

*
ELSS UNSTOW. KNOCKED BACK OFF
CENTER LIGHT (BRIGHT) SHORTED OUT
1/4 PAGES CAME OFF.

GT-X

17 JULY 1966

THL 1 50.217

11 B & W

$\frac{70 \text{ MM}}{2 \frac{1}{2}}$

PART NO	DASH	S/N	S/C	BOOK	REMARKS
CF55019	- 18	101			EXP/LOG

PRIORITY:

D-5
D-10
S-26
S-13
S-12
S-10
S-1
S-5
S-6

MSC-6/3

MSC-7/3

MSC-12

MSC-5

MSC-8

FILM:

70 MM MAURER:

- A. (ON CAMERA) M=4, DOCK, S-5, S-6
B. (IN T-17 POUCH) MSC-8
C. (LH AFT BOX) S-5/S-6 2nd & 2nd DRY
D. (" " ") PASSIVE, EVA, S-5/S-6
H. EYE POSITION - REENTRY
(CAMERA BOX)

HASSALBLAD:

- E. (ON CAMERA) U.S. PASS, M=4, AGENA, S-5
F. (IN BOX) S-5/S-6
G. (" ") SPARE
~~H. (" ")~~

I. (T-17 POUCH) EVA

16 MM:

1. LH, M=4, 75 MM, $\frac{1}{50}$, F. 28, 00, 1 FPS
2. RH " 18 MM " " " "
3. LH: DOCK TO SLEEP, 18 MM, F-16, $\frac{1}{200}$, 6 FPS
4. RH " " " " " "
5. MSC-12
6. LH: PASSIVE
7. RH: PASSIVE
8. UMBILICAL EVA
9. " "
10. FIRST PASS ACROSS STATES - 1 FPS
11. WASTE BAG JETTISON
12. RETRO & REENTRY
- 13.
- 14.
- 15.
- 16.
17. } B&W - S-26 $\frac{1}{50}$, F-2
18. } " " - D-10 + INSIDE " "

51:16

51:38:51

1 FPS SOUTH

HT

53:11

ADD

50:30 HMC11

51:38:51

100.0 FT/SEC (1:57)

YAW 180° P 0°

25 91000 AFT

80 00005
81 00027
82 00020

RETRO

DEplete MAIN OAMS

250 PSI @ 75 FPS

DOCK
PRAC

BEND
TEST

S-26

MSC-
12

S-5

D-5

S-6

D-10

S-1

MSC-
6

CREW
LOG

GEN
PHOTO

VOX
CHECK

DOCKING PRACTICESCONFIGURATION

PLATFORM - ORB RATE
RATE GYROS - PRI
COMPUTER - AS REQUIRED
16MM CAMERA, 18MM LENS, 1/200 AT F 16

DOCKINGS

- 1: 05:50, CP, TDA NORTH, F. C. 6
- 2: 19:55, CP, TDA SOUTH, F. C. 1
- 3: 20:45, P, TDA SOUTH, F. C. 1

PROCEDURESUNDOCK

- 1) PRIOR TO UNDOCKING,
 - A. COMPUTER - NAV (CTCH-UP)
LOAD THE COMPUTER AS FOLLOWS:

25:00000
26:00000
27:00000

START COMP - PUSH
 - B. RDR - STBY
 - C. SEND THE FOLLOWING AGENA COMMANDS:

141 - APPROACH LIGHTS ON
201 - SDP BRIGHT
071 - L BAND BEACON ON
041 - RECORD DATA
220 - UNRIGIDIZE (OR TDA CONTROL - UNDOCK)
- 2) START 16MM CAMERA AT 6 FRAMES/SEC
- 3) OAMS CNTL POWER - ON
- 4) ATTITUDE CONTROL - RATE CMD OR DIRECT

5) UNDOCK AND TRANSLATE TO 10 FEET AT 1/2 FT/SEC

- 6) ATTITUDE CONTROL - PULSE
- 7) RDR - ON
- 8) CHANGE 16MM CAMERA SPEED TO ONE FRAME/SEC
- 9) PROCEED WITH S-26 EXPERIMENT
- 10) TRANSLATE TO 60 FEET FROM THE AGENA.

DOCK

- 1) IF AGENA RECORDING TIME IS AVAILABLE,
 - A. SEND AGENA CMD 041-(RECORD DATA)
 - B. RDR - STBY
- 2) START 16MM CAMERA AT ONE FRAME/SEC
- 3) TRANSLATE TOWARD THE AGENA AT 1/2 FT/SEC
- 4) AT A RANGE OF 25 FEET, START THE 16MM CAMERA AT 6 FRAMES/SEC
- 5) ATTITUDE CONTROL - RATE CMD OR DIRECT
- 6) DOCK
- 7) WHEN THE RIGID LT COMES ON:
 - A. RIGID STOP - STOP
 - B. OAMS CNTL POWER - OFF
 - C. ATTITUDE CONTROL - PULSE
 - D. ENGINE - ARM
 - E. CHECK SDP ARMED LT ILLUMINATED.
 - F. ENGINE - STOP
 - G. CHECK SDP ARMED LT EXTINGUISHED.
 - H. RDR - OFF

BEND
TEST

S-26

MSC-
12

S-5

D-5

S-6

D-10

S-1

MSC-
6CREW
LOGGEN
HOTOVOX
CHECK

DOCK
PRAC

I - COMPUTER - PRE LN

8) STOP 16MM CAMERA

9) SEND THE FOLLOWING AGENA COMMANDS:

030 - T/M OFF

021 - T/M ON

140 - APPROACH LTS OFF

070 - L BAND BEACON OFF

10) CONFIGURE AGENA SDP AS DESIRED.

BEND
TEST

S-26

MSC-
12

S-5

D-5

S-6

D-10

S-1

MSC-
6

CREW
LOG

GEN
HOTO

VOX
CHECK

DOCK
PRAC

S/C - AGENA BENDING TEST

CONFIGURATION

BEND
TEST

OAMS CNTL PWR - ON
S/C - AGENA DOCKED IN ANY ATTITUDE:
AGENA CONFIGURATION (F.C. 6)
ATT CONT - DIRECT
ENCDR - ON

NOTE: TEST MUST BE PERFORMED OVER R/TT/M
SITE

TIME: 06:00:00 _____ (OVER STA - HAW)

PROCEDURES:

S/C RECORDER - ON

1. SEND THE FOLLOWING CMDS TO THE AGENA:

300 - H/S - OFF

350 - GEO RATE - OFF

400 - ACS - OFF

S/C RECORDER - ON

041 - RECORDER ON AT TIME _____

2. APPLY 3 SEC PITCH DOWN IMMEDIATELY
FOLLOWED BY A 3-SEC PITCH UP.

3. ALLOW THE S/C - AGENA TO STABILIZE
2 MIN

4. APPLY 3 SEC YAW LEFT IMMEDIATELY
FOLLOWED BY A 3 SEC YAW RIGHT THRUST

5. ALLOW S/C - AGENA TO STABILIZE 10 SEC

030 - TM RECORDER OFF TIME _____

021 - TM ON

S/C RECORDER - OFF

S-26

MSC-
12

S-5

D-5

S-6

D-10

S-1

MSC-
6

CREW
LOG

GEN
HOTO

VOX
CHECK

BEND
TEST
S-26
CONFIGURATION

AGENA SYSTEMS (SEE DOCKING PRACTICE)

1. STABILIZATION CONTROL SYSTEM - ON
2. ORIENTATION - TDA/FORWARD OR SOUTH.
3. TELEMETRY - OPERATING.

GEMINI SYSTEMS

1. PLATFORM - ORB RATE AND ALIGNED.
2. RENDEZVOUS RADAR - OFF WITHIN 20 FT.
VOICE TAPE - LOADED ON AT PT B

NOTE: RADAR ON CLOSER MAY MAKE SENSORS READ FALSE DATA.

3. ATTITUDE CONTROL - PULSE
4. TRI-AXIS MAGNETOMETER - ON
5. SEQUENCE CAMERA - MOUNTED AND PLUGGED IN USING 18MM LENS.

NOTE: LOAD WITH S0217 FOR DAYLIGHT, OR HI SPEED BLACK AND WHITE FOR DARKNESS.

TIMES

19:30 - 19:45 _____
20:10 - 20:25 _____
22:11 - 22:21 _____

MODE

B _____
B _____
A _____

PROCEDURES:

MODE A - LINEAR MAPPING

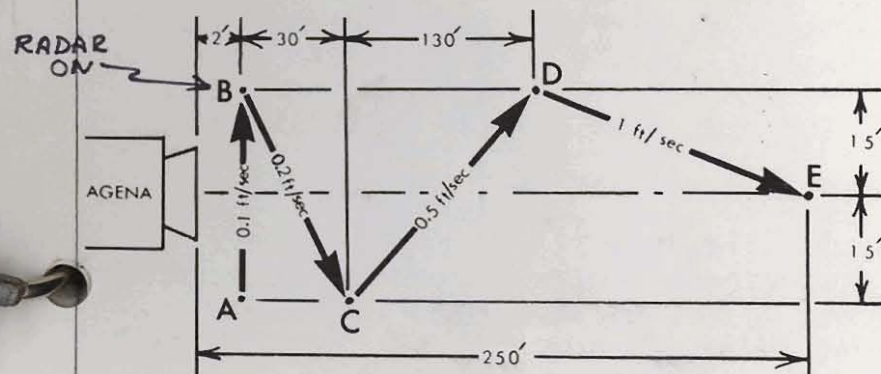
1. SEQUENCE CAMERA - 1 FRAME/SEC - ON
VOICE TAPE - CONTINUOUS
2. VOICE RECORD AND/OR LOG START TIME OF CAMERA AND MAGAZINE NUMBER ON VOICE TAPE AND/OR IN LOG.
3. SEND COMMAND 041 TO AGENA (TM AND PCM ON)
4. VOICE RECORD AND/OR LOG PCM START TIME.
5. FOLLOWING UNDOCKING: (SEE DOCKING PROCEDURES) SEPARATE AT ABOUT 2 FEET PER

SECOND TO A DISTANCE OF 1000 FEET, HOLDING AGENA IN VIEW.

6. SEND COMMAND 030 TO AGENA (PCM AND T/M OFF).
7. SEND COMMAND 021 TO AGENA (T/M ON).
8. SEQUENCE CAMERA - OFF
9. DUMP AGENA PCM OVER STATION.

MODE B - TRANSVERSE MAPPING

1. SEQUENCE CAMERA - 1 FRAME/SEC - ON
2. VOICE RECORD AND/OR LOG STARTING TIME OF CAMERA.
3. SEND COMMAND 041 TO AGENA (TM AND PCM ON)
4. VOICE RECORD AND/OR LOG AGENA PCM START TIME.
5. HOLDING S/C AT 0,180,0 AS WELL AS POSSIBLE, MAP THE WAKE AS PER SKETCH AND DETAILS BELOW.



- A. UNDOCK, STATION KEEP AT 1 TO 30 FT. SEPARATION FOR 15 TO 20 SEC. MINIMIZE THRUSTER FIRING.

DOCK
PRAC

BEND
TEST

S-26

B. MANEUVER TO 2 FT AHEAD OF AND 15 FT BELOW THE AGENA, TO POINT A.

C. HOLDING 2 FT SEPARATION, TRANSLATE UPWARDS 30 FT TO POINT B. RATE SHOULD BE ABOUT 0.1 FT/SEC.

E. ~~D~~ TRANSLATE OUT 30 FT AND DOWN 30 FT TO POINT C. RATE SHOULD BE ABOUT 0.2 FT/SEC.

D. ~~E~~ AT AN ESTIMATED ¹⁰ ~~20~~ TO ¹⁵ ~~25~~ FT SEPARATION TURN ON L BAND RADAR. VOICE RECORD AND/OR LOG RADAR ON TIME.

F. TRANSLATE OUT 130 FT AND UP 30 FT TO POINT D. RATE SHOULD BE ABOUT 0.5 FT/SEC.

G. TRANSLATE DOWN AND OUT TO 250 FT SEPARATION. RATE SHOULD BE ABOUT 0.1 FT/SEC.

6. SEND COMMAND 030 TO AGENA (TM AND PCM OFF). VOICE RECORD AND/OR LOG OFF TIME.

7. SEND COMMAND 021 TO AGENA (TM ON).

8. SEQUENCE CAMERA - OFF. VOICE RECORD AND/OR LOG OFF TIME OF CAMERA.

9. CONTINUE WITH DOCKING PRACTICE.

10. DUMP AGENA PCM OVER STATION.

NOTE: AGENA PCM IS LIMITED TO 20 MIN RECORD TIME. IT MUST BE SHUT OFF AT 20 MIN FOR SUBSEQUENT DUMP.

MSC-
12

S-5

D-5

S-6

D-10

S-1

MSC-
6

CREW
LOG

GEN
HOTO

CHECK

DOCK
PRAC

EXPERIMENT MSC-12
LANDMARK CONTRAST

BEND
TEST

S-26

MSC-
12

CONFIGURATION

1. UNDOCKED
2. PHOTOMETER UNSTOWED AND CONNECTED TO AUX RECP AND TM JACK.
3. PHOTOMETER DAY NIGHT SWITCH - DAY.
4. FILTER - IN PLACE.
5. GAIN WHEEL - LEFT (DOWN).
6. S/C RETICLE IN WINDOW.
7. ATTITUDE CONTROL - PULSE
8. SEQUENCE CAMERA WITH 75MM LENS MOUNTED IN RIGHT WINDOW BRACKET.

TIMES(?)

	MODE	SEQ
25:35 - 25:45	A	11 HAWAII
25:45 - 25:55	A	01 BAJA
25:55 - 26:00	E CALIB	XX CLOUDS
27:15 - 27:25	A	11 HAWAII
27:25 - 27:30	E CALIB	XX CLOUDS
41:05 - 41:45	A	08 MED

CONDITIONS REQUIRED

1. SUN ANGLE AT LEAST 30 DEG ABOVE HORIZON.
2. AREA SCANNED DIRECTLY ON TRACK.
3. S/C RIGHT WINDOW SHADED FROM SUN GLARE.

NOTE: DO NOT EXPOSE SENSOR TO DIRECT SUNLIGHT.

PROCEDURES

MODE A - BOUNDARY OBSERVATIONS

1. ROLL TO HEADS DOWN, YAW 0 DEG, PITCH 25 DEG DOWN.
2. ALIGN S/C ON LAND-SEA INTERFACE ON GROUND TRACK.
3. ACTUATE CAMERA AT 1 FRAME/SEC
4. CALIBRATION:
 - A. ALIGN PHOTOMETER ON LAND.
 - B. DEPRESS CALIBRATE BUTTON.
 - C. ROTATE GAIN WHEEL UNTIL COLOR CHANGES (RED TO GREEN FLUCTUATING).
 - D. RELEASE CALIBRATION BUTTON.
5. BRIGHTNESS MEASUREMENT:

ALIGN PHOTOMETER ON LAND FOR 4 SEC THEN ON WATER FOR 2 SEC
6. POLARIZATION CHECK:
 - A. DEPRESS CALIBRATE BUTTON FOR 1 SEC.
 - B. ROTATE PHOTOMETER 90 DEG ABOUT OPTICAL AXIS.
 - C. ALIGN PHOTOMETER ON LAND FOR 4 SEC THEN ON WATER FOR 2 SEC
7. CONTINUE WITH AS MANY BRIGHTNESS MEASUREMENTS AS POSSIBLE.
8. AFTER TASK:
 - A. CAMERA - OFF
 - B. COVER SENSOR FOR 10 SEC. TO GET "DARK" READINGS-SETTINGS UNCHANGED FROM PREVIOUS OPERATION.

S-5

D-5

S-6

D-10

S-1

MSC-
6

CREW
LOG

GEN
PHOTO

CHECK

VOX
CHECK

DOCK
PRACEXPERIMENT S-5
SYNOPTIC TERRAIN PHOTOGRAPHY

S-5 & S-6

BEND
TEST

CONFIGURATION

S-26

MSC-
12

S-5

1. ATTITUDE CONTROL - PULSE

2. UNSTOW

A. 70MM MAURER CAMERA

B. RINGSIGHT

C. FILM MAGAZINE

D. 80MM LENS.

TIME

MODE

SEQ

25:50 - 26:00

PROCEDURES

1. ASSEMBLE CAMERA, LENS, ETC.

2. VOICE RECORD AND/OR LOG GET, SEQ, MODE,
MAGAZINE NUMBER AND FRAME NUMBER.3. PITCH S/C STRAIGHT DOWN, IF POSSIBLE, TO
GET PHOTOGRAPHS.4. CONTROL ROLL TO KEEP SUN GLARE OFF
WINDOW.MODE A - STRIP PHOTOGRAPHY - 1 FRAME EVERY
5 SEC.SEQ 01. RED SEA - ARABIAN PENINSULA
SEQ 02. CENTRAL MEXICO - BAJA CALIFORNIA
SEQ 03. WEST PAKISTAN
SEQ 04. SAHARA DESERT
SEQ 05. N. W. SOUTH AMERICA

MODE B - PAIRS OF EXPOSURES

SEQ 06. MISSISSIPPI DELTA TO BLUE WATER
SEQ 07. GANGES DELTA TO BLUE WATER
SEQ 08. TONGUE OF THE OCEAN - BAHAMAS
SEQ 09. PHILLIPPINES AND ADJACENT WATERS.
SEQ 10. MEKONG ALLUVIUM TO BLUE WATER.TIME TO
NEAREST SECSEQ OR
SUBJECT

MODE

MAG

FRAME

REMARKS

D-5

S-6

D-10

S-1

MSC-
6CREW
LOGGEN
HOTOVOX
CHECK

DOCK
PRAC

EXPERIMENT D-5
STAR OCCULTATION NAVIGATION

CONFIGURATION

1. UNDOCKED.
2. AUX RECP - OFF
3. PHOTOMETER UNSTOWED AND CONNECTED TO
AUX RECP AND TM JACK.
- NOTE: KEEP SENSOR COVERED BEFORE SUNSET
4. FILTER - STOWED POSITION.
5. GAIN WHEEL - LEFT (DOWN)
6. S/C RETICLE - INSTALLED
7. DAY-NIGHT SWITCH - NIGHT
8. ATTITUDE CONTROL - PULSE
9. CABIN LIGHTS - DIM

TIMES - GET UPDATED SUNSET TIMES MODE

26:07 - 26:43	_____	A	_____
27:40 - 28:16	_____	A	_____
29:12 - 29:48	_____	D	_____
41:29 - 42:05	_____	D	_____

PROCEDURES

MODE A

1. ALIGN S/C BEF.
2. ACQUIRE BRIGHT STAR ABOUT TO BE OCCULTED
3. AUX RECP - ON
4. POINT PHOTOMETER AT STAR, ALIGN STAR IN
INSTRUMENT RETICLE CIRCLE.

5. DEPRESS CALIBRATE BUTTON.
6. TURN GAIN WHEEL UP UNTIL RETICLE COLOR
CHANGES (RED TO GREEN FLUCTUATING).
7. RELEASE CALIBRATE BUTTON.
8. CONTINUE TO TRACK STAR UNTIL IT DIS-
APPEARS.
9. ACQUIRE NEXT STAR IN SEQUENCE AND REPEAT
STEPS 4 THRU 8.
10. VOICE RECORD OR ENTER IN LOG THE TIME,
VARIATIONS FROM SUGGESTED SEQUENCE AND
COMMENTS.

MODE B

SAME AS MODE A, EXCEPT: AFTER CALIBRATION
ON STAR, POINT PHOTOMETER SO THAT STAR IS
OUTSIDE RETICLE CIRCLE TO THE SIDE. CONTINUE
TO TRACK STAR UNTIL IT IS OCCULTED.

NOTE: RETICLE LIGHT WILL REMAIN RED.

MODE C

SAME AS MODE A, EXCEPT: DEPRESS CALIBRATE
BUTTON BRIEFLY WHEN THE STAR IS AT THE TOP
AND BOTTOM OF THE AIRGLOW AND AS IT
VANISHES FROM VIEW.

MODE D

1. RECEIVE DCS VECTOR
2. LOAD VI 6209001
CONFIRM TPW 120
STBY-OFF
3. COMP-ORB DET
4. START COMP

DOCK
PRAC

5. ENTER

92	
93	
90	ORB DET VALUES

6. MARK OCCULTATION
(START COMP)

7.

83	00000
----	-------

8. START COMP

9. READ

83	
----	--

10.

88	11111
----	-------

11. REPEAT STEPS 3-10 FOR REMAINING STARS

12. AFTER COMPLETION,

LOAD III

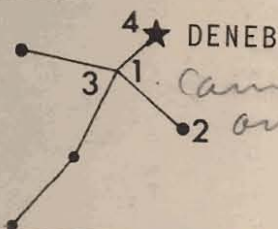
62	09001
----	-------

CONFIRM TPW 076
STBY - OFF

START CLOCK AT SUNSET

RT ASC & DEC	STARS	TIME SINCE SUNSET	DIRECTION FROM BEF
92 21629 93 01214	01-REGULUS (18 JULY) 21530 (19 JULY) 21432 (20 JULY)	:05	5° L 420-410-441 440
92 24148 93 01476	02-DENEbola 24049 23996	:11	5° L 420-410-441 440
92 25778 93 05614	03-ALIOth 25680 25581	:15	25° R 420-411-441 440
92 27123 93 04949	04-ALKAID 27025 26926	:18	20° R 420-410-441 440
92 27818 93 01936	05-ARCTURUS 27719 27621	:20	ON TRACK 420-410-441 440
92 29797 93 02683	06-ALPHECCA 29698 29599	:24	5° R 420-411-441 440

CALIBRATION



:28
CUTOFF 25° R
420-410-441
440

83-2133

92 34360 07-VEGA
93 03875 34262
34163

READ OUT

84	65600
89	11252

wrong
R.H.

REGULUS - RESIDUAL 000.20

DENEbola " 000.20

ALIOth " 000.90

ALKAID " 000.18

ARCTURUS " 000.18

ALPHECCA " 000.15

DENEb " "

VEGA " "

S-6

D-10

S-1

MSC-
6CREW
LOGGEN
HOTOVOX
CHECK

DOCK
PRAC

D-5 MODE D

BEND
TEST

STAR

RUN

G.E.T.

ADD 83

S-26

MSC-
12

S-5

D-5

M-1

M-2

M-3

S-6

D-10

S-1

MSC-
6

CREW
LOG

GEN
HOTO

VOX
CHECK

EXPERIMENT S-6
SYNOPTIC WEATHER PHOTOGRAPHY

CONDITIONS

BETWEEN 10 MIN AND 45 MIN AFTER SUNRISE

CONFIGURATION

1. ATTITUDE CONTROL - PULSE
2. UNSTOW:
 - A. 70MM MAURER CAMERA
 - B. RINGSIGHT
 - C. 80MM LENS.
 - D. FILM MAGAZINE.

TIMES

26:50-27:15	28:50	-	29:00	_____
28:25-28:35	30:00	-	30:40	_____

PROCEDURES

1. ASSEMBLE CAMERA, LENS, ETC.
2. CONTROL ATTITUDE TO OBTAIN PHOTOGRAPHS OF SELECTED CLOUD FORMATIONS.
3. VOICE RECORD AND/OR LOG GET, SEQ. AND SIGNIFICANT OBSERVATIONS.

NOTE: A. CONTROL ROLL TO KEEP GLARE OFF WINDOW

B. PHOTOGRAPH SAME FORMATION ON SUCCESSIVE ORBITS, IF POSSIBLE.

C. CLOUDS OVER LAND ARE PREFERRED IN ORDER TO IDENTIFY LOCATION.

SEQUENCES - TO BE USED FOR GROUND UPDATES

01. CLOUD EDDIES NEAR ISLANDS AND COASTS.
02. DIURNAL CLOUD VARIATIONS IN COASTAL AND ISLAND AREAS.
03. CUMULUS CLOUD "STREETS".
04. SUNGLINT IN GULF OF MEX., BAHAMAS AREA.
05. SEVERE THUNDERSTORMS.
06. THUNDERSTORMS WITH STRONG WIND SHEAR.
07. TROPICAL AND EXTRA TROPICAL CYCLONES.
08. CIRRUS BAND EMANATING FROM TROPICAL CONVERGENCE ZONE.
09. AREAS OF INTEREST TO OCEANOGRAPHERS.
10. PICTURES NEAR METEOROLOGICAL SOUNDING STATIONS.

- | | |
|-----------------|----------------|
| A. GUAM | H. ENIWETOK |
| B. MIDWAY | I. KWAJALEIN |
| C. WAKE | J. KEY WEST |
| D. MARCUS IS. | K. SWAN ISLAND |
| E. JOHNSTON IS. | L. ASCENSION |
| F. KAUAI | M. WEST INDIES |
| G. HAWAII | |

DOCK
PRAC

[illegible]

BEND
TEST

S-26

MSC-
12

S-5

D-5

S-6

D-5

S-5 & S-6

[illegible]

D-10

S-1

MSC -
6

CREW
LOG

GEN
HOTO

VOX
CHECK

EXPERIMENT D-10
ION SENSING ATTITUDE CONTROL

SPACECRAFT SYSTEMS CONFIGURATION

1. UNDOCKED
2. AGENA POWER C/B - ENGAGED
3. OTHER SYSTEMS ARE DEPENDENT ON PARTICULAR SEQUENCES.

NOTE: TO BE COMPLETED WITH NO FIRING OF VERTICAL AND LATERAL THRUSTERS.

TIMES	MODE
51:10	A
52:55 - 53:05	C
53:05 - 53:45	D
63:00 - 64:52	D
64:52 - 65:12	F
65:12 - 65:20	C
65:20 - 66:00	E
66:00	H

PROCEDURES

MODE A - EQUIPMENT EXTENSION AND ACTIVATION

1. ✓ BUS ARM SWITCH - EXP
2. ✓ ION SENSOR SEQ. SWITCH - SEQ. 1
3. ✓ WAIT 1 TO 2 MINUTES FOR BOOMS TO FULLY EXTEND.
4. ✓ ION SENSOR MODE SWITCH - ON

NOTE: MUST REMAIN ON OR FDI UNTIL COMPLETION OF EXP

5. ✓ ION SENSOR SEQ. SWITCH - SEQ. 2.
6. ✓ BUS ARM SWITCH - SAFE

MODE B - AMBIENT DATA ACQUISITION

1. PLATFORM - ORB RATE AND ALIGNED.
2. COMPUTER - PRELAUNCH
3. ATTITUDE CONTROL - PLAT
4. ION SENSOR MODE SWITCH - FDI
5. FDI RANGE SELECTORS - HIGH SCALE
6. HOLD SPACECRAFT ATTITUDE AT ZERO IN ALL AXES FOR 10 MINUTES.

MODE C - ROLL ATTITUDE STUDY

1. PLATFORM - ORB RATE AND ALIGNED.
2. COMPUTER - PRELAUNCH
3. ATTITUDE CONTROL - PULSE.
4. ION SENSOR MODE SWITCH - FDI
5. FDI SCALES - HIGH
6. ROLL 720 DEGREES AT ABOUT 3 DEG. PER SECOND, HOLDING PITCH AND YAW TO ZERO.
7. VOICE RECORD CREW COMMENTARY ABOUT FDI NEEDLE MOVEMENTS.

MODE D - PITCH ATTITUDE STUDY

1. PLATFORM - ORB RATE AND ALIGNED.
2. COMPUTER - PRELAUNCH
3. ATTITUDE CONTROL - PULSE
4. ION SENSOR MODE SWITCH - FDI
5. FDI SCALES - HIGH

6. HOLDING BOTH YAW AND ROLL TO ZERO DEGREES, PITCH FROM 20 DEG. DOWN TO 40 DEG. UP AT ≈ 0.1 DEG. PER SECOND.
7. HOLDING YAW AT 5 DEG. LEFT AND ROLL TO ZERO, PITCH FROM 40 DEG. UP TO 20 DEG. DOWN AT ≈ 0.1 DEG. PER SECOND.
8. HOLDING YAW AT 5 DEG. RIGHT AND ROLL TO ZERO, PITCH FROM 20 DEG. DOWN TO 20 DEG. UP AT ≈ 0.1 DEG. PER SECOND.
9. VOICE RECORD CREW COMMENTARY ABOUT FDI NEEDLE MOVEMENTS.

MODE E - YAW ATTITUDE STUDY

1. PLATFORM - ORB RATE AND ALIGNED.
2. COMPUTER - PRELAUNCH
3. ATTITUDE CONTROL - PULSE
4. ION SENSOR MODE SWITCH - FDI
5. FDI SCALES - HIGH
6. HOLDING BOTH PITCH AND ROLL TO ZERO DEGREES, YAW FROM 20 DEG. RIGHT TO 40 DEG. LEFT AT 0.1 DEG. PER SECOND.
START AT 64:08:10
7. HOLDING PITCH AT 5 DEG. DOWN AND ROLL TO ZERO, YAW FROM 40 DEG. LEFT TO 20 DEG. RIGHT AT ≈ 0.1 PER SECOND.
20 *at 64:19* *AT 64:19:45*
8. HOLDING PITCH AT 5 DEG. UP AND ROLL TO ZERO, YAW FROM 20 DEG. LEFT TO 20 DEG. RIGHT AT ≈ 0.1 DEG. PER SECOND.
LEFT *64:29* *START 64:29:20*
9. VOICE RECORD CREW COMMENTARY ABOUT FDI NEEDLE MOVEMENTS.

MODE F - PHOTO EMISSION EFFECTS

1. PLATFORM - ORB RATE AND ALIGNED.
2. COMPUTER - PRELAUNCH

3. ATTITUDE CONTROL - PLAT
4. ION SENSOR MODE SWITCH - FDI
5. FDI SCALES - HIGH
6. HOLD SPACECRAFT ATTITUDE AT ZERO ABOUT ALL THREE AXES FROM 5 MIN. BEFORE SUNRISE TO 15 MIN. AFTER SUNRISE.
7. VOICE RECORD CREW COMMENTARY ON FDI NEEDLE MOVEMENTS.

MODE G - RANDOM DATA ACCUMULATION

1. ION SENSOR MODE SWITCH - ON
2. AT LEAST 6 HOURS OF DATA ACQUISITION IS REQUESTED. DRIFTING FLIGHT IS PREFERRED.

MODE H - TRANSLATION THRUSTER EFFECTS

1. PLATFORM - ORB RATE AND ALIGNED.
 2. COMPUTER - NAV (CTCH UP)
ENTER 25:00000, 26:00000, 27:00000
 3. ATTITUDE CONTROL - PULSE
 4. ION SENSOR MODE SWITCH - FDI
 5. FDI SCALES - HIGH
START COMP - PUSH
 6. HOLDING PITCH AND YAW AT ZERO DEG.,
FIRE L/R, U/D THRUSTERS BRIEFLY.
 7. READ ADD 80
 8. TRANSLATE AFT TO NULL ADD $80 \geq 0.2$
FT/SEC.
 9. VOICE RECORD CREW COMMENTARY ON FDI NEEDLE MOVEMENTS.
- NOTE: THRUSTER FIRINGS WILL PROBABLY DESTROY SENSORS.

D-10 LOG

GET

MODE

REMARKS

S-1

MSC-
6

CREW
LOG

GEN
PHOTO

VOX
CHECK

S-1
ZODIACAL LIGHT

S/C CONFIGURATION

1. UNDOCKED.
2. RATE GYROS - PRI OR SEC.
3. FDI SCALE RANGE - LO
4. ATT CONTROL - PULSE.
5. CABIN LIGHTS - OFF.
6. ATT IND LIGHTS - DIM. (How?)
7. S-1 CAMERA UNSTOWED.

NOTE: A. RED CAMERA LIGHT IS OFF WHEN FILM IS BEING EXPOSED.
B. SHUT CAMERA OFF BETWEEN EXPOSURES AS REQUIRED FOR ATTITUDE CONTROL.

TIME: 52:05 - 52:50 _____

PROCEDURE

1. EXPOSE FIRST TWO FRAMES BEFORE TAKING AIRGLOW PICTURES.
2. TAKE 6 EXPOSURES OF AIRGLOW TO WEST. START 1 MIN POST-SUNSET. CAMERA HORIZONTAL. END AT 8 MIN POST-SUNSET.
3. TAKE 2 MILKY WAY EXPOSURES TO SOUTH HORIZON. CAMERA VERTICAL. END AT SUNSET +12 (CRUX-SHUALA).
4. TAKE 2 MILKY WAY EXPOSURES AT ZENITH. CAMERA ALONG MILKY WAY. END AT SUNSET +15. (SHUALA-DENEK)
5. TAKE 2 MILKY WAY EXPOSURES TO NORTH HORIZON. CAMERA VERTICAL. END AT SUNSET +18. (DENEK-CASSIOPEIA).
6. TAKE 2 AIRGLOW EXPOSURES TO NORTH. CAMERA HORIZONTAL. END AT SUNSET +21.
7. TAKE 2 AIRGLOW EXPOSURES TO NORTH-EAST. CAMERA HORIZONTAL. END AT SUNSET +24.
8. TAKE 2 AIRGLOW EXPOSURES TO EAST. CAMERA HORIZONTAL. END AT SUNSET +27.
9. TAKE 6 AIRGLOW EXPOSURES TO SOUTH OR UNTIL STARS "WASH OUT". CAMERA HORIZONTAL.

MSC-
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S-26

MSC-
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S-5

D-5

S-6

D-10

S-1

MSC-
6

EXPERIMENT MSC-6
BETA SPECTROMETER

CONFIGURATION

1. BETA - WITH MAG. - INSERTION CHECKLIST.
2. PLATFORM - ORB RATE AND ALIGNED IF IN MODE A OR MODE B.
3. BETA - OFF IN PRERETRO CHECKLIST.

TIMES

MODE

PROCEDURES

MODE A - CONTROLLED ATTITUDE

1. ATTITUDE CONTROL - PULSE
2. HOLD YAW AT ZERO, PITCH AT ZERO. ROLL TO 42 DEG LEFT PLUS OR MINUS 2 DEG.
3. HOLD THIS ATTITUDE THROUGH THE ANOMALY AREA.

MODE B - CONTROLLED ROLL RATE

1. ATTITUDE CONTROL - PULSE
2. HOLD PITCH AND YAW AT ZERO DEG ROLL AT ABOUT 6 DEG/SEC THROUGH THE ANOMALY.

MODE C - RANDOM ATTITUDE

DRIFTING FLIGHT PREFERRED.

CREW
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S-26

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MSC-
6CREW
LOGGEN
PHOTO

GENERAL PHOTOGRAPHY

TIME	SEQ OR SUBJECT	MODE	MAG	FRAME	REMARKS
	PLA				
42-1	43-1			44-1	
66:55:05	68:33:25			70:11:12	
24+44	23+12			22+01	
29+34	28+07			27+17	
45-4	46-4			47-4	
73:03:02	74:41:09			76:18:54	
24+11	22+46			21+43	
29+10	27+58			27+09	
90° L	WX GOOD				
90° R	43-1				
	20° RETRO				

51:45:00

D-10 MADE A NO MAN

HOR SCAN 160RE-LEAVE ON FOR
SLEEP

51:45:00 } EAT

52:45:00 }

52:00:00 CSQ PORGE 1-2

- 1240 & 044

52:50:00 PLA

53:11:00 ORB TWEAK

53:00:00 SLEEP D-10

63:00:00 MIDE G?

VOX
CHECK

VOX CHECK WITH HELMETS (FACE PLATE CLOSED).

1. USING PTT VERIFY THAT KEYING OF THE UHF T/R CAN BE HEARD IN THE HEADSETS.
 - A. TURN DOWN THE INT AND HF VOLUME CONTROLS AND UHF SQUELCH CONTROL AS REQUIRED UNTIL KEYING IS HEARD IN THE HEADSET.
2. SELECT A UHF TRANSMITTER ON BOTH MODE SWITCHES AND PLACE THE KEYING SWITCH TO VOX. VERIFY MIKES ARE APPROXIMATELY 3/4" FROM THE CORNERS OF THE MOUTH.
3. PERFORM A UHF COMM CHECK USING VOX AND NOTE UHF T/R KEYING AS HEARD IN THE HEADSET. LISTEN PARTICULARLY FOR LOSS OF WORDS DUE TO DROPOUTS OR EXCESSIVE KEYING FROM BREATH NOISE AND OTHER S/C NOISE. USE TEST COUNT OF NUMBERS THIRTY THRU FORTY RATHER THAN ONE THRU 10 AND USE VOX IN NORMAL FLIGHT FOR APPROXIMATELY ONE ORBIT IF POSSIBLE.

VOX ADJUSTMENT IF REQUIRED

4. IF WORDS ARE LOST IN THE TRANSMISSION DUE TO DROPOUTS INCREASE THE VOX SENSITIVITY OF THE AFFECTED CREWMAN BY TURNING HIS VOX ADJUSTMENT CLOCKWISE.
5. IF THE TRANSMITTER KEYS EXCESSIVELY FROM BREATH NOISE OR OTHER S/C NOISES.
 - A. PLACE DESIRED MODE SW TO UHF AND THE OTHER MODE SW TO INT.
 - B. ADJUST VOX FOR MODE SW IN UHF FOR PROPER OPERATION.
 - C. REVERSE MODE SWITCH POSITIONS AND ADJUST THE OTHER VOX.
 - D. PLACE BOTH MODE SWITCHES TO UHF AND VERIFY PROPER OPERATION.

NOTE: TESTING INDICATES THAT THE VOX ADJUSTMENT FROM TOO SENSITIVE TO NOT SENSITIVE ENOUGH IS APPROXIMATELY 70°.

FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE
Sporting License—Issued By
NATIONAL AERONAUTIC ASSOCIATION, U.S.A.

No. 223-66 Valid thru Dec. 31, 1966
Issued to Michael Collins, MAJ.
USAF
Date of birth 31 October 1930
Place of birth Rome, Italy
Home address 18503 Barbuda lane
Houston, Texas
Signature of holder Michael Collins MJ Randallman
Sporting Committee

