

FLIGHT DATA FILE

Flight Plan

STS-43

(Flight Cycle R1 Trajectory)

Mission Operations Directorate
Operations Division

Final
June 12, 1991

Cover replaced
by PCN-1
(07/02/91)

<u>EVENT</u>	<u>CDT</u>		
Launch	9:55	Thurs	Aug 1
TDRSS Deploy	16:08	Thurs	July 25 July 25
KSC Landing	7:13	Sat	Aug 3



National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas

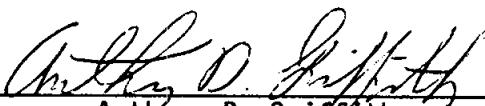


MISSION OPERATIONS DIRECTORATE

STS-43 FLIGHT PLAN

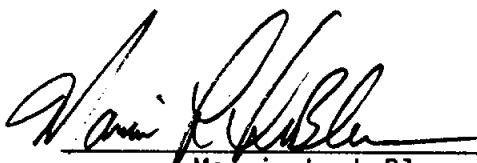
FINAL
June 12, 1991

PREPARED BY:




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Book Manager


APPROVED BY:



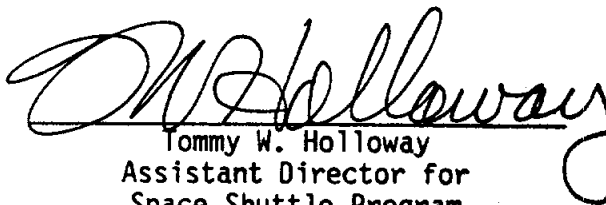
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	FLT PLN-1101	FLT PLN-1129	MULTI-439
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	FLT PLN-1103	FLT PLN-1131	EXEMPTION#: 5,
	FLT PLN-1105	FLT PLN-1132	21A
	FLT PLN-1107	FLT PLN-1133	
	FLT PLN-1114	FLT PLN-1134	
	FLT PLN-1116	FLT PLN-1135	
	FLT PLN-1118		

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Nominal Timelines	DH4/M. T. Hurt	483-4375
	DH4/R. M. Smith	483-6989
Pointing	DH4/J. R. Walsh	483-4478

STS-43 FLIGHT PLAN

LIST OF EFFECTIVE PAGES

FINAL 06/12/91
 PCN-1 07/02/91

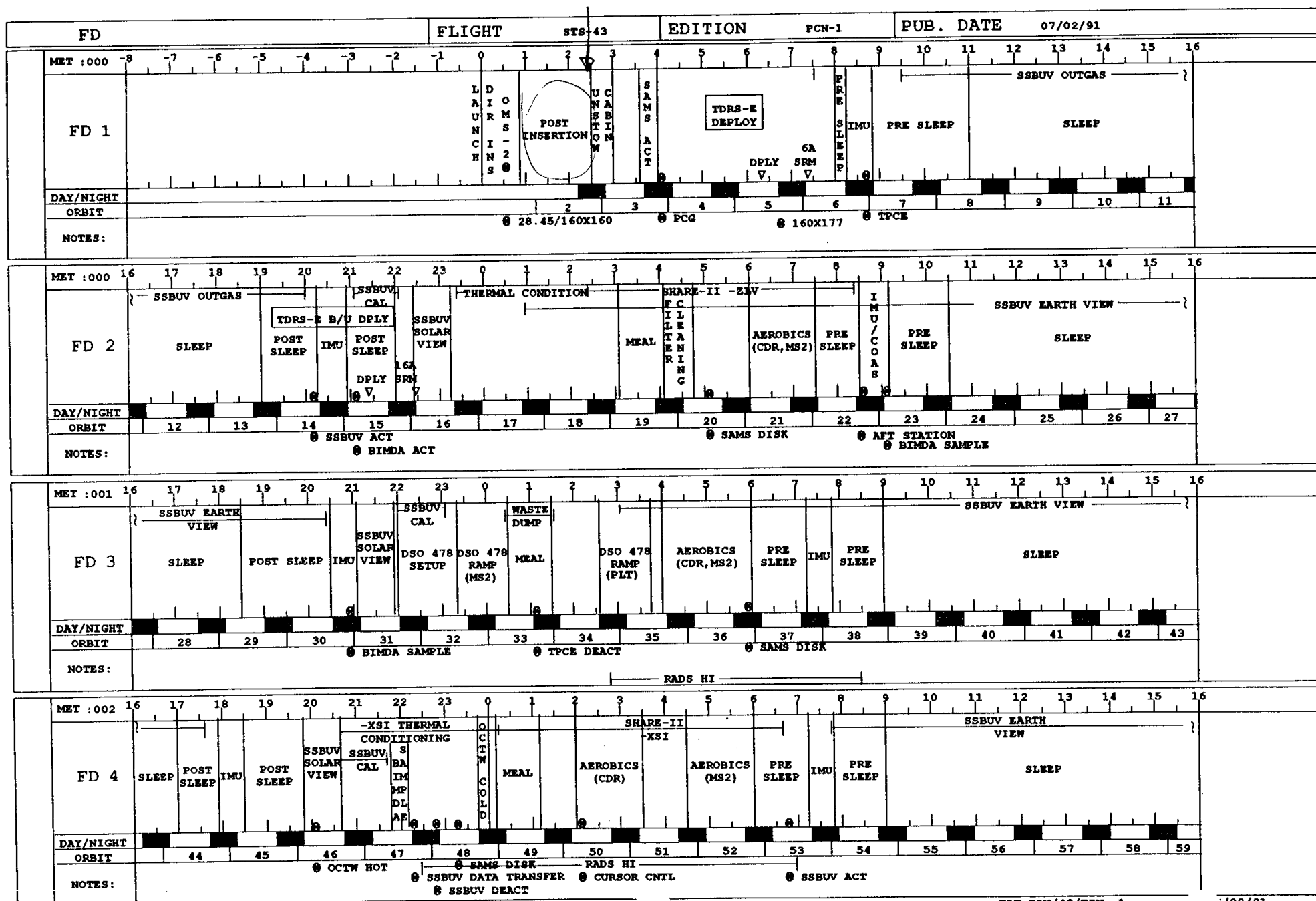
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ii.....*	43/FIN 1	3-28.....	43/FIN 1
iii.....*	43/FIN 1	3-29.....	43/FIN
iv.....*	43/FIN	3-30.....	43/FIN
v.....*	43/FIN	3-31.....	43/FIN 1
vi.....*	43/FIN	3-32.....	43/FIN
vii.....	43/FIN	3-33.....	43/FIN
viii.....	43/FIN	3-34.....	43/FIN
ix.....	43/FIN	3-35.....	43/FIN
x.....	43/FIN	3-36.....	43/FIN
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1-4.....	43/FIN 1	3-40.....	43/FIN
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2-4.....	43/FIN 1	3-44.....	43/FIN 1
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3-1.....	43/FIN	4B-1.....	43/FIN 1
3-2.....	43/FIN 1	4B-2.....	43/FIN
3-3.....	43/FIN 1	4B-3.....	43/FIN
3-4.....	43/FIN	4B-4.....	43/FIN
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3-6.....	43/FIN	4C-2.....	43/FIN
3-7.....	43/FIN 1	4C-3.....	43/FIN
3-8.....	43/FIN 1	4C-4.....	43/FIN
3-9.....	43/FIN 1	4C-5.....	43/FIN
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(*) - Omit from flight book

40-7..... 43/FIN
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 6-11.....* 43/FIN
 6-12.....* 43/FIN
 6-13.....* 43/FIN
 6-14.....* 43/FIN
 6-15.....* 43/FIN
 6-16.....* 43/FIN
 7-1.....* 43/FIN
 7-2.....* 43/FIN 1
 7-3.....* 43/FIN
 7-4.....* 43/FIN
 7-5.....* 43/FIN
 7-6.....* 43/FIN
 7-7.....* 43/FIN
 7-8.....* 43/FIN
 7-9.....* 43/FIN
 7-10.....* 43/FIN 1
 7-11.....* 43/FIN 1
 7-12.....* 43/FIN

STS-43 OVERVIEW

OVERVIEW



MET :003	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16											
FD 5	SSBUV EARTH VIEW																CURSOR		SSBUV SOLAR VIEW		SSBUV CAL		FILE TANKING		AEROBICS (CDR, MS2)		PRE SLEEP		IMU/COAS		WASTE DUMP		PRE SLEEP		SLEEP	
DAY/NIGHT	[Day/Night Cycle]																																			
ORBIT	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75																			
NOTES:	@ CURSOR @ DATA XFER @ SAMS DISK @ SAMS @ SSBUV DEACT @ FWD STATION DISK																																			

MET :004	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
FD 6	POST SLEEP		IMU		POST SLEEP		CURSOR		SHARE-II DEPRIME		CURSOR		AMOS		MEAL		AEROBICS (CDR, MS2)		PRE SLEEP		IMU		PRE SLEEP		SLEEP		POST SLEEP	
DAY/NIGHT	[Day/Night Cycle]																											
ORBIT	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90												
NOTES:	@ SAMS DISK @ APE @ APE @ SSCE																											

MET :005	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
FD 7	POST SLEEP		IMU		POST SLEEP		SSFLY DUMP		DSO 478 SOAK (MS2)		MEAL		DSO 478 SOAK (PLT)		PRE SLEEP		IMU		PRE SLEEP		SLEEP		POST SLEEP		IMU	
DAY/NIGHT	[Day/Night Cycle]																									
ORBIT	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106										
NOTES:	@ SAMS DISK @ SAMS DISK																									

MET :006	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16											
FD 8	POST SLEEP		APE		CURSOR		APE		DSO 478 RAMP (MS2)		APE		DSO 478 RAMP (PLT)		AMOS		MEAL		SHARE-II DEPRIME II		APE		PRE SLEEP		IMU		PRE SLEEP		SLEEP		POST SLEEP		IMU		POST SLEEP	
DAY/NIGHT	[Day/Night Cycle]																																			
ORBIT	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122																				
NOTES:	@ SAMS DISK @ SAMS DISK																																			

MET :007	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
FD 9	FCS C/O	HOT FIRE	DSO 478 RAMP (MS2)	DSO 478 RAMP (PLT)	CAOUNT F/TV	MEAL	CREW CONF					WASTE DUMP											POST SLEEP	IMU	POST SLEEP	DSORP					
DAY/NIGHT																															
ORBIT	123		124		125		126		127		128		129		130		131		132		133		134		135		136		137		138
NOTES:	BIMDA DEACT		RADS HI										SAMS DEACT																		

MET :008	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
FD 10	DEORBIT PREP			DEORBIT		LANCING																									
DAY/NIGHT																															
ORBIT	139		140		141		142		143		144		145		146		147		148		149		150		151		152		153		154
NOTES:	DSO ENTRY PREP																														

MET :009	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
FD																															
DAY/NIGHT																															
ORBIT	155		156		157		158		159		160		161		162		163		164		165		166		167		168		169		170
NOTES:																															


MET :010	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
FD																											
DAY/NIGHT																											
ORBIT	171		172		173		174		175		176		177		178		179		180		181		182		183		184
NOTES:																											

SUMMARY TIMELINE

SUMMARY TIMELINE

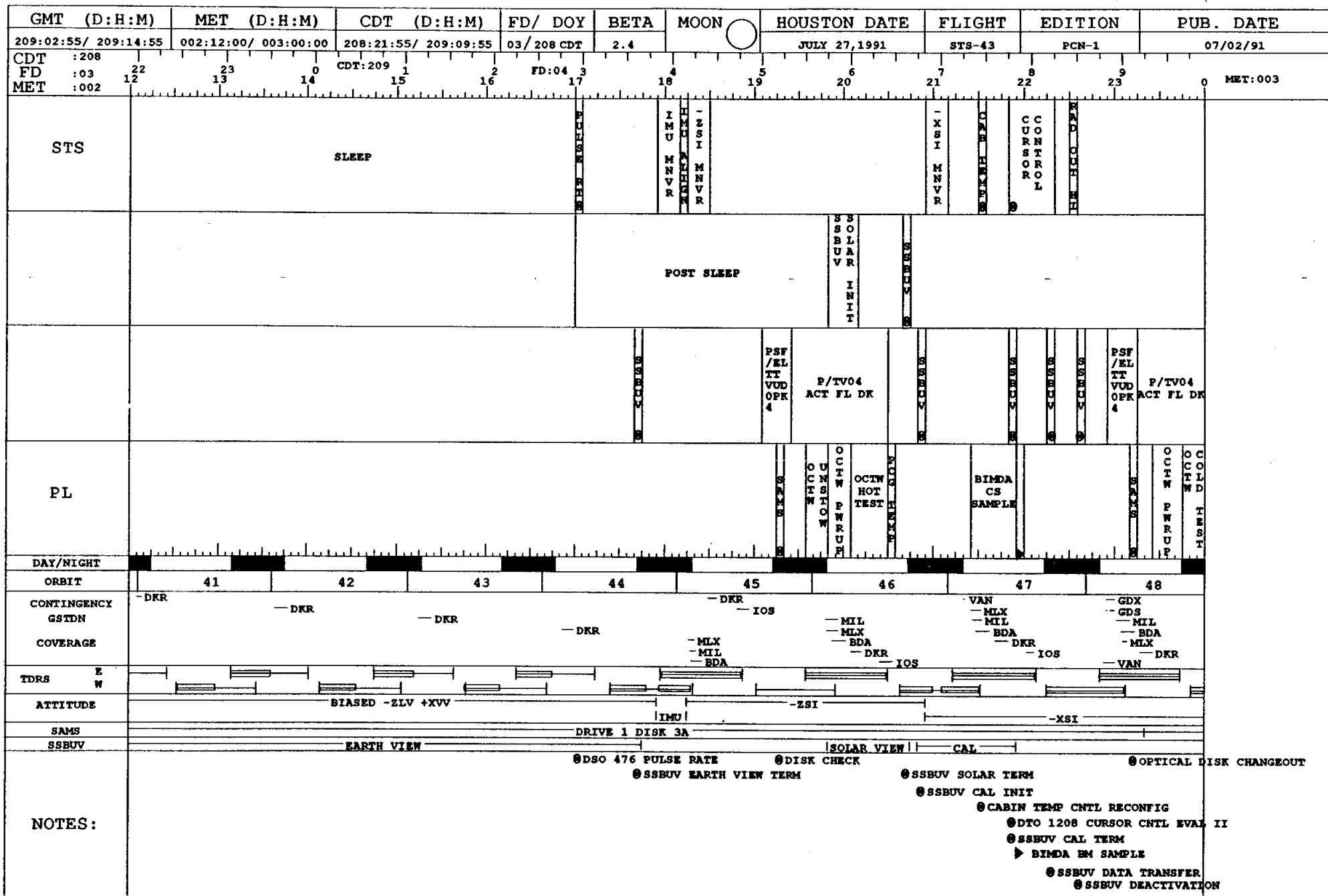
GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
206:14:55/ 207:02:55	000:00:00/ 000:12:00	206:09:55/ 206:21:55	01/ 206 CDT	-3.8		JULY 25, 1991	STS-43	FINAL	06/12/91
CDT :206	FD :01	MET :000							
STS									SLEEP
LAUNCH	OMS - 2	POST INSERTION	UNSTOW CABIN	MEAL	LOYS	P/TV03 ACT DPY	P/TV03 ACT DPY	PRE SLEEP	
PL	INSERTION								
DAY/NIGHT									
ORBIT		2	3	4	5	6	7	8	9
GSTDN COVERAGE		-VAN -GDX -WSG -MIL -BDA -DKR	-GDX -WSG -MIL -BDA	-MIL	-VAN				
RTS COVERAGE		-HTS -VTS -CTS	-HTS -VTS -CTS	-GTS -HTS -VTS -CTS	-DGS -GTS -HTS -VTS	-IOS -DGS -GTS -HTS	-IOS -DGS -GTS -HTS	-IOS -GTS	
TDRS E W									
ATTITUDE	ASCENT	BIASED -ZLV -YVV	IMU	TDRS CK	SEP	PROT	-ZLV +YVV	BIASED -ZLV -XVV	
SAMS									
SSBUV									
NOTES:									

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
207:02:55/ 207:14:55	000:12:00/ 001:00:00	206:21:55/ 207:09:55	01/206 CDT	-2.8	☉	JULY 25, 1991	STS-43	PCN-1	07/02/91	
CDT :206		CDT:207			FD:02				MET:001	
FD :01	22	23	0	1	2	3	4	5	6	
MET :000	12	13	14	15	16	17	18	19	20	
STS	SLEEP									
	POST SLEEP									
PL										
DAY/NIGHT	[Day/Night Cycle]									
ORBIT	9	10	11	12	13	14	15	16		
CONTINGENCY GSTDN COVERAGE	-DKR	-DKR	-DKR	-DKR	-DKR	-MIL -BDA -DKR	-DKR	-VAN -WSG -MIL -BDA		
CONTINGENCY RTS COVERAGE	-GTS	-GTS		-DGS	-IOS	-IOS -DGS	-IOS -DGS	-CTS	-IOS -DGS	
TDRS	[TDRS Schedule]									
ATTITUDE	BIASED -ZLV -XVW									
SAMS	DRIVE 1 DISK 1A					DRIVE 2 DISK 2A				
SSBUV	OUTGAS					ACT CAL SOLAR VIEW				
NOTES:	◎DSO 476 PULSE RATE ◎SSBUV OUTGAS TERM ◎MDA CLOSE ◎SSBUV CAL INIT ◎MDM VERIF ◎SSBUV CAL TERM ◎SSBUV SOLAR TERM ◎-ZLV +XVW									

GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
207:14:55/ 208:02:55		001:00:00/ 001:12:00		207:09:55/ 207:21:55		02/207 CDT	-1.6		JULY 26, 1991	STS-43	PCN-1	07/02/91	
CDT :207	10	11	12	13	14	15	16	17	18	19	20	21	12
FD :02													
MET :001													
STS			BLOOD PRESS		MEAL	FILTER CLEANING	C P A O P S		AEROBICS (CDR, MS2)	P R O M F M E D	I M U M N V R	Z L V M N V R	SLEEP
								PSM/ED IT VUD OPK 5	P/TVO5 ACT MD DK	P G S C M O D E M		PRE SLEEP	
	V P L A Y B A C K R		P S S / E S T T B V U U O P V 6		P A C T / T T V O S S B U V								
PL			S E A R C H I N I T		S H A R E - I I			S H A R E - I I					S I A M M P L A L E C S
DAY/NIGHT													
ORBIT	17	18	19	20	21	22	23	24					
CONTINGENCY	-VAN	-VAN	-GDS	-IOS									
GSTDN	-GDS	-GDX	-GDS	-GDX	-IOS								
COVERAGE	-MIL -BDA -MLX	-MIL -MLX -BDA	-MIL -MLX										
TDRS	E W												
ATTITUDE				BIASED -ZLV +XVV					IMU/COAS			BIASED -ZLV +XVV	
SAMS				DRIVE 2 DISK 2A								DRIVE 1 DISK 1B	
SSBUV									EARTH VIEW				
NOTES:				⊙DISK CHECK ⊙-ZLV PRECONDITION ACT ⊙DSO 602 BP VARIABILITY ⊙-ZLV (I) HTR ACT					⊙-ZLV (I) HTR DEACT ⊙DTO 645 COMBUSTION PRODUCTS ANALYZER ⊙OPTICAL DISK CHANGEOUT ⊙DSO 476 INFLIGHT AEROBICS ⊙-ZLV (II) HTR ACT			⊙-ZLV (II) HTR DEACT step 2 ⊙AFT STATION ⊙-ZLV +XVV	
									⊙DTO 799 PGSC/MODEM DEMO ⊙DISK CHECK ⊙-ZLV (II) HTR DEACT step 1				

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
208:02:55/ 208:14:55	001:12:00/ 002:00:00	207:21:55/ 208:09:55	02/ 207 CDT	-0.4	☉	JULY 26, 1991	STS-43	FINAL	06/12/91	
CDT : 207		CDT: 208								
FD : 02	22	23	14	15	16	17	18	19	20	
MET : 001	12	13	14	15	16	17	18	19	20	
STS	SLEEP						IMU MNV R	ZSI MNV R	ZLV MNV R	
									FSM /ED TT VUD OPK 5	P/TV05 ACT MD DK
							BIA MM DF AL E C S	BIA MM DP AL E B M	LBNP SETUP	LBNP PREP R A M P
PL							SSBUV I N I T			
DAY/NIGHT	[Day/Night Cycle]									
ORBIT	25	26	27	28	29	30	31	32		
CONTINGENCY GSTDN		--DKR		-DKR				-DKR		
COVERAGE					-BDA -DKR	-IOS	-MLX -BDA -DKR	-IOS	-MLX -DKR	-VAN -GDX -GDS
TDRS	E									
ATTITUDE				BIASED -ZLV +XVV			IMU	-ZSI		-ZLV +YVV
SAMS				DRIVE 1 DISK 1B					DRIVE 2 DISK 2B	
SSBUV				EARTH VIEW				SOLAR VIEW	CAL	
NOTES:	◎ DSO 476 PULSE RATE ◎ OPTICAL DISK CHANGEOUT ◎ EARTH VIEW TERM ◎ DTO 799 PGSC/MODEM PWRDN ◎ SOLAR TERM ◎ CAL INIT									

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
208:14:55/ 209:02:55	002:00:00/ 002:12:00	208:09:55/ 208:21:55	03/ 208 CDT	1.0	☉	JULY 27, 1991	STS-43	PCN-1	07/02/91
CDT :208									
FD :03									
MET :002									
STS									
PL									
DAY/NIGHT									
ORBIT	33	34	35	36	37	38	39	40	
CONTINGENCY GSTDN	-VAN -GDX -GDS	-VAN -GDS -GDX	-GDX -GDS -MIL						
COVERAGE	-MIL -MLX -BDA	-MIL -MLX -BDA		-VAN	-IOS	-IOS	-IOS		
TDRS									
ATTITUDE	-ZLV +YVV			BIASED -ZLV +XVV	IMU	BIASED -ZLV +XVV			
SAMS				DRIVE 2 DISK 2B				DRIVE 1 DISK 3A	
SSBUV						EARTH VIEW			
NOTES:				◎DSO 602 BP VARIABILITY ◎DISK CHECK ◎-ZLV +XVV	◎DTO 1208 MAC XFR SETUP ◎OPTICAL DISK CHANGEOUT ◎-ZLV +XVV	◎RAD OUT NORM ◎-ZLV +XVV			
				◎DTO 645 COMBUSTION PRODUCTS ANALYZER					
				◎DSO 476 INFLIGHT AEROBICS					



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
210:02:55/ 210:14:55	003:12:00/ 004:00:00	209:21:55/ 210:09:55	04 / 209 CDT	5.5	☉	JULY 28, 1991	STS-43	FINAL	06/12/91	
CDT : 209		CDT: 210								
FD : 04	22	23	0	1	2	3	4	5	6	
MET : 003	12	13	14	15	16	17	18	19	20	
STS	SLEEP									
	POST SLEEP									
PL										
DAY/NIGHT	[Bar chart showing day/night cycle]									
ORBIT	57	58	59	60	61	62	63	64		
CONTINGENCY GSTDN	-DKR	-DKR	-DKR		-MLX -BDA	-DKR -IOS	-MLX -DKR	-BDA		
COVERAGE				-BDA -DKR	-IOS	-MIL -MLX -BDA	-VAN -GDX -GDS	-VAN -GDS -MIL -MLX		
TDRS E W	[Bar chart showing TDRS coverage]									
ATTITUDE	BIASED -ZLV +XVV									
SAMS	IMU									
SSBUV	DRIVE 1 DISK 3B									
	EARTH VIEW									
	SOLAR VIEW									
NOTES:	@DSO 476 PULSE RATE @DSO 602 BP VARIABILITY @DTO 1208 CURSOR CNTL EVAL II @-ZLV +XVV @DTO 799 PGSC/MODEM PWRDN @SSBUV EARTH VIEW TERM @DISK CHECK @DTO 1208 CURSOR CNTL EVAL II @SSBUV SOLAR TERM @-ZLV, +YVV									

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
210:14:55/ 211:02:55	004:00:00/ 004:12:00	210:09:55/ 210:21:55	05/ 210 CDT	7.2		JULY 29, 1991	STS-43	PCN-1	07/02/91				
CDT :210													
FD :05													
MET :004													
	10	11	12	13	14	15	16	17	18	19	20	21	12
STS	ZLV MNV R	MEAL		RCJ JNF SI EG P E			PC RIN V M E D	IM U M N V R	CO AS M N V R	LD L V M N V R	WA SM TE I N I T	WD AU SM TE E T H E R	
				C P A O P S		MAC MODEM				PRE SLEEP			
				PSF /EL TT VUD OPK 4	P/TV04 ACT FL DK								
PL	S C E N E S S C E N E S S C E N E S S C E N E S	S C E N E S S C E N E S S C E N E S	S C E N E S S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S	S C E N E S S C E N E S
DAY/NIGHT													
ORBIT	64	65	66	67	68	69	70	71	72				
CONTINGENCY GSTDN		-VAN -GDS -GDX	-GDX -MIL -MLX				-IOS						-DKR
COVERAGE		-MIL -MLX -BDA		-VAN		-IOS							
TDRS	E W												
ATTITUDE			-ZLV +YVV			IMU/COAS					-ZLV +YVV		
SAMS		DRIVE 1 DISK 3B									DRIVE 2 DISK 4B		
SSBUV		CAL											
NOTES:		@-ZLV, +YVV @SSBUV CAL INIT @OPTICAL DISK CHANGEOUT @SSBUV CAL TERM @SSBUV DATA TRANSFER @SSBUV DEACTIVATION	@D645 COMBUSTION PRODUCTS ANALYZER @DSO 476 INFLIGHT AEROBICS @DISK CHECK	@D1208 MAC XFR SETUP		@FWD STATION @-ZLV, +YVV @OPTICAL DISK CHANGEOUT							

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
211:02:55/ 211:14:55	004:12:00/ 005:00:00	210:21:55/ 211:09:55	05/ 210 CDT	8.9	☉	JULY 29, 1991	STS-43	PCN-1	07/02/91				
CDT :210		CDT:211	FD:06						MET:005				
FD :05	12 ²²	13 ²³	14 ⁰	15 ¹	16 ²	17 ³	18 ⁴	19 ⁵	20 ⁶	21 ⁷	22 ⁸	23 ⁹	0
MET :004													
STS	SLEEP												
	POST SLEEP												
	IPMP												
	PSM/ED IT VUD OPK 5												
	P/TV05 ACT MD DK												
	PSM/ED IT VUD OPK 5												
PL	SHARE-II DEPRIME												
	2 SEC 8 SEC												
DAY/NIGHT	[Day/Night Cycle]												
ORBIT	72	73	74	75	76	77	78	79	80				
CONTINGENCY GSTDN COVERAGE	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR	-DKR
TDRS	[TDRS Coverage]												
ATTITUDE	-ZLV +YVV												
SAMS	DRIVE 2 DISK 4B												
SSBUV	DRIVE 1 DISK 5A												
NOTES:	@DSO 476 PULSE RATE @-ZLV, +YVV @DSO 602 BP VARIABILITY @DISK CHECK Δ BIMDA EM ACT @DTO 1208 CURSOR CNTL EVAL II @-ZLV, +XVV @OPTICAL DISK CHANGEOUT @-ZLV, +YVV												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
211:14:55/ 212:02:55	005:00:00/ 005:12:00	211:09:55/ 211:21:55	06/ 211 CDT	10.7		JULY 30, 1991	STS-43	FINAL	06/12/91
CDT :211									
FD :06									
MET :005									
STS	MEAL	CPA ZLV ATPE OPS MNV R	11 12 13 14 15	ATPE RCS ZLV MNV R	16 17 18 19	PROC MNV R	20 21 22	SLEEP	
		AEROBICS (CDR,MS2)		PGSC MODEM		PRE SLEEP			
	P/TV05 ACT MD DK	P/TV07 SETUP APE-B	PA/C TTV OA 7P E-B	PA/C TTV OA 7P E-B	PS/T TCV UW O 7A E-B				
PL	SSCE ACT								
DAY/NIGHT									
ORBIT	80	81	82	83	84	85	86	87	88
CONTINGENCY GSTDN		-VAN -GDS -GDX	-GDS	-IOS	-IOS				
COVERAGE		-MIL -MLX				-IOS			-DKR
TDRS	E W								
ATTITUDE		-ZLV +YVV	+ZLV -XVV		-ZLV +YVV			-ZLV +YVV	
SAMS			DRIVE 1 DISK 5A					DRIVE 2 DISK 6A	
SSBUV									
NOTES:		<ul style="list-style-type: none"> ⊙DSO 476 INFLIGHT AEROBICS ⊙SPECTROMETER MODE ⊙DTO 645 COMBUSTION PRODUCTS ANALYZER ⊙+ZLV -XVV ⊙THRUSTER EMISSION (FARFIELD) 		<ul style="list-style-type: none"> ⊙-ZLV, +YVV ⊙DISK CHECK ⊙THRUSTER EMISSION (FARFIELD) ⊙-ZLV, +YVV ⊙DTO 799 PGSC/MODEM DEMO 					


GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
212:02:55/ 212:14:55	005:12:00/ 006:00:00	211:21:55/ 212:09:55	06/211 CDT	12.5		JULY 30, 1991	STS-43	FINAL	06/12/91
CDT :211		CDT:212							
FD :06	12	13	14	15	16	17	18	19	20
MET :005									
STS	SLEEP								
PL									
DAY/NIGHT									
ORBIT	88	89	90	91	92	93	94	95	96
CONTINGENCY GSTDN	-DKR	-DKR	-BDA	-DKR	-DKR	-IOS	-DKR	-BDA	-BDA
COVERAGE			-DKR	-IOS	-MIL	-MLX	-BDA	-DKR	-BDA
TDRS									
ATTITUDE		-ZLV +YVV							
SAMS									
SSBUV									
NOTES:									


GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
212:14:55/ 213:02:55	006:00:00/ 006:12:00	212:09:55/ 212:21:55	07/ 212 CDT	14.3		JULY 31, 1991	STS-43	PCN-1	07/02/91
CDT :212									
FD :07									
MET :006									
STS	ALT DAP	ALT DAP	ALT DAP	CPA OPS	PCRO INF	IMU	ZLV		SLEEP
	P/TV05 ACT MD DR	VVE TTR RRA Y S E E T U V	MAC MODEM						
PL									
DAY/NIGHT									
ORBIT	96	97	98	99	100	101	102	103	104
CONTINGENCY GSTDN									
COVERAGE		--VAN --GDS --GDX --MLX --MIL			--IOS	--IOS		--DKR	--DKR
TDRS									
ATTITUDE	DTO 798								
SAMS									
SSBUV									
NOTES:	◎ DTO 798 ALT MODE TESTS 14-17 ◎ -ZLV (III) HTR ACT/DEACT step 5 ◎ DTO 798 ALT MODE TESTS 18-21 ◎ -ZLV (III) HTR ACT/DEACT step 6 ◎ DTO 798 ALT MODE TEST 22 ◎ -ZLV, +YVV ▶ SHARE HTR DEACT ◎ OPTICAL DISK CHANGEOUT ◎ DTO 645 COMBUSTION PRODUCTS ANALYZER ◎ -ZLV (III) HTR ACT/DEACT steps 1-2 ◎ -ZLV (III) HTR ACT/DEACT steps 3-4 ◎ DTO 1208 MAC XFR SETUP								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
213:02:55/ 213:14:55	006:12:00/ 007:00:00	212:21:55/ 213:09:55	07/ 212 CDT	16.2		JULY 31, 1991	STS-43	PCN-1	07/02/91	
CDT :212		CDT:213								
FD : 07 12	22 23	FD:08 15	1 2	3 4	5 6	7 8	9		MET:007	
MET :006	13 14		15 16	17 18	19 20	21 22	23			
STS	SLEEP		IMU MNV R	ZLV MNV R	COOR STOR ROL	ZLV MNV R	ZLV MNV R	ZLV MNV R	MEAL	WD AU SM TF E
		POST SLEEP								WD AU SM TF E
										A E C R D O R B I C S 2
			P/TV07 SETUP APE-B	PA /C TT V DA 7E E - E	PSM /ED TT VUD OPK 5	P/TV05 ACT MD DK	PA /C TT V DA 7E E - E	PSM /ED TT VUD OPK 5	P/TV05 ACT MD DK	
PL					LBNP PREP	LBNP RAMP (MS2)	LE B N R P E S S	LBNP PREP	LBNP RAMP (PLT)	LE B N R P E S S
DAY/NIGHT										
ORBIT	104	105	106	107	108	109	110	111	112	
CONTINGENCY GSTDN	-DKR		-DKR		-MIL -MLX -BDA	-BDA -DKR -IOS	-BDA -MLX -DKR	-MLX -BDA -DKR		-MIL
COVERAGE			-MLX -BDA -DKR		-IOS	-MLX -MIL	-VAN -GDX -MIL	-VAN -GDS -GDX -MIL		-VAN -GDS -GDX -MLX
TDRS										
ATTITUDE		-ZLV +YVV		IMU		-ZLV -YVV		+ZLV -YVV		-ZLV -YVV
SAMS										
SSBUV					DRIVE 2 DISK 6B					DRIVE 1 DISK 7A
NOTES:			⊙DSO 476 PULSE RATE ⊙-ZLV, -YVV		⊙SPECTROMETER MODE	⊙+ZLV -YVV	⊙ORBITER SURFACES	⊙OPTICAL DISK CHANGEOUT		⊙DSO 476 INFLT AEROBICS
					⊙ORBITER SURFACES	⊙DTO 1208 CURSOR CNTL EVAL II	⊙-ZLV, -YVV	⊙-ZLV, +XVV		⊙DISK CHECK
					⊙DISK CHECK	⊙THRUSTER EMISSION (NEARFIELD)		⊙-ZLV, +YVV		

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
213:14:55/ 214:02:55	007:00:00/ 007:12:00	213:09:55/ 213:21:55	08/ 213 CDT	18.0		AUGUST 1, 1991	STS-43	PCN-1	07/02/91				
CDT :213													
FD : 08	10	11	12	13	14	15	16	17	18	19	20	21	12
MET :007	0	1	2	3	4	5	6	7	8	9	10	11	12
STS	CC UR ST OR L	CP A OP S	PG SC M O D E	ZL V M N V R	AL PE EE I S T R I C T O R Y	PR O N T F M E D	IM U M N V R	ZL V M N V R	SLEEP				
	AEROBICS (CDR,MS2)			PRE SLEEP									
	PSM /ED IT VUD OPK 5	P/TV05 ACT MD DK	P/TV07 SETUP APE-B	PA /C SEC L V O O A 7 A E E E E E E E									
PL	SHARE-II DEPRIME II 2SEC												
DAY/NIGHT													
ORBIT	112	113	114	115	116	117	118	119	120	-DKR			
CONTINGENCY GSTDN	-VAN -GDY -GDS												
COVERAGE				-IOS	-IOS		-IOS			-DKR			
TDRS													
ATTITUDE	-ZLV +YVV			+ZLV -YVV			IMU			-ZLV +YVV			
SAMS	DRIVE 1 DISK 7A												
SSBUV													
NOTES:	@DSO 476 INFLIGHT AEROBICS @OPTICAL DISK CHANGEOUT @DTO 1208 CURSOR CNTL EVAL II @-ZLV, +YVV @DTO 645 COMBUSTION PRODUCTS ANALYZER @SPECTROMETER MODE @DTO 799 PGSC/MODEM DEMO @+ZLV -YVV @THRUSTER EMISSION (NEARFIELD)												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
214:02:55/ 214:14:55	007:12:00/ 008:00:00	213:21:55/ 214:09:55	08/213 CDT	19.9		AUGUST 1, 1991	STS-43	PCN-1	07/02/91	
CDT :213		CDT:214							MET:008	
FD : 08	22	13	0	1	2	3	4	5	6	
MET :007	12	13	14	15	16	17	18	19	20	
STS	SLEEP	IMU MNV R	ELV MNV R	FCS C/O	RCS HOT	FIRE	MEAL	AEROBICS (CDR)	CAPS	
		POST SLEEP							CABIN STOW	
		BP LOS DS	PSM ED TT VUD OPK 5	PAC TT VOM SD DK	LBNP PREP	LBNP RAMP (MS2)	LE BN PREP	LBNP RAMP (PLT)	LE BN PREP	
PL				MIDA DEACT			LBNP STOW		SAMS DEACT	
DAY/NIGHT	[Day/Night bar]		[Day/Night bar]		[Day/Night bar]		[Day/Night bar]		[Day/Night bar]	
ORBIT	120	121	122	123	124	125	126	127	128	
CONTINGENCY GSTDN	-DKR		-BDA -DKR	-DKR -IOS	-MIL -MLX -BDA	-DKR -IOS	-VAN -GDX -GDS	-VAN -GDX -GDS	-VAN -GDX -GDS	
COVERAGE			-MIL -MLX -BDA	-DKR -IOS	-MIL -MLX -BDA	-DKR -IOS	-VAN -GDX -GDS	-VAN -GDX -GDS	-VAN -GDX -GDS	
TDRS	[TDRS bar]		[TDRS bar]		[TDRS bar]		[TDRS bar]		[TDRS bar]	
ATTITUDE	-ELV +YVV		IMU	-ELV +YVV		CREW CONF ATT		-ELV +YVV		
SAMS	DRIVE 2 DISK 8A									
SSBUV										
NOTES:	@DSO 476 PULSE RATE @-ELV, +YVV @DSO 602 BP VARIABILITY @ APU HTR ACT			@DIO 799 PGSC/MODEM PWRDN @ APU HTR RECONFIG			@-ELV, +YVV @DSO 602 BP VARIABILITY @DSO 476 INFLIGHT AEROBICS (CDR) @DIO 645 COMBUSTION PRODUCTS ANALYZER			

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
214:14:55/ 215:02:55	008:00:00/ 008:12:00	214:09:55/ 214:21:55	09/ 214 CDT	21.8		AUGUST 2, 1991	STS-43	PCN-1	07/02/91					
CDT : 214														
FD : 09	10	11	12	13	14	15	16	17	18	19	20	21	12	
MET : 008														
STS														SLEEP
PL														
DAY/NIGHT														
ORBIT	128	129	130	131	132	133	134	135	136					
CONTINGENCY GSTDN														-DKR
COVERAGE		-VAN	-IOS		-IOS			-IOS						-DKR
TDRS E W														
ATTITUDE		-ZLV +YVV		IMU										-ZLV +YVV
SAMS														
SSBUV														
NOTES:		© DTO 1208 MAC XFR SETUP © DUMMY DISK LOADING △ RAD OUT NORM © -ZLV, +YVV												

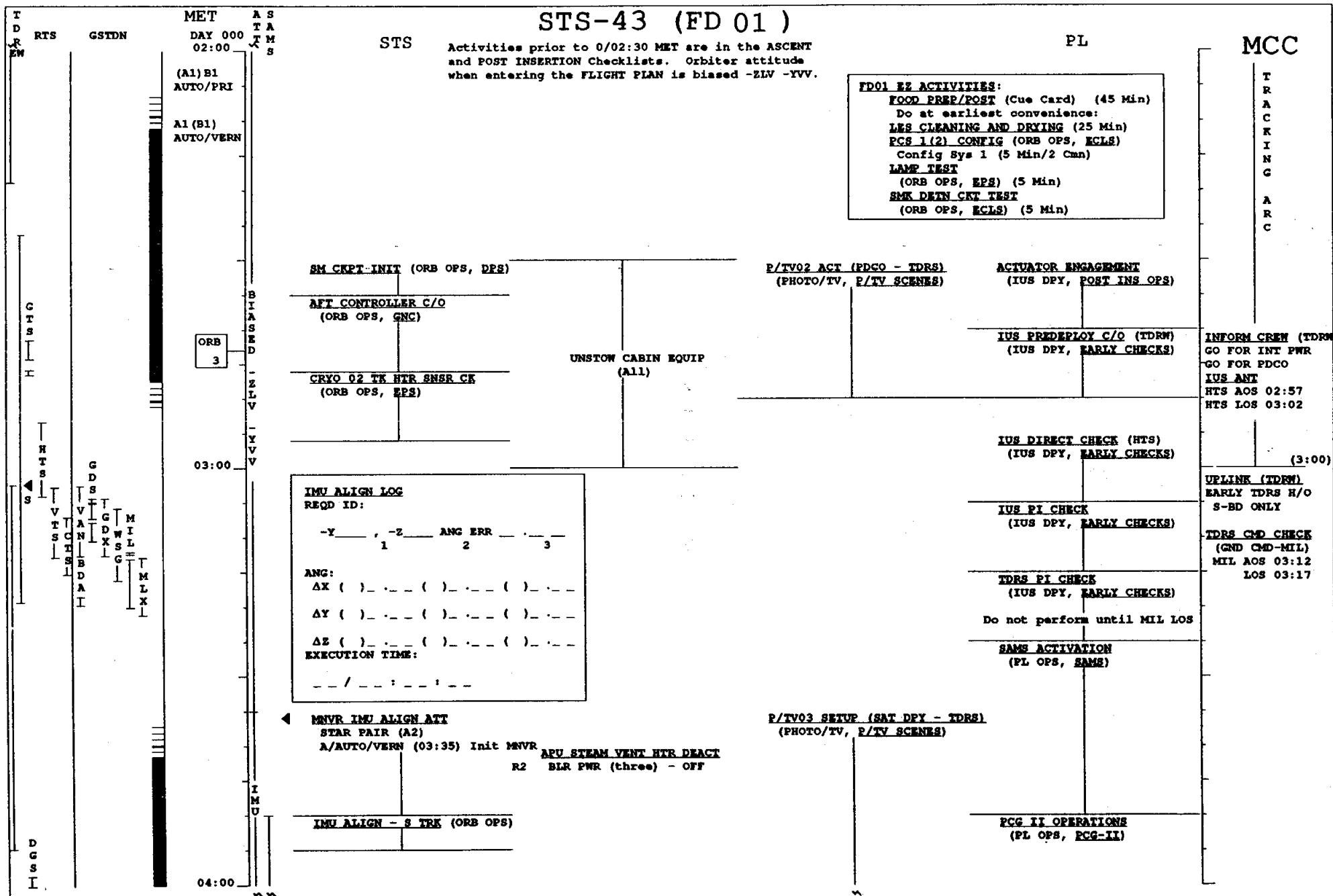
GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON 	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE																											
215:02:55/ 215:14:55	008:12:00/ 009:00:00	214:21:55/ 215:09:55	09/ 214 CDT	23.7		AUGUST 2, 1991	STS-43	PCN-1	07/02/91																											
CDT :214 FD : 09 MET :008		CDT:215 FD:10							MET:009																											
STS	SLEEP																																			
		POST SLEEP				DEORBIT		KSC																												
			DEORBIT			BURN		LANDING	*																											
PL																																				
DAY/NIGHT	[Bar chart showing day/night cycles]																																			
ORBIT	136	137	138	139	140	141	142	143																												
CONTINGENCY GSTDN COVERAGE	<table border="0"> <tr> <td></td><td>-DKR</td><td></td><td>-MLX -BDA</td><td>-DKR</td><td>-MLX -DKR</td><td>-BDA</td><td></td><td></td></tr> <tr> <td></td><td></td><td>-MIL -MLX -BDA</td><td>-DKR</td><td>-IOS</td><td>-VAN -GDS -GDX</td><td>-VAN -GDS</td><td>-VAN -GDS</td><td>-VAN -GDS</td></tr> <tr> <td></td><td></td><td>-DKR</td><td>-IOS</td><td>-MIL -MLX -BDA</td><td>-MIL -BDA</td><td>-MIL -MLX</td><td>-MIL -MLX</td><td>-MIL -MLX</td></tr> </table>										-DKR		-MLX -BDA	-DKR	-MLX -DKR	-BDA					-MIL -MLX -BDA	-DKR	-IOS	-VAN -GDS -GDX	-VAN -GDS	-VAN -GDS	-VAN -GDS			-DKR	-IOS	-MIL -MLX -BDA	-MIL -BDA	-MIL -MLX	-MIL -MLX	-MIL -MLX
	-DKR		-MLX -BDA	-DKR	-MLX -DKR	-BDA																														
		-MIL -MLX -BDA	-DKR	-IOS	-VAN -GDS -GDX	-VAN -GDS	-VAN -GDS	-VAN -GDS																												
		-DKR	-IOS	-MIL -MLX -BDA	-MIL -BDA	-MIL -MLX	-MIL -MLX	-MIL -MLX																												
TDRS E W	[Timeline of TDRS events]																																			
ATTITUDE	[Timeline of attitude events: -ZLV +YVV, IMU, -XSI, IMU/VERIF, D/O, ENTRY]																																			
SAMS																																				
SSBUV																																				
NOTES:	@DSO 476 PULSE RATE @DSO 602 BP VARIABILITY @DSO 603						* DEORBIT BURN 8/20:16	* KSC LANDING 8/21:18																												

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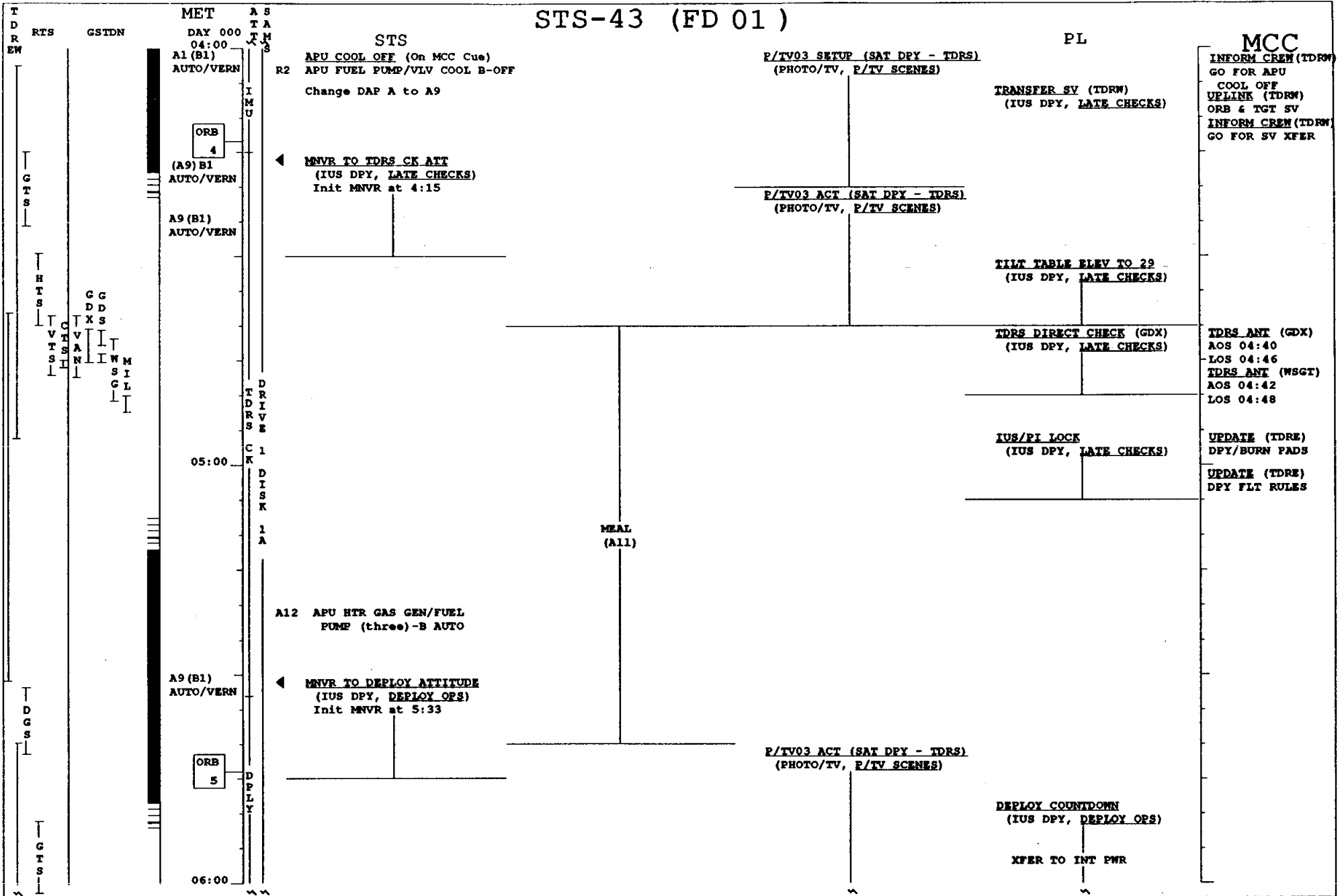
DETAILED TIMELINE

**DETAILED
TIMELINE**

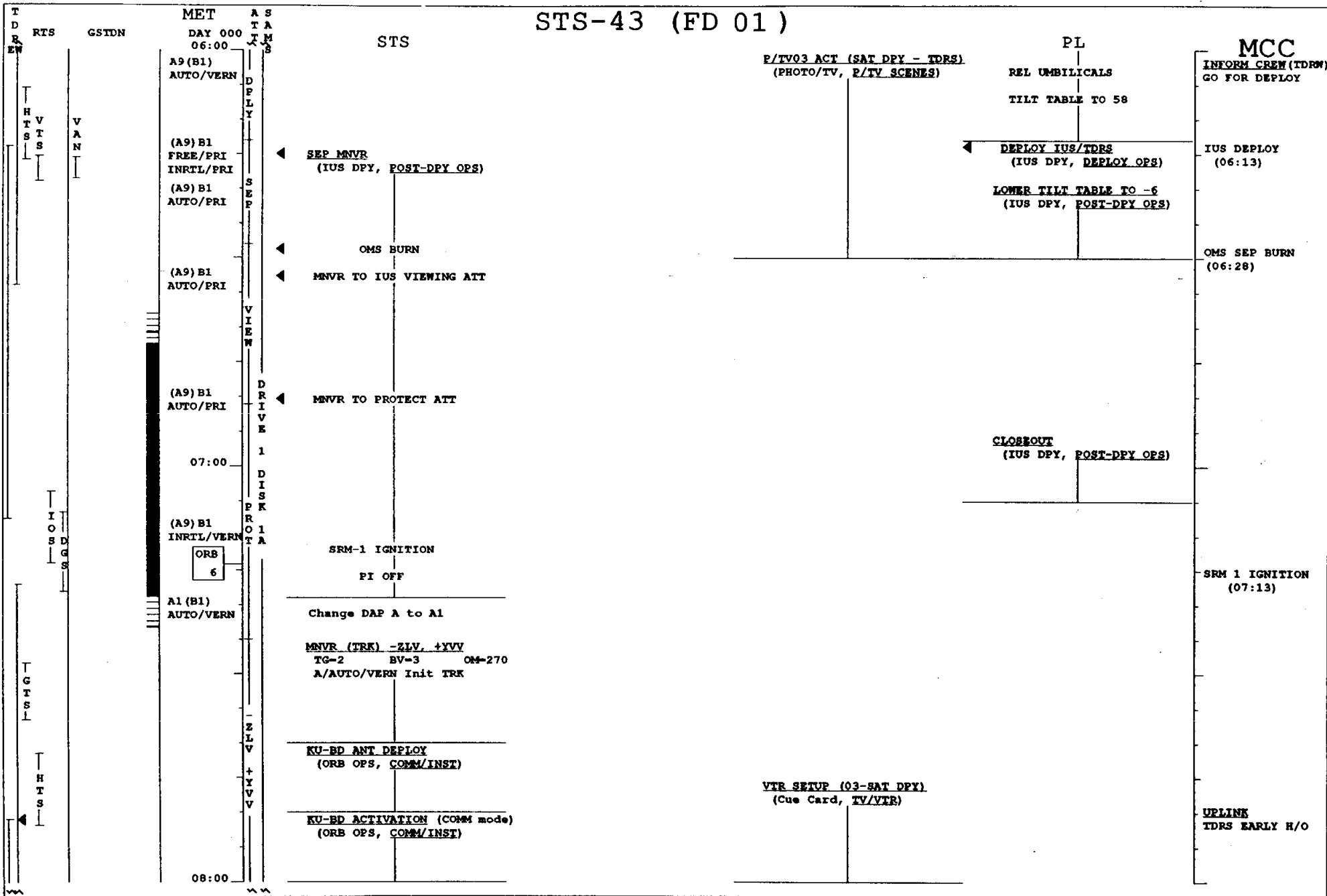
DETAILED TIMELINE



STS-43 (FD 01)



STS-43 (FD 01)



STS-43 (FD 01)

PL

MCC

CONTINGENCY
GSTDN

I O S

I O S

MET
DAY 000
08:00

A1 (B1)
AUTO/VERN

ORB 7

09:00

ORB 8

10:00

ORB 9

11:00

12:00

A S S
T A B
L E
M U
S V

I M U

D R I
V E
B I
L I
A S
D I
S K
E L
L V

X V V

O U T
G A S

STS

J/HUM SEP FOR WATER
ACCUMULATION

◀ MNVR IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNVR at SS

IMU ALIGN - S TRK (ORB OPS)
MNVR (TRK) -ZLV, -XVV
TG-2 BV=3 OM-335
A/AUTO/VERN Init TRK

A12 APU HTR GAS GEN/FUEL
PUMP (three)-A AUTO
APU TR/FU/H2O SYS 1A, 2A, 3A-AUTO
1B, 2B, 3B-OFF

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

UHF MODE - SPLX (or as reqd)

SLEEP

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

VTR PLAYBACK (03-SAT DPY)
(Cue Card, TV/VTR)
VTR at TDRE (8:00-8:08)

P/TV06 SETUP (SSBUV)
(PHOTO/TV, P/TV SCENES)

P/TV06 ACT (SSBUV)
(PHOTO/TV, P/TV SCENES)

APC UNSTOW/SETUP
(PL OPS, SSBUV)

ACTIVATION/CHECKOUT
(PL OPS, TPCK)
SYSTEM VERIFICATION
(PL OPS, SSBUV)

OUTGAS INIT
(PL OPS, SSBUV)

VTR (TDRE)
UPLINK
FC PURGE

TV (TDRM)
CREW CNTL-PL

IMU ALIGN LOG

REQD ID:

-Y _____, -Z _____ ANG ERR _____

1 2 3

ANG:

ΔX () _ _ _ () _ _ _ () _ _ _

ΔY () _ _ _ () _ _ _ () _ _ _

ΔZ () _ _ _ () _ _ _ () _ _ _

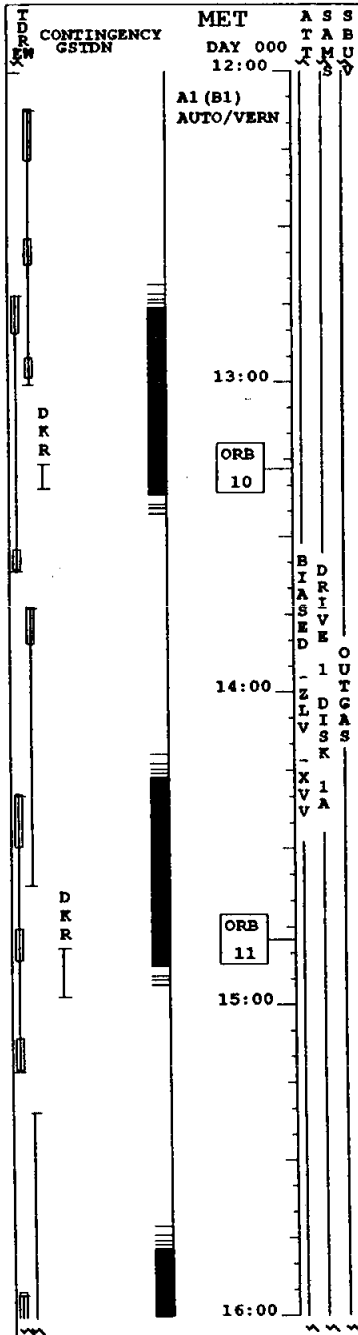
EXECUTION TIME:

_ _ / _ _ : _ _ : _ _

STS-43 (FD 01)

PL

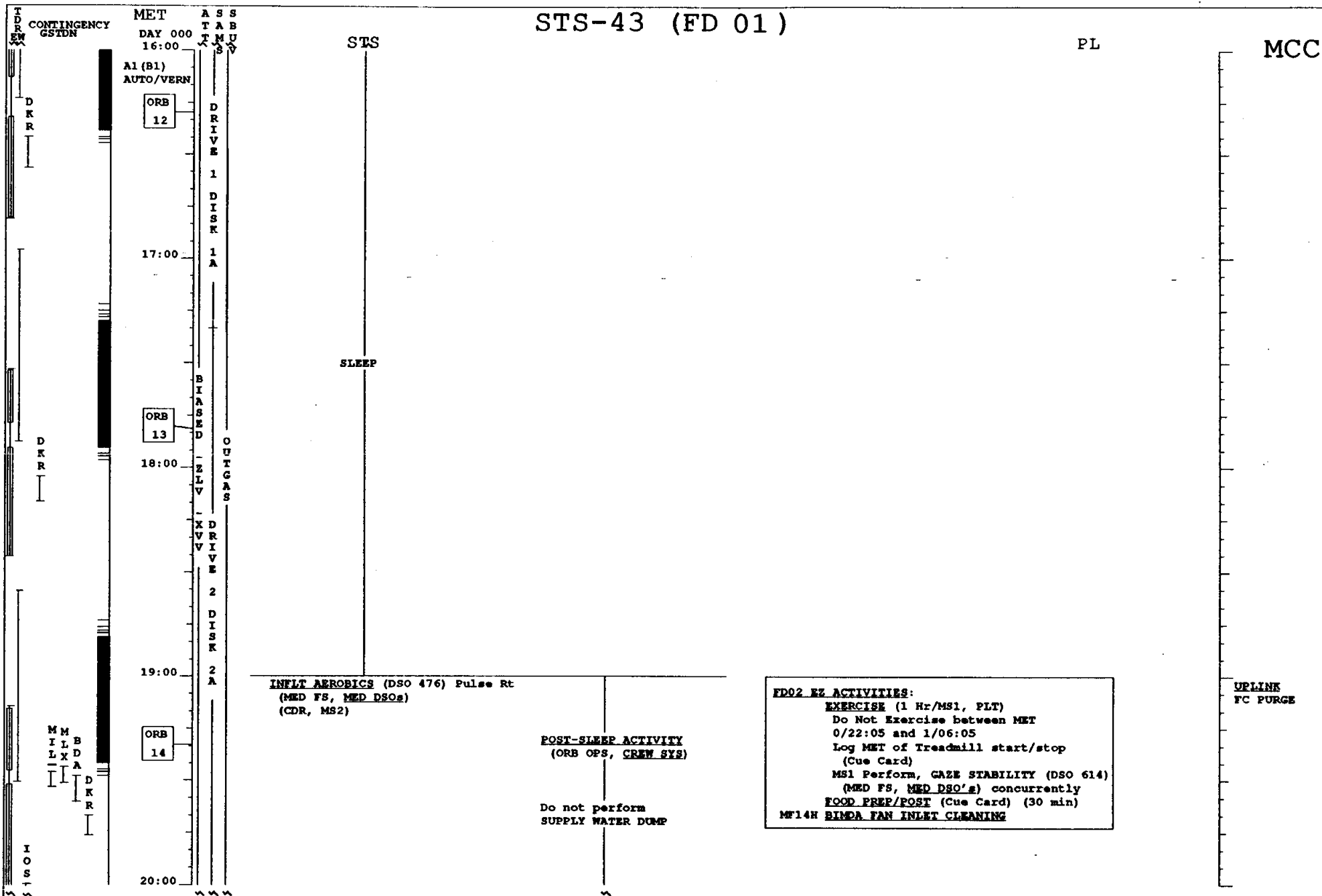
MCC



STS-43 (FD 01)

PL

MCC



STS-43 (FD 02)

CONTINGENCY
GSTDN

MM ILB
LXD A
D K R R
I O S

V AN N I
M M L I D B
X L D A
D K R R
I O S

MET
DAY 000
20:00

A1 (B1)
AUTO/VERN

ORB
15

21:00

ORB
16

22:00

ORB
17

001
00:00

STS

IMU ALIGN LOG
REQD ID:
-Y _____, -Z _____ ANG ERR _____
 1 2 3

ANG:
X () () ()
Y () () ()
Z () () ()

EXECUTION TIME:
_ / _ : _ : _

MNVR IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN (21:45) Init MNVR

IMU ALIGN - S TRK (ORB OPS)
MNVR SOLAR VIEW ATT (-ZSI)
TG-4 BV-3 OM-190
A/AUTO/VERN (22:05) INIT TRK

MNVR EARTH VIEW ATT
TG-2 BV-3 OM-205
A/AUTO/VERN (23:20) Init TRK

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

OUTGAS TERM
(PL OPS, SSBUV)

ACTIVATION
(PL OPS, SSBUV)

P/TV05 SETUP (BIMDA)
(PHOTO/TV, P/TV SCENES)

MDA CLOSE
(PL OPS, SSBUV)
CAL INIT
(PL OPS, SSBUV)
P/TV05 ACT (BIMDA)
(PHOTO/TV, P/TV SCENES)

MM VERIFICATION
(PL OPS, SHARE-II)

CAL TERM
(PL OPS, SSBUV)

SOLAR INIT
(PL OPS, SSBUV)

SOLAR TERM
(PL OPS, SSBUV)

VTR SETUP (05-BIMDA)
(Cue Card, TV/VTR)

PL

TEST BED SETUP
(PL OPS, BIMDA)

CELL SYRINGE OPS step 1
(PL OPS, BIMDA)

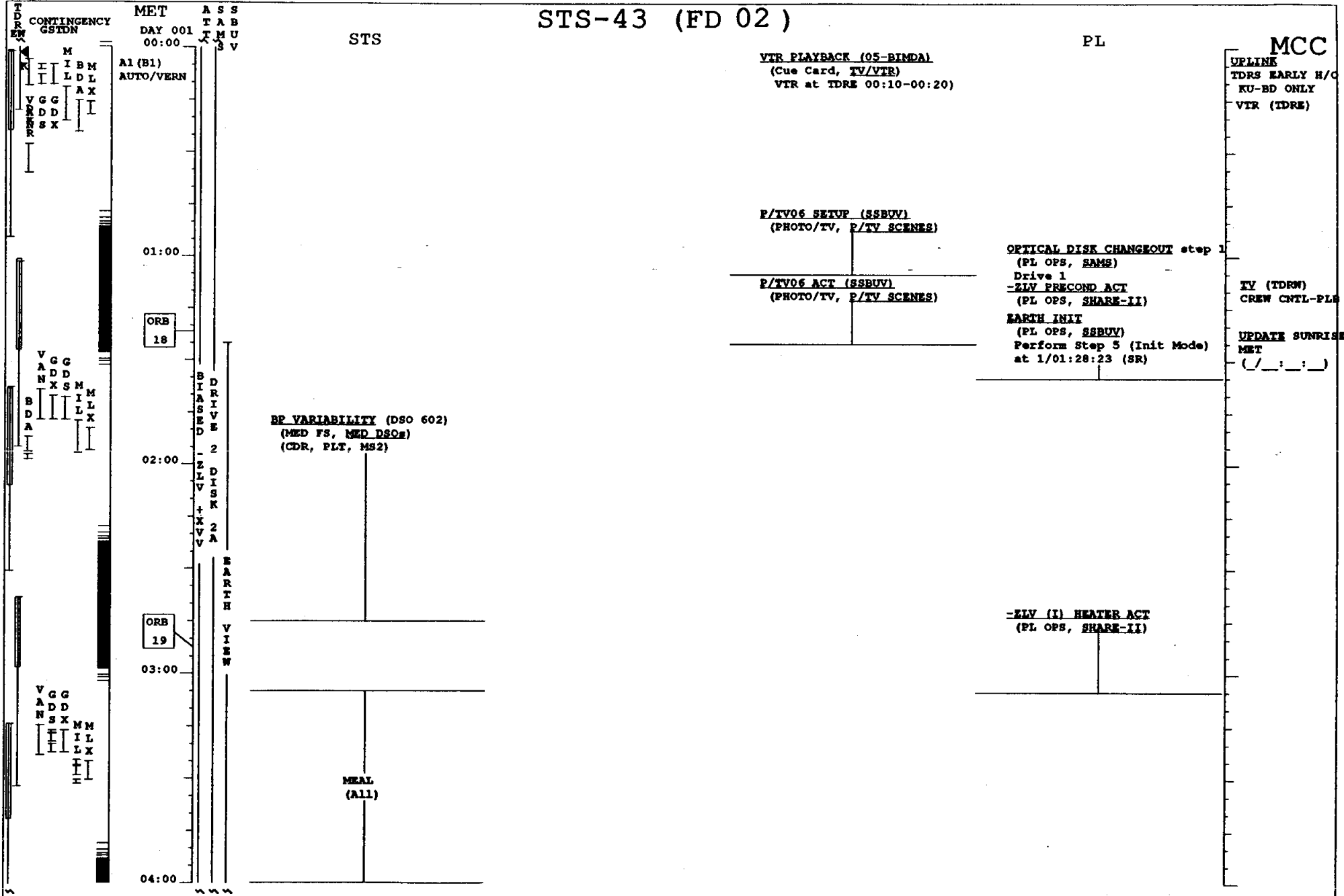
EM OPS step 1
(PL OPS, BIMDA)

MDA OPS step 1
(PL OPS, BIMDA)

UPDATE SUNRISE
MET
(/ : :)

MCC

STS-43 (FD 02)



STS-43 (FD 02)

TIME	CONTINGENCY GSTDN	MET	STS	PL	MCC
04:00		DAY 001 04:00 A1 (B1) AUTO/VERN	<u>FILTER CLEANING</u> (IFM, SCHEDULED MAINTENANCE)		
05:00		ORB 20	<u>CPA OPS (DTO 645)</u> (ORB OPS, CREW SYS)	<u>-ZLV (I) HEATER DEACT</u> (PL OPS, SHARE-II)	
06:00		ORB 21	<u>INFLIGHT AEROBICS (DSO 476)</u> (MED FS, MED DSOs) (CDR, MS2)	<u>-ZLV (II) HEATER ACT</u> (PL OPS, SHARE-II)	
06:00			<u>P/TV05 SETUP (DTO 652)</u> (PHOTO/TV, P/TV SCENES)	<u>PCG TEMP CHECK</u> Check, log PCG temp MET TEMP / : : If temp > 23 deg C or < 21 deg C: /MCC	
06:00			<u>P/TV05 ACT (DTO 652)</u> (PHOTO/TV, P/TV SCENES)		
07:00		ORB 22	<u>PADM SETUP (DTO 799)</u> (ORB OPS FS, MODEM DTO)	<u>OPTICAL DISK CHANGEOUT step 1</u> (PL OPS, SAMS) Drive 2	<u>INFORM CREW</u> GO FOR MODEM OPS
07:00			<u>PRE-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	<u>-ZLV (II) HEATER DEACT step 1</u> (PL OPS, SHARE-II)	<u>UPLINK</u> FC PURGE
08:00			<u>UHF MODE - OFF</u> PRIVATE MEDICAL CONFERENCE		
08:00			<u>UHF MODE - SPKX (or as read)</u>		
08:00			<u>Do not perform</u> SUPPLY WATER DUMP		

STS-43 (FD 02)

PL

MCC

CONTINGENCY GSTDN
MET DAY 001 08:00
A1 (B1) AUTO/VERN
A1 (B5) INRTL/VERN
ORB 23
09:00
A1 (B5) AUTO/VERN
A1 (B1) AUTO/VERN
10:00
ORB 24
11:00
ORB 25
12:00

ASS TAB T MU S
I M U / C O A S
D R I V E R T H
B I A S E D
Z L V
+ X V V

STS
019 /COAS PWR-OFF Mount COAS-AFT

◀ MNVR IMU ALIGN ATT
STAR PAIR (A2)
A/AUTO/VERN (08:30) Init MNVR

IMU ALIGN - S TRK (ORB OPS)
COAS CALIBRATION (ORB OPS)

◀ MNVR EARTH VIEW ATT
TC-2 BV-3 OM-205
A/AUTO/VERN (09:00) Init TRK

Change DAP B to B1

019 /COAS PWR - OFF Stow COAS

IF COAS CAL NOT COMPLETE
* BY 09:10:00, *
* * * * *
* PERFORM ASAP, *
* APC Relay 07 - H to L *
* /Relay 07 - L *
* /MCC * * *

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

SLEEP

-ZLV (II) HEATER DEACT step 2
(PL OPS, SHARE-II)

CELL SYRINGE OPS step 2
(PL OPS, BMDA)
Samples 1-3

VELINK
REFSMAT
NORMALIZATION

IMU ALIGN LOG
REQD ID:
-Y ____ , -Z ____ ANG ERR ____
1 2 3
ANG:
ΔX () ____ () ____ () ____
ΔY () ____ () ____ () ____
ΔZ () ____ () ____ () ____
EXECUTION TIME:
__ / __ : __ : __

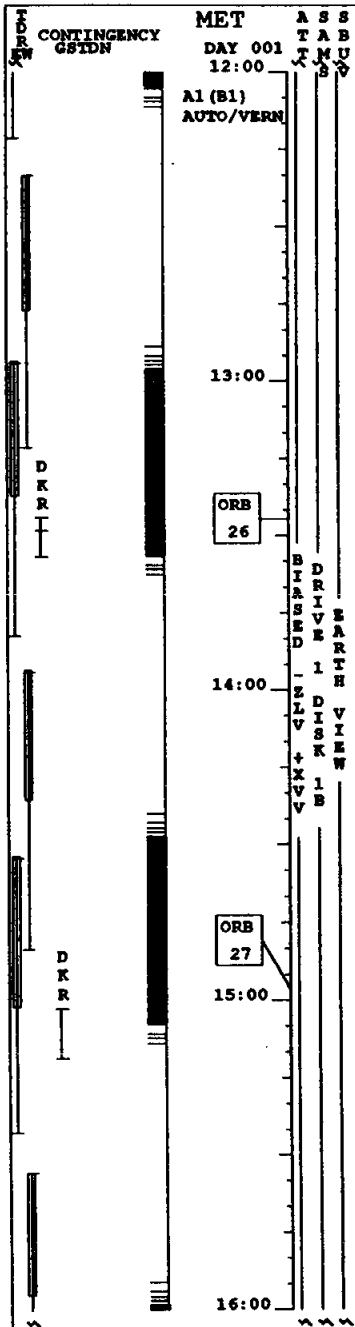
COAS CALIBRATION LOG
STAR ID: -Z 26 , FOMALHAUT
STAR AVAIL: 08:26 TO 09:12
-Z Δ BIAS ____ , ____
UPDATE TIME: __ / __ : __ : __

TV (TDRE/W)
GND CNTL-PLB
SSBUV CLOUDS
COVERAGE &
VIEWS OF
SSBUV SENSORS

STS-43 (FD 02)

PL

MCC



STS

SLEEP

STS-43 (FD 02)

PL

MCC

FORWARD CONTINGENCY GSTDN

MET DAY 001 16:00

A1 (B1) AUTO/VERN

ORB 28

17:00

ORB 29

18:00

B D A D K R R I O S

B D A D K R R

M M I L L X

ORB 30

20:00

ASS TABU

B D R I V E E A R T H

B I A S E D - 1 D I S K W

Z E V + X V B 1 B

STS

SLEEP

INFLT AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSOs)
(CDR, MS2)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

FD03 EZ ACTIVITIES:

- EXERCISE (1 Hr/MS1, PLT)
- MS1 Perform GAZE STABILITY (DSO 614)
(MED FS, MED DSO's) concurrently
- LOG MET of TREADMILL Start/Stop
(Cue Card)
- P/TV05 SETUP/ACT (DTO 652)
(PHOTO/TV, P/TV SCENES)
- FOOD PREP/POST (CUE CARD) (30 min)
- MF14H BIMDA FAN INLET CLEANING

UPLINK
FC PURGE

STS-43 (FD 03)

CONTINGENCY
 GSTDN
 I O S
 I L B
 L X D
 A
 D K R
 I O S
 V A N
 G D D M
 X S I B M
 L L A X
 D K R
 I O S

MET
 DAY 001
 20:00
 A1 (B1)
 AUTO/VERN
 ORB 31
 21:00
 ORB 32
 23:00
 002
 00:00

A S S
 T A B
 T M U
 S
 S
 I M U
 Z S I
 S O L A R
 V I E W
 D R I V E
 2
 D I S K
 2
 B
 C A L
 Z I V
 + Y V V

MNVR IMU ALIGN ATT
 STAR PAIR (A1)
 A/AUTO/VERN (20:25) Init MNVR
IMU ALIGN - S TRK (ORB OPS)
MNVR SOLAR VIEW ATT (-ZSI)
 TG-4 BV-3 OM-190
 A/AUTO/VERN (20:50) INIT TRK

POST-SLEEP ACTIVITY
 (ORB OPS, CREW SYS)
 Do not perform
 SUPPLY WATER DUMP

CELL SYRINGE OPS step 2
 (PL OPS, BIMDA)
 Samples 4-6
BM OPS step 2
 (PL OPS, BIMDA)
 Samples 3-6

PADM PWRDN (DTO 799)
 (ORB OPS FS, MODEM DTO)

LBNE (DSO 478) Setup
 (MED FS, MED DSOs)
 (2 CMW)

MNVR (TRK) -ZIV, +YVV
 TG=2 BV=3 OM=270
 A/AUTO/VERN Init TRK

P/TV05 SETUP (LBNE)
 (PHOTO/TV, P/TV SCENES)

P/TV05 ACT (LBNE)
 (PHOTO/TV, P/TV SCENES)

IMU ALIGN LOG
 REQD ID:
 -Y___, -Z___ ANG ERR ___
 1 2 3
 ANG:
 ΔX () _ _ _ () _ _ _ () _ _ _
 ΔY () _ _ _ () _ _ _ () _ _ _
 ΔZ () _ _ _ () _ _ _ () _ _ _
 EXECUTION TIME:
 _ / _ : _ : _

LBNE (DSO 478) Test Prep
 (MED FS, MED DSOs)

LBNE (DSO 478) Ramp
 (MED FS, MED DSOs)
 (MS2)

Log data on Mac thru test

PL
OPTICAL DISK CHANGEOUT
 (PL OPS, SAMS)
 Drive 2
EARTH TERM
 (PL OPS, SSBUY)

SOLAR INIT
 (PL OPS, SSBUY)

SOLAR TERM
 (PL OPS, SSBUY)

CAL INIT
 (PL OPS, SSBUY)

PCG FAN INLET CLEANING/TEMP CK
 / Inlet fan screen, clean if req'd
 Check, log PCG temp
 MET TEMP
 _ / _ : _ : _
 If temp > 23 deg or < 21 deg C: MCC

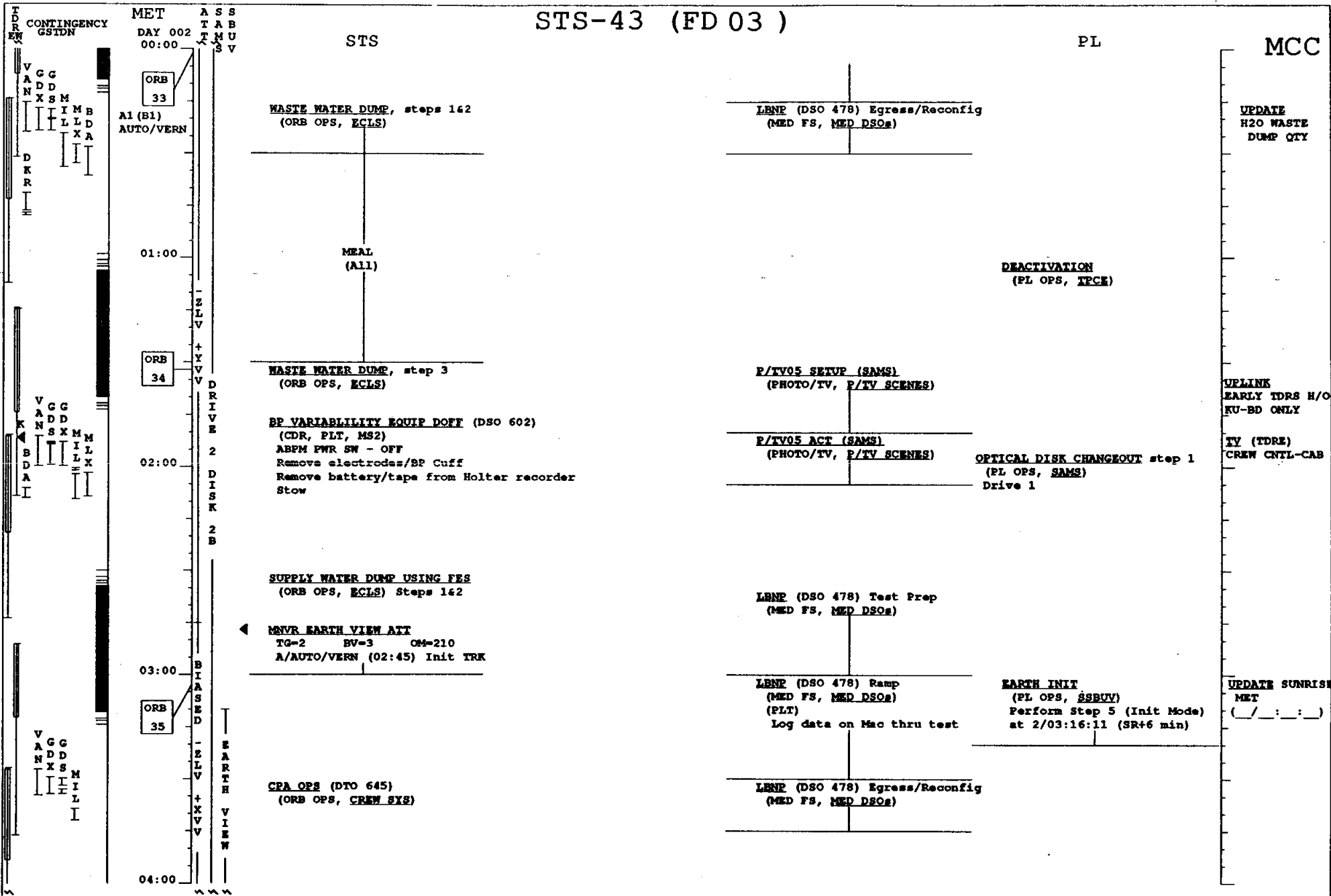
CAL TERM
 (PL OPS, SSBUY)

MCC

UPDATE SUNRISE
 MET
 (_ / _ : _ : _)

TV (TDRE)
 CREW CNTL-CAB

STS-43 (FD 03)



STS-43 (FD 03)

PL

MCC

CONTINGENCY
GSTDN

MET
DAY 002
04:00

ASS
TAB
JMU
S

STS
INFLIGHT AEROBICS (DSO 476)
(MED FS, MED DSOs)
(CDR, MS2)

ORB 36

05:00

ORB 37

06:00

ORB 38

07:00

08:00

VAN I O S

B I A S E D

D R I V E

E A R T H

D I S K

2 B

I M U

MAC MODEM (DTO 1208)
(ORB OPS FS, MAC MODEM)

PCG TEMP CHECK
Check, log PCG temp
MET TEMP
If temp > 23 deg C or < 21 deg C: MCC

OPTICAL DISK CHANGEOUT
(PL OPS, SAME)
Drive 1

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

UHF MODE - SPLX (or as reqd)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

◀ **MNVR IMU ALIGN ATT**
STAR PAIR (A2)
A/AUTO/VERN (07:10) Init MNVR

IMU ALIGN - S TRK (ORB OPS)

◀ **MNVR EARTH VIEW ATT**
TG-2 BV-3 OM-210
A/AUTO/VERN (07:35) Init TRK

IF IMU ALIGN NOT COMPLETE
* BY 07:53,
*
* PERFORM ASAP,
* APC Relay 07 - H to L
* /Relay 07 - L
* /MCC

IMU ALIGN LOG
REQD ID:

-Y __, -X __ ANG ERR __. __.

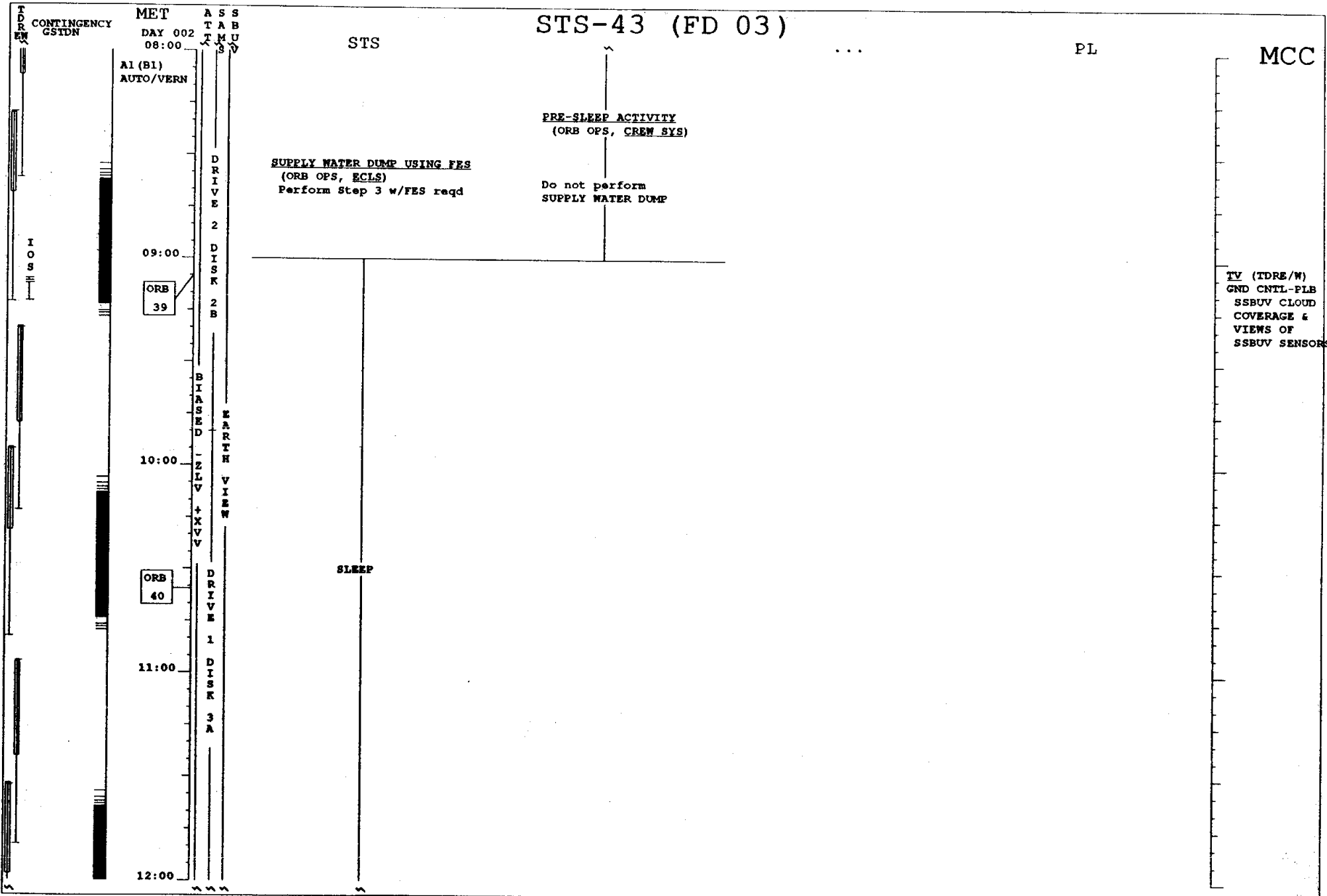
1 2 3

ANG:
ΔX () . . . () . . . () . . .
ΔY () . . . () . . . () . . .
ΔZ () . . . () . . . () . . .

EXECUTION TIME:
_ / _ : _ : _

INFORM CREW
GO FOR MODEM
OPS

UPLINE
FC PURGE



STS-43 (FD 03)

PL

MCC

CONTINGENCY
GSTDN

MET
DAY 002
12:00

ASS
TAB
T
J
M
U
S
V

ORB 41
A1 (B1)
AUTO/VERN

13:00

ORB 42
DRIVE
BIAS
D

14:00
EARTH
DIVISION
DISK
3
A
+
X
V
V

15:00

ORB 43

16:00

DKR

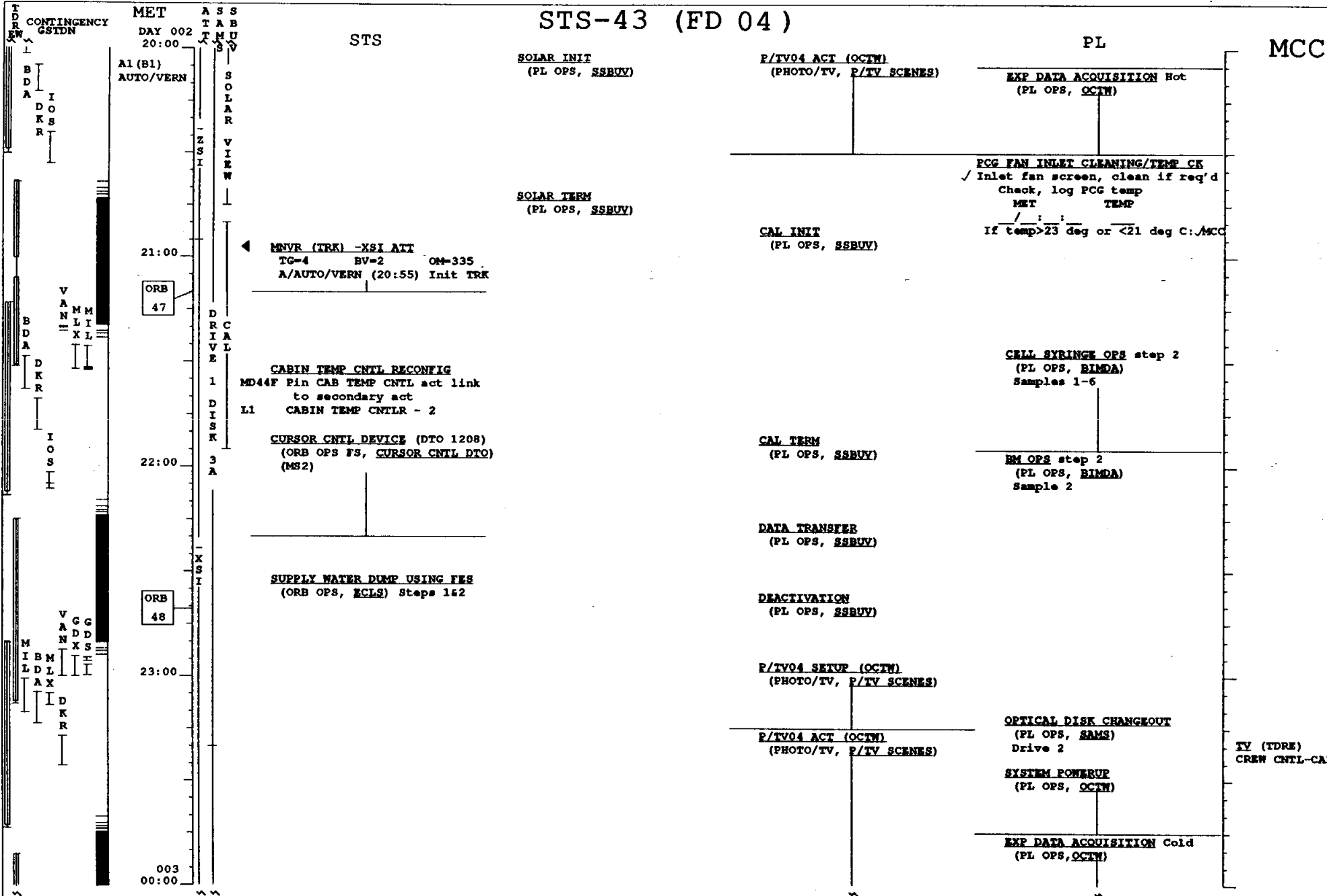
DKRR

DKRR

STS

SLEEP

STS-43 (FD 04)



STS

SOLAR INIT
(PL OPS, SSBUV)

P/TVO4 ACT (OCTN)
(PHOTO/TV, P/TV SCENES)

PL

MCC

EXP DATA ACQUISITION Hot
(PL OPS, OCTN)

SOLAR TERM
(PL OPS, SSBUV)

PCG FAN INLET CLEANING/TEMP CK
✓ Inlet fan screen, clean if req'd
Check, log PCG temp
MET TEMP
If temp > 23 deg or < 21 deg C: MCC

← **MNVN (TRK) -XSI ATT**
TG-4 BV-2 OM-335
A/AUTO/VERN (20:55) Init TRK

CAL INIT
(PL OPS, SSBUV)

CELL SYRINGE OPS step 2
(PL OPS, BIMDA)
Samples 1-6

CABIN TEMP CNTL RECONFIG
MD44F Pin CAB TEMP CNTL act link
to secondary act
L1 CABIN TEMP CNTLR - 2

CAL TERM
(PL OPS, SSBUV)

RM OPS step 2
(PL OPS, BIMDA)
Sample 2

CURSOR CNTL DEVICE (DIO 1208)
(ORB OPS FS, CURSOR CNTL DIO)
(MS2)

DATA TRANSFER
(PL OPS, SSBUV)

SUPPLY WATER DUMP USING FES
(ORB OPS, ECL2) Steps 1&2

DEACTIVATION
(PL OPS, SSBUV)

P/TVO4 SETUP (OCTN)
(PHOTO/TV, P/TV SCENES)

OPTICAL DISK CHANGEOUT
(PL OPS, SAMS)
Drive 2

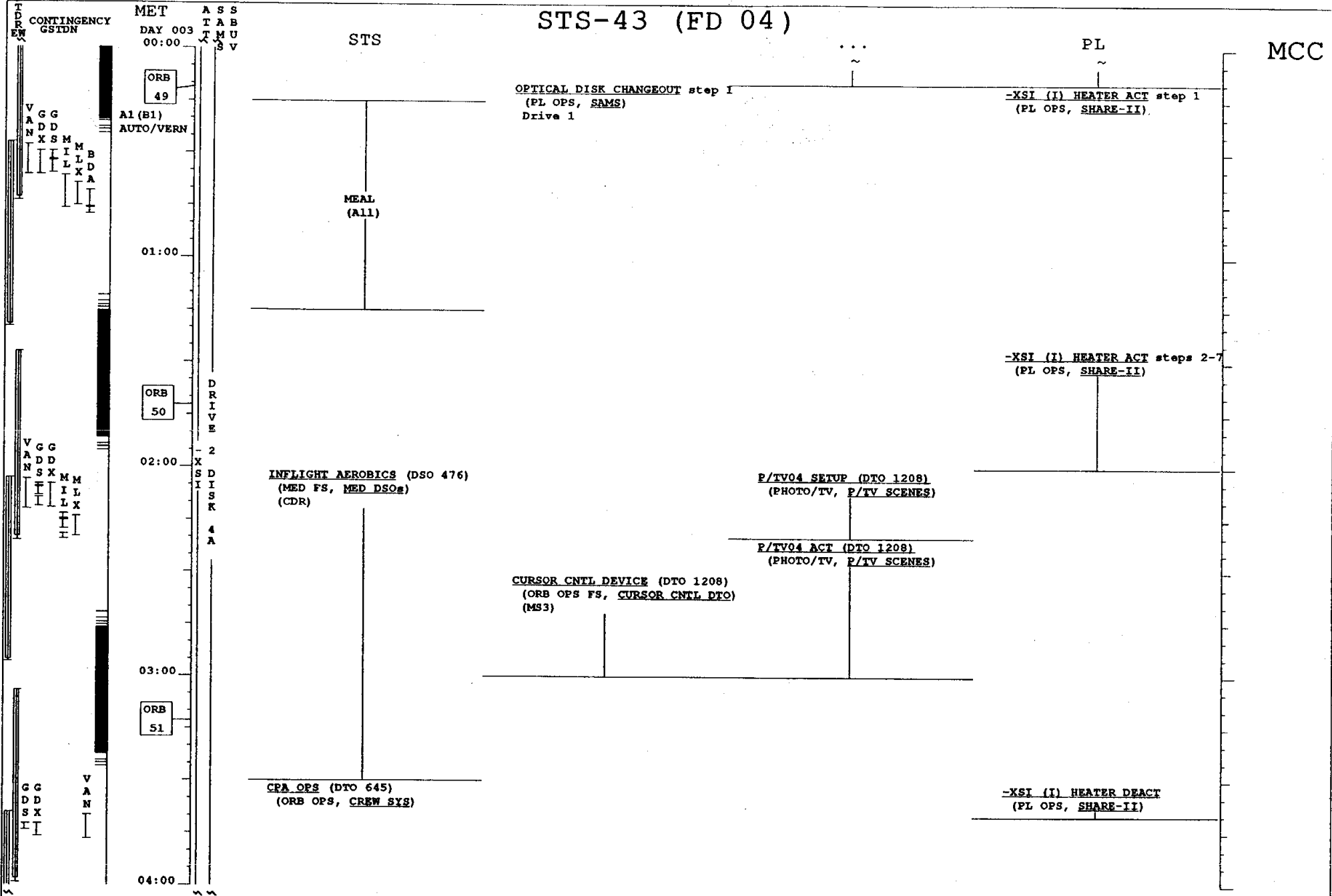
P/TVO4 ACT (OCTN)
(PHOTO/TV, P/TV SCENES)

SYSTEM POWERUP
(PL OPS, OCTN)

EXP DATA ACQUISITION Cold
(PL OPS, OCTN)

TY (TDRE)
CREW CNTL-CAB

STS-43 (FD 04)



MET
DAY 003
00:00

ORB
49

A1 (B1)
AUTO/VERN

01:00

ORB
50

02:00

03:00

ORB
51

04:00

STS

MEAL
(All)

INFLIGHT AEROBICS (DSO 476)
(MED FS, MED DSOg)
(CDR)

CURSOR CNTL DEVICE (DTO 1208)
(ORB OPS FS, CURSOR CNTL DTO)
(MS3)

CRA OPS (DTO 645)
(ORB OPS, CREW SYS)

OPTICAL DISK CHANGEOUT step I
(PL OPS, SAMS)
Drive 1

P/TV04 SETUP (DTO 1208)
(PHOTO/TV, P/TV SCENES)

P/TV04 ACT (DTO 1208)
(PHOTO/TV, P/TV SCENES)

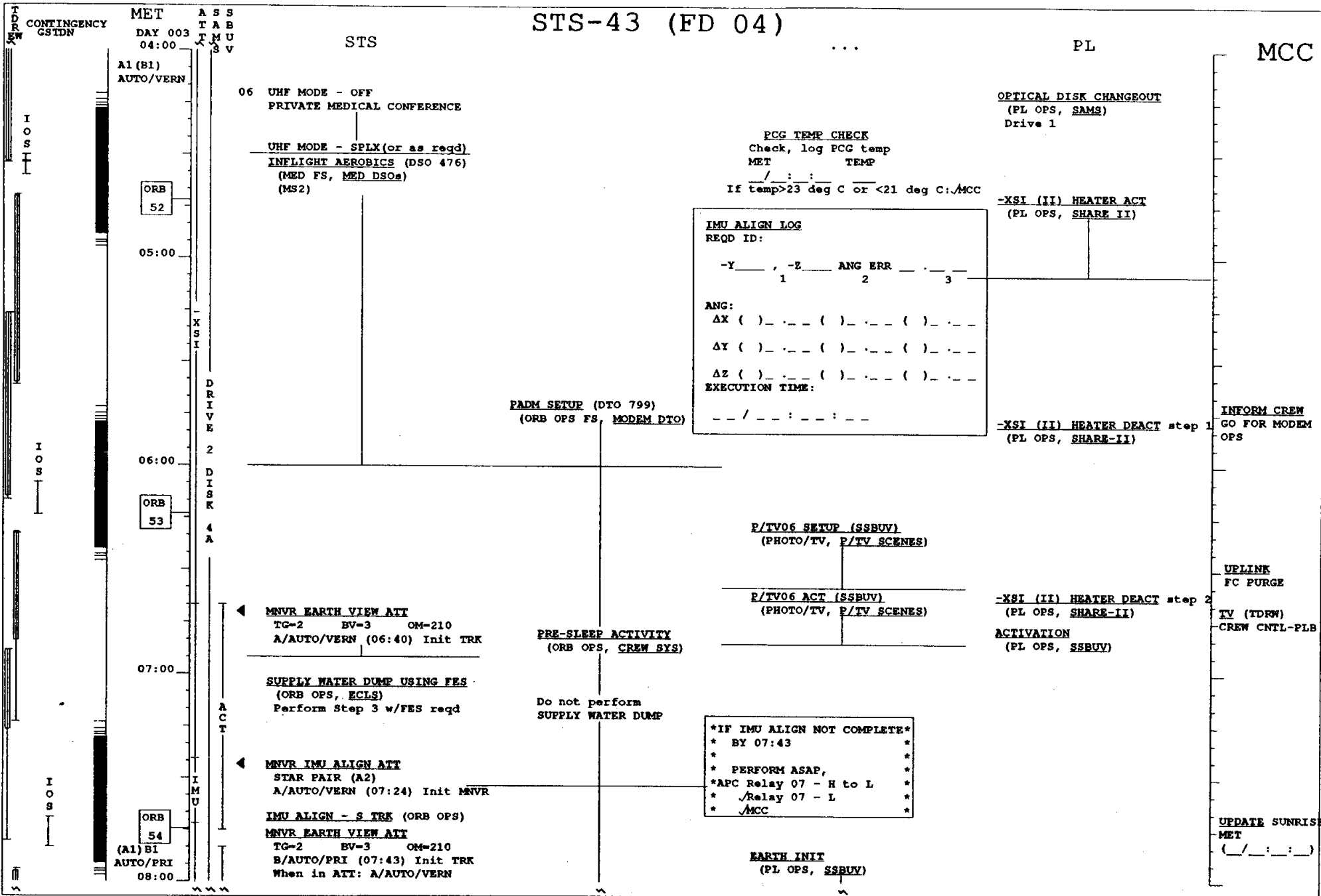
PL

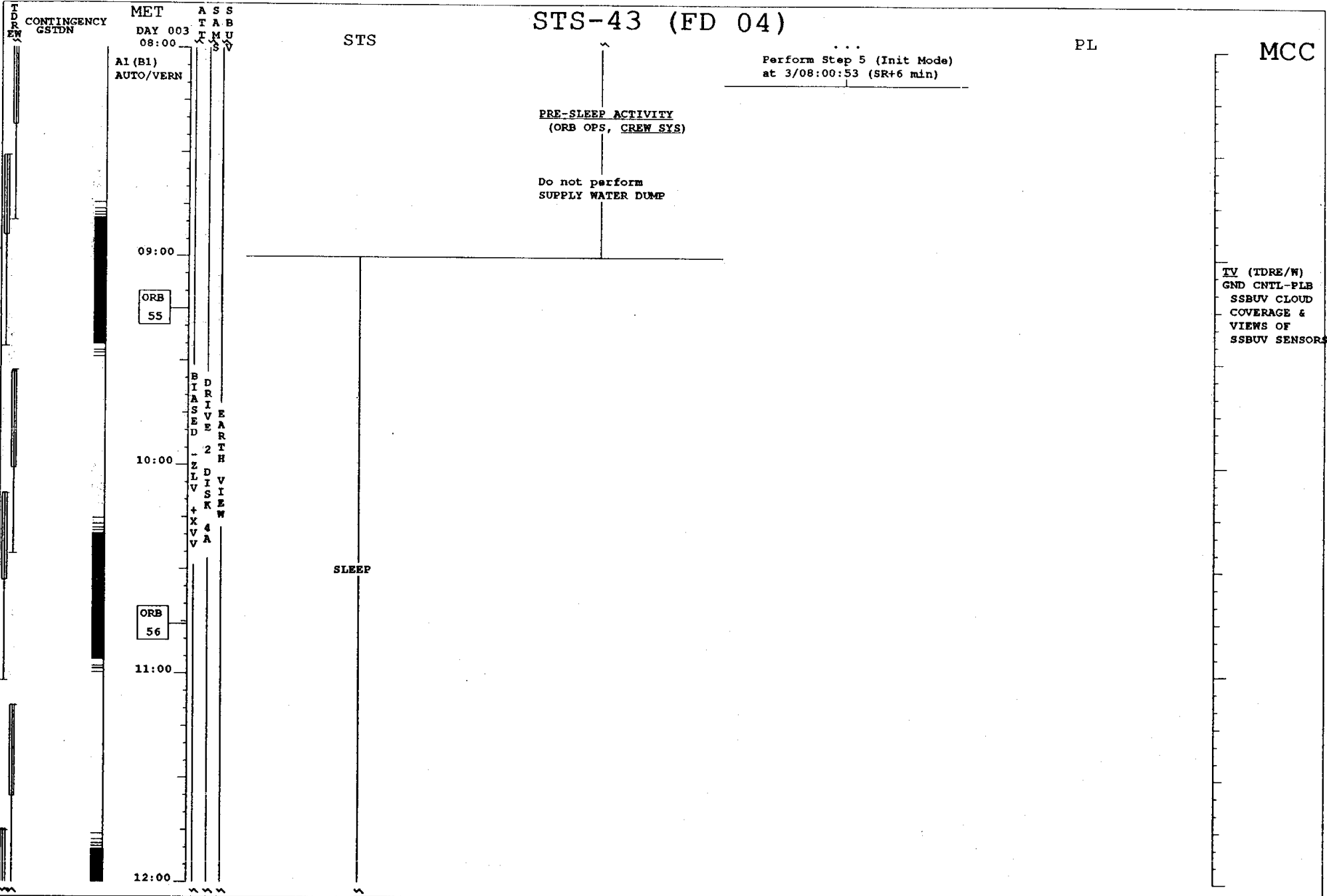
-XSI (I) HEATER ACT step 1
(PL OPS, SHARE-II)

-XSI (I) HEATER ACT steps 2-7
(PL OPS, SHARE-II)

-XSI (I) HEATER DEACT
(PL OPS, SHARE-II)

MCC

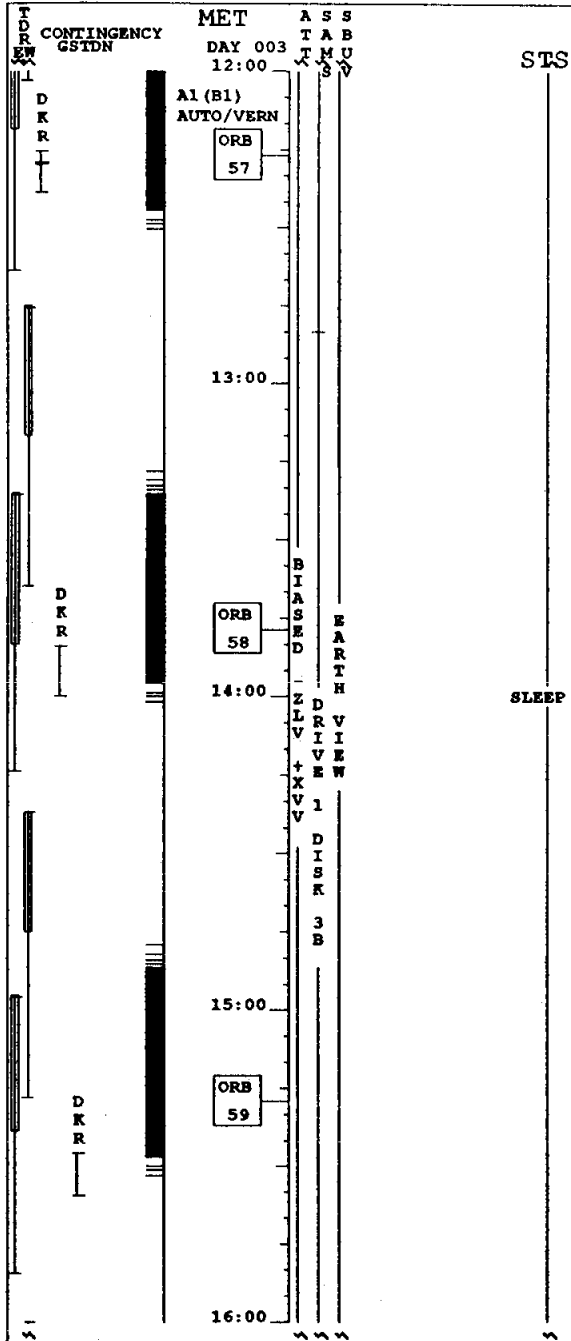




STS-43 (FD 04)

PL

MCC



STS-43 (FD 04)

PL

MCC

CONTINGENCY
GSTDN

MET
DAY 003
16:00

A1 (B1)
AUTO/VERN

ORB 60

17:00

ZLV

+XVVV

DRIVE
EARTH
DIVISION

18:00

ORB 61

A1 (B1)
AUTO/VERN

19:00

ZLV

+XVVV

ORB 62

20:00

L1

ASS TAB
T M U
S Y

B D A
D K R R

I O S

M M
I L B
L X D
A

D K R R

I O S

B I A S E D

B I A S E D

B I A S E D

STS

SLEEP

INFLT AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSOs)
(CDR, MS2)

MNVR IMU ALIGN ATT
STAR PAIR (A2)
A/AUTO/VERN (18:00) Init MNVR

IMU ALIGN - S TRK (ORB OPS)

MNVR EARTH VIEW ATT
TC=2 BV=3 OM=210
A/AUTO/VERN (18:25) Init TRK

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

IF IMU ALIGN NOT COMPLETE
* BY 18:41 *
* * * * *
* PERFORM ASAP, *
*APC Relay 07 - H to L *
* /Relay 07 - L *
* /MCC *
* * * * *

√HUM SEPs for H2O
accumulation, then
HUMIDITY SEP RECONFIG
L1 HUMIDITY SEP B - OFF
A - ON

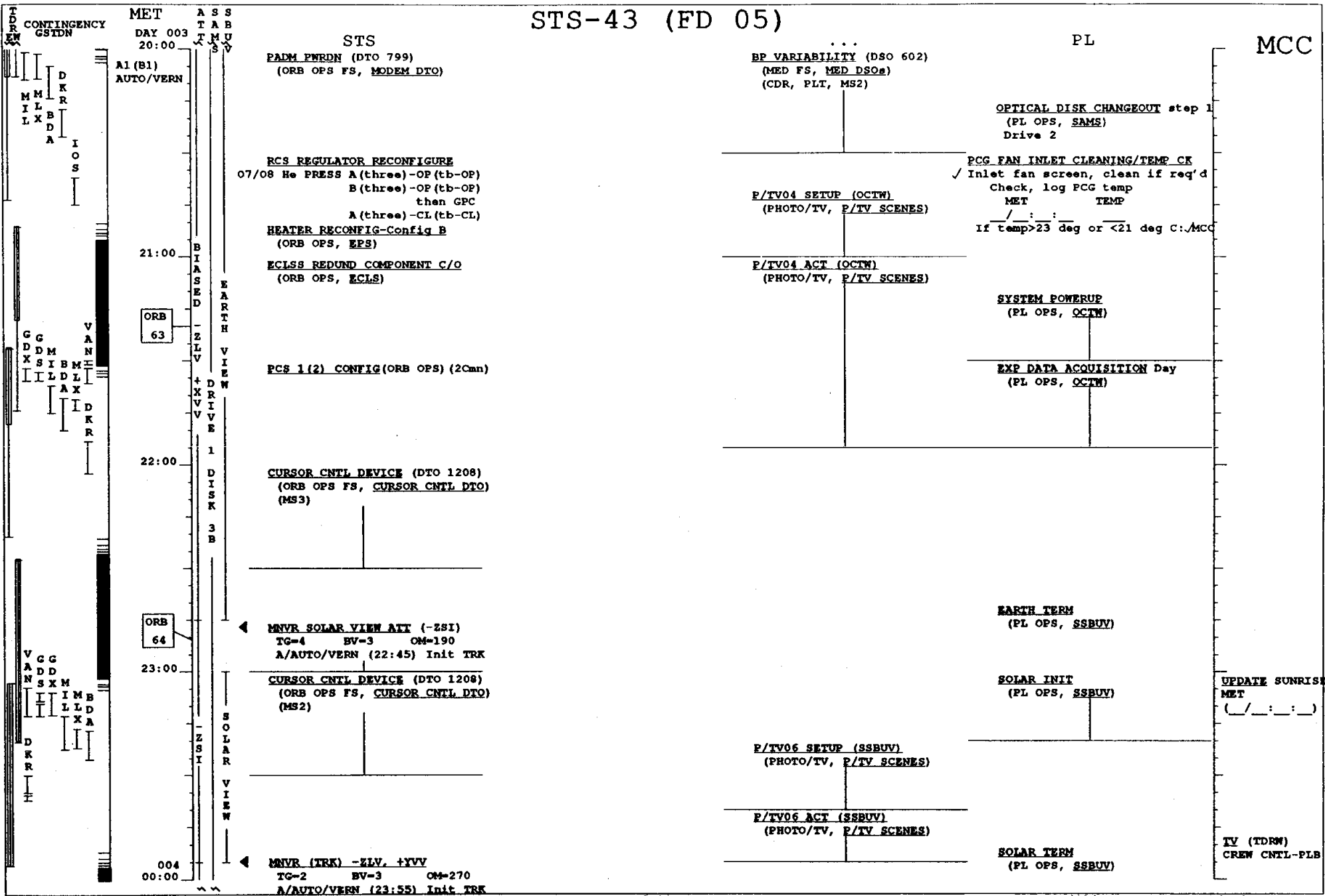
FD05 EZ ACTIVITIES:
EXERCISE (1 Hr/MS1, PLT)
MS1 Perform GAZE STABILITY (DSO 614)
(MED FS, MED DSOs) concurrently
Log MET of TREADMILL Start/Stop
(Cue Card)
FOOD PREP/POST (Cue Card) (30 Min)
MF14H BMDA FAN INLET CLEANING

IMU ALIGN LOG
REQD ID:
-Y___, -Z___ ANG ERR ___ . ___
1 2 3
ANG:
ΔX () _ _ _ () _ _ _ () _ _ _
ΔY () _ _ _ () _ _ _ () _ _ _
ΔZ () _ _ _ () _ _ _ () _ _ _
EXECUTION TIME:
_ _ / _ _ : _ _ : _ _

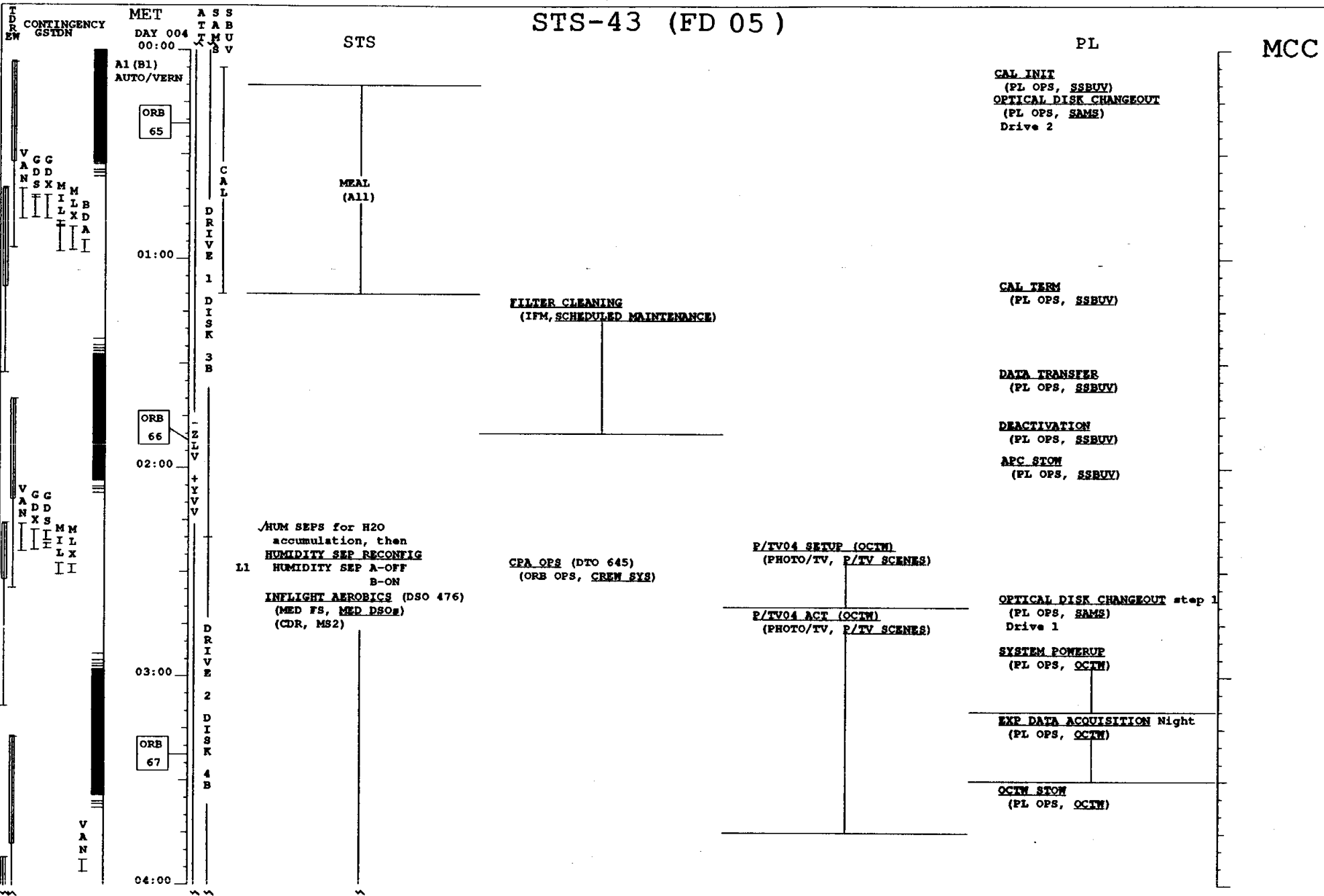
BP VARIABILITY (DSO 602)
(MED FS, MED DSOs)
(CDR, PLT, MS2)

UPLINK
FC BURGE

STS-43 (FD 05)



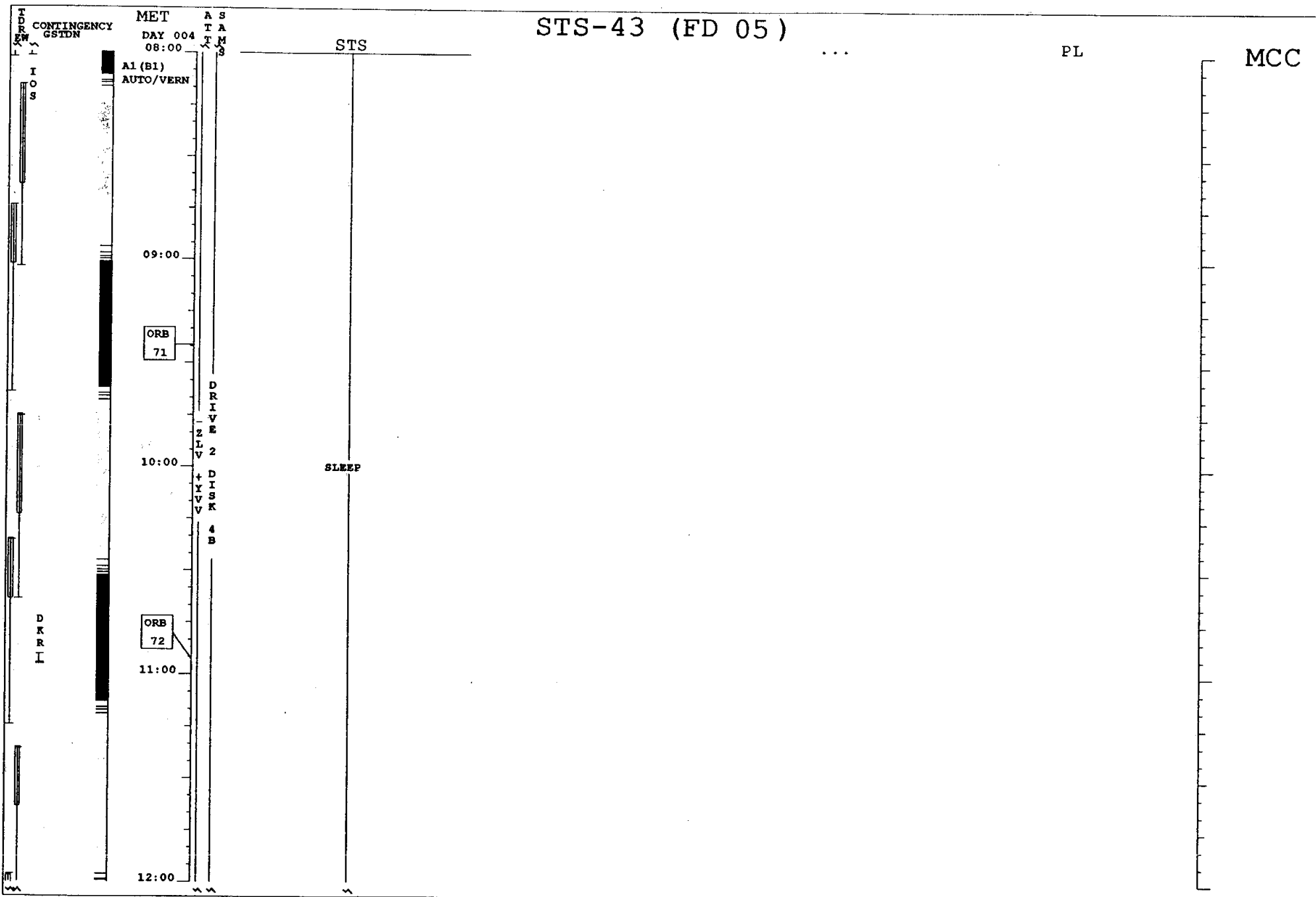
STS-43 (FD 05)



STS-43 (FD 05)

PL

MCC



STS-43 (FD 05)

PL

MCC

TD
R
EW

CONTINGENCY
GSDN

MET
DAY 004
12:00

A1 (B1)
AUTO/VERN

ORB
73

13:00

ORB
74

14:00

ORB
75

15:00

16:00

DRIVE
ZLV
DISK
+YVV
4B

DRR

DRR

DRR

AS
TA
TM
S

STS

SLEEP

STS-43 (FD 06)

PL

MCC

CONTINGENCY
GSTDN

MET DAY 004
16:00

A1 (B1)
AUTO/VERN

ORB 76

17:00

ORB 77

18:00

A10 (B1)
AUTO/VERN

19:00

LVLH/VERN
FREE/VERN

A10 (B1)
AUTO/VERN

ORB 78

A11 (B1)
20:00

AS
TAMS

ZLV
+YVV
-ZLV
+YVV

DRIVE
1
ID
MISK
5
A

MMB
LXLA
D
KRR
I
OOS

MLB
XDA
D
KRR
I
OOS

MIL

STS
INFLT AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSOs)
(CDR, MS2)

FD06 EZ ACTIVITIES:
EXERCISE (1 Hr/MS1, PLT)
MS1 Perform GAZE STABILITY (DSO 614)
(MED FS, MED DSO's) concurrently
Log MET of TREADMILL Start/Stop
(Cue Card)
FOOD PREP/POST (Cue Card) (30 Min)
MF14H BIMDA FAN INLET CLEANING

IMU ALIGN LOG
REQD ID:
-Y____, -Z____ ANG ERR ____
 1 2 3
ANG:
ΔX () _ _ _ () _ _ _ () _ _ _
ΔY () _ _ _ () _ _ _ () _ _ _
ΔZ () _ _ _ () _ _ _ () _ _ _
EXECUTION TIME:
_ / _ : _ : _

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do FC PURGE MANUAL (CUE CARD)

18:00
MNVN IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNVN at 17:55

IMU ALIGN - S TRK (ORB OPS)
MNVN (TRK) -ZLV, +YVV
TG-2 BV-3 OM-270
A/AUTO/VERN (18:15) Init TRK

MDA OPS step 2
(PL OPS, BIMDA)
Unit 3

HPRS DEPRIME HEATER ACT
(PL OPS, SHARE-II)

OPTICAL DISK CHANGEOUT step 1
(PL OPS, SAMS)
Drive 2

2 SEC X AXIS BURN

PCG FAN INLET CLEANING/TEMP CK
✓ Inlet fan screen, clean if req'd
Check, log PCG temp
MET TEMP
_ / _ : _ : _
If temp > 23 deg or < 21 deg C: MCC

P/TV05 SETUP (IPMP)
(PHOTO/TV, P/TV SCENES)

CURSOR CNTL DEVICE (DTO 1208)
(ORB OPS FS, CURSOR CNTL DTO)
(MS2)

P/TV05 ACT (IPMP)
(PHOTO/TV, P/TV SCENES)

8 SEC X AXIS BURN

TV (TDRW)
CREW CNTL-CAB

STS-43 (FD 06)

CONTINGENCY
GSTDN

MET
DAY 004
20:00

AS TAMS

M M L I B D A
- K L D A
V A N I I
D K R R

I O S S

21:00

ORB 79

V A D D X S M M I L L X
N N X S S I L L X
D K R R

22:00

5 A

A1 (B1)
AUTO/VERN

23:00
(A1) B2
LVLH/PRI

ORB 80

A1 (B1)
AUTO/VERN

V A D D X S M M I L L X
N N X S S I L L X
D K R R

005
00:00

STS
~

IPMP ACTIVATION
(PL OPS, IPME)

P/TV05 ACT (IPME)
(PHOTO/TV, P/TV SCENES)

PL
HPRS DEPRIME HEATER ACT
(PL OPS, SHARE-II)
STEP 7

MCC
TV (TDRW)
CREW CNTL-CAB

BP VARIABILITY EQUIP DOFF (DSO 602)
(CDR, PLT, MS2)
ABPM PWR SW - OFF
Remove electrodes/BP Cuff
Remove battery/tape from Holter recorder
Stow

STEPS 8-12

BM OFF step 1
(PL OPS, BIMDA)
Sample 1

CURSOR CNTL DEVICE (DTO 1208)
(ORB OPS FS, CURSOR CNTL DTO)
(MS3)

P/TV05 SETUP (SSCE)
(PHOTO/TV, P/TV SCENES)

STEP 13

Config DAP A to A1
MNVR (TRK) -ZLV, +XVY
TC-2 BV-3 OM-180
A/AUTO/VERN Init TRK

← **AMOS RCS TEST**
(ORB OPS, AMOS)
TCA: 4/23:10:00
Change DAP B to B1
MNVR (TRK) -ZLV, +XVY
TC-2 BV-3 OM-270
A/AUTO/VERN Init TRK

MEAL
(All)

OPTICAL DISK CHANGEOUT
(PL OPS, SAMS)
Drive 2

UPDATE (TDRW)
AMOS TCA
(/ : :)

STS-43 (FD 06)

PL

MCC

CONTINGENCY GSTDN

MET DAY 005 00:00

ASATMS

DRIVE

DISK

5A

ORB 81

ORB 82

ORB 83

GGDDXMM

VANSX

GGDDXS

I O S I

01:00

02:00

03:00

04:00

STS

MEAL (All)

DAP: FREE UPON SSCE TEST COMPLETION A1/AUTO/VERN

CPA OPS (DTO 645) (ORB OPS, CREW SYS)

MNVR (TRK) +ZLV -XVV
 TG-2 BV-5
 P-270 Y-0 OM-180
 A/AUTO/VERN (01:30) Init TRK
APE-B RCS TEST (PL OPS, APE-B)

APE-B RCS TEST (PL OPS, APE-B)

MNVR (TRK) -ZLV +YVV
 TG-2 BV-3 OM-270
 A/AUTO/VERN Init TRK

INFLIGHT AEROBICS (DSO 476) (MED FS, MED DSO) (CDR, MS2)

PADM SETUP (DTO 799) (ORB OPS FS, MODEM DTO)

P/TV05 ACT (SSCE) (PHOTO/TV, P/TV SCENES)

SSCE ACTIVATION (PL OPS, SSCE)

P/TV07 SETUP (APE-B) (PHOTO/TV, P/TV SCENES) Spectroscopy Setup

P/TV07 ACT (APE-B) Procedure 4 (PHOTO/TV, P/TV SCENES) Farfield

P/TV07 ACT (APE-B) Procedure 4 (PHOTO/TV, P/TV SCENES) Farfield

P/TV07 STOW (APE-B) (PHOTO/TV, P/TV SCENES)

PCG TEMP CHECK
 Check, log PCG temp
 MET TEMP
 If temp > 23 deg C or < 21 deg C: MCC

TV (TDRW) CREW CNTRL-CAB

INFORM CREW GO FOR MODEM OPS

TDR EN
CONTINGENCY
GSTDN

MET
DAY 005
04:00

A S
T A
T M
S

STS-43 (FD 06)

PL

MCC

A1 (B1)
AUTO/VERN

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

UHF MODE - SPLX (or as reqd)

Z L V
D R V
V I E
+ Y V
V V
1
D I S
K
I M U

MNVR IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNVR at 55

05:00

ORB
84

IMU ALIGN - S TRK (ORB OPS)
MNVR (TRK) -ZLV, +YVV
TC=2 BV=3 OM=270
A/AUTO/VERN Init TRK

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

IMU ALIGN LOG
REQD ID:

-Y____, -Z____ ANG ERR ____

1 2 3

ANG:

ΔX () () () ()

ΔY () () () ()

ΔZ () () () ()

EXECUTION TIME:

___/___:___:___

OPTICAL DISK CHANGEOUT step 1
(PL OPS, SAMS)
Drive 1

06:00

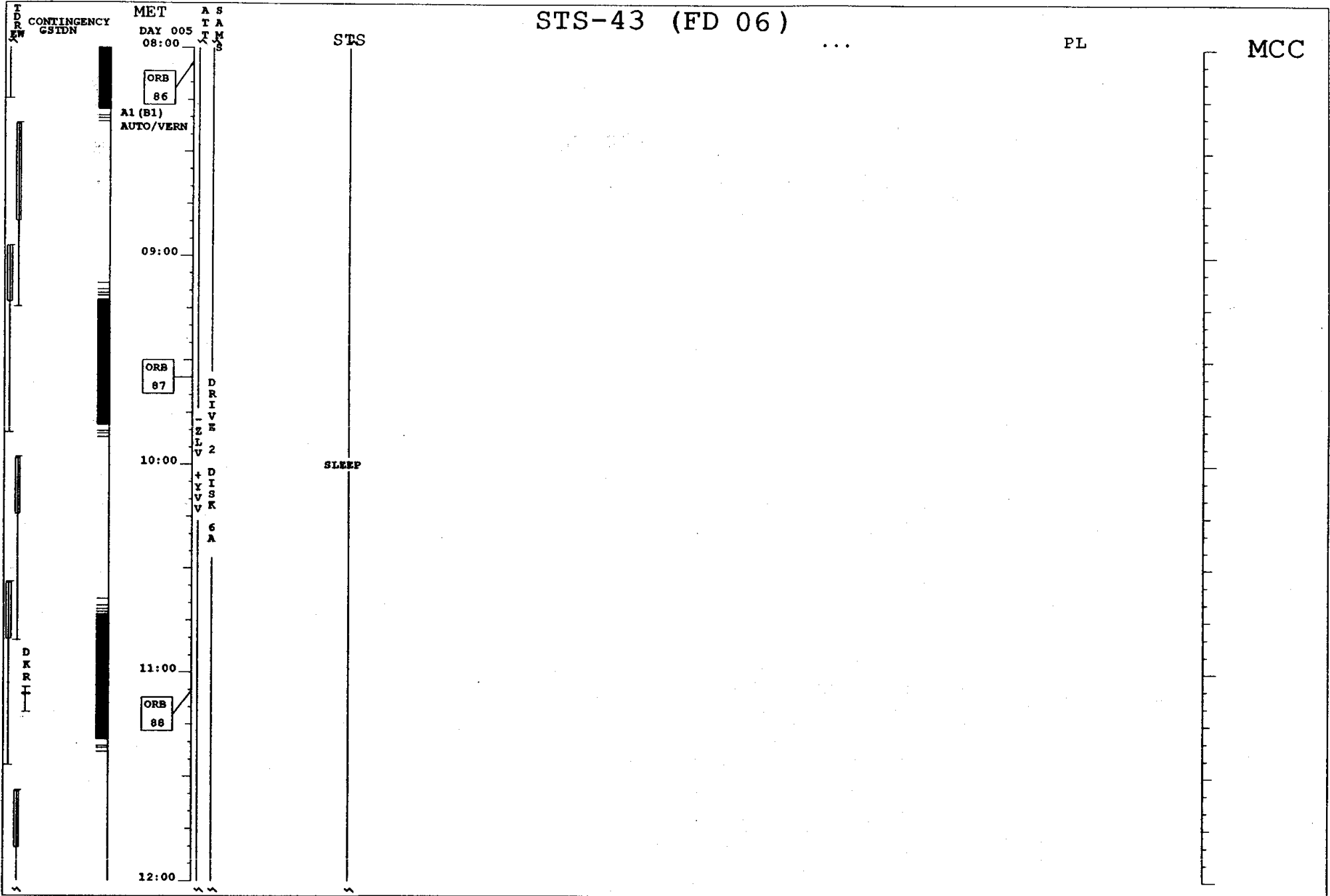
ORB
85

Z L V
D R V
V I E
+ Y V
V V
2
D I S
K
I M U

07:00

SLEEP

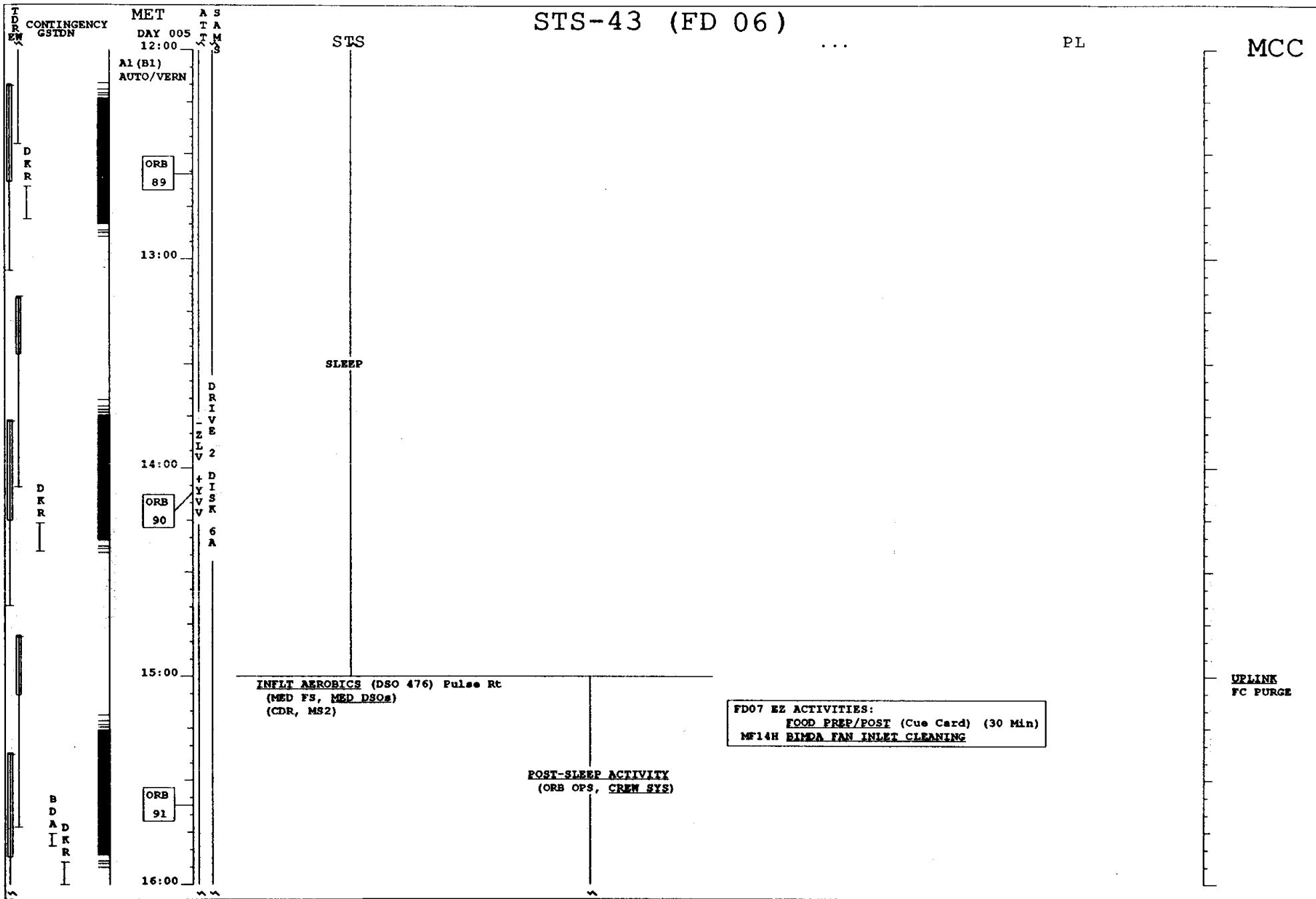
08:00

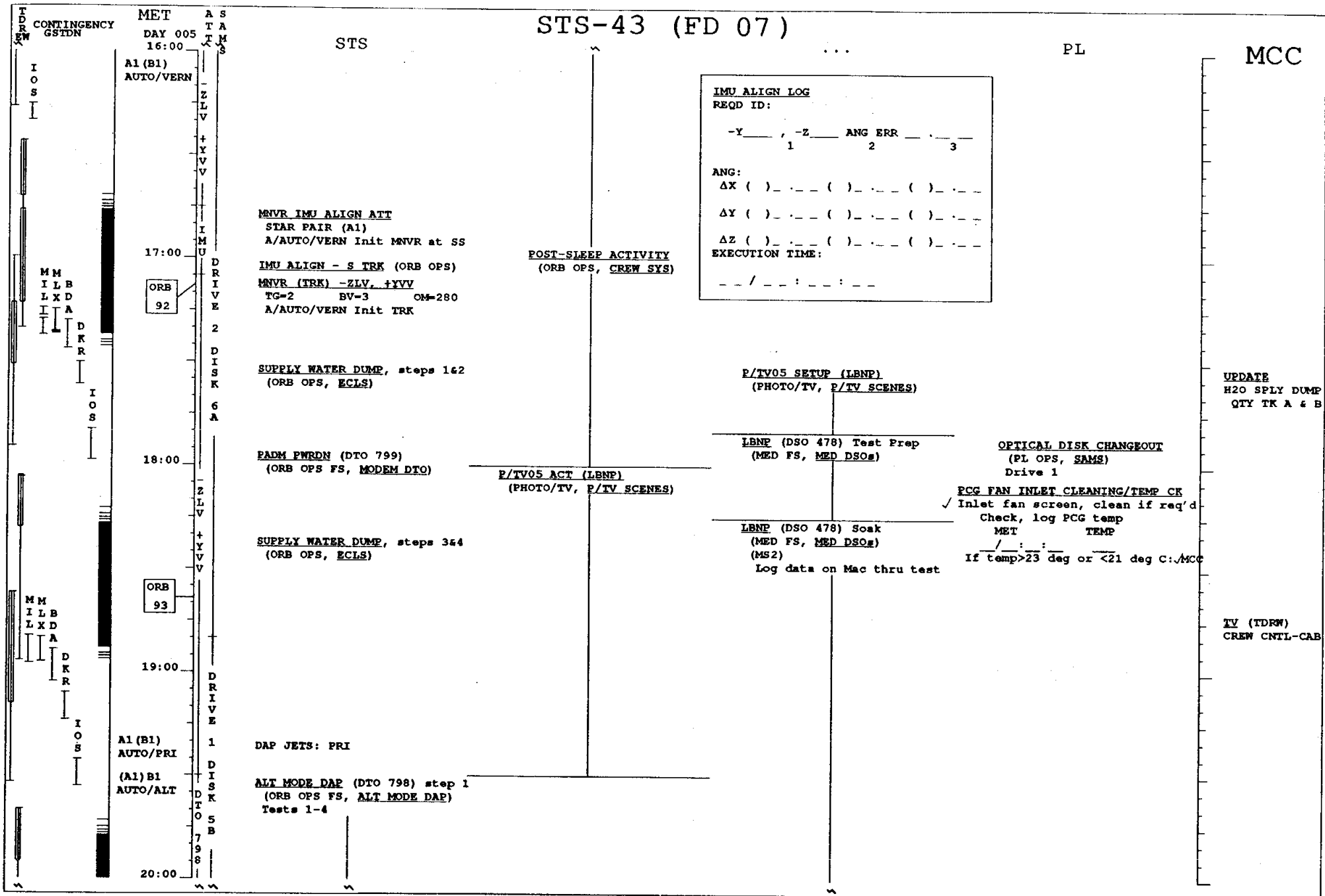


STS-43 (FD 06)

PL

MCC





STS-43 (FD 07)

STS

PL

MCC

MET DAY 005
16:00

A1 (B1)
AUTO/VERN

17:00

ORB 92

18:00

ORB 93

19:00

A1 (B1)
AUTO/PRI

(A1) B1
AUTO/ALT

20:00

MNRV IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNRV at SS

IMU ALIGN - S TRK (ORB OPS)
MNRV (TRK) -ZLV, +YV
TG-2 BV-3 OM-280
A/AUTO/VERN Init TRK

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SUPPLY WATER DUMP, steps 1&2
(ORB OPS, ECLS)

PADM PWRDN (DTO 799)
(ORB OPS FS, MODEM DTO)

SUPPLY WATER DUMP, steps 3&4
(ORB OPS, ECLS)

DAP JETS: PRI

ALT MODE DAP (DTO 798) step 1
(ORB OPS FS, ALT MODE DAP)
Tests 1-4

IMU ALIGN LOG
REQD ID:

-Y____, -Z____ ANG ERR ____
 1 2 3

ANG:
ΔX () _ _ _ () _ _ _ () _ _ _
ΔY () _ _ _ () _ _ _ () _ _ _
ΔZ () _ _ _ () _ _ _ () _ _ _
EXECUTION TIME:
_ _ / _ _ : _ _ : _ _

P/TV05 SETUP (LBNP)
(PHOTO/TV, P/TV SCENES)

LBNP (DSO 478) Test Prep
(MED FS, MED DSOg)

P/TV05 ACT (LBNP)
(PHOTO/TV, P/TV SCENES)

LBNP (DSO 478) Soak
(MED FS, MED DSOg)
(MS2)
Log data on Mac thru test

OPTICAL DISK CHANGEOUT
(PL OPS, SAMS)
Drive 1

PCG FAN INLET CLEANING/TEMP CK
✓ Inlet fan screen, clean if req'd
Check, log PCG temp
MET TEMP
_ / _ : _ : _
If temp > 23 deg or < 21 deg C: MCC

UPDATE
H2O SPLY DUMP
QTY TR A & B

TV (TDRW)
CREW CNIL-CAB

STS-43 (FD 07)

PL

MCC

CONTINGENCY GSTDN

MET DAY 005

AS TATS

DRIVE DISK SB

(A1) B1 AUTO/ALT

ORB 94

20:00

V A G G
N D D M
H X S I M B
I I I L L D
I I I X A

D K R R

I O S I

(A1) B1 AUTO/VERN

ORB 95

22:00

V A G G
N D D M
H X S I M B
I I I L L D
I I I X A

D K R R

(A1) B1 AUTO/VERN

ORB 96

23:00

M I L B
L X D A
I I I I

V A G G
N D D M
H X S I M B
I I I L L D
I I I X A

(A1) B1 AUTO/ALT

006 00:00

STS

ALT MODE DAP (DTO 798) step 1
(ORB OPS FS, **ALT MODE DAP**)
Tests 1-4

ALT MODE DAP (DTO 798) step 2
(ORB OPS FS, **ALT MODE DAP**)
Tests 10-13

MNVR ALT DAP SET 3 ATT
TG=2 BV=3 OM=280
A/AUTO/VERN (21:40) Init TRK
ALT MODE DAP (DTO 798) step 1
(ORB OPS FS, **ALT MODE DAP**)
Tests 5-9

MNVR ALT DAP SET 4 ATT
TG=2 BV=3 OM=280
A/AUTO/VERN (22:40) Init TRK

MEAL (All)

ALT MODE DAP (DTO 798) step 2
(ORB OPS FS, **ALT MODE DTO**)
Tests 14-17

...
LBNE (DSO 478) Soak
(MED FS, **MED DSOs**)
(MS2)
Log data on Mac thru test

SHARE HTR ACT
L12 HTR 3,6 PWR (two)-ON

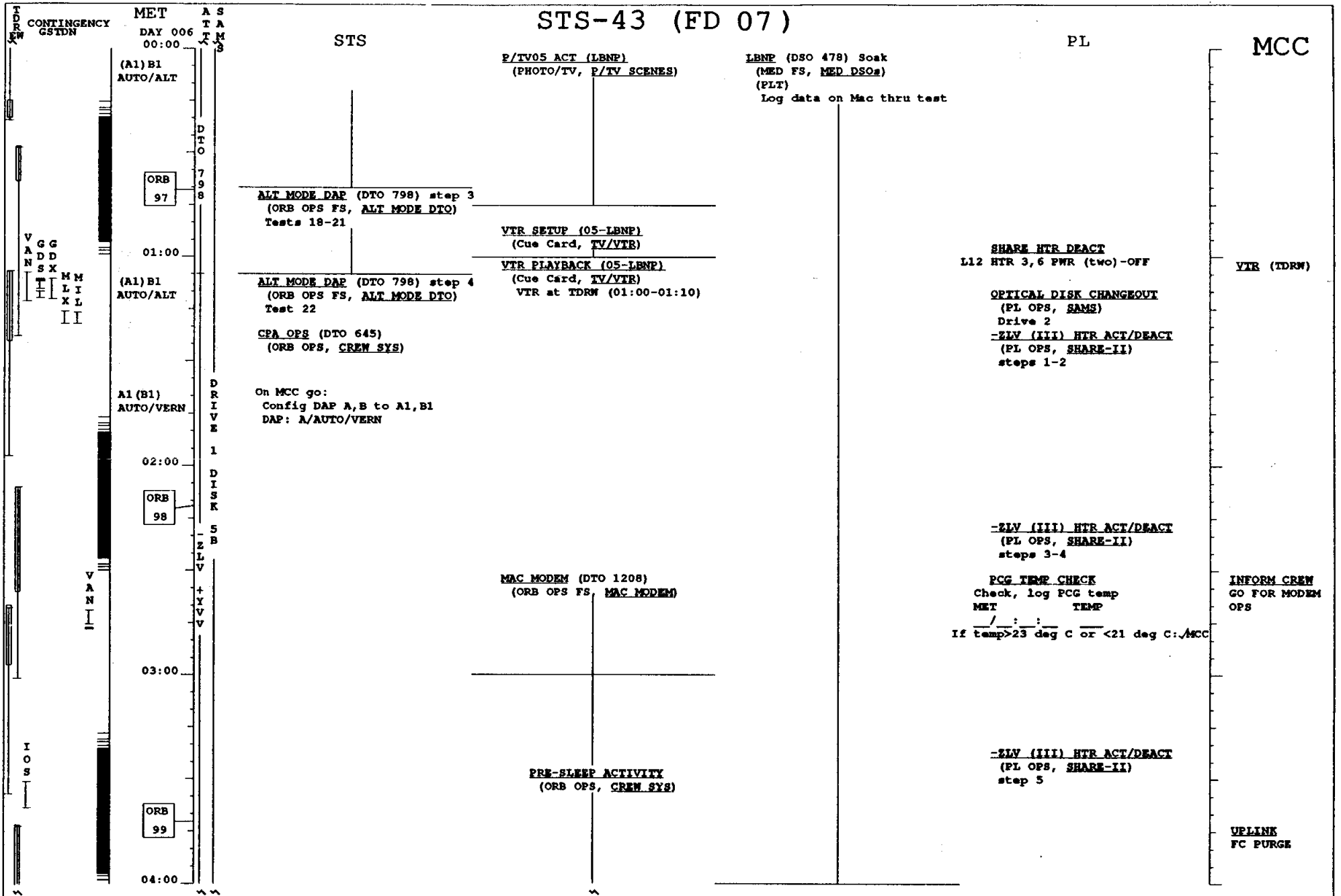
OPTICAL DISK CHANGEOUT step 1
(PL OPS, **SAMS**)
Drive 2

LBNE (DSO 478) Egress/Reconfig
(MED FS, **MED DSOs**)

LBNE (DSO 478) Test Prep
(MED FS, **MED DSOs**)

F/TV05 ACT (LBNE)
(PHOTO/TV, P/TV SCENES)

STS-43 (FD 07)



MET DAY 006 00:00

(A1) B1
AUTO/ALT

ORB 97

01:00

(A1) B1
AUTO/ALT

A1 (B1)
AUTO/VERN

02:00

ORB 98

03:00

ORB 99

04:00

STS

P/TV05 ACT (LBNP)
(PHOTO/TV, P/TV SCENES)

ALT MODE DAP (DTO 798) step 3
(ORB OPS FS, ALT MODE DTO)
Tests 18-21

VTR SETUP (05-LBNP)
(Cue Card, TV/VTR)

ALT MODE DAP (DTO 798) step 4
(ORB OPS FS, ALT MODE DTO)
Test 22

VTR PLAYBACK (05-LBNP)
(Cue Card, TV/VTR)
VTR at TDRW (01:00-01:10)

CPA OPS (DTO 645)
(ORB OPS, CREW SYS)

On MCC go:
Config DAP A, B to A1, B1
DAP: A/AUTO/VERN

MAC MODEM (DTO 1208)
(ORB OPS FS, MAC MODEM)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PL

LBNP (DSO 478) Soak
(MED FS, MED DSOs)
(PLT)
Log data on Mac thru test

SHARE HTR DEACT
L12 HTR 3, 6 PWR (two) -OFF

OPTICAL DISK CHANGEOUT
(PL OPS, SAME)
Drive 2
-ELV (III) HTR ACT/DEACT
(PL OPS, SHARE-II)
steps 1-2

-ELV (III) HTR ACT/DEACT
(PL OPS, SHARE-II)
steps 3-4

PCG TEMP CHECK
Check, log PCG temp
MET TEMP
/ : :
If temp > 23 deg C or < 21 deg C: /MCC

-ELV (III) HTR ACT/DEACT
(PL OPS, SHARE-II)
step 5

MCC

VTR (TDRW)

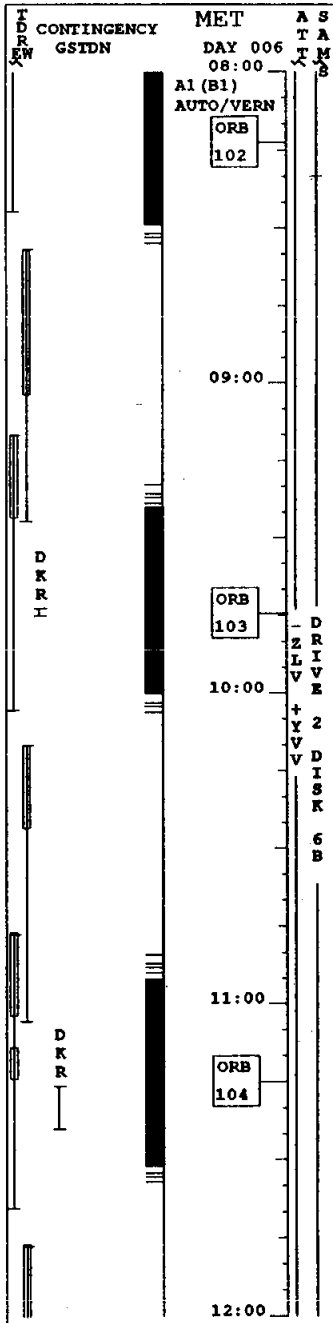
INFORM CREW
GO FOR MODEM
OPS

UPLINK
FC PURGE

STS-43 (FD 07)

PL

MCC



STS-43 (FD 07)

PL

MCC

CONTINGENCY MET A S
GSTDN DAY 006 T A
12:00 T M S

A1 (B1)
AUTO/VERN

ORB 105

13:00

SLEEP

ORB 106

14:00

INLET AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSO's)
(CDR, MS2)

ORB 107

15:00

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

ORB 108

16:00

MMB
LIDA
XLA
II

STS

SLEEP

INLET AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSO's)
(CDR, MS2)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

← MNRV IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNRV at SS

IMU ALIGN - S TRK (ORB OPS)
MNRV (TRK) -ZLV, -YVY
TG-2 BV-3 OM-90
A/AUTO/VERN Init TRK

IMU ALIGN LOG
REQD ID:

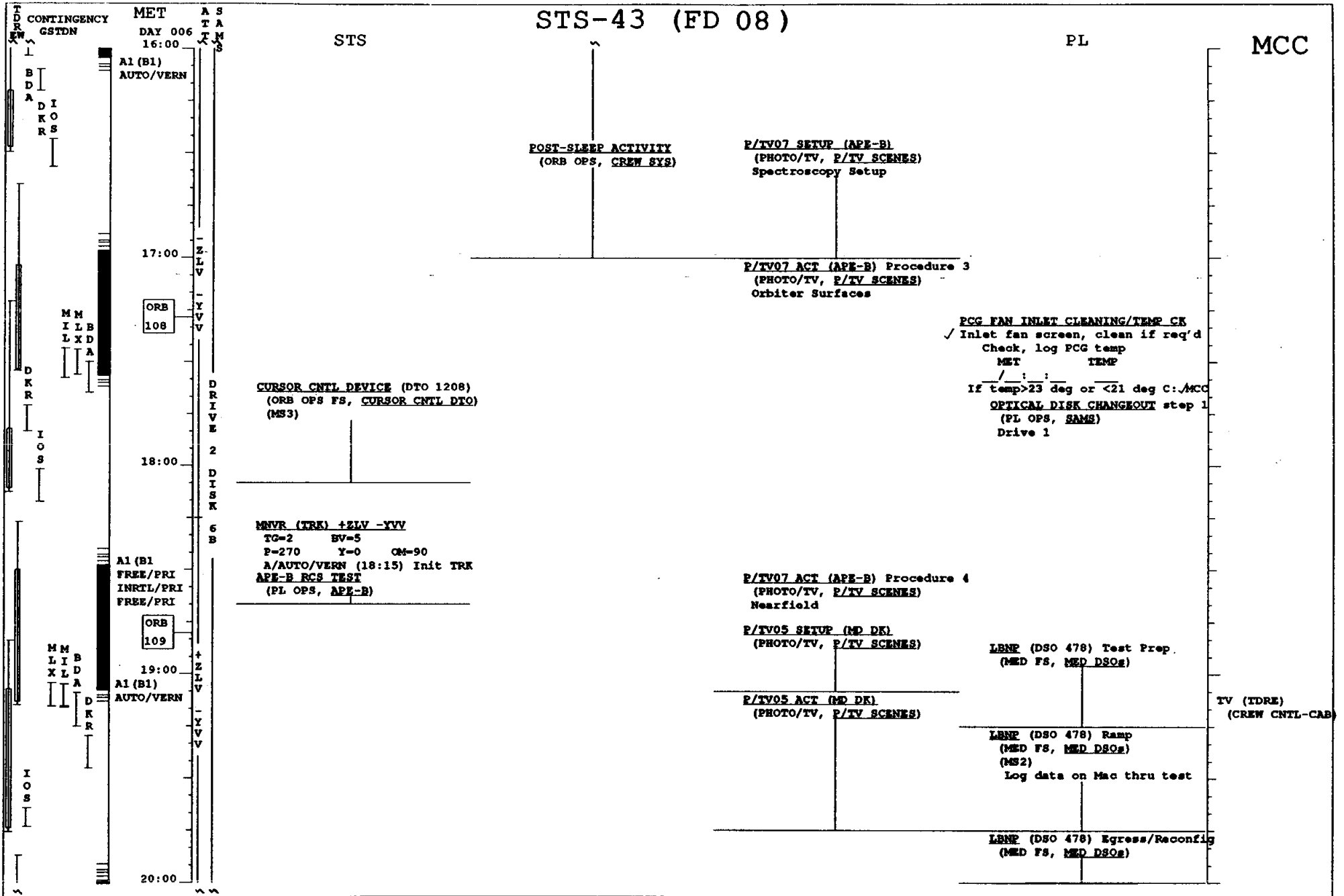
-Y____, -Z____ ANG ERR ____
 1 2 3

ANG:
ΔX () _ _ _ () _ _ _ () _ _ _
ΔY () _ _ _ () _ _ _ () _ _ _
ΔZ () _ _ _ () _ _ _ () _ _ _

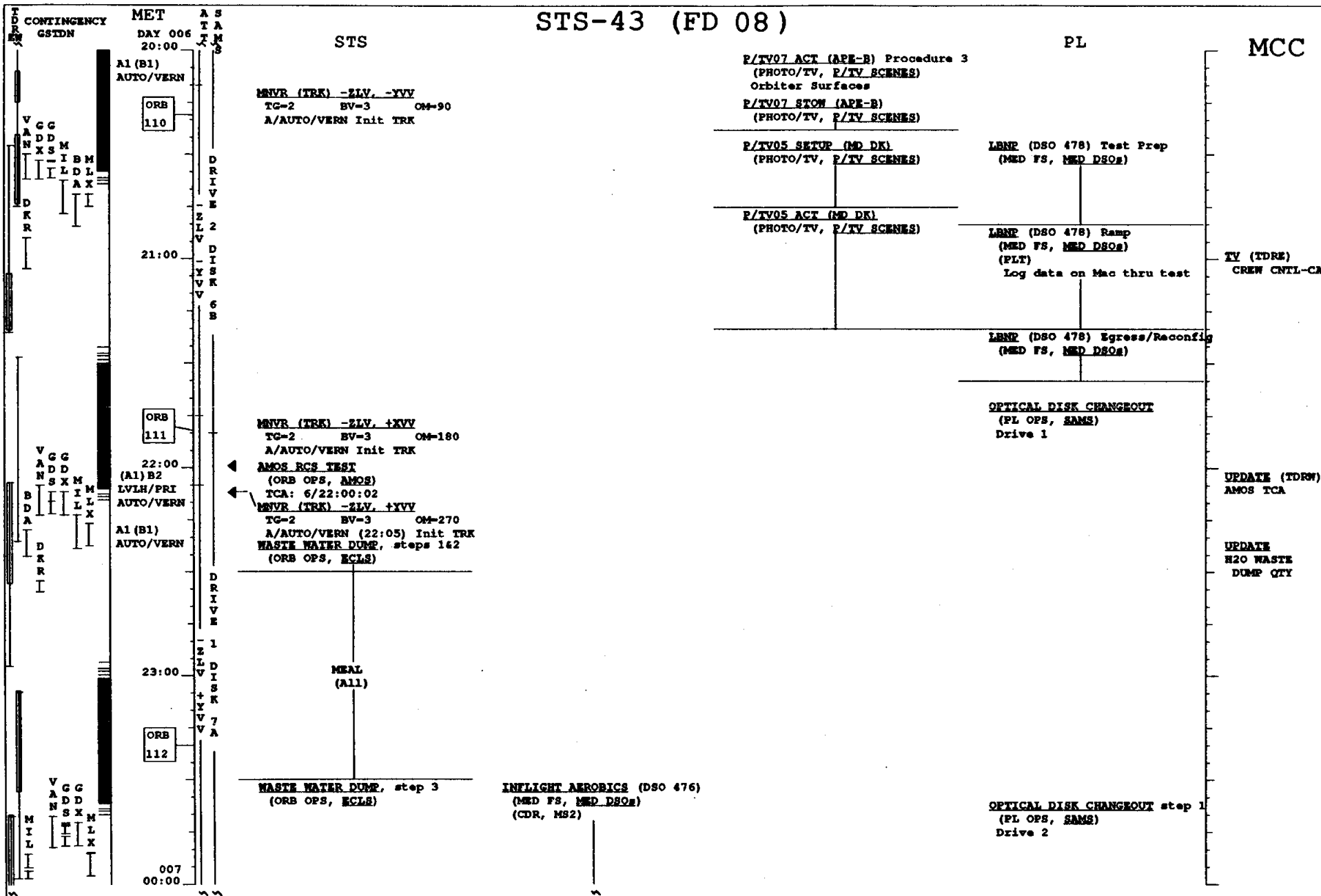
EXECUTION TIME:
_ _ / _ _ : _ _ : _ _

FD08 EE ACTIVITIES:
EXERCISE (1 Hr/MS1, PLT)
MS1 Perform GAZE STABILITY (DSO 614)
(MED FS, MED DSO's) concurrently
Log MET of TREADMILL Start/Stop
(Cue Card)
FOOD PREP/POST (Cue Card) (30 Min)
MF14H BIMDA FAN INLET CLEANING

UPLINK
FC PURGE



STS-43 (FD 08)



STS-43 (FD 08)

STS

PL

MCC

CONTINGENCY GSTDN
MET DAY 007 00:00
A1 (B1) AUTO/VERN
A10 (B1) AUTO/VERN

ORBITAL TRACKING
V A N C G D D X S H I I
I O S I

01:00
ORBITAL TRACKING
ORBITAL TRACKING
ORBITAL TRACKING

02:00
A1 (B1) FREE/PRI
INRIL/PRI
FREE/PRI
ORBITAL TRACKING
ORBITAL TRACKING
ORBITAL TRACKING

03:00
A1 (B1) AUTO/VERN
ORBITAL TRACKING
ORBITAL TRACKING
ORBITAL TRACKING

04:00
ORBITAL TRACKING
ORBITAL TRACKING
ORBITAL TRACKING

CURSOR CNTL DEVICE (DTO 1208)
(ORB OPS FS, CURSOR CNTL DTO)
(MS2)

CPA OPS (DTO 645)
(ORB OPS, CREW SYS)

PADM SETUP (DTO 799)
(ORB OPS FS, MODEM DTO)

MNVR (TRK) +ZLV -YVV
TG-2 BV-5
P-270 Y=0 OM-90
A/AUTO/VERN (01:50) Init TRK
APE-B RCS TEST
(PL OPS, APE-B)

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE
UHF MODE - SPLX (or as reqd)

MNVR IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNVR at SS

IMU ALIGN - S TRK (ORB OPS)
MNVR (TRK) -ZLV, +YVV
TG-2 BV-3 OM-270
A/AUTO/VERN Init TRK

INFLIGHT AEROBICS (DSO 476)
(MED FS, MED DSOs)
(CDR, MS2)

P/TV05 SETUP (DSO 1208)
(PHOTO/TV, P/TV SCENES)

SHARE-II DEPRIME II
(PL OPS, SHARE-II)

P/TV05 ACT (DSO 1208)
(PHOTO/TV, P/TV SCENES)

2 SECOND BURN

PCG TEMP CHECK
Check, log PCG temp
MET TEMP
If temp > 23 deg C or < 21 deg C: MCC

P/TV07 SETUP (APE-B)
(PHOTO/TV, P/TV SCENES)
Spectrometer Setup

INFORM CREW
GO FOR MODEM
OPS

P/TV07 ACT (APE-B) Procedure 4
(PHOTO/TV, P/TV SCENES)
Nearfield
P/TV07 STOW (APE-B)
(PHOTO/TV, P/TV SCENES)

UPLINK
FC PURGE

IMU ALIGN LOG
REQD ID:
-Y____, -Z____ ANG ERR ____
1 2 3
ANG:
AX () () ()
AY () () ()
AZ () () ()
EXECUTION TIME:
-- / -- : -- : --

OPTICAL DISK CHANGEOUT
(PL OPS, SAMS)
Drive 2

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

STS-43 (FD 08)

STS

PL

MCC

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

SLEEP

TDR
CONTINGENCY
GSTDN

MET
DAY 007
04:00

ASS
TAM
JMS

AI (BI)
AUTO/VERN

I O S

ORB 116

05:00

DRIVE
ZLV 1

06:00

+DISK
YVVV 7A

ORB 117

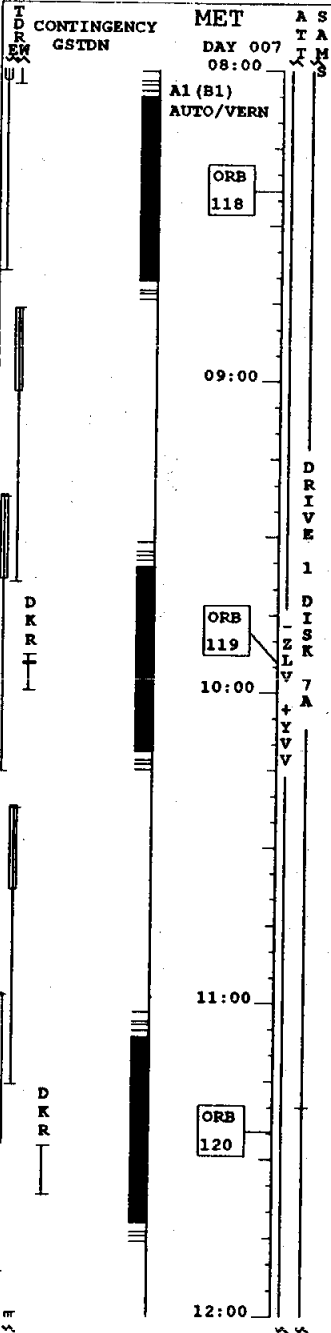
07:00

08:00

STS-43 (FD 08)

PL

MCC



STS-43 (FD 08)

PL

MCC

CONTINGENCY GSTDN
MET DAY 007 12:00
A1 (B1) AUTO/VERN
ORB 121
13:00
ORB 122
14:00
ORB 123
15:00
16:00

DRIVE
DISK
ISMA
ZLV
+YVV
ZLV
+YVV
ZLV
+YVV

DRIVE
DISK
ISMA
ZLV
+YVV
ZLV
+YVV

DRIVE
DISK
ISMA
ZLV
+YVV
ZLV
+YVV

STS

SLEEP

INFILT AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSO's)
(CDR, MS2)

MNVR IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNVR at SS

IMU ALIGN - S TRK (ORB OPS)
MNVR (TRK) -ZLV, +YVV
TG=2 BV=3 OM=270
A/AUTO/VERN Init TRK

APU STEAM VENT HTR ACT
BLR PWR (three) -ON

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

IMU ALIGN LOG

REQD ID:

-Y____, -Z____ ANG ERR ____
1 2 3

ANG:

ΔX () () ()

ΔY () () ()

ΔZ () () ()

EXECUTION TIME:

___/___:___:___

FD09 E2 ACTIVITIES:

EXERCISE (1 Hr/MS1, MS2, PLT)
MS2 after 7/21:30
MS1 Perform GAZE STABILITY (DSO 614)
(MED FS, MED DSO's) concurrently
Log MET of TREADMILL Start/Stop
(Cue Card)
FOOD PREP/POST (Cue Card) (30 Min)
MF14H BIMDA FAN INLET CLEANING

BP VARIABILITY (DSO 602)
(MED FS, MED DSO's)
(CDR)

VELINK
FC PURGE

STS-43 (FD 09)

CONTINGENCY
GSTDN

MET
DAY 007
16:00

A S T A
T M S

STIS

PL

MCC

DRIVE
ZLV 2
DYSK
SA

ORBITAL
ORB 124
ORB 125

MISSION
A1 (B1) AUTO/VERN
MIL X
M L B D A
D K R R
I O S
M L B D A
D K R R
I O S
M L B D A
D K R R
I O S
G D M S I L L H
M B L L D A
V A N D X L I
D K R R
I O S

FCS CHECKOUT
(ORB OPS, GNC)
(2 Cmn)

RCS HOT FIRE TEST
(ORB OPS, RCS) (2 Cmn)
Config DAP: A/AUTO/VERN

APU HTR RECONFIG (ORB OPS)
APU COOL OFF (On MCC Cue)
R2 **APU FUEL PUMP/VLV COOL A-OFF**

PADM PWRDN (DTC 799)
(ORB OPS FS, MODEM DTC)

P/TV05 SETUP (BIMDA)
(PHOTO/TV, P/TV SCENES)

P/TV05 ACT (BIMDA)
(PHOTO/TV, P/TV SCENES)

LBNE (DSO 478) Test Prep
(MED FS, MED DSOs)

LBNE (DSO 478) Ramp
(MED FS, MED DSOs)
(MS2)
Log data on Mac thru test

LBNE (DSO 478) Egress/Reconfig
(MED FS, MED DSOs)

LBNE (DSO 478) Test Prep
(MED FS, MED DSOs)

LBNE (DSO 478) Ramp
(MED FS, MED DSOs)
(PLT)
Log data on Mac thru test

LBNE (DSO 478) Egress/Reconfig
(MED FS, MED DSOs)

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

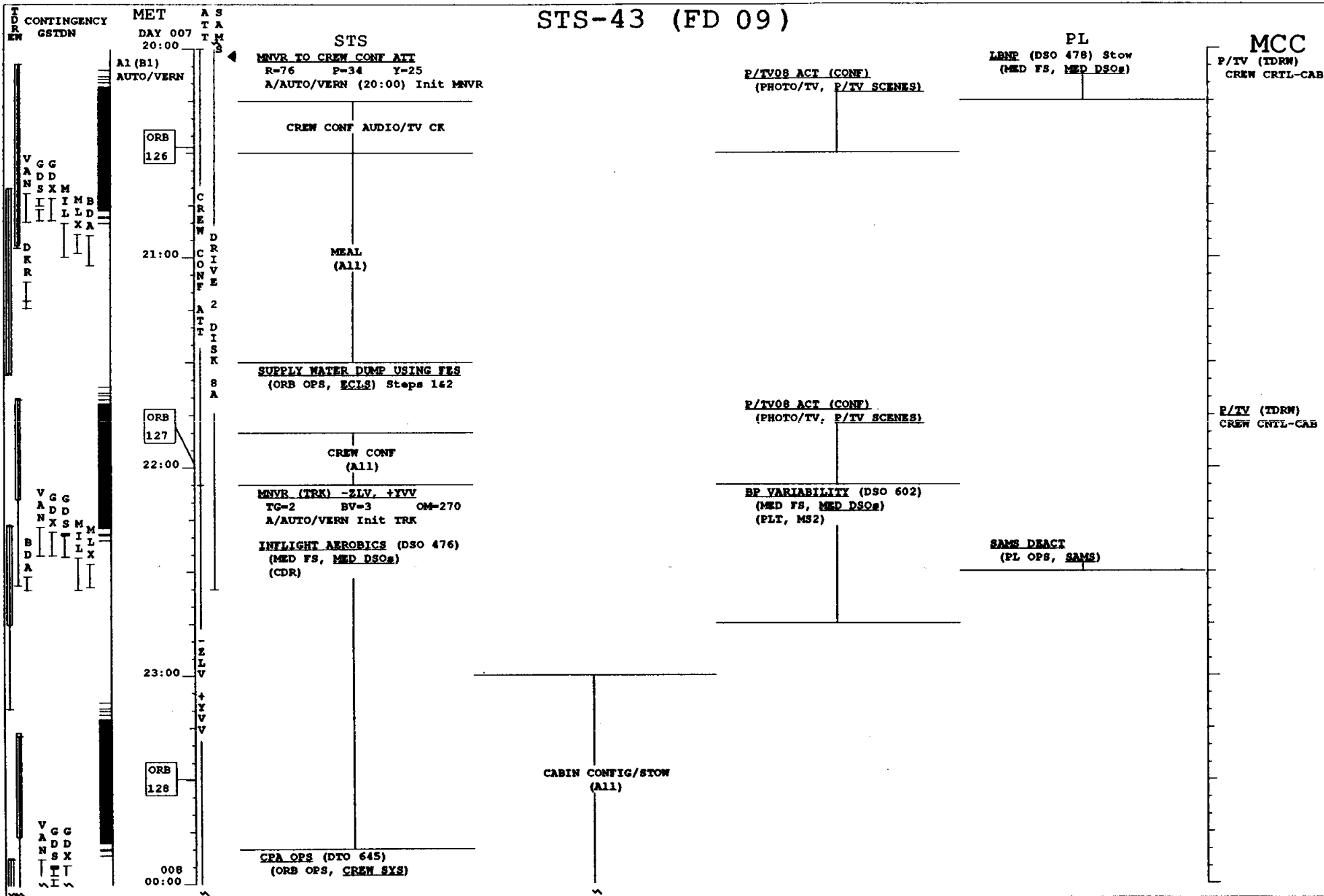
PCG FAN INLET CLEANING/TEMP CK
/ Inlet fan screen, clean if req'd
Check, log PCG temp
MET TEMP
/ : :
If temp > 23 deg or < 21 deg C: MCC

MDA OPS step 2
(PL OPS, BIMDA)
Unit 2
STOW
(PL OPS, BIMDA)

LBNE (DSO 478) Stow
(MED FS, MED DSOs)

INFORM CREW
GO FOR APU
COOL OFF

STS-43 (FD 09)



CONTINGENCY
GSTDN

MET
DAY 008
00:00

A S
T A
T M
S

STS-43 (FD 09)

STS

PL

MCC

M
M
I
L
L
X

A1 (B1)
AUTO/VERN

ORB
129

01:00

Z
L
V

+
Y
V
V

CABIN CONFIG/STOW
(All)

PCG TEMP CHECK
Check, log PCG temp
MET TEMP
/ : :
If temp > 23 deg C or < 21 deg C: MCC

V
A
N
I
I

KU-BD ANT STOW
(ORB OPS, COMM/INST)

MAC MODEM (DTO 1208)
(ORB OPS FS, MAC MODEM)

INFORM CREW
GO FOR MODEM
OPS

02:00

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

DUMMY DISK LOADING
(PL OPS, SAMS)

UPLINK
FC PURGE

UHF MODE - SPLX (or as reqd)
MNRV IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNRV at SS

ORB
130

I
M
U

IMU ALIGN - S TRK (ORB OPS)
MNRV (TRK) -ZLV, +YVV
TG=2 BV=3 OM=270
A/AUTO/VERN Init TRK

SUPPLY WATER DUMP USING FES
(ORB OPS, ECLS)
Perform Step 3 w/FES reqd

UPDATE
H2O WASTE
DUMP QTY

03:00

WASTE WATER DUMP, steps 1&2
(ORB OPS, ECLS)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

IMU ALIGN LOG		
REQD ID:		
-Y	, -Z	ANG ERR
1	2	3
ANG:		
ΔX	()	()
ΔY	()	()
ΔZ	()	()
EXECUTION TIME:		
/ : :		

04:00

WASTE WATER DUMP, step 3
(ORB OPS, ECLS)

Z
L
V

+
Y
V
V

I
O
S
I

STS-43 (FD 09)

STS

PL

MCC

CONTINGENCY
GSTDN

MET
DAY 008
04:00

A S
T A
M S

ORB 131

A1 (B1)
AUTO/VERN

05:00

ORB 132

06:00

Z
L
V
+
Y
V
V

07:00

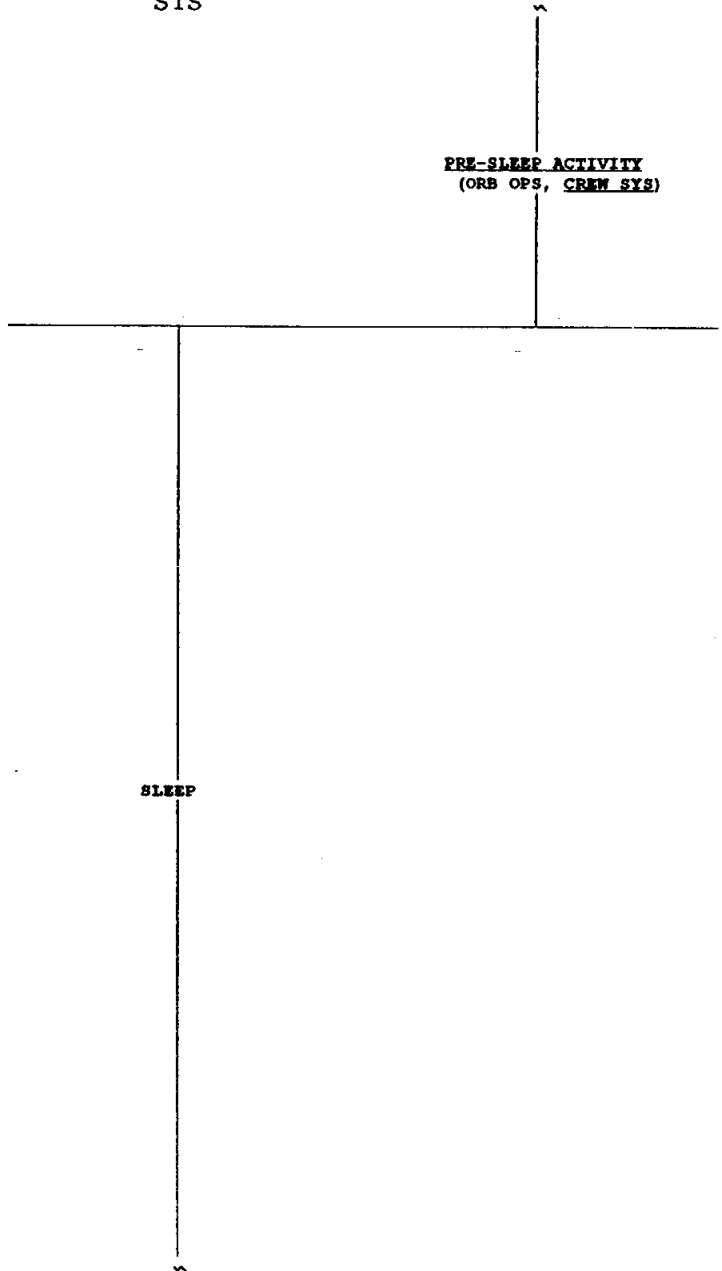
ORB 133

08:00

I O S

I O S

I O S



STS-43 (FD 09)

T D R CONTINGENCY MET A S
EW GSTDN DAY 008 T A
08:00 T M
S

PL

MCC

A1 (B1)
AUTO/VERN

ORB
134

09:00

10:00

ORB
135

11:00

ORB
136

12:00

STS

SLEEP

D
K
R
R

D
K
R
R

STS-43 (FD 10)

PL

MCC

CONTINGENCY
GSDN

MET
DAY 008
12:00

A1 (B1)
AUTO/VERN

13:00

ORB 137

14:00

ORB 138

15:00

16:00

TD
R
SW

MB
ILD
XA

D
K
R

I
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A
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Z
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V

+
Y
V
V

I
M
U

X
S
I

STS
SLEEP

INFLT AEROBICS (DSO 476) Pulse Rt
(MED FS, MED DSOs)
(CDR, MS2)

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

UHF MODE - SPLX (or as reqd)

← MNVR IMU ALIGN ATT
STAR PAIR (A1)
A/AUTO/VERN Init MNVR at SS

IMU ALIGN - S TRK (ORB OPS)

← MNVR (TRK) -XSI ATT
TG=4 BV=5
P=184 Y=0 OM=90
A/AUTO/VERN (14:40) Init TRK

BP VARIABILITY EQUIP DOFF (DSO 602)
(CDR, PLT, MS2)
ABPM PWR SW - OFF
Remove electrodes/BP Cuff
Remove battery/tape from Holter recorder
Stow

Update: CRT TIMER SETUP PAD
in NOMINAL DEORBIT PREP

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

IMU ALIGN LOG
REQD ID:

-Y _____, -Z _____ ANG ERR _____
1 2 3

ANG:
ΔX () _ _ _ () _ _ _ () _ _ _
ΔY () _ _ _ () _ _ _ () _ _ _
ΔZ () _ _ _ () _ _ _ () _ _ _
EXECUTION TIME:
_ _ / _ _ : _ _ : _ _

EE ACTIVITIES BEFORE LEAVING FLT PLN:

AIR SAMPLE
Red MET on bottle
CPA OPS (DTC 645)
(ORB OPS, CREW SYS)
Perform concurrently with
Air Sample

FLUID LOADING PREP
Fill 6 drink containers with
8 oz H2O each (per person)

DSO ENTRY PREP
(MED FS, MED DSOs)
DSO 603

UPLINK
FC PURGE

UPDATE
CRT TIMER
SETUP PAD

STS-43 (FD 10)

STS

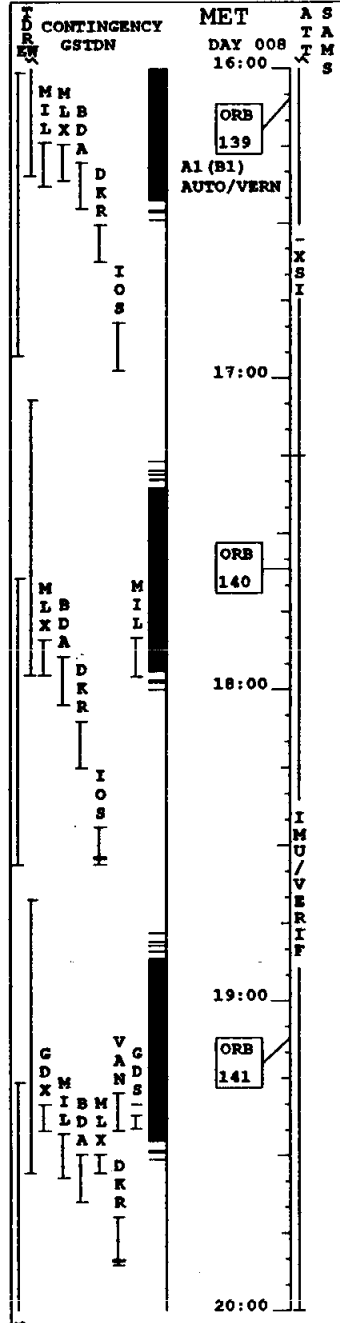
PL

MCC

DSO ENTRY PREP
(MED FS, MED DSOs)
DSO 603

ENTRY CABLE RECONFIG
(PL OPS, DEORB PREP)

GO TO DEORBIT PREP AT 8/16:16



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CONTINGENCY TIMELINES

7A TDRS INSERTION.....	4A-1
16A TDRS INSERTION.....	4B-1
18A TDRS (EVA) INSERTION.....	4C-1
MINIMUM DURATION FLIGHT.....	4D-1

CONTINGENCY
TIMELINES

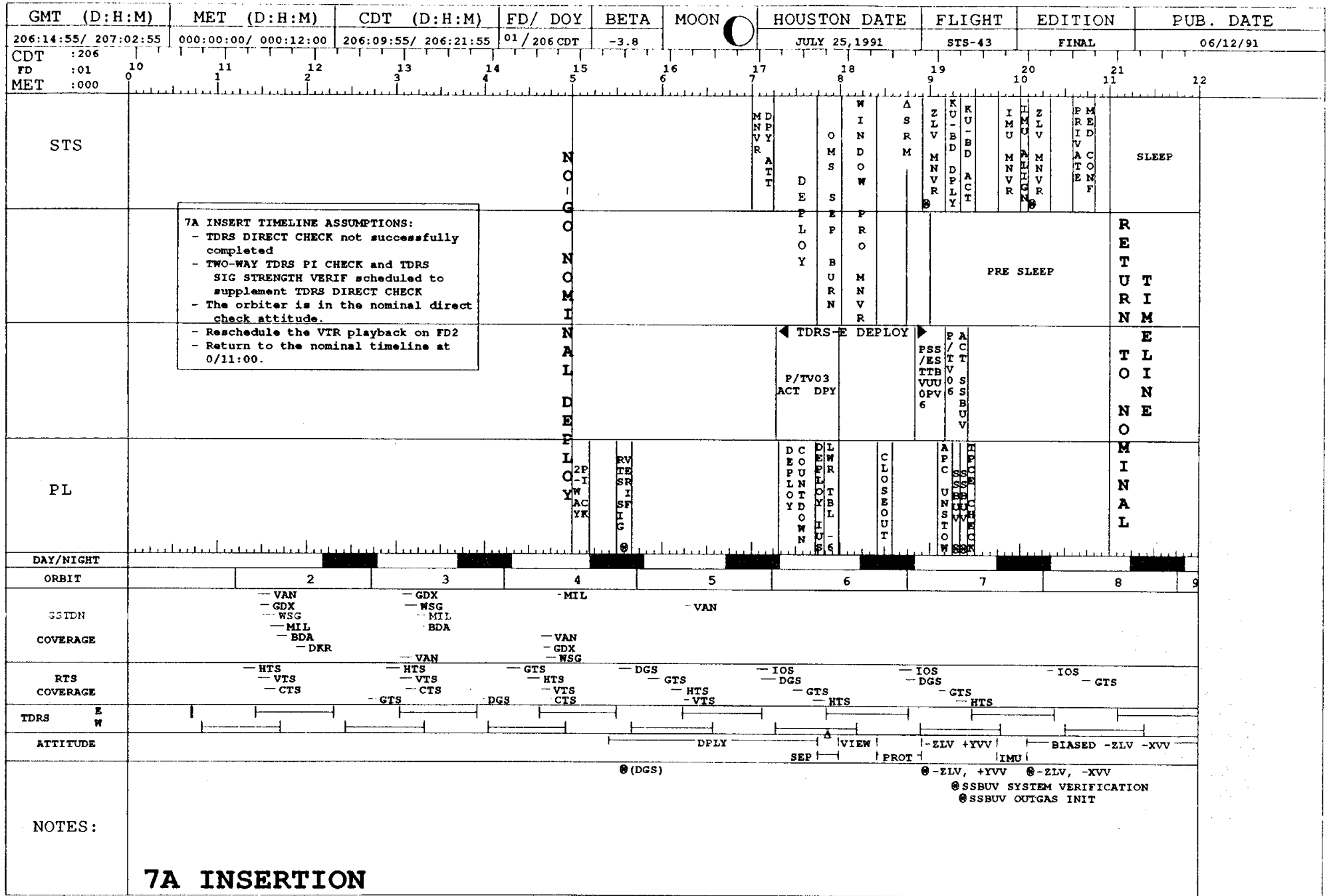
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7A TDRS INSERTION

The 7A TDRS Insertion timeline is designed to accommodate delaying deployment of TDRS to the 7A Insertion opportunity. The nominal timeline is used until the GO/NO-GO point. For this timeline, the waive-off occurs after the TDRS Direct Check, but the waive-off could occur as late as the Go/No Go point in deploy countdown for the 6A opportunity. A maneuver to a new TDRS Check attitude must be computed. The timeline is based on the Flight Cycle R1 OMS-2 Insertion incorporating the nominal 6A trajectory..

7A
INSERTION

7A
INSERTION



16A TDRS INSERTION

The 16A TDRS Insertion timeline is designed to accommodate delaying deployment of TDRS until the 16A Insertion opportunity. The timeline assumes an attempt at 7A Insertion failed at the GO/NO-GO decision point in the deploy countdown procedure. The timeline assumes the tilt table is at 29 degrees at the wave-off decision. Additional assumptions are shown on the timeline. The trajectory utilized is the nominal Flight Cycle R1 OMS-2 Insertion incorporating the nominal 6A trajectory.

16A
INSERTION

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
206:14:55/ 207:02:55	000:00:00/ 000:12:00	206:09:55/ 206:21:55	01/ 206 CDT	-3.8	☾	JULY 25, 1991	STS-43	FINAL	06/12/91				
CDT :206													
FD :01													
MET :000													
	10	11	12	13	14	15	16	17	18	19	20	21	12
	0	1	2	3	4	5	6	7	8	9	10	11	
STS							DE PL OY	IM U M N V R	SH R E I I Z L V M N V R	PC RO IM V F M E D	SLEEP (7.0)		
	<p>ASSUMPTIONS FOR 16A INSERTION TIMELINE</p> <ul style="list-style-type: none"> - Enter timeline after NO GO for 7A deploy - P/TV CAMERA SETUP in place for FD2 deploy - Return to nominal timeline at 1/10:00 - Reschedule SHARE-II -ZLV 1 AND 2 - Reschedule BM Sample 2:15 later on FD3 - One Orbit of SSBUV Earth viewing will be scheduled later if time permits 						NO GO		PRE SLEEP				
	<ul style="list-style-type: none"> - IMU/COAS maneuvers will be protected for SSBUV cover constraints - Exercise will not be performed on FD2 - The nominal 6A trajectory was used 						RE ST O W I U S	SS / ES ITS VOC OPV 6	PA C T T V 0 6 6 S S B U V				
PL							DE PL OY D O W N	A F C C I D E N C E R S C O N S T R U C T I O N S	SS / ES ITS VOC OPV 6	PA C T T V 0 6 6 S S B U V			
DAY/NIGHT	[Timeline bar]												
ORBIT		2	3	4	5	6	7	8	9				
GSTDN COVERAGE		-VAN -GDX -WSG -MIL -BDA -DKR	-GDX -WSG -MIL -BDA	-MIL	-VAN								
RTS COVERAGE		-RTS -VTS -CTS	-RTS -VTS -CTS	-GTS -VTS -CTS	-DGS -VTS -CTS	-DGS -VTS -CTS	-IOS -DGS -GTS -RTS	-IOS -DGS -GTS -RTS	-IOS -DGS -GTS -RTS				
IDRS E W	[Timeline bar]												
ATTITUDE	[Timeline bar]												
SSBUV SAMS	[Timeline bar]												
	DRIVE 1 DISK 1A												
NOTES:	<ul style="list-style-type: none"> ● -ZLV, -YV ● SSBUV SYSTEM VERIFICATION ● SSBUV OUTGAS INIT 												
	16A INSERTION												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
207:02:55/ 207:14:55	000:12:00/ 001:00:00	206:21:55/ 207:09:55	02/206 CDT	-2.8		JULY 25, 1991	STS-43	FINAL	06/12/91
CDT :206		CDT:207							
MET :000									MET:001
<p>Timeline and Activity Log:</p> <p>STS (Space Shuttle) activities:</p> <ul style="list-style-type: none"> SLEEP (7.0) (00:00 - 07:00) AMU/IMU SEQ (07:00 - 07:15) POST SLEEP (07:15 - 07:30) TDRS-E DEPLOY (07:30 - 07:45) P/TV03 ACT DPY (07:45 - 08:00) P/TV05 ACT MD DK (08:00 - 08:15) <p>PL (Payload) activities:</p> <ul style="list-style-type: none"> IUS P D C C O TDRS DIR TDRS DIR (MIL) IUS/PI CHROMODM B B B B B B B B C C C C C C C C M M M M M M M M P P P P P P P P F F F F F F F F E E E E E E E E S S S S S S S S L L L L L L L L N N N N N N N N O O O O O O O O D D D D D D D D C C C C C C C C P P P P P P P P Y Y Y Y Y Y Y Y <p>DAY/NIGHT (09-16): DAY (9-12), NIGHT (12-15), DAY (15-16)</p> <p>ORBIT (09-16): 9, 10, 11, 12, 13, 14, 15, 16</p> <p>GSTDN COVERAGE (09-16): -DKR (09-12), -DKR (12-14), -MIL -BDA -DKR (14-16)</p> <p>RTS COVERAGE (09-16): -GTS (09-10), -GTS (10-12), -DGS (12-14), -IOS (14-16), -DGS (16-17)</p> <p>TDRS E W (09-16): Coverage bars from 09:00 to 17:00</p> <p>ATTITUDE (09-16): TDRS THERMAL, TDRS CK, SEP, PROT</p> <p>SSBUV SAMS (09-16): OUTGAS, DRIVE 1 DISK 1A, DRIVE 2 DISK 2A, ACT</p>									
NOTES:	<p>16A INSERTION</p> <ul style="list-style-type: none"> TRACKING ARC @DSO 476 PULSE RATE @SSBUV OUTGAS TERM @PRE-DPY CK (TDRE) @TDRS DIR (MIL) @TDRS CK ATT @IUS/PI LOCK @-ZLV, -YVV @SSBUV CAL INIT @BINDA MDA ACT 								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE					
207:14:55/ 208:02:55	001:00:00/ 001:12:00	207:09:55/ 207:21:55	/ 207 CDT	-1.6		JULY 26, 1991	STS-43	FINAL	06/12/91					
CDT :207														
MET :001	10	11	12	13	14	15	16	17	18	19	20	21	12	
STS		ZSI MNV R	VIS VEST DATA	VISTA VEST	ZLV MNV R	MEAL			PROF M E D	I M U M N V R	ZLV M N V R			BACK TO NOMINAL TIMELINE
			BLOOD PRESS			FILTER CLEANING		MODEM D T O		PRE SLEEP				
	PA/C TIVITY M E													
PL	PC OK	SSBUV INIT	SSBUV	SSBUV	SSBUV						B I M D A L C S			
DAY/NIGHT														
ORBIT	17	18	19	20	21	22	23	24						
GSTDN COVERAGE	-VAN -GD -MIL -BDA -DKR	-MIL -BDA	-VAN -GD -MIL											
TDRS E W														
ATTITUDE	-ZLV -XVV		-ESI			-ZLV +XVV			IMU/COAS			-ZLV +XVV		
SSBOV	CAL	SOLAR VIEW				EARTH VIEW								
SAMS			DRIVE 2 DISK 2A					DRIVE 1 DISK 1B						
NOTES:			@SSBOV CAL TERM @OPTICAL DISK CHECK @DSO 604 VIS VES INTG OI-3 @DSO 602 BP VARIABILITY @DSO 604 VIS VEST INTG OI-1 @SSBOV SOLAR TERM @-ZLV, +XVV			@OPTICAL DISK CHANGEOUT @DTO 799 PGSC/MODEM @OPTICAL DISK CHECK @AFT STATION @-ZLV, +XVV								
			16A INSERTION											

18A TDRS (EVA) INSERTION

The 18A TDRS Insertion timeline is designed to accommodate delaying deployment of TDRS until the 18A Insertion opportunity following an EVA to manually raise the tilt table. The decision to perform an EVA must be made by 0/05:00 MET in order to meet EVA preparation and equipment constraints. The 10.2 psi Cabin EVA protocol is used. There will be no Flight Day 1 EVA. The Contingency EVA Operations STS-43 Flight Supplement, Contingency EVA for Payload Failures section, is the source document for the 18A Insertion timeline. Additional assumptions are shown on page 4C-2 and 4C-3. The timeline is based on the Flight Cycle R1 OMS-2 Insertion incorporating the nominal 6A trajectory.

18A
INSERTION

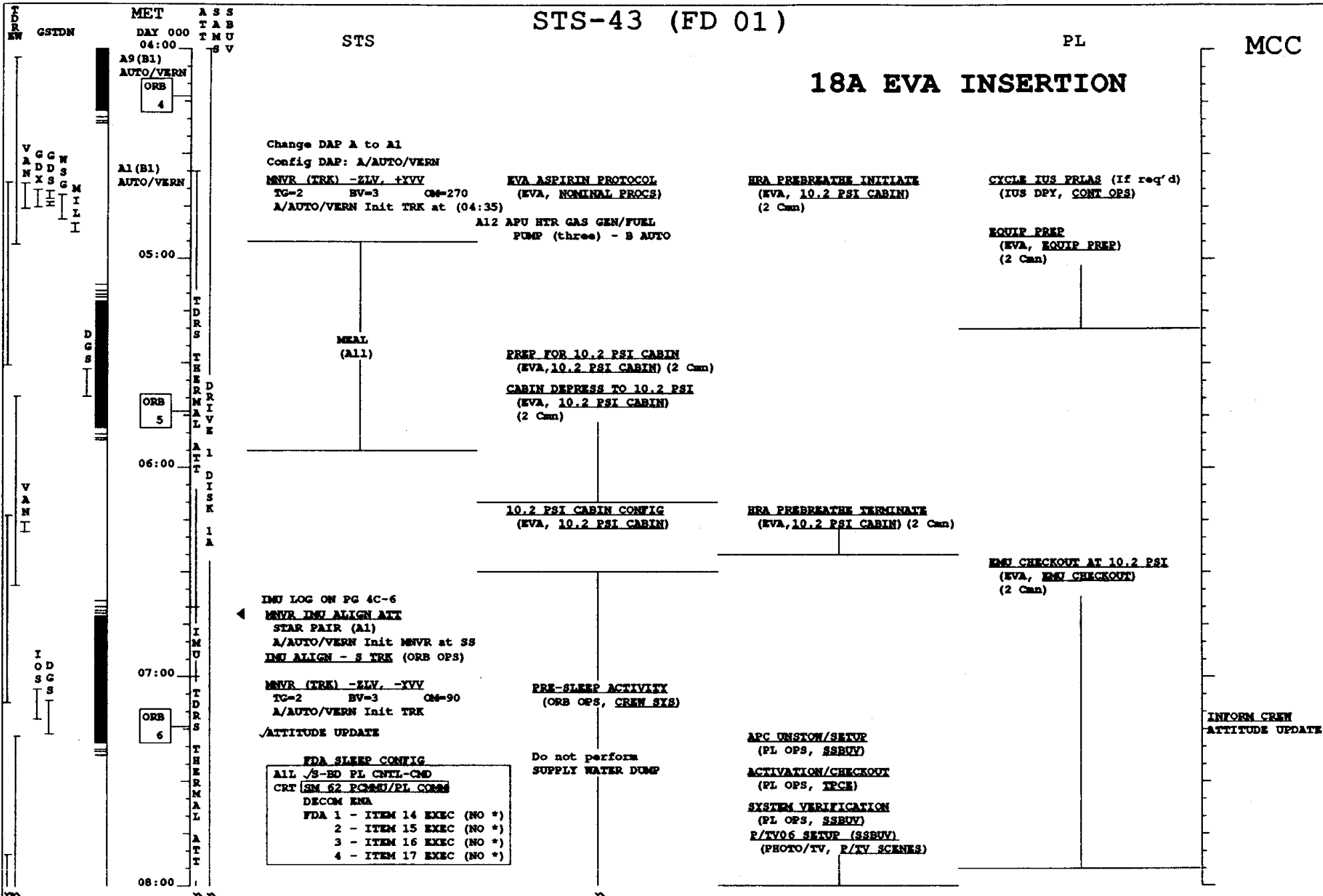
18A INSERTION

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
206:14:55/ 207:02:55	000:00:00/ 000:12:00	206:09:55/ 206:21:55	01/ 206 CDT	-3.8	☾	JULY 25, 1991	STS-43	FINAL	06/12/91				
CDT :206													
FD :01													
MET :000													
STS	10	11	12	13	14	15	16	17	18	19	20	21	12
L M N O P Q R S T U V W X Y Z													
PL													
DAY/NIGHT													
ORBIT		2	3	4	5	6	7	8	9				
GSTDN COVERAGE		-VAN -GDY -WSG -MIL -BDA -DKR	-GDX -WSG -MIL -BDA	-MIL		-VAN							
RTS COVERAGE		-HTS -VTS -CTS	-HTS -VTS -CTS	-GTS -HTS -VTS -CTS	-DGS -GTS -HTS -VTS	-IOS -DGS -GTS -HTS	-IOS -DGS -GTS -HTS	-IOS -DGS -GTS -HTS					
TDRS E W													
ATTITUDE				TDRS THERMAL ATT		IMU!		TDRS THERMAL ATT					
SAMS								DRIVE 1 DISK 1A					
SSBUV										OUTGAS			
NOTES:	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <ul style="list-style-type: none"> ■ APU HIR RECONFIG ⊙ IF NOT PREVIOUSLY OPERATED ⊙ -ZLV, +YVV </div> <div style="width: 45%;"> <ul style="list-style-type: none"> ⊙ APU RECONFIG B ⊙ -ZLV, -YVV ⊙ SSBUV SYSTEM VERIFICATION ⊙ SSBUV OUTGAS INIT </div> </div> <p style="text-align: center; font-size: 1.2em; margin-top: 10px;">18A EVA INSERTION</p>												

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
207:02:55/ 207:14:55	000:12:00/ 001:00:00	206:21:55/ 207:09:55	01 / 206 CDT	-2.8	☉	JULY 25, 1991	STS-43	FINAL	06/12/91
CDT :206		CDT:207	FD2:02						MET:001
FD :01									
MET :000									
STS	SLEEP (6.5)				PROG MNT MNT	AMU/IMU SEQUENCE	MNT R S MNT	T D R S D I R	M D M N T R A M M
			POST SLEEP				P/TV03 SETUP DPY		P/TV03 ACT DPY
				10.2 M A I N T		EVA PREP 75 MIN SUIT P/B	A D E C K L E N E S S		EVA
PL				X F E R S V	I U S P D C O	S I M U L A T I O N	P L B P R E P 16A 16A RAT DPY V V		EVA SUPPORT 17A 19A DPY RAT V V
DAY/NIGHT									
ORBIT	9	10	11	12	13	14	15	16	
GSTDN COVERAGE	-DKR	-DKR	-DKR	-DKR	-DKR	-MIL -BDA -DKR	-MIL -BDA -DKR	-VAN -WSG -MIL -BDA	-DKR
RIS COVERAGE	-GTS	-GTS			-DGS	-DGS	-IOS -DGS	-CTS	-IOS -DGS
IDRS E W									
ATTITUDE	IDRS THERMAL ATT								
SAMS	DRIVE 1 DISK 1A				DRIVE 2 DISK 2A				DPLY
SSBUV	OUTGAS								
NOTES:	<p>18A EVA INSERTION</p> <p> ◎DSO 476 PULSE RATE ◎PRE-DPY CK ◎SSBUV CAL TERM ◎SSBUV OUTGAS TERM ◎SSBUV CAL INIT ◎IUS DIRECT (IOS) ◎IDRS DIR (MIL) ◎IDRS CK ATT </p>								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE				
207:14:55/ 208:02:55	001:00:00/ 001:12:00	207:09:55/ 207:21:55	02/ 207 CDT	-1.6	☉	JULY 26, 1991	STS-43	FINAL	06/12/91				
CDT :207 FD :02 MET :001													
	10	11	12	13	14	15	16	17	18	19	20	21	12
STS	TDRS DE	OMS SE	WIND DOW	SRM	ZLV MNV	ZLV MNV	1REP 4.7	ZLV MNV	FROM MED	IMU MNV	ZLV MNV	SLEEP	
	EPL OY	PBU RN	PRO MNV		MEAL		VIS VEST DATA	PRE SLEEP				Return to Nominal Timeline at 1/10:00 with the following exceptions: - Reschedule SHARE-II and middeck payloads as required - Crew wake up will be a half hour earlier on FD3 - Schedule POST EVA ENTRY PREP, ASPIRIN PROTOCOL and EMU MAINTENANCE RECHARGE as required. - Need to regain two orbits of EARTH VIEW later in flight. - The CDR and MS2 will not perform DSO 476. - FILTER CLEANING to be performed on FD3.	
	ING RES	ING RES	EVA	POST EVA	VT SETUP	VE BACK	PSM ED TT VOD OPK 5	P/TV05 ACT MD DK					
PL	DC FD LM OT YD O	PLB PREP	EVA SUPPORT	PS SPT ERT VA	SS BL UVR	SS BL UVR	SS BL UVR	SS BL UVR	SS BL UVR	SS BL UVR	SS BL UVR	SS BL UVR	SS BL UVR
DAY/NIGHT													
ORBIT	17	18	19	20	21	22	23	24					
GSTDN COVERAGE	-VAN -GDS -WSG -MIL -BDA -DKR	-GDS -WSG -MIL -BDA	--MIL	-VAN -GDS -WSG	-VAN -GDS -WSG								
TDRS E W													
ATTITUDE	VIEW	VIEW	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV	-ZLV -YVV
SAMS	SEP	PROT	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A	DRIVE 2 DISK 2A
SSBUV			SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW	SOLAR VIEW
NOTES:			@-ZLV, -YVV	@DEPRESS/REPRESS (Cue Card)	@DISK CHECK	@-ZSI TRK	@SSBUV SOLAR TERM	@-ZLV, +XVV	@DSO 604 VIS VEST INTG OI-3	@OPTICAL DISK CHANGEOUT	@DSO 604 VIS VEST INTG OI-1	@DTO 799 PGSC/MODEM DEMO	@DISK CHECK

18A EVA INSERTION



STS-43 (FD 01)

PL

MCC

P/TV06 ACT (SSBUV)
(PHOTO/TV, P/TV SCENES)

OUTGAS INIT
(PL OPS, SSBUV)

HELINK
FC PURGE

MET
DAY 000
08:00

A1 (B1)
AUTO/VERN

STS
A12 APU HTR GC/FU (three) - A AUTO
TK/FU/H2O SYS 1A, 2A, 3A - AUTO
1B, 2B, 3B - OFF

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE
06 UHF MODE - SINGLEX (or as req'd)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

18A EVA INSERTION

IMU ALIGN LOG

REQD ID:

-Y 26 , -Z 14 ANG ERR _ _ _
1 2 3

ANG:

AX () _ _ _ () _ _ _ () _ _ _

AY () _ _ _ () _ _ _ () _ _ _

AZ () _ _ _ () _ _ _ () _ _ _

EXECUTION TIME:

_ _ / _ _ : _ _ : _ _

ORB
7

09:00

10:00

ORB
8

11:00

ORB
9

12:00

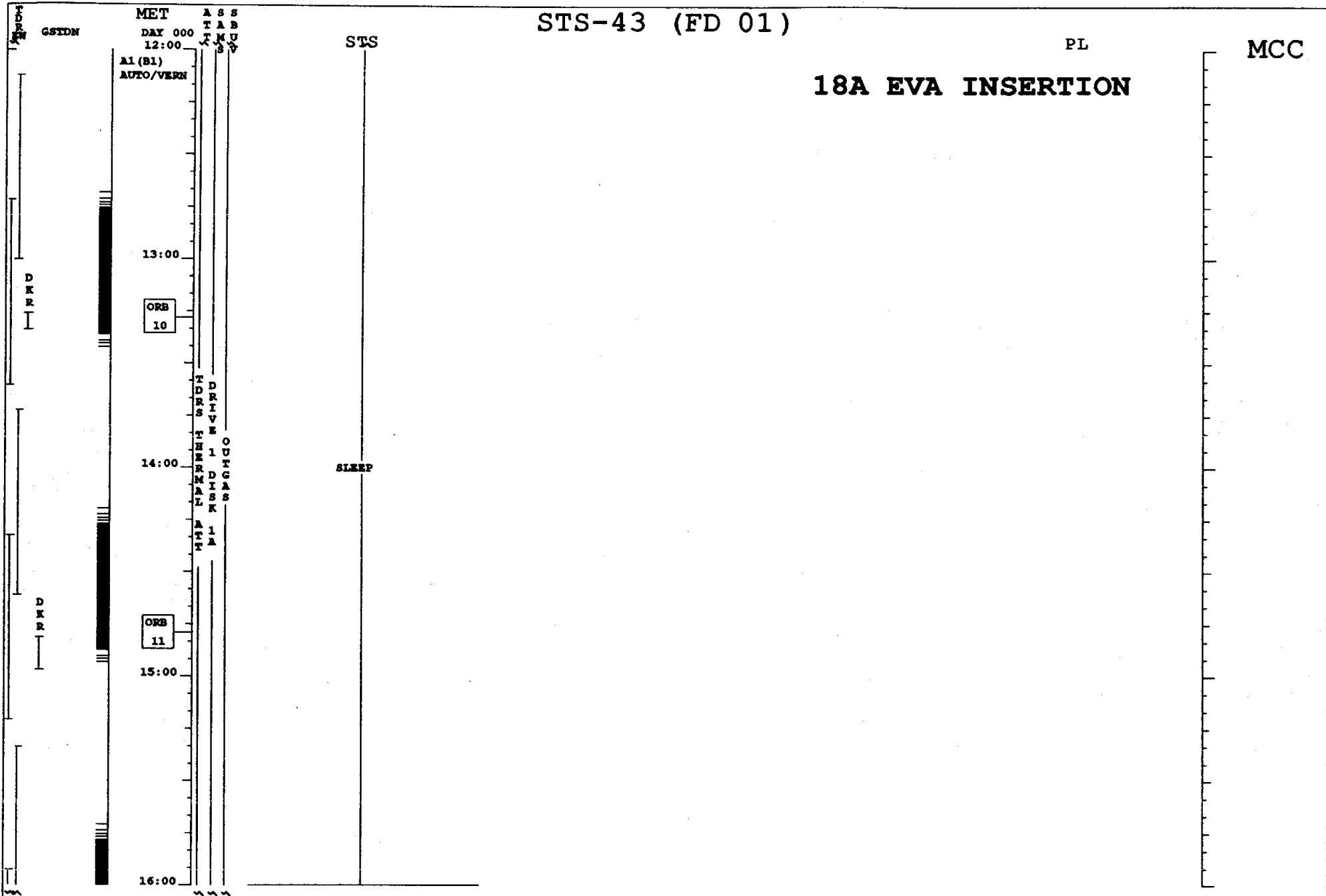
SLEEP

STS-43 (FD 01)

PL

MCC

18A EVA INSERTION

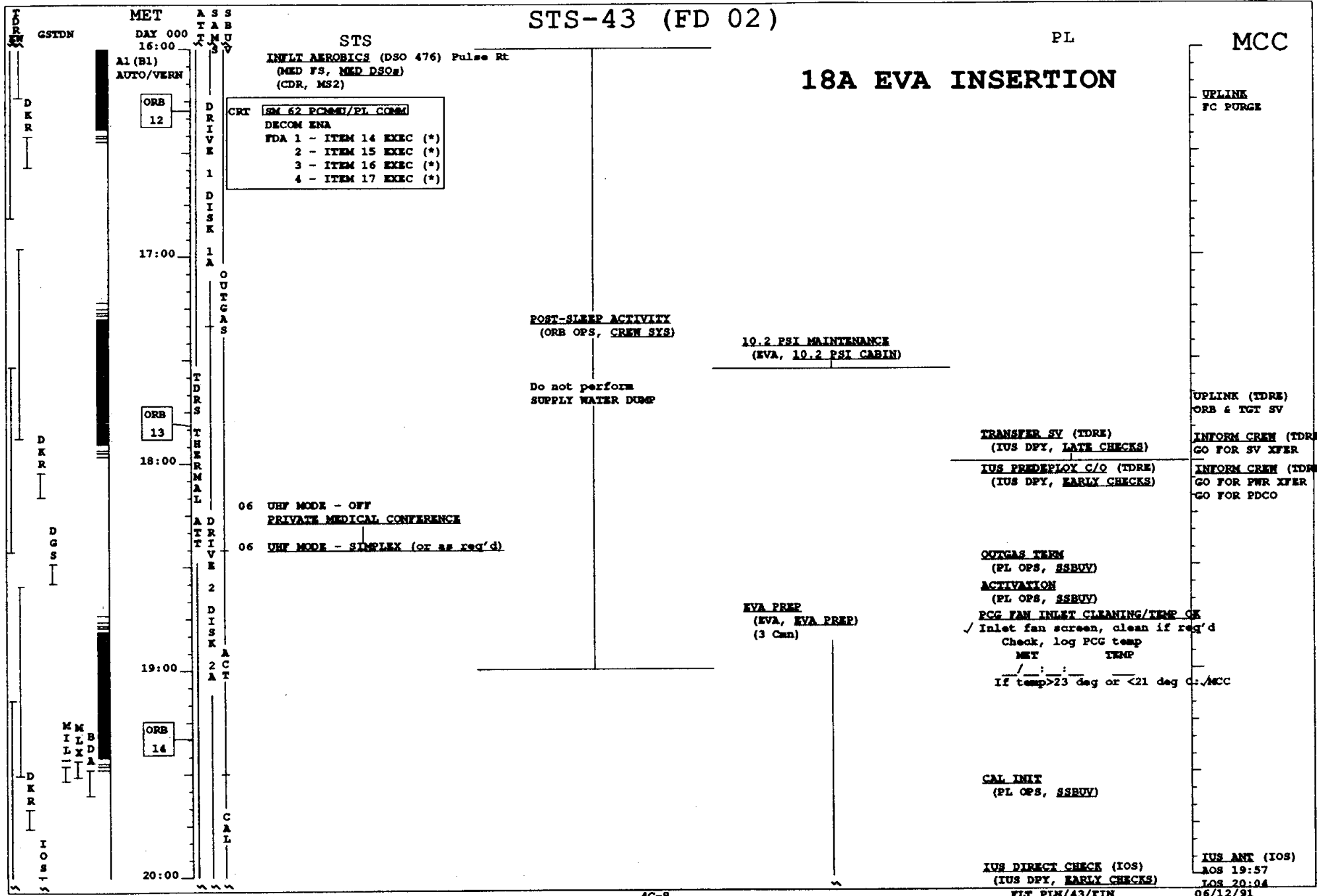


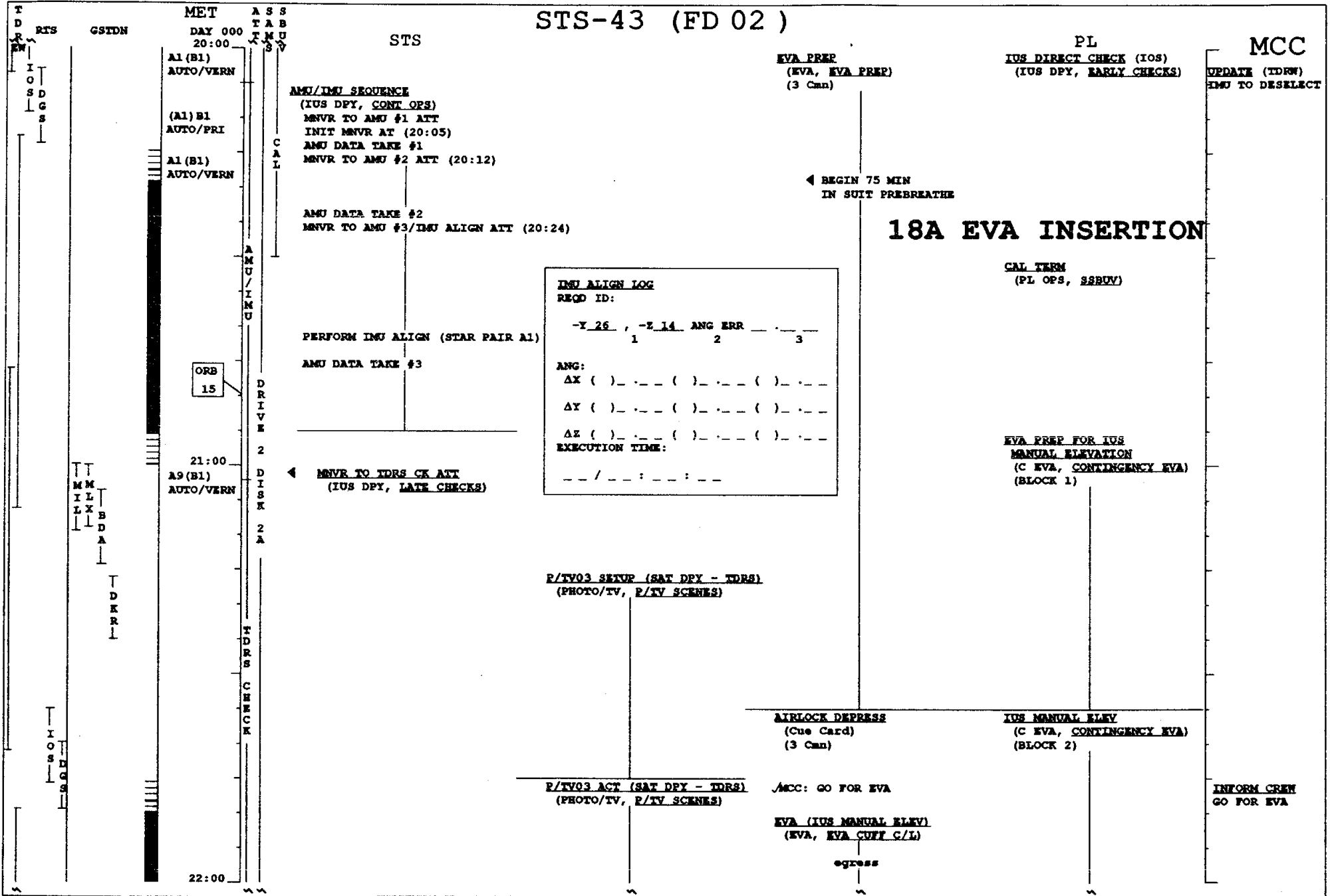
STS-43 (FD 02)

PL

MCC

18A EVA INSERTION





STS-43 (FD 02)

18A EVA INSERTION

IMU ALIGN LOG
 REQD ID:
 -Y 26 , -Z 14 ANG ERR _ _ _
 1 2 3
 ANG:
 ΔX () _ _ _ () _ _ _ () _ _ _
 ΔY () _ _ _ () _ _ _ () _ _ _
 ΔZ () _ _ _ () _ _ _ () _ _ _
 EXECUTION TIME:
 _ _ / _ _ : _ _ : _ _

STS-43 (FD 02)

STS

PL

MCC

MET
DAY 000
22:00

A9(B1)
AUTO/VERM

R/TY03 ACT (SAT DPY - TDRS)
(PHOTO/TV, R/TY SCENES)

EVA (IUS MANUAL ELEV)
(EVA, EVA CUFF C/L)

IUS MANUAL ELEV
(C EVA, CONTINGENCY EVA)
(BLOCK 2)

18A EVA INSERTION

ORB
16

TDRS DIRECT CHECK (MIL)
(IUS DPY, LATE CHECKS)

23:00

MNVR TO DEPLOY ATTITUDE
(IUS DPY, DEPLOY OPS)

ORB
17

001
00:00

egress

ingress

TDRS
AOS (MIL) 22:32
LOS (BDA) 22:44

UPDATE (TDRS)
DPY/BURN PADS
UPDATE (TDRS)
DPY FLT RULES

STS-43 (FD 02)

STS

18A EVA INSERTION

PL
DEPLOY COUNTDOWN
(IUS DPLY, DEPLOY OPS)
XFER TO INT FWR
REL UMBILICALS
DEPLOY IUS/TDRS
(IUS DPLY, DEPLOY OPS)

MCC

INFORM CREW
GO FOR DEPLOY
IUS DEPLOY
(00:16)

OMS SEP BURN
(00:31)

EVA PREP FOR TILT TABLE STORAGE
(C EVA, CONTINGENCY EVA)
(BLOCK 4)

INFORM CREW
GO FOR EVA

TILT TABLE STORAGE
(C EVA, CONTINGENCY EVA)
(BLOCK 6)

SRM 1 IGNITION
(01:16)

MCC: GO FOR EVA

EVA (MANUAL LOWERING, ASE)
(EVA, EVA COFF C/L)

egress

ingress

AIRLOCK REPRESS

(Cue Card)
(3 Can)

POST EVA
(EVA, POST EVA)
(3 Can)

POST EVA SUPPORT
(EVA, POST EVA)

OPTICAL DISK CHANGEOUT step
(PL OPS, SAMS)

MEAL
(All)

SEP MNVR
(IUS DPLY, POST DPLY OPS)
OMS BURN

MNVR TO IUS VIEWING ATT

MNVR TO PROTECT ATT

SRM 1 IGNITION
PI OFF

Change DAP A to A1
MNVR (TRK) -ZLV, -YVV
TG=2 BV=3 CM=90
A/AUTO/VERN Init TRK

CLOSEOUT
(IUS DPLY, POST DPLY OPS)

KU-BD ANT DEPLOY
(ORB OPS, COMM/INST)

KU-BD ACTIVATION (COMM mode)
(ORB OPS, COMM/INST)

LOAD FUTURE MNVR -ZSI
TG=4 BV=3 CM=270
A/AUTO/VERN INIT TRK (04:00)

MET

DAY 001
00:00

A9 (B1)
AUTO/VERN

(A9) B1
FREE/PRI
INRTL/PRI

(A9) B1
AUTO/PRI

01:00

(A9) B1
AUTO/VERN

ORB
18

A1 (B1)
AUTO/VERN

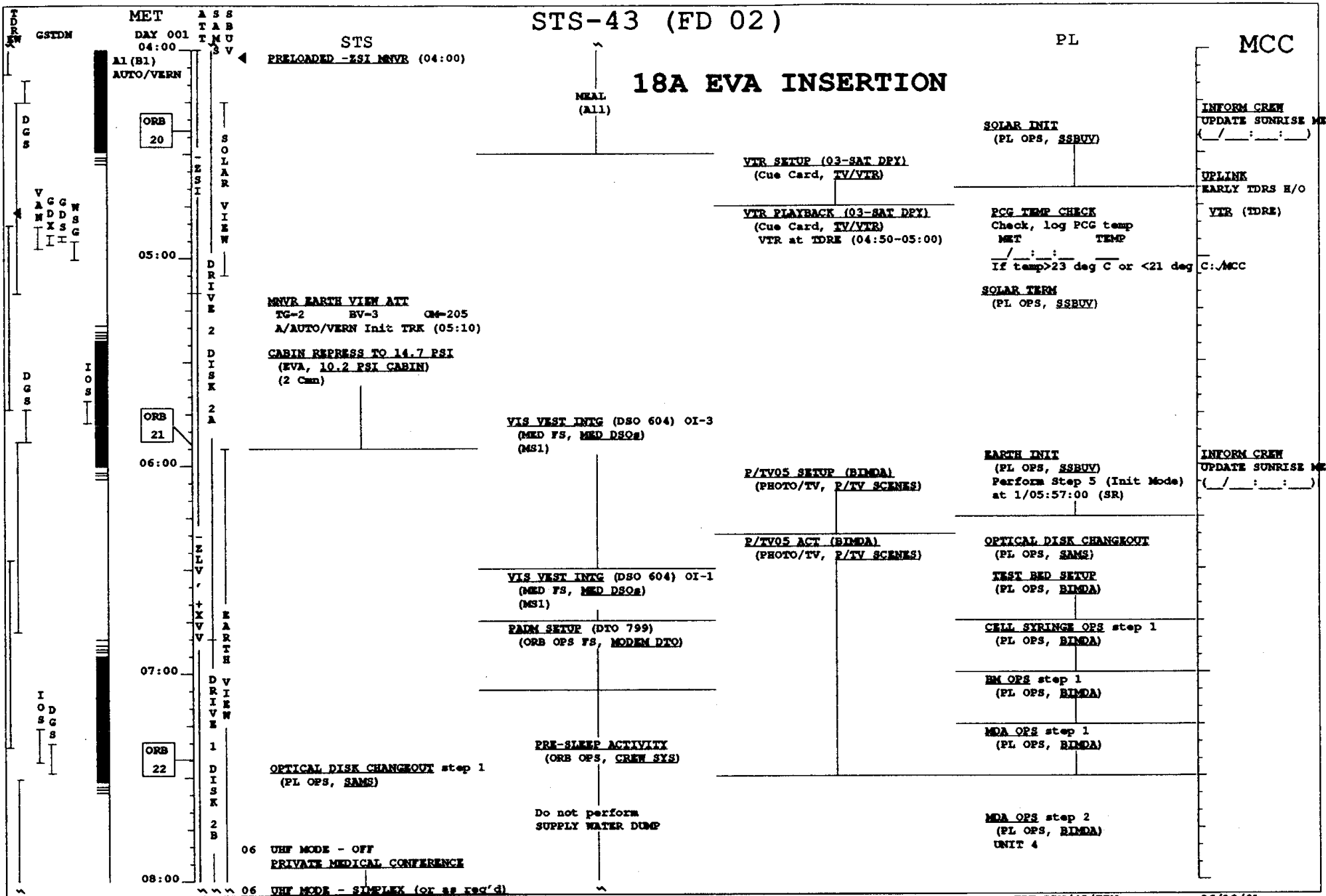
02:00

ORB
19

03:00

04:00





STS-43 (FD 02)

PL

MCC

MET

DAY 001
08:00

A1(B1)
AUTO/VERN

(A1)B1
AUTO/PRI

(A1)B5
INRIL/VERN

ORB
23

09:00
A1(B1)
AUTO/VERN

ORB
24

11:00

ORB
25

12:00

DRIVE EARTH VIEW
1
2
B

STS

06 UHF MODE - OFF
PRIVATE MEDICAL CONFERENCE

06 UHF MODE - SIMPLEX (or as req'd)

019 /COAS FWR-OFF Mount COAS-AFT
MNVN INU ALIGN ATT
STAR PAIR (A2)
A/AUTO/VERN Init MNVN (08:27)

INU ALIGN - S TRK (ORB OPS)
COAS CALIBRATION (ORB OPS)
Change DAP B to B1
MNVN EARTH VIEW ATT
TC-2 BV-3 CM-205
B/AUTO/NORM Init TRK (08:52)

019 /COAS FWR - OFF Stow COAS

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Do not perform
SUPPLY WATER DUMP

IF COAS CAL NOT COMPLETE
BY 08:52:00,

PERFORM ASAP,
APC Relay 07 - H to L
/Relay 07 - L
/ACC

18A EVA INSERTION

INU ALIGN LOG

REQD ID:

-Y 14 , -Z 26 ANG ERR
1 2 3

ANG:

ΔX () () () ()

ΔY () () () ()

ΔZ () () () ()

EXECUTION TIME:

___ / ___ : ___ : ___

COAS CALIBRATION LOG

STAR ID: -Z 26, FOMALHAUT

STAR AVAIL: 08:22 TO 09:08

-Z Δ BIAS ___ , ___

UPDATE TIME: ___ / ___ : ___ : ___

UPLINK
FC PURGE

UPLINK
REFSMAT
NORMALIZAT'N

TV (TDRE/W)
(GND CNTRL-PLB)
SSBUV CLOUD
COVERAGE +
VIEWS OF SSBUV
SENSORS

RETURN TO NOMINAL TIMELINE

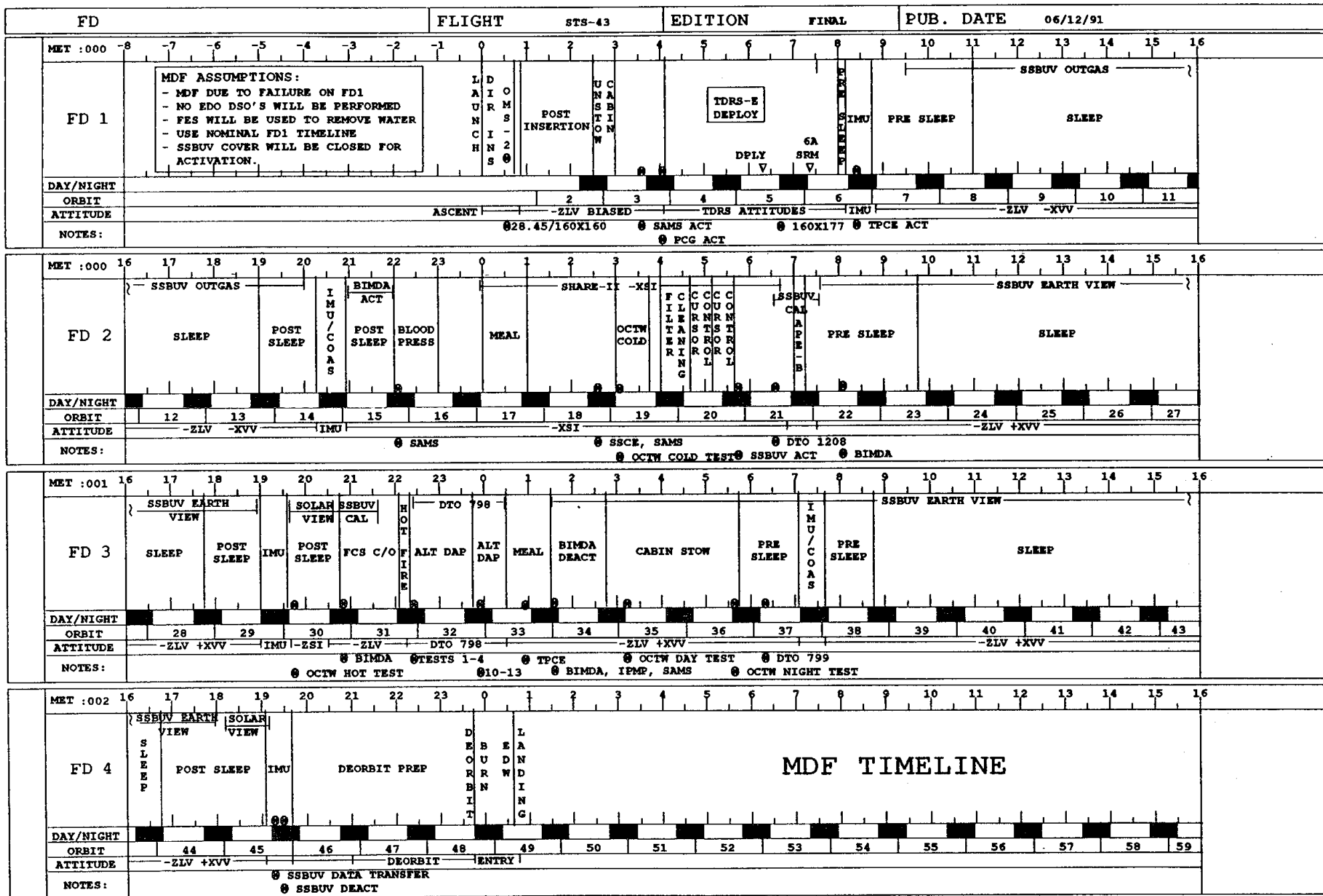
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MINIMUM DURATION FLIGHT (MDF) TIMELINE

The MDF timeline assumes that a failure occurred during or shortly after ascent which places the orbiter in an MDF posture. The timeline assumes a mission of approximately 72 burn duration designed to achieve the highest priority mission objectives.

MDF
TIMELINE

MDF TIMELINE



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
207:02:55/ 207:14:55	000:12:00/ 001:00:00	206:21:55/ 207:09:55	/ 206 CDT	-2.8	☉	JULY 25, 1991	STS-43	FINAL	06/12/91
CDT :206		CDT:207							
MET :000									MET:001
STS	SLEEP							BLOOD PRESS	
							POST SLEEP		
...	<div style="border: 1px solid black; padding: 5px;"> MDF ASSUMPTIONS: - MDF DUE TO FAILURE ON FD1 - DSO 478 (LBNP) WILL NOT BE PERFORMED - FES WILL BE USED TO REMOVE WATER - USE NOMINAL FD1 TIMELINE - SSBUV COVER WILL BE CLOSED FOR ACTIVATION. </div>								
PL									
DAY/NIGHT									
ORBIT	9	10	11	12	13	14	15	16	
GSTDN COVERAGE	-DKR	-DKR	-DKR	-DKR	-DKR	-CAN	-MIL -BDA -DKR	-CAN -VAN	-MIL -BDA -DKR
TDRS									
ATTITUDE	-ZLV -XVV					IMU/COAS		-XSI	
SAMS	DRIVE 1 DISK 1A					DRIVE 2 DISK 2A			
SSBUV	OUTGAS								
NOTES:	<p style="text-align: center;"> ◎DSO 476 PULSE RATE ◎SSBUV OUTGAS TERM ◎AFT STATION </p> <p style="text-align: center;"> ◎DSO 602 BP VARIABILITY ◎UNIT 4 </p> <p style="text-align: right;"> ◎-XSI (I) HTR ACT STEP 1 </p>								
MDF TIMELINE									

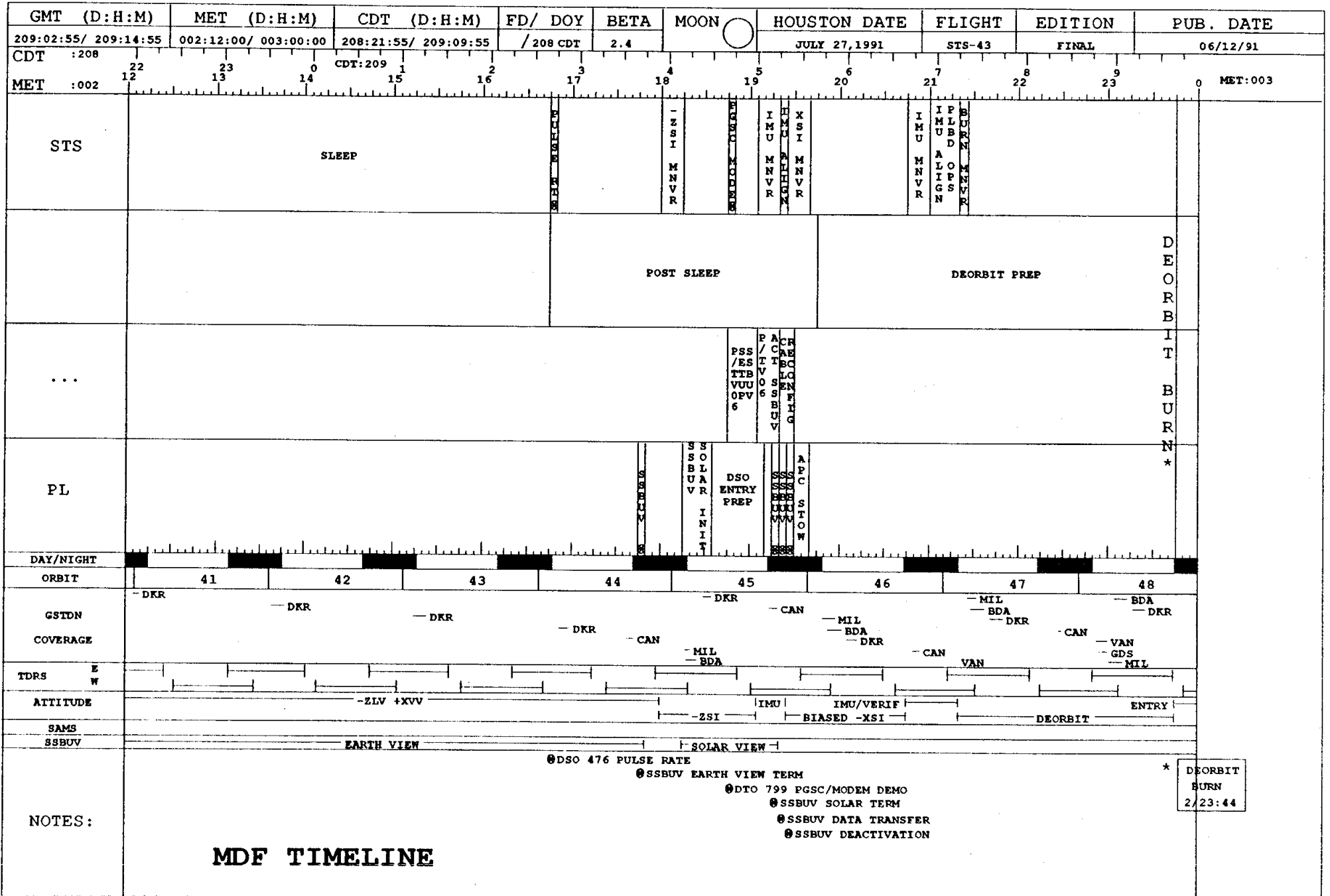
GMT (D:H:M)		MET (D:H:M)		CDT (D:H:M)		FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE		
207:14:55/ 208:02:55		001:00:00/ 001:12:00		207:09:55/ 207:21:55		/207 CDT	-1.6		JULY 26,1991	STS-43	FINAL	06/12/91		
CDT	:207	10	11	12	13	14	15	16	17	18	19	20	21	12
MET	:001	0	1	2	3	4	5	6	7	8	9	10	11	
STS	MEAL						COUNTROL	COUNTROL	ZLV	ZLV	PROV		SLEEP	
			PSF/EL TT VUD OPK 4		F/TV04 ACT FL DK		FILTER CLEANING						PRE SLEEP	
...		SHARE II	PSM/ED TT VUD OPK 5	P/TV05 ACT MD DK	SHARE II	SHARE II	SHARE II	SHARE II	SHARE II	SHARE II	SHARE II	SHARE II	SHARE II	SHARE II
PL				SSCC ACT	OCTW COLD TEST		P/TV04 SETUP APE-B							
DAY/NIGHT														
ORBIT		17	18	19	20	21	22	23	24					
GSTDN														
COVERAGE														
TDRS	E													
ATTITUDE														
SAMS		DRIVE 2 DISK 2A						DRIVE 1 DISK 1B						
SSBUV														
NOTES:		①-XSI (I) HTR ACT STEPS 2-5 ②-OPTICAL DISK CHECK				①-DTO 1208 CURSOR CNTL EVAL II ②-OPTICAL DISK CHANGEOUT ③-XSI (II) HTR DEACT ④-XSI (II) HTR ACT				①-ZLV, +XVV ②-SAMPLE 1, 2, 3 ③-OPTICAL DISK CHECK ④-SSBUV CAL INIT ⑤-XSI (II) HTR DEACT STEP 2 ⑥+ZLV, +YVV ⑦-DTO 1208 CURSOR CNTL EVAL II ⑧-OPTICAL DISK CHECK ⑨-SSBUV CAL TERM				

MDF TIMELINE

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
208:02:55/ 208:14:55	001:12:00/ 002:00:00	207:21:55/ 208:09:55	/ 207 CDT	-0.4	☉	JULY 26, 1991	STS-43	FINAL	06/12/91
CDT :207									
MET :001									MET:002
STS	SLEEP								
	POST SLEEP								
...									
PL									
DAY/NIGHT									
ORBIT	25	26	27	28	29	30	31	32	
GSTDN COVERAGE	--DKR	--DKR	--DKR	--CAN	--BDA --DKR	--CAN	--MIL --BDA --DKR	--CAN	--VAN --GDS --MIL --BDA --DKR
TDRS									
ATTITUDE	-ZLV +XVV								
SAMS	DRIVE 1 DISK 1B								
SSBUV	EARTH VIEW								
NOTES:	<p style="text-align: center;">MDF TIMELINE</p> <ul style="list-style-type: none"> ⊙ DSO 476 PULSE RATE ⊙ APU HTR ACT ⊙ DSO 602 BP VARIABILITY ⊙ EARTH TERM ⊙ OPTICAL DISK CHANGEOUT ⊙ DTO 798 ALT MODE TESTS 1-4 ⊙ SSBUV SOLAR TERM ⊙ APU HTR RECONFIG ⊙ -ZLV, -YVV ⊙ DTO 798 ALT MODE TESTS 10-13 ⊙ SSBUV CAL INIT ⊙ DTO 1208 CURSOR CNTL EVAL II ⊙ SAMPLES 3-6 ⊙ SSBUV CAL TERM ⊙ SAMPLES 4-6 ▶ SHARE-II HTR 3,6 ACT 								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
208:14:55/ 209:02:55	002:00:00/ 002:12:00	208:09:55/ 208:21:55	/ 208 CDT	1.0	☉	JULY 27, 1991	STS-43	FINAL	06/12/91
CDT : 208									
MET : 002									
STS	ALT DAP	ZLV MNV R							SLEEP
	MEAL								
			CABIN STOW						PRE SLEEP
...	PSM/ED TT VUD OPK 5	SSR UTV I N I T	P/TV05 ACT MD DK	PSF/EL TT VUD OPK 4	P/TV04 ACT FL DK		P/TV04 ACT FL DK		
PL									
DAY/NIGHT									
ORBIT	33	34	35	36	37	38	39	40	
GSTDN COVERAGE	-VAN -GDS -MIL -BDA -DKR	-MIL -BDA	-VAN -GDS -MIL		-VAN				
TDRS									
ATTITUDE					IMU/COAS				
SAMS									
SSBUV									
NOTES:	@DTO 798 ALT MODE TESTS 10-13 @SHARE-II 3,6 HTR DEACT @-ZLV, +XVV @SAMPLES 1-6 @SAMPLES 1,2 @UNITS 2,3				@DTO 799 PGSC/MODEM DEMO @FWD STATION @-ZLV, +XVV				

MDF TIMELINE



MDF TIMELINE

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/ DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
209:14:55/ 210:02:55	003:00:00/ 003:12:00	209:09:55/ 209:21:55	/209 CDT	4.0	○	JULY 28, 1991	STS-43	FINAL	06/12/91
CDT :209									
MET :003									
STS									
	E D W								
	L A N D I N G *								
PL									
DAY/NIGHT									
ORBIT	49	50	51	52	53	54	55	56	
GSTDN COVERAGE	--VAN --GDS --MIL --BDA		--VAN --GDS						
TDRS E W									
ATTITUDE	ENTRY								
SAMS									
SSBUV									
NOTES:	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> * EDW LANDING 3/00:44 </div>								

MDF TIMELINE

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

STS-43
ATTITUDE TIMELINE

ATTITUDE
TIMELINE

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 0/01:12:00 17:07	TRK TGT=2 BV=3(90.00, 0.00) OM= 75.00	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+285	POST INS ATT IUS DIR CK
2 0/03:35:00 40:41	MNVR R+344.00 P+310.00 Y+ 25.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 76 P 146	STAR PR A2 -Y: 14 -Z: 26	IMU ALIGN
3 0/04:15:00 19:03	MNVR R+309.00 P+297.00 Y+356.00	B1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 90 P 180		TDRS DIR CK GDx 4
4 0/05:33:00 36:12	TRK TGT=4 BV=5(281.70, 0.00) OM=270.00 DEPLOY 0/06:12:37	A9 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.01	SUN T 78 P 181	INRTL R+298 P+260 Y+345	TDRS E DEPLOY ATTITUDE
5 0/06:13:37 DPY +01:00	ROT BV=5(0.00,270.00)	B1 FREE PRI	DSC 0.420 DB AT 3.00 DB RT 0.20		ROT R+298 START P+260 ATT Y+345	-2.2 FPS SEP AND BEGIN -70 DEG PITCH
6 0/06:13:45 DPY +01:08	ROT BV=5(0.00,270.00)	B1 FREE PRI	DSC 0.840 DB AT 3.00 DB RT 0.20		ROT R+298 START P+258 ATT Y+348	SEP CUTOFF CONTINUE -70 DEG PITCH
7 0/06:15:03 DPY +02:26	CANCEL	B1 INRT PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 9 P 184	INRTL R+310 P+221 Y+ 45	END OF -70 DEG PITCH
8 0/06:19:37 24:46 DPY +07:00	MNVR R+249.00 P+ 65.00 Y+283.00	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 151 P 66	TIG 0/06:27:37	OMS SEP ATTITUDE
9 0/06:30:37 33:38 DPY +18:00	TRK TGT=1 BV=3(90.00, 0.00) OM= 0.00	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	EARTH T 90 P 180		IUS VIEWING ATTITUDE
10 0/06:57:37 59:09 DPY +45:00	TRK TGT=1 BV=5(320.00, 0.00) OM= 0.00	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 56 P 176		WINDOW PROTECT ATTITUDE
11 0/07:12:37 DPY +60:00	CANCEL	B1 INRT VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 56 P 176	INRTL R+323 P+311 Y+ 53	INRTL HOLD
12 0/07:25:00 36:27	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV

ALL ATTITUDES IN MEAN OF 1950

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 0/08:15:00 28:19	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 121 P 120	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
2 0/08:35:00 44:33	TRK TGT=2 BV=3(90.00, 0.00) OM=335.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 25	SSBUV OUTGAS BIASED -ZLV TAIL FWD
3 0/21:45:00 59:47	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 121 P 120	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
4 0/22:05:00 18:57	TRK TGT=4 BV=3(90.00, 0.00) OM=190.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 91 P 0	INRTL R+115 P+350 Y+ 31	SSBUV SOLAR VIEW 1 (-ZSI)
5 0/23:20:00 26:19	TRK TGT=2 BV=3(90.00, 0.00) OM=205.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 25	SSBUV EARTH VIEW ATTITUDE BIAS -ZLV NOSE FWD
6 1/08:30:00 43:28	MNVR R+344.00 P+310.00 Y+ 25.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 77 P 147	STAR PR A2 -Y: 14 -Z: 26	IMU ALIGN -Z COAS CAL STAR 26
7 1/09:00:00 12:58	TRK TGT=2 BV=3(90.00, 0.00) OM=205.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 25	SSBUV EARTH VIEW
8 1/20:25:00 33:09	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 120 P 119	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
9 1/20:50:00 21:03:54	TRK TGT=4 BV=3(90.00, 0.00) OM=190.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 91 P 360	INRTL R+117 P+347 Y+ 31	SSBUV SOLAR VIEW 2 (-ZSI)
10 1/22:05:00 13:00	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
11 2/02:45:00 50:00	TRK TGT=2 BV=3(90.00, 0.00) OM=210.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 30	SSBUV EARTH VIEW
12 2/07:10:00 23:38	MNVR R+344.00 P+310.00 Y+ 25.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 77 P 147	STAR PR A2 -Y: 14 -Z: 26	IMU ALIGN

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 2/07:35:00 47:34	TRK TGT=2 BV=3(90.00, 0.00) OM=210.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 30	SSBUV EARTH VIEW
2 2/17:55:00 18:00:25	MNVR R+142.00 P+ 3.00 Y+326.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 155 P 353	STAR PR B1 -Y: 57 -Z: 40	IMU ALIGN
3 2/18:15:00 20:55	TRK TGT=4 BV=3(90.00, 0.00) OM=190.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 90 P 0	INRTL R+118 P+344 Y+ 31	SSBUV SOLAR VIEW 3 (-ZSI)
4 2/20:55:00 21:07:57	TRK TGT=4 BV=2(180.00, 0.00) OM=335.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 180 P 332	INRTL R+343 P+ 30 Y+311	SHARE -XSI ATTITUDE
5 3/06:40:00 53:12	TRK TGT=2 BV=3(90.00, 0.00) OM=210.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 30	SSBUV EARTH VIEW
6 3/07:24:00 37:17	MNVR R+344.00 P+310.00 Y+ 25.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 78 P 148	STAR PR A2 -Y: 14 -Z: 26	IMU ALIGN
7 3/07:43:00 47:56	TRK TGT=2 BV=3(90.00, 0.00) OM=210.00	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 30	SSBUV EARTH VIEW
8 3/18:00:00 13:07	MNVR R+344.00 P+310.00 Y+ 25.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 79 P 148	STAR PR A2 -Y: 14 -Z: 26	IMU ALIGN
9 3/18:25:00 37:07	TRK TGT=2 BV=3(90.00, 0.00) OM=210.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 30	SSBUV EARTH VIEW
10 3/22:45:00 46:50	TRK TGT=4 BV=3(90.00, 0.00) OM=190.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 91 P 0	INRTL R+119 P+342 Y+ 31	SSBUV SOLAR VIEW 4 (-ZSI)
11 3/23:55:00 4/00:03:33	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
12 4/05:55:00 06:08:01	MNVR R+347.00 P+291.00 Y+316.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 117 P 151	ALT STAR PR -Y: 30 -Z: 26	IMU ALIGN ATT

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 4/06:13:00 13:45	MNVR R+340.00 P+281.00 Y+310.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 116 P 156	+X ST: 14	+X COAS CAL
2 4/06:20:00 32:14	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV WASTE WATER DUMP
3 4/17:55:00 18:04:54	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 118 P 118	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
4 4/18:15:00 29:56	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
5 4/22:55:00 23:02:30	TRK TGT=2 BV=3(90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD AMOS RCS TEST
6 4/23:20:00 27:30	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
7 5/01:30:00 45:00	TRK TGT=2 BV=5(270.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 180	LVLH R+180 P+180 Y+ 0	+ZLV TAIL FWD APE RCS TEST FARFIELD OPS
8 5/03:30:00 45:00	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
9 5/04:40:00 52:16	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 117 P 118	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
10 5/05:00:00 12:33	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
11 5/16:45:00 57:00	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 117 P 118	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
12 5/17:05:00 17:30	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	BIAS -ZLV NOSE SOUTH DTC 798 - START ATT

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 5/19:30:00	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #1 LVLH HOLD
2 5/19:52:00	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #2 LVLH HOLD
3 5/20:14:00 14:02	MNVR R+ 27.00 P+ 74.00 Y+ 11.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 109 P 31		TEST #3 INRTL HOLD
4 5/20:36:00	MNVR R+ 27.00 P+ 74.00 Y+ 11.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	SUN T 109 P 31		TEST #4 INRTL HOLD
5 5/21:00:00 03:46	MNVR R+ 48.00 P+111.00 Y+ 6.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 90 P 359		TEST #10 EIGEN AXIS P=45 Y=35
6 5/21:10:00 11:31	MNVR R+ 27.00 P+ 74.00 Y+ 11.00	B1 AUTO ALT	DSC 0.500 DB AT 1.00 DB RT 0.02	SUN T 109 P 31		TEST #11 EIGEN AXIS P=225 Y=325
7 5/21:15:00 22:30	MNVR R+ 54.00 P+ 71.00 Y+335.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	SUN T 139 P 349		TEST #12 EIGEN AXIS P=45 Y=325
8 5/21:32:00 35:45	MNVR R+ 27.00 P+ 74.00 Y+ 11.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 109 P 31		TEST #13 EIGEN AXIS P=225 Y=35
9 5/21:40:00 41:32	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	RE-INIT BIAS -ZLV NOSE SOUTH ATT
10 5/21:45:00	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #5 LVLH HOLD
11 5/21:57:00	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #6 LVLH HOLD
12 5/22:09:00	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #7 LVLH HOLD

Attitude Timeline

MET	MNVR OPTION	DAP	E/S	REMARKS	EVENT	
1 5/22:21:00	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #8 LVLH HOLD
2 5/22:33:00 33:02	MNVR R+198.00 P+ 66.00 Y+ 29.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 97 P 226		TEST #9 INRTL HOLD
3 5/22:40:00 42:20	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	RE-INIT BIAS -ZLV NOSE SOUTH ATT
4 5/23:45:00 48:44	TRK TGT=2 BV=5(69.00, 30.00) OM=301.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 72 P 32	LVLH R+309 P+206 Y+ 45	TEST #14 EIGEN AXIS P=135 Y=35
5 5/23:55:00 58:44	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #15 EIGEN AXIS P=315 Y=325
6 6/00:05:00 08:44	TRK TGT=2 BV=5(122.00, 18.00) OM=312.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 120 P 22	LVLH R+ 19 P+131 Y+ 48	TEST #16 EIGEN AXIS P=135 Y=325
7 6/00:20:00 23:44	TRK TGT=2 BV=3(90.00, 0.00) OM=280.00	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 80	TEST #17 EIGEN AXIS P=315 Y=35
8 6/00:30:00	ROT BV=4(358.00, 0.00)	B1 AUTO ALT	DSC 1.000 DB AT 1.00 DB RT 0.02		ROT R+ 89 START P+ 79 ATT Y+ 19	TEST #18
9 6/00:31:30	CANCEL	B1 AUTO ALT	DSC 1.000 DB AT 1.00 DB RT 0.02	SUN T 102 P 238	INRTL R+179 P+ 77 Y+ 17	STOP TEST #18
10 6/00:35:00	ROT BV=1(0.00, 0.00)	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02		ROT R+179 START P+ 77 ATT Y+ 17	TEST #19
11 6/00:42:30	CANCEL	B1 AUTO ALT	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 102 P 148	INRTL R+269 P+ 77 Y+ 17	STOP TEST #19
12 6/00:45:00	ROT BV=5(45.00, 45.00)	B1 AUTO ALT	DSC 0.500 DB AT 1.00 DB RT 0.02		ROT R+269 START P+ 77 ATT Y+ 17	TEST #20

Attitude Timeline

MET	MNVR OPTION		DAF	E/S	REMARKS	EVENT
1 6/00:48:00	CANCEL	B1 AUTO ALT	DSC 0.500 DB AT 1.00 DB RT 0.02	SUN T 157 P 31	INRTL R+315 P+ 60 Y+303	STOP TEST #20
2 6/00:50:00	ROT BV=5(0.00, 90.00)	B1 AUTO ALT	DSC 0.700 DB AT 1.00 DB RT 0.02		ROT R+315 START P+ 60 ATT Y+303	TEST #21
3 6/00:52:08	CANCEL	B1 AUTO ALT	DSC 0.700 DB AT 1.00 DB RT 0.02	SUN T 71 P 12	INRTL R+ 65 P+190 Y+337	STOP TEST #21
4 6/01:05:00 29:33	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	B1 AUTO ALT	DSC 0.100 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	TEST #22 MNVR TO -ZLV NOSE SOUTH
5 6/04:50:00 05:01:44	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 116 P 117	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
6 6/05:10:00 23:04	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
7 6/15:25:00 36:40	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 116 P 117	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
8 6/15:45:00 56:27	TRK TGT=2 BV=3(90.00, 0.00) OM= 90.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+270	-ZLV -YVV
9 6/18:15:00 30:00	TRK TGT=2 BV=5(270.00, 0.00) OM= 90.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 180	LVLH R+ 0 P+ 0 Y+ 90	+ZLV -YVV APE RCS TEST NEARFIELD OPS
10 6/20:10:00 25:00	TRK TGT=2 BV=3(90.00, 0.00) OM= 90.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+270	-ZLV -YVV
11 6/21:45:00 52:30	TRK TGT=2 BV=3(90.00, 0.00) OM=180.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD AMOS RCS TEST
12 6/22:05:00 12:30	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV WASTE WATER DUMP

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 7/01:50:00 02:05:00	TRK TGT=2 BV=5(270.00, 0.00) OM= 90.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 180	LVLH R+ 0 P+ 0 Y+ 90	+ZLV -YVV APE RCS TEST NEARFIELD OPS
2 7/03:30:00 37:29	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 116 P 117	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
3 7/03:50:00 04:03:21	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
4 7/14:10:00 22:39	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 115 P 117	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
5 7/14:30:00 42:06	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
6 7/20:00:00 09:20	MNVR R+ 76.00 P+ 34.00 Y+ 25.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 110 P 8		CREW CONF ATT
7 7/22:05:00 08:27	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV
8 8/02:15:00 27:24	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 115 P 117	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
9 8/02:35:00 47:18	TRK TGT=2 BV=3(90.00, 0.00) OM=270.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 90	-ZLV +YVV WASTE WATER DUMP
10 8/14:20:00 32:10	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 114 P 116	STAR PR A1 -Y: 26 -Z: 14	IMU ALIGN
11 8/14:40:00 45:30	TRK TGT=4 BV=5(184.00, 0.00) OM= 90.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 176 P 170	INRTL R+230 P+ 29 Y+318	TAIL SUN ATT
12 8/17:16:00 21:30	MNVR R+282.00 P+119.00 Y+320.00	A1 AUTO VERN	DSC 0.200 DB AT 1.00 DB RT 0.02	SUN T 114 P 116	-Y ST: 26 -Z ST: 14	D/O IMU ALIGN

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 8/17:36:00 39:15	MNVR R+142.00 P+ 3.00 Y+326.00	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 160 P 0	-Y ST: 57 -Z ST: 40	D/O VERIF ALIGN
2 8/20:05:00 10:23	MNVR R+ 74.00 P+166.00 Y+ 48.00 TIG 8/20:16:18	B1 AUTO PRI	DSC 0.500 DB AT 3.00 DB RT 0.20	SUN T 27 P 292		D/O BURN ATT

STS-43 DAP BOOK

DAP A CONFIGURATIONS

	ITEM #	A1*	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
<u>TRANSLATION</u>												
PULSE ft/sec	1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.25	0.50	1.99
<u>ROTATION</u>												
DSC RT NORM °/sec	2	0.200	0.400	0.200	0.500	0.200	0.200	0.200	0.200	0.200	0.100	0.100
VERN °/sec	3	0.200	0.400	0.008	0.200	0.200	0.200	0.200	0.200	0.200	0.100	0.100
PULSE NORM °/sec	4	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.07	0.14
VERN °/sec	5	0.010	0.010	0.010	0.010	0.050	0.010	0.010	0.010	0.010	0.033	0.132
COMP NORM °/sec	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERN °/sec	7	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
<u>DEADBAND</u>												
ATT NORM (deg)	8	5.00	1.00	1.00	3.00	5.00	5.00	2.00	2.00	1.00	1.00	1.00
VERN (deg)	9	1.000	1.000	0.070	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
RATE NORM °/sec	10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
VERN °/sec	11	.020	.020	.010	.020	.020	.020	.020	.020	.010	.010	.010
<u>JET OPT</u>												
P	12	1	1	1	1	1	3	1 or 3	1	3	1	1
Y	13	1	1	3	1	1	3	1 or 3	1	3	1	1
CNTL ACCEL	14	0	0	0	0	0	0	0	0	0	0	0

*I-LOADED OPS-2 DAP Configuration

DAP B CONFIGURATIONS

	ITEM #	B1*	B2	B3	B4	B5	B6	B7	B8
<u>TRANSLATION</u>									
PULSE ft/sec	15	0.02	0.02	0.02	0.02	0.02		0.05	0.01
<u>ROTATION</u>									
DSC RT NORM °/sec	16	0.500	0.200	0.200	0.200	0.200		0.500	0.200
VERN °/sec	17	0.200	0.200	0.200	0.008	0.016		0.200	0.200
PULSE NORM °/sec	18	0.04	0.04	0.04	0.04	0.04		0.04	0.04
VERN °/sec	19	0.002	0.002	0.002	0.002	0.002		0.002	0.002
COMP NORM °/sec	20	.00	.00	.00	.00	.00		.00	.00
VERN °/sec	21	.000	.000	.000	.000	.000		.000	.000
<u>DEADBAND</u>									
ATT NORM (deg)	22	3.00	3.00	3.00	0.30	3.00		2.00	2.00
VERN (deg)	23	1.000	1.000	1.000	0.100	0.033		1.000	1.000
RATE NORM °/sec	24	0.20	0.20	0.20	0.20	0.20		0.20	0.20
VERN °/sec	25	.020	.020	.020	.010	.020		.020	.020
<u>JET OPT</u>									
P	26	1	3	1	3	3		1 or 3	1
Y	27	1	3	1	3	3		1 or 3	1
CNTL ACCEL	28	0	0	0	0	0		0	0

*I-LOADED OPS-2 DAP Configuration

DAP BOOK

HOOK
VELCRO

FLT PLN-1a/43/0/A

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	PTC ($\sim 2^\circ$ below +X)*
= 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

G2D DAP CONFIG	
CNTL ACCEL = 0	Orbiter Alone
= 1-5	not used
JET OPT = 1	Normal
= 2	Nose only
= 3	Tail only

FLT PLN-1b/43/0/A

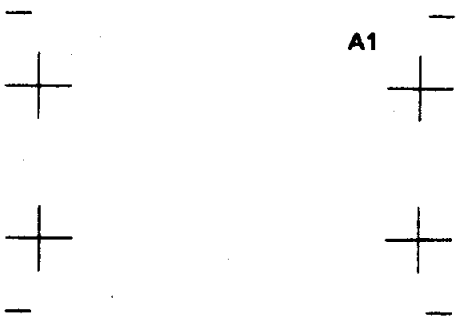
TOP



DAP PURPOSE

- A1 - NOMINAL
IMU ALIGN
LOSS OF VERN
(NOSE & TAIL)
- A2 - PTC
- A3 - GG
- A4 - PRE/POST DEPLOY
- A5 - IMU ROTATION
- A6 - LOSS OF VERN
(TAIL ONLY)
- A7 - RENDEZVOUS
- A8 - PROX OPS
- A9 - IUS DEPLOY
- A10 - SHARE-II DEPRIME
(2 SEC)
- A11 - SHARE-II DEPRIME
(8 SEC)

FLT PLN-2a/43/0/B



A1

DAP A1

PURPOSE:

NOMINAL
IMU ALIGN
LOSS OF VERN
(NOSE & TAIL)

0.1 0

1 TRANSLATION
PULSE

0.2 0 0

2 ROTATION
DSC RT NORM

0.2 0 0

3 VERN

0.1 0

4 PULSE NORM

0.0 1 0

5 VERN

.0 0 0

6 COMP NORM

.0 0 0

7 VERN

DEADBAND

5.0 0

8 ATT NORM

1.0 0 0

9 VERN

0.2 0

10 RATE NORM

0.2 0

11 VERN

1

12 JET OPT P

1

13 Y

0

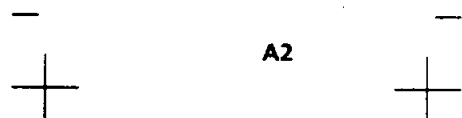
14 CNTL ACCEL

FLT PLN-2b/43/0/A



TOP

FLT PLN-3a/43/0/A



A2



A1

TOP

DAP A2

A2

PURPOSE:

PTC

0.1 0

1

TRANSLATION PULSE

0.4 0 0

2

ROTATION DSC RT NORM

0.4 0 0

3

VERN

0.1 0

4

PULSE NORM

0.0 1 0

5

VERN

.0 0 0

6

COMP NORM

.0 0 0

7

VERN

DEADBAND

1.0 0

8

ATT NORM

1.0 0 0

9

VERN

0.2 0

10

RATE NORM

.0 2 0

11

VERN

1

12

JET OPT P

1

13

Y

0

14

CNTL ACCEL

FLT PLN-3b/43/0/A

FLT PLN-4a/43/0/A



TOP

A3

TOP



A2

DAP A3

A3

PURPOSE:

GG

0.1 0

1

TRANSLATION PULSE

0.2 0 0

2

ROTATION DSC RT NORM

0.0 0 0

3

VERN

0.1 0

4

PULSE NORM

0.0 1 0

5

VERN

.0 0 0

6

COMP NORM

.0 0 0

7

VERN

DEADBAND

1.0 0

8

ATT NORM

0.0 7 0

9

VERN

0.2 0

10

RATE NORM

.0 1 0

11

VERN

1

12

JET OPT P

3

13

Y

0

14

CNTL ACCEL

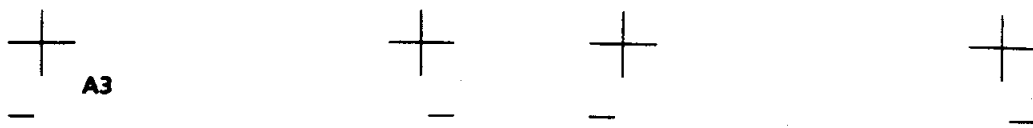
FLT PLN-4b/43/0/A

FLT PLN-5a/43/0/A



TOP

A4



A3

DAP A4

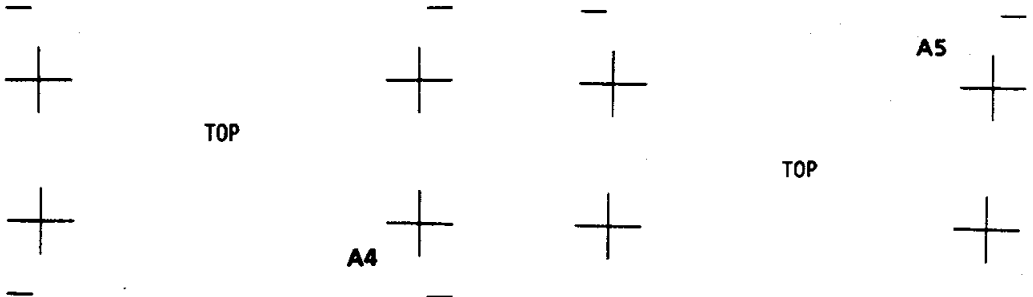
PURPOSE:
PRE/POST DEPLOY

A4

0.1 0	1	TRANSLATION PULSE	
0.5 0 0	2	ROTATION DSC RT	NORM
0.2 0 0	3		VERN
0.1 0 0	4	PULSE	NORM
0.0 1 0	5		VERN
.0 0 0	6	COMP	NORM
.0 0 0	7		VERN
3.0 0	8	DEADBAND ATT	NORM
1.0 0 0	9		VERN
0.2 0	10	RATE	NORM
0.0 2 0	11		VERN
1	12	JET OPT	P
1	13		Y
0	14	CNTL ACCEL	

FLT PLN-5b/43/0/A

FLT PLN-6a/43/0/A



TOP

TOP

A5

A4

DAP A5

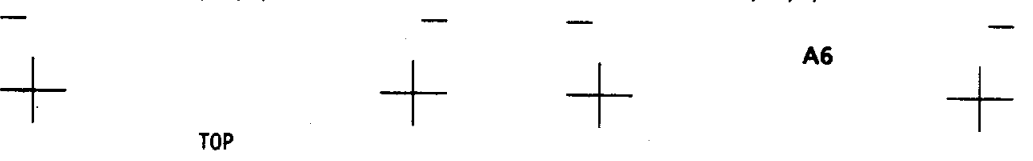
PURPOSE:
IMU ROTATION

A5

0.1 0	1	TRANSLATION PULSE	
0.2 0 0	2	ROTATION DSC RT	NORM
0.2 0 0	3		VERN
0.1 0 0	4	PULSE	NORM
0.0 5 0	5		VERN
.0 0 0	6	COMP	NORM
.0 0 0	7		VERN
5.0 0	8	DEADBAND ATT	NORM
1.0 0 0	9		VERN
0.2 0	10	RATE	NORM
.0 2 0	11		VERN
1	12	JET OPT	P
1	13		Y
0	14	CNTL ACCEL	

FLT PLN-6b/43/0/A

FLT PLN-7a/43/0/A



TOP

A6

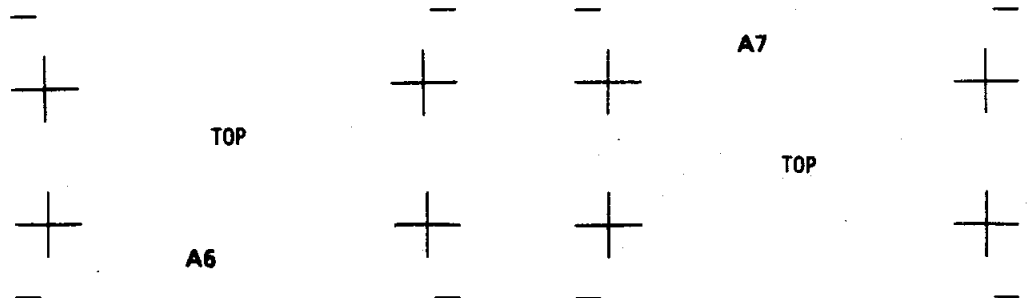


PURPOSE:
LOSS OF VERN
(TAIL ONLY)

0.1 0	1	TRANSLATION	
		PULSE	
ROTATION			
0.2 0 0	2	DSC RT	NORM
0.2 0 0	3		VERN
0.1 0 0	4	PULSE	NORM
0.0 1 0	5		VERN
.0 0 0	6	COMP	NORM
.0 0 0	7		VERN
DEADBAND			
5.0 0	8	ATT	NORM
1.0 0 0	9		VERN
0.2 0	10	RATE	NORM
.0 2 0	11		VERN
3	12	JET OPT	P
3	13		Y
0	14	CNTL ACCEL	

FLT PLN-7b/43/0/A

FLT PLN-8a/43/0/A

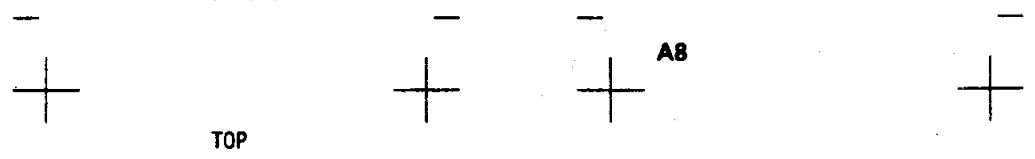


PURPOSE:
RENDEZVOUS

0.1 0	1	TRANSLATION	
		PULSE	
ROTATION			
0.2 0 0	2	DSC RT	NORM
0.2 0 0	3		VERN
0.1 0 0	4	PULSE	NORM
0.0 1 0	5		VERN
.0 0 0	6	COMP	NORM
.0 0 0	7		VERN
DEADBAND			
2.0 0	8	ATT	NORM
1.0 0 0	9		VERN
0.2 0	10	RATE	NORM
.0 2 0	11		VERN
1 or 3	12	JET OPT	P
1 or 3	13		Y
0	14	CNTL ACCEL	

FLT PLN-8b/43/0/A

FLT PLN-9a/43/0/A



TOP



A7

DAP A8

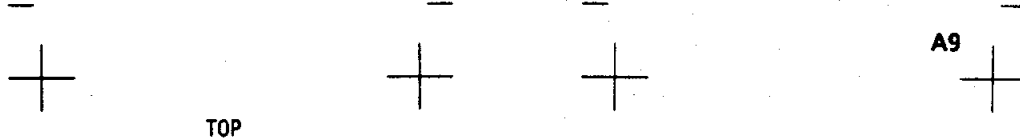
PURPOSE:
PROX OPS

A8

0.0 5	1	TRANSLATION PULSE
0.2 0 0	2	ROTATION DSC RT NORM
0.2 0 0	3	VERN
0.1 0 0	4	PULSE NORM
0.0 1 0	5	VERN
0.0 0 0	6	COMP NORM
0.0 0 0	7	VERN
2.0 0	8	DEADBAND ATT NORM
1.0 0 0	9	VERN
0.2 0	10	RATE NORM
0.2 0	11	VERN
1	12	JET OPT P
1	13	Y
0	14	CNTL ACCEL

FLT PLN-9b/43/0/A

FLT PLN-10a/43/0/A



TOP

TOP

A9

A8

DAP A9

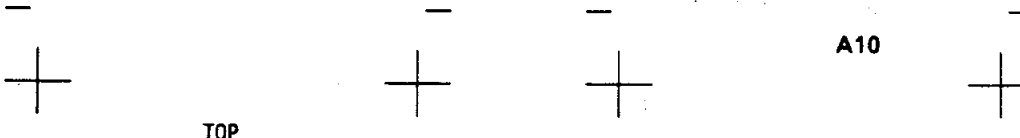
PURPOSE:
IUS DEPLOY

A9

0.2 5	1	TRANSLATION PULSE
0.2 0 0	2	ROTATION DSC RT NORM
0.2 0 0	3	VERN
0.0 5	4	PULSE NORM
0.0 1 0	5	VERN
0.0 0 0	6	COMP NORM
0.0 0 0	7	VERN
1.0 0	8	DEADBAND ATT NORM
1.0 0 0	9	VERN
0.2 0	10	RATE NORM
0.1 0	11	VERN
3	12	JET OPT P
3	13	Y
0	14	CNTL ACCEL

FLT PLN-10b/43/0/A

FLT PLN-11a/43/0/B



TOP

A10

TOP

A9

DAP A10

PURPOSE:

SHARE-II DEPRIME
(2 SEC)

A10

0.5 0 1 TRANSLATION PULSE

0.1 0 0 2 ROTATION DSC RT NORM
0.1 0 0 3 VERN
0.0 7 4 PULSE NORM
0.0 3 3 5 VERN
.0 0 6 COMP NORM
.0 0 7 VERN

1.0 0 8 DEADBAND ATT NORM
1.0 0 9 VERN

0.2 0 10 RATE NORM
.0 1 0 11 VERN

1 12 JET OPT P
1 13 Y

0 14 CNTL ACCEL

FLT PLN-11b/43/0/B

FLT PLN-12a/43/0/A

A11

TOP

TOP

A10

DAP A11

PURPOSE:

SHARE-II DEPRIME
(8 SEC)

1.2 2 1 TRANSLATION PULSE

0.1 0 0 2 ROTATION DSC RT NORM
0.1 0 0 3 VERN
0.1 4 4 PULSE NORM
0.1 3 2 5 VERN
.0 0 6 COMP NORM
.0 0 7 VERN

1.0 0 8 DEADBAND ATT NORM
1.0 0 9 VERN

0.2 0 10 RATE NORM
.0 1 0 11 VERN

1 12 JET OPT P
1 13 Y

0 14 CNTL ACCEL

FLT PLN-12b/43/0/B

FLT PLN-13a/43/0/A

TOP

TOP



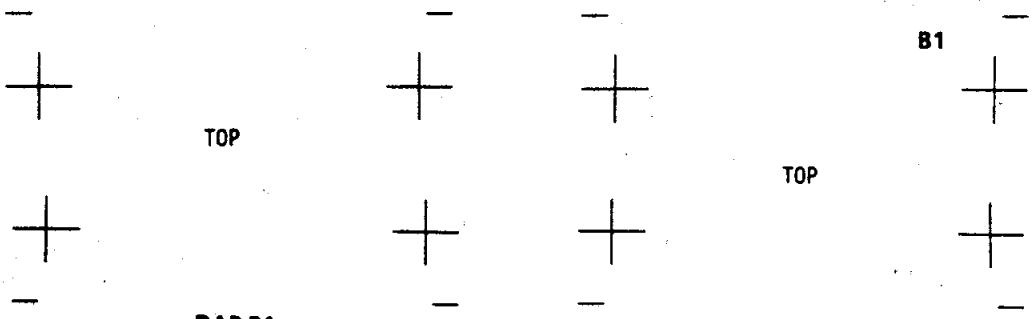
A11

DAP PURPOSE

- B1 - NOMINAL
 PRCS IMU ALIGN
 OMS & RCS BURNS
- B2 - LOSS OF VERN
 (TAIL ONLY)
- B3 - LOSS OF VERN
 (NOSE & TAIL)
 GG MNVR
- B4 - SSUS DEPLOY
- B5 - COAS CAL
- B6 - (Blank)
- B7 - RENDEZVOUS
- B8 - PROX OPS

FLT PLN-13b/43/0/A

FLT PLN-14a/43/0/A



TOP

B1

TOP

DAP B1

B1

PURPOSE:

NOMINAL
PRCS IMU ALIGN
OMS & RCS BURNS

TRANSLATION
PULSE

15 0.0 2

ROTATION

DSC RT	NORM	16	0.5 0 0
	VERN	17	0.2 0 0
PULSE	NORM	18	0.0 4
	VERN	19	0.0 0 2
COMP	NORM	20	.0 0 0
	VERN	21	.0 0 0

DEADBAND

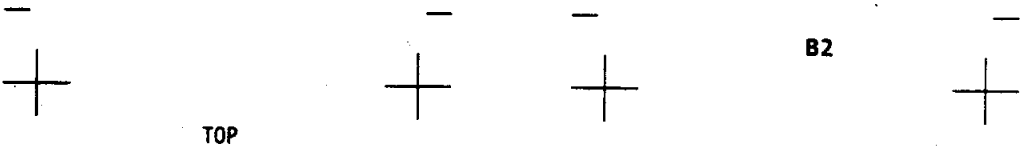
ATT	NORM	22	3.0 0
	VERN	23	1.0 0 0
RATE	NORM	24	0.2 0
	VERN	25	.0 2 0

JET OPT	P	26	1
	Y	27	1

CNTL ACCEL	28	0
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FLT PLN-14b/43/0/A

FLT PLN-15a/43/0/A



TOP

B2



B1



TOP



DAP B2

PURPOSE:

LOSS OF VERN
(TAIL ONLY)

B2

TRANSLATION				
PULSE	15	0.0	2	
ROTATION				
DSC RT NORM	16	0.2	0	0
VERN	17	0.2	0	0
PULSE NORM	18	0.0	4	
VERN	19	0.0	0	2
COMP NORM	20	.0	0	0
VERN	21	.0	0	0
DEADBAND				
ATT NORM	22	3.0	0	
VERN	23	1.0	0	0
RATE NORM	24	0.2	0	
VERN	25	.0	2	0
JET OPT P	26		3	
Y	27		3	
CNTL ACCEL	28		0	

FLT PLN-15b/43/0/A

FLT PLN-16a/43/0/A



TOP



B3



B2



TOP



DAP B3

PURPOSE:

LOSS OF VERN
(NOSE & TAIL)
GG MNVR

B3

TRANSLATION				
PULSE	15	0.0	2	
ROTATION				
DSC RT NORM	16	0.2	0	0
VERN	17	0.2	0	0
PULSE NORM	18	0.0	4	
VERN	19	0.0	0	2
COMP NORM	20	.0	0	0
VERN	21	.0	0	0
DEADBAND				
ATT NORM	22	3.0	0	
VERN	23	1.0	0	0
RATE NORM	24	0.2	0	
VERN	25	.0	2	0
JET OPT P	26		1	
Y	27		1	
CNTL ACCEL	28		0	

FLT PLN-16b/43/0/A

FLT PLN-17a/43/0/A



TOP



B4





B3

DAP B4

PURPOSE:
SSUS DEPLOY

FLT PLN-17b/43/0/A



TOP



DAP B5

PURPOSE:
COAS CAL

FLT PLN-18b/43/0/A



TOP



TOP

B4

TRANSLATION
PULSE 15 0.0 2

ROTATION
DSC RT NORM 16 0.2 0 0
VERN 17 0.0 0 8
PULSE NORM 18 0.0 4
VERN 19 0.0 2
COMP NORM 20 0.0 0
VERN 21 0.0 0

DEADBAND
ATT NORM 22 0.3 0
VERN 23 0.1 0 0

RATE NORM 24 0.2 0
VERN 25 0.1 0

JET OPT P 26 3
Y 27 3

CNTL ACCEL 28 0

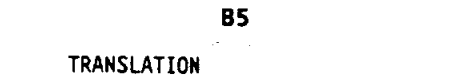
FLT PLN-18a/43/0/A



B5



TOP



B5

TRANSLATION
PULSE 15 0.0 2

ROTATION
DSC RT NORM 16 0.2 0 0
VERN 17 0.0 1 6
PULSE NORM 18 0.0 4
VERN 19 0.0 2
COMP NORM 20 0.0 0
VERN 21 0.0 0

DEADBAND
ATT NORM 22 3.0 0
VERN 23 0.0 3 3

RATE NORM 24 0.2 0
VERN 25 0.2 0

JET OPT P 26 3
Y 27 3

CNTL ACCEL 28 0

FLT PLN-19a/43/0/A



B6

TOP

B5

DAP B6

PURPOSE: (Blank)

B6

TRANSLATION PULSE 15

ROTATION

DSC RT NORM 16

VERN 17

PULSE NORM 18

VERN 19

COMP NORM 20

VERN 21

DEADBAND

ATT NORM 22

VERN 23

RATE NORM 24

VERN 25

JET OPT P 26

Y 27

CNTL ACCEL 28

FLT PLN-19b/43/0/A

FLT PLN-20a/43/0/A

B7

TOP

TOP

B6

DAP B7

PURPOSE:

RENDEZVOUS

B7

TRANSLATION PULSE 15 0.0 5

ROTATION

DSC RT NORM 16 0.5 0 0

VERN 17 0.2 0 0

PULSE NORM 18 0.0 4

VERN 19 0.0 0 2

COMP NORM 20 .0 0 0

VERN 21 .0 0 0

DEADBAND

ATT NORM 22 2.0 0

VERN 23 1.0 0 0

RATE NORM 24 0.2 0

VERN 25 .0 2 0

JET OPT P 26 1 or 3

Y 27 1 or 3

CNTL ACCEL 28 0

FLT PLN-20b/43/0/A

FLT PLN-21a/43/0/A

B8

TOP

TOP



B7



DAP B8

B8

PURPOSE:
PROX OPS

TRANSLATION
PULSE 15 0.0 1

ROTATION
DSC RT NORM 16 0.2 0 0
VERN 17 0.2 0 0
PULSE NORM 18 0.0 4
VERN 19 0.0 0 2
COMP NORM 20 .0 0 0
VERN 21 .0 0 0

DEADBAND
ATT NORM 22 2.0 0
VERN 23 1.0 0 0

RATE NORM 24 0.2 0
VERN 25 .0 2 0

JET OPT P 26 1
Y 27 1

CNTL ACCEL 28 0

FLT PLN-21b/43/0/A

FLT PLN-22a/43/0/A



TOP



B9



B8



FLT PLN-22b/43/0/A



TOP



TOP



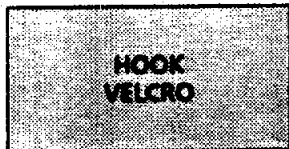
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FLT PLN-23a/43/0/A



TOP

BACK COVER 'DAP BOOK'



FLT PLN-23b/43/0/A



**STS-43
FLIGHT PLAN NOTES**

FLT PLN NOTES

FLIGHT PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

The STS-43 (OV-104) launch from KSC on July 25, 1991, (Flight Cycle R1) will be into a 160 nm orbit at an inclination of 28.45 degrees. The mission duration will be 9 days. Nominal landing occurs at KSC on August 3, 1991.

Landing opportunities are:

		<u>Landing Orbit No.</u>	<u>Site</u>	<u>Landing Site Time</u>
Nominal	Primary	142	KSC	08:13 EDT
	Weather Alt.	143	KSC	09:49 EDT
1 Day Late	Primary	157	KSC	06:49 EDT
	Weather Alt.	159	EDW	06:51 PDT
2 Days Late	Primary	173	KSC	07:00 EDT
	Weather Alt.	175	EDW	07:03 PDT

MAJOR EVENTS

LAUNCH (KSC) July 25, 1991
MET (DD/HH:MM) 0/00:00
 Day of year 206
CDT/GMT 9:55/14:55

OMS-2
MET (DD/HH:MM) 0/00:42
 DV (fps) 221.50
 ORBIT ha/hp (nm) 161/160

TDRS/IUS DEPLOY
MET (DD/HH:MM) 0/06:13

OMS SEPARATION BURN
MET (DD/HH:MM) 0/06:28
 DV (fps) 31.0
 DT (MM:SS) 00:16
 ORBIT ha/hp (nm) 177/161

DEORBIT BURN
MET (DD/HH:MM) 08/20:16
 DV (fps) 301.0

LANDING (KSC)
MET (DD/HH:MM) 08/21:18
 Day of year 215
CDT/GMT 7:13/12:13

FLT PLN NOTES

B. CREW

1. The five crewmembers flying this mission are:

CDR - John E. Blaha
PLT - Michael A. Baker
MS1 - Shannon W. Lucid
MS2 - G. David Low
MS3 - James C. Adamson

2. The crewmembers responsible for performing an EVA, should one become necessary, are: MS3 will be EV1, MS2 will be EV2, and PLT will be IV1.

C. ORBITER SYSTEMS

1. Communications and Instrumentation

- a. The Operational Instrumentation (OI) system will nominally be managed from the ground through uplink real-time commands (RTCs) coordinated with the crew.
- b. TDRS coverage is supported by TDRS-E (41 degrees W) and TDRS-W (171 degrees W) and is the prime mode of communication coverage.
- c. TDRS Ku-band is the prime mode of real-time TV. There are also three GSTDN sites available as backup for TV (90 minute lead time required): GDS(GDX), MIL(MLX), VAN.
- d. TDRS-E is available to support Ku-band uplink (e.g., TAGS). The status of TDRS-W is TBD.
- e. HDR uplink (e.g., Teleprinter) is available through TDRS-E and TDRS-W.
- f. GSTDN sites available during the first 25 minutes of the mission are MIL(MLX), PDL, BDA, DKR, and IOS. IOS can be used for UHF voice during ascent.
- g. There are five GSTDN sites available on-orbit through TDRS deploy, or for deorbit: VAN, GDS(GDX), MIL(MLX), BDA(BDX), and DFR. (Note: DFR is not shown in the Flight Plan). CAN and MAD can be called up for emergencies.
- h. After TDRS deploy, there are five GSTDN sites which are available or can be called up to support as bailout sites: VAN, GDS(GDX), MIL(MLX), BDA(BDX), and DFR. One GSTDN site will be available per orbit. (Note: DFR is not shown in the Flight Plan).
- i. RTS sites are available predeploy to support IUS activities. They are also available for contingency support or when scheduled in advance (2 hours of lead time required). HTS, GTS, VTS, and IOS are certified for orbiter support; CTS is available only for direct communication to the IUS.

2. Guidance and Navigation

- a. The orbiter state vector must be uplinked whenever downtrack error in the on-board vector becomes greater than 20 nm, but is usually uplinked when errors are greater than 5 nm. These are real-time calls. In addition, state vectors must be uplinked for specified targets when utilizing an orbiting vehicle as a TGT ID with Universal Pointing.
- b. IMU alignments occur approximately every 12 hours in the pre-sleep and postsleep activities and prior to major events requiring low navigation uncertainty.

3. Environmental Control and Life Support Subsystem (ECLSS)

- a. Two CO2 absorbers are installed prior to launch. On orbit, the canisters are alternately replaced as required per the cue card.
- b. There are four supply water tanks and one waste water tank which are loaded for launch with volumes sufficient to meet a launch day deorbit opportunity with payload bay doors (PLBDs) failed closed. Supply water will be managed via the FES to minimize SSBUV contamination throughout the first 5 days of the flight. After this point, the FES will be supplemented by a supply water dump scheduled on FD7. A waste water dump is scheduled on FD5 and FD9.

4. Utility Power Usage

The following tables are the dc and ac Utility Power Outlet Schedules. These tables show the times of outlet reconfiguration during the mission.

STS-43 DC UTILITY POWER OUTLET SCHEDULE

OUTLET \ MET		PRELAUNCH	POST INSERTION	ON-ORBIT		DEORBIT PREP
			0/2:02	0/2:30	0/TIG-4:00	
MNA	019 M052J	PLT* MS3*	--	-- PDB*	-- PDB*	PLT* MS3*
MNB	F1 M013Q	-- PDB**	-- PDB**	PGSC LBNP	PGSC LBNP	-- PDB**
MNC	A11 A15 M030F	MS1*,MS2* CDR* --	-- TPR --	OCTW TPR SAMS	OCTW TPR SAMS	MS1*,MS2* CDR* --

NOTE: * Crewmember suit fan
 ** Power distribution box with PCG and BIMDA

STS-43 AC UTILITY POWER OUTLET SCHEDULE

OUTLET \ MET		PRELAUNCH	POST INSERTION	ON-ORBIT		DEORBIT PREP
			0/1:00	1/2:30	TIG-4:00	
AC1	MO52J	--	--	AFE	AFE	-- SPOC THRU D/O BURN
	F1	--	--	--	--	
AC3	MO13Q	--	--	MAC	MAC	-- --
	A15	--	--	MAC	MAC	

NOTE: Intermittent ac outlets are needed for the vacuum cleaner and the photo floodlight.

D. TEXT UPLINK SYSTEM

1. The Text and Graphics System (TAGS) is a high-resolution facsimile system that scans text or graphics material and converts the analog SCAN data into serial digital data. This data is transmitted via a telemetry link to the cathode-ray tube hardcopier. Transmission time for an 8-1/2 by 11-inch page can vary from just over 1 minute to just over 16 minutes depending on the hardcopy resolution desired. The TAGS can only uplink images using Ku-band. This Flight Plan assumes Ku-band forward link is available for both TDRS-E and TDRS-W, (TBD), and TAGS is the primary mode of text uplink. Instrumentation has the capability to uplink onboard hardcopier control commands via S-band or Ku-band for power on, advance, ready, standby, and off.
2. The teleprinter (TPR) will provide a backup on-orbit capability to receive and reproduce text-only data from MCC. The TPR uses S-band and is not dependent on TDRS Ku-band. TPR requires 1 to 2.5 minutes per page, depending on the number of lines (up to 66). In the event of a FD2 IUS/TDRS Deploy, the TPR will be used for FDF updates. The TPR will also be nominally used the night before entry, as the Ku-band antenna is stowed.

E. TELEVISION/PHOTOGRAPHY

1. The CCTV systems provide two-color, wide-angle cameras for in-cabin coverage. There will also be four PLB TV cameras. There are three different lens assemblies for the PLB cameras (color lens assembly, monochrome lens assembly, and wide-angle lens assembly). The type of lens assembly for each PLB camera is documented in the Flight Requirements Document.
2. There is a video tape recorder available with 30-minute cassettes.
3. Three camera systems are available: 35mm, 16mm, and 70mm.

F. PAYLOADS

1. Tracking and Data Relay Satellite (TDRS)

The TDRS-E is a communication satellite which is the fourth spacecraft launched in the process of assembling the Tracking and Data Relay Satellite System. The system will provide a high-capacity communication and data link with the STS as well as other spacecraft and launch vehicles. The nominal IUS/TDRS-E deployment opportunity occurs 60 minutes prior to node 6A (ascending) at 0/6:13 MET. Backup opportunities occur prior to 7A and 16A. A contingency opportunity occurs 60 minutes prior to 8D (descending).

2. Inertial Upper Stage (IUS)

The IUS is a two-stage solid rocket, inertially stabilized upper stage which will place TDRS-E in a geosynchronous orbit. The IUS ignites its first stage (SRM-1) for transfer orbit insertion.

3. Shuttle Solar Backscatter Ultraviolet (SSBUV)

The SSBUV program is designed to provide calibration of backscatter ultraviolet (UV) instruments being flown currently on free-flying satellites. The payload configuration consists of two canisters interconnected by cables mounted on a Get-Away-Special (GAS) adapter beam. The canister containing the SSBUV spectrometer is equipped with a Motorized Door Assembly (MDA). The adjacent support canister contains data, command, and power systems. Crew interface is through a GAS Autonomous Payload Controller (GAPC) on the aft flight deck. After an outgassing period, the instrument will operate in three modes: Earth view, Solar view, and calibration.

4. Space Station Heat Pipe Advanced Radiator Element (SHARE-II)

The SHARE consists of two hardware assemblies: the Heat Pipe Radiator System (HPRS) and the Heat Pipe Instrumentation and Control System (HPICS). The HPRS is a 52-foot long assemblage that will be attached to the orbiter via four mounting pedestals on the starboard sill. The HPICS consists of black boxes and a thermal shroud which are mounted in Bay 5 Forward on the starboard side. The heat pipe is a closed system for transferring large quantities of thermal energy, essentially isothermally, between a heat source and a heat sink. Two thermal testing periods of four revs each in specified attitudes are required. Thermal conditioning of two revs in a specified attitude is required prior to each test. Deprime will also be demonstrated as well as two optional tests that may be performed on this flight.

5. Optical Communications Through the Shuttle Window (OCTW)

The OCTW system consists of two modules; one inside the orbiter crew cabin and one in the PLB. The crew compartment will house an optoelectronic transmitter/receiver pair for video and digital subsystems, test circuitry, and interface circuitry. The PLB module serves as a repeater station. During the experiment operation, a signal is transmitted through the shuttle window to a bundle of optical fiber cables mounted in the PLB near an aft window. The cables carry optical signals from the crew compartment equipment to the OCTW PLB module. The signals are returned via optical fiber cable to the AFD window, retransmitted through the window, and received by the crew compartment equipment. System performance will be measured by recording video test patterns and digital signal integrity on the CCTV VTR system. This experiment has four tests under various PLB temperature and lighting conditions.

6. Solid Surface Combustion Experiment (SSCE)

The SSCE consists of an ashless filter paper sample internally mounted in a pressurized chamber. While the sample is burned, documentary photography of the front and side of the sample is taken. In addition, measurements are made of chamber temperature, chamber pressure, and middeck air temperature. The experiment must be run during a period of low orbiter accelerations.

7. Space Acceleration Measurement System (SAMS)

SAMS will provide acceleration data in the middeck environment. The payload consists of three triaxial accelerometers connected to a digital encoder with an optical disk data recorder. SAMS is mounted in a single middeck locker with additional optical disk storage. Accelerometer heads will be mounted to the treadmill and adjacent to the PCG and SSCE experiments.

8. Bioserve-Instrumentation Technology Associates Materials Dispersion Apparatus (BIMDA)

The BIMDA consists of three experiments housed within a refrigerator/incubator module (R/IM). The payload elements are as follows: four material dispersion apparatus (MDA) minilabs, six bioprocessing modules (BM), six cell syringes (CS), and one automatic temperature recorder. The BIMDA occupies the space of one middeck locker, and draws 28-V dc power for the R/IM. The MDA will study protein crystal growth, collagen polymerization and several other phenomena. MDA is the primary objective. The BM and CS experiments will study the response of live cells to various stimulating agents.

9. Tank Pressure Control Experiment (TPCE)

TPCE will determine the effectiveness of jet mixing as a means of controlling tank pressures and equilibrating fluid temperatures. TPCE is installed in a sealed GAS canister attached to a GAS adapter beam in the PLB.

10. Investigations into Polymer Membrane Processing (IPMP)

The research objective of the IPMP payload is to flash evaporate mixed solvent systems in the absence of convection to control the porosity of the polymer membrane. With at least 24 hours remaining before entry the crew will activate the experiment and log the MET.

11. Protein Crystal Growth (PCG)

The PCG payload is designed to conduct experiments which will supply information on the scientific methods and commercial potential for growing large, high-quality protein crystals in microgravity. The PCG will be installed and operated on the orbiter middeck.

12. Air Force Maui Optical Site (AMOS)

The primary objective of the AMOS activity is to use the orbiter during cooperative overflights of Maui to obtain imagery and/or signature data to support the calibration of the AMOS ground-based sensors and to observe plume phenomenology. No unique onboard hardware is associated with the AMOS test; crew and orbiter participation may be required to establish the controlled conditions for the Maui cooperative overflight.

13. Auroral Photography Experiment (APE-B)

The objective of APE-B is to photograph and record the spectra of the following aurora phenomena: shuttle glow, thruster emissions, aurora effects on the orbiter, aurora and airglow layer. APE-B equipment consists of a 35mm SLR camera, a 55mm lens, a 135mm lens, an image intensifier, spectrometer bar, filter holder and various filters.

14. Ultraviolet Plume Instrument (UVPI)

The primary objectives of the UVPI activity are to use the orbiter during cooperative encounters of the Low-Power Atmospheric Compensation Experiment (LACE) satellite to obtain imagery and/or signature data to support the calibration of UVPI space-based sensors and to observe orbiter events. No unique onboard hardware is associated with the UVPI tests; crew and orbiter participation are required to establish the controlled conditions for the cooperative passes.

G. DTO's ON-ORBIT

1. ALT MODE DAP (DTO-798)

This DTO will demonstrate the inflight operation of the Alternate mode of the on-orbit digital autopilot by performing representative control scenarios and thereby establishing an initial level of confidence in this system.

2. PGSC/PSDM/AIR/Ground COMM DEMO (DTO 799)

This DTO will demonstrate the operational ability of the integrated Payload and General Support Computer/Portable Audio Data Modem (PGSC/PADM) system to uplink and downlink STS and P/L data files from the FAO MPSR via the orbiter voice communications link.

3. Space Station Cursor Control Device Evaluation (DTO 1208)

This DTO will evaluate several hardware items and software concepts that are being considered for the Space Station. The evaluations include cursor control devices, portable computers, and Electronic Flight Data File.

4. Combustion Products Analyzer (DTO 645)

Should a thermodegradation event occur within the crew cabin the Combustion Products Analyzer (CPA) will ensure the safety of the crew by measuring possible resultant toxic gases. This DTO will verify the CPA function through inflight checkout. Specifically, CPA operation and calibration stability will be tested.

5. Vibration Recordings on the Shuttle Treadmill Using an Accelerometer (DTO 652)

The vibrational impact of the shuttle treadmill is sometimes a concern for material research experiments. This DTO will measure the magnitude and frequency of vibration at the source and on a middeck locker with the aid of the Space Acceleration Measurement System (SAMS). This will allow determination of whether the vibration is amplified or attenuated by the middeck structure. Ultimately, this will assist in the design of a treadmill isolation device or the determination of alternate exercise equipment.

6. TDRS S-band Forward Link RF Power Level Evaluation (DTO 700)

The agreed upon power level of the TDRS forward link is 46.0 dBW. Continued operation at the higher level is not guaranteed due to hardware constraints of the TDRS power amplifier and end-of-life degradation. During low activity periods of the timeline, this DTO will test orbiter S-band reception at the lower power level.

H. ON-ORBIT DSO's

1. Inflight Aerobic Exercise (DSO 476)

Daily inflight aerobic exercise will 1) inhibit the decrease in cardiac dimensions observed during space flight and thus improve postflight orthostatic tolerance, and 2) minimize the loss of aerobic capacity after flight. The STS-43 crew is divided into two groups (exercisers and nonexercisers) who participate in daily measurements of resting heart rate. The exercisers will conduct detailed test protocols of aerobic exercise while measurement of ECG and heart rate are recorded. This research hopes to develop counter measures that will provide complete prevention of post-spaceflight orthostatic intolerance.

2. Inflight Lower Body Negative Pressure (LBNP) (DSO 478)

Fluid loading via ingestion of salt tablets and water in association with lower body negative pressure (LBNP) treatment will protect tolerance to orthostasis (simulated inflight by LBNP). The objective of this study is to evaluate the effectiveness of fluid loading during LBNP in improving tolerance of a LBNP stress protocol.

3. Variability of Blood Pressure and Heart Rate During Space Flight (DSO 602)

The objective of this DSO is to determine whether arterial blood pressure and heart rate exhibit less variability in a microgravity environment than on Earth. The data will be used to investigate whether reduced blood pressure variability in flight, if any, is correlated with the extent of baroreflex attenuation that has been measured postflight. Integrity of the baroreceptor function is required for the appropriate blood pressure responses to the orthostatic stresses imposed by entry, landing, and egress. The crewmember will wear blood pressure and electrocardiograph equipment for two flight days on orbit.

4. Orthostatic Function During Entry, Landing, and Egress (DSO 603)

The objective of this DSO is to measure the changes in orthostatic function of crewmembers during the actual stresses of entry, landing, and egress from the orbiter. Crewmembers will don equipment prior to donning the LES during deorbit preparation. Equipment consists of a blood pressure monitor, accelerometers, an Impedance Cardiograph, and Transcranial Doppler hardware. The crewmember wears the equipment and records verbal comments through entry.

5. Effect of Prolonged Space Flight on Head and Gaze Stability During Locomotion (DSO 614)

This test will characterize head and body movement along with gaze stability during walking and running in association with regular treadmill exercise. These factors are relevant to egress from the shuttle and will be compared to baseline and postflight data.

6. Documentary Television (DSO 901)

This DSO requires live television transmission or VTR dumps of crew activities and spacecraft functions which include: Payload Bay Views, TDRS Predeploy, Deploy and Separation Activities, views of PLB attached payloads, In-Flight Crew Conference, views of Middeck Payload Sessions, and unscheduled TV Activities.

7. Documentary Motion Picture Photography (DSO 902)

This DSO requires documentary and public affairs motion picture photography of significant activities which best depicts the basic capabilities of the space shuttle and key objectives. This DSO includes motion picture photography of IUS Predeploy and Deploy Activities, Middeck Activities, and any unscheduled Motion Picture Photography.

8. Documentary Still Photography (DSO 903)

This DSO requires still photography of crew activities in the orbiter, spacecraft accommodations, and mission related scenes of general public and historical interest. Still photography with 70mm format for exterior photography and 35mm format for interior photography is required.

I. TIMELINE FORMATS

1. The timeline formats used in this Flight Plan are based on JSC document 19933: Timeline Format Definitions and Standard Notes, Revision B, May 25, 1987.

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CSTC
Doc Cntl/Vos
Onizuka AFB
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VOS/DOCUMENTATION CNTL (50)
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