

Flight Plan

STS-99

(STS-99 FRR)

Mission Operations Directorate
Operations Division

Final
December 7, 1999

Major Event	MET		Central	
Launch	0	0:00	Thu	1/13/2000 12:11
SRTM Mast Deploy	0	05:20	Thu	1/13/2000 17:31
1st of 159 Mapping Orbits	0	14:39	Fri	1/14/2000 02:50
EKAM Setup	0	23:00	Fri	1/14/2000 11:11
SRTM Deact/Mast Stow	10	10:00	Sun	1/23/2000 22:11
EKAM Mission End	10	10:00	Sun	1/23/2000 22:11
Deorb TIG	11	03:14	Mon	1/24/2000 15:25
KSC Landing	11	04:08	Mon	1/24/2000 16:19

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



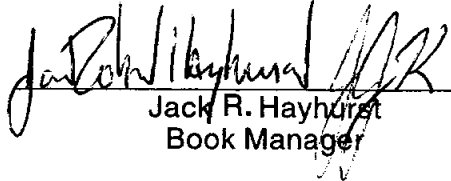
Verify this is the correct version for the pending operation (training, simulation or flight).
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MISSION OPERATIONS DIRECTORATE

STS-99 FLIGHT PLAN

FINAL
December 7, 1999

PREPARED BY:

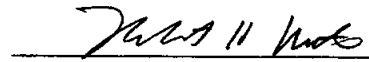


Jack R. Hayhurst
Book Manager

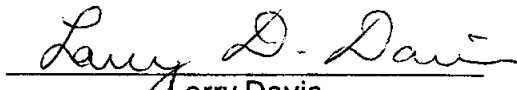
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	FLT PLN-1910	FLT PLN-1924	FLT PLN-1938A	MULTI-1494
	FLT PLN-1911	FLT PLN-1925	FLT PLN-19344	
	FLT PLN-1912A	FLT PLN-1926	FLT PLN-1945	
	FLT PLN-1914	FLT PLN-1927	FLT PLN-1947	
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	FLT PLN-1916	FLT PLN-1929	FLT PLN-1949	
	FLT PLN-1917	FLT PLN-1930A	FLT PLN-1951	
	FLT PLN-1918	FLT PLN-1931		
	FLT PLN-1919	FLT PLN-1932		
	FLT PLN-1920	FLT PLN-1933		

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Book Manager/Lead FAO	DO4/J. Hayhurst	281-244-1027
Lead Timeliner	DO4/J. Keeton	281-483-6882
Lead Pointer	DO4/M. Benavides	281-244-1023

FLIGHT PLAN
STS-99

LIST OF EFFECTIVE PAGES

FINAL 12/07/99

Sign Off	* 99/FIN	3-13	99/FIN
ii	* 99/FIN	3-14	99/FIN
iii	* 99/FIN	3-15	99/FIN
iv	* 99/FIN	3-16	99/FIN
v	* 99/FIN	3-17	99/FIN
vi	* 99/FIN	3-18	99/FIN
vii	* 99/FIN	3-19	99/FIN
viii	* 99/FIN	3-20	99/FIN
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CC 10-3	* 99/FIN
CC 10-4	* 99/FIN
CC 10-5	* 99/FIN
10-6	* 99/FIN

* - Omit from flight book

STS-99 FLIGHT PLAN FABRICATED ITEMS

<u>Title</u>	<u>Ref. Page</u>	<u>Item No.</u>
DAP A, FRONT TOP	CC 10-2	FLT PLN-1a/99/O/A
DAP A, FRONT BOTTOM	CC 10-3	FLT PLN-1b/99/O/B
DAP B, BACK TOP	CC 10-4	FLT PLN-1aa/99/O/A
DAP B, BACK BOTTOM	CC 10-5	FLT PLN-1bb/99/O/B

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INTRODUCTION

The STS-99 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. Bond copies of the flight plan will have all detailed pages. Flight copies will have detailed page covering FDs 1 & 2 only. Subsequent FD detailed pages will be uplinked in daily execute packages.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive, and the requirements of the STS-99 Flight Requirements Document.

The flight profile used for this Flight Plan is for a launch date of January 13, 2000, at 12:11 CDT. Orbiter inertial attitudes are expressed relative to a mean of 1950 (M50) reference frame.

NSTS-37326, Shuttle Crew Scheduling Constraints (SCSC), Basic, July 1998, has been used to build the timelines contained in this Flight Plan.

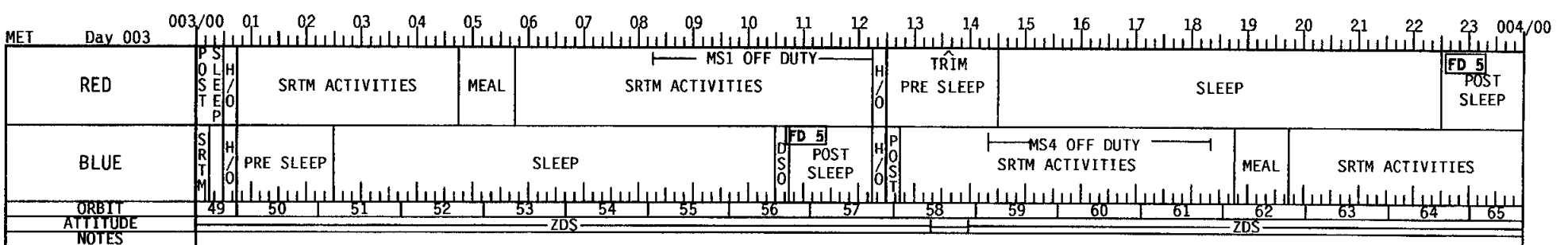
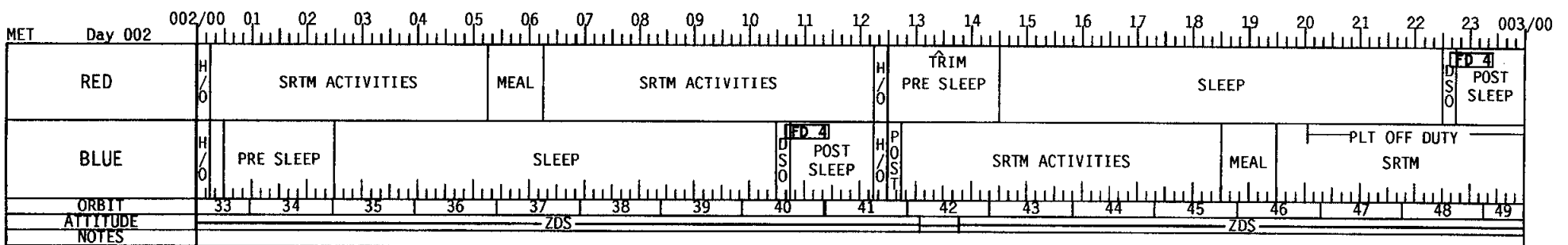
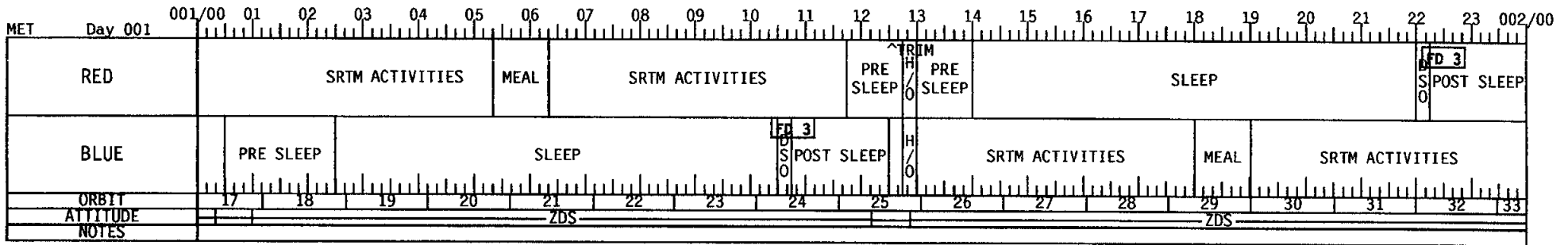
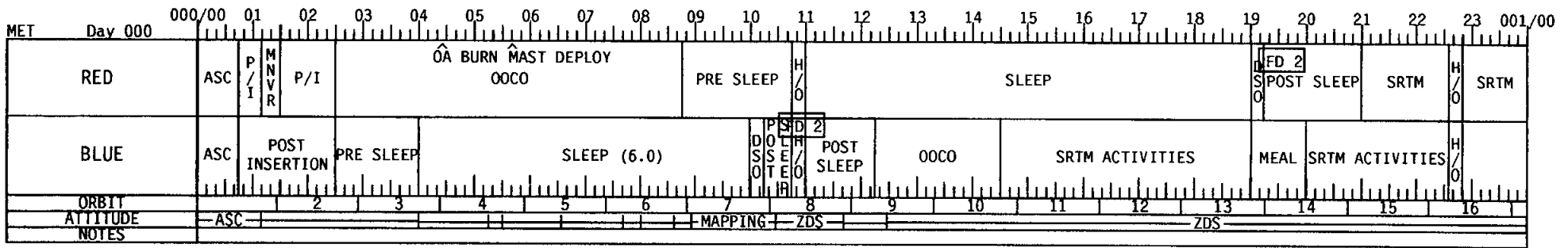
The following STS-99 SCSC Exceptions have been submitted and are in the process of being approved: 99-1, 99-2, and 99-3

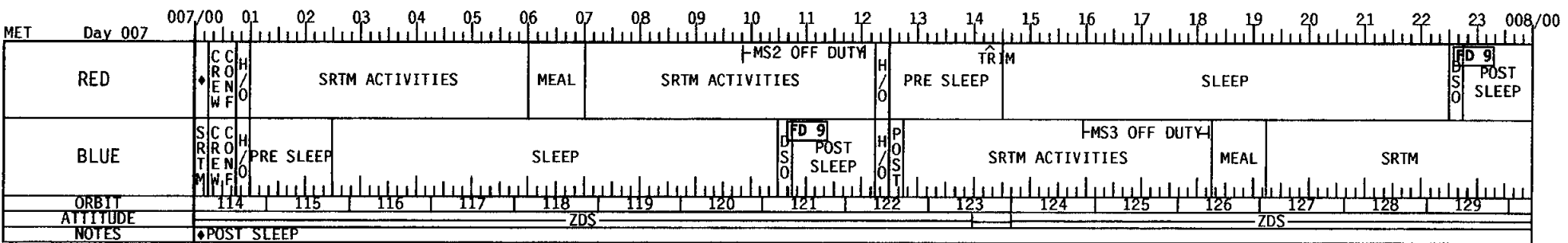
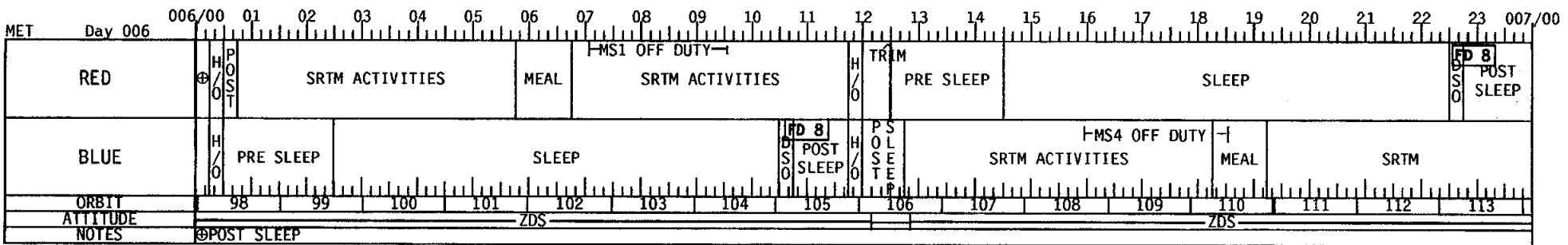
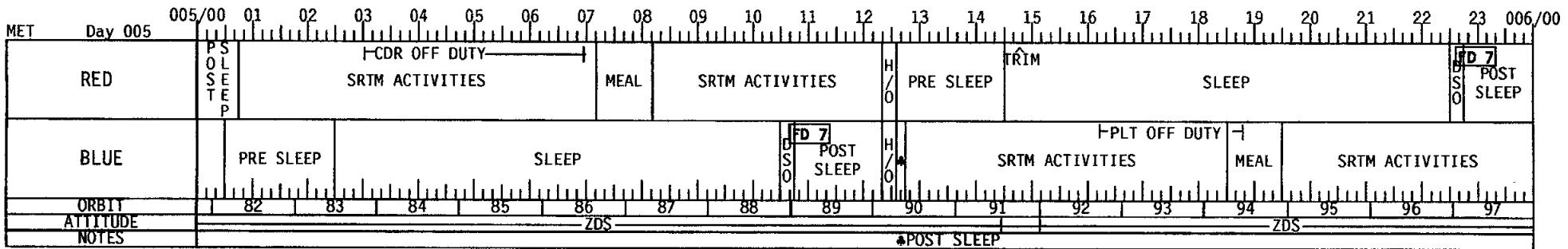
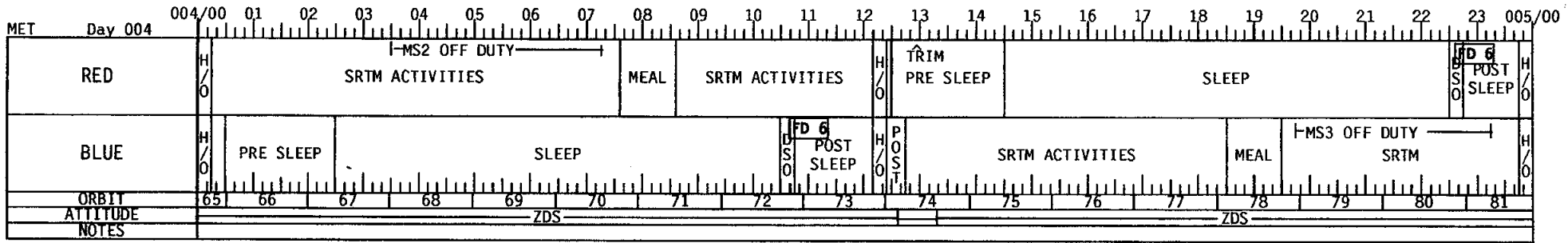
The timeline formats used in this Flight Plan are based on JSC-19933, Timeline Format Definitions and Standard Notes, Rev C, May 1990.

The Flight Plan timeline pages, as well as other flight planning information, are available on the Space Shuttle Flight Planning web page at the following address:
<http://www4.jsc.nasa.gov/shuttle/fltplan/sts99>

OVERVIEW TIMELINE

OVERVIEW TIMELINE





MET	Day 008	008/00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	009/00	
RED			POST	SRTM ACTIVITIES				MEAL	CDR OFF DUTY				SRTM ACTIVITIES	H/O	TRIM	PRE SLEEP	SLEEP							FD 10	POST SLEEP		
BLUE		SRTM	H/O	PRE SLEEP	SLEEP										FD 10	POST SLEEP	H/O	TRIM	PRE SLEEP	SRTM ACTIVITIES				MEAL	SRTM		
ORBIT		130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146									
ATTITUDE		ZDS											ZDS														
NOTES		POST SLEEP																									

MET	Day 009	009/00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	010/00
RED		PS	POST	H/O	SRTM ACTIVITIES				MEAL	SRTM ACTIVITIES				TRIM	PRE SLEEP	H/O	PRE SLEEP	SLEEP							FD 11	POST SLEEP
BLUE		SRTM	H/O	PRE SLEEP	SLEEP										FD 11	POST SLEEP	H/O	POST SLEEP	SRTM ACTIVITIES			MEAL	SRTM ACTIVITIES			
ORBIT		146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162								
ATTITUDE		ZDS											ZDS													
NOTES																										

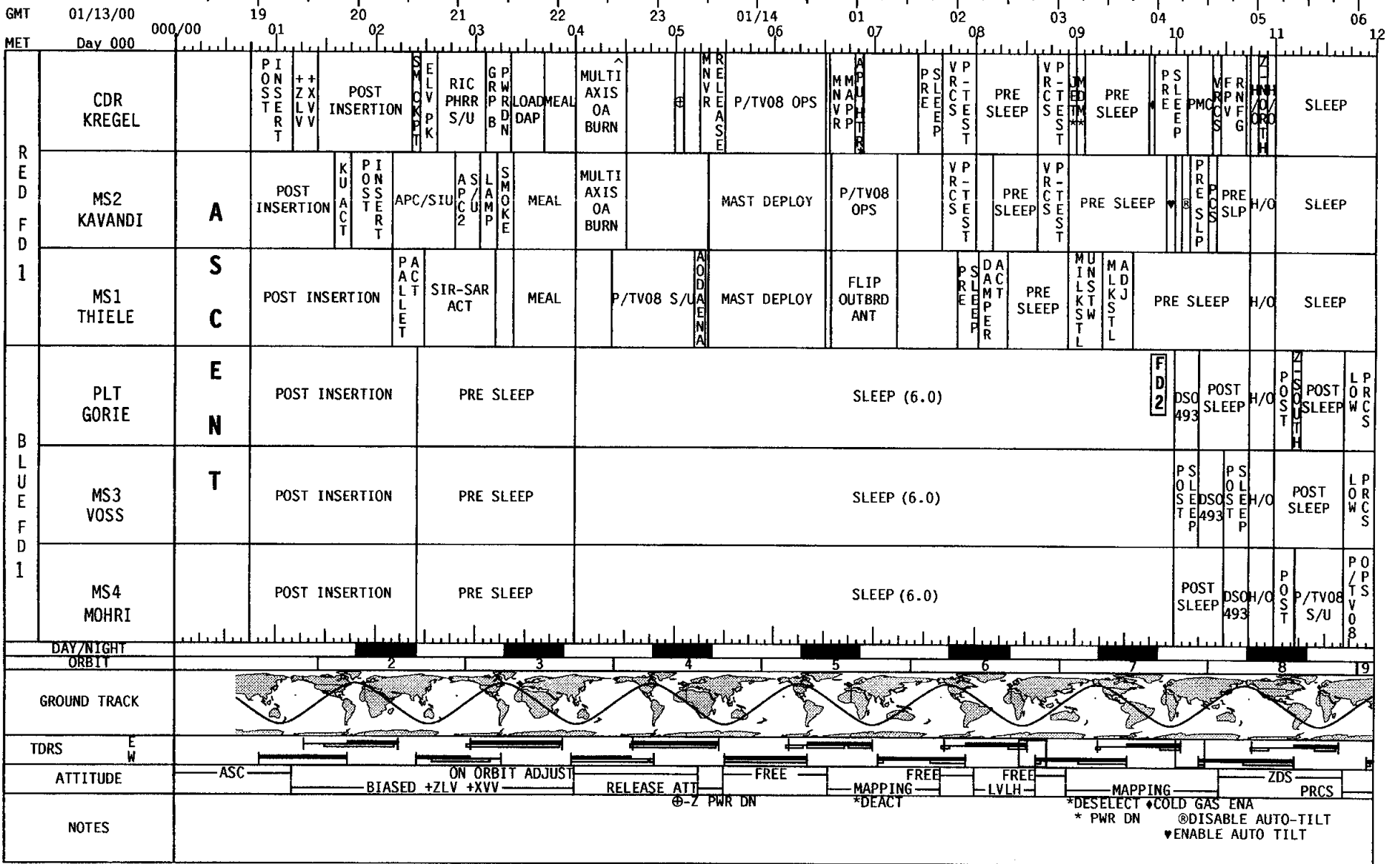
MET	Day 010	010/00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	011/00						
RED		PS	POST	H/O	SRTM	DB	R	I	E	F	SRTM ACTIVITIES		MEAL	SRTM ACTIVITIES			SRTM	DEACTIVATION	PRE SLEEP	H/R	H/O	SLEEP (6.5)							FD 12	POST SLEEP	D/O	PREP
BLUE		SRTM		H/O	PRE SLEEP	DB	R	I	E	F	SLEEP										PS	POST	FD 12	POST SLEEP	FCS	C/O	CABIN STOW		MEAL	D/O	PREP	
ORBIT		162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178														
ATTITUDE		ZDS											MAST RETRACT				-ZLV+YVV															
NOTES																																

MET	Day 011	011/00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	012/00
RED		D/O		PREP	DB	R	I	E	F	K																
BLUE		D/O		PREP	DB	R	I	E	F	S																
ORBIT		179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194									
ATTITUDE		DEORBIT PREP											* JIG:011/03:14													
NOTES													* KSC LNDG:011/04:08				* B/U LNDG 011/05:38							* B/U LNDG 011/17:37		

SUMMARY TIMELINE

SUMMARY TIMELINE

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
13/18:11	000/00:00	13/12:11	13 CT	-19.05			13 Jan 2000	99	FINAL
14/06:11	000/12:00	14/00:11							



GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
14/06:11	000/12:00	14/00:11	14 CT	-21.39			14 Jan 2000	99	FINAL
14/18:11	001/00:00	14/12:11							

GMT 01/14/00 12 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 18 001/00
MET Day 000

RED FD 1	MAPPING MUST BEGIN TO ACHIEVE COMPLETE MAPPING MISSION SLEEP																	FD2	POST SLEEP	FILTER CLEANING	H/O	EKAM S/U	PMCO			
	CDR KREGEL																		DSO 493							
BLUE FD 2	SLEEP																	PSOL SOSTE 493 P	POST SLEEP			H/O				
	MS2 KAVANDI																									
SLEEP																	POST SLEEP	DSO 493	POST SLEEP			H/O				
MS1 THIELE	LOW PRCS TEST	POST SLEEP	MAGR UNSTOW & S/U	POST														MEAL	MEAL	FFC PRG	CRYO 02 SN SRC CK	AFT CO	ERGO S/U	H/O	EKAM S/U	
PLT GORIE	LOW PRCS TEST	PHRR 4 S/U	MAID J K	POST	AODA OCA DUMP													MEAL				CREW D/L		H/O		
MS3 VOSS	PO P TS V 0 8	POST SLEEP																MEAL					ERGO S/U	H/O	PRE SLEEP	
MS4 MOHRI																										P/T V 0 8
DAY/NIGHT ORBIT																										
GROUND TRACK																										
TDRS E W																										
ATTITUDE																	ZDS									
NOTES																	ΔMAGR UNSTOW & S/U ◊GIRA NIGHT CNFG ●PHRR MAN QUICK WRITE ▽PHRR MANUAL STOP ▲GIRA MORN CNFG MANUAL									

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
14/18:11	001/00:00	14/12:11	14 CT	-23.75			14 Jan 2000	99	FINAL
15/06:11	001/12:00	15/00:11							

GMT	01/14/00	19	20	21	22	23	01/15	01	02	03	04	05	06
MET	Day 001	001/00	01	02	03	04	05	06	07	08	09	10	11
RED FD 2	CDR KREGEL	HIGH PRCS TEST					MEAL	MEAL		EXERCISE			PRE SLEEP
	MS2 KAVANDI	HIGH PRCS TEST	EXERCISE				MEAL						P/TV08 S/U
	MS1 THIELE			EXERCISE			MEAL					CREW D/L	
BLUE FD 2	PLT GORIE		PRE SLEEP				SLEEP						POST SLEEP
	MS3 VOSS		PRE SLEEP				SLEEP						POST SLEEP
	MS4 MOHRI	P/ S/ V/ U/ 08	P/TV08 OPS	PRE SLEEP			SLEEP						POST SLEEP
DAY/NIGHT ORBIT			17	18	19	20	21	22	23	24	25		
GROUND TRACK													
TDRS													
ATTITUDE		PRCS ————— ZDS —————											
NOTES													

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
15/06:11	001/12:00	15/00:11	15 CT	-26.13			15 Jan 2000	99	FINAL
15/18:11	002/00:00	15/12:11							

GMT	01/15/00		07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	18		
MET	Day 001		12	13	14	15	16	17	18	19	20	21	22	23	002/00							
RED FD2	CDR KREGEL	TRIM BURN	H/O	PRE SLEEP				SLEEP												FD3	POST SLEEP	
	MS2 KAVANDI	PRE SLEEP	H/O	PRE SLEEP				SLEEP													PS OL SE TE P	POST SLEEP
	MS1 THIELE	PRE SLEEP	H/O	PRE SLEEP				SLEEP														POST SLEEP
BLUE FD3	PLT GORIE	TRIM BURN	H/O	PS LN E PT	POST																	
	MS3 VOSS	POST SLEEP	H/O																			
	MS4 MOHRI	P/TV08 OPS	H/O	POST SLEEP																		
DAY/NIGHT	[Day/Night Cycle]																					
ORBIT	[Orbit Diagram]																					
GROUND TRACK	[Ground Track Map]																					
TDRS	[TDRS Diagram]																					
ATTITUDE	[Attitude Diagram]																					
NOTES	* FILTER CHECK ◊GIRA MORNING CONFIG * STRING 1 C/O *GIRA NIGHT CNFG																					

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
15/18:11	002/00:00	15/12:11							
16/06:11	002/12:00	16/00:11	15 CT	-28.54			15 Jan 2000	99	FINAL

GMT	01/15/00	19	20	21	22	23	01/16	01	02	03	04	05	06
MET	Day 002	002/00	01	02	03	04	05	06	07	08	09	10	11
RED FD3	CDR KREGEL	H/O	OPMC			EXERCISE	MEAL	MEAL					PRE SLEEP
	MS2 KAVANDI	H/O			W S T I E T			MEAL			EXERCISE		
	MS1 THIELE	H/O	T A P E C H G		T A P E C H G	O C A D /	T A P E C H G		MEAL	T A P E C H G	O C A D /	T A P E C H G	EXERCISE
BLUE FD3	PLT GORIE	H/O		PRE SLEEP									F04 DSO 493 POST SLEEP
	MS3 VOSS	H/O		PRE SLEEP									PS OL S E D S O T E P 493 POST SLEEP
	MS4 MOHRI	H/O		PRE SLEEP									POST SLEEP DSO 493 POST SLEEP
DAY/NIGHT ORBIT			33	34	35	36	37	38	39	40	41		
GROUND TRACK													
TDRS													
ATTITUDE		ZDS											
NOTES		*FES DMP TERM W/FES											

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
16/06:11	002/12:00	16/00:11	16 CT	-30.95			16 Jan 2000	99	FINAL
16/18:11	003/00:00	16/12:11							

GMT 01/16/00
MET Day 002

RED FD 3	BLUE FD 4	DAY/NIGHT ORBIT	GROUND TRACK	TDRS	ATTITUDE	NOTES	
CDR KREGEL PS L E H/O PS R L E E P TRIM BURN PRE SLEEP SLEEP DSO 493 POST SLEEP FD4	MS2 KAVANDI H/O PRE SLEEP SLEEP PS O L S E T E P DSO 493 POST SLEEP	MS1 THIELE H/O PRE SLEEP SLEEP POST SLEEP DSO 493 POST SLEEP	PLT GORIE PS O L S E T E P H/O POST TRIM BURN EXERCISE MEAL MEAL OFF DUTY	MS3 VOSS PS O L S E T E P H/O PFC EXERCISE MEAL CREW RD/L	MS4 MOHRI PS O L S E T E P H/O P/TVO8 OPS MEAL EXERCISE	DAY/NIGHT ORBIT GROUND TRACK TDRS ATTITUDE NOTES	*PRE *PRE * FILTER CHECK *GIRA MORN CNFG *GIRA NIGHT CNFG *DT0 700-17A OPS *DT0 700-17A OPS *DT0 700-17A OPS *STRING I C/O

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
16/18:11	003/00:00	16/12:11	16 CT	-33.35			16 Jan 2000	99	FINAL
17/06:11	003/12:00	17/00:11							

GMT	01/16/00	19	20	21	22	23	01/17	01	02	03	04	05	06
MET	Day 003	003/00	01	02	03	04	05	06	07	08	09	10	11
RED FD4	CDR KREGEL	POST SLEEP H/O	NINORFH	PMCTO	NINORFH	PAC	NINORFH	MEAL	MEAL	NINORFH	EXERCISE	NINORFH	PRE SLEEP
	MS2 KAVANDI	POST SLEEP H/O		PSTE	PAC	OCA	TAPECHG	MEAL		NINORFH	TAPECHG	EXERCISE	TAPECHG
	MS1 THIELE	POST SLEEP H/O	TAPECHG		EXERCISE	MEAL	TAPECHG		TAPECHG		OFF DUTY		
	PLT GORIE	PSLEE H/O	PRE SLEEP			SLEEP						FDS	DSO 493 POST SLEEP
BLUE FD4	MS3 VOSS	TAPECHG H/O	PRE SLEEP			SLEEP						PSOL	EDSO 493 POST SLEEP
	MS4 MOHRI	PSLEE H/O	PRE SLEEP			SLEEP						POST SLEEP	DSO 493 POST SLEEP
	DAY/NIGHT ORBIT		49	50	51	52	53	54	55	56	57		
GROUND TRACK													
TDRS													
ATTITUDE	ZDS												
NOTES	*FES DMP TERM W/FES												

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
17/06:11	003/12:00	17/00:11	17 CT	-35.74	☾		17 Jan 2000	99	FINAL
17/18:11	004/00:00	17/12:11							

GMT 01/17/00
MET Day 003

RED FD 4	BLU FD 5	DAY/NIGHT	ORBIT	GROUND TRACK	TDRS	ATTITUDE	NOTES			
CDR KREGEL H/O PRE SLEEP TRIM BURN PRE SLEEP SLEEP DSC 493 POST SLEEP	MS2 KAVANDI H/O PRE SLEEP SLEEP DSC 493 POST SLEEP	MS1 THIELE OD FU FT Y H/O PRE SLEEP SLEEP DSC 493 POST SLEEP	PLT GORIE PS OL SE TP H/O PS OL SE TP TRIM BURN PS OL SE TP PGR BOOT PS OL SE TP TAPE CHG EXERCISE MEAL MEAL GPS OPS2 TEST*	MS3 VOSS PS OL SE TP H/O PS OL SE TP TAPE CHG EXERCISE OCA D/L TAPE CHG MEAL PAO TAPE CHG	MS4 MOHRI PS OL SE TP H/O P/TV08 S/U P/TV08 OPS OFF DUTY MEAL PS TE VT OU 4 PAO EXERCISE	DAY/NIGHT ORBIT 57 58 59 60 61 62 63 64 65	GROUND TRACK 	TDRS E W ZDS TRIM BURN ZDS	ATTITUDE * FILTER CHECK •GIRA NIGHT CNFG φGIRA MORN CNFG *DIO 700-14	NOTES

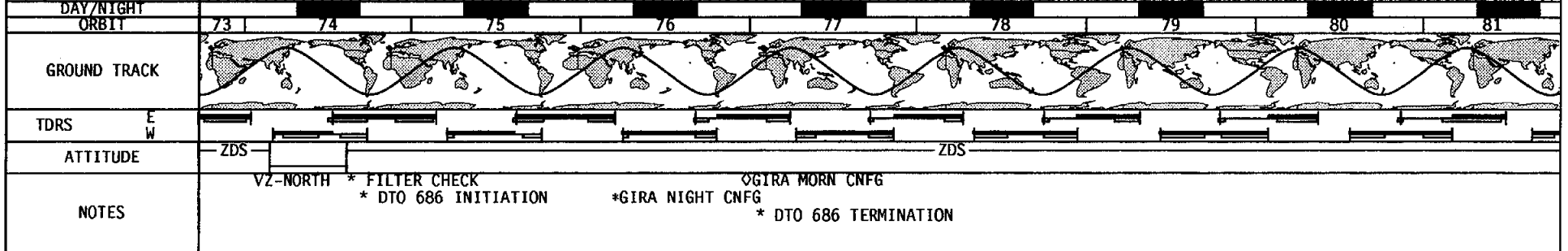
GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
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18/06:11	004/12:00	18/00:11							

GMT	01/17/00	19	20	21	22	23	01/18	01	02	03	04	05	06
MET	Day 004	004/00	01	02	03	04	05	06	07	08	09	10	11
RED FD5	CDR KREGEL	H/O	PS SLEEP	OPMO		EXERCISE	POP/S P/TV04		MEAL	MEAL			PRE SLEEP
	MS2 KAVANDI	H/O	POST SLEEP	PFC		OFF DUTY			MEAL				EXERCIS
	MS1 THIELE	APECHG	POST SLEEP		TAPECHG	EXERCISE		TAPECHG	MEAL	OCA D/L	TAPECHG		P/TV08 S/U
BLUE FD5	PLT GORIE	H/O		PRE SLEEP				SLEEP					FD6 DSO 493 POST SLEEP
	MS3 VOSS	H/O		PRE SLEEP				SLEEP					PS L S E E P DSO 493 POST SLEEP
	MS4 MOHRI	H/O		PRE SLEEP				SLEEP					POST SLEEP DSO 493 POST SLEEP
DAY/NIGHT ORBIT			65	66	67	68	69	70	71	72	73		
GROUND TRACK													
TDRS													
ATTITUDE		ZDS											
NOTES		*FES DMP TERM W/FES											

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
18/06:11	004/12:00	18/00:11	18 CT	-40.53	☉		18 Jan 2000	99	FINAL
18/18:11	005/00:00	18/12:11							

GMT 01/18/00
MET Day 004

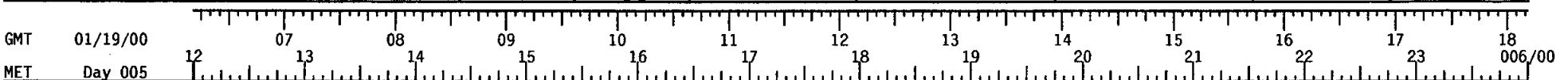
RED FD 5	CDR KREGEL	PRE SLP H/O	TRIM BURN	PRE SLEEP											SLEEP	FD6	POST SLEEP	WINSITET	H/O																									
RED FD 5	MS2 KAVANDI	EXERCISE H/O	PRE SLEEP												SLEEP	PSOLSTEP	DSO 493	POST SLEEP	H/O																									
RED FD 5	MS1 THIELE	TAPCHG H/O	PRE SLEEP												SLEEP	POST SLEEP	DSO 493	POST SLEEP	TAPCHG H/O																									
BLUE FD 6	PLT GORIE	POST H/O	TRIM BURN	Z										EXERCISE	Z										MEAL	MEAL	Z										OFF DUTY	H/O						
BLUE FD 6	MS3 VOSS	POST H/O	P/TV08 OPS	ACT	TAPCHG										EXERCISE	*	Z										MEAL	OFF DUTY										H/O						
BLUE FD 6	MS4 MOHRI	POST H/O	PSOLSTEP	DTO 686 S/U	DTO 686*	PAO A/G	TAPCHG										OFF DUTY	OCAD/L	TAPCHG										MEAL	PFC	PS/TTVIP	TAPCHG										EXERCISE	PO/PTS	H/O



GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
18/18:11	005/00:00	18/12:11	18 CT	-42.96			18 Jan 2000	99	FINAL
19/06:11	005/12:00	19/00:11							

GMT	01/18/00	19	20	21	22	23	01/19	01	02	03	04	05	06
MET	Day 005	005/00	01	02	03	04	05	06	07	08	09	10	11
RED FD 6	CDR KREGEL	PS SLEEP	OPMC POST	POST	POST	POST	POST	POST	POST	POST	POST	POST	POST
	MS2 KAVANDI	POST SLEEP	WST TERM	EXERCISE	FILTER CLEANING					MEAL			
	MS1 THIELE	POST SLEEP	PAO A/G	TAPE CHG					EXERCISE	TAPE CHG	MEAL		
BLUE FD 6	PLT GORIE		PRE SLEEP						SLEEP				FD7 DSO 493 POST SLEEP
	MS3 VOSS		PRE SLEEP						SLEEP				PS SLEEP DSO 493 POST SLEEP
	MS4 MOHRI		PRE SLEEP						SLEEP				POST SLEEP DSO 493 POST SLEEP
DAY/NIGHT ORBIT		81	82	83	84	85	86	87	88	89			
GROUND TRACK													
TDRS													
ATTITUDE	ZDS												
NOTES	*TAPECHG *FILTER CHECKS *FES DMP TERM W/FES												

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
19/06:11 19/18:11	005/12:00 006/00:00	19/00:11 19/12:11	19 CT	-45.37	☉		19 Jan 2000	99	FINAL

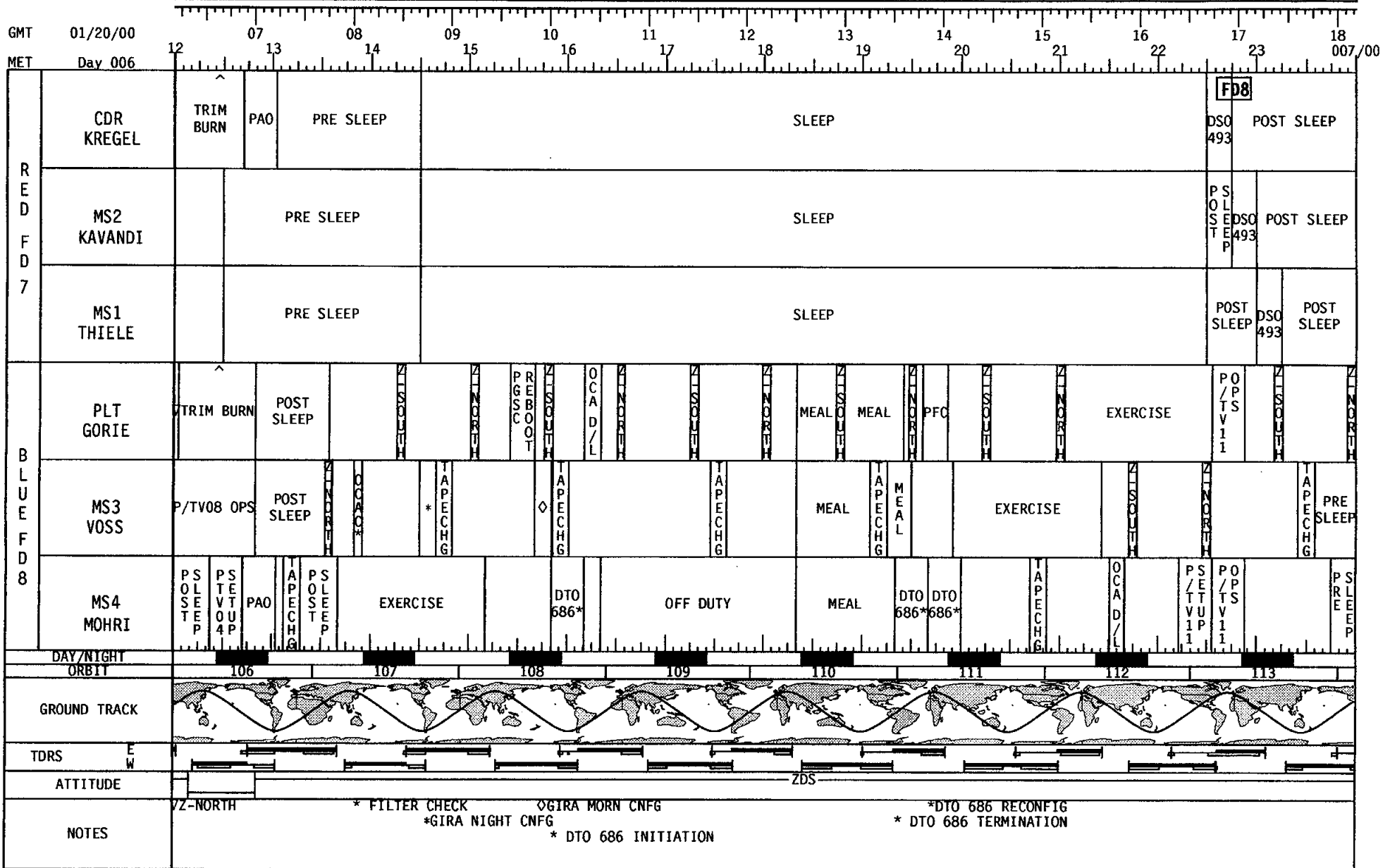


Crew Member	Activity		Time		Notes		
	Start	End	Start	End	Activity	Notes	
RED FD 6	CDR KREGEL	PREH/O SLP	12:00	13:00	PRE SLEEP		
	MS2 KAVANDI	PREH/O	12:00	13:00	PRE SLEEP		
	MS1 THIELE	H/O	12:00	13:00	PRE SLEEP		
BLUE FD 7	PLT GORIE	PS O L S E T P	12:00	13:00	TRIM BURN		
	MS3 VOSS	PS O L S E T P	12:00	13:00	EXERCISE		
	MS4 MOHRI	PS E T T V U P 1	12:00	13:00	P/TV08 S/U		
DAY/NIGHT ORBIT		90		91		92	
GROUND TRACK							
TDRS		ZDS					
ATTITUDE		ZDS					
NOTES		♦ DTO 700-17A OPS ◎ DTO 700-17A OPS ⊕ GIRA MORN CNFG Δ DTO 700-17A OPS ◊ DTO 700-17A OPS ◆ GIRA NIGHT CNFG * DTO 686 TERMINATION ● DTO 700-17A OPS ▲ DTO 700-17A OPS * DTO 686 INITIATION					

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
19/18:11 20/06:11	006/00:00 006/12:00	19/12:11 20/00:11	19 CT	-47.78			19 Jan 2000	99	FINAL

GMT	01/19/00	19	20	21	22	23	01/20	01	02	03	04	05	06
MET	Day 006	006/00	01	02	03	04	05	06	07	08	09	10	11
RED FD7	CDR KREGEL	PS LSE H/O	POST SLEEP	PMO	DSO 802		EXERCISE	MEAL					PS LSE H/O
	MS2 KAVANDI	PS LSE H/O	PS LSE H/O	DSO 802 S/U	DSO 802		MEAL	MEAL	WI ST TET		EXERCISE		P/TV08 S/U
	MS1 THIELE	PS LSE H/O	OPFC	TA PE CH G	EXERCISE		MEAL		TA PE CH G		OFF DUTY		TA PE CH G
BLUE FD7	PLT GORIE		PRE SLEEP					SLEEP					FD8 DSO 493 POST SLEEP
	MS3 VOSS	H/O	PRE SLEEP					SLEEP					PS LSE H/O DSO 493 POST SLEEP
	MS4 MOHRI	H/O	PRE SLEEP					SLEEP					POST SLEEP DSO 493 POST SLEEP
DAY/NIGHT ORBIT			98	99	100	101	102	103	104	105			
GROUND TRACK													
TDRS													
ATTITUDE		ZDS											
NOTES		*FES DMP TERM W/FES											

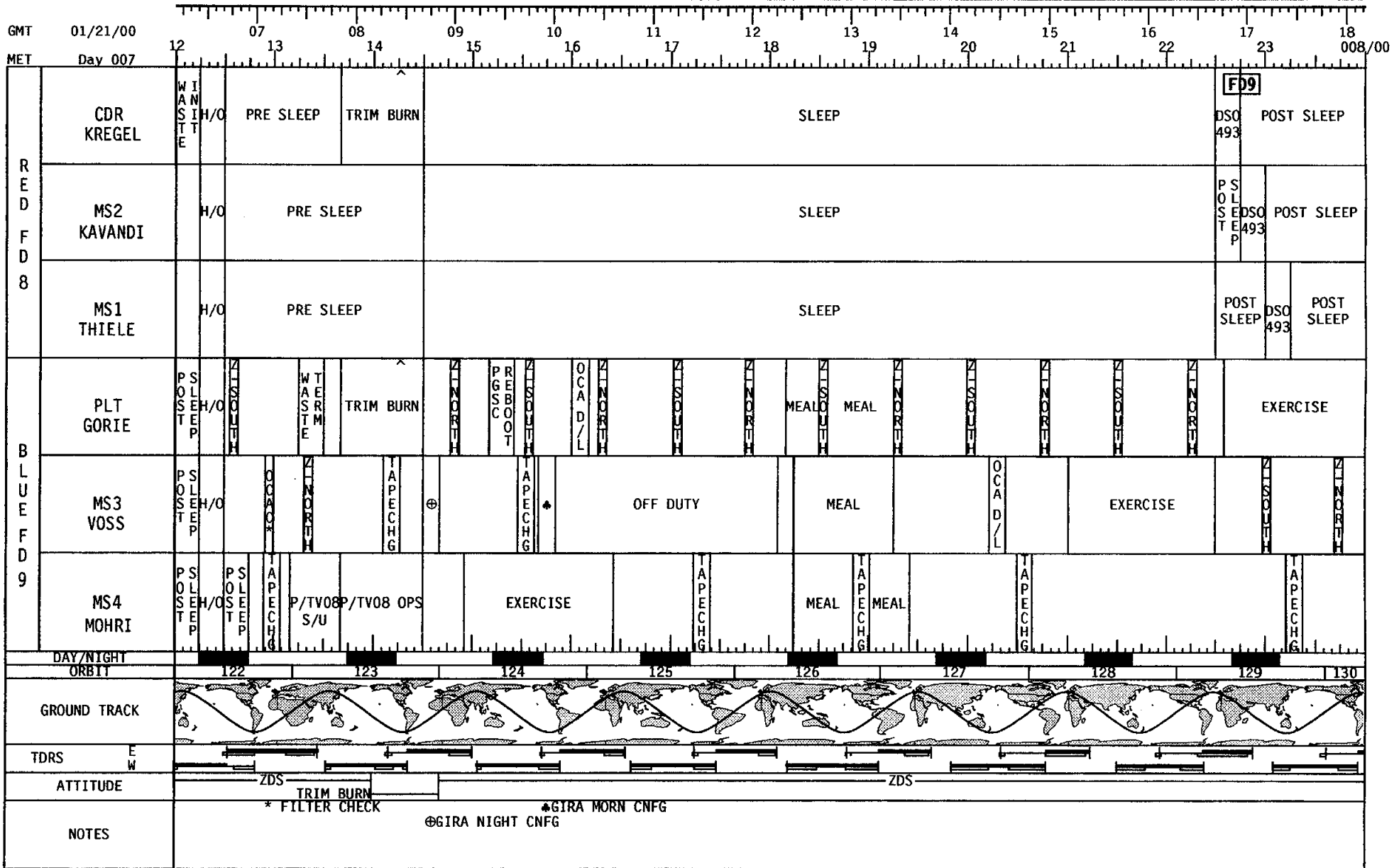
GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
20/06:11	006/12:00	20/00:11	20 CT	-50.16	☉		20 Jan 2000	99	FINAL
20/18:11	007/00:00	20/12:11							



GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
20/18:11	007/00:00	20/12:11	20 CT	-52.51			20 Jan 2000	99	FINAL
21/06:11	007/12:00	21/00:11							

GMT	01/20/00	19	20	21	22	23	01/21	01	02	03	04	05	06
MET	Day 007	007/00	01	02	03	04	05	06	07	08	09	10	11
RED FD 8	CDR KREGEL	PS SLEEP	CREW CONF	H/O	PMCC	PFCC	EXERCISE	MEAL	MEAL	PS TV 03	PO TV 03	PRE SLEEP	AP ECHG
	MS2 KAVANDI	PS SLEEP	CREW CONF	H/O			EXERCISE	MEAL	MEAL	AP ECHG		OFF DUTY	
	MS1 THIELE	PS SLEEP	CREW CONF	H/O	AP ECHG			MEAL		AP ECHG	OC AD/L		EXERCISE
BLUE FD 8	PLT GORIE		CREW CONF	H/O	PRE SLEEP			SLEEP				DSO 493	POST SLEEP
	MS3 VOSS	PS TV 04	CREW CONF	H/O	PRE SLEEP			SLEEP				PS SLEEP	DSO 493
	MS4 MOHRI	PS SLEEP	CREW CONF	H/O	PRE SLEEP			SLEEP				POST SLEEP	DSO 493
DAY/NIGHT ORBIT			114	115	116	117	118	119	120	121	122		
GROUND TRACK													
TDRS													
ATTITUDE	ZDS												
NOTES	*COMPACT											*FES DMP TERM W/FES	

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
21/06:11 21/18:11	007/12:00 008/00:00	21/00:11 21/12:11	21 CT	-54.85			21 Jan 2000	99	FINAL



GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
21/18:11	008/00:00	21/12:11	21 CT	-57.18			21 Jan 2000	99	FINAL
22/06:11	008/12:00	22/00:11							

GMT	01/21/00	19	20	21	22	23	01/22	01	02	03	04	05	06
MET	Day 008	008/00	01	02	03	04	05	06	07	08	09	10	11
RED FD 9	CDR KREGEL	PS SLEEP	H/O	POST SLEEP	PMC	PAO	EXERCISE	MEAL	MEAL	OFF DUTY	OFF DUTY	PRE SLEEP	PS SLEEP
	MS2 KAVANDI	PS SLEEP	H/O	POST SLEEP	T A P E C H G	PAO	MEAL		EXERCISE			CREW D/L	
	MS1 THIELE	PS SLEEP	H/O	POST SLEEP	P S T E V T O U P	PAO	EXERCISE	MEAL	T A P E C H G	T A P E C H G	O C A D /L	T A P E C H G	
B L U E F D 9	PLT GORIE	H/O	PRE SLEEP				SLEEP					FD10	POST SLEEP
	MS3 VOSS	H/O	PRE SLEEP				SLEEP					PS SLEEP	POST SLEEP
	MS4 MOHRI	H/O	PRE SLEEP				SLEEP					POST SLEEP	POST SLEEP
DAY/NIGHT ORBIT			130	131	132	133	134	135	136	137	138		
GROUND TRACK													
TDRS													
ATTITUDE		ZDS											
NOTES		*EXERCISE											
		*FES DMP TERM W/FES											

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
22/06:11 22/18:11	008/12:00 009/00:00	22/00:11 22/12:11	22 CT	-59.49	○		22 Jan 2000	99	FINAL

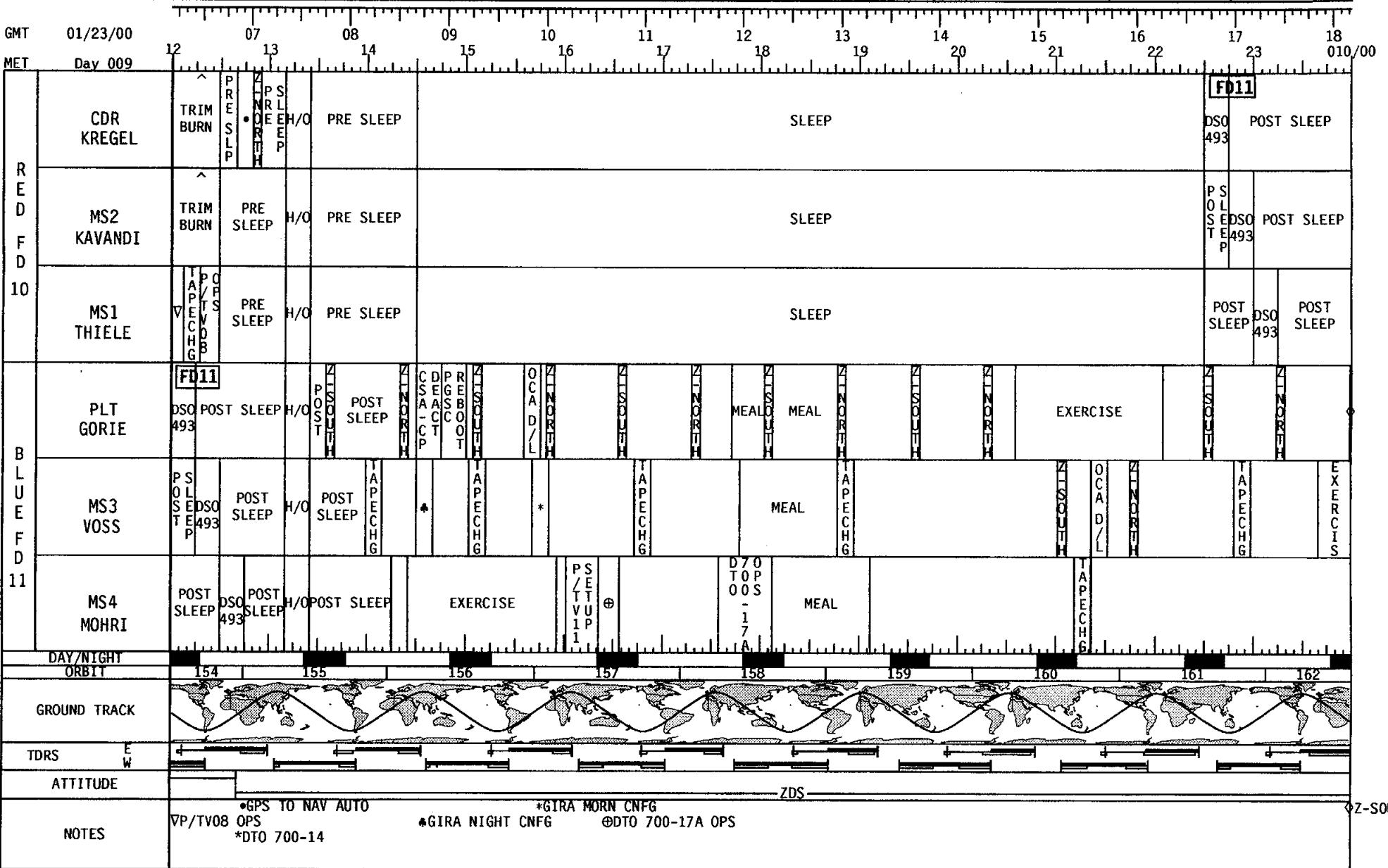
GMT 01/22/00
MET Day 008

RED FD 9	MS2 KAVANDI	MS1 THIELE	PLT GORIE	MS3 VOSS	MS4 MOHRI				
CDR KREGEL	H/O PRE SLEEP TRIM BURN PRE SLEEP	H/O PRE SLEEP	H/O POST SLEEP TRIM BURN	H/O POST SLEEP	H/O P/TVO8 P/TVO8 OPS				
MS2 KAVANDI	H/O PRE SLEEP	H/O PRE SLEEP	POST SLEEP	POST SLEEP	EXERCISE				
MS1 THIELE	H/O PRE SLEEP	H/O PRE SLEEP	POST SLEEP	POST SLEEP	EXERCISE				
PLT GORIE	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP				
MS3 VOSS	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP				
MS4 MOHRI	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP	POST SLEEP				
DAY/NIGHT ORBIT	138	139	140	141	142	143	144	145	146
GROUND TRACK									
TDRS	ZDS TRIM BURN								
ATTITUDE	ZDS								
NOTES	* FILTER CHECK ◎ DTO 700-17A OPS ▲ DTO 700-17A OPS ▼ GIRA MORN CNFG Δ GIRA NIGHT CNFG								

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
22/18:11	009/00:00	22/12:11	22 CT	-61.75			22 Jan 2000	99	FINAL
23/06:11	009/12:00	23/00:11							

GMT	01/22/00	19	20	21	22	23	01/23	01	02	03	04	05	06
MET	Day 009	009/00	01	02	03	04	05	06	07	08	09	10	11
RED FD 10	CDR KREGEL	POST SLEEP	PMC	CP RH E O W T O	H/O			EXERCISE		MEAL	MEAL	FILTER CLEANING	
	MS2 KAVANDI	POST SLEEP		CP RH E O W T O	H/O					MEAL		EXERCISE	
	MS1 THIELE	POST SLEEP		CP RH E O W T O	H/O		EXERCISE			MEAL			
BLUE FD 10	PLT GORIE			CP RH E O W T O	H/O		PRE SLEEP					SLEEP	
	MS3 VOSS			CP RH E O W T O	H/O		PRE SLEEP					SLEEP	
	MS4 MOHRI			CP RH E O W T O	H/O		PRE SLEEP					SLEEP	
DAY/NIGHT													
ORBIT		146	147	148	149	150	151	152	153	154			
GROUND TRACK													
TDRS													
ATTITUDE	ZDS												
NOTES	<p style="text-align: right;">PHRR TAPE C/O *FES DMP TERM W/FES</p>												

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
23/06:11	009/12:00	23/00:11	23 CT	-63.95	☾		23 Jan 2000	99	FINAL
23/18:11	010/00:00	23/12:11							



GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
23/18:11	010/00:00	23/12:11	23 CT	-66.05			23 Jan 2000	99	FINAL
24/06:11	010/12:00	24/00:11							

GMT	01/23/00	19	20	21	22	23	01/24	01	02	03	04	05	06									
MET	Day 010	010/00	01	02	03	04	05	06	07	08	09	10	11									
RED FD 11	CDR KREGEL	POST SLEEP	PMO	L-1 COMM	H/O	D/O BRIEF	REST	L-1 COMM	CABIN STOW	REST	CS AT BO I W	MEAL	MEAL	REST	CABIN STOW	REST	MEAL	EXERCISE	REST	MS NT V O R W	P/TV08 OPS	
	MS2 KAVANDI	POST SLEEP			H/O	D/O BRIEF	REST	CABIN STOW	EXERCISE	MEAL	CABIN STOW	REST	MEAL	REST	EXERCISE	REST	MEAL	P/TV08 S/U	REST		MAST STOW	
	MS1 THIELE	POST SLEEP			H/O	D/O BRIEF	REST	CS AT BO I W D/L	CABIN STOW	REST	MEAL	REST	MEAL	REST	CABIN STOW	EXERCISE	CABIN STOW		REST			MAST STOW
BLUE FD 11	PLT GORIE	REST	REST	REST	H/O	D/O BRIEF	REST	PRE SLEEP														SLEEP
	MS3 VOSS	EXERCIS			H/O	D/O BRIEF	REST	PRE SLEEP														SLEEP
	MS4 MOHRI	REST			H/O	D/O BRIEF	REST	PRE SLEEP														SLEEP
DAY/NIGHT ORBIT		162	163	164	165	166	167	168	169	170												
GROUND TRACK																						
TDRS																						
ATTITUDE	ZDS																					
NOTES	* FILTER CHECK						*FES DMP TERM W/FES						MAST RETRACT									

PHRR 5
PHRR 4
SIR/S

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
24/06:11 24/18:11	010/12:00 011/00:00	24/00:11 24/12:11	24 CT	-68.05			24 Jan 2000	99	FINAL

GMT 01/24/00
MET Day 010

REDFD 11	REDFD 11	BLUFD 11	BLUFD 11
CDR KREGEL PRE SLEEP SLEEP (6.5)	MS2 KAVANDI PRE SLEEP SLEEP (6.5)	MS1 THIELE PRE SLEEP SLEEP (6.5)	PLT GORIE SLEEP POST SLEEP CABIN STOW ERGO STOW MEAL DEORBIT PREP
MS3 VOSS SLEEP POST SLEEP CABIN STOW MEAL DEORBIT PREP	MS4 MOHRI SLEEP POST SLEEP CABIN CONFIG/STOW ERGO STOW MEAL DEORBIT PREP		

DAY/NIGHT ORBIT



TDRS ATTITUDE

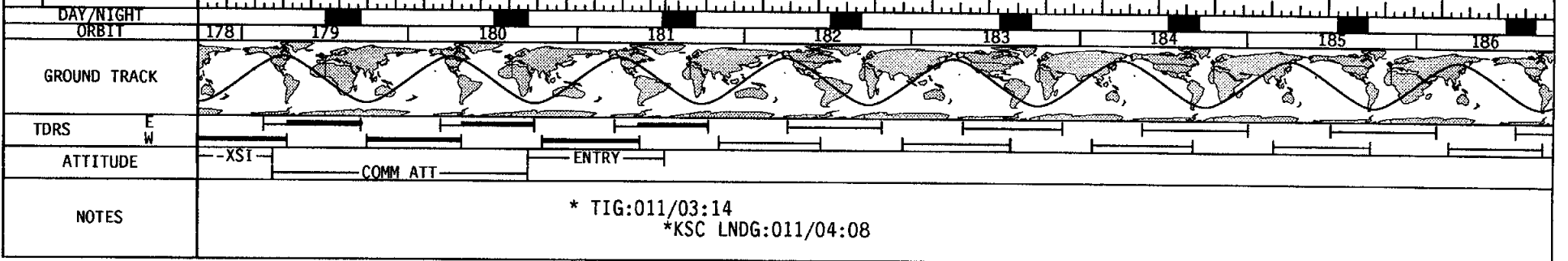
NOTES

- Δ-Z PWR UP
- ▲GPS TO NAV INHIBIT
- ◊MDM POWER UP
- *APC DEACT & STOW
- * RESELEC - XV
- CRYO MNFD VALVE C/O * ACT
- ⊙GIRA NIGHT CNFG
- *CRYO MNFD VALVE C/O
- ▲GIRA MORN CNFG
- VCRYO MNFD VALVE C/O
- IMU ALIGN
- XSI

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
24/18:11	011/00:00	24/12:11	24 CT	-69.92			24 Jan 2000	99	FINAL
25/06:11	011/12:00	25/00:11							

GMT 01/24/00 19 20 21 22 23 01/25 01 02 03 04 05 06
MET Day 011 01 02 03 04 05 06 07 08 09 10 11 12

RED FD 12	CDR KREGEL	DEORBIT PREP	D E O R B I T B U R N	K S C L A N D I N G
	MS2 KAVANDI	DEORBIT PREP		
	MS1 THIELE	DEORBIT PREP		
BLUE FD 12	PLT GORIE	DEORBIT PREP		
	MS3 VOSS	DEORBIT PREP		
	MS4 MOHRI	DEORBIT PREP		

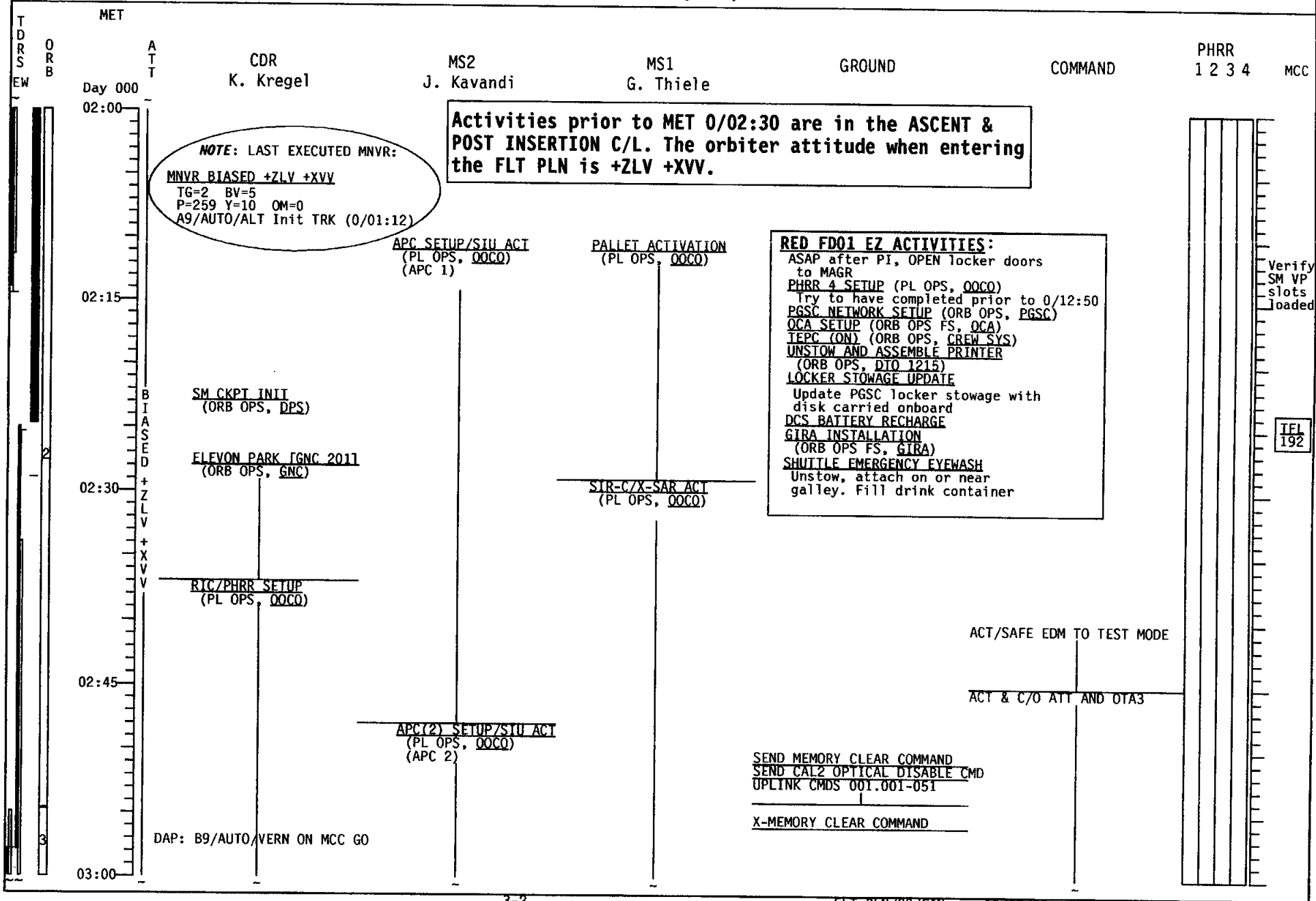


DETAILED TIMELINE

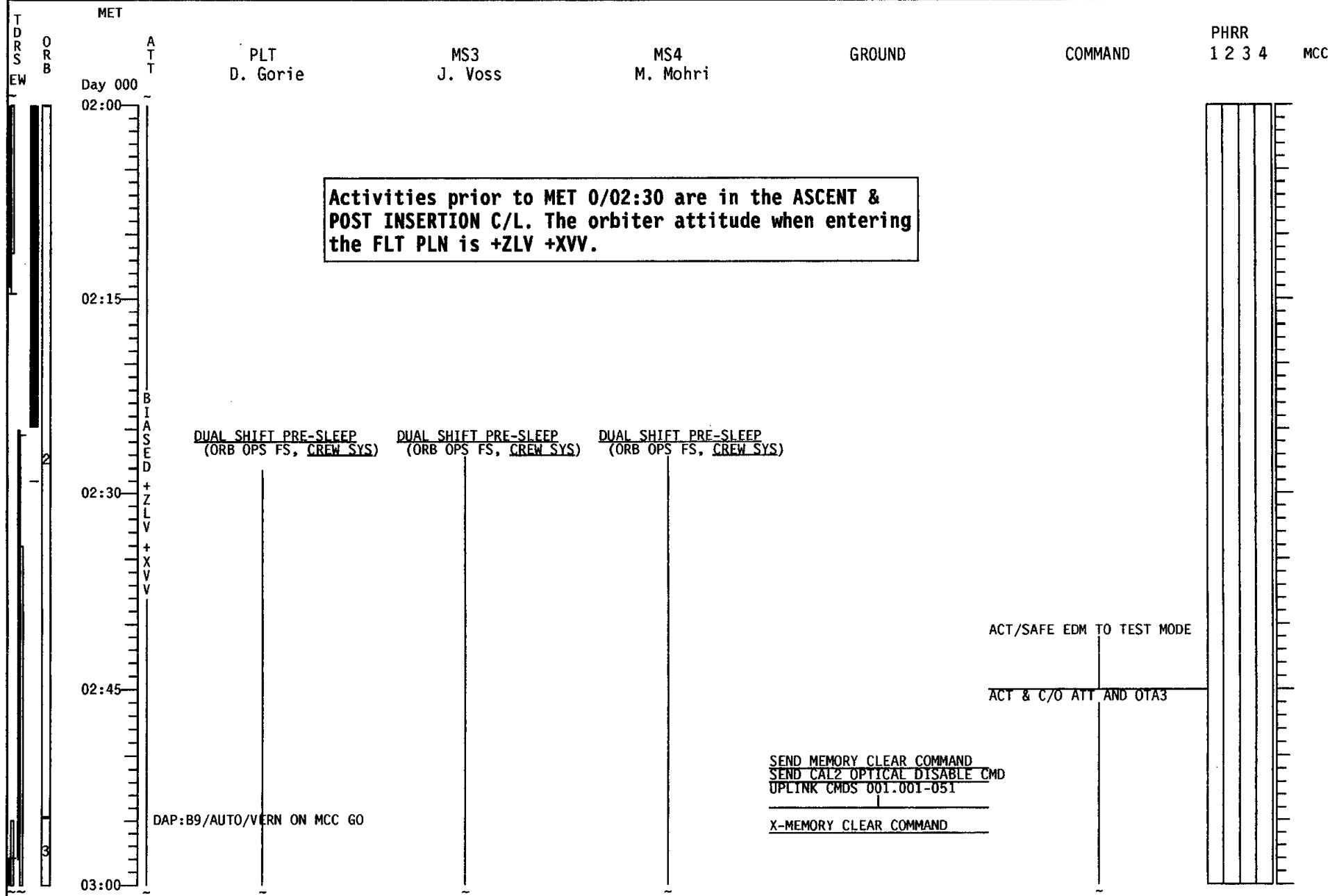
DETAILED
TIMELINE

DETAILED TIMELINE

STS-99 (RED) FD1



STS-99 (BLUE) FD1



Activities prior to MET 0/02:30 are in the ASCENT & POST INSERTION C/L. The orbiter attitude when entering the FLT PLN is +ZLV +XVV.

DUAL SHIFT PRE-SLEEP (ORB OPS FS, CREW SYS) DUAL SHIFT PRE-SLEEP (ORB OPS FS, CREW SYS) DUAL SHIFT PRE-SLEEP (ORB OPS FS, CREW SYS)

ACT/SAFE EDM TO TEST MODE

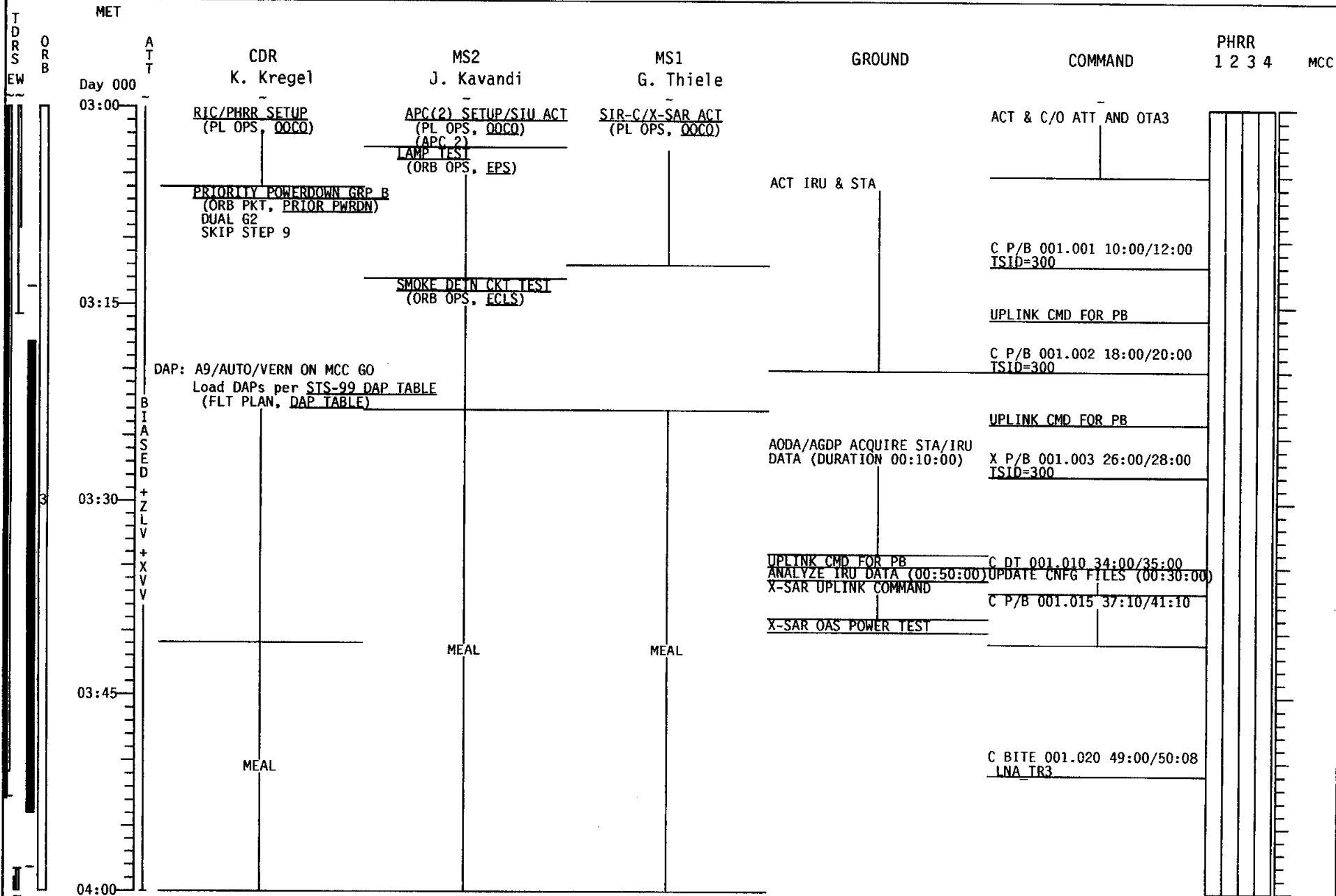
ACT & C/O ATT AND OTA3

SEND MEMORY CLEAR COMMAND
 SEND CAL2 OPTICAL DISABLE CMD
 UPLINK CMDS 001.001-051

X-MEMORY CLEAR COMMAND

DAP:B9/AUTO/VERN ON MCC GO

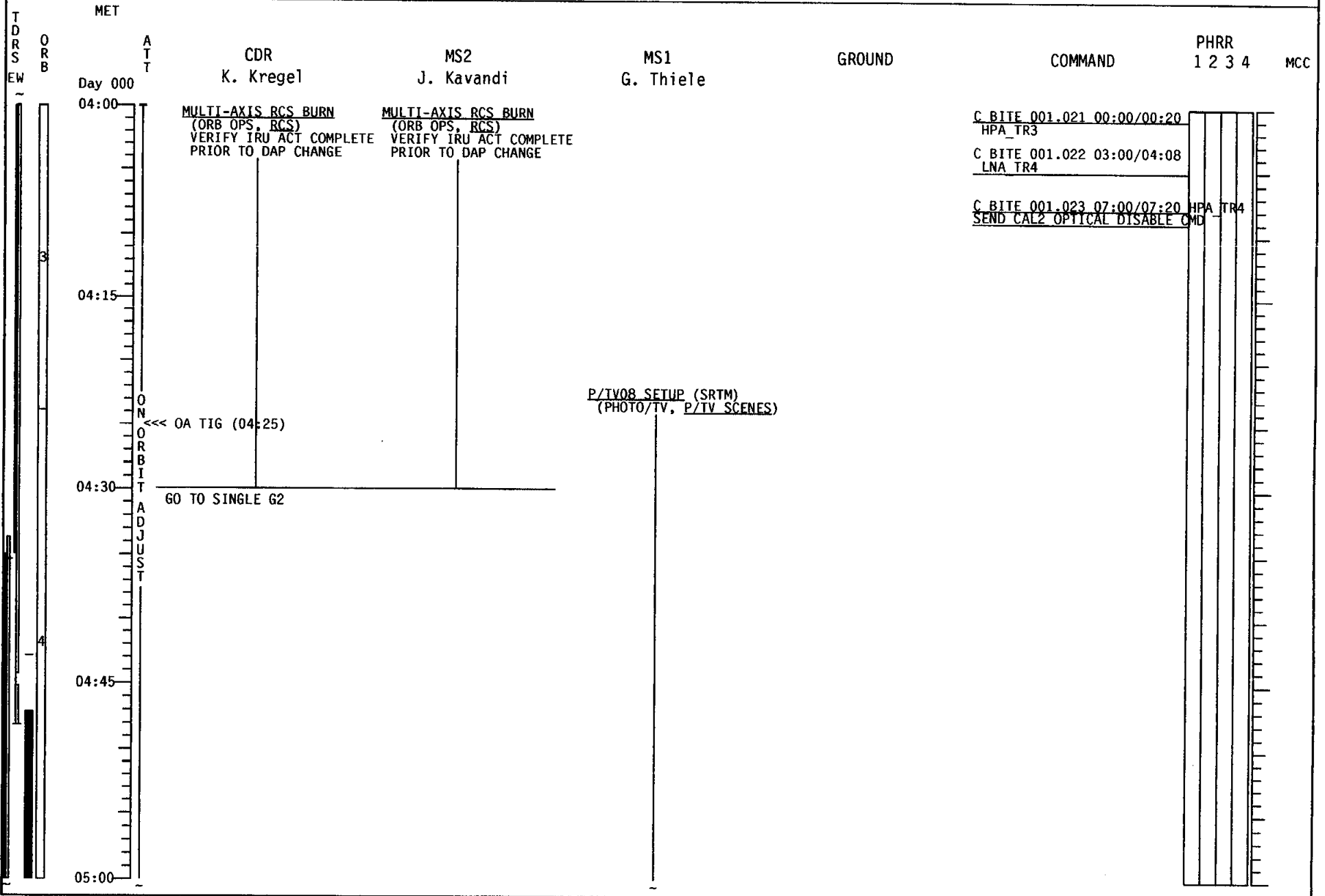
STS-99 (RED) FD1



STS-99 (BLUE)FD1

T D R S E W	O R B	M E T	A T	PLT	MS3	MS4	GROUND	COMMAND	PHRR	MCC
				D. Gorie	J. Voss	M. Mohri				1 2 3 4
		Day 000								
		03:00		DUAL SHIFT PRE-SLEEP (ORB OPS FS, CREW SYS)	DUAL SHIFT PRE-SLEEP (ORB OPS FS, CREW SYS)	DUAL SHIFT PRE-SLEEP (ORB OPS FS, CREW SYS)		ACT & C/O ATT AND OTA3		
							ACT IRU & STA			
								C P/B 001.001 10:00/12:00 TSID=300		
		03:15						UPLINK CMD FOR PB		
								C P/B 001.002 18:00/20:00 TSID=300		
								UPLINK CMD FOR PB		
							AODA/AGDP ACQUIRE STA/IRU DATA (DURATION 00:10:00)	X P/B 001.003 26:00/28:00 TSID=300		
		03:30						UPLINK CMD FOR PB		
								C DT 001.010 34:00/35:00		
							ANALYZE IRU DATA (00:50:00)	UPDATE CNFG FILES (00:30:00)		
							X-SAR UPLINK COMMAND	C P/B 001.015 37:10/41:10		
							X-SAR OAS POWER TEST			
		03:45								
								C BITE 001.020 49:00/50:08 LNA_TR3		
		04:00								

STS-99 (RED) FD1



MET
 Day 000
 04:00
 04:15
 04:30
 04:45
 05:00

TDRS EW
 ORB
 ATT
 ORBIT ADJUST

CDR K. Kregel MS2 J. Kavandi MS1 G. Thiele GROUND COMMAND PHRR 1 2 3 4 MCC

MULTI-AXIS RCS BURN (ORB OPS, RCS)
 VERIFY IRU ACT COMPLETE PRIOR TO DAP CHANGE

MULTI-AXIS RCS BURN (ORB OPS, RCS)
 VERIFY IRU ACT COMPLETE PRIOR TO DAP CHANGE

C BITE 001.021 00:00/00:20
 HPA_TR3
 C BITE 001.022 03:00/04:08
 LNA_TR4

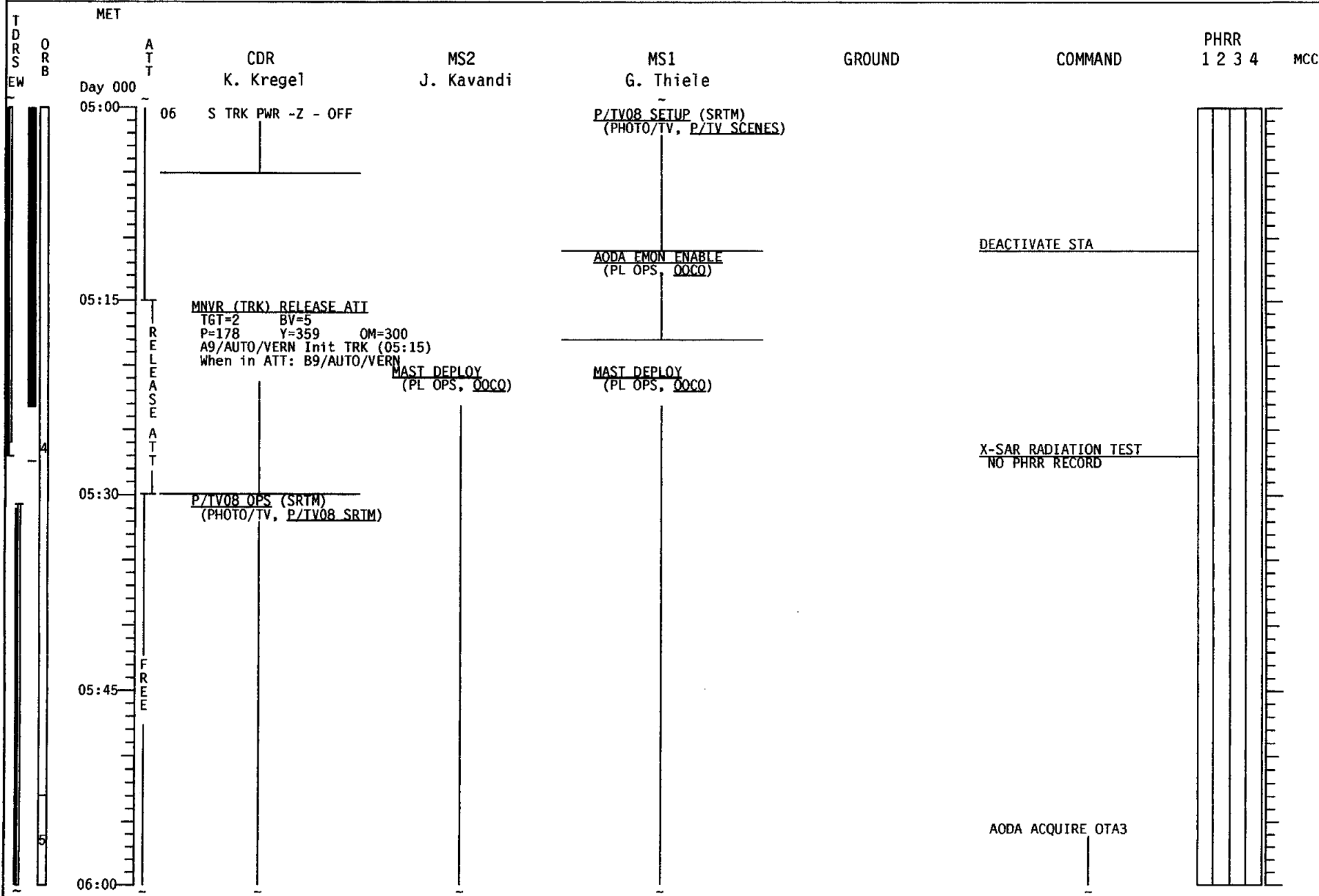
C BITE 001.023 07:00/07:20 HPA_TR4
 SEND CAL2 OPTICAL DISABLE CMD

<<< OA TIG (04:25)

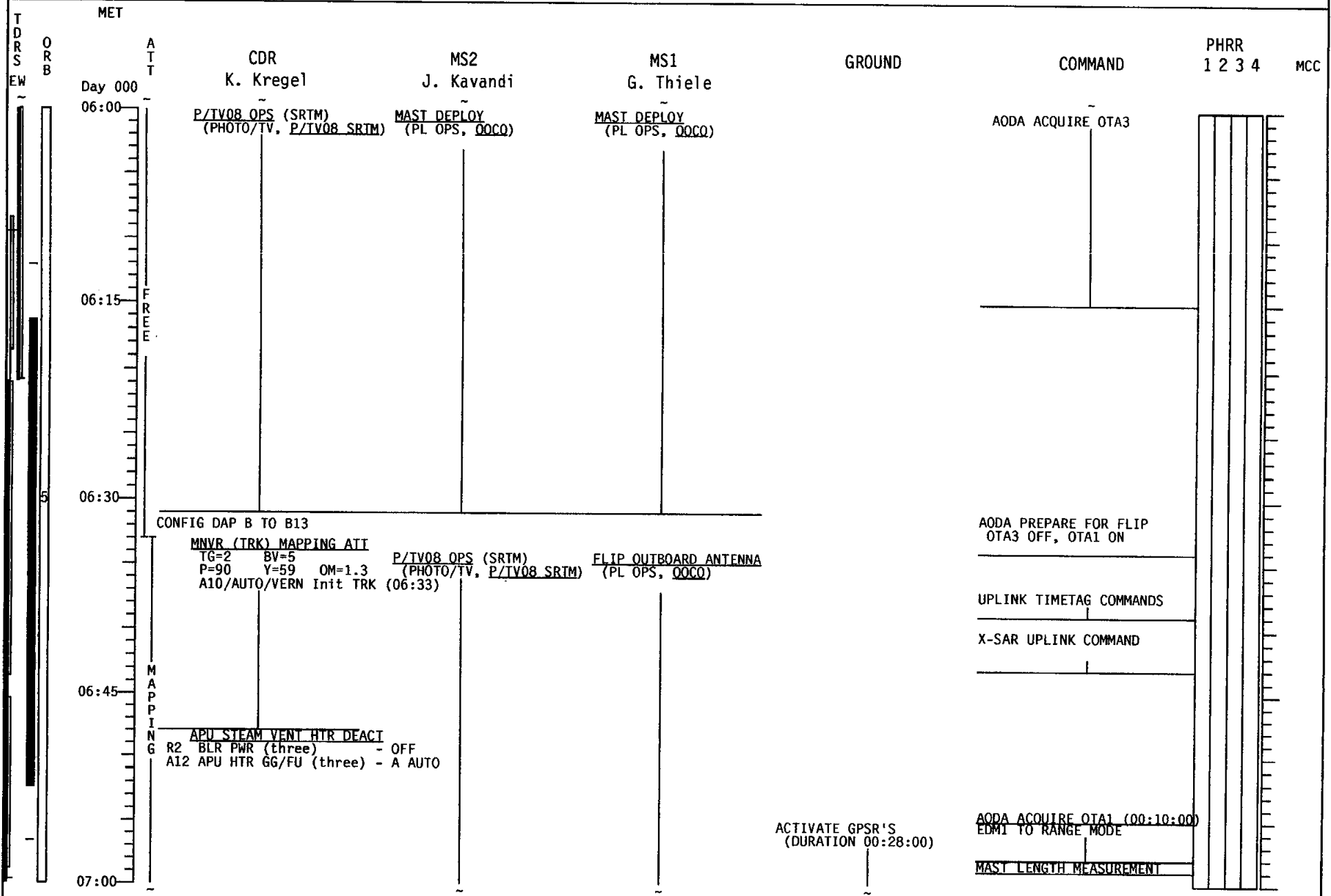
P/TV08 SETUP (SRTM)
 (PHOTO/TV, P/TV SCENES)

GO TO SINGLE G2

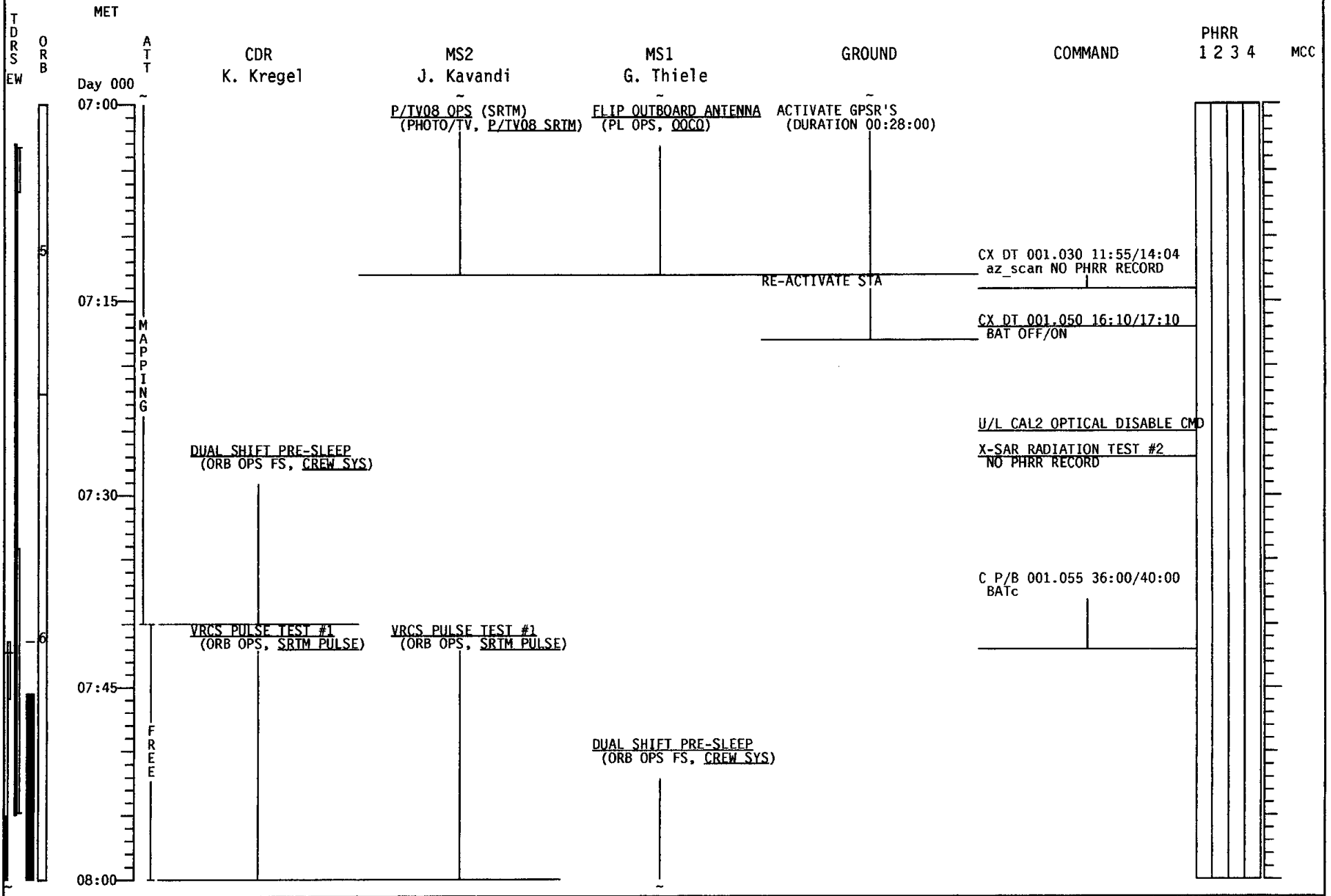
STS-99 (RED) FD1



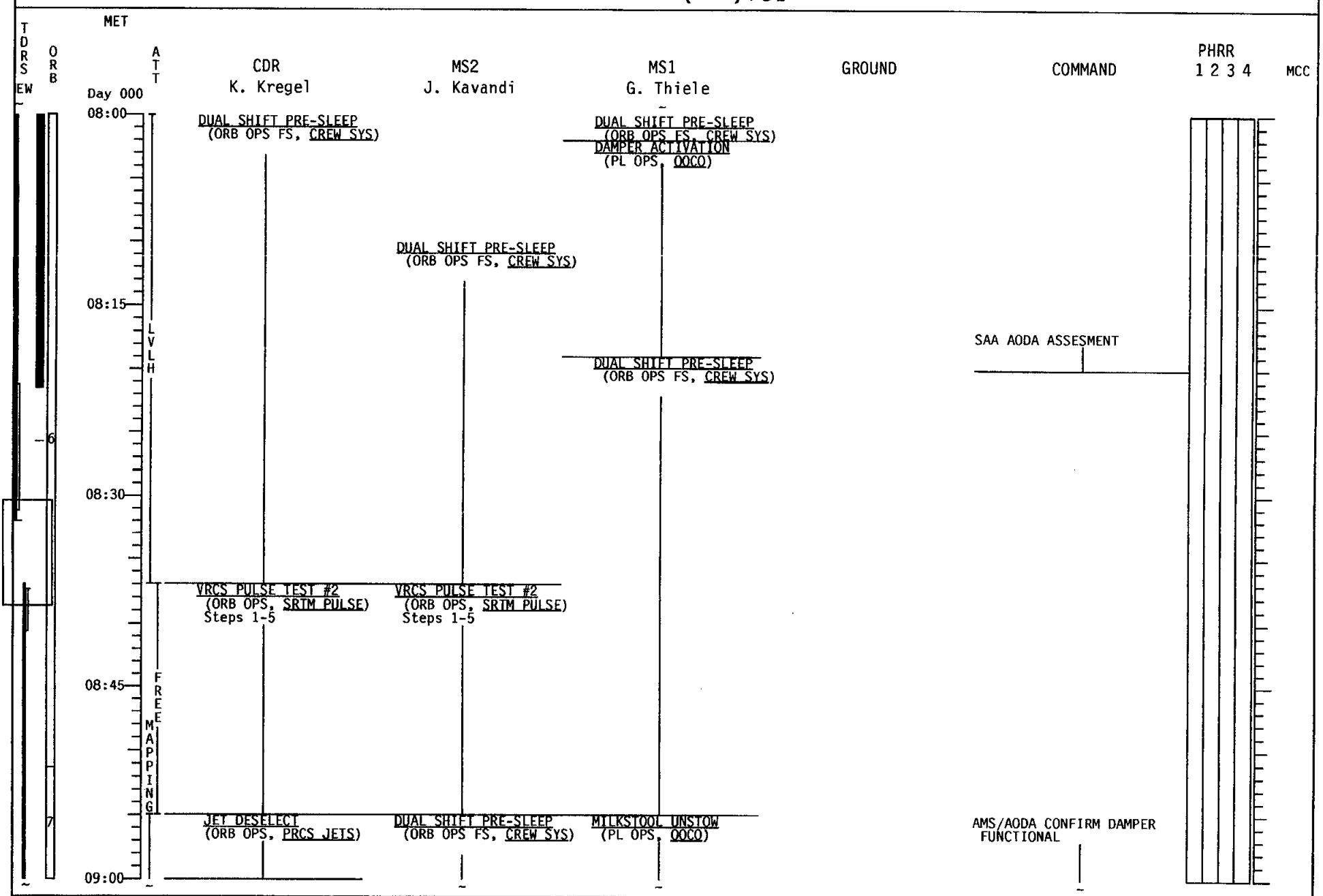
STS-99 (RED) FD1



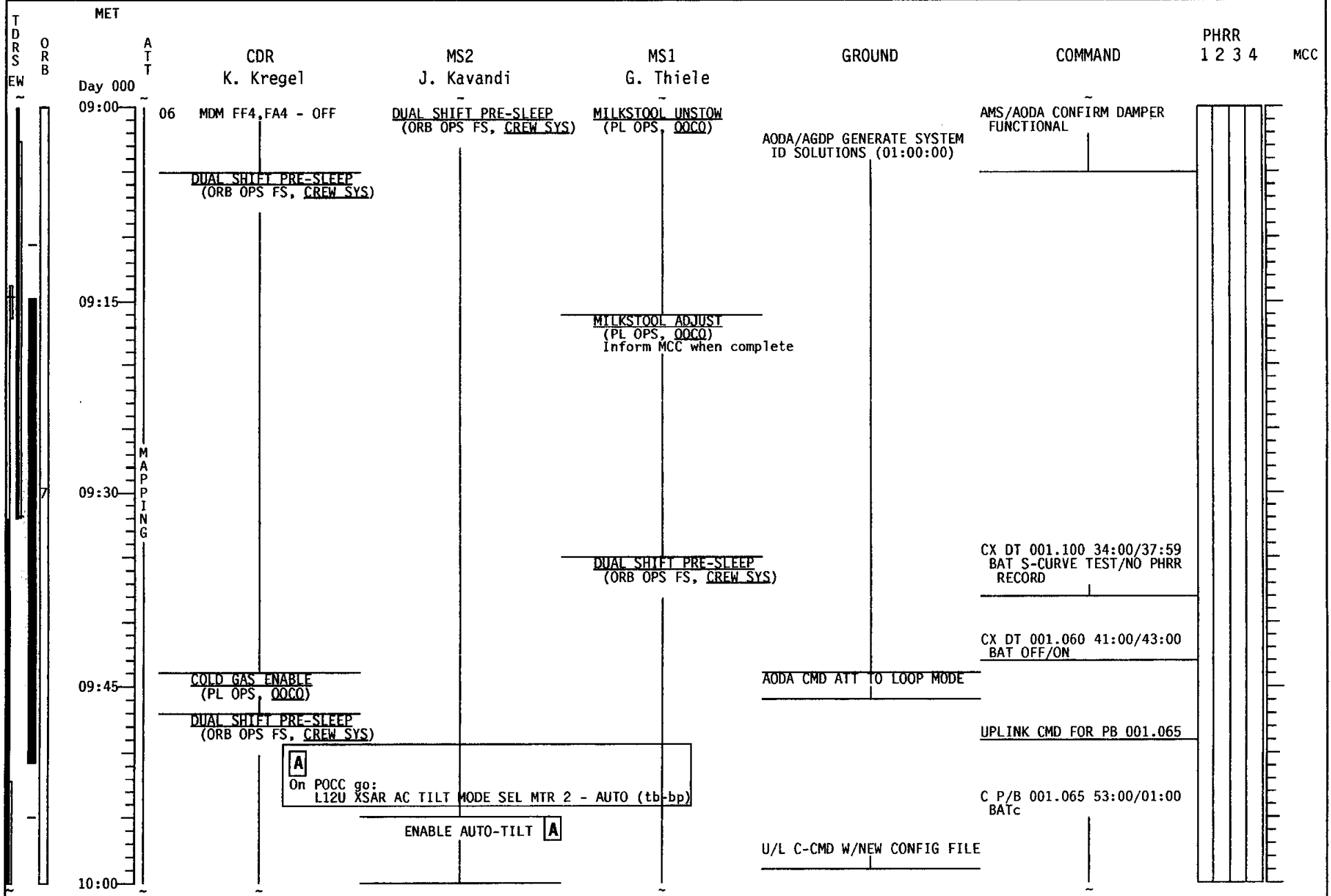
STS-99 (RED) FD1



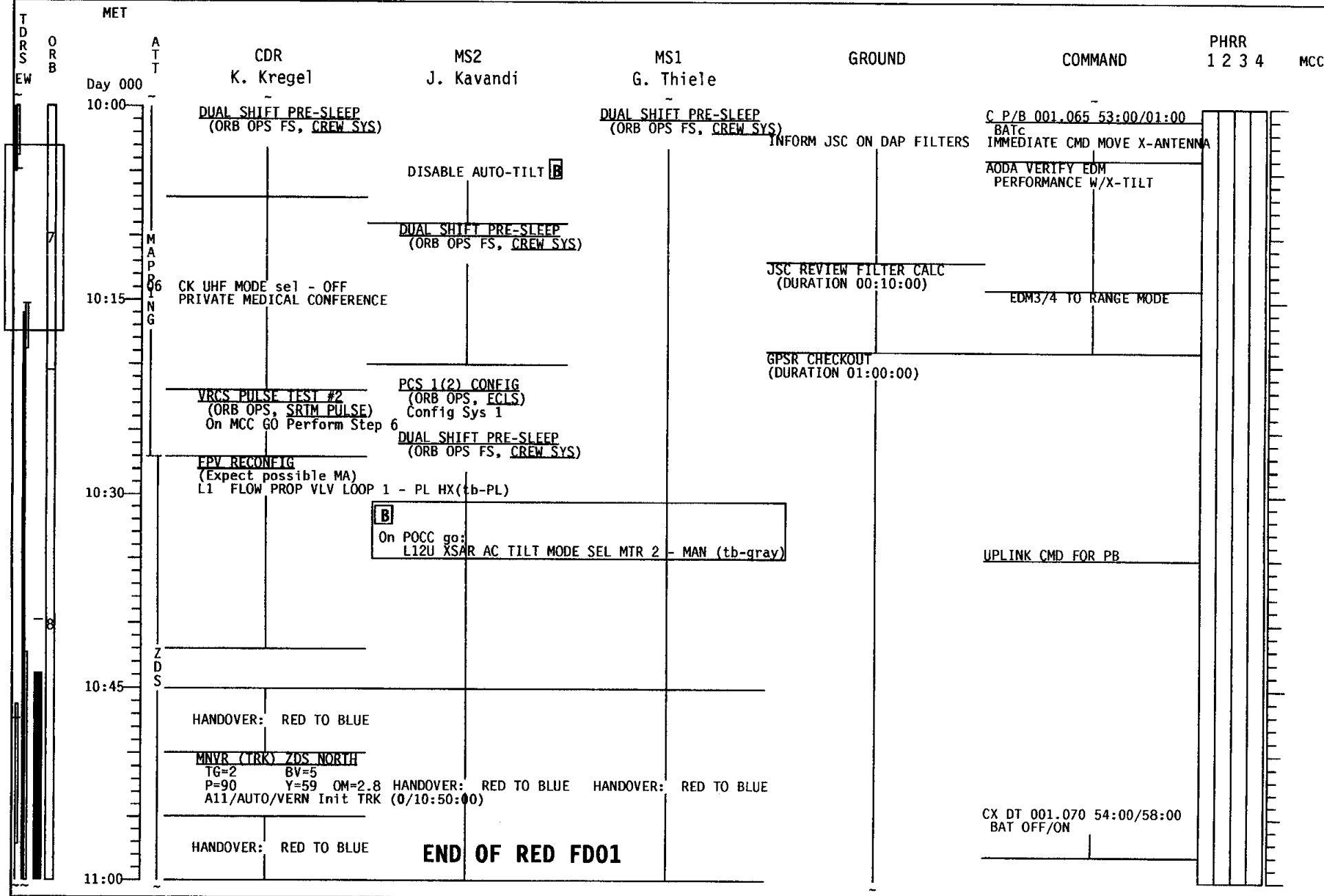
STS-99 (RED) FD1



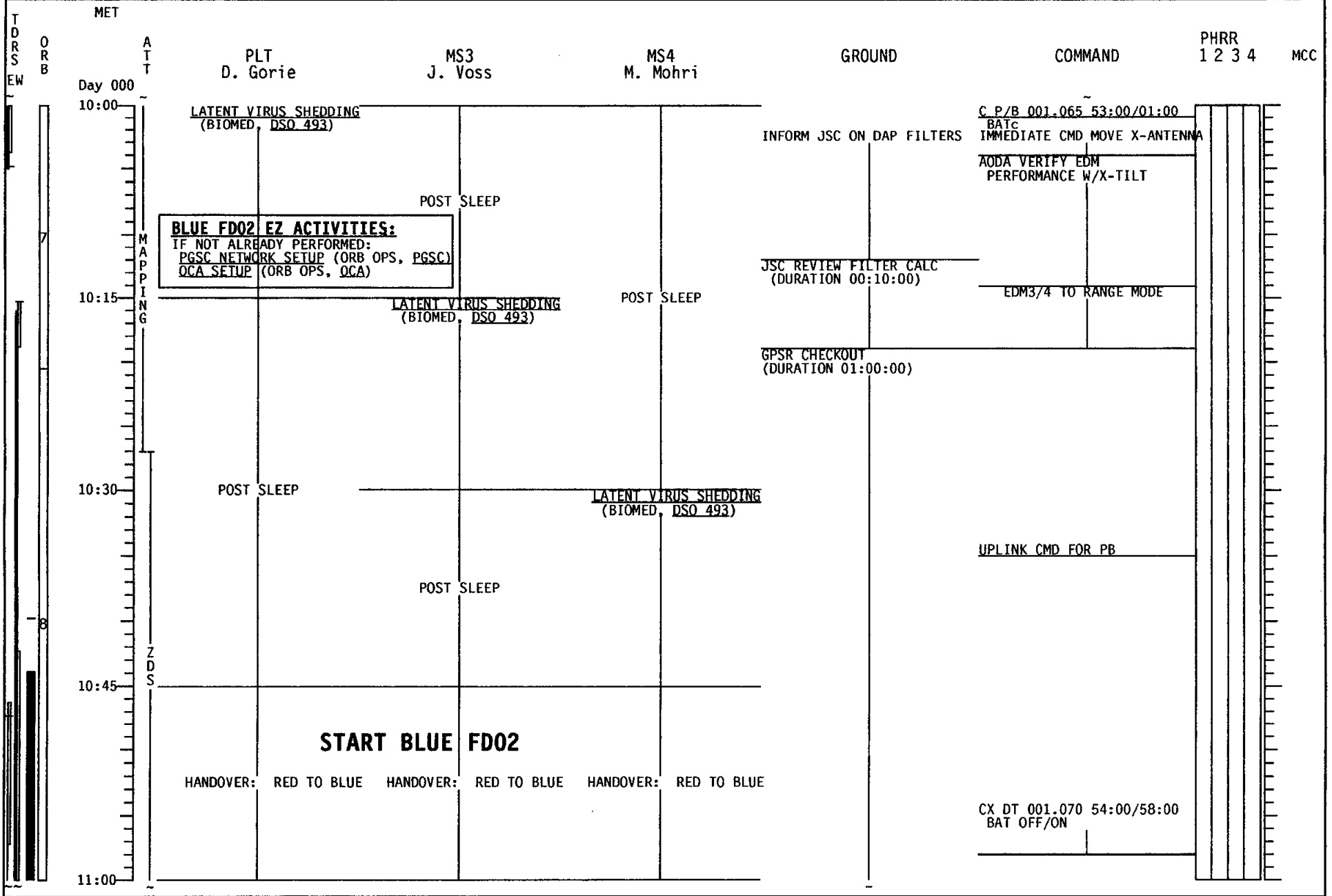
STS-99 (RED) FD1



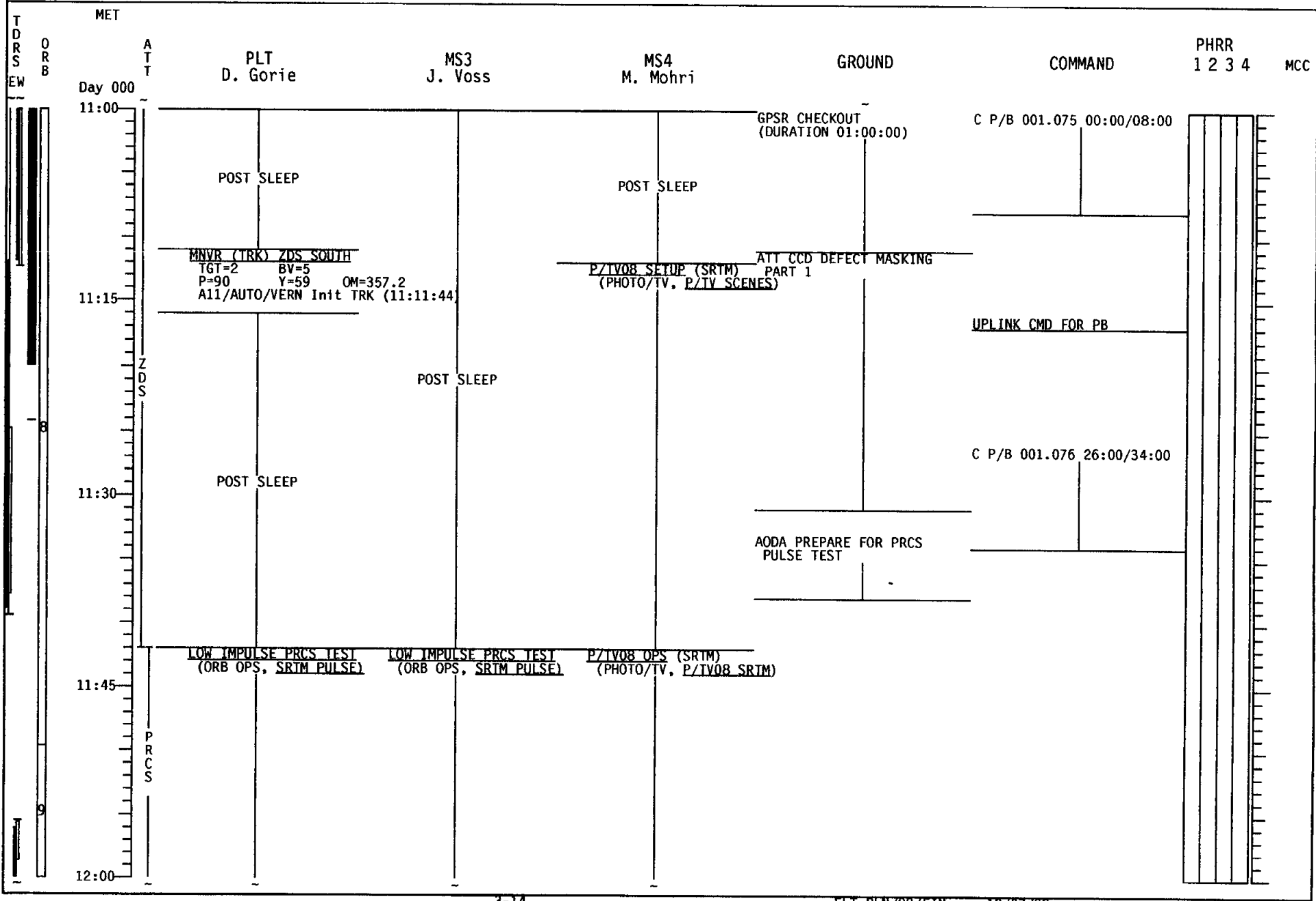
STS-99 (RED) FD1



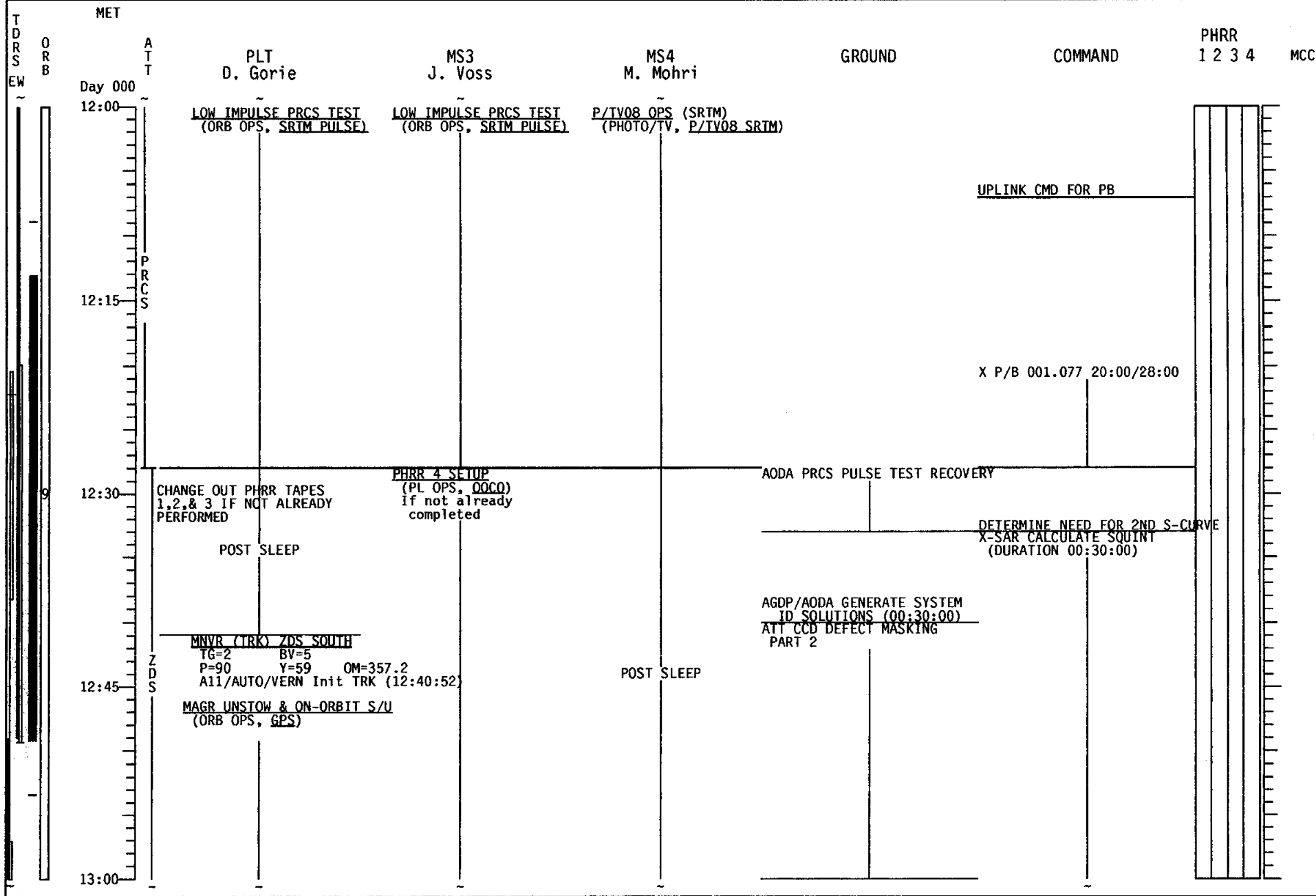
STS-99 (BLUE) FD2



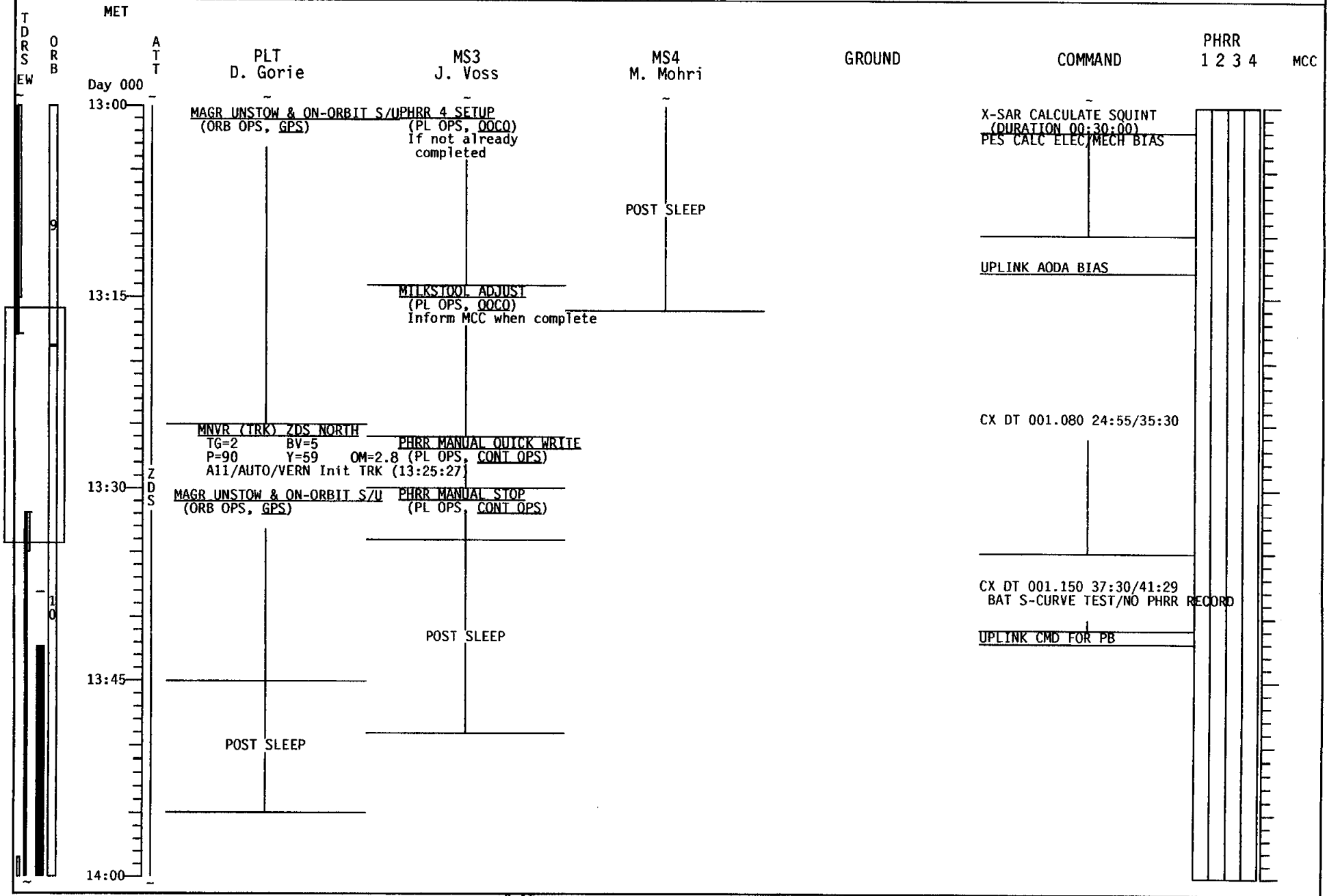
STS-99 (BLUE) FD2



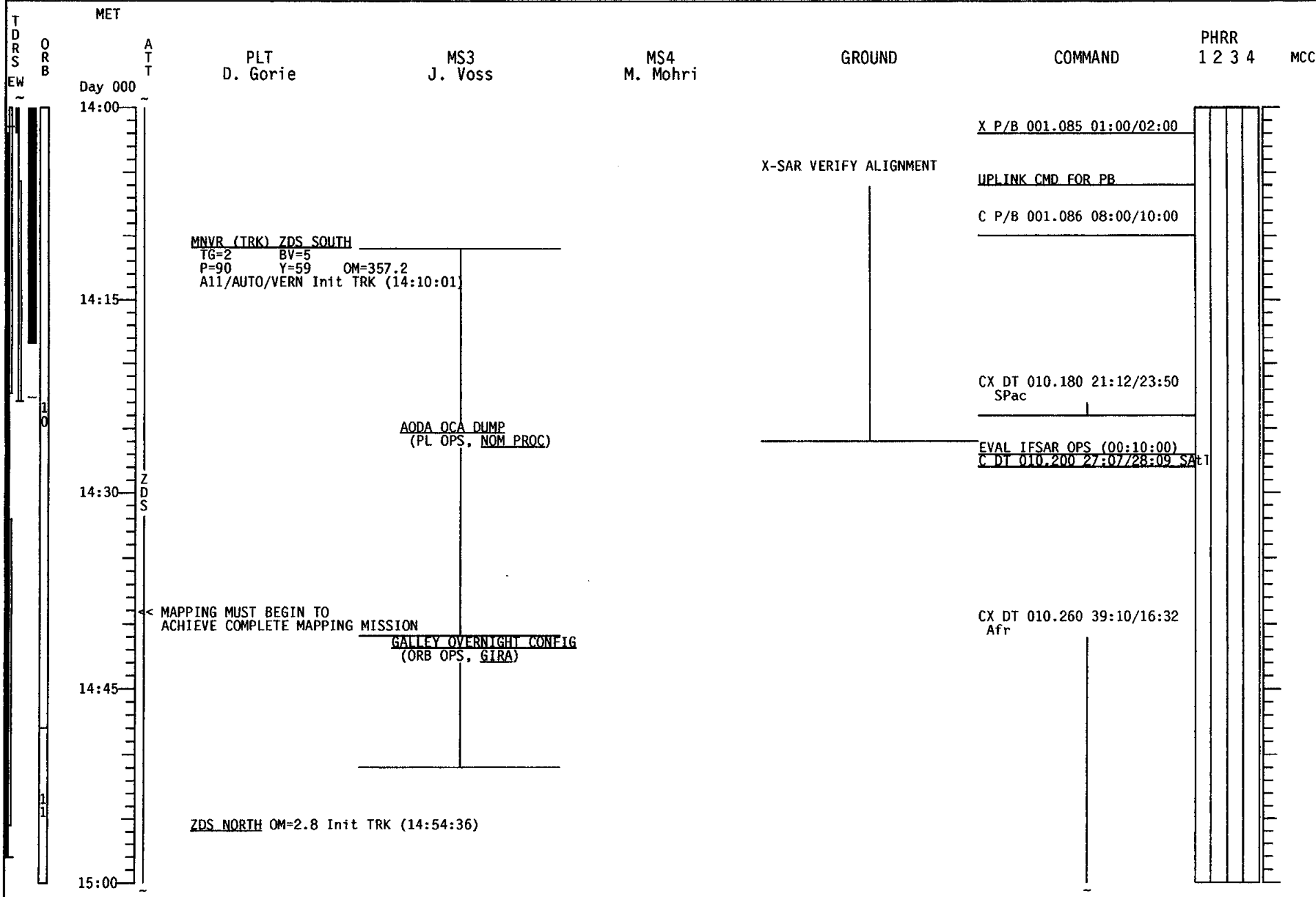
STS-99 (BLUE) FD2



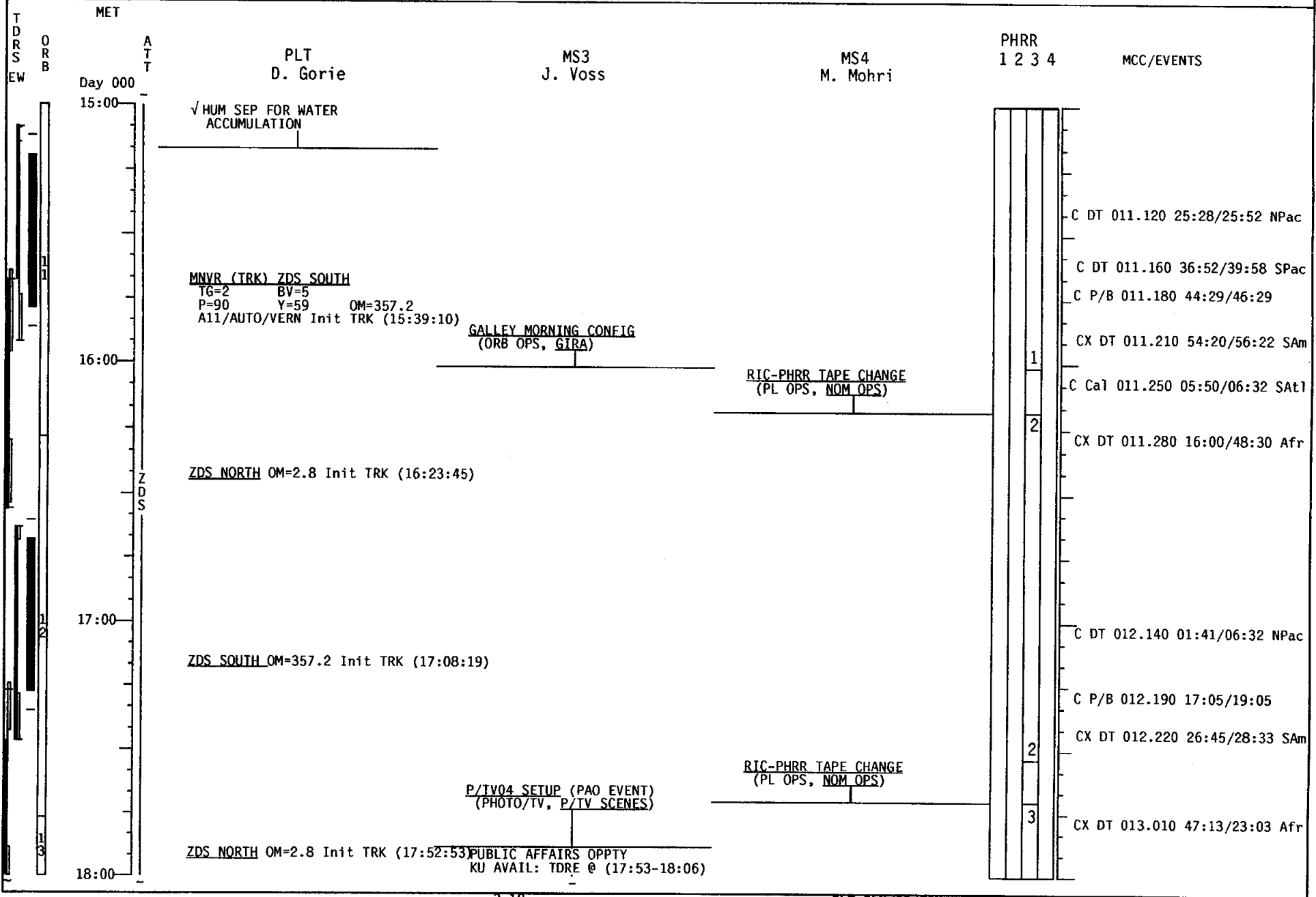
STS-99 (BLUE) FD2



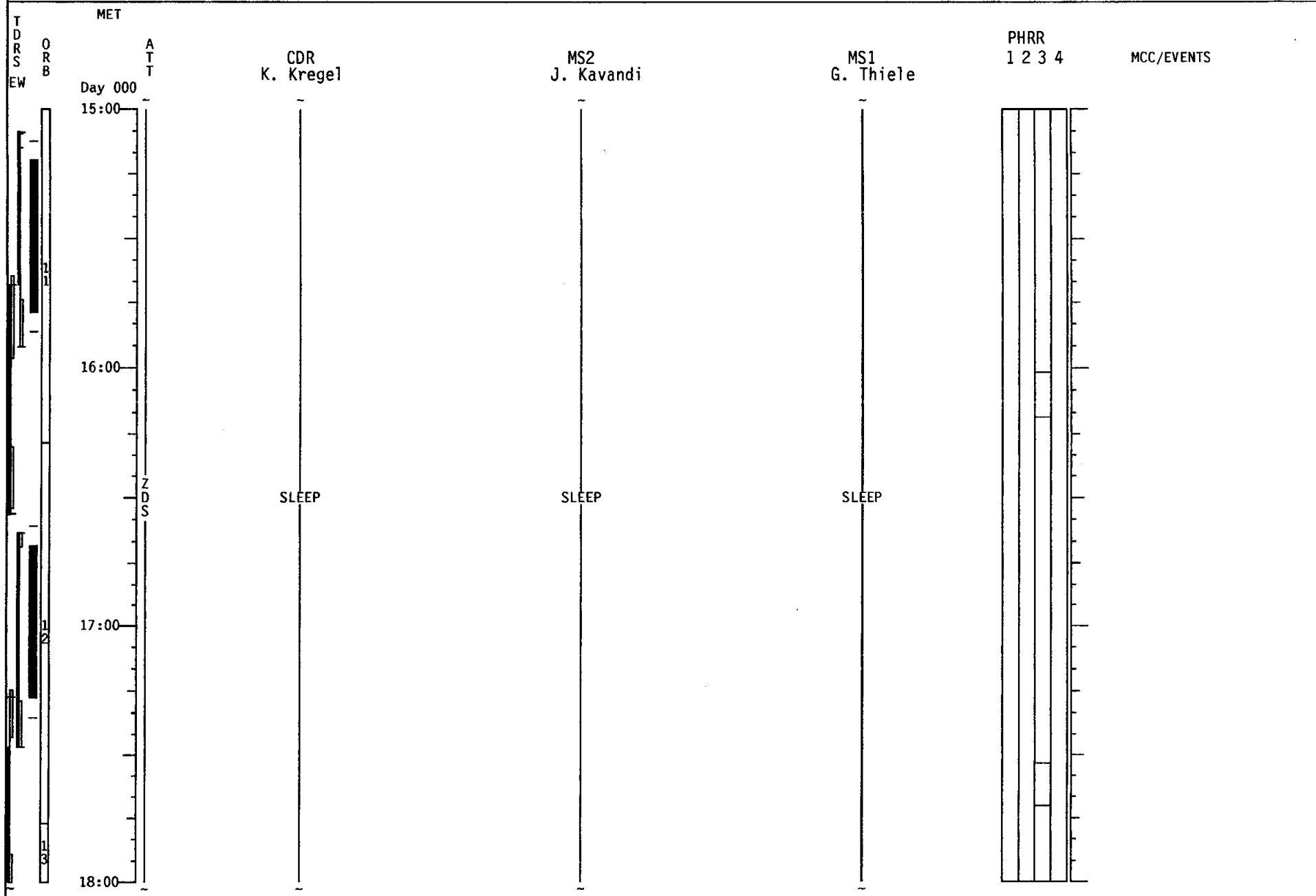
STS-99 (BLUE) FD2



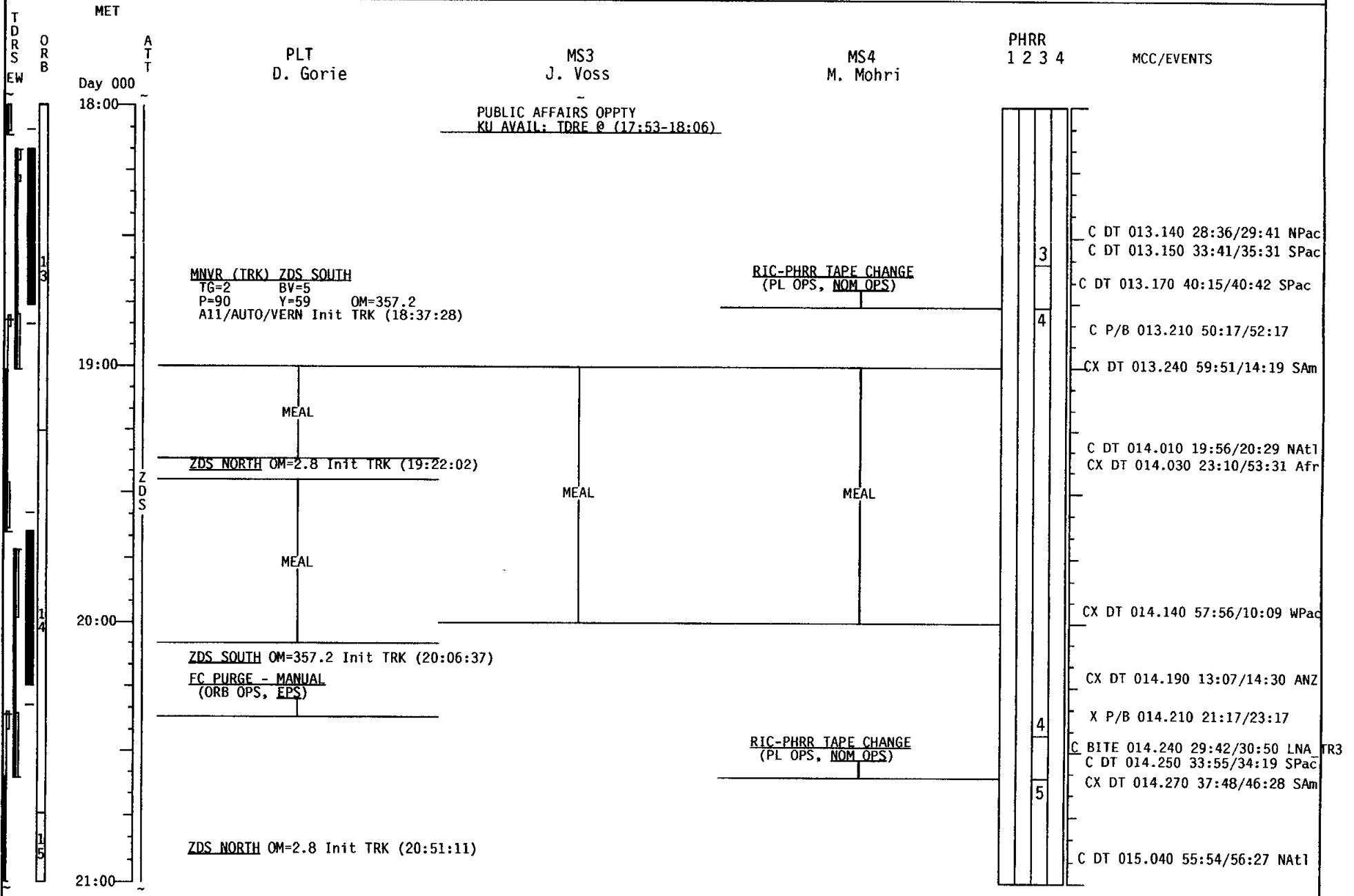
STS-99 (BLUE)FD2



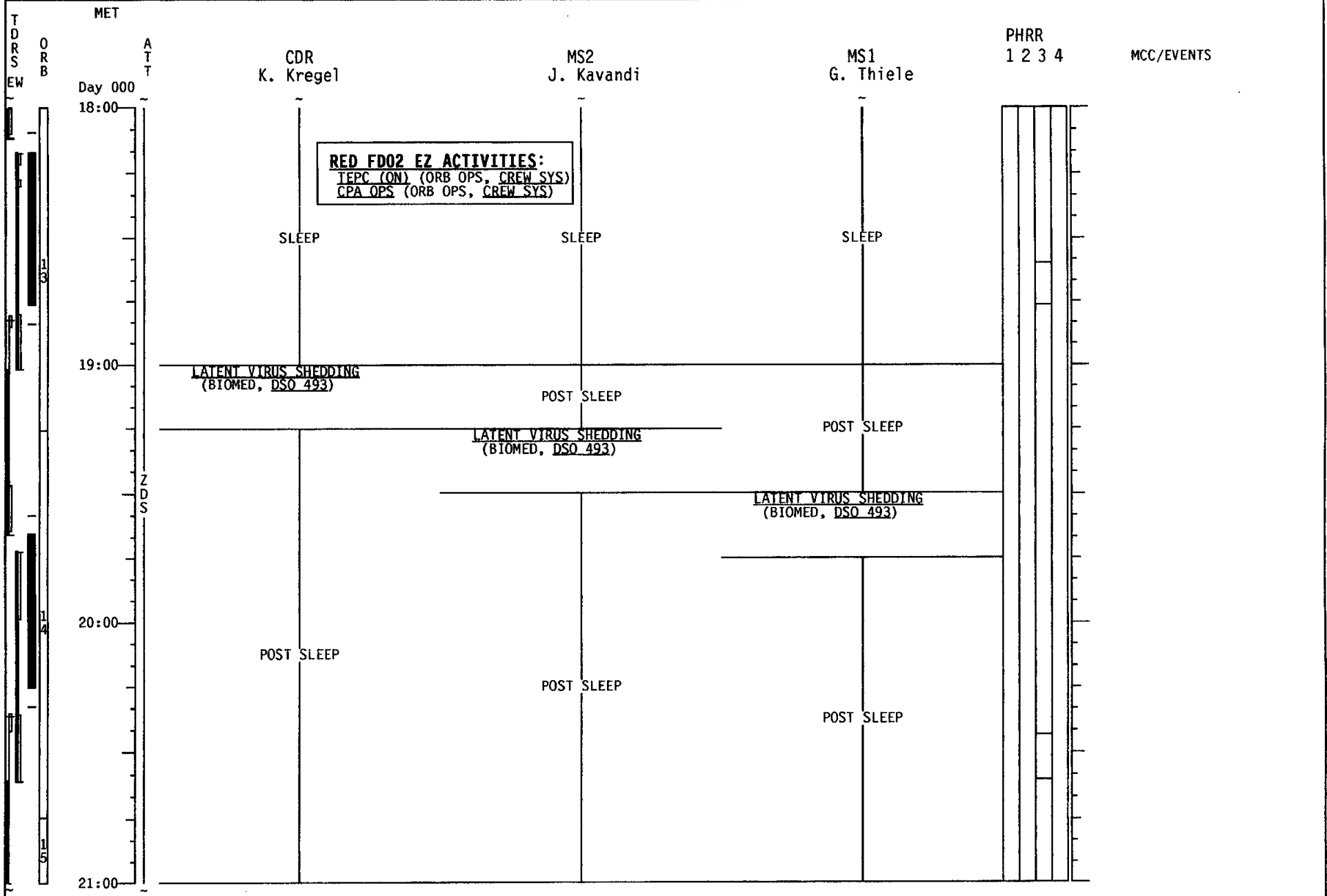
STS-99 (RED) FD2



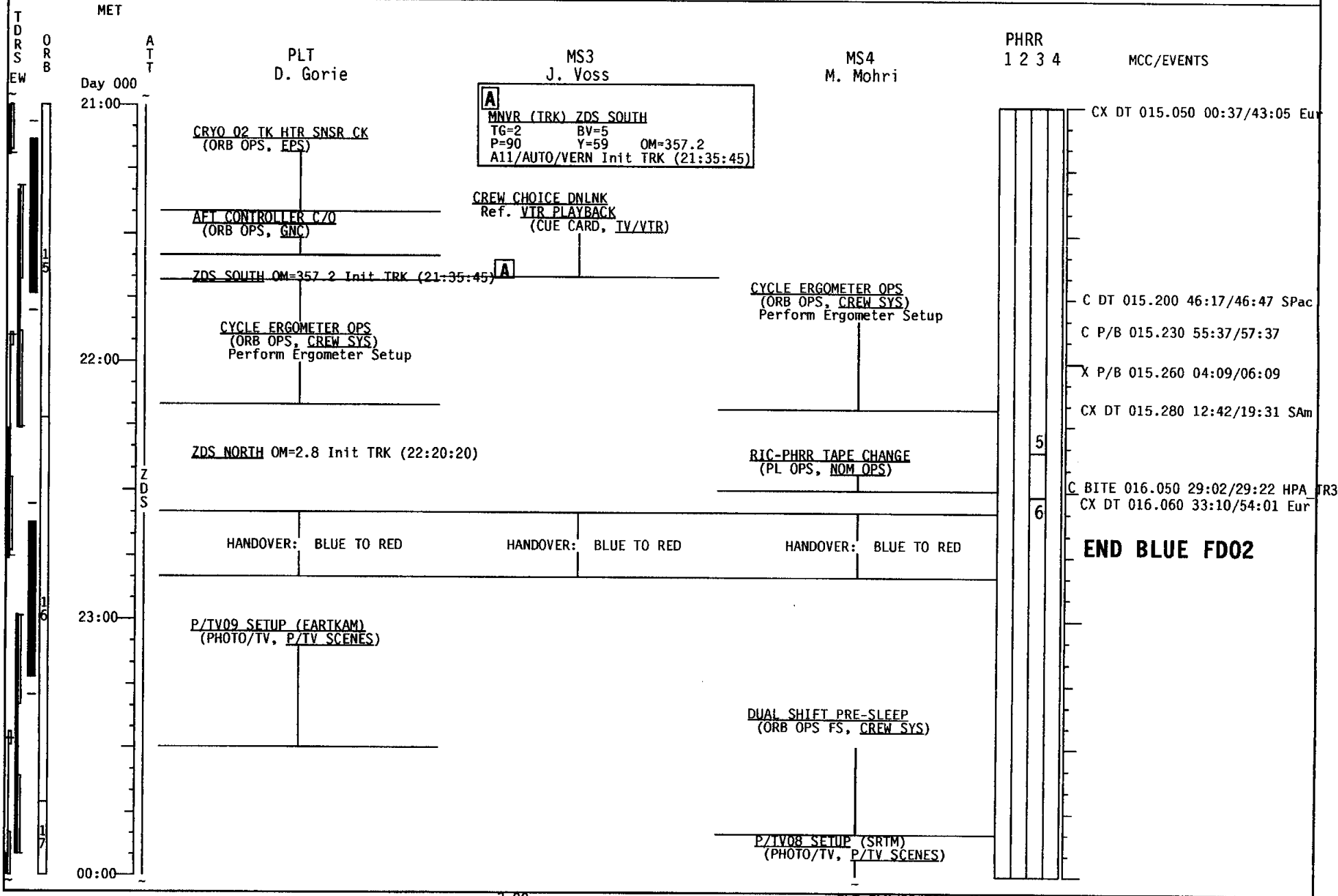
STS-99 (BLUE)FD2



STS-99 (RED) FD1



STS-99 (BLUE)FD2



CX DT 015.050 00:37/43:05 Eur

C DT 015.200 46:17/46:47 SPac

C P/B 015.230 55:37/57:37

X P/B 015.260 04:09/06:09

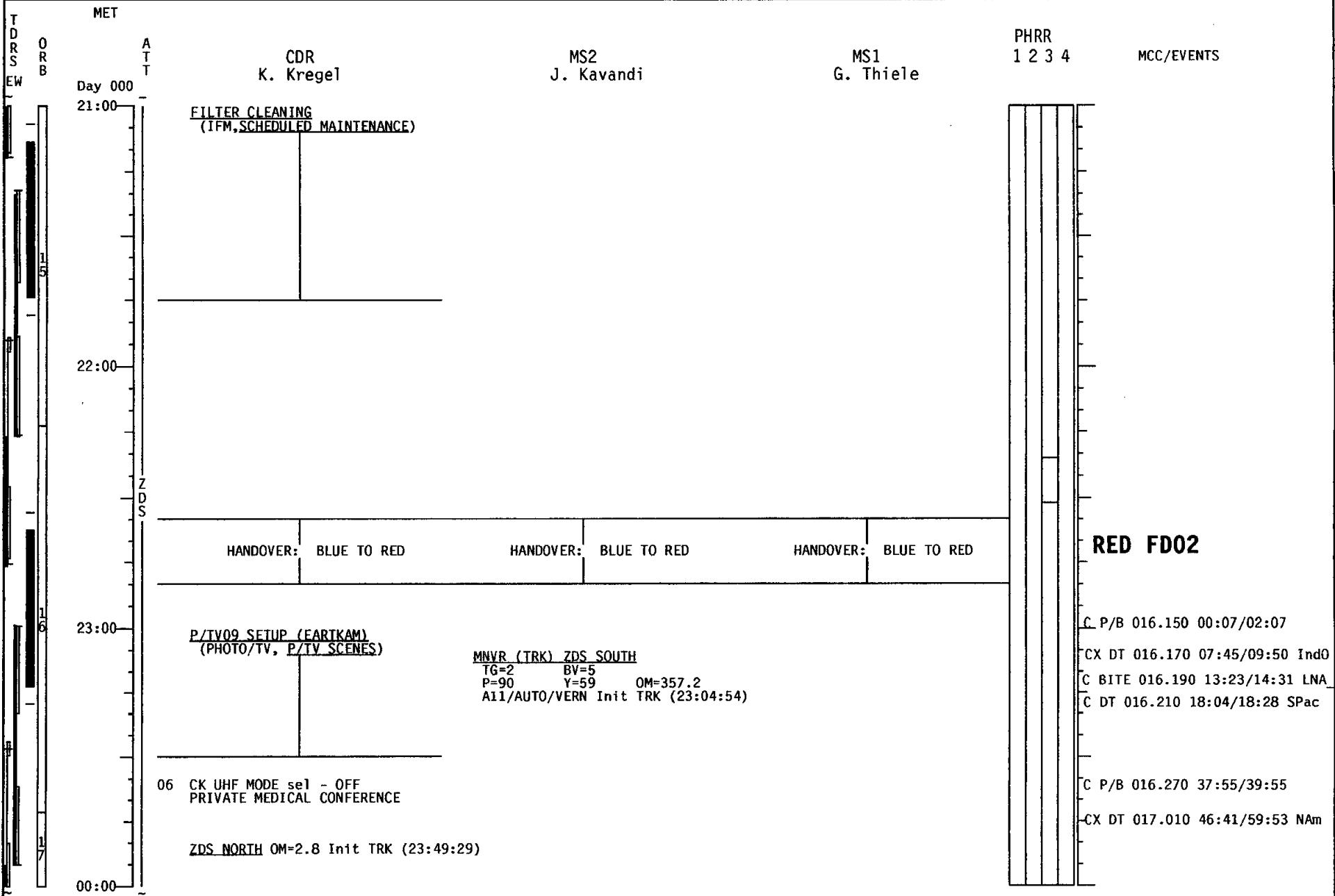
CX DT 015.280 12:42/19:31 SAm

C BITE 016.050 29:02/29:22 HPA TR3

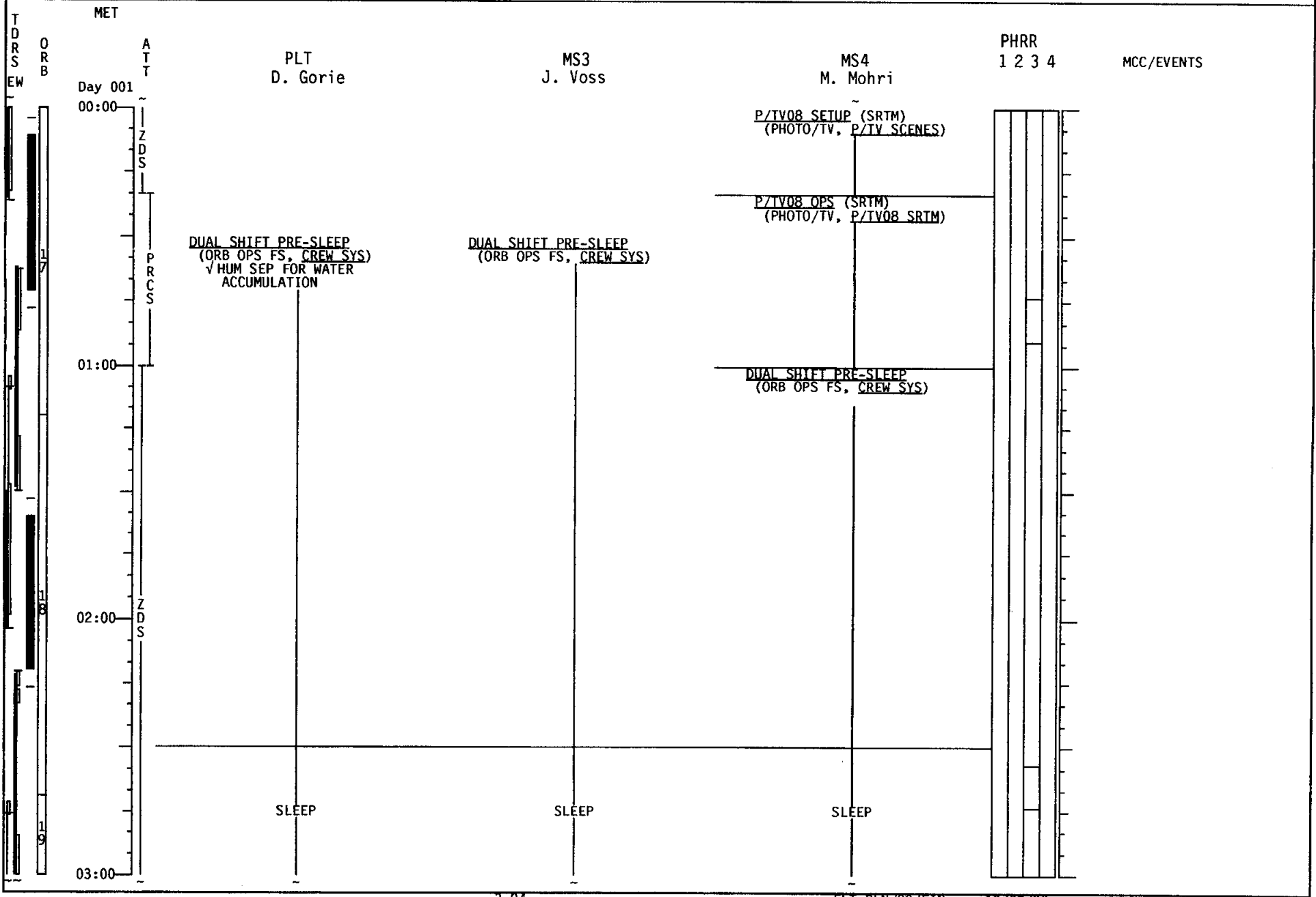
CX DT 016.060 33:10/54:01 Eur

END BLUE FD02

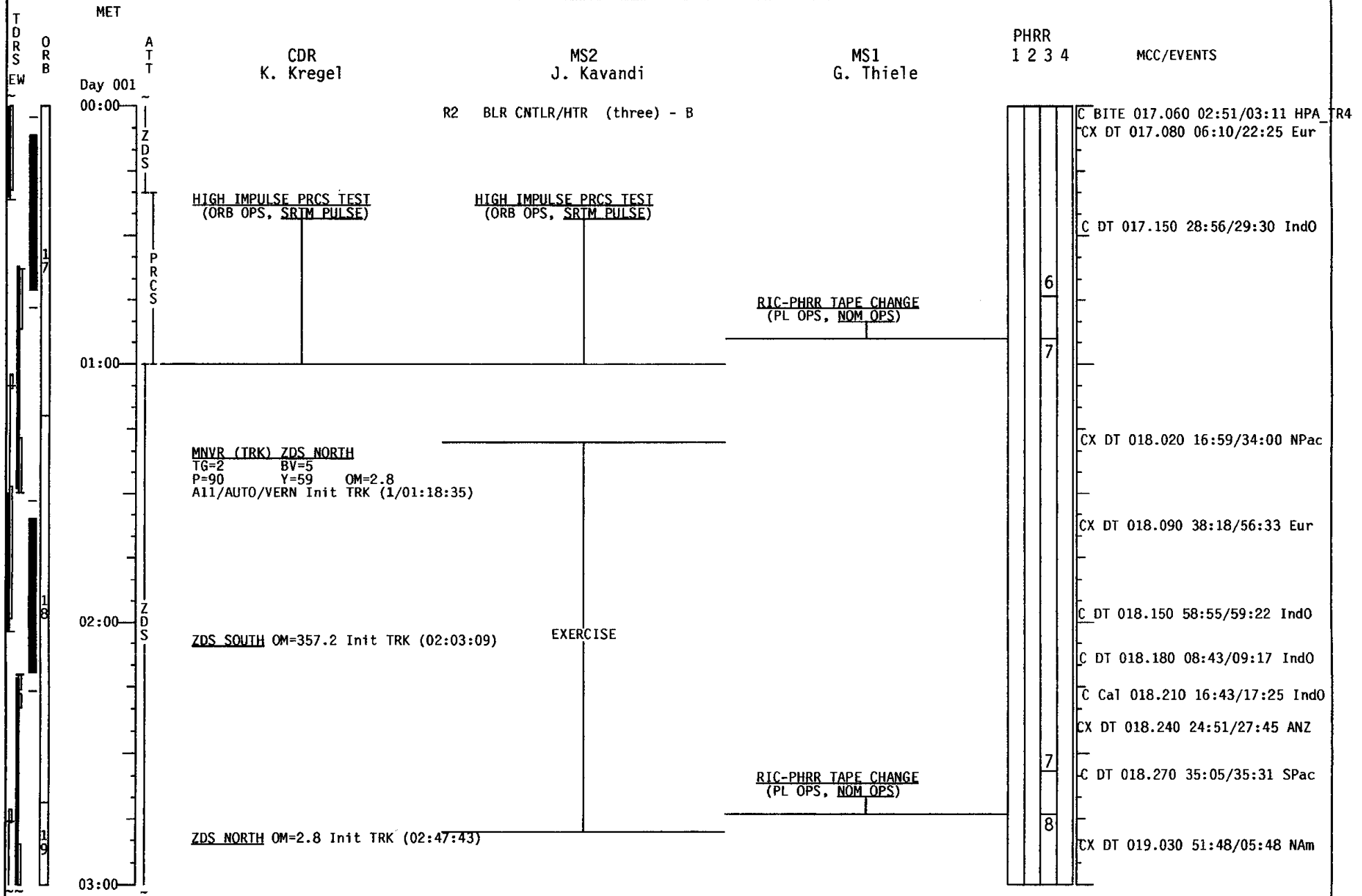
STS-99 (RED) FD2



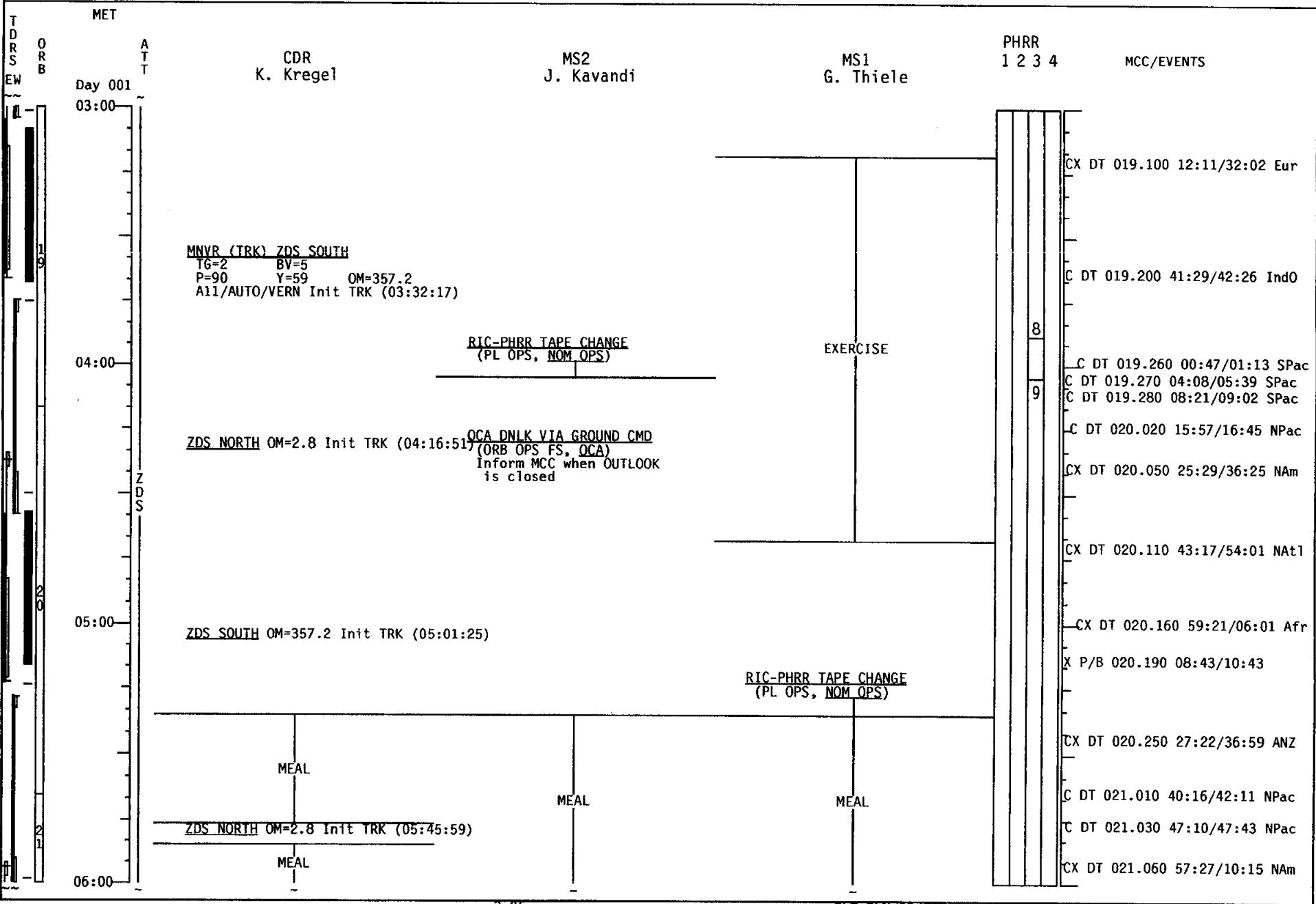
STS-99 (BLUE) FD2



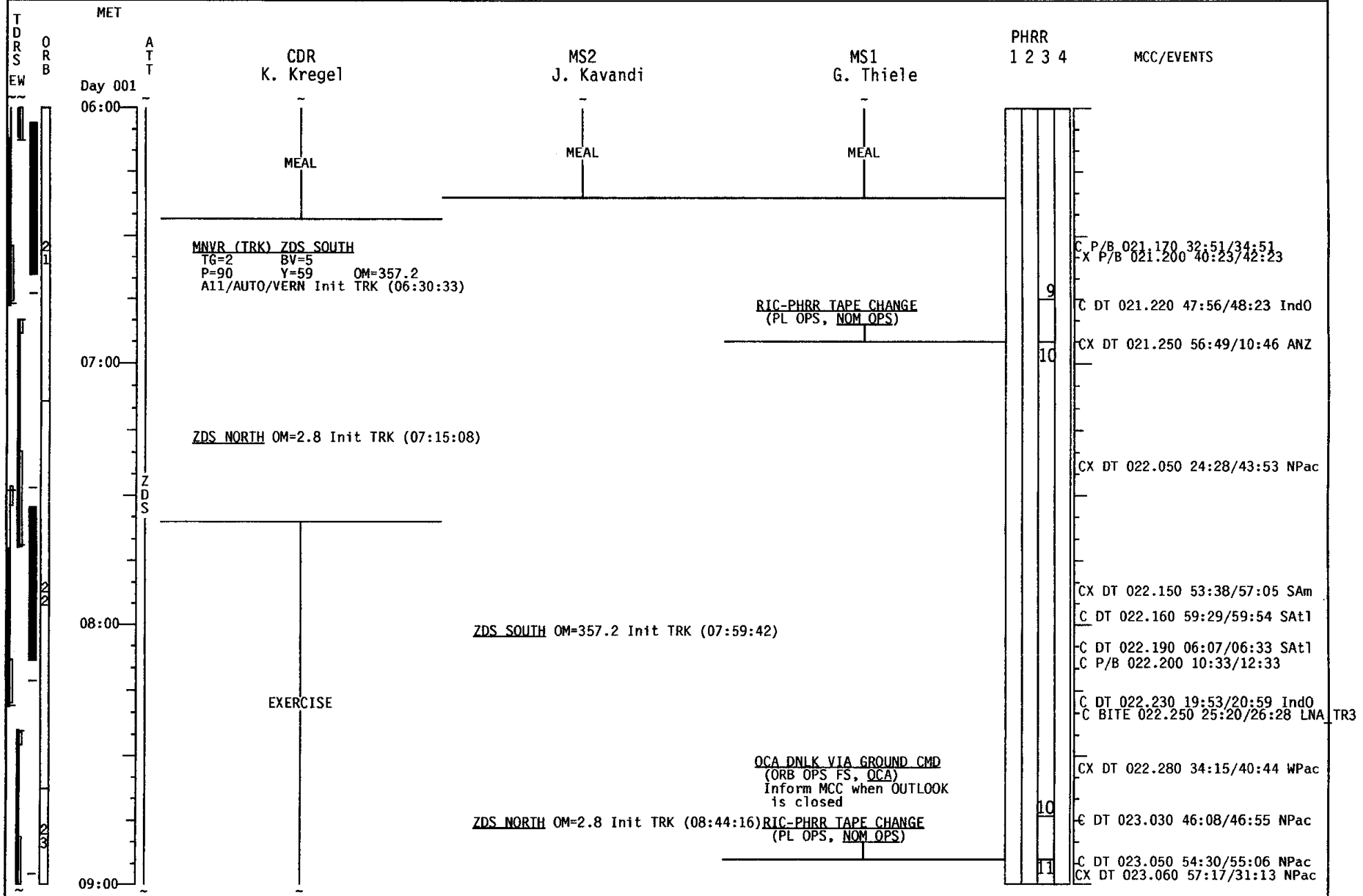
STS-99 (RED) FD2



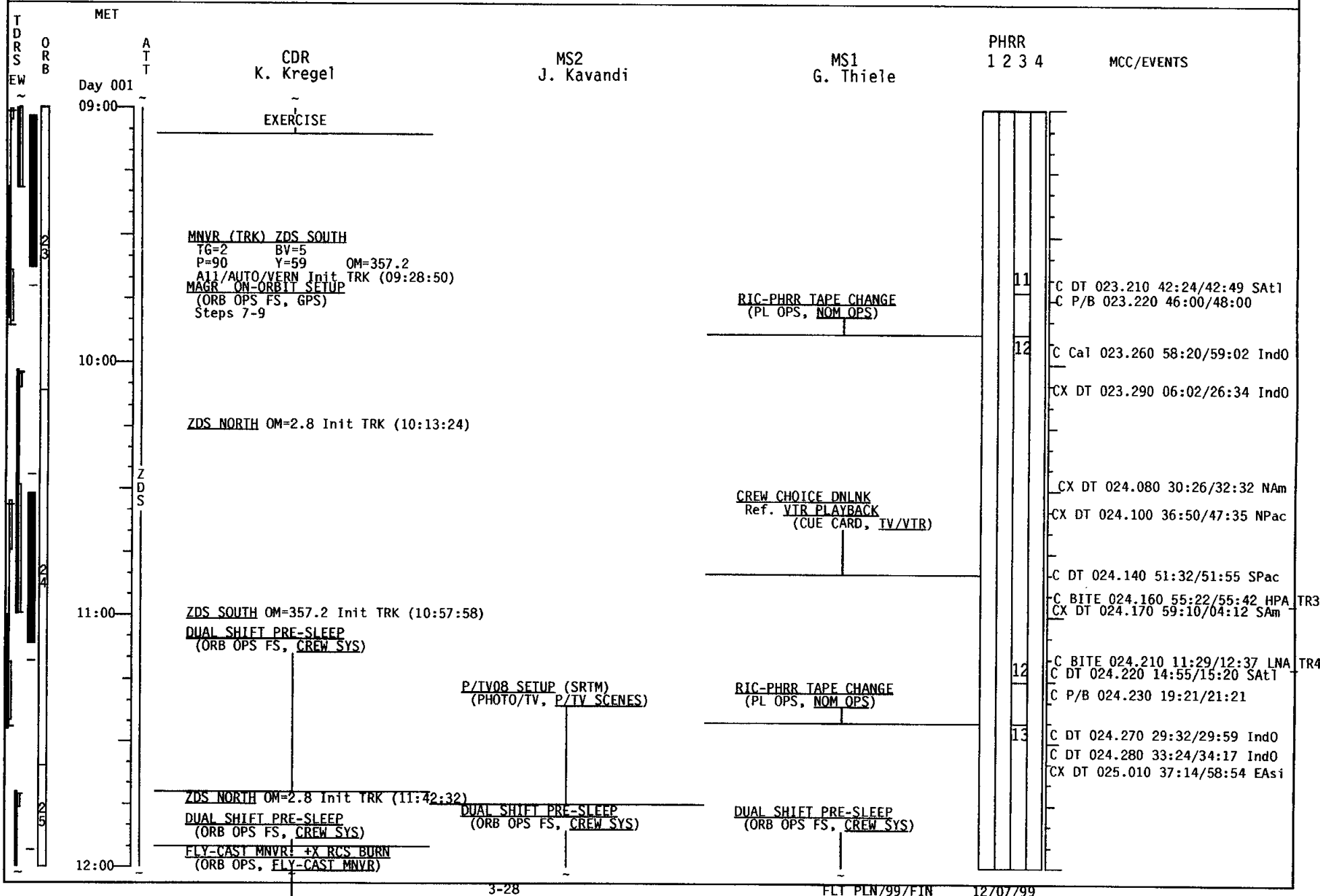
STS-99 (RED) FD2



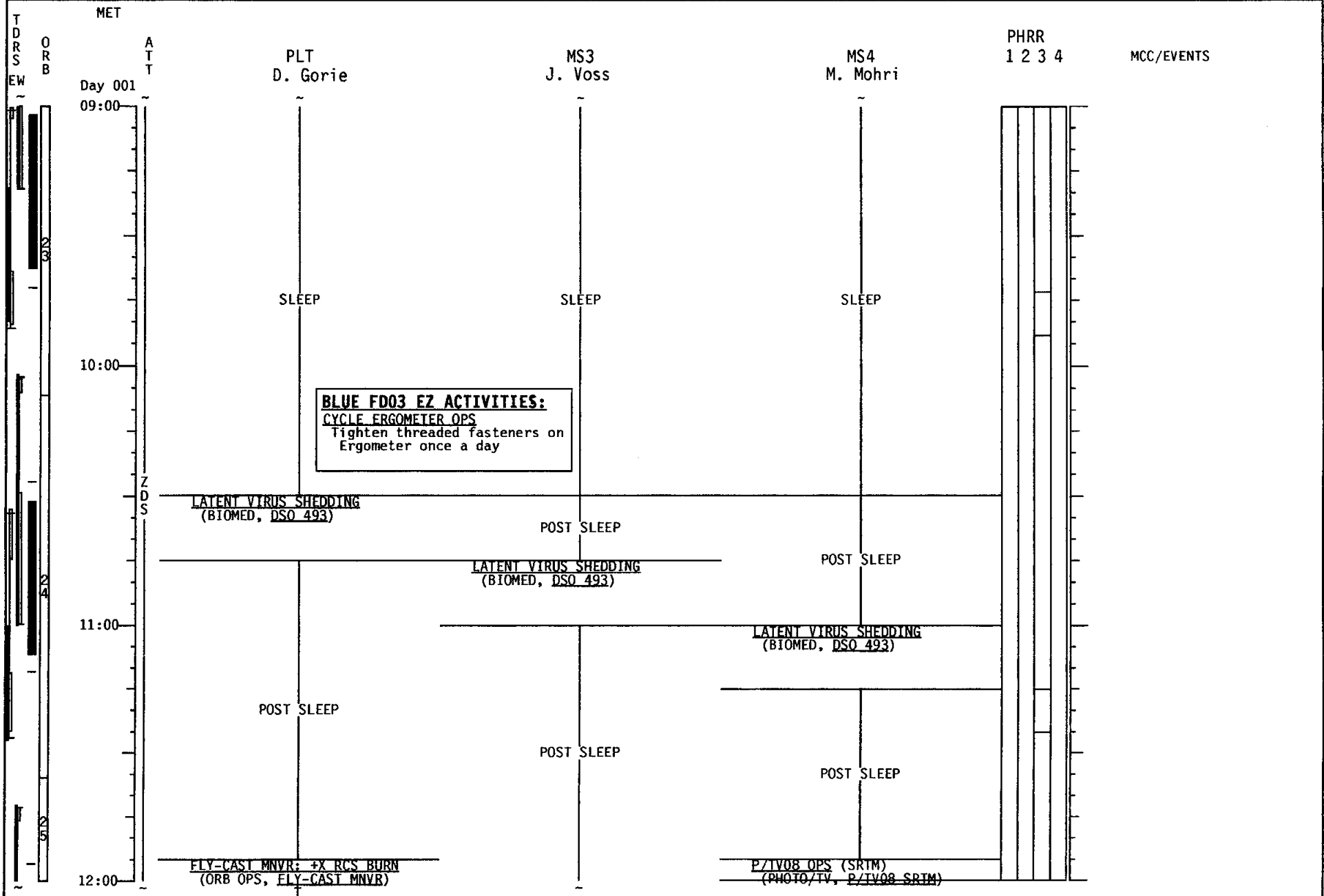
STS-99 (RED) FD2



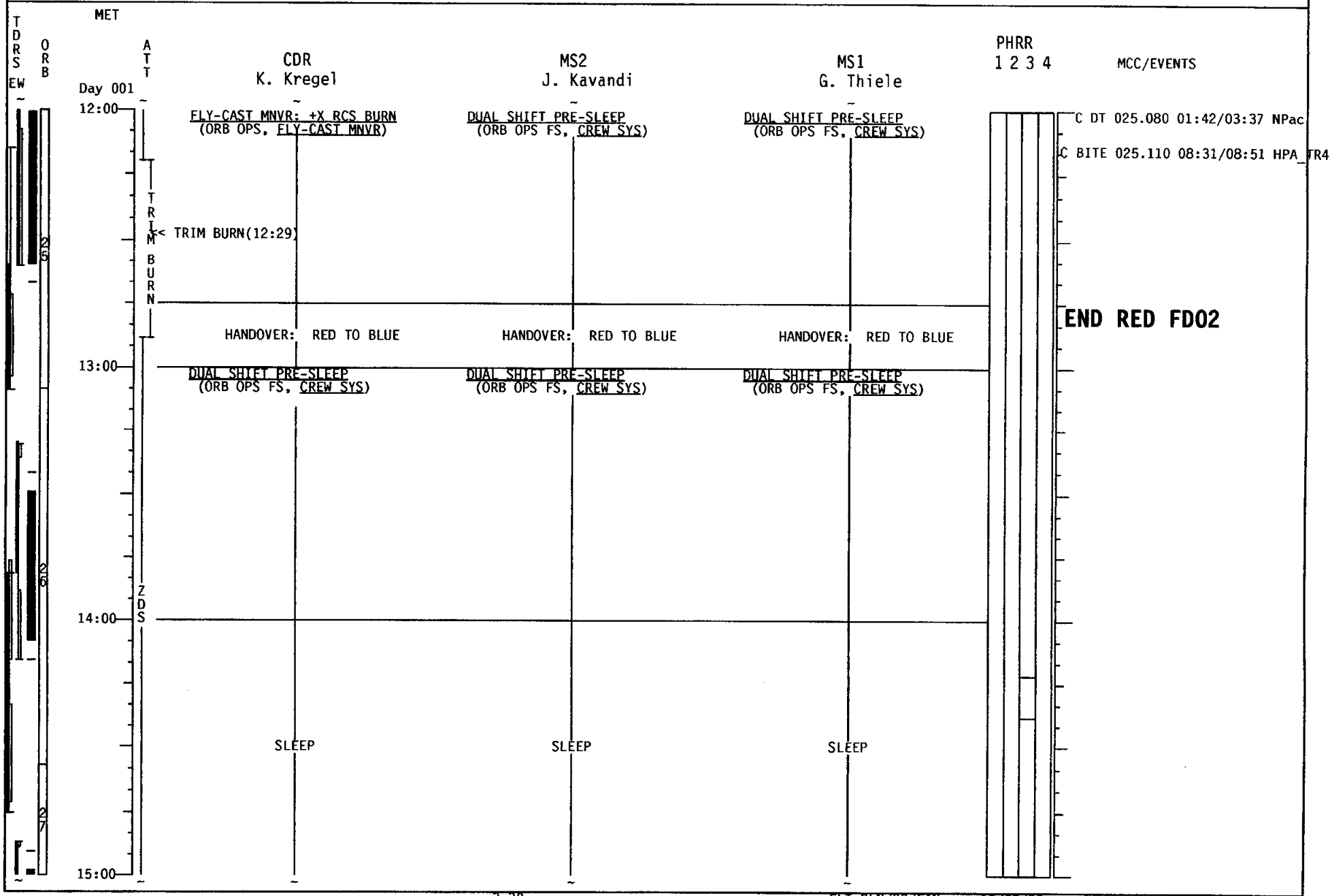
STS-99 (RED) FD2



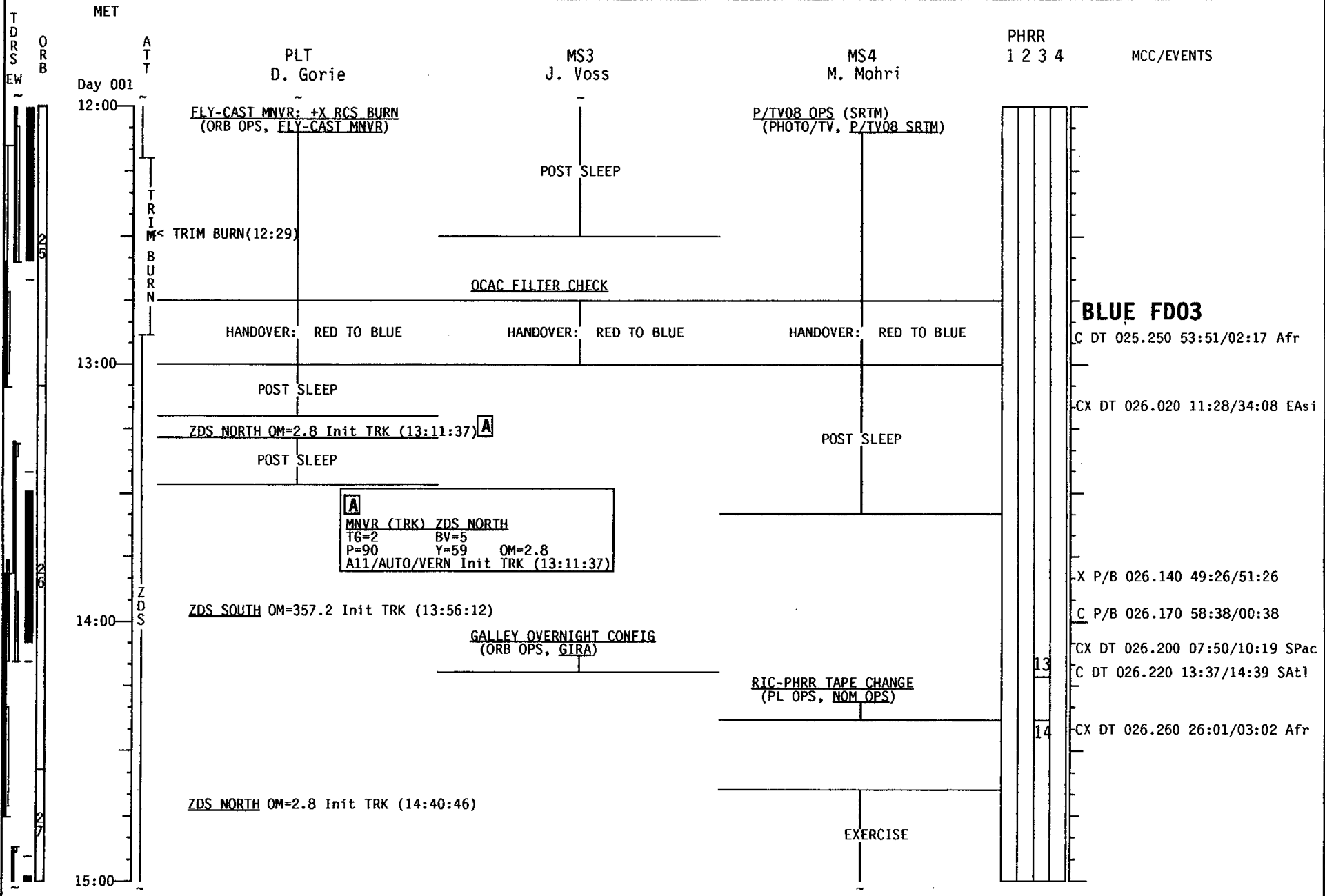
STS-99 (BLUE)FD2



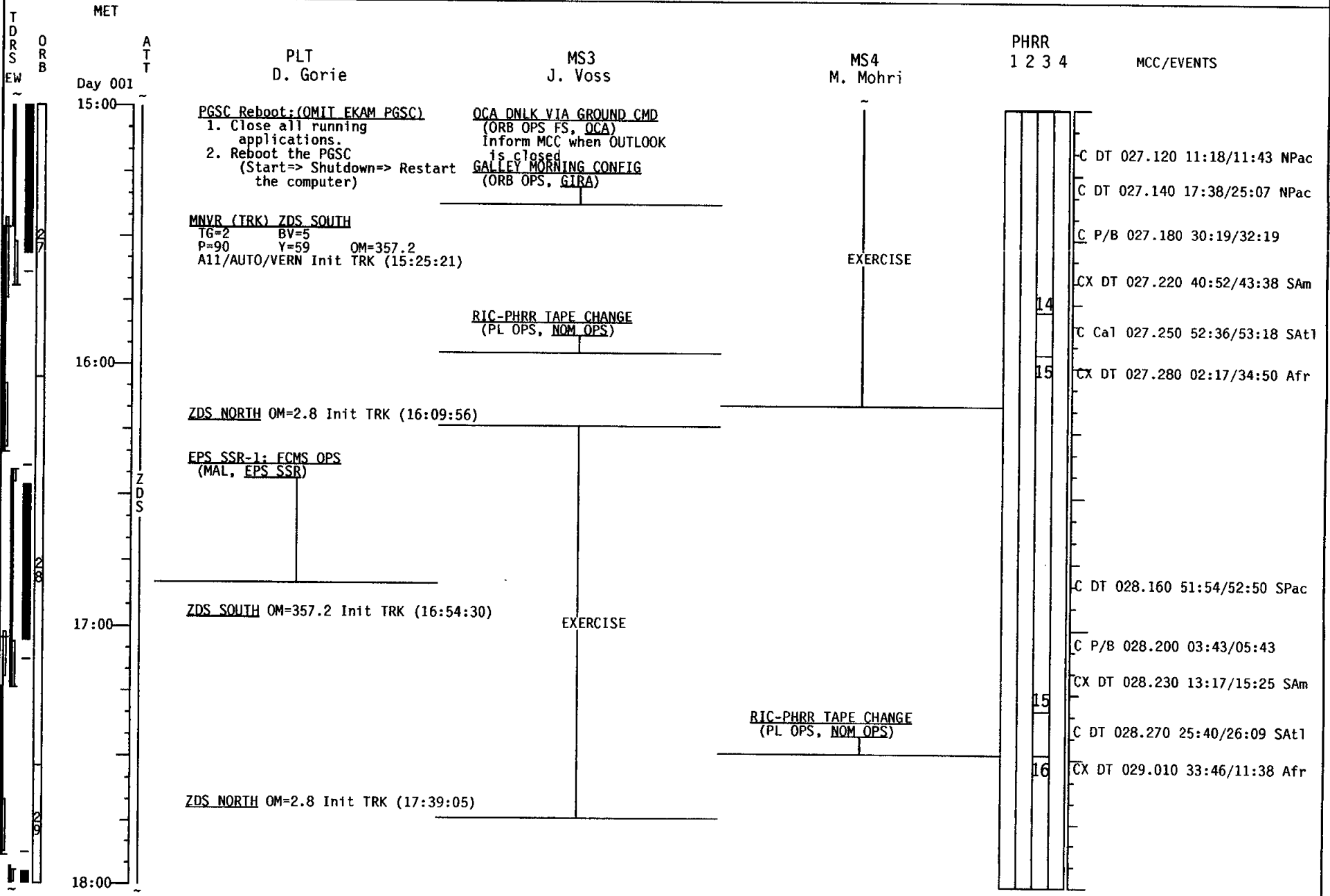
STS-99 (RED) FD2



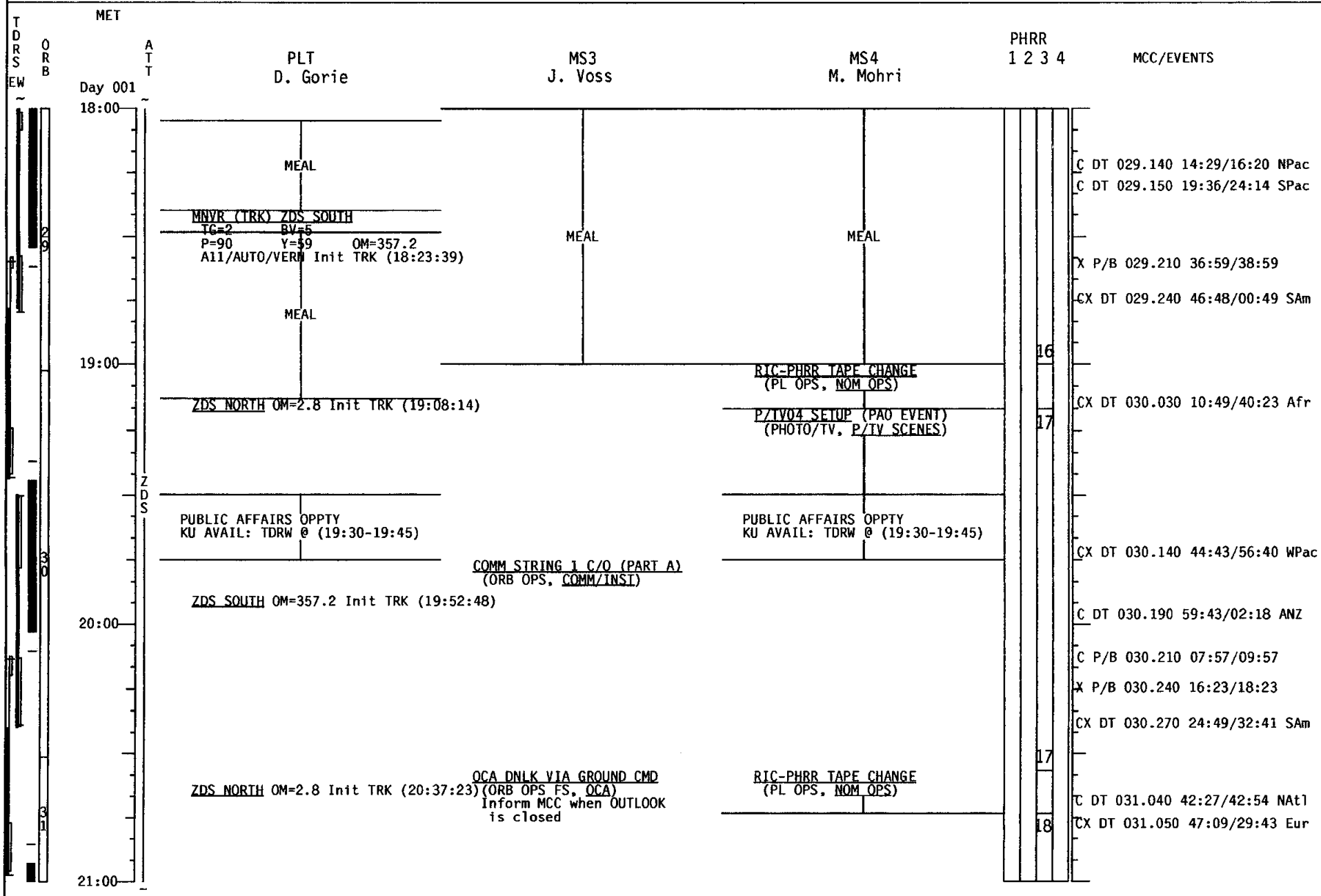
STS-99 (BLUE)FD3



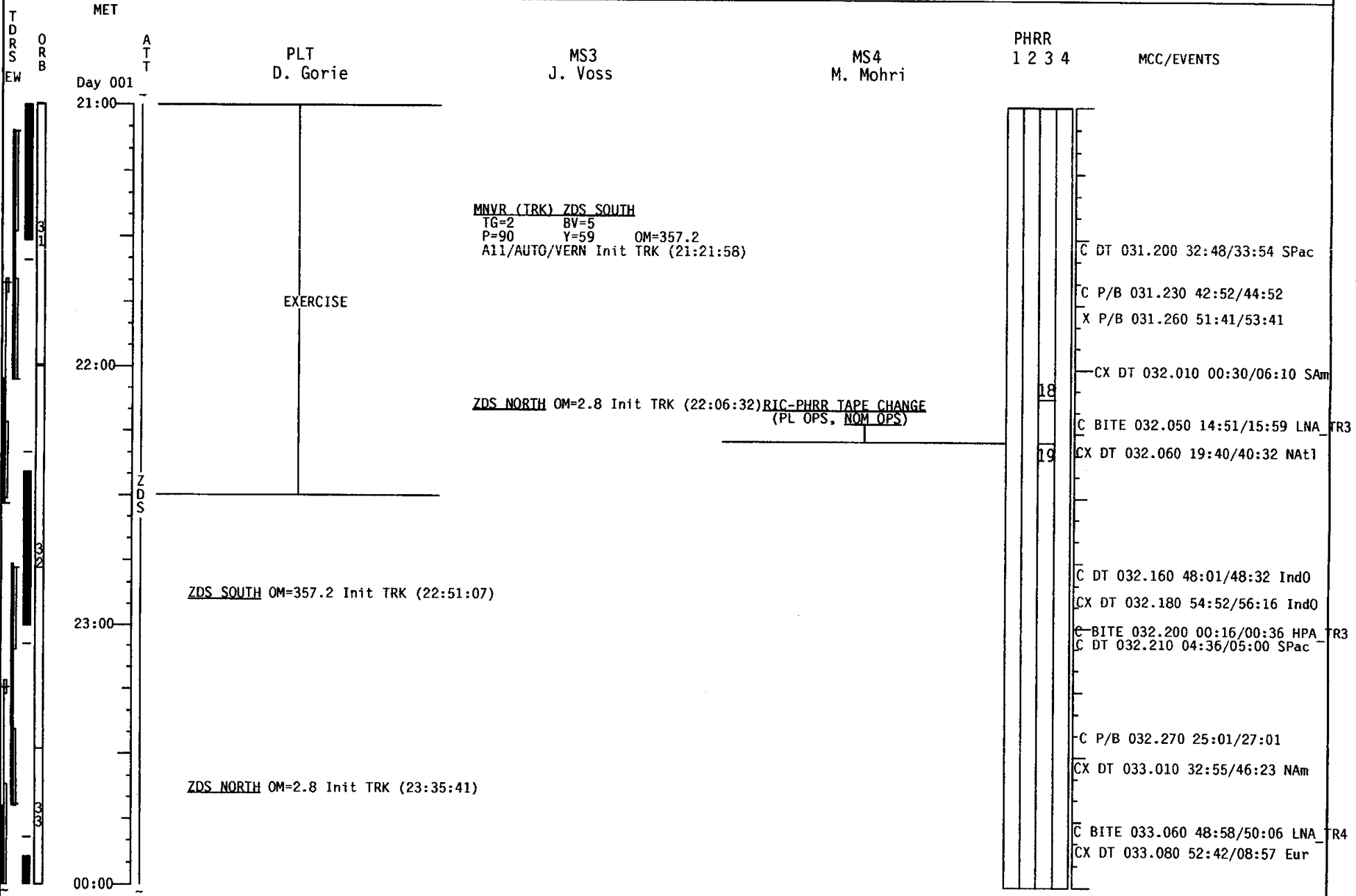
STS-99 (BLUE)FD3



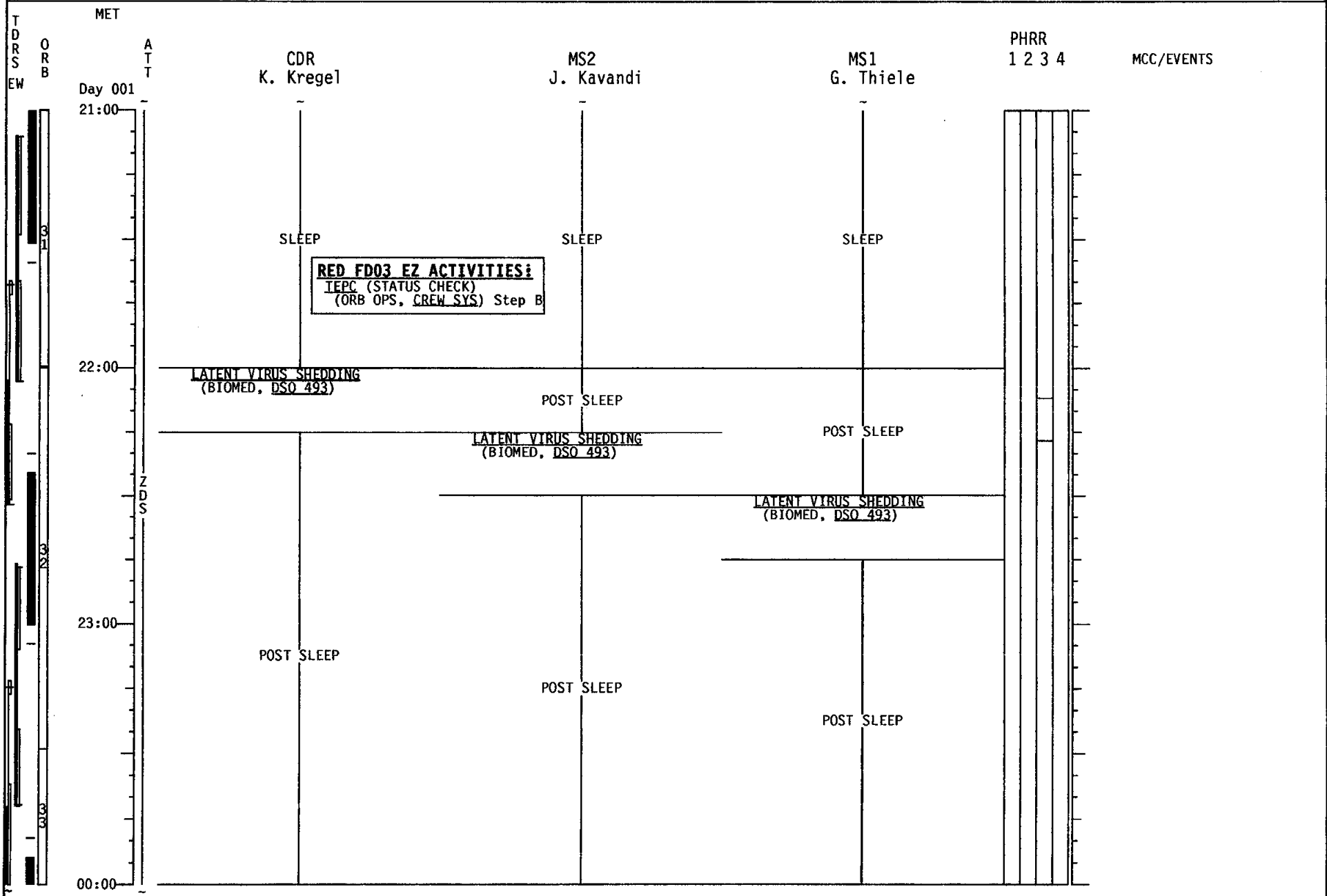
STS-99 (BLUE)FD3



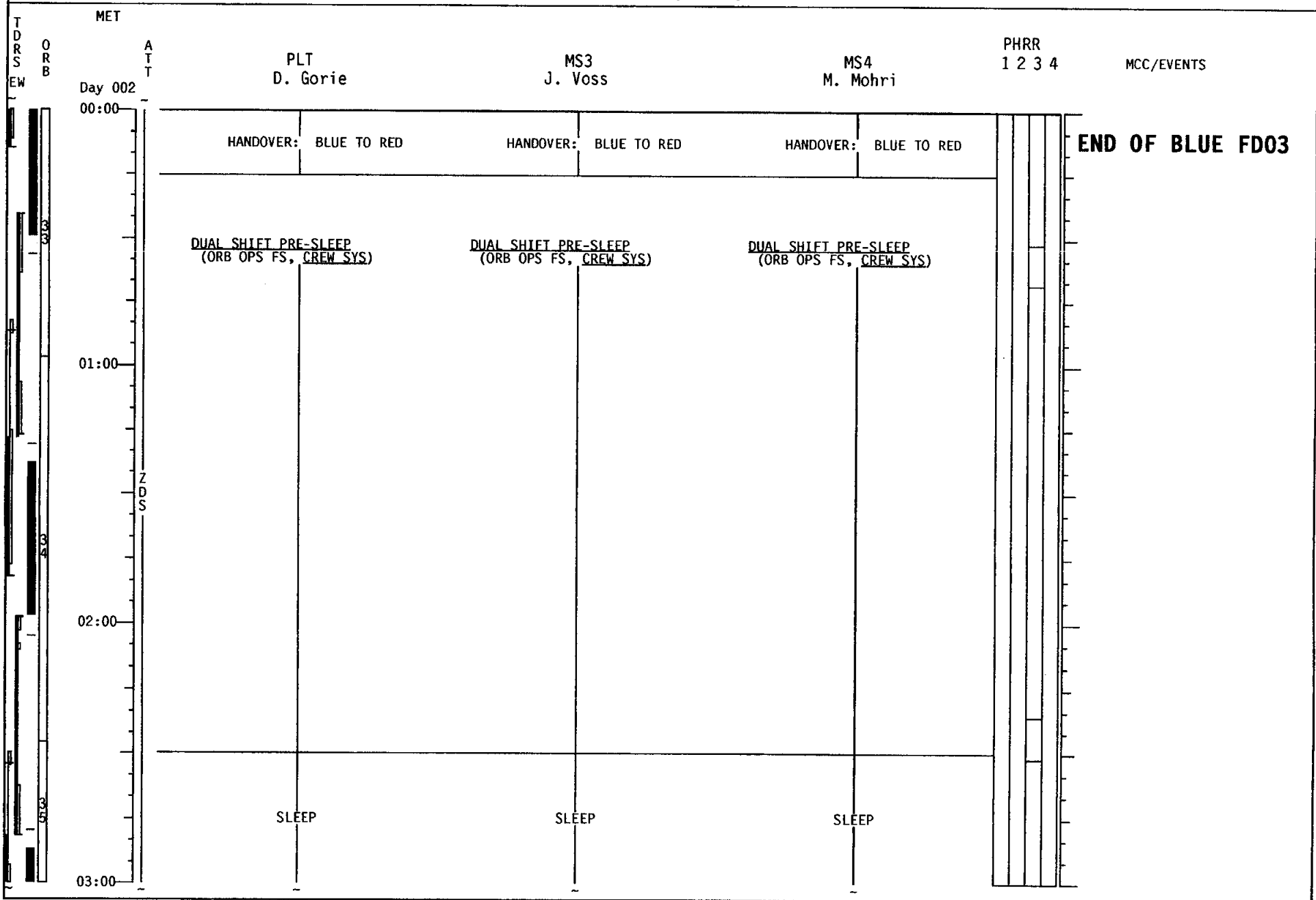
STS-99 (BLUE)FD3



STS-99 (RED) FD2



STS-99 (BLUE)FD3

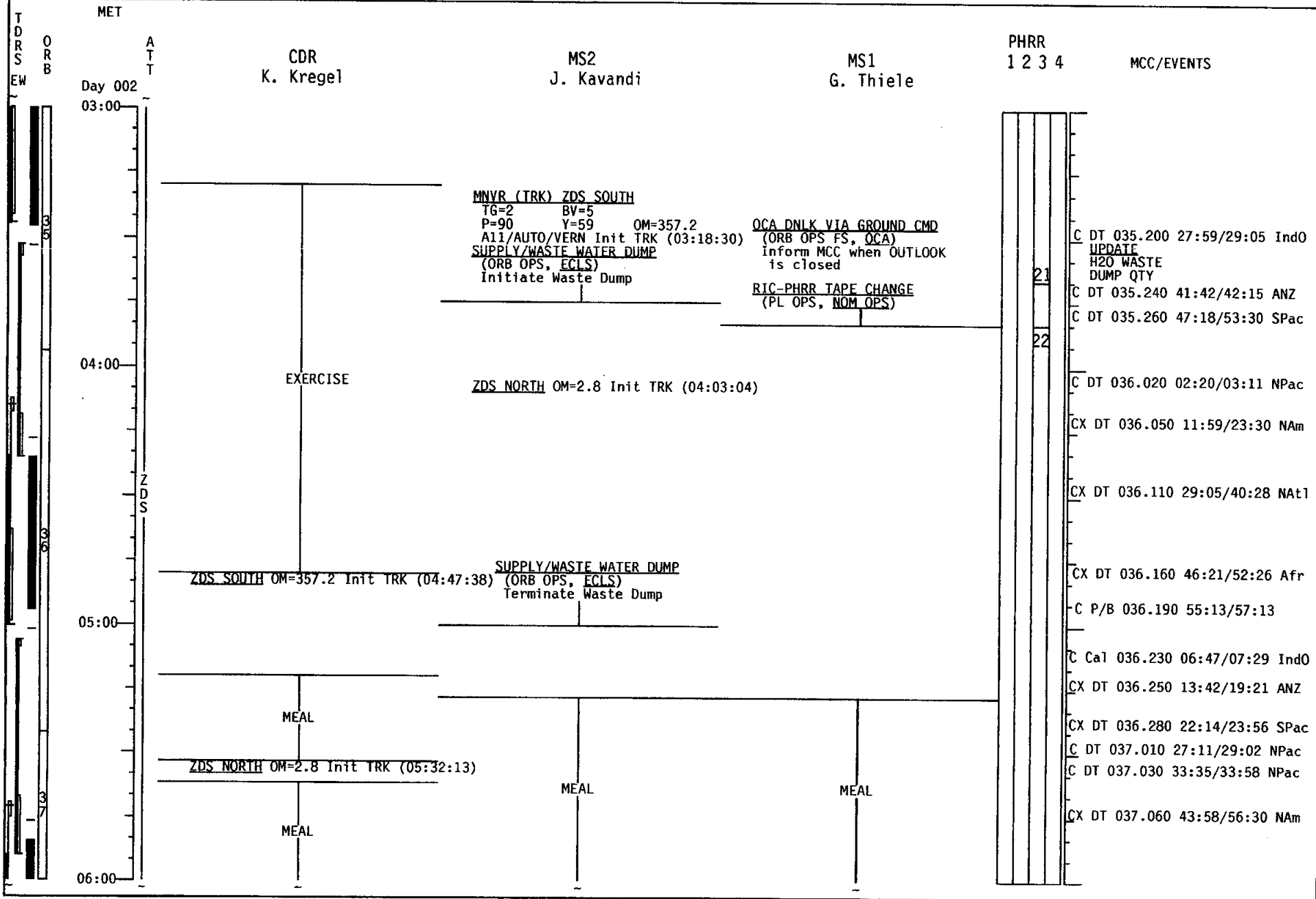


END OF BLUE FD03

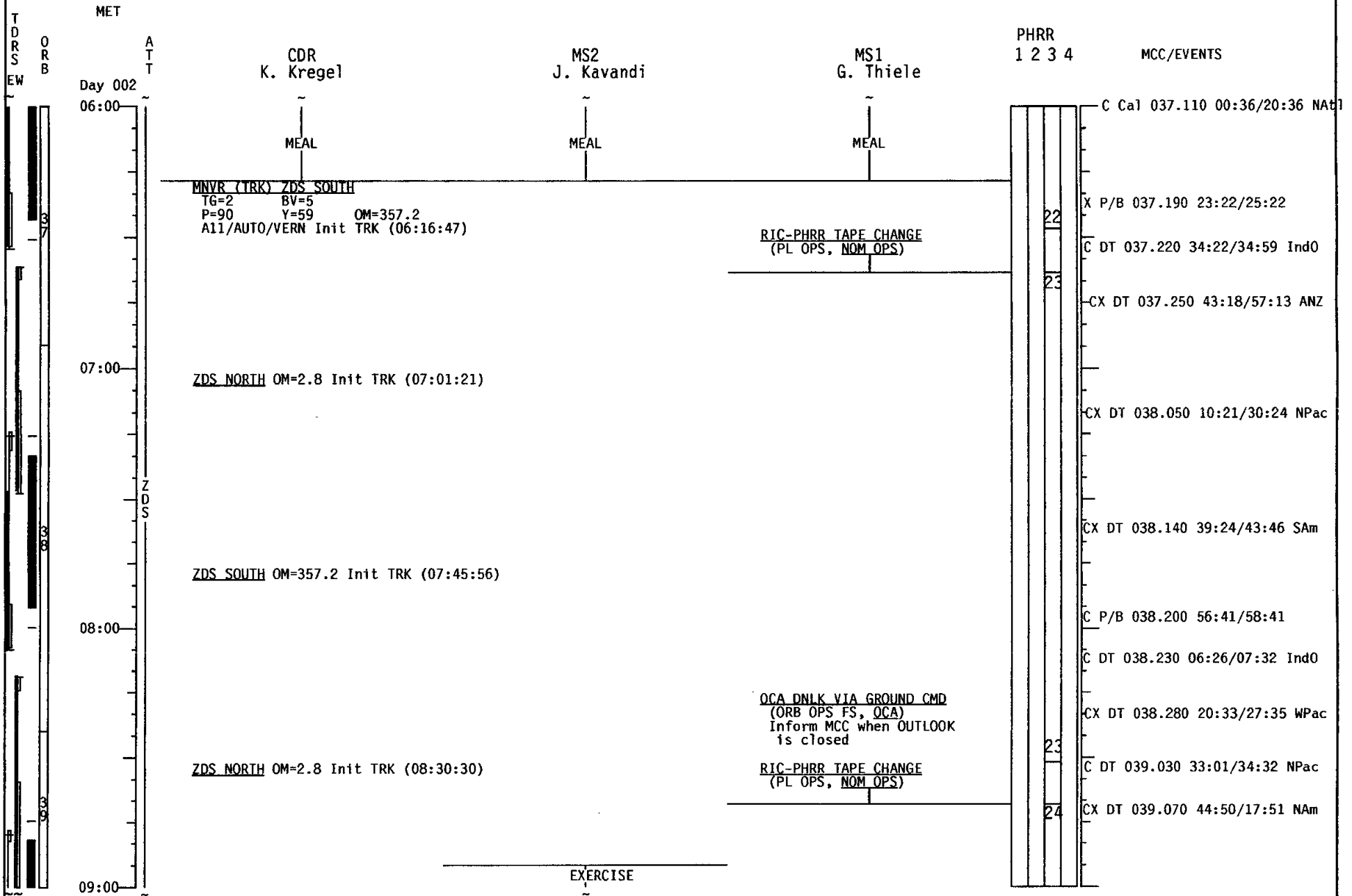
STS-99 (RED) FD3

	MET	CDR K. Kregel	MS2 J. Kavandi	MS1 G. Thiele	PHRR 1 2 3 4	MCC/EVENTS	
TDRS ORB EW	Day 002 00:00 01:00 02:00 03:00	HANDOVER: BLUE TO RED HANDOVER: BLUE TO RED HANDOVER: BLUE TO RED					
		ZDS SOUTH OM=357.2 Init TRK (2/00:20:13) A 06 CK UHF MODE sel - OFF PRIVATE MEDICAL CONFERENCE		A MNVR (TRK) ZDS SOUTH TG=2 BV=5 P=90 Y=59 OM=357.2 A11/AUTO/VERN Init TRK (2/00:20:13)	RIC-PHRR TAPE CHANGE (PL OPS, NOM OPS)	19 20	C DT 033.150 15:26/16:24 IndO C P/B 033.190 27:07/29:07 C DT 033.220 37:06/40:55 SPac C DT 033.270 51:50/53:31 SPac
		SPLY H2O DMP USING FES (ORB OPS, FCLS) Step 1 ZDS NORTH OM=2.8 Init TRK (01:04:47)				20	CX DT 034.020 05:00/20:31 NAm CX DT 034.090 24:42/43:07 Eur
		ZDS SOUTH OM=357.2 Init TRK (01:49:21)				20	C DT 034.150 45:40/49:29 Afr C BITE 034.200 00:12/00:32 HPA_TR4
		ZDS NORTH OM=2.8 Init TRK (02:33:56)		RIC-PHRR TAPE CHANGE (PL OPS, NOM OPS)		21	C DT 034.240 11:26/15:21 ANZ C DT 034.270 21:19/21:44 SPac C DT 034.280 23:58/25:52 SPac CX DT 035.040 38:28/50:14 NAm CX DT 035.100 58:42/19:15 Eur

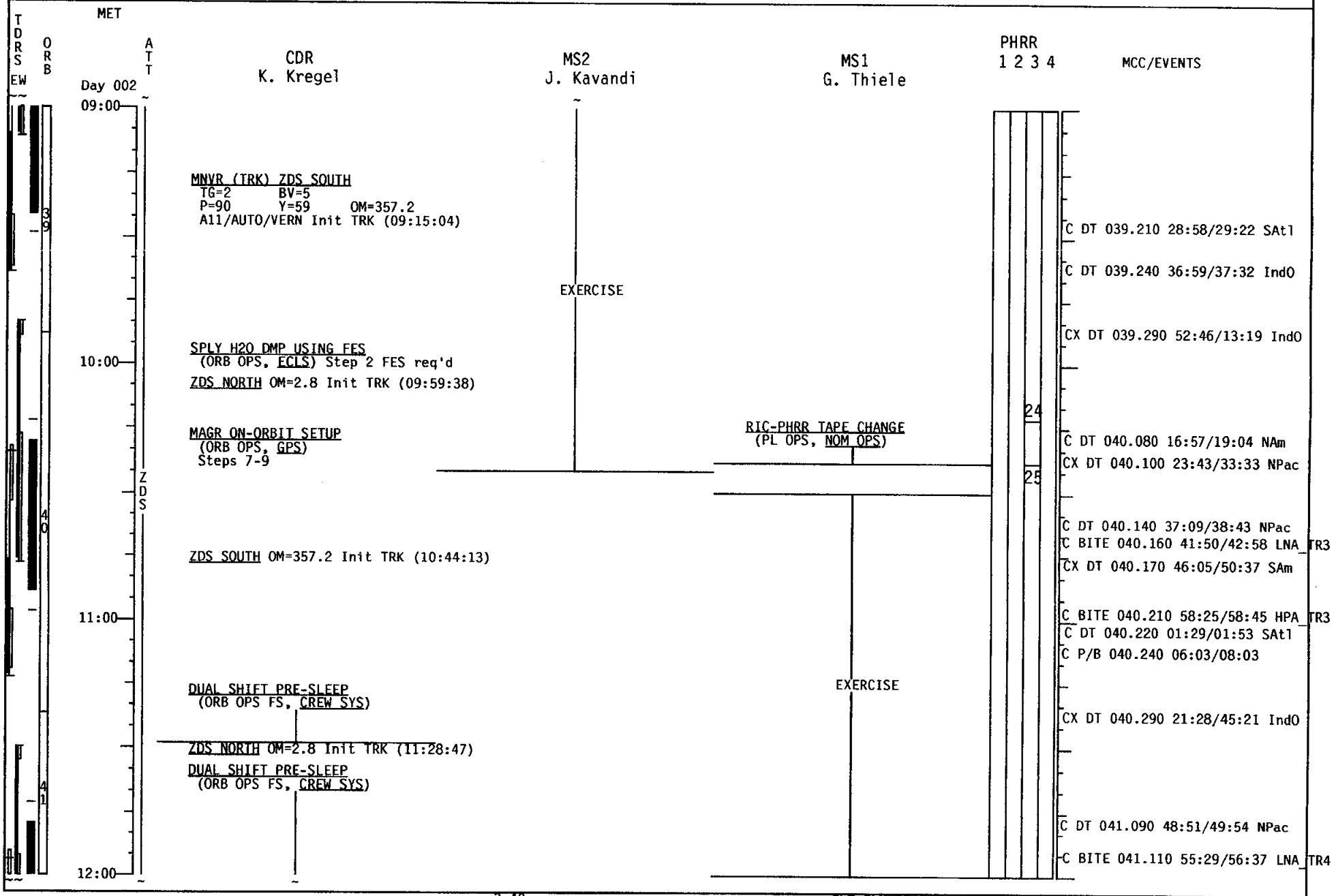
STS-99 (RED) FD3



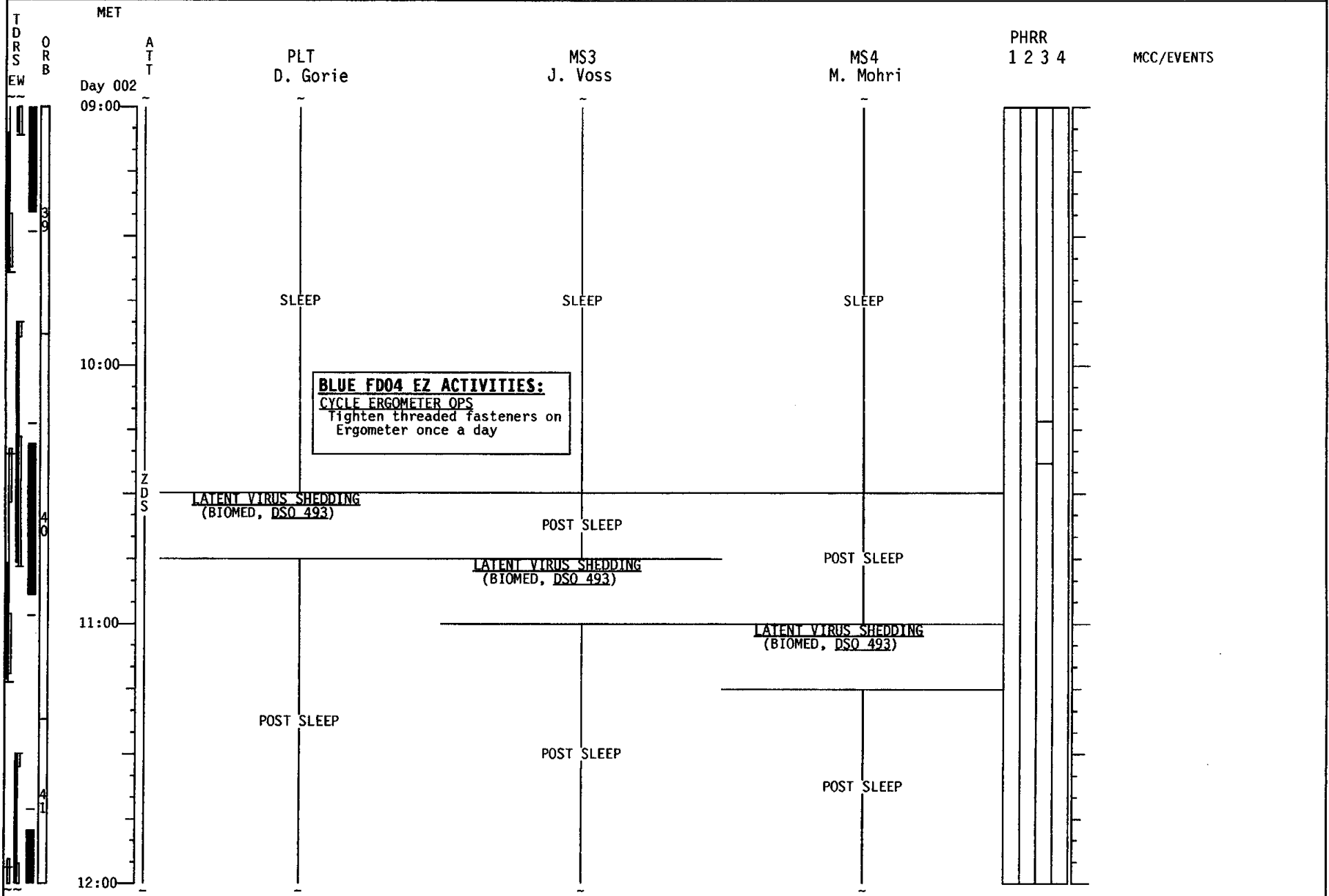
STS-99 (RED) FD3



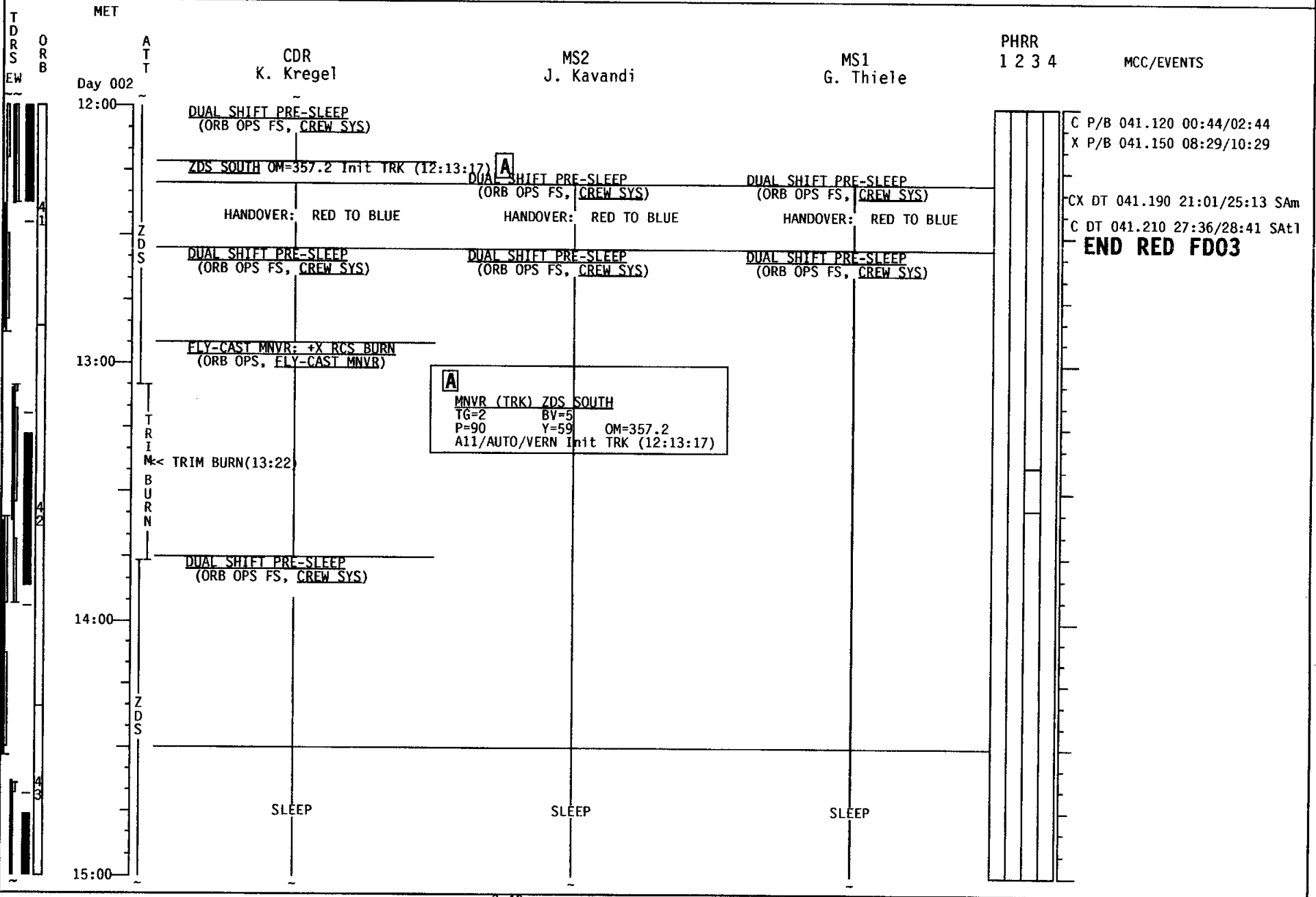
STS-99 (RED) FD3



STS-99 (BLUE)FD3

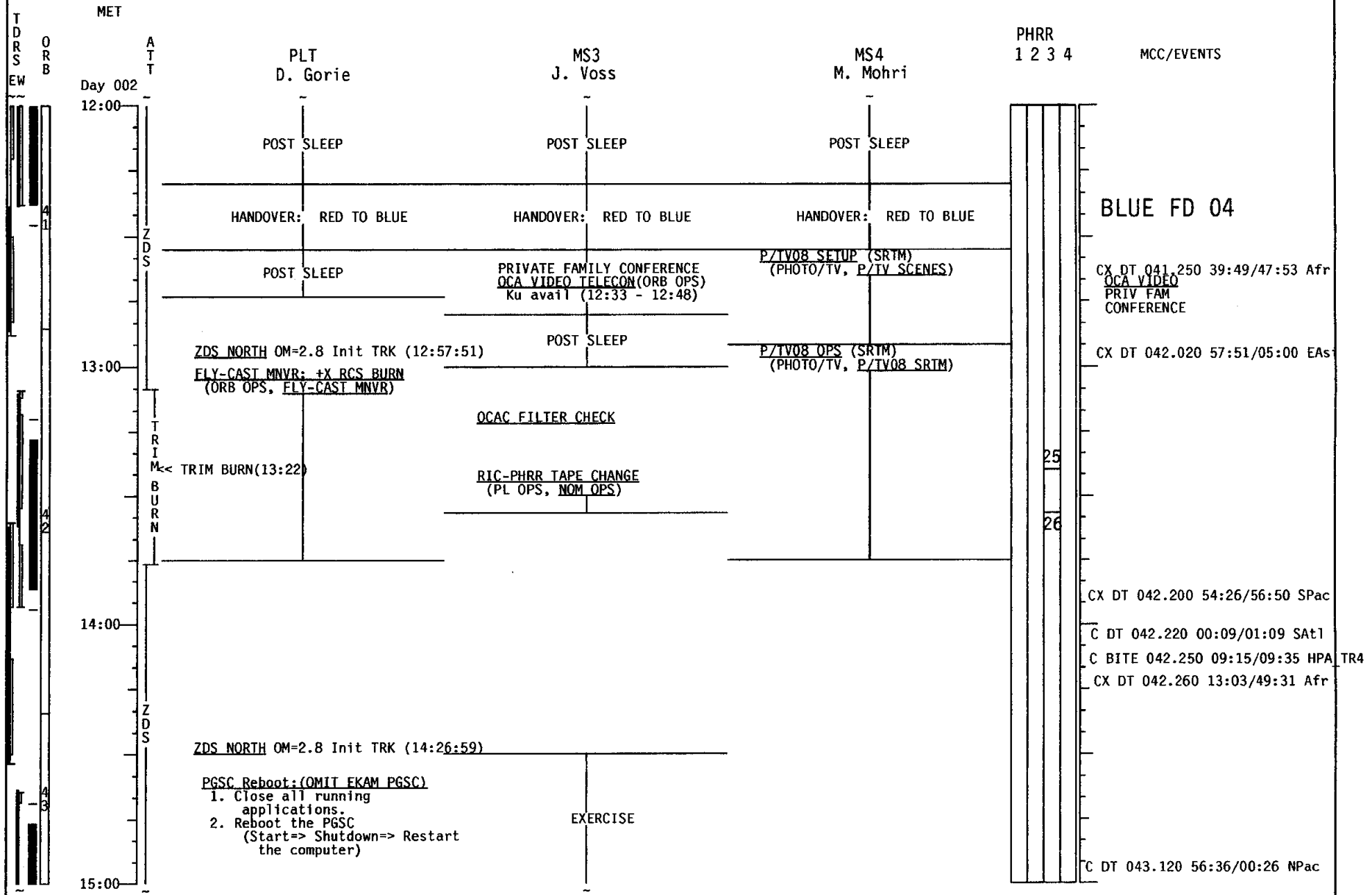


STS-99 (RED)FD3

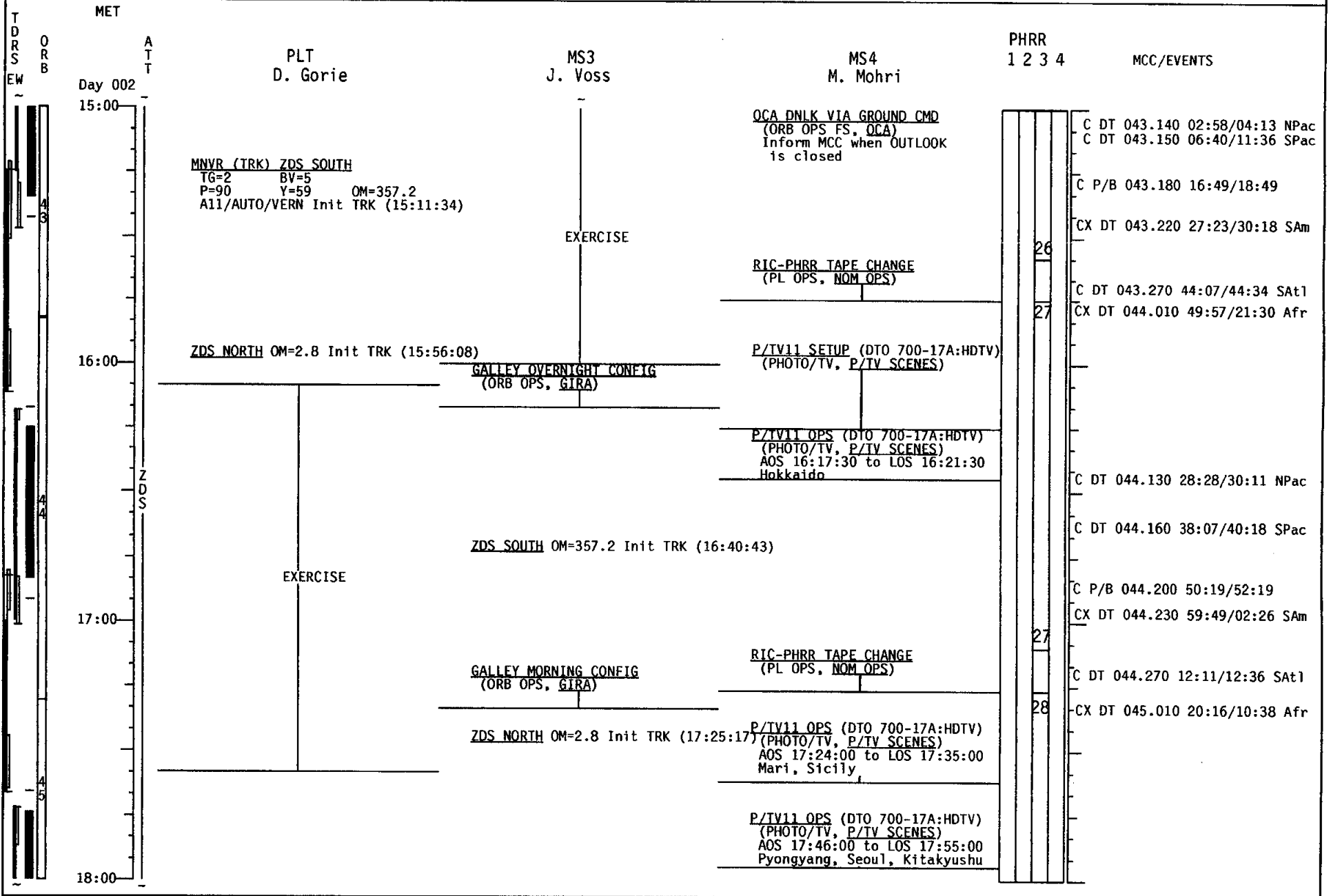


C P/B 041.120 00:44/02:44
 X P/B 041.150 08:29/10:29
 CX DT 041.190 21:01/25:13 SA#1
 C DT 041.210 27:36/28:41 SA#1
END RED FD03

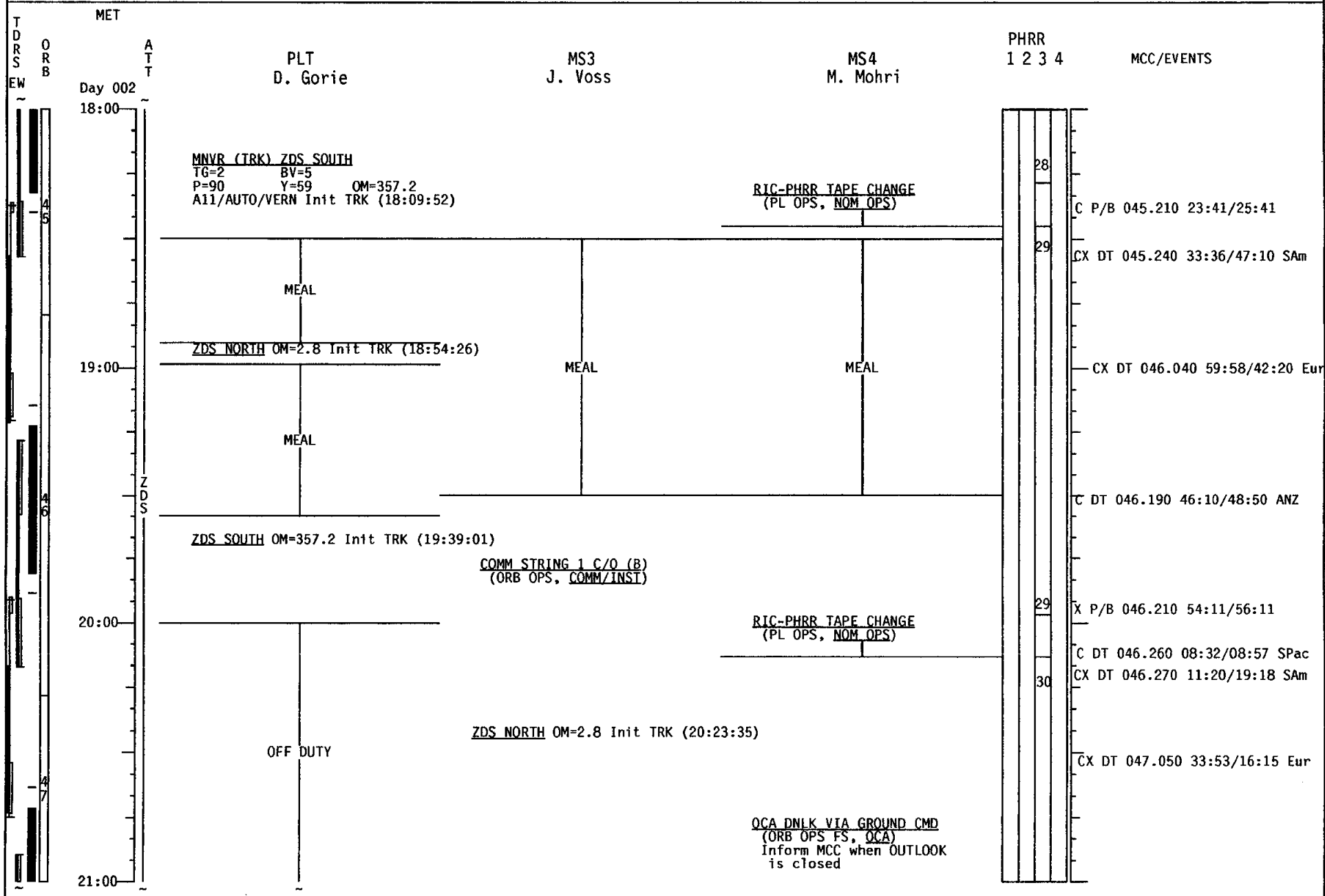
STS-99 (BLUE)FD4



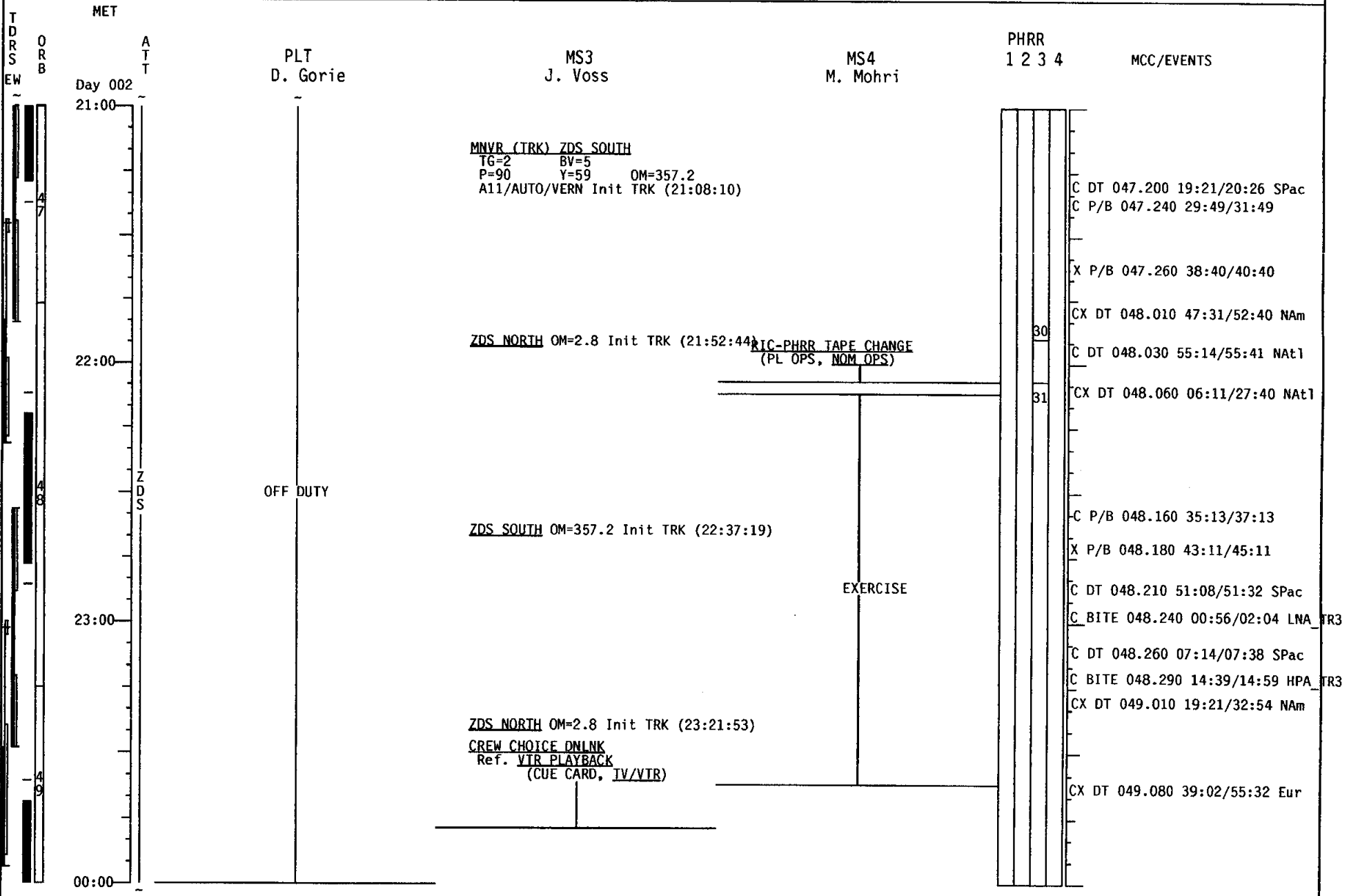
STS-99 (BLUE)FD4



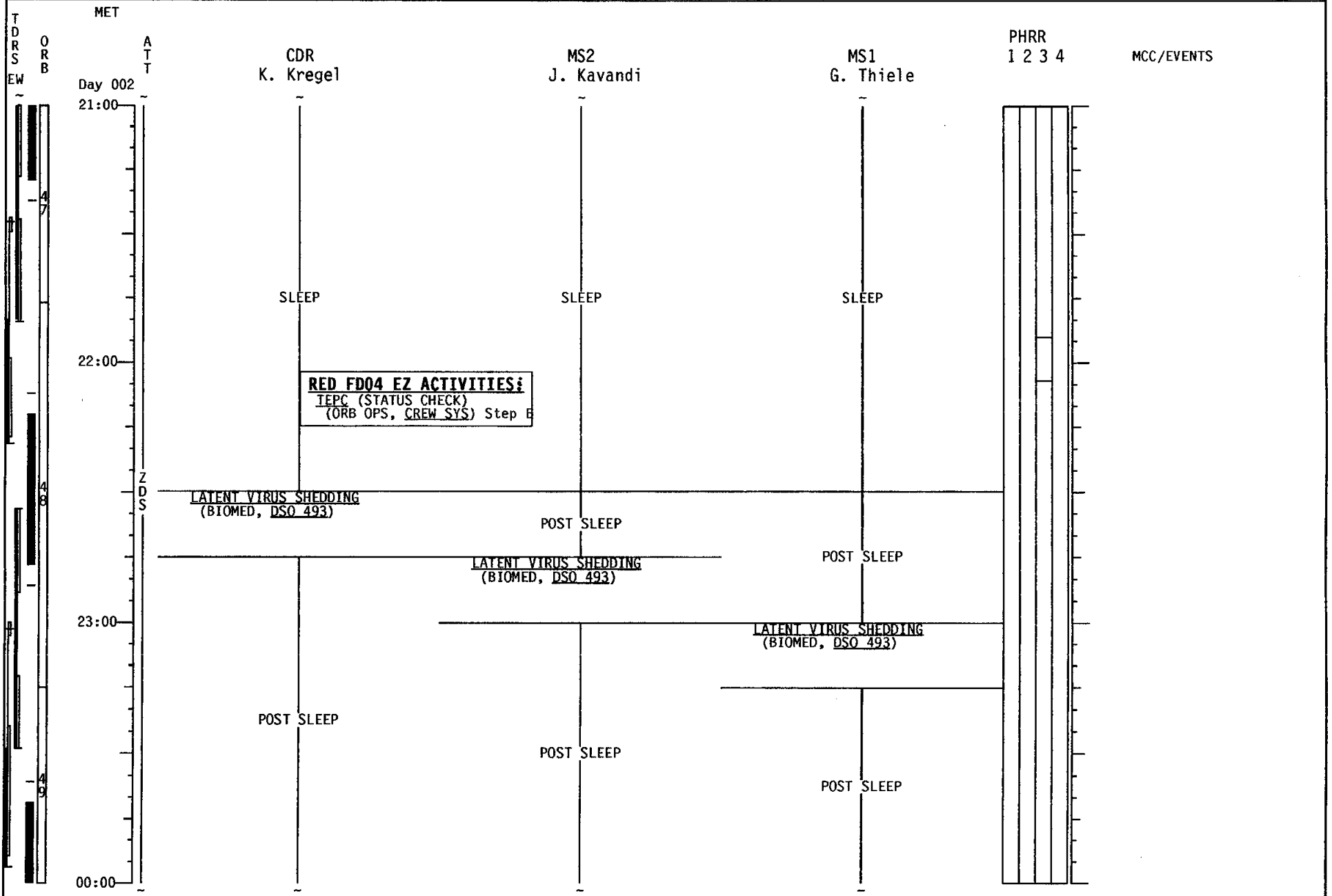
STS-99 (BLUE)FD4



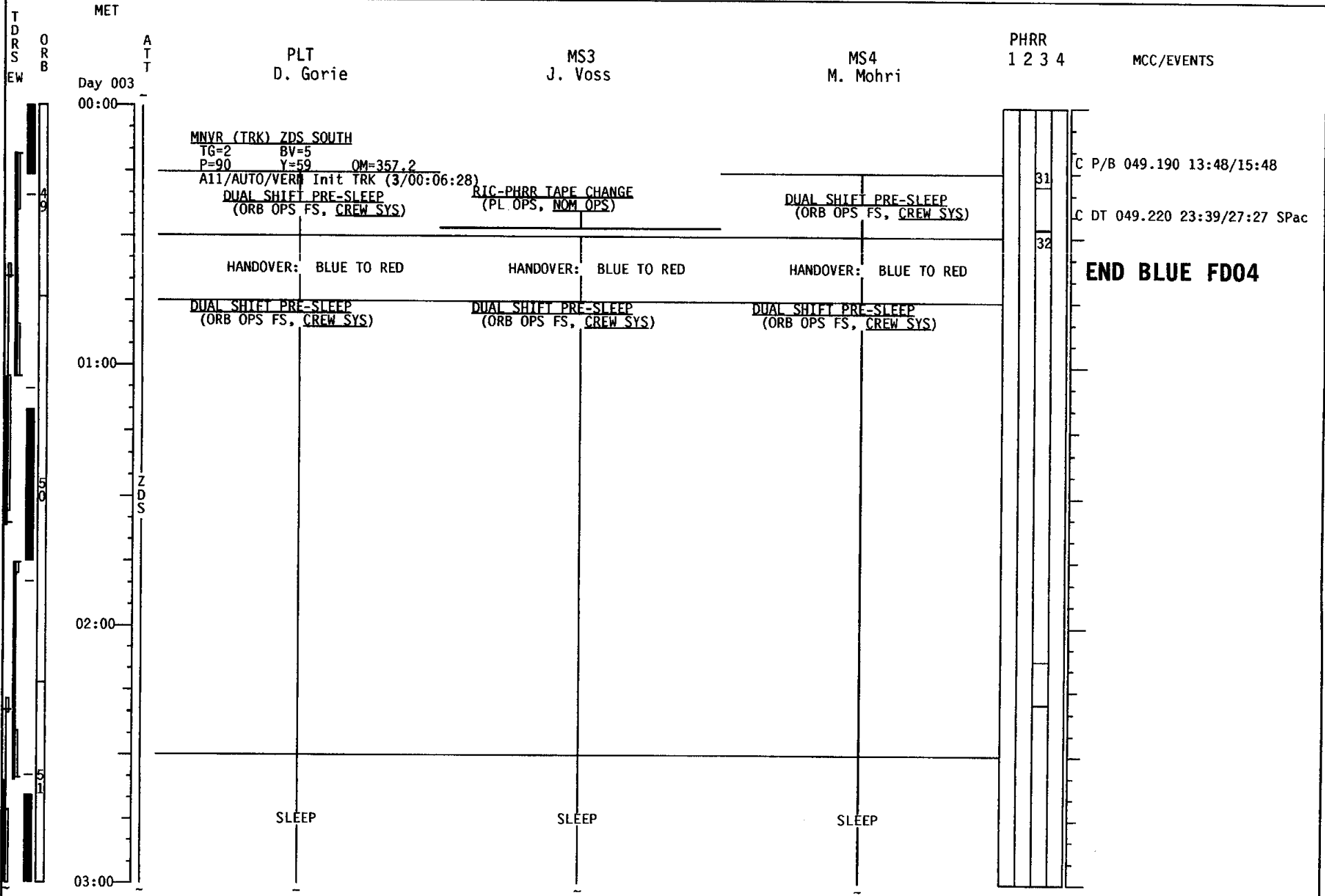
STS-99 (BLUE)FD4



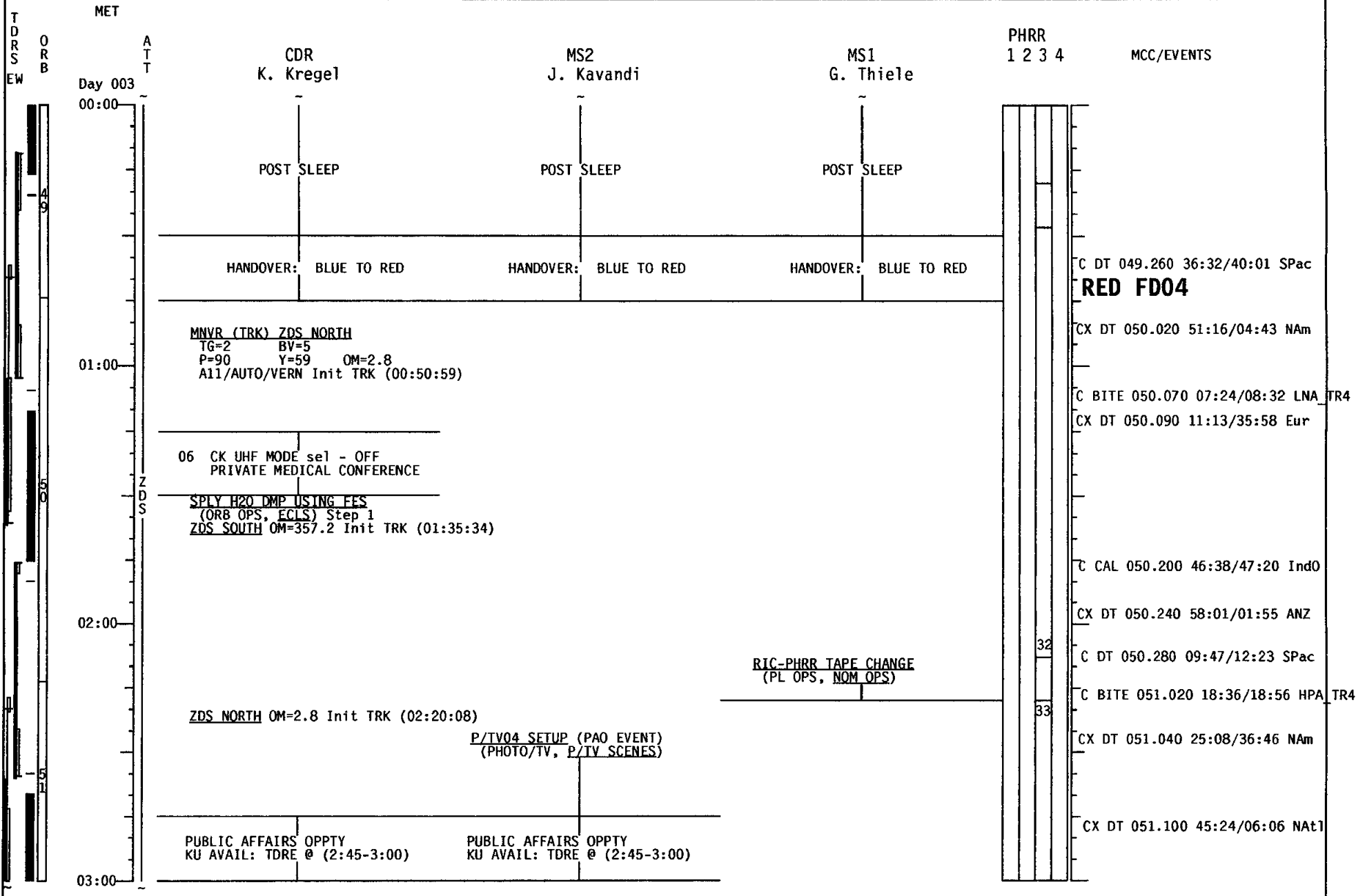
STS-99 (RED) FD3



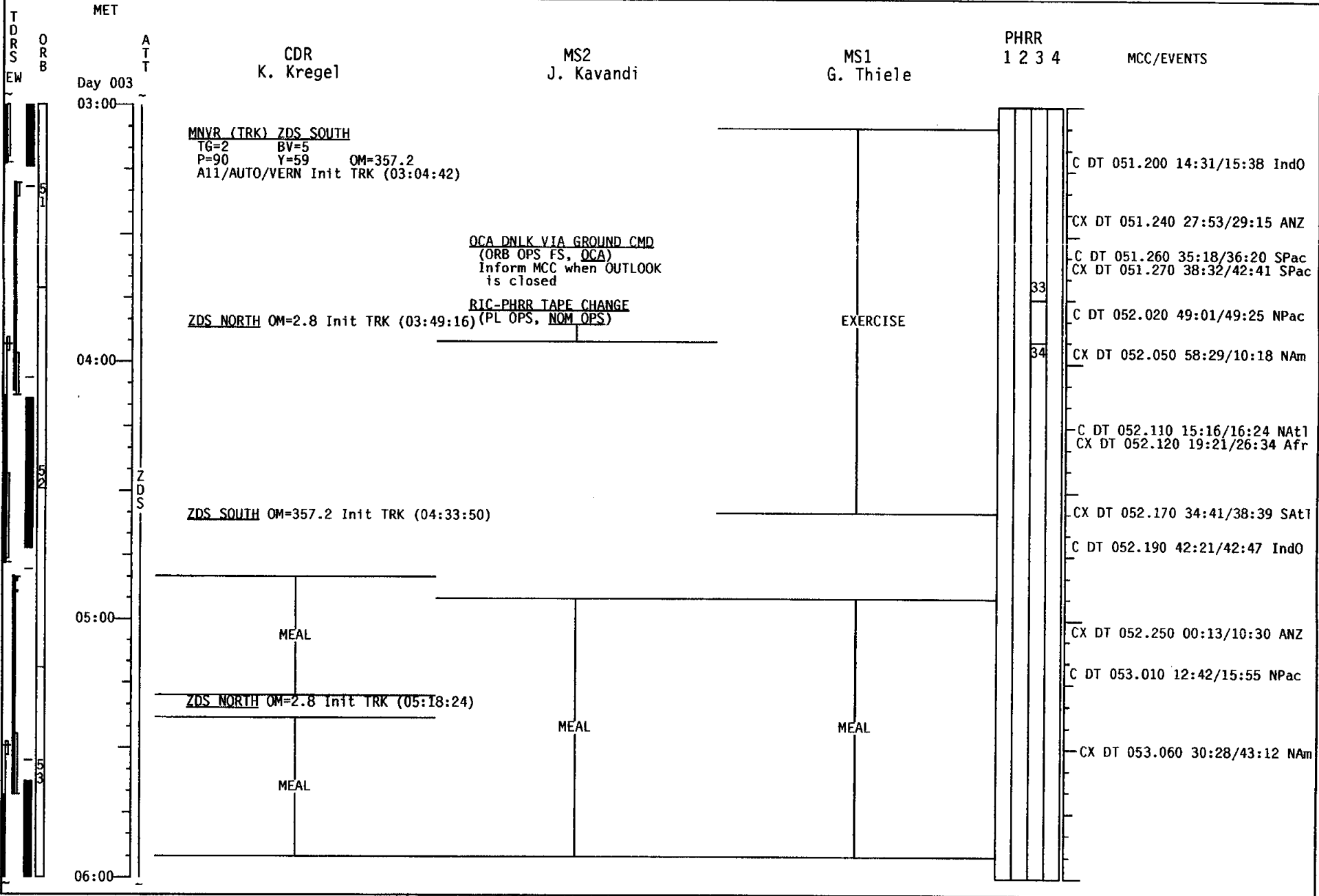
STS-99 (BLUE)FD4



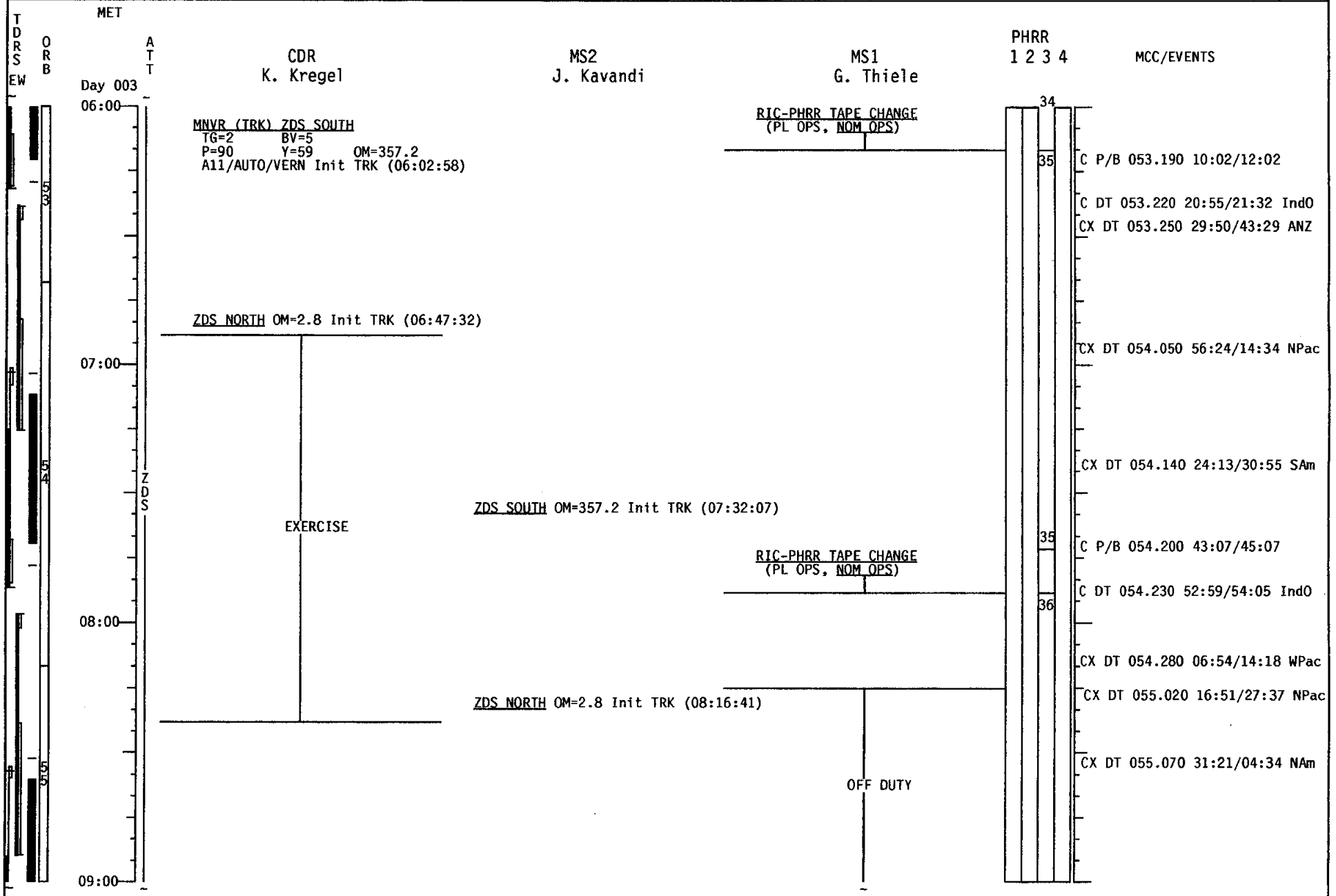
STS-99 (RED) FD4



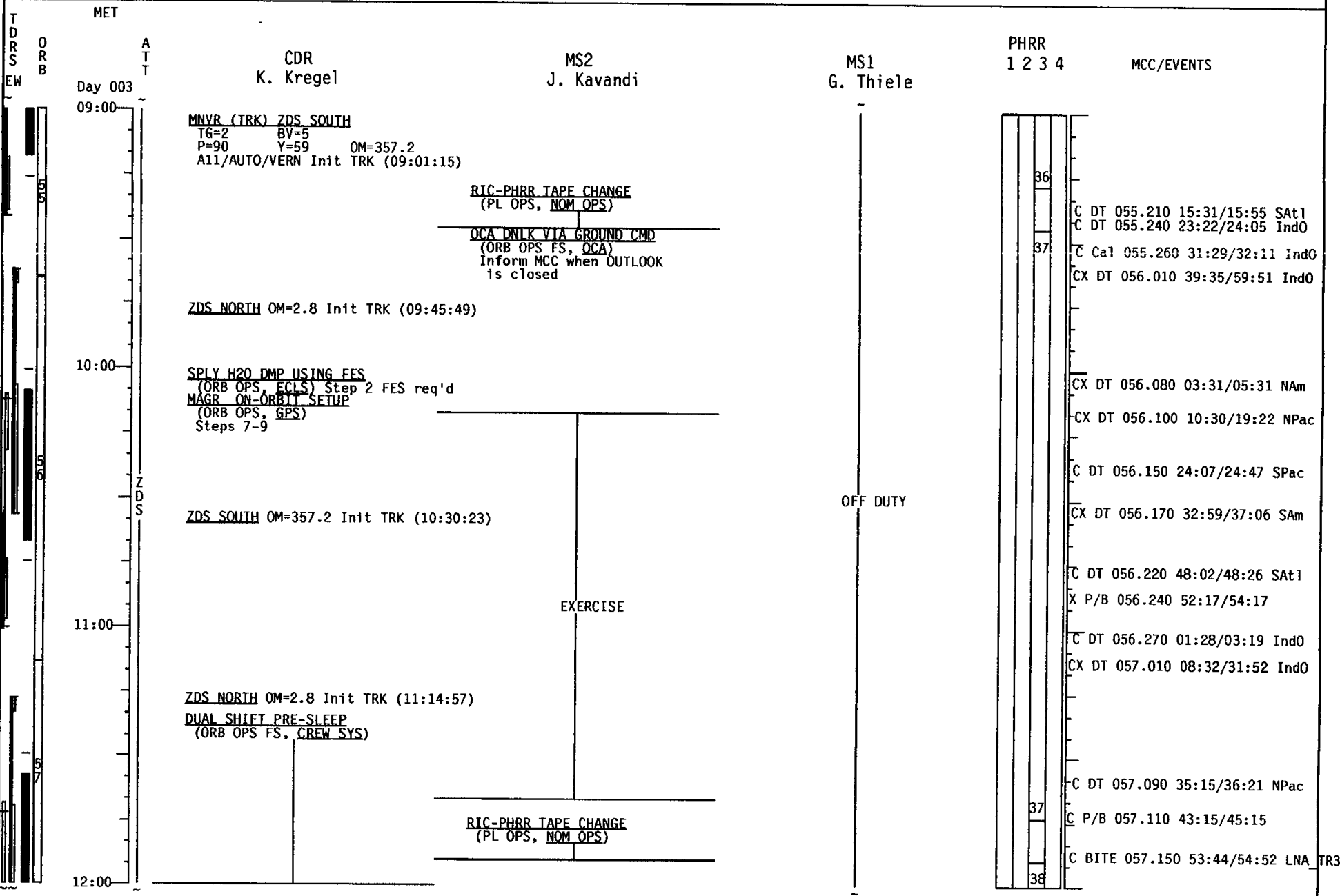
STS-99 (RED) FD4



STS-99 (RED) FD4



STS-99 (RED) FD4



MET

T
D
R
S
E
W

Day 003

09:00

10:00

11:00

12:00

A
I
T

CDR
K. Kregel

MS2
J. Kavandi

MS1
G. Thiele

PHRR
1 2 3 4

MCC/EVENTS

MNVR (TRK) ZDS SOUTH
TG=2 BV=5
P=90 Y=59 OM=357.2
A11/AUTO/VERN Init TRK (09:01:15)

RIC-PHRR TAPE CHANGE
(PL OPS, NOM OPS)

OCA DNK VIA GROUND CMD
(ORB OPS FS, OCA)
Inform MCC when OUTLOOK
is closed

ZDS NORTH OM=2.8 Init TRK (09:45:49)

SPLY H2O DMP USING FES
(ORB OPS, ECLS) Step 2 FES req'd
MAGR ON-ORBIT SETUP
(ORB OPS, GPS)
Steps 7-9

ZDS SOUTH OM=357.2 Init TRK (10:30:23)

EXERCISE

ZDS NORTH OM=2.8 Init TRK (11:14:57)
DUAL SHIFT PRE-SLEEP
(ORB OPS FS, CREW SYS)

RIC-PHRR TAPE CHANGE
(PL OPS, NOM OPS)

OFF DUTY

36

37

37

38

C DT 055.210 15:31/15:55 SAT1
C DT 055.240 23:22/24:05 IndO

C Ca1 055.260 31:29/32:11 IndO
CX DT 056.010 39:35/59:51 IndO

CX DT 056.080 03:31/05:31 NAm
CX DT 056.100 10:30/19:22 NPac

C DT 056.150 24:07/24:47 SPac
CX DT 056.170 32:59/37:06 SAm

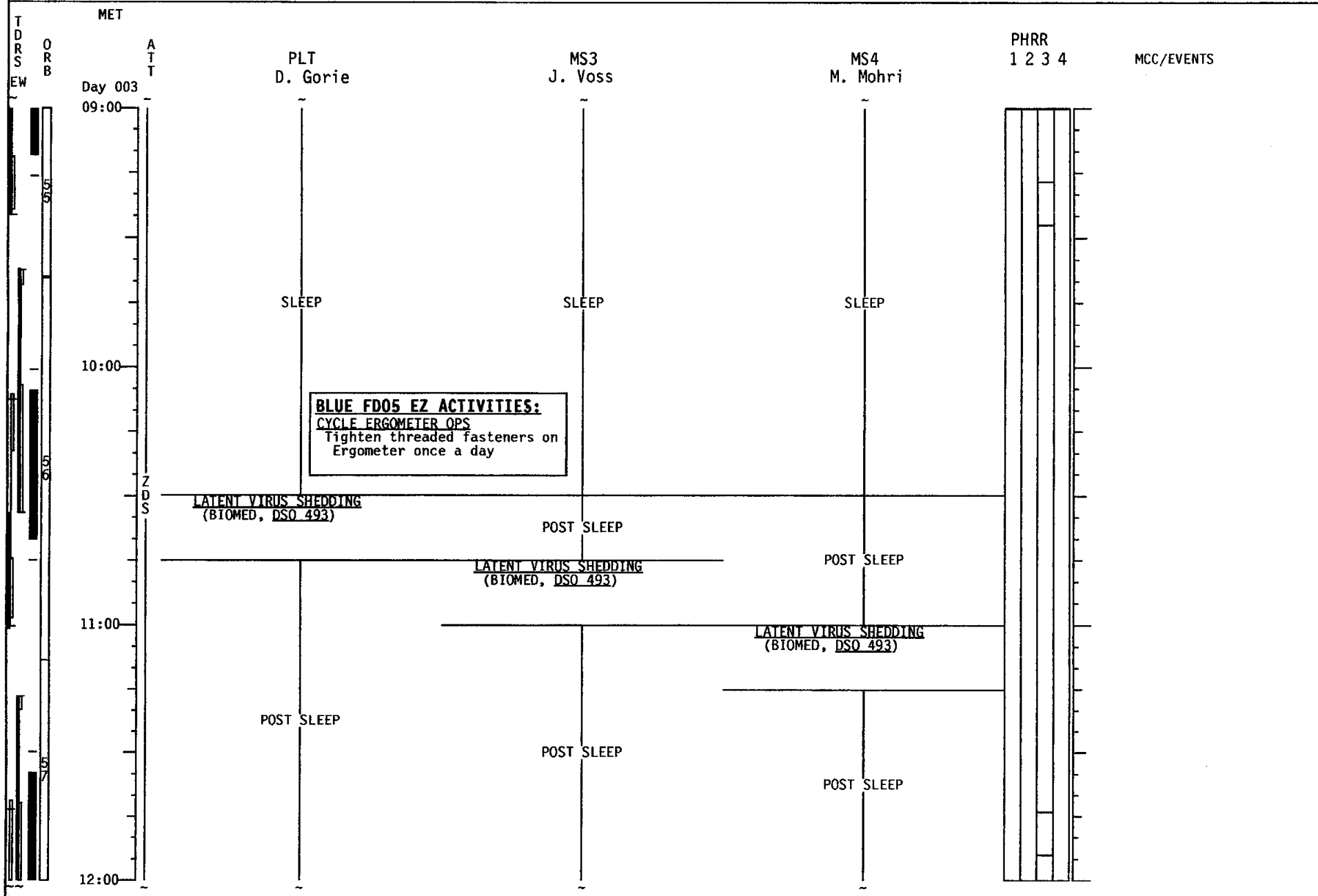
C DT 056.220 48:02/48:26 SAT1
X P/B 056.240 52:17/54:17

C DT 056.270 01:28/03:19 IndO
CX DT 057.010 08:32/31:52 IndO

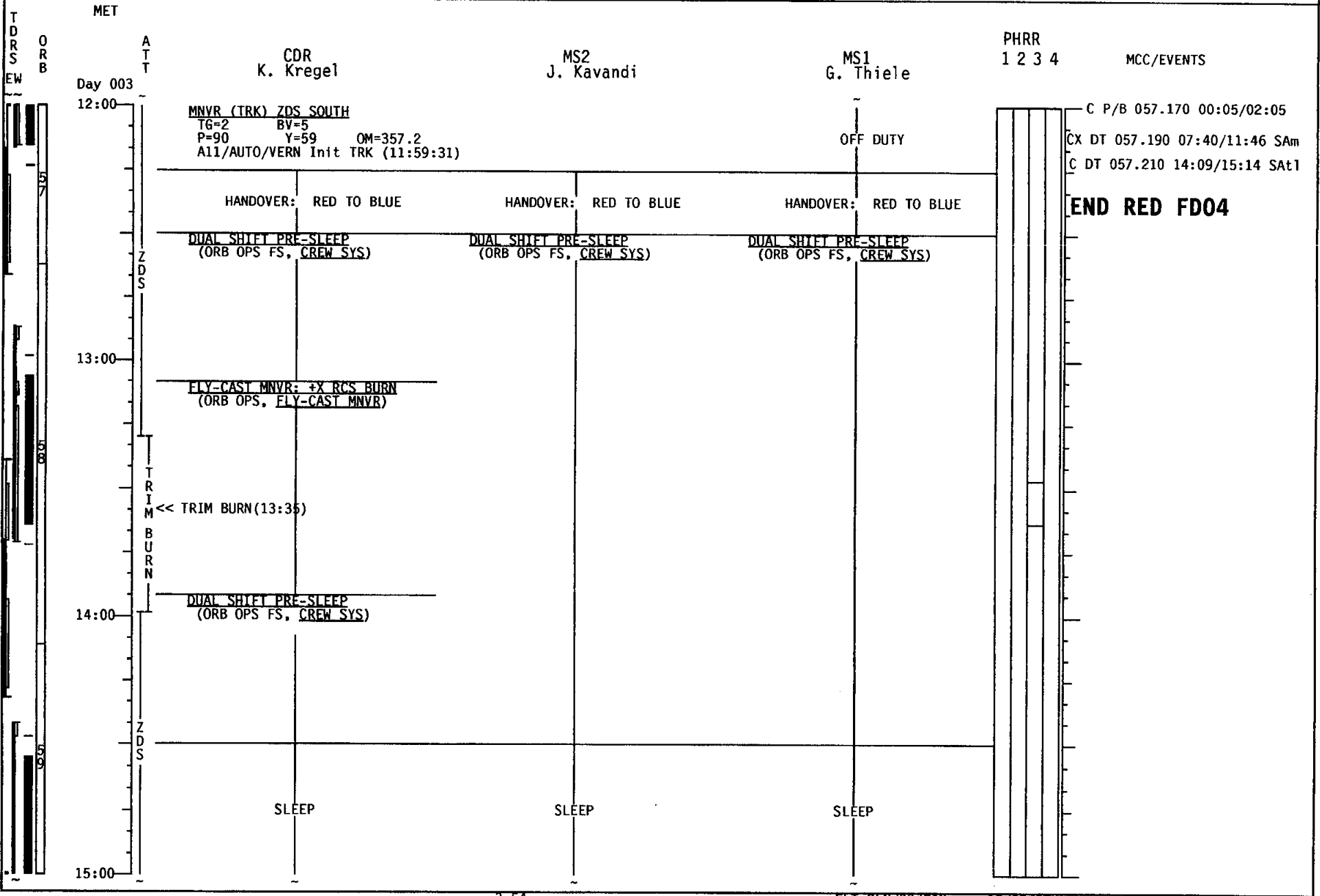
C DT 057.090 35:15/36:21 NPac
C P/B 057.110 43:15/45:15

C BITE 057.150 53:44/54:52 LNA TR3

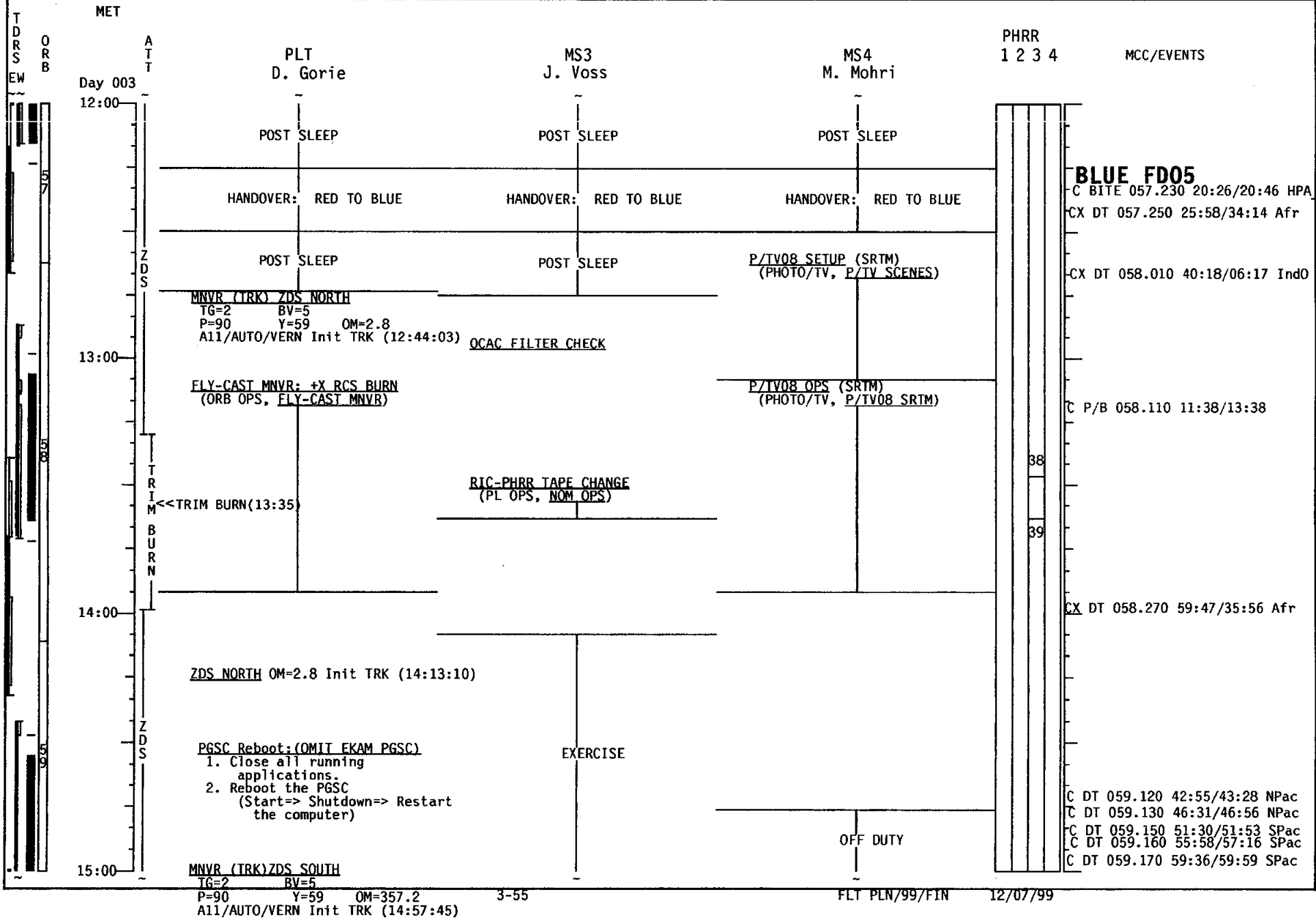
STS-99 (BLUE)FD4



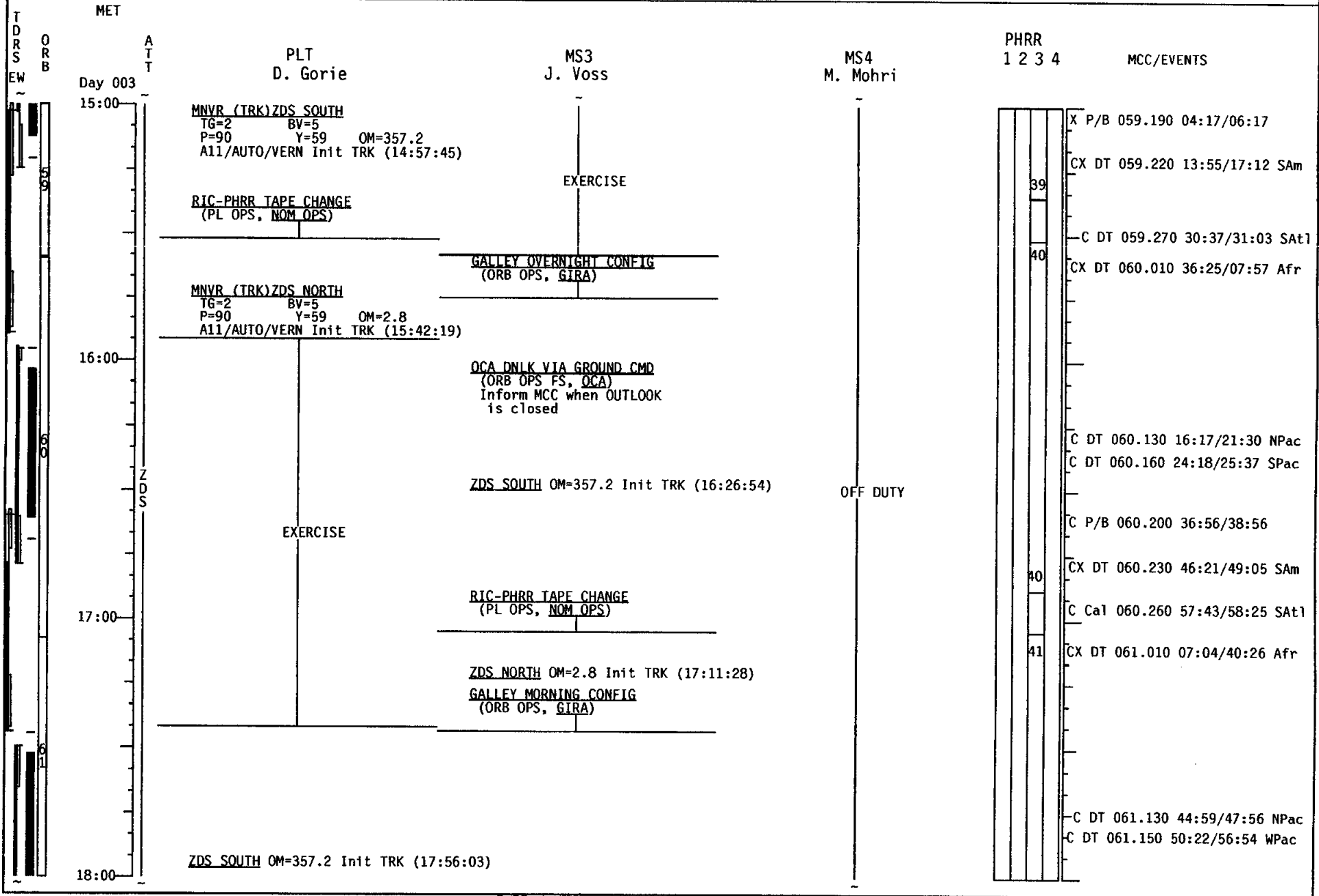
STS-99 (RED) FD4



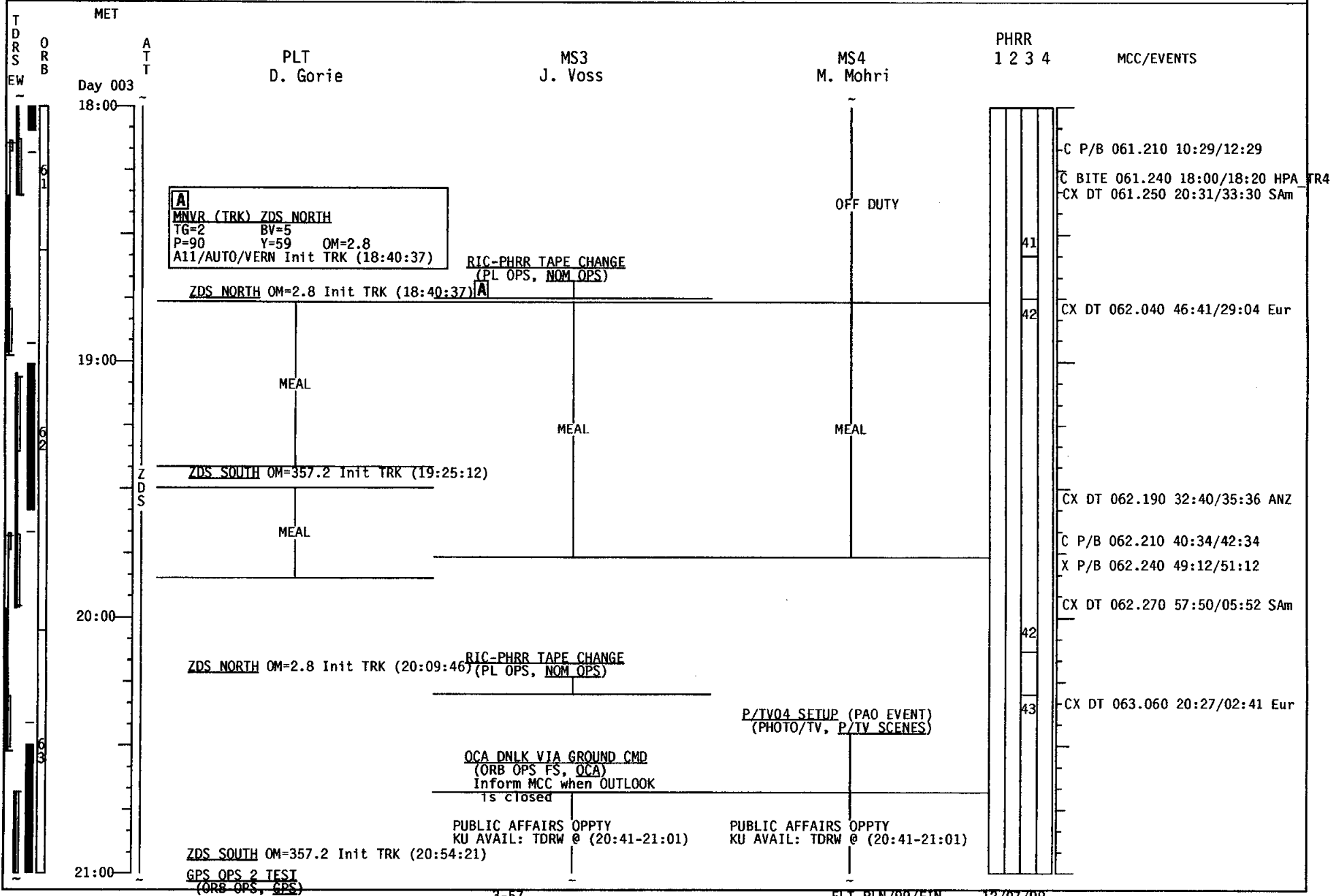
STS-99 (BLUE)FD5



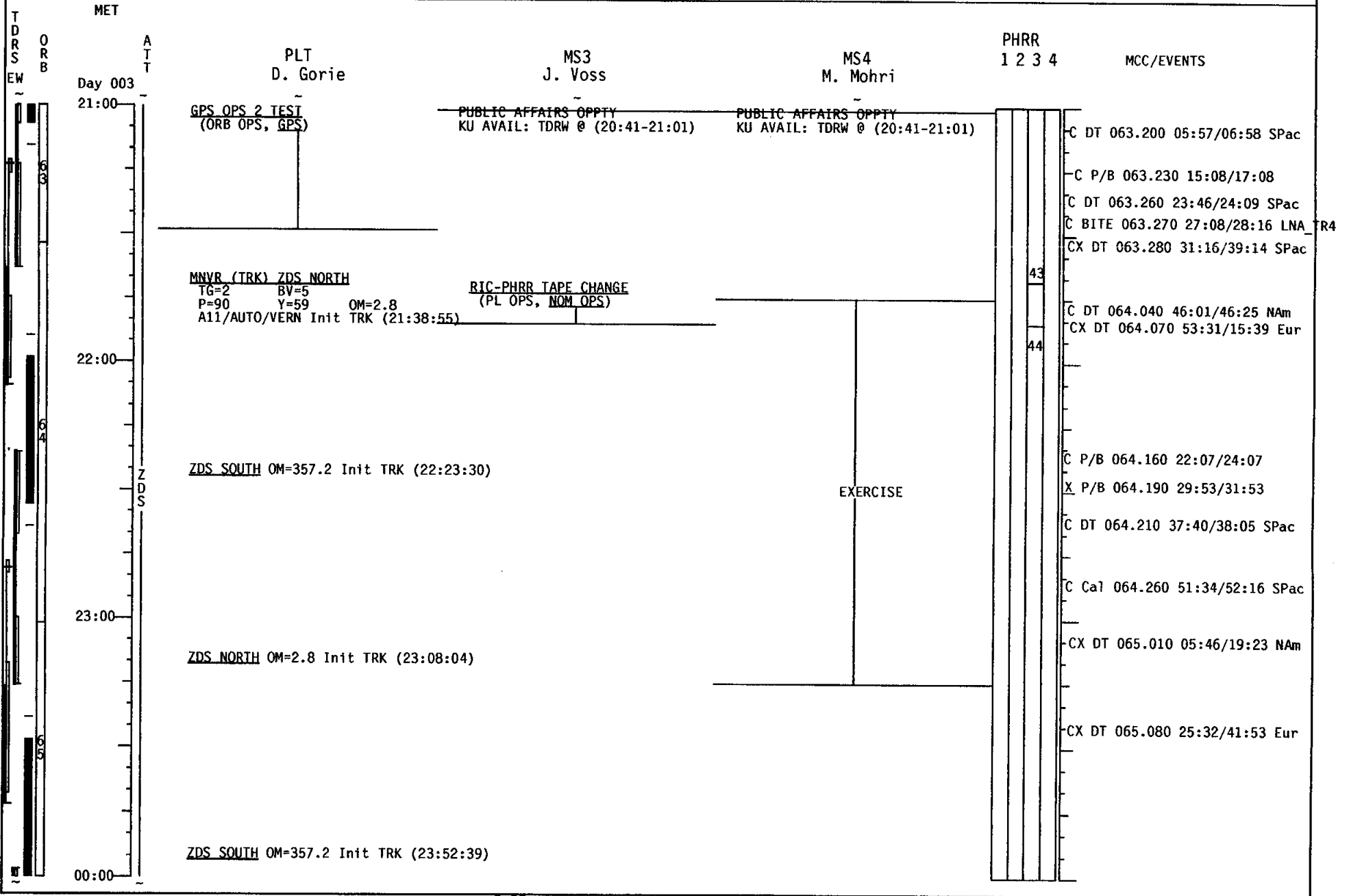
STS-99 (BLUE)FD5



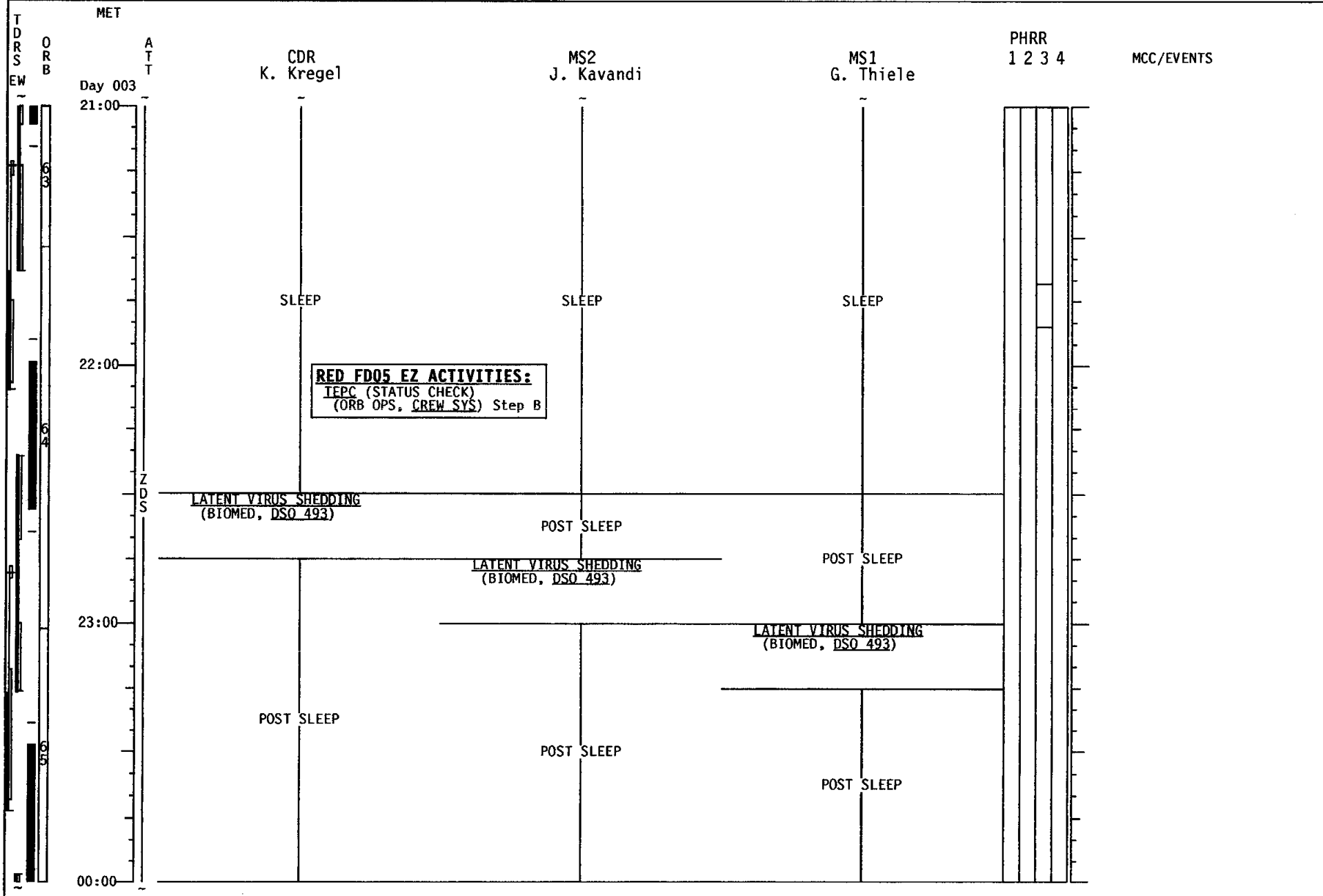
STS-99 (BLUE)FD5



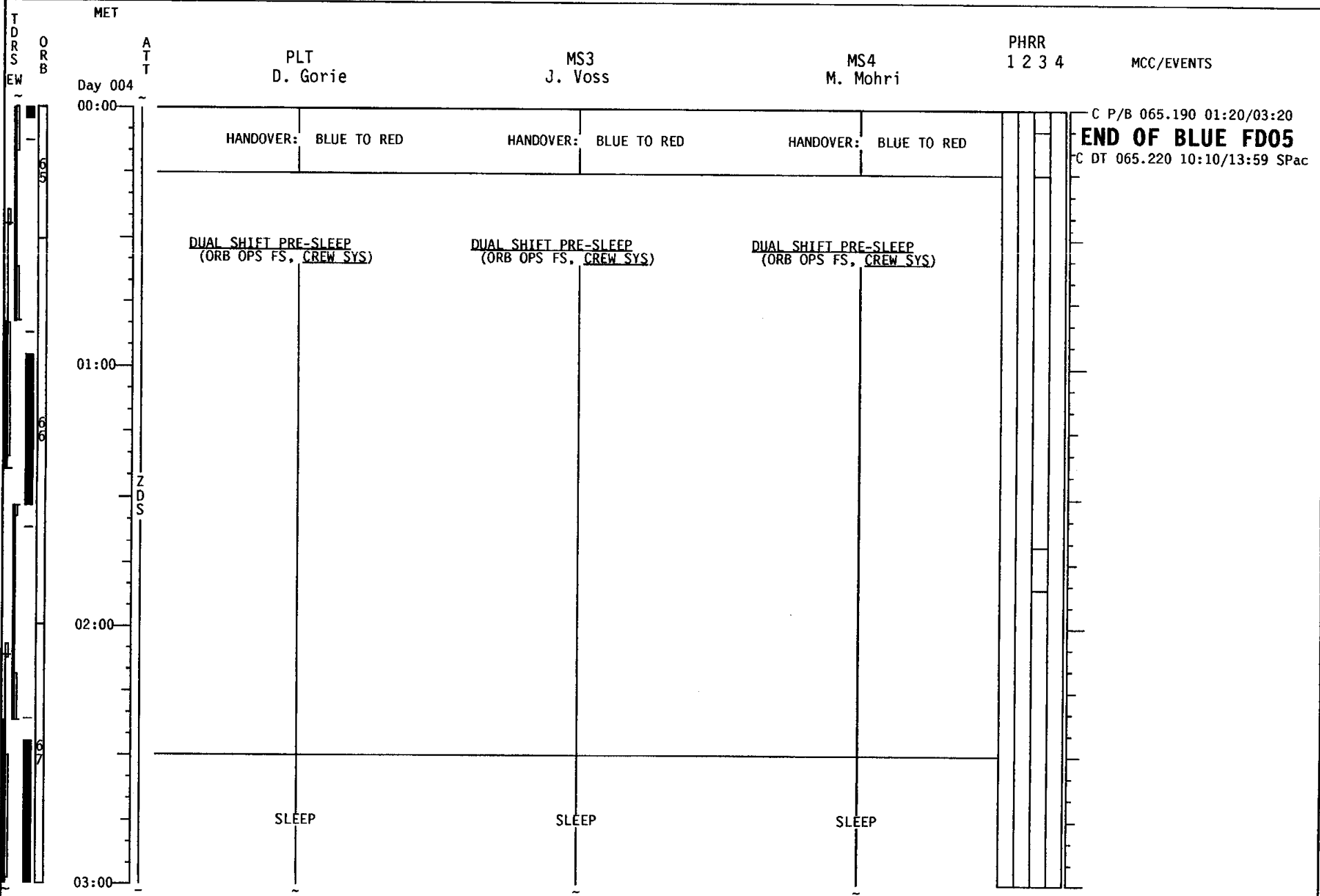
STS-99 (BLUE)FD5



STS-99 (RED) FD4

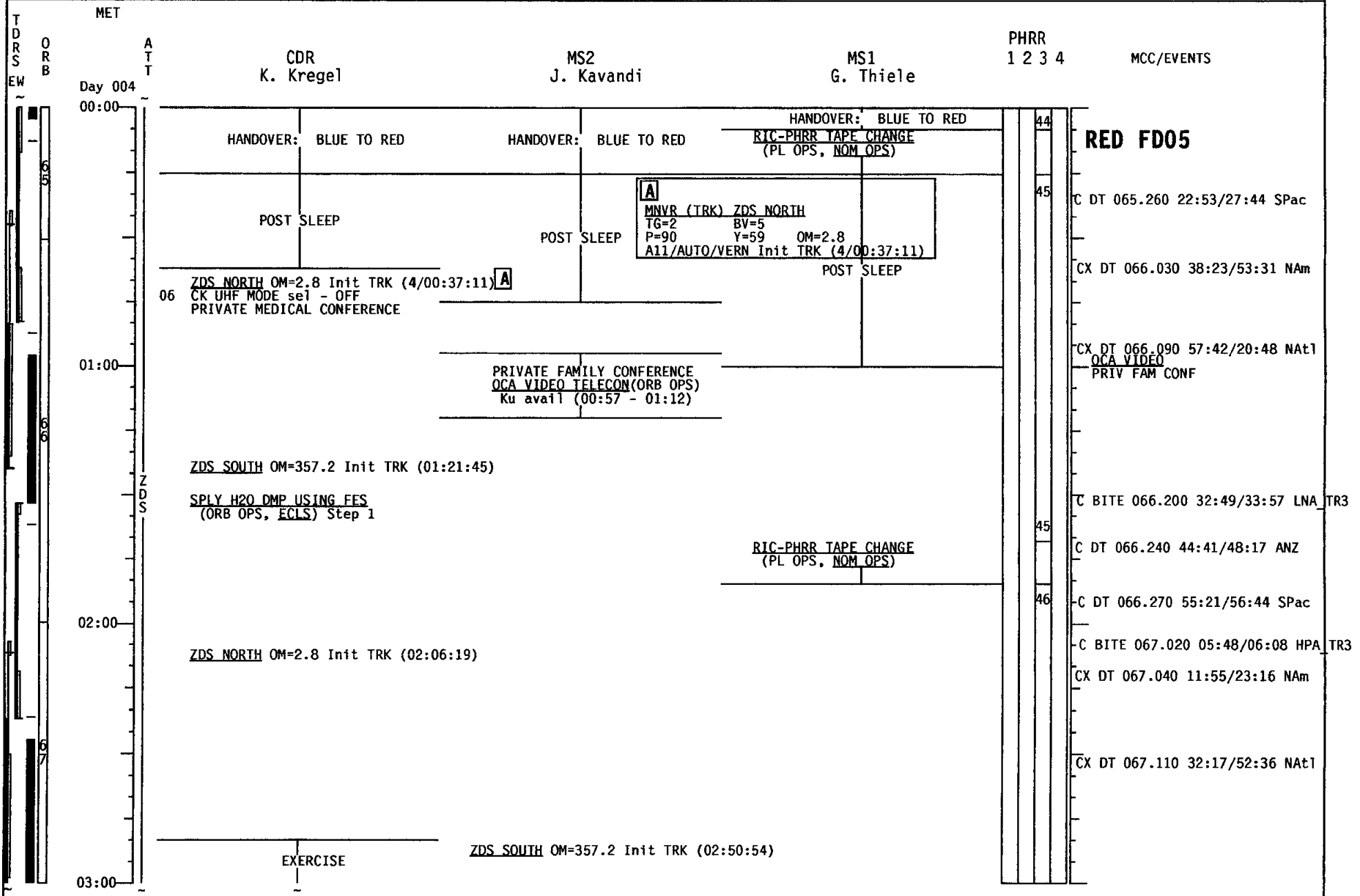


STS-99 (BLUE)FD5

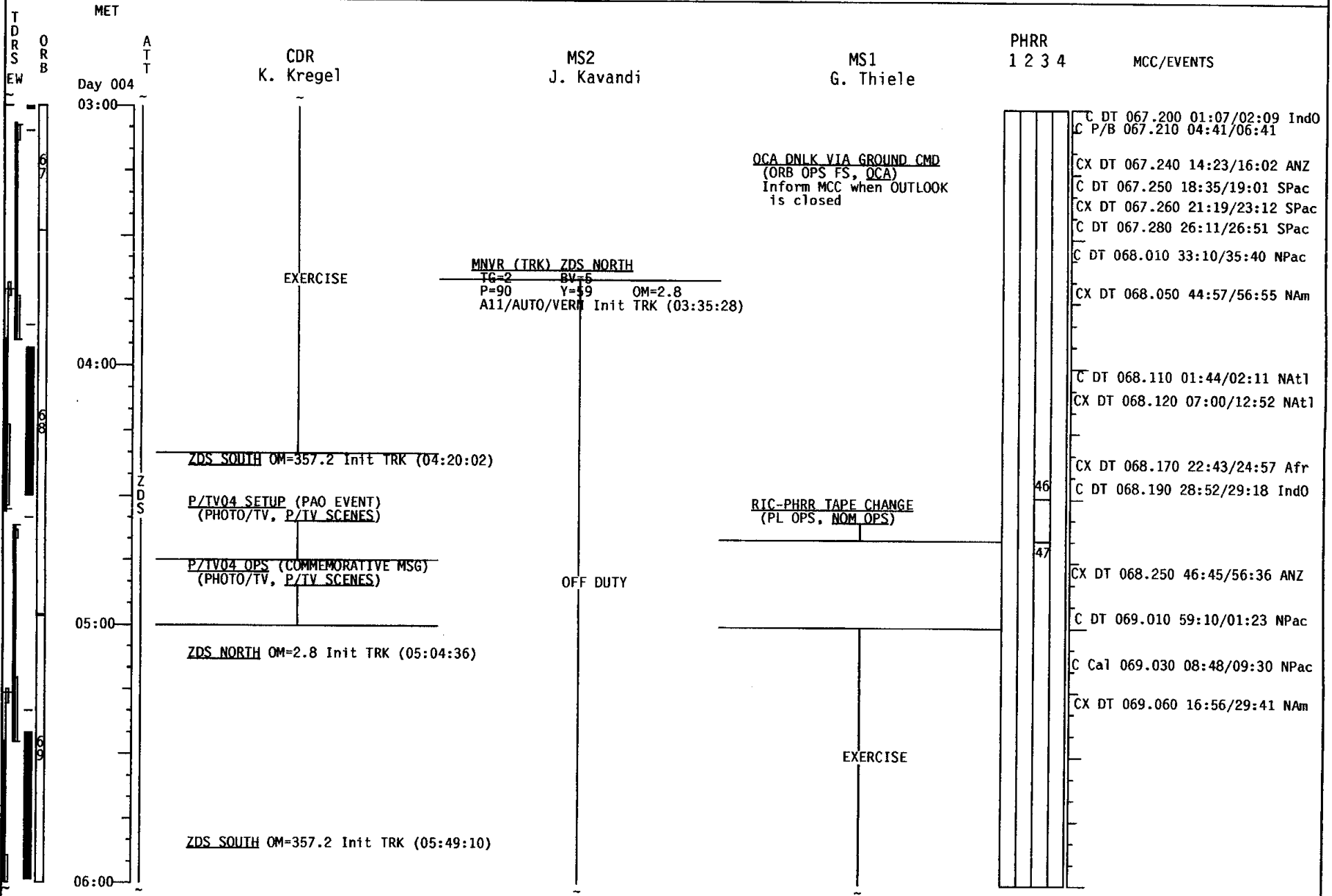


C P/B 065.190 01:20/03:20
END OF BLUE FD05
 C DT 065.220 10:10/13:59 SPac

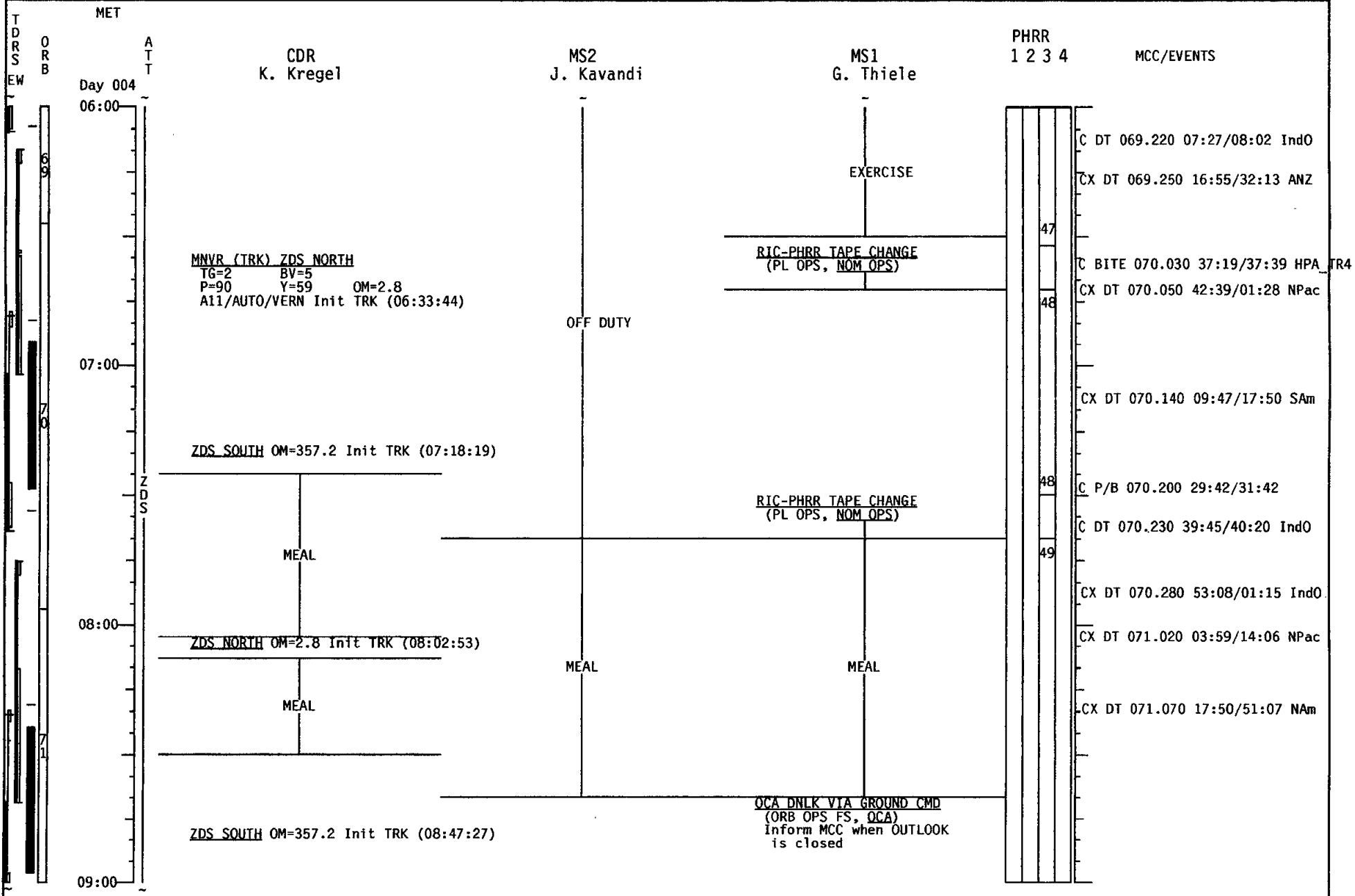
STS-99 (RED) FD5



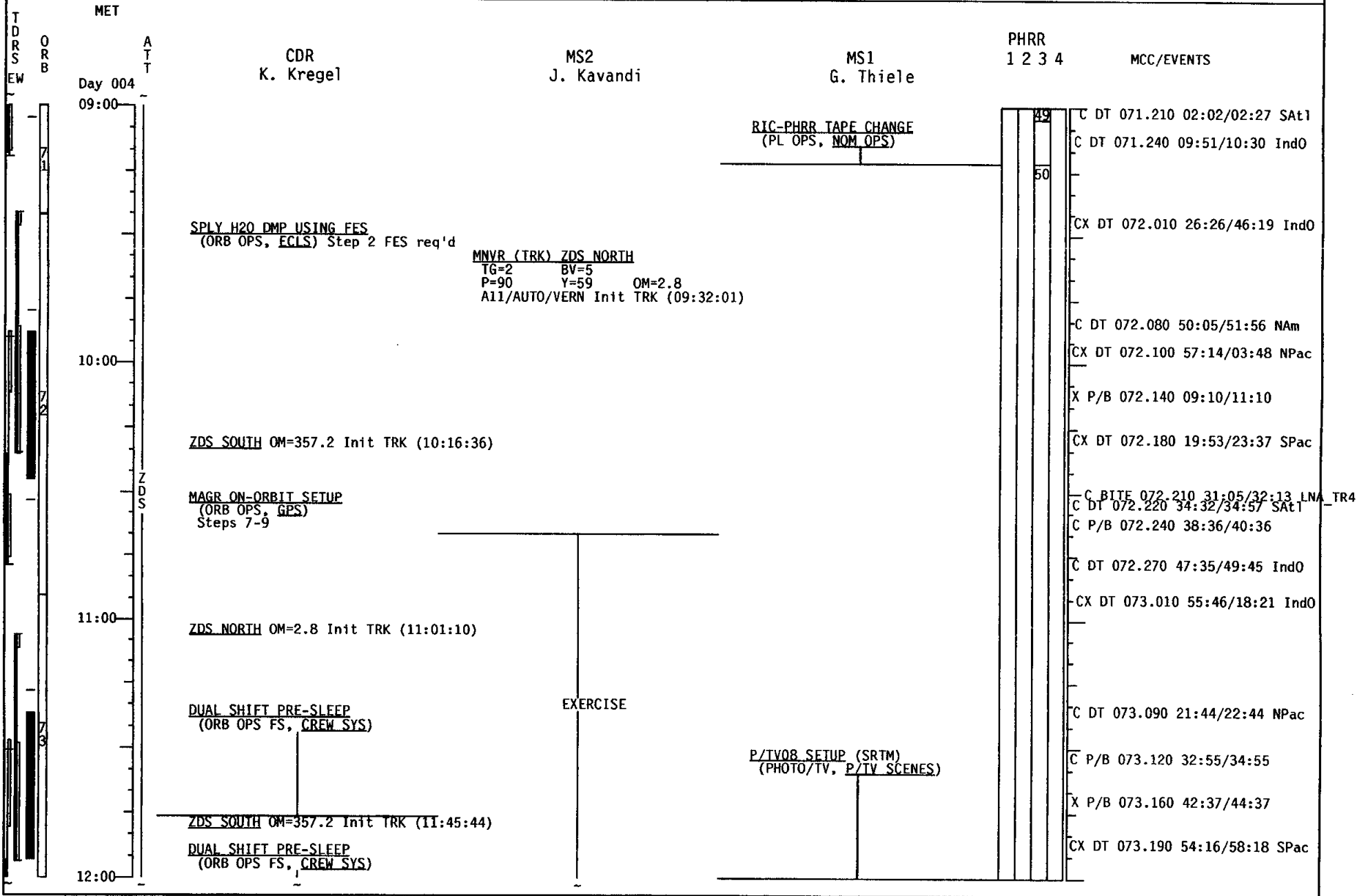
STS-99 (RED) FD5



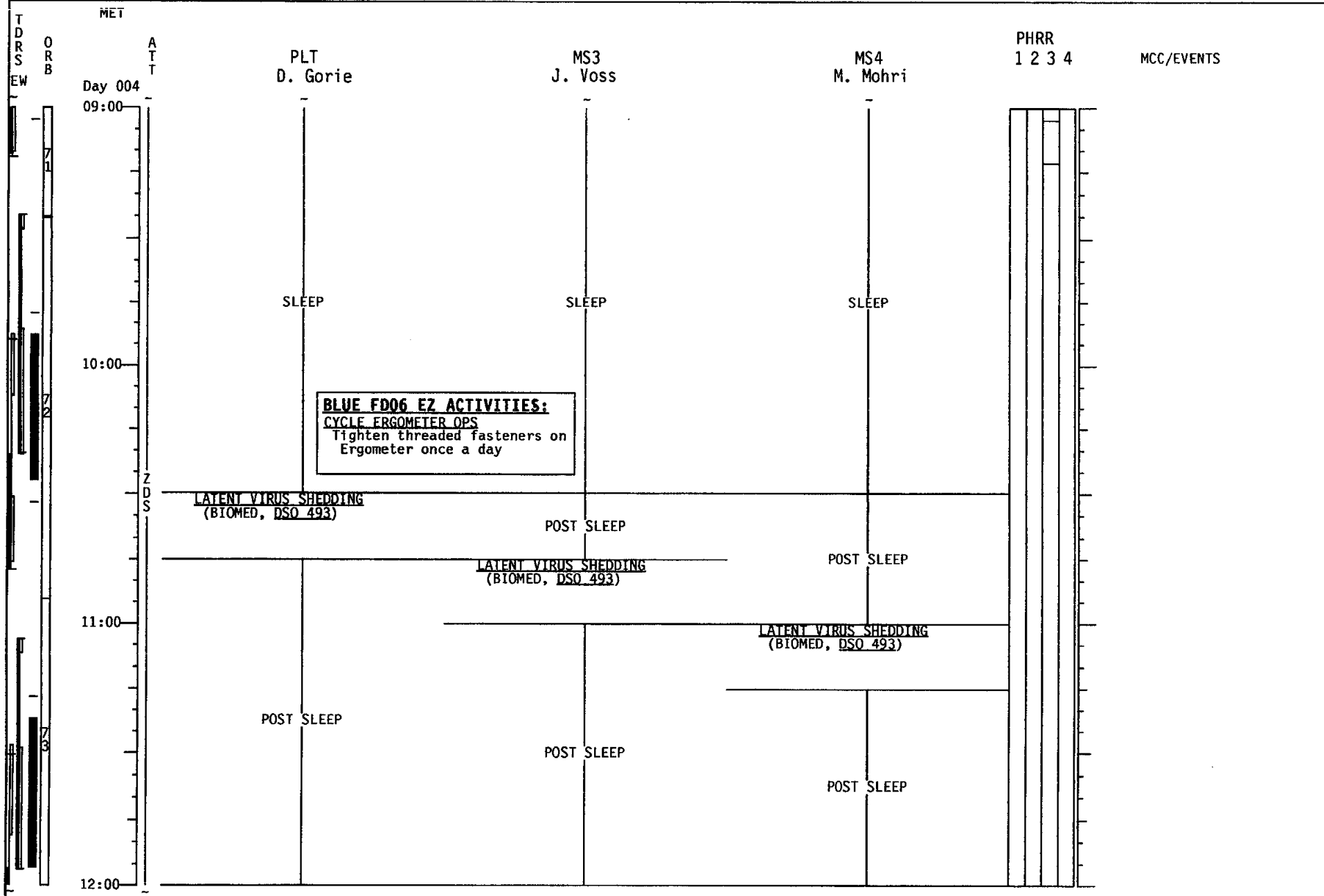
STS-99 (RED) FD5



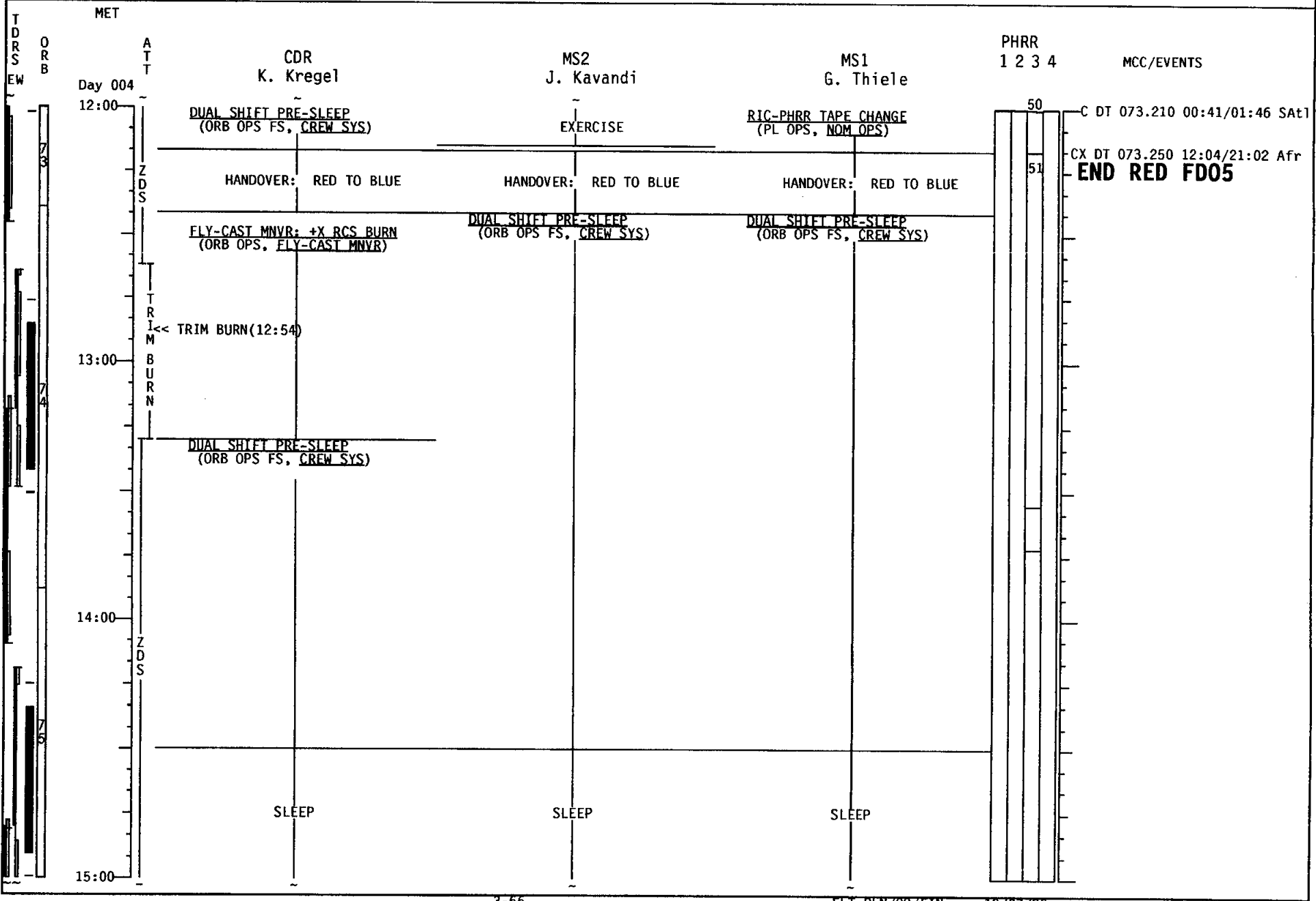
STS-99 (RED) FD5



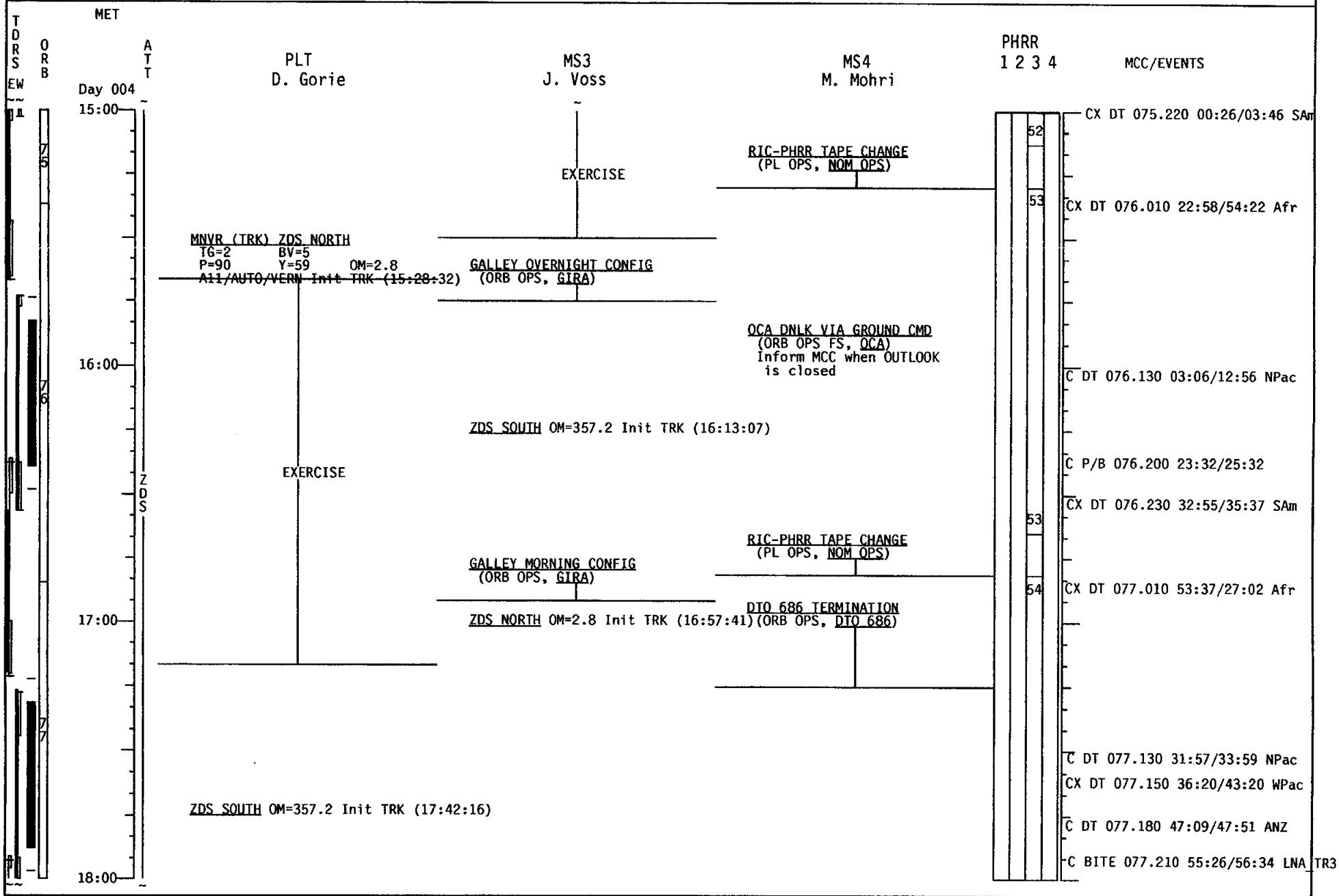
STS-99 (BLUE)FD5



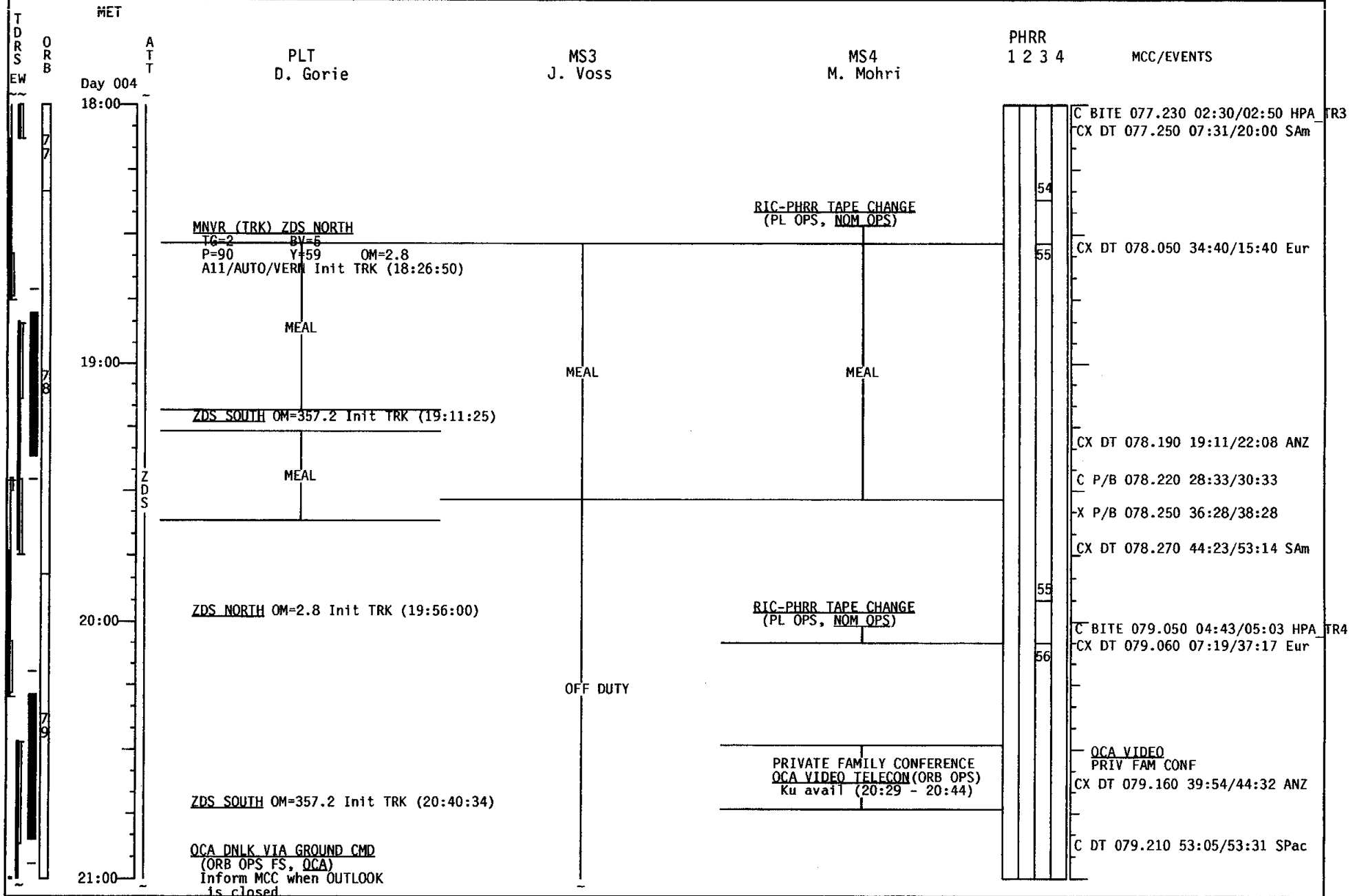
STS-99 (RED) FD5



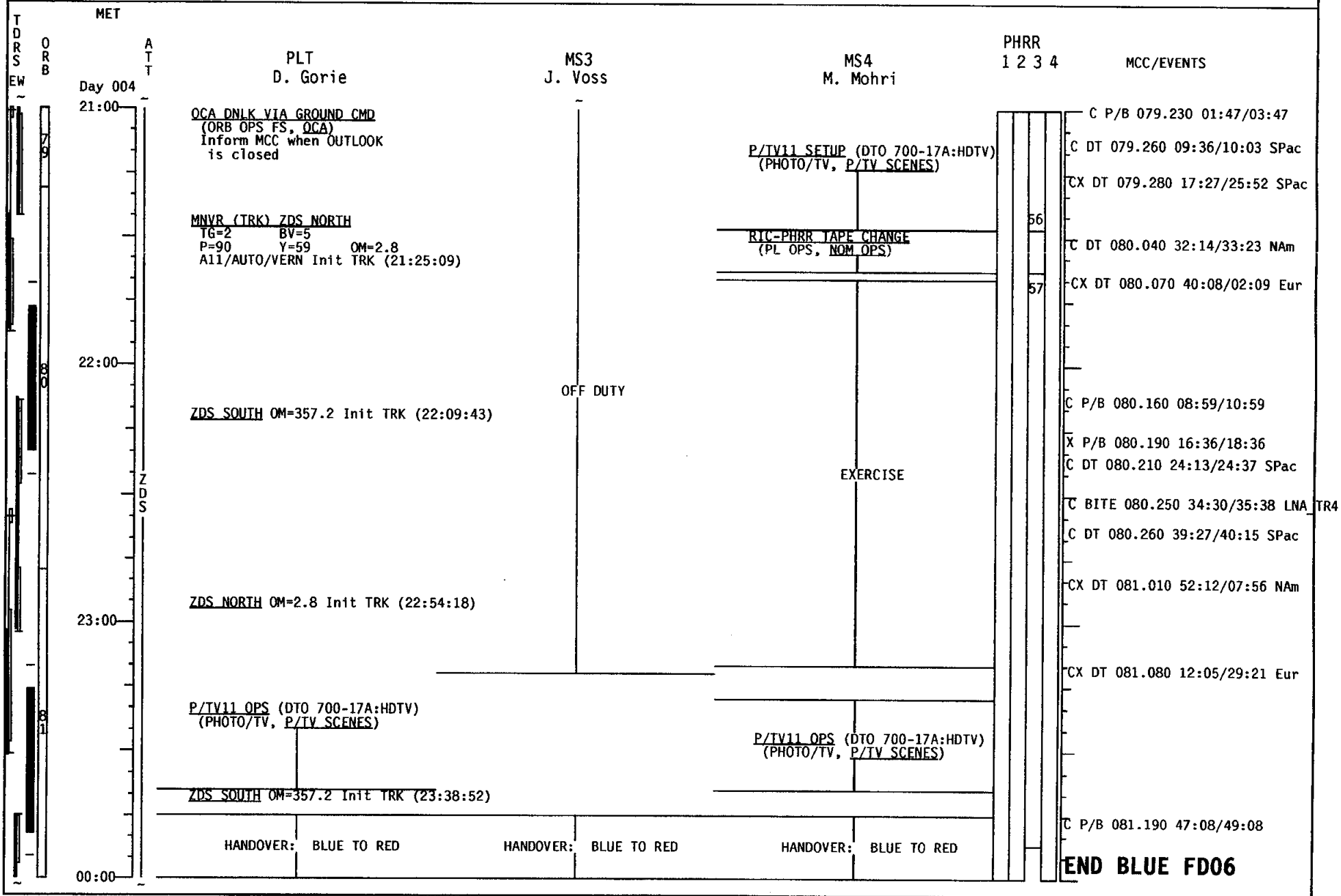
STS-99 (BLUE)FD6



STS-99 (BLUE)FD6

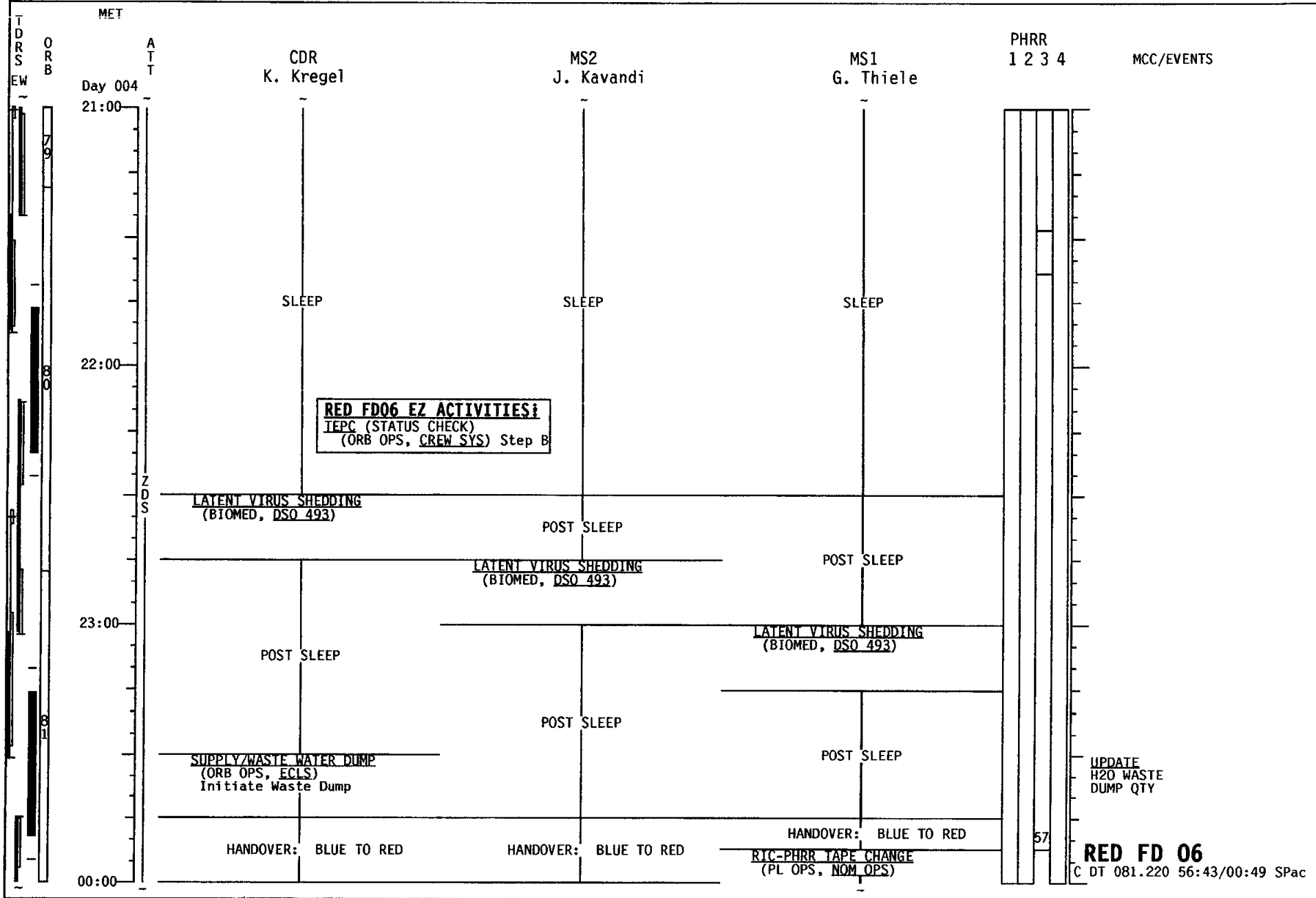


STS-99 (BLUE)FD6



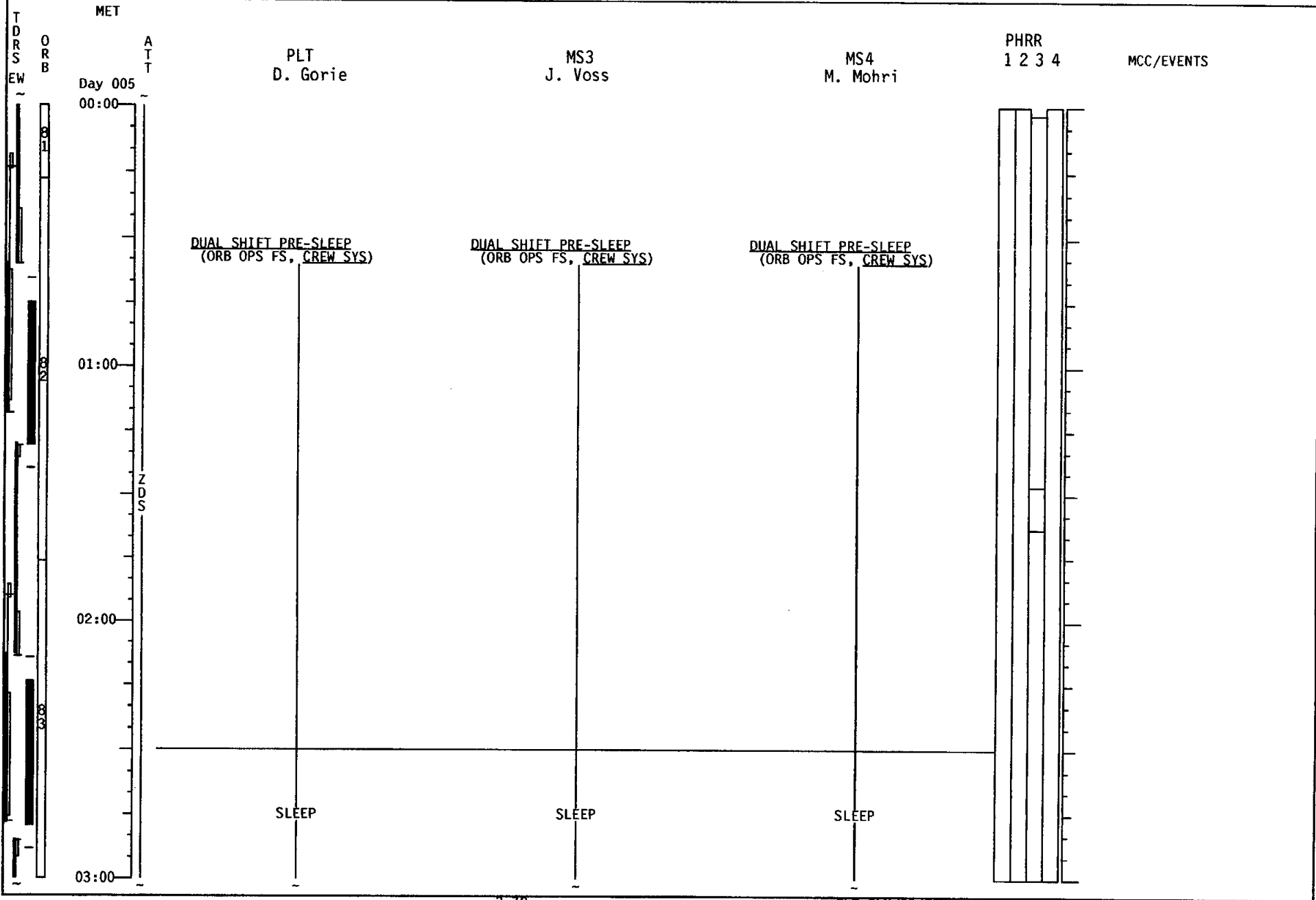
END BLUE FD06

STS-99 (RED) FD5

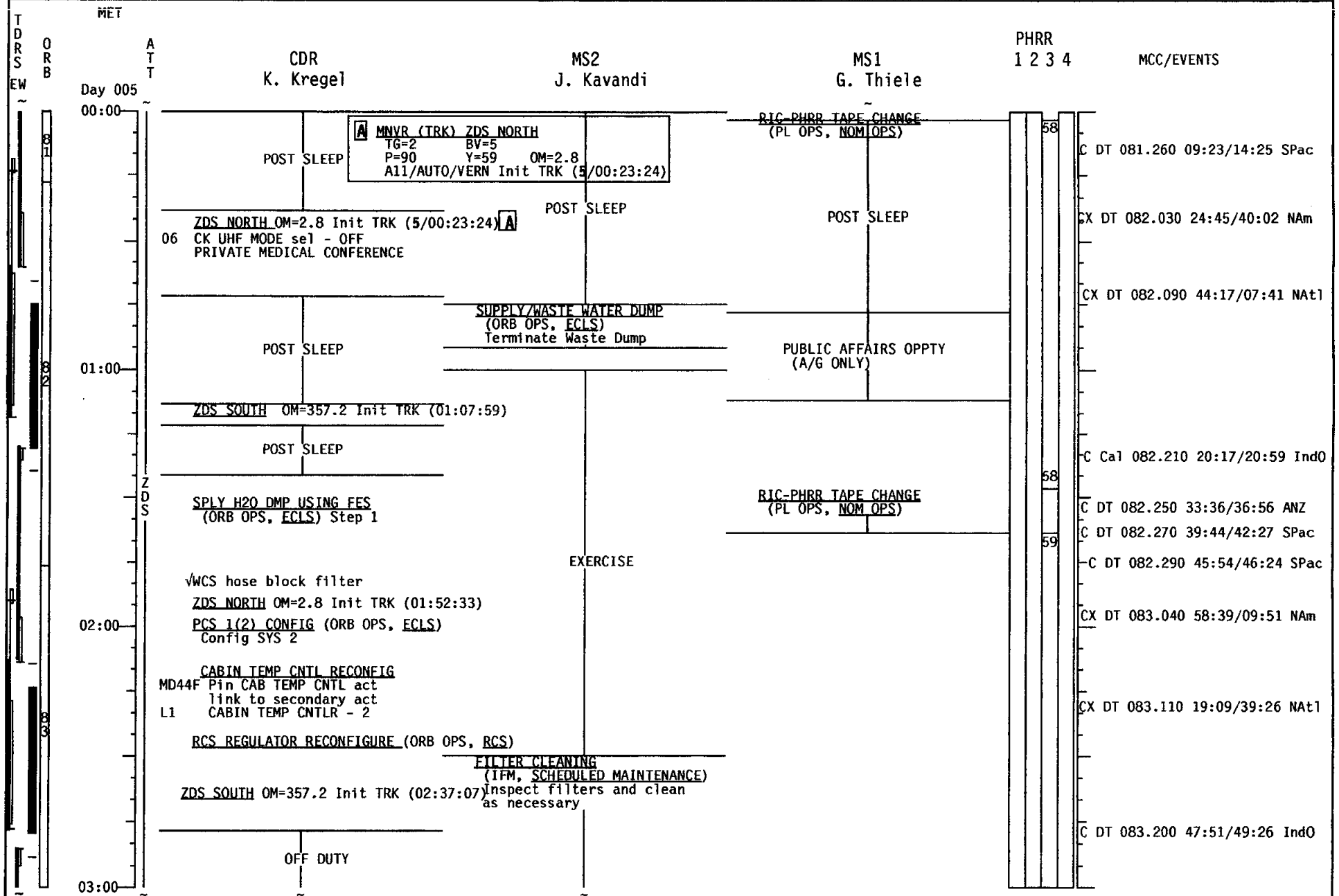


RED FD 06
C DT 081.220 56:43/00:49 SPac

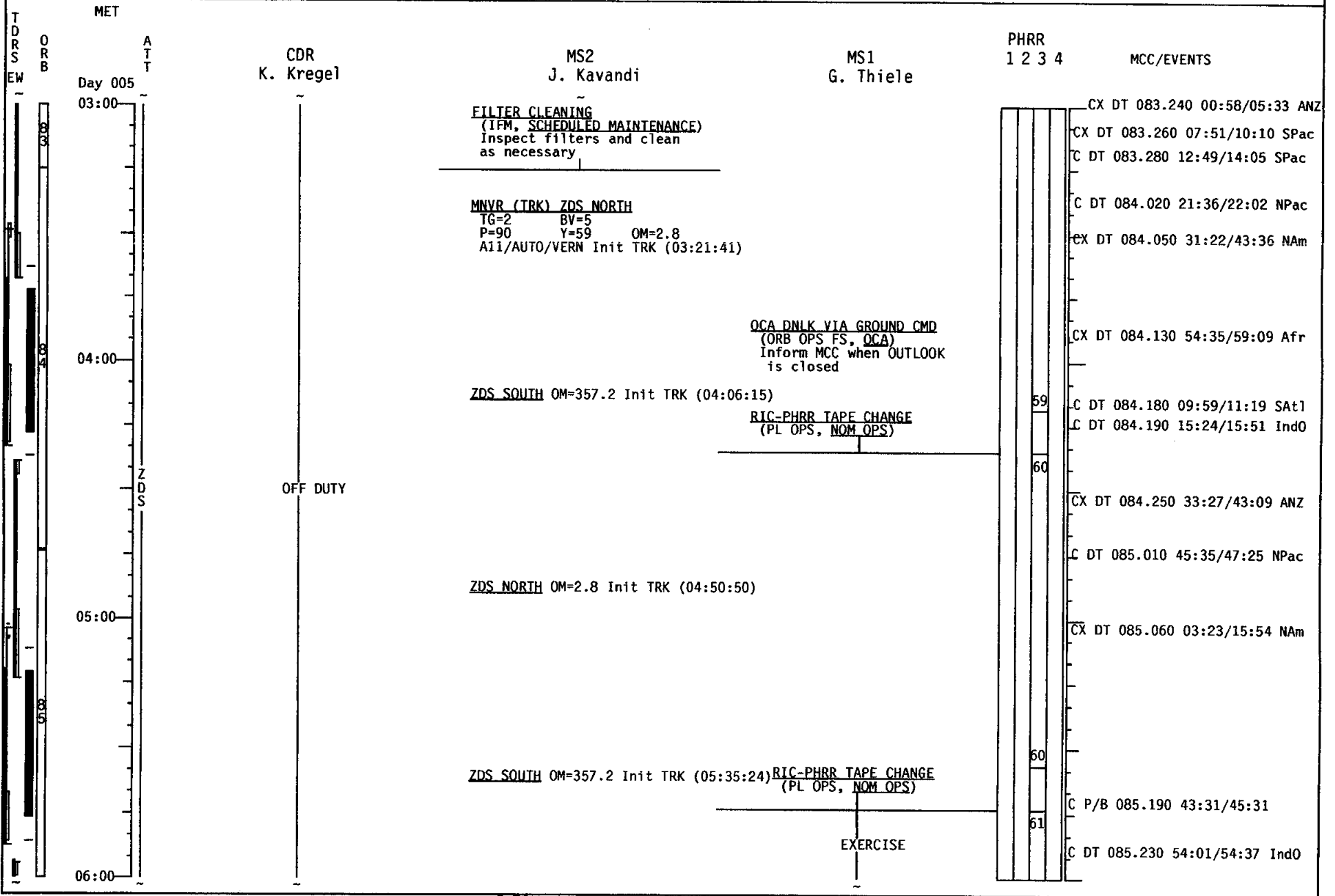
STS-99 (BLUE)FD6



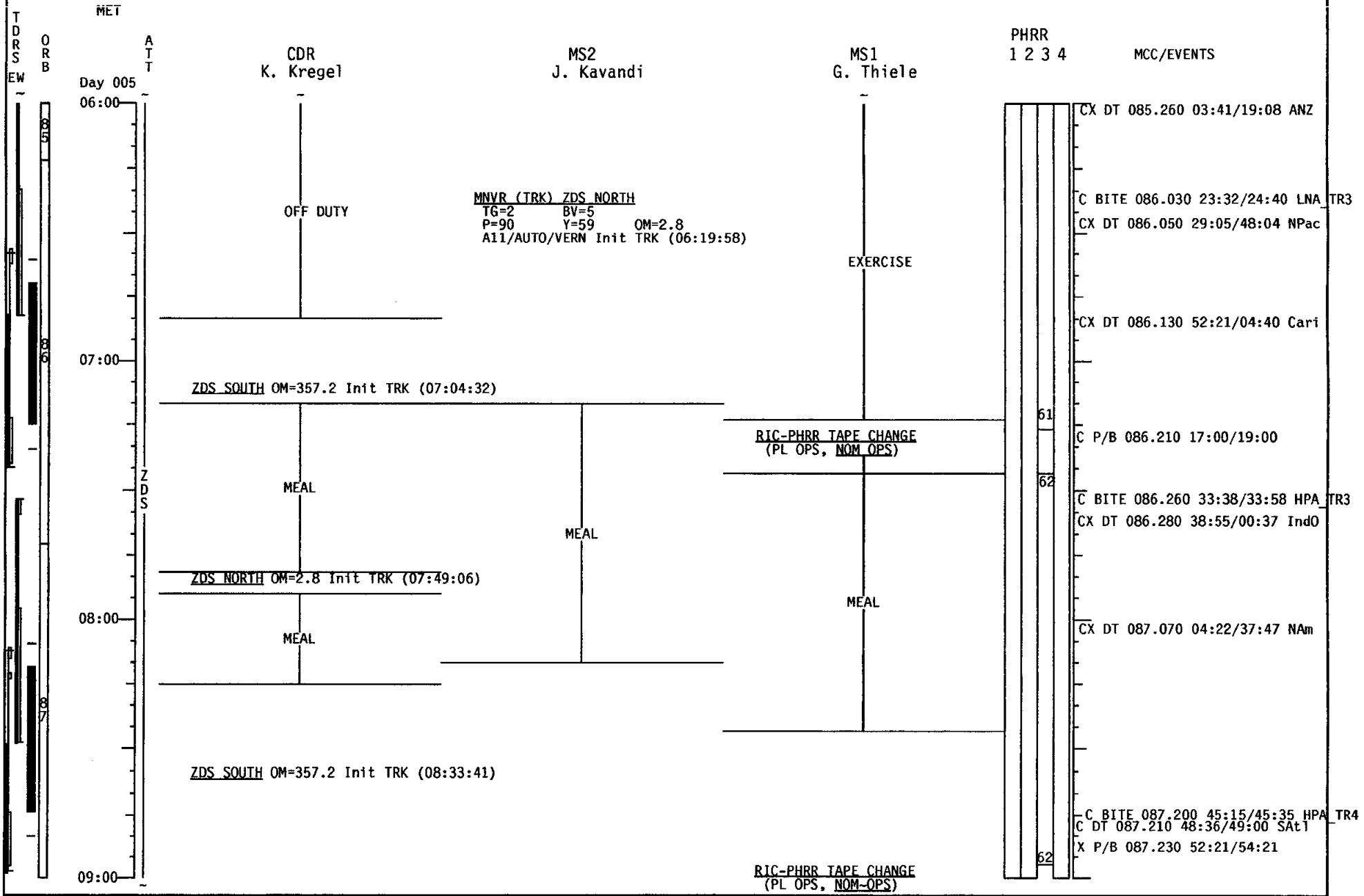
STS-99 (RED) FD6



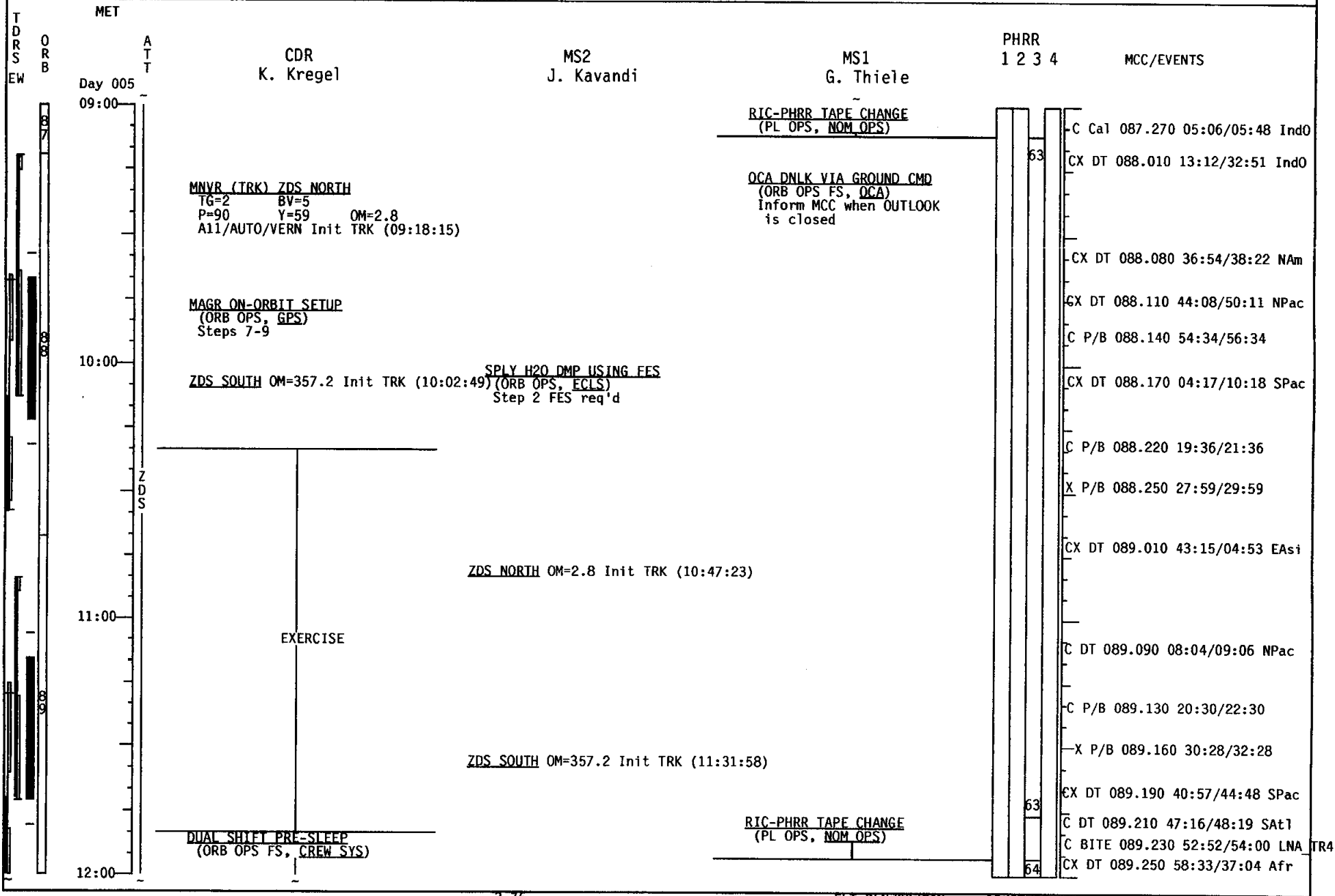
STS-99 (RED) FD6



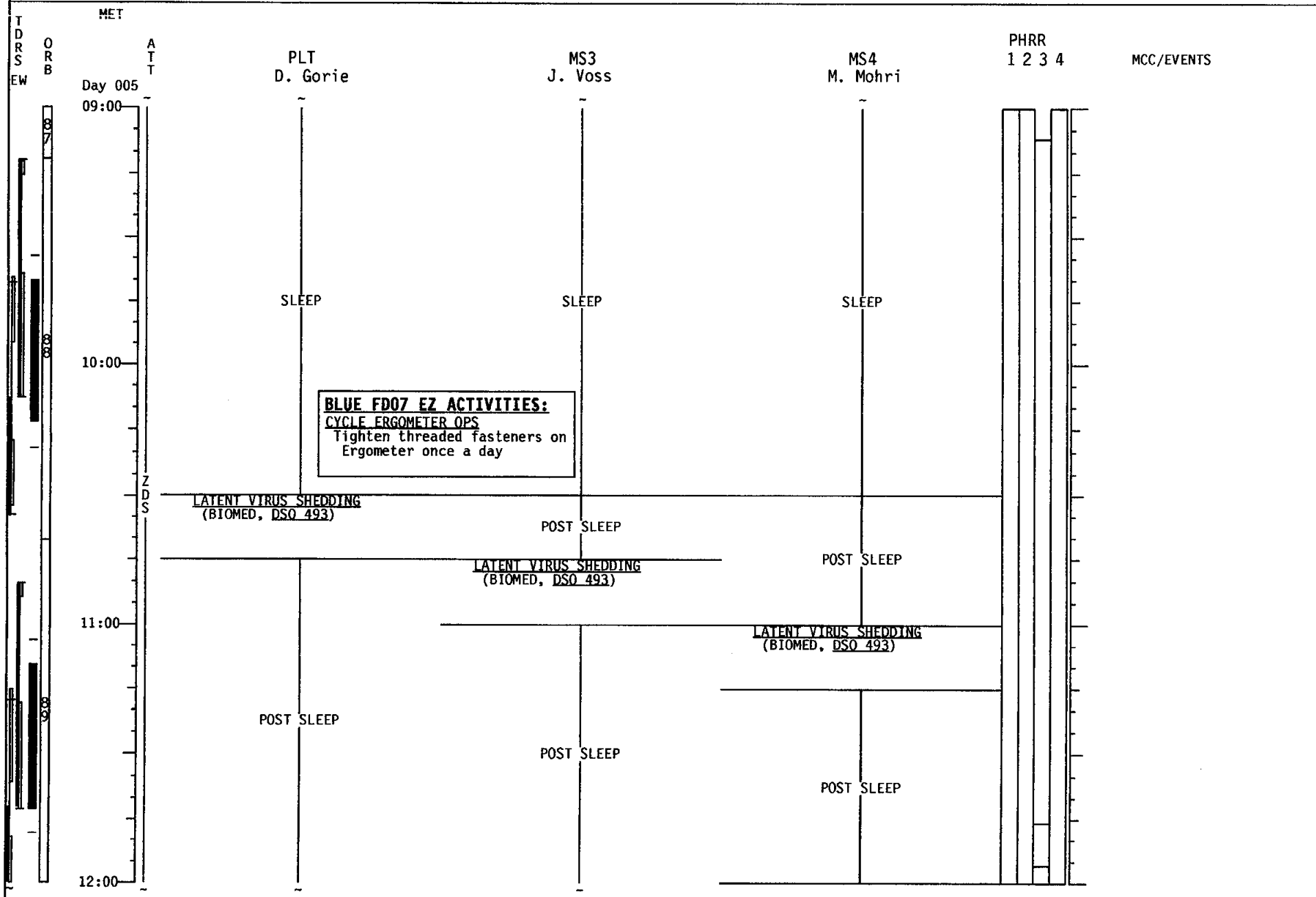
STS-99 (RED) FD6



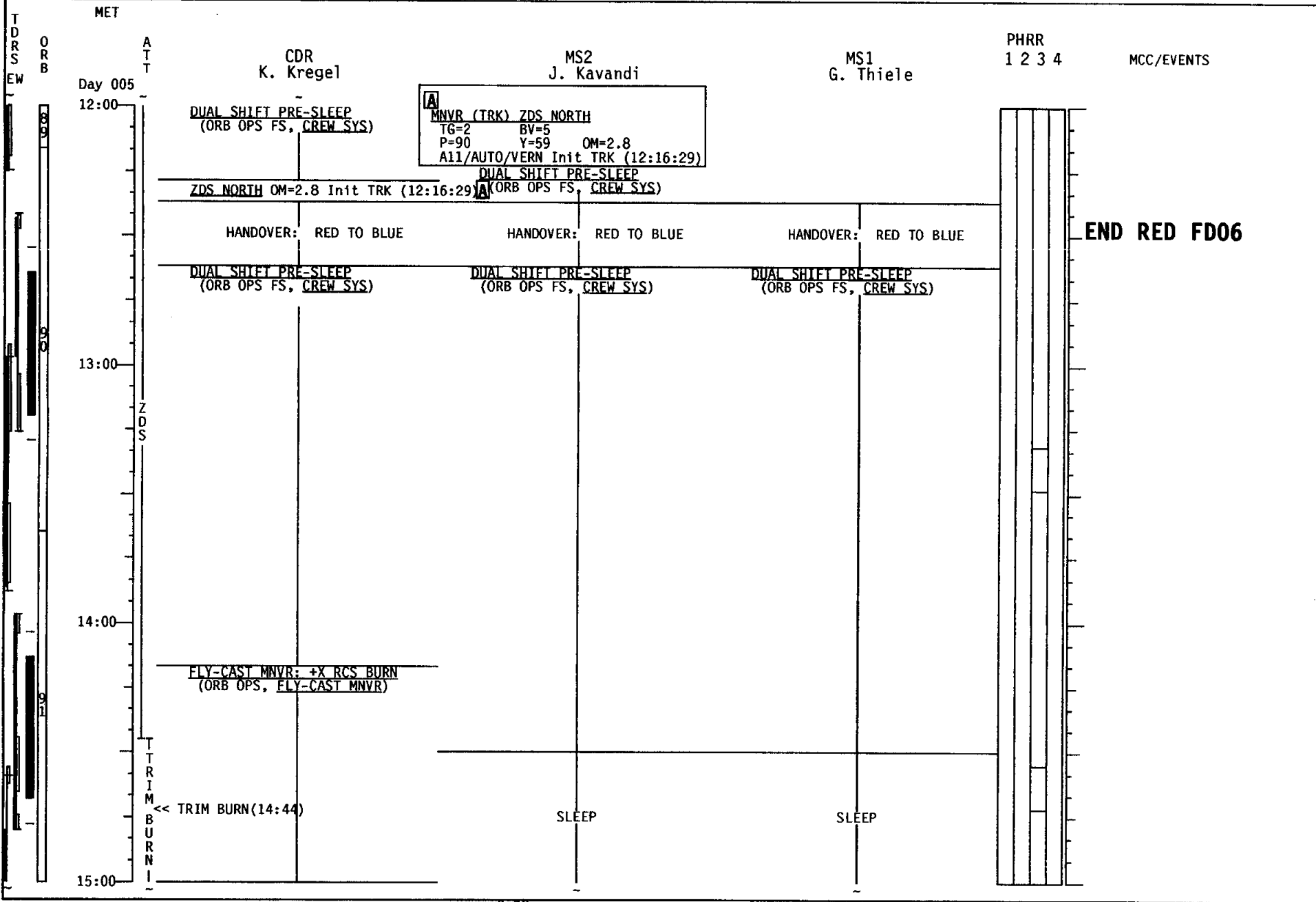
STS-99 (RED) FD6



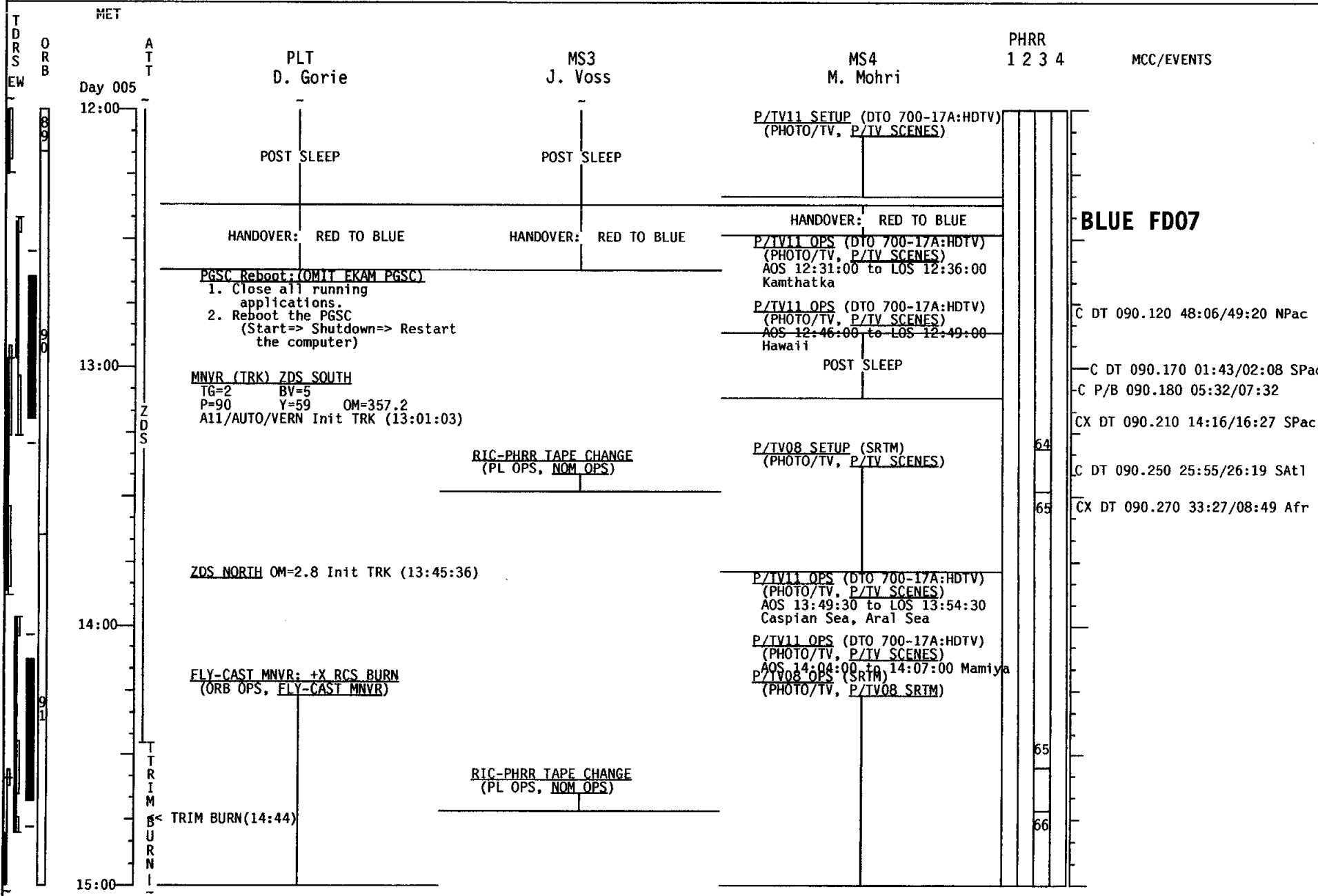
STS-99 (BLUE)FD6



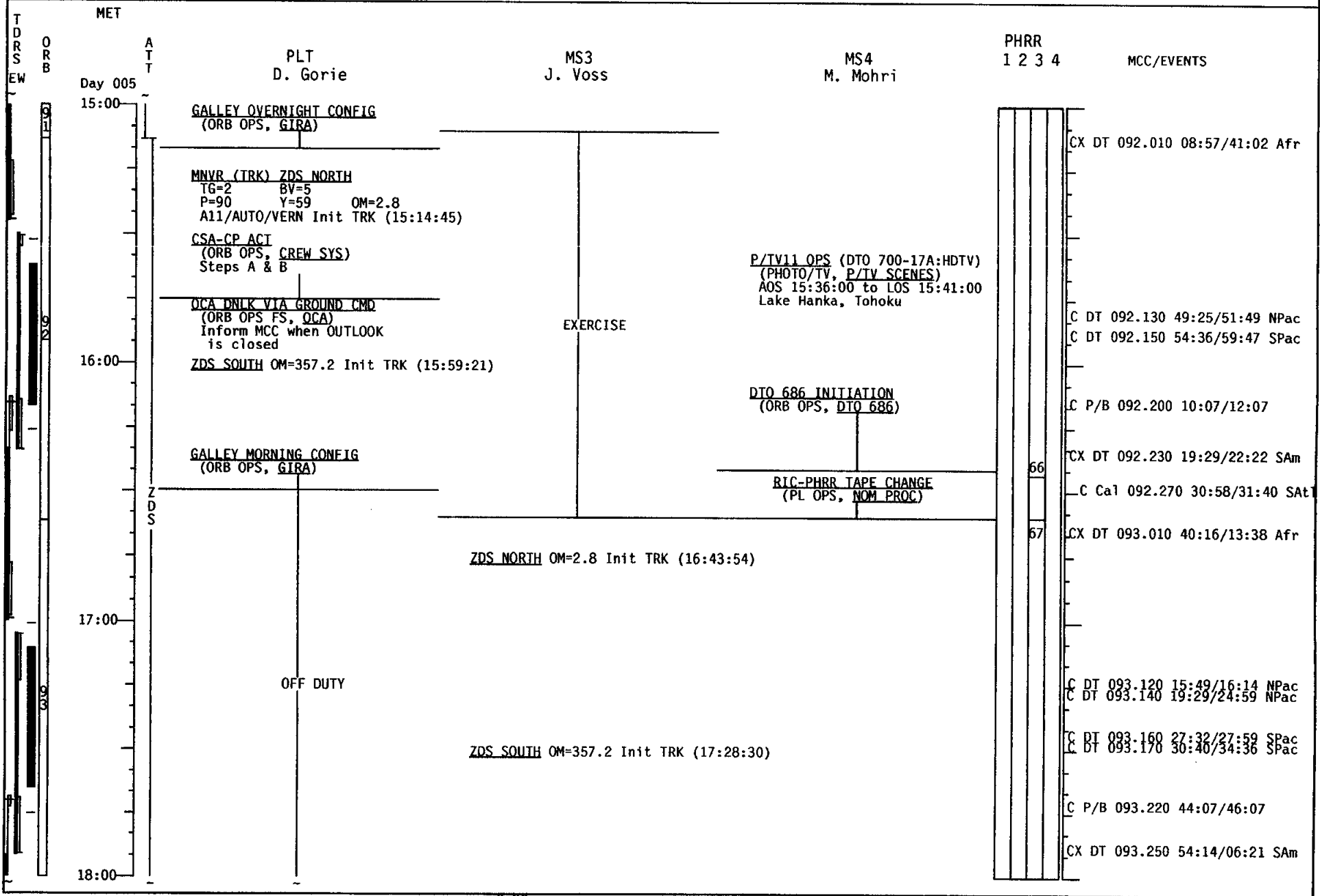
STS-99 (RED) FD6



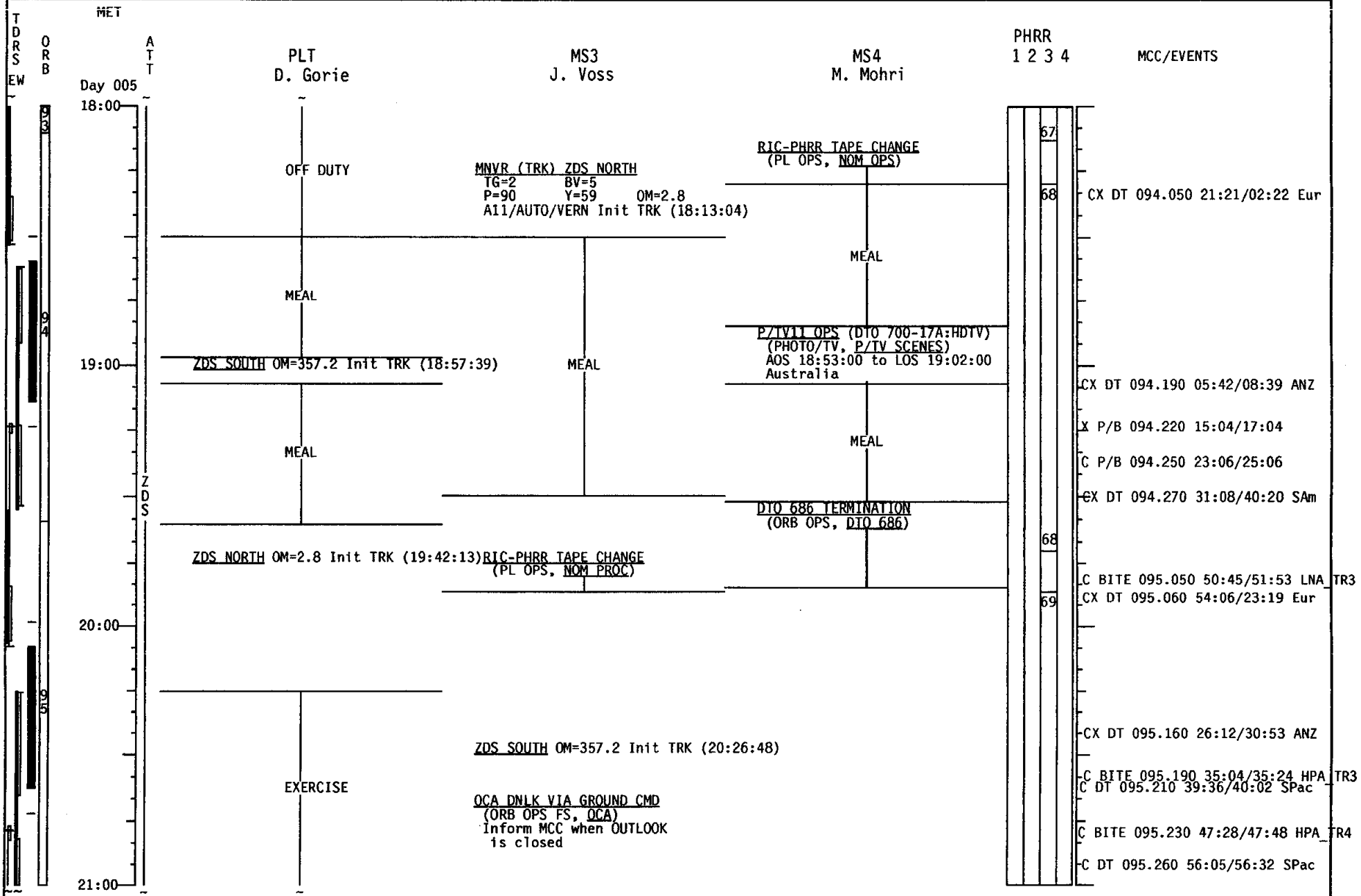
STS-99 (BLUE)FD7



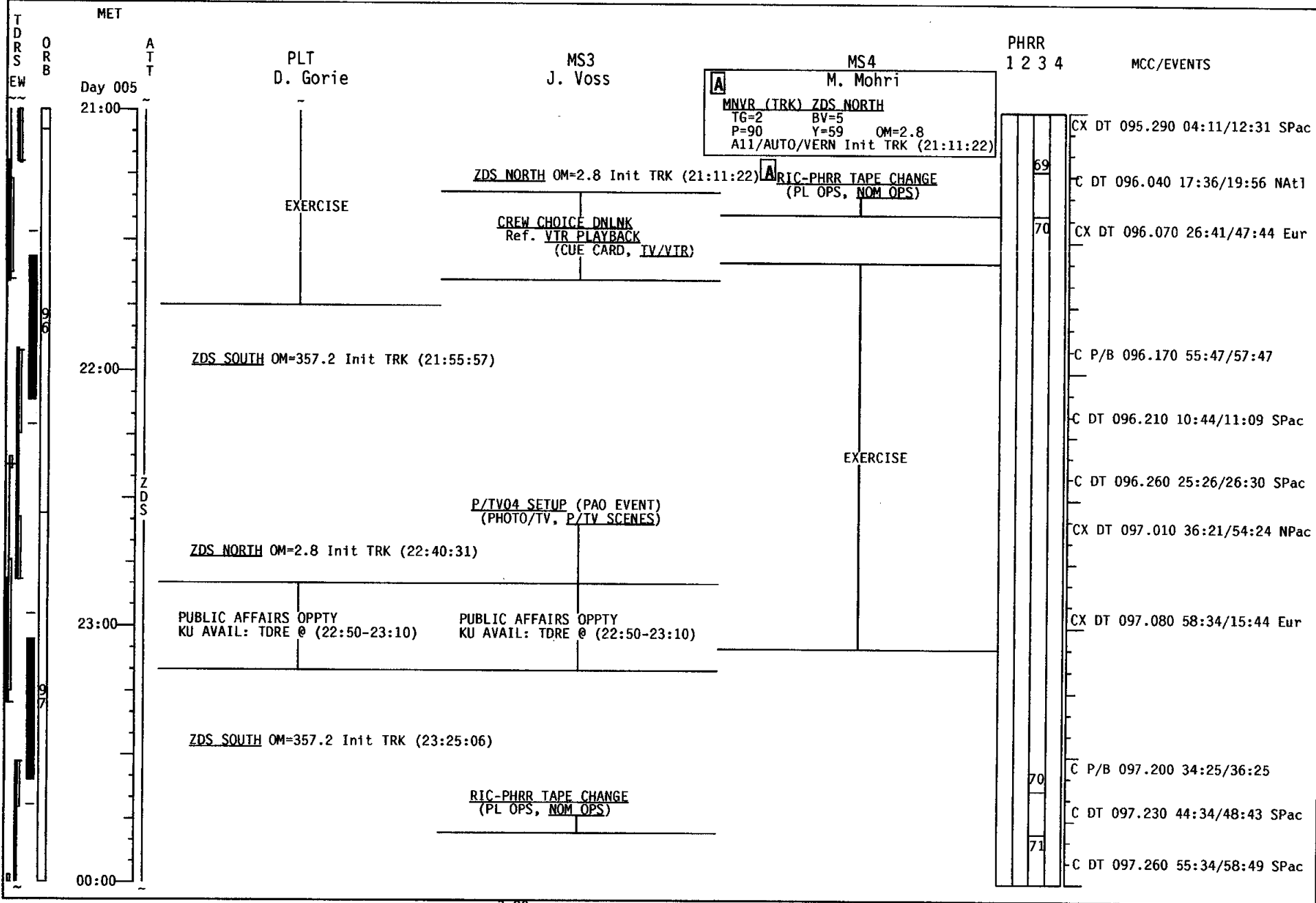
STS-99 (BLUE)FD7



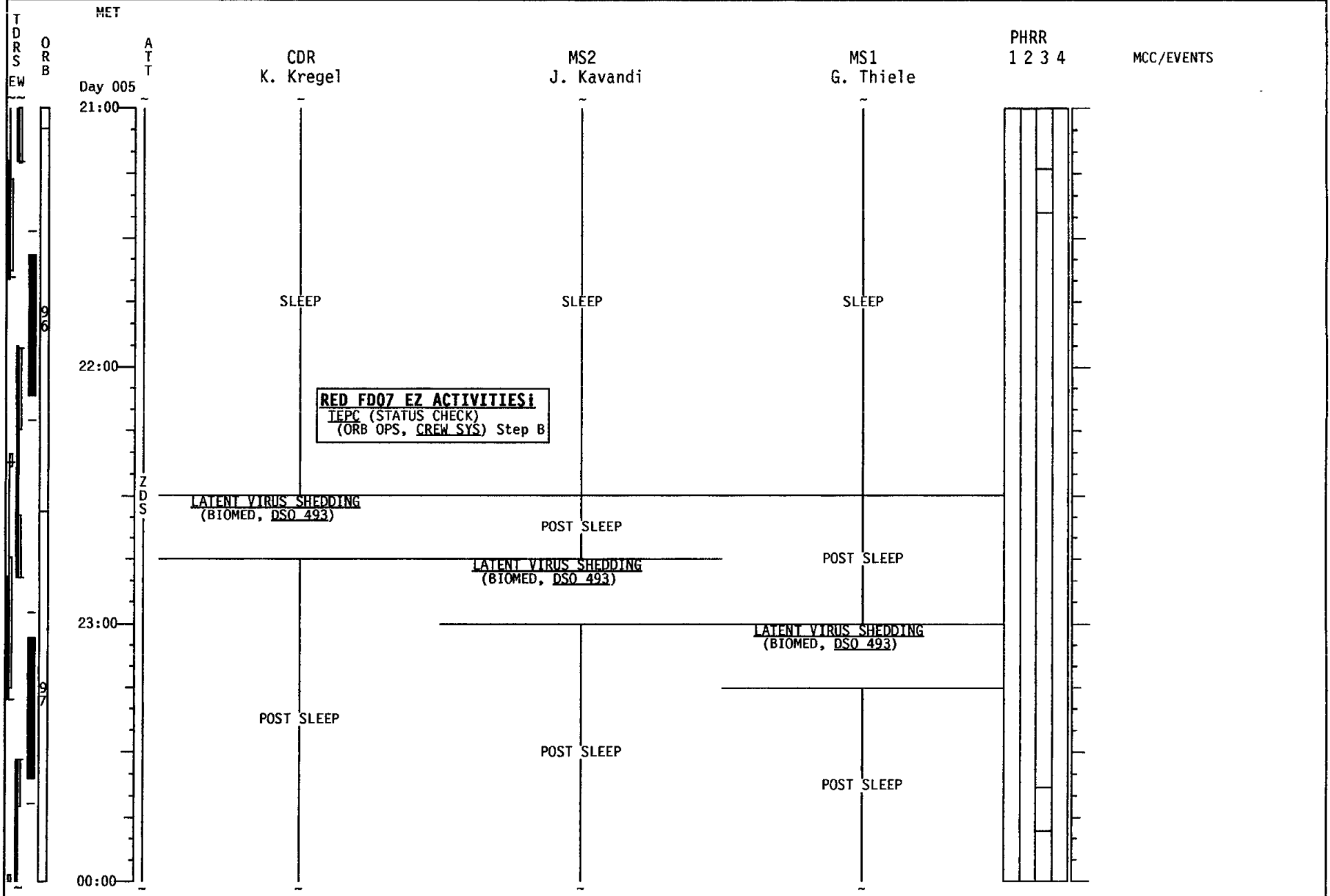
STS-99 (BLUE)FD7



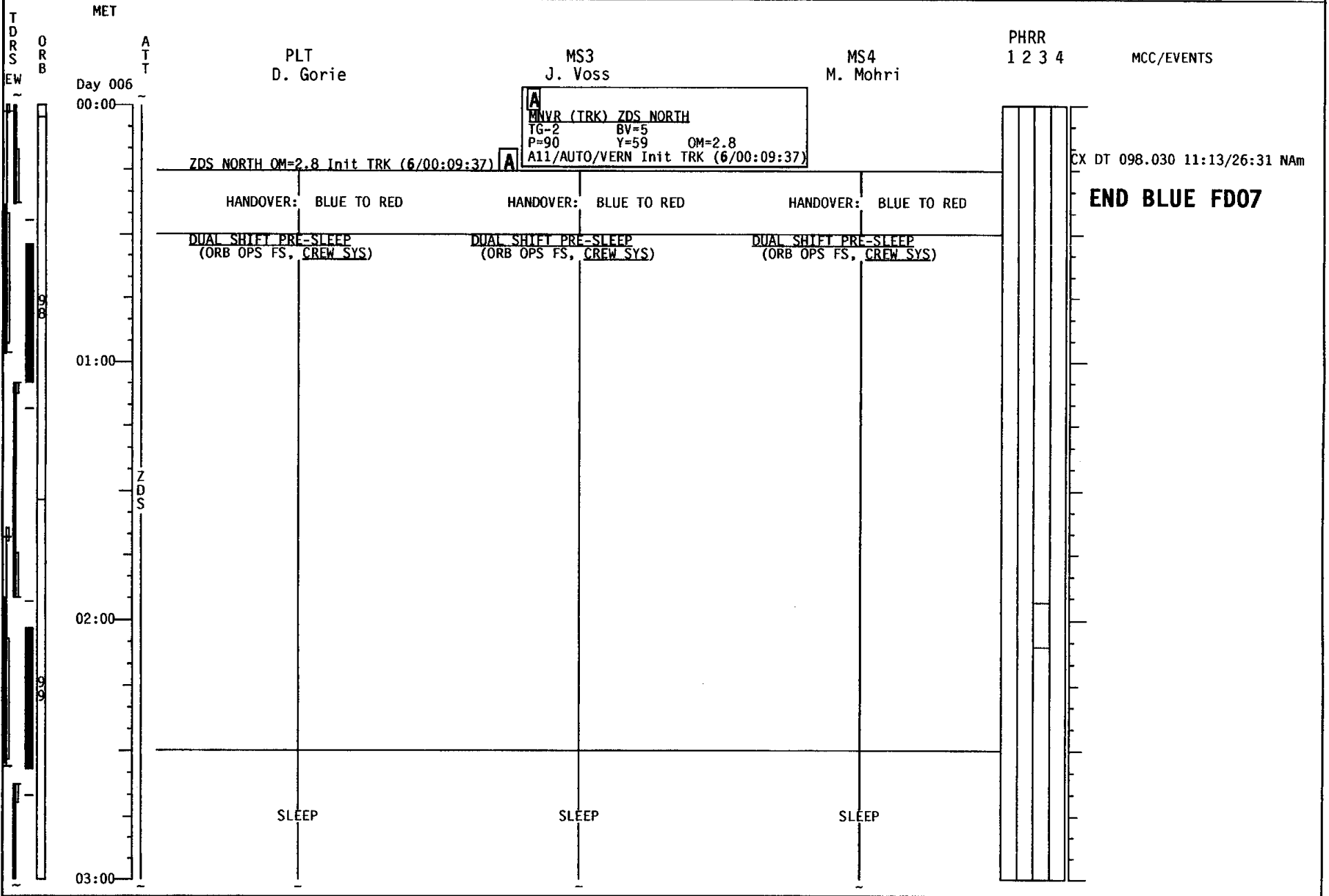
STS-99 (BLUE)FD7



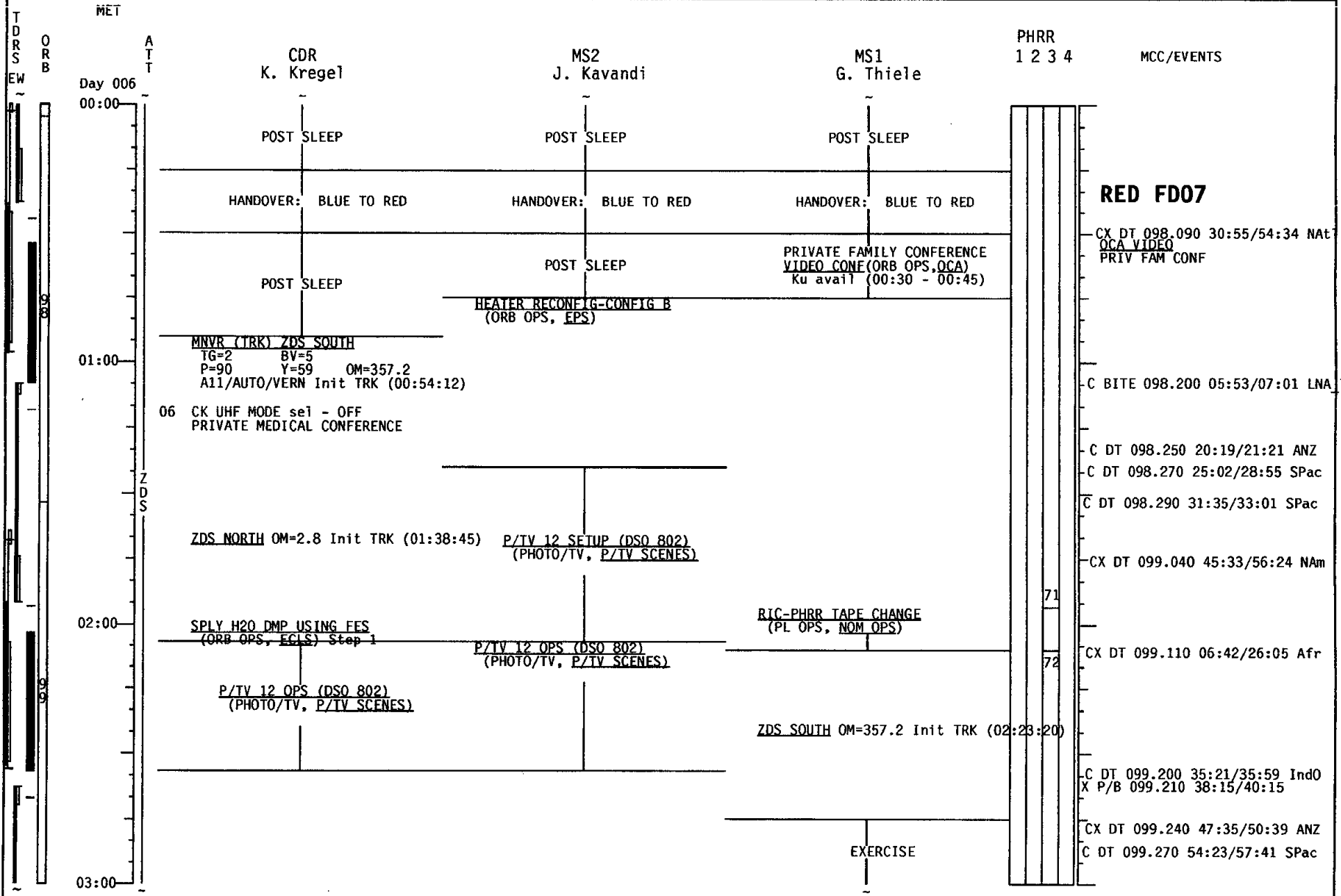
STS-99 (RED) FD6



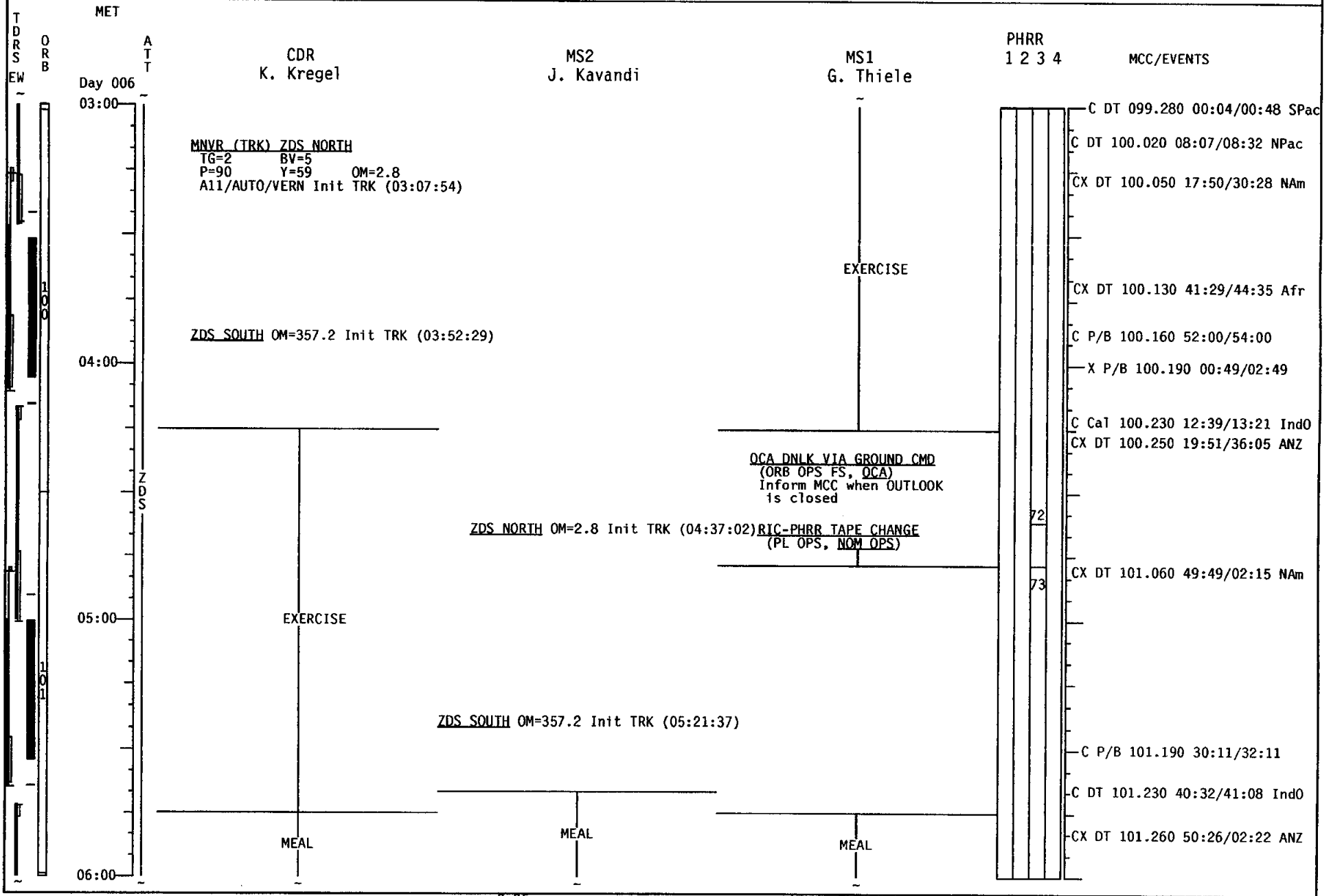
STS-99 (BLUE)FD7



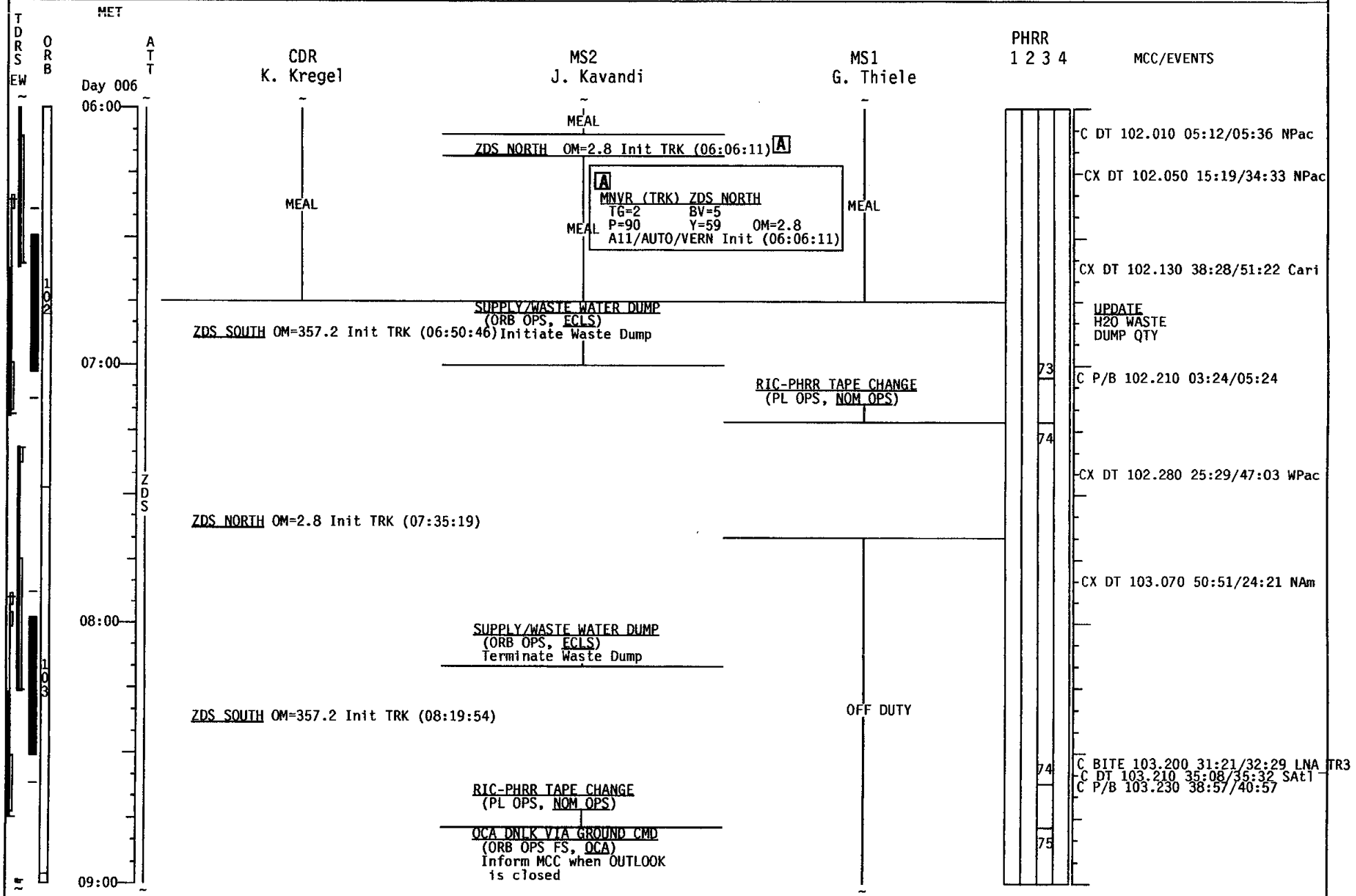
STS-99 (RED) FD7



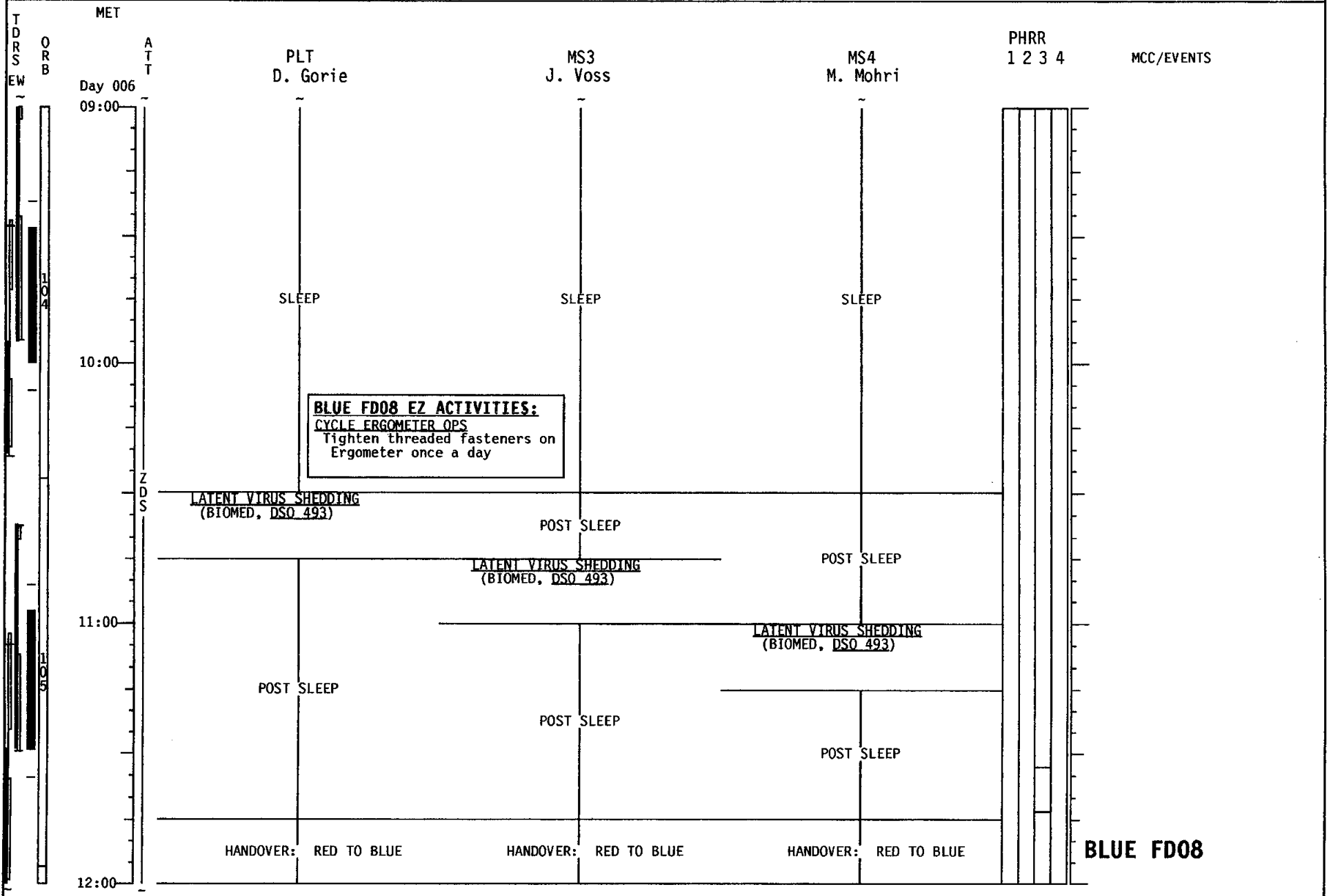
STS-99 (RED) FD7



STS-99 (RED) FD7

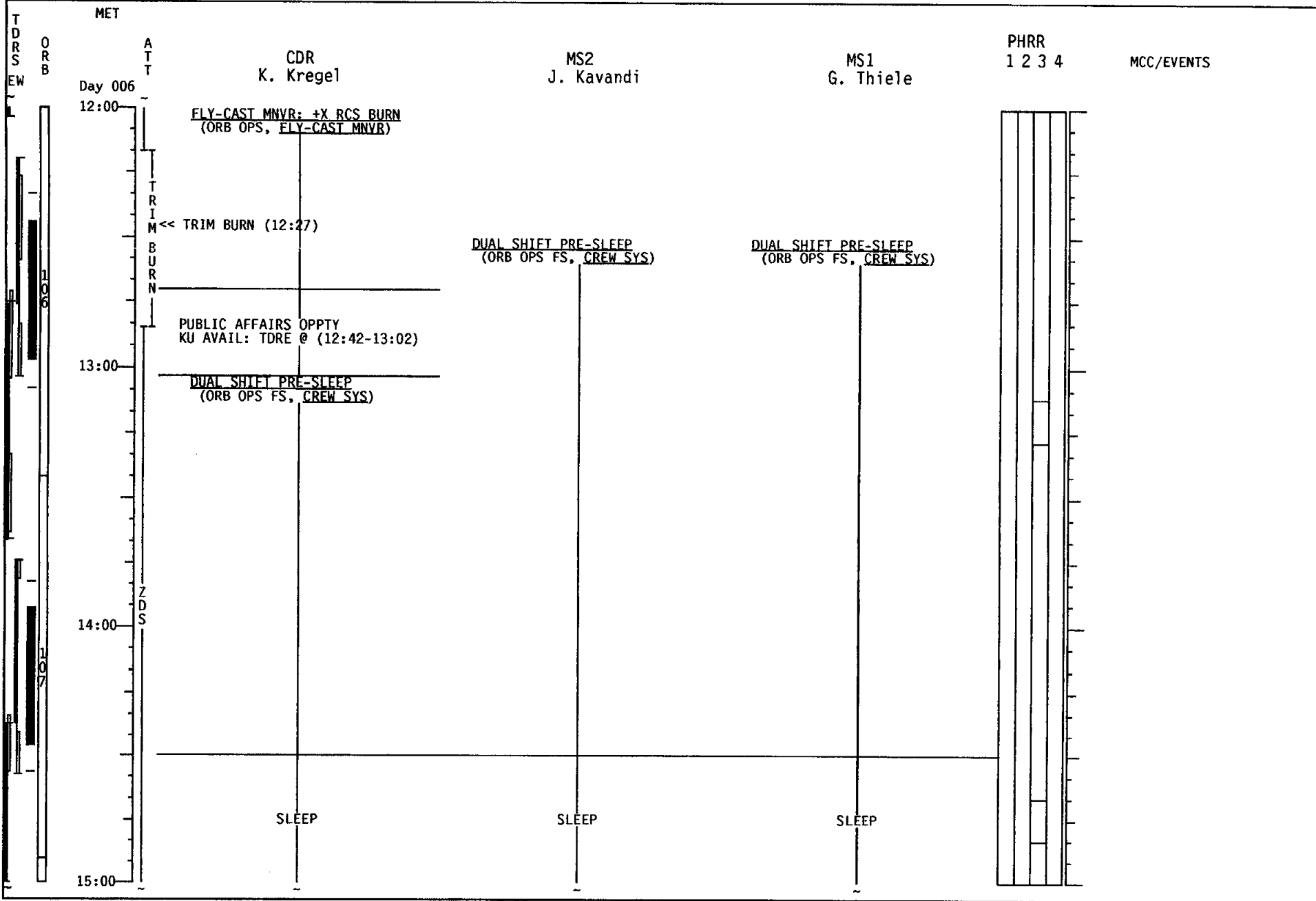


STS-99 (BLUE)FD7

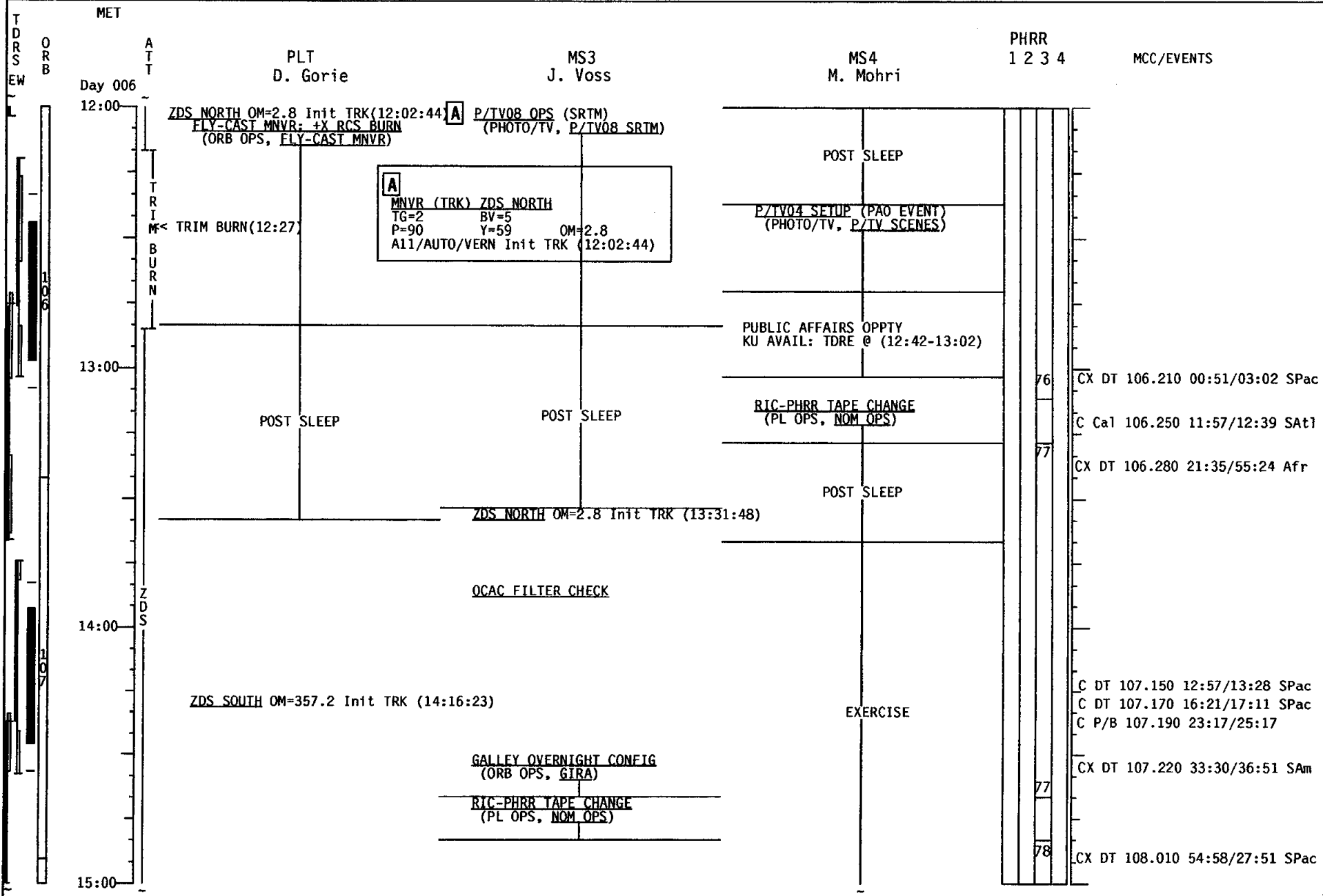


BLUE FD08

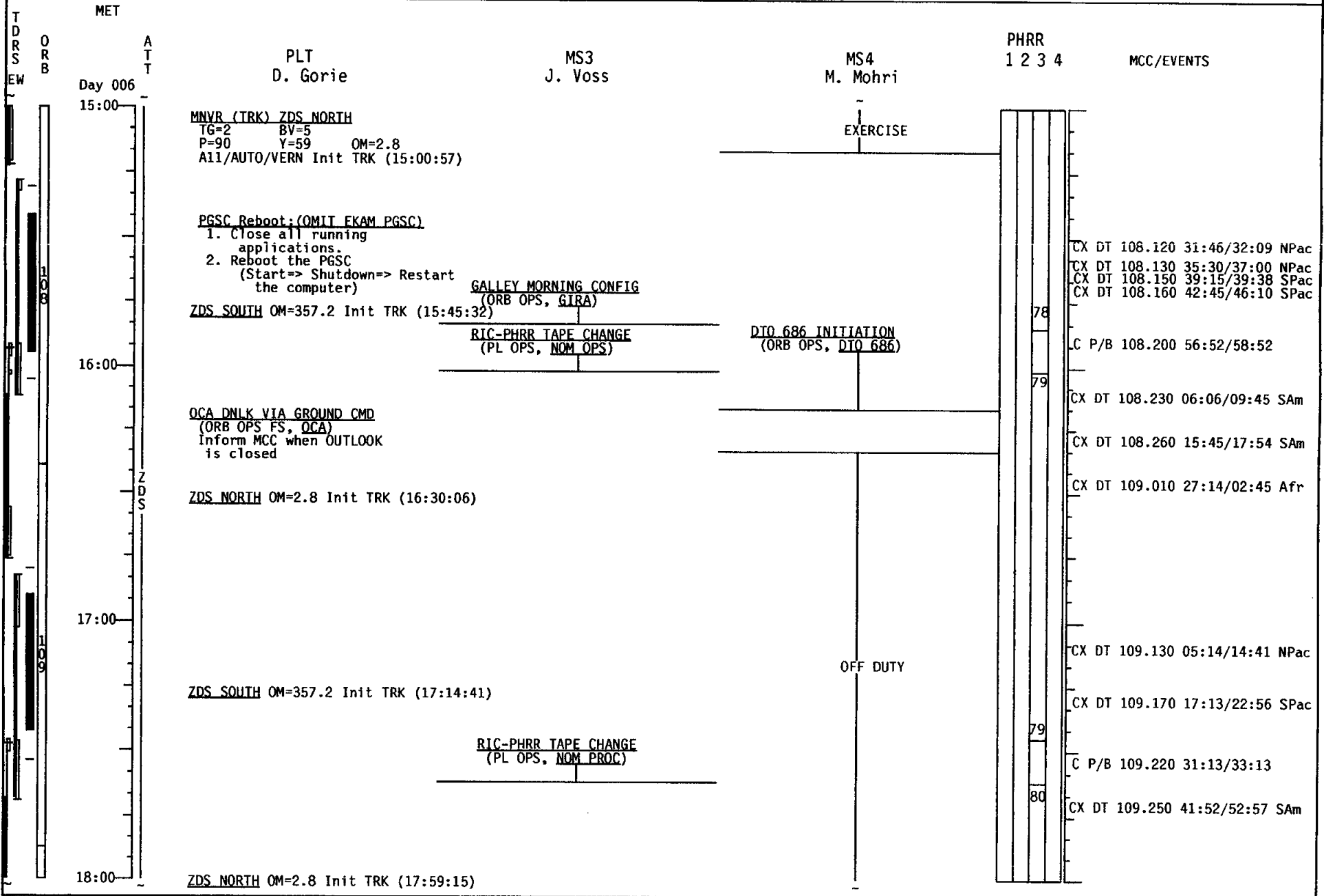
STS-99 (RED) FD7



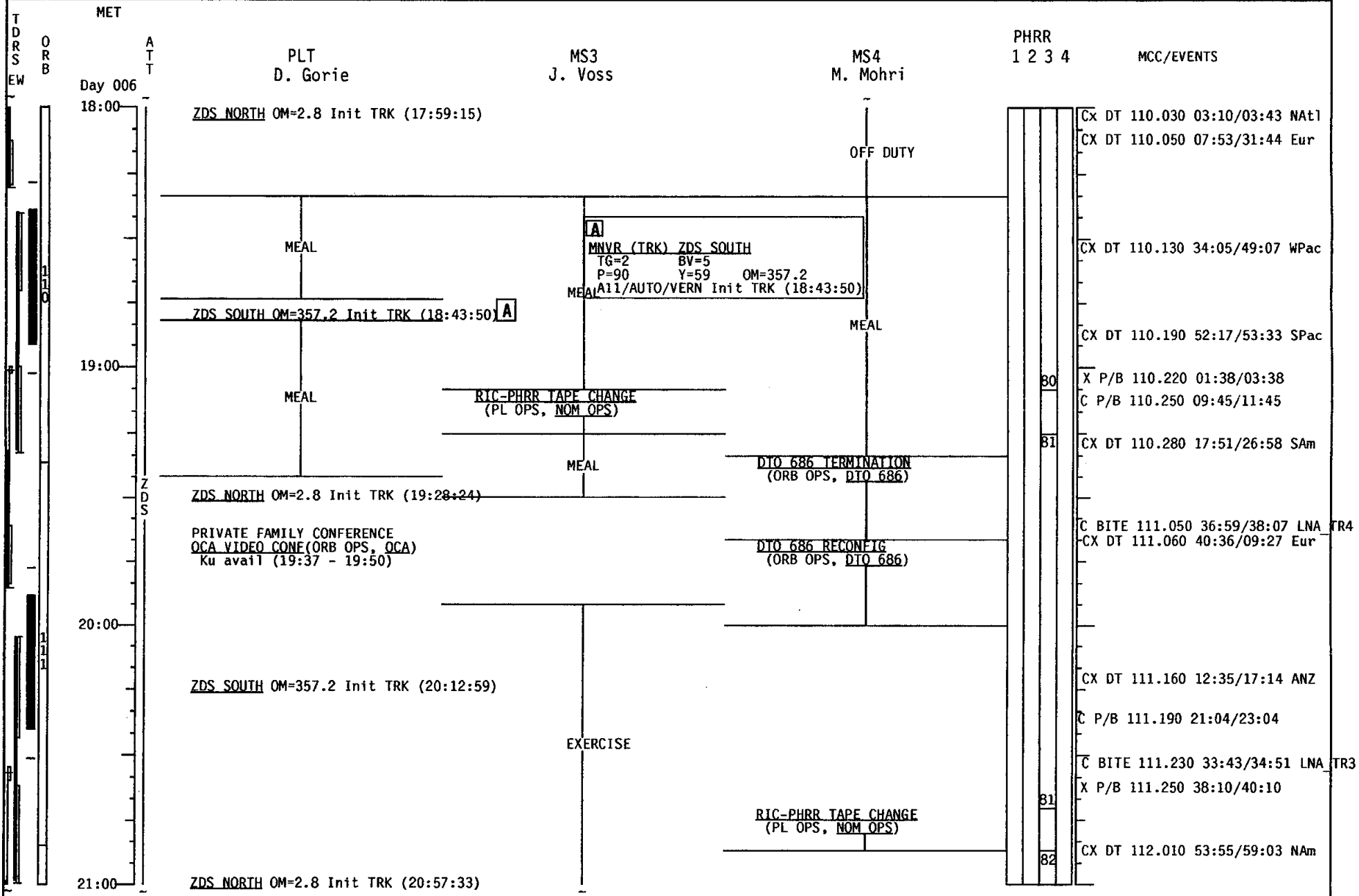
STS-99 (BLUE)FD8



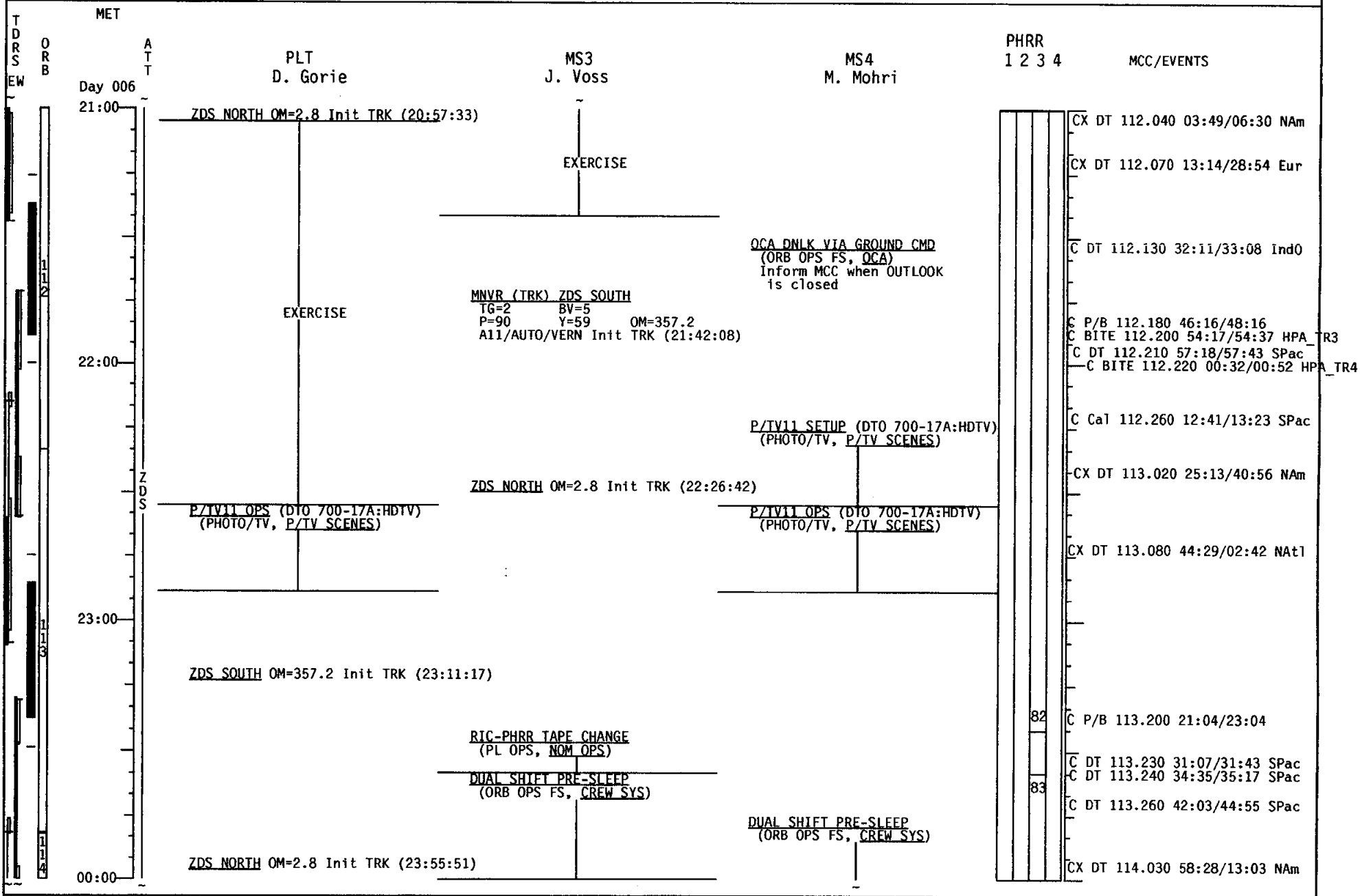
STS-99 (BLUE) FD8



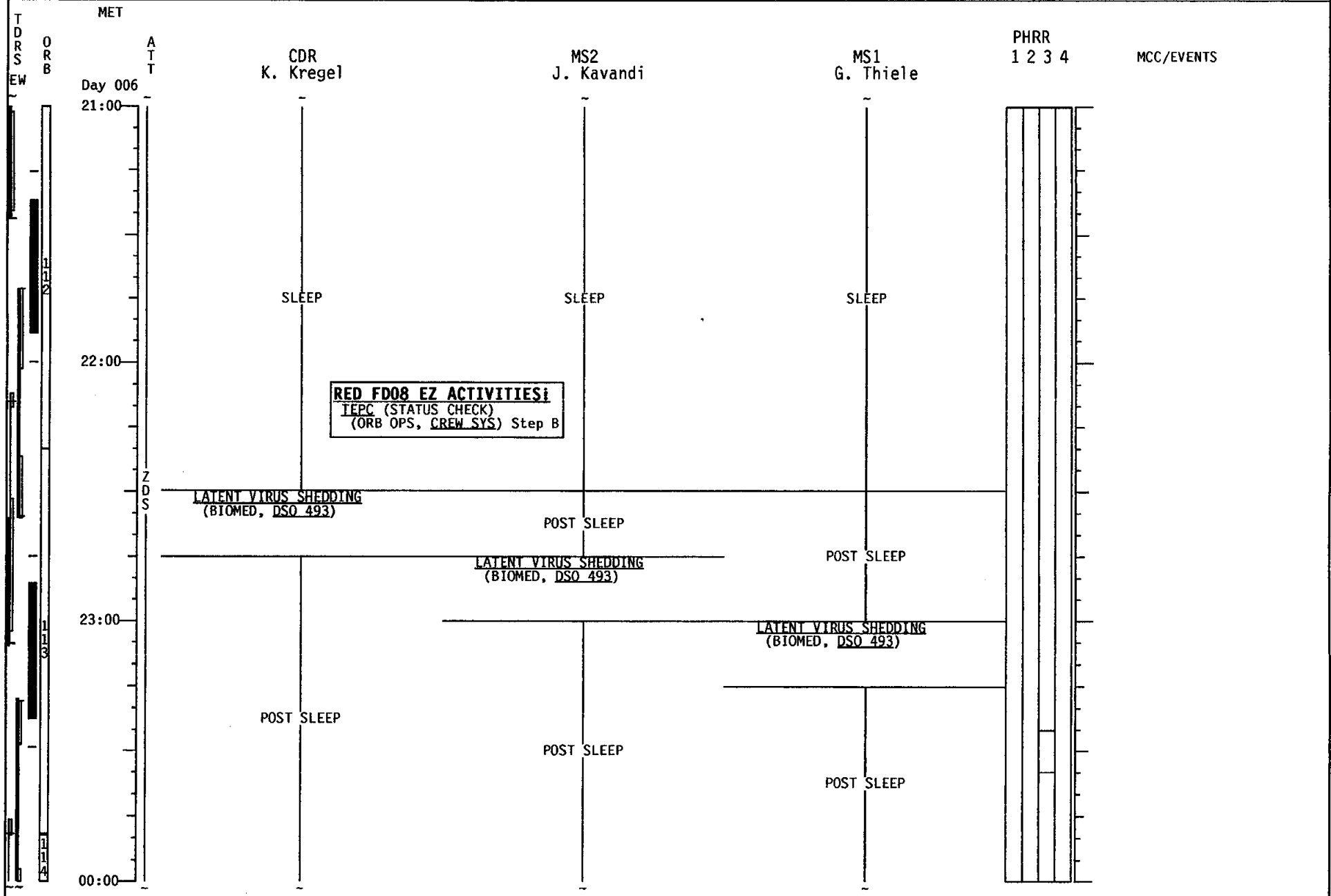
STS-99 (BLUE)FD8



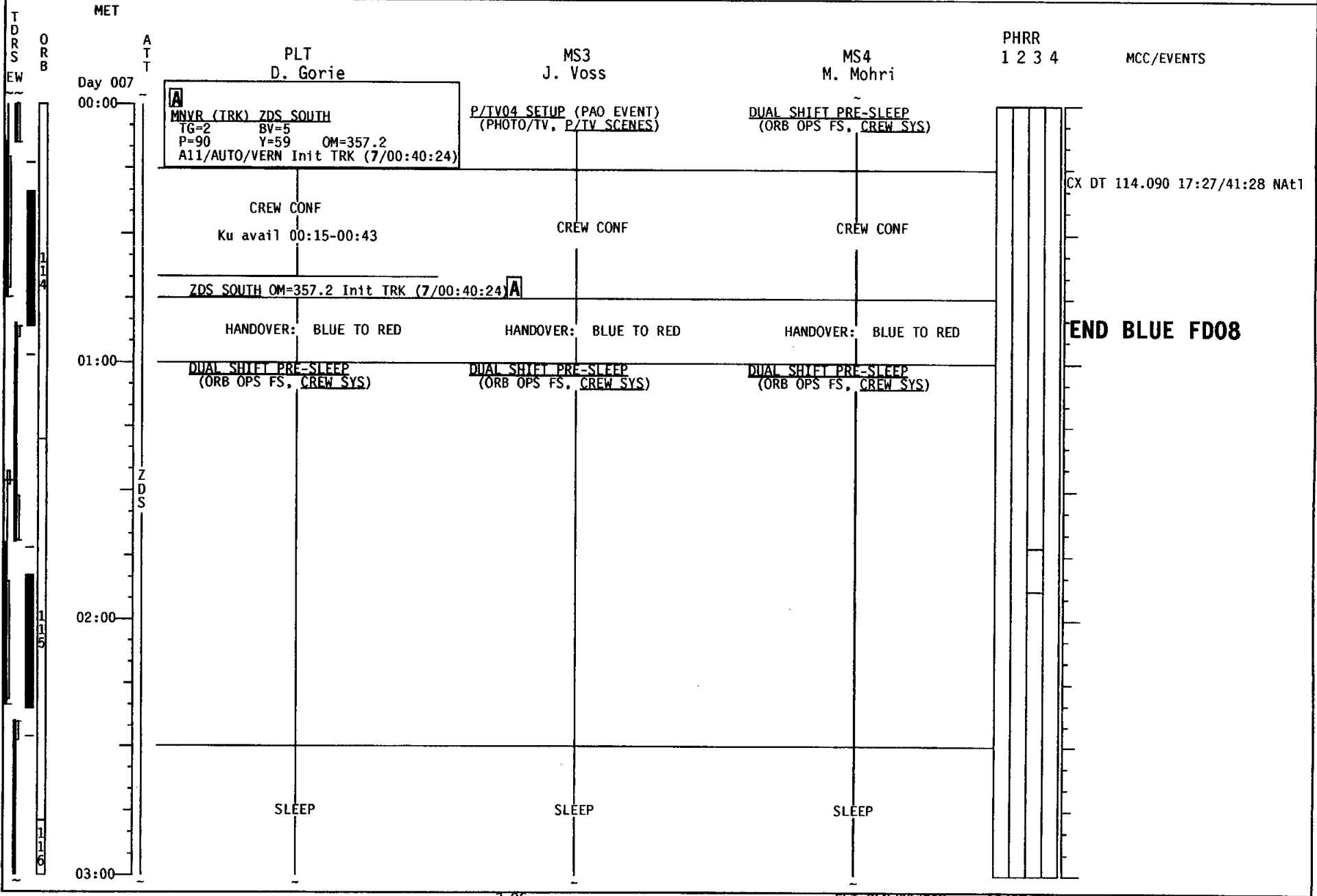
STS-99 (BLUE) FD8



STS-99 (RED) FD7



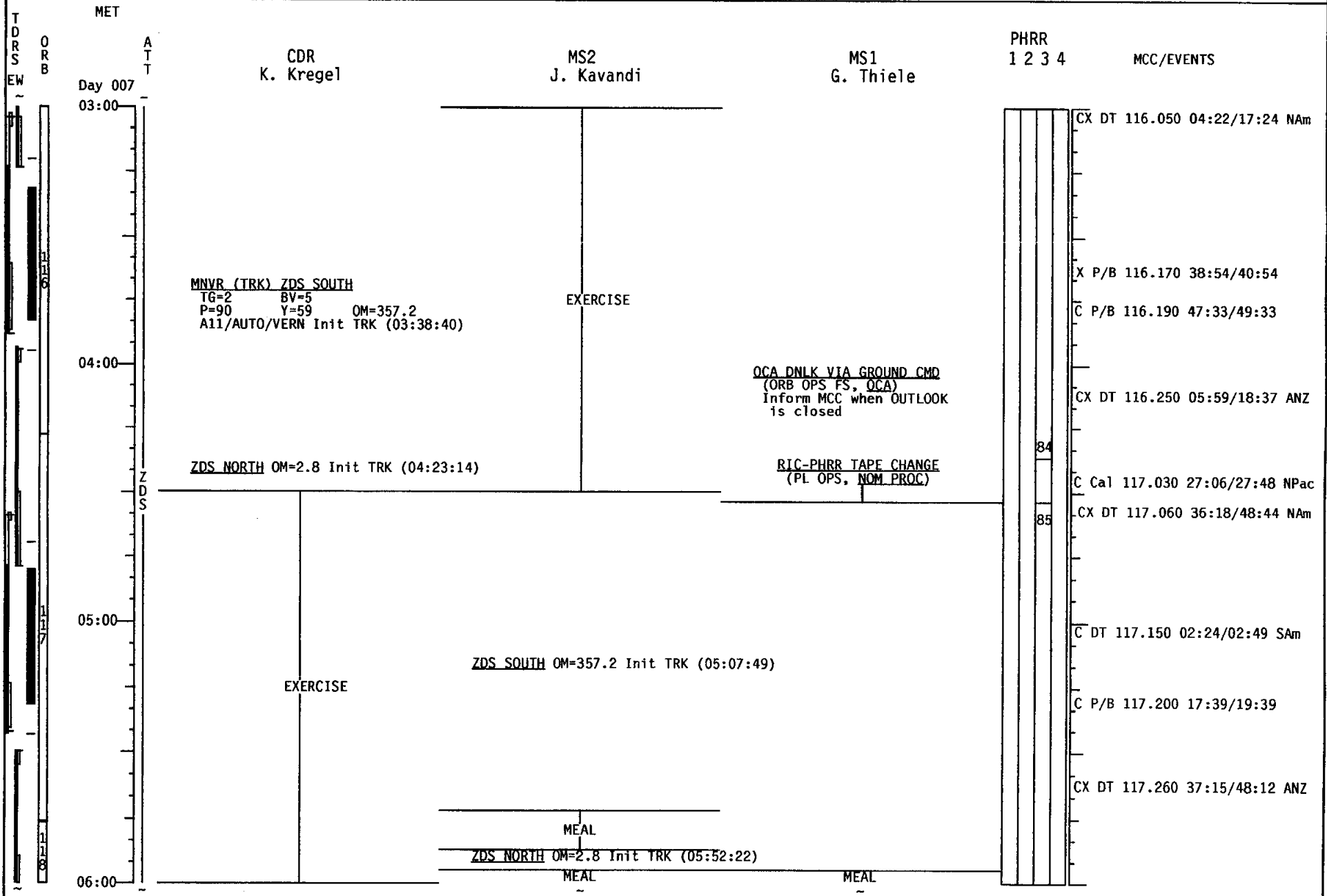
STS-99 (BLUE) FD8



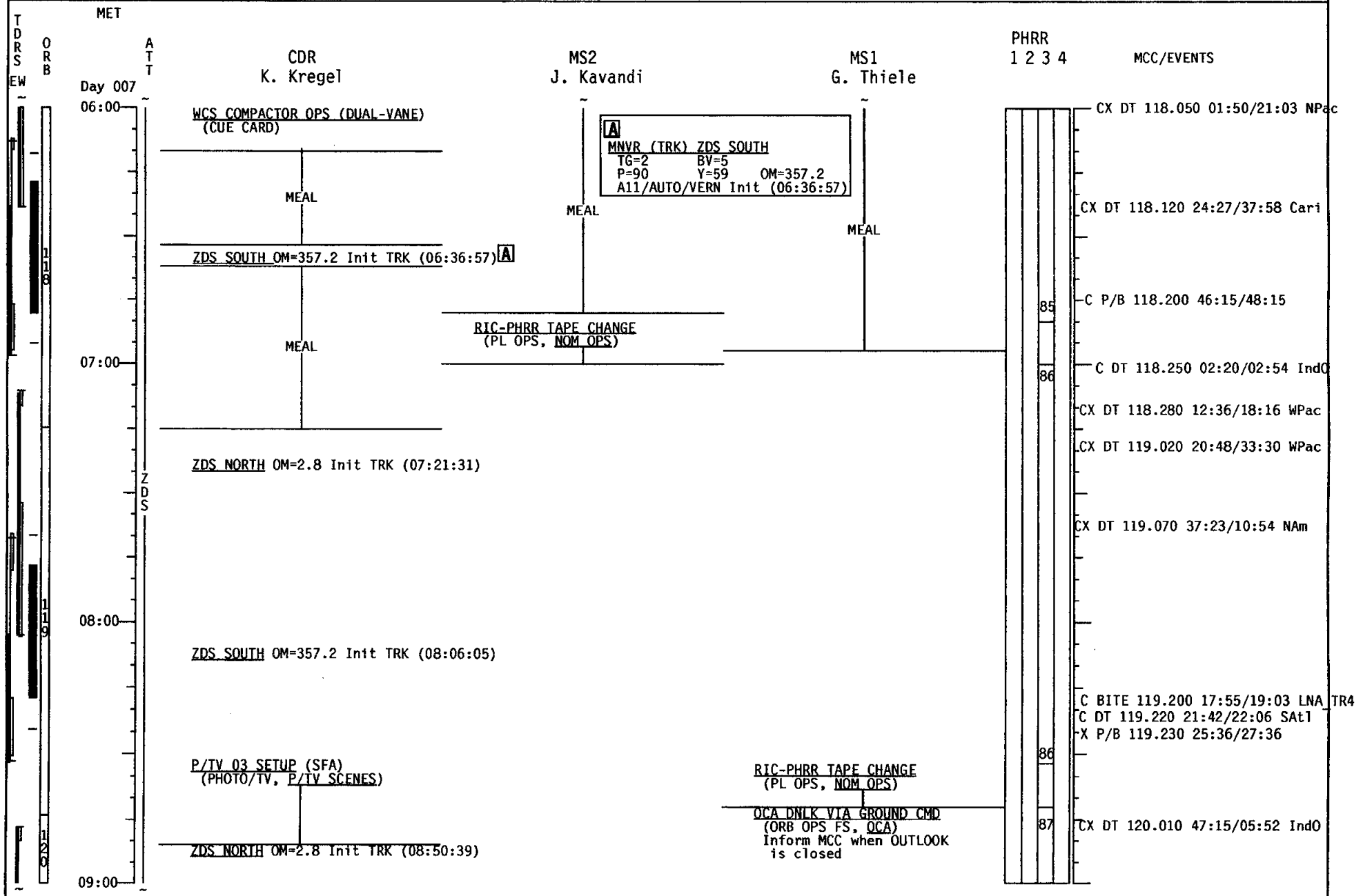
STS-99 (RED) FD8

T D R S E W	O R B	M E T	A T T	CDR K. Kregel	MS2 J. Kavandi	MS1 G. Thiele	PHRR 1 2 3 4	MCC/EVENTS
				Day 007				
		00:00		POST SLEEP	POST SLEEP	POST SLEEP		
				CREW CONF Ku avail 00:15-00:42	CREW CONF	CREW CONF		
				HANDOVER: BLUE TO RED	HANDOVER: BLUE TO RED	HANDOVER: BLUE TO RED		
		01:00		POST SLEEP				
				06 CK UHF MODE sel - OFF PRIVATE MEDICAL CONFERENCE				C DT 114.250 07:01/07:49 ANZ C DT 114.260 11:13/14:11 SPac C DT 115.010 19:06/19:36 NPac
			Z D S	<u>MNVR (TRK) ZDS NORTH</u> TG=2 BV=5 P=90 Y=59 OM=2.8 All/AUTO/VERN Init TRK (01:24:57)				CX DT 115.050 32:19/42:57 Nam
				<u>SPLY H2O DMP USING FES</u> (ORB OPS, ECLS) Step 1				
						<u>RIC-PHRR TAPE CHANGE</u> (PL OPS, NOM OPS)		
		02:00		PRIVATE FAMILY CONFERENCE <u>OCA VIDEO CONF(ORB OPS, OCA)</u> Ku avail (01:55 - 02:10)			83	CX DT 115.110 53:14/12:46 Afr <u>OCA VIDEO</u> PRIV FAM CONF
				<u>ZDS SOUTH OM=357.2 Init TRK (02:09:32)</u>				
							84	
								C DT 115.190 17:47/18:33 IndO C DT 115.210 21:54/22:31 IndO C P/B 115.220 24:50/26:50
								CX DT 115.250 34:17/38:22 ANZ
								C DT 115.270 41:13/43:50 SPac C DT 115.290 46:42/47:24 SPac
		03:00		<u>ZDS NORTH OM=2.8 Init TRK (02:54:06)</u>				

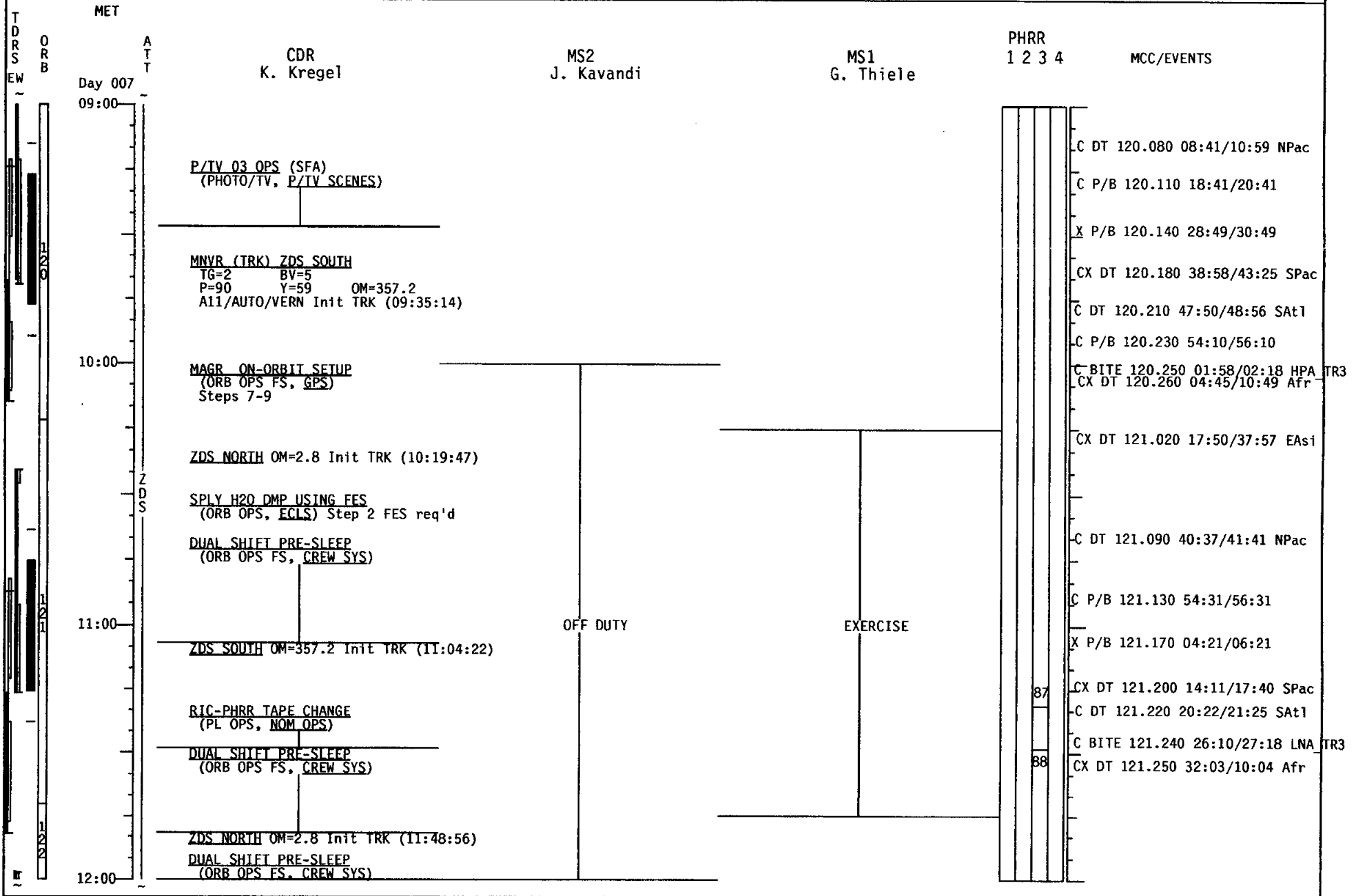
STS-99 (RED) FD8



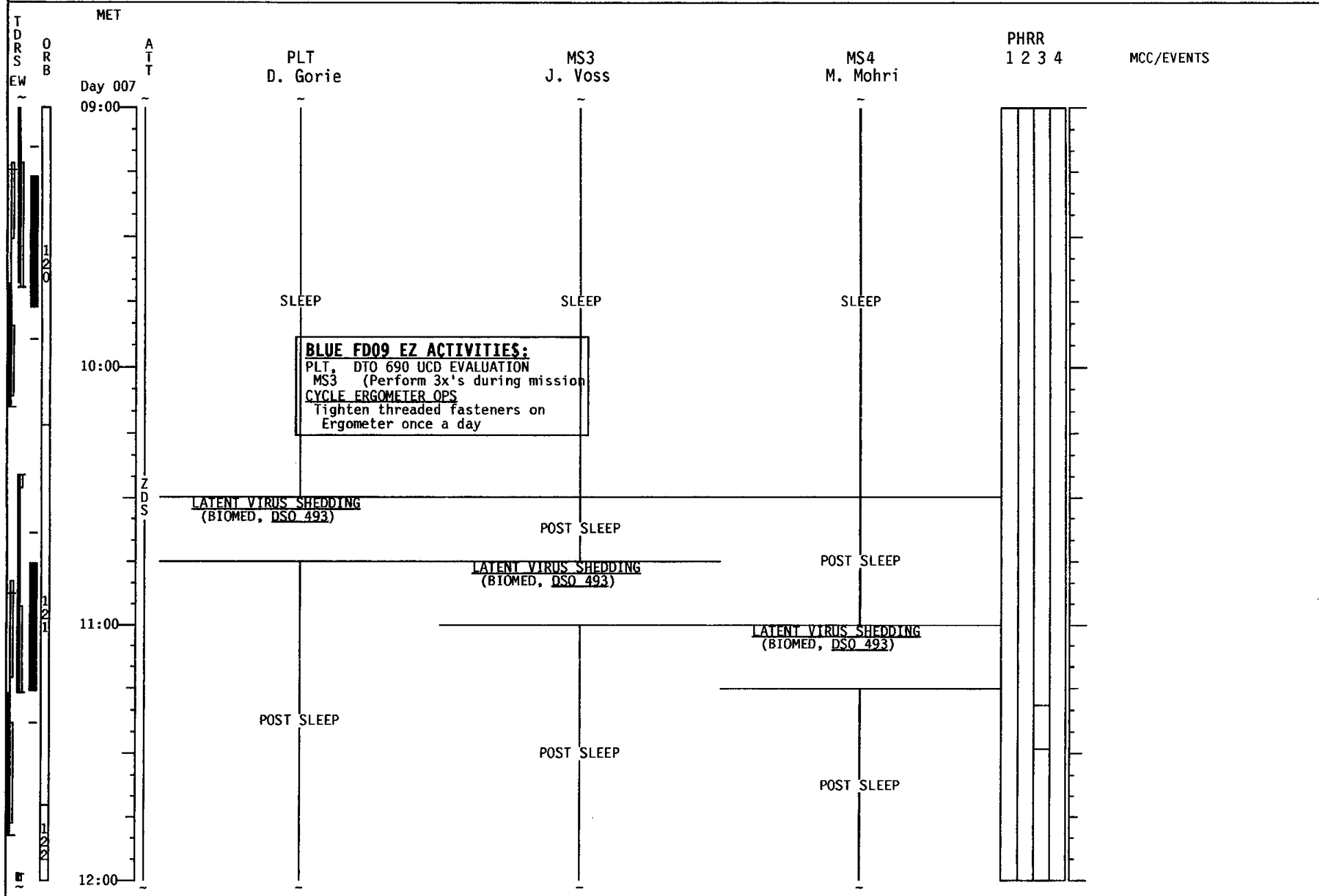
STS-99 (RED) FD8



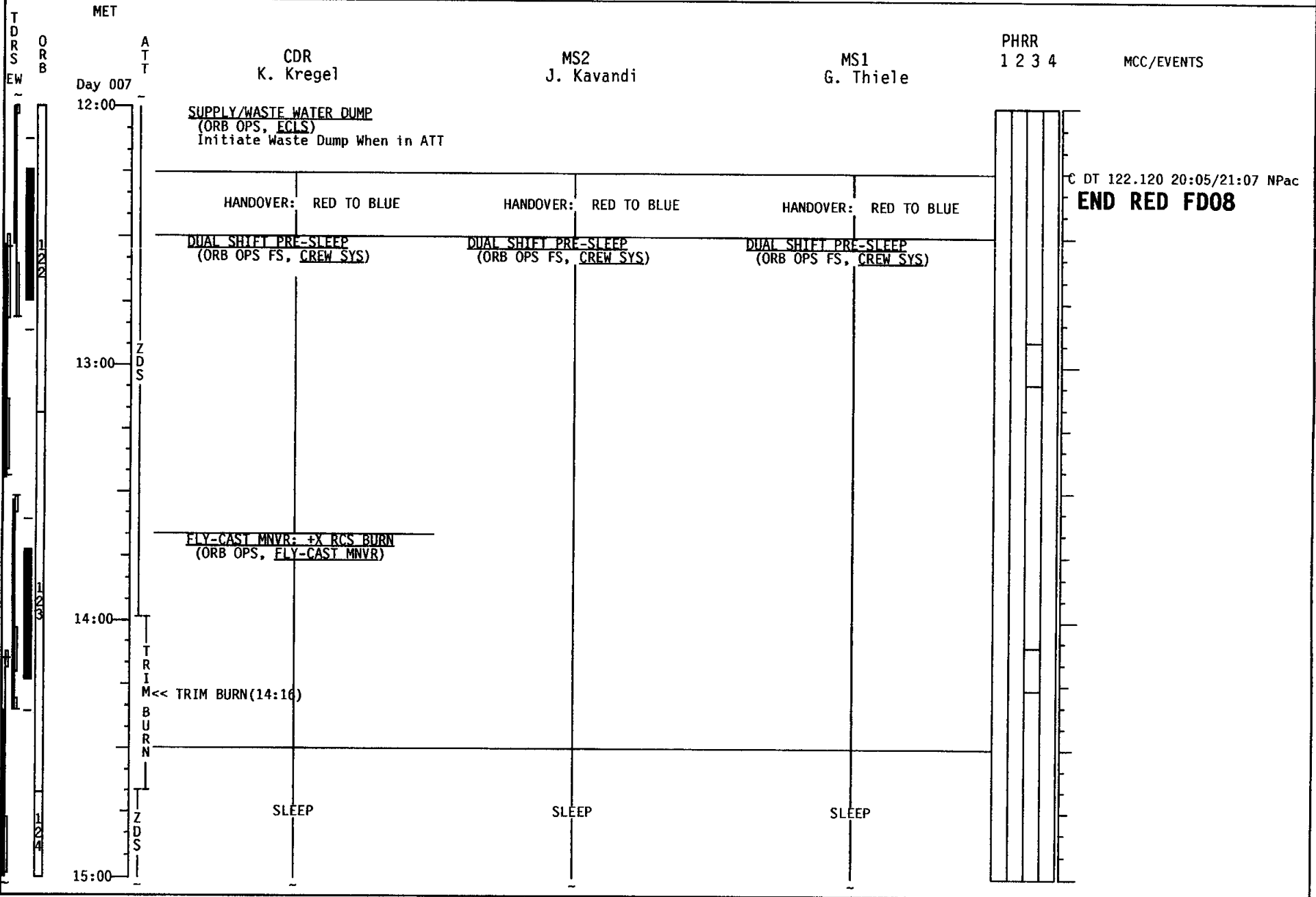
STS-99 (RED) FD8



STS-99 (BLUE) FD8



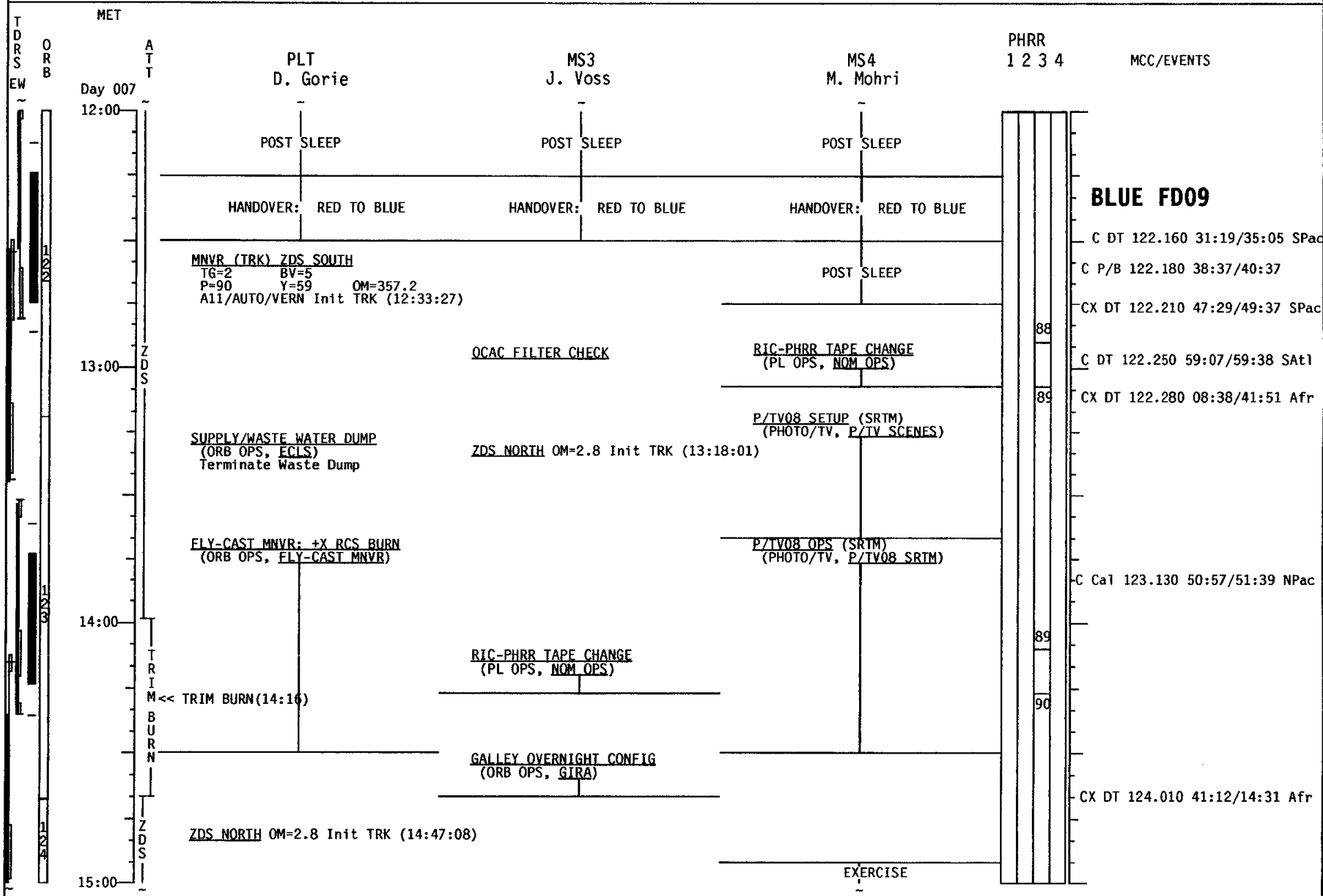
STS-99 (RED) FD8



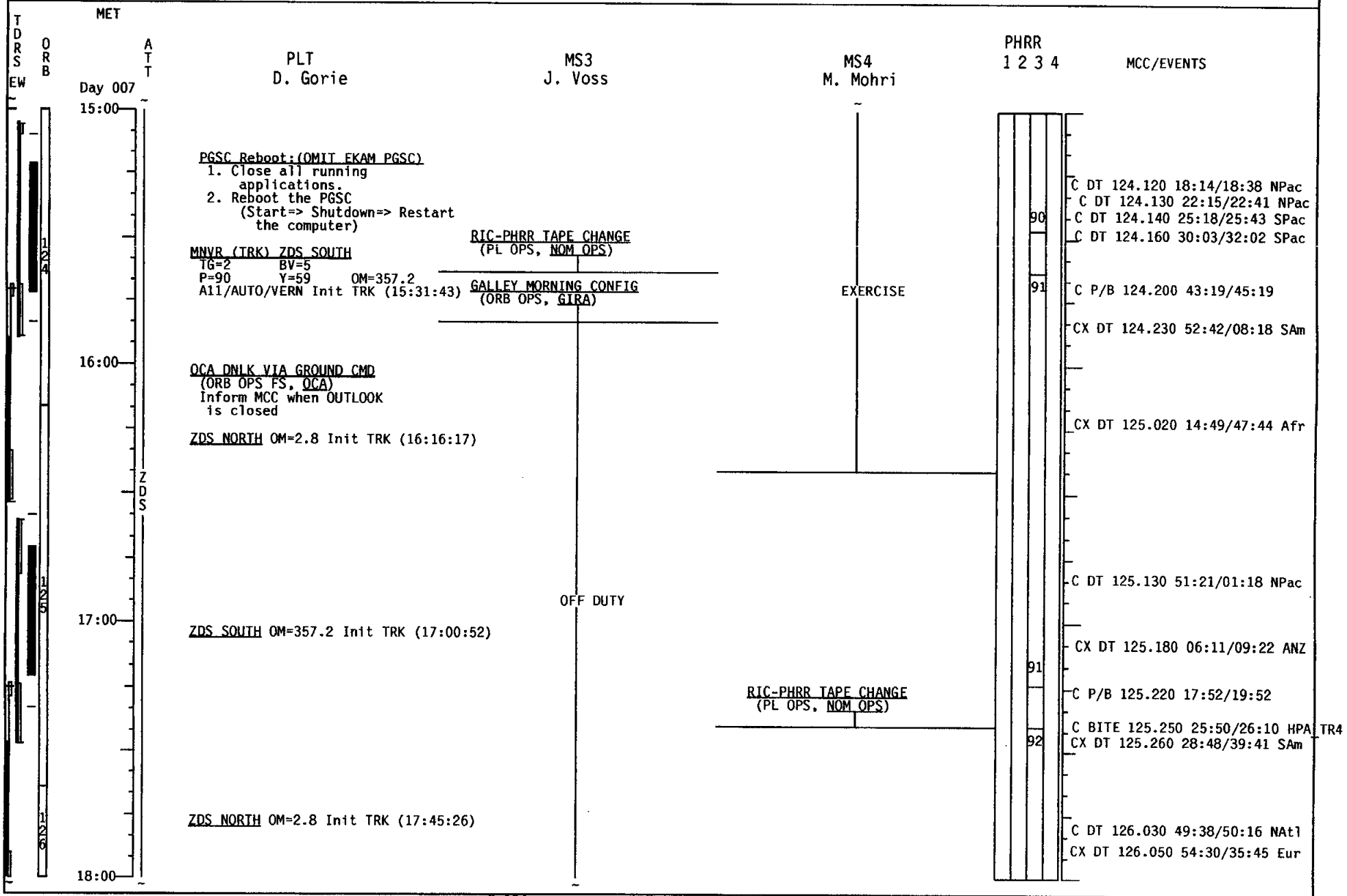
C DT 122.120 20:05/21:07 NPac

END RED FD08

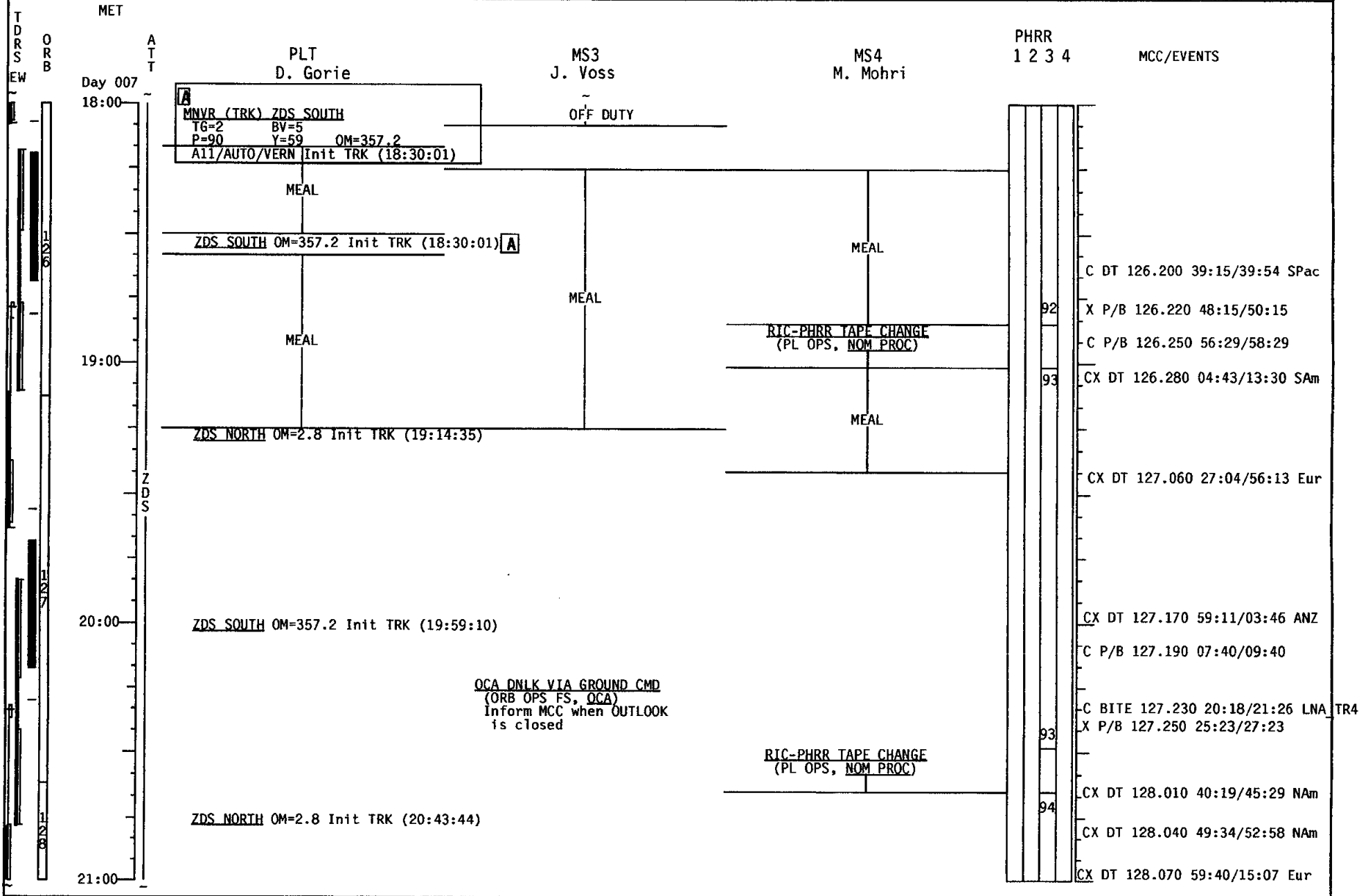
STS-99 (BLUE)FD9



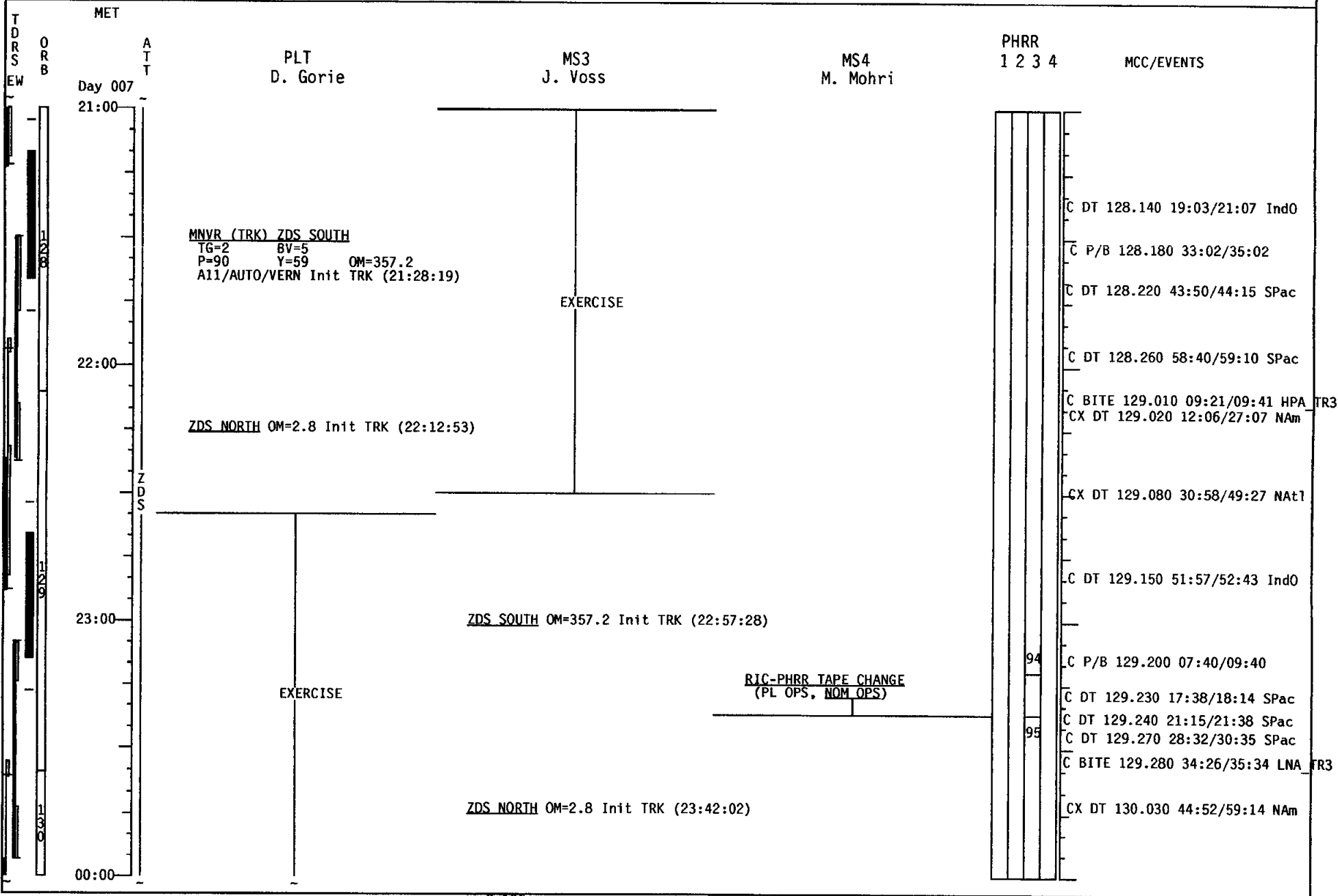
STS-99 (BLUE) FD9



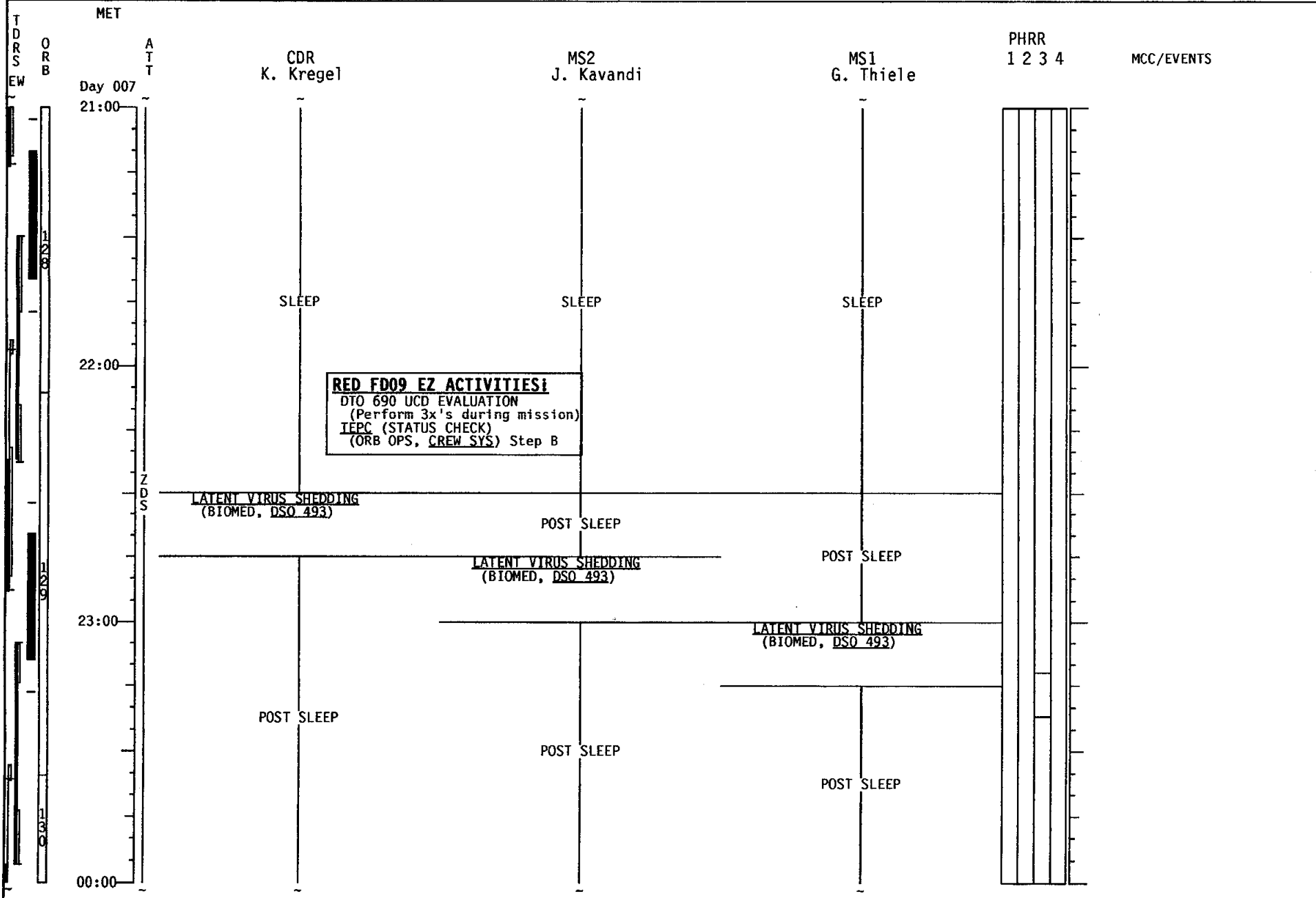
STS-99 (BLUE) FD9



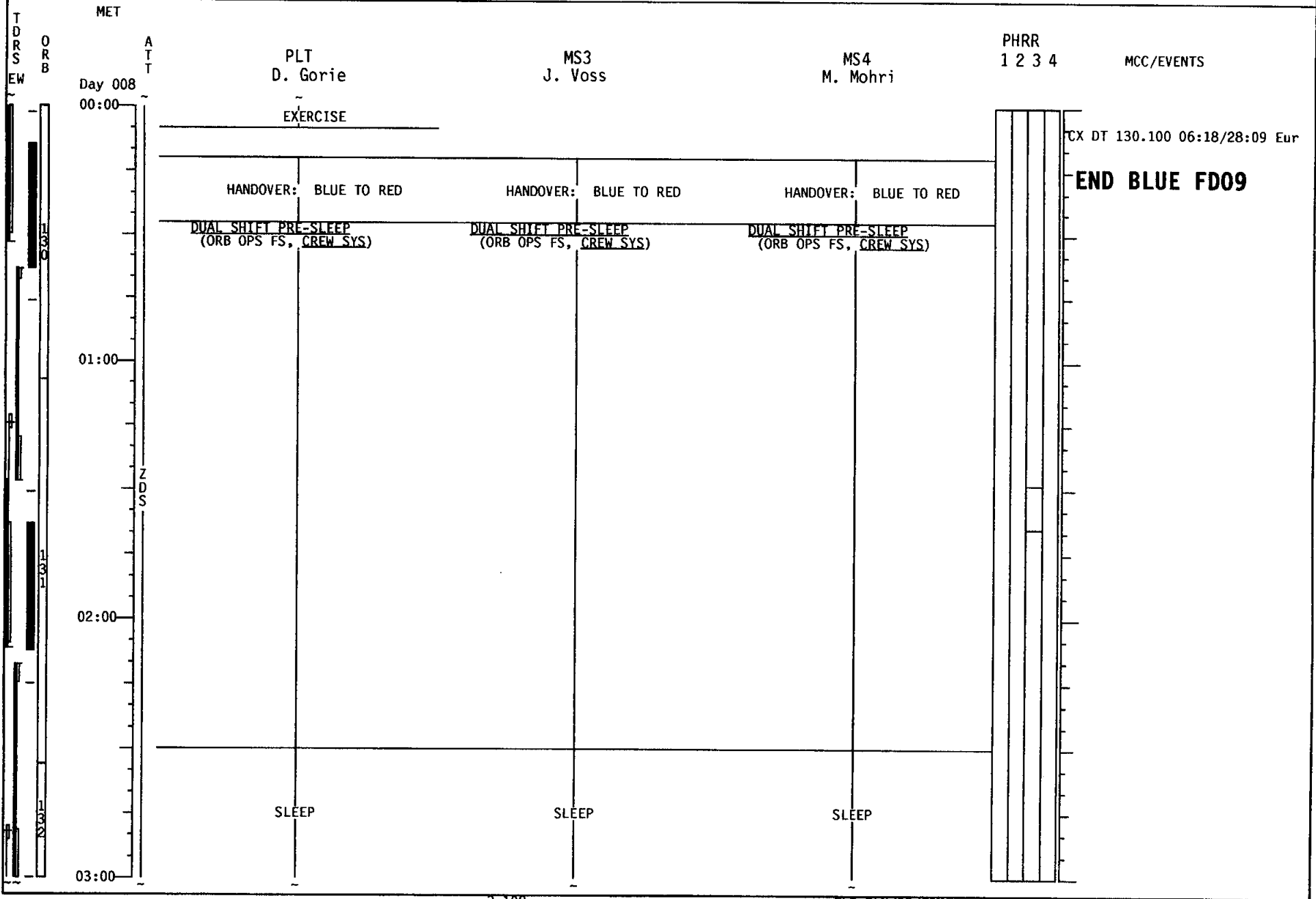
STS-99 (BLUE) FD9



STS-99 (RED) FD8



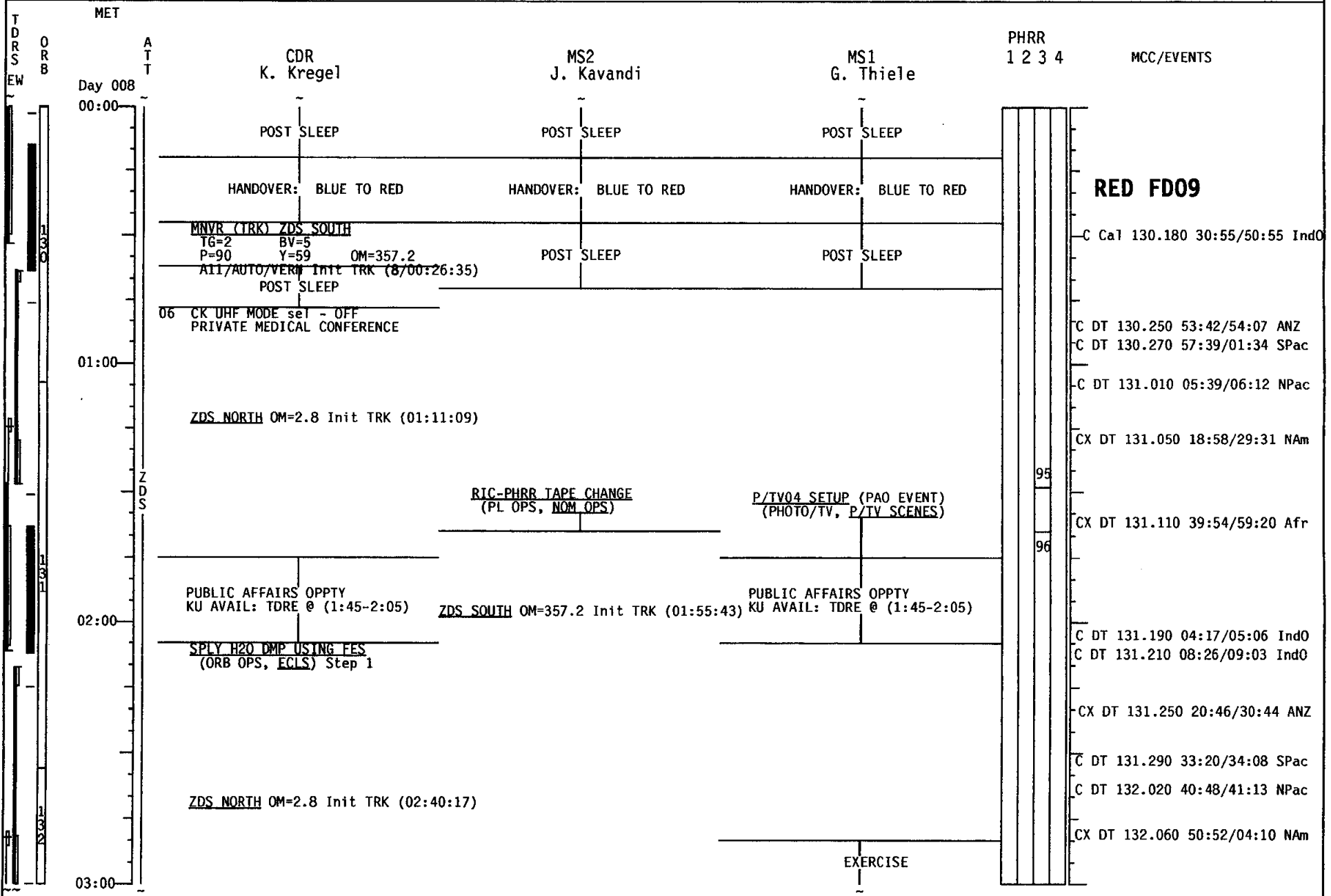
STS-99 (BLUE) FD9



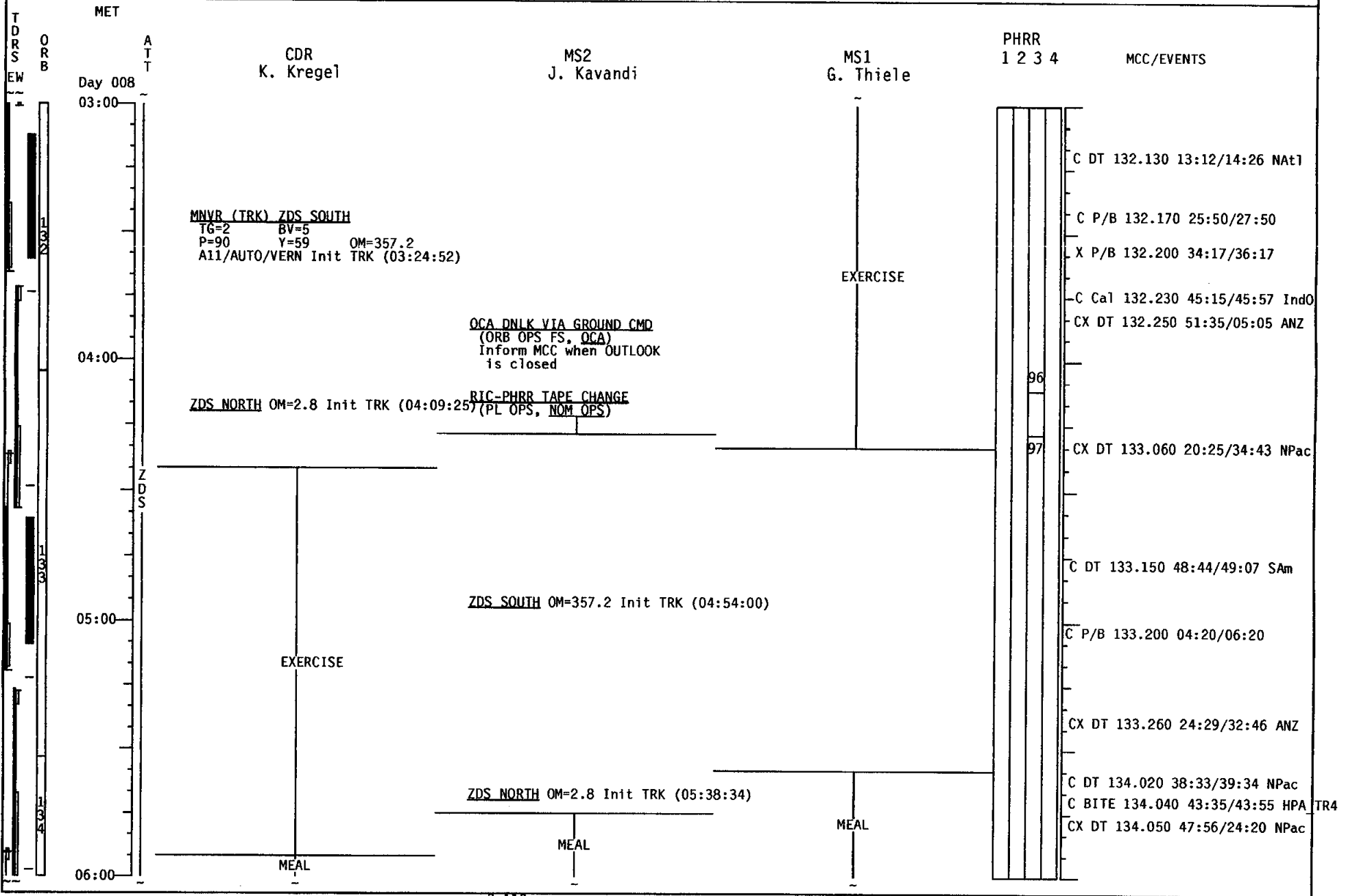
CX DT 130.100 06:18/28:09 Eur

END BLUE FD09

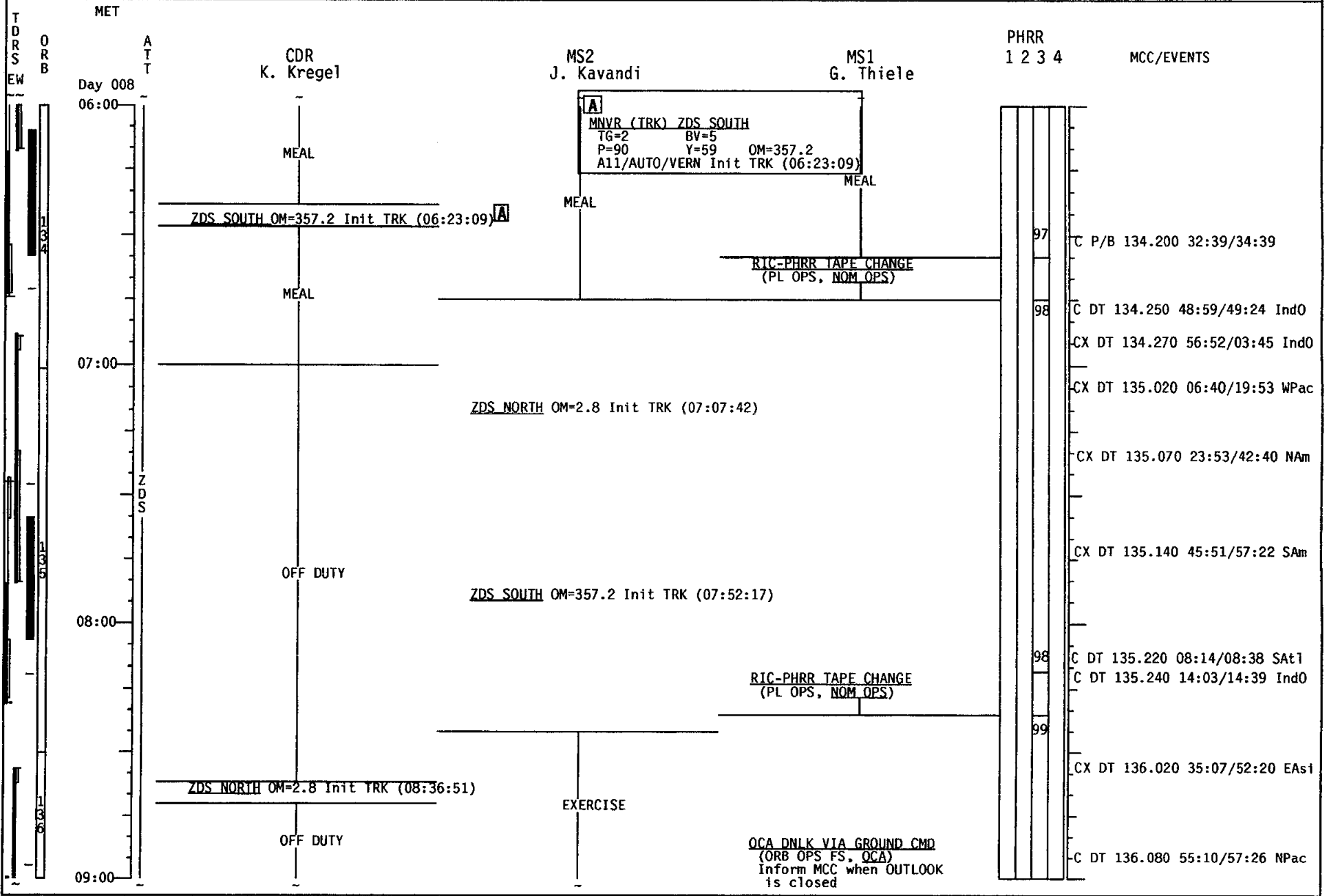
STS-99 (RED) FD9



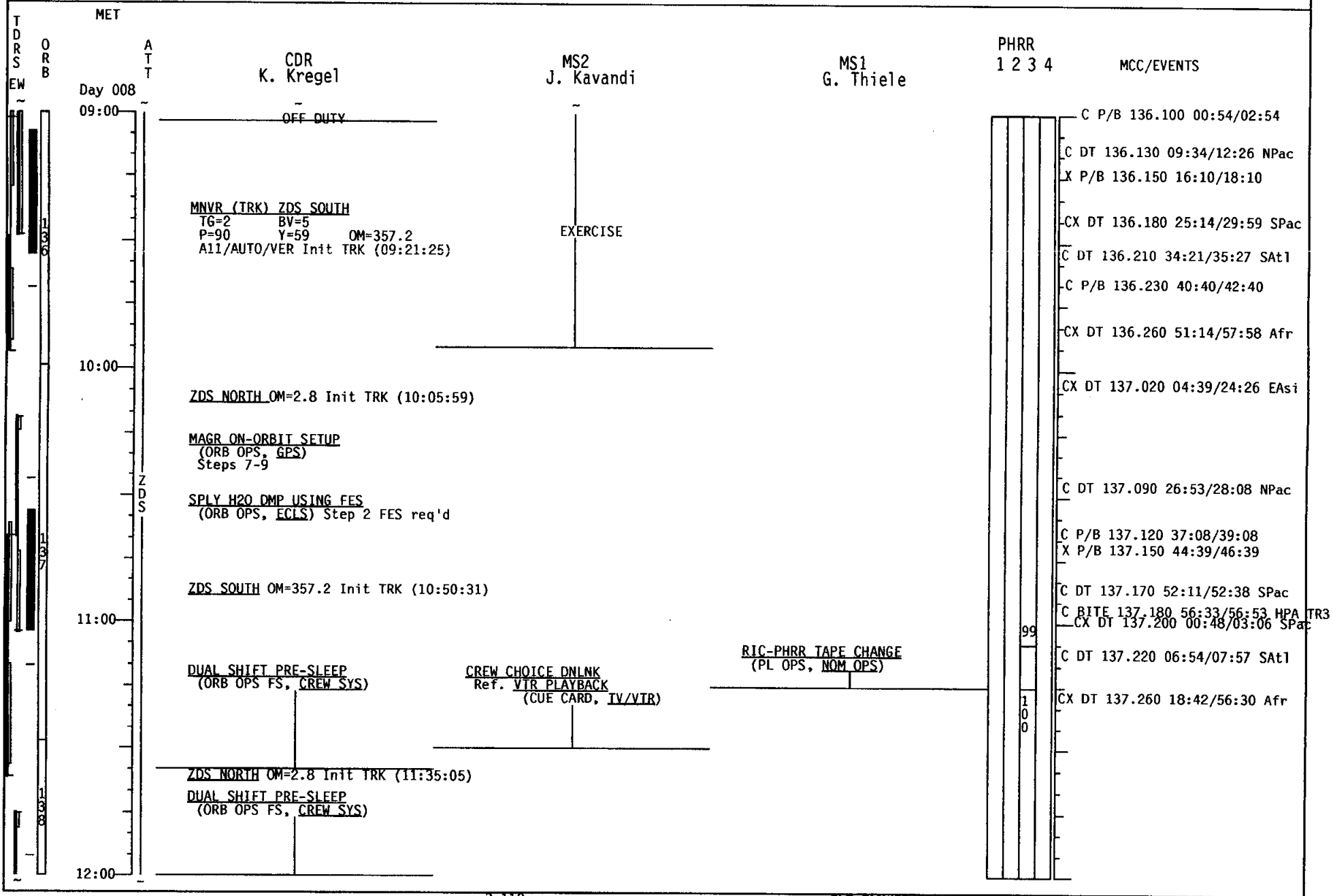
STS-99 (RED) FD9



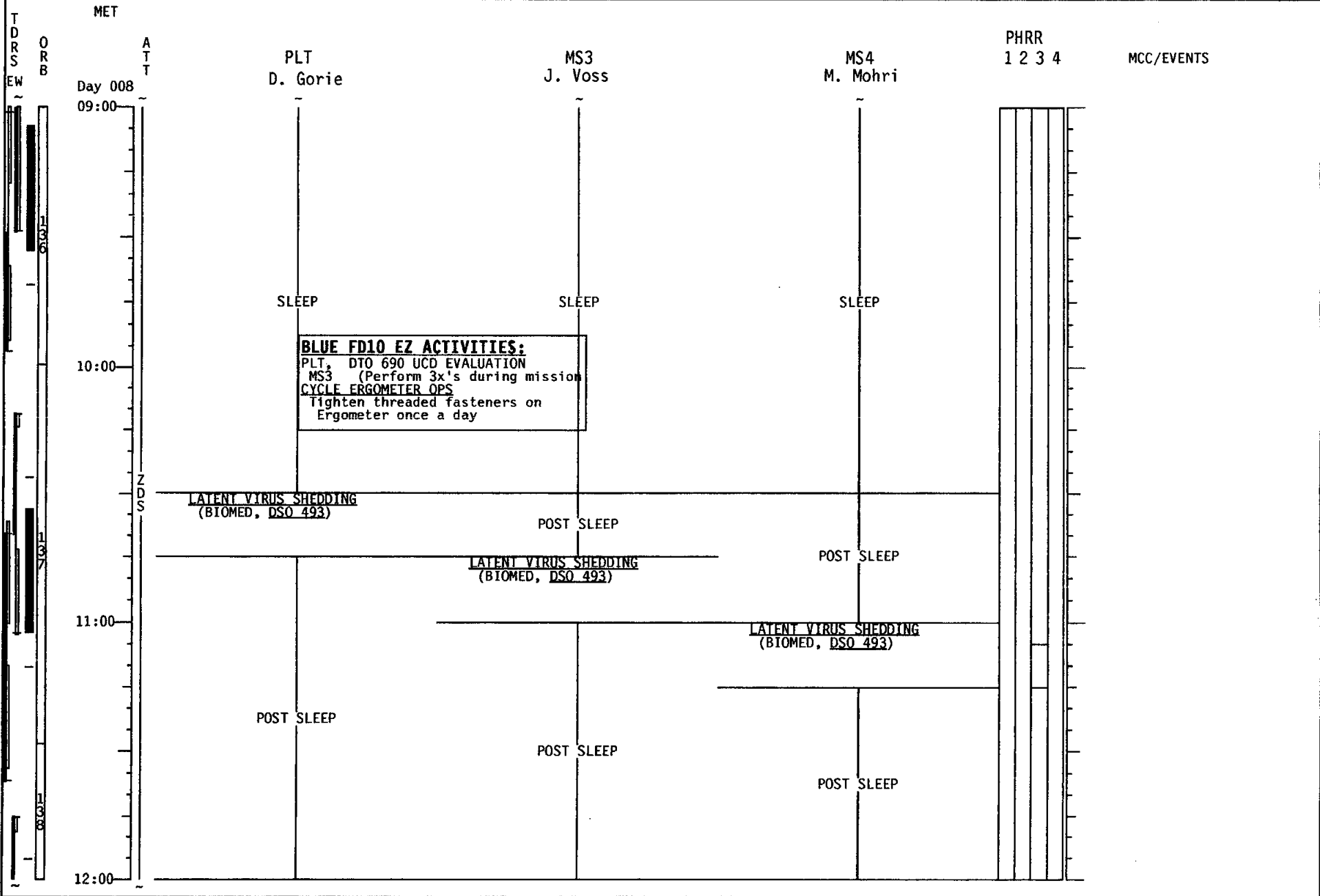
STS-99 (RED) FD9



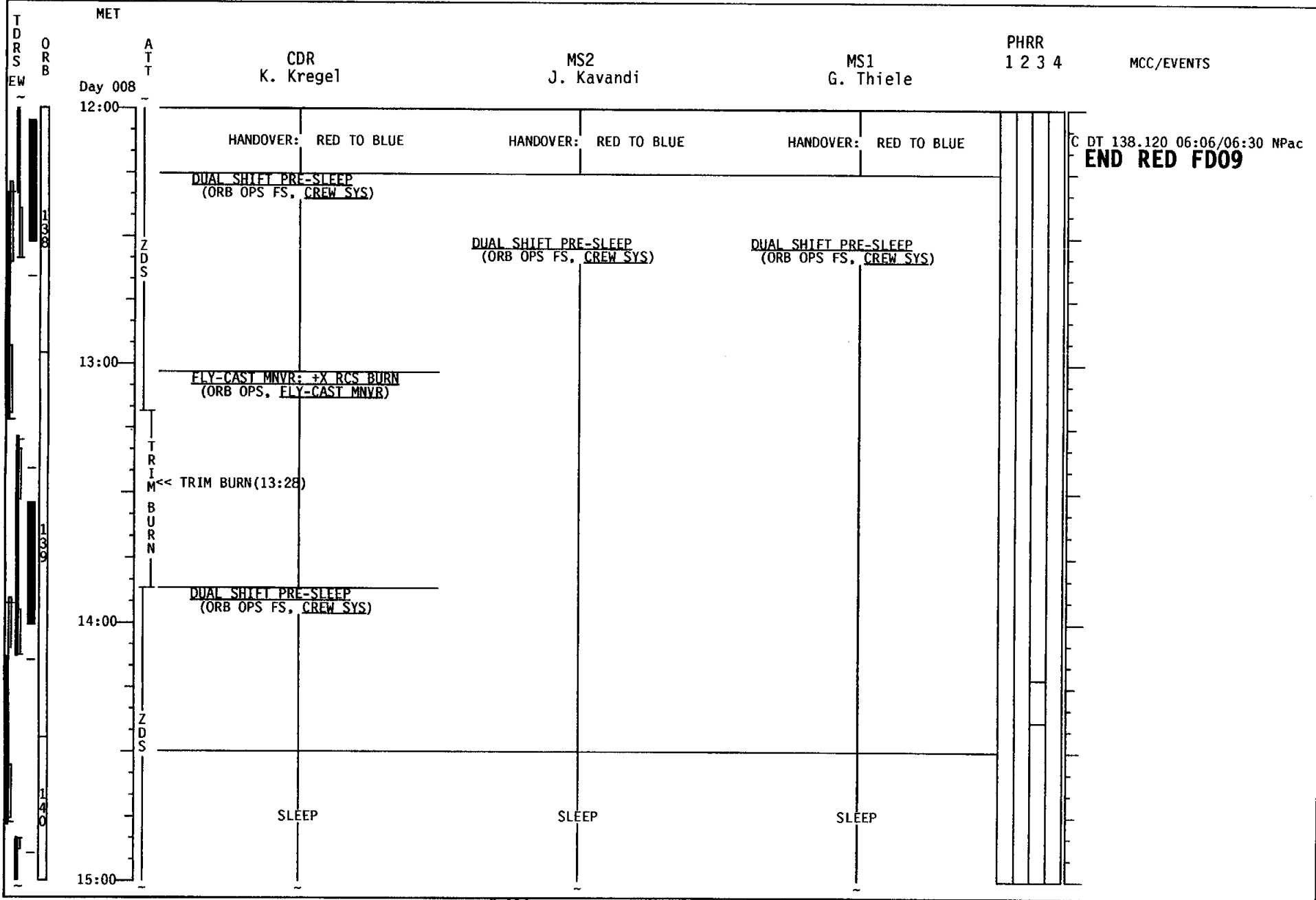
STS-99 (RED) FD9



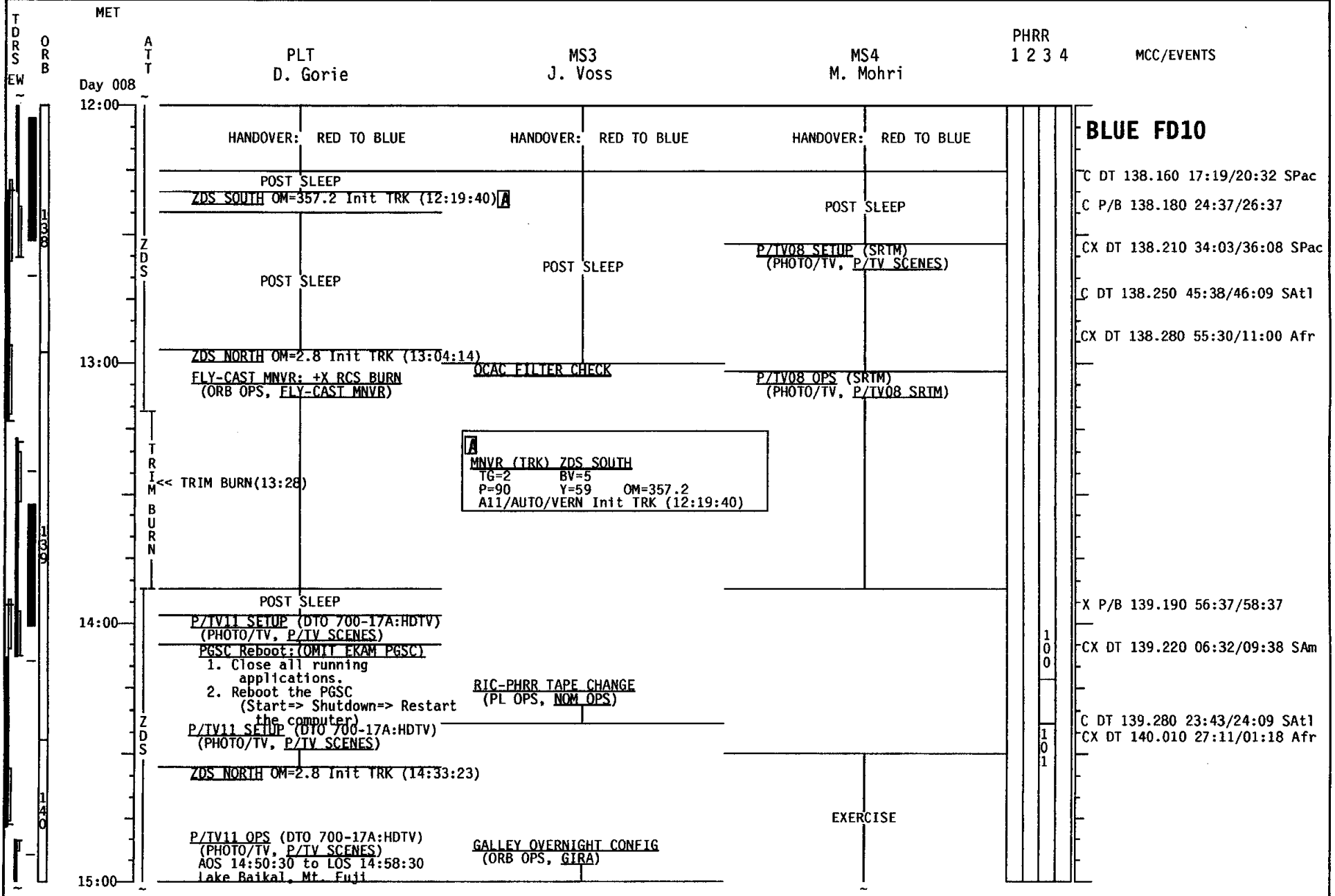
STS-99 (BLUE) FD9



STS-99 (RED) FD9

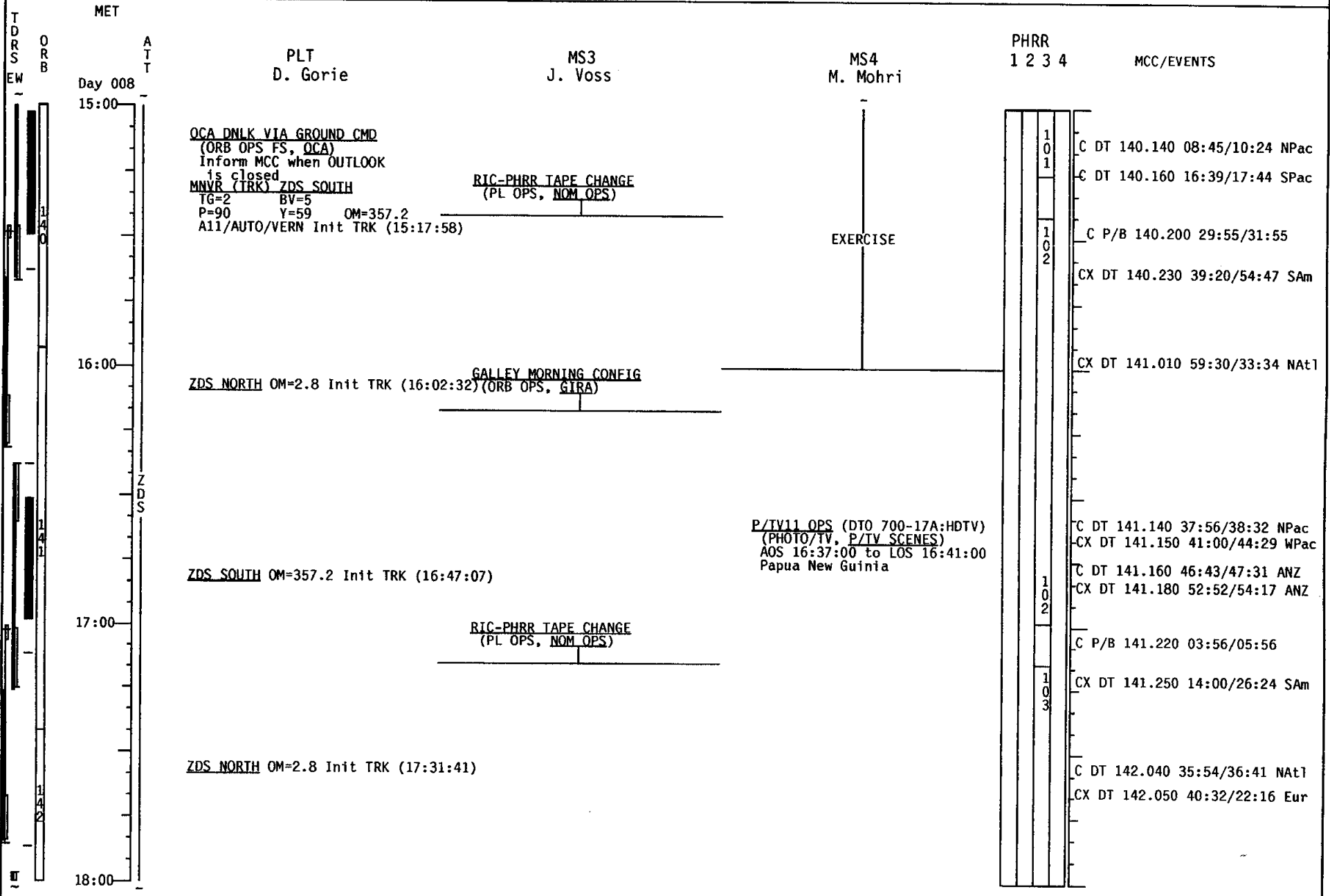


STS-99 (BLUE)FD10

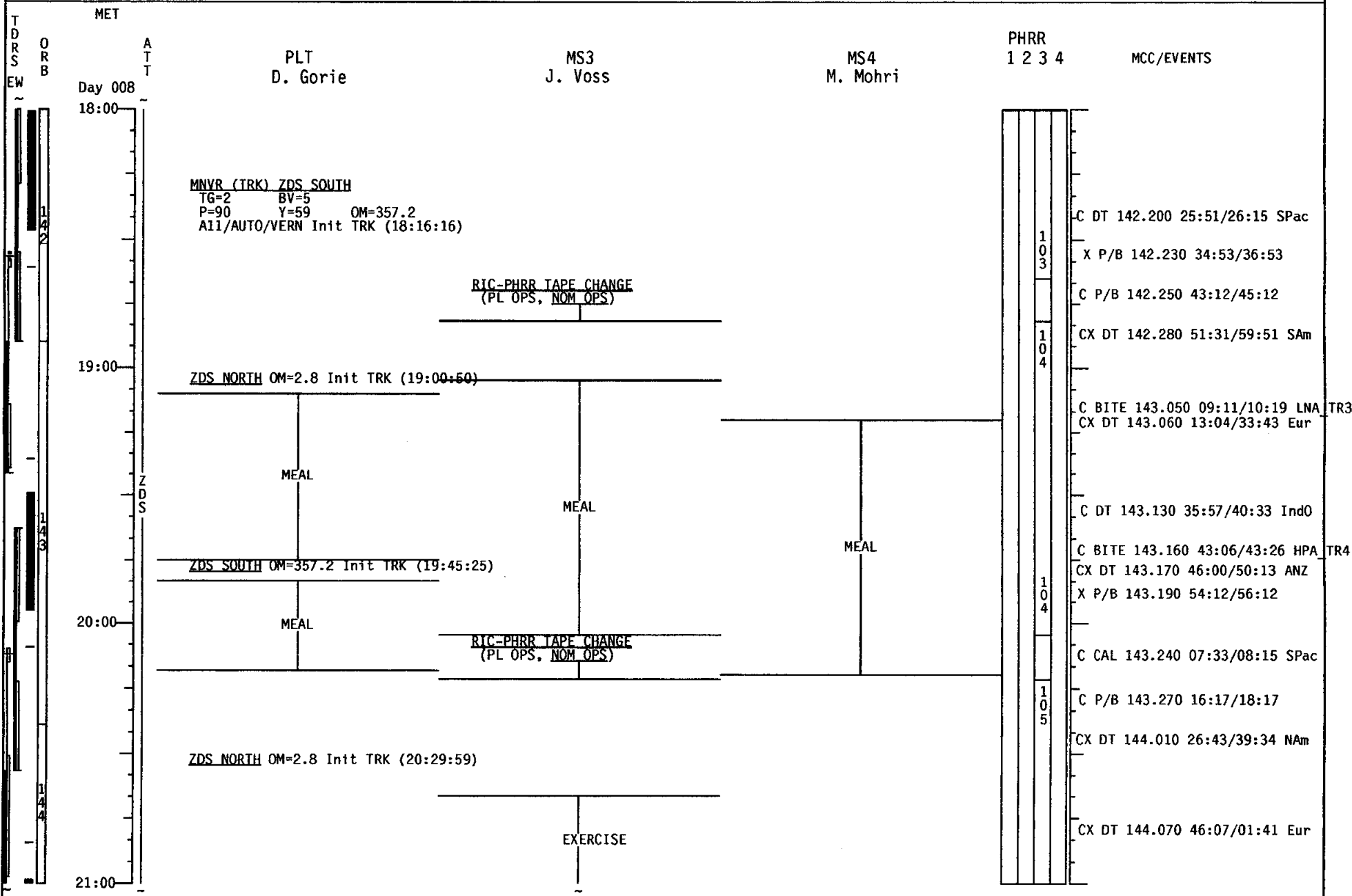


A
 MNVR (TRK) ZDS SOUTH
 TG=2 BV=5
 P=90 Y=59 OM=357.2
 All/AUTO/VERN Init TRK (12:19:40)

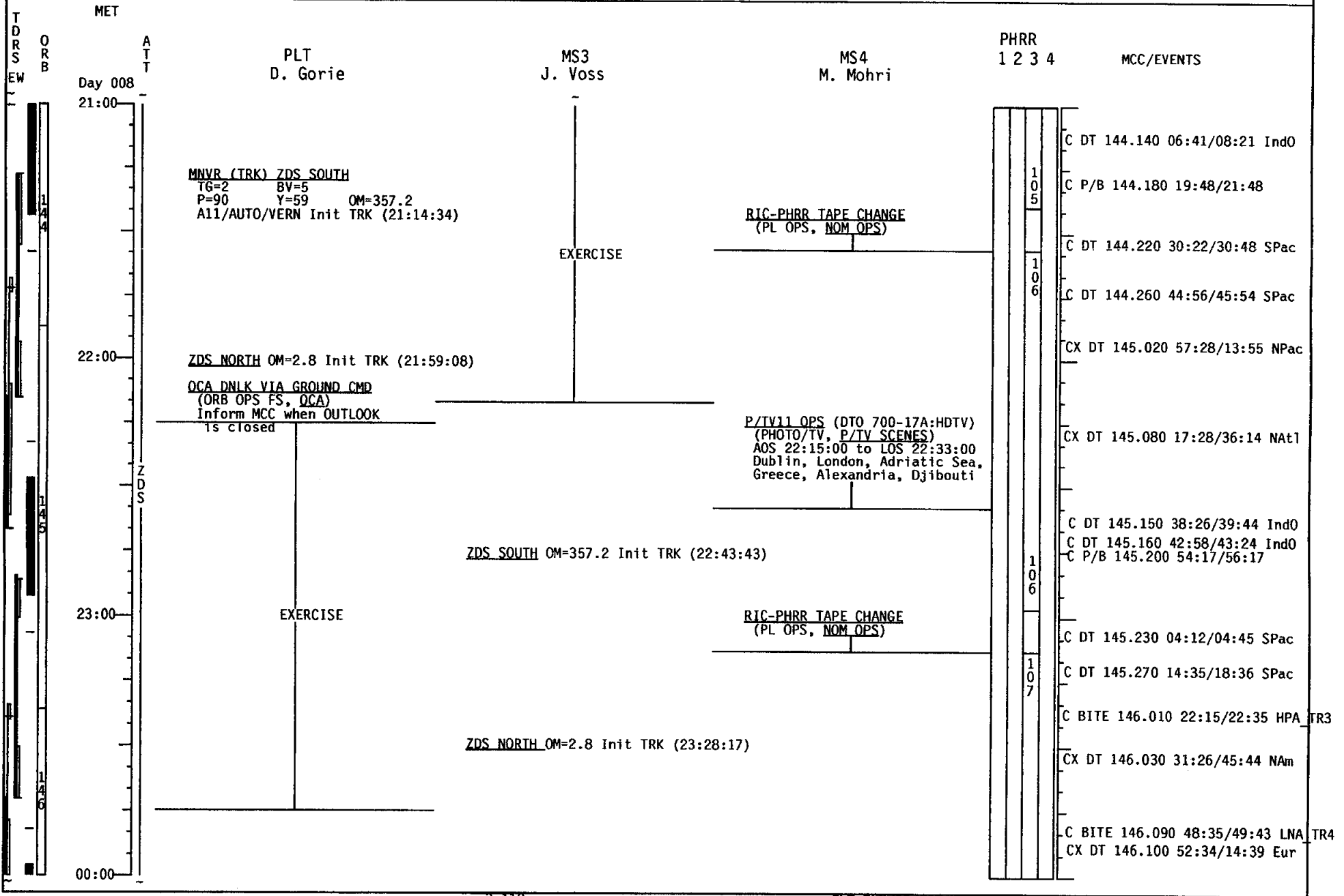
STS-99 (BLUE) FD10



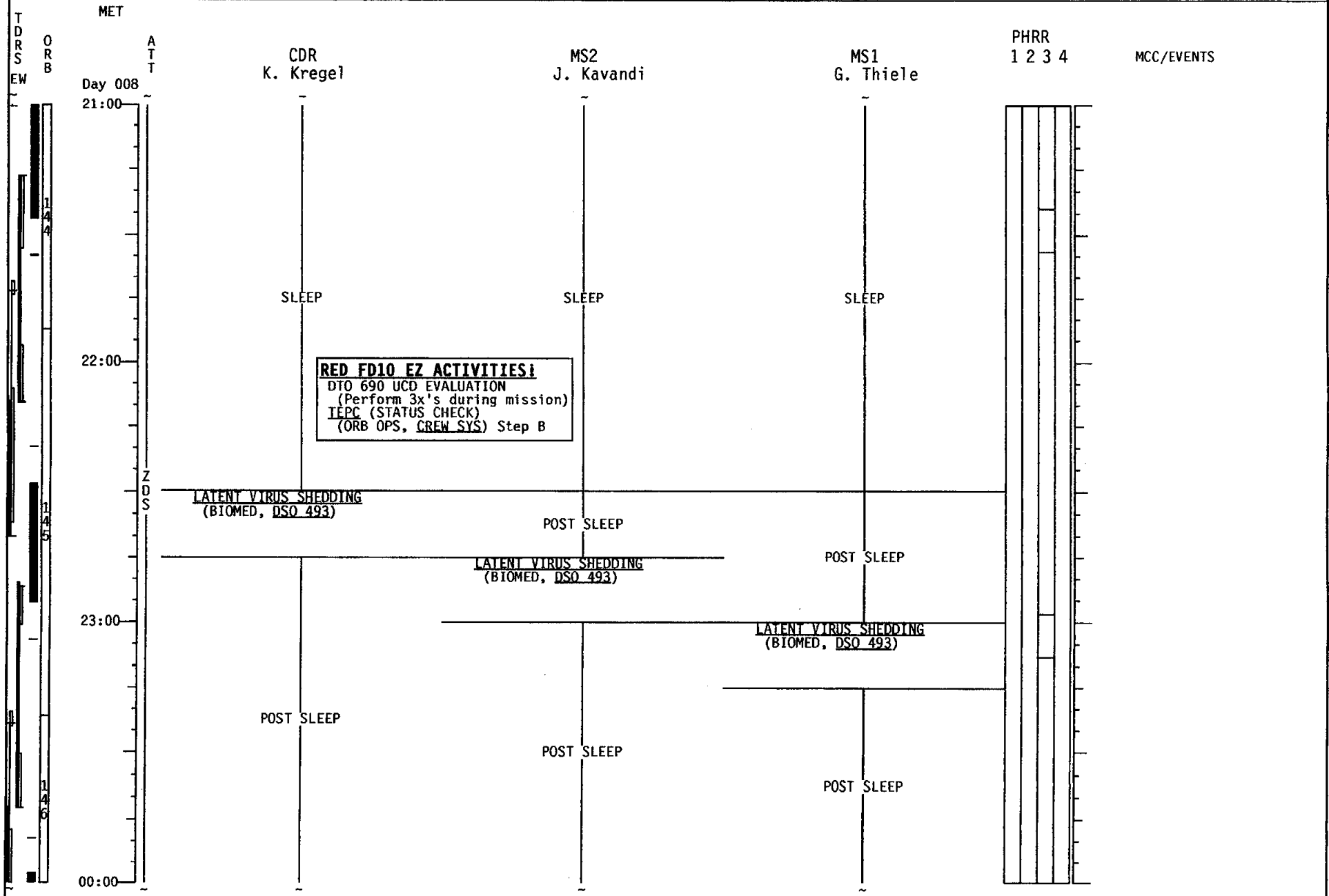
STS-99 (BLUE)FD10



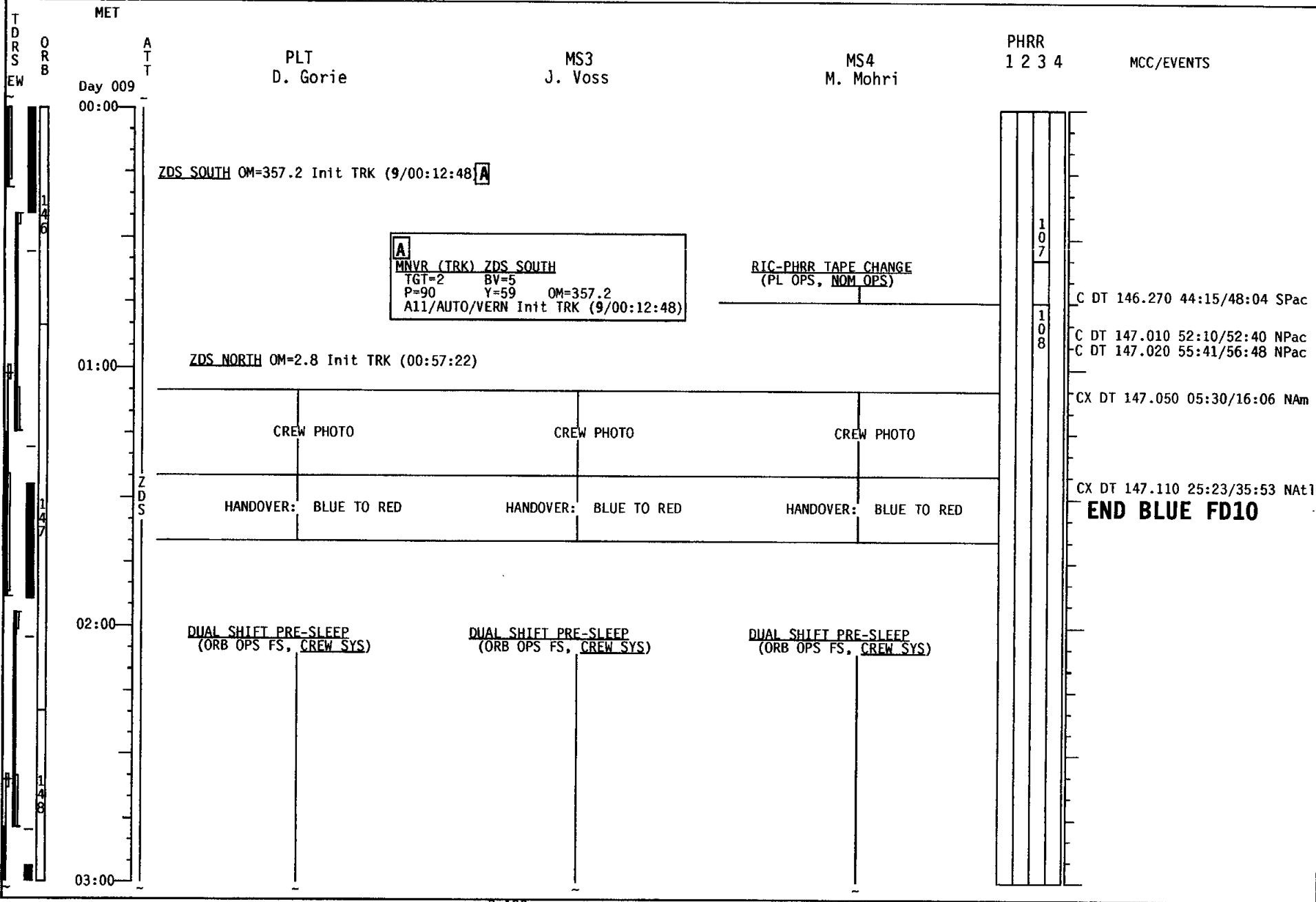
STS-99 (BLUE)FD10



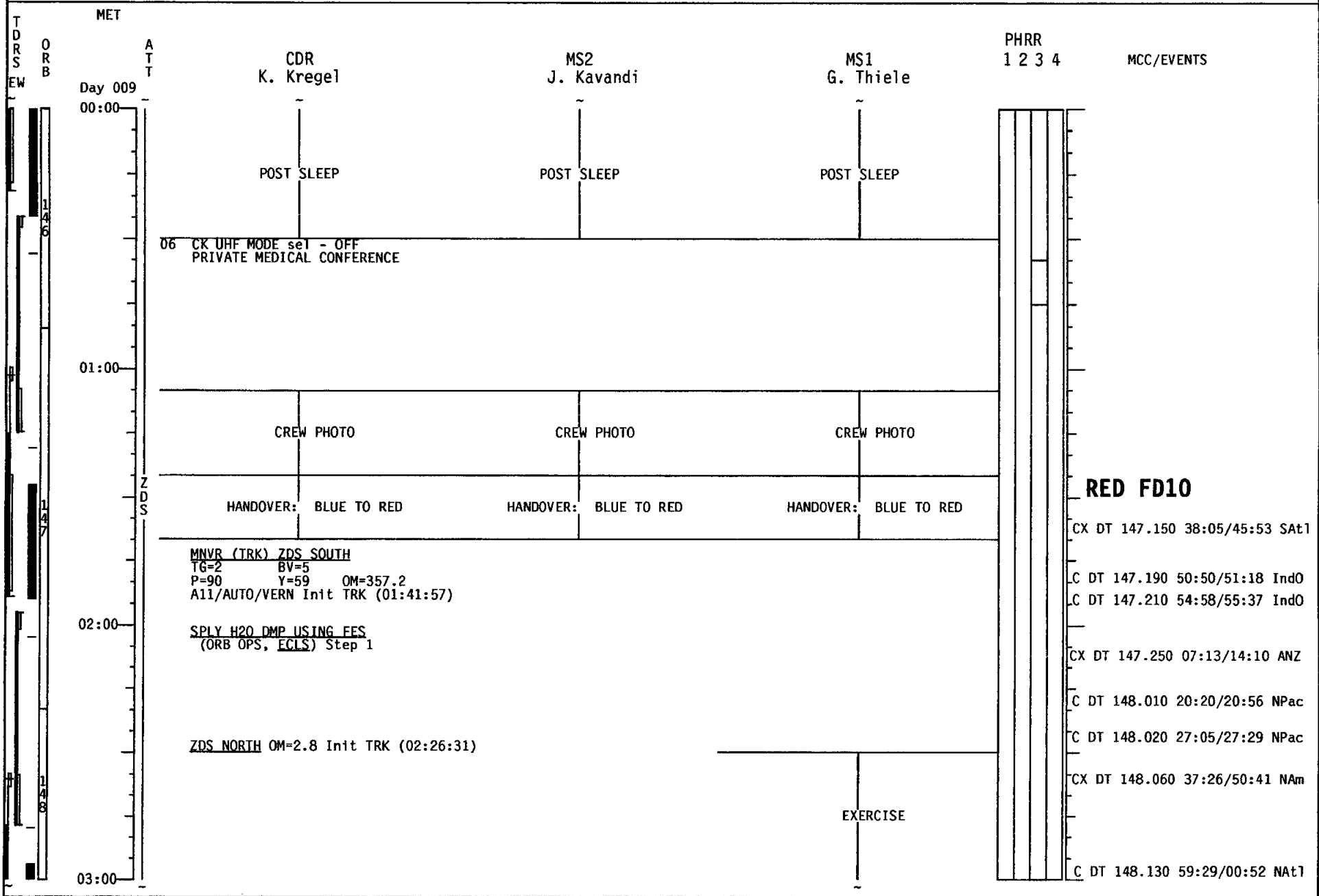
STS-99 (RED) FD9



STS-99 (BLUE) FD10



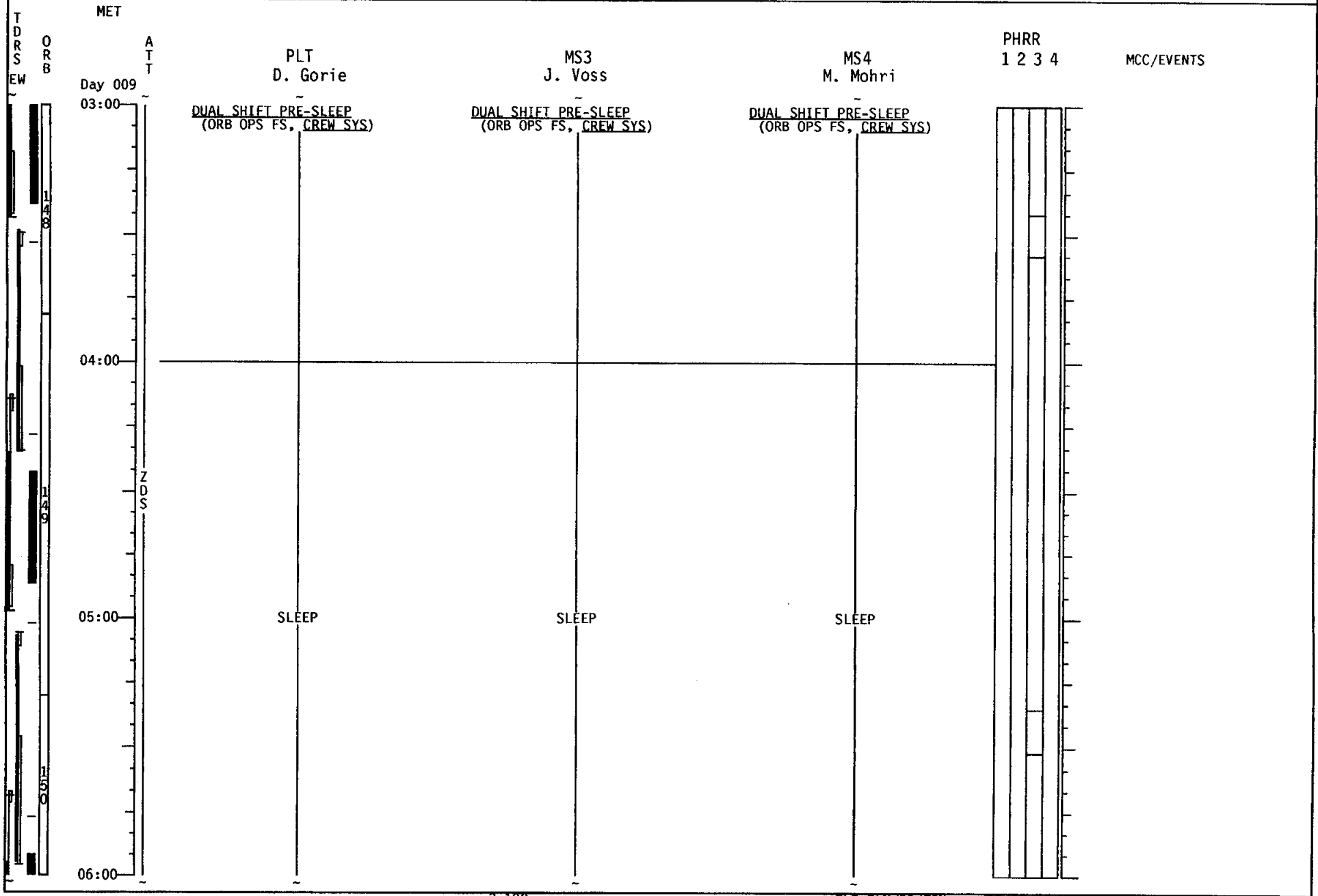
STS-99 (RED) FD10



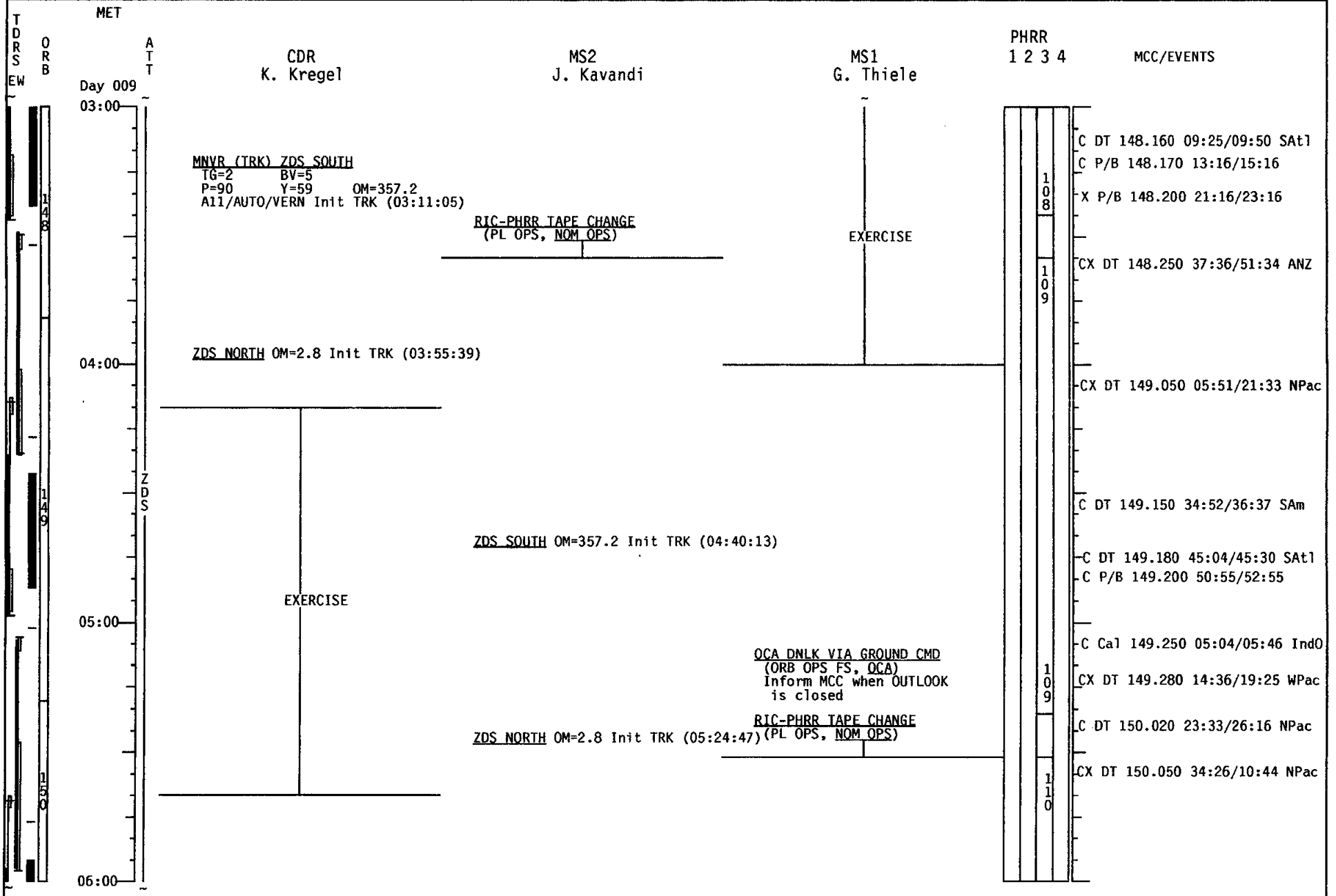
RED FD10

- CX DT 147.150 38:05/45:53 SAT1
- C DT 147.190 50:50/51:18 IndO
- C DT 147.210 54:58/55:37 IndO
- CX DT 147.250 07:13/14:10 ANZ
- C DT 148.010 20:20/20:56 NPac
- C DT 148.020 27:05/27:29 NPac
- CX DT 148.060 37:26/50:41 NAm
- C DT 148.130 59:29/00:52 NAT1

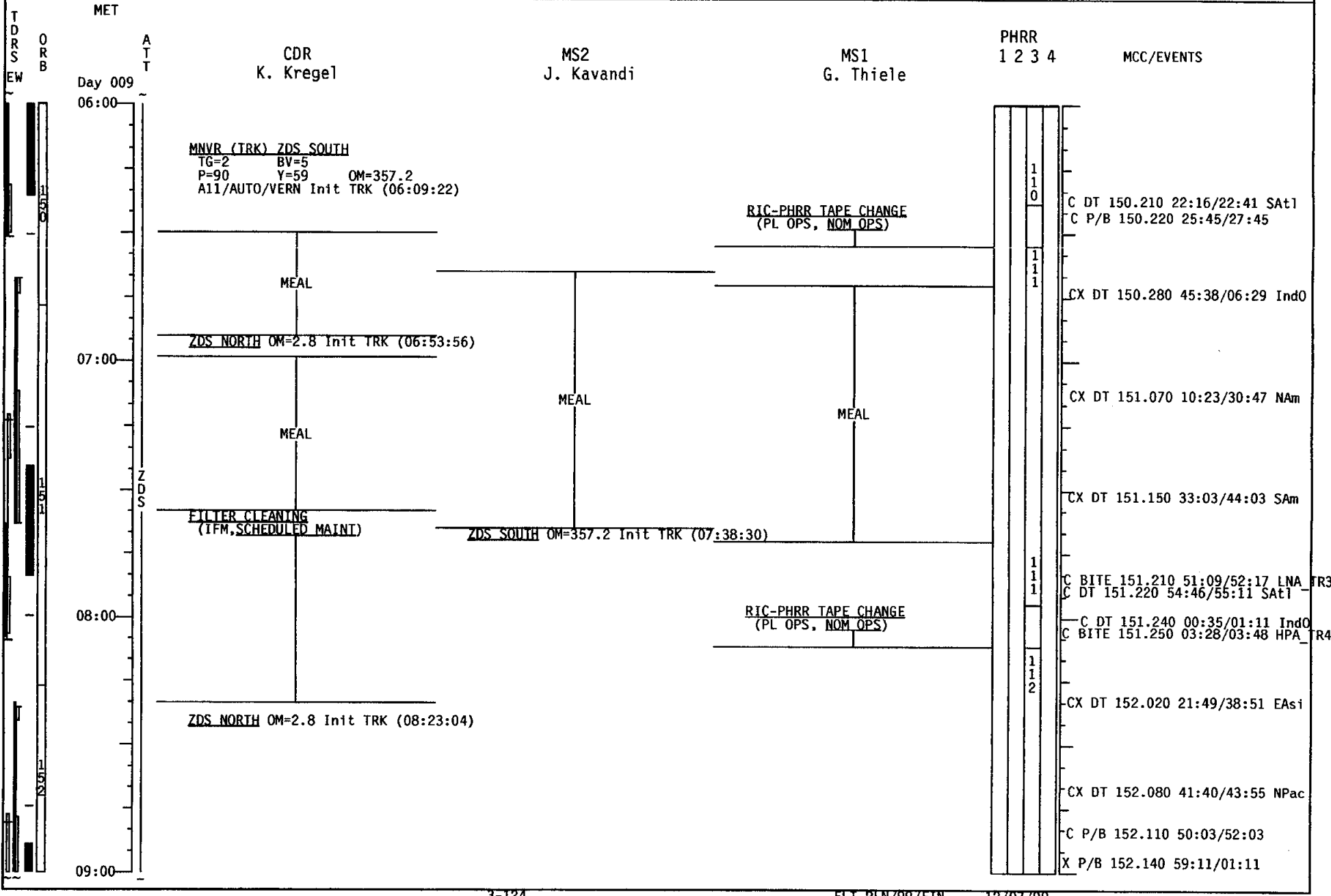
STS-99 (BLUE) FD10



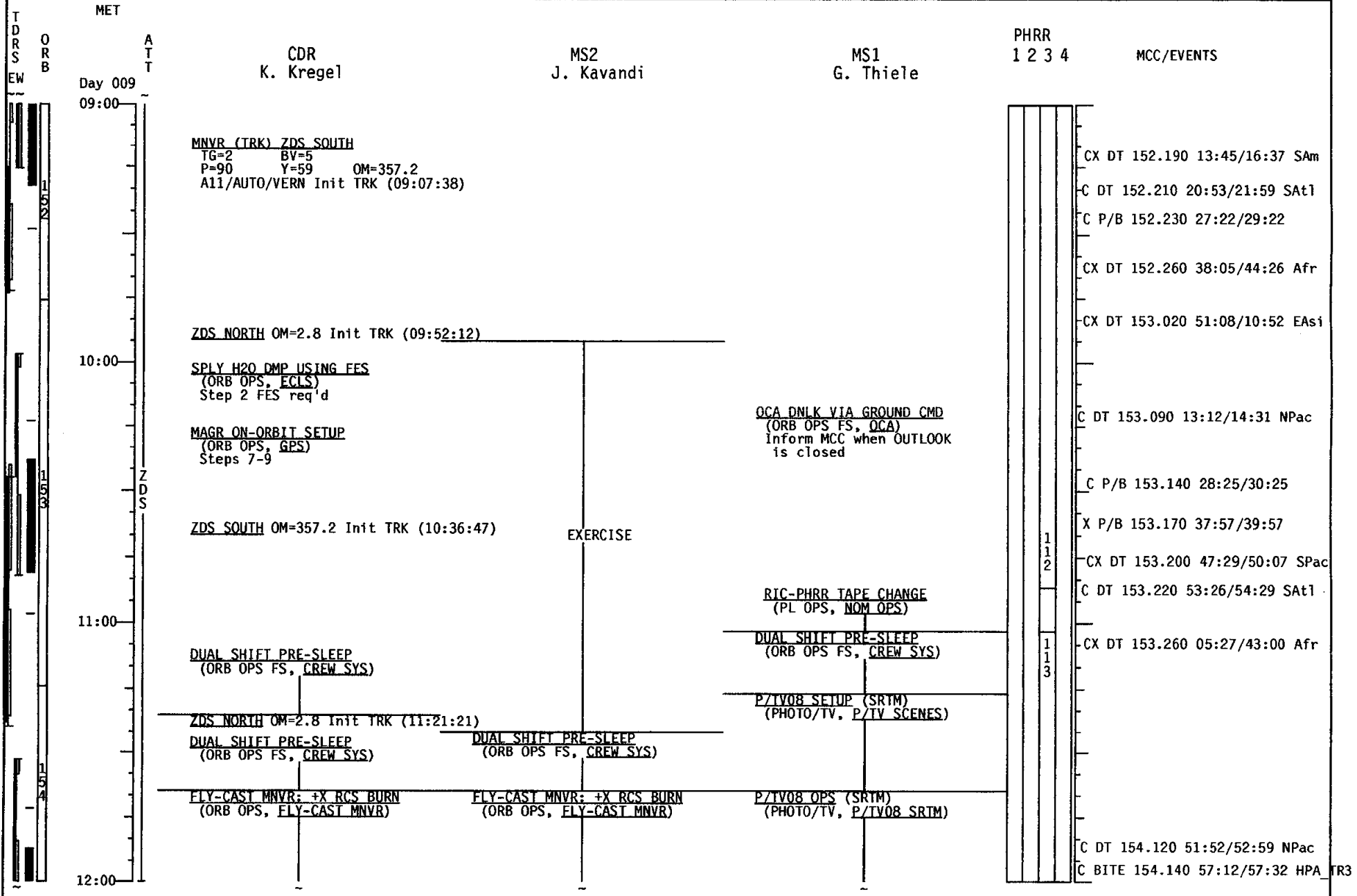
STS-99 (RED) FD10



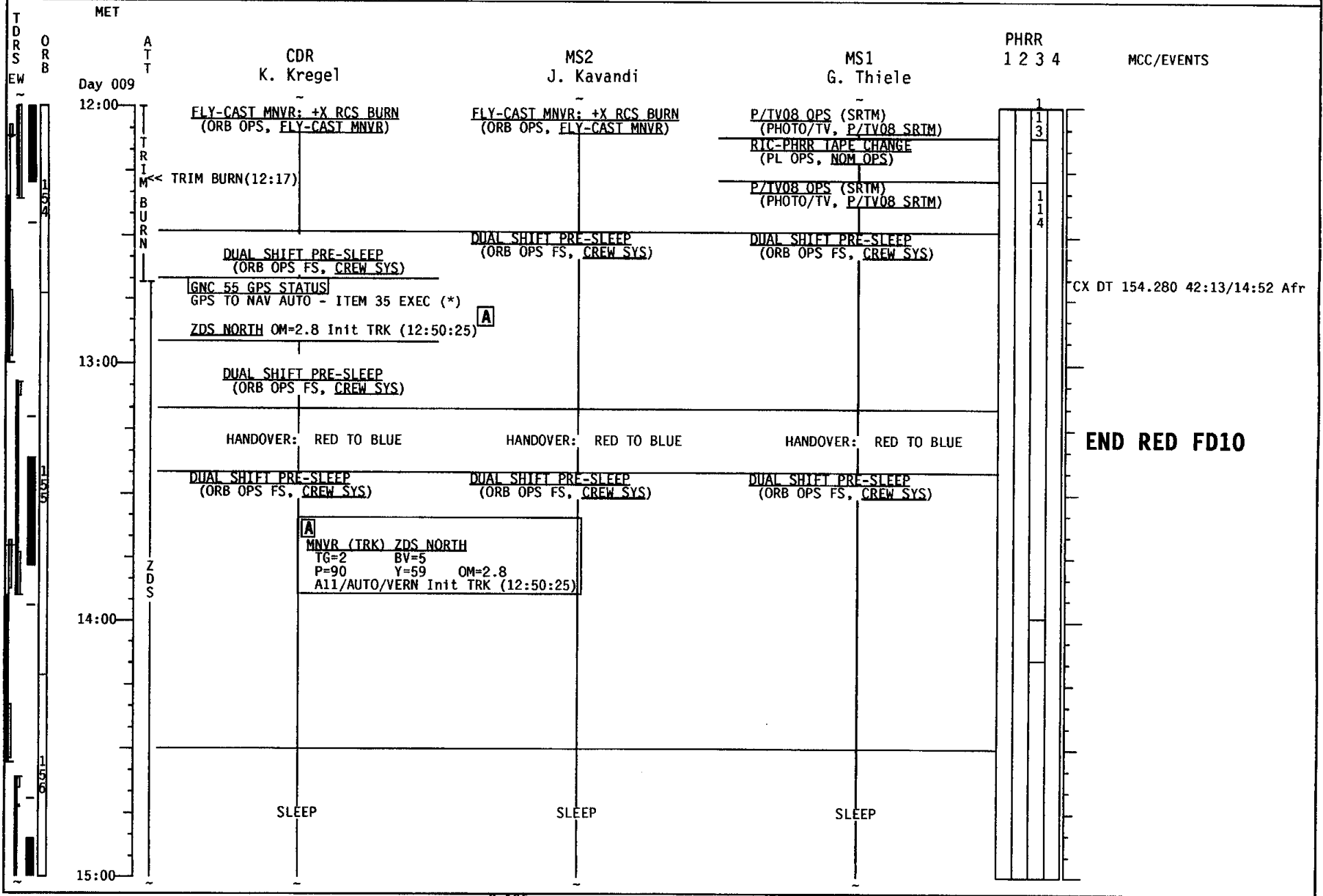
STS-99 (RED) FD10



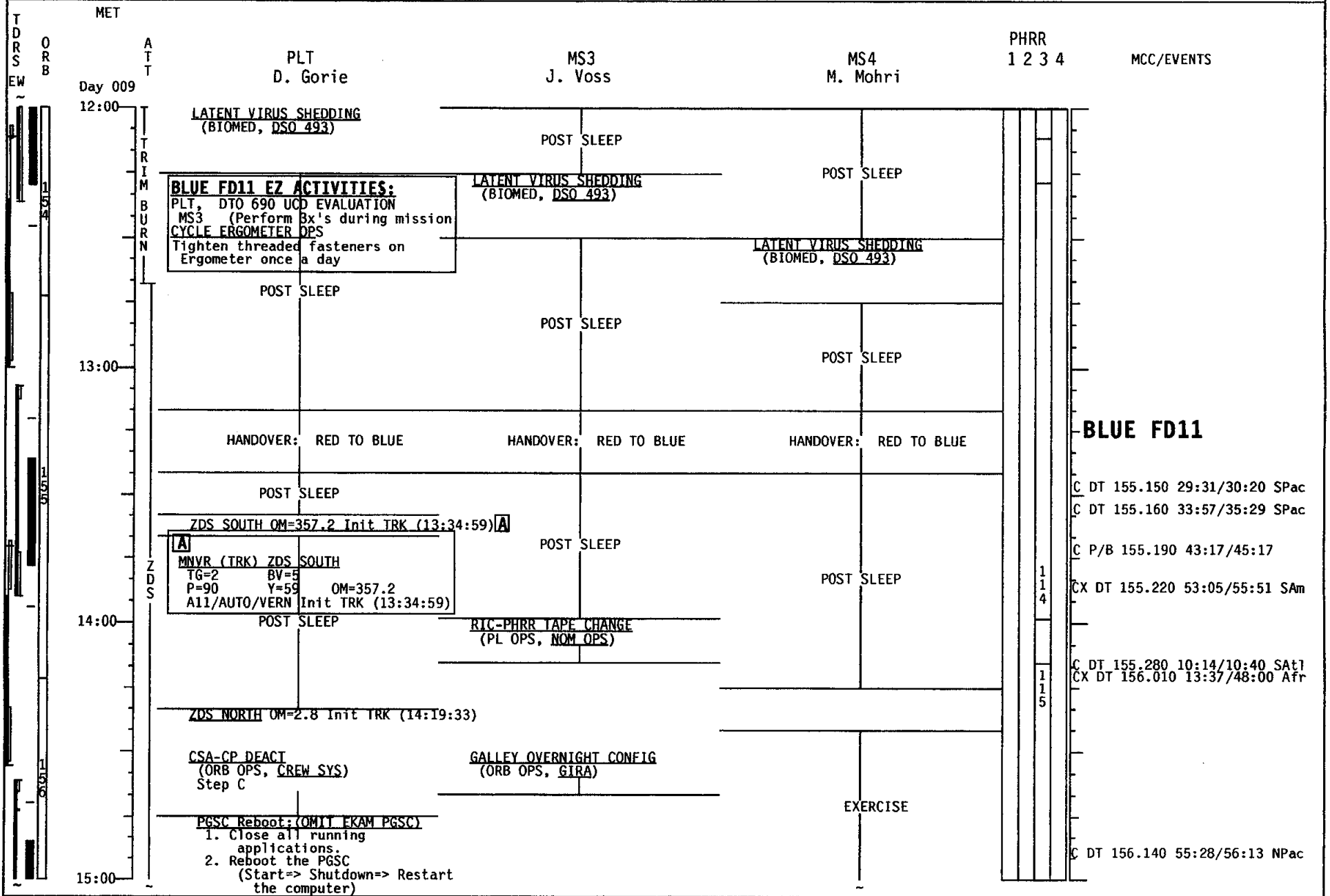
STS-99 (RED) FD10



STS-99 (RED) FD10



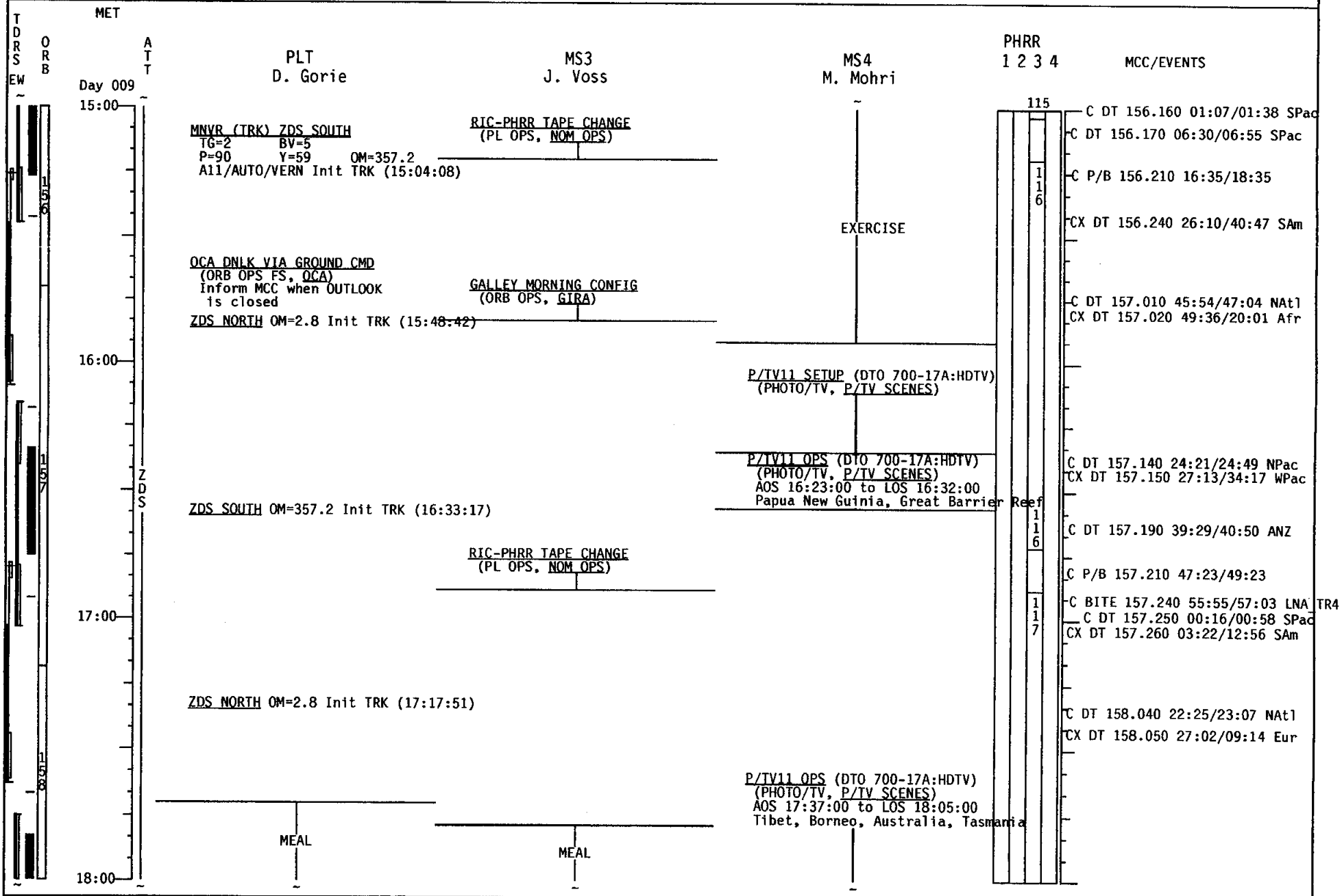
STS-99 (BLUE)FD11



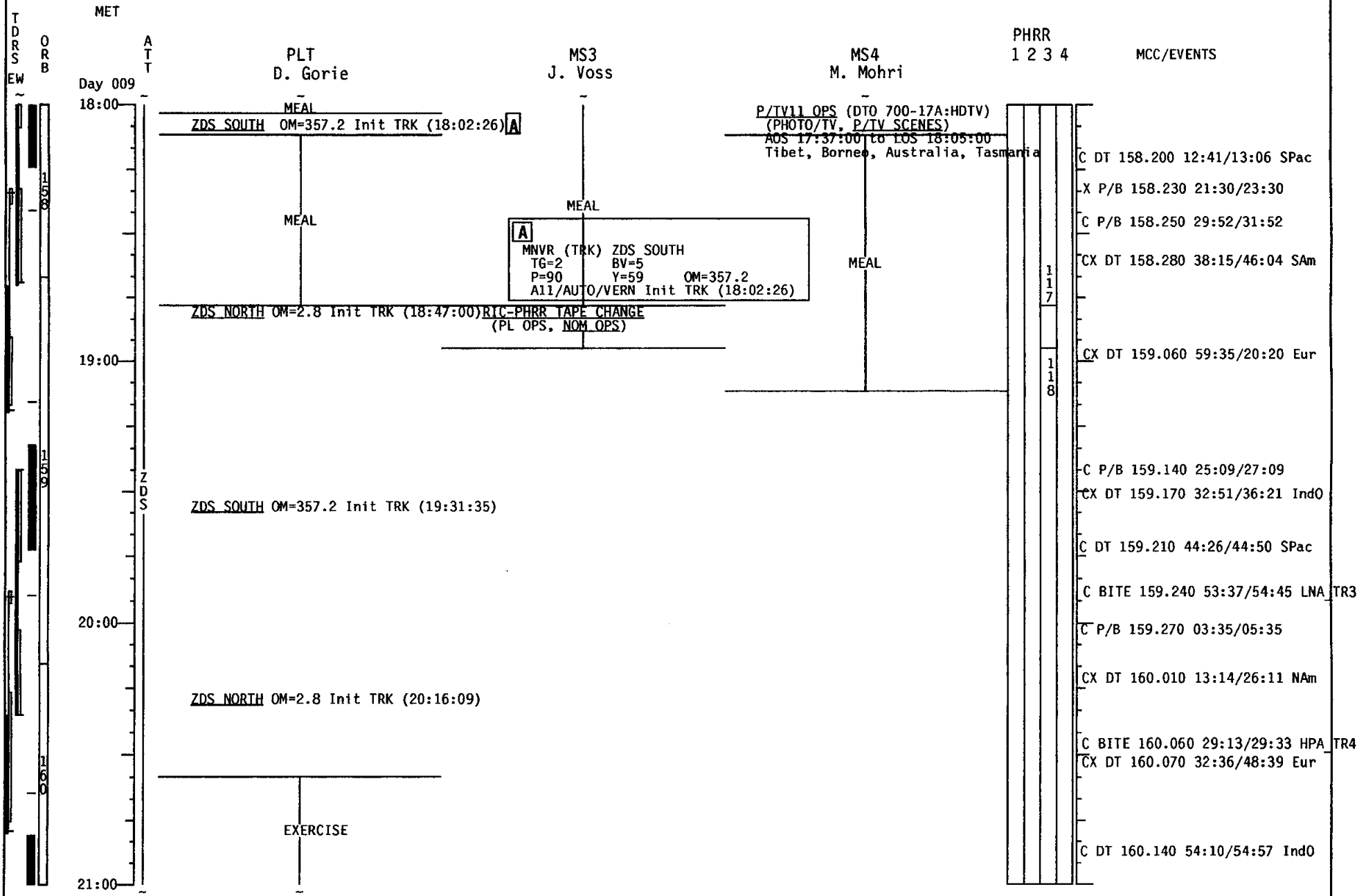
BLUE FD11

C DT 155.150 29:31/30:20 SPac
 C DT 155.160 33:57/35:29 SPac
 C P/B 155.190 43:17/45:17
 CX DT 155.220 53:05/55:51 SAm
 C DT 155.280 10:14/10:40 SAT1
 CX DT 156.010 13:37/48:00 Afr
 C DT 156.140 55:28/56:13 NPac

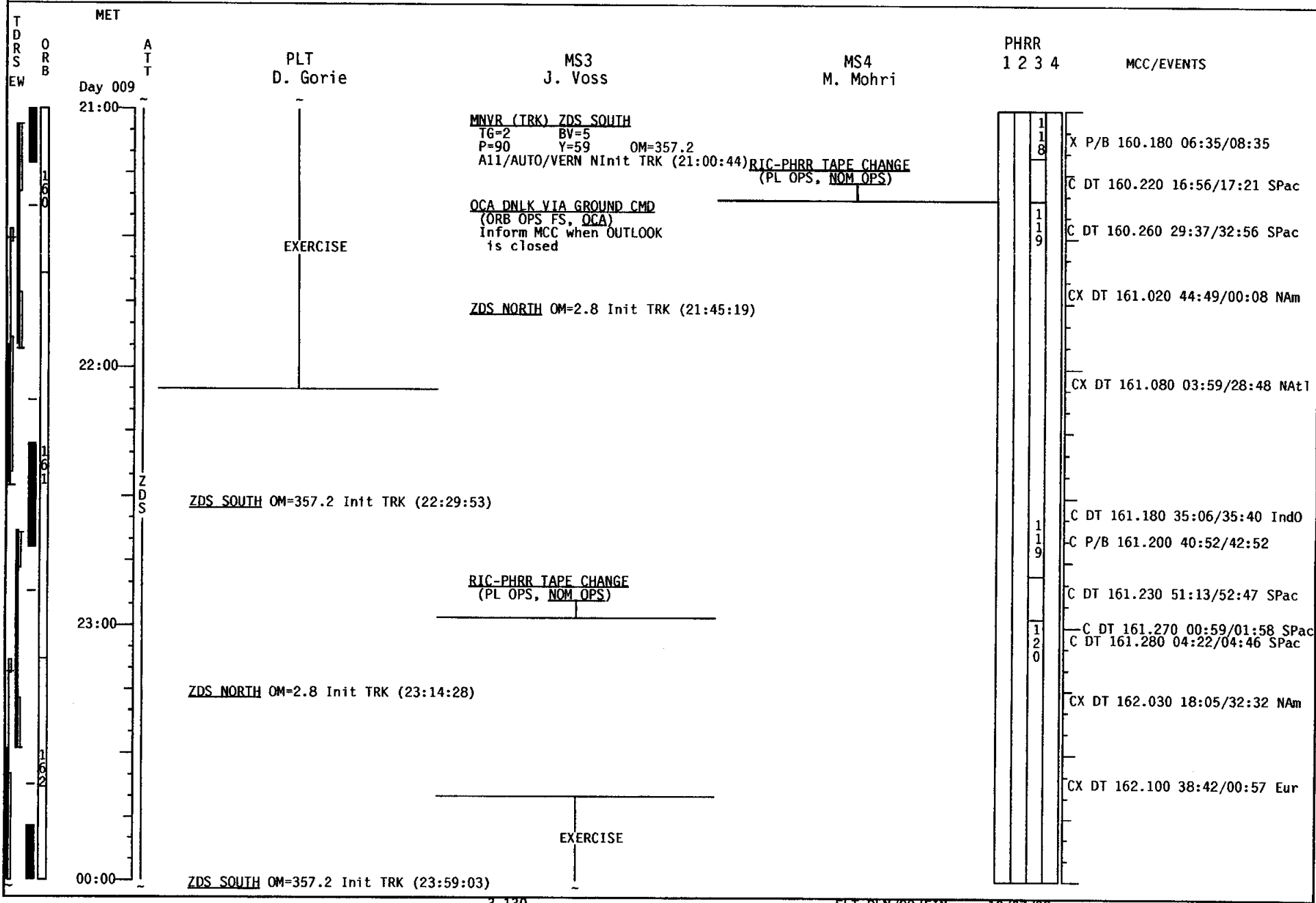
STS-99 (BLUE) FD11



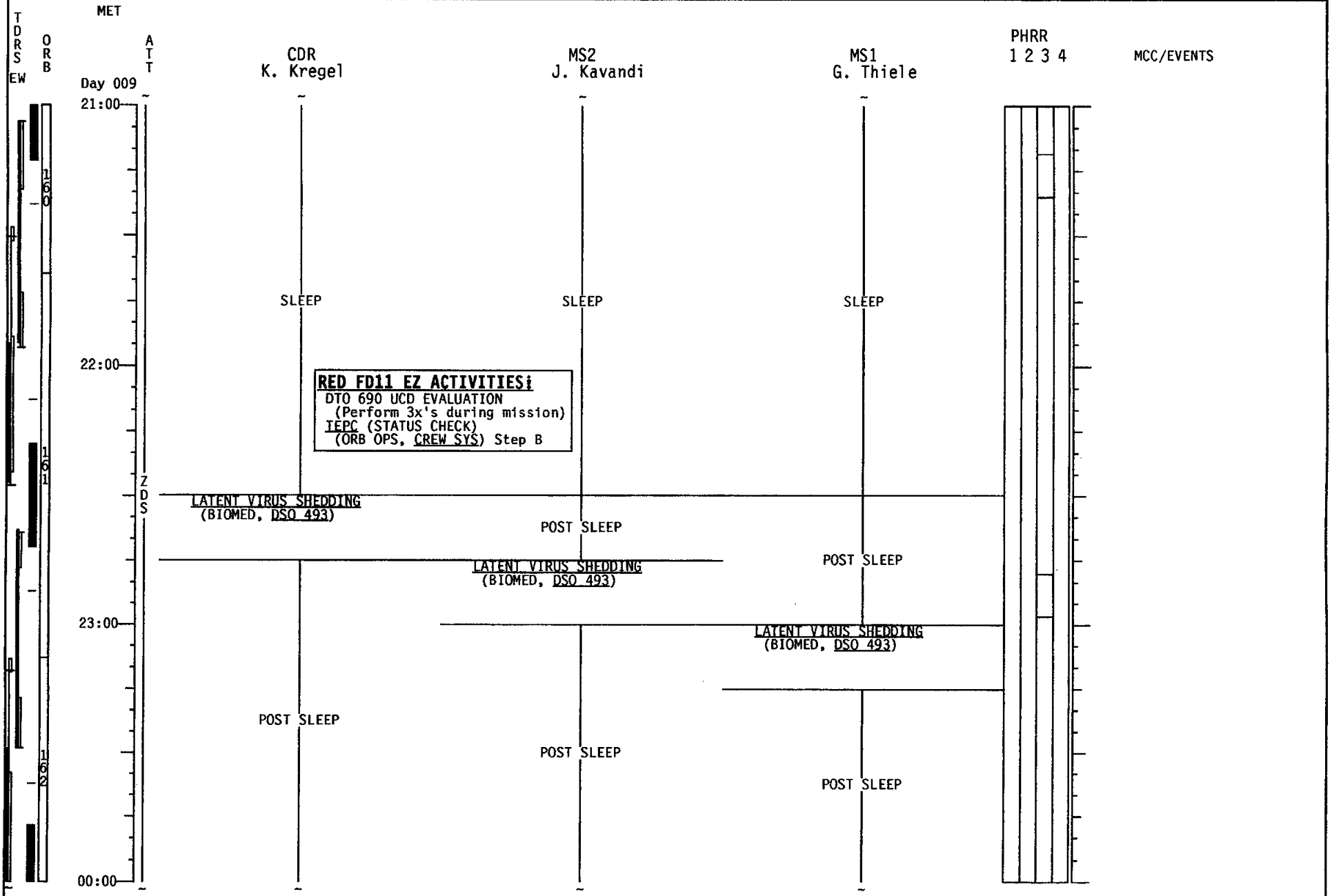
STS-99 (BLUE)FD11



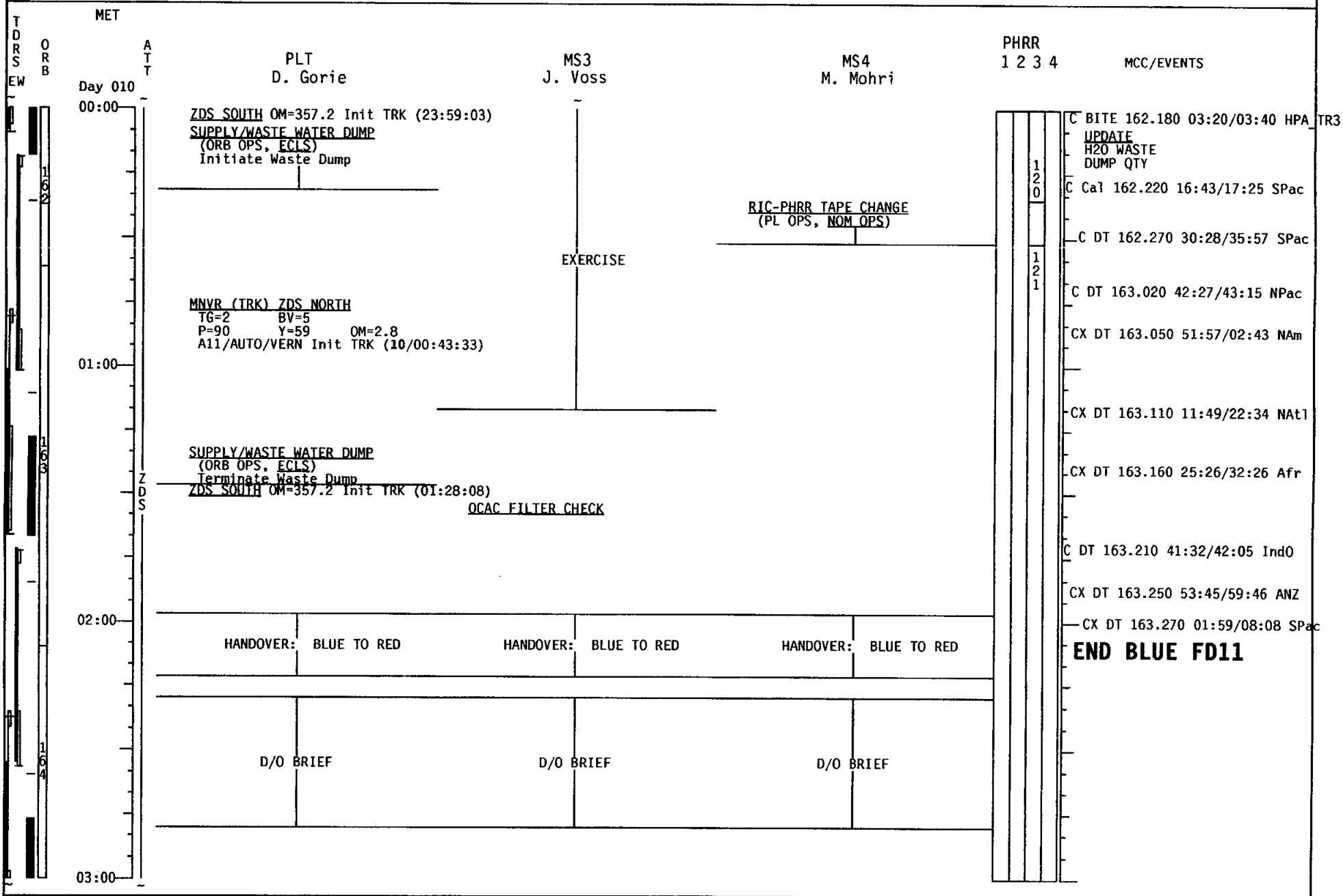
STS-99 (BLUE) FD11



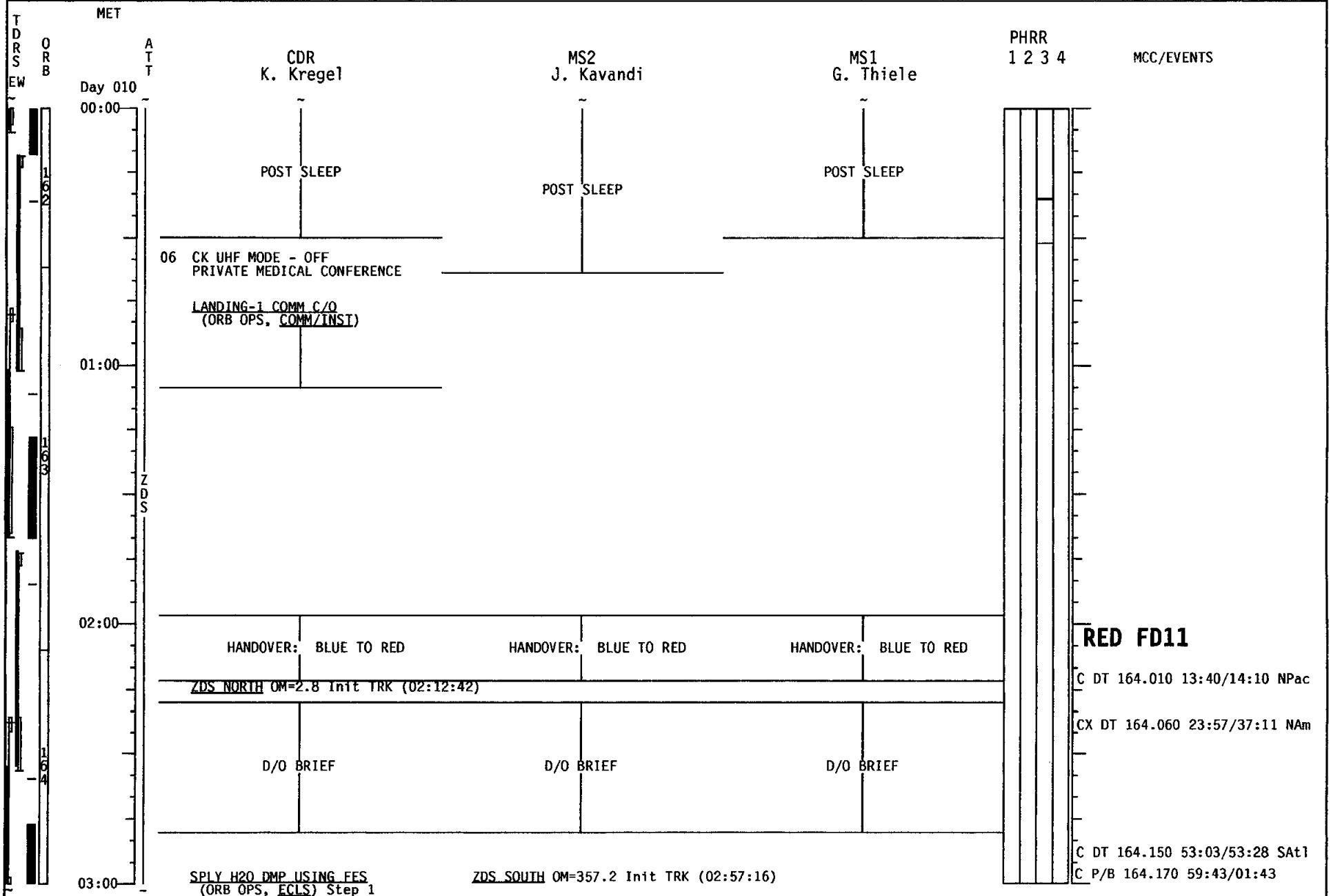
STS-99 (RED) FD10



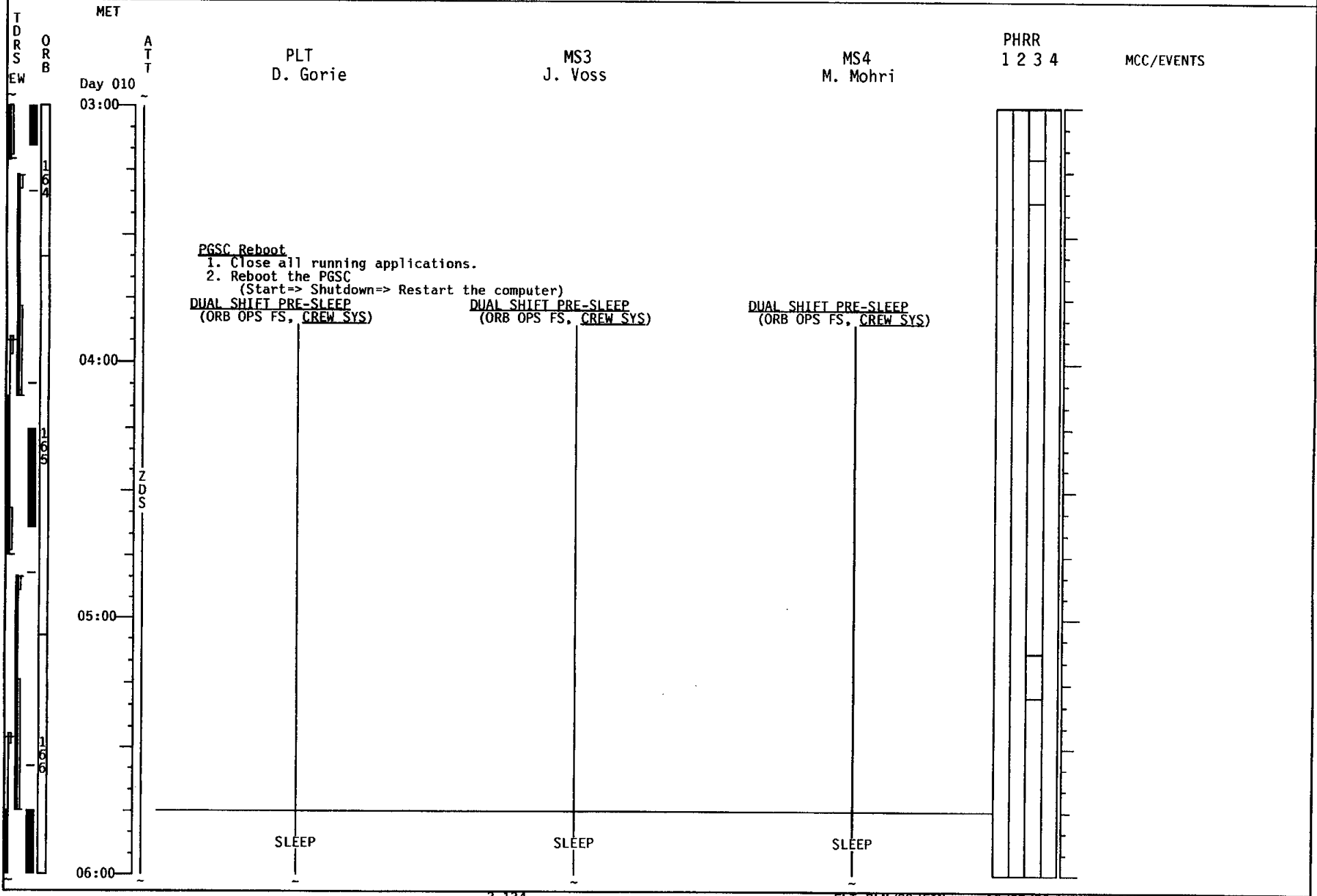
STS-99 (BLUE) FD11



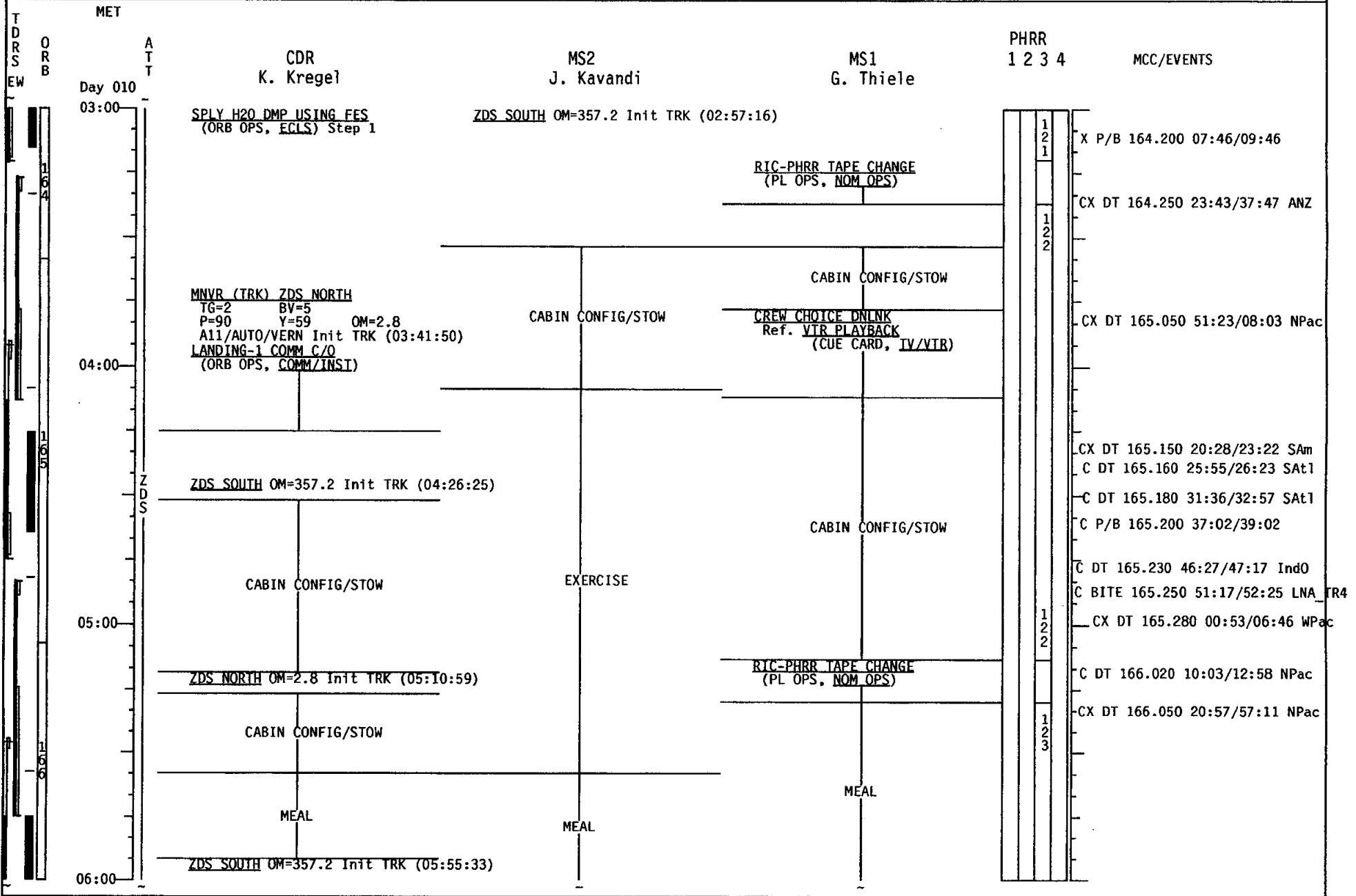
STS-99 (RED) FD11



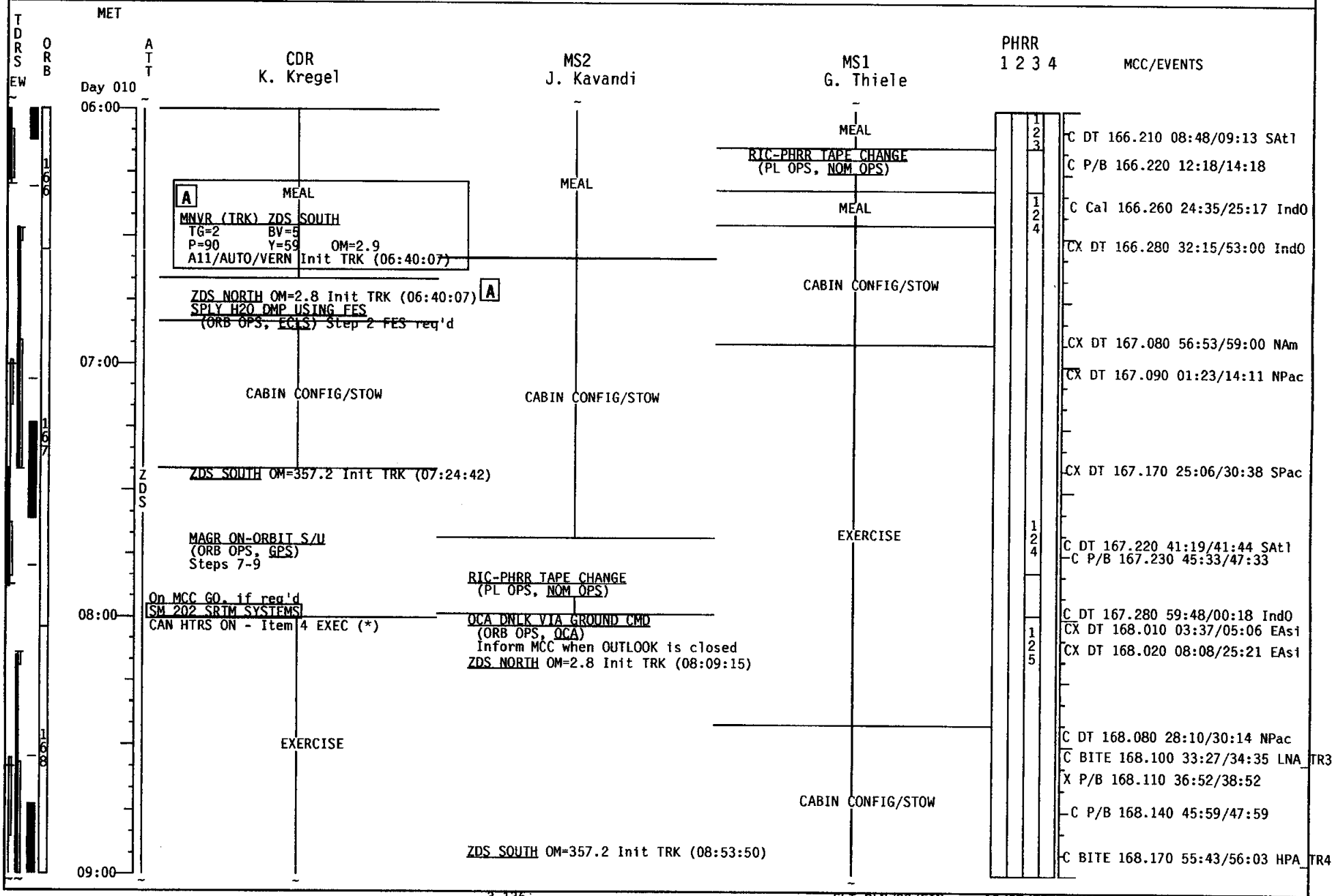
STS-99 (BLUE) FD11



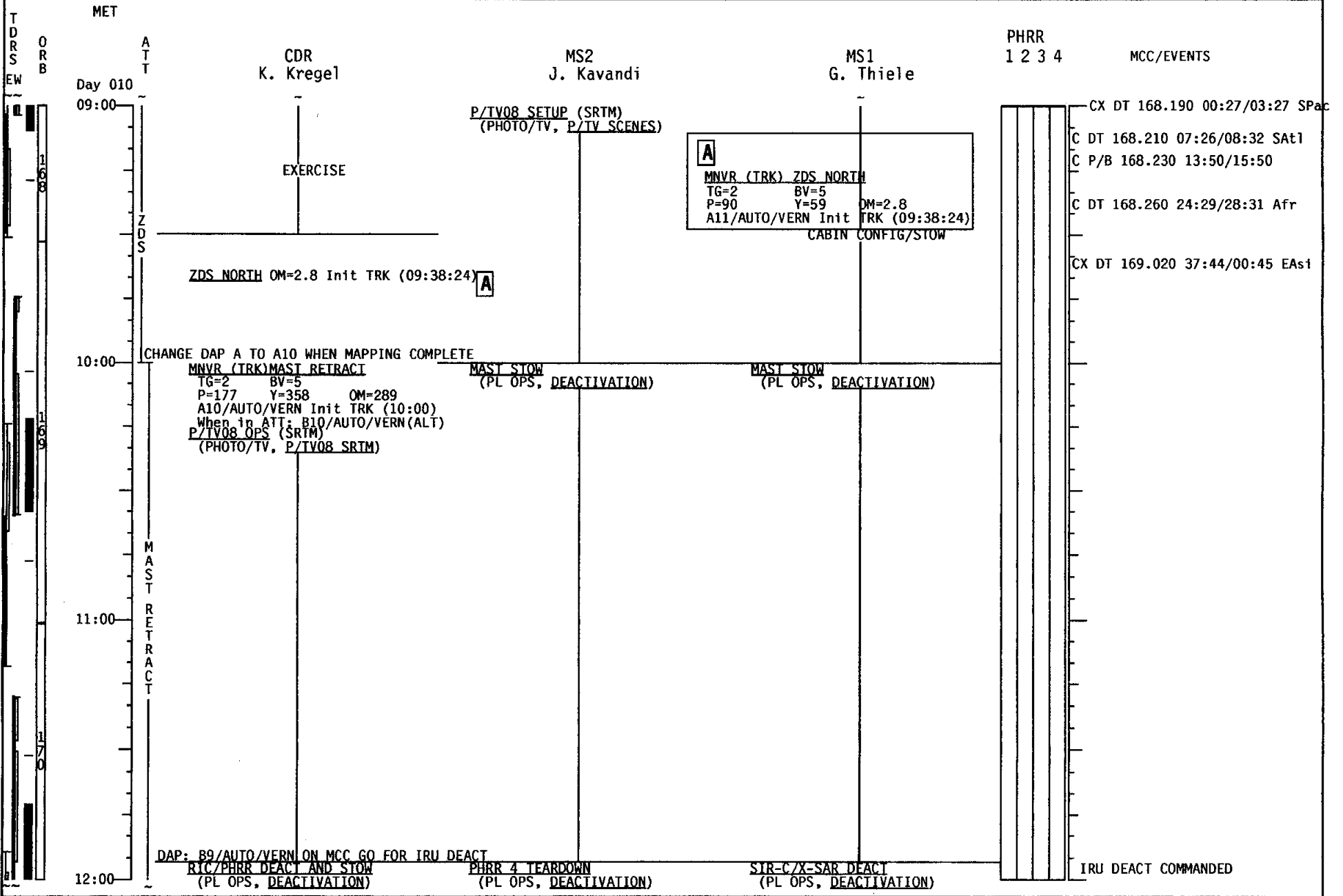
STS-99 (RED) FD11



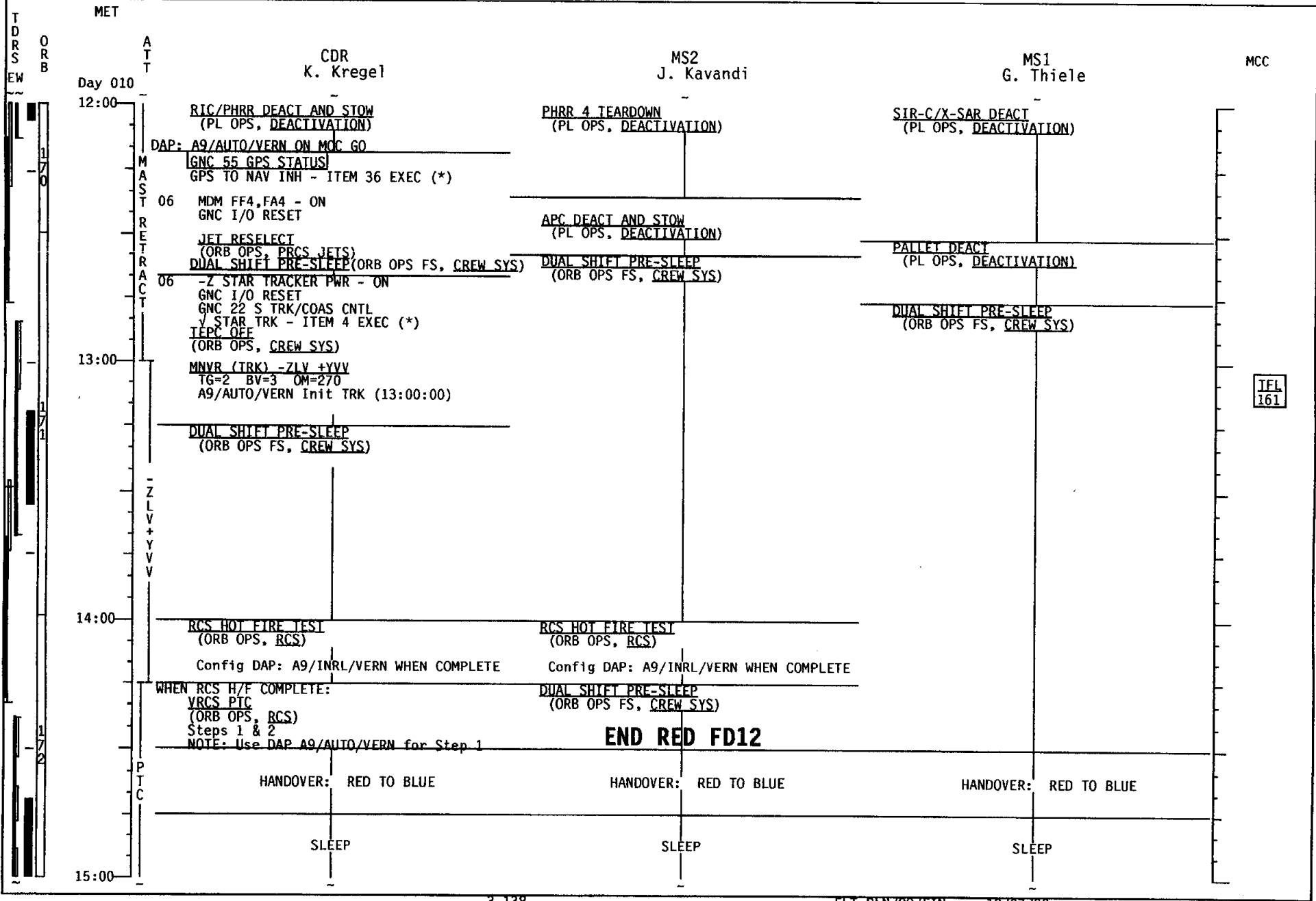
STS-99 (RED) FD11



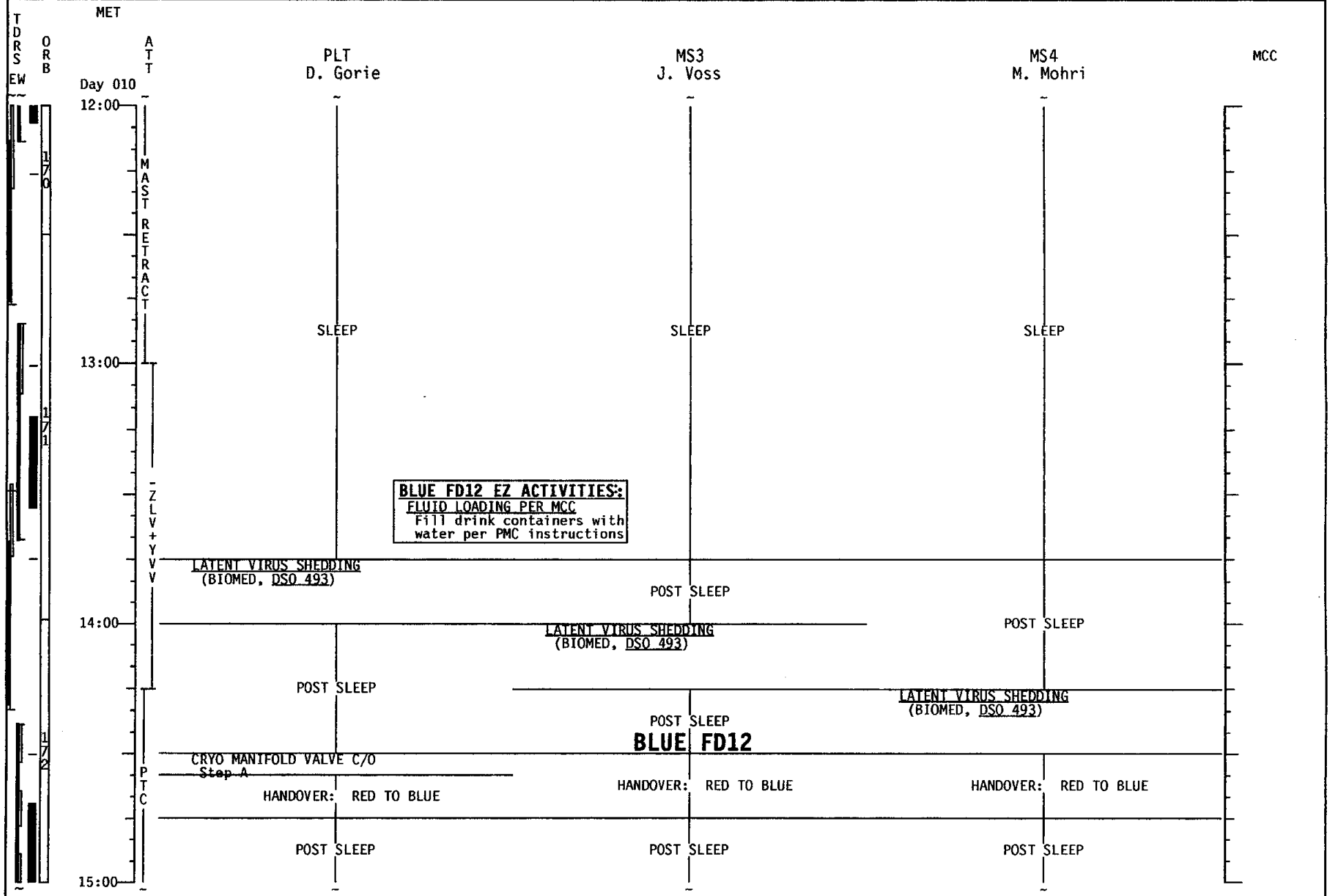
STS-99 (RED) FD11



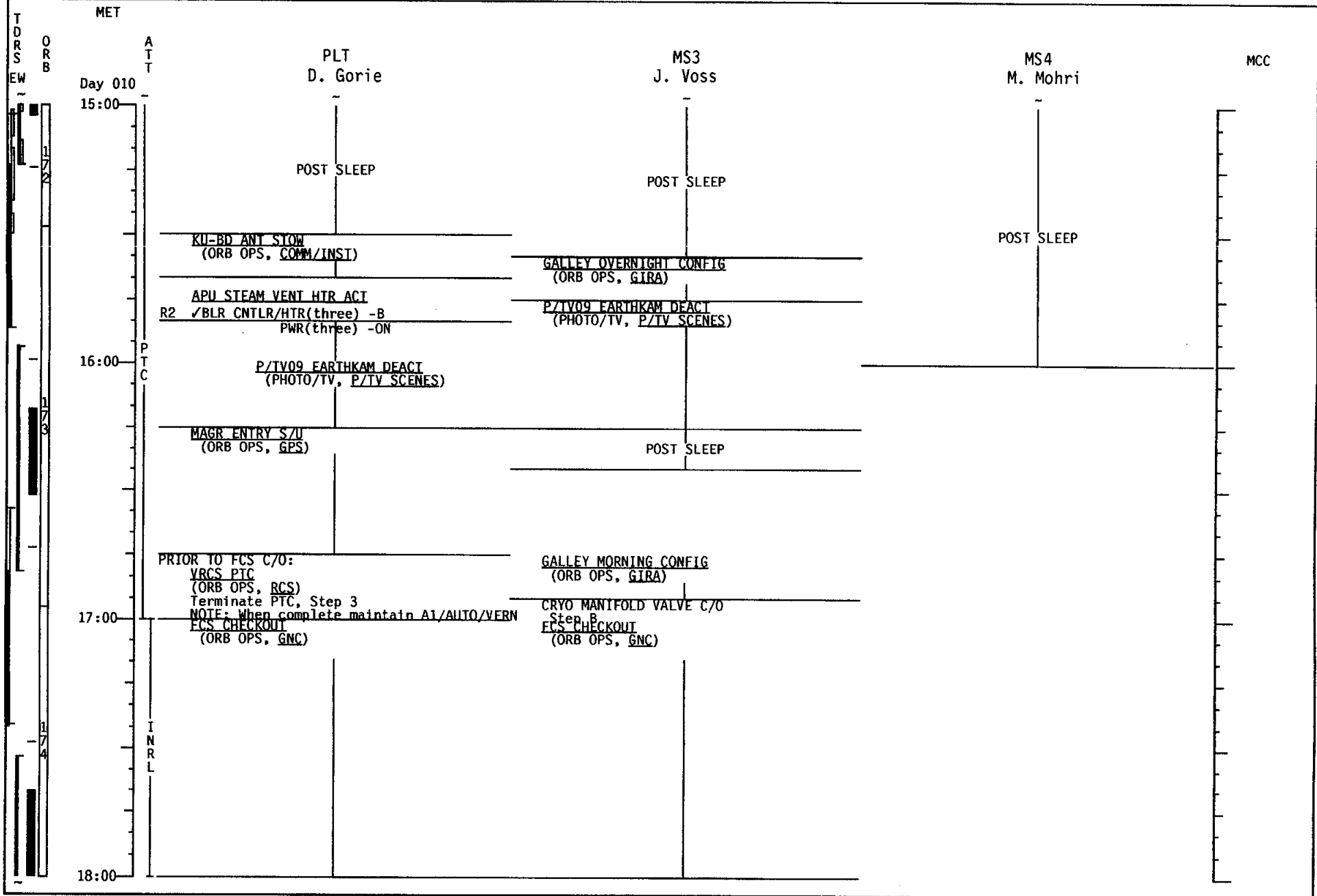
STS-99 (RED) FD11



STS-99 (BLUE)FD11



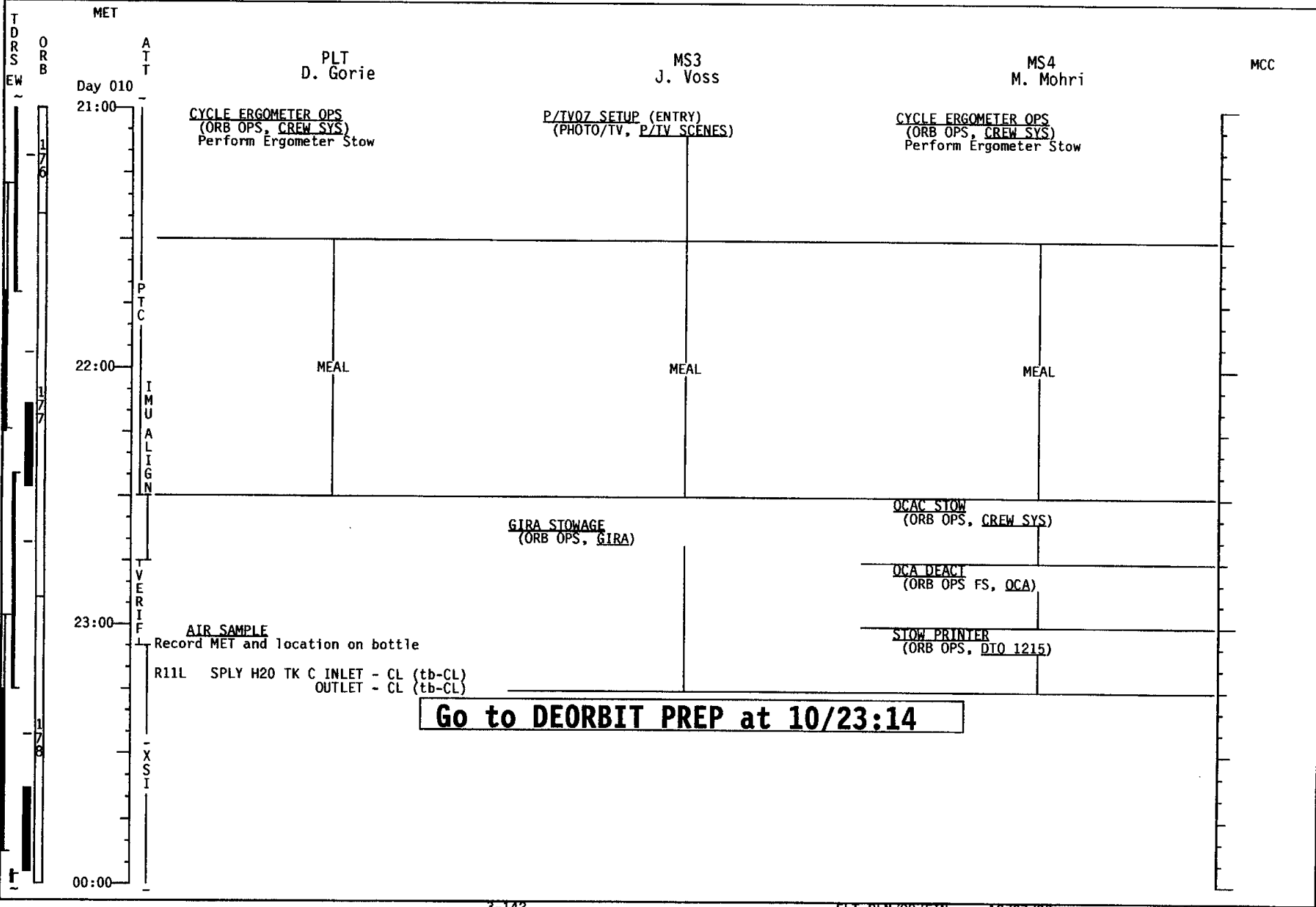
STS-99 (BLUE) FD12



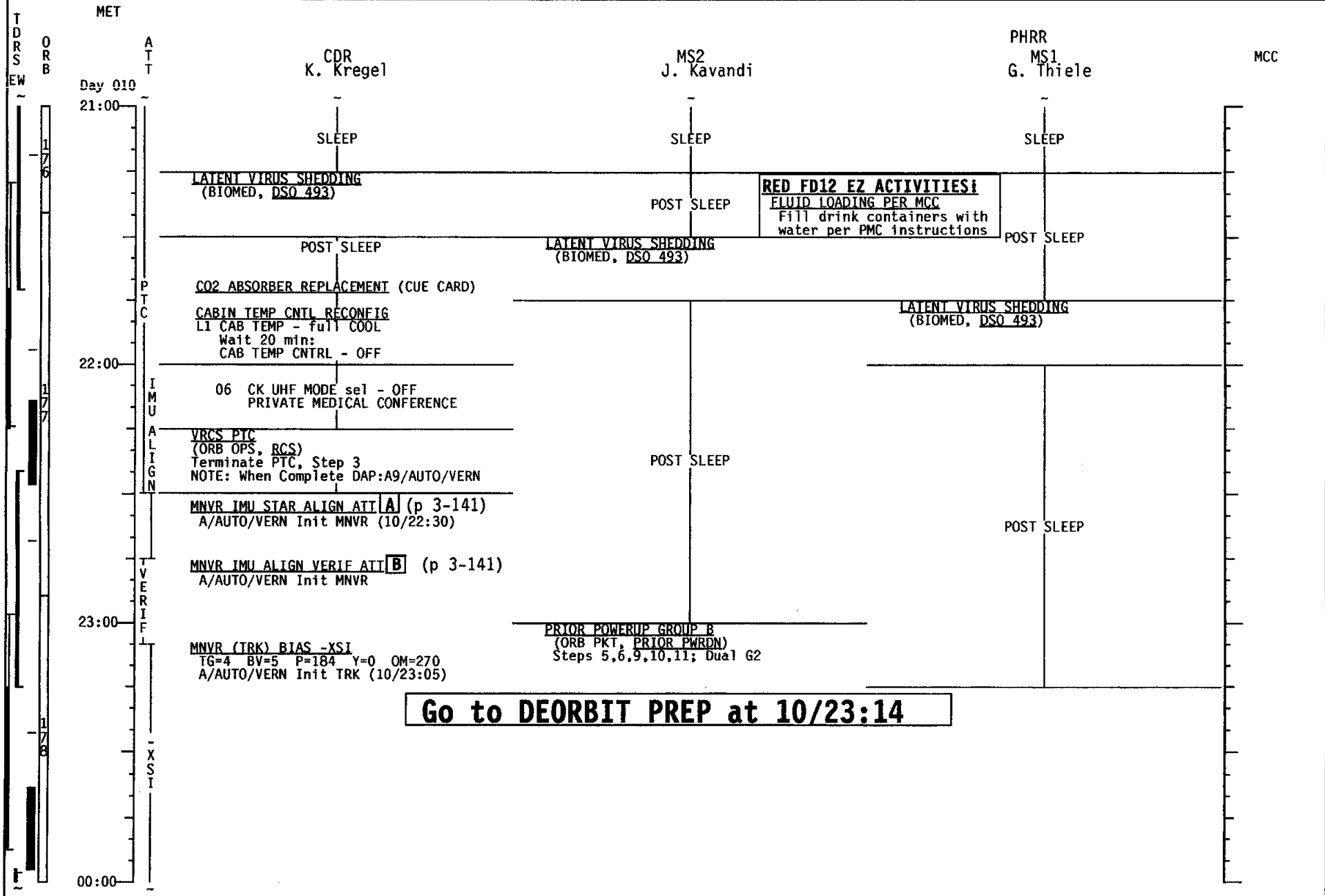
STS-99 (BLUE) FD12

T D R S E W	O R B	A T T	MET Day 010 18:00 19:00 20:00 21:00	PLT D. Gorie	MS3 J. Voss	MS4 M. Mohri	MCC																								
				CABIN CONFIG/STOW	CABIN CONFIG/STOW																										
				WHEN FCS C/O COMPLETE: VRCS PIC (ORB OPS, RCS) Steps 1 & 2 NOTE: Use DAP A9/AUTO/VERN for Step 1																											
				CABIN CONFIG/STOW																											
				CRYO MANIFOLD VALVE C/O CABIN CONFIG/STOW																											
				A IMU STAR ALIGN ID: -Y: 36, KAUS AUSTRALIA MET (10/22:30 to 10/23:10) -Z: 47, BETELGEUSE MET (10/22:17 to 10/23:03) ANG DIFF: 81.9 DUAL S TRKR ALIGNMENT <table style="margin-left: 20px;"> <tr> <td style="border: 1px solid black; padding: 2px;">R</td> <td style="border: 1px solid black; padding: 2px;">0</td> <td style="padding: 2px;">-Z:</td> <td style="padding: 2px;">36</td> <td style="padding: 2px;">-Y:</td> <td style="padding: 2px;">47</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td style="border: 1px solid black; padding: 2px;">77</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">283</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">79</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">24</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">63</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">88</td> </tr> <tr> <td></td> <td></td> <td style="padding: 2px;"></td> <td style="padding: 2px;">31</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">35</td> </tr> </table>		R	0	-Z:	36	-Y:	47	P	77		283		79	Y	24		63		88				31		35		
R	0	-Z:	36	-Y:	47																										
P	77		283		79																										
Y	24		63		88																										
			31		35																										
				REQD ID: -Y: __, -Z: __, ANG ERR __, __ ANG: 1 2 3 ΔX () __, __ () __, __ () __, __ ΔY () __, __ () __, __ () __, __ ΔZ () __, __ () __, __ () __, __ EXECUTION TIME: __/__:__:__ MET																											
				B IMU STAR VERIFICATION ID: -Y: 104, ZETA AQUILA MET (10/22:45 to 10/23:26) -Z: 46, PHECDA MET (10/22:47 to 10/23:26) ANG DIFF: 89.1 DUAL S TRKR ALIGNMENT <table style="margin-left: 20px;"> <tr> <td style="border: 1px solid black; padding: 2px;">R</td> <td style="border: 1px solid black; padding: 2px;">4</td> <td style="padding: 2px;">-Z:</td> <td style="padding: 2px;">104</td> <td style="padding: 2px;">-Y:</td> <td style="padding: 2px;">46</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">P</td> <td style="border: 1px solid black; padding: 2px;">147</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">270</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">95</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">329</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">133</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">156</td> </tr> <tr> <td></td> <td></td> <td style="padding: 2px;"></td> <td style="padding: 2px;">337</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">342</td> </tr> </table>		R	4	-Z:	104	-Y:	46	P	147		270		95	Y	329		133		156				337		342		
R	4	-Z:	104	-Y:	46																										
P	147		270		95																										
Y	329		133		156																										
			337		342																										
				REQD ID: -Y: __, -Z: __, ANG ERR __, __ ANG: 1 2 3 ΔX () __, __ () __, __ () __, __ ΔY () __, __ () __, __ () __, __ ΔZ () __, __ () __, __ () __, __ If any ΔX, ΔY, or ΔZ > 0.1 Check MCC EXECUTION TIME: __/__:__:__ MET																											

STS-99 (BLUE) FD12



STS-99 (RED) FD11



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CONTINGENCY PLAN B

CONTINGENCY
PLAN B

CONTINGENCY PLAN B

CONTINGENCY PLAN B

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
13/18:11	000/00:00	13/12:11	13 CT	-19.05			13 Jan 2000	99	FINAL
14/06:11	000/12:00	14/00:11							

GMT 01/13/00 19 20 21 22 23 01/14 01 02 03 04 05 06
 MET Day 000 01 02 03 04 05 06 07 08 09 10 11 12

RED FD1	CDR KREGEL		PION SSE RT ++ ZLVV	POST INSERTION	EL CV PK	G P R D N	LOAD DAP	MEAL	MULT AXIS OA BURN			M R N E L R E A S E	P/TV08 OPS	M M A V P R P	R I C P H R R S /U	V P - R C T E S T	SLEEP						
	MS2 KAVANDI	A	POST INSERTION	K U A C T	P I O N S S E R T	L A M P	S M O K E	MEAL	MULT AXIS OA BURN			A P C /S I U	A S P C U	P/TV08 S/U	MAST DEPLOY	P/TV08 OPS	V P - R C T E S T	SLEEP					
	MS1 THIELE	S C	POST INSERTION					MEAL				P A C T L E T	S I R - S A R A C T		A O D I A E N A	MAST DEPLOY	F L I P O U T B R D A N T	H/O	SLEEP				
BLUE FD1	PLT GORIE	E N	POST INSERTION					PRE SLEEP								F D 2	D S O S T 4 9 3	P S O L E S T P	F R N T F E G	H/O	P S O L E S T P	V P - R C T E S T	M P O S T S L E E P
	MS3 VOSS	T	POST INSERTION					PRE SLEEP									P S O L E S T P	D S O S T 4 9 3	P S O L E S T P	H/O	D A C T M P E R	V P - R C T E S T	M U N I L S T S W T L
	MS4 MOHRI		POST INSERTION					PRE SLEEP										P O S T S L E E P	D S O H /O 4 9 3				P O S T S L E E P

DAY/NIGHT ORBIT

GROUND TRACK

TDRS E W

ATTITUDE

ASC BIASED +ZLV +XVV -ON ORBIT ADJUST- BIASED +ZLV +XVV RELEASE ATT FREE MAPPING FREE FREE

NOTES

*-Z PWR DN *DEACT

ACOLD GAS
*DESELECT
*PWR DN

CONTINGENCY PLAN B

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
14/06:11	000/12:00	14/00:11	14 CT	-21.39			14 Jan 2000	99	FINAL
14/18:11	001/00:00	14/12:11							

GMT	01/14/00	07	08	09	10	11	12	13	14	15	16	17	18	001/00
MET	Day 000	12	13	14	15	16	17	18	19	20	21	22	23	

RED FD 1	CDR KREGEL	MAPPING MUST BEGIN TO ACHIEVE COMPLETE MAPPING MISSION												FD2	POST SLEEP	FILTER CLEANING	H/O	NIGHT	PMCO			
	MS2 KAVANDI													PSOL S E DSO T E 493 P	POST SLEEP		H/O					
	MS1 THIELE													POST SLEEP	DSO 493	POST SLEEP		H/O				
BLUE FD 2	PLT GORIE	POST SLEEP	MAGR UNSTOW & S/U	MUNSTOW	MUNSTOW	NIGHT	NIGHT	NIGHT	NIGHT	NIGHT	NIGHT	NIGHT	NIGHT	NIGHT	MEAL	MEAL	FCC PRG	CRYO 02 S/USR CK	AFT CO	ERGO S/U	H/O	
	MS3 VOSS	MILK ADJ	POST SLEEP	SAMPL											MEAL					CREW D/L	H/O	
	MS4 MOHRI	POST SLEEP													MEAL						ERGO S/U	H/O

DAY/NIGHT ORBIT	9	10	11	12	13	14	15	16	17
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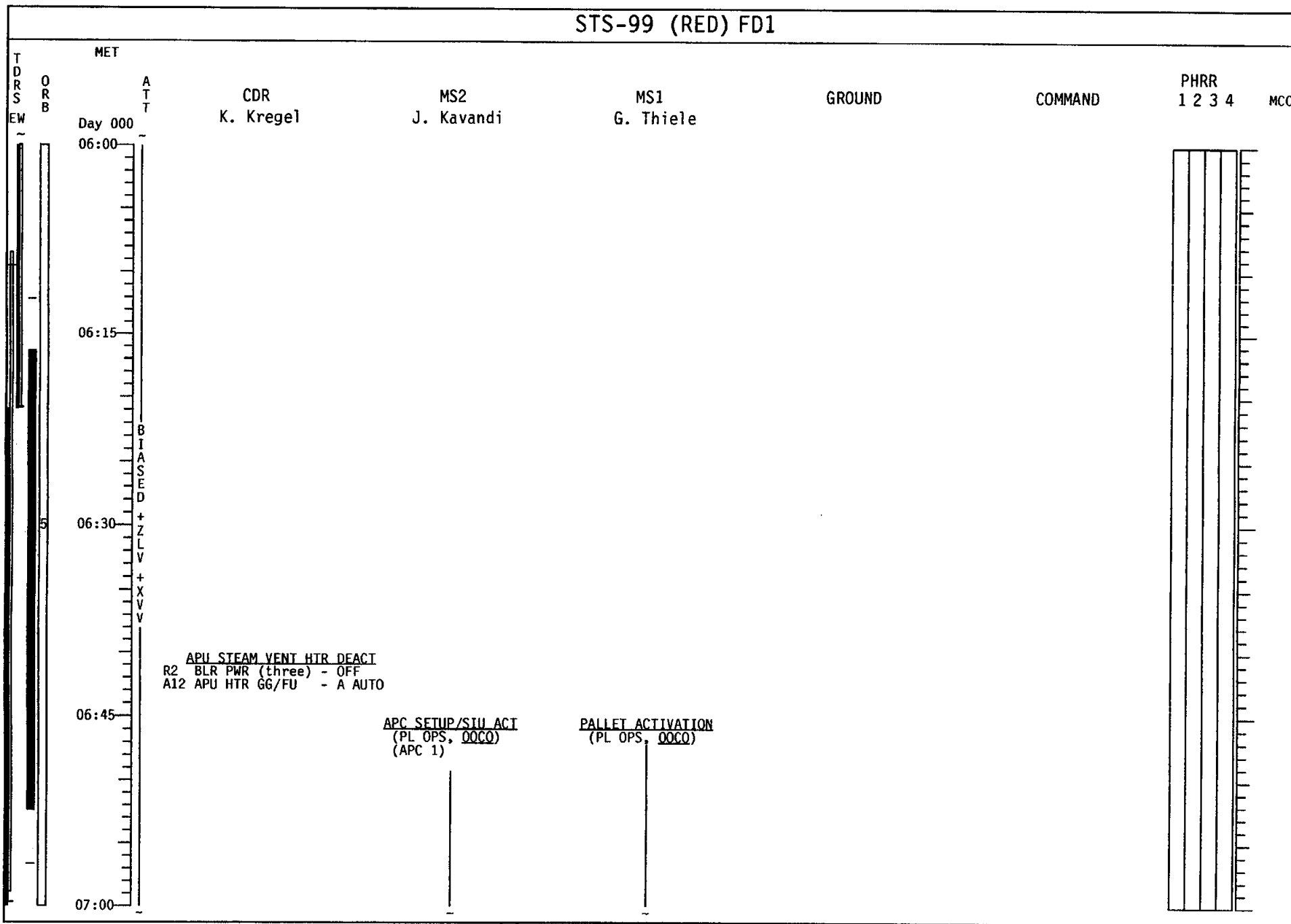
NOTES

MILKSTL UNSTW ▲VRCS P-TEST ◊GIRA MORN CNFG
 •GIRA NIGHT CNFG

MANUAL

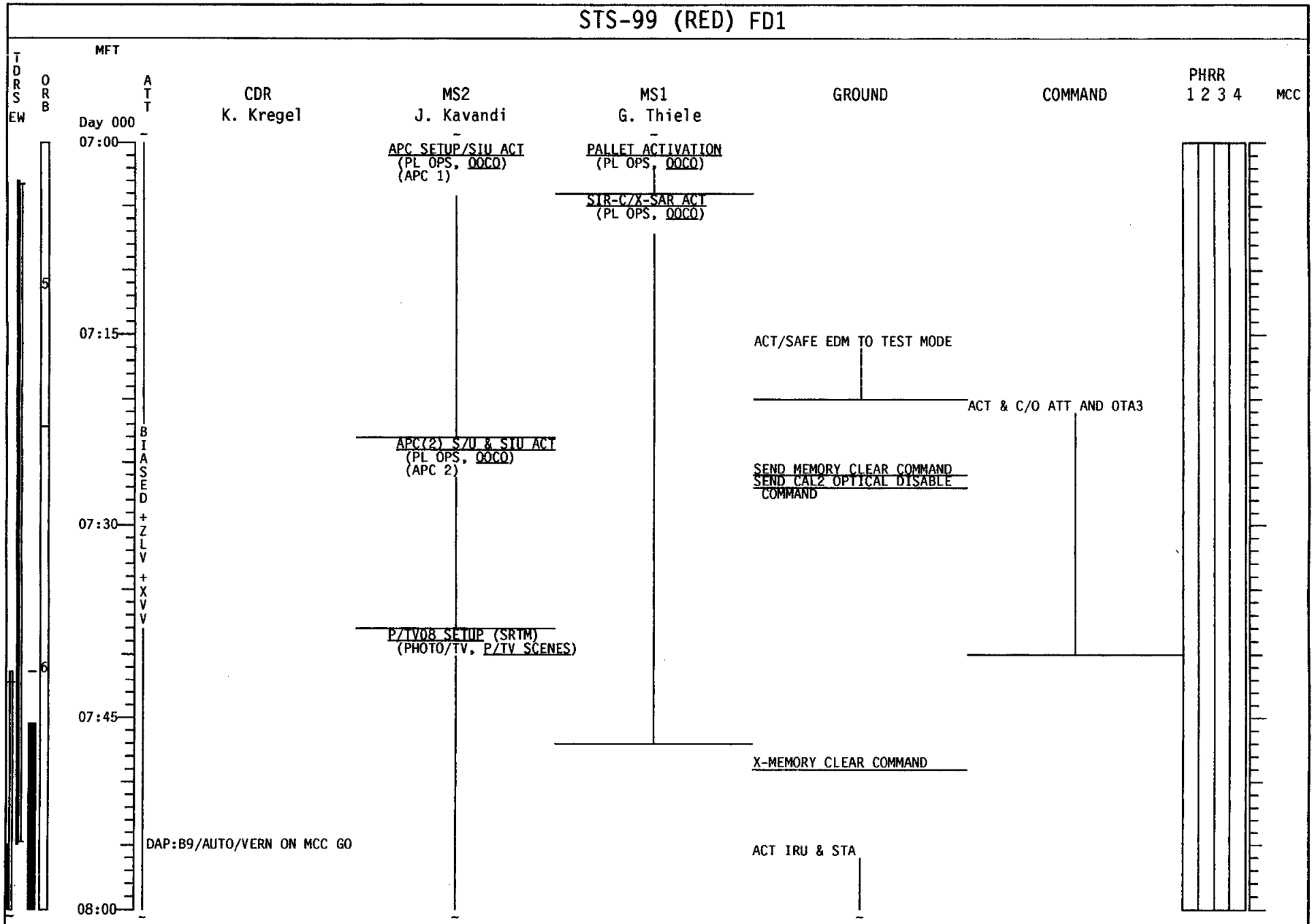
CONTINGENCY PLAN B

STS-99 (RED) FD1



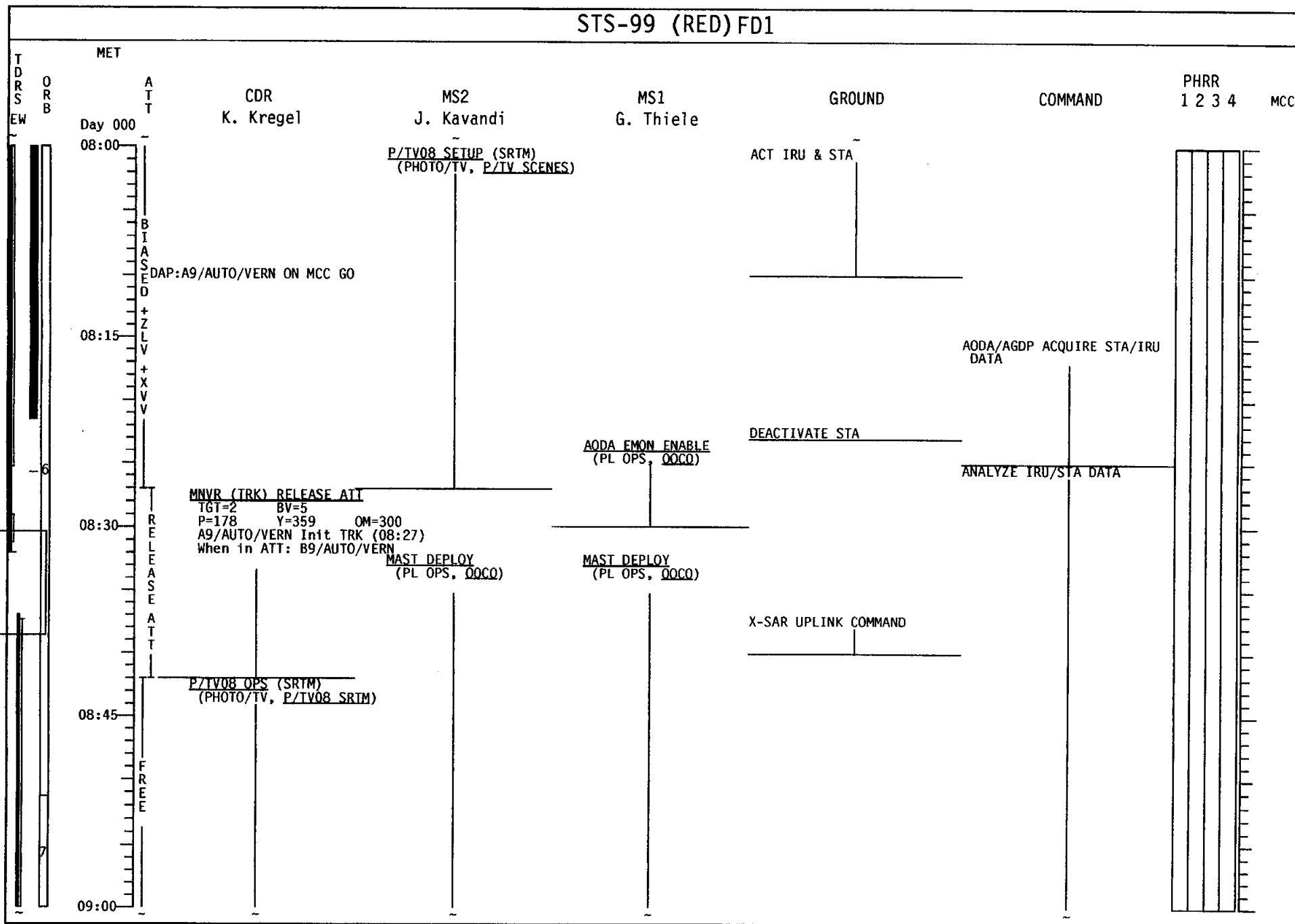
CONTINGENCY PLAN B

STS-99 (RED) FD1



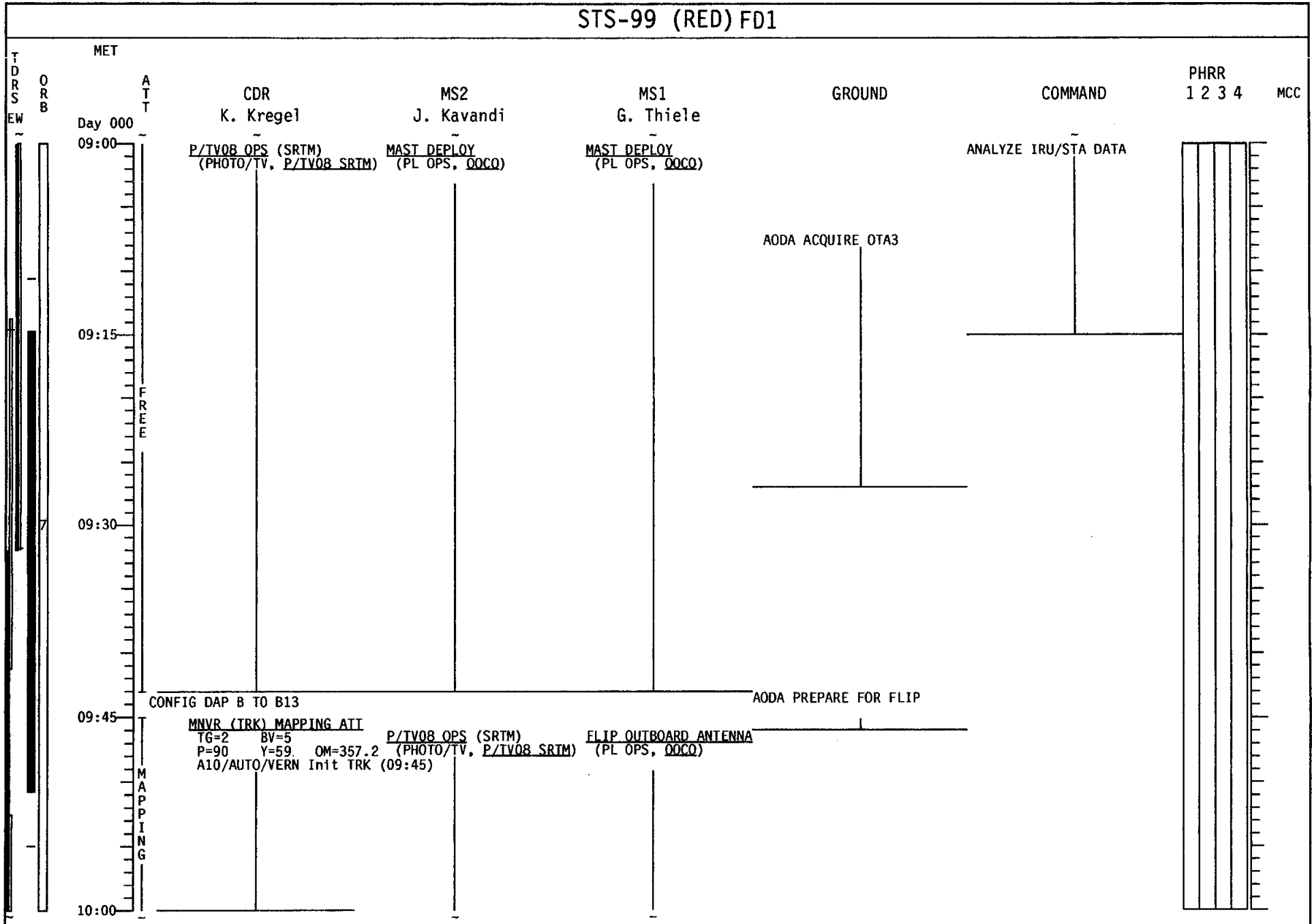
CONTINGENCY PLAN B

STS-99 (RED) FD1



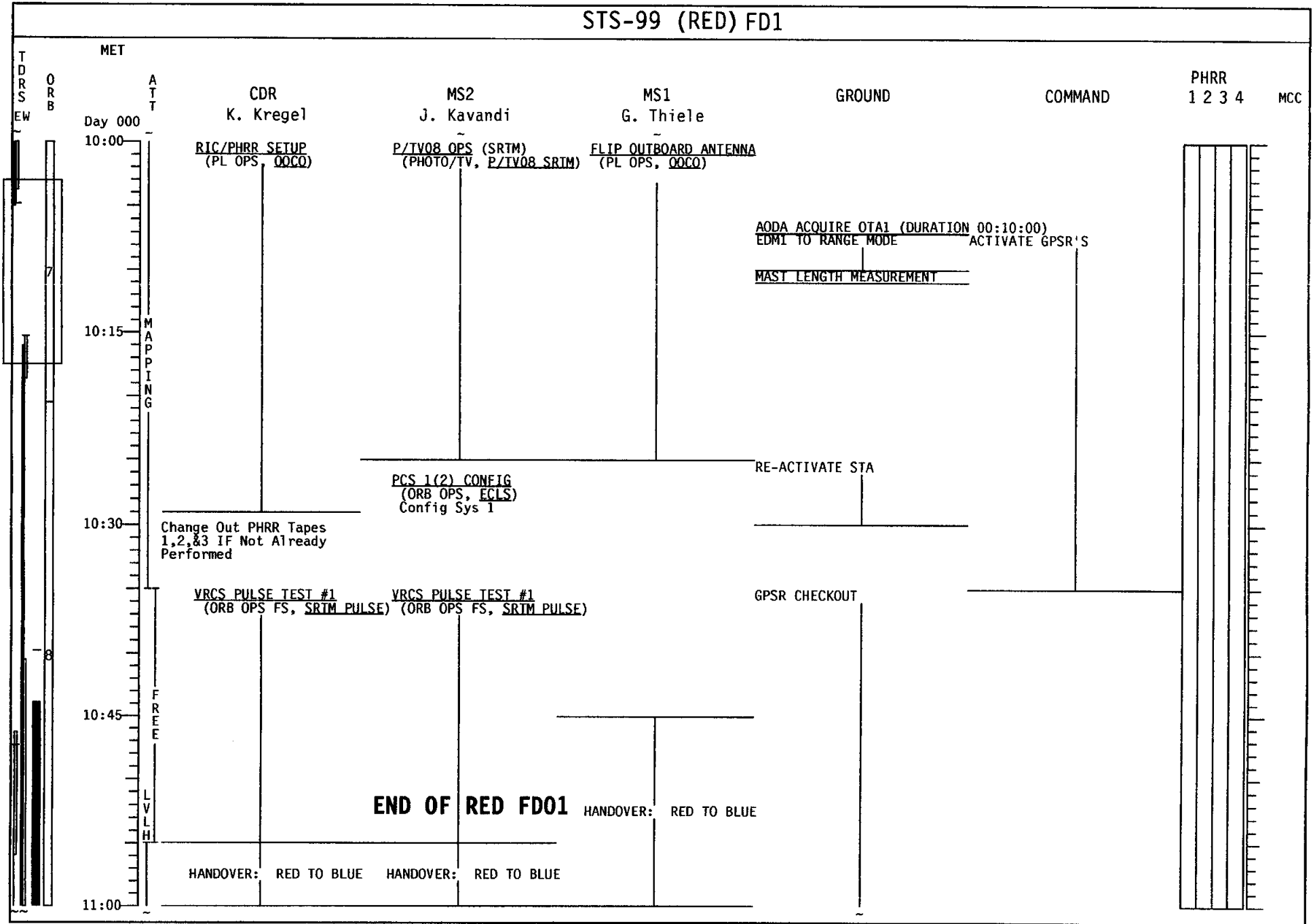
CONTINGENCY PLAN B

STS-99 (RED) FD1



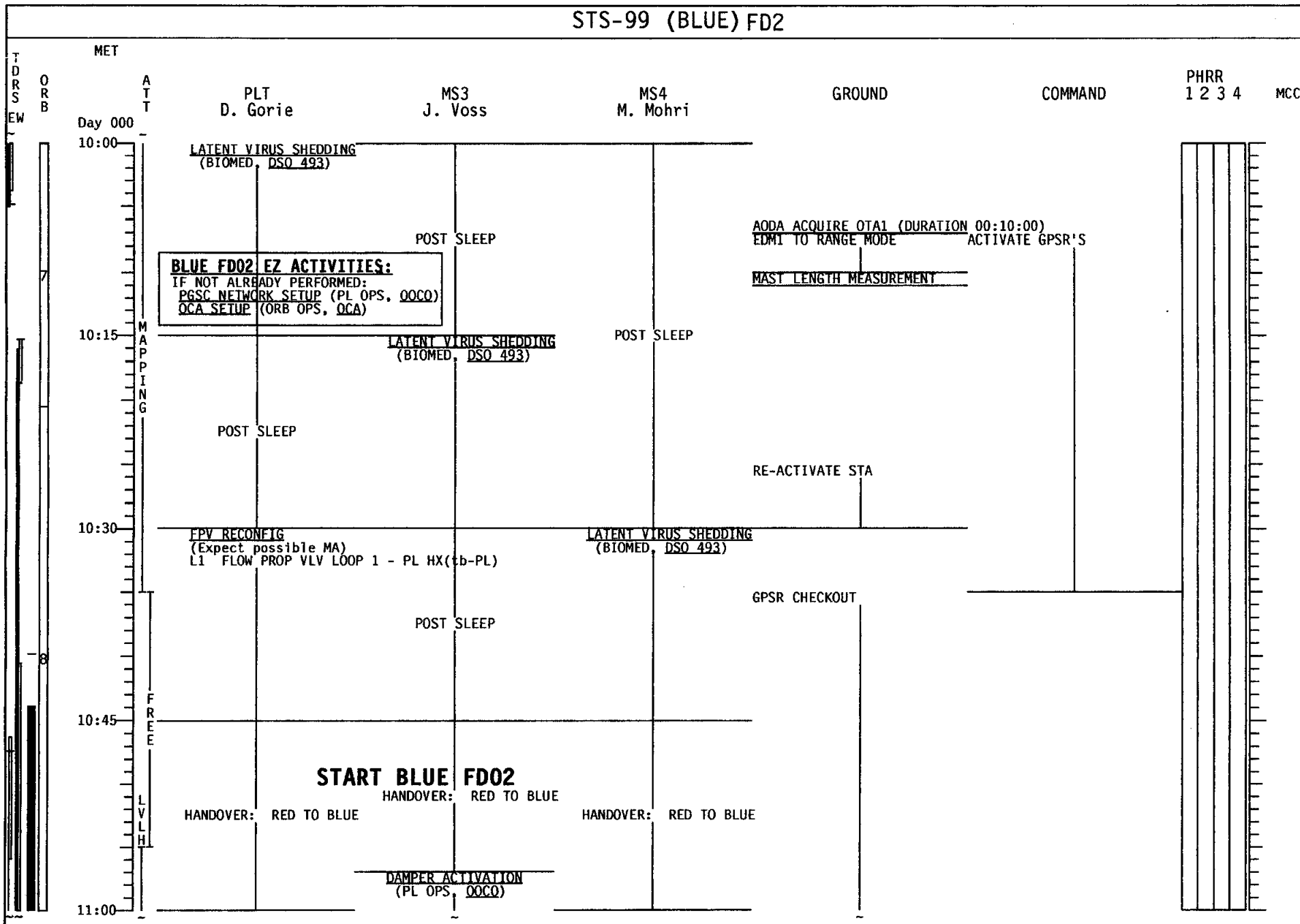
CONTINGENCY PLAN B

STS-99 (RED) FD1



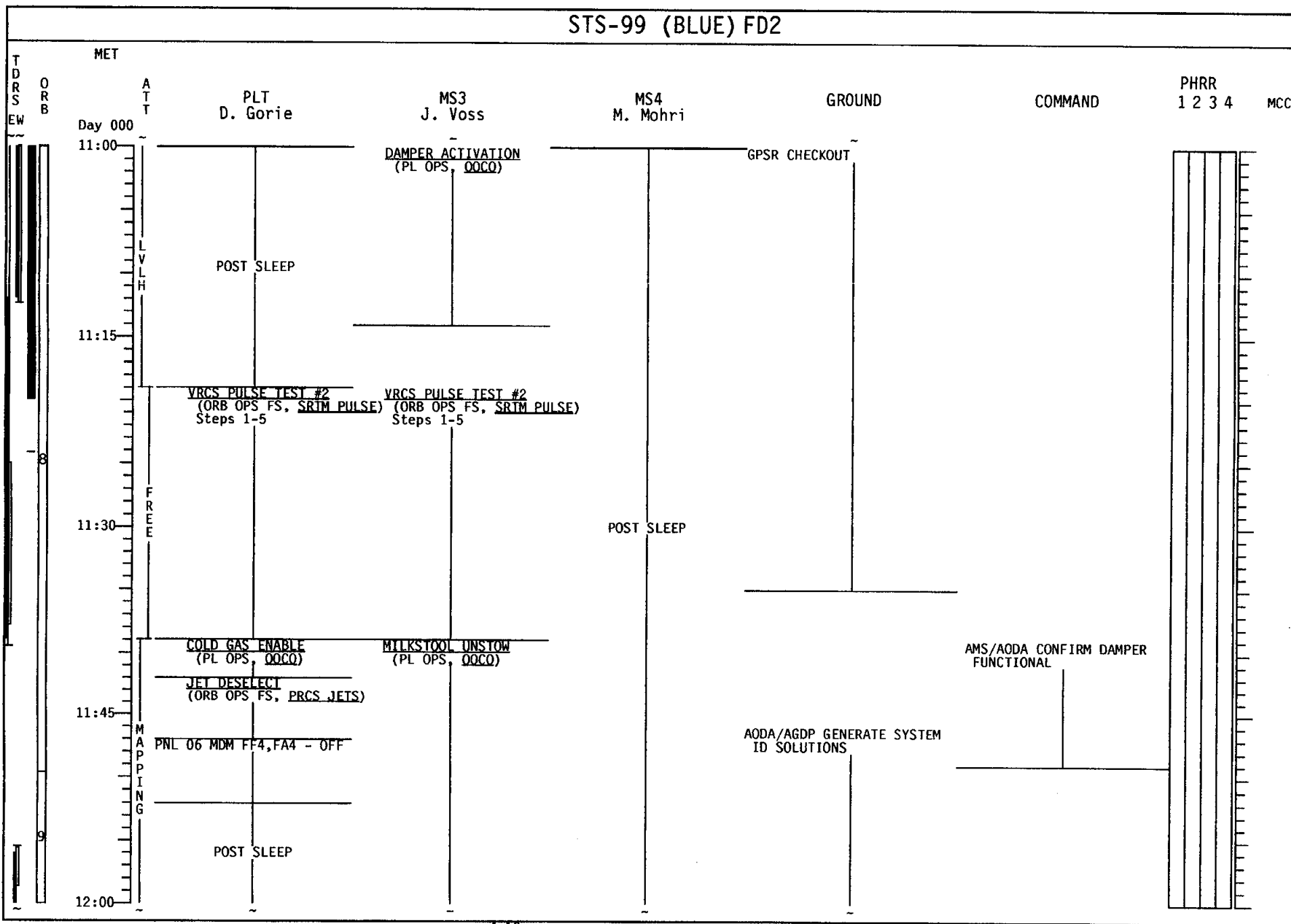
CONTINGENCY PLAN B

STS-99 (BLUE) FD2



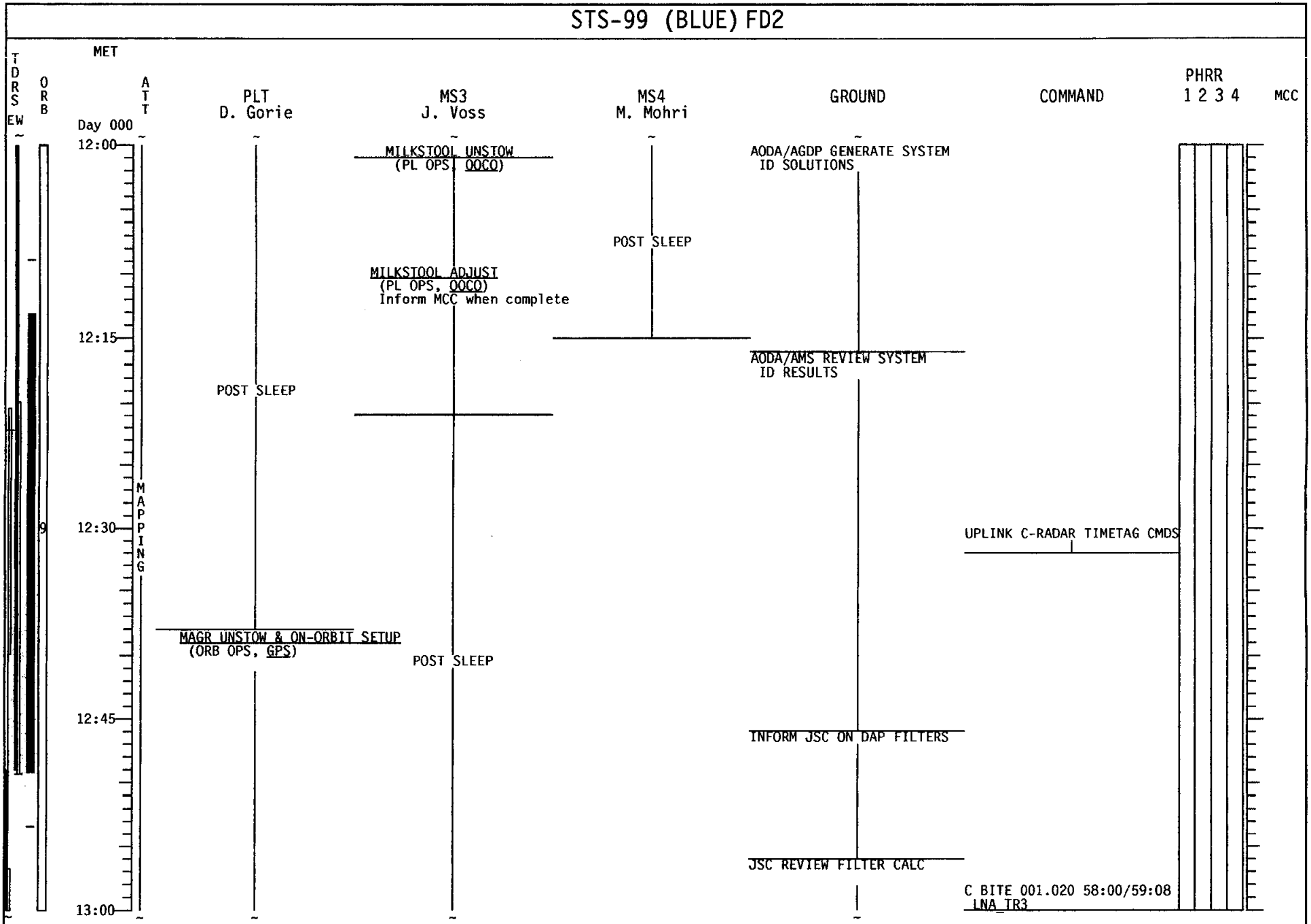
CONTINGENCY PLAN B

STS-99 (BLUE) FD2



CONTINGENCY PLAN B

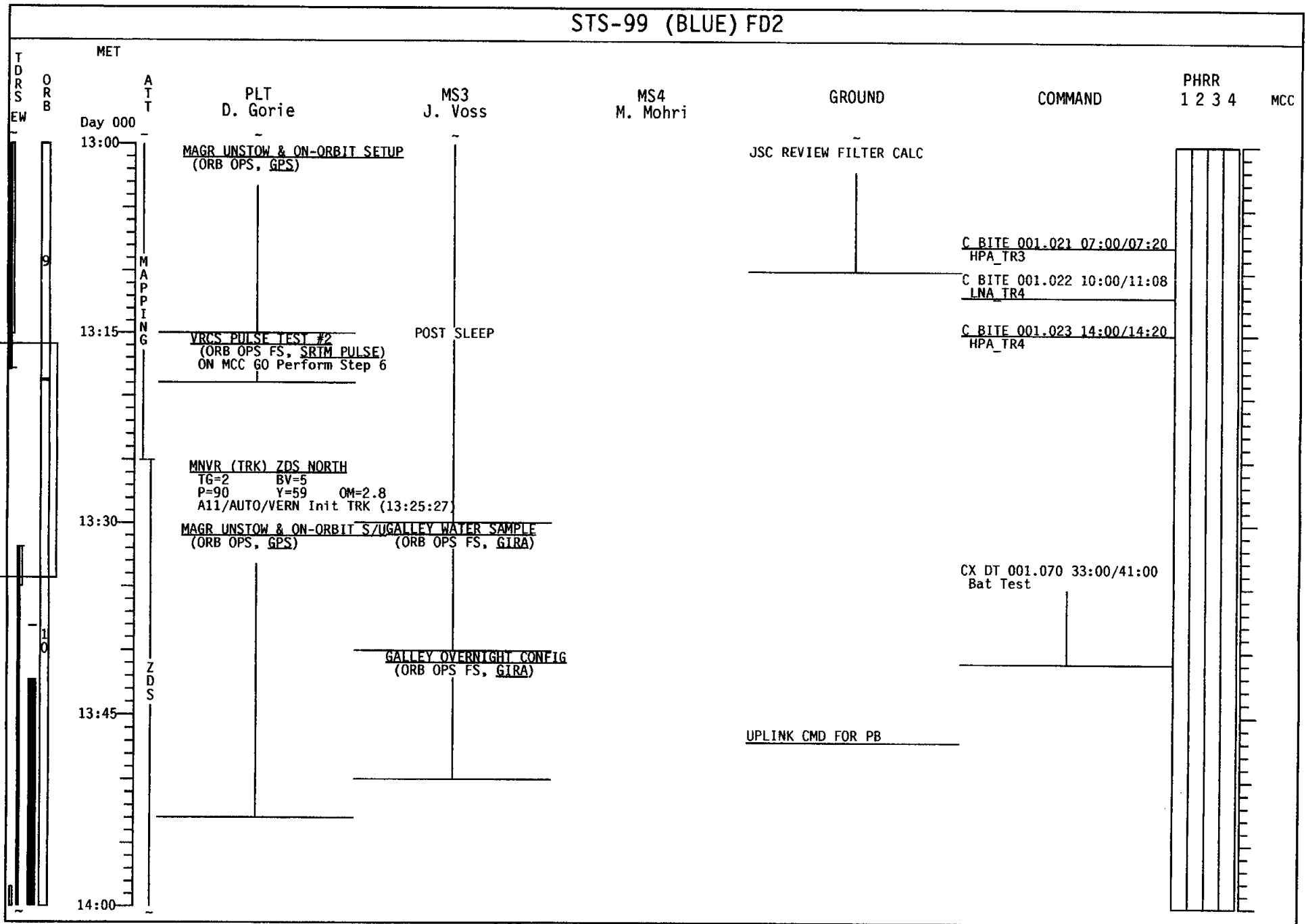
STS-99 (BLUE) FD2



C BITE 001.020 58:00/59:08
LNA_TR3

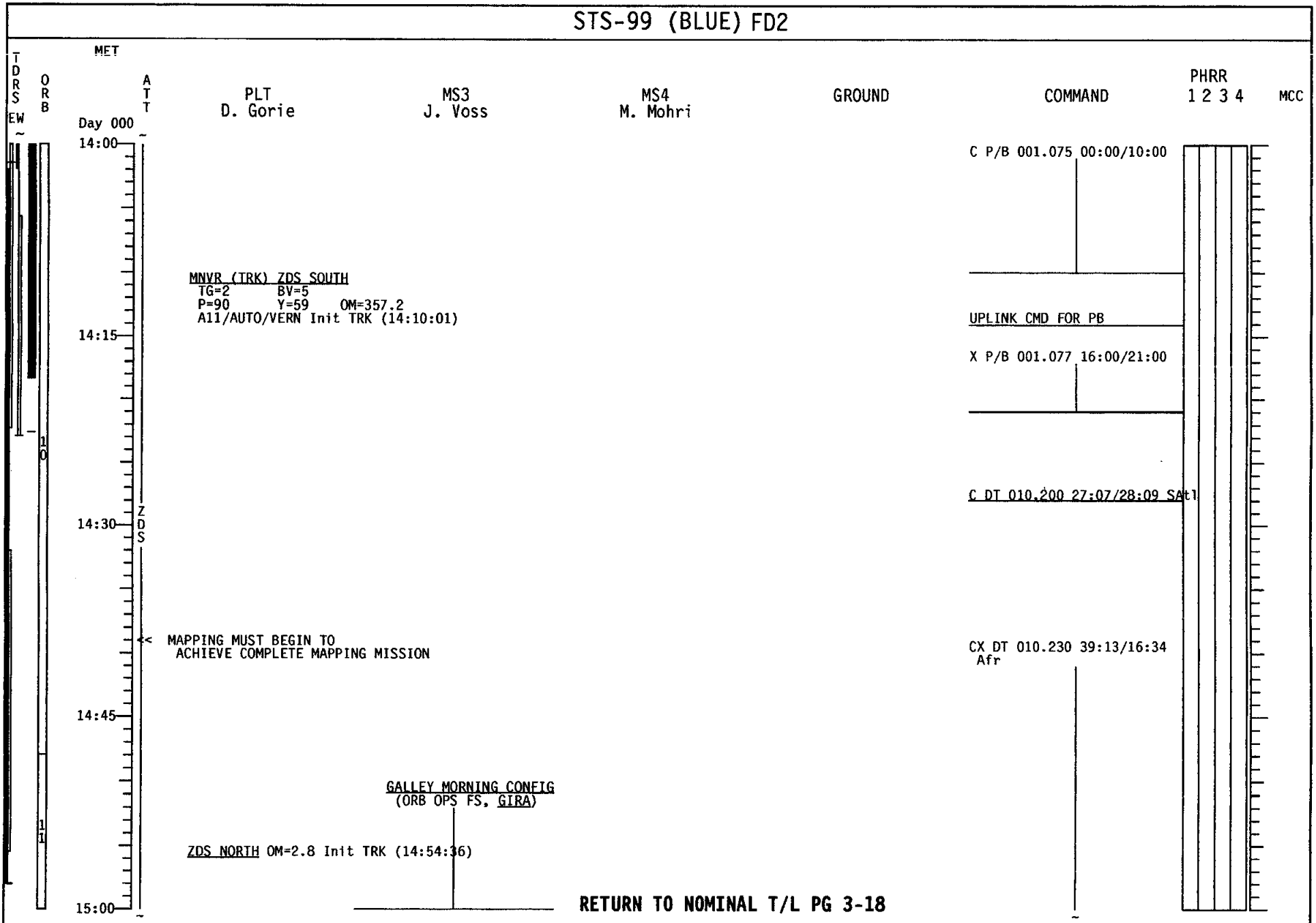
CONTINGENCY PLAN B

STS-99 (BLUE) FD2



CONTINGENCY PLAN B

STS-99 (BLUE) FD2



SUMMARY OOCO

SUMMARY
OOCO

SUMMARY OOCO

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
13/18:11	000/00:00	13/12:11	13 CT	-19.05			13 Jan 2000	99	FINAL
14/06:11	000/12:00	14/00:11							

GMT	MET	19	20	21	22	23	01/14	01	02	03	04	05	06						
01/13/00	000/00	01	02	03	04	05	06	07	08	09	10	11	12						
Day	000																		
R E D F I D 1	CDR KREGEL	PI ON SS TE RT ++ Z LV VV	POST INSERTION	SEL V P K	RIC PHRR S/U	GP R P R D N	LOAD MEAL DAP	MULTI AXIS OA BURN	M R E L E A S E	P/TV08 OPS	M M P R P	P R E S L E E P	V P R C T E S T	PRE SLEEP	V P R C T E S T	PRE SLEEP	P S L E E P	M F R N F G	H O S L E E P
	MS2 KAVANDI	POST INSERTION	K U A C T	P I O N S S E R T	A P C / S I U	A S P / C U	L A M P	S M O K E	MEAL	MULTI AXIS OA BURN	MAST DEPLOY	P/TV08 OPS	V P R C T E S T	PRE SLEEP	V P R C T E S T	PRE SLEEP	P R E S L E E P	P R E S L E E P	H O S L E E P
	MS1 THIELE	POST INSERTION	P A C T L E T	S I R - S A R A C T	MEAL	P/TV08 S/LA	MAST DEPLOY	FLIP O U T B R D A N T	P R E S L E E P	D A C T	PRE SLEEP	M U N I S T S W T L	M A L D K J S T L	PRE SLEEP	H O S L E E P	H O S L E E P	H O S L E E P	H O S L E E P	
DAY/NIGHT	ORBIT																		
GROUND TRACK																			
TORS																			
OOCO ACTS	<p>EDMs ACT BITE HPA TR4 STA DEACT AODA ACQ OTA1 GPSRs ACT BAT S-CURVE GPSR C/O</p> <p>ATT & OTA3 ACT IRU & STA ACT PHRR1 PB PHRR2 PB PHRR3 PB NOISE REC NOISE PB BITE LNA TR3 BITE HPA TR3 BITE LNA TR4</p> <p>X RAD TEST AODA ACQ OTA3 STA REACT AZMIUTH SCAN EARLY BAT TEST X RAD TEST C BAT PB H</p> <p>BAT CG OFF C PB (BAT OFF) C/X UPLNK CMD BAT PB BAT CG OFF PB TILT ENABLE TILT DISABLE C/X BAT OFF/ON H</p>																		
ATTITUDE	ASC	ON ORBIT ADJUST		BIASED +ZLV +XVV	RELEASE ATT	FREE	FREE	FREE	MAPPING	FREE	FREE	MAPPING	ZDS						
NOTES	<p>⊖-Z PWR DN</p> <p>*DEACT</p> <p>*DESELECT ⊕COLD GAS ENA</p> <p>* PWR DN ⊕DISABLE AUTO-TILT</p> <p>♥ENABLE AUTO TILT</p>																		

GMT	MET	CT	DOY	BETA	MOON	ATTITUDE	HOUSTON DATE	IDENTIFIER	EDITION
14/06:11	000/12:00	14/00:11	14 CT	-21.39			14 Jan 2000	99	FINAL
14/18:11	001/00:00	14/12:11							

GMT 01/14/00
MET Day 000

TIME	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	001/00				
BLUEFIELD 2	PLT GORIE	LOW PRCS	POST SLEEP	MAGR UNSTOW & S/U	POST	POST	POST	POST	POST	POST	POST	POST	POST	MEAL	MEAL	FCC PRG	CRYO 02 SNSR CK	AFT CO	ERGO S/U	H/O	EKAM S/U	
	MS3 VOSS	LOW PRCS	PHRR 4 S/U	MAID LK	POST	AODA OCA DUMP								MEAL							H/O	
	MS4 MOHRI	PO P TS V 0 8	POST SLEEP											MEAL							ERGO S/U	H/O

DAY/NIGHT ORBIT



TDRS

TIME	07	08	09	10	11	12	13	14	15	16	17
OOCO ACTS	XPB	CAL SQ	AODA BIAS	MAPPING START	C/X DT	C CAL DT	C DT	C PB	C/X DT	C/X DT	
			C/X VERIF ALIGN								
			C/X BAT S-CURVE								
			X ALIGN VERIF PB								
			X ALIGN VERIF								
			C ALIGN VERIF PB								

ATTITUDE

NOTES	▲MAGR UNSTOW & S/U ●GIRA MORN CNFG ◆GIRA NIGHT CNFG ◎PHRR MAN QUICK WRITE ♥PHRR MANUAL STOP
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ANOMALY LOG

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STS-99 DAP TABLE

**STS-99
DAP TABLE**

DAP PURPOSE
A1 - NOMINAL
A2 - PTC
A3 - GG
A4 - PRE/POST DEPLOY
A5 - LOSS OF VERN
 (NOSE & TAIL)
A6 - LOSS OF VERN
 (TAIL ONLY)
A7 - RNDZ
A8 - PROX OPS
A9 - RETRACTED MNVRS
A10 - MAST DEPLOYED
 MNVRS
A11 - SCIENCE
A12 - MAST DPLYD HIGH
 MNVRT
A14 - FLYCAST SINGLE-PULSE
A15 - FLYCAST MULTI-PULSE

DAP PURPOSE
B1 - NOM OMS & RCS BURNS
B2 - LOSS OF VERN
 (TAIL ONLY)
B3 - LOSS OF VERN
 (NOSE & TAIL)
B5 - COAS CAL
B7 - RNDZ
B8 - PROX OPS
B9 - RETRACTED DB COLLAPSE
 FOR EXTENSION
B10 - EXTENDED DB COLLAPSE
 FOR RETRACTION
B11 - EXTENDED DB COLLAPSE
 FOR FLYCAST
B12 - COLLAPSE FOR MNVRT TO
 FLYCAST
B13 - COLLAPSE FOR MNVRT TO
 SCIENCE
B14 - FLYCAST SINGLE-PULSE
B15 - FLYCAST MULTI-PULSE

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

CNTL ACC = 0 SHUTTLE ALONE
= 1* RETRACTED MAST
= 2 EXTENDED MAST, ATTITUDE MNVRS CAGED
 DAMPERS
= 3 EXT MAST, DB COLLAPSE AND SCIENCE
= 4 EXT MAST, ATT MNVRS, UNCAGED DAMPERS
= 5 EXT MAST, DB COL AND SCIENCE, CAGED
 FAILURE
= 6,7 FLYCAST SINGLE
= 8,9 FLYCAST MULTI

* CNTRL ACC 1 PREFERRED FOR RETRACTED MNVRS

STS-99 DAP A - GENERIC

	ITEM #	A1	A2	A3	A4	A5	A6	A7
PRI								
ROT RATE	10	0.2000	0.4000	0.2000	0.5000	0.2000	0.2000	0.2000
ATT DB	11	5.00	1.00	1.00	3.00	5.00	5.00	2.00
RATE DB	12	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10	0.10	0.10
COMP	14	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL	TAIL	ALL
Y OPTION	16	ALL	ALL	TAIL	ALL	ALL	TAIL	ALL
TRAN PLS	17	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ALT								
RATE DB	18	0.200	0.200	0.200	0.200	0.070	0.070	0.200
JET OPT	19	ALL	ALL	ALL	ALL	ALL	TAIL	ALL
# JETS	20	2	2	2	2	1	1	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN								
ROT RATE	23	0.2000	0.4000	0.0080	0.2000	0.2000	0.2000	0.2000
ATT DB	24	1.000	1.000	0.070	1.000	1.000	1.000	1.000
RATE DB	25	0.020	0.020	0.010	0.020	0.020	0.020	0.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/ POST DEPLOY	LOSS OF VERN (NOSE & TAIL)	LOSS OF VERN (TAIL ONLY)	RNDZ

STS-99 DAP A CONFIGURATIONS

	ITEM #	A8	A9	A10	A11	A12	A14	A15
PRI								
ROT RATE	10	0.2000	0.2000	0.1000	0.1000	0.1000	0.2000	0.2000
ATT DB	11	2.00	3.00	3.00	1.00	3.00	5.00	5.00
RATE DB	12	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10	0.10	0.42
COMP	14	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Y OPTION	16	ALL	ALL	ALL	ALL	ALL	ALL	ALL
TRAN PLS	17	0.05	0.10	0.10	0.10	0.10	0.10	0.10
ALT								
RATE DB	18	0.200	0.200	0.100	0.070	0.100	0.200	0.200
JET OPT	19	ALL	ALL	TAIL	ALL	ALL	TAIL	TAIL
# JETS	20	2	2	2	1	2	2	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	1.68	1.68
DELAY	22	0.00	0.00	4.00	4.00	4.00	1.68	1.68
VERN								
ROT RATE	23	0.2000	0.2000	0.2000	0.0030	0.3000	0.2000	0.2000
ATT DB	24	1.000	3.000	3.000	0.100	3.000	1.000	1.000
RATE DB	25	0.020	0.020	0.050	0.010	.050	0.020	0.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	1	2(4)¹	3	4	6	8
PURPOSE		PROX OPS	RETRACTED MNVRs	MAST DEPLOYED MNVRs	SCIENCE	MAST DPLYD HIGH MNVR RT	FLYCAST SINGLE- PULSE	FLYCAST MULTI- PULSE

NOTE: **BOLD-ITALIC** indicate a change from I-load

1 DAPs A10 and B10 use either CNTL ACC 2 or 4. CNTL ACC are modified via the PAYLOAD OPS DAMPER ACTIVATION and MAST STOW procedures

STS-99 DAP B - GENERIC

	ITEM #	B1	B2	B3	B4	B5	B6	B7
PRI								
ROT RATE	30	0.5000	0.2000	0.2000	0.2000	0.2000	0.5000	0.5000
ATT DB	31	3.00	3.00	3.00	0.30	3.00	3.00	2.00
RATE DB	32	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL
Y OPTION	36	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL
TRAN PLS	37	0.10	0.02	0.02	0.02	0.02	0.02	0.05
ALT								
RATE DB	38	0.200	0.070	0.070	0.200	0.200	0.200	0.200
JET OPT	39	ALL	TAIL	ALL	ALL	ALL	ALL	ALL
# JETS	40	2	1	1	2	2	2	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN								
ROT RATE	43	0.2000	0.2000	0.2000	0.0080	0.0160	0.2000	0.2000
ATT DB	44	1.000	1.000	1.000	0.100	0.033	1.000	1.000
RATE DB	45	.020	.020	.020	.010	.020	.020	.020
ROT PLS	46	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP	47	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48	0	0	0	0	0	0	0
PURPOSE		NOM OMS & RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (NOSE & TAIL)		COAS CAL		RNDZ

STS-99 DAP B CONFIGURATIONS

	ITEM #	B8	B9	B10	B11	B12	B13	B14	B15
PRI									
ROT RATE	30	0.2000	0.1000	0.1000	0.1000	0.1000	0.1000	0.5000	0.5000
ATT DB	31	2.00	1.00	0.30	3.00	3.00	3.00	3.00	3.00
RATE DB	32	0.20	0.10	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Y OPTION	36	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
TRAN PLS	37	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
ALT									
RATE DB	38	0.200	0.070	0.070	0.100	0.100	0.100	0.200	0.200
JET OPT	39	ALL	ALL	TAIL	ALL	ALL	ALL	TAIL	TAIL
# JETS	40	2	1	1	2	2	2	2	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.68
DELAY	42	0.00	0.00	4.00	4.00	4.00	4.00	1.68	0.00
VERN									
ROT RATE	43	0.2000	0.1000	0.1000	0.1000	0.1000	0.0400	0.2000	0.2000
ATT DB	44	1.000	1.000	1.000	1.000	1.000	0.100	1.000	1.000
RATE DB	45	0.020	0.010	0.010	0.020	0.050	0.010	0.020	0.020
ROT PLS	46	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP	47	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48	0	1	4(2) ¹	4	4	3	7	9
PURPOSE		PROX OPS	RETRACTED DB COLLAPASE FOR EXTENSION	EXTENDED DB COLLAPASE FOR RETRACTION	EXTENDED DB COL-LAPASE FOR FLY-CAST	COL-LAPASE FOR MNVR TO FLY-CAST	COL-LAPASE FOR MNVR TO SCIENCE	FLYCAST, SINGLE-PULSE	FLYCAST, MULTI-PULSE

Note: **BOLD-ITALIC** indicate a change from I-load

1 DAPs A10 and B10 use either CNTL ACC 2 or 4. CNTL ACC are modified via the PAYLOAD OPS DAMPER ACTIVATION and MAST STOW procedures

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

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ATTITUDE TIMELINE

ATTITUDE
TIMELINE

Attitude Timeline							
MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT	
1	000/01:12:00 MET 17:56 013/19:23:00 GMT 28:56	TGT=2 BV=5 P=259.00 Y= 10.00 OM= 0.00	A9 AUTO ALT	RATE 0.2000 DB AT 3.00 DB RT 0.200	EARTH R 170 P 101	LVLH R= 9.82 P= 10.84 Y= 1.90	AODA/PLBD Att Config Verns 2:05
2	000/04:25:00 MET 013/22:36:00 GMT						Orbit Adjust Occurs between 3:45 and 5:15 MET
3	000/05:15:00 MET 22:51 013/23:26:00 GMT 33:51	TGT=2 BV=5 P=178.00 Y=359.00 OM=300.00	A9 AUTO VERN	RATE 0.2000 DB AT 3.000 DB RT 0.020	EARTH R 333 P 178	LVLH R= 60.00 P= 91.87 Y= 1.23	Release Comp. Attitude Upon Completion of Orbit Adjust
4	000/05:30:00 MET 013/23:41:00 GMT						FREE DRIFT FOR MAST DEPLOY
5	000/06:33:00 MET 44:26 014/00:44:00 GMT 55:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 1.30	A10 AUTO VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=358.70	Mapping Att ZDS South Prep for ZDS
6	000/07:40:00 MET 014/01:51:00 GMT						FREE DRIFT FOR VRCS PULSE TEST #1
7	000/08:00:00 MET 014/02:11:00 GMT		A10 LVLH VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 HOLD P=180.00 Y=358.70	LVLH between VRCS tests
8	000/08:37:00 MET 014/02:48:00 GMT						FREE DRIFT FOR VRCS PULSE TEST #2
9	000/08:57:00 MET 014/03:08:00 GMT	A10/AUTO/VERN					End of VRCS PULSE TEST #2
10	000/10:50:00 MET 58:20 014/05:01:00 GMT 09:20	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS Init
11	000/11:11:44 MET 42:51 014/05:22:44 GMT 53:51	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
12	000/11:42:00 MET 014/05:53:00 GMT	A10/AUTO/VERN					Low Impulse PRCS Test

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
13 000/12:25:00 MET 28	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A10 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	Mnvr ZDS North for ZDS Prep
014/06:36:00 GMT 28					
14 000/12:40:52 MET 13:11:59	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/06:51:52 GMT 07:22:59					
15 000/13:25:27 MET 56:34	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
014/07:36:27 GMT 08:07:34					
16 000/14:10:01 MET 41:08	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/08:21:01 GMT 52:08					
17 000/14:54:36 MET 15:25:43	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
014/09:05:36 GMT 36:43					
18 000/15:39:10 MET 16:10:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/09:50:10 GMT 10:21:17					
19 000/16:23:45 MET 54:52	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
014/10:34:45 GMT 11:05:52					
20 000/17:08:19 MET 39:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/11:19:19 GMT 50:26					
21 000/17:52:53 MET 18:24:00	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
014/12:03:53 GMT 35:00					
22 000/18:37:28 MET 19:08:35	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/12:48:28 GMT 13:19:35					
23 000/19:22:02 MET 53:09	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
014/13:33:02 GMT 14:04:09					
24 000/20:06:37 MET 37:44	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/14:17:37 GMT 48:44					

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
25 000/20:51:11 MET 21:22:18 014/15:02:11 GMT 33:18	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
26 000/21:35:45 MET 22:06:52 014/15:46:45 GMT 16:17:52	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
27 000/22:20:20 MET 51:27 014/16:31:20 GMT 17:02:27	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
28 000/23:04:54 MET 36:01 014/17:15:54 GMT 47:01	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
29 000/23:49:29 MET 014/18:00:29 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010			ZDS North
30 001/00:20:00 MET 014/18:31:00 GMT	*** MNVR INTERRUPT *** DAP A10	A10 LVLH VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 HOLD P=180.25 Y=357.31	Place Holder for HI IMPULSE TEST
31 001/00:45:00 MET 23 014/18:56:00 GMT 23	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=358.10 WIA A11/AUTO/VERN	A10 AUTO VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 1.90	ZDS Prep for data take
32 001/01:18:35 MET 44:42 014/19:29:35 GMT 55:42	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
33 001/02:03:09 MET 34:16 014/20:14:09 GMT 45:16	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
34 001/02:47:43 MET 03:18:50 014/20:58:43 GMT 21:29:50	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
35 001/03:32:17 MET 04:03:24 014/21:43:17 GMT 22:14:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
36 001/04:16:51 MET 47:58 014/22:27:51 GMT 58:58	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT	
37 001/05:01:25 MET 32:32	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
014/23:12:25 GMT 43:32						
38 001/05:45:59 MET 06:17:06	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
014/23:56:59 GMT 015/00:28:06						
39 001/06:30:33 MET 07:01:40	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
015/00:41:33 GMT 01:12:40						
40 001/07:15:08 MET 46:15	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
015/01:26:08 GMT 57:15						
41 001/07:59:42 MET 08:30:49	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
015/02:10:42 GMT 41:49						
42 001/08:44:16 MET 09:15:23	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
015/02:55:16 GMT 03:26:23						
43 001/09:28:50 MET 59:57	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
015/03:39:50 GMT 04:10:57						
44 001/10:13:24 MET 44:31	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
015/04:24:24 GMT 55:31						
45 001/10:57:58 MET 11:29:05	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
015/05:08:58 GMT 40:05						
46 001/11:42:32 MET	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010			ZDS North
015/05:53:32 GMT						
47 001/12:04:00 MET 18:11	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 AUTO VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-1 TIG 01/12:29:00
015/06:15:00 GMT 29:11						
48 001/12:33:00 MET 42:16	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A12 AUTO VERN	RATE 0.3000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
015/06:44:00 GMT 53:16						

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

Attitude Timeline

MET/GMT		MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
49	001/13:11:37 MET 42:44	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	015/07:22:37 GMT 53:44	P= 90.00 Y= 59.00 OM= 2.80					
50	001/13:56:12 MET 14:27:19	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	015/08:07:12 GMT 38:19	P= 90.00 Y= 59.00 OM=357.20					
51	001/14:40:46 MET 15:11:53	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	015/08:51:46 GMT 09:22:53	P= 90.00 Y= 59.00 OM= 2.80					
52	001/15:25:21 MET 56:28	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	015/09:36:21 GMT 10:07:28	P= 90.00 Y= 59.00 OM=357.20					
53	001/16:09:56 MET 41:03	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	015/10:20:56 GMT 52:03	P= 90.00 Y= 59.00 OM= 2.80					
54	001/16:54:30 MET 17:25:37	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	015/11:05:30 GMT 36:37	P= 90.00 Y= 59.00 OM=357.20					
55	001/17:39:05 MET 18:10:12	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	015/11:50:05 GMT 12:21:12	P= 90.00 Y= 59.00 OM= 2.80					
56	001/18:23:39 MET 54:46	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	015/12:34:39 GMT 13:05:46	P= 90.00 Y= 59.00 OM=357.20					
57	001/19:08:14 MET 39:21	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	015/13:19:14 GMT 50:21	P= 90.00 Y= 59.00 OM= 2.80					
58	001/19:52:48 MET 20:23:55	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	015/14:03:48 GMT 34:55	P= 90.00 Y= 59.00 OM=357.20					
59	001/20:37:23 MET 21:08:30	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	015/14:48:23 GMT 15:19:30	P= 90.00 Y= 59.00 OM= 2.80					
60	001/21:21:58 MET 53:05	TGT=2 BV=5	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	015/15:32:58 GMT 16:04:05	P= 90.00 Y= 59.00 OM=357.20					

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
61 001/22:06:32 MET 37:39 015/16:17:32 GMT 48:39	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
62 001/22:51:07 MET 23:22:14 015/17:02:07 GMT 33:14	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
63 001/23:35:41 MET 002/00:06:48 015/17:46:41 GMT 18:17:48	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
64 002/00:20:13 MET 51:20 015/18:31:13 GMT 19:02:20	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
65 002/01:04:47 MET 35:54 015/19:15:47 GMT 46:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
66 002/01:49:21 MET 02:20:28 015/20:00:21 GMT 31:28	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
67 002/02:33:56 MET 03:05:03 015/20:44:56 GMT 21:16:03	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
68 002/03:18:30 MET 49:37 015/21:29:30 GMT 22:00:37	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
69 002/04:03:04 MET 34:11 015/22:14:04 GMT 45:11	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
70 002/04:47:38 MET 05:18:45 015/22:58:38 GMT 23:29:45	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
71 002/05:32:13 MET 06:03:20 015/23:43:13 GMT 016/00:14:20	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
72 002/06:16:47 MET 47:54 016/00:27:47 GMT 58:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
73 002/07:01:21 MET 32:28 016/01:12:21 GMT 43:28	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
74 002/07:45:56 MET 08:17:03 016/01:56:56 GMT 02:28:03	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
75 002/08:30:30 MET 09:01:37 016/02:41:30 GMT 03:12:37	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
76 002/09:15:04 MET 46:11 016/03:26:04 GMT 57:11	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
77 002/09:59:38 MET 10:30:45 016/04:10:38 GMT 41:45	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
78 002/10:44:13 MET 11:15:20 016/04:55:13 GMT 05:26:20	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
79 002/11:28:47 MET 59:54 016/05:39:47 GMT 06:10:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
80 002/12:13:17 MET 44:24 016/06:24:17 GMT 55:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
81 002/12:57:51 MET 016/07:08:51 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010			ZDS North
82 002/13:06:00 MET 20:00 016/07:17:00 GMT 31:00	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 AUTO VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-2 TIG 02/13:22:00
83 002/13:25:00 MET 39:03 016/07:36:00 GMT 50:03	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=359.29	A10 AUTO VERN	RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 0.71	ZDS Prep Feet Dry @ 002/13:54:00
84 002/13:54:00 MET 14:05:37 016/08:05:00 GMT 16:37	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	Resume ZDS Sth Feet Dry @ 002/13:54:00

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
85 002/14:26:59 MET 58:06 016/08:37:59 GMT 09:09:06	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
86 002/15:11:34 MET 42:41 016/09:22:34 GMT 53:41	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
87 002/15:56:08 MET 16:27:15 016/10:07:08 GMT 38:15	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
88 002/16:40:43 MET 17:11:50 016/10:51:43 GMT 11:22:50	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
89 002/17:25:17 MET 56:24 016/11:36:17 GMT 12:07:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
90 002/18:09:52 MET 40:59 016/12:20:52 GMT 51:59	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
91 002/18:54:26 MET 19:25:33 016/13:05:26 GMT 36:33	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
92 002/19:39:01 MET 20:10:08 016/13:50:01 GMT 14:21:08	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
93 002/20:23:35 MET 54:42 016/14:34:35 GMT 15:05:42	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
94 002/21:08:10 MET 39:17 016/15:19:10 GMT 50:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
95 002/21:52:44 MET 22:23:51 016/16:03:44 GMT 34:51	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
96 002/22:37:19 MET 23:08:26 016/16:48:19 GMT 17:19:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
97 002/23:21:53 MET 53:00 016/17:32:53 GMT 18:04:00	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
98 003/00:06:28 MET 37:35 016/18:17:28 GMT 48:35	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
99 003/00:50:59 MET 01:22:06 016/19:01:59 GMT 33:06	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
100 003/01:35:34 MET 02:06:41 016/19:46:34 GMT 20:17:41	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
101 003/02:20:08 MET 51:15 016/20:31:08 GMT 21:02:15	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
102 003/03:04:42 MET 35:49 016/21:15:42 GMT 46:49	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
103 003/03:49:16 MET 04:20:23 016/22:00:16 GMT 31:23	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
104 003/04:33:50 MET 05:04:57 016/22:44:50 GMT 23:15:57	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
105 003/05:18:24 MET 49:31 016/23:29:24 GMT 017/00:00:31	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
106 003/06:02:58 MET 34:05 017/00:13:58 GMT 45:05	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
107 003/06:47:32 MET 07:18:39 017/00:58:32 GMT 01:29:39	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
108 003/07:32:07 MET 08:03:14 017/01:43:07 GMT 02:14:14	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
109 003/08:16:41 MET 47:48 017/02:27:41 GMT 58:48	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
110 003/09:01:15 MET 32:22 017/03:12:15 GMT 43:22	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
111 003/09:45:49 MET 10:16:56 017/03:56:49 GMT 04:27:56	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
112 003/10:30:23 MET 11:01:30 017/04:41:23 GMT 05:12:30	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
113 003/11:14:57 MET 46:04 017/05:25:57 GMT 57:04	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
114 003/11:59:31 MET 12:30:38 017/06:10:31 GMT 41:38	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
115 003/12:44:03 MET 017/06:55:03 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010			ZDS North
116 003/13:02:00 MET 16:08 017/07:13:00 GMT 27:08	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-3 TIG 03/13:35:00
117 003/13:18:00 MET 31:54 017/07:29:00 GMT 42:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	Resume ZDS South Feet Dry @ 003/14:00
118 003/14:13:10 MET 44:17 017/08:24:10 GMT 55:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
119 003/14:57:45 MET 15:28:52 017/09:08:45 GMT 39:52	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
120 003/15:42:19 MET 16:13:26 017/09:53:19 GMT 10:24:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
121 003/16:26:54 MET 58:01 017/10:37:54 GMT 11:09:01	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
122 003/17:11:28 MET 42:35 017/11:22:28 GMT 53:35	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
123 003/17:56:03 MET 18:27:10 017/12:07:03 GMT 38:10	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
124 003/18:40:37 MET 19:11:44 017/12:51:37 GMT 13:22:44	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
125 003/19:25:12 MET 56:19 017/13:36:12 GMT 14:07:19	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
126 003/20:09:46 MET 40:53 017/14:20:46 GMT 51:53	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
127 003/20:54:21 MET 21:25:28 017/15:05:21 GMT 36:28	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
128 003/21:38:55 MET 22:10:02 017/15:49:55 GMT 16:21:02	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
129 003/22:23:30 MET 54:37 017/16:34:30 GMT 17:05:37	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
130 003/23:08:04 MET 39:11 017/17:19:04 GMT 50:11	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
131 003/23:52:39 MET 004/00:23:46 017/18:03:39 GMT 34:46	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
132 004/00:37:11 MET 01:08:18 017/18:48:11 GMT 19:19:18	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
133 004/01:21:45 MET 52:52 017/19:32:45 GMT 20:03:52	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
134 004/02:06:19 MET 37:26 017/20:17:19 GMT 48:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
135 004/02:50:54 MET 03:22:01 017/21:01:54 GMT 33:01	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
136 004/03:35:28 MET 04:06:35 017/21:46:28 GMT 22:17:35	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
137 004/04:20:02 MET 51:09 017/22:31:02 GMT 23:02:09	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
138 004/05:04:36 MET 35:43 017/23:15:36 GMT 46:43	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
139 004/05:49:10 MET 06:20:17 018/00:00:10 GMT 31:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
140 004/06:33:44 MET 07:04:51 018/00:44:44 GMT 01:15:51	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
141 004/07:18:19 MET 49:26 018/01:29:19 GMT 02:00:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
142 004/08:02:53 MET 34:00 018/02:13:53 GMT 45:00	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
143 004/08:47:27 MET 09:18:34 018/02:58:27 GMT 03:29:34	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
144 004/09:32:01 MET 10:03:08 018/03:43:01 GMT 04:14:08	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
145 004/10:16:36 MET 47:43 018/04:27:36 GMT 58:43	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
146 004/11:01:10 MET 32:17 018/05:12:10 GMT 43:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
147 004/11:45:44 MET 12:16:51 018/05:56:44 GMT 06:27:51	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
148 004/12:30:15 MET 018/06:41:15 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010			ZDS North
149 004/12:39:00 MET 53:01 018/06:50:00 GMT 07:04:01	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-4 TIG 04/12:54:00
150 004/12:57:00 MET 13:11:17 018/07:08:00 GMT 22:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.57	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.43	ZDS Prep for Feet Dry @ 13:15:57
151 004/13:15:57 MET 45:47 018/07:26:57 GMT 56:47	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	Resume ZDS Sth Feet Dry @ 004/13:15:57
152 004/13:59:23 MET 14:30:30 018/08:10:23 GMT 41:30	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
153 004/14:43:58 MET 15:15:05 018/08:54:58 GMT 09:26:05	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
154 004/15:28:32 MET 59:39 018/09:39:32 GMT 10:10:39	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
155 004/16:13:07 MET 44:14 018/10:24:07 GMT 55:14	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
156 004/16:57:41 MET 17:28:48 018/11:08:41 GMT 39:48	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION		DAP	E/S	REF ATT/REMARKS	EVENT
157						
004/17:42:16 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS South
18:13:23	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y= 2.80	
018/11:53:16 GMT	Y= 59.00					
12:24:23	OM=357.20					
158						
004/18:26:50 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS North
57:57	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y=357.20	
018/12:37:50 GMT	Y= 59.00					
13:08:57	OM= 2.80					
159						
004/19:11:25 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS South
42:32	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y= 2.80	
018/13:22:25 GMT	Y= 59.00					
53:32	OM=357.20					
160						
004/19:56:00 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS North
20:27:07	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y=357.20	
018/14:07:00 GMT	Y= 59.00					
38:07	OM= 2.80					
161						
004/20:40:34 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS South
21:11:41	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y= 2.80	
018/14:51:34 GMT	Y= 59.00					
15:22:41	OM=357.20					
162						
004/21:25:09 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS North
56:16	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y=357.20	
018/15:36:09 GMT	Y= 59.00					
16:07:16	OM= 2.80					
163						
004/22:09:43 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS South
40:50	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y= 2.80	
018/16:20:43 GMT	Y= 59.00					
51:50	OM=357.20					
164						
004/22:54:18 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS North
23:25:25	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y=357.20	
018/17:05:18 GMT	Y= 59.00					
36:25	OM= 2.80					
165						
004/23:38:52 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS South
005/00:09:59	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y= 2.80	
018/17:49:52 GMT	Y= 59.00					
18:20:59	OM=357.20					
166						
005/00:23:24 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS North
54:31	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y=357.20	
018/18:34:24 GMT	Y= 59.00					
19:05:31	OM= 2.80					
167						
005/01:07:59 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS South
39:06	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y= 2.80	
018/19:18:59 GMT	Y= 59.00					
50:06	OM=357.20					
168						
005/01:52:33 MET	TGT=2	A11	RATE 0.0030	EARTH	LVLH R=301.00	ZDS North
02:23:40	BV=5	AUTO	DB AT 0.100	R 59	P=180.00	
	P= 90.00	VERN	DB RT 0.010	P 90	Y=357.20	
018/20:03:33 GMT	Y= 59.00					
34:40	OM= 2.80					

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
169 005/02:37:07 MET 03:08:14 018/20:48:07 GMT 21:19:14	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
170 005/03:21:41 MET 52:48 018/21:32:41 GMT 22:03:48	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
171 005/04:06:15 MET 37:22 018/22:17:15 GMT 48:22	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
172 005/04:50:50 MET 05:21:57 018/23:01:50 GMT 32:57	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
173 005/05:35:24 MET 06:06:31 018/23:46:24 GMT 019/00:17:31	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
174 005/06:19:58 MET 51:05 019/00:30:58 GMT 01:02:05	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
175 005/07:04:32 MET 35:39 019/01:15:32 GMT 46:39	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
176 005/07:49:06 MET 08:20:13 019/02:00:06 GMT 31:13	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
177 005/08:33:41 MET 09:04:48 019/02:44:41 GMT 03:15:48	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
178 005/09:18:15 MET 49:22 019/03:29:15 GMT 04:00:22	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
179 005/10:02:49 MET 33:56 019/04:13:49 GMT 44:56	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
180 005/10:47:23 MET 11:18:30 019/04:58:23 GMT 05:29:30	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
181 005/11:31:58 MET 12:03:05 019/05:42:58 GMT 06:14:05	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
182 005/12:16:29 MET 47:36 019/06:27:29 GMT 58:36	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
183 005/13:01:03 MET 32:10 019/07:12:03 GMT 43:10	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
184 005/13:45:36 MET 46:04 019/07:56:36 GMT 57:04	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A10 AUTO VERN RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
185 005/14:07:00 MET 21:18 019/08:18:00 GMT 32:18	TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 AUTO VERN RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-5 TIG 05/14:44:00
186 005/14:47:00 MET 15:00:54 019/08:58:00 GMT 09:11:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A10 AUTO VERN RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS Prep for Feet Dry @ 005/15:09:23
187 005/15:09:23 MET 019/09:20:23 GMT	DAP A11				Feet Dry ZDS resumes
188 005/15:14:45 MET 45:52 019/09:25:45 GMT 56:52	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
189 005/15:59:21 MET 16:30:28 019/10:10:21 GMT 41:28	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
190 005/16:43:54 MET 17:15:01 019/10:54:54 GMT 11:26:01	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
191 005/17:28:30 MET 59:37 019/11:39:30 GMT 12:10:37	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
192 005/18:13:04 MET 44:11 019/12:24:04 GMT 55:11	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
193 005/18:57:39 MET 19:28:46 019/13:08:39 GMT 39:46	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
194 005/19:42:13 MET 20:13:20 019/13:53:13 GMT 14:24:20	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
195 005/20:26:48 MET 57:55 019/14:37:48 GMT 15:08:55	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
196 005/21:11:22 MET 42:29 019/15:22:22 GMT 53:29	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
197 005/21:55:57 MET 22:27:04 019/16:06:57 GMT 38:04	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
198 005/22:40:31 MET 23:11:38 019/16:51:31 GMT 17:22:38	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
199 005/23:25:06 MET 56:13 019/17:36:06 GMT 18:07:13	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
200 006/00:09:37 MET 40:44 019/18:20:37 GMT 51:44	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
201 006/00:54:12 MET 01:25:19 019/19:05:12 GMT 36:19	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
202 006/01:38:45 MET 02:09:52 019/19:49:45 GMT 20:20:52	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
203 006/02:23:20 MET 54:27 019/20:34:20 GMT 21:05:27	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
204 006/03:07:54 MET 39:01 019/21:18:54 GMT 50:01	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT		MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
205	006/03:52:29 MET 04:23:36	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
206	006/04:37:02 MET 05:08:09	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
207	006/05:21:37 MET 52:44	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
208	006/06:06:11 MET 37:18	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
209	006/06:50:46 MET 07:21:53	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
210	006/07:35:19 MET 08:06:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
211	006/08:19:54 MET 51:01	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
212	006/09:04:27 MET 35:34	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
213	006/09:49:02 MET 10:20:09	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
214	006/10:33:36 MET 11:04:43	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
215	006/11:18:11 MET 49:18	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
216	006/12:02:44 MET 020/06:13:44 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010			ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF	ATT/REMARKS	EVENT
217 006/12:10:33 MET 24:33 020/06:21:33 GMT 35:33	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 AUTO VERN RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24		Flycast Trim-6 TIG 06/12:27:00
218 006/12:30:00 MET 43:54 020/06:41:00 GMT 54:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A10 AUTO VERN RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80		ZDS Prep for Feet Dry @ 006/13:21:56
219 006/13:21:56 MET 020/07:32:56 GMT	DAP A11					Feet Dry ZDS resumes
220 006/13:31:48 MET 14:02:55 020/07:42:48 GMT 08:13:55	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20		ZDS North
221 006/14:16:23 MET 51 020/08:27:23 GMT 51	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A10 AUTO VERN RATE 0.2000 DB AT 3.000 DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80		ZDS South
222 006/15:00:57 MET 32:04 020/09:11:57 GMT 43:04	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20		ZDS North
223 006/15:45:32 MET 16:16:39 020/09:56:32 GMT 10:27:39	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80		ZDS South
224 006/16:30:06 MET 17:01:13 020/10:41:06 GMT 11:12:13	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20		ZDS North
225 006/17:14:41 MET 45:48 020/11:25:41 GMT 56:48	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80		ZDS South
226 006/17:59:15 MET 18:30:22 020/12:10:15 GMT 41:22	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20		ZDS North
227 006/18:43:50 MET 19:14:57 020/12:54:50 GMT 13:25:57	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80		ZDS South
228 006/19:28:24 MET 59:31 020/13:39:24 GMT 14:10:31	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20		ZDS North

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

Attitude Timeline

MET/GMT		MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
229	006/20:12:59 MET 44:06	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/14:23:59 GMT 55:06						
230	006/20:57:33 MET 21:28:40	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	020/15:08:33 GMT 39:40						
231	006/21:42:08 MET 22:13:15	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/15:53:08 GMT 16:24:15						
232	006/22:26:42 MET 57:49	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	020/16:37:42 GMT 17:08:49						
233	006/23:11:17 MET 42:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/17:22:17 GMT 53:24						
234	006/23:55:51 MET 007/00:26:58	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	020/18:06:51 GMT 37:58						
235	007/00:40:24 MET 01:11:31	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/18:51:24 GMT 19:22:31						
236	007/01:24:57 MET 56:04	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	020/19:35:57 GMT 20:07:04						
237	007/02:09:32 MET 40:39	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/20:20:32 GMT 51:39						
238	007/02:54:06 MET 03:25:13	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	020/21:05:06 GMT 36:13						
239	007/03:38:40 MET 04:09:47	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/21:49:40 GMT 22:20:47						
240	007/04:23:14 MET 54:21	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	020/22:34:14 GMT 23:05:21						

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

Attitude Timeline

MET/GMT		MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
241	007/05:07:49 MET 38:56	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	020/23:18:49 GMT 49:56	Y= 59.00 OM=357.20					
242	007/05:52:22 MET 06:23:29	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	021/00:03:22 GMT 34:29	Y= 59.00 OM= 2.80					
243	007/06:36:57 MET 07:08:04	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	021/00:47:57 GMT 01:19:04	Y= 59.00 OM=357.20					
244	007/07:21:31 MET 52:38	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	021/01:32:31 GMT 02:03:38	Y= 59.00 OM= 2.80					
245	007/08:06:05 MET 37:12	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	021/02:17:05 GMT 48:12	Y= 59.00 OM=357.20					
246	007/08:50:39 MET 09:21:46	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	021/03:01:39 GMT 32:46	Y= 59.00 OM= 2.80					
247	007/09:35:14 MET 10:06:21	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	021/03:46:14 GMT 04:17:21	Y= 59.00 OM=357.20					
248	007/10:19:47 MET 50:54	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	021/04:30:47 GMT 05:01:54	Y= 59.00 OM= 2.80					
249	007/11:04:22 MET 35:29	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	021/05:15:22 GMT 46:29	Y= 59.00 OM=357.20					
250	007/11:48:56 MET 12:20:03	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
	021/05:59:56 GMT 06:31:03	Y= 59.00 OM= 2.80					
251	007/12:33:27 MET 13:04:34	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
	021/06:44:27 GMT 07:15:34	Y= 59.00 OM=357.20					
252	007/13:18:01 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010			ZDS North
	021/07:29:01 GMT	Y= 59.00 OM= 2.80					

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
253	*** MNVR INTERRUPT ***				
007/13:40:00 MET 54:11	TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 AUTO DB AT 3.000 VERN DB RT 0.050	RATE 0.2000 R 121 P 96	EARTH LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-7 TIG 07/14:16:00
021/07:51:00 GMT 08:05:11					
254					
007/14:19:00 MET 32:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A10 AUTO DB AT 3.000 VERN DB RT 0.050	RATE 0.2000 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y= 2.80	ZDS Prep for Feet Dry @ 007/14:41:36
021/08:30:00 GMT 43:54					
255					
007/14:41:36 MET	DAP A11				Feet Dry ZDS resumes
021/08:52:36 GMT					
256					
007/14:47:08 MET 15:18:15	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y=357.20	ZDS North
021/08:58:08 GMT 09:29:15					
257					
007/15:31:43 MET 16:02:50	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
021/09:42:43 GMT 10:13:50					
258					
007/16:16:17 MET 47:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y=357.20	ZDS North
021/10:27:17 GMT 58:24					
259					
007/17:00:52 MET 31:59	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
021/11:11:52 GMT 42:59					
260					
007/17:45:26 MET 18:16:33	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y=357.20	ZDS North
021/11:56:26 GMT 12:27:33					
261					
007/18:30:01 MET 19:01:08	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
021/12:41:01 GMT 13:12:08					
262					
007/19:14:35 MET 45:42	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y=357.20	ZDS North
021/13:25:35 GMT 56:42					
263					
007/19:59:10 MET 20:30:17	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
021/14:10:10 GMT 41:17					
264					
007/20:43:44 MET 21:14:51	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 R 59 P 90	EARTH LVLH R=301.00 P=180.00 Y=357.20	ZDS North
021/14:54:44 GMT 15:25:51					

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
265 007/21:28:19 MET 59:26 021/15:39:19 GMT 16:10:26	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
266 007/22:12:53 MET 44:00 021/16:23:53 GMT 55:00	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
267 007/22:57:28 MET 23:28:35 021/17:08:28 GMT 39:35	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
268 007/23:42:02 MET 008/00:13:09 021/17:53:02 GMT 18:24:09	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
269 008/00:26:35 MET 57:42 021/18:37:35 GMT 19:08:42	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
270 008/01:11:09 MET 42:16 021/19:22:09 GMT 53:16	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
271 008/01:55:43 MET 02:26:50 021/20:06:43 GMT 37:50	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
272 008/02:40:17 MET 03:11:24 021/20:51:17 GMT 21:22:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
273 008/03:24:52 MET 55:59 021/21:35:52 GMT 22:06:59	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
274 008/04:09:25 MET 40:32 021/22:20:25 GMT 51:32	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
275 008/04:54:00 MET 05:25:07 021/23:05:00 GMT 36:07	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
276 008/05:38:34 MET 06:09:41 021/23:49:34 GMT 022/00:20:41	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAF	E/S	REF ATT/REMARKS	EVENT
277 008/06:23:09 MET 54:16 022/00:34:09 GMT 01:05:16	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
278 008/07:07:42 MET 38:49 022/01:18:42 GMT 49:49	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
279 008/07:52:17 MET 08:23:24 022/02:03:17 GMT 34:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
280 008/08:36:51 MET 09:07:58 022/02:47:51 GMT 03:18:58	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
281 008/09:21:25 MET 52:32 022/03:32:25 GMT 04:03:32	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
282 008/10:05:59 MET 06:27 022/04:16:59 GMT 17:27	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
283 008/10:50:31 MET 11:21:38 022/05:01:31 GMT 32:38	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
284 008/11:35:05 MET 12:06:12 022/05:46:05 GMT 06:17:12	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
285 008/12:19:40 MET 50:47 022/06:30:40 GMT 07:01:47	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
286 008/13:04:14 MET 022/07:15:14 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010			ZDS North
287 008/13:13:00 MET 27:01 022/07:24:00 GMT 38:01	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-8 TIG 08/13:28:00
288 008/13:31:00 MET 44:54 022/07:42:00 GMT 55:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS Prep for Feet Dry @ 008/14:27:35

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT	
289 008/14:27:35 MET	DAP A11				Feet Dry ZDS resumes	
022/08:38:35 GMT						
290 008/14:33:23 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/08:44:23 GMT	Y= 59.00 OM= 2.80					
008/15:17:58 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/09:28:58 GMT	Y= 59.00 OM=357.20					
008/16:02:32 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/10:13:32 GMT	Y= 59.00 OM= 2.80					
008/16:47:07 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/10:58:07 GMT	Y= 59.00 OM=357.20					
008/17:31:41 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/11:42:41 GMT	Y= 59.00 OM= 2.80					
008/18:16:16 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/12:27:16 GMT	Y= 59.00 OM=357.20					
008/19:00:50 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/13:11:50 GMT	Y= 59.00 OM= 2.80					
008/19:45:25 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/13:56:25 GMT	Y= 59.00 OM=357.20					
008/20:29:59 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/14:40:59 GMT	Y= 59.00 OM= 2.80					
008/21:14:34 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/15:25:34 GMT	Y= 59.00 OM=357.20					
008/21:59:08 MET	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/16:10:08 GMT	Y= 59.00 OM= 2.80					

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT	
301 008/22:43:43 MET 23:14:50	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/16:54:43 GMT 17:25:50						
302 008/23:28:17 MET 59:24	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/17:39:17 GMT 18:10:24						
303 009/00:12:48 MET 43:55	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/18:23:48 GMT 54:55						
304 009/00:57:22 MET 01:28:29	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/19:08:22 GMT 39:29						
305 009/01:41:57 MET 02:13:04	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/19:52:57 GMT 20:24:04						
306 009/02:26:31 MET 57:38	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/20:37:31 GMT 21:08:38						
307 009/03:11:05 MET 42:12	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/21:22:05 GMT 53:12						
308 009/03:55:39 MET 04:26:46	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/22:06:39 GMT 37:46						
309 009/04:40:13 MET 05:11:20	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
022/22:51:13 GMT 23:22:20						
310 009/05:24:47 MET 55:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
022/23:35:47 GMT 023/00:06:54						
311 009/06:09:22 MET 40:29	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/00:20:22 GMT 51:29						
312 009/06:53:56 MET 07:25:03	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/01:04:56 GMT 36:03						

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
313 009/07:38:30 MET 08:09:37 023/01:49:30 GMT 02:20:37	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
314 009/08:23:04 MET 54:11 023/02:34:04 GMT 03:05:11	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
315 009/09:07:38 MET 38:45 023/03:18:38 GMT 49:45	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
316 009/09:52:12 MET 10:23:19 023/04:03:12 GMT 34:19	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
317 009/10:36:47 MET 11:07:54 023/04:47:47 GMT 05:18:54	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
318 009/11:21:21 MET 023/05:32:21 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010			ZDS North
319 009/11:40:00 MET 54:08 023/05:51:00 GMT 06:05:08	*** MNVR INTERRUPT *** TGT=2 BV=5 P=259.20 Y= 59.00 OM= 0.00	A10 RATE 0.2000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 121 P 96	LVLH R= 58.55 P= 5.61 Y= 9.24	Flycast Trim-9 TIG 09/12:17:00
320 009/12:20:00 MET 29:16 023/06:31:00 GMT 40:16	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A12 RATE 0.3000 AUTO DB AT 3.000 VERN DB RT 0.050	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS Prep for Data Init @ 09/12:35:00
321 009/12:35:00 MET 023/06:46:00 GMT	DAP A11				Data Init ZDS resumes
322 009/12:50:25 MET 13:21:32 023/07:01:25 GMT 32:32	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
323 009/13:34:59 MET 14:06:06 023/07:45:59 GMT 08:17:06	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
324 009/14:19:33 MET 50:40 023/08:30:33 GMT 09:01:40	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 RATE 0.0030 AUTO DB AT 0.100 VERN DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION		DAP	E/S	REF ATT/REMARKS	EVENT
325						
009/15:04:08 MET 35:15	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/09:15:08 GMT 46:15	Y= 59.00 OM=357.20					
326						
009/15:48:42 MET 16:19:49	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/09:59:42 GMT 10:30:49	Y= 59.00 OM= 2.80					
327						
009/16:33:17 MET 17:04:24	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/10:44:17 GMT 11:15:24	Y= 59.00 OM=357.20					
328						
009/17:17:51 MET 48:58	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/11:28:51 GMT 59:58	Y= 59.00 OM= 2.80					
329						
009/18:02:26 MET 33:33	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/12:13:26 GMT 44:33	Y= 59.00 OM=357.20					
330						
009/18:47:00 MET 19:18:07	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/12:58:00 GMT 13:29:07	Y= 59.00 OM= 2.80					
331						
009/19:31:35 MET 20:02:42	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/13:42:35 GMT 14:13:42	Y= 59.00 OM=357.20					
332						
009/20:16:09 MET 47:16	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/14:27:09 GMT 58:16	Y= 59.00 OM= 2.80					
333						
009/21:00:44 MET 31:51	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/15:11:44 GMT 42:51	Y= 59.00 OM=357.20					
334						
009/21:45:19 MET 22:16:26	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/15:56:19 GMT 16:27:26	Y= 59.00 OM= 2.80					
335						
009/22:29:53 MET 23:01:00	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
023/16:40:53 GMT 17:12:00	Y= 59.00 OM=357.20					
336						
009/23:14:28 MET 45:35	TGT=2 BV=5 P= 90.00	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
023/17:25:28 GMT 56:35	Y= 59.00 OM= 2.80					

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

Attitude Timeline

MET/GMT		MNVR OPTION	DAP		E/S	REF ATT/REMARKS	EVENT
337	009/23:59:03 MET 010/00:30:10 023/18:10:03 GMT 41:10	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
338	010/00:43:33 MET 01:14:40 023/18:54:33 GMT 19:25:40	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
339	010/01:28:08 MET 59:15 023/19:39:08 GMT 20:10:15	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
340	010/02:12:42 MET 43:49 023/20:23:42 GMT 54:49	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
341	010/02:57:16 MET 03:28:23 023/21:08:16 GMT 39:23	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
342	010/03:41:50 MET 04:12:57 023/21:52:50 GMT 22:23:57	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
343	010/04:26:25 MET 57:32 023/22:37:25 GMT 23:08:32	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
344	010/05:10:59 MET 42:06 023/23:21:59 GMT 53:06	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
345	010/05:55:33 MET 06:26:40 024/00:06:33 GMT 37:40	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
346	010/06:40:07 MET 07:11:14 024/00:51:07 GMT 01:22:14	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North
347	010/07:24:42 MET 55:49 024/01:35:42 GMT 02:06:49	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
348	010/08:09:15 MET 40:22 024/02:20:15 GMT 51:22	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO VERN	RATE 0.0030 DB AT 0.100 DB RT 0.010	EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y=357.20	ZDS North

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
349 010/08:53:50 MET 09:24:57 024/03:04:50 GMT 35:57	TGT=2 BV=5 P= 90.00 Y= 59.00 OM=357.20	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 EARTH R 59 P 90	LVLH R=301.00 P=180.00 Y= 2.80	ZDS South
350 010/09:38:24 MET 024/03:49:24 GMT	TGT=2 BV=5 P= 90.00 Y= 59.00 OM= 2.80	A11 AUTO DB AT 0.100 VERN DB RT 0.010	RATE 0.0030 EARTH R 0 P 90		ZDS North
351 010/10:00:00 MET 11:58 024/04:11:00 GMT 22:58	*** MNVR INTERRUPT *** TGT=2 BV=5 P=177.00 Y=358.00 OM=289.00	A10 AUTO DB AT 3.000 VERN DB RT 0.050	RATE 0.2000 EARTH R 326 P 176	LVLH R= 71.00 P= 92.87 Y= 2.19	Mast Retract
352 010/13:00:00 MET 07:25 024/07:11:00 GMT 18:25	TGT=2 BV=3 P= 90.00 Y= 0.00 OM=270.00	A9 AUTO DB AT 3.000 VERN DB RT 0.020	RATE 0.2000 EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y= 90.00	-ZLV +YVV nose south
353 010/14:15:00 MET 28:37 024/08:26:00 GMT 39:37	TGT=4 RA= 305.248 BV=5 DEC= -19.503S P=270.00 Y= 0.00 OM=270.00	A9 AUTO DB AT 3.000 VERN DB RT 0.020	RATE 0.2000 SUN R 180 P 90	INRTL R=104.18 P=234.11 Y=322.56	PTC Setup
354 010/14:30:00 MET 024/08:41:00 GMT	INRTL BV=1 ROTR P= 0.00 Y= 0.00	A2 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.4000 EARTH R 0 P 90	INRTL R=104.29 P=234.27 Y=322.59	PTC
355 010/17:00:00 MET 024/11:11:00 GMT		A1 INRT DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 SUN R 180 P 90	INRTL R=104.29 HOLD P=234.27 Y=322.59	INRL HOLD FOR FCS C/O
356 010/18:00:00 MET 06 024/12:11:00 GMT 06	TGT=4 RA= 305.412 BV=5 DEC= -19.467S P=270.00 Y= 0.00 OM=270.00	A9 AUTO DB AT 3.000 VERN DB RT 0.020	RATE 0.2000 SUN R 180 P 90	INRTL R=105.33 P=235.78 Y=322.82	PTC Setup
357 010/18:15:00 MET 024/12:26:00 GMT	INRTL BV=1 ROTR P= 0.00 Y= 0.00	A2 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.4000 EARTH R 0 P 90	INRTL R=105.42 P=235.91 Y=322.84	PTC
358 010/22:30:00 MET 43:13 024/16:41:00 GMT 54:13	INRTL R= 0.00 MNVR P= 77.00 Y= 24.00	A9 AUTO DB AT 3.000 VERN DB RT 0.020	RATE 0.2000 SUN R 242 P 84		D/O IMU ALIGN -Y: 47 -Z: 36 AOS 22:30 LOS 23:03
359 010/22:45:00 MET 52:13 024/16:56:00 GMT 17:03:13	INRTL R= 4.00 MNVR P=147.00 Y=329.00	A9 AUTO DB AT 3.000 VERN DB RT 0.020	RATE 0.2000 SUN R 230 P 81		D/O VERIF -Y: 104 -Z: 46 AOS 22:47 LOS 23:26
360 010/23:05:00 MET 16:43 024/17:16:00 GMT 27:43	TGT=4 RA= 305.634 BV=5 DEC= -19.417S P=184.00 Y= 0.00 OM=270.00	A9 AUTO DB AT 3.000 VERN DB RT 0.020	RATE 0.2000 SUN R 180 P 176	INRTL R=109.70 P=213.27 Y= 46.30	-XSI RAD Cold Soak Bay Sth for Th.

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
361					
011/00:40:00 MET	INRTL R=134.00	A9	RATE 0.2000	SUN	
42:33	MNVR P=177.00	AUTO	DB AT 3.000	R 90	Comm attitude
	Y= 33.00	VERN	DB RT 0.020	P 150	Pyld bay south
024/18:51:00 GMT					
53:33					
362					
011/02:55:00 MET	INRTL R=212.00	TRN	RATE 0.5000	SUN	
58:59	MNVR P=258.00	AUTO	DB AT 3.50	R 88	D/O TIG
	Y=308.00	PRI	DB RT 0.20	P 71	TIG 11/03:14:00
024/21:06:00 GMT					
09:59					

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

FLIGHT PLAN NOTES

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV105/Endeavour
 Inclination: 57°
 Insertion Altitude: 127 nm
 Duration: 11+2 days

B. FLIGHT OVERVIEW

The primary objective of this flight is to successfully perform the operations of the Shuttle Radar Topography Mission (SRTM)/Space Radar Lab-3 (SRL-3). In addition, the secondary objective of this flight is to perform the requirements for EarthKAM. The mission launch date is January 13, 2000.

C. MAJOR EVENTS

<u>EVENT</u>	<u>ORBIT</u>	<u>MET</u>	<u>DATE</u>	<u>CST</u>	<u>ΔV</u> (fps)	<u>HP/HA</u> (nm)
Launch	--	00/00:00	01/13/00	12:11	--	--
OMS-2 C/O	1	00/00:35	01/13/00	12:48	184.5	127/127
ORB ADJ	4	00/04:25	01/13/00	16:36	1.3	128/128
MAST DPLY	4	00/05:20	01/13/00	17:31	--	127/128
TRIM 1	25	01/12:29	01/15/00	00:40	3.4	127/126
TRIM 2	42	02/13:22	01/16/00	01:33	3.3	127/126
TRIM 3	58	03/13:35	01/17/00	01:46	3.1	127/126
TRIM 4	74	04/12:54	01/18/00	01:05	3.4	128/126
TRIM 5	91	05/14:44	01/19/00	02:55	3.3	127/126
TRIM 6	106	06/12:27	01/20/00	00:38	3.2	127/126
TRIM 7	123	07/14:16	01/21/00	02:27	3.3	127/125
TRIM 8	139	08/13:28	01/22/00	01:39	3.3	128/127
TRIM 9	154	01/12:17	01/23/00	00:28	3.1	128/125
MAST						
RETRACT	169	10/10:00	01/23/00	22:11	--	125/127
DEORBIT	180	11/03:14	01/24/00	15:25	234	--
LANDING	181	11/04:08	01/24/00	16:19	--	--

D. LANDING OPPORTUNITIES

		<u>Landing Orbit No.</u>	<u>Site</u>	<u>Local Time</u>	<u>MET</u>
Nominal	Primary	180	KSC	17:19	11/04:08
	1 Rev Late	181	KSC	18:51	11/05:40
	Weather Alt	182	EDW	17:17	11/07:06
1 Day Late	Primary	196	KSC	17:04	12/03:53
	1 Rev Late	197	KSC	18:37	12/05:26
	Weather Alt	198	EDW	17:02	12/06:51
2 Day Late	Primary	212	KSC	16:49	13/03:38
	1 Rev Late	213	KSC	18:21	13/05:10
	Weather Alt	214	EDW	16:47	13/06:36

E. CREW

STS-99

RED

BLUE

CDR – Kevin Kregel	PLT – Dom Gorie
MS1 – Gerhard P. J. Thiele	MS3 – Janice Voss
MS2 – Janet Kavandi	MS4 – Mamoru Mohri

F. COMMUNICATIONS

TDRS Support:	East (47° W), West (171° W)
Backup Real-Time TV:	Merritt Island (MIL), Dryden (DFR)
Contingency GSTDN/UHF:	MIL, Wallops (WLP), DFR, and Oakhangar (OTS)
Contingency RTS:	OTS, Diego Garcia (DGS), Vandenberg (VTS), Colorado (CTS), New Hampshire (NHS), Hawaii (HTS), and Guam (GTS)

G. PAYLOADS

SPACE RADAR TOPOGRAPHY MISSION (SRTM)

1. The SRTM payload is an Earth observation experiment that by using the Interferometric Synthetic Aperture Radar (IFSAR) will provide a global digital elevation map of 80% of the Earth's surface.

The SRTM payload is comprised of the following experiments and supporting recording systems:

- a. The C-band Interferometric Synthetic Aperture Radar (C-IFSAR) – The C-IFSAR system is a fourth generation of imaging radars flown on the shuttle. The primary difference between C-IFSAR/SRTM and its predecessor flown during the Space Radar Laboratory (SRL) missions is the addition of a C-band receive-only antenna and supporting structure at the end of a deployable 60-meter mast, and addition of a precision Antenna and Orbit Determination Avionics (AODA) system.
- b. The X-band Synthetic Aperture Radar (X-SAR) system for SRTM is an interferometric radar follow-on to the X-SAR system that flew as part of SRL missions. It is made up of an X-band radar containing a transmit and receive antenna (vertically polarized) in the payload bay and a second receive-only antenna also mounted on a structure at the end of the 60-meter SRTM mast.
- c. Three Payload High Rate Recorders (PHRRs) will be carried in the aft flight deck, with a fourth warm spare in the MAR and a fifth cold spare in storage.

2. Earth Knowledge Acquired for Middle Schools (EarthKAM)

The EarthKAM payload plans to conduct Earth observations using the Electronic Still Camera (ESC) installed in the overhead starboard window of the Aft Flight Deck (AFD). The EarthKAM payload will use an ESC provided as Government–Furnished Equipment (GFE), a Payload and General Support Computer (PGSC) (IBM Thinkpad 755C) connected to the onboard Ethernet Local Area Network (LAN), and Personal Computer Memory Card International Association (PCMCIA)/Small Computer System Interface (SCSI) cards with integral cable. The LAN connection is not required if the Orbiter Communications Adapter (OCA) PGSC is used to support EarthKAM operations. The ESC will be bracket–mounted to the overhead window facing nadir to image various student–selected sites on the Earth during the predock and postseparation portions of the mission.

H. ON–ORBIT DETAILED TEST OBJECTIVES (DTOs)

1. HEAT EXCHANGE UNIT EVALUATION (DTO 686)

The purpose of this DTO is to test the effectiveness of the Portable Heat Exchange Unit in microgravity. The objectives of the DTO are to demonstrate the technology in microgravity, identify potential applications for utilization on the shuttle, and measure the chilling capacity of the unit. Once the water overboard dump line is available, a crewmember will connect the heat exchange unit to the waste dumphine via a quick disconnect.

2. URINE COLLECTION DEVICE (DTO 690)

The purpose of this DTO is to evaluate the fit of several sizes/types of manual Urine Collection Devices (UCDs) and their adapters (anatomical interface) in microgravity; evaluate the capability of the adapter and valve design to accommodate urine flow with minimal leakage; and evaluate hygienic aspects of the UCD design with respect to minimizing urine remaining in or around the adapter which could potentially get loose into the cabin. This accomplishment will also increase the accuracy of science measurements of total urine volume within the bag. This DTO will also evaluate the user–friendliness of urine collection operations, and (Lower Priority) evaluate techniques for returning urine to the Waste Collection System (WCS).

3. MINIATURIZED AIRBORNE GPS RECEIVER—MAGR (DTO 700–14)

The purpose of this experiment is to demonstrate the performance and operations of the GPS during orbiter ascent, on–orbit operations, entry, and landing phases utilizing a modified military GPS receiver processor and the existing orbiter GPS antennas. Crew involvement will be limited to activation and deactivation of GPS receiver and upper and lower GPS preamplifier power.

4. HIGH DEFINITION TELEVISION (HDTV) CAMCORDER DEMONSTRATION (DTO 700–17A)

This DTO is a joint NASA/NASDA collaborative effort. The NASA objective is to provide HDTV capability to the shuttle. A standalone battery–powered HDTV camcorder will be flown to document various mission objectives and scenes in the HDTV format. Some of the scenes will also be recorded using the side–by–side comparison of the current shuttle NTSC video capability and the HDTV format. NASDA objectives currently contain multiple Earth Obs targets that will be uplinked during the mission and JSC Earth Obs.

5. CROSSWIND LANDING PERFORMANCE (DTO 805)

The purpose is to demonstrate the capability to perform a manually controlled landing in the presence of a crosswind. No on-orbit activities are required for this DTO.

I. DETAILED SUPPLEMENTARY OBJECTIVES (DSOs)

1. EFFECT OF SPACE FLIGHT ON BONE AND MUSCLE (DSO 206)

The purpose of this DSO is to investigate the basic mechanism of the effects of space flight on the musculoskeletal system in order to reduce bone loss and muscle atrophy during long-term space flight. No on-orbit activities are required.

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

This DSO will attempt to determine the frequency of induced reactivation of latent viruses, latent virus shedding, and clinical disease after exposure to the physical, physiological, and psychological stresses associated with space flight. Each crewmember will perform saliva collection each flight day during post sleep.

3. INDIVIDUAL SUSCEPTIBILITY TO POST-SPACEFLIGHT ORTHOSTATIC INTOLERANCE (DSO 496)

This DSO looks to elucidate mechanisms responsible for post-flight autonomic dysfunction which could be a contributor to orthostatic intolerance in order to customize countermeasure protocols for future flights. No on-orbit activities are required.

4. SPACE FLIGHT AND IMMUNE FUNCTIONS (DSO 498)

This DSO will try to determine the functional status of important elements of the immune response to provide valuable data to help in the assessment of infectious disease risks associated with long-duration space flight. No on-orbit activities are required for this DSO.

5. EDUCATIONAL ACTIVITIES (DSO 802)

This DSO supports the live TV downlink of educational activities performed by the flight crew explicitly toward or involving the participation of students and teacher. Two crewmembers will be utilized for the duration of the event, typically 30 minutes in length.

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CUE CARD CONFIGURATION

CUE CARD
CONFIGURATION

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STS-99 DAP A - GENERIC

	ITEM #	A1	A2	A3	A4	A5	A6	A7
PRI								
ROT RATE	10	0.2000	0.4000	0.2000	0.5000	0.2000	0.2000	0.2000
ATT DB	11	5.00	1.00	1.00	3.00	5.00	5.00	2.00
RATE DB	12	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10	0.10	0.10
COMP	14	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL	TAIL	ALL
Y OPTION	16	ALL	ALL	TAIL	ALL	ALL	TAIL	ALL
TRAN PLS	17	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ALT								
RATE DB	18	0.200	0.200	0.200	0.200	0.070	0.070	0.200
JET OPT	19	ALL	ALL	ALL	ALL	ALL	TAIL	ALL
# JETS	20	2	2	2	2	1	1	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN								
ROT RATE	23	0.2000	0.4000	0.0080	0.2000	0.2000	0.2000	0.2000
ATT DB	24	1.000	1.000	0.070	1.000	1.000	1.000	1.000
RATE DB	25	0.020	0.020	0.010	0.020	0.020	0.020	0.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/ POST DEPLOY	LOSS OF VERN (NOSE & TAIL)	LOSS OF VERN (TAIL ONLY)	RNDZ

CUE CARD
CONFIGURATION

FLT PLN-1a/99/O/A

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FLT PLN/99/FIN

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BACK OF 'STS 99 DAP A - GENERIC'

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HOOK
VELCRO

STS-99 DAP A CONFIGURATIONS

	ITEM #	A8	A9	A10	A11	A12	A14	A15
PRI								
ROT RATE	10	0.2000	0.2000	0.1000	0.1000	0.1000	0.2000	0.2000
ATT DB	11	2.00	3.00	3.00	1.00	3.00	5.00	5.00
RATE DB	12	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	13	0.10	0.10	0.10	0.10	0.10	0.10	0.42
COMP	14	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Y OPTION	16	ALL	ALL	ALL	ALL	ALL	ALL	ALL
TRAN PLS	17	0.05	0.10	0.10	0.10	0.10	0.10	0.10
ALT								
RATE DB	18	0.200	0.200	0.100	0.070	0.100	0.200	0.200
JET OPT	19	ALL	ALL	TAIL	ALL	ALL	TAIL	TAIL
# JETS	20	2	2	2	1	2	2	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	1.68	1.68
DELAY	22	0.00	0.00	4.00	4.00	4.00	1.68	1.68
VERN								
ROT RATE	23	0.2000	0.2000	0.2000	0.0030	0.3000	0.2000	0.2000
ATT DB	24	1.000	3.000	3.000	0.100	3.000	1.000	1.000
RATE DB	25	0.020	0.020	0.050	0.010	.050	0.020	0.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	1	2(4) ¹	3	4	6	8
PURPOSE		PROX OPS	RETRACTED MNVRS	MAST DEPLOYED MNVRS	SCIENCE	MAST DPLYD HIGH MNVRT	FLYCAST SINGLE- PULSE	FLYCAST MULTI- PULSE

NOTE: **BOLD-ITALIC** indicate a change from I-load
 1 DAPs A10 and B10 use either CNTL ACC 2 or 4. CNTL ACC are modified via the PAYLOAD OPS
 DAMPER ACTIVATION and MAST STOW procedures

FLT PLN-1b/99/O/B

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HINGE

STS-99 DAP B - GENERIC

	ITEM #	B1	B2	B3	B4	B5	B6	B7
PRI								
ROT RATE	30	0.5000	0.2000	0.2000	0.2000	0.2000	0.5000	0.5000
ATT DB	31	3.00	3.00	3.00	0.30	3.00	3.00	2.00
RATE DB	32	0.20	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL
Y OPTION	36	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL
TRAN PLS	37	0.10	0.02	0.02	0.02	0.02	0.02	0.05
ALT								
RATE DB	38	0.200	0.070	0.070	0.200	0.200	0.200	0.200
JET OPT	39	ALL	TAIL	ALL	ALL	ALL	ALL	ALL
# JETS	40	2	1	1	2	2	2	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN								
ROT RATE	43	0.2000	0.2000	0.2000	0.0080	0.0160	0.2000	0.2000
ATT DB	44	1.000	1.000	1.000	0.100	0.033	1.000	1.000
RATE DB	45	.020	.020	.020	.010	.020	.020	.020
ROT PLS	46	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP	47	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48	0	0	0	0	0	0	0
PURPOSE		NOM OMS & RCS BURNS	LOSS OF VERN (TAIL ONLY)	LOSS OF VERN (NOSE & TAIL)		COAS CAL		RNDZ

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FLT PLN/99/FIN

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 'STS 99 DAP A - CONFIGURATIONS'

HINGE

STS-99 DAP B CONFIGURATIONS

	ITEM #	B8	B9	B10	B11	B12	B13	B14	B15
PRI									
ROT RATE	30	0.2000	0.1000	0.1000	0.1000	0.1000	0.1000	0.5000	0.5000
ATT DB	31	2.00	1.00	0.30	3.00	3.00	3.00	3.00	3.00
RATE DB	32	0.20	0.10	0.20	0.20	0.20	0.20	0.20	0.20
ROT PLS	33	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
COMP	34	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Y OPTION	36	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
TRAN PLS	37	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
ALT									
RATE DB	38	0.200	0.070	0.070	0.100	0.100	0.100	0.200	0.200
JET OPT	39	ALL	ALL	TAIL	ALL	ALL	ALL	TAIL	TAIL
# JETS	40	2	1	1	2	2	2	2	2
ON TIME	41	0.08	0.08	0.08	0.08	0.08	0.08	0.08	1.68
DELAY	42	0.00	0.00	4.00	4.00	4.00	4.00	1.68	0.00
VERN									
ROT RATE	43	0.2000	0.1000	0.1000	0.1000	0.1000	0.0400	0.2000	0.2000
ATT DB	44	1.000	1.000	1.000	1.000	1.000	0.100	1.000	1.000
RATE DB	45	0.020	0.010	0.010	0.020	0.050	0.010	0.020	0.020
ROT PLS	46	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP	47	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	48	0	1	4(2)¹	4	4	3	7	9
PURPOSE		PROX OPS	RETRACTED DB COLLAPSE FOR EXTENSION	EXTENDED DB COLLAPSE FOR RETRACTION	EXTENDED DB COLLAPSE FOR FLYCAST	COLLAPSE FOR MNVR TO FLYCAST	COLLAPSE FOR MNVR TO SCIENCE	FLYCAST, SINGLE-PULSE	FLYCAST, MULTI-PULSE

Note: **BOLD-ITALIC** indicate a change from I-load
 1 DAPs A10 and B10 use either CNTL ACC 2 or 4. CNTL ACC are modified via the PAYLOAD OPS DAMPER ACTIVATION and MAST STOW procedures

FLT PLN-1bb/99/O/B



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FLIGHT DATA FILE
Distribution
99 FLT PLN FSP FIN

JSC

CB/KREGEL, K. (7)
CB/LEAD CAPCOM (2)
CB/CHIEF
DA2/STONE, B.R.
DA8/DYE, P.
DB/LEAD SHUTTLE GC (2)
DF/WOOD, C. (4)
DF24/LEAD INCO (3)
DF25/LEAD DPS (2)
DX32/LEAD EVA (2)
DF52/LEAD MMACS (2)
DF62/LEAD PROP (2)
DF62/LEAD GNC (2)
DF73/LEAD EGIL (2)
DF73/SYSTEMS LIBRARY
DF82/LEAD EECOM (2)
DF83/LEAD ECLS (2)
DM4/LEAD FDO (2)
DM43/DM CONSOLE LIBRARY (2)
DM3/LEAD RNDZ GPO (2)
DO13/LIBRARY (5)
DO4/NUTE, R.
DO35/FDF LIBRARY
DO353/FDF MNGR/RESERVE (15)
DO4/BOOK MNGR FLT PLN (5)
DO4/FAO TEAM (33)
DO4/POINTING (6)
DO4/SHUTTLE FLT PLANNING (3)
DO47/LIBRARY
DO5/LEAD ACO (5)
EC/CTSD LIBRARY
EV/111/LIBRARY
EV14-LIB/ASD-14-LIB
GS53/STI LIBRARY (3)
MA2/HOLT, D.
MER/30 LIBRARY
MT2/LEWIS, P.
MT3/MANAGER.
OM/CONSOLE SUPPORT
OM2/CASTLE, S.
OM2/ENGELAUF, K.M.
SD2/LEAD SURGEON (2)
ZR1/USAF TECHNICAL LIBRARY (3)

JSC OFFSITE

LOCKHEED-MARTIN HOUSTON
C102/STEPHENS, K.
C33/CHU, J.
C42/GERLACH, M.
C42/HANLEY, S.
C42/NEMETH, P.
C42/PICKETT, L.
C42/ROVINELLI, L.
C42/TINSLER, T.
C70/KEENER, J.F.

POUCH MAIL

NASA KSC
KSC/KSC TECH LIBRARY-D
F264/LINTEREUR, P.
FF-S-A/CREW QUARTERS
OM/MI RESIDENT OFFICE
PA-PIB/GRINTER, K.
PZ-A3/SOWASH, S. (2)
USK-215/KELLY, T.E.
USK-247/HOOPER, J. (2)
USK-550/VITT OFFICE

NASA -JPL
300-331/ALVARADO, C. (16)

U.S. MAIL

DLR-BONN
AP2
KOENIGSWINTERER STRASSE 522-52A
D-53227 BONN, GERMANY
WERNINGHAUS, R. (3)

DLR-OBERPFAFFENHOFEN
INSTITUTE OF RADIO FREQUENCY
P.O. BOX 1116
WESSLING D-82230, GERMANY
NE-HF/MEISINGER, B.
NE-HF/PFENNINGS, J.M.
NE-HF/WERNER, N. (3)