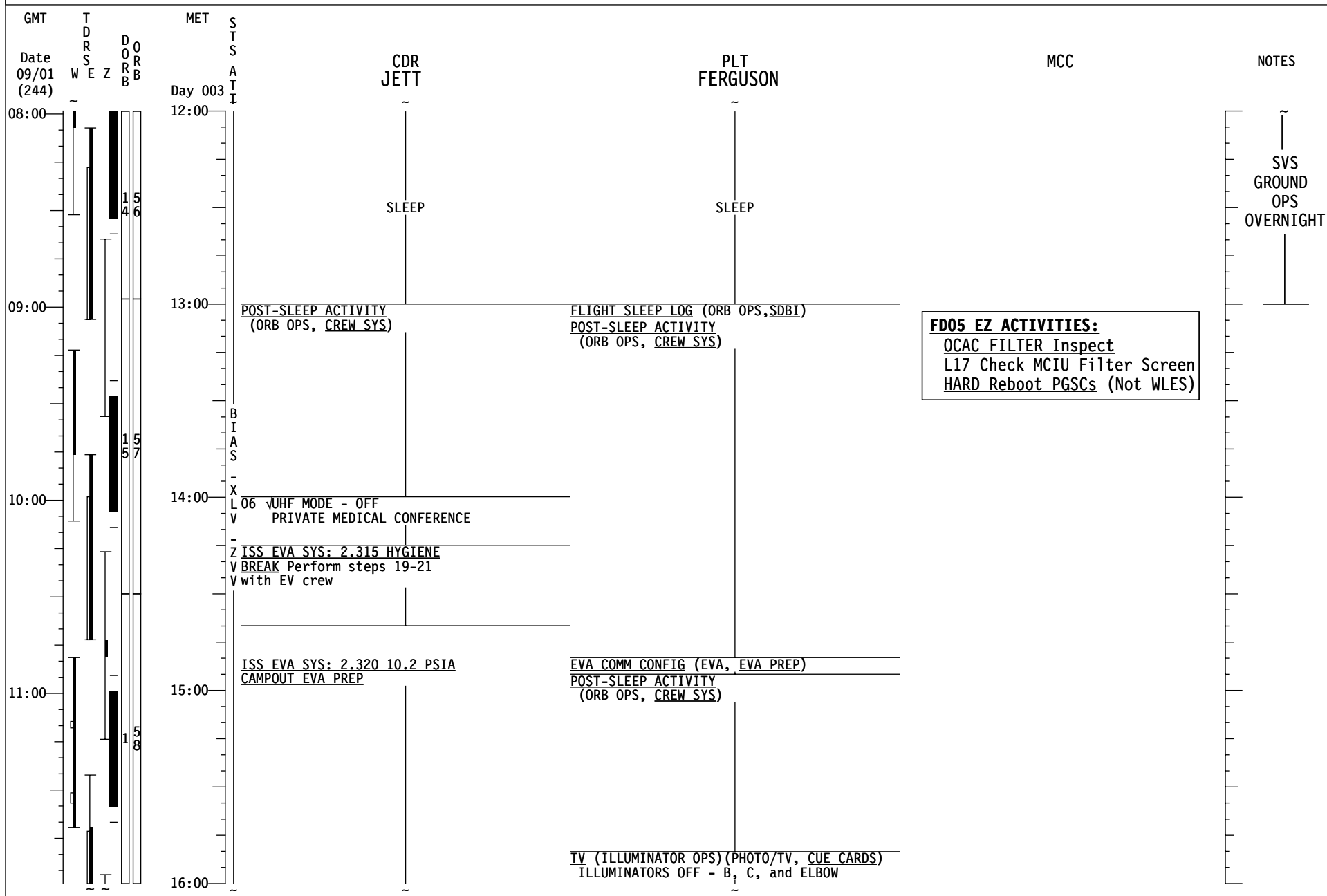
STS-115 (FD04)



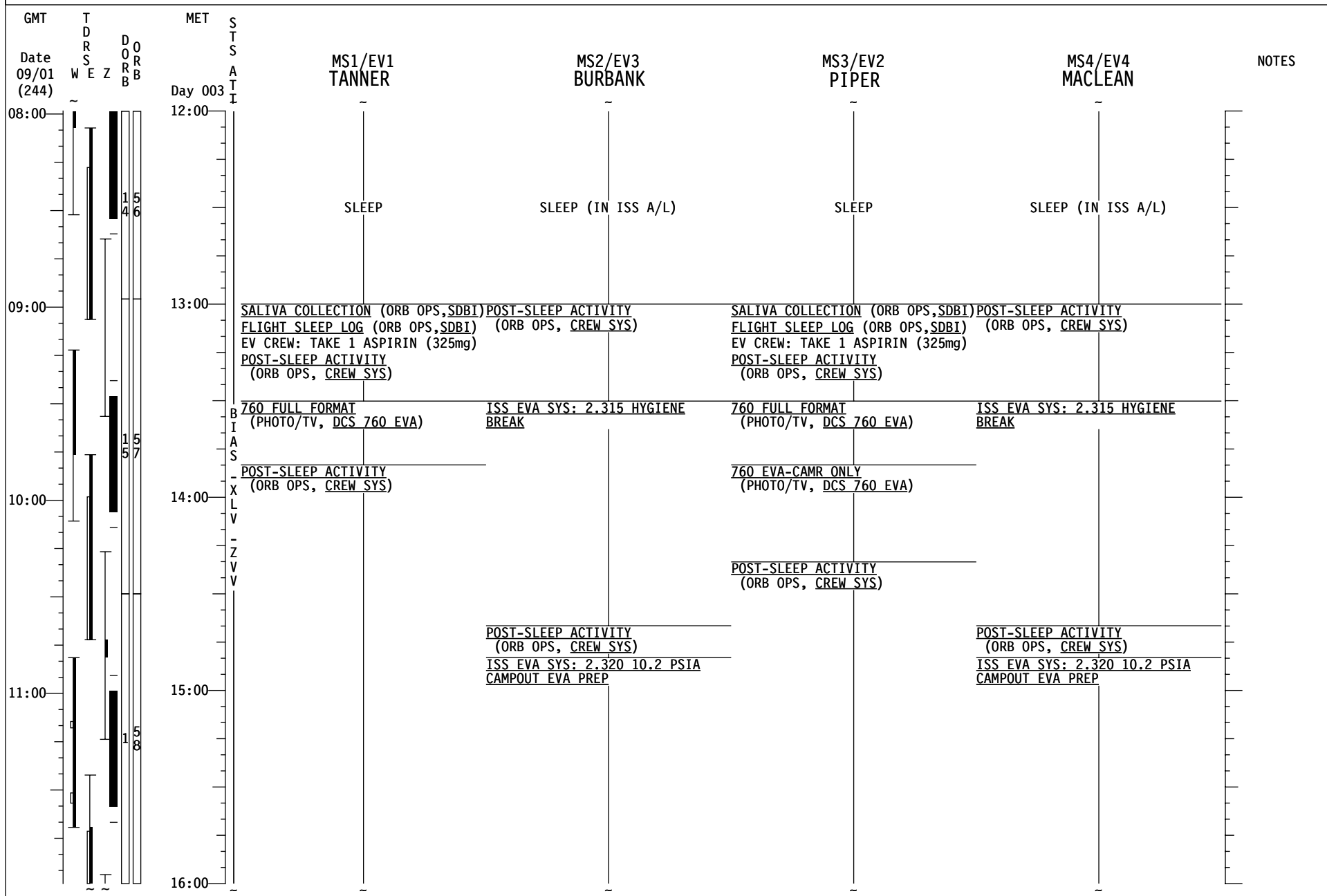
STS-115 (FD04)



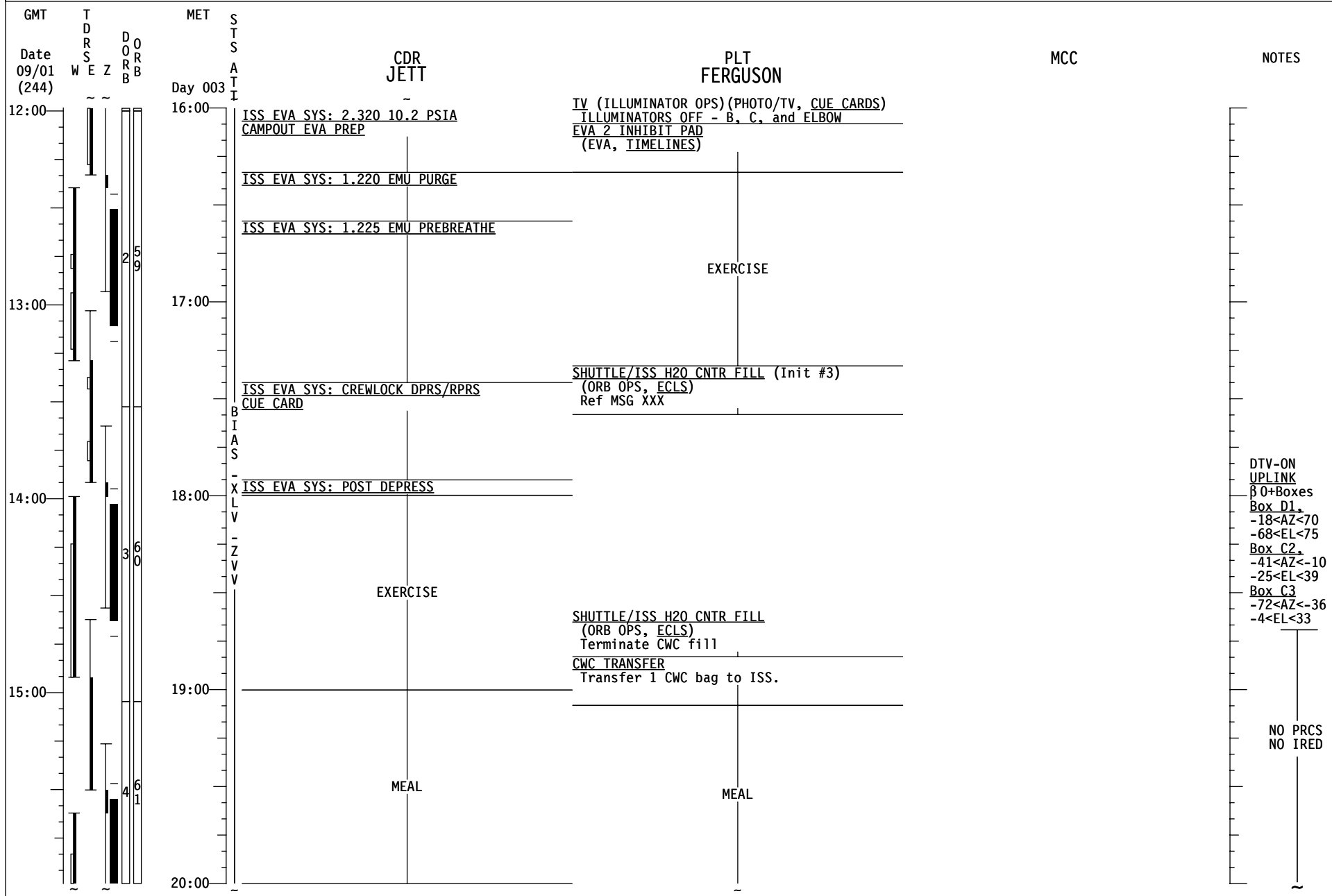
STS-115 (FD05)



STS-115 (FD05)



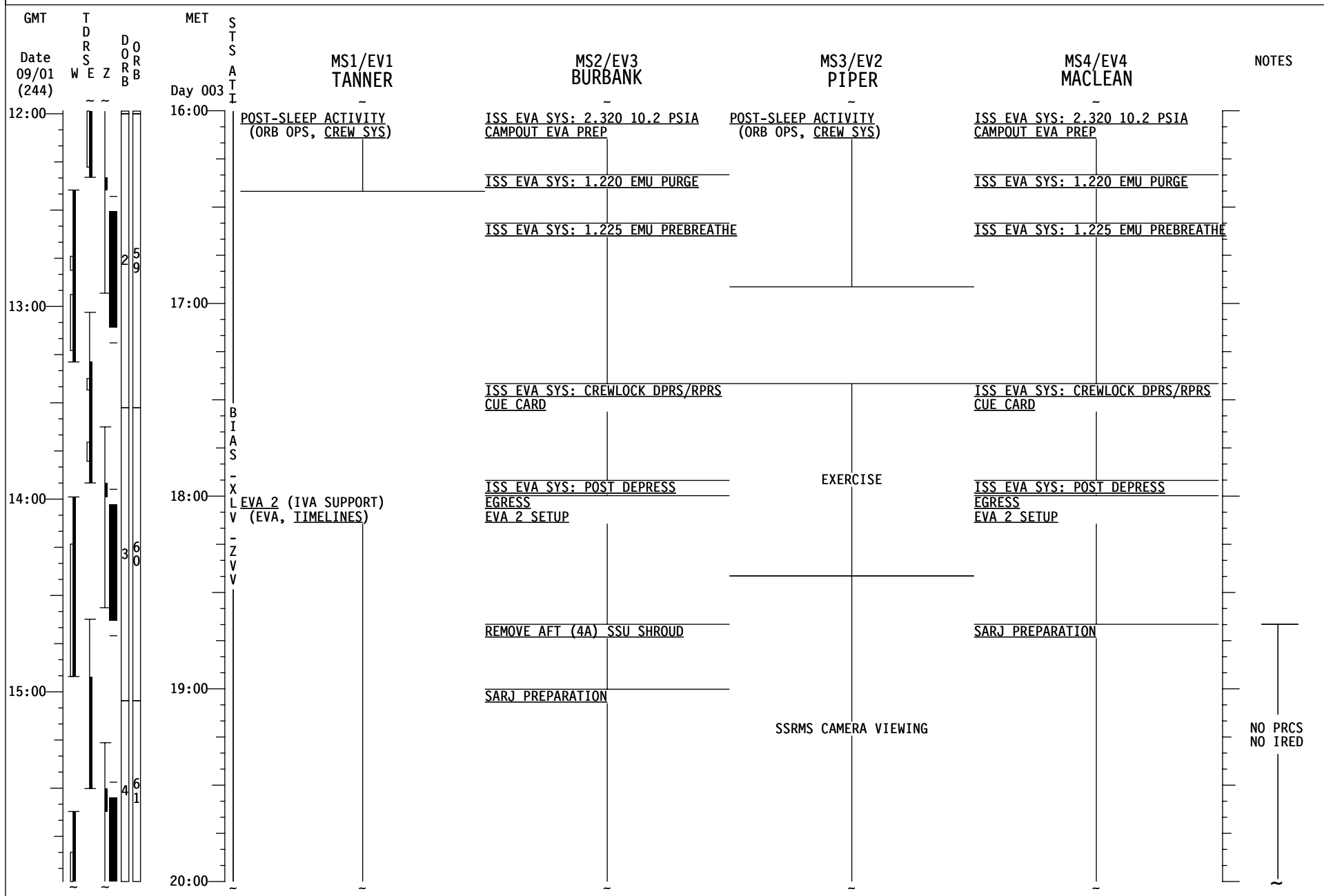
STS-115 (FD05)



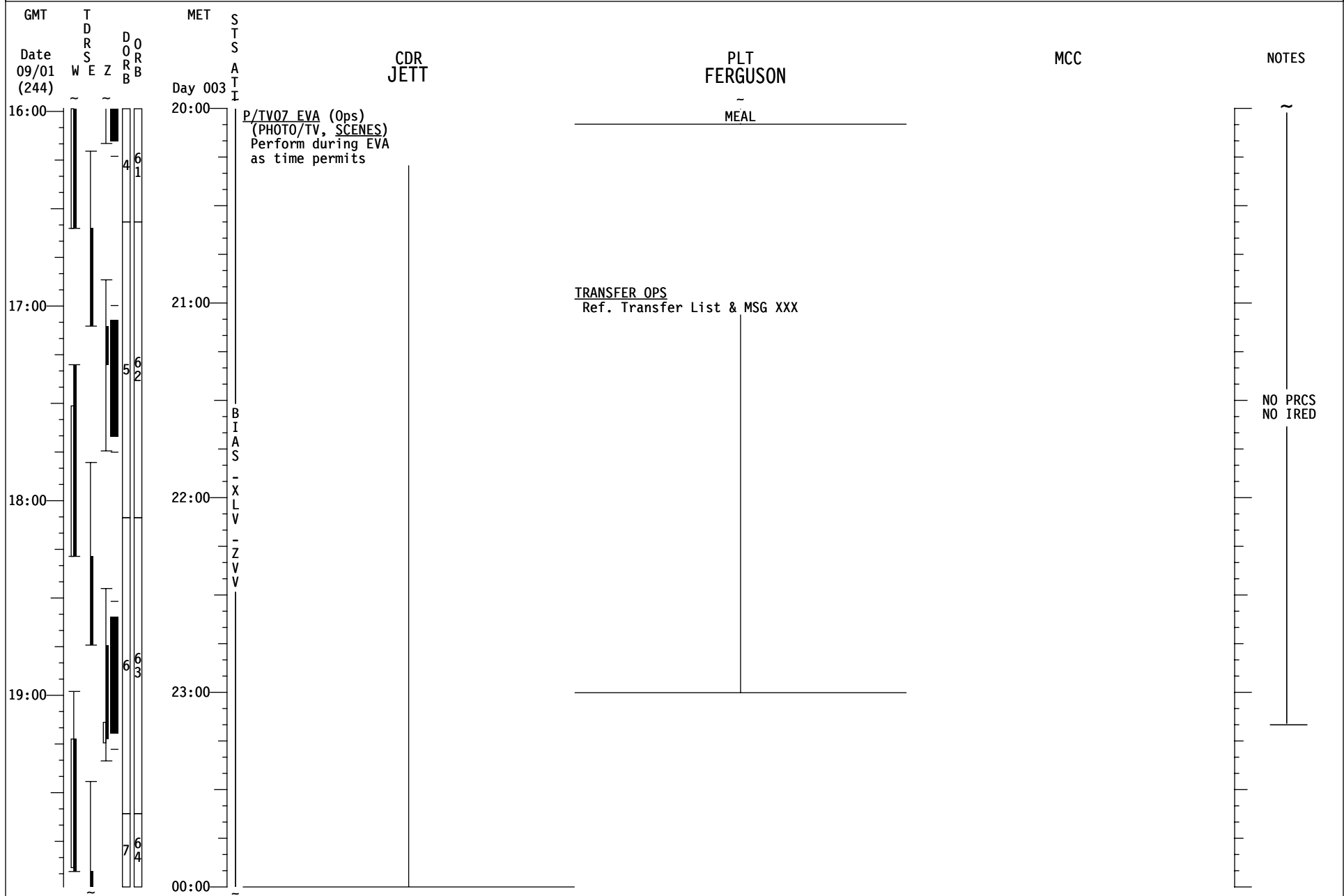
DTV-ON
UPLINK
β 0+Boxes
Box D1
-18<AZ<70
-68<EL<75
Box C2
-41<AZ<-10
-25<EL<39
Box C3
-72<AZ<-36
-4<EL<33

NO PRCS
NO IRED

STS-115 (FD05)



STS-115 (FD05)



P/TV07 EVA (Ops)
(PHOTO/TV, SCENES)
Perform during EVA
as time permits

TRANSFER OPS
Ref. Transfer List & MSG XXX

NO PRCS
NO IRED

STS-115 (FD05)

GMT	T D R S E Z	D O R B	MET	S T S	CDR	PLT	MCC	NOTES
Date 09/01 (244)	W	Z	Day 004	A T I	JETT	FERGUSON		
20:00				B I A S				
21:00								
22:00								
23:00								
04:00								

A UPLINK
 β21+Boxes
 Box D1
 -18<AZ<70
 -68<EL<75
 Box C2
 -41<AZ<-10
 -25<EL<39
 Box C3
 -72<AZ<-36
 -4<EL<33

A

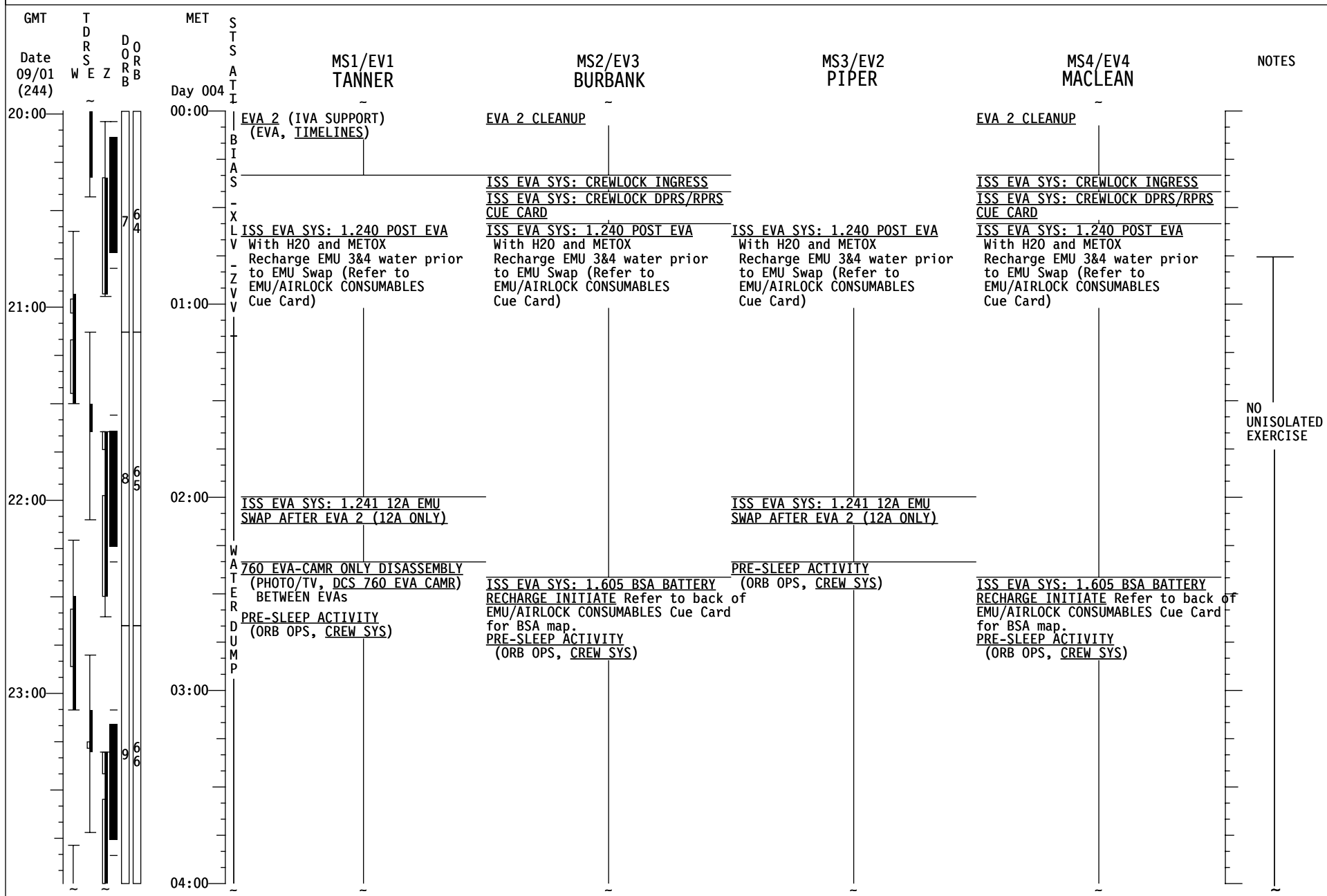
NO UNISOLATED EXERCISE

UPDATE H2O WASTE DUMP QTY

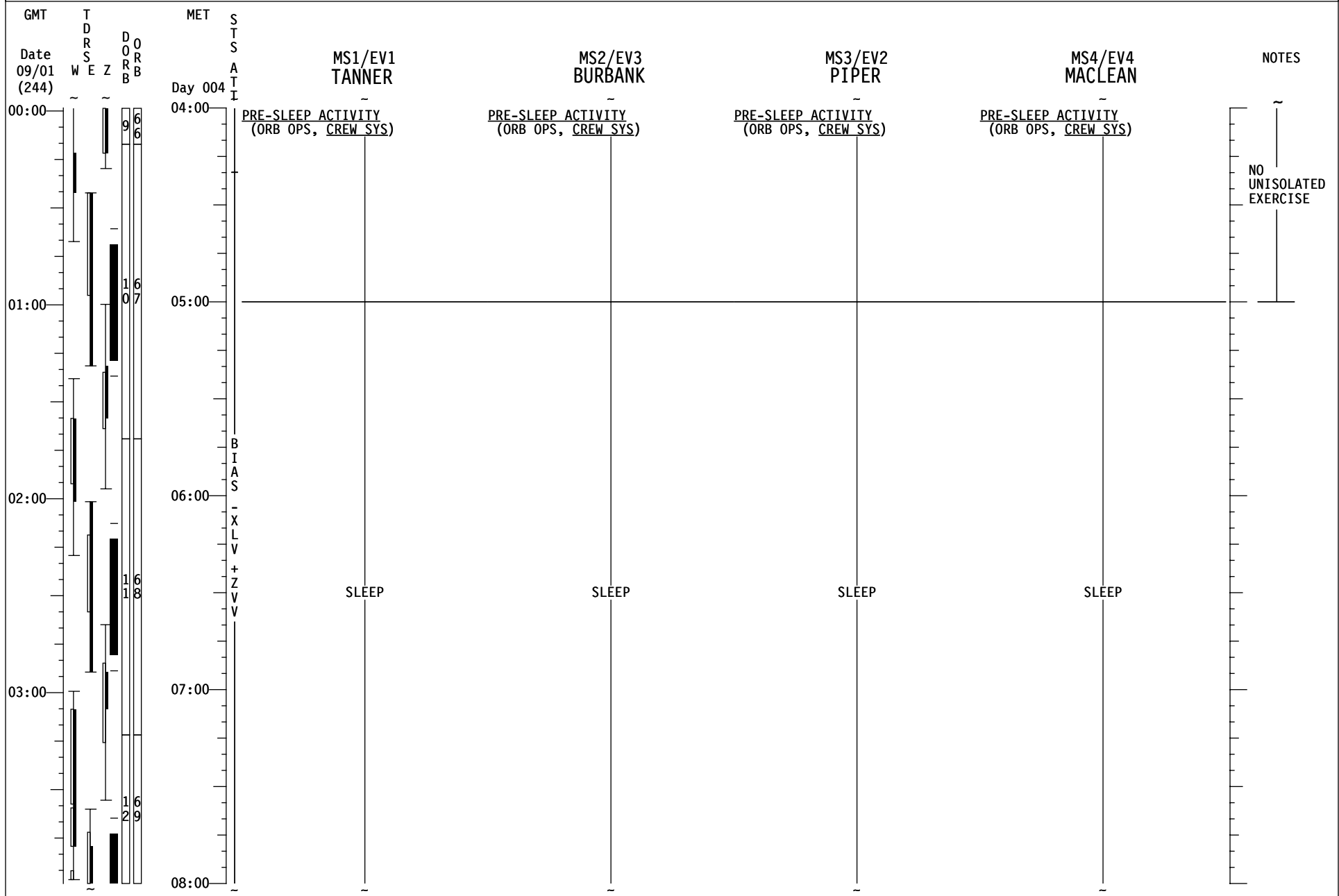
UPLINK CNFG 780 TFL 199

DTV-OFF

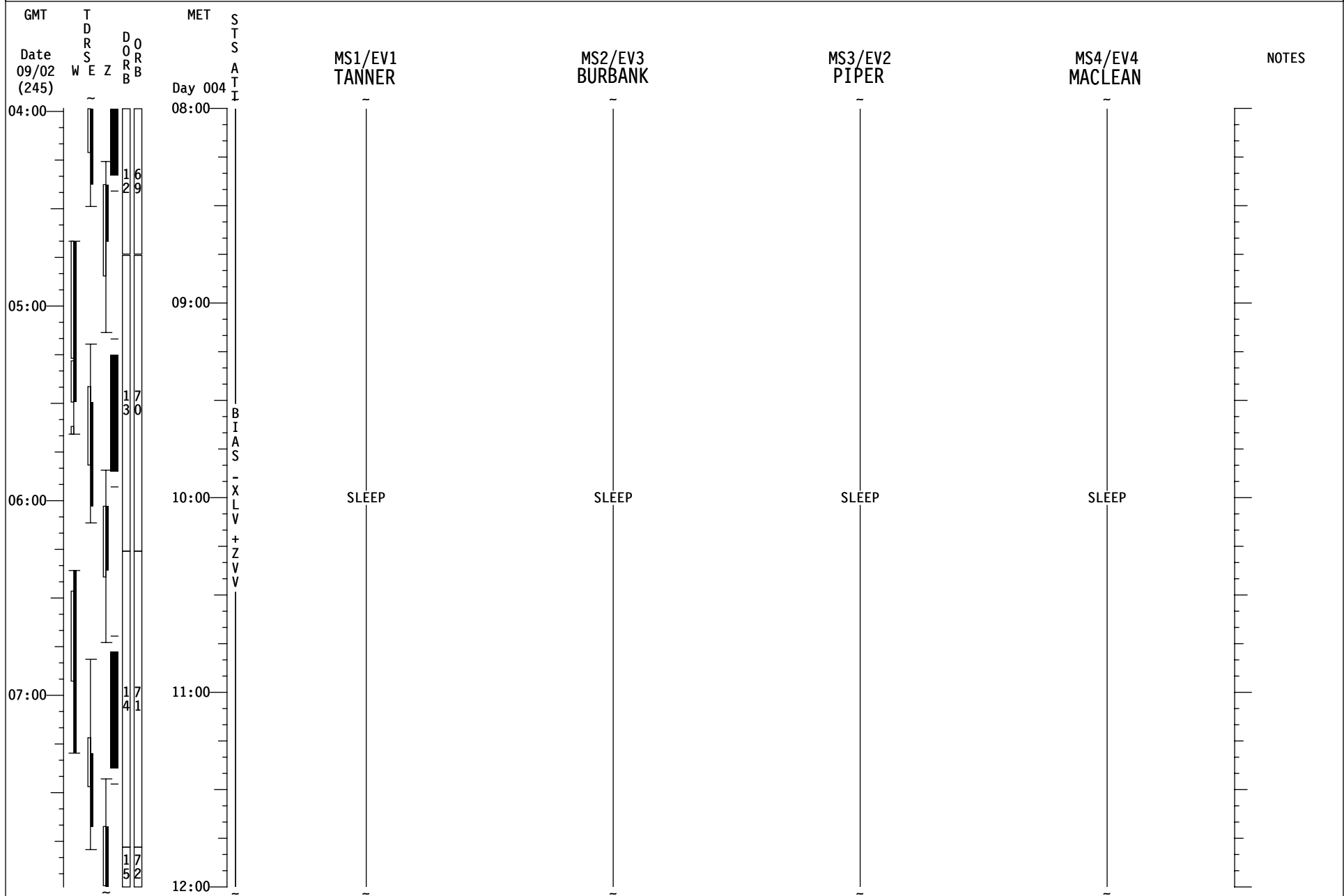
STS-115 (FD05)



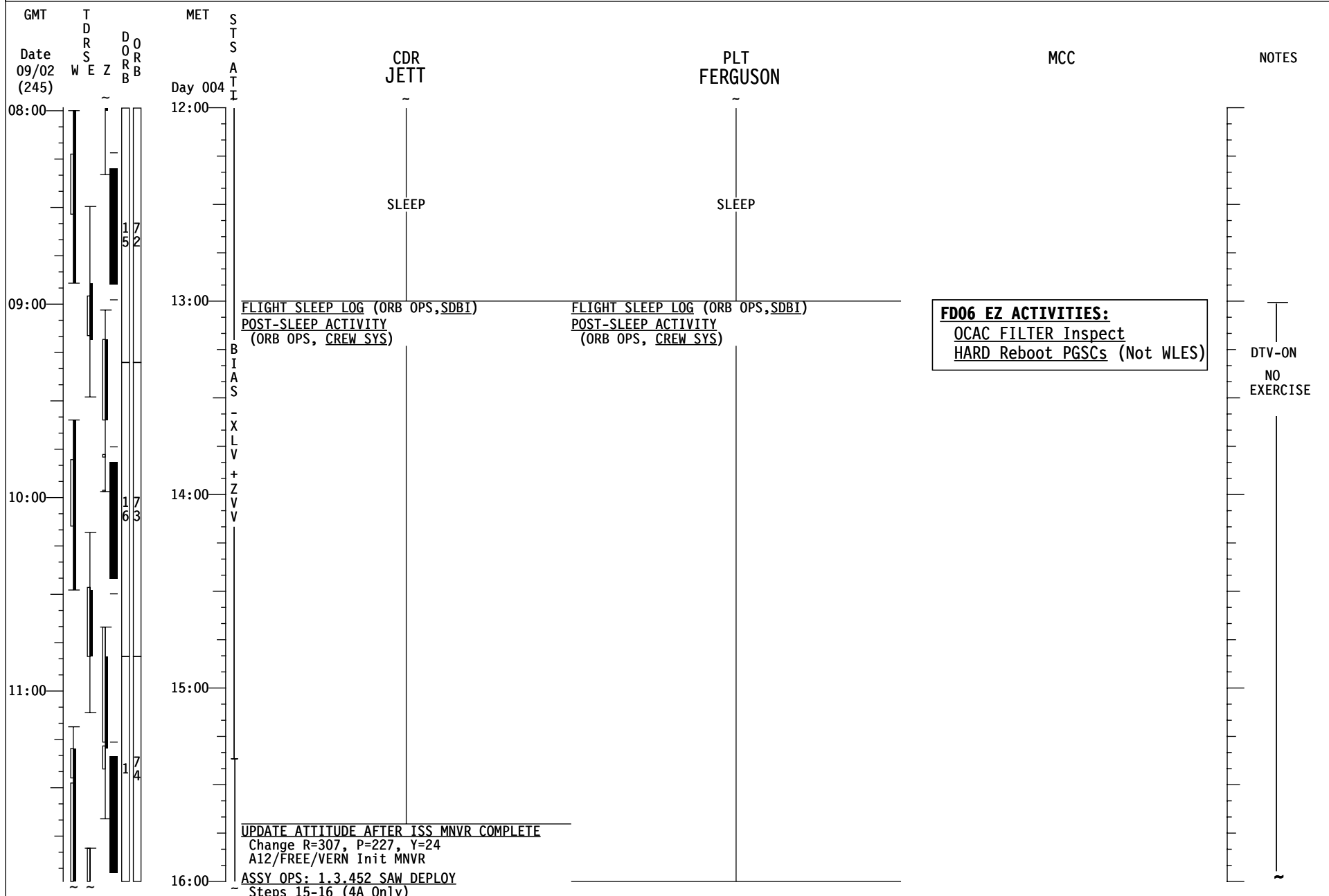
STS-115 (FD05)



STS-115 (FD05)

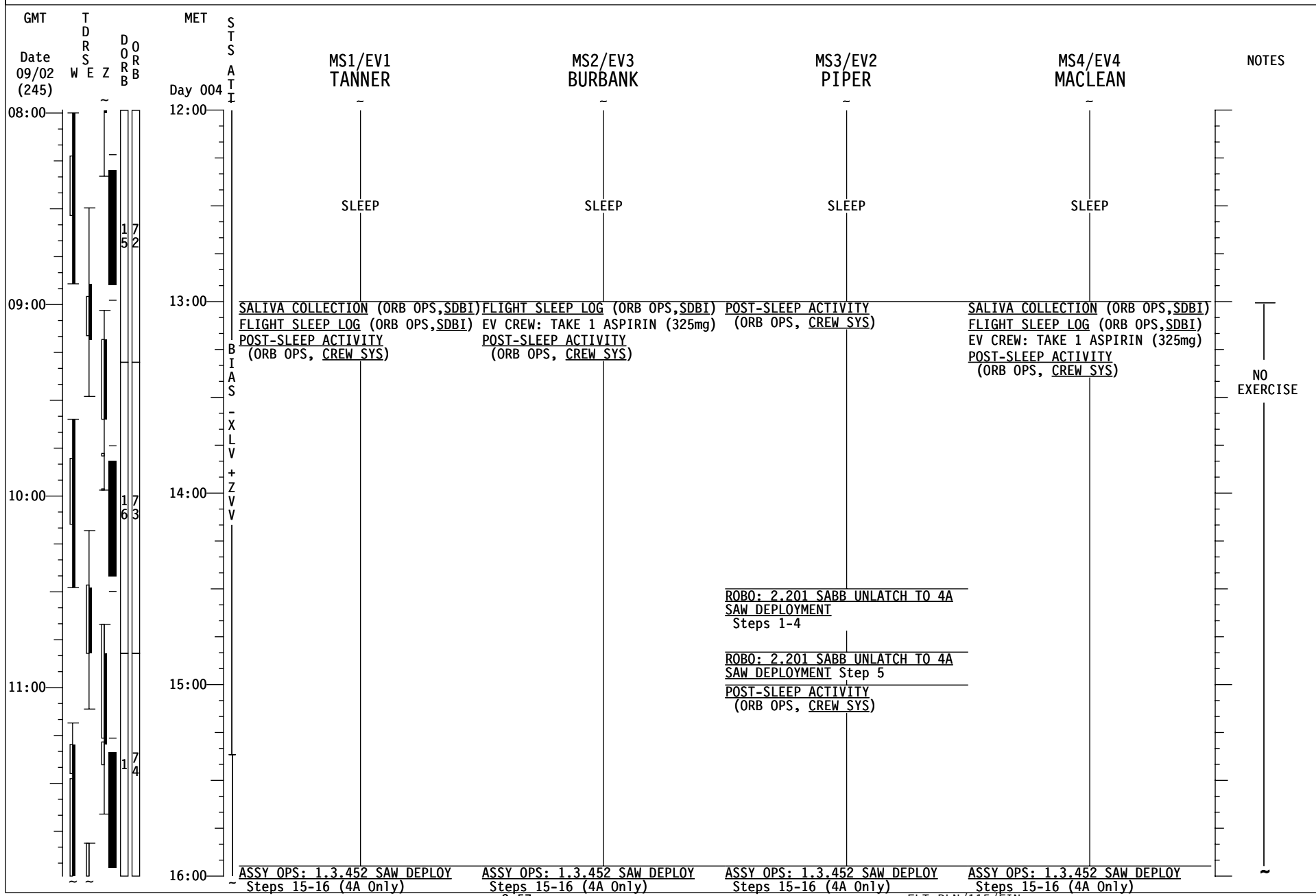


STS-115 (FD06)



FD06 EZ ACTIVITIES:
 OCAC FILTER Inspect
 HARD Reboot PGSCs (Not WLES)

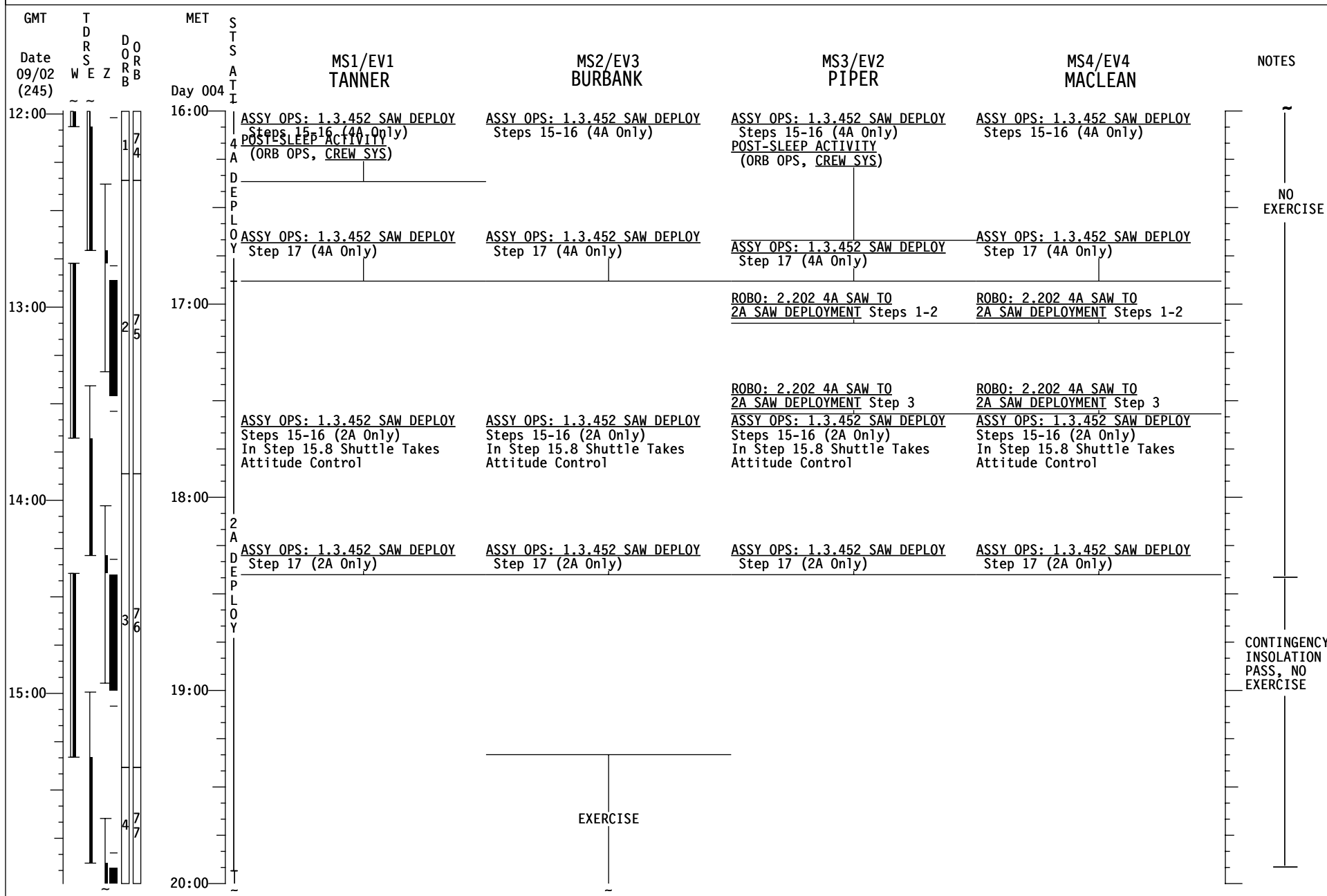
STS-115 (FD06)



STS-115 (FD06)

GMT	TDRS W E Z	DORB 1 7 4	MET Day 004	STS A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
12:00				4 A D E P L O Y		<u>FILTER CLEANING</u> (IFM, SCHEDULED MAINTENANCE) Inspect filters and clean as necessary		NO EXERCISE
13:00				2 7 5	<u>UPDATE ATTITUDE AFTER ISS MNVR COMPLETE</u> Change R=302, P=236, Y=30 A12/FREE/VERN Init MNVR	<u>WCS CRADLE-AUTO INHIBIT</u> Inspect hose block filter, change if req'd <u>WCS CRADLE-AUTO SHUTTLE/ISS H2O CNTR FILL</u> (Init #5) (ORB OPS, ECLS) Ref MSG XXX		
14:00				2 A D E P L O Y	<u>ASSY OPS: 1.3.452 SAW DEPLOY</u> Steps 15-16 (2A Only) In Step 15.8 Shuttle Takes Attitude Control	<u>SHUTTLE/ISS H2O CNTR FILL</u> (ORB OPS, ECLS) Terminate CWC fill <u>CWC TRANSFER</u> Transfer 2 CWC bags to ISS.		CONTINGENCY INSULATION PASS, NO EXERCISE
15:00				3 7 6	<u>ASSY OPS: 1.3.452 SAW DEPLOY</u> Step 17 (2A Only)	<u>SHUTTLE/ISS H2O CNTR FILL</u> (Init #6) (ORB OPS, ECLS) Ref MSG XXX		
16:00				4 7 7	In step 17.9, before performing Rate Damping (LVLH), Update Attitude: MNVR (TRK) -XLV, -ZVV TG=2 BV=5 P=155 Y=317 OM=185 A12/AUTO/VERN Init TRK	<u>FUEL CELL PURGE - MANUAL</u> (ORB OPS, EPS) SSV OUTFATE - 4 <u>OIU DEACTIVATION</u> (ORB OPS, OIU)		UPLINK CNFG 762 TFL 188
17:00								
18:00								
19:00								
20:00								

STS-115 (FD06)



STS-115 (FD06)

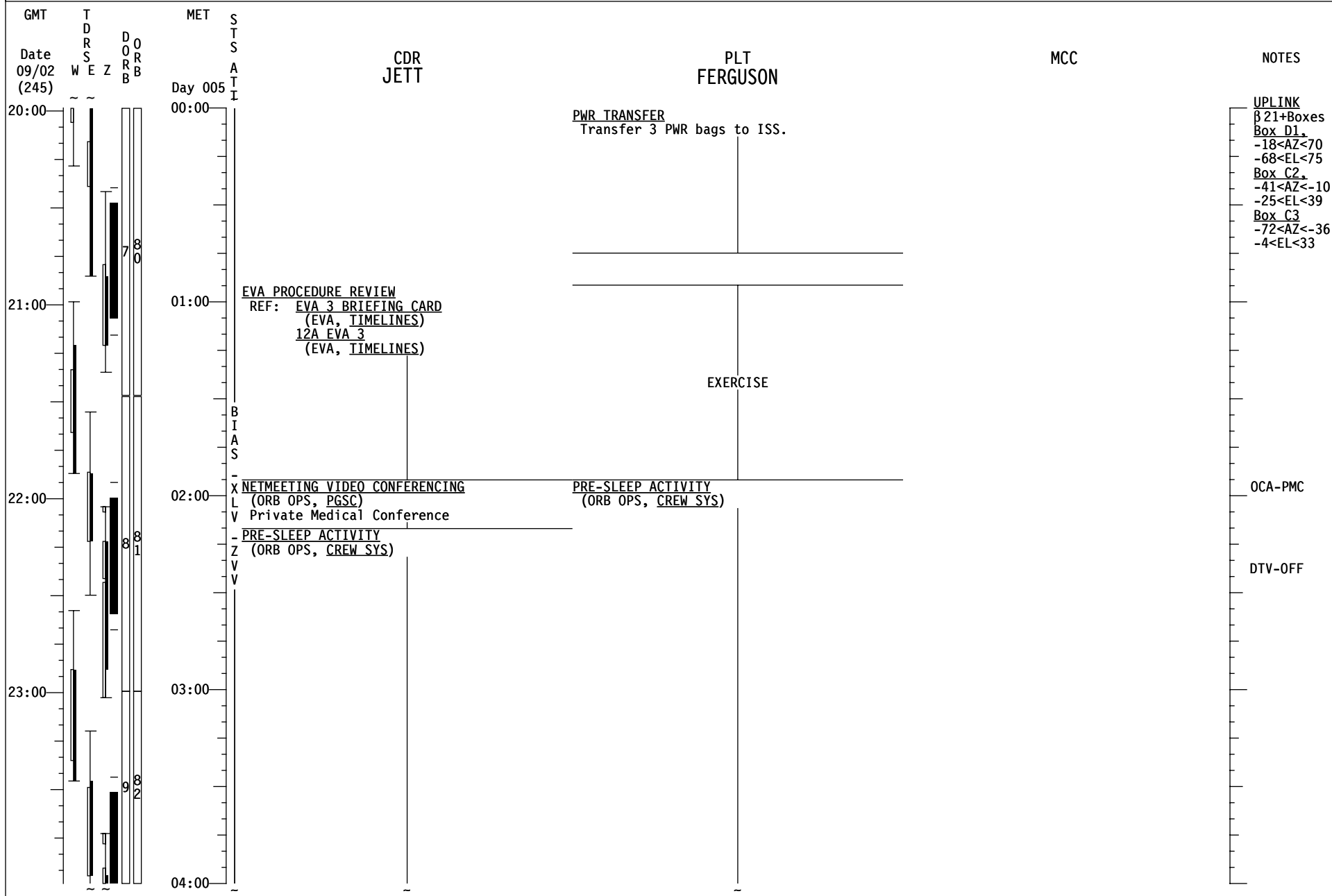
GMT	TDRS W E Z	DORB ~	MET Day 004	S T S A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
16:00								
					In step 17.9, before performing Rate Damping (LVLH), Update Attitude: MNVR (TRK) -XLV, -ZVV TG=2 BV=5 P=158 Y=316 OM=182 A12/AUTO/VERN Init TRK	<u>SHUTTLE/ISS H2O CNTR FILL</u> (ORB OPS, ECLS) Terminate CWC fill		
					Verify 2A SA Feathered prior to ATT H/O <u>JOINT OPS: 3.111 HANDOVER ATTITUDE</u> <u>CONTROL ORBITER TO CMG TA</u> <u>P/TV05 ISS INTERNAL SETUP</u> (PHOTO/TV, SCENES) Setup	✓ CWC fill complete before PWR fill <u>PWR FILL</u> (ORB OPS, ECLS) Init Fill #1 Ref MSG XXX Fill SN TBS Fill dur ~30 min		
17:00								
					MEAL	MEAL		
18:00								
						<u>CWC TRANSFER</u> Transfer 1 CWC bag to ISS.		
					<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX Ref. MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List, Items XXX & MSG XXX		
19:00								
					EXERCISE	<u>PWR FILL</u> (ORB OPS, ECLS) Init Fill #2 Ref MSG XXX Fill SN 1010 Fill dur ~30 min		
						<u>PWR FILL</u> (ORB OPS, ECLS) Init Fill #3 Ref MSG XXX Fill SN 1011 Fill dur ~30 min		
00:00								

UPLINK
 β 21+Boxes
Box D1
 -18<AZ<70
 -68<EL<75
Box F1
 -92<AZ<5
 -82<EL<4
Box F2
 -129<AZ<10
 -10<EL<42

STS-115 (FD06)

GMT	TDRS WSEZ	DORB	MET Day 004	STS ATTI	MS1/EV1 TANNER	MS2/EV3 BURBANK	MS3/EV2 PIPER	MS4/EV4 MACLEAN	NOTES
16:00					EXERCISE	EXERCISE <u>DCS BATT CHARGING</u> (PHOTO/TV, BATT & FUSES) Charge 2 Batts/1 Charger/3hrs			
							A Stow EV3/4 items, reconnect LTA, Helmets in prep for Post EVA3 swap.		
17:00					MEAL	MEAL	MEAL	MEAL	
						<u>ISS EVA SYS: 1.605 BSA BATTERY RECHARGE</u> (Terminate)	<u>ISS EVA SYS: 1.605 BSA BATTERY RECHARGE</u> (Terminate)	<u>ROBO: 2.301 2A SAW DEPLOYMENT TO WALK-OFF</u>	
						<u>NODE 1 EMU CLEANUP</u> A	<u>NODE 1 EMU CLEANUP</u> A	<u>ROBO: 2.302 SSRMS DOUBLE WALK-OFF TO LAB</u>	
18:00					<u>ISS EVA SYS: 1.505 EMU WATER RECHARGE</u> Refer to back of EMU/AIRLOCK CONSUMABLES cue card for BSA map.	<u>ISS EVA SYS: 1.505 EMU WATER RECHARGE</u> Refer to back of EMU/AIRLOCK CONSUMABLES cue card for BSA map.	<u>TRANSFER OPS</u> Ref. Transfer List, Items XXX & MSG XXX		
					<u>ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP</u> Defer HL batt install until BSA charging complete	<u>ISS EVA SYS: 1.305 EQUIPMENT LOCK PREP</u> Defer HL batt install until BSA charging complete			
19:00					<u>760 FULL FORMAT</u> (PHOTO/TV, DCS 760 EVA)	<u>760 FULL FORMAT</u> (PHOTO/TV, DCS 760 EVA)			
								<u>ROBO: 2.303 WALK-OFF TO MT VIEWING</u>	
00:00									

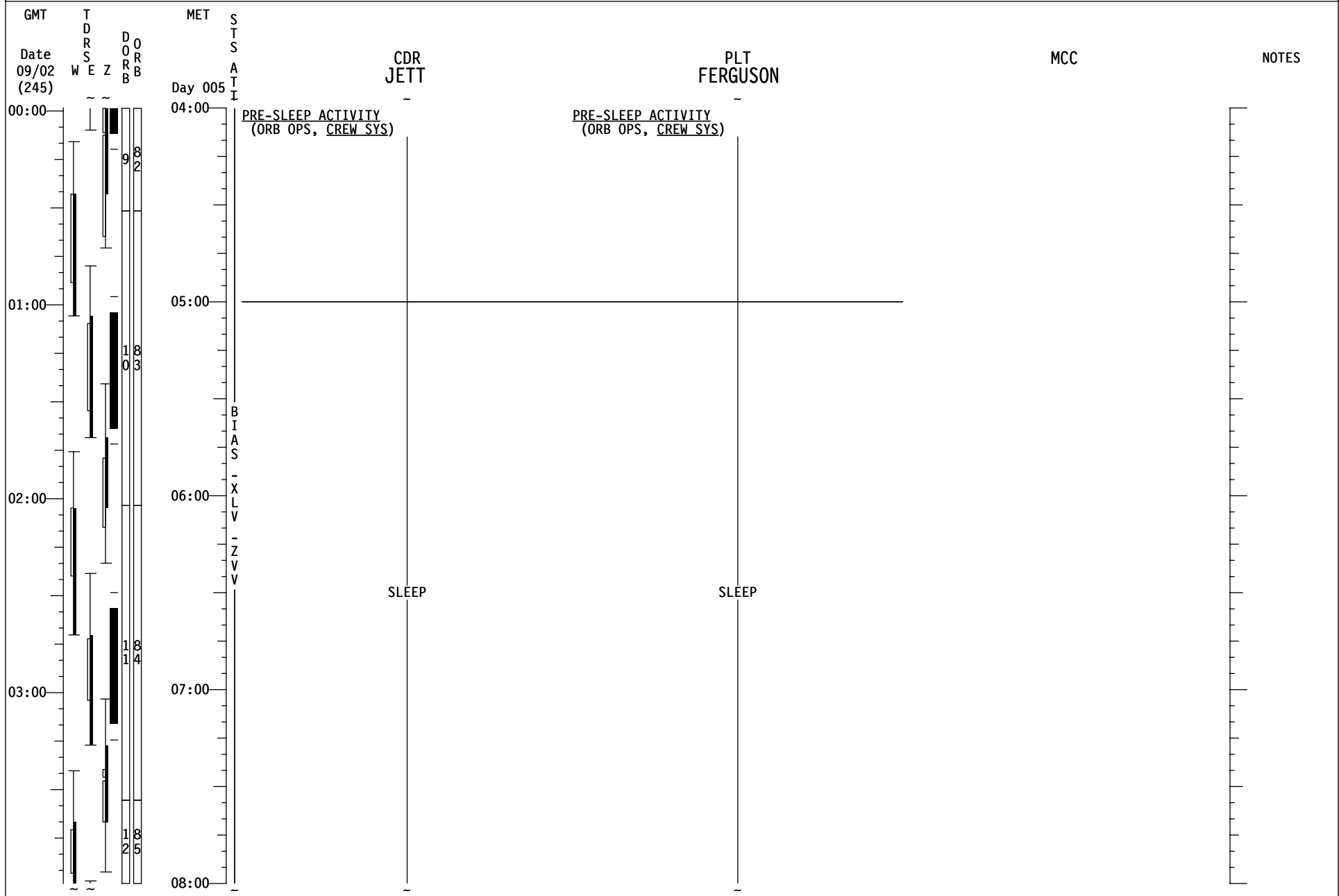
STS-115 (FD06)



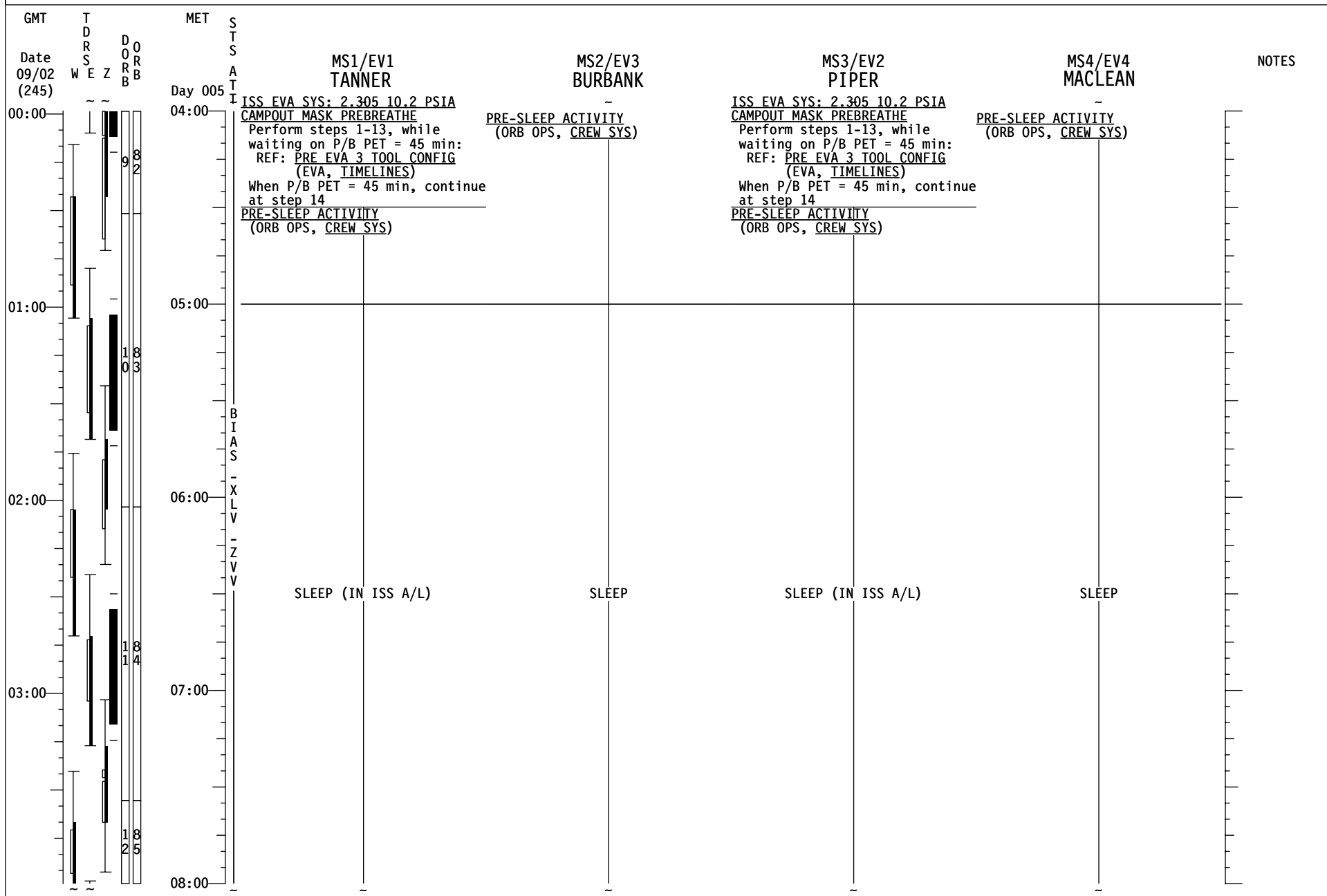
STS-115 (FD06)

GMT	T D R S E Z W E Z	D O R B D O R B	MET Day 005	S T S A T T I	MS1/EV1 TANNER	MS2/EV3 BURBANK	MS3/EV2 PIPER	MS4/EV4 MACLEAN	NOTES
20:00			00:00		<u>PRE EVA 3 TOOL CONFIG</u> (EVA, TIMELINES) Defer PGT batt install until BSA charging complete	<u>760 EVA-CAMR ONLY</u> (PHOTO/TV, DCS 760 EVA)	<u>PRE EVA 3 TOOL CONFIG</u> (EVA, TIMELINES) Defer PGT batt install until BSA charging complete		
								EXERCISE	
					<u>EVA IR CAMERA SETUP</u> (PHOTO/TV, EVA IR CAM) Use EHIP Batt S/N TBS		<u>TRANSFER TAGUP</u> Coordinate with transfer counterpart		
							<u>TRANSFER BRIEF</u> Call down status to MCC		
21:00			01:00		<u>EVA PROCEDURE REVIEW</u> REF: <u>EVA 3 BRIEFING CARD</u> (EVA, TIMELINES) <u>12A EVA 3</u> (EVA, TIMELINES)	<u>EVA PROCEDURE REVIEW</u> REF: <u>EVA 3 BRIEFING CARD</u> (EVA, TIMELINES) <u>12A EVA 3</u> (EVA, TIMELINES)	<u>EVA PROCEDURE REVIEW</u> REF: <u>EVA 3 BRIEFING CARD</u> (EVA, TIMELINES) <u>12A EVA 3</u> (EVA, TIMELINES)	<u>EVA PROCEDURE REVIEW</u> REF: <u>EVA 3 BRIEFING CARD</u> (EVA, TIMELINES) <u>12A EVA 3</u> (EVA, TIMELINES)	
22:00			02:00		<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
23:00			03:00						
					<u>ISS EVA SYS: 2.305 10.2 PSIA</u> <u>CAMPOUT MASK PREBREATHE</u> Perform steps 1-13, while waiting on P/B PET = 45 min: REF: <u>PRE EVA 3 TOOL CONFIG</u> (EVA, TIMELINES) When P/B PET = 45 min, continue at step 14		<u>ISS EVA SYS: 2.305 10.2 PSIA</u> <u>CAMPOUT MASK PREBREATHE</u> Perform steps 1-13, while waiting on P/B PET = 45 min: REF: <u>PRE EVA 3 TOOL CONFIG</u> (EVA, TIMELINES) When P/B PET = 45 min, continue at step 14		
04:00									

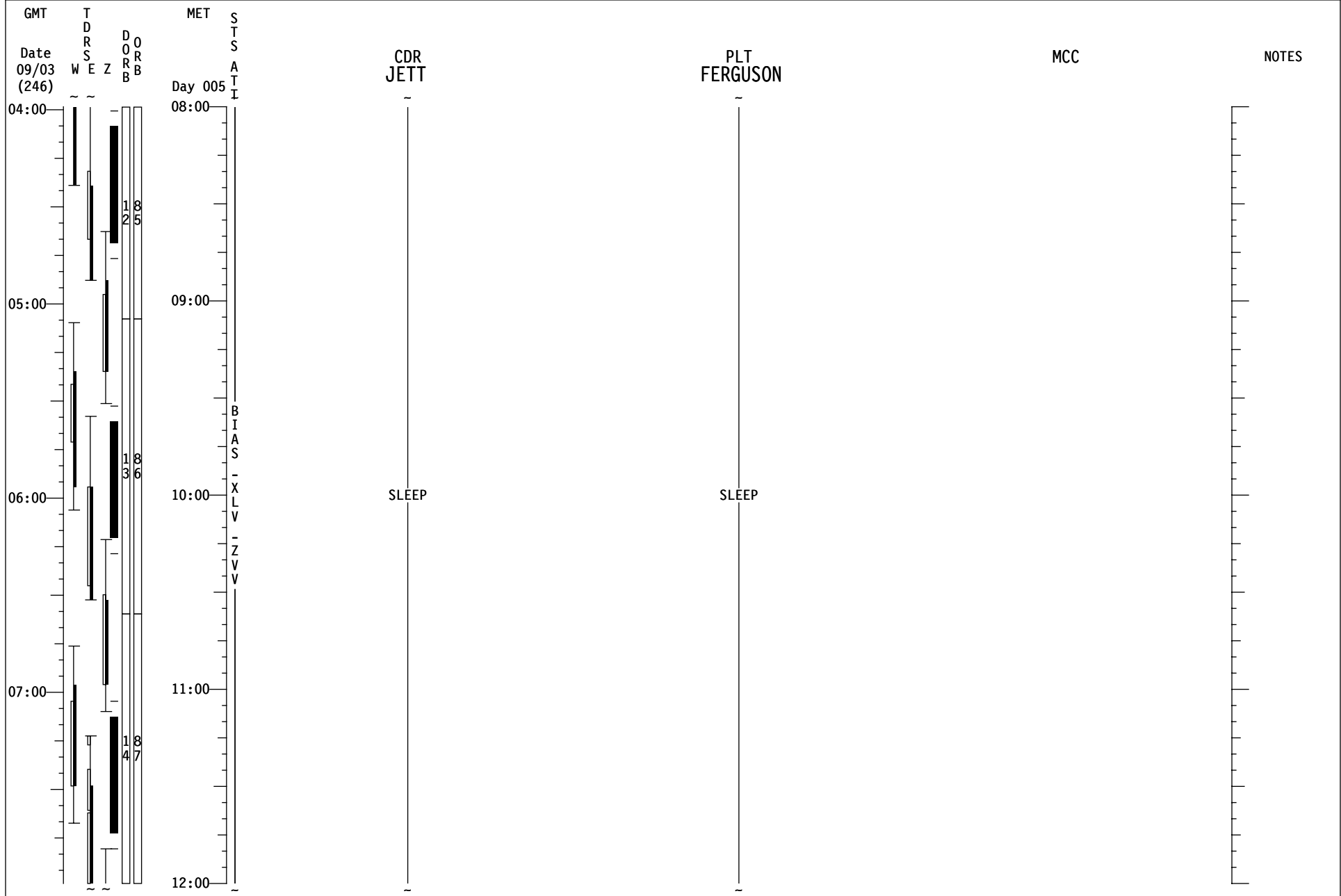
STS-115 (FD06)



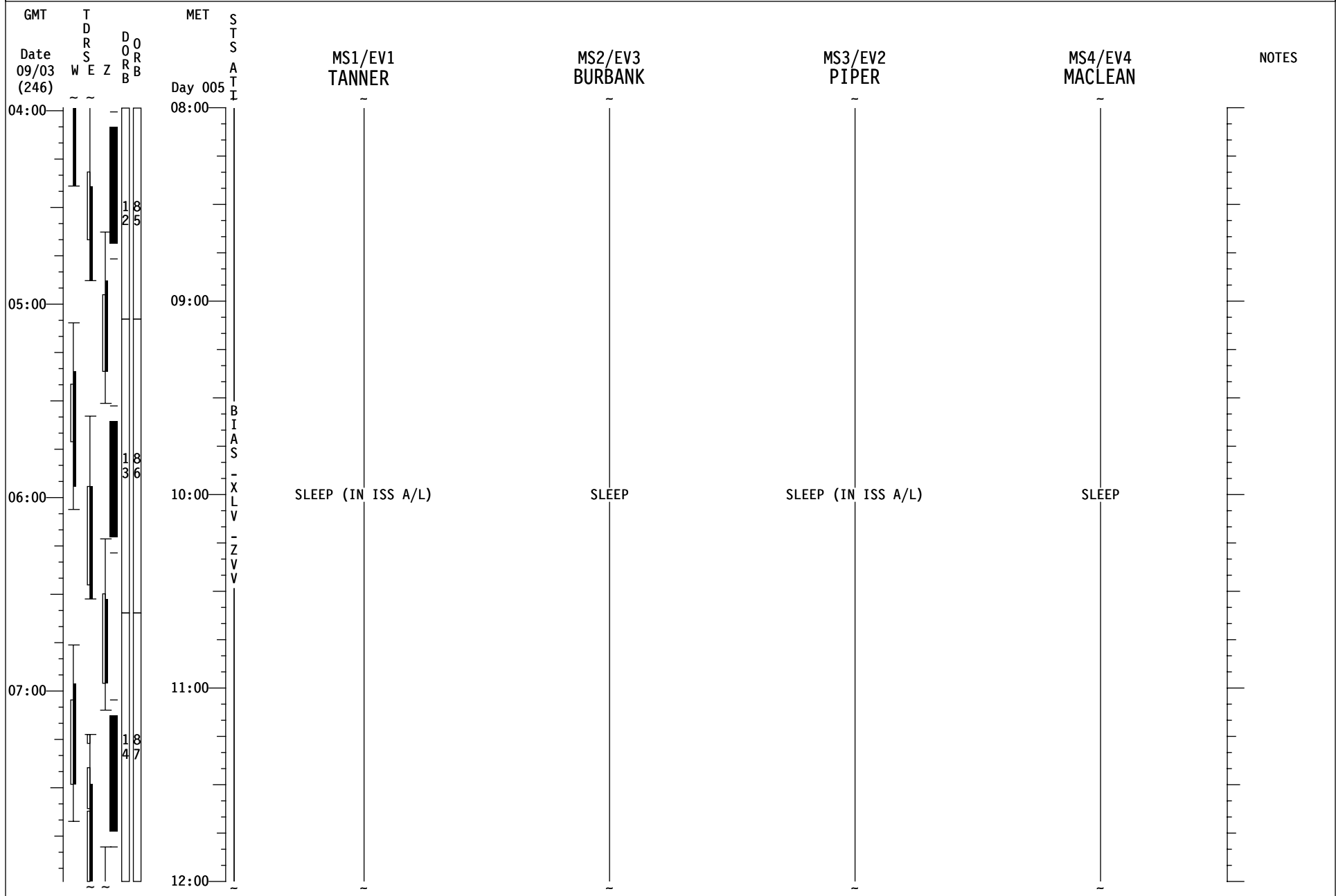
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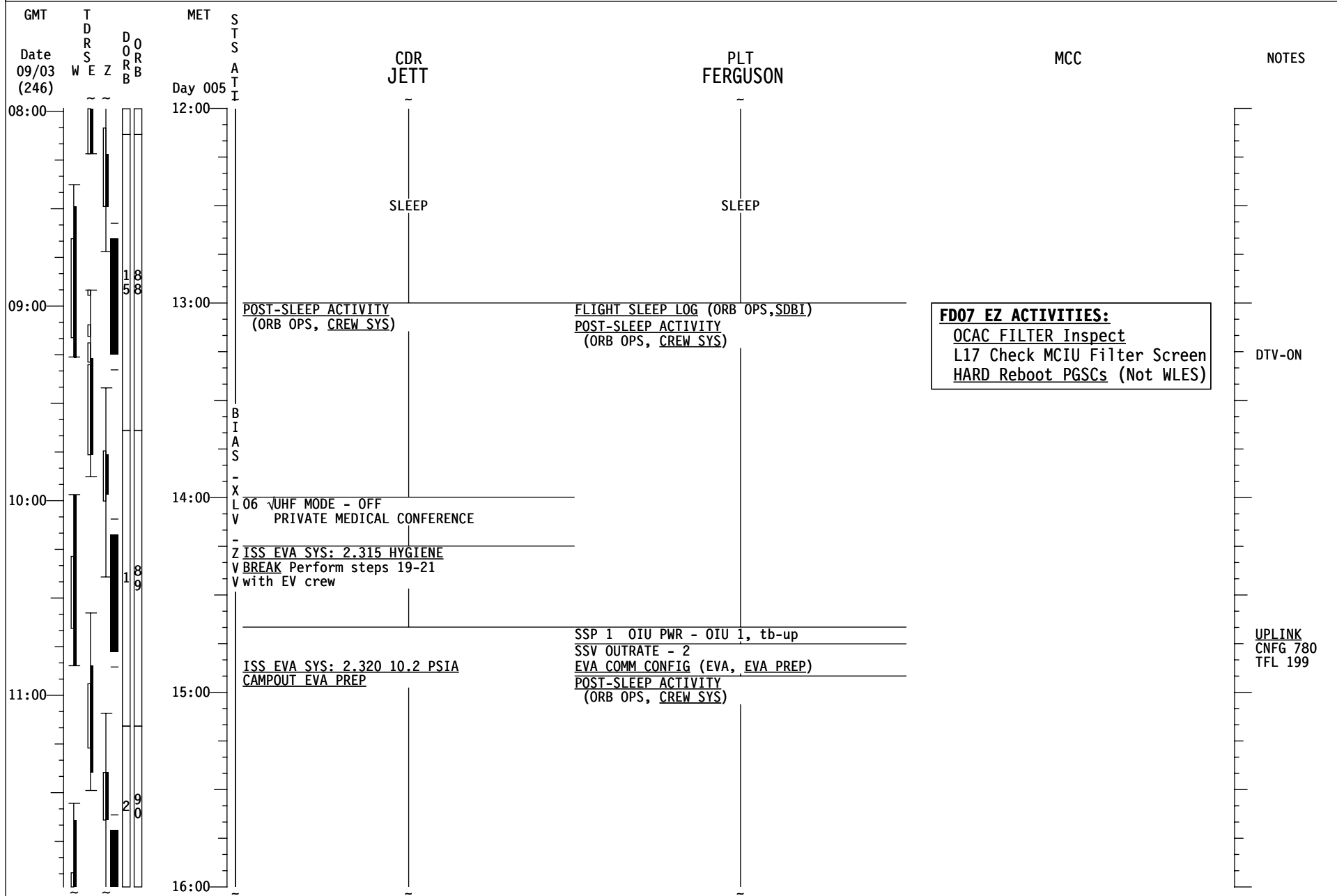
STS-115 (FD06)



STS-115 (FD06)

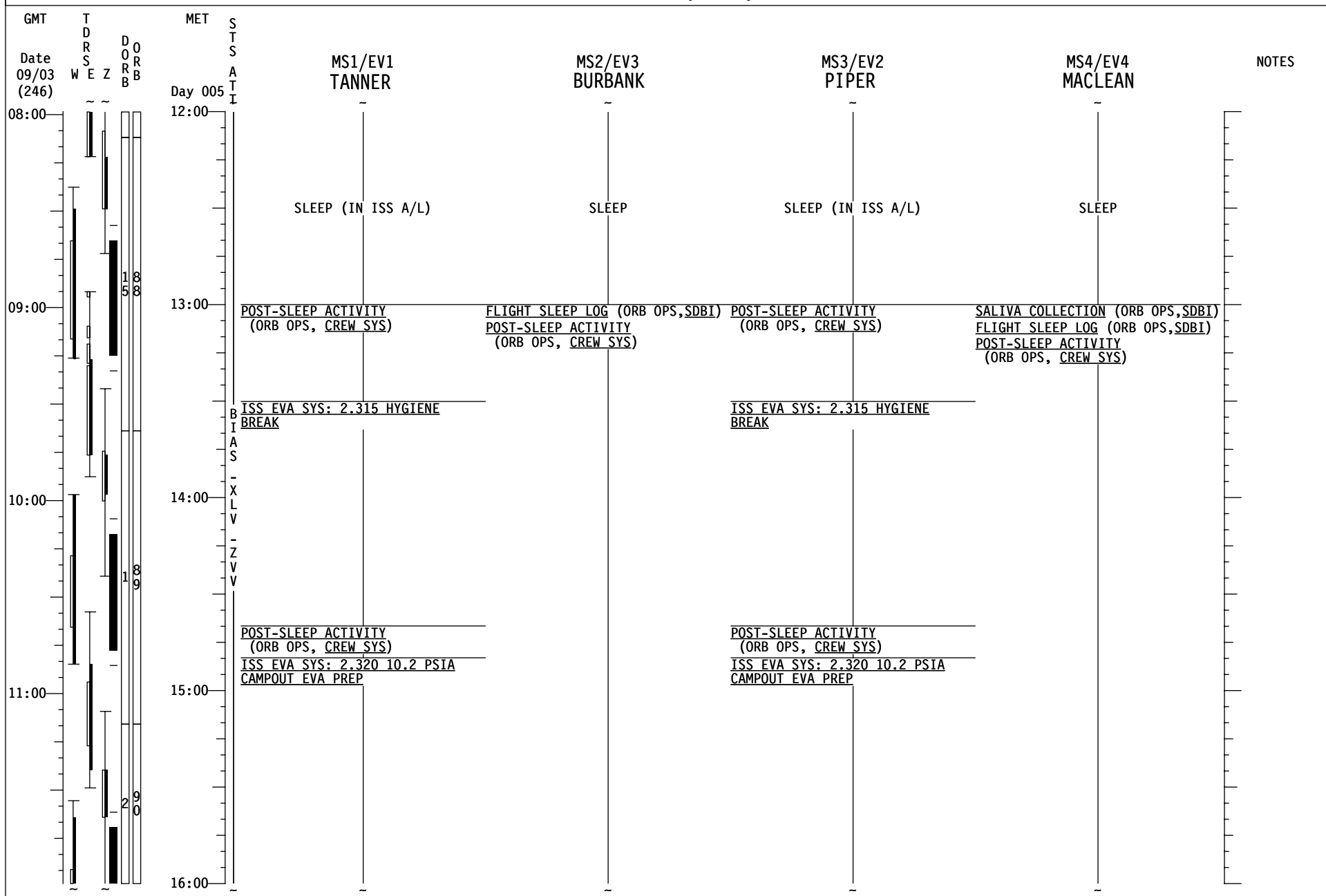


STS-115 (FD07)



FD07 EZ ACTIVITIES:
OCAC FILTER Inspect
L17 Check MCIU Filter Screen
HARD Reboot PGSCs (Not WLES)

STS-115 (FD07)

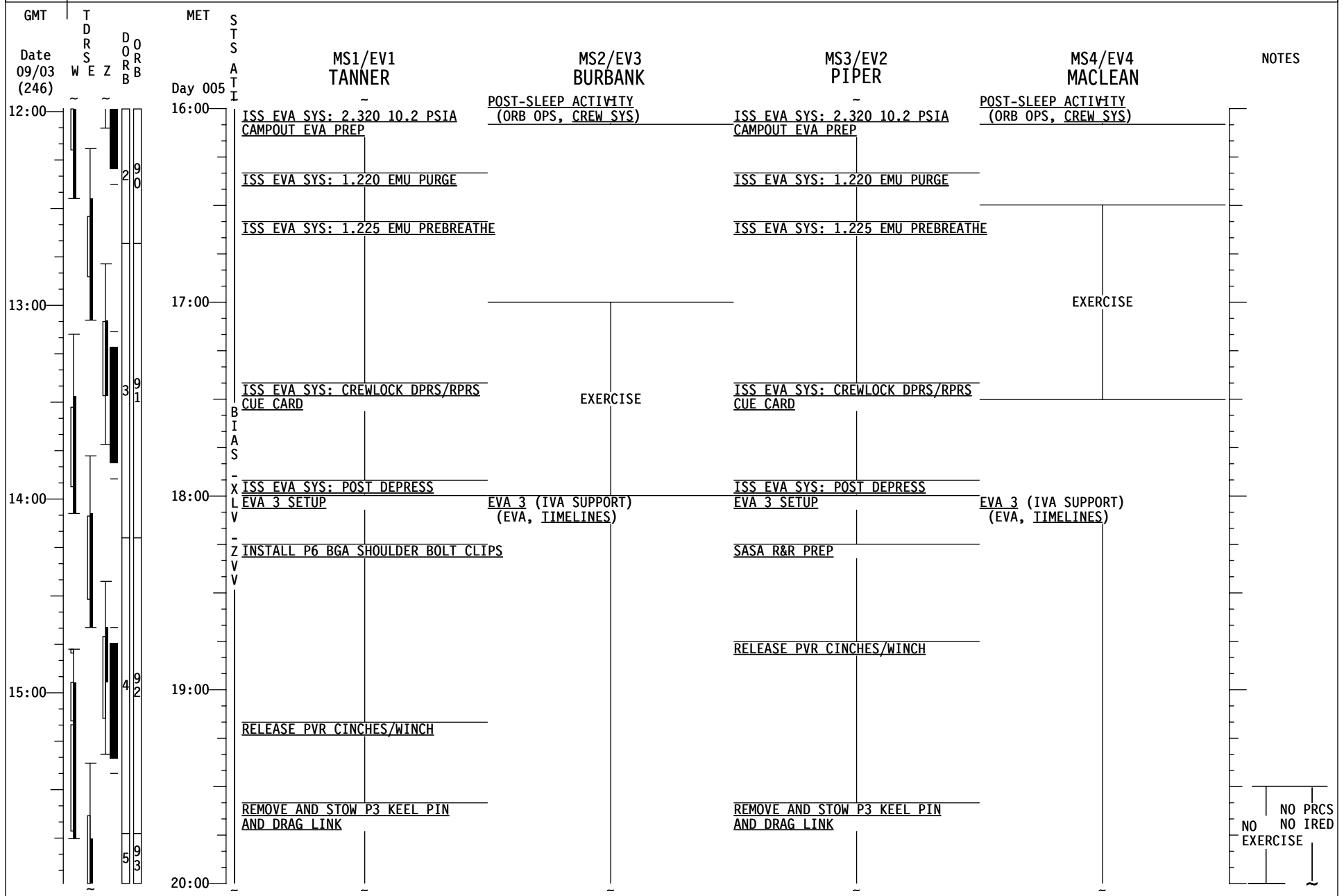


STS-115 (FD07)

GMT	TDRS WSEZ	DORB	MET	SATS	CDR JETT	PLT FERGUSON	MCC	NOTES
Date 09/03 (246)			Day 005					
12:00								
					ISS EVA SYS: 2.320 10.2 PSIA CAMPOUT EVA PREP	POST-SLEEP ACTIVITY - (ORB OPS, CREW SYS) EVA 3 INHIBIT PAD (EVA, TIMELINES)		
					ISS EVA SYS: 1.220 EMU PURGE			
					ISS EVA SYS: 1.225 EMU PREBREATHE	√ PWR fill complete before CWC fill SHUTTLE/ISS H2O CNTR FILL (Init #7) (ORB OPS, ECLS) Ref MSG XXX		
13:00								
					ISS EVA SYS: CREWLOCK DPRS/RPRS CUE CARD			
						SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		
14:00					X ISS EVA SYS: POST DEPRESS L P/TV07 EVA V (PHOTO/TV, SCENES) Setup	SHUTTLE/ISS H2O CNTR FILL (Init #8) (ORB OPS, ECLS) Ref MSG XXX		UPLINK β 0+Boxes Box D1 -18<AZ<70 -68<EL<75 Box C2 -41<AZ<-10 -25<EL<39 Box C3 -72<AZ<-36 -4<EL<33
15:00					P/TV09 SAW/PVR DEPLOY (PHOTO/TV, SCENES) Setup	SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill		
					ASSY OPS: 1.115 PVM-RADIATOR DEPLOY	ASSY OPS: 1.115 PVM-RADIATOR DEPLOY		
20:00								

NO PRCS
NO IRED
EXERCISE

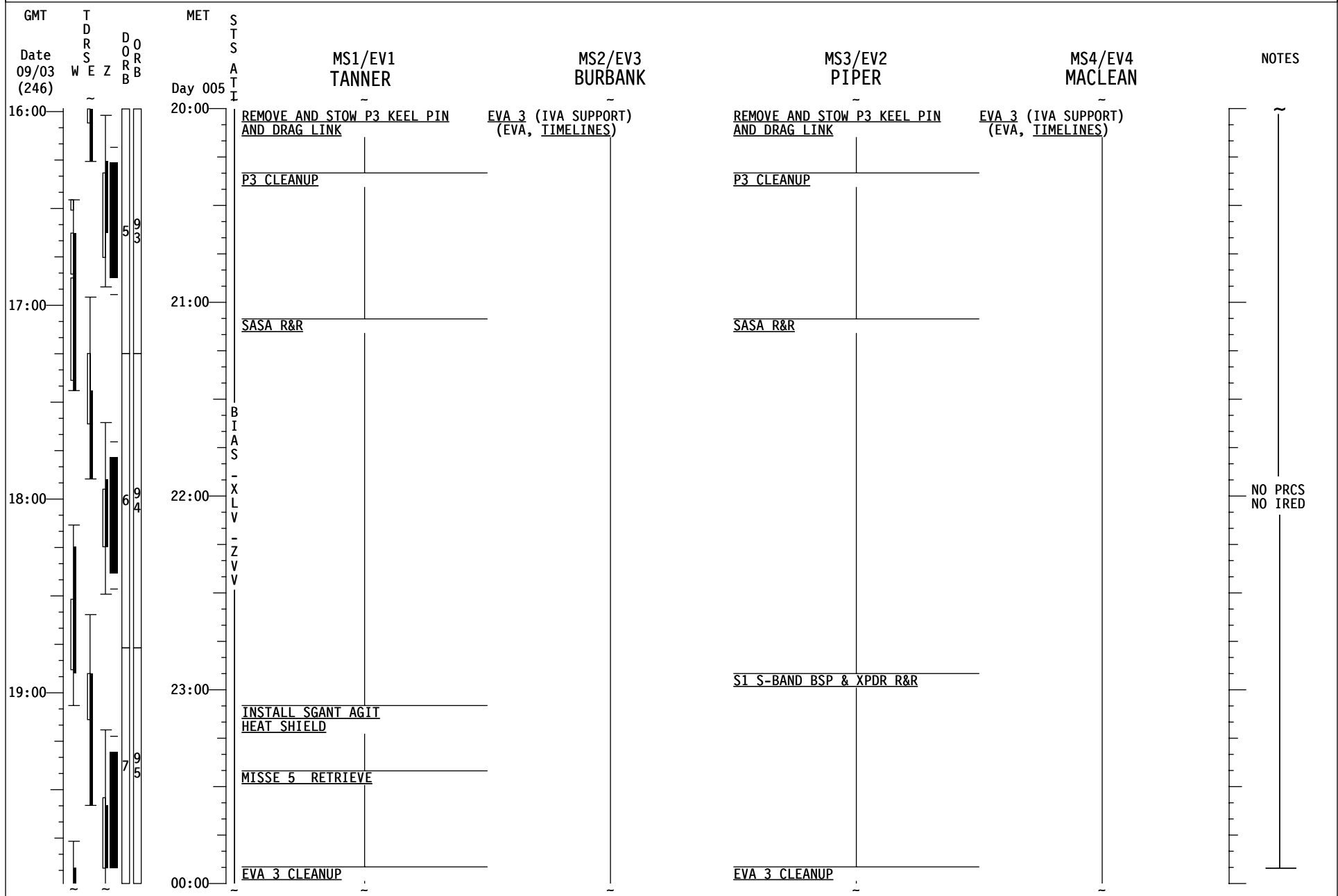
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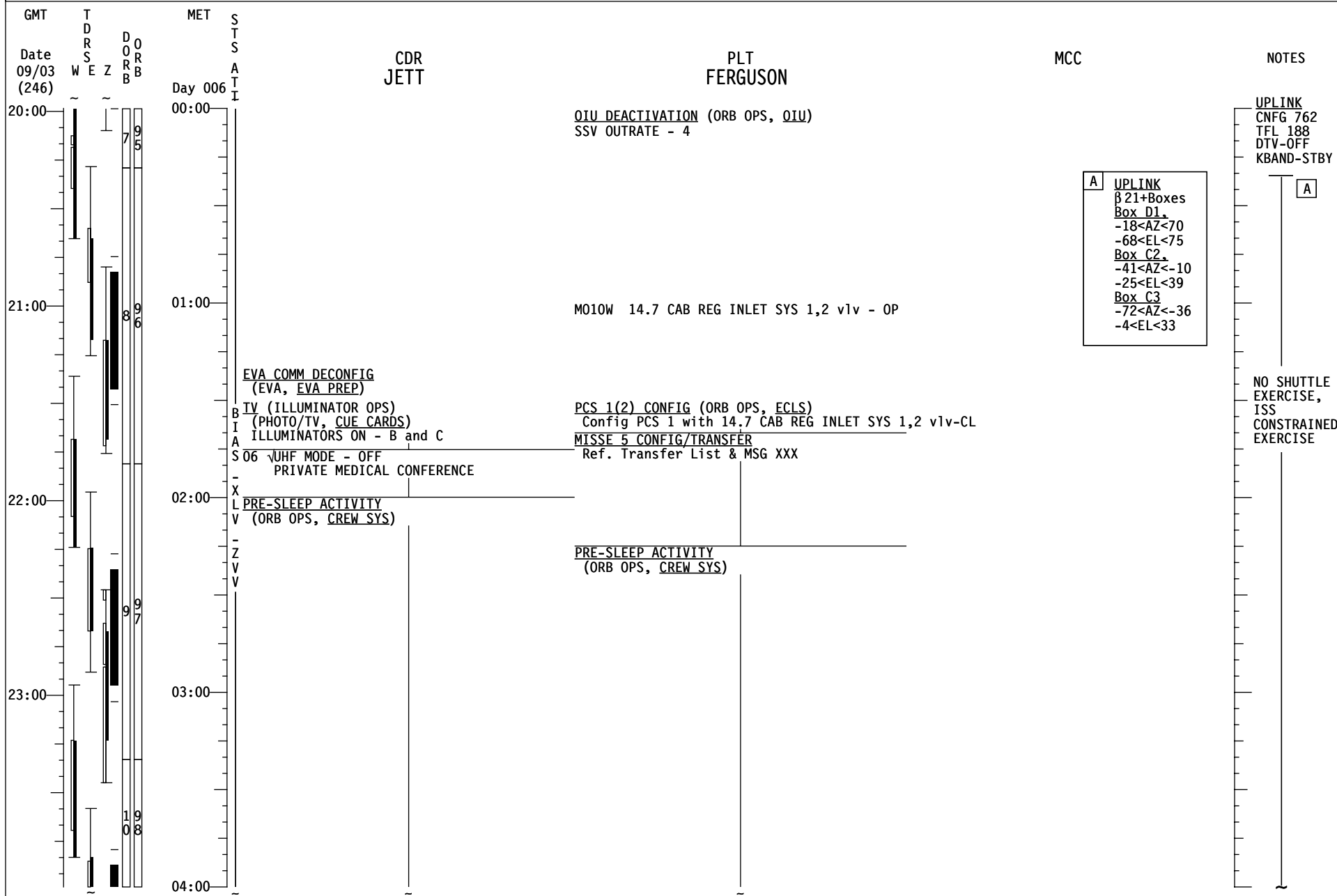
STS-115 (FD07)

GMT	TDRS WSEZ	DORB	MET Day 005	STS ATTI	CDR JETT	PLT FERGUSON	MCC	NOTES
16:00					~ ASSY OPS: 1.115 PVM-RADIATOR DEPLOY	~ ASSY OPS: 1.115 PVM-RADIATOR DEPLOY		
					MEAL	MEAL		
17:00					P/TV07 EVA (Ops) (PHOTO/TV, SCENES) Perform during EVA as time permits	CWC TRANSFER Transfer 2 CWC bags to ISS.		
18:00								
						EXERCISE		
19:00					EXERCISE			
00:00								

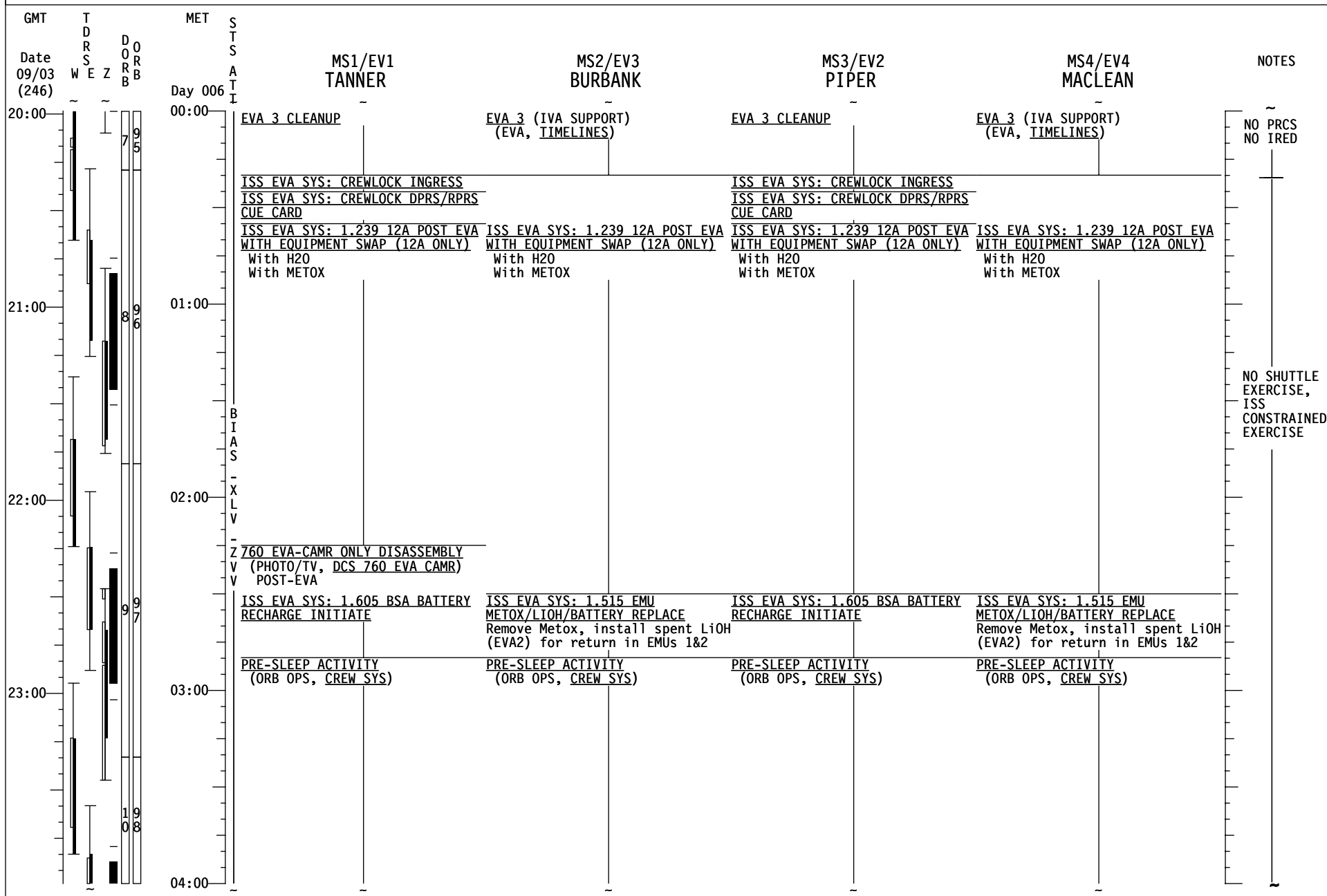
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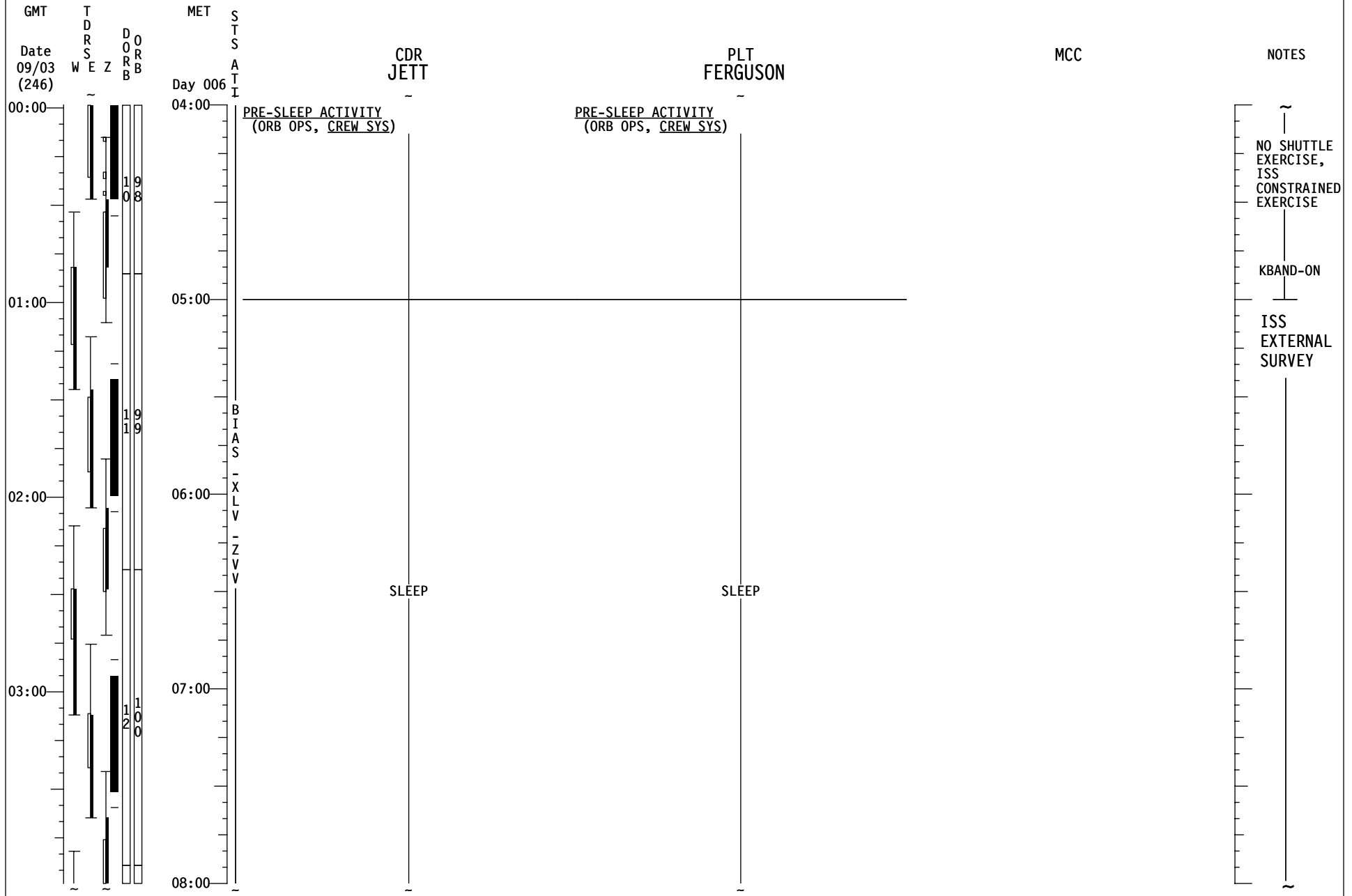
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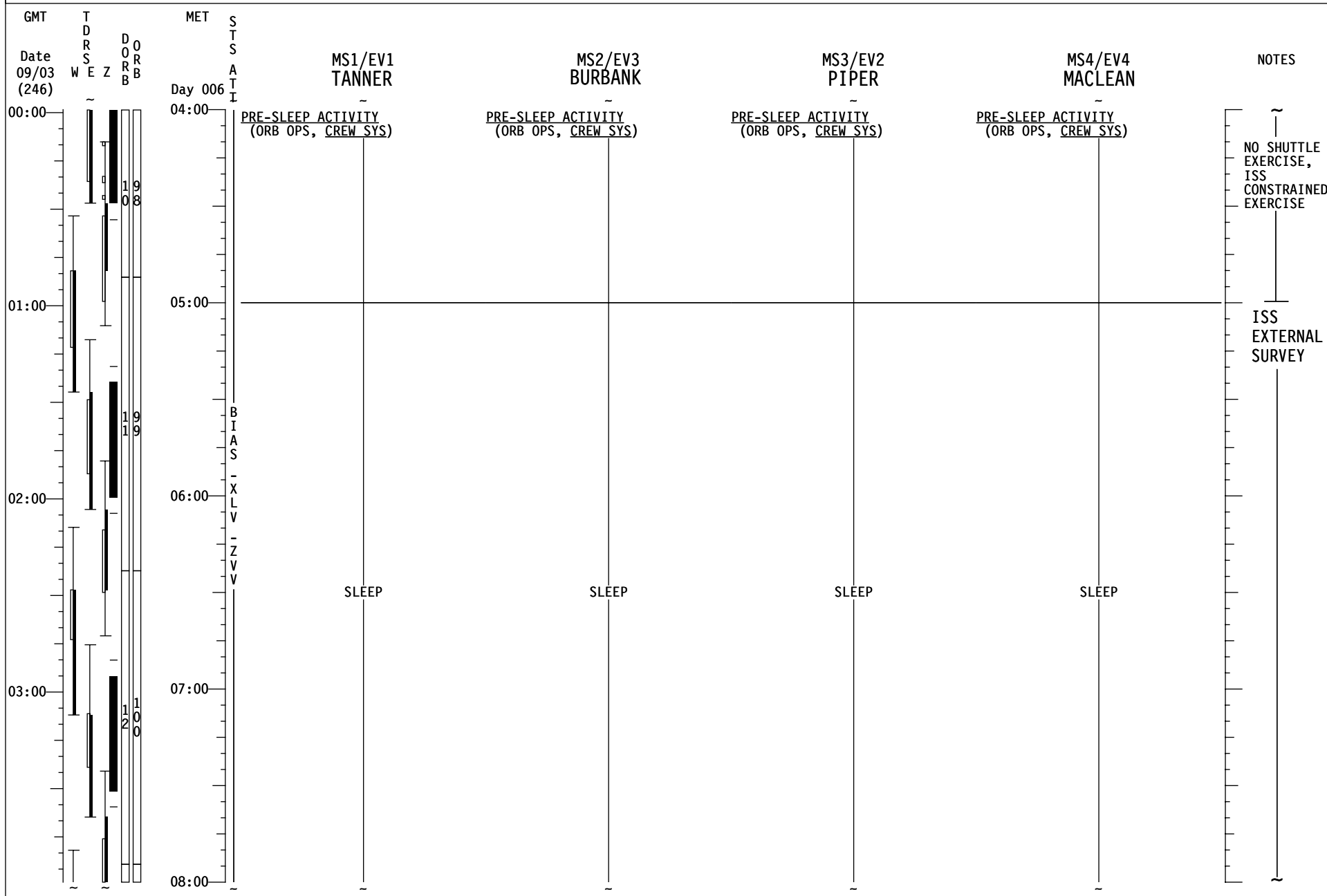
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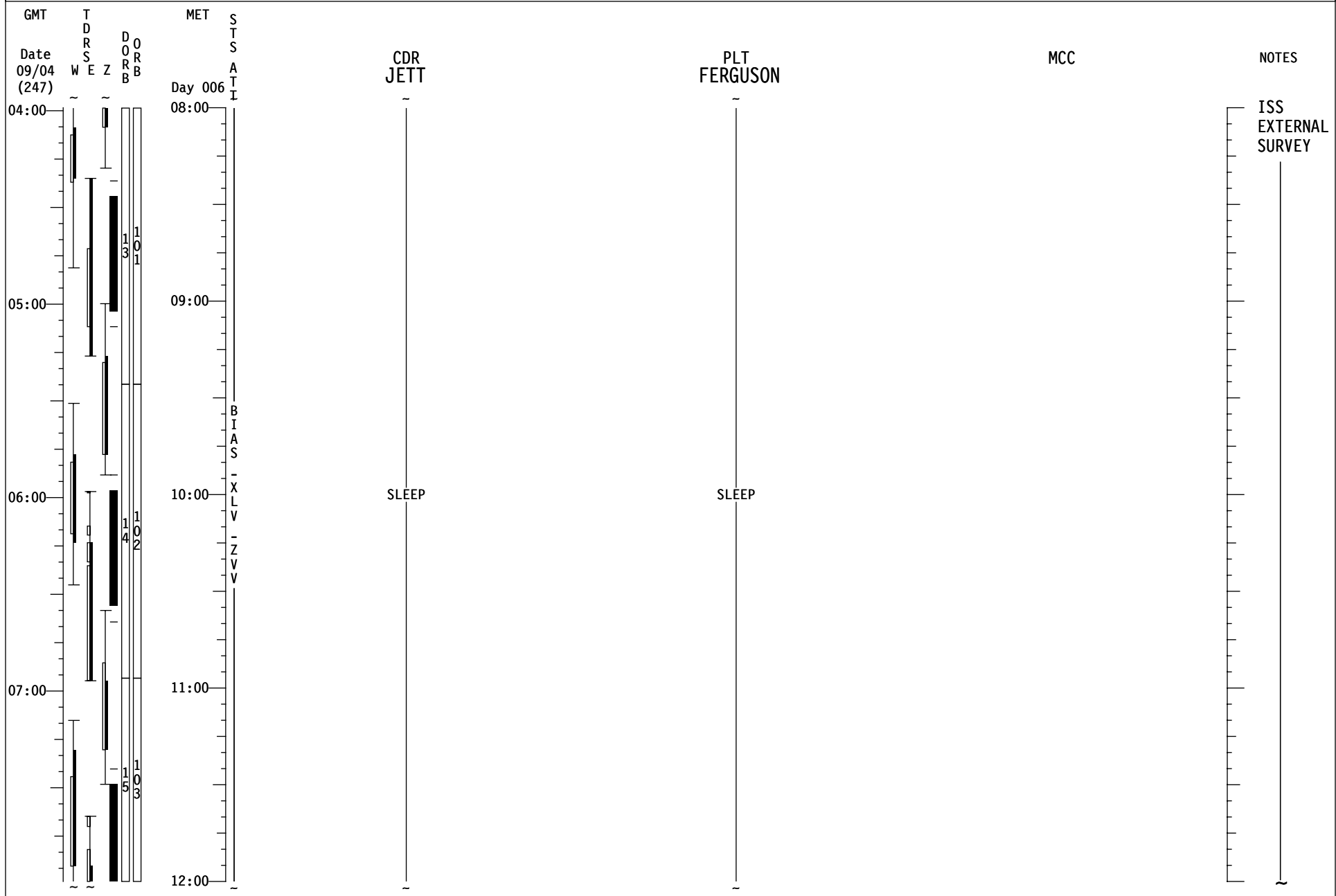
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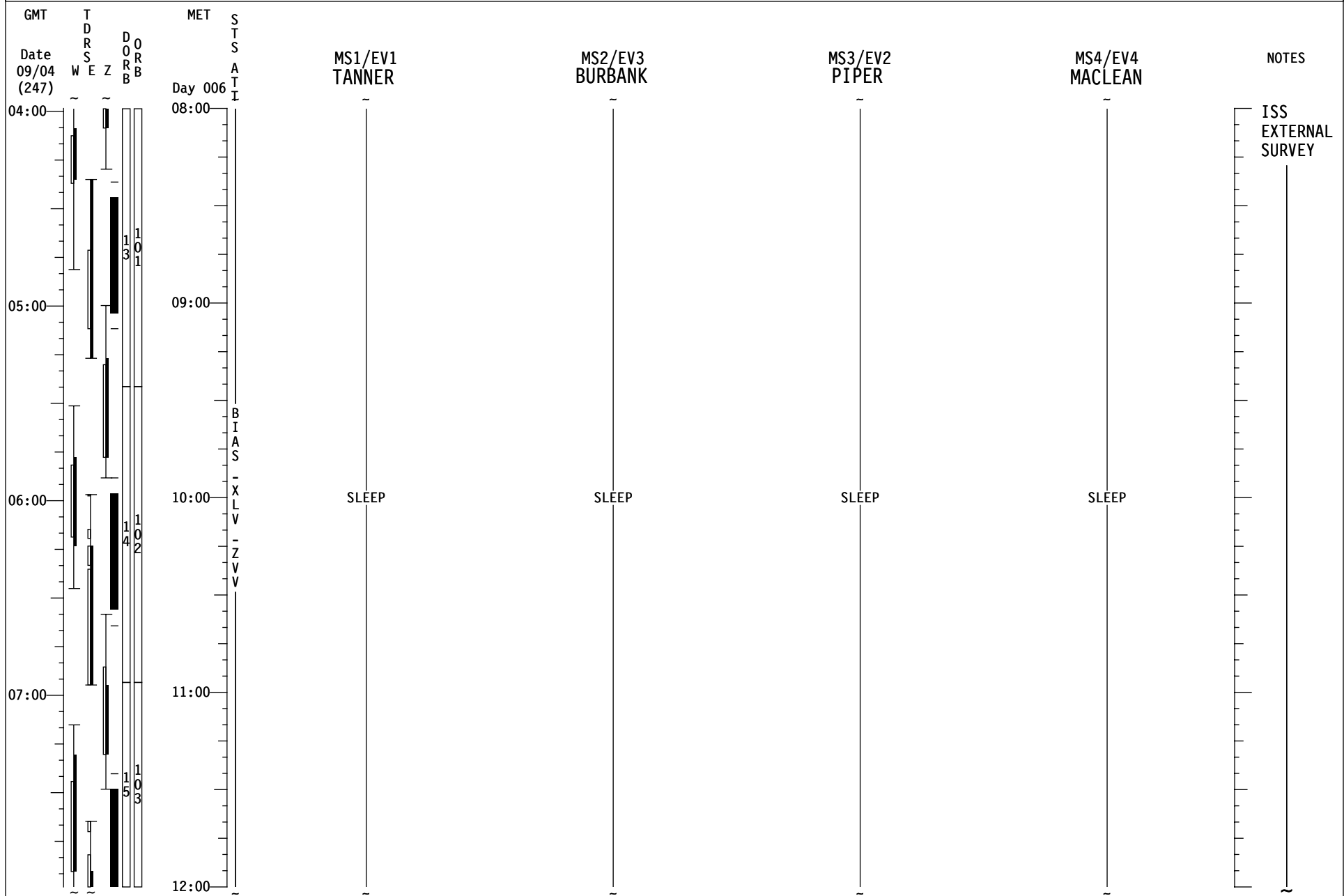
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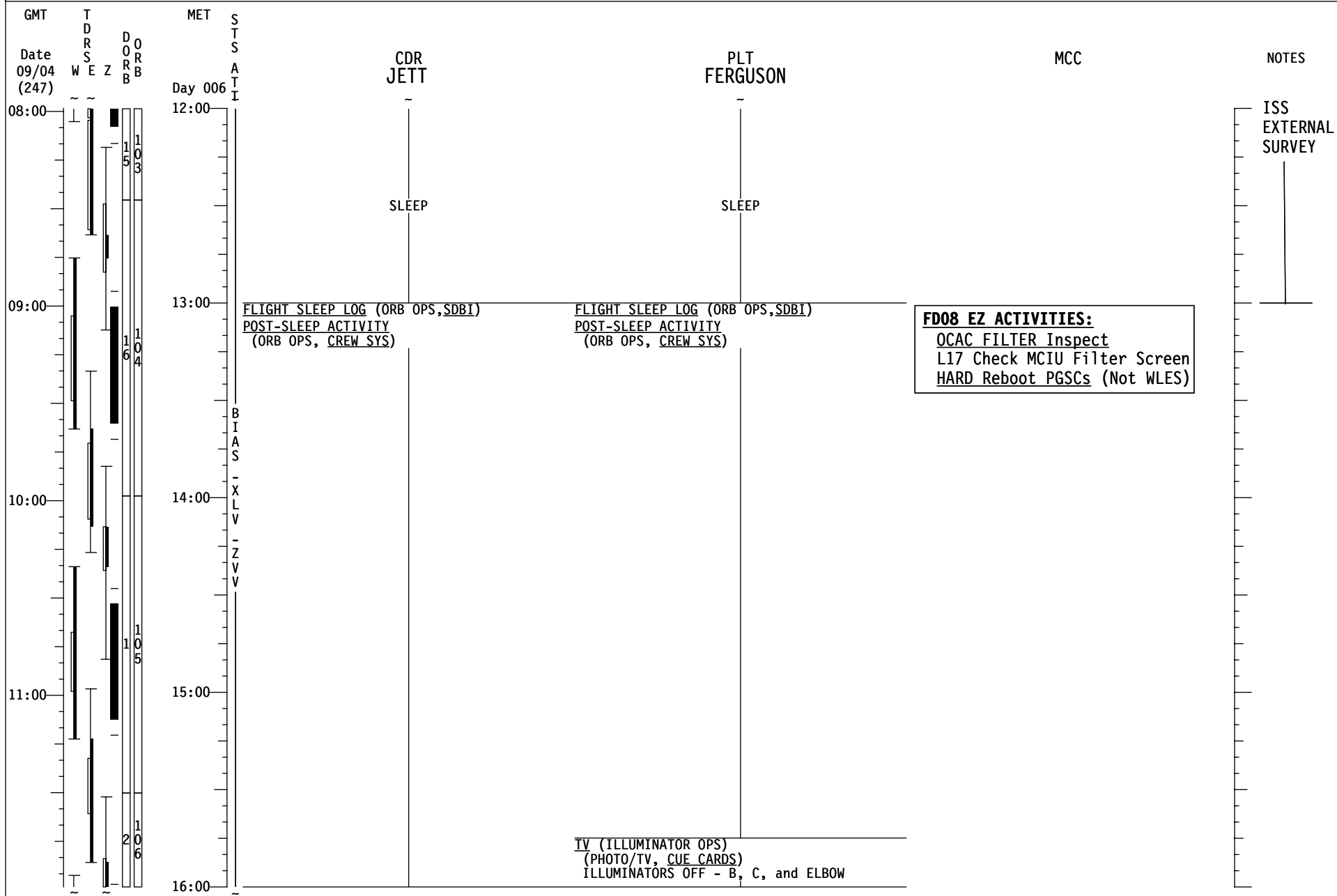
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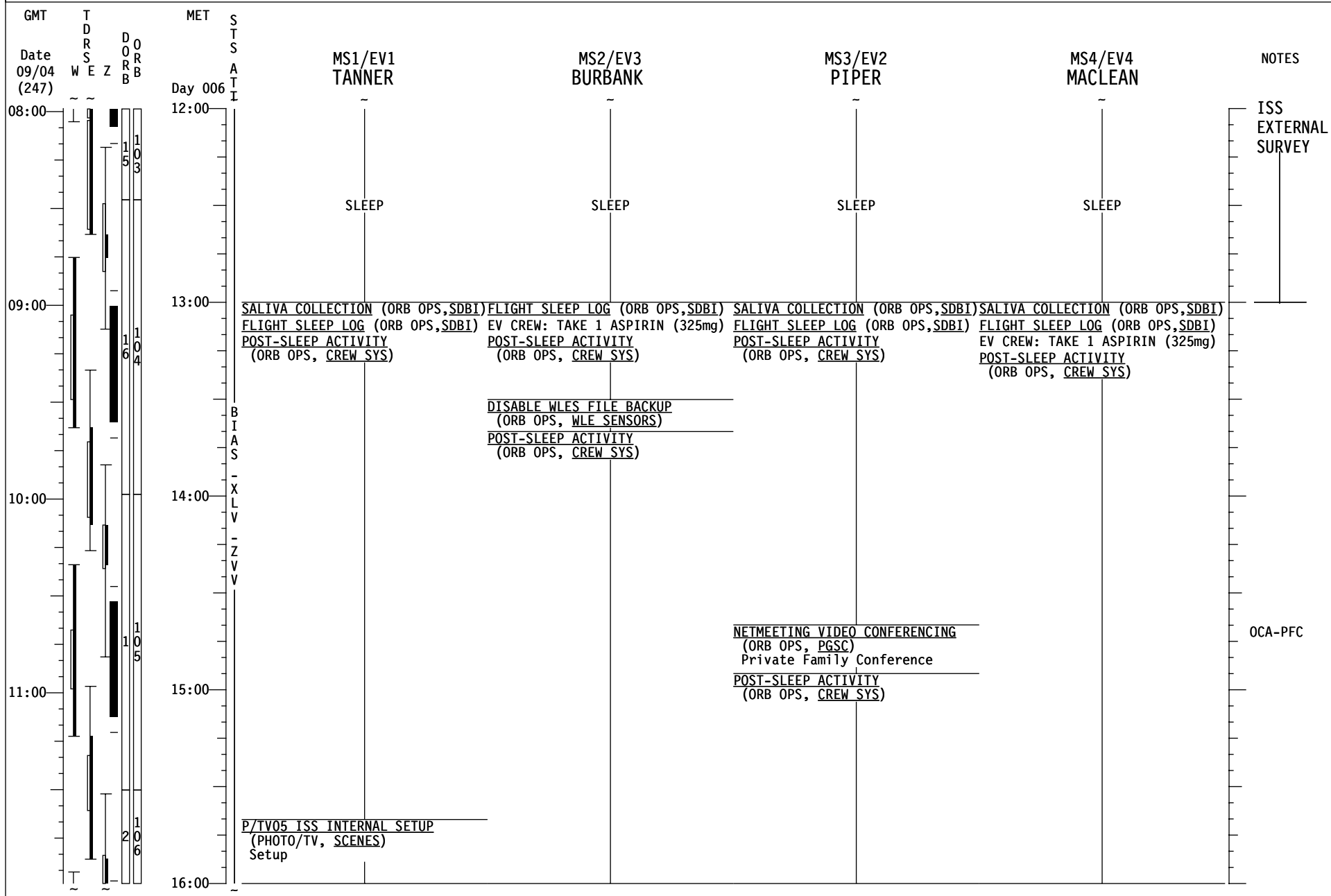
STS-115 (FD07)



STS-115 (FD08)



STS-115 (FD08)



STS-115 (FD08)

GMT	TDRS WSEZ	DORB	MET Day 006	STS ATTI	CDR JETT	PLT FERGUSON	MCC	NOTES
12:00					OFF DUTY			
13:00					06 UHF MODE - OFF PRIVATE FAMILY CONFERENCE			
14:00					OFF DUTY	OFF DUTY		
15:00					OFF DUTY			
16:00								
17:00								
18:00								
19:00								DTV-ON
20:00								

STS-115 (FD08)

GMT	T D R S E Z	D O R B	MET	S T S A T I	MS1/EV1 TANNER	MS2/EV3 BURBANK	MS3/EV2 PIPER	MS4/EV4 MACLEAN	NOTES	
Date 09/04 (247)	W	Z	Day 006							
12:00			16:00		OFF DUTY					
					<div style="border: 1px solid black; padding: 2px;"> NETMEETING VIDEO CONFERENCING (ORB OPS, PGSC) Private Family Conference </div>				OCA-PFC	
						OFF DUTY				
13:00			17:00					OFF DUTY		
						<div style="border: 1px solid black; padding: 2px;"> NETMEETING VIDEO CONFERENCING (ORB OPS, PGSC) Private Family Conference </div>			OCA-PFC	
					OFF DUTY		OFF DUTY			
14:00			18:00				OFF DUTY			
								<div style="border: 1px solid black; padding: 2px;"> NETMEETING VIDEO CONFERENCING (ORB OPS, PGSC) Private Family Conference </div>		OCA-PFC
15:00			19:00			OFF DUTY		OFF DUTY		
			20:00							

STS-115 (FD08)

GMT	TDRS WSEZ	DORB	MET	STS ATTI	CDR JETT	PLT FERGUSON	MCC	NOTES
Date 09/04 (247)			Day 006					
16:00		4						
					MEAL	MEAL		
17:00		5 9			CREW PHOTO	CREW PHOTO		
					<u>CREW CONFERENCE</u> KU AVAIL: XX:XX - XX:XX, TDRX Ref. MSG XXX	<u>CREW CONFERENCE</u> KU AVAIL: XX:XX - XX:XX, TDRX Ref. MSG XXX		
18:00		6 10			<u>JOINT OPS: 3.123 O2 TRANSFER SETUP (POST PREBREATHE USING SHUTTLE O2)</u> Ref. Transfer List Item #TBD	<u>OBSS HANDOFF FROM SSRMS TO SRMS</u> (PDRS, NOMINAL) Steps 1-2		UPLINK β 21+Boxes Box C2, -41<AZ<-10 -25<EL<39 Box C3, -72<AZ<-36 -4<EL<33 Box D1, -18<AZ<70 -68<EL<75 Box D2 -120<AZ<6 -89<EL<-45
					<u>OBSS H/O FROM SSRMS TO SRMS</u> (PDRS, NOMINAL) Steps 3-5			
19:00		7 11			<u>JOINT OPS: 3.116 HIGH PRESSURE TANK O2 TRANSFER (Init) Step 2</u> <u>SHUTTLE/ISS H2O CNTR FILL (Init #9)</u> (ORB OPS, ECLS) Ref. MSG XXX			
					<u>P/TV08 EXTERNAL SURVEY</u> (PHOTO/TV, SCENES) Setup	<u>OBSS HANDOFF FROM SSRMS TO SRMS</u> (PDRS, NOMINAL) Steps 6-7		
00:00								

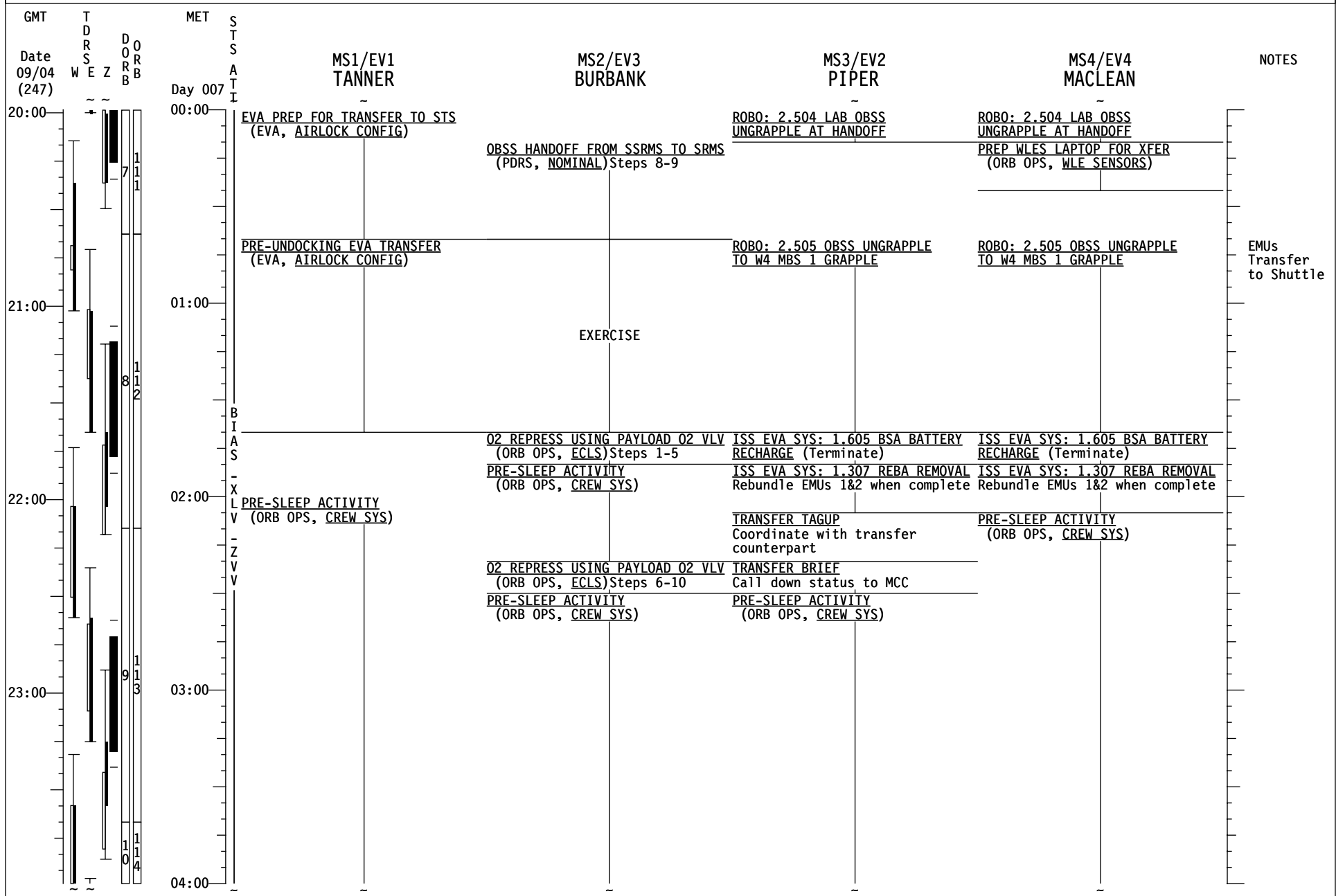
STS-115 (FD08)

GMT	TDRS WSEZ	DORB	MET Day 006	STS ATTI	MS1/EV1 TANNER	MS2/EV3 BURBANK	MS3/EV2 PIPER	MS4/EV4 MACLEAN	NOTES
16:00					MEAL	MEAL	MEAL	MEAL	
17:00					CREW PHOTO	CREW PHOTO	CREW PHOTO	CREW PHOTO	
					<u>CREW CONFERENCE</u> KU AVAIL: XX:XX - XX:XX, TDRX Ref. MSG XXX	<u>CREW CONFERENCE</u> KU AVAIL: XX:XX - XX:XX, TDRX Ref. MSG XXX	<u>CREW CONFERENCE</u> KU AVAIL: XX:XX - XX:XX, TDRX Ref. MSG XXX	<u>CREW CONFERENCE</u> KU AVAIL: XX:XX - XX:XX, TDRX Ref. MSG XXX	
18:00					<u>PWR FILL</u> (ORB OPS, ECLS) Init Fill #4 Ref MSG XXX Fill SN 1011 Fill dur ~30 min	<u>ENABLE WLES FILE BACKUP</u> (ORB OPS, WLE SENSORS)	<u>ROBO: 2.501 LAB BERTHED</u> <u>OBSS GRAPPLE</u>	<u>ROBO: 2.501 LAB BERTHED</u> <u>OBSS GRAPPLE</u>	
					<u>PWR FILL</u> (ORB OPS, ECLS) Init Fill #5 Ref MSG XXX Fill SN 1011 (Barcode #TBS) Fill dur ~30 min	<u>OBSS HANDOFF FROM SSRMS TO SRMS</u> (PDRS, <u>NOMINAL</u>) Steps 1-2 <u>OBSS H/O FROM SSRMS TO SRMS</u> (PDRS, <u>NOMINAL</u>) Steps 3-5	<u>ROBO: 2.502 LAB OBSS UNBERTH</u>	<u>ROBO: 2.502 LAB OBSS UNBERTH</u>	
19:00					<u>EVA PREP FOR TRANSFER TO STS</u> (EVA, AIRLOCK CONFIG)		<u>ROBO: 2.503 LAB OBSS</u> <u>MNVR TO HANDOFF</u>	<u>ROBO: 2.503 LAB OBSS</u> <u>MNVR TO HANDOFF</u>	
						<u>OBSS HANDOFF FROM SSRMS TO SRMS</u> (PDRS, <u>NOMINAL</u>) Steps 6-7			
00:00							<u>ROBO: 2.504 LAB OBSS</u> <u>UNGRAPPLE AT HANDOFF</u>	<u>ROBO: 2.504 LAB OBSS</u> <u>UNGRAPPLE AT HANDOFF</u>	

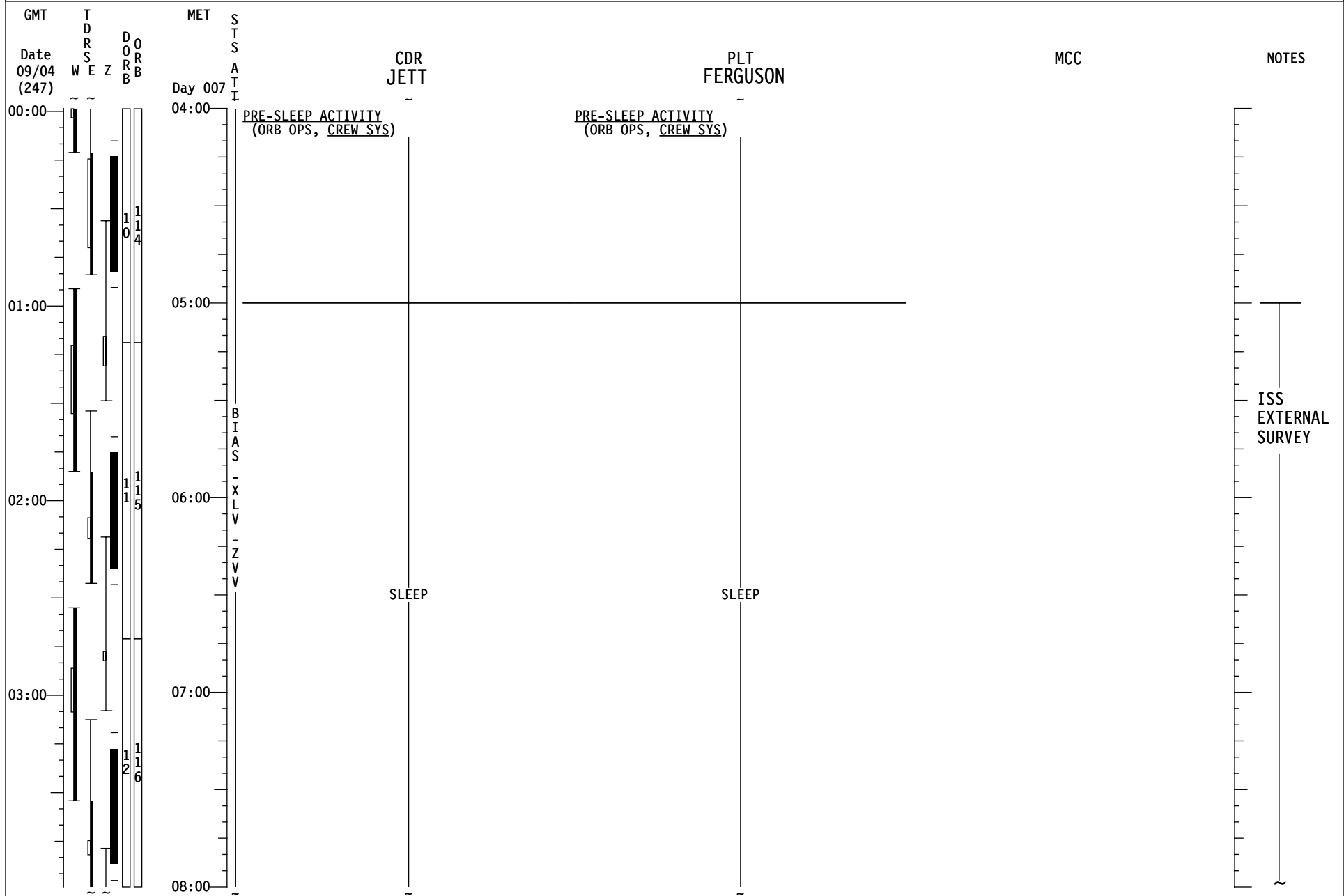
STS-115 (FD08)

GMT	TDRS WSEZ	DORB	MET Day 007	S T S A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
20:00	~	~	00:00					
					SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill	OBSS HANDOFF FROM SSRMS TO SRMS (PDRS, NOMINAL) Steps 8-9		UPLINK β 21+Boxes Box D1 -18<AZ<70 -68<EL<75
					SHUTTLE/ISS H2O CNTR FILL (Init #10) (ORB OPS, ECLS) Ref MSG XXX			Box F1 -92<AZ<5 -82<EL<4
					P/TV08 EXTERNAL SURVEY (PHOTO/TV, SCENES) Ops			Box F2 -129<AZ<10 -10<EL<42
21:00			01:00					DTV-OFF
						NETMEETING VIDEO CONFERENCING (ORB OPS, PGSC) Private Family Conference		OCA-PFC
					06 UHF MODE - OFF PRIVATE MEDICAL CONFERENCE	PWR TRANSFER Transfer 2 PWR bags to ISS.		
					SHUTTLE/ISS H2O CNTR FILL (ORB OPS, ECLS) Terminate CWC fill			
					CWC TRANSFER Transfer 2 CWC bags to ISS.	TV (ILLUMINATOR OPS) (PHOTO/TV, CUE CARDS) ILLUMINATORS ON - B and C		
22:00			02:00			PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)		
					PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)			
23:00			03:00					
04:00			04:00					

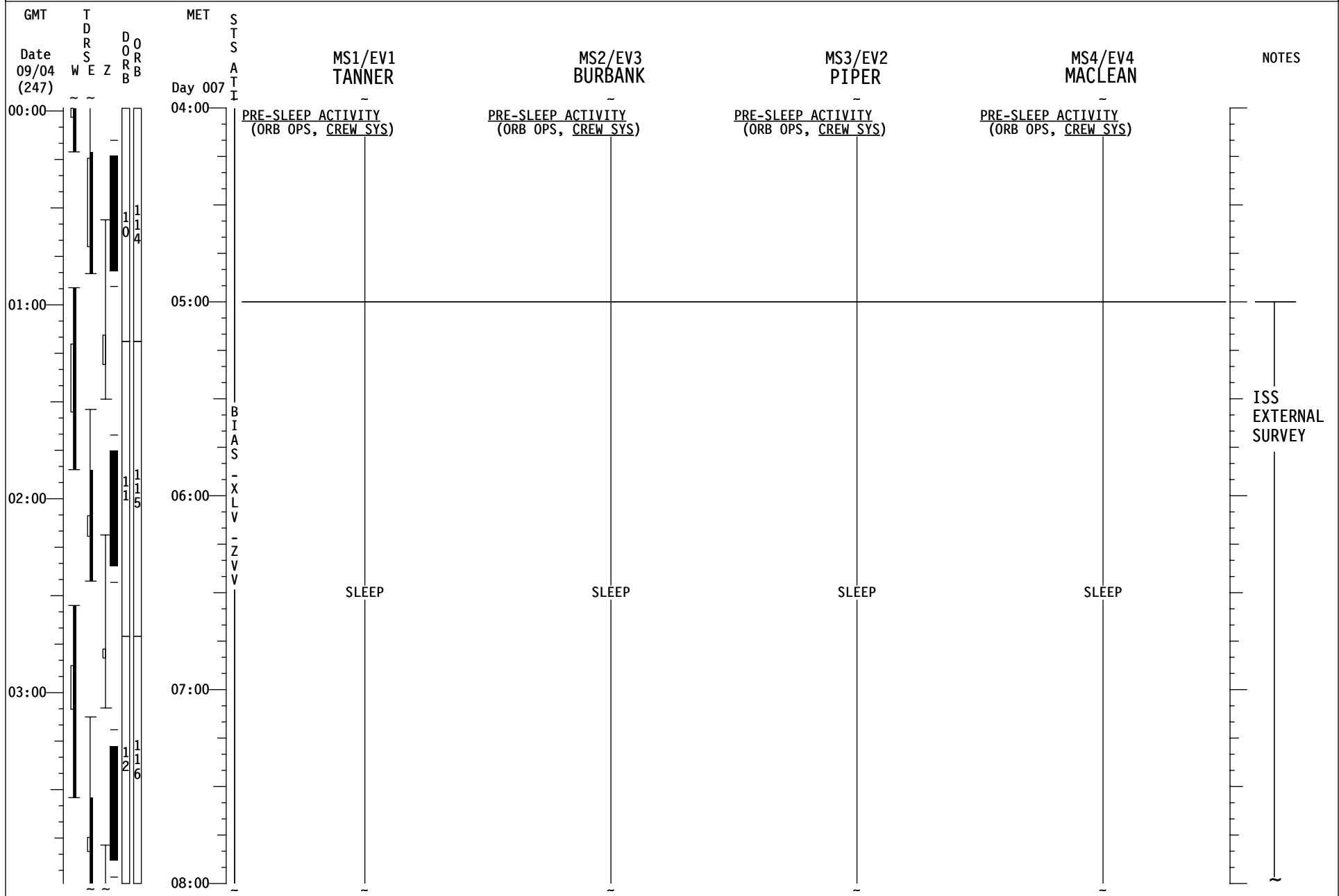
STS-115 (FD08)



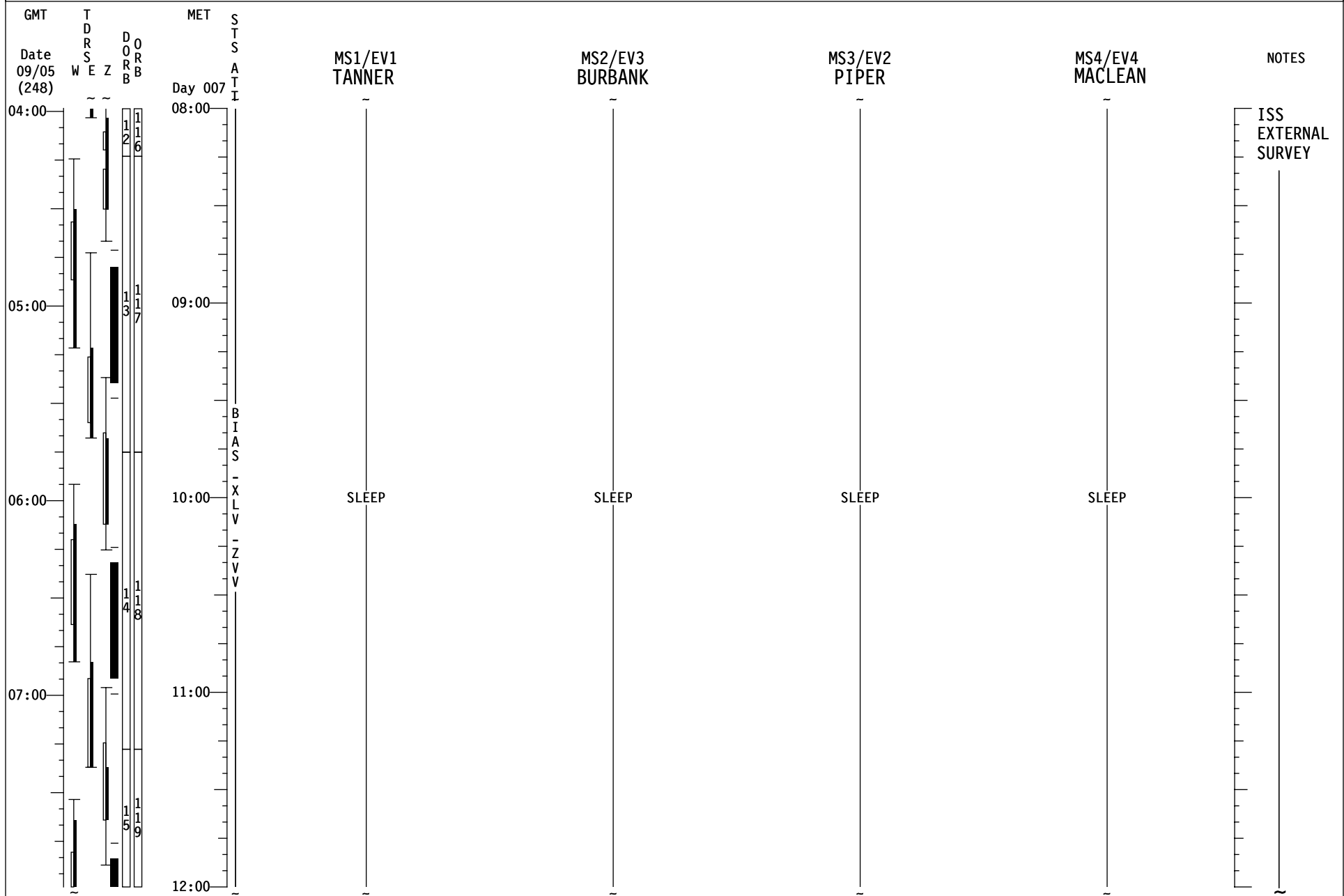
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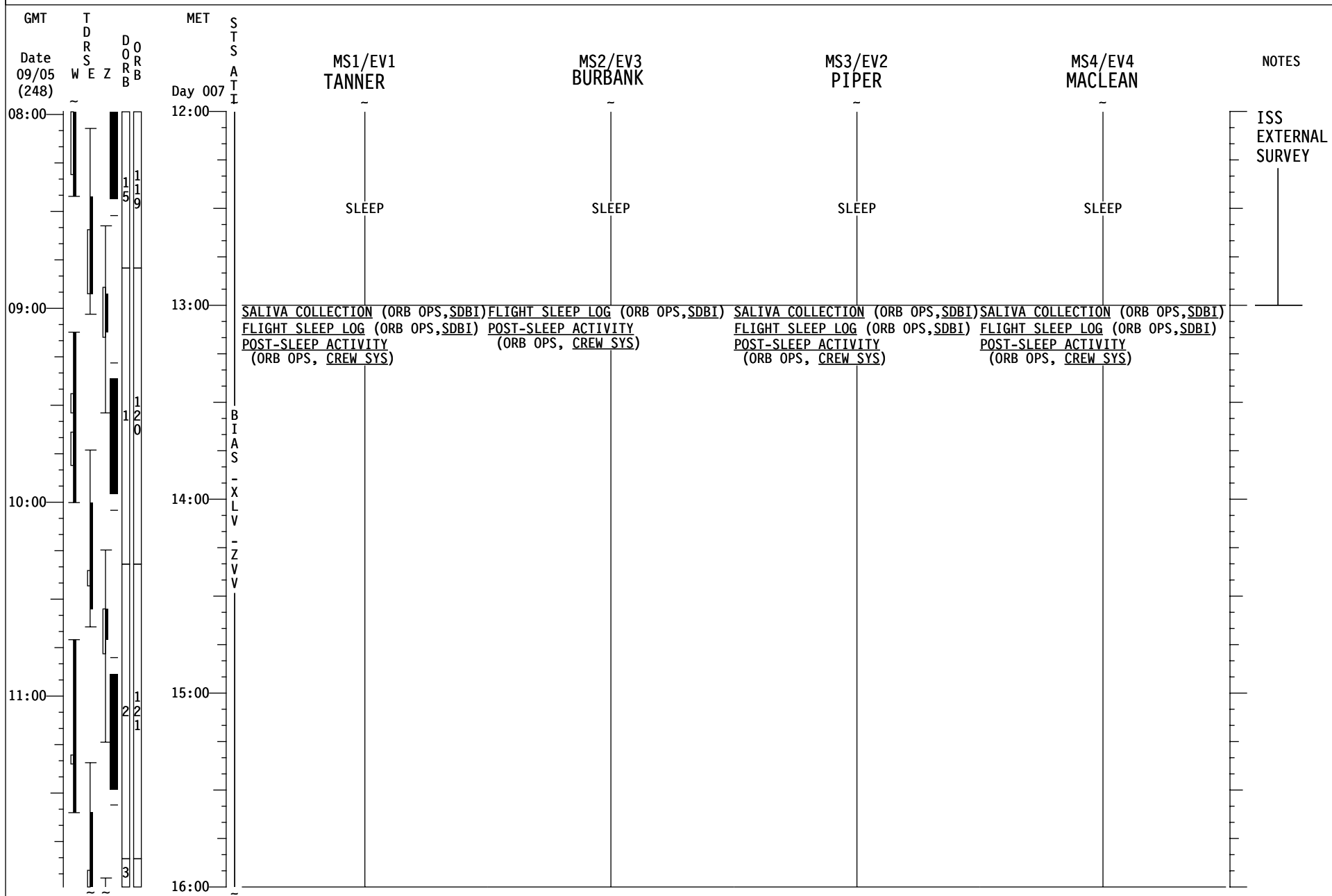
STS-115 (FD08)



STS-115 (FD08)



STS-115 (FD09)

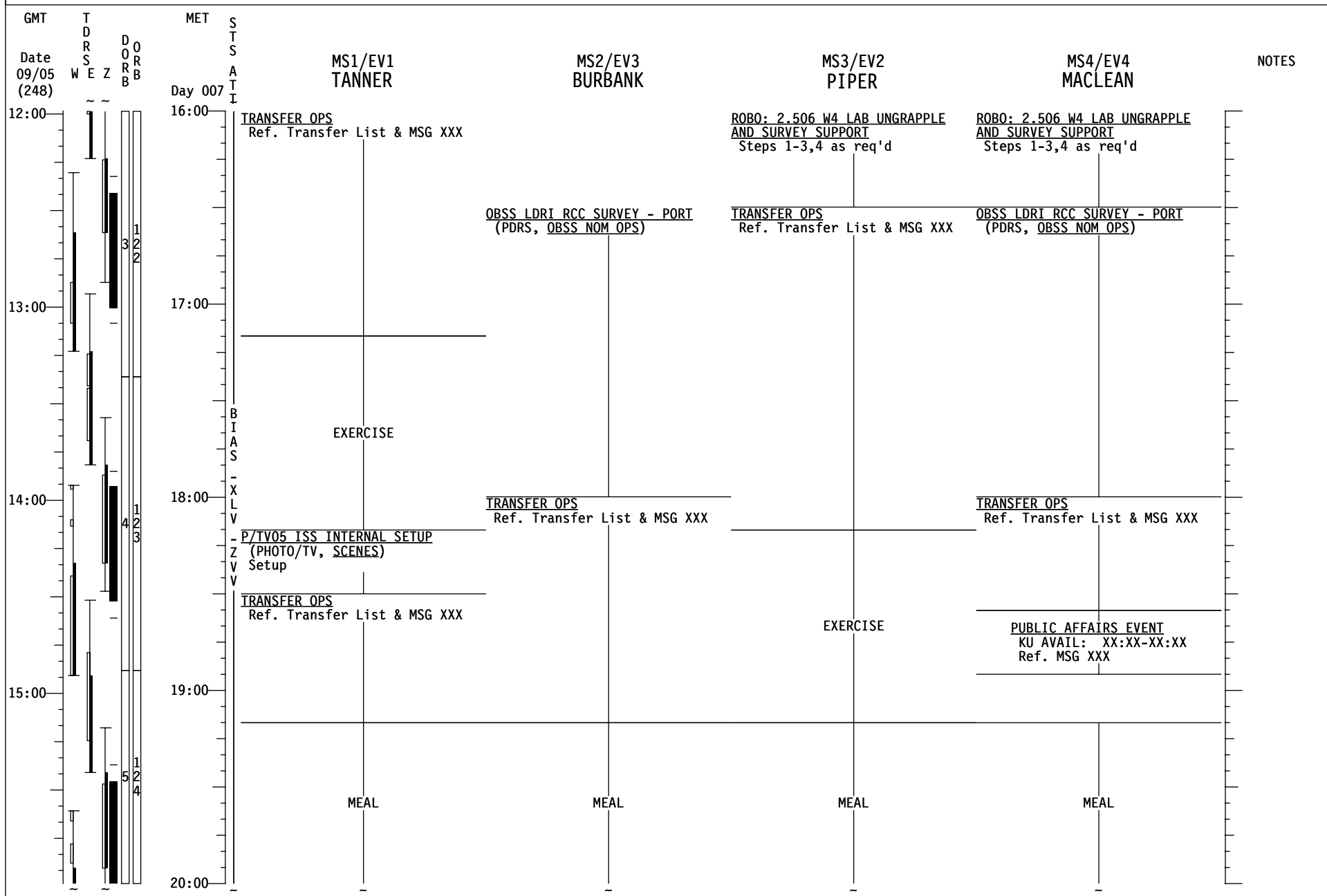


STS-115 (FD09)

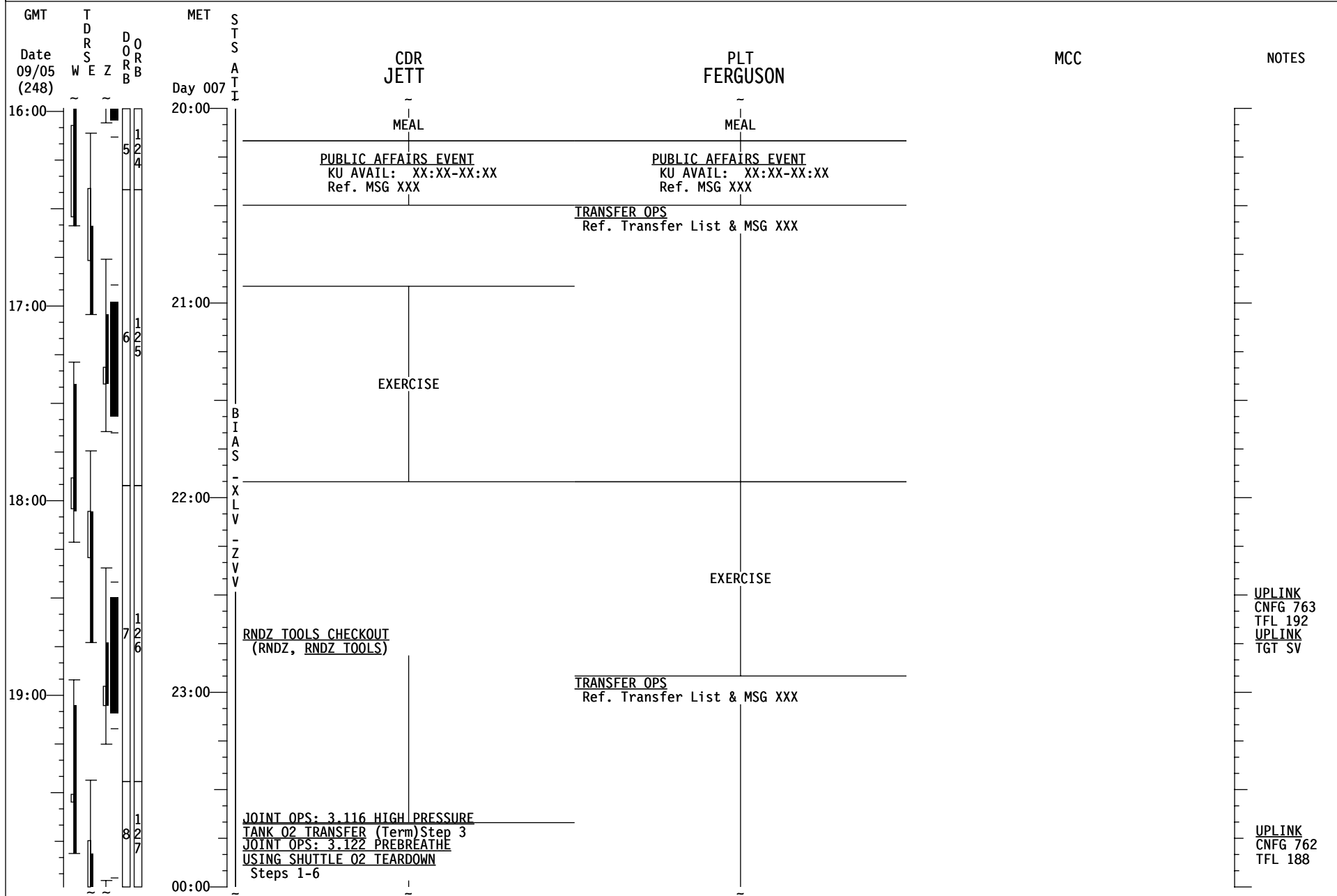
GMT	T D R S W E Z	D O R B B B	MET Day 007	S T S A T T I	CDR JETT	PLT FERGUSON	MCC	NOTES
12:00								
					<u>SHUTTLE CONDENSATE COLLECTION</u> (ORB OPS, ECLS) Perform CHANGEOUT only.	<u>TV (ILLUMINATOR OPS)</u> (PHOTO/TV, CUE CARDS) ILLUMINATORS OFF - B, C, and ELBOW		
						<u>ACTIVATION</u> (PHOTO/TV, LDRI/ITVC CC) <u>OBSS LDRI RCC SURVEY - PORT</u> (PDRS, OBSS NOM OPS)		
13:00					<u>SHUTTLE/ISS H2O CNTR FILL (Init #11)</u> (ORB OPS, ECLS) Ref MSG XXX			
14:00					<u>SHUTTLE/ISS H2O CNTR FILL</u> L (ORB OPS, ECLS) V Terminate CWC fill	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX		
					- CWC TRANSFER Z Transfer 1 CWC bag to ISS.			
					<u>PUBLIC AFFAIRS EVENT</u> KU AVAIL: XX:XX-XX:XX Ref. MSG XXX			
15:00								
					MEAL	MEAL		
20:00								

UPLINK
 β 21+Boxes
Box D1
 -18<AZ<70
 -68<EL<75
Box C2
 -41<AZ<-10
 -25<EL<39
Box F2
 -129<AZ<10
 -10<EL<42

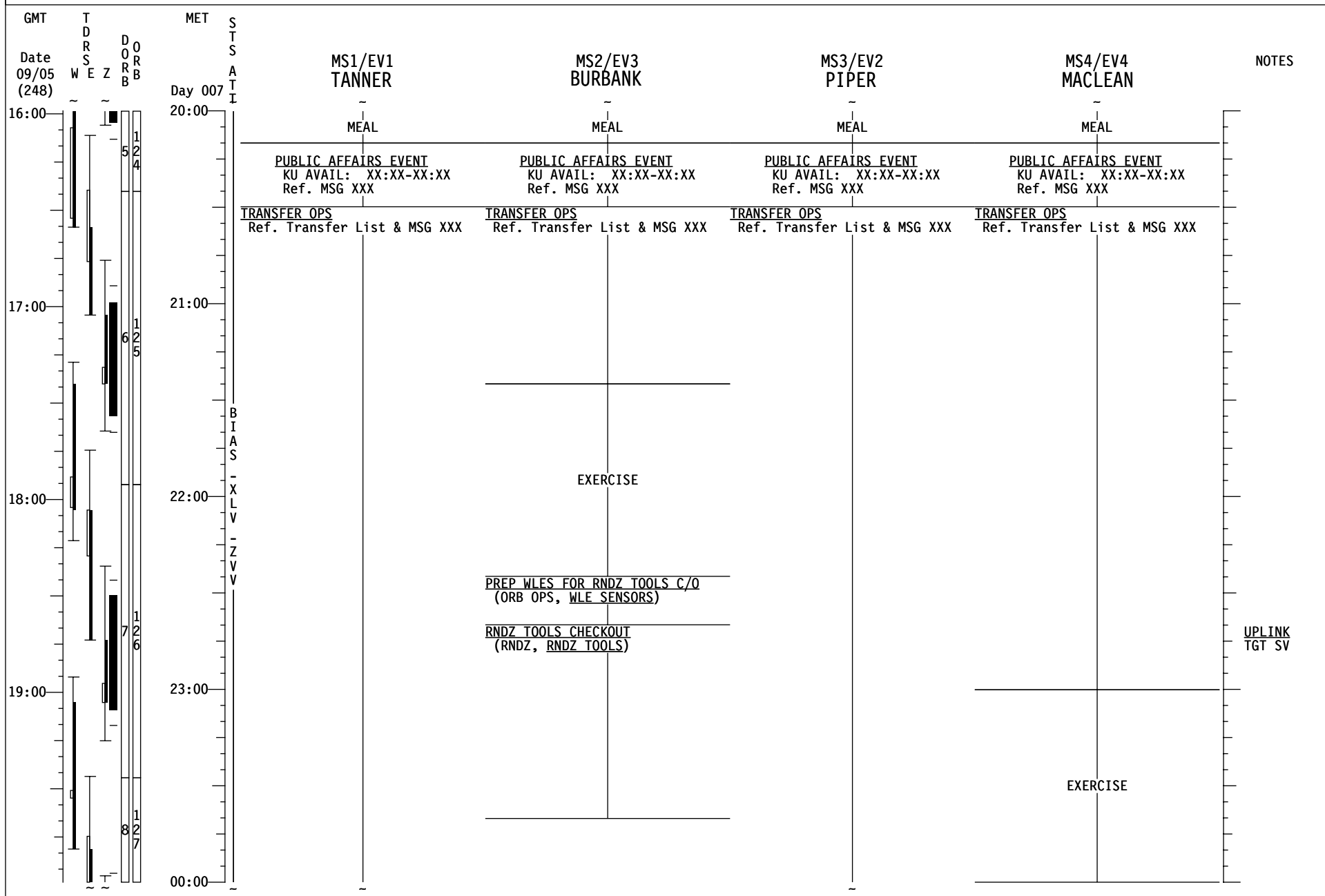
STS-115 (FD09)



STS-115 (FD09)



STS-115 (FD09)



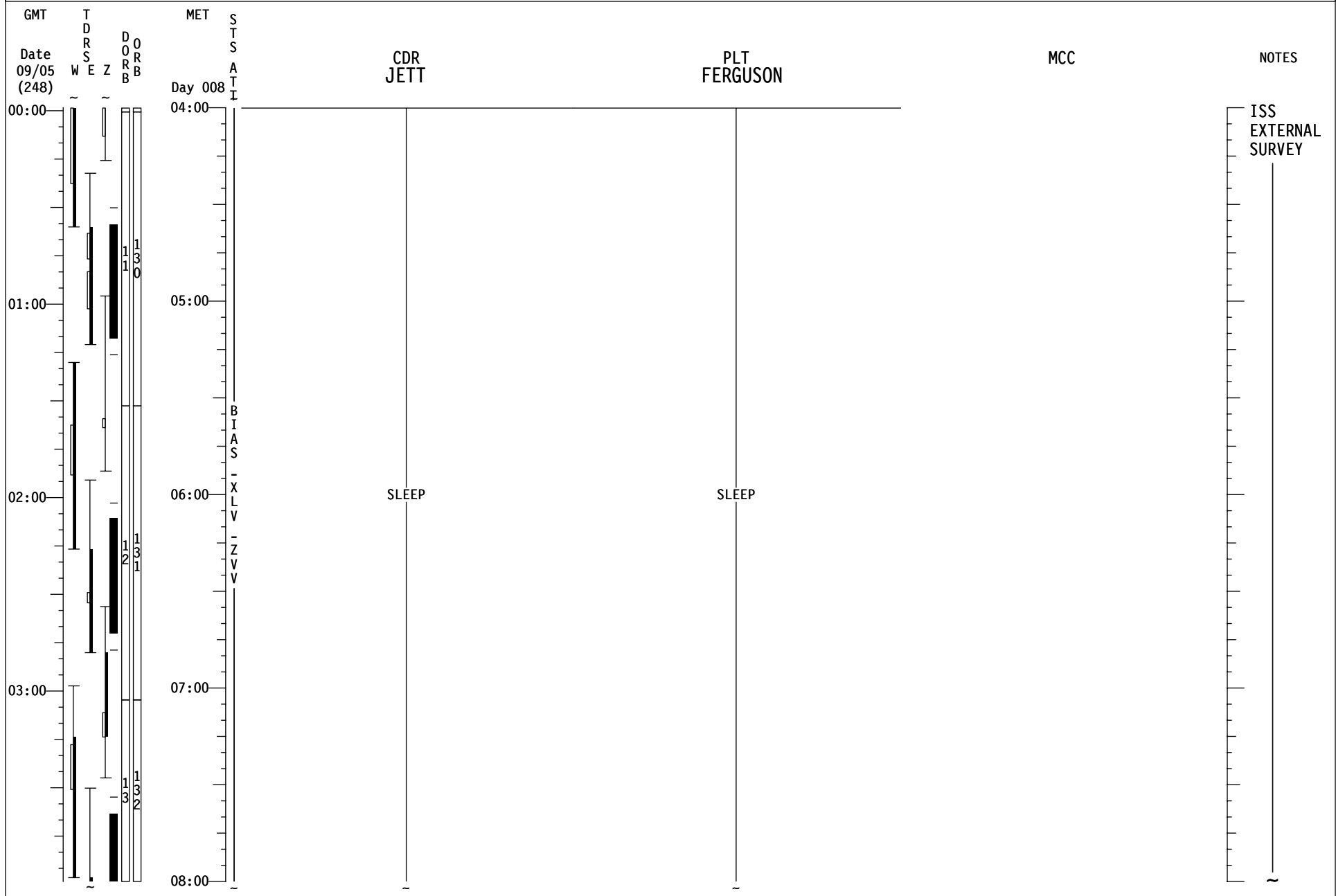
STS-115 (FD09)

GMT	TDRS W E Z	DORR B B	MET Day 008	STS A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
20:00								
					<u>JOINT OPS: 3.122 PREBREATHE</u> <u>USING SHUTTLE O2 TEARDOWN</u> Steps 1-6	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX		
21:00					06 \sqrt UHF MODE - OFF PRIVATE MEDICAL CONFERENCE	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, <u>CREW SYS</u>)		
					<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, <u>CREW SYS</u>)			
22:00								
23:00								
04:00								

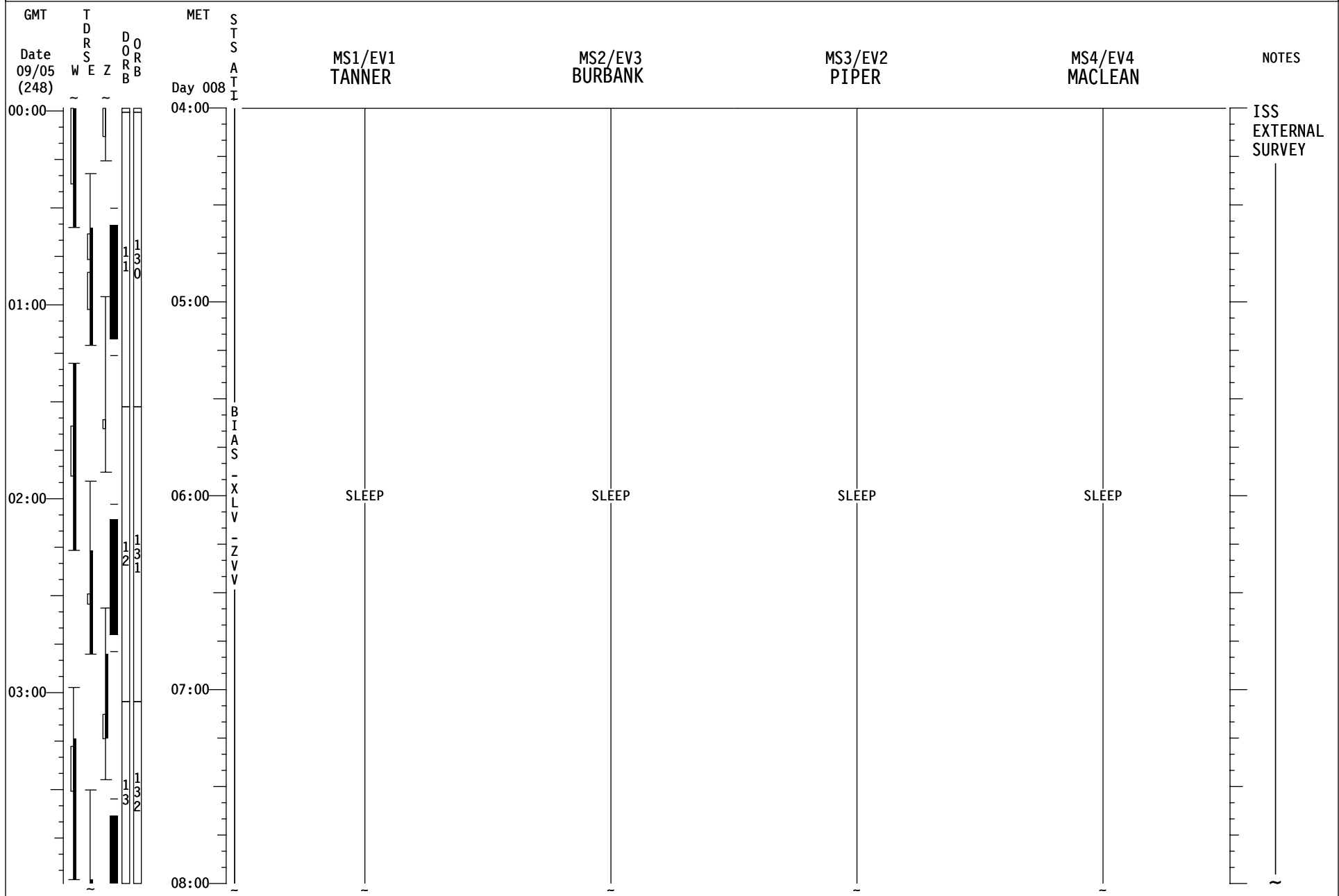
STS-115 (FD09)

GMT	T D R S E Z W E Z	D O R B B B	MET Day 008	S T S A T I	MS1/EV1 TANNER	MS2/EV3 BURBANK	MS3/EV2 PIPER	MS4/EV4 MACLEAN	NOTES
20:00					<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	<u>TRANSFER OPS</u> Ref. Transfer List & MSG XXX	
							<u>TRANSFER TAGUP</u> Coordinate with transfer counterpart		
					<u>P/TV04 INGRESS/EGRESS</u> (PHOTO/TV, SCENES) Setup	<u>O2 REPRESS USING PAYLOAD O2 VLV</u> (ORB OPS, ECLS)Steps 1-5	<u>TRANSFER BRIEF</u> Call down status to MCC		
21:00					<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
						<u>O2 REPRESS USING PAYLOAD O2 VLV</u> (ORB OPS, ECLS)Steps 6-10			
						<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)			
22:00									
23:00									
04:00									

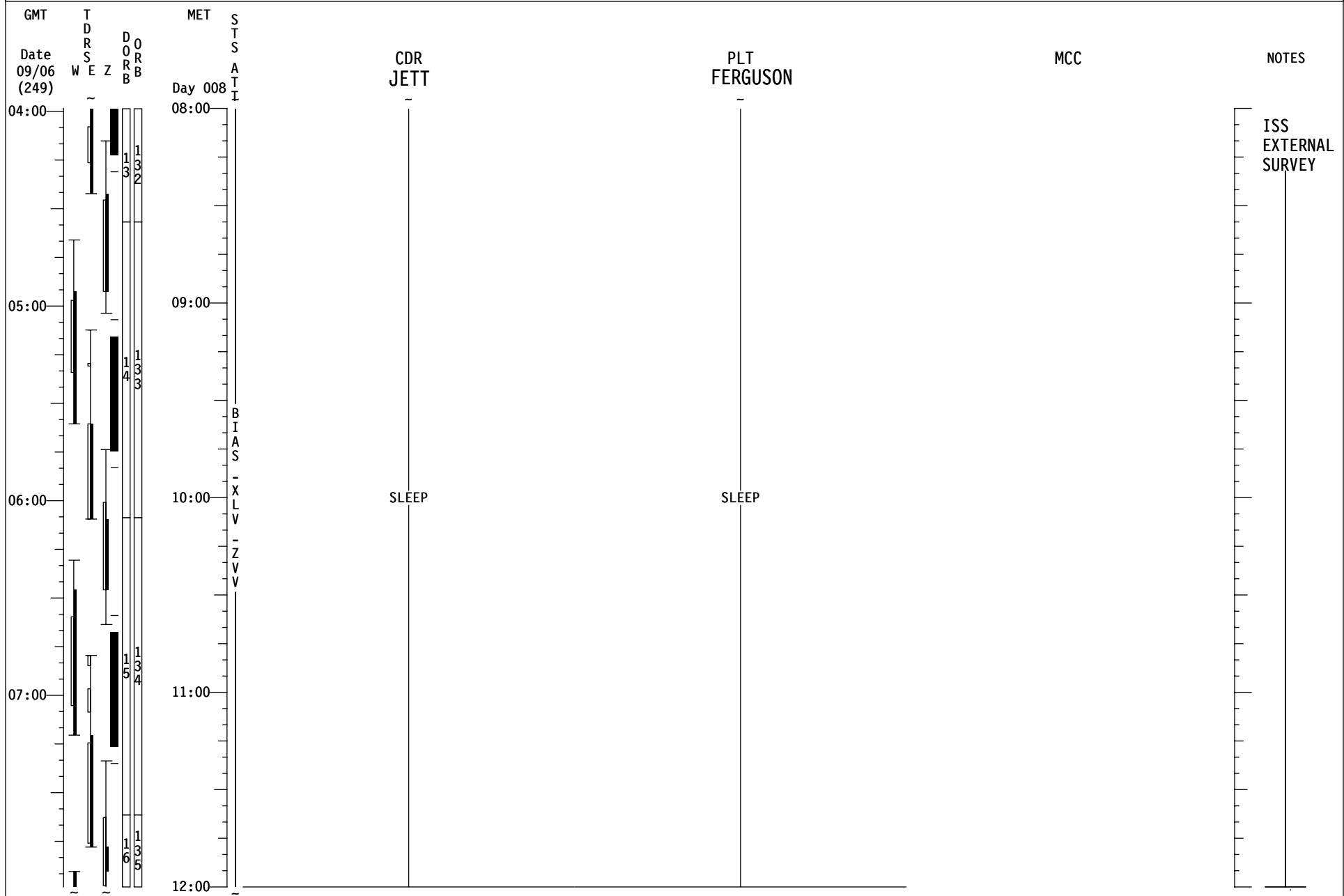
STS-115 (FD09)



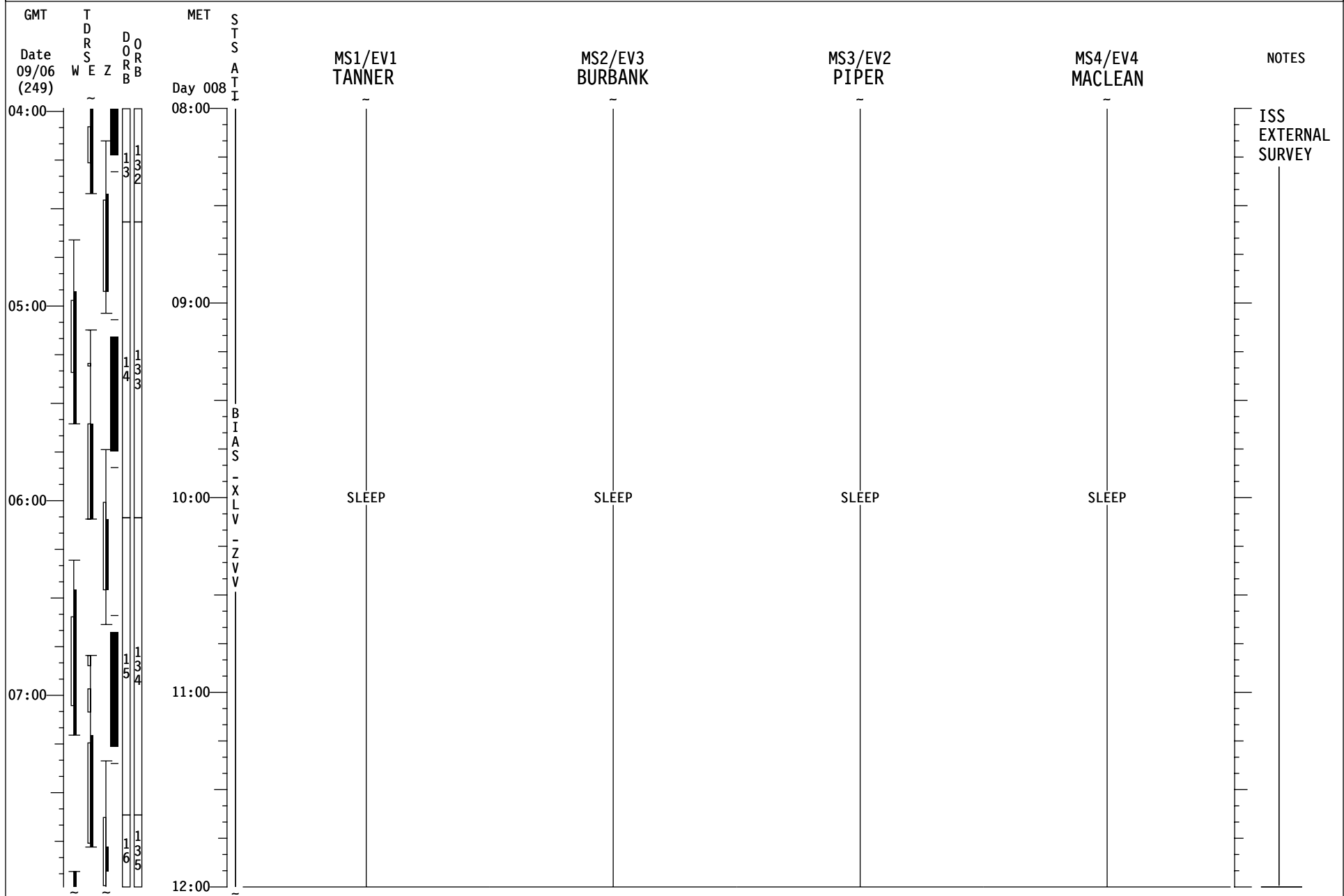
STS-115 (FD09)



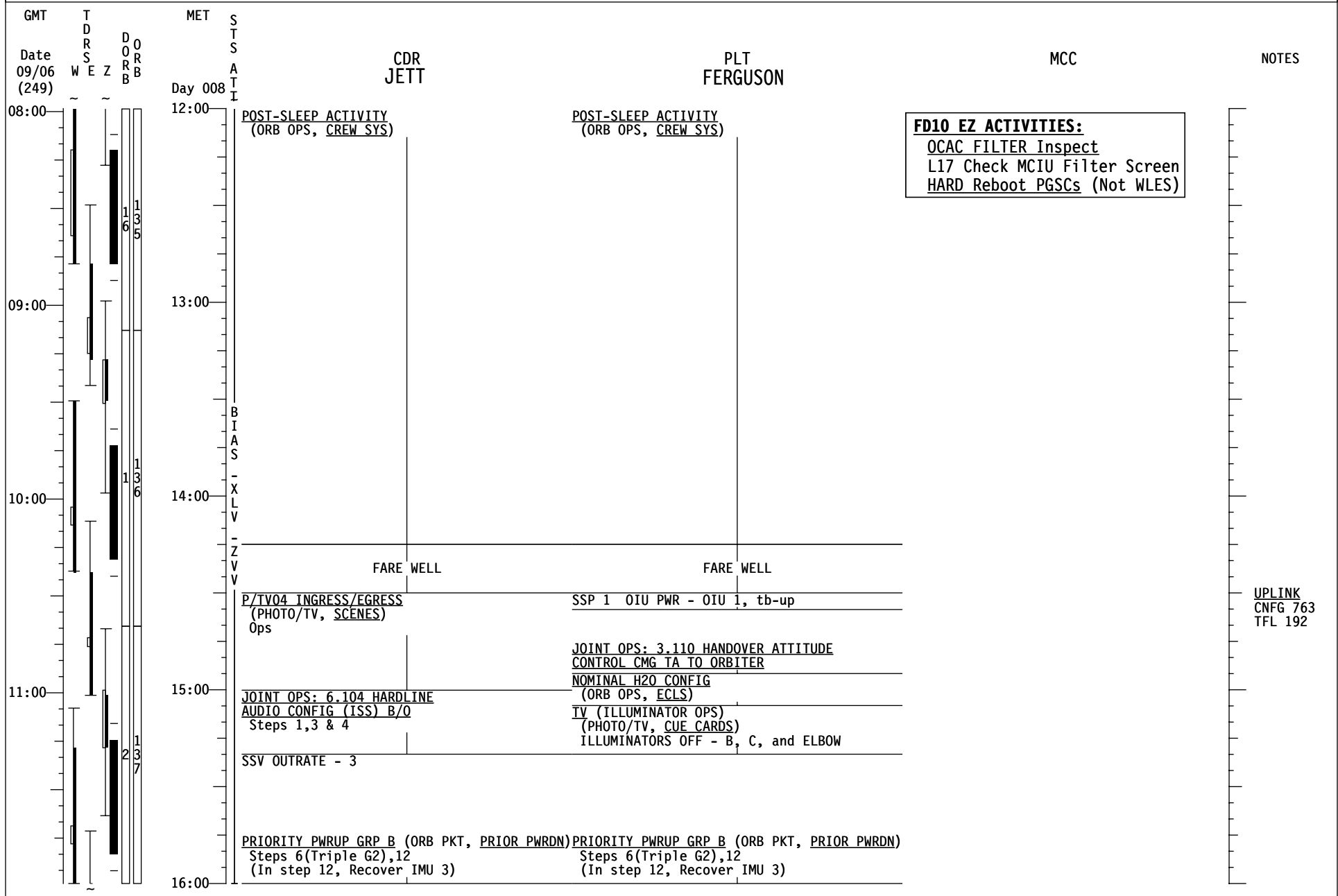
STS-115 (FD09)



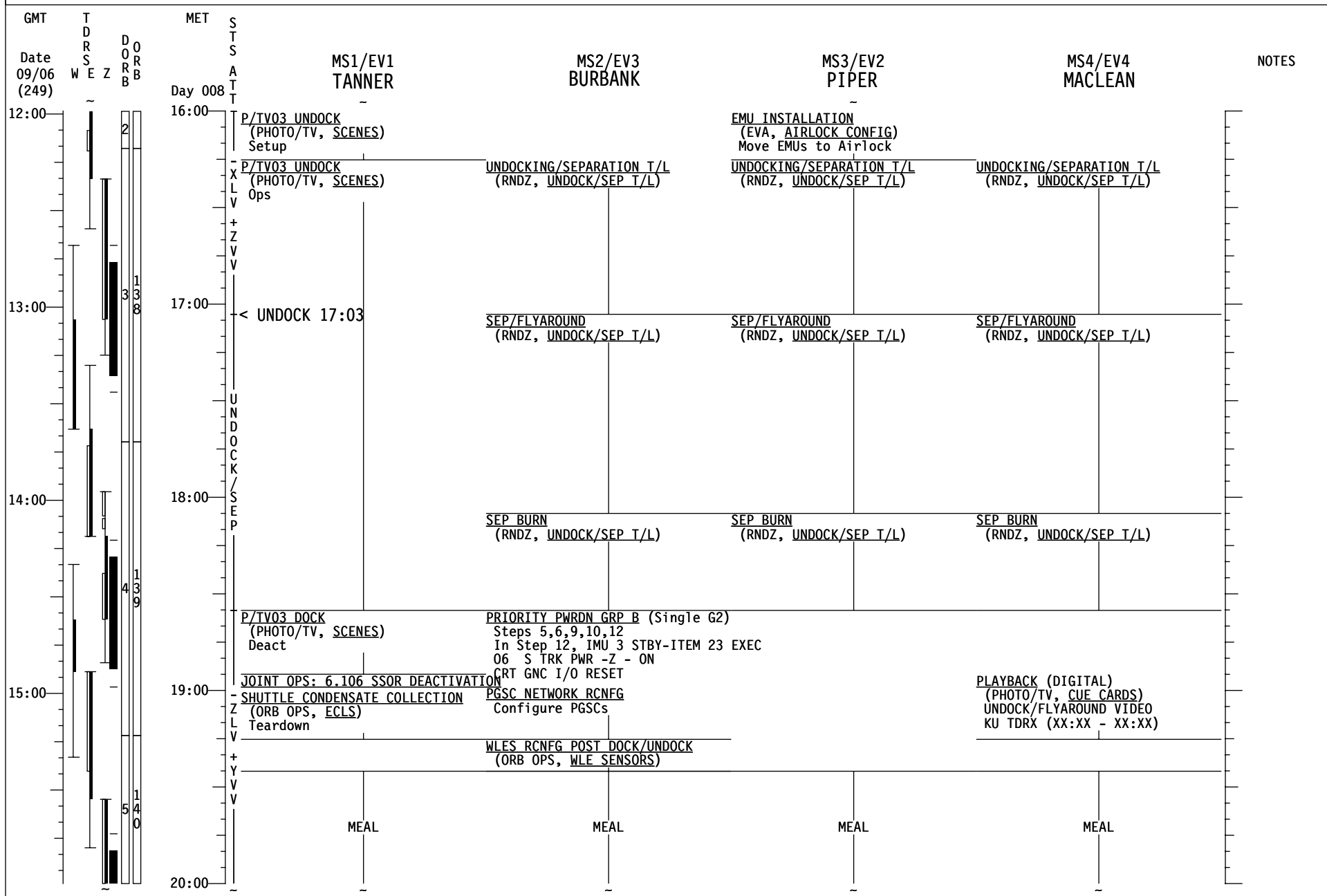
STS-115 (FD09)



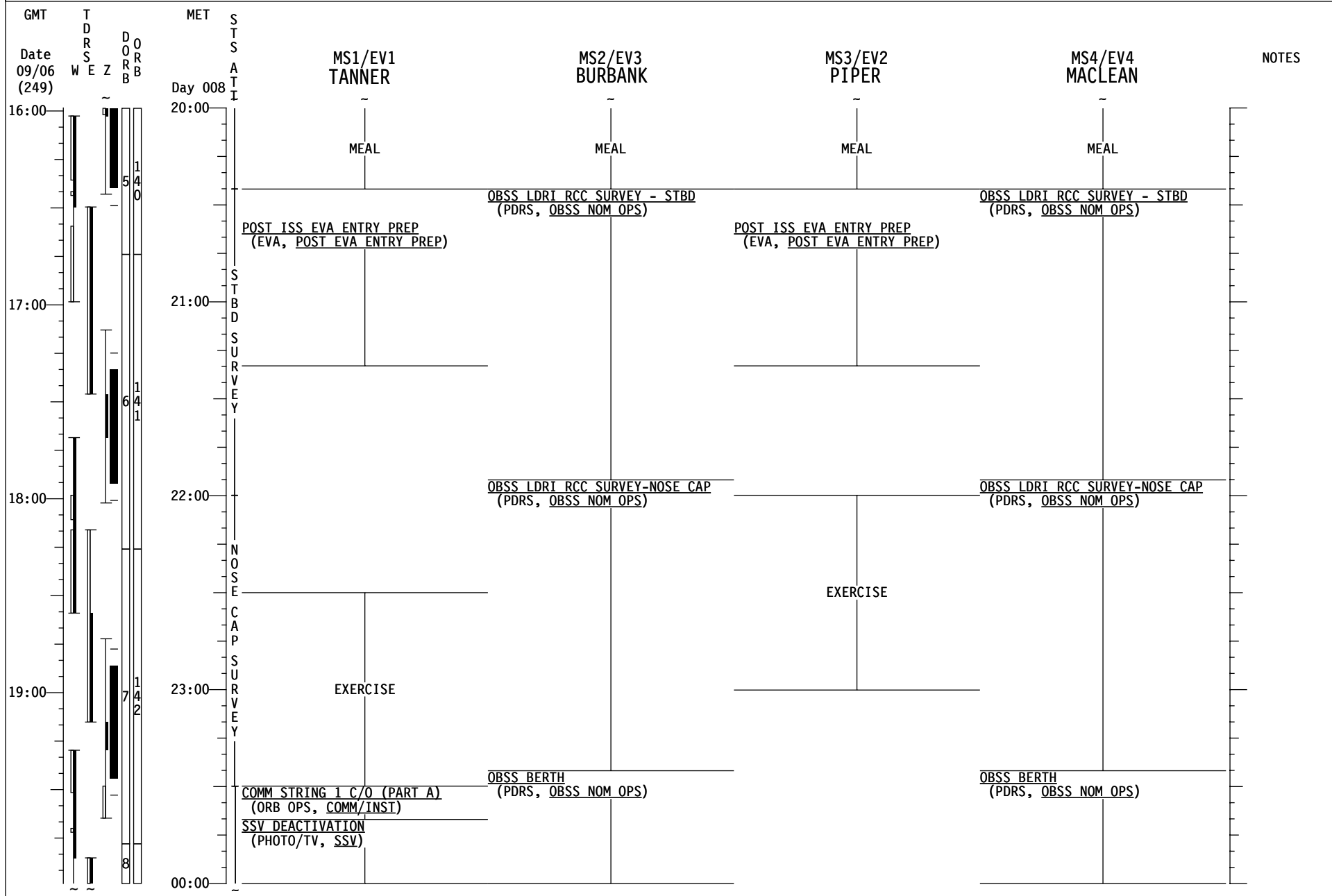
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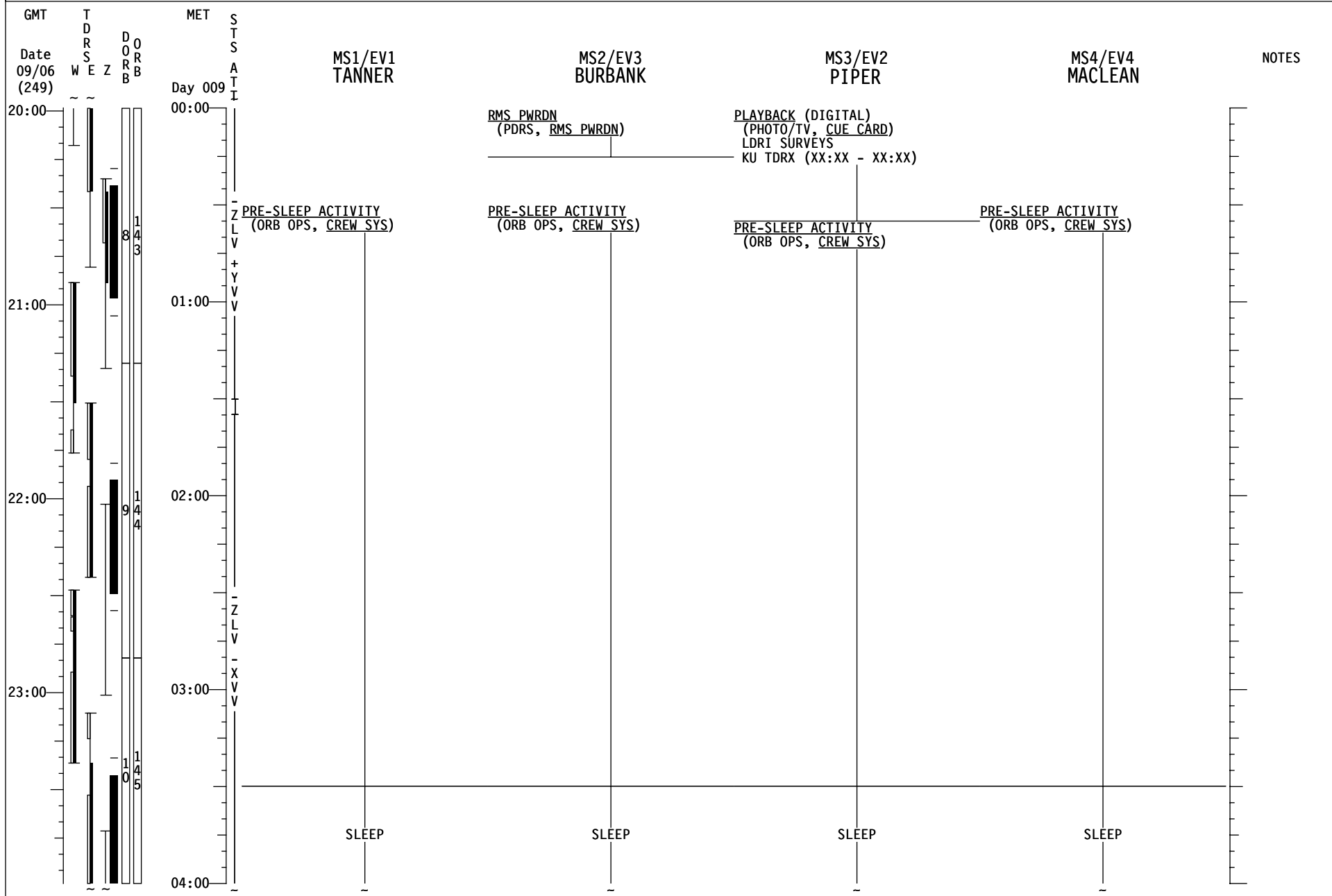
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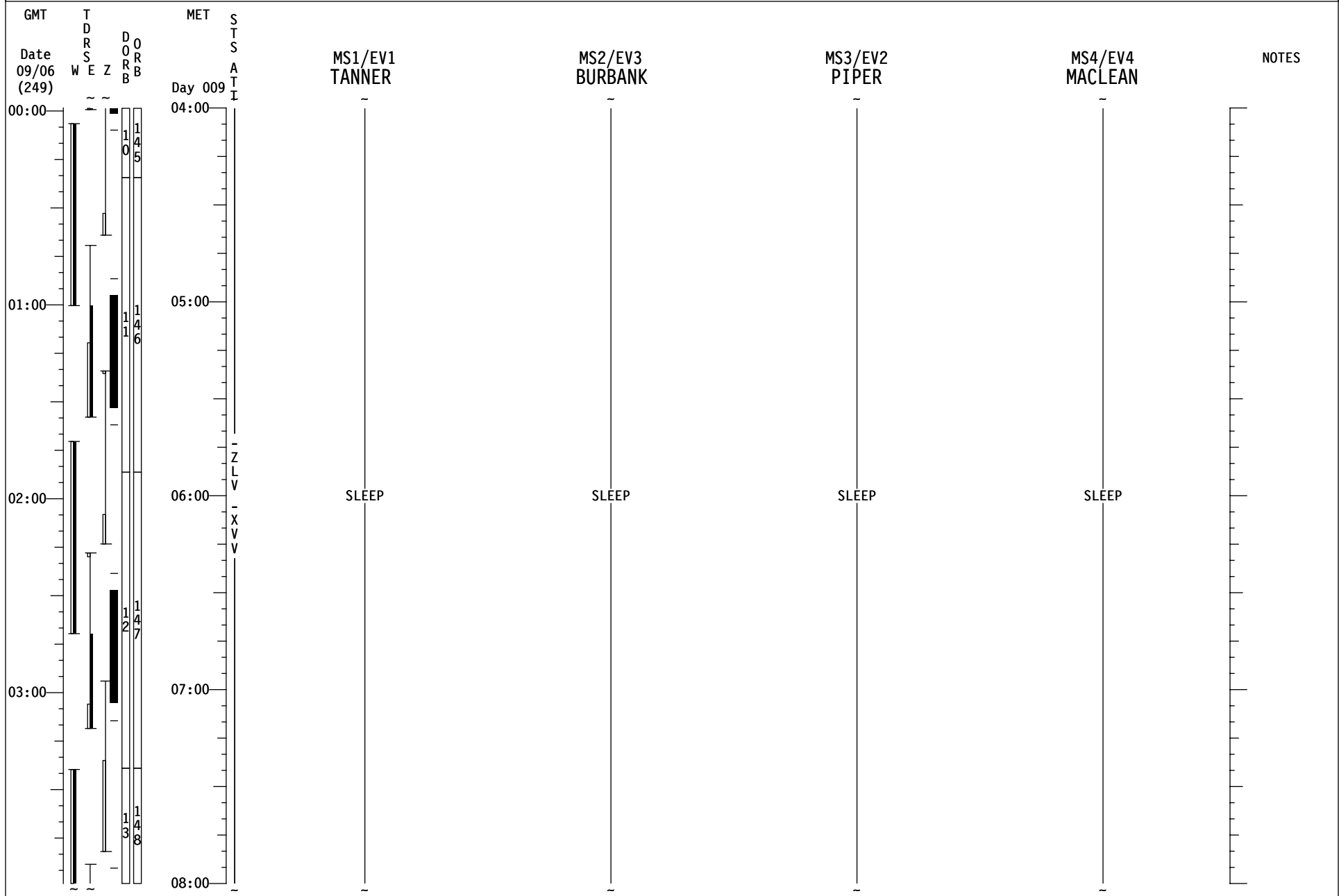
STS-115 (FD10)



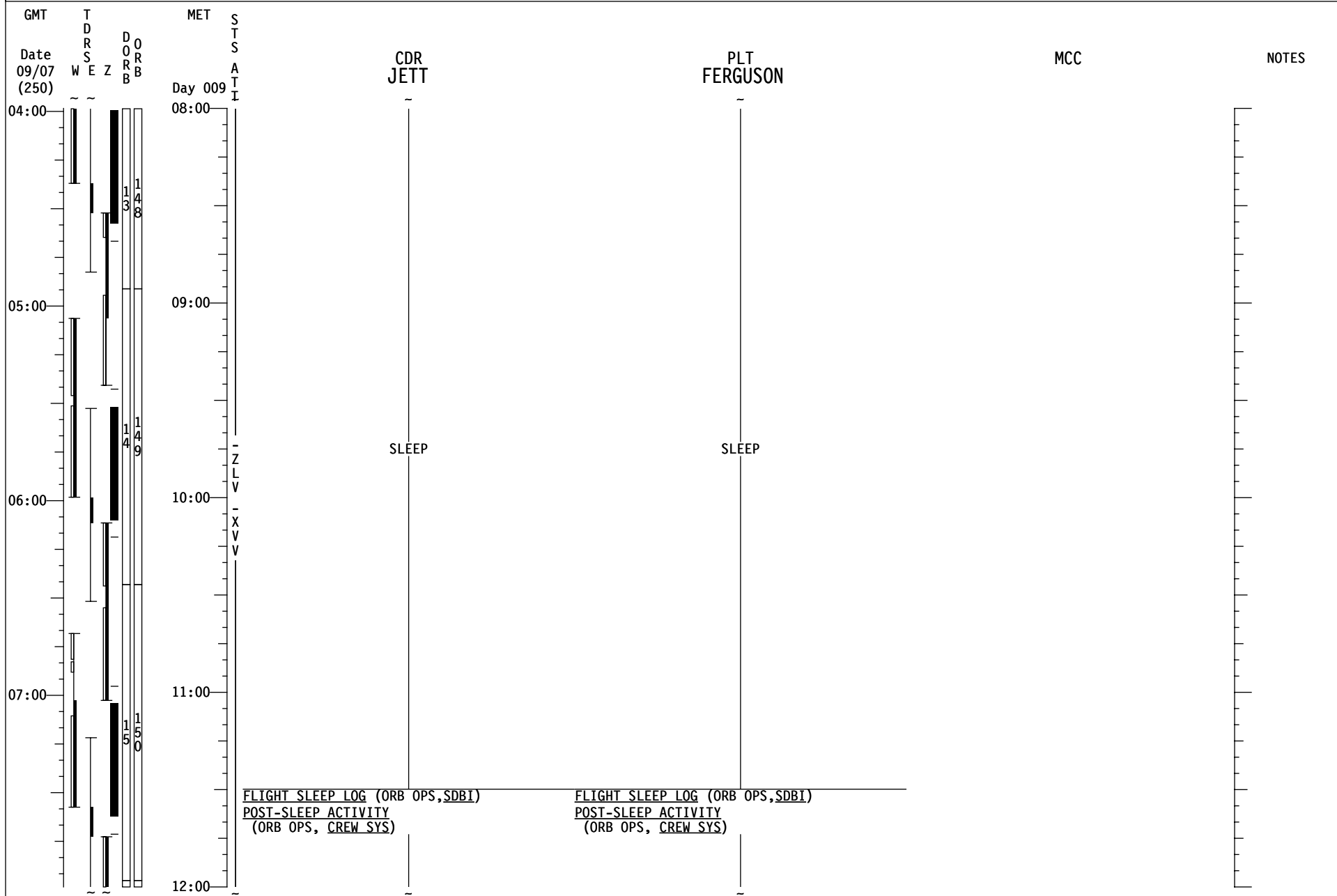
STS-115 (FD10)



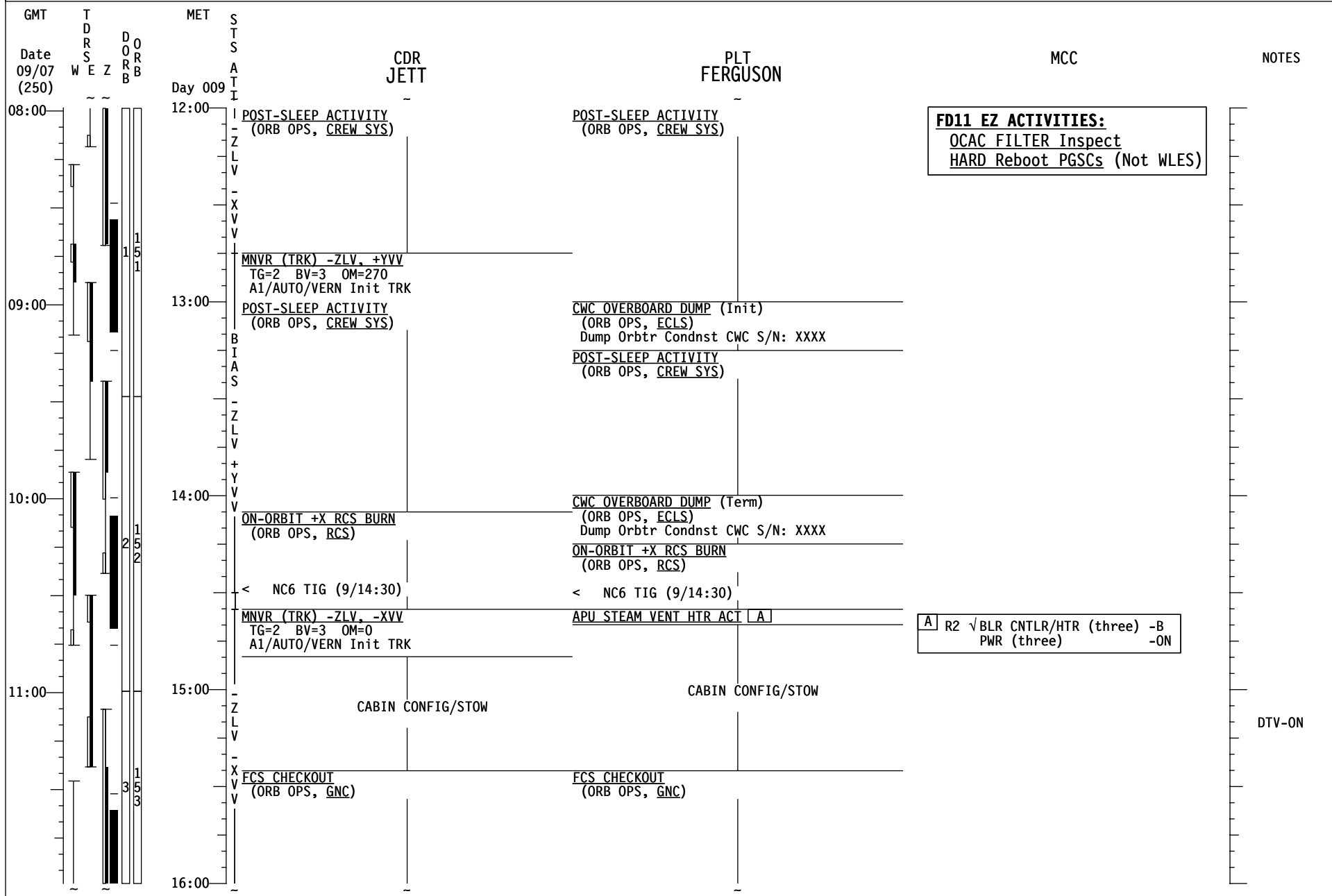
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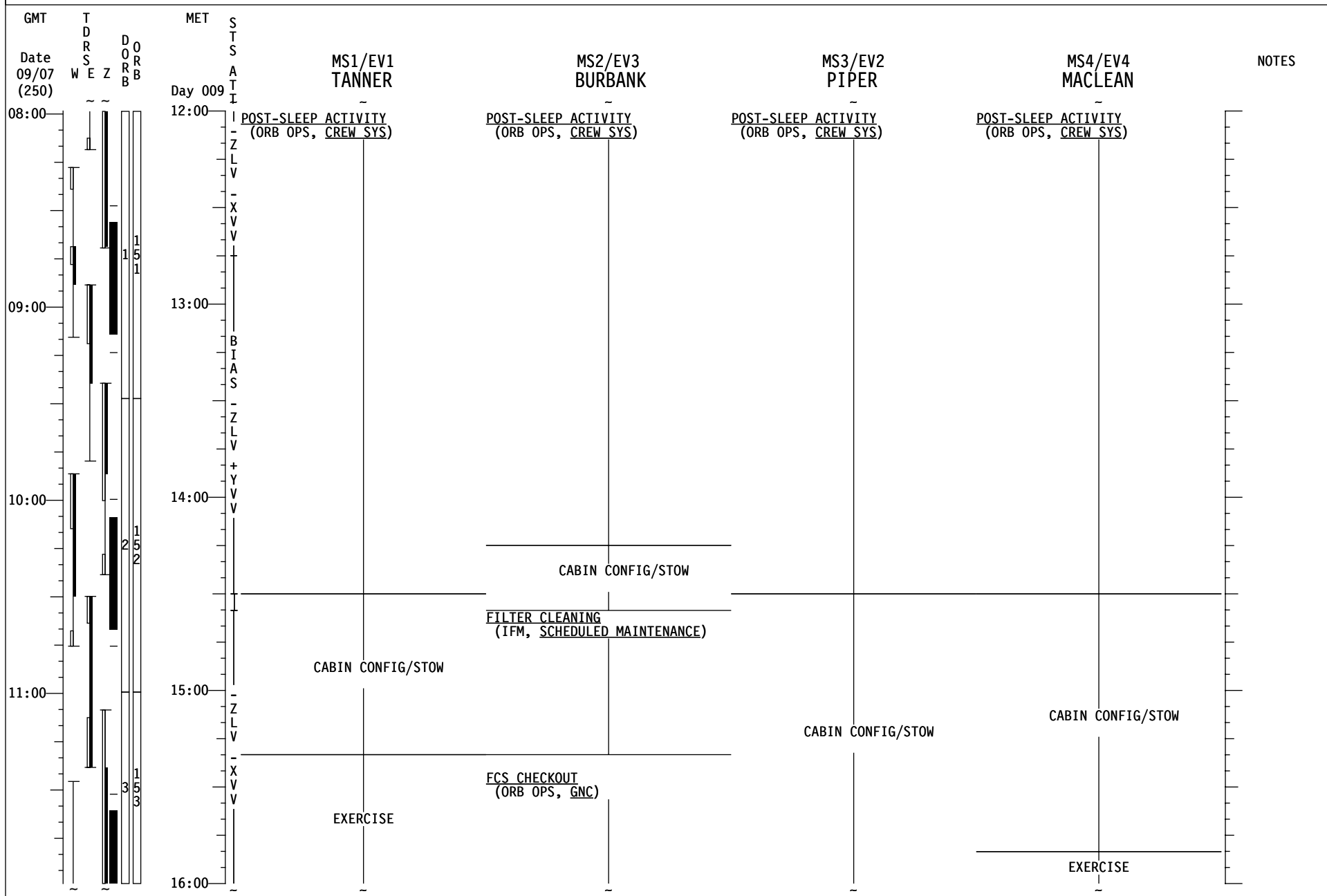
STS-115 (FD10)



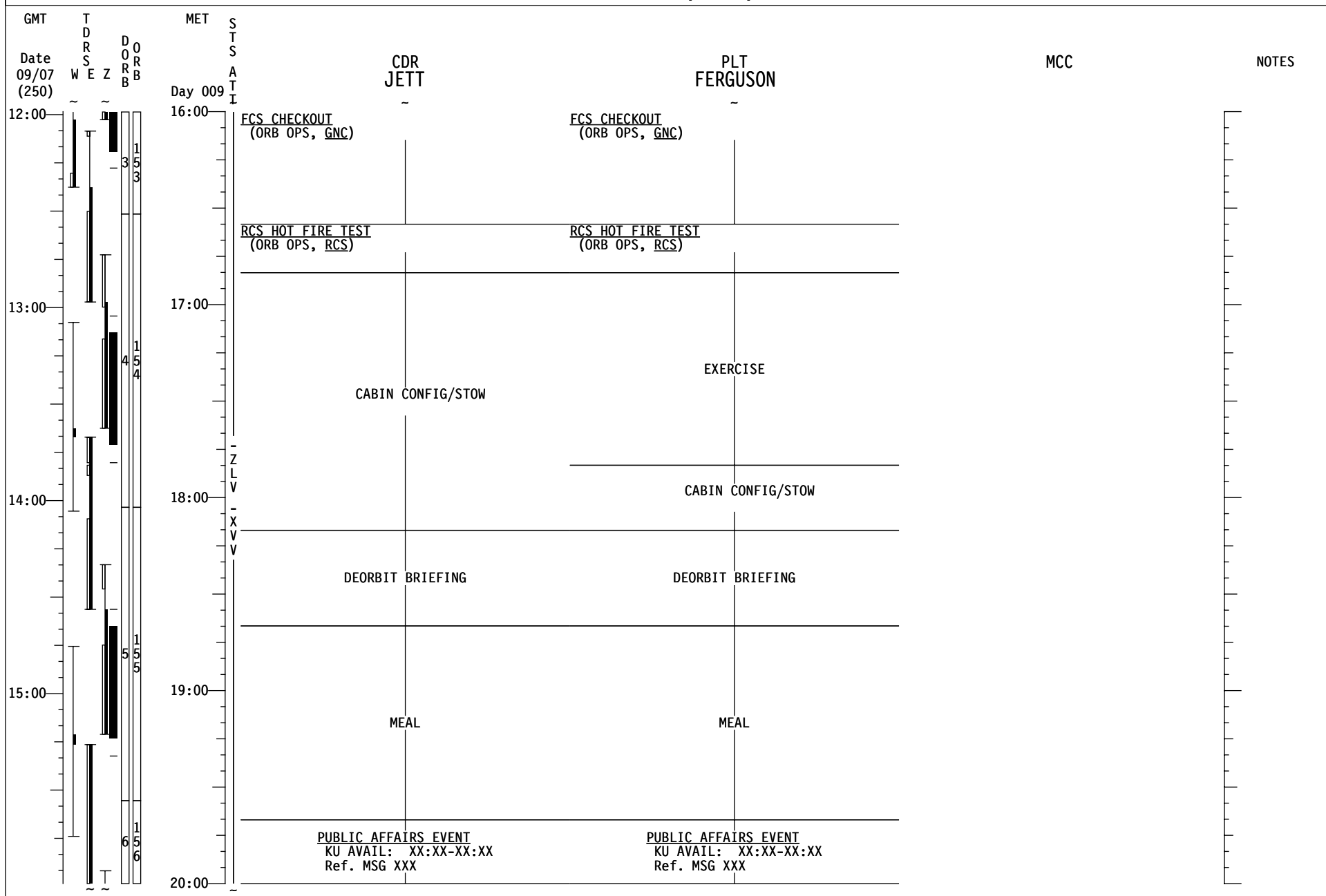
STS-115 (FD11)



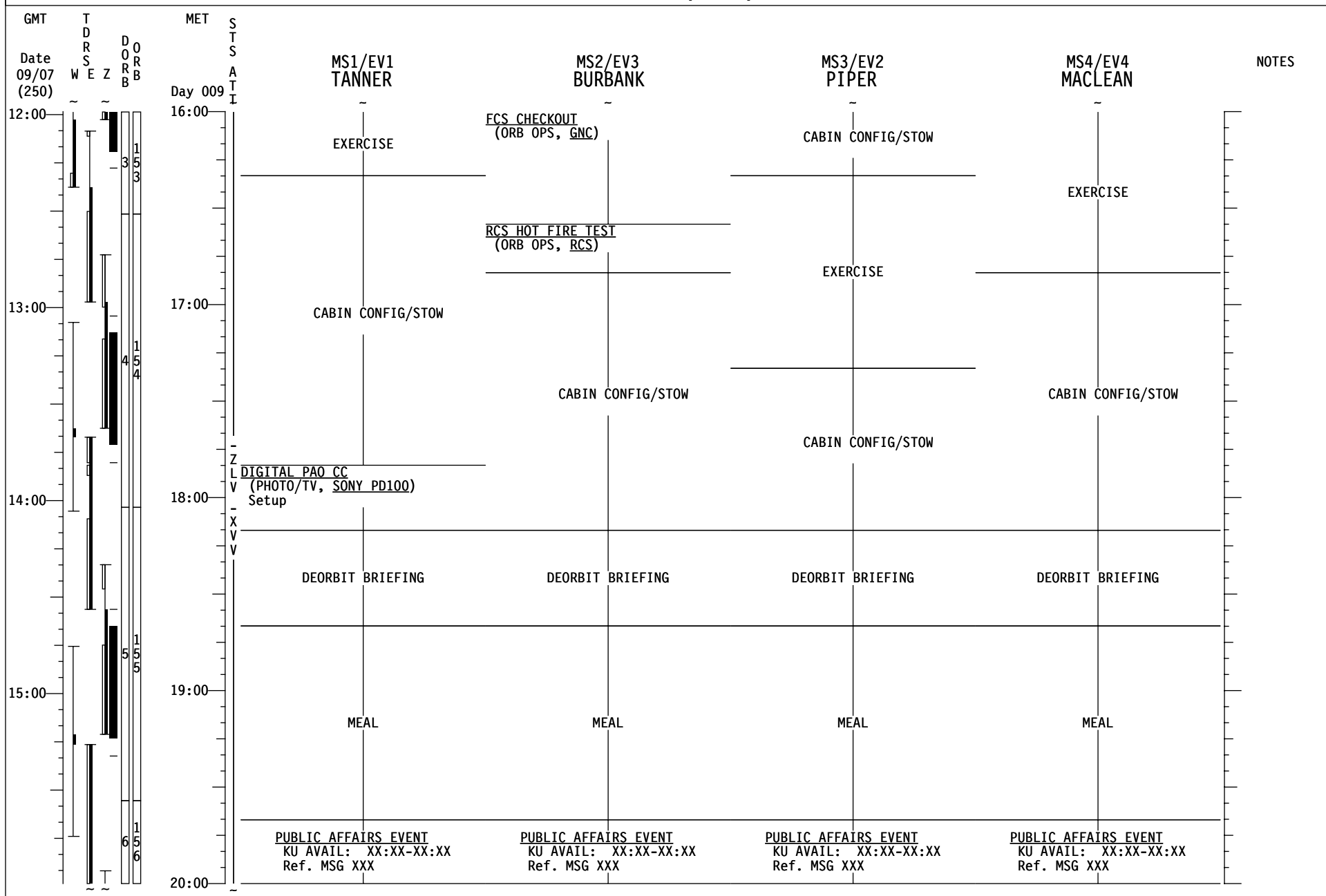
STS-115 (FD11)



STS-115 (FD11)



STS-115 (FD11)



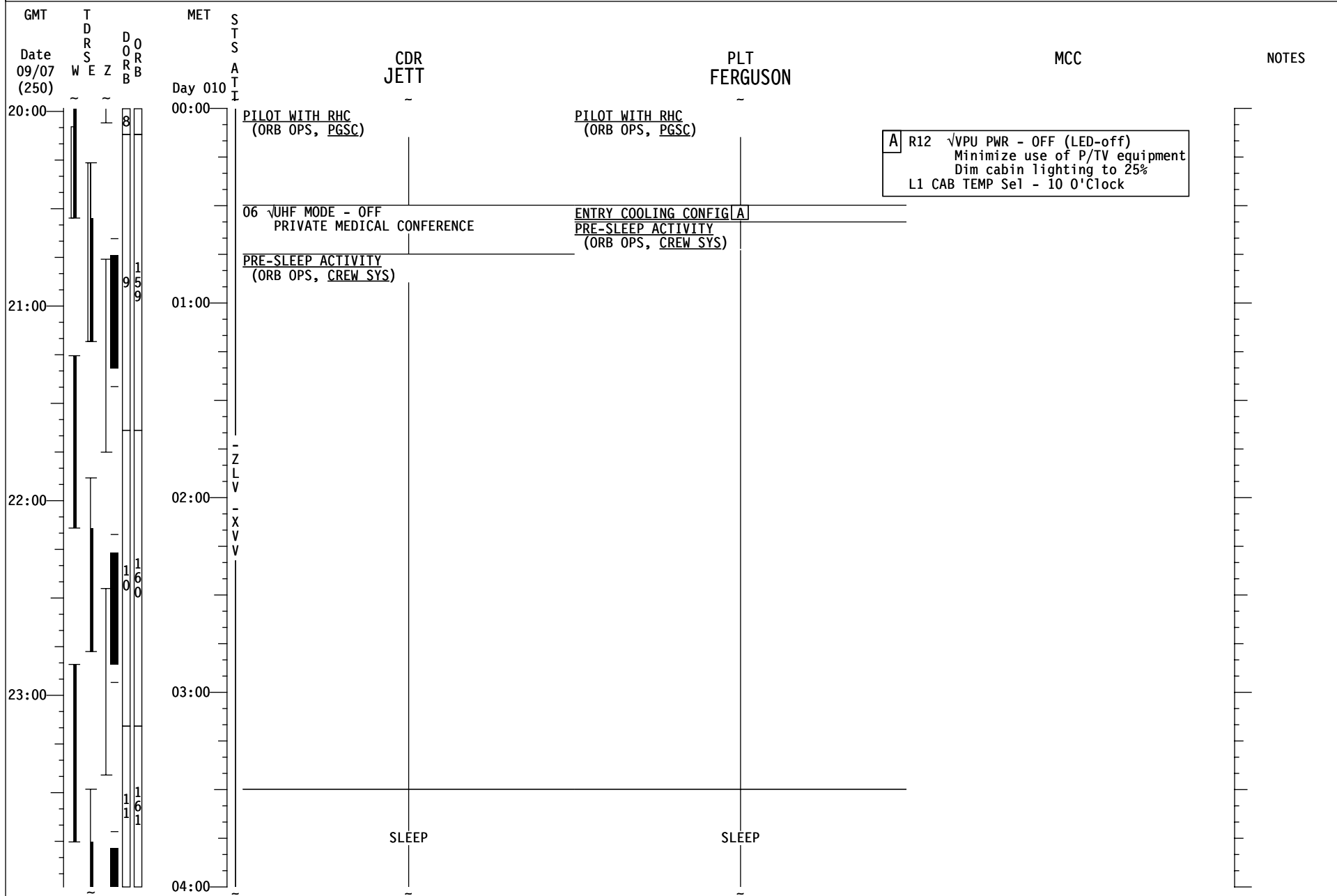
STS-115 (FD11)

GMT	TDRS W E Z	DORB	MET Day 009	S T S A T I	CDR JETT	PLT FERGUSON	MCC	NOTES
16:00								
17:00					OFF DUTY	OFF DUTY		
18:00				Z L V				
19:00				X V V	EXERCISE	CABIN CONFIG/STOW		
					<u>PILOT WITH RHC SETUP DIAGRAM</u> (ORB OPS, PGSC)	<u>SUPPLY WATER DUMP USING FES (ORB OPS, ECLS)</u> Perform Step 2 w/FES reqd		
					<u>PILOT WITH RHC</u> (ORB OPS, PGSC)	<u>PILOT WITH RHC</u> (ORB OPS, PGSC)		
20:00								
21:00								
22:00								DTV-OFF
23:00								
00:00								

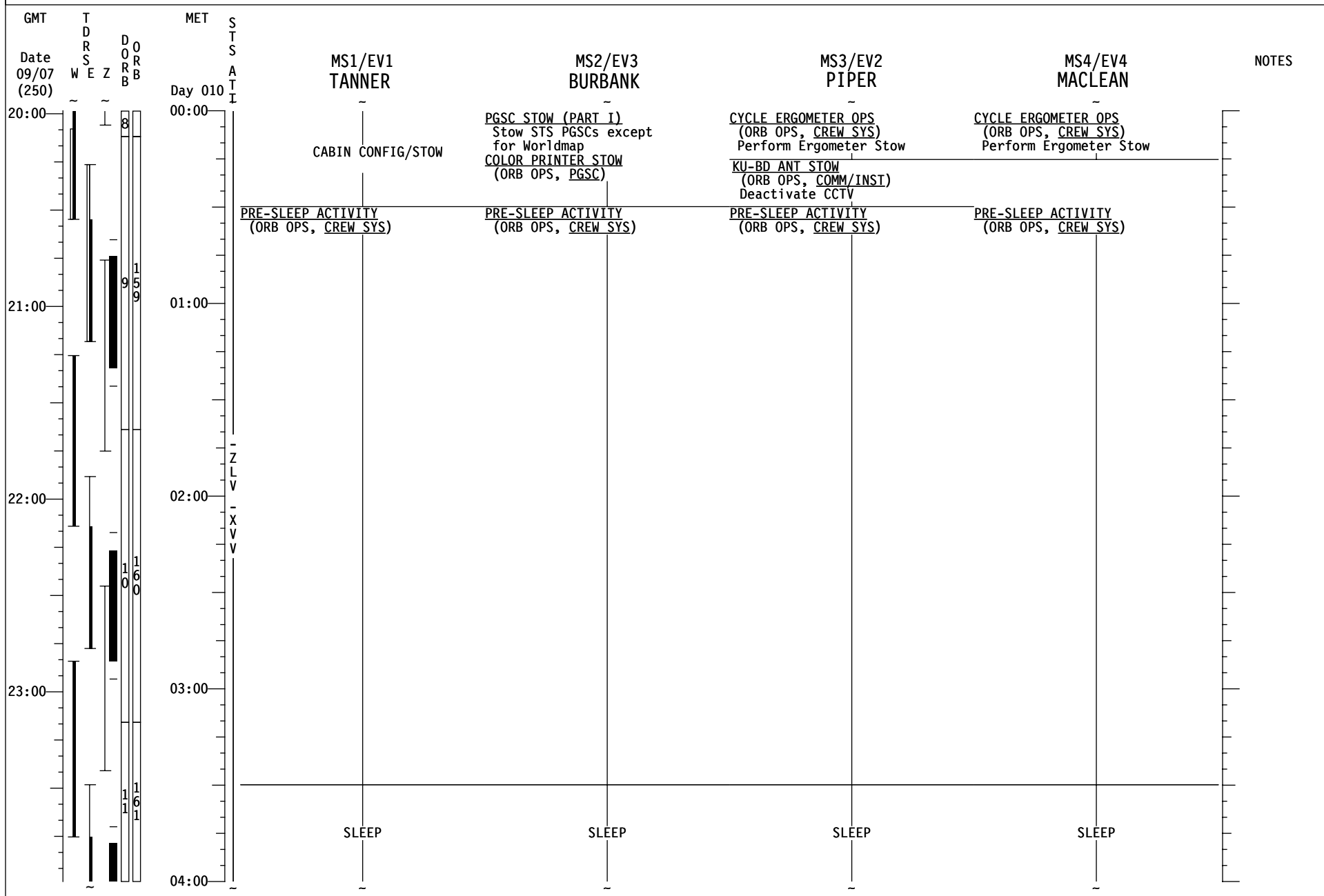
STS-115 (FD11)

GMT	TDRS W E Z	DORB	MET Day 009	STS A T I	MS1/EV1 TANNER	MS2/EV3 BURBANK	MS3/EV2 PIPER	MS4/EV4 MACLEAN	NOTES
16:00									
17:00					OFF DUTY	OFF DUTY	OFF DUTY	OFF DUTY	
18:00							LANDING-1 COMM C/O (ORB OPS, COMM/INSI)		
19:00							OFF DUTY		
					ENTRY VIDEO SETUP (PHOTO/TV, MINI-CAM)	CABIN CONFIG/STOW	CABIN CONFIG/STOW		
							LANDING-1 COMM C/O (ORB OPS, COMM/INSI)	CABIN CONFIG/STOW	
					CABIN CONFIG/STOW	EXERCISE	CABIN CONFIG/STOW		
								DEACT AND TEARDOWN (ORB OPS, WLE SENSORS)	
						COMM STRING 1 C/O (PART B) (ORB OPS, COMM/INSI)			
						PGSC STOW (PART I) Stow STS PGSCs except for Worldmap	CYCLE ERGOMETER OPS (ORB OPS, CREW SYS) Perform Ergometer Stow	CYCLE ERGOMETER OPS (ORB OPS, CREW SYS) Perform Ergometer Stow	
00:00					COLOR PRINTER STOW (ORB OPS, PGSC)				

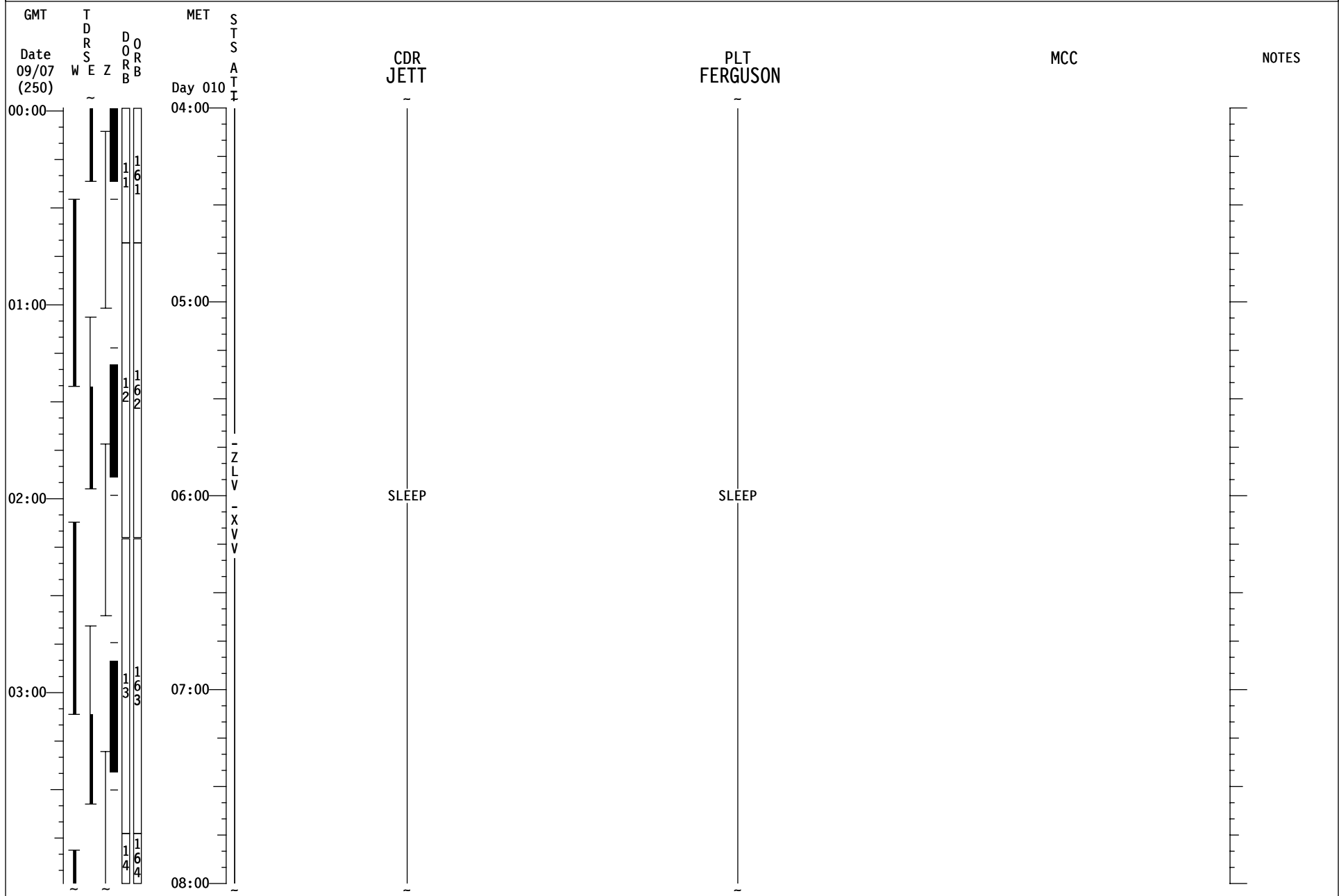
STS-115 (FD11)



STS-115 (FD11)



STS-115 (FD 11)



ATTITUDE TIMELINE

ATTITUDE
TIMELINE

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Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
1 000/00:38:00 M 240/20:37:04 G	M50 (CALC) INRTL R = 204.00 MNVR P = 59.00 PYR Y = 32.00 MNVR TRN/AUTO/PRI HOLD (same)	RATE 0.5000 DB AT 3.50 DB RT 0.20 SUN R 200 P 108 $\beta = 18$	+X PYR R = 359.66 P = 12.08 Y = 359.51 LVLH 000/00:38:00 M 240/20:37:04 G	OMS-2 Posigrade Heads Up TIG 0/00:38:00
2 000/01:12:00 M 19:54 240/21:11:04 G 18:58	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A6/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 5.00 DB RT 0.070 EARTH R 0 P 90 $\beta = 18$	LVLH R= 0.00 P=180.00 Y= 90.00	PLBD Opening -ZLV +YVV
3 000/02:45:00 M 53:40 240/22:44:04 G 52:44	M50 (CALC) INRTL R = 4.00 MNVR P = 287.00 PYR Y = 321.00 MNVR B1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 161 P 109 $\beta = 17$	+X PYR R = 179.92 P = 348.22 Y = 0.10 LVLH 000/02:57:00 M 240/22:56:04 G	NC-1 Posigrade Heads Down TIG 0/02:57
4 000/03:00:00 M 15:00 240/22:59:04 G 23:14:04	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 17$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
5 000/08:00:00 M 241/03:59:04 G				DEU MNVR Placeholder
6 000/15:35:00 M 45:41 241/11:34:04 G 44:45	M50 (CALC) INRTL R = 197.00 MNVR P = 77.00 PYR Y = 43.00 MNVR B1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 195 P 90 $\beta = 15$	+X PYR R = 0.15 P = 11.61 Y = 353.76 LVLH 000/15:51:00 M 241/11:50:04 G	NC-2 Posigrade L OMS Heads Up TIG 15:51
7 000/15:55:00 M 16:08:19 241/11:54:04 G 12:07:23	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 90.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 15$	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV OBSS Unberth Flat Fields
8 000/18:35:00 M 49:47 241/14:34:04 G 48:51	TGT= 4 BV = 5 P = 0.00 Y = 49.00 OM = 196.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 90 P 49 $\beta = 14$	INRTL R=334.76 P=169.97 Y=337.72 RA= 157.153 DEC= 9.559N	OBSS STBD Survey
9 000/20:15:00 M 25:55 241/16:14:04 G 24:59	TGT= 4 BV = 5 P = 320.00 Y = 0.00 OM = 300.00 MNVR A14/AUTO/VERN HOLD A14/AUTO/ALT	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 180 P 40 $\beta = 14$	INRTL R= 68.11 P=205.35 Y= 61.07 RA= 157.216 DEC= 9.535N	Nose Cap Survey
10 000/22:45:00 M 58:09 241/18:44:04 G 57:13	TGT= 4 BV = 5 P = 0.00 Y = 344.00 OM = 138.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 270 P 16 $\beta = 13$	INRTL R=269.99 P=207.62 Y= 23.31 RA= 157.311 DEC= 9.498N	OBSS Port Survey

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
11 001/00:45:00 M 54:51 241/20:44:04 G 53:55	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 130.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 13$	LVLH R=180.00 P= 0.00 Y=310.00	Bias -ZLV -YVV Upper Surface Survey
12 001/01:55:00 M 02:08:44 241/21:54:04 G 22:07:48	TGT= 4 BV = 5 P = 0.00 Y = 90.00 OM = 90.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 90 P 90 $\beta = 13$	INRTL R=301.82 P=123.58 Y=315.89 RA= 157.431 DEC= 9.451N	INRTL COMM ATT Max KU for LDRI Downlink
13 001/03:03:00 M 12:22 241/23:02:04 G 11:26	M50 (CALC) INRTL R = 193.00 MNVR P = 308.00 PYR Y = 322.00 MNVR B1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 345 P 125 $\beta = 12$	+X PYR R = 359.40 P = 9.69 Y = 359.68 LVLH 001/03:23:36 M 241/23:22:40 G	NC-3 +X RCS TIG 1/03:23:36
14 001/03:30:00 M 42:05 241/23:29:04 G 41:09	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 12$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
15 001/13:05:00 M 12:30 242/09:04:04 G 11:34	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = 10$	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV Waste Dump future loaded
16 001/14:50:00 M 15:00:59 242/10:49:04 G 11:00:03	M50 (CALC) INRTL R = 139.00 MNVR P = 205.00 PYR Y = 347.00 MNVR A7/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 2.00 DB RT 0.100 SUN R 334 P 38 $\beta = 10$	+X PYR R = 0.17 P = 12.24 Y = 6.25 LVLH 001/15:10:05 M 242/11:09:09 G	NC-4 Posigrade ROMS Heads Up TIG 1/15:10:05
17 001/15:15:00 M 19:02 242/11:14:04 G 18:06	EPH TARGET TGT = 1 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR B7/AUTO/ALT HOLD A7/AUTO/VERN	RATE 0.5000 DB AT 2.00 DB RT 0.100 $\beta = 10$	LVLH R= 0.06 P=271.28 Y= 0.00 TGT VIDFILE: 115FIN VID #: 11	-Z Target Track
18 001/16:30:00 M 33:16 242/12:29:04 G 32:20	M50 (CALC) INRTL R = 140.00 MNVR P = 214.00 PYR Y = 356.00 MNVR A7/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 2.00 DB RT 0.100 SUN R 351 P 35 $\beta = 9$	+X PYR R = 360.00 P = 11.83 Y = 353.83 LVLH 001/16:41:25 M 242/12:40:29 G	Ti Posigrade LOMS Heads Up TIG 1/16:41:25
19 001/16:45:00 M 48:41 242/12:44:04 G 47:45	EPH TARGET TGT = 1 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR B7/AUTO/ALT HOLD A7/AUTO/VERN	RATE 0.5000 DB AT 2.00 DB RT 0.100 $\beta = 9$	LVLH R= 0.64 P=277.70 Y= 0.00 TGT VIDFILE: 115FIN VID #: 11	-Z Target Track
20 001/17:58:00 M 18:05:12 242/13:57:04 G 14:04:16	LVLH TRACK TGT = 2 P = 270.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A7/AUTO/ALT HOLD (same)	RATE 0.2000 DB AT 2.00 DB RT 0.100 EARTH R 180 P 90 $\beta = 9$	LVLH R= 0.00 P= 0.00 Y= 0.00	+ZLV +XVV Establish RBAR

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
21 001/18:25:00 M 242/14:24:04 G	LVLH FREE ROTATION ROTR ABOUT +Y AXIS RATE=0.750 MNVR A9/LVLH/PRI HOLD (same)	RATE 0.7500 DB AT 1.00 DB RT 0.10 $\beta = 9$	LVLH R= 0.00 P= 0.00 Y= 0.00	RPM
22 001/18:34:00 M 39:54 242/14:33:04 G 38:58	LVLH TRACK TGT = 2 P = 179.00 BV = 5 Y = 0.00 OM = 0.00 MNVR A9/AUTO/VERN HOLD (same)	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 0 P 179 $\beta = 9$	LVLH R= 0.00 P= 91.00 Y= 0.00	-XLV +ZVV TORVA
23 001/19:36:00 M 242/15:35:04 G	FREE DRIFT Config DAP: A12 for Attitude Control			Docking 1/19:36
24 001/19:56:00 M 59:32 242/15:55:04 G 58:36	COE (CALC) TGT = 2 P = 158.00 BV = 5 Y = 3.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 8 P 158 $\beta = 9$	ISS YPR R = 3.24 P = 21.97 Y = 1.21 LVLH 001/19:56:00 M 242/15:55:04 G	Bias -XLV +ZVV Mated TEA Pre P3/4 Install ORB R = 358.88 LVLH P = 112.03 Y = 2.78
25 001/22:41:00 M 42:55 242/18:40:04 G 41:59	COE (CALC) TGT = 2 P = 161.00 BV = 5 Y = 8.00 OM = 5.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.0650 DB AT 3.000 DB RT 0.050 EARTH R 23 P 159 $\beta = 8$	ISS YPR R = 8.45 P = 18.81 Y = 7.74 LVLH 001/22:41:00 M 242/18:40:04 G	Bias -XLV +ZVV 1st P3/P4 Overnight Park ORB R = 352.63 LVLH P = 109.73 Y = 5.90
26 002/01:01:00 M 04:52 242/21:00:04 G 03:56	COE (CALC) TGT = 2 P = 160.00 BV = 5 Y = 353.00 OM = 4.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.0650 DB AT 3.000 DB RT 0.050 EARTH R 340 P 159 $\beta = 8$	ISS YPR R = 352.56 P = 19.84 Y = 1.46 LVLH 002/01:01:00 M 242/21:00:04 G	Bias -XLV +ZVV 2nd P3/P4 Overnight Park ORB R = 358.61 LVLH P = 109.66 Y = 352.06
27 002/15:30:00 M 36:42 243/11:29:04 G 35:46	COE (CALC) TGT = 2 P = 157.00 BV = 5 Y = 317.00 OM = 3.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.0900 DB AT 3.000 DB RT 0.050 EARTH R 293 P 132 $\beta = 5$	ISS YPR R = 314.63 P = 16.60 Y = 346.85 LVLH 002/15:30:00 M 243/11:29:04 G	Bias -XLV +ZVV Mated TEA Post P3/4 Install ORB R = 16.62 LVLH P = 117.96 Y = 319.66
28 003/01:00:00 M 32:40 243/20:59:04 G 21:31:44	COE (CALC) TGT = 2 P = 159.00 BV = 5 Y = 45.00 OM = 178.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.0900 DB AT 3.000 DB RT 0.050 EARTH R 70 P 131 $\beta = 3$	ISS YPR R = 46.97 P = 14.68 Y = 193.19 LVLH 003/01:00:00 M 243/20:59:04 G	Bias -XLV -ZVV Mated TEA MMOD ORB R = 162.66 LVLH P = 63.09 Y = 317.76
29 004/01:10:00 M 18:13 244/21:09:04 G 17:17	COE (CALC) TGT = 2 P = 180.00 BV = 5 Y = 0.00 OM = 195.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 355 P 180 $\beta = -1$	ISS YPR R = 0.00 P = 0.00 Y = 195.00 LVLH 004/01:10:00 M 244/21:09:04 G	Bias -XLV -ZVV Water Dump 15 deg retrograde ORB R = 165.00 LVLH P = 90.00 Y = 0.00
30 004/04:10:00 M 54:34 245/00:09:04 G 53:38	COE (CALC) TGT = 2 P = 159.00 BV = 5 Y = 317.00 OM = 2.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.0600 DB AT 3.000 DB RT 0.050 EARTH R 291 P 133 $\beta = -2$	ISS YPR R = 315.03 P = 15.19 Y = 347.33 LVLH 004/04:10:00 M 245/00:09:04 G	Bias -XLV +ZVV Mated TEA SAW Conditioning ORB R = 16.15 LVLH P = 116.20 Y = 319.55

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
31 004/15:22:00 M 44:03 245/11:21:04 G 43:07	M50 (CALC) INRTL R = 307.00 MNVR P = 227.00 PYR Y = 24.00 MNVR A12/FREE/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 SUN R 233 P 36 $\beta = -4$	ISS YPR R = 25.04 P = 20.59 Y = 269.68 XPOP 004/16:30:00 M 245/12:29:04 G	4A SAW Deploy XPOP 1 rev
32 004/16:53:00 M 54:40 245/12:52:04 G 53:44	M50 (CALC) INRTL R = 302.00 MNVR P = 236.00 PYR Y = 30.00 MNVR A12/FREE/VERN HOLD A12/AUTO/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 SUN R 241 P 44 $\beta = -4$	ISS YPR R = 34.99 P = 19.78 Y = 270.15 XPOP 004/18:00:00 M 245/13:59:04 G	2A SAW Deploy XPOP 2 revs
33 004/19:56:00 M 20:18:10 245/15:55:04 G 16:17:14	COE (CALC) TGT = 2 P = 158.00 BV = 5 Y = 316.00 OM = 182.00 MNVR A12/AUTO/VERN HOLD A12/FREE/VERN	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 291 P 132 $\beta = -5$	ISS YPR R = 313.83 P = 15.63 Y = 166.32 LVLH 004/19:56:00 M 245/15:55:04 G	Bias -XLV -ZVV Mated TEA Post P3/4 Install ORB R = 197.58 LVLH P = 62.18 Y = 41.05
34 008/16:00:00 M 28:56 249/11:59:04 G 12:28:00	LVLH TRACK TGT = 2 P = 180.00 BV = 2 Y = 0.00 OM = 0.00 MNVR A12/AUTO/VERN HOLD (same)	RATE 0.1000 DB AT 3.000 DB RT 0.050 EARTH R 315 P 180 $\beta = -23$	LVLH R= 0.00 P= 90.00 Y= 0.00	-XLV +ZVV Mnvr To Undock
35 008/17:03:00 M 249/13:02:04 G				Undock 8/17:03
36 008/17:04:00 M 249/13:03:04 G				Flyaround Placeholder
37 008/17:20:00 M 31:32 249/13:19:04 G 30:36	LVLH TRACK TGT = 2 P = 90.00 BV = 5 Y = 0.00 OM = 0.00 MNVR B9/AUTO/VERN HOLD A9/AUTO/VERN	RATE 0.1300 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -23$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV SEP-1 17:32 SEP-2 18:00
38 008/18:35:00 M 42:30 249/14:34:04 G 41:34	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -23$	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV Simo Dump Region B
39 008/20:25:00 M 27:21 249/16:24:04 G 26:25	TGT= 4 BV = 5 P = 0.00 Y = 49.00 OM = 206.00 MNVR A14/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 90 P 49 $\beta = -24$	INRTL R=334.33 P=167.04 Y=330.31 RA= 164.472 DEC= 6.623N	OBSS STBD Survey
40 008/22:00:00 M 13:24 249/17:59:04 G 18:12:28	TGT= 4 BV = 5 P = 320.00 Y = 0.00 OM = 345.00 MNVR A14/AUTO/VERN HOLD A14/AUTO/ALT	RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 180 P 40 $\beta = -24$	INRTL R=130.40 P=161.25 Y= 49.52 RA= 164.532 DEC= 6.598N	Nose Cap Survey

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

Attitude Timeline

MET/GMT	ORBITER		REF ATT/REMARKS	EVENT
	MNVR OPTION	DAP E/S/ β		
41 008/23:30:00 M 44:58 249/19:29:04 G 44:02	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -24$	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV CWC Dump
42 009/01:30:00 M 249/21:29:04 G				NC-5 Multiaxis TIG 01:30
43 009/01:35:00 M 42:30 249/21:34:04 G 41:34	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -25$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
44 009/12:45:00 M 52:30 250/08:44:04 G 51:34	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 270.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -27$	LVLH R= 0.00 P=180.00 Y= 90.00	Bias -ZLV +YVV Water Dump
45 009/14:30:00 M 250/10:29:04 G				NC-6 Multiaxis TIG 14:30
46 009/14:35:00 M 42:30 250/10:34:04 G 41:34	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -27$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV
47 009/15:50:00 M 250/11:49:04 G		RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 29 P 73 $\beta = -27$	INRTL R=120.22 HOLD P=244.71 Y=327.04	FCS C/O
48 009/15:55:00 M 56:38 250/11:54:04 G 55:42	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -27$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Return to att. post FCS C/O
49 009/16:35:00 M 250/12:34:04 G		RATE 0.2000 DB AT 1.000 DB RT 0.020 SUN R 150 P 109 $\beta = -27$	INRTL R=240.76 HOLD P= 63.08 Y= 30.59	RCS Hotfire
50 009/16:50:00 M 54:56 250/12:49:04 G 54:00	LVLH TRACK TGT = 2 P = 90.00 BV = 3 Y = 0.00 OM = 0.00 MNVR A1/AUTO/VERN HOLD (same)	RATE 0.2000 DB AT 1.000 DB RT 0.020 EARTH R 0 P 90 $\beta = -27$	LVLH R= 0.00 P=180.00 Y= 0.00	-ZLV -XVV Return to att. post RCS Hotfire

ALL ORBITER DATA IN
MEAN OF 1950 AND PYR EULER SEQUENCE

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FLIGHT PLAN NOTES

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV-104 Atlantis
 Launch Window: 10 min
 Inclination: 51.6°
 Insertion Altitude: 122 nm
 Rendezvous Altitude: 185 nm
 Duration: 11+1+2 days

B. SHUTTLE AND STATION CREW

CDR/IV	– Brent Jett
PLT/R1 (Inspection, P3/4 Mate, EVA), R2 (P3/4 Unberth)	– Christopher Ferguson
MS1/EV1	– Joseph Tanner
MS2/EV3/R1 (Inspection, P3/4 Unberth), R2 (P3/4 Mate)	– Daniel Burbank
MS3/EV2/M1 (EVA2), Cargo Master	– Heidemarie Stefanyshyn-Piper
MS4/EV4/M1 (P3/4 Install, EVA1, EVA3)	– Steven MacLean (CSA)
ISS CDR	– Pavel Vinogradov
FE-1/M2 (P3/4 Install, EVA1, EVA2, EVA3)	– Jeffrey Williams
FE-2/IV	– Thomas Reiter

C. MAJOR EVENTS

<u>EVENT</u>	<u>FD</u>	<u>MET</u>	<u>GMT</u>	<u>LOCAL DATE</u>
Launch	01	00/00:00	240/19:59	14:59, (08/28/06)
OMS-2	01	00/00:39	240/20:38	15:38, (08/28/06)
NC1	01	00/02:57	240/22:56	17:56, (08/28/06)
NC2	02	00/15:51	241/11:50	06:50, (08/29/06)
NC3	02	01/03:24	241/23:23	18:23, (08/29/06)
NC4	03	01/15:10	242/11:09	06:09, (08/30/06)
Ti	03	01/16:41	242/12:40	07:40, (08/30/06)
ISS Docking	03	01/19:36	242/15:35	10:35, (08/30/06)
P3/P4 Unberth	03	01/22:20	242/18:19	13:19, (08/30/06)
P3/P4 Install	04	02/14:50	243/10:49	05:49, (08/31/06)
EVA 1	04	02/17:55	243/13:54	08:54, (08/31/06)
EVA 2	05	03/17:55	244/13:54	08:54, (09/01/06)
P4 4A SAW Deploy	06	04/15:57	245/11:56	06:56, (09/02/06)
P4 2A SAW Deploy	06	04/17:34	245/13:33	08:33, (09/02/06)
EVA 3	07	05/17:55	246/13:54	08:54, (09/03/06)
Undock	10	08/17:03	249/13:02	08:02, (09/06/06)
Sep1	10	08/17:32	249/13:31	08:31, (09/06/06)
Sep2	10	08/18:00	249/13:59	08:59, (09/06/06)
NC5	10	09/01:30	249/21:29	16:29, (09/06/06)
NC6	11	09/14:30	250/10:29	05:29, (09/07/06)
Deorbit	12	10/19:12	251/15:11	10:11, (09/08/06)
Landing	12	10/20:16	251/16:15	11:15, (09/08/06)

D. LANDING OPPORTUNITIES

		<u>Landing Orbit #</u>	<u>Site</u>	<u>TIG MET</u>	<u>Landing MET</u>	<u>Landing GMT</u>	<u>Landing CDT</u>
Nominal	Primary	172	KSC	10/19:12	10/20:16	251/16:15	11:15, (09/08/06)
	1 Rev Late	173	EDW	10/20:32	10/21:46	251/17:45	12:45, (09/08/06)
	Weather Alt	174	EDW	10/22:09	10/23:21	251/19:20	14:20, (09/08/06)
EOM +1	Primary	187	KSC	11/17:49	11/19:03	252/15:02	10:02 (09/09/06)
	1 Rev Late	188	KSC	11/19:24	11/20:38	252/16:37	11:37 (09/09/06)
	Weather Alt	189	EDW	11/20:54	11/22:08	252/18:07	13:07 (09/09/06)
EOM +2	Primary	203	KSC	12/18:11	12/19:25	253/15:24	10:24 (09/10/06)
	1 Rev Late	204	EDW	12/19:41	12/20:55	253/16:54	11:54 (09/10/06)
	Weather Alt	205	EDW	12/21:16	12/22:30	253/18:29	13:29 (09/10/06)

E. COMMUNICATIONS

The Summary Timeline contains several data bands for ground site and TDRS events. The TDRS band reflects the three prime TDRS satellites that will be used for orbiter coverage (East, West, and Z) and their longitudinal positions. Ku-band coverage is shown as unshaded bars.

TDRS-Z currently does not have the capability for DTV, therefore can not be used for critical damage detection. Nor is TDRS-Z considered acceptable for PAO events. OCA downlink is limited to 2 Mbps on TDRS-Z.

Prime TDRS Support: TDRS 46(LON: - 46° W), TDRS 171(LON: -171° W),
TDRS 275(LON -275° W)

Backup TDRS Support: TDRS 41 (LON: -41° W), TDRS 174(LON: -174° W)

U.S. Ground Sites: MIL, DFR, WLP, AGO

F. PAYLOADS

LAUNCH PACKAGE (LP) 12A

The primary objective of this flight is to deliver and integrate the completion of ISS Stage 12A with the P3/P4 Integrated Truss Segment (ITS). The P4 Photovoltaic (PV) Module (PVM) contains two beta gimbal/PV array assemblies, two Beta Gimbal Transition Structures (BGTs), one Integrated Equipment Assembly (IEA) – Type I, and associated cabling. The cargo element also includes 6 battery sets, PV radiator, 2 Unpressurized Cargo Carrier Attach Systems (UCCAS), Solar Array Rotating Joint (SARJ) and pre-integrated Orbiter Space Vision System (OSVS) targets. The CE occupies the majority of the payload bay and is attached in the payload bay by four active longeron trunnion latches and two active keel trunnion latches. Also part of the LP are the ISS Utilization payloads, which consist of six unpowered and three powered experiments.

Return Complement In-Cabin Requirements: ISS hardware, utilization hardware and support equipment that was launched in the Orbiter middeck or retrieved from the ISS.

G. SECONDARY PAYLOADS

1. EFFECT OF SPACEFLIGHT ON MICROBIAL GENE EXPRESSION & VIRULENCE (MICROBE)

The objective of the MICROBE payload is to characterize the effects of space on the virulence and physiology of three common microbes previously isolated from the space shuttle environment and to facilitate development of effective antimicrobials/therapeutics and effective systems for maintaining water potability.

The experiment consists of 12 Group Activation Packs (GAPs) will be loaded on the Shuttle for sortie operations. On orbit, the GAPs will be manually activated using a small hand crank, which will introduce fresh growth medium into the cultures. Following 24 ± 2 hours of passive ambient (cabin) incubation, the crew will manually terminate growth using the hand crank.

Crew time: Activation: One hour for 1 crew member. Termination (24 ± 2 hrs after Act): One hour for 1 crew member.

Currently the timeline does not support scheduling MICROBE. If an extra day is added to the mission then 8 of the 12 GAPs may be scheduled depending on the required activities on that day. The remaining 4 GAPs require activation as late as possible in the mission. Scheduling the 4 GAPs is dependent on the post undock timeline.

2. YEAST-GAP

This experiment will study how individual genes respond to microgravity conditions. The results could help scientists understand how mammalian cells will respond when they are grown in microgravity as well as improve culturing techniques of mammalian cells on Earth.

The experiment consists of 4 Group Activation Packs (GAPs) will be loaded on the Shuttle for sortie operations. On orbit, the GAPs will be manually activated using a small hand crank, which will introduce fresh growth medium into the cultures. Following 24 hours of passive ambient (cabin) incubation, the crew will manually terminate growth using the hand crank.

Crew time: Activation: 20 minutes for 1 crew member. Termination (24 hrs after act): 20 minutes for 1 crew member.

Currently the timeline does not support scheduling YEAST-GAP. It is to be transferred to the ISS to be performed by the Increment crew. However, if an additional day is added to the mission then the experiment may be scheduled on the Shuttle crew.

H. PAYLOADS OF OPPORTUNITY

1. Ram Burn Observation (RAMBO)

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

2. Maui Analysis of Upper-Atmospheric Injections (MAUI)

The objective of the MAUI payload is to obtain optical signatures of spacecraft plumes using optical telescope sensors and all-sky imagers at the Air Force Maui Optical and Supercomputing Site (AMOS). The MAUI payload may collect data during any encounter opportunity when the Orbiter support activities can be planned to meet the criteria defined.

No unique onboard hardware is required to establish the controlled conditions for the cooperative passes. The MAUI payload observes retrograde OMS engine firings, various Angle-Of-Attack (AOA) PRCS and VRCS thruster firings, and Shuttle burns to reboost ISS. These burns can be dedicated to MAUI or required by Shuttle.

I. ON ORBIT DETAILED TEST OBJECTIVES (DTOS)

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

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

2. DTO 851: EXTRAVEHICULAR ACTIVITY (EVA) INFRARED (IR) CAMERA

The purpose of this DTO is to test the application of an IR camera for on-orbit RCC inspection by the EVA crewmember. Ground testing and analysis will provide a baseline inspection technique and an initial characterization of the IR camera performance. However, on-orbit testing is required to validate the EVA inspection/damage detection techniques and characterize expected flight performance. This DTO will be carried as a get-ahead task on EVA 3.

Specific objectives of the DTO are to:

1. Measure the surface temperature profile of the WLE RCC under on-orbit solar heating. This will provide the data necessary to update ground thermal models and refine the inspection/damage detection technique.
2. Compare IR imagery of an RCC test article with known damage taken on-orbit to ground imagery of the same RCC test article. This will enable analysts to characterize the expected flight performance of the EVA IR camera based on ground test results.

J. STATION DEVELOPMENT TEST OBJECTIVE (SDTO)

1. SDTO 12004-U: SHUTTLE BOOSTER FAN BYPASS

The purpose of this SDTO is to increase Shuttle on orbit cryo margin by bypassing and deactivating the Shuttle booster fan (airlock fan) whenever possible on-orbit. The booster fan will not be activated in post insertion and will remain deactivated for most of the mission. It will however be activated for docking, and undocking to provide cooling to the powered docking avionics and to prevent condensation on the ODS hatch window. The fan will also be activated when the crew is working in the airlock (such as during EMU checkout) to provide good airflow. While docked, sufficient air circulation will be achieved through use of the Lab forward IMV fan so that CO2 levels on both the ISS and Shuttle can be controlled during the day by the ISS. A real-time call may instruct the crew to replace LiOH on the middeck to supplement the CO2 removal provided by the ISS. Acceptable flow rate through the IMV fan and proper CO2 levels on the Shuttle

throughout the docked timeframe must be confirmed on-orbit to prove this cryo reduction method a success.

2. SDTO 13005-U ISS STRUCTURAL LIFE VALIDATION AND EXTENSION

- a. For P3/P4 Installation (Internal Wireless Instrumentation System [IWIS] required)
- b. For Orbiter Undocking (Internal Wireless Instrumentation System [IWIS] Desired)

The overall purpose of this SDTO is to guarantee safety of the ISS structure and crew. Specific objectives are to accurately determine structural life usage, to expand ISS operations and to increase the life of the structure. This reconstruction requires actual or educated estimates of input (forcing function) and actual output (on-orbit sensor measurements) of the ISS response.

Measurement of the force input (i.e., thruster firing sequences, video of crew activity, etc.) and ISS response will aid reconstruction of ISS loads and structural life usage over the life of the ISS, and thus allowing life extension of the structure. Performed during P3/P4 Installation operations.

3. SDTO 15003-U MICROGRAVITY ENVIRONMENT DEFINITION

The ISS microgravity instrumentation will be used to measure the microgravity environment and enable prediction of acceptable microgravity experiment times for similar ISS structural configurations. The measurements will be performed prior to experimentation times to assure ISS operations are consistent with the microgravity requirements. Measurements will be made for specific expected attitudes and dynamic disturbances, in the case of STS-115 to characterize the SARJ checkout.

K. SHORT DURATION BIOASTRONAUTICS INVESTIGATION (SDBI)

1. Bioavailability And Performance Effects of Promethazine During Space Flight (SDBI 1490B)

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

2. Monitoring Latent Virus Reactivation and Shedding in Astronauts (SDBI 1493)

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

Space flight – induced alterations in the immune response will become increasingly important on long-duration missions, with one focus being the potential for reactivation and dissemination (shedding) of latent viruses. An example of a latent virus is herpes simplex type-1 (HSV-1), which infects 70 to 80 percent of adults. Its manifestation is classically associated with the presence of cold sores, pharyngitis, and tonsillitis, and is usually acquired through contact with the saliva, skin, or mucous membranes of an

infected individual. However, many recurrences are asymptomatic, resulting in shedding of the virus. Twenty subjects have been studied for Epstein-Barr virus. Three additional viruses will be focused upon with an increase in subject allotment.

3. Sleep-Wake Actigraphy and Light Exposure During Spaceflight (SDBI 1634)

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

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FLIGHT PLAN WALKTHROUGH
(WITH RATIONALE)

Generic Items

- A total of 11 CWCs and 5 PWRs are filled and transferred to ISS. CWCs and PWRs can not be filled at the same time since EECOM would not be able to tell how much water is in each. PWR fills can not occur during supply nozzle dumps.
- Transfer and Transfer Tagups are scheduled on non-EVA docked days.
- An estimated ~25 required man-hours for 12A generic transfer. EVA, water, and transfer briefings are scheduled separately from generic transfer.
- All nominal EVAs are performed using the ISS Airlock and the Campout prebreathe protocol. The shuttle crew is prime for all SSRMS and EVA tasks. MCC-H is prime for ISS commanding activities.
- International Space Station (ISS) Activities performed prior to Shuttle Docking:
 - Prepacking
 - RPM photography training
 - MSS Pre-launch C/O at WS#7
 - SSRMS Checkout Viewing
 - EMU, Safer, and PGT Checkout
 - SSAS Checkout
 - P3/P4 Dry Run
 - 12A Timeline Review
- Water dumps will be performed 15 degrees out of the approved attitude envelope. The Shuttle will maneuver the stack to the dump attitude and hold attitude control during all dump events. Three hours is the maximum excursion time from docked attitude for water dumps.
- The Flash Evaporator System (FES) will be powered through out the mission to support FES Dumps.

FD01

- Standard Flight Day (FD01) activities will be completed: Aft Controller Checkout, Elevon Park, RMS On-Orbit Initiate, Galley Iodine Removal Assembly (GIRA) Installation, Auxiliary Power Unit (APU) FD01 Reconfiguration, flight specific DAP updates and Group B Powerdown.
- Part I of PGSC Setup will be performed which includes setting up the OCA Router, Proshare, Color Printer, and the three A31Ps for WLES sensor data, ET Umbilical Photos (DOUG machine), and LCS. The crew will download the ET photos and WLES data to the A31Ps as soon as possible so OCA can downlink them for ground processing. The remaining PGSC configurations will be performed on FD02.
- Rendezvous burn NC-1 will be performed.
- The Wing Leading Edge (WLE) Sensor System will not be flown in a YVV attitude due to prop margins. The data downlink will begin for this as soon as OCA capabilities are up.
- PLT and MS2 will perform RMS checkout.
- Participating crewmembers will don equipment and begin logs for SDBIs (formerly known as DSOs).
- Crew will go to sleep at MET 0/06:00. ISS crew will also sleep shift in preparation for shuttle docking.

FD02

- Cabin Temp Controller and Heater B Reconfig are scheduled.
- Shuttle crew performs checkouts of 2 EMU suits and prepares for transfer.
- All starboard wing, nose cap, and port wing RCC are surveyed with the OBSS. Scans of the starboard wing and nose cap may not be performed while docked so these are scheduled first in the timeline. Three crew are required continuously during the survey with two performing OBSS/SRMS ops and one monitoring the LDRI and situational awareness

cameras. Only two crew are required during unberthing and berthing (non laser ops). The survey is scheduled to continue through the night passes due to time constraints, but the crew may elect to pause if the night time visuals are not sufficient.

- The LDRI survey attitude requires no sun within +/- 10 degrees of the laser FOV. Realtime Ku is required during the LDRI 3D calibration in OBSS unberth and during LDRI mode changes in Flat Fields. Each 90-minute surface scan requires as much real-time Ku as possible to downlink DTV. Inertial attitudes are scheduled to maximize Ku and to optimize LDRI lighting. Specifically, the wing attitudes put the sun on the wing in the X-Y plane ~60 degrees from the nose, and the nose cap attitude puts the sun on the nose pitched down 30 degrees to avoid sun in the crew's eyes. All maneuvers are scheduled to occur during SRMS/OBSS repositioning. If maneuvers are required during the survey, the scanning will be paused during mnvr init and term. VERN/ALT attitude hold is acceptable for LDRI. A special DAP (A14) is loaded in Unberth and used during the survey. Nose jets are disabled during the nose cap survey and ALT/tail only is selected per the procedure.
- Replay of survey data not obtained real-time is scheduled prior to presleep. INCO will provide LOS times in order to help the crew cue the tapes. A dedicated mnvr may be required in order to get enough LDRI downlink time. Note: TDRS Z does not have the capability for DTV, thus can not be used to downlink critical damage data.
- LCS notes: LCS will be used as a backup to LDRI. LCS has no lighting constraints and requires OCA downlink of data instead of video downlink. LCS requires masking from Ku radiation during surveys due to data degradation. LCS also requires certain S-band antennas be inhibited during data takes but this is handled by the procedure.
- Crew Cabin Survey to be performed following the OBSS Berth with the SRMS EE Camera by PLT, MS2, and MS4. Following the survey, the SRMS will remain powered up for the P3/P4 unberth on FD03.
- Rendezvous prep activities including Rendezvous tools set up and checkout, Centerline Camera Install and Orbiter Docking System (ODS) Ring Extension will be performed prior to docking with the ISS. Rendezvous burns NC-2 and NC-3 will be performed.
- P/TV01 Video Setup is completed.
- CWC fill equipment is set up and one bag is filled.
- Part II of PGSC Setup will be performed which includes setting up the remaining PGSCs and running the Late Update Disk on all PGSCs.
- CDR will future load the maneuver for the FD3 simo water dump. The maneuver will occur after wake up.
- The shuttle crew goes to bed one hour earlier in support of tomorrow's rendezvous activities.

FD03 - Docking

- A simo water dump will be performed as close to the start of Rendezvous ops as possible to minimize the amount of water dumped during the docked mission. The crew will set up the Collapsible Water Container (CWC) Condensate Collection System to collect orbiter condensate to also minimize waste dumps during the docked mission.
- With the current launch date the NH burn is not required so the crew will enter the RNDZ book later than usual. If the launch slips and the NH burn is required, the timeline will have to be replanned to include the burn.
- The EMUs will be removed from the Shuttle Airlock to facilitate transfers after docking. MS1 and MS2 will fill 4 EMU drink bags required for the EVAs prior to transfer. Prior to filling the EMU drink bags, MS1 will reconfigure the galley for overnight to allow iodinated water to be filled in the drink bags. After the fill, the galley is reconfigured back to the morning config.
- P/TV02 will support docking operations, setup performed by MS1.
- The orbiter will dock with the ISS. There are no ground site or lighting constraints for docking.
- The shuttle will maneuver the stack into the Bias -XLV +ZVV attitude. ISS will maintain attitude control during most of the docked timeframe using the Lab Control Moment Gyros

(CMGs). Shuttle will maintain attitude control during the 2A Solar Array Deploy, mated water dumps, and reboosts if propellant is available.

- After docking, leak checks will be performed on the PMA and ODS, the ODS will be prepared for ingress (centerline camera will be removed and ducting will be prepared), and hatches will be opened. P/TV04 will support hatch opening and ingress. A short ISS Safety Briefing will be given to the arriving shuttle crewmembers.
- The SODF and ISS laptop hard drives will be transferred to the ISS crew to support joint operations.
- The PGSC network will be reconfigured from the rendezvous configuration after docking.
- The Flash Evaporator System (FES) will be shut down after docking to save power.
- The SSRMS will be reconfigured for the P3/P4 Handoff. The SRMS was left powered on following the FD02 orbiter surveys.
- The crew will grapple the P3/P4 with the SRMS and remove it from the orbiter payload bay. The P3/P4 truss will then be handed over to the SSRMS where it will remain during the crew sleep period. The crew will pick up the next morning with the Pre-Install during the Campout EVA Prep.
- EMU Reconfiguration Pre-EVA will transfer EMUs and EVA Equipment to ISS. Rechargeable EVA Battery Assembly (REBA) batteries will be installed into the EMUs and REBA powered equipment will be verified operational on both EMUs. EVA tools will be transferred to the ISS and will be prepared for EVA 1 the next day. Equipment Lock (E/L) Prep will be performed to install helmet light batteries and apply antifog. The tools for EVA1 will be setup and the EVA cameras will be prepared. Most crewmembers will participate in an EVA 1 Procedure Review.
- The hardware for O2 Prebreathe will be set up.
- The ISS Overnight Campout protocol will be used to support EVA 1. MS1 and MS3 will begin the mask pre-breathe/tool configuration, followed by the ISS Airlock 10.2 psi depress. The crewmembers will then sleep in the ISS airlock overnight. The EVA crewmembers cannot initiate repress until at least 8:40 has been spent at 10.2 psi.
- Prior to crew wakeup on FD04, MCC-H completes the P1/P3 SSAS Prep for Mate activities.

FD04 – EVA 1

- P3/P4 will be installed on the SSAS using an auto sequence. The SRMS will then support P3/P4 installation with video cues. Third Stage is required for EVA loads. No exercise is permitted during SSAS ops. EVA is given a GO to go off SCU power when 3 of 4 bolts are tight. Once bolting is completed, the SSRMS is reconfigured to support EVA1.
- Thirty minutes following crew wake, there will be an airlock repress to 14.7 psi. The EVA crewmembers will have 30 minutes while wearing their Quick-Don masks for hygiene and gathering breakfast. The EVA and IVA crewmembers will ingress the ISS Airlock prior to closing the hatch. This will be followed by a 20 minute depress to 10.2 psi. The EVA crew will then doff the O2 mask and have another 10 minute post-sleep period and prior to donning their EMUs. The EMUs are then purged with pure O2 and the Airlock will be repressurized to 14.7 psi. The Node hatch may then be opened. The EVA crewmembers will then perform a 60 minute in-suit prebreathe followed by Crew Lock hatch closing, Crew Lock depress, and finally Post Depressurization where the EVA crew will go off the Service and Cooling Umbilical (SCU) and Phase Elapse Time (PET) clock starts counting. Crew Lock depress will utilize the depress pump down to 1.5 psi. At 3 psi, the Crew Lock valves will be opened to vacuum. Once Crew Lock depress is complete, EVA crewmembers will egress the Crew Lock and begin EVA setup. P/TV07 will support EVA activities.
- EVA 1 (PET ~6:30): EVA Activities:
 - MCC will give GO after Lower Tray Prep is complete for P3/P1 Lower Tray Utility connections. EV/IV will give GO after umbilicals are connected so MCC can perform Lower Tray Recovery and Upper Tray Prep. MCC will give GO after Upper Tray Prep is complete for P3/P1 Upper Tray Utility connections.
 - Between the Lower and Upper powerup/powerdown, the AFT/FWD Wing Beta Gimbal Restraints and AFT/FWD Solar Array Blanket Box (SABB) Restraints will be released, the P4 Keel Pin is rotated, and the AFT/FWD Wing SABB are unstowed.

- SARJ Preparation (Deploy and Verify DLAs 1 and 2 are engaged, and opens MLI Cover Fasteners)
- A FES Water Dump is scheduled prior to the EVA.
- The Mission Control Center (MCC) will command activation of the P4.
- When EVA cleanup is complete, EVA crewmembers will ingress ISS Crew Lock and perform Pre-repress (EVA crew back on SCU and EVA complete), close the EVA hatch, and repress the Crew Lock. Post EVA procedures and EVA preparation activities for the next EVA (Battery Stowage Assembly (BSA) and REBA battery charge initiate) will be performed. EMUs will be swapped with second set of EMUs and transferred to orbiter Airlock for recharging overnight. Water recharge of the EMUs will be performed. Equipment Lock (E/L) Prep will be performed to install helmet light batteries and apply anti-fog in preparation for EVA 2 tomorrow.
- CWC #2 is filled and transferred to ISS.
- Most crewmembers will participate in an EVA 2 Procedure Review.
- The ISS Overnight Campout protocol for MS2 and MS4 is the same as on FD03.
- During crew sleep, MCC will start charging 4A and 2A batteries.

Flight Day 5 – EVA 2

- EVA 2 (PET ~6:30): (See the FD04 explanation of pre and post EVA activities.)
- EVA specific tasks are:
 - Remove AFT (4A) SSU Shroud.
 - Remove 6 SARJ launch restraints.
 - Remove 4 SARJ MLI covers and 16 launch locks.
 - Deploy the SARJ braces (4).
- Post EVA will include Metox Regeneration Init. The metox canisters were used for the first two EVAs, and in order to have enough for EVA 3, the canisters must be regenerated. BSA and EMU battery charging will be performed in support of EVA 3 on FD07.
- CWC #3 and #4 are filled and transferred to ISS.
- Transfer time is scheduled for critical transfer items.
- After the EVA, the SSRMS will maneuver and park overnight in preparation for 4A deploy the next day. Also, P/TV09 will be set up to support SARJ Checkout and Solar Array Deploy to bay 1 performed overnight and the remaining Solar Array deploy activities on FD06.
- The day ends with a SIMO and condensate CWC dump. The dump is scheduled just prior to the Solar Array deploy in order to minimize the number of future docked dumps and prevent possible contamination of the Solar Array wings. Shuttle will perform the MNVR and hold attitude for the dump. Shuttle will then handover control to ISS and ISS will MNVR back to the nominal attitude.
- During crew sleep, MCC will activate and check out SARJ and continue charging 4A and 2A batteries. The SARJ checkout must be completed prior to Solar Array deploy to avoid collision of P4 arrays with the P6 port array. MCC will also initiate 4A and 2A Solar Array Mast 1 deploy during crew sleep.

Flight Day 6

- Solar Array Deploy. Deploy will be initiated by MCC during crew sleep on FD05, MCC will deploy the Solar Array mast to 1 bay for 4A and 2A. During post sleep, the crew will reconfigure the SSRMS Cameras to view 4A deploy. ISS will maneuver to the 4A Solar Array Deploy attitude. During the first insulation period after post sleep, the crew is expected to deploy the 4A Solar Array mast to 15.5 bays (49%) then to 31.5 bays (100%). After 4A is deployed and visual verifications are complete, the SSRMS will be set up in preparation for 2A Solar Array Deploy. ISS will maneuver to the 2A Solar Array Deploy attitude and hand over attitude control to shuttle. Shuttle will maintain attitude control during the 2A deploy and for an additional insulation period. The 2A Solar Array mast is deployed to 15.5 bays (49%), held for 30 minutes for thermal conditioning and then complete deployment to 31.5 bays (100%). The timeline protects for 1 insulation period per Solar Array and an additional insulation period for a contingency deploy. After these three

insolation periods, due to ISS thermal a 6 hr. recovery period in the nominal attitude is required prior to another attempt at deploying. Shuttle will maneuver back to the nominal TEA attitude prior to handing attitude control back over to ISS. After the mid-day meal, the SSRMS will perform a double walk-off to the lab. This is in support of EVA 3 and WS#8 checkout which is scheduled after EVA 3.

- WCS filter check is scheduled.
- Generic transfer activities are scheduled during the second half of the day.
- PWR Fills 1, 2, and 3 are scheduled.
- A PAO event is scheduled in the latter half of the day.
- EVA Tool Config and Equipment Lock Prep are scheduled in preparation for EVA 3.
- CWC #5 and #6 will be filled and transferred to ISS.
- Most crewmembers will participate in an EVA 3 Procedure Review.
- ISS Overnight Campout Protocol for MS1 and MS3 is the same as on FD03.

Flight Day 7

- EVA 3 (PET ~6:30): (See the FD04 explanation of pre and post EVA activities.) EVA specific tasks are:
 - Install P6 BGA Shoulder Bolt Clips.
 - Release the PV Radiator Cinches (6) and Winch bars (2) in order to deploy the radiator.
 - Remove the P3 Keel pin and Drag link. To clear the MT translation path.
 - P3 Cleanup.
 - SASA R&R.
 - Install SGANT AGIT Heat Shield.
 - Remove and Replace S1 S-Band ORUs.
 - MISSE 5 retrieval.
- Post EVA will include Metox Regeneration Init. BSA and EMU battery charging will be performed in support of any contingency EVAs.
- CWCs #7 and #8 will be filled and transferred to ISS.
- MCC-H will translate the MT to WS8 for a checkout of the work site. After the checkout, the MT will be translated to WS4.

Flight Day 8

- The crew has a Half Off-Duty day (4 hours).
- P/TV08 will be set up for external ops. Operations must occur during a day pass.
- PFCs are scheduled for the Shuttle crew. A Crew Conference and Crew Photo are scheduled after the meal. P/TV05 is scheduled to support the crew conference.
- PWR Fill 4 and 5 are scheduled.
- The O2 system will be reconfigured for O2 transfer.
- CWCs #9 and #10 will be filled and transferred to ISS.
- Metox and BSA battery charge will be terminated. REBA will be removed on this day.
- Generic transfer activities are scheduled throughout the afternoon.
- The OBSS is unberthed by the SSRMS and handoff from the SSRMS to the SRMS is completed. Two SRMS crew and two SSRMS crew are required for this entire operation. During SSRMS unberth of the OBSS and maneuver to handoff position, the SRMS cameras will provide clearance monitoring. The SRMS/OBSS will remain deployed and powered for the remaining docked mission.
- Pre-Undock EVA Reconfigs will be performed, suits transferred to Shuttle.
- The SSRMS will walk-off to Worksite 4 in support of Port wing survey.
- O2 Repress is performed.

Flight Day 9

- CWCs #11 will be filled and transferred to ISS.
- The SSRMS maneuvers to support survey viewing. The OBSS is used to scan the Port wing for Late Inspection requirements. Following the LDRI scan, the OBSS is maneuvered to the previous OBSS handoff position in preparation for undock.

- More generic transfer activities are scheduled throughout the day.
- RNDZ Tools C/O will be performed in preparation for Undocking.
- There is a PAO event scheduled for this day. An additional PAO event (Canadian Event) is scheduled immediately after for CDR and MS4.
- The O2 transfer will be terminated by the ground and the crew will tear down the hardware after O2 terminate is complete.
- O2 Repress is performed.
- P/TV04 will be setup to capture the farewell and hatch closure.
- The sleep period is scheduled 1 hour early to prepare for deorbit opportunities.

Flight Day 10

- O2 Repress is performed.
- After both crews say their good-byes, the hatches are closed and ODS leak checks are performed.
- C/L Camera Install will be performed.
- P/TV03 is scheduled to capture undocking.
- Undocking at 8/17:03. There is a placeholder for flyaround, however, no flyaround is expected due to prop constraints resulting from the addition of Late Inspection and re-rendezvous requirements.
- After final sep, the orbiter maneuvers in support of a hour-long SIMO dump.
- The PGSC network will be reconfigured from the rendezvous configuration after undocking.
- COMM String 1 C/O (Part A) will be performed.
- Post ISS EVA Entry Prep is scheduled in preparation for entry.
- The maneuver to a sun avoidance inertial attitude protects the LDRI sensor during the Starboard and Nose Cap surveys. Following the surveys, the OBSS is berthed.
- During OBSS berthing, the orbiter maneuvers in support of a Condensate CWC dump.
- After the surveys are complete a condensate CWC dump is performed.
- The NC5 burn is scheduled to support re-rendezvous.
- The sleep period is scheduled 30 minutes earlier to prepare for deorbit opportunities.

Flight Day 11

- Prior to NC6 burn, the orbiter will maneuver in support of short Condensate CWC dump.
- The NC6 burn is scheduled to support re-rendezvous.
- FCS C/O, RCS Hot Fire, PILOT Ops, and Deorbit Briefing.
- L-1 COMM checks are performed for MILA and Dryden ground sites.
- Cabin Stow.
- PAO Event for all crewmembers on the eve of their return.
- The crew has 2 hrs of Off-Duty time scheduled in the afternoon.
- A FES Water Dump is scheduled after Off Duty.
- Entry Video Setup (P/TV05) will be performed.
- Crew will stow the Ergometer and Ku-Band Antenna, and set up MFX.
- PGSC Part I Stowage (stowing PGSCs not needed for MFX on entry morning).
- COMM String 1 C/O (Part B) is performed to switch back to COMM string 2.

Flight Day 12

- Standard Entry Day activities, including IMU align, GIRA stow, Air Sample, OCAC Stow, H2O Tank Reconfig, and MNVR to -XSI.
- SCBI actilight watches are stowed after final log.
- PGSC Part II Stowage. Color printer stowed.
- Deorbit Prep & landing at KSC.



FLIGHT PLAN

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