

CREW ACTIVITY

PLAN

FINAL REV-A

PCN-1

Flight Data File Crew Activity Plan

STS 51-E

Mission Operations Directorate
Operations Division

Final, Revision A
February 19, 1985

<u>EVENT</u>	<u>GST</u>		
Launch	07:31	Sun	Mar 3
TDRS Deploy	17:33	Sun	Mar 3
TELESAT Deploy	15:37	Mon	Mar 4
Crew Press Conference	07:56	Wed	Mar 6
KSC Landing	08:34	Thu	Mar 7

NASA

National Aeronautics and
Space Administration

Lyn don B. Johnson Space Center
Houston, Texas

MISSION OPERATIONS DIRECTORATE

STS 51-E CREW ACTIVITY PLAN

FINAL, REVISION A
February 19, 1985

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This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes must be submitted on standard JSC Form 482 to OH4/FDF Manager, Bldg 4, Rm 352, 713-483-2868.

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Incorporates 482
 No: CAP-289
 CAP-292
 CAP-E7293
 CAP-E2294
 CAP-295
 CAP-E7296
 CAP-298
 CAP-299

ACKNOWLEDGMENTS

The following individuals contributed significantly to preparing the
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STS 51-E CREW ACTIVITY PLAN

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INTRODUCTION

The STS 51-E 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. For continuity, the entire flight is shown in the summary level timeline.

The section entitled 'Crew Activity Plan Notes (constraints and guidelines)', included in CAPs for previous flights, has been published as a generic document entitled 'Timeline Format Definitions and Standard Notes/JSC-19933'.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS 51-E Flight Requirements Document.

The flight profile (Cycle 2 trajectory data) used for this Crew Activity Plan is for a launch date of February 18, 1985 at 13:18 GMT. The launch time and date have been corrected to reflect the March 3, 1985 launch at 13:31. Orbiter inertial attitudes are expressed relative to Mean of 1950 (M50) reference frame.

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STS 51-E OVERVIEW

OVERVIEW

FLIGHT		STR 91-1		EDITION		FINAL REV N°		PUB. DATE		2/19/85	
FD 1											
FD 2											
FD 3											
FD 4											
FD 5											

SUMMARY
TIMELINE

SUMMARY TIMELINE

COMP (PROGRAM)	UNIT	CHANNEL	CH	(PROGRAM)	STZ	DDY	HEYN	MOON	MOON DATE	FLIGHT	EDITION	REP. DATE
101	10	10	10	10	10	10	10	10	10	10	10	10
SFS												
PRE SLEEP ACT												
POST SLEEP ACT												
PL												
STZ												
DDY												
HEYN												
MOON												
MOON DATE												
FLIGHT												
EDITION												
REP. DATE												
STZ												
DDY												
HEYN												
MOON												
MOON DATE												
FLIGHT												
EDITION												
REP. DATE												
NOTES:												

GRP	(DZMOM)	HE	(DZMOM)	CST	(DZMOM)	RD/DOY	AS TA	MOON	HOUSTON DATE	PLTGM	EDITION	PUB. DATE
STP	20	21	22	23	24	25	26	27	28	29	30	31
STP	SLEEP								SEE P. 1	SEE P. 2		
										PST SLEEP RPT		
PL												
ESTD	25	26	27	28	29	30	31	32				
COVERAGE	-400 -400 -100	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
OPS COVERAGE		-575			-105		-105					-105
PPG												
OFFSHORE												
NOTES:												

SWP		No. 1 (OPERATOR)			No. 2 (OPERATOR)			No. 3 (OPERATOR)			No. 4 (OPERATOR)			MISSION TIME			PLIGHT	EXTIONS	PLIB. DATE						
L. J. 1000		10			11			12			13			14			15	16	17	18					
MST 1000		10			11			12			13			14			15	16	17	18					
SFS		SFS			SFS			SFS			SFS			SFS			SFS								
		PPTV ACT			PPTV ACT			PPTV ACT			PPTV ACT			PPTV ACT			PRE SLEEP ACT								
														PPTV ACT											
PL		PRE OPS (REST) (10)			PRE OPS (DUP) (10)			PPTV SETUP			PRE OPS (REST) (10)			PRE OPS (DUP) (10)											
SWP		33			34			35			36			37			38			39			40		
SFTO		-100			-100			-100			-100			-100			-100			-100			-100		
COVERAGE		-100			-100			-100			-100			-100			-100			-100			-100		
OPS		-675			-675			-675			-675			-675			-675			-675			-675		
COVERAGE		-675			-675			-675			-675			-675			-675			-675			-675		
RDS		-675			-675			-675			-675			-675			-675			-675			-675		
COVERAGE		-675			-675			-675			-675			-675			-675			-675			-675		
NOTES:		<p>• 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000</p> <p>• 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000</p> <p>• 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000</p>																							

GROUP	DATE	TIME	TYPE	STATUS	REMARKS	LOCATION	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
STS	20	20	22	23	24	25	26	27	28	29	30	
								7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31			25 00	
								PROP SLEEP NET		PROP SLEEP		
PL											FREE OPS (NET) (MS)	
GROUP	41	42	43	44	45	46	47	48				
SSPDN COVERAGE											PROP SLEEP NET	
OPS COVERAGE											PROP SLEEP NET	
FDPS											PROP SLEEP NET	
NOTES:												

COMP. (DAYS)	NO. P. (DAYS)	CSF (DAYS)	STD. (DAYS)	BD. (DAYS)	INDIC.	MONITORING DATE	REMARKS	PERSON	REP. DATE
ST5									
							POB SLEEP NLT	SECRET PREP	
PL									
COMP.	57	58	59	60	61	62	63	64	
SSPDS									
COVERAGE									
DPS									
COVERAGE									
POBS									
COVERAGE									
NOTES:									

UNIT	DESIGN	NET	(DIMENS)	UNIT	(DIMENS)	HGT	DOT	BEFN	MOON	MOON DATE	FLIGHT	EDITION	R/JB DATE
UNIT 1000										MOON DATE 2/19/66	FLIGHT 575	EDITION 374	R/JB DATE 2/19/66
NET 1000													
STS													
ESTIM COVERAGE													
RFG COVERAGE													
RFRS													
NOTES													

2-79

EMVST-61214 2/19/66

DETAILED TIMELINE

DETAILED
TIMELINE

DETAILED TIMELINE

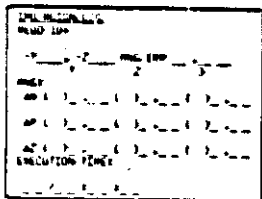
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STS SITE DETAILED

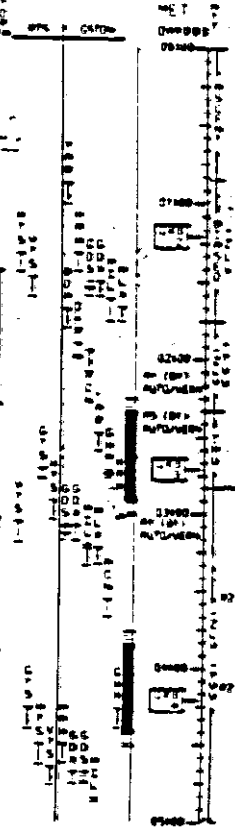
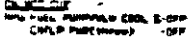
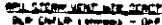
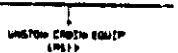
PL

MCC

At location prior to 06:29:20 EDT and via the
WCBAR and 705F INSPECTION CHECKLISTS
Between 06:10:00 when entering the CRF
via 2LV, 700



- CRF AND ACTIVITIES FOR 100M**
 Go up and down communication
 06:12:00 (600 OPS)
 (Contingency: 5 Min/2 Con)
- NET CONTROL PER**
 (100 OPS, 500 100 Min)
 Prior to 105 display
- CRF POWER ASSEMBLY**
 (Priority, 2, 4, 100 100 Min)
 Prior to 105 display
- EEF SETUP, DECONTAMINATION (PS)**
 (PL OPS, 100 100 Min)
- EEF TEST, TEST OPS (PS)**
 (PL OPS, 100 100 Min)
 Perform on 200 (Non-scheduled)
- EEF STORAGE (PS)**
 (PL OPS, 100 100 Min)
- HEAL/STAGE (Cwp Card) (60 Min)**
- WCBAR & FIRE SUPPLY TEST**
 (100 OPS, 100 100 Min)

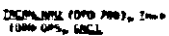


- INSPECTION CHECK (PS)**
 100 OPS, 100 100 Min
- CRF CHECK (PS)**
 100 OPS, 100 100 Min
- WCBAR CHECK (PS)**
 100 OPS, 100 100 Min

- INSPECTION CHECK (PS)**
 GO FOR PWR 100
- INSPECTION CHECK (PS)**
 INS 100 200
- INSPECTION CHECK (PS)**
 INS 100 200

- WCBAR CHECK (PS)**
 100 OPS, 100 100 Min
- WCBAR CHECK (PS)**
 100 OPS, 100 100 Min
- WCBAR CHECK (PS)**
 100 OPS, 100 100 Min

- INSPECTION CHECK (PS)**
 GO FOR PWR 100
- INSPECTION CHECK (PS)**
 INS 100 200
- INSPECTION CHECK (PS)**
 INS 100 200



INSPECTION CHECK (PS)
 100 OPS, 100 100 Min

STS ST-E DETAILED

STS

PL

MCC

DISC DEPLOY STOP FAIL
 (100 OPS, 1000 OPS)
 OPS BURN
 ROAD TO DIS WIZING OFF

DATA DEACT (STOP DEPLOY-TORS)
 (100 OPS, 1000 OPS)

DEPLOY TUS/TORS
 (100 OPS, 1000 OPS)
 EEL SETUP/ACT/INH/AM (PS)
 1% OPS, EEL-ALL
 EEL-REST-INIT/OPS (PS)
 1% OPS, EEL-OPS

DEPLOY COUNTDOWN
 (100 OPS, 1000 OPS)
 CYCLIC WEP SW TO IWS

IWS DEPLOY
 (100 OPS)
OPS-SEP BURN
 (100 OPS)

ROAD TO PROTECT WPT

PT OFF
 (100 OPS, 1000 OPS)

SAP IGNITION
 (100 OPS)

PLASMA DISCHARGE
 (100 OPS, 1000 OPS)
 (100 OPS, 1000 OPS)
 (100 OPS, 1000 OPS)

PLASMA DISCHARGE
 (100 OPS, 1000 OPS)

DISCHARGE TEMP CHECK
 (100 OPS, 1000 OPS)

PLASMA DISCHARGE (PS)
 1% OPS, EEL-SIGN

DISCHARGE TEMP CHECK
 (100 OPS, 1000 OPS)

FLASH TEMP OVER POC (10) - OFF

PLASMA DISCHARGE
 (100 OPS, 1000 OPS)

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

ENCLOSURE TIME

DISCHARGE TEMP CHECK
 (100 OPS, 1000 OPS)

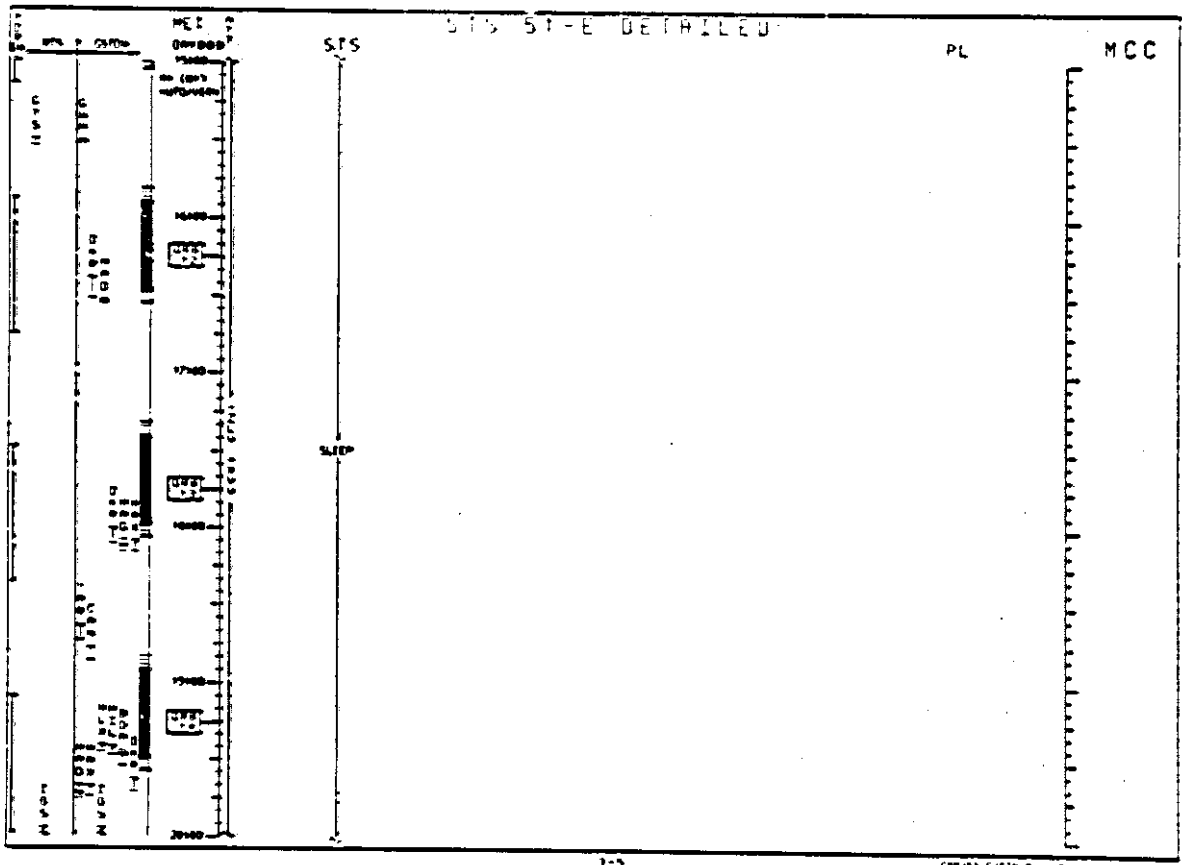
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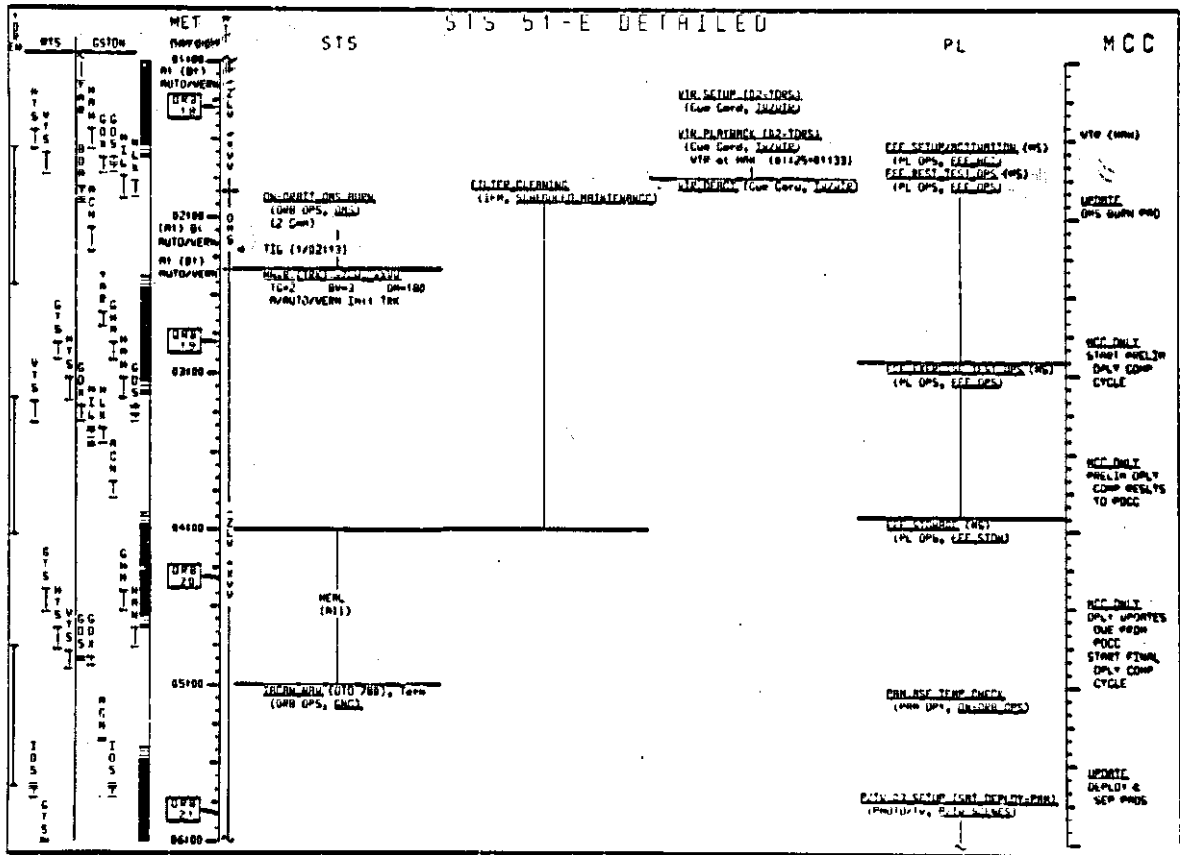
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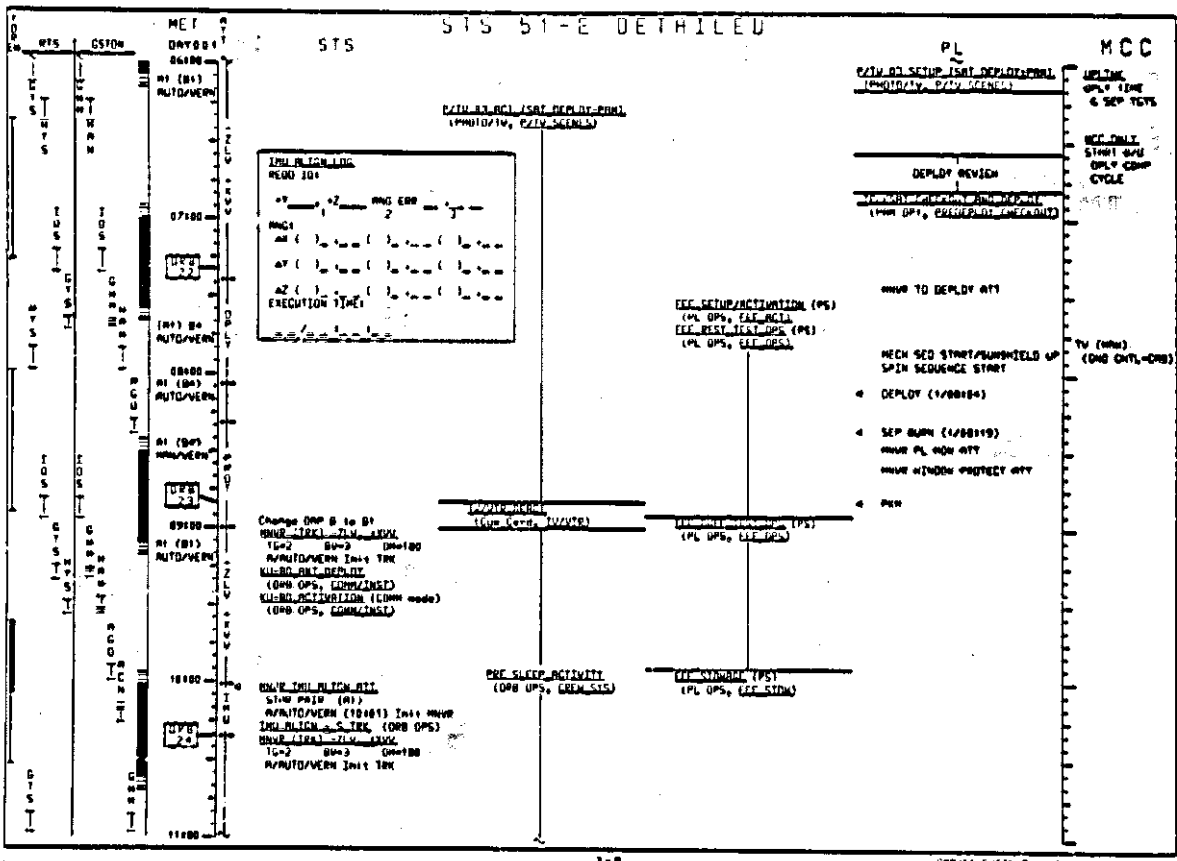
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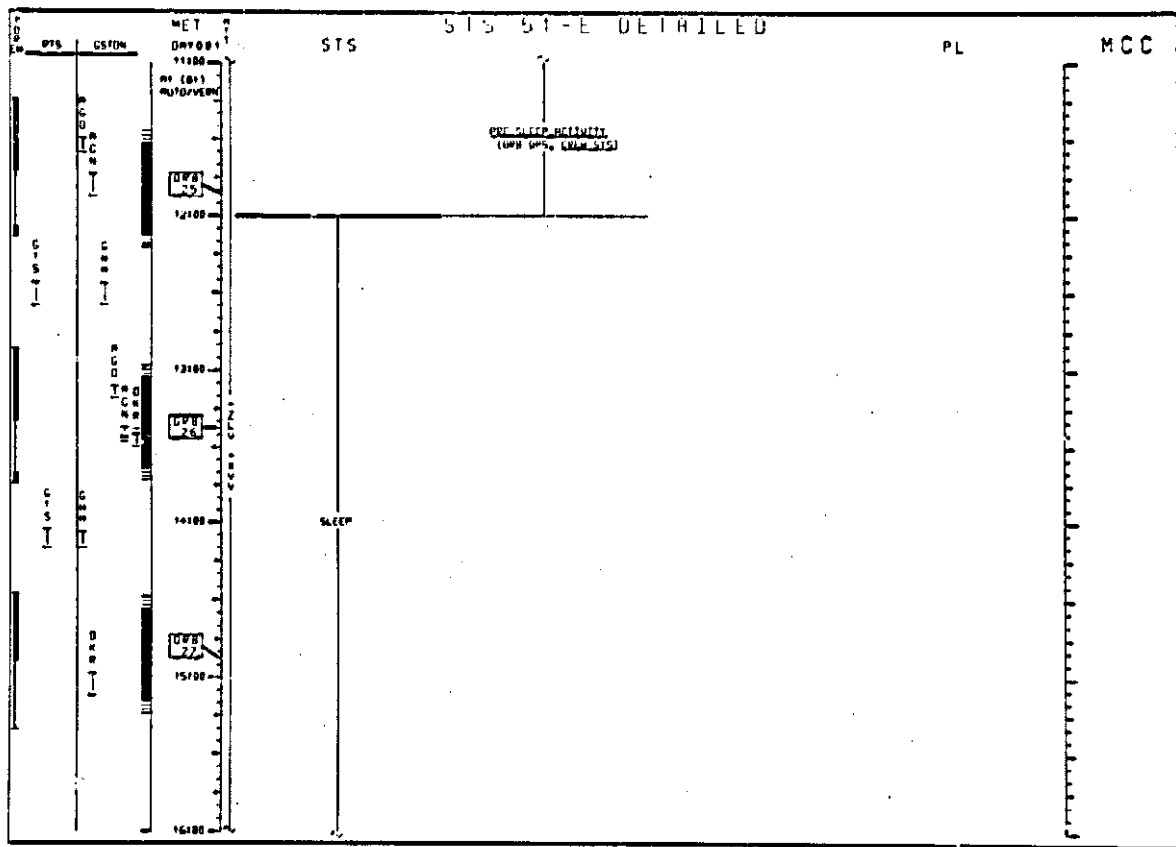
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SFS SITE DETAILED

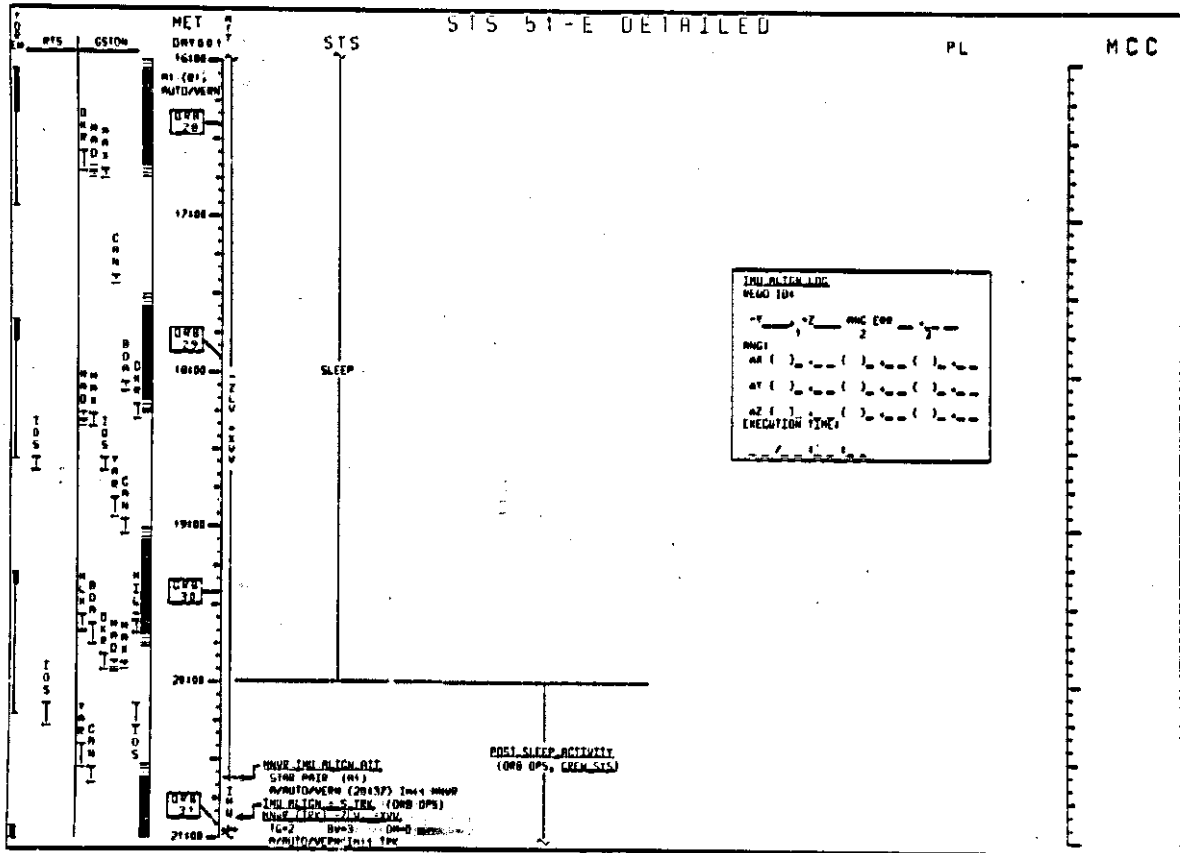


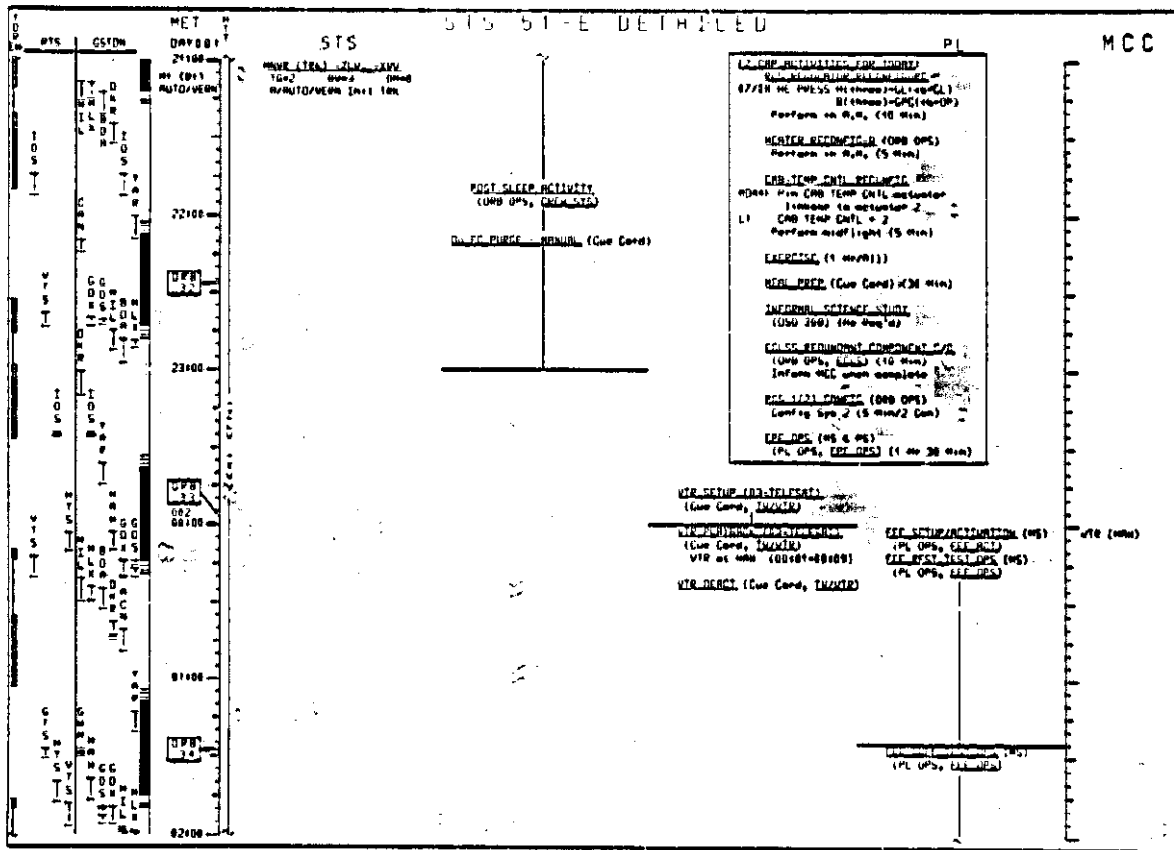


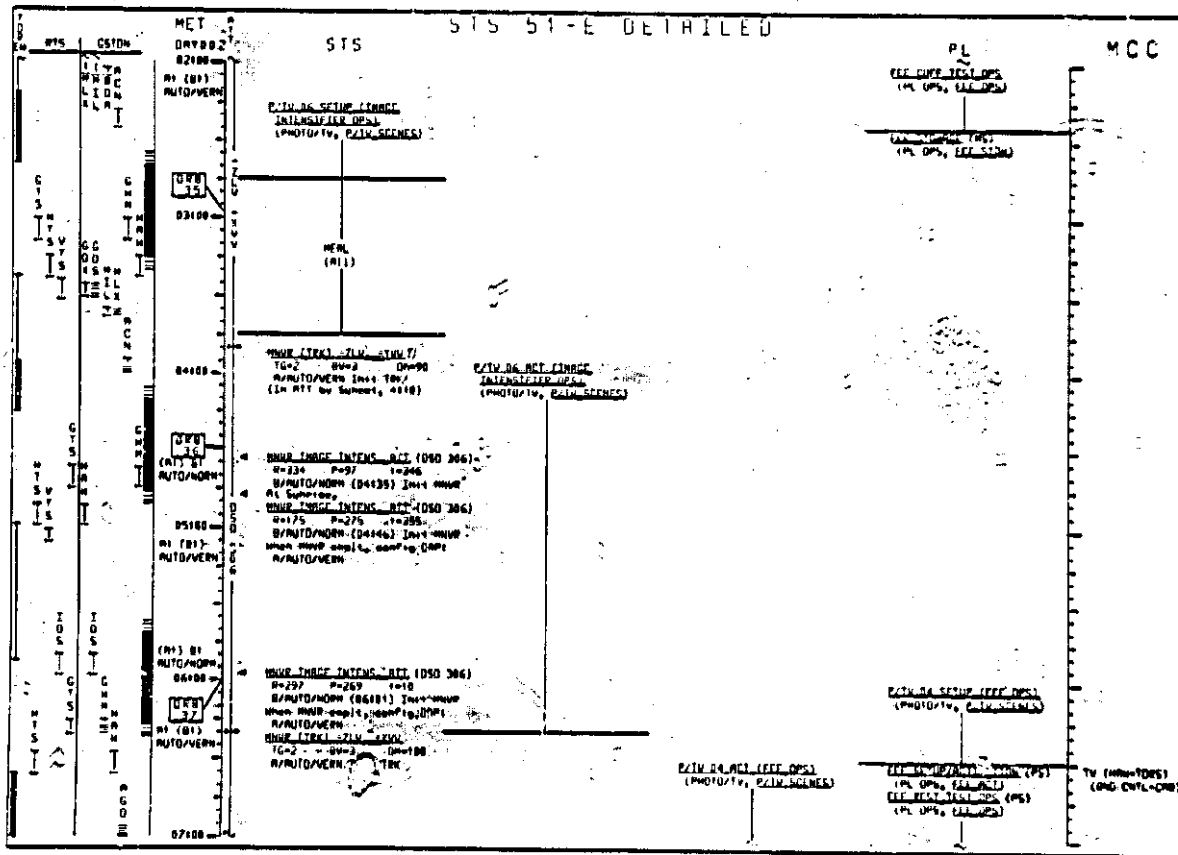


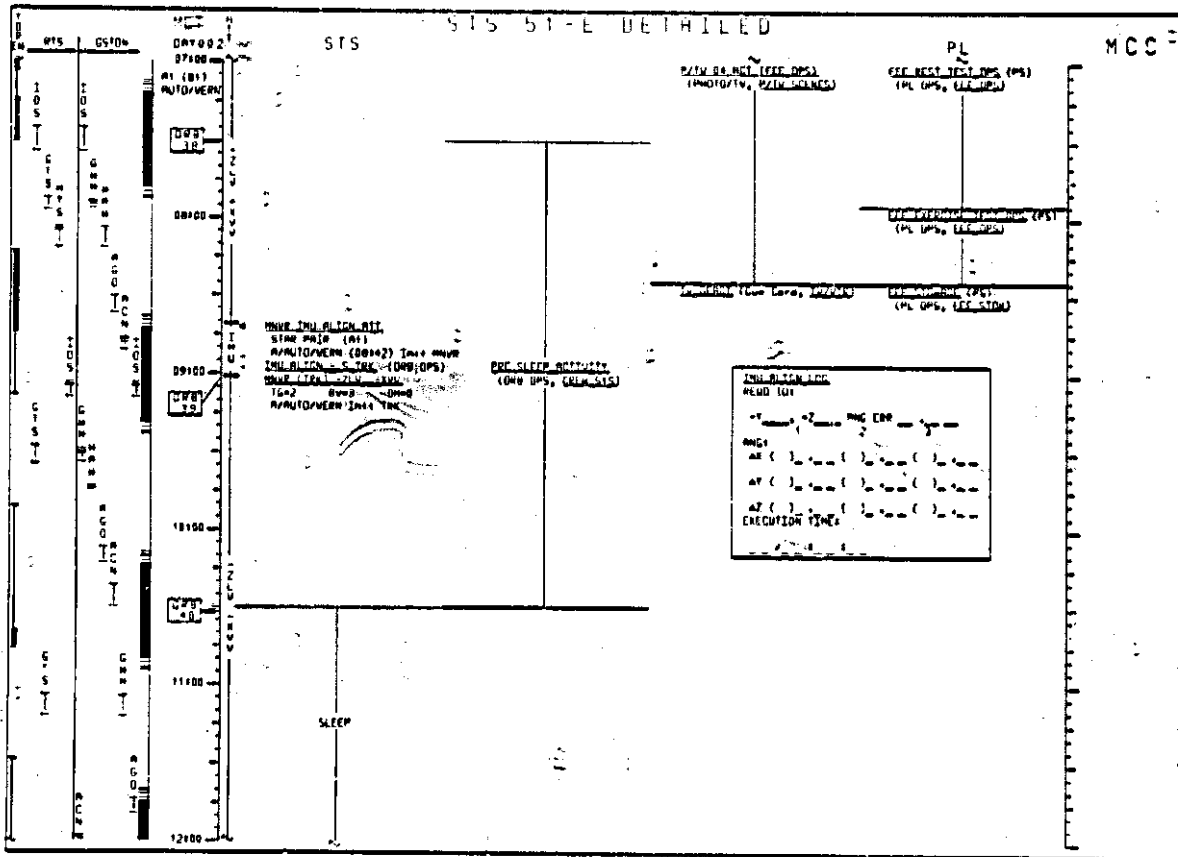


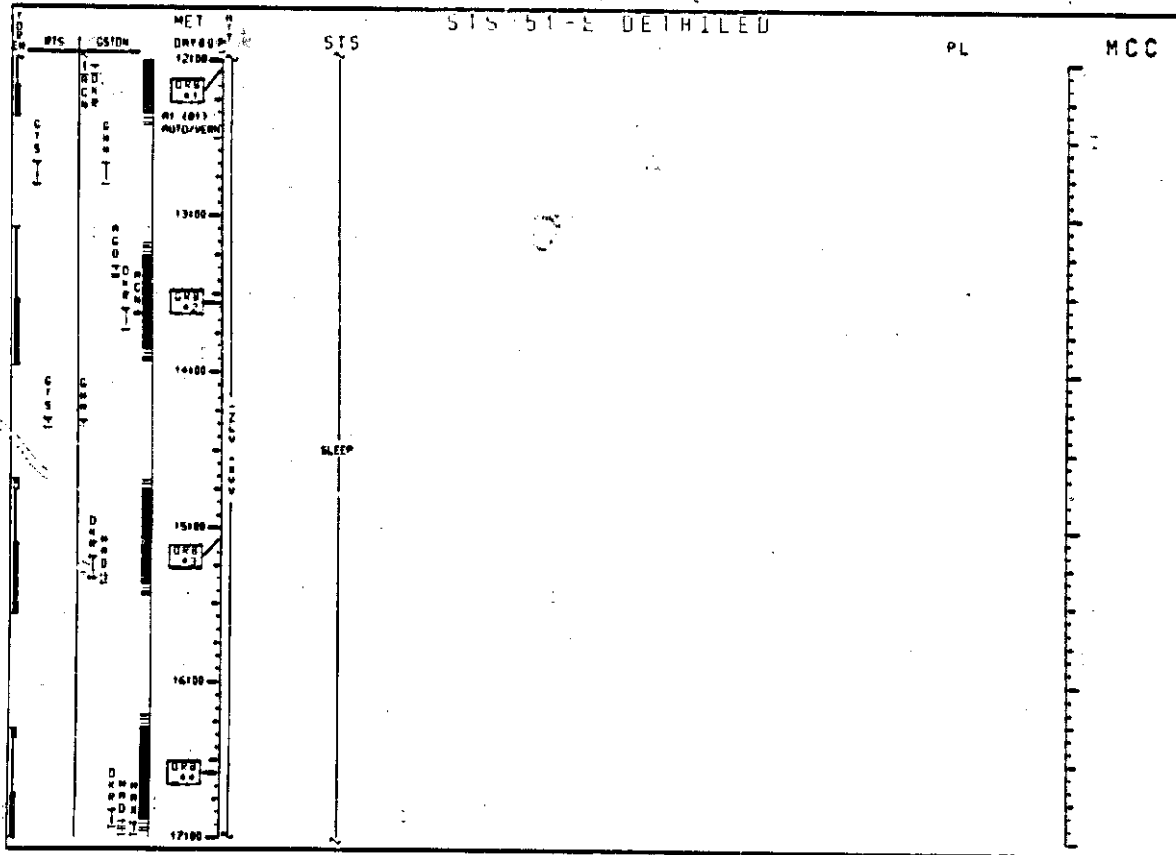
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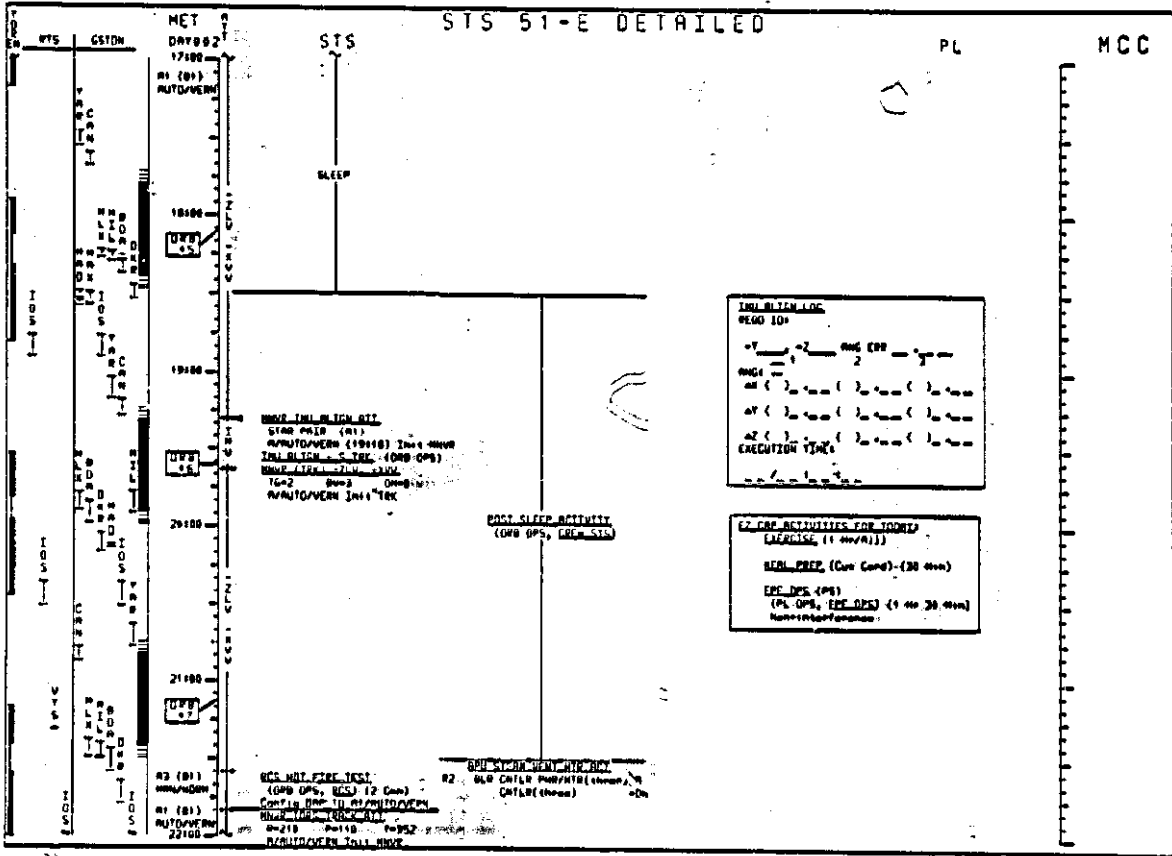


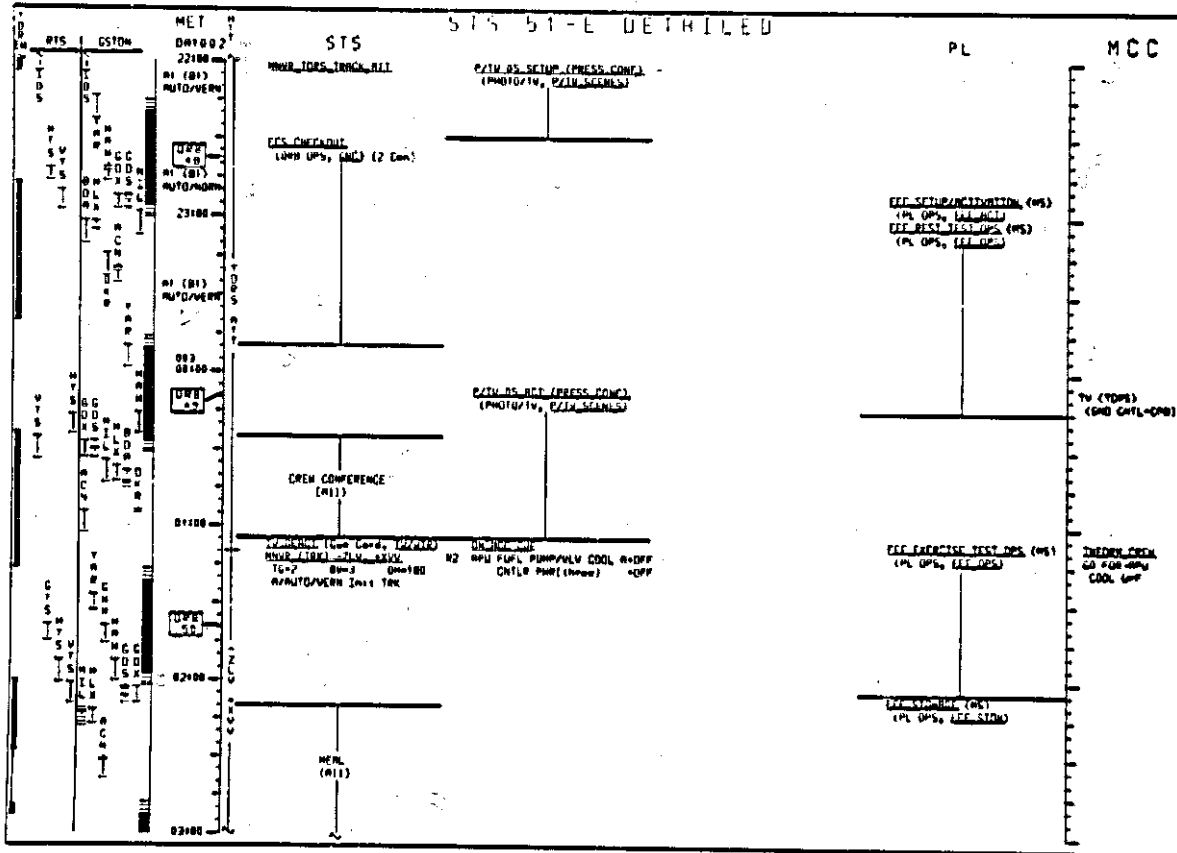




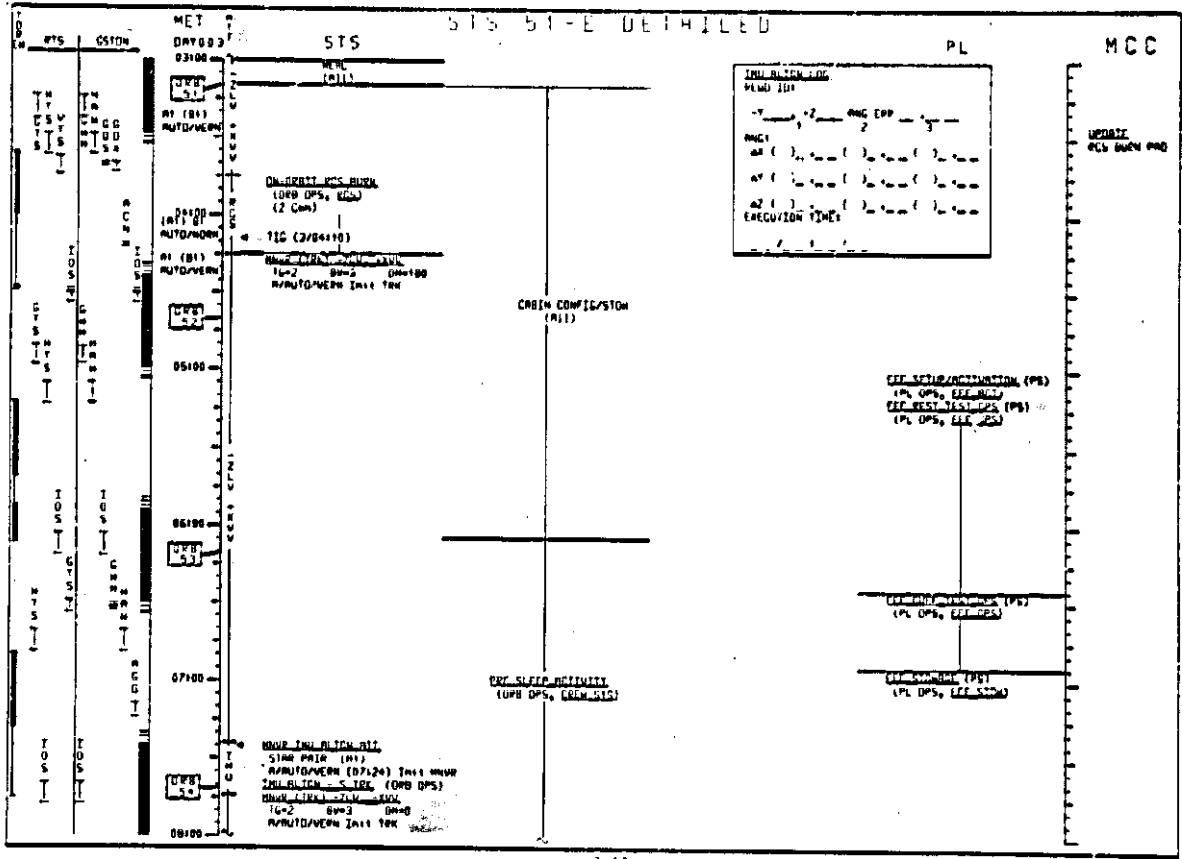


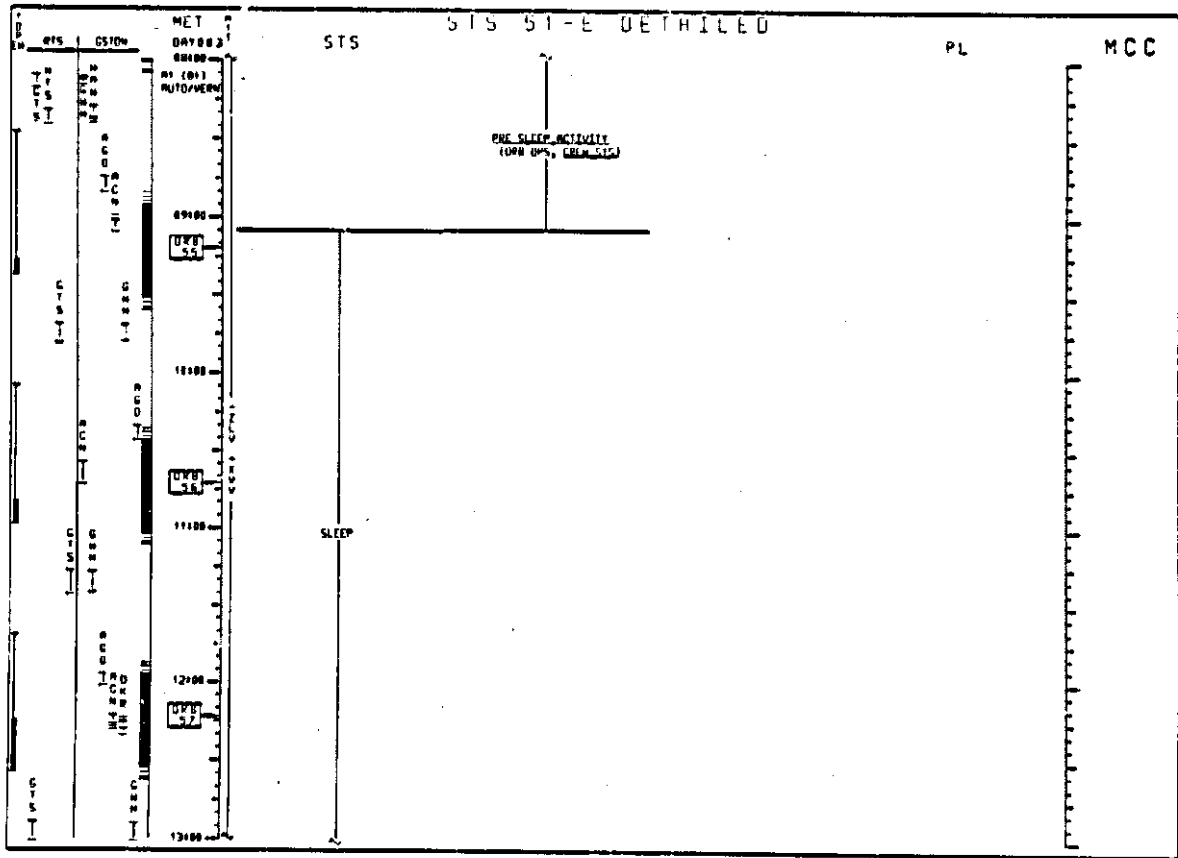
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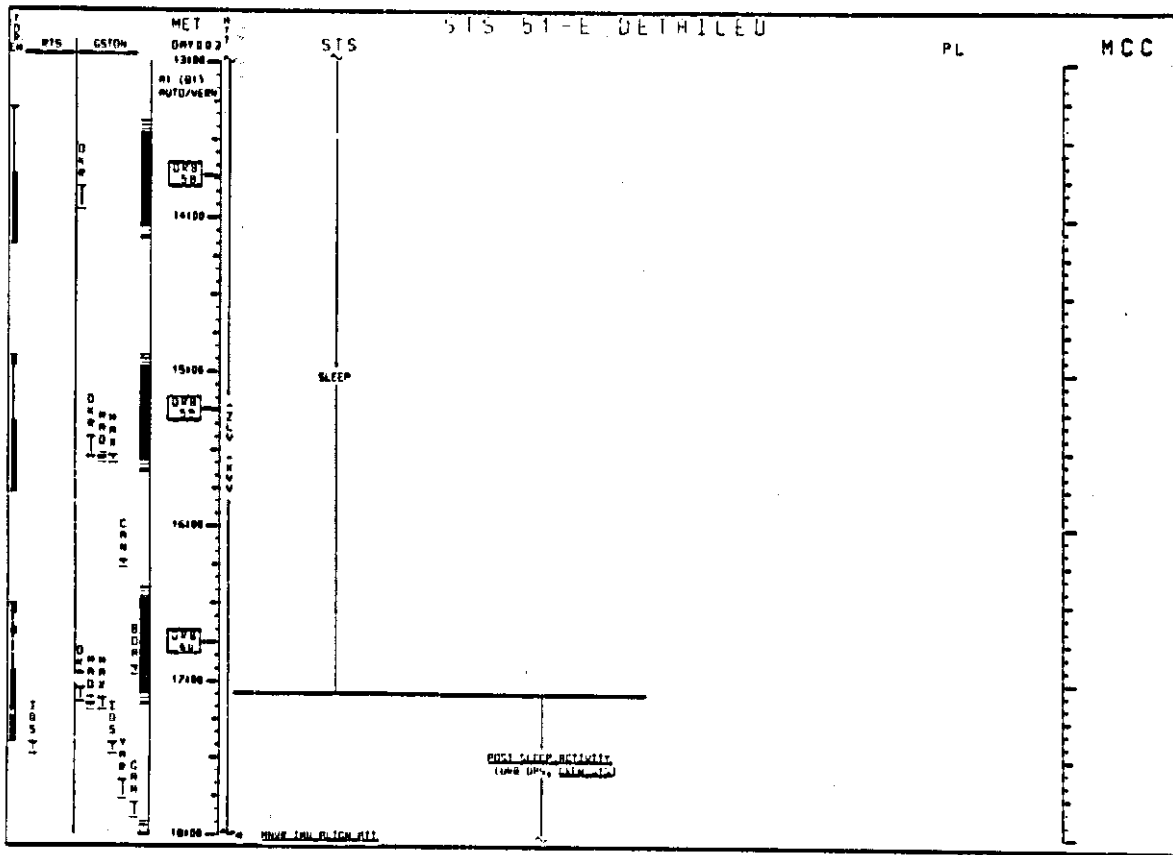




STS STS ST-E DETAILED







CONTINGENCY TIMELINES

90 TDRS DEPLOYMENT.....	4A-1
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18A TDRS DEPLOYMENT.....	4C-1
20A TDRS (EVA) DEPLOYMENT.....	4D-1
40 TELESAT DEPLOYMENT.....	4E-1

CONTINGENCY
TIMELINES

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COMING
TUESDAY

90 TDRS DEPLOYMENT

The 90 Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 90 opportunity. The nominal timeline is used until 0/07:00 MET. An early TDRS DIRECT check may be performed at IOS (REV 5). This will preclude two-way voice communications through IOS.

All nominal deployment activities are included in this timeline. The tracking arc and the IUS C/O and TDRS late checks are performed at the last acceptable opportunities. Additional assumptions are shown on page 4A-2. The timeline is based on the nominal Cycle 2 trajectory.

90
DEPLOYMENT

SO DEPLOYMENT

UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT	UNIT	COMPONENT											
SO DEPLOY																												
STS																												
<div style="border: 1px solid black; padding: 5px;"> <p>TABLE NO. 1 (This table refers to the following Standard Order)</p> <ul style="list-style-type: none"> - THE NUMBER OF FIGHTERS IN EACH UNIT, AIRCRAFT SET - THE DATES OF DEPARTURE AND RETURN OF THE UNIT - THE AIRCRAFT TYPE TO BE USED IN EACH UNIT - THE AIRCRAFT TO BE USED IN EACH UNIT - THE AIRCRAFT TO BE USED IN EACH UNIT - THE AIRCRAFT TO BE USED IN EACH UNIT - THE AIRCRAFT TO BE USED IN EACH UNIT </div>												TOPS-B DEPLOY																
PL																												
<div style="border: 1px solid black; padding: 5px;"> <p>NOTES:</p> <ul style="list-style-type: none"> 1. TOPS-B DEPLOY (TOPS-B DEPLOY) 2. TOPS-B DEPLOY (TOPS-B DEPLOY) 3. TOPS-B DEPLOY (TOPS-B DEPLOY) 4. TOPS-B DEPLOY (TOPS-B DEPLOY) 5. TOPS-B DEPLOY (TOPS-B DEPLOY) 6. TOPS-B DEPLOY (TOPS-B DEPLOY) 7. TOPS-B DEPLOY (TOPS-B DEPLOY) 8. TOPS-B DEPLOY (TOPS-B DEPLOY) 9. TOPS-B DEPLOY (TOPS-B DEPLOY) </div>																												

100 DEPLOYMENT

The 100 Deployment timeline is designed to accommodate delaying deployment of TDRS to the 100 opportunity. The nominal timeline is used up to 07:00 MET. A TDRS DIRECT check may be performed at 105 (Rev 5). This will preclude two-way voice communications through 105.

All nominal deployment activities are included in this timeline. The tracking arc and the IUS C/O and TDRS late checks are performed at the last acceptable opportunities. Additional assumptions are shown on page 48-2. The timeline is based on the nominal Cycle 2 trajectory.

100
DEPLOYMENT

100 DEPLOYMENT

UNIT (ID#)	UNIT (ID#)	UNIT (ID#)	UNIT (ID#)	UNIT (ID#)	UNIT (ID#)	UNIT (ID#)	HOUSTON DATE		FLIGHT		EJECTION		RUB. DATE	
							1	2	3	4	5	6	7	8
100 DEPLOY														
STS														
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> THE 100 TRAINING RUCS THE FOLLOWING PROVISIONS: - THE NUMBER OF TRAINING IS UNLIMITED, UNLESS NOT - THE TRAINING ACTIVITIES ARE SCHEDULED ON THE 100 DEPLOYMENT PLAN BY UNIT IN ACCORDANCE WITH THE - THE TRAINING IS TO BE CONDUCTED IN THE - THE TRAINING ARE TO BE CONDUCTED TO THE - THE TRAINING ARE TO BE CONDUCTED TO THE - THE TRAINING ARE TO BE CONDUCTED TO THE </div>														
PL														
UNIT	1	2	3	4	5	6	7	8	9					
STATION COORDINATE														
RUCS COORDINATE														
TIME														
REMARKS														
NOTE														

GMT	1000000	0800	0600	0400	0200	0000	2200	2000	1800	1600	1400	1200	1000	0800	0600	0400	0200	0000
MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI
<div style="text-align: center;"> <p>ADD DEPLOY</p> <p>RETURN TO THE NOMINAL (80) TIMELINE AT 170400Z MET</p> </div>																		
STS																		
PL																		
1800Z	17	18	19	20	21	22	23	24										
ESPOB																		
CSB0000																		
CSB0000																		
FGMS																		
OFFSP000																		
NOTES:																		

18A TDRS DEPLOYMENT

The 18A Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 18A opportunity. The timeline begins during crew sleep and assumes the tilt table is stowed at 0°. All nominal deployment activities are included in this timeline. Additional assumptions are shown on page 4C-2.

The timeline is based on the nominal Cycle 2 trajectory.

18A
DEPLOYMENT

**18A
DEPLOYMENT**

NO.	STATION	UNIT	POSITION	POST	OPERATION	REP. UNIT	HT. TO	WIND	MOON	HOUSTON DATE	FLIGHT	EDITION	WJR. DATE
1	18	23	25	27	29					28	29	29	29
	ISB DEPLOY												
STS													
<p>TOPS-B DEPLOY</p> <p>TOPS-B DEPLOY</p> <p>POST SLEEP ACT</p> <p>WTO ACT</p> <p>TOPS-B DEPLOY</p>													
PL													
0000		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
ESTIM. COVERAGE		-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000
OPS. COVERAGE		-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000
POPS													
APPRAISE													
REMARKS													
NOTES:	<p>1. RECHECKS (MAX 1, UNIT 2, STW 2 (105 LOS))</p> <p>2. RECHECKS (MAX 1, UNIT 2, STW 2 (105 LOS))</p> <p>3. RECHECKS (MAX 1, UNIT 2, STW 2 (105 LOS))</p>												

COMP (ORIGIN)	APP. (ORIGIN)	CST (ORIGIN)	NOZ DIR	HEIN	MOUN	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
303						15	16	17	18
ISR DEPLOY									
<div data-bbox="487 503 729 573" data-label="Text"> <p>RETURN TO NORMAL TIMING THE INT. OF DEPLOY IS APPROX 1200 HRS. ON 10/21/85 CHECK FOR SCHEDULES AND PLANS</p> </div>									
PL	DEPLOY	PER OPS (MS)	PER OPS (MS)						
COV	27	28	29	20	21	22	23	24	
COVERAGE	COV	COV	COV	COV	COV	COV	COV	COV	COV
DPS COVERAGE	DPS	DPS	DPS	DPS	DPS	DPS	DPS	DPS	DPS
PLANS	PLANS	PLANS	PLANS	PLANS	PLANS	PLANS	PLANS	PLANS	PLANS
OFFERS	OFFERS	OFFERS	OFFERS	OFFERS	OFFERS	OFFERS	OFFERS	OFFERS	OFFERS
TELETYPE	TELETYPE	TELETYPE	TELETYPE	TELETYPE	TELETYPE	TELETYPE	TELETYPE	TELETYPE	TELETYPE
NOTES:	<p>① FILTER CLEANING ② BOMBING ALERTS, (Check Perform Step 7 on Deploy) ③ ④ - 21, 2000</p>								

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20A TDRS (EVA) DEPLOYMENT

The 20A Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 20A opportunity following an EVA to manually raise the tilt table. The decision to perform an EVA must be made by 07:05:00 MET. All nominal deployment activities are included in this timeline. The TELESAT would be deployed no earlier than the 34A PDM opportunity.

The timeline is based on the nominal Cycle 2 trajectory.

20A
DEPLOYMENT

GMT (DISHM)		MET (DISHM)		CST (DISHM)		ED/ DDT	REFN	MOON	MISSION DATE		FLIGHT	EDITION		PUR. DATE	
LST 1962 PD 181 REF 0001		20 21 22 23 24 25 26 27 28 29 30 31		21 22 23 24 25 26 27 28 29 30 31		027	027	0	MARCH 3, 1965		STS 5-A	FINAL DEC 6		2/19/65	
13		14		15		16		17		18		19		20	
		SLEEP						20R DEPLOY							
STS								Z L W W W W W W W W W						W L O S C P S E	
								POST SLEEP ACT		PTV SETUP		PTV ACT			
								POST SLEEP ACT		EVR OPS					
								POST SLEEP ACT		EVR PSEP SUPPORT		EVR SUPPORT			
PL								POST SLEEP ACT		EVR PSEP SUPPORT		EVR SUPPORT			
DURATION															
SPEED															
EVIATION		-RGN -RCH -DR		-RCH -DR -RGN		-DR -RND		-RCH -RCH -RND -RND -RND		-RND -RND -RND -RND -RND -RND		-RND -RND -RND -RND -RND -RND		-RND -RND -RND -RND -RND -RND	
PTS		-RND		-RND		-RND		-RND		-RND		-RND		-RND	
COVERAGE															
DPS															
RTF/PDR															
TELETYPE															
NOTES:															

40 TELESAT DEPLOYMENT

The 40 Deployment Timeline is designed to accommodate deployment of TELESAT on the 40 opportunity. A failed open sunshield requires a sun protected attitude until the TELESAT deployment maneuver. The TDRS/IUS checks are performed at the nominal 80 times except for the ACTUATOR ENGAGE which is delayed until after the TELESAT deployment.

The timeline is based on the nominal Cycle 2 trajectory.

40
DEPLOYMENT

CHALLENGE LOGIC OF PORT PLUG

1. PLUG OPS INHIBIT

HW/AL	0	MCN LOGIC	AND MID 1 = ON
	0		AND MID 2 = ON
	0		AND MID 3 = ON
	0		AND MID 4 = ON

2. PLUG DOOR IS NOT IMPROVED AS PER DESIGN

HW/AL PL GRY DP = STOP

CP14

HW/AL

MC POWER ON = ILEN 1 (ELEC 10)
 JOP/CL STATUS (same) = GP 1 (same)
 JMAN SEL =
 CENTER LATCHES (four) = (NO = 1)
 5 LATCHES 6 DOOR (same) = (NO = 1)
 6 LATCHES 6 DOOR (same) = (NO = 1)
 JPO IN STRONG = ILEN 10 (NO = 1)

Select PORT DOOR

HW/AL PL GRY DP = CL (Start stop)
 HW/AL PL GRY DP = STOP

Verify no more than 4 releases available on PLUG push pads (second push pad has pad which is locked out)

CP14 Deconnect PORT DOOR

MC POWER OFF = ILEN 2 (ELEC 10)
 HW/AL

HW/AL

3. PLUG OPS INHIBIT

HW/AL	0	MCN LOGIC	AND MID 1 = OFF
	0		AND MID 2 = OFF
	0		AND MID 3 = OFF
	0		AND MID 4 = OFF

LOGIC OF PLUG PLUG

1. PLUG OPS INHIBIT

HW/AL	0	MCN LOGIC	AND MID 1 = ON
	0		AND MID 2 = ON
	0		AND MID 3 = ON
	0		AND MID 4 = ON

2. PLUG DOOR IS FULLY OPEN POSITION

HW/AL PL GRY DP = STOP

CP14

HW/AL

MC POWER ON = ILEN 1 (ELEC 10)
 JOP/CL STATUS (same) = GP 1 (same) + GP 2 (same) + GP 3 (same)
 JMAN SEL =
 CENTER LATCHES (four) = (NO = 1)
 5 LATCHES 6 DOOR (same) = (NO = 1)
 6 LATCHES 6 DOOR (same) = (NO = 1)
 JPO IN STRONG = ILEN 10 (NO = 1)

Select PORT DOOR

HW/AL PL GRY DP = SP (Start stop)
 PL DOOR = GP 4 = SP (SEE)
 PL GRY DP = STOP

CP14 Deconnect PORT DOOR

MC POWER OFF = ILEN 2 (ELEC 10)
 HW/AL

HW/AL

3. PLUG OPS INHIBIT

HW/AL	0	MCN LOGIC	AND MID 1 = OFF
	0		AND MID 2 = OFF
	0		AND MID 3 = OFF
	0		AND MID 4 = OFF

具

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STS 51-E FLIGHT SPECIFIC DATA

FLT SPEC
DATA

FLIGHT DAY 1 TFL/DFL SEQUENCE

NET (HR MIN)	REV	SITE	ACTIVE TFL	CU (DB)	EVENT	NOTES
00 20	-	MIL	191	64	• Ascent Config	• PDI DECOM 1, 1 KB • PL RCOR: 64 KB • FL 191/118 LOADED
~1:00			192	64	• OPS Config SM4	• RUS 64 KB on PL RCOR • TDRS 1 KB on OPS RCOR
1:12	2	HTS AOS		64		• RUS 64 KB on FM DL
1:27	2	TDRS AOS		16	• CU to 16 KB (on MCC Cue)	• PL RCOR DUMP • PDI 16/1 KB REAL TIME
1:55	2	ACN	100	16	• OPS Config SM2	
2:15	2	TDRS LOS	183	64	• TFL OFL to 183 (INCO) • CU to 64 KB (on MCC Cue)	• 64/1 KB on OPS RCOR
2:41	2	GTS	183	64		
2:54	3	HTS	183	64	• RUS CO (EARLY)	• FM OFF during PI CO
3:10	3	VTS LOS TDRS AOS	100	16	• TFL/DFL to 192 (INCO) • CU to 16 KB (ON MCC CUE)	• 64/1 KB ON PL RCOR • FM OFF during PI CO
3:12	3	MIL AOS	100	16	• TDRS (PI) LINK CO	• INCO cmd PI OFF after CO
3:32	3	ACN AOS	100	16	• TDRS DIRECT	• FM OFF until ACN LOS
3:54	3	TDRS LOS	192	64		
4:28	4	HAW AOS	192	64		• SS-HD VTR DUMP
4:56	4	TDRS AOS	100	16		• OPS RCOR DUMP
4:45	4	VTS LOS	100	16		
5:25	4	TDRS LOS	192	64		
5:05	5	HAW AOS	192	64		• REAL TIME TV DL
6:15	5	HAW LOS TDRS AOS	100	16		
7:02	5	IOS AOS TDRS LOS	183	64	• TFL to 183/100 (INCO) • CU to 64 KB (on MCC Cue)	
7:40	6	HAW AOS		64	RUS CO (LATE)	
8:23	6	TDRS	100		TFL to 192/100 (INCO) • CU to 16 KB (on MCC Cue)	
8:30	5	TDRS	100			
8:35	6	TDRS LOS IOS AOS	183		• RECK LATE, PART 8	• FM OFF
8:46	7	IOS LOS	100			
9:16	7	HAW AOS			• TDRS DIRECT CK	• FM OFF
9:20	7	HAW LOS TDRS AOS	100			
9:30	7	TDRS AOS	100		• RUS PI LOCK	
10:02	7	TDRS				TDRS DEPLOY
11:05	8	TDRS AOS	114		• SM Ops Trans SM2 to SM4	

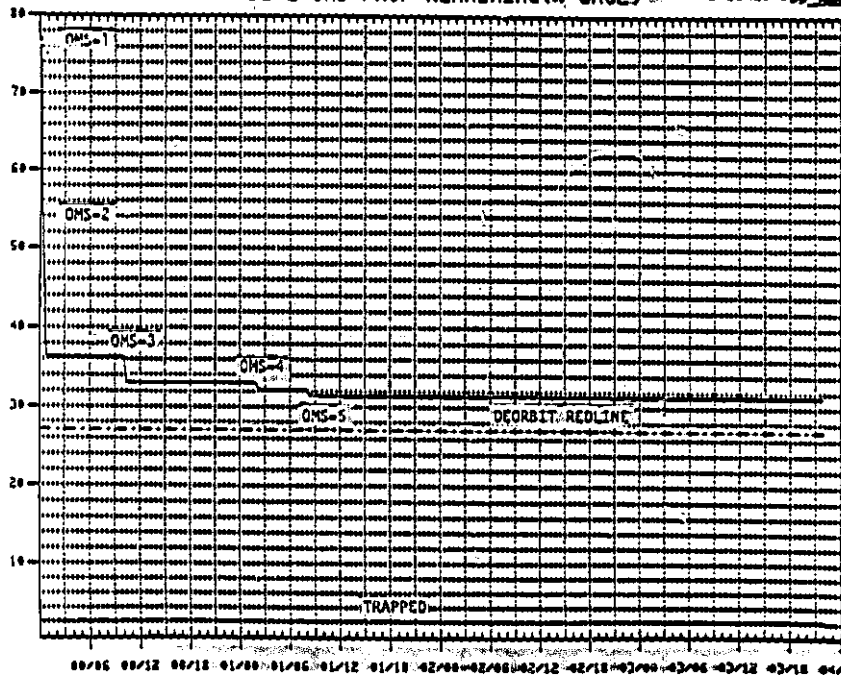
FLT SPEC
DATA

CONSUMABLES CURVES

P. M. KULESA/MDTSCO
 DATA SUBMITTAL J-746 Add 5
 JSC-20105 (CAP) 10/1/84
 CHECKED BY *[Signature]*

51-E OMS PROP REMAINING(% GAGE)

OMS PROP REMAINING

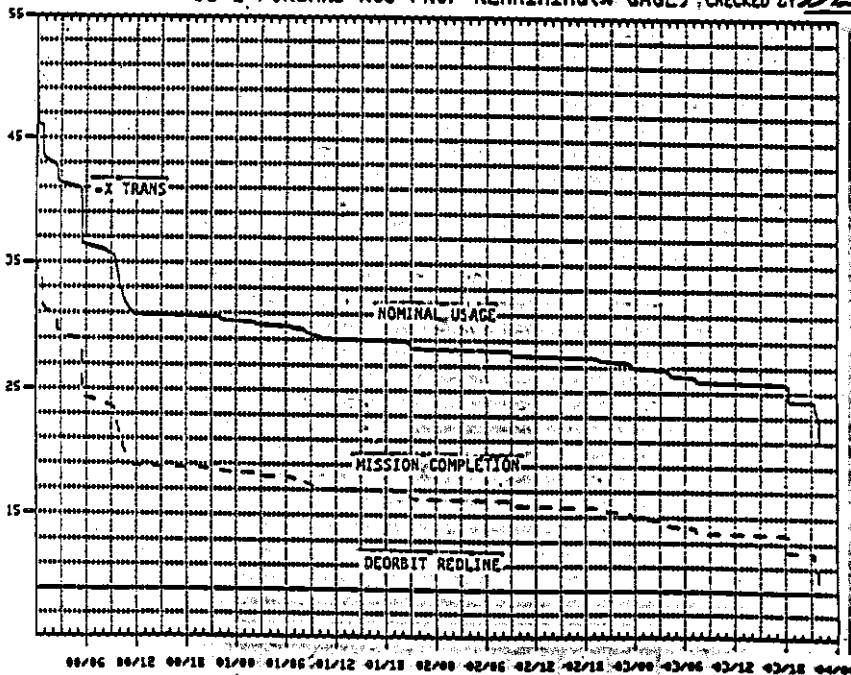


MISSION ELAPSED TIME IN DAYS/HOURS

P. M. KULESA/MDTSCD
DATA SUBMITTAL J-746 Add 5
JSC-20105 (CAR) 30/11/84
CHECKED BY *[Signature]*

51-E FORWARD RCS PROP REMAINING(% GAGE)

FORWARD
RCS
GAGE
PROP
REMAINING

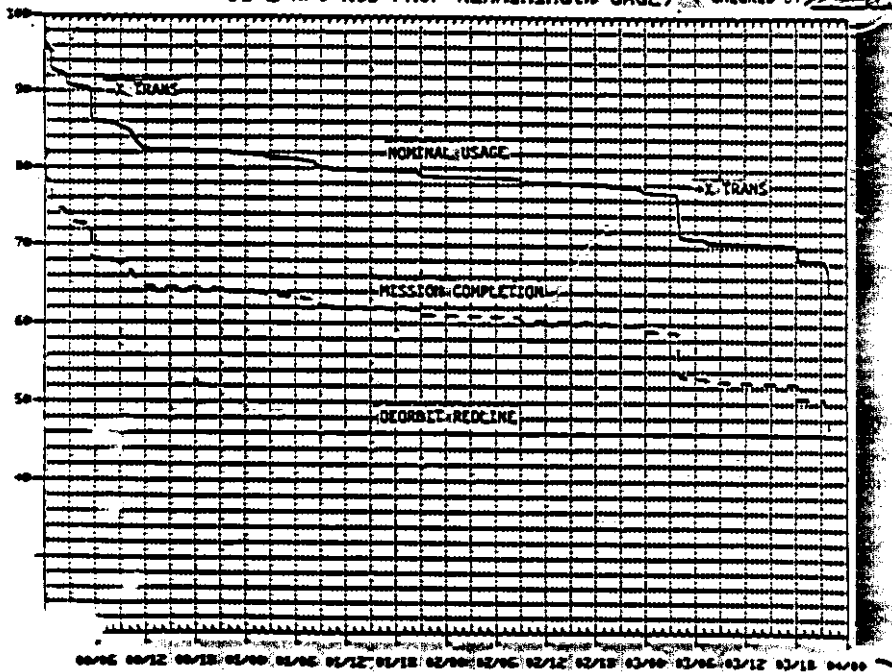


MISSION ELAPSED TIME IN DAYS/HOURS

P. M. KULESA/MOTSCO
DATA SUBMITTAL J-746 Add 5
JSC-20105 (CAP) 10/11/84
CHECKED BY *[Signature]*

SI-E AFT RCS PROP REMAINING (X GAGE)

441-0000 0000 0000 0000 0000 0000



MISSION ELAPSED TIME IN DAYS/HOURS

5-6

CAP/SI-E/FIN A

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

STS 51-E DAP BOOK

DAP A CONFIGURATIONS..... 6-2
DAP B CONFIGURATIONS..... 6-3
STS 51-E DAP BOOK..... 6-4

DAP BOOK

TABLE 6-1
DAP A CONFIGURATIONS

	A1*	A2	A3	A4	A5	A6	A7	A8
TRANSLATION								
PULSE ft/sec	0.10	0.10	0.10	0.10	0.10	0.10		0.25
ROTATION								
OSC RT NORM */sec	0.200	0.400	0.200	0.200	0.200	0.200		0.200
VERN */sec	0.200	0.400	0.200	0.008	0.200	0.200		0.200
PULSE NORM */sec	0.10	0.10	0.30	0.10	0.10	0.10		0.05
VERN */sec	0.010	0.010	0.010	0.010	0.050	0.010		0.010
COMP NORM */sec	.00	.00	.00	.00	.00	.00		.00
VERN */sec	.000	.000	.000	.000	.000	.000		.000
DEADBAND								
ATT NORM (deg)	5.00	1.00	5.00	1.00	5.00	5.00		1.00
VERN (deg)	1.000	1.000	1.000	0.070	1.000	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		.010
JET OPT								
P	1	1	3	1	1	3		1
Y	1	1	3	3	1	3		1
ENTL ACCEL	0	0	0	0	0	0		0

*1-LOADED OPS-2 DAP Configuration

TABLE 6-1 (Cont)
OAP B CONFIGURATIONS

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

*1-LOADED OPS-2 OAP Configuration

TOP
FRONT COVER 'DAP BOOK'

DAP BOOK

HOOK
VELCRO

CAP/SI-E/O/BAS

UNIT P/N	
TGT 28 = 1	Orbiting Vehicle
= 2	Earth ckr
= 3	Earth tgt
	Input CAT (+90)
	LCR (+180) * = (east)
	ALV (-20000.0)
	(-3448.0)
= 4	Sun ckr
= 5	Celestial tgt
	Input RA (0-359.99)
	DEC (+90)
= 11-12	Ray Stars
BODY VECS = 1	1st
= 2	2d
= 3	3d
= 4	4th (-2- below +3)
= 5	Optional
	Input P (0-359.99)
	(272-359.99, 0-90)
0 Input CM =	CM (0-359.99)
MCN AXIS = 1	1

CAP/SI-E/O/BAS

E29 DAP CONFIG	
ENTL ACCEL = 0	0-tilt alone
= 1	Not used
= 2	Not used
= 3	Not used
= 4	Not used
= 5	Not used
EXT OPT = 1	Normal
= 2	Rose only
= 3	Tail only

TOP
BACK OF FRONT COVER
'DAP BOOK'

TOP

DAP PURPOSE

- A1 - NOMINAL
- ZLV
- IMU ALIGN
- TAIL ONLY CONTROL
- BACKOUT
- PRE/POST PAM DEPLOY
- OMS BURN
- TAIL-TO-SUN
- LOSS OF VERN
- A2 - PIC
- A3 - RCS NOT FIRE
- A4 - GS
- A5 - IMU ROTATION
- A6 - LOSS OF VERN
- (TAIL ONLY)
- A7 - (Track)
- A8 - IUS DEPLOY

CAP/31-E/O/BAS

A1

TOP

DAP A1

A1

PURPOSE:

- ZLV
- IMU ALIGN
- TAIL ONLY CONTROL
- BACKOUT
- PRE/POST PAM DEPLOY
- OMS BURN
- TAIL-TO-SUN
- LOSS OF VERN
- (NOSE & TAIL)

TRANSLATION
PULSE

ROTATION
OSC RT

NORM
VERN
NORM
VERN
NORM
VERN

DEADBAND
ATT

NORM
VERN
NORM
VERN

12 JET OFF

13

14 CNTRL ACCEL

CAP/31-E/O/BAS

CAP/31-E/O/BAS

A2



A1

DAP A2

PURPOSE:

PTC

CAP/SI-E/O/BAS



TOP



A2

DAP A3

PURPOSE:

RCS NOT FIRE

CAP/SI-E/O/BAS



TOP

A2

TRANSLATION
PULSE

0-1 0 1	1	TRANSLATION	
0-1 0 1	2	ROTATION	
0-1 0 1	3	BSC RT	NORM
0-1 0 1	4		VERN
0-1 0 1	5	PULSE	NORM
0-1 0 1	6		VERN
0-1 0 1	7	COMP	NORM
0-1 0 1	8		VERN

DEADBAND
ATT NORM
VERN

0-1 0 1	10	RATE	NORM
0-1 0 1	11		VERN

0-1 0 1	12	JET OPT	P
0-1 0 1	13		V

0 14 CNTL ACCEL

CAP/SI-E/O/BAS

A3

TOP

A3

TRANSLATION
PULSE

0-1 0 1	1	TRANSLATION	
0-1 0 1	2	ROTATION	
0-1 0 1	3	BSC RT	NORM
0-1 0 1	4		VERN
0-1 0 1	5	PULSE	NORM
0-1 0 1	6		VERN
0-1 0 1	7	COMP	NORM
0-1 0 1	8		VERN

DEADBAND
ATT NORM
VERN

0-1 0 1	10	RATE	NORM
0-1 0 1	11		VERN

0-1 0 1	12	JET OPT	P
0-1 0 1	13		V

0 14 CNTL ACCEL

CAP/SI-E/O/BAS

A4

TOP
 + A3 +

DAP A4

PURPOSE:
 GG

CAP/SI-E/O/BAS

TOP
 + +

TOP

+ A4 +

DAP AS

PURPOSE:
 IMJ ROTATION

CAP/SI-E/O/BAS

TOP
 + +

TOP

(reduced copy)

TOP
 + +

A4

0.1 0	1	TRANSLATION PULSE
0.2 0	2	ROTATION DSC RT NORM VERN
0.3 0	3	ROTATION DSC RT NORM VERN
0.4 0	4	PULSE NORM VERN
0.5 0	5	PULSE NORM VERN
0.6 0	6	COMP NORM VERN
0.7 0	7	COMP NORM VERN
1.0 0	8	DEADBAND ATT NORM VERN
0.2 0	9	DEADBAND ATT NORM VERN
0.1 0	10	RATE NORM VERN
0.1 0	11	RATE NORM VERN
	12	JET OPT P
	13	JET OPT P
0	14	CNTL ACCEL

CAP/SI-E/O/BAS

TOP
 + A5 +

TOP

+ A4 +

A5

0.1 0	1	TRANSLATION PULSE
0.2 0	2	ROTATION DSC RT NORM VERN
0.3 0	3	ROTATION DSC RT NORM VERN
0.4 0	4	PULSE NORM VERN
0.5 0	5	PULSE NORM VERN
0.6 0	6	COMP NORM VERN
0.7 0	7	COMP NORM VERN
1.0 0	8	DEADBAND ATT NORM VERN
0.2 0	9	DEADBAND ATT NORM VERN
0.1 0	10	RATE NORM VERN
0.1 0	11	RATE NORM VERN
	12	JET OPT P
	13	JET OPT P
0	14	CNTL ACCEL

CAP/SI-E/O/BAS

TOP
 + A6 +

A6

TOP

A5

DAPA6

PURPOSE:

LOSS OF VERN
(TAIL ONLY)

CAP/ST-E/O/BAS

TOP

A6

DAPA7

PURPOSE: (Blank)

CAP/ST-E/O/BAS

TOP

(reduced copy)

A6

TRANSLATION
PULSE

0-1 0 1

ROTATION
DSC RT NORM
VERN

0-1 0 2

PULSE NORM
VERN

0-1 0 3

COMP NORM
VERN

0-1 0 4

DEADBAND
ATT NORM
VERN

0-1 0 5

0-1 0 6

0-1 0 7

0-1 0 8

0-1 0 9

RATE NORM
VERN

0-1 0 10

0-1 0 11

JET OPT P
Y

0-1 0 12

0-1 0 13

0-1 0 14

CNTL ACCEL

CAP/ST-E/O/BAS

A7

TOP

A7

TRANSLATION
PULSE

0-1 0 1

ROTATION
DSC RT NORM
VERN

0-1 0 2

PULSE NORM
VERN

0-1 0 3

COMP NORM
VERN

0-1 0 4

DEADBAND
ATT NORM
VERN

0-1 0 5

0-1 0 6

RATE NORM
VERN

0-1 0 7

0-1 0 8

0-1 0 9

JET OPT P
Y

0-1 0 10

0-1 0 11

CNTL ACCEL

0-1 0 12

0-1 0 13

CAP/ST-E/O/BAS

A8

+ A7 +
 OAP A8
 PURPOSE:
 EUS DEPLOY

CAP/SI-E/O/BAS

+ TOP +
 + A8 +

CAP/SI-E/O/BAS

+ TOP +
 (reduced copy)

TOP +
 A8
 TRANSLATION PULSE
 0-2 1
 ROTATION
 0-2 2 DSC RT NORM
 0-2 3 VERN
 0-2 4 PULSE NORM
 0-2 5 VERN
 0-2 6 COMP NORM
 0-2 7 VERN
 DEADBAND
 1-0 8 ATT NORM
 1-0 9 VERN
 0-2 10 RATE NORM
 0-2 11 VERN
 1 12 JET OPT P
 1 13 V
 0 14 ENTL ACCEL

CAP/SI-E/O/BAS

+ TOP +
 + +

CAP PURPOSE

- B1 - NOMINAL
 PRCS (MU ALIGN
 TOP-TO-SUN
 TAIL ONLY CONTRAL
 BACKOUT
 OMS & RCS BURNS
- B2 - LOSS OF VERN
 (TAIL ONLY)
- B3 - LOSS OF VERN;
 CG HMYR
- B4 - PAR DEPLOY
 PRISSEE DEPLOY
- B5 - CGAS CAL

CAP/SI-E/O/BAS

+ B1 +

TOP

DAP B1

PURPOSE:
 PKCS IMU ALIGN
 TOP-TG-SUN
 TAIL ONLY CONTROL BACKOUT
 OMS & RCS BURSTS

B1

TRANSLATION			
PULSE	15	0-0-2	
ROTATION			
DSC RT	NORM 16	0-0-0	
VERN	17	0-0-0	
PULSE	NORM 18	0-0-0	
VERN	19	0-0-0	
COMP	NORM 20	0-0-0	
VERN	21	0-0-0	
DEADBAND			
ATT	NORM 22	1-1-1	
VERN	23	1-1-1	
RATE	NORM 24	0-0-0	
VERN	25	0-0-0	
JET OPT	P 26		1
	Y 27		1
CNTL ACCEL	28		0
CAP/SI-E/O/BAS			

CAP/SI-E/O/BAS

B2

TOP

TOP

B1

B2

DAP B2

PURPOSE:
 LOSS OF VERN
 (TAIL ONLY)

TRANSLATION			
PULSE	15	0-0-2	
ROTATION			
DSC RT	NORM 16	0-0-0	
VERN	17	0-0-0	
PULSE	NORM 18	0-0-0	
VERN	19	0-0-0	
COMP	NORM 20	0-0-0	
VERN	21	0-0-0	
DEADBAND			
ATT	NORM 22	1-1-1	
VERN	23	1-1-1	
RATE	NORM 24	0-0-0	
VERN	25	0-0-0	
JET OPT	P 26		1
	Y 27		1
CNTL ACCEL	28		0
CAP/SI-E/O/BAS			

CAP/SI-E/O/BAS

B3

TOP

82

OAP 83

PURPOSE:
LOSS OF VERN
(NOSE & TAIL)
GG MOV

CAP/SI-E/O/BAS

TOP

83

OAP 84

PURPOSE:
PAR DEPLOY
FPISBEE DEPLOY

CAP/SI-E/O/BAS

TOP

(reduced copy)

83

TOP

TRANSLATION		
PULSE	15	0.0 2
ROTATION		
BSC RT	NORM 16	0.0 0 0 0
	VERN 17	0.0 0 0 0
PULSE	NORM 18	0.0 0 0 0
	VERN 19	0.0 0 0 0
COMP	NORM 20	0.0 0 0 0
	VERN 21	0.0 0 0 0
DEADBAND		
ATT	NORM 22	0.0 0 0 0
	VERN 23	0.0 0 0 0
RATE	NORM 24	0.0 0 0 0
	VERN 25	0.0 0 0 0
JET OPT	P 26	1
	V 27	1
CNTL ACCEL	28	0
CAP/SI-E/O/BAS		

84

TOP

85

B4

TRANSLATION		
PULSE	15	0.0 2
ROTATION		
BSC RT	NORM 16	0.0 0 0 0
	VERN 17	0.0 0 0 0
PULSE	NORM 18	0.0 0 0 0
	VERN 19	0.0 0 0 0
COMP	NORM 20	0.0 0 0 0
	VERN 21	0.0 0 0 0
DEADBAND		
ATT	NORM 22	0.0 0 0 0
	VERN 23	0.0 0 0 0
RATE	NORM 24	0.0 0 0 0
	VERN 25	0.0 0 0 0
JET OPT	P 26	1
	V 27	1
CNTL ACCEL	28	0
CAP/SI-E/O/BAS		

85



TOP

DAP BS

BS

PURPOSE:

COAS CAL

TRANSLATION PULSE 15 0.0 2

ROTATION					
BSC BT	NORM	16	0.2	0	0
	VERN	17	0.0	0	0
PULSE	NORM	18	0.0	0	0
	VERN	19	0.0	0	0
COMP	NORM	20	0.0	0	0
	VERN	21	0.0	0	0

DEADBAND					
ATT	NORM	22	0.0	0	0
	VERN	23	0.0	0	0

FATE	NORM	24	0.2	0	0
	VERN	25	0.2	0	0

JET OPS	P	26	1		
	V	27	1		

CNTL ACCEL 20 0

CAP/SI-E/O/BAS

CAP/SI-E/O/BAS



TOP



BS

CAP/SI-E/O/BAS



TOP

TOP
BACK COVER "DAP BOOK"



HOOK
VELCRO

CAP/SI-E/O/BAS



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ATTITUDE
TIMELINE

STS 51-E ATTITUDE TIMELINE

ATTITUDE
TIMELINE

Attitude Timeline

REV	MNVR OPTON	DAP	E/S	REMARKS	EVENT	
0-00:50:00	TRK TGT=2 SV=3(90.00, 320.00) OM=100.00	A1 AUTO NORM	BSC 0.200 SB AT 5.00 SB RT 0.20	EARTH 0 90 0 320	LVLH R+220 P+ 0 Y+ 0	FLBD OPENING BIASED -ZLV
0-01:50:00 50:00	TRK TGT=2 SV=3(90.00, 0.00) OM= 90.00	A1 AUTO NORM	BSC 0.200 SB AT 5.00 SB RT 0.20	EARTH 0 90 0 360	LVLH R+180 P+ 0 Y+270	-ZLV -YVV
0-02:20:00	LVLH ROT FREE ROTATION ABOUT +2 AXIS RATE=0.250	A5 LVLH VERN	BSC 0.250 SB AT 1.00 SB RT 0.02			IMU YAW ALIGN
0-02:44:00	LVLH	A5 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 90 0 0	LVLH R+180 P+ 0 Y+270	IMU YAW ALIGN COMPLETION
0-03:20:00 24:14	MNVR R+153.00 P+204.00 Y+ 2.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20	SUN 0 84 0 191		TRANS DIRECT CHECK
0-03:25:00 27:09	TRK TGT=4 SV=5(220.00, 0.00) OM=270.00	A0 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.01	SUN 0 94 0 180	INRTL R+165 P+279 Y+ 25	IUS DEPLOY (0 0-10:01:42 APPROXIMATE)
0-10:02:42	ROT SV=5(0.00, 270.00)	B1 MAN NORM	BSC 0.000 SB AT 3.00 SB RT 0.20		FOY R+165 START P+279 ATT Y+ 25	2.2 FPS SEP PITCH DOWN
0-10:04:02	STOP	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20	SUN 0 20 0 180	INRTL R+191 P+339 Y+359	INERTIAL HOLD
0-10:09:42 11:00	MNVR R+125.00 P+311.00 Y+324.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20	SUN 0 54 0 243		SEP -JRN
0-10:22:00 26:54	TRK TGT=1 IUS SV=3(90.00, 0.00) OM= 0.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20			IUS VIEWING
0-10:45:00	TRK TGT=1 IUS SV=3(305.00, 0.00) OM= 0.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20			WINDOW PROTECT
0-10:59:02	STOP	A1 AUTO VERN	BSC 0.100 SB AT 1.00 SB RT 0.02			INERTIAL HOLD FOR FIN

Attitude Baseline

HEX	MNVR OPTION		DAP	C/S	REMARKS	EVENT
0-11:22:00 35:46	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 146 0 117		IMU ALIGN COAS CAL FAIR A1
0-11:45:00 57:25	TRK TGT+2 BY+3(90.00, 0.00) CM+180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLN R+180 P+ 0 Y+ 0	-ZLV NOISE FWD
0-21:56:00 22:06:03	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 146 0 110		IMU ALIGN FAIR A1
0-22:25:00 38:13	TRK TGT+2 BY+3(90.00, 0.00) CM+180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLN R+180 P+ 0 Y+ 0	-ZLV NOISE FWD
1-01:15:00 02:01:03	MNVR R+386.00 P+161.00 Y+ 30.00	91 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 148 0 195		OMS BURN (HEIGHT MNVR)
1-02:15:00 15:32	TRK TGT+2 BY+3(90.00, 0.00) CM+180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLN R+180 P+ 0 Y+ 0	-ZLV NOISE FWD
1-07:24:00 24:00	MNVR R+272.41 P+ 99.36 Y+353.40	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 90 0 202		TELESAT DEPLOY (0 1-03:04:10) APPROXIMATE)
1-08:07:00 14:33	MNVR R+206.00 P+163.00 Y+ 16.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 150 0 194		EEP BURN
1-08:22:00 24:00	TRK TGT+2 BY+3(90.00, 0.00) CM+180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLN R+180 P+ 0 Y+ 0	-ZLV NOISE FWD (VIEWING)
1-08:33:00 45:31	TRK TGT+2 BY+3(250.00, 30.00) CM+ 27.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 106 0 140	LVLN R+ 27 P+ 20 Y+ 30	WINDOW PROTECT
1-08:49:00	STOP	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 83 0 135	INRTL R+ 31 P+141 Y+289	INERTIAL HOLD FOR FIM
1-09:00:00 11:33	TRK TGT+2 BY+3(90.00, 0.00) CM+180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLN R+180 P+ 0 Y+ 0	-ZLV NOISE FWD

Attitude Timeline

RET	MNVR OPTION	SI	BAP	E/S	REMARKS	EVENT
1/10:01:00 11:00	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 146 0 119		IMU ALIGN PAIR A1
1/10:25:00 37:17	TRK TGT=2 DV=3(90.00, 0.00) OM=180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
1/20:37:00 46:58	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 146 0 120		IMU ALIGN PAIR A1
1/21:00:00 09:47	TRK TGT=2 DV=3(90.00, 0.00) OM= 0.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+ 0 P+180 Y+ 0	-ZLV TAIL FWD
2/03:50:00 04:05:00	TRK TGT=2 DV=5(270.00, 0.00) OM= 90.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 100	LVLH R+ 0 P+ 0 Y+ 90	IMAGE INTENS- IFIER OPS ATT 1
2/04:35:00 35:34	MNVR R+334.00 P+ 97.00 Y+346.00	SI AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 88 0 219		IMAGE INTENS- IFIER OPS ATT 2
2/04:46:00 51:23	MNVR R+175.00 P+275.00 Y+355.00	SI AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 90 0 171		IMAGE INTENS- IFIER OPS ATT 3
2/06:01:00 05:09	MNVR R+237.00 P+269.00 Y+ 10.00	SI AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 93 0 51		IMAGE INTENS- IFIER OPS ATT 4
2/06:20:00 31:41	TRK TGT=2 DV=3(90.00, 0.00) OM=180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
2/08:42:00 51:53	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 147 0 120		IMU ALIGN PAIR A1
2/09:09:00 15:03	TRK TGT=2 DV=3(90.00, 0.00) OM= 0.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+ 0 P+180 Y+ 0	-ZLV TAIL FWD
2/19:10:00 31:48	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 147 0 121		IMU ALIGN PAIR A1

Attitude Baseline

REV	MNVR OPTION	AP	E/S	REMARKS	EVENT
2/19/40:00 50:11	TRK TGT=2 Bv=3C 90.00, 0.00 Om= 0:00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 90 BB RT 0.02 0 0	EARTH LVLM R+ 0 P+180 Y+ 0	-ZLV TAIL FWD
2/22/35:00 41:43	MNVR R+210.00 P+110.00 Y+352.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 90 BB RT 0.02 0 345	SUN	PRESS CONFERENCE
2/23/30:00	FREE DRIFT	A1 MAN NORM	BSC 0.200 BB AT 5.00 BB RT 0.20		PCS HOT PIPE AND PCS C/O
3/01/10:00 19:51	TRK TGT=2 Bv=3C 90.00, 0.00 Om=180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 90 BB RT 0.02 0 0	EARTH LVLM R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
3/03/50:00 04:04:53	MNVR R+214.00 P+322.00 Y+302.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 56 BB RT 0.02 0 182	SUN	PCS REFICEE ADJUST
3/04/15:00 29:29	TRK TGT=2 Bv=3C 90.00, 0.00 Om=180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 90 BB RT 0.02 0 0	EARTH LVLM R+180 P+ 0 Y+ 0	-ZLV NOSE FWD
3/07/24:00 33:46	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 147 BB RT 0.02 0 122	SUN	IMU ALIGN PAIR A1
3/07/45:00 55:26	TRK TGT=2 Bv=3C 90.00, 0.00 Om= 0:00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 90 BB RT 0.02 0 0	EARTH LVLM R+ 0 P+180 Y+ 0	-ZLV TAIL FWD
3/17/53:00 18:18:55	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 147 BB RT 0.02 0 123	SUN	IMU ALIGN PAIR A1
3/18/10:00 21:14	TRK TGT=2 Bv=3C 90.00, 0.00 Om=270.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 176 BB RT 0.02 0 180	SUN INRTL R+207 P+180 Y+ 10	TAIL SUN
3/21/12:00 15:10	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 0 147 BB RT 0.02 0 123	SUN	RECRIP IMU ALIGN
3/21/30:00 33:43	MNVR R+272.00 P+340.00 Y+315.00	B1 AUTO NORM	BSC 0.400 BB AT 3.00 0 30 BB RT 0.20 0 142	SUN	RECRIP IMU VERIF

Attitude Timeline

NET	MNVR OPTION		BAP	E/S	REMARKS	EVENT
3/21:57:00 59:10	MNVR R+246.00 P+ 15.00 Y+ 0.00	DI AUTO NORM	BSC 0.500 BB AT 3.00 BB AT 0.20	SUN 0 15 1 346		DEORBIT BUFN (0 4:00:12 APPROXIMATE)

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PAGE CHANGE NOTICE

JSC-20105

Incorporates 482
No: CAP-305

STS 51-E CREW ACTIVITY PLAN,
FINAL REV A 02/19/85
PCN-1 02/26/85
Sheet 1 of 1

Replace/add the following:

1. Pages 1 and 11
2. Pages 5-7 thru 5-10

File this PCN immediately behind the front cover as a permanent record

Prepared by:

Philip Engel
Book Manager

Approved by:

Elin B. Russell
Head, Crew Activity
Planning Section 2

Elin B. Russell
Chief, Flight Activity Branch

Encls: 6 pages

STS 51-E CREW ACTIVITY PLAN

LIST OF EFFECTIVE PAGES

FINAL 01/09/85
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V.....	CAP/51-E/FIN A	4D-2.....	CAP/51-E/FIN A
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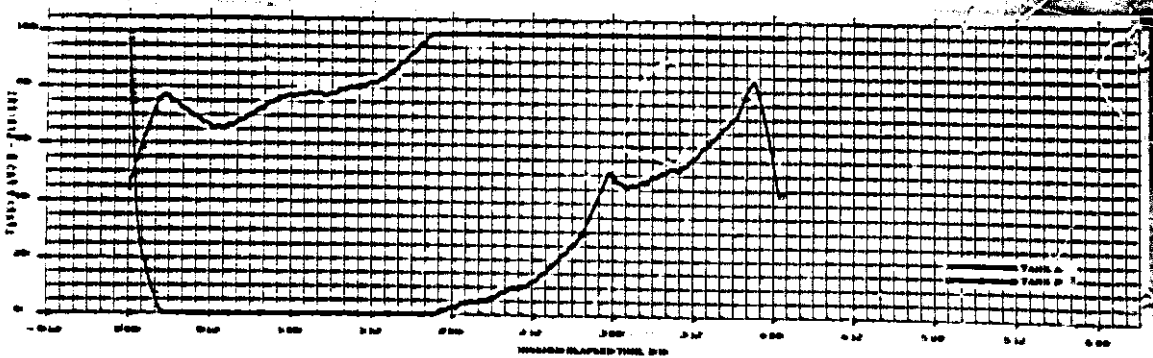
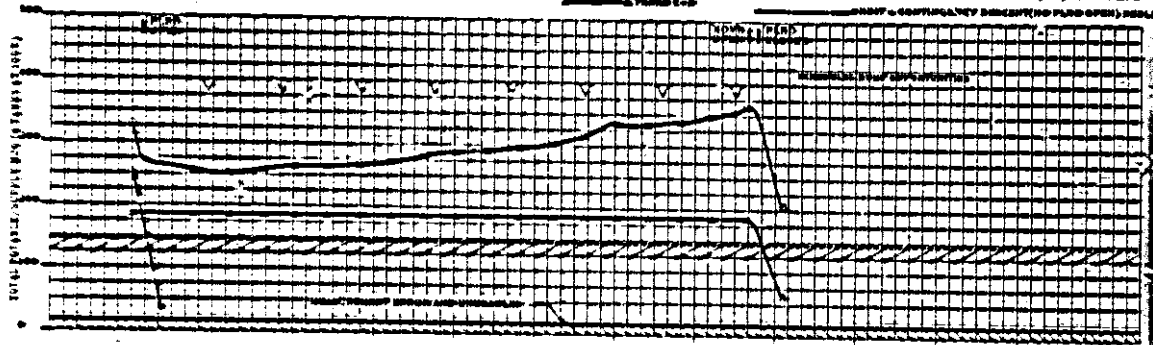
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075 1-11 SUPPLY WATER

5-7

CAP/51-E/FIN A.1

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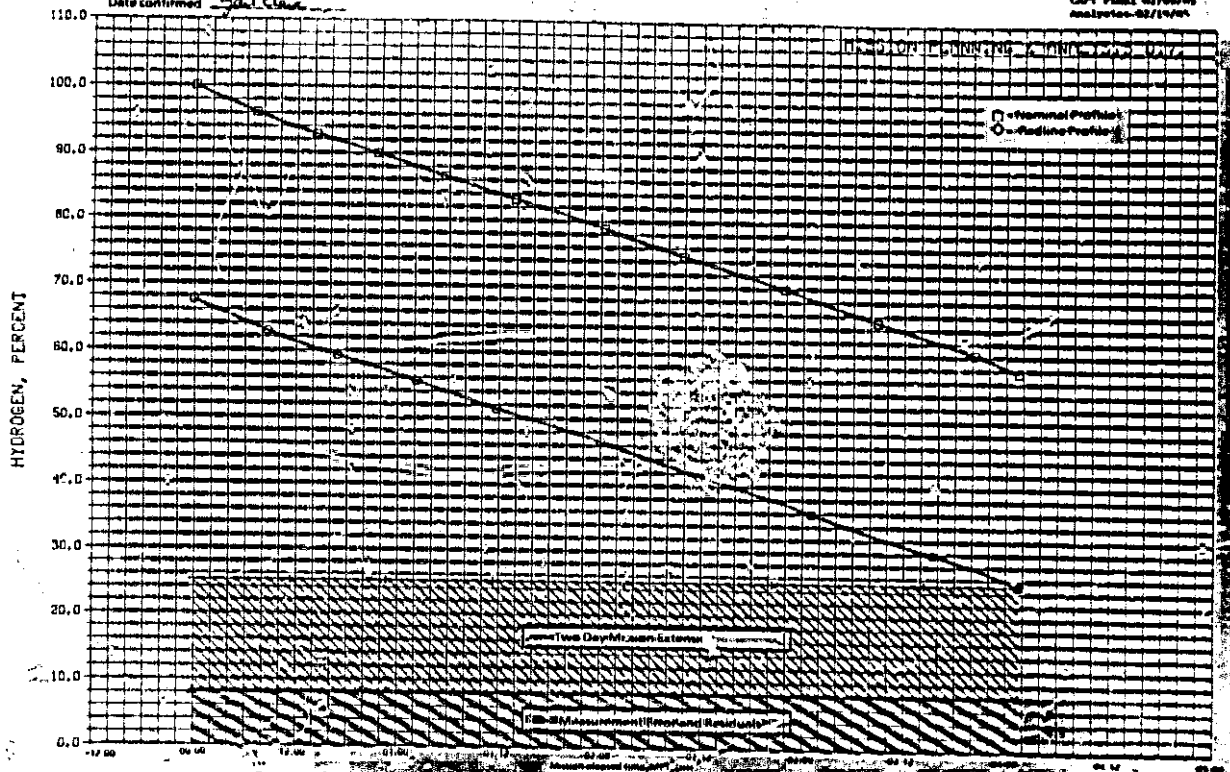
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Procedures Order 2

CAP: Final 02/08/68

Analyses-02/10/68

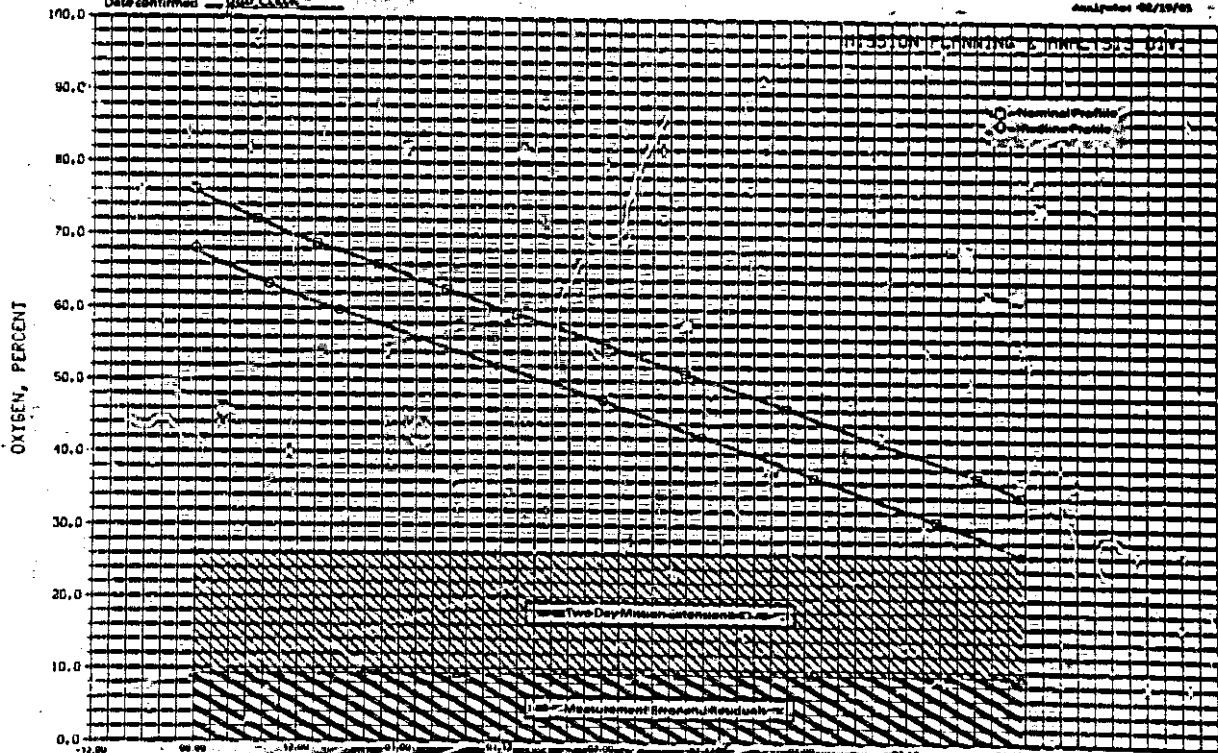


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FINAL

Flight Data File Crew Activity Plan

STS 51-E

Mission Operations Directorate
Operations Division

Final
January 9, 1985

EVENT	CST		
Launch (13:18 GMT)	07:18	Mon	Feb 18
TDRS Deploy	17:20	Mon	Feb 18
TELFAT Deploy	15:24	Tue	Feb 19
Crew Press Conference	06:08	Thu	Feb 21
KSC Landing	08:21	Fri	Feb 22

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National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas

MISSION OPERATIONS DIRECTORATE

STS 51-E CREW ACTIVITY PLAN

FINAL
January 9, 1985

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ACKNOWLEDGMENTS

The following individuals contributed significantly to preparing the 51-E Crew Activity Plan:

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VI.....	CAP/5	E/E/IN		4D-3.....	CAP/5	E/E/IN
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A5.....	6-7	CAP/51-E/O/BAS
DAP A6.....	6-8	CAP/51-E/O/BAS
A6.....	6-8	CAP/51-E/O/BAS
DAP A7.....	6-8	CAP/51-E/O/BAS
A7.....	6-8	CAP/51-E/O/BAS
DAP A8.....	6-9	CAP/51-E/O/BAS
A8.....	6-9	CAP/51-E/O/BAS
(Blank).....	6-9	CAP/51-E/O/BAS
DAP 5 TOC.....	6-9	CAP/51-E/O/BAS
DAP B1.....	6-10	CAP/51-E/O/BAS
B1.....	6-10	CAP/51-E/O/BAS
DAP B2.....	6-10	CAP/51-E/O/BAS
B2.....	6-10	CAP/51-E/O/BAS
DAP B3.....	6-11	CAP/51-E/O/BAS
B3.....	6-11	CAP/51-E/O/BAS
DAP B4.....	6-11	CAP/51-E/O/BAS
B4.....	6-11	CAP/51-E/O/BAS
DAP B5.....	6-12	CAP/51-E/O/BAS
B5.....	6-12	CAP/51-E/O/BAS
(Blank).....	6-12	CAP/51-E/O/BAS
DAP Book (Back Cover).....	6-13	CAP/51-E/O/BAS

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INTRODUCTION

The STS 51-E 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. For continuity, the entire flight is shown in the summary level timeline.

The section entitled 'Crew Activity Plan Notes (constraints and guidelines)', included in CAPs for previous flights, has been published as a generic document entitled 'Timeline Format Definitions and Standard Notes/JSC-19933'.

This on-orbit timeline satisfies the objectives specified in the flight Definition and Requirements Directive and the requirements of the STS 51-E Flight Requirements Document.

The flight profile (Cycle 2 trajectory data) used for this Crew Activity Plan is for a launch date of February 18, 1985 at 13:18 GMT. Orbiter inertial attitudes are expressed relative to Mean of 1950 (M50) reference frame.

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STS 51-E OVERVIEW

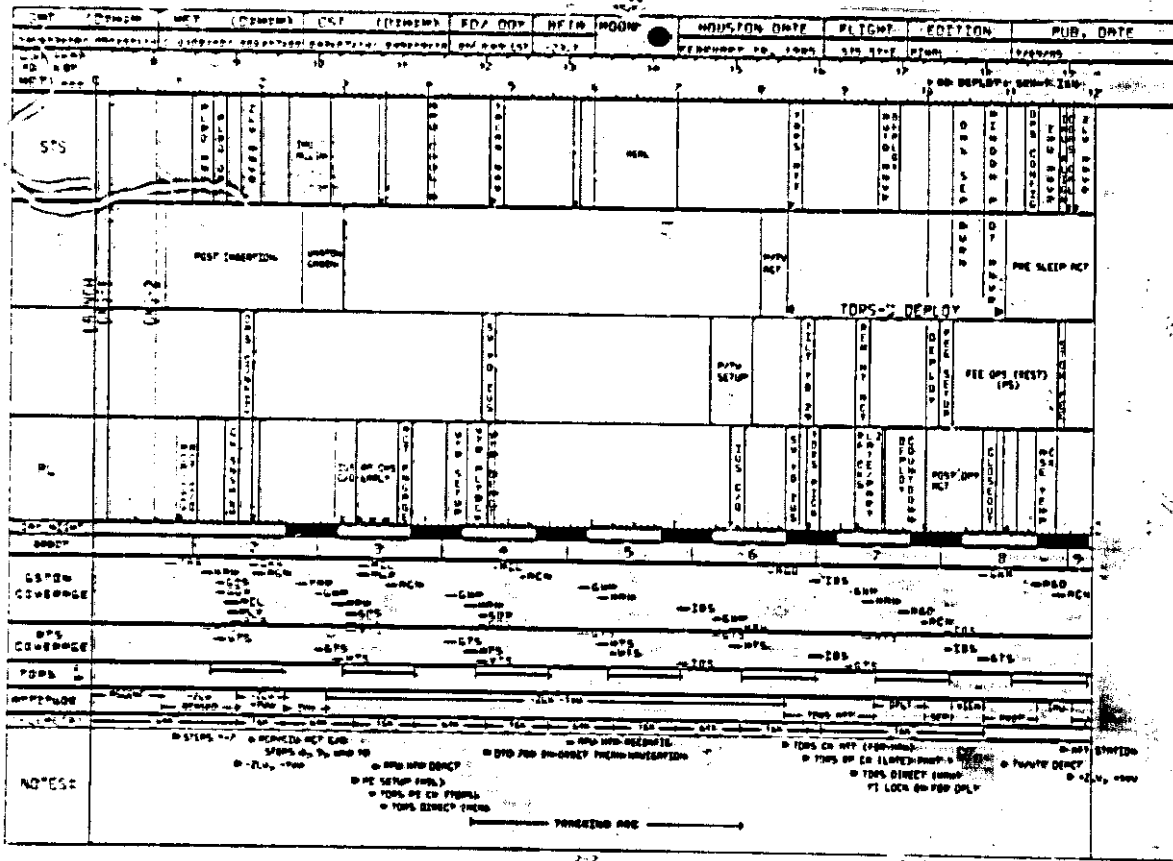
OVERVIEW

FLIGHT		975 51-7		EDITION		97000		PUB. DATE		1/05/85	
FC 1											
FC 2	SLEEP										
FC 3	SLEEP										
FC 4	SLEEP										
FC 5	SLEEP										

SUMMARY
TIMELINE

SUMMARY TIMELINE

SUMMARY TIMELINE



GMT	(DZ0000)	MPT	(DZ0000)	CST	(DZ0000)	PST	(DZ0000)	REF	(DZ0000)	MOON	(DZ0000)	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
U.S. TIME	20	21	22	23	24	25	26	27	28	29	30	31	12	13	14
MPT	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400
STS											01	02	03	04	05
PRE SLEEP ACT											06	07	08	09	10
<p style="text-align: right;">D-ZU, 1960</p>															
NOTES:															

UNIT (DENIED)	NET (DENIED)	CST (DENIED)	PD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
HOUSTON DATE						February 70	0805	0700	0805/05
NET 0000-E		P70 MTP		P70 MTP		P70 MTP		P70 MTP	
SPS					P70 MTP				SLEEP
				P70 MTP		P70 MTP			
SCOPAS 014								P70 MTP	
P	PRE OPI (WEST) (05)	PRE OPI (LAMP) (05)				P70 MTP	PRE OPI (WEST) (05)	PRE OPI (EEST) (05)	
<div style="display: flex; justify-content: space-around;"> 0000 33 34 35 36 37 38 39 40 </div>									
ESPDS COVERAGE	-00	-00	-00	-00	-00	-00	-00	-00	-00
DPS COVERAGE	-05	-05	-05	-05	-05	-05	-05	-05	-05
PPDS			010 00		010 00		010 00		010 00
NOTES	<p style="text-align: center;">© 1950-1970 © 050 006 DRAK INTERNATIONAL</p>								

COMP	17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	MONTH	DAY	YEAR	MOON	MOON DATE	FLIGHT	EDITION	PUB. DATE
U.S. AIR FORCE	12	12	12	12	12	12	12	12	12
STS	SLEEP					POST SLEEP ACT	PFT ACT		
P.L.									POST SLEEP ACT
COVERAGES	<p>12-12-12 12-12-12 12-12-12 12-12-12 12-12-12 12-12-12 12-12-12 12-12-12 12-12-12</p>								
NOTES:									

GMT (DIMIN)	NET (DIMIN)	CST (DIMIN)	FD/DOY	OSTM	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
052103100/053103110	053103100/053103110	052103100/052103110	052103100/052103110	052103100/052103110	10.4	FEBRUARY 21, 1968	STS 51-L	Final	1-09/68	
052103100	053103110	052103100	052103100	052103100	10.4	FEBRUARY 21, 1968	STS 51-L	Final	1-09/68	
NET 0000										
STS	FEE C/O	Z L V M M M M M M M M M	MEAL	MCS DUNK	Z L V M M M M M M M M M			SLEEP		
				CANIM-DUN				PRE SLEEP ACT		
PL	FEE OPS (REST) (MS)	FEE OPS (ENER) (MS)		FEE OPS (MCS) (PS)	FEE OPS (C/M) (PS)					
0000/00										
0001	49	50	51	52	53	54	55	56		
STDO COVERAGE	-RCH -RCH -DOR -DOR -MEL -MEL -MEL -MEL	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	-RCH -RCH -RCH -RCH -RCH -RCH -RCH -RCH	
OPS COVERAGE	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	-GTS -GTS -GTS -GTS -GTS -GTS -GTS -GTS	
TDPS										
ATTITUDE	-ZLV -AW	-ZLV -AW	-ZLV -AW	-ZLV -AW	-ZLV -AW	-ZLV -AW	-ZLV -AW	-ZLV -AW		
NOTES:										

GMT (DINIM)	MET (DINIM)	CST (DINIM)	FD/DOY	BETA MOON	HOUSTON URTF	FLIGHT	EDITION	PUB. DATE	
853113104 047011118	000100004 000100000	000100000 000100000	000100000 000100000	000100000 000100000	000100000 000100000	000100000 000100000	000100000 000100000	000100000 000100000	
051 1653	05	10	12	14	15	16	17	18	
FD 185									
MET 1000	1	2	3	4	5	6	7	8	
STS									
SECURE W BURN RSC LANDING (4701003)									
PL									
	65	66	67	68	69	70	71	72	
ESTDN COVERAGE	—GPP —GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH	—GPP —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH —RCH
VTS COVERAGE	—VTS —VTS —VTS —VTS —VTS —VTS —VTS —VTS —VTS —VTS —VTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS	—GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS —GTS
YOPS									
APPITUDE									
	SECURITY PREP								
NOTES:									

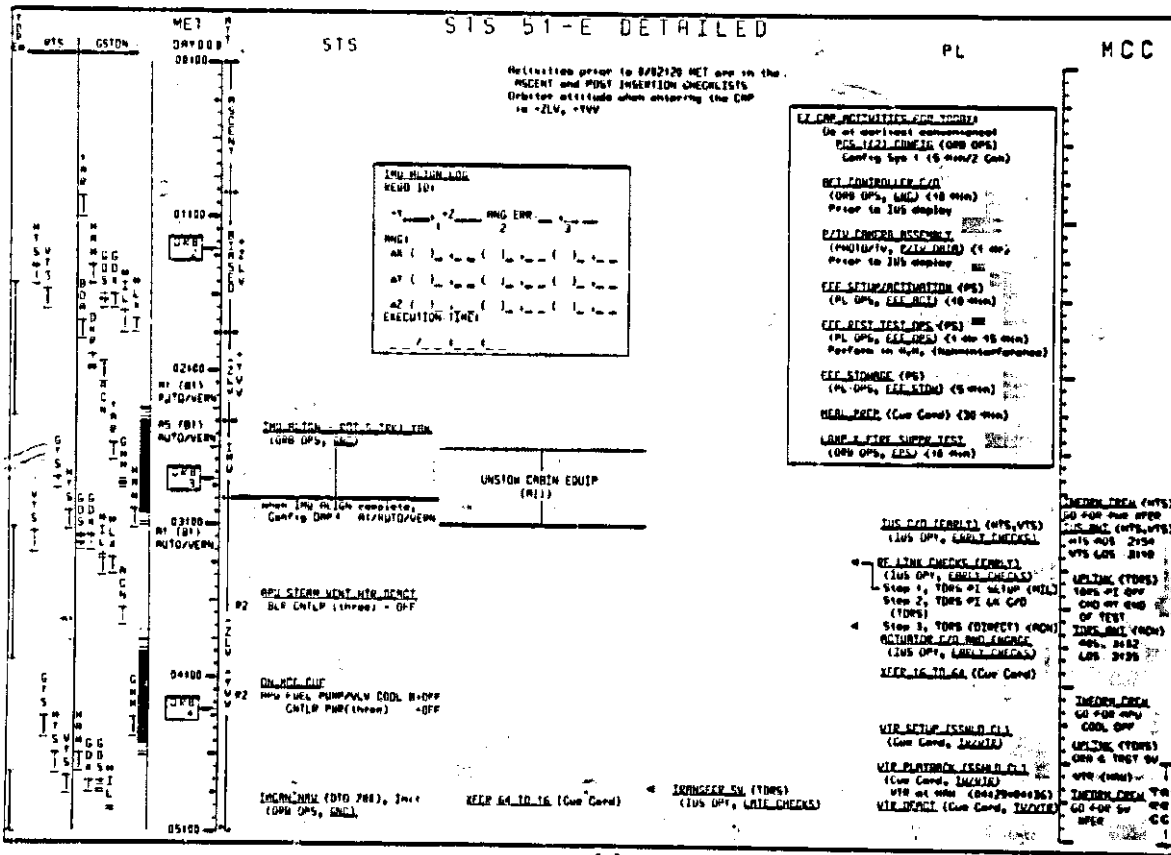
DETAILED TIMELINE

DETAILED
TIMELINE

DETAILED TIMELINE

STS 51-E DETAILED

Initiation prior to 04:27:20 MET end on the
ASCENT and POST INSERTION CHECKLISTS
Orbiter attitude when entering the CAP
is -ZLV, +VVW

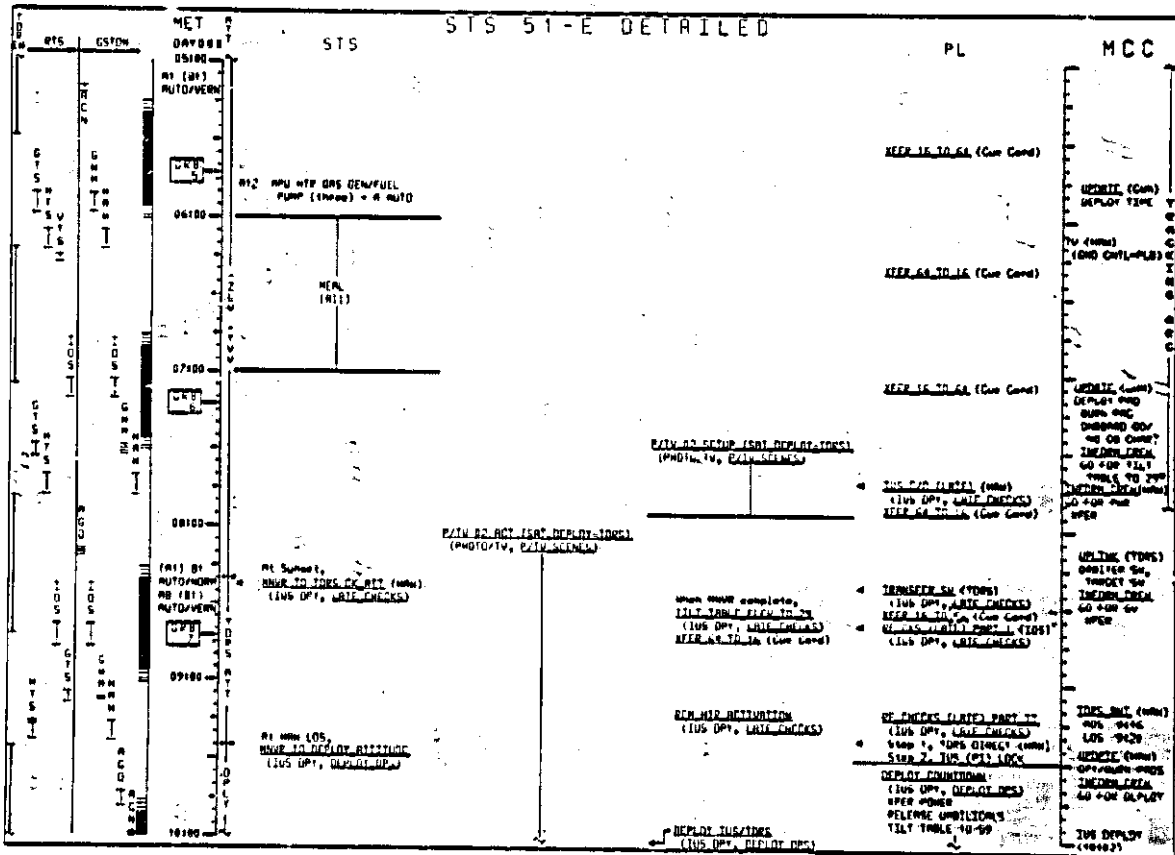


PL MCC

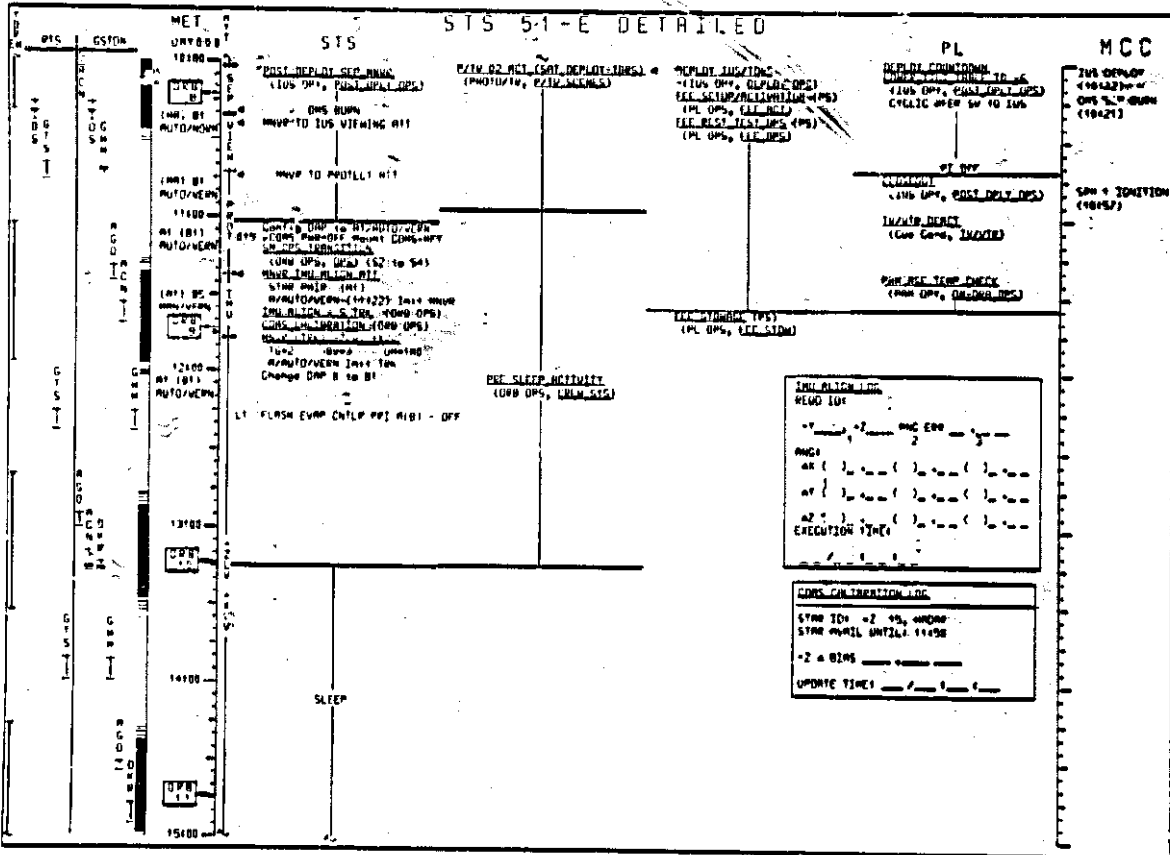
- 04:25 (RI) AUTO/VERN:**
 Unstow cabin equipment
 (ORR OPS, SMC) (10 min)
 Config Sys 1 (S Mode2 Con)
- 04:27 (RI) AUTO/VERN:**
 Unstow cabin equipment
 (ORR OPS, SMC) (10 min)
 Prior to 315 display
- 04:27 (RI) AUTO/VERN:**
 Post Insertion Assembly
 (ORR OPS, SMC) (10 min)
 Prior to 315 display
- 04:27 (RI) AUTO/VERN:**
 External Stowage
 (ORR OPS, SMC) (10 min)
- 04:27 (RI) AUTO/VERN:**
 External Stowage
 (ORR OPS, SMC) (10 min)
- 04:27 (RI) AUTO/VERN:**
 External Stowage
 (ORR OPS, SMC) (10 min)
- 04:27 (RI) AUTO/VERN:**
 External Stowage
 (ORR OPS, SMC) (10 min)
- 04:27 (RI) AUTO/VERN:**
 External Stowage
 (ORR OPS, SMC) (10 min)

- 04:25 (RI) AUTO/VERN:**
 Check sign. wind air sensct
 (ORR OPS, SMC) (10 min)
- 04:27 (RI) AUTO/VERN:**
 On-nose pup
 (ORR OPS, SMC) (10 min)
- 04:25 (RI) AUTO/VERN:**
 Unstow cabin equip (RI)
- 04:27 (RI) AUTO/VERN:**
 Unstow cabin equip (RI)
- 04:32 (RI) AUTO/VERN:**
 Unstow cabin equip (RI)

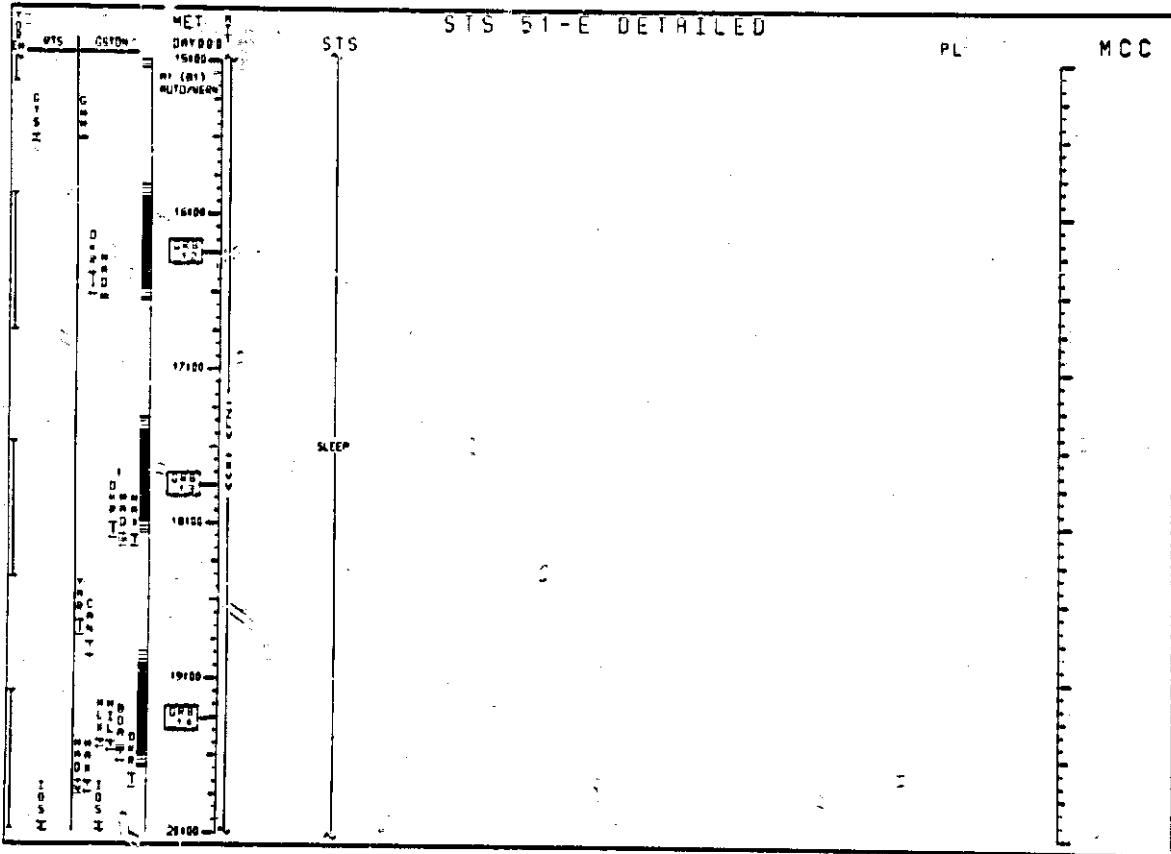
STS 51-E DETAILED



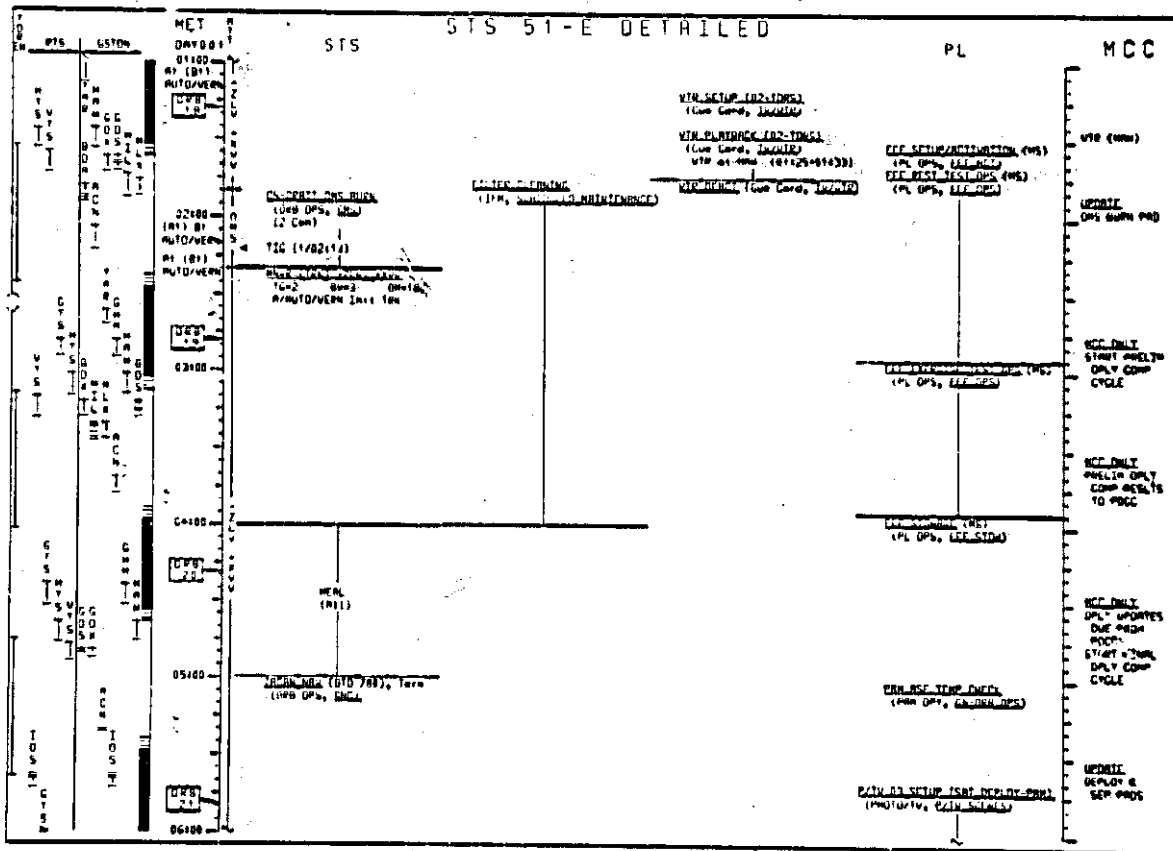
STS 51-E DETAILED



STS 51-E DETAILED



STS 51-E DETAILED



STS 51-E DETAILED

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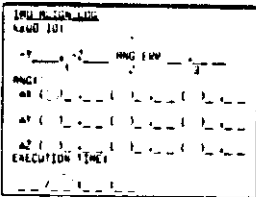
PL

MCC

P/W 03 00 (SRT DEPLOY-PH) (PHOTO 10, P/W 03 00)

P/W 03 00 (SRT DEPLOY-PH) (PHOTO 10, P/W 03 00)

UPLINK ONLY TIME
6 SEP 1976



DEPLOY REVIEW (PHOTO 10, P/W 03 00)

MCC ONLY
START ONLY
ONLY COMP
CYCLE

SEE SCHEMATIC (PHOTO 10) (PL OPS, ILLIUM)
SEE RESI ILLIUM OPS (PL OPS, ILLIUM)

HOW TO DEPLOY ATT

RECH SEC START/SUNSHIELD OF SPIN SEQUENCE START

TV (MCC) (OHO OHL-OHO)

4 DEPLOY (100000)

4 SEP BURN (100019)

HOW PL HON ATT

HOW WINDON PROTECT ATT

4 PH

Change OMP 8 to 01
IML BURN (1000) ILLIUM
A1 (B1) AUTO/VERN (1000) ILLIUM
A2 (B1) AUTO/VERN (1000) ILLIUM
IML BURN (1000) ILLIUM
(OHO OPS, ILLIUM)
IML BURN (1000) ILLIUM
(OHO OPS, ILLIUM)

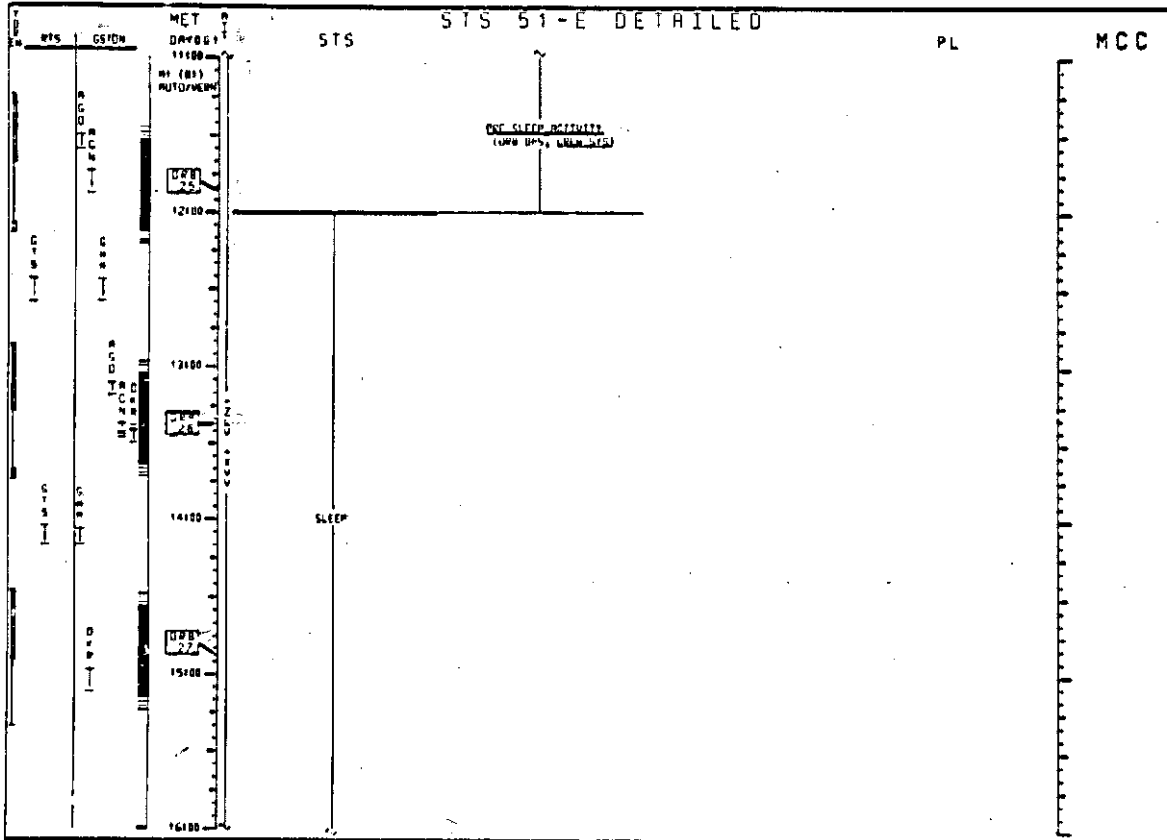
PRE SLEEP ACTIVITY (OHO OPS, ILLIUM)

DECONTAMINATION (PL OPS, ILLIUM)

IML BURN (1000) ILLIUM
A1 (B1) AUTO/VERN (1000) ILLIUM
IML BURN (1000) ILLIUM (OHO OPS)
A2 (B1) AUTO/VERN (1000) ILLIUM
A1 (B1) AUTO/VERN (1000) ILLIUM

PRE SLEEP ACTIVITY (OHO OPS, ILLIUM)

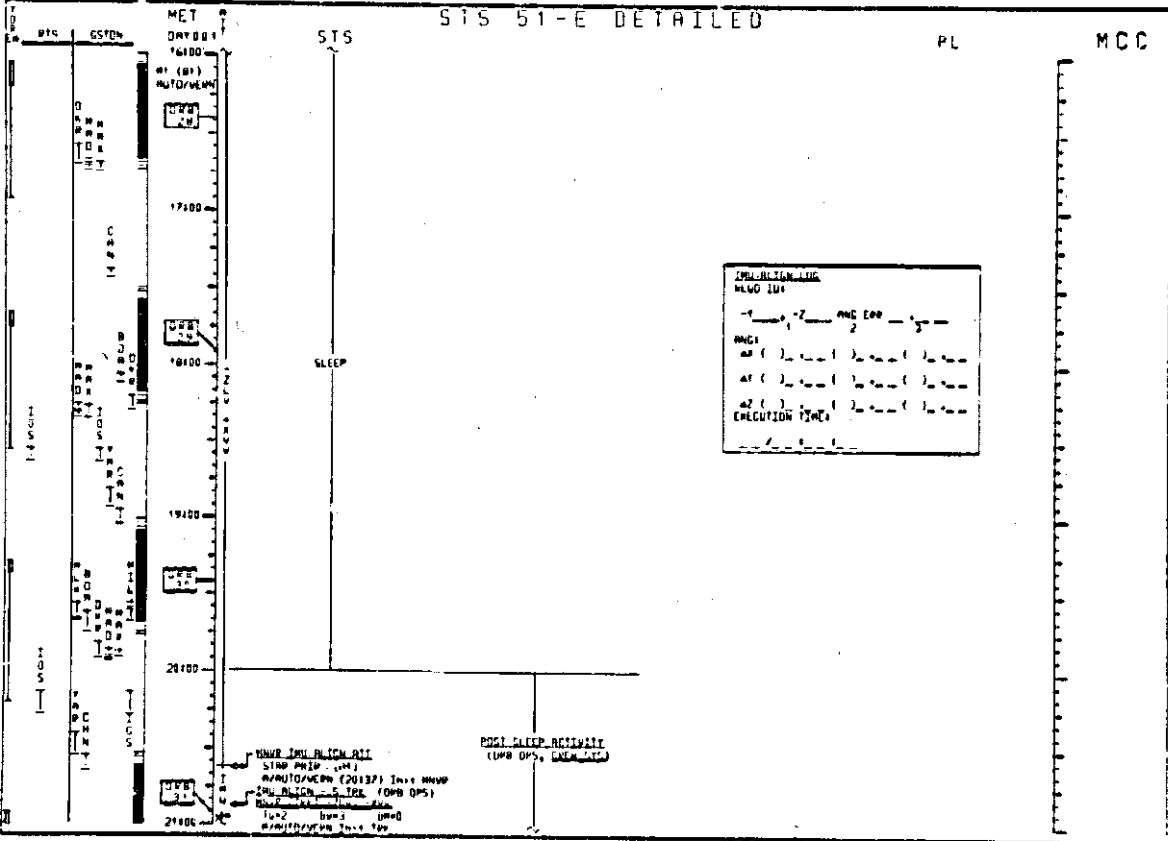
DECONTAMINATION (PL OPS, ILLIUM)



SIS 51-E DETAILED

PL

MCC



PIC
GSTDN
MET
SLEEP

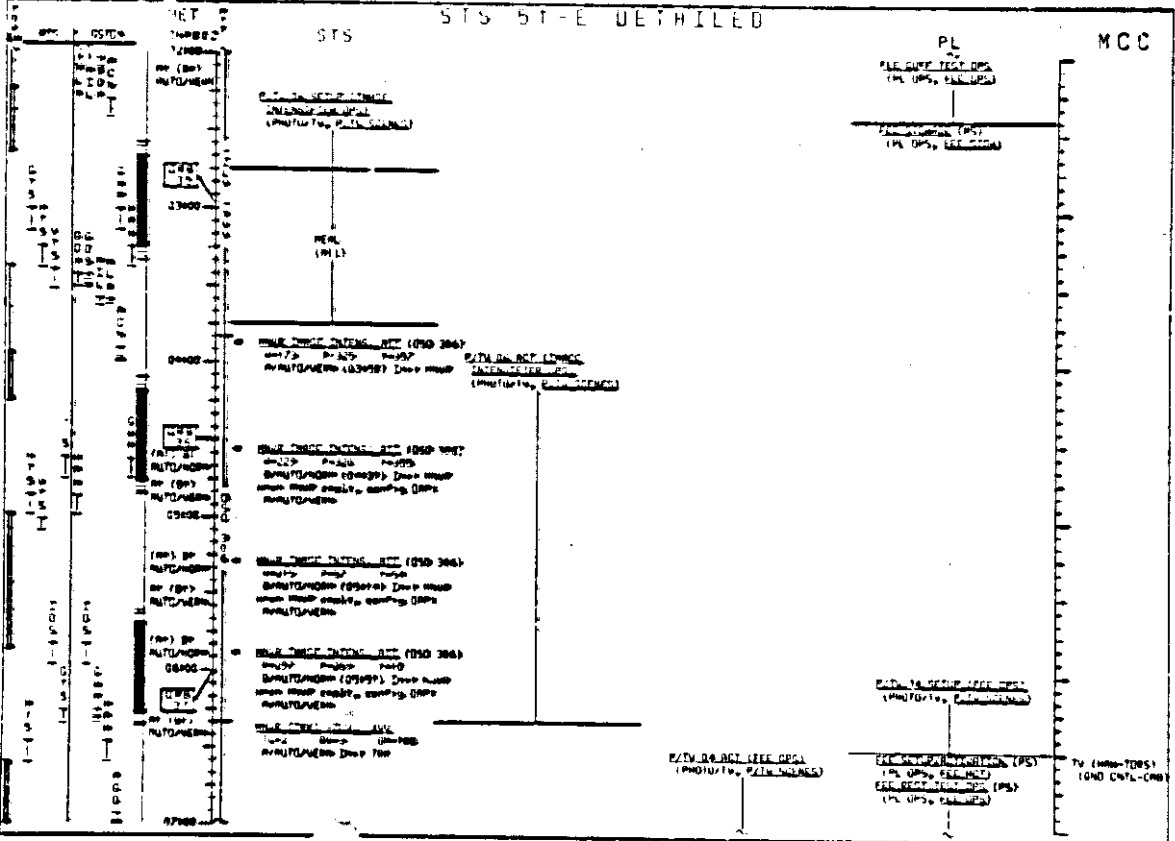
16100
17100
18100
19100
20100
21000

INSTR. EXEC. TIME
SLEEP (100ns)
AND1 (100ns) AND2 (100ns)
EXECUTION TIME (100ns)

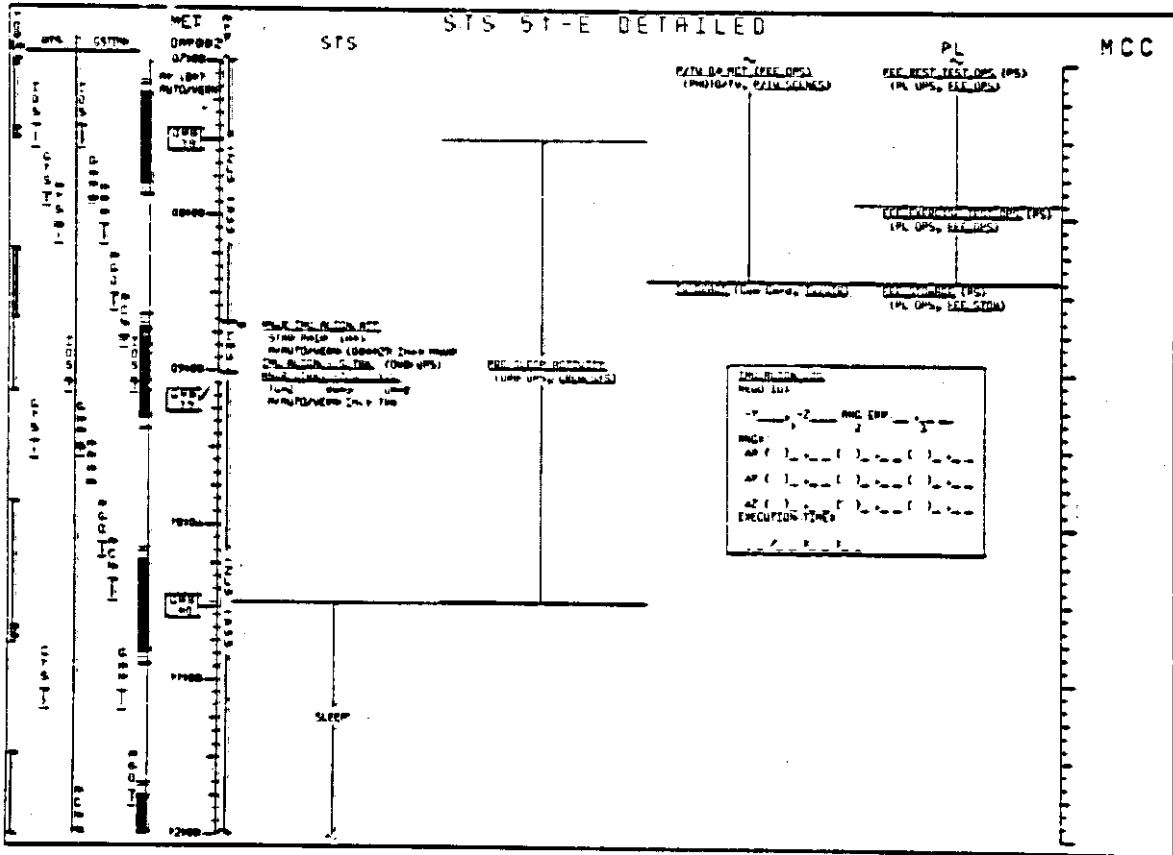
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STS 5T-E DETAILED



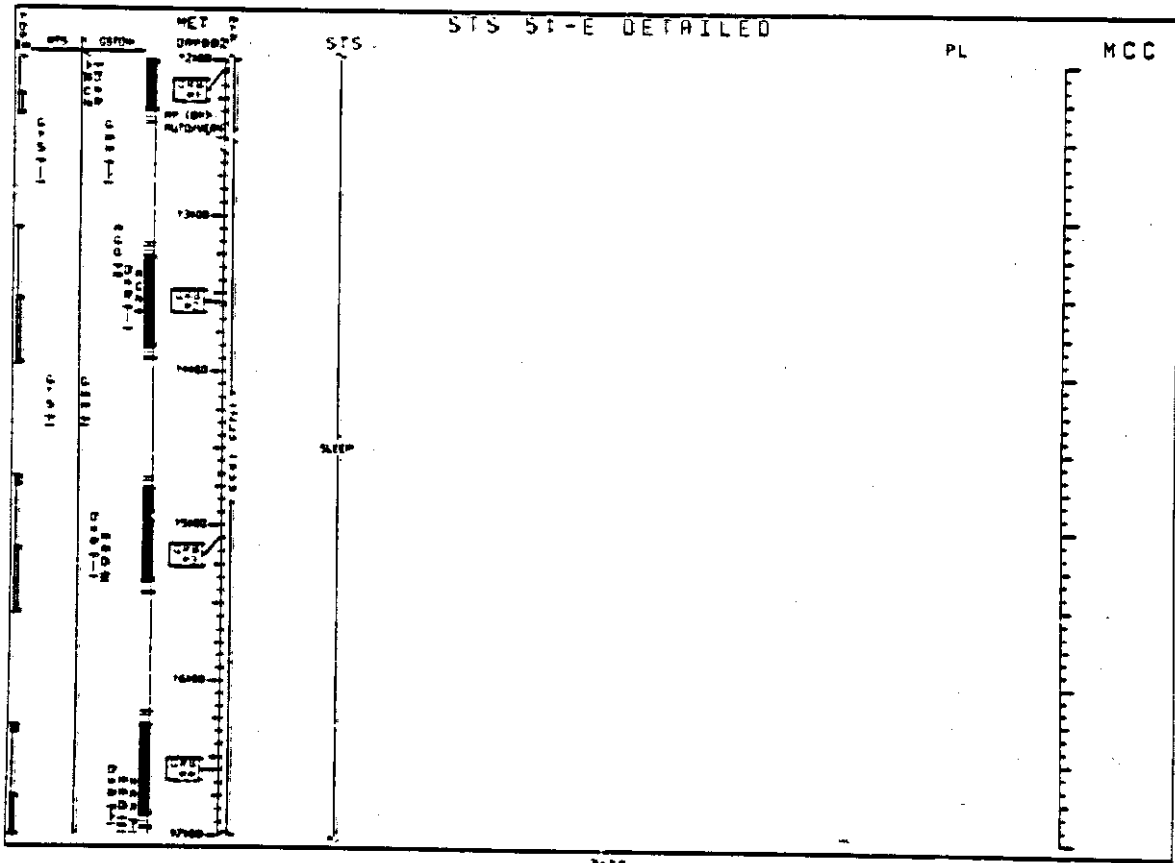
STS 51-E DETAILED



STS 51-E DETAILED

PL

MCC



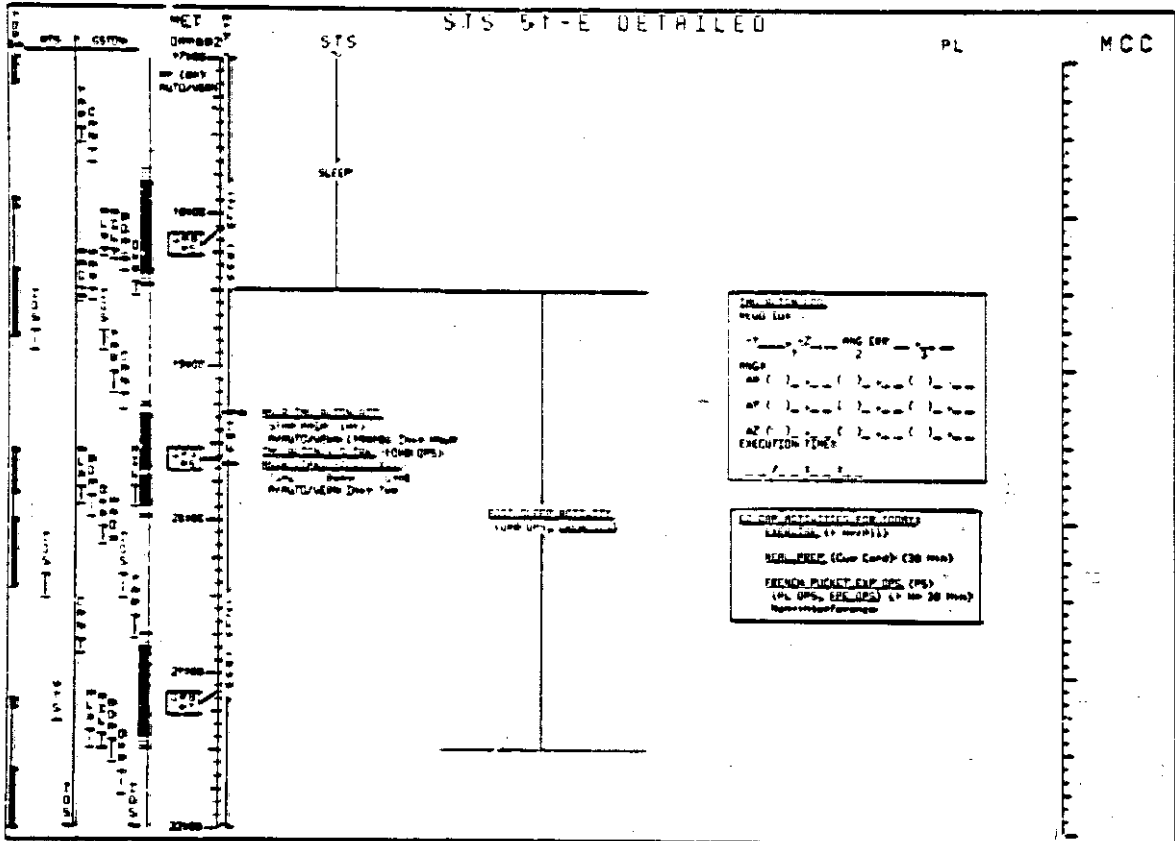
STS 51-E DETAILED

PL

MCC

STS

SLEEP



EXECUTION TIMES

STATION 1: _____

STATION 2: _____

STATION 3: _____

STATION 4: _____

STATION 5: _____

STATION 6: _____

STATION 7: _____

STATION 8: _____

STATION 9: _____

STATION 10: _____

EXECUTION TIMES

STATION 1: _____

STATION 2: _____

STATION 3: _____

STATION 4: _____

STATION 5: _____

STATION 6: _____

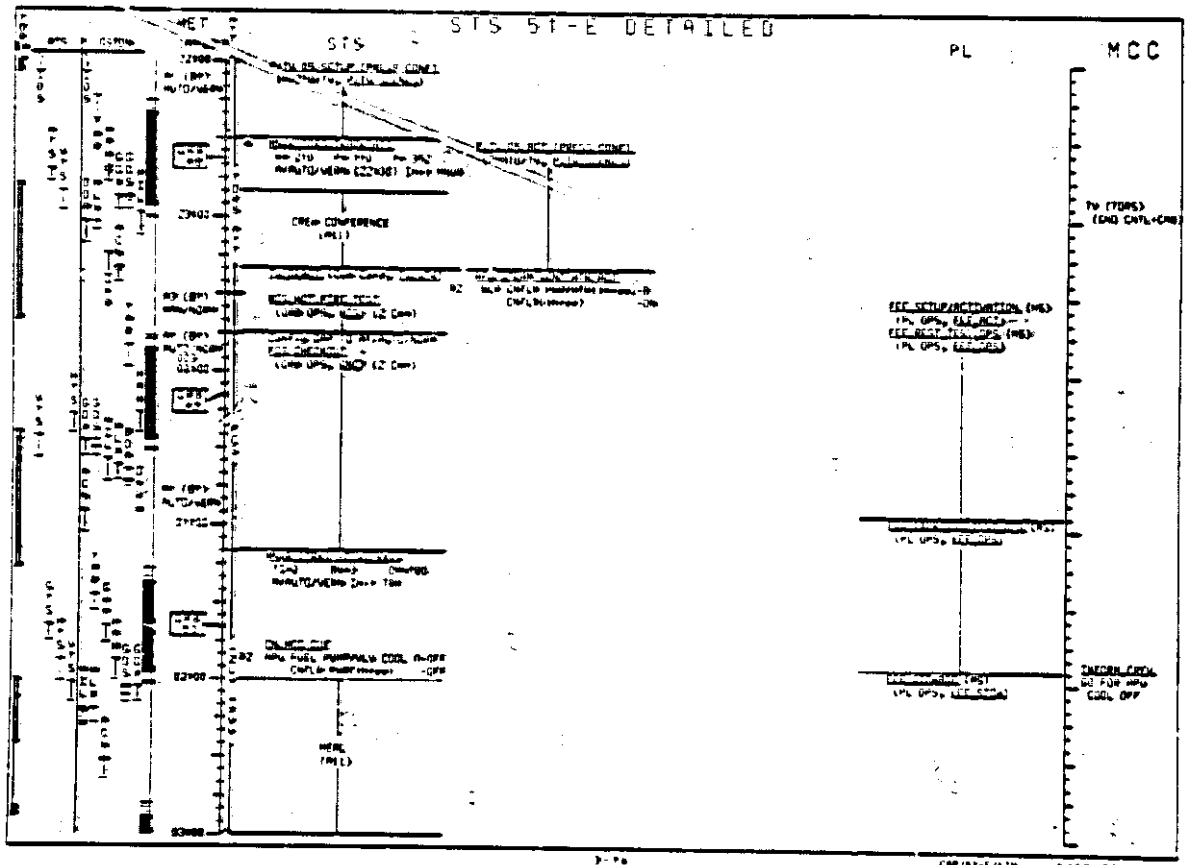
STATION 7: _____

STATION 8: _____

STATION 9: _____

STATION 10: _____

STS STS 51-E DETAILED



STS 51-E DETAILED

STS

PL

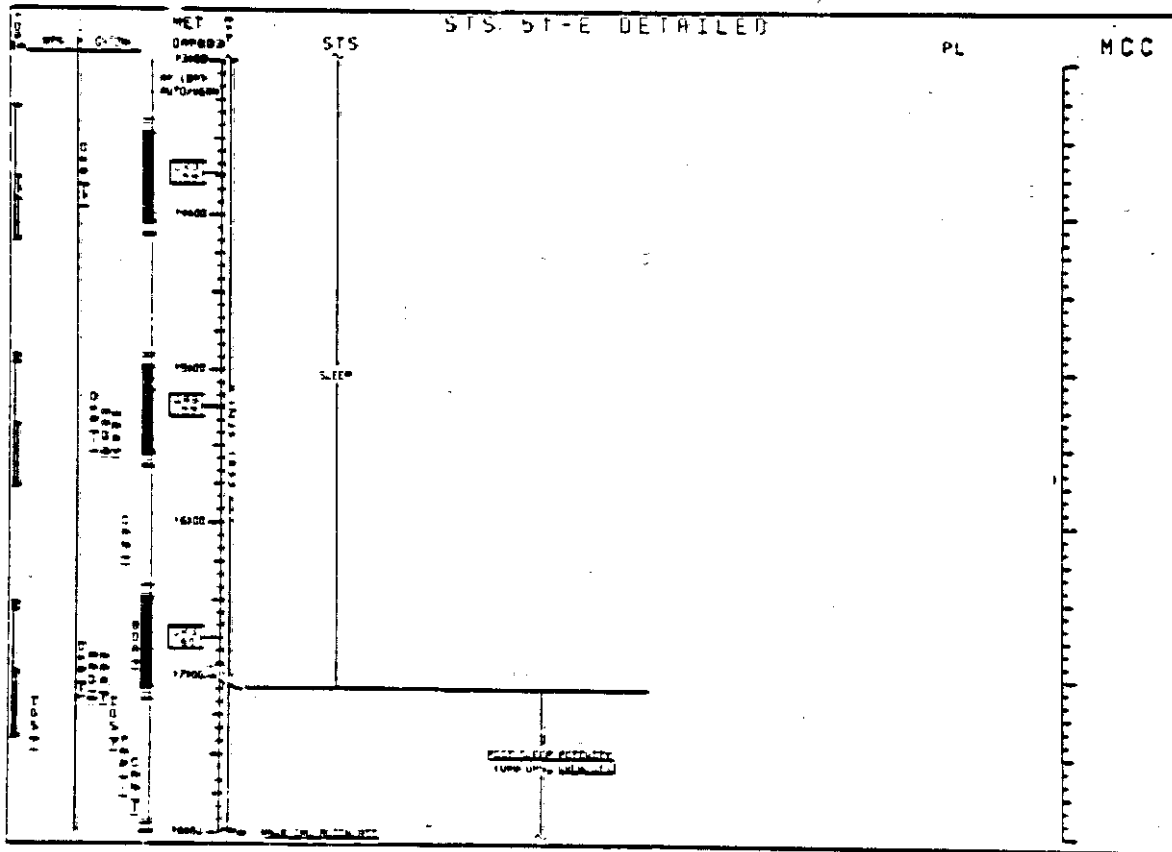
MCC

PIC. SLEEP ACTIVITY
1:00:00 - 1:00:00

SLEEP



STS: ST-E DETAILED



CONTINGENCY TIMELINES

90 TDRS DEPLOYMENT.....	4A-1
100 TDRS DEPLOYMENT.....	4B-1
18A TDRS DEPLOYMENT.....	4C-1
20A TDRS (EVA) DEPLOYMENT.....	4D-1
40 TELESAT DEPLOYMENT.....	4E-1

CONTINGENCY
TIMELINES

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CONTINGENCY
TIMELINES

90 TDRS DEPLOYMENT

The 90 Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 90 opportunity. The nominal timeline is used until 0707:00 MET. An early TDRS DIRECT check may be performed at 105 (REV 5). This will preclude two-way voice communications through 105.

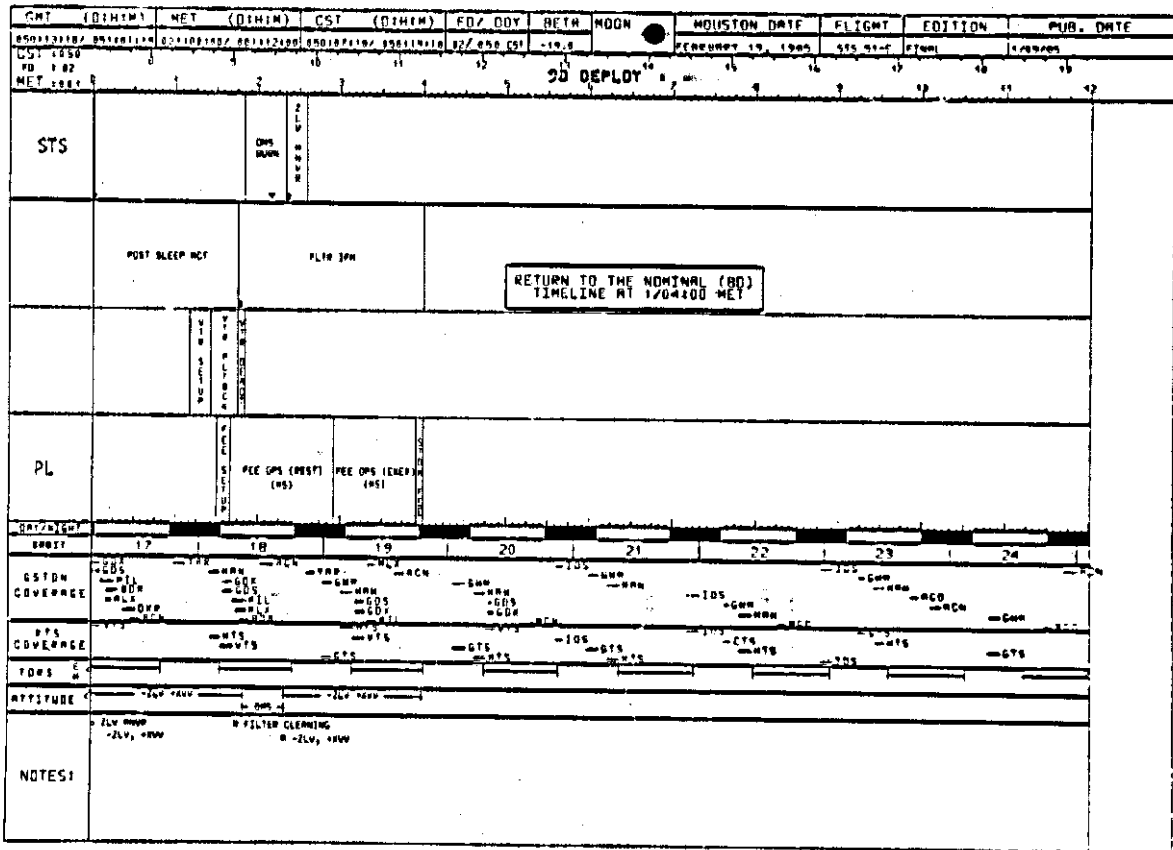
All nominal deployment activities are included in this timeline. The tracking arc and the IUS C/O and TDRS late checks are performed at the last acceptable opportunities. Additional assumptions are shown on page 4A-2. The timeline is based on the nominal Cycle 2 trajectory.

90
DEPLOYMENT

SC DEPLOYMENT

GMP	(OS/OP)	OUT	(OS/OP)	OSP	(OS/OP)	SD/DP	RFTN	ROOM	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE	
													PROGRAM NO.
									14	15	16	17	
SO DEPLOY													
STS										SO DEPLOY	18	19	
<p style="margin: 0;">THIS IS THE ONLY SCHEDULE THE FOLLOWING INFORMATION:</p> <ul style="list-style-type: none"> - THE NUMBER OF TIMELINE IS USED UNTIL DEPLOYMENT - THE LOCATION OF TIMELINE IS USED UNTIL DEPLOYMENT - THE LOCATION OF TIMELINE IS USED UNTIL DEPLOYMENT - THE LOCATION OF TIMELINE IS USED UNTIL DEPLOYMENT - THE LOCATION OF TIMELINE IS USED UNTIL DEPLOYMENT - THE LOCATION OF TIMELINE IS USED UNTIL DEPLOYMENT 										P/MS SET	TOPS-B DEPLOY	20	21
PL										P/MS SETUP	TOPS-B DEPLOY	22	23
<p>-----</p> <p>CS/OP</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p>													
<p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p>													
<p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p>													
NOTES:	<p style="text-align: right;">@ TOPS ON RTT (TOPS Setup)</p> <p style="text-align: right;">@ TOPS ON CH (TOPS Setup)</p> <p style="text-align: right;">@ TOPS DIRECT (Setup)</p> <p style="text-align: right;">TOPS MAP</p> <p style="text-align: right;">MOS 18000</p> <p style="text-align: right;">LOS 18000</p> <p style="text-align: right;">PI LOGS ON FOR ONLY</p> <p style="text-align: center; margin-top: 10px;">← TRACKING AGE →</p>												

GMT (DIMIN)	MET (DIMIN)	CST (DIMIN)	FD/DOY	RETR	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
00000000 00000000	00000000 00000000	00000000 00000000	01/04/79	-72.1	●	FEBRUARY 16 1985	STS 51-L	FTOM	1/20/85
EST 1849									
PD 1 01	SRN=1	IGN=0							
MET 1858	12	13	14	15	16	17	18	19	20
STS	SLEEP								
	PRE SLEEP ACT								POST SLEEP ACT
PL									
ORBIT	9	10	11	12	13	14	15	16	17
ESTON COVERAGE	-LNA	-AGD -ACH -DKV	-CWX	-DHP -HAG	-LKN	-MLL -MLL -DKR -HAB	-101 -TAP -CWA	-TOS -TAP -CWA	-101 -TAP -CWA
PTS COVERAGE		-GYS -HAG	-GYS -HAG						
TORS						-101			
ALTITUDE									
TELECOM						-101			
NOTES:	○ -ZLV, -DNU ● -101/DZNY ■ -RTN STATION ○ -ZLV, -DNU								



100 DEPLOYMENT

The 100 Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 100 opportunity. The nominal timeline is used up to 0/07:00 MET. A TDRS DIRECT check may be performed at IOS (Rev 5). This will preclude two-way voice communications through IOS.

All nominal deployment activities are included in this timeline. The tracking arc and the IVS C/O and TDRS late checks are performed at the last acceptable opportunities. Additional assumptions are shown on page 48-2. The timeline is based on the nominal Cycle 2 trajectory.

100
DEPLOYMENT

10D DEPLOYMENT

GMT (DINIM)	MET (DINIM)	CST (DINIM)	FD/DGT	REFR	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE																																																						
01/12/85	01/12/85	01/12/85	01/12/85	01/12/85	01/12/85	FEBRUARY 10, 1985	1100-1100	1100	1/12/85																																																						
10D DEPLOY																																																															
STS									V O C A T I O N	1 2 3 4 5 6																																																					
									VVO ACT	1 2 3 4 5 6																																																					
<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>THE 10D TIMELINE MAKES THE FOLLOWING ASSUMPTIONS:</p> <ul style="list-style-type: none"> • THE 10D TIMELINE IS USED UNTIL 8:00PM MET • THE DUTY/ON ACTIVITIES MAY SHOW BY THE LINE • ACCEPTABLE TIME TO MAKE A SUCCESSFUL 10D DEPLOY • THE DUTY/ON IS IN A LOW ALTITUDE • THE TRACKING AND ACTIVITIES ARE NOT INITIATED • THE TRACKING AND IS FROM GUN-PT-261 TO 100 (1400) • THE FIRELETS TRANSMITTING BACK TO THE 10D, 100 • THE 10D BY 10:00 MET </div>																																																															
PL									T U S C B	1 2 3 4 5 6																																																					
									VVO SCYP	1 2 3 4 5 6																																																					
<table border="0" style="width: 100%; font-size: small;"> <tr> <td style="width: 10%;">0800</td> <td style="width: 10%;">2</td> <td style="width: 10%;">3</td> <td style="width: 10%;">4</td> <td style="width: 10%;">5</td> <td style="width: 10%;">6</td> <td style="width: 10%;">7</td> <td style="width: 10%;">8</td> <td style="width: 10%;">9</td> </tr> <tr> <td>ESTON COVERAGE</td> <td>-ARM</td> <td>-ARM</td> <td>-ARM</td> <td>-ARM</td> <td>-ARM</td> <td>-ARM</td> <td>-ARM</td> <td>-ARM</td> </tr> <tr> <td>PTS COVERAGE</td> <td>-PTS</td> <td>-PTS</td> <td>-PTS</td> <td>-PTS</td> <td>-PTS</td> <td>-PTS</td> <td>-PTS</td> <td>-PTS</td> </tr> <tr> <td>TDRS</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>APPITUDE</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>TELEMETRY</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> <td>---</td> </tr> </table>										0800	2	3	4	5	6	7	8	9	ESTON COVERAGE	-ARM	-ARM	-ARM	-ARM	-ARM	-ARM	-ARM	-ARM	PTS COVERAGE	-PTS	-PTS	-PTS	-PTS	-PTS	-PTS	-PTS	-PTS	TDRS	---	---	---	---	---	---	---	---	APPITUDE	---	---	---	---	---	---	---	---	TELEMETRY	---	---	---	---	---	---	---	---
0800	2	3	4	5	6	7	8	9																																																							
ESTON COVERAGE	-ARM	-ARM	-ARM	-ARM	-ARM	-ARM	-ARM	-ARM																																																							
PTS COVERAGE	-PTS	-PTS	-PTS	-PTS	-PTS	-PTS	-PTS	-PTS																																																							
TDRS	---	---	---	---	---	---	---	---																																																							
APPITUDE	---	---	---	---	---	---	---	---																																																							
TELEMETRY	---	---	---	---	---	---	---	---																																																							
NOTES:									© 1985 BY THE U.S. GOVERNMENT THIS WORK IS IN THE PUBLIC DOMAIN (LIMITED COPY)																																																						

TRACKING AND

GMT (D/MIN)	MET (D/MIN)	CST (D/MIN)	FD/ DDT	REFR	MOON	HOUSTON DATE	FLIGHT	EDITION	PUR. DATE
0001000Z 0802100Z 0803100Z 0804100Z 0805100Z 0806100Z 0807100Z 0808100Z 0809100Z 0810100Z 0811100Z 0812100Z			01/ 240 CST			FEBRUARY 18, 1965	574 01-1	0100	19650208
WST 1040									
FD 181									
MET 1000 17	100 DEPLOY	0800T 10N							08 1 02
			021000 17						
STS	0800 0801 0802 0803 0804 0805 0806 0807 0808 0809 0810 0811 0812	0800 0801 0802 0803 0804 0805 0806 0807 0808 0809 0810 0811 0812				SLEEP (7 HOURS)			
		0800 0801 0802 0803 0804 0805 0806 0807 0808 0809 0810 0811 0812				PRE SLEEP ACT			POST SLEEP ACT
						TORS-R DEPLOY			
PL	0800 0801 0802 0803 0804 0805 0806 0807 0808 0809 0810 0811 0812	0800 0801 0802 0803 0804 0805 0806 0807 0808 0809 0810 0811 0812							
DAY/ENH									
SRMT									
STATION COVERAGE									
STS COVERAGE									
TORS									
ATTITUDE									
GENERAL									
NOTES:	0 TORS DIRECT (000) 0 WLD, WSW TORS ANT 0 TORS DIRECT POS 12118 0 ANT-STATION LOS 12922 PE LOCK ON FOR DPLY								

GMT	(DIMIM)	MET	(DIMIM)	CSI	(DIMIM)	FD/DOY	APTA	MOON	HOUSTON DATE	FLIGHT	EDITION	OCB, DATE
051 1050							100.0		STATION 13, 1985	614 57.7		13.00000
#0 1.02												
MET 1000									100 DEPLOY			
STS		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31			2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31							
		POST SLEEP ACT		RETURN TO THE NOMINAL (80) TIMELINE AT 1704:00 MET								
		V M S L E V R V C R M L E V R V C R M			PLN 3PH							
PL			PLN OPS (LEFT) (16)		PLN OPS (RIGHT) (16)							
DAY/DOY		17	18	19	20	21	22	23	24			
STATION COVERAGE		CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	CDL -S -D -E -G -H -K -L -M -N -O -P -R -S -T -U -V -W -X -Y -Z	
STS COVERAGE		-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S	-STS -M -T -S
IONS												
APPITUDE:												
NOTES:												

18A TORS DEPLOYMENT

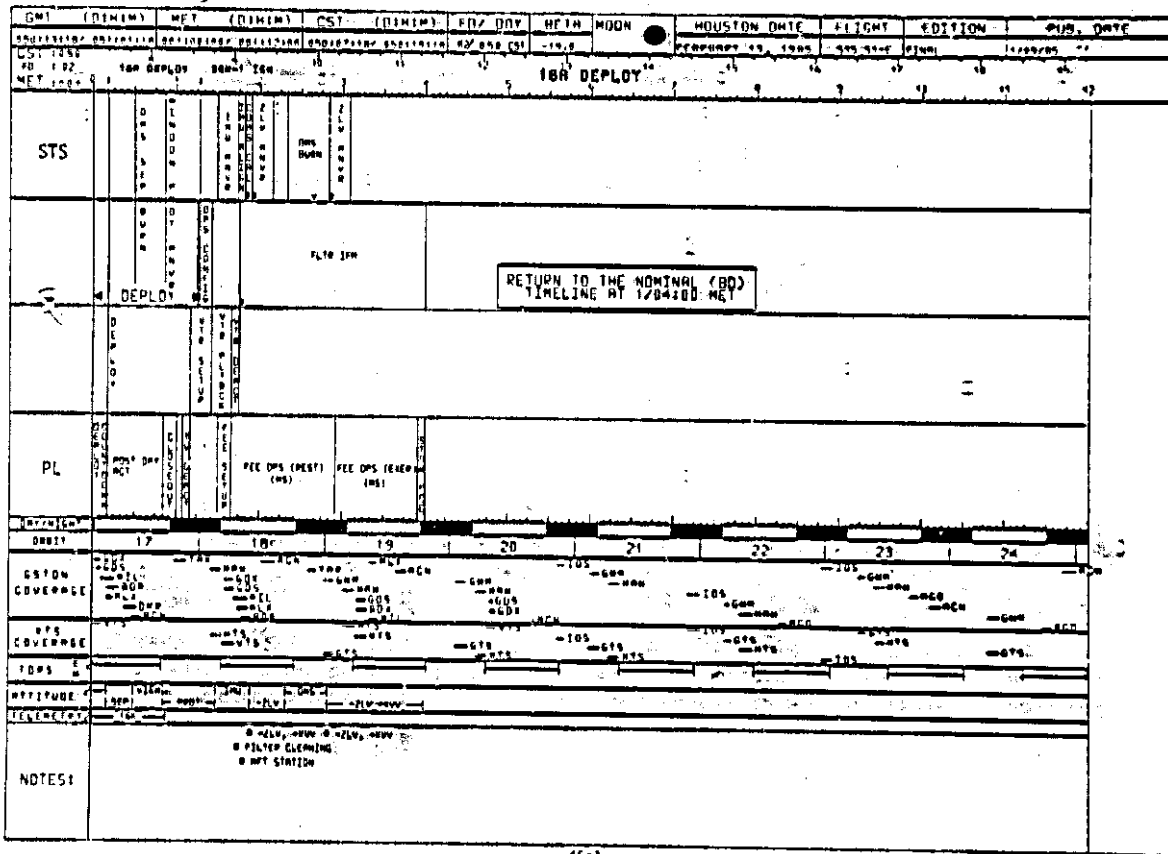
The 18A Deployment Timeline is designed to accommodate delaying deployment of TORS to the 18A opportunity. The timeline begins during crew sleep and assumes the tilt table is stowed at 0°. All nominal deployment activities are included in this timeline. Additional assumptions are shown on page 4C-2.

The timeline is based on the nominal Cycle 2 trajectory.

18A
DEPLOYMENT

18A
DEPLOYMENT

GMT (D/MIN)	MET (D/MIN)	CST (D/MIN)	PD/DOY	BETA	MOON	HOUSTON-DATF	FLIGHT	EDITION	PUB. DATE
09001108/09011018	09011008/09010808	04011010/09010810	01/0401/08	-20.000		Procedur 40 1965	110 01-1	1965	1965
051 1049	20	21	22	23					
PD 1:01									
MET 1960 12	13	14	15	16	17	18A DEPLOY	19	20	21
STS				SLEEP					
<p>THIS TDR TIMELINE MAKES THE FOLLOWING ASSUMPTIONS:</p> <ul style="list-style-type: none"> • THE TDR/FDRS WERE DISTURBED • THE FDR EVENING ACTION WAS A TWO-HOUR FLIGHT WITHOUT A COM-CAL • THE PDR-POS TEMP-CAL WAS PERFORMED IN THE FDR-POS SLEEP • THE APPROPRIATE TIMELINE IS USED UNTIL THE START OF THE FDR SLEEP PERIOD • THE TDR/FDRS ACTIVITIES ARE SHOWN AT THE LOWEST ACCEPTABLE TIME TO MAKE A SUCCESSFUL TDR DEPLOY • THE OPERATOR IS IN A "ZEL" "LOW" ATTITUDE • THE TDR/FDRS-POS IS TERMINATED AT 0115 (2100) • THE TIMELINE TOWNSHIP IS CHANGED TO THE HOUSTON-POS TIMELINE AT 0115 (0100) 						POST SLEEP ACT		DRY ACT	
									TDRS-B DEPLOY
PL									
<p>REVIEWED</p> <p>09011 9 10 11 12 13 14 15 16</p> <p>STATION COVERAGE</p> <p>RTS COVERAGE</p> <p>TDRS</p> <p>APPITUDE</p> <p>FOLLOWUP</p> <p>NOTES:</p> <p>TOWNSHIP AND</p> <p>• TDRS ON MT (POS-01)</p> <p>• TDRS ON CH (POS-02)</p> <p>• AT CHS LAUNCH-2</p> <p>TDRS DIRECT (MOUNT)</p> <p>TDRS ON</p> <p>000 2200</p> <p>LOS 2236</p>									



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20A TDRS (EVA) DEPLOYMENT

The 20A Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 20A opportunity following an EVA to manually raise the tilt table. The decision to perform an EVA must be made by 0705:00 MET. All nominal deployment activities are included in this timeline. The TELESAT would be deployed no earlier than the 34A PKN opportunity.

The timeline is based on the nominal Cycle 2 trajectory.

20A
DEPLOYMENT

**20A
DEPLOYMENT**

GMT (DINIM)	MET (DINIM)	CST (DINIM)	FD/DOY	BETA	MOON	HOUSTON DATE	FLIGHT	COITION	PLN, DATE
0411310Z 080101	0410110Z 080101	0410110Z 080101	01/ 000 001	-73.1	●	February 10, 1968	555 51-7	27000	1400005
051 1310									
FG 101									
MET 1000									
20A DEPLOY									
STS									
PL									
0001									
ESTDn COVERAGE									
BTS COVERAGE									
IDPS E									
ALTITUDE									
TELEMETRY									
NOTES:	<p> * PDPACTN ACT C/D STEPS 0, 5, and 10 * 000 OPS, INU ALIGN POSITION 5 1001 100 * 001 MTR DIRECT * DID FOR ORPHIT FROM NAVIGATION * 1 C EWR, LHM, ENHANCEMENT, INFLIGHT * EWR L/L, RESEARCH, RESEARCH, PREP * C EWR, ONE FOR 10.2 LHM, INFLIGHT * EWR C/L, LHM, INFLIGHT * C EWR, LHM, INFLIGHT TO 10.2 POSN * C EWR, LHM, INFLIGHT LHM, INFLIGHT * C EWR, LHM, INFLIGHT, INFLIGHT * 000 OPS, INU ALIGN POSITION 5 1001 100 * 001 MTR DIRECT </p>								

4D TELESAT DEPLOYMENT

The 4D Deployment Timeline is designed to accommodate deployment of TELESAT on the 4D opportunity. A failed open sunshield requires a sun protected attitude until the TELESAT deployment maneuver. The TORS/IUS checks are performed at the nominal 80 times except for the ACTUATOR ENGAGE which is delayed until after the TELESAT deployment.

The timeline is based on the nominal Cycle 2 trajectory.

4D
DEPLOYMENT

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STS 51-E FLIGHT SPECIFIC DATA

FLT SPEC
DATA

FLIGHT DAY 1 TFL/OFL SEQUENCE

MET (HR. MIN)	REV	SITE	ACTIVE TFL	CRU (KB)	EVENT	NOTES
-00:20	-	MIL	193	64	• Ascent Config	• PDI DECOM 1: 1 KB • PL PCDR: 64 KB • TFL 191/118 LOADED
-1:00			184	64	• DPS Config SMA	• RJS 64 KB on PL PCDR • TDRS 1 KB on OPS PCDR
1:17	2	HTS AOS		64		• RJS 64 KB on FM DL
1:27	2	VTS AOS		64		• RJS 64 KB on FM DL
1:55	2	ACN	100	16	• DPS Config SM2 • CRU to 16 KB (on MCC Cue)	• PDI 16/5 KB REAL TIME • TFL to 192/100 (INCO)
2:15	2	TDRS LOS	183	64	• TFL/OFL to 183 (INCO) • CRU to 64 KB (on MCC Cue)	• 64.1 KB on OPS PCDR
2:41	2	GTS	183	64		• PL RCDP DUMP
2:54	3	HTS	183	64	• RJS CG (EARLY)	• FM OFF during Pl CO
3:10	3	VTS LOS TDRS AOS	100	16	• TFL/OFL to 192 (INCO) • CRU to 16 KB (on MCC Cue)	• 64.1 KB on PL PCDR • FM LFP during Pl CO
3:12	3	MIL AOS	100	16	• TDRS (PI) LINK CO	• INCO cmd Pl OFF after CO
3:32	3	VTS AOS	100	16	• TDRS DIRECT	• FM OFF until ACN LOS
3:54	3	TDRS LOS	183	64	• TFL/OFL to 183 (INCO) • CRU to 64 KB (on MCC Cue)	
4:28	4	HAW AOS	183	64		• SS/D VTR DUMP
4:36	4	TDRS AOS	100	16	• TFL/OFL to 192 (INCO) • CRU to 16 KB (on MCC Cue)	• OPS PCDR DUMP
4:45	4	VTS LOS	100	16		
5:25	4	TDRS LOS	183	64	• TFL/OFL to 183 (INCO) • CRU to 64 KB (on MCC Cue)	
6:05	5	HAW AOS	183	64		• REAL TIME TV DL
6:15	5	HAW LOS TDRS AOS	100	16	• TFL to 192/100 (INCO) • CRU to 16 KB (on MCC Cue)	
7:02	5	RJS AOS TDRS LOS	183	64	• TFL to 183/100 (INCO) • CRU to 64 KB (on MCC Cue)	
7:40	6	HAW AOS		64	RJS (AD BATE)	
7:50	6	HAW LOS TDRS AOS	100		TFL to 192/100 (INCO) • CRU to 16 KB (on MCC Cue)	
8:30	6	TDRS	100		• TFL to 183/100 (INCO) • CRU to 64 KB (on MCC Cue)	
8:35	6	TDRS LOS RJS AOS	183		• RECREATE PART 1	• FM OFF
8:46	7	RJS LOS	100		• CRU to 16 KB (on MCC Cue)	• FM OFF
9:16	7	HAW AOS			• TDRS DIRECT R	
9:20	7	HAW LOS TDRS AOS	100		• TFL to 192/100 (INCO) • CRU to 16 KB (on MCC Cue)	• OPS PCDR DUMP
9:30	7	TDRS AOS	100		• RA FLICK R	
10:02	7	TDRS				TDRS DEPLOY
11:05	8	TDRS AOS	118		• SM Ops Trans SW2 to SW4	

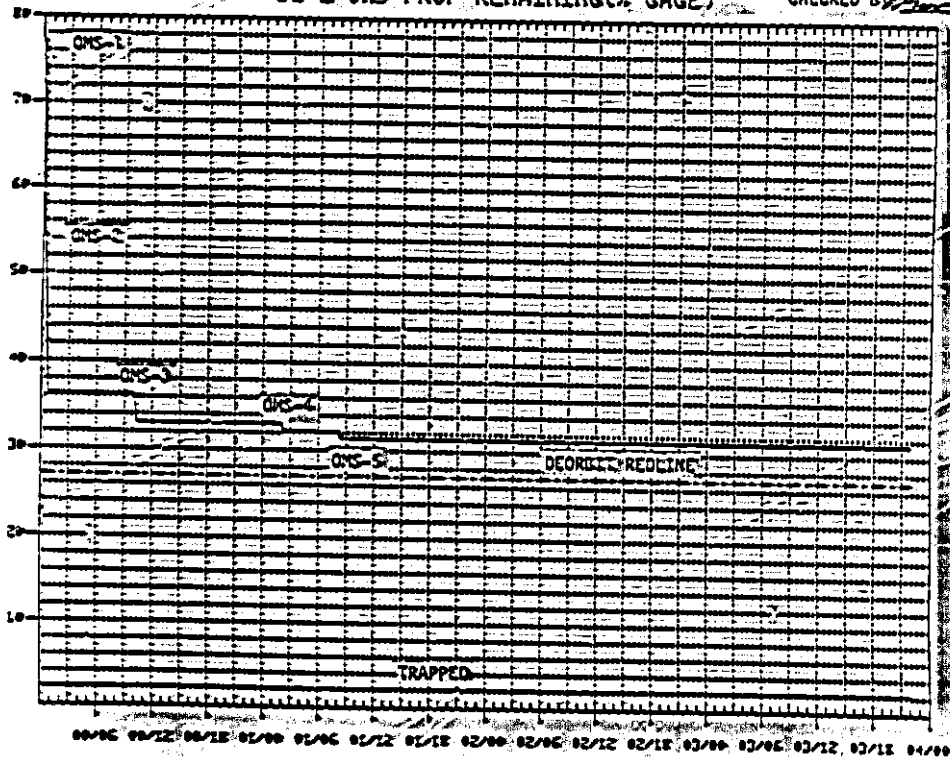
PLT SPEC
DATA

CONSUMABLES CURVES

P. M. KULESA/MDTSCO
DATA SUBMITTAL J-746 Add 5
JSC-20105 (CAP) TO/11/84
CHECKED BY *Richlin*

51-E OMS PROP REMAINING(% GAGE)

OMS PROP REMAINING(% GAGE)



MISSION ELAPSED TIME IN DAYS/HOURS

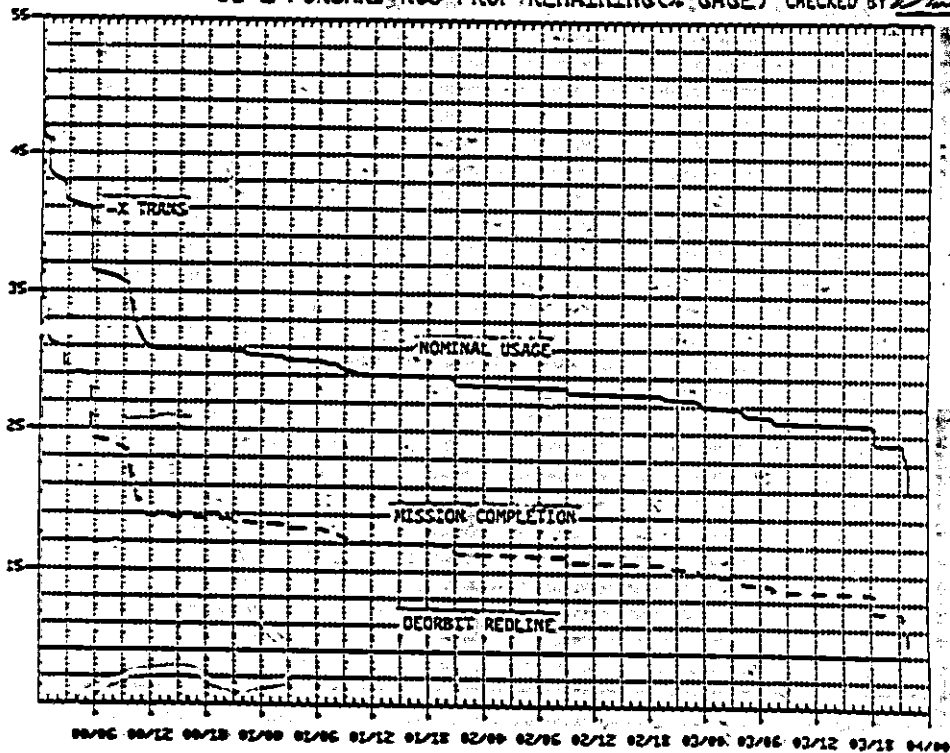
5-4

CAP/51-E/FIN

P. M. KULESA/MOTSCO
DATA SUBMITTAL J-746 Add 5
JSC-20105 (CAP) 10/11/84
CHECKED BY *P. M. Kulesa*

51-E FORWARD RCS PROP. REMAINING (% GAGE)

FORWARD RCS USED AREA REQUIRMENT



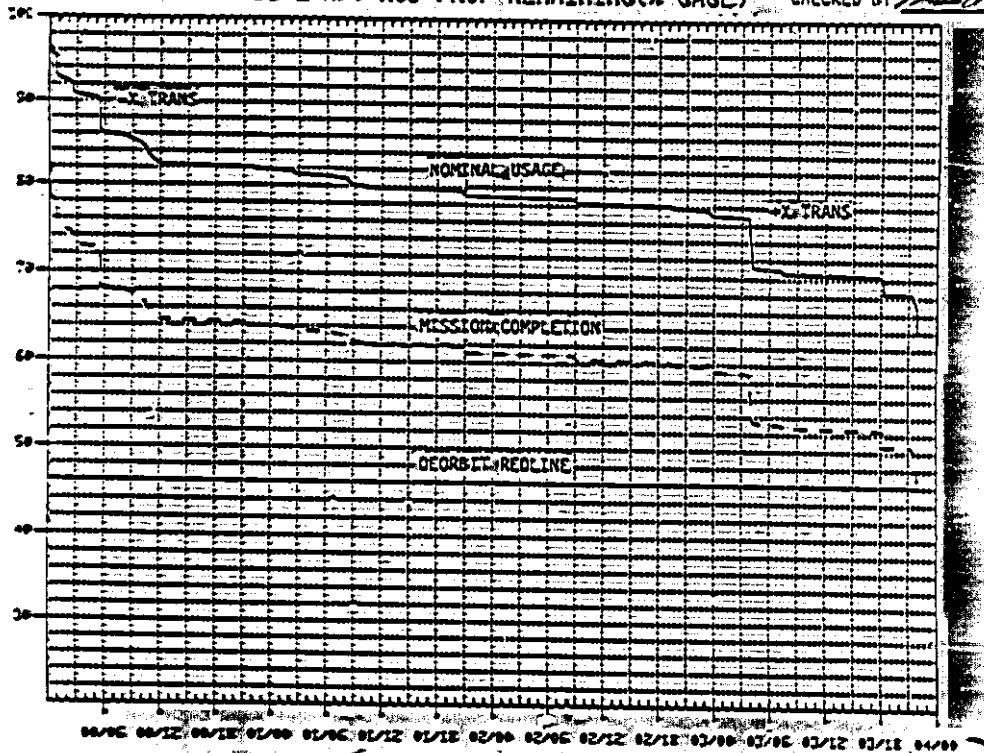
MISSION ELAPSED TIME IN DAYS/HOURS

5-5

CAP/51-E/FIN

SI-E AFT RCS PROP REMAINING(% GAGE)

ALL ROW GRID AREA NUMERIZED



MISSION ELAPSED TIME IN DAYS/HOURS

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

STS 51-E DAP BOOK

DAP A CONFIGURATIONS..... 6-2
DAP B CONFIGURATIONS..... 6-3
STS 51-E DAP BOOK..... 6-4

DAP BOOK

TABLE 6-1
DAP A CONFIGURATIONS

	A1*	A2	A3	A4	A5	A6	A7	A8
TRANSLATION								
PULSE ft/sec	0.10	0.10	0.10	0.10	0.10	0.10		0.25
ROTATION								
CSC RT NORM %/sec	0.200	0.400	0.200	0.200	0.200	0.200		0.200
VERN %/sec	0.200	0.400	0.200	0.008	0.200	0.200		0.200
PULSE NORM %/sec	0.10	0.10	0.30	0.10	0.10	0.10		0.05
VERN %/sec	0.010	0.010	0.010	0.010	0.050	0.010		0.010
COMP NORM %/sec	.00	.00	.00	.00	.00	.00		.00
VERN %/sec	.000	.000	.000	.000	.000	.000		.000
DEADBAND								
ATT NORM (deg)	5.00	1.00	5.00	1.00	5.00	5.00		1.00
VERN (deg)	1.000	1.000	1.000	0.070	1.000	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		.010
JET OPT								
P	1	1	3	1	1	3		1
Y	1	1	3	3	1	3		1
ENTL ACCEL								
	0	0	0	0	0	0		0

*1-LOADED OPS-2 DAP Configuration

TABLE 6-1 (Cont)
DAP B CONFIGURATIONS

	81*	82	83	84	85
TRANSLATION					
PULSE ft/sec	0.02	0.02	0.02	0.02	0.02
ROTATION					
GSC RT NORM %/sec	0.500	0.200	0.200	0.200	0.200
VERN %/sec	0.200	0.200	0.200	0.008	0.016
PULSE NORM %/sec	0.04	0.04	0.04	0.04	0.04
VERN %/sec	0.002	0.002	0.002	0.002	0.002
COMP NORM %/sec	.00	.00	.00	.00	.00
VERN %/sec	.000	.000	.000	.000	.000
DEADBAND					
ATT NORM (deg)	3.00	3.00	3.00	0.30	3.00
VERN (deg)	1.000	1.000	1.000	0.100	0.033
RATE NORM %/sec	0.20	0.20	0.20	0.20	0.20
VERN %/sec	.020	.020	.020	.010	.020
JET OPT					
P	1	3	1	1	3
Y	1	3	1	3	3
CNTL ACCEL	0	0	0	0	0

*1-LOADED OPS-2 DAP Configuration

TOP
FRONT COVER "DAP BOOK"

DAP BOOK

HOOK
VELCRO

CAP/SI-E/O/BAS

UNIV P13	
TGT ID = 1	Orbiting Vehicle
= 2	Earth ctr
= 3	Earth tgt
Input LRF	(+.90)
LCN	(+.80, +. East)
AL1	(+20000.0)
	(-.3248.0)
= 4	Sun ctr
= 5	Celestial tgt
Input RA	(0-359.99)
DEC	(-.90)
= 11-110	Nav Stars
MOBY VECT = 1	+.80
= 2	-.80
= 3	+.20
= 4	PTC (-.P below sig)
= 5	Optical
Input P	(0-359.99)
" "	(270-359.99, 0-90)
Input CM	CM (0-359.99)
MOB P113 = 1	+.8
= 2	-.8

CAP/SI-E/O/BAS

620 DAP CONFID			
CTRL ACCEL = 0	Orbiter alone	JET OPT = 1	Normal
= 1	Not used	= 2	Rose only
= 2	Not used	= 3	Tail only
= 3	Not used		
= 4	Not used		
= 5	Not used		

TOP
BACK OF FRONT COVER
"DAP BOOK"

(reduced copy)

TOP

DAP PURPOSE

- A1 - NOMINAL
- ZLV
- IMU ALIGN
- TAIL ONLY CONTROL
- BACKOUT
- PRE/POST PAM DEPLOY
- OMS BURN
- TAIL-TO-SUN
- LOSS OF VERN
- A2 - PTC
- A3 - RCS HOT FIRE
- A4 - CG
- A5 - IMU ROTATION
- A6 - LOSS OF VERN
- (TAIL ONLY)
- A7 - (Blank)
- A8 - IUS DEPLOY

CAP/SI-E/O/BAS

A1

TOP

DAP A1

A1

PURPOSE:

- ZLV
- IMU ALIGN
- TAIL ONLY CONTROL
- BACKOUT
- PRE/POST PAM DEPLOY
- OMS BURN
- TAIL-TO-SUN
- LOSS OF VERN
- (NOSE & TAIL)

0-10	1	TRANSLATION
		PULSE
0-10	2	ROTATION
		DSC RT NORM
0-10	3	VERN
		NORM
0-10	4	PULSE
		NORM
0-10	5	VERN
		NORM
0-10	6	COMP
		NORM
		VERN
		DEADBAND
1-10	8	ATT
		NORM
		VERN
0-10	10	RATE
		NORM
0-10	11	VERN
		NORM
	12	JET OPT
	13	P
		V
	14	CNTL ACCEL

CAP/SI-E/O/BAS

CAP/SI-E/O/BAS

A2

TOP

(reduced copy)

8-5



A1

DAP A2

PURPOSE:
BTC

CAP/SI-E/O/BAS



TOP



A2

DAP A3

PURPOSE:
RCS HOT PIPE

CAP/SI-E/O/BAS



TOP

(reduced copy)

A2

0-1 0	1	TRANSLATION	
		PULSE	
0-1 0 0	2	ROTATION	
0-1 0 0	3	BSC RT	NORM
0-1 0 0	4	PULSE	VERB
0-1 0 0	5		NORM
0-1 0 0	6	COMP	VERB
0-1 0 0	7		NORM
		DEADBAND	
1-1 0 0	8	ATT	NORM
1-1 0 0	9		VERB
0-2 0 0	10	RATE	NORM
0-2 0 0	11		VERB
	12	JET OPT	P
	13		V
	14	CNTL ACCEL	

CAP/SI-E/O/BAS

A3

TOP

A3

0-1 0	1	TRANSLATION	
		PULSE	
0-1 0 0	2	ROTATION	
0-1 0 0	3	BSC RT	NORM
0-1 0 0	4	PULSE	VERB
0-1 0 0	5		NORM
0-1 0 0	6	COMP	VERB
0-1 0 0	7		NORM
		DEADBAND	
1-1 0 0	8	ATT	NORM
1-1 0 0	9		VERB
0-2 0 0	10	RATE	NORM
0-2 0 0	11		VERB
	12	JET OPT	P
	13		V
	14	CNTL ACCEL	

CAP/SI-E/O/BAS

A3





A3

DAPA4

PURPOSE:

GG

CAP/SI-E/O/BAS



TOP



A4

DAPA5

PURPOSE:

IMU ROTATION

CAP/SI-E/O/BAS



TOP

(reduced copy)

TOP

A4

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

CAP/SI-E/O/BAS

A5

TOP

A5

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

CAP/SI-E/O/BAS

A6

+

AS

DAPA6

PURPOSES:
LOSS OF YERN
(TAIL ONLY)

CAP/SI-E/O/BAS

+

TOP

+

A6

DAPA7

PURPOSES (Blank)

CAP/SI-E/O/BAS

+

TOP

(reduced copy)

+

+

TOP

A6

0.1 1 TRANSLATION
PULSE

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

1.1 8 DEADBAND
ATT NORM
1.1 9 VERN

0.1 10 RATE NORM
0.1 11 VERN

1 12 JET OPT P
1 13 V

0 14 CNTL ACCEL

CAP/SI-E/O/BAS

+

+

A7

TOP

+

+

A7

0.1 1 TRANSLATION
PULSE

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

1.1 8 DEADBAND
ATT NORM
1.1 9 VERN

0.1 10 RATE NORM
0.1 11 VERN

1 12 JET OPT P
1 13 V

0 14 CNTL ACCEL

CAP/SI-E/O/BAS

+

+

A8

+ A7

+

+

TOP

+

OAP A8

PURPOSE

EVS DEPLOY

A8

0 1 1	1	TRANSLATION	
0 1 1	2	PHASE	
0 1 1	3	ROTATION	
0 1 1	4	OSC RT	NORM
0 1 1	5	PULSE	NORM
0 1 1	6	VERN	NORM
0 1 1	7	COMP	NORM
0 1 1	8	DEADBAND	
0 1 1	9	ATT	NORM
0 1 1	10	VERN	NORM
0 1 1	11	RATE	NORM
0 1 1	12	VERN	NORM
1	13	JET CRT	P
1	14	VERN	Y
0	15	CNTL ACCEL	

CAP/51-E/O/8AS

CAP/51-E/O/8AS

+

+

+

TOP

+

+

A8

+

+

CAP PURPOSE

- 01 - NOMINAL
- 02 - CHECK FOR ALIGN
- 03 - CHECK FOR
- 04 - CHECK FOR CONTACT
- 05 - CHECK FOR
- 06 - CHECK FOR
- 07 - CHECK FOR
- 08 - CHECK FOR
- 09 - CHECK FOR
- 10 - CHECK FOR
- 11 - CHECK FOR
- 12 - CHECK FOR
- 13 - CHECK FOR
- 14 - CHECK FOR
- 15 - CHECK FOR

CAP 51-E O 8AS

CAP 51-E O 8AS

81

TOP

DAP B1

PURPOSE:
 PRCS LMI ALIGN
 TOP-TO-SUN
 TAIL ONLY CONTROL BACKOUT
 OHS & ACS BURNS

B1

TRANSLATION					
PULSE	15	0-0	2		
ROTATION					
BSC RT	NORM 16	0	0	0	0
	VERN 17	0	0	0	0
PULSE	NORM 18	0	0	0	0
	VERN 19	0	0	0	0
COMP	NORM 20	0	0	0	0
	VERN 21	0	0	0	0
DEADBAND					
ATT	NORM 22	1	1	1	1
	VERN 23	1	1	1	1
RATE	NORM 24	0	0	0	0
	VERN 25	0	0	0	0
JET OPS	P 26				
	V 27				
CNTL ACCEL	28				
CAP/SI-E/O/BAS					

CAP/SI-E/O/BAS

B2

TOP

TOP

B1

DAP B2

PURPOSE:
 LOSS OF VERN
 (TAIL ONLY)

B2

TRANSLATION					
PULSE	15	0-0	2		
ROTATION					
BSC RT	NORM 16	0	0	0	0
	VERN 17	0	0	0	0
PULSE	NORM 18	0	0	0	0
	VERN 19	0	0	0	0
COMP	NORM 20	0	0	0	0
	VERN 21	0	0	0	0
DEADBAND					
ATT	NORM 22	1	1	1	1
	VERN 23	1	1	1	1
RATE	NORM 24	0	0	0	0
	VERN 25	0	0	0	0
JET OPS	P 26				
	V 27				
CNTL ACCEL	28				
CAP/SI-E/O/BAS					

CAP/SI-E/O/BAS

B3

TOP

(reduced copy)

6-10

TOP

02

OAP 03

PURPOSE:
LOSS OF VEEN
(NOSE & TAIL)
GG MNVR

CAP/SI-E/O/BAS

TOP

03

OAP 04

PURPOSE:
PAM DEPLOY
FRISBEE DEPLOY

CAP/SI-E/O/BAS

TOP

+

+

+

+

03

TRANSLATION		
PULSE	15	0 0 0
ROTATION		
BSC RT NORM	16	0 0 0
VERN	17	0 0 0
PULSE NORM	18	0 0 0
VERN	19	0 0 0
COMP NORM	20	0 0 0
VERN	21	0 0 0
DEADBAND		
ATT NORM	22	0 0 0
VERN	23	0 0 0
RATE NORM	24	0 0 0
VERN	25	0 0 0
JET OPT P	26	1
V	27	1
CNTL ACCEL	28	0
CAP/SI-E/O/BAS		

04

TOP

04

TRANSLATION		
PULSE	15	0 0 0
ROTATION		
BSC RT NORM	16	0 0 0
VERN	17	0 0 0
PULSE NORM	18	0 0 0
VERN	19	0 0 0
COMP NORM	20	0 0 0
VERN	21	0 0 0
DEADBAND		
ATT NORM	22	0 0 0
VERN	23	0 0 0
RATE NORM	24	0 0 0
VERN	25	0 0 0
JET OPT P	26	1
V	27	1
CNTL ACCEL	28	0
CAP/SI-E/O/BAS		

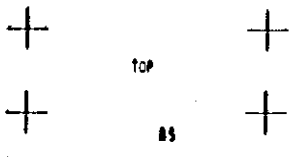
03



04
DAPBS

PURPOSE:
COAS CAL

CAP/SI-E/O/BAS



TOP

BS



TOP

BS

TRANSLATION			
PULSE	15	0.2	2
ROTATION			
BSC RE	NORM 16	0	0
	VERN 17	0	0
PULSE	NORM 18	0	0
	VERN 19	0	0
COMP	NORM 20	0	0
	VERN 21	0	0
DEADBAND			
ATT	NORM 22	0	0
	VERN 23	0	0
RATE	NORM 24	0	0
	VERN 25	0	0
JER OPT	P 26		1
	V 27		
CNTL ACCEL	28		0
CAP/SI-E/O/BAS			



CAP/SI-E/O/BAS



TOP

(reduced copy)

TOP
JACK COVER "DAP BOOK"



HOOK
VELCRO

CAP/SI-E/O/BAS



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ATTITUDE
TIMELINE

STS 51-E ATTITUDE TIMELINE

ATTITUDE
TIMELINE.

Attitude Timeline						
RET	MNVR OPTION		DSP	E/S	REMARKS	EVENT
0-00:50:00	TRK TGT=2 SV=5C 90.00, 320.00 OM=100.00	A1 AUTO NORM	BSC 0.200 SB AT 5.00 SB RT 0.20	EARTH 0 90 3 320	LVLN R+220 P+ 0 Y+ 0	PL33 OPENING BIASED -2LV
0-01:50:00 58:04	TRK TGT=2 SV=3C 90.00, 0.00 OM= 90.00	A1 AUTO NORM	BSC 0.200 SB AT 5.00 SB RT 0.20	EARTH 0 90 3 360	LVLN R+100 P+ 0 Y+270	-2LV -YVV
0-02:20:00	LVLN ROT FREE ROTATION ABOUT +Z AXIS RATE=0.250	A5 LVLN YERN	BSC 0.250 SB AT 1.00 SB RT 0.02			EMU YAW ALIGN
0-02:44:00	LVLN	A5 AUTO YERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 90 3 0	LVLN R+100 P+ 0 Y+270	EMU YAW ALIGN COMPLETION
0-08:20:00 23:43	MNVR R+155.00 P+284.00 Y+ 2.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20	SUN 0 90 3 100		SDBS DIRECT CHECK
0-09:25:00 26:42	TRK TGT=4 SV=5C 264.00, 0.00 OM=270.00	A0 AUTO YERN	BSC 0.200 SB AT 1.00 SB RT 0.01	SUN 0 90 3 100	INRTL R+100 P+200 Y+ 22	IUS DEPLOY (0-10:01:02 APPROXIMATE)
0-10:02:42	ROT SV=5C (0.00, 270.00)	B1 M.N NORM	BSC 0.500 SB AT 3.00 SB RT 0.20		ROT R+150 START P+200 ATT Y+ 22	2.2 FPS SEP PITCH DOWN
0-10:04:02	STOP	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20	SUN 0 90 3 100	INRTL R+146 P+320 Y+ 1	INERTIAL HOLD
0-10:09:40 51:06	MNVR R+129.00 P+311.00 Y+324.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20	SUN 0 90 3 226		SEP BURN
0-10:22:00 26:34	TRK TGT=1 IUS SV=3C 90.00, 0.00 OM= 0.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20			IUS VIEWING
0-10:45:00	TRK TGT=1 IUS SV=5C 189.00, 0.00 OM= 0.00	B1 AUTO NORM	BSC 0.500 SB AT 3.00 SB RT 0.20			WINDOW PROTECT
0-10:59:02	STOP	A1 AUTO YERN	BSC 0.200 SB AT 1.00 SB RT 0.02	SUN 0 90 3 27	INRTL R+250 P+ 94 Y+ 52	INERTIAL HOLD FOR P.M.

000ALL ATTITUDES IN REAR OF 195C000

7-2

CAP-31-E-FIN

Altitude Timeline

NET	MNVR OPTION	AI	DRP	E/S	REMARKS	EVENT
0/11122:00 32:42	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	SUN 0 101 0 92		IMU ALIGN COAS CAL PAIR A1
0/11149:00 54:42	TRK TGT=2 SV=3C 90.00, 0.00 OM=100.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 90 0 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD
0/21156:00 22:06:00	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	SUN 0 102 0 92		IMU ALIGN PAIR A1
0/22:25:00 35:04	TRK TGT=2 SV=3C 90.00, 0.00 OM=100.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 90 0 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD
1/01:55:00 02:02:12	MNVR R+300.00 P+161.00 Y+ 30.00	B1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	SUN 0 151 0 220		ONS BURN (HEIGHT MNVR)
1/02:19:00 15:30	TRK TGT=2 SV=3C 90.00, 0.00 OM=100.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 90 0 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD
1/07:24:00 32:13	MNVR R+ P+ 100 Y+	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02			TELESTAT DEPLOY (0 1-00:04:00 APPROXIMATE)
1/08:07:00 19:30	MNVR R+300.00 P+163.00 Y+ 36.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	SUN 0 153 0 221		ONS BURN
1/08:22:00 22:40	TRK TGT=2 SV=3C 90.00, 0.00 OM=100.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 90 0 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD (VIEWING)
1/08:33:00 43:00	TRK TGT=2 SV=3C 100 OM	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02			WINDOW PROTECT
1/08:49:00	STOP	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02		INRTL R+ P+ Y+	INERTIAL HOLD FOR PAM
1/09:00:00 19:00	TRK TGT=2 SV=3C 90.00, 0.00 OM=100.00	A1 AUTO VERN	BSC 0.200 SB AT 1.00 SB RT 0.02	EARTH 0 93 0 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD

Attitude Timeline

KEY	MNVR OPTION	AP	E/S	REMARKS	EVENT	
1/10:01:00 11:03	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 102 0 92		IMU ALIGN PAIR A1
1/10:25:00 34:28	TRK TGT=2 BV=3(98.00, 0.00) OM=180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+180 P+0 Y+0	-ZLV NOSE FWD
1/20:37:00 46:55	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 102 0 93		IMU ALIGN PAIR A1
1/21:00:00 12:33	TRK TGT=2 BV=3(98.00, 0.00) OM= 0.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+0 P+180 Y+0	-ZLV TAIL FWD
2/03:31:00 56:12	MNVR R+173.00 P+325.00 Y+357.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 50 0 156		IMAGE INTENS- IFIER OPS ATT 1
2/04:31:00 32:53	MNVR R+229.00 P+320.00 Y+355.00	B1 AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 54 0 183		IMAGE INTENS- IFIER OPS ATT 2
2/05:14:00 17:30	MNVR R+215.00 P+ 57.00 Y+ 54.00	B1 AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 89 0 113		IMAGE INTENS- IFIER OPS ATT 3
2/05:51:00 54:53	MNVR R+297.00 P+269.00 Y+ 19.00	B1 AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 105 0 39		IMAGE INTENS- IFIER OPS ATT 4
2/05:20:00 36:51	TRK TGT=2 BV=3(98.00, 0.00) OM=180.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+180 P+0 Y+0	-ZLV NOSE FWD
2/08:42:00 51:59	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 103 0 93		IMU ALIGN PAIR A1
2/09:03:00 17:55	TRK TGT=2 BV=3(98.00, 0.00) OM= 0.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R+0 P+180 Y+0	-ZLV TAIL FWD
2/19:18:00 23:14	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 103 0 93		IMU ALIGN PAIR A1

Attitude Tiesheet

KEY	MNVR OPTION	REF	BSP	E/Z	REMARKS	EVENT
2/19:49:00 53:03	TRK TGT=2 SV=3(90.00, 0.00) OH= 0.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R= 0 P=100 Y= 0	-ZLV TAIL FWD
2/22:25:00 41:43	MNVR R+210.00 P+110.00 Y+352.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 94 0 356		PFESS CONFERENCE
2/23:30:00	FREE DRIFT	A1 MAN NORM	BSC 0.200 BB AT 5.00 BB RT 0.20			RCS HOT FIRE AND RCS C/O
3/01:10:00 29:51	TRK TGT=2 SV=3(90.00, 0.00) OH=100.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R=100 P= 0 Y= 0	-ZLV NOSE FWD
3/03:50:00 04:04:58	MNVR R+214.00 P+322.00 Y+302.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 48 0 165		RCS PERIGEE ADJUST
3/04:15:00 29:59	TRK TGT=2 SV=3(90.00, 0.00) OH=100.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R=100 P= 0 Y= 0	-ZLV NOSE FWD
3/07:24:00 33:45	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 103 0 94		IMU ALIGN FAIR A1
3/07:45:00 58:20	TRK TGT=2 SV=3(90.00, 0.00) OH= 0.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	EARTH 0 90 0 0	LVLH R= 0 P=100 Y= 0	-ZLV TAIL FWD
3/17:59:00 10:10:23	MNVR R+202.00 P+219.00 Y+312.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 104 0 94		IMU ALIGN FAIR A1
3/18:10:00 26:06	TRK TGT=4 SV=5(104.00, 0.00) OH=270.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 176 0 102	INRTL R+257 P+192 Y+ 20	TAIL SUN
3/21:12:00 10:47	MNVR R+185.00 P+205.00 Y+346.00	A1 AUTO VERN	BSC 0.200 BB AT 1.00 BB RT 0.02	SUN 0 140 0 103		DEORBIT IMU ALIGN
3/21:30:00 33:18	MNVR R+270.00 P+347.00 Y+280.00	B1 AUTO NORM	BSC 0.500 BB AT 3.00 BB RT 0.20	SUN 0 50 0 150		DEORBIT IMU VERIF

Attitude Timeline						
RET	MOVE OPTION		SAP	E/S	REMARKS	EVENT
3/21/57:00 59:51	RNVR	R+246.00 P+ 15.00 Y+ 0.00	BI AUTO NORM	BSC 0.500 SS AT 3.00 SS RT 0.20	SUN 0 24 0 15	DEORBIT BURN (@ 4:00:12 APPROXIMATE)

2

2

RIGHT DATA FILE CODE DISTRIBUTION
120484

SEC Director
AP3/Support (2)
Pub. Information (1)
CAO/Director
CAJ/Chief
OAB/Chief (2)
DFC/Chief
DF24/NOCC (4)
DF23/Head
OGR/Head
DGA/Crew Sys. (2)
DGA/Comm. & Attached Pl. (2)
DHA/DF MGR
FAO
TA
PL ACB (16)
DHB/Comm Off. (1)
EC/Chief
EC2/Support (4)
EH13/Chief
Support
EH2/Head
EH3/Chief
EH4/Chief
EH5/Chief
Support
EH6/Head
EH8/Head
E53/Support
ET/Support
EU/DF CPCB Rep.
FE42/Head
FE3/Sys. Analysis Sect.
FMB3/Space Nav. Sect.
FMB5/Ground Nav. Sect.
JN2/Technical Library (3)
JN2/ACOD Pub. Center
MD/Manager
MD3/Support
MNGPE Project Office
Support (10)
MP2/CPS Rep.
MS/Safety Div.
SD2/Surgeon
Support
SMM/DO MONE (2)
Z14/MC Cubery (2)
Z12/Miss. in Support (2)

Busing
HS-040, Bennett
Dryden Flight Research Facility
O&A, L. Koff

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NOC, Lee
TX-11, G. Maloy
MOER, D. McCallery (2)
Kennedy Space Center
SE-PEO-AJ, A. Thomas
SO-A/Astronaut Office (2)
ZX-23/Rocketwell Tech Data
LSO-233/A, Grenville

Marshall Space Flight Center
MSFC, Bldg 4656
OCCOL White
SABDR, R. Priddy
EEASR, Hammern
PMTCTBL/J. Humphrey
R533, R/W, J. Jackson
Ford Aerospace Houston
SSO-1A/Tech, J.

Goldard Space Flight Center
4024, B. Hartmann
NASA SPRO - Palm Dale
NRSR, R. Fraser
PL14N, Kuznicki

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Flight Data File Crew Activity Plan

STS 51-E

Mission Operations Directorate
Operations Division

Basic
October 11, 1984

EVENT	CST	Day	Date
Launch (13:40 EDT)	07:40	Tue	Feb 12
TDRS Deploy	17:42	Tue	Feb 12
TELESAT Deploy	15:46	Wed	Feb 13
Crew Press Conference	06:30	Fri	Feb 15
KSC Landing	08:43	Sat	Feb 16

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National Aeronautics and
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Lyndon B. Johnson Space Center
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MISSION OPERATIONS DIRECTORATE

STS 51-E CREW ACTIVITY PLAN

BASIC

October 11, 1984

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STS 51-E CREW ACTIVITY PLAN

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A7.....	6-8	CAP/51-E/O/BAS
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A8.....	6-9	CAP/51-E/O/BAS
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INTRODUCTION

The STS 51-E 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. For continuity, the entire flight is shown in the summary level timeline.

The section entitled 'Crew Activity Plan Notes (constraints and guidelines)', included in CAPs for previous flights, has been published as a generic document entitled 'Timeline format Definitions and Standard Notes/JSC-19933'.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS 51-E Flight Requirements Document.

The flight profile (Cycle 1 trajectory data) used for this Crew Activity Plan is for a launch date of February 12, 1985 at 13:40 GMT. Orbiter inertial attitudes are expressed relative to Mean of 1950 (M50) reference frame.

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STS 51-E OVERVIEW

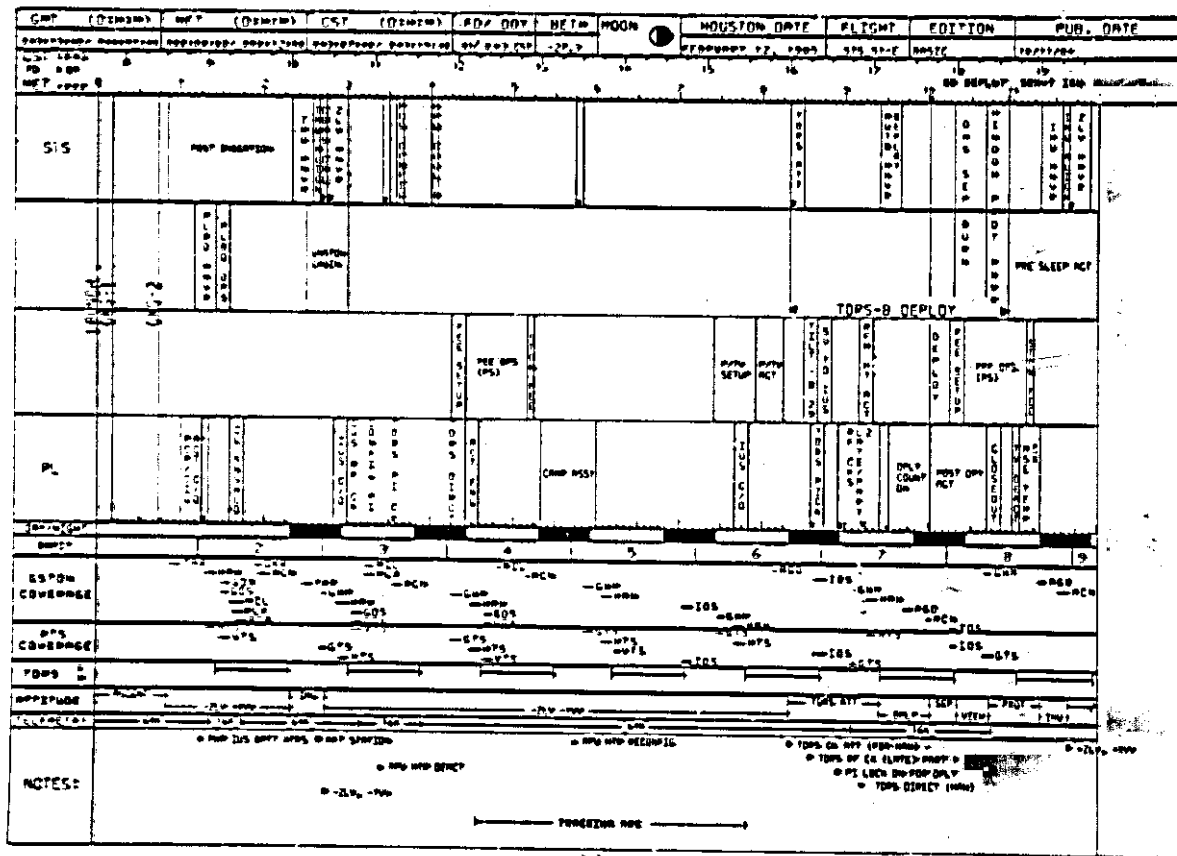
OVERVIEW

	NO DEPLOY	FLIGHT	SPS SPC-E	EDITION BASIC	PUB. DATE	10/11/00
101			REC'D HELP INSTRUC	REP OP ENGR	REP OP	NO DEP SHP P SLEEP
102	SLEEP	PSD	PSD	REP OP ENGR	REP OP ENGR	NO DEP SHP P SLEEP
103	SLEEP	PSD	PSD	REP OP ENGR	REP OP ENGR	NO DEP SHP P SLEEP
104	SLEEP	PSD	PSD	REP OP ENGR	REP OP ENGR	NO DEP SHP P SLEEP
105	SLEEP	PSD	PSD	REP OP ENGR	REP OP ENGR	NO DEP SHP P SLEEP
106						

SUMMARY
TIMELINE

SUMMARY TIMELINE

SUMMARY TIMELINE



GMT	(DENSEM)	MET	(DENSEM)	CST	(DENSEM)	RD/DOY	REFR	MOON	MOISTON DATE	FLIGMS	EDITION	PUB. DATE
W3 1000						10 000 11	-21.2		PERFORM 17 1000	100 000	17	10 000 11
RD 102	20	21	22	23	24	25	26	27	28	29	30	31
MET 1000 12	13	14	15	16	17	18	19	20	21	22	23	24
STS	MEEP								TEST 01	TEST 02		
									POST MEEP ACT			
PL												
	25	26	27	28	29	30	31	32				
ESTON	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000
COVERGE	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000
COVERGE	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000	-000
FOOD												
APPETITE												
NOTES:												

GMT (020000)	NET (020000)	CSF (020000)	PD/ DDT	BFPA	MOON	MOON DATE	FLIGHT	EDITION	PUB. DATE
S-S									SLEEP
									PRE SLEEP NET
PL									PL TO NET
ESTOR	39	30	35	36	37	38	39	40	
CD SOURCE									
SPS									
CD SOURCE									
PPPS									
CD SOURCE									
NOTES:									

GMT (DZMMS)	MPT (DZMMS)	CSF (DZMMS)	EDZ DOY	REFN	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
12 24 26 28 30 32 34 36 38 40 42 44 46 48 50	13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51	14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52	15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53	16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54	17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55	18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56	19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57	20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58	21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59
STS		REP							
PL									
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SPD COVERAGE									
PDS									
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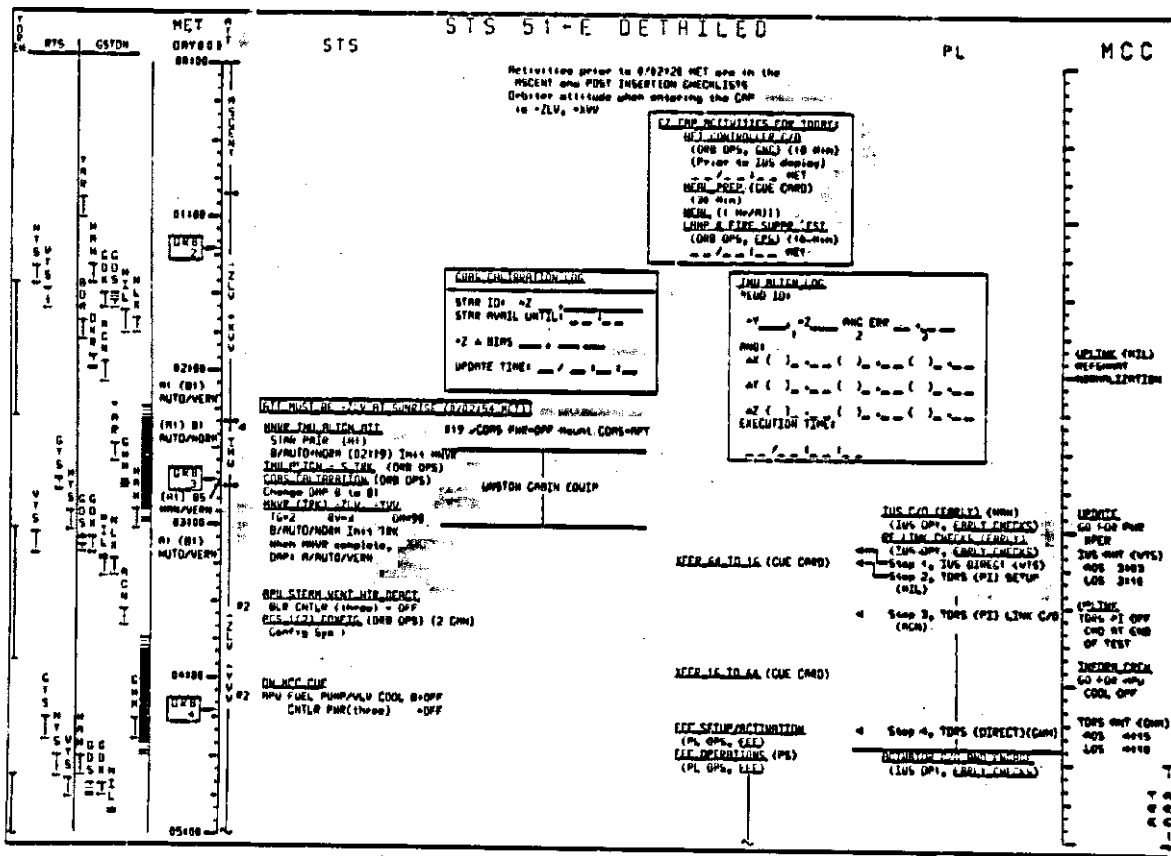
COMP	(DOWNS)	NET	(DOWNS)	CS7	(DOWNS)	FDZ	DDY	BE7P	MOON	HOUSTON DATE	FLIGHT	FOLTON	PUB. DATE
21 166								-17.7		FEBRUARY 22, 1966	375 3147	0857E	10/11/66
NET	12	14	15	16	17	18	19	20	21	22	23		
STS	SLEEP							1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	SECURITY PROP	PROP SLEEP	SECURITY PROP		
	PROP SLEEP NET												
PL													
PROP	57	59	59	60	61	62	63	64					
CS7DN	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
CONVERSE	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
CS7				-100									
CONVERSE				-100									
PROP													
PROP													
PROP													
NOTES:													

GRP	(DEMENT)	NET	(DEMENT)	CSP	(DEMENT)	RD/ DDT	BETA	MOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
15	16	17	18	19	20	21	22	23	24	25	26	27
575												
GROUP 1 BURN - RICE LAURENCE KSC (LOADING (4/11/72))												
PL												
GROUP	65	66	67	68	69	70	71	72				
ESFDs COVERS	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100
OPS COVERS	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100	100 -25 -50 -75 -100
FPS												
OFFPS												
NOTES:												

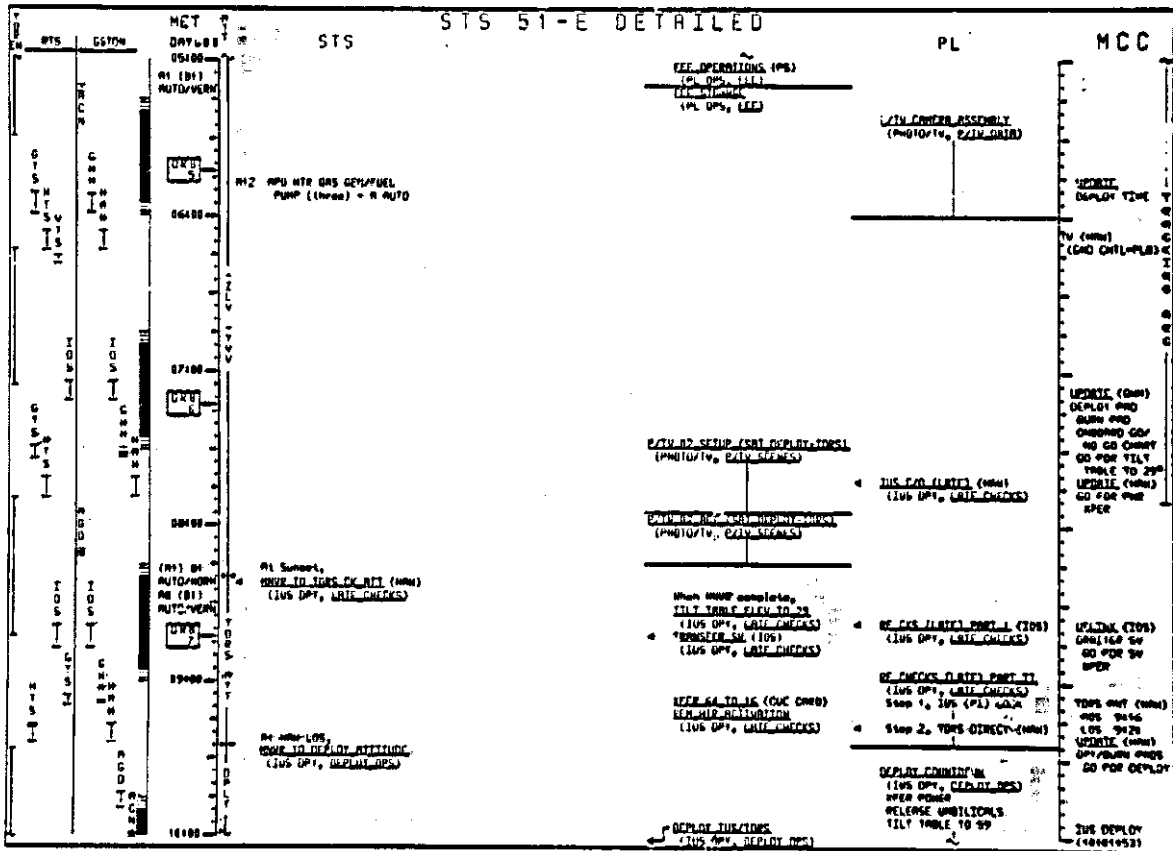
DETAILED TIMELINE

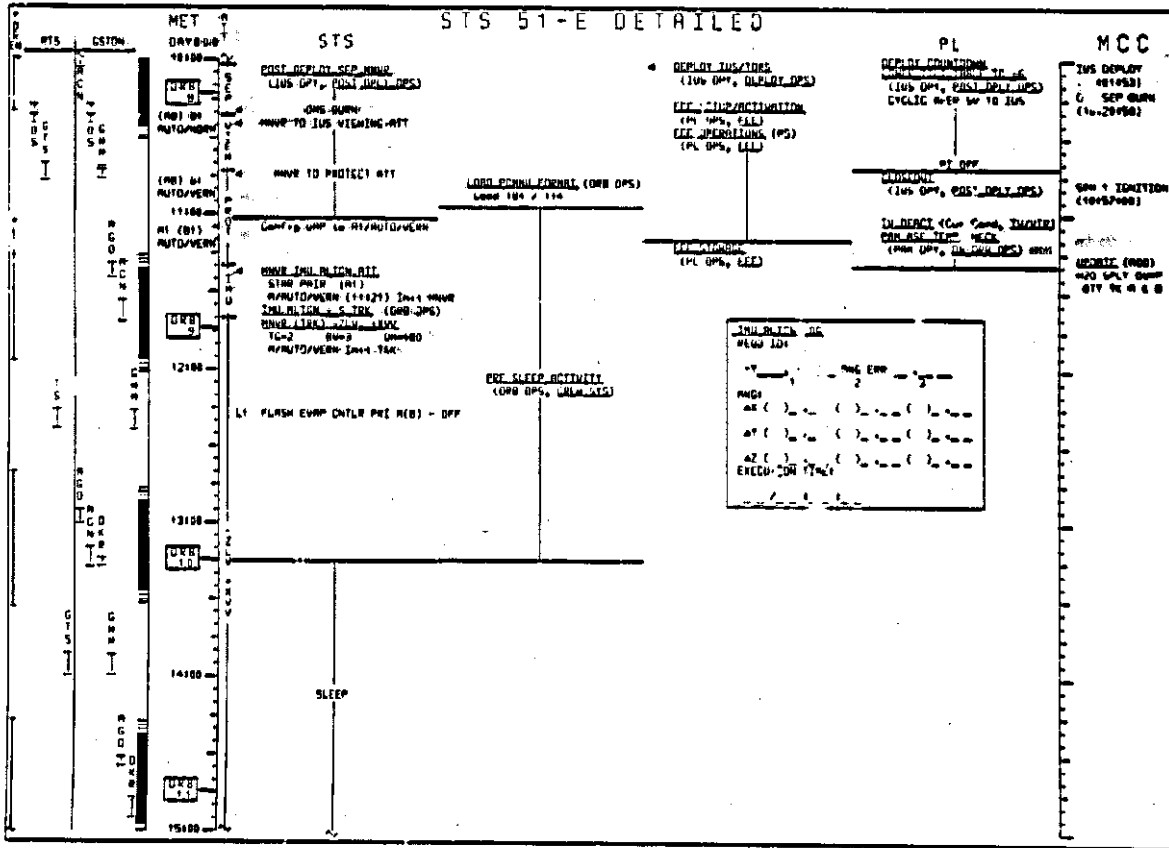
DETAILED
TIMELINE

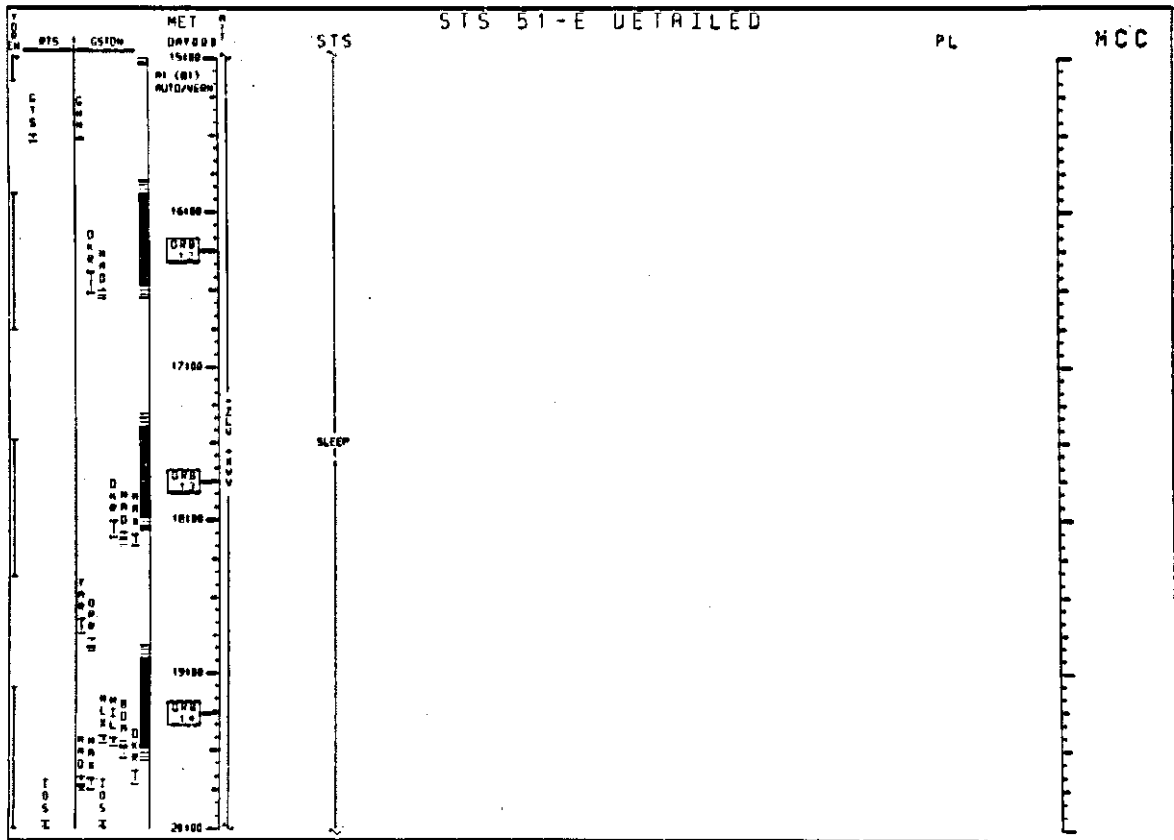
DETAILED TIMELINE



STS 51-E DETAILED



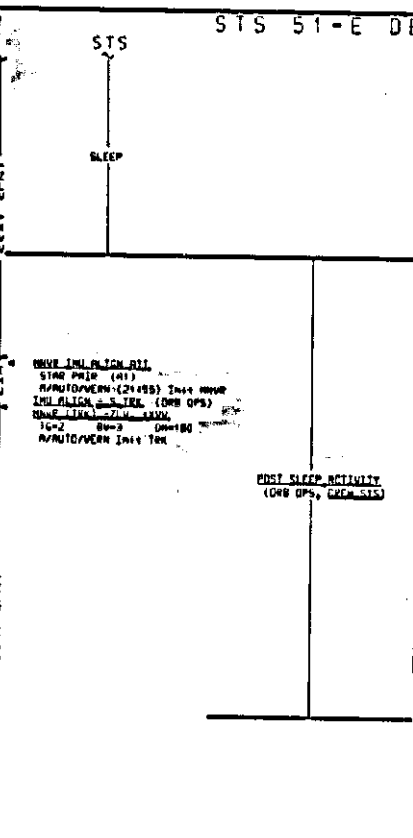
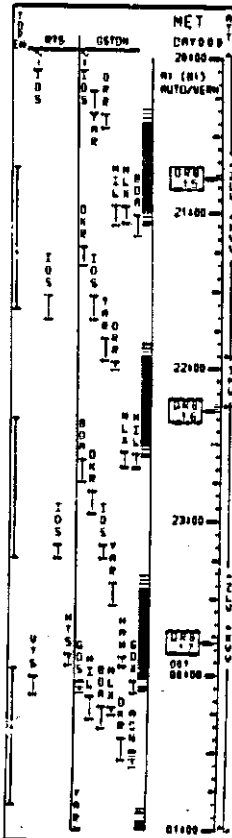




STS 51-E DETAILED

PL

MCC



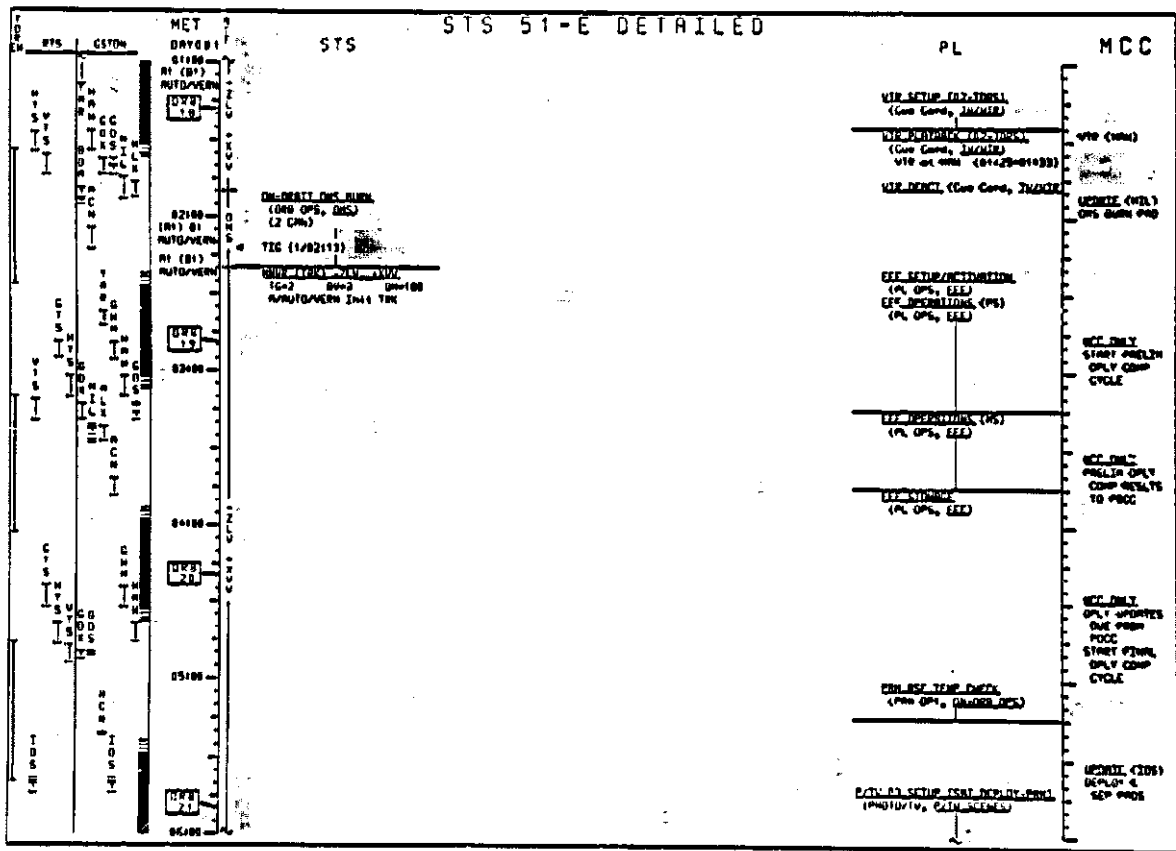
INIT PL-TOM LDC	
NEW ID	
*Y	2.0000000000000000
AND ERR	2.0000000000000000
AND	
a1 ()
a2 ()
EXECUTION TIME	



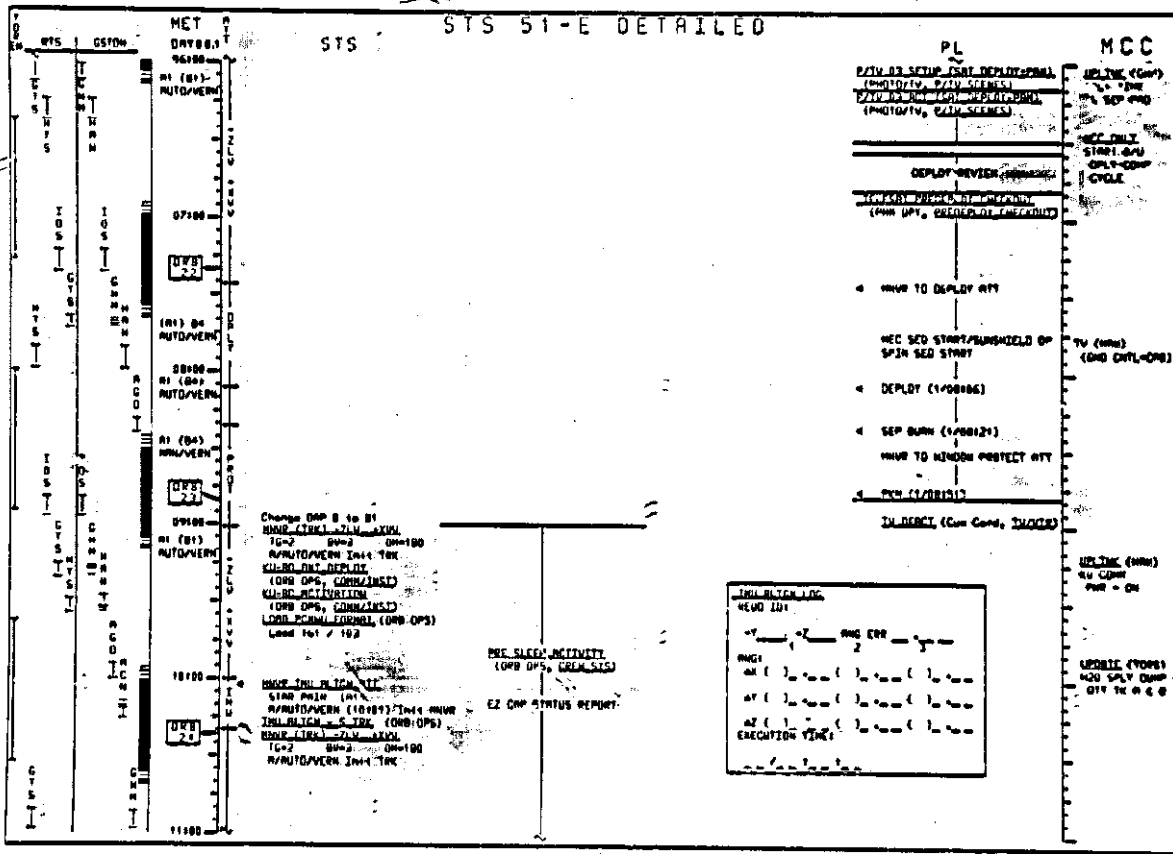
(0001 (TDRS)
AND SPLY DUMP
OPX TR 000
OP/WCC
TCOMRECT
CONVIC

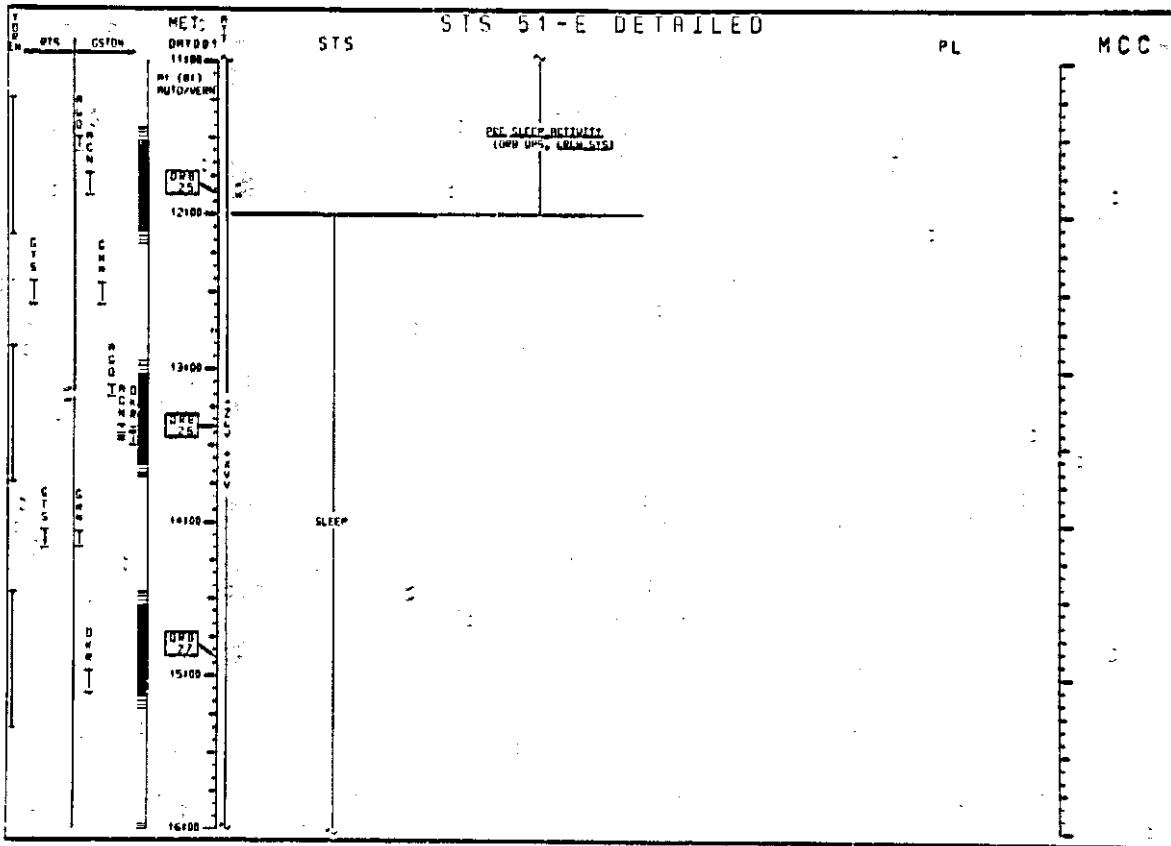
POST SLEEP ACTIVITY
(000 OPS, 0000-010)

EZ OP. ACTIVITIES FOR TODAY	
EXERCISE (1 00:00:01)	
M/R/STK/PA/ (000 0000)	
(00 000)	
M/R/STK/PA/ (1 00:00:01)	
EXERCISE/TIME/OF THE	
(M/R/STK/PA/ (000 0000)	
(00 000:01:01)	
- - - - - MET	

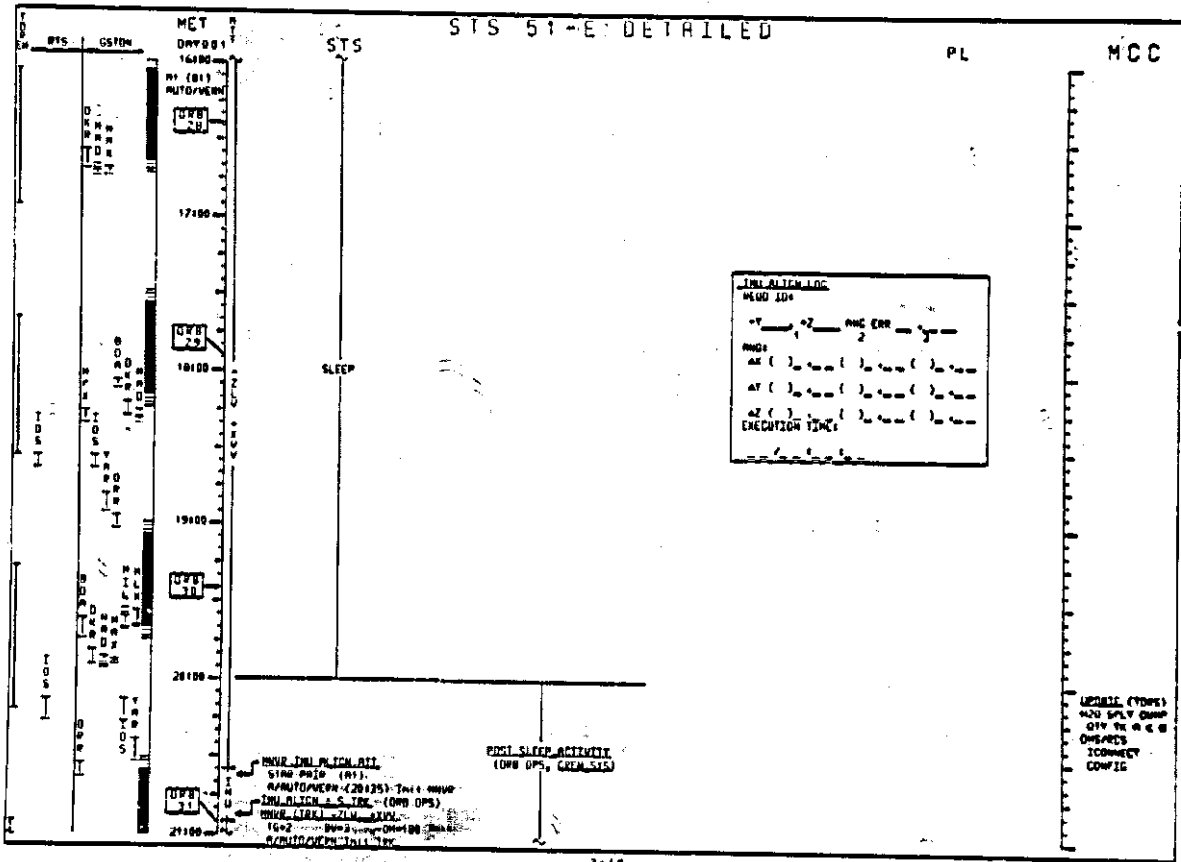


STS STS 51-E DETAILED





STS 51-E DETAILED



STS 51-E DETAILED

STS

PL

MCC

STW 1
STW 2
STW 3
STW 4
STW 5
STW 6
STW 7
STW 8
STW 9
STW 10
STW 11
STW 12
STW 13
STW 14
STW 15
STW 16
STW 17
STW 18
STW 19
STW 20
STW 21
STW 22
STW 23
STW 24
STW 25
STW 26
STW 27
STW 28
STW 29
STW 30

03100

04100

05100

06100

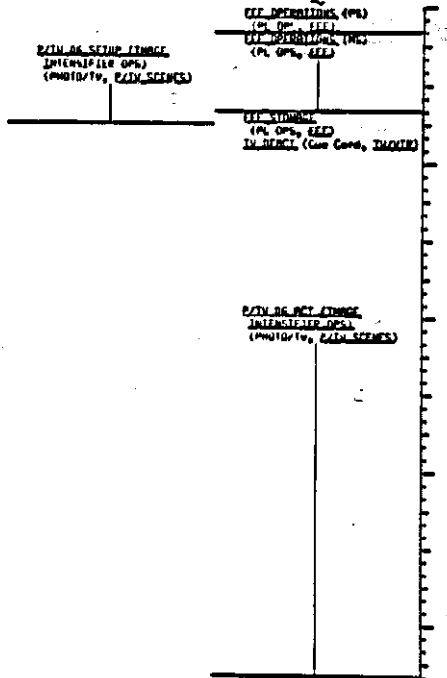
07100

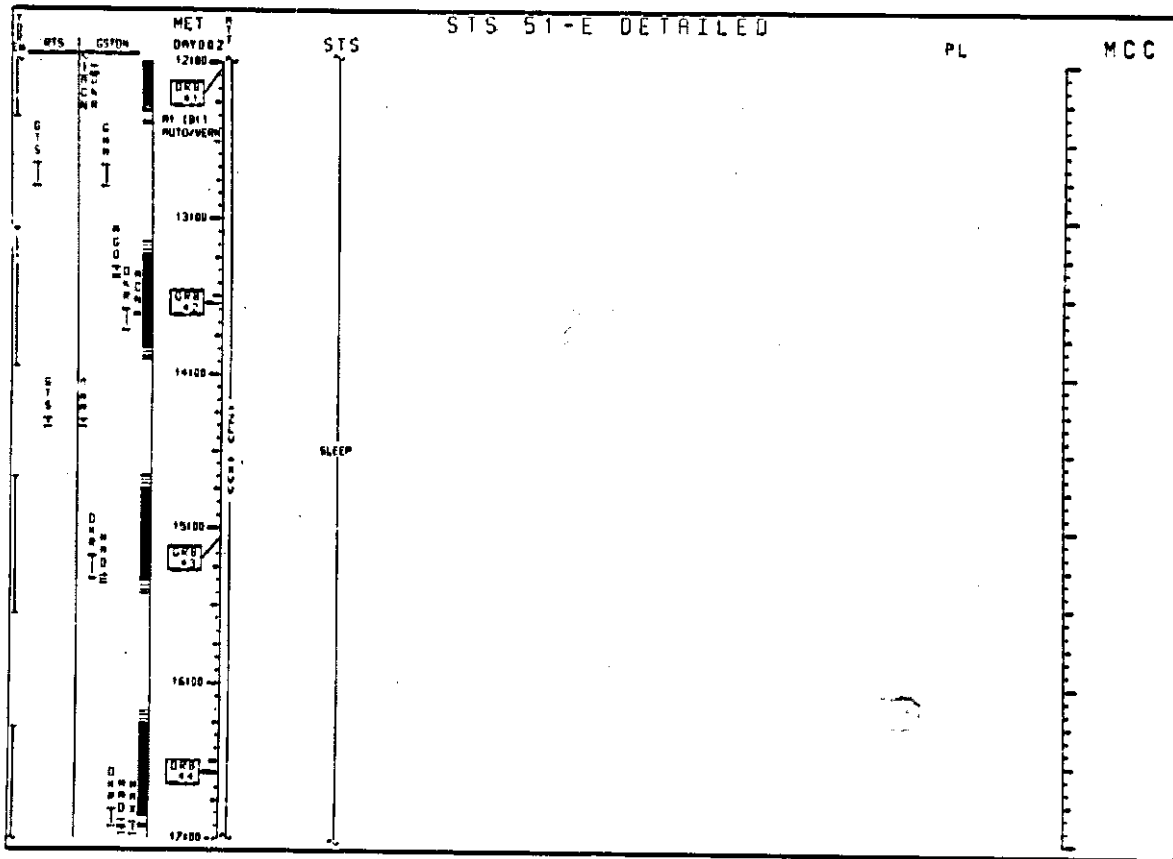
MET DAY 082 0200
0400
0600
0800
1000
1200
1400
1600
1800
2000
2200

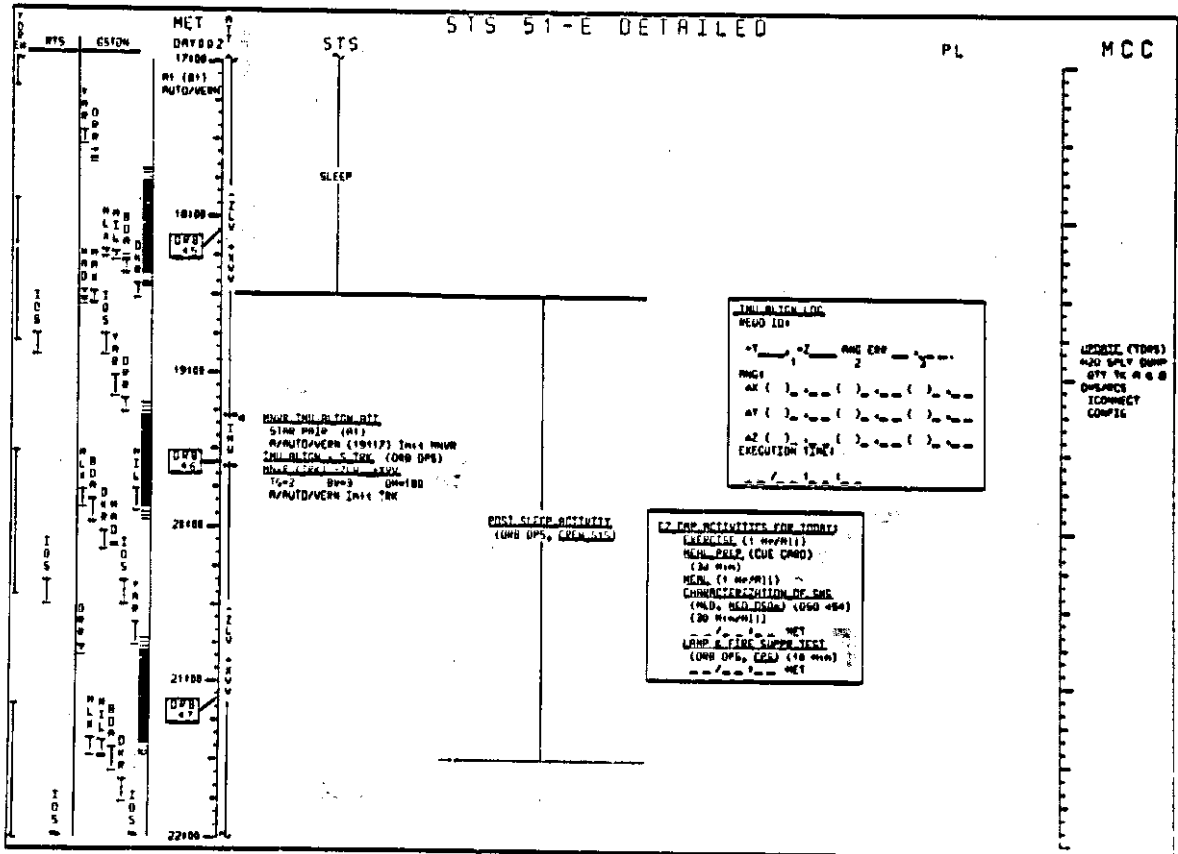
04100 - MAIN DECK INTERM. RTI (040 006)
To
R/AUTO/PCRN (04006) Int 1 HRVR

05100 - MAIN DECK INTERM. RTI (050 006)
To
R/AUTO/PCRN (05115) Int 1 HRVR

06100 - MAIN DECK INTERM. RTI (060 006)
To
R/AUTO/PCRN Int 1 HRVR



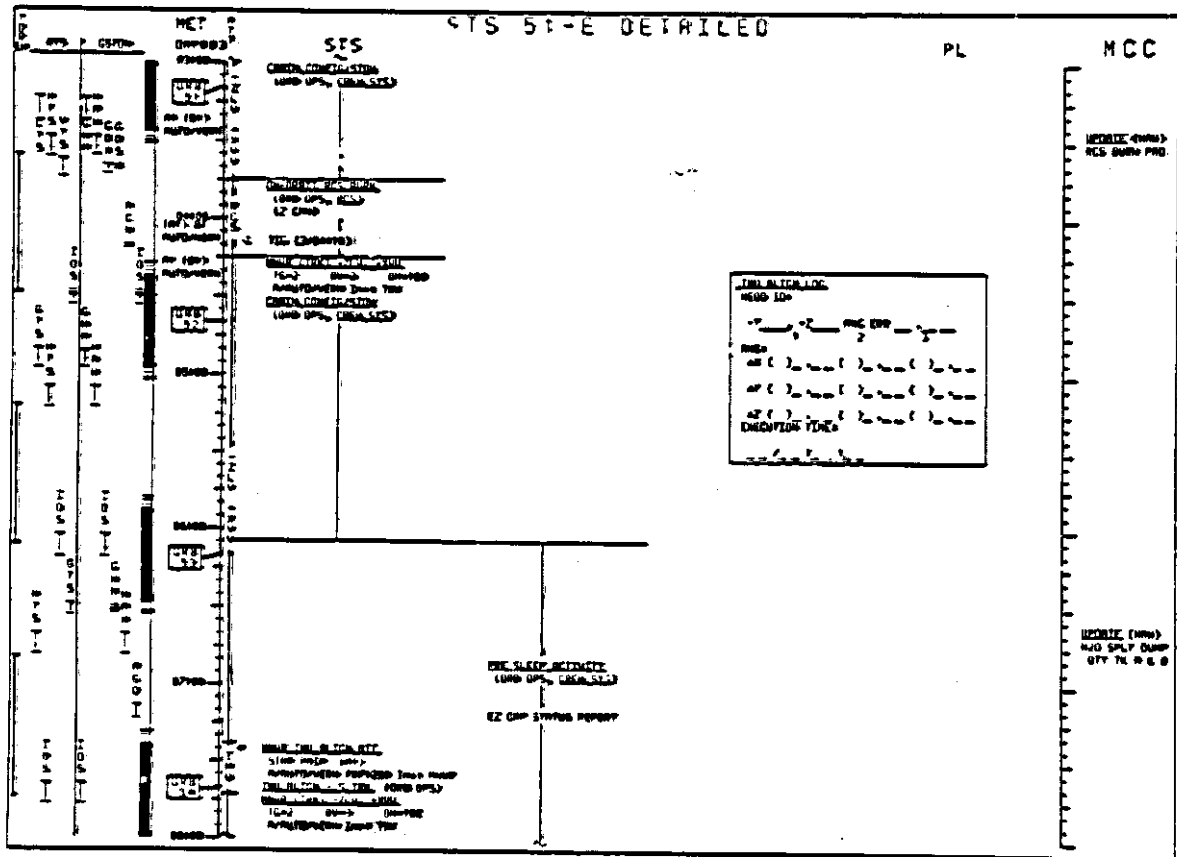


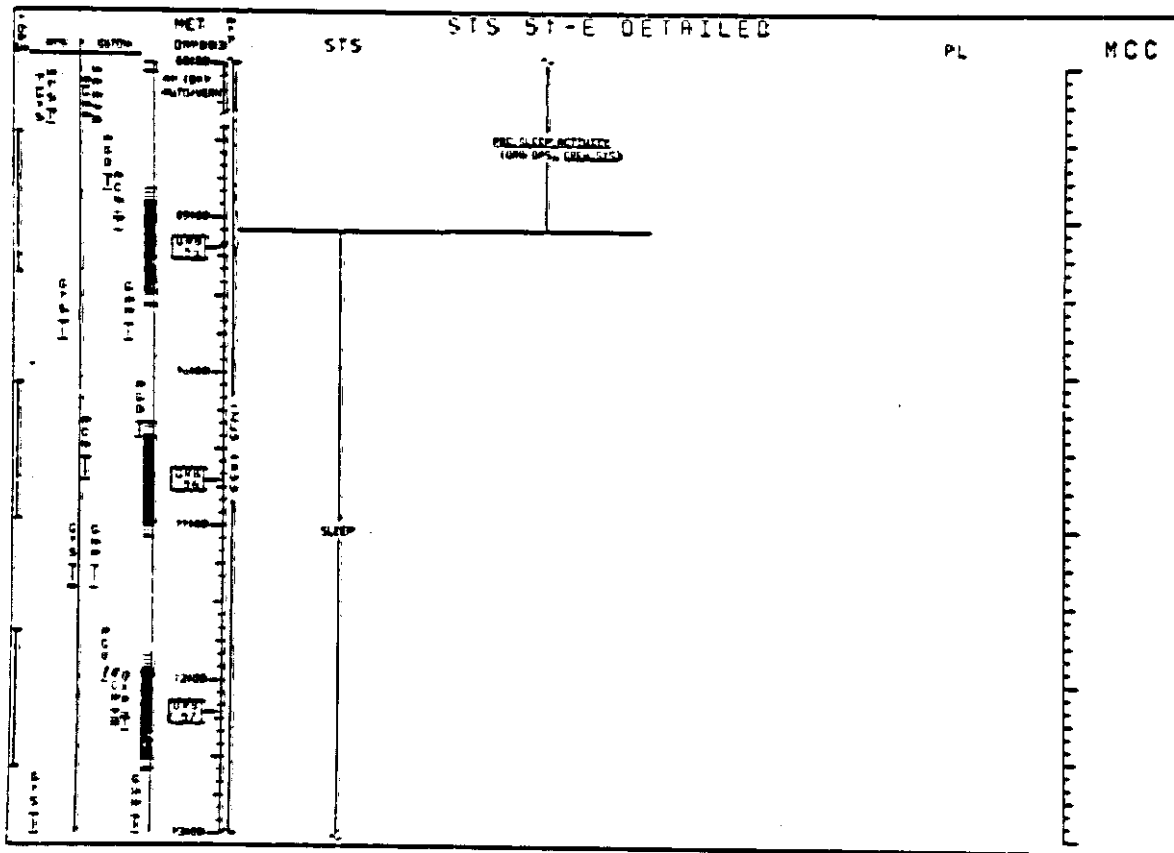


CYS 51-E DETAILED

PL

MCC





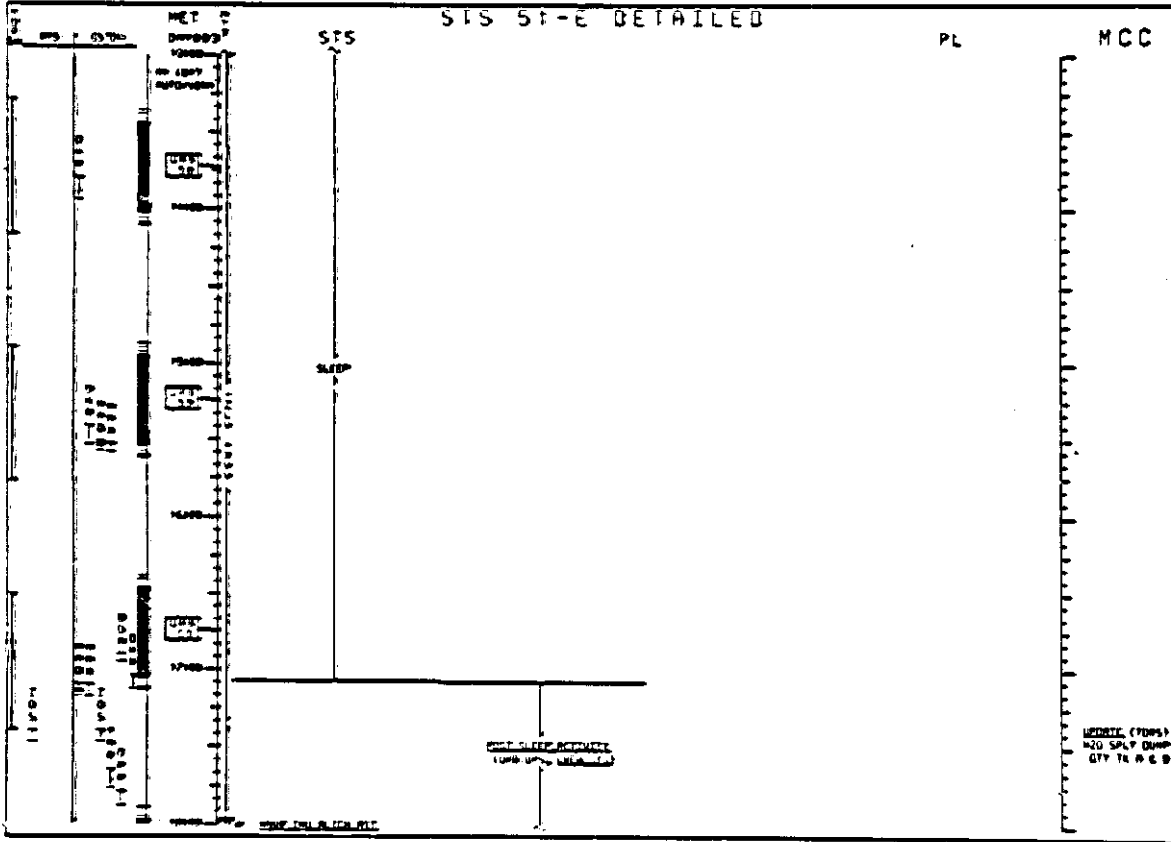
STS SF-E DETAILED

MET

PL

MCC

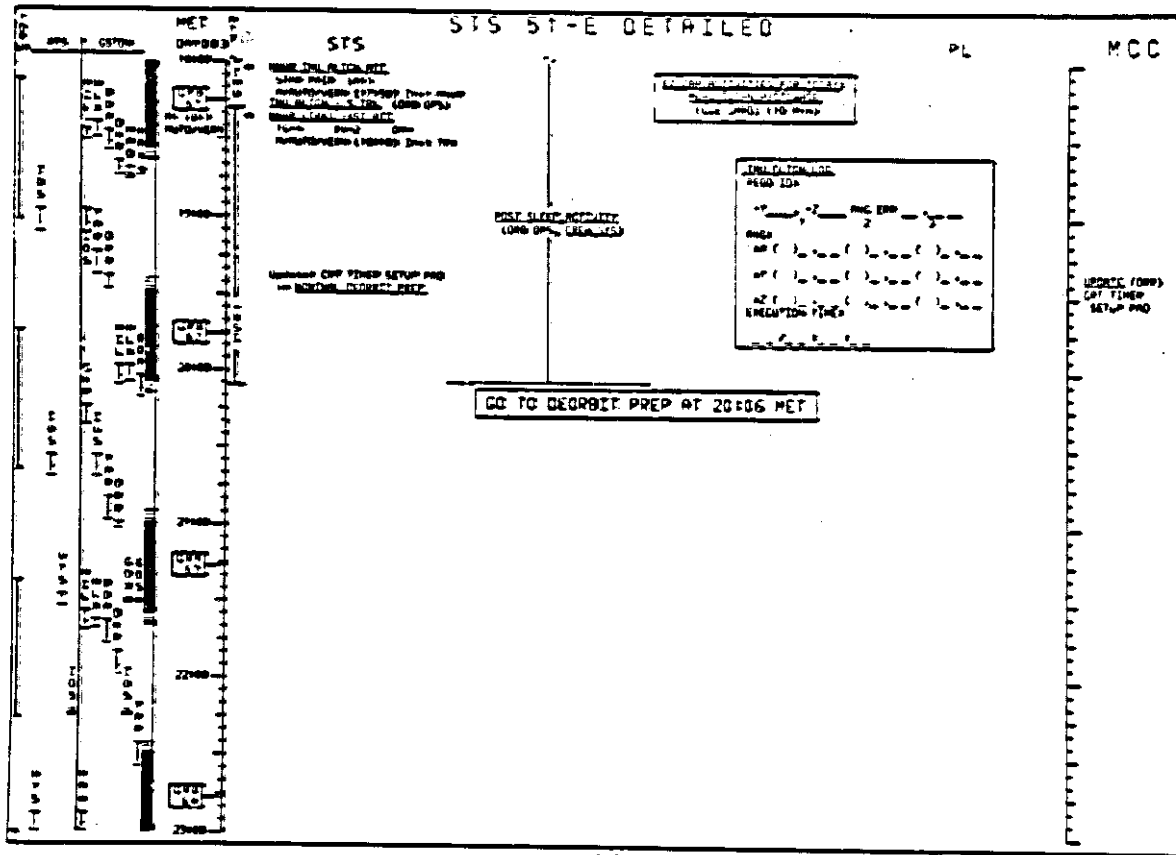
SFS



WATER SUPPLY SYSTEM
CONNECTION POINT

WATER (FORMS)
H2O SPLY DUMP
QTY TO R & B

STS 51-E DETAILED



CONTINGENCY TIMELINES

9D DEPLOYMENT.....	4A-1
100 DEPLOYMENT.....	4B-1
18A DEPLOYMENT.....	4C-1

CONTINGENCY
TIMELINES

CONTINGENCY
TIMELINES

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90 DEPLOYMENT

The 90 Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 90 opportunity. The nominal timeline is used until 0/07:00 MET. All nominal deployment activities are included in this timeline. An early TDRS DIRECT check may be performed at 10S (REV 5). This will preclude two-way voice communications through 10S.

All nominal deployment activities are included. The tracking arc and the IUS C/O and TDRS late checks are performed at the last acceptable opportunities. Additional assumptions are shown on page 4A-2. The timeline is based on the nominal Cycle 1 (C11) trajectory.

90
DEPLOYMENT

90 DEPLOYMENT

GMP (DESIGN)	NET (DESIGN)	CLP (DESIGN)	RDP DOT	RFP DOT	MOOP	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
90-DEPLOY						90-DEPLOY			
SSS	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>READ TO FINALISE USING THE FOLLOWING PRECAUTIONS:</p> <ul style="list-style-type: none"> - THE NUMBER OF TURNS IN IS MUST NOT BE CHANGED - THE NUMBER OF IS IS - IS MUST BE CORRECT - THE NUMBER OF IS MUST BE CORRECT - THE NUMBER OF IS MUST BE CORRECT - THE NUMBER OF IS MUST BE CORRECT - THE NUMBER OF IS MUST BE CORRECT </div>					TOOS-B DEPLOY			
						PL	PLP SETUP	PLP ACT	PLP ACT
<div style="display: flex; justify-content: space-around;"> 12345678910 </div>									
ESTD COVERAGE									
OPS COVERAGE									
PLP									
OFFSHORE									
RELEAS									
NOTES:	<p> * TOOS ON OFF (PLP) (ACT) * PLP ON OFF (PLP) (ACT) * PLP ON OFF (PLP) (ACT) * PLP ON OFF (PLP) (ACT) </p> <p style="text-align: center;">← TURNING AGE →</p> <p style="text-align: right;">LOG P</p>								

CWP (Drawn)	NET (Drawn)	CS* (Drawn)	#D/ DO*	BETA	MOON	HOUSTON (MTC)	FLIGHT	EDITION	PUB. DATE	
SD DEPLOY						27	27	27	27	27
SFS	SE S E E E E E E	SE S E E E E E E								
	PRE SLEEP NET								POST SLEEP NET	
PL	PL S E E E E E E									
NOTE:										

GMT (DZxxxx)	NET (DZxxxx)	ESP (DZxxxx)	RDZ DDT	BETA MOON	HOUSTON DATE	ALIGHT	EDITION	PUB. DATE
9D DEPLOY								
S'S								
	NET - ESP ACT		RETURN TO THE NOMINAL (RDZ) TIMELINE AT 140220Z NET					
PL								
0000	01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26
ESPDS COVERAGE								
OPS COVERAGE								
PDRS								
NOTES:								

100 DEPLOYMENT

The 100 Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 100 opportunity. The nominal timeline is used up to 0/07:00 MET. A TDRS DIRECT check may be performed at IOS (Rev 5). This will preclude two-way voice communications through IOS.

All nominal deployment activities are included. The tracking arc and the IUS C/O and TDRS late checks are performed at the last acceptable opportunities. Additional assumptions are shown on page 4B-2. The timeline is based on the nominal Cycle 1 (C1) trajectory.

100
DEPLOYMENT

100 DEPLOYMENT

GMT (DZMEM)	MPT (DZMEM)	CST (DZMEM)	PD/DOY	BETA	NOON	HOUSTON DATE	FLIGHT	EDITION	PUB. DATE
						12, 1965	155 07-E	DASIC	10/11/65
100 DEPLOY									
STS									
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p>THE 100 TIMELINE MAKES THE FOLLOWING ASSUMPTIONS:</p> <ul style="list-style-type: none"> - THE HOURS OF TRAINING IN GROUND SQUAD, SURFACE NET - THE HOURS OF TRAINING IN AIR - FROM AIRFIELD - THE HOURS OF AIR SERVICE AND NET TRAINING - THE TRAINING HOURS FROM GND TO AIR IN PHASES - THE TRAINING TRANSFERRED FROM TO THE HOURS OF TRAINING IN AIR - 10/11/65 </div>									
PL							MPT MPT	I C A B	MPT MPT
0000	1	2	3	4	5	6	7	8	9
SS/DO CONDUCTOR		-TAX -SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT
SPT CONDUCTOR		-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT
PD/DO		-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT	-SPT -SPT -SPT
MPT/DO									
TELETYPE									
NOTES:									© 1965 CA NY (FWD GND) © 1965, WPT CA (L) 100 DEPT

GMT (DIMIN)	MET (DIMIN)	CSY (DIMIN)	AD/DOY	APTA	MOON	HOUSTON DATE	FLIGHT	EDITION	PLB. DATE			
00011000/04010100	00110000/00112100	00010100/00010100	02/044	021	MOON	FEBRUARY 11, 1995	17A 000	0001	00000000			
LST 1800						1800: DEPLOY						
FD 182												
NET 1800												
STS	Z L C M R N		Z L C M R N		D M R							
										POST SLEEP MET		
										RETURN TO THE NOMINAL (BD) TIMELINE AT 1702:20 MET		
PL	Z L C M R N		Z L C M R N		D M R							
										DAY/HEAT		
										ORBIT		
										ESTON COVERAGE		
										GTS COVERAGE		
TDRS			HTF/TUBE			NOTES:						

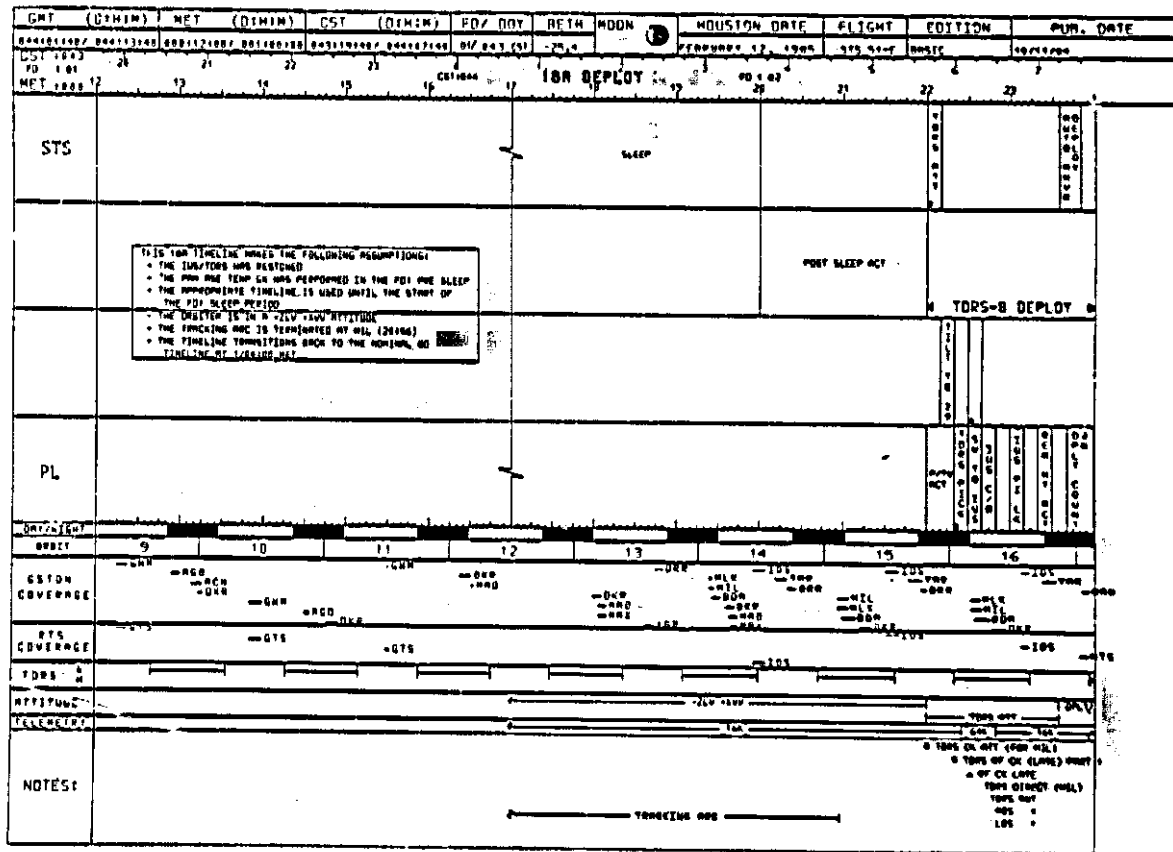
18A DEPLOYMENT

The 18A Deployment Timeline is designed to accommodate delaying deployment of TDRS to the 18A opportunity. The timeline begins during crew sleep and assumes the tilt table is stowed at 0°. All nominal deployment activities are included. Additional assumptions are shown on page 4C-2.

The timeline is based on the nominal Cycle 1 (CIT) flight profile.

18A
DEPLOYMENT

18A DEPLOYMENT



GMT (DIMIN)	MET (DIMIN)	CST (DIMIN)	FD/DOY	AFIR	MOON	MOONSET DATE	PLTGMT	EDITION	UP. DATE					
GMT 1992	192	18	182	182	☐	FEBRUARY 17, 1992	5% 4-5	00000	182/192					
MET 1992	1	1	18R DEPLOY							8	9	10	11	12
STS														
			RETURN TO THE NOMINAL (80) TIMELINE AT 1704100 MET											
PL														
17 18 19 20 21 22 23 24														
BRIDN	-EBS													
COVERAGE	-EBS -EBS -EBS -EBS -EBS -EBS -EBS -EBS -EBS -EBS -EBS -EBS -EBS													
STS	-STS -STS -STS -STS -STS -STS -STS -STS -STS -STS -STS -STS -STS													
FDPS	-FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS -FDPS													
ATTITUDE	-ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE -ATTITUDE													
TELEMETRY	-TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY -TELEMETRY													
NOTES:	S-LV, 1800													

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CONSUMABLES CURVES
(TBS)

CONSUMABLES
CURVES

CONSUMABLES
CURVES

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

STS 51-E DAP BOOK

DAP A CONFIGURATIONS.....	6-2
DAP B CONFIGURATIONS.....	6-3
STS 51-E DAP BOOK.....	6-4

DAP BOOK

TABLE 6-1
DAP A CONFIGURATIONS

	A1*	A2	A3	A4	A5	A6	A7	A8
TRANSLATION								
PULSE ft/sec	0.10	0.10	0.10	0.10	0.10	0.10		0.25
ROTATION								
OSC RT NORM %/sec	0.200	0.400	0.200	0.200	0.200	0.200		0.200
VERN %/sec	0.200	0.400	0.200	0.008	0.200	0.200		0.200
PULSE NORM %/sec	0.10	0.10	0.30	0.10	0.10	0.10		0.05
VERN %/sec	0.010	0.010	0.010	0.010	0.050	0.010		0.010
COMP NORM %/sec	.00	.00	.00	.00	.00	.00		.00
VERN %/sec	.000	.000	.000	.000	.000	.000		.000
DEADBAND								
ATT NORM (deg)	5.00	1.00	5.00	1.00	5.00	5.00		1.00
VERN (deg)	1.000	1.000	1.000	0.070	1.000	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		.010
JET OPT								
P	1	1	3	1	1	3		1
Y	1	1	3	3	1	3		1
ENTL ACCEL	0	0	0	0	0	0		0

*1-LOADED OPS-2 DAP Configuration

**TABLE 6-1 (Cont)
DAP B CONFIGURATIONS**

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

*I-LOADED OPS-2 DAP Configuration

TOP
FRONT COVER 'DAP BOOK'

DAP BOOK

HOOK
VELCAO

CAP/SI-E/O/BAS

CAP/SI-E/O/BAS

UNIV PTG	
TGT ID = 1	Orbiting Vehicle
= 2	Earth ctr
= 3	Earth tgt
	Input (LAT (+90)
	LON (+180, + - East)
	ALY (+20000.0)
	(-2444.0)
= 4	Sun ctr
= 5	Celestial tgt
	Input RA (0-359.99)
	DEC (+90)
	= 11-110 New Stars
BODY VECT	
= 1	+X*
= 2	-X*
= 3	-Z*
= 4	PTC (+-Z below +X)*
= 5	Optional
	Input P (0-359.99)
	Y (270-359.99, 0-90)
* Input OM ->	OM (0-359.99)
MON AXIS	
= 1	+X
= 2	-X

E20 DAP CONFIG	
ENTL ACCEL = 0	Orbiter alone
= 1	Not used
= 2	Not used
= 3	Not used
= 4	Not used
= 5	Not used
JEV OPT = 1	Normal
= 2	Nose only
= 3	Tail only

TOP
BACK OF FRONT COVER
'DAP BOOK'

TOP

DAP PURPOSE

- A1 - NOMINAL
 - ZLV
 - IMJ ALIGN
 - TAIL ONLY CONTROL
 - BACKOUT
 - PRE/POST PAM DEPLOY
 - OMS BURN
 - TAIL-TO-SUN
 - LOSS OF VERN
- A2 - JTC
- A3 - RCS HOT FIRE
- A4 - GG
- A5 - IMJ ROTATION
- A6 - LOSS OF VERN (TAIL ONLY)
- A7 - (Blank)
- A8 - IUS DEPLOY

CAP/S1-E/O/BAS

A1

TOP

DAP A1

PURPOSE:

- ZLV
- IMJ ALIGN
- TAIL ONLY CONTROL
- BACKOUT
- PRE/POST PAM DEPLOY
- OMS BURN
- TAIL-TO-SUN
- LOSS OF VERN (NOSE & TAIL)

A1

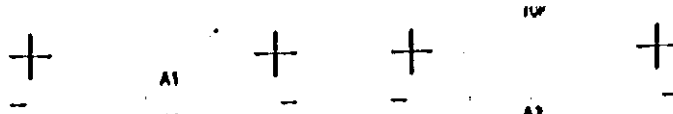
0.1 0	1	TRANSLATION
		PULSE
		ROTATION
0.2 0 0	2	DSC RT NORM
0.2 0 0	3	VERN
0.1 0 0	4	PULSE NORM
0.1 0 0	5	VERN
0.0 0 0	6	COMP NORM
0.0 0 0	7	VERN
		DEADBAND
5.0 0	8	ATT NORM
1.0 0 0	9	VERN
0.2 0	10	RATE NORM
0.2 0	11	VERN
1	12	JET OPT P
1	13	Y
0	14	CNTL ACCEL

CAP/S1-E/O/BAS

CAP/S1-E/O/BAS

A2

TOP



A1
 OAP A2
 PURPOSE:
 PIC

A2
 TRANSLATION
 PULSE
 0-1 0 1
 ROTATION
 DSC RT 2 NORM
 YERN
 PULSE 3 NORM
 YERN
 COMP 4 NORM
 YERN
 DEADBAND
 ATT 8 NORM
 YERN
 RATE 10 NORM
 YERN
 11
 JET OPT 12 P
 Y
 13
 CNTL ACCEL 14

CAP/S1-E/O/BAS

CAP/S1-E/O/BAS



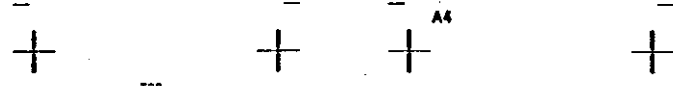
A2
 OAP A3

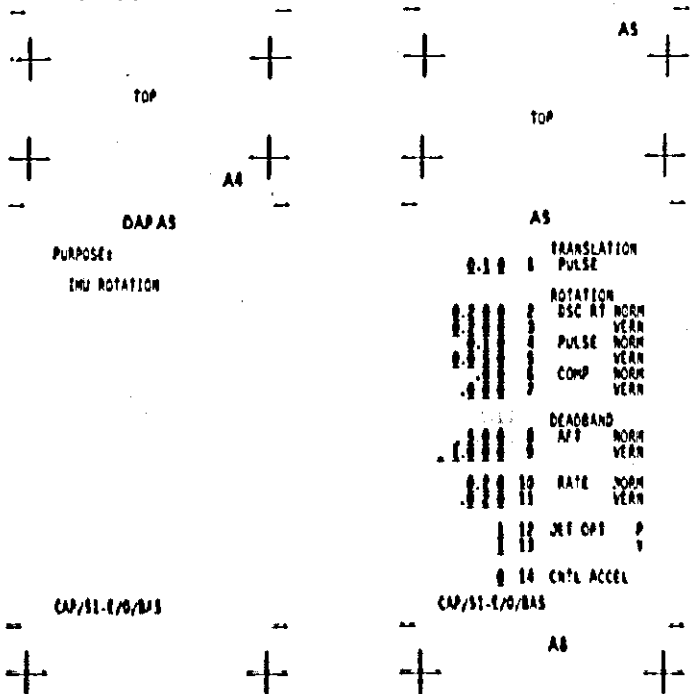
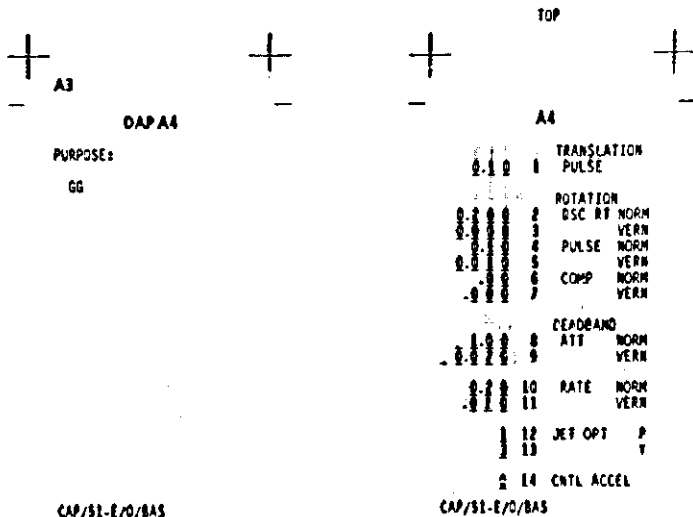
A3
 TRANSLATION
 PULSE
 0-1 0 1
 ROTATION
 DSC RT 2 NORM
 YERN
 PULSE 3 NORM
 YERN
 COMP 4 NORM
 YERN
 DEADBAND
 ATT 8 NORM
 YERN
 RATE 10 NORM
 YERN
 11
 JET OPT 12 P
 Y
 13
 CNTL ACCEL 14

PURPOSE:
 RCS HOT FIRE

CAP/S1-E/O/BAS

CAP/S1-E/O/BAS





TOP

AS

DAPA6

PURPOSE:

LOSS OF VERN
(TAIL ONLY)

CAP/SI-E/O/BAS

TOP

AS

DAPA7

PURPOSE: (Blank)

CAP/SI-E/O/BAS

TOP

(reduced copy)

A6

TRANSLATION
PULSE

0.1 0	1	TRANSLATION PULSE
0.1 0	2	ROTATION DSC RT NORM
0.1 0	3	VERN VERN
0.1 0	4	PULSE NORM
0.1 0	5	VERN VERN
0.1 0	6	COMP NORM
0.1 0	7	VERN VERN

DEADBAND
ATT NORM
VERN

1.0 0	8	DEADBAND ATT NORM
1.0 0	9	VERN
0.2 0	10	RATE NORM
0.2 0	11	VERN

12 JET OPT P
13 V

14 CNTL ACCEL

CAP/SI-E/O/BAS

A7

TOP

A7

TRANSLATION
PULSE

0.1 0	1	TRANSLATION PULSE
0.1 0	2	ROTATION DSC RT NORM
0.1 0	3	VERN VERN
0.1 0	4	PULSE NORM
0.1 0	5	VERN VERN
0.1 0	6	COMP NORM
0.1 0	7	VERN VERN

DEADBAND
ATT NORM
VERN

1.0 0	8	DEADBAND ATT NORM
1.0 0	9	VERN
0.2 0	10	RATE NORM
0.2 0	11	VERN

12 JET OPT P
13 V

14 CNTL ACCEL

CAP/SI-E/O/BAS

AS



A7

CAP A8

PURPOSE:
EVS DEPLOY

TOP

A8

0-2 5	1	TRANSLATION PULSE
0-2 0	2	ROTATION
0-2 0	3	DSC RT NORM
0-2 0	4	VERM
0-2 0	5	PULSE NORM
0-2 0	6	VERM
0-2 0	7	COMP NORM
0-2 0	8	VERM
1-1 0 0	9	DEAD-BAND ATT NORM
1-1 0 0	10	VERM
0-2 0	11	KATE NORM
0-2 0	12	VERM
1	13	JET OPT P
1	14	V
Q	14	CNTL ACCEL

CAP/SI-E/O/BAS

CAP/SI-E/O/BAS



TOP

TOP



A8

DAP PURPOSE

- 01 - NOMINAL
PRES IMU ALIGN
TOP-TO-SUN
TAIL ONLY CONTROL
BACKOUT
- 02 - LOSS OF VERM
CHS B RCS BURNS
(TAIL ONLY)
- 03 - LOSS OF VERM;
EG POWER
- 04 - PAM DEPLOY
FRISBEE DEPLOY
- 05 - COAS CAL

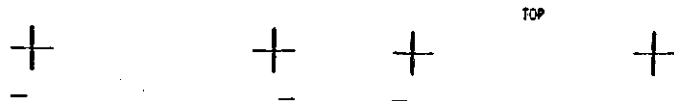
CAP/SI-E/O/BAS

CAP/SI-E/O/BAS



01

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DAP B1

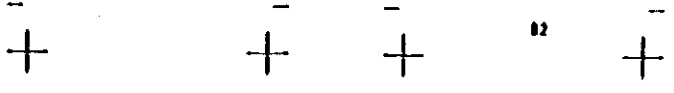
PURPOSE:
 PRCS IMJ ALIGN
 TOP-TO-SUR
 TAIL ONLY CONTROL BACKOUT
 OMS & RCS BURNS

TOP

B1

TRANSLATION			
PULSE	15	0.0	2
ROTATION			
BSC RT	NORM 16	0.5	0
	VERN 17	0.0	0
PULSE	NORM 18	0.0	0
	VERN 19	0.0	0
COMP	NORM 20	0.0	0
	VERN 21	0.0	0
DEADBAND			
ATT	NORM 22	1.0	0
	VERN 23	1.0	0
RATE	NORM 24	1.0	0
	VERN 25	1.0	0
JET OPT	P 26		1
	V 27		
CNTL ACCEL	28		0

CAP/SI-E/O/BAS



TOP

B1

DAP B2

PURPOSE:
 LOSS OF VERN
 (TAIL ONLY)

B2

TOP

TRANSLATION			
PULSE	15	0.0	2
ROTATION			
BSC RT	NORM 16	0.5	0
	VERN 17	0.0	0
PULSE	NORM 18	0.0	0
	VERN 19	0.0	0
COMP	NORM 20	0.0	0
	VERN 21	0.0	0
DEADBAND			
ATT	NORM 22	1.0	0
	VERN 23	1.0	0
RATE	NORM 24	1.0	0
	VERN 25	1.0	0
JET OPT	P 26		1
	V 27		
CNTL ACCEL	28		0

CAP/SI-E/O/BAS



TOP

+	+	+	+
-	-	-	-
B2			
OAP B3			B3
PURPOSE:			TRANSLATION
LOSS OF VERN			PULSE 15 0-0 2
(NOSE & TAIL)			ROTATION
GG MNVR			BSC RT NORM 16 0-0 0
			VERN 17 0-0 0
			PULSE NORM 18 0-0 0
			VERN 19 0-0 0
			COMP NORM 20 0-0 0
			VERN 21 0-0 0
			DEADBAND
			ATT NORM 22 1-0 0
			VERN 23 1-0 0
			RATE NORM 24 0-0 0
			VERN 25 0-0 0
			JET OPT P 26 1
			V 27 1
			CNTL ACCEL 28 0
CAP/SI-E/O/BAS			CAP/SI-E/O/BAS

+	+	+	+
-	-	-	-
TOP			TOP
B3			B4
OAP B4			B4
PURPOSE:			TRANSLATION
PFM DEPLOY			PULSE 15 0-0 2
FRISBEE DEPLOY			ROTATION
			BSC RT NORM 16 0-0 0
			VERN 17 0-0 0
			PULSE NORM 18 0-0 0
			VERN 19 0-0 0
			COMP NORM 20 0-0 0
			VERN 21 0-0 0
			DEADBAND
			ATT NORM 22 1-0 0
			VERN 23 1-0 0
			RATE NORM 24 0-0 0
			VERN 25 0-0 0
			JET OPT P 26 1
			V 27 1
			CNTL ACCEL 28 0
CAP/SI-E/O/BAS			CAP/SI-E/O/BAS

+	+	+	+
-	-	-	-
TOP			TOP



84



TOP

OAP 85

PURPOSE:
COAS CAL

TRANSLATION			
PULSE	15	0.0	2
ROTATION			
DSC RT	NORM 16	0.0	0
	VERN 17	0.0	0
PULSE	NORM 18	0.0	0
	VERN 19	0.0	0
COMP	NORM 20	0.0	0
	VERN 21	0.0	0

DEADBAND			
ATT	NORM 22	0.0	0
	VERN 23	0.0	0

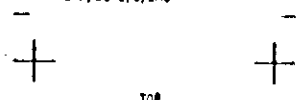
RATE	NORM 24	0.0	0
	VERN 25	0.0	0

JET OPT	P 26	1
	T 27	1

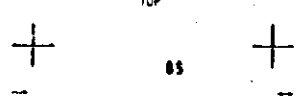
CNTL ACCEL	28	0
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CAP/SI-E/O/BAS

CAP/SI-E/O/BAS

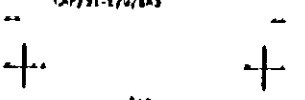


TOP



85

CAP/SI-E/O/BAS



TOP

(reduced copy)

TOP
BACK COVER "DAP BOOK"

HOOK
VELCRO

CAP/SL-E/O/BAS

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