

Flight Plan

STS-73

(FRR Trajectory)

Mission Operations Directorate
Operations Division

Final
August 16, 1995

<u>EVENT</u>	<u>CDT</u>		
Launch	08:31	Thurs	Sep 21
KSC Landing	06:26	Sat	Oct 7

BRANCH CHIEF
R.H. NOYE
DD4
6000

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



MISSION OPERATIONS DIRECTORATE

STS-73 FLIGHT PLAN

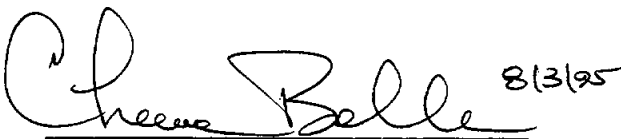
FINAL
August 16, 1995

PREPARED BY:


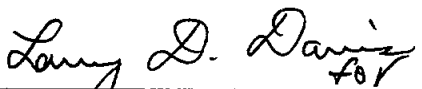


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	FLT PLN-1768	FLT PLN-1771	FLT PLN-1774
	FLT PLN-1769	FLT PLN-1772	FLT PLN-1775
Exemption #'s: 70A, 72A			

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Book Manager/Lead FAO	DO4/A. Bartos	244-1073
Lead Timeliner	DO4/A. Cofrin	244-1170
Lead Pointer	DO4/J. Kirinich	244-5752

FLIGHT PLAN
STS-73

LIST OF EFFECTIVE PAGES

FINAL 08/16/95

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INTRODUCTION

The STS-73 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. For continuity, the summary level timeline includes the entire flight.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive, and the requirements of the STS-73 Flight Requirements Document. The Flight Plan, as part of the Flight Data File, meets the specifications of One Cycle to Flight version of the STS-73 Flight Initialization Data Pack.

The flight profile used for this Flight Plan is for a launch date of September 21, 1995, at 08:31 CDT. Orbiter inertial attitudes are expressed relative to a mean of 1950 (M50) reference frame.

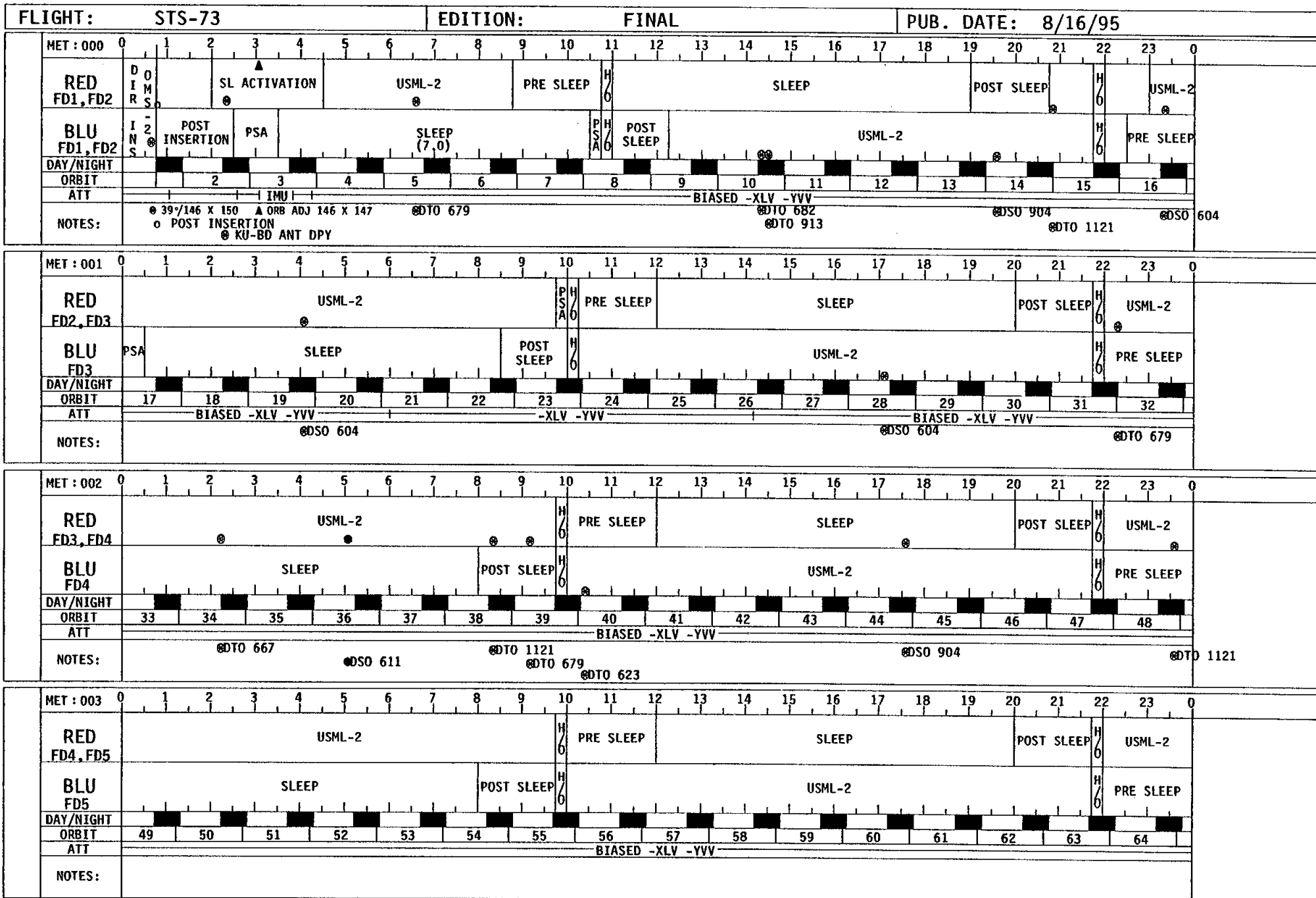
JSC-22359, Crew Scheduling Constraints (Appendix K, CPMP), Basic, Rev B, January 1992, has been used to build the timelines contained in this Flight Plan. The following two Appendix K Exemptions have been approved for STS-73:

- #70A - Allows the Blue team to wake up 15 hours before landing time to provide the Red team with 8 hours of sleep prior to entry.
- #72A - Documents the requirement for the preflight circadian rhythm sleep cycle for the Blue team to be aligned with the 0/01:30 point (and not the 0/02:30 which may be improperly calculated).

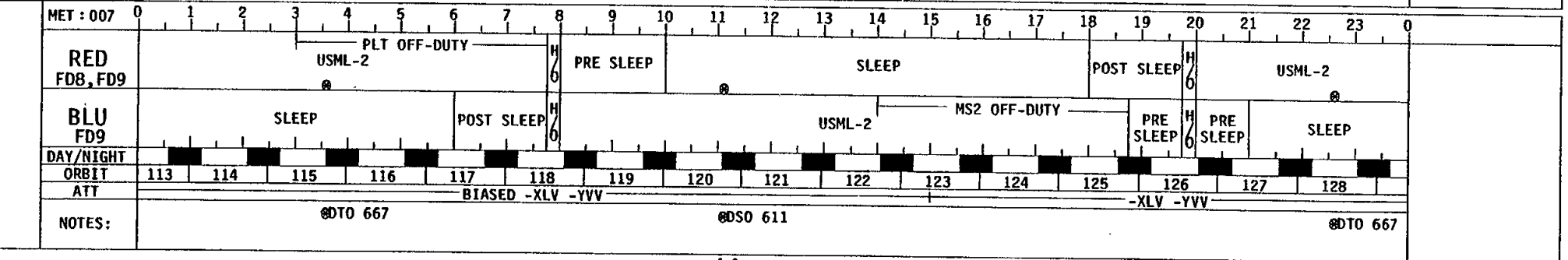
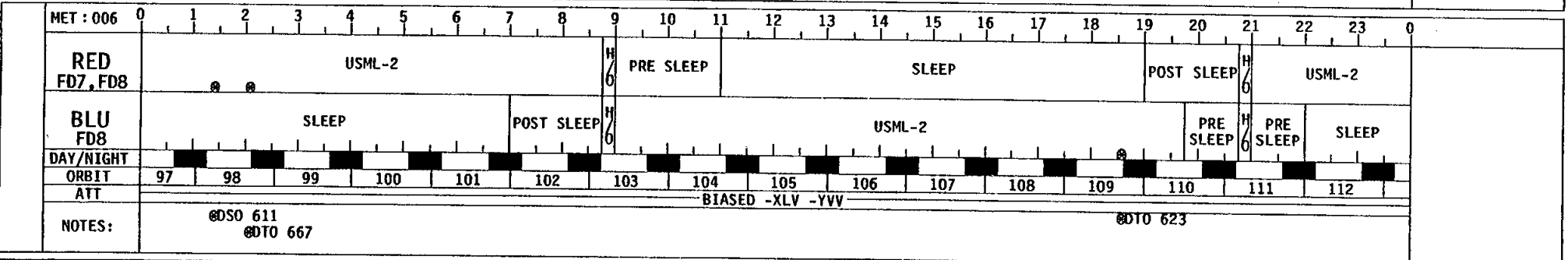
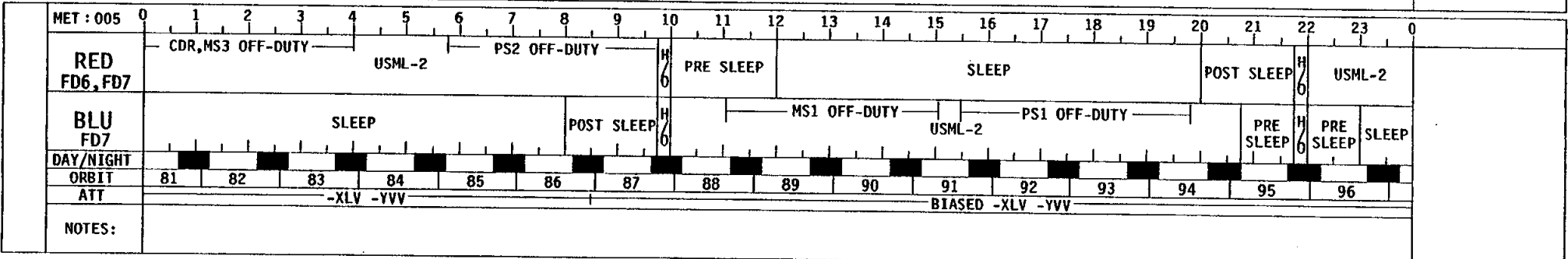
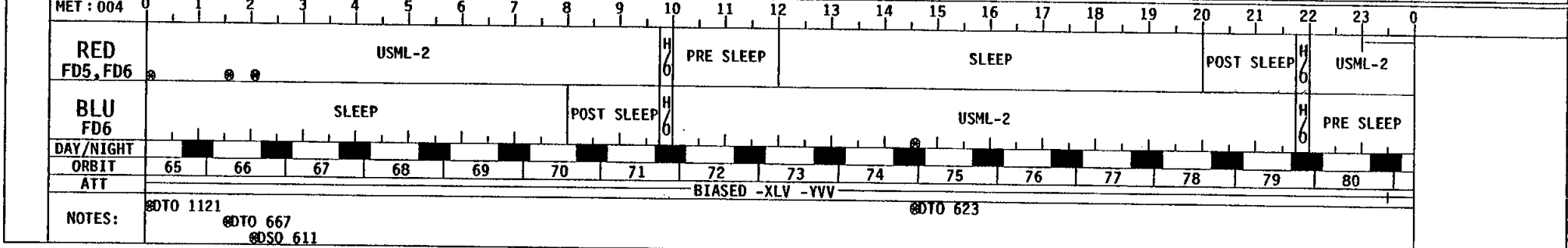
The timeline formats used in this Flight Plan are based on JSC-19933, Timeline Format Definitions and Standard Notes, Rev C, May 1990.

STS-73 OVERVIEW

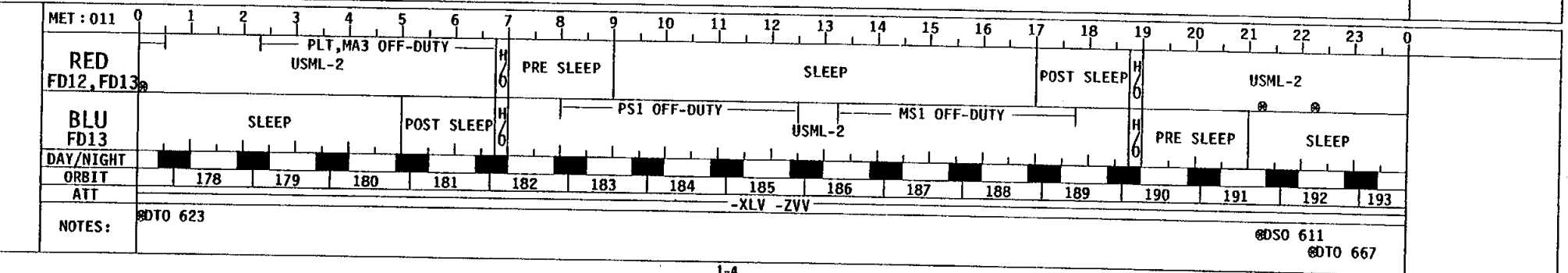
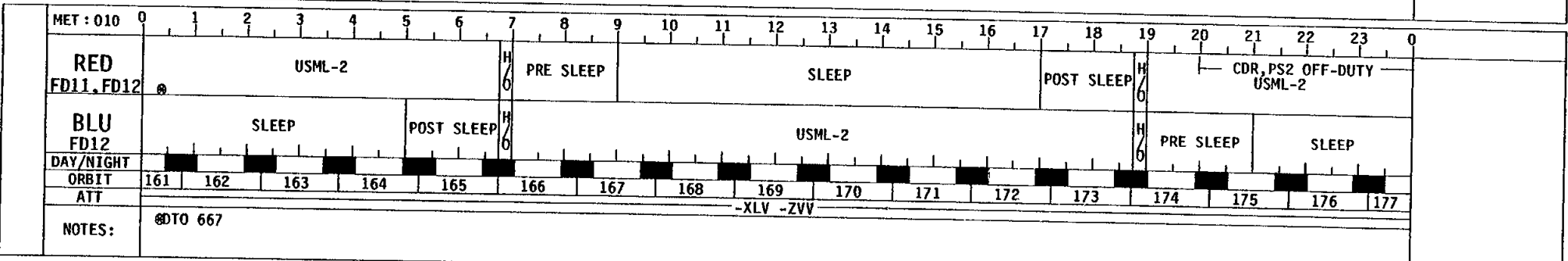
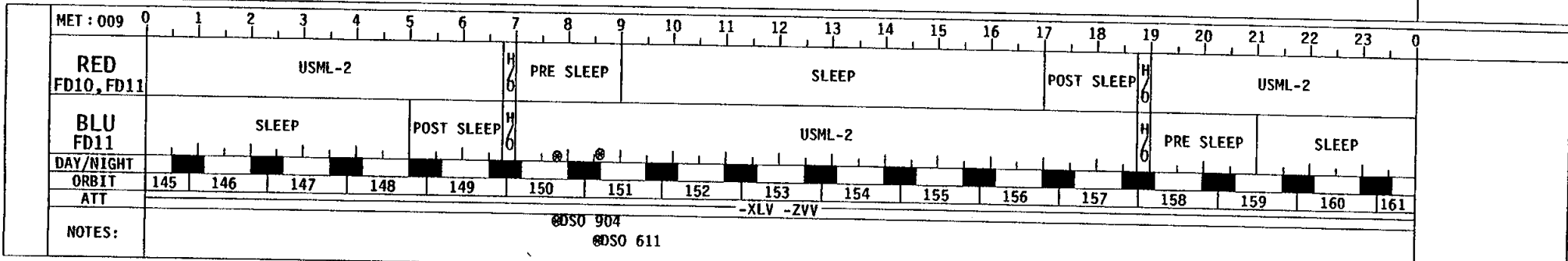
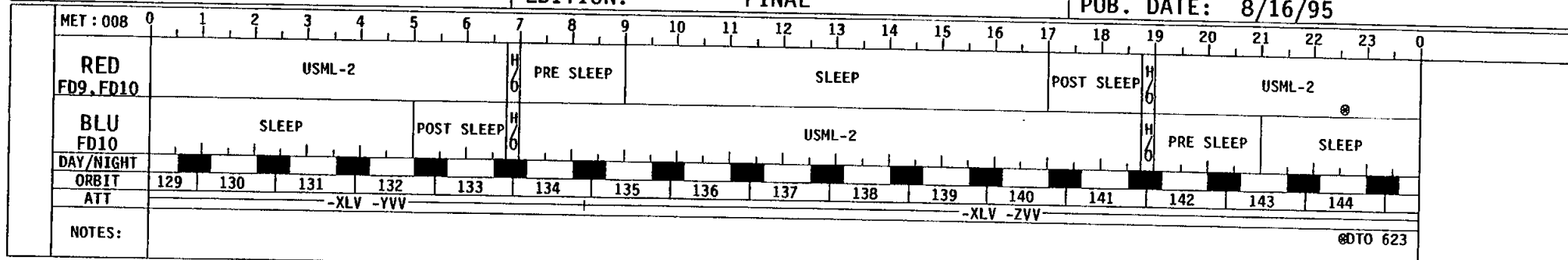
OVERVIEW



FLIGHT: STS-73 EDITION: FINAL PUB. DATE: 8/16/95



FLIGHT: STS-73 EDITION: FINAL PUB. DATE: 8/16/95



FLIGHT: STS-73 EDITION: FINAL PUB. DATE: 8/16/95

MET: 012	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0			
RED FD13, FD14	USML-2						H/O	PRE SLEEP	SLEEP						POST SLEEP	H/O	USML-2											
BLU FD14	SLEEP				POST SLEEP	H/O	USML-2						MS2 OFF-DUTY	H/O	PRE SLEEP	SLEEP												
DAY/NIGHT	[Day/Night Cycle]																											
ORBIT	194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209																											
ATT	-XLV -ZVV																											
NOTES:	@DSO 802														@DSO 904													

MET: 013	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0			
RED FD14, FD15	USML-2						H/O	PRE SLEEP	SLEEP						POST SLEEP	H/O	CREW CONF	USML-2										
BLU FD15	SLEEP				POST SLEEP	H/O	USML-2						PSA	H/O	CREW CONF	PRE SLEEP	SLEEP											
DAY/NIGHT	[Day/Night Cycle]																											
ORBIT	210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225																											
ATT	-XLV -ZVV																											
NOTES:	@D/O 623 @DSO 802														@DSO 904 @D/O 667													

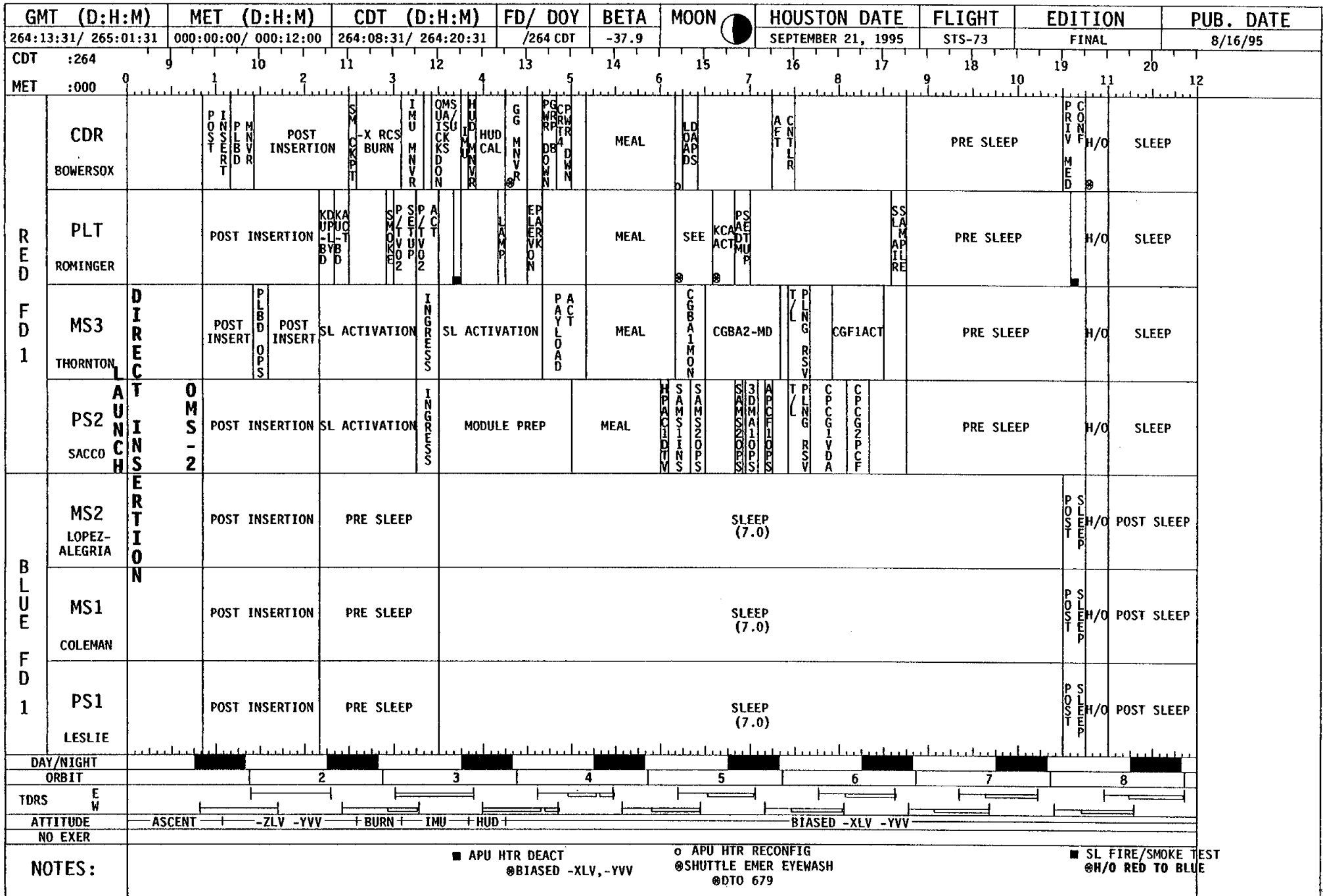
MET: 014	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0			
RED FD15, FD16	USML-2						PRE SLEEP	H/O	PRE SLEEP	SLEEP						POST SLEEP	H/O	FCS C/O	SAMS OARE	ABURN	USML-2							
BLU FD16	SLEEP				PSA	H/O	POST SLEEP	USML-2						H/O	FCS C/O	PRE SLEEP	SLEEP											
DAY/NIGHT	[Day/Night Cycle]																											
ORBIT	226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241																											
ATT	-XLV -ZVV BIASED -XLV -YVV -XLV -ZVV																											
NOTES:	@DSO 604														@DSO 611 @DSO 604 @D/O PREP BRIEF @D/O 667 @RCS HOT FIRE @IF REQ'D													

MET: 015	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0			
RED FD16, FD17	USML-2						PRE SLEEP	H/O	SLEEP						POST SLEEP	DEORBIT PREP												
BLU FD17	SLEEP				H/O	POST SLEEP	CABIN STOW	PL DEACT	SL DEACT	MEAL	DEORBIT PREP						DEB	EA	L									
DAY/NIGHT	[Day/Night Cycle]																											
ORBIT	242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257																											
ATT	KU BIAS -YLV +ZVV -ZLV -YVV -XSI COMM ENTRY																											
NOTES:	@D/O 679														SNACK @D/O 623 @D/O 913 @D/O 682 @D/O 1121 @DSO 621 @DSO 603													

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SUMMARY TIMELINE

SUMMARY TIMELINE



GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
265:01:31 / 265:13:31		000:12:00 / 001:00:00		264:20:31 / 265:08:31		/264 CDT	-37.7		SEPTEMBER 21, 1995	STS-73	FINAL	8/16/95				
CDT :264		21	22	23	0	CDT:265	1	2	3	4	5	6	7	8	0	MET:001
MET :000		12	13	14	15	16	17	18	19	20	21	22	23			
RED FD 2	CDR BOWERSOX	SLEEP								POST SLEEP	FILTER CLEANING	H/O	KX CFE R FILE	DSO 604 (OI-3C)		
	PLT ROMINGER	SLEEP								POST SLEEP	GATV STATUS M S E R G A T V O P S	H/O	E (G XD2 ES4 RO)	EXERCISE (DSO 624)	DSO 604 (OI-3C)	
	MS3 THORNTON	SLEEP								POST SLEEP			H/O	D/P	EXERCISE	D P M I S T R I T
	PS2 SACCO	SLEEP								POST SLEEP	EXERCISE	H/O	D/P	G U I D E L I N E	GBX1ZCGO	
BLUE FD 2	MS2 LOPEZ- ALEGRIA	SPCG1ACT	SPCG4HH	ERG SETUP	I V T S	S E T U P	P I O - C B R	A S C 4 A I R	MEAL	E S C I T I N I T	EXERCISE	P S A E / C T T I V U V O P O 3 3	H/O	PRE SLEEP		
	MS1 COLEMAN	D/P	CGBA2-SL	P L N G R S V		EXERCISE	GBX1CHK	MEAL	GBX1CHK	A S / U	P L N G R S V	STDC3VSC	H/O	PRE SLEEP		
	PS1 LESLIE	D/P	CG2MANX	CGF10FGB	CGF2MANX	CGF2MANX	P L N G R S V	MEAL	STDC1INS	S T D C 2 T M L	P L N G R S V	EXERCISE	H/O	PRE SLEEP		
DAY/NIGHT		ORBIT		TDRS		ATTITUDE		NO EXER								
		9		10		11		12		13		14		15		
		E		W												
								BIASED -XLV -VVV								
NOTES:		◎DTO 682		◎DTO 913		◎DSO 904		◎DTO 1121		◎H/O BLUE TO RED		◎ BLEED ORF CNFG				

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE						
265:13:31 / 266:01:31		001:00:00 / 001:12:00		265:08:31 / 265:20:31		/265 CDT	-37.2		SEPTEMBER 22, 1995	STS-73	FINAL	8/16/95						
CDT	:265	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
MET	:001	0	1	2	3	4	5	6	7	8	9	10	11	12				
RED FD 2	CDR BOWERSOX	DSO 604 (01-3C)		EXERCISE (DSO 624)		MEAL												PRE SLEEP
	PLT ROMINGER	DSO 604 (01-3C)		ASC1MON	ASC30BS	MEAL	DSO 604 (01-1)											PRE SLEEP
	MS3 THORNTON	DPM1STR	DPM1STR			MEAL												PRE SLEEP
	PS2 SACCO	GBX1ZCGO	PLNG RSV	GBX1ZCGO	GBX1ZCGO	MEAL	ZCG1CONF											PRE SLEEP
BLUE FD 3	MS2 LOPEZ-ALEGRIA	PRE SLEEP				SLEEP				POST SLEEP	H/O							
	MS1 COLEMAN	PRE SLEEP				SLEEP				POST SLEEP	H/O	D/P	LBN1STUP					
	PS1 LESLIE	PRE SLEEP				SLEEP				POST SLEEP	H/O	D/P	LBN1STUP					
DAY/NIGHT ORBIT		17		18		19		20		21		22		23		24		
TDRS EW																		
ATTITUDE NO EXER				BIASED -XLV -YVV								-XLV -YVV						
NOTES:		ⓂMANUAL						Ⓜ-XLV, -YVV										ⓂRADIO ONLY: CREW MEMBERS(S) DETERMINED REAL TIME ⓂH/O RED TO BLUE

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE																			
266:01:31 / 266:13:31		001:12:00 / 002:00:00		265:20:31 / 266:08:31		/265 CDT	-36.5		SEPTEMBER 22, 1995	STS-73	FINAL	8/16/95																			
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MET :001		12	13	14	15	16	17	18	19	20	21	22	23	0																	
RED FD 3	CDR BOWERSOX	SLEEP										POST SLEEP			SD PM LP Y I HN 21 OT	H/O	KY CF AB ET RE AT C L F I L E	C N T L	EXERCISE (DSO 624)												
	PLT ROMINGER	SLEEP										POST SLEEP			H/O	EXERCISE (DSO 624)		SD PM LP Y T HE R O M													
	MS3 THORNTON	SLEEP										POST SLEEP			H/O/D/P	LBN3RAMP															
	PS2 SACCO	SLEEP										POST SLEEP			H/O/D/P	LBN3RAMP															
BLUE FD 3	MS2 LOPEZ- ALEGRIA	NOON	NOON	MEAL	NOON	NOON	DSO 604 (OI-1)	NOON	NOON	EXERCISE	SAC CUM EON	H/O	BAD S6 DPC AD MCAM AFSA 22332 M444 00000 NNNN	PRE SLEEP																	
	MS1 COLEMAN	ST D C A O N	T P L N G R S V	MEAL	NOON	NOON	GBX1PCGO	T P L N G R S V	EXERCISE	NOON	H/O	PRE SLEEP																			
	PS1 LESLIE	T P L N G R S V	ST51f1-1	MEAL	NOON	NOON	ST51f1-2	T P L N G R S V	ST51f1-3	S D D O F F	P E T U P P A V E N T	EXERCISE	H/O	PRE SLEEP																	
DAY/NIGHT ORBIT		25		26		27		28		29		30		31		32															
TDRS E W																															
ATTITUDE NO EXER		-XLV -YVV								BIASED -XLV -YVV																					
NOTES:		⊗BIASED -XLV, -YVV										⊗H/O BLUE TO RED ⊗DTO 679																			

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
266:13:31/ 267:01:31		002:00:00/ 002:12:00		266:08:31/ 266:20:31		/266 CDT	-35.7		SEPTEMBER 23, 1995	STS-73	FINAL	8/16/95				
CDT	:266	9	10	11	12	13	14	15	16	17	18	19	20			
MET	:002	0	1	2	3	4	5	6	7	8	9	10	11	12		
RED FD 3	CDR BOWERSOX					MEAL					P/T V 24 SETUP EVENT	SD PMLY HN 21 01	KXCRV CABIN TELE CONF MED H/O	PRE SLEEP		
	PLT ROMINGER	NORON ASC1MON	ASC1MON	MEAL	GBX1PCGO	DSO 611	PA/E/C T/VU OPO 3	NORON CGBA 2-MD	SPC G3MOM CPC G2MOM	GBX1PCGO	GATV OPS	AD3 POD CAM MA 232 MM 000 NNN	ASC1MON H/O	PRE SLEEP		
	MS3 THORNTON	LBN3RAMP	PLN G RSV	LBN3RAMP	MEAL	STDC4ON	ST51c1-4		PLN G RSV	STDC4ON	EVENT	EXERCISE	H/O	PRE SLEEP		
	PS2 SACCO	LBN3RAMP	PLN G RSV	LBN3RAMP	MEAL	GBX1PCGO	PLN G RSV	GBX1PCGO	GBX1CDOT	EXERCISE	H/O	PRE SLEEP				
BLUE FD 4	MS2 LOPEZ-ALEGRIA	SLEEP				POST SLEEP				H/O	SD PMLY HN 21 01 T HEG ZRS OME	EXERCISE				
	MS1 COLEMAN	SLEEP				POST SLEEP				H/O	D/P	STDC4ON	DPM1STRT			
	PS1 LESLIE	SLEEP				POST SLEEP				H/O	EXERCISE	D/P	ST51C2-1			
DAY/NIGHT																
ORBIT																
TDRS																
ATTITUDE	BIASED -XLV -YVV															
NO EXER																
NOTES:	◎DTO 667				◎AIR MONITORING				◎DTO 1121				◎DTO 679			
	◎H/O RED TO BLUE ◎CABIN AIR MONITOR															

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
267:01:31/ 267:13:31		002:12:00/ 003:00:00		266:20:31/ 267:08:31		/266 CDT	-34.7		SEPTEMBER 23, 1995	STS-73	FINAL	8/16/95					
CDT :266		21	22	23	0	CDT:267	1	2	3	4	5	6	7	8	0	MET:003	
MET :002		12	13	14	15	16	17	18	19	20	21	22	23				
RED FD 4	CDR BOWERSOX	SLEEP								POST SLEEP		H/O	EXERCISE (DSO 624)				
	PLT ROMINGER	SLEEP								POST SLEEP		H/O	EXERCISE (DSO 624)		STDC40N	STDC40N	STDC40N
	MS3 THORNTON	SLEEP								POST SLEEP		H/O	EXERCISE		D/P	DPMFOLLOW	
	PS2 SACCO	SLEEP								POST SLEEP		H/O	D/P	STDC40N	STDC40N	STDC40N	
BLUE FD 4	MS2 LOPEZ-ALEGRIA			MEAL		GBX1PCGO		TV26:DSO	KXCFER		GBX1PCGO	STDC40N	PRE SLEEP				
	MS1 COLEMAN	DPM1STR	PLNG RSV	DPM1STR		MEAL	GBX1PCGO	PLNG RSV	GBX1PCGO		EXERCISE	H/O	PRE SLEEP				
	PS1 LESLIE	ST51c2-1	PLNG RSV	ST51c2-2		MEAL	ST51c2-3	PLNG RSV	ST51c2-4		ST51c2-5	H/O	PRE SLEEP				
DAY/NIGHT ORBIT		41		42		43		44		45		46		47		48	
TDRS E W		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]	
ATTITUDE NO EXER		BIASED -XLV -YVV															
NOTES:		@DSO 904										@H/O BLUE TO RED			@DTO 1121		

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
267:13:31/ 268:01:31		003:00:00/ 003:12:00		267:08:31/ 267:20:31		/267 CDT	-33.5		SEPTEMBER 24, 1995	STS-73	FINAL	8/16/95	
CDT	:267	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 12											
MET	:003												
RED FD 4	CDR BOWERSOX												
	PLT ROMINGER	CGBA1MON	MEAL		ASC1MON		ASC3OBS		GBX1PCGO		EXERCISE		PRE SLEEP
	MS3 THORNTON	DPM6FLOW	DPM12DPY	DPM6FLOW	MEAL	DPM6FLOW	DPM6FLOW		GBX1PCGO		EXERCISE		PRE SLEEP
	PS2 SACCO	ST61f1-1	ST61c1-2	MEAL	ST61c1-3	GBX1PCGO		EXERCISE		EXERCISE		PRE SLEEP	
BLUE FD 5	MS2 LOPEZ-ALEGRIA	SLEEP				POST SLEEP				EXERCISE		EXERCISE	
	MS1 COLEMAN	SLEEP				POST SLEEP				EXERCISE	D/P	GBX1PCGO	
	PS1 LESLIE	SLEEP				POST SLEEP				D/P	EXERCISE	STDC2TM	STDC4NOZ
DAY/NIGHT	[Graph showing Day/Night cycles for orbits 49-56]												
ORBIT	49 50 51 52 53 54 55 56												
TDRS E W	[Graph showing TDRS contact windows]												
ATTITUDE NO EXER	BIASED -XLV -YVV												
NOTES:	ⓂH/O RED TO BLUE												

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
268:01:31/ 268:13:31		003:12:00/ 004:00:00		267:20:31/ 268:08:31		/267 CDT	-32.2	●	SEPTEMBER 24, 1995	STS-73	FINAL	8/16/95				
CDT	:267	21	22	23	0	CDT:268	1	2	3	4	5	6	7	8	0	MET:004
MET	:003	12	13	14	15	16	17	18	19	20	21	22	23			
RED FD5	CDR BOWERSOX	SLEEP										POST SLEEP	H/O	WASTE DUMP MONITOR	SD IMP O T HE 2R OM	
	PLT ROMINGER	SLEEP										POST SLEEP	H/O	EXERCISE (DSO 624)	FX 3 BATT	
	MS3 THORNTON	SLEEP										POST SLEEP	H/O	D/P	STDC4-1	
	PS2 SACCO	SLEEP										POST SLEEP	H/O	EXERCISE	D/P	DPM3RHEO
BLUE FD5	MS2 LOPEZ-ALEGRIA	MEAL										PRE SLEEP	H/O			
	MS1 COLEMAN	GBX1PCGO	MEAL	GBX1PCGO	GBX1PCGO	GBX2ICE	PRE SLEEP	H/O								
	PS1 LESLIE	ST52f3-1	MEAL	ST52f3-2	ST52f3-3	ST52c3-4	EXERCISE	H/O	PRE SLEEP							
DAY/NIGHT	[Day/Night Cycle]															
ORBIT	[Orbit Cycle]															
TDRS	[TDRS Cycle]															
ATTITUDE	BIASED -XLV -YVV															
NO EXER	[No Exercise Periods]															
NOTES:	H/O BLUE TO RED															

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE									
268:13:31 / 269:01:31		004:00:00 / 004:12:00		268:08:31 / 268:20:31		/268 CDT	-30.8	●	SEPTEMBER 25, 1995	STS-73	FINAL	8/16/95									
CDT	:268	9	10	11	12	13	14	15	16	17	18	19	20	21	22						
MET	:004	0	1	2	3	4	5	6	7	8	9	10	11	12	13						
RED FD5	CDR BOWERSOX						MEAL			EXERCISE (DSO 624)			P/T V24 SETUP	PAVENT	FILTER CLEANING	P/NTV MED	H/O	SD P/LP H/N 21 OT	PRE SLEEP	SD P/LP H/N 21 OM	PRE SLEEP
	PLT ROMINGER	GATV OPS	ESCB AIT	PDT ITR LOA INER	DSO 611	ASC1MOM	ASC2K2CA	PCG6GJKCA	MEAL	CGBA5TV	KXCF AE R FILE	CGBA5TV		CPCC G2 NON	BAD53 DPCAD MCAMA AFMSA 22832 ***** 00000 NNNN	GBX1 PCGO	H/O	PRE SLEEP			
	MS3 THORNTON	ST52c4-1	ST52c4-2		PLNG RSV	ST52c4-3		MEAL	ST52c4-4	ST52 OFF	PLNG RSV	PLNG RSV	PLNG RSV	PLNG RSV	PLNG RSV	PAVENT	EXERCISE	H/O	PRE SLEEP		
	PS2 SACCO	DPM3 RHEO	DPM12 DPY	DPM3 RHEO	PLNG RSV	PLNG RSV	GBX1 PCGO	MEAL	DPM3 RHEO	PLNG RSV	GBX1 PCGO		PLNG RSV	GBX1 PCGO		H/O	PRE SLEEP				
BLUE FD6	MS2 LOPEZ- ALEGRIA	SLEEP										POST SLEEP		H/O	PLNG RSV	EXERCISE		PLNG RSV			
	MS1 COLEMAN	SLEEP										POST SLEEP		H/O	D/P	ST52c5-1	PLNG RSV				
	PS1 LESLIE	SLEEP										POST SLEEP		H/O	EXERCISE	D/P	DPM12 DPY				
DAY/NIGHT ORBIT		65		66		67		68		69		70		71		72		73			
TDRS E W		65		66		67		68		69		70		71		72		73			
ATTITUDE NO EXER								BIASED -XLV -YVV													
NOTES:		◎DT0 1121		◎DT0 667		◎AIR MONITORING										◎H/O RED TO BLUE					

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE																
269:01:31/ 269:13:31		004:12:00/ 005:00:00		268:20:31/ 269:08:31		/268 CDT	-29.2	●	SEPTEMBER 25, 1995	STS-73	FINAL	8/16/95																
CDT	:268	12	21	13	22	14	23	15	0	CDT:269	1	17	2	18	3	19	4	20	5	21	6	22	7	23	8	0	MET:005	
MET	:004																											
RED FD 6	CDR BOWERSOX	SLEEP										POST SLEEP		H/O	EXERCISE (DSO 624)		OFF DUTY											
	PLT ROMINGER	SLEEP										POST SLEEP		H/O			PCGJKA GMFNCR											
	MS3 THORNTON	SLEEP										POST SLEEP		H/O	EXERCISE		OFF DUTY											
	PS2 SACCO	SLEEP										POST SLEEP		H/O	D/P	GBX1PCGO	EXERCISE											
BLUE FD 6	MS2 LOPEZ-ALEGRIA	MEAL		MEAL		MEAL		MEAL		EXERCISE		PRE SLEEP																
	MS1 COLEMAN	ST52c5-1	ST52c5-2	ST52c5-3	ST52c5-4	EXERCISE		PRE SLEEP																				
	PS1 LESLIE	DPM12DPY	DPM10SHL	DPM10SHL	DPM10SHL	PRE SLEEP																						
DAY/NIGHT	[ORBIT TRACK]																											
ORBIT	73 74 75 76 77 78 79 80 81																											
TDRS	[TDRS TRACK]																											
ATTITUDE	BIASED -XLV -YVV																											
NO EXER	[NO EXER TRACK]																											
NOTES:	@CABIN AIR MONITOR														@H/O BLUE TO RED								@-XLV -YVV					

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE						
269:13:31/ 270:01:31		005:00:00/ 005:12:00		269:08:31/ 269:20:31		/269 CDT	-27.5	●	SEPTEMBER 26, 1995	STS-73	FINAL	8/16/95						
CDT :269		0 9 10 11 12 13 14 15 16 17 18 19 20 12																
MET :005		0 1 2 3 4 5 6 7 8 9 10 11 12																
RED FD 6	CDR BOWERSOX	OFF DUTY										SD PM LP Y I HN 21 OT	MEAL	SD PM LP Y T HE RR OM	PR IV F V M E D	CP OR IV F V M E D	CK X CF E F H /O	PRE SLEEP
	PLT ROMINGER	NORON	GILL WON	MEAL			ASC1M0N	ASC30B5	ASC2KKA	CGBA2-MD	CBCC3M0N	SACURON	EXERCISE (DSO 624)	H/O	PRE SLEEP			
	MS3 THORNTON	OFF DUTY			MEAL	D/P	ST62c2-2	ST62c2-3	PL NG R S V	ST 6 2 C 2 - 3	ST D I O T M R	ST D I O T M R	ST D I O T M R	ST D I O T M R	H/O	PRE SLEEP		
	PS2 SACCO	EX ER C I S E	ST A B I O P S	ST D C 2 M I	ST D C 4 O M	PL N G R S V	ST62f2-1	MEAL	GB X I N C O	NORON	OFF DUTY			H/O	PRE SLEEP			
BLUE FD 7	MS2 LOPEZ-ALEGRIA	SLEEP					POST SLEEP					PS P O S T S L E E P	H/O	EXERCISE				
	MS1 COLEMAN	SLEEP					POST SLEEP					PS P O S T S L E E P	H/O	EXERCISE	OFF DUTY			
	PS1 LESLIE	SLEEP					POST SLEEP					PS P O S T S L E E P	H/O	D/P	NORON	ST D C 2 M I	ST D C 4 O M	PL N G R S V
DAY/NIGHT	ORBIT																	
TDRS	E W																	
ATTITUDE	NO EXER																	
NOTES:	-XLV -YVV BIASED -XLV -YVV @BIASED -XLV, -YVV @H/O RED TO BLUE ST53f6-1																	

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
270:01:31 / 270:13:31		005:12:00 / 006:00:00		269:20:31 / 270:08:31		/269 CDT	-25.7	☉	SEPTEMBER 26, 1995	STS-73	FINAL	8/16/95					
CDT	:269	21	22	23	0	CDT:270	1	2	3	4	5	6	7	8	0	MET:006	
MET	:005	12	13	14	15	16	17	18	19	20	21	22	23				
RED FD7	CDR BOWERSOX	SLEEP								POST SLEEP	H/O	EXERCISE (DSO 624)	SL CNDS TK DUMP				
	PLT ROMINGER	SLEEP								POST SLEEP	H/O	EXERCISE (DSO 624)					
	MS3 THORNTON	SLEEP								POST SLEEP	H/O	D/P	LBN3RAMP				
	PS2 SACCO	SLEEP								POST SLEEP	H/O	D/P	LBN3RAMP				
BLUE FD7	MS2 LOPEZ-ALEGRIA		TVIA-SAM			MEAL											
	MS1 COLEMAN	OFF DUTY			MEAL	D/P	ST53f6-2	ST53f6-3									
	PS1 LESLIE	ST53f6-1	STAB3PGS	STAB3PGS	STAB3PGS	MEAL	OFF DUTY			EXERCISE	PRE SLEEP	H/O	PRE SLEEP	SLEEP			
DAY/NIGHT	[Day/Night Cycle Diagram]																
ORBIT	89 90 91 92 93 94 95 96 97																
TDRS E/W	[TDRS E/W Diagram]																
ATTITUDE	BIASED -XLV -YVV																
NO EXER	[NO EXER Diagram]																
NOTES:	⑧H/O BLUE TO RED																



GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE		
270:13:31/ 271:01:31		006:00:00/ 006:12:00		270:08:31/ 270:20:31		/270 CDT	-23.8		SEPTEMBER 27, 1995	STS-73	FINAL	8/16/95		
CDT	:270	9	10	11	12	13	14	15	16	17	18	19	20	
MET	:006	0	1	2	3	4	5	6	7	8	9	10	11	12
RED FD 7	CDR BOWERSOX					MEAL					PSETUP 24 PAVENT S H/O	PRE SLEEP	SLEEP	
	PLT ROMINGER	ASCIMON	DSO 611	PDT ITR LOA OT NER	MEAL	ASCIMON	GBX1PCGO	ASCIMON	ASCIMON	ASCIMON	H/O	PRE SLEEP	PRE SLEEP	SLEEP
	MS3 THORNTON	LBN3RAMP	LBN3RAMP	LBN3RAMP	MEAL	ST53c6-4	ST53c6-4	ST53c6-4	ST53c6-4	EXERCISE	H/O	PRE SLEEP	PRE SLEEP	SLEEP
	PS2 SACCO	LBN3RAMP	LBN3RAMP	LBN3RAMP	MEAL	GBX1PCGO	GBX1PCGO	GBX1PCGO	GBX1PCGO	EXERCISE	H/O	PRE SLEEP	PRE SLEEP	SLEEP
BLUE FD 8	MS2 LOPEZ-ALEGRIA	SLEEP				POST SLEEP				H/O	EXERCISE			
	MS1 COLEMAN	SLEEP				POST SLEEP				H/O	D/P	ST53c7-1	ST53c7-1	ST53c7-1
	PS1 LESLIE	SLEEP				POST SLEEP				H/O	EXERCISE	D/P	ST53c7-1	ST53c7-1
DAY/NIGHT														
ORBIT	97	98	99	100	101	102	103	104	105					
TDRS														
ATTITUDE	BIASED -XLV -YVV													
NO EXER														
NOTES:	AIR MONITORING DTO 667						H/O RED TO BLUE							

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
271:01:31/ 271:13:31		006:12:00/ 007:00:00		270:20:31/ 271:08:31		/270 CDT	-21.9		SEPTEMBER 27, 1995	STS-73	FINAL	8/16/95				
CDT	:270	21	22	23	0	CDT:271	1	2	3	4	5	6	7	8	0	MET:007
MET	:006	12	13	14	15	16	17	18	19	20	21	22	23			
RED FD8	CDR BOWERSOX	SLEEP								POST SLEEP	SD PLP Y H/O T HE 2R DM	KX CH ER FILE	FILTER CLEANING	PA VE NT		
	PLT ROMINGER	SLEEP								POST SLEEP	H/O	EXERCISE (DSO 624)	ES CJ B A T T	ES CJ B A T T		
	MS3 THORNTON	SLEEP								POST SLEEP	H/O	EXERCISE	D/P	PO Y - S T D	PA VE NT	
	PS2 SACCO	SLEEP								POST SLEEP	H/O	D/P	ST D C A O N	ST D G O F F		
BLUE FD8	MS2 LOPEZ- ALEGRIA	MEAL		SLEEP		SLEEP		SLEEP		PRE SLEEP	H/O	PRE SLEEP	SLEEP			
	MS1 COLEMAN	MEAL		GBX1PCGO		EXERCISE		EXERCISE		PRE SLEEP	H/O	PRE SLEEP	SLEEP			
	PS1 LESLIE	MEAL		ST53c7-2		ST53c7-3		ST53c7-4		PRE SLEEP	H/O	PRE SLEEP	SLEEP			
DAY/NIGHT	[Shaded bars indicating day/night cycle]															
ORBIT	105 106 107 108 109 110 111 112 113															
TDRS	[Shaded bars indicating TDRS activity]															
ATTITUDE	BIASED -XLV -YVV															
NO EXER	[Shaded bars indicating no exercise periods]															
NOTES:	@CABIN AIR MONITOR @H/O BLUE TO RED															


GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
271:13:31 / 272:01:31		007:00:00 / 007:12:00		271:08:31 / 271:20:31		/271 CDT	-19.9	☉	SEPTEMBER 28, 1995	STS-73	FINAL	8/16/95
CDT :271		MET :007										
RED FD 8	CDR BOWERSOX	WASTE DUMP MONITOR		MEAL		PDT ITR LOAD OUT		EXERCISE (DSO 624)	H/O	PRE SLEEP	SLEEP	
	PLT ROMINGER	ASC1MON	ASC30BS	MEAL	OFF DUTY				H/O	PRE SLEEP	SLEEP	
	MS3 THORNTON			MEAL	ST63f3-1	ST63c3-2	ST63c3-3		H/O	PRE SLEEP	SLEEP	
	PS2 SACCO	GBX1PCGO		MEAL		DPM5COAL	DPM5COAL	EXERCISE	H/O	PRE SLEEP	SLEEP	
BLUE FD 9	MS2 LOPEZ-ALEGRIA			SLEEP				POST SLEEP	H/O	EXERCISE		DSO 611
	MS1 COLEMAN			SLEEP				POST SLEEP	H/O	EXERCISE	D/P	
	PS1 LESLIE			SLEEP				POST SLEEP	H/O	D/P	GBX2CDOT	GBX1ICE
DAY/NIGHT		ORBIT										
TDRS		E W										
ATTITUDE		NO EXER										
NOTES:		○ HTR CONFIG ○ RCRS CONFIG ○ DTO 667 ○ CABIN TEMP CNTL RECONFIG ○ H/O RED TO BLUE ○ AIR MONITORING										


GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE																			
272:01:31/ 272:13:31		007:12:00/ 008:00:00		271:20:31/ 272:08:31		/271 CDT	-17.8		SEPTEMBER 28, 1995	STS-73	FINAL	8/16/95																			
CDT	:271	12	21	13	22	14	23	0	CDT:272	1	17	2	18	3	19	4	20	5	21	6	22	7	23	8	0	MET:008					
MET	:007																														
RED FD 9	CDR BOWERSOX	SLEEP												POST SLEEP		H/O	KX CFE R FILE	EXERCISE (DSO 624)		P /T V 2 4		P E V E N T									
	PLT ROMINGER	SLEEP												POST SLEEP		H/O	G L I C C I O N	G B X 1 P C G O		P D T R L O A D I N E R		P E V E N T		G B X 1 P C G O							
	MS3 THORNTON	SLEEP												POST SLEEP		H/O	D/P	S T D C O N I		S T D C O N		S T 7 2 f 1 - 1		P L N G R S V		M E A L					
	PS2 SACCO	SLEEP												POST SLEEP		H/O	E X E R C I S E		D/P		G B X 1 P C G O		P L N G R S V		G B X 1 P C G O						
BLUE FD 9	MS2 LOPEZ-ALEGRIA	MEAL		FS U T A R T		OFF DUTY												PRE SLEEP		H/O	PRE SLEEP		SLEEP								
	MS1 COLEMAN	MEAL		G B X 1 P C G O		T L		P L N G R S V		G B X 1 P C G O		Z O N E		PRE SLEEP		H/O	PRE SLEEP		SLEEP												
	PS1 LESLIE	G B X 1 I C E		MEAL		S T A B 2 C H K		S T I M A D E O C C I R M		G F F C O M A G		G F F C O M A T		S T A B 2 C H K		S T A B 2 C H K		T L		P L N G R S V		E X E R C I S E		PRE SLEEP		H/O	PRE SLEEP		SLEEP		
DAY/NIGHT	E		W		BIASED -XLV -YVV																										
ORBIT	121		122		123		124		125		126		127		128		129														
TDRS																															
ATTITUDE																															
NO EXER																															
NOTES:																															

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
272:13:31 / 273:01:31		008:00:00 / 008:12:00		272:08:31 / 272:20:31		/272 CDT	-15.7		SEPTEMBER 29, 1995	STS-73	FINAL	8/16/95
CDT :272		0 1 2 3 4 5 6 7 8 9 10 11 12										
MET :008		0 1 2 3 4 5 6 7 8 9 10 11 12										
RED FD 9	CDR BOWERSOX	MEAL	SD PM LP Y I HN 21 DT	SD PM LP Y I HN 21 DT						H/O	PRE SLEEP	SLEEP
	PLT ROMINGER	MEAL								H/O	PRE SLEEP	SLEEP
	MS3 THORNTON	MEAL	CGF8SACA	CGF8SACA	ST72c1-2	ST72c1-2				H/O	PRE SLEEP	SLEEP
	PS2 SACCO	MEAL	CGF8SACA	CGF8SACA	ASCIMON	ASCIMON				H/O	PRE SLEEP	SLEEP
BLUE FD 10	MS2 LOPEZ-ALEGRIA		SLEEP							H/O	POST SLEEP	P/TV15 S/U
	MS1 COLEMAN		SLEEP							H/O D/P	POST SLEEP	GBX1CDOT
	PS1 LESLIE		SLEEP							H/O EXERCISE D/P	POST SLEEP	GBX1OTFE
DAY/NIGHT ORBIT		129 130 131 132 133 134 135 136 137										
TDRS E W		[Timeline bars for TDRS E and W]										
ATTITUDE NO EXER		-XLV -YVV -XLV -ZVV										
NOTES:		⊗H/O RED TO BLUE ⊗-XLV,-ZVV										

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE							
273:01:31 / 273:13:31		008:12:00 / 009:00:00		272:20:31 / 273:08:31		/272 CDT	-13.5		SEPTEMBER 29, 1995	STS-73	FINAL	8/16/95							
CDT :272		12	21	22	23	0	CDT:273	1	2	3	4	5	6	7	8	0	MET:009		
MET :008		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
RED FD 10	CDR BOWERSOX	SLEEP						POST SLEEP		H/O									
	PLT ROMINGER	SLEEP						POST SLEEP		H/O	BLTONEG							DGOJONG	
	MS3 THORNTON	SLEEP						POST SLEEP		H/O	EXERCISE	D/P	NODGROG NODGROG NODGROG NODGROG NODGROG NODGROG NODGROG NODGROG NODGROG NODGROG		ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT ESUJBT	PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR PLNGSUR	MEAL		
	PS2 SACCO	SLEEP						POST SLEEP		H/O	D/P	DPM4SURF					DPM4SURF		
BLUE FD 10	MS2 LOPEZ- ALEGRIA	MEAL								EXERCISE	KX CF AE R FI E	H/O	PRE SLEEP			SLEEP			
	MS1 COLEMAN	MEAL		DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF		P/T V21 S/U		EXERCISE		H/O	PRE SLEEP			SLEEP					
	PS1 LESLIE	MEAL		DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF DPM4SURF		CGBA1MON		EXERCISE		H/O	PRE SLEEP			SLEEP					
DAY/NIGHT	137		138		139		140		141		142		143		144		145		
TDRS E W	=====		=====		=====		=====		=====		=====		=====		=====		=====		
ATTITUDE									-XLV -ZVV										
NO EXER																			
NOTES:																			
											@H/O BLUE TO RED						@CABIN AIR MONITOR		

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE			
273:13:31/ 274:01:31		009:00:00/ 009:12:00		273:08:31/ 273:20:31		/273 CDT	-11.3		SEPTEMBER 30, 1995	STS-73	FINAL	8/16/95			
CDT :273		9	10	11	12	13	14	15	16	17	18	19	20		
MET :009		0	1	2	3	4	5	6	7	8	9	10	11	12	
RED FD 10	CDR BOWERSOX	MEAL		EXERCISE (DSO 624)			PRIV F FAM	PRIV F MED	H/O	PRE SLEEP		SLEEP			
	PLT ROMINGER	MEAL		EXERCISE (DSO 624)			SD PM Y I HN 21 OT	SD PM Y I HN 21 OT	H/O	PRE SLEEP		SLEEP			
	MS3 THORNTON	MEAL	DPM4SURF		DPM4SURF			PLNG RSV	PLNG RSV	H/O	PRE SLEEP		SLEEP		
	PS2 SACCO	DPM4 SURF	MEAL	GFC6 MAG	GFC4 EDT	GBX1CDOT	T/L PLNG RSV	ASC1MON	ASC3OBS	ASC2KCA	EXERCISE	H/O	PRE SLEEP		SLEEP
BLUE FD 11	MS2 LOPEZ- ALEGRIA	SLEEP			POST SLEEP			POST SLEEP	POST SLEEP	H/O	EXERCISE	DSO 611	P/T V24	EVENT	
	MS1 COLEMAN	SLEEP			POST SLEEP			POST SLEEP	POST SLEEP	H/O	EXERCISE	D/P	DPM4SURF	T/L PLNG RSV	EVENT
	PS1 LESLIE	SLEEP			POST SLEEP			POST SLEEP	POST SLEEP	H/O	D/P	GBX10TFE	T/L PLNG RSV	EVENT	G/L L2000 S
DAY/NIGHT															
ORBIT		145	146	147	148	149	150	151	152	153					
TDRS															
ATTITUDE		-XLV -ZVV													
NO EXER															
NOTES:		◎H/O RED TO BLUE ◎AIR MONITORING ◎DSO 904													

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
274:01:31/ 274:13:31		009:12:00/ 010:00:00		273:20:31/ 274:08:31		/273 CDT	-9.1		SEPTEMBER 30, 1995	STS-73	FINAL	8/16/95				
CDT	:273	21	22	23	0	CDT:274	1	2	3	4	5	6	7	8	0	MET:010
MET	:009	12	13	14	15	16	17	18	19	20	21	22	23			
RED FD 11	CDR BOWERSOX	SLEEP				POST SLEEP				H/O			P/T V24 SET UP EVENT PAO	MEAL		
	PLT ROMINGER	SLEEP				POST SLEEP				H/O	EXERCISE (DSO 624)		EVENT PAO			
	MS3 THORNTON	SLEEP				POST SLEEP				H/O	D/P	DPM4SURF		T/PLNG R/SV	DPM4SURF	
	PS2 SACCO	SLEEP				POST SLEEP				H/O	EXERCISE	D/P	ASC1MON	ASC3OBS	EVENT PAO T/PLNG R/SV PG LN GC R/SO VN ASC RCA MEAL	
BLUE FD 11	MS2 LOPEZ-ALEGRIA	MEAL									H/O	PRE SLEEP		SLEEP		
	MS1 COLEMAN	MEAL	DPM3RHEO				DPM3RHEO				H/O	PRE SLEEP		SLEEP		
	PS1 LESLIE	MEAL	DPM2FILM		STABLOPS		EXERCISE				H/O	PRE SLEEP		SLEEP		
DAY/NIGHT	[Shaded bars indicating day/night cycle]															
ORBIT	153		154		155		156		157		158		159		161	
TDRS	[Timeline with E/W markers]															
ATTITUDE	-XLV -ZVV															
NO EXER	[Timeline with bars]															
NOTES:	⊙H/O BLUE TO RED															

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE		
274:13:31/ 275:01:31		010:00:00/ 010:12:00		274:08:31/ 274:20:31		/274 CDT	-6.8		OCTOBER 1, 1995	STS-73	FINAL	8/16/95		
CDT	:274	9	10	11	12	13	14	15	16	17	18	19	20	
MET	:010	0	1	2	3	4	5	6	7	8	9	10	11	12
RED FD 11	CDR BOWERSOX	MEAL			EXERCISE (DSO 624)			SD PLP I HN 21 OT	KX CF AE R F I L E	P R I V M E D	H/O	PRE SLEEP	SLEEP	
	PLT ROMINGER	PDT ITR LOA INER T	MEAL		ES C B A T T	ES C B A T T	G F F C 3 M O N	C P C C 3 M O N	S P C C 2 M O N	3 G A D 3 S D F P C D A M P C A M A C F M A S 2 3 2 8 2 3 M M M M M M M M M M M M M M M	H/O	PRE SLEEP	SLEEP	
	MS3 THORNTON	D P M 4 S U R F	MEAL		G F F C 2 O P S	S T A B 3 P P G S	P L N G R S V	D P M 4 S U R F		EXERCISE	H/O	PRE SLEEP	SLEEP	
	PS2 SACCO	MEAL	D P M 4 S U R F		T L P L N G R S V	G B X 1 N C G O	C G B A 5 T V		N O R O N	H/O	PRE SLEEP	SLEEP		
BLUE FD 12	MS2 LOPEZ- ALEGRIA	SLEEP				POST SLEEP	H/O		EXERCISE	P A V O N E V E N T S E T U P P / V 2 4				
	MS1 COLEMAN	SLEEP				POST SLEEP	H/O		D/P	D P M 2 F I L M	T L P L N G R S V	HPAC2SEC	C P C C 3 M O N P A V O N E V E N T	
	PS1 LESLIE	SLEEP				POST SLEEP	H/O		EXERCISE	D/P	G B X 1 P D E	T L P L N G R S V	G B X 1 P D E	M E A L
DAY/NIGHT														
ORBIT	161	162	163	164	165	166	167	168	169					
TDRS														
ATTITUDE	-XLV -ZVV													
NO EXER														
NOTES:	@DTO 667						@H/O RED TO BLUE							

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE														
275:01:31/ 275:13:31		010:12:00/ 011:00:00		274:20:31/ 275:08:31		/274 CDT	-4.6		OCTOBER 1, 1995	STS-73	FINAL	8/16/95														
CDT	:274	12	21	13	22	14	23	0	CDT:275	1	17	2	18	3	19	4	20	5	21	6	22	7	23	8	0	MET:011
MET	:010																									
RED FD 12	CDR BOWERSOX	SLEEP						POST SLEEP			H/O	FILTER CLEANING		OFF DUTY												
	PLT ROMINGER	SLEEP						POST SLEEP			H/O	ASC1MON	EXERCISE (DSO 624)		OFF DUTY											
	MS3 THORNTON	SLEEP						POST SLEEP			H/O	D/P	EXERCISE		DPM4SURF		OFF DUTY									
	PS2 SACCO	SLEEP						POST SLEEP			H/O	EXERCISE		OFF DUTY												
BLUE FD 12	MS2 LOPEZ-ALEGRIA	MEAL								PRE SLEEP			SLEEP													
	MS1 COLEMAN	MEAL		GBX1PDE		GBX1FSDC		GBX1FSDC		EXERCISE		PRE SLEEP						SLEEP								
	PS1 LESLIE	MEAL		GBX1PDE		GBX1FSDC		GBX1FSDC		PRE SLEEP		SLEEP														
DAY/NIGHT ORBIT		169		170		171		172		173		174		175		176		177								
TDRS E W		-----		-----		-----		-----		-----		-----		-----		-----		-----								
ATTITUDE NO EXER								-XLV -ZVV																		
NOTES:																										

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
275:13:31 / 276:01:31		011:00:00 / 011:12:00		275:08:31 / 275:20:31		/275 CDT	-2.3		OCTOBER 2, 1995	STS-73	FINAL	8/16/95
CDT :275		MET :011		0 1 2 3 4 5 6 7 8 9 10 11 12								
RED FD 12	CDR BOWERSOX	OFF DUTY	MEAL			EXERCISE (DSO 624)	WASTE DUMP MONITOR	H/O	PRE SLEEP	PRE SLEEP	SLEEP	
	PLT ROMINGER		MEAL			OFF DUTY		H/O	PRE SLEEP	PRE SLEEP	SLEEP	
	MS3 THORNTON	DPM4SURF	MEAL			OFF DUTY		H/O	PRE SLEEP	PRE SLEEP	SLEEP	
	PS2 SACCO	OFF DUTY	MEAL	D/P		DPM4SURF		H/O	PRE SLEEP	PRE SLEEP	SLEEP	
BLUE FD 13	MS2 LOPEZ-ALEGRIA		SLEEP			POST SLEEP		H/O	EXERCISE			
	MS1 COLEMAN		SLEEP			POST SLEEP		H/O	D/P	DPM11CMP	DPM11CMP	
	PS1 LESLIE		SLEEP			POST SLEEP		H/O	EXERCISE		OFF DUTY	
DAY/NIGHT ORBIT		177 178 179 180 181 182 183 184 185										
TDRS E W		[Timeline bars for TDRS E and W]										
ATTITUDE NO EXER		-XLV -ZVV										
NOTES:		@CABIN AIR MONITOR @H/O RED TO BLUE										

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE							
276:01:31/ 276:13:31		011:12:00/ 012:00:00		275:20:31/ 276:08:31		/275 CDT	-0.1		OCTOBER 2, 1995	STS-73	FINAL	8/16/95							
CDT :275																			
MET :011												MET:012							
RED FD 13	CDR BOWERSOX	SLEEP					POST SLEEP			H/O	EXERCISE (DSO 624)		P S E T U P P L V 2 4		E V E N T				
	PLT ROMINGER	SLEEP					POST SLEEP			H/O	EXERCISE (DSO 624)		G L I N E S D S O 6 1 1		P A O E V E N T P D T R L O A D I N E R P 1 2 - E D O T V 1 2 - E D O				
	MS3 THORNTON	SLEEP					POST SLEEP			H/O D/P	LBN3RAMP		P L N G R S V		LBN3RAMP				
	PS2 SACCO	SLEEP					POST SLEEP			H/O D/P	LBN3RAMP		P L N G R S V		LBN3RAMP				
BLUE FD 13	MS2 LOPEZ-ALEGRIA	MEAL		S P A C E C A M E R A S C A P E C A M E R A		G L I N E S		C G B A 1 M O N		N O R E C T I F I C A T I O N S E R V I C E S E R V I C E S E R V I C E S		H/O	PRE SLEEP		SLEEP				
	MS1 COLEMAN	MEAL		OFF DUTY					EXERCISE		H/O	PRE SLEEP		SLEEP					
	PS1 LESLIE	OFF DUTY	MEAL	D/P	D P M 1 1 C M P	G B X 1 0 T F E		E S C R I B E R I E S E S C R I B E R I E S E S C R I B E R I E S		H/O	PRE SLEEP		SLEEP						
DAY/NIGHT																			
ORBIT		185		186		187		188		189		190		191		192		193	
TDRS		E		W															
ATTITUDE																			
NO EXER																			
NOTES:																			
										⊗H/O BLUE TO RED		⊗AIR MONITORING				⊗DTO 667			

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE			
276:13:31/ 277:01:31		012:00:00/ 012:12:00		276:08:31/ 276:20:31		/276 CDT	2.1		OCTOBER 3, 1995	STS-73	FINAL	8/16/95			
CDT	:276	9	10	11	12	13	14	15	16	17	18	19	20	12	
MET	:012	0	1	2	3	4	5	6	7	8	9	10	11	12	
RED FD 13	CDR BOWERSOX	MEAL						SD PM LP Y I HN 21 OT							
	PLT ROMINGER	MEAL							SL CNDS TK DUMP						
	MS3 THORNTON	MEAL								EXERCISE					
	PS2 SACCO	MEAL								EXERCISE					
BLUE FD 14	MS2 LOPEZ-ALEGRIA			SLEEP											MEAL
	MS1 COLEMAN			SLEEP											MEAL
	PS1 LESLIE			SLEEP											MEAL
DAY/NIGHT															
ORBIT	193	194	195	196	197	198	199	200	201						
TDRS															
ATTITUDE	-XLV -ZVV														
NO EXER															
NOTES:	DSO 802			DSO 802			H/O RED TO BLUE			EDUCATIONAL ACT					

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE							
277:01:31 / 277:13:31		012:12:00 / 013:00:00		276:20:31 / 277:08:31		/276 CDT	4.3		OCTOBER 3, 1995	STS-73	FINAL	8/16/95							
CDT	:276	21	22	23	0	CDT:277	1	2	3	4	5	6	7	8	9	0	MET:013		
MET	:012	12	13	14	15	16	17	18	19	20	21	22	23						
RED FD 14	CDR BOWERSOX	SLEEP						POST SLEEP		H/O	EXERCISE (DSO 624)								
	PLT ROMINGER	SLEEP						POST SLEEP		H/O	EXERCISE (DSO 624)								
	MS3 THORNTON	SLEEP						POST SLEEP		H/O	EXERCISE	D/P	TV26:DSO	GBX3FSDC		PLNG RSW	GBX3FSDC		
	PS2 SACCO	SLEEP						POST SLEEP		H/O	D/P	GFCC2OPS	DPM9FISS	ESCBATT	GFCC2OPS	ESCBATT	PLNG RSW	DPM2FILM	
BLUE FD 14	MS2 LOPEZ-ALEGRIA	MEAL	OFF DUTY						KXCF AE FILE	H/O	PRE SLEEP		SLEEP						
	MS1 COLEMAN	MEAL	DPM9FISS		PLNG RSW	DPM9FISS		EXERCISE		H/O	PRE SLEEP		SLEEP						
	PS1 LESLIE	MEAL	GBX2FSDC		PLNG RSW	GBX2FSDC		GBX2FSDC		3ADS3 DPCAD MCAAM AFMSA 22832 00000 NNNN	H/O	PRE SLEEP		SLEEP					
DAY/NIGHT ORBIT		201		202		203		204		205		206		207		208		209	
TDRS E W		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]	
ATTITUDE NO EXER		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]		[Bar]	
NOTES:		<p style="text-align: center;">@H/O BLUE TO RED @DSO 904</p>																	

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE			
277:13:31/ 278:01:31		013:00:00/ 013:12:00		277:08:31/ 277:20:31		/277 CDT	6.5		OCTOBER 4, 1995	STS-73	FINAL	8/16/95			
CDT	:277	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MET	:013	0	1	2	3	4	5	6	7	8	9	10	11	12	13
RED FD 14	CDR BOWERSOX		MEAL						FILTER CLEANING	H/O		PRE SLEEP			SLEEP
	PLT ROMINGER		MEAL						FILTER CLEANING	H/O		PRE SLEEP			SLEEP
	MS3 THORNTON		MEAL						DCAM7REC			PRE SLEEP			SLEEP
	PS2 SACCO		MEAL						GBX2ZCGO			PRE SLEEP			SLEEP
BLUE FD 15	MS2 LOPEZ-ALEGRIA		SLEEP						POST SLEEP	H/O		EXERCISE			
	MS1 COLEMAN		SLEEP						POST SLEEP	H/O		EXERCISE	D/P		
	PS1 LESLIE		SLEEP						POST SLEEP	H/O	D/P	DPM9FISS			DPM9FISS
DAY/NIGHT	ORBIT	209	210	211	212	213	214	215	216	217					
TDRS	E W														
ATTITUDE	NO EXER														
NOTES:															

◎CABIN AIR MONITOR
 ◎EDUCATIONAL ACT
 ◎H/O RED TO BLUE

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE																																						
278:01:31 / 278:13:31		013:12:00 / 014:00:00		277:20:31 / 278:08:31		/277 CDT	8.7		OCTOBER 4, 1995	STS-73	FINAL	8/16/95																																						
CDT	:277	12	21	13	22	14	23	15	0	CDT:278	1	17	2	18	3	19	4	20	5	21	6	22	7	23	8	0	MET:014																							
MET	:013																																																	
RED FD 15	CDR BOWERSOX	SLEEP						POST SLEEP			H/O	CREW CONF			EXERCISE (DSO 624)																																			
	PLT ROMINGER	SLEEP						POST SLEEP			H/O	CREW CONF			SD P M L P Y I H N Z I O T			SD P M L P Y I H N Z I O T																																
	MS3 THORNTON	SLEEP						POST SLEEP			H/O	D/P	CREW CONF			EXERCISE			T P L N G R S V			ASC1MON ASC3OBS			ASC3KCA																									
	PS2 SACCO	SLEEP						POST SLEEP			H/O	D/P	CREW CONF			EXERCISE			DPM7ENCP			T P L N G R S V			DPM7ENCP																									
BLUE FD 15	MS2 LOPEZ-ALEGRIA	MEAL							K X C P A R			O L L O G N O			U O F C J B A T T			E S C C B A T T			R E S T O N			P S E T U P			H/O			C A C O U R D / T V			S T E L I A			CREW CONF			PRE SLEEP			SLEEP								
	MS1 COLEMAN	MEAL	GBX2PCGD						T P L N G R S V			GBX2PCGD			G F F C M A G			G F F C 4 E D T			G F F C O P P S			A L B E R T			A D A S P C A C			S T O P M H			H/O			PRE SLEEP			CREW CONF			PRE SLEEP			SLEEP					
	PS1 LESLIE	MEAL	DPM9FISS						T P L N G R S V			DPM9FISS			EXERCISE			H/O			PRE SLEEP			CREW CONF			PRE SLEEP			SLEEP																				
DAY/NIGHT ORBIT		217		218		219		220		221		222		223		224		225																																
TDRS E W																																																		
ATTITUDE																																																		
NO EXER																																																		
NOTES:		@DSO 904 @H/O BLUE TO RED @DTO 667																																																

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE										
278:13:31/ 279:01:31		014:00:00/ 014:12:00		278:08:31/ 278:20:31		/278 CDT	10.8		OCTOBER 5, 1995	STS-73	FINAL	8/16/95										
CDT	:278	9	10	11	12	13	14	15	16	17	18	19	20	21	22							
MET	:014	0	1	2	3	4	5	6	7	8	9	10	11	12	13							
RED FD 15	CDR BOWERSOX	MEAL	DSO 604 (OI-3C)				KX C R E R E T I L E	G G M N V R	P S E T U P P E R T I V E S	P E V E N T	PRE SLEEP	H/O	PRE SLEEP	SLEEP								
	PLT ROMINGER	MEAL	DSO 604 (OI-3C)		DSO 604 (OI-1)	EXERCISE (DSO 624)				PRE SLEEP	H/O	PRE SLEEP	SLEEP									
	MS3 THORNTON	MEAL	CGBA5TV	CGBA5TV			T P L N G R S V	P L N G R S V	A D P C A M M O N	S G A M S C O N N	PRE SLEEP	H/O	PRE SLEEP	SLEEP								
	PS2 SACCO	MEAL	DPM7ENCP				T P L N G R S V	D P M I S S I O N	P E V E N T		PRE SLEEP	H/O	PRE SLEEP	SLEEP								
BLUE FD 16	MS2 LOPEZ-ALEGRIA	SLEEP									POST SLEEP	H/O	POST SLEEP	P S E T U P P E R T I V E S	P E V E N T							
	MS1 COLEMAN	SLEEP									POST SLEEP	H/O	POST SLEEP	D/P	S T D C T M I	S T D C O M	G F L C O P S	S T R O N G S	CGBA2-SL	P L N G R S V	Z C G 6 D A C T	Z C G 7 S T O W
	PS1 LESLIE	SLEEP									POST SLEEP	H/O	POST SLEEP	EXERCISE	D/P	ST82f1-1		T P L N G R S V	ST82c1-2			
DAY/NIGHT																						
ORBIT	225	226	227	228	229	230	231	232	233													
TDRS																						
ATTITUDE	-XLV -ZVV																					
NO EXER	BIASED -XLV -YVV																					
NOTES:	@BIASED -XLV, -YVV @H/O RED TO BLUE																					

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
279:01:31/ 279:13:31		014:12:00/ 015:00:00		278:20:31/ 279:08:31		/278 CDT	12.8		OCTOBER 5, 1995	STS-73	FINAL	8/16/95
CDT :278				CDT:279								MET:015
MET :014												
RED FD 16	CDR BOWERSOX	SLEEP		POST SLEEP		H/O	BRIEF	PILOT DTO TRAINER	FCS C/O	SAMS OARE	MEAL	UHF CHECK COMM
	PLT ROMINGER	SLEEP		POST SLEEP		H/O	BRIEF	PILOT DTO TRAINER	FCS C/O	SAMS OARE	MEAL	ASC1MON UHF CHECK COMM
	MS3 THORNTON	SLEEP		POST SLEEP		H/O	BRIEF	LBN4SOAK	LBNP4MON	MEAL	LBNP4MON MEAL	LBN4SOAK
	PS2 SACCO	SLEEP		POST SLEEP		H/O		LBN4SOAK				
BLUE FD 16	MS2 LOPEZ- ALEGRIA	MEAL	DSO 611	DSO 604 (01-1)	CGBA1MON	CGBA4TRN	H/O	EXERCISE	FCS C/O	PRE SLEEP	SLEEP	
	MS1 COLEMAN	ZCG7STOW	MEAL	GBX3SHUT	LBN4SOAK	EXERCISE	H/O			PRE SLEEP	SLEEP	
	PS1 LESLIE	MEAL	SPCG4HH	SPCG3DCT	GFFC7STW	STD11STW	H/O			PRE SLEEP	SLEEP	
DAY/NIGHT												
ORBIT												
TORS												
ATTITUDE												
NO EXER												
NOTES:												

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
279:13:31/ 280:01:31		015:00:00/ 015:12:00		279:08:31/ 279:20:31		/279 CDT	14.8		OCTOBER 6, 1995	STS-73	FINAL	8/16/95	
CDT :279		0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22											
MET :015		0 1 2 3 4 5 6 7 8 9 10 11 12											
RED FD 16	CDR BOWERSOX	EXERCISE (DSO 624)		WASTE DUMP MONITOR		CABIN STOW			PRE SLEEP	PC R I V M E D	SLEEP		
	PLT ROMINGER	EXERCISE (DSO 624)		CABIN STOW			PRE SLEEP	H/O	SLEEP				
	MS3 THORNTON	LBN4SOAK						PRE SLEEP	H/O	SLEEP			
	PS2 SACCO	LBN4SOAK	MEAL	LBNP4MON	LBNP4MON	LBNP4MON	LBNP4MON	LBNP4MON	LBN4SOAK	PRE SLEEP	H/O	SLEEP	
BLUE FD 17	MS2 LOPEZ-ALEGRIA	SLEEP						PC R I V M E D	POST SLEEP	K C A C T	CABIN STOW		
	MS1 COLEMAN	SLEEP						H/O	POST SLEEP	LBN5STOW	CABIN STOW		
	PS1 LESLIE	SLEEP						H/O	POST SLEEP	LBN5STOW	CABIN STOW		
DAY/NIGHT													
ORBIT		242 243 244 245 246 247 248 249											
TDRS													
ATTITUDE		KU BIAS -YLV +ZVV											
NO EXER		-ZLV -YVV											
NOTES:		@BIASED -YLV,+ZVV				@LOAD FUTURE START MNVR -ZLV, -YVV				@H/O RED TO BLUE			
		@DTO 679											

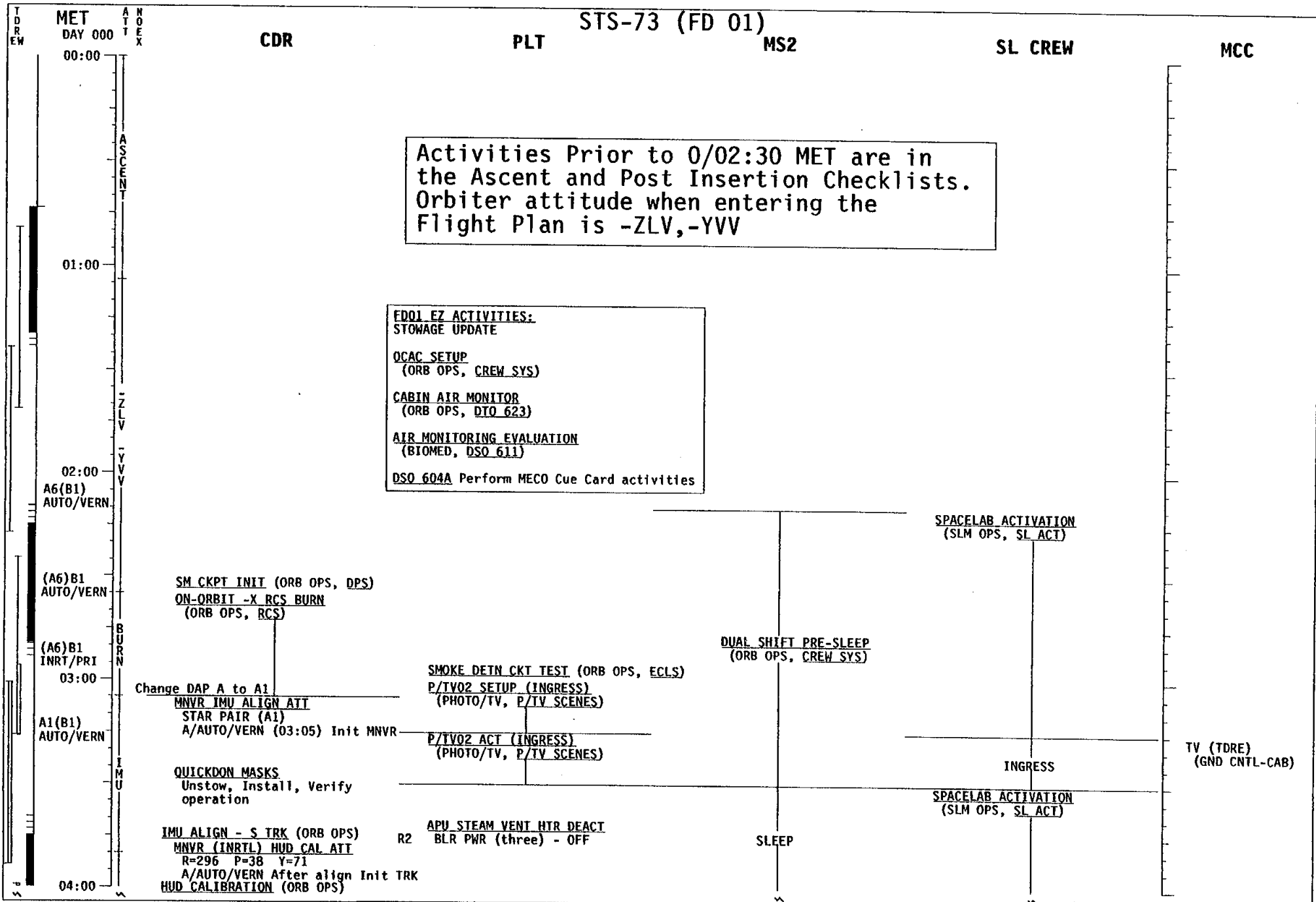
GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
280:01:31/ 280:13:31		015:12:00/ 016:00:00		279:20:31/ 280:08:31		/279 CDT	16.7		OCTOBER 6, 1995	STS-73	FINAL	8/16/95					
CDT :279																	
MET :015												MET:016					
RED FD 17	CDR BOWERSOX	SLEEP				POST SLEEP	POST SLEEP	DEORBIT PREP	DEORBIT PREP								
	PLT ROMINGER	SLEEP				POST SLEEP		DEORBIT PREP									
	MS3 THORNTON	SLEEP				POST SLEEP	ORTHO ENTRY PREP	DEORBIT PREP									
	PS2 SACCO	SLEEP				POST SLEEP	ORTHO ENTRY PREP	DEORBIT PREP									
BLUE FD 17	MS2 LOPEZ-ALEGRIA	SSRS	SSRS	SSRS	SSRS	SSRS	SSRS	SSRS	SSRS	SSRS	SSRS	SSRS					
	MS1 COLEMAN	CABIN STOW	CGF9DACT	SL DEACTIVATION	SL DEACT	MEAL	DEORBIT PREP										
	PS1 LESLIE	PAYLOAD DEACT	ORTHO ENTRY PREP	MEAL	DEORBIT PREP												
DAY/NIGHT ORBIT		250		251		252		253		254		255		256		257	
TDRS E W																	
ATTITUDE NO EXER		-ZLV -YVV						-XSI		COMM		ENTRY					
NOTES:		@CABIN AIR MONITOR @DTO 1121 @CABIN TEMP CNTL RECONFIG @DTO 913 @DTO 682		@DSO 621 @AFT STATION o KU-BD STOW @DSO 603C ORTHOSTATIC FUNCTION v -XSI MNVR @DSO 621		*TIG 15/20:55 *LNDG 15/21:55											

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DETAILED TIMELINE

**DETAILED
TIMELINE**

DETAILED TIMELINE



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MET
DAY 000

04:00
(A1) B5
INTL/VERN
A1(B1)
AUTO/VERN

05:00

06:00

07:00

08:00

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STS-73 (FD 01)

CDR

HUD CALIBRATION (ORB OPS, GNC)

Change DAP B to B1 after HUD CAL

MNVR (TRK) BIASED -XLV -YVV
TG=2 BV=5
P=178 Y=0 OM=73
A/AUTO/VERN Init MNVR after Cal complete

PRIORITY PWRDN GROUP B
(ORB PKT, PRIOR PWRDN)

CRT4 POWERDOWN
R12L CRT4 - STBY

PLT

LAMP TEST (ORB OPS, EPS)

ELEVON PARK
(ORB OPS, GNC)

MS2

SLEEP

SL CREW

SPACELAB ACTIVATION
(SLM OPS, SL ACT)

PAYLOAD ACTIVATION
(PL SYS HDBK, PAYLOAD ACT)
(MS3)

MEAL

CGBA

TIMELINE PLANNING
RESERVE

CGF

MCC

A12 APU HTR GG/FU (three) - A AUTO
Load DAPs per STS-73 DAP TABLES
(FLT PLN, DAP TABLES)

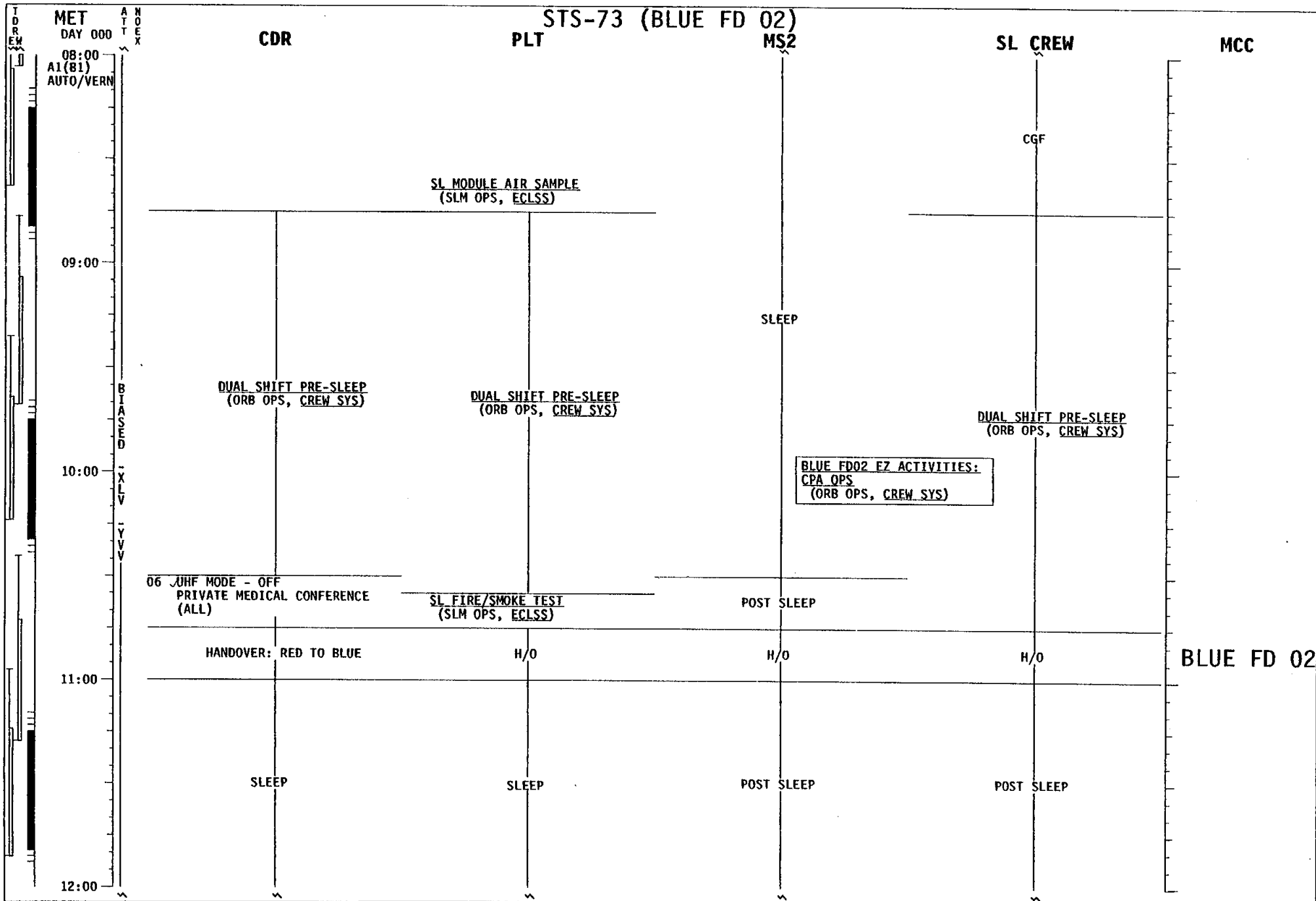
SHUTTLE EMER EYEWASH (SEE)
Unstow, attach on or near galley. Fill drink container(s) and attach near appropriate experiment location

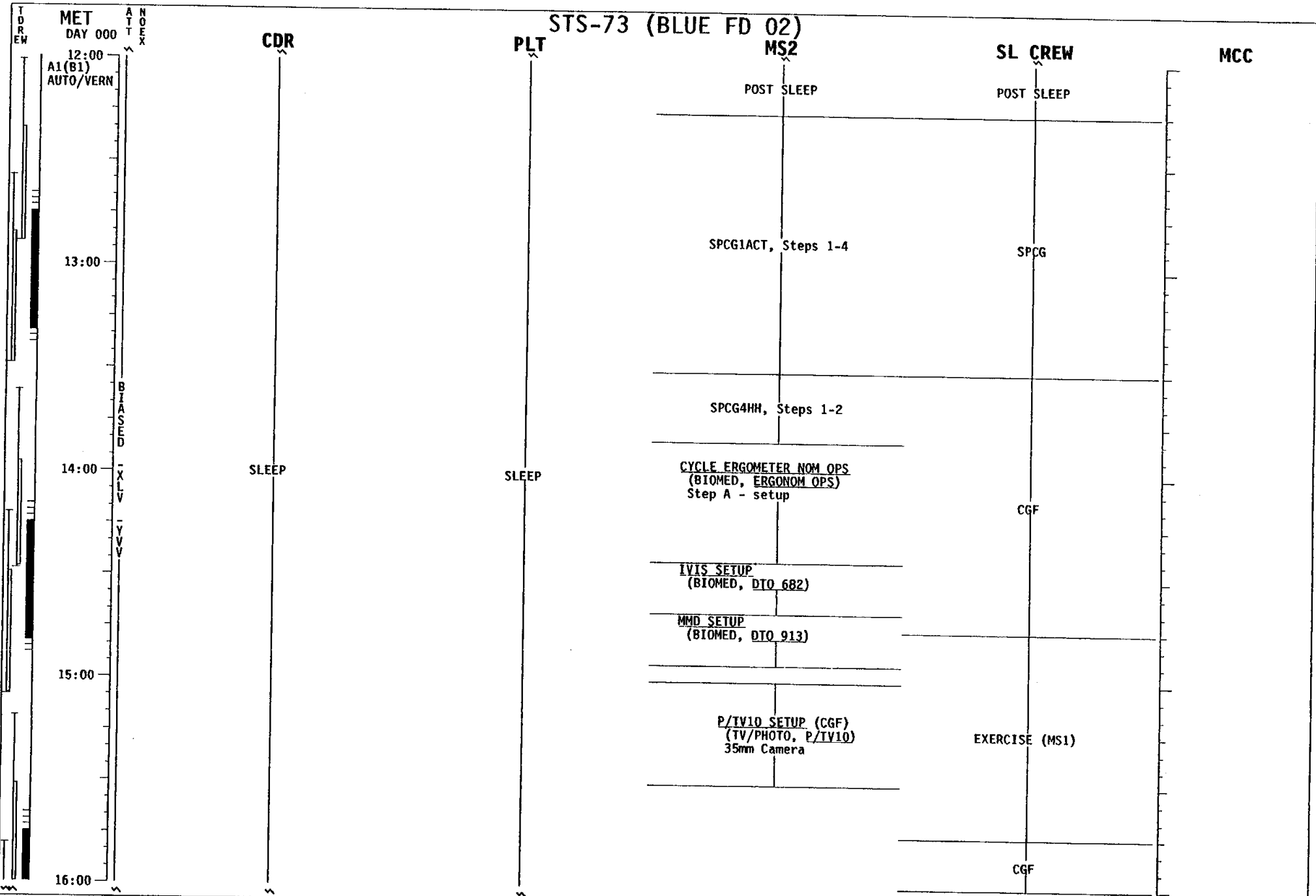
KCA ACT
(PL OPS, DIO 679)

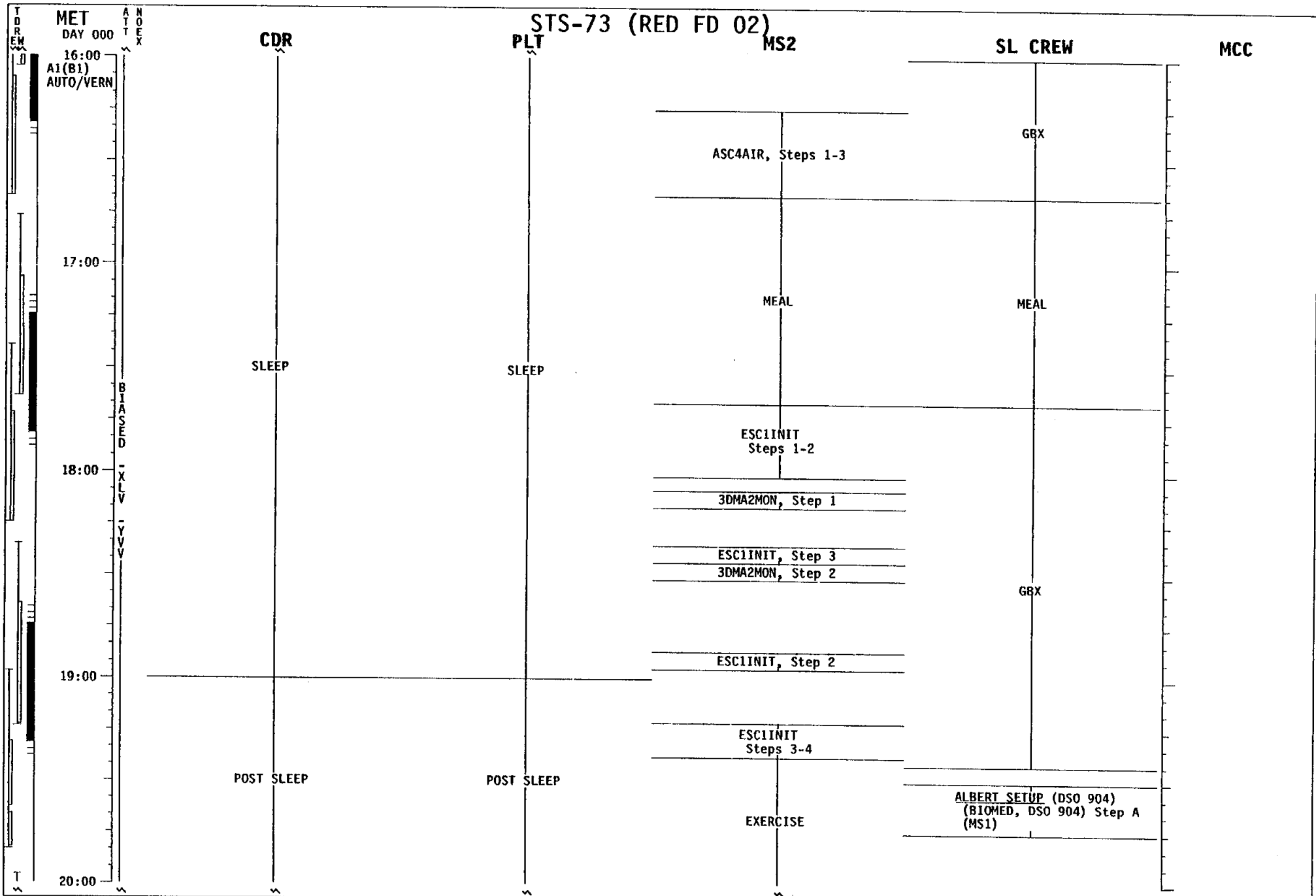
PADM SETUP
(ORB OPS, PGSC)

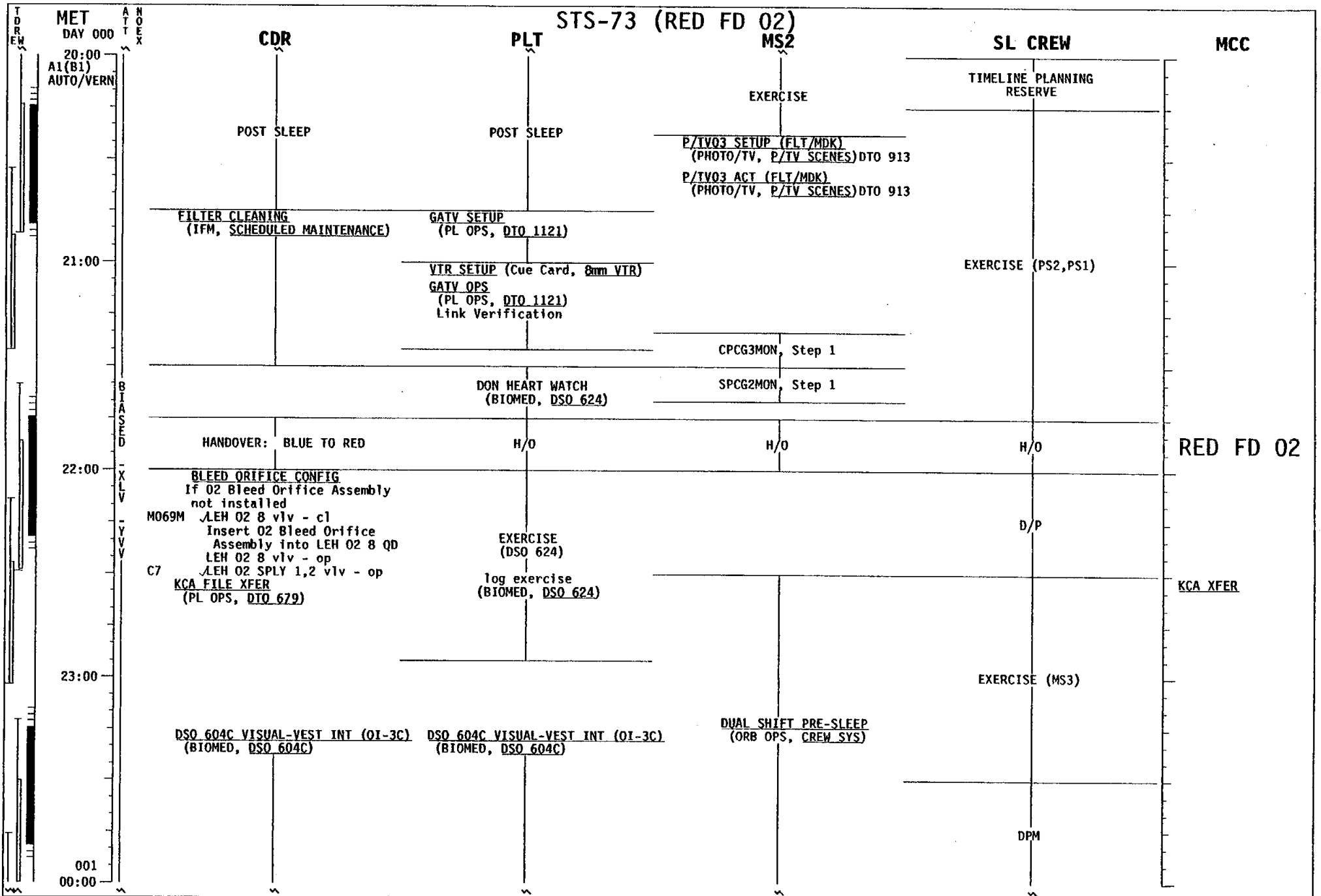
AFT CONTROLLER C/O
(ORB OPS, GNC)

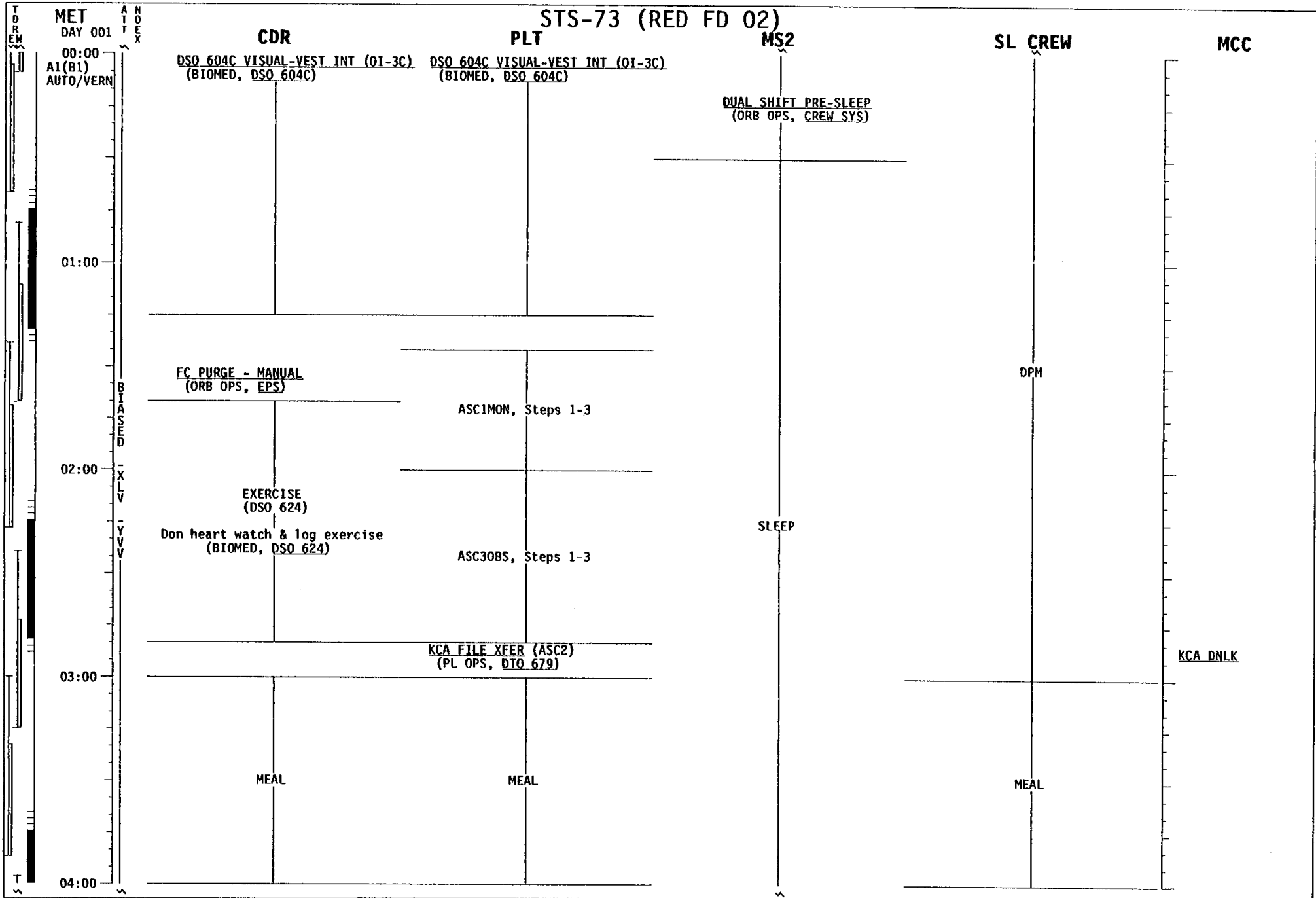
HUD CALIBRATION LOG	
STAR ID:	13, RIGEL
STAR AVAIL:	03:55 TO 04:42
+X ΔBIAS	___' ___' ___"
UPDATE TIME:	___/___:___:___

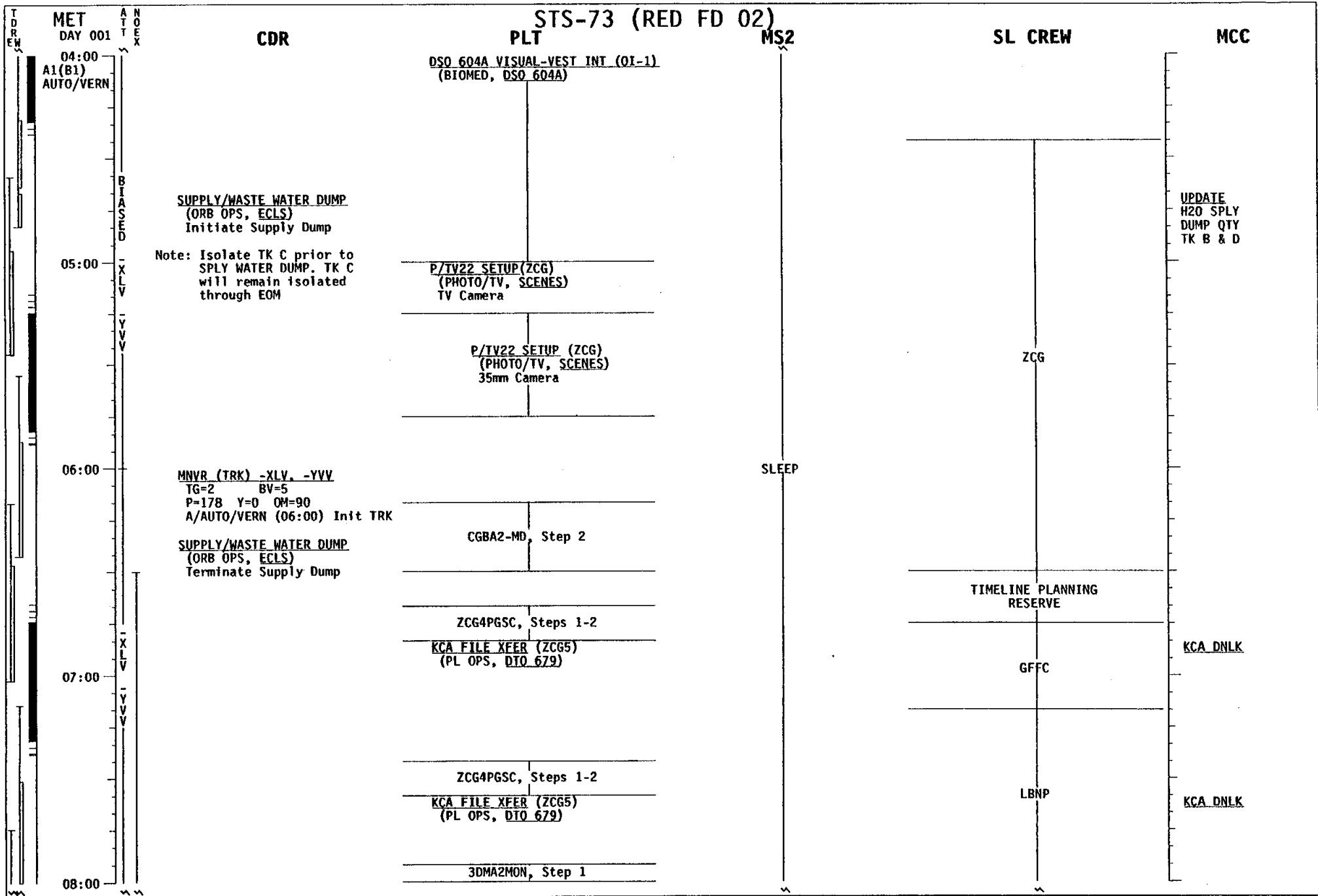


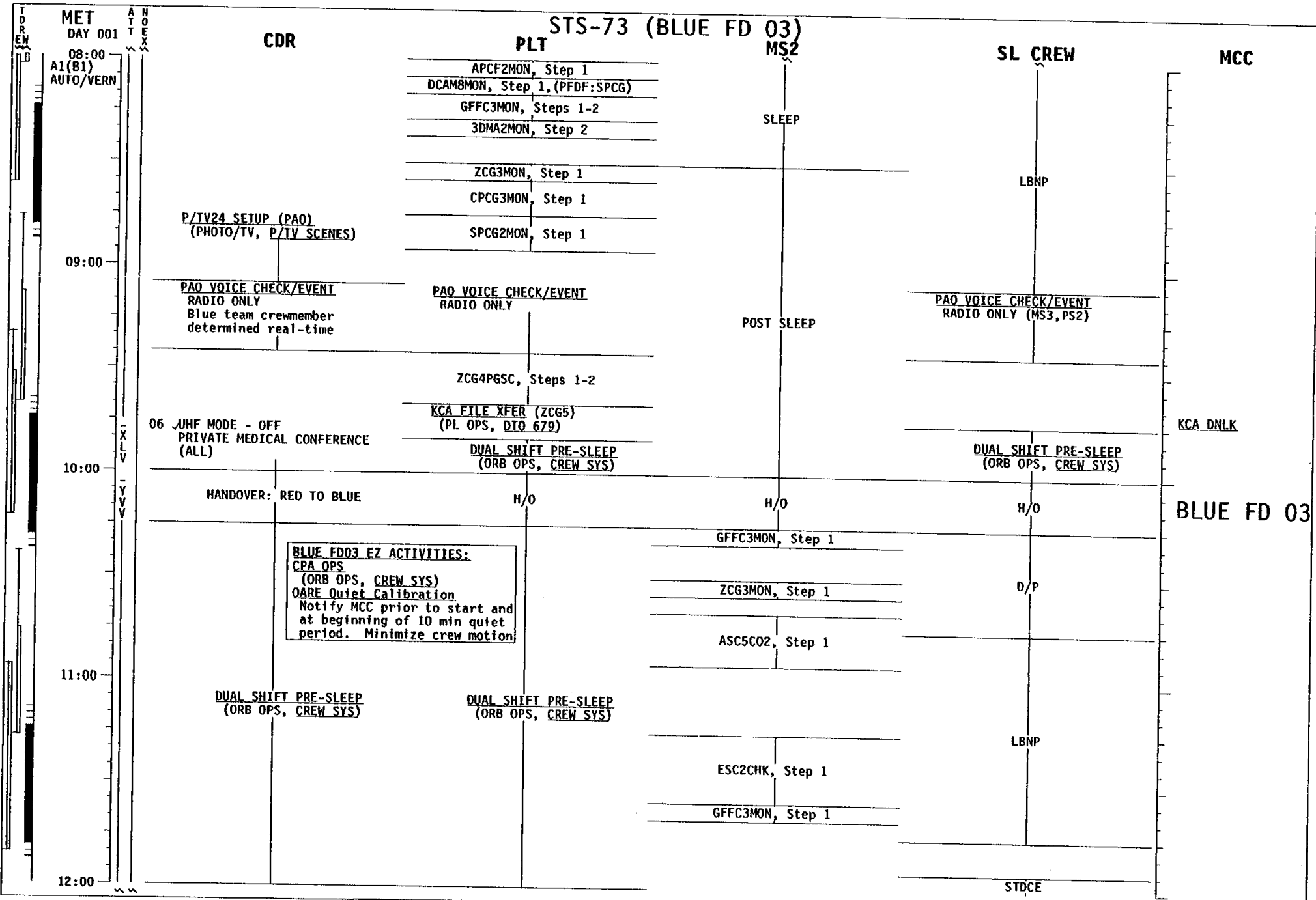












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MET
DAY 001

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X

STS-73 (BLUE FD 03) MS2

CDR

PLT

SL CREW

MCC

12:00
A1(81)
AUTO/VERN

13:00

14:00

15:00

16:00

X
L
V
-
Y
V
V

B
I
A
S
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D
-
X
L
V
-
Y
V
V

SLEEP

SLEEP

ZCG3MON, Step 1

STOCE

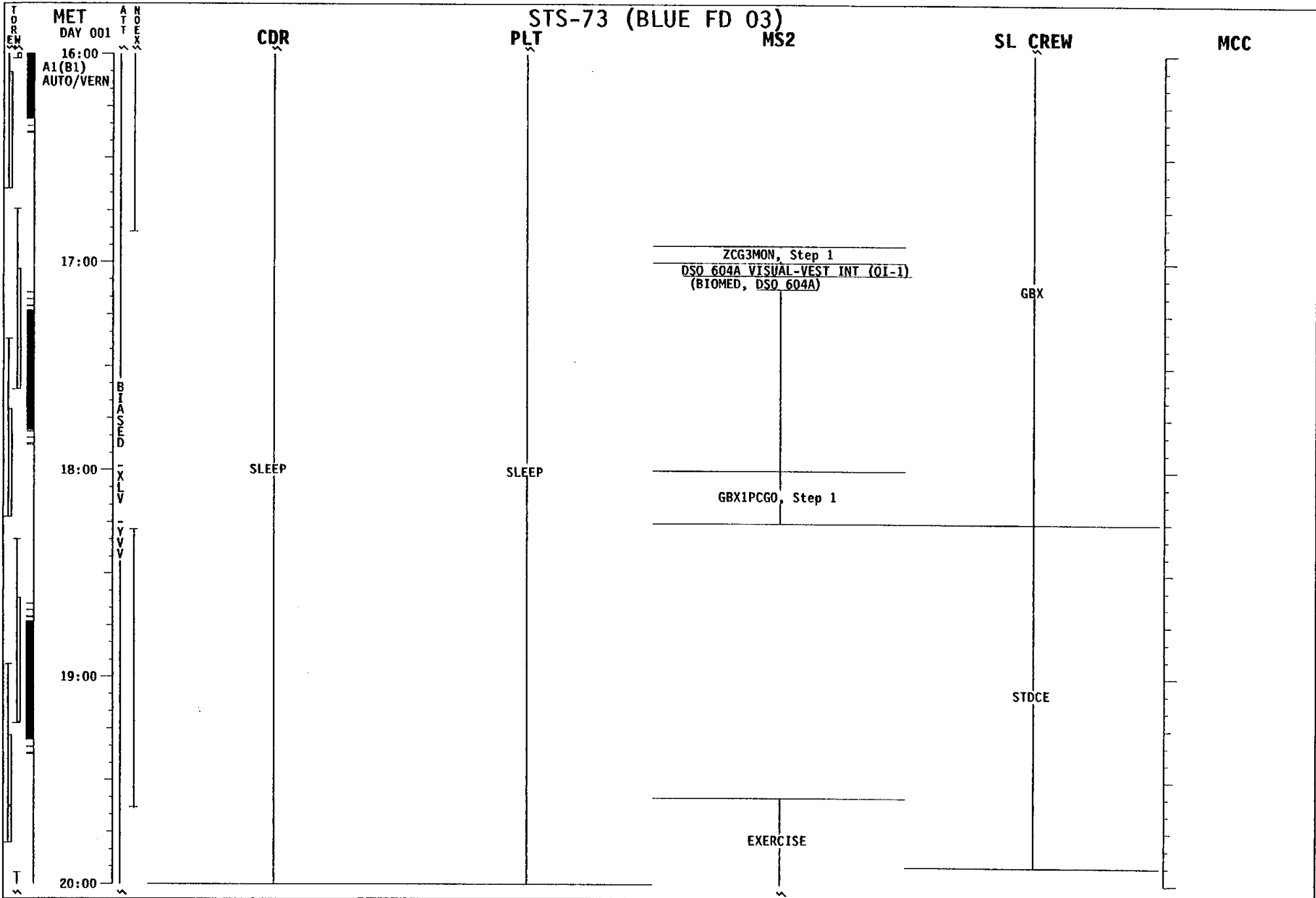
MNVR (TRK) BIASED -XLV -YVV
TG=2 BV=5 P=178 Y=0 OM=73
A/AUTO/VERN (14:10) Init TRK

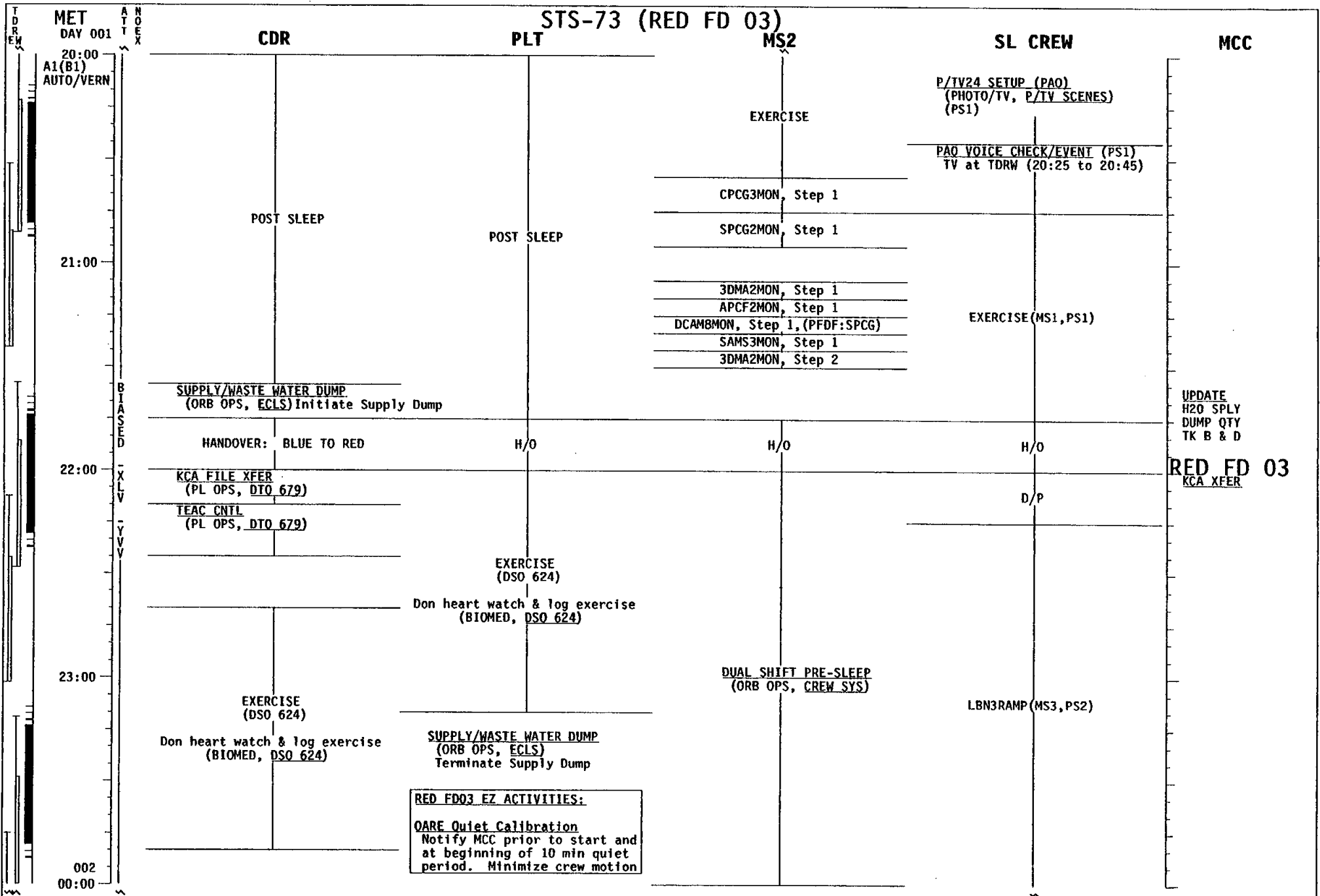
MEAL

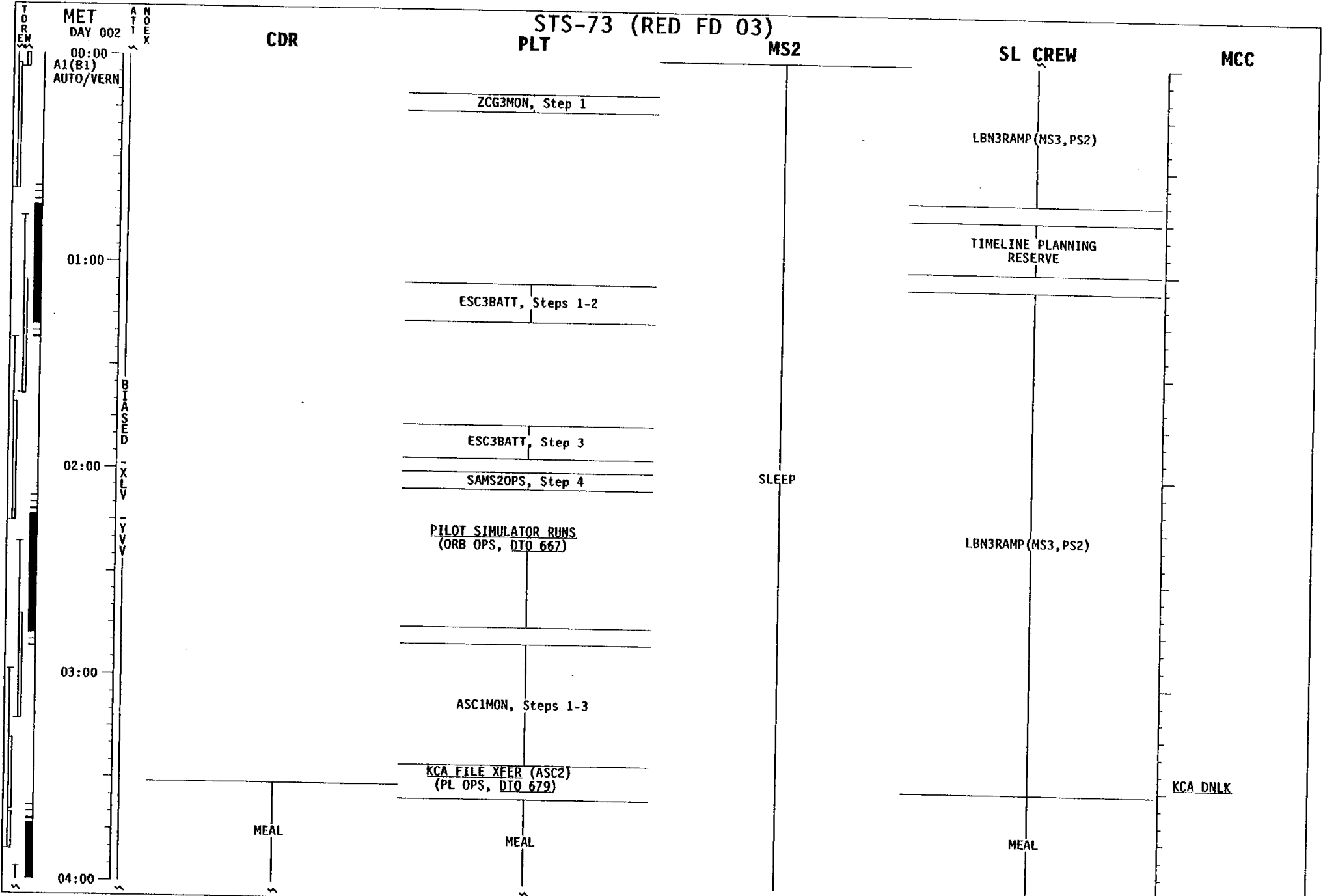
MEAL

GBX1PCGO, Step 1

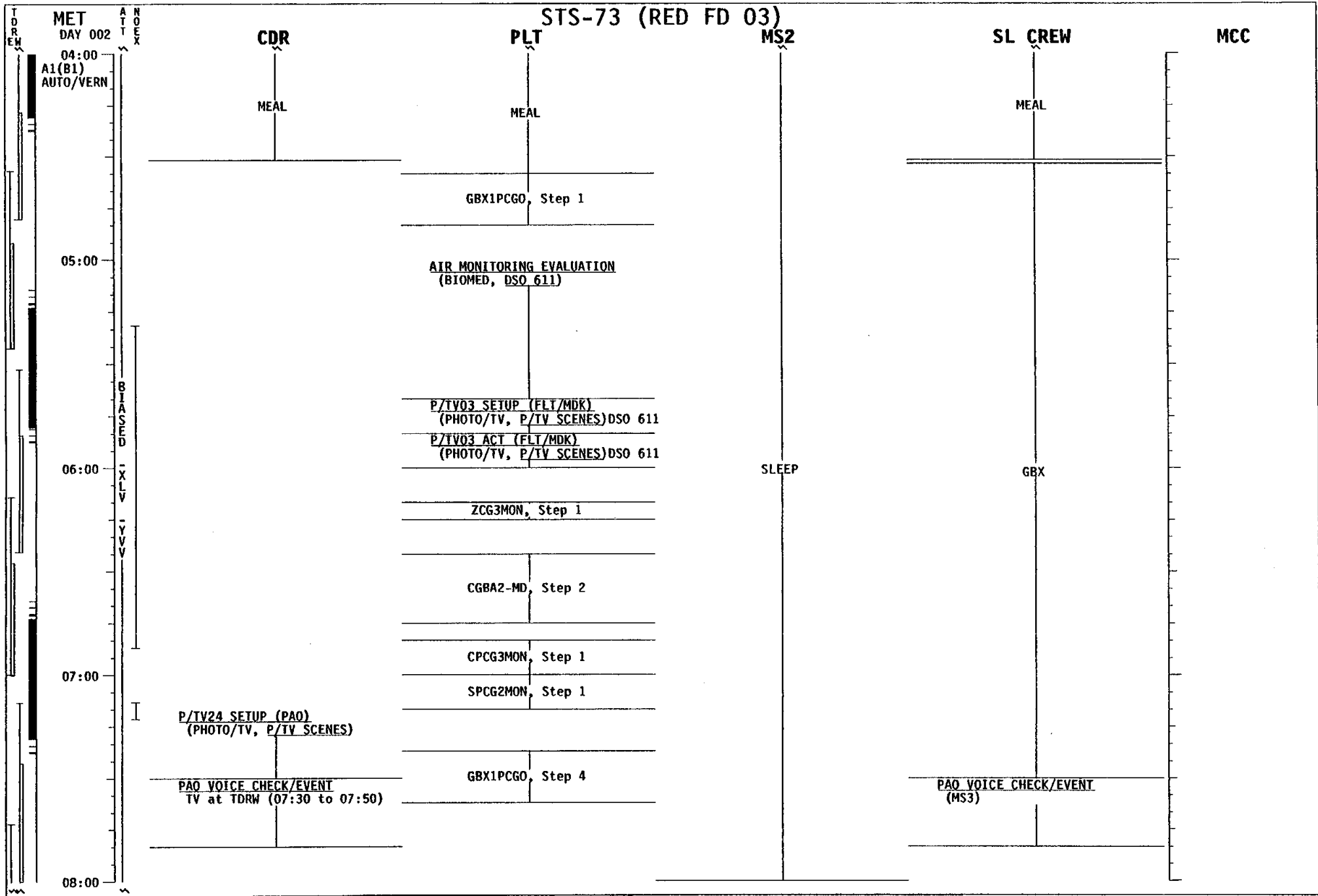
GBX

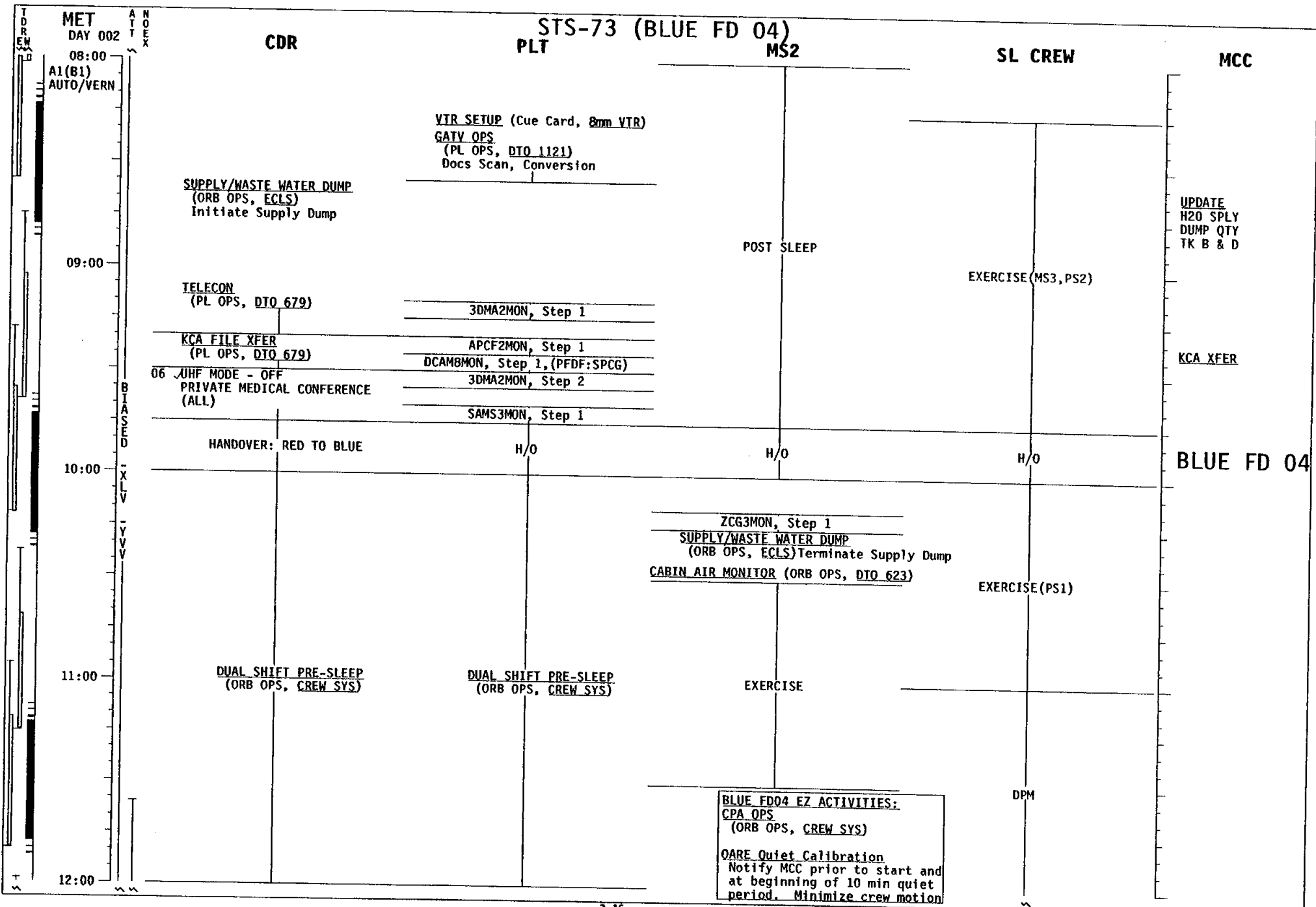




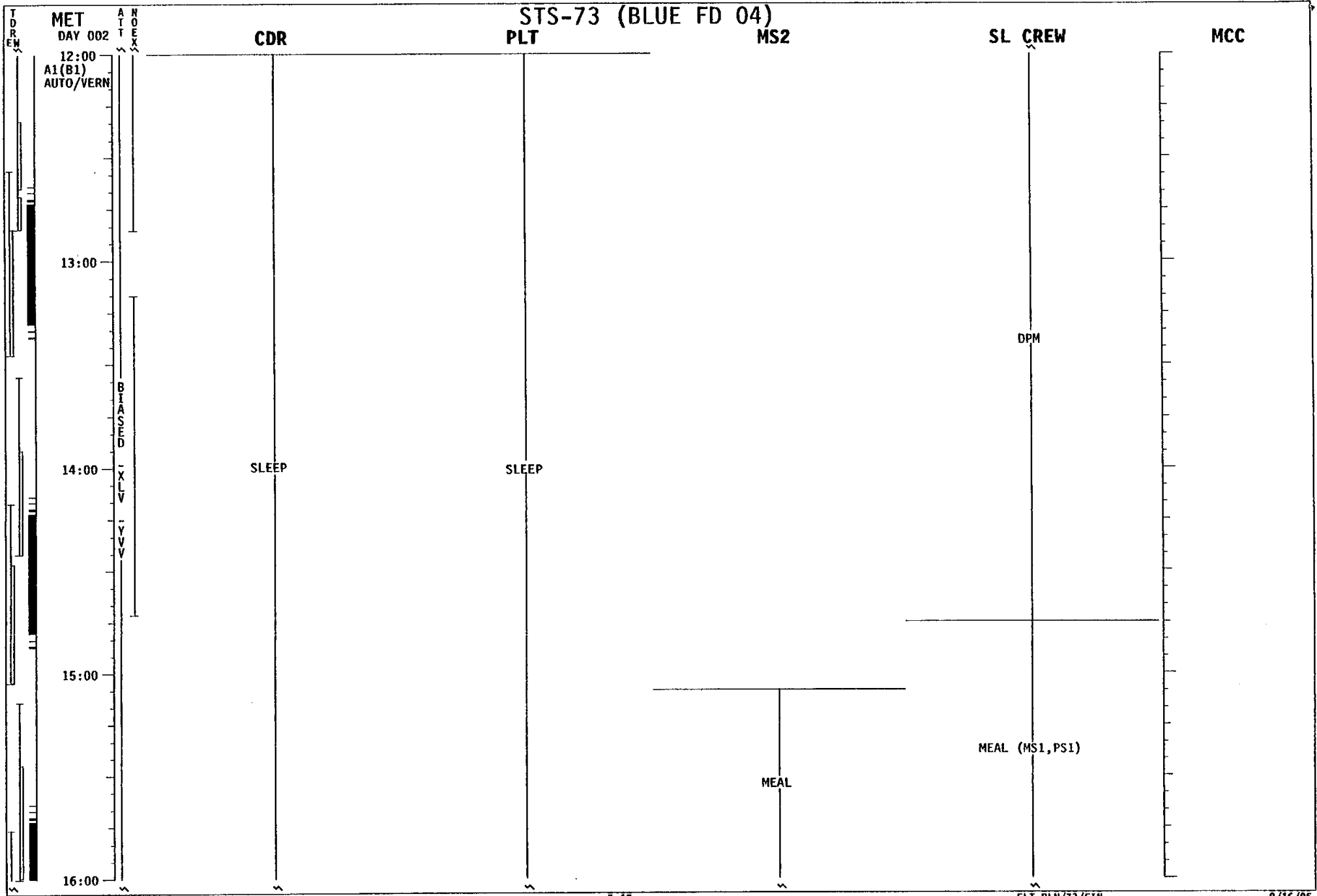


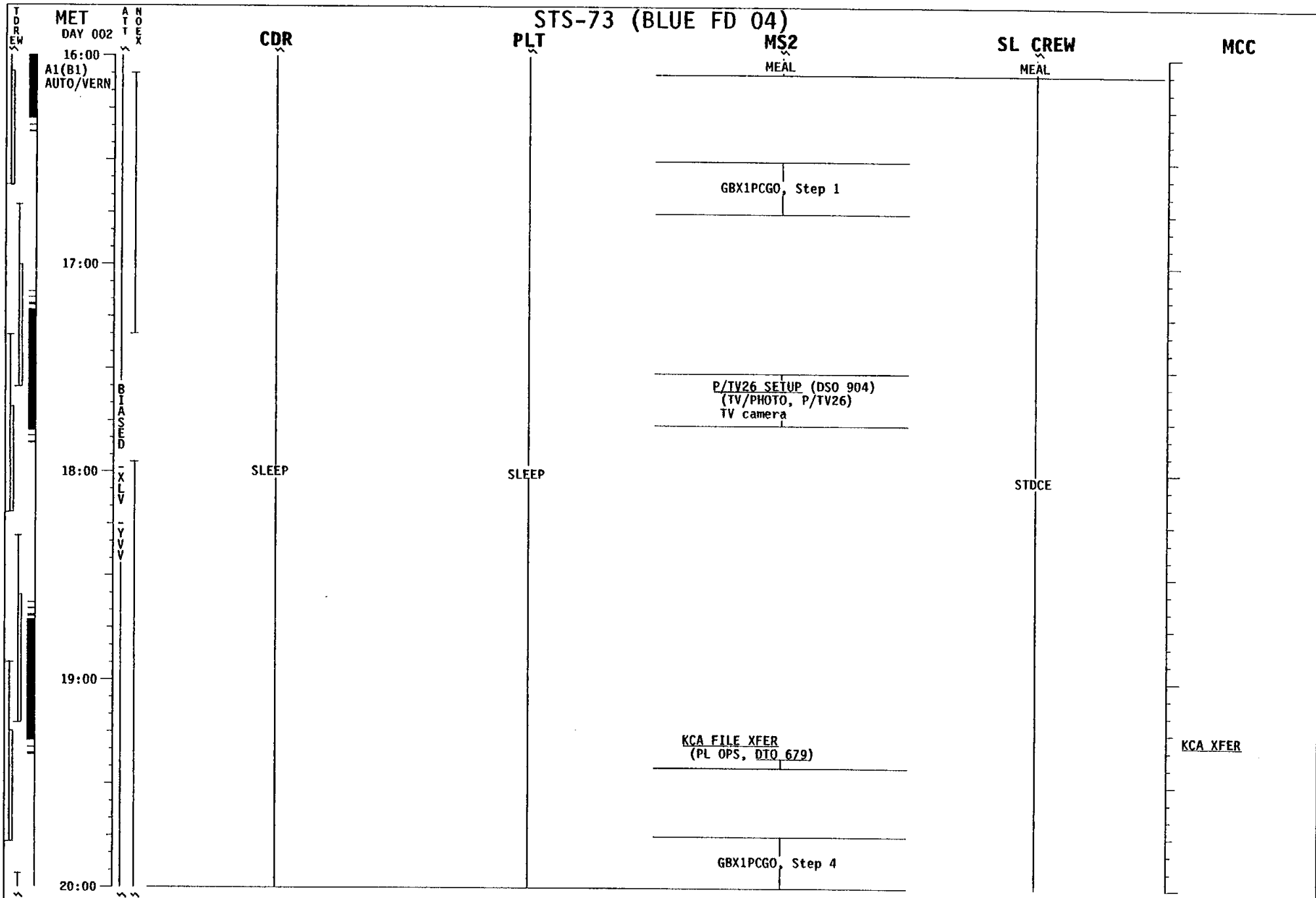
STS-73 (RED FD 03)

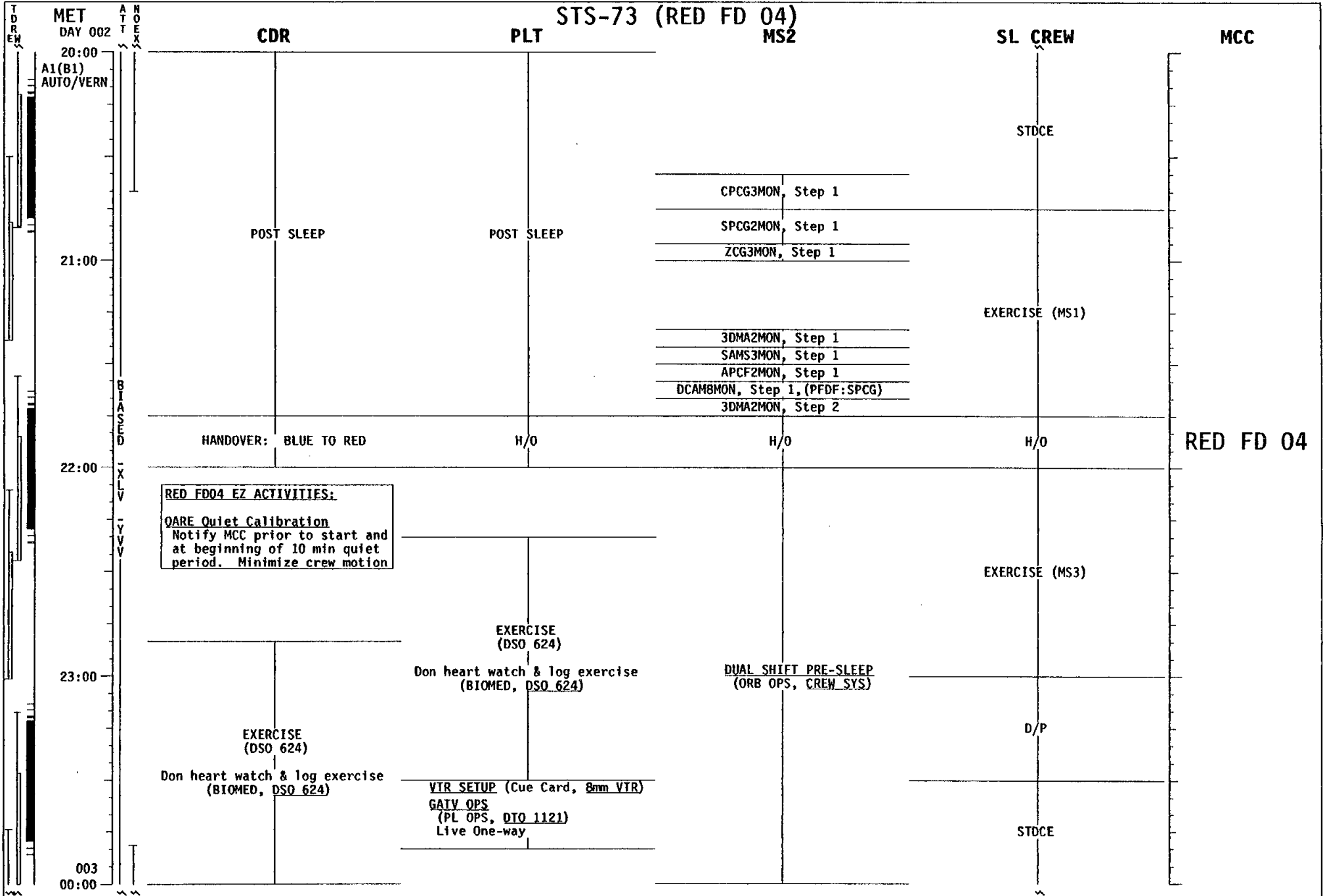


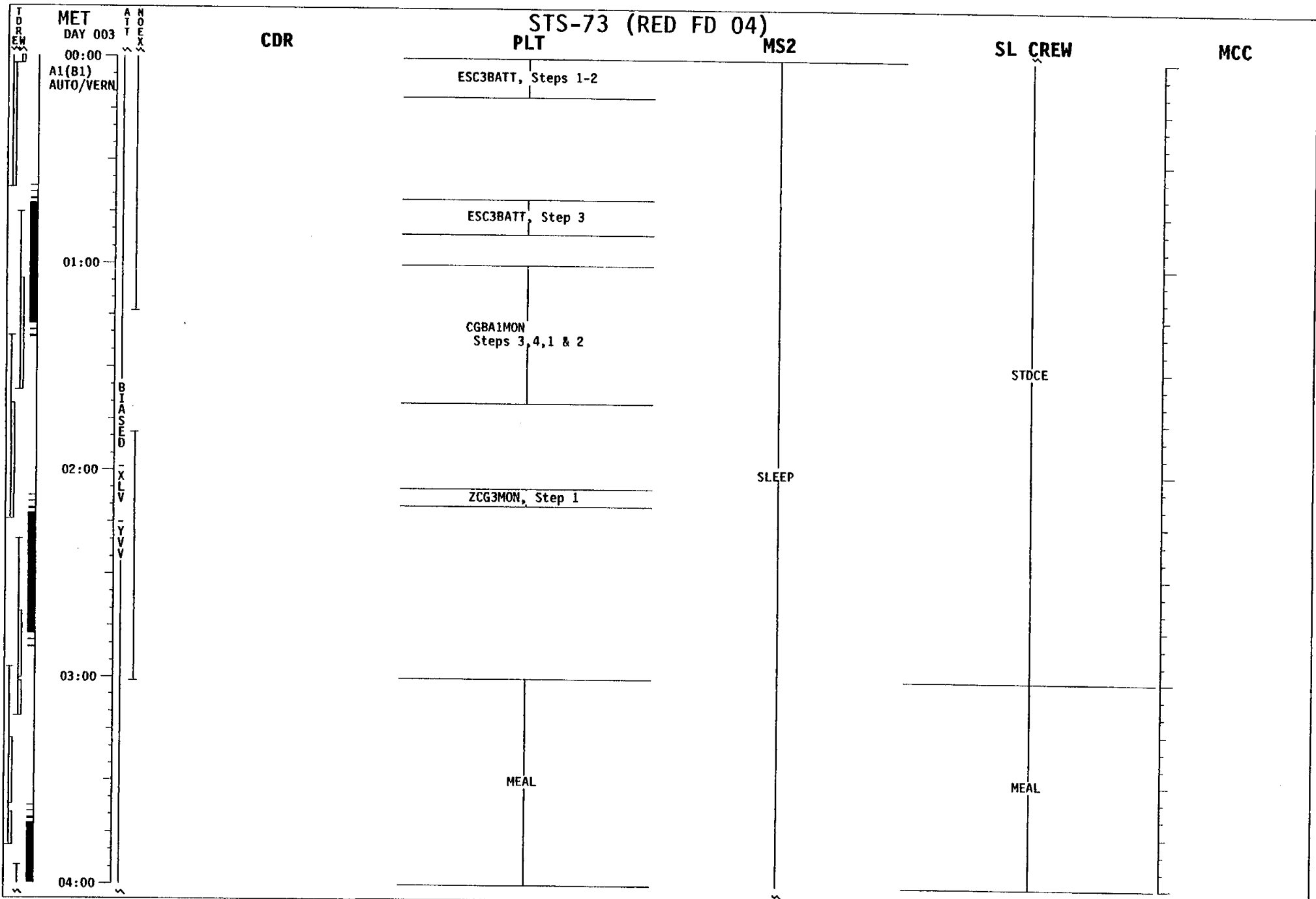


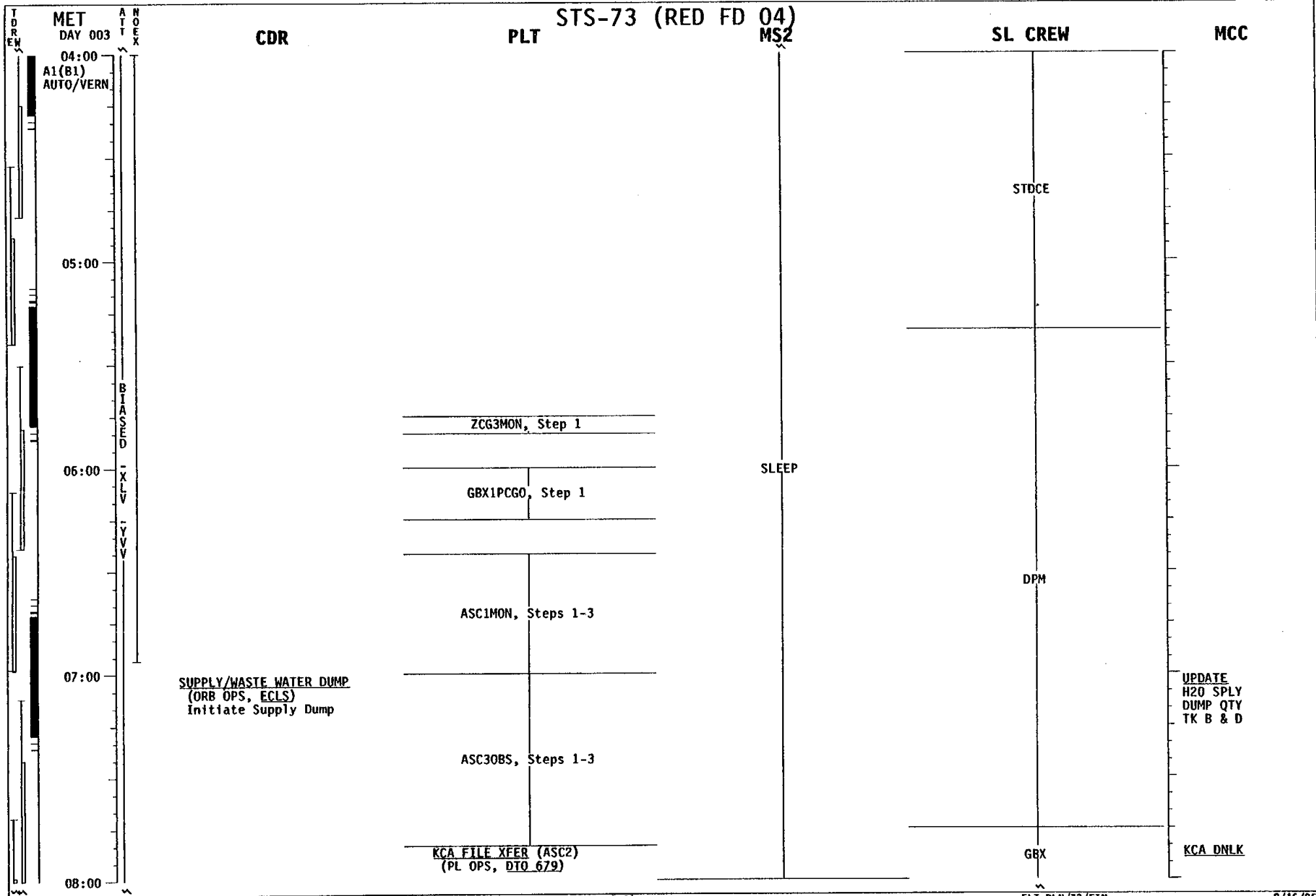
BLUE FD04 EZ ACTIVITIES:
CPA OPS (ORB OPS, CREW SYS)
OARE Quiet Calibration
Notify MCC prior to start and at beginning of 10 min quiet period. Minimize crew motion

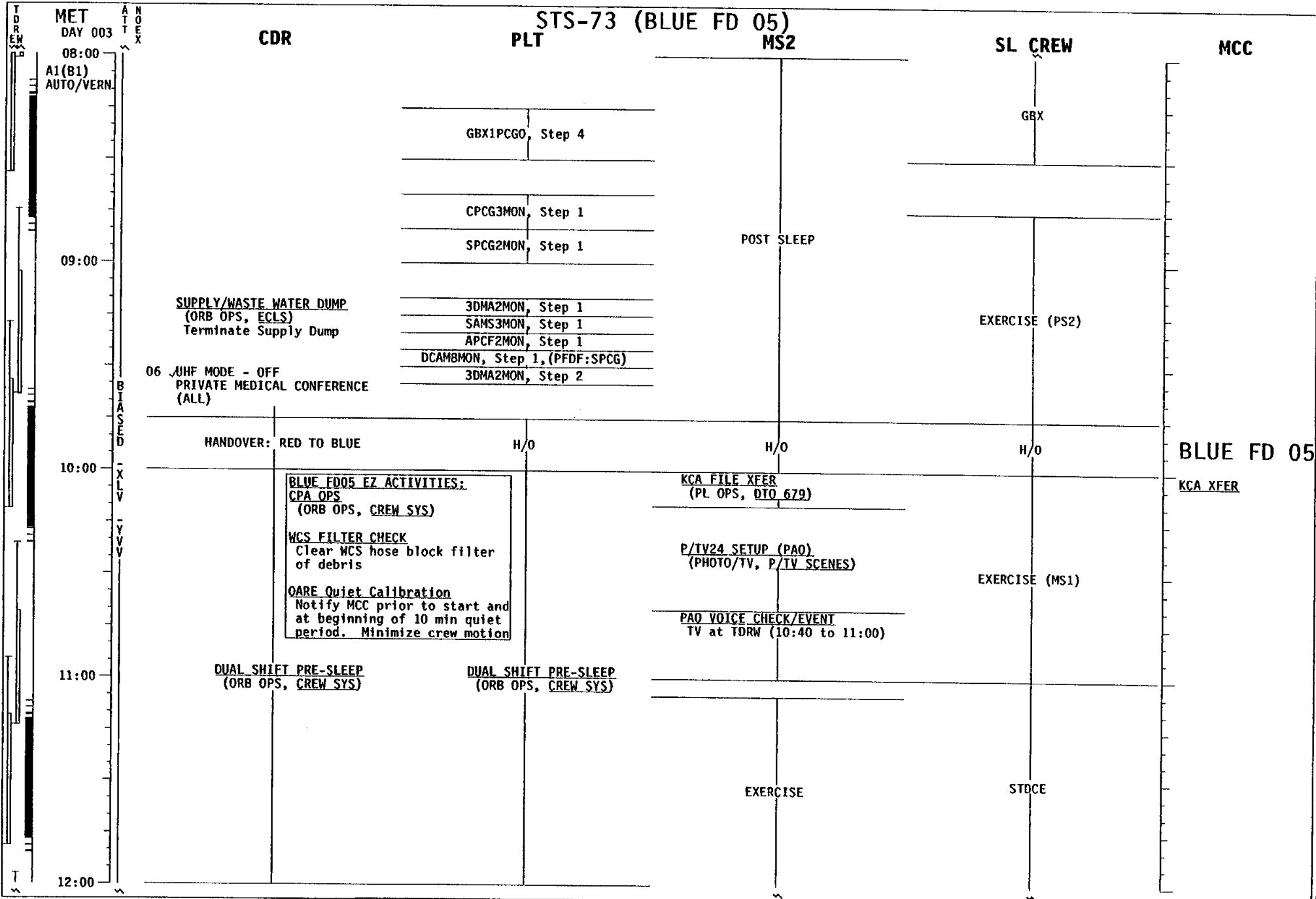


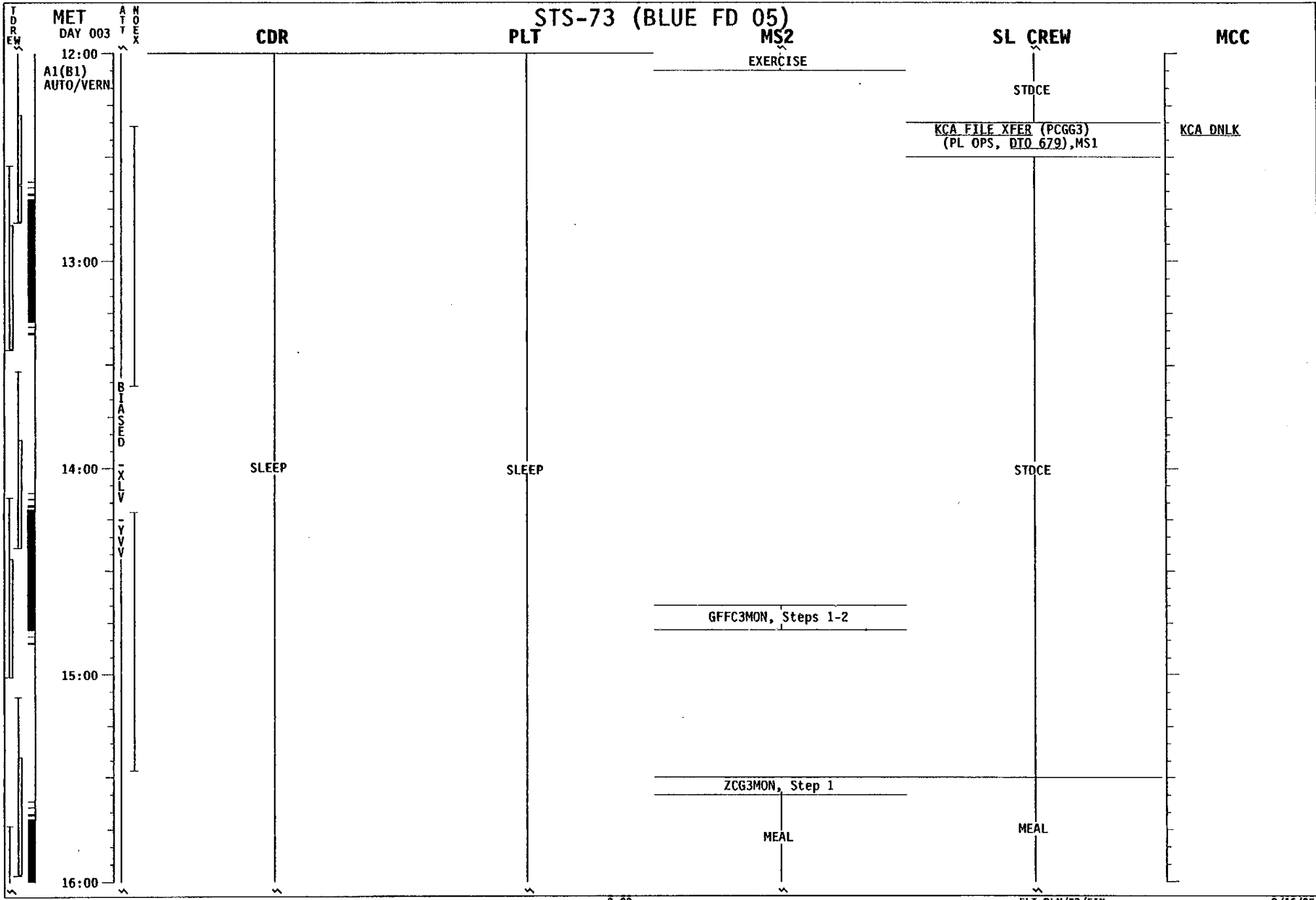


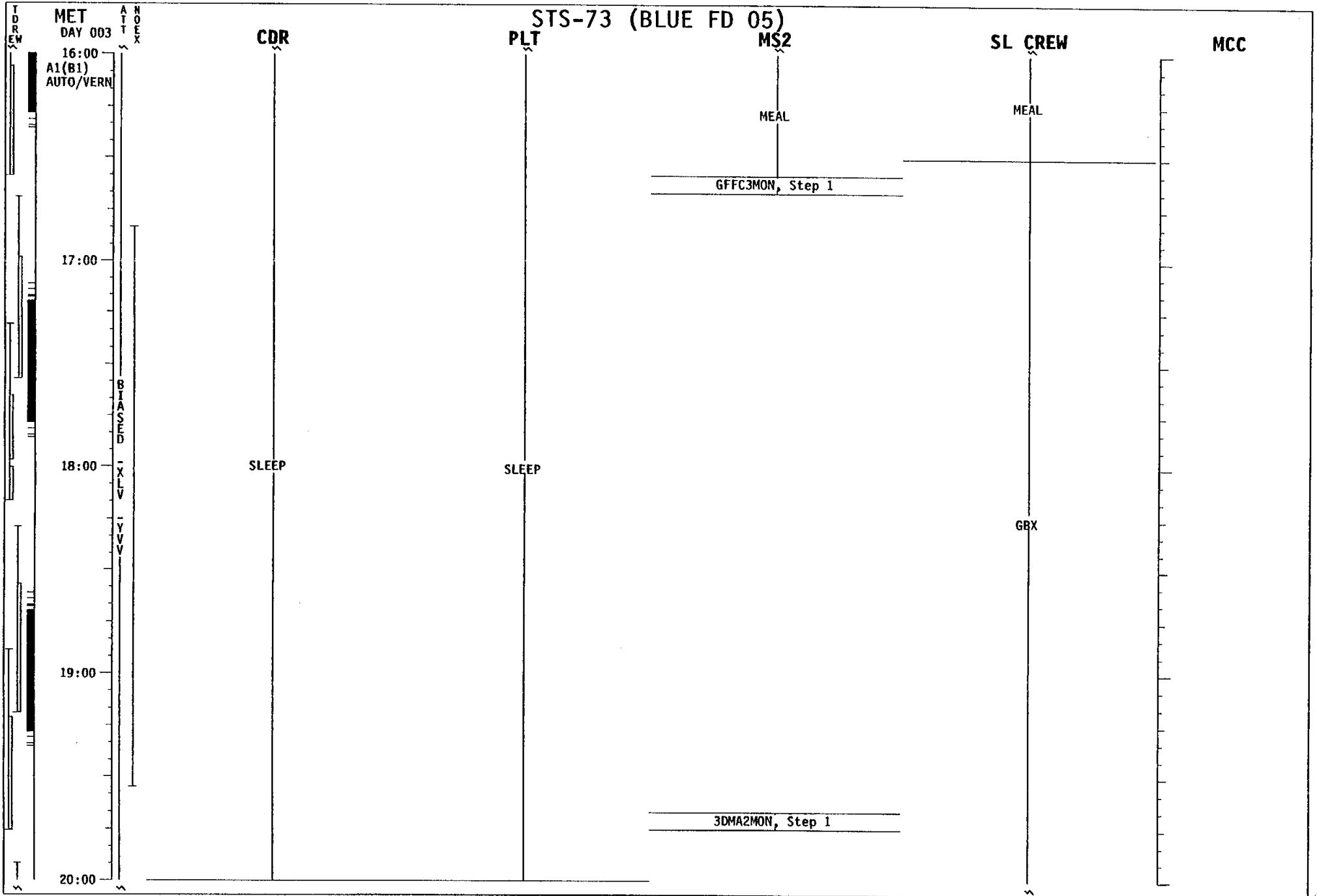


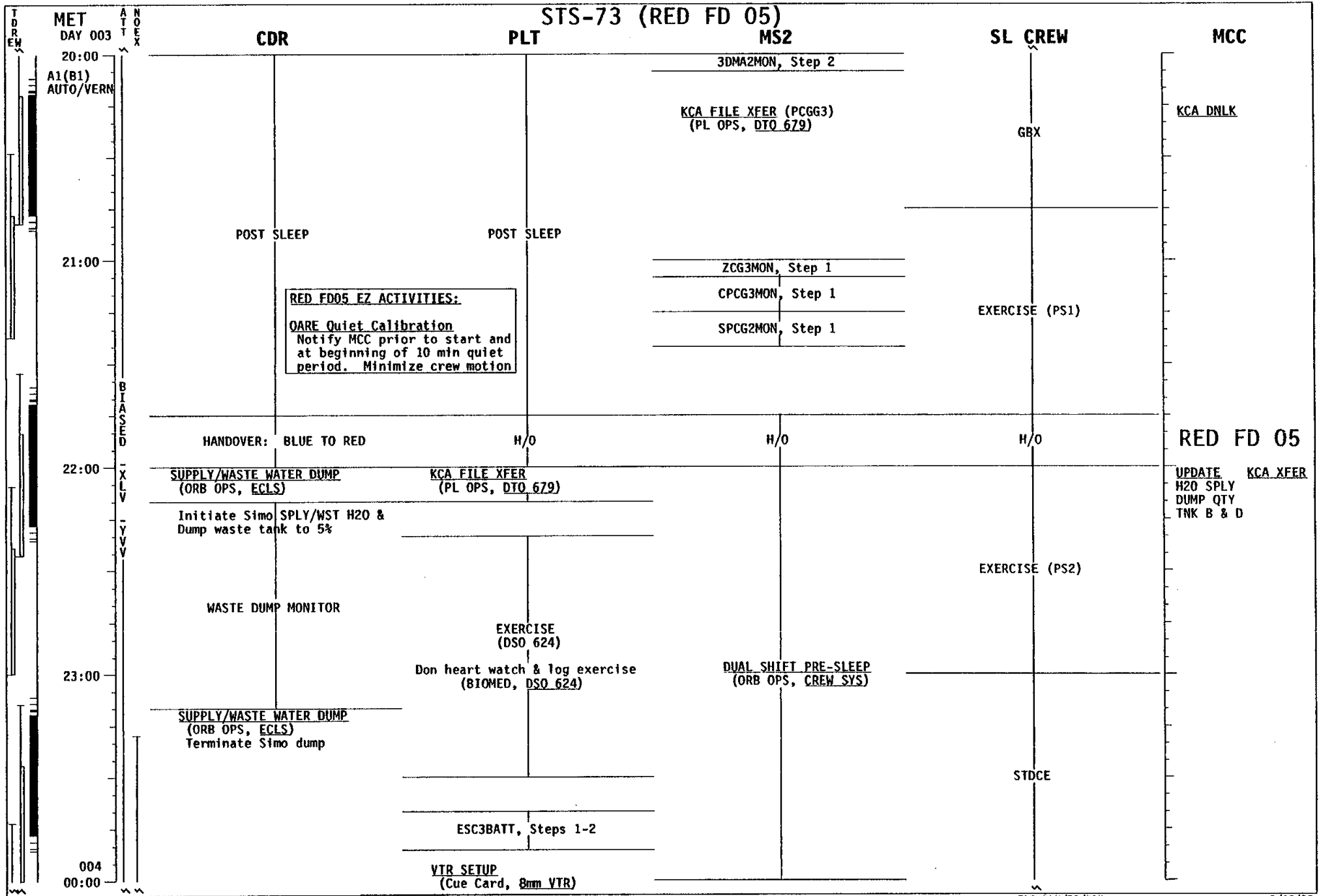


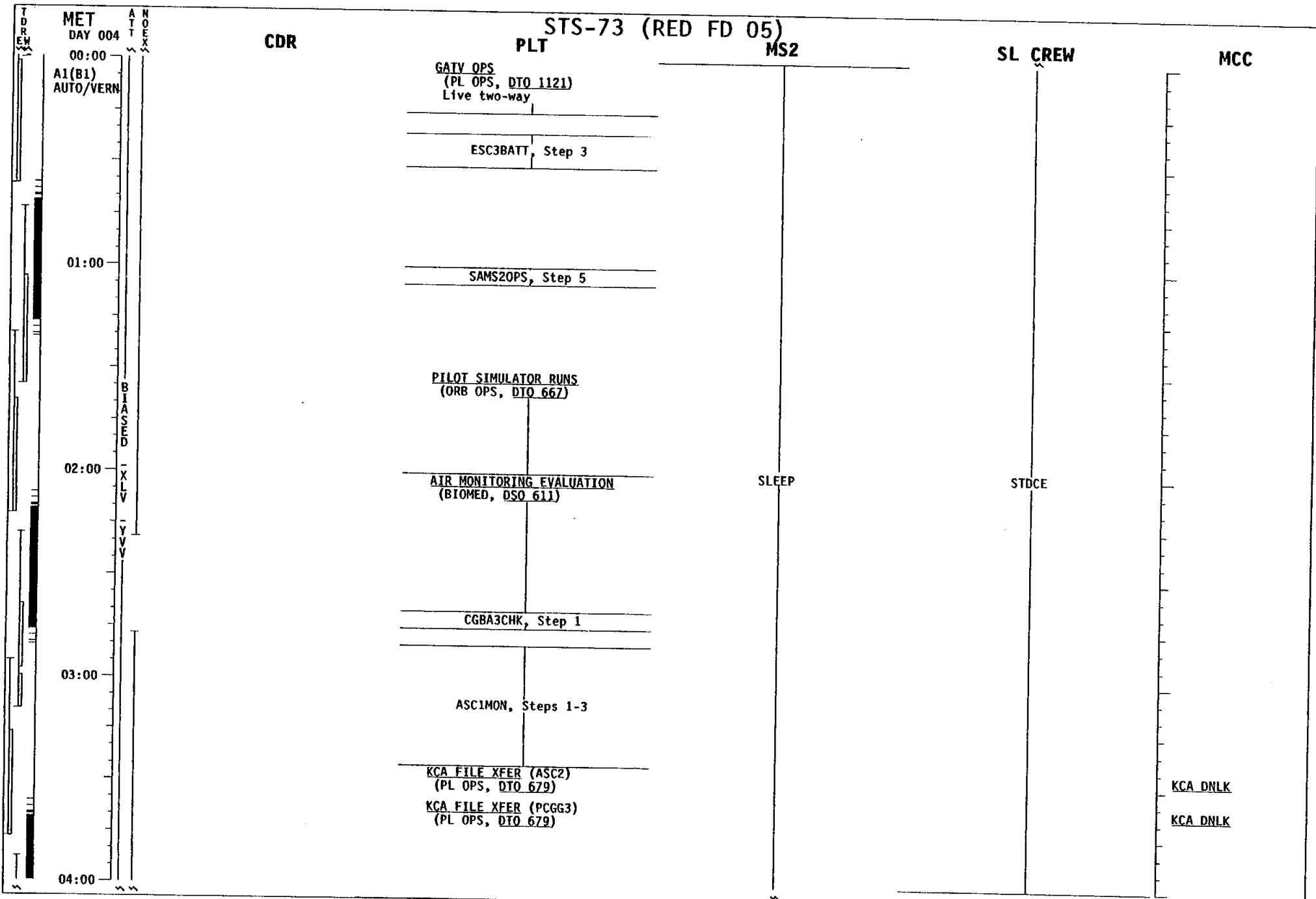


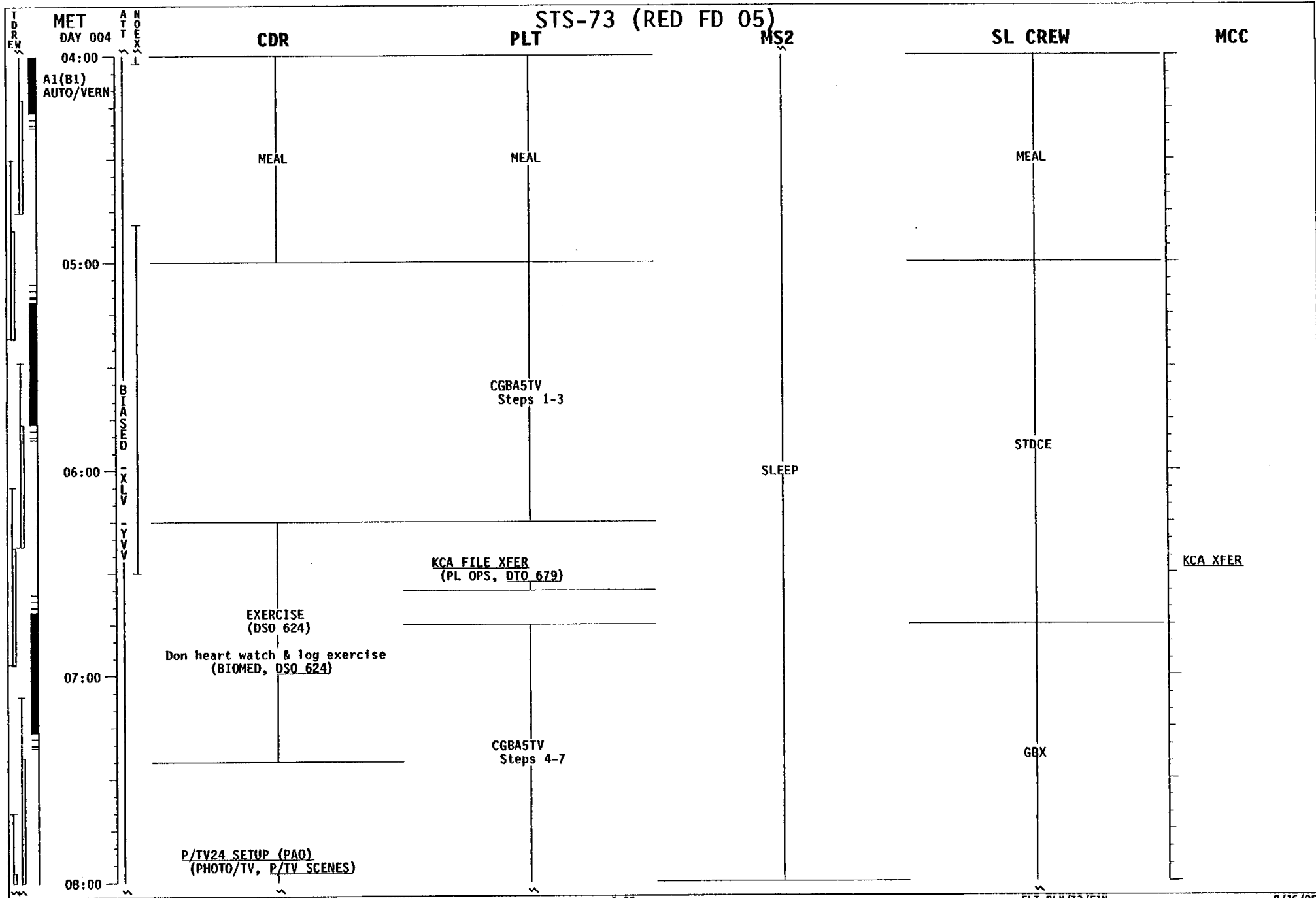


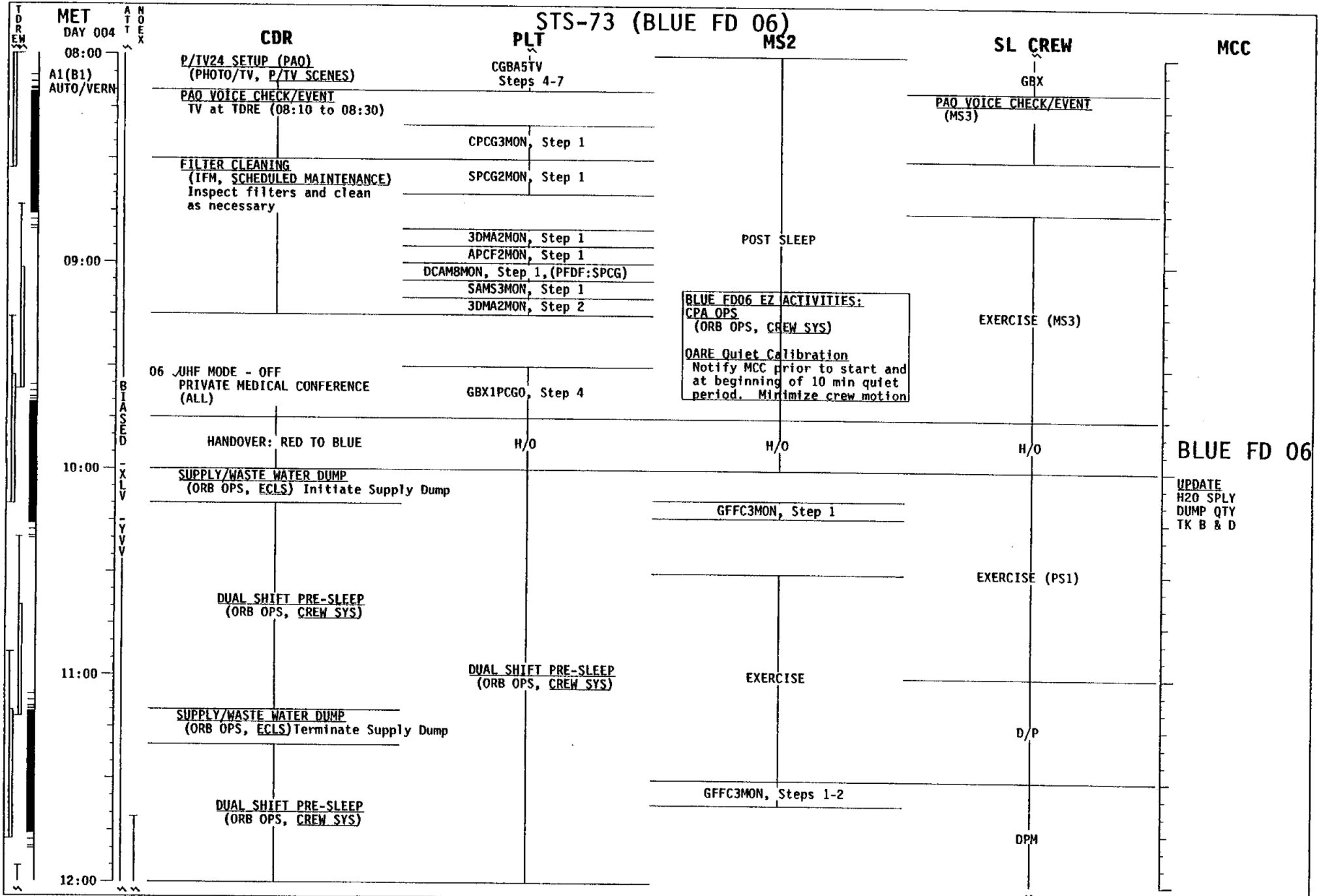


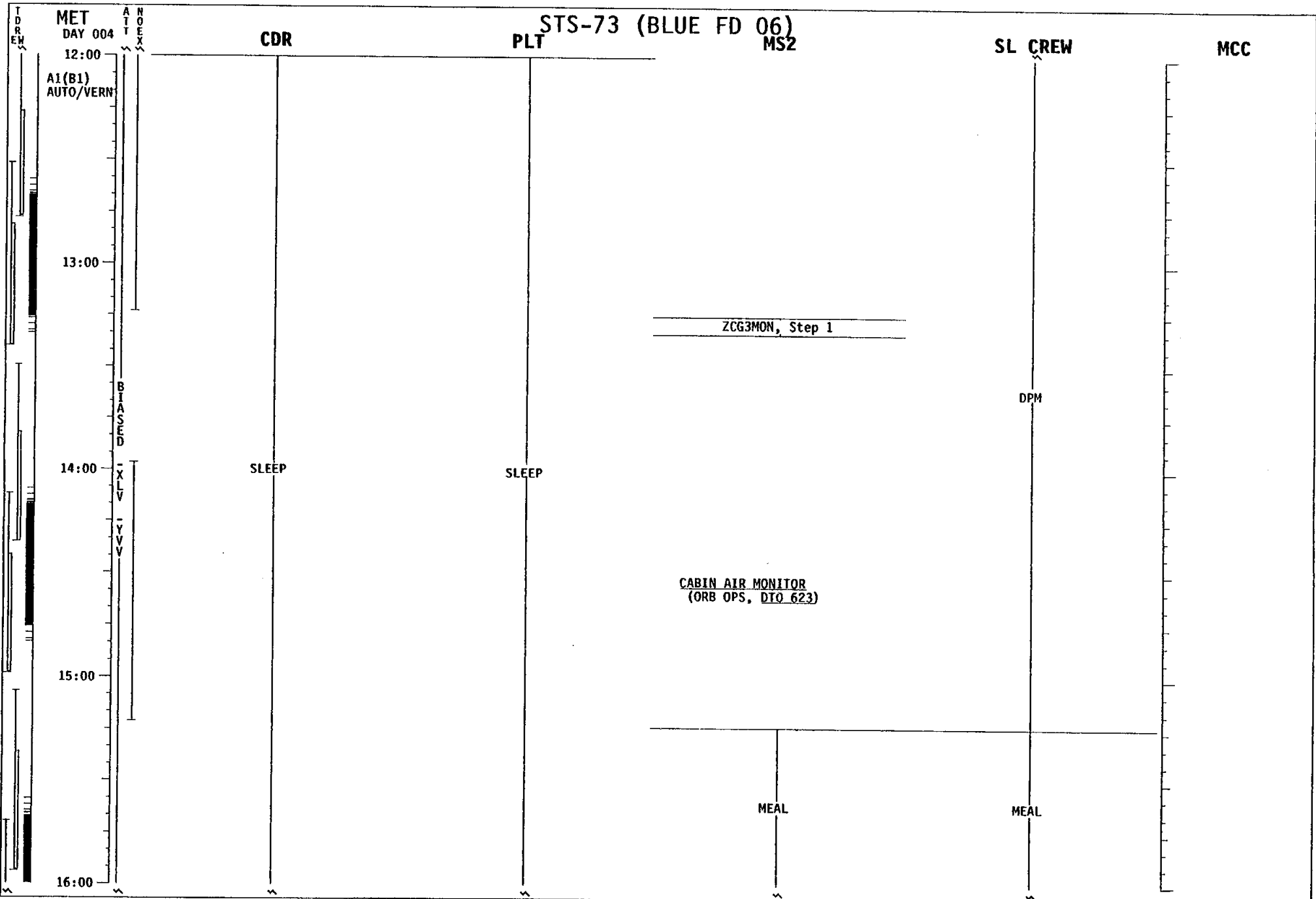


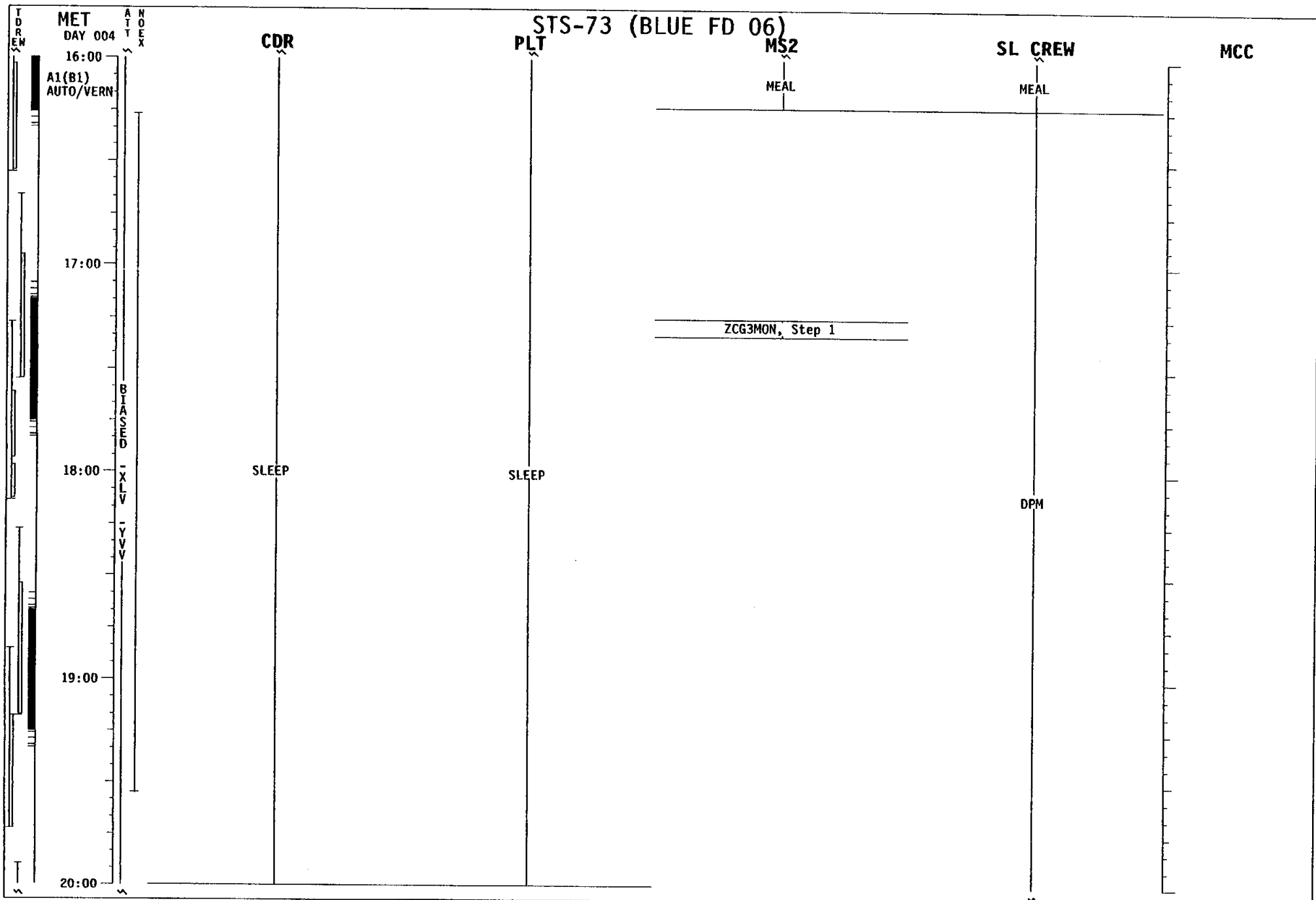


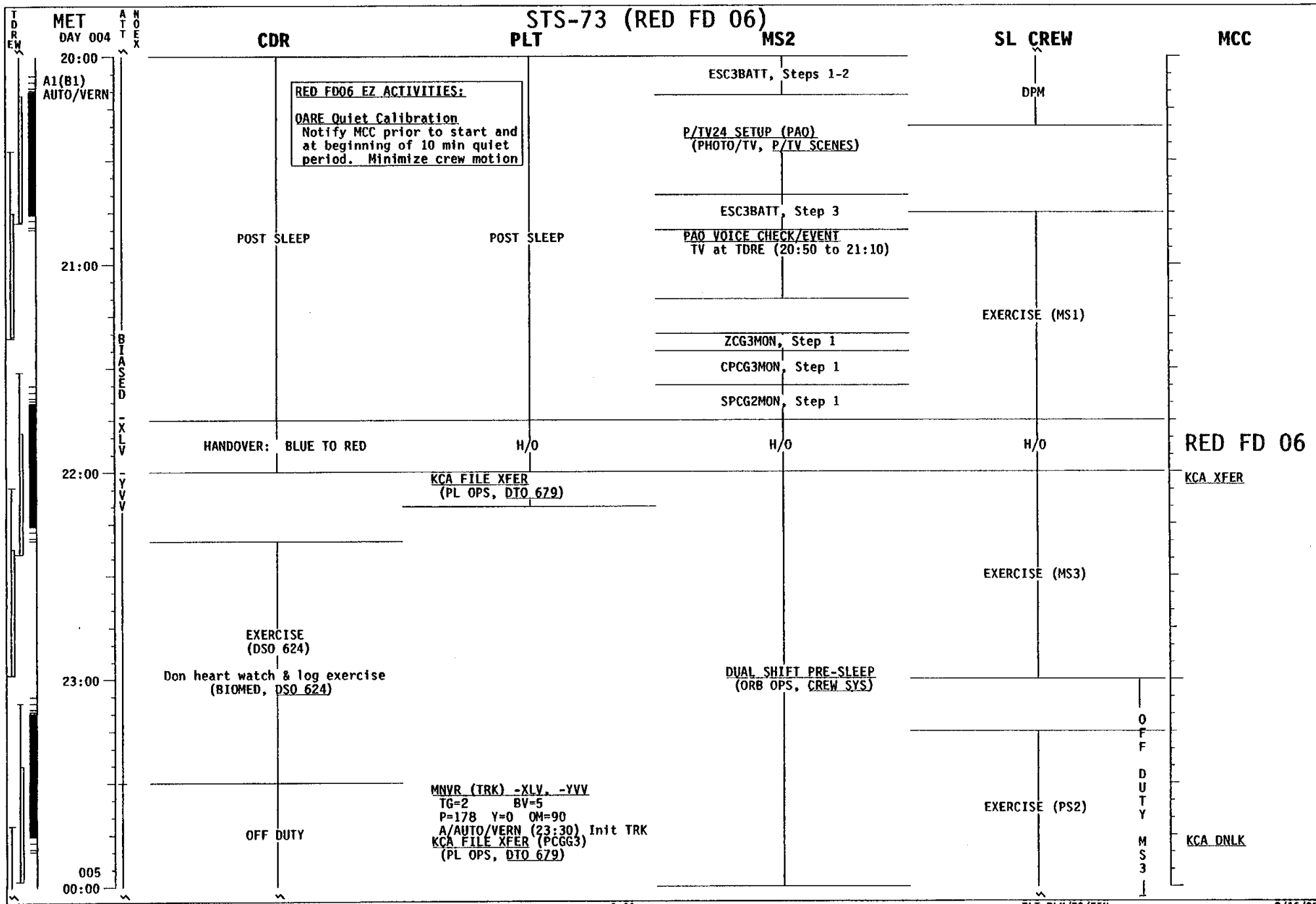


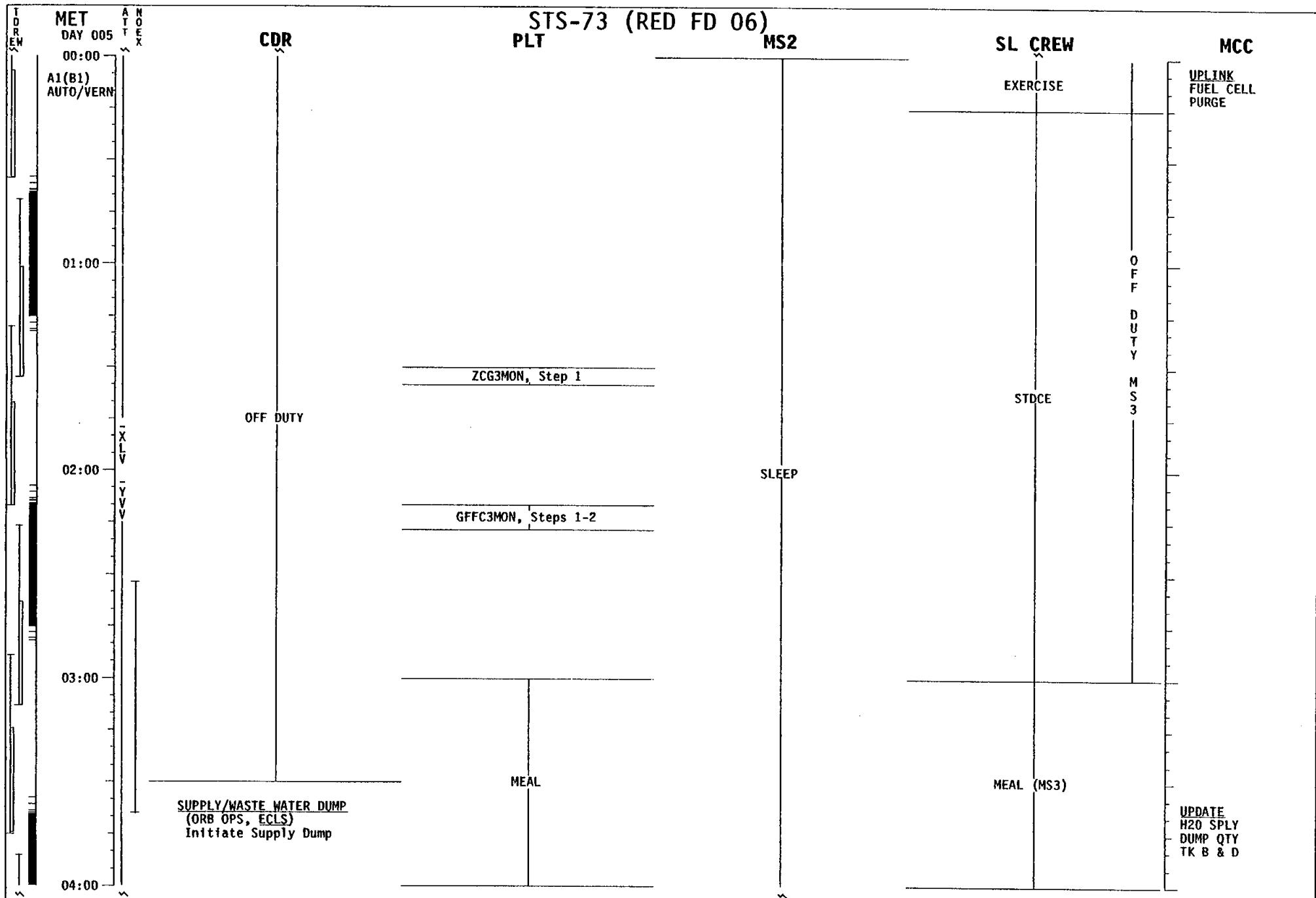


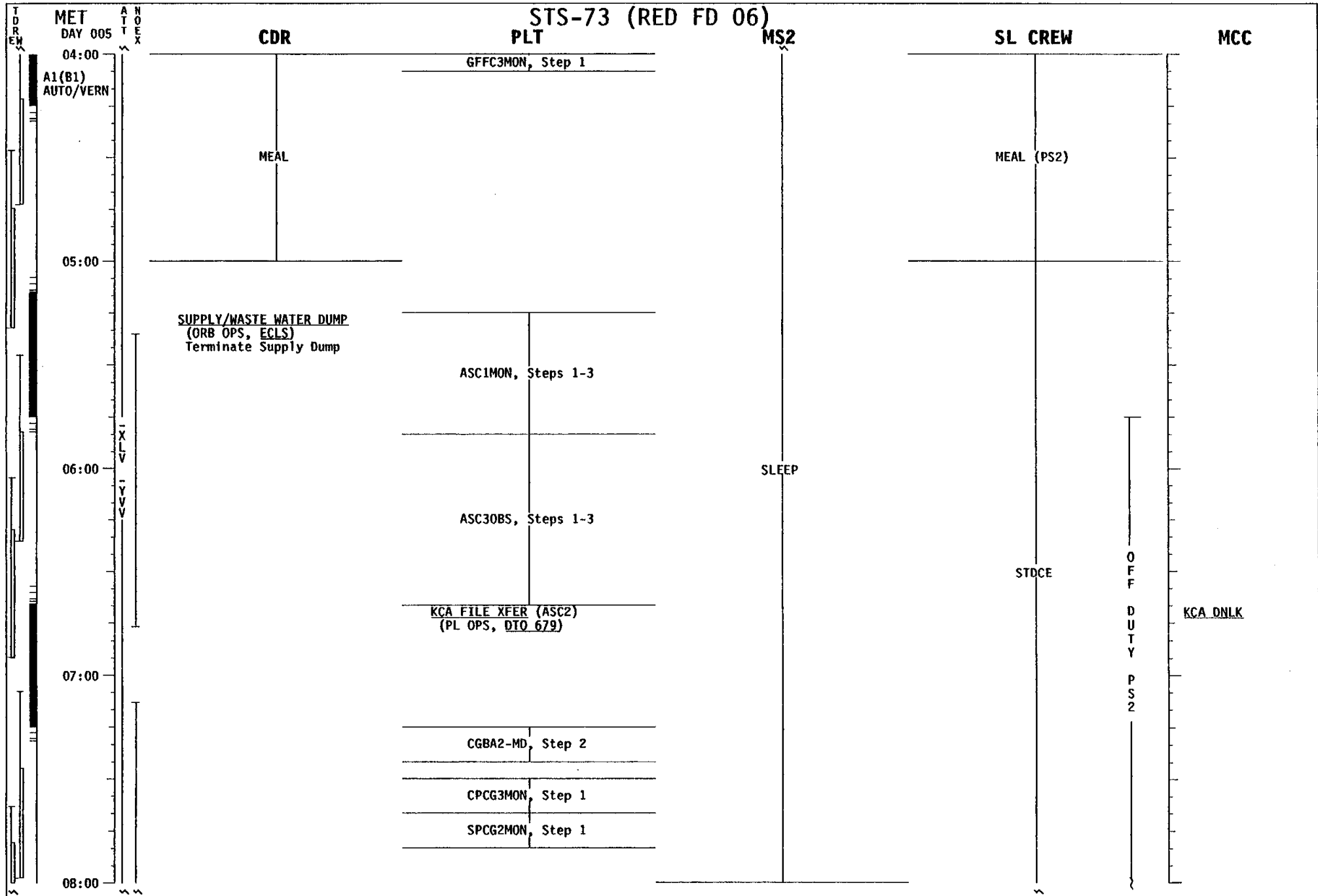


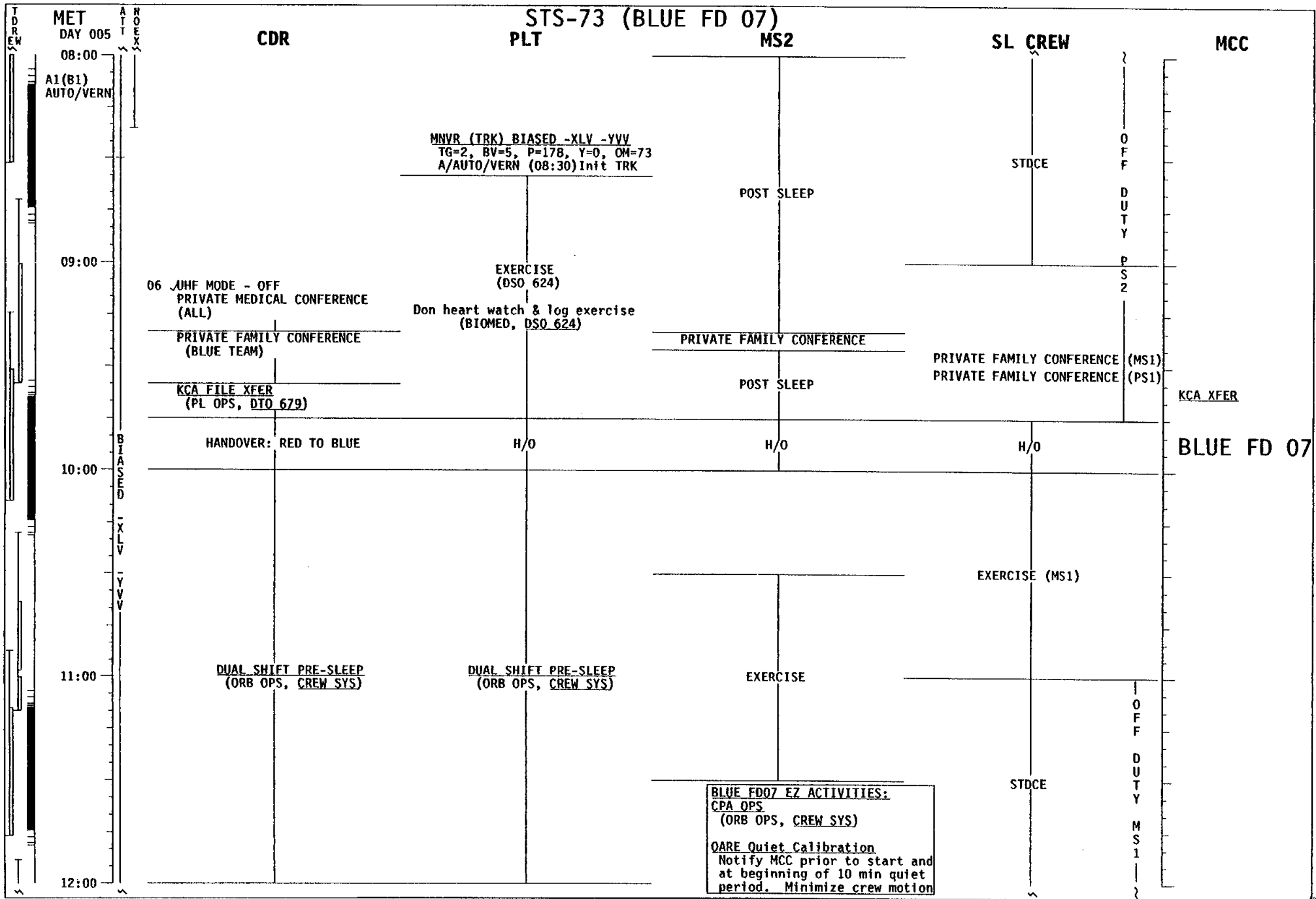


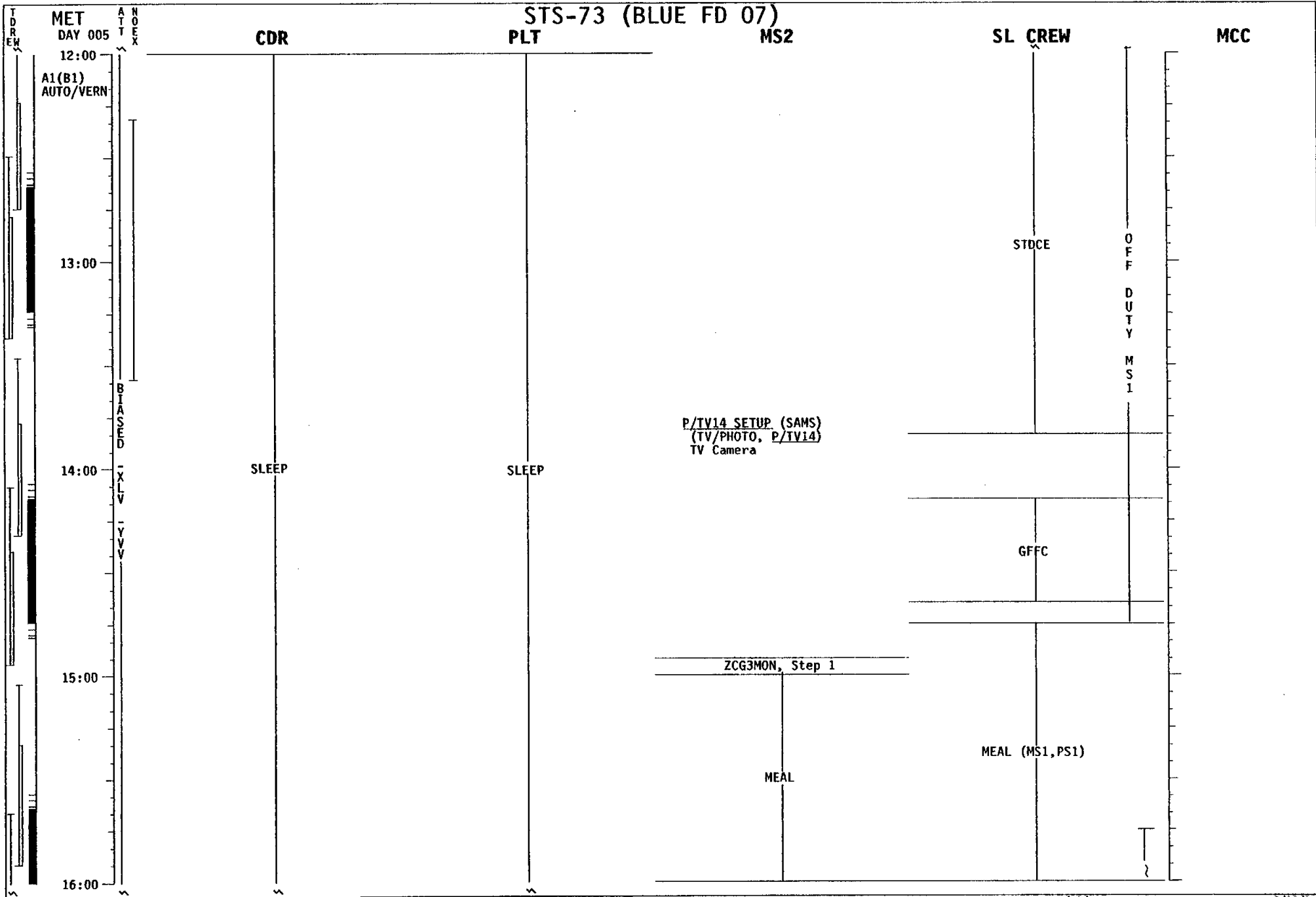


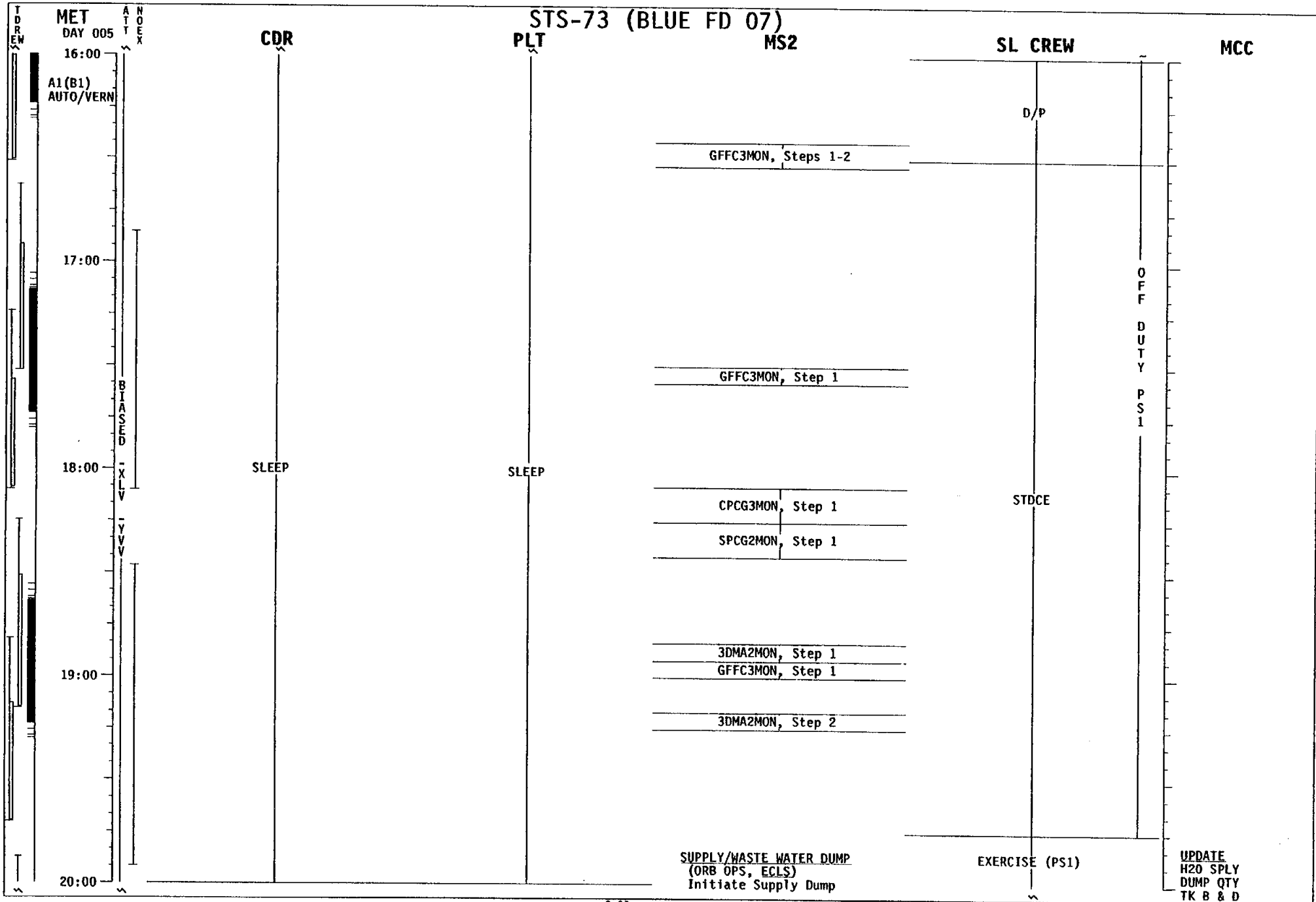


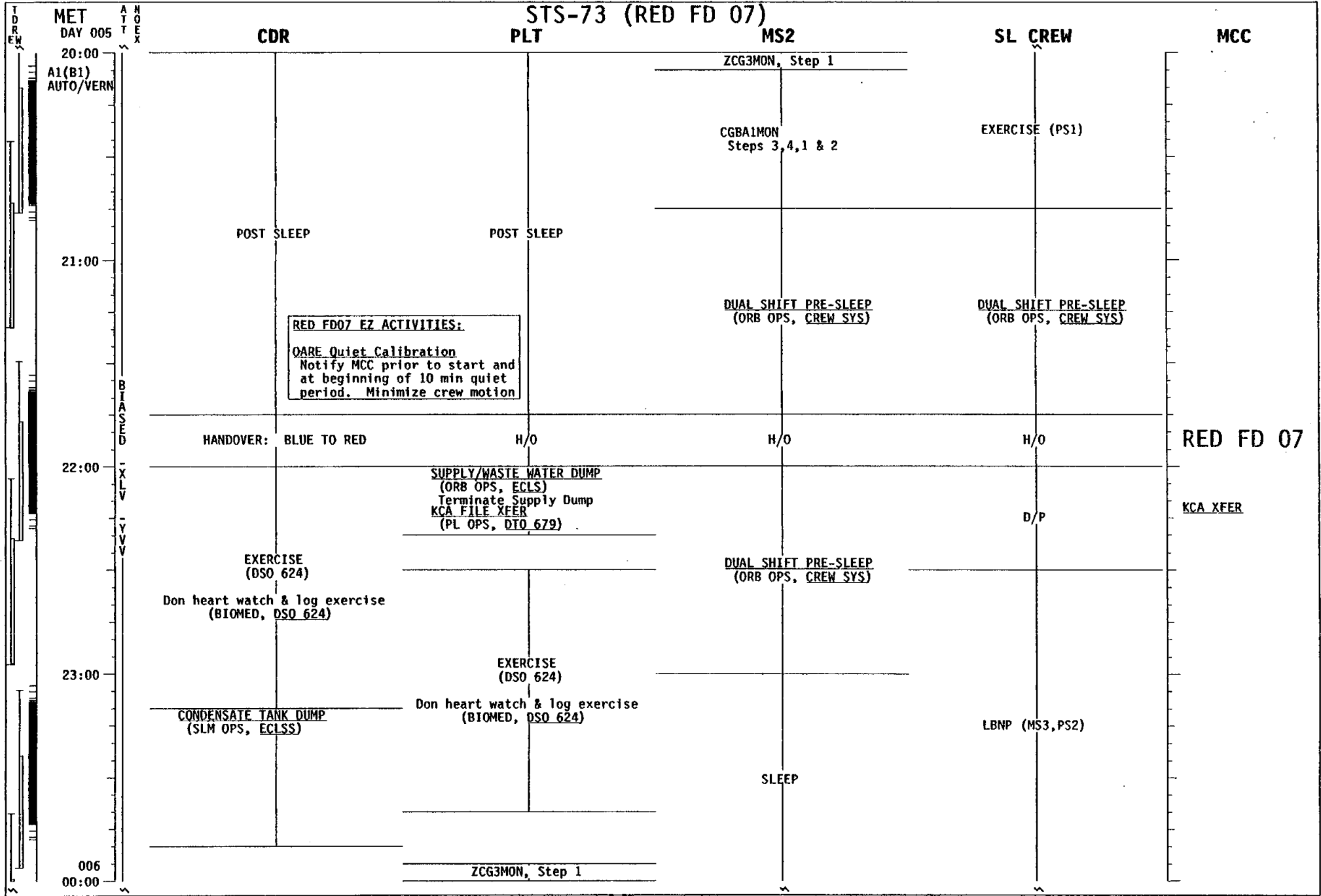


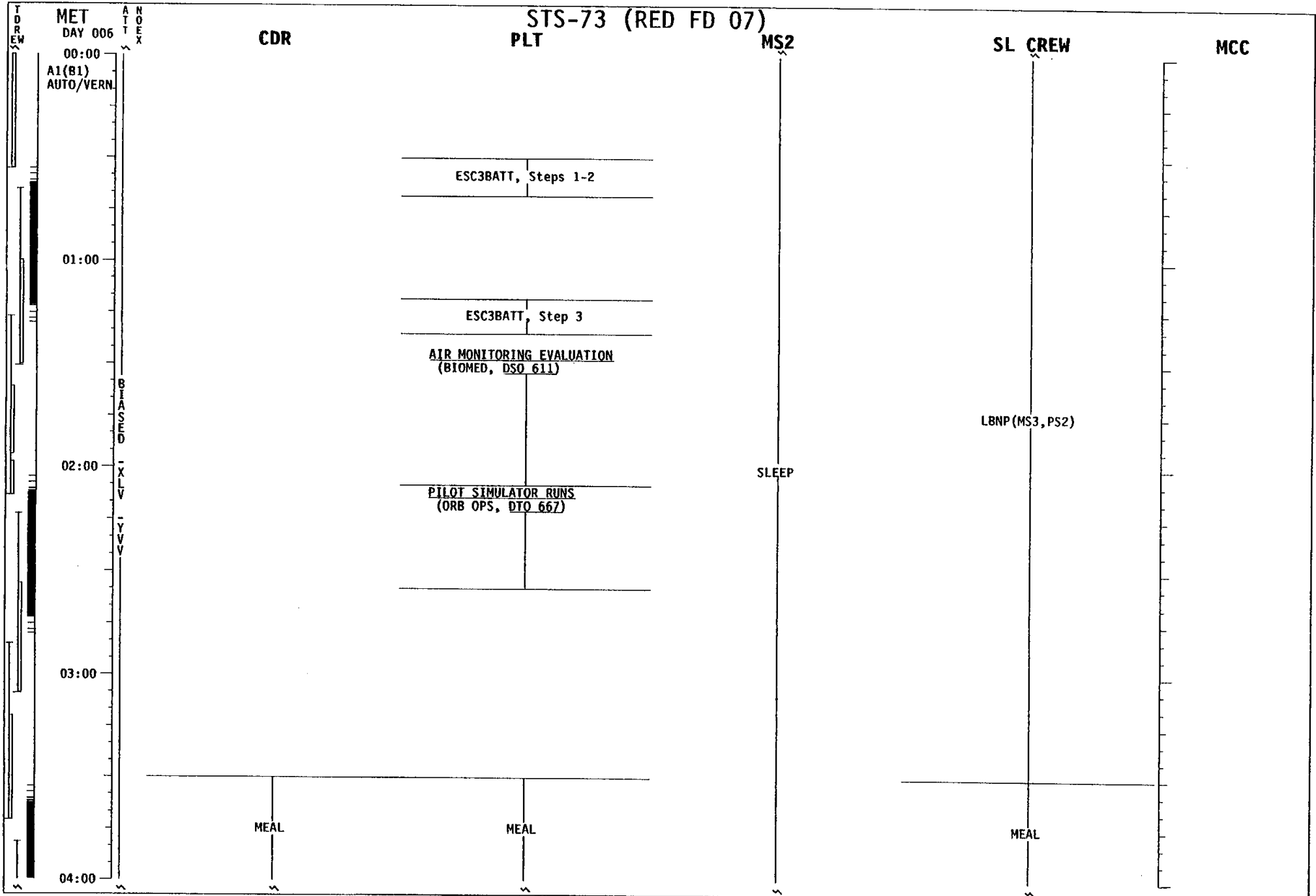


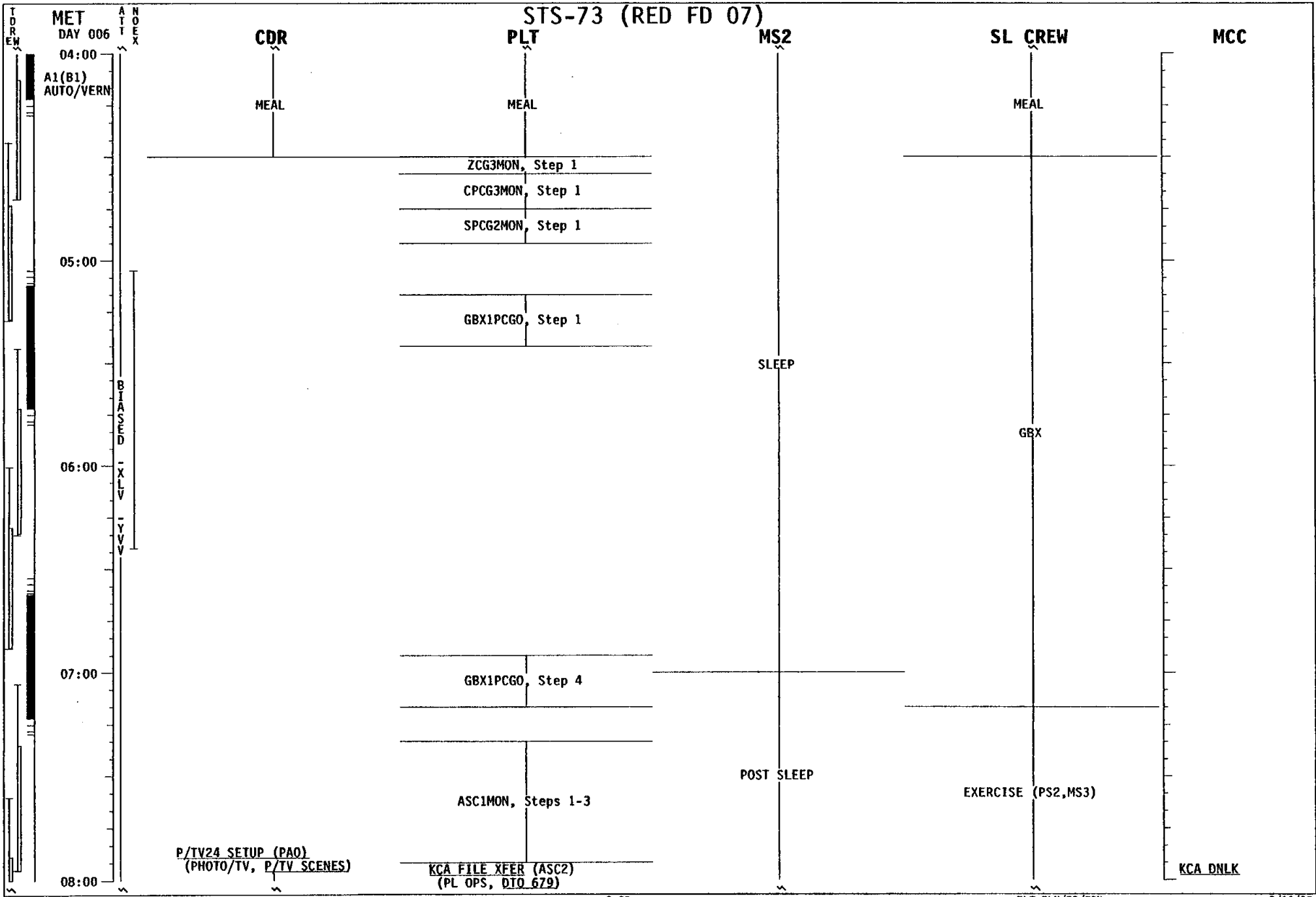


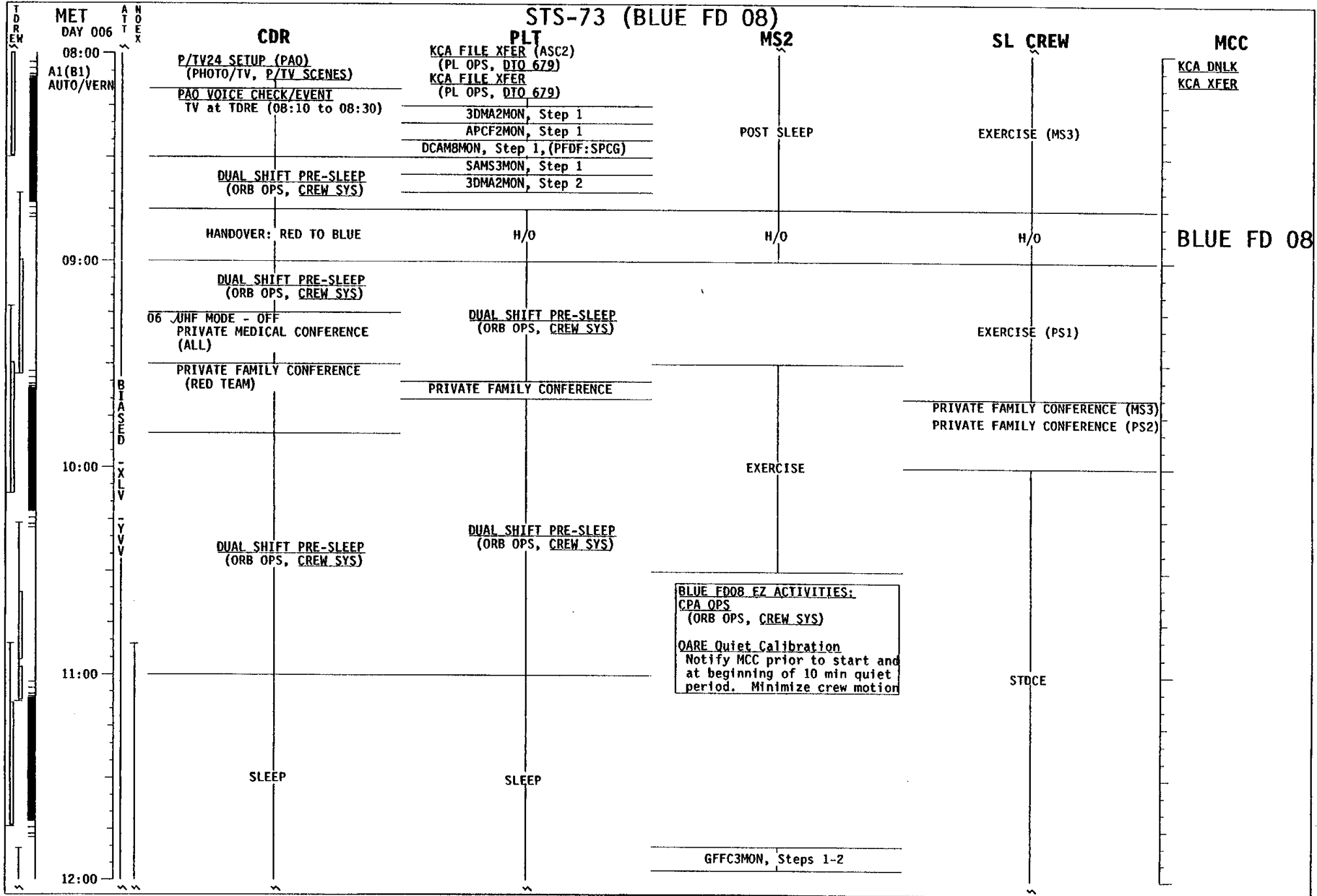


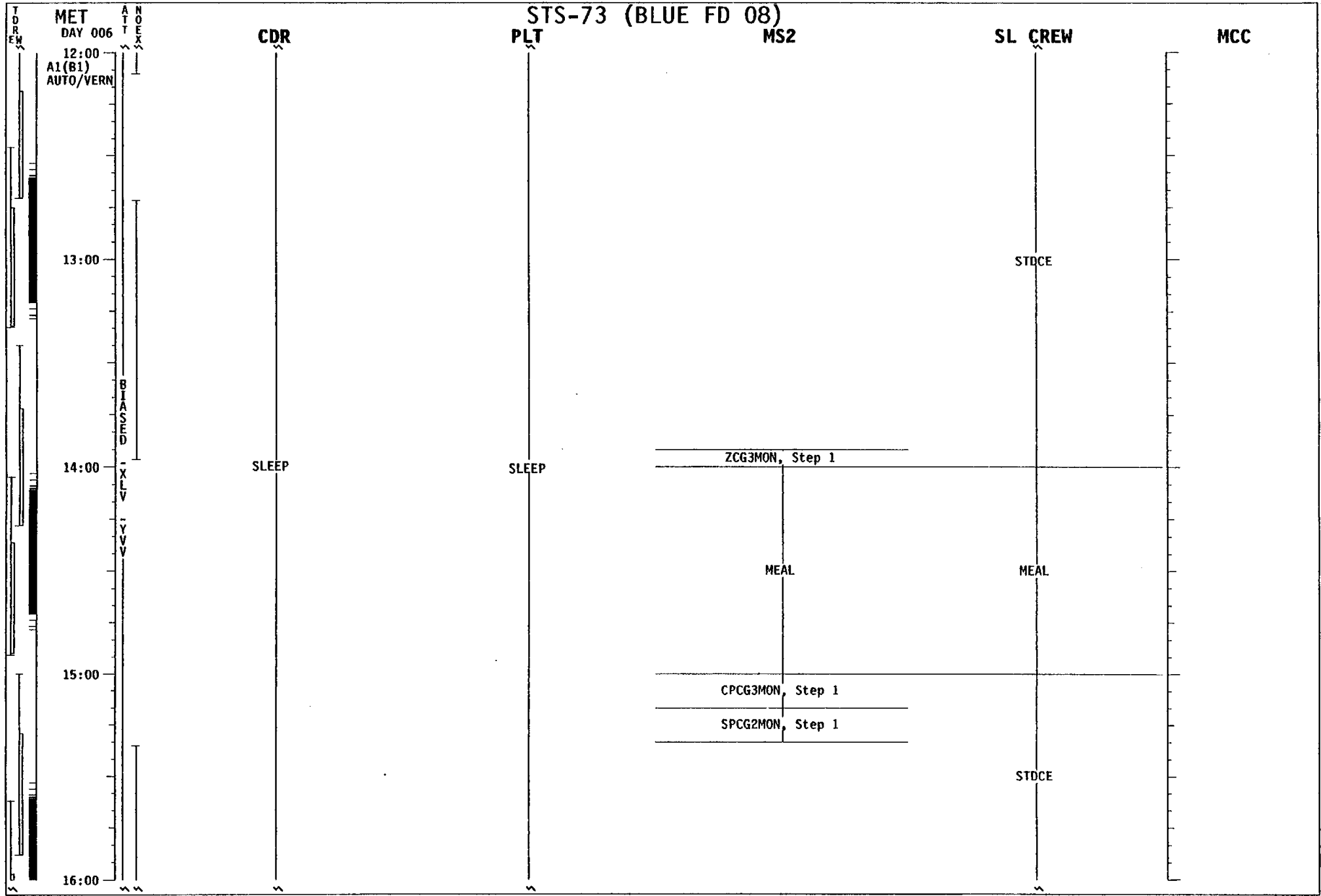


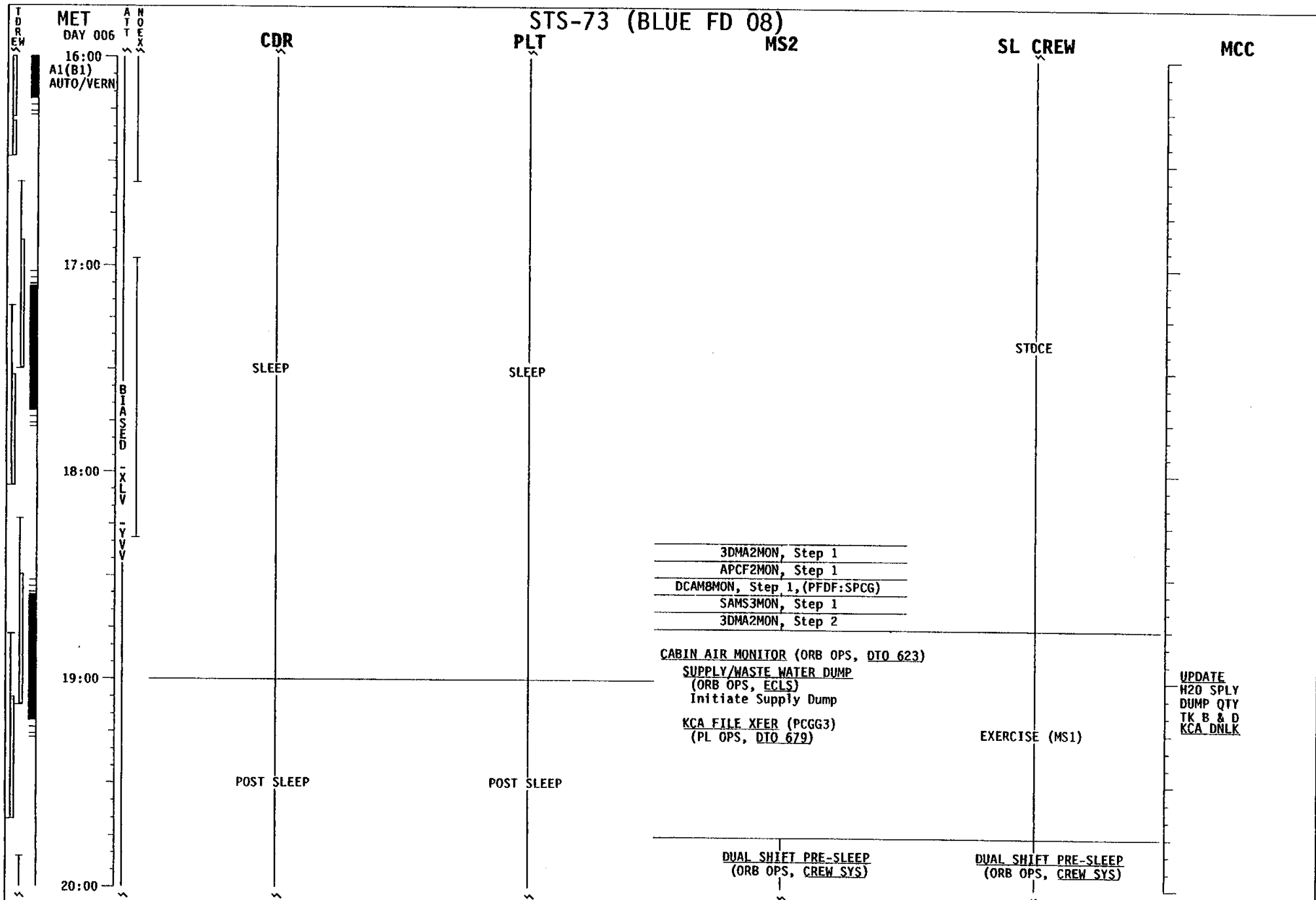


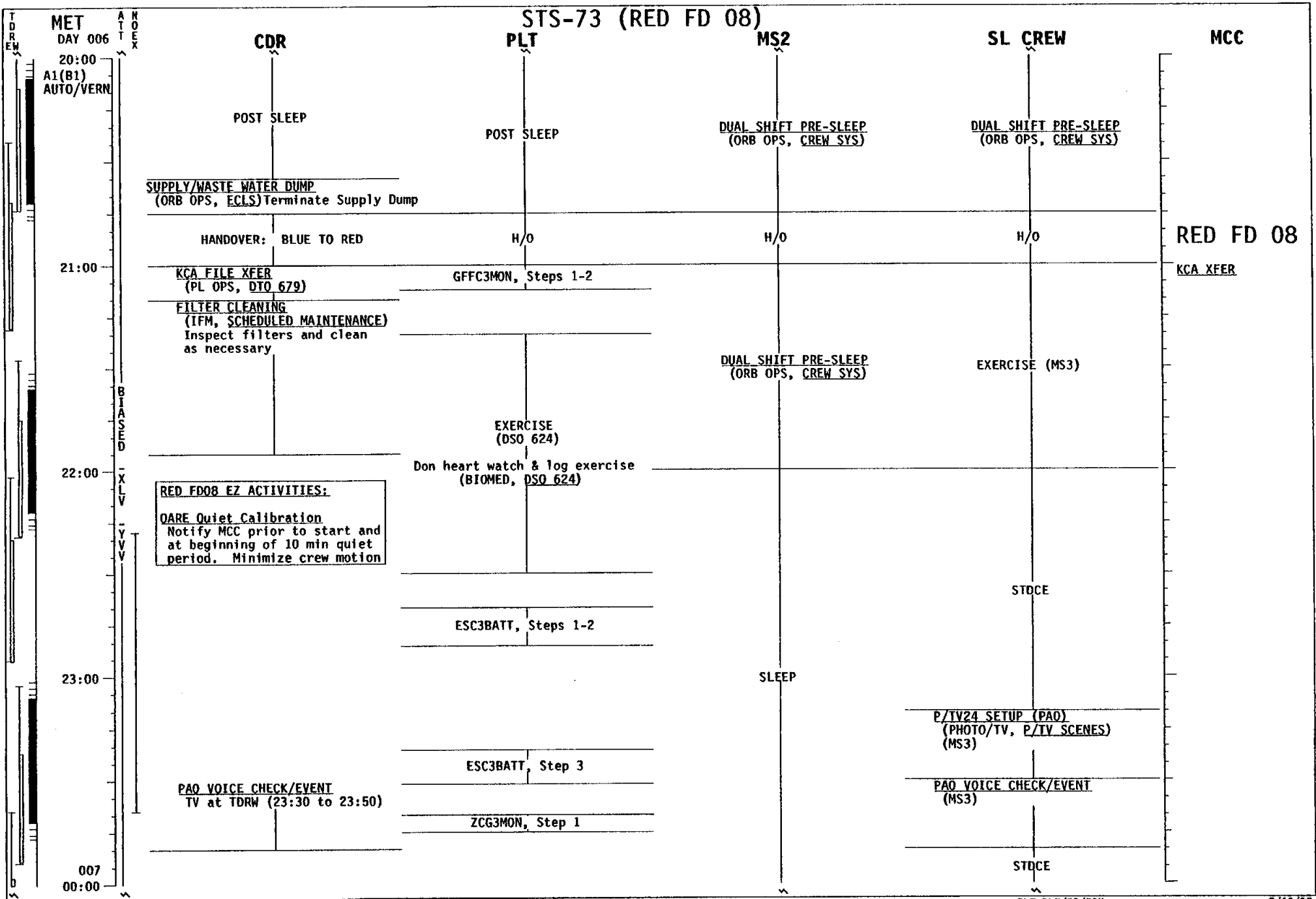


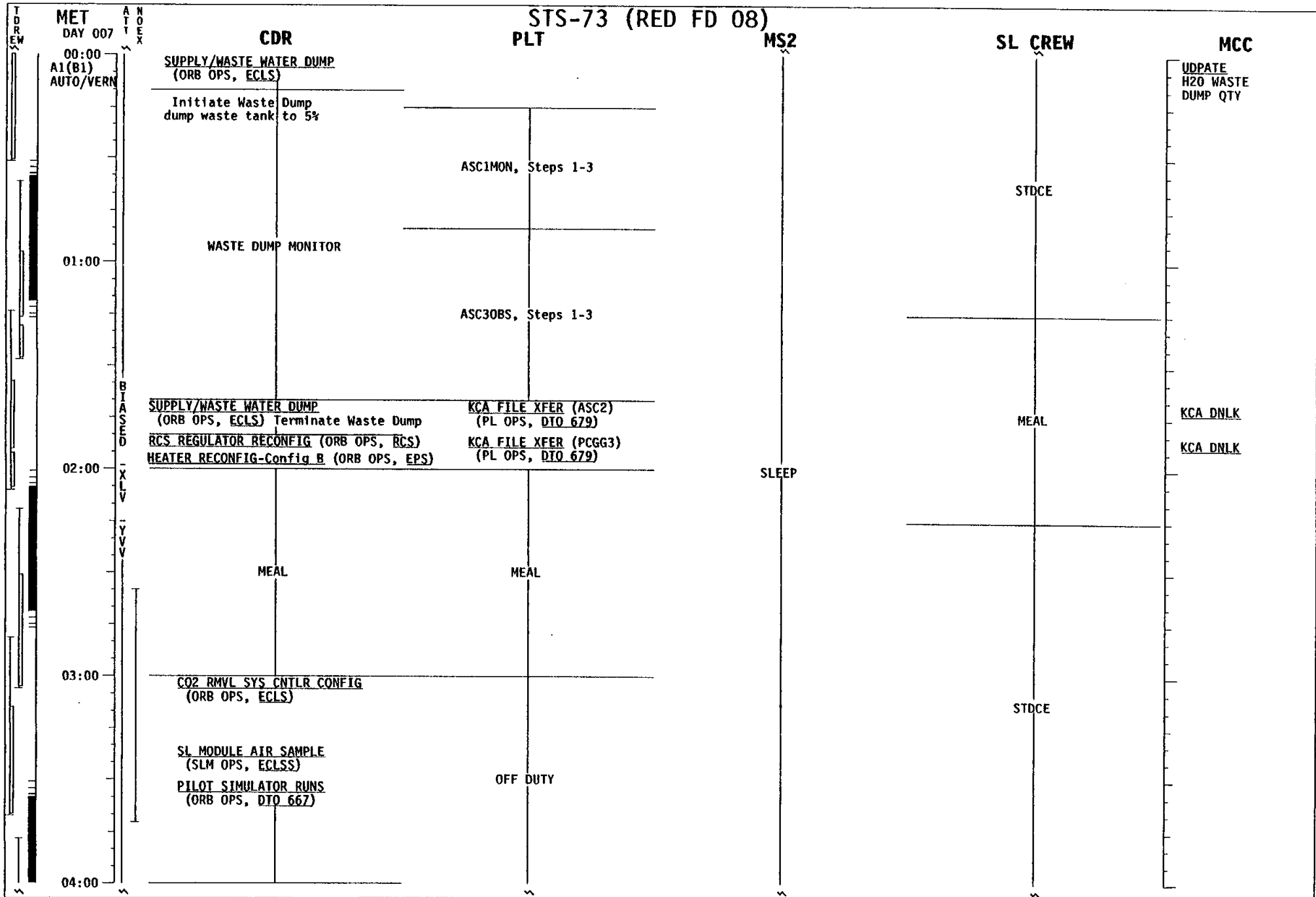


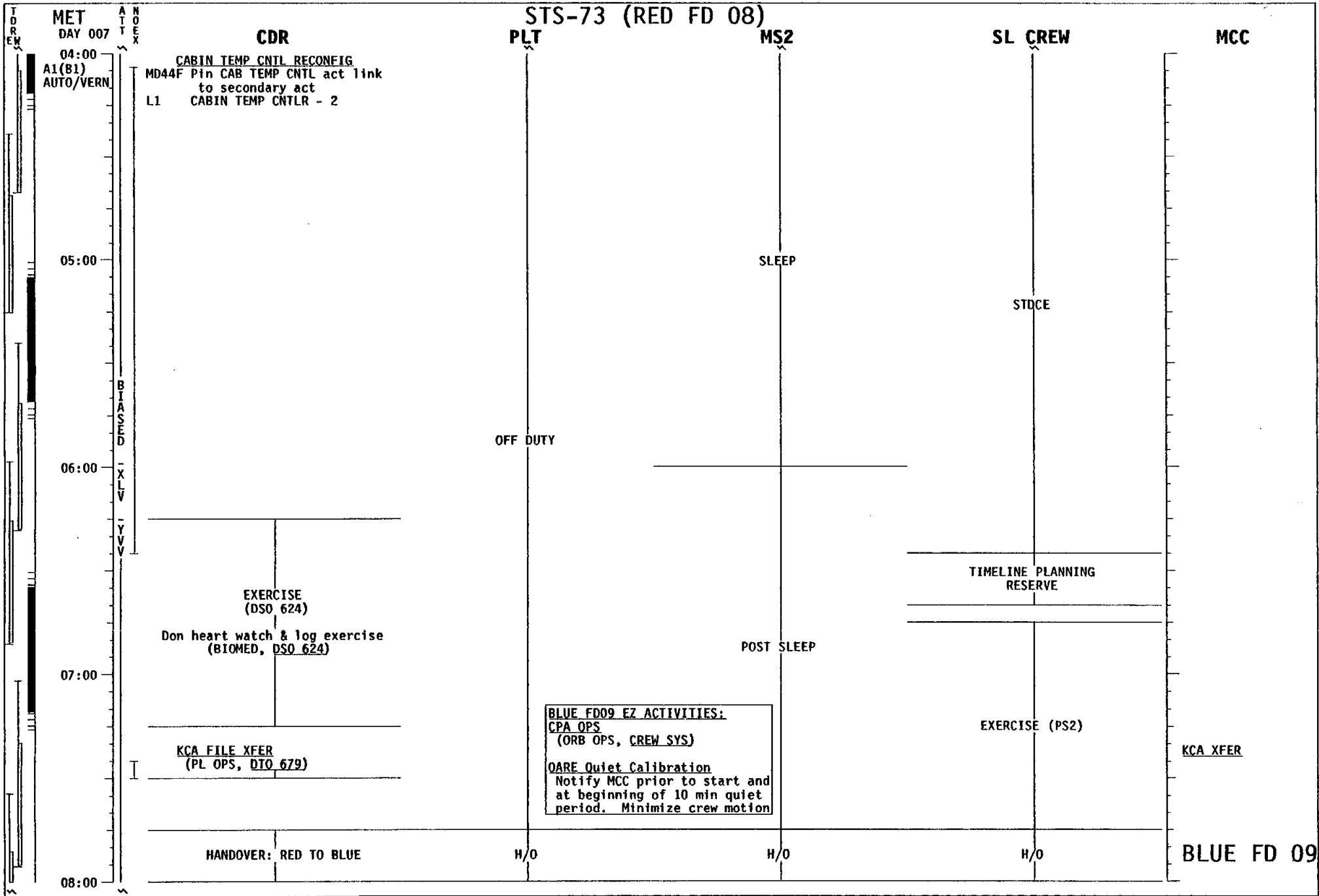


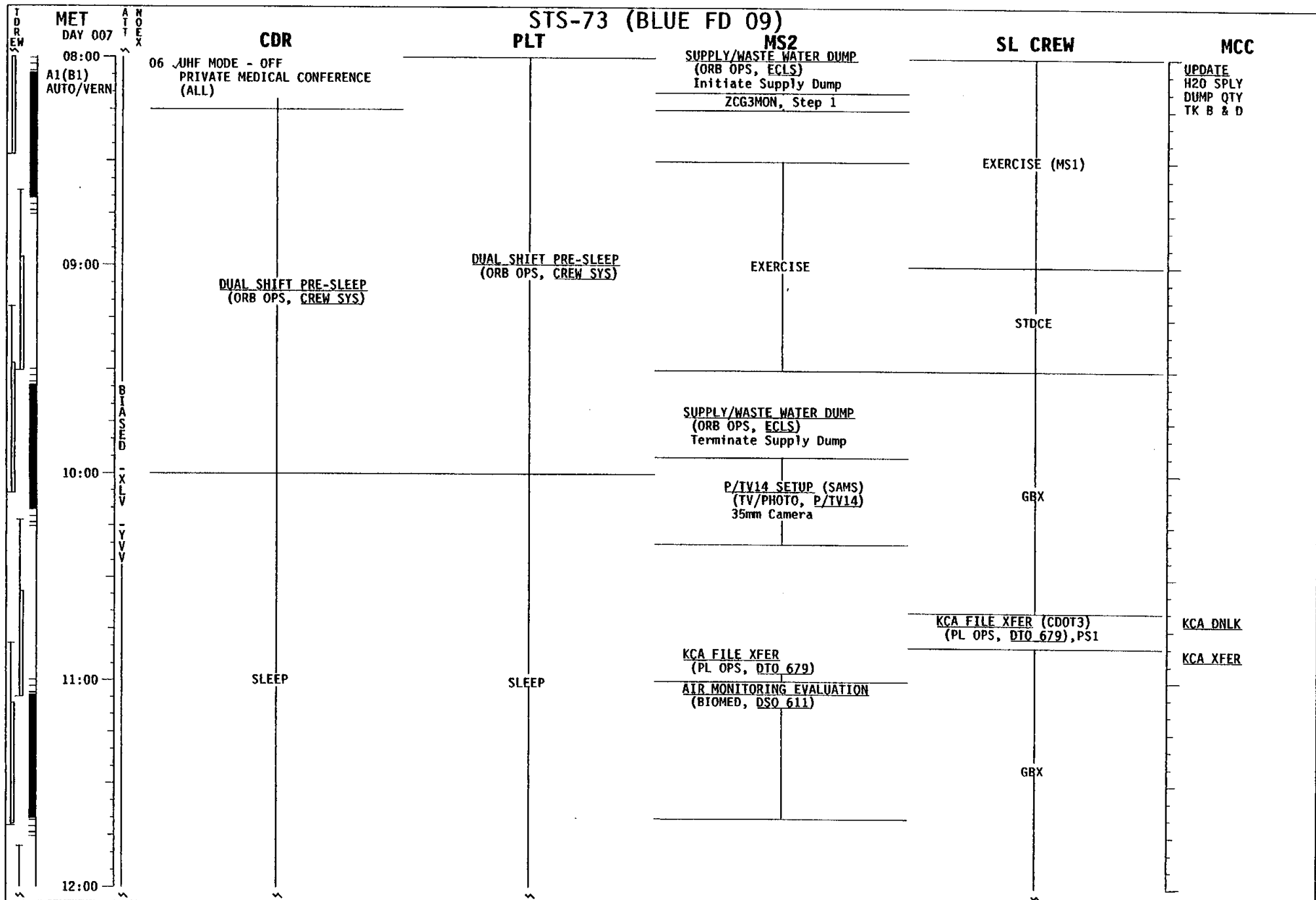


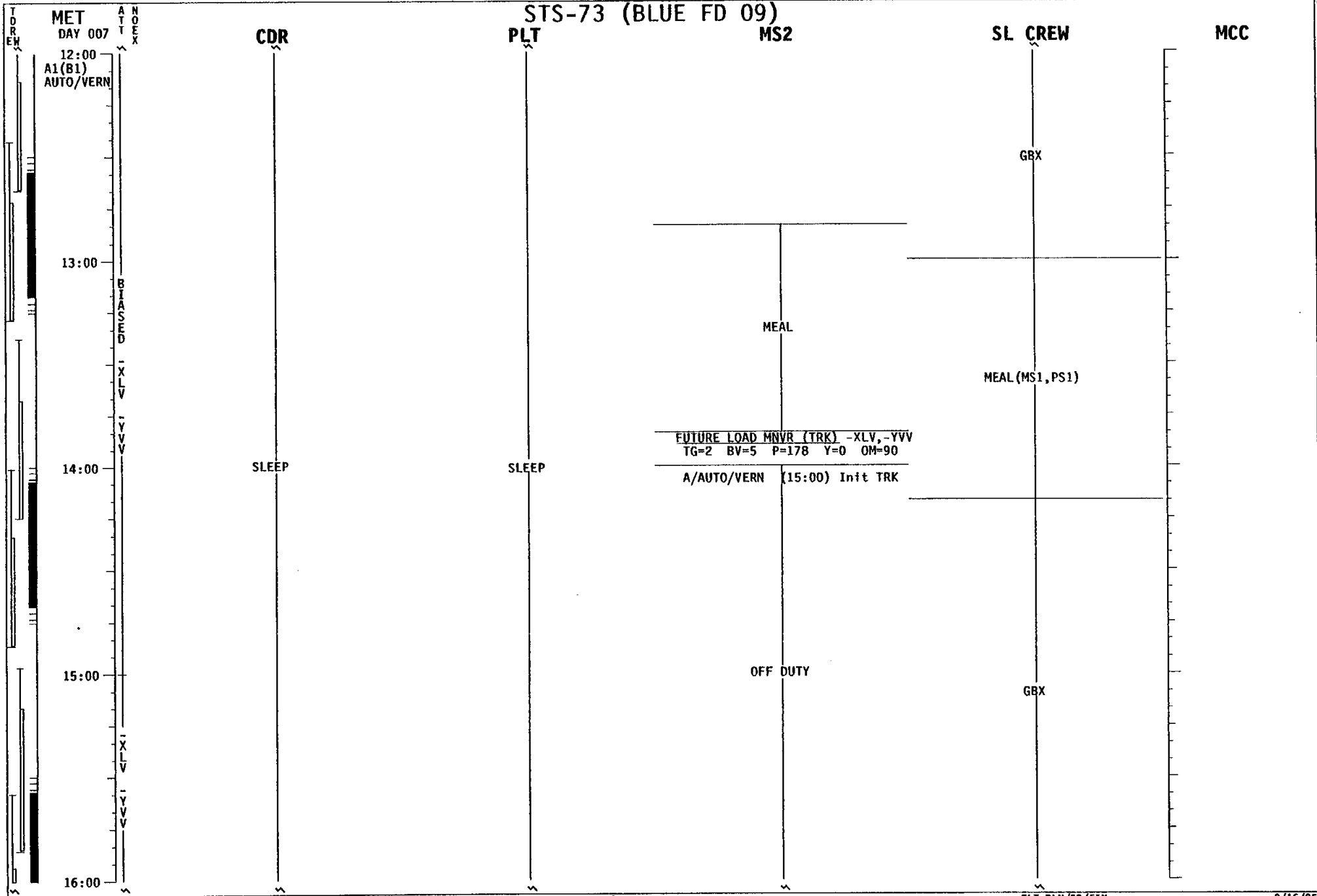


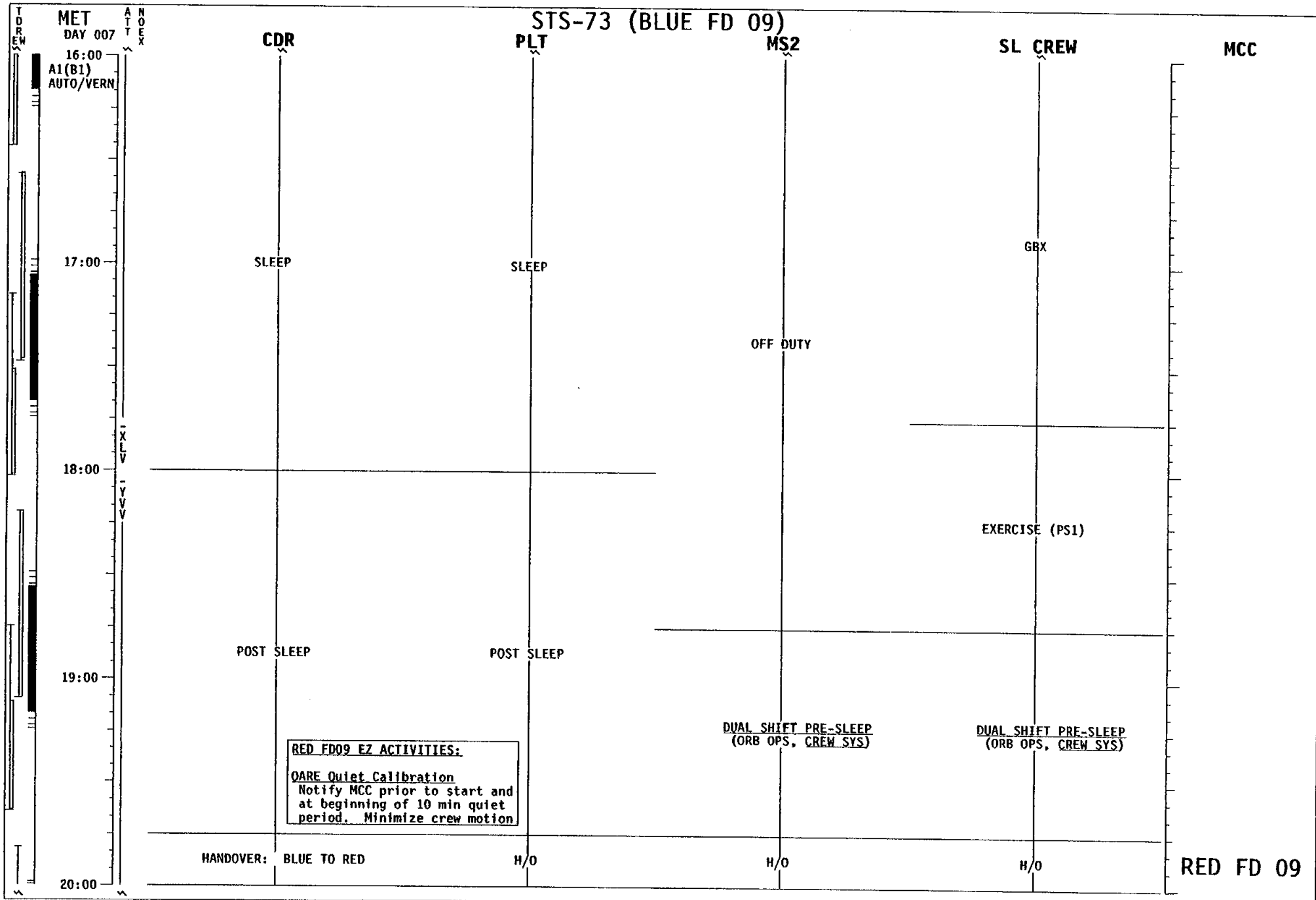


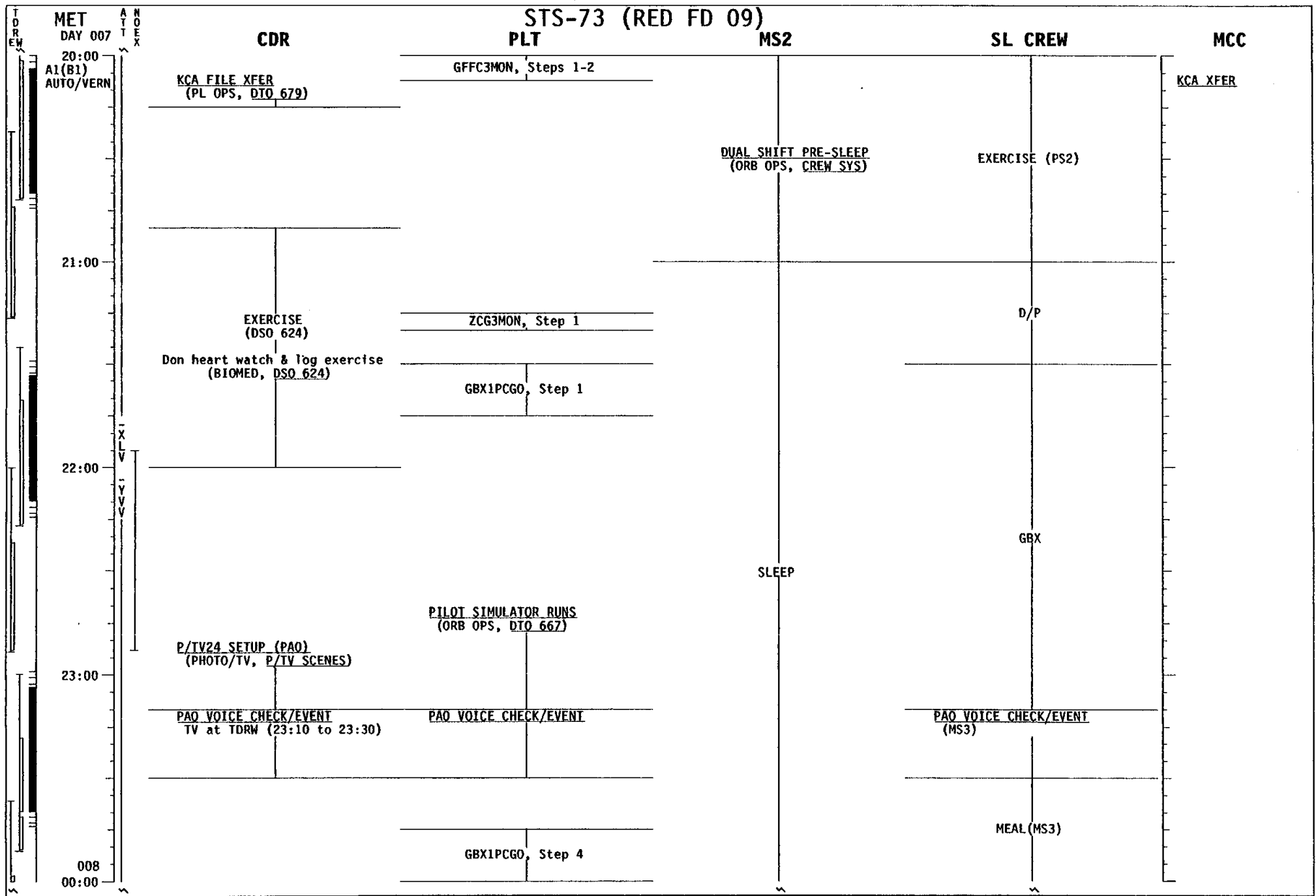


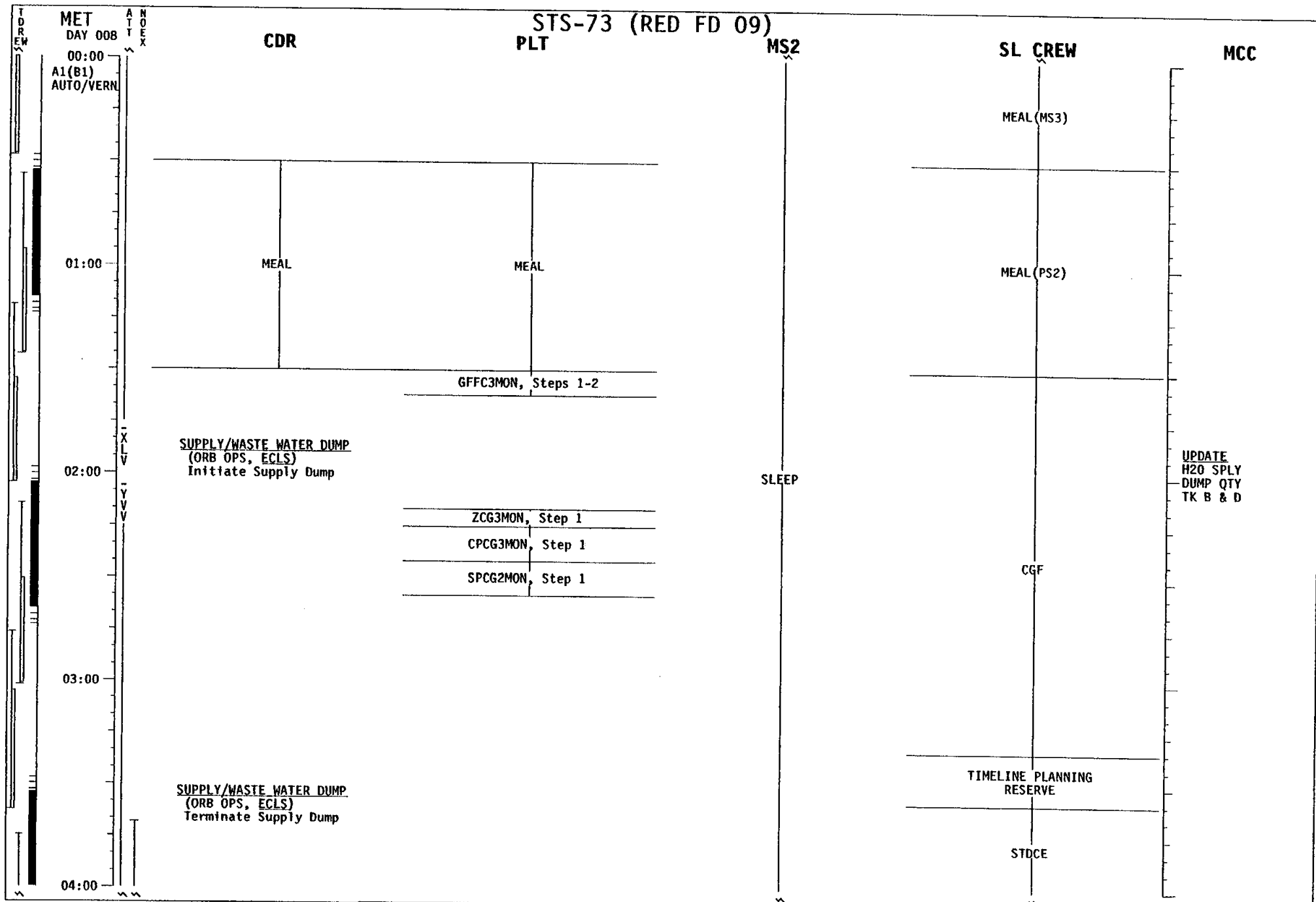


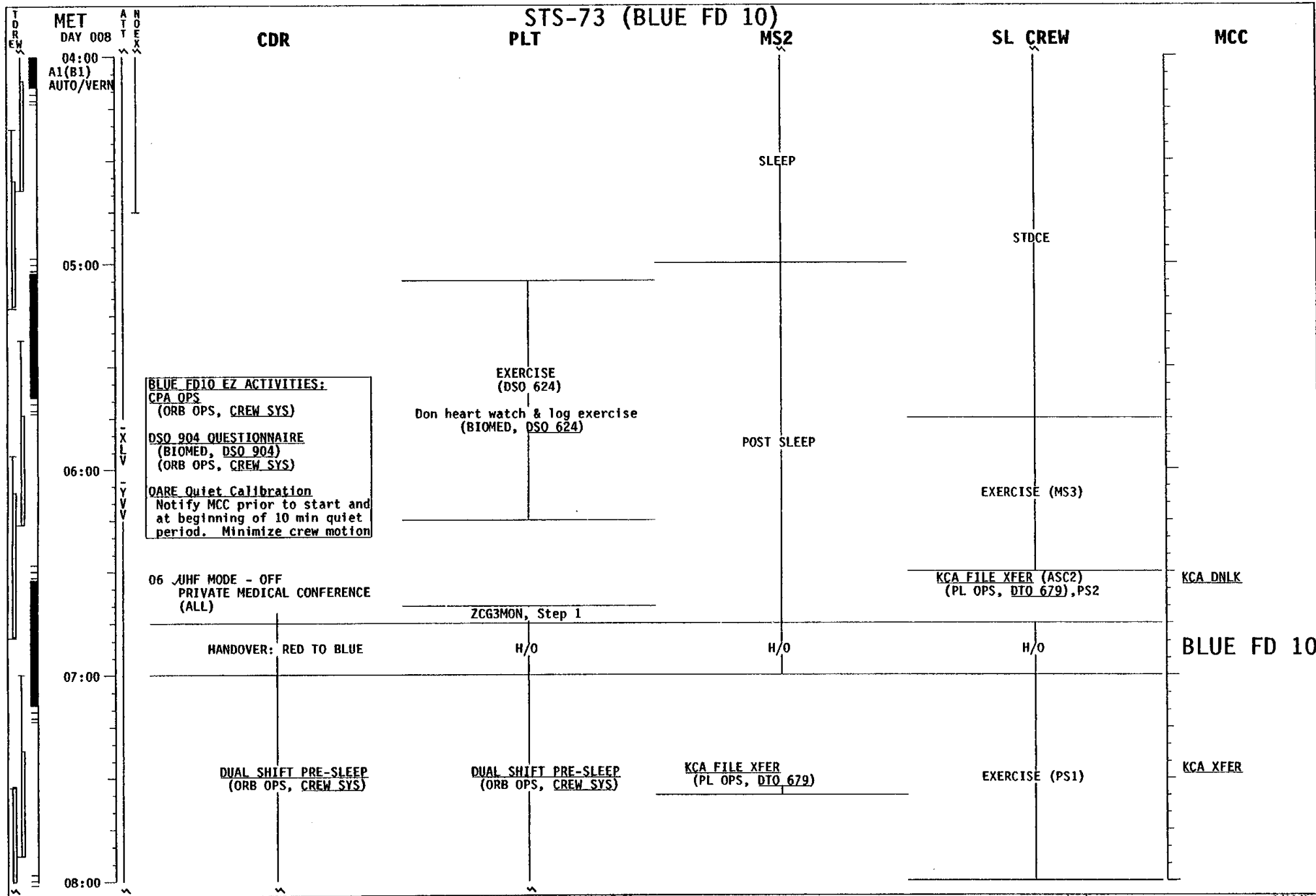


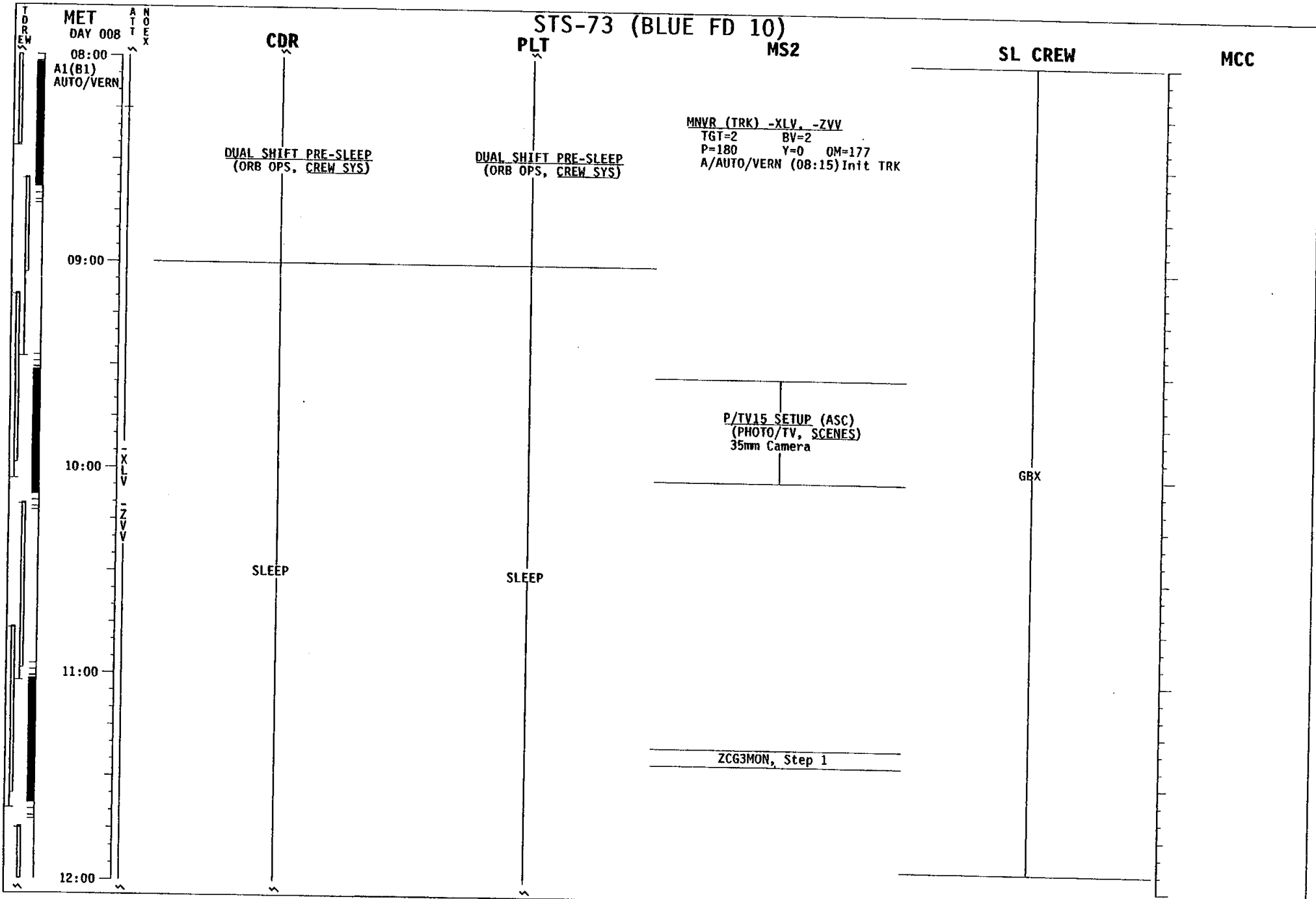


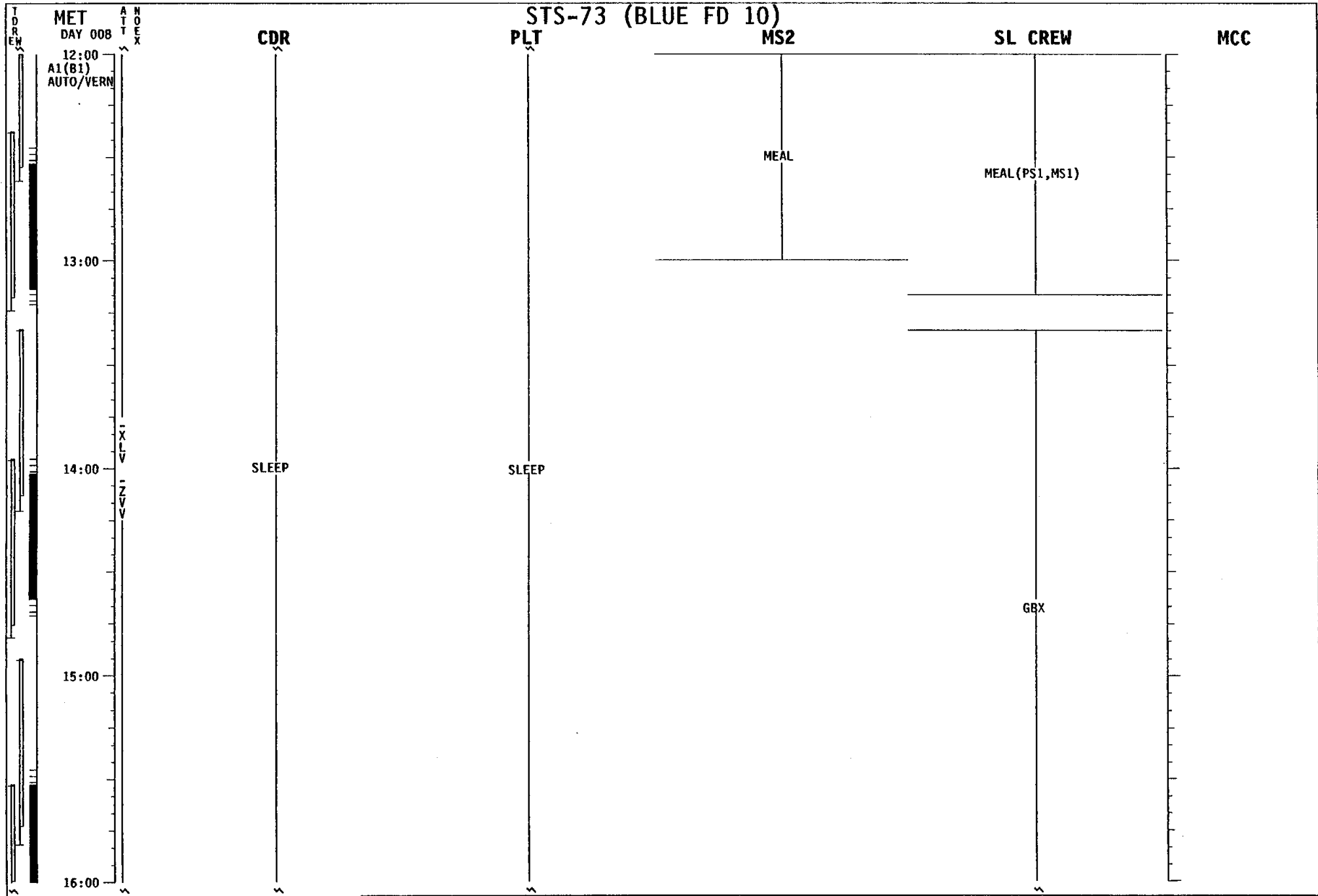


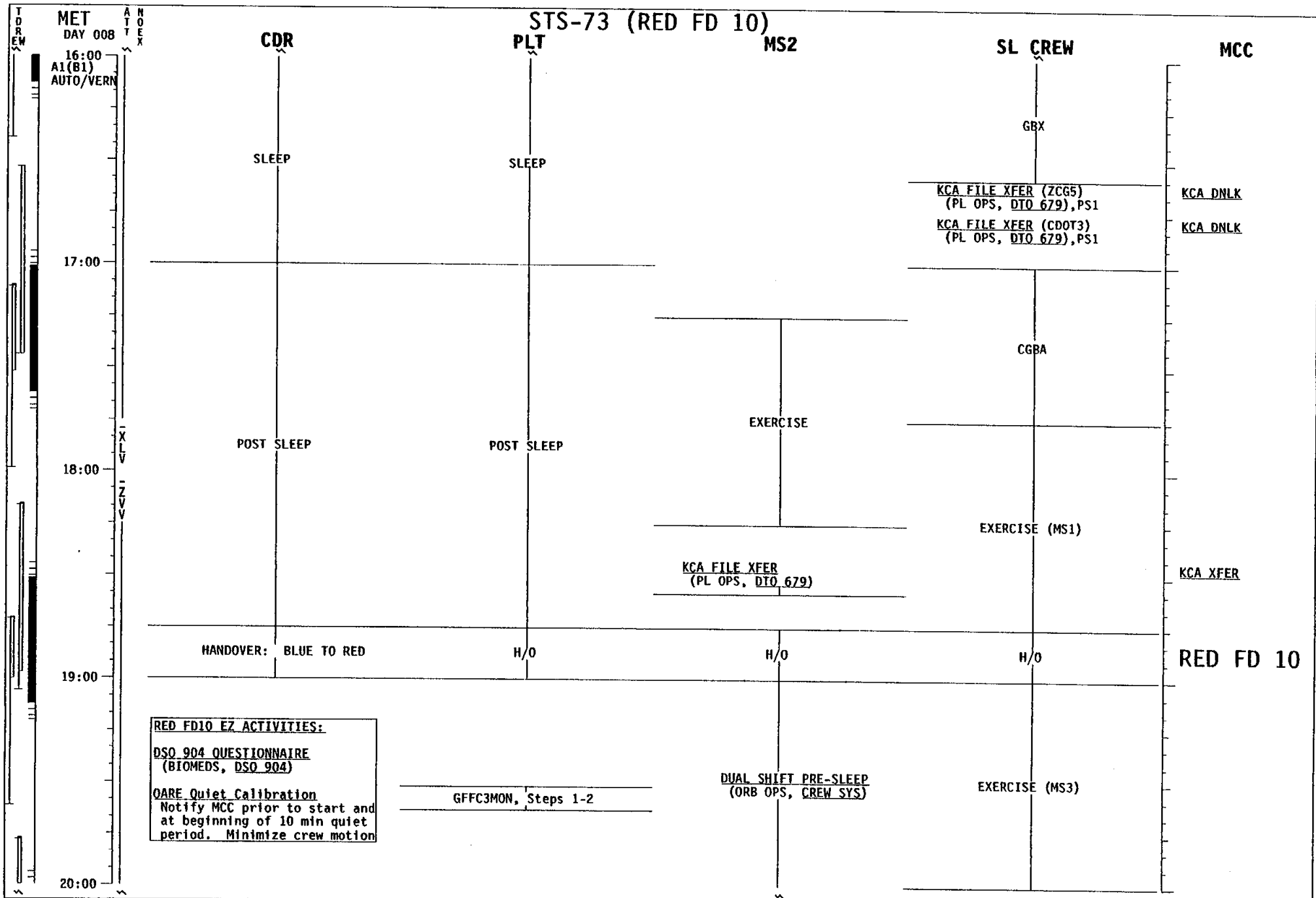


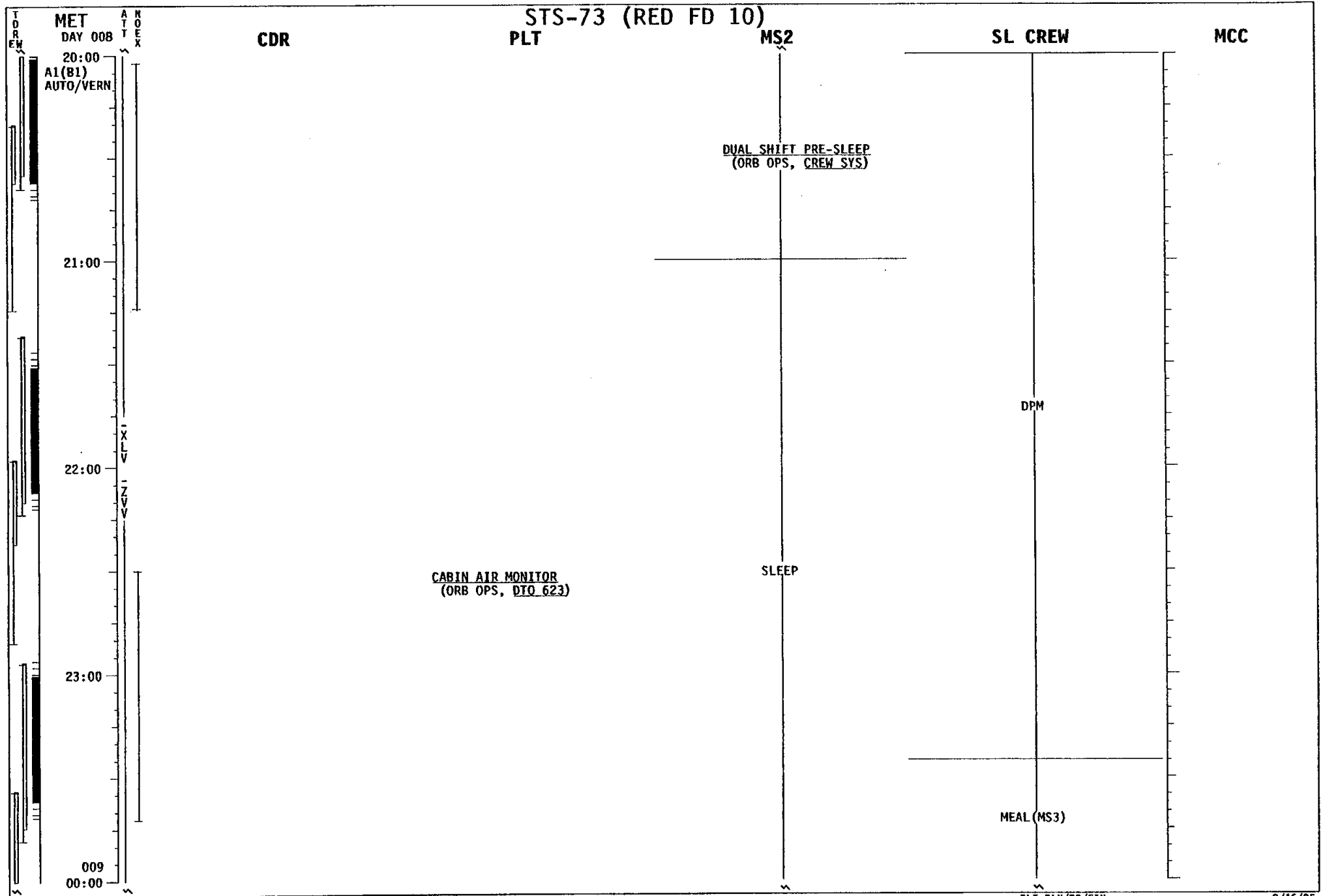


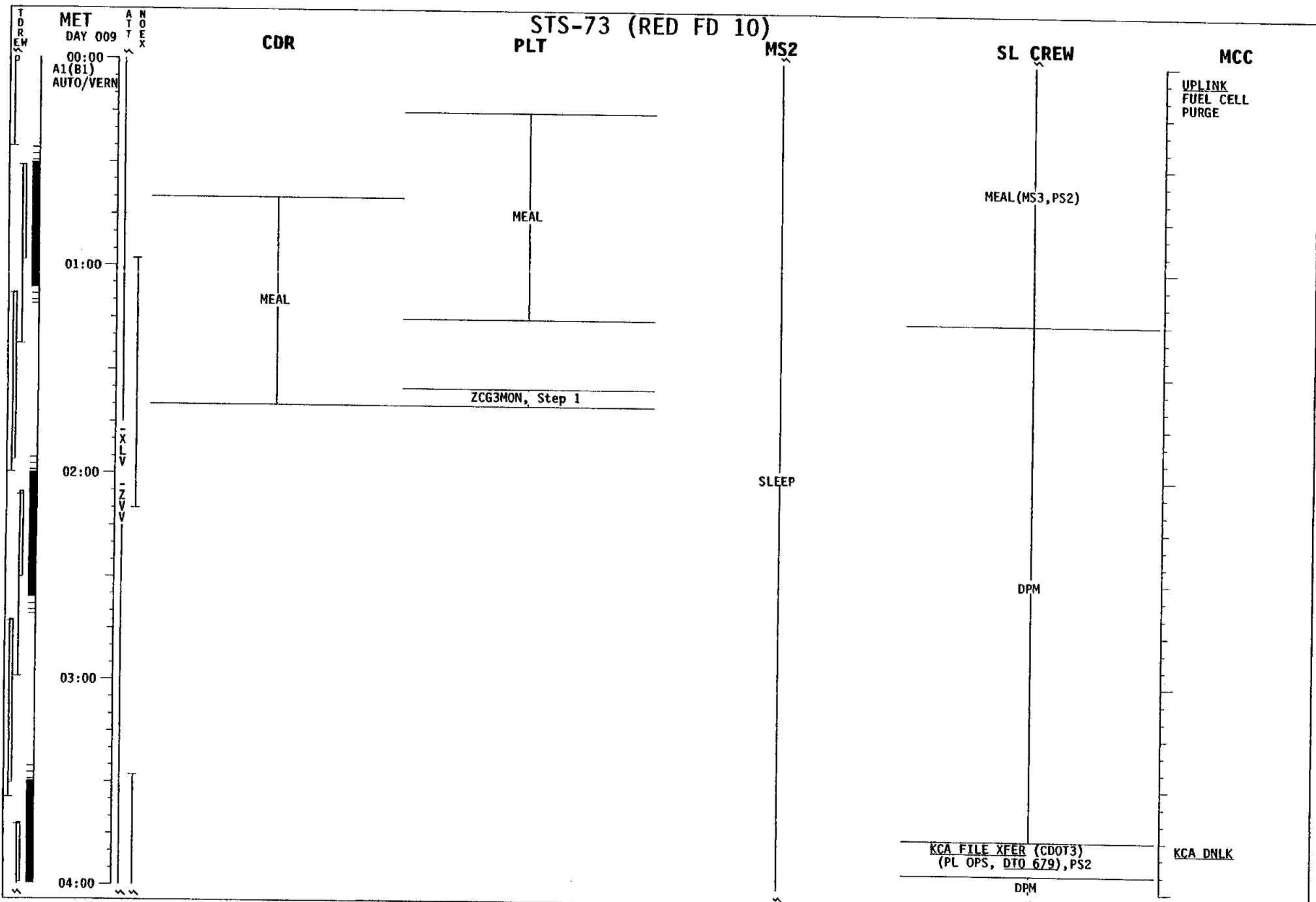


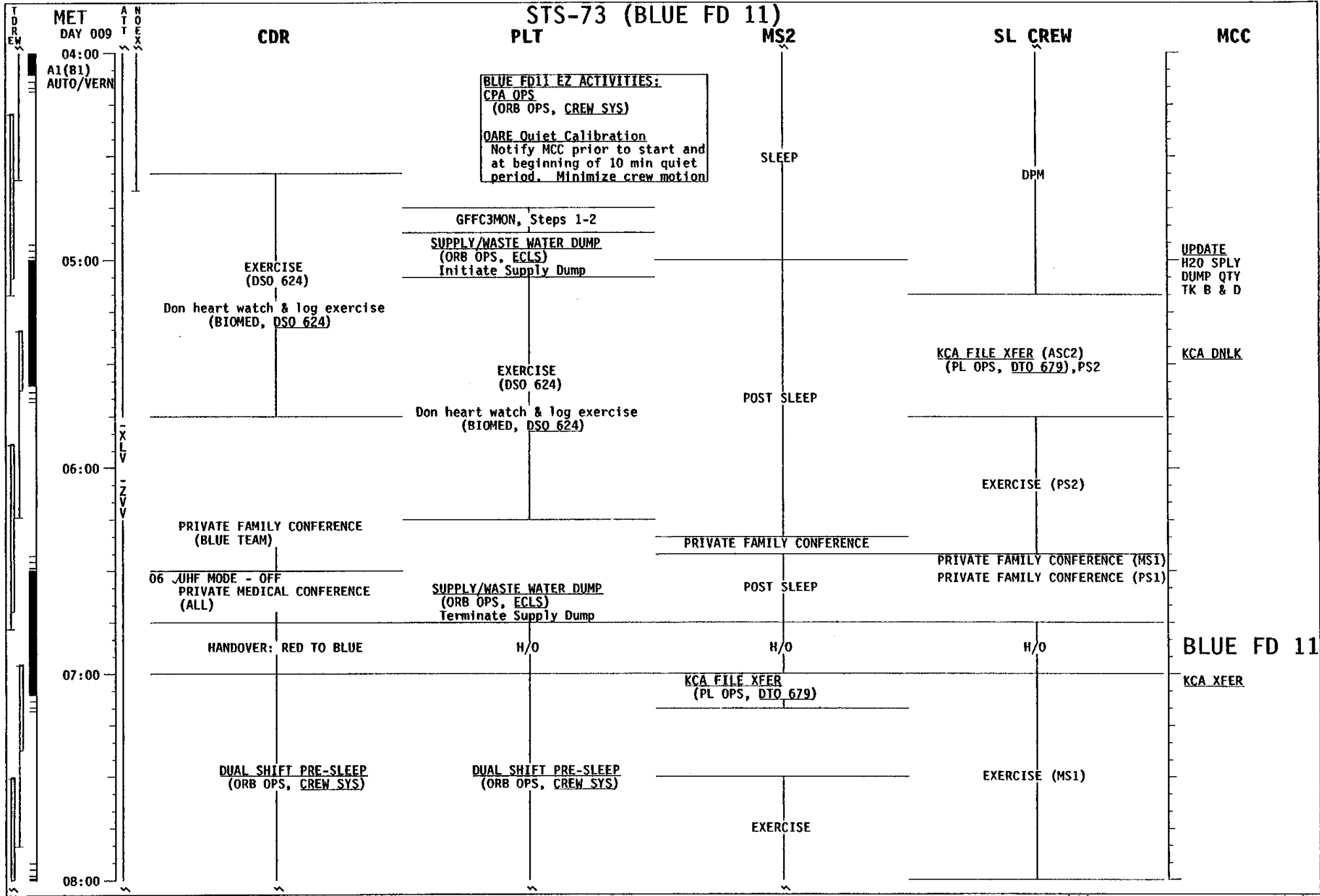


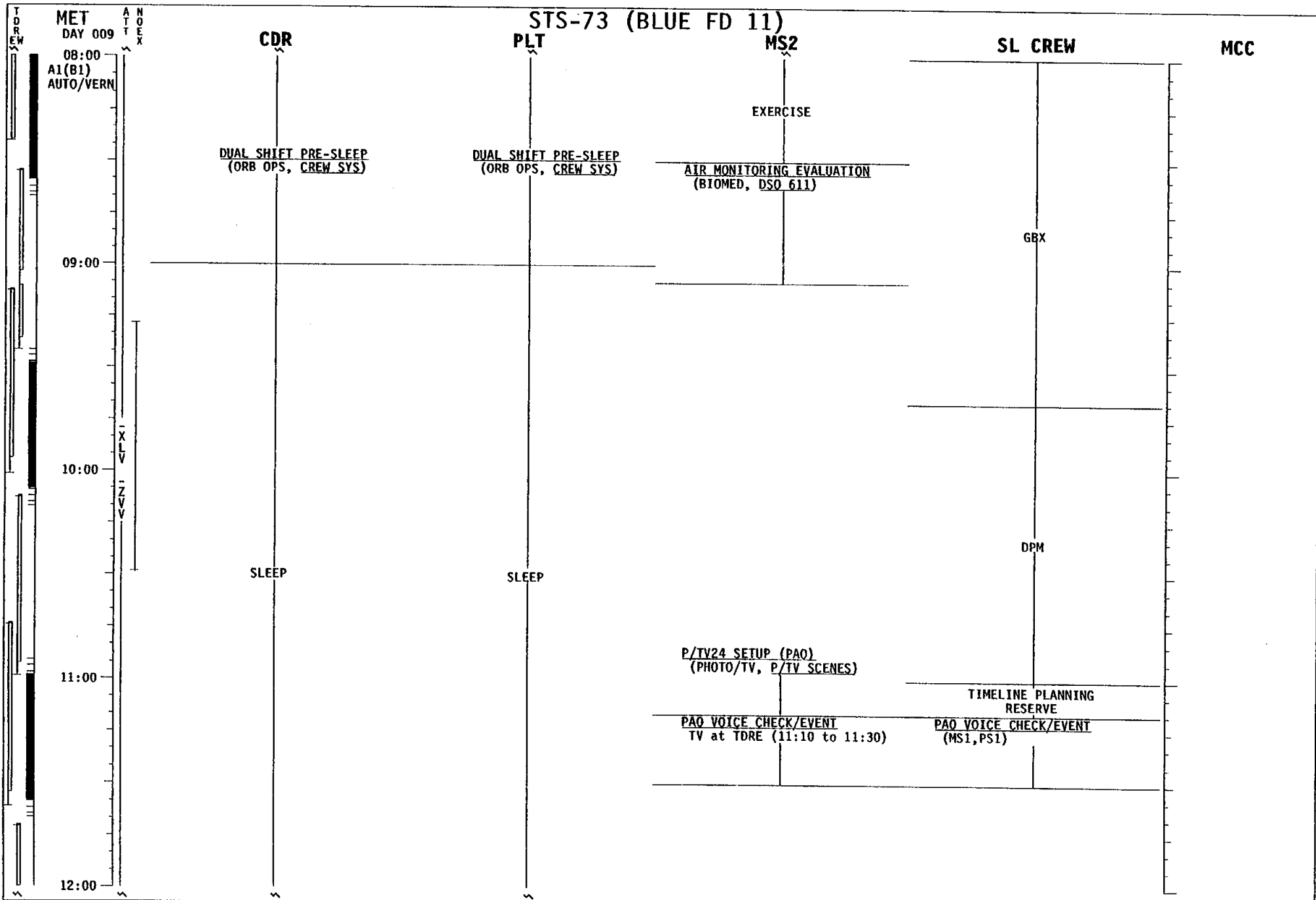


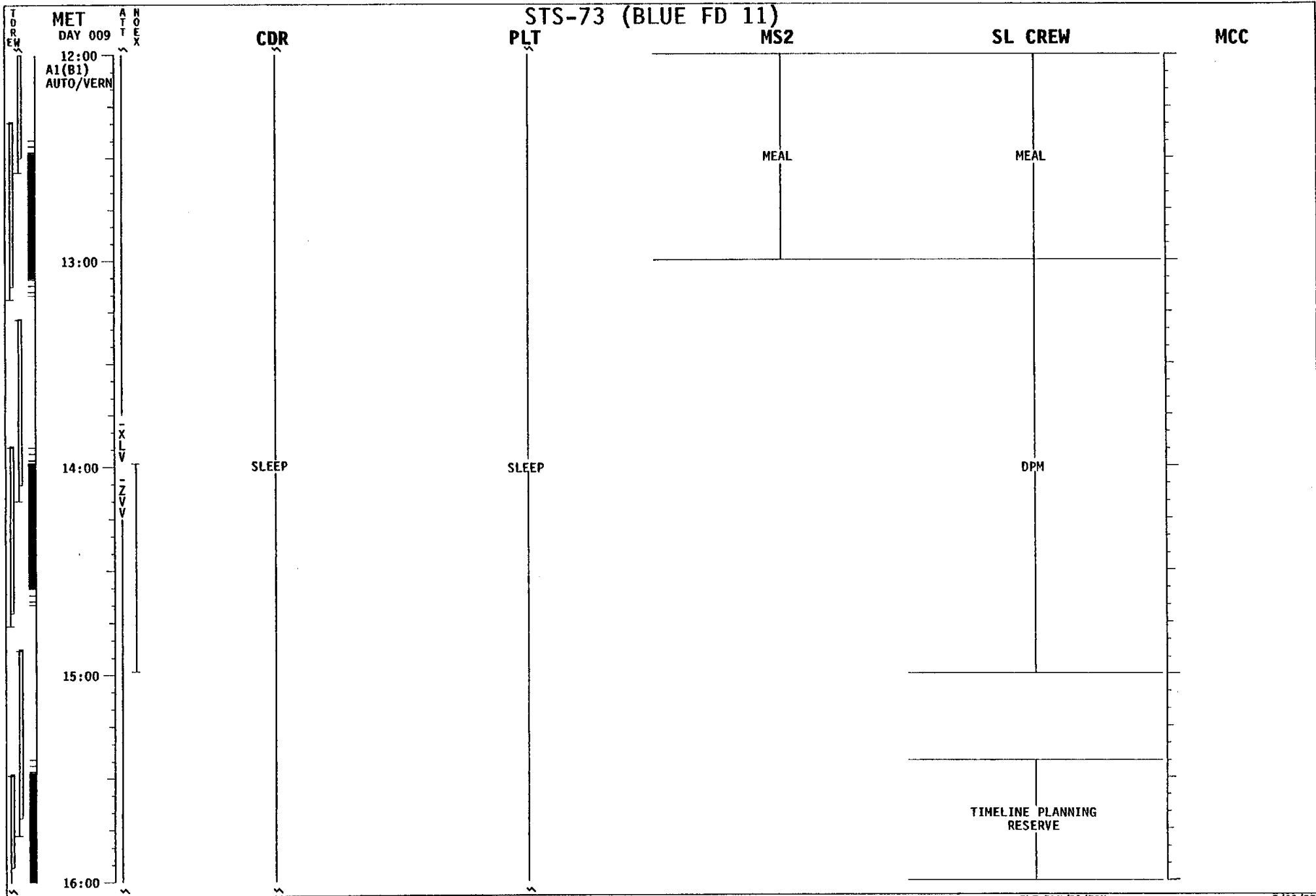


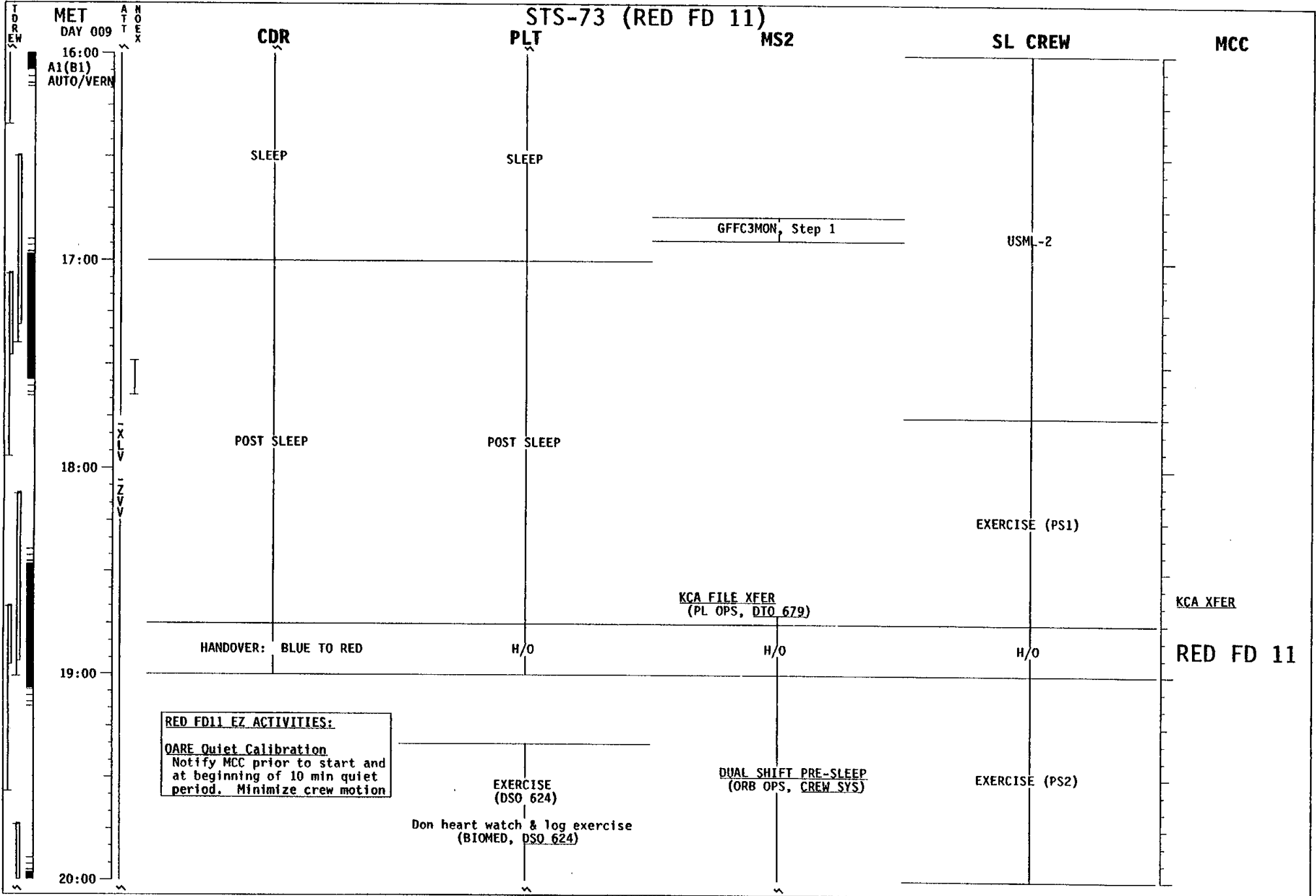


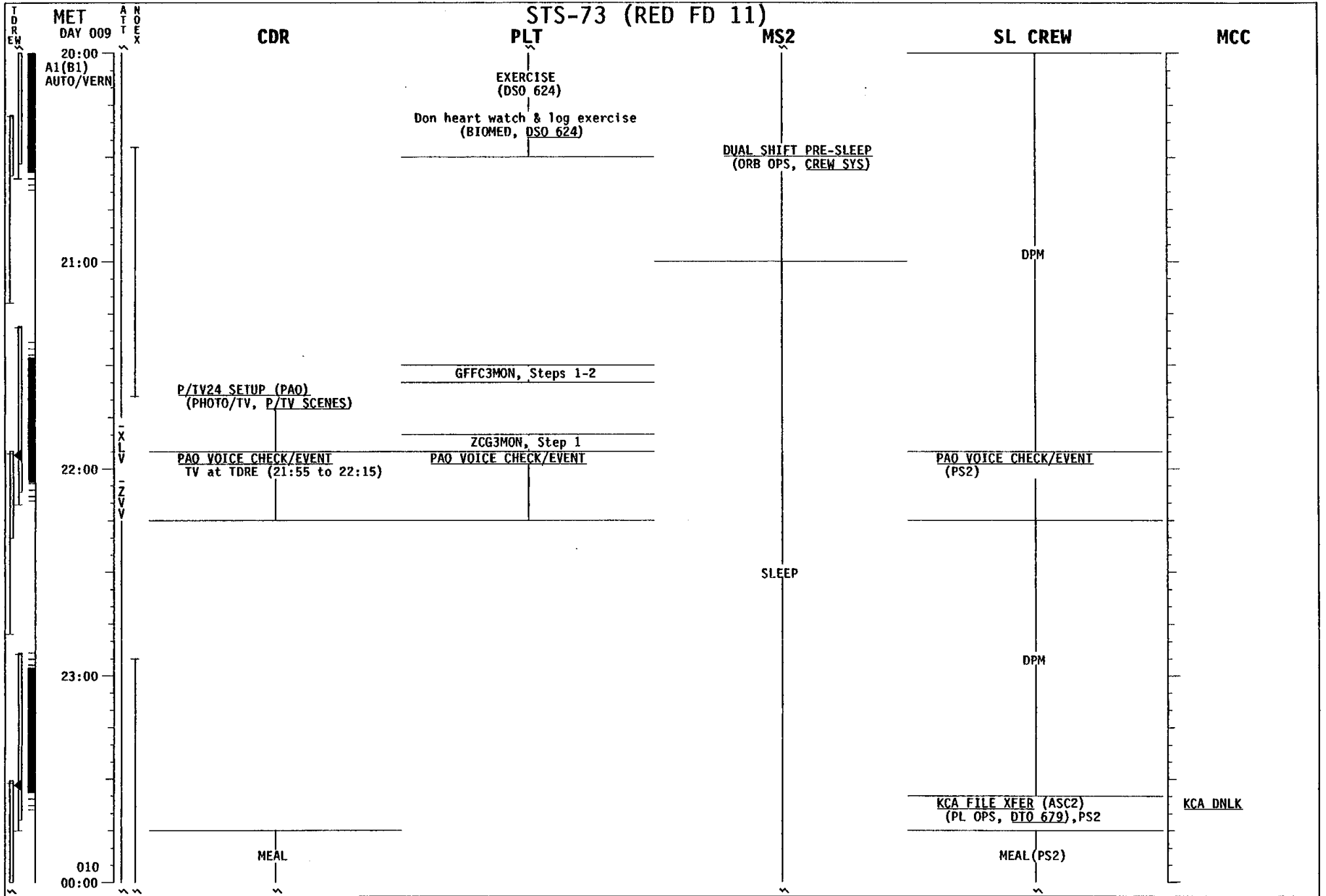


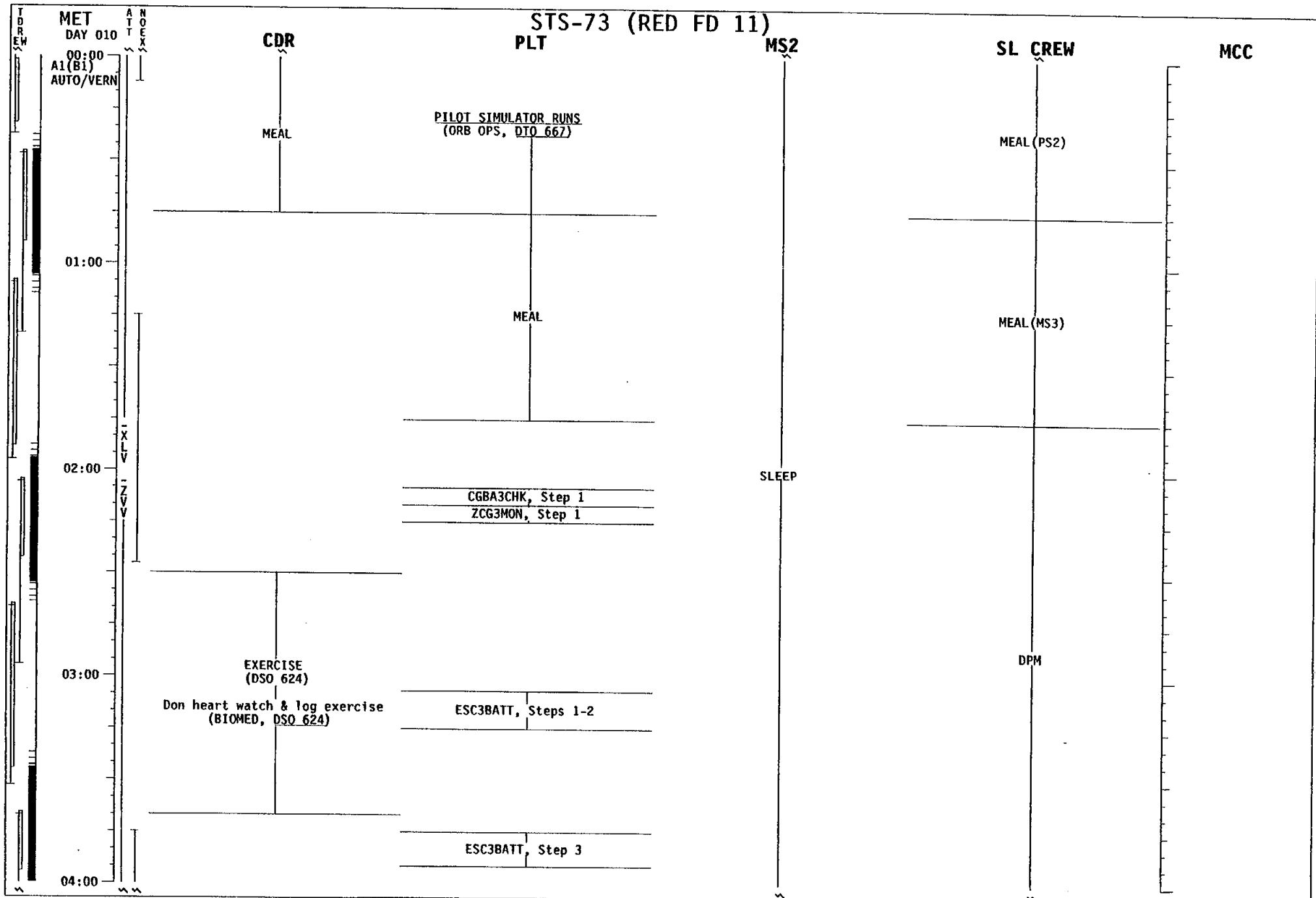


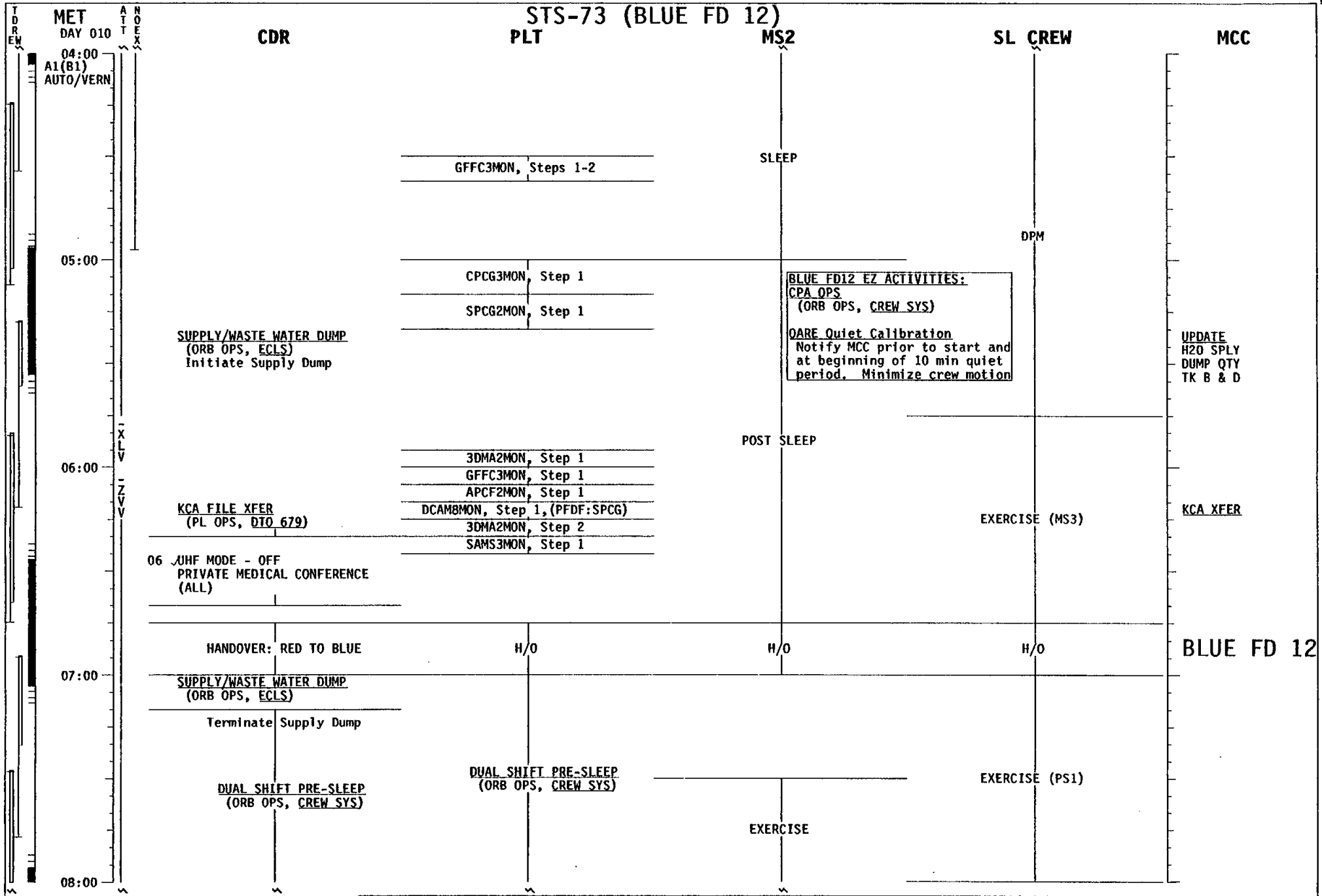


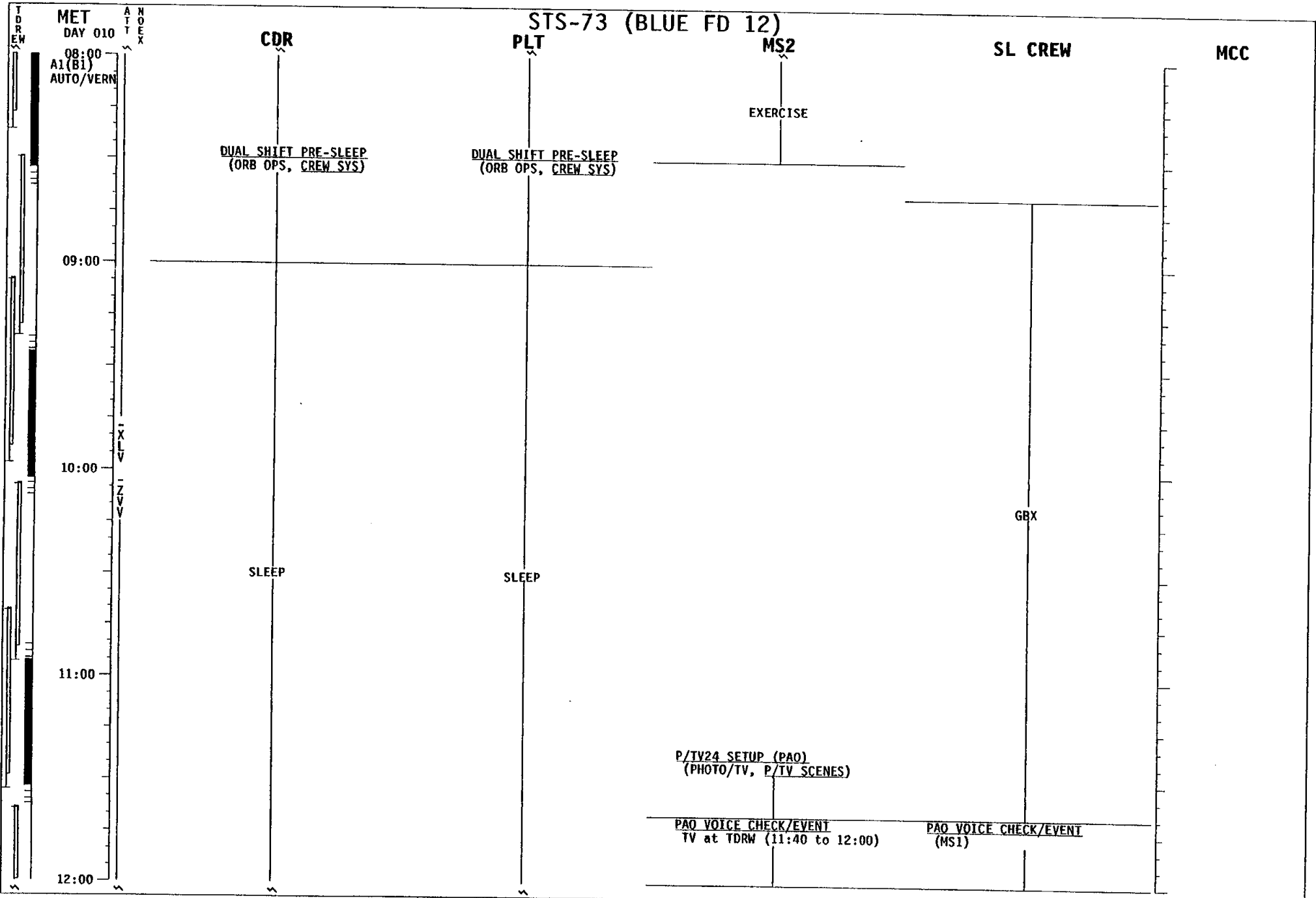


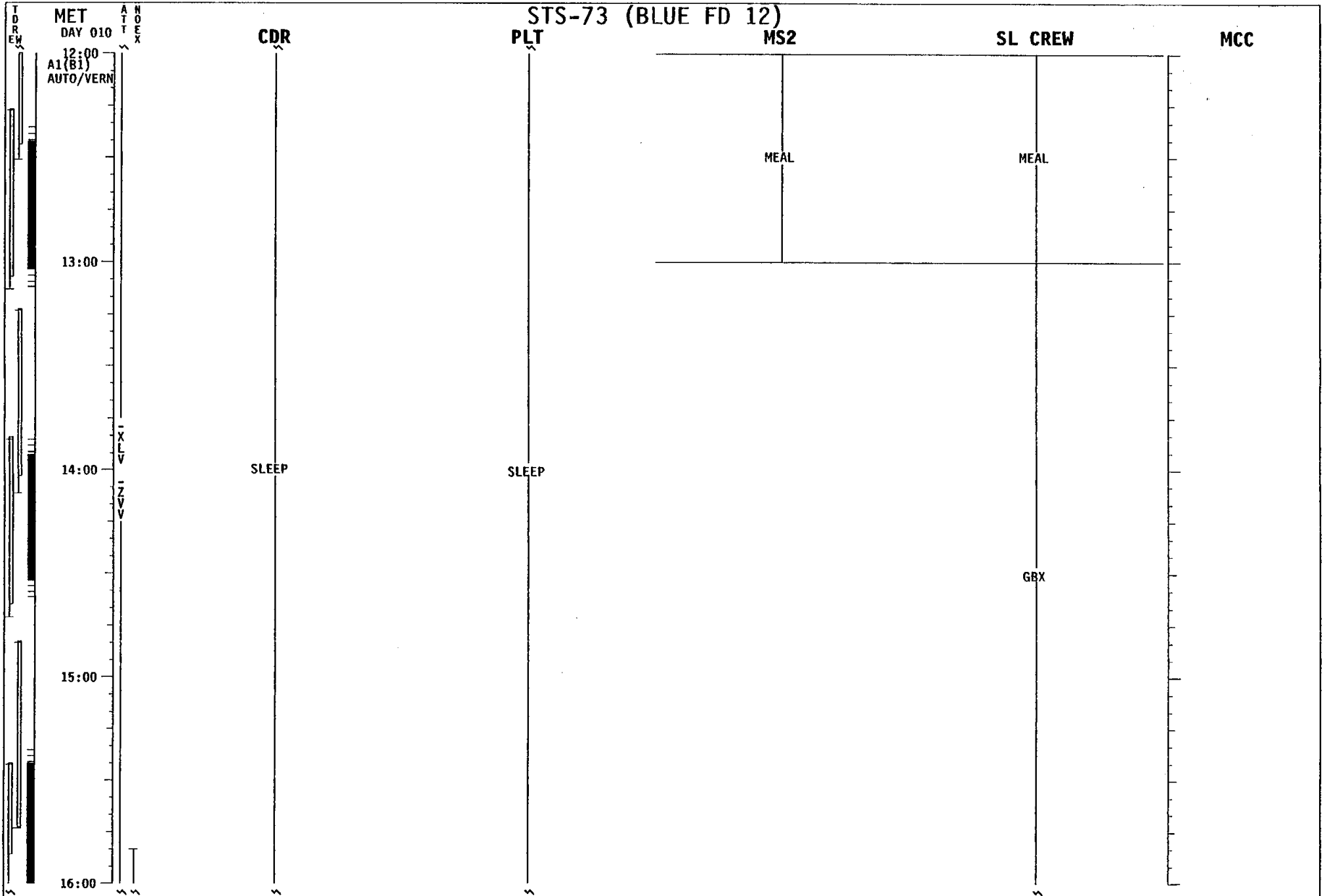


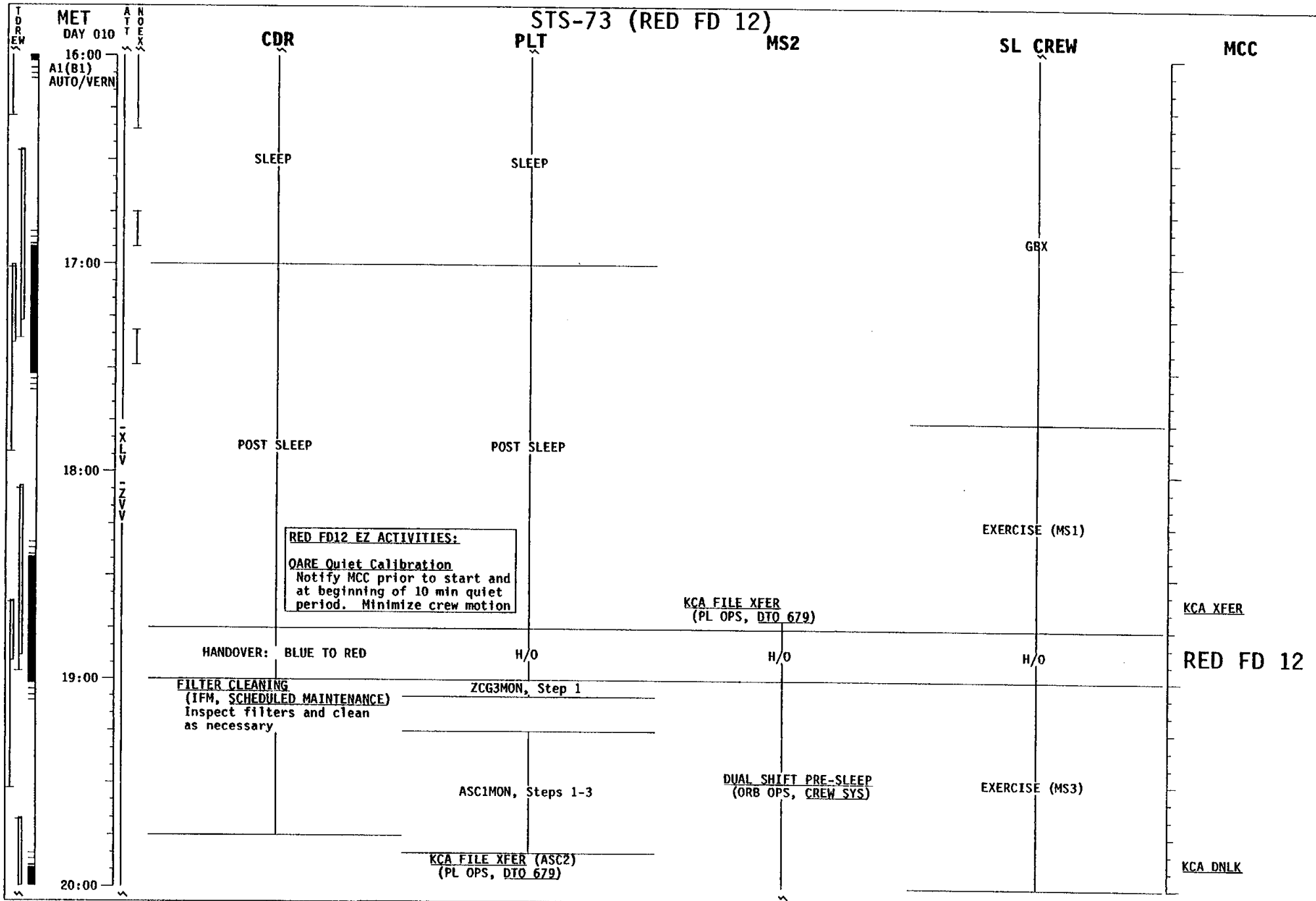


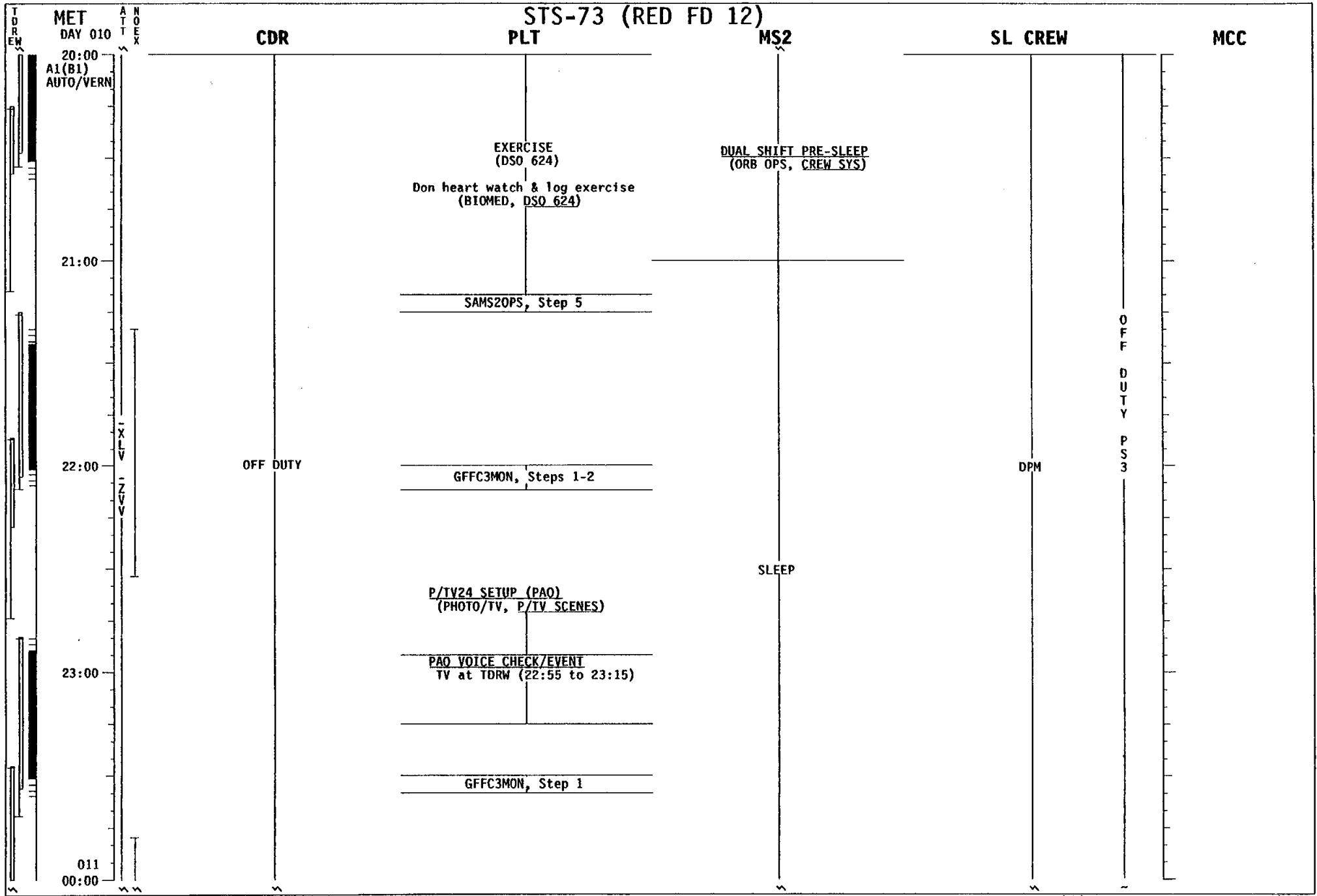


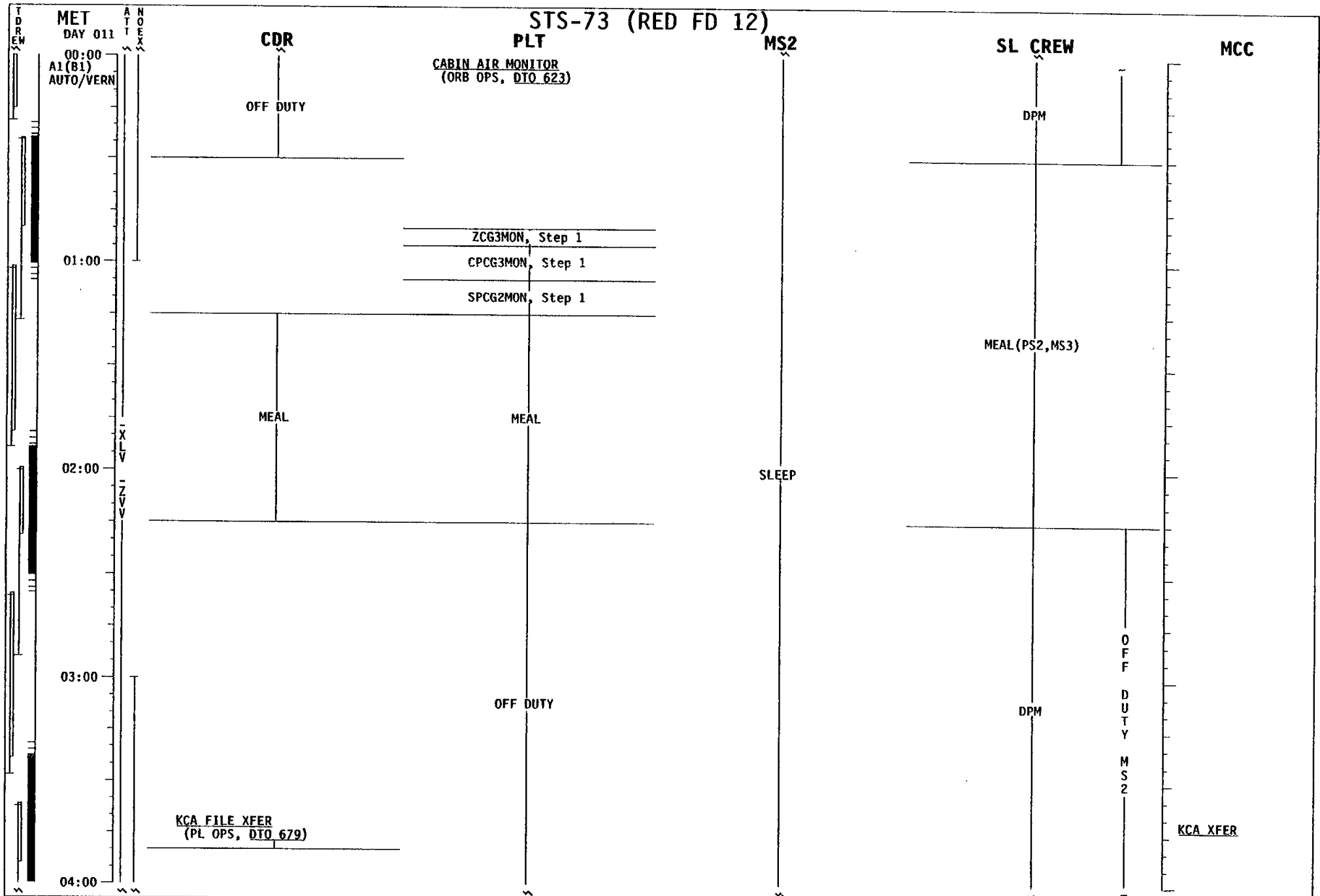


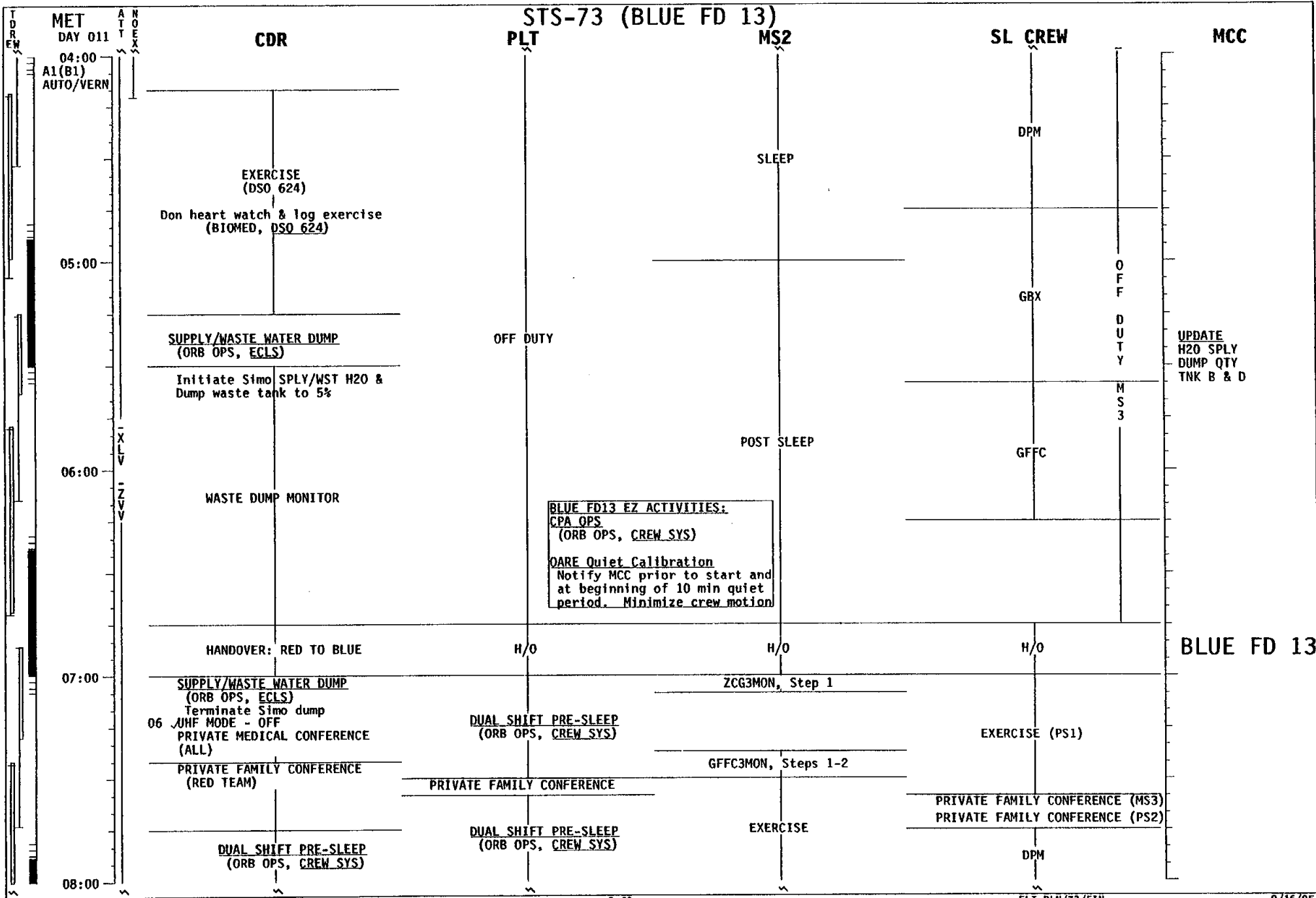


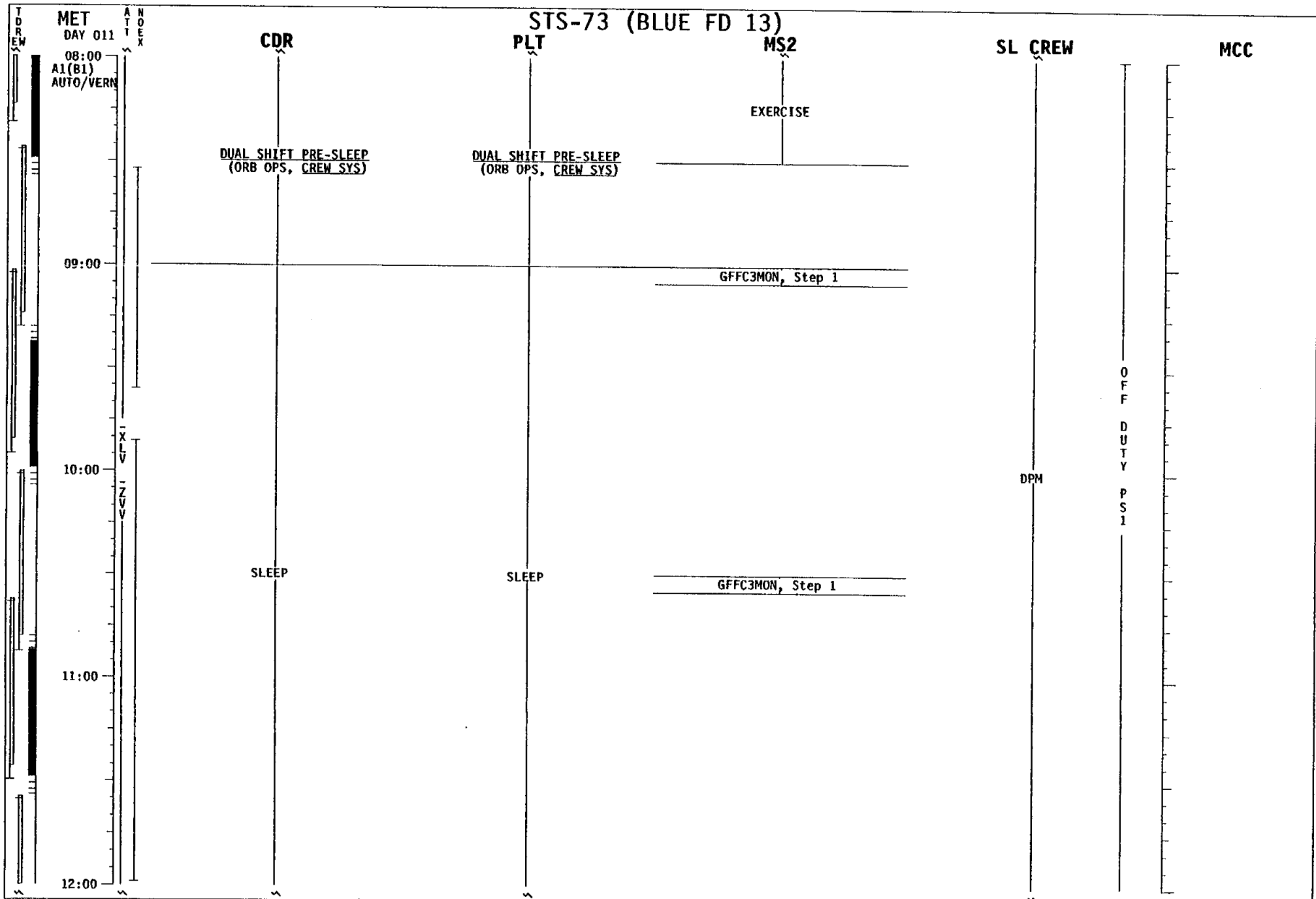


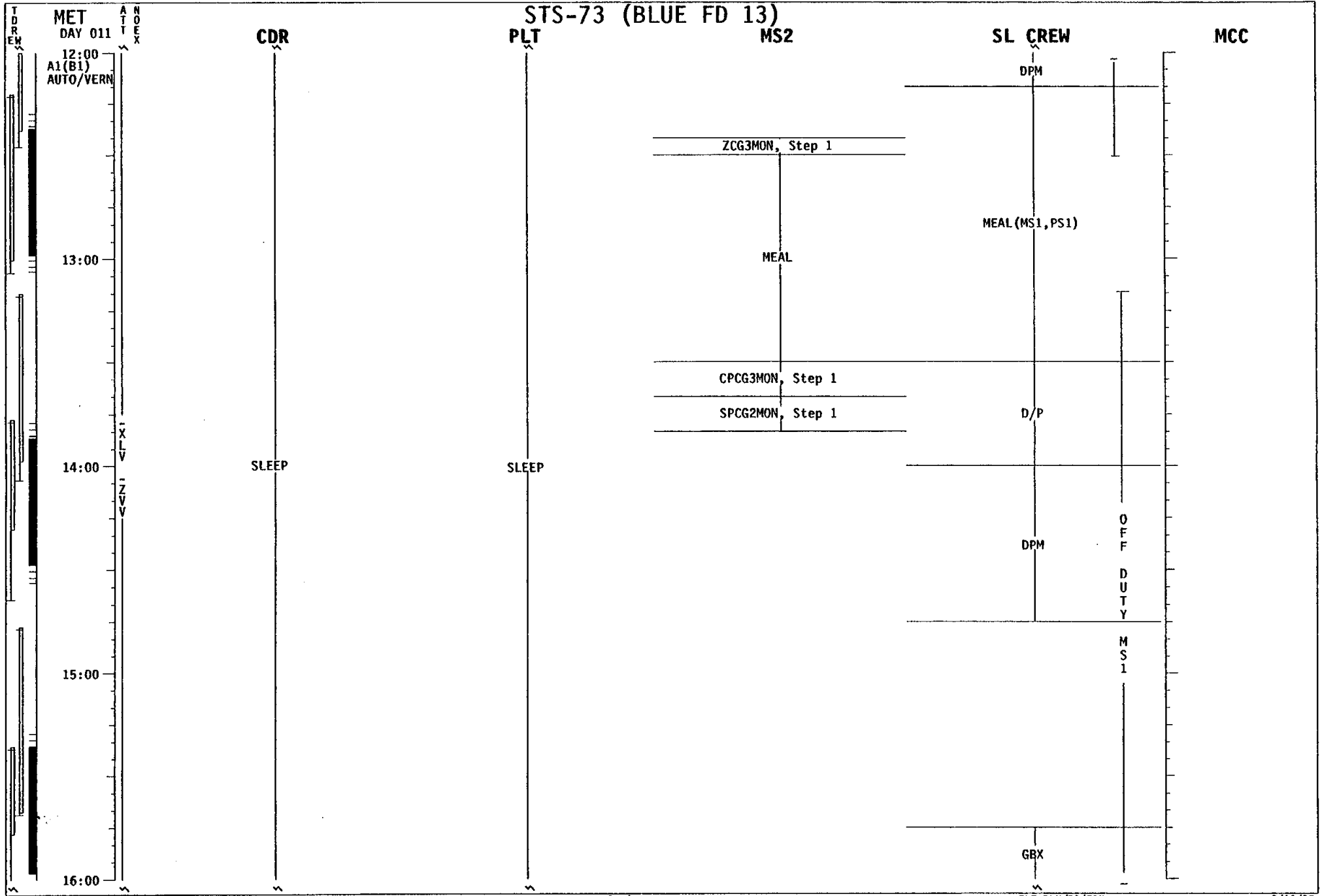


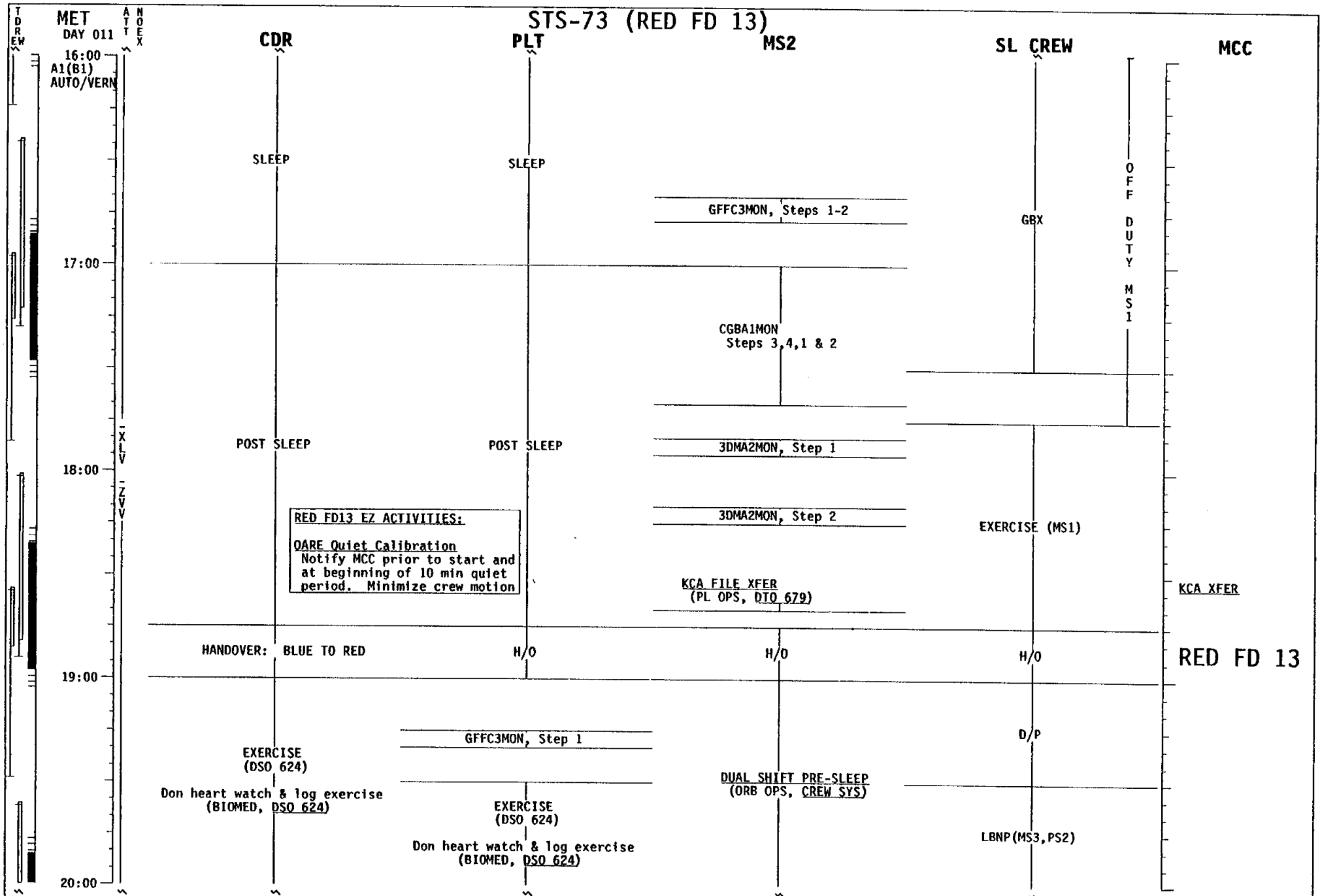


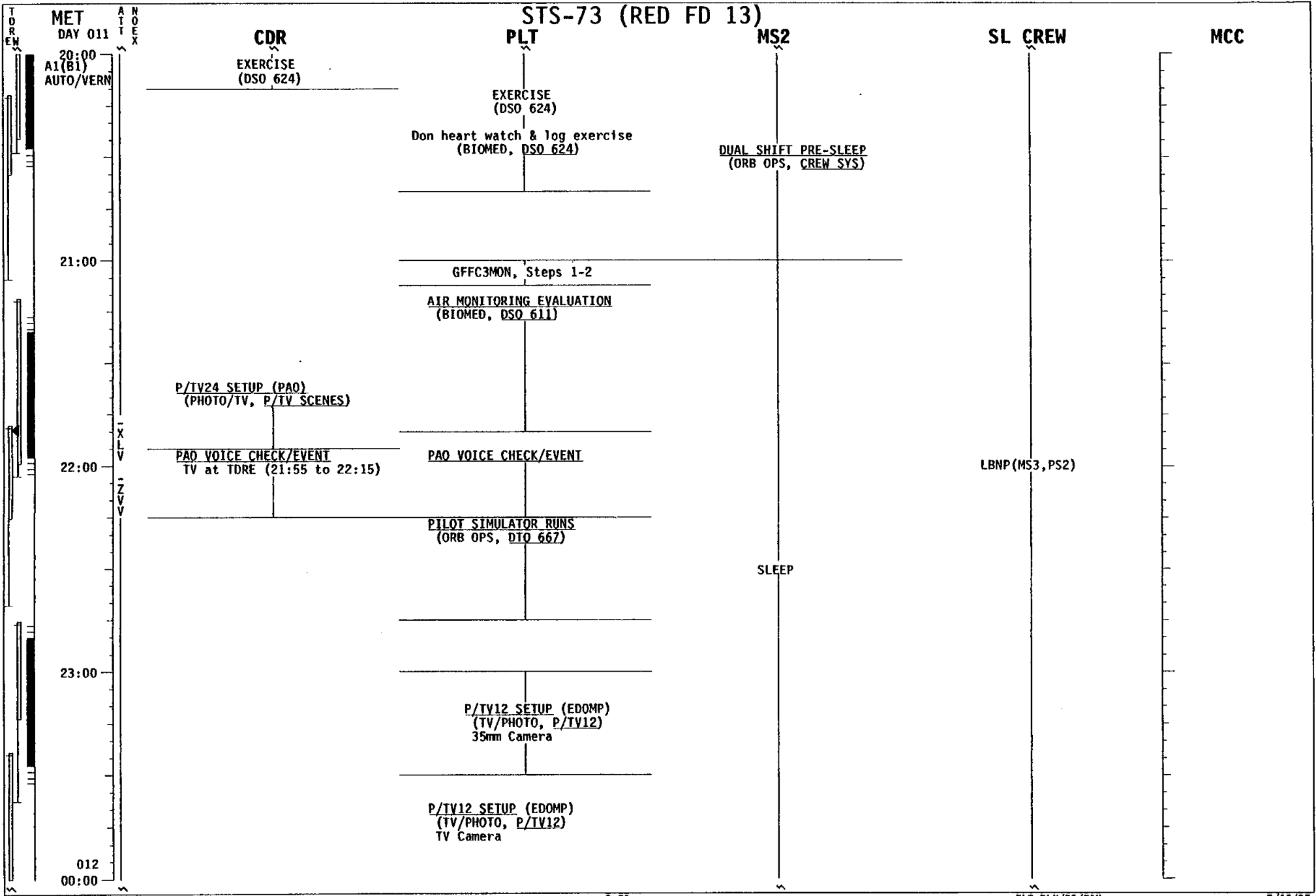


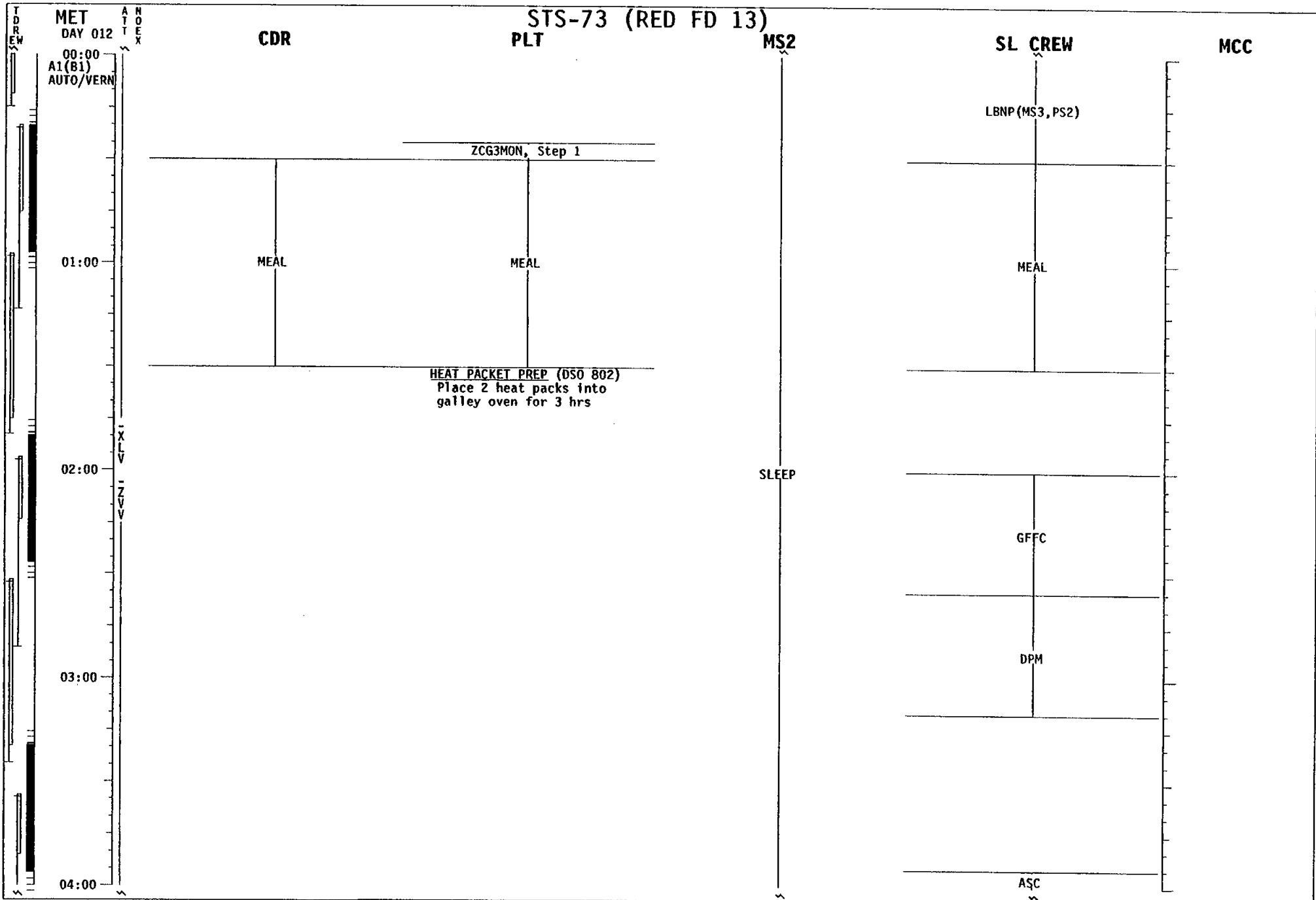


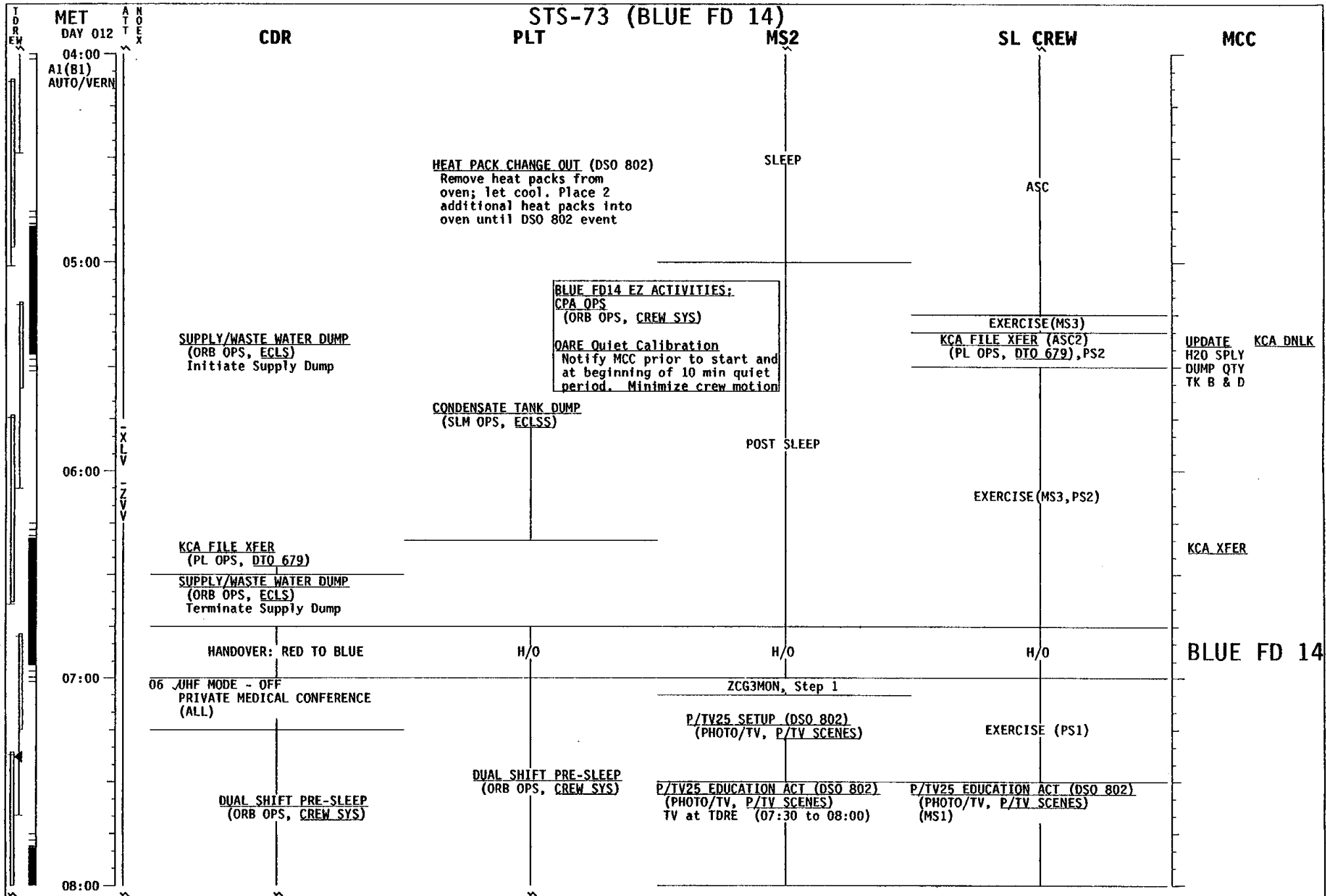


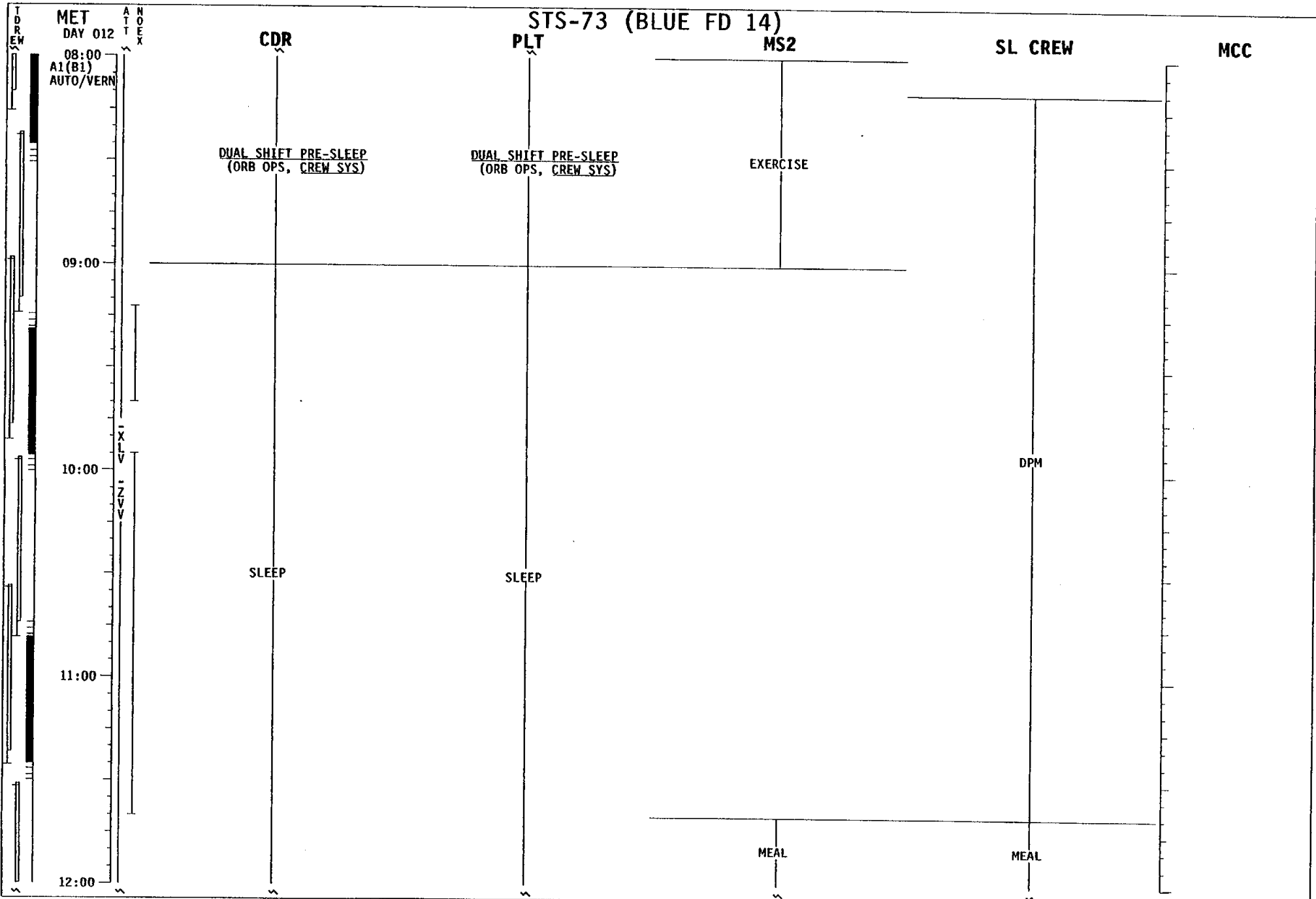


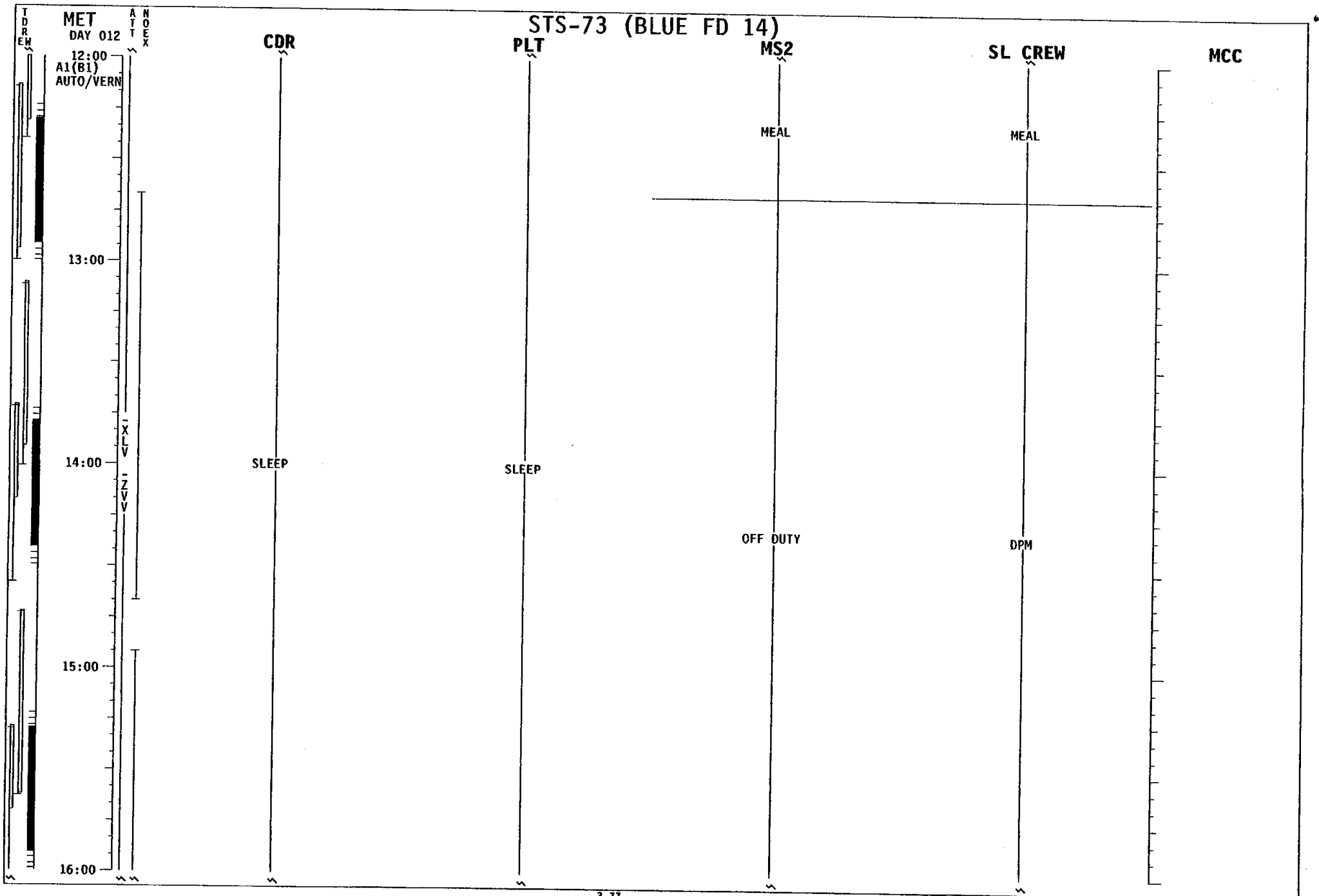


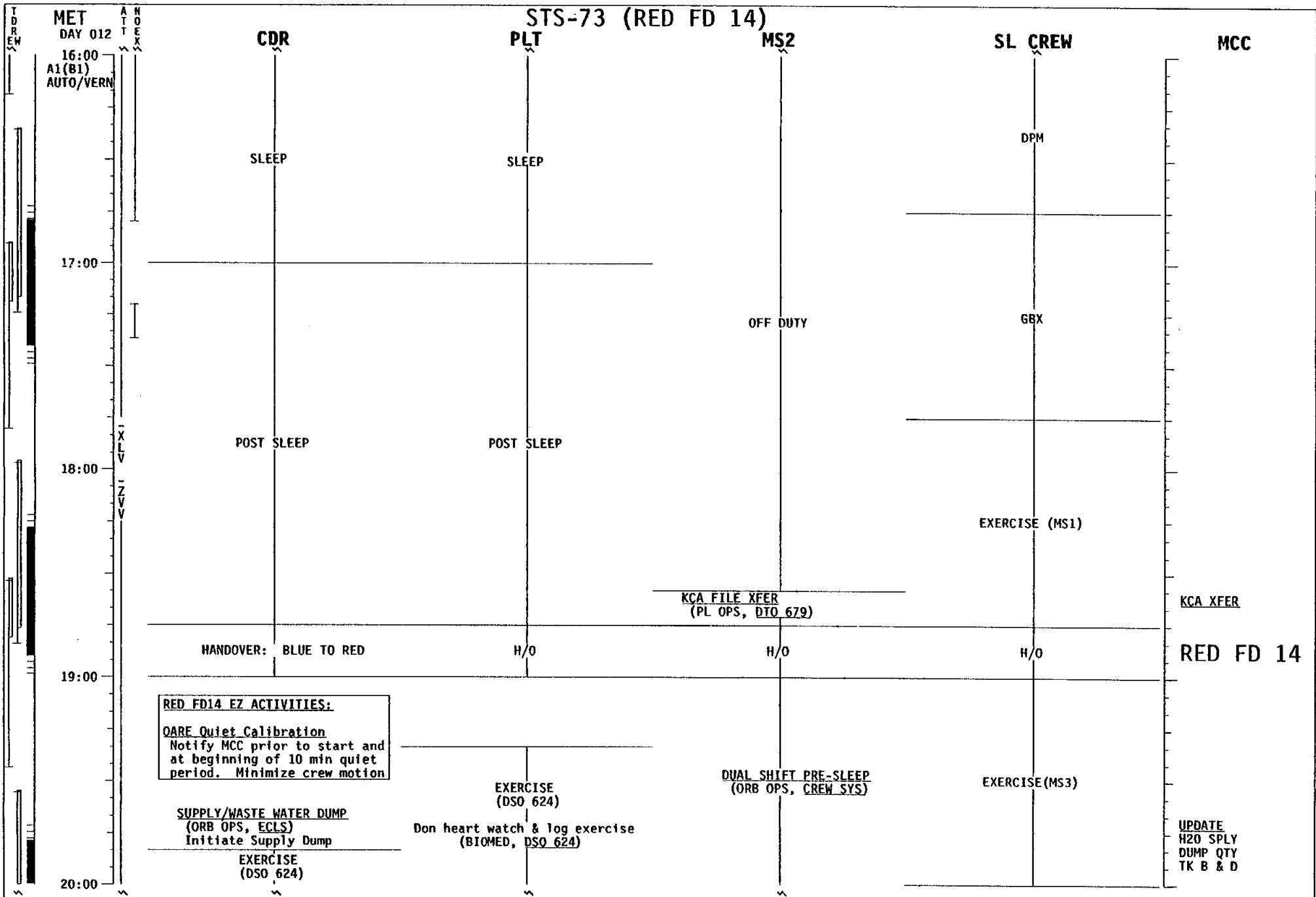


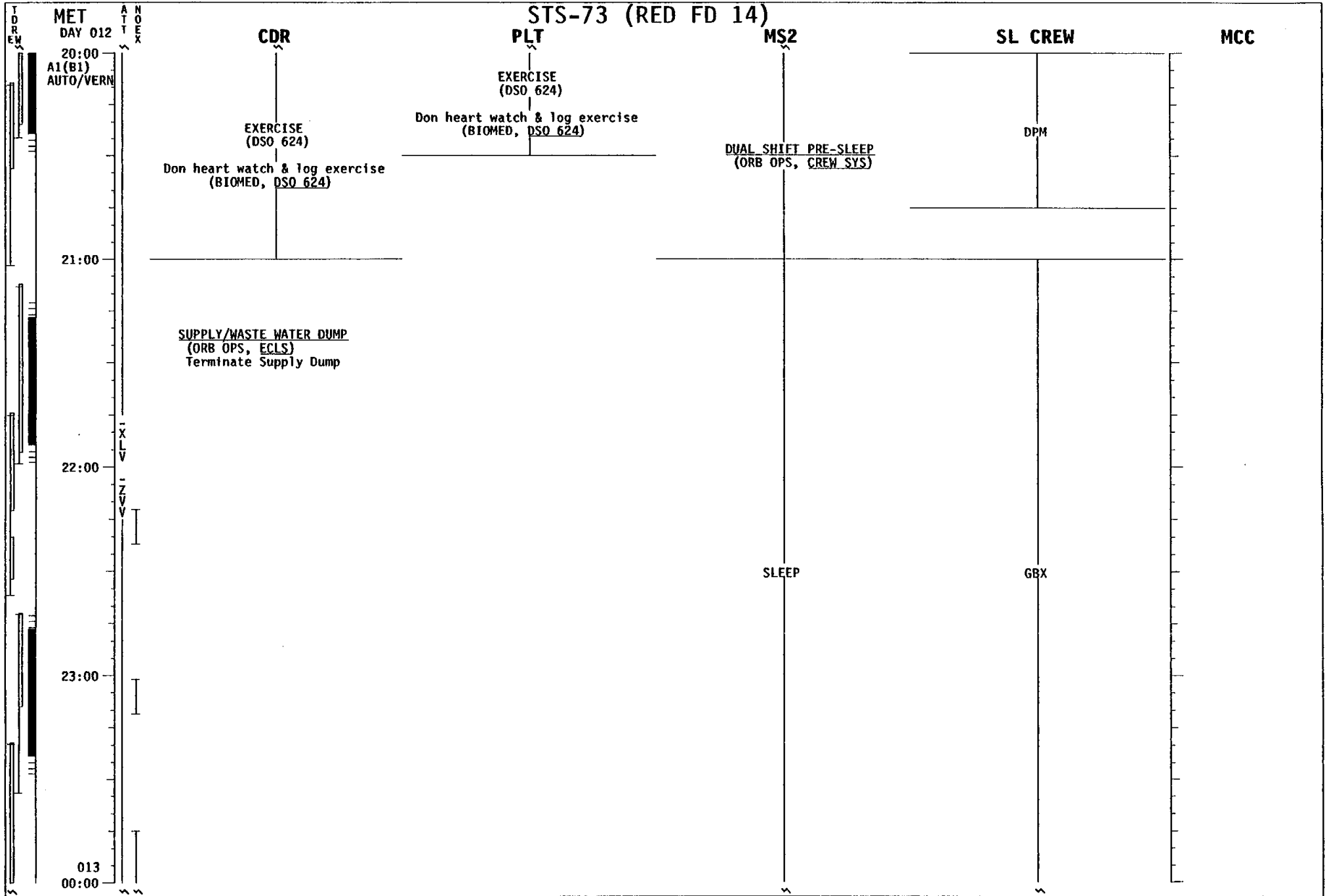


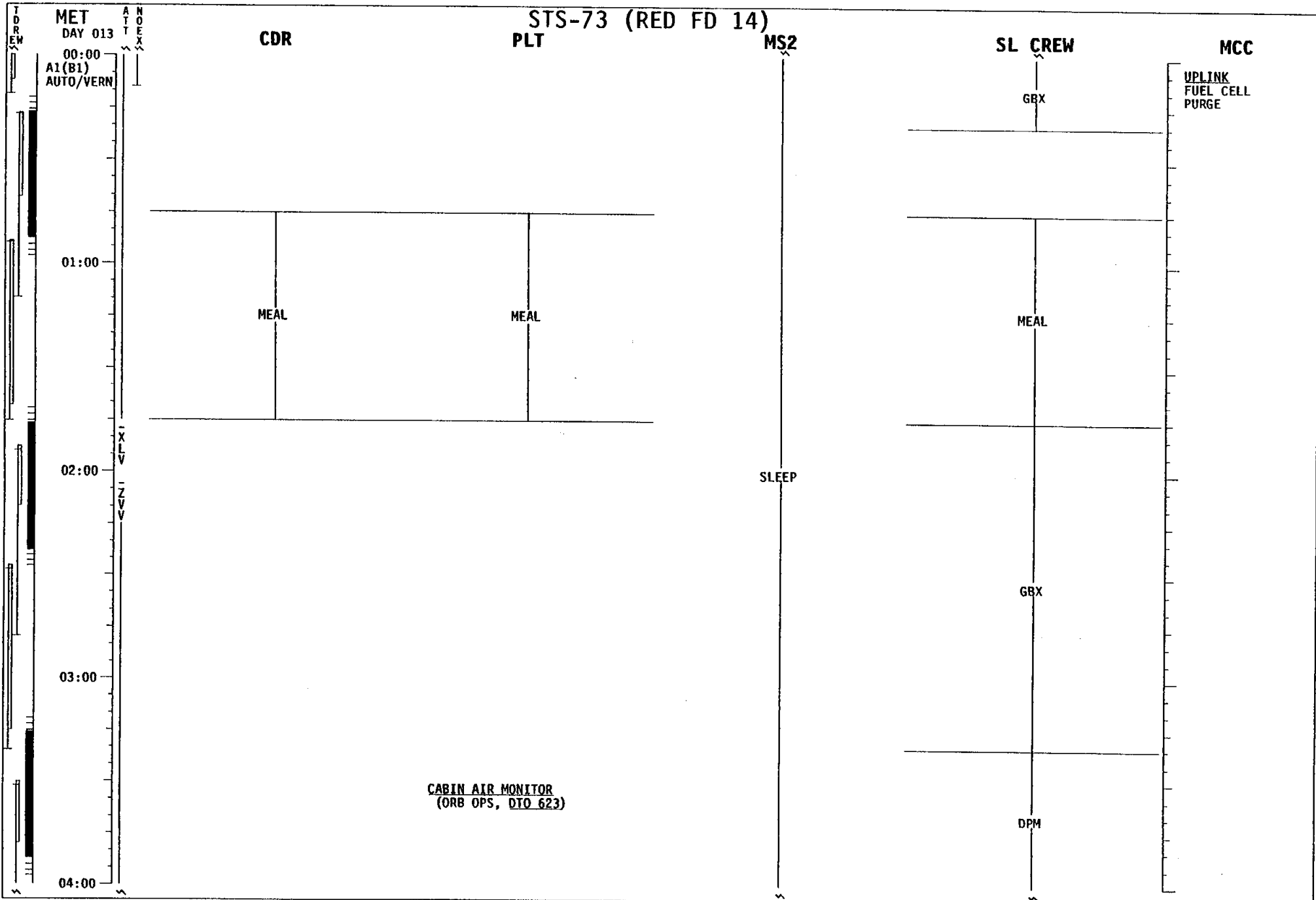


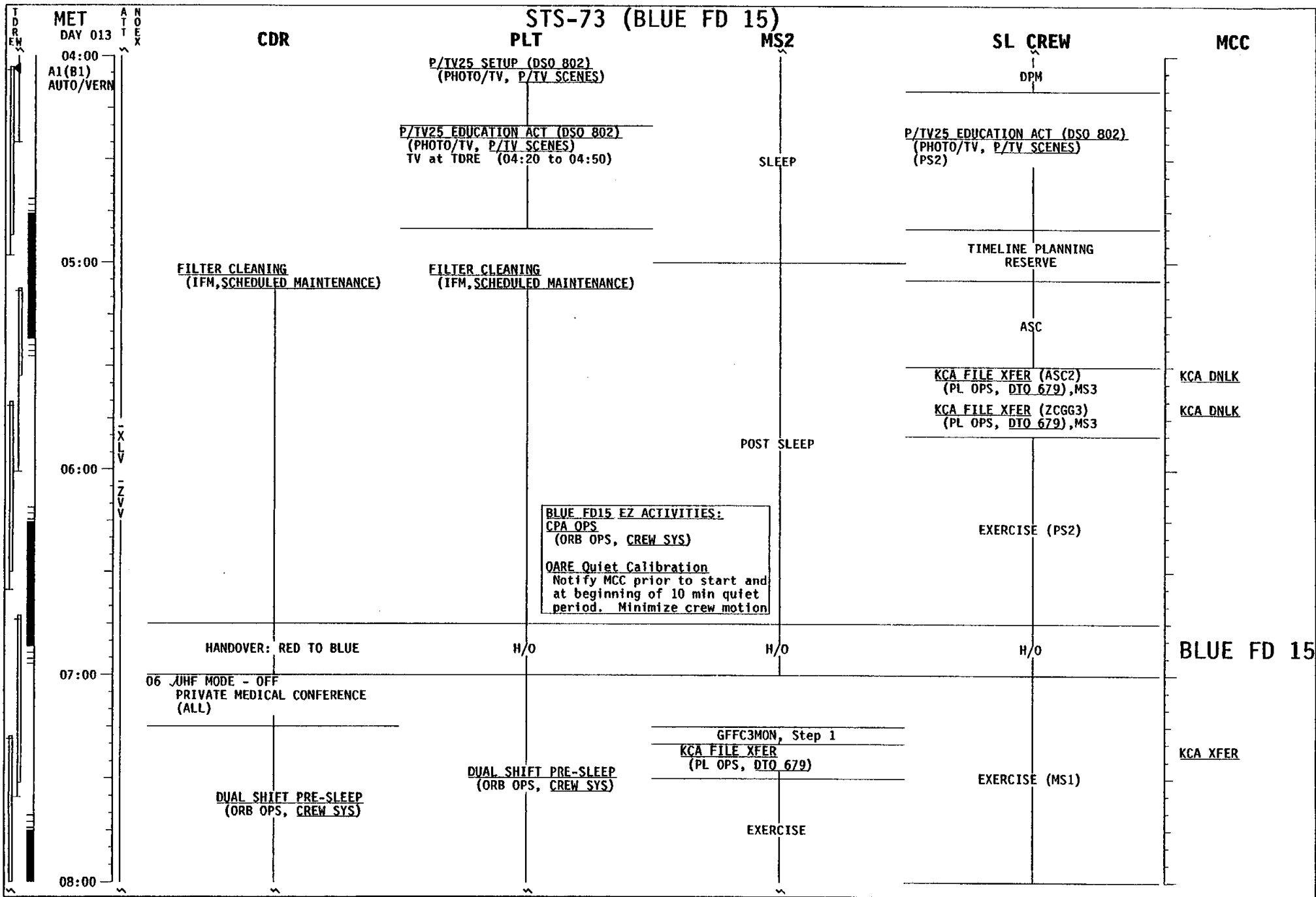


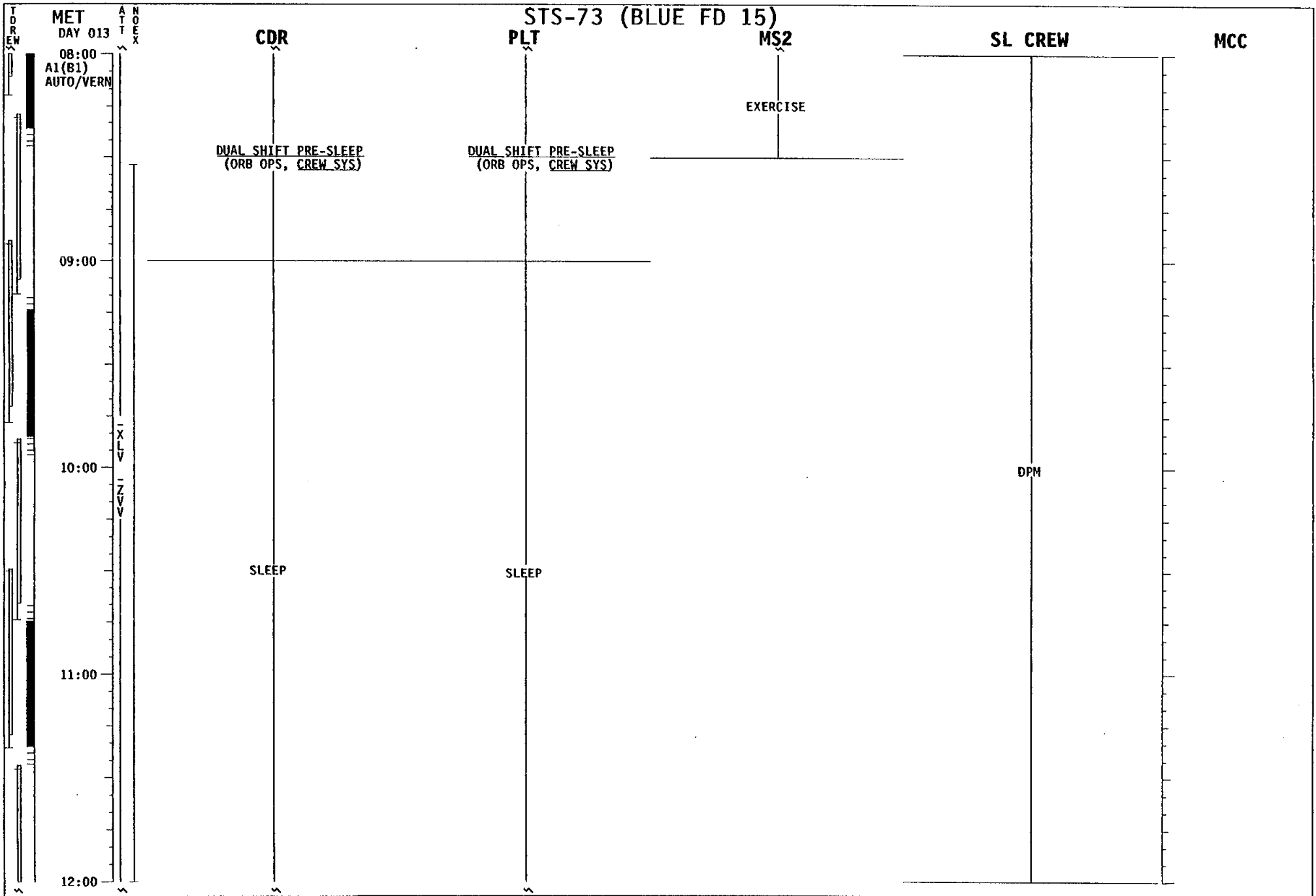


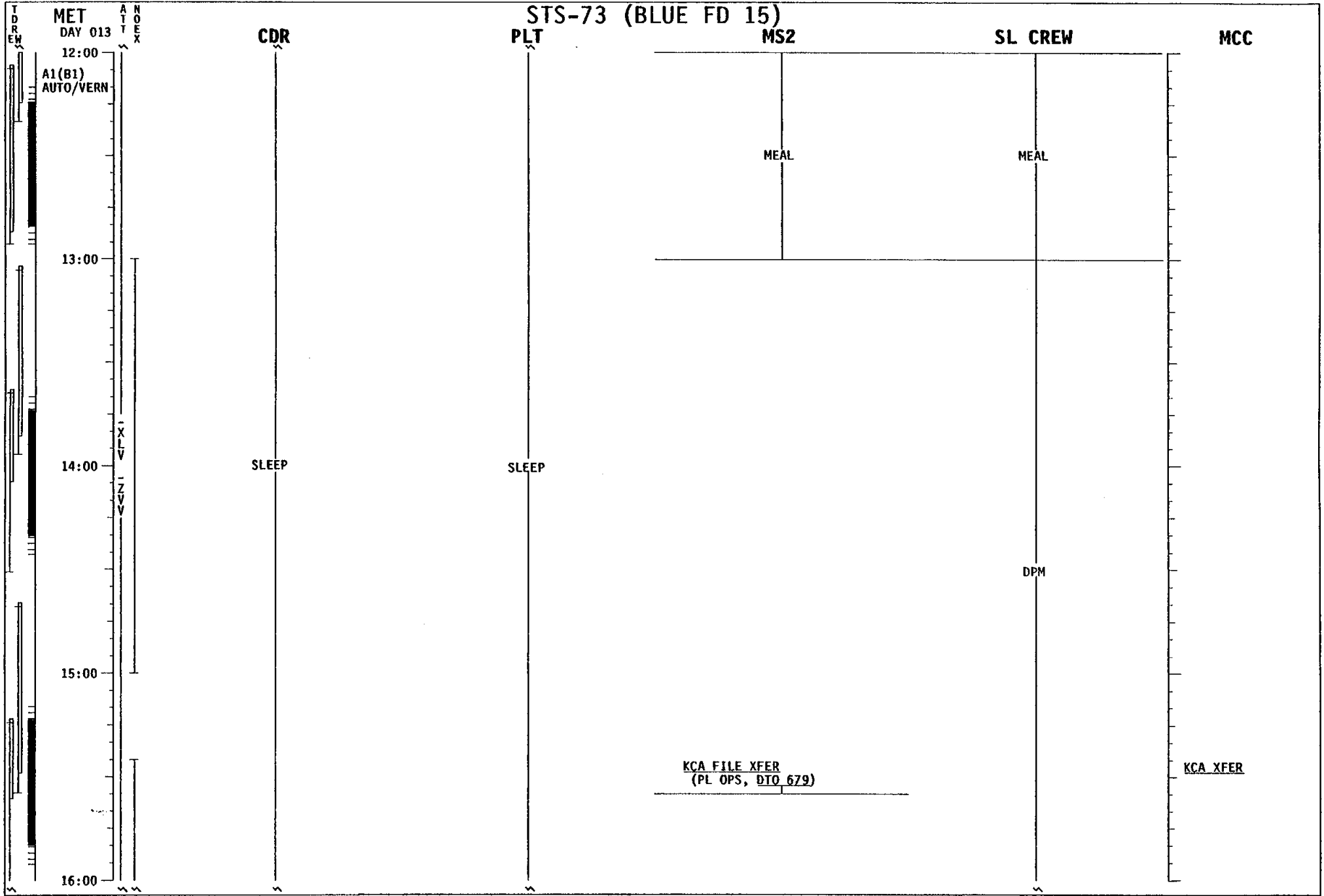


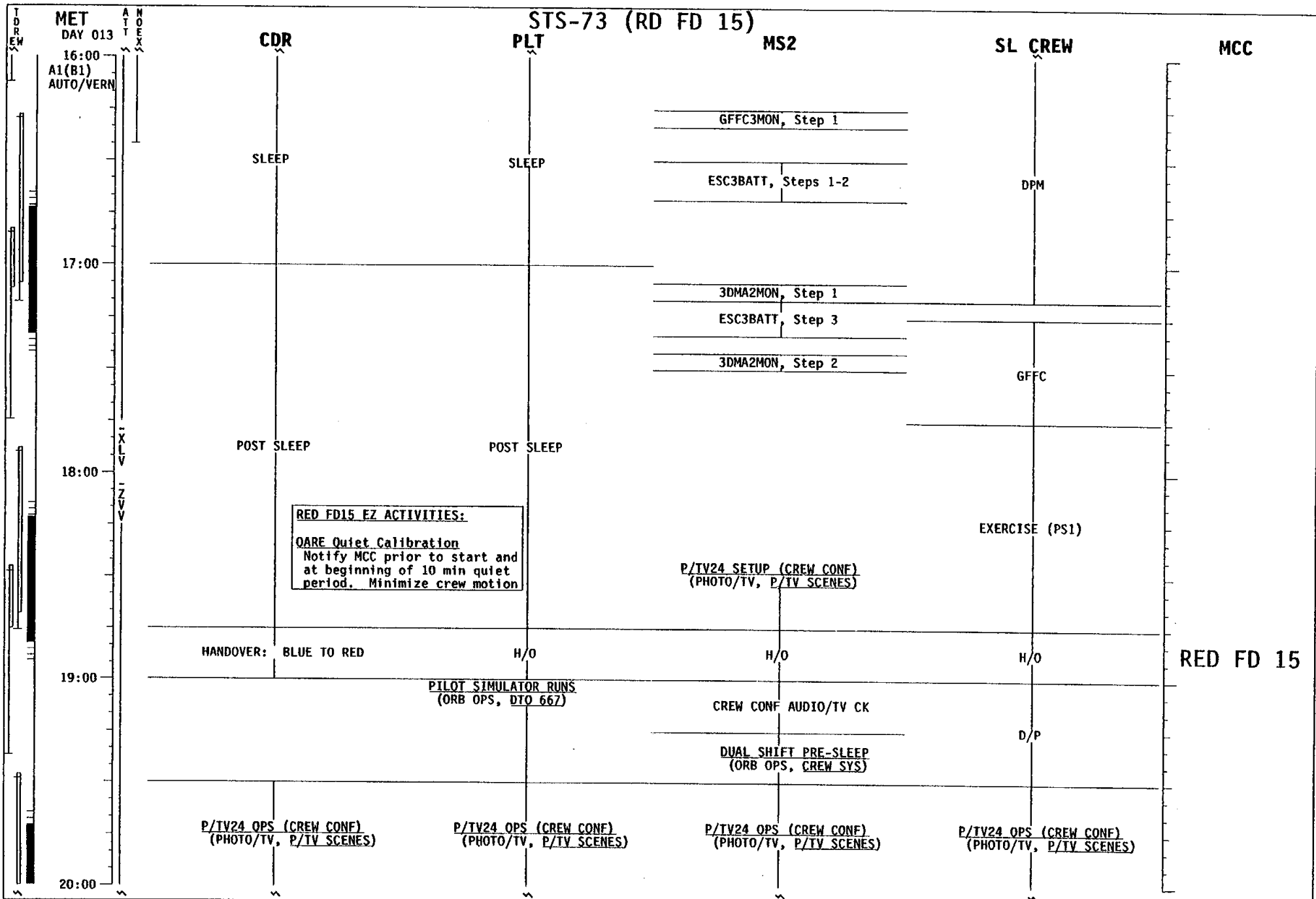


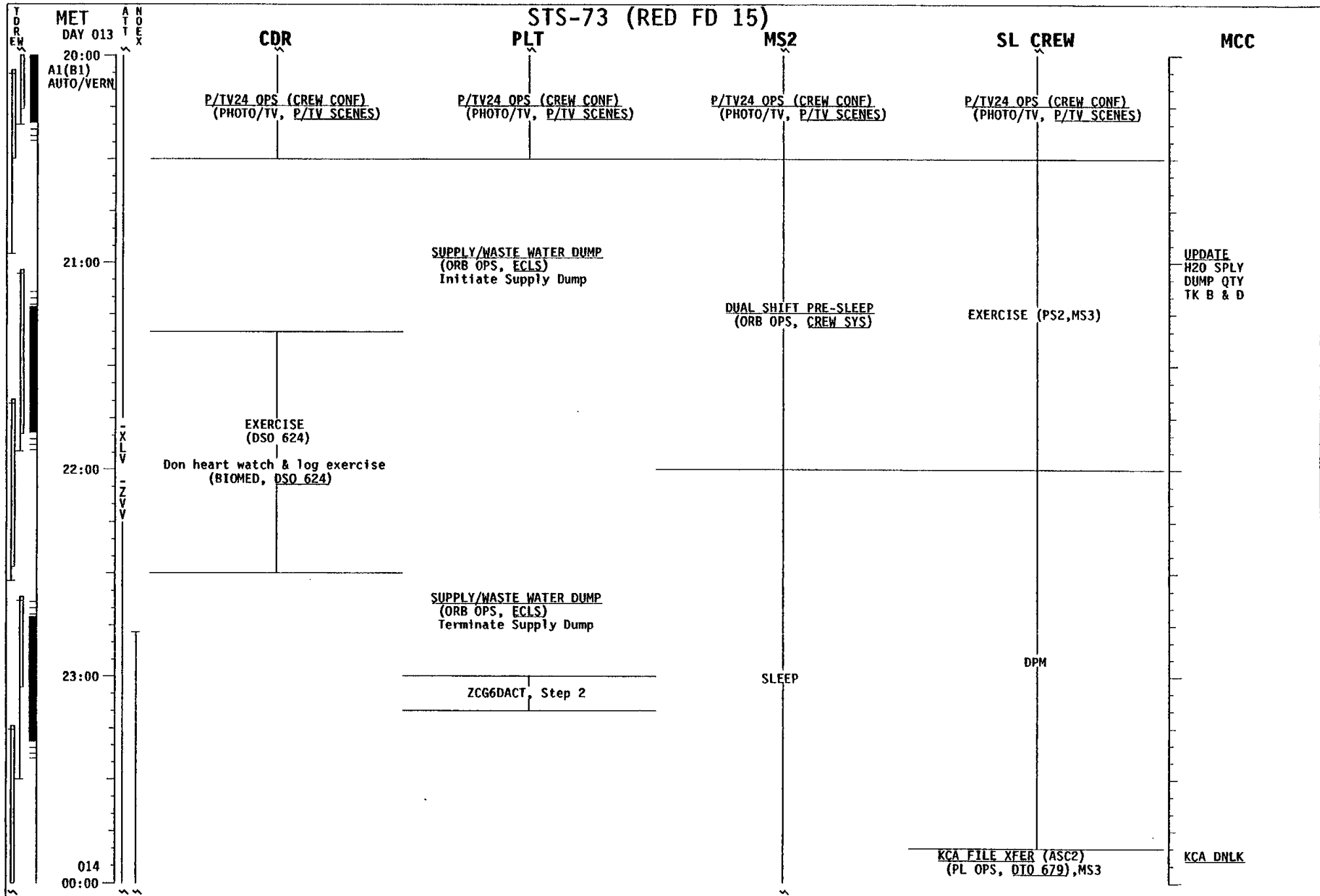


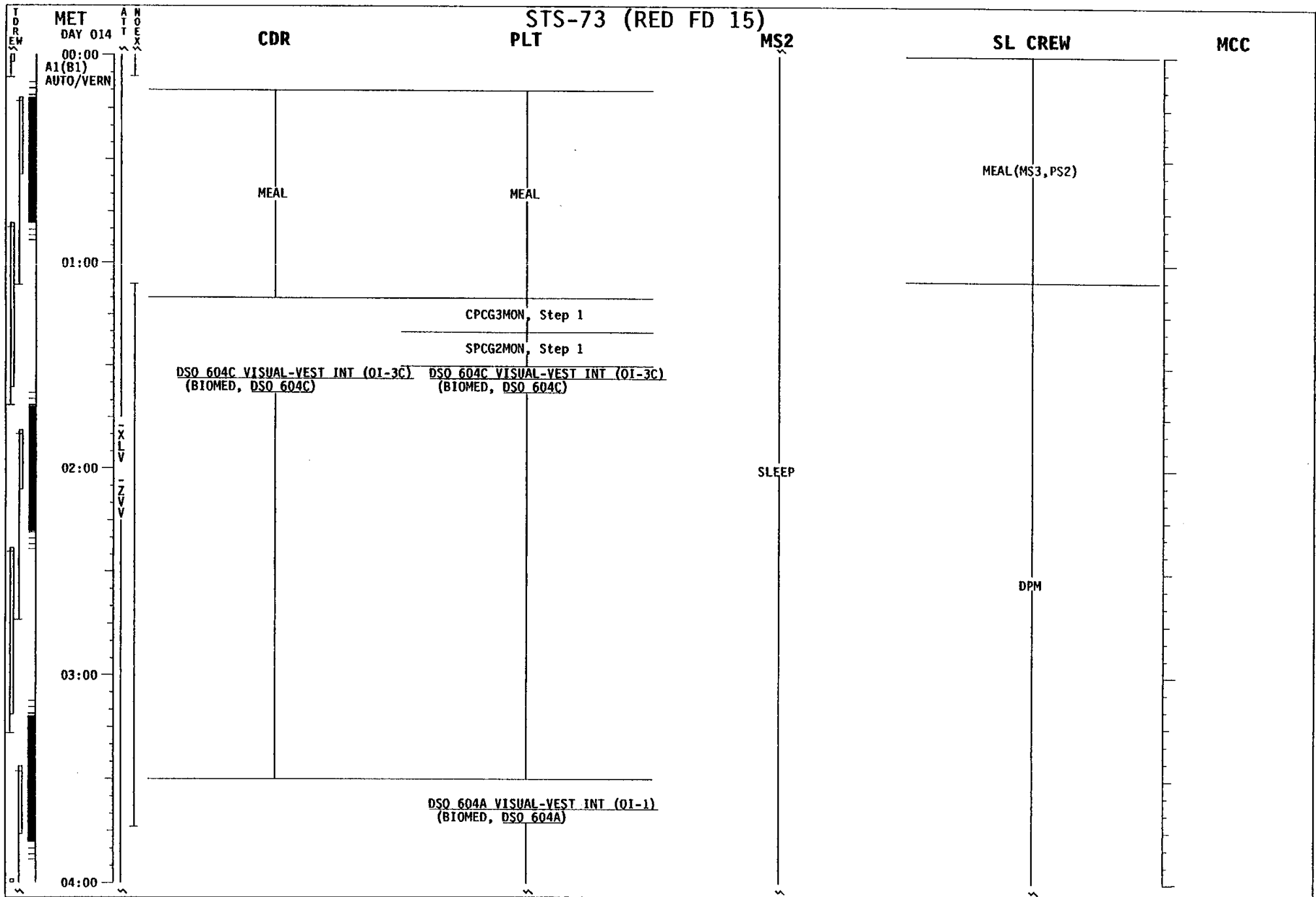


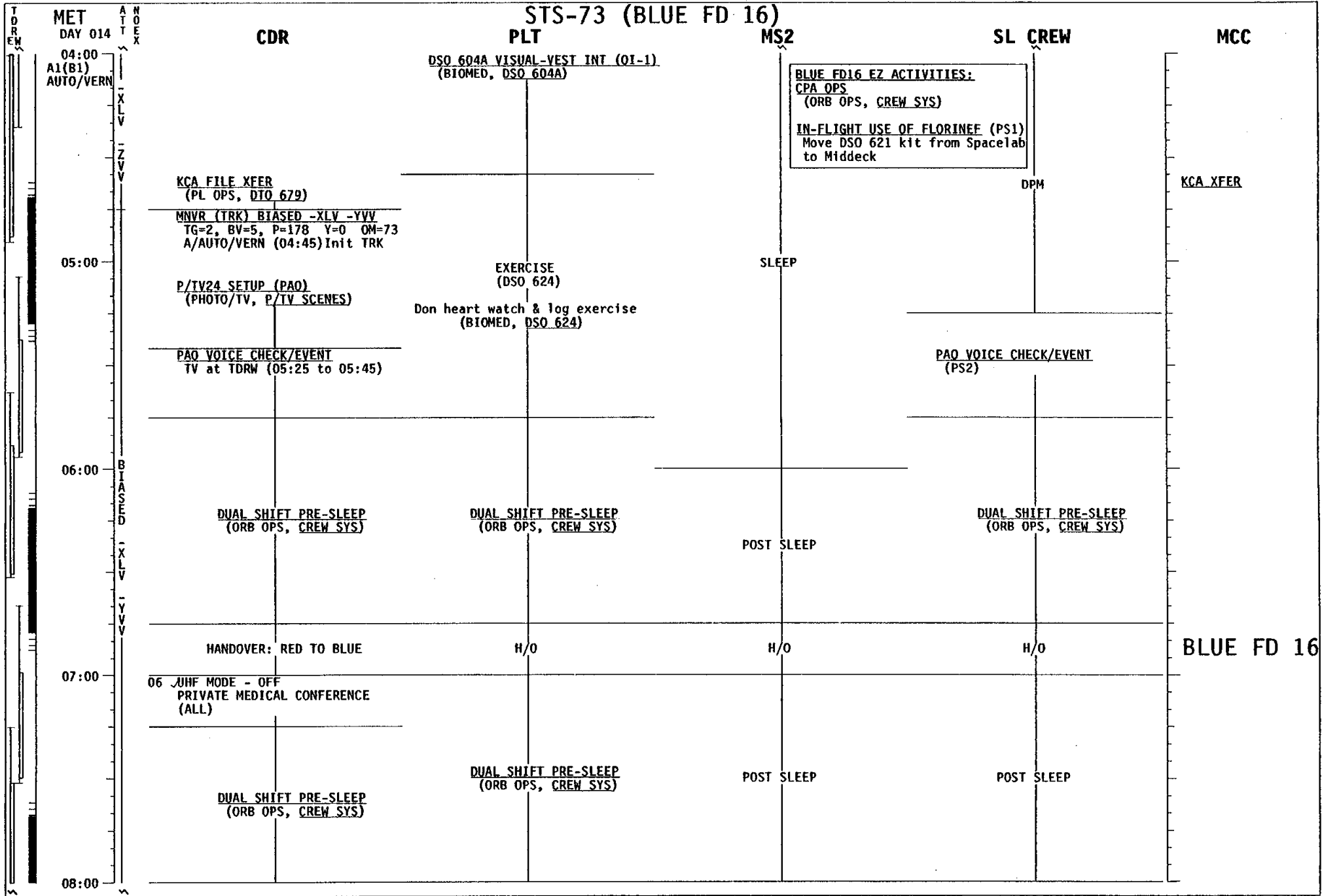


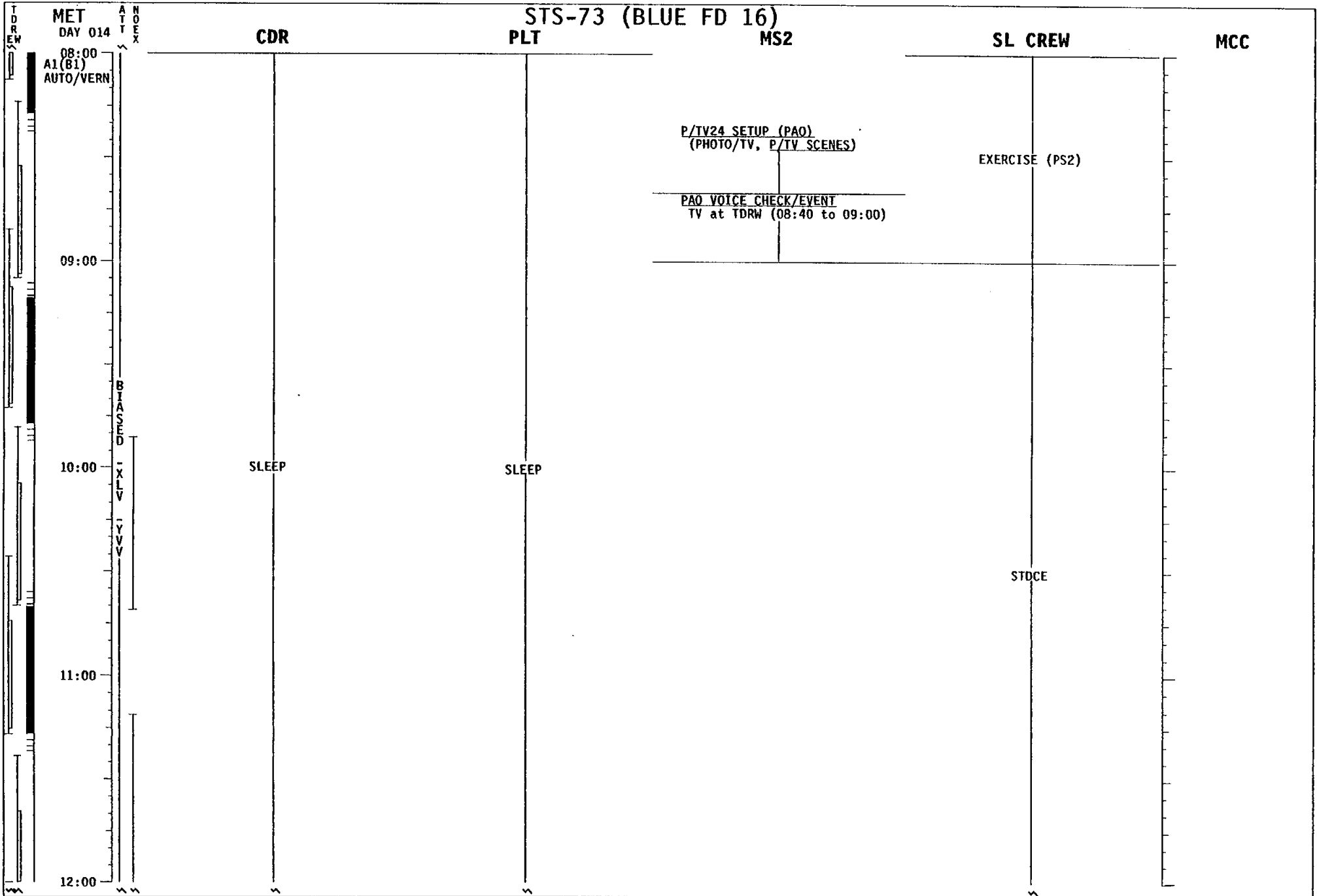


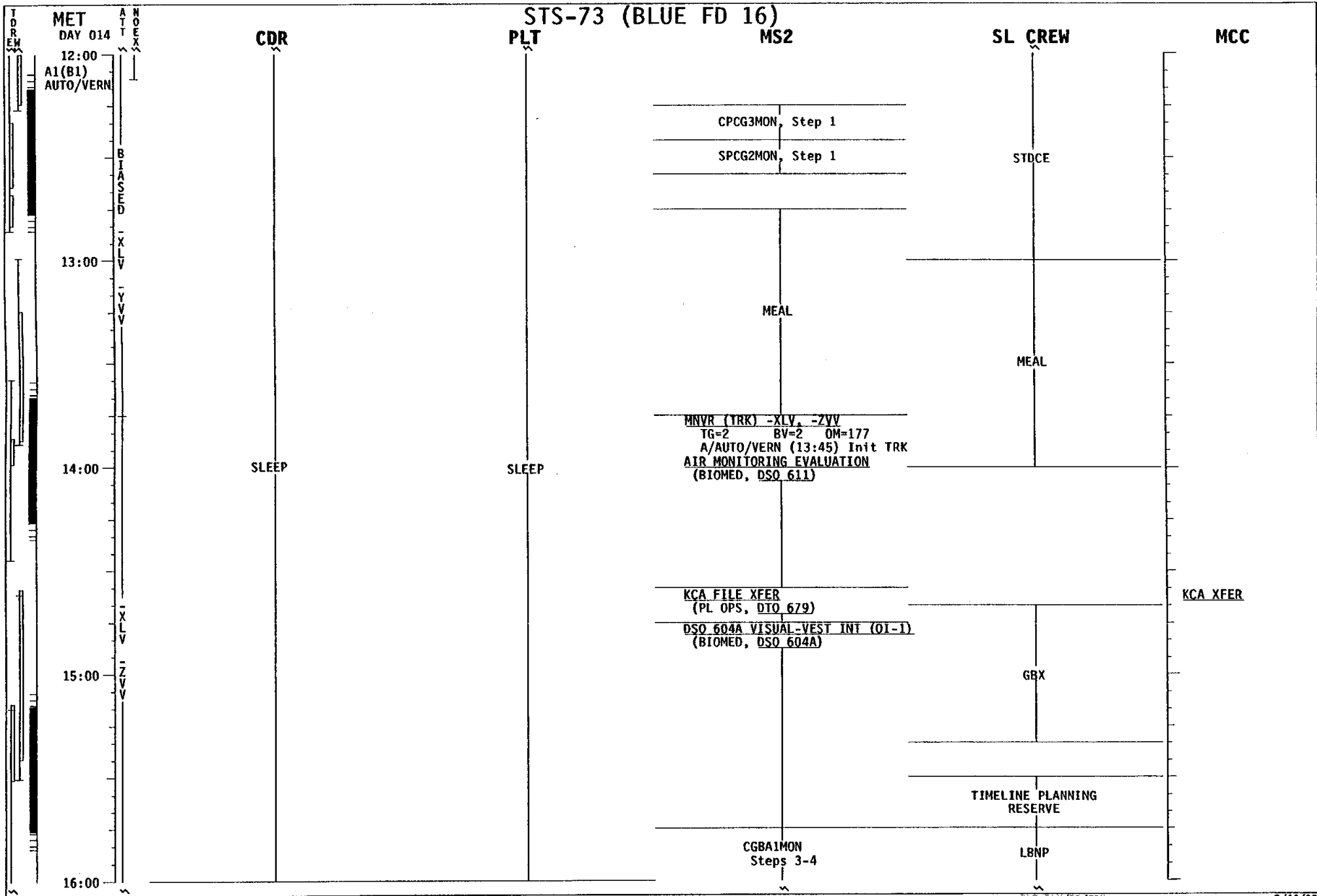


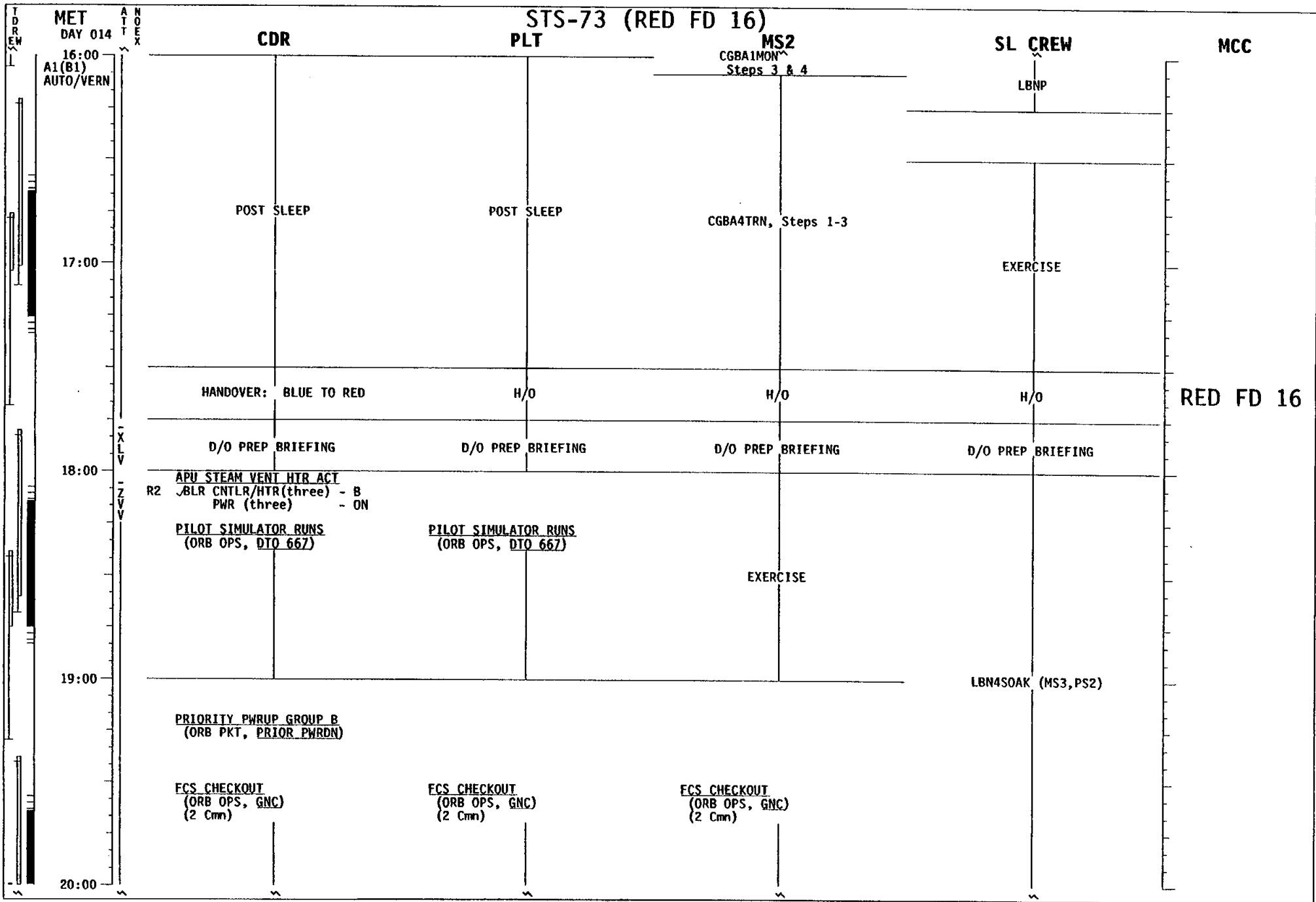


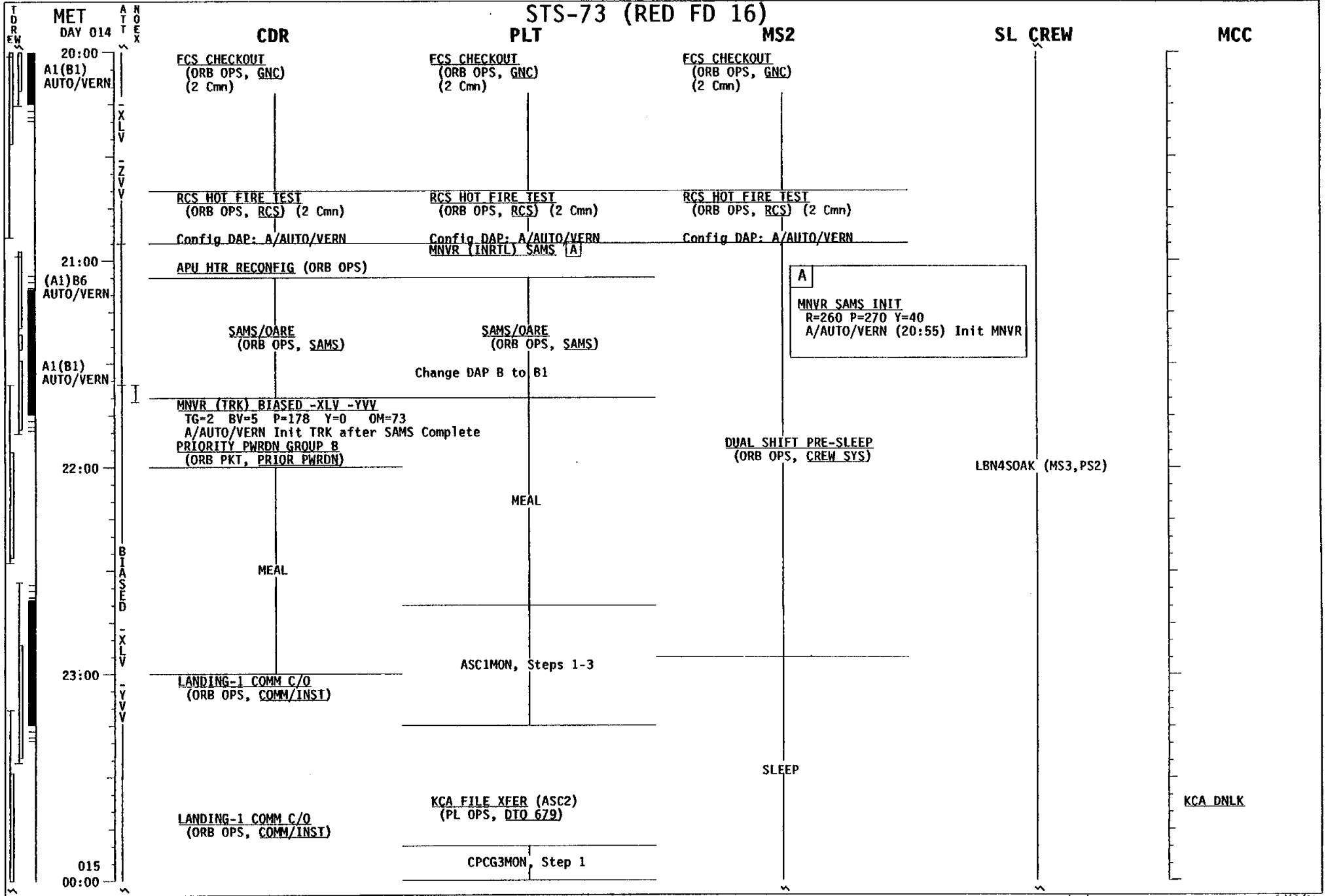


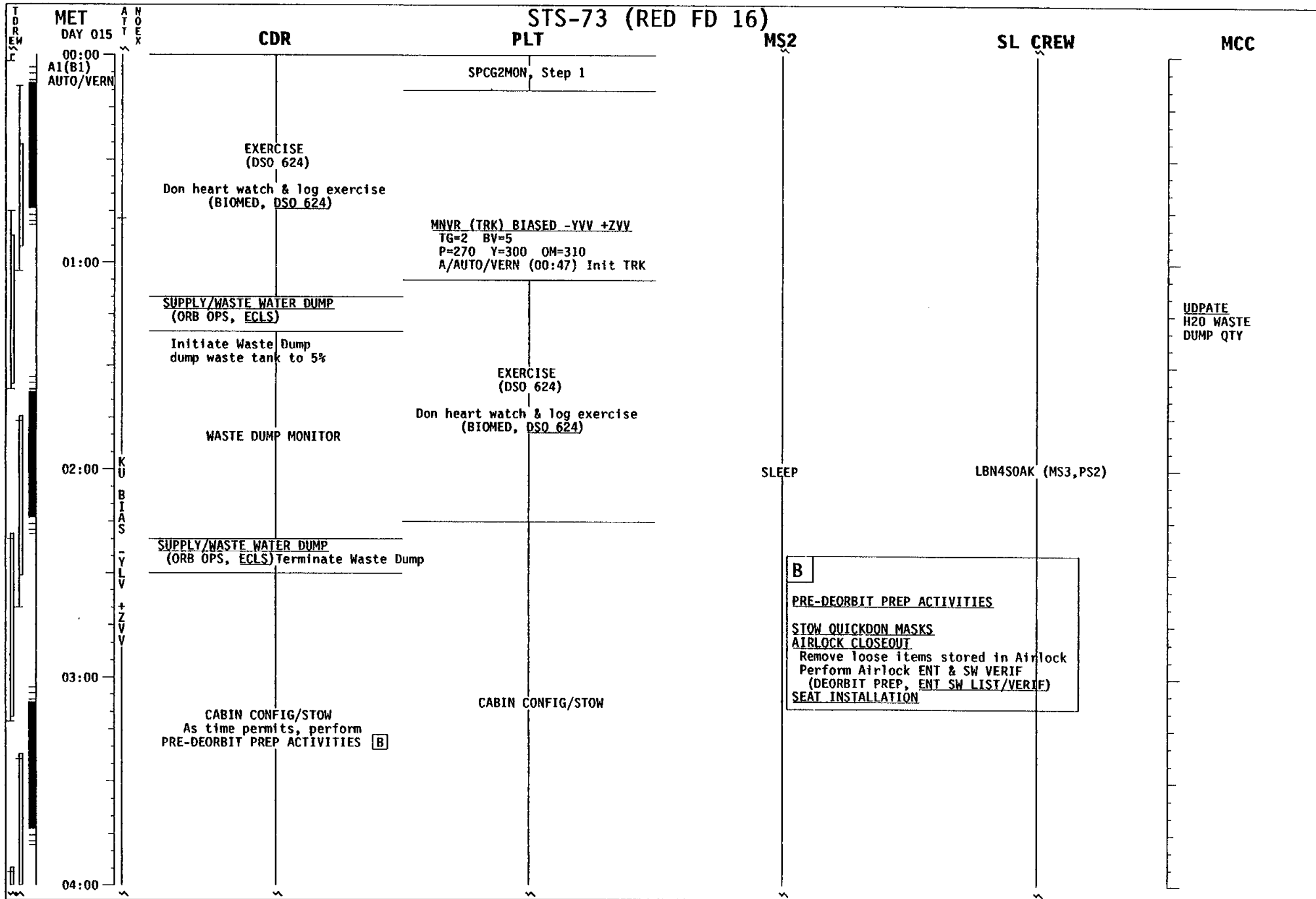


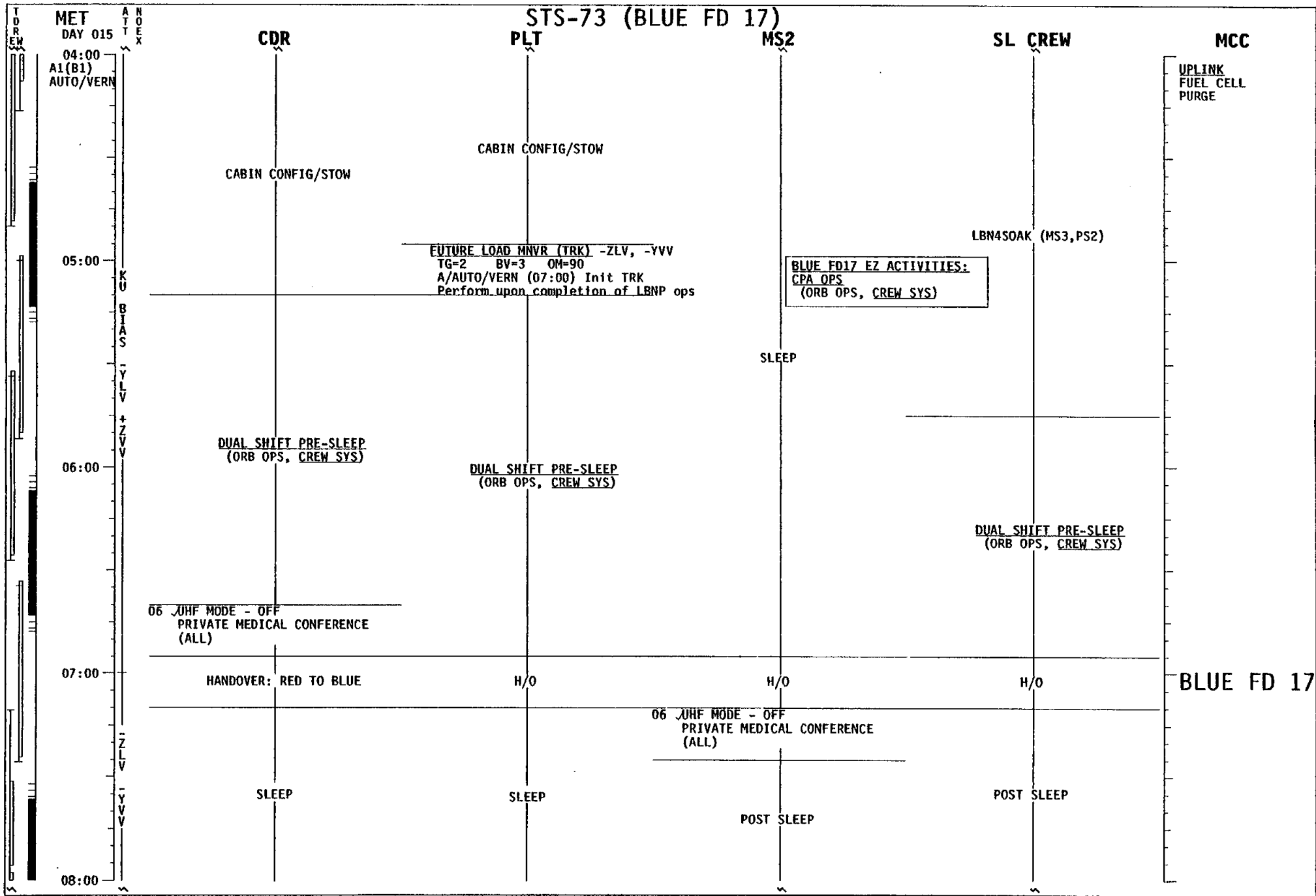


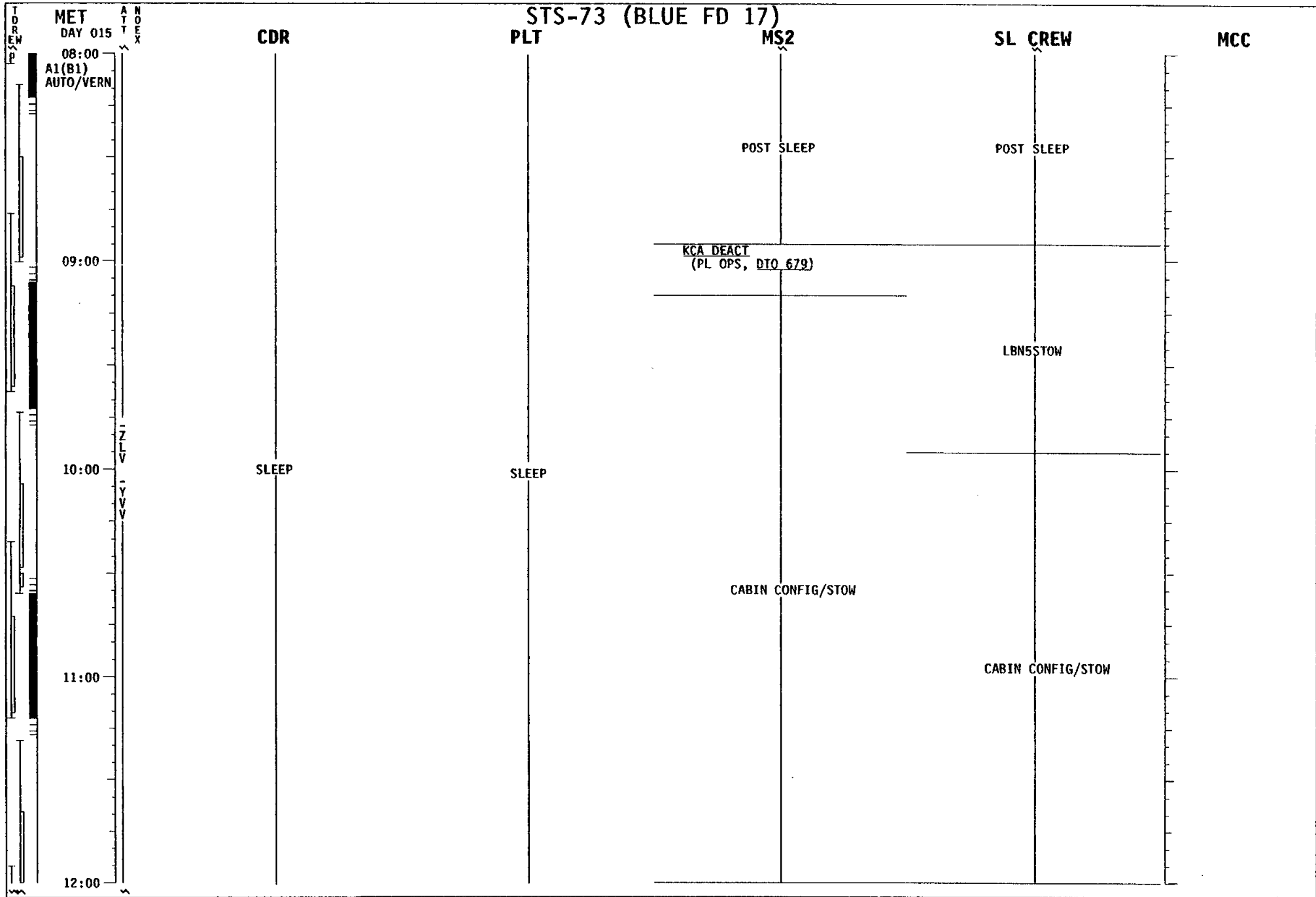




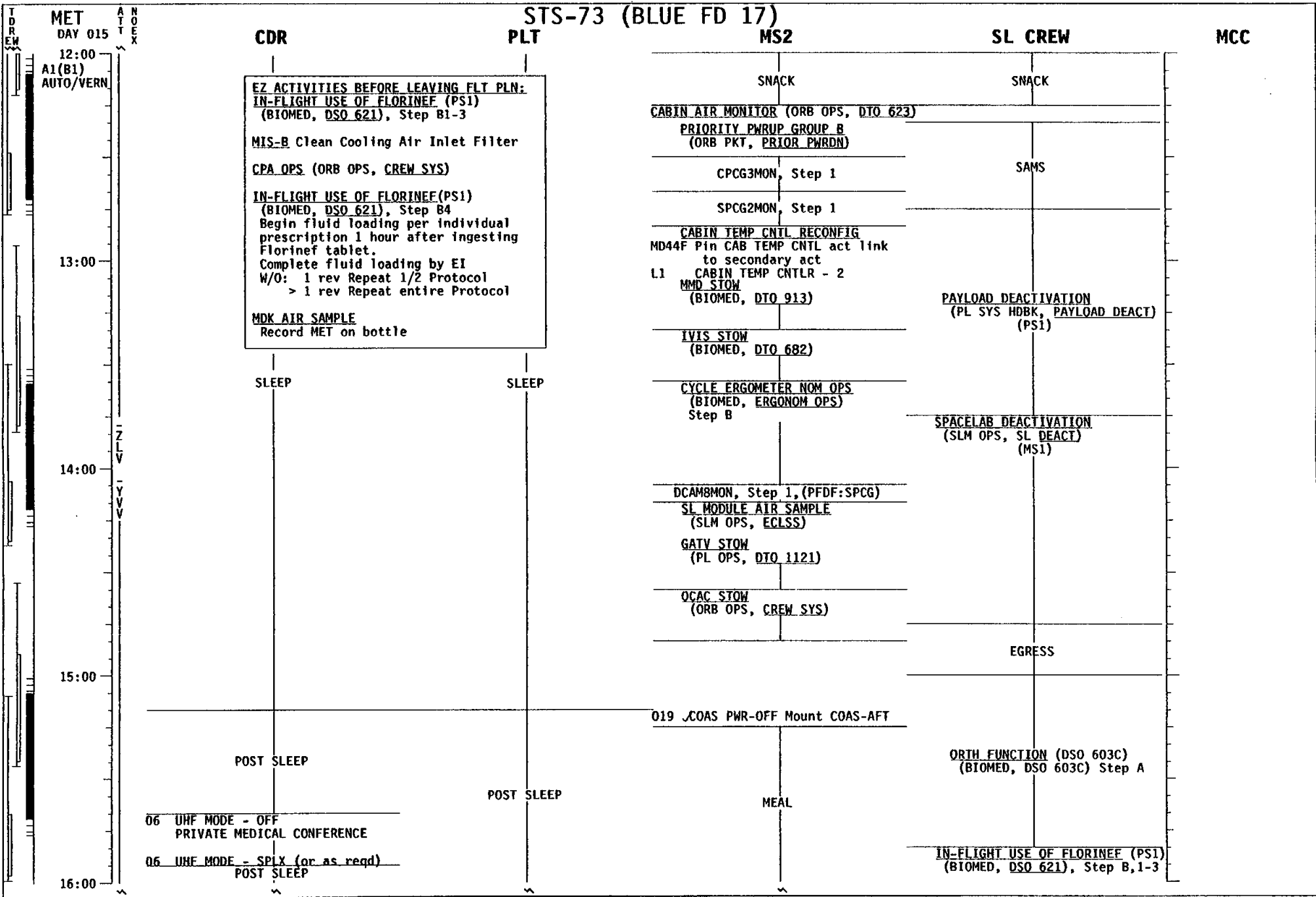


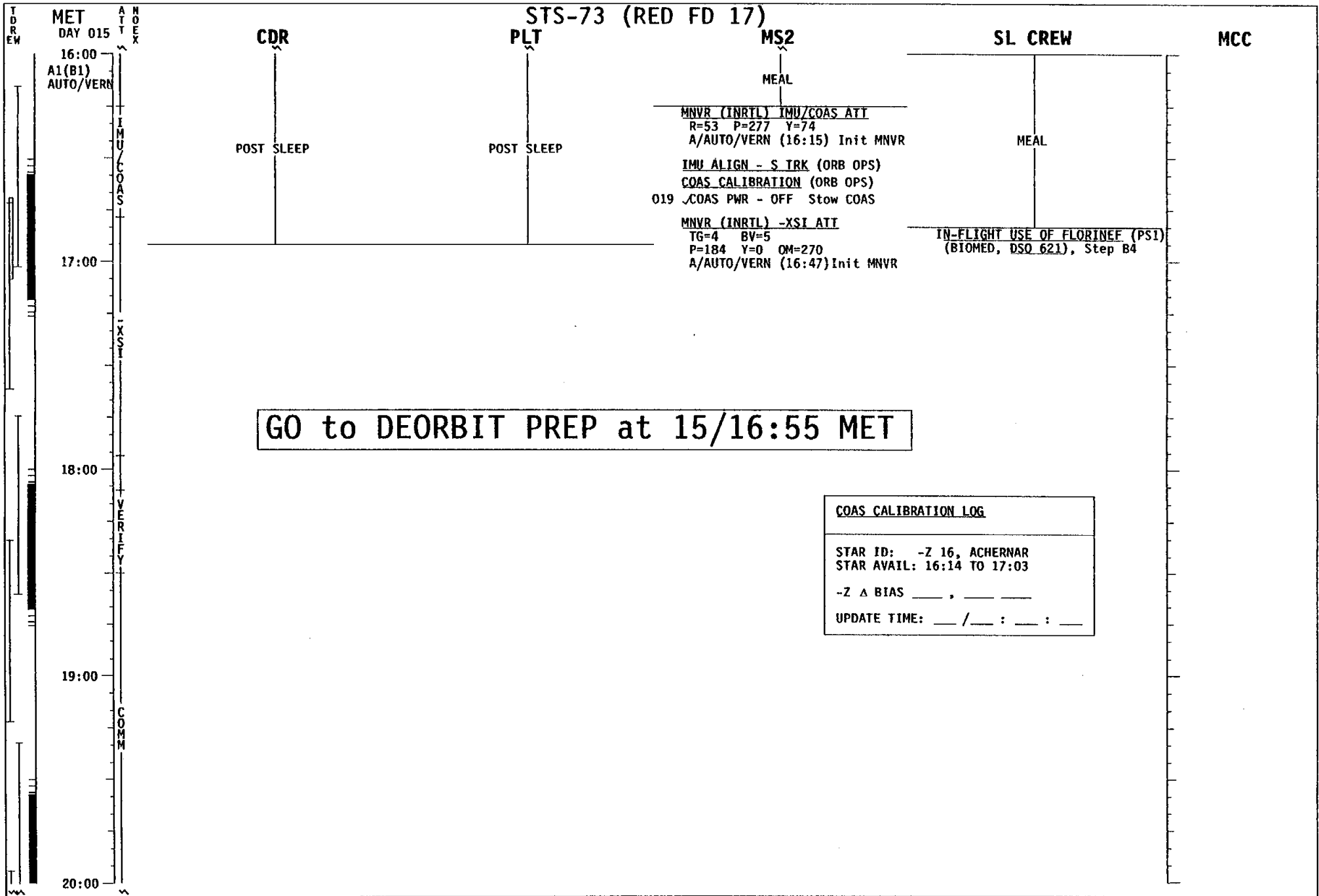






STS-73 (BLUE FD 17)





STS-73 DAP TABLES

DAP TABLES

DAP TABLES

<u>DAP</u>	<u>PURPOSE</u>	<u>DAP</u>	<u>PURPOSE</u>
A1	- NOMINAL	B1	- NOMINAL
A2	- PTC		OMS & RCS BURNS
A3	- GG	B2	- LOSS OF VERN (TAIL ONLY)
A4	- PRE/POST DEPLOY	B3	- LOSS OF VERN (NOSE & TAIL)
A5	- LOSS OF VERN (NOSE & TAIL)	B4	- SSUS DEPLOY
A6	- TAIL ONLY ALT MIN PROP VERN	B5	- COAS CAL
A7	- RENDEZVOUS	B6	- SAMS
A8	- PROX OPS	B7	- RENDEZVOUS
		B8	- PROX OPS

CNT ACC = 0 UNLOADED RMS
 = 1-5 NOT USED

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	

STS-73 GENERIC DAP A CONFIGURATIONS

	ITEM #	A1	A2	A3	A4	A5	A6	A7	A8
PRI									
ROT RATE	10	0.2000	0.4000	0.2000	0.5000	0.2000	0.2000	0.2000	0.2000
ATT DB	11	5.00	1.00	1.00	3.00	5.00	5.00	2.00	2.00
RATE DB	12	0.20	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	0.10
COMP	14	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	15	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
Y OPTION	16	ALL	ALL	TAIL	ALL	ALL	TAIL	ALL	ALL
TRAN PLS	17	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05
ALT									
RATE DB	18	0.200	0.200	0.200	0.200	0.070	0.070	0.200	0.200
JET OPT	19	ALL	ALL	ALL	ALL	ALL	TAIL	ALL	ALL
# JETS	20	2	2	2	2	1	1	2	2
ON TIME	21	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
DELAY	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERN									
ROT RATE	23	0.2000	0.4000	0.0080	0.2000	0.2000	0.0650	0.2000	0.2000
ATT DB	24	1.000	1.000	0.070	1.000	1.000	1.000	1.000	1.000
RATE DB	25	.020	.020	.010	.020	.020	.020	.020	.020
ROT PLS	26	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
COMP	27	.000	.000	.000	.000	.000	.000	.000	.000
CNTL ACC	28	0	0	0	0	0	0	0	0
PURPOSE		NOMINAL	PTC	GG	PRE/ POST DEPLOY	LOSS OF VERN N/T	LOSS OF VERN TAIL ONLY	RNDZ	PROX OPS

STS-73 GENERIC DAP B CONFIGURATIONS (DAP B6 STS-73 SPECIFIC)

	ITEM #	B1	B2	B3	B4	B5	B6	B7	B8
PRI									
ROT RATE	30	0.5000	0.2000	0.2000	0.2000	0.2000	1.000	0.5000	0.2000
ATT DB	31	3.00	3.00	3.00	0.30	3.00	2.00	2.00	2.00
RATE DB	32	0.20	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	0.04
COMP	34	.000	.000	.000	.000	.000	.000	.000	.000
P OPTION	35	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL	ALL
Y OPTION	36	ALL	TAIL	ALL	TAIL	TAIL	ALL	ALL	ALL
TRAN PLS	37	0.10	0.02	0.02	0.02	0.02	0.02	0.05	0.01
ALT									
RATE DB	38	0.200	0.070	0.070	0.200	0.200	0.200	0.200	0.200
JET OPT	39	ALL	TAIL	ALL	ALL	ALL	ALL	ALL	ALL
# 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	0.08
DELAY	42	0.00	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	0.2000
ATT DB	44	1.000	1.000	1.000	0.100	0.033	1.000	1.000	1.000
RATE DB	45	.020	.020	.020	.010	.020	.020	.020	.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	0	0	0	0	0	0	0
PURPOSE		NOM OMS RCS BURNS	LOSS OF VERN TAIL ONLY	LOSS OF VERN N/T	SSUS DEPLOY	COAS CAL	SAMS	RNDZ	PROX OPS

NOTE: ***BOLD-ITALIC*** indicates a change from the I-load

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 264/14:43:00 GMT	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV
2	000/02:45:00 MET 59:25 264/16:16:00 GMT 30:25	TGT=2 BV=5 P=280.00 Y= 0.00 OM= 0.00	B1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 180 P 80	LVLH R= 0.00 P=350.00 Y= 0.00	TRIM BURN ATT
3	000/02:59:30 MET 264/16:30:30 GMT		B1 INRT PRI	RATE 0.5000 DB AT 3.00 DB RT 0.20	SUN R 58 P 46	INRTL R= 82.65 HOLD P=215.09 Y=329.39	-X RCS BURN TIG: 0/03:00
4	000/03:05:00 MET 14:36 264/16:36:00 GMT 45:36	INRTL R= 50.00 MNVR P=283.00 Y= 76.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 118 P 91	STARS -Y: 37 -Z: 16	IMU ALIGN STAR PAIR A1
5	000/03:53:00 MET 55:19 264/17:24:00 GMT 26:19	INRTL R=296.00 MNVR P= 38.00 Y= 71.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 116 P 103	STAR: 13 RIGEL	+X HUD CAL
6	000/04:15:00 MET 23:05 264/17:46:00 GMT 54:05	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 73.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 178	LVLH R=287.01 P= 90.58 Y=358.09	BIAS -XLV -YVV
7	001/06:00:00 MET 01:25 265/19:31:00 GMT 32:25	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 178	LVLH R=270.00 P= 90.00 Y=358.00	-XLV -YVV GFFC
8	001/14:10:00 MET 11:25 266/03:41:00 GMT 42:25	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 73.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 178	LVLH R=287.01 P= 90.58 Y=358.09	BIAS -XLV -YVV
9	004/23:30:00 MET 31:25 269/13:01:00 GMT 02:25	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 178	LVLH R=270.00 P= 90.00 Y=358.00	-XLV -YVV GFFC
10	005/08:30:00 MET 31:25 269/22:01:00 GMT 02:25	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 73.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 178	LVLH R=287.01 P= 90.58 Y=358.09	BIAS -XLV -YVV
11	007/15:00:00 MET 01:25 272/04:31:00 GMT 32:25	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 90.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 360 P 178	LVLH R=270.00 P= 90.00 Y=358.00	-XLV -YVV GFFC
12	008/08:15:00 MET 22:15 272/21:46:00 GMT 53:15	TGT=2 BV=2 P=180.00 Y= 0.00 OM=177.00	A1 AUTO VERN	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 180	LVLH R=183.00 P= 90.00 Y= 0.00	-XLV -ZVV CGF

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT	
13 014/04:45:00 MET 53:40 278/18:16:00 GMT 24:40	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 73.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 0 P 178	LVLH R=287.01 P= 90.58 Y=358.09	BIAS -XLV -YVV
14 014/13:45:00 MET 53:40 279/03:16:00 GMT 24:40	TGT=2 BV=2 P=180.00 Y= 0.00 OM=177.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 263 P 180	LVLH R=183.00 P= 90.00 Y= 0.00	-XLV -ZVV CGF
15 014/20:55:00 MET 21:08:17 279/10:26:00 GMT 39:17	INRTL R=260.00 MNVR P=270.00 Y= 40.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 285 P 101		SAMS INIT ATT
16 014/21:10:00 MET 279/10:41:00 GMT	INRTL BV=5 ROTR P= 0.00 Y= 90.00	B6 AUTO DB AT 3.00 PRI DB RT 0.20	RATE 1.0000 DB AT 3.00 DB RT 0.20		INRTL R=260.00 P=270.00 Y= 40.00	SAMS PITCH
17 014/21:16:00 MET 279/10:47:00 GMT		B6 INRTL DB AT 3.00 PRI DB RT 0.20	RATE 1.0000 DB AT 3.00 DB RT 0.20	SUN R 285 P 101	INRTL R=260.00 HOLD P=270.00 Y= 40.00	PITCH COMPLETE
18 014/21:17:00 MET 279/10:48:00 GMT	INRTL BV=1 ROTR P= 0.00 Y= 0.00	B6 AUTO DB AT 3.00 PRI DB RT 0.20	RATE 1.0000 DB AT 3.00 DB RT 0.20		INRTL R=260.00 P=270.00 Y= 40.00	SAMS ROLL
19 014/21:23:00 MET 279/10:54:00 GMT		B6 INRTL DB AT 3.00 PRI DB RT 0.20	RATE 1.0000 DB AT 3.00 DB RT 0.20	SUN R 285 P 101	INRTL R=260.00 HOLD P=270.00 Y= 40.00	ROLL COMPLETE
20 014/21:24:00 MET 279/10:55:00 GMT	INRTL BV=5 ROTR P=270.00 Y= 0.00	B6 AUTO DB AT 3.00 PRI DB RT 0.20	RATE 1.0000 DB AT 3.00 DB RT 0.20		INRTL R=260.00 P=270.00 Y= 40.00	SAMS YAW
21 014/21:30:00 MET 279/11:01:00 GMT		B6 INRTL DB AT 3.00 PRI DB RT 0.20	RATE 1.0000 DB AT 3.00 DB RT 0.20	SUN R 285 P 101	INRTL R=260.00 HOLD P=270.00 Y= 40.00	YAW COMPLETE
22 014/21:31:00 MET 279/11:02:00 GMT		A1 FREE DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	SUN R 285 P 101	INRTL R=260.00 HOLD P=270.00 Y= 40.00	SAMS FREE DRIFT
23 014/21:36:00 MET 38:59 279/11:07:00 GMT 09:59	TGT=2 BV=5 P=178.00 Y= 0.00 OM= 73.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 360 P 178	LVLH R=287.01 P= 90.58 Y=358.09	BIAS -XLV -YVV
24 015/00:47:00 MET 55:49 279/14:18:00 GMT 26:49	TGT=2 BV=5 P=270.00 Y=300.00 OM=310.00	A1 AUTO DB AT 1.000 VERN DB RT 0.020	RATE 0.2000 DB AT 1.000 DB RT 0.020	EARTH R 240 P 90	LVLH R=300.00 P= 0.00 Y=310.00	BIAS -YLV +ZVV FOR KU

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

Attitude Timeline

MET/GMT	MNVR OPTION	DAP	E/S	REF ATT/REMARKS	EVENT
25 015/07:00:00 MET 10:20 279/20:31:00 GMT 41:20	TGT=2 BV=3 P= 90.00 Y= 0.00 OM= 90.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	EARTH R 0 P 90	LVLH R= 0.00 P=180.00 Y=270.00	-ZLV -YVV
26 015/16:15:00 MET 24:26 280/05:46:00 GMT 55:26	INRTL R= 53.00 MNVR P=277.00 Y= 74.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 119 P 105	STARS -Y: 37 -Z: 16 COAS: 16	IMU ALIGN & -Z COAS CAL
27 015/16:47:00 MET 54:10 280/06:18:00 GMT 25:10	TGT=4 RA= 191.846 BV=5 DEC= -5.088S P=184.00 Y= 0.00 OM=270.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 180 P 176	INRTL R= 33.80 P=351.41 Y= 9.59	-XSI
28 015/17:57:00 MET 18:01:26 280/07:28:00 GMT 32:26	INRTL R= 39.00 MNVR P=301.00 Y= 32.00	A1 RATE 0.2000 AUTO DB AT 1.000 VERN DB RT 0.020	SUN R 131 P 127	STARS -Y: 60 -Z: 57	D/O IMU ALIGN
29 015/18:07:00 MET 11:12 280/07:38:00 GMT 42:12	INRTL R=142.00 MNVR P= 3.00 Y=326.00	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 139 P 133	STARS -Y: 57 -Z: 40	D/O IMU VERIF
30 015/18:31:00 MET 34:48 280/08:02:00 GMT 05:48	INRTL R= 37.00 MNVR P=342.00 Y= 22.00	B1 RATE 0.5000 AUTO DB AT 3.00 PRI DB RT 0.20	SUN R 105 P 164		D/O THERMAL & COMM ATT
31 015/20:40:00 MET 45:42 280/10:11:00 GMT 16:42	INRTL R= 50.00 MNVR P=173.00 Y=330.00	TRN RATE 0.5000 AUTO DB AT 3.50 PRI DB RT 0.20	SUN R 35 P 18		D/O Burn to KSC TIG: 15/20:55
32 015/21:00:00 MET 04:57 280/10:31:00 GMT 35:57	INRTL R=316.62 MNVR P=307.19 Y= 38.82	TRN RATE 0.5000 AUTO DB AT 3.50 PRI DB RT 0.20	SUN R 204 P 130		EI-25 INRT
33 015/21:20:00 MET 280/10:51:00 GMT	TGT=2 BV=5 P=230.00 Y= 0.00 OM= 0.00	TRN RATE 0.5000 AUTO DB AT 3.50 PRI DB RT 0.20	EARTH R 180 P 130	LVLH R= 0.00 P= 40.00 Y= 0.00	EI-5 LVLH

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

**STS-73
FLIGHT PLAN NOTES**

**FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)**

**FLIGHT PLAN
NOTES**

A. FLIGHT DESCRIPTION

Orbiter: OV102/Columbia
 Inclination: 39°
 Insertion Altitude: 150 x 146 nm
 Duration: 16 days

B. MAJOR EVENTS

<u>EVENT</u>	<u>MET</u>	<u>DATE</u>	<u>CDT</u>	<u>GMT</u>	<u>ΔV</u>	<u>HA/HP</u>
Launch	00/00:00	09/21/95	08:31	264/13:31	--	--
OMS-2	00/00:43	09/21/95	09:14	264/14:14	184.9	152/146
Trim Burn	00:03:00	09/21/95	11:31	264/16:31	9.5	147/146
D/O Burn	15:20:55	10/07/95	05:26	280/10:26	241.0	--
Landing	15:21:55	10/07/95	06:26	280/11:26	--	--

C. LANDING OPPORTUNITIES

		<u>Landing Orbit</u>	<u>Site</u>	<u>Local Time</u>	<u>MET</u>
		<u>No.</u>			
Nominal	Primary	256	KSC	07:26	15/21:55
	1 Rev Late	257	KSC	09:01	15/23:30
	Weather Alt	258	EDW	07:27	16/00:56
1 Day Late	Primary	272	KSC	07:19	16/21:48
	1 Rev Late	273	KSC	08:53	16/23:22
	Weather Alt (2 Rev Late)	274	EDW	07:18	17/00:47
2 Days Late	Primary	288	KSC	07:10	17/21:39
	1 Rev Late	289	KSC	08:44	17/23:13
	Weather Alt (2 Rev Late)	290	EDW	07:09	18/00:38

D. CREW

CDR – Kenneth Bowersox
 PLT – Kent Rominger
 MS1 – Catherine Coleman
 MS2 – Michael Lopez-Alegria
 MS3 – Kathryn Thornton
 PS1 – Fred Leslie
 PS2 – Albert Sacco

- RED Team: CDR, PLT, MS3, PS2
 BLUE Team: MS2, MS1, PS1

Each team works approximately 12 hours followed by 12 hours off duty. This allows continuous 24-hour/day payload operations

- The Payload Commander is MS3. The crewmembers responsible for performing an EVA, should one become necessary, are MS1 and MS2

E. COMMUNICATIONS

SHUTTLE

TDRS Support: East (41° W), West (174° W)

Ground Sites: MIL and BDA

Contingency RTS: DGS, GTS, HTS, IOS, MIL, BDA, OTS, and VTS

F. WATER MANAGEMENT

The reduced Freon flow through the radiators due to the cold attitude profile will result in cold radiator panel temperatures and necessitate frequent nozzle dumps. Nozzle dumps will be performed in the experiment attitudes.

G. IMU ALIGNS

Routine IMU aligns are expected to occur every 24 hours with stars of opportunity; therefore, aligns are not scheduled in the Flight Plan. If required, specific IMU star pair attitudes are available. The exceptions to this are the IMU align immediately preceding the HUD Calibration and the IMU align before the deorbit burn. An additional IMU align preceding the -Z COAS Calibration is also scheduled. This IMU/COAS Cal is highly desired.

H. CREW CIRCADIEN RHYTHM

The Blue team on most dual shift flights is scheduled for 0/03:30 MET and the duration is typically six hours. In these situations the preflight circadian rhythm sleep cycle was aligned with 0/01:30 MET which means the Blue team would still be waking up at the same time despite going to sleep two hours late. For this flight, a seven-hour sleep period is scheduled in an attempt to compensate the crew for going to sleep two hours late. The casual observer may misconstrue the pre-flight circadian rhythm sleep cycle to be aligned with 0/02:30 MET which when combined with the seven hours of sleep would make a full eight hours of sleep. However, Appendix K waiver #72A was written to document the requirement to align the preflight circadian rhythm sleep cycle with 0/01:30 MET for on-orbit sleep shifting flexibility.

I. OFF DUTY

Off duty periods for the spacelab crew are scheduled for FDs 6 and 12 for the Red team and FDs 7 and 13 for the Blue team. One crewmember will be off-duty at a time in order to continue with USML-2 operations. The PLT's off-duty periods are on FDs 8 and 11, and the MS2's are on FDs 9 and 14. The CDR has off-duty periods on FDs 6 and 12.

J. PAYLOADS

1. United States Microgravity Laboratory - 2 (USML-2)

USML-2 is a mission of various experiments which focus on microgravity materials processing technology and other science and research requiring the low gravity environment of Earth orbit. It will include a long Spacelab Transfer Tunnel (STT) and a long module made up of a core segment and an experiment segment to be located in the cargo bay. Some experiments will also be installed in the orbiter middeck locker spaces. For mission 2 (STS-73), USML will support 18 payloads including 5 in the middeck.

The following is a list of the USML-2 Middeck experiments:

- ASC - Astroculture
- CGBA - Commercial Generic Bioprocessing Apparatus
- CPCG - Commercial Protein Crystal Growth
- SPCG - Single-Locker Protein Crystal Growth
- ZCG - Zeolite Crystal Growth

The following is a list of the USML-2 Module experiments:

- APCF - Advanced Protein Crystallization Facility
- CGBA - Commercial Generic Bioprocessing Apparatus
- CGF - Crystal Growth Furnace
- 3-DMA - Three Dimensional Microgravity Accelerometer
- DPM - Drop Physics Module
- EDOMP - Extended Duration Orbiter Medical Program
- GFFC - Geophysical Fluid Flow Cell
- SAMS - Space Acceleration Measurement System
- STDCE - Surface Tension Driven Convection Experiment
- GBX - Glovebox Experiments:
 - Colloidal Disorder-Order Transitions (CDOT)
 - Fibers Supported Droplet Combustion (FSDC)
 - Interface Configuration Experiment (ICE)
 - Oscillatory Thermocapillary Flow Experiment (OTFE)
 - Protein Crystal Growth Glovebox (PCGG)
 - Particle Dispersion Experiment (PDE)
 - Zeolite Crystal Growth Glovebox (ZCGG)
- HI-PAC - High-Packed Digital Television Demonstration
- STABLE - Suppression of Transient Accelerations by Levitation Evaluation
- CHUCK - CHUCK

2. Orbital Acceleration Research Experiment (OARE)

The OARE will acquire accurate measurement data of low level aerodynamic acceleration on the orbiter in the free-molecular flow regime of the upper atmosphere

K. ON-ORBIT DTOs

1. Cabin Air Monitoring (DTO 623)

This DTO will use the solid sorbent sampler to continuously sample the orbiter atmosphere throughout the flight

2. Foot Restraint Evaluation (DTO 655)

The purpose of this DTO is to evaluate a new conceptual design for foot restraints

3. Portable In-Flight Landing Operations Trainer (PILOT) (DTO 667)

This DTO consists of a laptop PC with landing software and a spare RHC (essentially a landing simulator). The DTO will attempt to verify that the simulator will assist the CDR and PLT in maintaining a high level of proficiency for approach and landing on EDO missions

4. **KU-Band Communications Adapter (KCA) Demonstration (DTO 679)**

This DTO will demonstrate the capability of KCA to provide high speed bi-directional computer communications via the KU-Band system. This high speed data transfer capability will improve the slower Portable Audio Data Modem (PADM) transfer method which links a standard PGSC to the shuttle S-Band system

5. **Inertial Vibrations Isolation System (IVIS) (DTO 682)**

This DTO consists of hardware that will be mounted with the cycle ergometer to help protect the microgravity environment during crew exercise. This isolation system has been designed based on analysis of data from STS-65 and adds an inertial mass to counteract forces produced by exercise

6. **Microgravity Measuring Device (MMD) Evaluation (DTO 913)**

This DTO will evaluate the effectiveness of the IVIS system using the MMD to measure and record in-flight accelerations

7. **Ground-To-Air-Television (DTO 1121)**

The purpose of this DTO is to evaluate a prototype system and methodology for uplinking real-time, full-screen color television (TV) signals from MSFC and JSC to the orbiter. The TV signal will be digitized and sent up on KU-Band.

L. **ON-ORBIT DSOs**

1. **Immunological Assessment of Crewmembers (DSO 487)**

As shuttle mission durations increase, the potential development of infectious illness in crewmembers during flight also increases. This study will improve the understanding of the potential impacts of space flight induced immunological alterations on crewmember health and performance. There are no on-orbit crew activities associated with this DSO

2. **Characterization of Microbial Transfer Among Crewmembers During Space Flight (DSO 491)**

In order to minimize the spreading of infectious agents during space flight, a better understanding of microbial dissemination within the shuttle environment is necessary. The dissemination of normal crew microbiota will be studied by tracking a specific target organism through samples obtained preflight and post flight from participating crewmembers. No inflight crew activities are required

3. **Orthostatic Function During Entry, Landing, and Egress (DSO 603C)**

The purpose of this DSO is to document the relationship between mission duration and changes in orthostatic function of crewmembers during the actual stresses of entry, landing, and egress from the seat and from the cabin. The crewmembers will don and calibrate equipment prior to deorbit preparation. At LES donning, the crewmembers will connect cables and power the equipment. This data will be used to guide the development of entry, landing, and egress countermeasures

4. Visual Vestibular Integration as a Function of Adaptation (DSO 604 OI-1, OI-3)

This DSO is to investigate visual vestibular and perceptual adaptive responses as a function of longer missions and to determine the operational impact on performances of entry, landing, and egress procedures

5. Visual Vestibular Integration as a Function of Adaptation (DSO 605)

The objective of this DSO is to investigate visual vestibular and perceptual adaptive responses as a function of longer missions and to determine the operational impact on performance of entry, landing, and egress procedures. There are no on-orbit crew activities associated with this DSO

6. Air Monitoring Instrument Evaluation and Atmosphere Characterization (DSO 611)

DSO 611 is designed to evaluate and verify air monitoring equipment. The Microbial Air Sampler (MAS) will be used to collect data on the contaminants that affect crew health and safety. On this EDO mission, the MAS will evaluate the effect of the Regenerable CO₂ Removal System (RCRS) on air quality. Air samples from the middeck and flight deck will be collected on an early, mid, and late flight day

7. In-flight Use of Florinef to Improve Orthostatic Intolerance Postflight (DSO 621)

The purpose of this DSO is to evaluate the efficacy of Florinef on postflight orthostatic tolerance using heart rate, blood pressure, stroke volume, and other cardiovascular responses to orthostatic stress

8. Pre and Postflight Measurement of Cardiorespiratory Responses to Submaximal Exercise (DSO 624)

DSO 624 will evaluate the changes in aerobic capacity using submaximal exercise testing to correlate preflight and in-flight crew activities with postflight aerobic performance. This data will be used to assist in the development of optimal exercise prescriptions as countermeasures to prevent decrements in the nominal cardiorespiratory response. Crewmembers will don a heart watch prior to exercise and will maintain a daily exercise log

9. CV Responses to Standing Postflight (DSO 626)

The objective of this DSO is to characterize the integrated responses of arterial pressure control systems to standing before and after spaceflight. There are no on-orbit crew activities associated with this DSO

10. Educational Activities (DSO 802)

The purpose of this DSO is to use the attraction of spaceflight to capture the interest of students and motivate them toward careers in science, engineering, and mathematics

11. Documentary Television (DSO 901)

The purpose of DSO 901 is to provide live television or Video Tape Recorder (VTR) dumps of crew activities, orbiter operations, payload deployment, retrieval operations, Earth views, rendezvous, and proximity operations

12. Documentary Motion Picture (DSO 902)

The purpose of DSO 902 is to provide documentary and public affairs motion picture photography of the orbiter's basic capabilities and key flight objectives. Documentation shall include launch, crew activities, payload deployment/retrieval, landing, and unscheduled activities of special interest

13. Documentary Still Photography (DSO 903)

The purpose of DSO 903 is to provide still photography of crew activities, orbiter operations, payload deployment/retrieval and operations, Earth views, and unscheduled items of interest

14. Assessment of Human Factors (DSO 904)

This DSO will analyze data from the digital sound level meter recording device in the middeck, flight deck, and module, relative to crew comments and crew performance. In addition, it will evaluate human-machine interactions during routine spacelab operations (e.g., stowage, hand and foot restraints, wire and cable interface, etc.)

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FLIGHT DATA FILE
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73 FLT PLN FSP FIN

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