

CREW ACTIVITY

PLAN

FINAL REV-A

PCN-1

Flight Data File Crew Activity Plan STS 61-C (Cycle 2 Trajectory)

Mission Operations Directorate
Operations Division

Final, Revision A PCN-1
November 26, 1985

EVENT	CSI			
Launch	06:00	Wed	Dec	18
SATCOM Deploy	15:32	Wed	Dec	18
Crew Press Conference	05:43	Sun	Dec	22
KSC Landing	06:14	Mon	Dec	23



National Aeronautics and
Space Administration


Lyndon B. Johnson Space Center
Houston, Texas

MISSION OPERATIONS DIRECTORATE


STS 61-C CREW ACTIVITY PLAN

FINAL, REVISION A
November 26, 1965

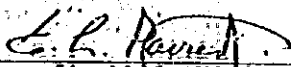
PREPARED BY:



 PHILIP L. ENGELAUF
 Book Manager

APPROVED BY:


 Elvin B. Pippert, Jr.
 Head, Crew Activity Planning
 Section 2


 John F. Whiteley
 Chief, Flight Activity Branch


 Edward L. Pavella, Jr.
 Chief, Operations Division


 John W. O'Neill
 Assistant Director for
 Operations

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Comments concerning this document may be addressed to DH4/Phil Engelauf, or DH4/Dennis Knutson, Bldg 4, Rm 348B, 713-483-3486.

Changes to the distribution list should be submitted in writing to DH4/Gwen Butler, Bldg 4, Rm 373, 713-483-5224.

Incorporated	483
No:	483
CAP-444	EZ CAP-453
CAP-445	EZ CAP-464
CAP-446	CAP-457
CAP-447	CAP-459
CAP-448	

ACKNOWLEDGMENTS

The following individuals contributed significantly to preparing the STS 61-C Crew Activity Plan:

<u>AREA</u>	<u>NAME</u>	<u>PHONE NO.</u>
Nominal Timeline	Dennis Knutsen	483-3486
CAPS Processing	Mike Casey	483-3486
	Mary Lou Stirling	483-3087
	Greg Picard	483-3087
	C. Cheryl Triplett	483-3486
	Nancy Harris	483-2307
Attitude and Pointing	David Schurr	483-2201
	Kathy Amidon	483-3486
Editing (Omniplan)	Mildred Cherry	483-3844
Word Processing (Omniplan)	J. Herrington	
	S. Kerr	
	G. Richards	
	P. Romero	
	R. Scott	
	T. Walker	

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INTRODUCTION

The STS 61-C 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, Desorbit Prep, and Entry Checklists. For continuity, the entire flight is shown in the summary level timeline.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS 61-C Flight Requirements Document.

The flight profile (Cycle 2 trajectory data) used for this Crew Activity Plan is for a launch date of December 20, 1985, at 12:00 GMT. The launch date change to December 18, 1985, at 12:00 GMT has been incorporated throughout the Crew Activity Plan where appropriate and does not impact the trajectory data. Orbiter inertial attitudes are expressed relative to the Mean of 1950 (M50) reference frame.

OVERVIEW

STS 61-C OVERVIEW

OVERVIEW

FLIGHT		EDITION		PUB. DATE	
FD 1	SLEEP	POST SLEEP	MEAL	POST SLEEP	SLEEP
FD 2	SLEEP	POST SLEEP	MEAL	POST SLEEP	SLEEP
FD 3	SLEEP	POST SLEEP	MEAL	POST SLEEP	SLEEP
FD 4	SLEEP	POST SLEEP	MEAL	POST SLEEP	SLEEP
FD 5	SLEEP	POST SLEEP	MEAL	POST SLEEP	SLEEP

RELIEF		FLIGHT		EDITION		PUB. DATE	
FD 6	RELIEF	PREP	RECEIVED	RECEIVED	RECEIVED	RECEIVED	RECEIVED

If not full in box use 4 for 10

SUMMARY
TIMELINE

SUMMARY TIMELINE

COMP	ISSUES	REF	DAYS	PAGES	ISSUES	SO. DTP	REIM	MAGN	ACQUISITION DATE		EDITION		PUB. DATE		
									1	2	3	4	5	6	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
STS	MAP											100 SCALE 005-10			
	MAP														
PL															
25	26	27	28	29	30	31	32								
EXPD															
C															
NOTES:															

STS 61-C TEAM SCHEDULE

<u>FD</u>	<u>Team</u>	<u>Hours</u>	<u>MET ON</u>	<u>MET OFF</u>	<u>CST ON</u>	<u>CST OFF</u>
Prelaunch	Planning (FD/INCO)	3.5	L-2830	L-2500	17:0130	17:0500
	Ascent FCR Team	2	L-2030	L-1830	17:0930	17:1130
	Planning Full Team	8	L-1100	L-0300	17:1900	18:0300
1	Ascent/Orbit 1	8	L-0400	0:0400	18:0200	18:1000
	Orbit 2	9	0:0300	0:1200	18:0900	18:1800
	Planning	9	0:1100	0:2000	18:1700	19:0200
2	Orbit 1	8	0:1900	1:0300	19:0100	19:0900
	Orbit 2	8	1:0200	1:1000	19:0800	19:1600
	Planning	9	1:0900	1:1800	19:1500	20:0000
3	Orbit 1	9	1:1700	2:0200	19:2300	20:0800
	Orbit 2	8	2:0100	2:0900	20:0700	20:1500
	Planning	9	2:0800	2:1700	20:1400	20:2300
4	Orbit 1	9	2:1600	3:0100	20:2200	21:0700
	Orbit 2	8	3:0000	3:0800	21:0600	21:1400
	Planning	9	3:0700	3:1600	21:1300	21:2200
5	Entry	10	3:1500	4:0100	21:2100	22:0700
	Orbit 2	9	4:0000	4:0900	22:0600	22:1500
	Planning	10	4:0800	4:1800	22:1400	23:0000
6	Entry	9	4:1700	5:0200	23:2300	23:0800

FD	NAME	PRIMARY	TELE	SLIP/NO
FD 01	00/20150	000 14 00/20159:10.6 00005120.0	13 00/19115:19.0 00005101.0	
FD 02	01/19100	000 29 01/18110:52.6 000104120.0	28 01/17159:51.0 00005101.0	
FD 03	02/17145	000 44 02/17109:102.6 000107110.0	17 01/16108:111.6 00005111.0	
FD 04	03/16170	000 59 03/15150:152.6 000106100.0	20 01/15109:51.0 00005101.0	
FD 05	04/15115	000 75 04/14119:112.6 000105100.0	24 01/14108:111.6 00005111.0	

000 75
01/14119:112.6
000105100.0

00-11	01-11	02-11	03-11	04-11	10
1	000	00	000	00	000
2	000	00	000	00	000
3	000	00	000	00	000
4	000	00	000	00	000
5	000	00	000	00	000
6	000	00	000	00	000
7	000	00	000	00	000
8	000	00	000	00	000
9	000	00	000	00	000
10	000	00	000	00	000
11	000	00	000	00	000
12	000	00	000	00	000
13	000	00	000	00	000
14	000	00	000	00	000
15	000	00	000	00	000
16	000	00	000	00	000
17	000	00	000	00	000
18	000	00	000	00	000
19	000	00	000	00	000
20	000	00	000	00	000
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23	000	00	000	00	000
24	000	00	000	00	000
25	000	00	000	00	000
26	000	00	000	00	000

DETAILED TIMELINE

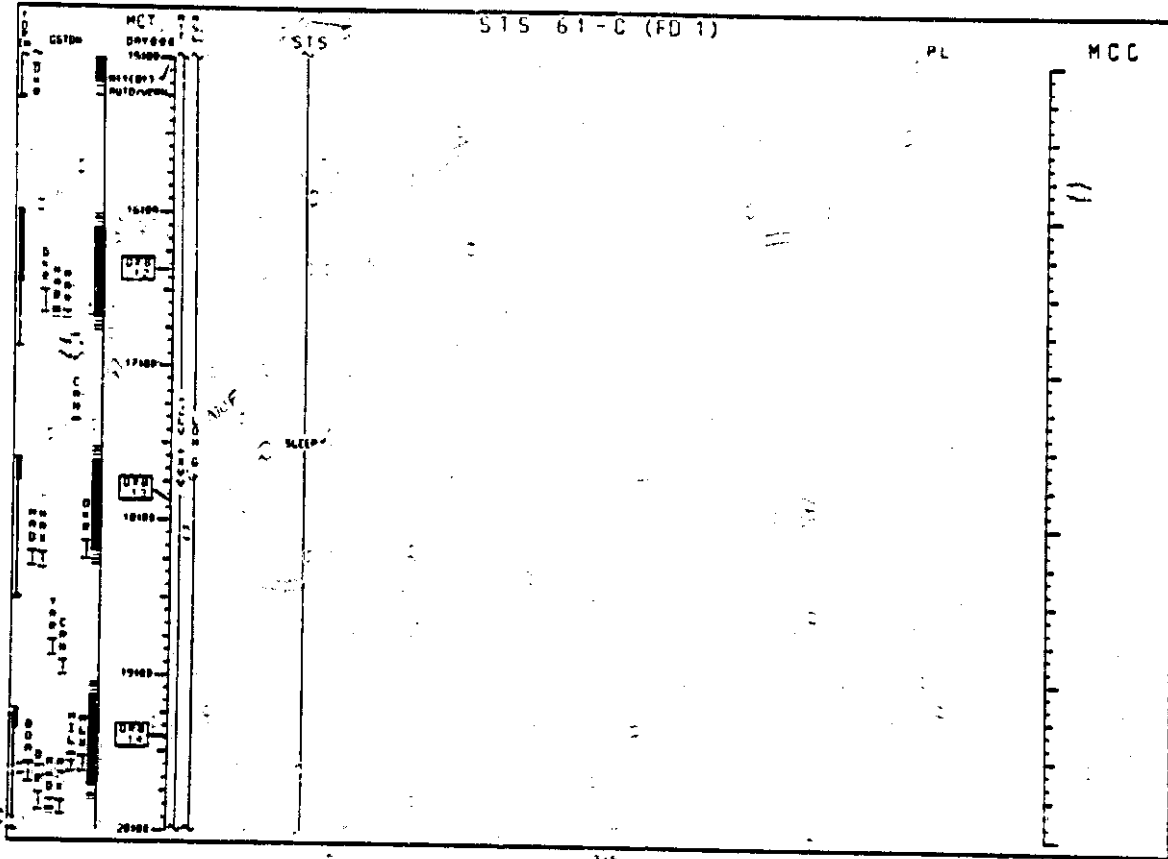
DETAILED
TIMELINE

SIS 61-C (FD 1)

SIS

PL

MCC



STS 61-C (FD 2)

STS

PL

MCC

MET
DAY 001
11100

RESCUE
ROTORWHEEL

12100

13100

14000

15000

16000

SLEEP

STS 515 61-C (FD 3)

PL

MCC

STS

INSULIN - 5.15 (1000 DPS)

INSULIN - 5.15 (1000 DPS)

POST SLEEP ACTIVITY
(1000 DPS, (MCC, STS))

Do not perform
until Dumps-section
7 no of UWE OBS

INSULIN (PL DPS) - *Sample*
CHECKING TIME CHECK
(PLM DPS, (MCC, STS) - CO)

INSULIN - 5.15

WIND 101

1 2 3 4 5 6 7 8 9 10

WIND

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WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR SETUP (MCC, STS, EXP)

(Loop Cards, (MCC, STS))

WTR (MCC, STS)

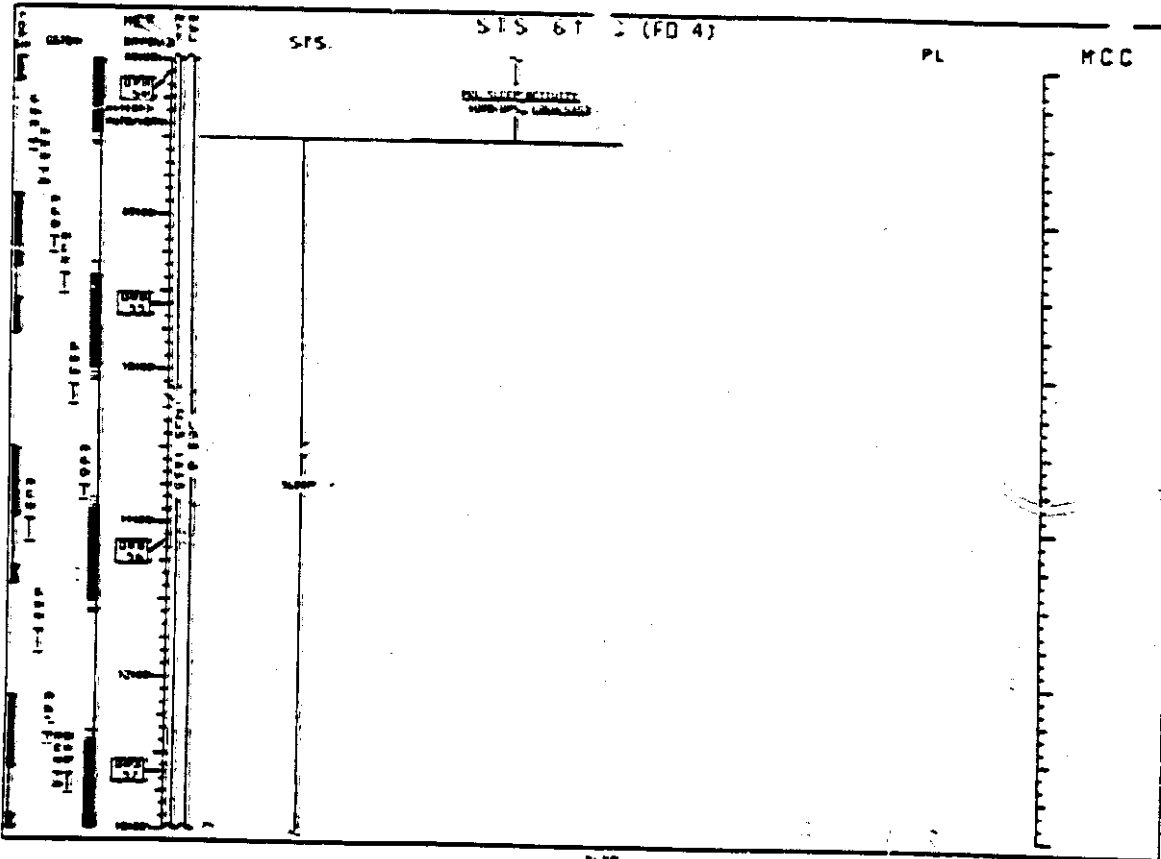
SFS.

SFS 6T 2 (FD 4)

PL

MCC

PLS. SEE REVISIONS
FOR THIS DRAWING



2-10

08/20/09

11/26/09

STS 61-C (FO 5)

PL

MCC

STS

STS
1969
1969

EXTRACTOR/LOADER/CONVEYOR
(PHOTOGRAPHIC DEVELOPMENT)

CHANGING
STATION

UNLOADING/LOADING
(PL, UPS, UNL)

UNLOADING/LOADING
(PL, UPS, UNL)
1. UNL 1969 1969
2. UNL 1969 1969
3. UNL 1969 1969
4. UNL 1969 1969
5. UNL 1969 1969
6. UNL 1969 1969
7. UNL 1969 1969
8. UNL 1969 1969
9. UNL 1969 1969
10. UNL 1969 1969

CHANGING
STATION

TO (TDS)
(B) OVL-CHS

UNL/DECK
(PL, UPS, UNL)

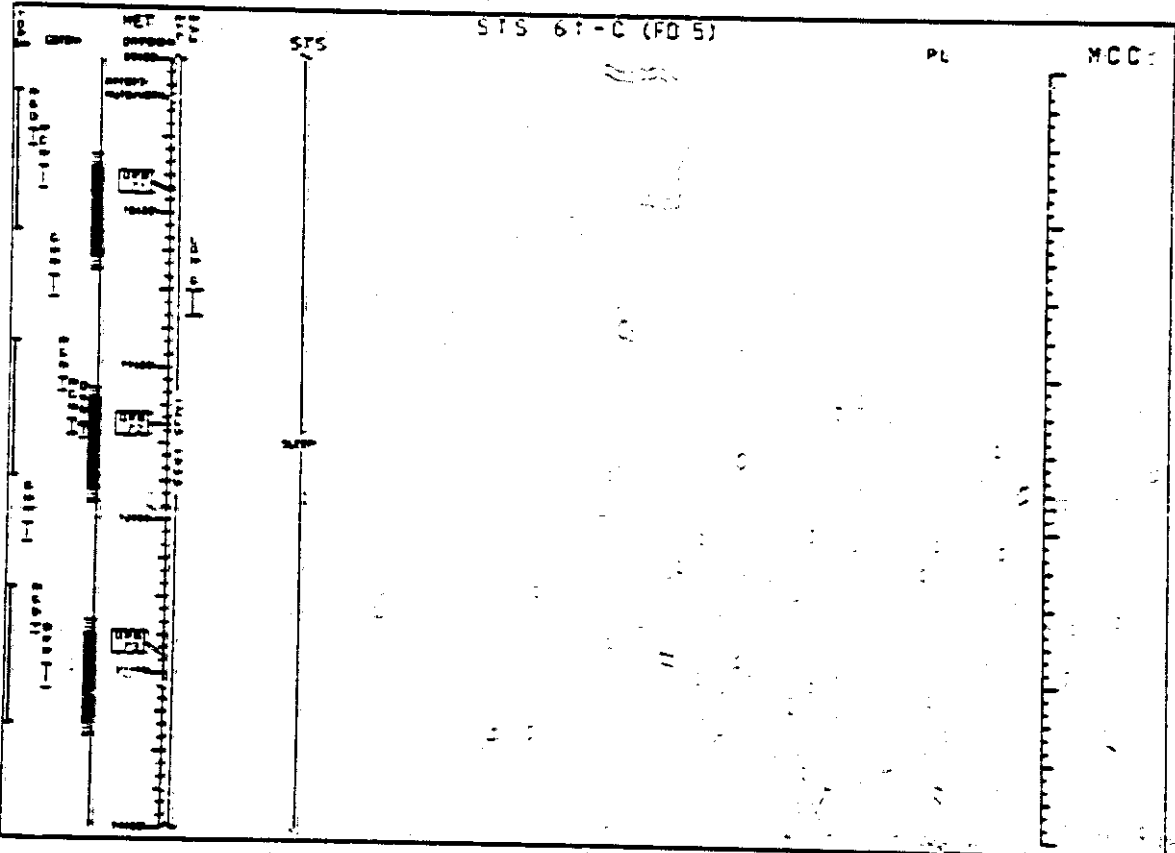
UNLOADING/LOADING
(PL, UPS, UNL)

STS 61-C (FO 5)

PL

MCC

STS



3-23

2000000000

11/20/69

STS 61-C (FD 6)

PL

MCC

ST OPS ACTIVITIES BEYOND LEADING OPS

FIFTH LEADING OPS
 1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops

FOURTH LEADING OPS
 1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops

THIRD LEADING OPS
 1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops

SECOND LEADING OPS
 1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops

LEADING OPS
 1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops

STOPS ACTIVITIES

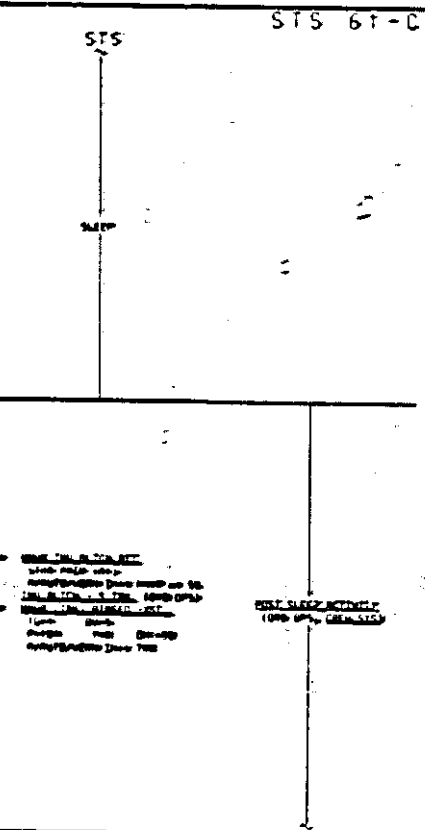
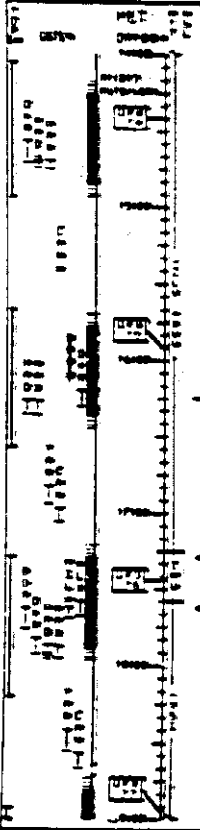
NEAR 100

1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops
 3. 1st to 4th ops - 1st to 4th ops
 4. 1st to 4th ops - 1st to 4th ops
 5. 1st to 4th ops - 1st to 4th ops

STOPS ACTIVITIES

1. 1st to 4th ops - 1st to 4th ops
 2. 1st to 4th ops - 1st to 4th ops
 3. 1st to 4th ops - 1st to 4th ops
 4. 1st to 4th ops - 1st to 4th ops
 5. 1st to 4th ops - 1st to 4th ops

234
 [Handwritten notes]



STS 61-C (FO 6)

STS

USE THE COP TIEUP SETUP PEG
IN BENCH, TIEUP PEG

DO NOT SCALE, REEPLY
WITH THE CRANKS

PL

USE ENGINEERING (2)
1% OF PAGES

MCC

USE THE
COP TIEUP
SETUP PEG

GO TO DEBRIT PREP AT 19214 MET

MCS

FIND

TNCC

TAX. Machine

EXCISE

Tax Code

FILE

Handwritten

Open Log Book, Review

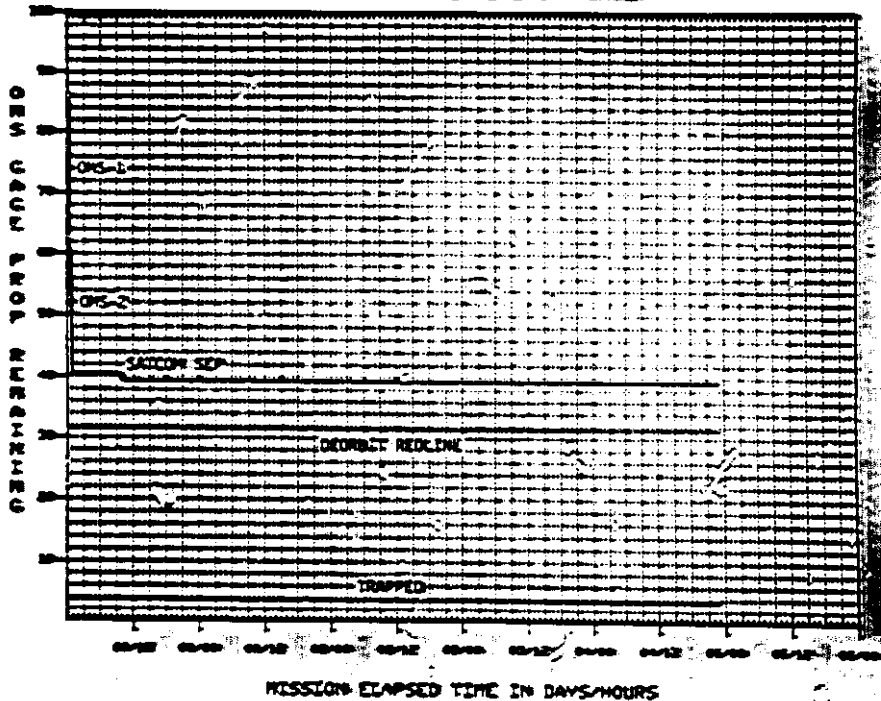
CONSUMABLES CURVES

CONSUMABLES
CURVES

CONSUMABLES
CURVES

C. D. PRIST
S005-2778 ADD 4
JSC-20771 (CAP) FINAL 10/25/85
CHECKED BY: Bill Halliday

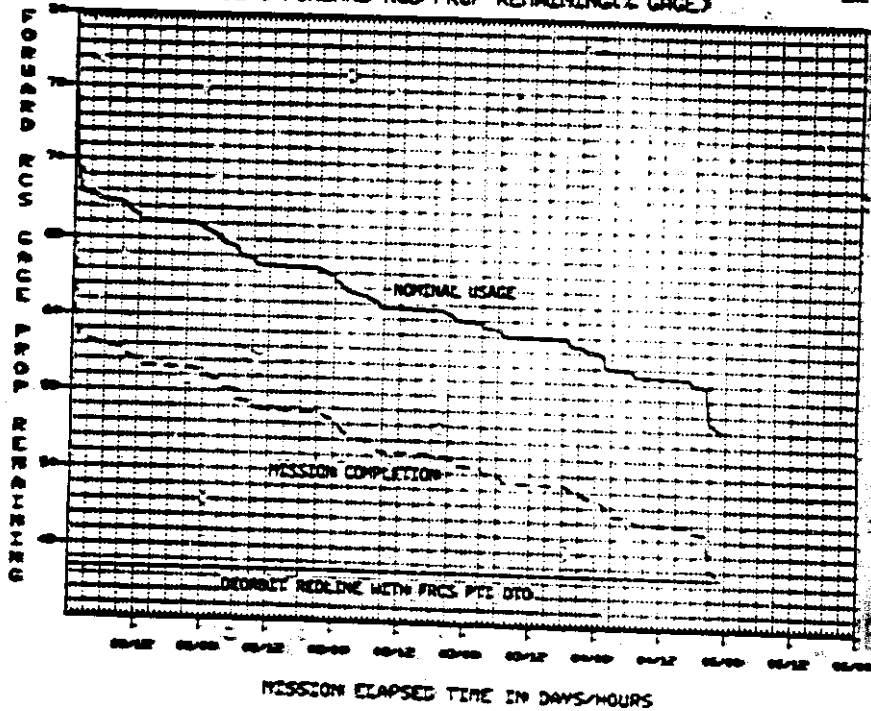
62-C OPS PROP REMAINING (CAGE)



MISSION ELAPSED TIME IN DAYS/HOURS

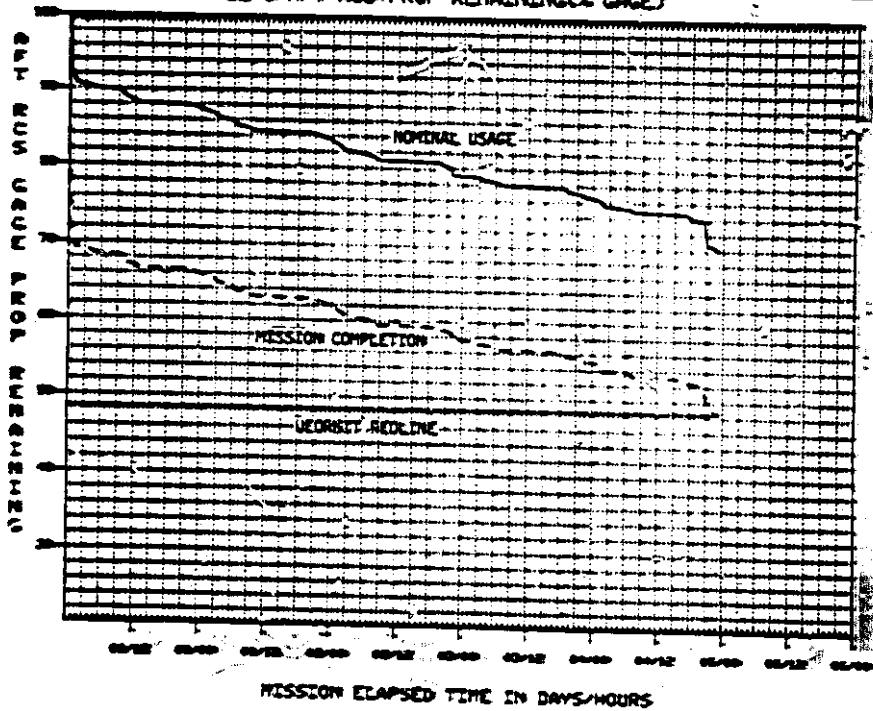
C. D. PRIST
SOCS J-779 ADD 4
JSC-2077L (CAP) FINAL 10/25/85
CHECKED BY: *D. H. [Signature]*

61-C FORWARD RCS PROP REMAINING (% GAGE)



C. D. PRUST
SR- J-779 ADD 4
JSC-20771 (CAP) FINAL 10/25/85
CHECKED BY: Bill Miller

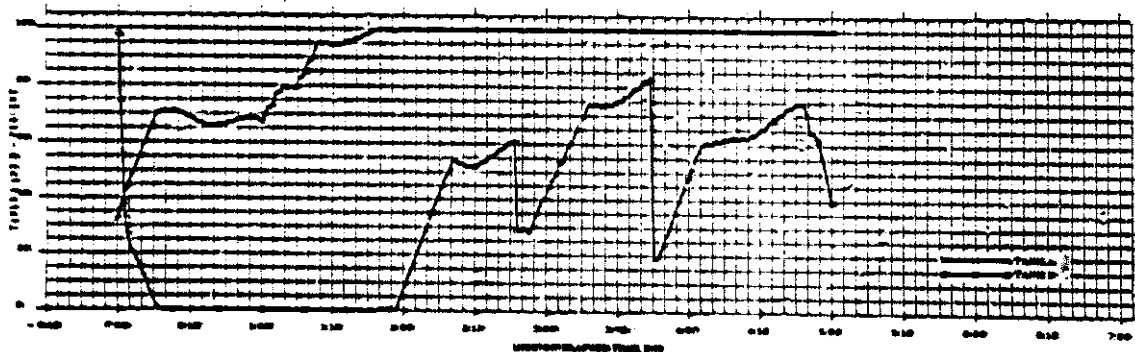
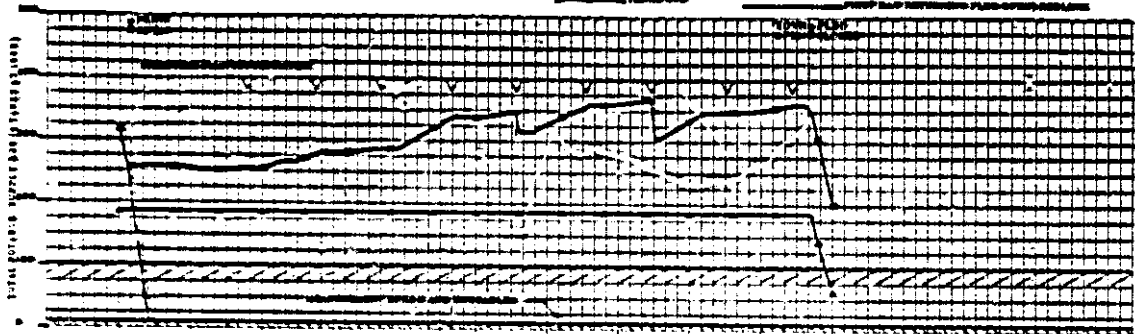
62-C AFT RCS PROP REMAINING (GAGE)



2-2

CAP/ST-C/TEN A

SECRET



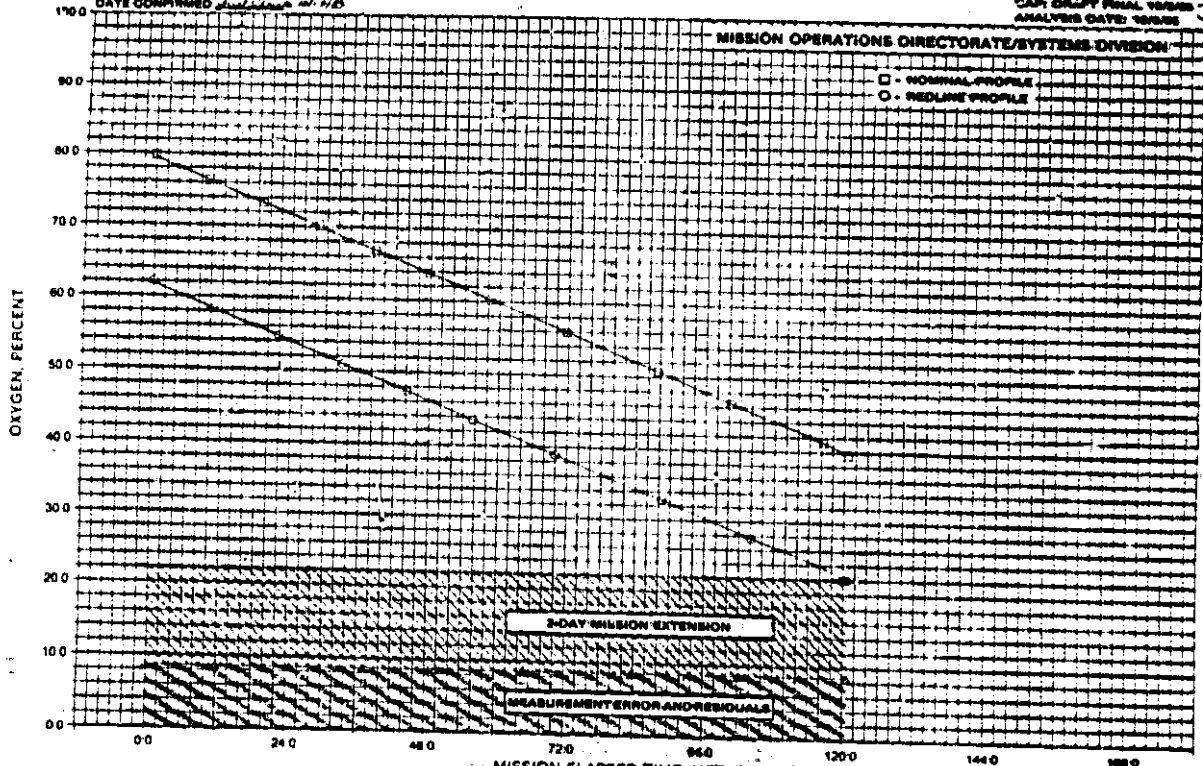
SECRET

P. BALLHOF'S
DATA SOURCE:
DATE CONFIRMED: *1/11/68*

TRAJECTORY OFF CYCLE'S
CAP: DRAFT FINAL TESTS
ANALYSIS DATE: 1968

MISSION OPERATIONS DIRECTORATE/SYSTEMS DIVISION

□ - NORMAL PROFILE
○ - REDLINE PROFILE



MISSION ELAPSED TIME, MET, DH
FLIGHT 61-C CRYOGENIC OXYGEN PROFILE

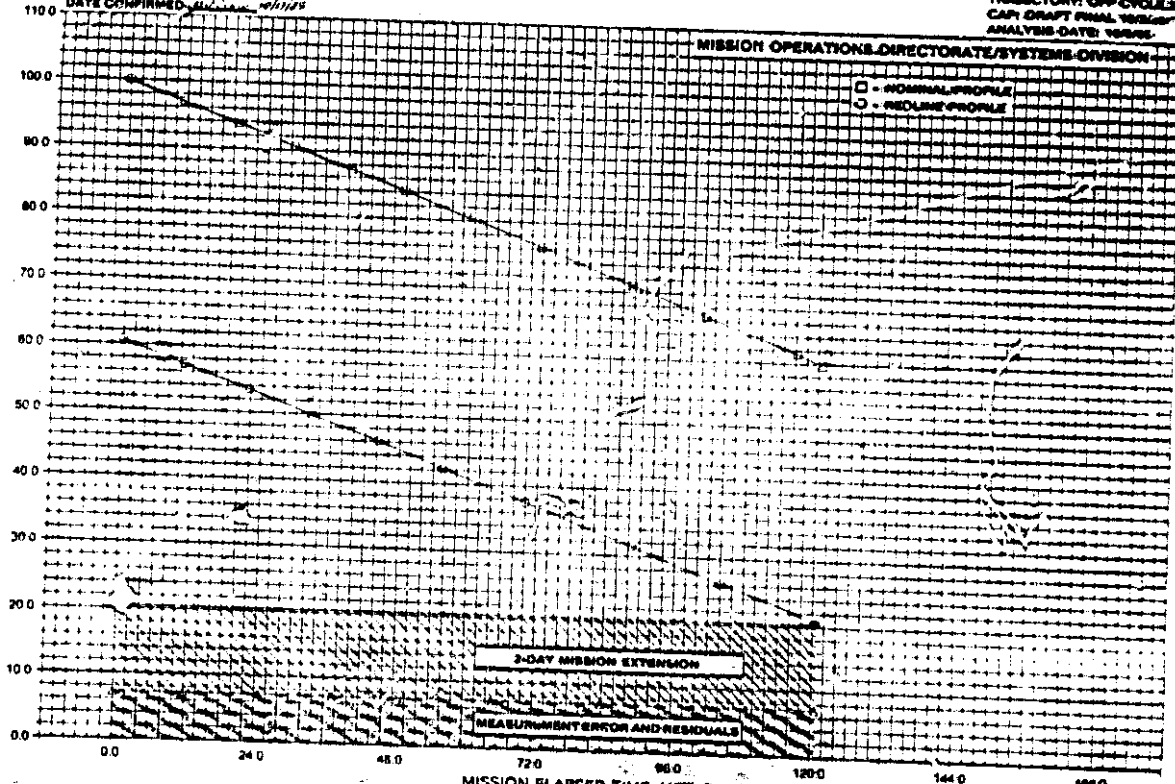
F. BALLEWDS
DATA SOURCE
DATE CONFIRMED: 11/11/88

TRAJECTORY: OFF CYCLE
CAP/ DRAFT FINAL 1988
ANALYSIS DATE: 1988

MISSION OPERATIONS DIRECTORATE/SYSTEMS DIVISION

□ - NORMAL PROFILE
○ - REDLINE PROFILE

HYDROGEN, PERCENT



MISSION ELAPSED TIME, MET, O/M
FLIGHT 61-C CRYOGENIC HYDROGEN PROFILE

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

GAP BOOK

GAP BOOK

DAP A CONFIGURATIONS

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
TRANSLATION												
PULSE ft/sec	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.10	
ROTATION												
DSC RT												
NORM °/sec	0.200	0.400	0.200	0.200	0.200	0.200	0.500	0.500	0.200	0.200	0.200	
VERN °/sec	0.200	0.400	0.200	0.008	0.200	0.200	0.500	0.500	0.200	0.200	0.200	
PULSE												
NORM °/sec	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
VERN °/sec	0.010	0.010	0.010	0.010	0.050	0.010	0.010	0.010	0.010	0.010	0.010	
COMP												
NORM °/sec	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
VERN °/sec	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
GEAR BAND												
ATT												
NORM (deg)	5.00	1.00	5.00	1.00	5.00	5.00	0.50	3.00	2.00	2.00	1.00	
VERN (deg)	1.000	1.000	1.000	0.070	1.000	1.000	0.500	1.000	1.000	1.000	1.000	
RATE												
NORM °/sec	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	
VERN °/sec	.020	.020	.020	.010	.020	.020	.020	.020	.020	.020	.020	
KEY OPT												
P	1	1	3	1	1	3	3	1	1	1	3	
Y	1	1	3	3	1	3	3	1	1	1	3	
MTL ACCEL	0	0	0	0	0	0	0	0	0	0	0	

*1-loaded OPS-2 DAP Configuration

DAP 2 CONFIGURATIONS

	B1*	B2	B3	B4	B5	B6	B7	B8	B9
TRANSLATION									
PULSE ft/sec	0.02	0.02	0.02	0.02	0.02	0.05	0.01	0.02	0.02
ROTATION									
DSC RT									
NORM °/sec	0.500	0.200	0.200	0.200	0.200	0.500	0.200	1.000	0.500
VERN °/sec	0.200	0.200	0.200	0.008	0.016	0.200	0.200	0.008	0.500
PULSE									
NORM °/sec	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
VERN °/sec	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
COMP									
NORM °/sec	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERN °/sec	.000	.000	.000	.000	.000	.000	.000	.000	.000
DEADEND									
ATT									
NORM (deg)	3.00	3.00	3.00	0.30	3.00	2.00	2.00	5.00	10.00
VERN (deg)	1.000	1.000	1.000	0.100	0.0033	1.000	1.000	0.050	10.000
RATE									
NORM °/sec	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.50
VERN °/sec	.020	.020	.020	.010	.020	.020	.020	.010	.500
NET OPT									
P	1	3	1	3	3	1	1	3	3
Y	1	3	1	3	3	1	1	3	3
CTRL AXCEL									
	0	0	0	0	0	0	0	0	0

*1-LOADED OPS-2 DAP Configuration

TOP
FRONT COVER "DAP BOOK"

DAP BOOK

HOOK
VELCRO

CAP/61-C/0/718

UNIV PTR	
VECT 10 =	1 Orbiting Vehicle
	2 Earth ctr
	3 Earth tri
	Input LAT (+90)
	ON (+180, + = East)
	ALT (-3444 to 20,000 nm)
	4 Sun ctr
	5 Celestial Eq
	Input RA (0-359.99)
	DEC (+90)
	11-119 Nav Stars
BODY VECT =	1 +X
	2 -X
	3 +Y
	4 -Y
	5 PTC (-2 below +3)*
	6 Optional
	Input P (0-359.99)
	U (270-359.99, 0-90)
	ON (0-359.99)
* Input ON →	
FOR AXIS =	1 +X
	2 -X

CAP/61-C/0/718

G20 DAP CONFIG	
CHVL ACCEL =	0 Orbiter alone
	1 thru 5 Not used
JET OPT =	1 Normal
	2 Nose only
	3 Tail only

TOP
BACK OF FRONT COVER
"DAP BOOK"

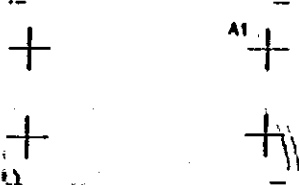
TOP



BAR PURPOSE

- A1 - NOMINAL
IMJ ALIGN
LOSS OF VERN
(NOSE & TAIL)
- A2 - PIC
- A3 - RCS MOT FIRE
- A4 - GA
- A5 - IMJ ROTATION
- A6 - LOSS OF VERN
(TAIL ONLY)
- A7 - DTG 902
- A8 - PRE/POST DEPLOY
- A9 - RENDEZVOUS
- A10 - PRM OPS
- A11 - TAIL ONLY (1 DEC 00)
- A12 - (Blank)

CAP/61-C/O/FIN



DAPA1

PURPOSE:

- NOMINAL
- IMJ ALIGN
- LOSS OF VERN
(NOSE & TAIL)

TOP



A1

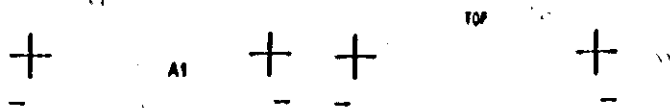
3	TRANSLATION	
4	PULSE	
5	ROTATION	
6	BSC RT	NORM
7	VERN	NORM
8	PULSE	NORM
9	VERN	NORM
10	COMP	NORM
11	VERN	NORM
12	DEADBAND	
13	ATT	NORM
14	VERN	NORM
15	RATE	NORM
16	VERN	NORM
17	JET OPT	P
18	VERN	V
19	CHTL ACCEL	

CAP/61-C/O/FIN

CAP/61-C/O/FIN

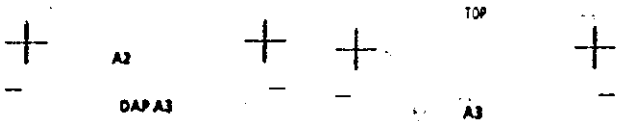
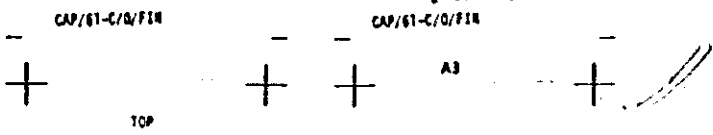


TOP



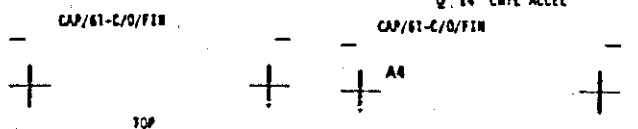
DAP A2
PURPOSE:
PTC

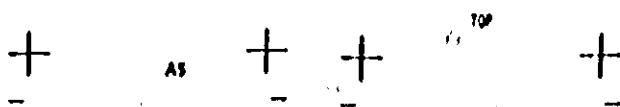
A3
1 TRANSLATION PULSE
2 ROTATION BSC RT NORM YERN
3 PULSE NORM YERN
4 COMP NORM YERN
5 DEADBAND ATT NORM YERN
6 RATE NORM YERN
7 JET OPT P
8
9
10
11
12
13
14 CNTL ACCEL



PURPOSE:
RCS HOT FIRE

A3
1 TRANSLATION PULSE
2 ROTATION BSC RT NORM YERN
3 PULSE NORM YERN
4 COMP NORM YERN
5 DEADBAND ATT NORM YERN
6 RATE NORM YERN
7 JET OPT P
8
9
10
11
12
13
14 CNTL ACCEL





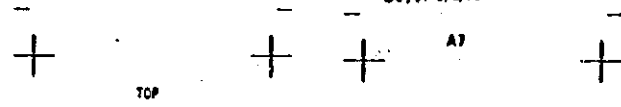
DAP A6

PURPOSE:
LOSS OF VERN
(TAIL ONLY)

A6
 TRANSLATION PULSE
 ROTATION
 DSC RT NORM
 VERN
 PULSE NORM
 VERN
 COMP NORM
 VERN
 DEADBAND
 ATT NORM
 VERN
 RATE NORM
 VERN
 12 JET OPT P
 13 V
 14 CNTL ACCEL

CAP/61-C/O/FIN

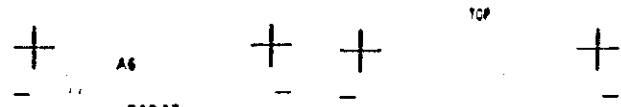
CAP/61-C/O/FIN



TOP

A7

TOP



A6

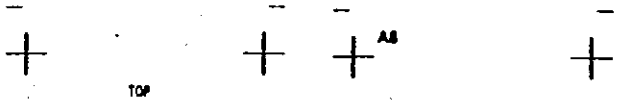
DAP A7

PURPOSE:
878 902

A7
 TRANSLATION PULSE
 ROTATION
 DSC RT NORM
 VERN
 PULSE NORM
 VERN
 COMP NORM
 VERN
 DEADBAND
 ATT NORM
 VERN
 RATE NORM
 VERN
 12 JET OPT P
 13 V
 14 CNTL ACCEL

CAP/61-C/O/FIN

CAP/61-C/O/FIN



TOP

A8

(reduced copy)

+ A7

+ +

TOP

+ +

DAP A8

PURPOSE:
PRE/POST DEPLOY

A8

0-10	1	TRANSLATION	
		PULSE	
0-10	2	ROTATION	
		BSC RT	NORM
			VERN
0-10	3	PULSE	NORM
			VERN
0-10	4	COMP	NORM
			VERN
1-10	5	DEADRAND	
		ATT	NORM
			VERN
0-10	10	RATE	NORM
			VERN
1-10	11	JET OPT	P
			V
0-10	14	CNTL ACCEL	

CAP/61-C/O/FIN

CAP/61-C/O/FIN

+ +

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A8 +

TOP

TOP

+ +

A8

+ +

+ +

DAP A8

PURPOSE:
RENDEZVOUS

A8

0-10	1	TRANSLATION	
		PULSE	
0-10	2	ROTATION	
		BSC RT	NORM
			VERN
0-10	3	PULSE	NORM
			VERN
0-10	4	COMP	NORM
			VERN
1-10	5	DEADRAND	
		ATT	NORM
			VERN
0-10	10	RATE	NORM
			VERN
1-10	11	JET OPT	P
			V
0-10	14	CNTL ACCEL	

CAP/61-C/O/FIN

CAP/61-C/O/FIN

+ +

+ +

A10

+ +

TOP

(reduced copy)

TOP

A9

OAP A10

PURPOSE:
PROG OPS

A10

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

CAP/61-C/O/FIN

CAP/61-C/O/FIN

A11

TOP

TOP

A10

OAP A11

PURPOSE:
TAIL ONLY (1 DEG D0)

A11

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

CAP/61-C/O/FIN

CAP/61-C/O/FIN

A12

TOP

+ A11

+ +

TOP

+ +

DAP A12

PURPOSE: (Blank)

A12

TRANSLATION
PULSE

1	ROTATION	
2	BSC BT	NORM
3		VERN
4	PULSE	NORM
5		VERN
6	COMP	NORM
7		VERN

8	DEADBAND	
9	ATT	NORM
		VERN

10	RATE	NORM
11		VERN

12	JET OPT	P
13		V

14 CNTL ACCEL

CAP/61-C/O/FIN

CAP/61-C/O/FIN

+ +

+ +

+ +

TOP

+ +

A12

+ +

+ +

DAP PURPOSE

- 01 - NORMAL
PRCS TRU ALIGN
OMS & RCS BURNS
- 02 - LOSS OF VERN
(TAIL ONLY)
- 03 - LOSS OF VERN
(NOSE & TAIL)
- 04 - GC MOVE
- 05 - SSUS DEPLOY
- 06 - COAS CAL
- 07 - RENDEZVOUS
- 08 - PRCK OPS
- 09 - UVR SCAN
- 09 - BTG 502

CAP/61-C/O/FIN

CAP/61-C/O/FIN

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TOP

(reduced copy)

TOP

OAP B1

B1

PURPOSE:

NOMINAL
PRCS INU FLIGH
ONS & RCS BURMS

TRANSLATION					
PULSE	15	0-0-2			
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				
CHTL ACCEL	28	0			

CAP/61-C/O/PIN

B2

TOP

TOP

B1

OAP B2

B2

PURPOSE:

LOSS OF VERN
(TAIL ONLY)

TRANSLATION					
PULSE	29	0-0-2			
ROTATION					
BSC RT	NORM 30	0-0-0			
	VERN 31	0-0-0			
PULSE	NORM 32	0-0-0			
	VERN 33	0-0-0			
COMP	NORM 34	0-0-0			
	VERN 35	0-0-0			
DEADBAND					
ATT	NORM 36	1-0-0			
	VERN 37	1-0-0			
RATE	NORM 38	0-0-0			
	VERN 39	0-0-0			
JET OPT	P 40	1			
	V 41				
CHTL ACCEL	42	0			

CAP/61-C/O/PIN

CAP/61-C/O/PIN

B3

TOP

DAP 85

PURPOSE:
COAS CAL

85

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	0.0 0 0	
	VERN 23	0.0 0 0	
RATE	NORM 24	0.0 0 0	
	VERN 25	0.0 0 0	
JET OPT	P 26	0	
	V 27	0	
ENR ACCEL	28	0	
CAP/81-E/O/FIR			

CAP/81-E/O/FIR

86

TOP

TOP

85

DAP 86

PURPOSE:
PENDEZVOUS

86

TRANSLATION			
PULSE	15	0.0 0	
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	0.0 0 0	
	VERN 23	0.0 0 0	
RATE	NORM 24	0.0 0 0	
	VERN 25	0.0 0 0	
JET OPT	P 26	0	
	V 27	0	
ENR ACCEL	28	0	
CAP/81-E/O/FIR			

CAP/81-E/O/FIR

87

TOP



TOP



00
CAP 89

00

PURPOSE 1
DTG 902

TRANSLATION		
PULSE	15	0.0 2
ROTATION		
BSC RT	NORM 16	
	VERN 17	
PULSE	NORM 18	
	VERN 19	
COMP	NORM 20	
	VERN 21	
DEADBAND		
ATT	NORM 22	
	VERN 23	
RATE	NORM 24	
	VERN 25	
JET OP	P 26	
	V 27	
CHTL ACCEL	28	

CAP/61-610/11A

CAP/61-610/11A



TOP



00

CAP/61-610/11A



TOP

(reduced copy)

8-16

TOP
BACK COVER 'DAP BOOK'

MOORE
VELP'S

00/01-2/6/710

ATTITUDE
TIMELINE

ATTITUDE TIMELINE

ALTITUDE
TIMELINE

Altitude Timeline

KEY	MNVR OPTION	AP	BSP	E/S	REMARKS	EVENT
1 0-01:10:00	TRK TGT=2 SV=3C 98.00, 325.00 CM=100.00	A1 AUTO NORM	BSC .200 SB AT 5.00 SB RT .20	EARTH T 90 P 325	LVLH R=215 Pa 0 Ya 0	PLBD OPENING
2 0-03:50:00 04:00:53	MNVR R=105.00 P=27.00 Y=357.00	A1 AUTO VERN	BSC 1.200 SB AT 1.00 SB RT .02	SUN T 70 P 109		IMU ALIGN COAS CAL
3 0-04:23:00	TRK TGT=2 SV=3C 98.00, .00 CM=100.00	A1 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	EARTH T 93 P 0	LVLH R=100 Pa 0 Ya 0	-2LV NOSE FWD
4 0-08:02:00 09:02:11	MNVR R=351.00 P=110.00 Y=24.00 GENERIC ALTITUDE 0	A0 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	SUN T 93 P 269		SATCOM DEPLOY ATT
5 0-09:35:00 10:147	MNVR R= 02.00 P= 36.00 Y= 04.00 GENERIC ALTITUDE 0	A0 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	SUN T 137 P 219		ONS SEP ATT
6 0-09:50:00 09:57	TRK TGT=2 SV=3C 98.00, .00 CM=100.00	A0 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	EARTH T 90 P 0	LVLH R=100 Pa 0 Ya 0	-2LV NOSE FWD
7 0-10:01:00 10:16	TRK TGT=1 SV=3C130.00, .00 CM= 12.00 GENERIC ALTITUDE 0	A0 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	EARTH T 100 P 170	LVLH R= 0 Pa 10 Ya 9	WINDOW PROTECT ATT
8 0-10:17:00	CANCEL GENERIC ALTITUDE 0	A0 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	SUN T 103 P 144	INRTL R=103 Pa 100 Ya 7	PAN
9 0-10:27:00 11:05	TRK TGT=2 SV=3C 98.00, .00 CM=100.00	A1 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	EARTH T 90 P 0	LVLH R=100 Pa 0 Ya 0	-2LV NOSE FWD
10 0-11:03:00 11:51	MNVR R=105.00 P=27.00 Y=357.00	A1 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	SUN T 70 P 109		IMU ALIGN
11 0-11:03:00 12:03:50	TRK TGT=2 SV=3C 98.00, .00 CM=100.00	A1 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	EARTH T 90 P 0	LVLH R=100 Pa 0 Ya 0	-2LV NOSE FWD
12 0-22:10:00 20:13	MNVR R=105.00 P=27.00 Y=357.00	A1 AUTO VERN	BSC .200 SB AT 1.00 SB RT .02	SUN T 72 P 109		IMU ALIGN

6-2

CAP/01-C/PIN A

00-ALL ALTITUDES IN HEAD OF 100000
ACCURATE TO WITHIN +/- 15 DEGREES.

Attitude Timeline

REV	MNVR OPTION	AP	E/S	REMARKS	EVENT	
1	0:23:29:00 39:17 MNVR R+165.37 P+311.61 Y+309.02	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 50 P 122		UVX-1
2	1:01:01:00 07:10 MNVR R+175.61 P+346.83 Y+17.91	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 112 P 119		UVX-2A
3	1:02:29:00 35:11 MNVR R+173.20 P+49.56 Y+336.25	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 50 P 117		UVX-3 START
4	1:02:45:00 03:03:50 MNVR R+170.23 P+41.02 Y+337.26	ALL AUTO VERN	BSC .200 DB AT .05 DB RT .01	SUN T 59 P 122		UVX-3 END
5	1:03:11:00 17:51 TRK TGT+2 BY+31 92.00, .00 CM+100.00	ALL AUTO VERN	BSC .200 DB AT 1.22 DB RT .02	EARTH T 93 P 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE PWS
6	1:05:31:00 45:09 MNVR R+223.93 P+133.04 Y+304.23	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 21 P 2		UVX-11 START
7	1:05:40:00 06:03:00 MNVR R+210.25 P+114.70 Y+298.12	ALL AUTO VERN	BSC .200 DB AT .05 DB RT .01	SUN T 11 P 4		UVX-11 END
8	1:06:20:00 20:26 MNVR R+210.00 P+123.02 Y+301.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 16 P 3		COMET HALLEY ACTIVE MONITORING PROGRAM
9	1:08:40:00 54:22 MNVR R+103.00 P+27.00 Y+357.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 77 P 100		IRU ALIGN
10	1:09:00:00 21:10 TRK TGT+2 BY+31 92.00, .00 CM+100.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 0	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE PWS
11	1:20:37:00 31:07:15 MNVR R+103.00 P+27.00 Y+357.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 74 P 100		IRU ALIGN
12	1:22:16:00 19:12 MNVR R+120.35 P+4.30 Y+335.10	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 65 P 176		UVX-10

Altitude Timeline

REV	MNVR OPTION	ALL	BSC	DB AT	E/S	REMARKS	EVENT
1 1-23:44:00 49:10	MNVR R+168.76 P+ 1.97 Y+ 17.33	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 105 P 125			UVX-5 START
2 2-00:01:00 10:41	MNVR R+164.12 P+ 19.03 Y+ 13.33	DB AUTO VERN	BSC .016 DB AT .05 DB RT .01	SUN T 94 P 120			UVX-5 END
3 2-01:15:00 10:04	MNVR R+170.46 P+342.46 Y+ 24.76	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 119 P 125			UVX-7 START
4 2-01:32:00 52:40	MNVR R+166.15 P+353.14 Y+ 22.72	DB AUTO VERN	BSC .060 DB AT .05 DB RT .01	SUN T 113 P 123			UVX-7 END
5 2-02:05:00 15:22	TRK TGT=2 Sv=5(270.00, 290.00) OM= .00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 100	LVLH R+290 P+ 0 Y+ 0		DEEP SPACE
6 2-03:30:00 04:01:00	TRK TGT=2 Sv=3(.00, .00) OM=100.00	DB AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	EARTH T 0 P 100	LVLH R+100 P+270 Y+ 0		CG ATT
7 2-05:02:00 06:05:12	MNVR R+ 29.46 P+348.22 Y+ 41.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 135 P 273			UVX-8
8 2-07:35:00 43:51	MNVR R+103.00 P+ 27.00 Y+357.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 70 P 100			IMU ALIGN
9 2-07:55:00 08:03:04	TRK TGT=2 Sv=3(90.00, .00) OM=100.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	EARTH T 90 P 0	LVLH R+100 P+ 0 Y+ 0		-ZLV NOSE PWD
10 2-19:04:00 54:24	MNVR R+100.00 P+ 27.00 Y+357.00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 75 P 100			IMU ALIGN
11 2-21:03:00 05:51	MNVR R+ 75.24 P+ 13.13 Y+335.91	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	SUN T 99 P 220			UVX-9
12 2-22:00:00 13:27	TRK TGT=2 Sv=3(30.00, .00) OM= .00	ALL AUTO VERN	BSC .200 DB AT 1.00 DB RT .02	EARTH T 30 P 0	LVLH R+ 0 P+240 Y+ 0		IR-10

Altitude Timeline

HEI	NNVA OPTION	BAR	E/S	REMARKS	EVENT	
1 3/03:00:00 14:50	MNVR R+221.00 P+127.00 Y+302.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 21 SB RT .02 P 0	SUN		COMET HALLEY ACTIVE MONITORING PROGRAM
2 3/06:22:00 30:32	MNVR R+103.00 P+27.00 Y+357.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 75 SB RT .02 P 100	SUN		IMU ALIGN
3 3/06:42:00 54:50	TRK TGT=2 SV=3C 90.00, .00 CM=100.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 90 SB RT .02 P 0	EARTH	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD
4 3/10:31:00 41:30	MNVR R+103.00 P+27.00 Y+357.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 75 SB RT .02 P 107	SUN		IMU ALIGN
5 3/10:31:00 19:05:50	TRK TGT=2 SV=5(270.00, .00) CM= .00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 90 SB RT .02 P 100	EARTH	LVLH R+ 0 P+ 0 Y+ 0	+ZLV NOSE FWD
6 3/21:50:00 06:24	MNVR R+147.00 P+67.00 Y+ 19.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 105 SB RT .02 P 99	SUN		CREW CONF
7 4/00:23:00 35:23	MNVR R+ 80.00 P+ 21.00 Y+332.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 50 SB RT .02 P 215	SUN		UVX=0
8 4/01:20:00 26:34	TRK TGT=2 SV=2(240.00, .00) CM=100.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 20 SB RT .02 P 100	EARTH	LVLH R+100 P+250 Y+ 0	OTO 902 START ATT
9 4/01:43:00	ROT SV=5C .00,270.00	R7 AUTO NCRM	BSC .500 SB AT .50 SB RT .20		ROT R+250 START P+215 ATT Y+ 40	OTO 902 ROTATION
10 4/01:49:00	LVLH	R7 AUTO NCRM	BSC .500 SB AT .50 T 176 SB RT .20 P 100	EARTH	LVLH R+100 P+ 94 Y+ 0	OTO 902 STOP ATT
11 4/01:50:00 57:40	TRK TGT=2 SV=3C 90.00, .00 CM=100.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 90 SB RT .02 P 0	EARTH	LVLH R+100 P+ 0 Y+ 0	-ZLV NOSE FWD
12 4/06:33:00 45:12	MNVR R+103.00 P+27.00 Y+357.00	ALL AUTO VERN	BSC .200 SB AT 1.00 T 74 SB RT .02 P 107	SUN		IMU ALIGN

Attitude Timeline						
REL	MNVR OPTICN	BAP	E/S	REMARKS	EVENT	
1 4:06:59:00 07:12:13	TRK TGT=2 SV=3C 90.00, .00 OM=102.00	A1 AUTO VERN	DSC .200 SB AT 1.00 T 90 SB RT .02 P 0	EARTH T 90 P 0	LVLM R=100 P= 0 Y= 0	-ZLV NOSE FWD
2 4:17:17:00 27:16	MNVR R=100.00 P= 27.00 Y=357.00	A1 AUTO VERN	DSC .200 SB AT 1.00 T 74 SB RT .02 P 107	SUN T 74 P 107		IMU ALIGN
3 4:17:37:00 47:50	TRK TGT=4 SV=5C104.00, .00 OM= 90.00	A1 AUTO VERN	DSC .200 SB AT 1.00 T 176 SB RT .02 P 176	SUN T 176 P 176	INRTL R=311 P=255 Y= 70	TRAIL SUN
4 4:20:14:00 27:29	MNVR R=101.00 P=255.00 Y=325.00	A1 AUTO VERN	DSC .200 SB AT 1.00 T 79 SB RT .02 P 166	SUN T 79 P 166		IMU ALIGN
5 4:20:30:00 32:30	MNVR R= 66.00 P=192.00 Y= 11.00	B1 AUTO VERN	DSC .500 SB AT 2.00 T 100 SB RT .20 P 161	SUN T 100 P 161		IMU VERIF

ALL ATTITUDES IN MEAN OF 1950000

6-6

CAP-01-C-FIN A
SASA-06

FINAL

Flight Data File **ROOM 0011** Crew Activity Plan STS 61-C (Cycle 2 Trajectory)

Mission Operations Directorate
Operations Division

Final
October 25, 1985

Event	GMT	Day	Dec
Launch	08:00	Fri	20
SATCOM Deploy	13:32	Fri	20
Crew Press Conference	08:55	Tue	24
RSC Landing	06:14	Wed	28

NASA

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas

MISSION OPERATIONS DIRECTORATE

STS 61-C CREW ACTIVITY PLAN

FINAL
October 25, 1985

PREPARED BY:

Philip L. Engelau
Philip L. Engelau
Crew Manager

APPROVED BY:

Elvin B. Pippert, Jr. 10-27-85
Elvin B. Pippert, Jr.
Head, Crew Activity Planning
Section 2

John F. Whitteley
John F. Whitteley
Chief, Flight Activity Branch

Edward L. Powell, Jr.
Edward L. Powell, Jr.
Chief, Operations Division

John W. O'Neill
John W. O'Neill
Assistant Director for
Operations

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 OMA/FOC Manager, Bldg 4, Rm 352, 713-483-2868. Comments concerning this document may be addressed to OMA/PHL Engelau, or OMA/Dennis Knutson, Bldg 4, Rm 368, 713-483-3468. Changes to the distribution list should be submitted in writing to OMA/Den Butler, Bldg 4, Rm 373, 713-483-5224.

Incorporates 482
No: UA

ACKNOWLEDGMENTS

The following individuals contributed significantly to preparing the STS 61-C Crew Activity Plans:

<u>AREA</u>	<u>NAME</u>	<u>PHONE NO.</u>
Nominal Timeline	Dennis Knutson	483-3486
CAPS Processing	Mike Casey	483-3486
	Mary Lou Stirling	483-3087
	Greg Picard	483-3087
	C. Cheryl Triplatt	483-3486
	Nancy Harris	483-2307
Attitude and Pointing	David Schurr	483-2201
	Kathy Andon	483-3486
Editing (Omniplan)	Hilred Cherry	483-3844
Word Processing (Omniplan)	J. Herrington	
	J. Kerr	
	G. Richards	
	P. Romero	
	H. Scott	
	T. Walker	

00/11/71

STS 61-C CAP CUE CARDS

CAP Book Front Cover	1	CAP	C-70/F
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CAP A 10C	3	CAP	C-70/F
CAP A 11	4	CAP	C-70/F
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INTRODUCTION

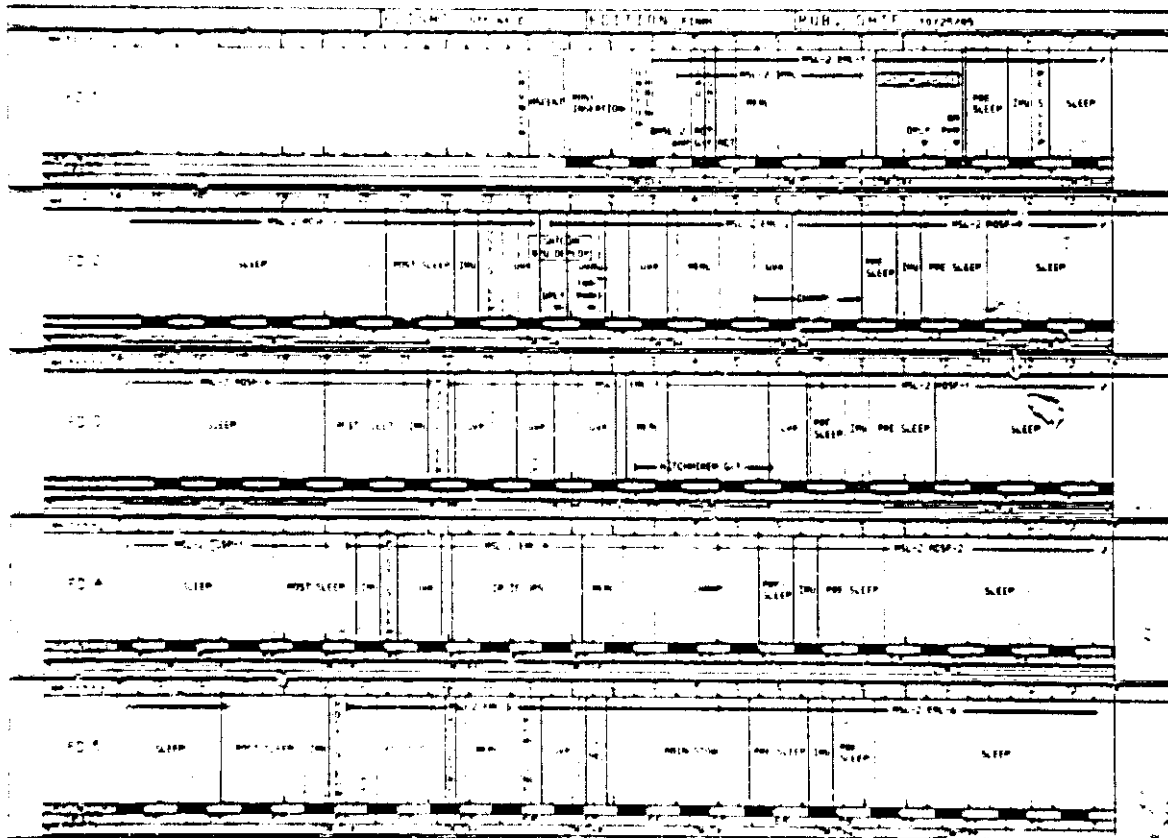
The STS 61-C Crew Activity Plan is the flight data file article that contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry Checklists. For continuity, the entire flight is shown in the summary level timeline.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS 61-C Flight Requirements Document.

The flight profile (Cycle 2 trajectory data) used for this Crew Activity Plan is for a launch date of December 20, 1985, at 12:00 GMT. Orbiter inertial attitudes are expressed relative to the Mean of 1950 (M50) reference frame.

SIS 61-C OVERVIEW

OVERVIEW



10/22/85

10/22/85

NO. 1000		EDITION 1968		PUB. DATE 10/25/68	
PC 10	NAME	POST OFFICE	CITY	STATE	ZIP

SUMMARY
TIMELINE

SUMMARY TIMELINE

SUMMARY
TIMELINE

DATE	TIME	LOCATION	ACTIVITY	BY	REMARKS	MOBILE	MOBILE DATE	FLIGHT	EDITION	OBJ. DATE
1972	10	11	12	13	14	15	16	17	18	19
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1972	30	31	32	33	34	35	36	37	38	39
1972	40	41	42	43	44	45	46	47	48	49
1972	50	51	52	53	54	55	56	57	58	59
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1972	80	81	82	83	84	85	86	87	88	89
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1972	160	161	162	163	164	165	166	167	168	169
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1972	180	181	182	183	184	185	186	187	188	189
1972	190	191	192	193	194	195	196	197	198	199
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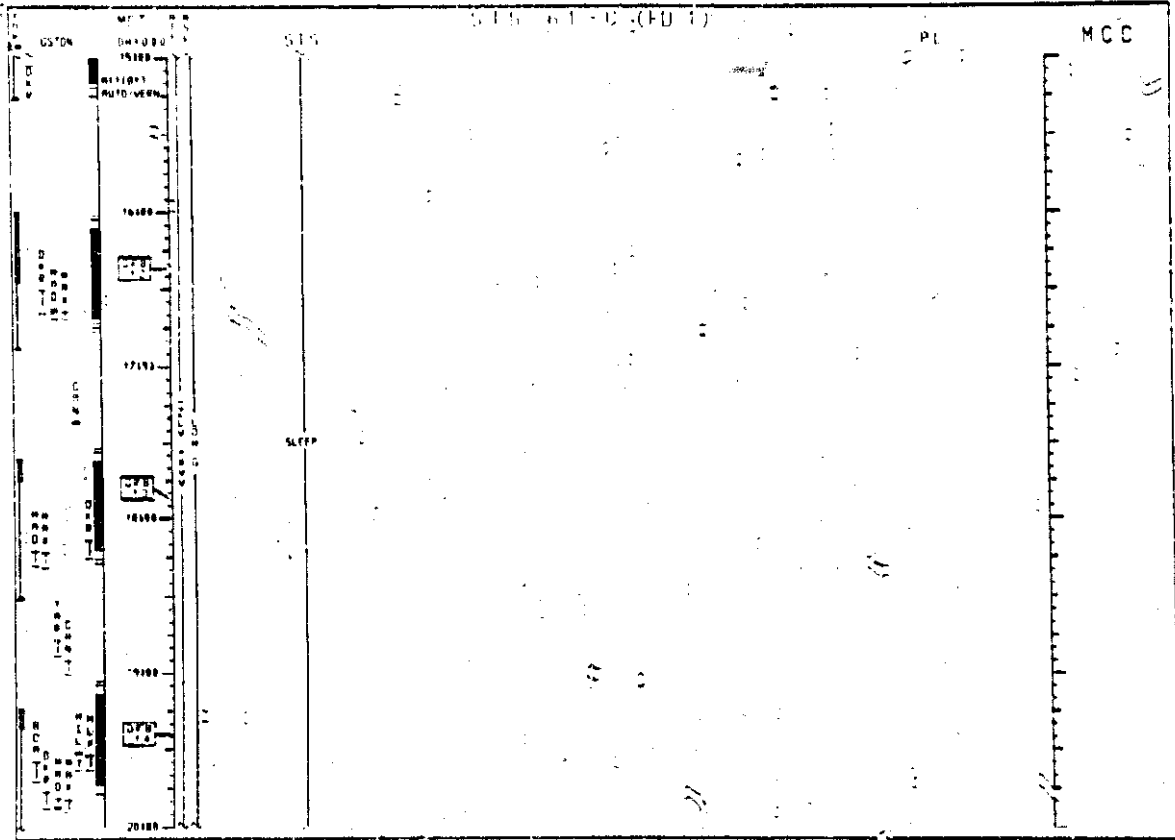
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				FLIR IN								NO SLEEP	
PL		RTV REC											
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CS ON													
COVERAGE													
TOPS													
INSTRUMENTS													
NOTES													

GMT (DINW)	MET (DINW)	CST (DINW)	ED/DOY	HEM	MOON	HOUSTON DATE	LIGHT	EDITION	PUS DATE
15:1359			07 250 011	0.5	0	DECEMBER 25, 1965	STS 67-2	PL	10/25/65
ED 1 00									
MET 000									
STS									
	ISC 185011W (5/00118)								
PL									
ORBIT	B0	B1	B2	B3	B4	B5	B6	B7	B8
COVERED									
FORM									
ALTITUDE									
NOTES									

DETAILED TIMELINE

DETAILED
TIMELINE

515 01-0 (FD 1)



STS 67-0 (AD 2)

PC

M 10

STS

WATER SUPPLY FOR STS
(170, 180, 190)

WATER SUPPLY
(170, 180, 190)

WATER SUPPLY FOR STS
(170, 180, 190)

WATER SUPPLY FOR STS
(170, 180, 190)

WATER SUPPLY FOR STS
(170, 180, 190)

WATER SUPPLY FOR STS
(170, 180, 190)

WATER SUPPLY FOR STS
(170, 180, 190)

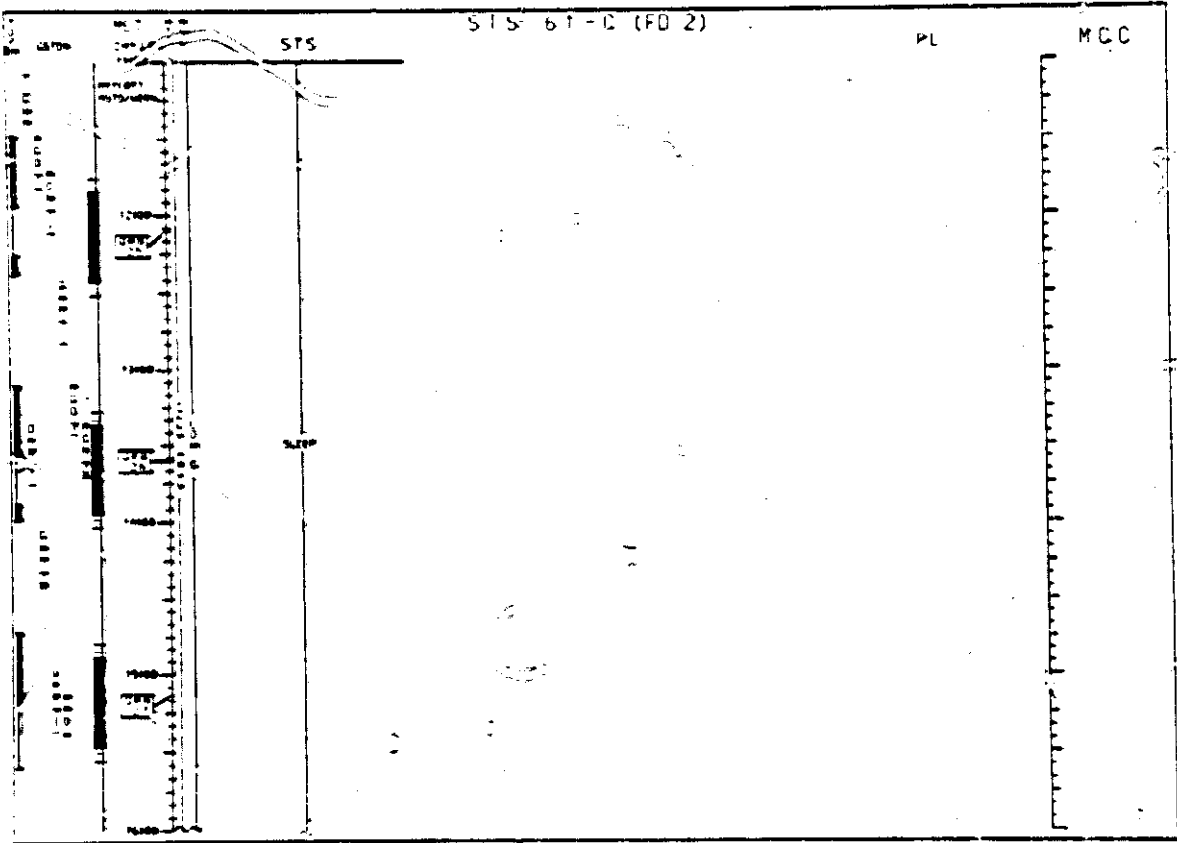
WATER SUPPLY FOR STS
(170, 180, 190)

WATER SUPPLY FOR STS
(170, 180, 190)
WATER SUPPLY FOR STS
(170, 180, 190)
WATER SUPPLY FOR STS
(170, 180, 190)

STS 61-C (FD 2)

PL

MCC



1-4

EMPAK-0216

10-23-65

STS 61-C (FD 3)

PL

MCC

STS

MULTI-PHASED

OPERATIONAL (100 OPS)

REST SLEEP PERIOD
(100 OPS - UNASSIGNED)

Do not perform
MATED DUTY, unless
in the OP LOG ESB.

● ESB (PL OPS) - NORMAL
COLLECTIVE CHECK
(100 OPS - UNASSIGNED)

MULTI-PHASED	
Phase 100	
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

0100
0200
0300
0400
0500
0600
0700
0800
0900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400

0100
0200
0300
0400
0500
0600
0700
0800
0900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400

0100
0200
0300
0400
0500
0600
0700
0800
0900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400

MULTI-PHASED Phase 10
(100 OPS - UNASSIGNED)

MULTI-PHASED Phase 5
(100 OPS - UNASSIGNED)

MULTI-PHASED Phase 7
(100 OPS - UNASSIGNED)

WTR SCHEDULE (NON-STUDENT CASE)
Hourly Summary, 12/1/10

WTR SCHEDULE (NON-STUDENT CASE)
Hourly Summary, 12/1/10

WTR (100-1005)

SFS 61-C (FU 3)

PL

M.C.C.

WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

SFS

WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

WPL
(ACI)

WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

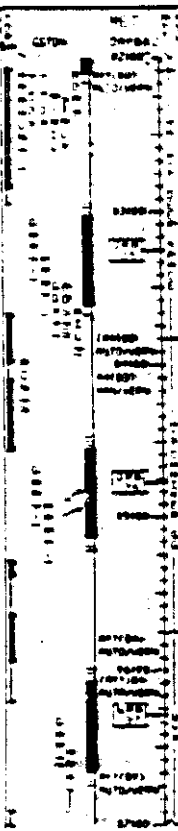
WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)

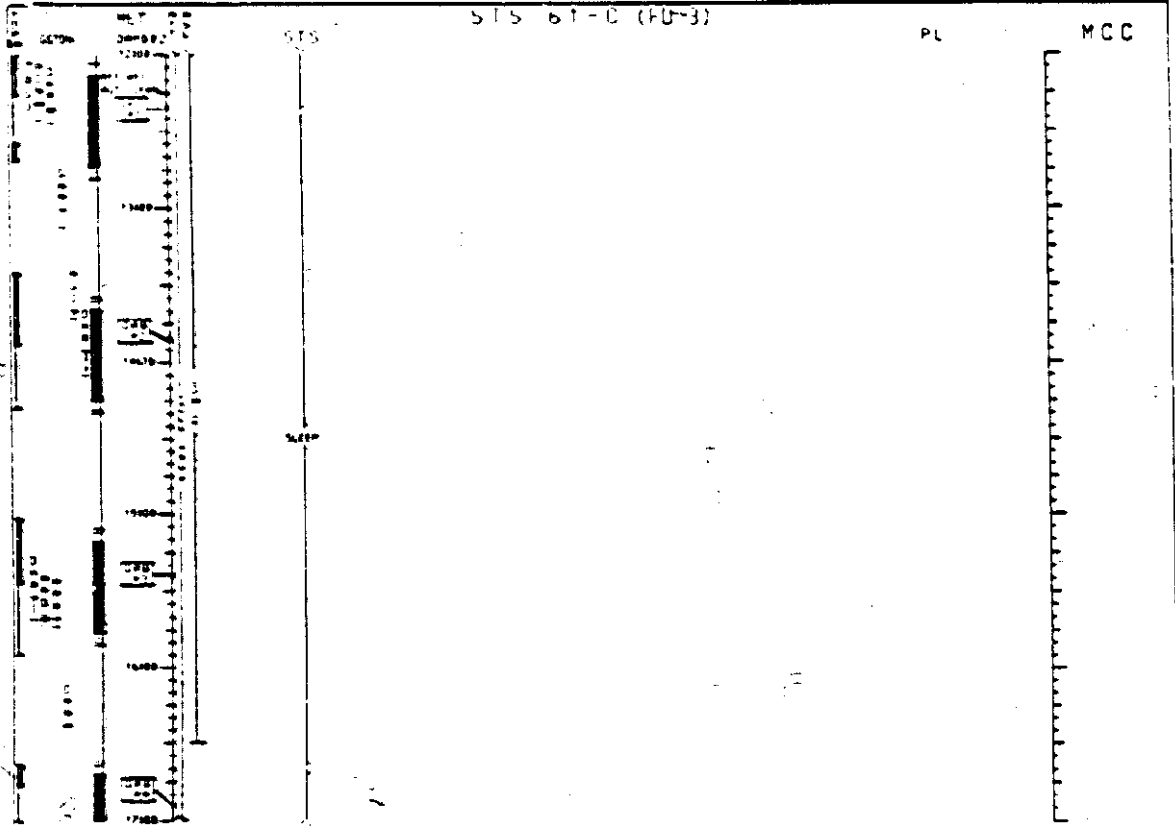
WPL PLUMBING (NON-STANDARD) CAPS
with no standard
WPL SEPEC (See Code, TRAINED)



STS 61-C (FD-3)

PL

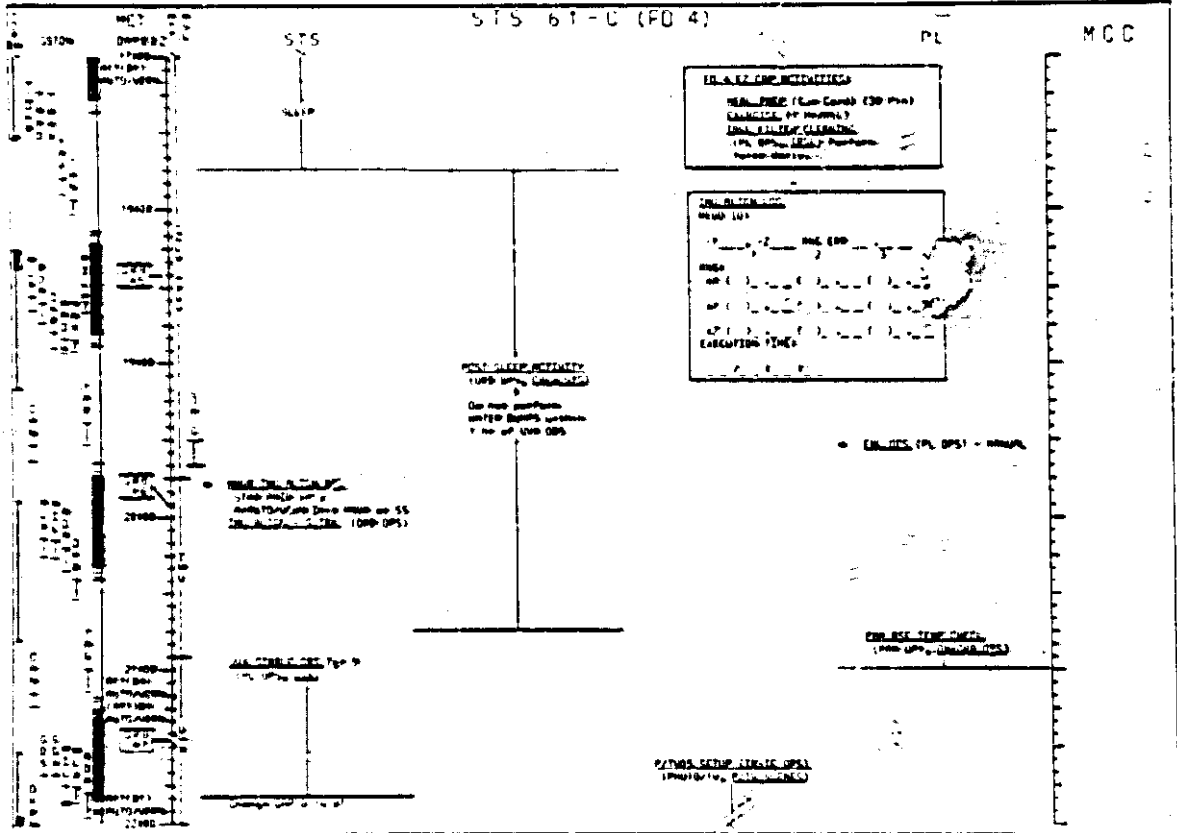
MCC

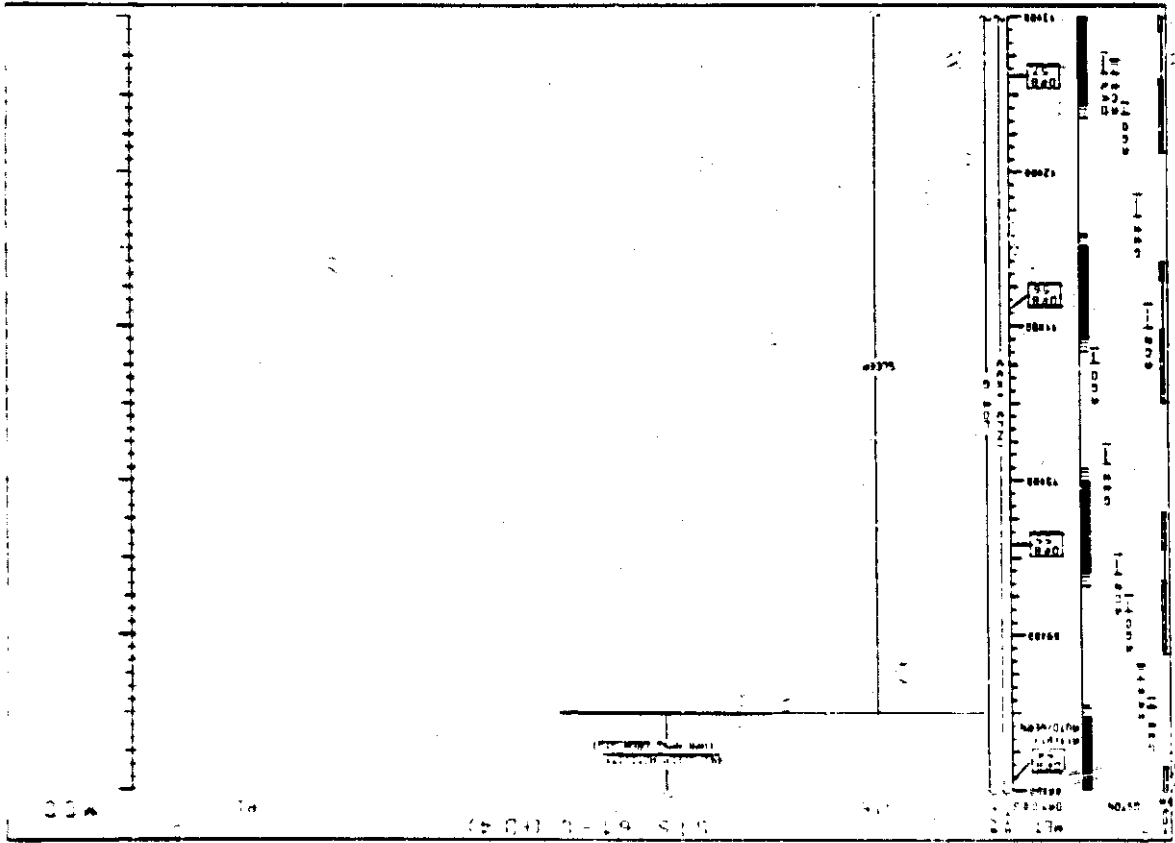


STS 61-C (FD 4)

PL

MCC





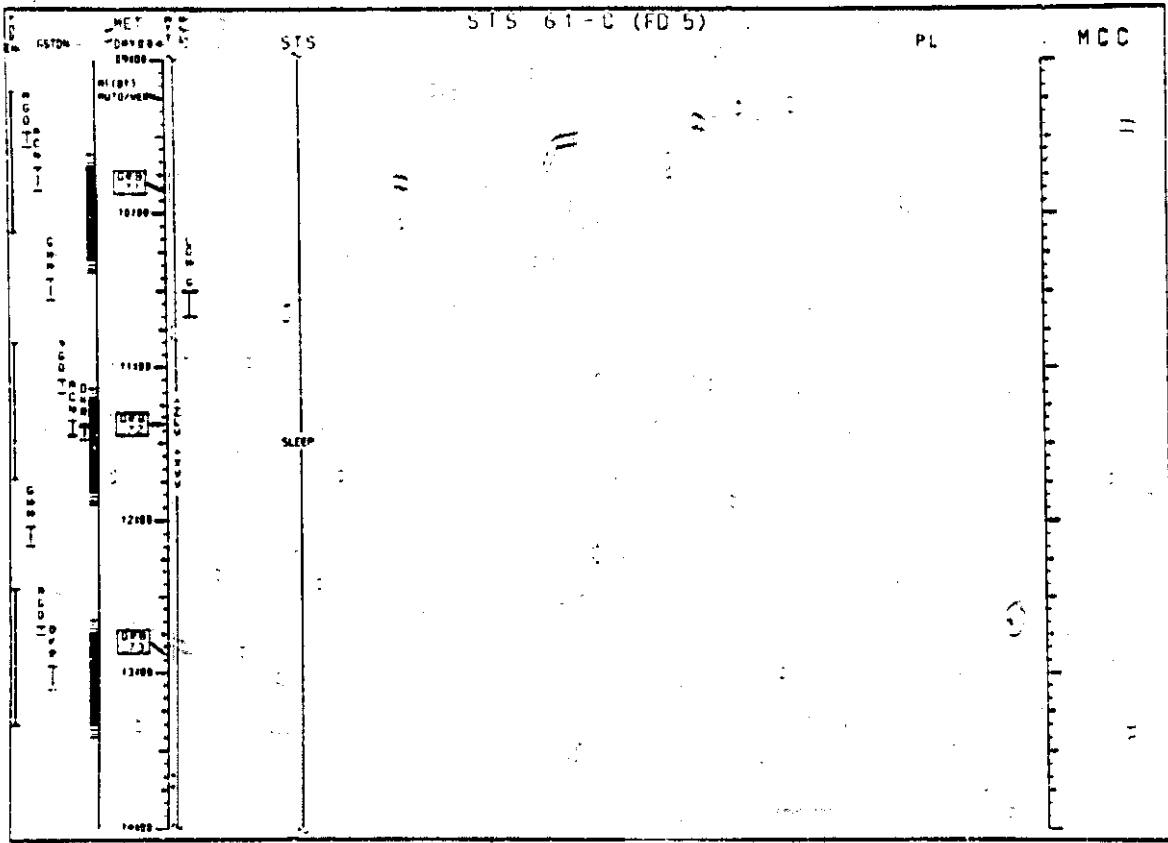
100

100

100 100 100 100

100

STS 61-C (FD 5)



CONSUMABLES CURVES

CONSUMABLES
CURVES

CONSUMABLES CURVES

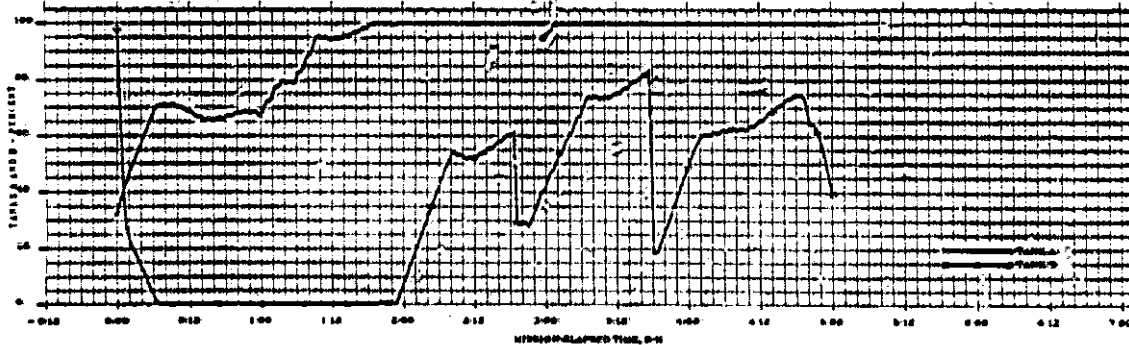
MISSION OPERATIONS DIRECTORATE - SYSTEMS DIVISION

CABLE: JAMES WELLS
FIELD OFFICE: THE LEON
DATA CONTROL: *[Signature]*

EXPERIMENTAL REPORT
DATE: 12/14/61

EXPERIMENT NAME: J-0
EXPERIMENT NUMBER: 003

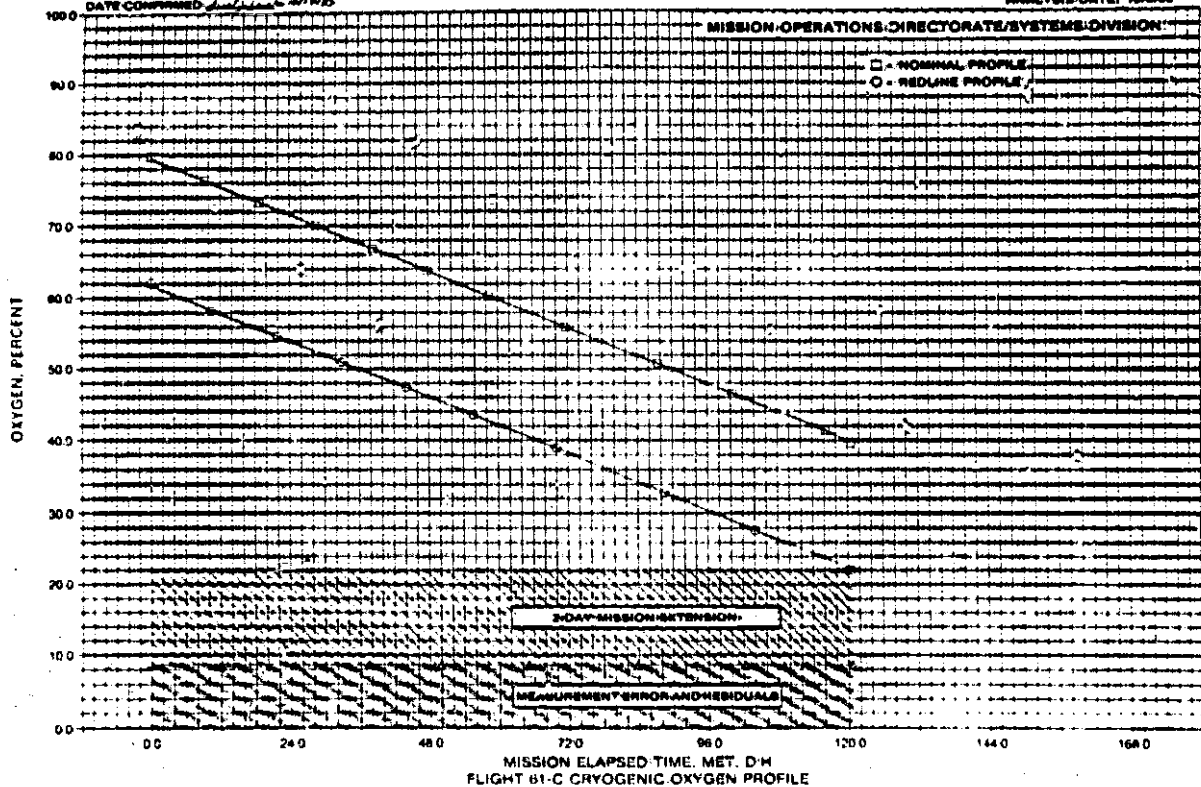
EXPERIMENTAL UNIT: CONTINUITY CHECKER
EXPERIMENTAL METHOD: NETWORKING PLUG-OPEN-REPLUG



WFO-4-C SUPPLY WATER

P. BALL/OPS
DATA SOURCE
DATE CONFIRMED *12/15/66*

TRAJECTORY OFF-CYCLE 2
CAP. DRAFT FINAL 10/2/66
ANALYSIS DATE: 1966/6



P. BALL/EDS

DATA SOURCE

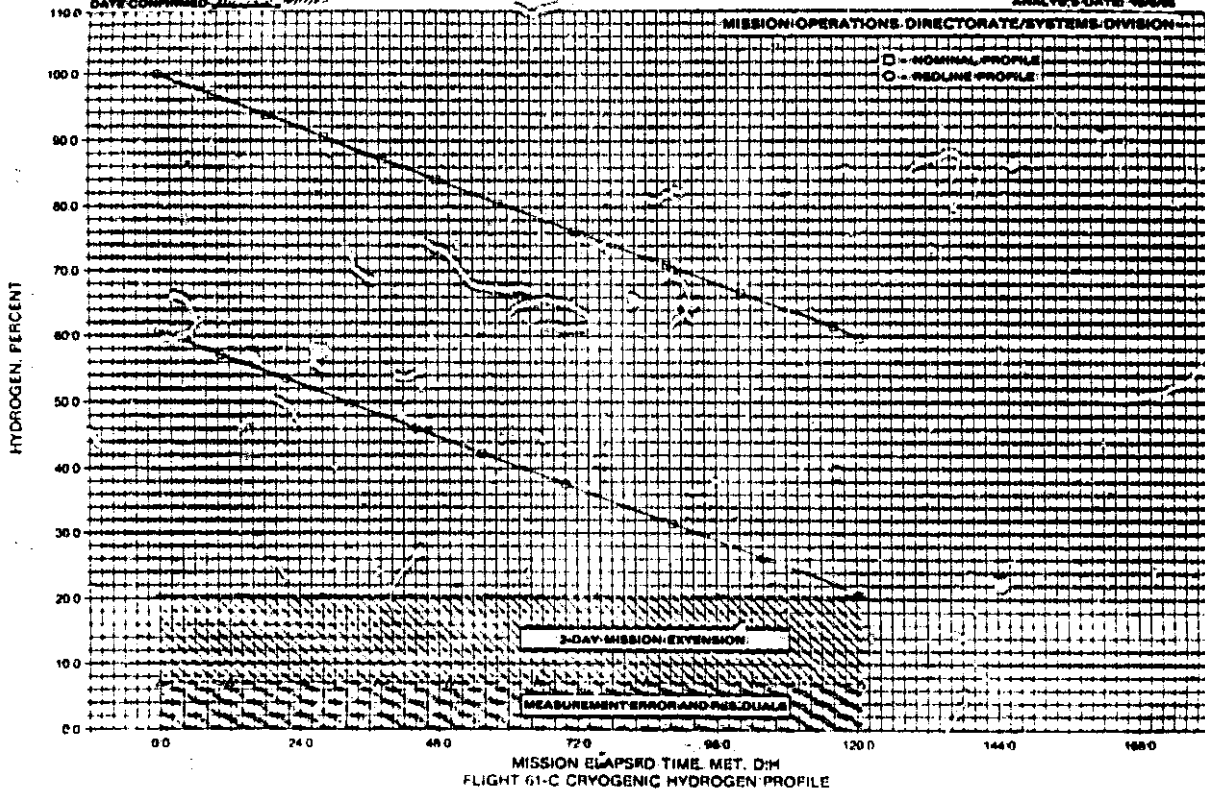
DATE CONFIRMED

TRAJECTORY OFF-CYCLE 2

CAP: DRAFT/FINAL 18/88

ANALYSIS DATE 18/88

MISSION OPERATIONS DIRECTORATE/SYSTEMS DIVISION



MISSION ELAPSED TIME MET. D:M
FLIGHT 61-C CRYOGENIC HYDROGEN PROFILE

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

DAP BOOK

DAP A CONFIGURATIONS

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
TRANSLATION												
PULSE ft/sec	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.10	
ROTATION												
DSC RT												
NORM °/sec	0.200	0.400	0.200	0.200	0.200	0.200	0.500	0.500	0.200	0.200	0.200	
VERN °/sec	0.200	0.400	0.200	0.008	0.200	0.200	0.500	0.200	0.200	0.200	0.200	
PULSE												
NORM °/sec	0.10	0.10	0.30	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
VERN °/sec	0.010	0.010	0.010	0.010	0.050	0.010	0.010	0.010	0.010	0.010	0.010	
COMP												
NORM °/sec	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
VERN °/sec	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
DEADBAND												
ATT												
NORM (deg)	5.00	1.00	5.00	1.00	5.00	5.00	0.50	3.00	2.00	2.00	1.00	
VERN (deg)	1.000	1.000	1.000	0.070	1.000	1.000	0.500	1.000	1.000	1.000	1.000	
RATE												
NORM °/sec	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	
VERN °/sec	.020	.020	.020	.010	.020	.020	.020	.020	.020	.020	.020	
JET OPT												
P	1	1	3	1	1	3	3	1	1	1	3	
Y	1	1	3	3	1	3	3	1	1	1	3	
CTRL ACCEL	0	0	0	0	0	0	0	0	0	0	0	

*1-loaded OPS-2 DAP Configuration

DAP-B CONFIGURATION

	B1*	B2	B3	B4	B5	B6	B7	B8	
TRANSLATION									
PULSE FT/sec	0.02	0.02	0.02	0.02	0.02	0.05	0.01	0.02	0.02
ROTATION									
DSC R- HORN /sec VERN /sec	0.500 0.200	0.200 0.200	0.200 0.200	0.200 0.008	0.200 0.016	0.500 0.200	0.200 0.200	1.000 0.008	0.500 0.500
PULSE NORM /sec VERN /sec	0.04 0.002	0.04 0.002	0.04 0.002	0.04 0.002	0.04 0.002	0.04 0.002	0.04 0.002	0.04 0.002	0.04 0.002
COMP NORM /sec VERN /sec	.00 .000	.00 .000	.00 .000	.00 .000	.00 .000	.00 .000	.00 .000	.00 .000	.00 .000
DEARBAND									
ATT NORM (deg) VERN (deg)	3.00 1.000	3.00 1.000	3.00 1.000	0.30 0.100	3.00 0.033	2.00 1.000	2.00 1.000	5.00 0.050	10.00 10.000
RATE NORM /sec VERN /sec	0.20 .020	0.20 .020	0.20 .020	0.20 .010	0.20 .020	0.20 .020	0.20 .020	0.20 .010	0.50 .500
NET OPT									
P	1	3	1	3	3	1	1	3	3
Y	1	3	1	3	3	1	1	3	3
CHTL ACCEL	0	0	0	0	0	0	0	0	0

*1-LOADED OPS-2 DAP Configuration

TOP

GAP PURPOSE

- A1 - NOMINAL
IMU ALIGN
LOSS OF VEHN
(NOSE & TAIL)
- A2 - YTC
- A3 - RCS NOT PIPE
- A4 - DR
- A5 - IMU ROTATION
- A6 - LOSS OF VEHN
(TAIL ONLY)
- A7 - DR DR
- A8 - P/L POST DEPLOY
- A9 - NUCLEARUS
- A10 - PROT OPS
- A11 - TAIL ONLY (1 DEG DR)
- A12 - (DR-1)

CU/61-2/6/PIR

A1

TOP

GAP A1

PURPOSE:

- NOMINAL
IMU ALIGN
LOSS OF VEHN
(NOSE & TAIL)

A9

- TRANSLATION
PULSE
- ROTATION
USE AT NOMN
VEHN
- PULSE
VEHN
COM NOMN
VEHN
- BEACONS
ATT NOMN
VEHN
- RATE NOMN
VEHN
- MT OPS P
- DATA ACCEL

CU/61-2/6/PIR

CU/61-2/6/PIR

A2

TOP

+

A3

+

+

TOP

+

GAP AA

PURPOSE:

GA

AA

TRANSLATION
PULSE

ROTATION
BSC RT NORM
VERB
PULSE NORM
VERB
COMP NORM
VERB

DEADBAND
ATT NORM
VERB

RATE NORM
VERB

JET GPT P

Q 14 CTRL ACCEL

CAP/ST-2/6/710

CAP/ST-2/6/710

+

+

+

A3

TOP

TOP

+

AA

+

+

+

GAP AS

PURPOSE:

END ROTATION

AS

TRANSLATION
PULSE

ROTATION
BSC RT NORM
VERB
PULSE NORM
VERB
COMP NORM
VERB

DEADBAND
ATT NORM
VERB

RATE NORM
VERB

JET GPT P

Q 14 CTRL ACCEL

CAP/ST-2/6/710

CAP/ST-2/6/710

+

+

+

A3

+

+

AS

GAP AS

PURPOSE:
LOSS OF VERN
(TAIL ONLY)

CAP/01-2/W/PIR

+

TOP

+

AS

GAP AS

PURPOSE:
DTG DOE

CAP/01-2/W/PIR

+

TOP

+

+

+

+

+

+

+

+

TOP

AS

TRANSLATION
PULSE

ROTATION
OSC RT
PULSE
COMP

HEADBAND
ATT

RATE

JET CRT

0 10 CRTX ACCEL

CAP/01-2/W/PIR

AS

TOP

AS

TRANSLATION
PULSE

ROTATION
OSC RT
PULSE
COMP

HEADBAND
ATT

RATE

JET CRT

0 10 CRTX ACCEL

CAP/01-2/W/PIR

AS

+

+

+

+

AS

DAP AB

PURPOSE:
PRE/POST DEPLOY

TOP

AB

TRANSLATION
PULSE

NOTATION
OSC RT NORM
VERB
PULSE NORM
VERB
COMP NORM
VERB

DEADBAND
ATT NORM
VERB

RATE NORM
VERB

JET OFF P

0 14 CATE ACCEL

CAP/61-C/W/FIX

CAP/61-C/W/FIX

+

+

+

AS

TOP

TOP

+

AS

+

+

DAP AB

AB

PURPOSE:
RENDEZVOUS

TRANSLATION
PULSE

NOTATION
OSC RT NORM
VERB
PULSE NORM
VERB
COMP NORM
VERB

DEADBAND
ATT NORM
VERB

RATE NORM
VERB

JET OFF P

0 14 CATE ACCEL

CAP/61-C/W/FIX

CAP/61-C/W/FIX

+

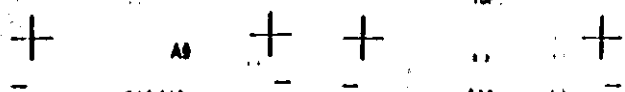
+

+

AS

+

TOP



CAP A10

PURPOSE:
PROX OPS

A10

TRANSLATION
PULSE

ROTATION
OSC RT NORM
VERB
PULSE NORM
VERB
COMP NORM
VERB

DEADBAND
ATT NORM
VERB

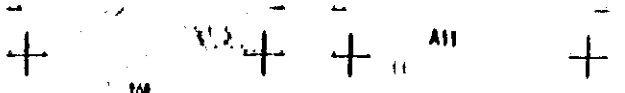
RATE NORM
VERB

JET OPT P

0 10 CNTL ACCEL

CAP/61-2/0/710

CAP/61-2/0/710



TOP

TOP

A10

CAP A11

A11

PURPOSE:
TALK ONLY (1 DEC 00)

TRANSLATION
PULSE

ROTATION
OSC RT NORM
VERB
PULSE NORM
VERB
COMP NORM
VERB

DEADBAND
ATT NORM
VERB

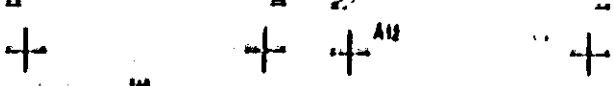
RATE NORM
VERB

JET OPT P

0 10 CNTL ACCEL

CAP/61-2/0/710

CAP/61-2/0/710



TOP

(reduced copy)

8-70

+ A11

+ +

TOP

+
-

DAP A12
PURPOSE: (blank)

A12

TRANSLATION
PULSE

ROTATION

BSC BY NORM

VERB

PULSE NORM

VERB

COMP NORM

VERB

DEADBAND

ATT NORM

VERB

10 RATE NORM

VERB

12 JET ONT P

13

14 CNTL ACCEL

CAI/61-2/0/110

CAI/61-2/0/110

+
-

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+
-

+
-

TOP

TOP

+
-

A12
+

+
-

+
-

BAR PURPOSE

- 01 - HORIZONTAL
- 02 - TRACK ALIGN
- 03 - LOSS OF VERB
- 04 - (TAIL ONLY)
- 05 - LOSS OF VERB
- 06 - (HEAD & TAIL)
- 07 - ON BODY
- 08 - EYES DISPLAY
- 09 - EYES OFF
- 10 - REMOVED
- 11 - PHOTO OPS
- 12 - EYE SCAN
- 13 - BTG 502

CAI/61-2/0/110

CAI/61-2/0/110

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+
-

01 +
-

TOP

(reduced copy)

6-11

+ + + +

81

DAP 81

PURPOSE:
 NORMAL
 PACS LHM ALIGN
 OMS & ACS BURRS

TRANSLATION
 PULSE 15 0-0-0

ROTATION
 BSC BY NORM 16 0-0-0
 YERN 17 0-0-0
 PULSE NORM 18 0-0-0
 YERN 19 0-0-0
 COMP NORM 20 0-0-0
 YERN 21 0-0-0

DEADEND
 ATT NORM 22 0-0-0
 YERN 23 0-0-0

RATE NORM 24 0-0-0
 YERN 25 0-0-0

JET OPT 26 0-0-0
 27 0-0-0

CNTL ACCEL 28 0

CAP/61-2/4/FIN

+ + + +

82

DAP/61-2/4/FIN

+ + + +

81

DAP 82

PURPOSE:
 LOSS OF YERN
 (TAIL ONLY)

TRANSLATION
 PULSE 15 0-0-0

ROTATION
 BSC BY NORM 16 0-0-0
 YERN 17 0-0-0
 PULSE NORM 18 0-0-0
 YERN 19 0-0-0
 COMP NORM 20 0-0-0
 YERN 21 0-0-0

DEADEND
 ATT NORM 22 0-0-0
 YERN 23 0-0-0

RATE NORM 24 0-0-0
 YERN 25 0-0-0

JET OPT 26 0-0-0
 27 0-0-0

CNTL ACCEL 28 0

CAP/61-2/4/FIN

+ + + +

83

DAP/61-2/4/FIN

+

B2

+

+

TOP

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DAP B3

PURPOSE:

LOSS OF VEER
(ROSE & TAIL)
ON MOVE

B3

TRANSLATION
PULSE

15

0-0-2

ROTATION

BSC AT

NORM

VEER

NORM

VEER

PULSE

NORM

VEER

COMP

NORM

VEER

DEADBAND

ATT

NORM

VEER

RATE

NORM

VEER

JET OPT

0

CTRL ACCEL

20

CAP/81-C/8/P10

CAP/81-C/8/P10

+

TOP

+

+

B4

+

+

B3

+

+

TOP

+

DAP B4

PURPOSE:

SSVS DEPLOY

B4

TRANSLATION
PULSE

15

0-0-2

ROTATION

BSC AT

NORM

VEER

NORM

VEER

PULSE

NORM

VEER

COMP

NORM

VEER

DEADBAND

ATT

NORM

VEER

RATE

NORM

VEER

JET OPT

0

CTRL ACCEL

20

CAP/81-C/8/P10

CAP/81-C/8/P10

+

TOP

+

+

B3

+

(reduced copy)

8-13

+	06	+	+	TOP	+
	CAP 07			07	
	PURPOSE:			TRANSLATION	
	PROG OPS			PULSE	15 0-0 1
				ROTATION	
				BSC RT	16 NONE
				VERN	17 NONE
				PULSE	18 NONE
				VERN	19 NONE
				COMP	20 NONE
				VERN	21 NONE
				DEADBAND	
				ATT	22 NONE
				VERN	23 NONE
				RATE	24 NONE
				VERN	25 NONE
				JET OPT	26 1
				ENTL ACCEL	28 0
	CAP/07-0/0/10			CAP/07-0/0/10	

+	08	+	+	TOP	+
	TCP			08	
				TRANSLATION	
				PULSE	15 0-0 2
				ROTATION	
				BSC RT	16 NONE
				VERN	17 NONE
				PULSE	18 NONE
				VERN	19 NONE
				COMP	20 NONE
				VERN	21 NONE
				DEADBAND	
				ATT	22 NONE
				VERN	23 NONE
				RATE	24 NONE
				VERN	25 NONE
				JET OPT	26 1
				ENTL ACCEL	28 0
	CAP/07-0/0/10			CAP/07-0/0/10	

+	09	+	+	TOP	+
---	----	---	---	-----	---



00



TOP



CAP 00

PURPOSE:
BTB 902

TRANSLATION					
PULSE	15	0.0	0		
ROTATION					
BSC BY	NORM	15	0.1	0	
	VERA	15	0.1	0	
PULSE	NORM	15	0.1	0	
	VERA	15	0.1	0	
COMP	NORM	15	0.1	0	
	VERA	15	0.1	0	
DEADLAND					
ATT	NORM	15	0.1	0	
	VERA	15	0.1	0	
RATE	NORM	15	0.1	0	
	VERA	15	0.1	0	
JET OPT:	0	15			
	0	15			
CTRL ACCEL	20				
CAP/61-2/0/110					

CAP/61-2/0/110



TOP



00



CAP/61-2/0/110



(reduced copy)

TOP
BACK COVER "DAP BOOK"

HOOR
VILCO

CAJ/81-4/8/F14

ATTITUDE
TIMELINE

ATTITUDE
TIMELINE

ATTITUDE
TIMELINE

Attitude Timeline

REV	MNVR OPTION	MAD	B/C	E/Z	REMARKS	EVENT
1	0/01:10:00 TRK TGT=2 SV=3(90.00, 325.00) OH=100.00	A1 AUTO NOFN	BSC .200 33 AT 1.00 33 RT .20	EARTH T 90 P 325	LVLH R=215 P= 0 Y= 0	PLDD OPENING
2	0/03:50:00 04:00:55 MNVR R=103.00 P= 27.00 Y=357.00	A1 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 70 P 109		IMU ALIGN CORR CAL
3	0/04:23:00 34:20 TRK TGT=2 SV=3(90.00, .00) OH=100.00	A1 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 0	LVLH R=100 P= 0 Y= 0	-ZLV NOSE FWD
4	0/08:52:00 09:02:11 MNVR R=251.00 P=119.00 Y= 24.00 GENERIC ATTITUDE 0	A8 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 93 P 265		SATCON DEPLOY ATT
5	0/09:35:00 40:47 MNVR R= 02.00 P= 36.00 Y= 64.00 GENERIC ATTITUDE 0	A8 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 137 P 217		OMS SEP ATT
6	0/09:50:00 50:57 TRK TGT=2 SV=3(90.00, .00) OH=100.00	A8 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 0	LVLH R=100 P= 0 Y= 0	-ZLV NOSE FWD
7	0/10:01:00 15:16 TRK TGT=1 SV=3(310.00, .00) OH= 12.00 GENERIC ATTITUDE 0	A8 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 100 P 170	LVLH P= 0 P= 10 Y= 9	WINSOW PROTECT ATT
8	0/10:17:00 GENERIC ATTITUDE 4	A8 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 103 P 144	INRTL R=103 P=103 Y= 7	FKM
9	0/10:27:00 41:05 TRK TGT=2 SV=3(90.00, .00) OH=100.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 0	LVLH R=100 P= 0 Y= 0	-ZLV NOSE FWD
10	0/11:33:00 43:31 MNVR R=103.00 P= 27.00 Y=357.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 70 P 109		IMU ALIGN
11	0/11:53:00 12:05:50 TRK TGT=2 SV=3(90.00, .00) OH=100.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 0	LVLH R=100 P= 0 Y= 0	-ZLV NOSE FWD
12	0/22:10:00 20:13 MNVR R=103.00 P= 27.00 Y=357.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 77 P 109		IMU ALIGN

ALL ATTITUDES IN MEAN OF 1950
**ACCURATE TO WITHIN +/- 15 DEGREES.

Attitude Tolerances

REV	MNVR OPTION	REF	2/3	REMARKS	EVENT
1 0:23:29:00 39:17	MNVR R+169.37 P+311.61 Y+309.00	A11 AUTO VERN	BSC .200 99 AT 1.00 T 99 99 RT .02 P 122	SUN	UVX-1
2 1:01:01:00 07:10	MNVR R+173.61 P+348.03 Y+ 17.91	A11 AUTO VERN	BSC .200 99 AT 1.00 T 112 99 RT .02 P 119	SUN	UVX-2A
3 1:02:29:00 35:11	MNVR R+173.20 P+ 47.96 Y+336.25	A11 AUTO VERN	BSC .200 99 AT 1.00 T 50 99 RT .02 P 117	SUN	UVX-3 START
4 1:02:46:00 03:00:50	MNVR R+170.23 P+ 41.02 Y+337.26	B AUTO VERN	BSC .000 99 AT .95 T 93 99 RT .01 P 122	SUN	UVX-3 END
5 1:03:11:00 20:51	TRK TGT=2 SV=30 90.00, .00 DM=100.00	A11 AUTO VERN	BSC .200 99 AT 1.00 T 98 99 RT .02 P 0	EARTH	LYLH R+100 P+ 0 Y+ 0
6 1:05:31:00 45:09	MNVR R+223.90 P+130.04 Y+304.29	A11 AUTO VERN	BSC .200 99 AT 1.00 T 21 99 RT .02 P 2	SUN	UVX-11 STPAT
7 1:05:40:00 06:09:00	MNVR R+210.25 P+114.40 Y+298.12	B AUTO VERN	BSC .000 99 AT .05 T 11 99 RT .01 P 4	SUN	UVX-11 END
8 1:06:20:00 20:26	MNVR R+213.00 P+123.00 Y+301.00	A11 AUTO VERN	BSC .200 99 AT 1.00 T 16 99 RT .02 P 3	SUN	COMET VALLEY ACTIVE MONITORING PROGRAM
9 1:08:40:00 56:22	MNVR R+103.00 P+ 27.00 Y+357.00	A11 AUTO VERN	BSC .200 99 AT 1.00 T 77 99 RT .02 P 100	SUN	IMU ALIGN
10 1:09:00:00 21:10	TRK TGT=2 SV=30 90.00, .00 DM=100.00	A11 AUTO VERN	BSC .200 99 AT 1.00 T 90 99 RT .02 P 0	EARTH	LYLH R+100 P+ 0 Y+ 0
11 1:20:07:00 21:07:19	MNVR R+103.00 P+ 27.00 Y+357.00	A11 AUTO VERN	BSC .200 99 AT 1.00 T 76 99 RT .02 P 101	SUN	IMU ALIGN
12 1:22:16:00 19:12	MNVR R+120.35 P+ 1.30 Y+335.10	A11 AUTO VERN	BSC .200 99 AT 1.00 T 65 99 RT .02 P 176	SUN	UVX-10

*ALL ATTITUDES IN MEAN OF 1950000

Attitude Tabling

REV	MNVR OPTION	MODE	ASC	AT	RT	REV	EVENT
1	2-22:44:00 49:10 MNVR R+169.76 P+ 19.97 Y+ 13.39	A11	ASC	.200	SUN		UVX-5 START
		AUTO	AT	1.00	T 100		
		VERN	RT	.02	P 125		
2	2-00:01:00 10:03 MNVR R+169.12 P+ 19.09 Y+ 13.39	D0	ASC	.010	SUN		UVX-5 END
		AUTO	AT	1.00	T 50		
		VERN	RT	.01	P 120		
3	2-01:10:00 10:04 MNVR R+173.46 P+335.96 Y+ 24.76	A11	ASC	.200	SUN		UVX-7 START
		AUTO	AT	1.00	T 100		
		VERN	RT	.02	P 125		
4	2-01:32:00 52:00 MNVR R+165.14 P+333.14 Y+ 22.72	D0	ASC	.000	SUN		UVX-7 END
		AUTO	AT	.05	T 115		
		VERN	RV	.01	P 120		
5	2-02:05:00 15:22 TRK TGT=2 SV=5(270.00,000.00) GM=.00	A11	ASC	.200	EARTH	LVLN R+290 P+ 0 Y+ 0	DEEP SPACE
		AUTO	AT	1.00	T 50		
		VERN	RT	.02	P 250		
6	2-02:50:00 04:01:01 TRK TGT=2 SV=11 .00, .00 GM=100.00	D3	ASC	.200	EARTH	LVLN R+100 P+270 Y+ 0	CG ATT
		AUTO	AT	1.00	T 0		
		VERN	RT	.02	P 100		
7	2-05:02:00 06:05:12 MNVR R+ 29.46 P+340.22 Y+ 41.00	A11	ASC	.200	SUN		UVX-8
		AUTO	AT	1.00	T 135		
		VERN	RT	.02	P 273		
8	2-07:35:00 43:31 MNVR R+103.00 P+ 27.00 Y+357.00	A11	ASC	.200	SUN		IMU ALIGN
		AUTO	AT	1.00	T 76		
		VERN	RT	.02	P 100		
9	2-07:53:00 00:00:04 TRK TGT=2 SV=3(90.00, .00) GM=100.00	A11	ASC	.200	EARTH	LVLN R+100 P+ 0 Y+ 0	-ZLV NOSE FWD
		AUTO	AT	1.00	T 90		
		VERN	RT	.02	P 0		
10	2-10:40:00 54:24 MNVR R+103.00 P+ 27.00 Y+357.00	A11	ASC	.200	SUN		IMU ALIGN
		AUTO	AT	1.00	T 75		
		VERN	RT	.02	P 100		
11	2-21:03:00 05:51 MNVR R+ 75.24 P+ 19.13 Y+335.01	A11	ASC	.200	SUN		UVX-9
		AUTO	AT	1.00	T 55		
		VERN	RT	.02	P 220		
12	2-21:50:00 50:14 TRK TGT=2 SV=5(30.00, .00) GM=.00	A11	ASC	.200	EARTH	LVLN R+240 P+ 0 Y+ 0	IR-IE
		AUTO	AT	1.00	T 90		
		VERN	RT	.02	P 300		

Attitude Tideline

REV	MODE	POSITION	MODE	MODE	MODE	MODE	REMARKS	EVENT
1	3-02:00:00 11:10	HNRV	B=221.00 P=127.00 Y=302.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 21 P 0		CONET VALLEY ACTIVE MONITORING PROGRAM
2	3-02:22:00 30:32	HNRV	B=103.00 P= 27.00 Y=357.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 72 P 100		IMU ALIGN
3	3-02:32:00 34:50	TRK	TGT=2 BV=3130.00, .00 OR=100.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 0	LVLN B=100 P= 0 Y= 0	-2LV NOSE FWD
4	3-02:31:00 41:30	HNRV	B=103.00 P= 27.00 Y=357.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 79 P 107		IMU ALIGN
5	3-02:31:00 49:05:50	TRK	TGT=2 BV=31270.00, .00 OR= .00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 100	LVLN B= 0 P= 0 Y= 0	+2LV NOSE FWD
6	3-02:30:00 56:24	HNRV	B=107.00 P=167.00 Y= 59.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 103 P 99		CREW CONF
7	3-02:23:00 55:23	HNRV	B= 85.00 P= 21.00 Y=332.01	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 93 P 215		UNK-0
8	3-02:20:00 26:34	TRK	TGT=2 BV=5340.00, .00 OR=100.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 100	LVLN B=100 P=250 Y= 0	STD 902 START ATT
9	3-02:14:00	ROT	BV=31 00 270.00	A7 AUTO NCRM	BSC .500 33 AT .50 33 RT .20		ROT B=250 START P=215 ATT Y= 40	STD 902 R2STATIC
10	3-02:14:00	LVLN		A7 AUTO NCRM	BSC .500 33 AT .50 33 RT .20	EARTH T 176 P 100	LVLN B=100 P= 90 Y= 0	STD 902 STCP ATT
11	3-02:50:00 37:49	TRK	TGT=2 BV=31 50 00, .00 OR=100.00	A11 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	EARTH T 90 P 0	LVLN B=100 P= 0 Y= 0	-2LV NOSE FWD
12	3-02:39:00 49:12	HNRV	B=103.00 P= 27.00 Y=357.00	A1 AUTO VERN	BSC .200 33 AT 1.00 33 RT .02	SUN T 74 P 107		IMU ALIGN

ALL ATTITUDES IN DEGR OF 1950

6-5

EXP 61-C-FIM

Attitude Timeline

TIME	MNVR OPTION	AS	BSC	AT	RT	REMARKS	EVENT
4-06:59:00 07:12:13	TRK TGT=2 BY=30 99.00, .00 OM=100.00	AS AUTO VERN	BSC 99 AT 1.00 99 RT .02	EARTH	LYLN R=100 P= 0 Y= 0	-2LV NOSE FWD	
4-17:17:00 27:16	MNVR R=100.00 P= 27.00 Y=357.00	AS AUTO VERN	BSC 99 AT 1.00 99 RT .02	SUN	T 70 P 197	IMU ALIGN	
4-17:37:00 47:30	TRK TGT=4 BY=5(104.00, .00) OM= 90.00	AS AUTO VERN	BSC 99 AT 1.00 99 RT .02	SUN	INRTL R=311 P=255 Y= 70	TAIL SUN	
4-20:10:00 27:29	MNVR R=101.00 P=255.00 Y=325.00	AS AUTO VERN	BSC 99 AT 1.00 99 RT .02	SUN	T 70 P 166	IMU ALIGN	
4-20:30:00 32:30	MNVR R= 80.00 P=192.00 Y= 11.00	AS AUTO VERN	BSC 99 AT 1.00 99 RT .02	SUN	T 100 P 161	IMU VERIFY	

ALL ATTITUDES IN MEAN OF 1950

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