

FLIGHT DATA FILE

Crew Activity Plan

STS-26

(Cycle 3 Trajectory)

**Mission Operations Directorate
Operations Division**

**Final, Rev B
August 19, 1988**

<u>EVENT</u>	<u>CDT</u>		
Launch	07:48	Sat	Oct 1
TDRS Deploy	14:02	Sat	Oct 1
EDW Landing	08:45	Wed	Oct 5



National Aeronautics and
Space Administration

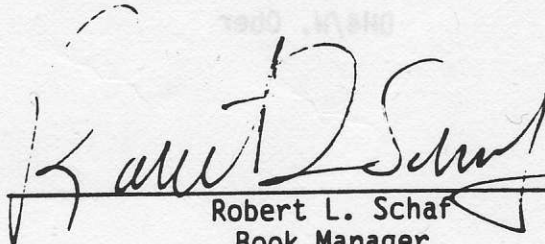
Lyndon B. Johnson Space Center
Houston, Texas

MISSION OPERATIONS DIRECTORATE

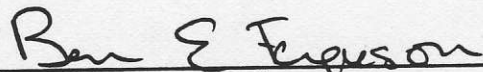
CREW ACTIVITY PLAN
STS-26

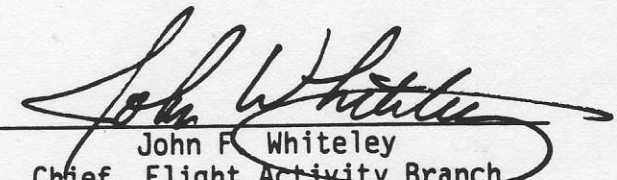
FINAL, REVISION B
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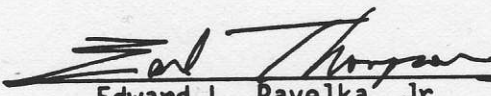
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482#:	CAP-559	CAP-563	EXEMPTION#: 1
	CAP-560	CAP-564	
	CAP-561	FDF-985	
	CAP-562		

AREAS OF TECHNICAL RESPONSIBILITY

Book Manager	DH4/R. Schaf	483-4468
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Pointing	DH4/W. Ober	483-4459

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STS-26 CREW ACTIVITY PLAN

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(*) - Omit from flight book

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ST-26 CREW ACTIVITY PLAN

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DAP A TOC.....	* 7-5	CAP/26/0/BAS
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INTRODUCTION

The STS-26 Crew Activity Plan is the flight data file article that contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry Checklists. The detailed deploy procedures required during the deploy timeframe are in the IUS Deploy Checklist. For continuity, the entire flight is shown in the summary level timeline.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS-26 Flight Requirements Document. This Crew Activity Plan, as part of the Flight Data File, meets the specifications of the Cycle 3 version of the STS-26B Flight Initialization Data Pack. (PCN-1)

The flight profile used for this Crew Activity Plan is for a launch date of October 1, 1988, at 07:48 CDT. Orbiter inertial attitudes are expressed relative to a Mean of 1950 (M50) reference frame.

JSC-22354 Crew Scheduling Constraints (Appendix K, CPMP), Basic, March 1987, has been used to build the timelines contained in this Crew Activity Plan. The Flight Day 2 unscheduled EVA plan in Section 4-D is specifically addressed in approved Exemption Request #1 to this document.

INTRODUCTION

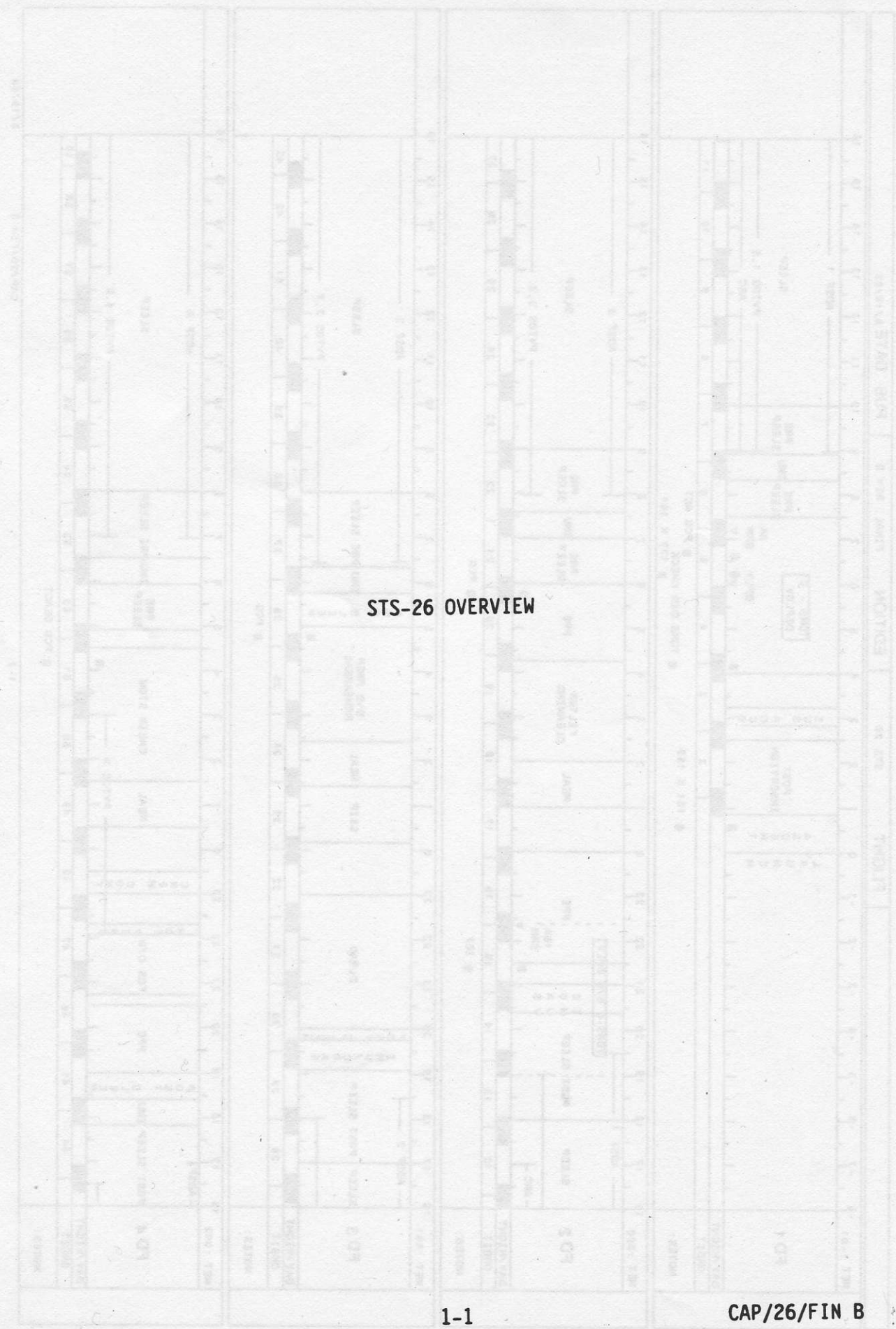
The STS-26 Crew Activity Plan is the flight data file which contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Descent, and Entry Checklists. The detailed deploy procedures required during the deploy timelines are in the ISS Deploy Checklist. For continuity, the entire flight is shown in the summary level timeline.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS-26 Flight Requirements Document. This Crew Activity Plan, as part of the Flight Data File, meets the specifications of the Cycle 3 version of the STS-26 Flight Initialization Data Pack (PCK-1).

The flight profile used for this Crew Activity Plan is for a launch date of October 1, 1988, at 07:48 CDT. Orbits initial altitudes are expressed relative to a Mean of 1980 (MEO) reference frame.

22C-22354 Crew Scheduling Constraints (Appendix K, CWP), Basic, March 1987, has been used to build the timelines contained in this Crew Activity Plan. The Flight Day 2 unscheduled EVA plan in Section 4-B is specifically addressed in approved Extension Request #1 to this document.

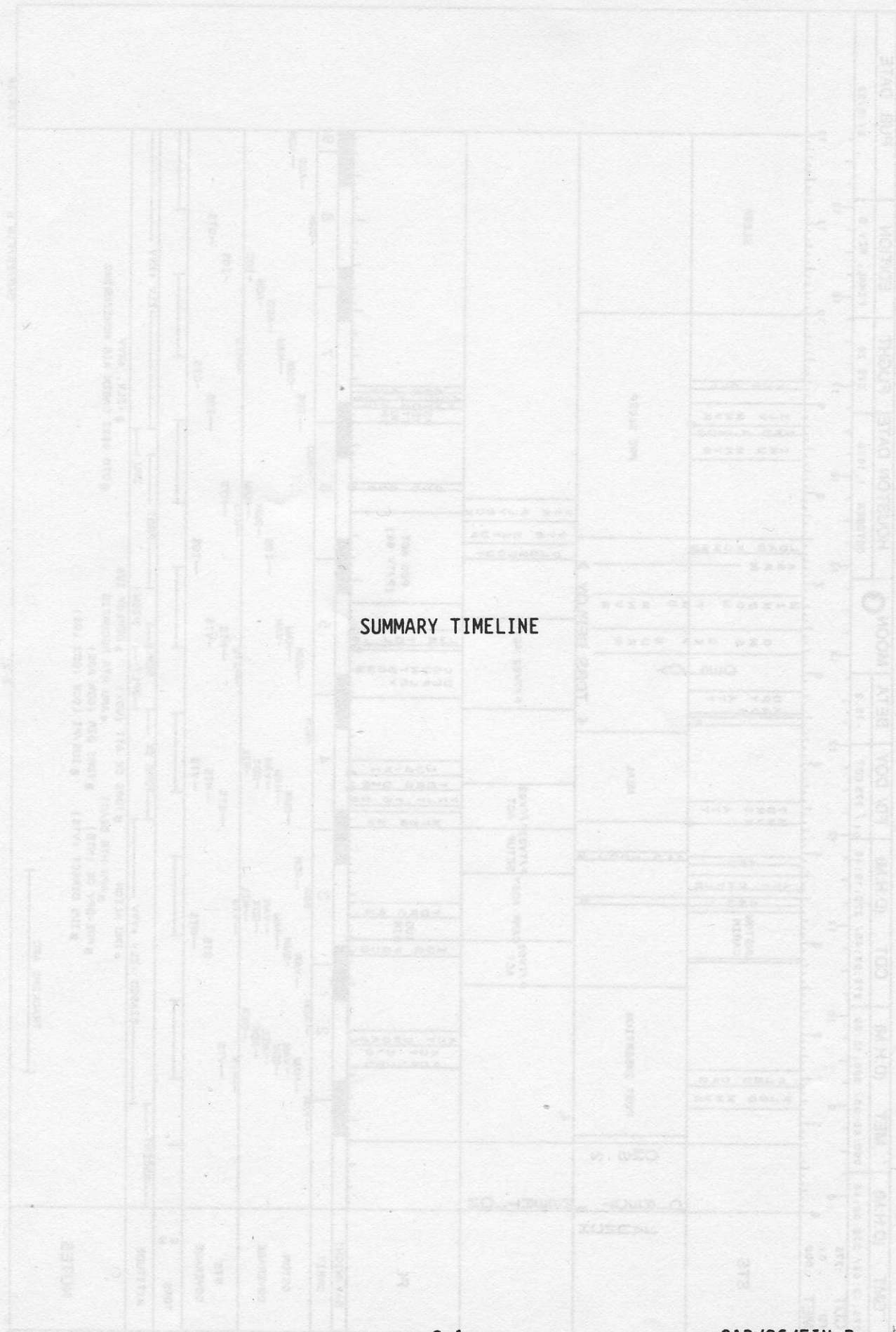
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STS-26 OVERVIEW

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The table is oriented vertically and contains several columns of data. The columns are labeled as follows from top to bottom: 'DATE', 'TIME', 'LOCATION', 'EQUIPMENT', 'OPERATOR', 'REMARKS', and 'SIGNATURE'. The rows contain various entries, including dates like '10/10/80', '10/11/80', and '10/12/80', and times like '0800', '0900', and '1000'. The 'REMARKS' column contains some illegible text, possibly 'NO DATA' or similar. The 'SIGNATURE' column is mostly empty.



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
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CDT : 277									
FD : 03									
MET : 002									
STS	MEAL	D/O PREP REHEARSAL			PRE SLEEP				
PL	SSIP CRYSTALS METALS								
DAY/NIGHT									
ORBIT									
GSTDN COVERAGE									
TDRS									
ATTITUDE									
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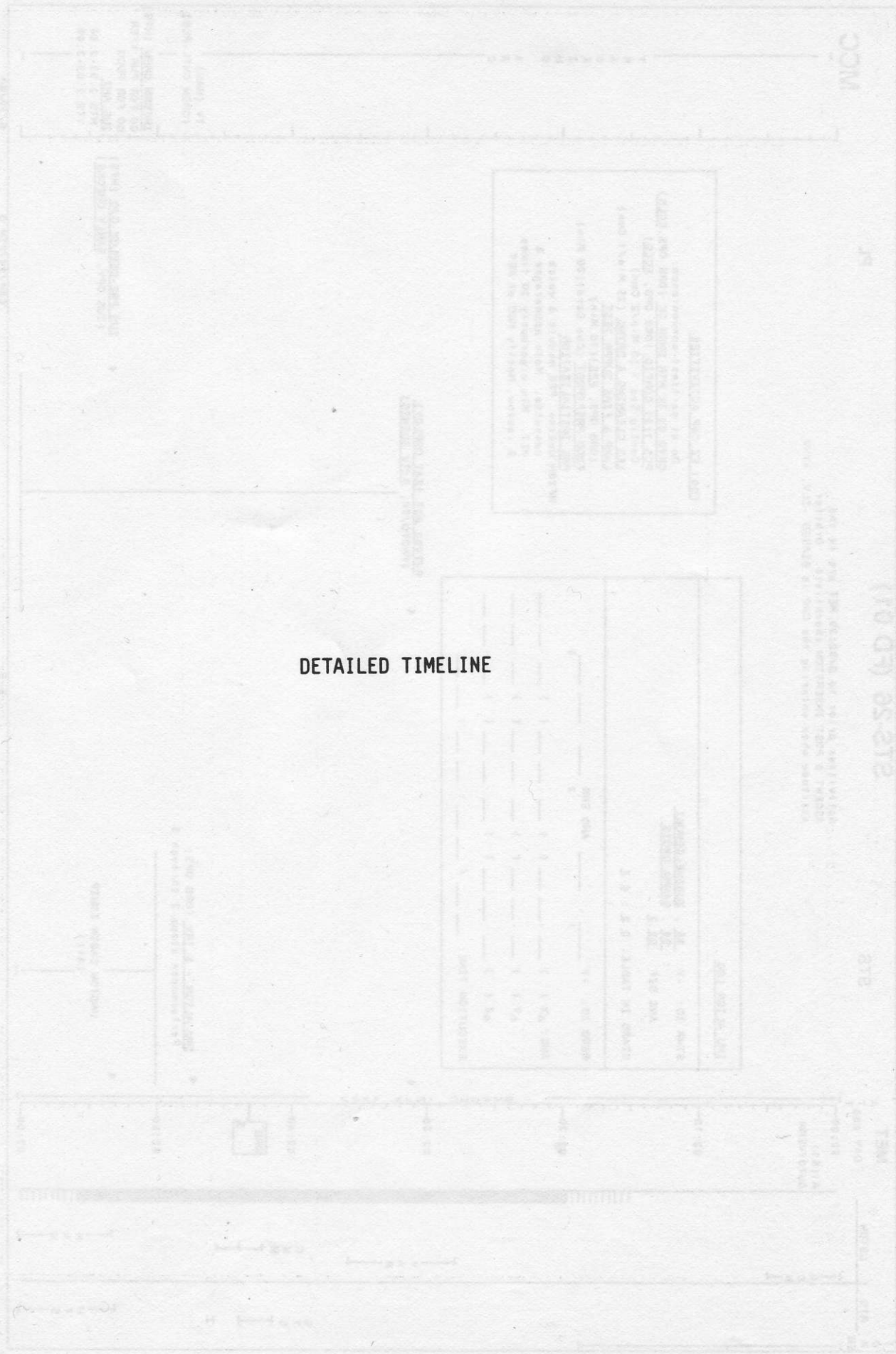
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CDT :277									
FD : 03									
MET :002									
STS	SLEEP						FCS C/O		
PL	POST SLEEP							P/TV05 P/TV05 SETUP ACT	
DAY/NIGHT									
ORBIT									
GSTDN COVERAGE									
TDRS									
ATTITUDE									
NOTES:									

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MET : 003									
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TDRS E W	-YAR	-YAR							
ATTITUDE		-ZLV +XVV		IMU					-ZLV +XVV
NOTES:									

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
279:00:48 / 279:12:48	003:12:00 / 004:00:00	278:19:48 / 279:07:48	05 / 278 CDT	-2.9	1	OCTOBER 4, 1988	STS 26	FINAL, REV B	8/19/88
CDT : 278									
FD : 04									
MET : 003									
STS	SLEEP								
PL									
DAY/NIGHT									
ORBIT									
GSTDN									
COVERAGE									
TDRS									
ATTITUDE									
NOTES:									

DEORBIT
BURN
(3/23:54)

0 DTO 0623 CABIN AIR MONITORING

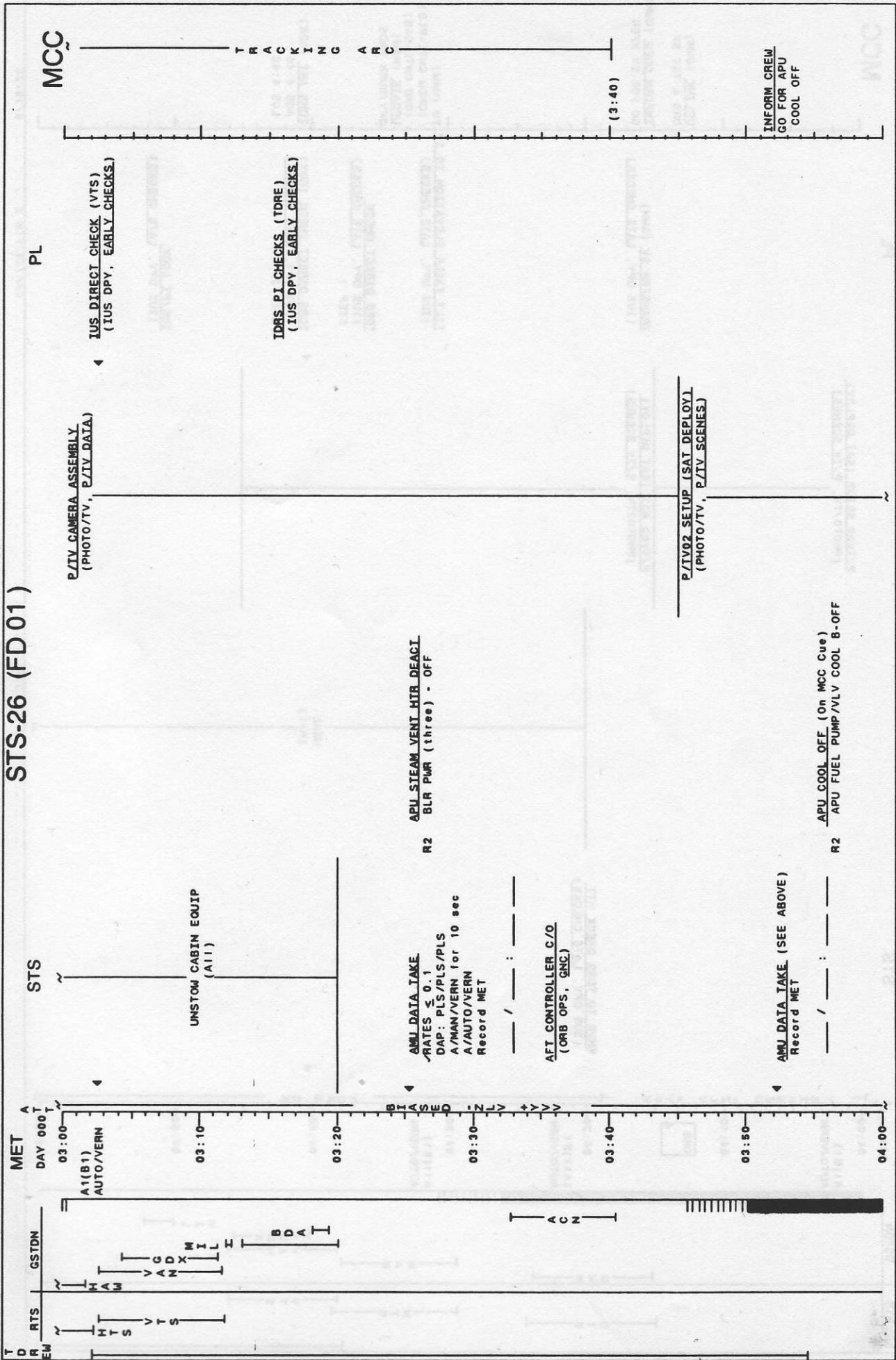


INCC

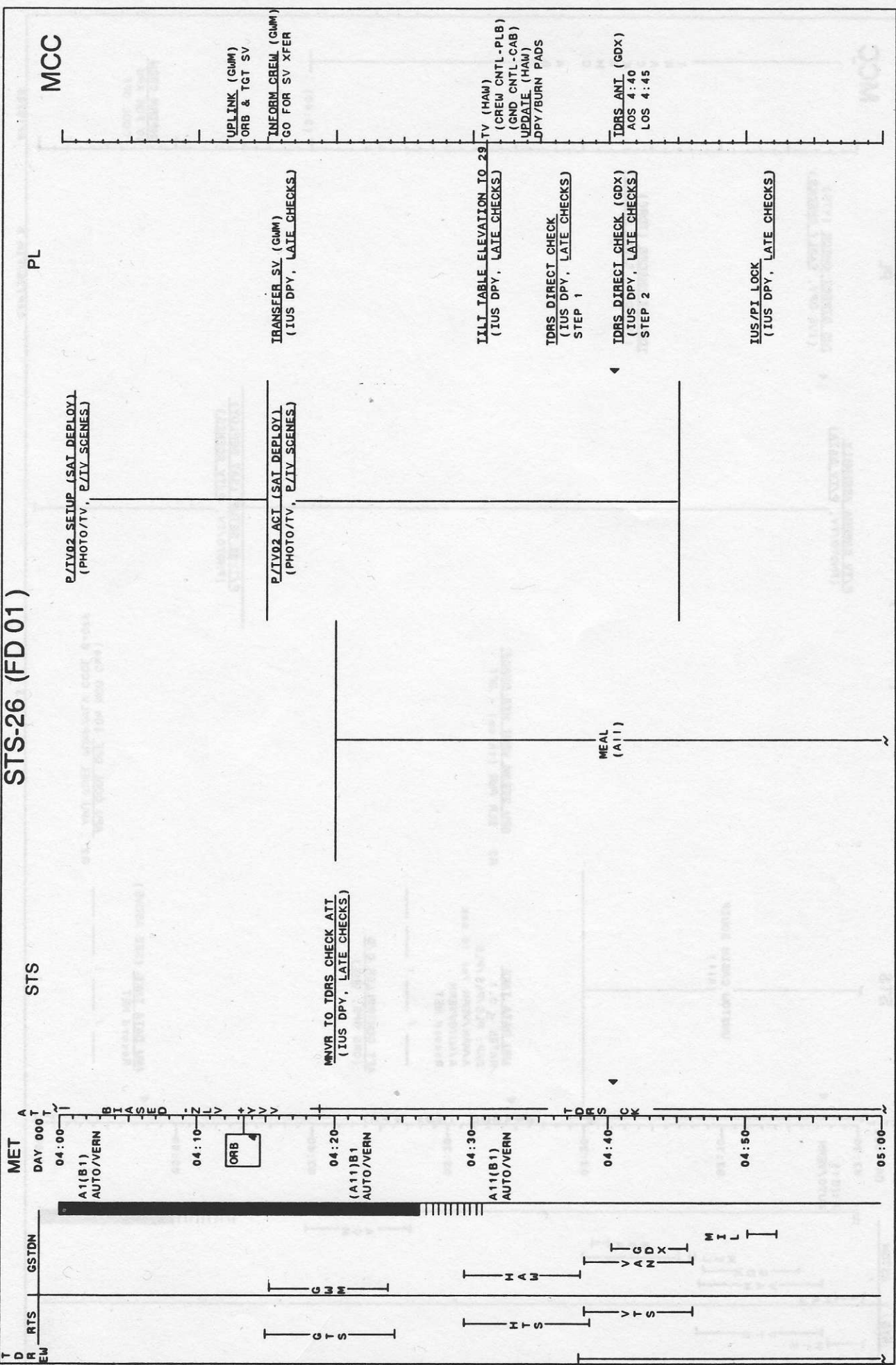
DETAILED TIMELINE

**DETAILED
TIMELINE**

STS-26 (FD 01)



STS-26 (FD 01)

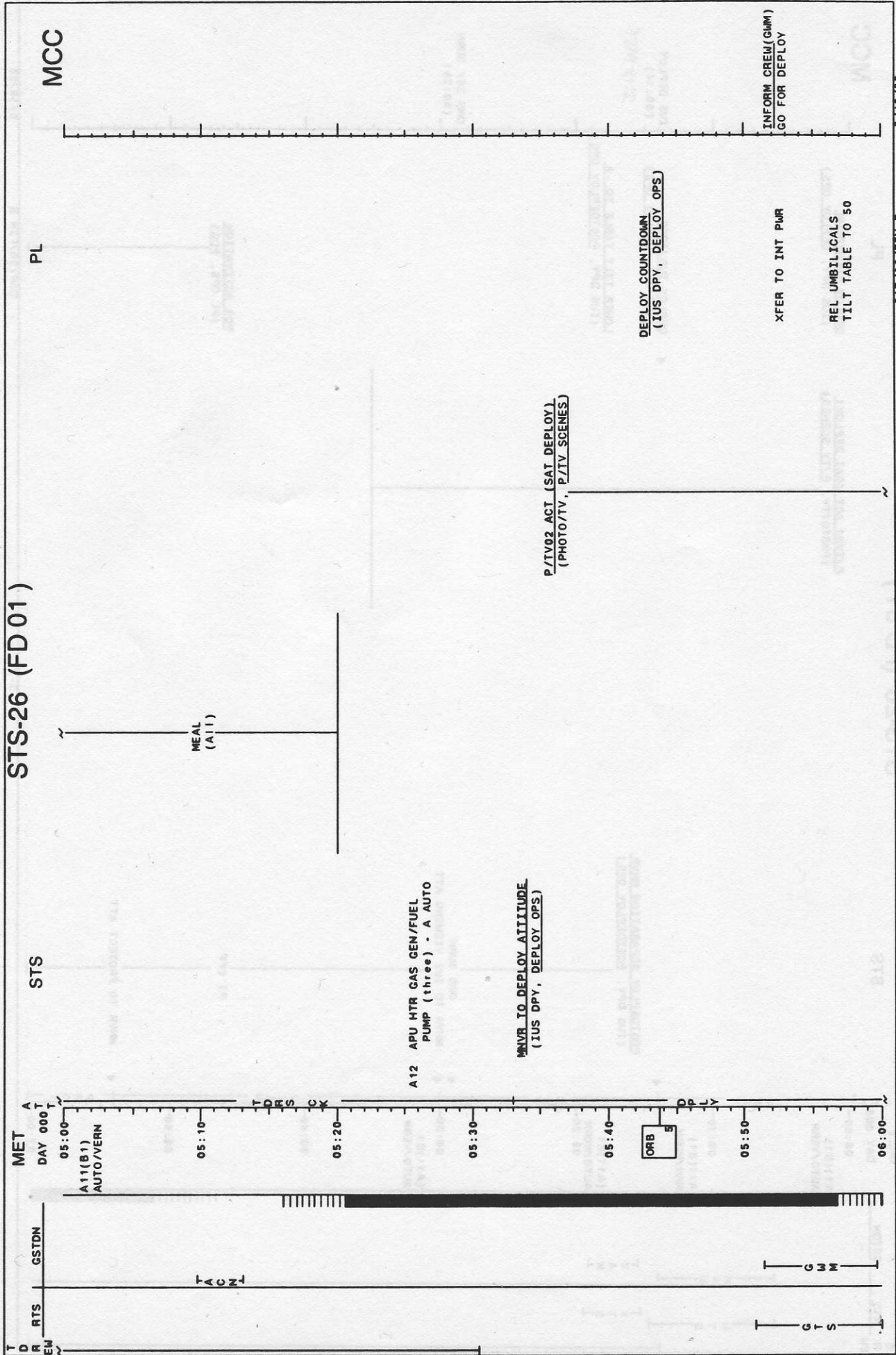


8719788

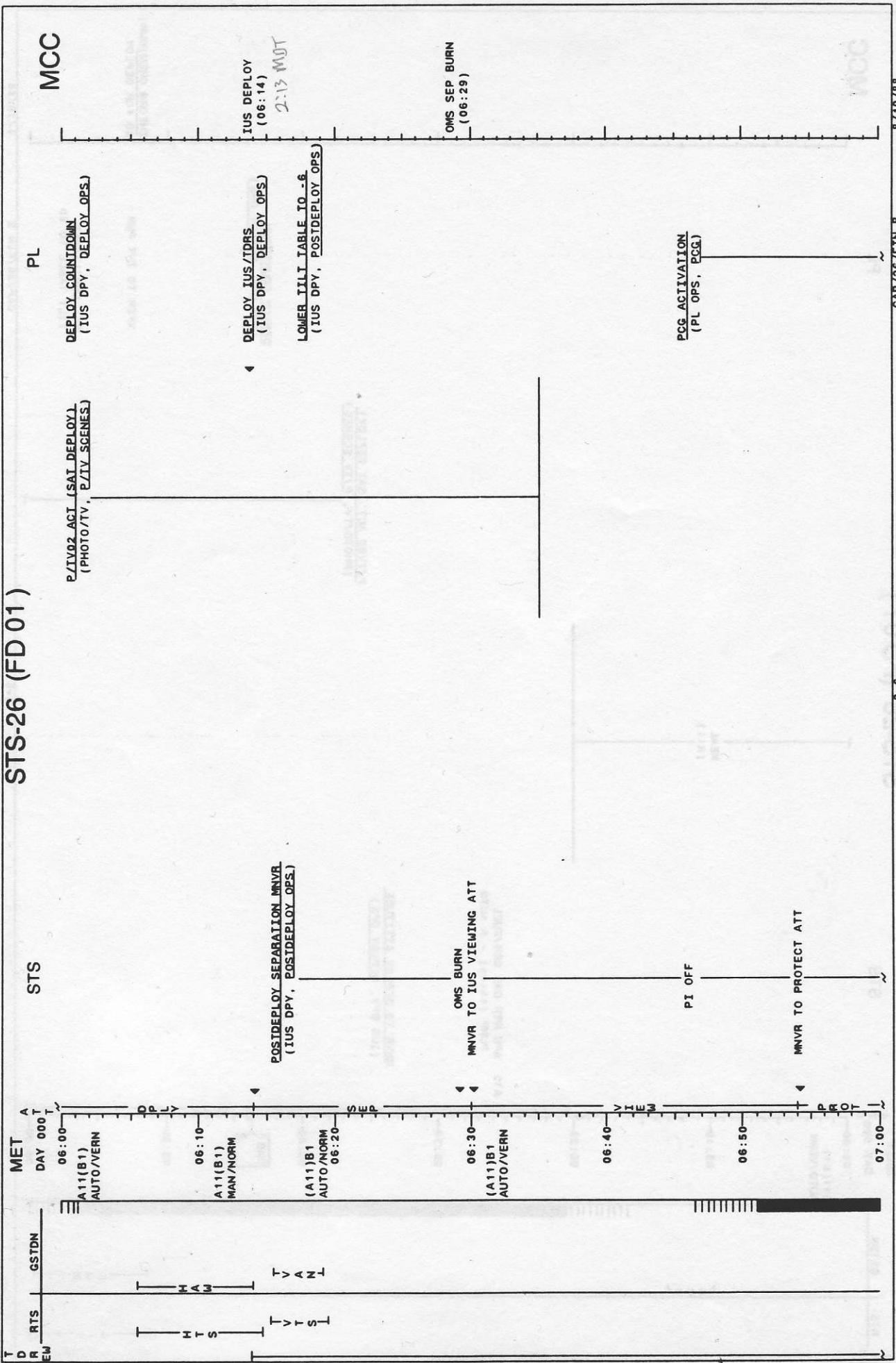
CAP/26/FIN B

3-4

STS-26 (FD01)



STS-26 (FD 01)

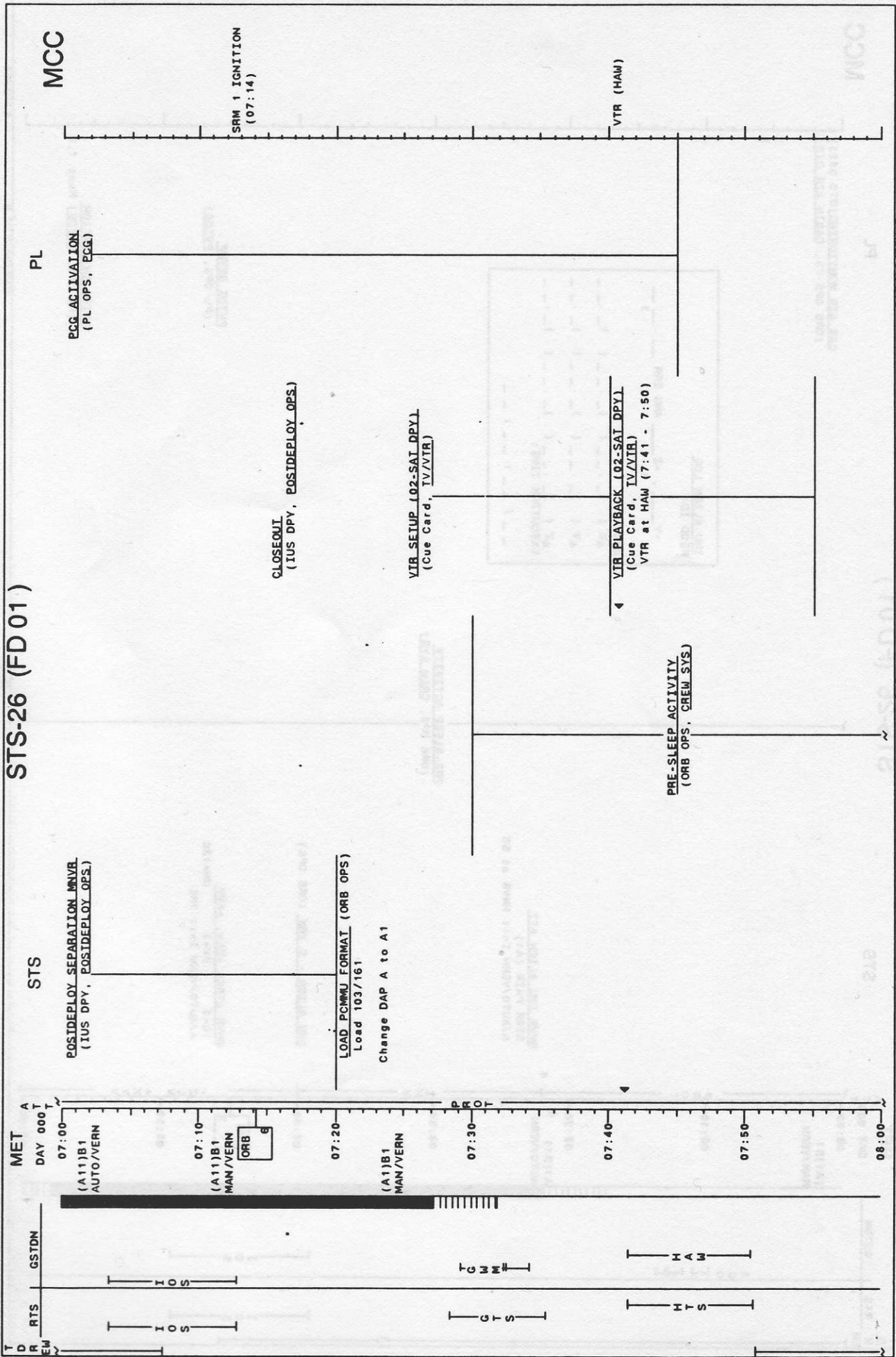


8719788

3-6

CAP7267FIN B

STS-26 (FD 01)



STS-26 (FD01)

STS

PL

MCC

CAB_AIR_MONITORING(DTO 0623)
(ORB OPS FS, CABIN_AIR_DIO)

MET DAY 000 T



IMU ALIGN LOG
RECORD ID: -Y 1 -Z 2 ANG ERR 3

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

EXECUTION TIME:
 -- / -- : -- : --

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

PRE-SLEEP ACTIVITY
(ORB OPS, CREW_SYS)

IMU ALIGN - S IRK (ORB OPS)

MNVR (TRK) -ZLV, +XVV
TG=2 BV=3 OM=180
A/AUTO/VERN Init TRK

PVTOS_SETUP
(PL OPS, PVTOS)

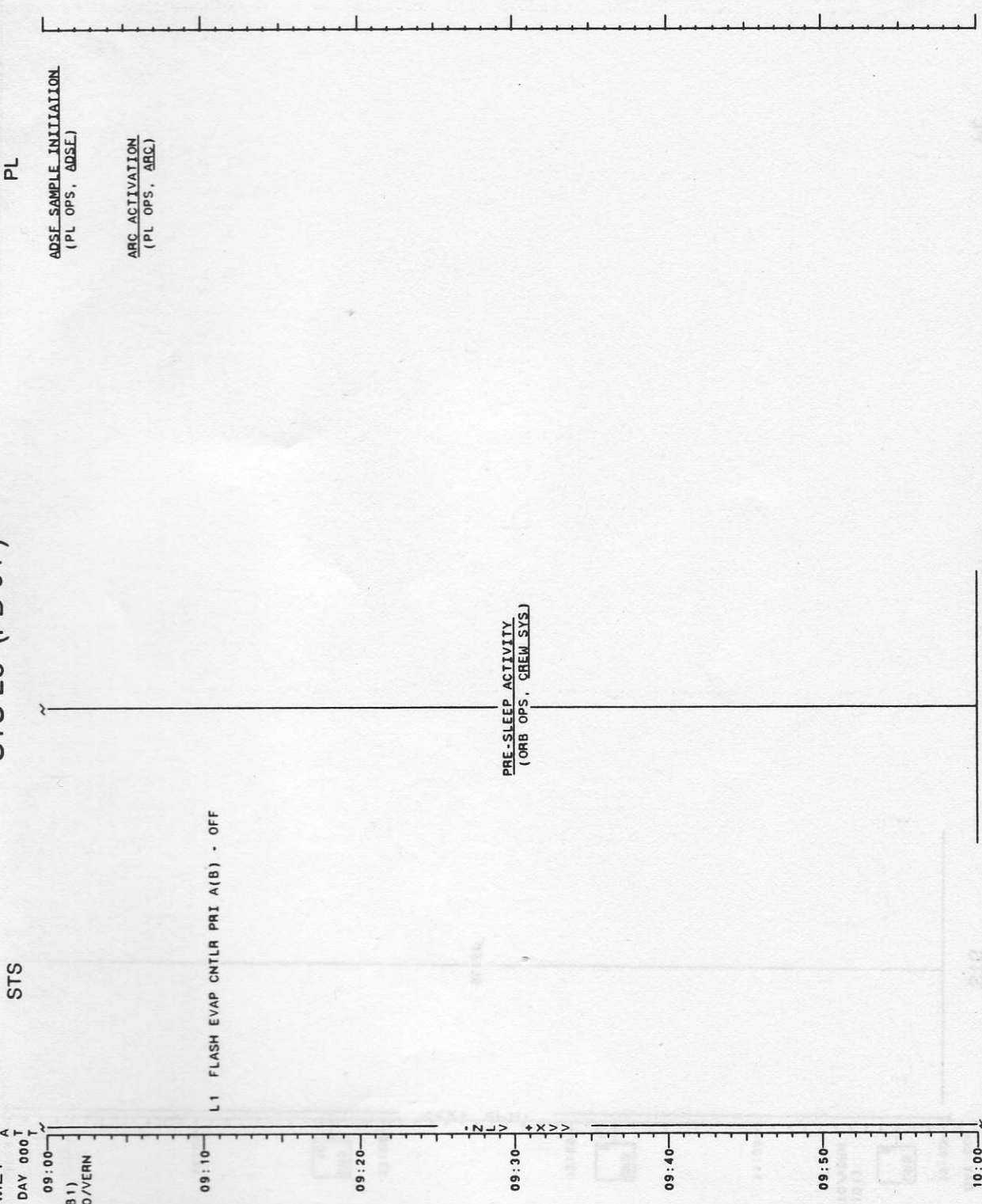
PVTOS INITIATION
(PL OPS, PVTOS) Runs 1, 5

STS-26 (FD01)

MET DAY 000 T

GSTDN

TDR RTS EW



STS

PL

MCC

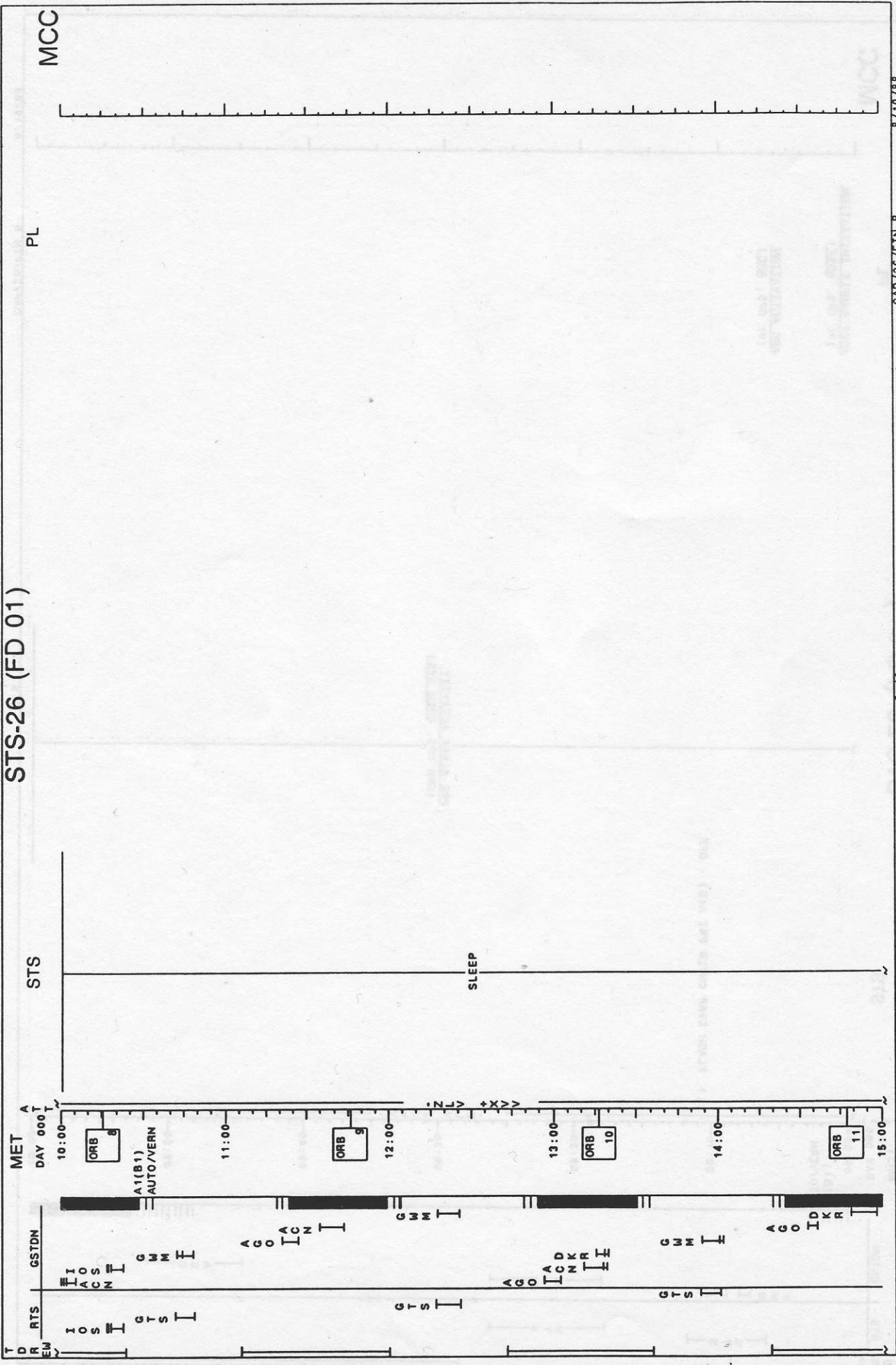
ADSE SAMPLE INITIATION
(PL OPS, ADSE)

ARC ACTIVATION
(PL OPS, ARC)

L1 FLASH EVAP CNTLR PRI A(B) - OFF

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

STS-26 (FD 01)



PL

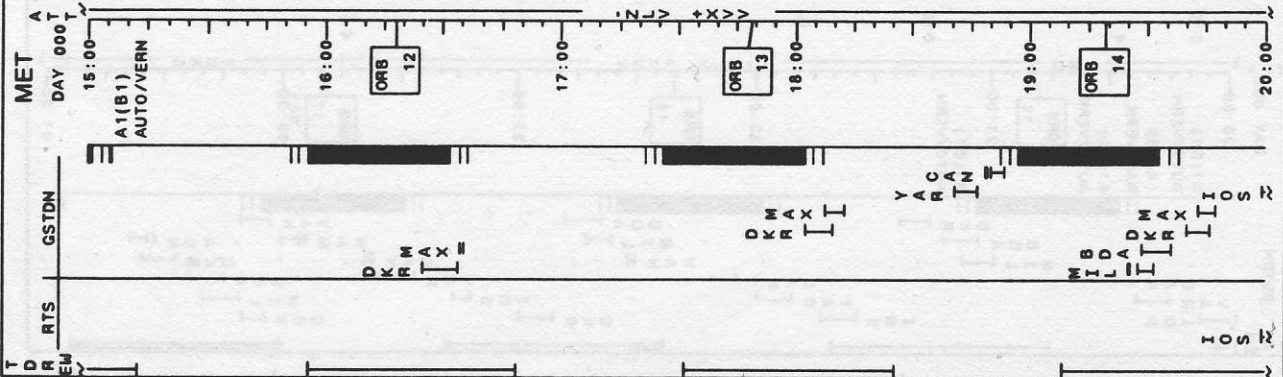
MCC

8/19/88

CAP/26/FIN B

3-10

STS-26 (FD 02)



PL

FD02 EZ CAP ACTIVITIES:
EXERCISE (1 Hr/All)
FOOD PREP/POSTI (Cue Card)(30 Min)
P/TV08 SETUP (MILE)
(PHOTO/TV, P/TV SCENES)(30 Min)
P/TV08 ACT (MILE)
(PHOTO/TV, P/TV SCENES)(2 Cmn)
Target of opportunity observations
CHANGES IN TOTAL BODY WATER (DSO 460)
(MED FS, MED DSO's) (15 Min/PLT,MS2)
 Samples at 0, 3, 5 hrs post-dosing
 Prefer start at wake-up
SALIVARY SCOP/DEX KINETICS (DSO 457)
(MED FS, MED DSO's) (5 Min/MS2,MS3)
 Samples at 0, .5, 1, 2, 4, 6, 8,
 10, 12, 24, 36 hrs post-dosing
 Prefer start at wake-up
SALIVARY IYLENOL KINETICS (DSO 458)
(MED FS, MED DSO's) (5 Min/CDR)
 Samples at 0, .25, .5, 1, 2, 3, 4,
 5, 6, 8 hrs post-dosing
 Prefer start at wake-up
OTOLITH TILT-TRANSLATION (DSO 459)
REINTERPRETATION
(MED FS, MED DSO's) (20 Min/CDR,MS2)
(45 Min/MS3)

ADSF DEACTIVATION
 (PL OPS, ADSE)

UPLINK
 REFSHMAT
 NORMALIZAT N

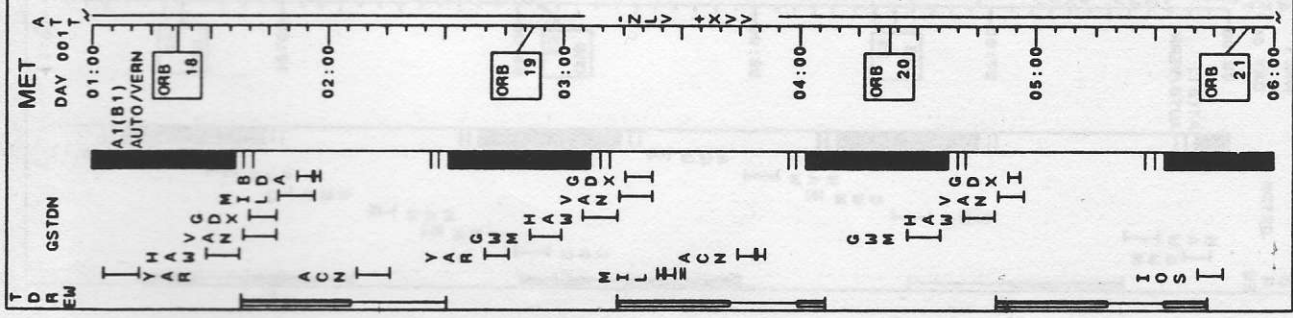
MCC

8/19/88

CAP/26/FIN B

3-11

STS-26 (FD 02)



STS

MNVB (TRK) -ZLV, +XVV
 TC=2 BV=3 OM=180
 A/AUTO/VERN Init TRK

MEAL (A11)

FILTER CLEANING
 (IFM. SCHEDULED MAINTENANCE.)

PL

P/TV07_SETUP (PPE)
 (PHOTO/TV, P/TV SCENES)

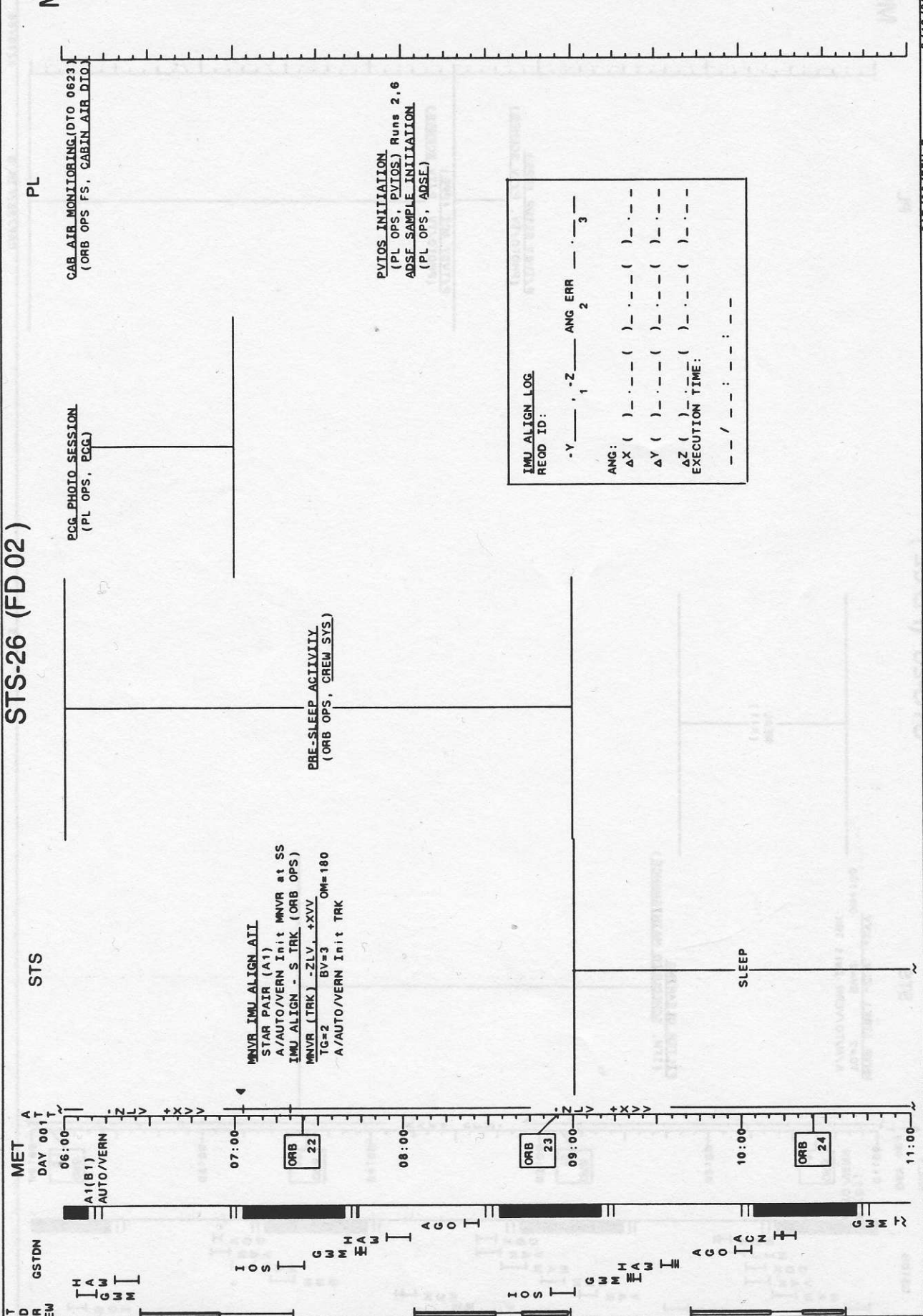
P/TV07_ACT (PPE)
 (PHOTO/TV, P/TV SCENES)

MCC

MCC

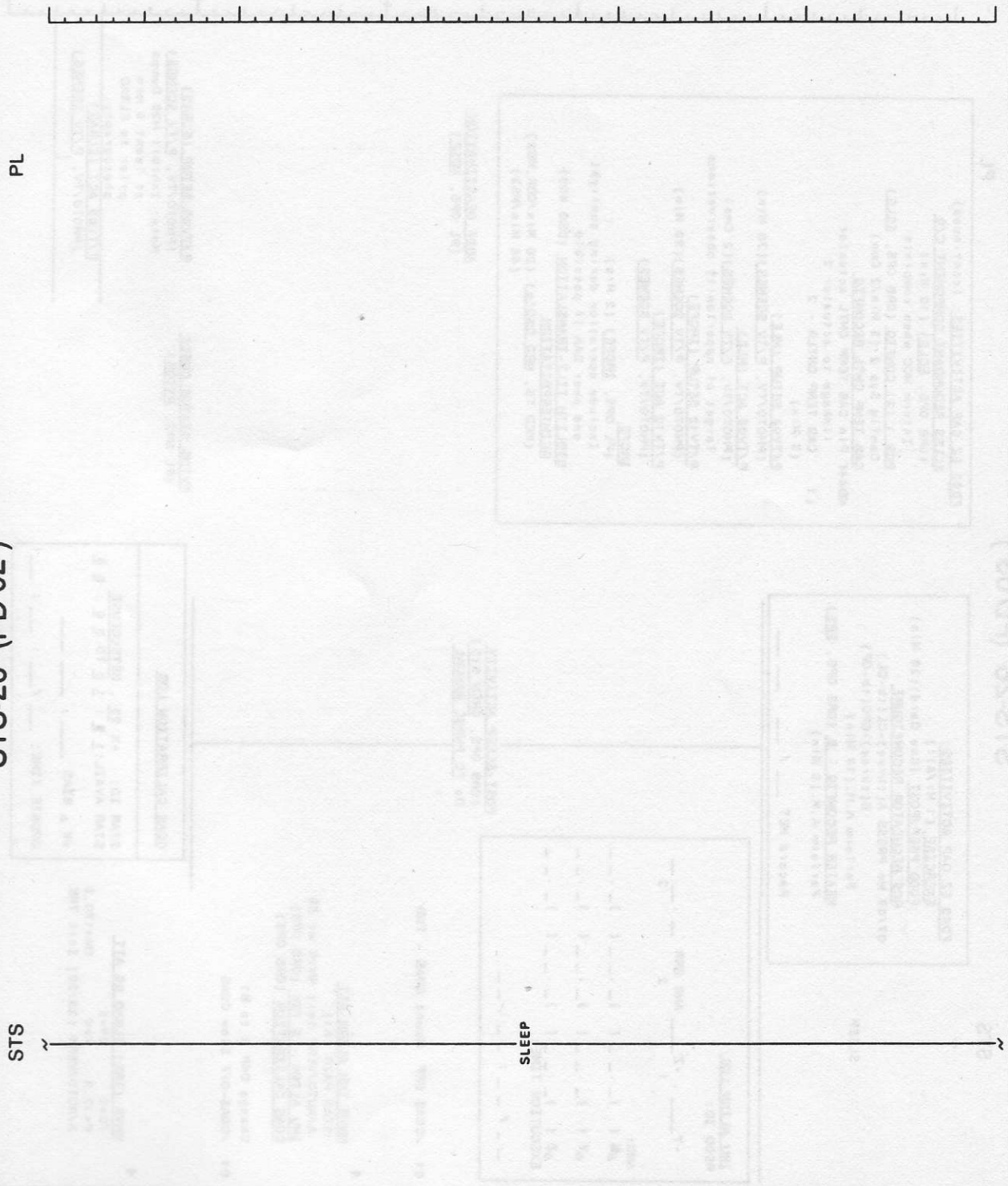
STS-26 (FD 02)

MCC



STS-26 (FD02)

T D R
E M
GSTDN
MET
DAY 001

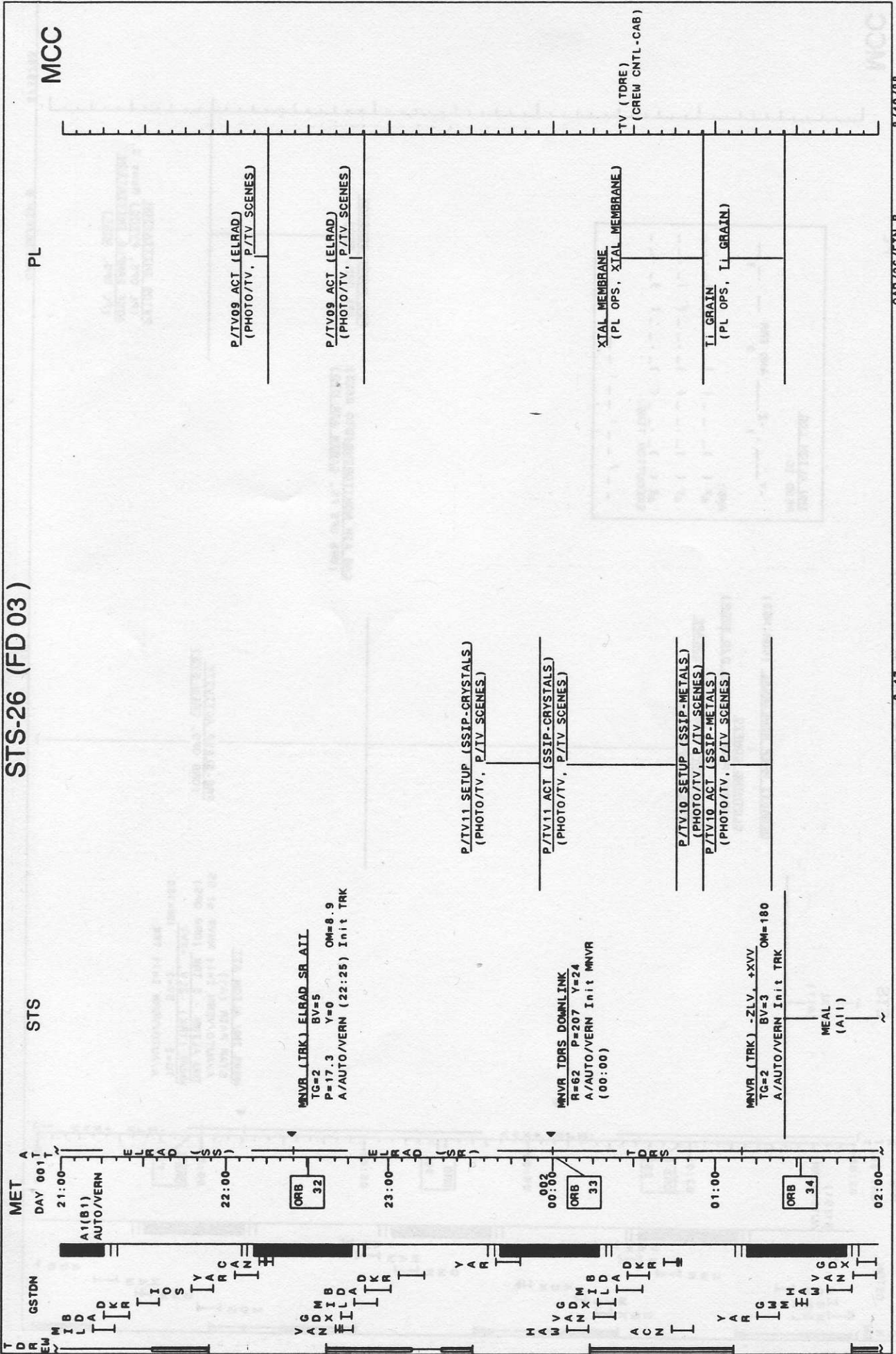


MCC

PL

MCC

STS-26 (FD 03)



MCC

PL

STS

MET

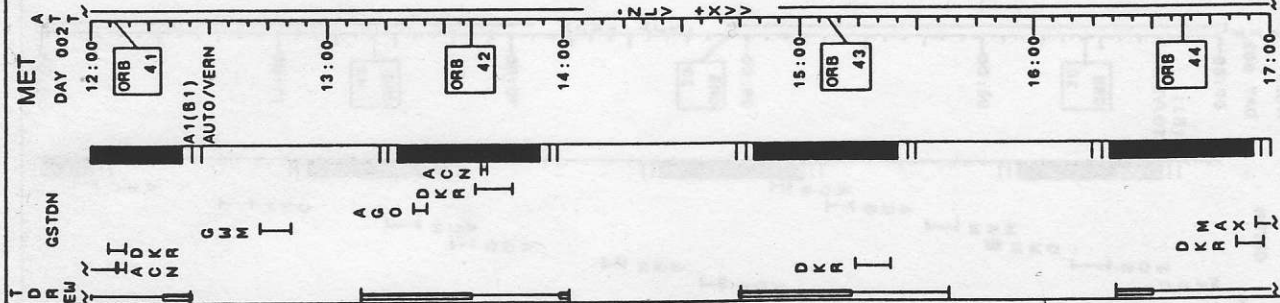
DAY 001T

GSTDN

TDR

MCC

STS-26 (FD04)



FD04 EZ CAP ACTIVITIES:

EXERCISE (1 Hr/All)
FOOD PREP/POST (Cue Card)(30 Min)
P/TV08 SETUP (MLE)
 (PHOTO/TV, P/TV SCENES)(30 Min)
P/TV08 ACT (MLE)
 (PHOTO/TV, P/TV SCENES)(2 Cmn)
 Target of opportunity observations
SALIVARY IYLENOL KINETICS (DSO 458)
 (MED FS, MED DSO's) (5 Min/CDR)
 Samples at 0, .25, .5, 1, 2, 3, 4,
 5, 6, 8 hrs post-dosing
 Prefer start at wake-up
OTOLITH ILLI-TRANSLATION (DSO 459)
REINTERPRETATION
 (MED FS, MED DSO's) (20 Min/CDR, MS2)
 (45 Min/MS3)
CHANGES IN TOTAL BODY WATER (DSO 460)
 (MED FS, MED DSO's) (15 Min/PLT, MS2)
 Samples at 0, 3, 5 hrs post-dosing
 Prefer start at wake-up

PL

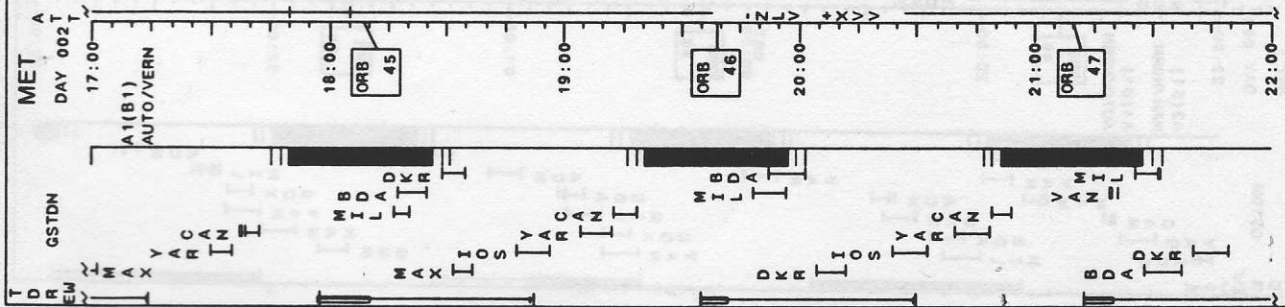
MCC

8/19/88

CAP/26/FIN B

3-20

STS-26 (FD04)



IMU ALIGN LOG

RECD ID: -V ____ -Z ____ ANG ERR ____ 3

ANG:

ΔX () ____ () ____ () ____

ΔY () ____ () ____ () ____

ΔZ () ____ () ____ () ____

EXECUTION TIME: ____ / ____ : ____ : ____

PL

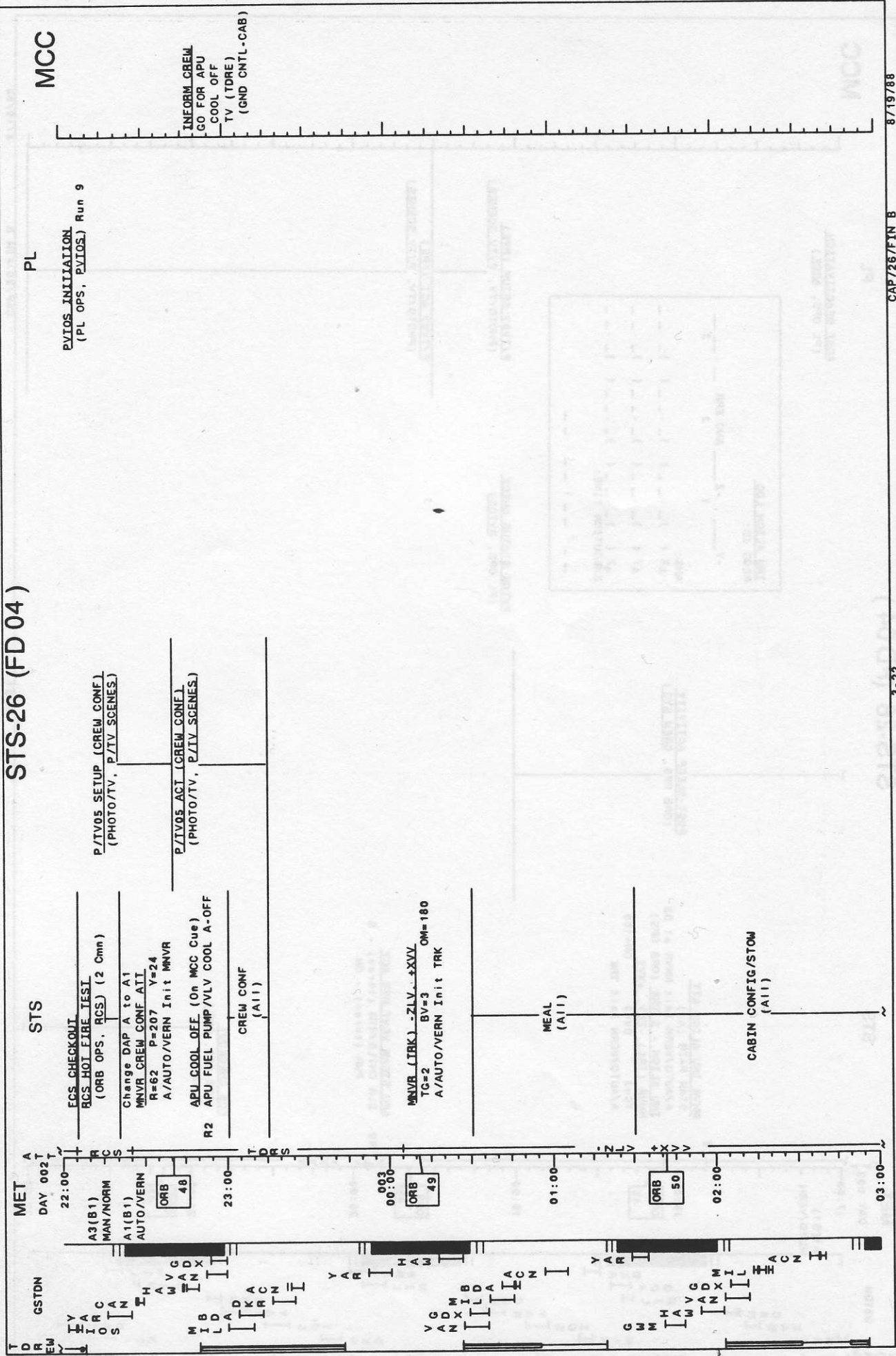
ADSE DEACTIVATION
(PL OPS, ADSE.)

PVTOS STATUS CHECK
(PL OPS, PVTOS)

P/TV07 SETUP (PPE)
(PHOTO/TV, P/TV SCENES)

P/TV07 ACT (PPE)
(PHOTO/TV, P/TV SCENES)

STS-26 (FD 04)

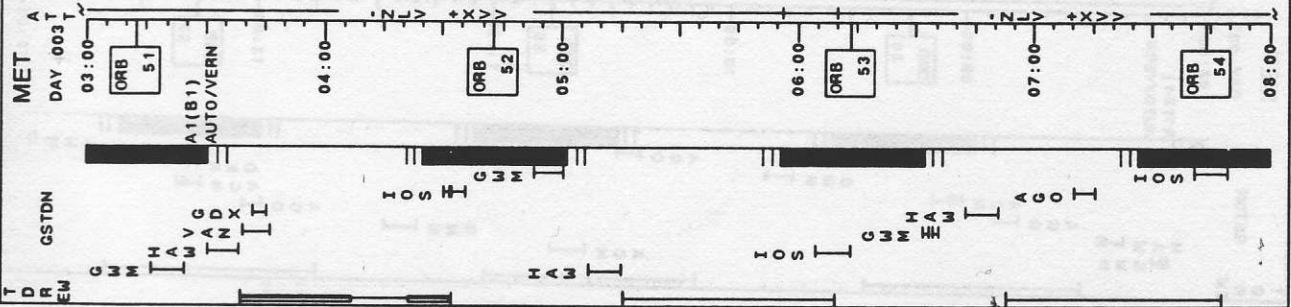


8/19/88

CAP/26/FIN B

3-22

STS-26 (FD04)



IMU ALIGN LOG
 RECD ID: _____

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

ANG:
 ΔX () _____ () _____ () _____
 ΔY () _____ () _____ () _____
 ΔZ () _____ () _____ () _____

EXECUTION TIME:
 - - / - - : - - : - -

PL

PVTOS STATUS CHECK
 (PL OPS, PVTOS)

PCG DEACTIVATION
 (PL OPS, PCG)

CAB AIR MONITORING (DTO 0623)
 (ORB OPS FS, CABIN AIR DIO)

ADSF SAMPLE INITIATION
 (PL OPS, ADSF)
 PVTOS INITIATION
 (PL OPS, PVTOS) Runs 4, 8

CABIN CONFIG/STOW
 (A11)

PRE-SLEEP ACTIVITY
 (ORB OPS, CREW SYS)

MNVR IMU ALIGN ALL
 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=180
 A/AUTO/VERN Init TRK

STS-26 (FD 04)

MCC
PL

MCC

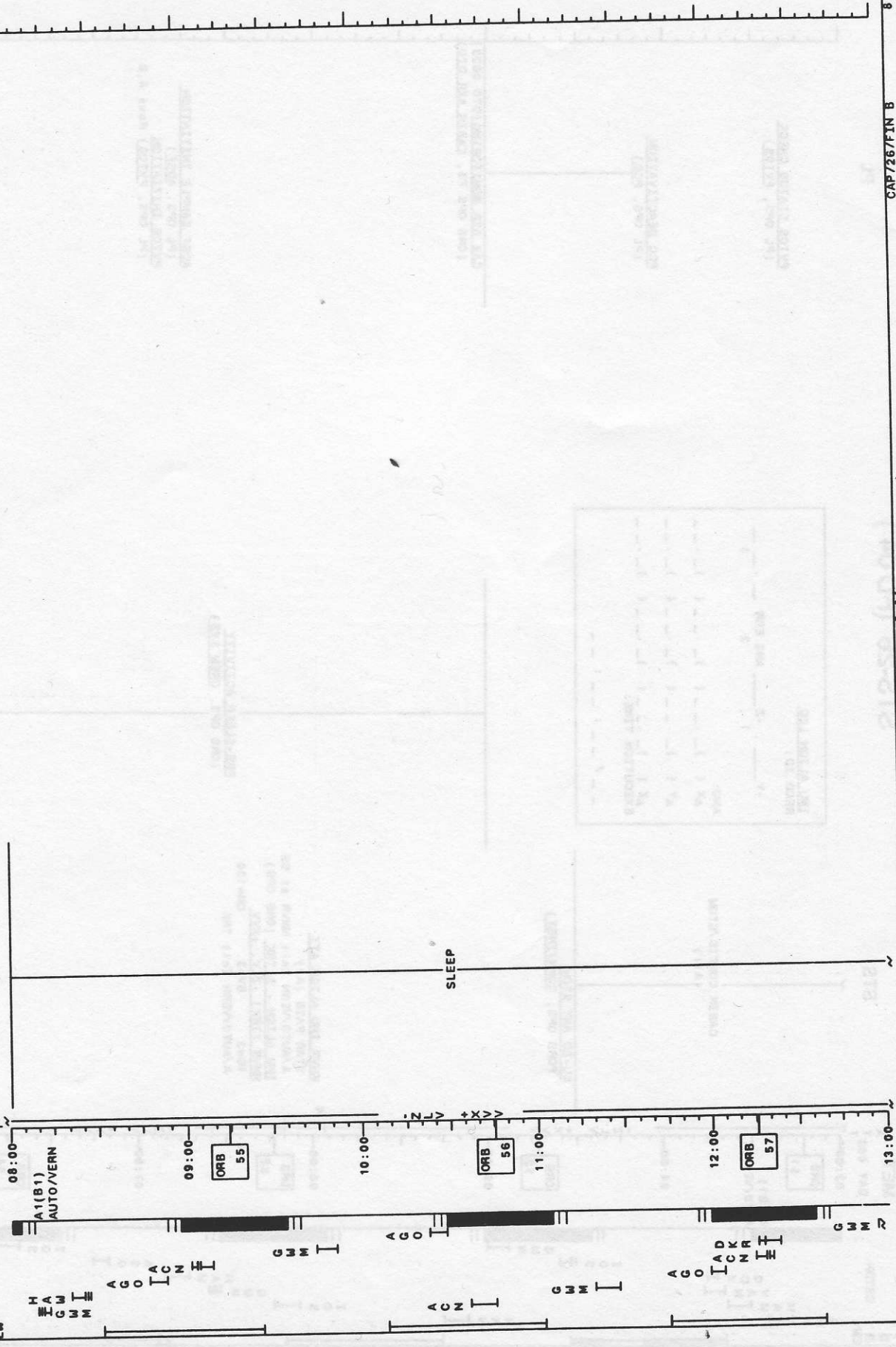
CAPT/26/FIN B 8719788

3-24

MET
DAY 003 T

STS

TDR
EM



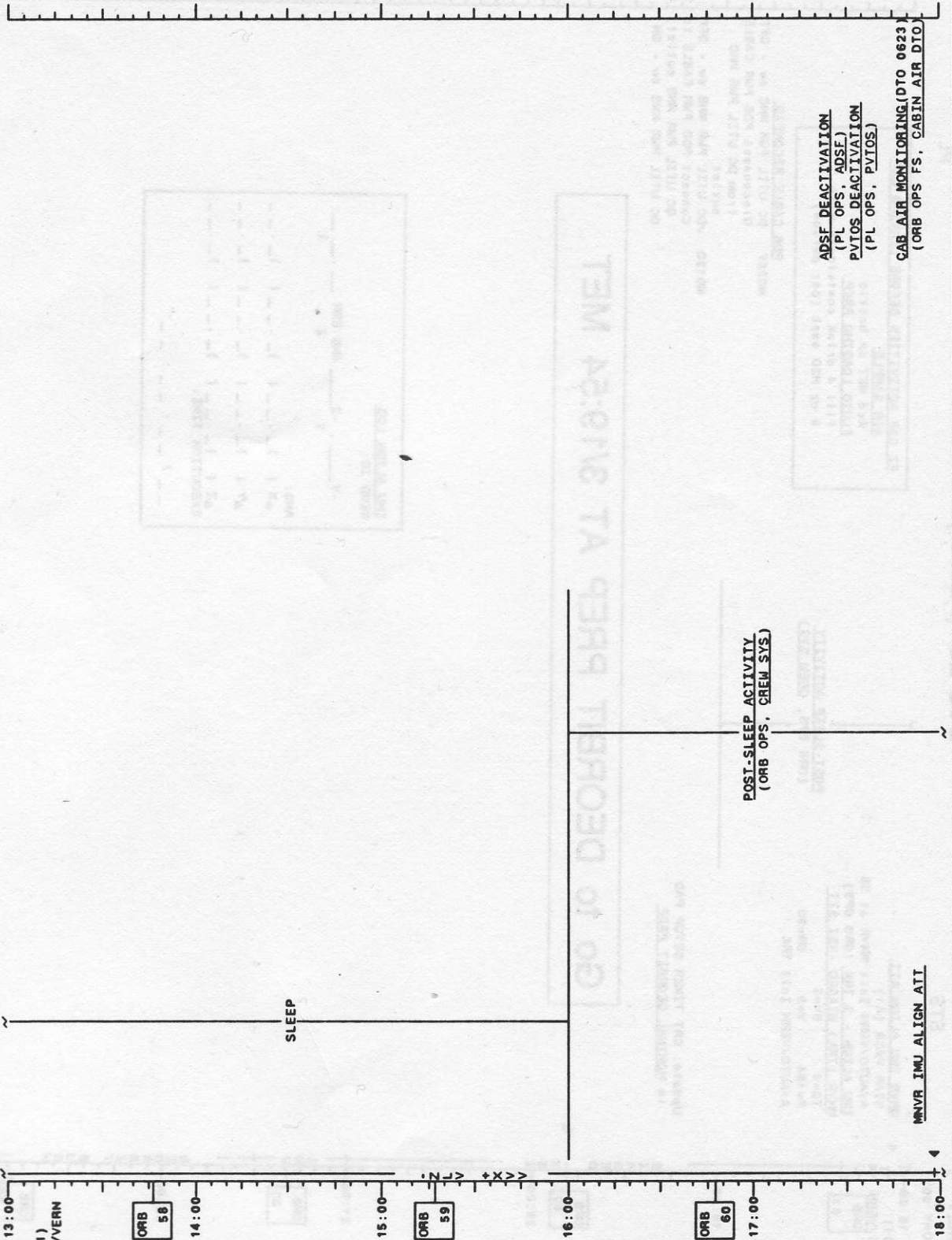
STS-26 (FD05)

MET DAY 003

T D R EM

PL MCC

STS



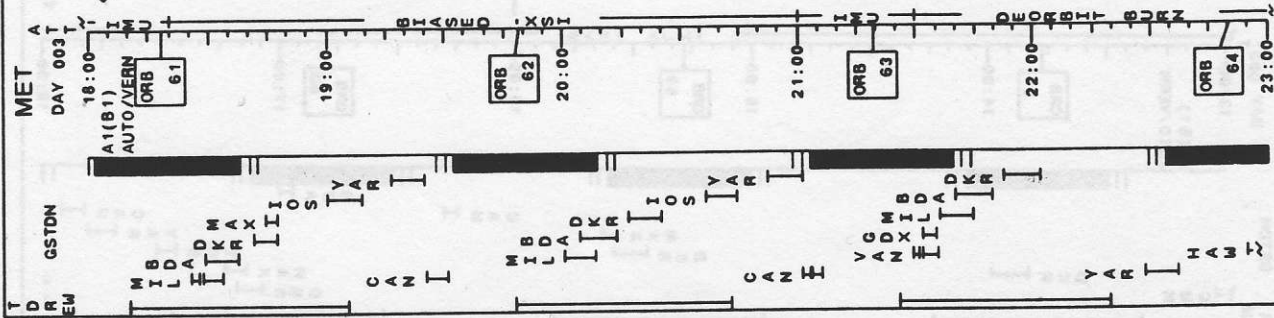
8/19/88

CAP/26/FIN B

3-25

STS-26 (FD05)

MCC



STS
 MNVR IMU ALIGN AII
 STAR PAIR (A1)
 A/AUTO/VERN Init MNVR at SS
 IMU_ALIGN - S TRK (ORB OPS)
 MNVR (TRK) BIASED -XSI AII
 TG=4 BV=5 OM=90
 P=184 V=0
 A/AUTO/VERN Init TRK

PL
 EZ CAP ACTIVITIES BEFORE LEAVING CAP:
 AIR SAMPLE
 Rcd MET on bottle
 FLUID LOADING PREP
 Fill 4 drink containers with
 8 oz H2O each (per person)

POST-SLEEP ACTIVITY
 (ORB OPS, CREW SYS.)

PDB_CABLE_RECONFIG.
 M030F DC UTIL PMR MNC sw - OFF
 Disconnect PDB PMR CABLE
 from DC UTIL PMR MNC
 outlet
 M0130 /DC UTIL PMR MNB sw - OFF
 Connect PDB PMR CABLE to
 DC UTIL PMR MNB outlet
 DC UTIL PMR MNB sw - ON

Update: CRT TIMER SETUP PAD
 in NOMINAL_DEORBIT PREP

UPDATE
 CRT TIMER
 SETUP PAD

Go to DEORBIT PREP AT 3/19:54 MET

IMU_ALIGN_LOG
 RECD ID:
 -Y ____ , -Z ____ ANG ERR ____ 3
 ANG:
 ΔX () ____ () ____ () ____
 ΔY () ____ () ____ () ____
 ΔZ () ____ () ____ () ____
 EXECUTION TIME:
 ____ / ____ : ____ : ____

CONTINGENCY TIMELINES

7A TDRS INSERTION..... 4A-1
8D TDRS INSERTION..... 4B-1
16A TDRS INSERTION..... 4C-1
18A TDRS (EVA) INSERTION..... 4D-1

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CONTINGENCY
TIMELINES

4A-1 7A TORS INSERTION

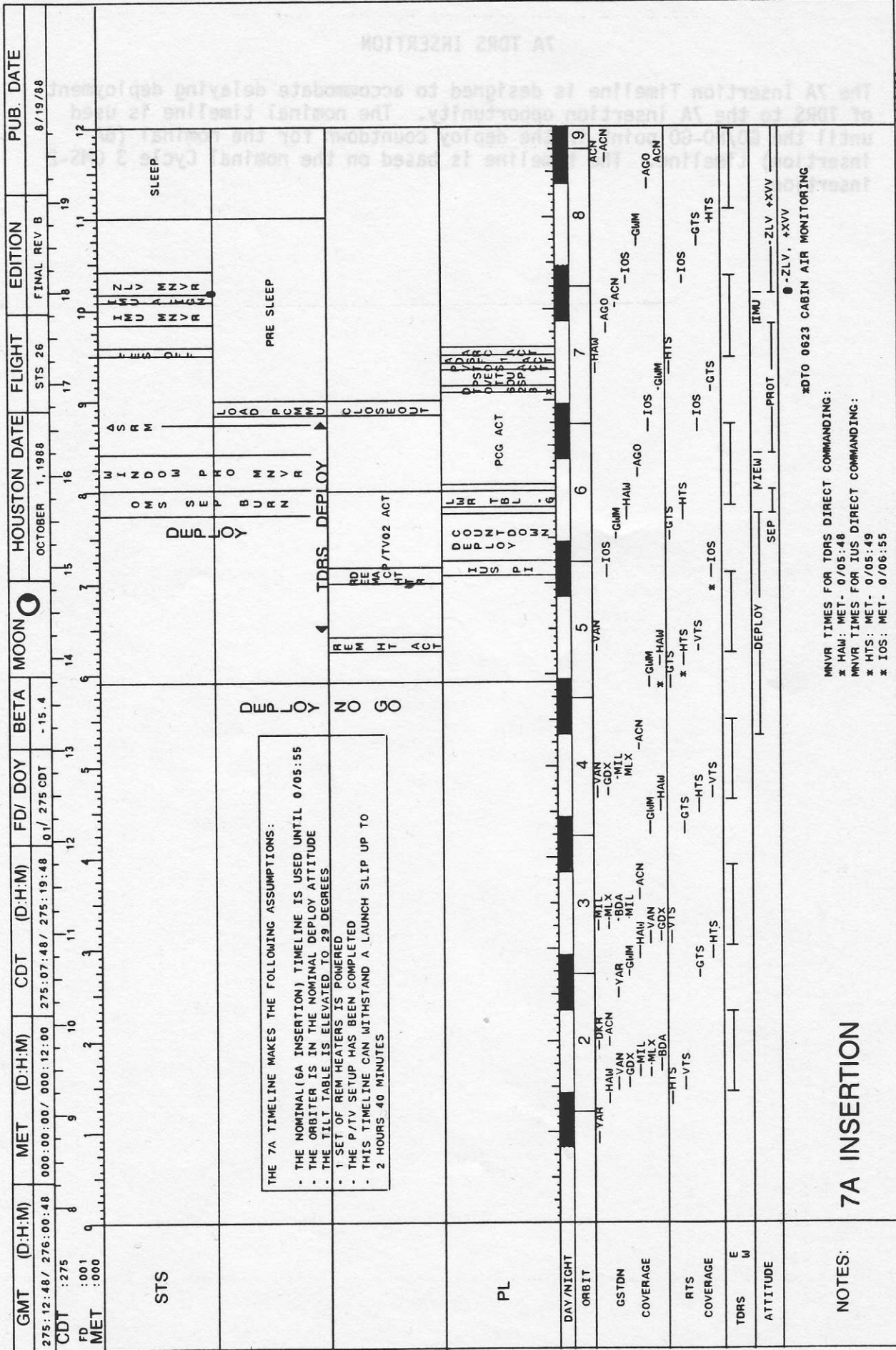
4B-1 8D TORS INSERTION

4C-1 16A TORS INSERTION

4D-1 18A TORS (EVA) INSERTION

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CONTINGENCY
TIMELINES



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
276:00:48 / 276:12:48	000:12:00 / 001:00:00	275:19:48 / 276:07:48	02 / 275 CDT	-13.6	☉	OCTOBER 1, 1988	STS 26	FINAL REV B	8/19/88
CDT :275	20	23	0 CDT:276		18	19 FD:002	21	22	23
FD :001	12	14	17		19	20	21	22	23
MET :000	13	15			20	21	22	23	24
STS	SLEEP								
PL	POST SLEEP								
DAY/NIGHT	RETURN TO THE NOMINAL TIMELINE AT 0/22:20. ALL CREW SLEEP PERIODS AND PRE/POST SLEEP ACTIVITIES WILL HAVE TO BE REPLANNED.								
ORBIT									
GSTDN COVERAGE	9 -GMM -AGO -ACN -DKR CAN 10 -GMM -DKR 11 -ACN 12 -DKR 13 -DKR -MAX -MAD 14 -MIL -MLX -BDA -DKR -MAD -MAX 15 -MIL -MLX -BDA -DKR -IOS -YAR -CAN 16 -DKR -IOS -YAR -CAN -VAN -MLX -MIL -BDA -MAM								
RTS COVERAGE	9 -GTS 10 -GTS 11 -GTS 12 -GTS 13 -GTS 14 -GTS 15 -GTS 16 -GTS								
TDRS E W	9 -ZLV +XVV 10 -ZLV +XVV 11 -ZLV +XVV 12 -ZLV +XVV 13 -ZLV +XVV 14 -ZLV +XVV 15 -ZLV +XVV 16 -ZLV +XVV								
ATTITUDE	9 -IMU 10 -IMU 11 -IMU 12 -IMU 13 -IMU 14 -IMU 15 -IMU 16 -IMU								
NOTES:	7A INSERTION ● AFT STATION ● -ZLV, +XVV								

8D TDRS INSERTION

The 8D Insertion Timeline is designed to accommodate delaying deployment of TDRS for the 8D insertion opportunity. The 7A insertion timeline is used up to the GO/NO-GO decision point in the deploy countdown. An 8D insertion will be considered if a high probability of deploying exists or if a 16A insertion cannot be accommodated due to orbiter or IUS/TDRS problems. Additional assumptions are shown on page 4B-2. The timeline is based on the nominal Cycle 3 OMS-2 insertion.



8D TDRS

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FDI DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
276:00:48 / 276:12:48	000:12:00 / 001:00:00	275:19:48 / 276:07:48	02 / 275 CDT	-13.6	☉	OCTOBER 1, 1988	STS 26	FINAL REV B	8/19/88
CDT :275	20	21	0 CDT:276	17	2	19	5	6	
FD MET :000	12	13	16	18	19	20	21	22	23
	14	15	23						
STS									
PL									
DAY/NIGHT									
ORBIT	9	10	11	12	13	14	15	16	
GSTDN COVERAGE	-GUM -AGO -ACN -DKR	-GUM -DKR	-ACN -DKR	-DKR CAN	-DKR MAX -MAD	-MIL -MLX -BDA -DKR -MAD MAX	-MIL -MLX -BDA -DKR	-VAN -MLX -MIL -BDA	-DKR -IOS -YAR -CAN -HAW
RTS COVERAGE	-GTS	-GTS	-GTS	-GTS	-GTS	-GTS	-IOS	-IOS	-HTS
TDRS									
ATTITUDE									
NOTES:	8D INSERTION								

RETURN TO THE NOMINAL TIMELINE AT 1/00:00. ALL CREW SLEEP PERIODS AND PRE/POST SLEEP ACTIVITIES WILL HAVE TO BE REPLANNED. PCG ACTIVATION, IFF ACTIVATION, PPE, KU BAND DEPLOY ACTIVITIES AND VTR PLAYBACK WILL HAVE TO BE REPLANNED.

BACK TO THE NOMINAL TIMELINE

SLEEP

POST SLEEP

● APT STATION
● -ZLV, +XVV

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GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
275:12:48 / 276:00:48	000:00:00 / 000:12:00	275:07:48 / 275:19:48	01 / 275 CDT	-15.4	☉	OCTOBER 1, 1988	STS-26	FINAL, REV B	8/19/88
FD :001	MET :000								
STS									
PL									
DAY/NIGHT									
ORBIT									
GSTDN									
COVERAGE									
RTS COVERAGE									
TDRS E W									
ATTITUDE									
NOTES:	<p>THIS 16A TIMELINE MAKES THE FOLLOWING ASSUMPTIONS:</p> <ul style="list-style-type: none"> - THE 7A INSERTION TIMELINE IS USED UNTIL 07:30 MET - THE FD2 MORNING IMU ALIGN IS A STAR-OF-OPPORTUNITY ALIGN - P/TV CAMERA SETUP STILL IN PLACE - THE IUS/TDRS ACTIVITIES ARE SCHEDULED AT THE LAST ACCEPTABLE TIME FOR A SUCCESSFUL 16A DEPLOY - THE TIMELINE RETURNS TO NOMINAL AT 0723:30 MET - THE COMS CALIBRATION SHOULD BE PERFORMED DURING PRE-SLEEP ACTIVITIES ON FD 2 - PCG, PPE, AND IEF ACTIVITIES SHOULD BE REPLANNED. 								
	<p>16A INSERTION</p>								

GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB DATE
276:00:48 / 276:12:48	000:12:00 / 001:00:00	275:19:48 / 276:07:48	02 / 275 CDT	-13.6		OCTOBER 1, 1988	STS-26	FINAL, REV B	8/19/88
CDT :275									
FD :001									
MET :000									
STS		SLEEP							
PL		POST SLEEP							
DAY/NIGHT									
ORBIT									
GSTDN COVERAGE									
RTS COVERAGE									
TDRS E ly									
ATTITUDE									
NOTES:									

276:00:48 / 276:12:48 000:12:00 / 001:00:00 275:19:48 / 276:07:48 02 / 275 CDT -13.6

CDT :275 FD :001 MET :000

STS SLEEP

PL POST SLEEP

DAY/NIGHT ORBIT

GSTDN COVERAGE RTS COVERAGE

TDRS E ly ATTITUDE

NOTES:

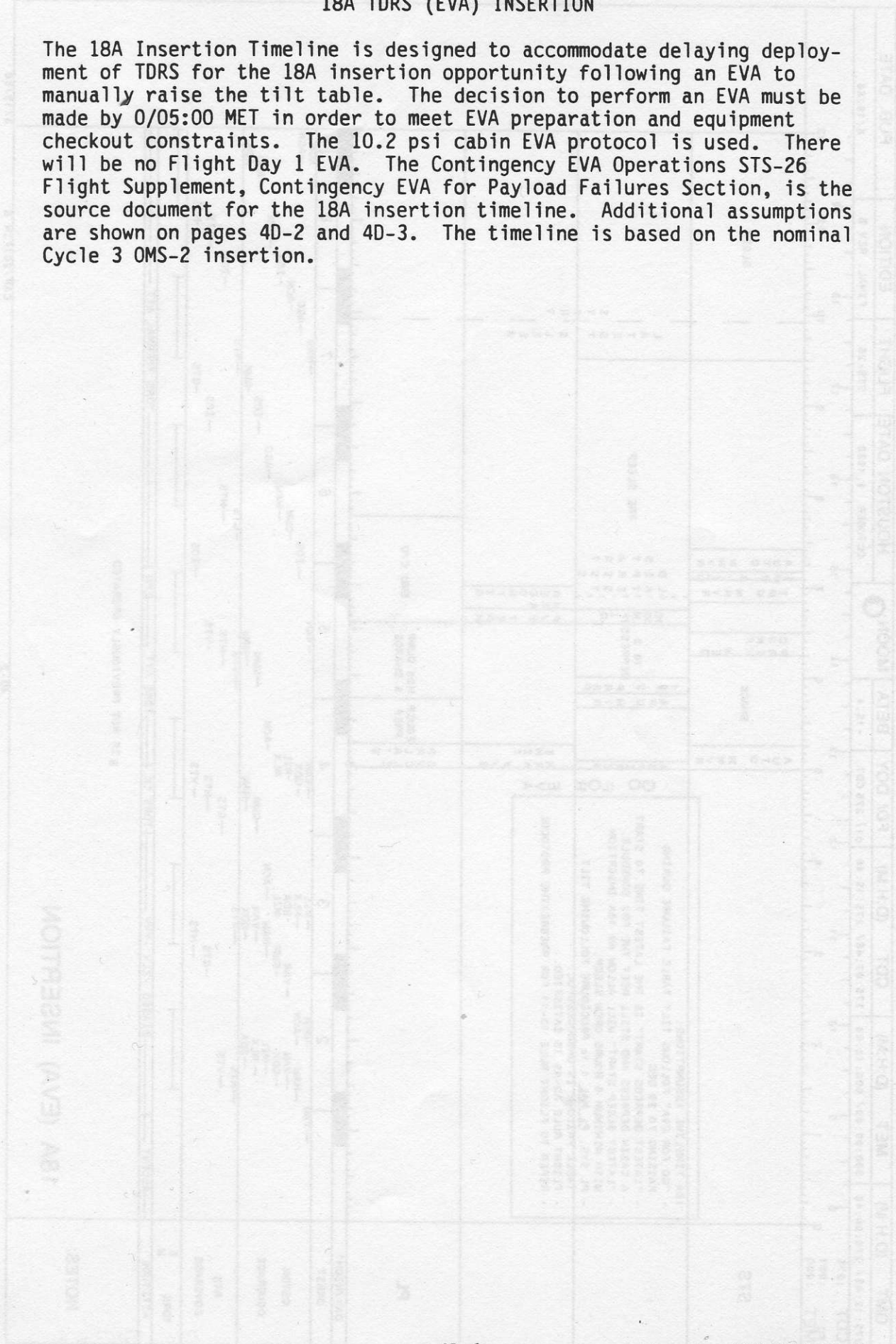
16A INSERTION

TRACKING ARC

4C-3 8719788 CAP/26/FIN B

18A TDRS (EVA) INSERTION

The 18A Insertion Timeline is designed to accommodate delaying deployment of TDRS for 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 checkout constraints. The 10.2 psi cabin EVA protocol is used. There will be no Flight Day 1 EVA. The Contingency EVA Operations STS-26 Flight Supplement, Contingency EVA for Payload Failures Section, is the source document for the 18A insertion timeline. Additional assumptions are shown on pages 4D-2 and 4D-3. The timeline is based on the nominal Cycle 3 OMS-2 insertion.



GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
275:12:48 / 276:00:48	000:00:00 / 000:12:00	275:07:48 / 275:19:48	01 / 275 CDT	-15.4	☉	OCTOBER 1, 1988	STS-26	FINAL, REV B	8/19/88
CDT :275									
FD :001									
MET :000									
STS									
PL									
DAY/NIGHT									
ORBIT									
GSTDN									
COVERAGE									
RTS									
COVERAGE									
TDRS									
ATTITUDE									
NOTES:									

18A TIMELINE ASSUMPTIONS:
 - "GO FOR EVA" FOLLOWS TILT TABLE FAILURE DURING RAISING TO 29 DEG
 - "LATEST DEPRESS START" IS THE LATEST TIME TO START A CABIN DEPRESS AND STILL MEET THE FD2 SCHEDULE.
 - "LATEST SLEEP START" WILL ALLOW AN 18A INSERTION WITH MINIMUM 6 HOURS CREW SLEEP.
 - PL SYS. PL MAL 1.1c PROCEDURE FOLLOWING TILT TABLE FAILURE IS UNSUCCESSFUL.
 - FLIGHT RULE A2-45 IS SATISFIED.
 - REFER TO FLIGHT RULE 13-11 FOR PREBREATHE PROTOCOL

18A (EVA) INSERTION

● IF NOT PREVIOUSLY OPERATED

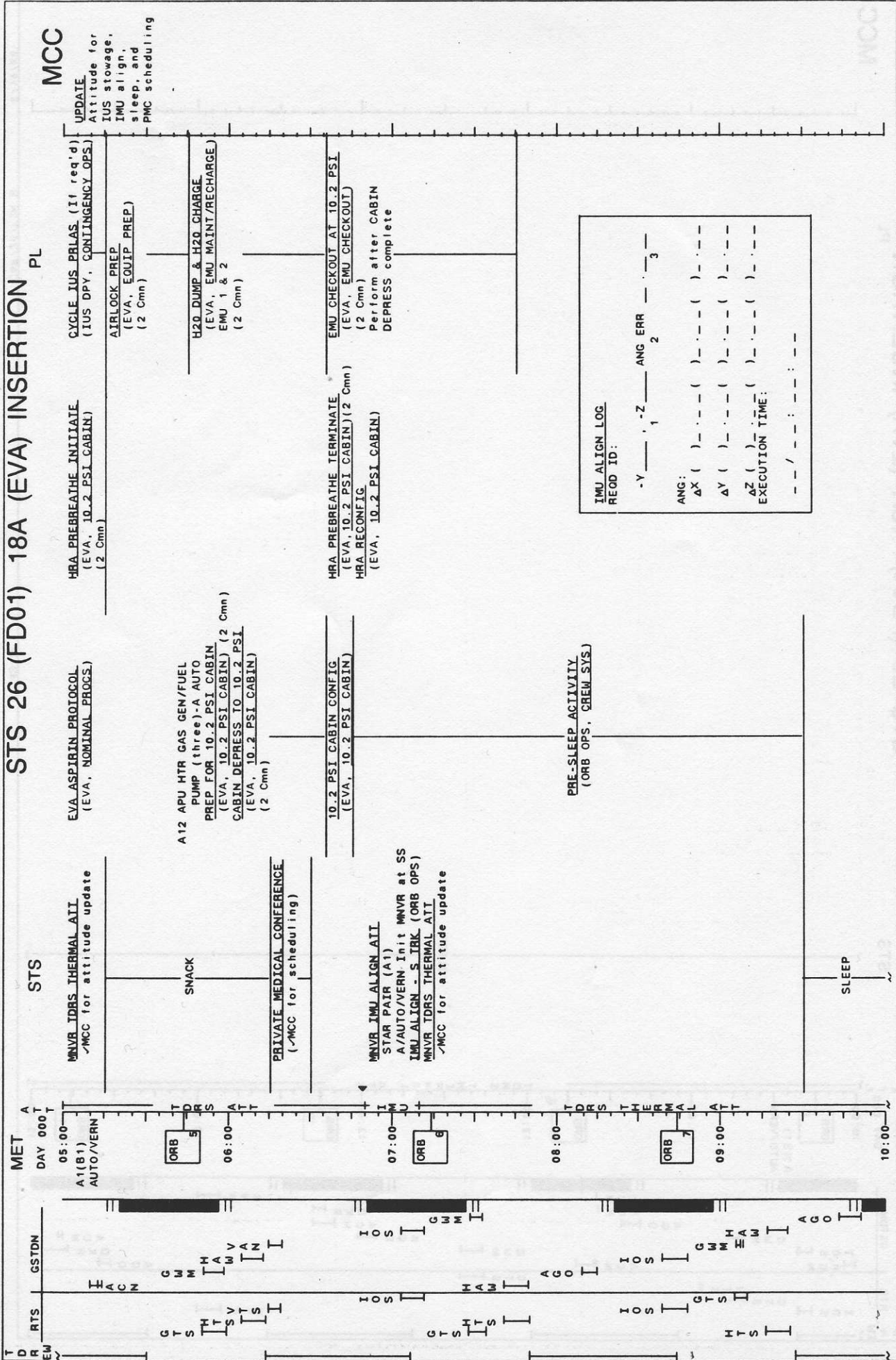
GMT (D:H:M)	MET (D:H:M)	CDT (D:H:M)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
276:00:48 / 276:12:48	000:12:00 / 001:00:00	275:19:48 / 276:07:48	02 / 275 CDT	-13.6		OCTOBER 1, 1988	STS-26	FINAL, REV B	8/19/88
CDT :275	MET :20	CDT :23	FD:00276						
FD :001	MET :12	CDT :15	FD:00277						
MET :000	MET :10	CDT :10							
STS	SLEEP								
	POST SLEEP								
PL									
DAY/NIGHT									
ORBIT									
GSTDN COVERAGE									
RTS COVERAGE									
TDRS E W									
ATTITUDE									
NOTES:									

FD2 ASSUMPTIONS:

- IUS/TDRS IS THERMALLY DEPLOYABLE ON FD2.
- ATTEMPTS WILL BE MADE TO RAISE THE IUS/TDRS PRIOR TO THE AIRLOCK DEPRESS. IF SUCCESSFUL THE EVA WILL NOT OCCUR AS SCHEDULED.
- ATTEMPTS TO RAISE PAST 29 DEG PRIOR TO EVA (UMBILICALS DISCONNECTED) MUST WAIT UNTIL AFTER "18A BAT" TIME LIMIT ON TDS BATTERIES.
- TDRS DIRECT CHECK OPPORTUNITIES: MIL 15, CAN 15, MIL 16.
- THE TIMELINE RETURNS TO NOMINAL AT 01/09:00.
- MIDDECK PAYLOAD ACTIVITIES SHOULD BE REPLANNED.

18A (EVA) INSERTION

STS 26 (FD01) 18A (EVA) INSERTION PL



MCC
UPDATE
Attitude for
IUS storage,
IMU align,
sleep, and
PMC scheduling

CYCLE IUS PRLAS (If req'd)
(IUS OPY, CONTINGENCY OPS)

AIRLOCK PREP
(EVA, EQUIP PREP)
(2 Cmn)

H2O DUMP & H2O CHARGE
(EVA, EMU MAINT/RECHARGE)
EMU 1 & 2
(2 Cmn)

EMU CHECKOUT AT 10.2 PSI
(EVA, EMU CHECKOUT)
(2 Cmn)
Perform after CABIN
DEPRESS complete

HRA PREBREATH INITIATE
(EVA, 10.2 PSI CABIN)
(2 Cmn)

A12 APU HTR GAS GEN/FUEL
PUMP (three)-A AUTO
PREP FOR 10.2 PSI CABIN
(EVA, 10.2 PSI CABIN) (2 Cmn)
CABIN DEPRESS TO 10.2 PSI
(EVA, 10.2 PSI CABIN)
(2 Cmn)

HRA PREBREATH TERMINATE
(EVA, 10.2 PSI CABIN) (2 Cmn)
HRA RECONFIG
(EVA, 10.2 PSI CABIN)

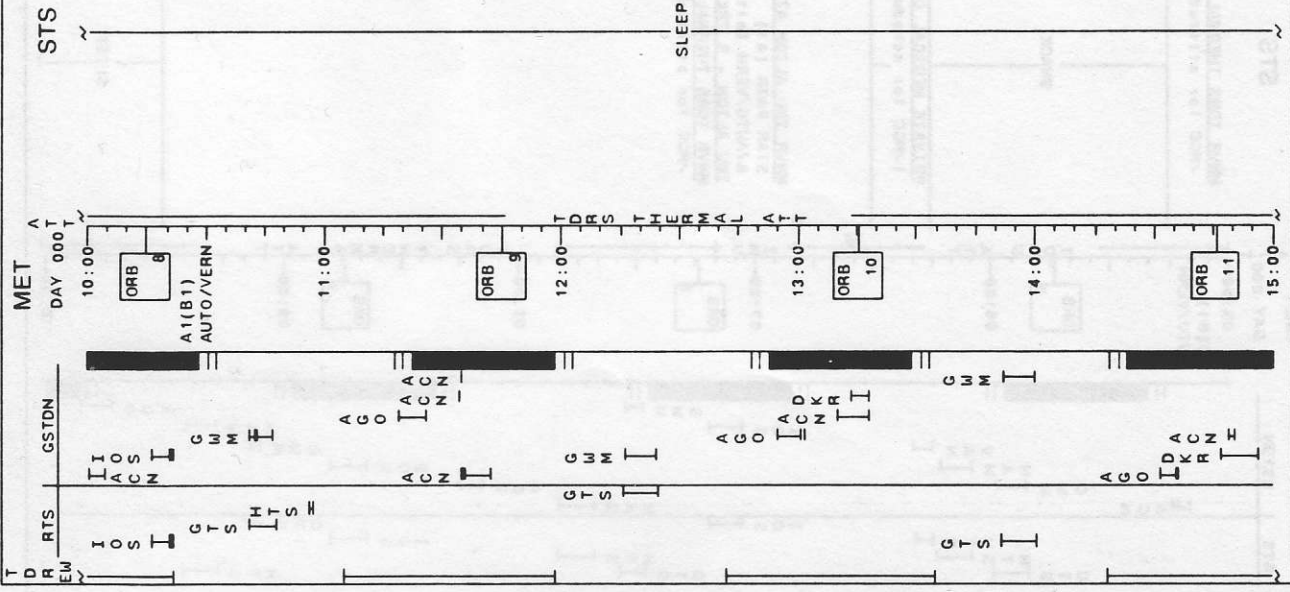
10.2 PSI CABIN CONFIG
(EVA, 10.2 PSI CABIN)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

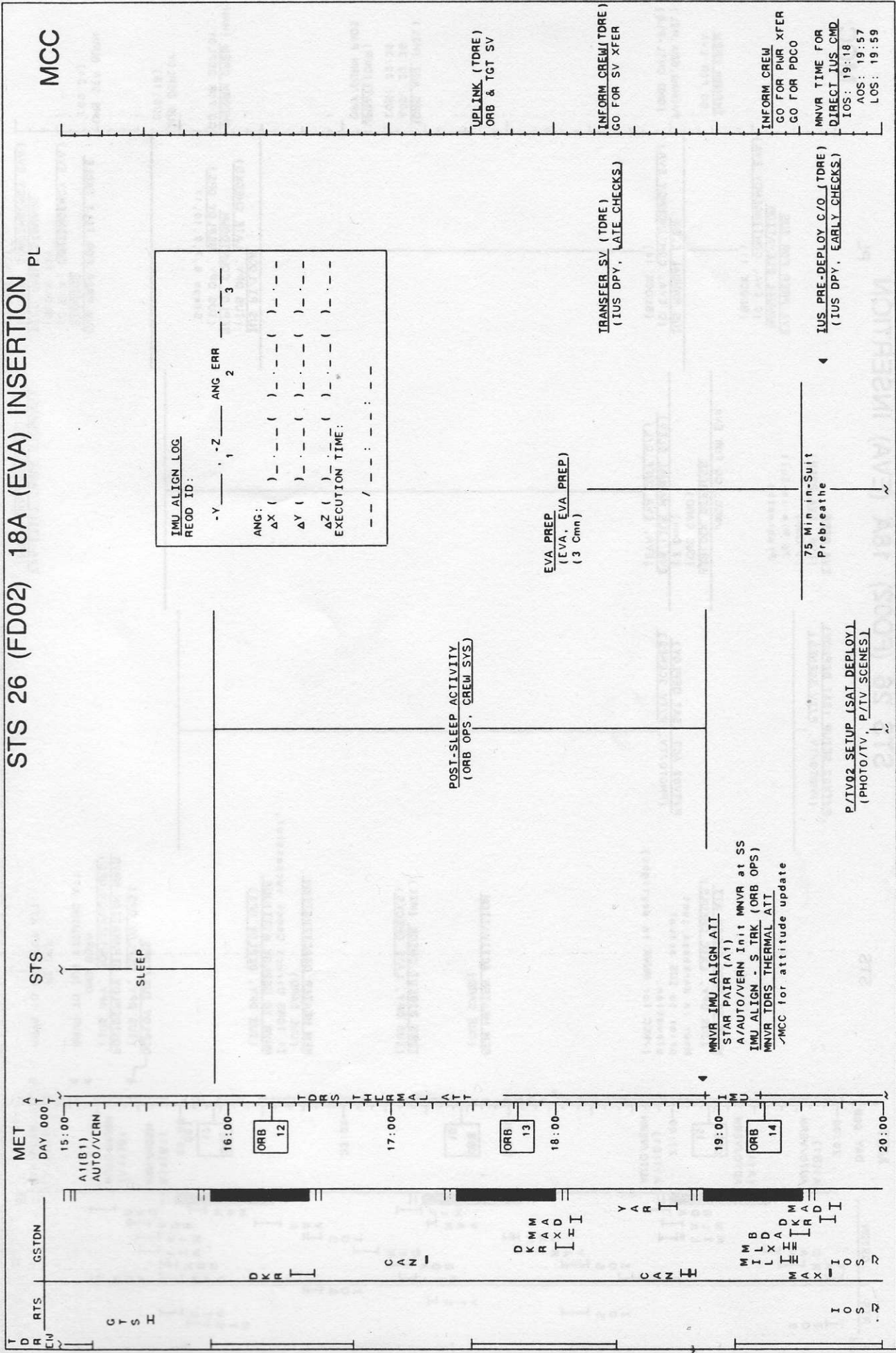
IMU ALIGN LOG	
RECD ID:	
-Y	1 -Z ANG ERR 2 3
ANG:	
ΔX ()	() () ()
ΔY ()	() () ()
ΔZ ()	() () ()
EXECUTION TIME:	---
---	---

STS 26 (FD01) 18A (EVA) INSERTION PL

MCC



STS 26 (FD02) 18A (EVA) INSERTION PL



MCC

8/19/88

CAPT/26/FIN B

40-7

STS 26 (FD02) 18A (EVA) INSERTION PL

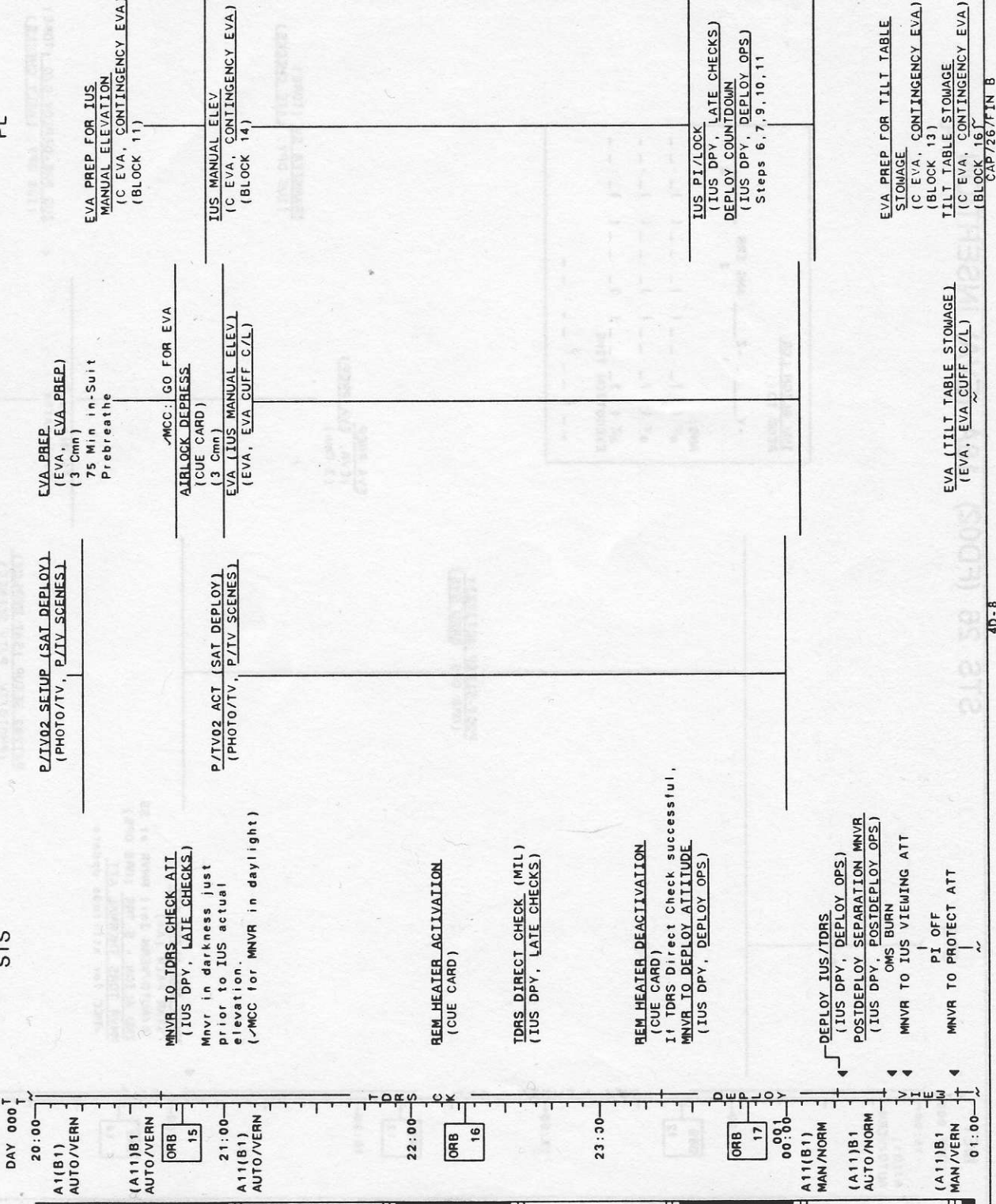
MCC

MET

STS

TDRS

PL

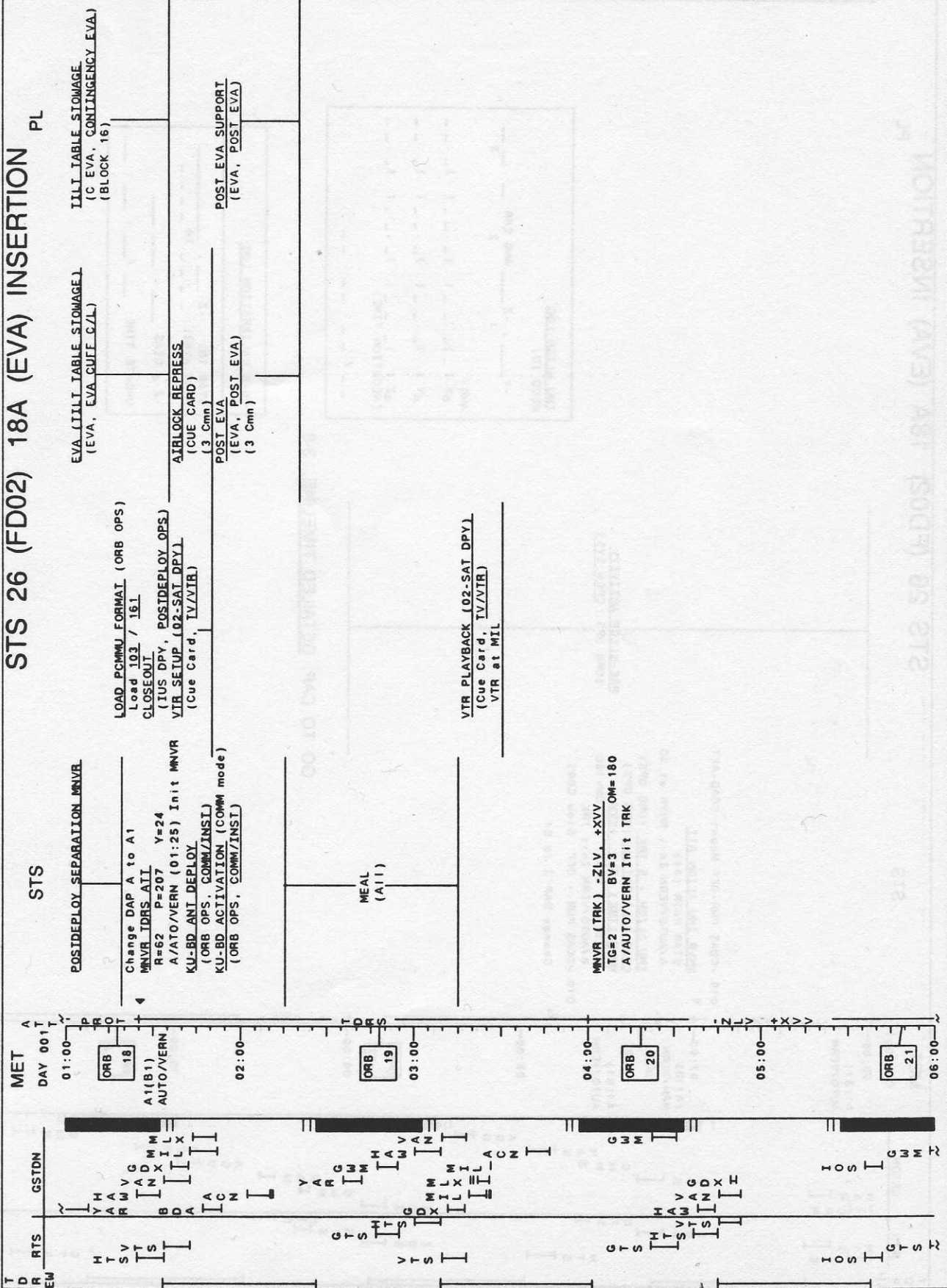


8/19/78

4D-8

CAP 726/FIN B

STS 26 (FD02) 18A (EVA) INSERTION



MCC

PL

SAM 1 IGNITION
(01:17)

VTR (MIL)

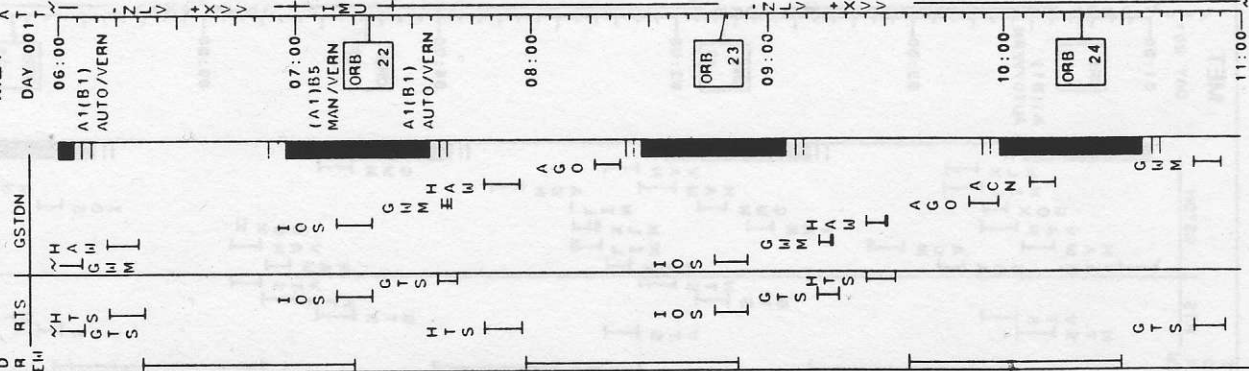
MCC

STS 26 (FD02) 18A (EVA) INSERTION PL

MCC

STS

MET DAY 001 T



019 /COAS PHWR-OFF Mount COAS-AFT
 MNVR IMU ALIGN ATT
 STAR PATR (A1)
 A/AUTO/VERN Init MNVR at SS
 IMU ALIGN - S IRK (ORB OPS)
 COAS CALIBRATION (ORB OPS)
 MNVR (IRK) -ZLV, +XVV
 TC=2 BV=3 OM=180
 A/AUTO/VERN Init TRK
 019 /COAS PHWR - Off Stow COAS
 Change DAP B to B1

PRE-SLEEP ACTIVITY
 (ORB OPS, CREW SYS)

IMU ALIGN LOG

RECD ID: - Y _____ , Z _____ ANG ERR _____ 3

ANG: ΔX () _____ () _____ () _____
 ΔY () _____ () _____ () _____
 ΔZ () _____ () _____ () _____

EXECUTION TIME: _____ / _____ : _____

COAS CALIBRATION LOG

STAR ID: -Z _____ TO _____
 STAR AVAIL: _____ / _____ : _____
 -Z Δ BIAS _____ / _____ : _____
 UPDATE TIME: _____ / _____ : _____

GO TO CAP. DETAILED TIMELINE. 3-8

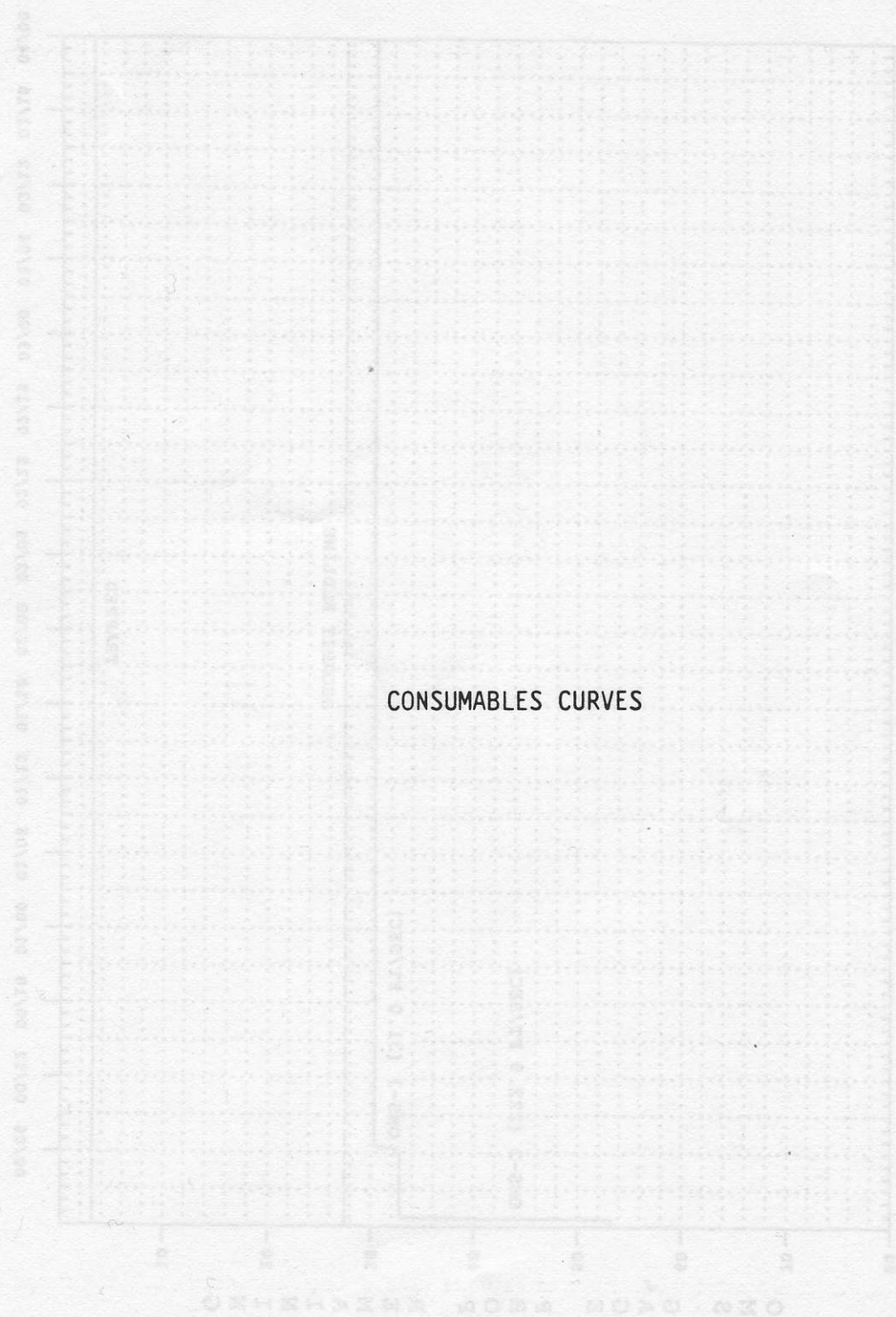
8/19/88

CAP/26/TIN B

4D-10

MCC

MISSION REVERSED TIME IN DAYS/HOURS



CONSUMABLES CURVES

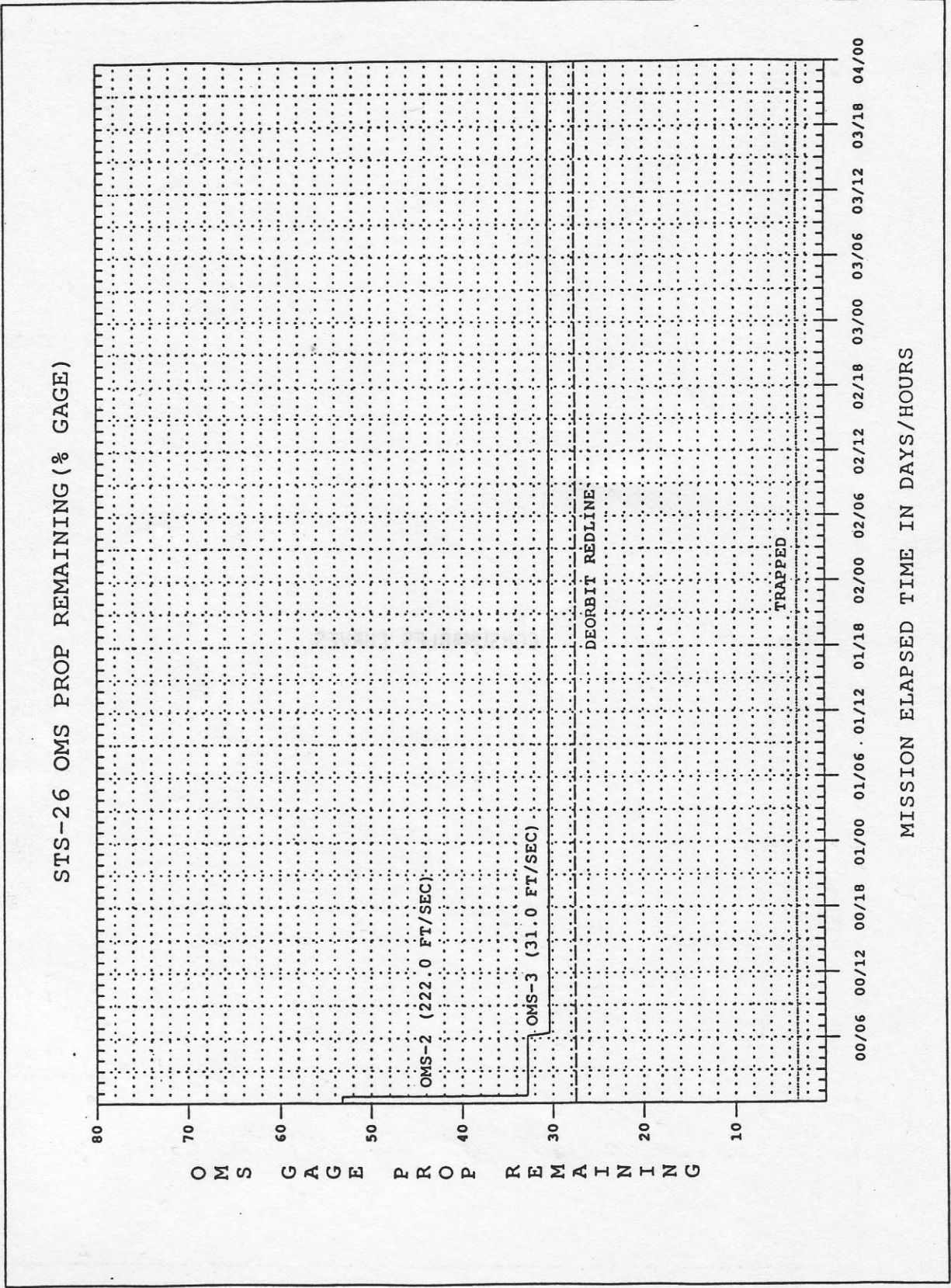
212-50 0M2 1E06 REVERSED (7 CYCLES)

Circle Number: 12 101 08
Circle Number: 08 40000000 (0110)
Circle Number: 08 40000000 (0110)
Circle Number: 08 40000000 (0110)

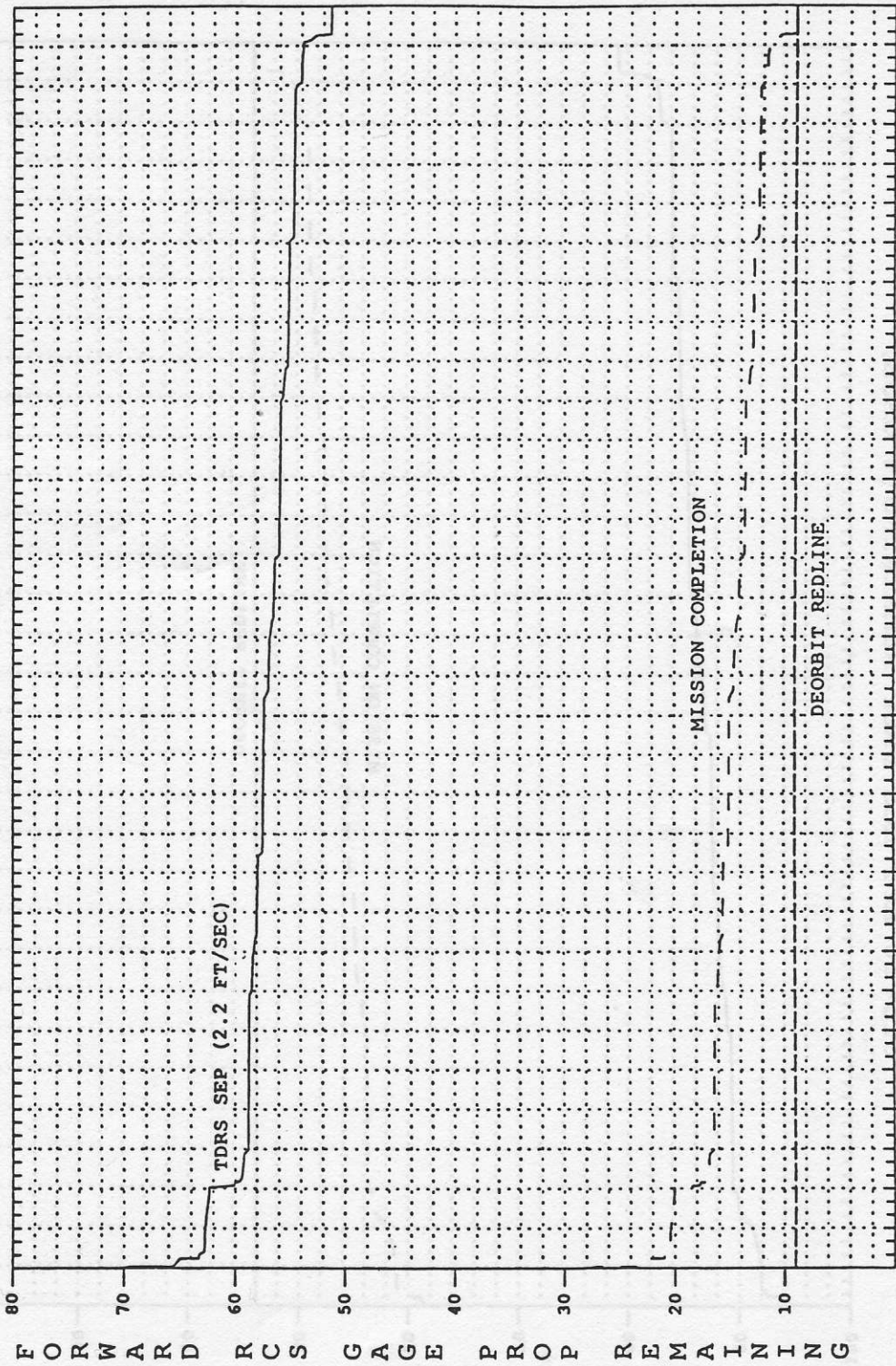
CONSUMABLES CURVES

CONSUMABLES
CURVES

FIDP: CY3/26B/May 88
 CAP/ATL: Basic, 25 Nov. 87
 Charts generated by: Bill Hollister/RSOC (DF75)
 Charts generated on: 15 July, 88

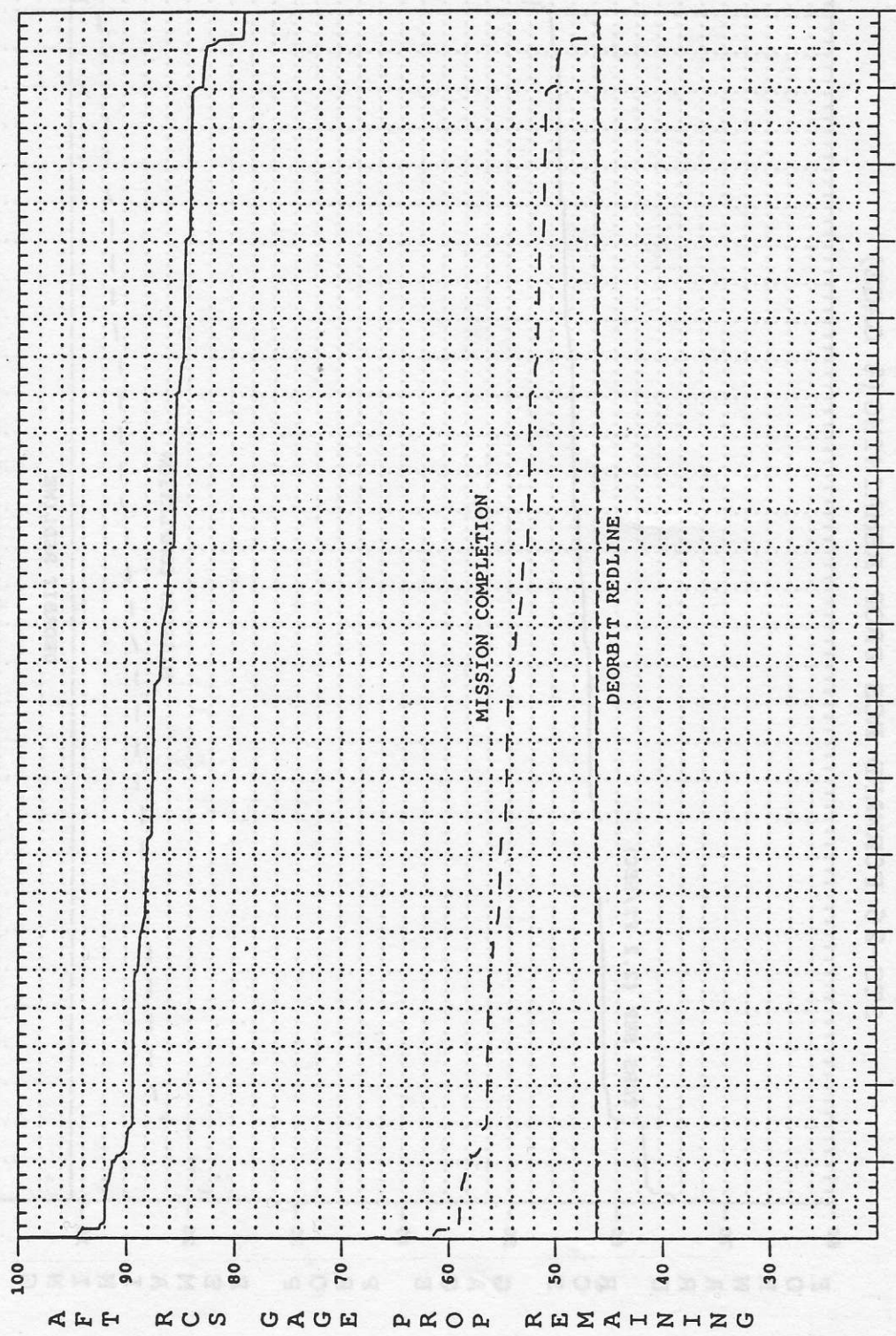


STS-26 FORWARD RCS PROP REMAINING (% GAGE)



MISSION ELAPSED TIME IN DAYS/HOURS

STS-26 AFT RCS PROP REMAINING (% GAGE)



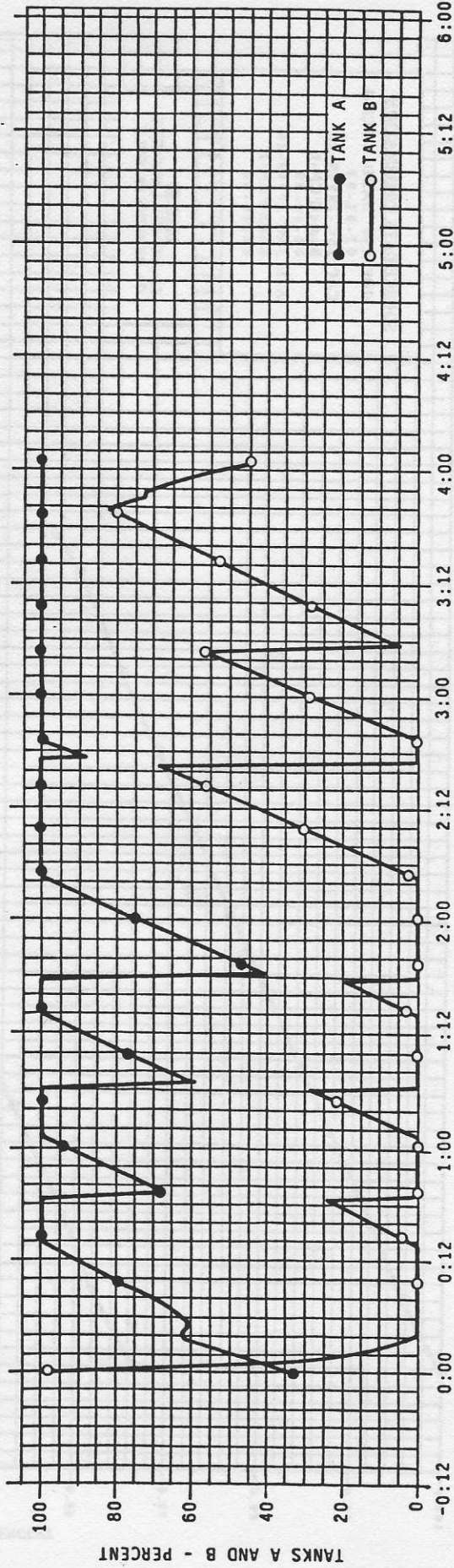
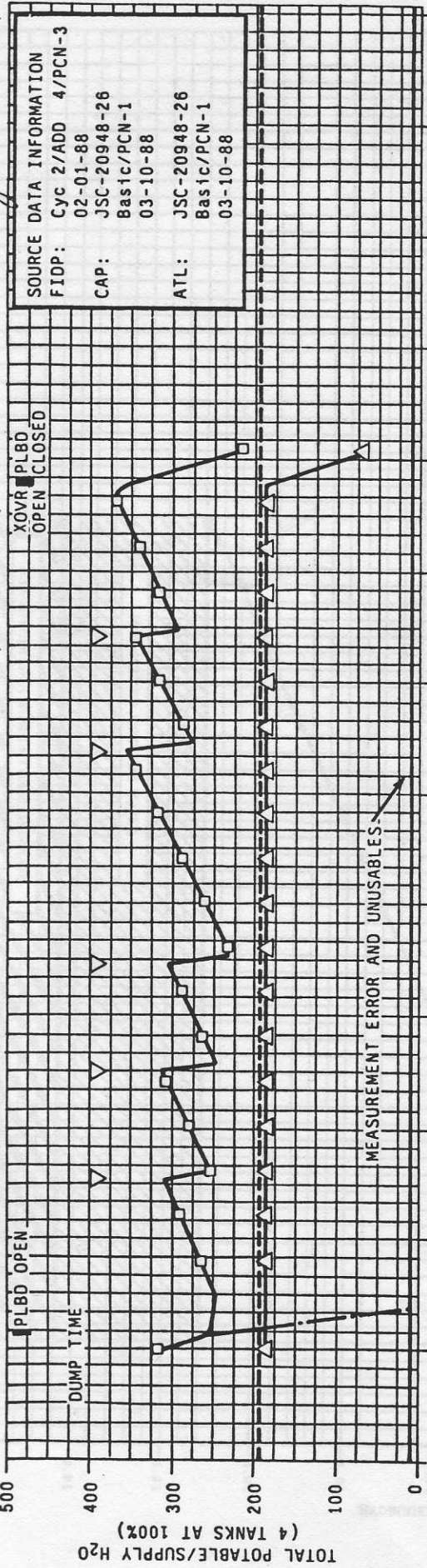
MISSION ELAPSED TIME IN DAYS/HOURS

MISSION OPERATIONS DIRECTORATE-SYSTEMS DIVISION

KHANDAKER M. RAHMAN
 ANALYSIS DATE: 04-04-88
 TRAJ CYCLE: OFP-2

□ TANKS A-D
 △ TANKS C+D
 --- ANYTIME CONTINGENCY DEORBIT
 -.- FIRST DAY RETURN (NO PLBD OPEN) REDLINE

DATE CONFIRMED: *Spader 7/11/88*



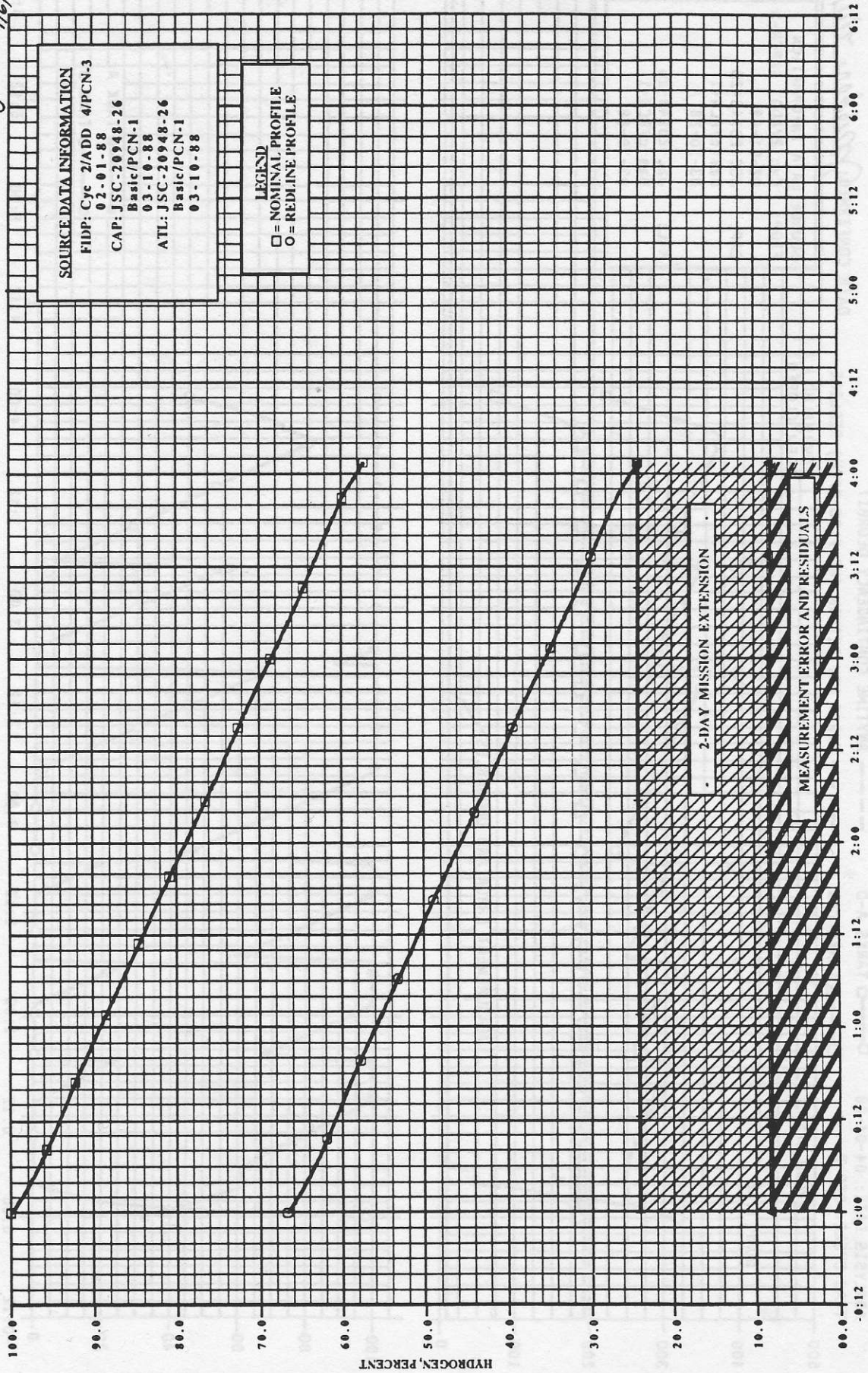
MISSION ELAPSED TIME, D:H

STS-26 SUPPLY WATER

MISSIONS OPERATIONS DIRECTORATE
SYSTEMS DIVISION

DATA CONFIRMED: *J. Clark* 7/6/88

R. D. PECHACEK
ANALYSIS DATE: 04-04-88
TRAJ CYCLE: OPF-2



SOURCE DATA INFORMATION
 FIDP: Cyc 2/ADD 4/PCN-3
 02-01-88
 CAP: JSC-20948-26
 Basic/PCN-1
 03-10-88
 ATL: JSC-20948-26
 Basic/PCN-1
 03-10-88

LEGEND
 □ = NOMINAL PROFILE
 ○ = REDLINE PROFILE

2-DAY MISSION EXTENSION
 MEASUREMENT ERROR AND RESIDUALS

MISSION ELAPSED TIME, D:H
 STS 26 CRYOGENIC HYDROGEN PROFILE

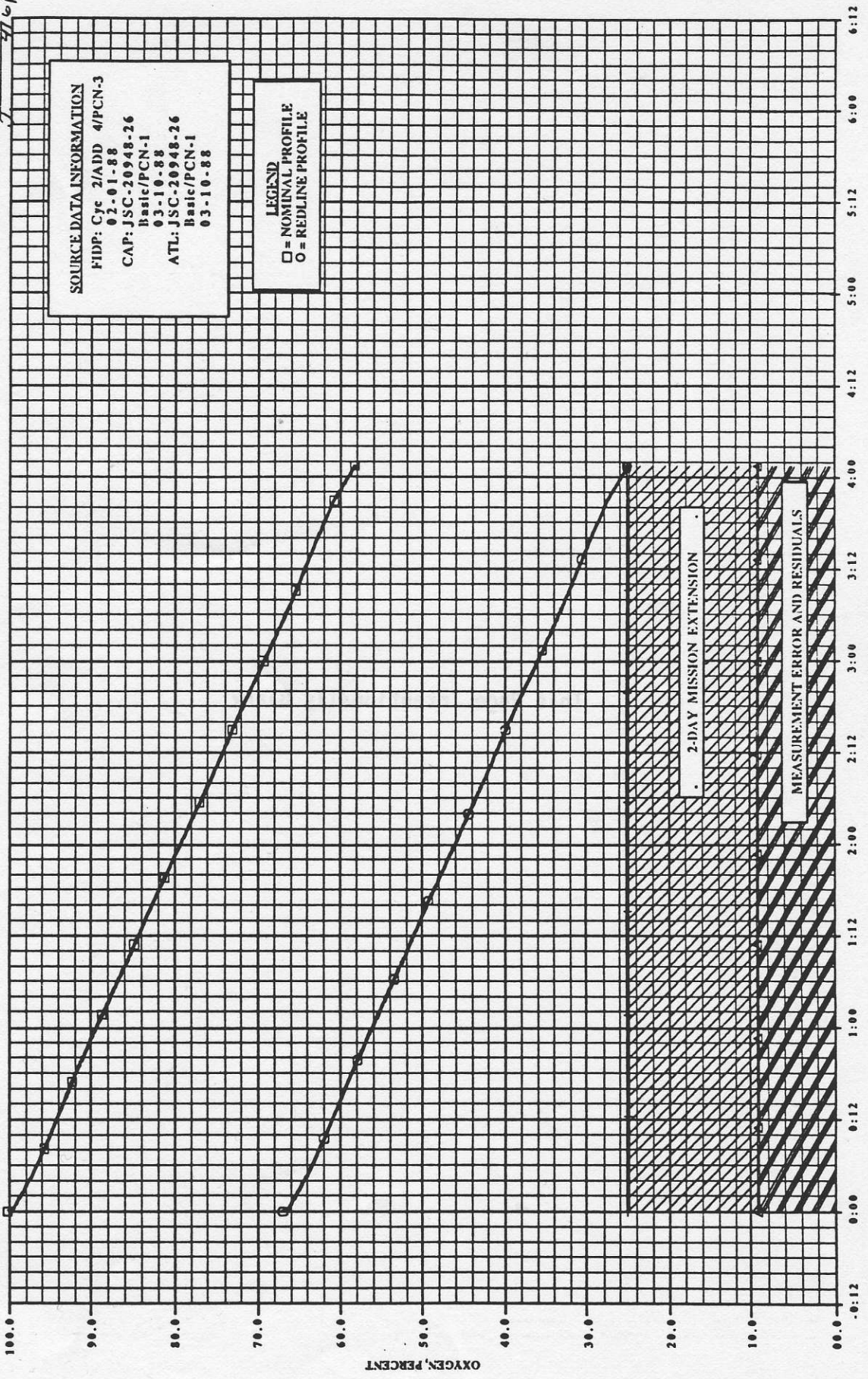
MISSIONS OPERATIONS DIRECTORATE
SYSTEMS DIVISION

DATA CONFIRMED *Clark* 3/6/88

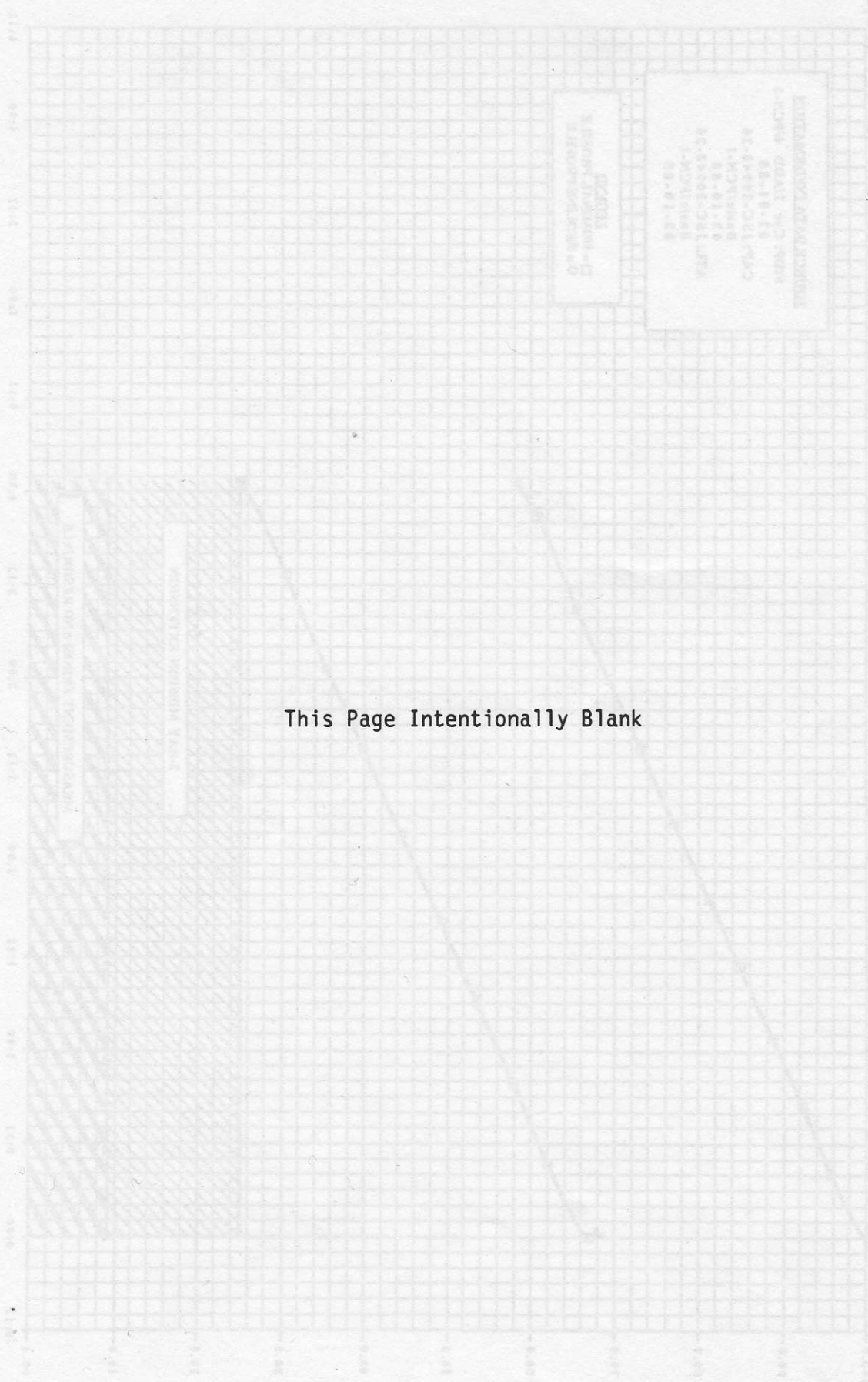
R. D. PECHACEK
ANALYSIS DATE: 04-04-88
TRAJ CYCLE: OPP-2

SOURCE DATA INFORMATION
 FIDP: CFC 2/ADD 4/PCN-3
 02-01-88
 CAP: JSC-20948-26
 Basic/PCN-1
 03-10-88
 ATL: JSC-20948-26
 Basic/PCN-1
 03-10-88

LEGEND
 □ = NOMINAL PROFILE
 ○ = REDLINE PROFILE



MISSION ELAPSED TIME, D:H
STS 26 CRYOGENIC OXYGEN PROFILE



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DATE COMPLETED
 DRAWING NUMBER
 PROJECT DESCRIPTION

DATE
 TIME

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 TIME

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

CREW ACTIVITY PLAN NOTES
(CONSTRAINTS AND GUIDELINES)

CAP NOTES

A. FLIGHT DESCRIPTION

The STS-26 (OV-103) launch from KSC on October 1, 1988 (Cycle 3) will be into a 160 nm orbit at an inclination of 28.5 degrees. The mission duration will be 4 days. Nominal landing occurs at EDW on October 5, 1988.

Landing opportunities are:

		<u>Landing Orbit No.</u>	<u>Site</u>	<u>Local Time</u>
Nominal	Primary	65	EDW	06:45
	Backup	66	EDW	08:21
	Weather Alt.	65	NOR	07:48
1 Day Late	Primary	81	EDW	06:58
	Backup	82	EDW	08:33
	Weather Alt.	81	NOR	08:00
2 Days Late	Primary	97	EDW	07:10
	Backup	98	EDW	08:45
	Weather Alt.	97	NOR	08:12

MAJOR EVENTS

LAUNCH (KSC) October 1, 1988
 MET (DD/HH:MM:SS) 0/00:00:00
 Day of year 275
 CDT/GMT 07:48/12:48

OMS-2
 MET (DD/HH:MM:SS) 0/00:42:00
 DV (fps) 222
 DT (MM:SS) 2:23
 ORBIT ha/hp (nm) 159 x 161

TDRS/IUS DEPLOY (6A INSERTION)
 MET (DD/HH:MM:SS) 0/06:14

OMS SEPARATION BURN
 MET (DD/HH:MM:SS) 0/06:29
 DV (fps) 31
 DT (MM:SS) 00:19
 ORBIT ha/hp (nm) 177 x 161

DEORBIT BURN
 MET (DD/HH:MM:SS) 03/23:54
 DV (fps) 304

LANDING (EDW)
 MET (DD/HH:MM:SS) 04/00:57:00
 Day of year 279
 CDT/GMT 08:45/13:45

B. CREW

1. The crewman responsible for performing an EVA, should one become necessary, are: MS3 will be EV1, MS1 will be EV2, and PLT will be IV1
2. There will be 5 crewmen flying this mission, with each specialist assigned to the following tasks:

CDR - Overall mission decisions, vehicle control, GNC, ECLSS, C&W, DPS, Medical
 PLT - APU/HYD, MPS, EPS, OMS, RCS, Earth Obs
 MS1 - IUS/TDRS, OASIS, Crew Equipment
 MS2 - Communications, SPOC/HP41, PLBD/RAD
 MS3 - EMU, TV, Instrumentation FDF, IFM Habitability, Middeck Payloads

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 coordinated with the crew.
- b. There are 13 GSTDN sites available for on-orbit coverage: CAN, GDX, MIL (MLX), BDA, HAW, GWM, AGO, ACN, MAD (MAX), YAR, DKR, IOS, and VAN
- c. There are 3 GSTDN sites available for real-time TV: GDX, MIL (MLX), and HAW.
- d. There are 2 GSTDN sites available for UHF voice only: YAR, IOS
- e. There are 4 SGLS sites available for on-orbit coverage during the TDRS/IUS mission: IOS, VTS, GTS, HTS.
- f. TDRS-E is assumed to be in position (41 degrees W).
- g. The only means available for HDR uplink (e.g., Teleprinter) while encrypted is through MIL, BDA and TDRS-E.

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 much 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 morning and evening activities and prior to major events requiring low navigation uncertainty.
- c. In order not to perturb the Tracking Arc before the deploy, the first IMU align will be in a bias $-ZLV \pm YVV$ attitude.

The orbiter will be biased in yaw assuring acquisition of stars for the IMU align before the IUS deploy.

3. Environmental Control and Life Support Subsystem (ECLSS)

- a. The CO2 absorbers are installed for launch and entry and are alternately replaced on-orbit as required.
- b. There are four supply water tanks and one waste water tank which are loaded for launch with volumes sufficient to meet an orbit 3 launch day deorbit with PLBDs failed closed. If waste water production exceeds storage capacity, a real-time call will be made to perform a waste tank dump. Normally two supply water dumps will occur per flight day. A real-time call will be made prior to each to inform the crew whether a dump is required, and to what level. Tanks A and B will be dumped to a level that will allow the tanks to be full prior to the next daily group of deorbit opportunities.

4. DC Utility Power Usage

The following table is the DC Utility Power Outlet Schedule. This table shows the times of outlet reconfigurations during the mission.

STS-26 DC UTILITY POWER OUTLET SCHEDULE

MET OUTLET	PRELAUNCH	POST INSERTION	ON ORBIT			DEORBIT PREP
		0/02:00	0/08:45	0/09:00	3/19:00	3/23:00
019	PLT*	----	----	----	----	PLT*
MO52J	MS3*	----	----	ADSF	----	MS3*
F1	----	----	----	----	----	----
MO13Q	PDB**	----	PVTOS	PVTOS	PDB**	PDB**
A11	MS1*, MS2*	----	----	----	----	MS1*, MS2*
A15	CDR*	TLPR	TLPR	TLPR	TLPR	CDR*
MO30F	----	PDB**	PDB**	PDB**	----	----

NOTES:

* Crewman suit fan

** Power distribution box with ARC and PCG

If an outlet column is blank, the outlet is not in use

D. TEXT UPLINK SYSTEM

1. The teleprinter (TPR) will provide an on-orbit capability to receive and reproduce text-only data (such as procedures, weather data, and CAP updates or changes) from MCC. The TPR uses S-Band and is not dependent on TDRS Ku-Band. TPR uplink requires 1 to 2.5 minutes per message, depending upon the number of lines (up to 66). Activation includes powering up the unit during Post Insertion. The TPR will remain on continuously until deactivation prior to seat ingress on entry day.

E. TELEVISION/PHOTOGRAPHY

1. The CCTV systems provide two color wide-angle cameras for in-cabin coverage. There will also be four PLBD TV cameras and two Remote Manipulator System (RMS) TV cameras (RMS Elbow, RMS end effector). The two RMS TV cameras will only be available if the RMS is carried on the flight. There are three different lens assemblies for the PLB and RMS TV cameras (color lens assembly, monochrome lens assembly and wide angle lens assembly). The type of lens assembly for each PLB and RMS TV camera can be selected pre-flight by the payload customer.
2. There is a video tape recorder available with 30 min cassettes.
3. 35mm, 16mm, and 70mm camera systems are available.

F. PAYLOADS

1. TDRS (Tracking and Data Relay Satellite)

The TDRS-C is a communication satellite which is the second of two 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. TDRS-A was launched on STS-6. The nominal IUS/TDRS-C deployment opportunity occurs 60 minutes prior to node 6A (ascending) at 0/6:14 MET. Backup opportunities occur prior to 7A and 16A. A contingency opportunity occurs 60 minutes prior to 8D (descending).

2. IUS (Inertial Upper Stage)

The IUS is a two-stage solid rocket, inertially stabilized upper stage which will place TDRS-C in a geosynchronous orbit. The IUS ignites its first stage (SRM-1) for transfer orbit insertion 60 minutes after TDRS-C/IUS deployment. The second burn (SRM-2) occurs approximately 7 hours after deployment, resulting in a 0 degree inclination, geosynchronous orbit at 178 degree W longitude for the 6A deployment opportunity.

3. OASIS-I (Orbiter Experiments Autonomous Supporting Instrumentation System)

The OASIS-I payload will collect environmental data for Orbiter primary payloads. OASIS is capable of collecting a variety of environmental parameters based on specific transducer configurations for each flight. For STS-26, OASIS is configured to interface with TDRS-C/IUS. OASIS has transducers/sensors mounted on the forward and aft IUS ASE to measure thermal, acoustic, vibration, stress, and acceleration data.

4. ADSF (Automated Directional Solidification Furnace)

The ADSF is a furnace facility designed to conduct materials processing experiments. It takes the space of 5 middeck lockers. It consists of a furnace container which houses 4 samples, a Control Electronics Container (CEC), and a Middeck Electronics Module (MEM). The 4 samples will run for 10 hours 30 minutes each.

5. PVTOS (Physical Vapor Transport of Organic Solids)

PVTOS is an experiment which will observe and study sublimation of 9 organic solids in a micro-g environment via gaseous diffusion. It takes the space of 3 Middeck lockers and consists of a Experiment Apparatus Container (EAC), and a Generic Electronics Module (GEM). Each of the 9 cells takes 5 hours of processing.

6. ARC (Aggregation of Red Blood Cells)

The ARC payload will conduct experiments which will supply information on the kinetics of aggregation of human red blood cells, the morphology of red blood cell aggregates, and the viscosity of whole blood at lower and higher flow rates. It consists of 2 sealed packages, the Experiment Apparatus Container (EAC) and the Electronics Equipment Package (EEP). It takes the place of 3 middeck lockers. The experiment run time is 8 hours.

7. IEF (Isoelectric Focusing Experiment)

IEF is a payload which will evaluate the effect of electro-osmosis on isoelectric focusing in the absence of gravity. The IEF is a completely self-contained assembly which takes up 1 Middeck locker. Experiment duration is 1.5 hours.

8. MLE (Mesoscale Lightning Experiment)

The objective of MLE is to photograph large scale upper atmospheric lightning using the Cargo Bay cameras and a 35 mm camera. It is a target of opportunity observation where the crew will document lightning phenomenon at one of 6 designated areas. It requires 2 crewmen to make the observation. Observations are to be made on at least 2 night passes per flight day.

9. ELRAD (Earth Limb Radiance Experiment)

The ELRAD payload will measure the radiance of twilight sky for various positions of the sun from sunset (and sunrise) to 9 degrees below the earth's horizon. It requires 1 crewman to perform the experiment, a 35 mm camera with an 85 mm lens and 3 photographic sequences (1 sunrise and 2 sunsets).

10. IRCFE (Infrared Communication Flight Experiment)

The purpose of this payload is to demonstrate the use of infrared communication. This system will replace the radio frequency communication system used by 1 crewman for a 2 hour period. Operation should occur during the passage through the South Atlantic Anomaly.

11. PPE (Phased Partitioning Experiment)

The PPE payload will document the phenomena of surface tension effects on mixed fluids in the absence of gravity. The experiment consists of a module with 15 chambers of mixed fluids. One crewman will shake up the module and document the separation of the fluid at intervals of time.

12. SSIP 82-5, 82-4 (Shuttle Student Involvement Projects)

Student experiment 82-4 is called "The Effect of Weightlessness on Grain Formation and Strength in Metals". Its objective is to observe the transformation and resolidification of Titanium alloys in a zero-g environment. It utilizes 1/2 a middeck locker. It contains 4 Titanium alloy samples contained in pyrex mounted on the experiment base plate. One crewman will send a 10 second charge through each of the wires and they will be analyzed after the mission.

Student experiment 82-5 is called "Utilizing a Semi-Permeable Membrane to Direct Crystal Growth in Zero-Gravity". Its objective is to observe and obtain crystal growth between 2 aqueous solutions in a deionized water solution. The experiment uses 1/2 middeck locker. It contains 3 crystal growth units. The unit will be activated by turning the handles on each end of the units. The Lead Acetate solution and the Potassium Iodide solution will mix in the deionized water and promote crystal growth. The crystal growth will be documented on video and analyzed post mission.

13. PCG (Protein Crystal Growth)

The objective of the PCG is to produce large, high quality crystals of selected proteins under controlled conditions in microgravity. The payload mounts in place of 1 middeck locker. Experiment operation consists of initiation of the crystal growth once on orbit, and photography at 24 hours intervals.

G. ON-ORBIT DSO'S

1. Salivary Pharmacokinetics of Scop-Dex (DSO 457)

The purpose of this DSO is to investigate the pharmacokinetics of scopolamine and dextroamphetamine during space flight. When the degree and nature of the pharmacokinetics are determined, the therapeutic consequences may be predicted. The crewmember will take the drug after an 8 hour fast, and take salivary samples at required intervals during the flight day.

2. Salivary Acetaminophen Pharmacokinetics (DSO 458)

This DSO investigates the pharmacokinetics of Acetaminophen (Tylenol). This drug is used for evaluation because it distributes into the saliva with a ratio similar to blood plasma. The crewmembers will take the Tylenol after an 8 hour fast and take salivary samples at specified intervals during the flight day.

3. Otolith Tilt-Translation Reinterpretation (DSO 459)

The objective of this DSO is to collect data which will allow development of a trainer to preadapt astronauts to the sensory changes produced by microgravity. Two crewmembers will work together to obtain data regarding their perceived position each flight day. One crewmember will wear the OTTR goggles for data collection of otolith response.

4. Changes in Total Body Water During Spaceflight (DSO 460)

The purpose of this DSO is to measure the changes in total body water that occur during spaceflight. These measurements will also prove valuable in future studies which will track fluid shifts among specific body fluid compartments. The procedure involves ingestion of a dose of water labeled with the stable isotope oxygen-18, followed by periodic collection of saliva samples to determine the concentration of labeled water after establishment of a steady-state distribution.

5. 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-C/IUS Predeploy and Deploy Activities, VTR Downlink of Deploy Activities, In-Flight Crew Conference, and unscheduled TV Activities.

6. Documentary Motion Picture Photography (DSO 902)

This DSO requires documentary and public affair 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 TDRS-C/IUS Predeploy and Deploy Activities, Flight Deck Activities, Middeck Activities, and any unscheduled Motion Picture Photography.

7. 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.

H. ON-ORBIT DTOs

1. Cabin Air Monitoring (DTO 623)

This DTO will use the solid sorbent sampler to continuously sample the Orbiter atmosphere throughout the flight. The solid sorbent sampler is to be flown on first flights of a new vehicle or after extensive non-metallic materials refurbishment in the Orbiter cabin.

2. Attitude Match Update (DTO 787)

Downlink Orbiter and IUS data will be compared at 6 points during the predeploy timeline. CSTC will receive the data and test and verify the new procedures for evaluating and correcting alignment errors onboard the IUS.

I. TIMELINE FORMATS

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

*1-TWEDB 052-5-0V6 COM410M-ST104

UNIT	VOLTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AEEM	1.25C	0.50	0.50	0.10	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
MOEM	1.25C	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
AEEM	1.00B	1.000	1.000	0.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
MOEM	1.00B	2.00	2.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
AEEM	1.25C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MOEM	1.25C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AEEM	1.25C	0.010	0.010	0.010	0.02	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
MOEM	1.25C	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
AEEM	1.25C	0.500	0.500	0.008	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
MOEM	1.25C	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
AEEM	1.135C	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
MOEM	1.135C	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

STS-26 DAP BOOK

DWG V CORRECTIONS

DAP A CONFIGURATIONS

	A1*	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
<u>TRANSLATION</u>											
PULSE ft/sec	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10	0.05	0.25
<u>ROTATION</u>											
DSC RT NORM °/sec	0.200	0.400	0.200	0.200	0.200	0.200		0.500	0.200	0.200	0.200
VERN °/sec	0.200	0.400	0.200	0.008	0.200	0.200		0.200	0.200	0.200	0.200
PULSE NORM °/sec	0.10	0.10	0.30	0.10	0.10	0.10		0.10	0.10	0.10	0.05
VERN °/sec	0.010	0.010	0.010	0.010	0.050	0.010		0.010	0.010	0.010	0.010
COMP NORM °/sec	.00	.00	.00	.00	.00	.00		.00	.00	.00	.00
VERN °/sec	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
<u>DEADBAND</u>											
ATT NORM (deg)	5.00	1.00	5.00	1.00	5.00	5.00		3.00	2.00	2.00	1.00
VERN (deg)	1.000	1.000	1.000	0.070	1.000	1.000		1.000	1.000	1.000	1.000
RATE NORM °/sec	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20	0.20	0.20
VERN °/sec	.020	.020	.020	.010	.020	.020		.020	.020	.020	.010
<u>JET OPT</u>											
P	1	1	3	1	1	3		1	1	1	1
Y	1	1	3	3	1	3		1	1	1	1
CNTL ACCEL	0	0	0	0	0	0		0	0	0	0

*I-LOADED OPS-2 DAP Configuration

DAP B CONFIGURATIONS

	B1*	B2	B3	B4	B5	B6	B7	B8
<u>TRANSLATION</u>								
PULSE ft/sec	0.02	0.02	0.02	0.02	0.02	0.05	0.01	
<u>ROTATION</u>								
DSC RT NORM °/sec	0.500	0.200	0.200	0.200	0.200	0.500	0.200	
VERN °/sec	0.200	0.200	0.200	0.008	0.016	0.200	0.200	
PULSE NORM °/sec	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
VERN °/sec	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
COMP NORM °/sec	.00	.00	.00	.00	.00	.00	.00	
VERN °/sec	.000	.000	.000	.000	.000	.000	.000	
<u>DEADBAND</u>								
ATT NORM (deg)	3.00	3.00	3.00	0.30	3.00	2.00	2.00	
VERN (deg)	1.000	1.000	1.000	0.100	0.033	1.000	1.000	
RATE NORM °/sec	0.20	0.20	0.20	0.20	0.20	0.20	0.20	
VERN °/sec	.020	.020	.020	.010	.020	.020	.020	
<u>JET OPT</u>								
P	1	3	1	3	3	1	1	
Y	1	3	1	3	3	1	1	
CNTL ACCEL	0	0	0	0	0	0	0	

*I-LOADED OPS-2 DAP Configuration

DAP BOOK

HOOK
VELCRO

CAP/26/0/BAS

CAP/26/0/BAS

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 (-2° 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
G20 DAP CONFIG	
CNTL ACCEL = 0	Orbiter alone
= 1	thru 5 not used
JET OPT = 1	Normal
= 2	Nose only
= 3	Tail only

TOP

DAP PURPOSE

- A1 - NOMINAL
IMU ALIGN
LOSS OF VERN
(NOSE & TAIL)
- A2 - PTC
- A3 - RCS HOT FIRE
- A4 - GG
- A5 - IMU ROTATION
- A6 - LOSS OF VERN
(TAIL ONLY)
- A7 - (Blank)
- A8 - PRE/POST DEPLOY
- A9 - RENDEZVOUS
- A10 - PROX OPS
- A11 - IUS DEPLOY

CAP/26/0/BAS

A1

TOP

DAP A1

PURPOSE:

NOMINAL
IMU ALIGN
LOSS OF VERN
(NOSE & TAIL)

0.1 0

1 TRANSLATION
PULSE

ROTATION

0.2 0 0

2 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

CAP/26/0/BAS

CAP/26/0/BAS

A2

TOP

TOP

A1

DAP A2

PURPOSE:

PTC

A2

0.1 0	1	TRANSLATION	
		PULSE	
0.4 0 0	2	ROTATION	
0.4 0 0	3	DSC RT	NORM
0.1 0 0	4	PULSE	VERN
0.0 1 0	5		NORM
.0 0 0	6	COMP	VERN
.0 0 0	7		NORM
		DEADBAND	
1.0 0 0	8	ATT	NORM
1.0 0 0	9		VERN
0.2 0 0	10	RATE	NORM
.0 2 0	11		VERN
1	12	JET OPT	P
1	13		Y
0	14	CNTL ACCEL	

CAP/26/0/BAS

CAP/26/0/BAS

A3

TOP

TOP

A2

DAP A3

PURPOSE:

RCS HOT FIRE

0.1 0	1	TRANSLATION	
		PULSE	
0.2 0 0	2	ROTATION	
0.2 0 0	3	DSC RT	NORM
0.3 0 0	4	PULSE	VERN
0.0 1 0	5		NORM
.0 0 0	6	COMP	VERN
.0 0 0	7		NORM
		DEADBAND	
5.0 0 0	8	ATT	NORM
1.0 0 0	9		VERN
0.2 0 0	10	RATE	NORM
.0 2 0	11		VERN
3	12	JET OPT	P
3	13		Y
0	14	CNTL ACCEL	

CAP/26/0/BAS

CAP/26/C/BAS

A4

TOP

(reduced copy)

CAP/26/FIN B

TOP

A3

DAP A4

PURPOSE:

GG

HIGH TR 320 3 0.0 0.0
 VERN 1 0.0 0.0
 HIGH 32.0 4 0.0 0.0
 PULSE 5 0.0 0.0
 VERN 6 0.0 0.0
 HIGH 6 0.0 0.0
 VERN 7 0.0 0.0
 HIGH 8 0.0 0.0
 VERN 9 0.0 0.0
 HIGH 10 0.0 0.0
 VERN 11 0.0 0.0

0.1 0

1 TRANSLATION PULSE

ROTATION

0.2 0 0 2
 0.0 0 0 3
 0.1 0 0 4
 0.0 1 0 5
 .0 0 0 6
 .0 0 0 7

2 DSC RT NORM
 3 VERN
 4 PULSE NORM
 5 VERN
 6 COMP NORM
 7 VERN

DEADBAND

1.0 0 0 8
 0.0 7 0 9

8 ATT NORM
 9 VERN

0.2 0 0 10
 .0 1 0 11

10 RATE NORM
 11 VERN

1 12
 3 13

12 JET OPT P
 13 Y

0

14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

A5

TOP

TOP

A4

DAP A5

PURPOSE:

IMU ROTATION

HIGH TR 320 3 0.0 0.0
 VERN 1 0.0 0.0
 HIGH 32.0 4 0.0 0.0
 PULSE 5 0.0 0.0
 VERN 6 0.0 0.0
 HIGH 6 0.0 0.0
 VERN 7 0.0 0.0
 HIGH 8 0.0 0.0
 VERN 9 0.0 0.0
 HIGH 10 0.0 0.0
 VERN 11 0.0 0.0

0.1 0

1 TRANSLATION PULSE

ROTATION

0.2 0 0 2
 0.2 0 0 3
 0.1 0 0 4
 0.0 5 0 5
 .0 0 0 6
 .0 0 0 7

2 DSC RT NORM
 3 VERN
 4 PULSE NORM
 5 VERN
 6 COMP NORM
 7 VERN

DEADBAND

5.0 0 0 8
 1.0 0 0 9

8 ATT NORM
 9 VERN

0.2 0 0 10
 .0 2 0 11

10 RATE NORM
 11 VERN

1 12
 1 13

12 JET OPT P
 13 Y

0

14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

A6

TOP

TOP

A5

DAP A6

PURPOSE: LOSS OF VERN (TAIL ONLY)

A6

TRANSLATION PULSE

0.1 0 1

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 0 6 COMP NORM
0.0 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

CAP/26/0/BAS

CAP/26/0/BAS

A7

TOP

TOP

A6

DAP A7

PURPOSE: (Blank)

A7

TRANSLATION PULSE

0.0 0 1

ROTATION

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

DEADBAND

0.0 0 8 ATT NORM
0.0 0 9 VERN
0.0 0 10 RATE NORM
0.0 0 11 VERN

0 12 JET OPT P
0 13 Y

0 14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

A8

TOP

TOP

A7

DAP A8

PURPOSE:

PRE/POST DEPLOY

A8

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

DEADBAND

3.0 0 0

8 ATT NORM

1.0 0 0

9 VERN

0.2 0 0

10 RATE NORM

.0 2 0

11 VERN

1

12 JET OPT P

1

13 Y

0

14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

A9

TOP

TOP

A8

DAP A9

PURPOSE:

RENDEZVOUS

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 1 0

5 VERN

.0 0 0

6 COMP NORM

.0 0 0

7 VERN

DEADBAND

2.0 0 0

8 ATT NORM

1.0 0 0

9 VERN

0.2 0 0

10 RATE NORM

.0 2 0

11 VERN

1

12 JET OPT P

1

13 Y

0

14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

A10

TOP

(reduced copy)

7-9

CAP/26/FIN B

TOP

A9

DAP A10

PURPOSE:

PROX OPS

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

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

12 JET OPT P

1

13 Y

0

14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

A11

TOP

TOP

A10

DAP A11

PURPOSE:

IUS DEPLOY

0.2 5

1 TRANSLATION PULSE

0.2 0 0

2 ROTATION DSC RT NORM

0.2 0 0

3 VERN

0.0 0 5

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 1 0

11 VERN

1

12 JET OPT P

1

13 Y

0

14 CNTL ACCEL

CAP/26/0/BAS

CAP/26/0/BAS

TOP

(reduced copy)

7-10

CAP/26/FIN B



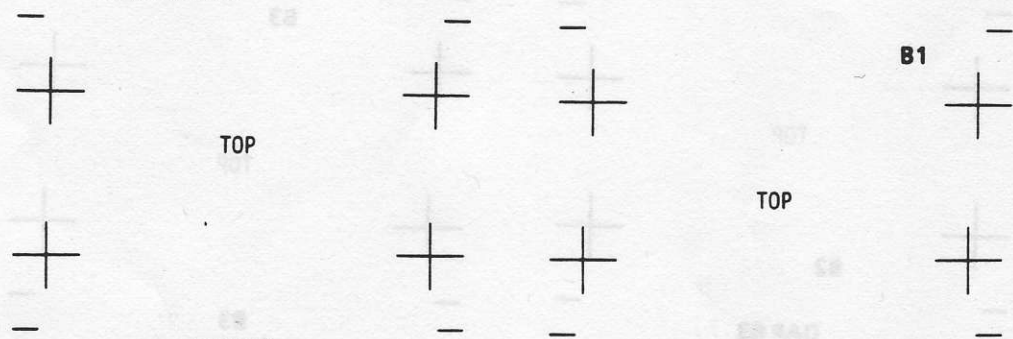
TOP

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 - RENDEZVOUS
- B7 - PROX OPS
- B8 - (Blank)

CAP/26/0/BAS

CAP/26/0/BAS



B1

TOP

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	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	0
	VERN	23	1.0	0	0

RATE

	NORM	24	0.2	0
	VERN	25	0.2	0

JET OPT

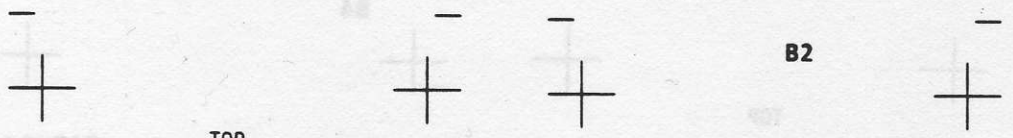
	P	26	1
	Y	27	1

CNTL ACCEL

28 0

CAP/26/0/BAS

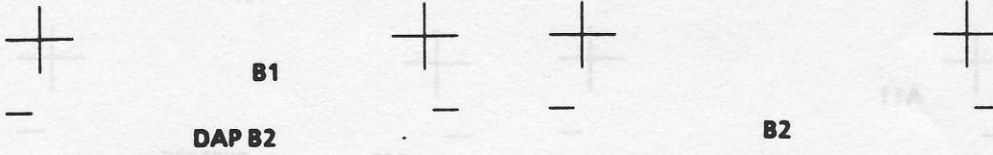
CAP/26/0/BAS



B2

TOP

TOP



PURPOSE:

LOSS OF VERN
(TAIL ONLY)

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	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	0
	VERN	23	1.0	0	0

RATE	NORM	24	0.2	0	0
	VERN	25	.0	2	0

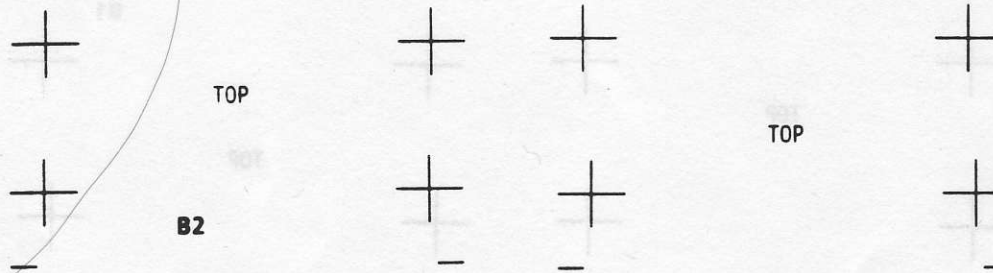
JET OPT	P	26		3	
	Y	27		3	

CNTL ACCEL 28 0

CAP/26/0/BAS

CAP/26/0/BAS

B3



TOP

TOP

B2

DAP B3

B3

PURPOSE:

LOSS OF VERN
(NOSE & TAIL)
GG MNVR

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	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	0
	VERN	23	1.0	0	0

RATE	NORM	24	0.2	0	0
	VERN	25	.0	2	0

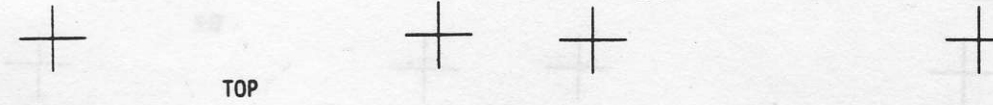
JET OPT	P	26		1	
	Y	27		1	

CNTL ACCEL 28 0

CAP/26/0/BAS

CAP/26/0/BAS

B4



TOP

TOP

B3

DAP B4

PURPOSE:

SSUS DEPLOY

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 0 4
VERN 19 0.0 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

CAP/26/0/BAS

CAP/26/0/BAS

B5

TOP

TOP

B4

DAP B5

PURPOSE:

COAS CAL

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 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

CAP/26/0/BAS

CAP/26/0/BAS

B6

TOP

TOP

B5

DAP B6

PURPOSE:

RENDEZVOUS

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	0	4
	VERN	19	0.0	0	2
COMP	NORM	20	0.0	0	0
	VERN	21	0.0	0	0

DEADBAND

ATT	NORM	22	2.0	0	0
	VERN	23	1.0	0	0

RATE	NORM	24	0.2	0	0
	VERN	25	0.0	2	0

JET OPT	P	26	1		
	Y	27	1		

CNTL ACCEL 28 0

CAP/26/0/BAS

B7

TOP

TOP

B6

DAP B7

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	0	4
	VERN	19	0.0	0	2
COMP	NORM	20	0.0	0	0
	VERN	21	0.0	0	0

DEADBAND

ATT	NORM	22	2.0	0	0
	VERN	23	1.0	0	0

RATE	NORM	24	0.2	0	0
	VERN	25	0.0	2	0

JET OPT	P	26	1		
	Y	27	1		

CNTL ACCEL 28 0

CAP/26/0/BAS

CAP/26/0/BAS

B8

TOP

TOP

B7

DAP B8

PURPOSE: (Blank)

B8

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

CAP/26/O/BAS

CAP/26/O/BAS

TOP

B8

CAP/26/O/BAS

TOP

(reduced copy)

7-15

CAP/26/FIN B

DAP 88
PURPOSE: (81m)

TRANSLATION
PULSE
ROTATION
DEC RT
VERB
PULSE
VERB
CONV
VERB
DEADEND
RTT
VERB
DATE
VERB
ACT OPT
Y
CMTL ACCEL
CAP/26/O/BAS

TOP
BACK COVER 'DAP BOOK'

HOOK
VELCRO

CAP/26/O/BAS

ATTITUDE TIMELINE

TIME	DESCRIPTION	STATUS	REMARKS
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11
07:00:00	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11	ALL DEC MAN DS AT 1.00 T 88 VIEW DS RT .20 P 120	07:00:00 TRK TGT-1 RW-2(3)0.00 CW-23.11

STS-26 ATTITUDE TIMELINE

ALL ATTITUDES IN DEGREE OR 180

Attitude Timeline

MET	MNVR OPTION	DAP	E/S	REMARKS	EVENT
1 0/01:10:00 20:19	TRK TGT=2 BV=3(90.00, .00) OM=270.00	A1 DSC .200 AUTO DB AT 5.00 NORM DB RT .20	EARTH T 90 P 0	LVLH R+ 0 P+180 Y+ 90	-ZLV NOSE SOUTH PLBD OPENING
2 0/04:19:00 33:39	MNVR R+ 8.00 P+267.00 Y+358.00	B1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 90 P 180		TDRS DIRECT CHECK ATT
3 0/05:33:00 35:06	TRK TGT=4 BV=5(270.60, .00) OM=270.00 DEPLOY 0/06:13:33	A11 DSC .200 AUTO DB AT 1.00 VERN DB RT .01	SUN T 89 P 180	INRTL R+ 9 P+270 Y+333	TDRS DEPLOY ATTITUDE
4 0/06:14:33	ROT BV=5(.00,270.00)	A11 DSC .430 MAN DB AT 1.00 NORM DB RT .20		ROT R+ 9 START P+270 ATT Y+333	-2.2 FPS SEP AND BEGIN -70 DEGREE PITCH
5 0/06:14:41	ROT BV=5(.00,270.00)	A11 DSC .860 MAN DB AT 1.00 NORM DB RT .20		ROT R+ 7 START P+266 ATT Y+333	SEP CUTOFF CONTINUE -70 DEGREE PITCH
6 0/06:15:59	CANCEL	A11 DSC .200 MAN DB AT 1.00 NORM DB RT .20	SUN T 19 P 179	INRTL R+337 P+194 Y+344	END OF -70 DEGREE PITCH
7 0/06:20:33 24:38	MNVR R+198.00 P+ 17.00 Y+316.00	B1 DSC .500 AUTO DB AT 3.00 NORM DB RT .20	SUN T 125 P 97	TIG 0/06:28:33	OMS SEP ATTITUDE
8 0/06:28:59 32:06	TRK TGT=1 BV=3(90.00, .00) OM= .00	B1 DSC .500 AUTO DB AT 3.00 NORM DB RT .20	EARTH T 90 P 0		IUS VIEWING ATTITUDE
9 0/06:54:33 07:00:22	TRK TGT=1 BV=5(310.00, .00) OM= 22.71	B1 DSC .500 AUTO DB AT 3.00 NORM DB RT .20	SUN T 89 P 150		WINDOW PROTECT ATTITUDE
10 0/07:13:33	CANCEL	B1 DSC .200 MAN DB AT 1.00 VERN DB RT .02	SUN T 89 P 150	INRTL R+ 72 P+225 Y+ 77	INRTL HOLD
11 0/08:22:00 25:05	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 102 P 116	STAR PR A1	IMU ALIGN
12 0/08:40:00 51:00	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWI

ATTITUDE
TIMELINE

ALL ATTITUDES IN MEAN OF 1950

Attitude Timeline

MET	MNVR OPTION		DAP	E/S	REMARKS	EVENT
1 0/20:28:00 39:52	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	SUN T 102 P 116	STAR PR A1 -Z COAS:16 -Y ST:37	IMU ALIGN COAS CAL
2 0/20:50:00 21:00:52	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
3 0/23:45:00 59:57	MNVR R+ 62.00 P+207.00 Y+ 24.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	SUN T 44 P 162		KU-BAND ATT
4 1/00:55:00 01:09:55	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
5 1/07:03:00 14:49	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	SUN T 103 P 116	STAR PR A1	IMU ALIGN
6 1/07:20:00 30:46	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
7 1/19:09:00 20:43	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	SUN T 103 P 116	STAR PR A1 +X COAS:23	IMU ALIGN COAS CAL
8 1/20:20:00 31:08	TRK TGT=2 BV=5(17.30, .00) OM=170.80	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	EARTH T 17 P 359	LVLH R+171 P+287 Y+357	ELRAD SUNSET
9 1/22:25:00 38:25	TRK TGT=2 BV=5(17.30, .00) OM= 8.90	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	EARTH T 17 P 1	LVLH R+ 9 P+253 Y+357	ELRAD SUNRISE
10 2/00:00:00 05:18	MNVR R+ 62.00 P+207.00 Y+ 24.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	SUN T 45 P 162		KU-BAND ATT
11 2/01:10:00 24:39	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
12 2/05:44:00 55:39	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 AUTO VERN	DSC .200 DB AT 1.00 DB RT .02	SUN T 104 P 115	STAR PR A1	IMU ALIGN

Attitude Timeline

MET	MNVR OPTION	DAP	E/S	REMARKS	EVENT
1 2/06:00:00 10:32	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
2 2/17:50:00 18:01:33	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 104 P 115	STAR PR A1	IMU ALIGN
3 2/18:05:00 15:25	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
4 2/22:25:00 39:22	MNVR R+ 62.00 P+207.00 Y+ 24.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 46 P 163		KU-BAND ATT
5 3/00:05:00 19:21	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
6 3/05:56:00 06:07:25	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 105 P 115	STAR PR A1	IMU ALIGN
7 3/06:10:00 20:18	TRK TGT=2 BV=3(90.00, .00) OM=180.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	EARTH T 90 P 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
8 3/17:58:00 18:09:47	MNVR R+ 50.00 P+283.00 Y+ 76.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 105 P 115	STAR PR A1	IMU ALIGN
9 3/18:20:00 27:02	TRK TGT=4 BV=5(184.00, .00) OM=270.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 176 P 186	INRTL R+ 31 P+352 Y+ 9	TAIL SUN COLD SOAK
10 3/21:00:00 06:03	MNVR R+344.00 P+310.00 Y+ 25.00	A1 DSC .200 AUTO DB AT 1.00 VERN DB RT .02	SUN T 135 P 187	-Z ST:26 -Y ST:14	D/O IMU ALIGN
11 3/21:20:00 23:38	MNVR R+ 90.00 P+252.00 Y+356.00	B1 DSC .500 AUTO DB AT 3.00 NORM DB RT .20	SUN T 76 P 101	-Z ST:23 -Y ST:37	IMU VERIF
12 3/21:30:00 33:07	MNVR R+ 61.00 P+180.00 Y+355.00	B1 DSC .500 AUTO DB AT 3.00 NORM DB RT .20	SUN T 8 P 171	TIG 3/23:54:30	DEORBIT ATT

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