



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 15 (JULY 26, 1971)
(AUGUST 24, 1971)
(SEPTEMBER 22, 1971)
(SEPTEMBER 23, 1971)

AS-510/CSM-112/LM-10
FINAL

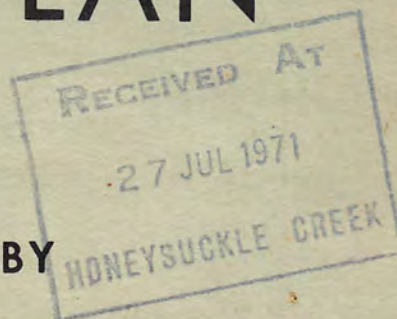
CHANGE B

FLIGHT PLAN

2
SD

PREPARED BY

FLIGHT PLANNING SECTION
FLIGHT PLANNING BRANCH
CREW PROCEDURES DIVISION



MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

JULY 12, 1971

This final version of **the Apollo 15 Flight Plan** is labelled "Copy No. 2 STADIR" (Station Director) and was sent to Honeysuckle Creek Tracking Station, Canberra, Australia, for support of the mission.

The base Flight Plan is dated June 21, 1971, and the first few pages contain revisions dated July 6 and July 12, 1971.

The last update was received at the station on July 27.

Honeysuckle Creek was one of NASA's three prime 26 metre dish tracking sites (the others being Goldstone, California and Madrid, Spain).

This copy was preserved by Honeysuckle Creek's Hamish Lindsay, who was responsible for the station's Technical Support Section.

The Flight Plan was scanned, and this PDF file assembled, by Colin Mackellar for **www.honeysucklecreek.net**, July 2021, the 50th anniversary of Apollo 15.

Blank pages have also been retained, and pages with tables have been rotated.

www.honeysucklecreek.net

APOLLO 15

(JULY 26, 1971)

FLIGHT PLAN

FINAL

CHANGE B

JULY 12, 1971

SUBMITTED BY:

Spencer H. Gardner

SPENCER H. GARDNER
BOOK MANAGER

APPROVED BY:

T. W. Holloway for

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It is requested that any organization having comments, questions, or suggestions concerning this document contact Spencer H. Gardner, Flight Planning Branch, CG52, Building 4, room 232, telephone 483-4271.

This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes should be submitted to the Apollo Flight Data File Manager, T. W. Holloway, CG52, Building 4, room 230, telephone 483-4271.

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ACKNOWLEDGMENTS

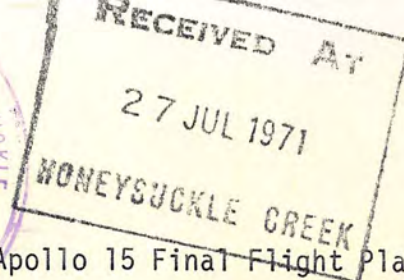
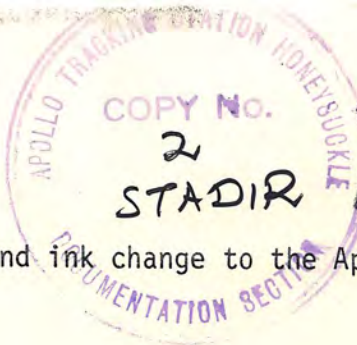
Acknowledgment is made to Messrs. Leonard Riche, Richard Shinkle, Wood Calvert, John Owen, Joe Shacter, Don Hutson, Thomas Johnson, Leon Vick, Elvin Pippert, Charles Stough, Brian Hurlbut, Mason Lancaster, Steve Pollock, and Richard Meckley for their technical support in the preparation of the Apollo 15 Flight Plan.

Acknowledgment is also made to Mike Cox, Marcy Kennedy, Anita Martinec, Evelyn Franks, David Johnson, Barbara Bolthouse, Christine Rizzo, Pat Dewey, Margaret Jones, Joan Keith, Linda Morrison, Lela Stewart, Bill Welch, Karen McPherson, and James Wilkinson for their support on this Flight Plan. Views of the earth and moon shown in the Flight Plan were taken from the document, "Views of the Earth and Moon in Support of the Apollo 15 (J-1) Flight Plan (July 26, 1971, Launch)" published April 8, 1971, MSC Internal Note No. 71-FM-127 by the Planetary Mission Analysis Branch of the Mission Planning and Analysis Division.

The CSM and LM attitude information was taken from the document, "Operational Lunar Orbit Attitude Sequence for Apollo 15, (Mission J-1)" to be published.

Consumable analysis data were prepared by the Consumables Analysis Section of the Mission Planning and Analysis Division.

FLIGHT PLAN (JULY 26 LAUNCH)
Change C 7/20/71 (P&I)



The following is a pen and ink change to the Apollo 15 Final Flight Plan (July 26).

1. Page i
 - (a) Under "Change B 7/12/71" add "Change C 7/20/71 (P&I)"
2. Page ii
 - (a) Change "*3-85 . . . 7/12/71" to "*3-85 . . . 7/20/71 (P&I)"
3. Page iii
 - (a) Change "*3-213 . . . 7/12/71" to "*3-213 . . . 7/20/71 (P&I)"
 - (b) Change "3-267 . . . 6/21/71" to "*3-267 . . . 7/20/71 (P&I)"
 - (c) Change "*3-289 . . . 7/12/71" to "*3-289 . . . 7/20/71 (P&I)"
4. Page iv
 - (a) Change "3-354 . . . 6/21/71" to "*3-354 . . . 7/20/71 (P&I)"
 - (b) Change "*3-355 . . . 7/12/71" to "*3-355 . . . 7/20/71 (P&I)"
5. Page 3-85
 - (a) At 80:42 change "CM2(f5.6, . . . " to "CM5(f5.6, . . . "
 - (b) Change the edition and date to "Change C" and "7/20/71"
6. Page 3-213
 - (a) At 146:18 change "(306, 214, 052) HGA P-12, Y 145" to "(299, 213, 065) HGA P-26, Y 139"
 - (b) Change the Edition and Date to "Change C" and "7/20/71"
7. Page 3-267
 - (a) At 170:39 after "REMOVE DECONTAMINATION BAGS (ON A2)" add "(REMOVE ROPES TO TEMPORARY STOWAGE)"
 - (b) At 170:40 add "H₂ Purge Line Heaters - OFF"
 - (c) Change the edition and date to "CHANGE C" and "7/20/71"
8. Page 3-289
 - (a) At 177:35 after "ZIP SUITS . . . (PGA BAG)" add "CDR & LMP PGA ELECTRICAL COVERS IN PURSE, CDR & LMP INSTALL LCG PLUGS (PURSE), INSTALL NECK RING COVERS (CDR'S & LMP'S IN PURSE)"
 - (b) Change the edition and date to "CHANGE C" and "7/20/71"

9. Page 3-354

- (a) At 240:59 add "V49 MNVR TO EVA ATT (241:13)
(352,063,050) HGA P 4, Y 225"
- (b) Change the edition and date to "CHANGE C" and
"7/20/71"

10. Page 3-355

- (a) At 241:17 delete "V49 MNVR TO EVA ATT (241:35)
(352,063,050) P 4, Y 225"
- (b) Change the edition and date to "CHANGE C" and
"7/20/71"


SPENCER H. GARDNER
BOOK MANAGER


APPROVAL

FLIGHT PLAN

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*Current Change

APOLLO 15 Flight Plan (July 26, 1971 Launch)
FINAL Change B 7/12/71

The attached is a change to the Apollo 15 Final Flight Plan for July 26, 1971 Launch. Please use the LOEP (pages i thru v) in updating this document.

This page may be destroyed.

FLIGHT PLAN (7/26)
Change B 7/12/71

These are the PEN & INK changes to the Final Flight Plan. For each page changed below the EDITION Block at the bottom of the page should have "CHANGE B" added and the DATE changed from "6/21/71" to "7/12/71."

1. Page 2-7 At Friday 6 Aug change Duration from
~~"00:30"~~ to "01:00"
2. Page 3-2 At 01:50 change "TLI Preparation Page L/2-23"
to "TLI Preparation Page L/2-29"
3. Page 3-6 At 3:02 Change "WASTE STOWAGE VENT-CLOSED
page L/2-26" to "WASTE STOWAGE VENT-CLOSED
page L/2-33"
4. Page 3-10 Under notes column in last line of Photography
note, change "MAG ()" to "MAG (J)"
5. Page 3-13 (a) At 08:50 change "N88(+82401)(+44316)(+35301)" to
read N88(+77864)(+23864)(+58031)
(b) 08:50 in the notes column, change "131 BETA
ARIETIS" to "102 MIRACH"
6. Page 3-15 (a) In second column, change "CHANGE SHUTTER TO B"
to "CHANGE SHUTTER TO 1/15"
(b) In next line, delete "EXP TIME 20 SEC"
(c) In next line, change "1/250" to "1/60"
(d) In next line, change "1/500" to "1/250"
7. Page 3-21 At 13:23 Delete "H2 HEATERS 1, 2 & 3(3) - AUTO"
Delete "O2 HEATERS 1 & 2(2) - OFF"
Delete "O2 HEATERS 3(1) - AUTO"
8. Page 3-22 At 14:40 Add "H2 HEATERS 1 & 2(2) - AUTO"
Add "H2 FANS 3(1) - AUTO"
Add "O2 HEATERS 1 & 2(2) - OFF"
Add "O2 HEATERS 3(1) - AUTO"
9. Page 3-28 Add "PANORAMIC CAMERA SELF TEST-HTRS" after
"PANORAMIC CAMERA POWER - ON (UP)/tb-BP(2 sec),
then GRAY"

10. Page 3-38

(a) Column 1: Change "V49 MNVR TO SXT PHOTO TEST AT1 (32:15)" to "V49 MNVR TO SXT PHOTO TEST ATT (32:05)"

(b) Change "(040,012,050) HGA P -38, Y 318" to "(270,012,050) OMNI C"

(c) Change "N88(+78675)(+47868)(+38950)" to "N88(-10820)(-79037)(-60300)"

(d) Change "VERIFY THRU SXT THAT OPTICS BORESIGHTED ON STAR" to "VERIFY THRU SXT THAT OPTICS BORE-SIGHTED ON TARGET"

(e) Change "(090,000,043) HGA P -47, Y 353" to "(239,169,330) OMNI D"

(f) Column II Line 22: Change "CONFIGURE CAMERA" to "CONFIGURE CAMERA: (UV Color)"

11. Page 3-41

At 34:30 Add "DUMP DSE" in the MCC-H column.

12. Page 3-43

At 36:40 add:

LM TO CM TRANSFER LIST (TLC)

<u>LM LOCATION</u>	<u>ITEM</u>	<u>CM LOCATION</u>
ON CREW	COMM CARR(2)	ON CREW
TEMP. STG.	JETTISON BAG	A2
ON CREW	CWG ADAPTERS (2)	CCU CABLE

13. Page 3-54

(a) After the title add "(AT 55:20 HOURS)"

(b) Change Line 17 "PANORAMIC CAMERA SELF TEST-OFF(CTR)" to "PANORAMIC CAMERA SELF TEST - HTRS"

14. Page 3-55

Delete "~~CYCLE FILM IN PANORAMIC AND MAPPING CAMERAS~~" at 53:56

15. Page 3-59

Add "~~CYCLE FILM IN PANORAMIC AND MAPPING CAMERAS~~ (p. 3-54)" at 55:20

16. Page 3-65

(a) At 60:00 add "S-BD AUX TV-SCI"

(b) At 60:06 add "S-BD AUX TV-OFF (CTR)"

17. Page 3-75

At 73:15:

(a) In MCC-H column add: UPDATE TO CSM
WASTE WATER
DUMP LEVEL

(b) In Flight Plan change "WASTE WATER DUMP" to "WASTE WATER DUMP TO PERCENTAGE SPECIFIED BY MSFN"

18. Page 3-76

(a) Step 1: between "MAPPING CAMERA TRACK-OFF/TB-GRAY" and " α RAY/X DR - α OFF", add "PANORAMIC CAMERA MODE - STBY"

(b) Move "S-BD AUX TV-SCI" from Section 3 to start of Section 2

(c) In Section 4: After "MAPPING CAMERA ON-STBY", add "(VERIFY)"

19. Page 3-77

(a) At 74:20 change "H2 HEATERS 3(1) - OFF" to "H2 FANS 3(1) - OFF"

(b) After that line and before "02 HEATERS 1 & 2(2) - AUTO", add "cb 0₂ TK 50W HTRS 1 MNB AND 2 MNA (2)-OPEN"

20. Page 3-79

Change "PRE-LOI SECONDARY GLYCOL LOOP CHECK PAGE S/1-15" to read "PRE-LOI SECONDARY GLYCOL LOOP CHECK PAGE S/1-16"

21. Page 3-85

At 80:25 add "WASTE WATER DUMP"

22. Page 3-86

At 81:03 add HGA Angles "P 0, Y 18"

23. Page 3-89

At 83:32: Delete "OMNI C", add "HGA P 38, Y 322"

24. Page 3-91:

At 85:35 add "MASS SPECT EXP - STBY"

At 85:59 add "EXP - ON," after "DSCRM-HIGH"

24a. Page 3-100

Delete CSM Consumables update pad

25. Page 3-103

At 95:32 add "POO AT PITCH 033"

26. Page 3-104:

(a) In time column delete "(P20)(5.0°DB)"

(b) At 96:20 change "(IF REQD)" to "(IF DOI TRIM REQD)"

(c) In DOI TRIM BURN TABLE add "*" in IN-PLANE BURN RESIDUALS BOX

(d) In DOI TRIM BURN TABLE delete "*" in OUT-OF-PLANE RESIDUALS BOX

27. Page 3-107

At 97:00 in time column delete "(P20)(5.0°DB)"

28. Page 3-109

(a) At 98:37 delete "ROLL(8)-OFF UNTIL LM/CM $\Delta P > 3.5$ PSID"

(b) At 98:39 add "PRE-LOAD PROBE (DECAL)"

29. Page 3-111

At 99:22 replace "PRE-LOAD PROBE (DECAL)" with "ROLL(8) - OFF UNTIL LM/CM $\Delta P > 3.5$ PSID"

30. Page 3-113
- (a) At 100:27 add "3" % MAG
 - (b) In UNDOCKING SWITCH CONFIGURATION add as the last item "DSE(HBR/RCD/FWD/CMD RESET)"
31. Page 3-115
- On P24 LDMK TRACKING PAD add "1/60" to ()
32. Page 3-123
- On P24 LDMK TRACKING PAD Add "1/60" to "()"
33. Page 3-125
- (a) At 103:09 - Delete "P20 OPT 5 OMNI A"
 - (b) At 103:11 - Delete "(P20)(5.0°DB)" in time column
 - (c) At 103:22 - Add "P20 OPT 4(LM TRACKING)(103:39)
 N78(+000.00)
 (-035.00)
 (+180.00)
 N79(+005.00)
 (180,318/055,000)"
 - (d) At 103:22 - Add in time column "(P20)(5.0°DB)"
34. Page 3-127
- (a) At 104:07(AOS) - Change "ACQ MSFN ---REACQ, NARROW" to "ACQ MSFN HGA P -26, Y 22"
 - (b) At 104:11 - Delete block "MSFN CUE---"
 - (c) At 104:27 - Add "SELECT P00 AT PDI TIG"
 - Add in time column "(11111)(X1111)"
 - (d) At 104:31 - Delete "(P20)(5.0°DB)" in time column
 - (e) At 104:46 - Add "P20 OPT 5 (+X FWD SIM ATT (105:00)
 N78(+090.00)
 (+052.25)
 (+180.00)
 N79(+005.00)
 N70(00050)
 (142,000/210,000) HGA P -42, Y 188"
 - (f) At 104:46 - Add in time column "(P20)(5.0°DB)"
35. Page 3-133
- In P24 LM VISUAL DRAWING at far right, change " Δ T1 = 300 sec" to " Δ T1 = 247 sec"
36. Page 3-141
- At 110:03 inside block change "... TLM FROM _____ to _____ and ..." to "... TLM FROM 110:12 to 111:04 and ..."

37. Page 3-143

(a) At 111:37 move V48(11111)(X1111) to 111:41

(b) At 111:37 move "(11111)(X1111)" in time column to 111:41 in time column

38. Page 3-165

At 122:35 change Roll Angle "322" to "332"

39. Page 3-167

At 123:34 change "1/500" to "1/60"

40. Page 3-169

(a) At 124:51 change MNVR angles for L4 Photo att from "(328,293,354)" to "(324,297,352)"

(b) At 124:55 change "(6 FR)" to "(14 FR)"

(c) At 124:57 change "MAG () ____" to "MAG (T) ____"

41. Page 3-171

At 125:14 change "CYCLE 1 FRAME" to "CYCLE 9 FRAMES"

42. Page 3-183

At 131:41 inside block change "... TLM from ____ to ____ and ..." to "... TLM from 131:51 to 132:44 and ..."

43. Page 3-187

(a) At 133:13 move "V48(11111)(X1111)" to 133:17

(b) At 133:13 move "(11111)(X1111)" in time column to 133:17 in time column

44. Page 3-207

(a) At 143:30 change HGA angles from "P -18, Y 11" to "P -15, Y 13"

(b) At 143:56 change "MAG () ____ ..." to "MAG (T) ____ ..."

45. Page 3-213

(a) At 146:21 change "MAG () ____ ..." to "MAG (U) ____ ..."

(b) At 146:49 delete "PCM BIT RATE-LOW/CMD RESET"

46. Page 3-217

At 148:26 change "MAG () ____ ..." to "MAG (U) ____ ..."

47. Page 3-223

(a) At 151:54 delete "tb-BP(2 sec)/GRAY" and add "(VERIFY)" in its place

(b) At 151:56 add after "-- OPR (T START)" "tb-BP(2 SEC)/GRAY"

48. Page 3-259
- (a) At 168:05 change "MAG () ____ ..." to "MAG (U) ____ ..."
 - (b) Move "DATA SYS ON - OFF" from 168:08 to 168:14
Move "S-BD AUX TV - OFF" from 168:11 to 168:14:30
Move "PCM BIT RATE - LOW" from 168:12 to 168:15
 - (c) At 168:43 after "CYCLE 1 FRAME, LIGHTS UP" -- add "RECORD FR # ____" and "STOW CAMERA & REMOVE CAMERA SHIELD"
 - (d) At 168:55 change "CM/DAC/SXT (EXP PAD)..." to "CM/DAC/SXT/CEX (EXP PAD) ..."
49. Page 3-261
- At 169:18 change "OMNI D" to "OMNI C"
50. Page 3-263
- In P24 LDMK TRACKING PAD add "1/250" to "()"
51. Page 3-279
- At 173:56 delete:
"DOFF PGA
ZIP SUIT & INSTALL ELECTRICAL COVER PRIOR TO STOWING (PGA BAG)
STOW COMM CARRIERS AND UCTA (PGA BAG)
TRANSFER PRD to CWG"
52. Page 3-280
- (a) ~~At 174:07 delete "DOFF SUITS"~~
 - (b) ~~At 174:22 delete "TRANSFER SUITS TO CMP"~~
53. Page 3-281
- ~~At 174:23 delete "RECEIVE SUITS FROM CDR"~~
54. Page 3-285
- At 175:10 delete "REMOVE CANISTERS & DIVIDER FROM A9 AND PLACE IN JETTISON STOWAGE BAG (NOTE: CANISTER 14 is UNUSED)"
55. Page 3-287
- (a) ~~At 176:55 add "DON HELMETS AND GLOVES"~~
 - (b) ~~At 176:57 add "SUIT CKT INTEGRITY CHECK(DECAL)"~~
 - (c) ~~At 176:59 change "REWIND" to "DUMP"~~
56. Page 3-305
- (a) At 193:19 delete "MSFN: VERIFY LENS TUCK IN"
 - (b) At 193:21 delete "PAN CAMERA: PWR - OFF"
 - (c) At 193:31 change "tb-BP(2 SEC)/GRAY" to "(VERIFY)"
57. Page 3-306
- (a) At 194:01 delete "02 HEATERS 1 & 2(2) - AUTO
02 HEATERS 3(1) - OFF"

58. Page 3-307

(a) At 195:33 change "MAG ()" to "MAG (V)"

(b) At 195:38 delete the TERMINATOR PHOTO PAD

59. Page 3-308

At 196:54 change "1/20" to "1/15"

60. Page 3-332

(a) At 220:53 delete "DATA SYSTEMS ON - OFF"

(b) At 220:59 delete "S-BD AUX TV - OFF (CTR)"

61. Page 3-335

At 222:25 change "f11" to "T11"

62. Page 3-336

(a) At 222:35 change "(LAUNCH -12 SEC)" to
"(LAUNCH -9 SEC)"

(b) At 222:39 change "(~ 12 SEC)" to "(~ 7 SEC)"

63. Page 3-339

(a) At 224:16 delete "MONITOR FOR FILM DEPLETION(tb-BP)"

(b) At 224:29 change "EXP - ON" to "EXP - STBY"

64. Page 3-341

(a) At 225:18, change "(f5.6,1/250,∞)" to "(f5.6,1/125,∞)"

(b) At 225:54 delete "V48(11111)(X1111)" in the Flight
Plan and and "(11111)" in the time column
(X1111)"

65. Page 3-342

(a) At 226:02, change "(11111)" to "(11101)" in the time
column (X1111)" (X1111)"

(b) At 226:16, change "(, ,) HGA P___, Y ___"
to "(326,146,030) HGA P___, Y ___ (CENTAURUS)"

66. Page 3-349

(a) At 237:02, change "(, ,) HGA P___, Y ___"
to "(355,036,000) HGA P___, Y ___ (MID-GALACTIC LATITUDE)"

(b) At 237:05, delete "LOGIC POWER (2) - DEPLOY/RETR"

67. Page 3-353

(a) At 239:37, delete "V49 MNVR TO CSM EVA ATTITUDE
(239:45)" and "(352,063,050) HGA P 4, Y 225"

68. Page 3-357

(a) At 243:04, change "(11101)" to "(11101)" in time column
(X1111)" (10011)"

(b) At 243:45, add "ENABLE ALL JETS"

(c) At 243:47, add "(11101)" in the time column and
(X1111)"
"V48(11101)(X1111)" in the Flight Plan.

(d) At 243:50, add "V49 MNVR TO THERMAL ATTITUDE(244:05)
(195,002,000)"

69. Page 3-387

(a) At 272:33, delete "SXT STAR CHECK"

(b) At 272:43, in MCC-H column, add "UPDATE TO CSM
WASTE WATER
DUMP LEVEL"

(c) At 272:43 in Flight Plan change "WASTE WATER DUMP"
to "WASTE WATER DUMP TO PERCENTAGE SPECIFIED BY MSFN"

70. Page 3-389

(a) At 273:55, delete "(11111) in time column and
(X1111)"
"V48(11111)(X1111)" in Flight Plan

71. Page 3-390

(a) At 274:02, change "(11111) to "(11101)
(X1111)" (X1111)"
in time column

(b) At 274:02, change "(, ,)" to "(306,082,030)
HGA P___, Y___ (NORTH GALACTIC POLE)"

(c) At 274:46, change "(, ,) HGA P___, Y___" to
"(195,002,000) OMNI D (GALACTIC PLANE ANTI-CENTER)"

72. Page 3-391

In the MCC-H column, at 275:00, add "DSE RCD/HBR",
and at 276:00, add "DSE STOP/LBR"

73. Page 3-399

(a) At 288:04, change "MASS SPECT: EXP-OFF, ION
SOURCE - OFF" to "MASS SPECT: ION SOURCE - OFF,
EXP - OFF"

(b) At 288:21, delete "ENABLE ALL JETS"

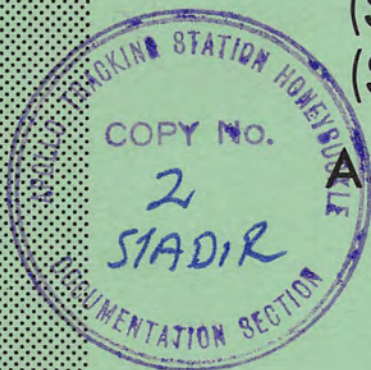
74. Page 3-404

In the MCC-7 BURN TABLE under SHUTDOWN TIME, change
" ΔC_c " to " ΔV_c "



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 15 (JULY 26, 1971)
(AUGUST 24, 1971)
(SEPTEMBER 22, 1971)
(SEPTEMBER 23, 1971)



AS-510/CSM-112/LM-10

FINAL CHANGE A FLIGHT PLAN

PREPARED BY

FLIGHT PLANNING SECTION
FLIGHT PLANNING BRANCH
CREW PROCEDURES DIVISION



MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

JULY 6, 1971

RECEIVED THE 10th OF 1967

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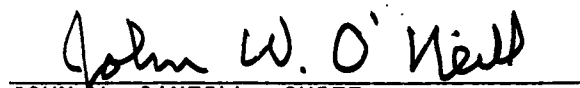
THROUGH: [illegible]

APOLLO 15
(JULY 26, 1971)
FLIGHT PLAN
FINAL
JULY 6, 1971

SUBMITTED BY:


SPENCER H. GARDNER
BOOK MANAGER

APPROVED BY:


JOHN W. O'NEILL, CHIEF
FLIGHT PLANNING BRANCH
CREW PROCEDURES DIVISION

It is requested that any organization having comments, questions, or suggestions concerning this document contact Spencer H. Gardner, Flight Planning Branch, CG52, Building 4, room 232, telephone 483-4271.

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The CSM and LM attitude information was taken from the document, "Operational Lunar Orbit Attitude Sequence for Apollo 15, (Mission J-1)" to be published.

Consumable analysis data were prepared by the Consumables Analysis Section of the Mission Planning and Analysis Division.

FLIGHT PLAN

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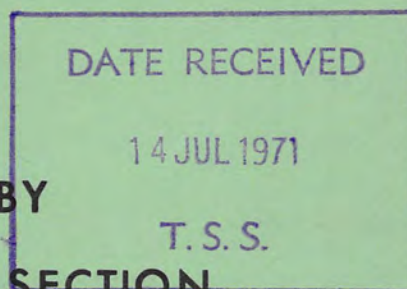


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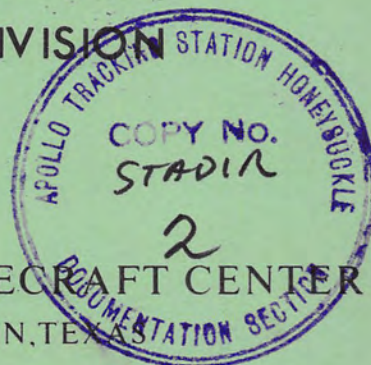
APOLLO 15 (JULY 26, 1971)
(AUGUST 24, 1971)
(SEPTEMBER 22, 1971)
(SEPTEMBER 23, 1971)

AS-510/CSM-112/LM-10
FINAL

FLIGHT PLAN



PREPARED BY
FLIGHT PLANNING SECTION
FLIGHT PLANNING BRANCH
CREW PROCEDURES DIVISION



MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

JUNE 21, 1971



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SECTION II

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APOLLO 15

(JULY 26, 1971)

FLIGHT PLAN

FINAL

JUNE 21, 1971

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The CSM and LM attitude information was taken from the document, "Operational Lunar Orbit Attitude Sequence for Apollo 15, (Mission J-1)" to be published.

Consumable analysis data were prepared by the Consumables Analysis Section of the Mission Planning and Analysis Division.

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ABBREVIATIONS

ABB	abbreviation or abbreviated
AC	alternating current
ACCEL	accelerometer
ACN	Ascension
ACT	activation
ACQ	acquisition or acquire
AEA	abort electronics assembly
AGS	abort guidance subsystem
AH	ampere hours
ALSCC	Apollo lunar surface close-up camera
ALSD	Apollo lunar surface drill
ALSEP	Apollo lunar surface experiment package
ALT	altitude
ALTM	altimeter
AM	amplitude modulation
AMP or amp	amperes
AMPL	amplifier
ANG	Antigua
ANT	antenna
AOH	Apollo Operations Handbook
AOL	Atlantic Ocean line
AOS	acquisition of signal or acquisition of site
AOT	alignment optical telescope
AP	alpha particle spectrometer
APS	ascent propulsion subsystem
ARIA	Apollo range instrumentation aircraft
ARS	atmosphere revitalization system
ASC	ascent
A/T	alignment technique
ATT	attitude
AUX	auxiliary
AZ	azimuth
BAT	battery
BEF	blunt end forward
BD	band
BDA	Bermuda
BIOMED	bio-medical data
BKWD	backward
BMAG	body mounted attitude gyro
BP	barber pole
BRKT	bracket
BSLSS	buddy secondary life support system
BT	burn time
BU	backup
BW	black and white (Film 3400)

BWD	backward
BW1	black and white (Film 3401)
CAP COM	capsule communicator
CAL	calibration
CAMR or CAM	camera
CB	circuit breaker
CCGE	cold cathode gage experiment
CCIG	cold cathode ion gage
CCW	counter clockwise
CDH	constant delta altitude
CDR	Commander
CDU	coupling data unit
CEX	color exterior (S0368)
CIN	color interior (S0168)
CIRC	circulation
CK	check
CKT	circuit
C/L	centerline or checklist
CM	command module
CMC	command module computer
CMD	command
CMP	Command Module Pilot
CNTL	control
C/O	check out
COAS	crew optical alignment sight
COMM	communications
CONFIG	configuration
COMP	compare or compensate
CONT	continue or contingency
CP	control point
CPLLE	charged particle lunar environment experiment
CRO	Carnarvon, Australia
CRYO	cryogenic
CS	contingency sample
CSI	coelliptic sequence initiation
CSM	command and service modules
CST	central standard time
C/S	central station
CTR	center
C&WS	caution and warning system
CW	clockwise
CWEA	caution and warning electronics assembly
CWG	constant wear garment
CYI	Grand Canary Island

DAC	data acquisition camera
DAP	digital auto pilot
DB	deadband
DC	direct current or data camera (70mm)
DCA	digital command assembly
DEDA	data entry and display assembly
DEG	degrees
DEPL	depletion
DES	descent
DET	digital event timer
DIFF	difference
DIR	direct
DK	docked
DO	detailed objective
DOI	descent orbit insertion
DPLY	deployment
DPS	descent propulsion system
DR	door
DRT	dome removal tool
DS	documented sample
DSCRM	discriminator
DSE	data storage equipment(CSM)
DSEA	data storage equipment assembly (LM)
DSKY	display and keyboard
DSM	deep space measurement
DTO	detailed test objective
DUA	digital uplink assembly
DWN	down
E	erasable or enter
ECS	environmental control system
ED	explosive device
EDT	eastern daylight time
EFH	earth far horizon
EI	earth (atmosphere) interface and entry interface
EKG	electrocardiogram
EL	electric Hasselblad camera
ELEV	elevation
EMER	emergency
EMS	entry monitor system
EMU	extravehicular mobility unit
ENG	engine
ENH	earth near horizon
ENT	entry
E.O.	earth orbit
EOM	end of mission
EPO	earth parking orbit
EPHEM	Ephemeris

EPS	electrical power subsystem
EQUIP	equipment
ERECT	erectable
ERR	error
EST	eastern standard time
ETB	equipment transfer bag
EV	extravehicular
EVA	extravehicular activity
EVAP	evaporator
EVCS	extravehicular communications system
EVT	extravehicular transfer
EXP	experiment
EXT	external or extend
f	f-stop
FAM	familiarize or familiarization
FC	fuel cell
FCS	fecal containment system
FDAI	flight director attitude indicator
FLT	flight
FM	frequency modulated
FOV	field of view
FPS	feet per second
fps	frames per second
FR	frame(s)
FREQ	frequency
FT or ft	feet
FTO	flight test objective
FTP	full throttle position
FTT	fuel transfer tool
FWD	forward
G.A.	gas analysis
GA	gimbal angle
GBI	Grand Bahama Islands
GBM	Grand Bahama (MSFN)
GDC	gyro display coupler
GDS	Goldstone, California
GET	ground elapsed time
GETI	ground elapsed time of ignition
GETIL	ground elapsed time of landing for TIG time of abort burn
GLY	glycol
GMT	Greenwich mean time
G&C	guidance and control
G&N	guidance and navigation
GNCS	guidance, navigation and control system (CSM)
GR	gamma ray spectrometer
GWM	Guam
GYM	Guaymas, Mexico

H2	hydrogen
HA	apogee altitude
HAW	Hawaii
HBR	high bit rate (TLM)
HD	highly desirable
HDC	hasselblad data camera
HFE	heat flow experiment
HGA	high-gain antenna
HI	high (switch position)
HOR	horizon
H2O	water
HP	perigee altitude
HR	hour(s)
HSK	Honeysuckle (Canberra, Australia)
HTC	hand tool carrier
HTR	heater
HTV	USNS Huntsville
ICDU	inertial coupling data unit
ID	identification
ICG	inflight coverall garment
IGA	inner gimbal angle
IGN	ignition
IMU	inertial measurement unit
INCR	increase
IND	indicator
INIT	initialization
INT	interval
IP	initial point
ISA	interim stowage assembly
IU	instrumentation unit
IVC	intervehicular communications
IVL	intervalometer
IVT	intravehicular transfer
iR	inclination of the ascending return
JETT	jettison
KG	kilogram
KM	kilometer
kwh	kilowatt hour
LA	launch azimuth or laser altimeter
LAT	latitude
LBR	low bit rate (TLM)
LB or lb	pound(s)
LCG	liquid cooled garment
LCRU	lunar communications relay unit

L/D	lift/drag
LD	lunar day (TV lens)
LDG	landing
LDMK	landmark
LEB	lower equipment bay
LEC	lunar equipment conveyor
LEVA	lunar extravehicular visor assembly
LFH	lunar far horizon
LGC	LM guidance computer
LH	left-hand
L/H	local horizontal
LHEB	left-hand equipment bay
LHFEB	left-hand forward equipment bay
LHSSC	left-hand side storage container
LiOH	lithium hydroxide
LLM	lunar landing mission
LLOS	landmark line of sight
LM	lunar module
LMP	Lunar Module Pilot
LNH	lunar near horizon
L/O	lift-off
LOI	lunar orbit insertion
LONG	longitude
LOS	loss of signal or loss of site
LPD	landing point designator
LPO	lunar parking orbit
LPM	lunar portable magnetometer
LR	landing radar
LRRR or LR3	laser ranging retro-reflector
LRV	lunar roving vehicle
L/S or LS	landing site or lunar surface
LSM	lunar surface magnetometer
LT	light
LTG	lighting
LUB	lubrication
LV	launch vehicle
L/V	local vertical
LVPD	launch vehicle pressure display
M	mandatory
MAD	Madrid, Spain
MAG	magazine (camera)
MAN	manual
MAX	maximum
MAX Q	maximum dynamic pressure
MBW	medium black and white film
MC	mapping camera
MCC	midcourse correction

MCC-H	Mission Control Center - Houston
MDC	main display console
MEAS	measurement
MED	medical
MESA	modular experiment stowage assembly
MET	mission event timer
MGA	middle gimbal angle
M/I	minimum impulse
MIN	minimum or minutes(s)
MIR	mirror
MLA	Merrit Island, Florida, launch area
mm or MM	millimeter
MNA or MNB	main electrical bus A or B
MNVR	maneuver
MON	monitor
MONO	monaural
MPL	mid-Pacific line
MPS	main propulsion system
M/R	mixture ratio (fuel to oxidizer)
MS	mass spectrometer
MSFN	Manned Space Flight Network
MSO	mass spectrometer outgasing
MTVC	manual thrust vector control
MULT	multiple
N2	nitrogen
NAV	navigation
NK	nikon camera
NM	nautical miles
NO.	number
NOM	nominal
NXX	Noun XX
O2	oxygen
OBS	observation
O/F	oxidizer to fuel ratio
OGA	outer gimbal angle
OID	octal identifier
OMNI	omnidirectional antenna
OPR	operate
OPS	oxygen purge system
OPT	option
ORB	orbital
ORDEAL	orbit rate display earth and lunar
ORIENT	orientation
OVBD	overboard
OVHD	overhead

P	pitch or program
PAD	voice update
PAN	panoramic
PART	particle
PCM	pulse code modulation
PC	plane change or chamber pressure
PDI	powered descent initiation
PER or PC	Pericynthion
PGA	pressure garment assembly
PGNCS	primary guidance, navigation and control system (LM)
PGNS	primary guidance navigation system (LM)
PHOTO	photograph
PIPA	pulse integrating pendulous accelerometer
PKG	package
PLSS	portable life support system
PM	phase modulated
POL	polarity or polarizing
PRD	passive radiation dosimeter
PREF	preferred
PREP	preparation
PRESS	pressure
PRIM	primary
PROP	proportional
PRN	pseudo random noise
PRPLNT	propellant
PSE	passive seismic experiment
PSIA	pounds per square inch absolute
PSID	pounds per square inch differential
PSIG	pounds per square inch gage
PT	point
PTC	passive thermal control
PU	propellant utilization
PUGS	propellant utilization gaging system
PWR	power
PXX	Program XX
PYRO	pyrotechnic
QTY	quantity
QUAD	quadrant
R	roll or range
R&B	red and blue
RAD	radiator, radial, or radiation
RCDR	recorder
RCS	reaction control system
RCU	remote control unit
RCV	receiver
REACQ	reacquire

REFSMMAT	reference stable member matrix
REG	regulator
REL	release
REQD	required
RETR	retract
REV	revolution
RH	right-hand
RHC	rotational hand controller
RING	ringsight
RLS	radius of landing site
RMT	
RNDZ	rendezvous
RNG	range or ranging
ROD	rate of descent
RR	rendezvous radar
RSI	roll stability indicator
RSLV	resolver
RT	realtime
RTC	realtime command
RTG	radioisotope thermoelectric generator
RXX	Routine XX
SA	shaft angle
SATT	satellite
S-BD	S-BAND
SC	spacecraft
SCE	signal conditioning equipment
SCS	stabilization control system
SCT	scanning telescope
SE	southeast or subearth
SEC	secondary
SECO	S-IVB engine cutoff
SECS	sequential events control system
SEF	sharp end forward
SEL	select
SEP	separate
SEQ	sequence
SEVA	standup extravehicular activity
SIDE	suprathermal ion detector experiment
SII	Saturn II (second stage)
SIM	scientific instrument module
S-IVB	Saturn IVB(third stage)
SLA	service module LM adapter
SLOS	star line-of-sight
SM	service module
SPECT	spectrometer
SPOT	spot meter

xx

SPS	service propulsion system
SR	sunrise
SRC	sample return container
SRX	S-Band receiver mode no. X
SS	sunset or subsolar
STBY	standby
STX	S-Band transmit mode no. X
SUBSAT	subsattellite
S.V.	state vector
SW	switch
SWC	solar wind composition
SWE	solar wind experiment
SXT	sextant
SYS	system
T EPHEM	time of Ephemeris update
TA	trunnion angle
TAN	Tananarive, Madagascar
TB	time base or talkback
TCA	time of closest approach
TD	touchdown
T&D	transposition and docking
TD&E	transposition docking and LM ejection
TDS	thermal degradation sample
TEC	transearth coast
TECH	technique
TEI	transearth injection
TEMP	temperature
TERM	terminate
TEX	Corpus Christi, Texas
TGT	target
THC	translation hand controller
TIG	time of ignition
TLC	translunar coast
TLI	translunar injection
TLM or TM	telemetry
TPF	terminal phase final
TPI	terminal phase initiation
TPM	terminal phase midcourse
T/R	transmitter/receiver
TRANS	translation
TRK	track or tracking
TRUN	trunnion
TV	television
TVC	thrust vector control
TWR	tower

UCTA	urine collection transfer assembly
UHT	universal hand tool
ULL	ullage
UMB	umbilical
UNBAL	unbalance (meter)
UNDK	undock
US	United States
UV	ultraviolet
V	velocity
VG _{IMU}	velocity to be gained as related to IMU orientation
VGX	velocity to be gained (X-body axis)
VGY	velocity to be gained (Y-body axis)
VGZ	velocity to be gained (Z-body axis)
VR	resultant velocity
VX	velocity along the X-axis
VY	velocity along the Y-axis
VZ	velocity along the Z-axis
VAN	USNS vanguard
VHBW	very high speed black and white film
VHF	very high frequency
VLV	valve
VOX	voice keying
VXX	Verb XX
WRT	with respect to
X	time of closest approach (symbol)
XDOT	rate of change along the X-axis
XFER	transfer
XMIT	transmit or transmitter
XPNDER	XPNDRtransponder
XR	X-ray spectrometer
Y	yaw
YDOT	rate of change along the Y-axis
ZDOT	rate of change along the Z-axis
ZPN	impedance pneumogram

ΔAz	azimuth change (difference)
ΔH	altitude change (difference)
ΔP	pressure change (difference)
ΔR	position change (difference)
ΔV	velocity change (difference)
ΔVC	velocity change at engine cutoff
ΔVT	velocity change loaded pre-burn
#	frame number(s) (for camera data)
ϕ	latitude
λ	longitude

PHOTOGRAPHIC NOMENCLATURE

AAA/BBB/CCC/DDD - EEE, EEE, (fGG, HHH, III) (JJ fps or JJ FR) (KK MIN)
(LL% MAG)

AAA - Location from which photography is to be accomplished

BBB - Camera

CCC - Lens

DDD - Film Type

EEE - Photography aids (i.e., brackets, intervalometer, mirror, etc.)

fGG - Lens Aperture Setting

HHH - Shutter Speed

III - Focus Distance in Feet

JJ - Number of frames for DC, EL & NK cameras or

JJ - Frame Rate for the DAC only

KK - Magazine percent for the DAC only

KK - Operating time (minutes) for TV

LL - Magazine percent for the DAC only

CODE EXAMPLE:

1. CM4/DAC/18-CEX-BRKT, SPOT (S,1/250,∞)(12 fps)(4 min)(50% MAG)

Meaning: Photos are taken from CM right hand rendezvous window using the DAC with 18mm lens and S0368 film. The camera will be bracket mounted with the following camera settings: f-stop from spotmeter reading, shutter speed 1/250 of a second, focus at infinity, 12 frames per second, 50% MAG for 4 min to be used.

2. CM4/EL/80/BW-BRKT, IVL (f5.6,1/250,∞) 10 FR

Meaning: Photos are taken from CM right hand rendezvous window using the Electric Hasselblad camera with the 80mm lens and black & white film (3400). The camera will be bracket mounted with the following settings f-stop (aperture) f5.6, shutter speed 1/250, and focus at infinity. The operation of the shutter will be controlled by the intervalometer. Ten frames have been allotted for this sequence.

PHOTOGRAPHIC NOMENCLATURE (CONT)

CAMERA LOCATIONS

COMMAND MODULE

CM-1	LH Side Window
CM-2	LH Rendezvous Window
CM-3	Hatch Window
CM-4	RH Rendezvous Window
CM-5	RH Side Window

LUNAR MODULE

LM-1	LH Window
LM-2	Docking Window
LM-3	RH Window

CAMERA MOUNTS

CSM

Electric Hasselblad (EL) +X axis +12°

Electric Hasselblad (EL) normal to RH Side Window

Data Acquisition Camera with right angle mirror (DAC) +X axis

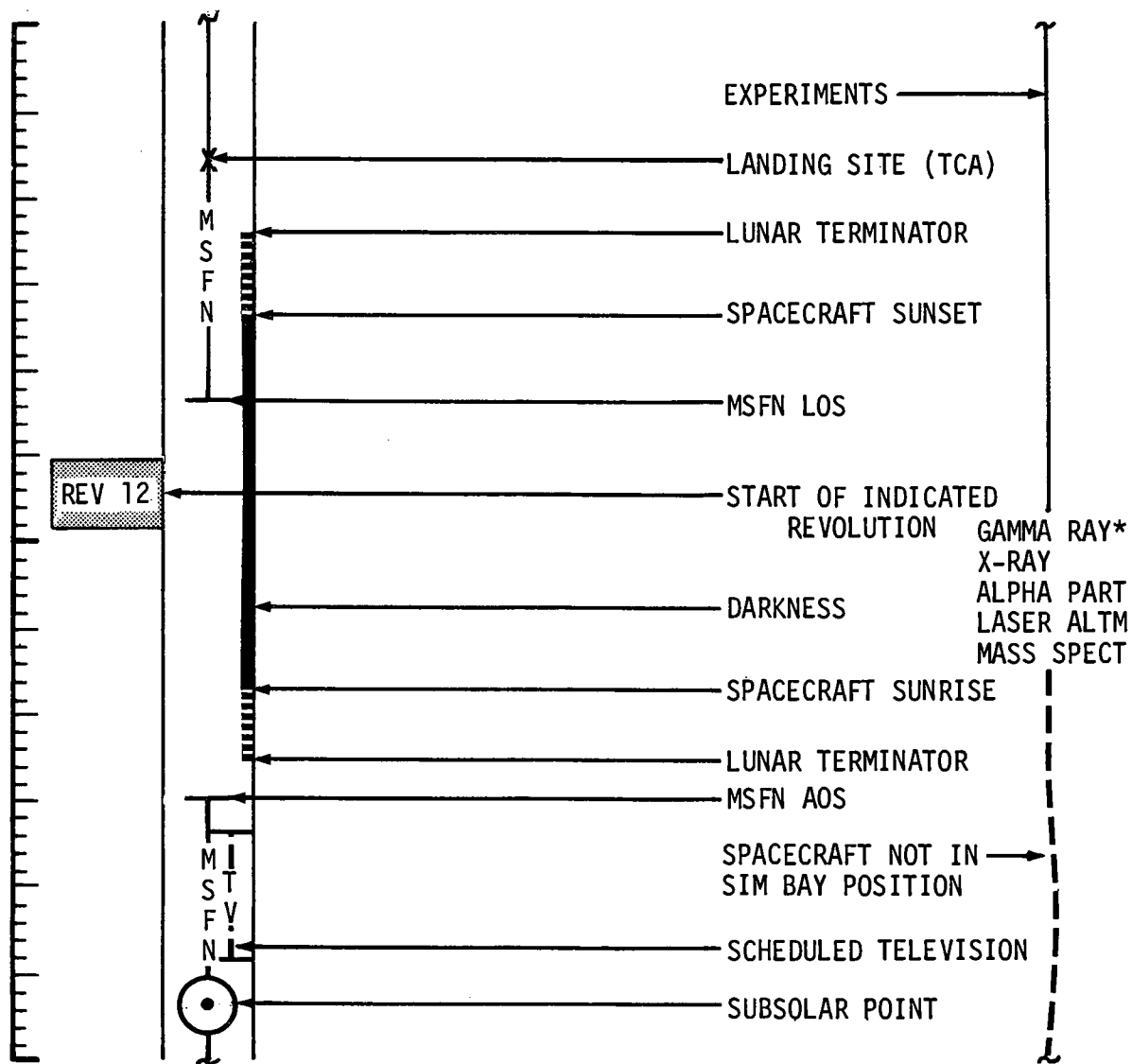
Data Acquisition Camera with SXT Adapter - same as SXT shaft & trunnion

NIKON (NK) Two positions

parallel to +X axis

+X axis +30°

SYMBOL NOMENCLATURE



*DEGRADED SIM BAY DATA

SECTION 1 - FLIGHT PLAN NOTES



FLIGHT PLAN NOTES

I. Crew

A. Crew designations are as follows:

<u>Designation</u>	<u>Prime</u>	<u>Backup</u>
Commander (CDR)	Scott	Gordon
Command Module Pilot (CMP)	Worden	Brand
Lunar Module Pilot (LMP)	Irwin	Schmitt

B. The nominal CM couch positions are:

<u>Activity</u>	<u>Left</u>	<u>Center</u>	<u>Right</u>
Launch thru TLI	CDR	CMP	LMP
T&D thru Entry	CMP	CDR	LMP

C. The PGA's are worn as shown in Table 2-1.

D. The Crew Biomedical Harness and sensor wearing schedule is shown in Table 2-2.

E. Crew status reports are voiced to MCC-H before and after crew sleep periods. After waking, the crew reports sleep obtained during the last 24 hours and personal dosimeter readings. Before going to sleep, the crew reports medication used and any other pertinent information on activities performed.

F. Negative reporting is used in reporting completion of each checklist.

G. All onboard gauge readings are read directly from the gauges with no calibration bias applied.

II. CSM Systems

A. Communications

1. The preferred S-Band communication modes are:

- (a) Uplink Mode 6 (Voice, PRN, and Udata)
- (b) Downlink Mode 2 (Voice, PRN, TLM-HBR)

2. VHF Duplex B is used for launch, and Simplex A is used for earth-orbit operations.

3. Table 2-3 summarizes the MSFN coverage available for the CSM.

4. Table 2-4 contains a summary of the scheduled CSM & LM TV transmissions.
5. MCC-H switches OMNI antennas during TLC and TEC rest periods and TLC PTC awake periods. MCC-H switches OMNI and HGA during TEC PTC awake periods. The crew manages antenna operations during all other TLC and TEC periods.
6. To optimize the return of SIM Bay data, the crew will manually acquire with the HGA during awake period.

B. DSE

1. During the earth-orbit phase, the CSM LBR data is recorded when the CSM is not within MSFN coverage. The DSE is dumped during the pass over the US prior to TLI if possible.
2. CSM HBR data will be recorded during all P24 landmark tracking.
3. CSM HBR will be recorded during all CSM engine burns, at Sim Door Jettison, TD&E, and during DAC/SXT Photo test.
4. LM LBR data will be recorded during LOS periods between CSM/LM Separation and PDI.
5. Along with manually acquiring MSFN with the HGA, the crew, instead of the ground, will rewind the DSE prior to the manual HGA acquisition to optimize the return of SIM Bay data. The crew will rewind manually for playback at a specific time.
6. All entry data will be recorded in HBR during the blackout.

C. Electrical Power

1. The CSM normally remains powered up throughout the mission.
2. Table 2-5 lists the fuel cell purges.
3. Based on cryo purity and performance, the time between fuel cell O₂ purges may be increased to coincide with water dump times. The O₂ purge at 10.5 hours allows a judgement to be made on the defined purge schedule.

4. The cryogenic heaters are managed such that the planned usage is obtained out of each O_2 . The H_2 fans are operated manually for one minute before and after each sleep cycle, prior to SPS or S-IVB thrusting and pré-CSM/LM ejection.
5. Table 2-6 contains the battery charge schedule.

D. ECS and Water Management

1. Potable water is chlorinated once a day after the eat period prior to each sleep period.
2. Waste water dump and fuel cell purge criteria:
 - (a) Waste water dumps, fuel cell purges, and urine dumps in lunar orbit are scheduled at the following times: (see table 2-5 for the scheduled fuel cell purges and waste water dumps)
 - (1) Once during each 24 hours, if possible, following the initial dump and purge
 - (2) H_2 fuel cell purges are scheduled at every other O_2 fuel cell purge after the first O_2 fuel cell purge
 - (b) The most opportune time to perform waste water dumps and fuel cell purges are as follows:
 - (1) Immediately after the sextant star check in maneuver preparation or cislunar navigation
 - (2) Behind the moon, with completion of dump or purge before AOS
 - (c) If possible, dumps and purges are not scheduled during the following periods:
 - (1) Ten hours before MCC-2 or a TLC P23 or until just before the midcourse change only
 - (2) Eight hours before MCC-5

(d) Dumps and purges are not scheduled during the following MSFN tracking periods:

(1) Between MCC-4 and LOI

(2) Four hours before DOI

(3) Ten hours before MCC-7 until entry

(e) All waste water dumps are manual.

3. Only one CO₂ absorber filter (LiOH canister) is changed at a time. Table 2-7 lists the LiOH canister change schedule. There are 30 filters on board, with 28 stowed at launch, only 23 are required.
4. At lift-off, the cabin contains 60% O₂ and 40% N₂. The CM is purged after launch. The purge is terminated prior to LM pressurization after TLI. After the LM is configured for ejection, it is isolated and the CM is purged for eight more hours.
5. CSM O₂ pressurizes the LM after transposition and docking; and repressurizes the LM before TLC LM entry, Sim Door Jett and LM activation.

E. Guidance and Navigation

1. REFSMMAT Definitions

- (a) The "Launch Pad" REFSMMAT is used for launch, TLI, and TD&E. This REFSMMAT places the IMU X-axis along the launch azimuth at the pad and the Z-axis along the negative radius vector. The FDAI, at launch, will display roll 170° (launch azimuth +90°), pitch 90°, and yaw 0°.

- (b) The "PTC" REFSMMAT is used for all midcourse maneuvers (except MCC-7) and for other operations during TLC and TEC. This REFSMMAT places the X-axis in the ecliptic plane and perpendicular to the earth-moon line projection in the ecliptic plane at the average time of transearth injection for the monthly launch window and azimuth range. The Z-axis is then perpendicular to the ecliptic and directed south. At the beginning of the PTC Mode the spacecraft maneuvers to an FDAI display of pitch 90° .
- (c) A "Preferred" REFSMMAT is used by the CSM for LOI, Lunar-Orbit Plane Change, and TEI. The CSM IMU X-axis aligns normally with the spacecraft X-body axis at the vehicle attitude for ignition with the thrust directed through the center of gravity. At burn ignition, the FDAI displays roll 0° , pitch 0° , and yaw 0° . In the case of the DOI TRIM burn, the IMU X-axis may be aligned 45° from the spacecraft body axis at ignition attitude. The Z-axis is in the plane formed by the X-axis and the position vector and directed down toward the moon.
- (d) The "Landing Site" REFSMMAT is used for DOI, PDI, landing, and CSM lunar orbit activities up to the second plane change. This REFSMMAT places the CSM IMU X-axis along the positive lunar radius vector at the landing site at the predicted landing time and places the Z-axis in the direction of flight parallel to the CSM orbital plane. At nominal touchdown, the LM FDAI displays roll 0° , pitch 0° , and yaw 0° .
- (e) The "Lift-Off" REFSMMAT is used for all lunar activities after plane change 2, through rendezvous, and LM jettison. This REFSMMAT places the CSM IMU X-axis along the positive lunar radius vector at the landing site at predicted lift-off time, with the Z-axis down range parallel to the CSM orbital plane. At nominal lift-off time, the LM FDAI displays roll 0° , pitch 0° , and yaw 0° with slight differences reflecting actual touchdown yaw and slope tilt angles.
- (f) The "Entry" REFSMMAT aligns the IMU X-axis in the local horizontal plane in the direction of flight at entry interface. The entry REFSMMAT is used for MCC-7 and all remaining activities. The Z-axis is down along the negative radius at entry interface. At entry interface, with wings level, local horizontal, heat shield for-

ward, inplane, lift up, heads down, the FDAI displays roll 0° , pitch 180° , and yaw 0° .

2. The CSM external lighting is operated during the rendezvous from lift-off to docking. The running lights only are on from CSM/LM separation to PDI.
3. The time tags on maneuvers in Section 3 indicate the completion time of the maneuvers unless otherwise stated. All maneuver angles are the angles read on the FDAI after the maneuver has been completed.
4. CSM/LM and CSM attitude maneuvers are normally performed at the rate of $0.2^{\circ}/\text{sec}$ ($0.5^{\circ}/\text{sec}$ after rendezvous and docking) unless other rates are required. LM maneuvers are normally performed at $2^{\circ}/\text{sec}$ unless otherwise specified.
5. The SIM Bay jett configuration provides single jet control authority in each axis to eliminate RCS contamination of the SIM experiments. See Table 2-8 for the period in lunar orbit when the CSM is in a non-SIM Bay configuration.
6. Undocking is done radially, CSM below, using the soft undocking procedure. The probe is extended its full length with the LM held on by the capture latches. When the rates are nulled, the CSM releases the LM. The separation maneuver is then performed immediately.
7. LM jettison is done radially, CSM below, with final sep pyros providing approximately 0.4 foot per second thrust radial. The separation burn is performed five minutes after jettison, providing one foot per second thrust retrograde.

F. Propulsion Systems

1. In order to conserve SM RCS, the SPS engine is used to "back-up" all nominal LM rendezvous burns. The SPS gimbal motors are not turned on during the normal maneuver preparation.
2. The SPS is always started using a single bank, however, the other bank will be opened 2 to 5 seconds after ignition for burns longer than 6 seconds.
3. Table 2-9 lists the CSM propulsion burns.

III. LM Systems

A. Communications

1. The preferred S-Band communications are:
 - (a) Uplink Mode 7 (Voice, Udata)
 - (b) Downlink Mode 2 (Voice, TLM-HBR, PRN, BIOMED)
2. The LM DSEA schedule is shown in Table 2-10.

B. ECS

1. The LM contains ambient air at lift-off. During launch the pressure bleeds to zero psia. CSM 02 pressurizes the LM after T&D. After T&D, the LM is isolated and allowed to bleed down via leakage. After the first LM egress, the LM is isolated and allowed to leak down. For the entry into the LM before undocking, the CSM 02 is used to pressurize the LM. This procedure insures a higher percentage of oxygen in the LM at the first EVA.
2. LM 02 is used to pressurize the LM five times; after the SEVA, EVA-1, EVA-2, EVA-3, and after equipment jettison.

C. Guidance Systems

1. The LGC and CMC use the same landing site and lift-off REFSMATS.
2. The AGS is placed in standby after the "GO" is given for lunar stay at T3.
3. The IMU is powered down and the LGC placed in standby approximately 1 hour after TD until prior to Post EVA-3 cabin cleanup. The LGC is placed in operate several times to update the computer clock.
4. To prevent overheating of the antenna, the rendezvous radar is pointed away from the sun and turned off when no functional use is required.
5. Lunar gravity measurement data are provided by putting the LGC in P00 for 10 minutes prior to surface powerdown, and for approximately 45 minutes prior to the P22 Lunar Surface Navigation before ascent.
6. The LM tracking light is operated continuously in the S/C dark period during rendezvous.

D. Propulsion Systems

1. The APS/RCS interconnect is used during the lunar lift-off and ascent only.
2. Table 2-11 lists the LM propulsion burns.

E. Electrical Power System

1. The LM is powered down to a minimum level to conserve battery consumables on the lunar surface from PDI +1:15 to lift-off -1:15.
2. LM battery management is scheduled on the lunar surface to equalize the usage of the five descent stage batteries. Battery management periods are at 105:35, 118:10, 127:45, 148:50, 160:15 and 169:40.

IV. Procedures

A. CSM - Crew procedures called out in the Flight Plan may be found in the following documents:

1. Apollo Operations Handbook - CSM 112 (AOH), Volume 2
2. Crew Checklists
3. CSM Rendezvous Procedures
4. Photographic and TV Procedures
5. Lunar Landmark Tracking Attitude Studies
6. Lunar Orbit Attitude Sequence for Mission J-1

B. LM - Crew procedures called out in the flight plan may be found in the following documents:

1. Apollo Operations Handbook LM-10, Volume 2
2. Crew Checklists
3. LM Rendezvous Procedures
4. LM Descent/Ascent Procedures
5. Photographic and TV Procedures
6. EVA Procedures
7. Lunar Surface Procedures

V. Synchronization of Ground Elapsed Time (GET)

The realtime GET is synchronized with the Flight Plan GET. In TLC, the GET is synchronized at 53:00 if the difference is more than +1 minute. In lunar orbit the GET is synchronized at 96:50 and at 150:20 if the difference is more than +2 minutes. The time changes are based on the expected difference between realtime and flight plan GET's at the start of lunar orbit revs. The synchronization is performed by a V70 uplink from the ground followed by the crew synchronizing the mission timer to the CMC clock.

VI. Miscellaneous

- A. Table 2-12 contains a summary of the expected block data update times.
- B. Table 2-13 contains landmark tracking and landing site data.
- C. Table 2-14 is a schedule of the P23 cislunar navigation sightings.
- D. Table 2-15 contains a film budget for the Mapping Camera.
- E. Table 2-16 contains a film budget for the Panoramic Camera.



SECTION 2 - CHARTS AND TABLES



TABLE 2-1
SUIT WEARING SCHEDULE

FINAL (7/26)
CHANGE B
7/12/71

ACTIVITY	PRESSURIZED (HARD SUIT)	SUITED (SOFT SUIT)	PARTIAL SUIT WITH- OUT HELMET & GLOVES	SHIRTSLEEVES (ICG)
LAUNCH		ALL		
EARTH ORBIT THRU S-IVB EVASIVE MNVR			ALL	
SIM DOOR JETTISON		ALL		
TLC & TEC EXCEPT TEC EVA				ALL
LM ACTIVATION			ALL*	
UNDOCKING -40MIN TO UNDOCKING +5MIN		CDR & LMP*	CMP**	
UNDOCKING +5MIN THRU CIRC			ALL*	
CIRC TO TD - 1 HR			CDR & LMP*	CMP
TD - 1 HR TD +15MIN		CDR & LMP*		CMP
LUNAR STAY EXCEPT SEVA & EVA				ALL
SEVA* & SURFACE EVA'S	CDR & LMP			CMP
LIFTOFF -25MIN THRU DOCKING		CDR & LMP	CMP	
DOCKING TO LM JETT			ALL	
LM JETT		ALL		
POST LM JETT THRU TEI				ALL
TEC EVA	ALL			
ENTRY				ALL

*The CDR & LMP do not wear the LCG during these phases.

**The CMP dons helmet and gloves for latch cocking and then doffs.

TABLE 2-2
CREW BIOMED HARNESS WEARING SCHEDULE
(7/26)

<u>Time, g.e.t.</u>	<u>CDR</u>	<u>CMP</u>	<u>LMP</u>
Prelaunch	on	on	on
13:30	off	off	
26:10	on		off
37:30	off	on	
49:00		off	on
60:00	on		off
71:15	off	on	
85:50		off	on
97:05	on		
97:30		on	
107:19			off*
117:50			on*
127:50	off*		
139:18	on*		
149:30			off*
159:45			on*
178:05	off	off	
189:00	on		off
202:14	off	on	
211:42		off	on
226:40		on	off
240:50	on		on
243:25		off	off
249:30	off		on
261:38		on	off
274:41	on	off	
288:30	off		on

*Crew option - the CDR & LMP may elect to wear their biosensors throughout the period of lunar surface activities.

TABLE 2-3
(7/26)

SC COVERAGE BY MSFN STATIONS USING 85FT/210FT DISH ANTENNA

	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
	AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
EARTH ORBIT	01:28	01:33						
TLI (2:50)	02:57	16:09						
TRANSLUNAR COAST			13:15	21:21			03:16	08:01
					10:45	23:49		
							22:27	32:47
	30:00	40:31						
			37:45	45:52	34:59	48:19		
							46:52	56:54
	54:17	64:36			59:03	72:29		
			61:35	70:03			71:05	78:23
LOI (78:31)	78:20	78:23						
TEI (233:46)							223:58	229:18
TRANSEARTH COAST	227:58	237:05						
			234:18	243:30	231:34	246:11		
							244:55	253:13
	252:13	261:04						
			258:24	267:47	255:35	270:35		
							269:05	277:13
	276:56	285:12						
EI (294:58)			282:56	292:49	279:55	299:52		

LOI 6:29 AEST 30 July
17h 31m to midnight 24:00

TABLE 2-3 (CONT)

SC COVERAGE BY MSFN STATIONS USING 85FT/210FT DISH ANTENNA

REV	GET AT END OF REV	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
		AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
LOI	78:31								
1	80:41	78:55	80:20					78:56	80:20
2	82:49	81:03	82:28	10:15 AEST		11:03 AEST			08:07 AEST
3	84:43	83:16	84:21			83:16	84:21		
4	86:39	85:09	86:14	85:43	86:14	85:09	86:14		
5	88:30	87:03	88:08	87:03	88:08	87:03	88:08		
6	90:23			88:57	90:02	88:57	90:02		
7	92:17			90:50	91:56	90:50	91:56		
8	94:11			92:44	93:49	92:44	93:49		
9	96:04					94:38	95:43	95:42	95:42
10	97:58					96:31	97:10	96:31	97:36
11	99:52							98:24	99:30
12	101:45							100:18	101:23
13	103:43	103:19	103:21	1h12				102:10	103:22
14	105:41	104:08	105:20					104:08	105:20
15	107:40	106:06	107:18						
16	109:38	108:04	109:16		31 July	11:53 AEST	108:04	109:16	
17	111:36	110:02	111:14	110:18	111:14	110:02	111:14		
18	113:34	112:01	113:13	112:00	113:13	112:00	113:13		
19	115:32			113:59	115:11	113:59	115:11		
20	117:30			115:56	117:09	115:56	117:09		
21	119:28			117:55	119:07	117:55	119:07		
22	121:27					119:53	121:06	120:46	121:05
23	123:25					121:51	122:09	121:51	123:03
24	125:23							123:49	125:01
25	127:21							125:47	126:59
26	129:19	128:18	128:58					127:46	128:58
27	131:17	129:43	130:56					129:44	129:57

4h 37m
5h 18m

2-4
Touchdown
10:4 AEST
9:16 AEST
31 July

31 July
Too short 18m

1h 5m

1h 12m

TABLE 2-3 (CONT)

SC COVERAGE BY MSFN STATIONS USING 85FT/210FT DISH ANTENNA

REV	GET AT END OF REV	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
		AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
28	133:15	131:42	132:54			132:15	132:54		
29	135:14	133:40	134:52			133:40	134:52		
30	137:12	135:38	136:50	135:38	136:50	135:38	136:50		
31	139:10	137:26	137:57	137:36	138:48	137:36	138:48		
32	141:08			139:34	140:47	139:34	140:47		
33	143:06			141:33	142:45	141:32	142:45		
34	145:04			143:31	144:28	143:31	144:43		
35	147:03					145:28	146:41	145:48	146:40
36	149:01							147:27	148:39
37	150:59							149:25	150:37
38	152:57							151:23	152:35
39	154:55	153:21	154:33					153:21	154:33
40	156:53	155:19	156:31						
41	158:51	157:17	158:29			157:17	158:29		
42	160:50	159:15	160:28	159:50	160:28	159:15	160:28		
43	162:48	161:14	162:26	161:13	162:26	161:13	162:26		
44	164:46			163:12	164:24	163:12	164:24		
45	166:44			165:10	166:22	165:10	166:22		
46	168:42			167:08	168:21	167:08	168:21		
47	170:40			169:06	169:24	169:06	170:19		
48	172:39					171:04	172:14	171:04	172:16
49	174:37							173:00	174:14
50	176:35							175:00	176:13
51	178:33							176:58	178:11
52	180:31	178:56	180:09					178:57	179:29
53	182:29	180:54	182:07			181:53	182:07		
54	184:27	182:53	184:05			182:52	184:05		
55	186:25	184:51	186:03	184:50	186:03	184:50	186:03		
56	188:23	186:49	187:40	186:48	187:59	186:48	187:59		

39 min

1 Aug.

2 Aug.

2-5

2 Aug.

3 Aug.

14 min

3 Aug.

TABLE 2-3 (CONT)

SC COVERAGE BY MSFN STATIONS USING 85FT/210FT DISH ANTENNA

REV	GET AT END OF REV	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
		AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
57	190:22			188:47	189:59	188:47	189:59		
58	192:20			190:45	191:57	190:45	191:57		
59	194:17			192:42	193:55	192:43	195:55		
60	196:16					194:41	195:54	195:49	195:53
61	198:14					196:39	197:09	196:39	197:31
62	200:12							198:37	199:49
63	202:10							200:35	201:47
64	204:08	203:16	203:45					202:33	203:46
65	206:06	204:31	205:43						
66	208:04	206:29	207:41			206:53	207:41		
67	210:02	208:27	209:39			208:27	209:39		
68	212:00	210:26	211:38	210:25	211:37	210:25	211:37		
69	213:58	212:23	212:41	212:23	213:35	212:23	213:35		
70	215:56			214:21	215:33	214:21	215:33		
71	217:54			216:19	217:32	216:19	217:32		
72	219:52			218:18	219:18	218:18	219:30		
73	221:51					220:15	221:28	220:37	221:28
TEI	223:46							222:13	223:25

2-6

4 days

4 days

5 days

TABLE 2-4
APOLLO 15 TV SCHEDULE
(7/26)

DAY	DATE	CDT	GET HR:MIN	DURATION HR:MIN	ACTIVITY SUBJECT	VEHICLE	STATION
Monday	26 July	11:59 AM	03:25	00:25	TRANSPOSITION & DOCKING	CSM	GDS
Tuesday	27 July	6:19 PM	33:45	00:45	INTERIOR & IVT TO LM	CSM	GDS
Friday	30 July	7:32 AM	94:58	00:10	LANDING SITE	CSM	HSK
Saturday	31 July	8:34 AM	120:00	06:40*	LUNAR SURFACE EVA-1	LM/LRV	HSK/MAD
Sunday	1 Aug	6:04 AM	141:30	06:30*	LUNAR SURFACE EVA-2	LRV	PKS/HSK/MAD
Monday	2 Aug	2:44 AM	162:10	05:40*	LUNAR SURFACE EVA-3	LRV	PKS
Monday	2 Aug	12:04 PM	171:30	00:15	LM LIFTOFF	LRV	MAD
Monday	2 Aug	1:44 PM	173:10	00:06	RENDEZVOUS	CSM	MAD
Monday	2 Aug	2:05 PM	173:31	00:05	DOCKING	CSM	MAD
Thursday	5 Aug	10:41 AM	242:07	00:30	TRANSEARTH EVA	CSM	HSK/PKS
Friday	6 Aug	2:54 PM	270:20	00:30	PRESS CONFERENCE	CSM	MAD

*SEE SECTION 3 FOR DETAILED START/STOP TIMES DURING EVA

CH/B.

9 21 34
58
22 32

TABLE 2-5
FUEL CELL PURGE, URINE DUMP AND WASTE WATER DUMP SCHEDULE
(7/26)

GET (HR:MIN)	O ₂ FUEL CELL PURGE & WASTE H ₂ O DUMP		URINE DUMP		H ₂ FUEL CELL PURGE	
	NUMBER	ΔTIME (HR:MIN)	NUMBER	ΔTIME (HR:MIN)	NUMBER	ΔTIME (HR:MIN)
11:40	1	11:40	1	11:40*		
30:40	2	19:00	2	19:00*	1	30:40
56:15	3	25:35	3	25:35*		
73:15	4	17:00	4	17:00*	2	42:35
97:38	5	24:23	5	24:23		
125:20	6	27:42	6	27:42	3	52:05
146:59	7	21:39	7	21:39		
170:25	8	23:26	8	23:26	4	45:05
193:58	9	23:33	9	23:33		
221:41	10	27:43	10	27:43	5	51:16
238:18			11	16:37		
244:00	11	22:19				
272:27			12	32:54		
272:40	12	28:40			6	50:59

*URINE DUMP NOT CRITICAL PERFORM AT THE SAME TIME AS WASTE H₂O DUMP

TABLE 2-6

BATTERY CHARGE SCHEDULE
(7/26)

GET HR:MIN	BATTERY
4:30	B
25:10	A
31:00 (IF MCC 2 IS PERFORMED)	A
50:00	B
120:30	B
141:51	A
189:02	B
214:24	A
239:02	B
270:30	A

TABLE 2-7
CSM L10H CANISTER CHANGE SCHEDULE (7/26)

CHANGE NO.	APPROXIMATE GET, HR:MIN	APPROXIMATE ΔT , HR	INSTALL		REMOVE & STOW	
			CANISTER	POSITION	CANISTER NO.	STOWAGE LOCATION
1	12:10	14	3	A	1	B5
2	26:00		4	B	2	B5
3	38:00	12	5	A	3	B5
4	51:00	13	6	B	4	B5
5	61:45	11	7	A	5	B6
6	75:55	14	8	B	6	B6
7	85:55	10	9	A	7	B6
8	98:08	12	10	B	8	B6
9	122:00	24	11	A	9	A9
10	146:00	24	12	B	10	A9
11	169:00	23	13	A	11	A9
12	179:38	11	15	B	12	A3
13	191:59	12	16	A	13	A3
14	203:30	12	17	B	15	A3
15	215:27	12	18	A	16	A3
16	226:35	11	19	B	17	A4
17	238:57	12	20	A	18	A4
18	251:00	12	21	B	19	A4
19	263:02	12	22	A	20	A4
20	274:57	12	23	B	21	A5
21	288:35	14	24	A	22	A5

LM L10H CARTRIDGE CHANGE:GET (HR:MIN) 161:30 & 151:10

TABLE 2-8

LUNAR ORBIT NON-SIM BAY RCS JET CONFIGURATION PERIODS
(7/26)

<u>REASON</u>	<u>FROM</u>	<u>TO</u>	<u>TOTAL</u>	<u>ULLAGE</u>
LOI TRACKING & LOI THRU BAILOUT	74:00	83:55	9:55	16 SEC (DOI), 16 SEC (BAILOUT)
LM ACT DAY*	94:58	105:40	10:42	14 SEC (CIRC)
UV & DIM LIGHT PHOTOGRAPHY	123:15	125:30	2:15	NONE
LOPC 1**, RNDZ, & DOCKING	164:08	174:00	9:52	13 SEC (LOPC1)
LM JETT & CSM SEP	176:16	177:45	1:29	NONE
SHAPING BURN & TEI	222:42	224:03	1:21	13 SEC

NOTES:

SIM BAY SINGLE JET AUTHORITY WILL BE USED IN ALL LUNAR ORBIT PERIODS EXCEPT AS IDENTIFIED ABOVE
SIM BAY SINGLE JET AUTHORITY INHIBITS ALL JETS EXCEPT A1 & C2 or B2 & D1 FOR ROLL, A3 & C4 FOR
PITCH AND B3 & D4 FOR YAW CONTROL

*AN SPS DOI TRIM MAY BE REQUIRED WHICH WILL REQUIRE AN ULLAGE FOR ~14 SEC.

**IF Y&Z TRIMS ARE REQUIRED FOR LOPC 1, THE CMP WILL ROLL THE CSM SO THAT JETS B1 AND A2 ARE NOT USED.

TABLE 2-9
CSM BURN/EVENT SCHEDULE
(7/26)

BURN/ MNVR	GETI/ BURN TIME	ΔV_T (FPS)	ULLAGE/ ΔV (FPS)	REFSMMAT	RESULTANT HA/HP(NM)	REMARKS
TLI	2:49:58 5 MIN 56 SEC	10421.0		LAUNCH		S-IVB BURN
CSM EJECTION	4:16:00 3 SEC	0.4	-----	LAUNCH		RCS BURN
MCC-1	11:55:54	-----	-----	PTC		NOM ZERO
MCC-2	30:55:54	-----	-----	PTC		NOM ZERO
MCC-3	56:31:14.7	-----	-----	PTC		NOM ZERO
MCC-4	73:31:14.7	-----	-----	PTC		NOM ZERO
LOI	78:31:14.7 6 MIN 32 SEC	2997.9	NOT REQ'D	LOI	HA 170.0 HP 58.3	SPS BURN
DOI	82:39:32.6 22.9 SEC	207.6	4 JET 16 SEC	LDG SITE	HA 58.4 HP 9.6	SPS BURN
BAILOUT BURN	82:26:16.9 10.2 SEC	94.0	4 JET 16 SEC	LDG SITE	HA 71.0 HP 3.9	SPS BURN
DOI TRIM	96:17:00			LS OR PC AS REQ'D		SPS BURN NOM ZERO
UNDOCK & SEP	100:13:56.1 3.3 SEC	1.0	-----	LDG SITE	HA 59.8 HP 8.4	RCS BURN
CSM CIRC	101:34:55.1 3.9 SEC	70.8	4 JET 14 SEC	LDG SITE LDG SITE	HA 64.7 HP 54.5	SPS BURN
LOPC	165:12:50.6 16.5 SEC	308.6	4 JET 13 SEC	PLANE CHANGE	HA 59.8 HP 59.2	SPS BURN
LM JETT	177:20:45	~0.4		LIFTOFF		NO BURN
CSM SEP	177:25:45 6.4 SEC	1.0	-----	LIFTOFF	HA 59.9 HP 58.7	RCS BURN
CSM SHAPE	221:25:52 3.4 SEC	64.2	4 JET 13 SEC	TEI	HA 77.6 HP 57.5	SPS BURN
TEI	223:46:06 2MIN 17.8 SEC	3049.7	4 JET 13 SEC	TEI		SPS BURN
MCC-5	238:46:06	-----	-----	PTC		NOM ZERO
MCC-6	272:58:20	-----	-----	PTC		NOM ZERO
MCC-7	291:58:20	-----	-----	ENTRY		NOM ZERO
EI	294:58:20			ENTRY		NO BURN

TABLE 2-10

APOLLO 15/LM - 10 DSEA SCHEDULE (7/26)

<u>ACTIVITY</u>	<u>MODE</u>	<u>GET (HR:MIN)</u>	<u>RECORD TIME X DUTY CYCLE = TAPE USED (HR:MIN)</u>	<u>ACCUM. TAPE USED (HR:MIN)</u>
LM COMM ACTIVATION PDI PREP	ICS/PTT (VOX)	98:24 104:20	5:56 X 100% = 5:56	5:56
PDI PREP POST TOUCHDOWN	VOX OFF	104:20 104:49	0:29 X 63% = 0:17	6:13
EVA-1 FINAL PREP	VOX OFF	119:10 120:00	0:50 X 63% = 0:32	6:45
EVA-2 FINAL PREP	VOX OFF	140:28 141:18	0:50 X 63% = 0:32	7:17
EVA-3 FINAL PREP	VOX OFF	161:07 161:57	0:50 X 63% = 0:32	7:49
ASCENT COMM (L/O-17) LIFTOFF - 2 MIN	ICS/PTT (VOX)	171:20 171:35	0:15 X 100% = 0:15	8:04
LIFTOFF - 2 MIN INSERTION	VOX (ICS/PTT)	171:35 171:45	0:10 X 63% = 0:06	8:10
INSERTION POST-DOCKING	ICS/PTT OFF	171:45 173:35	1:50 X 100% = 1:50	10:00*

*END OF TAPE

TABLE 2-11
LM BURN SCHEDULE
(7/26)

BURN/ MNVR	GETI/ BURN TIME	ΔV_T (FPS)	ULLAGE/ ΔV (FPS)	REFSMAT	RESULTANT HA & HP	REMARKS
PDI	104:28:54.8 12 MIN 2.1 SEC	6700.0	4 JET 7.5 SEC	LDG SITE	---	DPS BURN
ASCENT	171:37:23.9 7 MIN 15.2 SEC	6055.5	NONE	LIFT-OFF	HA 45.6 HP 9.0	APS BURN
TPI	172:29:39.1 2.6 SEC	73.6	4 JET 10.0 SEC	LIFT-OFF	HA 61.5 HP 43.9	APS BURN
LM DEORBIT	179.06:22.7 1 MIN 22.3 SEC	195.4	N/A	LIFT-OFF	HA 62.0 HP-52.8	RCS BURN

TABLE 2-12
APOLLO 15 RETURN TO EARTH BLOCK DATA SCHEDULE (7/26)

DATA	GET UPDATE	GETI	PAD TYPE
TLI+90	1:30	4:16:34.32	Complete P-30
LO+8	1:30	8:00:00	P-37
LO+15	6:00	15:00:00	P-37
LO+25	13:30	25:00:00	P-37
LO+35	13:30	35:00:00	P-37
LO+45	13:30	45:00:00	P-37
LO+60	13:30	60:00:00	P-37
LOI-5	35:00	73:29:25.00	Complete P-30
FLYBY			(docked)
PER+2	72:00	80:28:20.99	ABBRR-30
			(docked)
TEI-4	76:50	87:12:24.45	ABBRR-30
TEI-5	81:40	88:25:54.66	↓
TEI-12	85:38	101:47:06.57	
TEI-19	95:25	115:28:46.69	
TEI-26	108:57	129:21:36.43	
TEI-37	126:44	150:57:57.96	
TEI-45	150:20	166:38:52.24	
TEI-52	163:35	180:20:15.47	
TEI-58	179:36	192:13:36.08	
TEI-60	189:05	196:11:15.16	
TEI-62	193:42	200:08:54.90	
TEI-64	196:50	204:06:34.11	
TEI-69	203:20	213:49:29.41	
TEI-71	213:28	217:47:07.83	
TEI-73	216:54	221:43:59.16	
PREL.			
TEI-74	220:22	223:43:57.86	Complete P-30
NOM			
TEI-74	222:43	223:43:57.86	Complete P-30
TEI-75	222:43	225:43:00.96	ABB P-30

Data are based on MCS IN71-FM112,S/C OT, Vol II., dated March 26, 1970.

NOTES:

1. All block data maneuvers are to the MPL line except:
 - a. TLI+90^m abort is to the AOL.
 - b. Nominal TEI (TEI₇₄) is to EOM target ($\lambda = 158^\circ\text{W}$).
 - c. TEI₇₅ is also to EOM target ($\lambda = 158^\circ\text{W}$).

TABLE 2-12 (CONT)

2. Pass flyby early if pericynthion is not clear of moon.
3. The flyby and PER+2 maneuvers are docked. All other aborts are undocked.
4. PER+2 fast return to MPL assumes MCC₄.
5. TEI₄ assumes LOI and no DOI.
6. TEI₅ assumes DOI.
7. TEI₁₂ assumes no circ.
8. TEI₁₉ assumes circ but no LOPC.
9. TEI₄₅ assumes no LOPC.
10. TEI₅₂ assumes LOPC.
11. TEI₇₃ assumes no shaping maneuver.
12. All TEI's are constrained to 40° inclination.

TABLE 2-13

LANDMARK AND LANDING SITE DATA

SITE	REV	LATITUDE DEG	LONGITUDE DEG	ALTITUDE** NM
J-1	3 & 10	25.958 N	11.3278 E	0.000
15-1	12* 13	26.065 N	3.671 E	-1.935
15-2	12* 47	25.991 N	3.613 E	-1.744
15-3	12	26.039 N	3.496 E	-1.795
15-4	12*	26.352 N	3.323 E	-1.867
15-5	12*	25.809 N	2.808 E	-1.854
15-6	12*	25.541 N	2.818 E	-1.877
HADLEY		26.074 N	3.654 E	-1.917

** Difference between landmark radius vector and 938.4935 NM (Mean Lunar Radius)

* Landing Site Landmark to be determined in real-time

TABLE 2-14
P23 CISLUNAR NAVIGATION (7/26)

GET	STAR/HORIZON	COMMON NAME
8:00	1/ENH 45/EFH 131/ENH 224/EFH	ALPHERATZ FOMALHAUT BETA ARIETIS MARKAB
236:20	57/EFH 50/ENH 13/EFH	BELLA TRIX POLLUX CAPELLA
251:10	50/ENH 11/EFH 13/EFH	POLLUX ALDEBARAN CAPELLA
263:15	142/EFH 11/EFH 13/EFH	ZETA TAURI ALDEBARAN CAPELLA
267:48	60/EFH 13/EFH 21/ENH	EL NATH CAPELLA ALPHARD
273:05	60/EFH 13/EFH 21/ENH	EL NATH CAPELLA ALPHARD
276:00	60/EFH 13/EFH 21/ENH	EL NATH CAPELLA ALPHARD
289:00	40/MFH 221/MFH 223/MNH 224/MNH 126/MNH	ALTAIR DELTA CAPRICORNI BETA PEGASI MARKAB GAMMA PEGASI
292:02	126/MNH 120/MFH 40/MFH	GAMMA PEGASI ALPHA GRUIS ALTAIR

TABLE 2-15
MAPPING CAMERA FILM BUDGET (7/26)

REV	START		STOP		REMARKS	FRAMES USED	FILM USED FT	FILM REMAINING FT
	GET (H:M:S)	LONG(DEG)	GET (H:M:S)	LONG(DEG)				
3/4	84:42:35	179.6W (E TERM)	84:54:15	142.5°E		36	15	1445.0
15	105:52:20	144.5E	106:17:20	74.0°E		59	24.6	1420.4
15/16	106:56:15	49.8W	108:54:40	50.8W	FULL REV	295	122.9	1297.5
22/23	119:33:35	162.7E (E TERM)	121:32:02	161.7E (E TERM)	FULL REV	297	123.8	1173.7
23	121:37:04	143.7E	122:31:28	18.8W (W TERM)	FORWARD OBLIQUES	118	49.2	1124.5
27	129:26:27	157.7E (E TERM)	130:26:00	22.8W (W TERM)	LIGHTSIDE PASS	152	63.4	1061.1
33/34	141:16:34	151.6E (E TERM)	143:15:02	150.6E (E TERM)	FULL REV	298	124.2	936.9
34	143:15:02	150.6E (E TERM)	144:09:00	11.8W	BKWD OBLIQUES	118	49.2	887.7
35	145:13:30	149.6E (E TERM)	146:12:55	30.8W (W TERM)	NORTH OBLIQUES	130	54.2	833.5
37/38	150:08:58	32.9W (W TERM)	152:08:20	33.9W (W TERM)	FULL REV	303	126.4	707.1
44	162:59:44	140.6E (E TERM)	163:59:10	39.9W (W TERM)	LIGHTSIDE PASS	152	63.4	643.7
50	174:50:06	134.6E (E TERM)	175:49:22	45.9W (W TERM)	LIGHTSIDE PASS	152	63.4	580.3
58/59	190:37:25	126.6E (E TERM)	192:35:51	125.6E (E TERM)	FULL REV	303	126.4	453.9
62/63	199:30:22	57.9W (W TERM)	201:28:11	58.9W (W TERM)	FULL REV	303	126.4	327.5
69	212:19:43	115.6E (E TERM)	214:18:10	114.6E (E TERM)	FULL REV	313	130.5	197.0
71	216:16:37	113.6E (E TERM)	217:15:47	66.9W (W TERM)	SOUTH OBLIQUES	130	54.2	142.8
71/72	217:20:00	82.9W (W TERM)	219:14:14	67.9W (W TERM)		292	121.7	21.1

TABLE 2-16
PANORAMIC CAMERA FILM BUDGET (7/26)

REV	START		STOP		MODE	FILM USED (STEREO) (DEGS)	FRAMES USED	APPROX FRAMES* REMAINING
	GET (H:M:S)	LONG(DEG)	GET (H:M:S)	LONG(DEG)				
3/4	84:42:35	179.6W (E TERM)	84:45:55	170.5E	MONO	5		
	84:45:55	170.5E	84:54:15	142.5E	STEREO	28	122	1440
15	105:52:20	144.5E	106:07:30	100E	STEREO	44.5		
	106:07:50	100E	106:14:20	82E	MONO	9.0		
	106:14:20	82E	106:17:20	74E	STEREO	8.0	202	1238
16	108:14:40	76E	108:39:15	1.8W	STEREO	77.8		
	108:39:15	1.8W	108:42:33	11.8W (W TERM)	MONO	5.0	238	1000
27	130:16:45	5.7E	130:18:00	1.7E	STEREO	4.0	14	986
33	141:45:05	67.5E	142:00:20	23E	STEREO	44.5	141	845
38	151:12:40	134E	151:31:50	77.5E	STEREO	56.5		
	151:31:50	77.5E	151:36:12	65.5E	MONO	6.0		
	151:56:20	5.7E	151:57:05	1.7E	STEREO	4.0	214	631
50	175:34:07	5.7E	175:36:00	0.3W	STEREO	6.0	17	615
58	190:37:25	126.6E (E TERM)	190:40:45	116.6E	MONO	5.0		
	190:40:45	116.6E	190:55:50	69.E	STEREO	47.5		
	190:55:50	69.E	191:01:45	53.E	MONO	8.		
	191:01:45	53E	191:08:20	36.5E	STEREO	16.5	248	366
59	193:05:25	38.5E	193:18:30	0	STEREO	38.5		
	193:31:45	44.9W	193:35:05	54.9W (W TERM)	MONO	5.0		
							136	230
70**	214:42:10	42E	214:50:12	20E	STEREO	-	-	-
72	218:48:30	22E	219:10:54	57.9W	STEREO	79.9		
	219:10:54	57.9W	219:14:14	67.9W	MONO	5.0	248	-18
						503.7		

**REV 70 will be scheduled only if it is determined REAL TIME that film is available.

* Based on 6500 feet of film loaded and 350 feet used for loading and cycling.

TABLE (2-17)
CRYO MANAGEMENT SCHEDULE (7/26)

FINAL (7/26)
CHANGE B
7/12/71

GET (HRS:MIN)	TANK NUMBERS				
	OXYGEN HTRS		H2 TANK 1, 2 HTRS, TANK 3 FANS		
	AUTO	OFF	AUTO	MANUAL	OFF
0:00	1,2	3	1,2	3	
15:00	3	1,2	1,2,3		
25:18			3		1,2
74:20*	1,2	3	1,2		3
95:00	3	1,2			
109:00	1,2	3			
190:00	3	1,2			
203:00	1,2	3			
222:00*					
241:25	1,2,3				
243:30	1,2	3			

*Switch to 100 watt heaters in oxygen tanks 1 and 2 at 74 HRS 20 MIN GET.
Switch back to 150 watt heaters at 222:00 HRS GET.

TABLE 2-18

PDI 2 ABORT PADS

I

PURPOSE		PDI ₂ PAD					
GETI PDI	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				

J

PURPOSE		PDI ₂ ABORT EARLY PAD					
GETI TPI N37	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				

K

PURPOSE		PDI ₂ ABORT LATE PAD					
GETI TPI N37	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				

E

F

G

H

PURPOSE		NO PDI ₂ + 12 ABORT					
GETI N33	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				
N84 LOCAL VERT	ΔVX						
	ΔVY						
	ΔVZ						
GETI CSI N11	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				
GETI TPI N37	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				

L

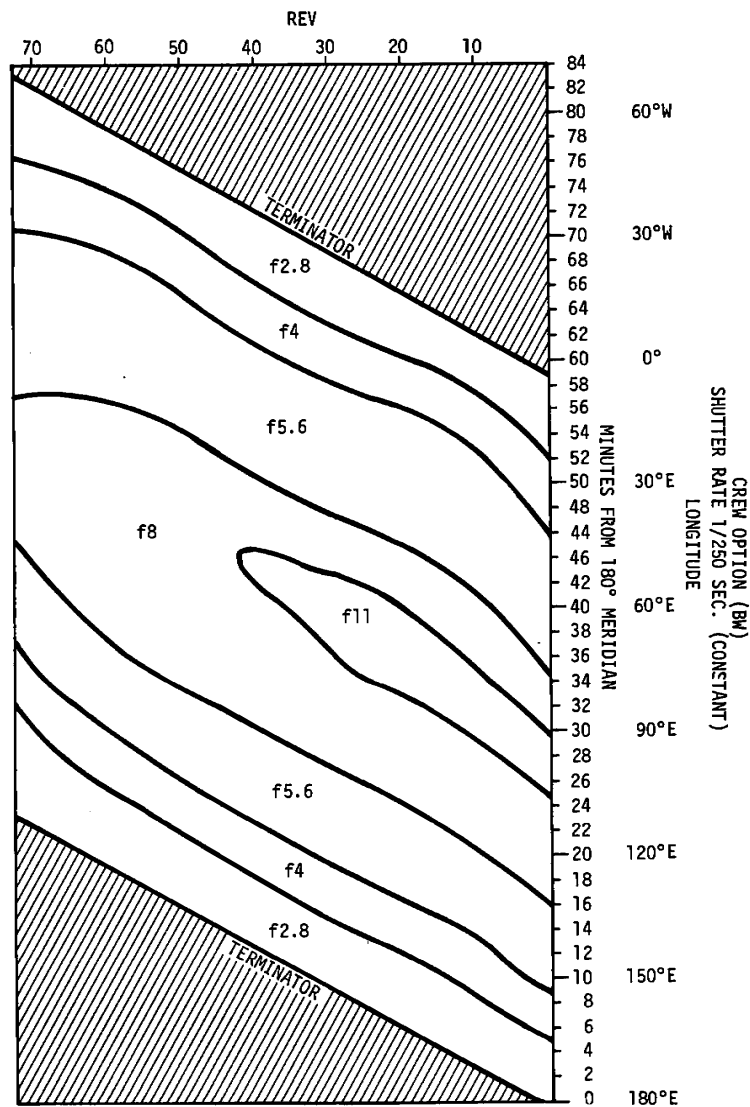
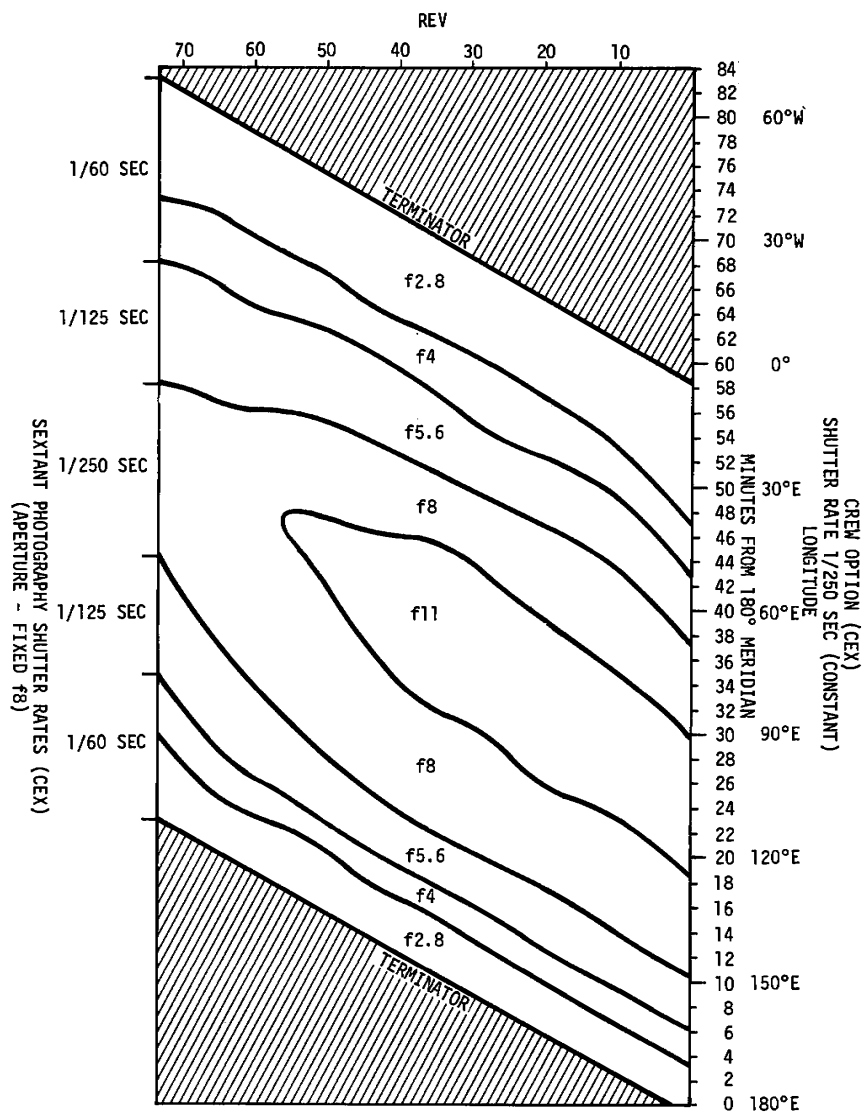
M

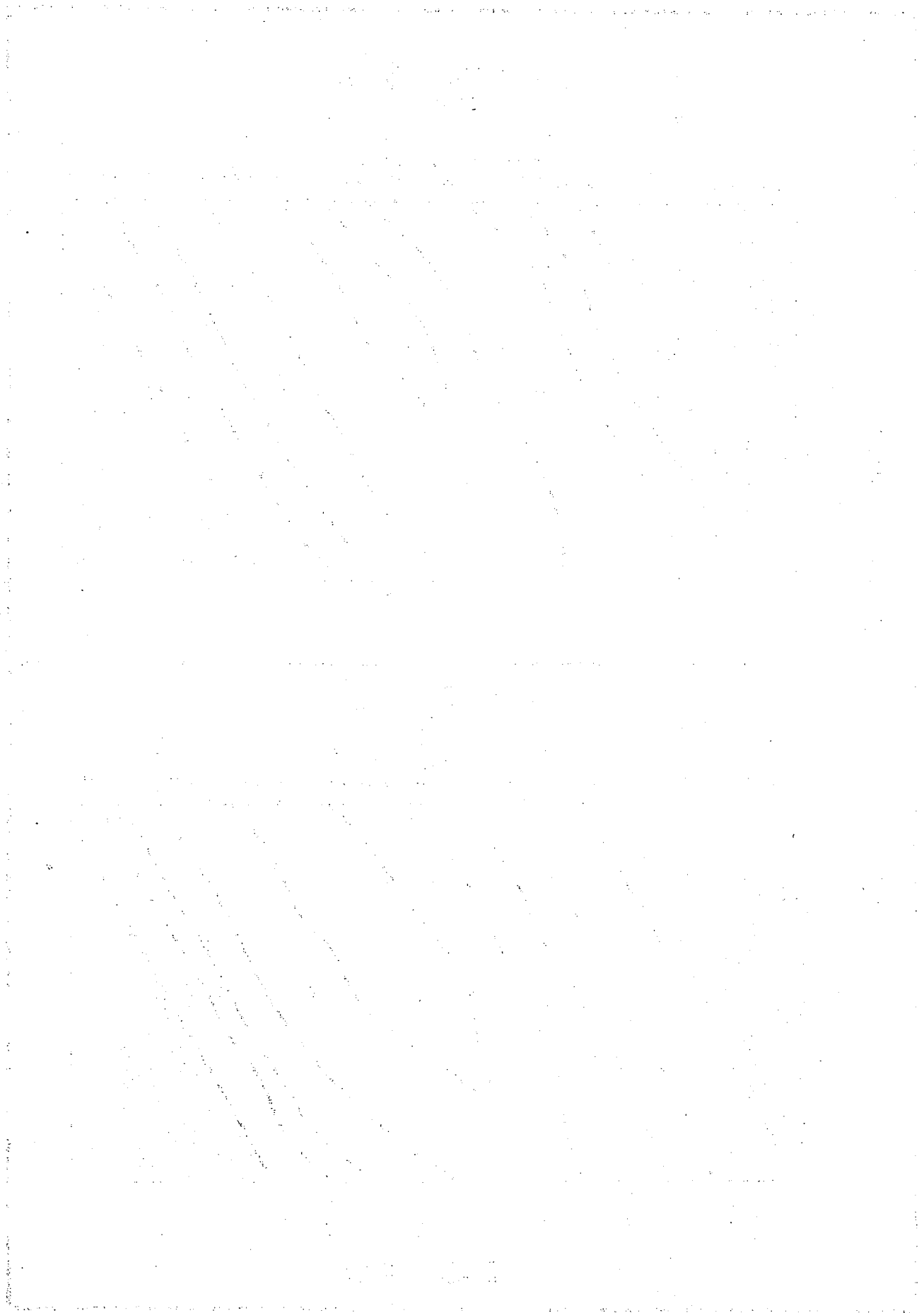
PURPOSE		T2-2 ABORT PAD					
GETI T2	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				
GETI TPI N37	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				

N

PURPOSE		T3 ABORT PAD					
GETI T3	HRS	+	0	0			
	MIN	+	0	0	0		
	SEC	+	0				

TABLE 2-19
FLIGHT PLAN CREW OPTION PHOTO CHARTS





SECTION 3 - DETAILED TIMELINE

SECTION 2 - RELATIVE HUMIDITY

FLIGHT PLAN

MCC-H

0834 CDT

NOTES

2334

UPDATE TO CSM
Z TORQUING ANGLE

00:00
(31102)
(01111)
:10
:20
00:30
:40
:50
01:00

MSFN
CYI
CRO

LIFT-OFF JULY 26, 1971

CSM LAUNCH CHECKLIST

SECO

INSERTION AND SYSTEM CHECKS PAGE L/2-11

L/O CREW POSITIONS
LEFT COUCH - CDR
CENTER COUCH - CMP
RIGHT COUCH - LMP
AT SECO+20 SEC, S-IVB
MNVRS TO LH AND
INITIATES ORB RATE
(HEADS DOWN)

THE DAP LOAD WILL
BE SHOWN WHEN
APPLICABLE IN THE
TIME COLUMN OR
AS A NOTE TO
INDICATE STATUS

THE PANORAMIC AND
MAPPING CAMERAS WILL
BE PLACED IN BOOST
AND STBY MODES RE-
SPECTIVELY FOR LAUNCH
THROUGH TD&E, AND ALL
SPS BURNS.

P52 IMU REALIGN

N71: __ __, __ __

N05: __ __. __ __

N93:

X __ __. __ __

Y __ __. __ __

Z __ __. __ __

GET __ __: __ __

P52 IMU REALIGN
OPTION 3 REFSMMAT
(LAUNCH ORIENT)

REPORT: GYRO TORQUING ANGLES

0034

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	00:00 - 01:00	1/E.O.	3-1

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0934 CDT

NOTES

0034

01:00
(31102)
(01111)

:10

:20

01:30

:40

:50

02:00

M
S
F
N

DUMP DSE
UPDATE TO CSM
TLI PAD
TLI +90 MIN ABORT
PAD
P37 (L/O+8) PAD
UPLINK TO CSM
CSM S.V. & V66

GO/NO-GO FOR PYRO
ARM

SCS ATT REF COMPARISON CHECK PAGE L/2-17
EXTEND DOCKING PROBE PAGE L/2-18

UV PHOTOS OF CLOUD COVER, LAND MASSES, OR
WATER AS AVAILABLE

GO/NO-GO FOR PYRO ARM (CUE MSFN)
LOGIC ON

TLI PREPARATION PAGE L/2-23

PYRO ARM

2-29.

AS A GENERAL RULE,
EXCEPT DURING TEC,
UNDOCKED PERIODS,
AND WHILE THE LM
IS ON THE LUNAR
SURFACE, MCC-H
WILL UPLINK THE
STATE VECTOR TO
THE CSM SLOT AND
TRANSFER IT VIA
V66 TO THE LM
SLOT IN ORDER TO
HAVE REDUNDANT
STATE VECTORS
ONBOARD.

0134

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	01:00 - 02:00	1/E.O.	3-2

FLIGHT PLANNING BRANCH

B.

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FLIGHT PLAN

TLI BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±45° TERMINATE	V_i = PAD VALUE + 2 SEC	NO TRIM

FLIGHT PLAN

MCC-H

1034 CDT

NOTES

0134

02:00
(31102)
(01111)

:10

:20

02:30

:40

:50

03:00

T
C
R
O
I

A
R
I
A

A
R
I
A

T
H
A
W

TLI, NOMINAL & MANUAL CHECKLIST PAGE L/2-30

TB6 02:40:20

GO/NO-GO FOR TLI

TLI

POO CMC IDLING
V66 SET CSM S.V. INTO LM S.V.
TLI BURN STATUS REPORT
CDR - TRANS TO CENTER COUCH, CMP - LEFT COUCH
LMP - RIGHT COUCH

TIG: 02:49:58

BT: 5 MIN 56 SEC

ΔVT: 10421 FPS

AT SECO: S-IVB INERTIAL
AT SECO+2 MIN 31 SEC:
S-IVB TO LOCAL
HORIZONTAL, ORB RATE,
HEADS DOWN

GO/NO-GO FOR TLI

0234

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	02:00 - 03:00	1/TLC	3-5

FLIGHT PLANNING BRANCH

FLIGHT PLAN

NOTES

MCC-H

1134 CDT

DUMP DSE

GO/NO-GO FOR T&D

03:00
:10
:20
03:30
:40
:50
04:00

(11103)

(01111)

(11102)

(01111)

M
S
F
N

T
V

WASTE STOWAGE VENT - CLOSED PAGE L/2-26 2-33,
NORMAL SC/BOOSTER SEPARATIONS PAGE L/3-1
DIRECT O₂ VLV - OPEN, UNTIL CABIN IS 5.7 PSI, THEN CLOSE

V48 (11103)(01111)

S-IVB MNVRS TO SEP ATT 03:10:54

(359,077,320) OMNI C

GO/NO-GO FOR TRANSPOSITION AND DOCKING
CSM SEPARATION PREPARATION PAGE L/3-1

CSM/S-IVB SEP 03:21

CSM MNVR TO DOCK ATT (301,257,040) (03:29)
V48 (11102)(01111) HGA P -22, Y 276, BEAM WIDE, REACQ
TV (GDS) 3:25 TO 3:50 CM4/TV - PEAK, BRKT (f22)
VISUALLY INSPECT AND PHOTOGRAPH S-IVB AND LM

DOCK 03:31

CSM/LM PRESSURE EQUALIZATION PAGE L/3-5

TUNNEL HATCH REMOVAL PAGE L/3-5

DOCKING LATCH VERIFICATION PAGE L/3-5

LM UMBILICAL CONNECTIONS PAGE L/3-5

HATCH INSTALLATION PAGE L/3-5

PRE LM SEP & EJECTION PAGE L/3-5

S-IVB NON-PROPULSIVE VENT START (03:55:54)

T&D MNVR
+X FOR 3 SEC ($\Delta V \sim 0.5$ FPS)
AFTER 15 SEC PITCH UP AT
0.5°/SEC. V49 AUTO MNVR
TO DOCKING ATT. NULL
TRANSLATION AND RATES,
+X FOR 4 SEC ($\Delta V \sim 0.7$ FPS)

DURING TLC, HGA IS
REQUIRED FOR TD&E,
TV TRANSMISSION,
SIM DOOR JETTISON,
DAC/SXT PHOTO TEST,
FILM CYCLING, CAM-
ERA TEMP SENSING AND
AND MCC'S. THE
ANTENNA WILL BE
STOWED AT OTHER TIMES.
DURING PTC MCC-H
WILL COMMAND OMNI
SELECTION.

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	03:00 - 04:00	1/TLC	3-6

FLIGHT PLANNING BRANCH

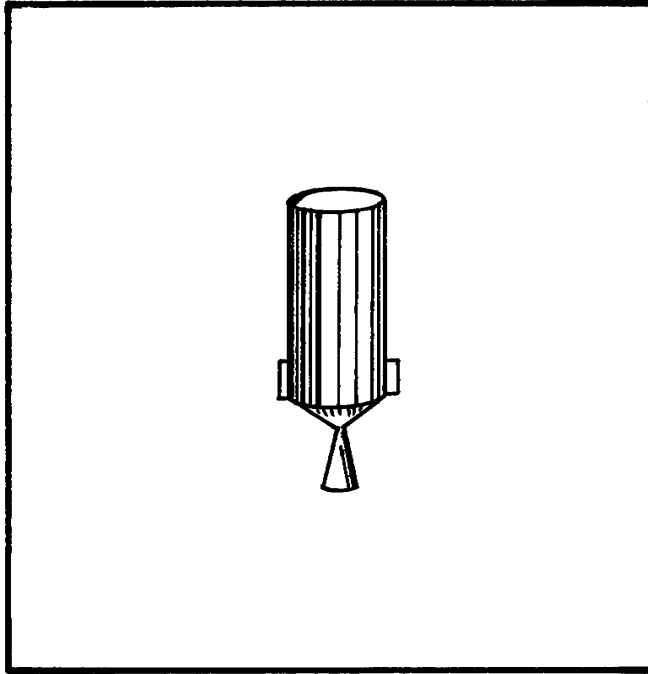
B.

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FLIGHT PLAN

GET 04:39

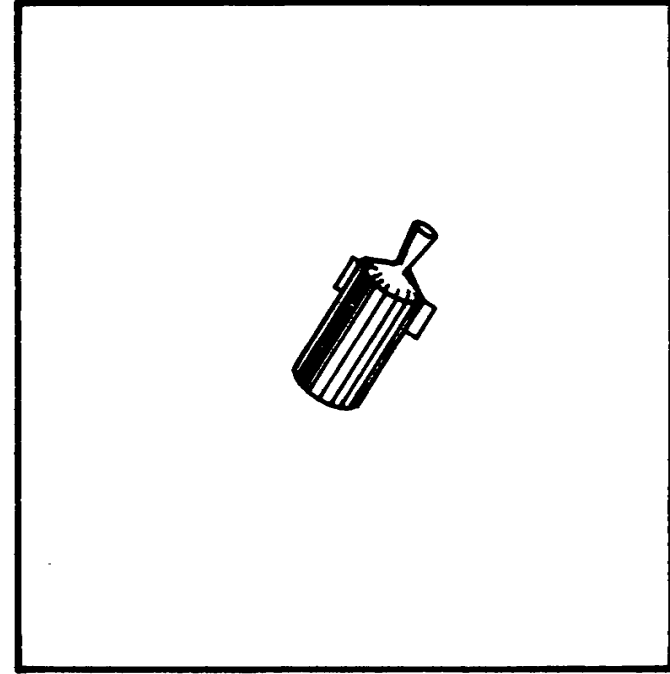
FOV 5°



S-IVB APS EVASIVE INITIATION

GET 05:00

FOV 1°



S-IVB LOX DUMP INITIATION

FLIGHT PLAN

NOTES

MCC-H

1234 CDT

0334

GO/NO-GO FOR
PYRO ARM AND
CSM/LM EJECTION

TLI CUTOFF +
1 HR 20 MIN

GO FOR S-IVB YAW
MNVR INITIATION

GO/NO-GO FOR S-IVB
EVASIVE BURN

DUMP DSE

04:00

(21101)
(X1111)

:10

:20

04:30

:40

:50

05:00

M
S
F
N

V48 (21101) (X1111)
GO/NO-GO PYRO ARM (CUE MSFN)
LOGIC ON
PYRO ARM
P47 THRUST MONITOR

S-IVB NON-PROPULSIVE VENT COMPLETE (04:10:54)

PHOTOGRAPH LM EJECTION

CSM/LM EJECTION

P00, V66 SET CSM S.V. INTO LM S.V.
REPORT: GOOD EJECTION
V49 MNVR TO VIEW S-IVB IN HATCH WINDOW BY 04:29
(090,257,355) OMNI A
REPORT: GO FOR S-IVB YAW MNVR
VISUALLY INSPECT S-IVB/IU THERMAL SHROUD

S-IVB YAW MNVR

04:29

(GROUND COMMAND)

CHARGE BATTERY B

REPORT: GO FOR S-IVB EVASIVE BURN

S-IVB APS EVASIVE BURN

04:39

(GROUND COMMAND)

V49 MNVR TO P52 ATTITUDE (05:25) (215,084,315)
DOFF AND STOW PGA'S HGA P -60, Y 76
TRANSFER ITEMS OUT OF PGA POCKETS
TRANSFER PRD TO CWG

S-IVB MNVRS TO PROPELLANT DUMP ATT (04:49)

REPORT: LM/CM ΔP

S-IVB CONTINUOUS H₂ VENT-ON (04:56)

SPRING ACTUATOR ΔV
~ 0.8 FPS. 5 SEC AFTER
EJECTION THERE IS A
4 JET RCS -X TRANSLA-
TION FOR 3 SEC (ΔV
~ 0.4 FPS). TOTAL ΔV
~ 1.2 FPS.

TIG: 04:16

BT: 3 SEC

ΔVT: 0.4 FPS

ULLAGE: NONE

ORBIT: N/A

THE MNVR TO ACQUIRE
THE S-IVB WILL BE
PERFORMED AT 0.2°/
SEC AND WILL BE INITI-
ATED AFTER GOOD
EJECTION IS VERIFIED

GO FOR S-IVB YAW MNVR
INDICATES THAT THE
S-IVB IS IN THE CREW
FIELD OF VIEW AND
ADEQUATE SPACECRAFT
SEPARATION HAS BEEN
ACHIEVED.

THE S-IVB YAW MNVR
WILL BE PERFORMED
NOMINALLY AT LM
EJECTION +13 MIN

EVASIVE BURN ΔV
~ 9.4 FPS

0434

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	04:00 - 05:00	1/TLC	3-9

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1334 CDT

0434

05:00

(21101)

(X1111)

UPLINK TO CSM
DESIRED ORIENTATION
(PTC)
ZERO TRUNNION BIAS

:10

:20

05:30

M
S
F
N

:40

:50

06:00

S-IVB LOX DUMP (05:00)

ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS

P52 IMU REALIGN
OPTION 3 REFSMMAT
(LAUNCH ORIENT)

REPORT: GYRO TORQUING ANGLES

P52 IMU REALIGN
OPTION 1 PREFERRED
(PTC ORIENT)

SC CONT - CMC
BMAG (3) - RATE 2

VHF A SIMPLEX - OFF
VERIFY WASTE STOWAGE VENT VALVE - VENT

NOTES

LOX DUMP $\Delta V \sim 28$ FPS

SC INTERIOR PHOTOGRAPHY AT CREW OPTION
CM/DAC/10/CIN- SPOT
(T2.8,1/60,3) 6 fps
(87% MAG)
MAG (J) ___, FR # __

STARS ___,
SA ___,
TA ___,

P52 IMU REALIGN

N71: ___,

N05: ___,

N93: ___,

X ___,

Y ___,

Z ___,

GET ___:__:

S-IVB APS MCC-1
GET ~05:45
 $\Delta V \sim 30$ FPS

P37 PAD ASSUMES
NO MCC-1

UPDATE TO CSM
P37 PAD (L/O+15)

0534

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	05:00 - 06:00	1/TLC	3-10

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1434 CDT

NOTES

0534

06:00
(21101)
(X1111)

:10

:20

06:30

M
S
F
N

:40

:50

07:00

EAT PERIOD

EARTH DISTANCE
~ 25,527 NM

0634

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	06:00 - 07:00	1/TLC	3-11

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1534 CDT

NOTES

0634

07:00
(21101)
(X1111)

CSM SYSTEMS CHECKLIST
DEACTIVATE PRIMARY EVAP

PAGE S/1-13

:10

:20

07:30

M
S
F
N

CSM G&C CHECKLIST

ΔV TEST & NULL BIAS CHECK
REPORT: BIAS

PAGE G/2-5

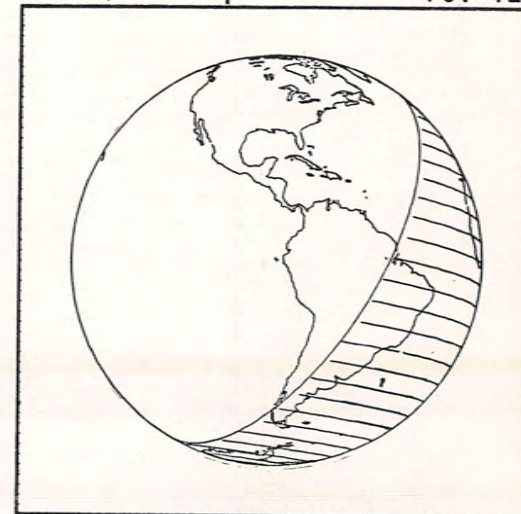
:40

:50

08:00

GET 8:00

FOV 12°



0734

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	07:00 - 08:00	1/TLC	3-12

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1634 CDT

NOTES

0834

08:00
(21101)
(X1111)
:10
:20
08:30
:40
:50
09:00

M
S
F
N

V49 MNVR TO OPTICS CALIBRATION ATTITUDE (08:06)
(210,339,330)

P23 CISLUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00001)
P00

V49 MNVR TO SIGHTING ATTITUDE (08:20)
(221,327,330)
V67 (+80000) (+00070) (+00003)

P23 CISLUNAR NAVIGATION
5 MARKS ON EACH STAR, UPDATE STATE VECTOR
1. N70 (00001) (00000) (00110)

2. N70 (00045) (00000) (00120)

3. N70 (00000) (00000) (00110)
N88 (+82401) (+44316) (+35301)
+77864 +23864 +58031

EARTH DISTANCE
~ 37,581 NM

LOAD W MATRIX

001 ALPHERATZ
(ENH)

045 FOMALHAUT
(EFH)

102 MIRACET.
~~131 BETA ARIETIS~~
(ENH)

0834

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	08:00 - 09:00	1/TLC	3-13

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1734 CDT

NOTES

0834

09:00
(21101)
(X1111)

4. N70 (00000) (00000) (00120)
N88 (+93634) (-23622) (+25973)

224 MARKAB (EFH)

:10

:20

P00
V49 MNVR TO OPTICS CALIBRATION ATTITUDE
(210,339,330)
P23 CISLUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00001)

S-IVB APS MCC-2
GET ~09:30
 ΔV NOM. ZERO

09:30

M
S
F
N

GET= 10 HOURS

FOV=1°

:40



:50

UV PHOTOS

10:00

0924

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	09:00 - 10:00	1/TLC	3-14

FLIGHT PLANNING BRANCH

FLIGHT PLAN

UV PHOTOS - CISLUNAR COAST

V49 MNVR TO EARTH UV PHOTO ATT (335,319,331) (09:55)

OMNI D

CONFIGURE CAMERA: (UV)

CM5/EL/105/UV-BRKT, CONT (f4.3,1/60,∞) (8 FR)

RINGSLIDE

MAG (N) _____, FR # _____

REMOVE R12 FLIGHT DATA FILE STOWAGE BOX

DAMP RATES

INHIBIT ALL JETS EXCEPT A1 & C2 OR B2 & D1,

A4, C3, B4, D3

VERIFY FDAI SCALE - 5/1

WAIT 5 MIN FOR RATES TO DAMP

VERIFY RATES ON FDAI ARE $<0.2^\circ/\text{SEC}$ IN ALL AXES

REMOVE CM5 WINDOW COVER, MOUNT UV CARDBOARD SHADE
AND CAMERA

2 FRAMES, FILTER 1, CHANGE SHUTTER TO B

2 FRAMES, FILTER 2, EXP TIME 20 SEC

CHANGE SHUTTER TO 1/250

2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500

2 FRAMES, FILTER 4

RECORD FR # _____

CONFIGURE CAMERA: (UV COLOR)

CM5/EL/105/CEX- CONT (f8,1/250,∞) (1 FR)

RINGSLIDE

MAG (M) _____, FR # _____

1 FRAME, FILTER 4

RECORD FR # _____

V49 MNVR TO MOON UV PHOTO CAL ATT (169,223,014) (10:20)

HGA P -33, Y 213

CONFIGURE CAMERA: (UV CALIBRATION)

CM5/EL/105/UV-BRKT, CONT (f4.3,1/60,∞) (8 FR)

RINGSLIDE

MAG (N) _____, FR # _____

DAMP RATES

VERIFY FDAI SCALE - 5/1

WAIT 5 MIN FOR RATES TO DAMP

VERIFY RATES ON FDAI ARE $<0.2^\circ/\text{SEC}$ IN ALL AXES

2 FRAMES, FILTER 1, CHANGE SHUTTER TO ~~B~~ 1/15

2 FRAMES, FILTER 2, ~~EXP TIME 20 SEC~~

CHANGE SHUTTER TO ~~1/250~~ 1/60

2 FRAMES, FILTER 3, CHANGE SHUTTER TO ~~1/500~~ 1/250.

2 FRAMES, FILTER 4

RECORD FR # _____

REMOVE CAMERA AND UV CARDBOARD SHADE

COMMENT - CONDITION OF CM5 WINDOW

REPLACE CM5 WINDOW COVER

ENABLE ALL JETS

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FLIGHT PLAN

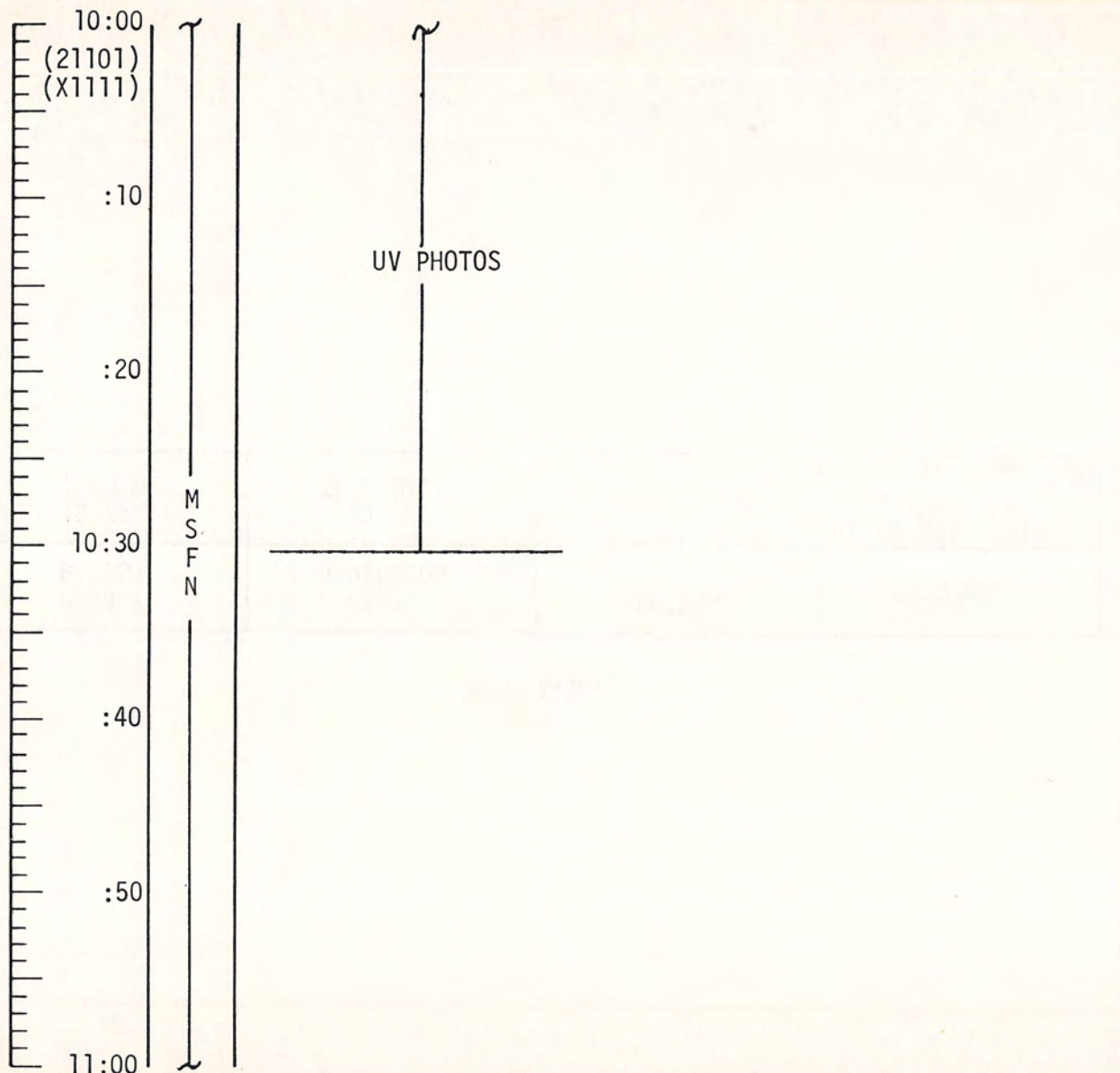
MCC-H

1834 CDT

NOTES

0934

UPDATE TO CSM
MCC-1 MNVR PAD
CSM S.V.
UPLINK TO CSM
CSM S.V. & V66
MCC-1 TGT LOAD



EARTH DISTANCE
~ 51,571 NM

034

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	10:00 - 11:00	1/TLC	3-17

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-1
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±10° TERMINATE	BT + 1 SEC	IF <2 FPS, TRIM X AXIS TO 0.2 FPS IF >2 FPS, NO TRIM

FLIGHT PLAN

NOTES

MCC-H

2034 CDT

1034

12:00
(21101)
(X1111)

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUP

:10

:20

12:30

:40

: 50

13:00

MSFN

REPORT: LM/CM ΔP
VENT BATTERIES UNTIL SYSTEM TEST METER 7A=0
OMNI B
SECURE HGA, HGA TRACK-MAN HGA P -52, Y 270
LiOH CANISTER CHANGE
(3 INTO A, STOW 1 IN B5)

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
V49 MNVR TO PTC ATTITUDE
(N20,090,000)
P20 OPT 2 X-AXIS
N78 (0,0,0)
N79 (-0.3500, 000.50)
N34 (0,0,0)

IF SPS MCC PERFORMED:
PANORAMIC CAMERA PWR - OFF
MAPPING CAMERA ON - OFF
SM SECTOR 1 SM/AC PWR - OFF

PTC

EARTH DISTANCE
~ 57,281 NM

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	12:00 - 13:00	1/TLC	3-20

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

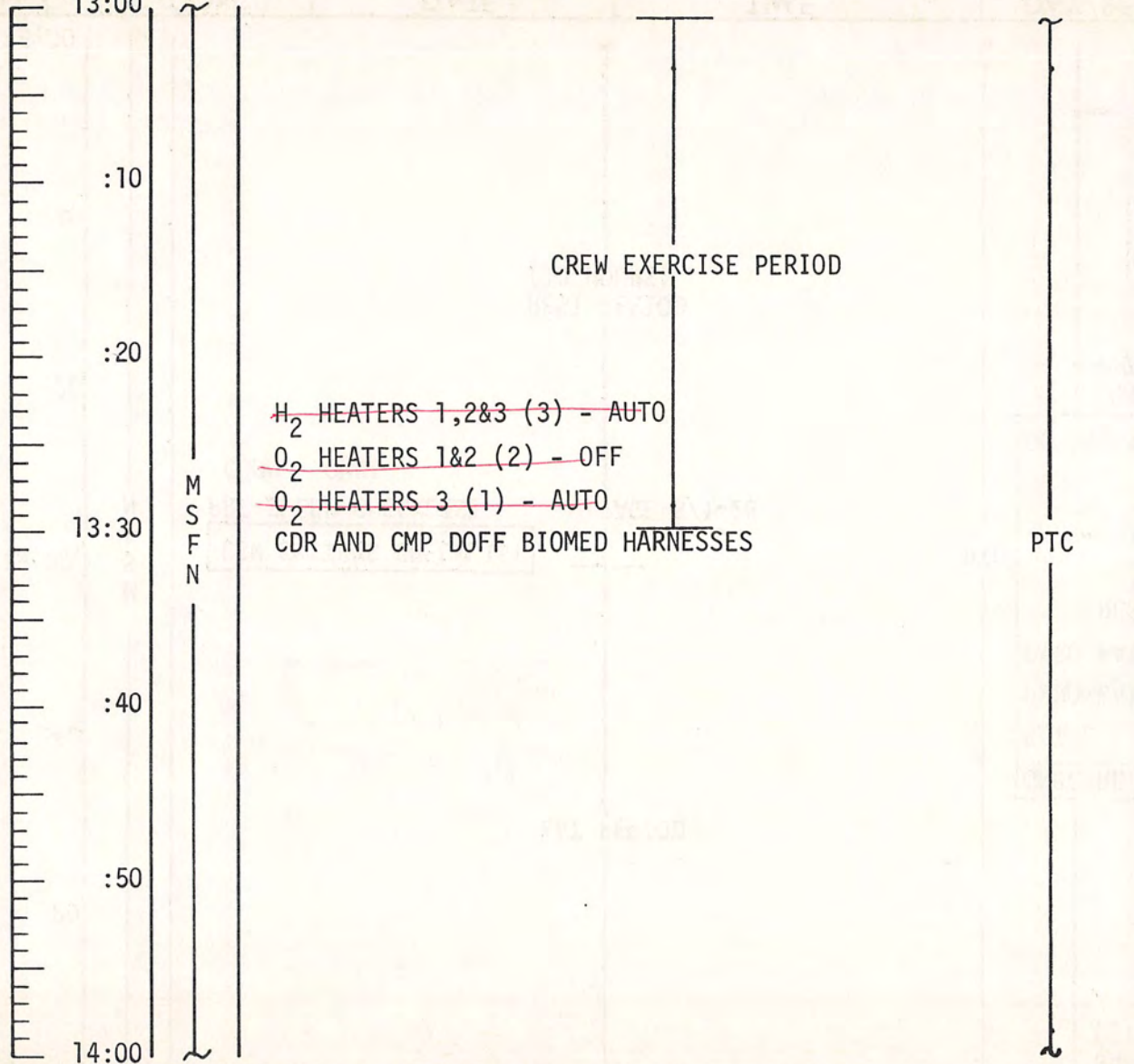
2134 CDT

NOTES

1234

DAP LOAD STATUS
(21101) (X1111)

UPDATE TO CSM
P37 PADS (LAUNCH
+25,35,45, & 60)



1334

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	13:00 - 14:00	1/TLC	3-21

FLIGHT PLANNING BRANCH

B

FLIGHT PLAN

MCC-H

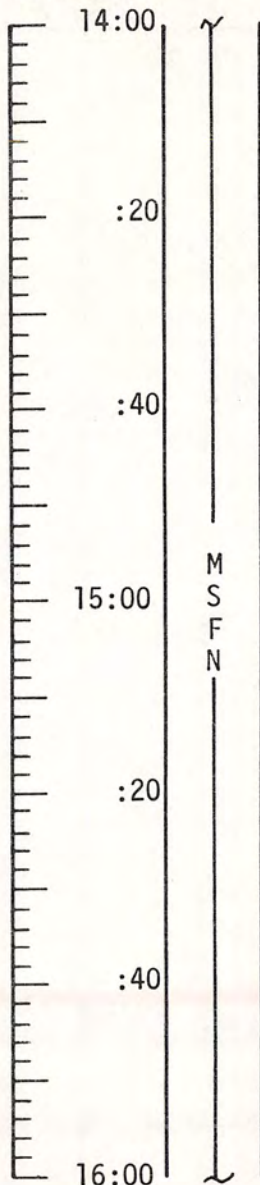
2234 CDT

NOTES

1334

1434

1434



H2 Healer 142(2) auto
H2 fan - 3(1) - Auto
O2 Healer 142(2) auto
O2 " 3(2) - Auto

CSM SYSTEMS CHECKLIST
 PRE-SLEEP CHECKLIST
 COMM - OMNI

EAT PERIOD

PAGE S/1-26

REST PERIOD
 (10 HOURS)

DAP LOAD STATUS
 (21101) (X1111)

ONBOARD READOUT	
BAT C	_____
PYRO BAT A	_____
PYRO BAT B	_____
RCS A	_____
B	_____
C	_____
D	_____
DC IND SEL - MNA OR B	

EARTH DISTANCE
 ~ 70,000 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	14:00 - 16:00	1/TLC	3-22

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

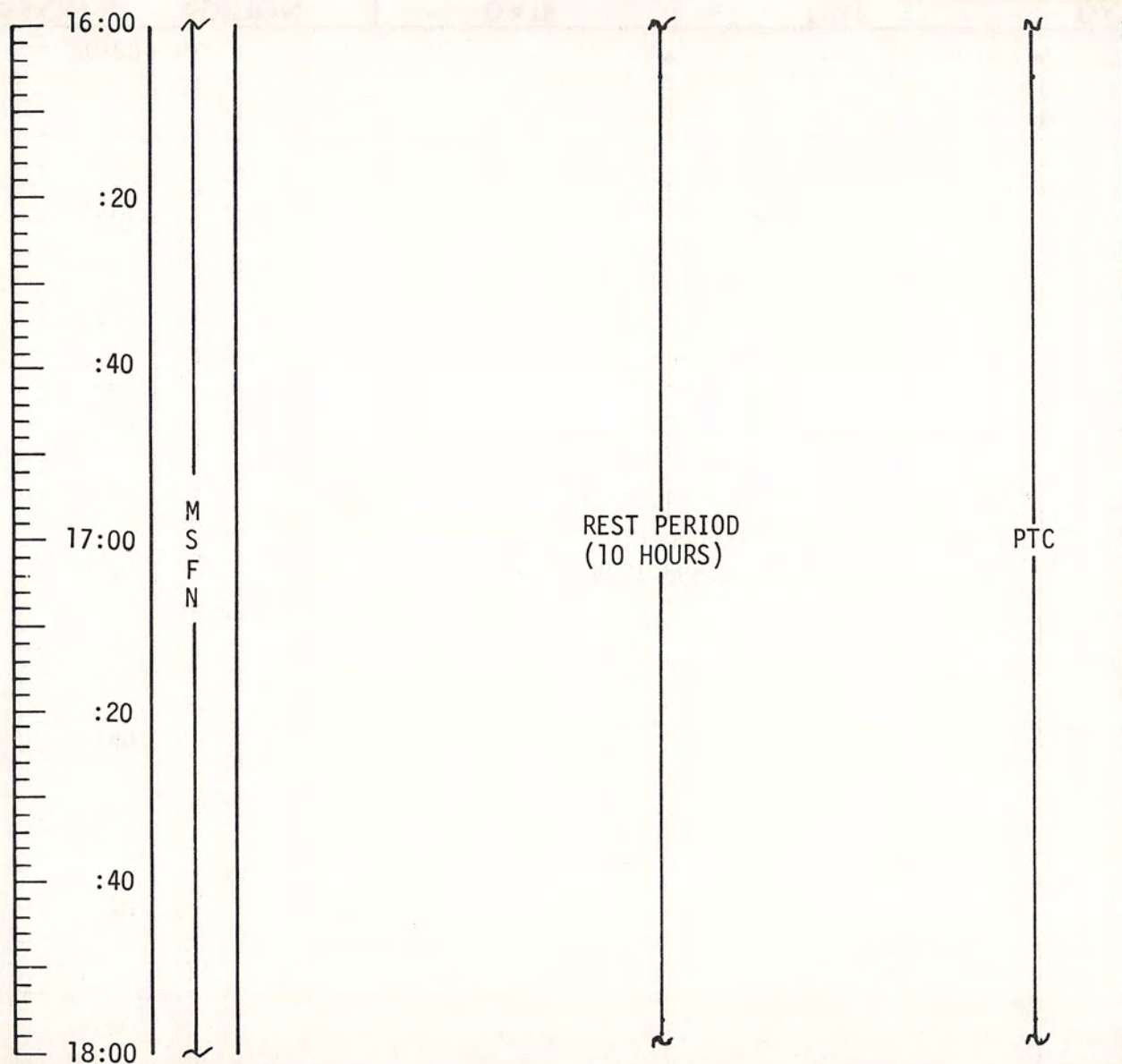
0034 CDT

NOTES

1534

1634

1734



DAP LOAD STATUS
(21101) (X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	16:00 - 18:00	1/TLC	3-23

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0234 CDT

NOTES

1734

18:00

DAP LOAD STATUS
(21101) (X1111)

:20

:40

1834

19:00

M
S
F
N

REST PERIOD
(10 HOURS)

PTC

:20

:40

1934

20:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	18:00 - 20:00	1/TLC	3-24

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0434 CDT

NOTES

1934

2034

2134

20:00
:20
:40
21:00
:20
:40
22:00

M
S
F
N

REST PERIOD
(10 HOURS)

PTC

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	20:00 - 22:00	1/TLC	3-25

FLIGHT PLANNING BRANCH

MCC-H

0634 CDT

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)

22:00

:20

:40

23:00

:20

:40

24:00

M
S
F
NREST PERIOD
(10 HOURS)

PTC

16MM AND 70MM CAMERA MAGAZINES

<u>CAMERA</u>	<u>MAGAZINE</u>	<u>TYPE (DECAL COLOR)</u>	<u>STOWAGE</u>
<u>DAC</u>	H	VHBW (SILVER/BLACK)	A1
<u>EL</u>	M	CEX (BLUE)	B3
	N	UV (RED)	A1

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	22:00 - 24:00	1/TLC	3-26

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

NOTES

MCC-H

0834 CDT

28/3 J.

24:00

:20

:40

25:00

:20

:40

26:00

M
S
F
N

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST
CHARGE BATTERY A
H₂ HEATERS 1&2 (2) - OFF

REST PERIOD
(10 HOURS)

PAGE S/1-26

EAT PERIOD

REPORT: LM/CM ΔP

DAP LOAD STATUS
(21101)(X1111)

CSM CONSUMABLES UPDATE

GET: ____ : ____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____

O₂ TANK 1 _____ 2 _____ 3 _____

PTC

EARTH DISTANCE
~ 105,000 NM

UPDATE TO CSM
CONSUMABLES
FLIGHT PLAN

28/0034

0134

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	24:00 - 26:00	1-2/TLC	3-27

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CYCLE FILM IN PANORAMIC AND MAPPING CAMERAS

ACQ MSFN, HGA: REACQ, NARROW (CUE MSFN FOR PITCH AND YAW)
VERIFY:

cb SCI EQUIP SEB 1 & 2 - CLOSE
NON ESS BUS - MNA
cb SM SECTOR 1 AC2 (3) - CLOSE
MAPPING CAMERA IMAGE MTN - OFF

PCM BIT RATE - HIGH
S-BD AUX TV - SCI
SM SECTOR 1 SM/AC PWR - ON (UP)
DATA SYS ON - ON
MAPPING CAMERA ON - STBY/tb-GRAY
PANORAMIC CAMERA MODE - STBY
PANORAMIC CAMERA POWER - ON (UP)/tb-BP (2 SEC), then GRAY
CONFIRM MSFN HAS TLM, CYCLE FILM ON MSFN CUE

MAPPING CAMERA ON - ON (2 MIN) then OFF
PANORAMIC CAMERA SELF TEST - ON (UP)/tb-BP (5 FR), then GRAY
PANORAMIC CAMERA SELF TEST - OFF (CTR)
PANORAMIC CAMERA POWER - OFF

AFTER MAPPING CAMERA OFF FOR 1 MIN:
SM SECTOR 1 SM/AC PWR - OFF
DATA SYS ON - OFF
OMNI B
SECURE HGA, TRACK MAN HGA P -52, Y 270
S-BD AUX TV - OFF (CTR)
PCM BIT RATE - LOW

FINAL (7/26)

6/21/71

3-28

B.

FLIGHT PLAN

MCC-H

1034 CDT

NOTES

UPDATE TO CSM
HGA ANGLES FOR
FILM CYCLE

26:00

:10

: 20

26:30

:40

:50

27:00

MSFN

LiOH CANISTER CHANGE
(4 INTO B, 2 INTO B5)
CYCLE FILM IN PANORAMIC AND MAPPING CAMERAS

CDR DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS

DAP LOAD STATUS
(21101)(X1111)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	26:00 - 27:00	2/TLC	3-29

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1134 CDT

NOTES

0234

27:00

:10

:20

27:30

:40

:50

28:00

M
S
F
N

PTC

DAP LOAD STATUS
(21101)(X1111)

CSM G&C CHECKLIST

Δ V TEST & NULL BIAS CHECK
REPORT: BIAS

PAGE G/2-5

0334

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	27:00 - 28:00	2/TLC	3-30

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1234 CDT

NOTES

0334

28:00

:10

:20

28:30

:40

:50

29:00

M
S
F
N

SIM ACTY
FILM/CYCLES

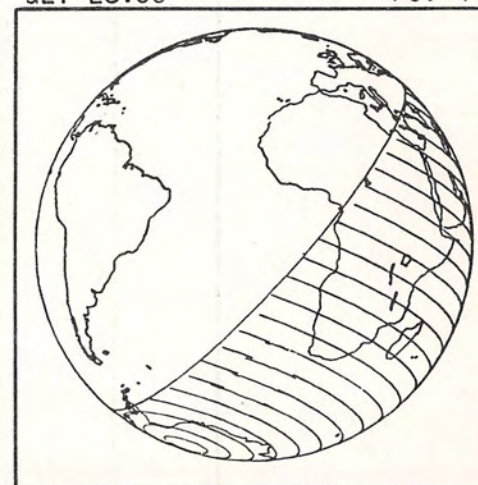
CREW EXERCISE PERIOD

DAP LOAD STATUS
(21101)(X1111)

PTC

GET 28:00

FOV 4°



0434

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	28:00 - 29:00	2/TLC	3-31

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1334 CDT

NOTES

0434

29:00

:10

:20

29:30

:40

:50

30:00

M
S
F
N

PTC

DAP LOAD STATUS
(21101)(X1111)

UPLINK TO CSM
CSM S.V. & V66
MCC-2 TGT LOAD

UPDATE TO CSM
GO/NO-GO MCC-2
MCC-2 MNVR PAD

EARTH DISTANCE
~ 118,447 NM

0534

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	29:00 - 30:00	2/TLC	3-32

FLIGHT PLANNING BRANCH

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FLIGHT PLAN

MCC-2
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±10° TERMINATE	BT + 1 SEC	IF < 2 FPS, TRIM X AXIS TO 0.2 FPS IF > 2 FPS, NO TRIM

FLIGHT PLAN

MCC-H

0534

1434 CDT

NOTES

DAP LOAD STATUS
(21101)(X1111)

P52 IMU REALIGN

N71: _____,

N05: _____.

N93: _____.

X _____.

Y _____.

Z _____.

GET _____:_____:

PTC

TIG: 30:55:54
BT: NOM ZERO
 Δ VT: NOM ZERO
ULLAGE: NONE
ORBIT: N/A

P52 IMU REALIGN
OPTION 3 REFSMMAT
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES

TERMINATE BATTERY CHARGE A IF MCC-2 REQUIRED

H₂ PURGE LINE HEATERS - ON

EXIT G&N PTC PAGE G/8-3

P30 EXTERNAL Δ V

V49 MNVR TO PAD BURN ATTITUDE

IF SPS MCC REQD:

SM SECTOR 1 SM/AC PWR - ON (UP)

PANORAMIC CAMERA PWR - BOOST

MAPPING CAMERA IMAGE MTN - OFF (VERIFY)

MAPPING CAMERA ON - STBY

SXT STAR CHECK

P40 SPS THRUSTING OR P41 RCS THRUSTING

H₂ & O₂ FUEL CELL PURGE

WASTE WATER DUMP

H₂ PURGE LINE HEATERS - OFF

MCC-2

V66 SET CSM S.V. INTO LM S.V.

M
S
F
N

30:00

:10

:20

(21101)

(X1111)

30:30

:40

:50

31:00

TLI CUTOFF +28 HR

0634

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	30:00 - 31:00	2/TLC	3-35

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1534 CDT

NOTES

0634

31:00
(21101)
(X1111)

BURN STATUS REPORT
CHARGE BATTERY A
IF SPS MCC PERFORMED:
PANORAMIC CAMERA PWR - OFF
MAPPING CAMERA ON - OFF
SM SECTOR 1 SM/AC PWR - OFF

:10

:20

31:30

M
S
F
N

EAT PERIOD

:40

:50

0734

32:00

IF LM/CM $\Delta P < 2.7$ PSID, TUNNEL VENT VLV - VENT
UNTIL $\Delta P \geq 2.7$ PSID

BURN STATUS REPORT					
X	X			•	ΔTIG
X	X			•	BT
				•	V _{gx}
TRIM					
X	X	X			R
X	X	X			P
X	X	X			Y
				•	V _{gx}
				•	V _{gy}
				•	V _{gz}
				•	ΔV _c
X	X	X			FUEL
X	X	X			OX
X	X	X			UNBAL

EARTH DISTANCE
~ 123,808 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	31:00 - 32:00	2/TLC	3-36

FLIGHT PLANNING BRANCH

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FLIGHT PLAN

SXT PHOTO TEST

1. V49 MNVR TO SXT PHOTO TEST ATT (32:15)
(040,012,050) HGA P -38, Y 318
2. CONFIGURE CAMERA
CM/DAC/SXT/VHBW-PCM CABLE (EXP 1/500) 24 fps (5% MAG)
MAG (H) _____, MAG % _____
UTILITY POWER - ON
3. DISABLE JETS A3, B3, C4, D4
P52 (NO MARKS)
N70 (00000)
N88 (+78675)(+47868)(+38950)
VERIFY THRU SXT THAT OPTICS BORESIGHTED ON STAR
G&N PWR (AC-PNL 5) - OFF
MOUNT DAC ON SXT
DIM INTERIOR LIGHTS, DAC - ON, 24 fps FOR 2 SEC
CHANGE TO TIME & 1/60
1 FRAME - 60 SEC EXP TIME
1 FRAME - 20 SEC EXP TIME
1 FRAME - 5 SEC EXP TIME
1 FRAME - 1 SEC EXP TIME
CHANGE TO 24 fps & 1/500 SEC
RUN DAC FOR 2 SEC, LIGHTS UP
ENABLE JETS
4. V49 MNVR TO SXT PHOTO TEST ATT (32:25)
(090,000,043) HGA P -47, Y 353
5. REPEAT STEP 3
6. RECORD MAG %
REMOVE AND STOW DAC

FINAL (7/26)

6/21/71

UV PHOTOS - CISLUNAR COAST

V49 MNVR TO EARTH UV PHOTO ATT (150,052,033) (32:50)
OMNI D

CONFIGURE CAMERA: (UV)
CM5/EL/105/UV-BRKT, CONT (f8,1/60,∞) (8 FR)
RINGSLIDE
MAG (N) _____, FR # _____
REMOVE R12 FLIGHT DATA FILE STOWAGE BOX

DAMP RATES

INHIBIT ALL JETS EXCEPT A1 & C2 OR B2 & D1, A4,
C3, B4, D3
VERIFY FDAI SCALE - 5/1
WAIT 5 MIN FOR RATES TO DAMP
VERIFY RATES ON FDAI ARE <0.2°/SEC IN ALL AXES
REMOVE CM5 WINDOW COVER, MOUNT UV CARDBOARD SHADE
AND CAMERA
2 FRAMES, FILTER 1, CHANGE SHUTTER TO B
2 FRAMES, FILTER 2, EXP TIME 20 SEC
CHANGE SHUTTER TO 1/250
2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500
2 FRAMES, FILTER 4
RECORD FR # _____

CONFIGURE CAMERA (UV COLOUR).
CM5/EL/105/CEX- CONT (f8,1/250,∞) (1 FR)
RINGSLIDE
MAG (M) _____, FR # _____
1 FRAME, FILTER 4
RECORD FR # _____
REMOVE CAMERA AND UV CARDBOARD SHADE
COMMENT - CONDITION OF CM5 WINDOW
REPLACE CM5 WINDOW COVER
ENABLE ALL JETS

3-38

FLIGHT PLAN

MCC-H

1634 CDT

NOTES

DSE RECORD/HBR

0734

32:00

(21101)

(X1111)

:10

SXT PHOTO TEST

:20

DSE STOP/LBR

32:30

M
S
F
N

:40

UV PHOTOS

:50

33:00

0834

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	32:00 - 33:00	2/TLC	3-39

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

1734 CDT

FLIGHT PLAN

NOTES

33:00

(21111)

(X1111)

V48 (21111)(X1111)

PREPARE TRANSFER ITEMS PER CSM TO LM TRANSFER LIST &
LM ACTIVATION CHECKLIST

CSM SYSTEMS CHECKLIST

IVT TO LM (CHECKOUT TLC)
PAGE S/2-1

CSM TO LM TRANSFER LIST (TLC)

CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG	TEMP STOW
ICG	SCISSORS (1)	DATA FILE
CCU CABLE	CWG ELECT. ADAPT. (2)	LHSSC
TSB	COMM CARR (2)	ON CREW
R5	UTIL. STRAPS (3)	LHSSC
R5	RETAINER STRAPS (4)	LHSSC
R13	70MM MAG (3) (MM,VV,WW)	FWD. RHSSC
R13	70MM MAG (4) (KK,LL,NN,OO)	AFT. RHSSC
R13	70MM MAG (3) (PP,QQ,RR)	BEHIND ENGINE COVER
A8	70MM MAG (3) (SS,TT,UU)	BEHIND ENGINE COVER
R13	16MM MAG (6) (CC-HH)	RHSSC
R13	16MM MAG (2) (II,JJ)	BEHIND ENGINE COVER
R13	16MM MAG (2) (AA,BB)	AA-RH WIND SEQ. CAM
		BB-ISA TOP POCKET
R3	(LM DATA KIT) LM ACTIVATION CHECKLT (2)	DATA FILE

:10

:20

33:30

M
S
F
NV49 MNVR TO TV/LM
CHECKOUT ATT (33:45)
(305,090,000)
HGA P -30, Y 276PRESSURIZE LM
PAGE S/2-3

:40

:50

T
I
V

TV (GDS) 33:45 TO 34:30 CM/TV - AVG (f5.6)

PREPARE FOR LM INGRESS
REMOVE TUNNEL HATCH AND STOW
REMOVE PROBE & DROGUE AND STOW

34:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	33:00 - 34:00	2/TLC	3-40

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM

LM

MCC-H

CMP

REPORT: DOCKING
TUNNEL INDEX ANGLE

1834 CDT

34:00
(21111)
(X1111)

:10

:20

34:30

:40

:50

35:00

M
S
F
N

CDR

LMP

ACTIVATION CHECKLIST

PAGE 1-1

IVT TO LM

ENTRY STATUS CHECK

IVT TO LM

HOUSEKEEPING

HOUSEKEEPING

Dump DSC

UPDATE TO CSM
LOI -5 HR FLYBY

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) <i>B</i>	6/21/71	34:00 - 35:00	2/TLC	3-41

1010

0934

FLIGHT PLAN

CSM

LM

MCC-H

CMP

CDR

LMP

1934 CDT

35:00
(21111)
(X1111)

:10

:20

35:30

:40

:50

36:00

M
S
F
N

HOUSEKEEPING

HOUSEKEEPING

COMM ACTIVATION

COMM ACTIVATION

S-BAND/VHF SIMPLEX
VOICE TEST

OPS CHECKOUT

OPS CHECKOUT

COMM DEACTIVATION

COMM DEACTIVATION

CSM POWER TO LM-OFF
(AT LMP REQUEST)
GET (__:__:__)

CSM POWER TO LM - ON
(AT LMP REQUEST)
GET (__:__:__)

1034

1134

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 1	FINAL (7/26)	6/21/71	35:00 - 36:00		3-

FLIGHT PLAN

MCC-H

2034 CDT

NOTES

1134

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUP

36:00
(21111)
(X1111)
:10
(21101)
(X1111)
:20
36:30
:40
:50
37:00

M
S
F
N

LMP & CDR IVT TO CSM & CLOSE LM HATCH
INSTALL PROBE, DROGUE AND CM HATCH

LM TUNNEL VENT VALVE - LM/CM ΔP
CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)
OMNI B

SECURE HGA, TRACK - MAN HGA P -52, Y 270

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2

V49 MNVR TO PTC ATTITUDE
(N20,090,000)

P20 OPT 2 X-AXIS

N78 (0,0,0)

N79 (-0.3500,000.50)

N34 (0,0,0)

DAP LOAD STATUS
(21101)(X1111)

PTC

LM 40 CM TRANSFER LIST (TLC)

1234

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	36:00 - 37:00	2/TLC	3-43

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2134 CDT

NOTES

1234

37:00

:10

:20

37:30

:40

:50

38:00

M
S
F
N

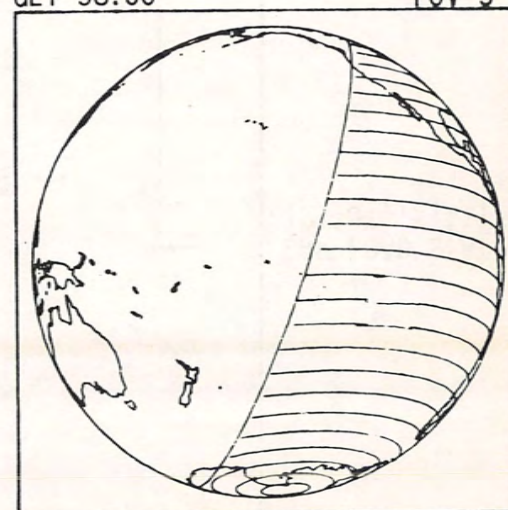
CMP DON BIOMED HARNESS
CDR DOFF BIOMED HARNESS

CREW EXERCISE PERIOD

DAP LOAD STATUS
(21101)(X1111)

PTC
GET 38:00

FOV 3°



1334

LiOH CANISTER CHANGE
(5 INTO A, 3 INTO B5)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	37:00 - 38:00	2/TLC	3-44

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2234 CDT

NOTES

DAP LOAD STATUS
(21101)(X1111)

ONBOARD READOUT

BAT C _____

PYRO BAT A _____

PYRO BAT B _____

RCS A _____

B _____

C _____

D _____

DC IND SEL - MNA OR B

38:00

:20

:40

39:00

:20

:40

40:00

M
S
F
N

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST
COMM-OMNI

EAT PERIOD

PAGE S/1-26

REST PERIOD
(9 HOURS)

PTC

EARTH DISTANCE
~ 141,176 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	38:00 - 40:00	2/TLC	3-45

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0034 CDT

NOTES

1534

16

17 1534

40:00
:20
:40
41:00
:20
:40
42:00

M
S
F
N

REST PERIOD
(9 HOURS)

PTC

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	40:00 - 42:00	2/TLC	3-46

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0234 CDT

NOTES

~~1534~~
17

DAP LOAD STATUS
(21101)(X1111)

18

42:00
:20
:40
43:00
:20
:40
44:00

M
S
F
N

REST PERIOD
(9 HOURS)

PTC

~~1634~~
19

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	42:00 - 44:00	2/TLC	3-47

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0434 CDT

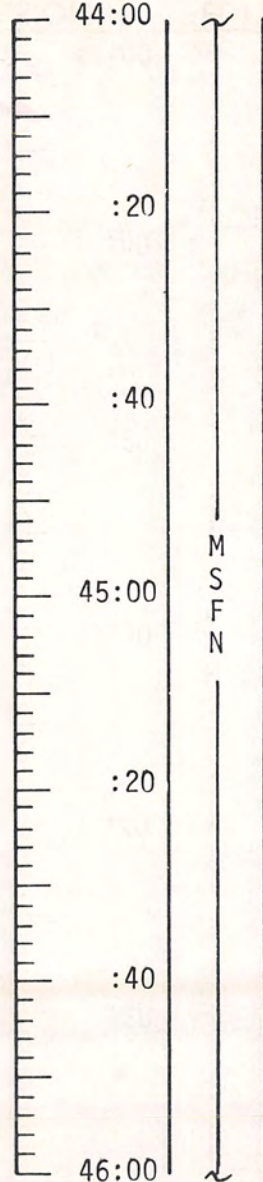
NOTES

1654
19

DAP LOAD STATUS
(21101)(X1111)

20

21
1754



REST PERIOD
(9 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	44:00 - 46:00	2/TLC	3-48

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0634 CDT

NOTES

DAP LOAD STATUS
(21101)(X1111)

46:00
:20
:40
47:00
:20
:40
48:00

M
S
F
N

REST PERIOD
(9 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	46:00 - 48:00	2/TLC	3-49

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0834 CDT

NOTES

UPDATE TO CSM
CONSUMABLES
FLIGHT PLAN

~~1834~~
~~2334~~

0034

0134
~~149~~

48:00
:20
:40
49:00
:20
:40
50:00

M
S
F
N

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST

PAGE S/1-26

EAT PERIOD

LMP DON BIOMED HARNESS
CMP DOFF BIOMED HARNESS

CHARGE BATTERY B

DAP LOAD STATUS
(21101)(X1111)

CSM CONSUMABLES UPDATE

GET: ____:____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____

O₂ TANK 1 _____ 2 _____ 3 _____

PTC

EARTH DISTANCE
~ 162,962 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	48:00 - 50:00	3/TLC	3-50

FLIGHT PLANNING BRANCH

MCC-H

1034 CDT

FLIGHT PLAN

NOTES

0134

50:00

:10

:20

50:30

:40

:50

51:00

M
S
F
NVISUAL LIGHT FLASH PHENOMENON EXPERIMENT

SET KITCHEN TIMER TO 60 MIN

ALL CREWMEN DON EYESHIELDS

REPORT: DON EYESHIELDS (GET __:__:__)

FLASH FREQUENCYFLASH DESCRIPTIONCREW POSITION W.R.T. X, Y, AND Z AXESAND LOCATION IN CMDAP LOAD STATUS
(21101)(X1111)DURING THE ENTIRE
TEST PERIOD, ALL
CREWMEN WILL FACE
THE DIRECTION OF THE
+X AXIS.

PTC

70MM CAMERA MAGAZINES

<u>CAMERA</u>	<u>MAGAZINE</u>	<u>TYPE (DECAL COLOR)</u>	<u>STOWAGE</u>
<u>EL</u>	M	CEX (BLUE)	B3
	N	UV (RED)	A1

0234

REPORT: DOFF EYESHIELDS (GET __:__:__)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	50:00 - 51:00	3/TLC	3-51

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1134 CDT

NOTES

02

51:00
:10
:20
51:30
:40
:50
52:00

M
S
F
N

LiOH CANISTER CHANGE
(6 INTO B, 4 INTO B5)

PTC

DAP LOAD STATUS
(21101)(X1111)

03

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	51:00 - 52:00	3/TLC	3-52

FLIGHT PLANNING BRANCH

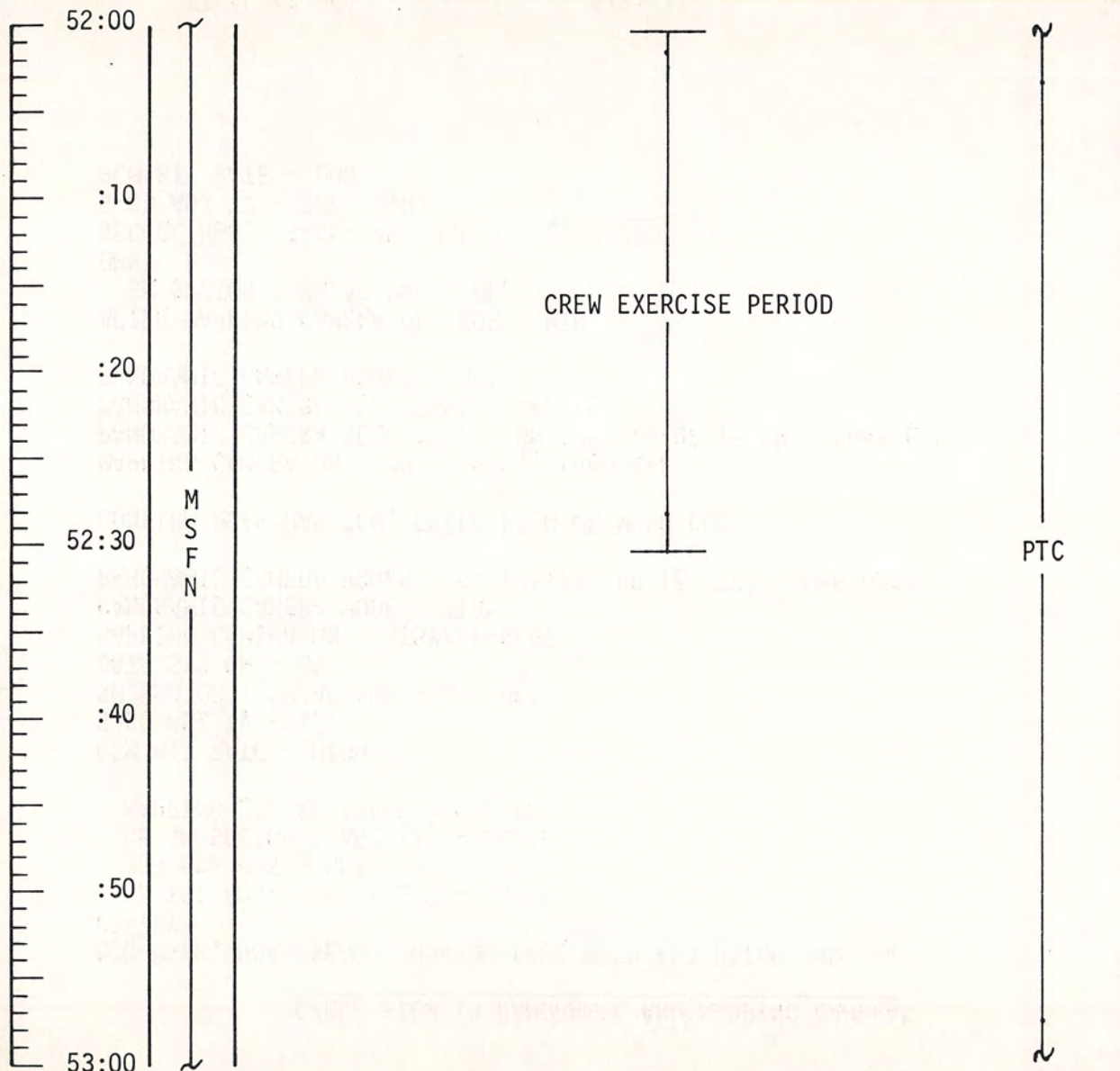
FLIGHT PLAN

MCC-H

1234 CDT

NOTES

03



DAP LOAD STATUS
(21101)(X1111)

04

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	52:00 - 53:00	3/TLC	3-53

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CYCLE FILM IN PANORAMIC AND MAPPING CAMERAS

(AT 55:20 HRS)

ACQ MSFN, HGA: REACQ, NARROW (CUE MSFN FOR PITCH AND YAW)

VERIFY:

cb SCI EQUIP SEB 1 & 2 - CLOSE

NON ESS BUS - MNA

cb SM SECTOR 1 AC2 (3) - CLOSE

MAPPING CAMERA IMAGE MTN - OFF

PCM BIT RATE - HIGH

S-BD AUX TV - SCI

SM SECTOR 1 SM/AC PWR - ON (UP)

DATA SYS ON - ON

MAPPING CAMERA ON - STBY/tb-GRAY

PANORAMIC CAMERA MODE - STBY

PANORAMIC CAMERA POWER - ON (UP)/tb-BP (2 SEC), then GRAY

CONFIRM MSFN HAS TLM, CYCLE FILM ON MSFN CUE

MAPPING CAMERA ON - ON (2 MIN), then OFF

PANORAMIC CAMERA SELF TEST - ON (UP)/tb-BP (5 FR), then GRAY

PANORAMIC CAMERA SELF TEST - ~~OFF (CTR)~~ *H-TARS*

PANORAMIC CAMERA POWER - OFF

AFTER MAPPING CAMERA OFF FOR 1 MIN:

SM SECTOR 1 SM/AC PWR - OFF

OMNI B

SECURE HGA, TRACK-MAN HGA P -52, Y 270

S-BD AUX TV - OFF (CTR)

PCM BIT RATE - LOW

B
FINAL (7/26)

6/21/71

3-54

FLIGHT PLAN

MCC-H

1334 CDT

NOTES

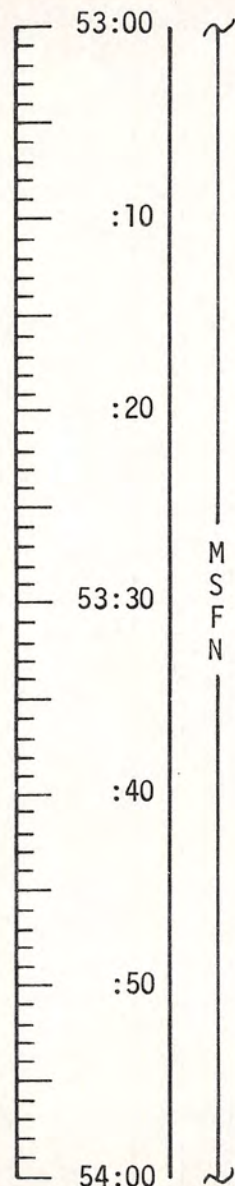
UPLINK TO CSM
LIFT-OFF TIME
(IF REQUIRED)

04

UPDATE TO CSM
T EPHEM
(IF REQUIRED)

UPDATE TO CSM
HGA ANGLES FOR
FILM CYCLE

05



SYNCHRONIZE MISSION TIMER TO CMC CLOCK (IF REQUIRED)
V05N01E, 1706E

DAP LOAD STATUS
(21101)(X1111)

T EPHEM UPDATE

OID

LOAD B

03

04

05

PTC

LIFT-OFF TIME WILL
BE UPDATED IF THE
TIME PROPAGATED
AHEAD TO START OF
REV 2 DIFFERS FROM
80:40:37.6 BY MORE
THAN 1 MIN

CSM G&C CHECKLIST

ΔV TEST & NULL BIAS CHECK
REPORT: BIAS

PAGE G/2-5

~~CYCLE FILM IN PANORAMIC AND MAPPING CAMERAS~~

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	53:00 - 54:00	3/TLC	3-55

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1434 CDT

NOTES

DAP LOAD STATUS
(21101)(X1111)

EARTH DISTANCE
~ 173,355 NM

54:00
:10
:20
54:30
:40
:50
55:00

M
S
F
N

EAT PERIOD

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	54:00 - 55:00	3/TLC	3-56

FLIGHT PLANNING BRANCH

FLIGHT PLAN

UV PHOTOS - CISLUNAR COAST

V49 MNVR TO EARTH UV PHOTO ATT (153,050,030) (55:35)
OMNI D

CONFIGURE CAMERA: (UV)
CM5/EL/105/UV-BRKT, CONT (f4.3,1/60, ∞) (8 FR)
RINGSLIDE
MAG (N) , FR #
REMOVE RT2 FLIGHT DATA FILE STOWAGE BOX

DAMP RATES
INHIBIT ALL JETS EXCEPT A1 & C2 OR B2 & D1, A4, C3, B4, D3
VERIFY FDAI SCALE - 5/1
WAIT 5 MIN FOR RATES TO DAMP
VERIFY RATES ON FDAI ARE $<0.2^\circ/\text{SEC}$ IN ALL AXES

REMOVE CM5 WINDOW COVER, MOUNT UV CARDBOARD SHADE AND CAMERA
2 FRAMES, FILTER 1, CHANGE SHUTTER TO B
2 FRAMES, FILTER 2, EXP TIME 20 SEC
CHANGE SHUTTER TO 1/250
2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500
2 FRAMES, FILTER 4
RECORD FR #

CONFIGURE CAMERA
CM5/EL/105/CEX-CONT (f8,1/250, ∞) (1 FR)
RINGSLIDE
MAG (M) , FR #
1 FRAME, FILTER 4
RECORD FR #

REMOVE CAMERA AND UV CARDBOARD SHADE
COMMENT - CONDITION OF CM5 WINDOW
REPLACE CM5 WINDOW COVER
ENABLE ALL JETS

FLIGHT PLAN

MAPPING CAMERA TO STBY MODE

cb SCI EQUIP SEB 1 & 2 - CLOSE (VERIFY)
NON ESS BUS - MNA (VERIFY)
SM SECTOR 1 SM/AC PWR - ON (UP)
MAPPING CAMERA IMAGE MTN - OFF (VERIFY)
MAPPING CAMERA ON - STBY

PANORAMIC CAMERA TO HTRS MODE

cb SCI EQUIP SEB 1 & 2 - CLOSE (VERIFY)
NON ESS BUS - MNA (VERIFY)
cb SM SECTOR 1 SM/AC2 (3) - CLOSE (VERIFY)
SM SECTOR 1 SM/AC PWR - ON (UP)
PANORAMIC CAMERA POWER - OFF (VERIFY)
PANORAMIC CAMERA MODE - STBY
PANORAMIC CAMERA SELF TEST - HTRS

FLIGHT PLAN

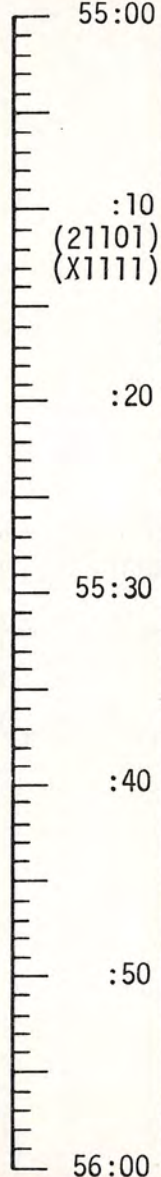
MCC-H

1534 CDT

NOTES

06

UPLINK TO CSM
CSM S.V. & V66
MCC-3 TGT LOAD
UPDATE TO CSM
GO/NO-GO FOR MCC-3
MCC-3 MNVR PAD



P52 IMU REALIGN
OPTION 3 REFSMMAT
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES
EXIT G&N PTC PAGE G/8-3

MAPPING CAMERA TO STBY MODE
PANORAMIC CAMERA TO HTRS MODE

*CYCLE FILM IN
PAN & map cams.*

M
S
F
N

UV PHOTOS

P30 EXTERNAL ΔV
V49 MNVR TO PAD BURN ATT

PTC

DAP LOAD STATUS
(21101)(X1111)

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____ : _____ : _____

GET 56 HOURS

FOV 3°



07

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	55:00 - 56:00	3/TLC	3-59

FLIGHT PLANNING BRANCH

B

FLIGHT PLAN

MCC-3
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±10° TERMINATE	BT + 1 SEC	IF <2 FPS, TRIM X AXIS TO 0.2 FPS IF >2 FPS, NO TRIM

FLIGHT PLAN

MCC-H

1634 CDT

NOTES

MCC-3 WILL BE
DELAYED TO MCC-4
IF PROPELLANT
COST IS NOT
PROHIBITIVE

EARTH DISTANCE
~ 177,000 NM

56:00

(21101)
(X1111)

:10

:20

56 : 30

:40

:50

57:00

MSFN

IF SPS MCC REQD:

SM SECTOR 1 SM/AC PWR - ON (UP) (VERIFY)

PANORAMIC CAMERA PWR - BOOST

MAPPING CAMERA IMAGE MTN - OFF (VERIFY)

MAPPING CAMERA ON - STBY (VERIFY)

SXT STAR CHECK

P40 SPS THRUSTING OR P41 RCS THRUSTING

0₂ FUEL CELL PURGE

WASTE WATER DUMP

TIG: 56:31:14.7

BT: NOM ZERO

ΔVT : NOM ZERO

ULLAGE: NONE

ORBIT: N/A

V66 SET CSM S.V. INTO LM S.V.
BURN STATUS REPORT

IF SPS MCC PERFORMED:

PANORAMIC CAMERA PWR - OFF

BURN STATUS REPORT

X	X		•	ΔTIG
X	X		•	
			•	
				BT
				V _{gx}

TRIM

X	X	X				R
X	X	X				P
X	X	X				Y
						V_{gx}
						V_{gy}
						V_{gz}
						ΔV_c
X	X	X				FUEL
X	X	X				OX
X	X	X				UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	56:00 - 57:00	3/TLC	3-61

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1734 CDT

NOTES

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUP

OS

57:00
:10
:20
57:30
:40
:50
58:00

M
S
F
N

CSM G&C CHECKLIST

PASSIVE THERMAL CONTRL (G&N)

PAGE G/8-2

V49 MNVR TO PTC ATTITUDE

(N20,090,000)

P20 OPT 2 X-AXIS

N78 (0,0,0)

N79 (-0.3500,000.50)

N34 (0,0,0)

CSM SYSTEMS CHECKLIST

IVT TO LM (CHECKOUT TLC)

PAGE S/2-1

START AT COUCH CONFIGURATION

IVT

PTC

PREPARE FOR LM INGRESS
REMOVE TUNNEL HATCH AND STOW
REMOVE PROBE & DROGUE AND STOW

DAP LOAD STATUS
(21101)(X1111)

09

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	57:00 - 58:00	3/TLC	3-62

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1834 CDT

NOTES

09

58:00
:10
:20
58:30
:40
:50
59:00

M
S
F
N

LMP & CDR IVT TO LM

PAGE S/2-1

DAP LOAD STATUS
(21101)(X1111)

PTC

LM HOUSEKEEPING & INSPECTION

10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	58:00 - 59:00	3/TLC	3-63

FLIGHT PLANNING BRANCH

MCC-H

1934 CDT

FLIGHT PLAN

NOTES

DAP LOAD STATUS
(21101)(X1111)

59:00
:10
:20
59:30
:40
:50
60:00

M
S
F
N

LM HOUSEKEEPING & INSPECTION

PTC

LMP & CDR IVT TO CSM & CLOSE LM HATCH
INSTALL PROBE, DROGUE AND CM HATCH
LM TUNNEL VENT VALVE - LM/CM ΔP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	59:00 - 60:00	3/TLC	3-64

FLIGHT PLANNING BRANCH

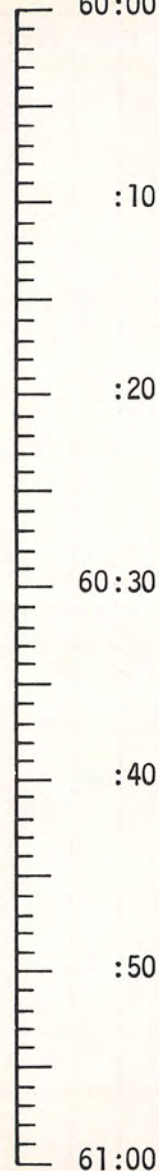
FLIGHT PLAN

MCC-H

2034 CDT

NOTES

UPDATE TO CSM
HGA ANGLES FOR
CAM TEMP MONITOR
MCC-H MONITOR
DATA SYSTEM
FOR CAMERA LENS
TEMPERATURES



- S-BD AUX TV-SCI
PANORAMIC CAMERA POWER - ON (FOR 5 MIN)/OFF
CDR DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS
- S-BD AUX TV-OFF (OTR)

CREW EXERCISE PERIOD

MSFN

S-170 BISTATIC RADAR FREQUENCY CHECK
VHF AM B - DUPLEX
VHF RANGING - ON
VHF ANT - LEFT (VERIFY)
NOTE: MSFN WILL TURN OFF
S-BAND UPLINK FOR
APPROXIMATELY 5 MIN
WHILE S-BAND DOWNLINK
FREQUENCY IS MEASURED

ON GROUND CUE:
VHF AM B - OFF
VHF RANGING - OFF

PTC

DAP LOAD STATUS
(21101)(X1111)

12

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	60:00 - 61:00	3/TLC	3-65

FLIGHT PLANNING BRANCH

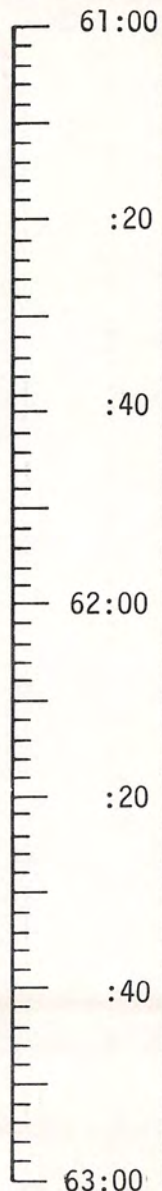
FLIGHT PLAN

MCC-H

2134 CDT

NOTES

12



M
S
F
N

LiOH CANISTER CHANGE
(7 INTO A, 5 INTO B6)

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST
COMM-OMNI

EAT PERIOD

PAGE S/1-26

REST PERIOD
(8 HOURS)

PTC

DAP LOAD STATUS
(21101)(X1111)

ONBOARD READOUT

BAT C

PYRO BAT A

PYRO BAT B

RCS A

B

C

D

DC IND SEL - MNA OR B

EARTH DISTANCE
~ 187,336 NM

13

14

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	61:00 - 63:00	3/TLC	3-66

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2334 CDT

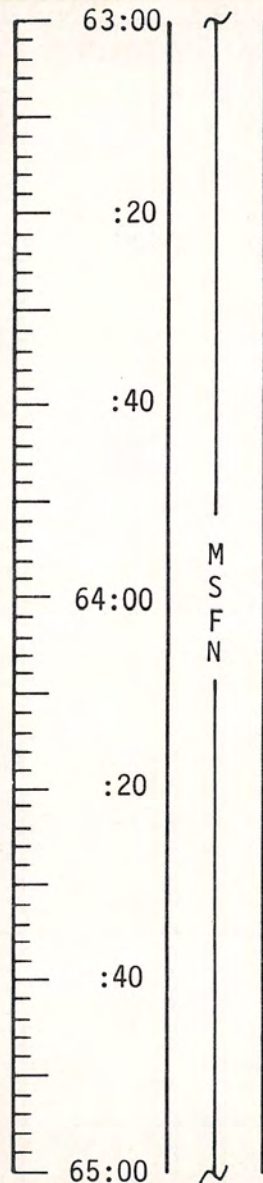
NOTES

DAP LOAD STATUS
(21101)(X1111)

14

15

16



REST PERIOD
(8 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	63:00 - 65:00	3/TLC	3-67

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0134 CDT

NOTES

65:00

:20

:40

66:00

:20

:40

67:00

M
S
F
N

REST PERIOD
(8 HOURS)

PTC

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	65:00 - 67:00	3/TLC	3-68

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0334 CDT

NOTES

67:00

:20

:40

68:00

:20

:40

69:00

M
S
F
N

REST PERIOD
(8 HOURS)

PTC

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	67:00 - 69:00	3/TLC	3-69

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0534 CDT.

NOTES

20

21

UPDATE TO CSM
FLIGHT PLAN
CONSUMABLES

69:00
:20
:40
70:00
:20
:40
71:00

M
S
F
N

CSM SYSTEMS CHECKLIST
POST-SLEEP CHECKLIST

PAGE S/1-26

REST PERIOD
(8 HOURS)

EAT PERIOD

PTC

DAP LOAD STATUS
(21101)(X1111)

CSM CONSUMABLES UPDATE

GET: ____ : ____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____

O₂ TANK 1 _____ 2 _____ 3 _____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	69:00 - 71:00	3-4/TLC	3-70

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0734 CDT

NOTES

DAP LOAD STATUS
(21101)(X1111)

CSM G&C CHECKLIST

ΔV TEST & NULL BIAS CHECK
REPORT: BIAS

PAGE G/2-5

CSM SYSTEMS CHECKLIST

CM/LM PRESSURE EQUALIZATION (DECAL)

PAGE S/2-3

CMP DON BIOMED HARNESS
CDR DOFF BIOMED HARNESS

DON PGA'S WITHOUT HELMETS AND GLOVES

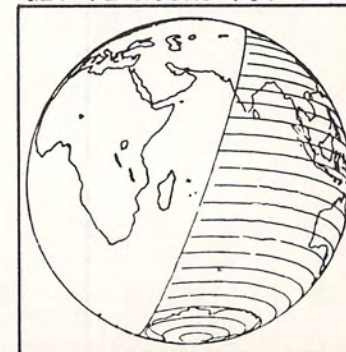
M
S
F
N

PTC

16MM AND 70MM CAMERA MAGAZINES

CAMERA	MAGAZINE	TYPE (DECAL COLOR)	STOWAGE
DAC	E	CEX (BLUE)	A1
EL	M	CEX (BLUE)	B3
	R	VHBW (SILVER/BLACK)	A1

GET 72 HOURS FOV 3°



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	71:00 - 72:00	4/TLC	3-71

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0834 CDT

NOTES

~~0034~~
2334

UPDATE TO CSM
MCC-4 MNVR PAD
PERICYNTHION +2 HR
ABORT PAD
UPLINK TO CSM
CSM S.V. & V66
MCC-4 TGT LOAD

72:00
:10
:20
72:30
:40
:50
73:00

M
S
F
N

CONFIGURE CAMERA FOR SIM DOOR JETT PHOTOS
CM5/DAC/75/CEX (f8,1/250,100) 12 fps (5% MAG)

MAG (E) _____, MAG % _____

H₂ PURGE LINE HEATERS - ON

P52 IMU REALIGN
OPTION 3 REFSMMAT
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES

EXIT G&N PTC PAGE G/8-3
P30 EXTERNAL ΔV
V49 MNVR TO PAD BURN ATT

PTC

DAP LOAD STATUS
(21101)(X1111)

PERICYNTHION +2 HR
ABORT PAD TARGETED
FOR A FAST RETURN
TO MPL.

P52 IMU REALIGN	
N71:	_____, ____
N05:	_____. ____
N93:	
X	____. ____
Y	____. ____
Z	____. ____
GET	____: ____:

0034
~~0134~~

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	72:00 - 73:00	4/TLC	3-72

FLIGHT PLANNING BRANCH

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FLIGHT PLAN

MCC-4
BURN TABLE

P OR Y RATE	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±10° TERMINATE	BT + 1 SEC	TRIM ONLY X AXIS TO 0.2 FPS

FLIGHT PLAN

NOTES

EARTH DISTANCE
~ 206,000 NM

BURN STATUS REPORT

X	X		•	ΔTIG
X	X		•	BT
			•	V _{gx}
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
			•	V _{gx}
			•	V _{gy}
			•	V _{gz}
			•	ΔV _c
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBAL

MCC-H

0934 CDT

6034

73:00

(21101)
(X1111)

:10

:20

73:30

:40

:50

74:00

M
S
F
N

IF SPS MCC REQD:

SM SECTOR 1 SM/AC PWR - ON (UP) (VERIFY)

PANORAMIC CAMERA PWR - BOOST

MAPPING CAMERA IMAGE MTN - OFF (VERIFY)

MAPPING CAMERA ON - STBY (VERIFY)

SXT STAR CHECK

P40 SPS THRUSTING OR P41 RCS THRUSTING

H₂ & O₂ FUEL CELL PURGE

WASTE WATER DUMP *to 70 spec by MSFN*

H₂ PURGE LINE HEATERS - OFF

MCC-4

TIG: 73:31:14.7
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NONE
ORBIT: N/A

V66 SET CSM S.V. INTO LM S.V.

BURN STATUS REPORT

V49 MNVR TO SIM DOOR JETTISON ATTITUDE (73:49)
(353,104,321)

ACQ MSFN HGA P -70, Y 269

DON HELMETS & GLOVES

SUIT CKT INTEGRITY CHECK

WHEN MNVR COMPLETE, BEGIN SIM DOOR JETT. PROCED.

GO/NO-GO FOR SIM DOOR JETTISON (CUE MSFN)

LOI -5 HR

GO/NO-GO FOR
SIM DOOR JETT

0134

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	73:00 - 74:00	4/TLC	3-75

FLIGHT PLANNING BRANCH

FLIGHT PLAN

SIM DOOR JETTISON PROCEDURE

1. VERIFY:

MAPPING CAMERA IMAGE MTN - OFF

MAPPING CAMERA TRACK - OFF/TB-GRAY *PAN CMR mode-STBY-*

α RAY/X DR - α OFF

SUBSAT EXTEND/LAUNCH - OFF/TB-GRAY

DATA SYS ON - ON

2. PANORAMIC CAMERA PWR - ON (FOR 2 MIN ON MSFN CUE)

PANORAMIC CAMERA PWR - BOOST

3. FC REACS VALVES - LATCH

S-BD AUX TV - SCI

4. SIM DOOR JETTISON

SM SECTOR 1 SM/AC PWR - OFF

cb LOGIC POWER (2) - CLOSE

LOGIC POWER (2) - JETT

GO/NO-GO FOR SIM DOOR JETTISON (CUE MSFN)

DOOR JETT - DOOR JETT 74:01

DAC-ON (FOR 20 SEC)

OBSERVE AND PHOTOGRAPH SIM DOOR THROUGH CM5 WINDOW

DOOR JETT - OFF

LOGIC POWER (2) - OFF (CTR)

SM SECTOR 1 SM/AC PWR - ON

FC REACS VALVES - NORM

SM RCS PRPLNT TB(8)-GRAY (VERIFY)

SM RCS He TB(8)-GRAY (VERIFY)

SM RCS SEC PRPLNT FUEL PRESS (4) - CLOSE

MAPPING CAMERA ON - STBY (*VERIFY*)

X-RAY - STBY

α RAY/X DR - α ON

MASS SPECT EXP - STBY

FINAL (7/26)

6/21/71

4/TLC

3-76

B.

1034 CDT

NOTES

0134

74:00
(21101)
(X1111)

SIM DOOR JETTISON 74:01

COMMENT ON PRIMARY AND SECONDARY HELIUM AND PROPELLANT
ISOLATION VALVE INDICATOR FLAGS AND ANY OTHER CSM PERTURBATIONS

$$\begin{pmatrix} 21111 \\ X1111 \end{pmatrix}$$

V48 (21111)(X1111)

DOFF & STOW PGA'S

H₂ HEATERS 1&2 (2) - AUTO

H₂ ~~FANS~~ HEATERS 3 (1) - OFF

0, HEATERS 1&2 (2) - AUTO

0₂ HEATERS 3 (1) - OFF

74:30

MSFN

AP*

:40

: 50

75:00

0234

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	74:00 - 75:00	4/TLC	3-77

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1134 CDT

NOTES

UPLINK TO CSM

CSM S.V. & V66

(PRELIMINARY)

LOI TGT LOAD

(PRELIMINARY)

DESIRED ORIENTATION

(LOI)

UPDATE TO CSM

LOI MNVR PAD

(PRELIMINARY)

75:00

(21111)

(X1111)

:10

:20

75:30

:40

:50

76:00

M
S
F
N

V49 MNVR TO P52 ATT (315,107,336) (75:20) HGA P -31, Y 263
CHECK MISSION TIMER AGAINST CMC CLOCK

GAMMA RAY: EXP-ON, GAINSTEP - SHIELD ON

ATT DEADBAND - MIN

RATE - LOW

BMAG (3) - ATT 1/RATE 2

SC CONT - SCS

P52 IMU REALIGN
OPTION 3 REFSMMAT
(PTC ORIENT)

STARS _____,

SA _____,

TA _____,

REPORT: GYRO TORQUING ANGLES

P52 IMU REALIGN
OPTION 1 PREFERRED
(LOI ORIENT)

SC CONT - CMC
BMAG (3) - RATE 2

LiOH CANISTER CHANGE
(8 INTO B, 6 INTO B6)

P52 IMU REALIGN

N71: _____,

N05: _____.

N93: _____.

X _____.

Y _____.

Z _____.

GET _____:_____:

GR*
AP*

GET 76 HOURS FOV 3°



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	75:00 - 76:00	4/TLC	3-78

FLIGHT PLANNING BRANCH

1234 CDT

NOTES

0334

76:00

(21111)

$$(x1111)$$

CSM G&C CHECKLIST

ΔV TEST & NULL BIAS CHECK
REPORT: BIAS

PAGE G/2-5

:10

:20'

76 : 30

MSFN

CREW EXERCISE PERIOD

GR*
AP*

:40

: 50

CSM SYSTEMS CHECKLIST

PRE-LOI SECONDARY GLYCOL LOOP CHECK
REPORT: LM/CM ΔP

PAGE S/~~1-15~~

TEI 4 PAD
ASSUMES NO DOI

UPDATE TO CSM
TEI 4 PAD

04

77:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	76:00 - 77:00	4/TLC	3-79

FLIGHT PLANNING BRANCH

MCC-H

1334 CDT

FLIGHT PLAN

NOTES

of

77:00
(21111)
(X1111)

:10

:20

77:30

(21101)
(X1111)

:40

:50

78:00

M
S
F
N

CSM SYSTEMS CHECKLIST

C&W SYSTEM OPERATION CHECK PAGE S/1-17
 SPS MONITORING CHECK PAGE S/1-1
 SM RCS MONITORING CHECK PAGE S/1-1
 CM RCS MONITORING CHECK PAGE S/1-1
 ECS MONITORING CHECK PAGE S/1-5
 OXIDIZER FLOW VALVE INCR - NORM (VERIFY)

S-BD AUX TV - OFF
 DATA SYS ON - OFF
 GAMMA RAY EXP - OFF
 X-RAY - OFF
 α RAY/X DR - α OFF
 MASS SPECT EXP - OFF

CYCLE CMC MODE - FREE/AUTO
 V48 (21101)(X1111)
 P30 EXTERNAL Δ V

V49 MNVR TO PAD BURN ATTITUDE (78:00)
 (000,000,000)
 OMNI C

MAP UPDATE REV 1

LOS: _____ : _____ : _____

180°: _____ : _____ : _____

AOS WITH LOI: _____ : _____ : _____

AOS WITHOUT LOI: _____ : _____ : _____

GR*
AP*

THE PU VALVE SHOULD
 BE USED TO MAINTAIN
 THE INDICATED
 UNBALANCE TO WITHIN
 +50 LBS OF THE
 STABILIZED READING
 (TIG +25 SEC) UNTIL
 CROSSOVER. AFTER
 CROSSOVER THE VALVE
 SHOULD BE USED TO
 CONTROL THE
 THE GREEN BAND
 (0 + 100 LBS).
 THE APPROXIMATE TIME
 OF CROSSOVER IS
 04:22 TO 04:29 MINUTES
 INTO THE LOI BURN.

UPDATE TO CSM
 LOI MNVR PAD
 MAP UPDATE REV 1

UPLINK TO CSM
 CSM S.V. & V66
 LOI TGT LOAD

os

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	77:00 - 78:00	4/TLC	3-80

FLIGHT PLANNING BRANCH

P30 MANEUVER

SET STARS						PURPOSE
						PROP/GUID
+						WT N47
R ALIGN		0	0			P TRIM N48
P ALIGN		0	0			Y TRIM
Y ALIGN	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0				SEC
ULLAGE						ΔV_X N81
						ΔV_Y
						ΔV_Z
	X	X	X			R
	X	X	X			P
	X	X	X			Y
	+					H _A N44
						H _p
	+					ΔVT
	X	X	X			BT
	X					ΔVC
	X	X	X	X		SXTS
	+				0	SFT
	+			0	0	TRN
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP

FLIGHT PLAN

LOI
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TAKEOVER & COMPLETE	±10° TAKEOVER & COMPLETE	BT + 10 SEC	DO NOT TRIM

FLIGHT PLAN

MCC-H

1434 CDT

05

NOTES

BURN STATUS REPORT

X	X		•	ΔTIG
X	X		•	BT
			•	V _{gx}
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
			•	V _{gx}
			•	V _{gy}
			•	V _{gz}
			•	ΔV _c
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBAL

RECORD V_G IMU DATA
GO/NO-GO FOR LOI

78:00
(21101)
(X1111)

:10

M
S
F
N

SXT STAR CHECK

P40 SPS THRUSTING

GO/NO-GO FOR LOI

:20

VERIFY DSE TAPE MOTION
(LBR/RCD/FWD/CMD RESET)

EARTH DISTANCE
~ 215,089 NM

78:30

REV 1

LOI

TIG: 78:31:14.7
BT: 6 MIN 32 SECS
ΔVT: 2997.9 FPS
ULLAGE: NONE
ORBIT: 170 x 58.3 NM

V66 SET CSM S.V. INTO LM S.V.

:40

(21111)
(X1111)

V48 (21111)(X1111)
V49 MNVR TO COMM ATT (78:55)
(167,048,020)

:50

ACQ MSFN HGA P -46, Y 25
BURN STATUS REPORT

79:00

DUMP DSE

06

MISSION	EDITION	DATE	TIME	DAY/REV.	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	78:00 - 79:00		3-83

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

06
79:00
(21111)
(X1111)

S-BD AUX TV - SCI
DATA SYS ON - ON

GAMMA RAY EXP - ON
X-RAY - STBY
 α RAY/X DR - α ON
MASS SPECT EXP - STBY
PAN CAMERA PWR - OFF

RECORD GET

S-IVB LUNAR IMPACT
GET: 79:14:26.7
LAT: 3.65°S
LONG: 7.58°W

EAT PERIOD

P20 OPT 5 (LUNAR SURFACE PHOTO) (79:25)
N78 (+090.00)
(+090.00)
(+180.00)
N79 (+005.00)
N70 (00050)
(167,000/048,020)

79:30
(P20)
(5.0°DB)
(21111)
(X1111)

MSFN UPDATE:
TEI 4 TIG (IF REQD) AND GIMBAL ANGLES

MSFN UPLINK:
DESIRED ORIENT (LDG SITE)

79:40

MSFN

EAT PERIOD

GAMMA RAY*
ALPHA PART*

GAMMA RAY: GAINSTEP - SHIELD OFF

79:50

GAMMA RAY: GAINSTEP - SHIELD ON (CTR)
CMC MODE - FREE

80:00

79:20
(P20)
(5.0°DB)

79:30

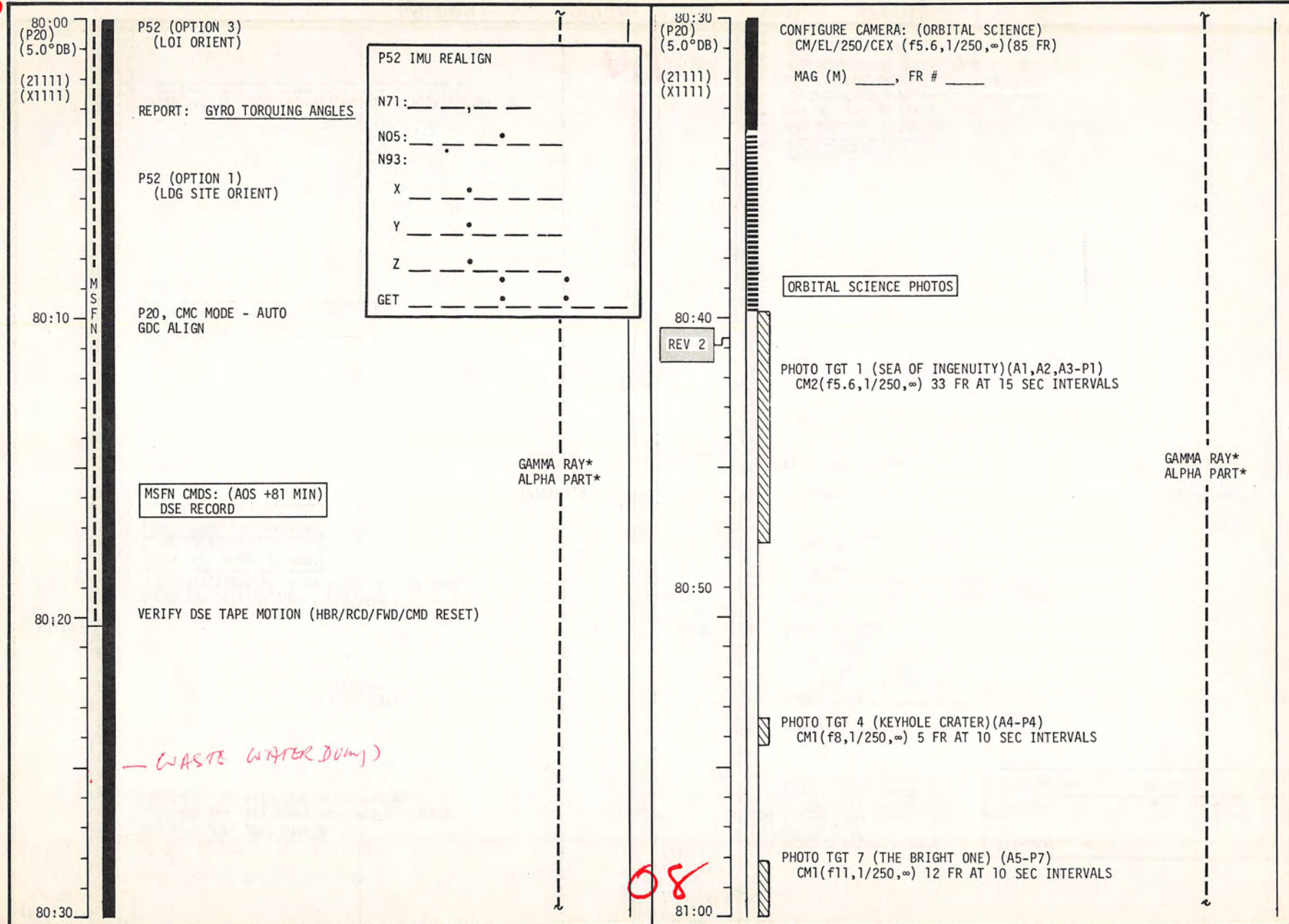
07

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-84

CSM FLIGHT PLAN

1634 CL

07



08

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-85

CSM FLIGHT PLAN

1734 CDT

81:00
(P20)
(5.0°DB)

(21111)
(X1111)

HGA 4000' P 0.718"
ACQ MSFN HGA: MAN, WIDE P, Y
S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW
CONFIGURE DSE (STOP/CMD RESET/REWIND)

CREW EXERCISE
PERIOD

81:10

PHOTO TGT 11 (IBN YUNUS) (A7-P11)
CM1(f11,1/250,∞) 14 FR AT 20 SEC INTERVALS

MSFN CUE: (~AOS +8 MIN)
HGA AUTO
MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

81:20

MSFN UPDATE:
TERMINATOR PHOTO PAD (81:34)

PHOTO TGT 19 (NECOMB/POSIDONIUS) (A10,A11-P19)
CM1(f8,1/250,∞) 21 FR AT 20 SEC INTERVALS

81:30

81:30
(P20)
(5.0°DB)

(21111)
(X1111)

MSFN UPLINK:
DOI TARGET LOAD
CSM S.V. AND V66
PIPA BIAS CHECK

TERMINATOR PHOTO PAD

T-START: _____
(TERMINATOR - 1 MIN 40 SEC)

RECORD FR # _____

MSFN UPDATE:
DOI MNVR PAD (82:15)
MAP UPDATE REV 3 (83:10)
J-1 LDMK OBS PAD (83:40)
TEI 5 PAD

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM4/EL/250/VH BW, IVL (f5.6,1/125,∞) (6 FR)
PCM CABLE
MAG (R) _____, FR # _____

EL - ON (T START)

EL - OFF (T START +1:40)

RECORD FR # _____

81:40

81:50

82:00

GAMMA RAY*
ALPHA PART*

GAMMA RAY*
ALPHA PART*

CSM SYSTEMS CHECKLIST

C&W WARNING OPERATIONAL CHECKLIST PAGE S/1-17
SPS MONITORING CHECK PAGE S/1-1
SM RCS MONITORING CHECK PAGE S/1-1
CM RCS MONITORING CHECK PAGE S/1-1
ECS MONITORING CHECK PAGE S/1-5

P00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-86

B

CSM FLIGHT PLAN

P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

GDC ALIGN
VERIFY ORDEAL

P30; VERIFY DOI TIG AND ΔV 'S
CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)
P40

MSFN RECORD:
VG IMU DATA

V49 MNVR TO DOI PAD BURN ATT (82:26)
ACQ MSFN OMNI C

MSFN CMDS:
DSE REWIND

PAN CAMERA PWR - BOOST
MAP CAMERA ON - STBY (VERIFY)
MAP CAMERA IMAGE MTN - OFF (VERIFY)
GAMMA RAY EXP - OFF
X-RAY - OFF
 α RAY/X DR - α OFF
MASS SPECT EXP - OFF
DATA SYS ON - OFF
S-BD AUX TV - OFF (CTR)

MSFN UPDATE:
GO/NO-GO FOR DOI

MSFN CMDS:
DSE RECORD

SXT STAR CHECK
P40 (TRIM)

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____

GAMMA RAY*
ALPHA PART*

RECORD GET _____

P30 MANEUVER

SET STARS	D	O	I			PURPOSE
	S	P	S	G	& N	PROP/GUID
	+					WT N47
R ALIGN _____		0	0			P TRIM N48
P ALIGN _____		0	0			Y TRIM
Y ALIGN _____	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0				SEC
ULLAGE _____						ΔV_X N81
						ΔV_Y
						ΔV_Z
	X	X	X			R (000)
	X	X	X			P (284)
	X	X	X			Y (000)
	+					H _A N44
						H _P
	+					ΔVT
	X	X	X			BT
	X					ΔVC
	X	X	X	X		SXTS
	+				0	SFT
	+				0 0	TRN
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-87

83:00

V49 MNVR TO BAILOUT BURN ATTITUDE
(340,032,000)

BURN STATUS REPORT					
X	X				ΔTIG
X	X				BT
					V _{gx}
TRIM					
X	X	X			R
X	X	X			P
X	X	X			Y
					V _{gx}
					V _{gy}
					V _{gz}
					ΔV _c
X					FUEL
X					OX
X					UNBAL

10
1934 CDT

CSM FLIGHT PLAN

83:00
(21101)
(X1111)

83:10

83:20

83:30

ACQ MSFN HGA P -37, Y 318

MSFN CMDS:
DSE STOP

REPORT: BURN STATUS

MSFN CMDS:
DSE REWINDMSFN CMDS:
DSE PLAYBACKMSFN UPDATE:
STAY/BAILOUTSC CONT - SCS
P47 THRUST MONITOR

BAILOUT BURN (340,074/032,000)

: : :

P00; V66 SET CSM S.V. INTO LM S.V.

MAP UPDATE REV 3
LOS :
180°:
AOS :*****
* AOS - NO UP VOICE PROCEDURE *
* 1. WAIT 30 SEC, CHECK HGA *
* 2. SELECT OMNI B *
* 3. SELECT SEC XPNDR *
* 4. AFTER 3 MIN GO TO LOSS *
* OF COMM CUE CARD *
*****TIG: 83:26:16.9
BT: 10.2 SEC
ΔVT: 94.0 FPS
ULLAGE: 4 JET, 16 SEC
ORBIT: 71.0 x 3.9

83:30

(21101)
(X1111)
(21102)
(X1111)

83:40

83:50

(P20)
(0.5°DB)

84:00

MSFN CMDS:
DSE REWINDV48 (21102)(X1111)
V49 MNVR TO LDMK OBS ATT (83:40)(IF NO BAILOUT REQD)
(015,291,000) OMNI - C *HEA P78 Y322*P24 (ORB NAV MONITOR LDMK NO MARKS)
OPT ZERO - OFF, OPT MODE - CMC
OPT TEL TRUN - SLAVE TO SXT
OPT COUPLING - RSLV, OPT SPEED - HI

LDMK ACQUISITION

TCA

V48 (21101)(X1111)

MSFN UPDATE:
MAP CAMERA PHOTO PAD (84:32)
PAN CAMERA PHOTO PAD (84:39)S-BD AUX TV - SCI
PCM BIT RATE - HIGH (VERIFY)
DATA SYS ON - ON
PAN CAMERA PWR - OFFP52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

GDC ALIGN
INHIBIT ALL JETS EXCEPT A1 & C2 OR D1 & B2,A3,C4,B3,D4
P20 OPT 5 (+X FWD SIM ATT) (84:14)N78 (+090.00)
(+052.25)
(+180.00)

N79 (+000.50)

N70 (00050)

(143,000/163,000) HGA P -12, Y 167

LDMK J-1 OBS

T HOR: : : :

TCA -20 SEC: : : :

LAT: +25.958

LONG/2: +05.664

ALT: +00000

P52(IMU REALIGN)

N71: : : :

N05: : : .

N93: : : :

X : : .

Y : : .

Z : : .

GET : : .

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-89

CSM FLIGHT PLAN

84:00
(P20)
(0.5°DB)
(21101)
(X1111)

SIM EXPERIMENT PREP (CUE CARD)

SUBSAT EXTEND/LAUNCH - OFF (CTR) VERIFY

LOGIC POWER (2) - JETT
DOOR JETT - ON/OFF
α RAY/X DR - X DOOR OPEN/α ON
LOGIC POWER (2) - DPLY/RETR
GAMMA RAY EXP - ON
MASS SPECT EXP - STBY
MAP CAMERA/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
ALPHA/X-RAY EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR)

RECORD GET

GAMMA RAY BOOM - DEPLOY tb-BP (BP +2 SEC ONLY) then OFF (CTR)
GAMMA RAY BOOM - RETRACT tb-BP/GRAY then OFF (CTR)
MASS SPECT BOOM - DEPLOY tb-BP (BP +2 SEC ONLY) then OFF (CTR)
MASS SPECT BOOM - RETRACT tb-BP/GRAY then OFF (CTR)

84:10
M
S
F
N

X-RAY - ON
RECORD GET

REPORT: GAMMA RAY AND MASS SPECT BOOM
DEPLOY AND RETRACT COMPLETED

LASER ALTM - ON
RECORD GET

MSFN CMDS: (AOS +62 MIN)
DSE RECORD

84:20

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM4/EL/80/VH BW, IVL (f2.8, 1/125, ∞) (6 FR)
PCM CABLE

MAG (R) _____, FR # _____

84:30

GAMMA RAY*
X-RAY*
ALPHA PART*

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

84:30
(P20)
(0.5°DB)
(21101)
(X1111)

PAN CAMERA: MODE - STBY,
PWR - ON tb-BP (2 SEC)/GRAY,
MONO, EXPOSURE - NORMAL (CTR)

MAP CAMERA PHOTO PAD

T-START: _____

T-STOP: _____

PAN CAMERA PHOTO PAD

T-START: _____

T-STOP: _____

TERMINATOR PHOTOS

EL - ON (T START -2:40)

MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY)

EL - OFF (T START -1 MIN)

MAP CAMERA ON - ON (T START)

PAN CAMERA MODE - OPR tb-BP (2 SEC)/GRAY (T START)

MAP CAMERA IMAGE - INCR (tb-BP +2 STEPS)/ON

PAN CAMERA - STEREO (T START +3:20)

RECORD FR # _____

EAT PERIOD

MAP CAMERA
PAN CAMERAGAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

REV 4

84:50

MAP CAMERA ON - OFF (T STOP)

PAN CAMERA MODE - STBY (T STOP)

MAP CAMERA ON - STBY (T STOP +1 MIN)

MAP CAMERA IMAGE MTN - OFF (tb-BP IN 3-5 SEC then GRAY)

MASS SPECT BOOM - DEPLOY tb-BP (~2:40)/GRAY then OFF (CTR)

RECORD EXTEND TIME _____ (ΔT IN BP)

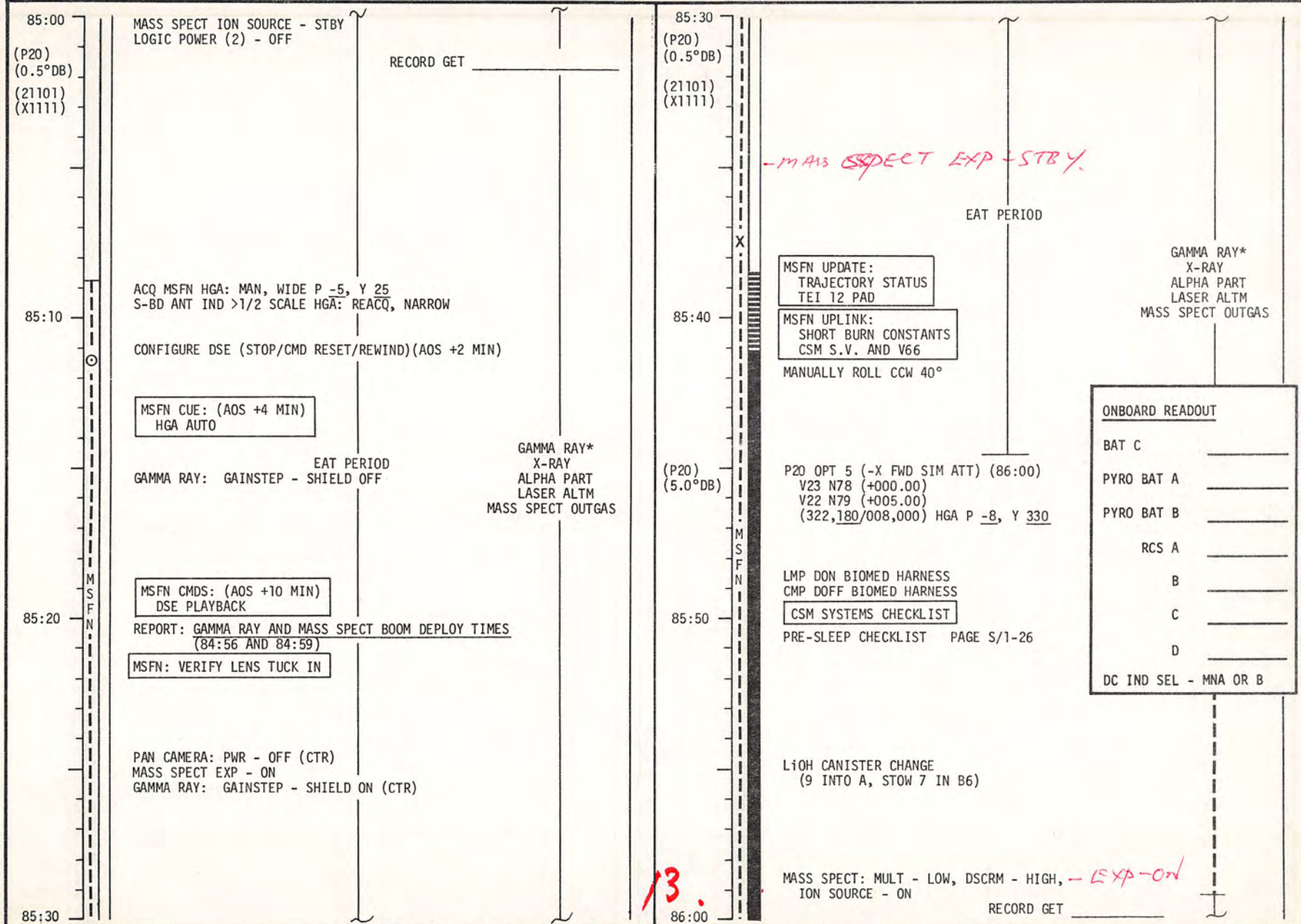
GAMMA RAY BOOM - DEPLOY tb-BP (~2:45)/GRAY then OFF (CTR)

RECORD EXTEND TIME _____ (ΔT IN BP)

85:00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-90

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-91

13

CSM FLIGHT PLAN

2234 CDT

13

86:00
(P20)
(5.0°DB)
(21101)
(X1111)

M
S
F
N

MSFN CMDS: (AOS +56 MIN)
DSE REWIND

86:10

MSFN CMDS: (AOS +64 MIN)
DSE RECORD

REST PERIOD
(7.7 HOURS)

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

86:20

86:30

86:30
(P20)
(5.0°DB)
(21101)
(X1111)

REV 5

86:40

86:50

87:00

REST PERIOD
(7.7 HOURS)

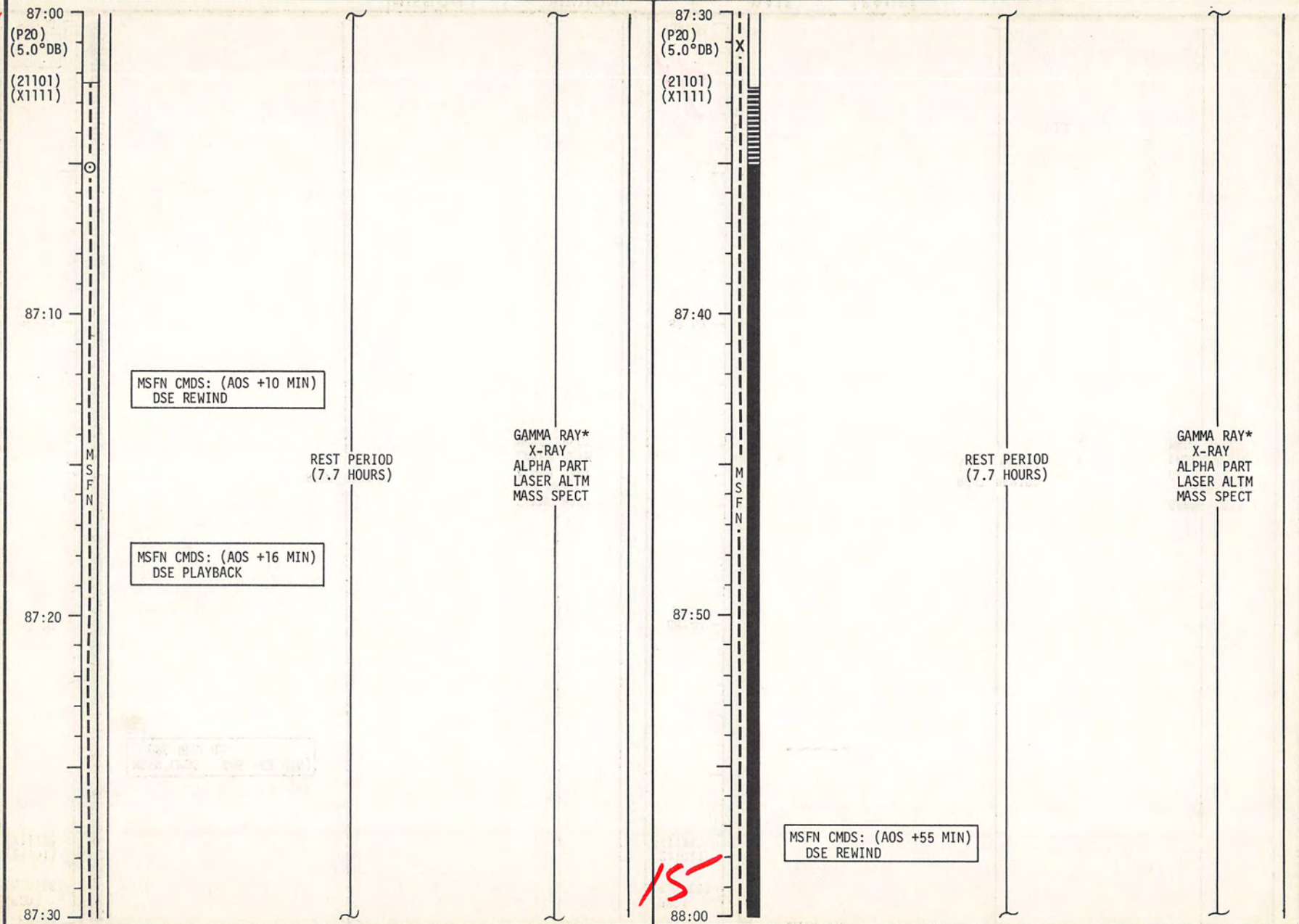
GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

14

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-92

2334 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-93

CSM FLIGHT PLAN

0034 CDT

15

88:00
(P20)
(5.0°DB)
(21101)
(X1111)
M
S
F
N
88:10
88:20
88:30
REV 6

MSFN CMDS: (AOS +63 MIN)
DSE RECORDS

REST PERIOD
(7.7 HOURS)

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

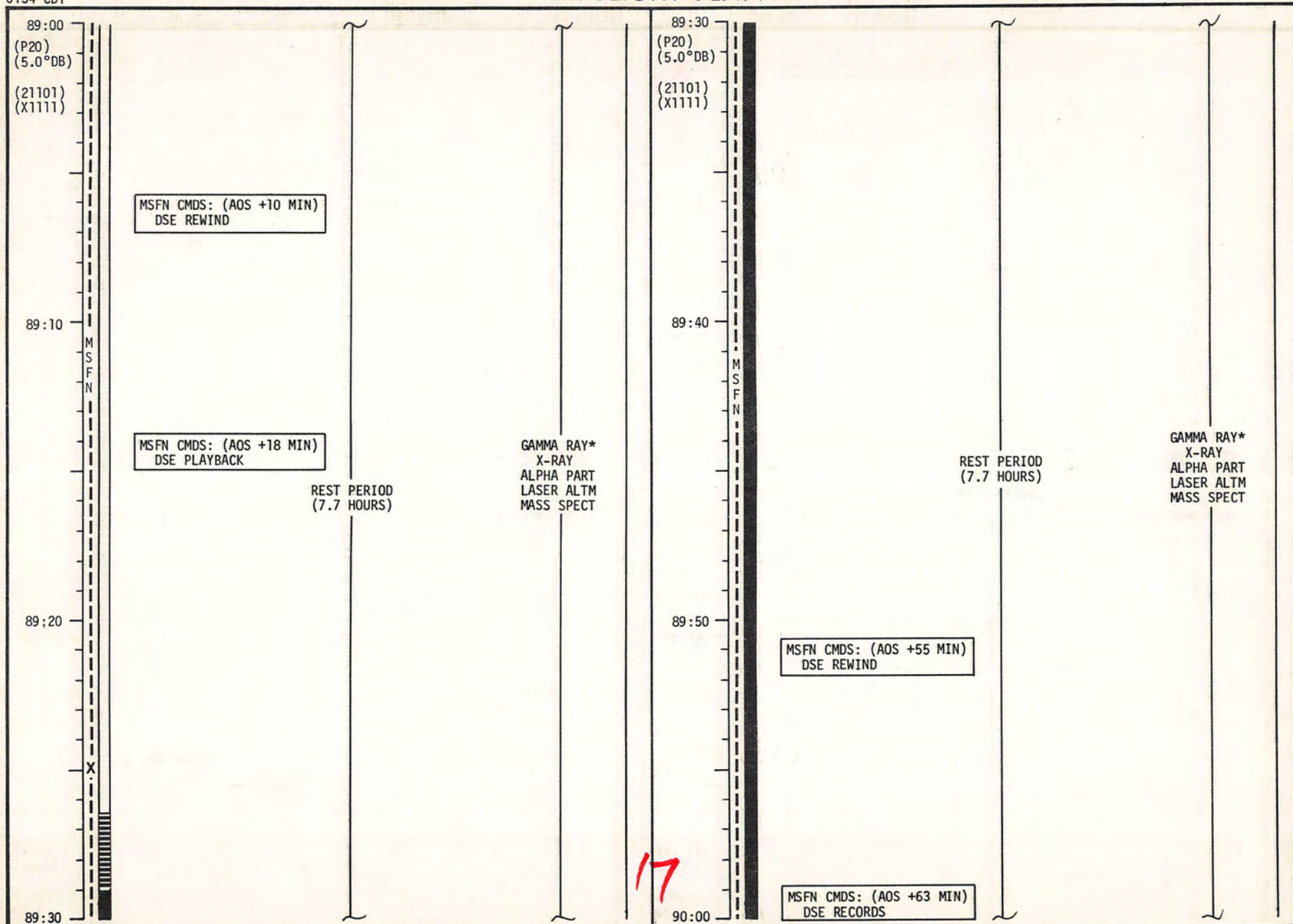
88:30
(P20)
(5.0°DB)
(21101)
(X1111)
88:40
88:50
89:00
M
S
F
N
16

REST PERIOD
(7.7 HOURS)

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-94

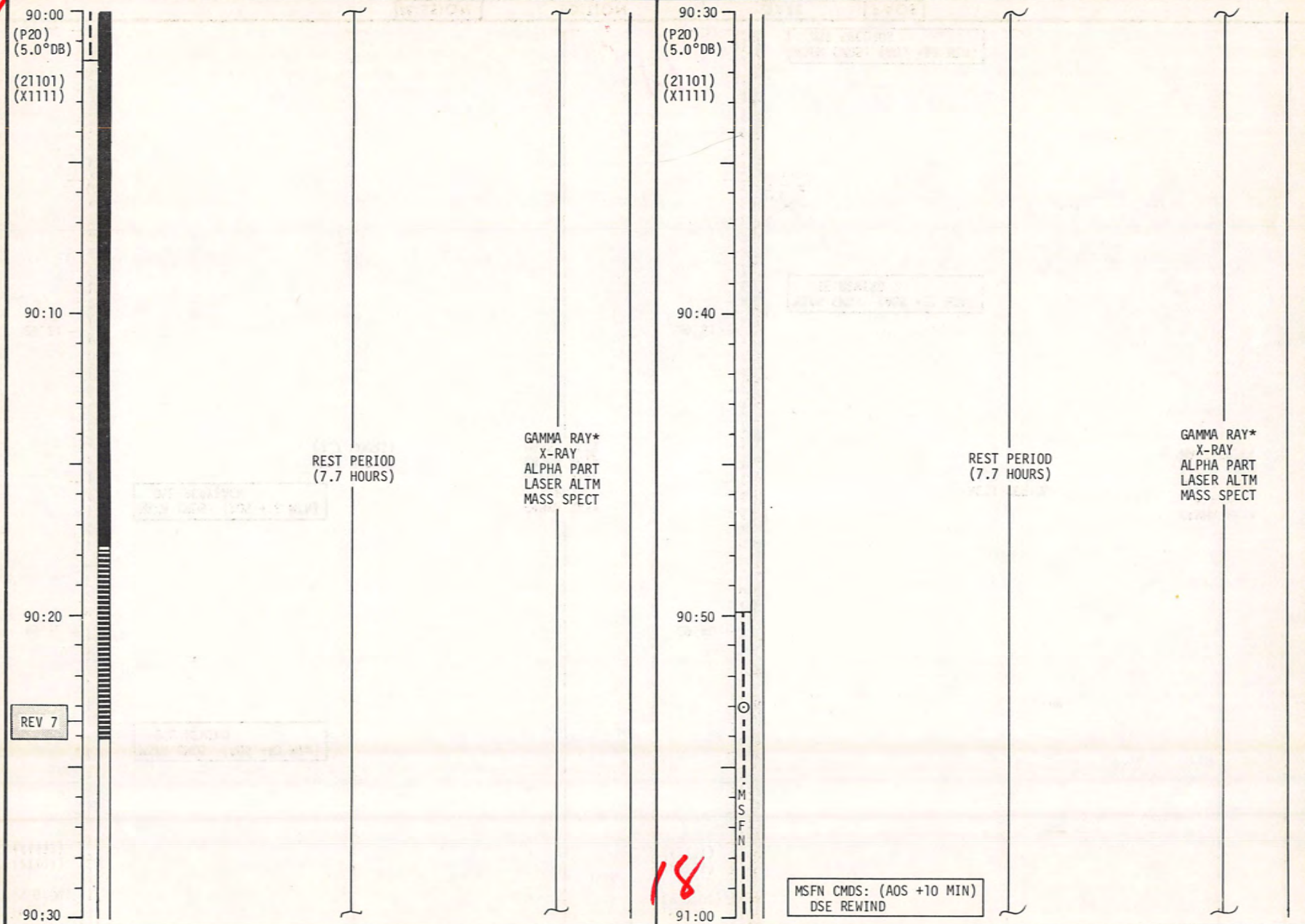
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-95

0234 CDT

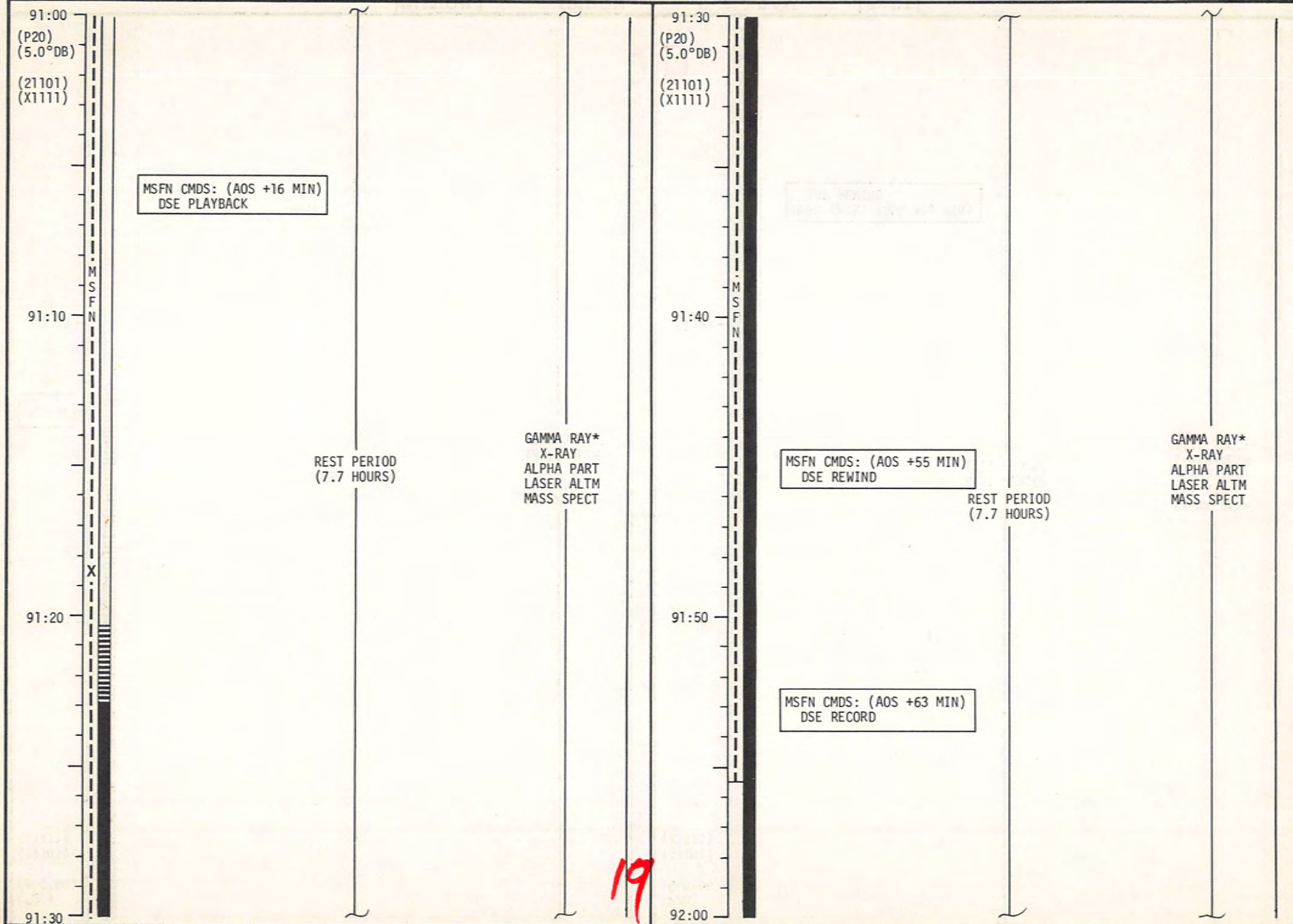
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-96

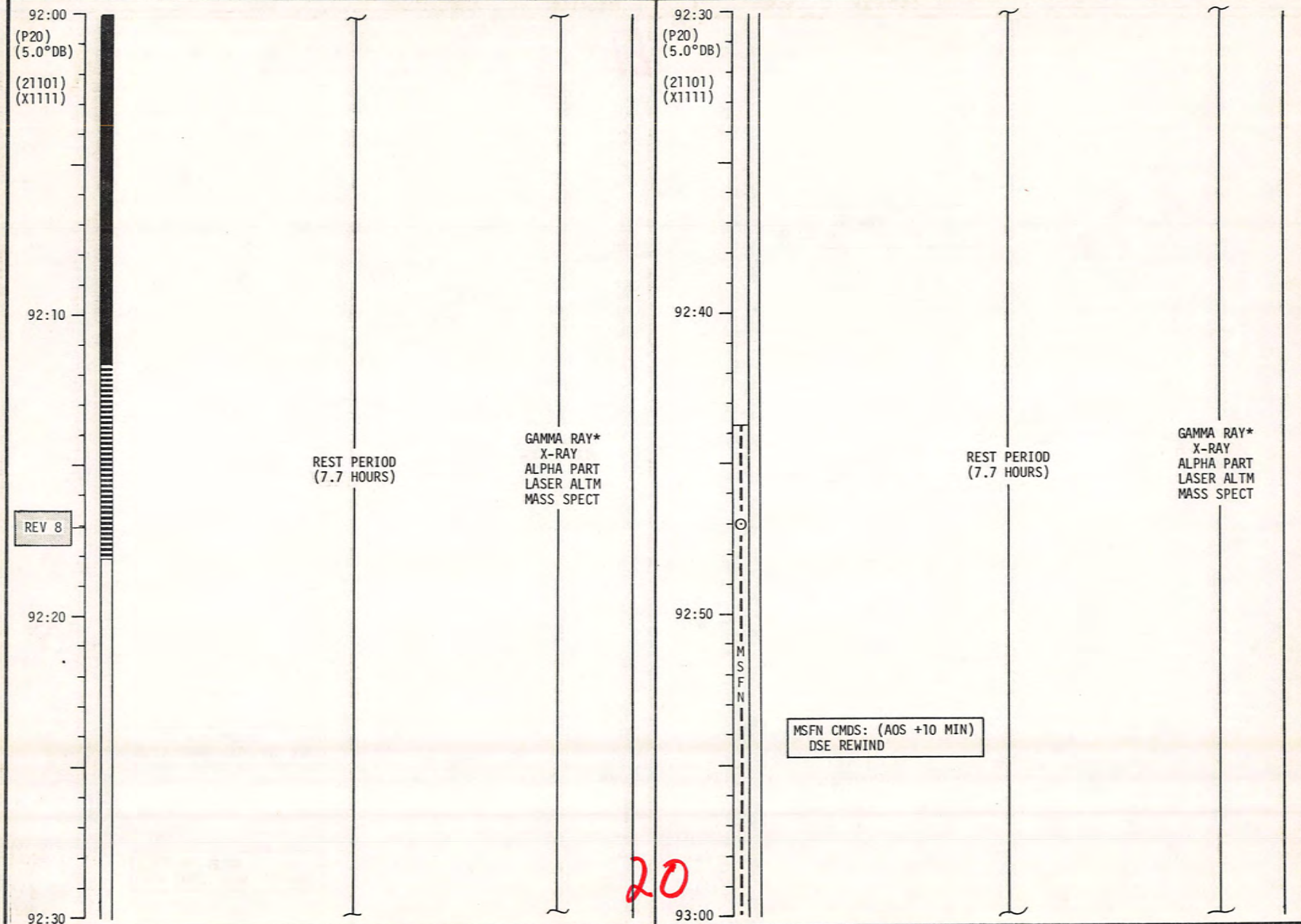
0334 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-97

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-98

20

CSM FLIGHT PLAN

0534 CLK

93:00

(P20)
(5.0°DB)

(21101)
(X1111)

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACK

93:10

X

M

S

F

N

REST PERIOD
(7.7 HOURS)

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

93:20

93:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-99

CSM FLIGHT PLAN

93:30

(P20)
(5.0°DB)(21101)
(X1111)REST PERIOD
(7.7 HOURS)MSFN CMDS: (AOS +55 MIN)
DSE REWIND

93:40

M
S
F
N

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-26

MSFN CMDS: (AOS +63 MIN)
DSE RECORD

93:50

EAT PERIOD

94:00

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

CSM CONSUMABLES UPDATE

GET: _____ : _____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____O₂ TANK 1 _____ 2 _____ 3 _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-100

21

B.

21

0634 CDT

CSM FLIGHT PLAN

94:00
(P20)
(5.0°DB)

(21101)
(X1111)

16MM & 70MM CAMERA MAGAZINES			
CAMERA	MAGAZINES	TYPE (DECAL COLOR)	STOWAGE LOCATION
EL	M	CEX (BLUE)	B3
	O	CEX (BLUE)	A8
	S	LBW (SILVER)	A1
DAC	B	CEX (BLUE)	A1
	E	CEX (BLUE)	A1

94:10

REV 9

EAT PERIOD

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

94:20

94:30

94:30
(P20)
(5.0°DB)

(21101)
(X1111)

EAT PERIOD

ACQ MSFN HGA: MAN, WIDE P 25, Y 185
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

P20 OPT 5 (LUNAR SURFACE TV ATT)(94:50)
V24N78 (+000.00)
(+057.50)

(000,213/171,000) HGA P 5, Y 199

94:40

SET UP TV (94:58)

MSFN CMDS: (AOS +10 MIN)
DSE REWIND

94:50

CM3/TV - AVG (f22)
TV (HSK) 94:58 - 95:08

95:00

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM
MASS SPECT

22

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-101

CHANGE B

CSM FLIGHT PLAN

22

95:00
(P20)
(5.0°DB)
(21101)
(X1111)

O₂ HEATERS 1&2 (2) - OFFO₂ HEATERS 3 (1) - AUTO

*CR 02 TK 101 3 MR OPEN
PRIMER 226*

S-BD AUX TV - SCI

MSFN CMDS: (AOS +31 MIN)
DSE PLAYBACK

95:10

GAMMA RAY: GAINSTEP - SHIELD OFF

MASS SPECT: ION SOURCE - OFF, EXP - STBY

CAUTION - WAIT 5 MIN BEFORE RETRACTING MASS SPECT BOOM

LASER ALTM - OFF, X-RAY - STBY

LOGIC POWER (2) - DPLY/RETR

RECORD GET

MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN)/GRAY then OFF (CTR)

ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

MAP CAMERA/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

MASS SPECT BOOM - RETRACT tb-BP (~2:30)/GRAY then OFF (CTR)

RECORD RETRACT TIME 2:33 (ΔT IN BP)

GAMMA RAY: GAINSTEP - SHIELD ON (CTR)

GAMMA RAY BOOM - RETRACT tb-BP (~3:15)/GRAY then OFF (CTR)

RECORD RETRACT TIME 3:09 (ΔT IN BP)

95:20

LOGIC POWER (2) - OFF

ENABLE ALL JETS

cb SCS CONTR DIR 1 MNB - CLOSE

cb SCS CONTR DIR 2 MNA - CLOSE

REPORT: GAMMA RAY AND MASS SPECT BOOM RETRACT TIMES

MSFN UPDATE:

TRAJECTORY STATUS

CONSUMABLES

FLIGHT PLAN

GO/NO-GO FOR DOI TRIM

DOI TRIM MNVR PAD (95:50) (IF DOI TRIM REQD)

P52 MNVR ATT (96:21) (IF DOI TRIM REQD)

TEI 19 PAD

GAMMA RAY*

ALPHA PART*

MSFN UPLINK:

DOI TRIM TARGET LOAD (IF DOI TRIM REQD)

CSM S.V. AND V66 (IF DOI TRIM REQD)

DESIRED ORIENT (DOI TRIM) (IF DOI TRIM REQD)

95:30

CSM CONSUMABLES UPDATE

GET: ____:____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____O₂ TANK 1 _____ 2 _____ 3 _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-102

CHANGE B

CSM FLIGHT PLAN

95:30
(P20)
(5.0°DB)(21101)
(X1111)M
S
F
N~~P52 (OPTION 3) (IF DOI TRIM REQD)
(LDC SITE ORIENT)~~REPORT: GYRO TORQUING ANGLESMSFN CMDS: (AOS +63 MIN)
DSE REWIND~~P52 (OPTION 1) (IF DOI TRIM REQD)
(DOI TRIM ORIENT)~~

GDC ALIGN (IF DOI TRIM REQD)
 CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +71 MIN)
 P30; VERIFY DOI TRIM TIG AND ΔV 'S (IF DOI TRIM REQD)
 S-BD AUX TV - OFF (CTR)
 DATA SYS ON - OFF
 V49 MNVR TO DOI TRIM BURN PAD ATT (96:07) (IF DOI TRIM REQD)

PAN CAMERA PWR - BOOST (IF DOI TRIM REQD)
 MAP CAMERA ON - STBY (IF DOI TRIM REQD)
 MAP CAMERA IMAGE MTN - OFF (VERIFY) (IF DOI TRIM REQD)
 X-RAY - OFF (IF DOI TRIM REQD)
 α RAY/X DR - α OFF (IF DOI TRIM REQD)
 GAMMA RAY EXP - OFF (IF DOI TRIM REQD)
 MASS SPECT EXP - OFF (IF DOI TRIM REQD)

P52 IMU REALIGN

N71: — — — — —

N05: — — — — —

N93: — — — — —

X — — — — —

Y — — — — —

Z — — — — —

GET — — — — —

GAMMA RAY*
ALPHA PART*

P30 MANEUVER

SET STARS	D	O	I	T	R	M	PURPOSE
	S	P	S	G	&	N	PROP/GUID
	+						WT N47
R ALIGN 2 8 8		0	0				P TRIM N48
P ALIGN 3 4 0		0	0				Y TRIM
Y ALIGN 3 4 6	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE							ΔV_X N81
							ΔV_Y
							ΔV_Z
	X	X	X				R
	X	X	X				P
	X	X	X				Y
	+						H _A N44
							H _P
	+						ΔVT
	X	X	X				BT
	X						ΔVC
	X	X	X	X			SXTS
	+					0	SFT
	+				0	0	TRN
	X	X	X				BSS
	X	X					SPA
	X	X	X				SXP

upl
RCS.
to him
fay
reloged
under

B.

CSM FLIGHT PLAN

23

96:00 SET DET COUNTING UP TO DOI TRIM
(P20)
(5.0°DB)
(21101)
(X1111)
REV 10

SXT STAR CHECK
P40 (TRIM)

96:10

GAMMA RAY*
ALPHA PART*

DOI TRIM (93/56)

TIG: 96:17:00
BT: NOM. ZERO
ΔVT: NOM. ZERO
ULLAGE: NONE
ORBIT: N/A

P00; V66 SET CSM S.V. INTO LM S.V.

96:20 V49 MNVR TO P52/HGA ATT (96:30) (IF REQD) ~~DOI TRIM REQD~~

R _____, P _____, Y _____

X-RAY - STBY (IF DOI TRIM REQD)
α RAY/X DR - α ON (IF DOI TRIM REQD)
GAMMA RAY: EXP - ON, GAINSTEP - SHIELD ON (IF DOI TRIM REQD)
MASS SPECT EXP - STBY (IF DOI TRIM REQD)
PAN CAMERA PWR - OFF (IF DOI TRIM REQD)

96:30

DOI TRIM
BURN TABLE

BURN TYPE	P OR Y RATES	ATT DEVIATIONS	SHUTDOWN TIME	RESIDUALS
IN-PLANE BURN	10°/SEC TERMINATE	+ 10° TERMINATE	BT	TRIM X TO 2 FPS DO NOT TRIM Y & Z
OUT-OF-PLANE BURN	10°/SEC TERMINATE	+ 10° TERMINATE	BT	TRIM V_{gy} TO 2 FPS IF - V _{gy} ROLL 90° CCW AND USE -Z THRUSTERS

*IF OVERBURN >3.2 FPS AND <10 FPS, PITCH 180° AND TRIM WITH +X RCS THRUSTERS,
IF >10 FPS USE SPS

BURN STATUS REPORT

X	X									ΔTIG
X	X									BT
										V _{gx}
										TRIM
X	X	X								R
X	X	X								P
X	X	X								Y
										V _{gx}
										V _{gy}
										V _{gz}
										ΔV _c
										FUEL
X										OX
X										UNBAL

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-104

0904 CDT

CSM FLIGHT PLAN

96:30
(21101)
(X1111)

ACQ MSFN HGA: P -43, Y 334

REPORT: BURN STATUS (IF REQD)MSFN UPDATE:
L/S OBS PAD (96:57)MSFN CMDS:
DUMP DSEMSFN UPLINK:
CSM S.V. AND V66
LIFT-OFF TIME (IF REQD)
DESIRED ORIENT (LDG SITE)NOTE: LIFT-OFF TIME WILL BE
UPDATED IF THE TIME
OF REV 14 MERIDIAN
CROSSING DIFFERS MORE
THAN + 2 MIN FROM
103:43:13.3

96:40

V49 MNVR TO L/S OBS ATT (96:55)
(015,290,000) OMNI CM
S
F
N

LMP DON PGA WITHOUT HELMET AND GLOVES

GAMMA RAY*
ALPHA PART*MSFN UPDATE:
T EPHEM (IF REQD)
REFSMAT 00 TIME COPY AT (97:25)
TEI 12 TIG (IF REQD)
TEI 19 TIG (IF REQD)

T EPHEM UPDATE

OID LOAD B

03	_____
04	_____
05	_____

96:50

P24 (ORB NAV MONITOR LDMK NO MARKS)
OPT ZERO - OFF, OPT MODE - CMC
OPT TEL TRUN - SLAVE TO SXT
OPT COUPLING - RSLV, OPT SPEED - HI

LANDING SITE OBS

T HOR: 96:57:10
TCA -20 SEC: _____
LAT: +26.074
LONG/2: +01.827
ALT: -01.917

LDMK ACQUISITION

TCA

97:00

CSM TO LM TRANSFER LIST

CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG (1)	TEMP. STG.
PGA BAG	BIO BELT & INSTRUMENTATION (2)	ON CREW
PGA BAG	UCTA (2)	ON CREW
A2	FCS (2)	ON CREW
ON CREW	CWG	ON CREW
CWG	PASSIVE DOSIMETER (6)	CWG
PGA BAG	PGA (2)	ON CREW
ICG	SUNGLASSES IN POUCH (2)	PGA POCKET
ON CREW	WATCH & WATCHBAND (2)	ON PGA
ICG	PEN & PENCILS (6)	PGA POCKET
ICG	CHECKLIST POCKET (4)	ON PGA
ICG	SCISSOR POCKET (2)	ON PGA
ICG	PENLIGHTS	PGA POCKET
PGA POCKET	EAR PLUGS (4)	PGA POCKET
PGA POCKET	PERSONAL DOSIMETER (2)	PGA POCKET
ON CREW	PASSIVE DOSIMETER (6)	
ACC BAG	COMM CARR (2)	ON CREW
TEMP. STOWAGE	IV GLOVES (2 PR.)	TEMP. STOW.
R3	HELMET (2)	TEMP. STOW.
	FLT. DATA FILE IN BAG:	FLT. DATA FILE
	LM TIMELINE BOOK	
	LM DATA CARD BOOK	
	LM LUNAR SURFACE CHECKLIST	
	ORBIT MONITOR CHART	
	ASCENT MONITOR CHART	
	LM STAR CHARTS (3)	
A8	LWHS (2)	LHSSC
U1	LCG	ISA BIG POCKET
R8	CWG ELECT. ADAPT. CAPS (2)	ON CWG ADAPTER
CCU CABLE	CWG ELECT. ADAPTER (2)	LHSSC
ON PGA	LCG PLUGS (2)	ON PGA
ON PGA	GAS CONNECT. PLUGS (4)	ON PGA
ON PGA	PGA ELECT. CONN CAPS (2)	AFT RHSSC

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-105

CHANGE B

0034
MCC H

0934 CDT

LM FLIGHT PLAN

CDR

LMP

NOTES

97:00
:10
:20
97:30
:40
:50
98:00

M
S
F
N

LM ACTIVATION CHECKLIST PAGE 2-1

IVT TO LM
OPEN HATCH
VERIFY DOCKING ANGLE
TRANSFER POWER

REV 11

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	97:00 - 98:00	5/10-11	3-106

FLIGHT PLANNING BRANCH

0134

97:30 CMP DON BIOMED HARNESS, PGA WITHOUT HELMET AND GLOVES

(21111)
(X1111)

M
S
F
N

LMP VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

97:40 O₂ FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP
V49 MNVR TO UNDOCK ATT (97:55)
(000,106,000)

PREPARE COUCH FOR HATCH
REMOVE PROBE STRAPS (R5)
TUNNEL LIGHTS - LIGHTS
VERIFY LM/CM $\Delta P < 0.2$ PSID
IF $\Delta P > 0.2$ PSID PERFORM CM/LM PRESSURE EQUALIZATION (DECAL)
TUNNEL HATCH REMOVAL (DECAL); STOW HATCH
PROBE REMOVAL (DECAL); STOW PROBE
DROGUE REMOVAL (DECAL); STOW DROGUE

RECORD DOCKING TUNNEL INDEX ANGLE _____

LMP IVT TO LM
GAMMA RAY*

97:50 — LMP IVT TO LM

GAMMA RAY*
ALPHA PART*

AT LMP REQUEST:
LM PWR - RESET/OFF GET _____:_____:_____(RECORD)
SYS TEST - 7D
SYS TEST ind - 0 volts

98:00

REFSMMAT 00 TIME					
+	0	0			HRS
+	0	0	0		MIN
+	0				SEC

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-107

LM FLIGHT PLAN

MCC-H

1034 CDT

CDR

LMP

NOTES

0134

UPDATE TO LM
DAP LOAD
AGS ABORT CONSTANTS

UPLINK TO LM
L/S REFSMMAT
LM S.V. & V66
LGC ABORT CONST
LGC ΔT CLOCK SYNC
(IF REQD)

02

98:00		LIGHTS ON DES O ₂ AND H ₂ O - OPEN
:10	IVT TO LM TRANSFER HELMETS & GLOVES MISSION TIMER ACTIVATION	EPS ACTIVATION CONNECT TO LM COMM CONFIGURE S-BAND
		PRIMARY GLYCOL LOOP ACT
		CAUTION/WARNING CHECKOUT
:20	CONNECT TO LM ECS CB ACTIVATION ACTIVATE RCS HEATERS PGNS TURN-ON & SELF TEST	ECS ACTIVATION & CHECKOUT CONNECT TO LM ECS CB ACTIVATION TB VERIFICATION
		VHF CHECKOUT RECORDER - ON
98:30	LGC/CMC CLOCK SYNC T EPHEM UPDATE V48 (32022) E-MEMORY DUMP DEPLOY LDG GEAR	PRIM S-BAND VOICE CHECK SEC S-BAND VOICE CHECK STEERABLE ANT. ACTIVATION P +134, Y +6 BIOMED - RIGHT
:40		SUIT FAN/H ₂ O SEP CHECK GLYCOL PUMP CHECK
:50	DOCKED IMU COARSE ALIGN	ASCENT BATTERY ACTIVATION AND CHECKOUT
99:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	98:00 - 99:00	5/11	3-108

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

98:00 (21111) (X1111) CONFIGURE CAMERAS: (UNDOCKING) CM2/EL/80/CEX (f8,1/250, FOCUS) (10 FR) MAG (M) _____, FR # _____ CM2/DAC/T8/CEX-BRKT, MIR (T8,1/250,7) 12 fps (100% MAG) MAG (B) _____, MAG % _____ UTILITY PWR - ON CDR IVT TO LM L10H CANISTER CHANGE (10 INTO B, STOW 8 IN B6) 98:10 MARK TO LM FOR LM MISSION TIMER SYNC AT CDR REQUEST 98:20 SWITCH TO CDR COMM UMB 98:30 ACQ MSFN HGA P -57, Y 216 VHF C/O AT LMP REQUEST VHF ANT - RIGHT VHF AM B - SIMPLEX FOR VHF B CHECK VHF AM A - SIMPLEX FOR VHF A CHECK REPORT: DOCKING TUNNEL INDEX ANGLE AND LM PWR - RESET/OFF MSFN CMDS: DSE DUMP MSFN UPLINK: CSM S.V. AND V66	98:30 (21111) (X1111) MSFN UPDATE: DAP DATA (99:45) UNDOCK/SEP PAD COPY AT (99:50) P24 TRK PAD: (L/S LDMK 15-X)(100:50) LM CLOCK SYNC: V16N65E ON CDR MARK - V06N65E LM T EPHEM UPDATE: V05N01E, 1706E ROLL (8) - OFF UNTIL LM/CM ΔP > 3.5 PSID REMOVE AND STOW CSM/LM UMBILICAL IN F1 or F2 INSTALL DROGUE AND PROBE (DECAL) <i>PRELOAD PROBE DECAL</i> 98:40 LM LANDING GEAR DEPLOY 98:50 MAN ATT (3) RATE CMD ATT DB - MIN RATE - LOW SC CONT - SCS BMAG (3) - ATT 1/RATE 2 LM DOCKED IMU COARSE ALIGN 99:00
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MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-109

LM FLIGHT PLAN

MCC-H

1134 CDT

CDR

LMP

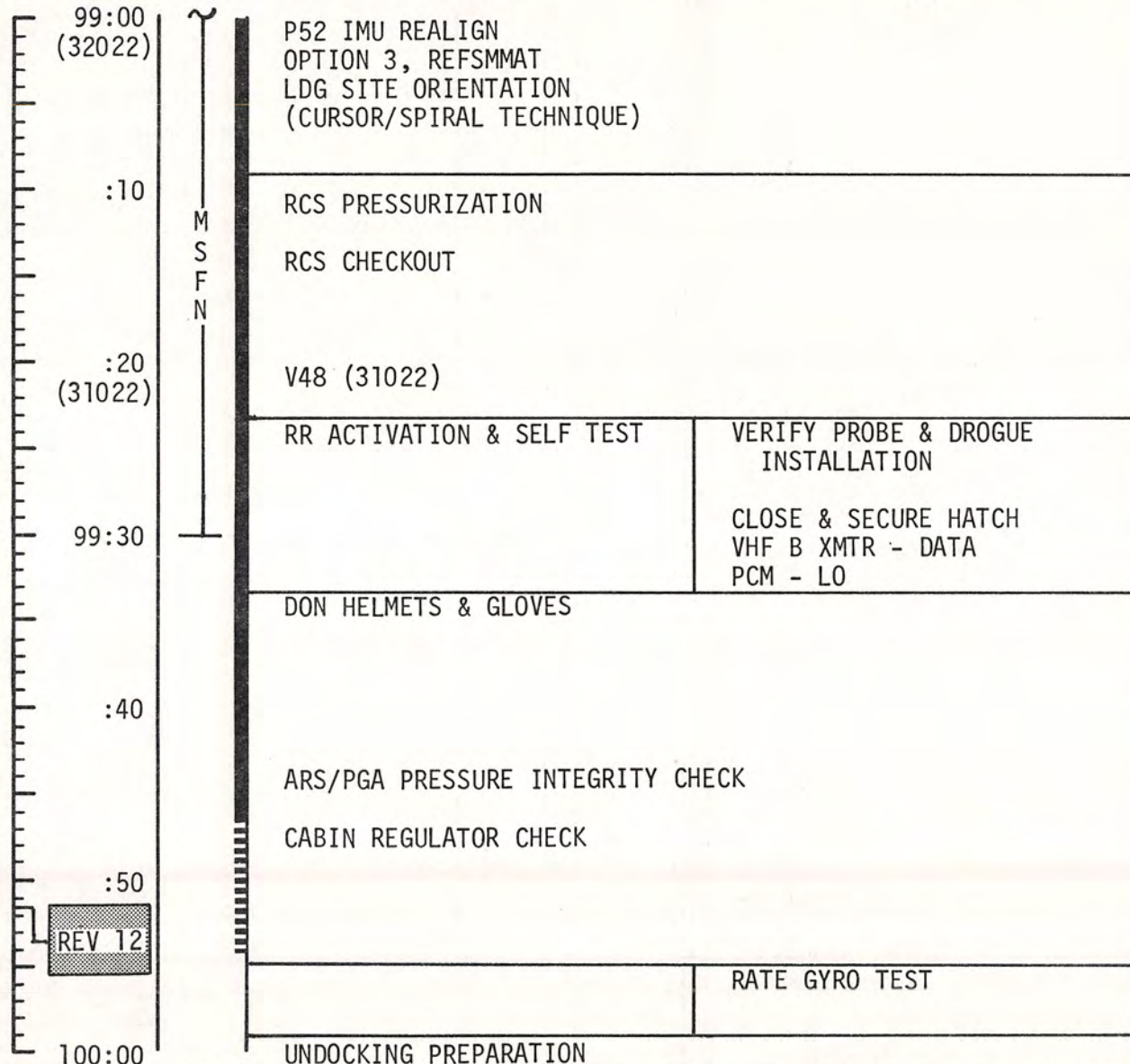
NOTES

02

UPLINK TO LM
E-MEMORY (IF REQD)
PIPA BIAS (IF REQD)

GO/NO-GO FOR
UNDocking &
SEPARATION

03



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	99:00 - 100:00	5/11-12	3-110

CSM FLIGHT PLAN

99:00 (21111) (X1111)	DON HELMET AND GLOVES	99:30 (21111) (X1111)	VHF ANT - RIGHT (VERIFY) VHF RCV ONLY - B DATA VHF AM A - SIMPLEX VHF AM B - OFF DOFF HELMET, GLOVES WHEN LM RR SELF - TEST COMPLETE: AUTO RCS SEL B3 - ON
	SUIT CKT INTEGRITY CHECK (DECAL)		RR XPNDR ACTIVATION AND SELF-TEST (DECAL)
99:10	ON LM CUE: SC CONT - CMC, ATT DB - MAX BMAG (3) - RATE 2 AT CDR'S REQUEST DURING RCS CHECKOUT CMC MODE - FREE FOR RCS HOT FIRE	99:40	
	PANEL 10 MODE - VOX VOX SENS tw - 5 S-BD - OFF INTERCOM - OFF VHF AM T/R - T/R (VERIFY)		VERIFY: CM2/EL/80/CEX (f8,1/250,FOCUS) CM2/DAC/18/CEX-BRKT, MIR (T8,1/250,7) 12 fps UTILITY PWR - ON
	GAMMA RAY* ALPHA PART*		GAMMA RAY* ALPHA PART*
99:20	AFTER LM RCS CHECKOUT CMC MODE - AUTO LM RR SELF-TEST RNDZ XPNDR - OFF (VERIFY) AUTO RCS SEL B3 - OFF	(21101) (X1111)	TUNNEL LIGHTS - OFF ROLL (4) - ON CYCLE CMC MODE - FREE/AUTO V48 (21101) (X1111) LOAD N47 & N48 V49 TRIM MNVR TO UNDOCK PAD ATT (99:55)
	PRE-LOAD PROBE (DECAL) <i>2048 - OFF UNTIL LM/CM AP 3.5 SP LD</i> DOCKING LATCH RELEASE (DECAL) HATCH INSTALLATION (DECAL)	99:50 REV 12	SET DET COUNTING UP TO UNDOCK/SEP UNDOCK CUE CARD P30; LOAD CSM SEP
99:30	HATCH INTEGRITY CHECK (DECAL) MSFN UPDATE: GO/NO-GO FOR UNDOCK/SEP VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)	100:00	

+						WT	N47
	0	0				P	TRIM N48
	0	0				Y	TRIM

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-111

13

LM FLIGHT PLAN

MCC-H

1234 CDT

CDR

LMP

NOTES

03

100:00
(31022)

CONFIGURE CB'S FOR UNDOCKING

MOUNT DAC ON WINDOW BAR

LM TIMELINE BOOK

:05

V06 N20E
VERIFY UNDOCKING ATTITUDE
(000,286,060)

(21012)

:10

V48 (21012), LM WEIGHT

P47 THRUST MONITOR

CSM/LM UNDOCKING & SEP

100:15

YAW LEFT 60°, PITCH UP 90°

SEPARATION PHOTOGRAPHY
LM3/DAC

LM3/DC

STEERABLE P +41, Y -55
BIOMED - LEFT, PCM - HI

:20

REPORT V06 N20 ANGLES
TO MCC-H

DOFF HELMET & GLOVES (OPT)

DOFF HELMET & GLOVES (OPT)

:25

CAMERA PREP FOR LANDING
SITE OBSERVATIONS

100:30



UPDATE TO LM
REV 12 TCA (L/S)

UPLINK TO LM
CSM S.V.
PIPA BIAS (IF REQD)

GET: 100:13:56

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	100:00 - 100:30	5/12	3-112

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

100:00
(21101)
(X1111)LOAD ΔV IN EMS TO -100.0
CHECK NULL BIAS
VERIFY EMS -100.0/ ΔV /STBYGDC ALIGN
VERIFY ORDEAL
ALT SET = 40 NM
V06N20E (AT LM REQUEST)
PERFORM UNDOCKING SWITCH
CONFIGURATION

UNDOCKING SWITCH CONFIGURATION

ATT DB - MIN
RATE - LOW
RHC PWR NORM - AC/DC
RHC PWR DIR - MNA/MNB
AUTO RCS (16) - MNA/MNB
CB DOCKING PROBE (2) - CLOSED

P41 (TRIM)

SC CONT - SCS
BMAG (3) - ATT 1/RATE 2100:10
(11101)
(X1111)V48 (11101)
(X1111)
RHC & THC - ARMED

UNDOCKING CHECKLIST

UNDOCK/SEPARATION (000,090/106,000)

TIG: 100:13:56.1
BT: 3.3 SEC
 ΔVT : 1.0 FPS
ULLAGE: N/A
ORBIT: 59.8 x 8.4

ACQ MSFN HGA P -57, Y 218

GAMMA RAY*
ALPHA PART*MSFN CMDS:
DSE DUMP

100:20

DAC - OFF
V49 MNVR TO LOW ALT LDMK TRK PAD ATT (100:33)
(020,296,000) OMNI CRECORD MAG % _____, FR # _____
GDC ALIGN
VERIFY ORDEAL
ALT SET = 40 NM

MONITOR S-BAND

CONFIGURE CAMERA: (LDMK TRK)
CM/DAC/SXT/CEX (EXP-PAD) 1 fps (% MAG)MAG (E) _____, MAG % _____
UTILITY PWR - ON

UNDOCKING CHECKLIST

59:30 EMS MODE - NORM, DAC - ON
THC PWR - ON00:00 PROBE EXT/REL - EXT/REL (MOM)
VERIFY PROBE EXTENDED, LM ATTACHED
ALLOW MOTION TO DAMP (5 SEC)
PROBE EXT/REL - EXT/REL (HOLD)(< 20 SEC)
AFTER 2 SEC XLATE (4 JET) AFT
FOR ~ 3 SEC (VGX to + 2.0)
AFTER PROBE/DROGUE DISENGAGED,
PROBE EXT/REL - OFF
CB DOCKING PROBE (2) - OPEN
THC & RHC - LOCKED, THC PWR - OFF
POO
SC CONT - CMC, ATT DB - MAX
 ΔV CG - CSM
BMAG (3) - RATE 2
RHC PWR DIR - OFF
ROLL (4) - OFF
EMS FUNC - ΔV SET/VHF RNG
EMS MODE - VHF RNG
VHF ANT - LEFT
VHF AM A - OFF
VHF AM B - DUPLEX
VHF RANGING - RANGING
VHF AM RCV ONLY - OFF

P30 MANEUVER

SET STARS	C	S	M	S	E	P	PURPOSE
	R	C	S	G	&	N	PROP/GUID
	+			N	/	A	WT N47
R ALIGN _____		O	O	N	/	A	P _{TRIM} N48
P ALIGN _____		O	O	N	/	A	Y _{TRIM}
Y ALIGN _____	+	O	O				HRS GETI
	+	O	O	O			MIN N33
	+	O					SEC
ULLAGE _____	+	O	O	O	O	O	ΔV_x N81
	+	O	O	O	O	O	ΔV_y
	-	O	O	O	1	O	ΔV_z
	X	X	X				R (000)
	X	X	X				P (106)
	X	X	X				Y (000)

100:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-113

LM FLIGHT PLAN

MCC-H

1304 CDT

CDR

LMP

NOTES

100:30
(21012)

:35

:40

100:45

:50

:55

101:00

M
S
F
N

X

DPS THROTTLE CHECK

PITCH TO OBSERVE LANDING SITE (100:43), SET ORDEAL
(000, 340/350,000)

PHOTOGRAPH LANDING SITE
LM3/DC
LM3/DAC

V49 MNVR TO RR CHECKOUT ATT
(100:50)
(000, 344/331,000)
RR & VHF RNG CHECKOUT

STEERABLE P +126, Y -60

P52 IMU REALIGN
OPTION 3, REFSMMAT
(LDG SITE ORIENTATION)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	100:30 - 101:00	5/12	3-114

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

100:30
(11101)
(X1111)

(P20)
(-2.000)
(0.5°DB)

100:40

(11101)
(X1111)

100:50

101:00

P20 OPT 2 (LOW ALT LDMK TRK)
N78 (+090.00)
(+XXX.XX) LOAD LDMK PAD ROLL ANGLE
N79 (-2.0000)
(+000.50)
N34 (LOAD T2 TIME)
PRO

MSFN CMDS:
DSE RECORD

P24 (L/S LDMK 15-X)
OPT ZERO - OFF, OPT MODE - CMC
OPT TEL TRUN - SLAVE TO SXT
OPT COUPLING - RSLV, OPT SPEED - HI

0:00 - T1 (HORIZON) DET - RESET/START, DAC - ON

1:38 - T2 (AUTO PITCH RATE BEGINS) OPT MODE - MAN, TAKE MARKS
2:08 - TCA
2:30 - T3 (LDMK LOSS) DAC - OFF
P00
STOP PITCH RATE AT P 117
VHF RNG - RESET, COMPARE RR AND VHF RANGE
ACQ MSFN HGA P -54, Y 184

MSFN CMDS:
DSE DUMP

RECORD MAG %
REMOVE & STOW DAC

GAMMA RAY: GAINSTEP - SHIELD OFF

P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

MSFN UPLINK:
CSM S.V.
CIRC TARGET LOAD

GAMMA RAY: GAINSTEP - SHIELD ON (CTR)

GAMMA RAY*
ALPHA PART*

P52(IMU REALIGN)

N71: _____

N05: _____

N93: _____

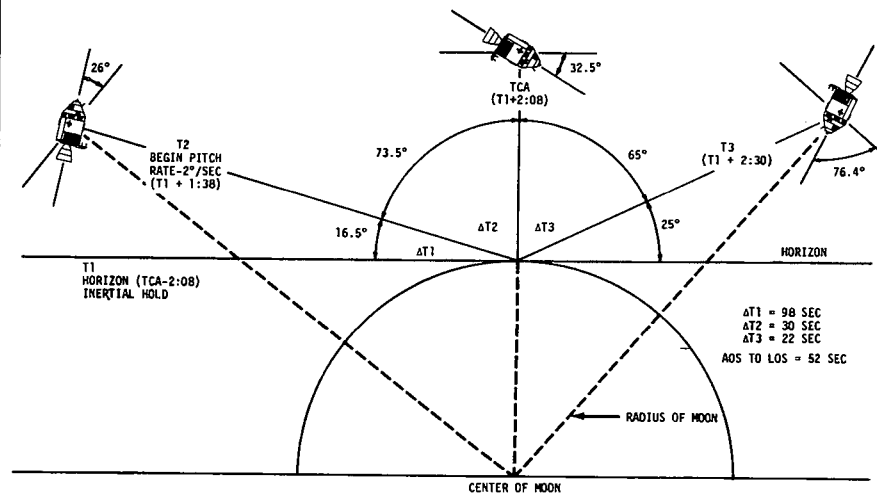
X _____

Y _____

Z _____

GET _____

CSM LOW ALTITUDE LANDMARK TRACKING PROFILE



P24 LDMK TRACKING

TGT: ()

T₁ _____

T₂ _____

TCA _____

T₃ _____

R _____ °P _____ °Y _____ °(T2 ACQ)

N or S NM _____ / SA _____ TA _____ (T2 ACQ)

N89	15-1	15-2	15-3	15-4	15-5	15-6
LAT	+26.065	+25.991	+26.039	+26.352	+25.809	+25.541
LONG/2	+01.836	+01.807	+01.748	+01.662	+01.404	+01.409
ALT	-01.935	-1.744	-01.795	-01.867	-01.854	-01.877

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-115

LM FLIGHT PLAN

MCC-H

1334 CDT

CDR

LMP

NOTES

UPDATE TO LM
CSM CIRC PAD
PDI₀ ABORT PAD

LM COPIES CSM UPDATE

UPLINK TO LM
LGC GYRO COMP
(IF REQD)

UPDATE TO LM
AGS K FACTOR

101:00
(21012)
:
:05
:
:10
:
101:15
:
:20
:
:25
101:30

M
S
F
N

LPD CALIBRATION

V49 MNVR TO AGS CAL ATT
(101:40)(024,014,021)

AGS ACTIVATION

INITIALIZE AGS TIME

V47 INITIALIZE AGS K FACTOR

ALIGN AGS TO PGNS

PCM - LO

OMNI - FWD, VHF B - DATA

AGS SELF TEST

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	101:00 - 101:30	5/12	3-116

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

101:00
(11101)
(X1111)MSFN UPDATE:
CIRC PAD
PADS A-D COPY AT (102:05)P30; VERIFY CIRC TIG AND ΔV 'S

V49 TRIM TO CIRC BURN PAD ATT

(P40)
(0.5°DB)SXT STAR CHECK
P40 (TRIM)GAMMA RAY*
ALPHA PART*

101:10

M
S
F
NGDC ALIGN
VERIFY ORDEAL
ALT SET = 50 NMGAMMA RAY EXP - OFF
X-RAY - OFF
 α RAY/X DR - α OFF
MASS SPECT EXP - OFF

RECORD GET

PAN CAMERA PWR - BOOST
MAP CAMERA ON - STBY (VERIFY)
MAP CAMERA IMAGE MTN - OFF (VERIFY)MSFN UPDATE:
GO/NO GO FOR CIRC

SET DET COUNTING UP TO CIRC

101:20

VHF AM B - OFF
VHF AM A - SIMPLEX
VHF RCY ONLY - B DATA
VHF RANGING - OFF

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

CIRC
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC	$\pm 10^\circ$	BT +1 SEC	TRIM X&Y TO < 0.2 FPS DO NOT TRIM Z
TERMINATE	TERMINATE		

101:30

P30 MANEUVER

SET STARS	C	I	R	C			PURPOSE
	S	P	S	G	&	N	PROP/GUID
	+						WT N47
R ALIGN		0	0				P TRIM N48
P ALIGN		0	0				Y TRIM
Y ALIGN	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE							ΔV_X N81
							ΔV_Y
							ΔV_Z
	X	X	X				R (000)
	X	X	X				P (117)
	X	X	X				Y (358)
	+						H _A N44
							H _P
	+						ΔVT
	X	X	X				BT
	X						ΔVC
	X	X	X	X			SXTS
	+					0	SFT
	+				0	0	TRN
	X	X	X				BSS
	X	X					SPA
	X	X	X				SXP

LM FLIGHT PLAN

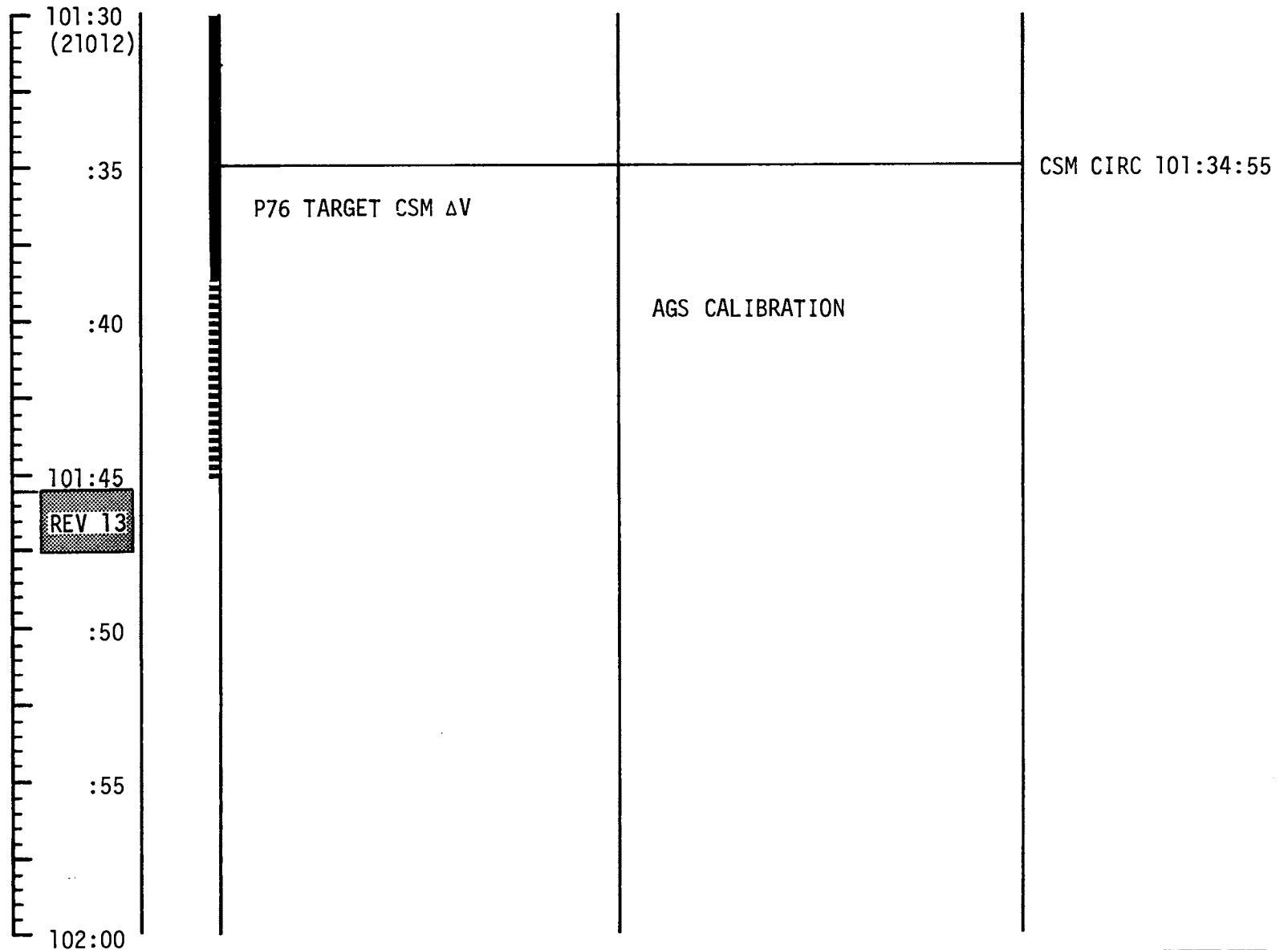
MCC-H

1404 CDT

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	101:30 - 102:00	5/12-13	3-118

FLIGHT PLAN BRANCH

CSM FLIGHT PLAN

101:30
(P40)
(0.5°DB)

(11101)
(X1111)

CSM CIRCULARIZATION(000,001/117,358)

TIG: 101:34:55.1

BT: 3.9 SEC

ΔVT: 70.8 FPS

ULLAGE: 4 JET, 14 SEC

ORBIT: 64.7 x 54.5

P00; VOICE P76 BURN DATA TO LM
V82

V49 MNVR TO LDMK TRK ATT EXCEPT IN ROLL (101:52)
(060,279,000)

101:40

DOFF PGA

ZIP SUIT & INSTALL ELECTRICAL COVER PRIOR
TO STOWING (PGA BAG)
STOW COMM CARRIERS & UCTA (PGA BAG)

REV 13

101:50

GAMMA RAY EXP - ON
X-RAY - STBY
α RAY/X DR - α ON
MASS SPECT EXP - STBY
PAN CAMERA PWR - OFF

RECORD GET

(11111)
(X1111)

V48 (11111)
(X1111)

GAMMA RAY*
ALPHA PART*

102:00

BURN STATUS REPORT

X	X									ΔTIG
X	X									BT
										V _{gx}
										TRIM
X	X	X								R
X	X	X								P
X	X	X								Y
										V _{gx}
										V _{gy}
										V _{gz}
										ΔV _c
X										FUEL
X										OX
X										UNBAL

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-119

LM FLIGHT PLAN

MCC-H

1434 CDT

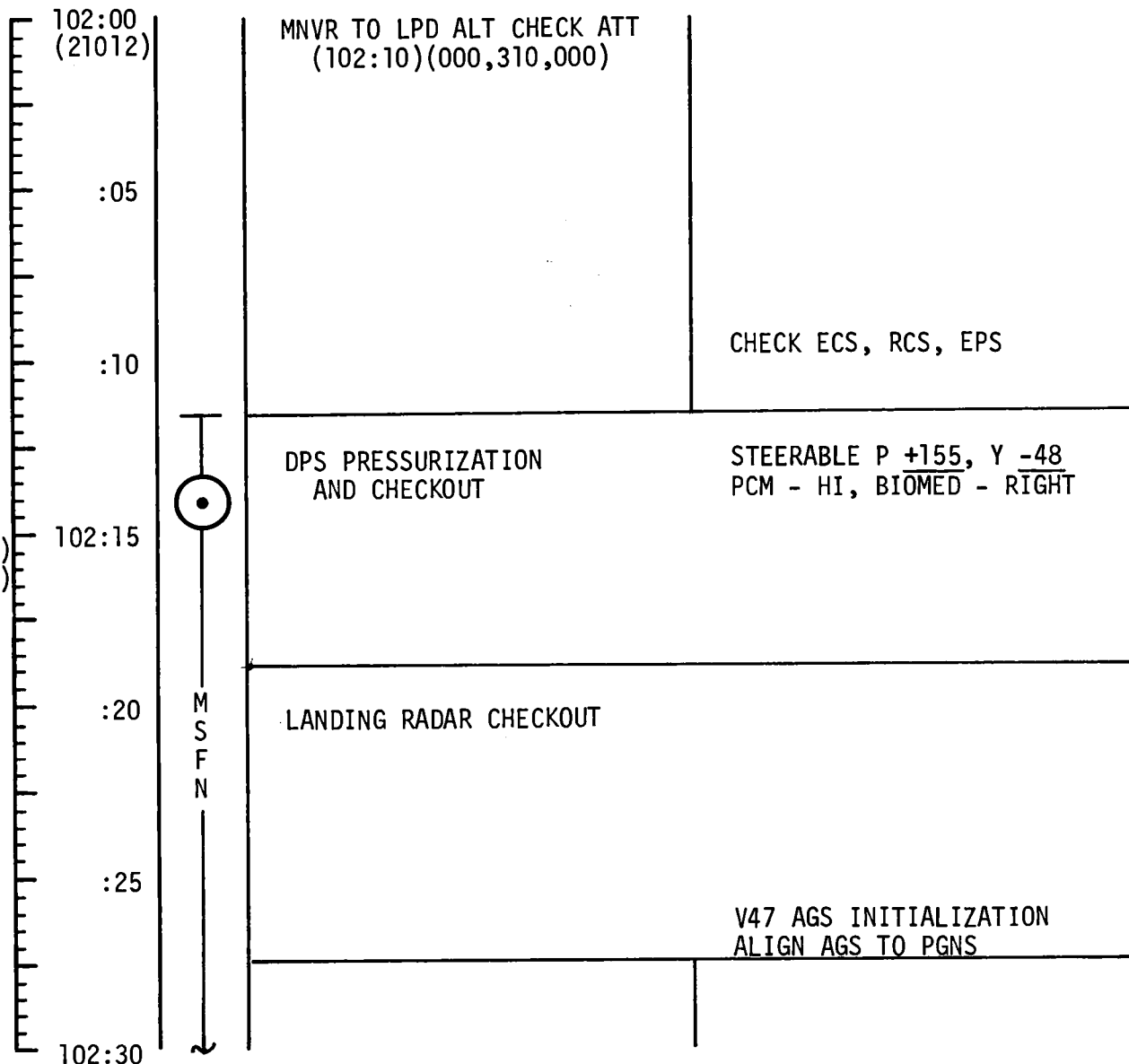
CDR

LMP

NOTES

UPLINK TO LM
CSM S.V. (P24 T2 ACQ)
LM S.V. (P24 T2 ACQ)
PIPA BIAS
DES TARGETING
LPD BIAS (IF REQD)

UPDATE TO LM
NO PDI +12 PAD
PDI PAD
PDI ABORT
EARLY/LATE
T2 ABORT PAD
T3 TIG



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	102:00 - 102:30	5/13	3-120

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

102:00
(11111)
(X1111)

CONFIGURE CAMERA: (LDMK TRK)
CM/DAC/SXT/CEX (EXP PAD) 1 fps (3.8% MAG)

MAG (E) _____, MAG % _____
UTILITY POWER - ON _____

VERIFY ORDEAL
ALT SET = 60 NM

ACQ MSFN HGA P 10, Y 288

MSFN CMDS:
DSE DUMP

REPORT: BURN STATUS

MSFN UPDATE:
P24 LDMK TRACK (102:50)

MSFN UPLINK:
CSM S.V. (P24 T2 ACQ)
LM S.V. (P24 T2 ACQ)
PIPA BIAS

MSFN UPDATE TO LM
WITH CSM COPY:
PADS E-N

CYCLE CMC MODE - FREE/AUTO
P20 OPT 5 (LDMK TRK ATT) (102:33)
N78 (+000.00)
(-068.00)
(+000.00)
N79 (+000.50)
N70 (00050)
(000,338/279,000) OMNI C

102:10

102:20

(P20)
(0.5°DB)

102:30

GAMMA RAY*
ALPHA PART*

PURPOSE		PDI ₀ ABORT PAD			
A	GETI N33	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	
B	N84 LOCAL	ΔVX			
	VERT	ΔVY			
		ΔVZ			
C	GETI CSI N11	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	
D	GETI TPI N37	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

PURPOSE		PDI ₁ PAD			
I	GETI N33	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

PURPOSE		PDI ₁ ABORT EARLY PAD			
J	GETI TPI N37	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

PURPOSE		PDI ₁ ABORT LATE PAD			
K	GETI TPI N37	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

PURPOSE		NO PDI ₁ +12 ABORT			
E	GETI N33	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	
F	N84 LOCAL	ΔVX			
	VERT	ΔVY			
		ΔVZ			
G	GETI CSI N11	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	
H	GETI TPI N37	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

PURPOSE		T2-1 ABORT PAD			
L	GETI T2	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	
M	GETI TPI N37	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

PURPOSE		T3 ABORT PAD			
N	GETI T3	HRS	+	0	0
		MIN	+	0	0
		SEC	+	0	

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-121

LM FLIGHT PLAN

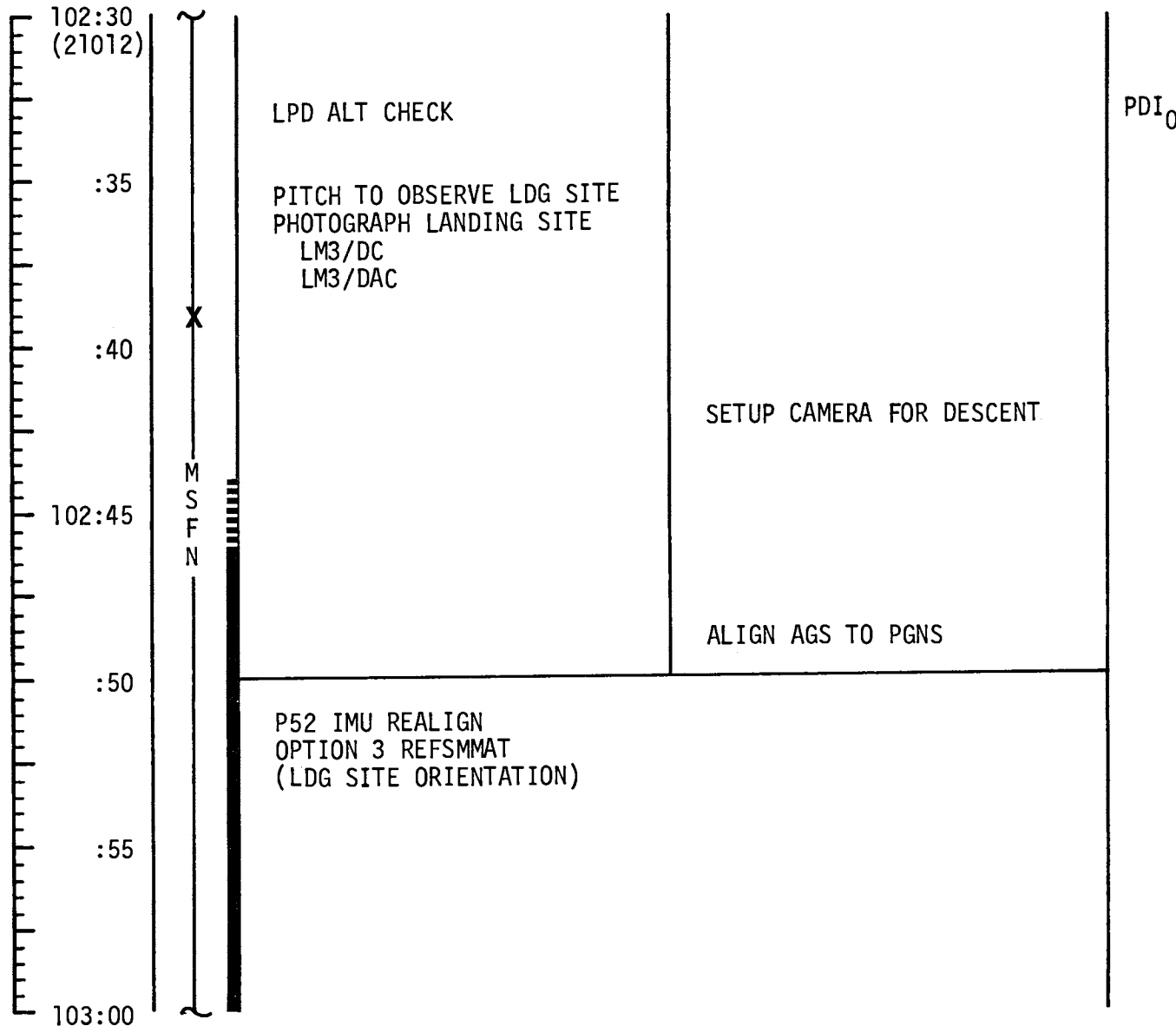
MCC-H

1504 CDT

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	102:30 - 103:00	5/13	3-122

FLIGHT PLANNING BRANCH

1504 CDT

CSM FLIGHT PLAN

102:30
(P20)
(0.5°DB)
(11111)
(X1111)

P24 (L/S LDMK 15-1)
OPT ZERO - OFF, OPT MODE - CMC

0:00 - T1 (HORIZON) DET - RESET/START

MSFN CMDS:
DSE RECORD

3:50 - DAC - ON

4:50 - T2 (LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA
7:18 - T3 (LDMK LOSS) DAC - OFF

P00

V48 (11112)

(X1111)

V49 MNVR TO P52 AND COAS CALIB ATT (102:54)
(180,257,012) HGA P -69, Y 114

GAMMA RAY*
ALPHA PART*

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____

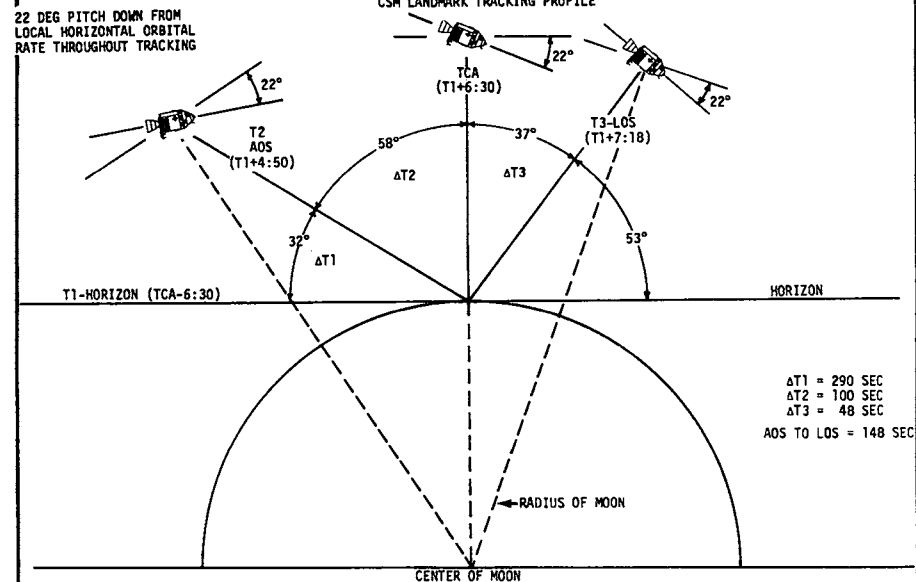
MSFN CMDS:
DSE DUMP

P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

22 DEG PITCH DOWN FROM
LOCAL HORIZONTAL ORBITAL
RATE THROUGHOUT TRACKING

CSM LANDMARK TRACKING PROFILE



P24 LDMK TRACKING

TGT: 15-1

T₁ _____
T₂ _____
TCA _____
T₃ _____
R _____ °P _____ °Y _____ ° (T2 ACQ)

N or S NM _____ / SA _____ TA _____ (T2 ACQ)

N89

LAT +26.065

LONG/2 +01.836

ALT -01.935

102:50 M
S
F
N

103:00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-123

LM FLIGHT PLAN

MCC-H

1534 CDT

CDR

LMP

NOTES

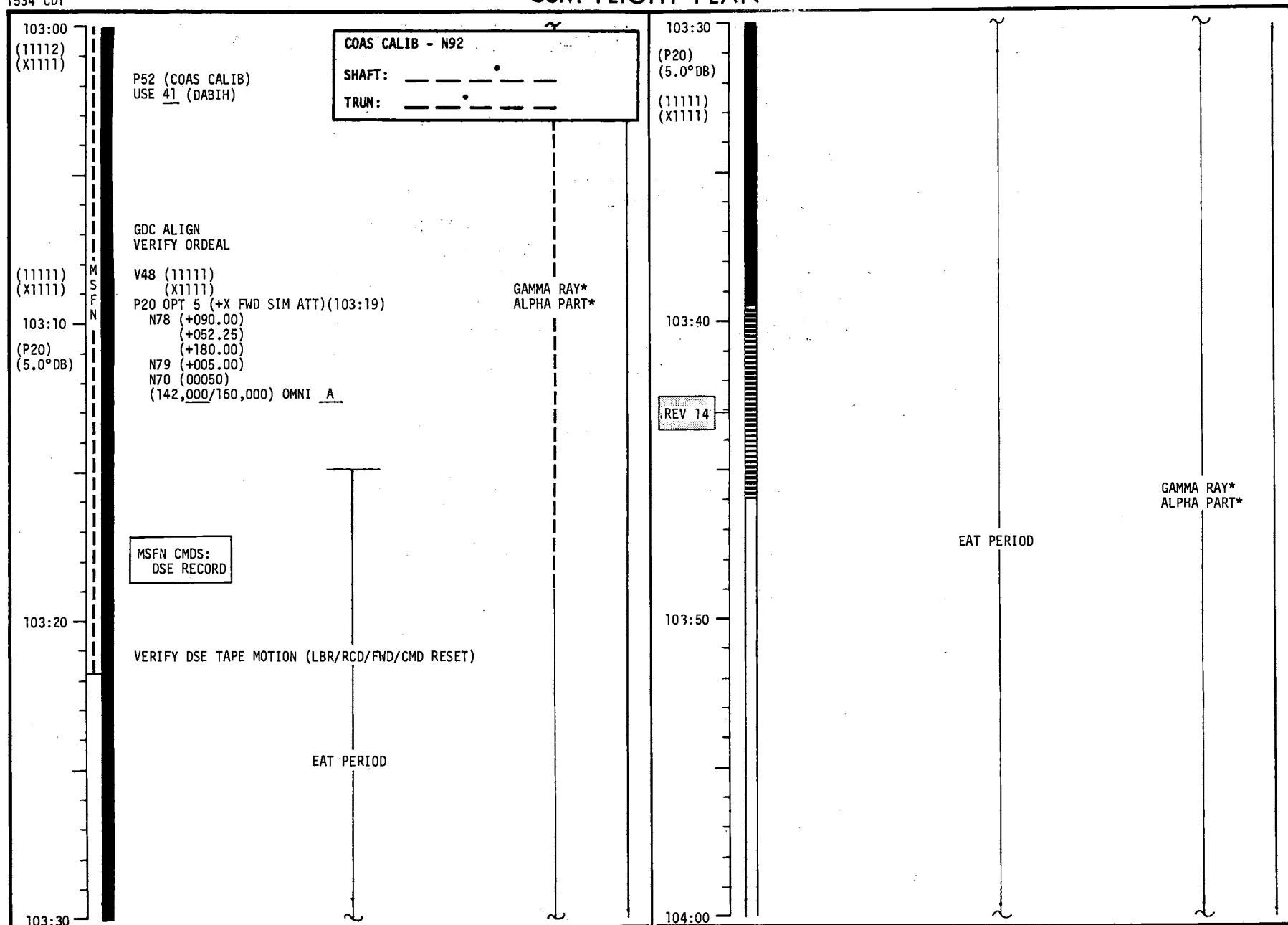
UPLINK TO LM
GYRO DRIFT COMP
(IF REQD)

103:00 (21012)		
:10 (22112)	COAS CALIBRATION P63 IGNITION ALGORITHM TEST MNVR TO PDI ATT (103:35) (000,111,310) V48 (22112)	ALIGN AGS TO PGNS
:20	COAS TO OVHD WINDOW	OMNI-FWD, PCM-LO VHF B-DATA VERIFY LOOSE GEAR STOWED AND RESTRAINTS ATTACHED
103:30	DON HELMET & GLOVES	ECS CHECKOUT DON HELMET & GLOVES
REV 14 :40		INVERTER-1
:50	PDI SWITCH CHECK	
104:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	103:00 - 104:00	5/13-14	3-124

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-125

LM FLIGHT PLAN

MCC-H

1634 CDT

CDR

LMP

NOTES

UPLINK TO LM
LM S.V.
RLS
UPDATE TO LM
AGS RLS (IF REQD)

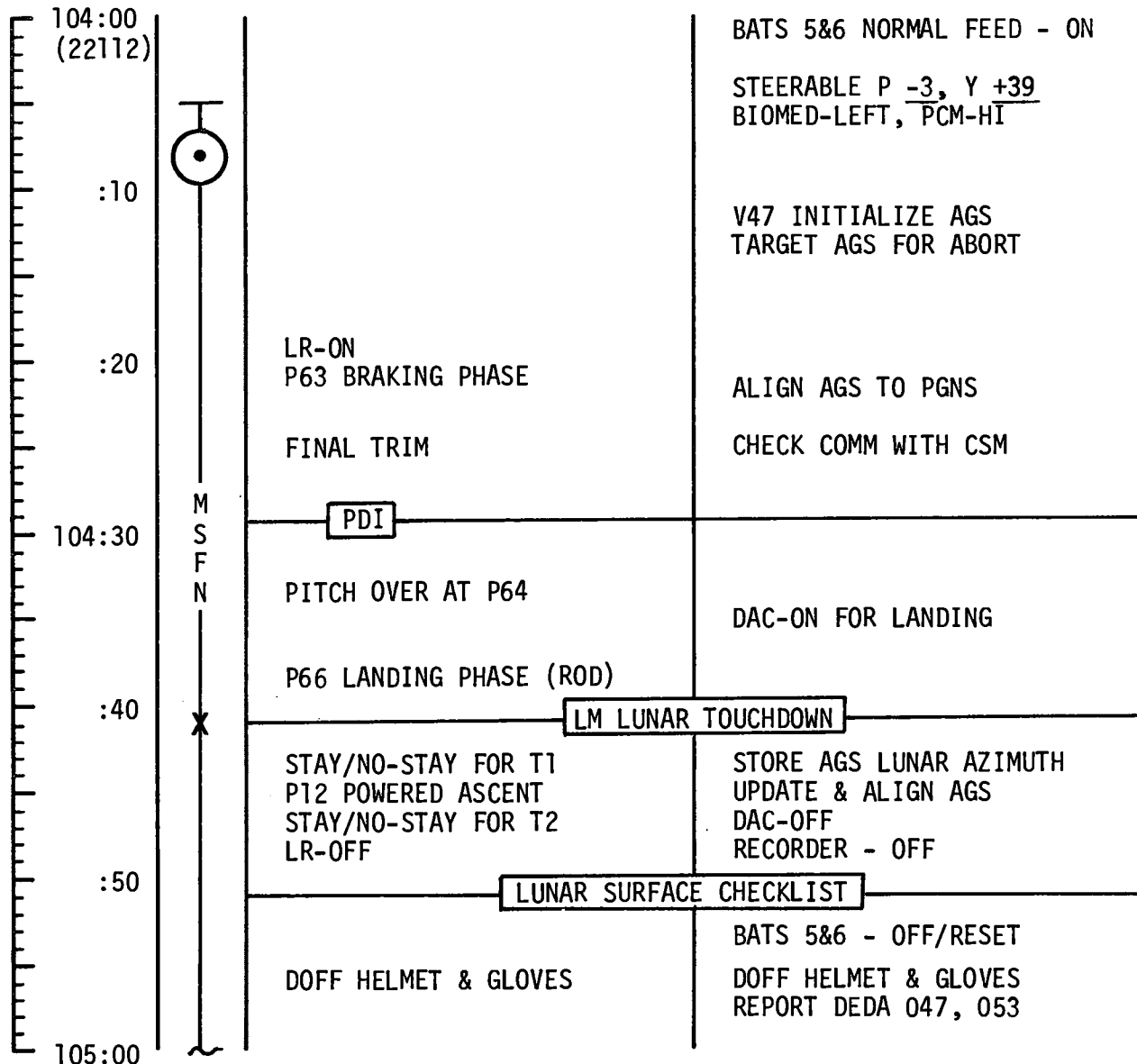
UPDATE TO LM
N69 BACKUP RLS
(IF REQD)

GO/NO-GO FOR PDI

UPDATE TO LM
(IF REQD)
N69 NOMINAL
N69 DOWN TRACK AND
CROSS TRACK
N69 RADIAL

STAY/NO-STAY FOR T1

STAY/NO-STAY FOR T2



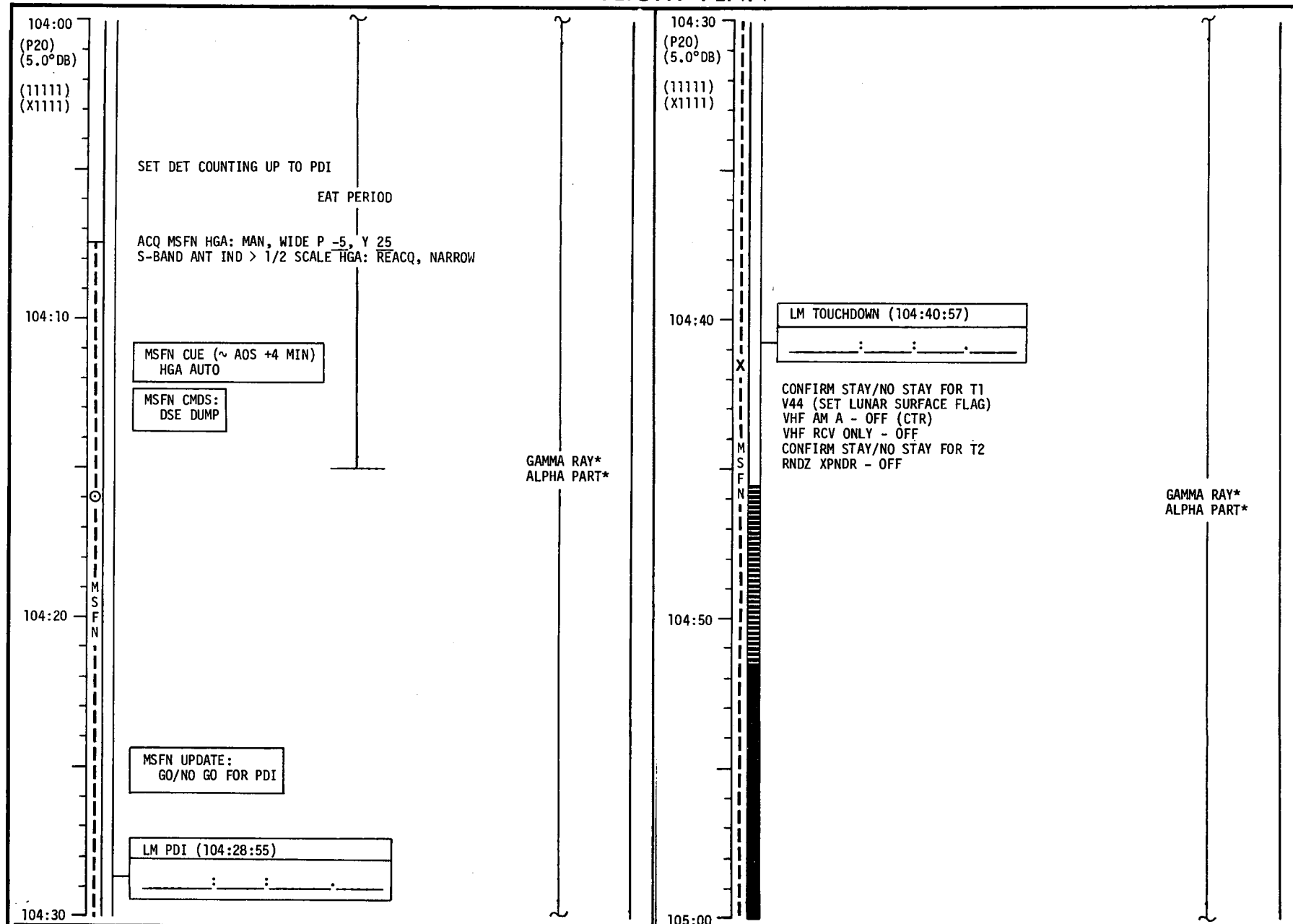
TIG: 104:28:54.8
BT: 12 MIN, 2.1 SEC
ΔVR: 6700 FT/SEC
ULLAGE: 4 JET 7.5 SEC

GET: 104:40:57

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	104:00 - 105:00	5/14	3-126

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-127

LM FLIGHT PLAN

MCC-H

1734 CDT

CDR

LMP

NOTES

0434

105:00
(22112)

:10

:20

105:30

:40

:50

106:00

M
S
F
N

P57 LUNAR SURFACE ALIGN OPTION 3 REFSMMAT A/T-1 GRAVITY & LM Z-AXIS (LANDING SITE ORIENT)	AGS LUNAR SURFACE GYRO CALIBRATION
INSTALL WINDOW SHADES	STEERABLE P <u>+73</u> , Y <u>-62</u>
PARTIAL POWER DOWN	
P57 LUNAR SURFACE ALIGN OPTION 3, REFSMMAT A/T-2, TWO CELESTIAL BODIES (LANDING SITE ORIENT)	
P57 LUNAR SURFACE ALIGN OPTION 3, REFSMMAT A/T-2, TWO CELESTIAL BODIES (LANDING SITE ORIENT)	
E-MEMORY DUMP, POO	AGS/PGNS ALIGN AGS STANDBY
CONFIGURE TO POWER DOWN	BATS 3&4 - OFF/RESET LUNAR BAT (CDR) - ON CHECK BUS VOLTS
LGC TO STANDBY, IMU PWR DN	
SEVA PREP EQUIPMENT PREP FOR SEVA	
HELMET/GLOVE DONNING	
PRESSURE INTEGRITY CHECK	

STAY/NO-STAY FOR T3

UPDATE TO LM
LIFT-OFF TIMES FOR
REVS 16 THRU 20

CSM REV 15

09

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	105:00 - 106:00	5/14-15	3-128

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

105:00 (P20) (5.0°DB) (11111) (X1111)	CMC MODE - FREE P52 (OPTION 3) (LDG SITE ORIENT) REPORT: <u>GYRO TORQUING ANGLES</u> P20, CMC MODE - AUTO GDC ALIGN VERIFY ORDEAL MSFN UPDATE: MAP CAMERA PHOTO PADS (105:30 AND 106:50) PAN CAMERA PHOTO PAD (105:35)	105:30 (P20) (5.0°DB) (11111) (X1111)	MAP CAMERA PHOTO PAD T-START: _____ T-STOP: _____ PAN CAMERA PHOTO PAD T-START: _____ T-STOP: _____
105:10	MSFN UPLINK: CSM S.V. P52 IMU REALIGN N71: _____ N05: _____ N93: _____ X _____ Y _____ Z _____ GET _____	105:40 REV 15	S-BD AUX TV - SCI DATA SYS ON - ON CMC MODE - FREE V22N79 (+000.50) CMC MODE - AUTO SIM EXPERIMENT PREP (CUE CARD) INHIBIT ALL JETS EXCEPT A1 & C2 OR D1 & B2, A3,C4,B3,D4 LOGIC POWER (2) - DPLY/RETR MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR) MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY
105:20	MSFN CMDS: (AOS +69 MIN) DSE RECORD VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET) GAMMA RAY* ALPHA PART* CONFIGURE CAMERA: (ORBITAL SCIENCE) CM/EL/250/CEX (5.6,1/250,∞) (64 FR) MAG (0) _____, FR # _____	105:50	PAN CAMERA: MODE - STBY, PWR - ON tb-BP (2 SEC)/GRAY, STEREO, EXPOSURE - NORMAL (CTR) PCM BIT RATE HIGH/CMD RESET LASER ALTM - ON RECORD GET _____ ORBITAL SCIENCE PHOTOS PHOTO TGT 2 (GAGARIN) (A3-P2) CM3 (f5.6,1/250,∞) 36 FR AT 5 SEC INTERVALS
105:30		106:00	MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY) MAP CAMERA ON - ON (T START) PAN CAMERA MODE - OPR tb-BP (2 SEC)/GRAY (T START) MAP CAMERA IMAGE MTN - INCR (tb-BP +4 STEPS)/ON REMOVE CM5 WINDOW COVER PHOTO TGT 6 (N.W. TSIOLKOVSKY) (A4,A5-P6) CM5 (f11,1/250,∞) 28 FR AT 5 SEC INTERVALS REPLACE CM5 WINDOW COVER RECORD FR # _____ GAMMA RAY* ALPHA PART* LASER ALTM MAP CAMERA PAN CAMERA

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-129

LM FLIGHT PLAN

MCC-H

1834 CDT

CDR

LMP

NOTES

106:00		CABIN DEPRESS		
:05		HATCH OPENING		
:10		STANDUP IN HATCH IDENTIFY LANDMARKS FOR LANDED LM LOCATION		START SEVA
106:15	M S F N	360° PAN DC/60MM (22 FR)	HAND DC/60MM TO CDR	
:20		CHECK TRAVERSE ROUTES FOR TRAFFICABILITY AND LANDMARKS, ALSEP LOCATION		0:10
:25		FAR FIELD GEOLOGY FRONT, RILLE, NORTH COMPLEX, MARE SURFACE & BOULDER FIELDS LONG LENS PHOTOGRAPHY	HAND DC/500MM TO CDR	
106:30				0:20

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	106:00 - 106:30	5/15	3-130

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

106:00	(P20)	(0.5°DB)	(11111)	(X1111)	
					ACQ MSFN HGA: MAN, WIDE P -5, Y 25 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW
					CONFIGURE DSE (STOP/CMD RESET/REWIND)(AOS +2 MIN) PAN CAMERA - MONO (T START +15:30)
106:10					MSFN CUE: (~ AOS +4 MIN) HGA AUTO MSFN UPDATE: P24 LM VISUAL (106:50) MAP CAMERA PAN CAMERA GAMMA RAY* ALPHA PART* LASER ALTM
					PAN CAMERA - STEREO (T START +22:00)
	(11102)	(X1111)			V48 (11102) (X1111)
					MAP CAMERA ON - OFF (T STOP)/LASER ALTM - OFF PAN CAMERA: MODE - STBY (T STOP) MAP CAMERA ON - STBY (T STOP +1 MIN)
					MSFN: VERIFY LENS TUCK IN
106:20	(P20)	(0.5°DB)			PAN CAMERA: PWR - OFF MAP CAMERA IMAGE MTN - OFF (tb-BP IN 3-5 SEC then GRAY) P20 OPT 5 (P24 LM VISUAL TRK ATT) (106:26) N78 (+000.00) (-080.00) (+000.00) N79 (+000.50) N70 (00050) (000,350/303,000) OMNI <u>D</u>
					MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN) then OFF (CTR)
					MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)
106:30					

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-131

LM FLIGHT PLAN

MCC-H

1904 CDT

CDR

LMP

NOTES

106:30
:35
:40
106:45
:50
:55
107:00

X
M
S
F
N

NEAR FIELD GEOLOGY EFFECTS OF DESCENT ENGINE FRAGMENT DISTRIBUTION CRATERS, BOULDERS, & SOIL
CONFIRM BEST ALSEP LOCATION
INGRESS CABIN INSTALL DROGUE
CLOSE HATCH
REPRESS CABIN
POST-SEVA SYSTEMS CONFIGURATION

0:20

0:30/END SEVA

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	106:30 - 107:00	5/15	3-132

FLIGHT PLANNING BRANCH

1904 CDT

CSM FLIGHT PLAN

106:30
(P20)
(0.5°DB)
(11102)
(X1111)

P24 (LM VISUAL TRACK)
OPT ZERO - OFF, OPT MODE - CMC

0:00 - T1 (HORIZON) DET - RESET/START

MSFN CMDS:
DSE RECORD

4:07 - T2 (LM ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA
6:58 - T3 (LM LOSS)

P20 OPT 5 (+X FWD SIM ATT)(106:49)
V25N78 (+090.00)
(+052.25)
(+180.00)
(142,000/243,000) HGA P -64, Y 222

GAMMA RAY: GAINSTEP - SHIELD OFF

GAMMA RAY*
ALPHA PART*

MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
ALPHA/X-RAY EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR)
GAMMA RAY BOOM - DEPLOY tb-BP(~2:45)/GRAY then OFF (CTR)

RECORD & REPORT DEPLOY TIME _____ (ΔT IN BP)

MSFN CMDS:
DSE DUMP

X-RAY - ON
LASER ALTM - ON

RECORD GET _____

GAMMA RAY: GAINSTEP - SHIELD ON (CTR)
MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY)
MAP CAMERA ON - ON (T START)
MAP CAMERA IMAGE MTN - INCR (tb-BP)/ON

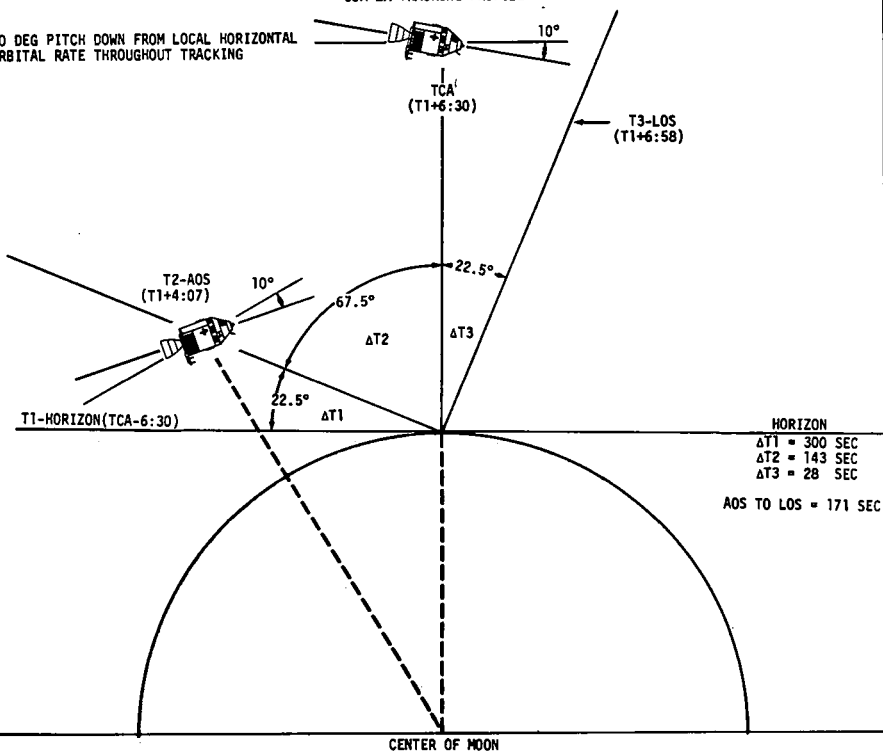
MAP CAMERA

106:50

107:00

10 DEG PITCH DOWN FROM LOCAL HORIZONTAL
ORBITAL RATE THROUGHOUT TRACKING

CSM LM TRACKING PROFILE



P24 LDMK TRACKING

TGT: LM VISUAL ()

T1 _____
T2 _____
TCA _____
T3 _____

R _____ °P _____ °Y _____ ° (T2 ACQ)

N or S NM _____ / SA _____ TA _____ (T2 ACQ)

N89

LAT +26.074

LONG/2 +01.827

ALT -01.917

MAP CAMERA PHOTO PAD

T-START: _____

T-STOP: _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-133

LM FLIGHT PLAN

MCC-H

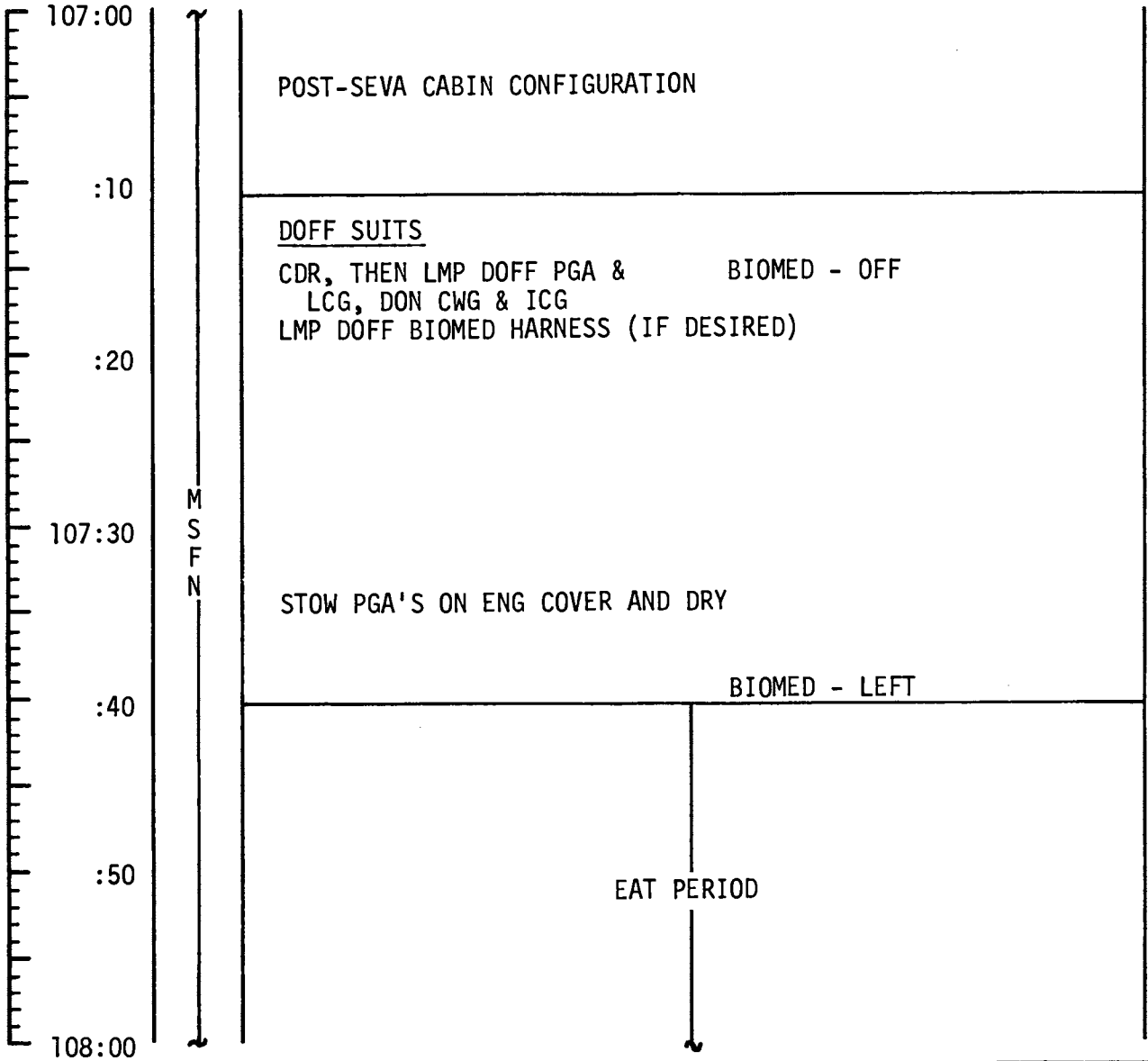
1934 CDT

CDR

LMP

NOTES

UPDATE TO LM
LM CONSUMABLES

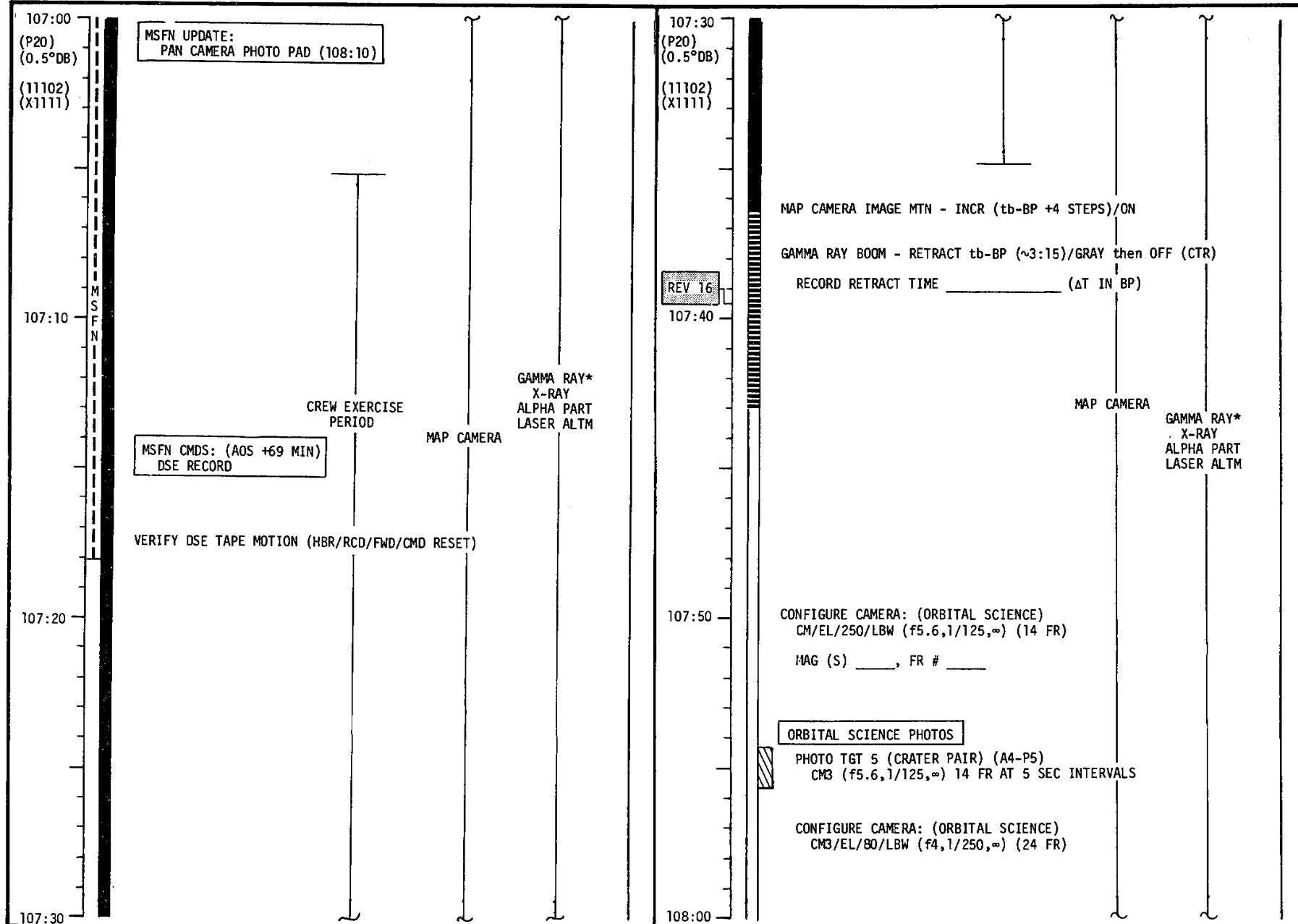


CSM REV 16

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	107:00 - 108:00	5/15-16	3-134

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-135

LM FLIGHT PLAN

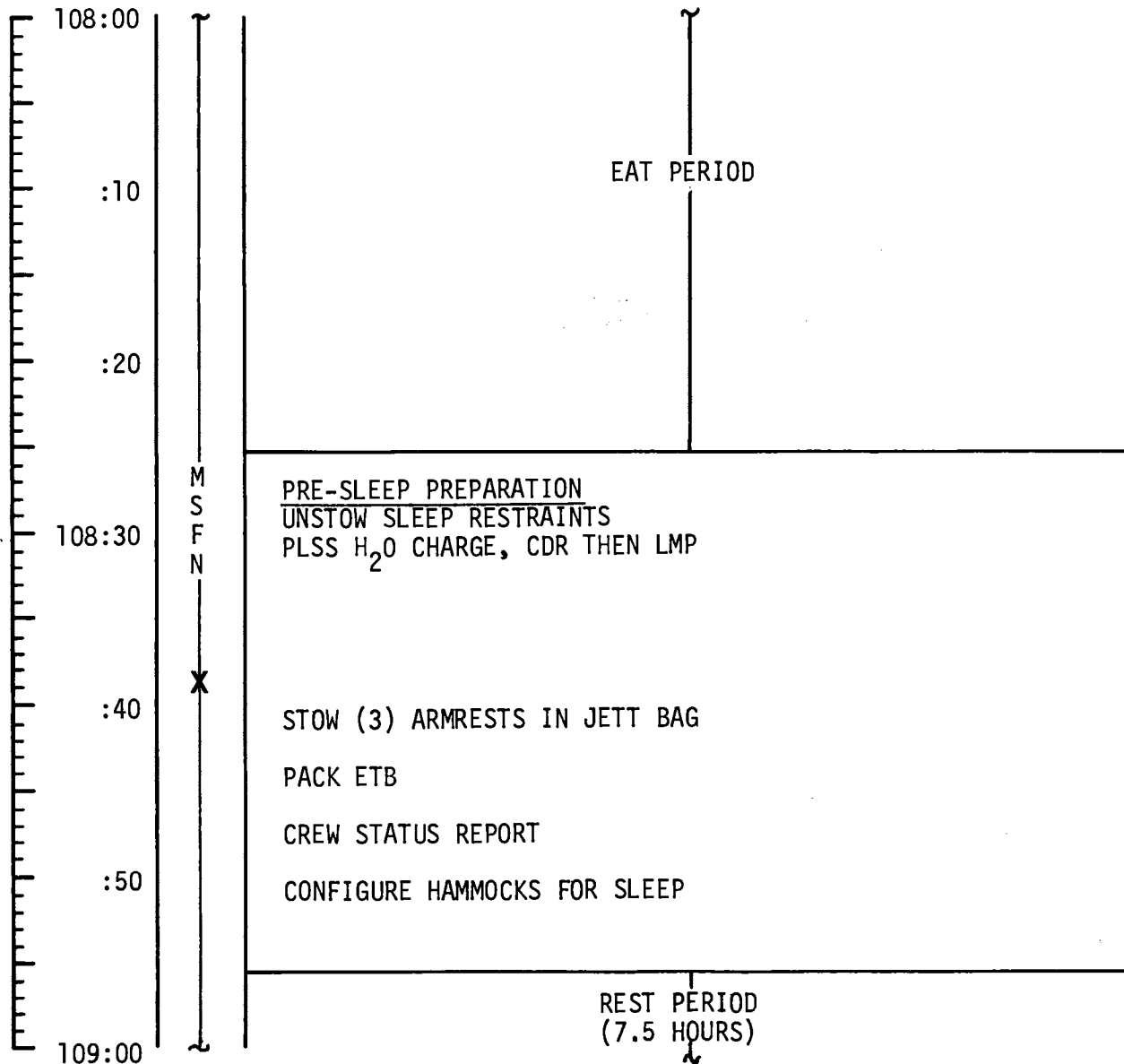
MCC-H

2034 CDT

CDR

LMP

NOTES

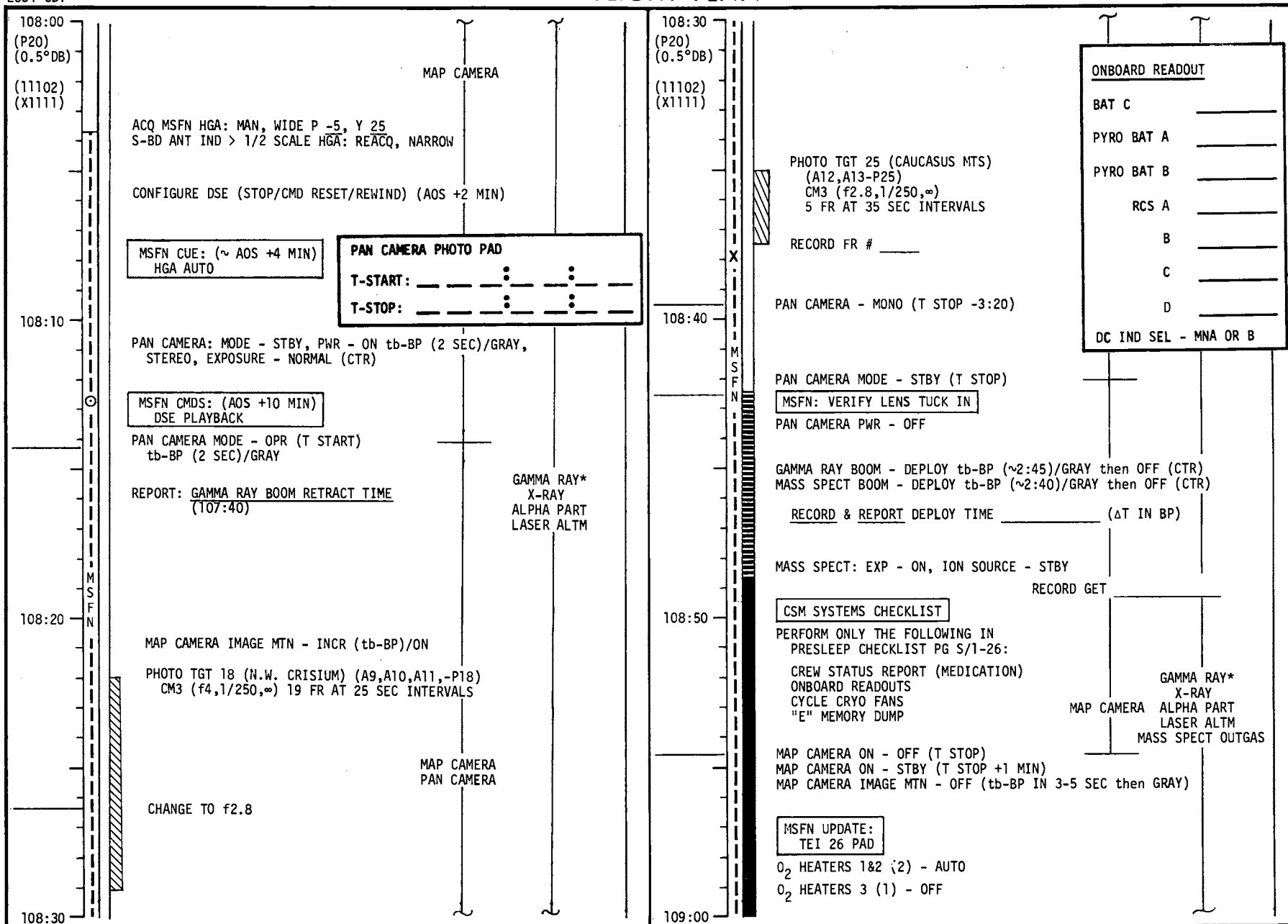


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	108:00 - 109:00	5/16	3-136

FLIGHT PLANNING BRANCH

2034 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-137

NOTES

110:00

MSFN

REST PERIOD
(7.5 HOURS)

CSM REV 17

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	109:00 - 110:00	5/16-17	3-138

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

109:00
(P20)
(0.5°DB)

(11102)
(X1111)

CMC MODE - FREE
P52 (OPTION 3)
(LDG SITE ORIENT)
REPORT: GYRO TORQUING ANGLES

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

P20, CMC MODE - AUTO
GDC ALIGN
VERIFY ORDEAL

X-RAY - STBY
LASER ALTM - OFF
MAP CAMERA TRACK - RETRACT tb-BP(≈4 MIN)/GRAY then OFF (CTR)
ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

MSFN CMDS: (AOS +69 MIN)
DSE RECORD

MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

(11102)
(X1111)

POO AT PITCH OF 158°
VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

GAMMA RAY*
ALPHA PART*
MASS SPECT OUTGAS

P52 IMU REALIGN

N71: _____
N05: _____
N93: _____
X _____
Y _____
Z _____
GET _____

109:30
(11102)
(11111)

(11101)
(X1111)

V48 (11101)
(X1111)

V49 MNVR TO BISTATIC RADAR ATT (109:45)
(06B,158,000)

CONFIGURE COMM FOR S-BAND & VHF BISTATIC RADAR TEST
VHF AM T/R (3) - RCV (VERIFY)
VHF AM A - OFF (VERIFY)
VHF AM B - DUPLEX (VERIFY)
VHF RNG - RNG
VHF ANT - RIGHT

S-BD MODE RANGING - OFF
S-BD AUX TAPE - OFF (VERIFY)
S-BD ANT - HI GAIN/MAN/WIDE
HGA P -21, Y 150

CONFIGURE DSE (LBR/RCD/FWD/CMD RESET)

GAMMA RAY*
ALPHA PART*
MASS SPECT OUTGAS

REV 17

109:40

109:50

P20 OPT 2
N78 (+090.00)
(+047.50)
N79 (-0.0830)
(+000.50)
N34 (+00110)
(+00000)
(+000.00)
PRO

110:00

109:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-139

LM FLIGHT PLAN

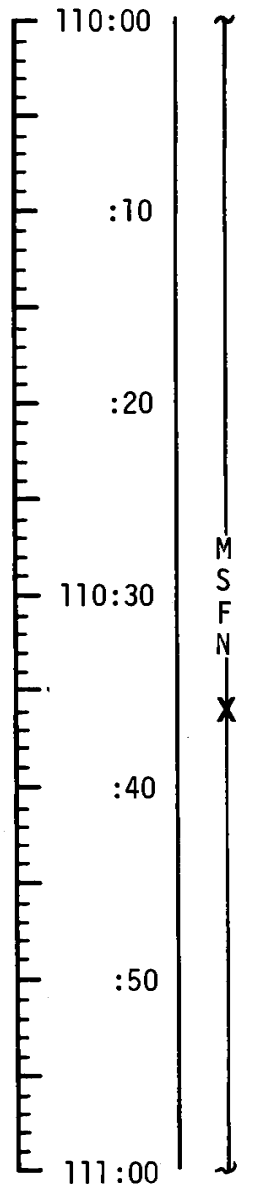
MCC-H

2234 CDT

CDR

LMP

NOTES



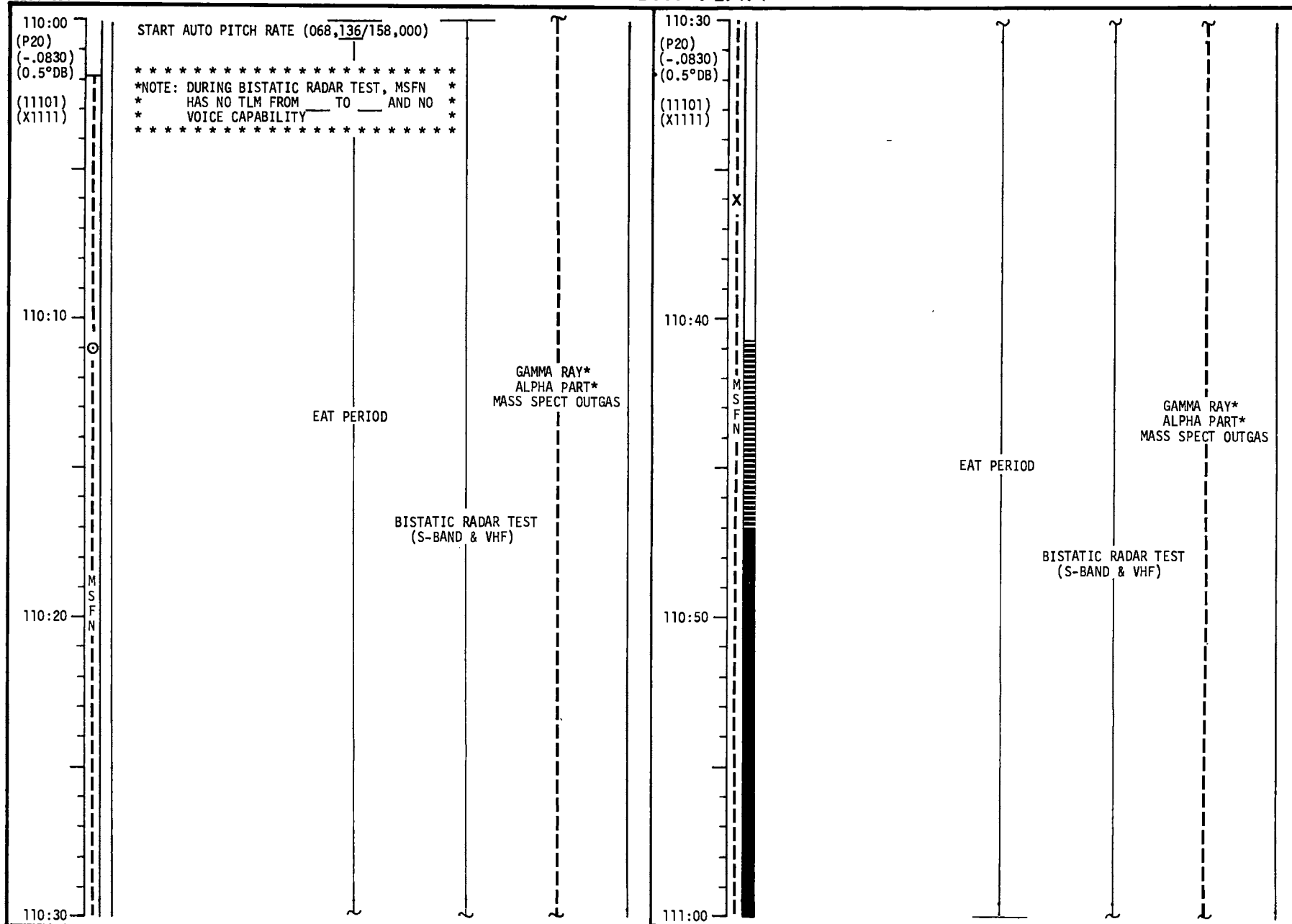
REST PERIOD
(7.5 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	110:00 - 111:00	5/17	3-140

FLIGHT PLANNING BRANCH

2234 GMT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-141

/B.

NOTES

112:00

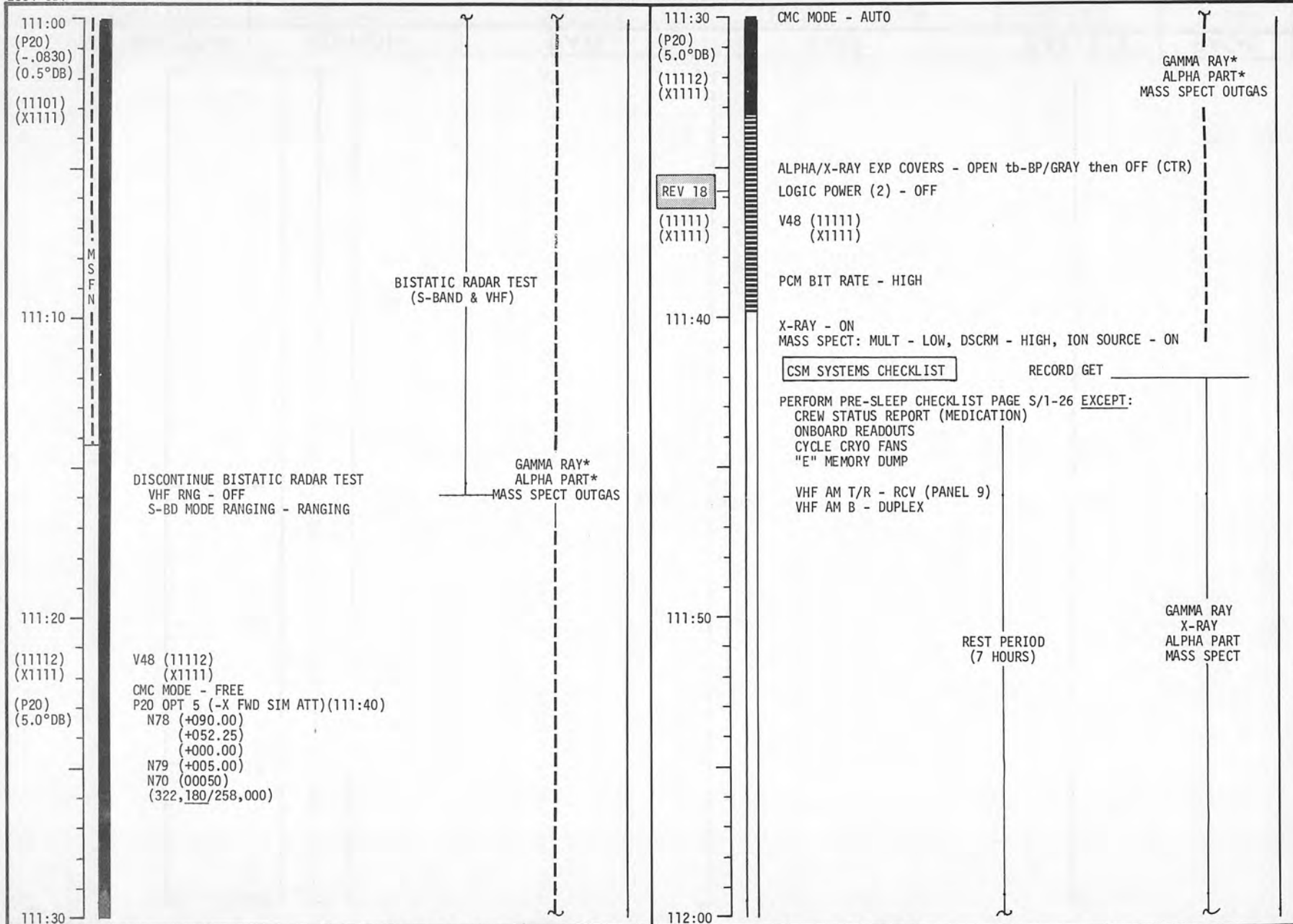
MSFN

REST PERIOD
(7.5 HOURS)

CSM REV 18

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	111:00 - 112:00	5/17-18	3-142

FLIGHT PLANNING BRANCH



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-143

LM FLIGHT PLAN

MCC-H

0034 CDT

CDR

LMP

NOTES

M
S
F
N
X

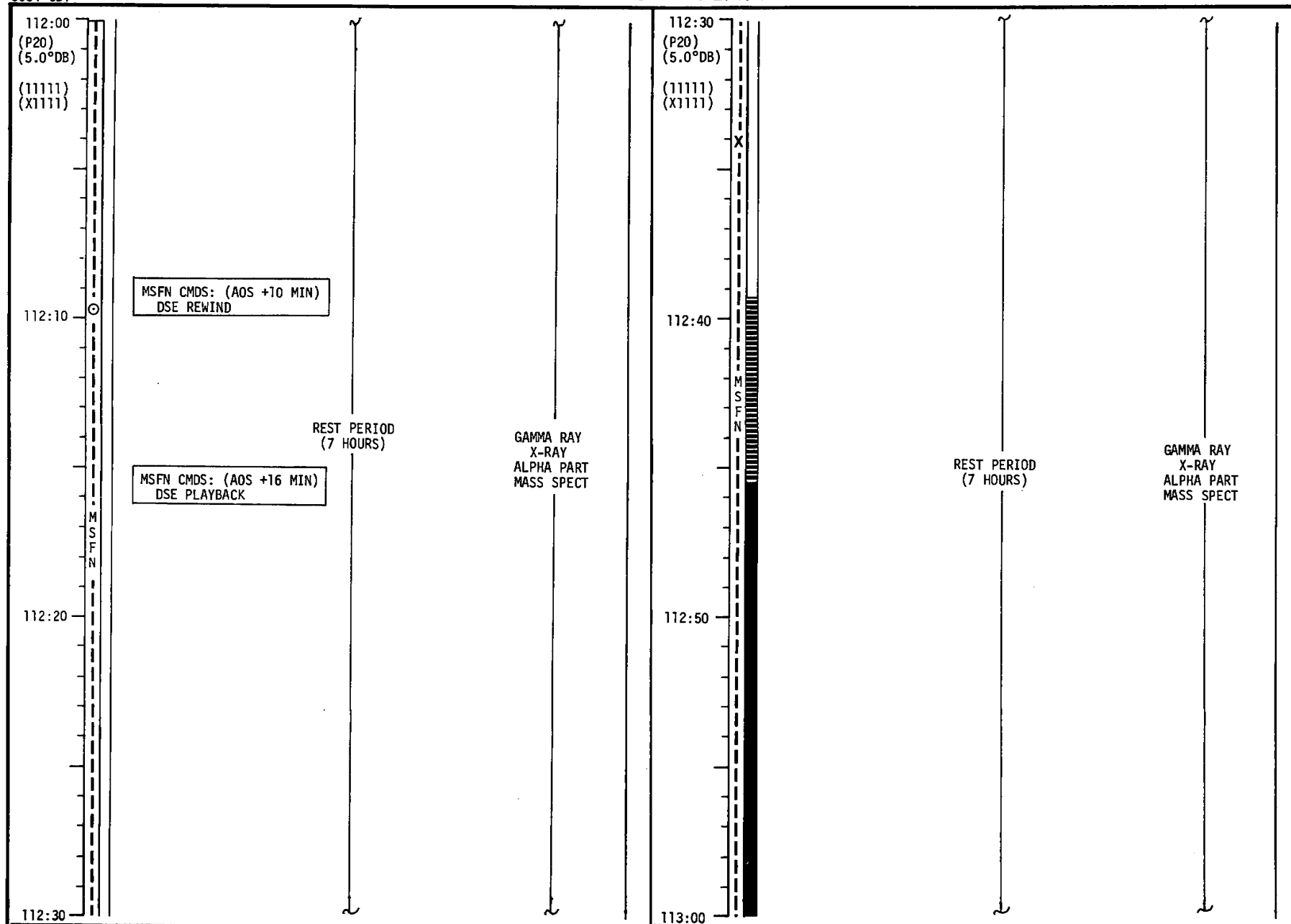
REST PERIOD
(7.5 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	112:00 - 113:00	5/18	3-144

FLIGHT PLANNING BRANCH

0034 CDT

CSM FLIGHT PLAN

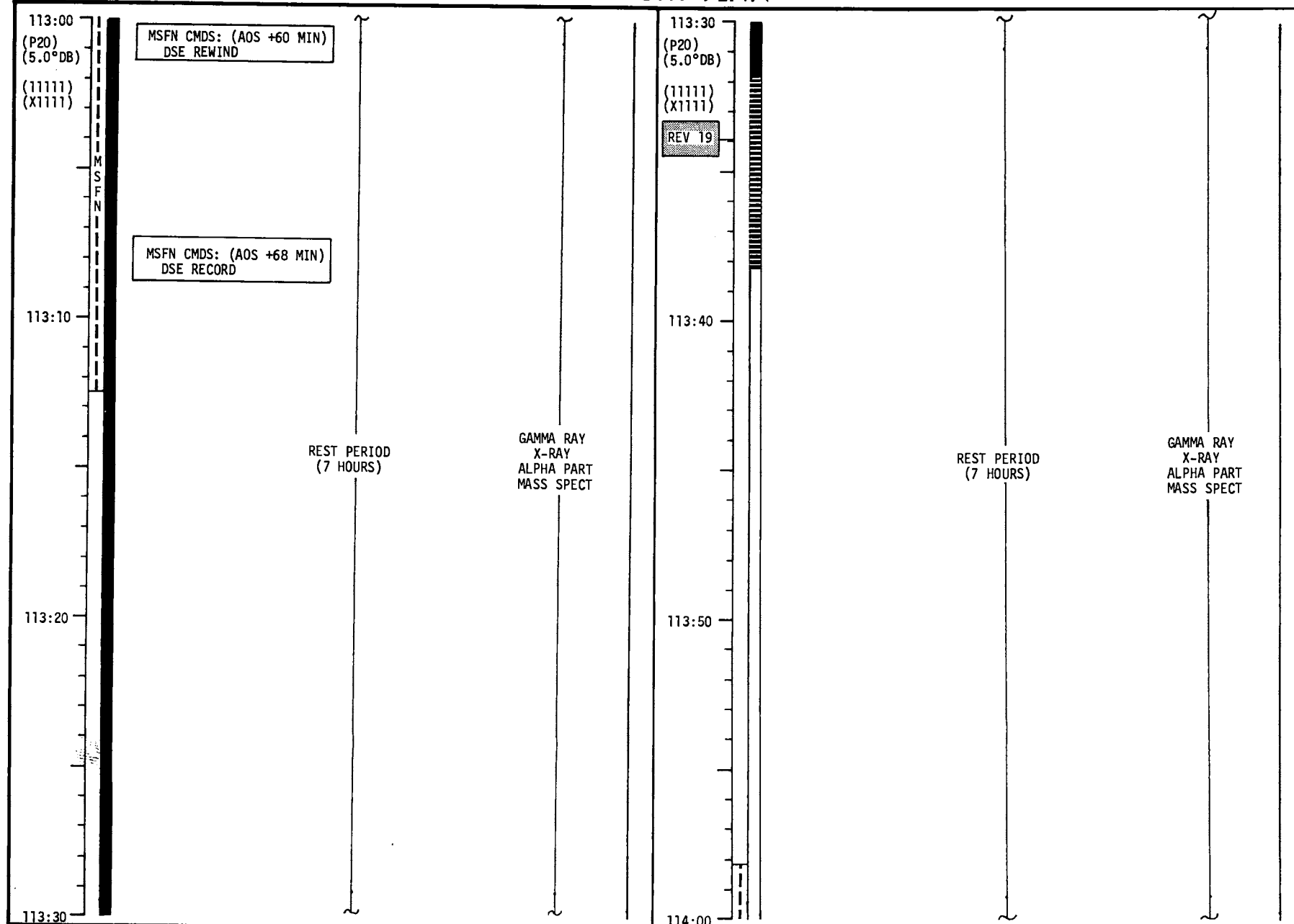


MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-145

FLIGHT PLANNING BRANCH

0134

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-147

LM FLIGHT PLAN

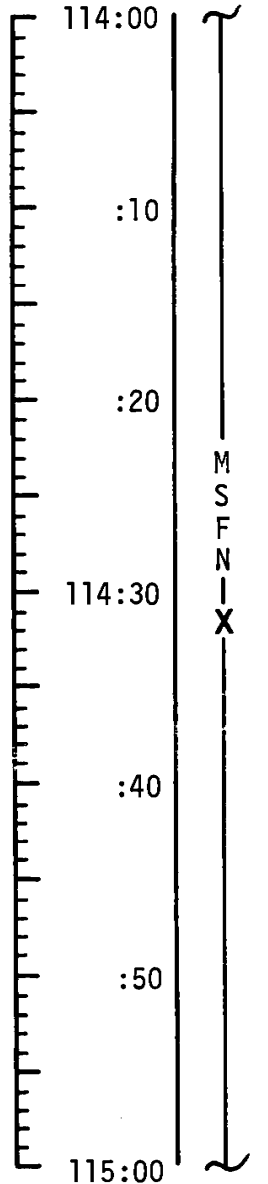
MCC-H

0234 CDT

CDR

LMP

NOTES

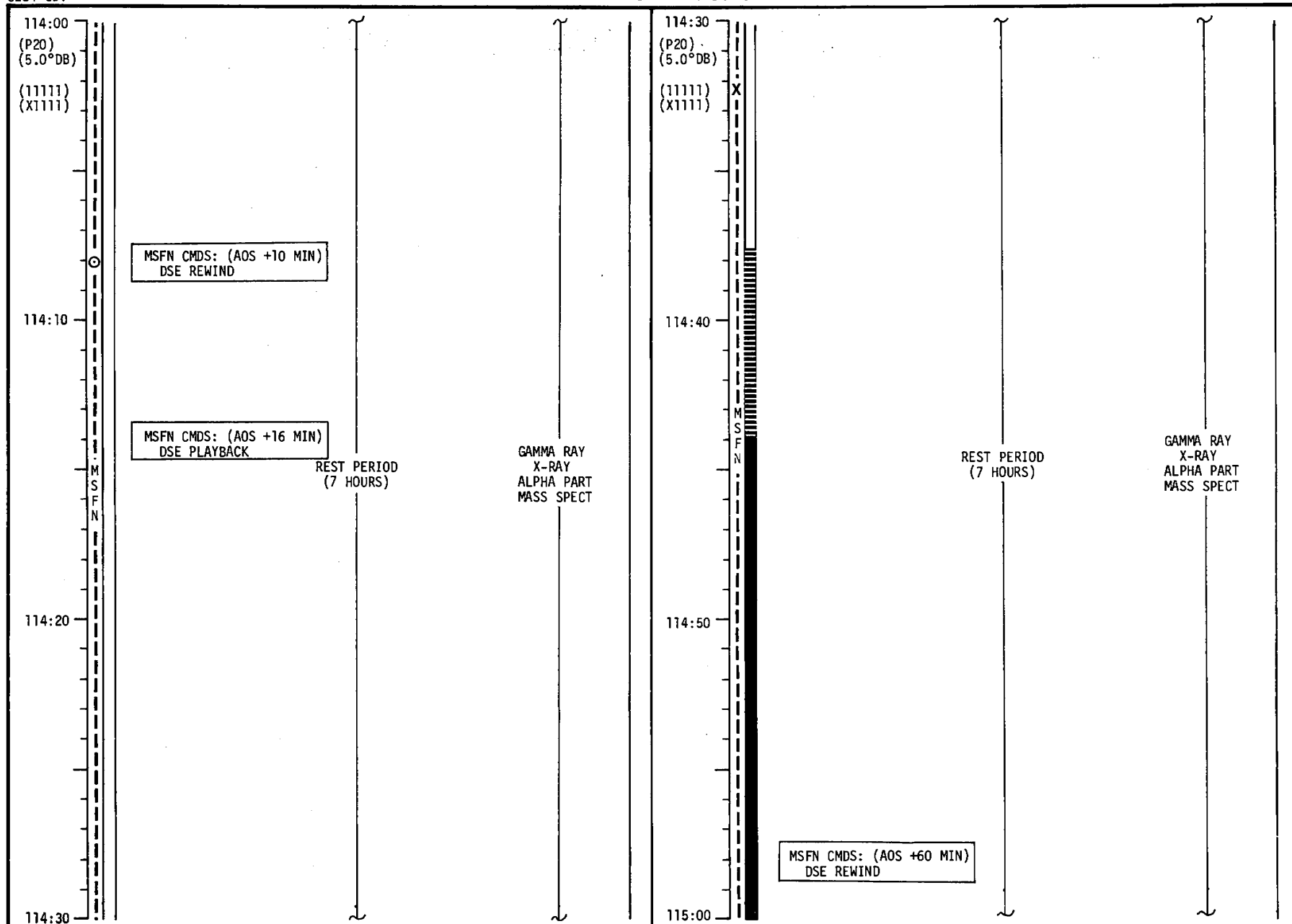


REST PERIOD
(7.5 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	114:00 - 115:00	5/19	3-148

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-149

CDR

0334 CDT

LMP

NOTES

MSFN

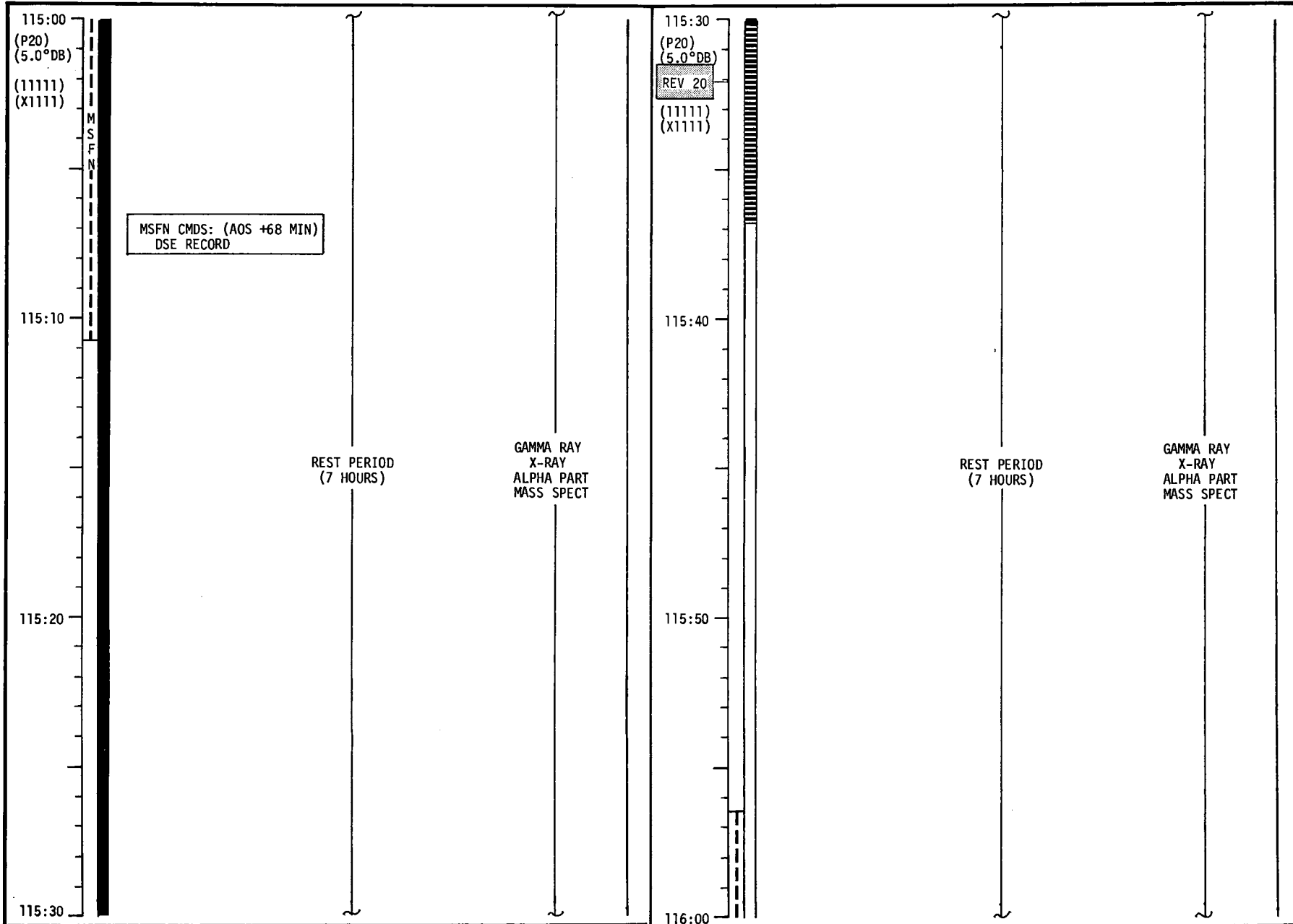
REST PERIOD
(7.5 HOURS)

CSM REV 20

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	115:00 - 116:00	5/19-20	3-150

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-151

LM FLIGHT PLAN

MCC-H

0434 CDT

CDR

LMP

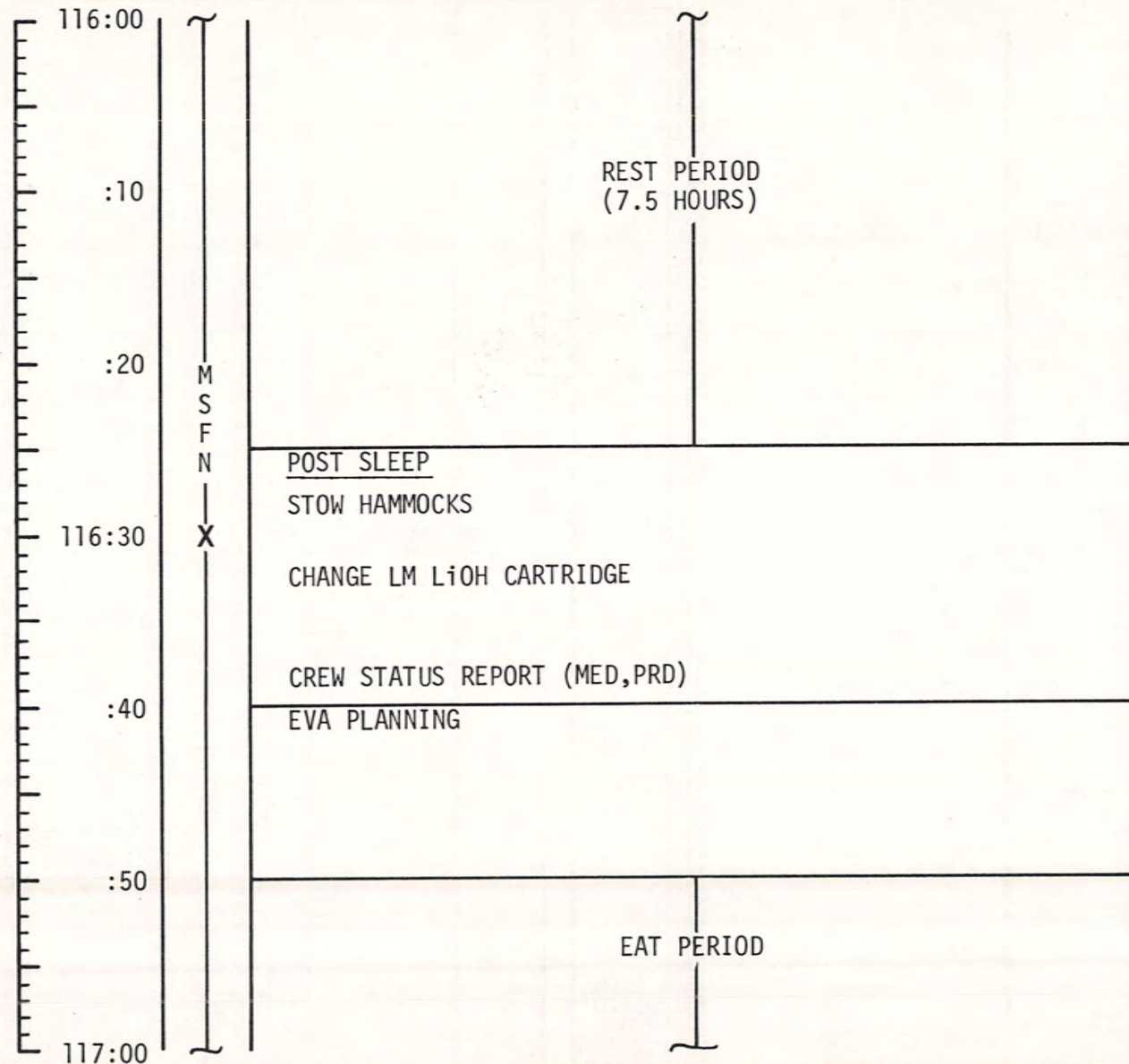
NOTES

1934

2004

STAY/NO-STAY FOR
EVA-1
UPDATE TO LM
LM CONSUMABLES
L/O TIMES REVS
21 THRU 27

2034

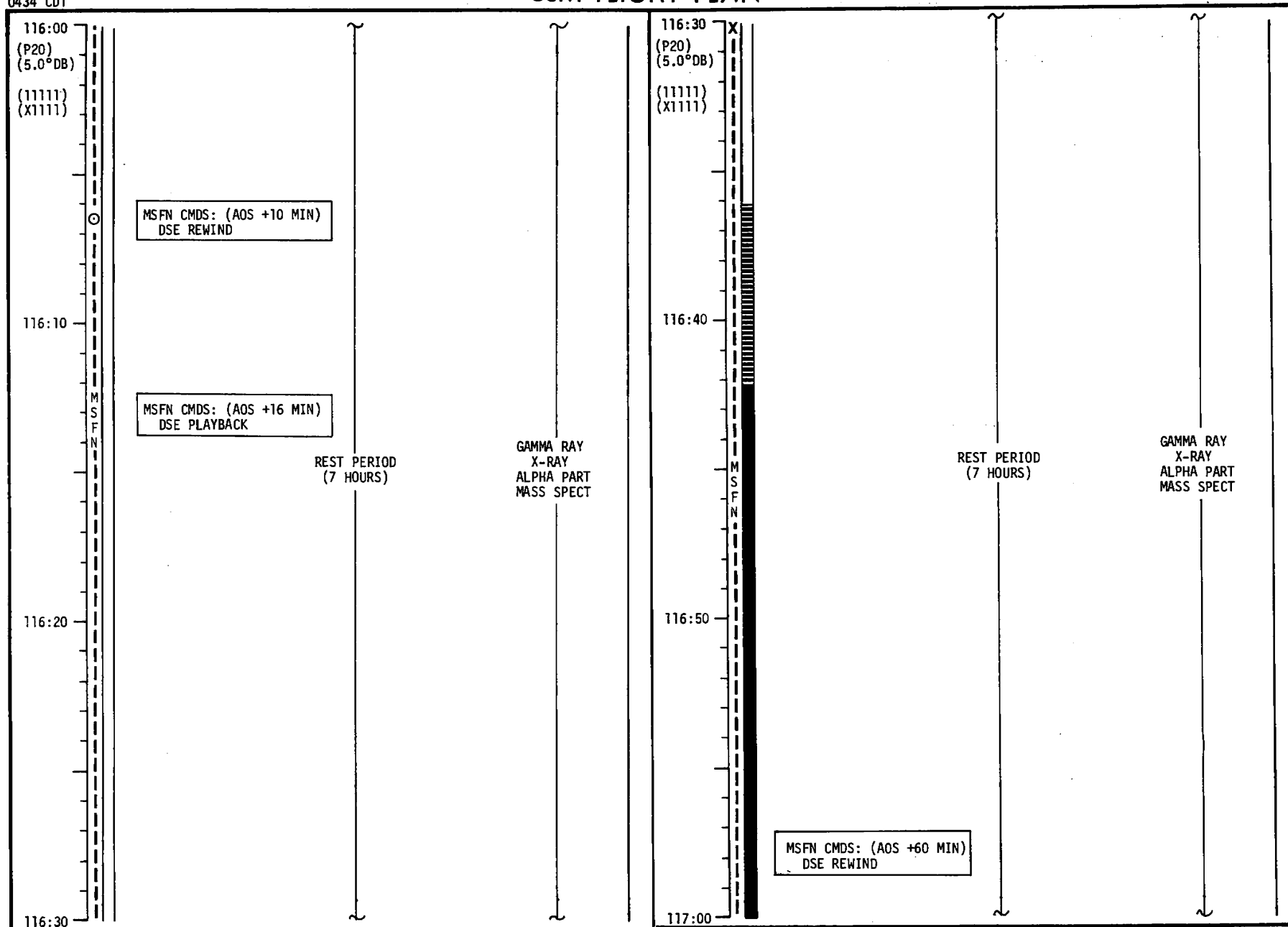


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	116:00 - 117:00	6/20	3-152

FLIGHT PLANNING BRANCH

0434 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-153

LM FLIGHT PLAN

MCC-H

0534 CDT

CDR

LMP

NOTES

2034

117:00
:10
:20
117:30
:40
:50
118:00

M
S
F
N

EAT PERIOD

PRO, RESET LGC CLOCK, P06

DON SUITS

BIOMED - OFF

FILL DRINK BAGS

LMP, THEN CDR DOFF ICG & CWG, DON LCG & PGA

LMP DON BIOMED HARNESS

CONNECT HOSES

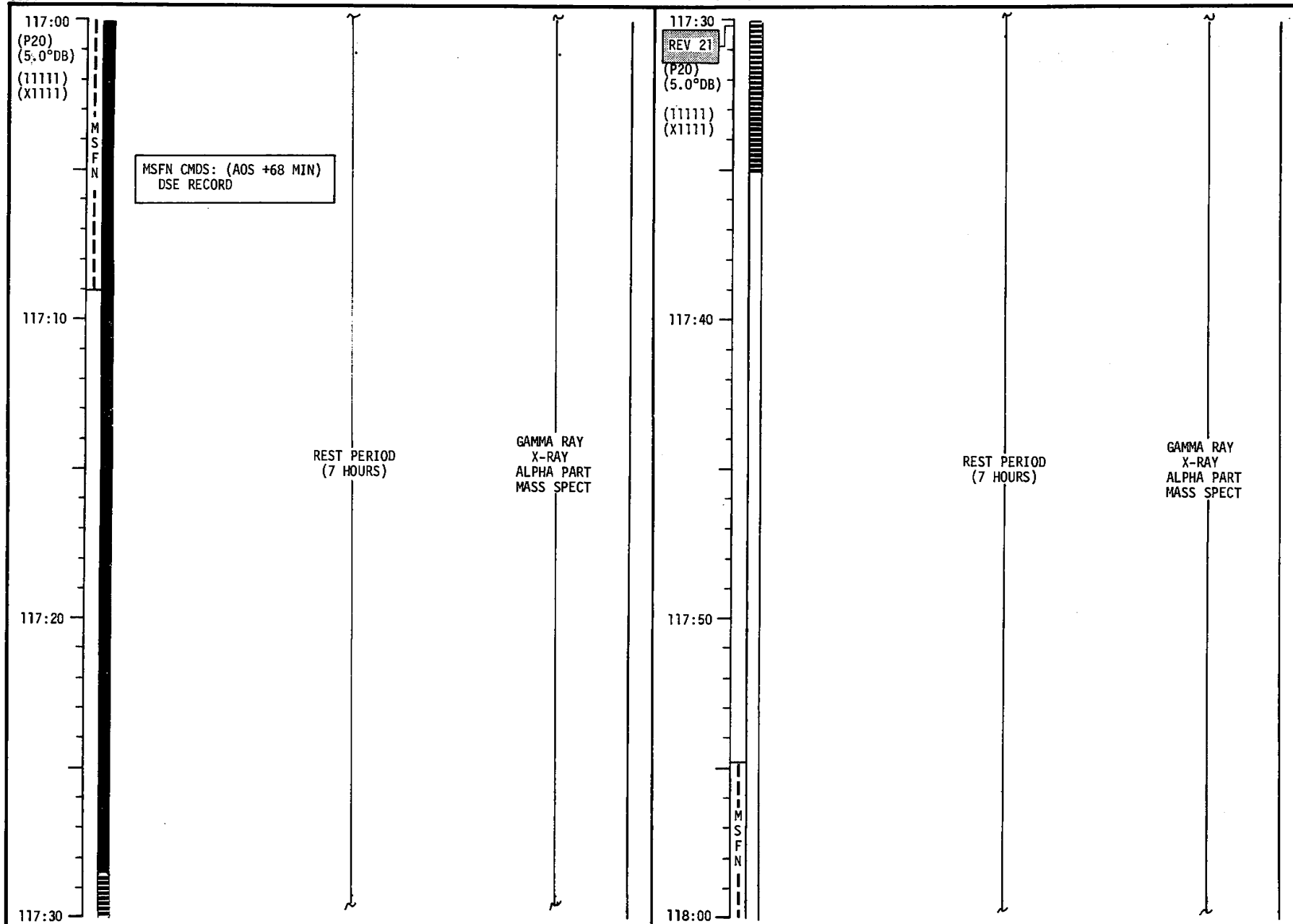
CSM REV 21

2134

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	117:00 - 118:00	6/20-21	3-154

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-155

LM FLIGHT PLAN

MCC-H

0634 CDT

CDR

LMP

NOTES

2184

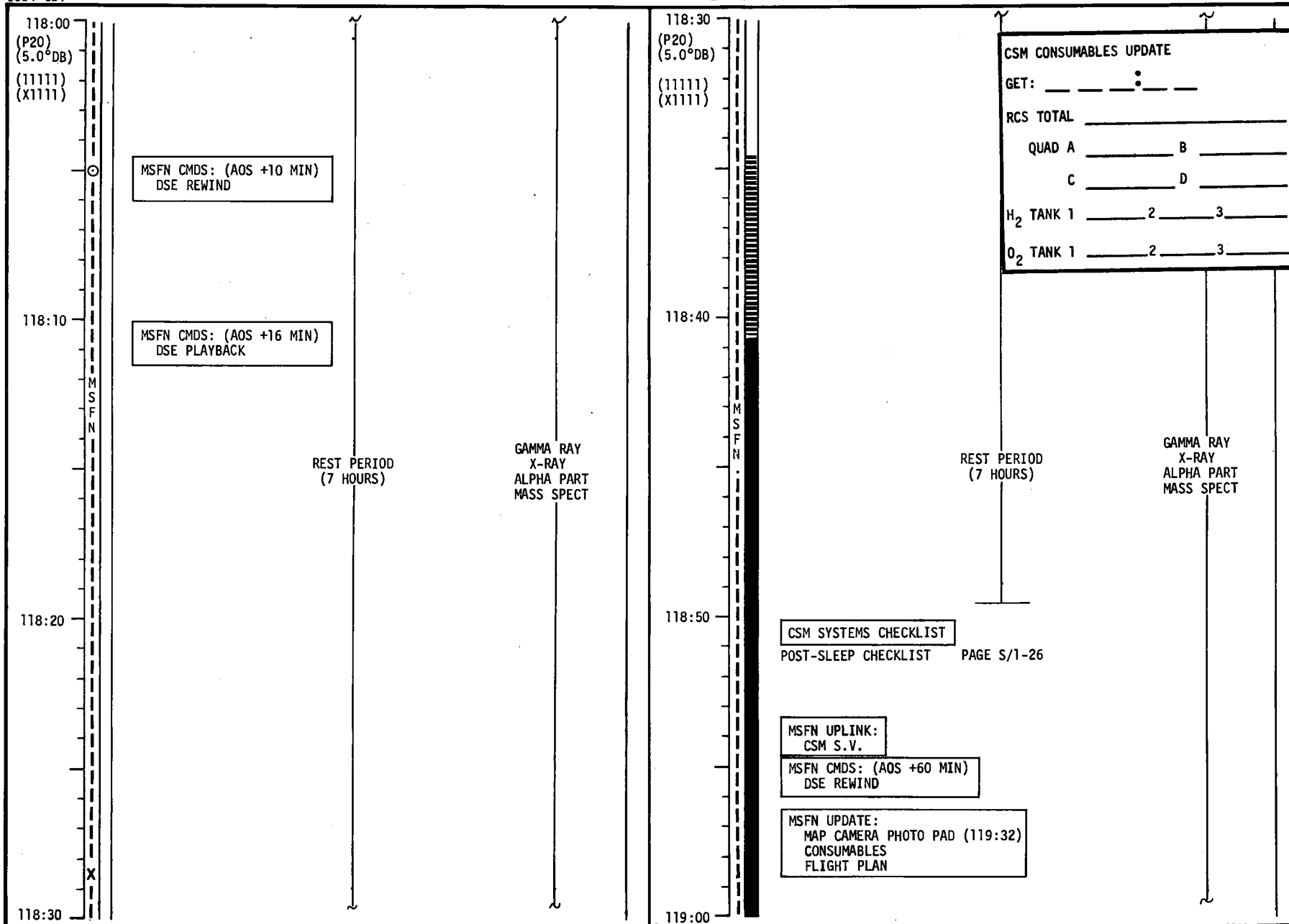
118:00		VERIFY COMM	BIOMED - RIGHT	
:10		CABIN PREP FOR EVA-1 STOW ALL LOOSE ITEMS NOT REQUIRED FOR EVA UNSTOW EVA-1 PREP & POST CARD STOW LUNAR SURFACE CHECKLIST	BATS 3,4 AND LUNAR (LMP)-ON BATS 1,2 AND LUNAR (CDR)- OFF/RESET CHECK BUS VOLTS	
:20	M S F N	EQUIPMENT PREP FOR EVA-1 CDR, THEN LMP DON BOOTS CHECK & RESTOW OPS CHECK & RESTOW RCU'S, HELMETS, GLOVES STOW PALLETS IN JETT BAG, TIE & STOW BAG UNLOCK FWD HATCH HANDLE		-1:30
118:30	X			-1:20
:40				-1:10
:50		PLSS DONNING CONFIGURE LMP PLSS ATTACH PLSS TO OPS LMP DON PLSS/OPS CONNECT RCU TO PGA & PLSS		-1:00
119:00				- :50

2234

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	118:00 - 119:00	6/21	3-156

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-157

LM FLIGHT PLAN

MCC-H

0734 CDT

CDR

LMP

NOTES

2234

119:00

:10

:20

119:30

:40

:50

120:00

M
S
F
N

CDR REPEAT PLSS DONNING

PLSS COMM CHECK REORDER - ON
VERIFY POWERDOWN CB CONFIGURATION
CONFIGURE COMM FOR EVA, BIOMED - OFF
COMM & TM CHECK, REPORT PLSS O₂ QUANTITIES TO MCC-H
FINAL SYSTEMS PREP

OPS CONNECT
LMP CONNECT OPS HOSES TO PGA

CDR REPEAT OPS CONNECT

HELMET/GLOVE DONNING
PLSS FANS - ON
DON HELMETS & LEVA'S
VERIFY PGA CONFIGURATION, VERIFY CB CONFIGURATION
DON GLOVES

PRESSURE INTEGRITY CHECK

CABIN DEPRESS
START WRIST WATCHES AT 3.5 PSIA

PARTIALLY OPEN FWD HATCH

FINAL PREP FOR EGRESS
OPEN FWD HATCH
REST UNTIL COOLING SUFFICIENT

RECORDER - OFF

-:50

-:40

-:30

CSM REV 22

-:20

-:10

0:00 START EVA-1

+:10

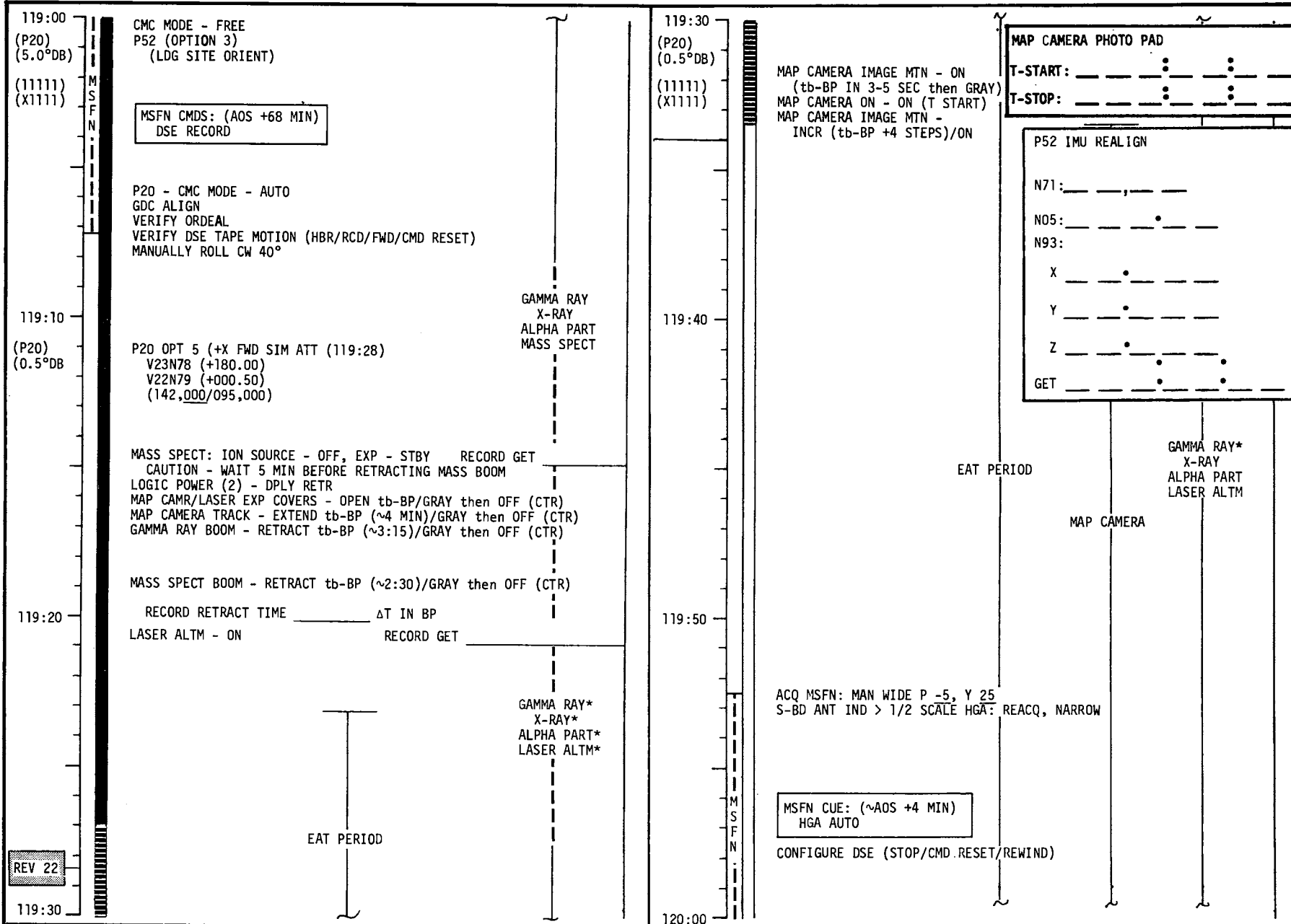
GO/NO-GO FOR CABIN
DEPRESS

2334

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	119:00 - 120:00	6/21-22	3-158

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-159

LM FLIGHT PLAN

MCC-H

0834 CDT

CDR

LMP

NOTES

2384

120:00	T V X M F S N	EGRESS DEPLOY MESA	ASSIST CDR EGRESS RELEASE CDR PLSS ANTENNA LEC TO CDR RECORDER - OFF VERIFY CB & SW CONFIGURATION	+10
:10		TRANSFER ETB	TRANSFER ETB	+20
		TV DEPLOY	EGRESS, CLOSE HATCH DESCEND TO SURFACE	
:20		RELEASE LMP PLSS ANTENNA LRV DEPLOY	COLLECT CONTINGENCY SAMPLE	+30
		LRV SETUP	ASSIST CDR	
120:30		LRV CHECKOUT		+40
		LCRU DEPLOY	LRV EQUIPMENT PREP	+50
:40				
:50		TRANSFER TV TO LRV		+1:00
121:00			INGRESS LM WITH CONTINGENCY SAMPLE CONFIGURE COMM	+1:10

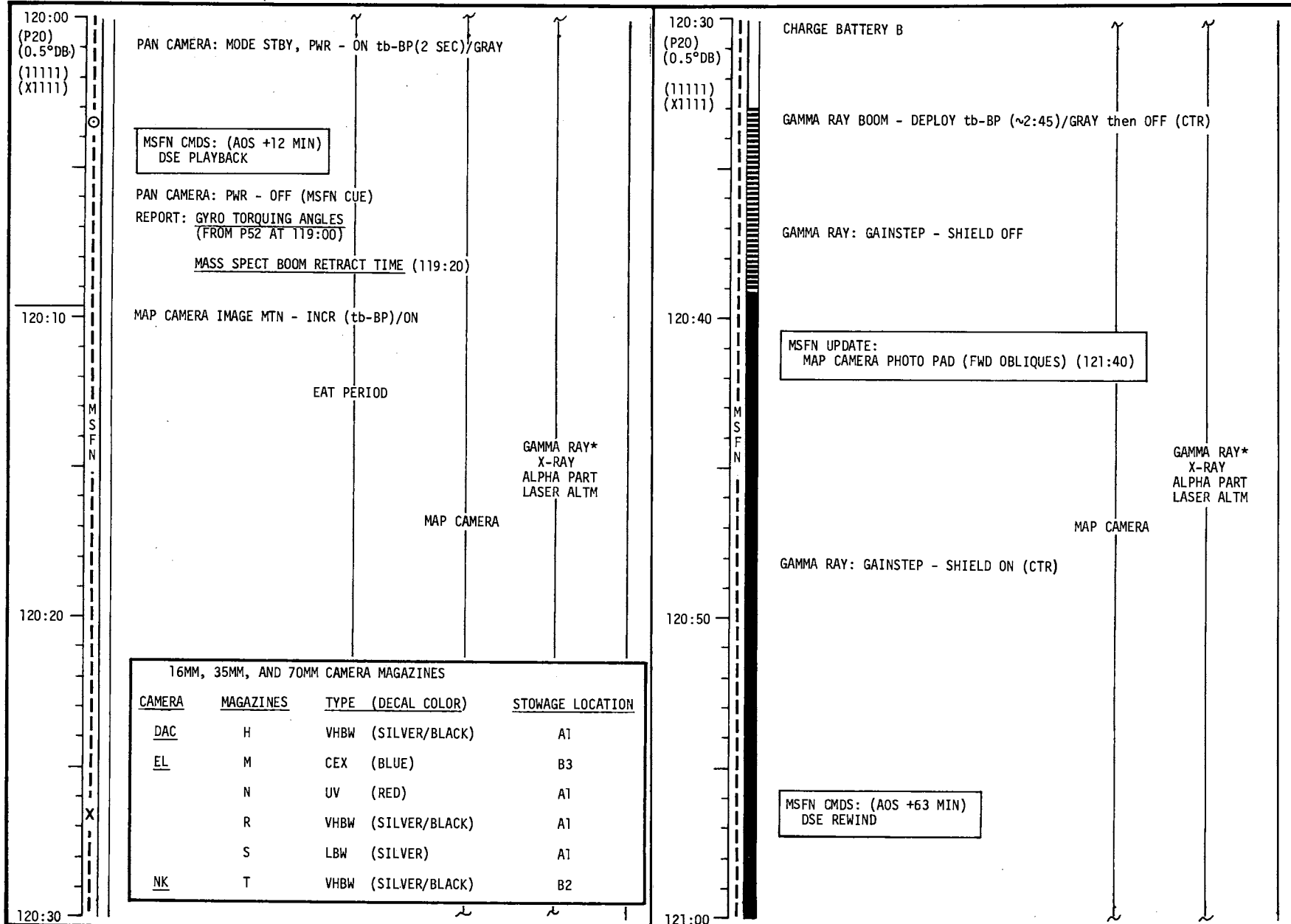
0034

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	120:00 - 121:00	6/22	3-160

FLIGHT PLANNING BRANCH

0834 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-161

CHANGE B

LM FLIGHT PLAN

MCC-H

0934 CDT

CDR

LMP

NOTES

0034

121:00		TRANSFER PALLET MOUNT LRV DRIVE LRV TO NAV SITE	TRANSFER PALLET	+1:10
:10		INITIALIZE LRV NAV	EGRESS LM DISCARD PALLET CLOSE HATCH	+1:20
:20		DRIVE TO CHECK POINT OBSERVE & DESCRIBE TRAVERSE	MOUNT LRV	+1:30
:30		DESCRIBE SURFACE FEATURES NOTE MARE AND RIM MATERIALS DIFFERENCES		+1:40
121:30		CHECK POINT DRIVE TO STATION 1		+1:50
:40		OBSERVE SCARP AROUND ELBOW CRATER OBSERVE EJECTA DISTRIBUTION		+2:00
:50		STATION #1 RADIAL SAMPLE OF ELBOW CRATER PAN		+2:10
122:00		DRIVE TO STATION 2 COMPARE MARE & RIM MATERIALS TO FRONT		

M
F
S
N

T
V

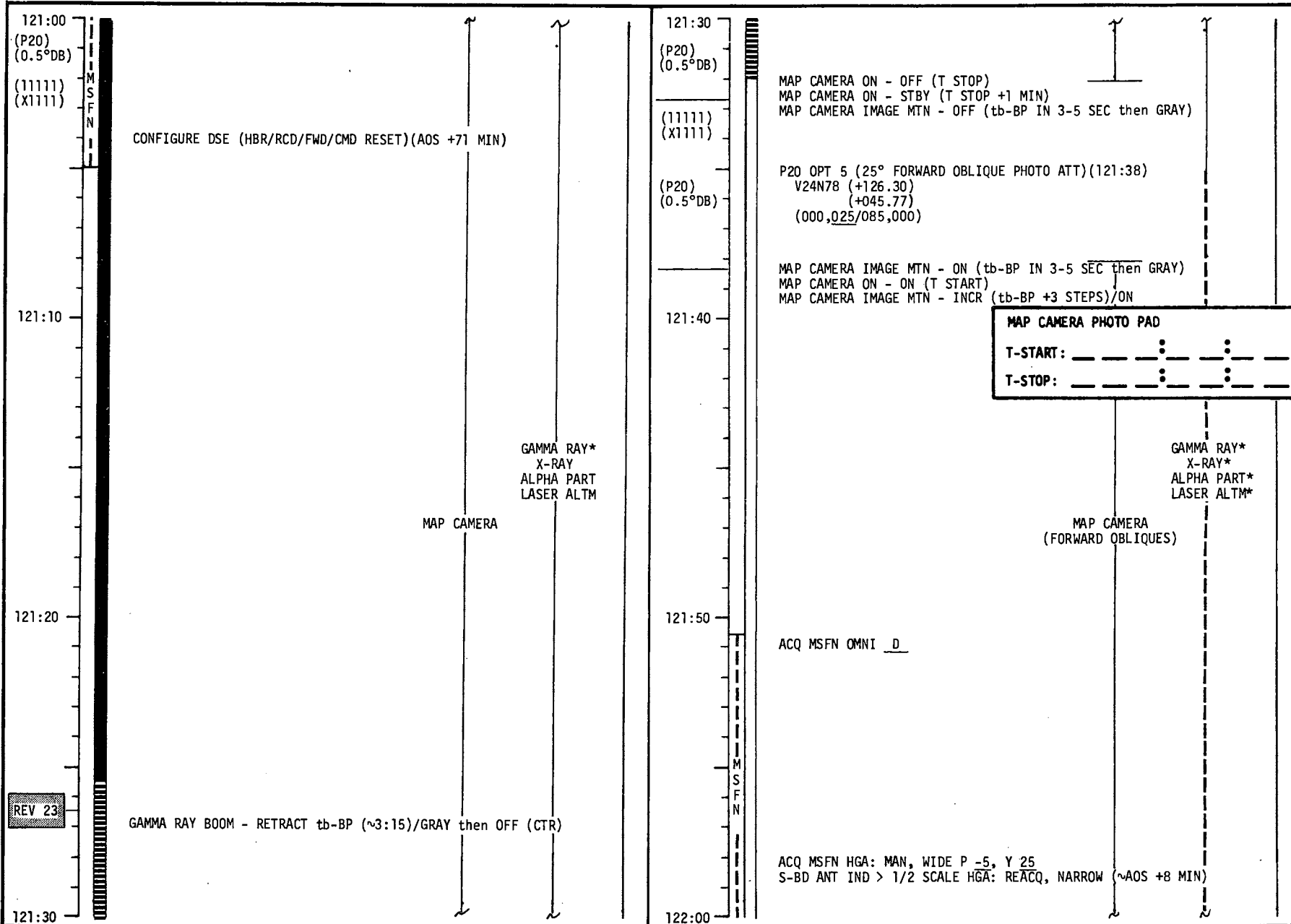
No 2
LOS
415K

0134

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	121:00 - 122:00	6/22-23	3-162

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-163

LM FLIGHT PLAN

MCC-H

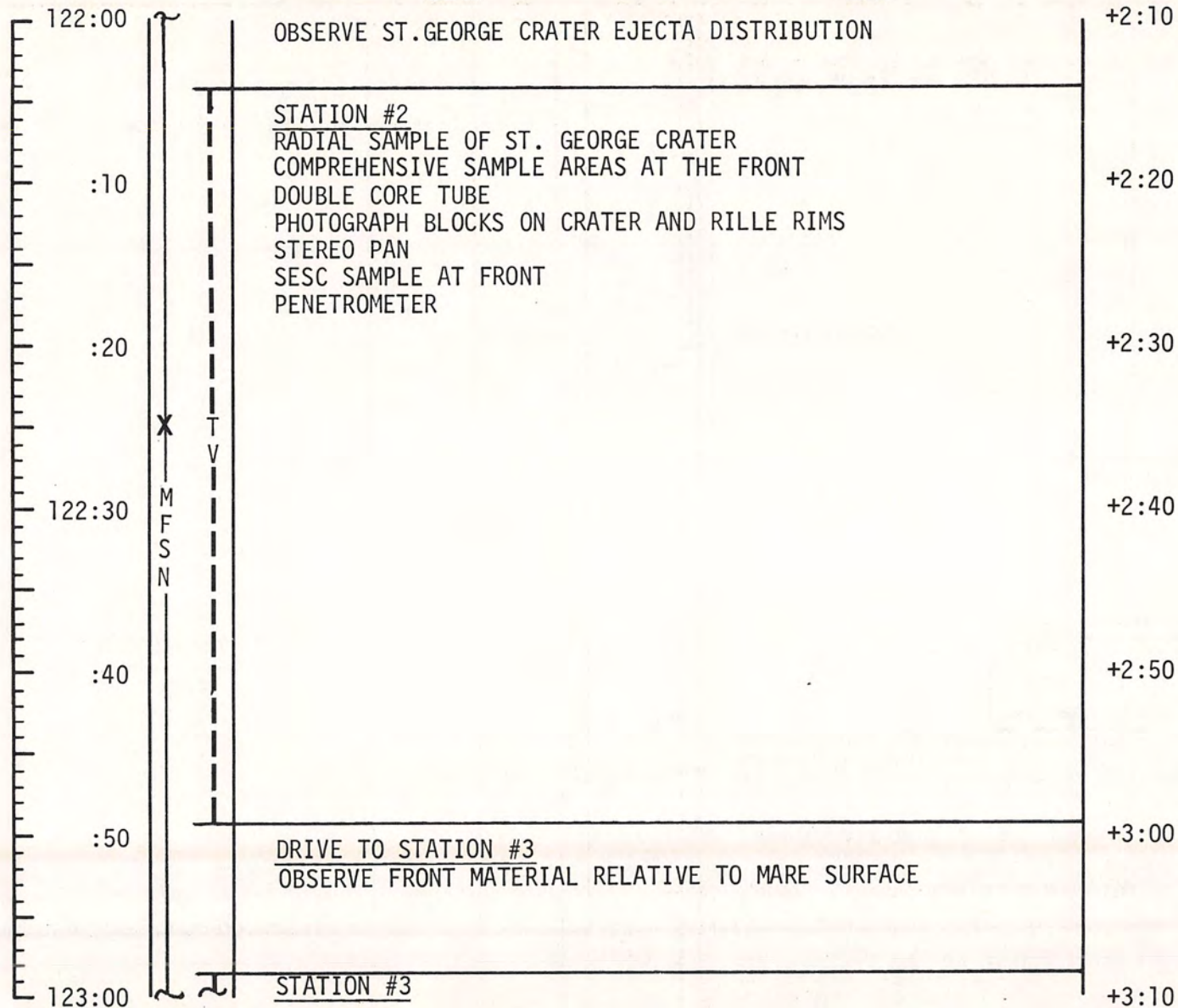
1034 CDT

CDR

LMP

NOTES

0134

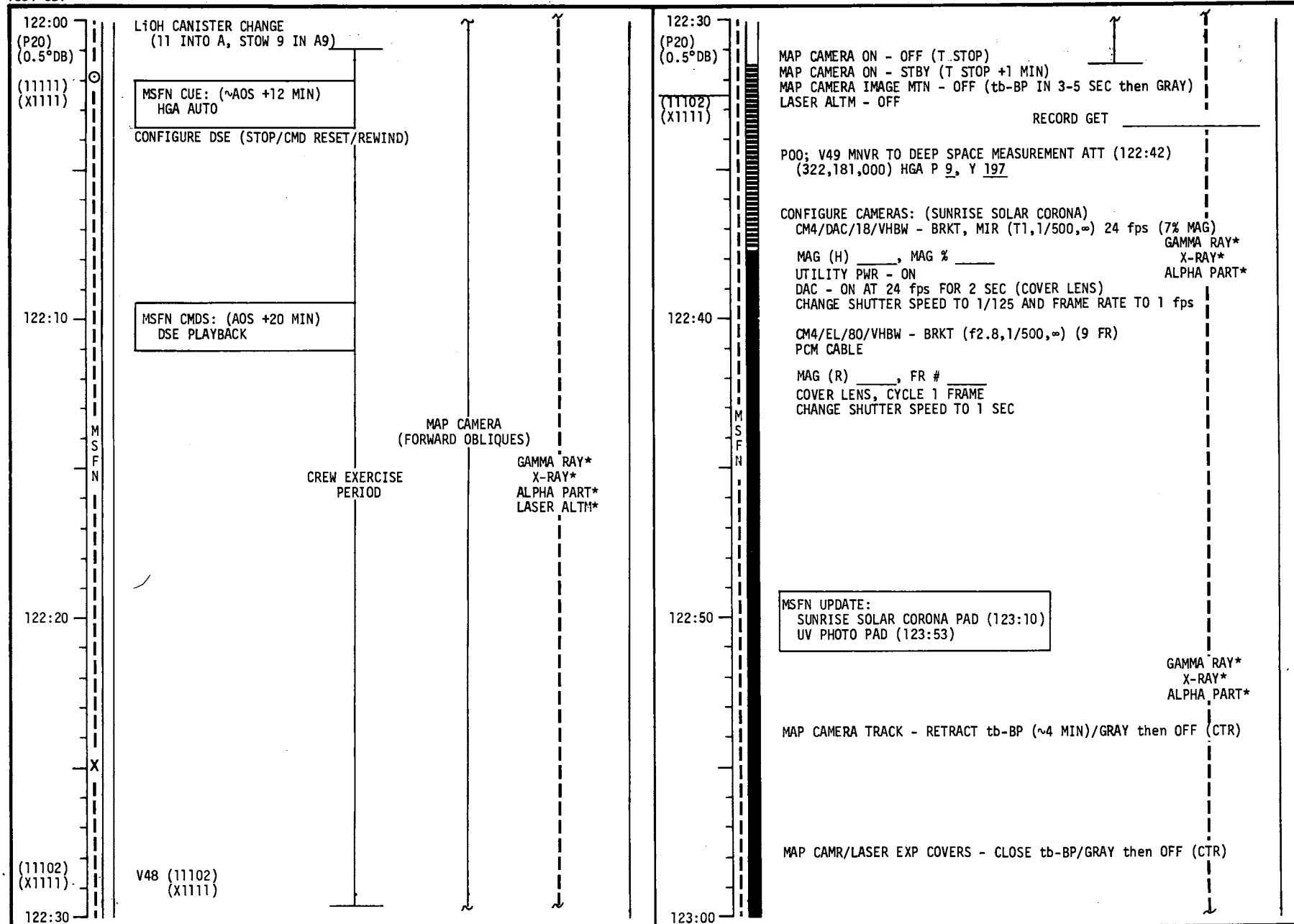


0234

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	122:00 - 123:00	6/23	3-164

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-165

LM FLIGHT PLAN

MCC-H

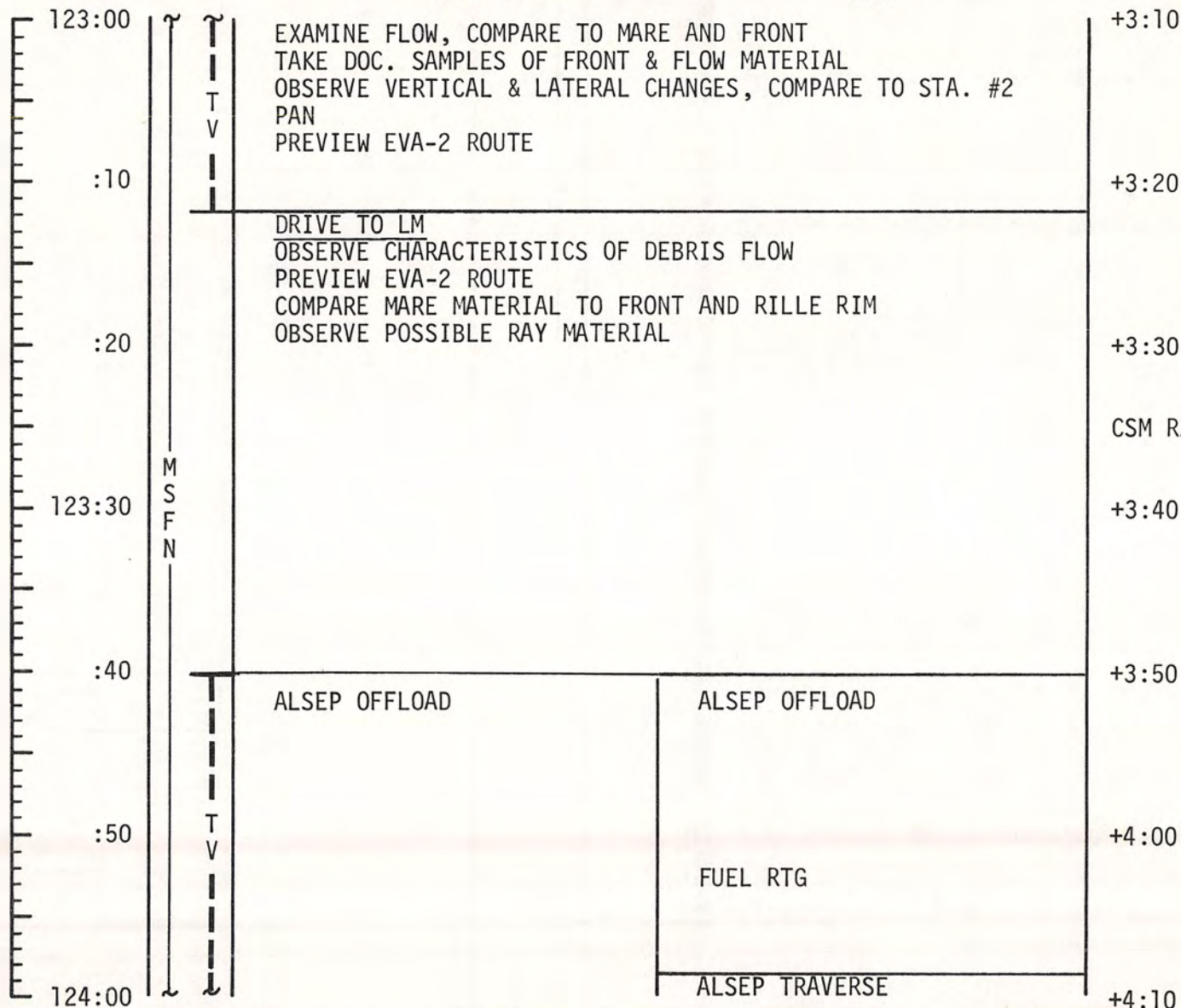
1134 CDT

CDR

LMP

NOTES

0234



0334

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	123:00 - 124:00	6/23-24	3-166

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

123:00 (11102) (X1111)	ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)	123:30 (11102) (X1111)	CMC MODE - FREE P00; V49 MNVR TO UV PHOTO ATT (123:38) (142,057,000) OMNI <u>D</u> CMC MODE - AUTO RESET MISSION TIMER
(P20) (5.0°DB)	MSFN CMDS: (AOS +71 MIN) DSE REWIND		CONFIGURE CAMERA: (UV PHOTOS OF LUNAR HORIZON/EARTH) CM5/EL/105/UV - BRKT, CONT (f4.3,1/500,∞)(16 FR) RINGSLIDE
	P20 OPT 5 (SR SOLAR CORONA ATT)(123:12) N78 (+000.00) (-082.00) (+000.00) N79 (+005.00) N70 (00050) (000,352,127,000)		MAG (N) _____, FR # _____ REMOVE RT2 FLIGHT DATA FILE STOWAGE BOX
123:10	CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +79 MIN)	123:40	UV PHOTOS OF LUNAR HORIZON/EARTH
	SOLAR CORONA PHOTO PAD (SR) T-START: _____ START MISSION TIMER AT SUNRISE -8 MIN		DAMP RATES VERIFY FDAI SCALE 5/1 WAIT 5 MINUTES FOR RATES TO DAMP
	SR SOLAR CORONA		VERIFY RATES <0.2°/SEC (ALL AXES)
	INHIBIT ALL JETS EXCEPT - A1&C2 OR D1&B2,A4,C3,B4,D3		GAMMA RAY* ALPHA PART* X-RAY*
	0:00 - MISSION TIMER: RESET/START (T START)(SR -8 MIN) PCM BIT RATE - HIGH DIM INTERIOR LIGHTS		REMOVE CM5 WINDOW COVER AND MOUNT UV CARDBOARD SHADE AND CAMERA
123:20	5:00 - DAC - ON 6:40 - CHANGE DAC SHUTTER TO 1/500 6:50 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/4 7:00 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/8 7:10 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/15 7:20 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/30 7:30 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/60 7:40 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/125 7:50 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/500 8:00 - DAC OFF	123:50	2 FRAMES, FILTER 1, CHANGE SHUTTER TO B (T START) 2 FRAMES, FILTER 2, EXP TIME 20 SEC CHANGE SHUTTER TO 1/250 2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500 2 FRAMES, FILTER 4, CHANGE SHUTTER TO 1/60
REV 24	REMOVE EL FROM WINDOW, COVER LENS AND CYCLE 1 FRAME REMOVE DAC FROM WINDOW, COVER LENS, AND RUN AT 24 fps AND SHUTTER SPEED 1/500 FOR 2 SEC LIGHTS UP RECORD MAG % _____, FR # _____ PCM BIT RATE - LOW		UV PHOTO PAD T-START: _____
123:30		124:00	2 FRAMES, FILTER 1, CHANGE SHUTTER TO B (T START +7 MIN) 2 FRAMES, FILTER 2, EXP TIME 20 SEC CHANGE SHUTTER TO 1/250 2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500 2 FRAMES, FILTER 4 RECORD FR # _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-167

LM FLIGHT PLAN

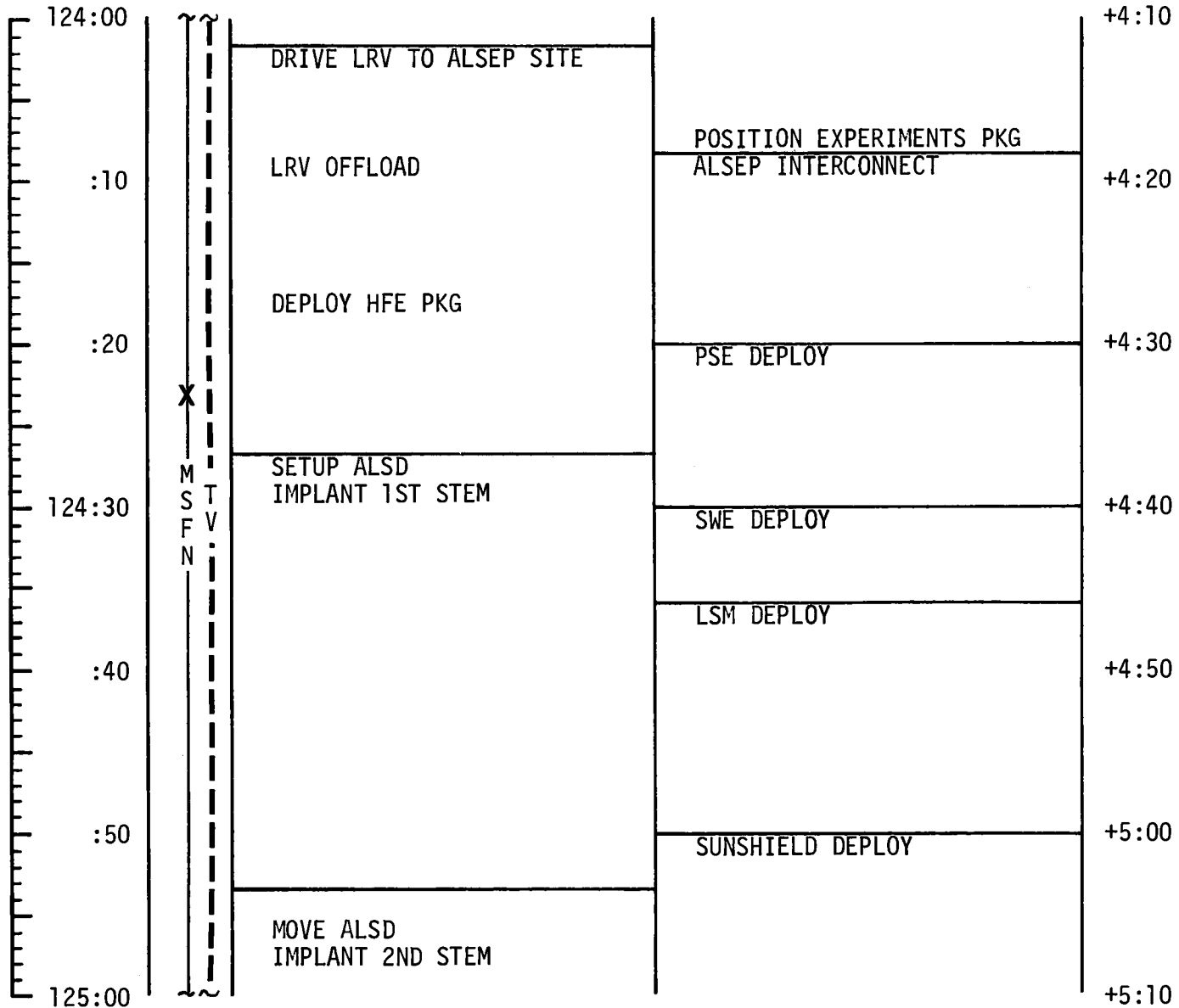
MCC-H

1234 CDT

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	124:00 - 125:00	6/24	3-168

FLIGHT PLANING BRANCH

1234 CDT

CSM FLIGHT PLAN

124:00 (11102) (X1111)	CONFIGURE CAMERA (UV COLOR PHOTOS OF EARTH) CM5/EL/105/CEX-BRKT, CONT (f8,1/250,∞) (1 FR) RINGSLIDE MAG (M) _____, FR # _____ 1 FRAME, FILTER 4 REMOVE CAMERA & UV CARDBOARD SHADE, NOTE COMMENTS AS TO CONDITION OF CM5, REPLACE WINDOW COVER RECORD FR # _____	124:30 (P20) (5.0°DB) (11102) (X1111)	SUNSET SOLAR CORONA 0:00 - MISSION TIMER: RESET/START/(T START)(SS -5 MIN) VERIFY PCM BIT RATE HIGH DIM INTERIOR LIGHTS
(P20) (5.0°DB)	P20 OPT 5 (SS SOLAR CORONA ATT)(124:12) N78 (+000.00) (+090.00) (+000.00) N79 (+005.00) N70 (00050) (000,180/133,000) HGA P -45, Y 208		SOLAR CORONA PHOTO PAD (SS) T-START: _____ START MISSION TIMER AT SUNSET -5 MIN
124:10	MSFN CMDS: DSE DUMP MSFN UPDATE: SUNSET SOLAR CORONA PAD (124:35)		5:00 - DAC - ON 5:10 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/60 5:20 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/30 5:30 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/15 5:40 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/8 5:50 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/4 6:00 - 1 FRAME EL, CHANGE EL SHUTTER TO 1.0 6:10 - 1 FRAME EL 6:20 - CHANGE DAC SHUTTER TO 1/125 8:00 - DAC - OFF, CHANGE EL SHUTTER TO 1/500 REMOVE EL FROM WINDOW, COVER LENS, AND CYCLE 1 FRAME REMOVE DAC FROM WINDOW, COVER LENS, AND RUN AT 24 fps, AND SHUTTER SPEED 1/500 FOR 2 SEC LIGHTS - UP
	GAMMA RAY* ALPHA PART* X-RAY*		RECORD MAG % _____, FR # _____ V48 (11101) (X1111)
	CONFIGURE CAMERAS: (SUNSET SOLAR CORONA) CM4/DAC/18/VHBW - BRKT, MIR (T1,1/500,∞) 24 fps (7% MAG) MAG (H) _____, MAG % _____		RESET MISSION TIMER CONFIGURE FOR URINE DUMP
124:20	UTILITY PWR - ON DAC - ON AT 24 fps FOR 2 SEC (COVER LENS) CHANGE FRAME RATE TO 1 fps CM4/EL/80/VHBW - BRKT (f2.8,1/500,∞)(9 FR) PCM CABLE MAG (R) _____, FR # _____ COVER LENS, CYCLE 1 FRAME CHANGE SHUTTER TO 1/125		CMC MODE - FREE P00; V49 MNVR TO L4 PHOTO ATT (125:00) (328,293,354) OMNI <u>D</u> CMC MODE - AUTO H ₂ PURGE LINE HEATERS - ON
			CONFIGURE CAMERA: (LUNAR LIBRATION) INSTALL CAMERA SHIELD CM4/NK/55/VHBW - BRKT, (f1.2,1/500,∞) (6 FR) MAG () _____, FR # _____
124:30		124:50 (11101) (X1111)	X-RAY EXP - STBY RECORD GET _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-169

LM FLIGHT PLAN

MCC-H

1334 CDT

CDR

LMP

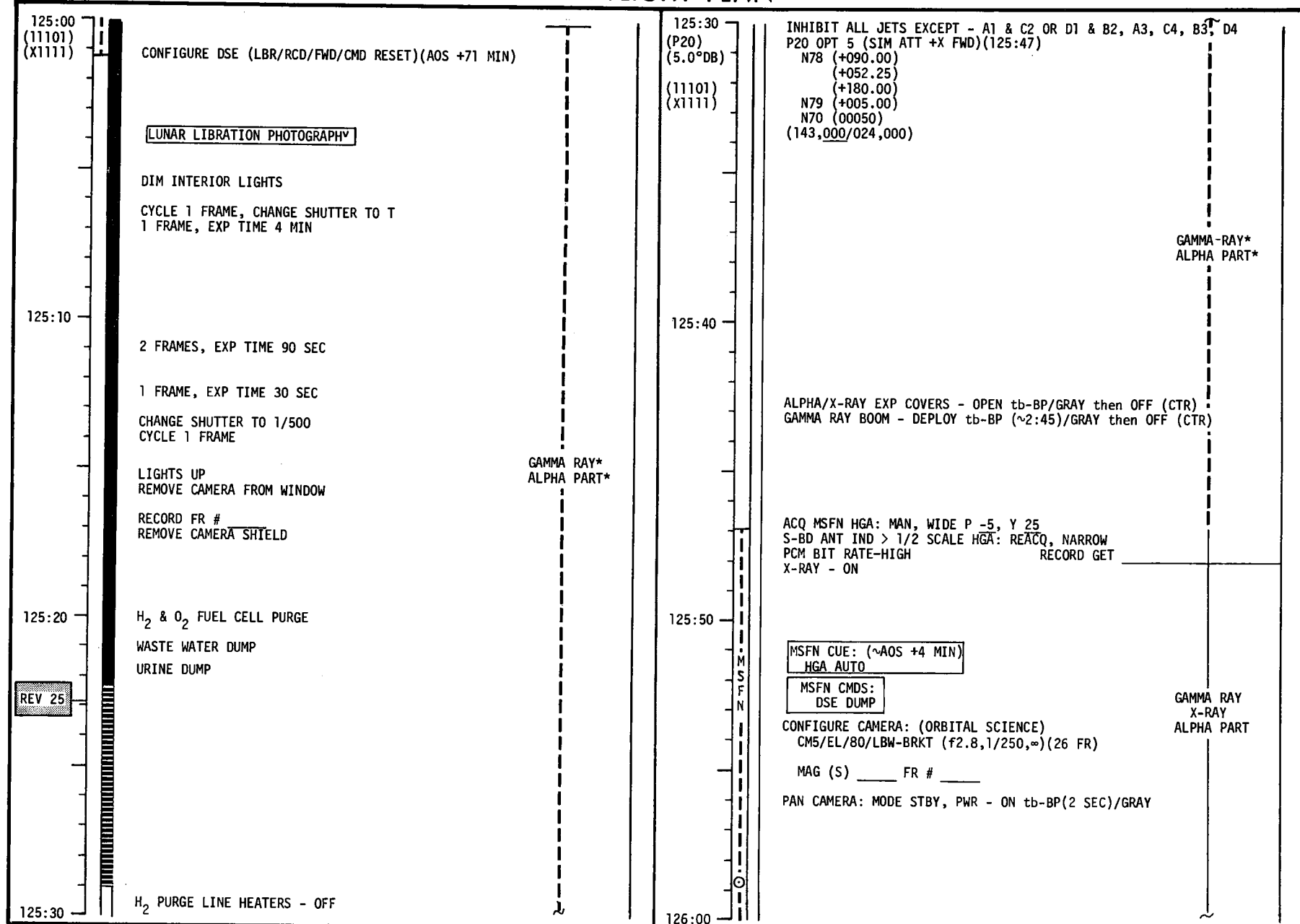
NOTES

125:00				+5:10
			CHECK ANTENNA LEVEL & ALIGN	
:10			SIDE/CCIG DEPLOY	+5:20
		MOVE ALSD TO LRV DRILL CORE SAMPLE	ACTIVATE CENTRAL STATION	
:20			DEPLOY LRRR	+5:30
				CSM REV 25
125:30		PHOTO PANS	ALSEP & LRRR PHOTOS	+5:40
		CAP & STOW STEMS		
:40		FILL SAMPLE BAGS	FILL SAMPLE BAGS	+5:50
		LRV TRAVERSE TO LM	LRV TRAVERSE TO LM	
:50				+6:00
		CONTAMINATED SAMPLE COLLECTION	CONTAMINATED SAMPLE COLLECTION	
126:00		POLARIMETRIC PHOTOGRAPHY	SWC DEPLOY	+6:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	125:00 - 126:00	6/24-25	3-170

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (1/26)	6/21/71	3-171

MCC-H

1434 CDT

LM FLIGHT PLAN

CDR

LMP

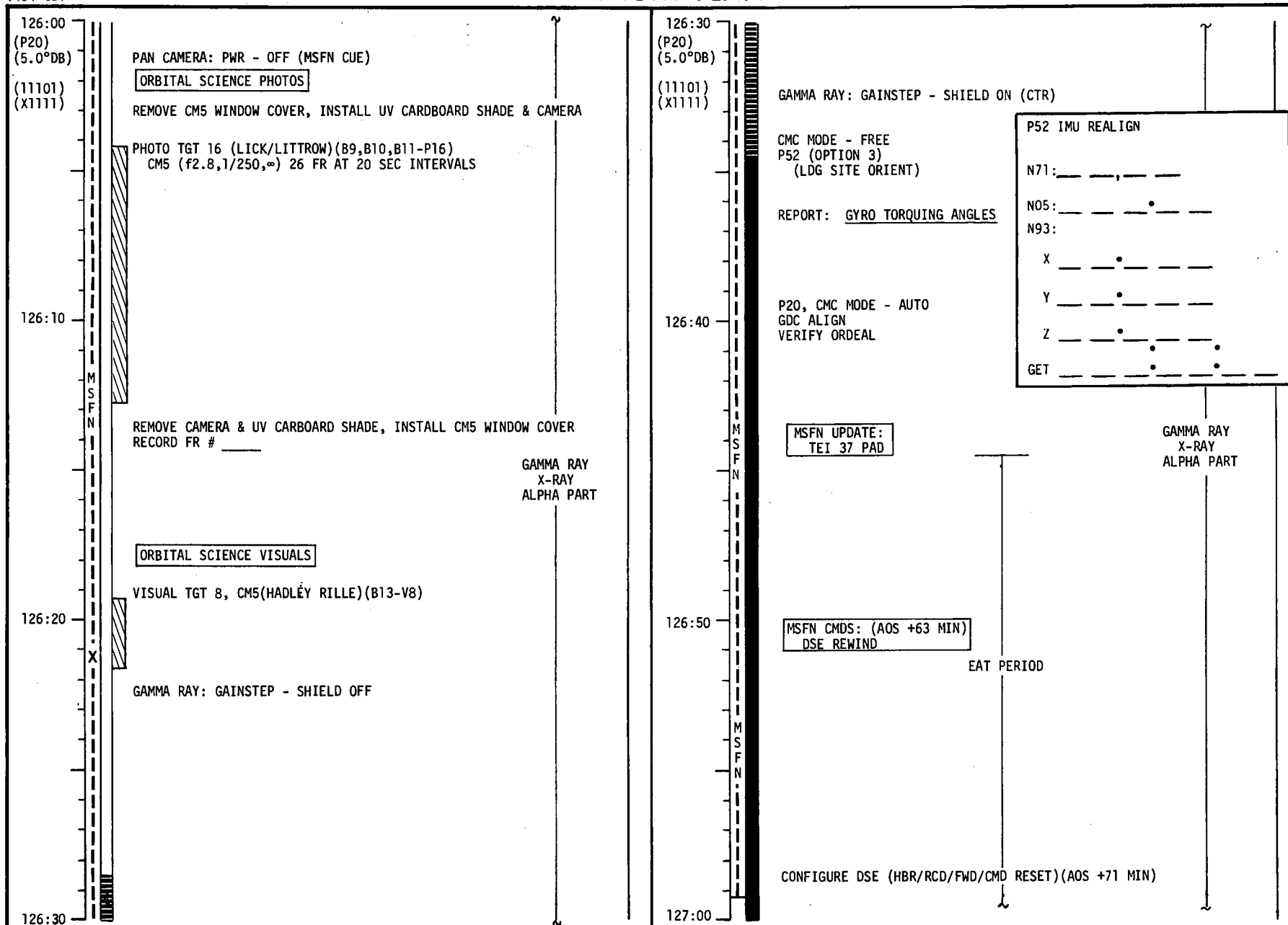
NOTES

126:00		FAR-FIELD POLARIMETRIC PHOTOGRAPHY		+6:10
		NEAR-FIELD POLARIMETRIC PHOTOGRAPHY	LM INSPECTION & PHOTOS	
:10		FLAG DEPLOY	FLAG DEPLOY	+6:20
		LOAD ETB		
:20	X	CLEAN EMU'S		+6:30
		STOW LMP PLSS ANTENNA		
126:30	M S F V N	STOW BSLSS & 500mm LENS CAMERA ON LRV	INGRESS STOW SAMPLE BAG	+6:40
		TRANSFER ETB	TRANSFER ETB	
:40		INGRESS		+6:50
		CLOSE HATCH REPRESS LM CABIN		
:50		POST EVA SYSTEMS CONFIGURATION CONFIGURE LM ECS, DOFF HELMETS & GLOVES CONNECT LM ECS HOSES TO SUITS CONNECT TO LM COMM, BIOMED LEFT		+7:00/END EVA
127:00				+7:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	126:00 - 127:00	6/25	3-172

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-173

LM FLIGHT PLAN

MCC-H

1534 CDT

CDR

LMP

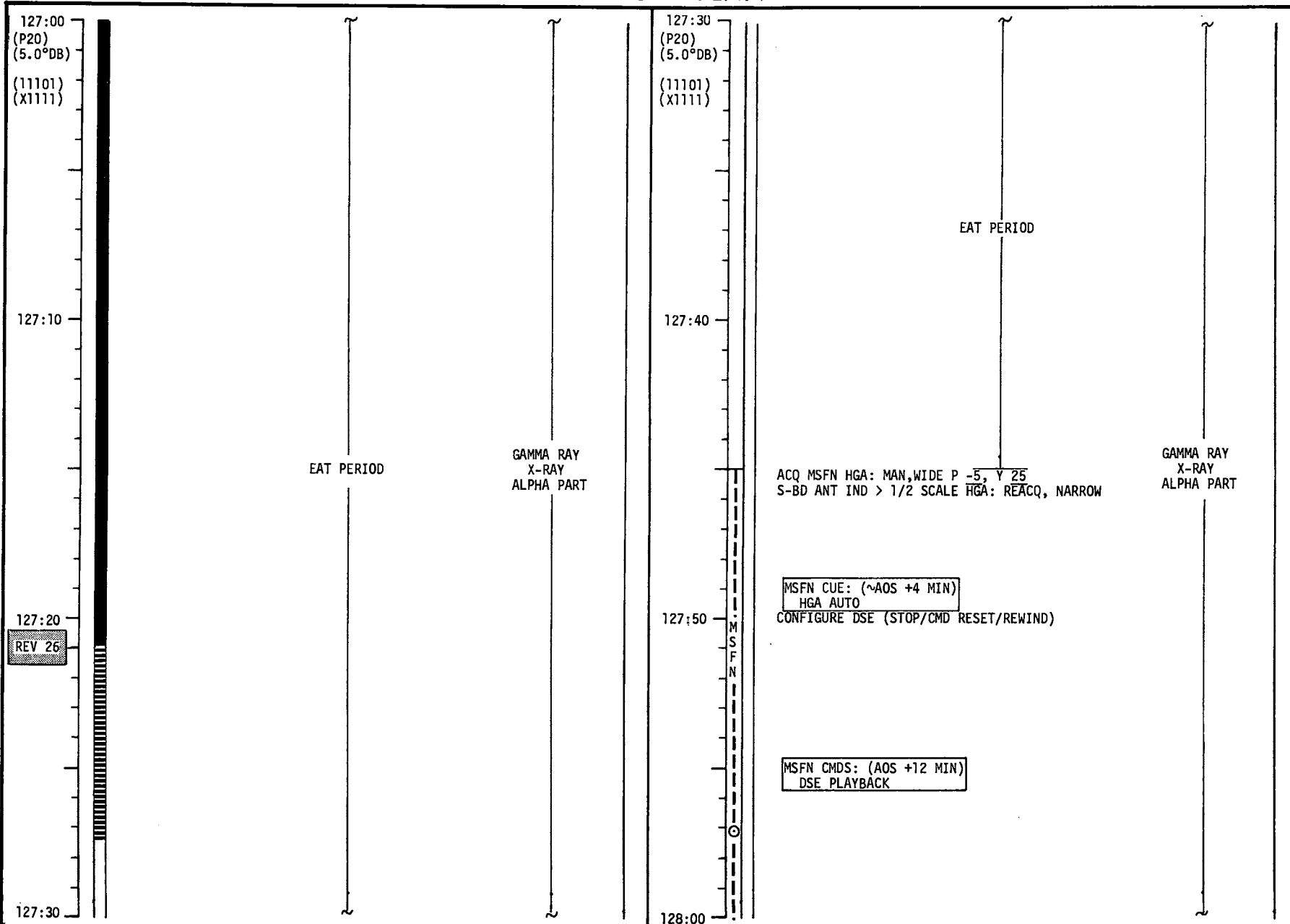
NOTES

127:00		PLSS O ₂ INITIAL RECHARGE	+:10
:10		PLSS/OPS DOFFING DISCONNECT OPS & RCU FROM PLSS LMP, THEN CDR DOFF PLSS/OPS CHANGE PLSS LiOH CARTRIDGES & BATTERIES STOW OPS'S & PLSS'S	+:20
:20			+:30 CSM REV 26
127:30	M S F N	POST EVA CABIN CONFIGURATION UNSTOW LUNAR SURFACE CHECKLIST STOW EVA-1 PREP AND POST CARD STOW ETB WEIGH SRC & COLLECTION BAG, REPORT WEIGHTS TO MCC-H STOW SRC & COLLECTION BAG	+:40
:40			+:50
:50		DOFF SUITS CDR, THEN LMP DOFF PGA & LCG, DON CWG & ICG CDR DOFF BIOMED HARNESS (IF DESIRED)	+1:00
128:00			+1:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	127:00 - 128:00	6/25-26	3-174

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-175

MCC-H

1634 CDT

LM FLIGHT PLAN

CDR

LMP

NOTES

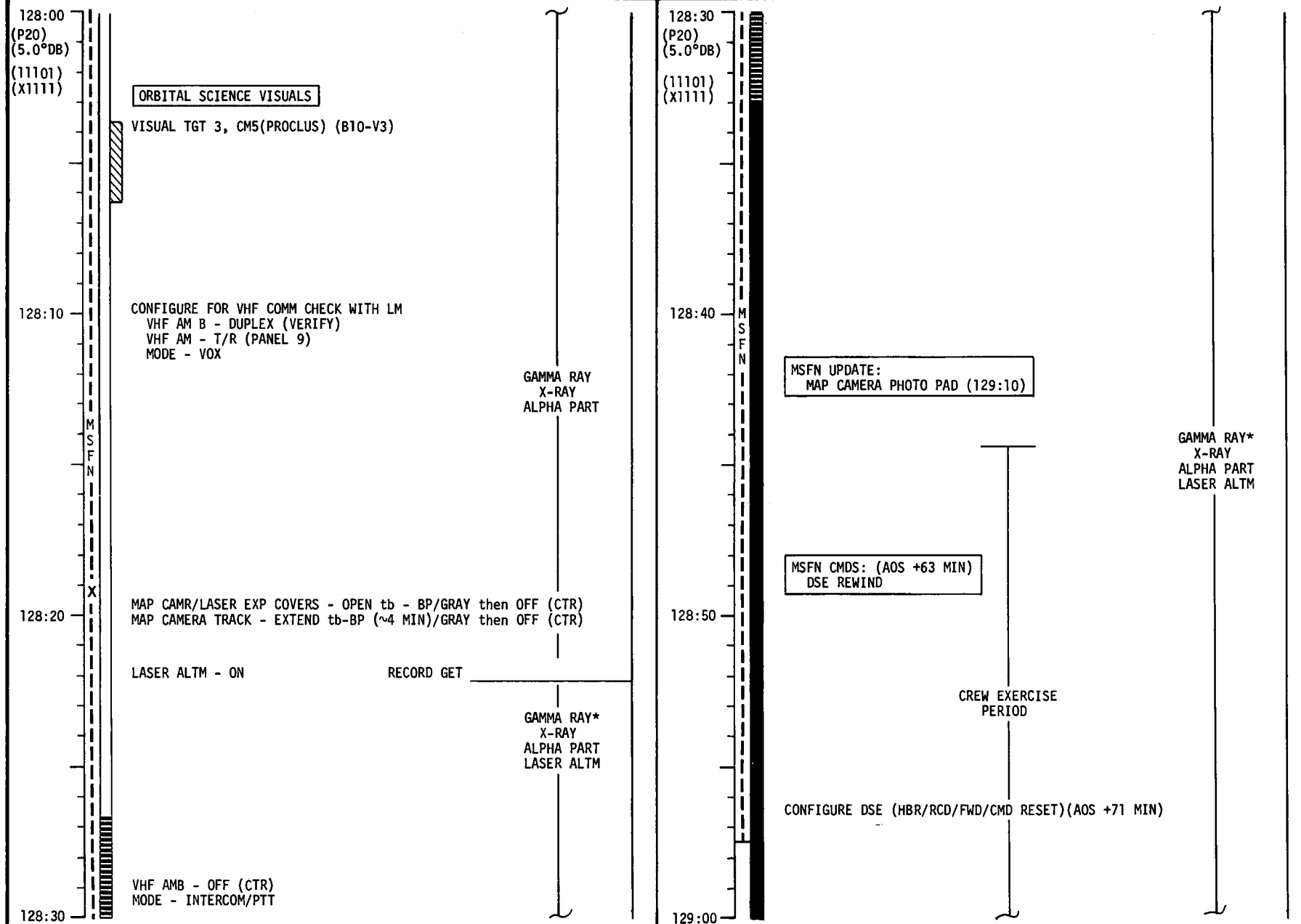
128:00			+1:10
:10		STOW PGA'S ON AFT ENGINE COVER AND DRY VHF VOICE CHECK	+1:20
:20	X	BIOMED - RIGHT	+1:30
128:30	M S F N	<u>PLSS O₂ & H₂O RECHARGE</u> CONNECT LM O ₂ SUPPLY TO CDR PLSS AND FILL (10 MIN)	
:40		CONNECT LM H ₂ O SUPPLY TO CDR PLSS AND FILL (3 MIN) CONNECT LM O ₂ SUPPLY TO LMP PLSS AND FILL (10 MIN)	
:50		CONNECT LM H ₂ O SUPPLY TO LMP PLSS AND FILL (3 MIN)	
129:00		<u>DEBRIEF</u> REPORT PLSS RECHARGE STATUS CREW STATUS REPORT (MED, PRD)	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	128:00 - 129:00	6/26	3-176

FLIGHT PLANNING BRANCH

1634 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-177

LM FLIGHT PLAN

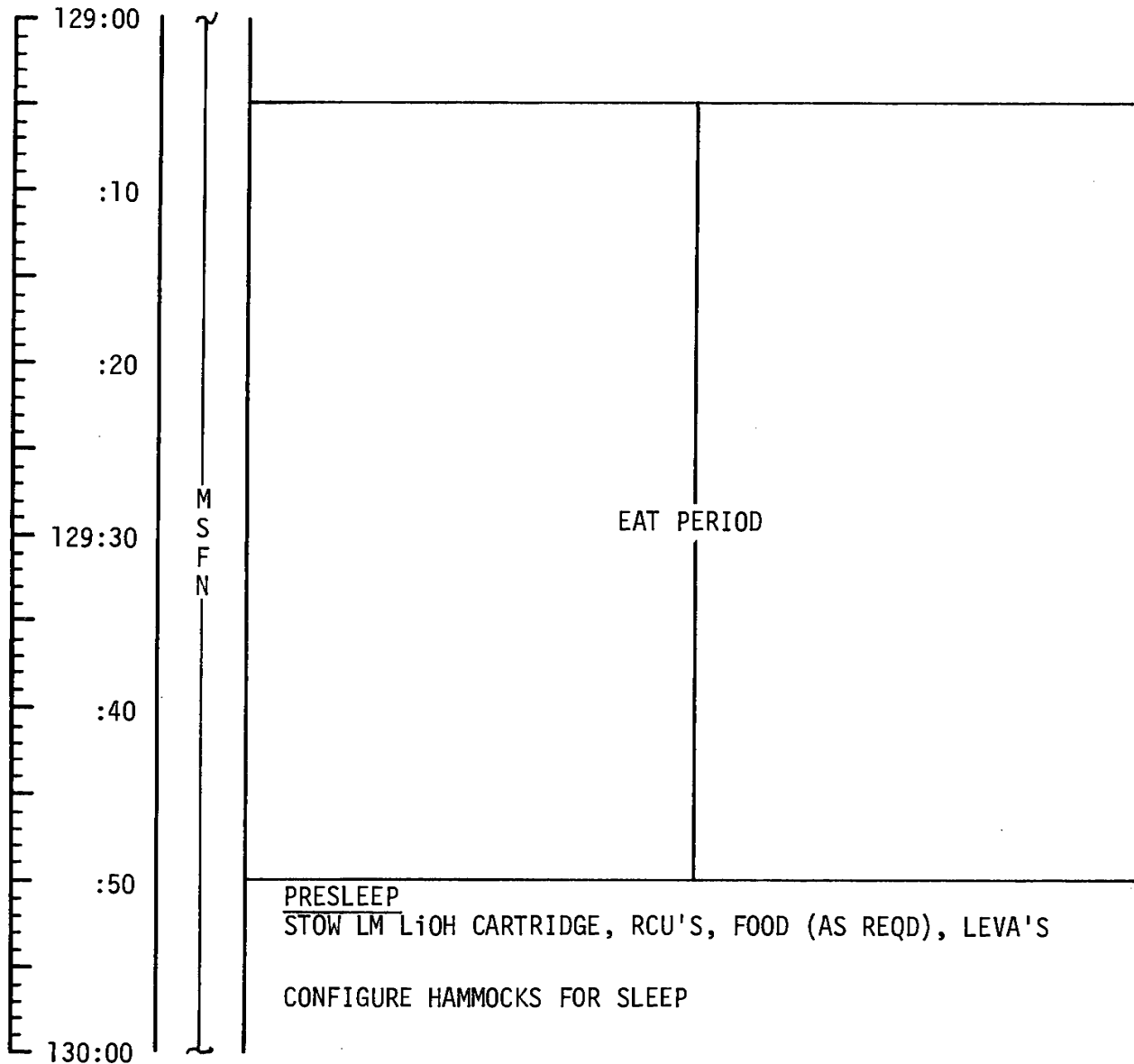
MCC-H

1734 CDT

CDR

LMP

NOTES



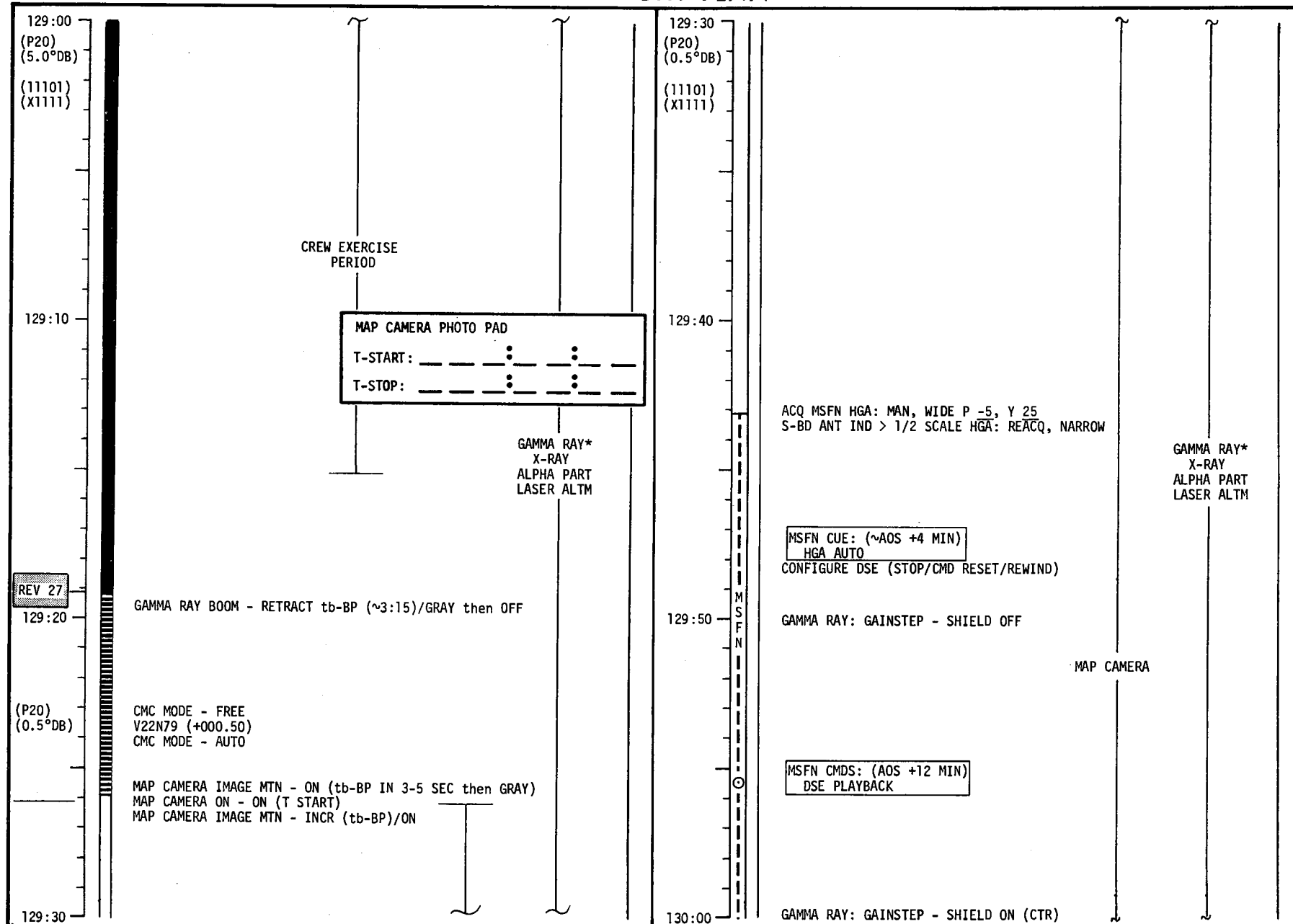
CSM REV 27

UPDATE TO LM
L/O TIMES REVS 28
THRU 31

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	129:00 - 130:00	6/26-27	3-178

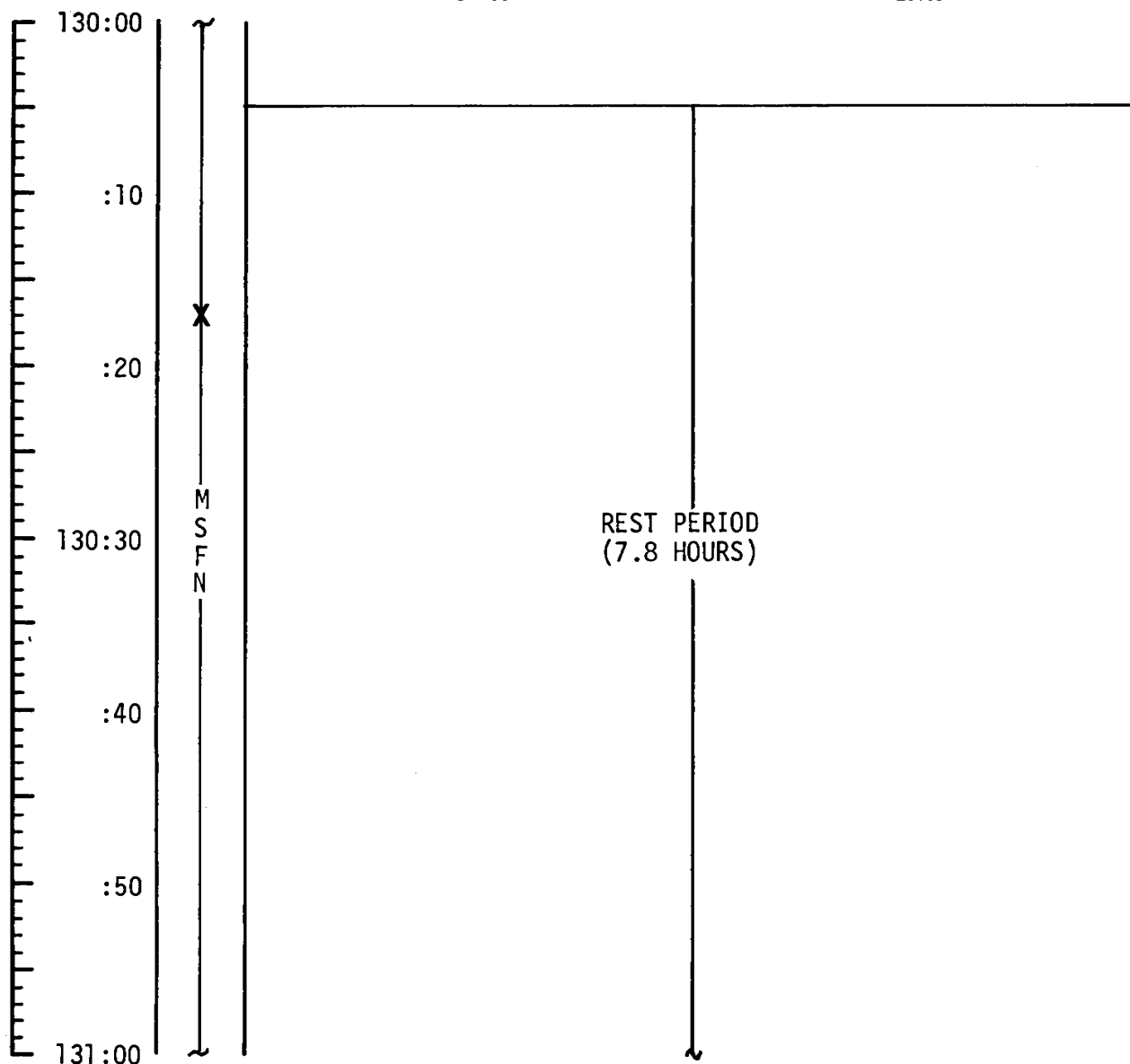
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-179

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	130:00 - 131:00	6/27	3-180

FLIGHT PLANNING BRANCH

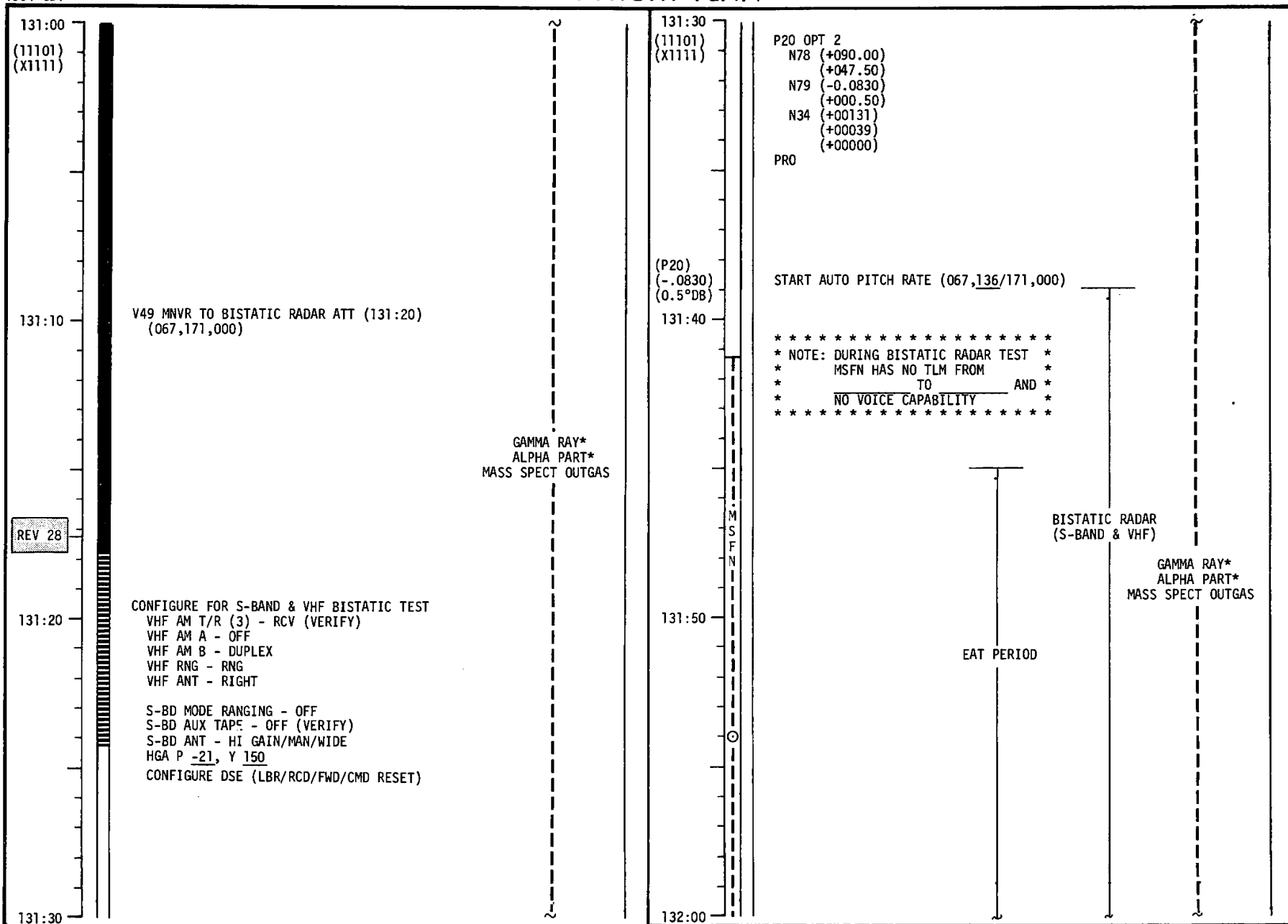
CSM FLIGHT PLAN

130:00 (P20) (0.5°DB)	CSM SYSTEMS CHECKLIST PERFORM ONLY THE FOLLOWING IN PRESLEEP CHECKLIST PAGE S/1-26 CREW STATUS REPORT ONBOARD READOUTS CYCLE CRYO FANS "E" MEMORY DUMP MSFN UPDATE: PAN CAMERA PHOTO PAD PAN CAMERA PHOTO PAD T-START: _____ T-STOP: _____	ONBOARD READOUT BAT C _____ PYRO BAT A _____ PYRO BAT B _____ RCS A _____ B _____ C _____ D _____ DC IND SEL - MNA OR B	130:30 (P20) (0.5°DB)	GAMMA RAY* X-RAY ALPHA PART LASER ALTM MASS SPECT OUTGAS P52 IMU REALIGN N71: _____ N05: _____ N93: _____ X _____ Y _____ Z _____ GET _____
130:10	PAN CAMERA: MODE-STBY, PWR-ON tb-BP (2 SEC)/GRAY, STEREO, EXPOSURE - NORMAL (CTR) PAN CAMERA MODE - OPR tb-BP (2 SEC)/GRAY(T START) PAN CAMERA MODE - STBY (T STOP) MSFN: VERIFY LENS TUCK IN PAN CAMERA: PWR - OFF MAP CAMERA MAP CAMERA ON - OFF (T STOP) MAP CAMERA ON - STBY (T STOP +1 MIN) MAP CAMERA IMAGE MTN - OFF (tb-BP IN 3-5 SEC then GRAY) MASS SPECT BOOM - DEPLOY tb - BP (~2:40)/GRAY then OFF (CTR) GAMMA RAY BOOM - DEPLOY tb-BP (~2:45)/GRAY then OFF (CTR) RECORD GET MASS SPECT: EXP - ON, ION SOURCE - STBY	GAMMA RAY* X-RAY ALPHA PART LASER ALTM REPORT: <u>GYRO TORQUING ANGLES</u> P20, CMC MODE - AUTO GDC ALIGN VERIFY ORDEAL X-RAY - STBY LASER ALTM - OFF MAP CAMERA TRACK - RETRACT tb-BP (4 MIN)/GRAY then OFF (CTR) ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR) MSFN CMDS: (AOS +63 MIN) DSE REWIND MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR) GAMMA RAY ALPHA PART MASS SPECT OUTGAS POO AT PITCH OF 171° CONFIGURE DSE (LBR/RCD/FWD/CMD RESET)(AOS +71 MIN)	130:40	
130:20			130:50	
130:30			131:00	

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-181

REST PERIOD
(7.8 HOURS)

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-183

LM FLIGHT PLAN

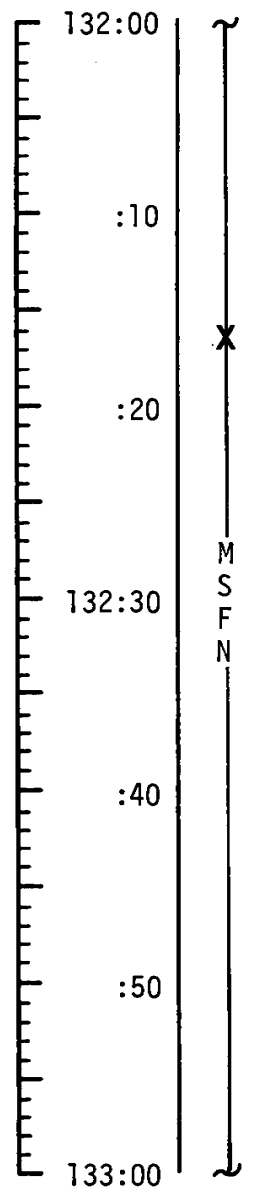
MCC-H

2034 CDT

CDR

LMP

NOTES



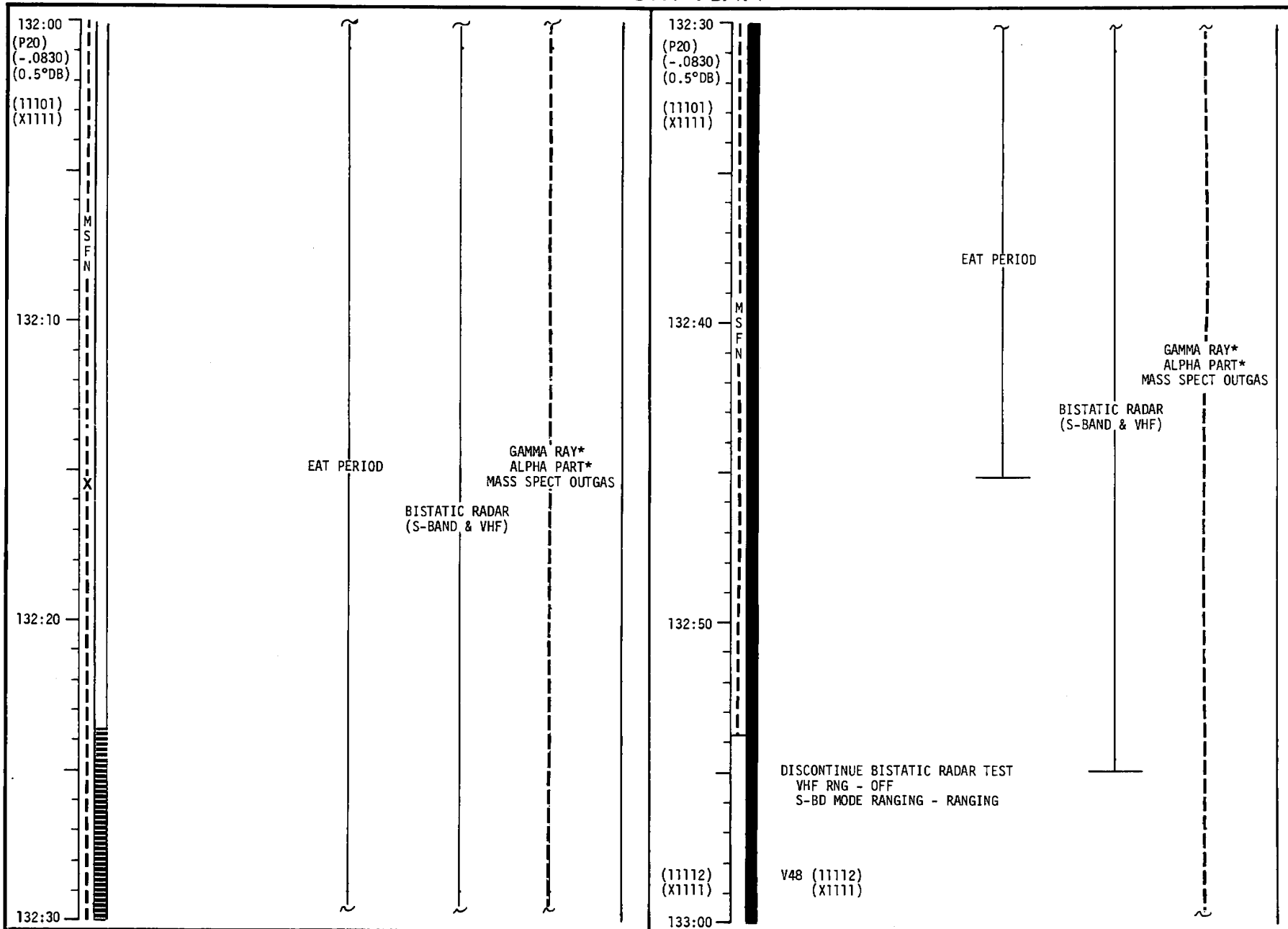
REST PERIOD
(7.8 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	132:00 - 133:00	6/28	3-184

FLIGHT PLANNING BRANCH

2034 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-185

LM FLIGHT PLAN

MCC-H

2134 CDT

CDR

LMP

NOTES

133:00
:10
:20
133:30
:40
:50
134:00

M
S
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N

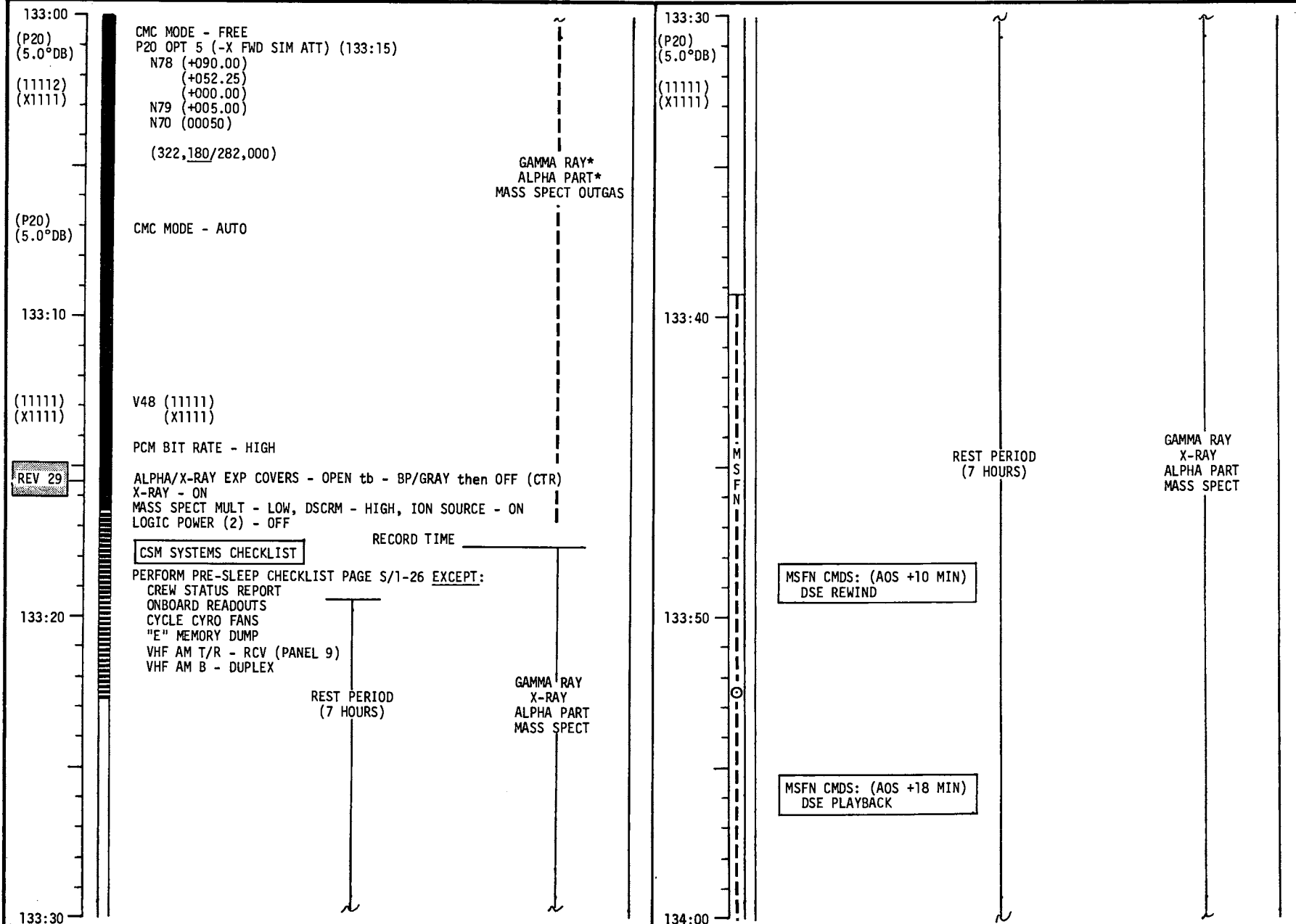
REST PERIOD
(7.8 HOURS)

CSM REV 29

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	133:00 - 134:00	6/28-29	3-186

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-187

LM FLIGHT PLAN

MCC-H

2234 CDT

CDR

LMP

NOTES

134:00
:10
:20
134:30
:40
:50
135:00

X
M
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F
N

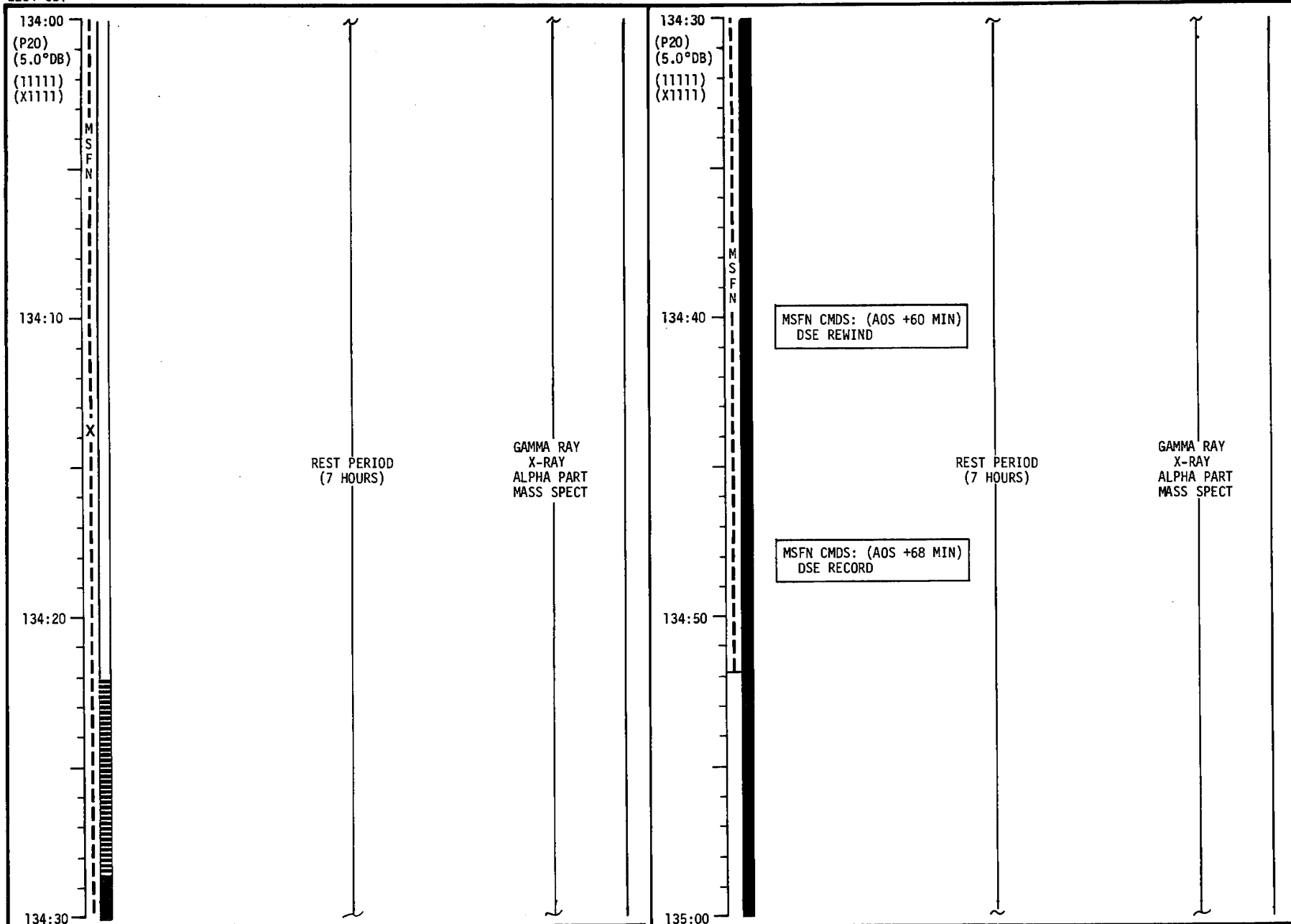
REST PERIOD
(7.8 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	134:00 - 135:00	6/29	3-188

FLIGHT PLANNING BRANCH

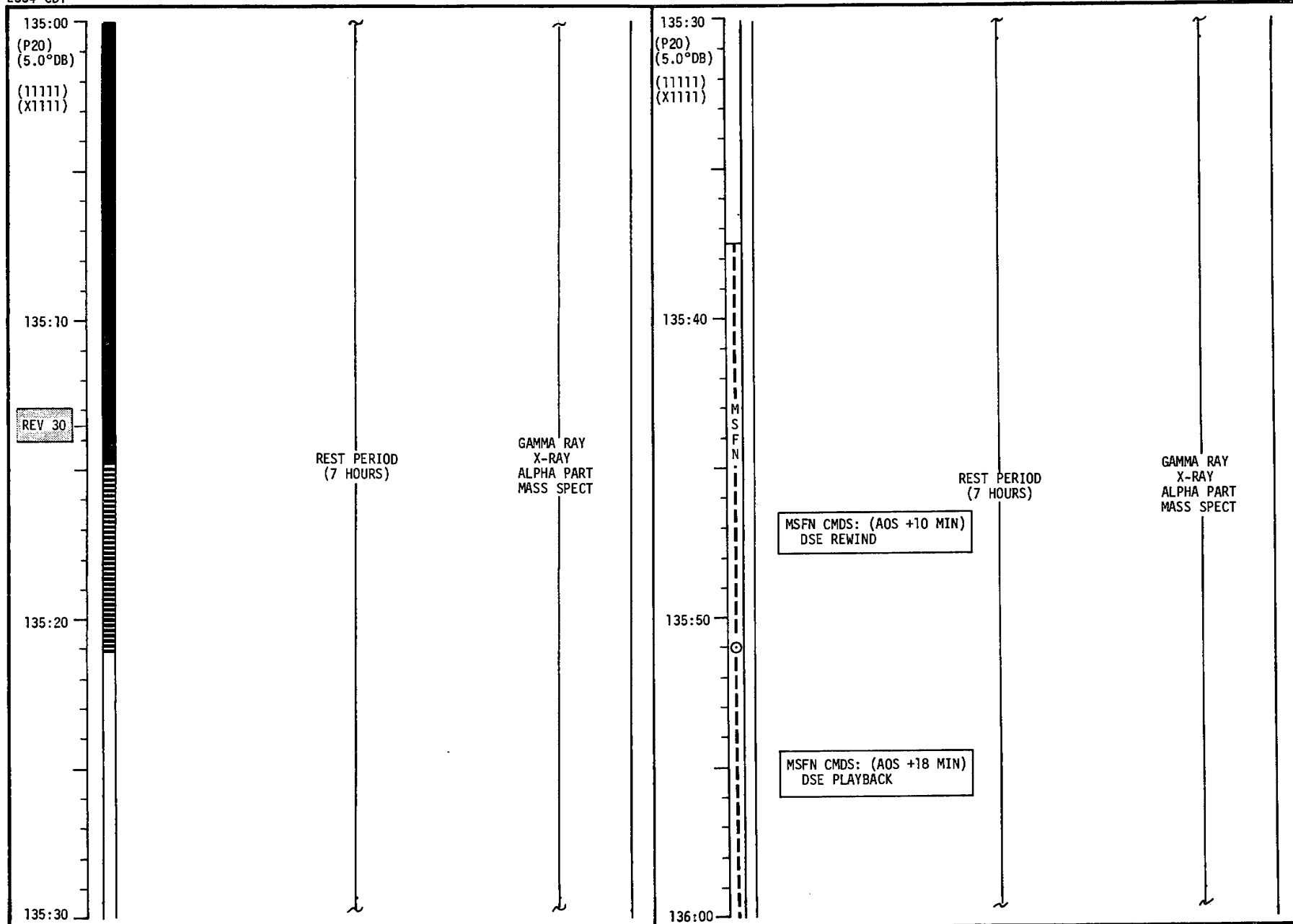
CSM FLIGHT PLAN

2234 CDT



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-189

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-191

LM FLIGHT PLAN

MCC-H

0034 CDT

CDR

LMP

NOTES

136:00
:10
:20
136:30
:40
:50
137:00

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X
M
S
F
N
~

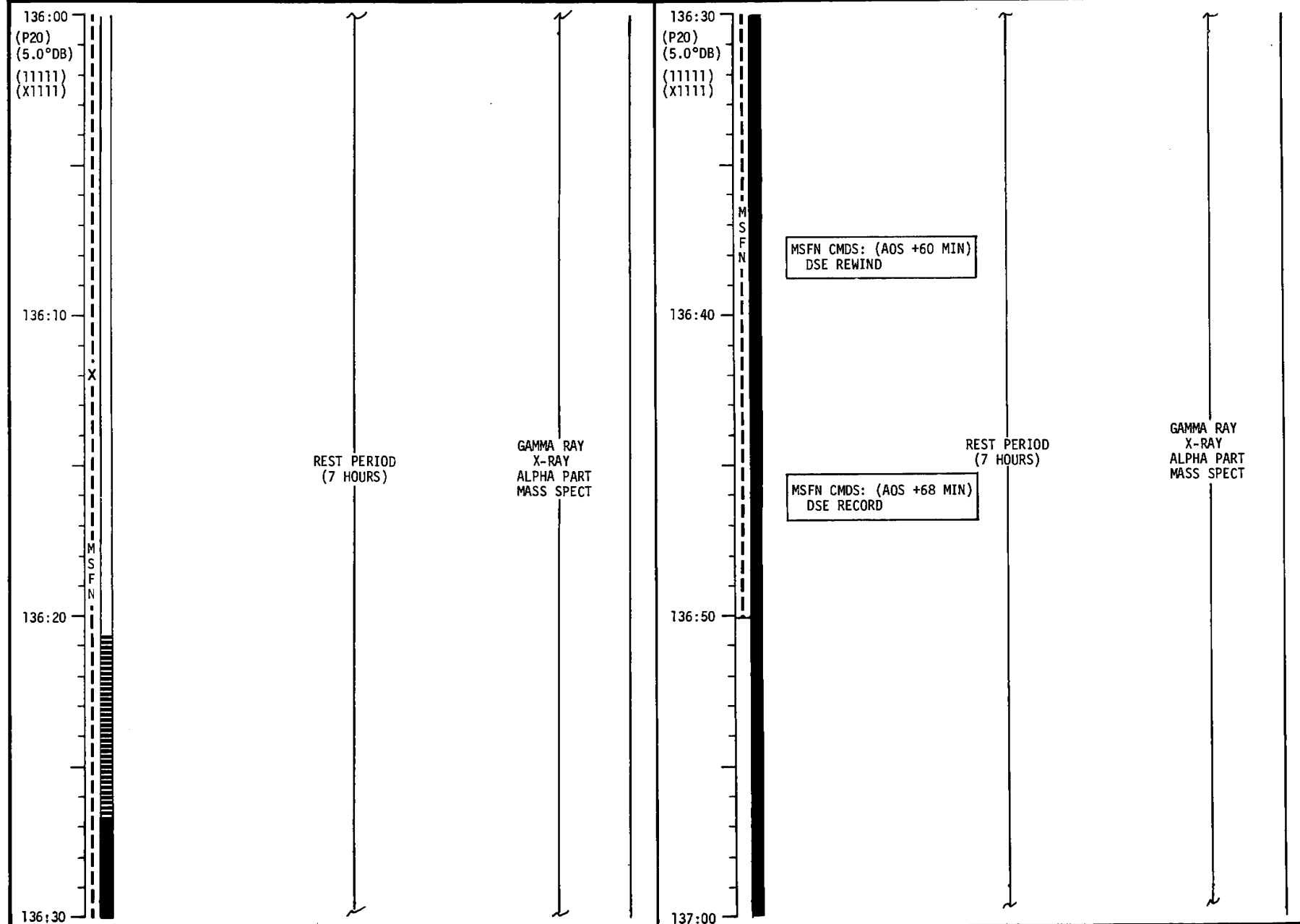
~
REST PERIOD
(7.8 HOURS)
~

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	136:00 - 137:00	6/30	3-192

FLIGHT PLANING BRANCH

0034 CDT

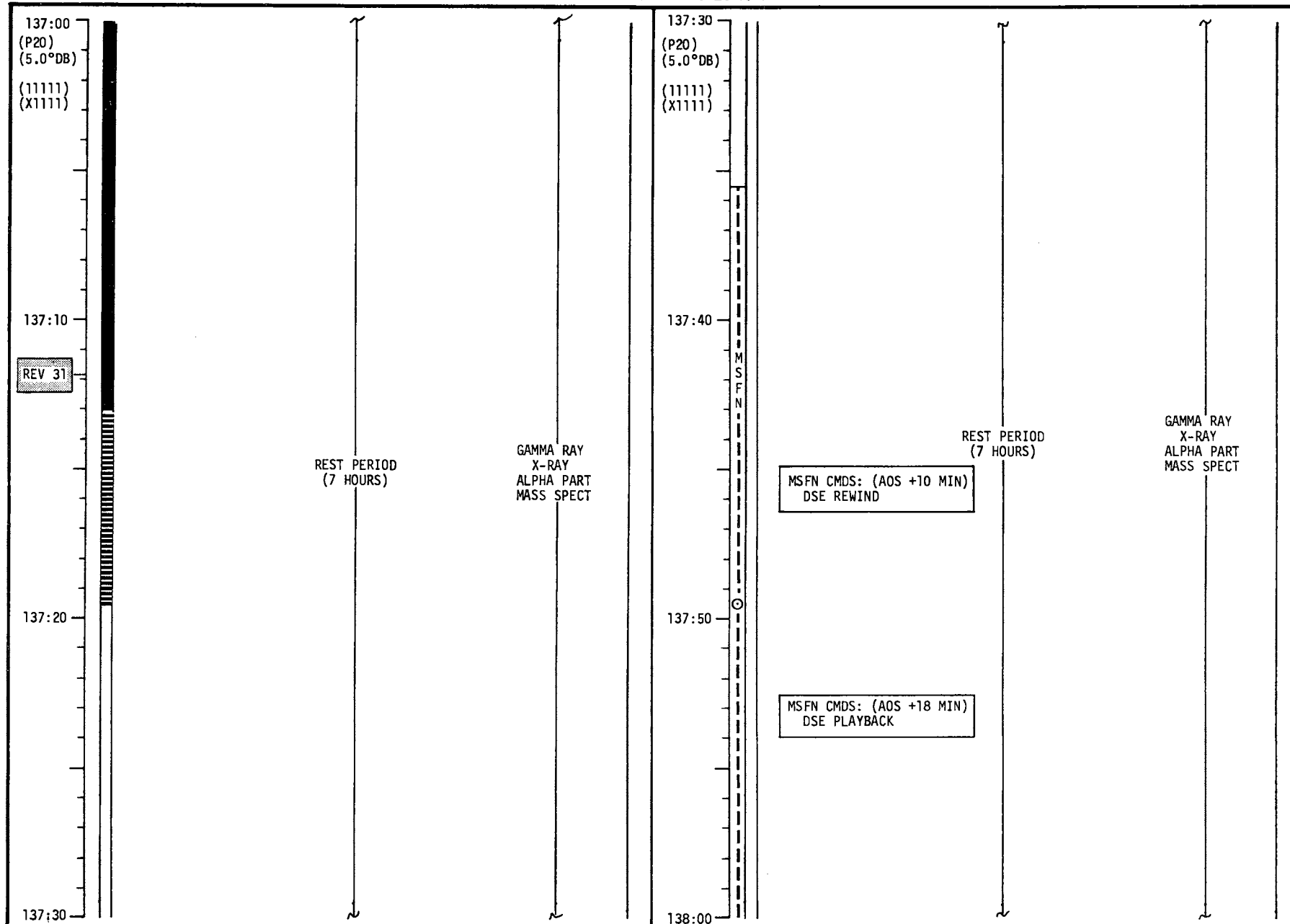
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-193

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-195

LM FLIGHT PLAN

MCC-H

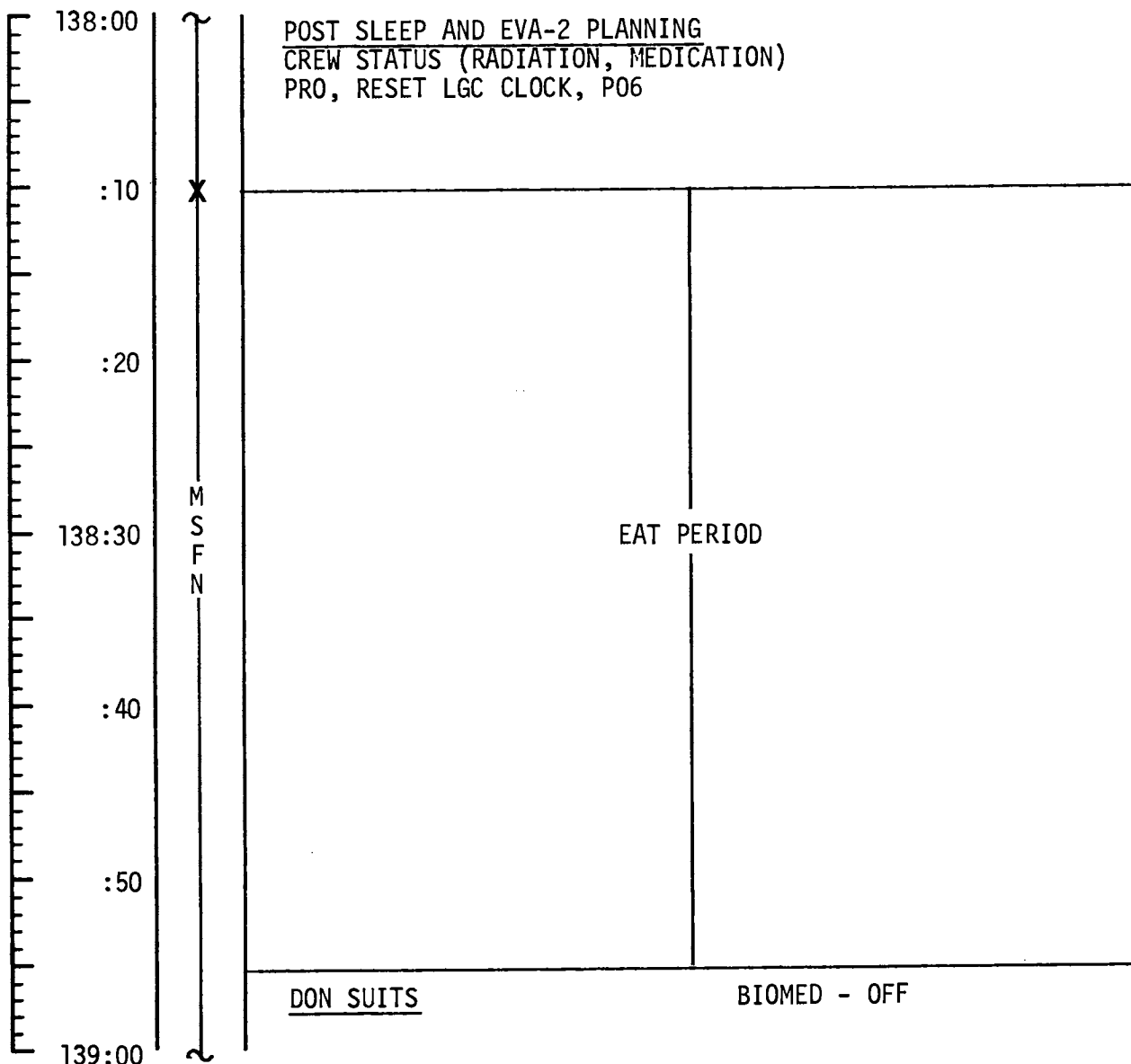
0234 CDT

CDR

LMP

NOTES

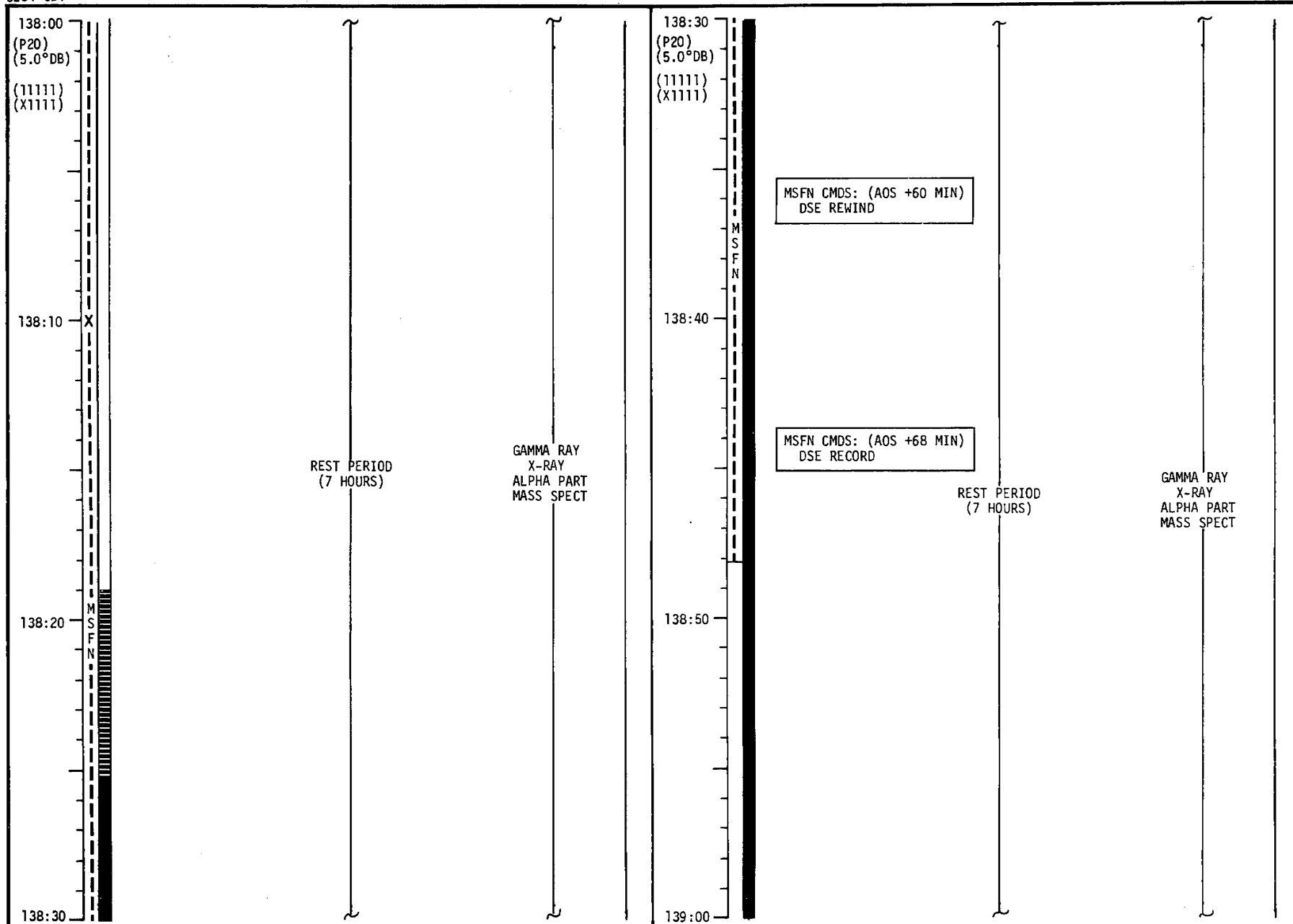
UPDATE TO LM
LM CONSUMABLES
TIME OF LIFT-OFF
FOR REVS 32
THROUGH 37



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	138:00 - 139:00	7/31	3-196

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-197

MCC-H

CDR

LMP

NOTES

MSFN

LMP, THEN CDR CLEAN & LUB PGA'S
DOFF ICG & CWG, DON LCG & PGA
CONNECT HOSES

CDR DON BIOMED HARNESS

VERIFY COMM

BIOMED - LEFT

EVA-2 PREP
STOW ALL LOOSE ITEMS NOT REQD FOR EVA

UNSTOW EVA-2 PREP & POST CARD

STOW LUNAR SURFACE CHECKLIST

UNSTOW AND CHECK BOTH OPS

CSM REV 32

-1:30

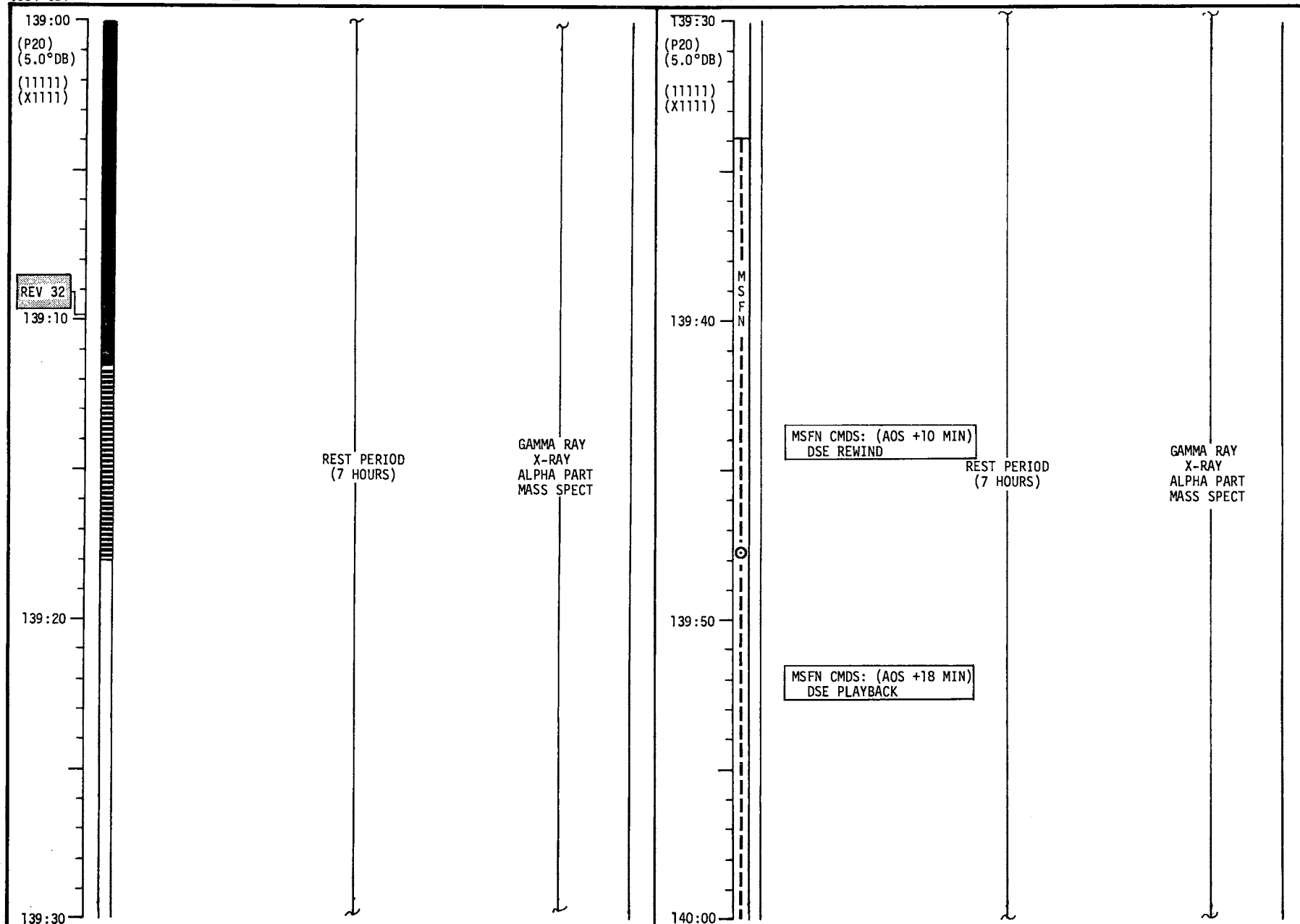
-1:20

-1:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	139:00 - 140:00	7/31-32	3-198

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-199

LM FLIGHT PLAN

MCC-H

0434 CDT

CDR

LMP

NOTES

140:00		PREPARE VISORS & HELMETS FOR EVA UNLOCK FORWARD HATCH HANDLE	-1:10
:10	X	<u>PLSS DONNING</u> CONFIGURE LMP PLSS ATTACH OPS TO PLSS LMP DON PLSS/OPS CONNECT RCU TO PGA AND PLSS UNSTOW LMP OPS O2 ACTUATOR AND CONNECT TO RCU CDR REPEAT PLSS DONNING	-1:00
:20			-:50
140:30	M S F N	<u>PLSS COMM CHECK</u> VERIFY POWERDOWN CB CONFIGURATION, RECORDER - ON CONFIGURE FOR EVA COMM, BIOMED - OFF VERIFY PLSS COMM & TM REPORT PLSS O2 QUANTITIES TO MCC-H FINAL SYSTEM PREP	-:40
:40		<u>OPS CONNECT</u> CONNECT OPS O2 HOSE TO PGA CDR REPEAT OPS CONNECT	-:30
:50		<u>HELMET/GLOVE DONNING</u> PLSS FAN - ON DON HELMETS AND LEVA'S VERIFY PGA CONFIGURATION VERIFY CB CONFIGURATION DON GLOVES	-:20
141:00			-:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	140:00 - 141:00	7/32	3-200

FLIGHT PLANNING BRANCH

0434 CDT

CSM FLIGHT PLAN

140:00
(P20)
(5.0°DB)(11111)
(X1111)

CSM CONSUMABLES UPDATE

GET: _____ : _____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____O₂ TANK 1 _____ 2 _____ 3 _____

35MM AND 70MM CAMERA MAGAZINES

CAMERA	MAGAZINES	TYPE (DECAL COLOR)	STOWAGE LOCATION
NK	T	VHBW (SILVER/BLACK)	B2
	U	VHBW (SILVER/BLACK)	B2
EL	S	LBW (SILVER)	A1

REST PERIOD
(7 HOURS)GAMMA RAY
X-RAY
ALPHA PART
MASS SPECT

P52 IMU REALIGN

N71: _____ , _____

N05: _____ . _____

N93: _____

X _____ . _____

Y _____ . _____

Z _____ . _____

GET _____ . _____

140:30
(P20)
(5.0°DB)(11111)
(X1111)

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-26

MSFN UPLINK:
CSM S.V.MSFN CMDS: (AOS +60 MIN)
DSE REWINDMSFN UPDATE:
MAP CAMERA PHOTO PAD (141:13)
PAN CAMERA PHOTO PAD (141:25)
CONSUMABLES
FLIGHT PLAN

140:40

CMC MODE - FREE
P52 (OPTION 3)
(LDG SITE ORIENT)MSFN CMDS: (AOS +68 MIN)
DSE RECORDGAMMA RAY
X-RAY
ALPHA PART
MASS SPECTP20, CMC MODE - AUTO
GDC ALIGN
VERIFY ORDEAL
VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

MANUALLY ROLL CW 40°

140:50

(P20)
(5.0°DB)P20 OPT 5 (+X FWD SIM ATT) (141:11)
V23N78 (+180.00)
(142,000/096,000)MASS SPECT: ION SOURCE - OFF, EXP - STBY
CAUTION - WAIT 5 MIN BEFORE RETRACTING MASS SPECT BOOM
RECORD GET _____

141:00

140:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-201

CHANGE B

LM FLIGHT PLAN

MCC-H

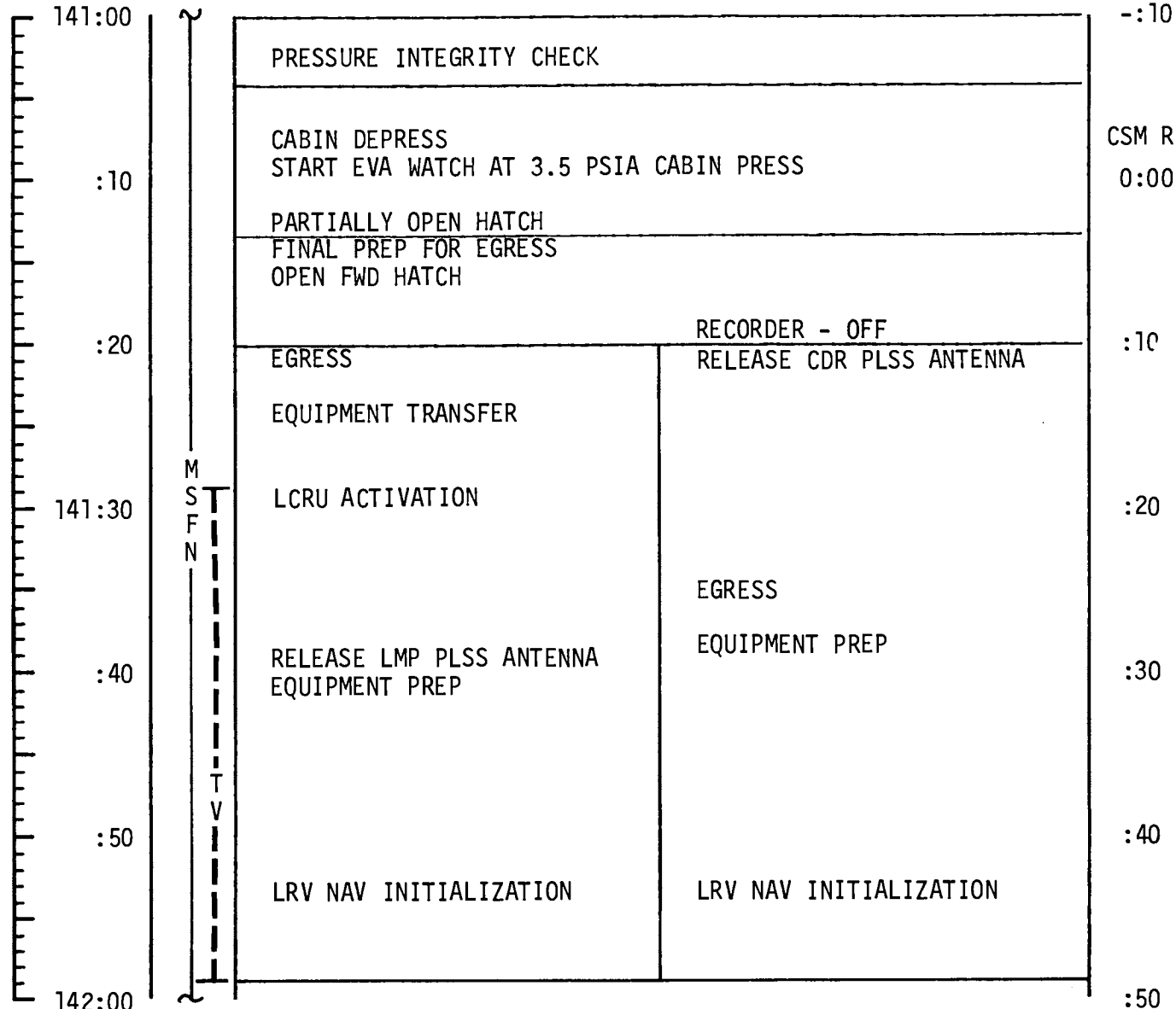
0534 CDT

CDR

LMP

NOTES

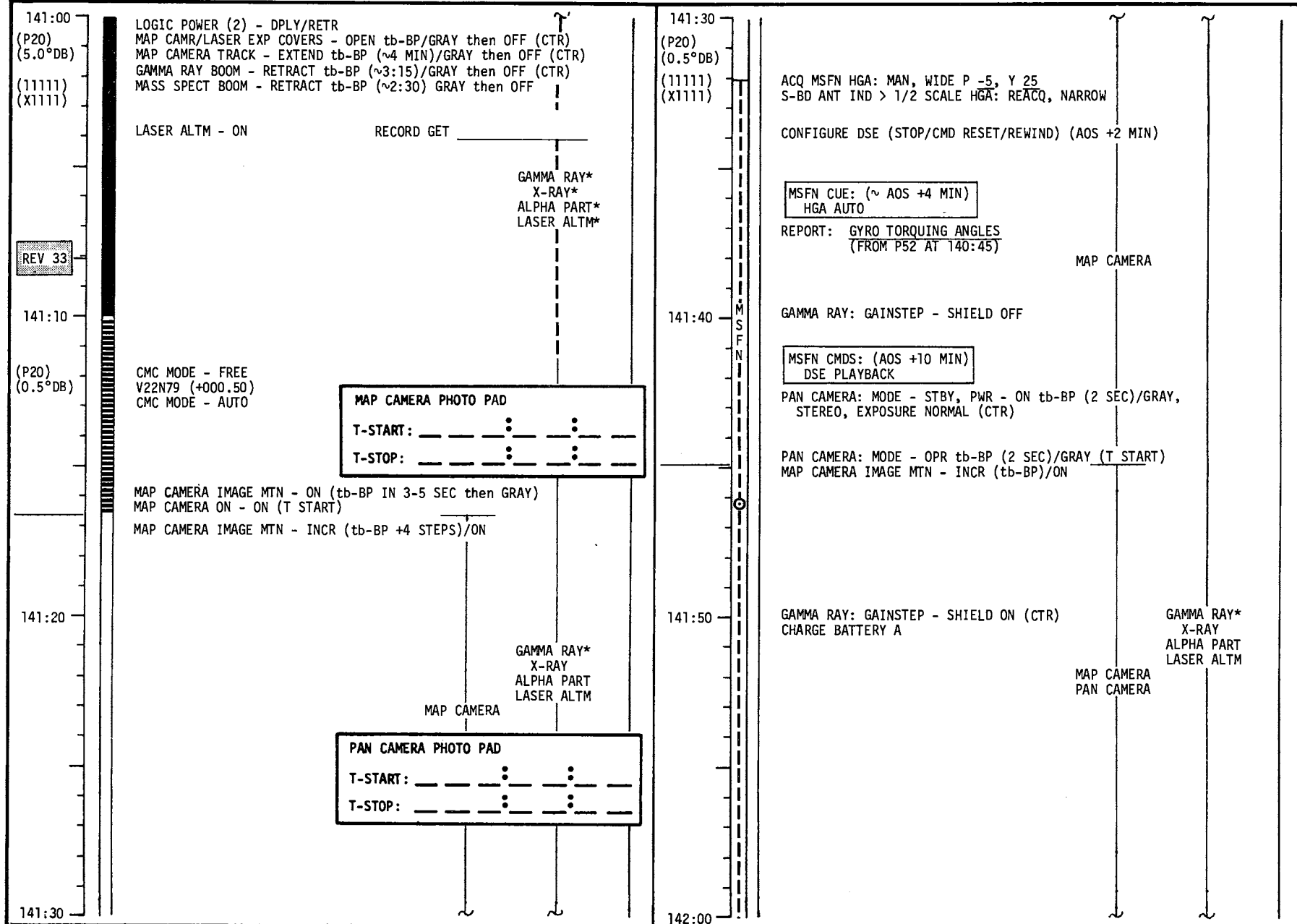
GO/NO-GO FOR
DEPRESS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	141:00 - 142:00	7/32-33	3-202

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-203

MCC-H

0634 CDT

LM FLIGHT PLAN

CDR

LMP

NOTES

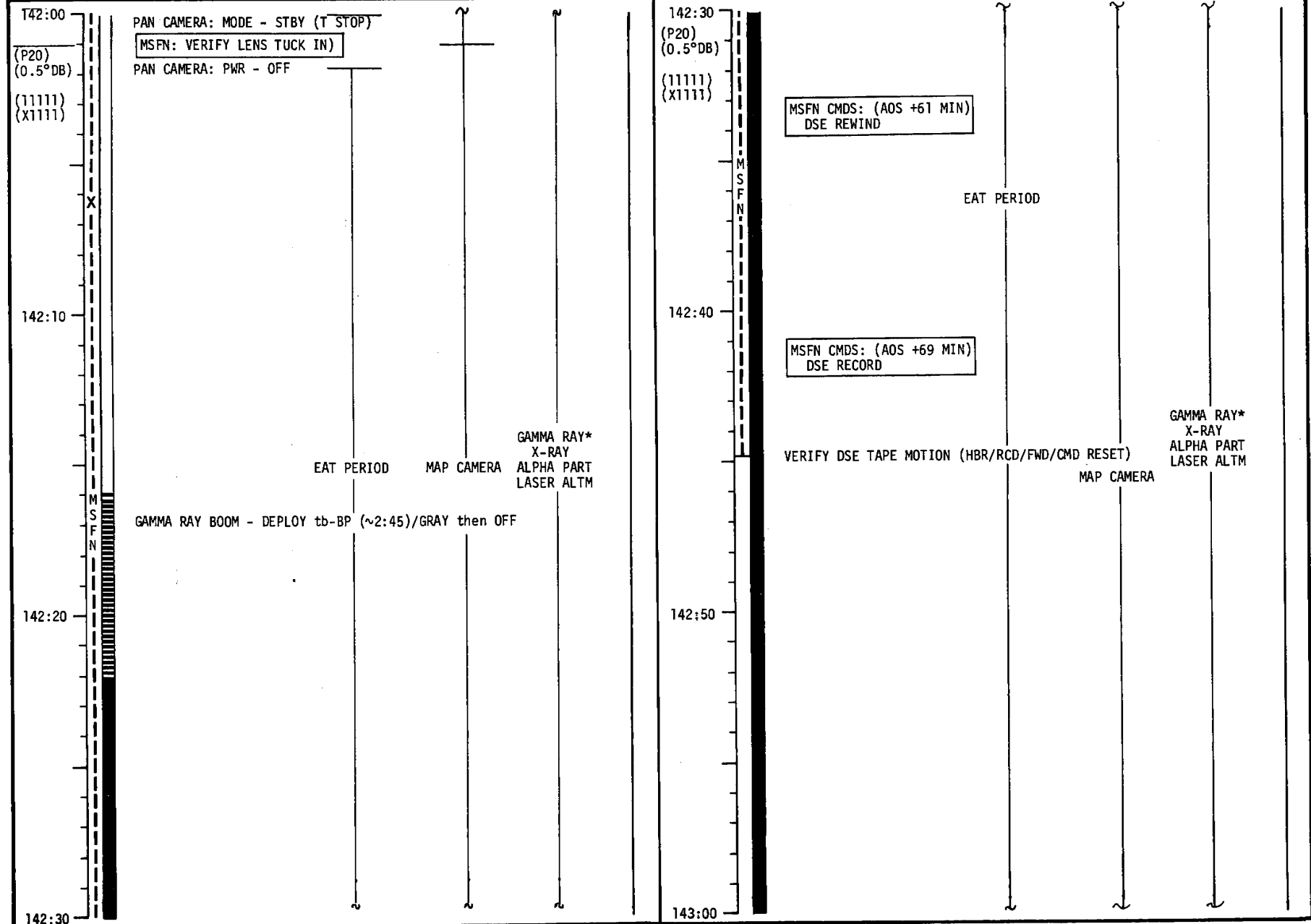
142:00	~	<u>DRIVE TO STATION #4</u>	:50
	X	OBSERVE SMOOTH MARE & SECONDARY CRATER CLUSTER CHARACTERISTICS PHOTOGRAPHY AS APPROPRIATE	
:10		CHECK POINT (2 MIN)	1:00
:20			1:10
			1:17
142:30	M S F N	<u>STATION #4</u> SOIL/RAKE SAMPLE DOCUMENTED SAMPLES PAN 500mm PHOTOGRAPHY OF FRONT EXPLORATORY TRENCH	1:20
:40	T V	OBSERVE CRATER INTERIOR & EJECTA COMPARE SECONDARY CRATER MATERIAL TO OTHER TERRAIN GEOLOGIC UNITS POSSIBLE CORE TUBE THROUGH SECONDARY EJECTA	1:30
			1:37
:50		<u>DRIVE TO FRONT</u> OBSERVE SMOOTH MARE & SECONDARY CRATER CLUSTER CHARACTERISTICS	1:40
		CHECK POINT (FRONT)	
143:00	~		1:50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	142:00 - 143:00	7/33	3-204

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0634 CDT



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-205

LM FLIGHT PLAN

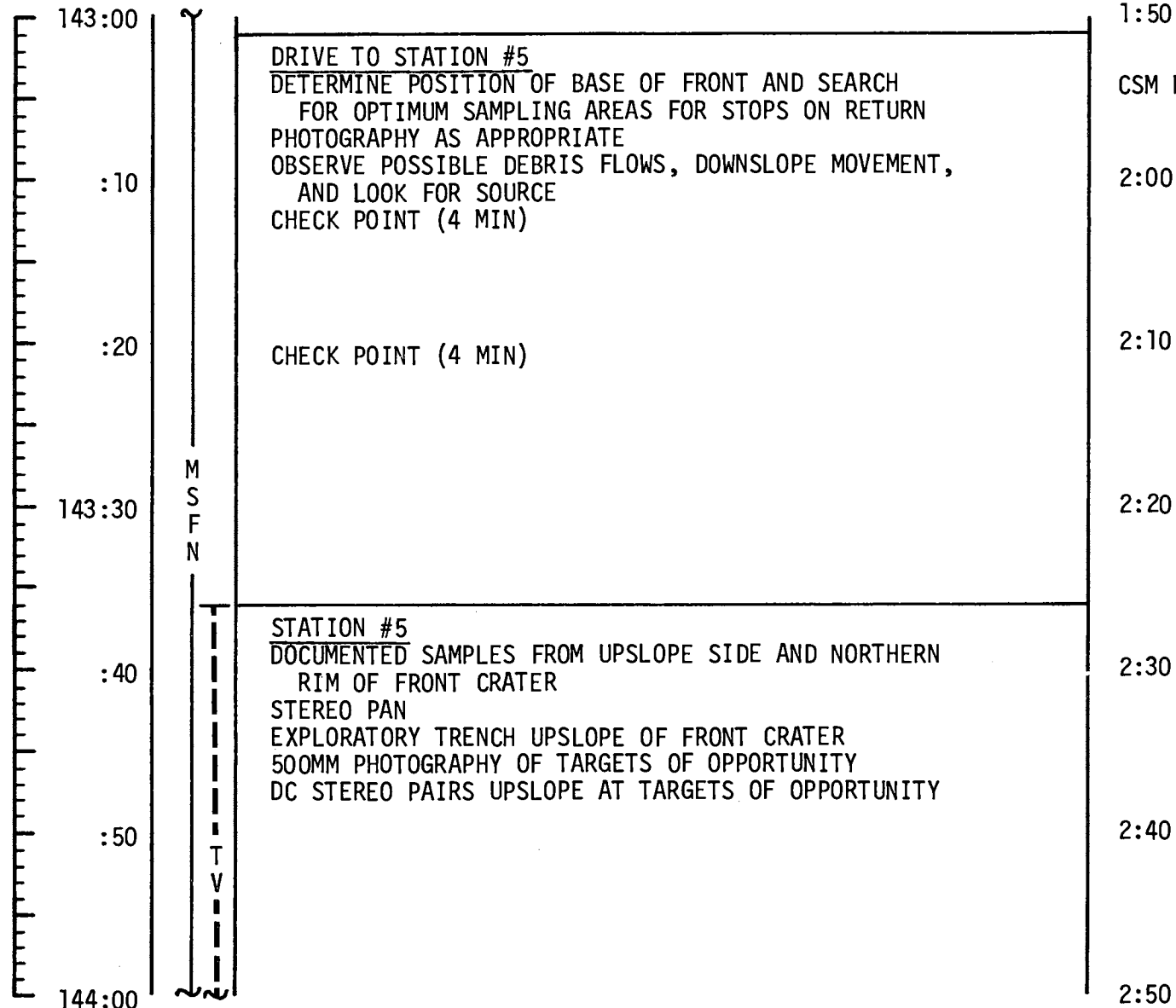
MCC-H

0734 CDT

CDR

LMP

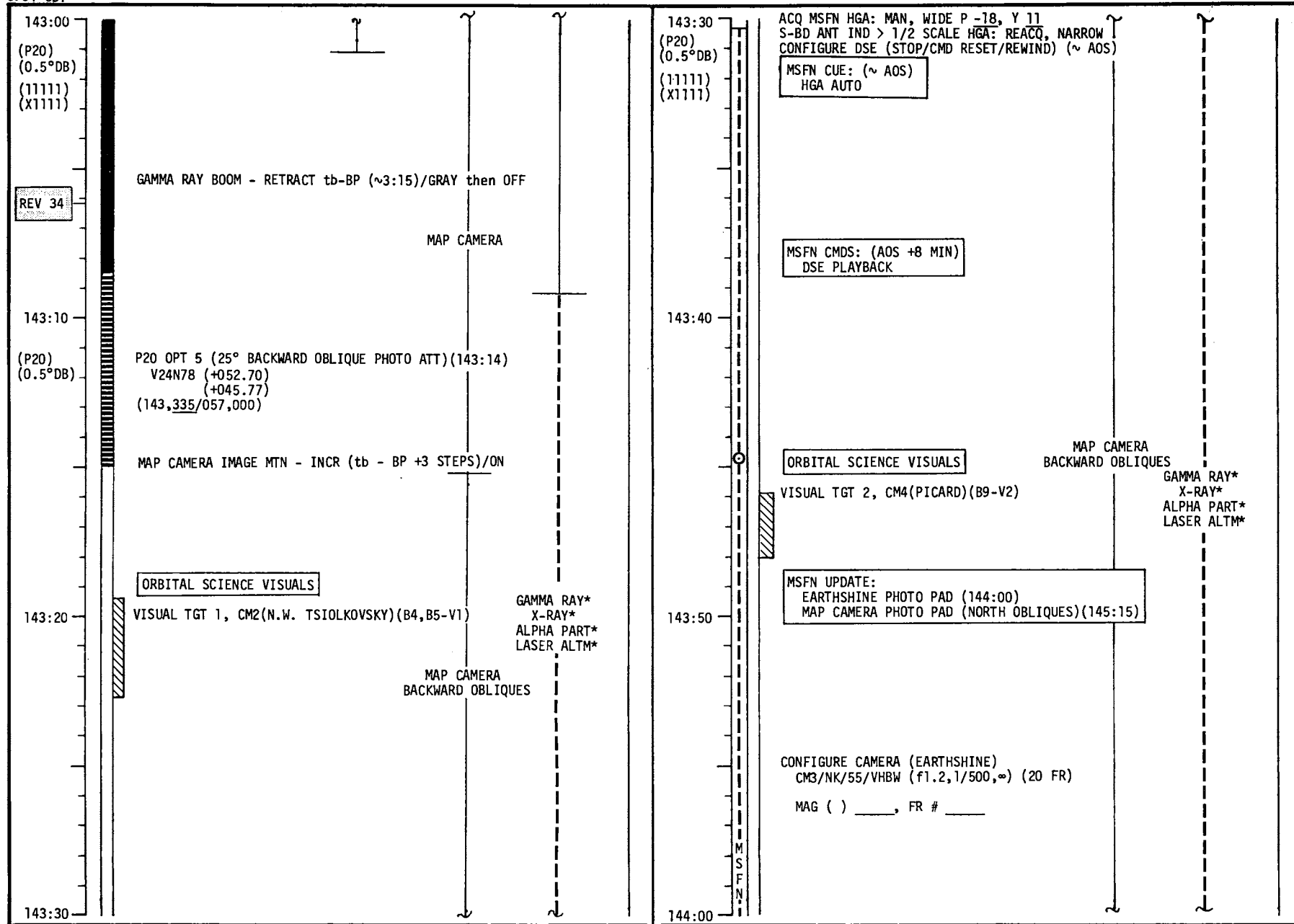
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	143:00 - 144:00	7/33-34	3-206

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-207

B.

LM FLIGHT PLAN

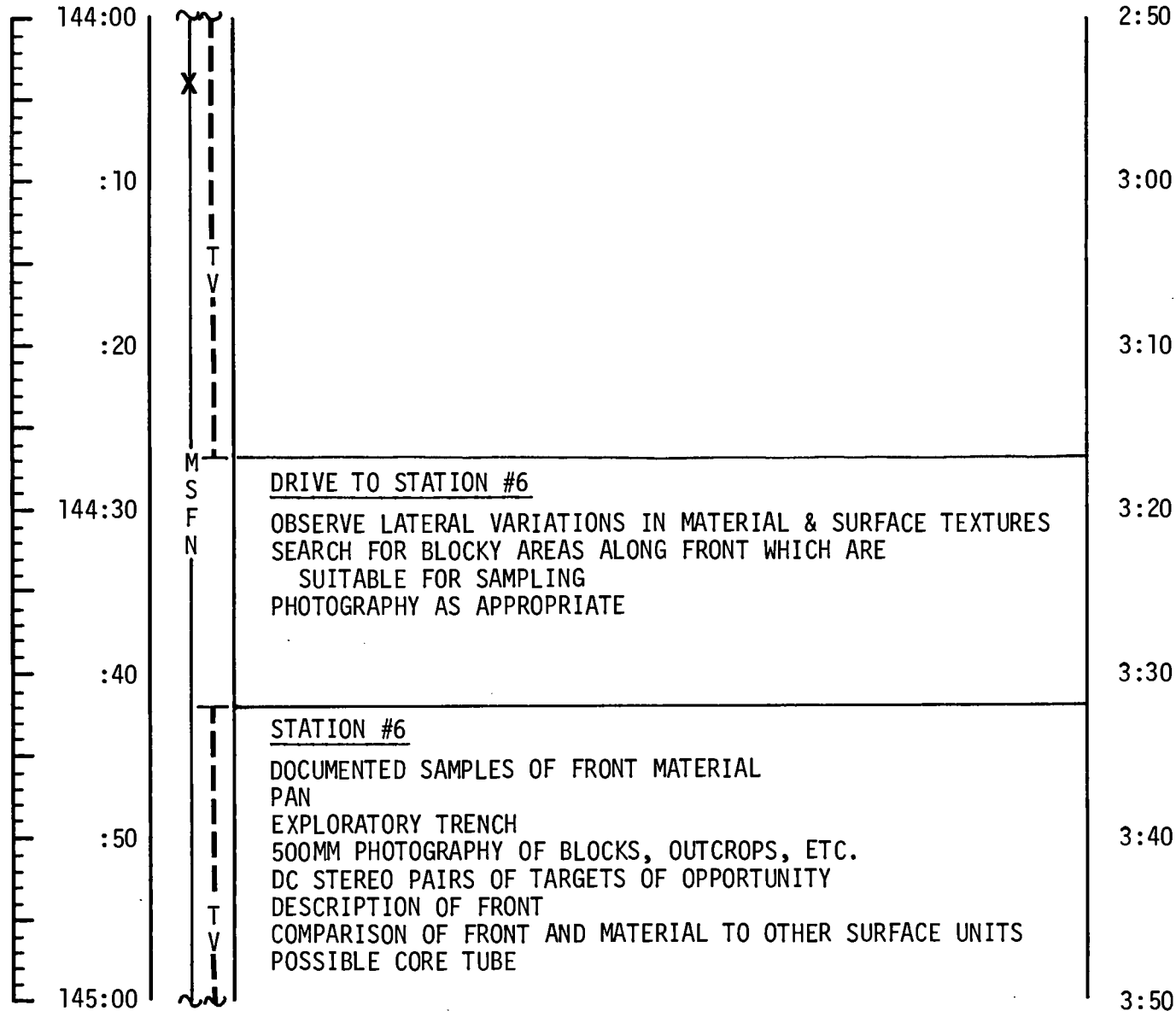
MCC-H

0834 CDT

CDR

LMP

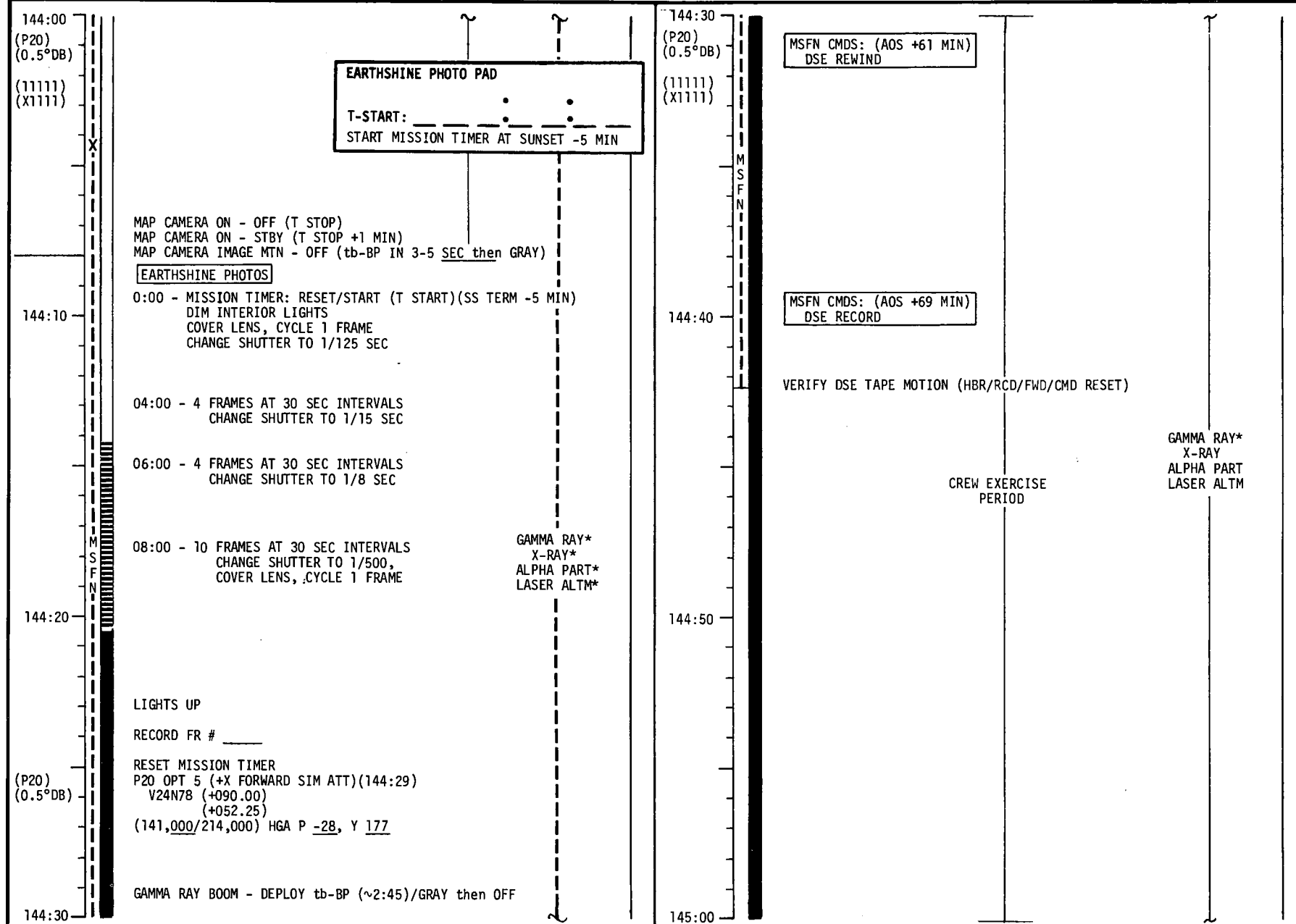
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	144:00 - 145:00	7/34	3-208

FLIGHT PLAN BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-209

LM FLIGHT PLAN

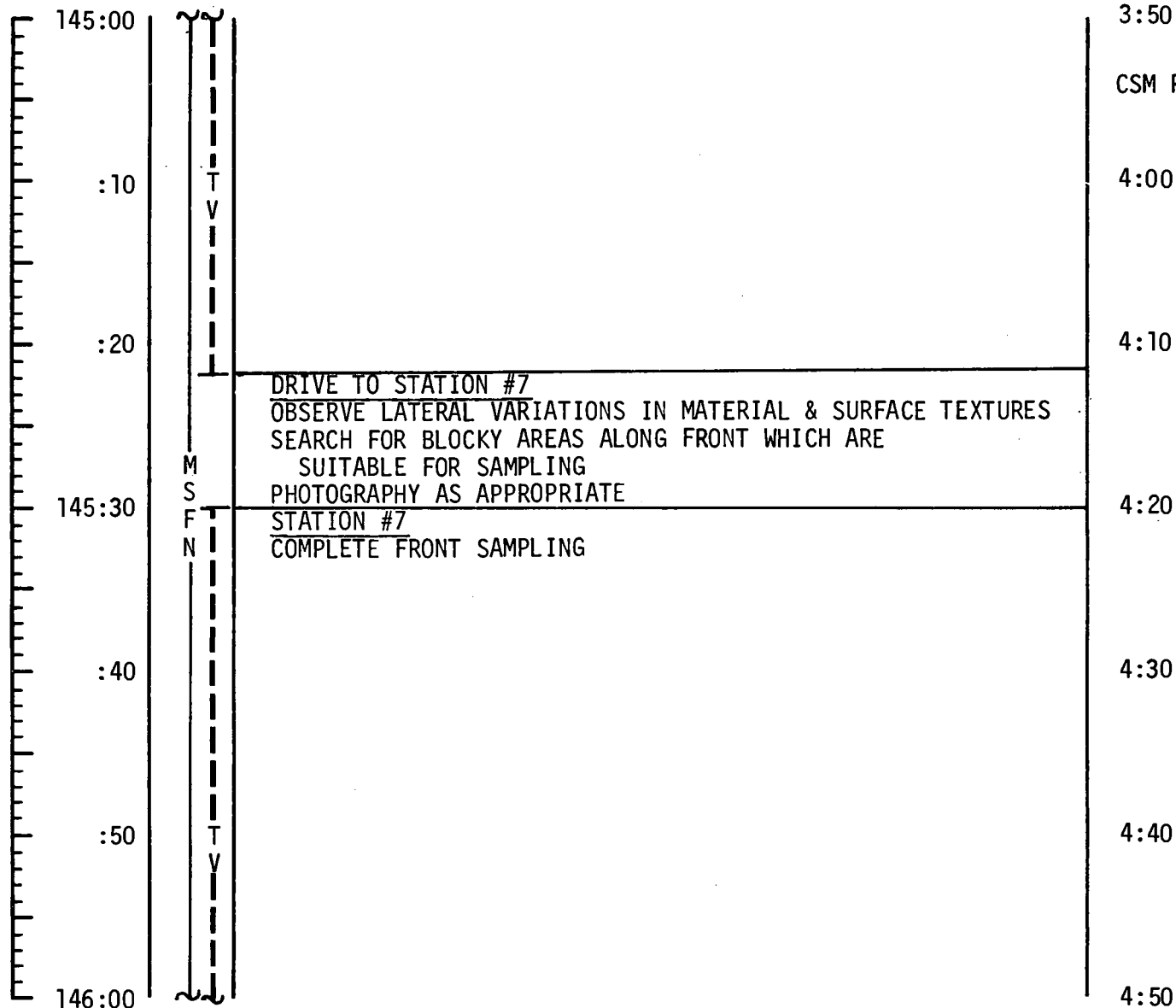
MCC-H

0934 CDT

CDR

LMP

NOTES

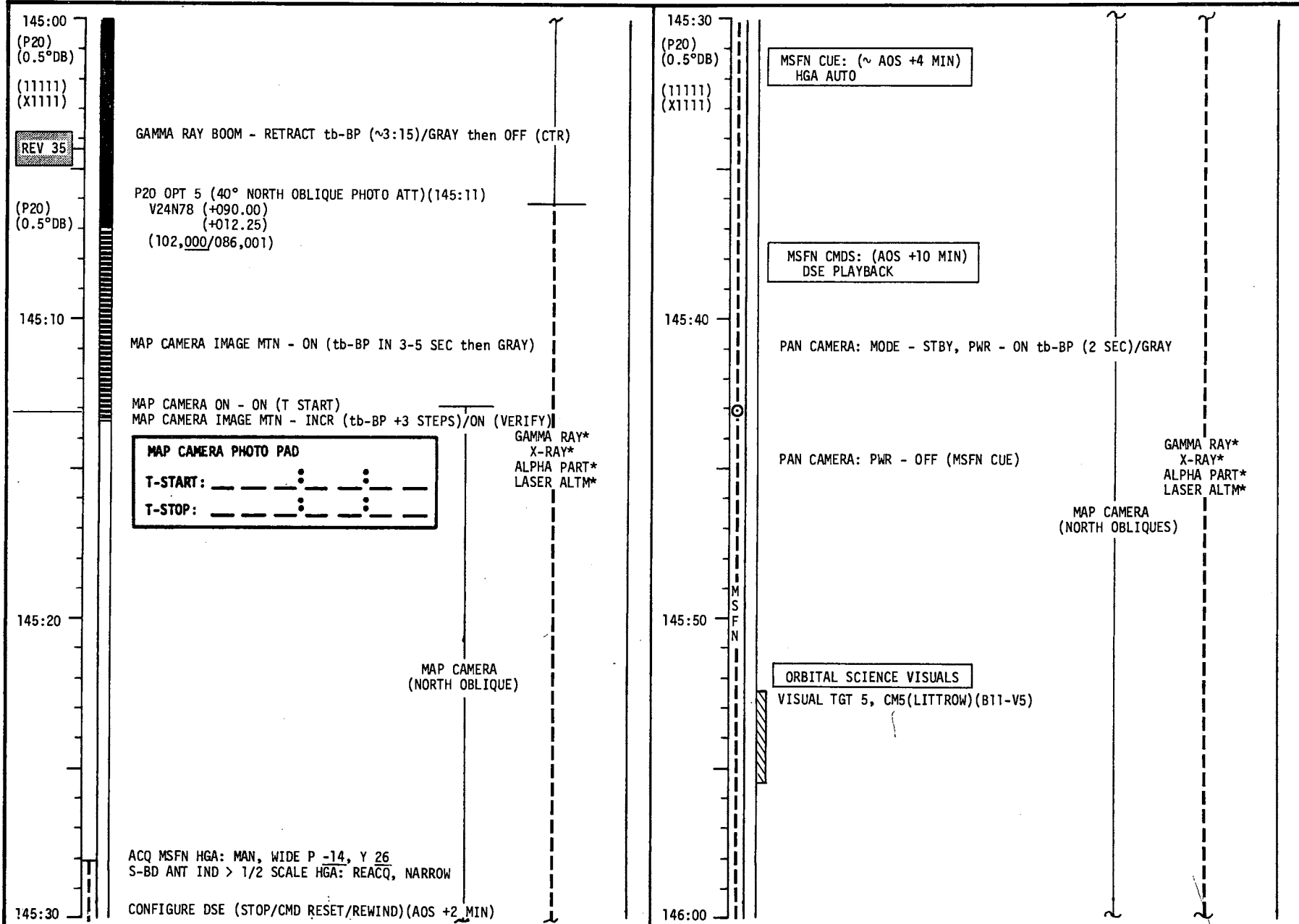


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	145:00 - 146:00	7/34-35	3-210

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0934 CDT



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-211

LM FLIGHT PLAN

MCC-H

1034 CDT

CDR

LMP

NOTES

146:00	X		4:50
:10	T	DRIVE TO STATION #8 OBSERVE SECONDARY CRATER DEPOSITS AND RELATION TO OTHER TERRAIN OBSERVE EASTERN EDGE OF POSSIBLE DEBRIS FLOW FROM FRONT PHOTOGRAPHY AS APPROPRIATE	5:00
:20	V		5:10
146:30	M		5:20
:40	S	STATION #8 COMPREHENSIVE SAMPLE DOUBLE CORE TUBE DOCUMENTED SAMPLING OF LARGE MARE CRATER (POSSIBLE FILLET/ROCK OR EQUIDIMENSIONAL ROCK SAMPLES) PAN TRENCH (POSSIBLE BURIED ROCK SAMPLE) FILL SPECIAL ENVIRONMENTAL SAMPLE CONTAINER PENETROMETER	5:30
:50	F		5:40
147:00	N		5:50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	146:00 - 147:00	7/35	3-212

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

146:00 (P20) (0.5°DB) (11111) (X1111)	L10H CANISTER CHANGE (12 INTO B, STOW 10 IN A9)	MAP CAMERA (NORTH OBLIQUE)	GAMMA RAY* X-RAY* ALPHA PART* LASER ALTM*	146:30 (11102) (X1111)	MSFN CMDS: (AOS +61 MIN) DSE REWIND	GAMMA RAY* X-RAY* ALPHA PART*
146:10	MAP CAMERA ON - OFF (T STOP) MAP CAMERA ON - STBY (T STOP +1 MIN) MAP CAMERA IMAGE MTN - OFF (tb-BP IN 3-5 SEC then GRAY) LASER ALTM - OFF	RECORD GET		146:40	MSFN CMDS: (AOS +69 MIN) DSE RECORD	
(11111) (X1111) (11102) (X1111)	CMC MODE - FREE P00 V48 (11102) (X1111) CMC MODE - AUTO			146:50	VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET) VERIFY RATES ARE <0.2°/SEC IN ALL AXES CMC MODE - FREE DIM INTERIOR LIGHTS CYCLE 1 FRAME, CHANGE SHUTTER TO T 1 FRAME, EXP TIME 1 MIN 1 FRAME, EXP TIME 3 MIN CHANGE SHUTTER TO 1/500 CYCLE 1 FRAME, LIGHTS UP CMC MODE - AUTO	
146:20	V49 MNVR TO DEEP SPACE MEAS./GEGENSCHNEIN CAL (146:24) (306,214,052) HGA P -12, Y 145				RECORD FR # REPLACE CM5 WINDOW COVER	
	CONFIGURE CAMERA: (GEGENSCHNEIN CALIBRATION) CM5/NK/55/VHBW (f1.2,1/500,∞) (4 FR)				X-RAY - STBY PCM BIT RATE - LOW/CMD RESET	
	MAG () _____, FR # _____ GAMMA RAY: GAINSTEP - SHIELD OFF CONFIGURE FOR URINE DUMP		GAMMA RAY* X-RAY* ALPHA PART*		MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN)/GRAY then OFF (CTR) ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)	GAMMA RAY* ALPHA PART*
146:30				147:00	MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)	
					O ₂ FUEL CELL PURGE WASTE WATER DUMP URINE DUMP	

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-213

18 C

LM FLIGHT PLAN

MCC-H

1134 CDT

CDR

LMP

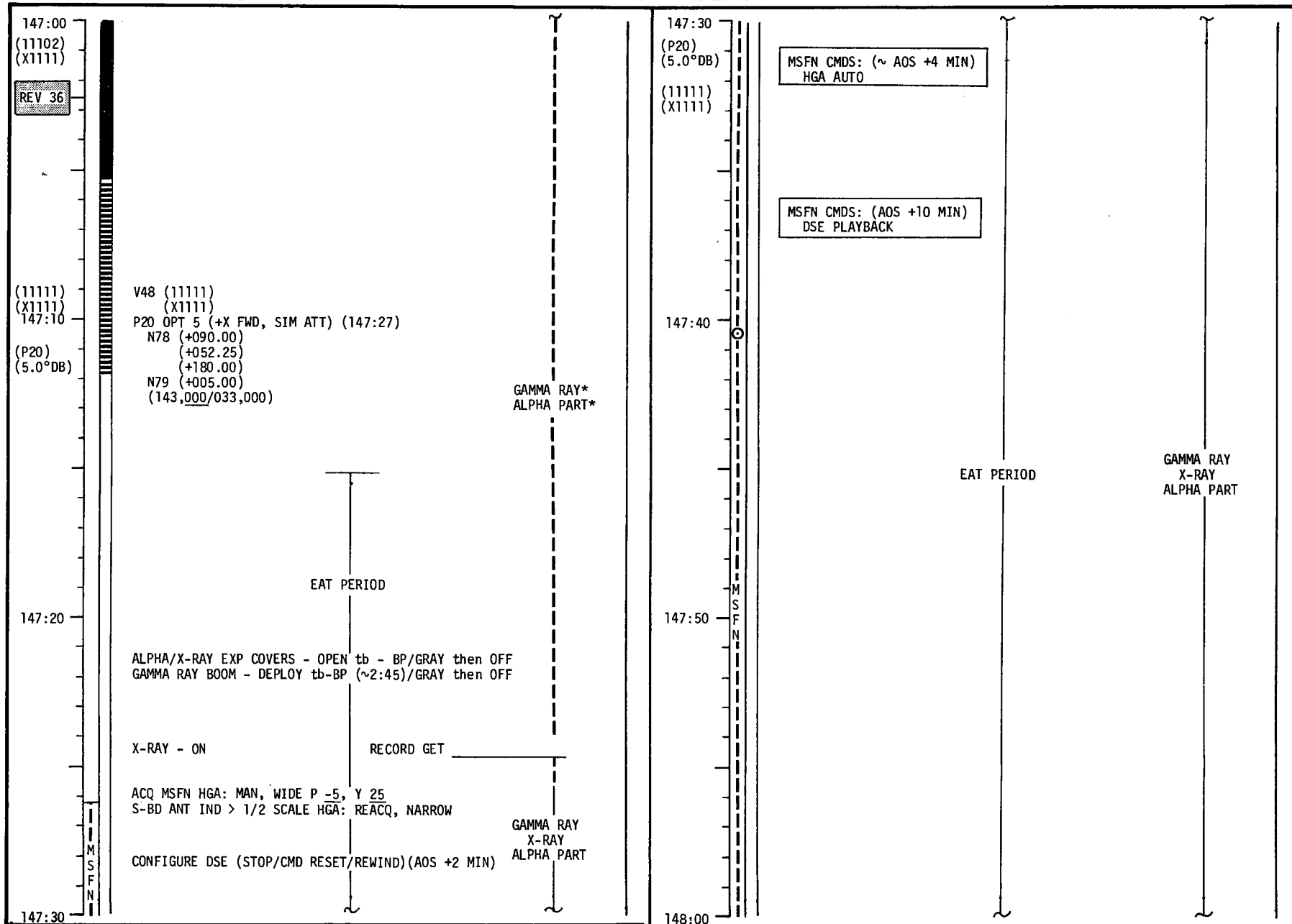
NOTES

147:00	T V			5:50
:10	T V			6:00
:20	T V	<u>DRIVE TO LM</u>		6:10
	T V	COMPARE MARE MATERIAL WITH OTHER TERRAIN OBSERVE POSSIBLE RAY MATERIAL		
147:30	M S F N	<u>PARK AT MESA</u> <u>EVA CLOSEOUT</u>	<u>EVA CLOSEOUT</u>	6:20
:40	M S F N			6:30
:50	T V	TRANSFER SRC #2 & ETB	INGRESS	6:40
148:00	T V		STOW EQUIPMENT	6:50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	147:00 - 148:00	7/35-36	3-214

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-215

LM FLIGHT PLAN

MCC-H

1234 CDT

CDR

LMP

NOTES

148:00	X	INGRESS LM			6:50
		REPRESSURIZE CABIN	CLOSE HATCH		
:10		<u>POST EVA SYSTEMS CONFIGURATION</u>			7:00 END EVA-2
		CONFIGURE LM ECS			
		DOFF HELMETS AND GLOVES			
		CONNECT LM ECS HOSES TO SUIT			
		CONNECT TO LM COMM			
:20		BIOMED - RIGHT			+ :10
		PLSS O ₂ INITIAL RECHARGE			
		<u>PLSS/OPS DOFFING</u>			
148:30	M S F N	DISCONNECT OPS & RCU FROM PLSS			+ :20
		LMP, THEN CDR DOFF PLSS/OPS			
		REPLACE PLSS BATTERIES AND LiOH CARTRIDGES			
:40		STOW OPS'S, PLSS'S & RCU'S			+ :30
		<u>POST EVA CABIN CONFIGURATION</u>			+ :40
:50		BATS 1,2 - OFF/RESET, LUNAR BAT (LMP) - ON			
		CHECK BUS VOLTS			
		UNSTOW LUNAR SURFACE CHECKLIST, STOW EVA-2 PREP & POST CARD			
149:00		UNSTOW SCALE			+ :50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	148:00 - 149:00	7/36	3-216

FLIGHT PLANNING BRANCH

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-217

LM FLIGHT PLAN

MCC-H

1334 CDT

CDR

LMP

NOTES

149:00	WEIGH SRC & COLLECTION BAGS, REPORT WEIGHTS TO MCC-H	+1:50 CSM REV 37
	STOW SCALE, SRC & COLLECTION BAG	
:10	DOFF SUITS CDR, THEN LMP DOFF PGA & LCG, DON CWG & ICG	+1:00
	STOW PGA ON AFT ENGINE COVER AND DRY	
:20		+1:10
149:30	LMP DOFF BIOMED HARNESS (IF DESIRED)	+1:20
:40	BIOMED - LEFT PLSS O ₂ & H ₂ O RECHARGE	+1:30
	CONNECT LM O ₂ SUPPLY TO CDR PLSS AND FILL (10 MIN)	
:50	VHF VOICE CHECK CONNECT LM H ₂ O SUPPLY TO CDR PLSS AND FILL (3 MIN)	
	CONNECT LM O ₂ SUPPLY TO LMP PLSS AND FILL (10 MIN)	
150:00		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	149:00 - 150:00	7/36-37	3-218

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

149:00	REV 37 (P20) (5.0°DB) (11111) (X1111) 29:00 - 1 FRAME, EXP TIME 1/8 29:15 - 1 FRAME, EXP TIME 1/15 29:30 - 1 FRAME, EXP TIME 1/30 29:45 - 1 FRAME, EXP TIME 1/60 CHANGE SHUTTER TO 1/500 CYCLE 1 FRAME LIGHTS UP CMC MODE - AUTO RECORD FR # _____ REMOVE CAMERA SHIELD RESET MISSION TIMER		149:30	CONFIGURE CAMERA: (ORBITAL SCIENCE) CM/EL/80/LBW (f4,1/250,∞)(15 FR) MAG (S) _____, FR # _____ MSFN CMDS: (AOS +10 MIN) DSE PLAYBACK	
149:10	CONFIGURE CAMERA: (ORBITAL SCIENCE) CM/EL/250/LBW (f5.6,1/125,∞) (19 FR) MAG (S) _____, FR # _____ ORBITAL SCIENCE PHOTOS	GAMMA RAY X-RAY ALPHA PART	149:40	CONFIGURE FOR VHF COMM CHECK WITH LM VHF AM B - DUPLEX (VERIFY) VHF AM - T/R (PANEL 9) PHOTO TGT 17 (W. CRISIUM)(C10,C11-P17) CM3 (f4,1/250,∞) 15 FR AT 35 SEC INTERVALS	GAMMA RAY X-RAY ALPHA PART
149:20	PHOTO TGT 9 (MEITNER)(C5,C6-P9) CM3 (f5.6,1/125,∞) 19 FR AT 10 SEC INTERVALS ACQ MSFN HGA: MAN, WIDE P -5, Y 25 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW CONFIGURE DSE (STOP/CMD RESET/REWIND)(AOS +2 MIN) MSFN CUE: (AOS +4 MIN) HGA AUTO		149:50	RECORD FR # _____	
149:30			150:00		

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-219

LM FLIGHT PLAN

MCC-H

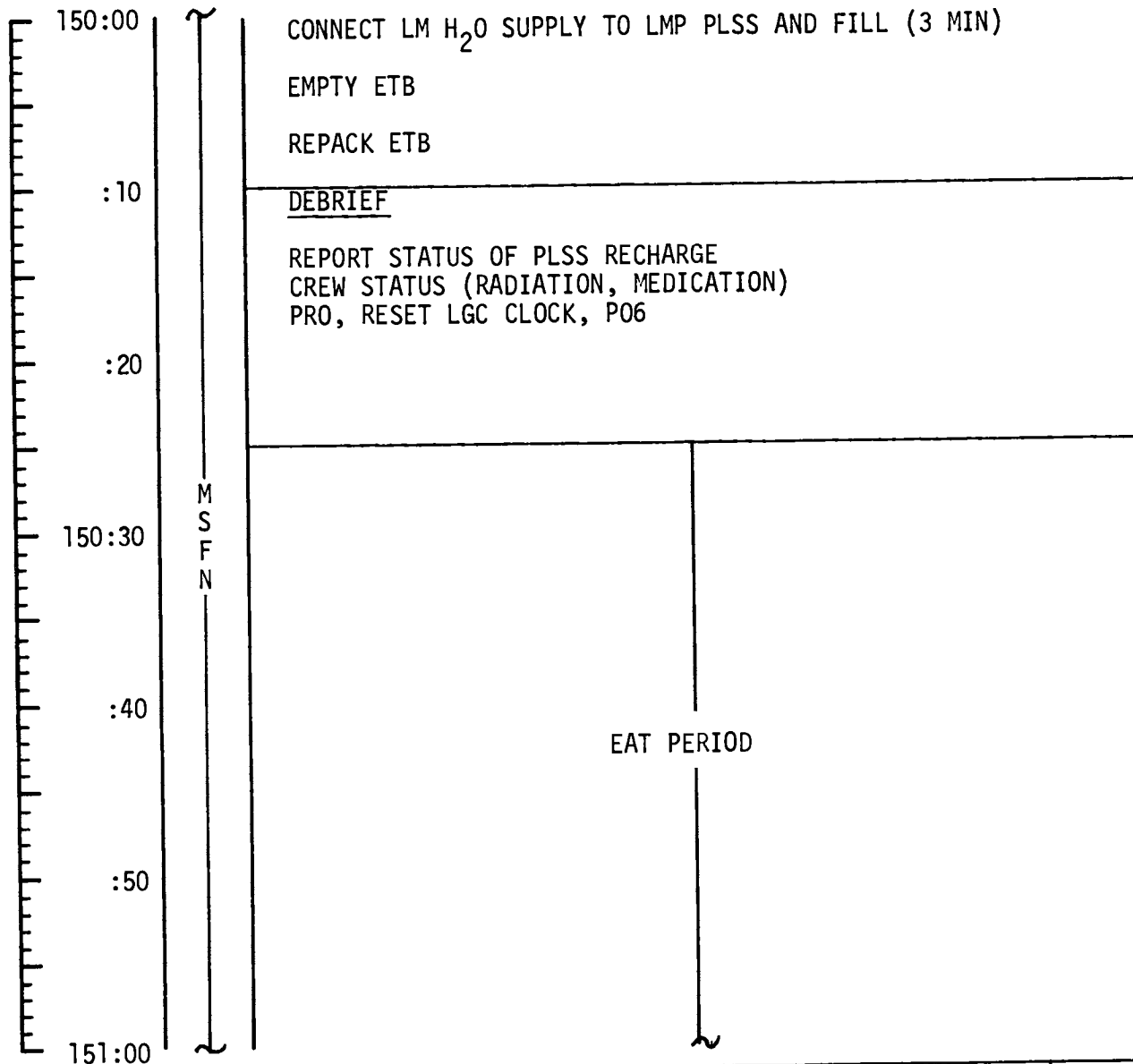
1434 CDT

CDR

LMP

NOTES

UPLINK TO LM
SATURN LIFT-OFF
TIME (IF REQD)



LIFT-OFF TIME WILL
BE UPDATED IF THE
REV 46 PRIME
MERIDIAN CROSSING
DIFFERS BY MORE
THAN +2 MIN FROM
166:44:11.2

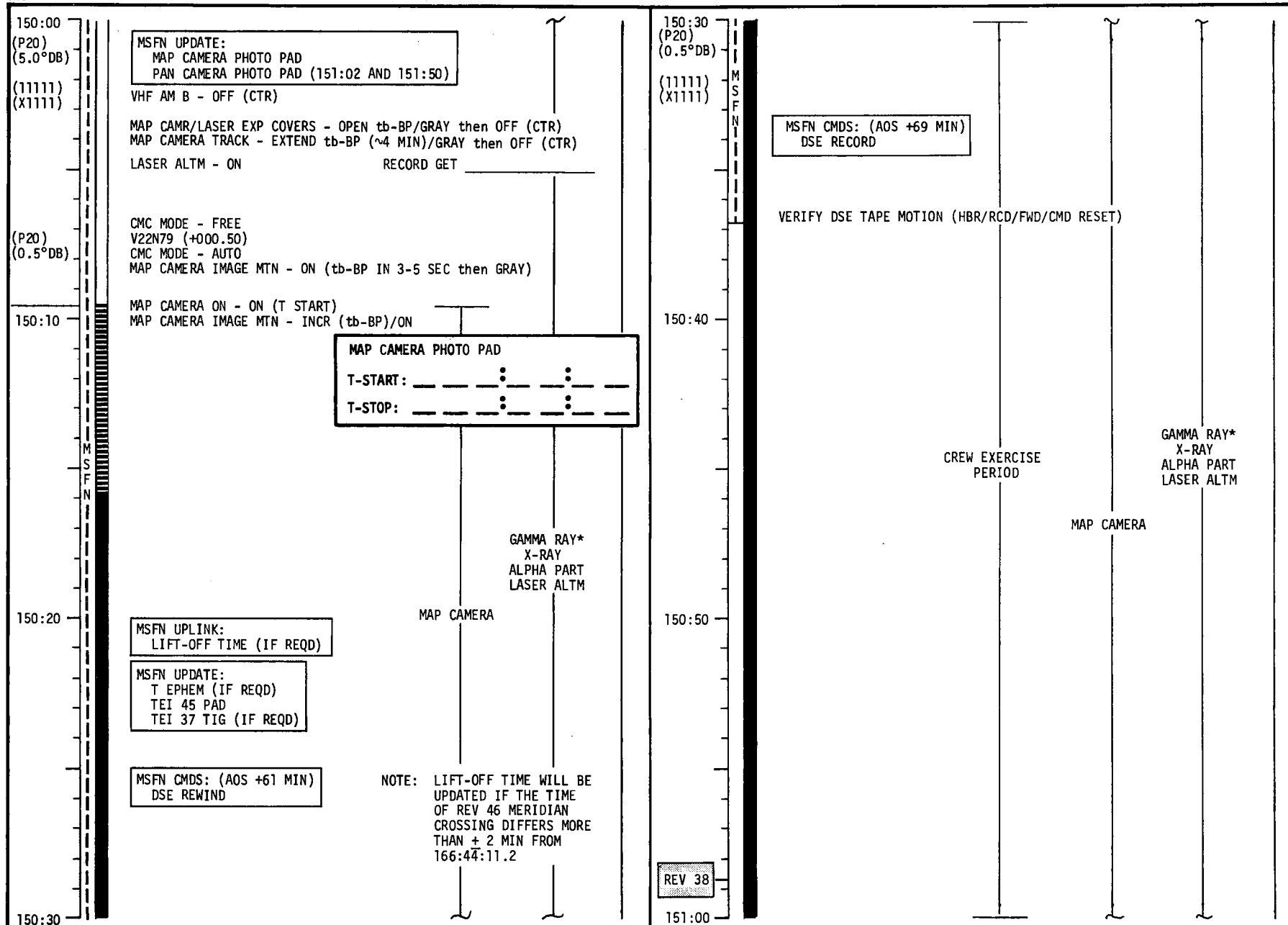
CSM REV 38

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	150:00 - 151:00	7/37-38	3-220

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1434 CL



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-221

LM FLIGHT PLAN

MCC-H

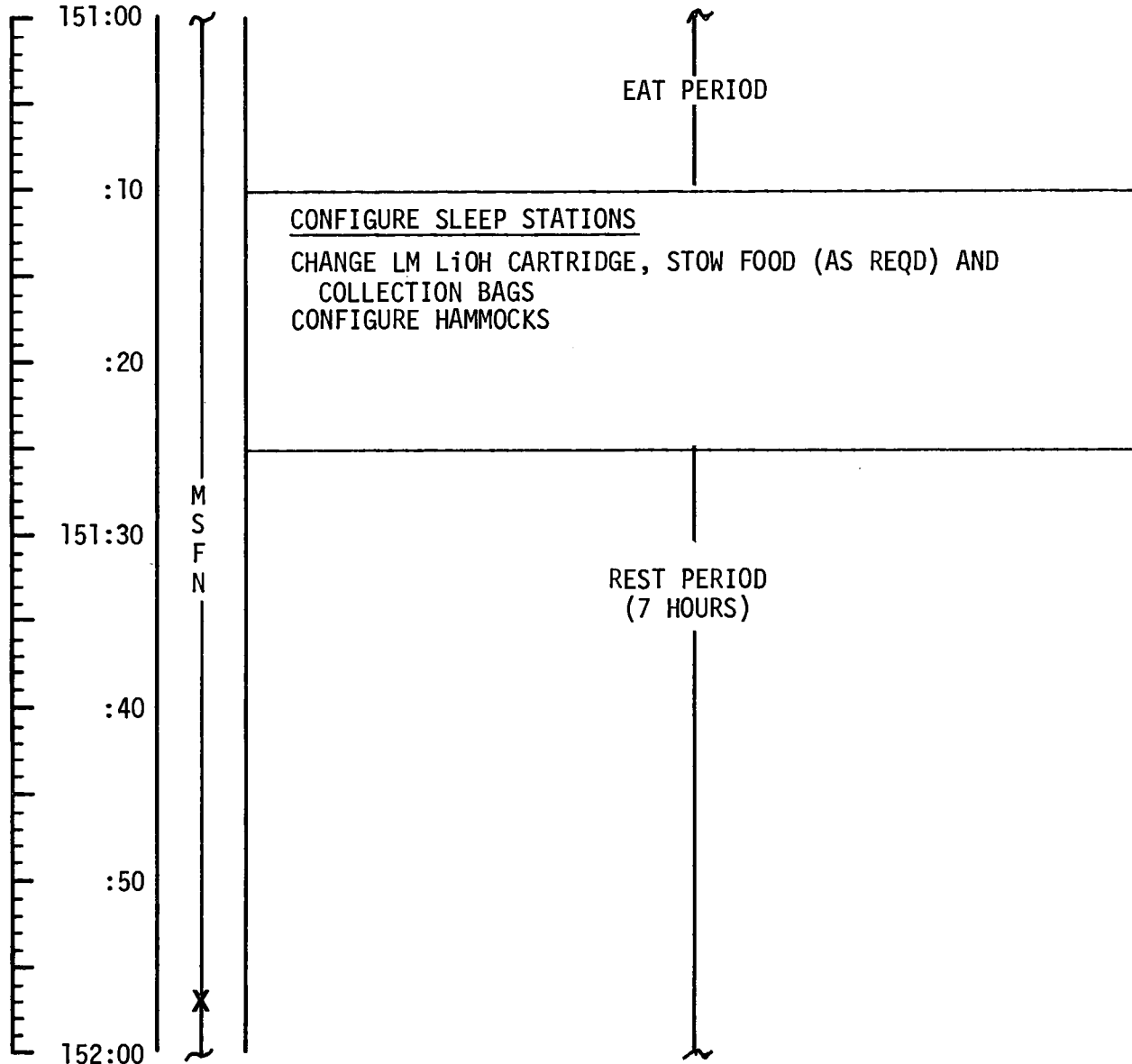
1534 CDT

CDR

LMP

NOTES

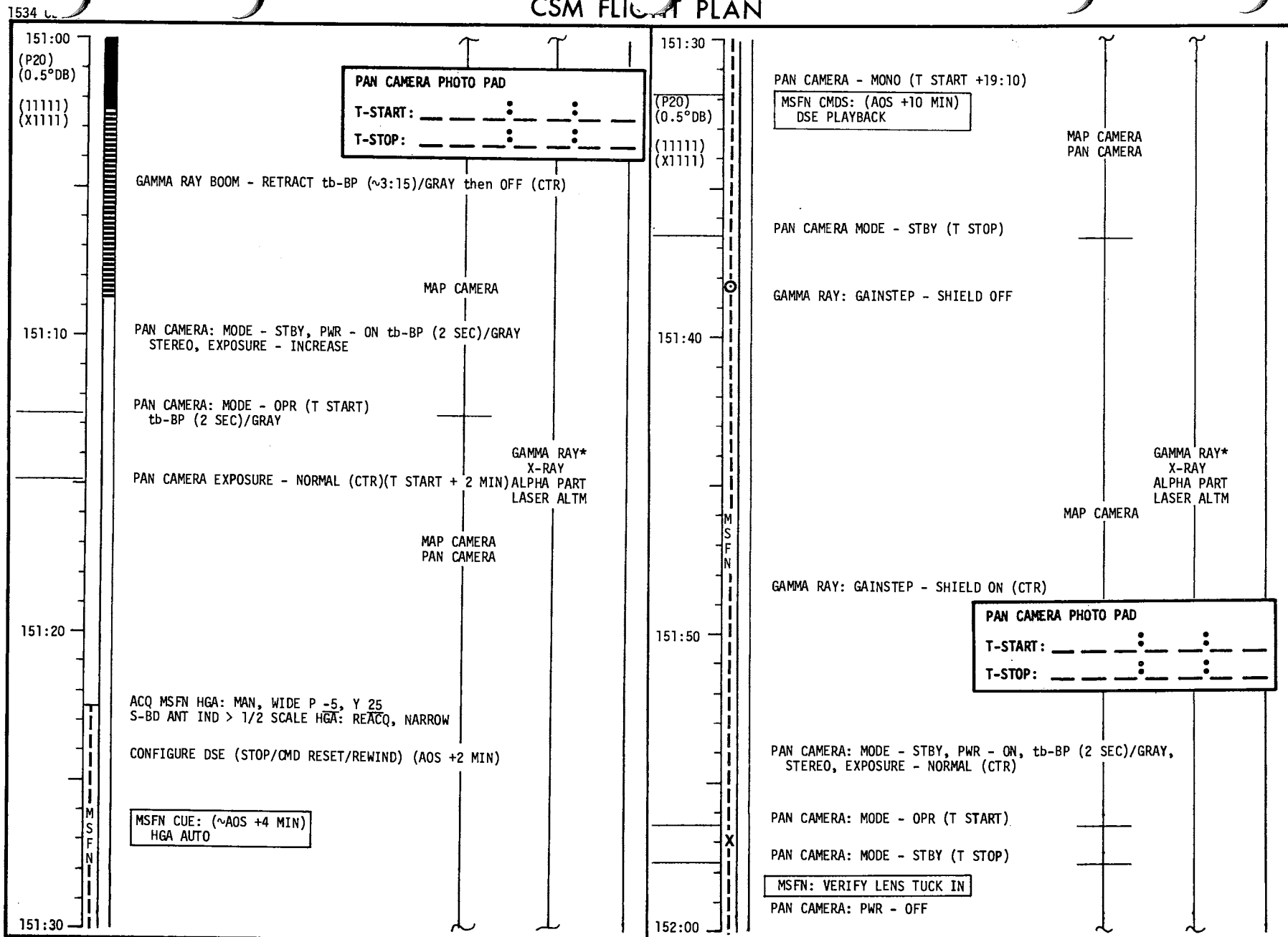
UPDATE TO LM
TIME OF LIFT-OFF
FOR REVS 38
THRU 41



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	151:00 - 152:00	7/38	3-222

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-223

13

LM FLIGHT PLAN

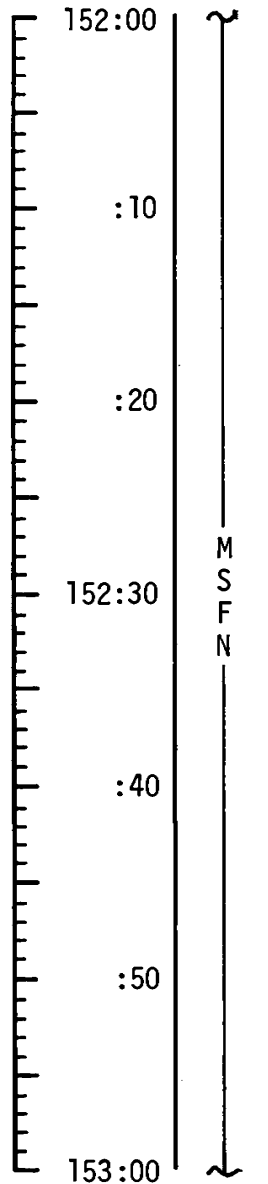
MCC-H

1634 CDT

CDR

LMP

NOTES



REST PERIOD
(7 HOURS)

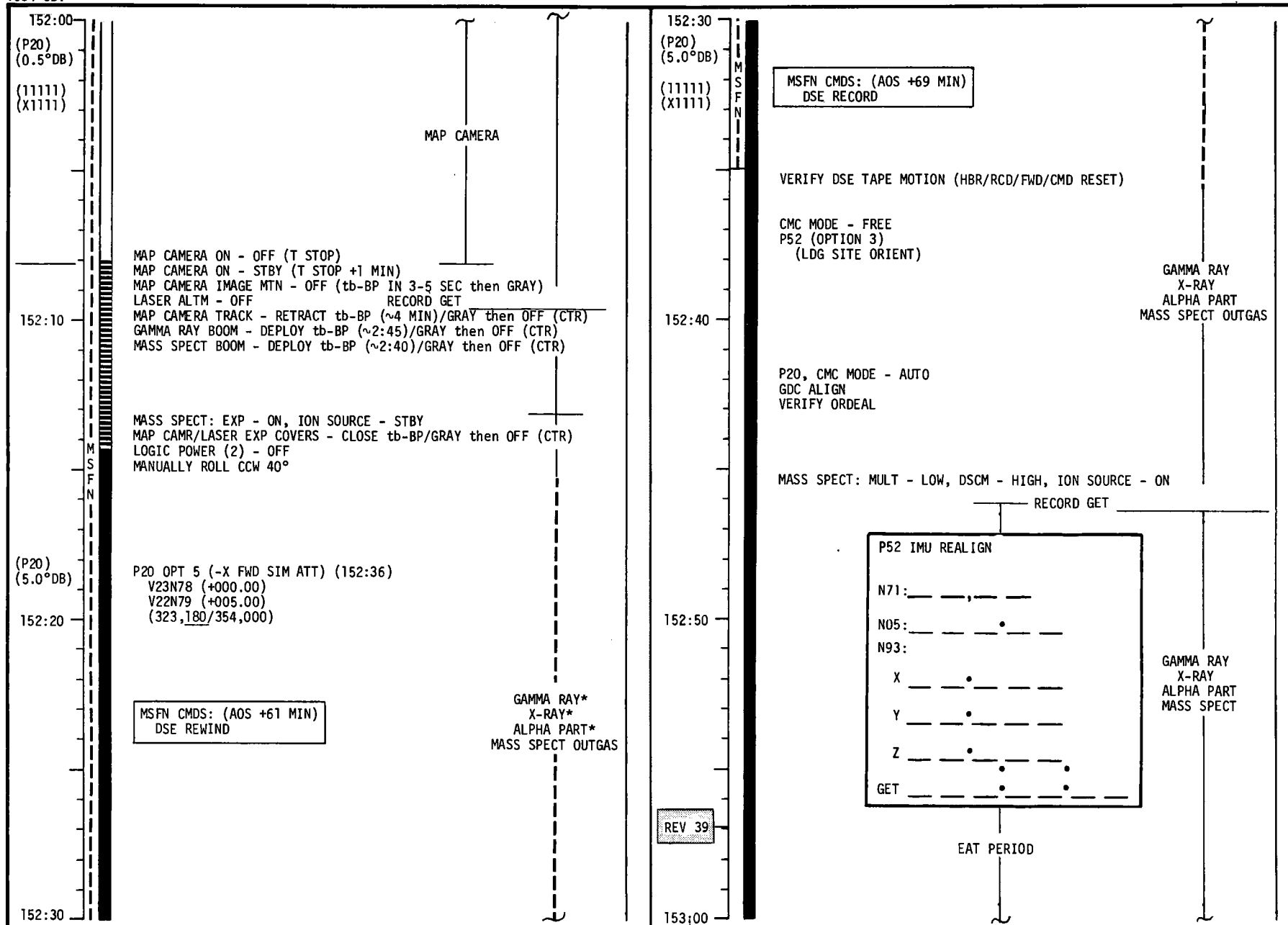
CSM REV 39

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	152:00 - 153:00	7/38-39	3-224

FLIGHT PLANNING BRANCH

1634 CDT

CSM FLIGHT PLAN



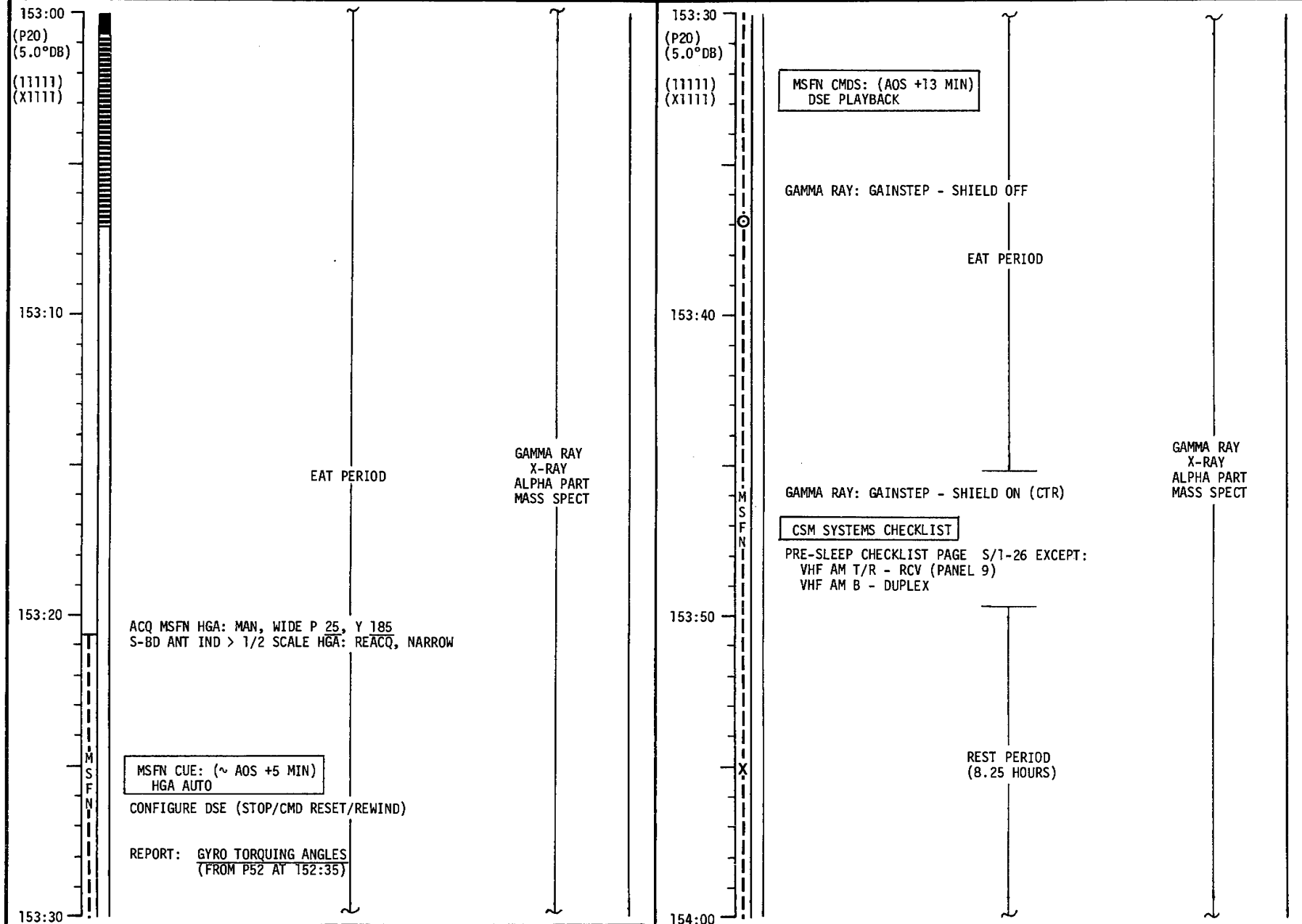
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-225

NOTES

REST PERIOD
(7 HOURS)

CSM FLIGHT PLAN

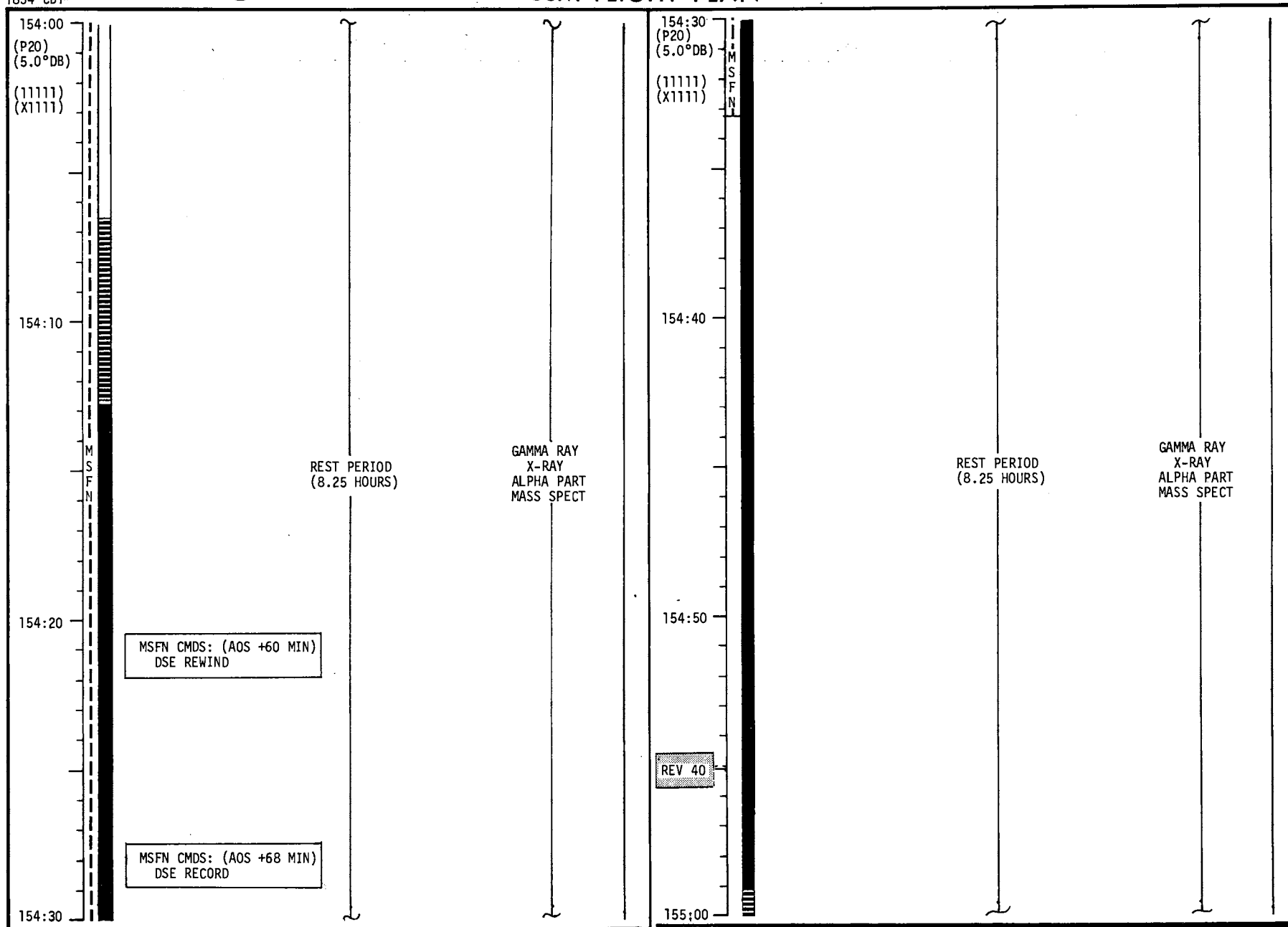
1734 CDT



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-227

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-229

LM FLIGHT PLAN

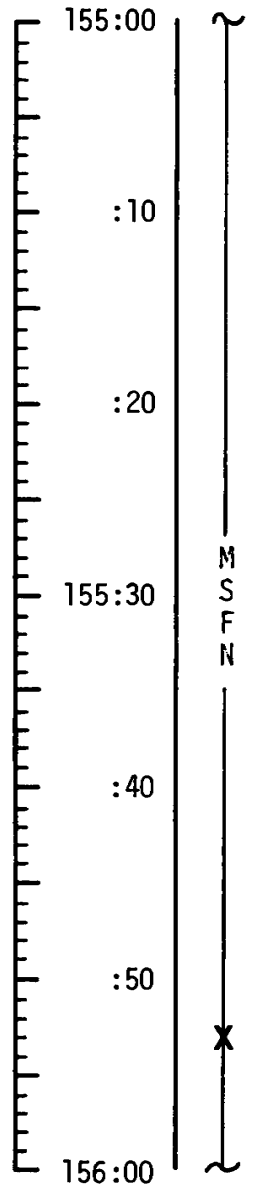
MCC-H

1934 CDT

CDR

LMP

NOTES

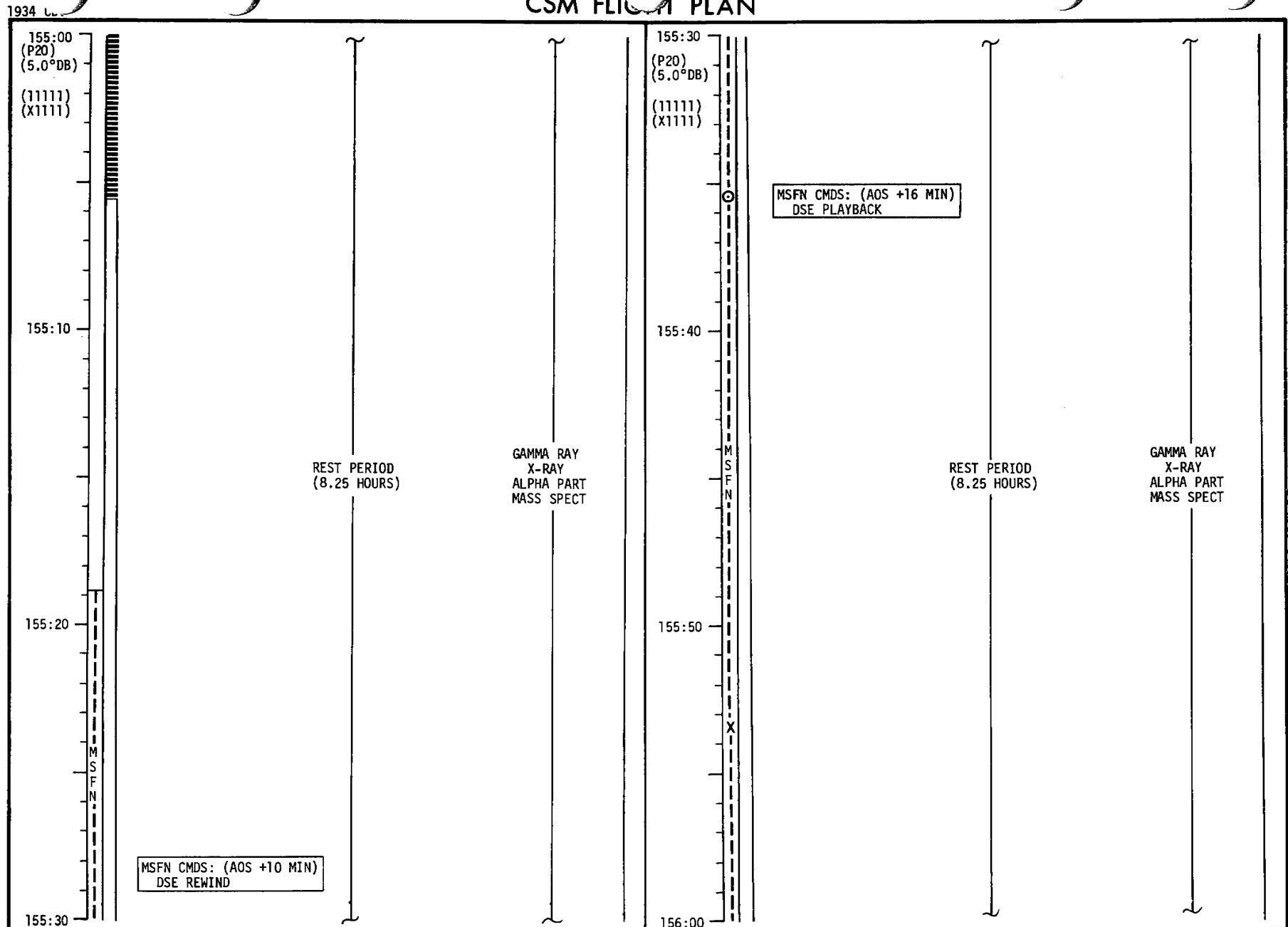


REST PERIOD
(7 HOURS)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	155:00 - 156:00	7/40	3-230

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-231

NOTES

157:00

MSFN

REST PERIOD
(7 HOURS)

CSM REV 41

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	156:00 - 157:00	7/40-41	3-232

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

(11111)
(X1111)

156:10

MSFN	
------	--

REST PERIOD
(8.25 HOURS)

GAMMA RAY
X-RAY
ALPHA PART
MASS SPECT

MSFN CMDS: (AOS +60 MIN)
DSE REWIND

156:20

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

156:30

156:30
(P20)
(5.0°DB)

(11111)
(X1111)

156:40

156:50

REV 41

157:00

REST PERIOD
(8.25 HOURS)

GAMMA RAY
X-RAY
ALPHA PART
MASS SPECT

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-233

NOTES

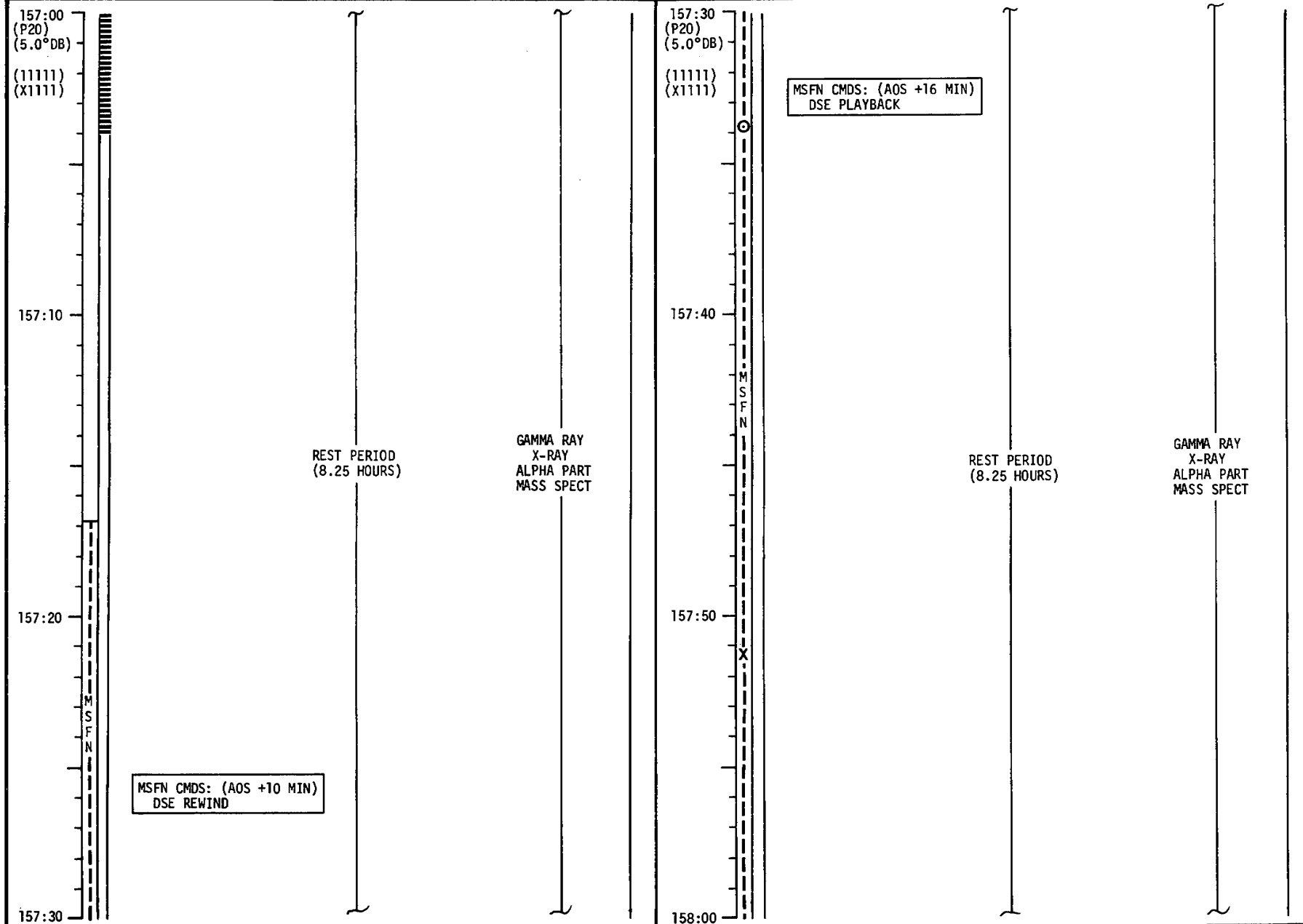
158:00

MSFN

REST PERIOD
(7 HOURS)

2134 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-235

LM FLIGHT PLAN

MCC-H

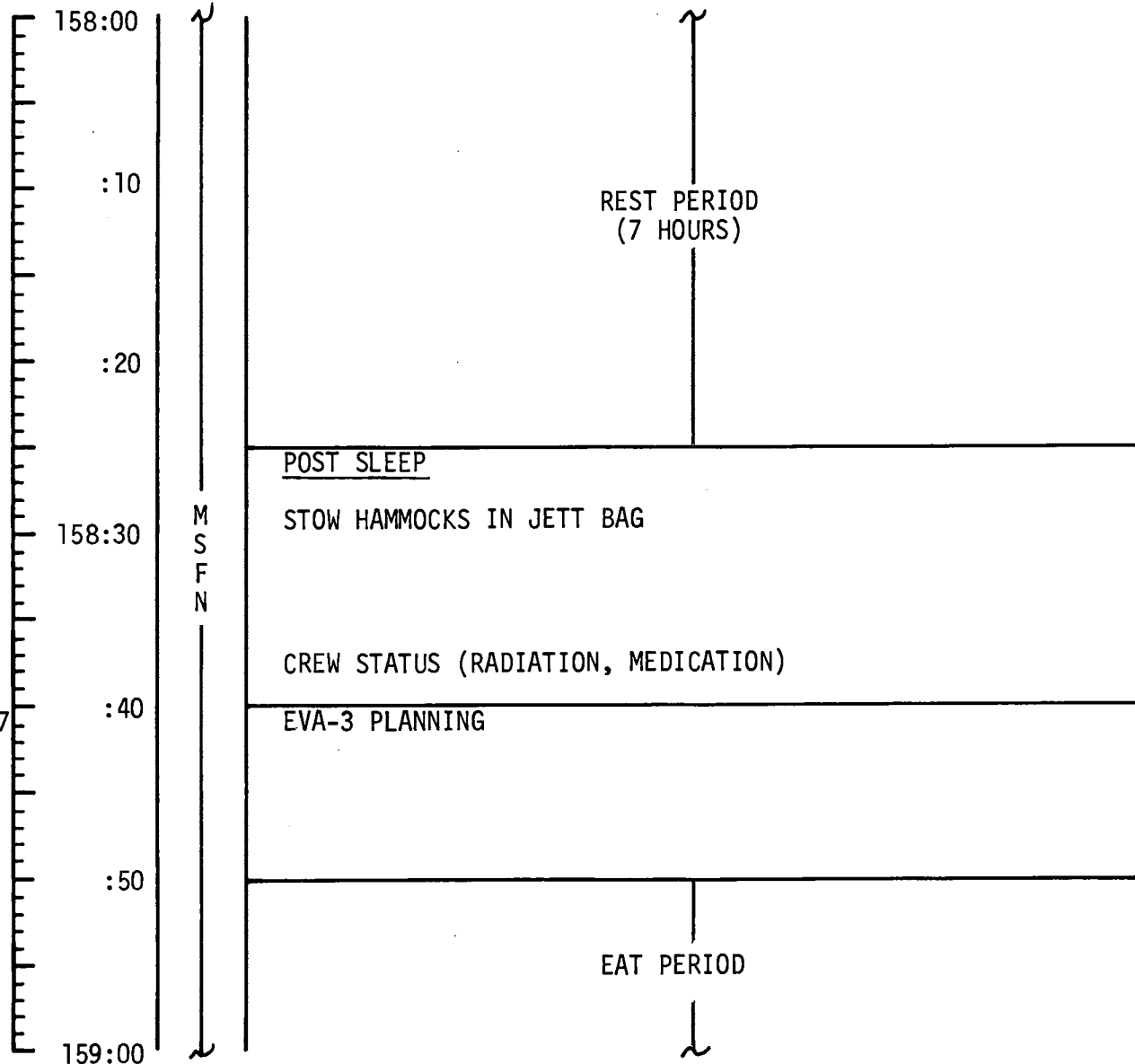
2234 CDT

CDR

LMP

NOTES

STAY/NO STAY FOR
EVA-3 PREP
UPDATE TO LM
TIME OF LIFT-OFF
FOR REV 42 THRU 47
LM CONSUMABLES

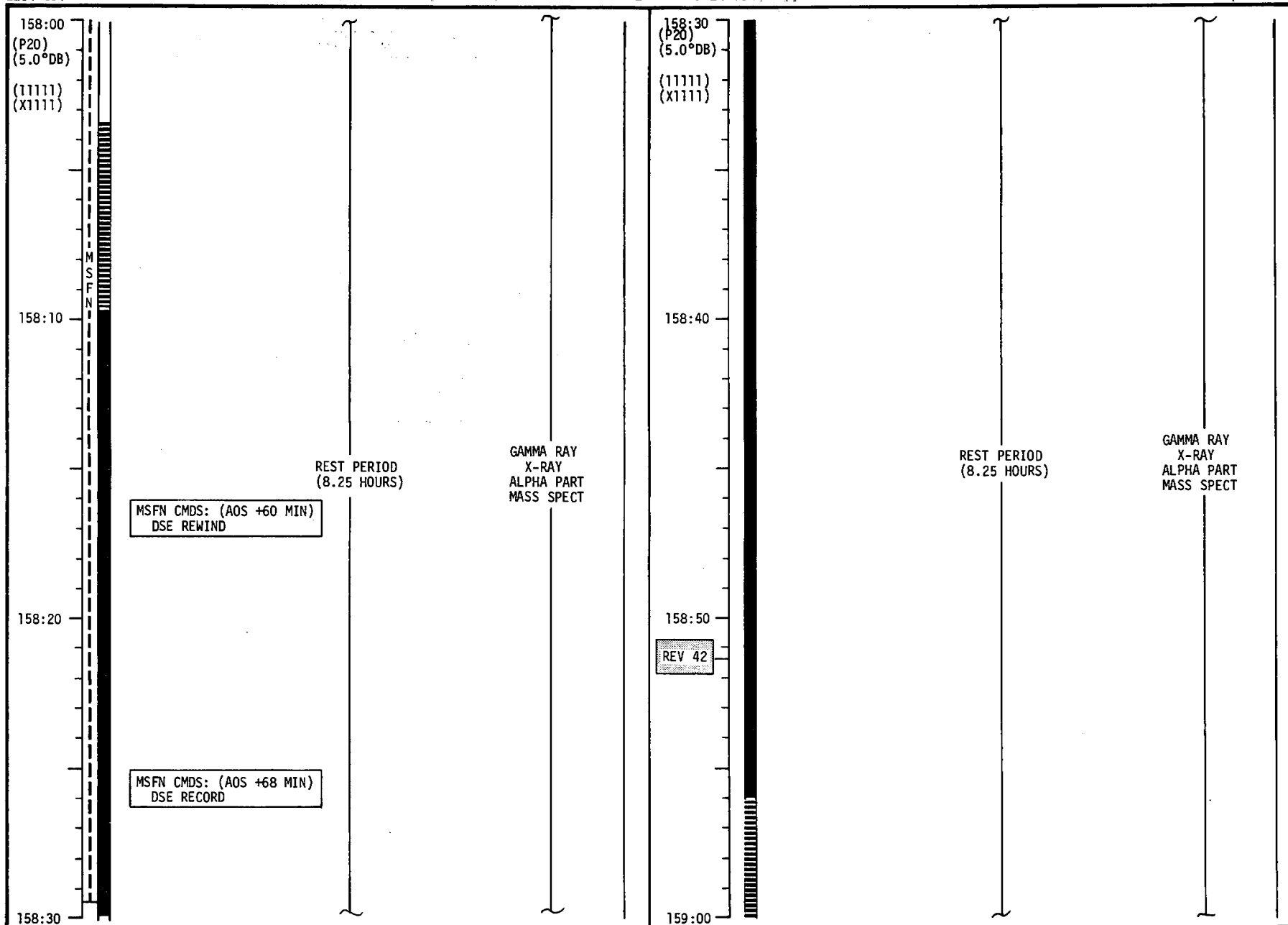


CSM REV 42

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	158:00 - 159:00	8/41-42	3-236

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-237

LM FLIGHT PLAN

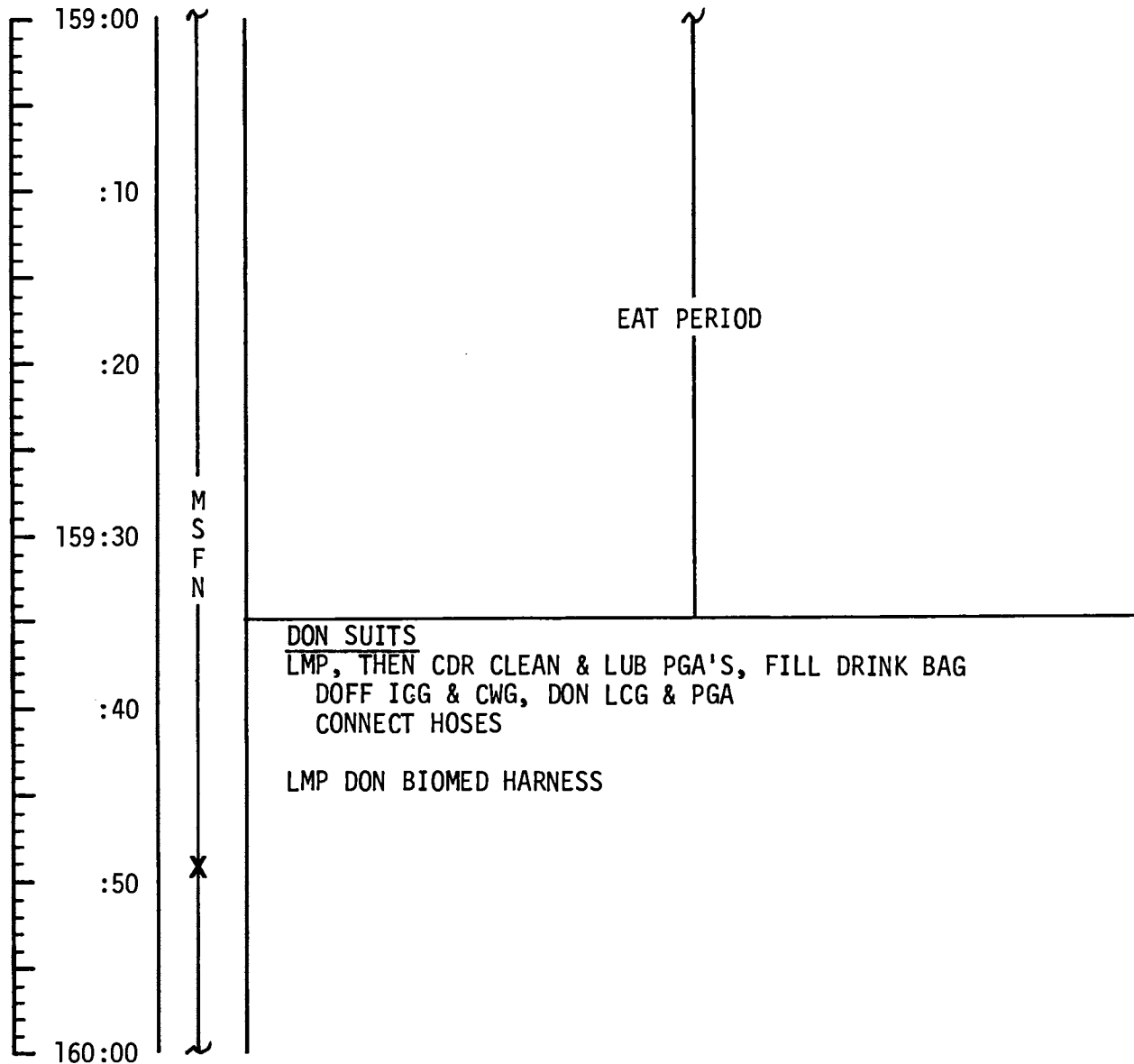
MCC-H

2334 CDT

CDR

LMP

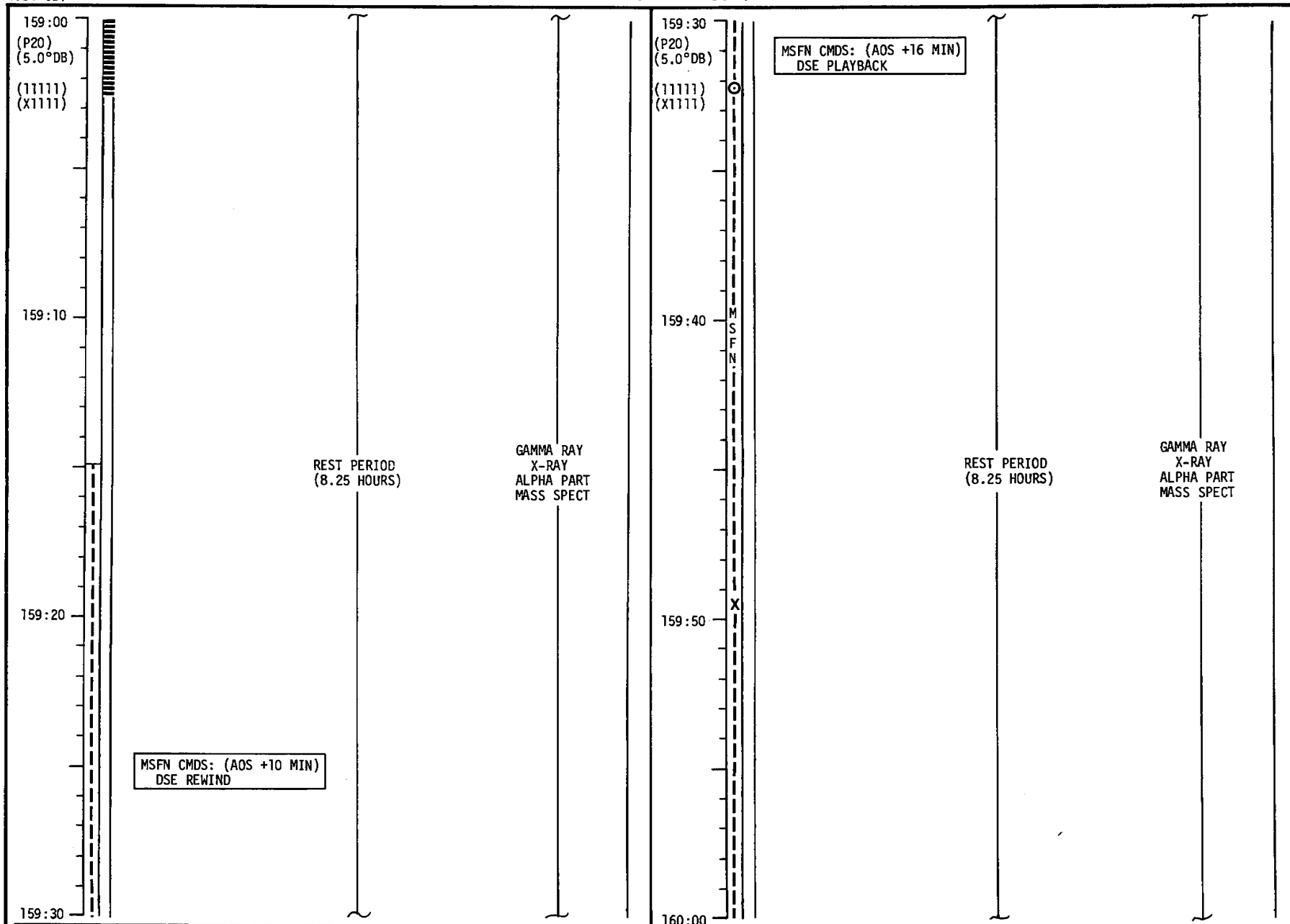
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	159:00 - 160:00	8/42	3-238

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-239

LM FLIGHT PLAN

MCC-H

0034 CDT

CDR

LMP

NOTES

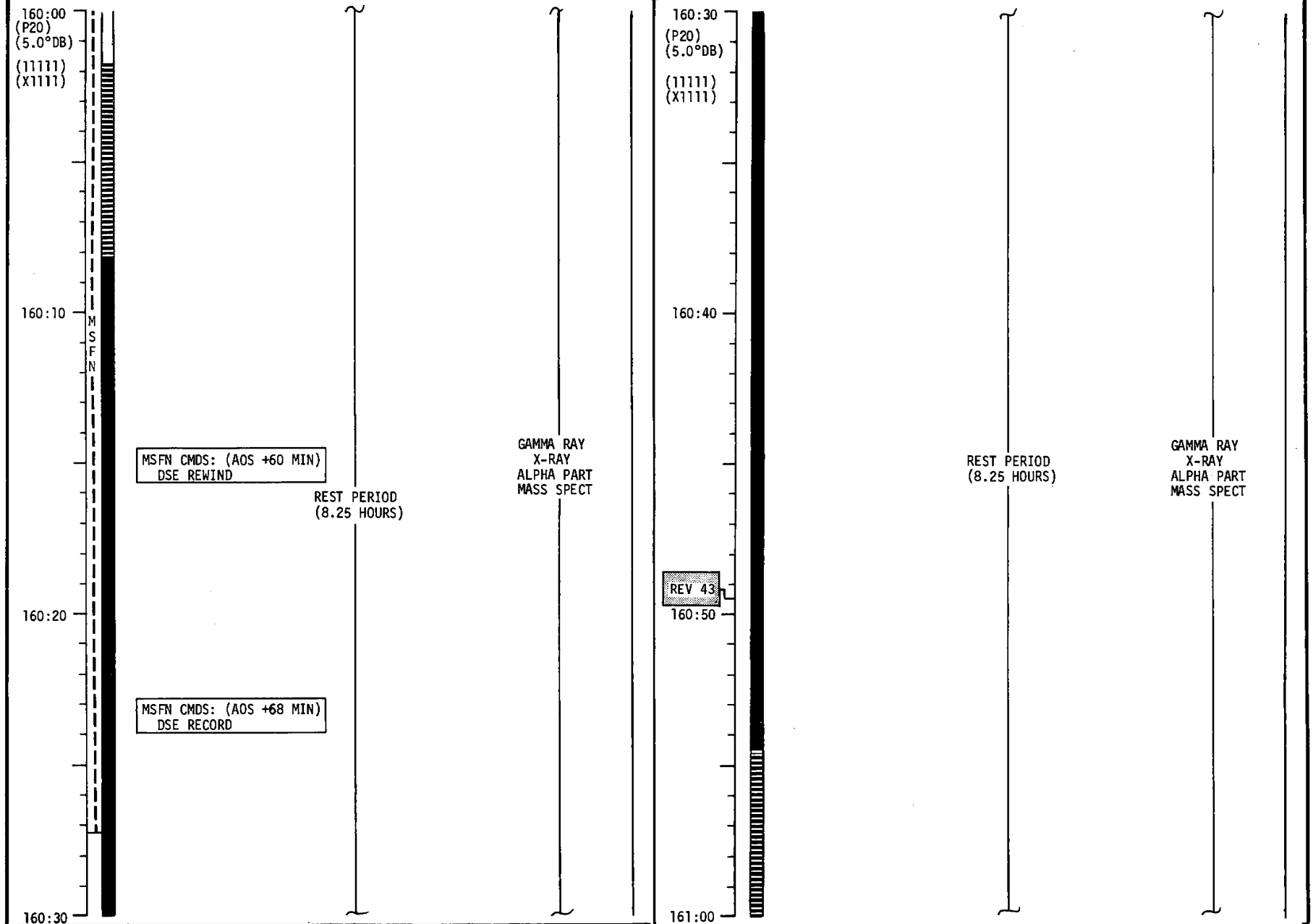
160:00			
:10		VERIFY COMM	BIOMED - RIGHT
		BATS 1,2 & LUNAR BAT (CDR) - ON	
		BATS 3,4 & LUNAR BAT (LMP) - OFF/RESET	
:20		CHECK BUS VOLTS	-1:30
		EVA-3 PREP	
		STOW ALL LOOSE ITEMS NOT REQD FOR EVA	
160:30	M S F N		-1:20
		UNSTOW EVA-3 PREP & POST CARD	
		STOW LUNAR SURFACE CHECKLIST	
:40		UNSTOW AND CHECK BOTH OPS	-1:10
		PREPARE VISORS & HELMETS FOR EVA	
		UNLOCK FORWARD HATCH HANDLE	
:50		PLSS DONNING	CSM REV 43
		CONFIGURE LMP PLSS	-1:00
		ATTACH OPS TO PLSS	
		LMP DON PLSS/OPS	
		CONNECT RCU TO PGA AND PLSS	
		UNSTOW LMP OPS 02 ACTUATOR AND CONNECT TO RCU	
		CDR REPEAT PLSS DONNING	
161:00			- :50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	160:00 - 161:00	8/42-43	3-240

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0034 CDT



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-241

CDR

NOTES

MCC-H

0134 CDT

161:00

1 - 50

:10

-:40

: 20

-:30

161:30

- : 20

:40

4-10

: 50

0:00 START EVA-3

162:00

+:10

GO/NO-GO FOR
DEPRESS

MSFN

PLSS COMM CHECK

VERIFY POWERDOWN CB CONFIGURATION, RECORDER - ON
CONFIGURE FOR EVA COMM, BIOMED - OFF
VERIFY PLSS COMM & TM
REPORT PLSS 02 QUANTITIES TO MCC-H
FINAL SYSTEM PREP

OPS CONNECT

CONNECT OPS 02 HOSE TO PGA
CDR REPEAT OPS CONNECT

HELMET/GLOVES DONNING

PLSS FAN - ON
DON HELMETS AND LEVA'S

VERIFY PGA CONFIGURATION
VERIFY CB CONFIGURATION
DON GLOVES

PRESSURE INTEGRITY CHECK

CABIN DEPRESS

START EVA WATCH AT 3.5 PSIA CABIN PRESS

PARTIALLY OPEN HATCH

FINAL PREP FOR EGRESS
OPEN FWD HATCH

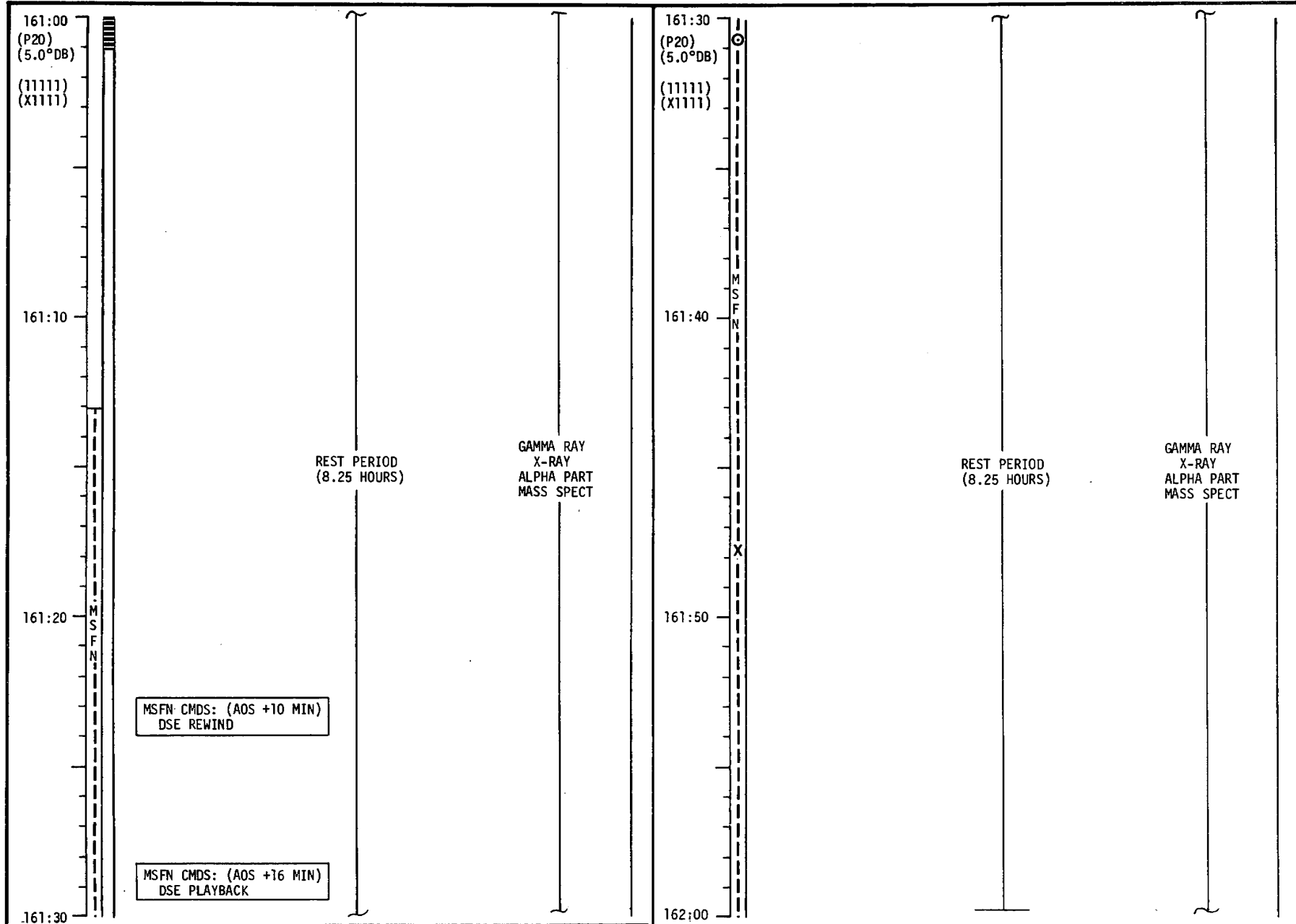
RECORDER - OFF

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	161:00 - 162:00	8/43	3-242

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0134 CDT



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-243

LM FLIGHT PLAN

MCC-H

0234 CDT

CDR

LMP

NOTES

162:00	T I T V M S F N	EGRESS	RELEASE CDR PLSS ANTENNA	0:10
:10		EQUIPMENT TRANSFER		
:20		LCRU ACTIVATION RELEASE LMP PLSS ANTENNA EQUIPMENT PREP	EGRESS EQUIPMENT PREP	0:20
:30				
162:30		LRV NAV INITIALIZATION		0:40
:40		<u>DRIVE TO STATION #9</u> COMPARE SMOOTH MARE MATERIAL TO RILLE RIM MATERIAL SUPPLEMENTARY SAMPLE STOP (5 MIN) SOIL/ROCK SAMPLE PAN		0:50
:50				
163:00		<u>STATION #9</u> OBSERVE AND DESCRIBE RILLE AND FAR WALL		1:00
				CSM REV 44
				1:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	162:00 - 163:00	8/43-44	3-244

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

162:00
(P20)
(5.0°DB)(11111)
(X1111)

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-26

MSFN UPLINK:
CSM S.V.MSFN UPDATE:
CONSUMABLES
MAP CAMERA PHOTO PAD (162:55)
FLIGHT PLAN

GAMMA RAY: GAINSTEP - SHIELD OFF

GAMMA RAY
X-RAY
ALPHA PART
MASS SPECTCMC MODE - FREE
P52 (OPTION 3)
(LDG SITE ORIENT)REPORT: GYRO TORQUING ANGLESP20, CMC MODE - AUTO
GDC ALIGN
VERIFY ORDEALMSFN CMDS: (AOS +60 MIN)
DSE REWIND

GAMMA RAY: GAINSTEP - SHIELD ON (CTR)

LOGIC POWER (2) - DPLY/RETR
MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR)
GAMMA RAY BOOM - RETRACT tb-BP (~3:15)/GRAY then OFF (CTR)
MASS SPECT: ION SOURCE - OFF, EXP - STBY
CAUTION - WAIT 5 MIN BEFORE RETRACTING MASS SPECT BOOM

LASER ALTM - ON

MSFN CMDS: (AOS +68 MIN)
DSE RECORDMASS SPECT BOOM - RETRACT tb-BP (~2:30)/GRAY then OFF (CTR)
VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

MANUALLY ROLL CW 40°

P52(IMU REALIGN)

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____

162:30
(P20)
(0.5°DB)(11111)
(X1111)

P20 OPTION 5 (+X FWD SIM ATT) (162:47)

V23N78 (+180.00)

V22N79 (+000.50)

(142,000/118,001)

162:40

REV 44

162:50

163:00

CSM CONSUMABLES UPDATE

GET: _____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____O₂ TANK 1 _____ 2 _____ 3 _____

EAT PERIOD

GAMMA RAY*
X-RAY*
ALPHA PART*
LASER ALTM*GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

MAP CAMERA PHOTO PAD

T-START: _____

T-STOP: _____

MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY)

MAP CAMERA ON - ON (T START)

MAP CAMERA IMAGE MTN - INCR (tb-BP)/ON

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-245

LM FLIGHT PLAN

MCC-H

0334 CDT

CDR

LMP

NOTES

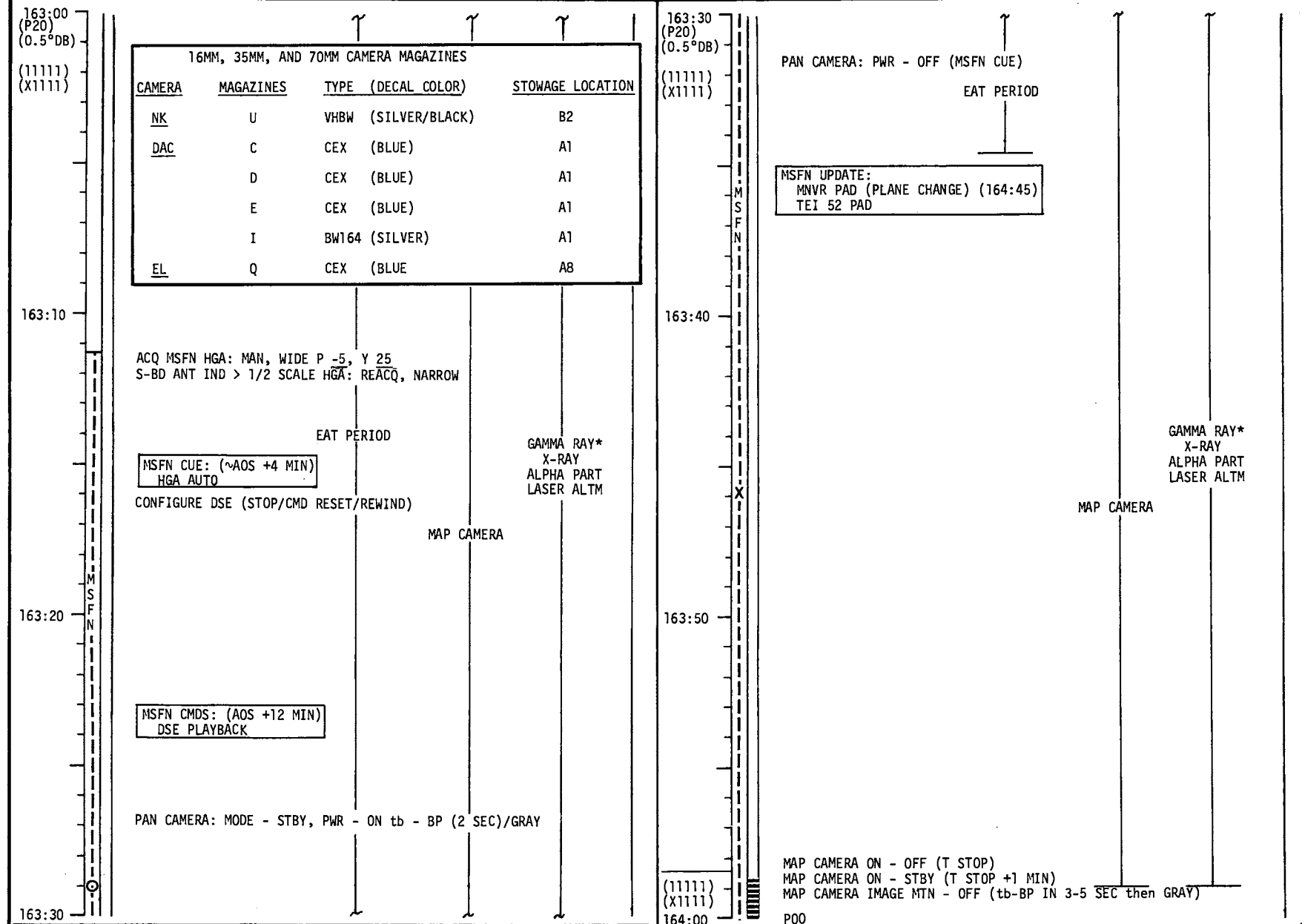
163:00	500MM PHOTOGRAPHY COMPREHENSIVE SAMPLE SINGLE (DOUBLE) CORE TUBE PAN DOCUMENTED SAMPLING OF CRATER AT EDGE OF RILLE PENETROMETER POSSIBLE PAN OF EDGE OF CRATER	1:10
:10		1:20
:20		1:30
163:30		1:40
:40		1:50
:50	DRIVE TO STATION #10	2:00
164:00	STATION #10 500MM PAN DOCUMENTED SAMPLE FROM CRATER ON RILLE RIM PAN	2:10
	DRIVE TO STATION #11	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	163:00 - 164:00	8/44	3-246

FLIGHT PLANNING BRANCH

0334 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-247

CHANGE 8

LM FLIGHT PLAN

MCC-H

0434 CDT

CDR

LMP

NOTES

164:00		CONTINUE DESCRIPTION OF RILLE AND RILLE RIM MATERIAL PHOTOGRAPHY AS APPROPRIATE	2:10
:05		STATION #11 OBSERVE AND DESCRIBE RILLE AND FAR RILLE WALL, COMPARE TO PREVIOUS OBSERVATIONS 500MM PHOTOGRAPHY DOCUMENTED SAMPLES OF RILLE RIM AND CRATER AT EDGE OF RILLE	
:10		PAN COMPARE RILLE RIM MATERIAL TO OTHER TERRAIN	2:20
164:15	M S F T V N		
:20			2:30
:25		DRIVE TO STATION #12 OBSERVE CHANGES IN MATERIAL BETWEEN RILLE RIM, MARE, AND NORTH COMPLEX OBSERVE CHARACTERISTICS OF CRATER CHAIN ORIGINATING IN CHAIN CRATER OBSERVE POSSIBLE SECONDARY CRATERS	
164:30			2:40

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	164:00 - 164:30	8/44	3-248

FLIGHT PLANNING BRANCH

0434 CDT

CSM FLIGHT PLAN

164:00
(11111)
(X1111)

GAMMA RAY EXP - OFF
 X-RAY - OFF, α RAY/X DR - α OFF RECORD GET _____
 LASER ALTM - OFF
 MASS SPECT: EXP - OFF

MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN)/GRAY then OFF (CTR)
 ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

MSFN UPLINK:
 CSM S.V.
 PLANE CHANGE TGT LOAD
 DESIRED ORIENT (PLANE CHANGE)

MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)
 LOGIC POWER (2) - OFF
 cb SCS CONTR DIR 1 MNB - CLOSE
 cb SCS CONTR DIR 2 MNA - CLOSE

ENABLE ALL JETS

V49 MNVR TO P52 ATT (164:15)
 (180,214,045) HGA P -10, Y 206

164:10

M
S
F
N

MSFN CMDS: (AOS +61 MIN)
 DSE REWIND

P52 (OPTION 3)
 (LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

164:20

P52 (OPTION 1)
 (PLANE CHANGE ORIENT)

MSFN CMDS: (AOS +69 MIN)
 DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

GDC ALIGN
 VERIFY ORDEAL

164:30

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-249

CSM FLIGHT PLAN

0504 CDT

164:30
(11111)
(X1111)

P30 VERIFY PC-1 TIG AND ΔV 'S

V49 MNVR TO PC-1 BURN PAD ATT (164:45)

164:40

REV 45

SXT STAR CHECK

164:50

SET DET COUNTING UP TO PLANE CHANGE

SECURE EQUIPMENT FOR PC-1

(P40)
(0.5°DB)

P40 (TRIM)

165:00

P30 MANEUVER

SET STARS	C	S	M	P	C	I	PURPOSE
	S	P	S/G	&	N		PROP/GUID
	+						WT N47
R ALIGN		0	0				P-TRIM N48
P ALIGN		0	0				Y-TRIM
Y ALIGN	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE							ΔV_X N81
							ΔV_Y
							ΔV_Z
	X	X	X				R (000)
	X	X	X				P (000)
	X	X	X				Y (000)
	+						H _A N44
							H _P
	+						ΔVT
	X	X	X				BT
	X						ΔVC
	X	X	X	X			SXTS
	+					0	SFT
	+				0	0	TRN
	X	X	X				BSS
	X	X					SPA
	X	X	X				SXP

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-251

LM FLIGHT PLAN

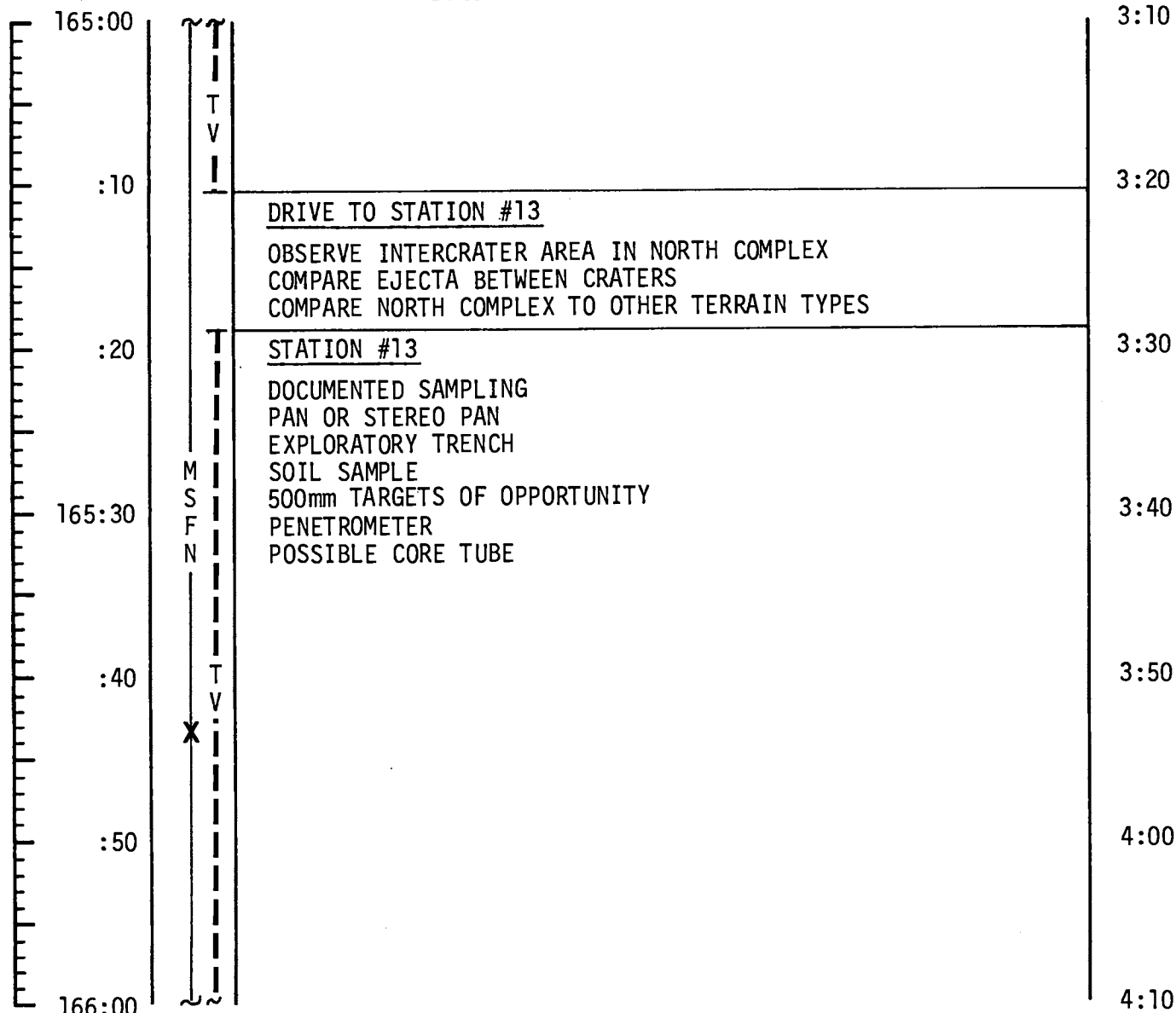
MCC-H

0534 CDT

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	165:00 - 166:00	8/45	3-252

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

T65:00 -
(P40)
(0.5° DB)

(11111)
(X1111)

MAP CAMERA ON - STBY (VERIFY)
MAP CAMERA IMAGE MTN - OFF (VERIFY)
PAN CAMERA: PWR - BOOST
DATA SYS ON - OFF
S-BD AUX TV - OFF (CTR)

CSM PLANE CHANGE 1
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	TRIM V _{gy} TO 0.2 FPS IF -V _{gy} ROLL 90° CCW AND USE -Z THRUSTERS

165:10

ACQ MSFN HGA P -10, Y 251

GO/NO-GO FOR PLANE CHANGE 1

CSM PLANE CHANGE 1 (000,000,000)

TIG: 165:12:50.6
BT: 16.5 SEC
ΔVT: 308.6 FPS
ULLAGE: 4 JET, 13 SEC
ORBIT: 59.8 x 59.2

(11111)
(X1111)

P00

REPORT: BURN STATUS

```
MSFN CMDS:
DSE DUMP
```

V49 MNVR TO P52 ATT (165:27)
(358,000,049) HGA P -9, Y 203

165:20

S-BD AUX TV - SCI
PCM BIT RATE - HIGH (VERIFY)
DATA SYS ON - ON

PAN CAMERA: PWR - OFF
GAMMA RAY: EXP - ON, GAINSTEP - SHIELD ON (CTR)
X-RAY - STBY, α RAY/X DR - α ON RECORD GET
MASS SPECT: EXP - STBY

GAMMA RAY*
ALPHA PART*

165:30

165:30

$$\begin{pmatrix} 11111 \\ x1111 \end{pmatrix}$$

165:40

165:50

166:00

MSFN UPLINK:
DESIRED ORIENT (LIFT-OFF)
RLS UPDATE (IF REQD)

MSFN UPDATE:
REFSMMAT 00 TIME

BURN STATUS REPORT

[illegible]

GAMMA RAY*
ALPHA PART*

REFSMAT 00 TIME

+	0	0				HRS
+	0	0	0			MIN
+	0					SEC

CREW EXERCISE
PERIOD

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-253

MCC-H

0634 CDT

LM FLIGHT PLAN

CDR

LMP

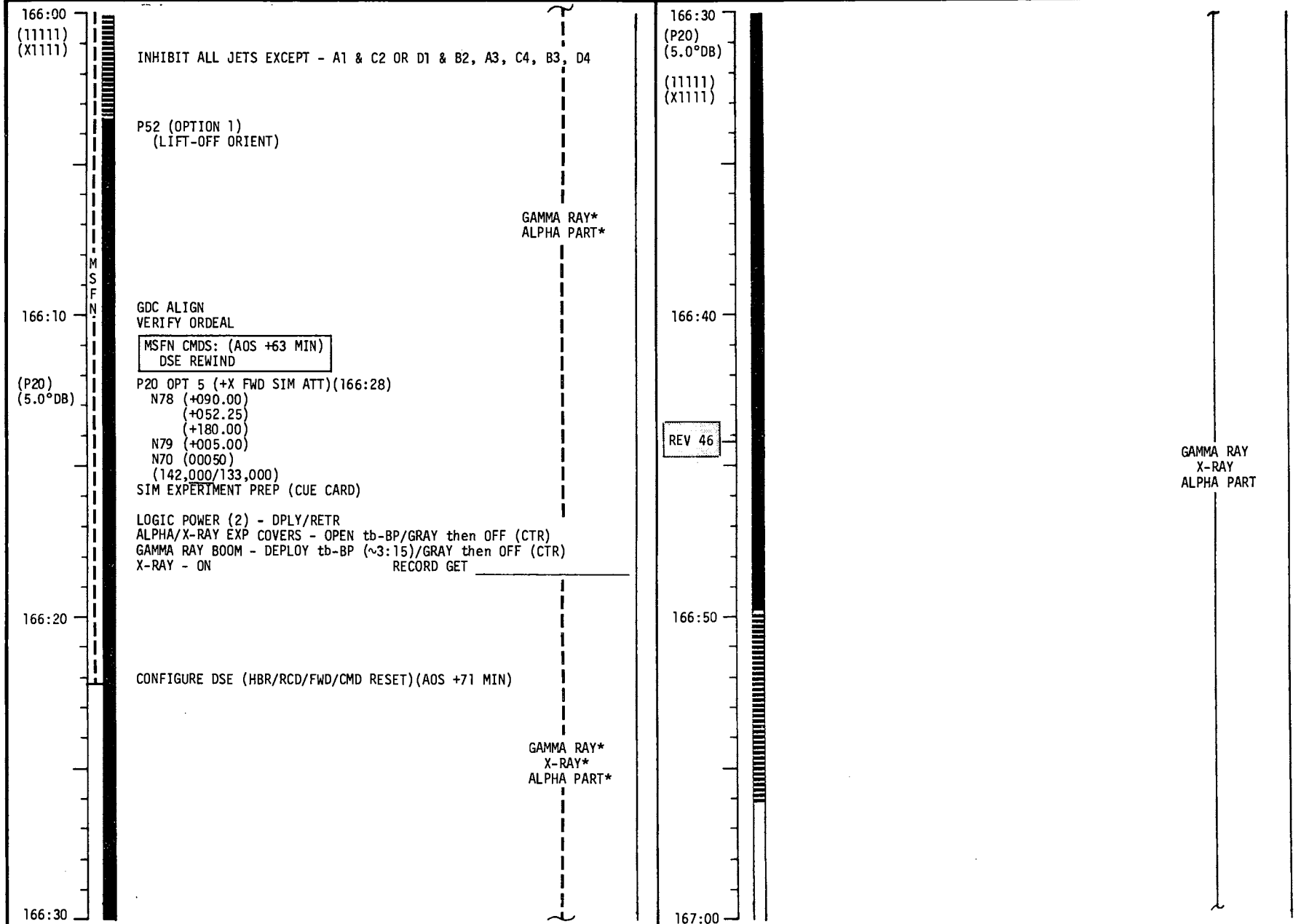
NOTES

166:00	T V		4:10
:10		DRIVE TO STATION #14 OBSERVE AND DESCRIBE DIFFERENCES IN MATERIAL AND SURFACE TEXTURES BETWEEN NORTH COMPLEX AND MARE NOTE AMOUNT OF SECONDARY CRATERING PHOTOGRAPHY AS APPROPRIATE	4:20
:20			4:30
166:30	M S F N		4:40
:40	T V	STATION #14 COMPARE BLOCKS AND MARE MATERIAL WITH NORTH COMPLEX DOCUMENTED SAMPLE OF MARE MATERIAL (POSSIBLE FILLET/ROCK, EQUIDIMENSIONAL ROCK AND RADIAL SAMPLES) PAN EXPLORATORY TRENCH IN RAY MATERIAL	4:50 CSM REV 46
:50			5:00
167:00		DRIVE TO LM DESCRIBE DIFFERENCES BETWEEN THIS AREA AND OTHER MARE AREAS NOTE DISTRIBUTION OF POSSIBLE SECONDARIES	5:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	166:00 - 167:00	8/45-46	3-254

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-255

LM FLIGHT PLAN

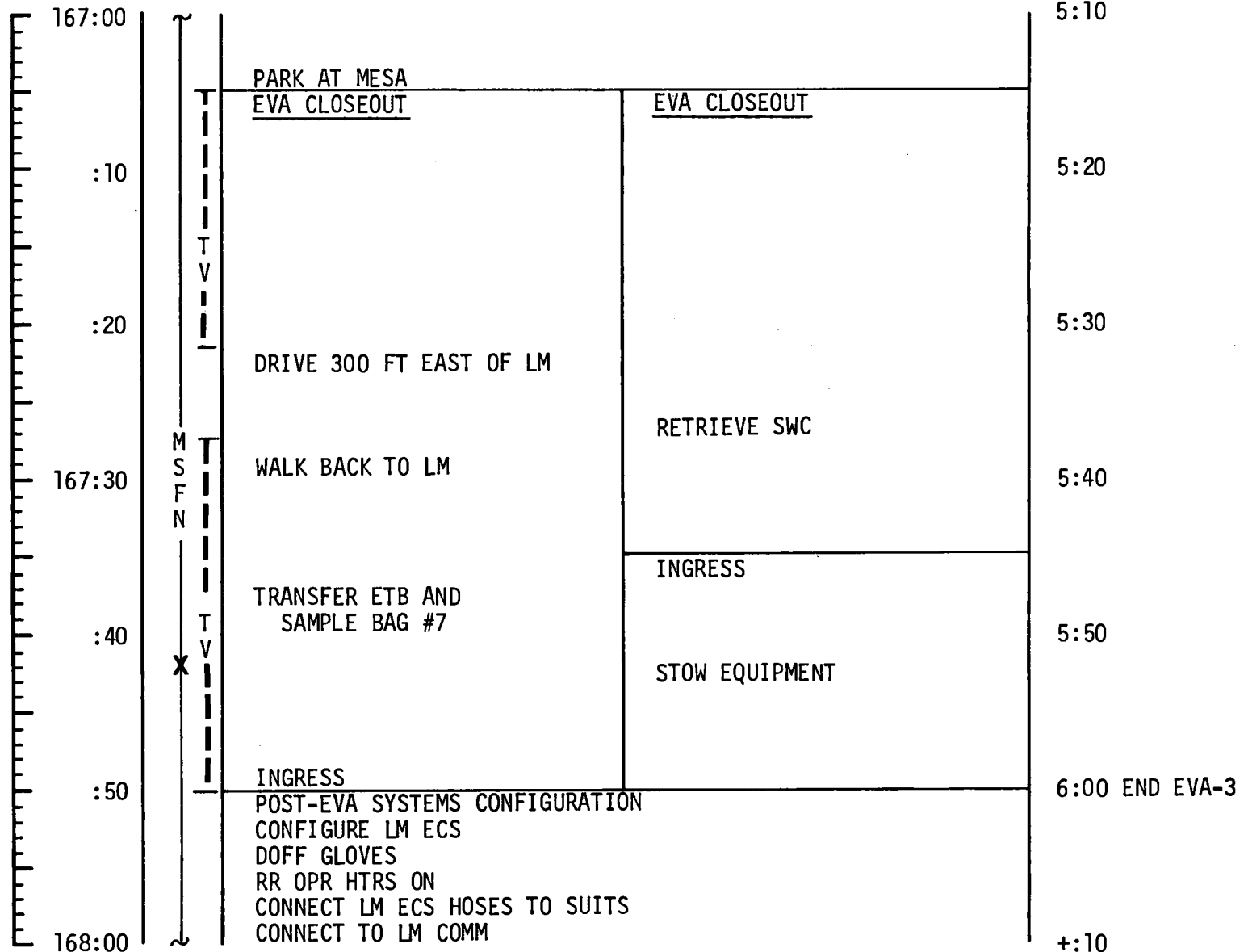
MCC-H

0734 CDT

CDR

LMP

NOTES

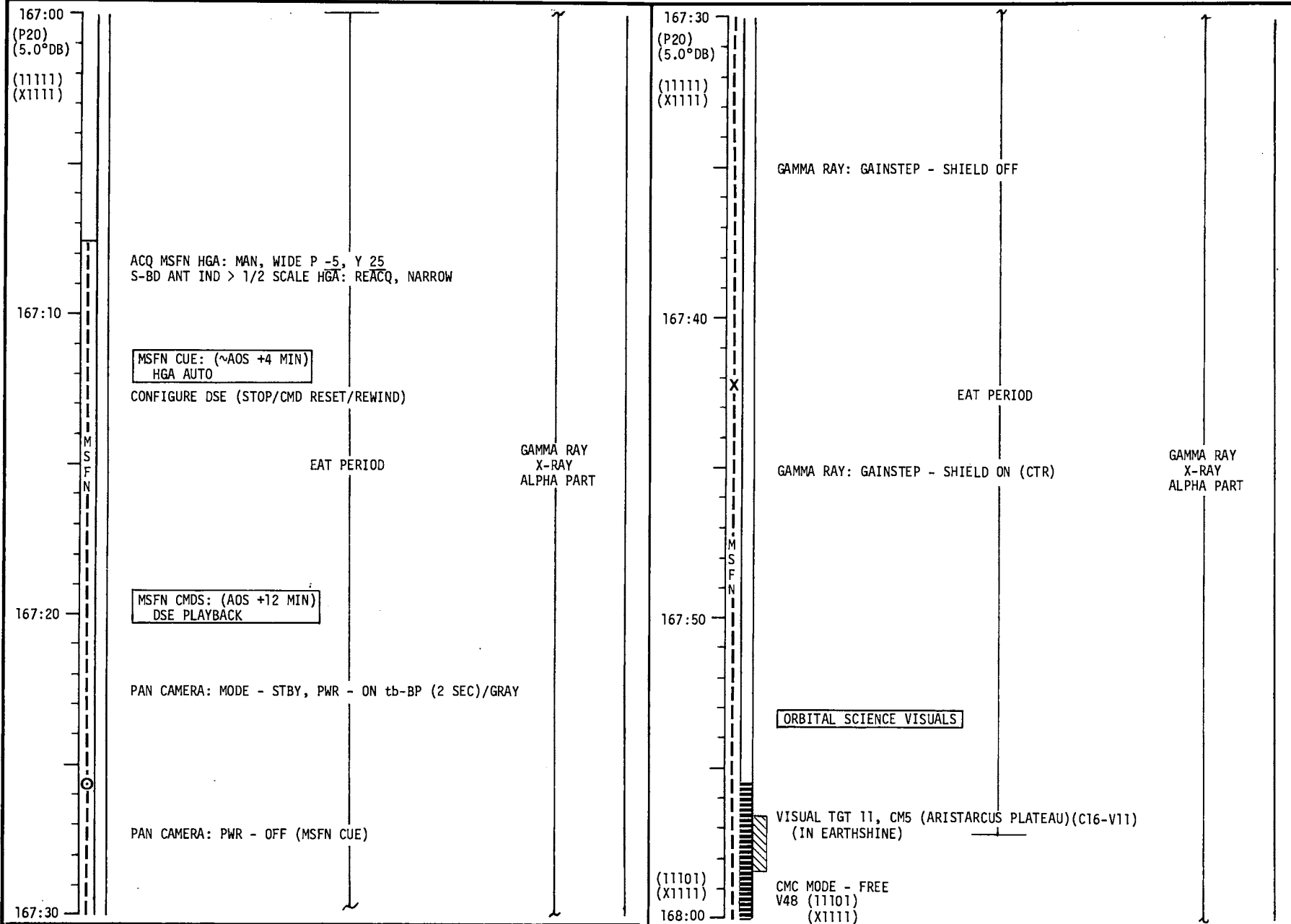


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	167:00 - 168:00	8/46	3-256

FLIGHT PLANNING BRANCH

0734 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-257

LM FLIGHT PLAN

MCC-H

0834 CDT

CDR

LMP

NOTES

GO/NO GO FOR
DEPRESS

UPDATE TO LM
P57 LIFT-OFF TIME
P22 ACQ TIME
UPLINK TO LM
CSM S.V. (L/O)
ZERO POS/NEG CELLS
RLS

168:00		PLSS/OPS DOFFING DISCONNECT OPS ACTUATORS & RCU'S	+10
:10		DISCONNECT AND DOFF PLSS/OPS (LMP FIRST)	
		CDR, THEN LMP, DISASSEMBLE PLSS/OPS CHECKOUT AND STOW OPS	+20
		VERIFY POWER DOWN CB CONFIGURATION	
:20		PREP FOR EQUIPMENT JETTISON UNSTOW SCALE WEIGH BSLSS/ROCK BAG & COLLECTION BAGS #7 & 8, REPORT TO MCC-H, STOW SCALE DOFF LUNAR BOOTS POSITION PLSS FOR JETTISON DON EVA GLOVES	+30
168:30	M S F N	PRESSURE INTEGRITY CHECK CABIN DEPRESS FOR JETTISON OPEN FORWARD HATCH JETTISON JET BAG AND PLSS'S CLOSE HATCH REPRESSURIZE CABIN DOFF HELMET & GLOVES	+40
:40			+50
(12102)		PGNS TURN ON & SELF TEST E-MEMORY DUMP	CSM REV 47
:50		P57 LUNAR SURFACE ALIGN OPTION 4 LANDING SITE A/T 3 - GRAVITY AND CELESTIAL BODY (LIFT-OFF ORIENTATION)	+1:00
169:00		POST-EVA CABIN CLEANUP	+1:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	168:00 - 169:00	8/46-47	3-258

FLIGHT PLANNING BRANCH

0834 CDT

CSM FLIGHT PLAN

168:00 (11101) (X1111)	P00: V49 MNVR TO ANTISOLAR POINT (168:15) (180,252,041) HGA P -66, Y 156 CMC MODE - AUTO CONFIGURE CAMERA: (GEGENSCHIN) INSTALL CAMERA SHIELD CM4/NK/55/VHBW-BRKT, (f1.2,1/500,∞) (12 FR) MAG () _____, FR # _____ GAMMA RAY BOOM - RETRACT tb-BP (~3:15)/GRAY then OFF (CTR) X-RAY - STBY DATA SYS ON - OFF ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR) LOGIC POWER (2) - OFF S-BD AUX TV - OFF PCM BIT RATE - LOW MSFN CMDS: (AOS +63 MIN) DSE REWIND ENABLE ALL JETS EXCEPT - A3,C4,B3,D4 GEGENSCHIN PHOTOS CONFIGURE DSE (LBR/RCD/FWD/CMD RESET)(AOS +71 MIN) DIM INTERIOR LIGHTS CYCLE 1 FRAME, CHANGE SHUTTER TO T 1 FRAME, EXP TIME 1 MIN 1 FRAME, EXP TIME 3 MIN CHANGE SHUTTER TO 1/500 CYCLE 1 FRAME, LIGHTS UP V49 MNVR TO MIDWAY PT (168:30) (180,257,032)	168:30 (11101) (X1111)	DIM INTERIOR LIGHTS CYCLE 1 FRAME, CHANGE SHUTTER TO T 1 FRAME, EXP TIME 1 MIN 1 FRAME, EXP TIME 3 MIN CHANGE SHUTTER TO 1/500 CYCLE 1 FRAME, LIGHTS UP V49 MNVR TO MOULTON PT (168:38) (180,261,021) DIM INTERIOR LIGHTS CYCLE 1 FRAME 1 FRAME, EXP TIME 1 MIN 1 FRAME, EXP TIME 3 MIN REV 47 CHANGE SHUTTER TO 1/500 CYCLE 1 FRAME, LIGHTS UP cb SCS CONTR DIR 1 MNB - CLOSE cb SCS CONTR DIR 2 MNA - CLOSE ENABLE ALL JETS RNDZ XPNDR ACTIVATION AND SELF TEST (DECAL) RNDZ XPNDR - HTR CONFIGURE CAMERA: (LDMK TRK) CM/DAC/SXT(EXP PAD) 1 fps (3.8% MAG) MAG (E) _____, MAG % _____ UTILITY POWER - ON	168:10 M S F N 168:20 168:30	168:40 168:50 169:00
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MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-259

13

LM FLIGHT PLAN

MCC-H

0934 CDT

CDR

LMP

NOTES

169:00
(12102)

:05

:10

169:15

:20

:25

169:30

M
S
F
N

SECURE OPS'S ON FLOOR

STOW EQUIPMENT FOR RETURN

PACK ISA

ATTACH BSLSS/ROCK BAG TO +Z27

STOW COLLECTION BAGS

INSTALL ISA IN AFT CABIN

SECURE LEVA BAGS ON ENG COVER

STOW EVA ONBOARD DATA IN FLIGHT DATA FILE

+1:10

+1:20

+1:30

+1:40

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	169:00 - 169:30	8/47	3-260

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0934

169:00

(11101)
(X1111)

L10H CANISTER CHANGE
(13 INTO A, STOW 11 IN A9)

ACQ MSFN HGA P -68, Y 114

MSFN CMDS:
DSE DUMP

169:10

MSFN UPDATE:
P24 LDMK TRACK (169:50)

(P20)
(0.5°DB)

M
S
F
N

P20 OPT 5 (LDMK TRK ATT)(169:32)

N78 (+000.00)
(-068.00)
(+000.00)

N79 (+000.50)

N70 (00050)

(000,338/272,000) OMNI D

GAMMA RAY*
ALPHA PART*

169:20

CONFIGURE FOR VHF COMM CHECK WITH LM

VHF AM B - DUPLEX (VERIFY)

VHF AM - T/R (PANEL 9)

MODE - VOX

RNDZ XPNDR - PWR

169:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-261

LM FLIGHT PLAN

MCC-H

1004 CDT

CDR

LMP

NOTES

169:30
(12102)

RR - ON
P22 LUNAR SURFACE NAVIGATION

:35

VHF VOICE CHECK

:40

X

169:45

M
S
F
N

TERMINATE P22 LUNAR
SURFACE NAVIGATION

:50

:55

EAT PERIOD

CREW STATUS (RADIATION, MEDICATION)

170:00

UPDATE TO LM
ASCENT PADS
CSI PAD
LM DAP WTS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	169:30 - 170:00	8/47	3-262

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

169:30
(P20)
(0.5°DB)(11101)
(X1111)MSFN CMDS:
DSE RECORDP24 (L/S LDMK 15-2)
OPT ZERO - OFF, OPT MODE - CMC

0:00 T1(HORIZON)DET - RESET/START

3:50 - DAC - ON

4:50 - T2(LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA
7:18 - T3(LDMK LOSS) DAC - OFF

169:40

(11101)
(X1111)

P00

VHF AM B - OFF (CTR)
MODE - INTERCOM/PTT
RNDZ XPNDR - HTR
V48 (11112)
(X1111)(11112)
(X1111)V49 MNVR TO P52/
COAS CAL ATT (169:54)
(180,224,016)
HGA P -46, Y 164

169:50

M
S
F
NMSFN UPLINK:
LM S.V. (INS +18)
CSM S.V. (L/O)
RESET SURFACE FLAGMSFN UPDATE:
CONSUMABLES (IF REQD)
CSM S.V. (L/O) COPY AT 170:15MSFN UPDATE TO LM WITH CSM COPY:
ASCENT PADS AND CSM WEIGHT COPY AT 171:10

CONFIGURE FOR URINE DUMP

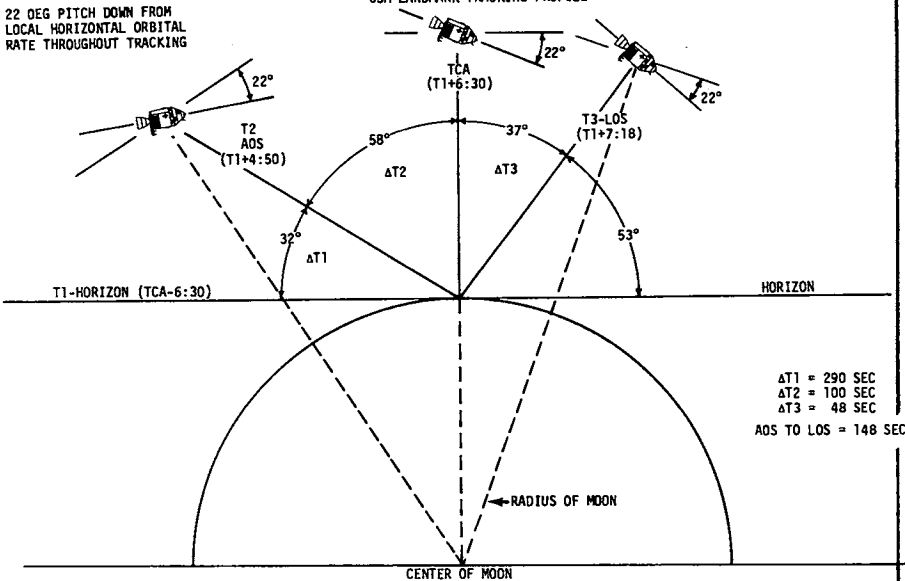
MSFN CMDS:
DSE DUMP

170:00

CONFIGURE FOR URINE DUMP

22 DEG PITCH DOWN FROM
LOCAL HORIZONTAL ORBITAL
RATE THROUGHOUT TRACKING

CSM LANDMARK TRACKING PROFILE



P24 LDMK TRACKING

TGT: 15-2

T₁ ————T₂ ————

TCA ————

T₃ ————

R ———— °P ———— °Y ———— ° (T2 ACQ)

N or S NM ———— / SA ———— TA ———— (T2 ACQ)

N89

LAT +25.991

LONG/2 +01.807

ALT -01.744

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-263

LM FLIGHT PLAN

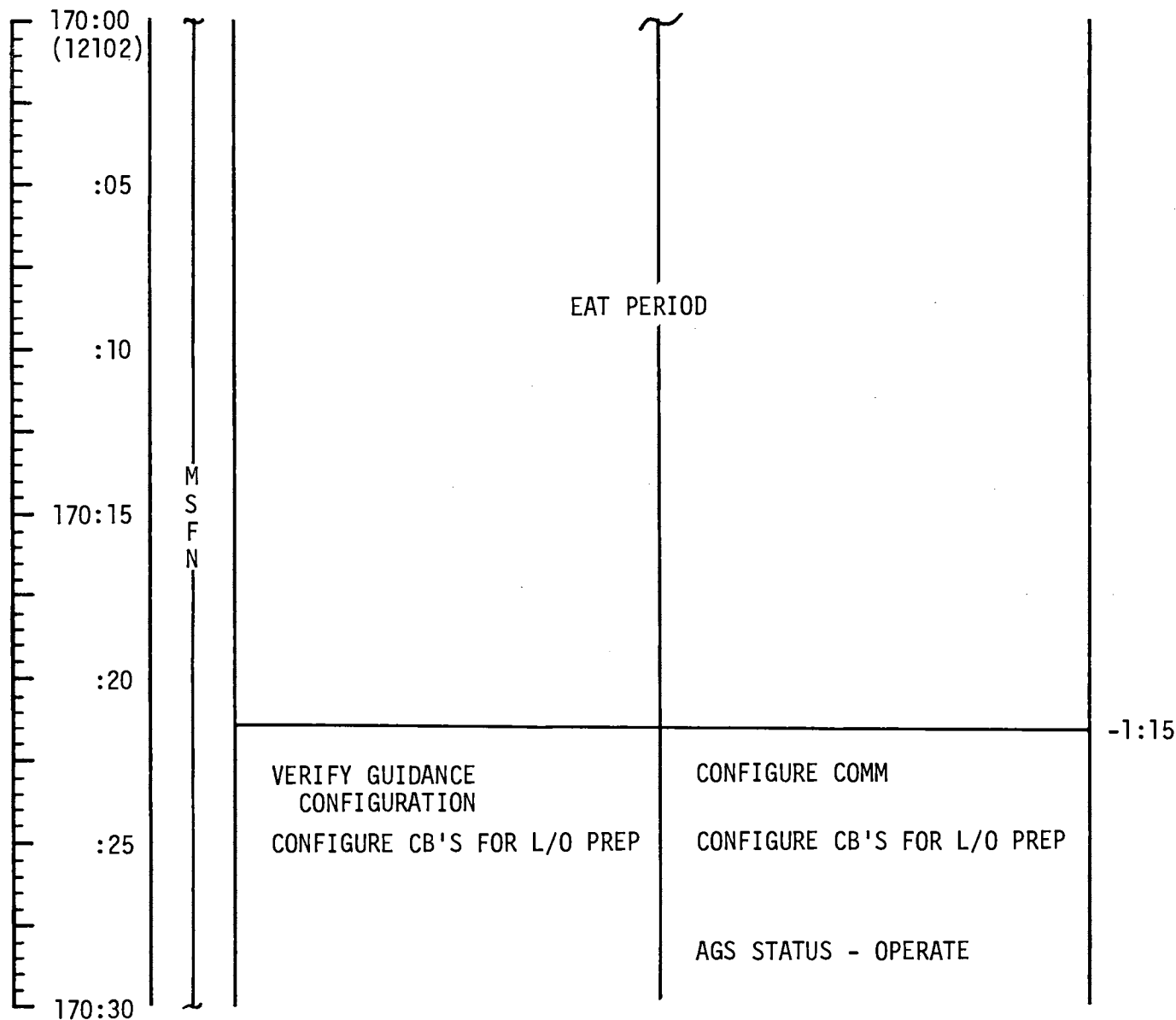
MCC-H

1034 CDT

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	170:00 - 170:30	8/47	3-264

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1034 CDT

170:00
(11112)
(X1111)

H₂ PURGE LINE HEATERS - ON
P52 (OPTION 3)
(LIFT-OFF ORIENT)
REPORT: GYRO TORQUING ANGLES

P52 (COAS CALIB)
USE STAR NO. 41

170:10

P00
GDC ALIGN
VERIFY ORDEAL

CONFIGURE CAMERAS: (DOCKING)

CM2/DAC/18/CEX-BRKT,MIR (T8,1/250,∞) 6 fps (40% MAG)

MAG (C) _____, MAG % _____
UTILITY PWR - ON

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

MSFN ENABLES MSFN S-BAND RELAY

170:20

CM/EL/80/CEX (f8,1/250,FOCUS) (10 FR)

MAG (Q) _____, FR # _____

CM4/TV-BRKT
(f44, PEAK) 11 MIN (ZOOM - 75MM)

H₂ AND O₂ FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

170:30

P52 IMU REALIGN

N71: _____, _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____

COAS CALIB - N92

SHAFT: _____

TRUN: _____

CSM S.V. (L/O) P27 UPDATE

PURP		V		V	
GET		:	:	:	:
304 01	INDEX			INDEX	
02					
03					
04					
05					
06					
07					
10					
11					
12					
13					
14					
15					
16					
17					
20					
21					
22					
23					
24					

LM FLIGHT PLAN

MCC-H

1104 CDT

CDR

LMP

NOTES

170:30
(12102)

:35

:40

170:45

:50

:55

171:00

M
S
F
N

CONFIGURE RR

V63 RR SELF TEST (IF REQ)

RATE GYRO TEST

RCS CHECKOUT

P57 LUNAR SURFACE ALIGN
OPTION 4 LANDING SITE
A/T 3 - GRAVITY AND CELESTIAL BODY
(LIFT-OFF ORIENTATION)

ALIGN AGS TO PGNS
AGS GYRO CALIBRATION

LOAD AGS ASCENT TARGETING

LGC CLOCK SYNC
AGS CLOCK INITIALIZATION

-1:00

CSM REV 48

-0:45

UPDATE TO LM
AGS K-FACTOR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	170:30 - 171:00	8/47-48	3-266

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

170:30
(11112)
(X1111)

DON PGA WITHOUT HELMET AND GLOVES

UNSTOW JETTISON BAG (A2)

PACK JETTISON ITEMS:

4 LIQH CANISTERS & PARTITIONS (A9) (NOTE: CANISTER 14 IS UNUSED)

FOOD (A7), FECAL BAGS (12 PACK) (A7)

HELMET SHIELD, CWG, MISC. WASTE

INSTALL CABIN FAN FILTER (U2)

INSTALL SPRINGS & CLIPS ON A8, A1, A6, A3, PNL 350

INSTALL TEMP STOWAGE BAGS ON LH AND RH LEB

REMOVE B5 AND B6 CURTAIN (STOW IN TSB)

REMOVE B5 AND B6 (STOW UNDER COUCH)

REMOVE COVERALLS (3) & CWG (3) (STOW IN TSB)

UNSTOW AND ASSEMBLE:

VACUUM CLEANER (SIDE A6), VACUUM BAG (A2)

PWR. CABLE (A2), BRUSH (SIDE A8)

CONNECT CABLE TO VAC. CLEANER & PNL 201

REMOVE DECONTAMINATION BAGS (ON A2)

OPEN BOTTOM & TOP OF PGA BAG

170:40

REV 48

WARNING

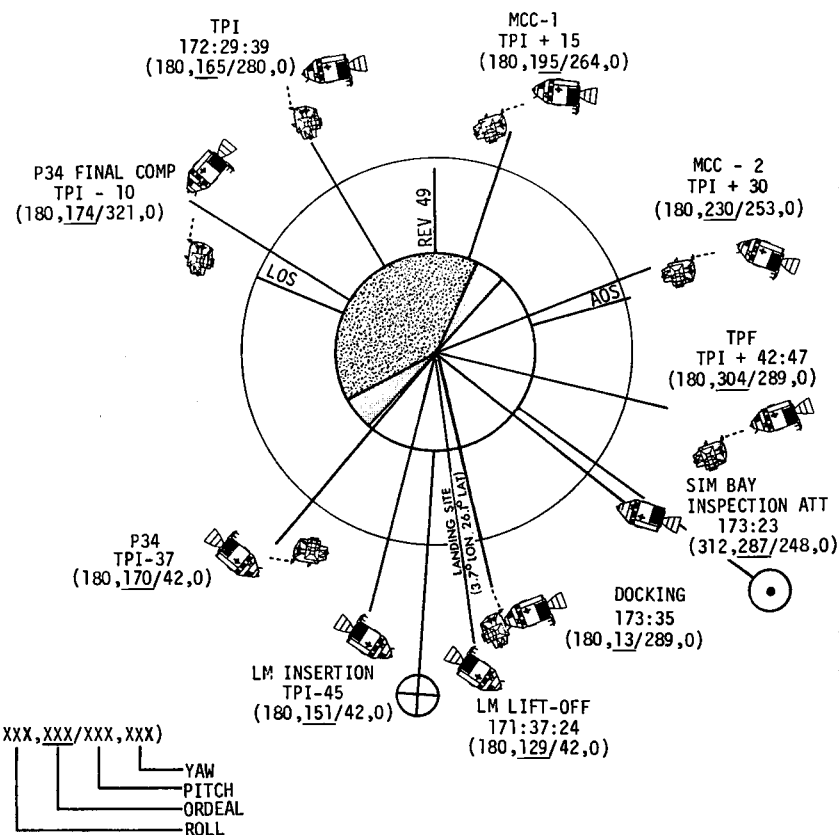
NO URINE/FECES
ALL OPENED FOOD MUST
BE TREATED AND
STORED IN BETA BAG

EAT PERIOD

GAMMA RAY*
ALPHA PART*

170:50

171:00



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-267

LM FLIGHT PLAN

MCC-H

1134 CDT

CDR

LMP

NOTES

UPLINK TO LM
CSM S.V. (L/O)
(IF REQD)
RLS (IF REQD)
LGC GYRO COMP

GUIDANCE RECOMMEN-
DATION FOR ASCENT

171:00 (12102)		POSITION RR ANT	ALIGN AGS TO PGNS BATS 5&6 - ON, 1&3-OFF/RESET SET CAMERA: LM3/DAC	
:05		LOAD DAP, LM WT P12 POWERED ASCENT		
:10		PRELAUNCH SWITCH CHECKS	AGS LUNAR ALIGN PRELAUNCH SWITCH CHECKS	-0:30
171:15	M S F N	DON HELMET & GLOVES	DON HELMET & GLOVES	
:20			V47 SET AGS BIAS LIFT-OFF COMM, RECORDER - ON BAT 2,4 - OFF/RESET DES BATS - DEADFACE	-0:15
:25		VERIFY CB STATUS APS PRESSURIZATION	VERIFY CB STATUS	
171:30				

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	171:00 - 171:30	8/48	3-268

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1134 CD

171:00
(11112)
(X1111)

AUTO RCS SEL (16) - MNA/MNB

ACQ MSFN HGA P -46, Y 164

MSFN CMDS:
DSE DUMP

171:10

VHF AM B - DUPLEX (VERIFY)
VHF AM A - OFF (CTR) (VERIFY)
VHF RANGING - ON(UP)
VHF ANT - LEFT
RNDZ XPNDR - PWR
EXT LIGHTS RUN/EVA - ON (UP)
EXT LIGHTS RNDZ - RNDZ

GAMMA RAY*
ALPHA PART*

(11102)
(X1111)

CYCLE CMC MODE - FREE/AUTO
V48 (11102)
(X1111)
LOAD CSM AND LM WT
V49 MNVR TO P20 ATT (171:20)
(180,42,0) OMNI D

171:20

GDC ALIGN
VERIFY ORDEAL

SYSTEMS TEST - XPNDR/C

GAMMA RAY EXP - OFF
X-RAY - OFF
α RAY/X DR - α OFF
MASS SPECT EXP - OFF
MAP CAMERA ON - STBY (VERIFY)
MAP CAMERA IMAGE MTN - OFF (VERIFY)
PAN CAMERA PWR - BOOST

LOAD N37

171:30

DIRECT ASCENT RNDZ PAD							UPDATE (IF REQ'D)						
GETI LIFT-OFF	HRS	+	0	0			+	0	0				
	MIN	+	0	0	0		+	0	0	0			
	SEC	+	0				+	0					
GETI	HRS	+	0	0			+	0	0				
TPI	MIN	+	0	0	0		+	0	0	0			
N37	SEC	+	0				+	0					

CSM WT	+						
LM WT	+	0	5	9	0	0	

COELLIPTIC RNDZ PAD							UPDATE (IF REQ'D)						
GETI LIFT-OFF	HRS	+	0	0			+	0	0				
	MIN	+	0	0	0		+	0	0	0			
	SEC	+	0				+	0					
GETI	HRS	+	0	0			+	0	0				
CSI	MIN	+	0	0	0		+	0	0	0			
N11	SEC	+	0				+	0					
GETI	HRS	+	0	0			+	0	0				
TPI	MIN	+	0	0	0		+	0	0	0			
N37	SEC	+	0				+	0					

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-269

LM FLIGHT PLAN

MCC-H

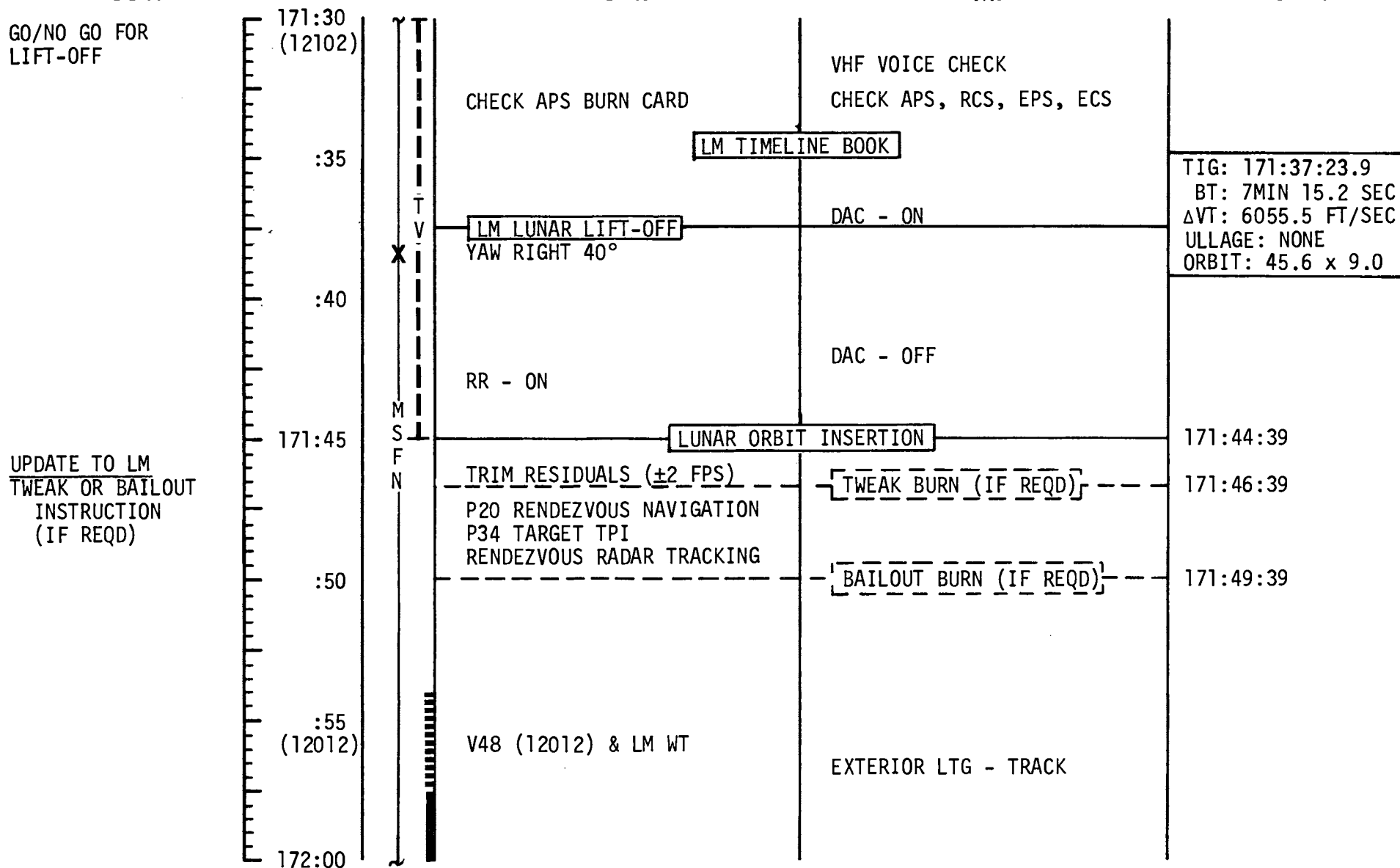
1204 CDT

GO/NO GO FOR
LIFT-OFF

CDR

LMP

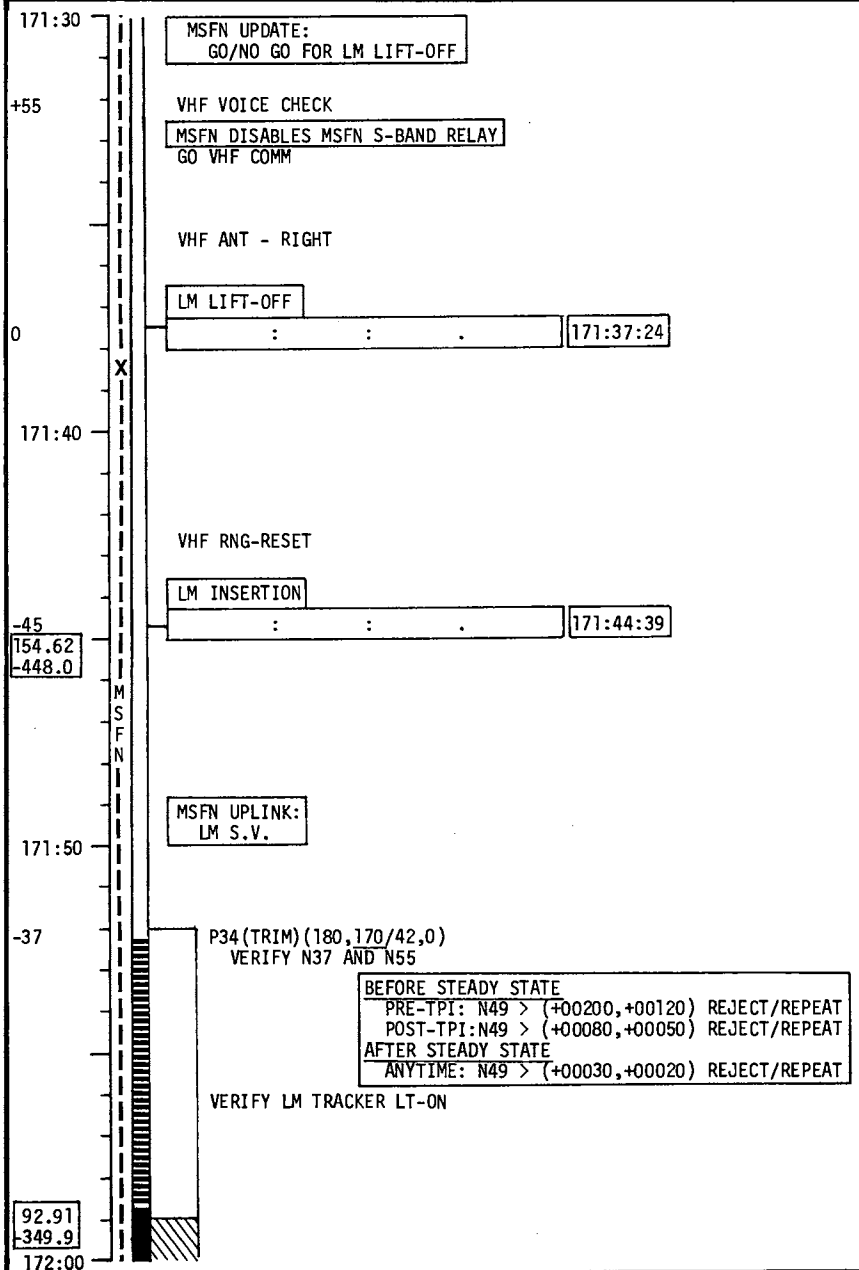
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	171:30 - 172:00	8/48	3-270

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



P30 MANEUVER

N/A SET STARS	C	S	M	B	/	O	PURPOSE
	S	P	S	G	&	N	PROP/GUID
	+			N	/	A	WT N47
R ALIGN N / A		0	0	N	/	A	P TRIM N48
P ALIGN N / A		0	0	N	/	A	Y TRIM
Y ALIGN N / A	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE							ΔV_x N81
4 JET, 11 SEC							ΔV_y
							ΔV_z
	X	X	X				R
	X	X	X				P
	X	X	X				Y
ΔV_C	+			N	/	A	H _A N44
				N	/	A	H _p

 * IF LM BAILOUT REQD:
 * COPY P76 DATA FROM LM
 *
 * 33 : :
 * : :
 * 84 . . .
 *
 * GO TO RESCUE BOOK PG 6

 * IF CSM BAILOUT REQD:
 *
 * MSFN UPDATE:
 * CSM BAILOUT P30 PAD
 * P30
 * P40 ; SET UP EMS
 * SPS BURN CUE CARD
 * CSM BAILOUT BURN
 * GO TO RESCUE BOOK PG 6

P34 INPUT

37	LM GETI-TPI		
55	INTEG OPT +00000	ELEVATION } +000.00	TRANSFER } +130.00

 * IF NO SXT, V57-LOAD R2=1; CALL N78,
 * LOAD R2=0; V58; V54; VHF ONLY
 * UNTIL TPI-16, THEN VHF/COAS(6).

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-271

LM FLIGHT PLAN

MCC-H

1234 CDT

CDR

LMP

NOTES

172:00
(12012)
:05
:10
172:15
:20
:25
172:30

M
S
F
N

CONFIGURE S-BD FOR LOS
OMNI-AFT, PCM-HI

P42 APS THRUSTING

MANUAL ULLAGE

LOAD AGS TPI EXTERNAL ΔV

TIG: 172:29:39.1
BT: 2.6 SEC
 ΔV T: 73.6 FT/SEC
ULLAGE: 4 JET 10 SEC
ORBIT: 61.5 x 43.9NM

TPI

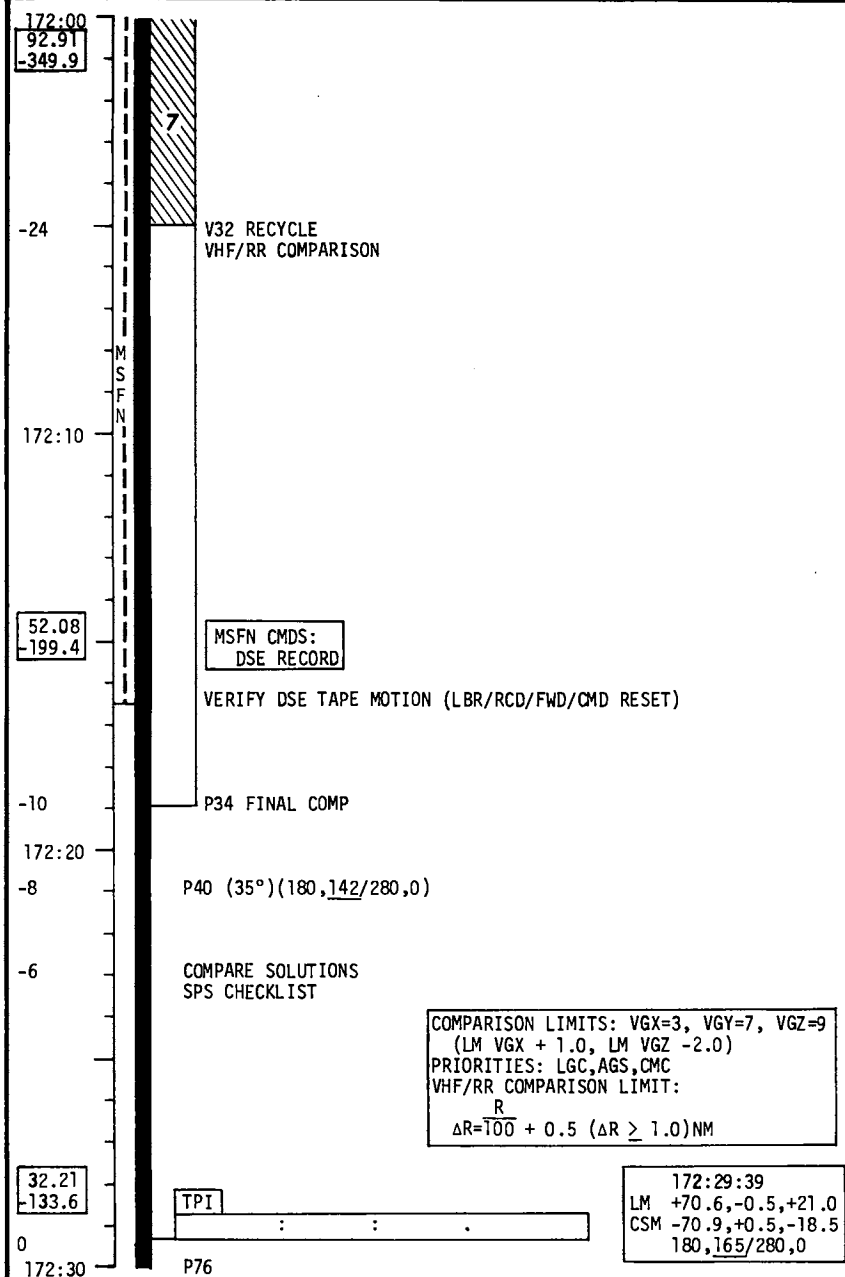
NULL RESIDUALS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	172:00 - 172:30	8/48	3-272

FLIGHT PLANING BRANCH

1234 CDT

CSM FLIGHT PLAN



* CONTINGENCY PROCEDURE *
* (P30-P40 BACKUP WITH LM SOLUTION) *
* P30-MIRROR IMAGE OF LM ΔV *
* P40 *

P34 RECYCLE

	INTEG OPT	ELEVATION }	TRANSFER }
55	+00000	.	+130.00
58	PERILUNE ALT	TPI ΔV	TPF ΔV
81	TPI ΔV-LV	.	.
84	LM TPI ΔV-LV	.	.

GROUND TPI FOR LM

						ΔV _X
						ΔV _Y
						ΔV _Z

P34 FINAL COMP

	INTEG OPT	ELEVATION }	TRANSFER }
55	+00000	.	+130.00
58	PERILUNE ALT	TPI ΔV	TPF ΔV
81	TPI ΔV-LV	.	.
84	LM TPI ΔV-LV	.	.
84	LM TPI ΔV-LV	.	.

P76

* IF SXT OR VHF ONLY, OR *
* VHF/COAS, V57-LOAD R2=1. *

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-273

LM FLIGHT PLAN

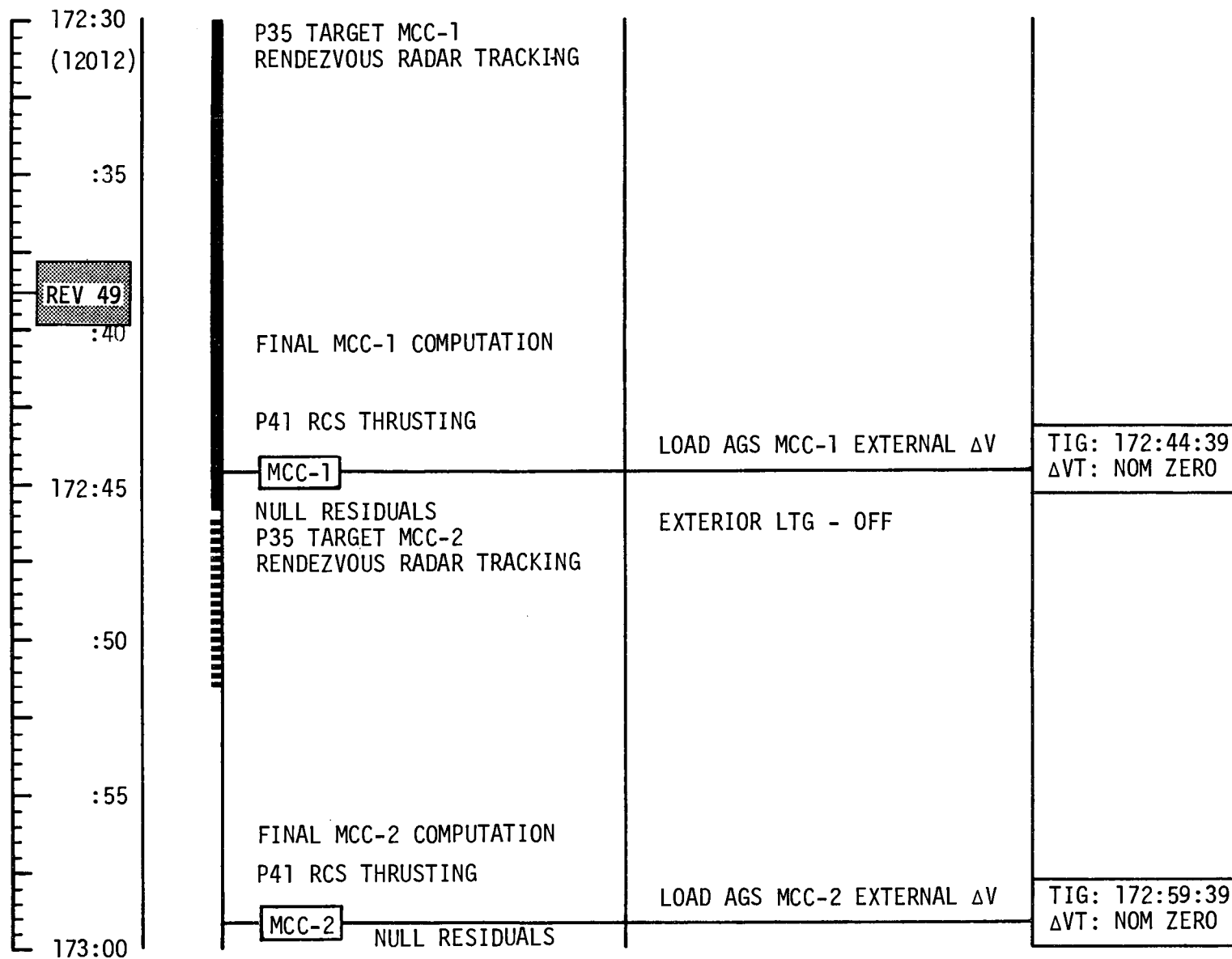
MCC-H

1304 CDT

CDR

LMP

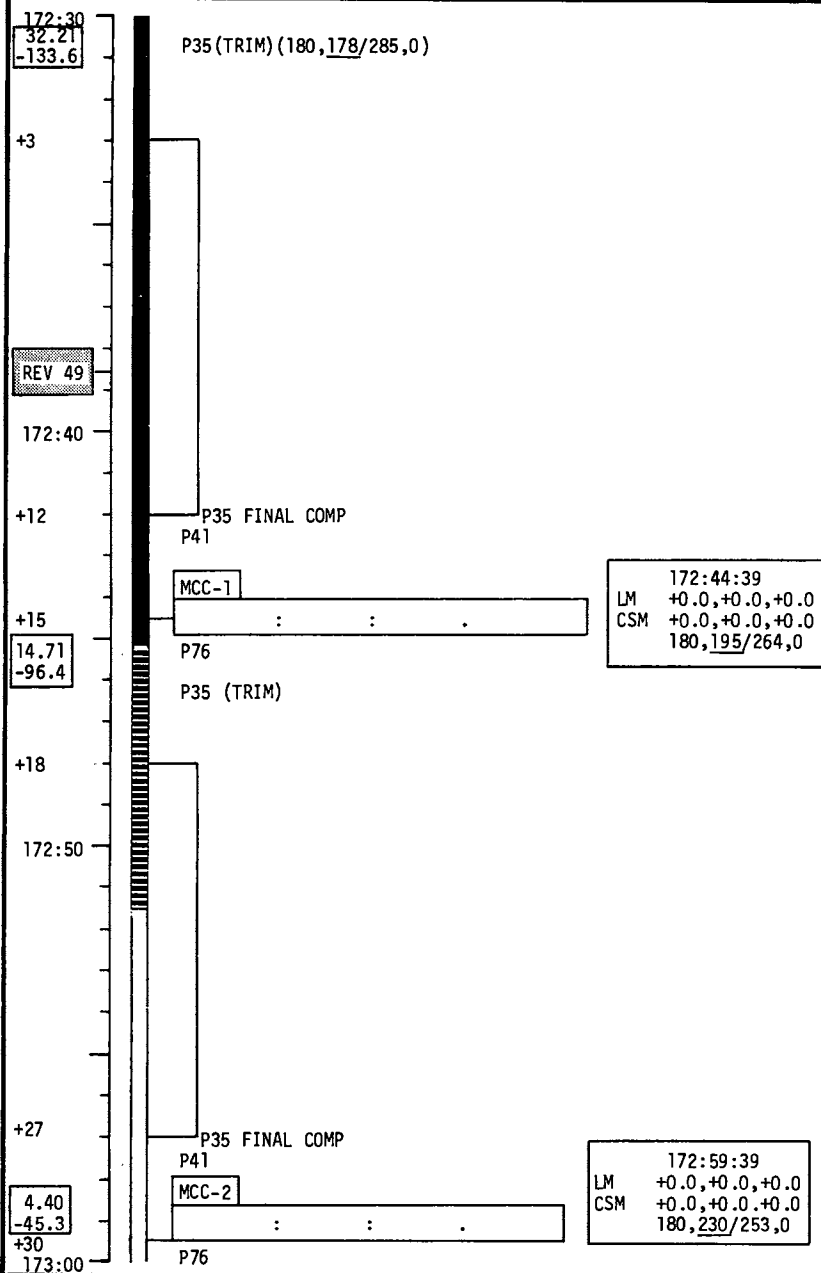
NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	172:30 - 173:00	8/48-49	3-274

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



P35 FINAL COMP			
81	MCC1 ΔV-LV		
84	LM MCC1 ΔV-LV		
84	LM MCC1 ΔV-LV		

P76

 * IF CSM ACTIVE & N58 TPF ΔV >55 FPS *
 * GO TO PRE-BRAKING SPS BURN PROCEDURES *
 * (SEE RESCUE BOOK PG 40) *

 * IF VHF/COAS, V93 *
 * BEFORE FIRST MARK *

P35 FINAL COMP			
81	MCC2 ΔV-LV		
84	LM MCC2 ΔV-LV		
84	LM MCC2 ΔV-LV		

P76

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-275

LM FLIGHT PLAN

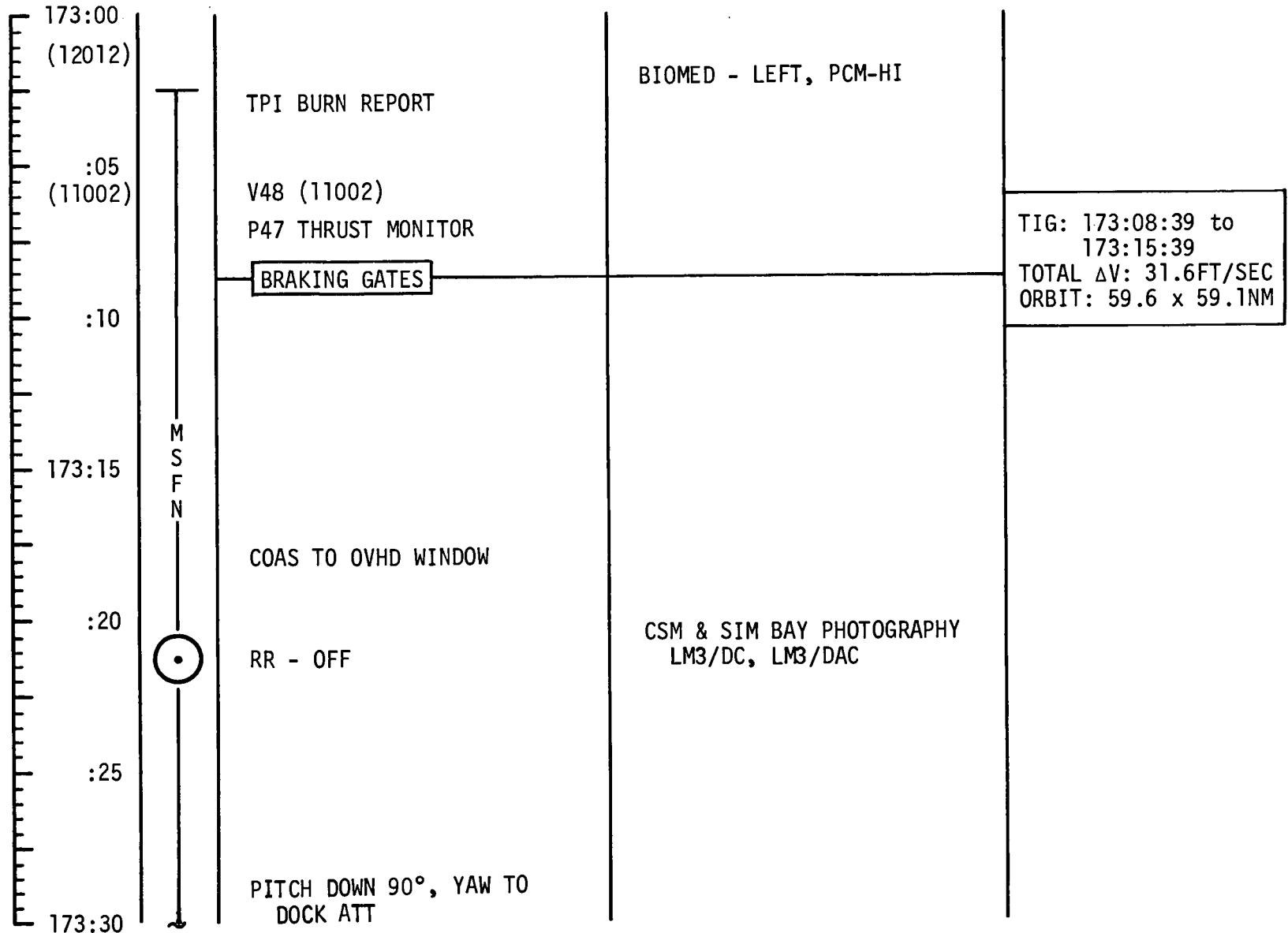
MCC-H

1334 CDT

CDR

LMP

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	173:00 - 173:30	8/49	3-276

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1334

173:00
4.40
-45.3

P79(35°)(180,271/289,0)

ACQ MSFN HGA P -57, Y 45

MSFN CMDS:
DSE DUMP

PERFORM PRE-DOCK CHECKLIST

IF CSM ACTIVE:

P47 AT R=1.25 NM

SEC PRPLNT FUEL PRESS (4) - OPEN

V83E
N83E
KEY REL

UTILITY PWR - ON (VERIFY)

TV - ON

DAC - ON

LM PHOTOS WITH DAC/TV

TPF

EMS MODE - STBY

EMS FUNC - OFF

EXT LIGHT RNDZ - OFF

LM STATIONKEEP

P00

DAC/TV - OFF

CMC MODE - AUTO

V49 MNVR TO SIM BAY INSPECTION ATTITUDE (173:23)
(312,248,0)

V49 MNVR TO DOCKING ATT (173:31)
(180,289,0) ACQ MSFN HGA P -57, Y 45

CUE MSFN FOR LOGIC ARM
SECS LOGIC (BOTH) - ON (UP)
MSFN GO FOR PYRO ARM
SECS PYRO ARM (2) - ON (UP)

PRE-DOCK CHECKLIST

MAN ATT (3) - RATE CMD (VERIFY)	CB DOCK PROBE (2) - CLOSED
LIMIT CYCLE - OFF (VERIFY)	PROBE RETRACT (2) - OFF (VERIFY)
ATT DB - MIN	PROBE EXTND/REL - RETRACT
RATE - LOW (VERIFY)	PROBE EXTND/REL TB (2) - GRAY (VERIFY)
TRANS CONTR PWR - ON (UP)	(IF TB NOT GRAY, GO TO PG S/2-12, E)
ROT CONTR PWR DIRECT (BOTH) - MNA/MNB	CB SECS LOGIC (2) - CLOSED (VERIFY)
SC CONT - CMC (VERIFY)	CB SECS ARM (2) - CLOSED
CMC MODE - HOLD	EXT LIGHTS RUN/EVA - ON (UP) (VERIFY)
AUTO RCS SEL (16) - MNA/MNB (VERIFY)	COAS PWR - ON (UP) (VERIFY)

BRAKING GATES

R,NM	R,FPS	RETICLE ANG,DEG	R,FT
1.50	45	.08	9000
1.00	30	.13	6000
.50	20	.26	3000
.25	10	.54	1500
.08	5	1.60	500
.05		2.70	300
.03		4.00	200
.02		8.50	100

173:20

173:30

MISSION	EDITION	DATE	PAGE
	FINAL (7/26)	6/21/71	3-277

LM FLIGHT PLAN

MCC-H

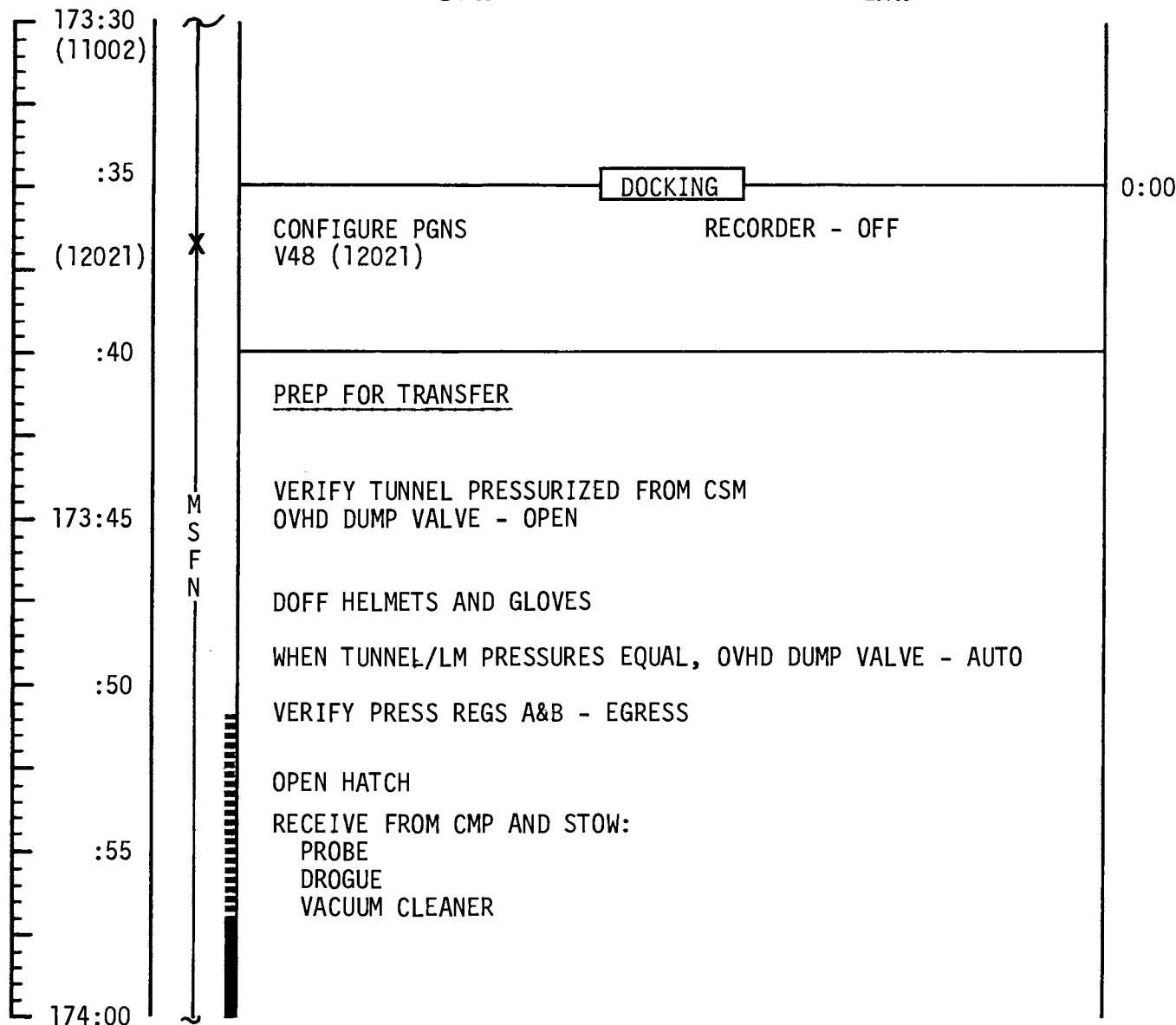
1404 CDT

CDR

LMP

NOTES

UPDATE TO LM
DEORBIT BURN PAD
DAP LOAD (WEIGHTS)
UPLINK TO LM
LM S.V. (TIG -10)
P30 TARGET LOAD
P99 LM DEORBIT



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	173:30 - 174:00	8/49	3-278

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

173:30
(11102)
(X1111)

P47
DAC/TV - ON (ZOOM - 25MM)
LM PITCH DOWN 90°, YAW LEFT 120°

T TRANSLATE TO CAPTURE LATCH
V PERFORM DOCKING CHECKLIST

DOCKING

173:35:00

DAC/TV - OFF
POO

(61101)
(11111)

V48 (61101) RECORD MAG % _____
(11111) RECORD EL FR # _____

CMC MODE - AUTO
SC CONT - CMC
RNDZ XPNDR - OFF

MSFN UPDATE:
DAP LOAD - UPDATE WEIGHTS (174:01)
MAP CAMERA PHOTO PAD (174:48)
PAN CAMERA PHOTO PAD (175:22)

PREPARE COUCH FOR HATCH

REMOVE PROBE STRAPS (R5)

CDR - VERIFY FWD DUMP VLV - AUTO
CABIN FANS - ON (UP)

EQUALIZE CSM/LM PRESSURE (LOD DECAL)

TUNNEL LIGHTS - LIGHTS
REMOVE HATCH AND STOW (DECAL)

173:50

VERIFY DOCKING LATCHES (DECAL)

REMOVE AND TEMP STOW PROBE AND DROGUE (DECAL)

TRANSFER TO CDR AT HIS REQUEST:
PROBE
DROGUE
VACUUM CLEANER (ASSEMBLED)

DOFF PGA
ZIP SUIT & INSTALL ELECTRICAL COVER PRIOR TO STOWING (PGA BAG)
STOW COMM CARRIERS AND UCTA (PGA BAG)
TRANSFER PRD TO CWG

174:00

DOCKING CHECKLIST

AT CAPTURE

PROBE EXTND/REL TB (2) - BP
(IF TB NOT BP, GO TO PG S/2-11, A)
REPORT CAPTURE TO LM
SC CONT - CMC (VERIFY)
CMC MODE - FREE
ALLOW PROBE TO DAMP SC MOTION (10 SEC)
WHEN WITHIN +3° OF DOCKING ATTITUDE
PROBE RETRACT SEC - 1 (PRIM - 2 IF REQD)

AT DOCK LATCH

PROBE EXTND/REL TB (2) - GRAY

AT HARD DOCK

SECS PYRO ARM (2) - SAFE	EXT LIGHTS (2) - OFF
SECS LOGIC (BOTH) - OFF	COAS PWR - OFF
CB SECS ARM (2) - OPEN	LIMIT CYCLE - ON (UP)
CB DOCK PROBE (2) - OPEN	ATT DB - MAX
THC - LOCKED	SC CONT - SCS
RHC - LOCKED	BMAG MODE (3) - ATT 1/RATE 2
BMAG MODE (3) - RATE 2	AUTO RCS SEL B/D ROLL (4) - OFF
PROBE EXTND/REL - OFF	TRANS CONTR PWR - OFF
PROBE RETRACT (2) - OFF	ROT CONTR PWR DIRECT (BOTH) - OFF

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-279

13

LM FLIGHT PLAN

MCC-H

1434 CDT

CDR

LMP

NOTES

174:00
(12021)

VACUUM PGA'S

:05

M
S
F
N

0:30

~~DOFF SUITS~~

:10

174:15

:20

~~TRANSFER SUITS TO CMP~~

PLACE EV GLOVES INSIDE HELMETS, HELMETS INSIDE
LEVA'S, IN LEVA BAG

:25

TRANSFER LEVA BAGS TO CMP

174:30

RECEIVE DECONTAMINATION BAGS FROM CMP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	174:00 - 174:30	8/49	3-280

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

174:00
(61101)
(11111)

M
S
F
N

V48 LOAD CSM & LM WEIGHT

S-BD AUX TV - SCI
PCM BIT RATE - HIGH

CSM WT	+						
LM WT	+						

INHIBIT ALL JETS EXCEPT: A1 & C2 OR D1 & B2, A3, C4, B3, D4
P20 OPT 5 (+X FWD SIM ATT)(174:15)

N78 (+090.00)
(+052.25)
(+180.00)

N79 (+000.50)

N70 (00050)

(142,000/154,000)

(P20)
(0.5°DB)

SIM EXPERIMENT PREP (CUE CARD)

MSFN CMDS:
DSE RECORD

DATA SYSTEMS ON - ON
LOGIC POWER (2) - DPLY/RETR
MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
ALPHA/X-RAY EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR)
VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

GAMMA RAY: EXP - ON, GAINSTEP - SHIELD ON
X-RAY - ON, α RAY/X DR - α ON RECORD GET
LASER ALTM - ON
MASS SPECT EXP - STBY
PAN CAMERA PWR - OFF

174:20

~~RECEIVE SUITS FROM CDR~~

RECEIVE LEVA BAGS

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

TRANSFER TO CDR
DECONTAMINATION BAGS

174:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-281

13.

LM FLIGHT PLAN

MCC-H

1504 CDT

CDR

LMP

NOTES

174:30
(12021)

:35

REV 50

:40

174:45

:50

:55

175:00

UNSTOW, VACUUM/WET WIPE AND BAG:

70MM MAG BAG (13 MAGS)

SURFACE 16MM MAG BAG (8 MAGS)

4 COLLECTION BAGS

ISA

BSLSS/ROCK BAG

1:00

TRANSFER ABOVE ITEMS TO CSM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	174:30 - 175:00	8/49-50	3-282

FLIGHT PLANNING BRANCH

1504 CDT

CSM FLIGHT PLAN

174:30
(P20)
(0.5°DB)
(61101)
(11111)

CMC MODE - FREE
P52 (OPTION 3)
(LIFT-OFF ORIENT)

P52(IMU REALIGN)

N71: _ _ _ _ _

N05: _ _ _ _ _

N93: _ _ _ _ _

X _ _ _ _

Y _ _ _ _

Z _ _ _ _

GET _ _ _ _

REV 50

P20, CMC MODE - AUTO
GDC ALIGN
VERIFY ORDEAL

174:40

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

MAP CAMERA PHOTO PAD

T-START: _ _ _ _

T-STOP: _ _ _ _

174:50

MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY)
MAP CAMERA ON - ON (T START)
MAP CAMERA IMAGE MTN - INCR (tb-BP)/ON

MAP CAMERA

RECEIVE ITEMS FROM LM AND STOW
(LM TO CM TRANSFER LIST)

ACQ MSFN: MAN, WIDE P -5, Y 25
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

175:00

LM TO CM TRANSFER LIST

ITEM	CM LOCATION
LEVA BAG (2)	TOP PGA BAG
70MM MAG (4)	R13
70MM MAG (3)	R13
70MM MAG (3)	R13
70MM MAG (3)	A8
PENETROMETER (1) IN DECOM BAG	A7
16MM MAG (6)	R13
16MM MAG (2)	R13
ISA BAG (1) IN DECOM BAG	ON A2
DECONTAMINATION BAG (1)	ON A7
DECONTAMINATION BAG (CORE TUBES) (1)	IN A9
DECONTAMINATION BAG (1)	ON A1
DECONTAMINATION BAG (WITHOUT STRAPS) (1)	PGA BAG
SRC (2)	B5 & B6
VACUUM CLEANER W/CABLE & BRUSH (1)	SIDE A6
OPS (1)	A7
IV GLOVES (2 PR.)	TSB
HELMETS (2)	UNDER RH COUCH
COMM CARR (2)	TSB
FDF	R3
PPK (3)	A8
FLAG KIT (1)	A8
PURGE VALVE & TETHERS (FROM PURSE)	EVA CONTAINER (A2)
PURSE (1)	A8
UNOPENED FOOD BAGS	TSB
USED FOOD BAGS	TSB
USED FECAL BAGS	TSB
ANCILLARY BAG (1)	A8

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-283

CHANGE B

LM FLIGHT PLAN

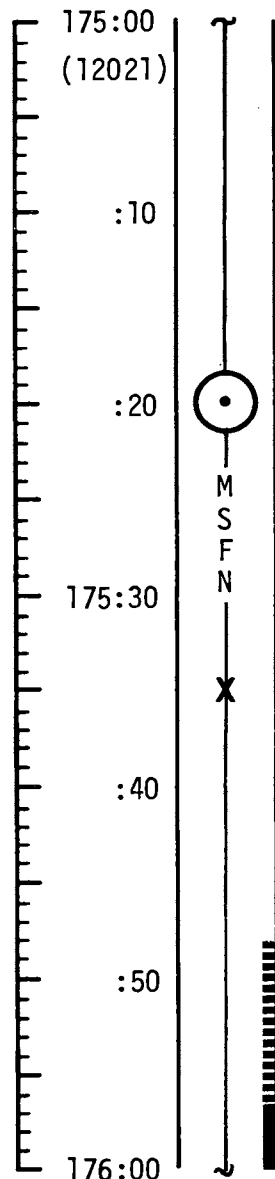
MCC-H

1534 CDT

CDR

LMP

NOTES



UNSTOW SRC'S, VACUUM AND BAG, TRANSFER TO CSM

1:30

RECEIVE B5 & B6 FROM CMP AND STOW IN SRC RACK

TRANSFER VACUUM CLEANER TO CSM

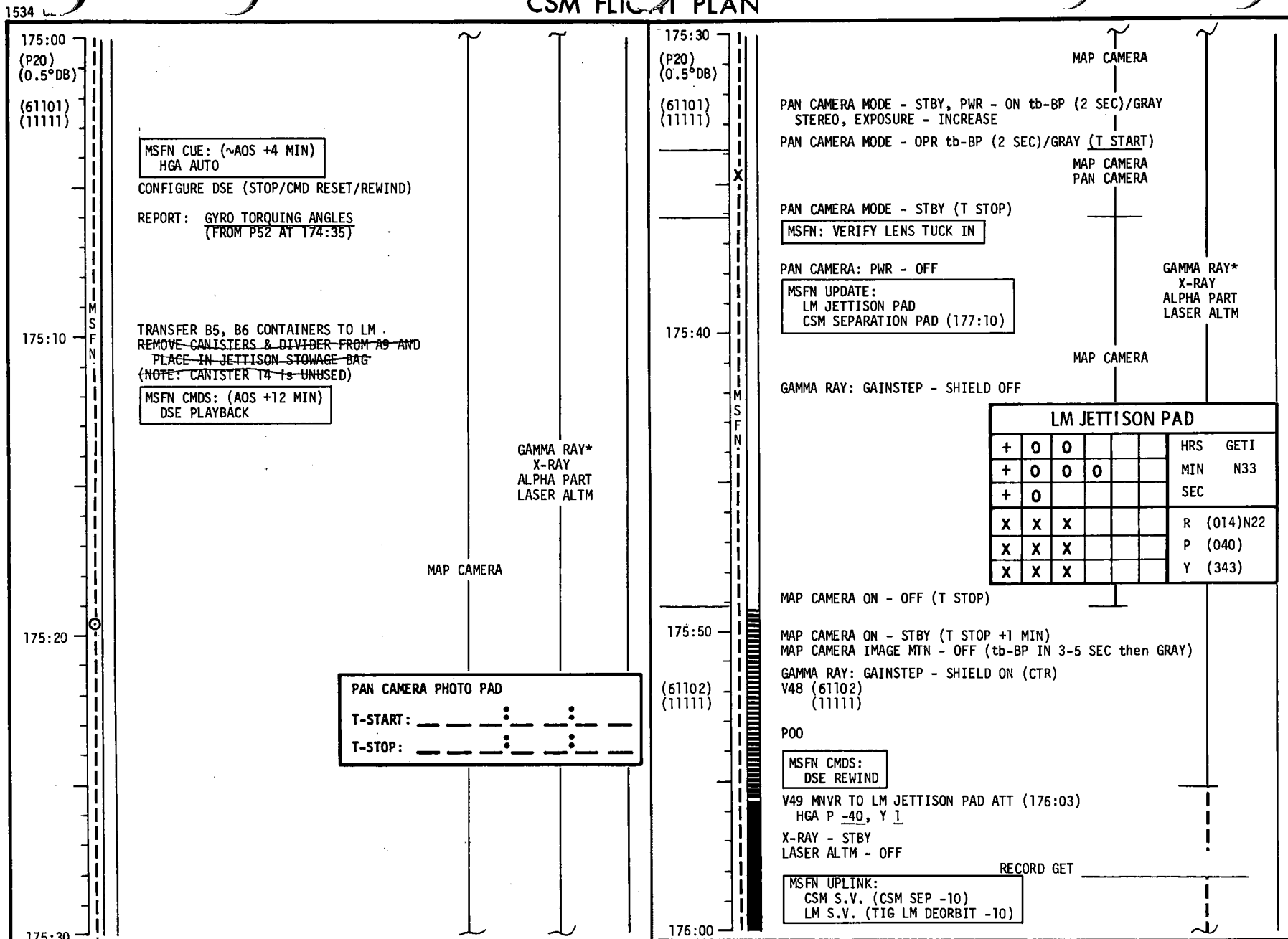
UNSTOW OPS, CHECKOUT, TRANSFER TO CMP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	175:00 - 176:00	8/50	3-284

CHANGE B

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-285

13.

LM FLIGHT PLAN

MCC-H

CDR

LMP

NOTES

UPDATE TO LM
DEORBIT TIG

GO/NO GO FOR LM
CLOSE OUT

1634 CDT

176:00
(12021)

T
M
S
F
N

VERIFY LM JETTISON ATTITUDE

P30 TARGET PGNS

STEERABLE P 205, Y 70

CONFIGURE S-BAND
VERIFY COMM
TARGET AGS ΔV FOR DEORBIT

2:30

:10

:20

CONFIGURE LM FOR JETTISON

STOW CSM JETTISON ITEMS

IVT TO CSM

176:30

REV 51

:40

CLOSE HATCH, IVT TO CSM

3:00

:50

3:10/LM CLOSEOUT

177:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	176:00 - 177:00	8/50-51	3-286

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

176:00 (61102) (11111)	MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN)/GRAY then OFF (CTR) ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)	176:30 (61102) (11111)	
		REV 51	
176:10	MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR) LOGIC POWER (2) - OFF ENABLE ALL JETS cb SCS CONTR DIR 1 MNB - CLOSE cb SCS CONTR DIR 2 MNA - CLOSE MSFN UPDATE: GO/NO-GO FOR LM CLOSEOUT MSFN CMDS: DSE RECORD	176:40	VHF AM B - OFF (CTR) VHF RANGING - OFF LMP - CLOSE LM HATCH DIRECT O ₂ VLV - CLOSED (CW) UNSTOW AND INSTALL FORWARD HATCH (DECAL) PERFORM HATCH INTEGRITY CHECK (DECAL)
176:20	VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET) GAMMA RAY* ALPHA PART*	176:50	TUNNEL LIGHTS - OFF CONFIGURE CAMERA FOR LM JETTISON PHOTOS CM2/DAC/18/CEX-BRKT,MIR (f8,1/250,7) 12 fps (50% MAG) MAG (D) _____, MAG % _____ UTILITY PWR - ON - DON HELMET & GLOVES - SUIT CKT INTEG. CHECK (DECAL)
176:30	TRANSFER CM JETTISON ITEMS TO LM WARNING NO URINE/FECES ALL OPENED FOOD MUST BE TREATED AND STORED IN BETA BAG	177:00	ACQ MSFN HGA: P -40, Y 1 MSFN CMDS: DSE REWIND DUMP

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-287

CSM FLIGHT PLAN

177:00
(61102)
(11111)

P30; LOAD CSM SEP PAD DATA

LM PWR - OFF (VERIFY)
CB SECS ARM (2) - CLOSED
CUE MSFN FOR LOGIC ARM

SECS LOGIC (BOTH) - ON (UP)

MSFN UPDATE:
GO/NO-GO FOR PYRO ARM

177:10

M
S
F
NLOAD ΔV IN EMS TO +100.0
CHECK NULL BIAS
GDC ALIGN
VERIFY ORDEALREPORT: CM/LM ΔP

PRE-JETTISON CHECKLIST

(11102)
(11111)V48 (11102)
(11111)

SECS PYRO ARM (2) - ARM

P47 (JETT -1 MIN)
EMS MODE NORMAL (JETT -30 SEC)
DAC - ON

177:20

LM JETTISON

177:20:45

: : . (014,090/040,343)

P00
DAC - OFF
PRE-SEPARATION CHECKLIST
EMS MODE - NORMAL (SEP -30 SEC)

CSM SEPARATION

177:25:45

: : . -1.0,+0.0,+0.0
(014,105/040,343)

P00

177:30

P30 MANEUVER

SET STARS	C	S	M	S	E	P	PURPOSE
	R	C	S	G	&	N	PROP/GUID
R ALIGN	+			N	/	A	WT N47
P ALIGN		0	0	N	/	A	P TRIM N48
Y ALIGN		0	0	N	/	A	Y TRIM
	+	0	0				HRS GETI
	+	0	0	0			MIN N33
	+	0					SEC
ULLAGE	-	0	0	0	1	0	ΔV_X N81
	+	0	0	0	0	0	ΔV_Y
	+	0	0	0	0	0	ΔV_Z
	X	X	X				R
	X	X	X				P
	X	X	X				Y

PRE-JETTISON CHECKLIST

BMAG MODE (3) - ATT 1/RATE 2
ATT DB - MIN
RATE - LOW
SC CONT - SCS
EMS FUNC - ΔV
AUTO RCS SEL (16) - MNA/MNB
THC PWR - ON
RHC PWR DIR - MNA/MNB
THC - ARMED
RHC - ARMED

PRE-SEPARATION CHECKLIST

EMS MODE - STBY
SC CONT - CMC
BMAG MODE (3) - RATE 2

P41 (BYPASS MNVR)

SECS PYRO ARM (2) - SAFE
SECS LOGIC (BOTH) - OFF
CB SECS ARM (2) - OPEN

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-288

1804 CDT

CSM FLIGHT PLAN

177:30
(11102)
(11111)

EMS MODE - STBY
EMS FUNC - OFF
THC PWR - OFF
RHC PWR DIR - OFF
THC LOCKED
RHC LOCKED

DOFF PGA'S
 ZIP SUITS & INSTALL ELECTRICAL COVERS PRIOR TO STOWING (PGA BAG)
 STOW COMM CARRIERS AND UTCAS (PGA BAG) → CDR & LMP PGA ELECTRICAL COVERS IN PURSE. CDR & LMP INSTALL.
 TRANSFER PRD'S TO CWG'S
 1 GG PLUGS (PURSE INSTALL NECK RING & COVERS (CDR'S & LMP'S IN PURSE).

177:40

GAMMA RAY*
 ALPHA PART*

V44

(11101)
(X1111)

V48 (11101)
 (X1111)

INHIBIT ALL JETS EXCEPT: A1 & C2 OR D1 & B2, A3, C4, B3, D4

P20 OPT 5 (-X FWD SIM ATT)(178:02)

N78 (+090.00)
 (+052.25)
 (+000.00)

(P20)
(5.0°DB)

N79 (+005.00)

N70 (00050)

(322,180/005,000) HGA P 8, Y 339

177:50

SIM EXPERIMENT PREP (CUE CARD)

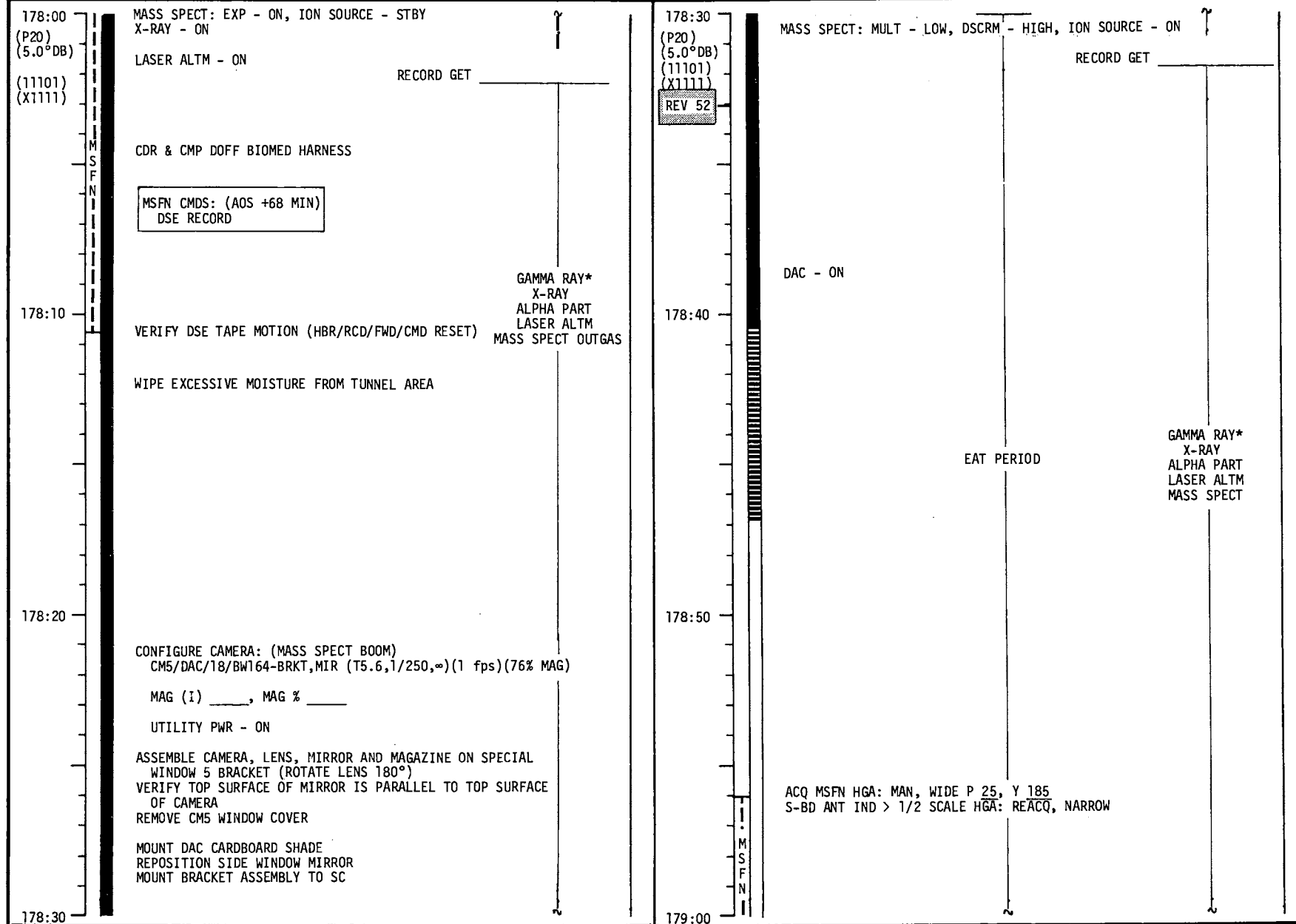
LOGIC POWER (2) - DPLY/RETR
 MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
 ALPHA/X-RAY EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
 GAMMA RAY BOOM - DEPLOY tb-BP (~2:45)/GRAY then OFF (CTR)
 MASS SPECT BOOM - DEPLOY tb-BP (~2:40)/GRAY then OFF (CTR)

178:00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-289

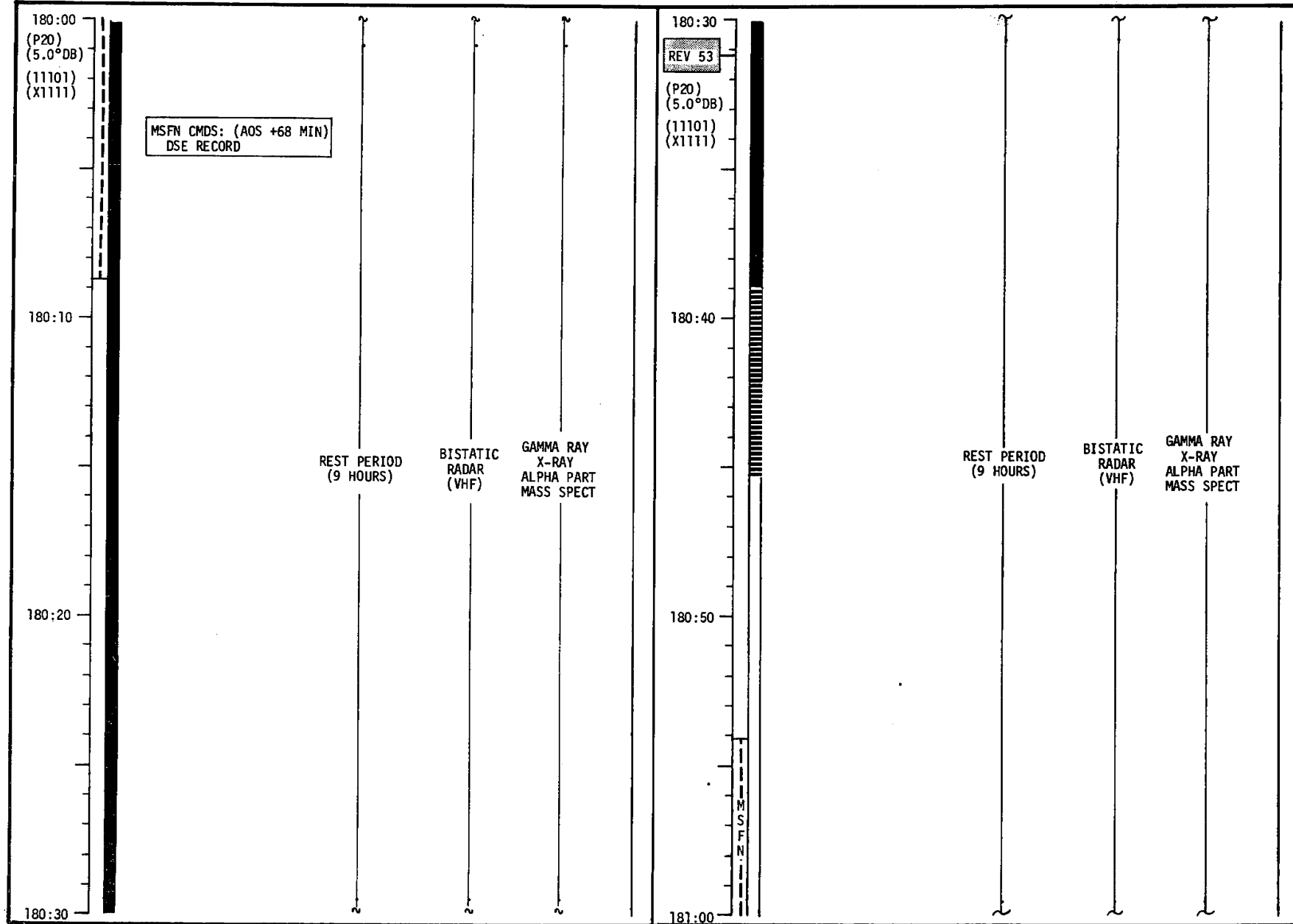
CHANGE B

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-290
CHANGE B			

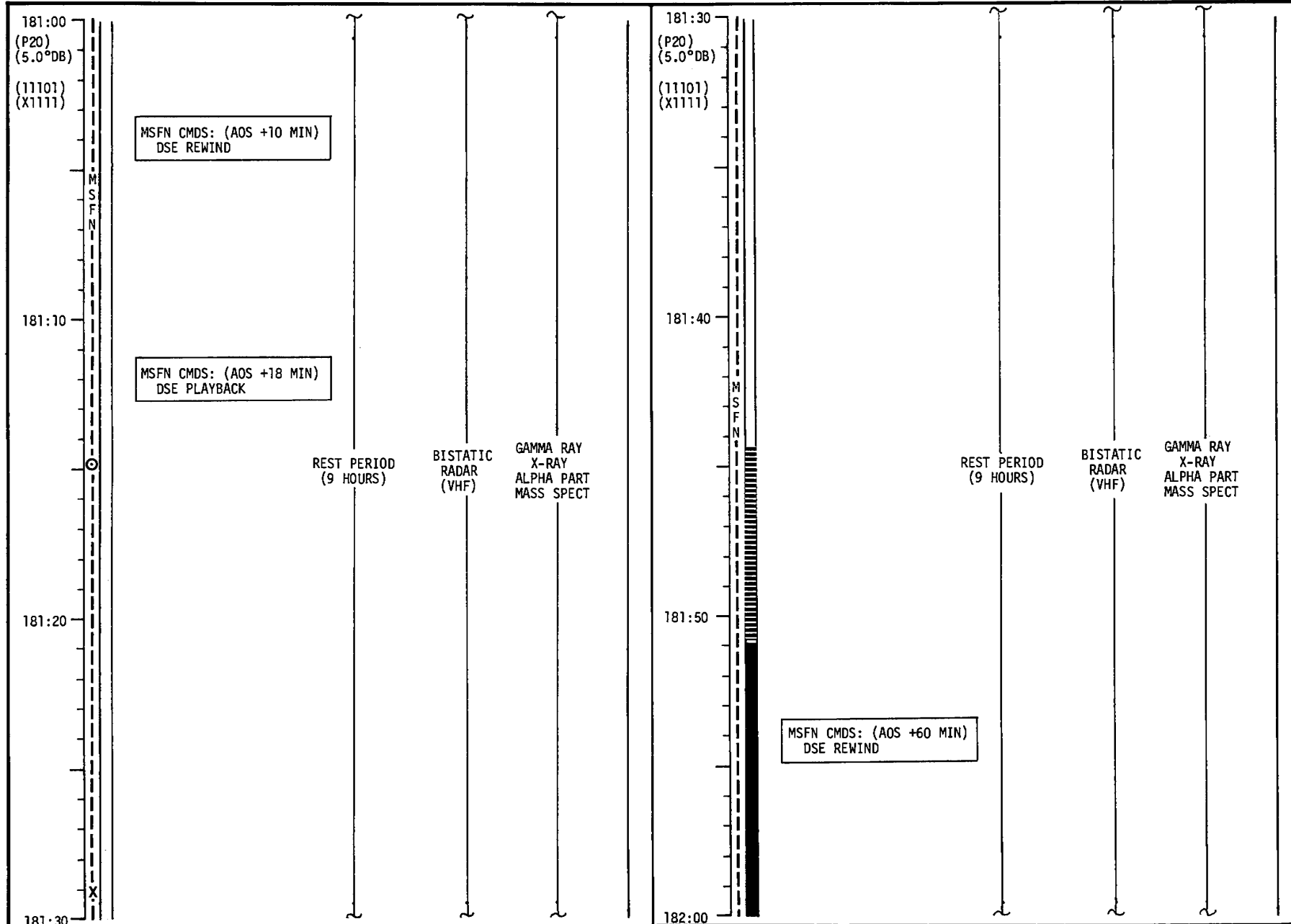
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-292

CSM FLIGHT PLAN

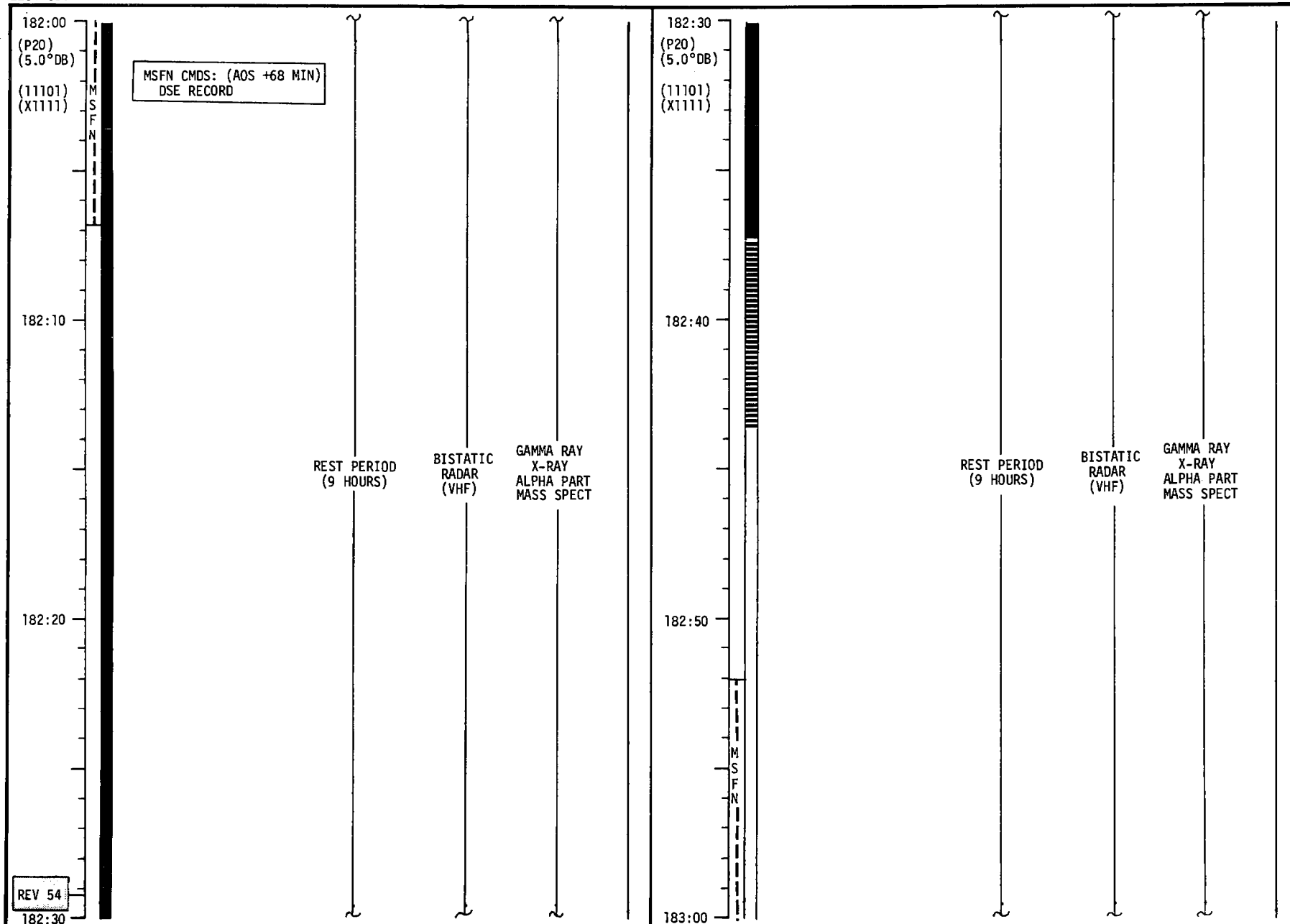
2134



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-293

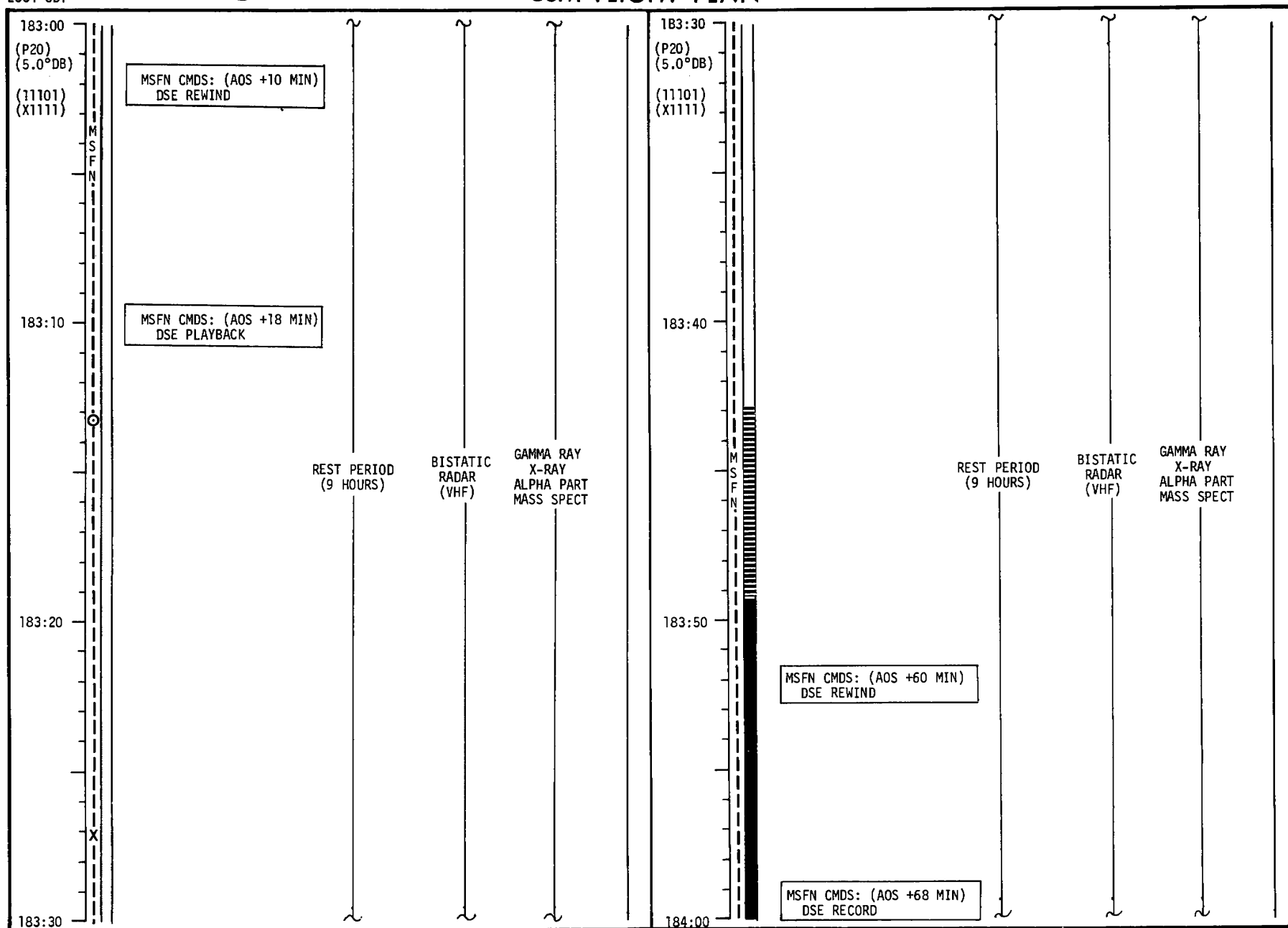
2234 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-294

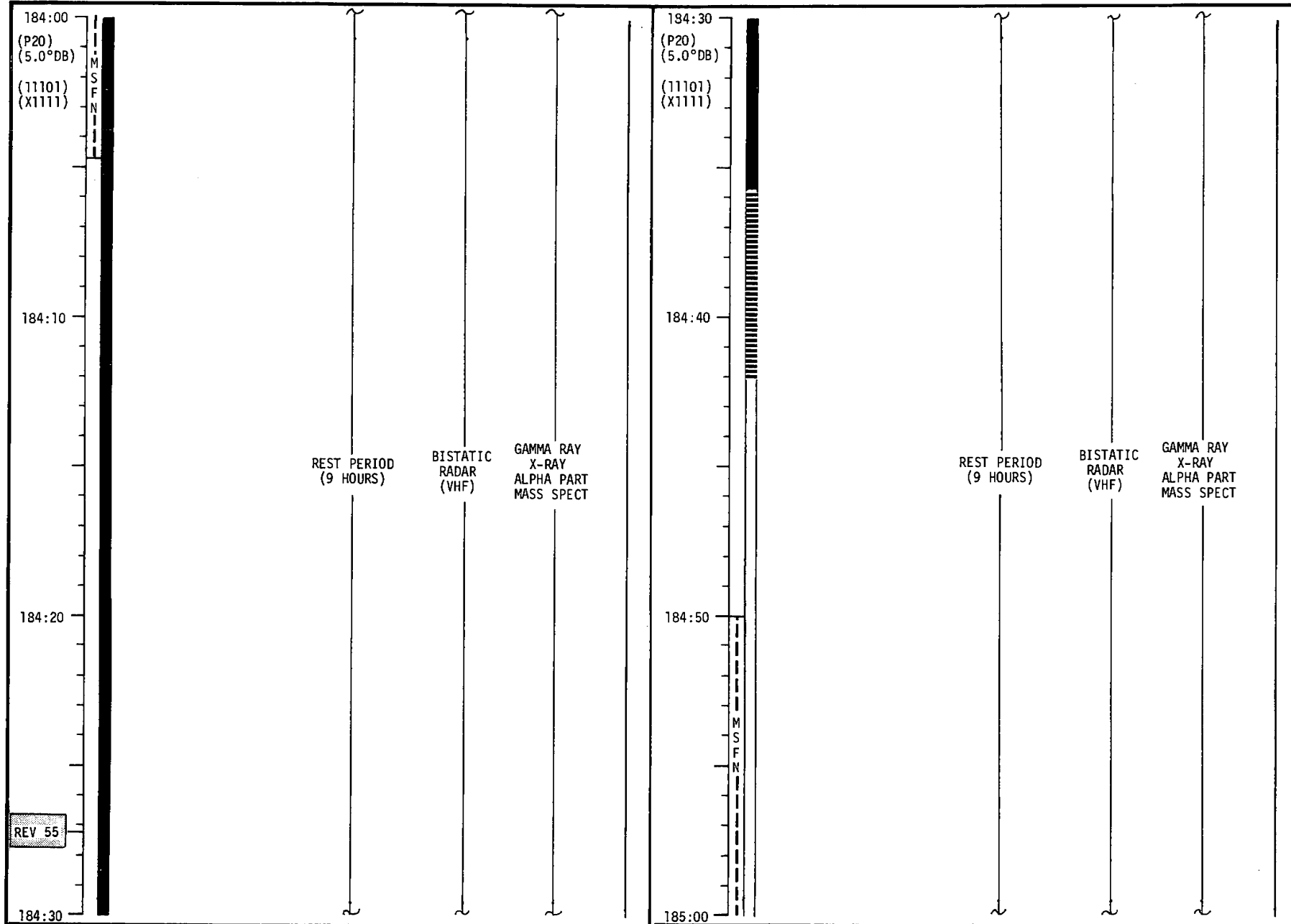
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-295

0034 CDT

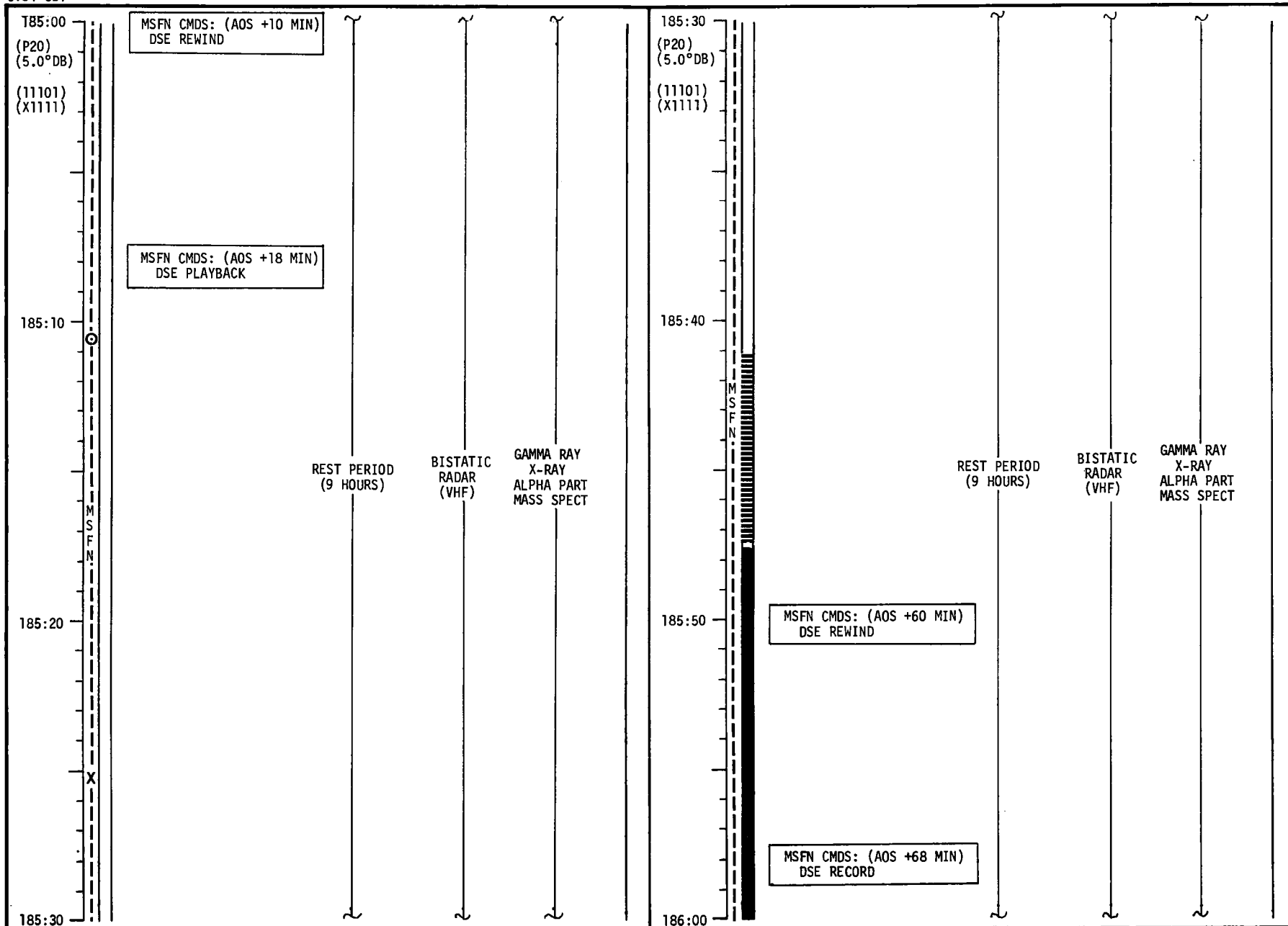
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-296

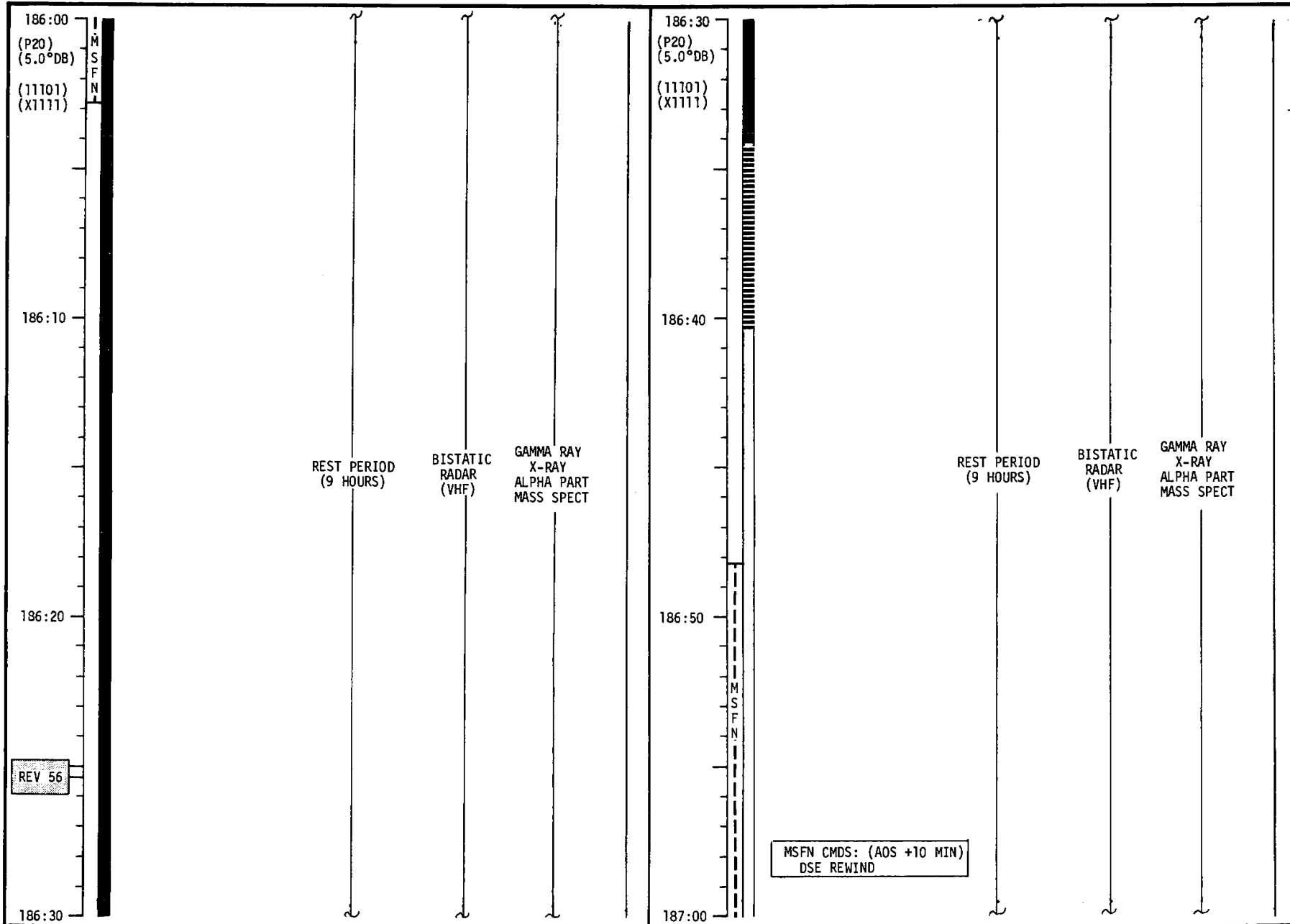
0134 CDT

CSM FLIGHT PLAN



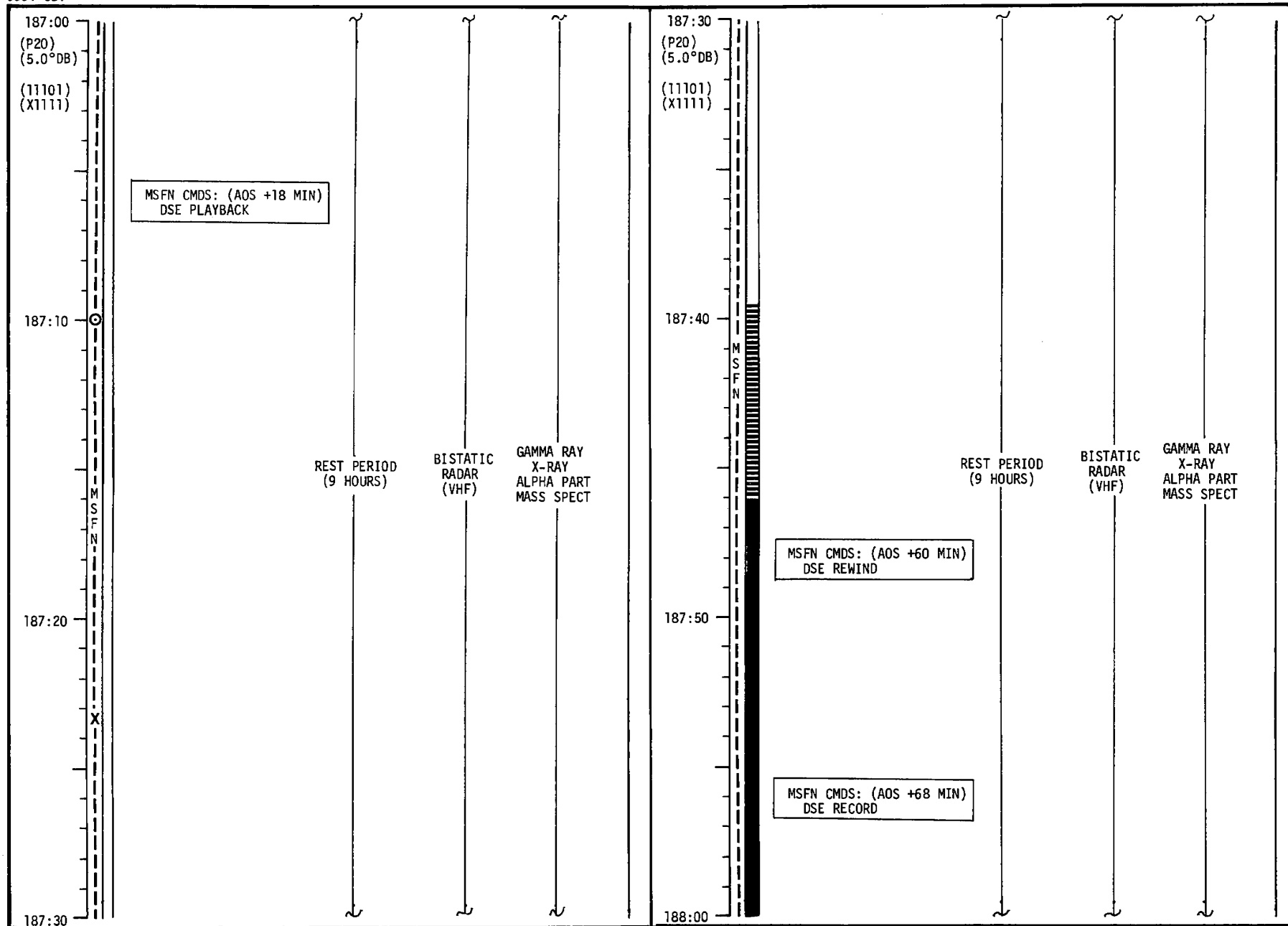
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-297

CSM FLIGHT PLAN



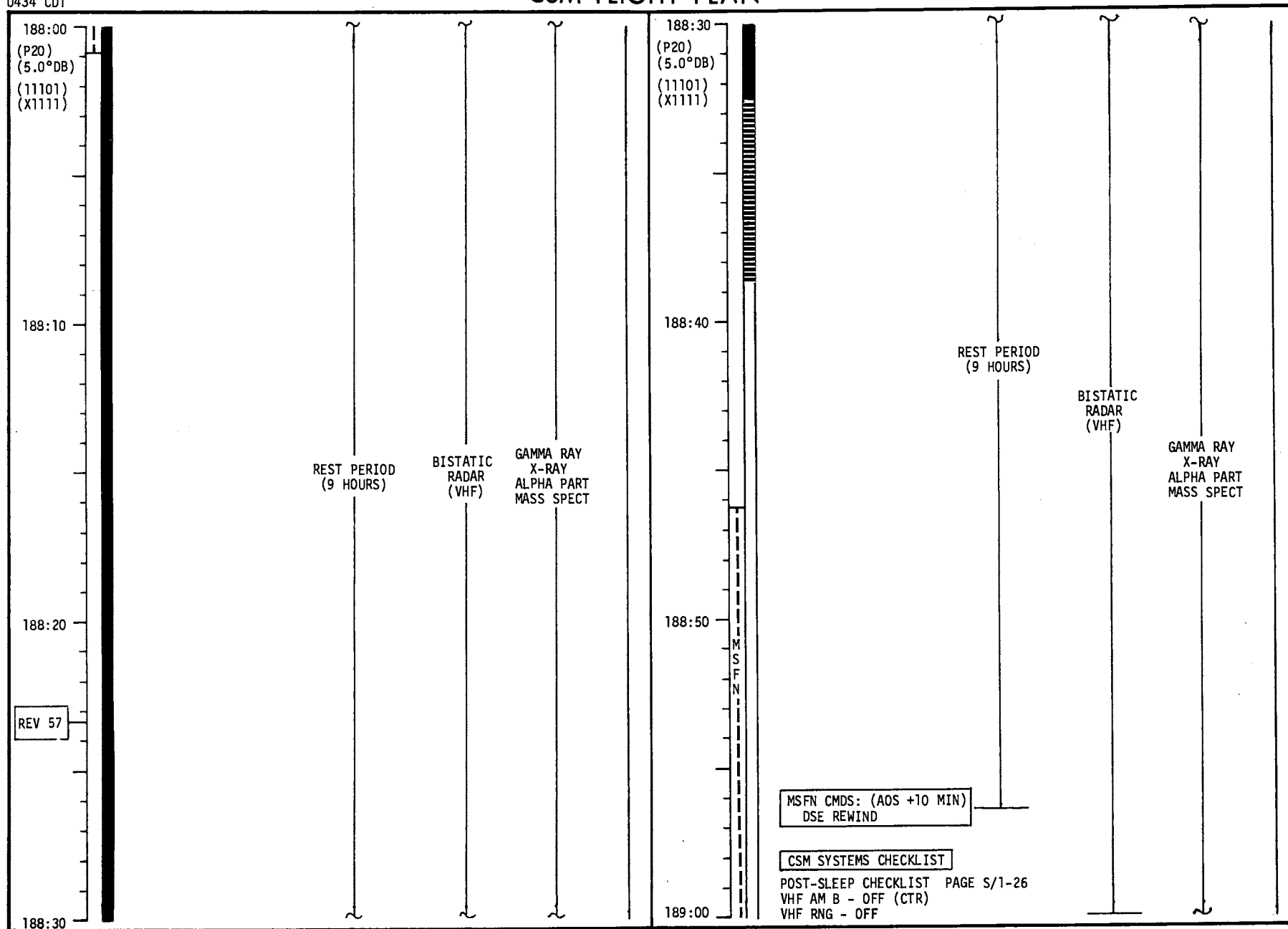
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-298

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-299

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-300

0534 CDT

CSM FLIGHT PLAN

189:00 (P20) (5.0°DB)	CDR DON BIOMED HARNESS LMP DOFF BIOMED HARNESS CHARGE BATTERY B MSFN CMDS: (AOS +18 MIN) DSE PLAYBACK MANUALLY ROLL CW 40° MSFN UPDATE: CONSUMABLES FLIGHT PLAN PAN CAMERA PHOTO PAD (190:32) MAP CAMERA PHOTO PAD (190:42) TEI 60 PAD GAMMA RAY: GAINSTEP - SHIELD OFF P20 OPT 5 (+X FWD SIM ATT) (189:24) V23N78 (+180.00) (142,000/271,000) HGA P -73, Y 258	GAMMA RAY X-RAY ALPHA PART MASS SPECT GAMMA RAY* X-RAY* ALPHA PART*	189:30 (P20) (5.0°DB) (11101) (X1111)																																			
189:10 (P20) (5.0°DB)	PAN CAMERA: MODE-STBY, PWR-ON tb-BP (2 SEC)/GRAY PAN CAMERA: PWR - OFF (MSFN CUE) GAMMA RAY: GAINSTEP - SHIELD ON (CTR) MASS SPECT: ION SOURCE - OFF, EXP - STBY CAUTION - WAIT 5 MIN BEFORE RETRACTING MASS SPECT BOOM LOGIC POWER (2) - DPLY/RETR RECORD GET MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR) MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR) LASER ALTM - ON MASS SPECT BOOM - RETRACT tb-BP (~2:30)/GRAY then OFF (CTR) MSFN UPLINK: CSM S.V. SHORT BURN CONSTANTS	CSM CONSUMABLES UPDATE GET: _____ : _____ RCS TOTAL _____ QUAD A _____ B _____ C _____ D _____ H ₂ TANK 1 _____ 2 _____ 3 _____ O ₂ TANK 1 _____ 2 _____ 3 _____	16MM, 35MM AND 70MM CAMERA MAGAZINES <table border="1"> <thead> <tr> <th>CAMERA</th> <th>MAGAZINES</th> <th>TYPE</th> <th>(DECAL COLOR)</th> <th>STOWAGE LOCATION</th> </tr> </thead> <tbody> <tr> <td>EL</td> <td>N</td> <td>UV</td> <td>(RED)</td> <td>A1</td> </tr> <tr> <td></td> <td>O</td> <td>CEX</td> <td>(BLUE)</td> <td>A8</td> </tr> <tr> <td></td> <td>R</td> <td>VHBW</td> <td>(SILVER/BLACK)</td> <td>A1</td> </tr> <tr> <td></td> <td>S</td> <td>LBW</td> <td>(SILVER)</td> <td>A1</td> </tr> <tr> <td>NK</td> <td>V</td> <td>VHBW</td> <td>(SILVER/BLACK)</td> <td>B2</td> </tr> <tr> <td>DAC</td> <td>L</td> <td>BW164</td> <td>(SILVER)</td> <td>A1</td> </tr> </tbody> </table>	CAMERA	MAGAZINES	TYPE	(DECAL COLOR)	STOWAGE LOCATION	EL	N	UV	(RED)	A1		O	CEX	(BLUE)	A8		R	VHBW	(SILVER/BLACK)	A1		S	LBW	(SILVER)	A1	NK	V	VHBW	(SILVER/BLACK)	B2	DAC	L	BW164	(SILVER)	A1
CAMERA	MAGAZINES	TYPE	(DECAL COLOR)	STOWAGE LOCATION																																		
EL	N	UV	(RED)	A1																																		
	O	CEX	(BLUE)	A8																																		
	R	VHBW	(SILVER/BLACK)	A1																																		
	S	LBW	(SILVER)	A1																																		
NK	V	VHBW	(SILVER/BLACK)	B2																																		
DAC	L	BW164	(SILVER)	A1																																		
189:20	EAT PERIOD MSFN CMDS: (AOS +61 MIN) DSE REWIND MSFN CMDS: (AOS +69 MIN) DSE RECORD VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)	GAMMA RAY* X-RAY ALPHA PART LASER ALTM	189:40 M S F N 189:50 190:00																																			

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-301

CHANGE B

CSM FLIGHT PLAN

190:00
(P20)
(5.0°DB)
(11101)
(X1111)

0₂ HEATERS 3 (1) - AUTO
0₂ HEATERS 1&2 (2) - OFF

EAT PERIOD

CMC MODE - FREE
P52 (OPTION 3)
(LIFT-OFF ORIENT)

190:10

190:20

REV 58

P20, CMC MODE - AUTO
GDC ALIGN
VERIFY ORDEAL

CMC MODE - FREE
V22 N79 (+000.50)
CMC MODE - AUTO

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM4/EL/250/VHBW,IVL (f5.6,1/125,∞) (6 FR)
PCM CABLE
MAG (R) _____, FR # _____

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

P52 IMU REALIGN

N71: _____
N05: _____
N93: _____
X _____
Y _____
Z _____
GET _____

190:30

190:30
(P20)
(0.5°DB)
(11101)
(X1111)

GAMMA RAY BOOM - RETRACT tb-BP (~3:15)/GRAY then OFF (CTR)

TERMINATOR PHOTOS

EL - ON (T START - 2:40)
PAN CAMERA: MODE - STBY, PWR - ON tb-BP (2 SEC)/GRAY,
MONO, EXPOSURE - NORMAL (CTR)

EL - OFF (T START - 1:00)
MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY)
PAN CAMERA MODE - OPR tb-BP (2 SEC)/GRAY (T START)
MAP CAMERA ON - ON (T START)
MAP CAMERA IMAGE MTN - INCR (tb-BP)/ON

RECORD FR # _____
PAN CAMERA - STEREO (T START +3:20)

MAP CAMERA PHOTO PAD

T-START: _____
T-STOP: _____

ACQ MSFN HGA: MAN, WIDE P -5, Y 25
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

CONFIGURE DSE (STOP/CMD RESET/REWIND)(AOS +2 MIN)

MSFN CUE: (~AOS +4 MIN)
HGA AUTO

PAN CAMERA
MAP CAMERA

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

REPORT: GYRO TORQUING ANGLES
(FROM P52 AT 190:20)

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM/EL/80/LBW (f2.8,1/250,∞)(14 FR)
MAG (S) _____, FR # _____

MSFN CMDS: (AOS +10 MIN)
DSE PLAYBACK

PAN CAMERA - MONO (T START +19 MIN)

ORBITAL SCIENCE PHOTOS

PAN CAMERA: EXPOSURE - DECREASE (2 MIN) then NORMAL

PHOTO TGT 14 (S. CRISIUM) (D9,D10-P14)
CM3 (f2.8,1/250,∞) 14 FR AT 25 SEC INTERVALS

190:40

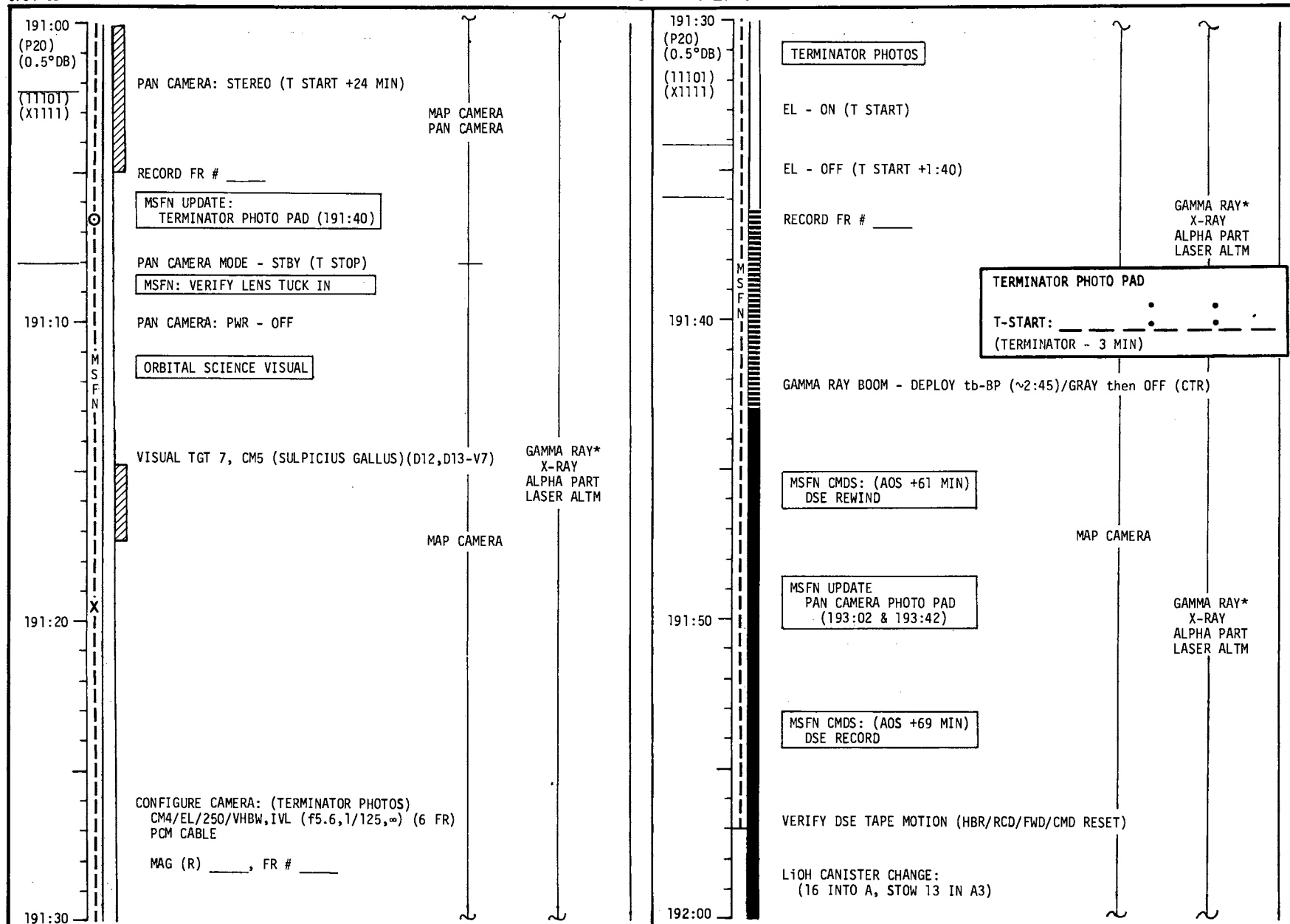
190:50

191:00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-302

0734 CDT

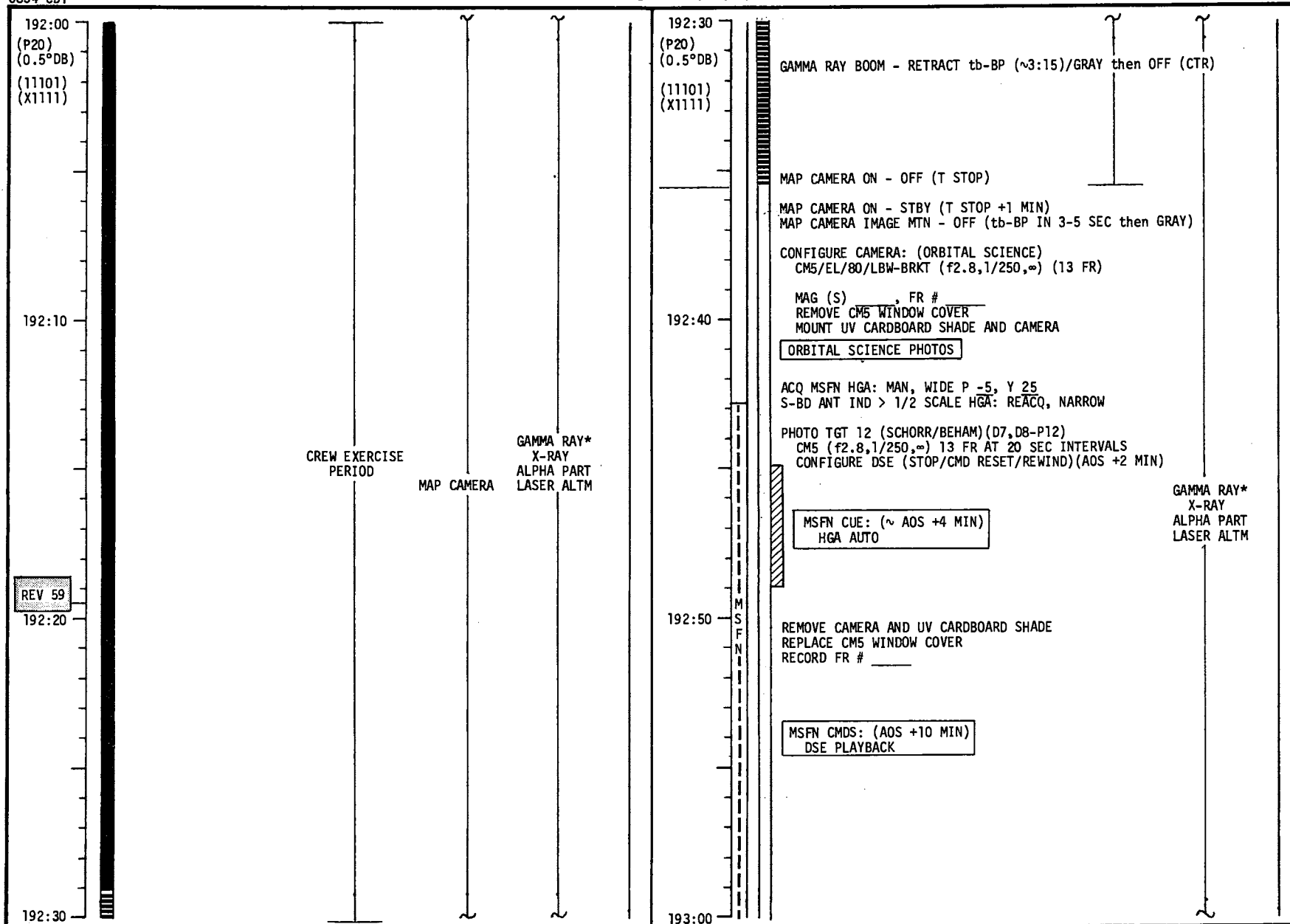
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-303

CHANGE B

CSM FLIGHT PLAN



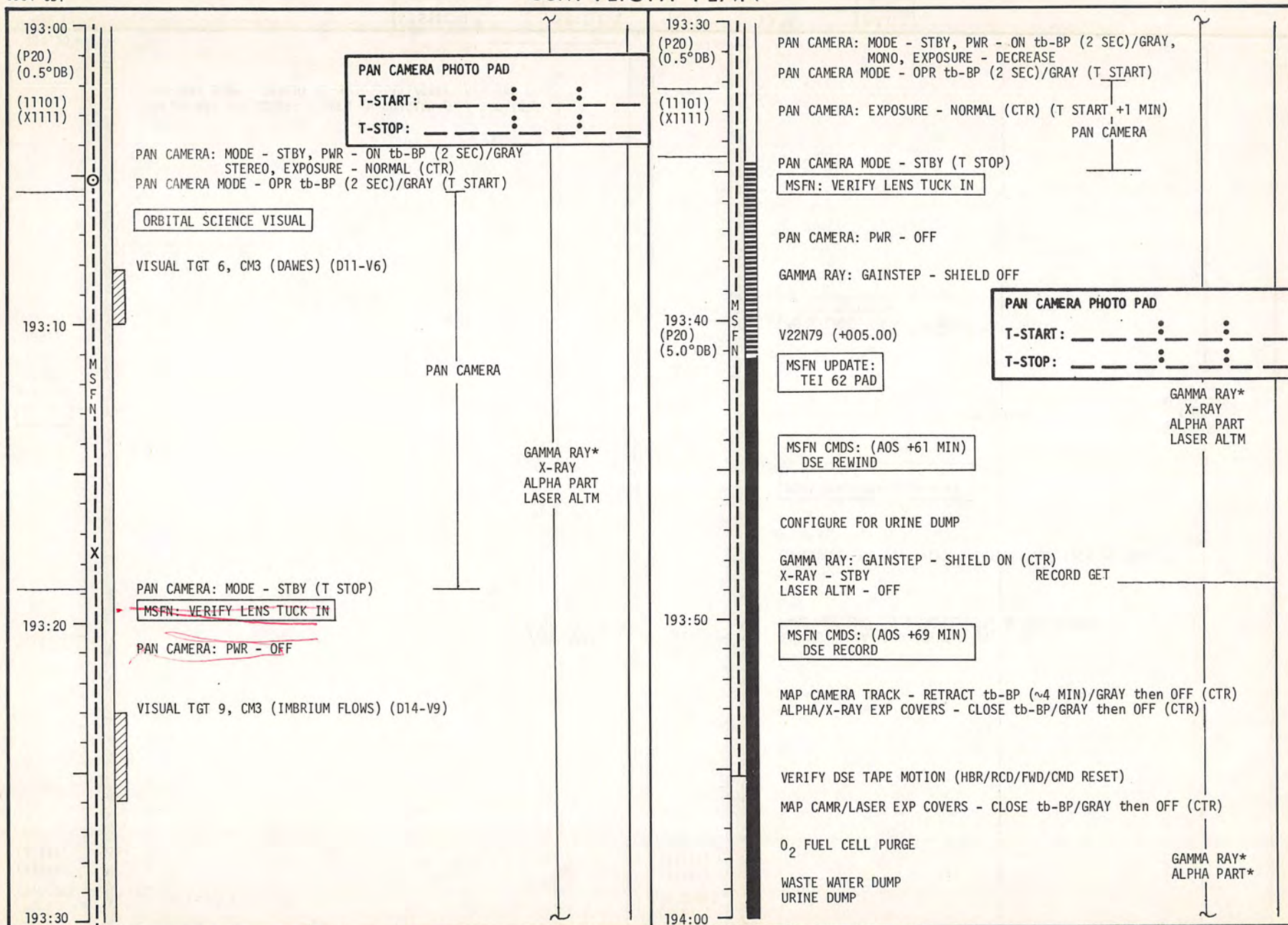
REV 59

192:20

192:30

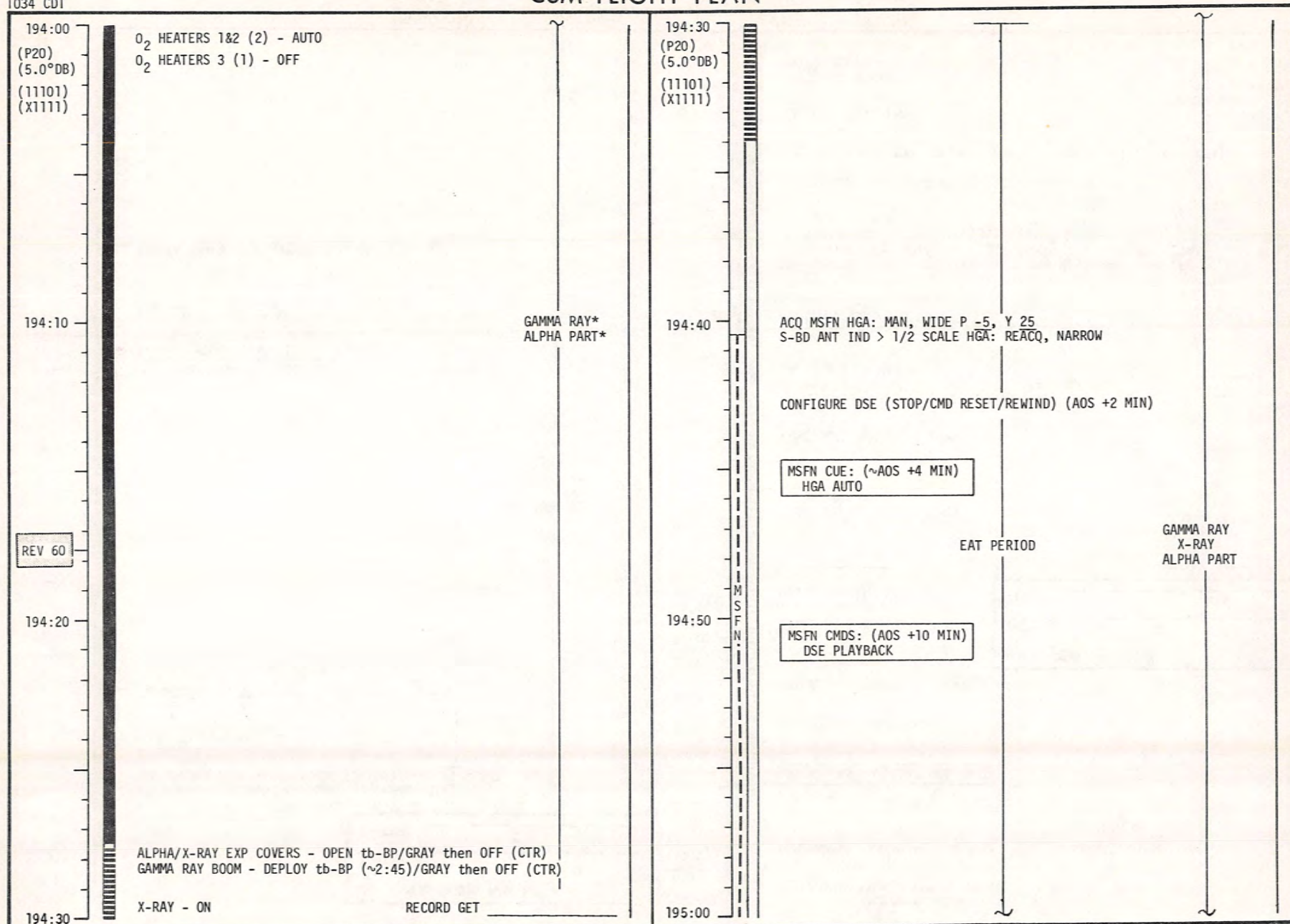
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-304

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-305

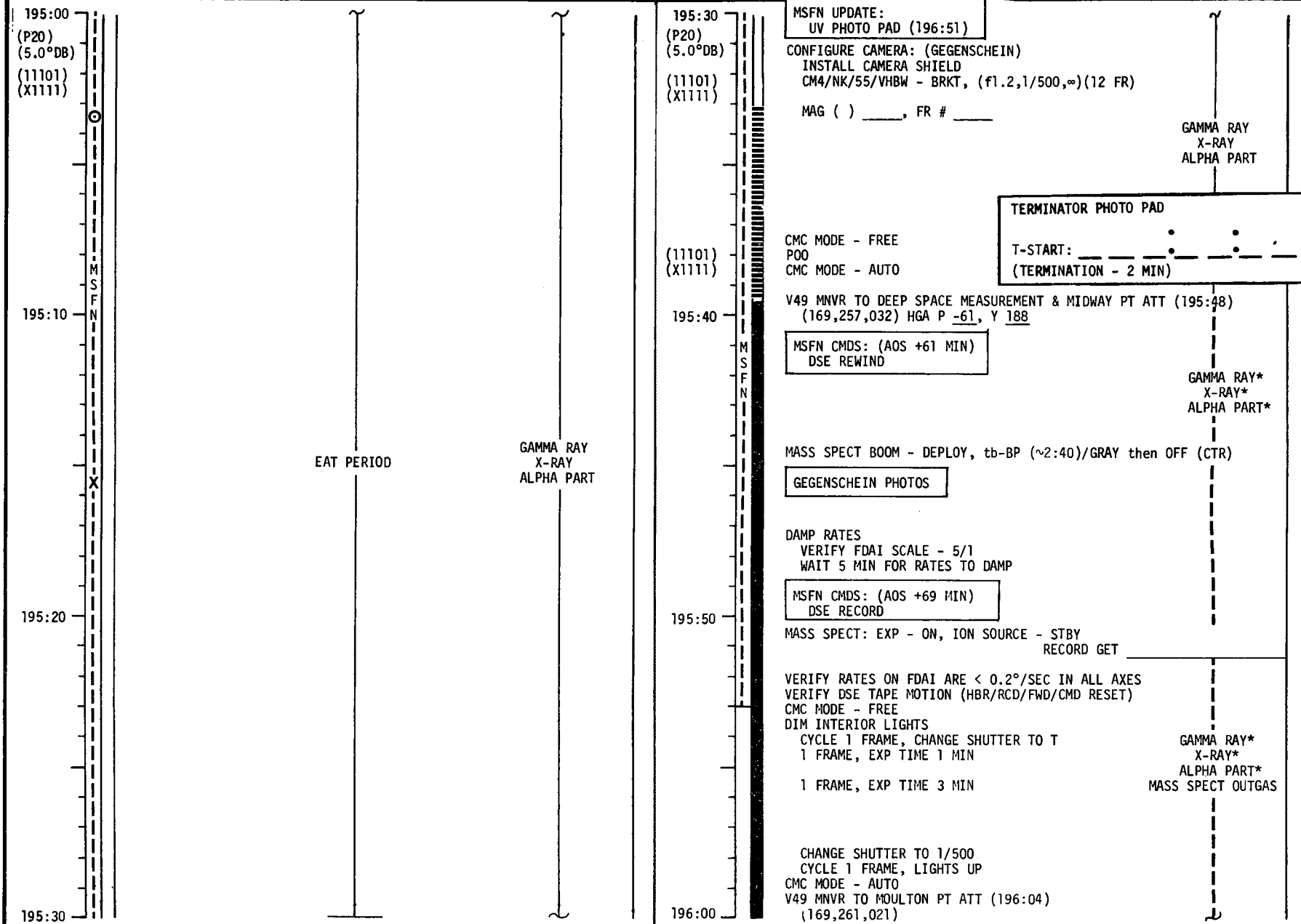
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-306

1134 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-307

CSM FLIGHT PLAN

196:00 (11101) (X1111) DAMP RATES VERIFY FDAI SACLE 5/1 WAIT 5 MIN FOR RATES TO DAMP 196:10 VERIFY RATES ON FDAI ARE < 0.2°/SEC IN ALL AXES CMC MODE - FREE DIM INTERIOR LIGHTS CYCLE 1 FRAME, CHANGE SHUTTER TO T 1 FRAME, EXP TIME 1 MIN 1 FRAME, EXP TIME 3 MIN CHANGE SHUTTER TO 1/500 CYCLE 1 FRAME, LIGHTS UP CMC MODE - AUTO RECORD FR # _____ REV 61 196:20 STOW CAMERA REMOVE CAMERA SHIELD 196:30 P20 OPT 5 (+X FWD SIM ATT) (196:37) N78 (+090.00) (+052.25) (+180.00) N79 (+005.00) N70 (00050) (143,000/034,000) MASS SPECT: MULT - LOW, DSCRM - HIGH, ION SOURCE - ON RECORD GET _____	196:30 (P20) (5.0°DB) (11101) (X1111) MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR) MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR) GAMMA RAY* X-RAY* ALPHA PART* MASS SPECT* LASER ALTM - ON RECORD GET _____ ACQ MSFN HGA: MAN, WIDE P -5, Y 25 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW CONFIGURE DSE (STOP/CMD RESET/REWIND) (AOS +2 MIN) MSFN CUE: (~AOS +4 MIN) HGA AUTO UV PHOTOS - LUNAR MARIA CONFIGURE CAMERA: (UV - LUNAR MARIA) CM5/EL/105/UV,BRKT,CONT (f4.3,1/250,∞) (10 FR) RINGSIDE MAG (N) _____, FR # _____ REMOVE R12 FLIGHT DATA FILE STOWAGE BOX REMOVE CM5 WINDOW COVER, MOUNT UV CARDBOARD SHADE & CAMERA MSFN CMDS: (AOS +10 MIN) DSE PLAYBACK MSFN UPDATE TEI 64 PAD 196:40 196:50 197:00 CMC MODE - FREE 2 FRAMES FILTER 4, CHANGE SHUTTER TO 1/60 (T START) 2 FRAMES FILTER 1, CHANGE SHUTTER TO 1/20 2 FRAMES FILTER 2, CHANGE SHUTTER TO 1/60 2 FRAMES FILTER 3, CHANGE SHUTTER TO 1/250 2 FRAMES FILTER 4 CMC MODE - AUTO RECORD FR # _____ REMOVE CAMERA & UV CARDBOARD SHADE NOTE COMMENTS AS TO CONDITION OF WINDOW 5 REPLACE CM5 WINDOW COVER
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MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-308

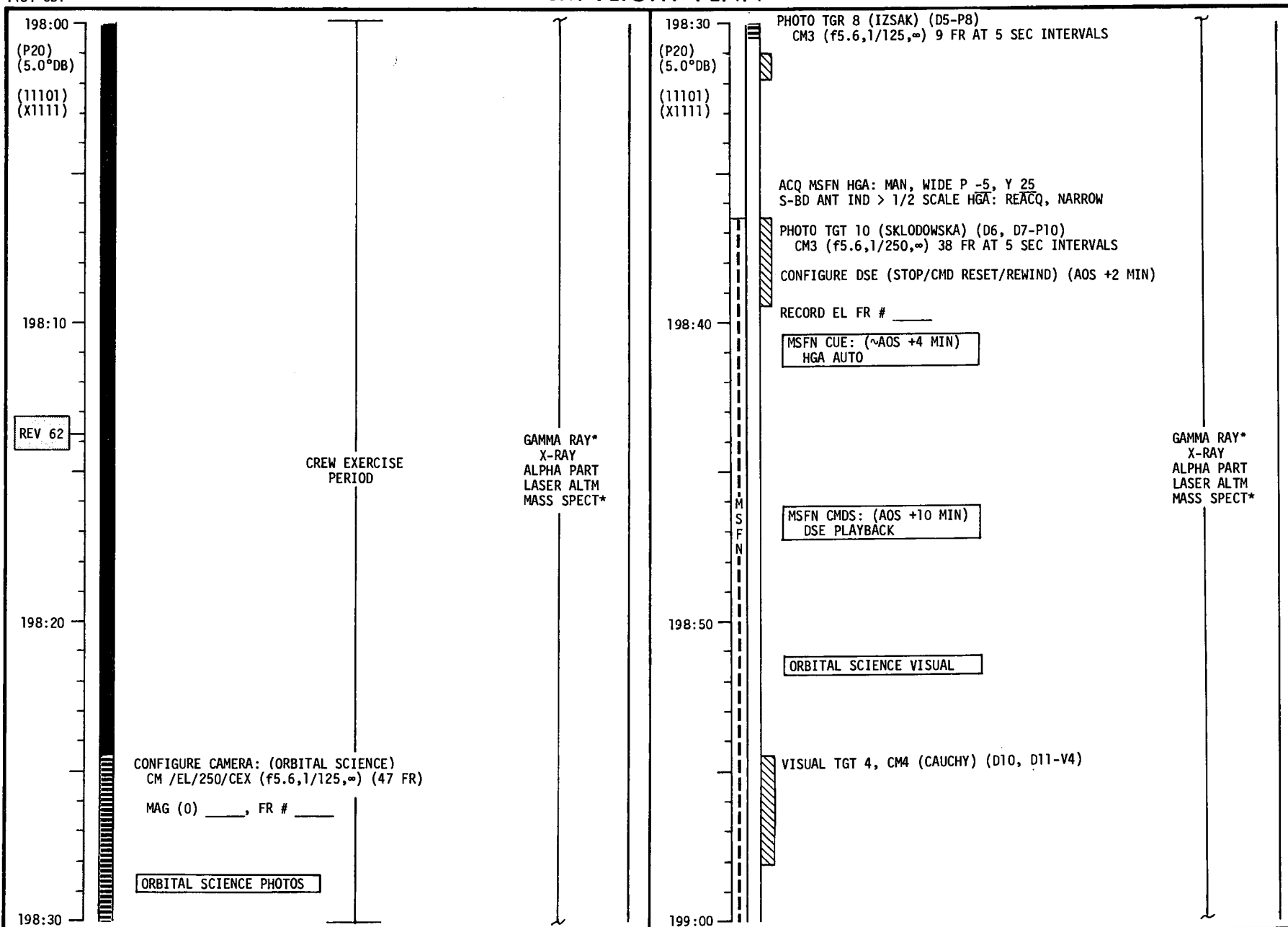
CSM FLIGHT PLAN

197:00	(P20) (5.0°DB) (11101) (X1111) LIGHT FLASH EXPERIMENT: UNSTOW EYE SHIELD SET KITCHEN TIMER TO 60 MIN 00:00 - DON EYE SHIELD, REPORT GET TO MSFN CREWMAN FACING LUNAR SURFACE PAN CAMERA: MODE - STBY, PWR - ON tb-BP (2 SEC)/GRAY REPORT THE FOLLOWING TO MSFN: FREQUENCY OF FLASHES DESCRIPTION OF FLASHES CREWMAN HEAD POSITION WRT LUNAR SURFACE CREWMAN HEAD POSITION WRT TO SC AXES PAN CAMERA: PWR - OFF (MSFN CUE) CSM SYSTEMS CHECKLIST CONTAMINATION CONTROL PAGE S/1-16 ORBITAL SCIENCE VISUAL VISUAL TGT 10, CM5 (HARBINGER MTS) (D16-V10) VISUAL TGT 11, CM5 (ARISTARCUS PLATEAU) (D16-V11)	197:30	(P20) (5.0°DB) (11101) (X1111) MSFN CMDS: (AOS +61 MIN) DSE REWIND CMC MODE - FREE P52 (OPTION 3) (LIFT-OFF ORIENT) REPORT: GYRO TORQUING ANGLES P20, CMC MODE - AUTO MSFN CMDS: (AOS +69 MIN) DSE RECORD 50:00 - CONTINUE LIGHT FLASHING OBSERVATIONS EXCEPT CREWMAN FACING AWAY FROM MOON GDC ALIGN VERIFY ORDEAL VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET) 60:00 - TERMINATE LIGHT FLASHING OBSERVATIONS REMOVE AND STOW EYE SHIELD
197:10		197:40	GAMMA RAY* X-RAY ALPHA PART LASER ALTM MASS SPECT* GAMMA RAY* X-RAY ALPHA PART LASER ALTM MASS SPECT*
197:20		197:50	P52 IMU REALIGN N71: _____ N05: _____ N93: _____ X _____ Y _____ Z _____ GET _____

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-309

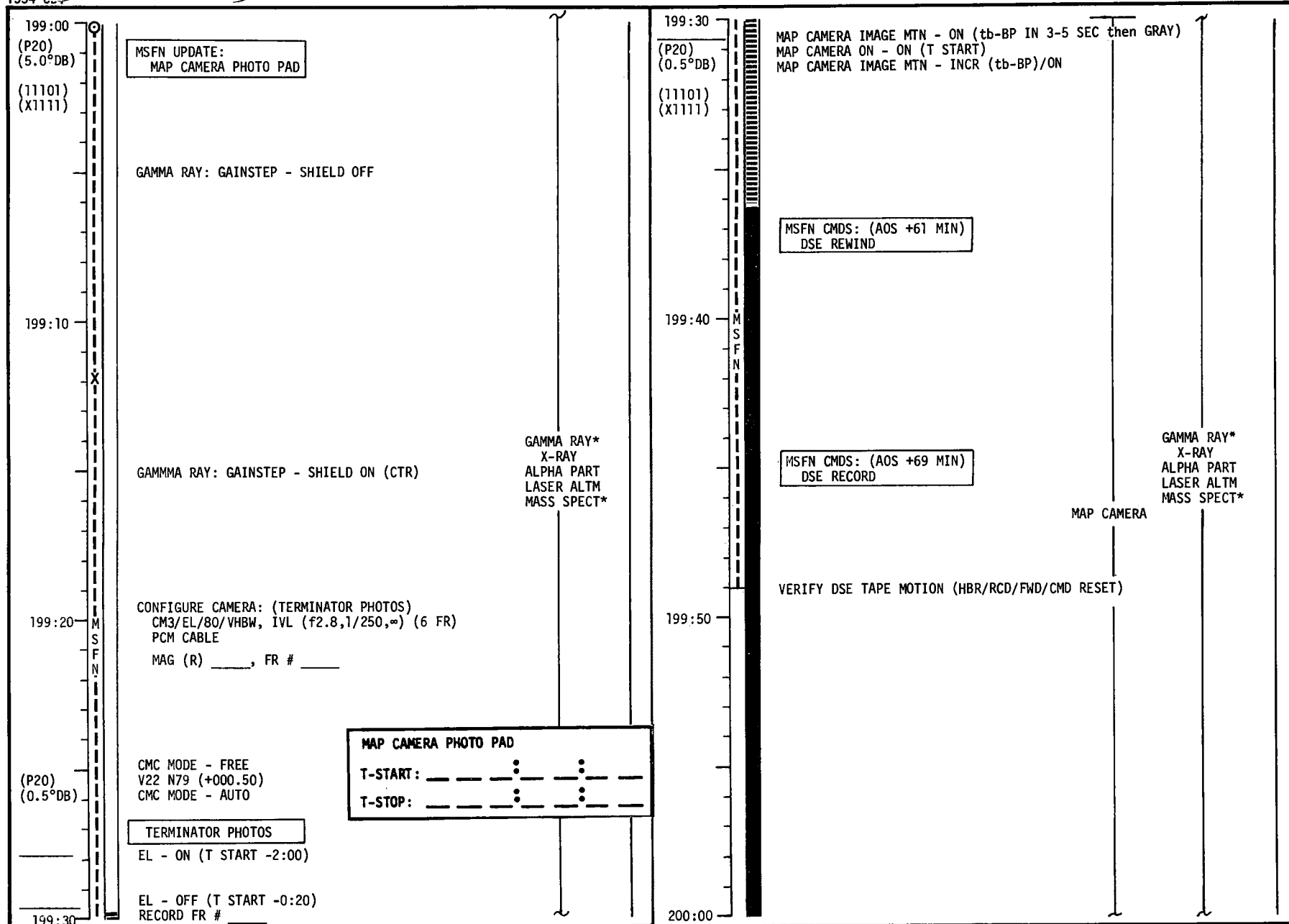
1434 CDT

CSM FLIGHT PLAN



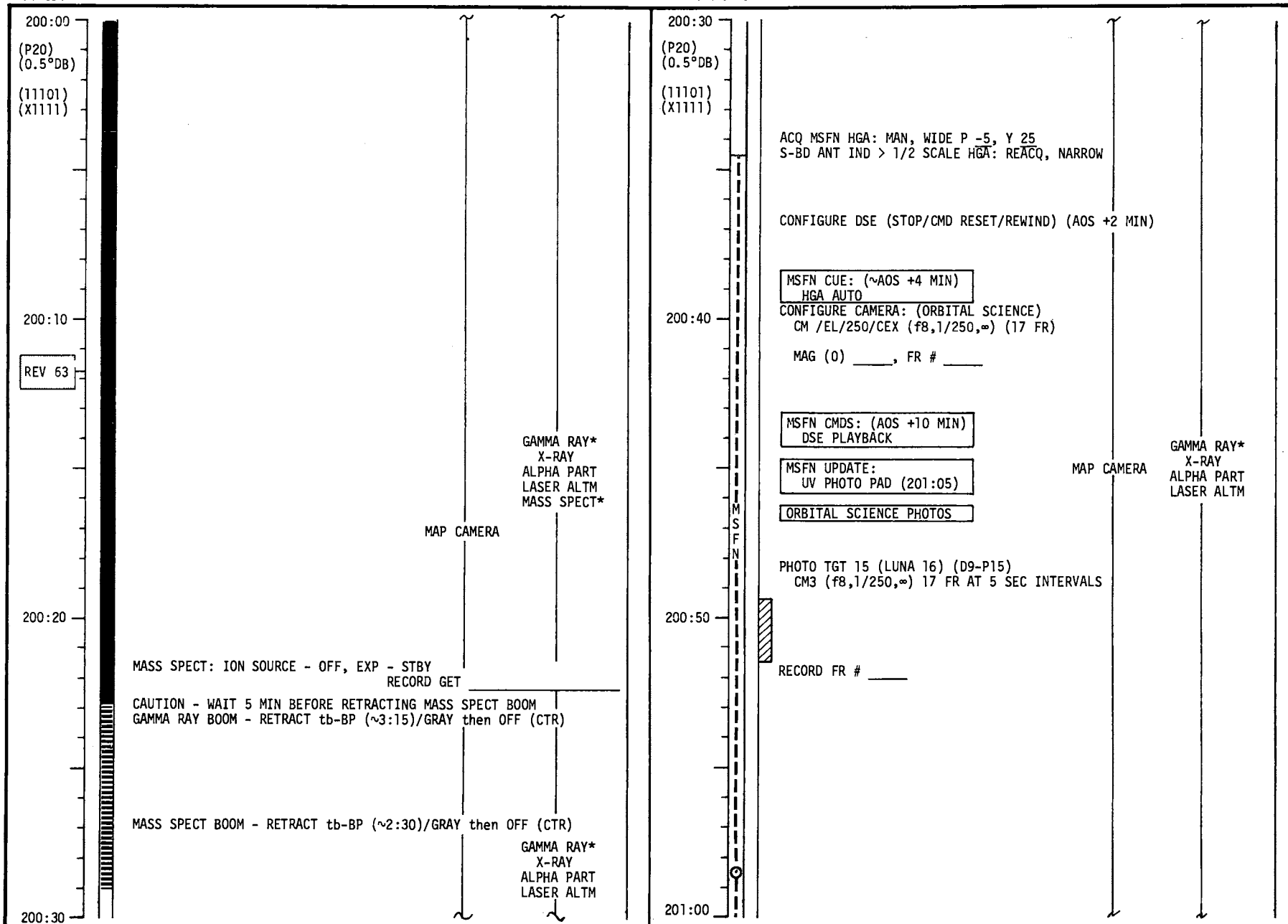
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-310

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-311

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-312

1734 CDT

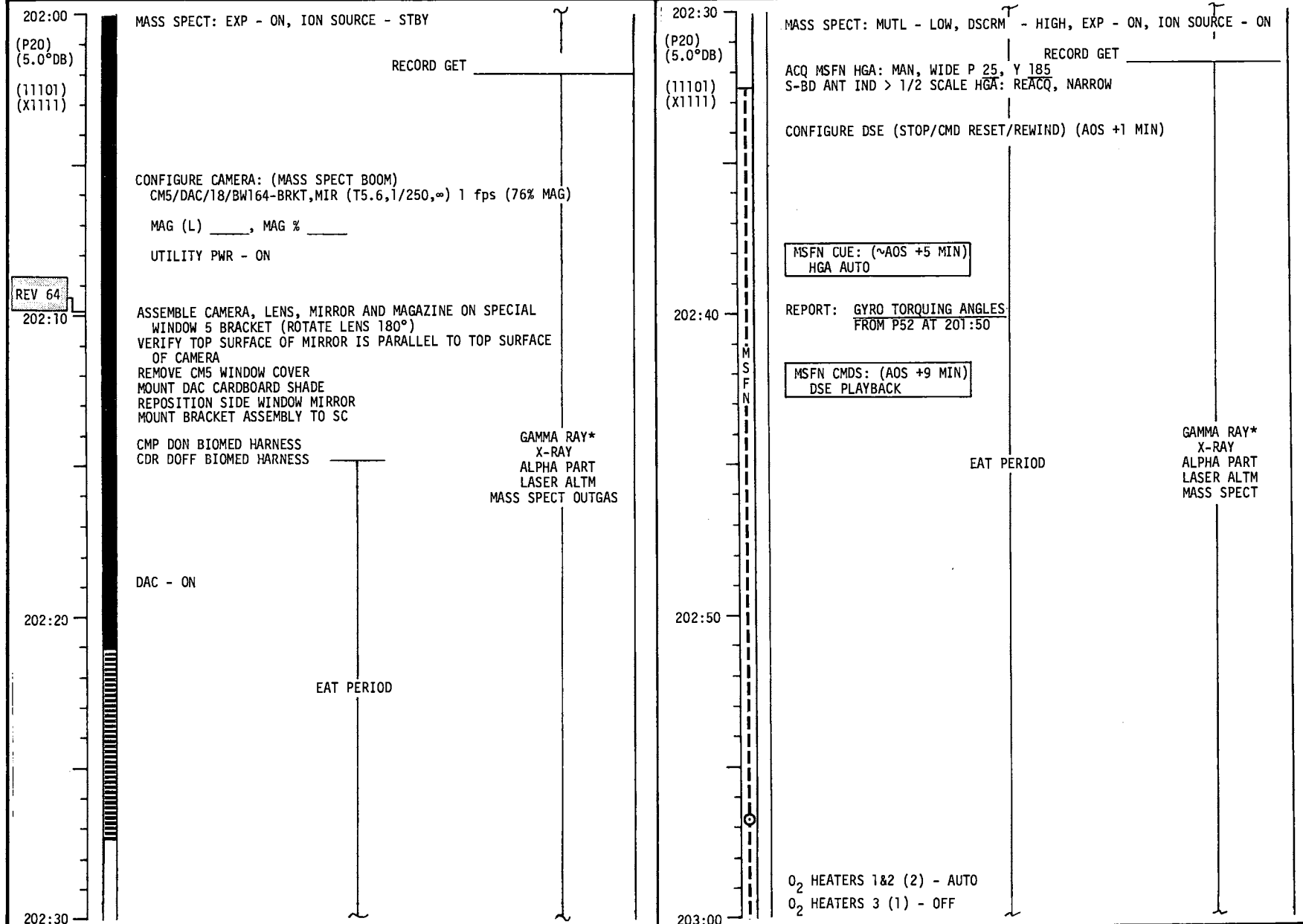
CSM FLIGHT PLAN

201:00 (P20) (0.5°DB)	CONFIGURE CAMERA: (UV - LUNAR TERRA) CM5/EL/105/UV,BRKT,CONT (f8,1/250,∞) (10 FR) RINGSLIDE MAG (N) _____, FR # _____ REMOVE RT2 FLIGHT DATA FILE STOWAGE BOX REMOVE CM5 WINDOW COVER, MOUNT UV CARDBOARD SHADE AND CAMERA	201:30 (P20) (0.5°DB)	MAP CAMERA ON - STBY (T STOP +1 MIN) MAP CAMERA IMAGE MTN - OFF (tb-BP IN 3-5 SEC then GRAY)
(11101) (X1111)	UV PHOTO PAD T-START: _____ (5° E)	(11101) (X1111)	MANUALLY ROLL CCW 40°
	UV PHOTOS - LUNAR TERRA		MSFN CMDS: (AOS +61 MIN) DSE REWIND
	CMC MODE - FREE 2 FRAMES FILTER 4, CHANGE SHUTTER TO 1/60 (T START) 2 FRAMES FILTER 1, CHANGE SHUTTER TO 1/15 2 FRAMES FILTER 2, CHANGE SHUTTER TO 1/60 2 FRAMES FILTER 3, CHANGE SHUTTER TO 1/250 2 FRAMES FILTER 4 CMC MODE - AUTO		P20 OPT 5 (-X FWD SIM ATT) (201:50) V23N78 (+000.00) V22N79 (+005.00) (323,180/343,000)
201:10	RECORD FR # _____ REMOVE CAMERA AND UV CARDBOARD SHADE NOTE COMMENTS AS TO CONDITION OF WINDOW 5 REPLACE CM5 WINDOW COVER		P52 IMU REALIGN N71: _____ N05: _____ N93: _____ X _____ Y _____ Z _____ GET _____
			MSFN CMDS: (AOS +69 MIN) DSE RECORD
			VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)
201:20	CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM3/EL/250/VH BW,IVL (f5.6,1/125,∞) (6 FR) PCM CABLE MAG (R) _____, FR # _____		CMC MODE - FREE P52 (OPTION 3) (LIFT-OFF ORIENT)
	TERMINATOR PHOTOS		P20, CMC MODE - AUTO GDC ALIGN VERIFY ORDEAL MASS SPECT BOOM - DEPLOY tb-BP(~2:45)/GRAY then OFF (CTR) GAMMA RAY BOOM - DEPLOY tb-BP(~2:40)/GRAY then OFF (CTR)
	EL - ON (T STOP -2:00) EL - OFF (T STOP -0:20) MAPPING CAMERA ON - OFF (T STOP)		GAMMA RAY* X-RAY* ALPHA PART* LASER ALTM*
201:30	RECORD FR # _____	202:00	

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-313

CHANGE B

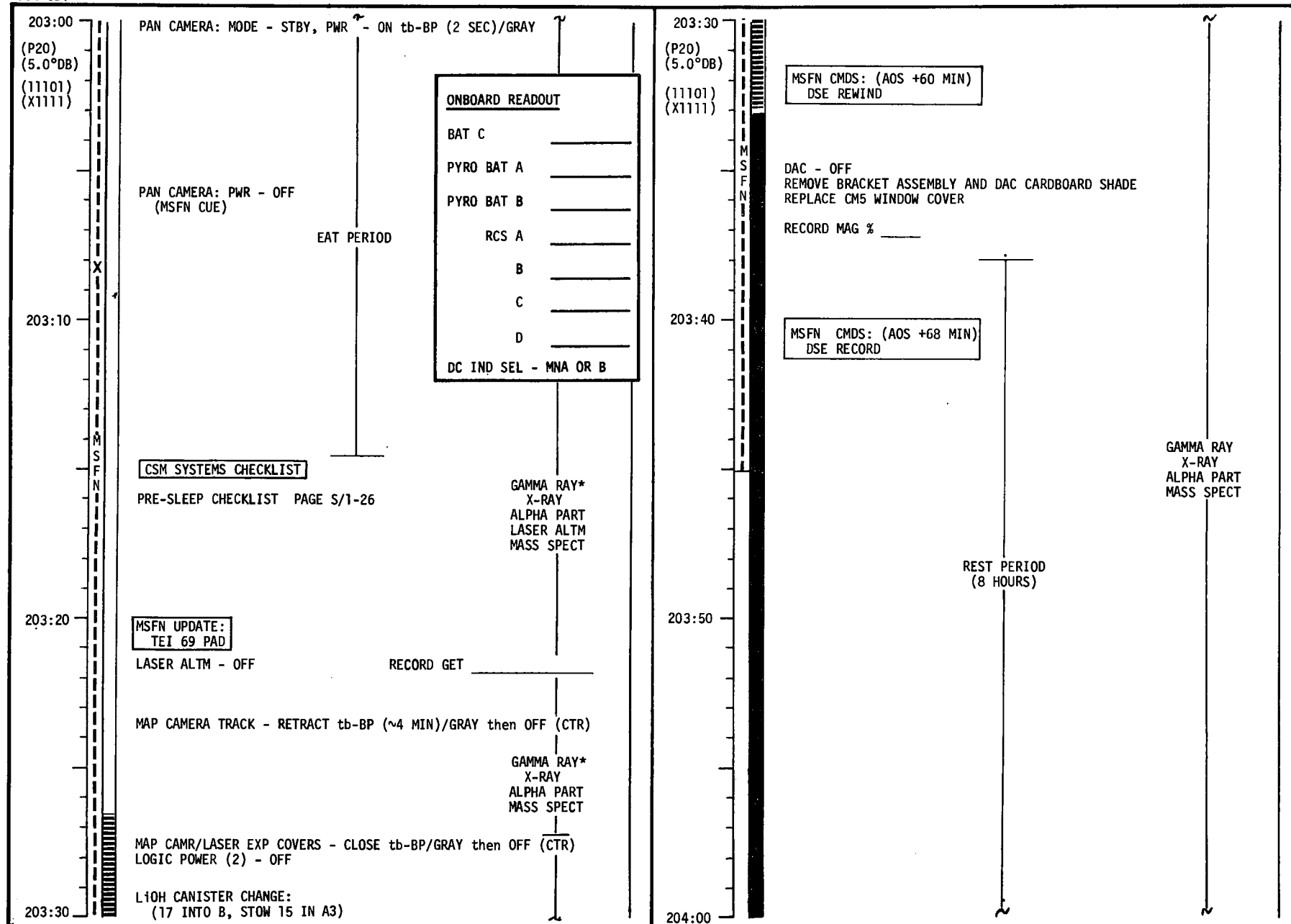
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-314
CHANGE B			

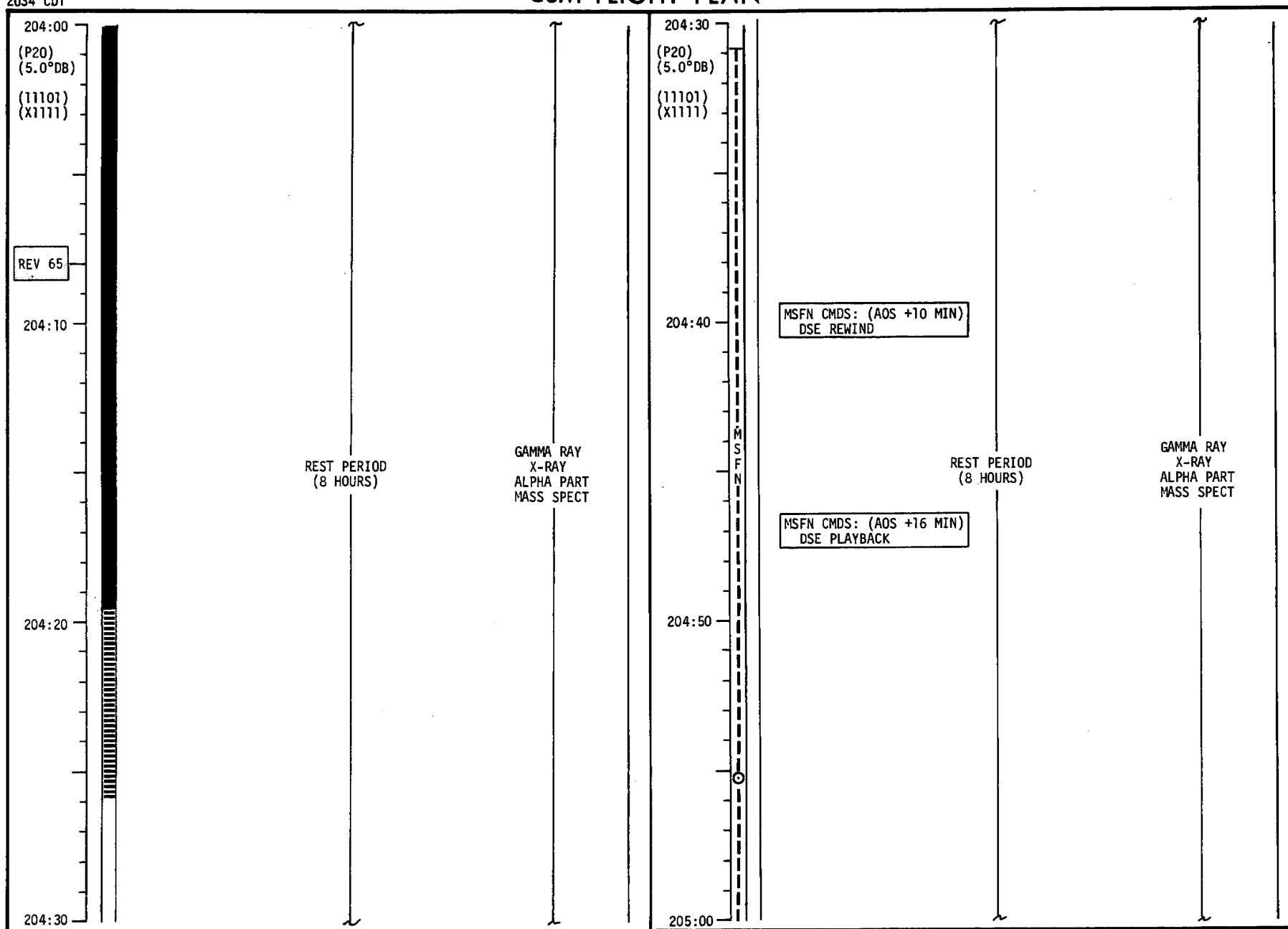
1934 CDT

CSM FLIGHT PLAN



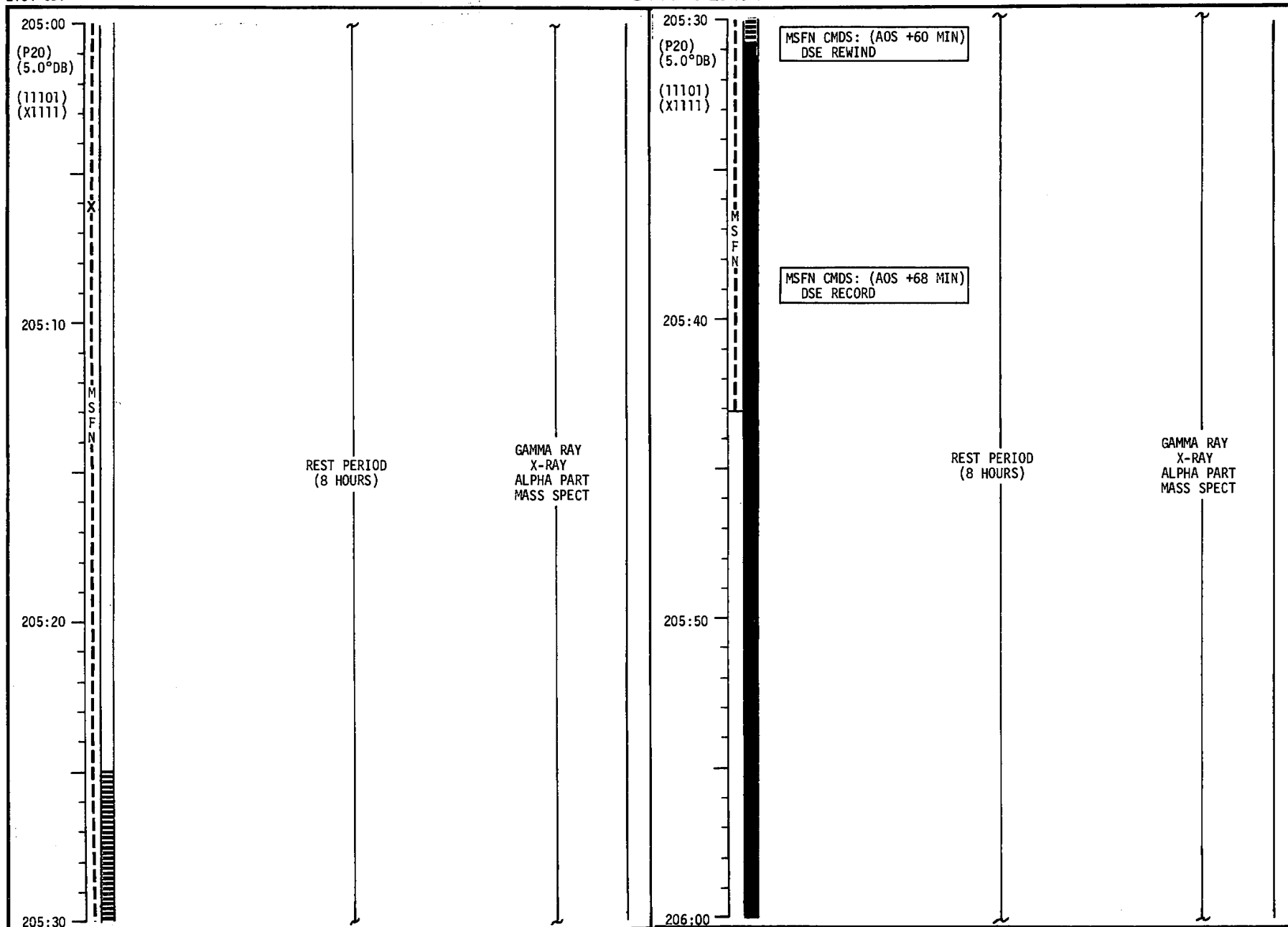
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-315

CSM FLIGHT PLAN



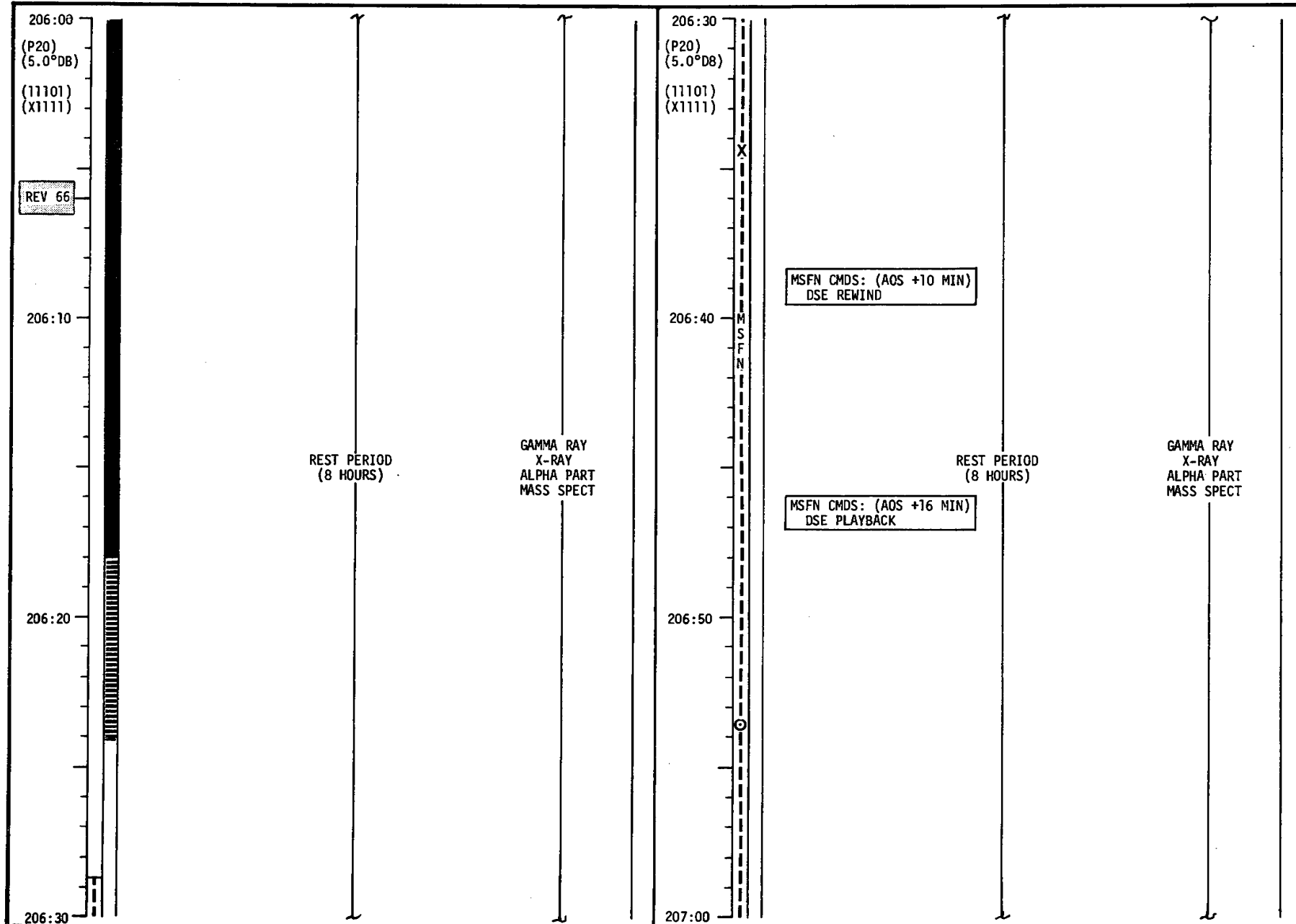
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-316

CSM FLIGHT PLAN



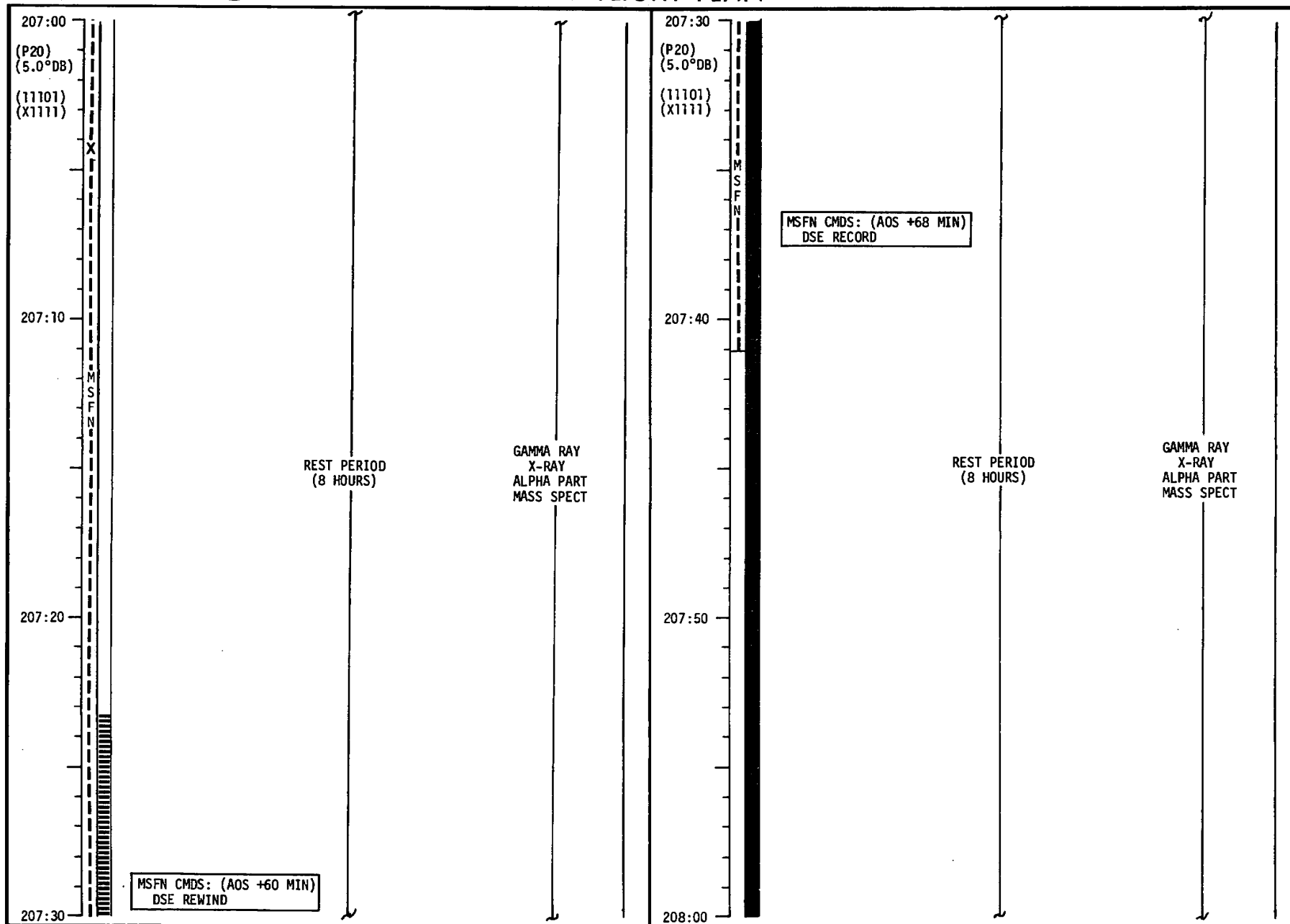
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-317

CSM FLIGHT PLAN



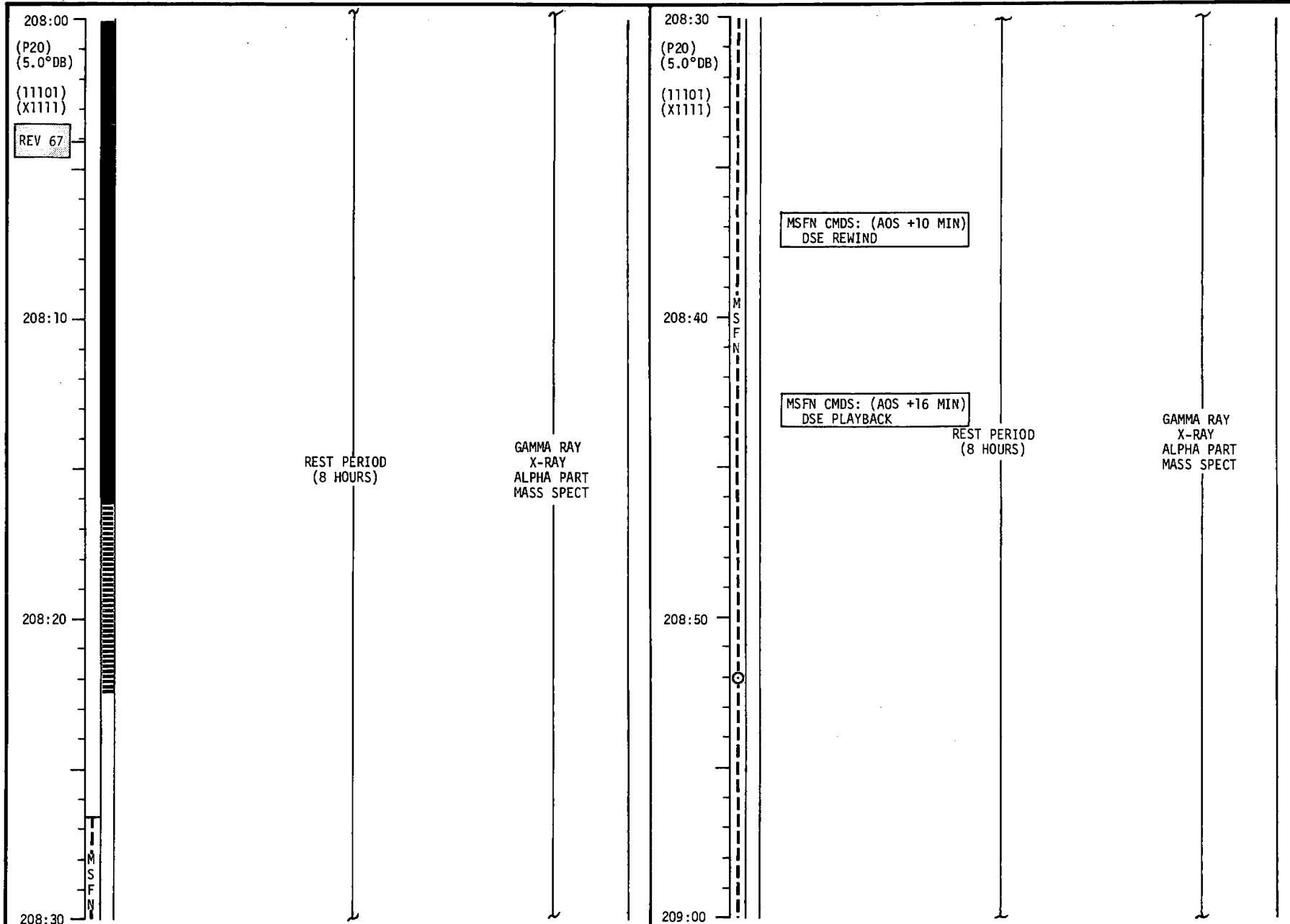
MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-318

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-319

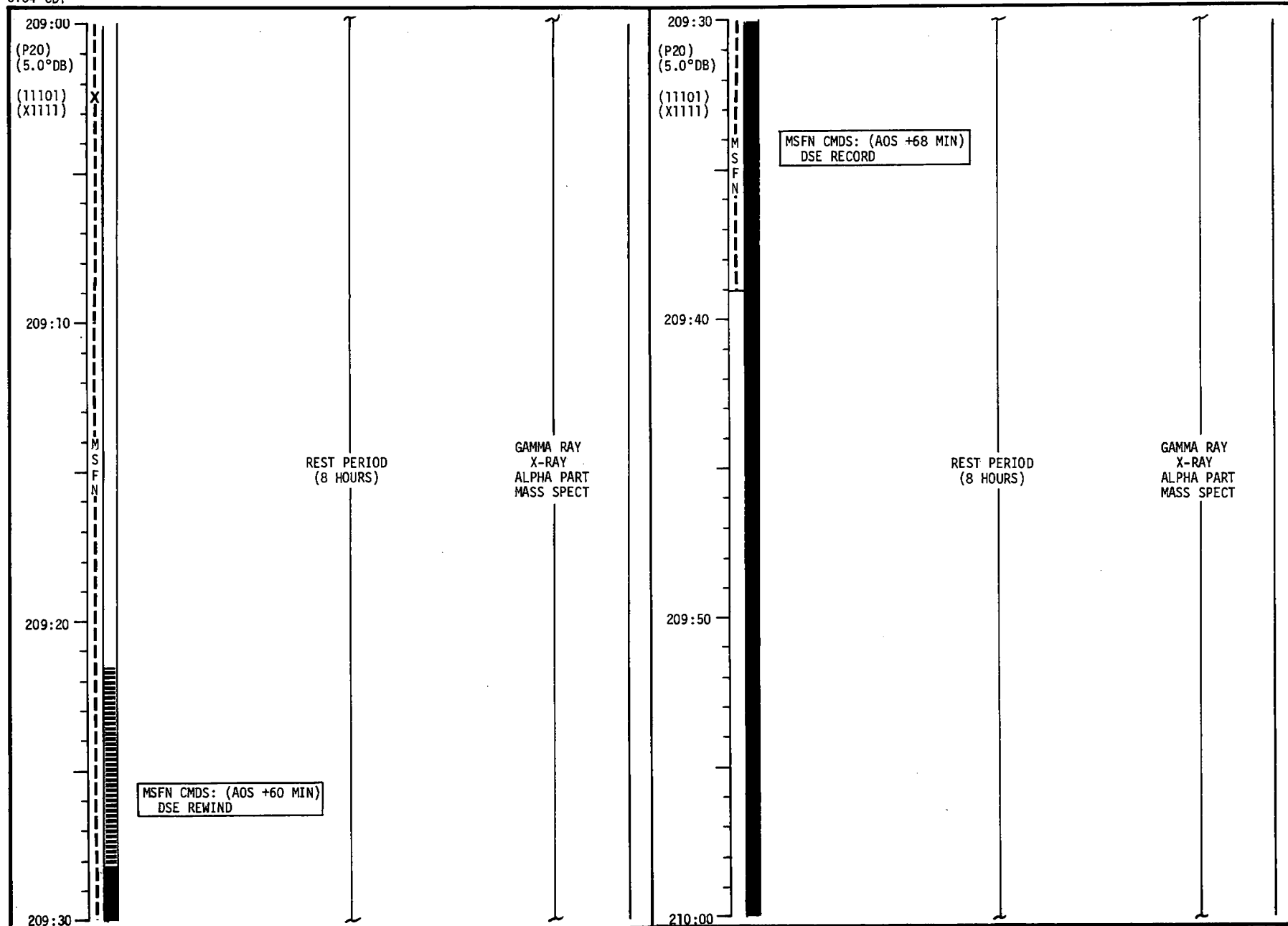
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-320

0134 CDT

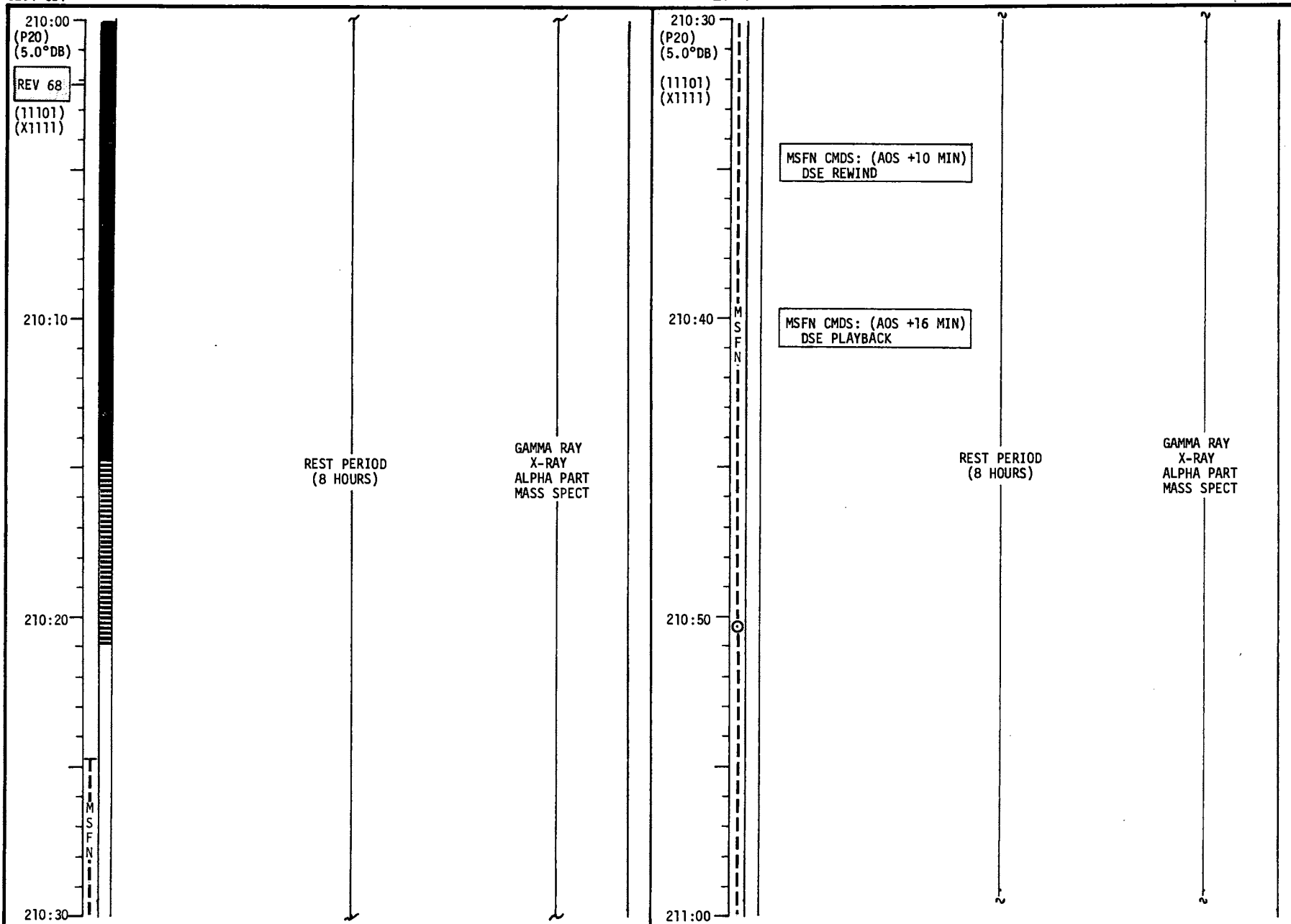
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-321

0234 CDT

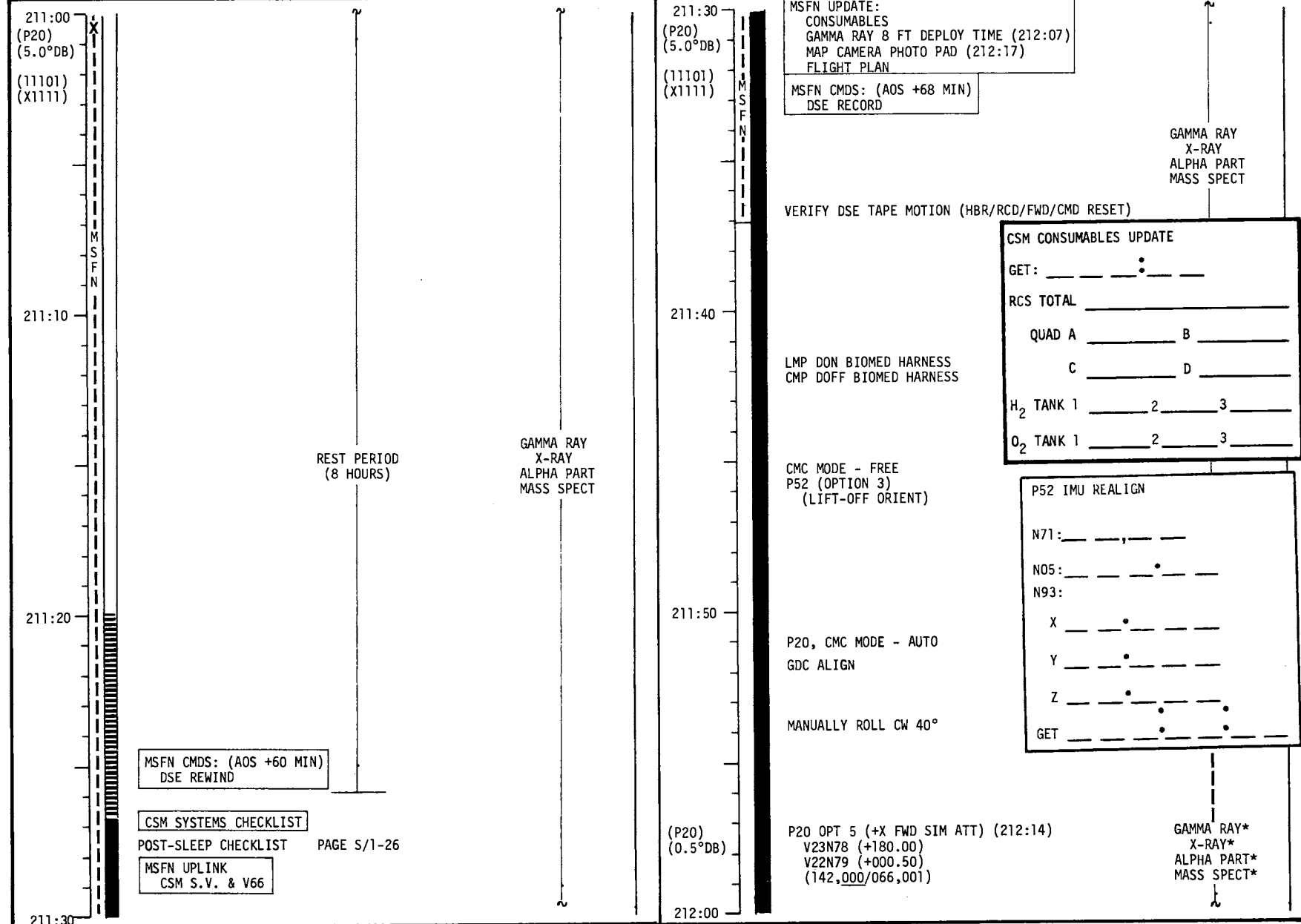
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-322

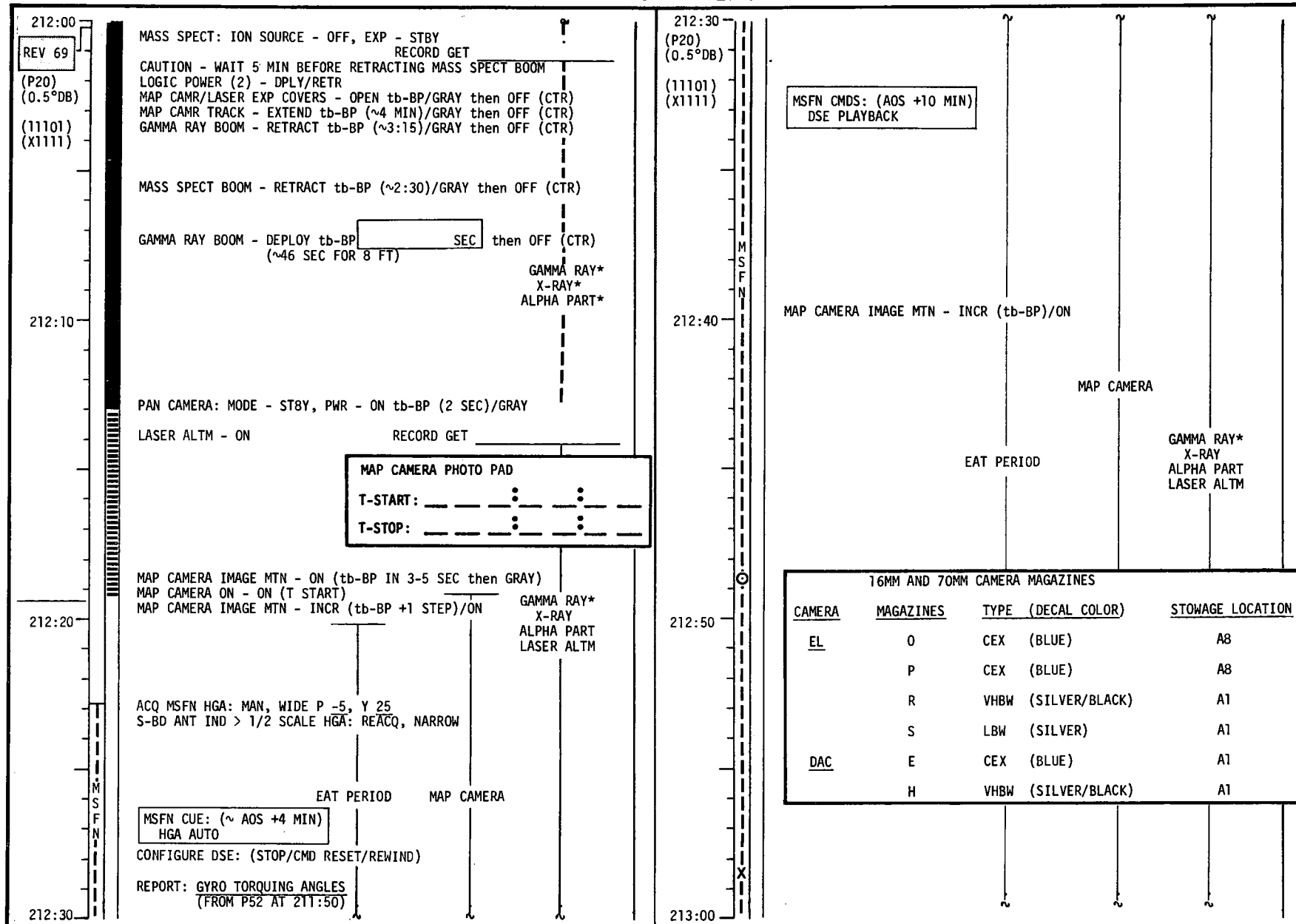
0334 CDT

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-323

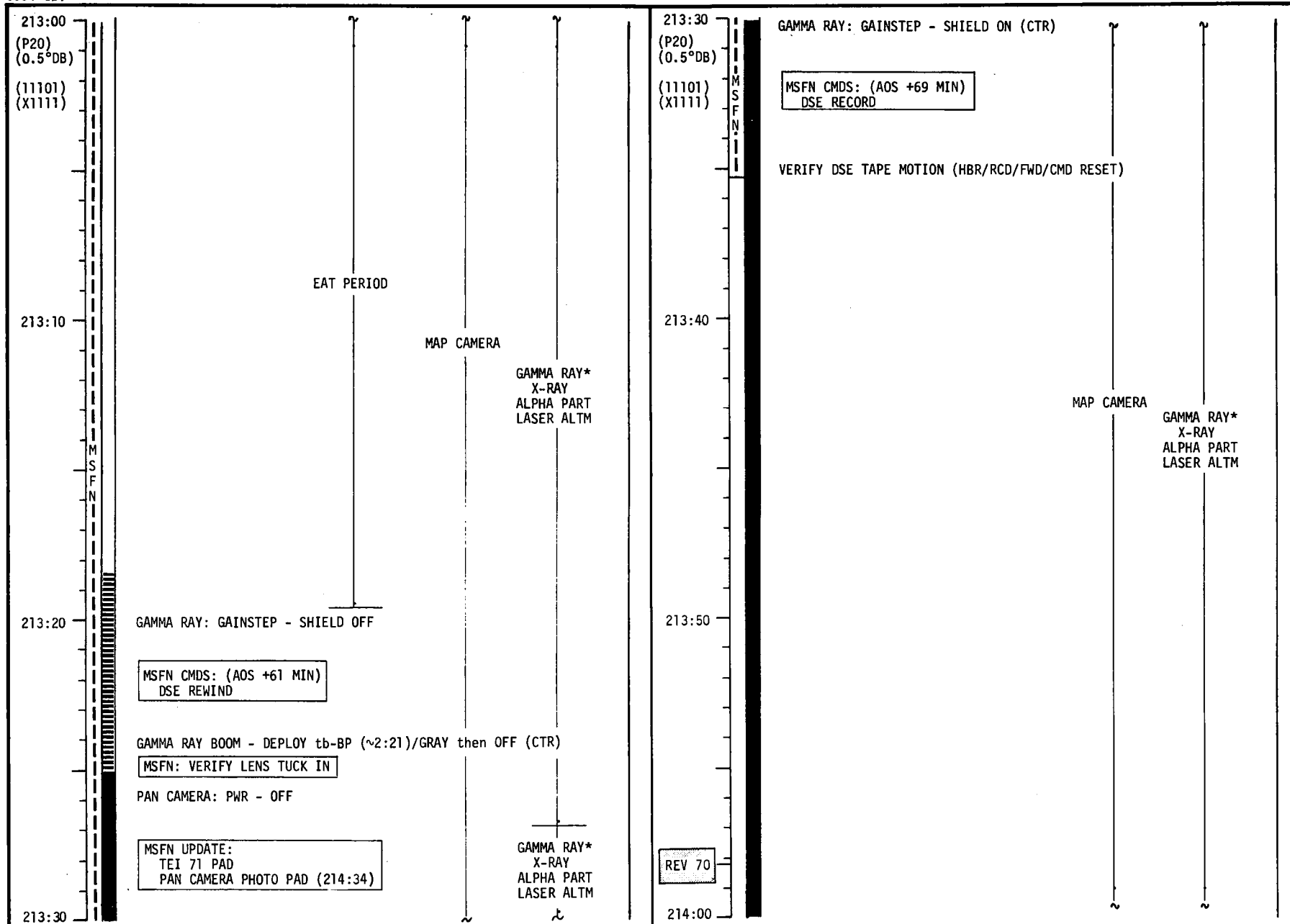
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-324

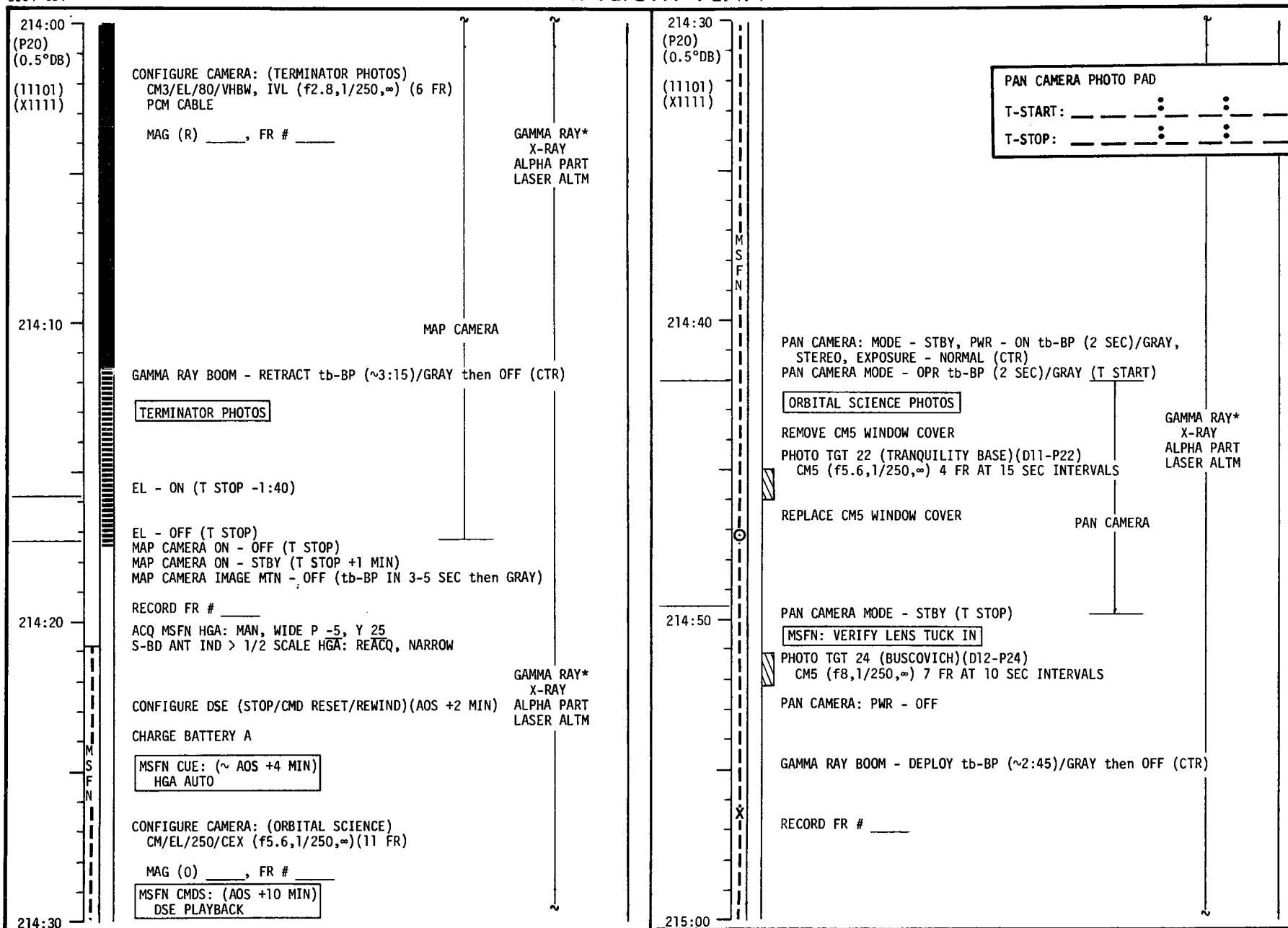
CHANGE B

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-325

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-326

CSM FLIGHT PLAN

0734

215:00 (P20) (0.5°DB) (11101) (X1111)	CONFIGURE CAMERA: (ORBITAL SCIENCE) CM5/EL/80/LBW-BRKT (f2.8,1/125,∞)(15 FR) MAG (S) _____, FR # _____ MSFN UPDATE: SOLAR CORONA PHOTO PAD (216:04) MAP CAMERA PHOTO PAD (216:27) ORBITAL SCIENCE PHOTOS REMOVE CM5 WINDOW COVER MOUNT UV CARDBOARD SHADE AND CAMERA PHOTO TGT 28 (ARISTARCHUS PLATEAU)(D16-P28) CM5 (f2.8,1/125,∞) 15 FR AT 20 SEC INTERVALS REMOVE CAMERA AND UV CARDBOARD SHADE REPLACE CM5 WINDOW COVER RECORD FR # _____ MSFN CMDS: (AOS +61 MIN) DSE REWIND P00 V49 MNVR TO DEEP SPACE MEASUREMENT ATT (215:38) (281,130,001) LASER ALTM - OFF LiOH CANISTER CHANGE: (18 INTO A, STOW 16 INTO A3) MSFN CMDS: (AOS +69 MIN) DSE RECORD	215:30 (11101) (X1111)
215:10	GAMMA RAY* X-RAY ALPHA PART LASER ALTM	215:40
215:20	RECORD GET GAMMA RAY* X-RAY* ALPHA PART*	215:50
(11101) (X1111)	REVISION 71	216:00

VERIFY DSE TAPE MOTION (HRB/RCD/FWD/CMD RESET)

GAMMA RAY*
X-RAY*
ALPHA PART*

CONFIGURE CAMERAS: (SUNRISE SOLAR CORONA)
CM4/DAC/18/VHBW - BRKT, MIR (T1,1/500,∞) 24 fps (7% MAG)

MAG (H) _____, MAG % _____
UTILITY PWR - ON
DAC - ON AT 24 fps FOR 2 SEC (COVER LENS)
CHANGE SHUTTER TO 1/125 AND FRAME RATE TO 1 fps

CM4/EL/80/VHBW - BRKT (f2.8,1/500,∞) (9 FR)
PCM CABLE

MAG (R) _____, FR # _____
COVER LENS, CYCLE 1 FRAME
CHANGE SHUTTER TO 1 SEC

P20 OPT 5 (40°S. OBLIQUE SIM PHOTO & SOLAR CORONA ATT)(216:03)
N78 (+270.00)
(+087.75)
(+180.00)
N79 (+000.50)
N70 (00050)
(182,000/089,001)

SUNRISE SOLAR CORONA

MISSION	EDITION	DATE	PAGE
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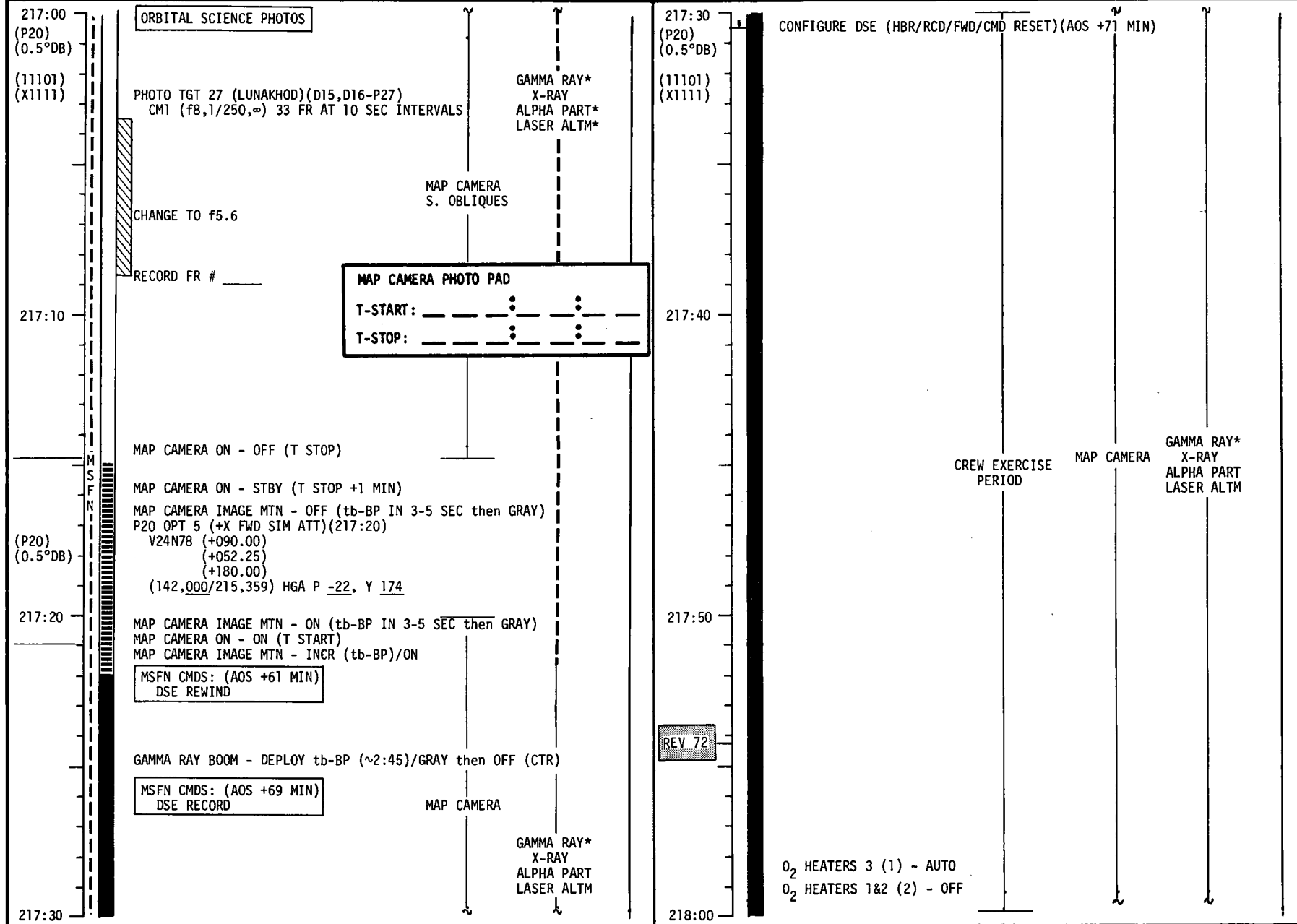
CSM FLIGHT PLAN

216:00 (P20) (0.5°DB)	GAMMA RAY BOOM RETRACT tb-BP (~3:15)/GRAY then OFF (CTR)!	216:30 (P20) (0.5°DB)	MSFN CMDS: (AOS +12 MIN) DSE PLAYBACK
(11101) (X1111)	LASER ALTM - ON RECORD GET	(11101) (X1111)	
	0:00 - MISSION TIMER: RESET/START (T START) (SR -8 MIN)		
	SOLAR CORONA PHOTO PAD (SR)		
	CMC MODE - FREE DIM INTERIOR LIGHTS		
	5:00 - DAC - ON		
	6:40 - CHANGE DAC SHUTTER TO 1/500		
	6:50 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/4		
	7:00 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/8		
	7:10 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/15		
	7:20 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/30		
	7:30 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/60		
	7:40 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/125		
	7:50 - 1 FRAME EL, CHANGE EL SHUTTER TO 1/500		
	8:00 - DAC - OFF		
216:10	REMOVE EL FROM WINDOW, COVER LENS AND CYCLE 1 FRAME REMOVE DAC FROM WINDOW, COVER LENS, AND RUN AT 24 fps AND SHUTTER SPEED 1/500 FOR 2 SEC, LIGHTS UP CMC MODE - AUTO RECORD MAG % ; RECORD FR # CONFIGURE CAMERA: (ORBITAL SCIENCE) CM/EL/250/CEX (f8,1/250,∞) (48 FR) MAG (P) , FR #	216:40	PAN CAMERA: MODE - STBY, PWR - ON tb-BP (2 SEC)/GRAY MAP CAMERA S. OBLIQUES
	MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY) MAP CAMERA ON - ON (T START) MAP CAMERA IMAGE MTN - INCR (tb-BP +3 STEPS)/ON		
	ACQ MSFN HGA: MAN, WIDE P 3, Y 18 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW		
216:20	ORBITAL SCIENCE PHOTOS	216:50	GAMMA RAY* X-RAY* ALPHA PART* LASER ALTM*
	REMOVE CM5 WINDOW COVER		PAN CAMERA: POWER - OFF (MSFN CUE)
	PHOTO TGT 13 (HUMBOLT)(D7-P13) CM5 (f8,1/250,∞) 15 FR AT 15 SEC INTERVALS		
	MAP CAMERA S. OBLIQUES		
	CONFIGURE DSE (STOP/CMD RESET/REWIND) REPLACE CM5 WINDOW COVER		
	MAP CAMERA PHOTO PAD		
	MSFN CUE: (~ AOS +6 MIN) HGA AUTO		
	T-START: : : T-STOP: : : : : : : : :		
216:30		217:00	MSFN UPDATE: MAP CAMERA PHOTO PAD (217:10) TERMINATOR PHOTO PAD (218:07) PAN CAMERA PHOTO PAD (218:39) TEI 73 PAD

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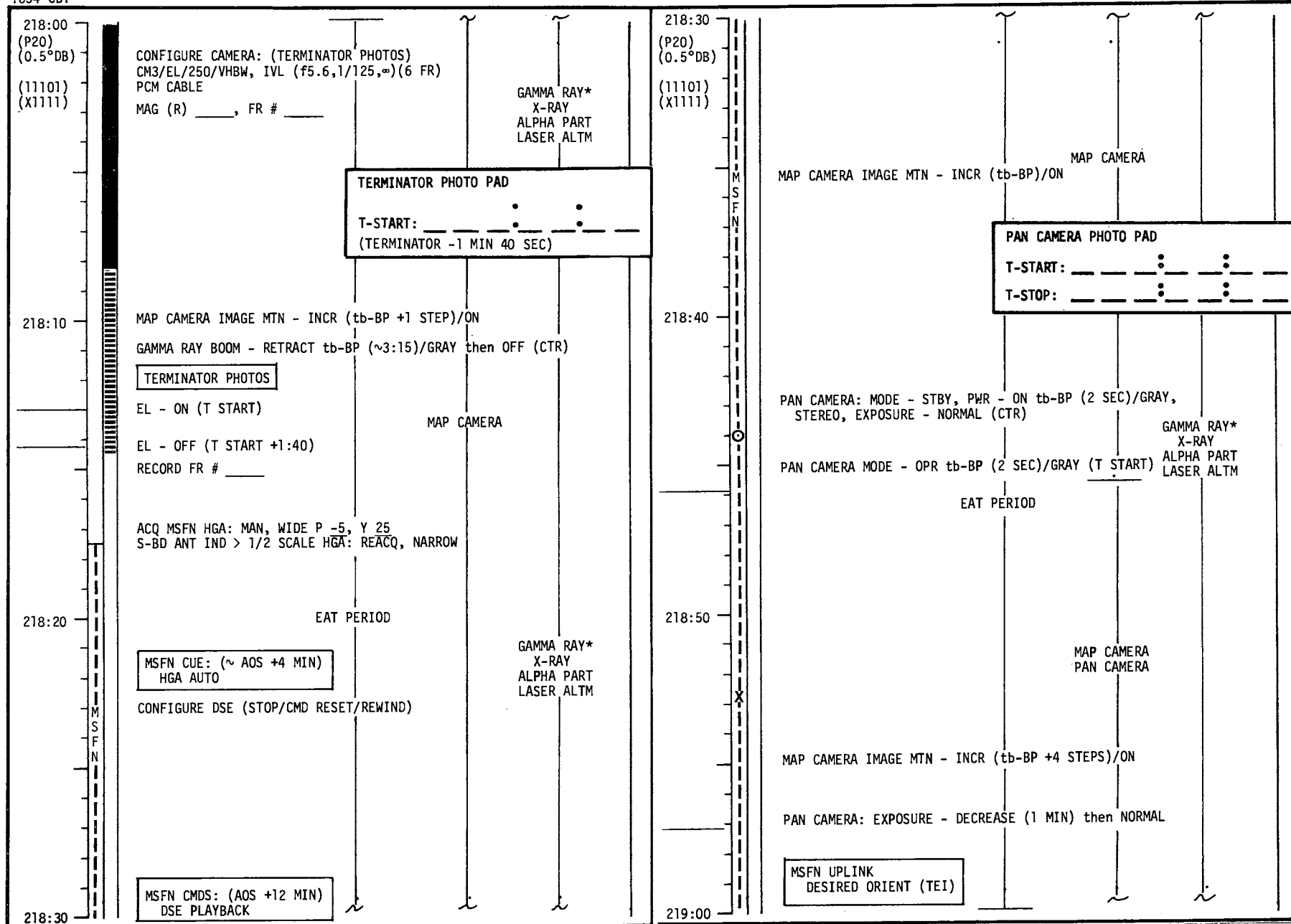
0934 CDT

CSM FLIGHT PLAN



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CSM FLIGHT PLAN



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CSM FLIGHT PLAN

219:00 (P20) (0.5°DB) (11101) (X1111)	MSFN UPDATE: TERMINATOR PHOTO PAD (220:10) PAN CAMERA: EXPOSURE + DECREASE (1 MIN) then NORMAL MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN)/GRAY then OFF (CTR) CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM3/EL/250/VHBW, IVL (f5.6,1/125,∞)(6 FR) PCM CABLE MAG (R) _____, FR # _____ TERMINATOR PHOTOS PAN CAMERA - MONO (T STOP -3:20) EL - ON (T STOP -2:00) EL - OFF (T STOP -0:40) MAP CAMERA ON - OFF (T STOP) PAN CAMERA MODE - STBY (T STOP) RECORD FR # _____ MSFN: VERIFY LENS TUCK IN MAP CAMERA ON - STBY (T STOP +1 MIN) MAP CAMERA IMAGE MTN - OFF (tb-BP IN 3-5 SEC then GRAY) PAN CAMERA: PWR - OFF MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR) MSFN CMDS: (AOS +63 MIN) DSE REWIND GAMMA RAY BOOM - DEPLOY tb-BP (~2:45)/GRAY then OFF (CTR) CMC MODE - FREE P52 (OPTION 3) (LIFT-OFF ORIENT) REPORT: <u>GYRO TORQUING</u> <u>ANGLES</u> P52 (OPTION 1) (TEI ORIENT) P20, CMC MODE - AUTO GDC ALIGN CONFIGURE DSE (HBR/RCD/FWD CMD RESET)(AOS +71 MIN)	219:30 (P20) (5.0°DB) (11101) (X1111) P20 OPT 5 (+X FWD SIM ATT) V22N79 (+005.00) 219:40 219:50 220:00
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MAP CAMERA
PAN CAMERA

GAMMA RAY*
X-RAY
ALPHA PART
LASER, ALTM

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____

REV 73

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CSM FLIGHT PLAN

220:00 (P20) (5.0°DB) (11101) (X1111)	TERMINATOR PHOTOS CONFIGURE CAMERA: (TERMINATOR PHOTOS) CM3/EL/250/VH BW, IVL (f5.6,/125,∞)(6 FR) PCM CABLE MAG (R) _____, FR # _____ TERMINATOR PHOTO PAD T-START: _____ (TERMINATOR -1 MIN 40 SEC)	220:30 (P20) (5.0°DB) (11101) (X1111)
220:10	EL - ON (T START) EL - OFF (T START +1:40) RECORD FR # _____ ACQ MSFN HGA: MAN, WIDE P -5, Y 25 S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW	220:40
220:20	MSFN CUE: (~ AOS +4 MIN) HGA AUTO CONFIGURE DSE (STOP/CMD RESET/REWIND) GAMMA RAY: GAINSTEP - SHIELD OFF MSFN UPDATE: SHAPE MNVR PAD (221:15) SUBSAT LAUNCH PAD (222:10) TEI 74 PAD (PRELIM)(223:15) MSFN UPLINK: CSM S.V. SHAPE TGT LOAD MSFN CMDS: (AOS +12 MIN) DSE PLAYBACK	220:50
220:30	GAMMA RAY: GAINSTEP - SHIELD ON (CTR)	221:00

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

GAMMA RAY*
X-RAY
ALPHA PART
LASER ALTM

GAMMA RAY EXP - OFF
X-RAY - OFF
α RAY/X DR - α OFF
LASER ALTM - OFF
MASS SPECT EXP - OFF
MAP CAMERA ON - STBY (VERIFY)
MAP CAMERA IMAGE MTN - OFF (VERIFY)
DATA SYSTEMS ON - OFF

RECORD GET _____

MAP CAMERA TRACK - RETRACK tb-BP (~4 MIN)/GRAY then OFF (CTR)
GAMMA RAY BOOM - RETRACT tb-BP (~3:15)/GRAY then OFF (CTR)
ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

MAP CAMR/LASER EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)
S-BD AUX TV - OFF (CTR)
LOGIC POWER (2) - OFF

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CSM FLIGHT PLAN

221:00

(P20)
(5.0°DB)

(11102)
(X1111)

P30; VERIFY SHAPE BURN TIG AND ΔV 's

CMC MODE - FREE
P00; V48 (11102)(X1111)

CMC MODE - AUTO

ENABLE ALL JETS

V49 MNVR TO SHAPE BURN PAD ATT (221:10)

HGA P -49, Y 155

BURN STATUS REPORT

X	X			.			ΔTIG
X	X			.			BT
							V _{gx}
TRIM							
X	X	X					R
X	X	X					P ⁻
X	X	X					Y
							V _{gx}
							V _{gy}
							V _{gz}
							ΔV _C
X				.			FUEL
X							Ox
X							UNBAL

MSFN CMDS:
DSE REWIND

V45

SET DET COUNTING UP TO
SHAPE BURN

cb SCS CONTR DIR 1 MNB - CLOSE

cb SCS CONTR DIR 2 MNA - CLOSE

DATA SYSTEMS ON - OFF

S-BD AUX TV - OFF (CTR)

H₂ PURGE LINE HEATERS - ON

SXT STAR CHECK

P40 (TRIM)

SHAPE BURN TABLE			
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC	<u>+10°</u>		TRIM X,Y AND Z TO < 0.2 FPS
TERMINATE	TERMINATE	BT + 1 SEC	IF (-) v_{gy} OR (+) v_{gz} ROLL AND USE -Z THRUSTERS

CSM SHAPE (350,068/229,006)

Trial	Control	MCI	AD
1	95	85	75
2	95	85	75
3	95	80	70
4	95	78	68
5	95	75	65

POO; REPORT: BURN STATUS

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/
RCD/FWD/CMD RESET)

TIG: 221:25:52
BT: 3.4 SEC
ΔVT: 64.2 FPS
ULLAGE: 4 JET, 13 SEC
ORBIT: 77.6 X 57.5

P30 MANEUVER

SET STARS		S	H	A	P	E	PURPOSE
		S	P	S	G	&	N
		+					WT N47
R	ALIGN		0	0		.	P TRIM N48
P	ALIGN		0	0		.	Y TRIM
Y	ALIGN	+	0	0			HRS GET
		+	0	0	0		MIN N33
		+	0			.	SEC
						.	ΔV_X N81
						.	ΔV_Y
						.	ΔV_Z
		X	X	X			R (350)
		X	X	X			P (229)
		X	X	X			Y (006)
		+				.	H _A N44
						.	H _P
		+				.	ΔVT
		X	X	X		.	BT
		X				.	ΔVC
		X	X	X	X		SXTS
		+				.	SFT
		+			.	0	0 TRN
		X	X	X			BSS
		X	X			.	SPA
		X	X	X		.	SXP

(P40)
(0.5°DB)

221:20

(11102)
(X1111)

221:30

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-333

CHANGE B

CSM FLIGHT PLAN

221:30
(11102)
(X1111)

CONFIGURE FOR URINE DUMP

P52 (OPTION 3)
(TEI ORIENT)

P52 IMU REALIGN

N71: _ _ _ , _ _ _

N05: _ _ _ . _ _ _

N93: _ _ _

X _ _ . _ _ _

Y _ _ . _ _ _

Z _ _ . _ _ _

GET _ _ . _ _ _

221:40

GDC ALIGN

H₂ & O₂ FUEL CELL PURGE

WASTE WATER DUMP
URINE DUMP

GAMMA RAY EXP - ON

X-RAY - ON

α RAY/X DR - α ON

MASS SPECT EXP - STBY

DATA SYSTEMS ON - ON

S-BD AUX TV - SCI

RECORD GET

CONFIGURE DSE: (HBR/RCD/FWD/CMD RESET)

221:50

H₂ PURGE LINE HEATERS - OFF

REV 74

GAMMA RAY*
X-RAY*
ALPHA PART*

222:00

cb O₂ TK 50W HTRS 1 MNB & 2 MNA (2) - CLOSE

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-334

CHANGE B

CSM FLIGHT PLAN

221:30
(11102)
(X1111)

CONFIGURE FOR URINE DUMP

P52 (OPTION 3)
(TEI ORIENT)

P52 IMU REALIGN

N71: _____, _____

N05: _____ • _____

N93: _____

X _____ • _____

Y _____ • _____

Z _____ • _____

GET _____ • _____

221:40

GDC ALIGN

H₂ & O₂ FUEL CELL PURGE

WASTE WATER DUMP

URINE DUMP

GAMMA RAY EXP - ON

X-RAY - STBY

α RAY/X DR - α ON

MASS SPECT EXP - STBY

DATA SYSTEMS ON - ON

S-BD AUX TV - SCI

PCM BIT RATE - HIGH

221:50

H₂ PURGE LINE HEATERS - OFF

REV 74

GAMMA RAY*
ALPHA PART*

222:00

O₂ HEATERS 1&2 (2) - AUTO

O₂ HEATERS 3 (1) - OFF

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-334

CSM FLIGHT PLAN

1434

222:00
(11102)
(X1111)

V49 MNVR TO SUBSAT LAUNCH PAD ATT (222:13)
HGA P 11, Y 318

222:10

REPORT:
GYRO TORQUING ANGLES
(FROM P52 AT 221:35)

MSFN CMDS
DSE DUMP

GAMMA RAY*
ALPHA PART*

222:20

CONFIGURE CAMERA: (SUBSAT PHOTOS)
CM3/DAC/75/CEX-RING (f11,1/125,100) 12 fps (6.4% MAG)

MAG (E) _____, MAG % _____
UTILITY PWR - ON

DAMP RATES:
INHIBIT ALL JETS EXCEPT: A1 & C2 OR B2 & D1, A3,C4,B3,D4
WAIT 5 MIN FOR RATES TO DAMP
VERIFY SUBSAT EXTEND/LAUNCH - OFF (CTR)

222:30

SUBSAT LAUNCH PAD

GET: _____
R (266), P (141), Y (038)

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-335

13.

CSM FLIGHT PLAN

222:30

(11102)
(X1111)

VERIFY:

cb PYRO A/SEQ A - CLOSE
 cb PYRO B/SEQ B - CLOSE
 cb LOGIC POWER (2) - CLOSE
 LOGIC POWER (2) - JETT

MSFN: VERIFY SIM PYRO BUS (2) ARMED AND RATES $\leq .05^\circ/\text{SEC}$

CMC MODE - FREE

SUBSAT - EXTEND/LAUNCH (LAUNCH -12 SEC) tb-BP UNTIL LAUNCH

SUBSAT LAUNCH 222:36:13

MSFN: VERIFY SUBSAT LAUNCH

PHOTO SUBSAT FOR ~ 30 SEC STARTING AT LAUNCH +9 SEC

CMC MODE - AUTO

SUBSAT - RETRACT tb-BP (~ 12 SEC)/GRAY then OFF (CTR)

LOGIC POWER (2) - OFF

222:40

RECORD DAC MAG %

ENABLE ALL JETS

MSFN UPDATE:

TEI 74 PAD (NOMINAL)(223:15)

TEI 75 PAD

MAP UPDATE REV 75 (223:17)

MSFN UPLINK:

CSM S.V. & V66

TEI 74 TGT LOAD

GAMMA RAY*
ALPHA PART*

CSM SYSTEM CHECKLIST

222:50

CONTAMINATION CONTROL PAGE S/1-16

C&WS OPERATIONAL CHECKS S/1-17

CM RCS MONITORING CHECK S/1-1

SM RCS MONITORING CHECK S/1-1

SPS MONITORING CHECK S/1-1

223:00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-336

1534 CDT

CSM FLIGHT PLAN

223:00
(11102)
(X1111)

P30 VERIFY TEI TIG AND ΔV 's
V49 MNVR TO TEI PAD BURN ATT (223:12)
OMNI D

GAMMA RAY*
X-RAY*
ALPHA PART*

GAMMA RAY EXP - OFF
X-RAY - OFF
 α RAY/X DR - α OFF
MASS SPECT EXP - OFF
MAP CAMERA ON - STBY (VERIFY)
MAP CAMERA IMAGE MTN - OFF (VERIFY)
DATA SYSTEMS ON - OFF
S-BD AUX TV - OFF (CTR) RECORD GET _____

223:10

MAP UPDATE REV 75

SXT STAR CHECK

LOS _____ : _____ : _____
180° _____ : _____ : _____
AOS WITH TEI _____ : _____ : _____
AOS WITHOUT TEI _____ : _____ : _____

223:20

(P40)
(0.5°DB)

P40 TRIM

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

223:30

P30 MANEUVER

SET STARS	T	E	I			PURPOSE
	S	P	S/G	&	N	PROP/GUID
	+					WT N47
R ALIGN _____		0	0			P TRIM N48
P ALIGN _____		0	0			Y TRIM
Y ALIGN _____	+	0	0			HRS GETI
	+	0	0	0		MIN N33
	+	0				SEC
ULLAGE _____						ΔV_X N81
						ΔV_Y
						ΔV_Z
	X	X	X			R (000)
	X	X	X			P (000)
	X	X	X			Y (000)
	+					H _A N44
						H _P
	+					ΔVT
HORIZON/WINDOW _____	X	X	X			BT
	X					ΔVC
	X	X	X	X		SXTS
	+				0	SFT
	+				0 0	TRN
	X	X	X			BSS
	X	X				SPA
	X	X	X			SXP
OTHER _____		0				LAT N61
						LONG
	+					RTGO EMS
	+					V10
						GET 0.05G

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-337

CHANGE B

224:00

TIG: 223:46:06
BT: 2 MIN 17.8 SEC
ΔVT 3049.7 FPS
ULLAGE: 4 JET, 13 SEC
ORBIT: N/A

TEI (000,000,000)

POO

V66 SET CSM S.V. INTO LM S.V.

V49 MNVR TO LUNAR SURFACE
PHOTO ATT (223:57)
(328,038,026)

BURN STATUS REPORT

X	X					Δ TIG
X	X					BT
						V _{gx}
TRIM						
X	X	X				R
X	X	X				P
X	X	X				Y
						V _{gx}
						V _{gy}
						V _{gz}
						ΔV_c
X						FUEL
X						OX
X						UNBAL

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	3-338

CHANGE B

CSM FLIGHT PLAN

1634 CDT

224:00
(11102)
(X1111)

ACQ MSFN OMNI D
REPORT: BURN STATUS
INHIBIT ALL JETS EXCEPT: A1 & C2 OR B2 & D1, A3, C4, B3, D4
cb SCS CONTR DIR 1 MNB - OPEN
cb SCS CONTR DIR 2 MNA - OPEN
RHC PWR DIR (2) - OFF OR MNA/MNB
S-BD AUX TV - SCI

MSFN UPDATE:
MAP CAMERA PHOTO PAD

PCM BIT RATE - HIGH
LOGIC POWER (2) - DPLY/RETR
MAP CAMR/LASER EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
MAP CAMERA TRACK - EXTEND tb-BP (~4 MIN)/GRAY then OFF (CTR)

MAP CAMERA PHOTO PAD

T-START: _____
T-STOP: _____

224:10

DATA SYSTEMS ON - ON
GAMMA RAY: GAINSTEP - SHIELD ON (CTR), EXP - ON
X-RAY - STBY RECORD GET
α RAY/X DR - α ON
MASS SPECT EXP - STBY
MAP CAMERA IMAGE MTN - ON (tb-BP IN 3-5 SEC then GRAY)
MAP CAMERA ON - ON (T START)
MAP CAMERA IMAGE MTN - INCR (tb-BP +3 STEPS)/OFF
MONITOR FOR FILM DEPLETION (tb-BP)

GAMMA RAY*
ALPHA PART*

MAP CAMERA

224:20

V49 MNVR TO VISUAL TARGET ATT (224:30)
(006,125,005) HGA P -25, Y 19

MAP CAMERA TRACK - RETRACT tb-BP (~4 MIN)/GRAY then OFF (CTR)

MASS SPECT BOOM - DEPLOY tb-BP (~2:40)/GRAY then OFF (CTR)

MAP CAMR/LASER EXP COVEERS - CLOSE tb-BP/GRAY then OFF (CTR)

MASS SPECT: EXP - ON, ION SOURCE - STBY
RECORD GET

224:30

224:30
(11102)
(X1111)

VISUAL TGT 12 & 13 EASTERN MARIA

MSFN CMDS:
DSE DUMP

MSFN UPLINK:
DESIRED ORIENT (PTC)

224:40

GAMMA RAY: GAINSTEP - SHIELD OFF

GAMMA RAY*
ALPHA PART*
MASS SPECT OUTGAS

224:50

GAMMA RAY: GAINSTEP - SHIELD ON (CTR)

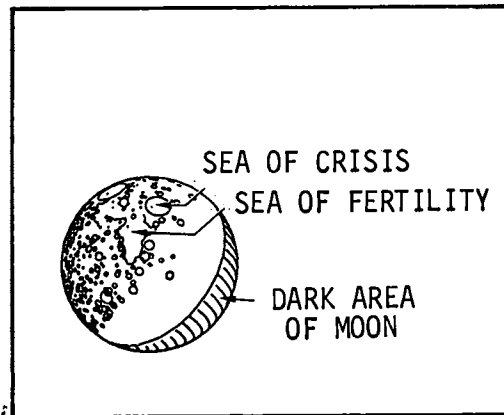
225:00

MISSION	EDITION	DATE	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	3-339

B-

FOV = 50°

GET 225:40



FINAL(7/26)

6/21/71

3-340

MCC-H

1734 CDT

FLIGHT PLAN

NOTES

225:00
 (11101)
 (X1111)
 :10
 :20
 225:30
 :40
 :50
 (11111)
 (X1111)
 226:00

M
S
F
N

V48 (11101)(X1111)

CONFIGURE CAMERA: (POST-TEI LUNAR DISC)
 CM3/EL/250/LBW (f5.6, 1/250, ∞) (4 FR)
 MAG (S) _____, FR # _____

V49 MNVR TO LUNAR SURFACE PHOTO ATTITUDE (225:40)
 (004,147,007)

225:40 - 4 FRAMES, HANDHELD, OVERLAPPING, PAN OF
 VISIBLE DISC, RAPID SEQUENCE

V48 (11111)(X1111)
 V49 MNVR TO P52 ATTITUDE (226:00)
 (303,148,007)

GR
AP*
MSO

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	225:00 - 226:00	10/TEC	3-341

FLIGHT PLANNING BRANCH

MCC-H

1834 CDT

FLIGHT PLAN

GR
AP*
MSO

NOTES

226:00
(11111)
(X1111)P52 IMU REALIGN
OPTION 3 REFSMMAT
TEI ORIENTATION

STARS _____

SA _____

TA _____

REPORT: GYRO TORQUING ANGLESP52 IMU REALIGN
OPTION 1 PREFERRED
PTC ORIENTATION

V49 MNVR TO X-RAY POINTING ATTITUDE (226:28)

(, ,) HGA P ____, Y ____

:10

:20

X-RAY - ON

ALPHA/X-RAY EXP COVERS - OPEN tb BP/GRAY then OFF (CTR)

GAMMA RAY BOOM - DEPLOY tb-BP (~2:45)/GRAY then OFF (CTR)

RECORD GET _____

226:30

M
S
F
NLiOH CANISTER CHANGE
(19 INTO B, STOW 17 IN A4)

:40

CMP DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS

:50

EAT PERIOD

227:00

GR
XR
AP
MSO

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____:_____:_____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	226:00 - 227:00	10/TEC	3-342

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1934 CDT

NOTES

227:00
(11101)
(X1111)

:10

:20

227:30

(11111)
(X1111)

:40

:50

228:00

M
S
F
N

EAT PERIOD

V48 (11111)(X1111)

ALPHA/X-RAY EXP COVERS - CLOSE tb BP/GRAY then OFF (CTR)

RECORD GET

LOGIC POWER (2) - OFF

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2

COMM: HGA REACQ MODE P -40, Y 90

V49 MNVR TO PTC ATTITUDE

(N20,090,000)

P20 OPT 2, X-AXIS

N78 (0,0,0)

N79 (-0.3500, +000.50)

N34 (0,0,0)

MASS SPECT: MULT-LOW, DSCRM-HIGH, EXP-ON, ION SOURCE-ON

RECORD GET

GR
XR
AP
MSO

GR
AP*
MSO

PTC

EARTH DISTANCE
~ 193,584 NM

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	227:00 - 228:00	10/TEC	3-343

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

2034 CDT

FLIGHT PLAN

NOTES

228:00
:20
:40
229:00
:20
:40
230:00

M
S
F
N

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST
COMM - HGA

PAGE S/1-26

REST PERIOD
(8 HOURS)

PTC

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

ONBOARD READOUT

BAT C _____
PYRO BAT A _____
PYRO BAT B _____
RCS A _____
B _____
C _____
D _____

DC 1ND SEL - MNA OR B

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	228:00 - 230:00	10/TEC	3-344

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2234 CDT

NOTES

230:00
:20
:40
231:00
:20
:40
232:00

M
S
F
N

REST PERIOD
(8 HOURS)

PTC

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	230:00 - 232:00	10/TEC	3-345

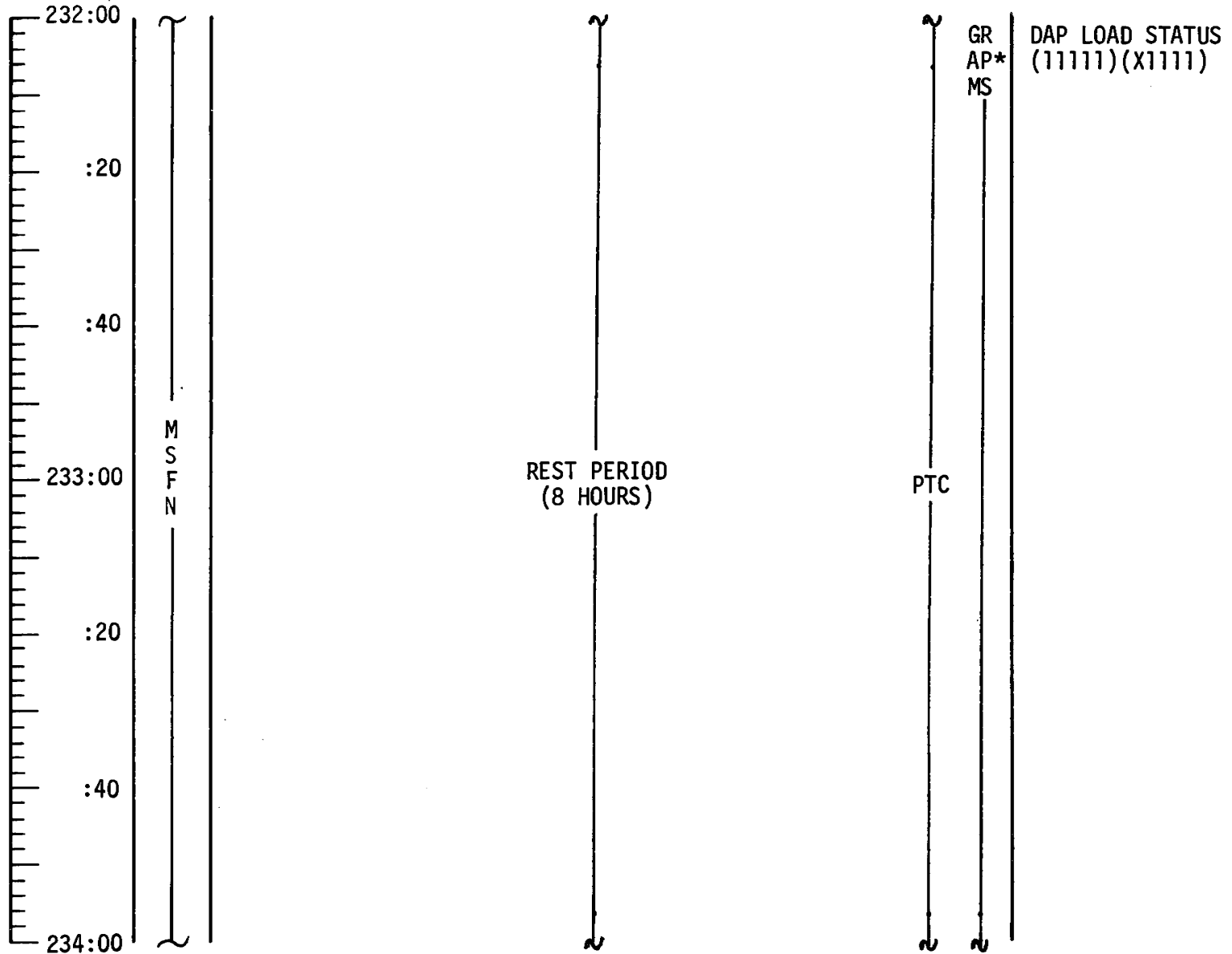
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0034 CDT

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	232:00 - 234:00	10/TEC	3-346

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0234 CDT

NOTES

234:00

:20

:40

235:00

:20

:40

236:00

M
S
F
N

REST PERIOD
(8 HOURS)

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

CSM CONSUMABLES UPDATE

GET: ____:____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____

O₂ TANK 1 _____ 2 _____ 3 _____

PTC

70MM CAMERA MAGAZINES

CAMERA	MAGAZINES	TYPE (DECAL COLOR)	STOWAGE LOCATION
<u>EL</u>	M	CEX (BLUE)	B3
	N	UV (RED)	A1
	R	VHBW (SILVER/BLACK)	A1
<u>DAC</u>	F	CEX (BLUE)	A8
	G	CEX (BLUE)	A8

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST

PAGE S/1-26

LOGIC POWER (2) - DEPLOY/RETR

GAMMA RAY BOOM - RETRACT tb-BP (~3:15)/GRAY then OFF (CTR)

UPDATE TO CSM
CONSUMABLES
FLIGHT PLAN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE B	7/12/71	234:00 - 236:00	10/TEC	3-347

FLIGHT PLANNING BRANCH

MCC-H

0434 CDT

FLIGHT PLAN

NOTES

236:00
(11111)
(X1111)
:10
(11101)
(X1111)
:20
236:30
:40
:50
237:00

M
S
F
N

EXIT G&N PTC

P52 IMU REALIGN
OPT 3 REFSMMAT
PTC ORIENTATION

REPORT: GYRO TORQUING ANGLES

CYCLE CMC MODE - FREE/AUTO
V48 (11101)(X1111)
V67 (+99000)(+00020)(+00003)
V49 MNVR TO OPTICS CALIBRATION ATT
(066,152,350) HGA P -70, Y 295
P23 CALIBRATION STAR N70 (00020)
P00
V49 MNVR TO SIGHTING ATT
(084,120,330) HGA P -57, Y 360
P23 CISELUNAR NAVIGATION
3 MARKS ON EACH STAR

1. N70 (00000) (00000) (00120)
N88 (+15707)(+98142)(+11018)

2. N70 (00000) (00000) (00110)
N88 (-38535)(+79355)(+47094)

3. N70 (00013) (00000) (00120)

DURING TEC, P23'S WILL BE PER-
FORMED ON A NON-INTERFERENCE
BASIS WITH OTHER CREW ACTIVITIES
AS IF A "NO-COMM" CONTINGENCY
EXISTED. MCC-H WILL UPLINK A STATE
VECTOR WHICH WILL BE STORED IN
THE LM SLOTS. MCC-H WILL COM-
PUTE AND BIAS MID-COURSE COR-
RECTION MANEUVERS USING THE
CSM VECTOR UPDATED BY P23 DATA.

GR
AP*
MS

LOAD W-MATRIX

EARTH DISTANCE
~ 181,215 NM

P52 IMU REALIGN

N71: _____

N05: _____

N93:

X _____

Y _____

Z _____

GET _____:_____:

57 BELLA TRIX (EFH)

50 POLLUX (ENH)

13 CAPELLA (EFH)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	236:00 - 237:00	10/TEC	3-348

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0534 CDT

NOTES

237:00
(11101)
(X1111)

:10

:20

237:30

:40

:50

238:00

M
S
F
N

V49 MNVR TO X-RAY POINTING ATTITUDE (237:15)

(, ,) HGA P , Y

LOGIC POWER (2) - DEPLOY/RETR

ALPHA/X-RAY EXP COVERS - OPEN tb BP/GRAY then OFF (CTR)

GR
XR
AP
MS

EAT PERIOD

EARTH DISTANCE
~ 178,796 NM

CONFIGURE FOR URINE DUMP
VERIFY REPRESS PKG O₂ PRESSURE - 865-935 PSI

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS
MCC-5 TGT LOAD
UPDATE TO CSM
MCC-5 MNVR PAD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	237:00 - 238:00	11/TEC	3-349

FLIGHT PLANNING BRANCH

B-

FLIGHT PLAN

MCC-5
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	±10° COMPLETE	BT + 1 SEC AND $\Delta V_c = 0$	TRIM X AXIS ONLY TO 0.2 FPS
IP CONTROL	10°/SEC TERMINATE	±10° TERMINATE	BT + 1 SEC AND $\Delta V_c = 0$	TRIM X & Z AXIS TO 0.2 FPS

FINAL(7/26)

6/21/71

3-350

FLIGHT PLAN

MCC-H

0634 CDT

NOTES

238:00
(11101)
(X1111)
:10
:20
238:30
:40
:50
239:00

M
S
F
N

MASS SPEC: ION SOURCE - OFF, EXP - OFF
CAUTION: WAIT 5 MIN BEFORE MASS SPECT BOOM RETRACT
MASS SPECT BOOM - RETRACT tb-GRAY/BP (~2:30)/GRAY then OFF (CTR)
P30 EXTERNAL ΔV
V49 MNVR TO PAD BURN ATTITUDE
ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)
RECORD GET
LOGIC PWER (2) - OFF
GAMMA RAY EXP - OFF
 α RAY/X DR - α OFF
X-RAY EXP - OFF
SXT STAR CHECK
URINE DUMP
DATA SYSTEMS ON - OFF
S-BD AUX TV - OFF (CTR)
ENABLE ALL JETS
cb SCS CONTR DIR 1 MNB - CLOSE
cb SCS CONTR DIR 2 MNA - CLOSE
P40 SPS THRUSTING OR
P41 RCS THRUSTING

MCC-5

BURN STATUS REPORT
cb SCS CONTR DIR 1 MNB - OPEN
cb SCS CONTR DIR 2 MNA - OPEN
RHC PWR DIR (2) - OFF OR MNA/MNB
LiOH CANISTER CHANGE
(20 INTO A, STOW 18 IN A4)

TIG: 238:46:06
BT: NOM ZERO
 ΔV T: NOM ZERO
ULLAGE: N/A
ORBIT: N/A

BURN STATUS REPORT										
X	X									Δ TIG
X	X									BT
										V _{gx}
TRIM										
X	X	X								R
X	X	X								P
X	X	X								Y
										V _{gx}
										V _{gy}
										V _{gz}
										ΔV_c
X	X	X								FUEL
X	X	X								OX
X	X	X								UNBAL

TEI +15 HR

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	238:00 - 239:00	11/TEC	3-351

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CORONA WINDOW CALIBRATION

V49 MNVR TO CORONA WINDOW CALIBRATION ATT (239:05)
(090,011,025) HGA P -69, Y 191

CONFIGURE CAMERA

CM4/EL/80/VHBW-BRKT (f2.8,1/500,∞) (5 FR)

MAG (R) _____, FR # _____

INHIBIT JETS A3, C4, B3, D4

CYCLE 1 FRAME, CHANGE SHUTTER TO 1/125

1 FRAME, CHANGE SHUTTER TO 1/60

1 FRAME, CHANGE SHUTTER TO 1/30

1 FRAME, CHANGE SHUTTER TO 1/500

CYCLE 1 FRAME

RECORD FR # _____

ENABLE ALL JETS

UV PHOTOS - TRANSEARTH COAST

V49 MNVR TO EARTH UV PHOTO ATT (239:25)
(204,178,324) OMNI D

CONFIGURE CAMERA: (UV)

CM5/EL/105/UV, BRKT, CONT (f8,1/60,∞) (8 FR)

RINGSLIDE

MAG (N) _____, FR # _____

REMOVE RT2 FLIGHT DATA FILE STOWAGE BOX

DAMP RATES

INHIBIT ALL JETS EXCEPT A1 & C2 or B2 & D1, A4, C3, B4, D3

VERIFY FDAI SCALE 5/1

WAIT 5 MIN FOR RATES TO DAMP

VERIFY RATES ARE <0.2°/SEC IN ALL AXES

REMOVE CM5 WINDOW COVER AND MOUNT UV CARDBOARD SHADE AND CAMERA

2 FRAMES, FILTER 1, CHANGE SHUTTER TO B

2 FRAMES, FILTER 2, EXP TIME 20 SEC

CHANGE SHUTTER TO 1/250

2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500

2 FRAMES, FILTER 4

RECORD FR # _____

CONFIGURE CAMERA: (UV COLOR)

CM5/EL/105/CEX, BRKT, CONT (f8,1/250,∞) (1 FR)

RINGSLIDE

MAG (M) _____, FR # _____

1 FRAME, FILTER 4

RECORD FR # _____

REMOVE CAMERA AND UV CARDBOARD SHADE

NOTE: COMMENTS AS TO CONDITION OF WINDOW 5

REPLACE CM5 WINDOW COVER

ENABLE ALL JETS

FINAL(7/26)

6/21/71

3-352

MCC-H

0734 CDT

FLIGHT PLAN

NOTES

239:00
(11101)
(X1111)

CHARGE BATTERY B

FOV = 3°

GET = 239

CORONA WINDOW CALIBRATION

:10

:20

UV PHOTOS

239:30

M
S
F
N

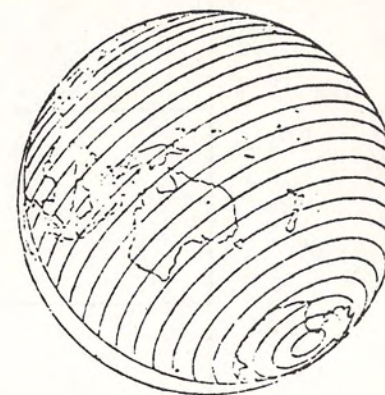
CSM SYSTEMS CHECKLIST

CM EVA PAGE S/3-1
CABIN PREP FOR CSM EVA
V49 MNVR TO CSM EVA ATTITUDE (239:45)
(352,063,050) HGA P 4, Y 225

:40

:50

240:00



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	239:00 - 240:00	11/TEC	3-353

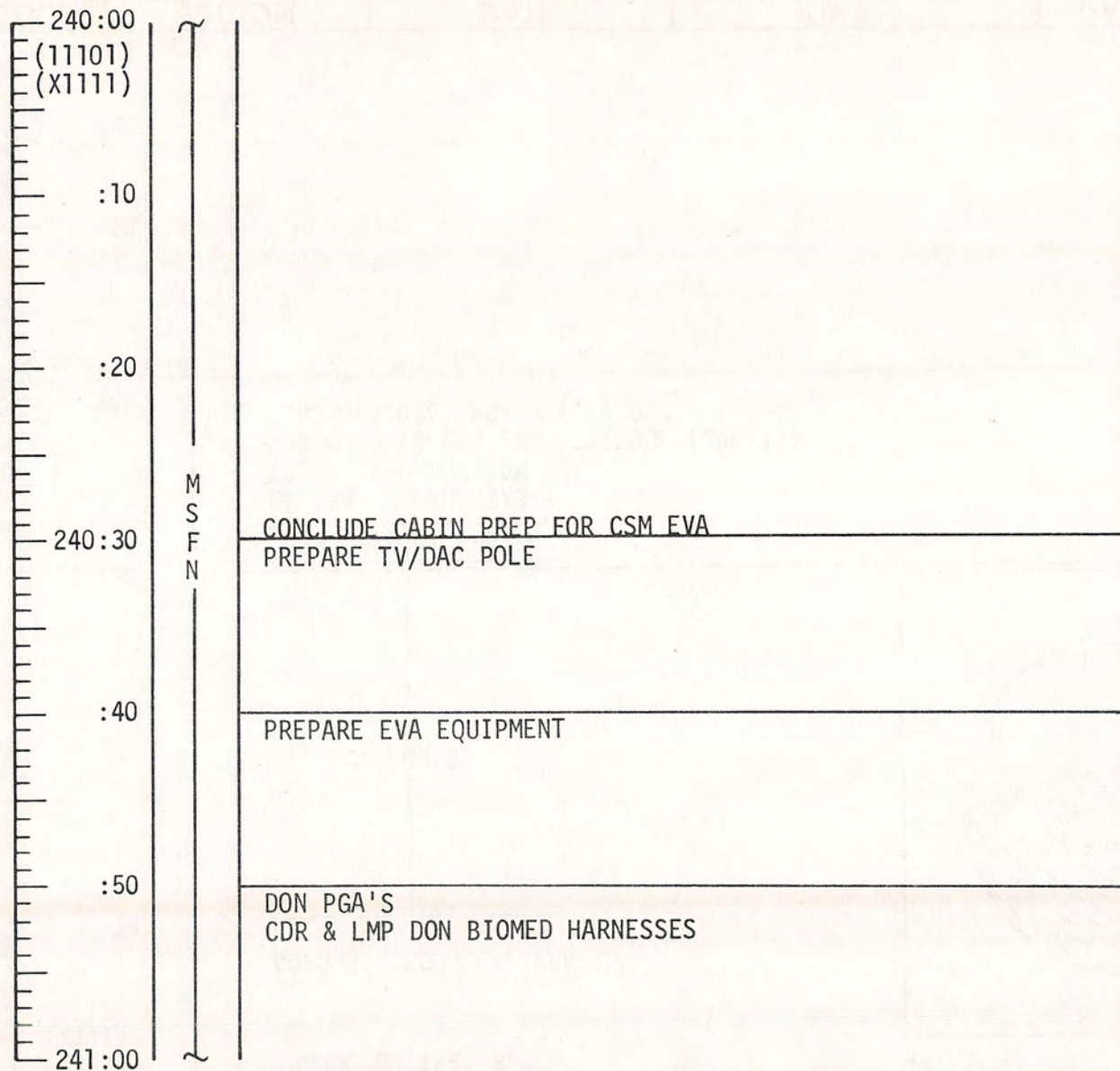
FLIGHT PLANNING BRANCH

MCC-H

0834 CDT

FLIGHT PLAN

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	240:00 - 241:00	11/TEC	3-354

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0934 CDT

NOTES

241:00
(11101)
(X1111)

:10

:20

(11101)
(10011)

241:30

:40

:50

242:00

M
S
F
N

S-BAND AUX TV - TV
COMM CHECK
SYSTEM PREP FOR DEPRESS
V49 MNVR TO EVA ATT (241:35)
(352,063,050) P 4, Y 225
DISABLE ALL JETS EXCEPT:
QUADS C & D AT CONCLUSION OF MNVR
O₂ HEATERS 1,2, & 3 (3) - AUTO
ESTABLISH SCS ATT CONT, TIGHT DEADBAND
V48 (11101)(10011)
CONCLUDE DONNING PGA'S
CMP DON EVA EQUIPMENT

CDR/LMP INTEGRITY CHECK

CMP INTEGRITY CHECK

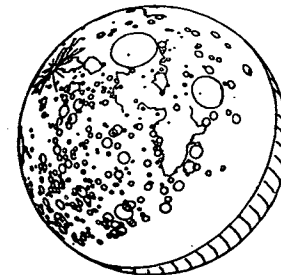
GO/NO-GO FOR CABIN DEPRESS

CABIN DEPRESS

HATCH OPENING

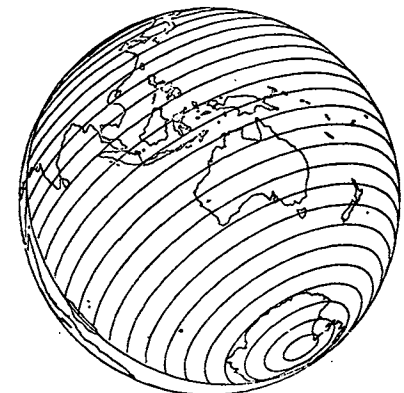
FOV 5°

GET = 241



FOV 3°

GET =241



GO/NO-GO FOR
CABIN DEPRESS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	241:00 - 242:00	11/TEC	3-355

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

1034 CDT

FLIGHT PLAN

NOTES

242:00		CMP EGRESS
(11101)		FAMILIARIZATION
(10011)		
:10		INSTALL TV/DAC, ADJUST
:20		RETRIEVE PAN CAMERA CASSETTES
		REST
		RETRIEVE MAPPING CAMERA CASSETTES
242:30		
		REST
:40		REMOVE TV/DAC
		INGRESS
:50		HATCH CLOSING
		CABIN REPRESS
243:00		

CSM EVA LENGTH
1 HR. MAX

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	242:00 - 243:00	11/TEC	3-356

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

1134 CDT

FLIGHT PLAN

NOTES

243:00
(11101)
(X1111)

:10

:20

243:30

:40

:50

244:00

M
S
F
N

OPS DEPLETION

CONCLUDE CABIN REPRESS

DOFF PGA'S
CMP & LMP DOFF BIOMED HARNESSSESCLEANUP PROCEDURES
O₂ HEATERS 3 (1) - OFF

STOW EQUIPMENT

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	243:00 - 244:00	11/TEC	3-357

FLIGHT PLANNING BRANCH

MCC-H

1234 CDT

FLIGHT PLAN

NOTES

244:00
(11101)
(X1111)

:10

:20

244:30

:40

:50

245:00

M
S
F
N

WASTE WATER DUMP & O₂ FUEL CELL PURGE

CONCLUDE EQUIPMENT STOWAGE

RECONFIGURE CABIN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	244:00 - 245:00	11/TEC	3-358

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

NOTES

245:00 (11101) (X1111)	M S F N	S-BAND AUX TV - SCI	MSO XR AP GR AT 25 FT
:10		CONCLUDE CABIN RECONFIGURATION	
:20		V49 MNVR TO X-RAY POINTING ATTITUDE (245:45) (103,257,000) HGA P -76, Y 117 (SCO X-1) DATA SYSTEMS ON - ON DISABLE ALL JETS EXCEPT A1 & C2 OR D1 & B2,A3,C4,B3,D4 LOGIC POWER (2) - DEPLOY/RETR	
:40		ALPHA/X-RAY EXP COVERS-OPEN tb BP/GRAY then OFF (CTR) GAMMA RAY BOOM-DEPLOY-tb BP(~2:45)/GRAY then OFF (CTR) MASS SPECT BOOM-DEPLOY-tb BP(~2:40)/GRAY then OFF(CTR) GAMMA RAY EXP - ON X-RAY EXP - ON α RAY/X DR - α ON	
:50		MASS SPECT: EXP-ON, ION SOURCE-STBY RECORD GET _____	
246:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	245:00 - 246:00	11/TEC	3-359

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

1434 CDT

FLIGHT PLAN

NOTES

246:00
(11101)
(X1111)
:
:10
:
:20
246:30
:
:40
:
:50
247:00

M
S
F
N

CREW EXERCISE PERIOD

V49 MNVR TO X-RAY POINTING ATTITUDE (246:35)
(008,328,030) HGA P __, Y __ (CYG X-1)

EAT PERIOD

MASS SPECT: ION SOURCE-ON, DSCRM-HIGH,MULT-LOW
RECORD GET

MSO
XR
AP
GR
AT
25
FT

MS
XR
AP
GR
AT
25
FT

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE B	7/12/71	246:00 - 247:00	11/TEC	3-360

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1334 CDT

NOTES

UPDATE TO CSM
GAMMA RAY BOOM
RETRACT TIME (15 FT)

245:00	M S F N	S-BAND AUX TV - SCI	MSO XR AP GR AT 15 FT
(11101)		V48 (11111)(X1111)	
(X1111)		CONCLUDE CABIN RECONFIGURATION	
		V49 MNVR TO X-RAY POINTING ATTITUDE (245:45)	
		(, ,) HGA P , Y	
		DATA SYSTEMS ON - ON	
		DISABLE ALL JETS EXCEPT A1 & C2 OR D1 & B2,A3,C4,B3,D4	
		LOGIC POWER (2) - DEPLOY/RETR	
		ALPHA/X-RAY EXP COVERS-OPEN tb BP/GRAY then OFF (CTR)	
		GAMMA RAY BOOM - DEPLOY-tb BP(~2:45)/GRAY then OFF(CTR)	
:10			
:20			
(11111)			
(X1111)			
245:30			
:40			
:50			
246:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	245:00 - 246:00	11/TEC	3-359

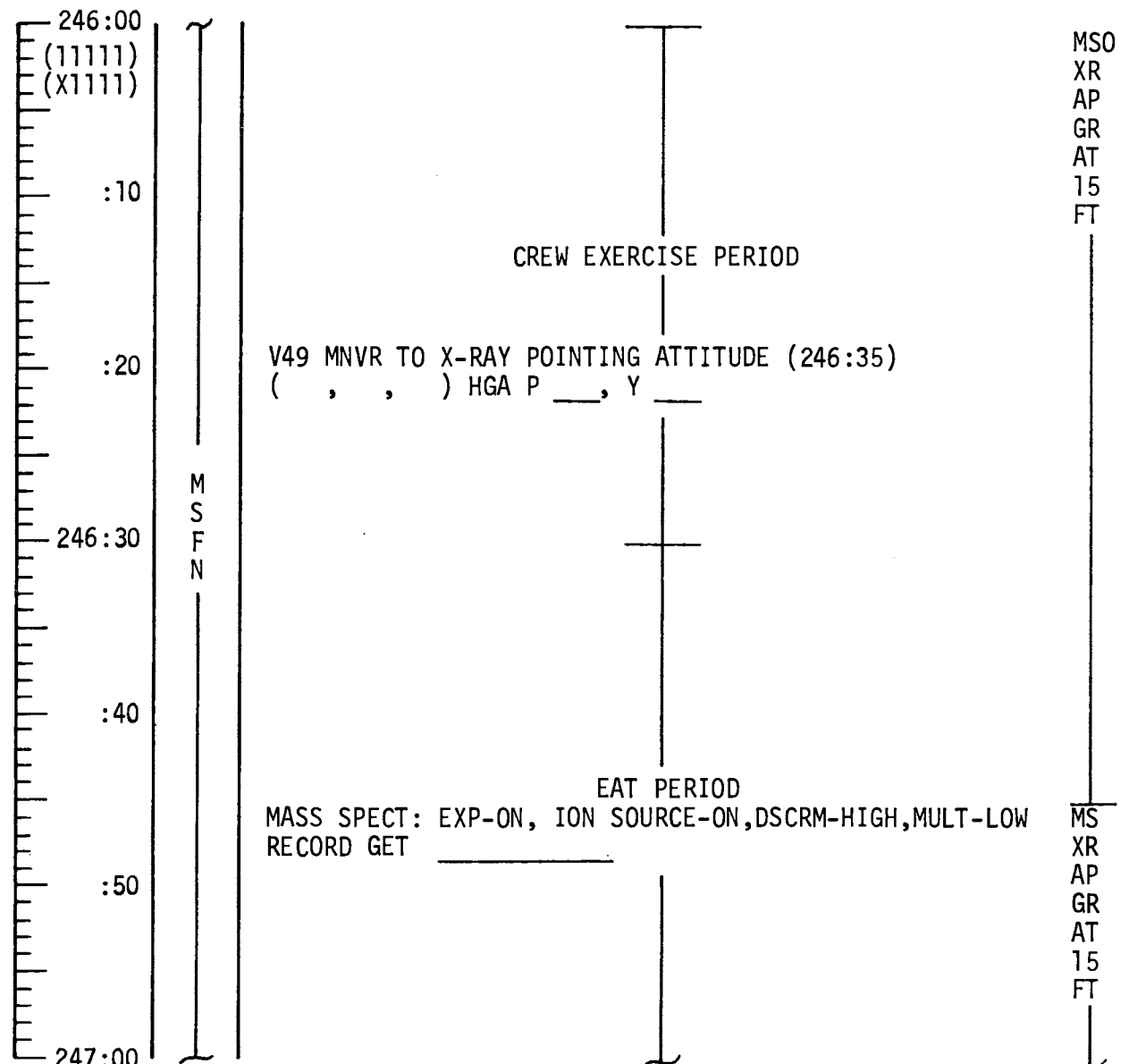
FLIGHT PLANNING BRANCH

MCC-H

1434 CDT

FLIGHT PLAN

NOTES



FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1534 CDT

NOTES

247:00
(11101)
(X1111)

:10

:20

(11111)
(X1111)
247:30

:40

:50

248:00

M
S
F
N

V48 (11111)(X1111)

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM HGA REACQ MODE P -40, Y 90
V49 MNVR TO PTC ATTITUDE
(203,090,000)
P20 OPT 2, X-AXIS
N78 (0,0,0)
N79 (-0.3500,+000.50)

EAT PERIOD

IN PTC, WHENEVER SUNLIGHT ENTERS THE FIELDS OF VIEW OF THE X-RAY AND ALPHA PARTICLE EXPERIMENTS, THE X-RAY - ALPHA EXPERIMENT COVER MUST BE CLOSED TO AVOID INSTRUMENT DAMAGE. THE COVERS WILL BE OPEN BETWEEN ROLL ANGLES 203° AND 307° AND CLOSED BETWEEN ROLL ANGLES 308° AND 202°. THE ONBOARD KITCHEN TIMER WILL BE SET TO 14 MIN BETWEEN COVER OPEN AND CLOSE AND 6 MIN BETWEEN COVER CLOSE AND OPEN.

QUAD D, A3, AND C4
WILL BE USED FOR PTC
RATE DAMPING, B2 & D2
FOR PTC SPINUP

GAMMA RAY BOOM - RETRACT tb-BP SEC then
OFF (CTR)

RECORD GET

MS
XR
AP
GR
AT
25
FT

PTC
MS
XR
AP
GR
AT
15
FT

UPDATE TO CSM
GAMMA RAY BOOM
RETRACT TIME (15 FT)
MASS SPECT BOOM
RETRACT TIME

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	247:00 - 248:00	11/TEC	3-361

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

1634 CDT

FLIGHT PLAN

NOTES

248:00
STEP 1
:10
STEP 2
:20
STEP 3
248:30
STEP 4
:40
STEP 5
:50
249:00

M
S
F
N

MASS SPECTROMETER BOOM RETRACTION SEQUENCE
MASS SPECT BOOM RETRACT tb-BP SEC then OFF (CTR)
(~42 SEC)

ABOVE SEQUENCE MUST BE REPEATED
5 TIMES BETWEEN GET 248:00 AND
GET 249:00 WITH LAST STEP TO
FULLY RETRACTED POSITION. EACH
SAMPLE PERIOD WILL LAST 12 MINUTES.

PTC

XR
AP
MS
GR
AT
15
FT

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	248:00 - 249:00	11/TEC	3-362

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1734 CDT

NOTES

UPDATE TO CSM
GAMMA RAY BOOM
DEPLOY TIME
(8FT)

249:00
:10
:20
249:30
:40
:50
250:00

M
S
F
N

CSM SYSTEMS CHECKLIST

CONTAMINATION CONTROL PAGE S/1-16
MASS SPECT BOOM-DEPLOY tb-BP(~2:40)/GRAY then OFF (CTR)

CDR DOFF BIOMED HARNESS
LMP DON BIOMED HARNESS
ALPHA/X-RAY EXP COVERS-CLOSE tb-BP/GRAY then OFF (CTR)
GAMMA RAY BOOM - RETRACT tb-BP/GRAY then OFF (CTR)
GAMMA RAY BOOM-DEPLOY tb-BP SEC then OFF (CTR)
RECORD GET

EAT PERIOD

XR
AP
MS
GR
AT
15
FT

PTC

MS
AP*
GR
AT
8
FT

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	249:00 - 250:00	11/TEC	3-363

CHANGE B

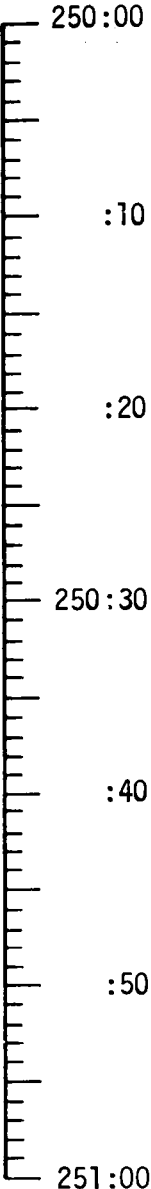
FLIGHT PLANNING BRANCH

MCC-H

1834 CDT

FLIGHT PLAN

NOTES



M
S
F
N

EAT PERIOD

P52 IMU REALIGN
OPTION 3 REFSMMAT
PTC ORIENTATION

REPORT: GYRO TORQUING ANGLES

MS
AP*
GR
AT
8
FT

DAP LOAD STATUS
(11111)(X1111)

PTC

P52 IMU REALIGN

N71: ____ , ____

N05: ____ . ____

N93: ____ . ____

X ____ . ____

Y ____ . ____

Z ____ . ____

GET ____ : ____ : ____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	250:00 - 251:00	11/TEC	3-364

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

1934 CDT

NOTES

251:00

$$\begin{pmatrix} 11101 \\ X1111 \end{pmatrix}$$

:10

:20

251 : 30

:40

$$\begin{pmatrix} 11111 \\ X1111 \end{pmatrix}$$

:50

252:00

M
S
F
N

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM HGA REACQ MODE P -40, Y 90
V49 MNVR TO PTC ATTITUDE
(N20,090,000)

PTC

AP*
MS
GR
AT
8
FT

DAP LOAD STATUS
(11111)(X1111)

EARTH DISTANCE
~ 154,731 NM

50 POLLUX (ENH)

11 ALDEBARAN (EFH)

13 CAPELLA (EFH)

QUAD D, A3 AND
C4 WILL BE USED
FOR PTC RATE
DAMPING, B2 & D2
FOR PTC SPINUP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	251:00 - 252:00	11/TEC	3-365

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

2034 CDT

FLIGHT PLAN

NOTES

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS252:00
:10
:20
252:30
:40
:50
253:00M
S
F
NP20 OPT. 2, X-AXIS
N78 (0,0,0)
N79 (-0.3500, +000.50)
N34 (0,0,0)GAMMA RAY BOOM - DEPLOY tb-BP(~1:55)/GRAY then OFF (CTR)
GAMMA RAY GAINSTEP - SHIELD OFF
RECORD GET
LOGIC POWER (2) - OFF (CTR)

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-26
COMM - HGA
GAMMA RAY GAINSTEP - SHIELD ON (CTR)REST PERIOD
(9 HOURS)

PTC

GR
AT
8
FT
XR
AP*
MS
GR
AP*
MSDAP LOAD STATUS
(11111)(X1111)

ONBOARD READOUT

BAT C

PYRO BAT A

PYRO BAT B

RCS A

B

C

D

DC IND SEL - MNA OR B

EARTH DISTANCE
~ 152,756 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	252:00 - 253:00	11/TEC	3-366

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

2134 CDT

FLIGHT PLAN

NOTES

253:00
:20
:40
254:00
:20
:40
255:00

M
S
F
N

REST PERIOD
(9 HOURS)

PTC

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	253:00 - 255:00	11/TEC	3-367

FLIGHT PLANNING BRANCH

MCC-H

2334 CDT

FLIGHT PLAN

NOTES

255:00
:20
:40
256:00
:20
:40
257:00

M
S
F
N

REST PERIOD
(9 HOURS)

PTC

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	255:00 - 257:00	11/TEC	3-368

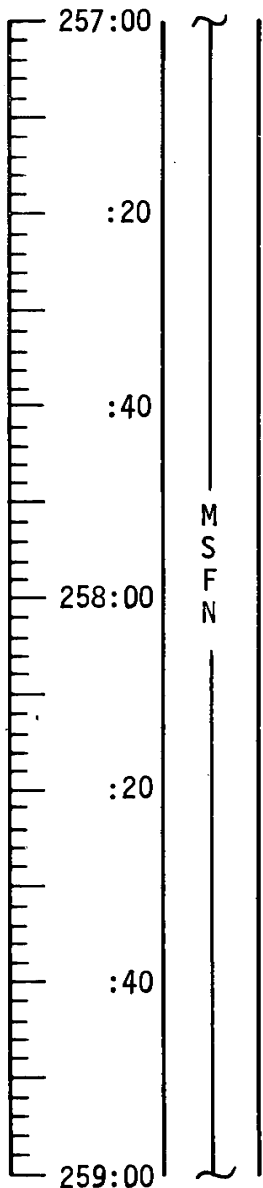
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0134 CDT

NOTES



REST PERIOD
(9 HOURS)

GR
AP*
MS

PTC

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	257:00 - 259:00	11/TEC	3-369

FLIGHT PLANNING BRANCH

MCC-H

0334 CDT

FLIGHT PLAN

NOTES

259:00
:20
:40
260:00
:20
:40
261:00

M
S
F
NREST PERIOD
(9 HOURS)

PTC

GR
AP*
MSDAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	259:00 - 261:00	11/TEC	3-370

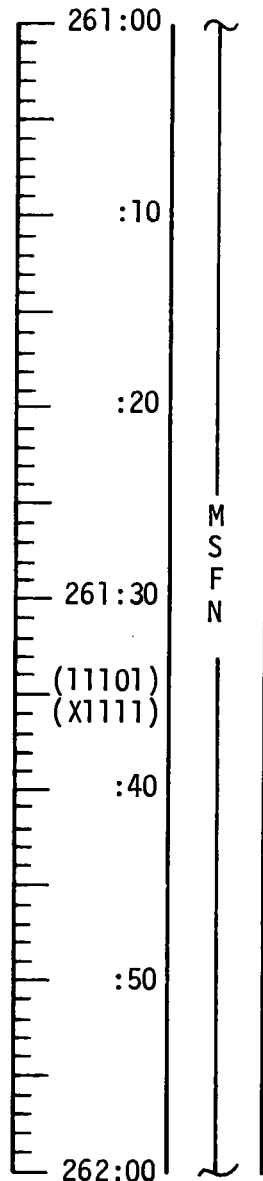
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0534 CDT

NOTES



UPDATE TO CSM
CONSUMABLES
FLIGHT PLAN

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST
V48 (11101)(X1111)
EXIT G&N PTC
V49 MNVR TO X-RAY POINTING ATTITUDE (261:50)
(332,226,000) HGA P __, Y __ (SOUTH GALACTIC POLE)
CMP DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS
LOGIC POWER (2) - DEPLOY/RETR
MAP CAMR/LASER EXP COVERS - OPEN tb BP/GRAY
then OFF (CTR)
ALPHA/X-RAY EXP COVERS - OPEN tb-BP/GRAY then OFF (CTR)
RECORD GET
GAMMA RAY GAINSTEP - SHIELD OFF

REST PERIOD
(9 HOURS)

PAGE S/1-26

EAT PERIOD

PTC

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

EARTH DISTANCE
~ 133,473 NM

CSM CONSUMABLES UPDATE

GET: ____:____

RCS TOTAL

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____

O₂ TANK 1 _____ 2 _____ 3 _____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	261:00 - 262:00	11/TEC	3-371

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

0634 CDT

FLIGHT PLAN

NOTES

262:00
(11101)
(X1111)

:10

:20

262:30

:40

:50

263:00

M
S
F
N

GAMMA RAY GAINSTEP - SHIELD ON (CTR)

16MM, 35MM, AND 70MM CAMERA MAGAZINES

CAMERA	MAGAZINES	TYPE (DECAL COLOR)	STOWAGE LOCATION
<u>EL</u>	M	CEX (BLUE)	B3
	N	UV (RED)	A1
	P	CEX (BLUE)	A8
<u>NK</u>	V	VHBW (SILVER/BLACK)	B2
<u>DAC</u>	H	VHBW (SILVER/BLACK)	A1

EAT PERIOD

P52 IMU REALIGN
OPTION 3 REFSMMAT
PTC ORIENTATION

GR
XR
AP
MS

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____:_____:_____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	262:00 - 263:00	11/TEC	3-372

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0734 CDT

NOTES

263:00
(11101)
(X1111)

:10

:20

263:30

:40

:50

(11111)
(X1111)
264:00

M
S
F
N

REPORT: GYRO TORQUING ANGLES
LiOH CANISTER CHANGE
(22 INTO A, STOW 20 IN A4)

V49 MNVR TO OPTICS CALIBRATION ATTITUDE
(066,152,350) HGA P -68, Y 307
P23 CISELUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00020)
P00
V49 MNVR TO SIGHTING ATTITUDE
(082,166,330) HGA P -59, Y 000
P23 CISELUNAR NAVIGATION
3 MARKS ON EACH STAR

1. N70 (00000) (00000) (00120)
N88 (+09762)(+92766)(+36044)

2. N70 (00011) (00000) (00120)

3. N70 (00013) (00000) (00120)
ALPHA/X-RAY EXP COVERS - CLOSE tb BP/GRAY then OFF
RECORD GET
V48 (11111)(X1111)

GR
XR
AP
MS

EARTH DISTANCE
~ 128,773 NM

142 ZETA TAURI (EFH)

11 ALDEBARAN (EFH)

13 CAPELLA (EFH)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	263:00 - 264:00	12/TEC	3-373

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

264:00
(11111)
(X1111)
:10
:20
264:30
:40
:50
265:00

M
S
F
N

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2

COMM: HGA REACQ MODE P-40, Y 90

V49 MNVR TO PTC ATTITUDE

(N20,090,000)

P20 OPT. 2, X-AXIS

N78 (0,0,0)

N79 (-0.3500, +000.50)

N34 (0,0,0)

MAP CAMR/LASER EXP COVERS - CLOSE tb BP/GRAY then OFF (CTR)

VISUAL LIGHT FLASH PHENOMENON EXPERIMENT

SET KITCHEN TIMER TO 60 MIN

ALL CREWMEN DON EYESHIELDS

REPORT: DON EYESHIELDS (GET _____:_____:____)

FLASH FREQUENCY

FLASH DESCRIPTION

CREW ORIENTATION W.R.T. X,Y, AND Z AXES AND
LOCATION IN CMGR
AP*
MS

PTC

DURING THE ENTIRE
TEST PERIOD, ALL
CREWMEN WILL FACE
THE DIRECTION OF
THE +X AXIS.

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	264:00 - 265:00	12/TEC	3-374

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

0934 CDT

FLIGHT PLAN

NOTES

265:00
:10
:20
265:30
:40
:50
266:00

M
S
F
N

REPORT: DOFF EYESHIELDS (GET ____:____:____)

CREW EXERCISE PERIOD

PTC

GR
AP*
MS

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	265:00 - 266:00	12/TEC	3-375

FLIGHT PLANNING BRANCH

MCC-H

1034 CDT

FLIGHT PLAN

NOTES

266:00
:10
:20
266:30
:40
:50
267:00

M
S
F
N

MASS SPECT: EXP - ON, ION SOURCE - ON

CREW EXERCISE PERIOD

GAMMA RAY GAINSTEP - SHIELD OFF

GAMMA RAY GAINSTEP - SHIELD ON (CTR)

EAT PERIOD

GR
AP*
MSDAP LOAD STATUS
(11111)(X1111)

PTC

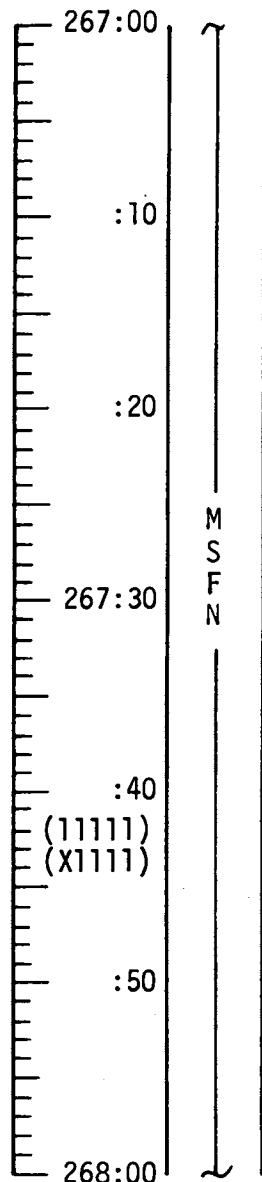
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	266:00 - 267:00	12/TEC	3-376

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1134 CDT



EAT PERIOD

P52 IMU REALIGN
OPTION 3 REFSMMAT
(PTC ORIENTATION)

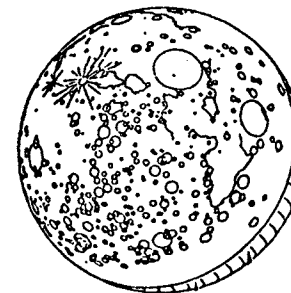
REPORT: GYRO TORQUING ANGLES
EXIT G&N PTC
V49 MNVR TO THERMAL ATTITUDE (268:00)
(230,180,024) OMNI D

NOTES

GR
AP*
MS
FOV 4°

DAP LOAD STATUS
(11111)(X1111)

GET = 267



PTC

P52 IMU REALIGN

N71: ____

N05: ____

N93:

X ____

Y ____

Z ____

GET ____:____:____

GR
AP*
MS

EARTH DISTANCE
~ 116,230 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	267:00 - 268:00	12/TEC	3-377

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

UV PHOTOS - TRANSEARTH COAST

V49 MNVR TO EARTH UV PHOTO ATT (268:50)
(217,045,332) OMNI D

CONFIGURE CAMERA: (UV)

CM5/EL/105/UV, BRKT, CONT (f4.3,1/60, ∞) (8 FR)

RINGSLIDE

MAG (N) _____, FR # _____

REMOVE R12 FLIGHT DATA FILE STOWAGE BOX

DAMP RATES

VERIFY FDAI SCALE 5/1

WAIT 5 MIN FOR RATES TO DAMP

VERIFY RATES ARE $<0.2^\circ/\text{SEC}$ IN ALL AXES

REMOVE CM5 WINDOW COVER AND MOUNT UV CARDBOARD SHADE AND CAMERA

CMC MODE - FREE

2 FRAMES, FILTER 1, CHANGE SHUTTER TO B

2 FRAMES, FILTER 2, EXP TIME 20 SEC

CHANGE SHUTTER TO 1/250

2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500

2 FRAMES, FILTER 4

RECORD FR # _____

CONFIGURE CAMERA: (UV COLOR)

CM5/EL/105/CEX, BRKT, CONT (f8,1/250, ∞) (1 FR)

RINGSLIDE

MAG (M) _____, FR # _____

1 FRAME, FILTER 4

RECORD FR # _____

REMOVE CAMERA AND UV CARDBOARD SHADE

NOTE: COMMENTS AS TO CONDITION OF WINDOW 5

REPLACE CM5 WINDOW COVER

CMC MODE - AUTO

FINAL (7/26)
CHANGE B

7/12/71

3-378

FLIGHT PLAN

MCC-H

1234 CDT

NOTES

268:00
(11111)
(X1111)
:10
:20
268:30
(11102)
(X1111)
:40
:50
269:00

M
S
F
N

CYCLE CMC MODE - FREE/AUTO
V48 (11102)(X1111)

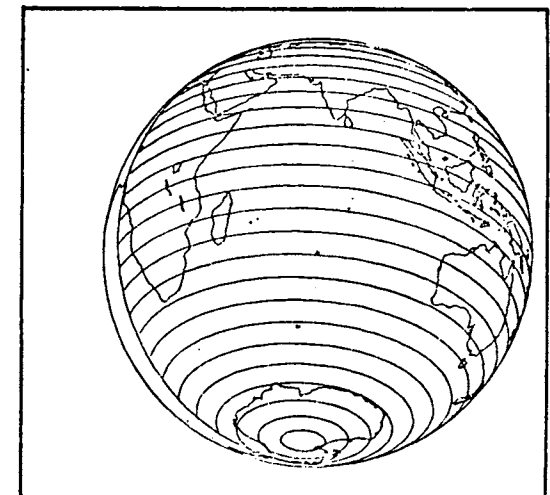
UV PHOTOS

UPDATE TO CSM
LUNAR ECLIPSE
PHOTO PAD
(PAGE 3-380)

GR
AP*
MS

FOV 4°

GET = 268



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE B	7/12/71	268:00 - 269:00	12/TEC	3-379

FLIGHT PLANNING BRANCH

FLIGHT PLAN

LUNAR ECLIPSE PHOTOS

CONFIGURE CAMERA: (LUNAR ECLIPSE)

INSTALL CAMERA SHIELD

CM4/NK/55/VHBW, BRKT (f1.2,1/500,∞) (8 FR)

MAG (V) _____, FR # _____

CM2/EL/250/CEX (f5.6,1/500,∞) (8 FR)

PCM CABLE

MAG (P) _____, FR # _____

V49 MNVR TO LUNAR ECLIPSE ATT

(270,012,041) OMNI D

PHOTO SEQUENCE (for moon entering earth's umbra)

00:00 - MISSION TIMER, RESET/START (T START)

CMC MODE - FREE

DIM INTERIOR LIGHTS

COVER EL LENS, CYCLE 1 FRAME

CHANGE EL SHUTTER TO 1 SEC

05:00 - 1 FRAME EL

CHANGE EL SHUTTER TO B

08:00 - 1 FRAME EL, EXP TIME 2 SEC

CHANGE to 80mm LENS AND f2.8

CHANGE EL SHUTTER TO 1 SEC

11:00 - 1 FRAME EL

CHANGE EL SHUTTER TO B

14:00 - 1 FRAME EL, EXP TIME 2 SEC

17:00 - 1 FRAME EL, EXP TIME 10 SEC

CYCLE NK 1 FRAME, CHANGE NK SHUTTER TO T

19:00 - 1 FRAME EL, EXP TIME 2 MIN

1 FRAME NK, EXP TIME 2 SEC

20:00 - 1 FRAME NK, EXP TIME 4 SEC

21:00 - 1 FRAME NK, EXP TIME 8 SEC

22:00 - 1 FRAME NK, EXP TIME 15 SEC

23:00 - 1 FRAME NK, EXP TIME 30 SEC

24:00 - 1 FRAME NK, EXP TIME 60 SEC

CHANGE NK SHUTTER TO 1/500 SEC

CYCLE NK 1 FRAME

CHANGE EL SHUTTER TO 1/500

COVER EL LENS, CYCLE 1 FRAME

LIGHTS UP, CMC MODE - AUTO

RECORD EL FR # _____

RECORD NK FR # _____

LUNAR ECLIPSE PHOTO PAD

T START ____:____:____

MOON ENTERS EARTH UMBRA - 20 MIN

FINAL (7/26)

CHANGE B

7/12/71

3-380

FLIGHT PLAN

MCC-H

1334 CDT

NOTES

269:00
(11102)
(X1111)
:10
:20
269:30
:40
:50
270:00

M
S
F
N

LUNAR ECLIPSE PHOTOS

ENTRY CHECKLIST

EMS ENTRY CHECK

PAGE E/1-3

GR
AP*
MS

UPDATE TO CSM
LUNAR ECLIPSE
PHOTO PAD
(PAGE 3-384)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE B	7/12/71	269:00 - 270:00	12/TEC	3-381

FLIGHT PLANNING BRANCH

FLIGHT PLAN

SXT PHOTO TEST

CONFIGURE CAMERA

CM/DAC/SXT/VHBW (EXP 1/500) 24 fps (5% MAG)
MAG (H) _____, MAG % _____
PCM CABLE _____
UTILITY POWER - ON

P52 (NO MARKS)

N70 (00000)
N88 (-10820)(-79037)(-60300)
VERIFY THRU SXT THAT OPTICS BORESIGHTED ON TARGET
G&N PWR (AC - PNL 5) - OFF
MOUNT DAC ON SXT
CMC MODE - FREE
DIM INTERIOR LIGHTS, DAC - ON AT 24 fps FOR 2 SEC
CHANGE TO TIME & 1/60
1 FRAME - 60 SEC EXP TIME
1 FRAME - 20 SEC EXP TIME
1 FRAME - 5 SEC EXP TIME
1 FRAME - 1 SEC EXP TIME
CHANGE TO 24 fps & 1/500
RUN DAC FOR 2 SEC, LIGHTS UP
CMC MODE - AUTO

V49 MNVR TO SXT PHOTO TEST ATT (270:15)
(334,260,000) HGA P 22, Y 261

P52 (NO MARKS)

N70 (00000)
N88 (-10820)(-79037)(-60300)
REMOVE DAC

VERIFY THRU SXT THAT OPTICS BORESIGHTED ON TARGET
MOUNT DAC ON SXT
CMC MODE - FREE
DIM INTERIOR LIGHTS, DAC - ON AT 24 fps FOR 2 SEC
CHANGE TO T1 & 1/60
1 FRAME - 60 SEC EXP TIME
1 FRAME - 20 SEC EXP TIME
1 FRAME - 5 SEC EXP TIME
1 FRAME - 1 SEC EXP TIME
CHANGE TO 24 fps & 1/500
RUN DAC FOR 2 SEC, LIGHTS UP
RECORD MAG % _____
REMOVE AND STOW DAC
G&N PWR - AC1 or AC2 (PNL 5)
CMC MODE - AUTO
V49 MNVR TO LUNAR ECLIPSE ATT (270:50)
(040,011,041) HGA P -22, Y 227

FINAL (7/26)
CHANGE B

7/12/71

3-382

FLIGHT PLAN

MCC-H

1434 CDT

NOTES

DSE RCD/HBR

270:00
(11102)
(X1111)

:10

SXT PHOTO TEST

DSE STOP/LBR

:20

S-BD AUX TV - TV
TV (MAD) 270:20 - 271:20 CM/TV-AVG (f5.6)

270:30

M
S
F
N
T
V

CHARGE BATTERY A
PRESS CONFERENCE

:40

:50

LUNAR ECLIPSE PHOTOS

271:00

GR
AP*
MS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	270:00 - 271:00	12/TEC	3-383

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

LUNAR ECLIPSE PHOTOS

CONFIGURE CAMERA: (LUNAR ECLIPSE)

INSTALL CAMERA SHIELD

CM4/NK/55/VHBW, BRKT (f1.2,1/500, ∞) (8 FR)

MAG (V) _____, FR # _____

CM2/EL/80/CEX (f2.8,1/500, ∞) (8 FR)

PCM CABLE

MAG (P) _____, FR # _____

V49 TRIM TO LUNAR ECLIPSE ATT (270:50)

(040,011,041) HGA P -22, Y 227

PHOTO SEQUENCE (for moon leaving earth's umbra)

00:00 - DET, RESET/START (T START)

CMC MODE FREE

DIM INTERIOR LIGHTS

CYCLE NK 1 FRAME, CHANGE NK SHUTTER TO T

06:00 - 1 FRAME NK, EXP TIME 60 SEC

07:00 - 1 FRAME NK, EXP TIME 30 SEC

08:00 - 1 FRAME NK, EXP TIME 15 SEC

COVER EL LENS, CYCLE 1 FRAME

CHANGE EL SHUTTER TO B

09:00 - 1 FRAME EL, EXP TIME 2 MIN

1 FRAME NK, EXP TIME 8 SEC

10:00 - 1 FRAME NK, EXP TIME 4 SEC

11:00 - 1 FRAME NK, EXP TIME 2 SEC

13:00 - 1 FRAME EL, EXP TIME 10 SEC

16:00 - 1 FRAME EL, EXP TIME 2 SEC

CHANGE EL SHUTTER TO 1 SEC

19:00 - 1 FRAME EL

CHANGE TO 250mm LENS AND f5.6

CHANGE EL SHUTTER TO B

22:00 - 1 FRAME EL, EXP TIME 2 SEC

CHANGE EL SHUTTER TO 1 SEC

25:00 - 1 FRAME EL

CHANGE EL SHUTTER TO 1/500 SEC

COVER EL LENS, CYCLE 1 FRAME

CHANGE NK SHUTTER TO 1/500 SEC

CYCLE NK 1 FRAME

LIGHTS UP, CMC MODE - AUTO

RECORD EL FR # _____

RECORD NK FR # _____

STOW CAMERAS

REMOVE CAMERA SHIELD

LUNAR ECLIPSE PHOTO PAD

T START ____:____:____

MOON LEAVES EARTH UMBRA - 10 MIN

FINAL (7/26)

CHANGE B

7/12/71

3-384

FLIGHT PLAN

MCC-H

1534 CDT

NOTES

271:00
(11102)
(X1111)

:10

:20

271:30

:40

:50

(11101)
(X1111)
272:00

T
V
M
S
F
N

LUNAR ECLIPSE PHOTOS

S-BD AUX TV - SCI

MASS SPECT: ION SOURCE - OFF, EXP - OFF

CAUTION: WAIT 5 MIN BEFORE MASS SPECT BOOM RETRACT

GAMMA RAY BOOM - RETRACT tb BP(~3:15)/GRAY then OFF (CTR)

MASS SPECT BOOM - RETRACT tb BP (~2:30)/GRAY then OFF (CTR)

RECORD GET

GAMMA RAY GAINSTEP - SHIELD OFF

X-RAY EXP - OFF

α RAY/X DR - α OFF

GAMMA RAY GAINSTEP - SHIELD ON (CTR)

GAMMA RAY EXP - OFF

DATA SYSTEMS ON - OFF

S-BD AUX TV - OFF (CTR)

cb SCS CONTR DIR 1 MNB - CLOSE

cb SCS CONTR DIR 2 MNA - CLOSE

ENABLE ALL JETS

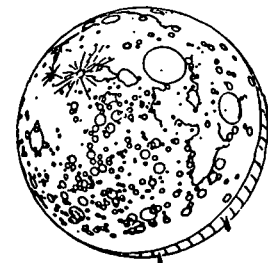
V48 (11101)(X1111)

CONFIGURE FOR URINE DUMP

GR
AP*
MS

FOV 2°

GET = 272



DUMP DSE

UPDATE TO CSM
MCC-6 MNVR PAD
ENTRY PAD
(ASSUMES MCC-6)
UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	271:00 - 272:00	12/TEC	3-385

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-6
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	+10° COMPLETE	BT + 1 SEC AND $\Delta V_c = 0$	TRIM X AXIS ONLY TO 0.2 FPS
IP CONTROL	10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC AND $\Delta V_c = 0$	TRIM X & Z AXIS TO 0.2 FPS

FINAL (7/26)
CHANGE B

7/12/71

3-386

MCC-H

1634 CDT

FLIGHT PLAN

NOTES

272:00
(11101)
(X1111)

:10

:20

272:30

:40

:50

273:00

M
S
F
N

P52 IMU REALIGN
OPTION 3 REFSMMAT
PTC ORIENTATION

REPORT: GYRO TORQUING ANGLES

H₂ PURGE LINE HEATER - ON
P30 EXTERNAL ΔV
V49 MNVR TO PAD ATT

SXT STAR CHECK
URINE DUMP

SXT STAR CHECK
P40 SPS THRUSTING OR
P41 RCS THRUSTING

H₂ & O₂ FUEL CELL PURGE
WASTE WATER DUMP

H₂ PURGE LINE HEATER - OFF

MCC-6

P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

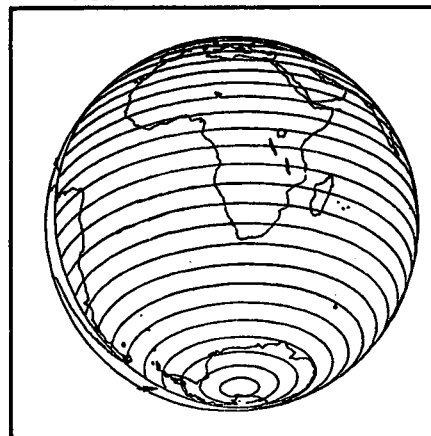
Y _____

Z _____

GET _____:_____:_____

FOV 5°

GET = 272



TIG: 272:58:20
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: N/A
ORBIT: N/A

BURN STATUS REPORT

X	X		•	•	•	•	ΔTIG
X	X		•	•	•	•	BT
						•	V _{gx}
TRIM							
X	X	X					R
X	X	X					P
X	X	X					Y
						•	V _{gx}
						•	V _{gy}
						•	V _{gz}
						•	ΔV _c
X	X	X					FUEL
X	X	X					OX
X	X	X					UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (7/26)	6/21/71	272:00 - 273:00	12/TEC	3-387

FLIGHT PLANNING BRANCH

FLIGHT PLAN

GR, XR, AP, MSO - ON (273:05)

DISABLE ALL JETS EXCEPT A1 & C2 OR B1 & D2, A3, C4, B3, D4

cb SCS CONTR DIR 1 MNB - OPEN

cb SCS CONTR DIR 2 MNA - OPEN

RHC PWR DIR (2) - OFF OR MNA/MNB

S-BD AUX TV - SCI

DATA SYSTEMS ON - ON

GAMMA RAY EXP - ON

α RAY/X DR - α ON

X-RAY EXP - ON

ALPHA/X-RAY EXP COVERS - OPEN tb - BP/GRAY then OFF (CTR)

GAMMA RAY BOOM - DEPLOY tb - BP (~2:45)/GRAY then OFF (CTR)

MASS SPECT BOOM - DEPLOY tb - BP (~2:40)/GRAY then OFF (CTR)

MASS SPECT: EXP - ON, ION SOURCE - STBY

RECORD GET _____

FLIGHT PLAN

MCC-H

1734 CDT

NOTES

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS

273:00

(11101)

(X1111)

:10

: 20

273:30

:40

: 50

$$-(11111)$$

(X1111)

274:00

MSFN

BURN STATUS REPORT

GR, XR, AP, MSO ON

V49 MNVR TO OPTICS CALIBRATION ATTITUDE

(066,152,350) HGA P -67, Y 314

P23 Cislunar Navigation

OPTICS CALIBRATION STAR N70 (00020)

P00

V49 MNVR TO SIGHTING ATTITUDE

(079,185,330) HGA P -59, Y 359

P23 CISELUNAR NAVIGATION

3 MARKS ON EACH STAR

1. N70 (00000) (00000) (00120)

N88 (+13540)(+86760)(+47847)

2. N70 (00013) (00000) (00120)

3. N70 (00021) (00000) (00110)

V48 (11111)(X1111)

GR
XR
AP
MSO

EARTH DISTANCE
~ 102,349 NM

60 EL NATH (EFH)

13 CAPELLA (EFH)

21 ALPHARD (ENH)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	273:00 - 274:00	12/TEC	3-389

FLIGHT PLANNING BRANCH

MCC-H

1834 CDT

FLIGHT PLAN

NOTES

274:00
 (11111)
 (X1111)
 :10
 :20
 274:30
 :40
 :50
 275:00

M
S
F
N

V49 MNVR TO X-RAY POINTING ATTITUDE (274:15)

(, ,)

MASS SPECT: MULT-LOW, DSCRM-HIGH, EXP-ON, ION SOURCE-ON

RECORD GET

LOGIC POWER (2) - OFF

GR
XR
AP
MS

CDR DON BIOMED HARNESS

CMP DOFF BIOMED HARNESS

V49 MNVR TO X-RAY POINTING ATTITUDE (275:00)

(, ,) HGA P , Y

REPORT: CM RCS INJECTOR VALVE TEMPS

(SYS TEST METER 5C, 5D, 6A, 6B, 6C, 6D)

CM RCS INJECTOR TEMP

5C _____ 5D _____

6A _____ 6B _____

6C _____ 6D _____

LiOH CANISTER CHANGE

(23 INTO B, STOW 21 IN A5)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	274:00 - 275:00	12/TEC	3-390

FLIGHT PLANNING BRANCH

MCC-H

1934 CDT

FLIGHT PLAN

NOTES

275:00
(11111)
(X1111)
:10
:20
275:30
:40
:50
276:00

M
S
F
N

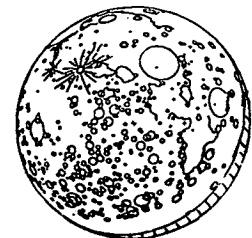
EAT PERIOD

CYCLE CMC MODE - FREE/AUTO
V48 (11101)(X1111)

GR
XR
AP
MS

FOV 1°

GET = 276



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	275:00 - 276:00	12/TEC	3-391

FLIGHT PLANNING BRANCH

2034 CDT

FLIGHT PLAN

NOTES

276:00

(11101)

(X1111)

:10

:20

276:30

:40

: 50

(11111)

(X1111)

277:00

MSFN

V49 MNVR TO OPTICS CALIBRATION ATTITUDE

(066,152,350) HGA P -66, Y 317

P23 Cislunar Navigation

OPTICS CALIBRATION STAR N70 (00020)

P00

V49 MNVR TO SIGHTING ATTITUDE

(078,191,330) HGA P -59, Y 359

P23 Cislunar Navigation

3 MARKS ON EACH STAR

1. N70 (00000) (00000) (00120)
N88 (+13540) (+86760) (+47847)

2. N70 (00013) (00000) (00120)

3. N70 (00021) (00000) (00110)

GAMMA RAY GAINSTEP-SHIELD OFF

GAMMA RAY GAINSTEP - SHIELD ON (CTR)

V48 (11111)(X1111)

GR
XR
AP
MS

EARTH DISTANCE
~ 93,233 NM

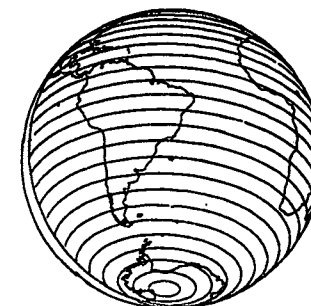
60 EL NATH (EFH)

13 CAPELLA (EFH)

21 ALPHARD (ENH)

FOV 7°

GET = 276



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	276:00 - 277:00	12/TEC	3-392

FLIGHT PI TRAINING BRANCH

MCC-H

2134 CDT

FLIGHT PLAN

NOTES

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2

COMM: HGA REACQ MODE P -40, Y 90

V49 MNVR TO PTC ATTITUDE

(N20,090,000)

P20 OPT. 2, X-AXIS

N78 (0,0,0)

N79 (-0.3500, +000.50)

N34 (0,0,0)

QUAD D, A3, AND
C4 WILL BE USED
FOR PTC RATE
DAMPING, B2 & D2
FOR PTC SPINUP

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST

COMM - HGA

PAGE S/1-26

REST PERIOD
(9 HOURS)

XR
AP
MSDAP LOAD STATUS
(11111)(X1111)

X-RAY & ALPHA
PARTICLE EXPERIMENT
COVERS WILL BE OPEN
CONTINUOUSLY UNTIL
GET 288:05

PTC

ONBOARD READOUT

BAT C _____

PYRO BAT A _____

PYRO BAT B _____

RCS A _____

B _____

C _____

D _____

DC IND SEL - MNA OR B

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS

M
S
F
N

277:00

:10

:20

277:30

:40

:50

278:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	277:00 - 278:00	12/TEC	3-393

CHANGE B

FLIGHT PLANNING BRANCH

MCC-H

2234 CDT

FLIGHT PLAN

NOTES

278:00
:20
:40
279:00
:20
:40
280:00

M
S
F
NREST PERIOD
(9 HOURS)

PTC

GR
XR
AP
MSDAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	278:00 - 280:00	12/TEC	3-394

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0034 CDT

NOTES

280:00
:20
:40
281:00
:20
:40
282:00

M
S
F
N

REST PERIOD
(9 HOURS)

PTC

GR
XR
AP
MS

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	280:00 - 282:00	12/TEC	3-395

FLIGHT PLANNING BRANCH

MCC-H

0234 CDT

FLIGHT PLAN

NOTES

282:00
:20
:40
283:00
:20
:40
284:00

M
S
F
N

REST PERIOD
(9 HOURS)

GR
XR
AP
MS

DAP LOAD STATUS
(11111)(X1111)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	282:00 - 284:00	12/TEC	3-396

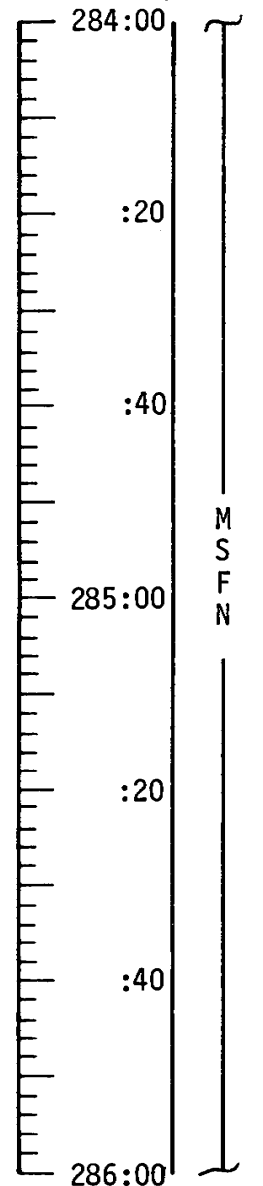
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0434 CDT

NOTES



REST PERIOD
(9 HOURS)

GR
XR
AP
MS

PTC

DAP LOAD STATUS
(11111)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	284:00 - 286:00	12/TEC	3-397

FLIGHT PLANNING BRANCH

MCC-H

0634 CDT

FLIGHT PLAN

NOTES

286:00
:20
:40
287:00
:20
:40
288:00

M
S
F
NREST PERIOD
(9 HOURS)

CSM SYSTEMS CHECKLIST
POST SLEEP CHECKLIST PAGE S/1-26

EAT PERIOD

16MM AND 70MM MAGAZINES				
CAMERA	MAGAZINES	TYPE	(DECAL COLOR)	STOWAGE LOCATION
<u>EL</u>	M	CEX	(BLUE)	B3
	N	UV	(RED)	A1
<u>DAC</u>	K	CIN	(GREEN)	A8

ENABLE ALL JETS
EXIT G&N PTC AT ROLL ANGLE 071
GAMMA RAY GAINSTEP - SHIELD OFF

GAMMA RAY GAINSTEP - SHIELD ON (CTR)

GR
XR
AP
MSDAP LOAD STATUS
(11111)(X1111)

CSM CONSUMABLES UPDATE

GET: ____:____

RCS TOTAL _____

QUAD A _____ B _____

C _____ D _____

H₂ TANK 1 _____ 2 _____ 3 _____O₂ TANK 1 _____ 2 _____ 3 _____

PTC

UPDATE TO CSM
CONSUMABLES
FLIGHT PLAN

(11111)
(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/12/71	286:00 - 288:00	12/TEC	3-398

CHANGE B

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0834 CDT

NOTES

288:00
(11111)
(X1111)
:10
:20
288:30
:40
:50
289:00

M
S
F
N

LOGIC POWER (2) - DPLY/RETR
GAMMA RAY EXP - OFF
MASS SPECT: EXP - OFF, ION SOURCE - OFF
GAMMA RAY BOOM - RETRACT tb-BP(1:40) then OFF (CTR)
ALPHA/X-RAY EXP COVERS - CLOSE tb-BP/GRAY then OFF (CTR)

RECORD GET
LOGIC POWER (2) - JETT
GAMMA RAY BOOM - JETT tb-BP/GRAY
MASS SPECT BOOM - JETT tb-BP/GRAY
DATA SYSTEMS ON - OFF
LOGIC POWER (2) - OFF
S-BD AUX TV - OFF (CTR)
ENABLE ALL JETS
cb SCS CONTR DIR 1 MNB - CLOSE
cb SCS CONTR DIR 2 MNA - CLOSE

LMP DON BIOMED HARNESS
CDR DOFF BIOMED HARNESS
LiOH CANISTER CHANGE
(24 INTO A, STOW 22 IN A5)
REPORT: CM INJECTOR VALVE TEMPS
(SYS TEST METER 5C, 5D, 6A, 6B, 6C, 6D)

ENTRY CHECKLIST

CYCLE CMC MODE - FREE/AUTO
V48 (11102)(01111)
GO/NO-GO FOR MCC-7

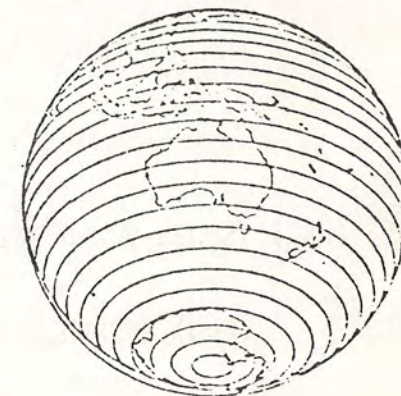
P52 IMU REALIGN
OPTION 3 REFSMMAT
PTC ORIENTATION

REPORT: GYRO TORQUING ANGLES

GR
XR
AP
MS

FOV 12°

GET = 289



P52 IMU REALIGN

N71: _____

N05: _____

N93: _____

X _____

Y _____

Z _____

GET _____ : _____ : _____

CM RCS INJECTOR TEMP

5C _____ 5D _____
6A _____ 6B _____
6C _____ 6D _____

GO/NO-GO FOR MCC-7

EI-6 HR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL(7/26)	6/21/71	288:00 - 289:00	13/TEC	3-399

FLIGHT PLANNING BRANCH

MCC-H

0934 CDT

FLIGHT PLAN

NOTES

289:00
(11102)
(01111)

:10

:20

289:30

:40

:50

290:00

M
S
F
N

V49 MNVR TO OPTICS CALIBRATION ATTITUDE
(330,073,330) OMNI D
P23 CISELUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00001)
P00

V49 MNVR TO SIGHTING ATTITUDE
(297,044,000) OMNI D
P23 CISELUNAR NAVIGATION
3 MARKS ON EACH STAR

1. N70 (00040) (00000) (00220)

40 ALTAIR (MFH)

2. N70 (00000) (00000) (00220)
N88 (+79939)(-53163)(-27991)

221 DELTA CAPRICORNI
(MFH)

3. N70 (00000) (00000) (00210)
N88 (+85577)(-21967)(+46840)

223 BETA PEGASI (MNH)

4. N70 (00000) (00000) (00210)
N88 (+93634)(-23622)(+25973)

224 MARKAB (MNH)

5. N70 (00000) (00000) (00210)
N88 (+96452)(+04966)(+25929)

126 GAMMA PEGASI (MNH)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	289:00 - 290:00	13/TEC	3-400

FLIGHT PLANNING BRANCH

THIS PAGE INTENTIONALLY BLANK

FLIGHT PLAN

UV PHOTOS - TRANSEARTH COAST

V49 MNVR TO EARTH UV PHOTO ATT (290:15)
(231,359,310) OMNI D

CONFIGURE CAMERA: (UV)
CM5/EL/105/UV, BRKT, CONT (f8,1/60,∞) (8 FR)
RINGSLIDE
MAG (N) _____, FR # _____

REMOVE R12 FLIGHT DATA FILE STOWAGE BOX
DAMP RATES WITH ALL JETS ENABLED
VERIFY FDAI SCALE 5/1
WAIT 5 MIN FOR RATES TO DAMP
VERIFY RATES ARE <0.2°/SEC IN ALL AXES
REMOVE CM5 WINDOW COVER, MOUNT UV CARDBOARD SHADE
AND CAMERA
CMC MODE - FREE

2 FRAMES, FILTER 1, CHANGE SHUTTER TO B
2 FRAMES, FILTER 2, EXP TIME 20 SEC
CHANGE SHUTTER TO 1/250
2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/500
2 FRAMES, FILTER 4
RECORD FR # _____

CONFIGURE CAMERA: (UV COLOR)
CM5/EL/105/CEX,BRKT,CONT (f8,1/250,∞) (1 FR)
RINGSLIDE
MAG (M) _____, FR # _____
1 FRAME, FILTER 4
RECORD FR # _____
CMC MODE - AUTO

V49 MNVR TO MOON PHOTO CALIBRATION ATT (290:40)
(002,333,000) HGA P 7, Y 250

CONFIGURE CAMERA: (UV CALIBRATION)
CM5/EL/105/UV, BRKT, CONT (f8,1/60,∞) (8 FR)
RINGSLIDE
MAG (N) _____, FR # _____

DAMP RATES WITH ALL JETS ENABLED
WAIT 5 MIN FOR RATES TO DAMP
VERIFY RATES ARE <0.2°/SEC IN ALL AXES
CMC MODE - FREE

2 FRAMES, FILTER 1, CHANGE SHUTTER TO 1/15
2 FRAMES, FILTER 2
CHANGE SHUTTER TO 1/60
2 FRAMES, FILTER 3, CHANGE SHUTTER TO 1/250
2 FRAMES, FILTER 4
RECORD FR # _____
REMOVE CAMERA AND UV CARDBOARD SHADE
NOTE: COMMENTS AS TO CONDITION OF WINDOW 5
REPLACE CM5 WINDOW COVER
CMC MODE - AUTO

FLIGHT PLAN

MCC-H

1034 CDT

NOTES

290:00

(11102)
(01111)

:10

:20

290:30

:40

:50

291:00

M
S
F
N

UV PHOTOS

UPDATE TO CSM
MCC-7 MNVR PAD &
ENTRY PAD

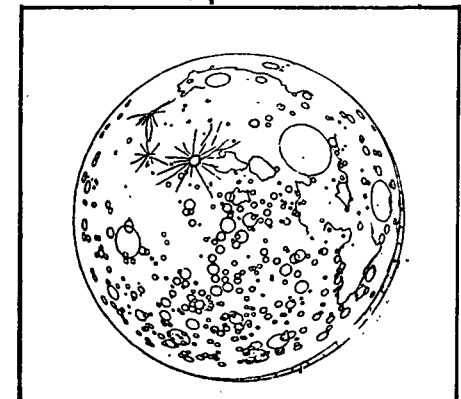
UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS
MCC-7 TGT LOAD
DESIRED ORIENT
(ENTRY)

EI-4 HR

V49 MNVR TO P52 ATTITUDE
(081,036,054) HGA P -23, Y 217
ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS

FOV 1°

GET = 290



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	290:00 - 291:00	13/TEC	3-403

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-7
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	±10° COMPLETE	BT + 1 SEC AND $\Delta C_c = 0$	TRIM X AXIS ONLY TO 0.2 FPS

FINAL (7/26)

6/21/71

3-404

1134 CDT

NOTES

- 291:00
(11102)
(01111)

P52 IMU REALIGN
OPTION 3 REFSMMAT
PTC ORIENTATION

STARS _____,
SA _____,
TA _____,

REPORT: GYRO TORQUING ANGLES

P52 IMU REALIGN
OPTION 1 PREFERRED
ENTRY ORIENTATION

P52 IMU REALIGN

N71: _____,

N05: .

N93:

X .

Y .

$$Z \quad \cdot \cdot$$

GET :

SC CONT - CMC

BMAG (3) - RATE 2

P30 EXTERNAL ΔV

V49 MNVR TO PAD BURN ATT

MSFN

291:30

:40

: 50

292:00

SXT STAR CHECK
P40 SPS THRUSTING OR
P41 RCS THRUSTING

TIG: 291:58:20
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: N/A
ORBIT: N/A

BURN STATUS REPORT

X	X		•	ΔTIG
X	X		•	BT
			•	V _{gx}
TRIM				
X	X	X		R
X	X	X		P
X	X	X		Y
			•	V _{gx}
			•	V _{gy}
			•	V _{gz}
			•	ΔV _c
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBA

EI - 3 HR

MCC-7

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	291:00 - 292:00	13/TEC	3-405

FLIGHT PLANNING BRANCH

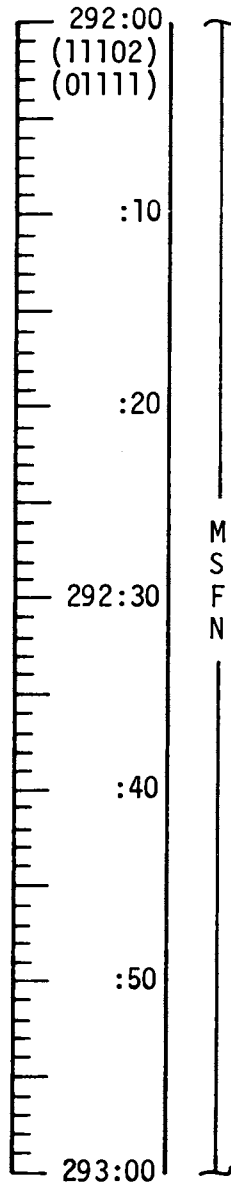
FLIGHT PLAN

MCC-H

1234 CDT

NOTES

UPLINK TO CSM
CSM S.V. (MSFN)
TO LM SLOTS



BURN STATUS REPORT
V49 MNVR TO OPTICS CALIBRATION ATTITUDE
(060,235,330) HGA P -12, Y 214
P23 CISELUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00001)
P00
V49 MNVR TO SIGHTING ATTITUDE
(038,267,000) OMNI C
P23 CISELUNAR NAVIGATION
3 MARKS ON EACH STAR

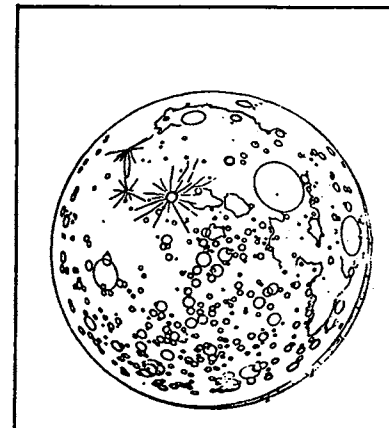
1. N70 (00000) (00000) (00210)
N88 (+96452)(+04966)(+25929)

2. N70 (00000) (00000) (00220)
N88 (+59893)(-32359)(-73251)

3. N70 (00040) (00000) (00220)

LOGIC SEQUENCE CHECK PAGE E/1-2
GO/NO-GO FOR PYRO ARM (CUE MSFN)
LOGIC ON

FOV 1° GET = 292:30



EARTH DISTANCE
~ 24,776 NM

126 GAMMA PEGASI (MNH)

120 ALPHA GRUIS (MFH)

40 ALTAIR (MFH)

EI - 2 HR
GO/NO-GO FOR PYRO
ARM SEQUENCE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	292:00 - 293:00	13/TEC	3-406

FLIGHT PLANNING BRANCH

NOTES

- 293:00
(11102)
(01111)

:10

:20

29 3:30

MSFN

P52 IMU REALIGN
OPTION 3 REFSMMAT
ENTRY ORIENTATION

REPORT: GYRO TORQUING ANGLES

GDC ALIGN
V49 MNVR TO HORIZON CHECK ATTITUDE
BORESIGHT & SXT STAR CHECK

EMS ENTRY CHECK	PAGE E/1-3
PRIMARY WATER EVAP ACTIVATION	PAGE E/1-4
SEC WATER EVAP ACTIVATION	PAGE E/1-4
CONFIGURE CAMERA EQUIP FOR FIREBALL AND CHUTES PHOTOS	
CM RCS PREHEAT (IF REQD)	PAGE E/1-4
FINAL STOWAGE	PAGE E/1-4

P52 IMU REALIGN

N71: _____,

N05: .

N93:

X .

Y

Z.

GET :

EI - 1 HR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	293:00 - 294:00	13/TEC	3-407

FLIGHT PLANNING BRANCH

MCC-H

1434 CDT

FLIGHT PLAN

NOTES

GO/NO-GO FOR
PYRO ARM
UPDATE TO CSM
ENTRY PAD
RECOVERY PAD
UPLINK TO CSM
CSM S.V. & V66

EI - 30 MIN
VHF-A SIMPLEX
COMM CHECK

294:00
(11102)
(01111)

:10

:20

294:30

:40

(ENTRY
DAP)
:50

295:00

M
S
F
N

TERMINATE RCS PREHEAT

CM RCS ACTIVATION

GO/NO-GO FOR PYRO ARM (CUE MSFN)

LOGIC ON

SET DET (UP, TO EI)

EMS INITIALIZATION

RSI ALIGNMENT

CM RCS CHECK

PAGE E/1-5

PAGE E/1-6

PAGE E/2-1

PAGE E/2-1

PAGE E/2-1

PAGE E/2-1

SEPARATION CHECKLIST

P61 ENTRY PREP PAGE E/2-2

P62 CM/SM SEP & PRE-ENTRY MNVR

SECS PYRO ARM

CM/SM SEP 294:43

V49 MNVR TO ENTRY ATT
(000,152,000)

EI 294:58:20

TRAJECTORY EVENTS

TIME FROM 400K FT

MIN:SEC

400K FT (GET 294:58:20)

00:00

ENTER S-BAND BLACKOUT

00:18

0.05G

00:29

KA-INITIATE CONSTANT DRAG

01:14

RDOT = -700 FPS

01:20

PEAK G

01:24

SUBCIRCULAR VELOCITY

02:10

P64 TO P67

02:12

EXIT S-BAND BLACKOUT

03:34

GUIDANCE TERMINATION

06:50

DROGUE DEPLOYMENT

07:47

MAIN DEPLOYMENT

08:36

SPLASHDOWN

13:26

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	294:00 - 295:00		3-408

FLIGHT PLANNING BRANCH

MSC

SECTION 4 - CONSUMABLES



Mission profile dependent
7/6/71 Final

THE SPS ANALYSIS ASSUMPTIONS
FOR THE SPS PROPELLANT ANALYSIS

1. All spacecraft weights and the sequential consumables losses were taken from the Spacecraft Operational Data Book, Amendment 106.
2. The engine I_{sp} assumed for this analysis is 315.0 seconds.
3. The 3σ dispersions are the RSS of the penalties imposed on the SPS margin by 3σ dispersions in propellant loading, mixture ratio, engine I_{sp} , maneuver ΔV , spacecraft weight, and consumable weight losses.
4. The CSM/LM weights for the J-missions have increased to an extent that, for some launch dates, the S-IVB will not have sufficient propellant reserves to compensate for a 3σ engine. Thus, in order to have a combined 3σ confidence level for the S-IVB and SPS, the S-IVB ΔV deficit is covered in the SPS propellant budget. For the Apollo 15, July 26, 1971, launch at an 80° azimuth, the S-IVB sigma level is 2.8. The statistical ΔV cost, related to end-of-mission ΔV , is 20 fps.
5. The ground rule for a contingency allowance is to budget for either an LM rescue or for a maneuver to avoid adverse weather conditions at entry, whichever produces the least SPS margin. The ΔV for the LM rescue allowance and the weather avoidance allowance is 600 ft/sec and 300 ft/sec, respectively. For this mission, the weather avoidance allowance produces the least SPS margin.

Mission profile dependent
7/6/71 Final

APOLLO 15 SPS PROPELLANT SUMMARY

[JULY 26, 1971, LAUNCH DATE; 80° LAUNCH AZIMUTH]

Item	Required, lb	Remaining, lb
Actual loaded	--	40 699.6
Trapped and unavailable	441.4	40 258.2
Outage	22.0	40 236.2
Unbalance meter	100.0	40 136.2
Available for ΔV	--	40 136.2
Required for ΔV		
LOI (2997.9 fps)	26 233.0	13 903.2
DOI (207.6 fps)	1 557.5	12 345.7
CIRC (70.8 fps)	276.5	12 069.2
LOPC (308.6 fps)	1 128.1	10 941.1
SHAPING (64.2 fps)	242.8	10 698.3
TEI (3050.0 fps)	9 319.3	1 379.0
Nominal remaining		1 379.0
Dispersions		
TLMC (23 fps)	262.2	1 116.8
-3 σ performance	351.7	765.1
S-IVB ΔV deficit (20 fps)*	52.0	713.1
Margin above 3 σ		713.1
Contingency (276 fps)**	713.1	0.0

*The ΔV deficit is in terms of end-of-mission ΔV .

**Available for weather avoidance.

Mission profile dependent
7/2/71 Final

GROUND RULES AND ASSUMPTIONS FOR THE CSM CRYOGENICS

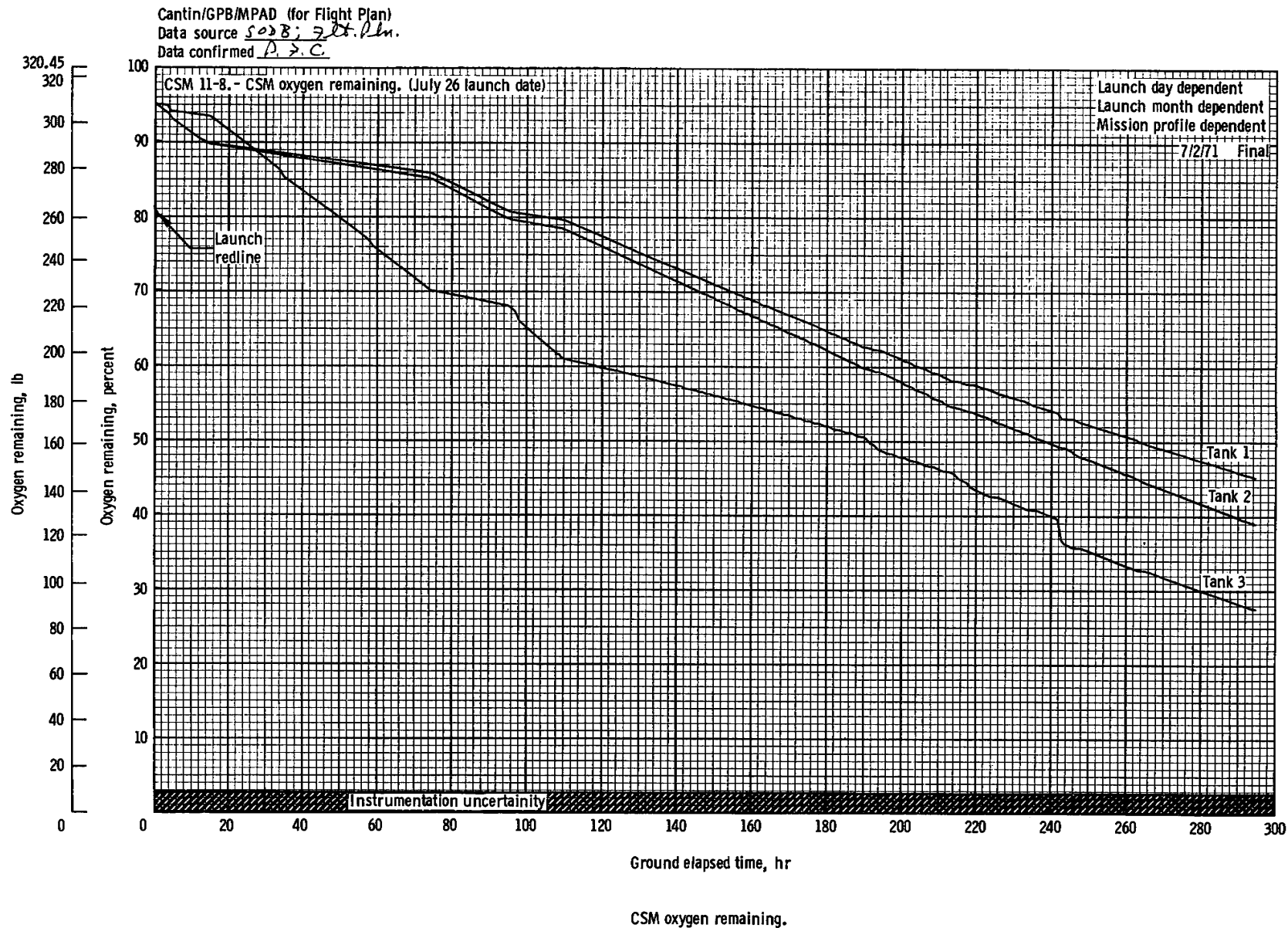
1. Three O_2 and H_2 tanks are available.
2. Fuel cell purging is included in the EPS requirements.
3. No cryogenic venting was assumed in flight.
4. The EPS hydrogen consumption rate ($\dot{H}_2$) (lb/hr) = $0.00257 \times I_{fc}$
when I_{fc} is the total fuel cell current.
5. The EPS oxygen consumption rate ($\dot{O}_2$) (lb/hr) = $7.936 \times \dot{H}_2$.
6. No allowance for the SM enhancement battery is assumed.

Mission profile dependent
7/2/71 Final

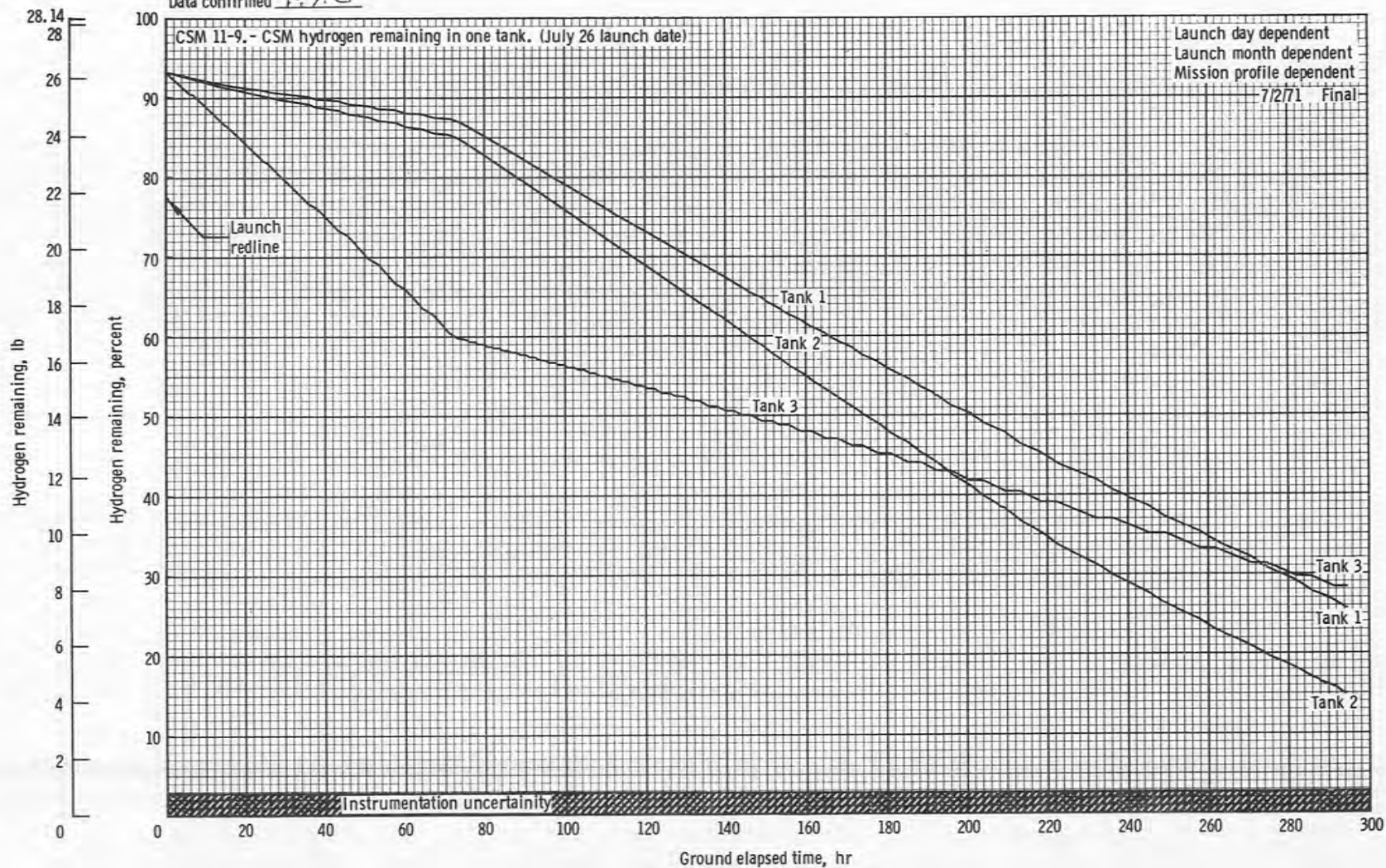
APOLLO 15 CRYOGENIC SUMMARY

	H ₂ lbs	O ₂ lbs
PLANNING ALLOWANCE		
TOTAL LOADED	87.9	990.3
LESS RESIDUAL	3.5	19.8
LESS INSTRUMENTATION ERROR	<u>2.3</u>	<u>26.0</u>
AVAILABLE FOR MISSION PLANNING	82.1	944.5
PRELAUNCH REQUIREMENT*	5.0	56.5
FLIGHT REQUIREMENT		
EPS (INCLUDING FUEL CELL PURGE)	59.4	470.3
ECS (INCLUDING CABIN PURGE + EVA)	--	81.3
LM PRESSURIZATION	<u>--</u>	<u>11.5</u>
	59.4	563.1
NOMINAL RESERVES		
EPS UNCERTAINTY (2.5%)	1.5	11.8
ECS UNCERTAINTY (.08 #/HR)	<u>--</u>	<u>23.6</u>
	1.5	35.4
TOTAL REQUIREMENT	65.9	655.0
MARGIN T = 0 (FILL/LAUNCH)	16.2	289.5

*Supplied by KSC.



Cantin/GPB/MPAD (for Flight Plan)
 Data source 5028; 7-26-71
 Data confirmed P. J. C.



CSM hydrogen remaining in one tank.

Mission profile dependent
4/22/71 Basic

SM RCS Ground Rules and Assumption

1. Following transposition and docking, the S-IVB performs the evasive maneuver.
2. Two midcourse corrections (translunar) are executed as SPS burns with one MCC followed by an RCS trim.
3. One midcourse correction (transearth) is executed as an RCS burn of 5 fps.
4. Quad management is to be determined during the mission.
5. Single jet RCS control during SIM exps.
6. Couple jet RCS control during SIM off periods (major burns)
7. All maneuvering at low rate ($0.2^\circ/\text{sec}$) both docked and undocked.
8. Attitude hold deadband during SIM photography and major burns - 0.5° .
9. Attitude hold deadband at other time - 5.0° .
10. Nominal 4-jet ullages.
11. Redlines have been defined by the Flight Control Division as an aid in assuring that mission rules are not violated during the mission. They are subject to review during the mission as mission phases are completed and systems capabilities are evaluated. In the event the rescue redline is violated prior to rendezvous, lunar orbit photography activities can be curtailed to conserve propellant. The lunar orbit redline includes a nominal transearth coast phase (with all navigational sightings) plus a 3 sigma G&N TEI cutoff error MCC. If a rescue is required and the lunar orbit redline is violated prior to the nominal TEI, TEI can be performed early and navigational sighting activity curtailed during the transearth phase. The rescue redline is based on the minimized activity during the transearth phase.

Mission profile dependent
7/1/71 Final

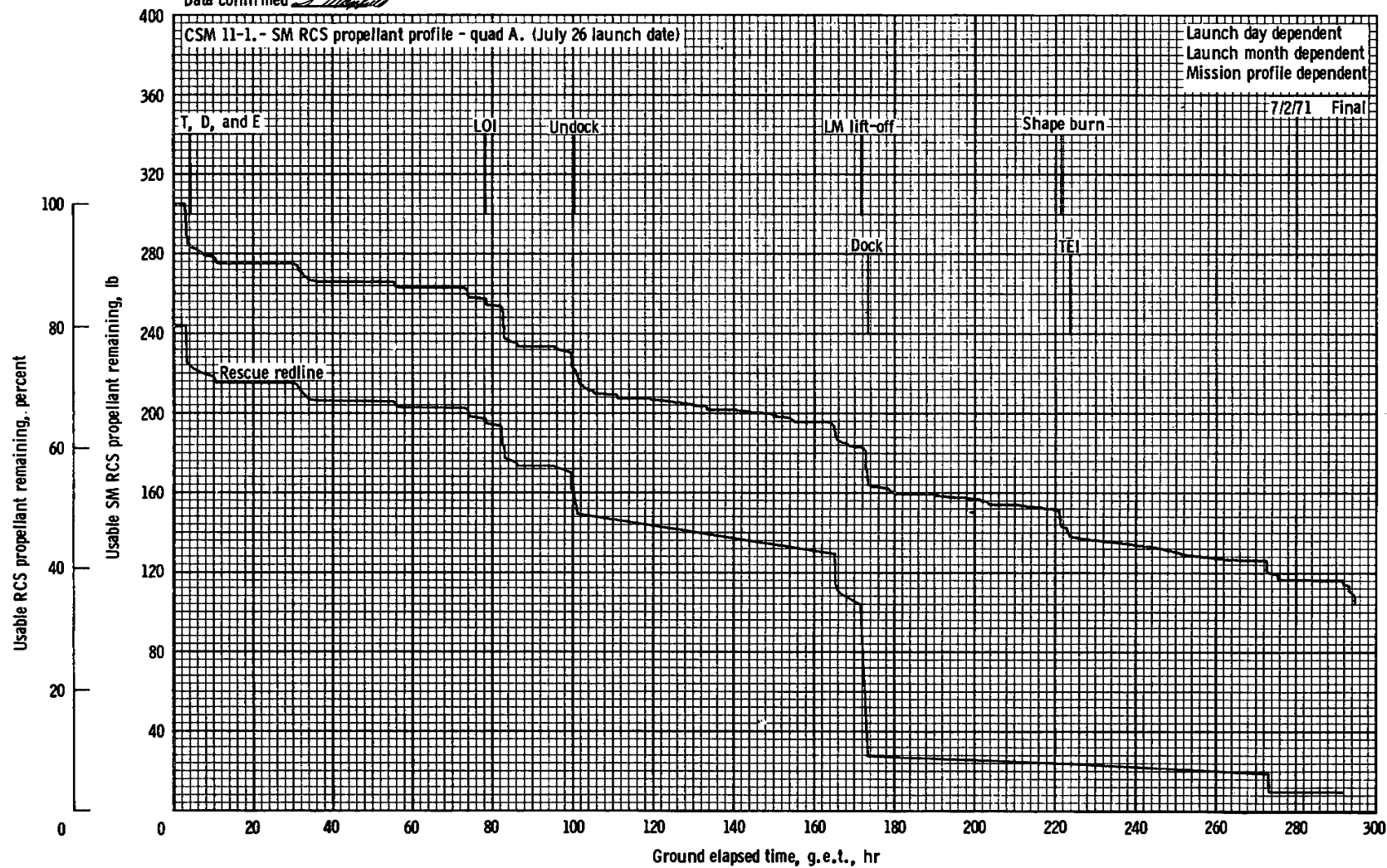
APOLLO 15 SM RCS ANALYSIS

Item	Required, lb	Remaining, lb
Expected loading	--	1342.4
Initial outage M/R	15.6	--
Total trapped	26.4	--
Gaging inaccuracy	80.4	--
Deliverable		1220.0
Nominal usage		
Translunar coast	192	--
Lunar orbit	444	--
Transearth coast	129	--
Total	765	--
Nominal remaining usable		455

Mayfield/GPB/MPAD (for Flight Plan, CSM Systems Data)

Data source *Flight Plan 5-48*

Data confirmed *A. Mayfield*

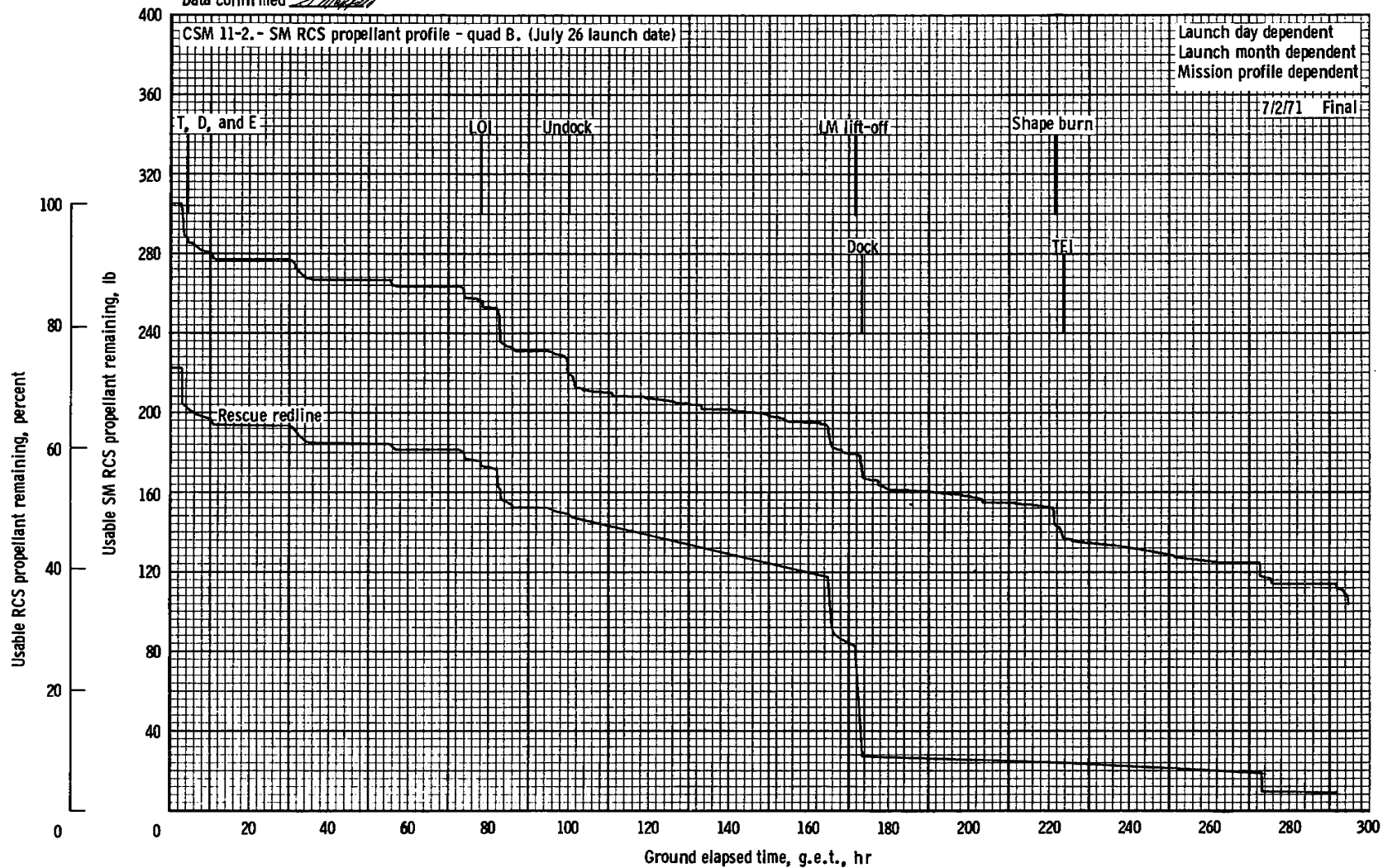


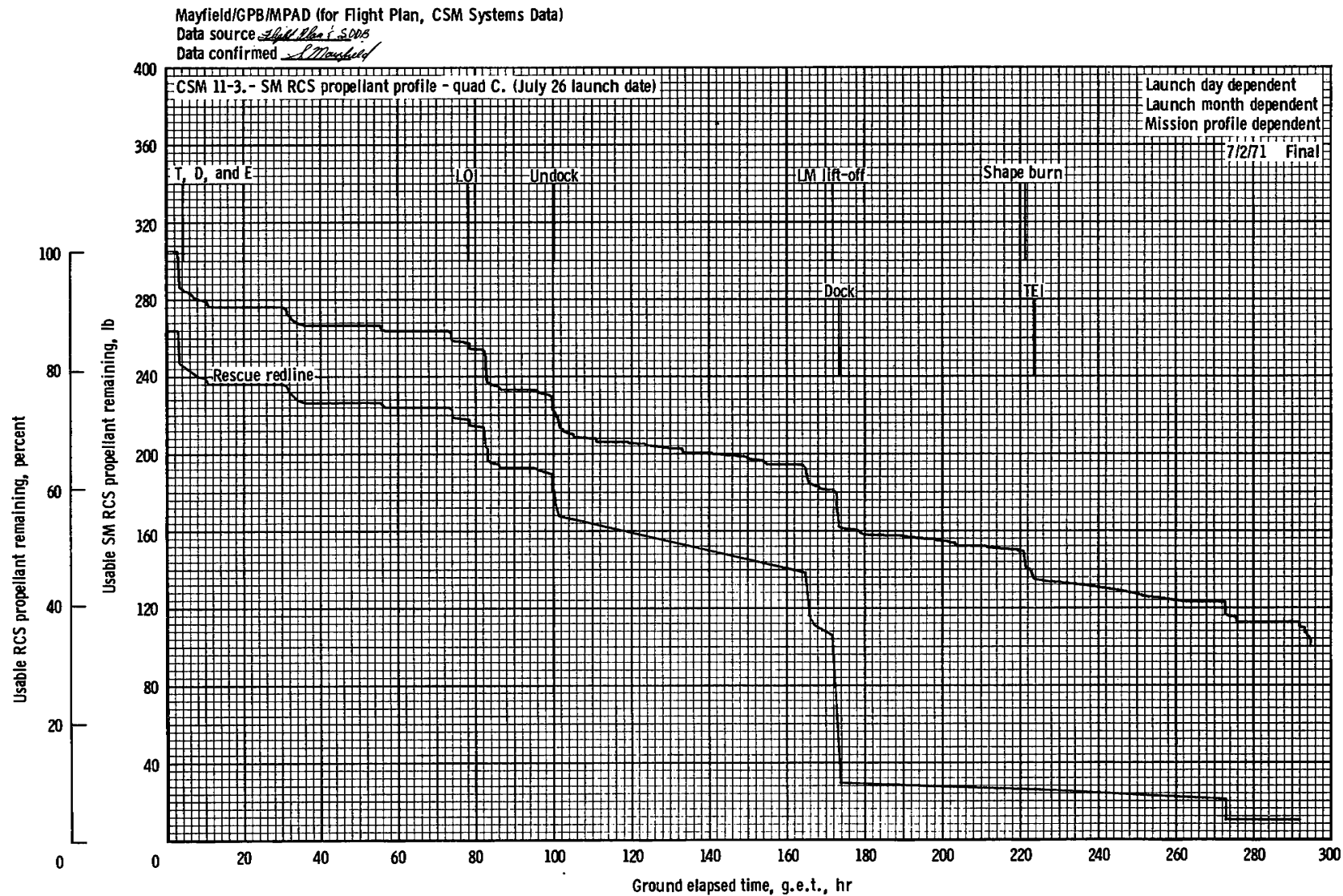
SM RCS propellant profile - quad A.

Mayfield/GPB/MPAD (for Flight Plan, CSM Systems Data)

Data source *Flight Plan 1-5008*

Data confirmed *J. Mayfield*



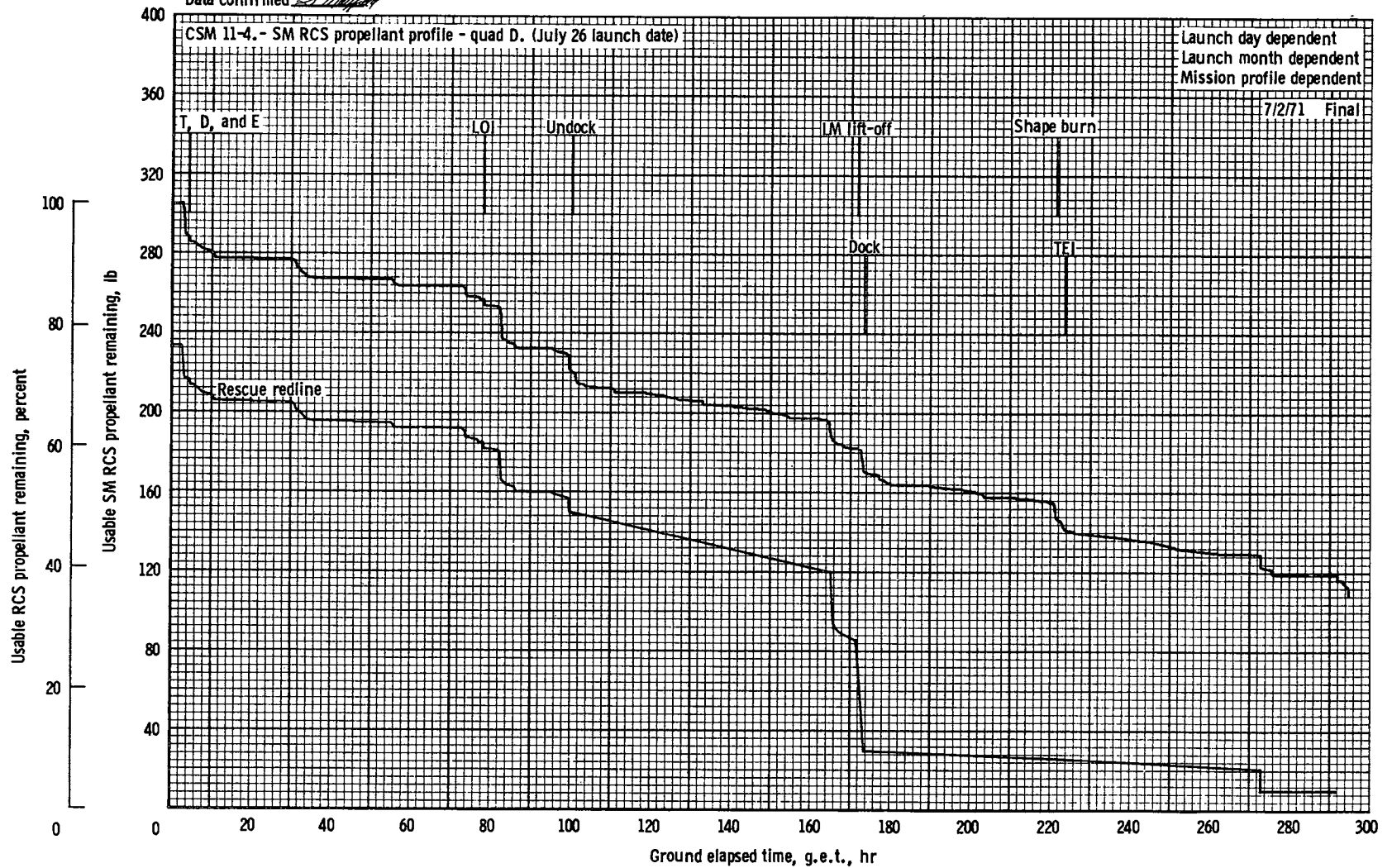


SM RCS propellant profile - quad C.

Mayfield/GPB/MPAD (for Flight Plan, CSM Systems Data)

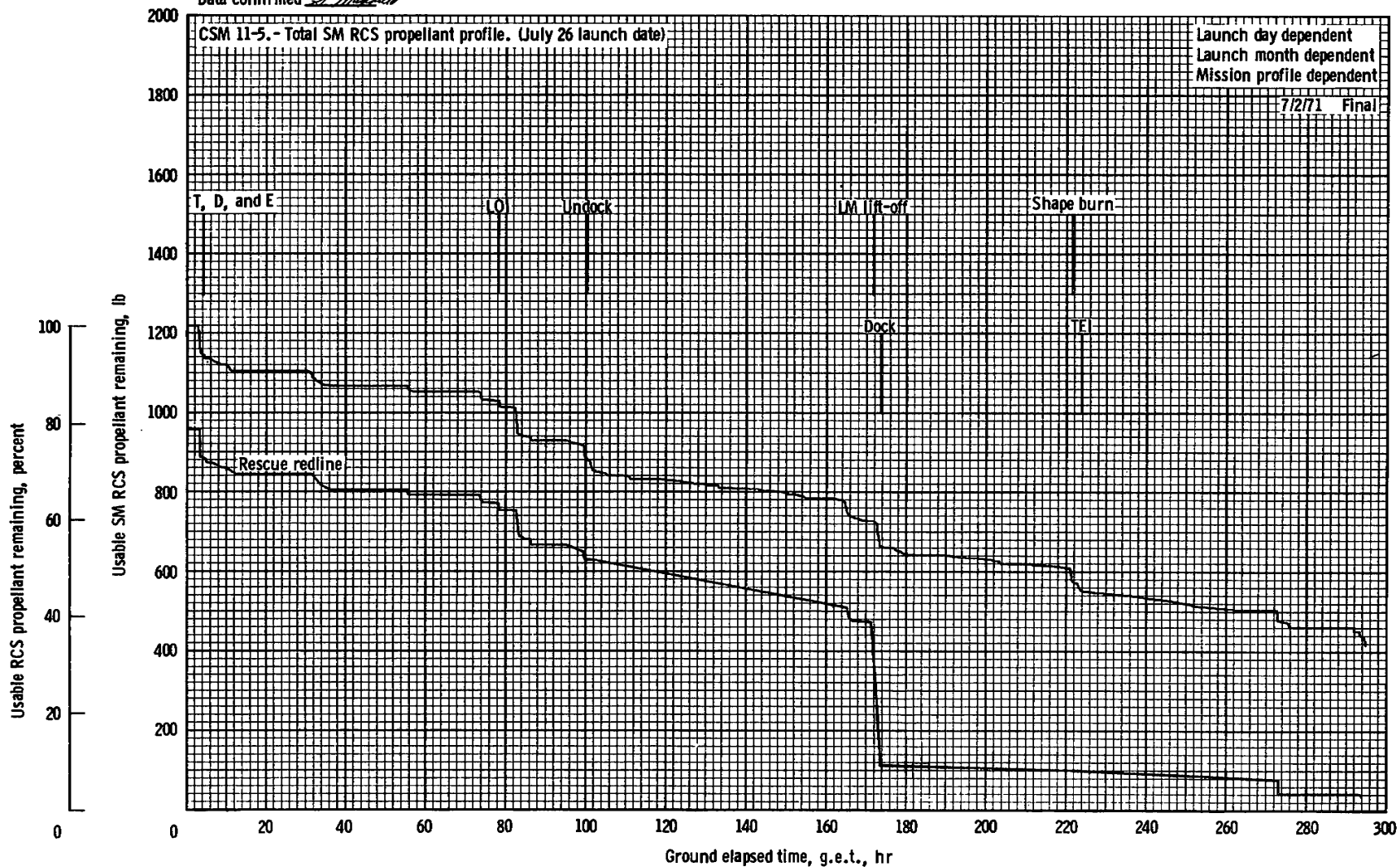
Data source *Flight Plan 5000*

Data confirmed *L. Mayfield*



SM RCS propellant profile - quad D.

Mayfield/GPB/MPAD (for Flight Plan, CSM Systems Data)

Data source *3-11-71 (Rev. 1-5-70)*Data confirmed *L. Mayfield*

Total SM RCS propellant usage profile.

Mission profile dependent
7/2/71 Final

CM RCS PROPELLANT SUMMARY

Item	Propellant required, lb	Propellant remaining, lb
Loaded	--	245.0
Trapped	36.4	208.6
Available for mission planning . . .	--	208.6
Nominal usage*	50.6	158.0
Nominal remaining	--	158.0

*CM RCS propellant usage is for dual ring operation
with DAP control

ASSUMPTIONS FOR THE LM EPS ANALYSIS

- a. Energy available from the descent batteries is 2075 A-h and from the ascent batteries is 592 A-h.
- b. Energy unusables caused by lack of continuous MSFN coverage for the descent and ascent stages are zero.
- c. Energy unusables caused by TM inaccuracies for the descent and ascent stages were 68 and 18 A-h, respectively. The new descent battery current measurement uncertainty of 0.5 amperes per battery was used.
- d. Energy unusables caused by checklist deviations (dispersion) for the descent and ascent stages were 33 and 6 A-h, respectively. This dispersion is obtained by calculating 2 percent of the energy used.
- e. No energy was budgeted for the PGNCs power uncertainty.
- f. In accordance with the Flight Plan, the PGNCs was in standby mode from surface powerdown until 1.76 hours before powerup.
- g. The RCS heaters were assumed to have a 100 percent duty cycle for 15 minutes after initial activation and then to decrease to a 7 percent duty cycle until undocking. From undocking until lunar surface powerdown, the heaters were assumed to cycle at 0 percent, but, from surface powerdown until lunar lift-off, the duty cycle was assumed to be 4.5 percent.
- h. The MESA heater power requirements were established by GAEC thermal analysis. From circuit breaker activation to touchdown the heater was assumed to be on 35 percent of the time in the low mode (two 25 watt heaters). From touchdown to the start of the open thermal blanket period of EVA-1 the duty cycle was 20 percent in the high mode (six 25 watt heaters). The duty cycle was 55 percent (high mode) during the open blanket period. At the end of the open blanket period the duty cycle decreased to 29 percent. At the start of EVA-2 the MESA heaters were turned off for the remainder of the mission.
- i. The inverter was operated throughout the mission.
- j. The CDR and LMP forward window heaters were assumed not to be needed.

ASSUMPTIONS FOR THE LM EPS ANALYSIS - Concluded

k. TV power is supplied by the LM during the first hour of EVA-1. For the remainder of EVA-1 and the other EVA's, the TV will be powered by the lunar communications relay unit (LCRU).

l. The liquid cooled garment pump was operated before each EVA for 17 minutes.

m. The S-band power amplifier was cycled as dictated by the time line.

n. The portable utility lights were assumed to be off throughout the mission.

o. In accordance with the Flight Plan, the floodlights were turned off at the beginning of the first sleep period, and on again at PGNCs powerup (lift-off - 2:15). The overhead and forward floodlights were not used.

p. The short ($M=1$) rendezvous was considered nominal.

q. At the beginning of the analysis, it was assumed that a total of 10 A-h had been used from the descent batteries between the period starting 30 minutes before launch and ending at the conclusion of transposition and docking.

Mission profile dependent
7/1/71 Final

DESCENT STAGE EPS SUMMARY

Item	A-h required	A-h remaining
Initial capacity	--	2075
Total unusables	101	1974
Required through touchdown	292	1682
Required for surface stay	1356	326
Total usable margin	--	326

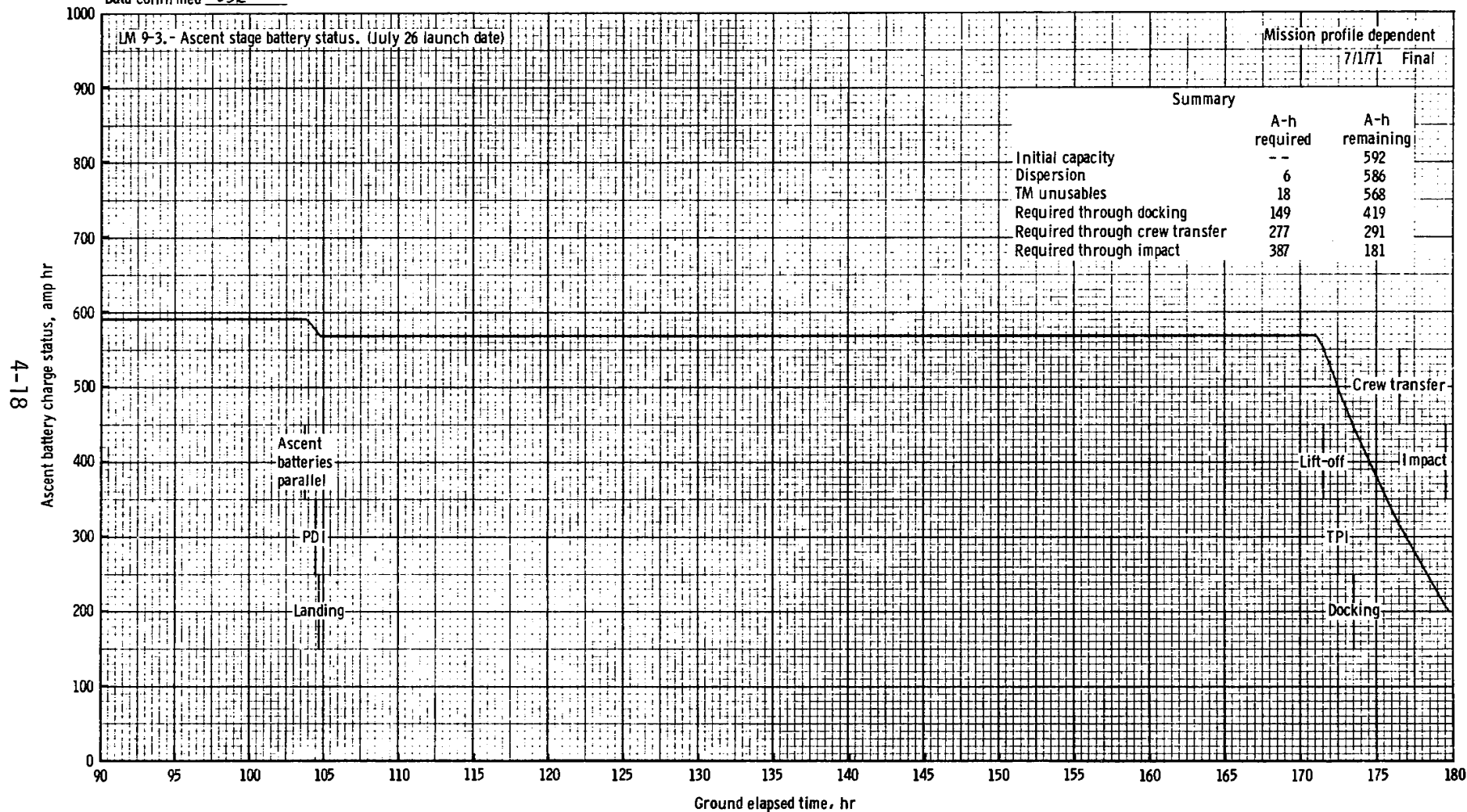
ASCENT STAGE EPS SUMMARY

Item	A-h required	A-h remaining
Initial capacity	--	592
Total unusables	24	568
Required through docking	149	419
Required through crew transfer	277	291
Required through impact	387	181

Ritchey/GPB/MPAD (for LM Systems)

Data source Flight Plan

Data confirmed USC

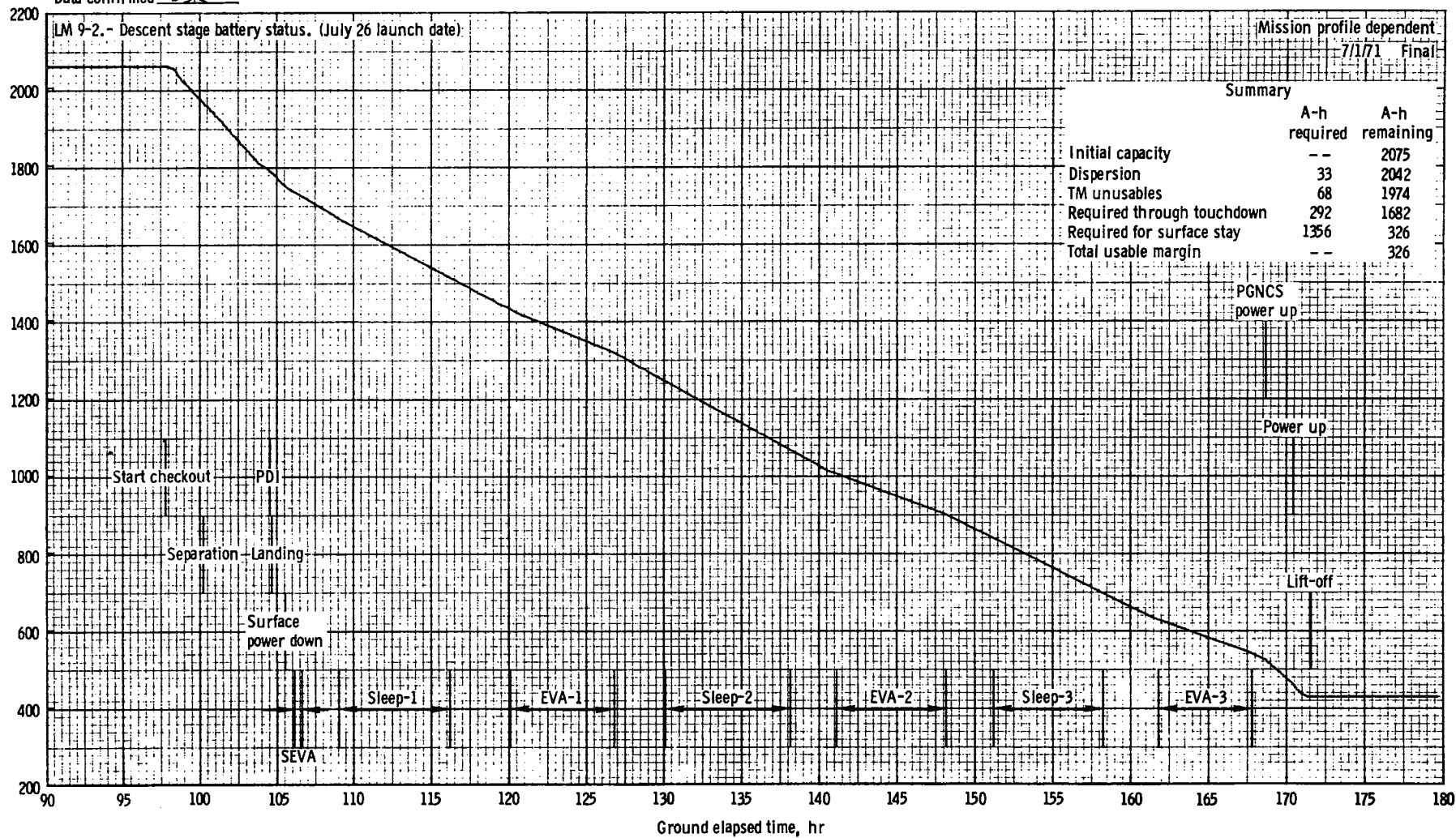


Apollo 15 ascent electrical energy remaining.

61-7

Descent battery charge status, amp hr

Ritchey/GPB/MPAD (for LM Systems)

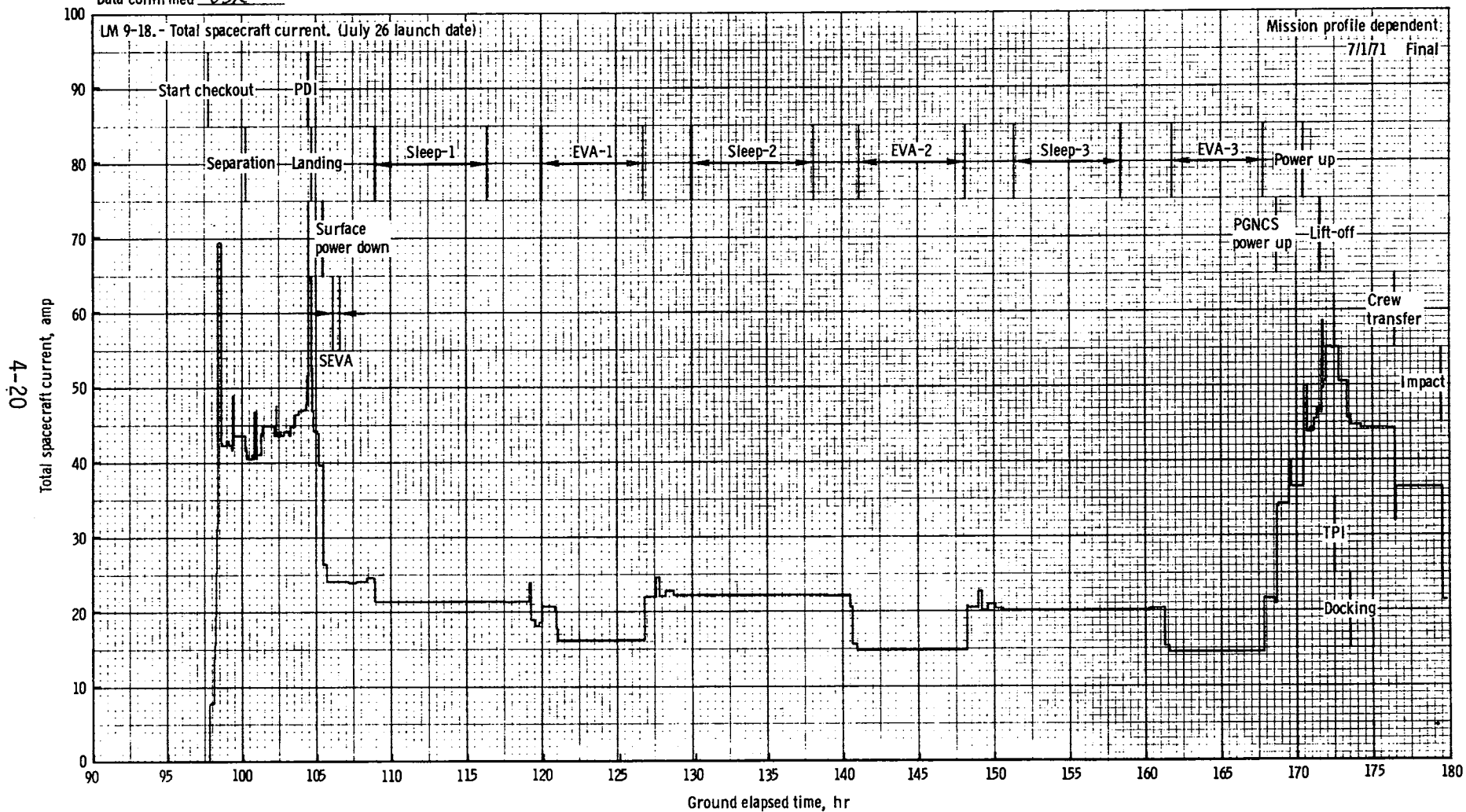
Data source Flight PlanData confirmed USR

Apollo 15 descent electrical energy remaining.

Ritchey/GPB/MPAD (for LM Systems)

Data source *Flight Plan*

Data confirmed *USR*



Apollo 15 total LM spacecraft current.

LM ECS Assumptions

- a. The oxygen analyses were calculated using a cabin leak rate of 0.06 lb/hr based on previous Apollo postflight analyses.
- b. Metabolic rates were varied using the final flight plan and table 4.3-II of SODB Vol. II.
- c. Metabolic oxygen consumed was calculated by $(1.643 \times 10^{-4} \times \text{lb/Btu})$ (metabolic rate, Btu/hr).
- d. The cabin regulator check and the suit integrity check were assumed to require 0.5 pound of oxygen.
- e. The cabin was pressurized five times with 5.5 pounds required for all pressurizations except the last one which required 5.8 pounds.
- f. The dispersion in the oxygen profile was calculated as 5 percent of the nominal oxygen requirement.
- g. The PLSS refills required 63.8 pounds of water and 5.4 pounds of oxygen.
- h. The sublimator fill required 2.23 pounds.
- i. The drink bags required 12.0 pounds of water.
- j. Water lost through crew micturition was 0.11 lb/hr per man.
- k. Water required for thermal control was calculated by dividing the total spacecraft heat load by 1040 Btu/lb.
- l. The dispersion in the water profile was calculated as 5 percent of the nominal usage.
- m. The descent oxygen tanks were loaded to 2610.0 psi at 70.0°F.

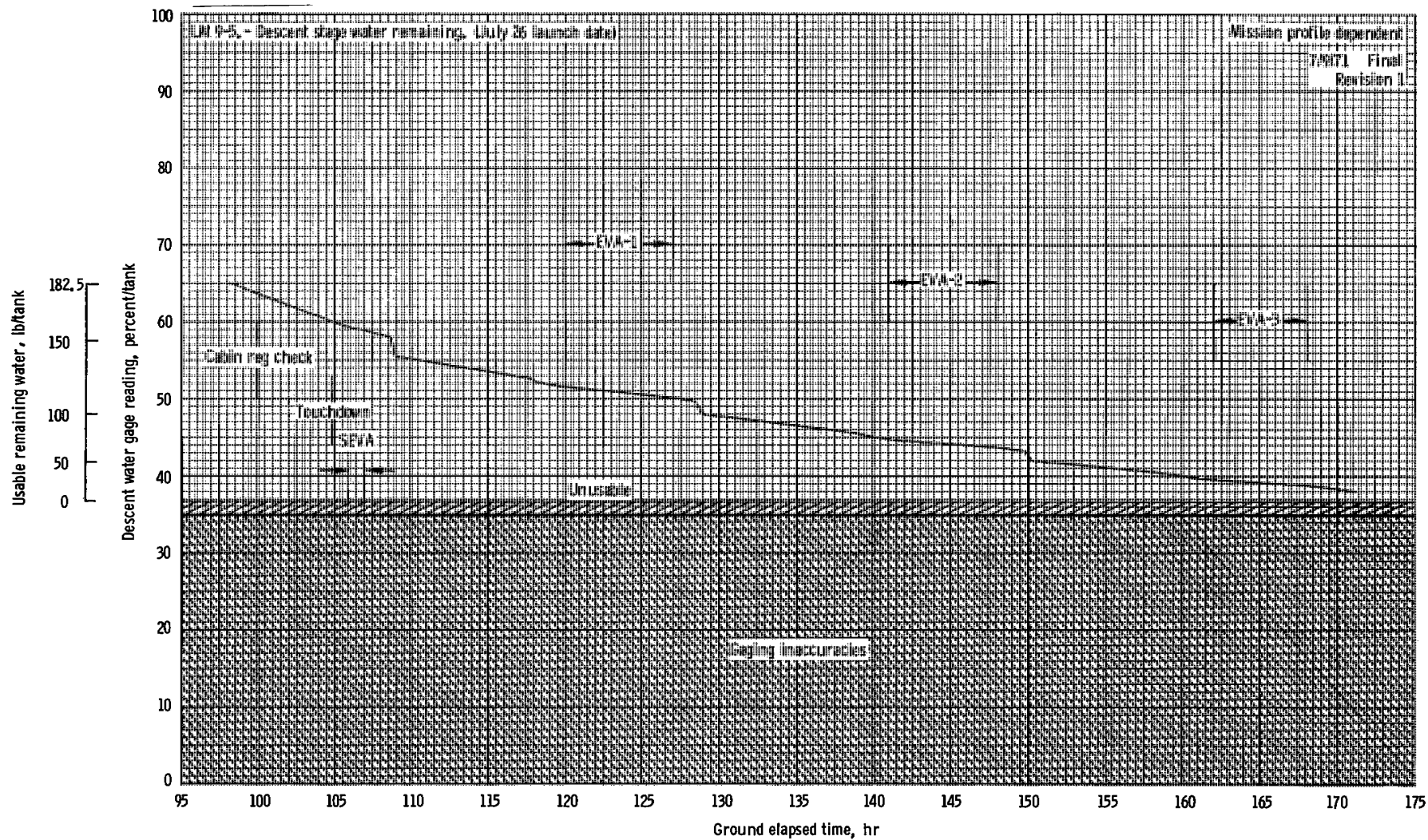
LM ECS SUMMARY

(a) Water

Description	Descent, lb	Ascent, lb
Loaded	423.0	85.0
Sampling	11.0	--
Residual	13.3	1.7
Telemetry uncertainty	22.5	15.0
Loading uncertainty	8.9	1.7
Available for mission	367.3	66.6
Required to lunar landing	39.7	0.0
Required to lunar lift-off	300.4	0.0
Required to LM/CSM docking	0.0	13.5
Required to LM close-out	0.0	17.2
Required to lunar impact	0.0	12.4
Remaining in tanks	27.2	23.5
Dispersion	17.0	2.2
Margin	10.2	21.3

(b) Oxygen

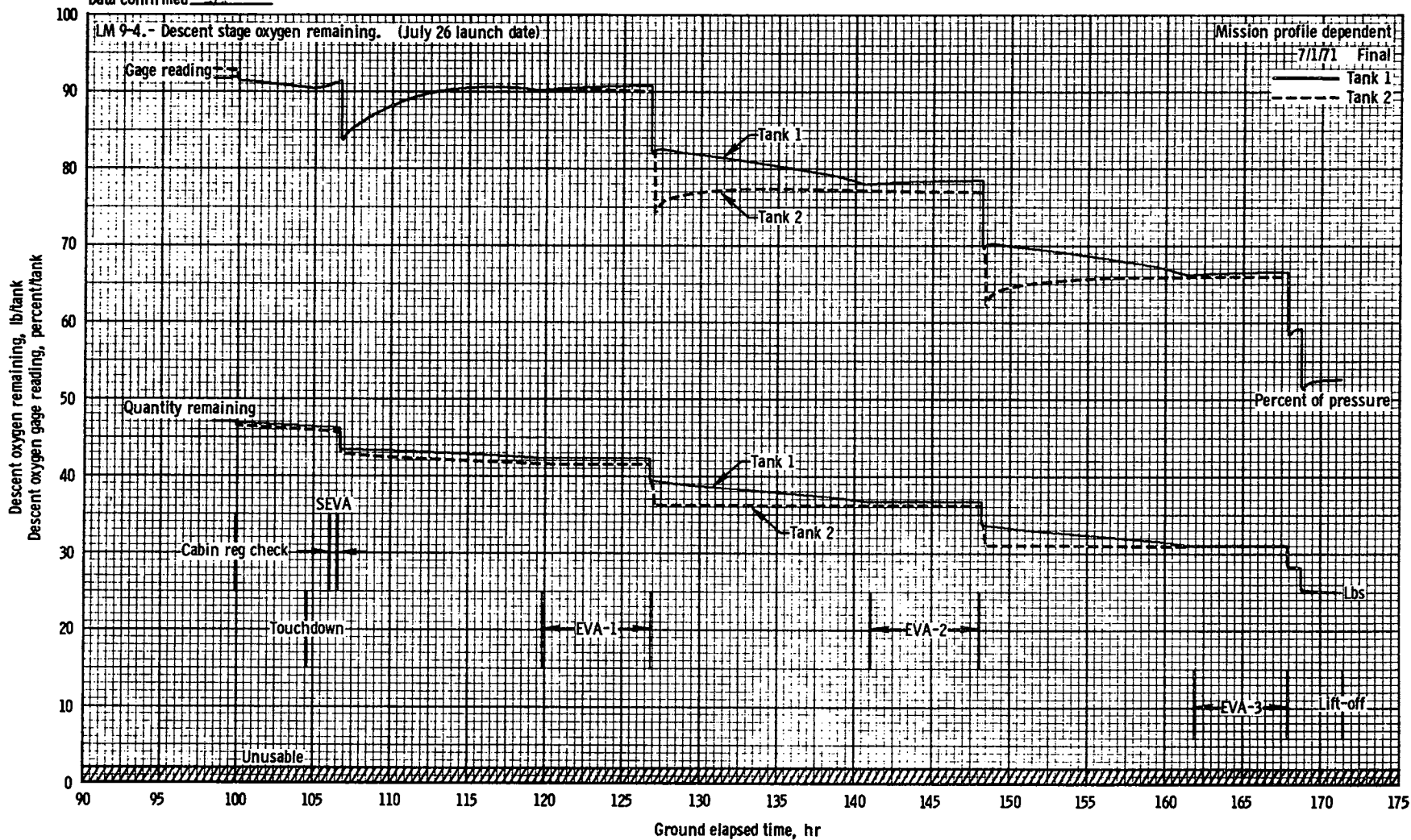
Description	Descent, lb	Ascent 1, lb	Ascent 2, lb
Loaded	93.8	2.4	2.4
Residual	1.6	0.1	0.1
Loading uncertainty	1.7	0.1	0.1
Available for mission	90.5	2.2	2.2
Required to lunar landing	1.6	0.0	0.0
Required to lunar lift-off	42.4	0.0	0.0
Required to LM/CSM docking	0.0	0.6	0.0
Required to LM close-out	0.0	0.1	0.0
Remaining in tank	46.5	1.5	2.2
Dispersion	2.2	0.1	0.0
Margin	44.3	1.4	2.2



Swalin/GPD/MPAD (for LM Systems)

Data source Final Mission Profile

Data confirmed SL



Descent stage oxygen remaining.

Mission profile dependent
7/9/71 Final
Revision 1

ASSUMPTIONS FOR THE DPS ANALYSIS

Propellant loading data reflects actual Apollo 15 loadings. The LM-10 data were used for engine performance, and ΔV requirements were coordinated with the Landing Analysis Branch. The ΔV requirement for lunar descent differs from that in the Operational Trajectory because of differences in the inert vehicle weight.

The 3σ dispersions represent total propellant cost based on 3σ uncertainties in propellant loading, trapped propellant, I_{sp} , ΔV , separation weight, non- ΔV consumables weight, mixture ratio, and physical location of the low-level sensor.

A flying time of 2 minutes and 30 seconds below low gate will be called a nominal requirement.

The following data were used.

- a. The separation weight is $36\,725.0 \pm 39.3$ pounds.
- b. Integrated average I_{sp} is 304.8 ± 1.8 seconds.
- c. Mixture ratio is $1.593 \pm .012$.
- d. Non- ΔV consumables from separation to PDI are 77.4 pounds.

Mission profile dependent

7/9/71 Final

Revision 1

DPS PROPELLANT SUMMARY

Item	Total propellant, lb	Hover time, sec
Loaded	19 561.5	--
Trapped and unavailable	-133.1	--
Outage	-16.1	--
Available for ΔV	19 412.3	--
Required for ΔV (150-sec flying time from low gate, $\Delta V = 7068.8$)	-18 785.0	--
Remaining	627.3	67
Dispersions (-3σ)	-285.5	--
Pad	341.8	36
Operational allowances		
Low-level (5 sec, 26.5 fps)	-47.4	--
Abort reserve (20 sec, 106 fps)	-188.3	--
Margin (hover time before abort decision point)	106.0	11

Mission profile dependent

7/9/71 Final
Revision 1

ASSUMPTIONS FOR THE APS ANALYSIS

Propellant loading data reflects actual Apollo 15 loadings. The LM-10 data were used for engine performance, and ΔV requirements were coordinated with the Landing Analysis Branch and the Orbital Mission Analysis Branch. The ΔV requirement for the lunar ascent differs from that in the Operational Trajectory because of differences in the inert vehicle weight.

The budget shown in table 4-1 accounts for an APS TPI, engine valve-pair malfunction, and balanced couples. A touchdown abort was not considered because the nominal lift-off weight is heavier than the abort weight. The following data were used.

- a. $I_{sp} = 309.57 \pm 3.77$ seconds
- b. Mixture ratio = $1.604 \pm .026$
- c. Lift-off weight = $10\,852.0 \pm 38.7$ pounds

APS PROPELLANT SUMMARY

Item	Total propellant, lb
Loaded	5237.0
Trapped and unavailable	-51.9
Outage	-10.0
Available for ΔV	5175.1
Required for ascent (6058.0 fps) . . .	-4939.3
Remaining	235.8
Required for APS TPI ^a (54.3 fps) . . .	-32.0
Remaining	203.8
Dispersions (-3σ)	-66.8
Pad	137.0
Contingencies	
Engine valve=pair malfunction ($\Delta MR = +.01$ or $-.018$)	-26.1
Balanced couples	-48.6
Half-degree out of plane (18 fps)	-10.5
Margin	51.8

^aThe total TPI ΔV is 76.3 fps. It is assumed that 22 fps is obtained by 10-sec, 4-jet ullage.

Mission profile dependent
4/22/71 Basic

ASSUMPTIONS AND GROUND RULES FOR THE LM RCS ANALYSIS

1. Data for the LM RCS engine performance and propellant requirements were obtained from the SODB, Volume II, and from postflight analyses of Apollo 9-14 missions.
2. The analysis assumes an RCS tweak burn (nominally zero) of 30 fps.
3. It is assumed there will be a 10-fps RCS trim following the APS TPI maneuver.

Mission profile dependent
7/1/71 Final

LM RCS PROPELLANT LOADING AND USAGE SUMMARY

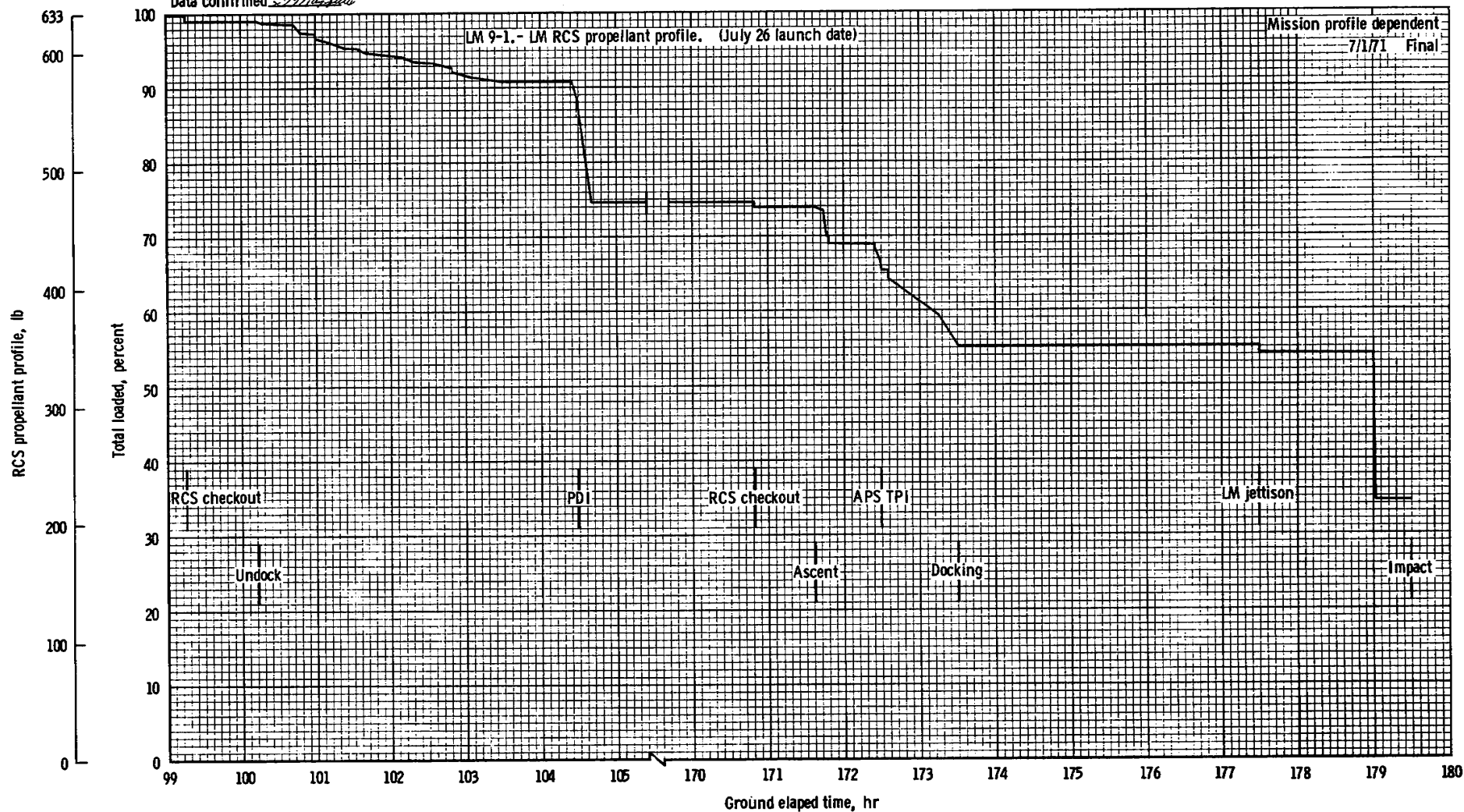
Item	Required, lb	Remaining, lb
Loaded		631.2
Trapped	38.0	593.2
Gaging inaccuracy and loading tolerance	43.5	549.7
Mixture ratio uncertainty	17.0	532.7
Usable		532.7
Nominal usage through lunar landing	159.8	372.9
Nominal usage from landing through docking	122.7	250.2
Nominal usage from docking through impact	131.1	119.1
Usable propellant remaining		119.1

4-31

Mayfield/GPB/MPAD (for LM Systems)

Data source *Flight 9000 t s rdb*

Data confirmed *by Mayfield*



LM RCS propellant profile.

SECTION 5 - ABBREVIATED TIMELINE



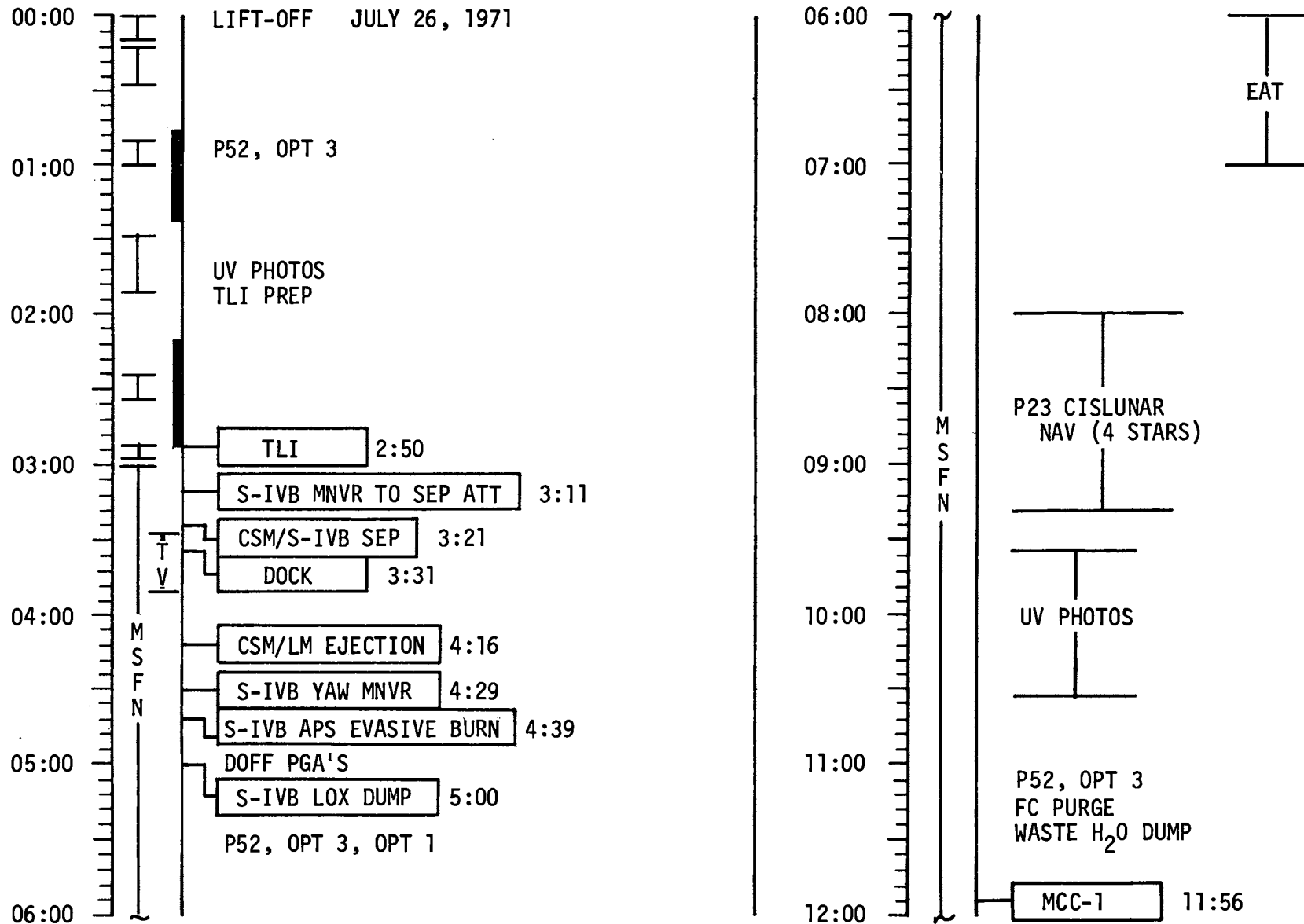
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3

4



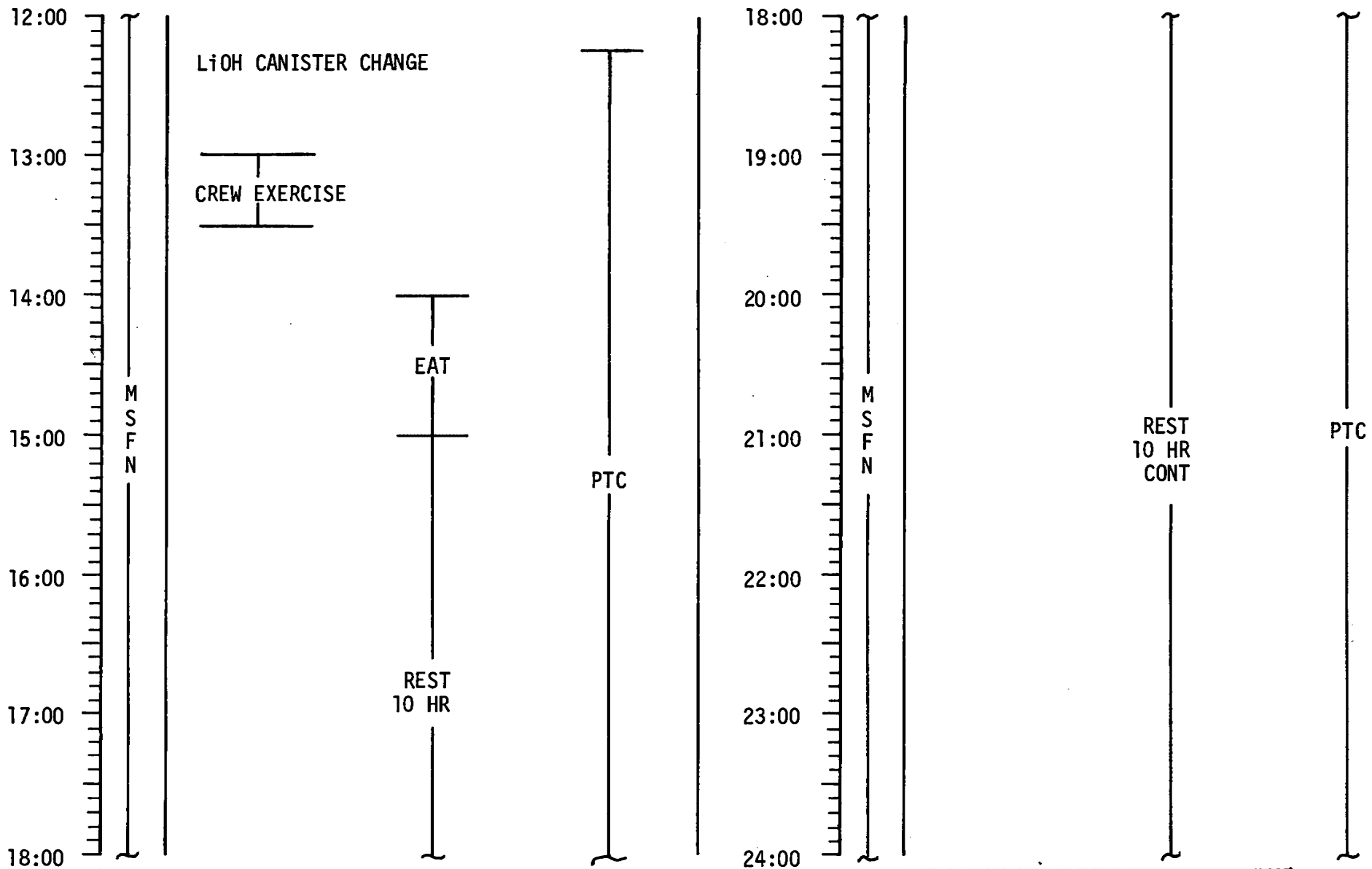
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	00:00 - 12:00	1/E.0 - TLC	5 - 1

FLIGHT PLANNING BRANCH

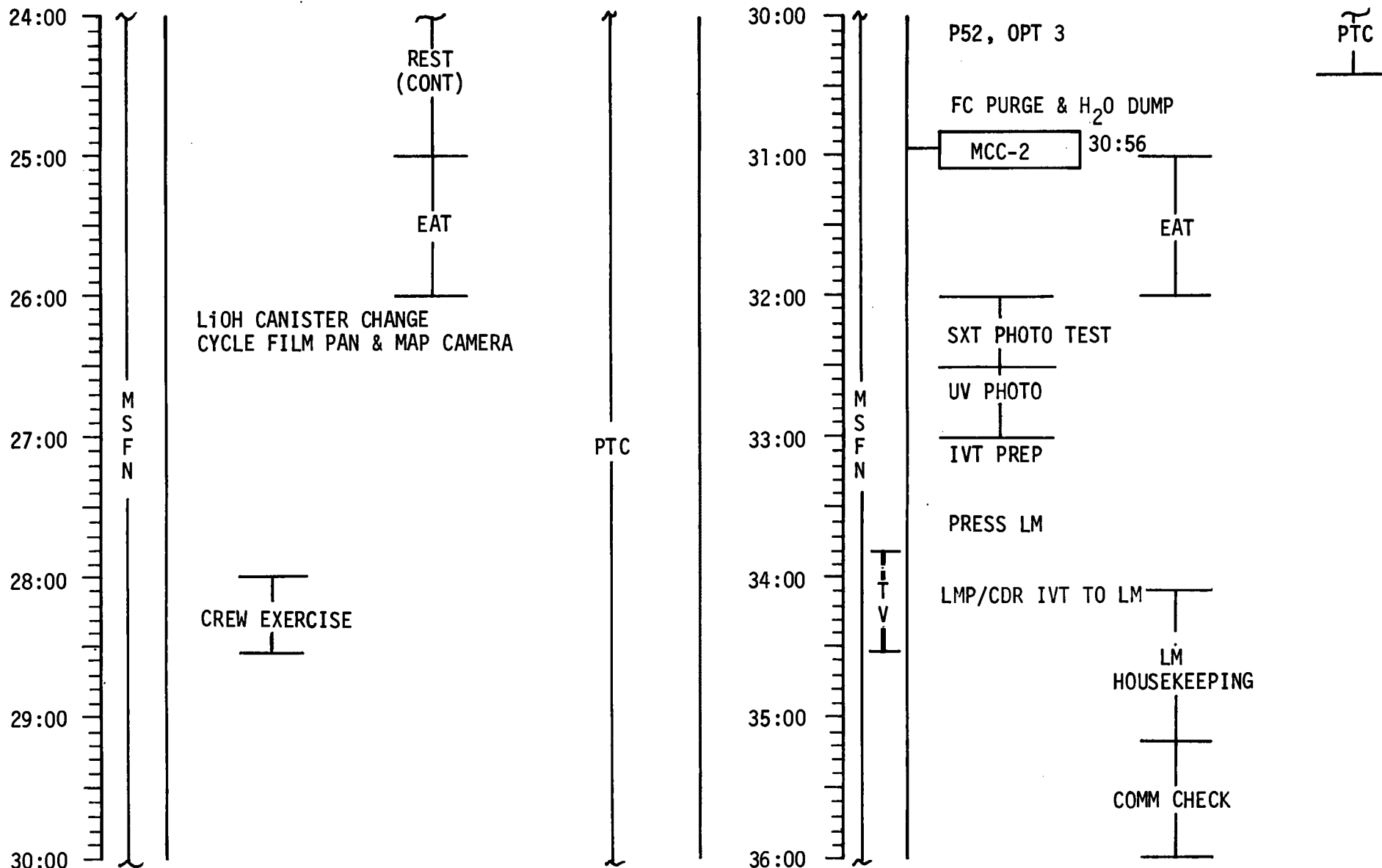
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	12:00 - 24:00	1/TLC	5 - 2

FLIGHT PLANNING BRANCH

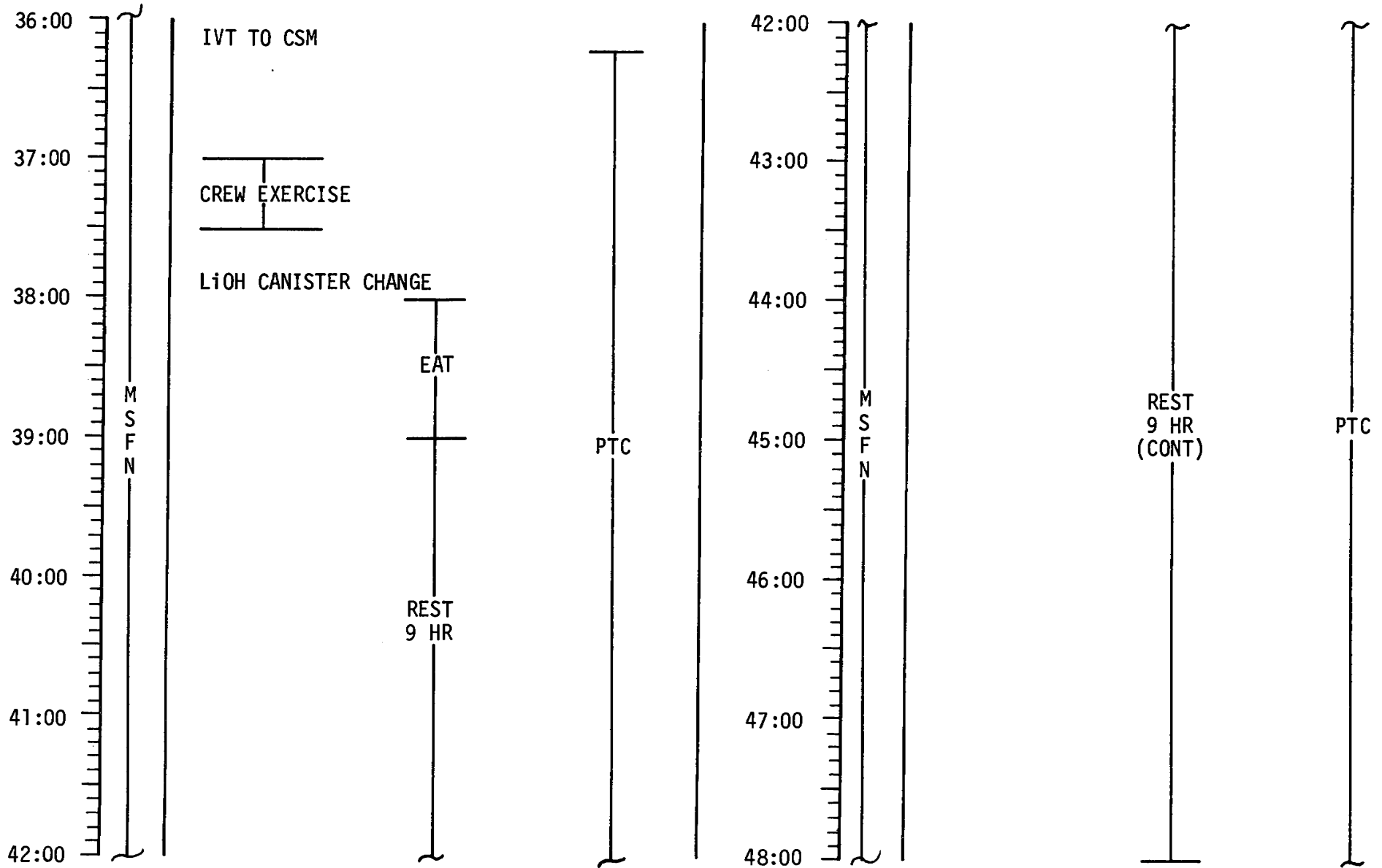
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	24:00 - 36:00	1-2/TLC	5 - 3

FLIGHT PLANNING BRANCH

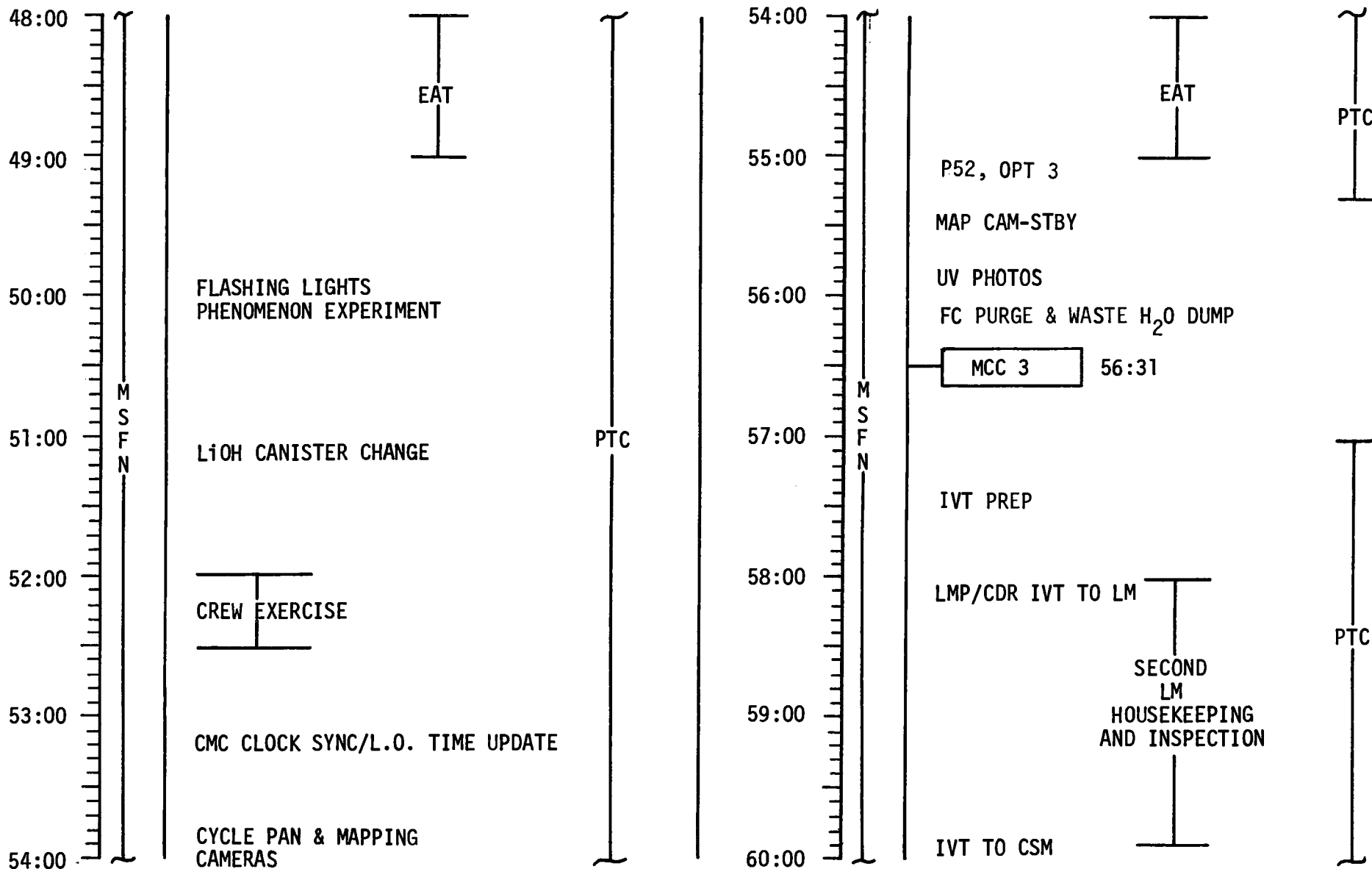
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	36:00 - 48:00	2/TLC	5 - 4

FLIGHT PLANNING BRANCH

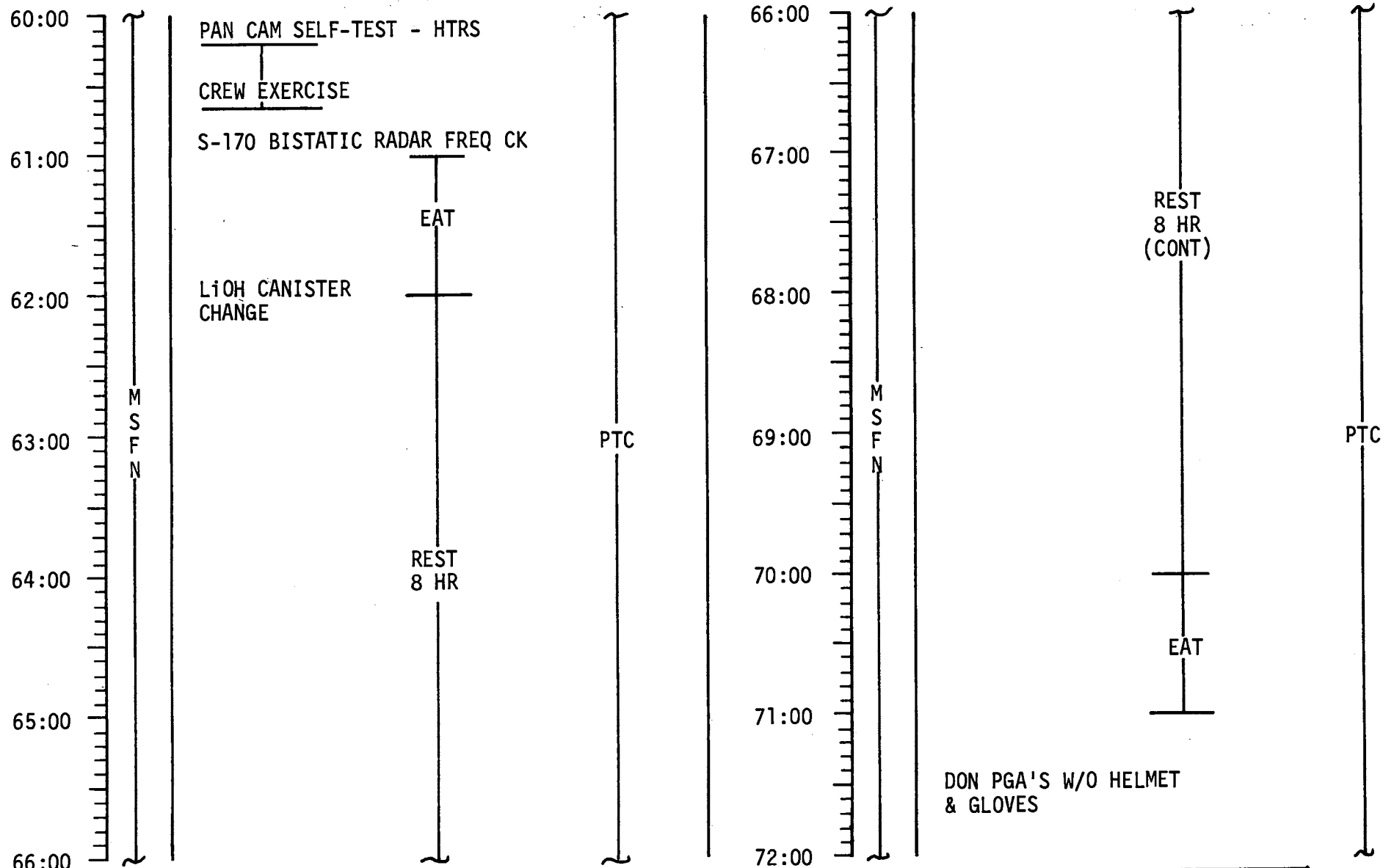
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	48:00 - 60:00	3/TLC	5 - 5

FLIGHT PLANNING BRANCH

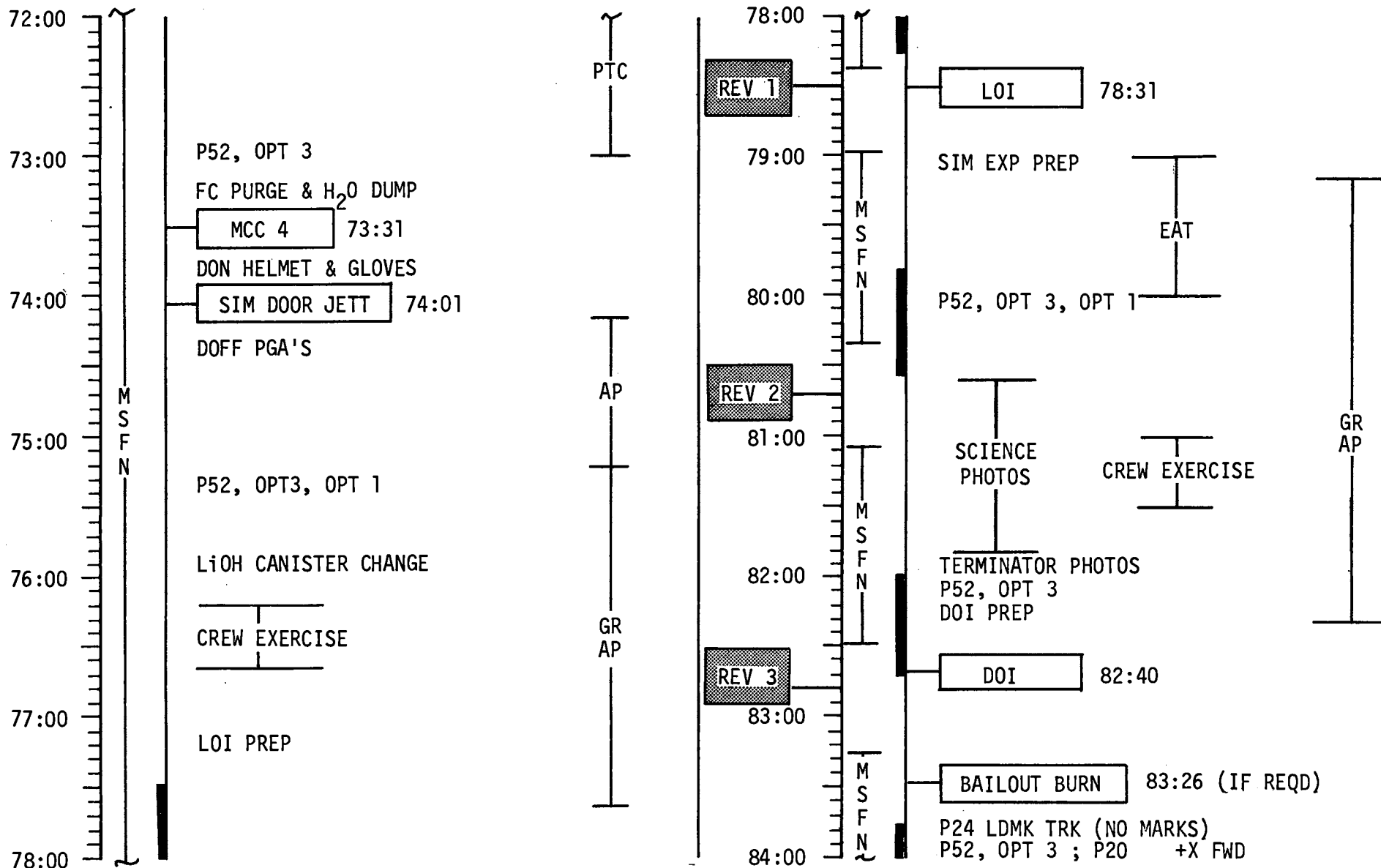
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	60:00 - 72:00	3-4/TLC	5 - 6

FLIGHT PLANNING BRANCH

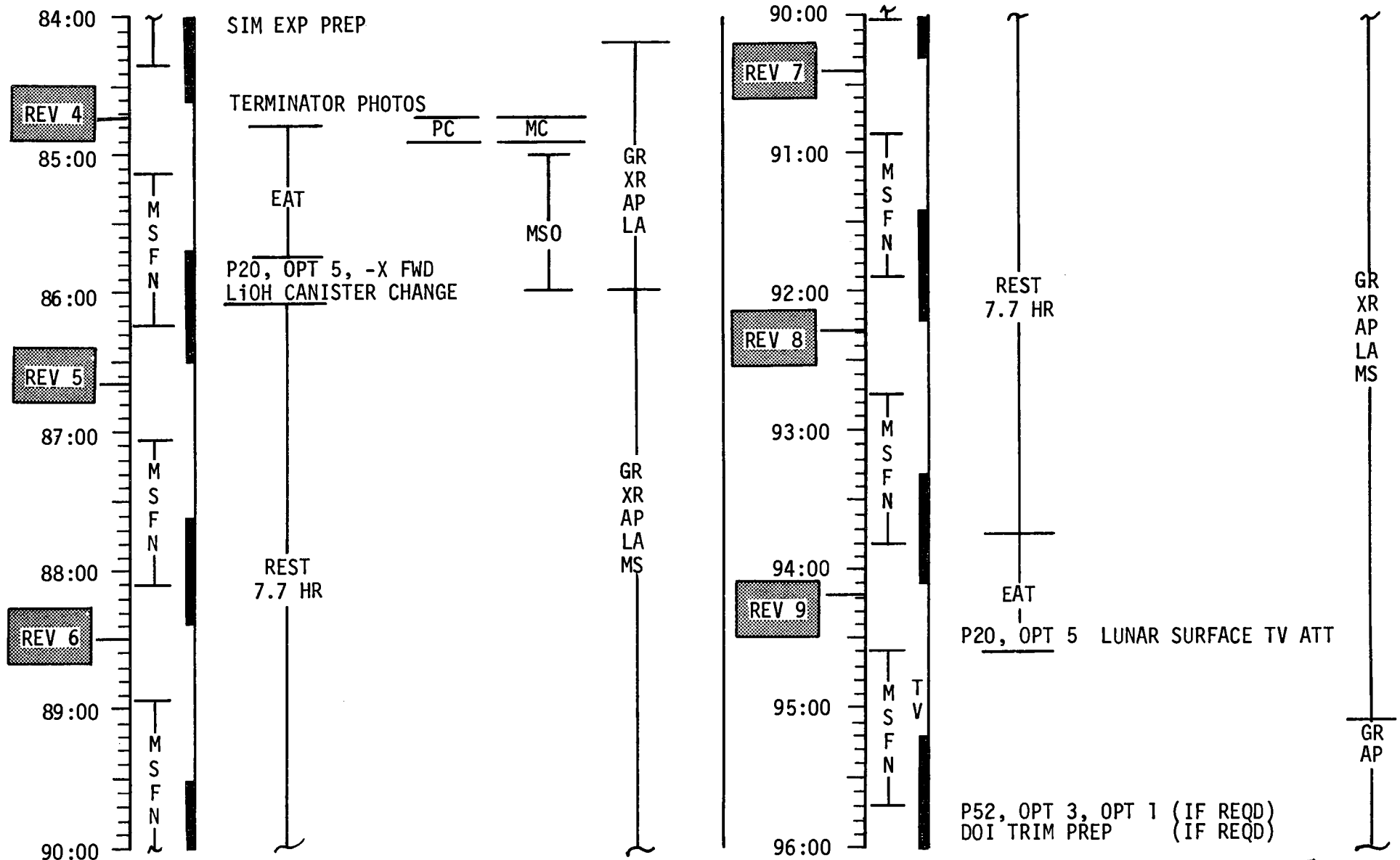
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	72:00 - 84:00	4/TLC - 3	5 - 7

FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	84:00 - 96:00	4-5/3 - 9	5 - 8

FLIGHT PLANING BRANCH

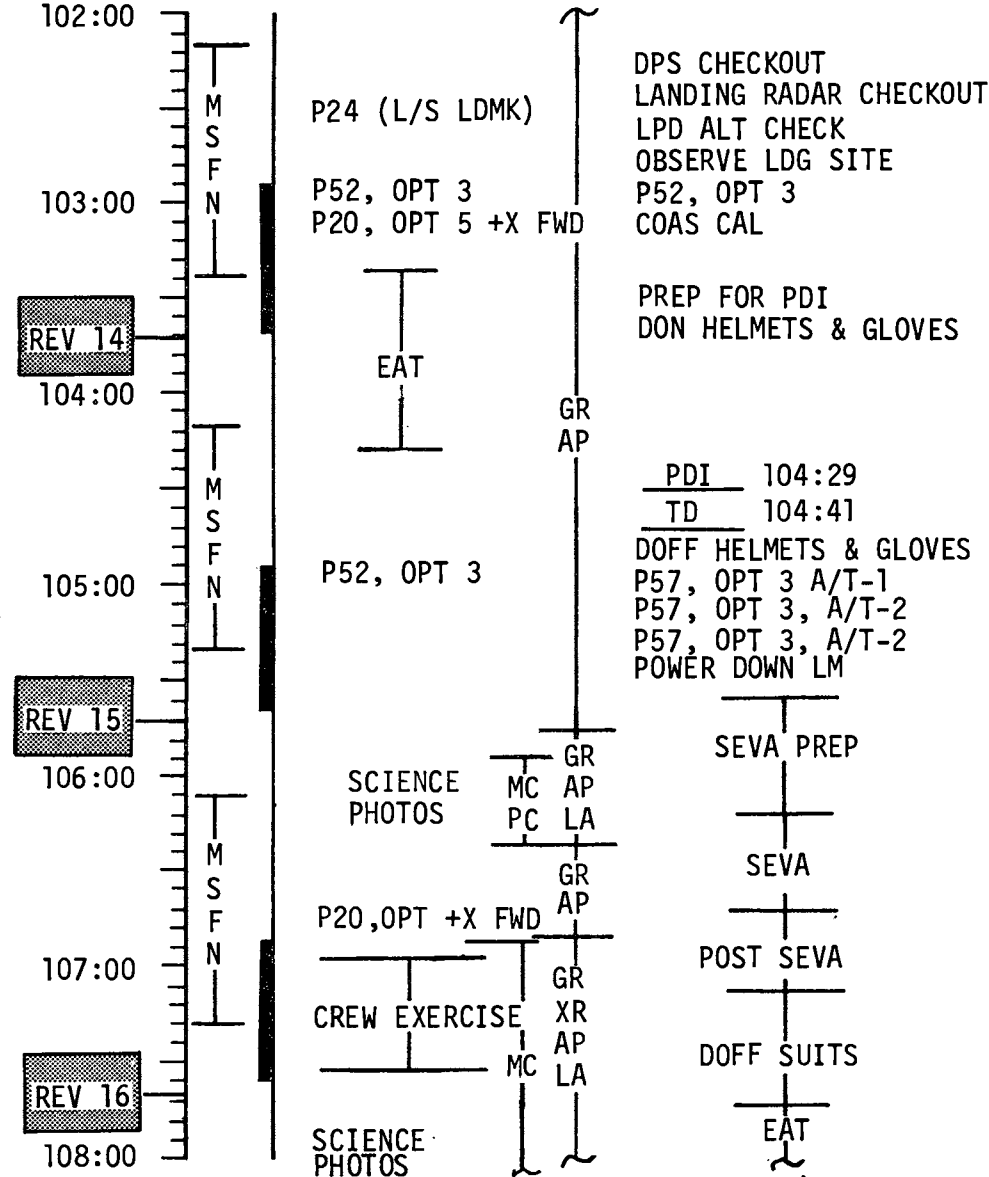
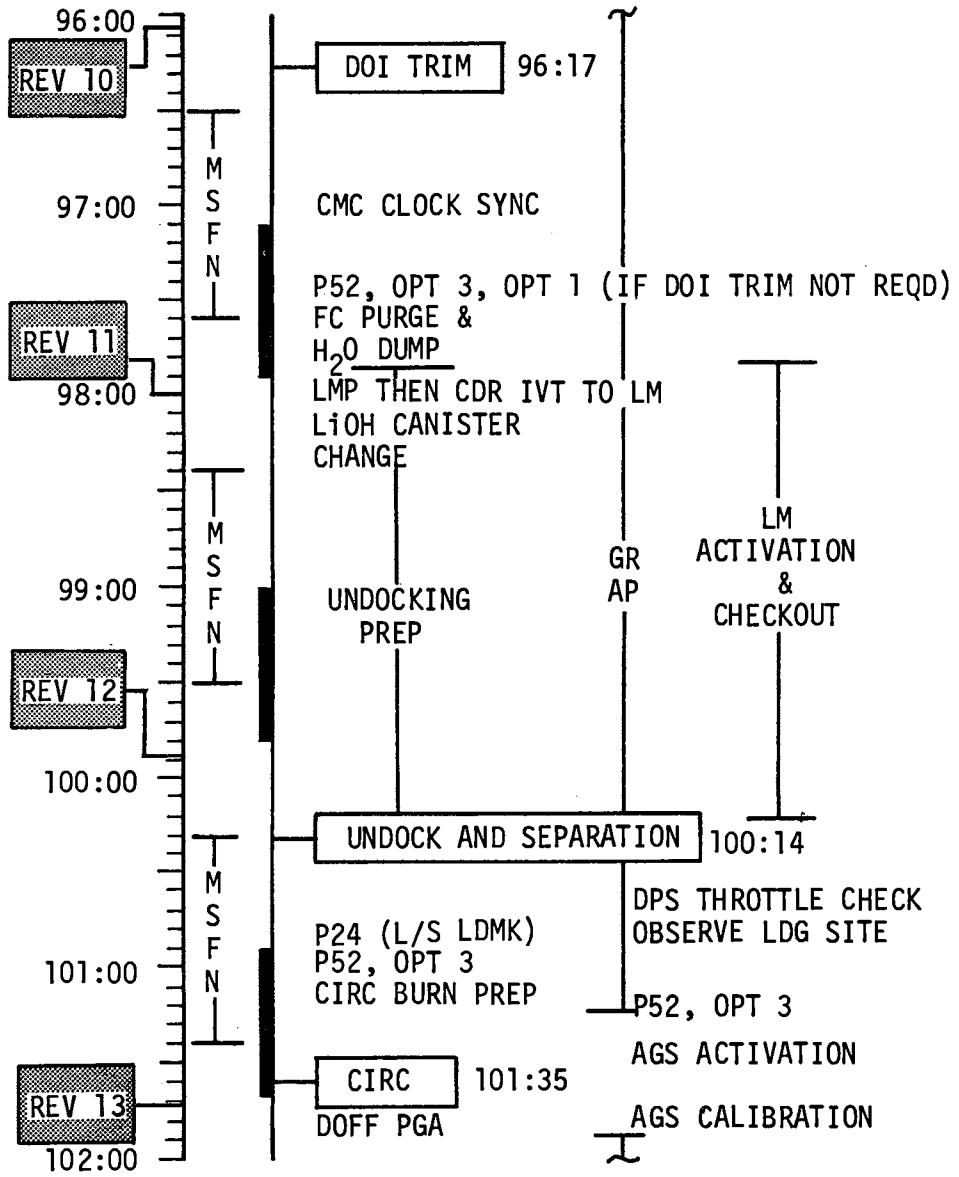
FLIGHT PLAN

CSM

LM

CSM

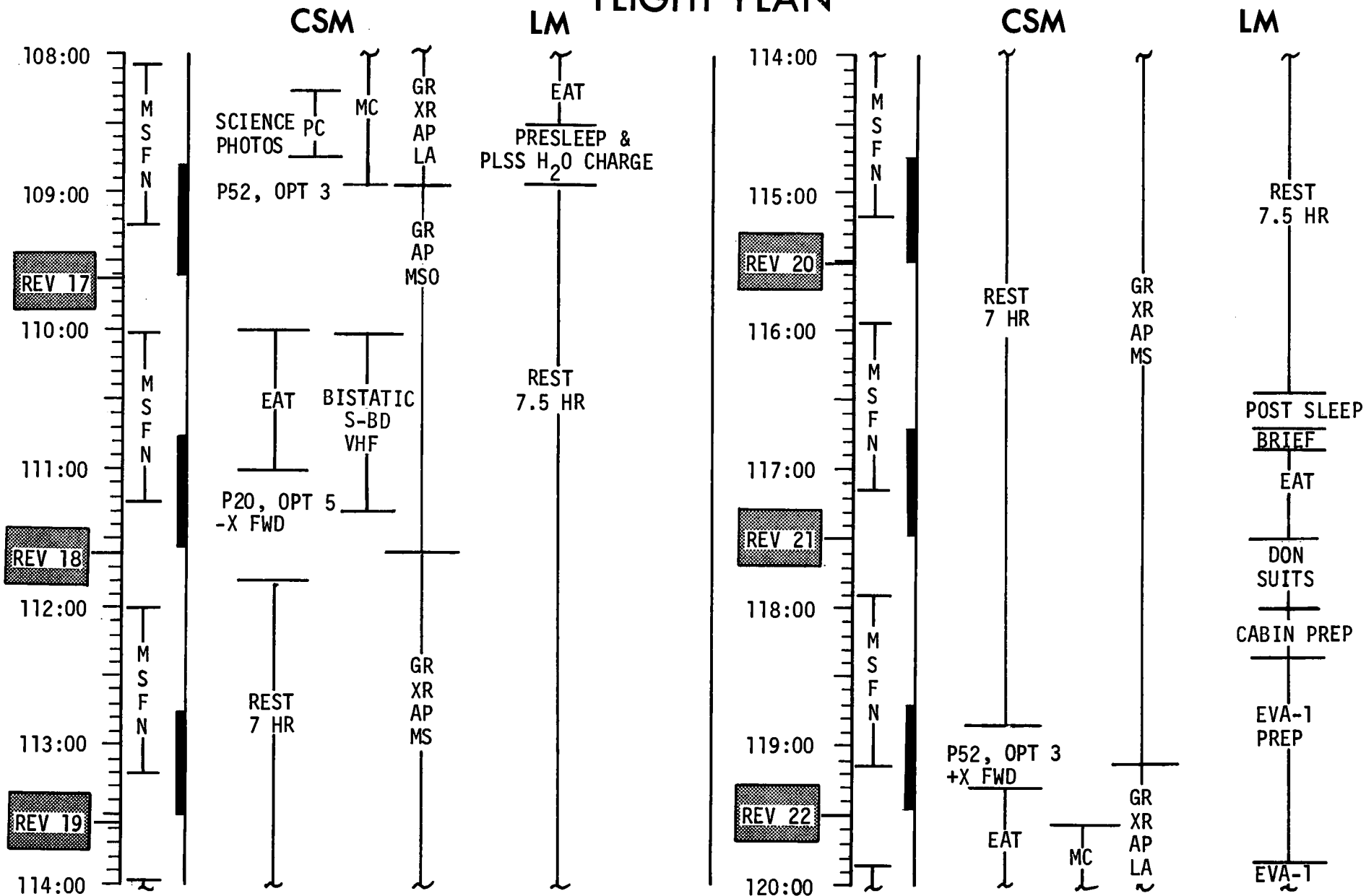
LM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	96:00 - 108:00	5/9 - 16	5 - 9

FLIGHT PLANNING BRANCH

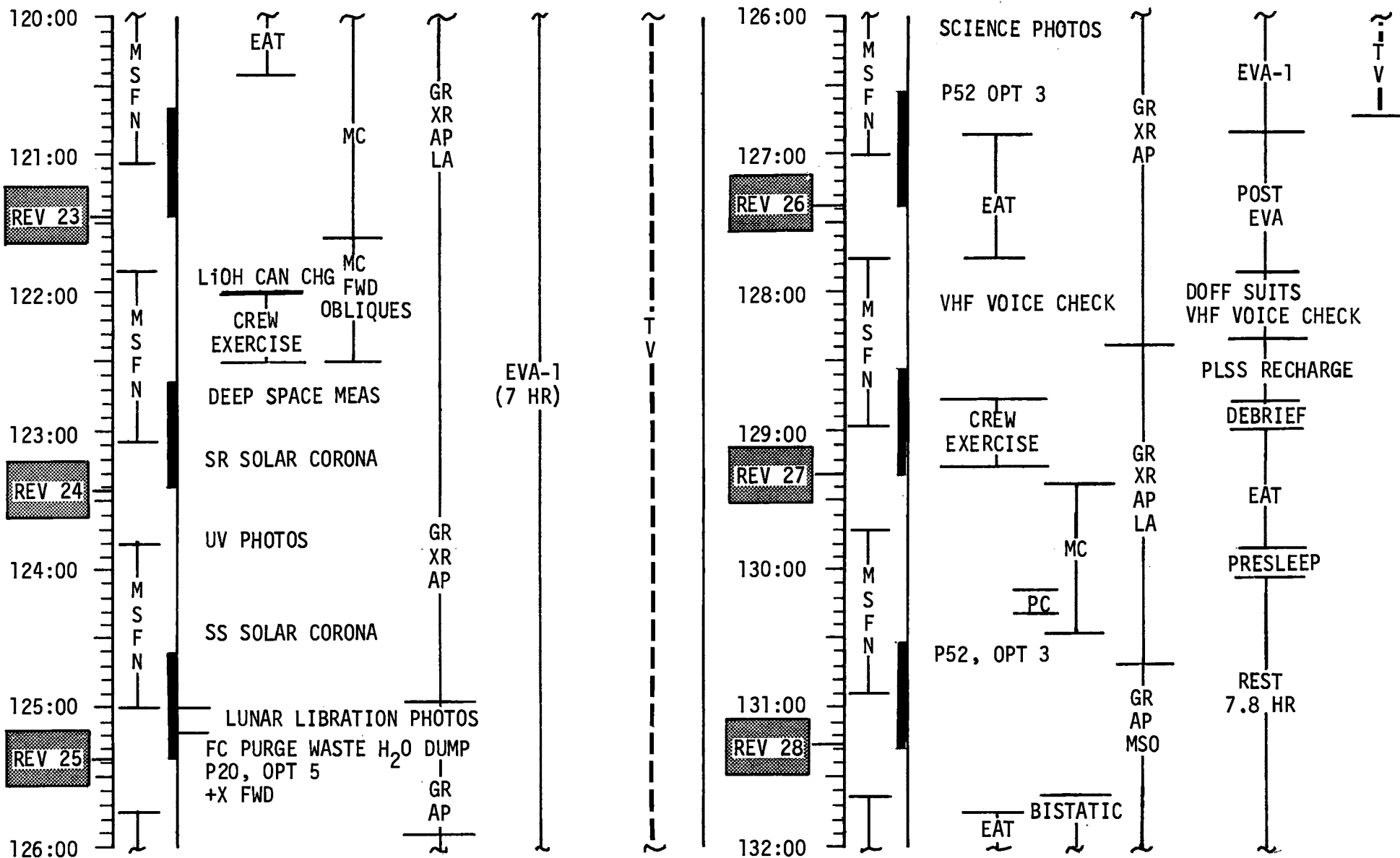
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	108:00 - 120:00	5-6/16 - 22	5 - 10

FLIGHT PLANNING BRANCH

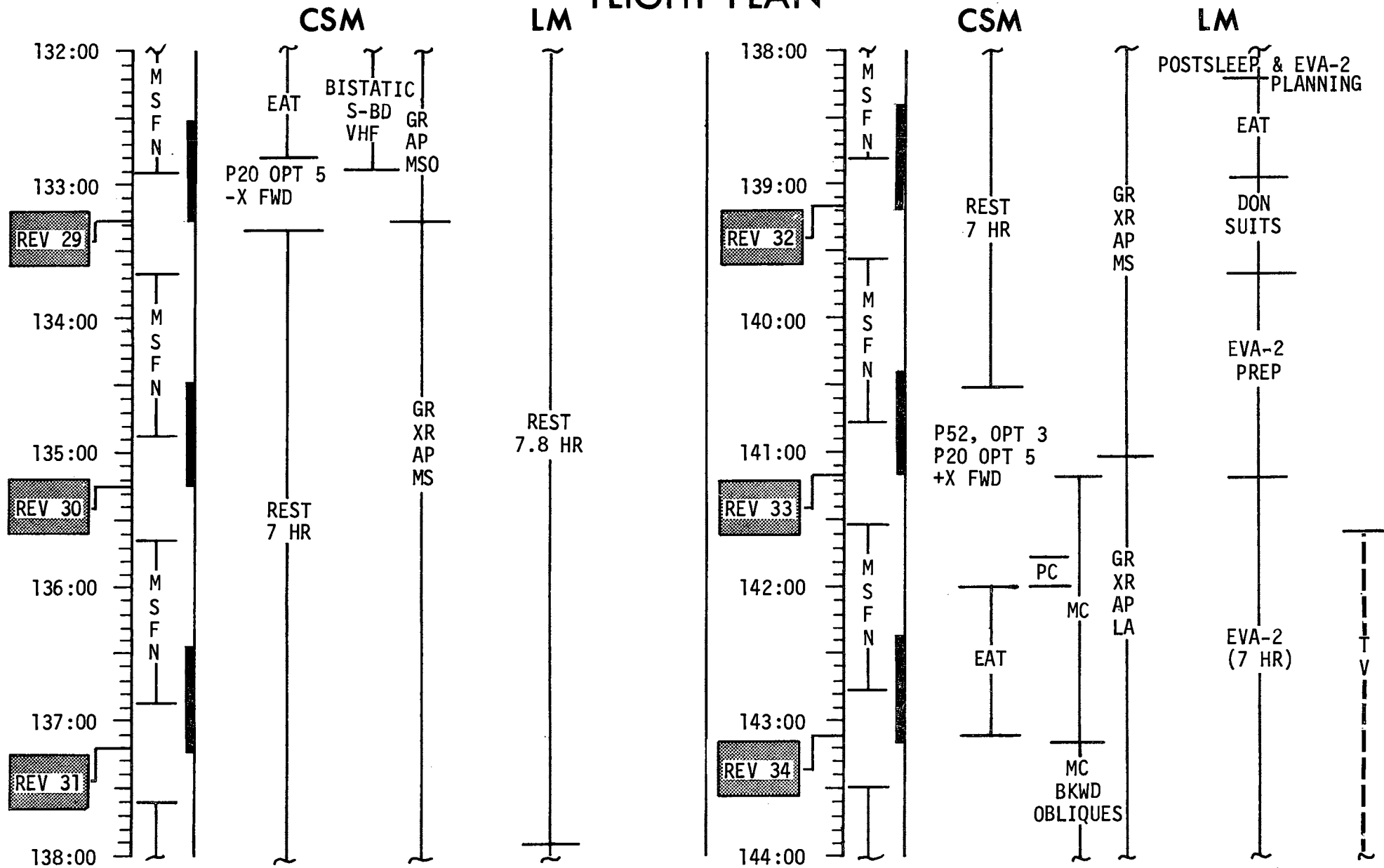
LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	120:00 - 132:00	6/22 - 28	5 - 11

FLIGHT PLANNING BRANCH

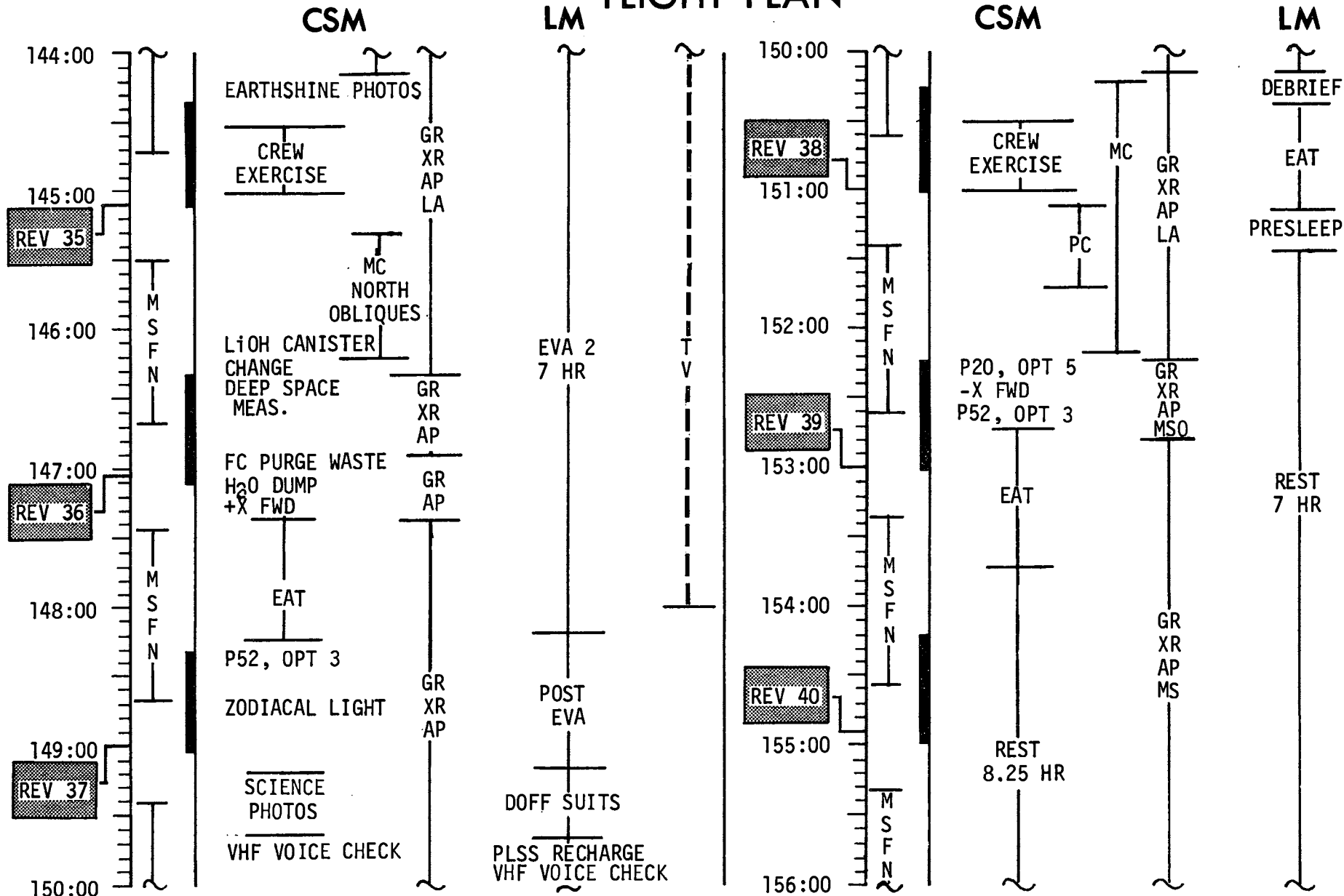
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	132:00 - 144:00	6-7/28 - 34	5 - 12

FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	144:00 - 156:00	7/34 - 40	5 - 13

FLIGHT PLANNING BRANCH

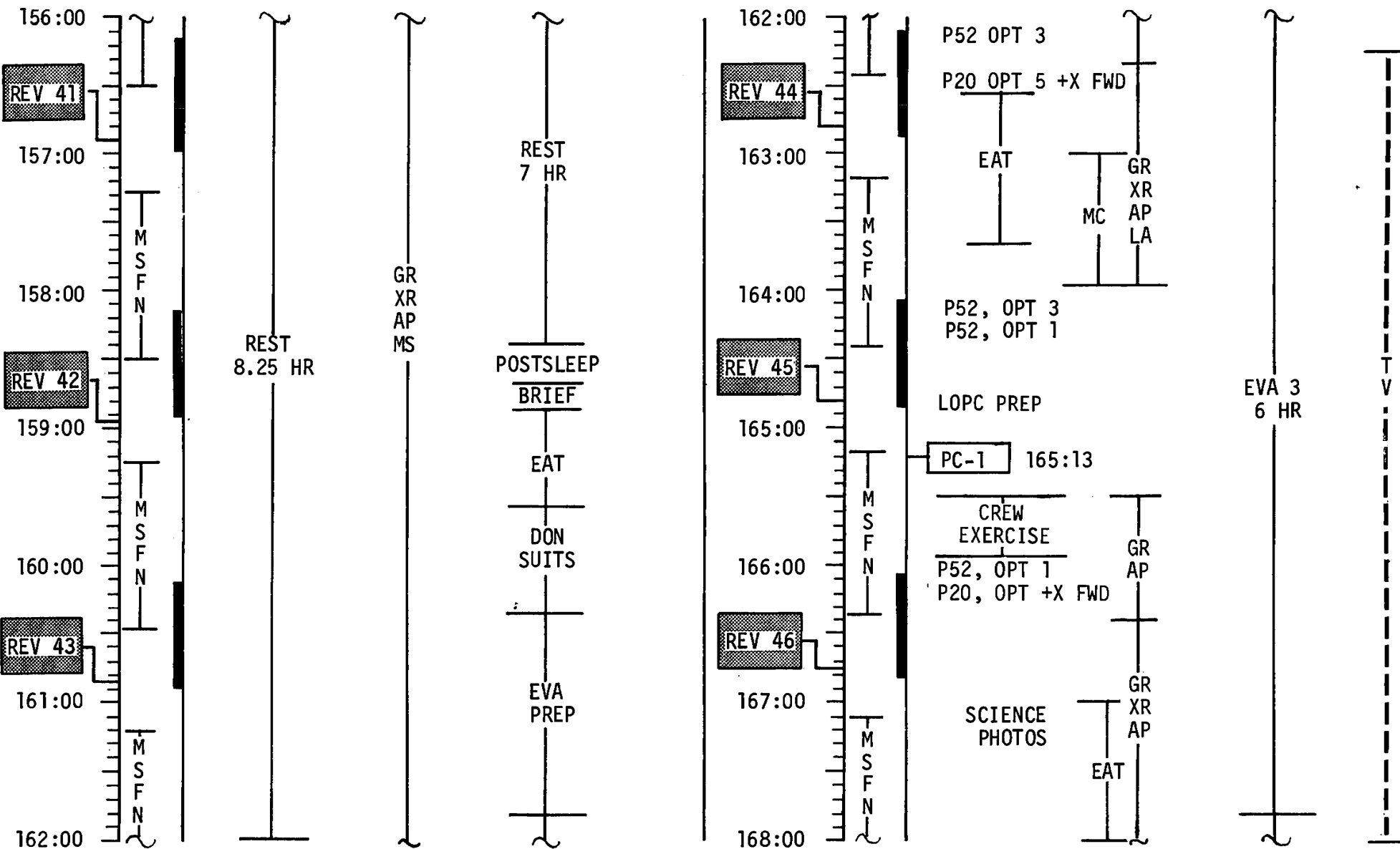
FLIGHT PLAN

CSM

LM

CSM

LM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	156:00 - 168:00	7-8/40 - 46	5 - 14

FLIGHT PLANNING BRANCH

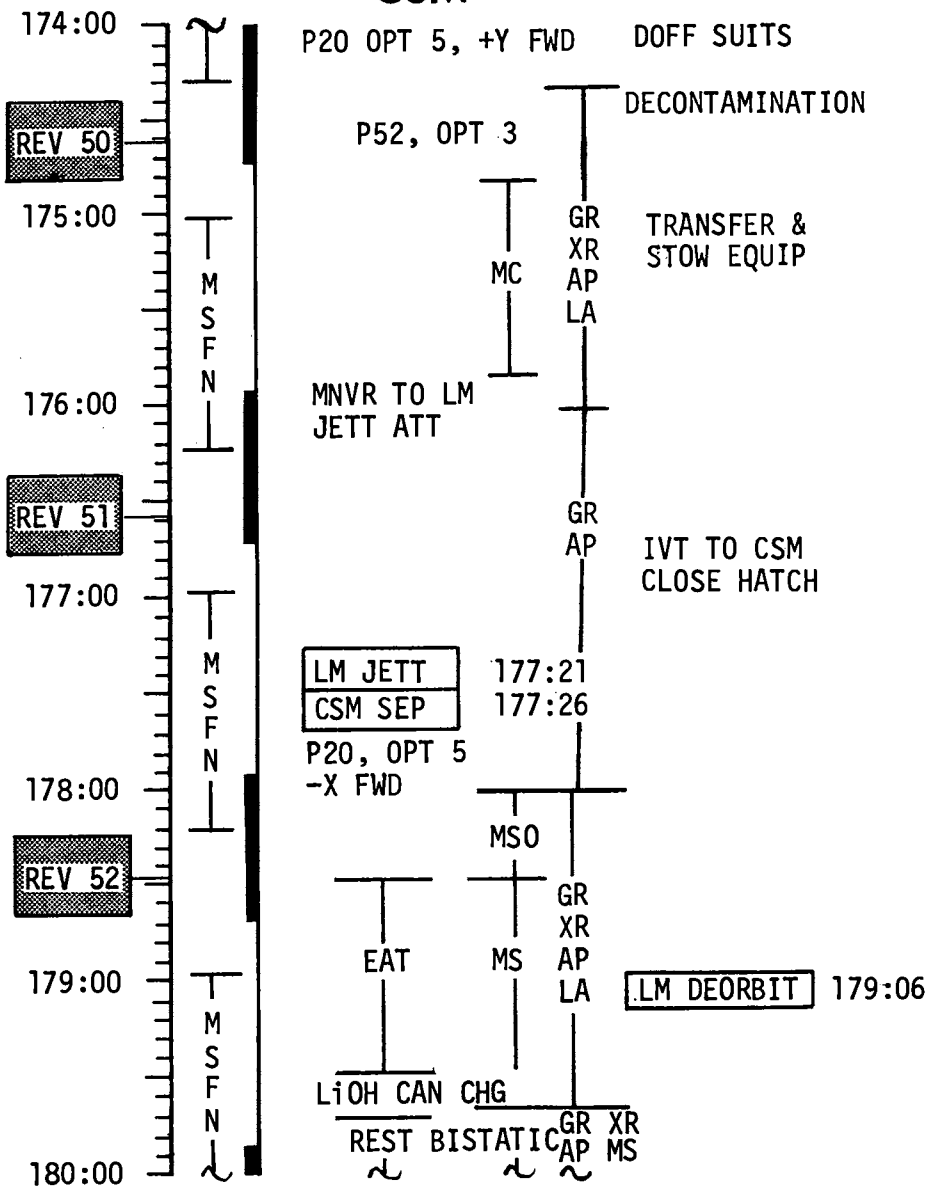
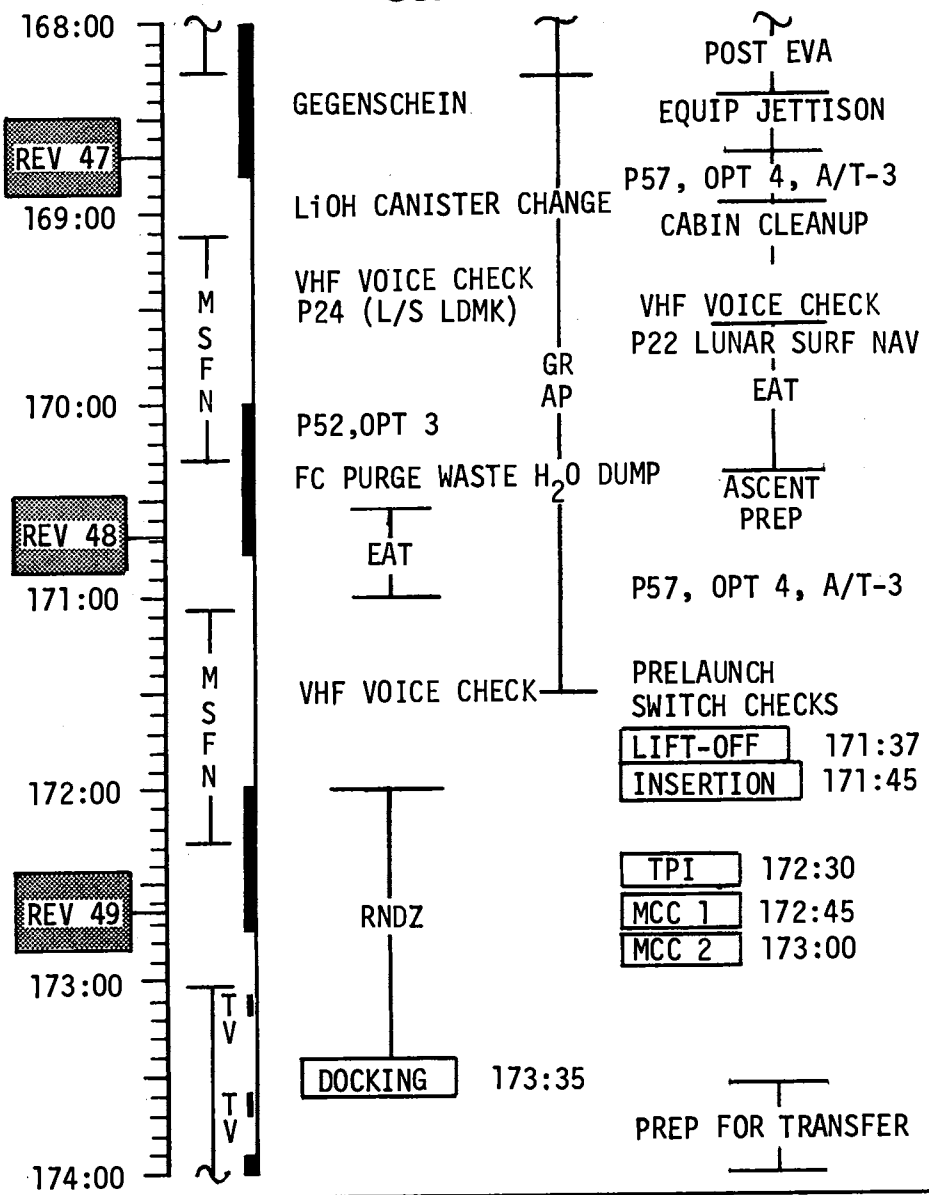
FLIGHT PLAN

CSM

LM

CSM

LM



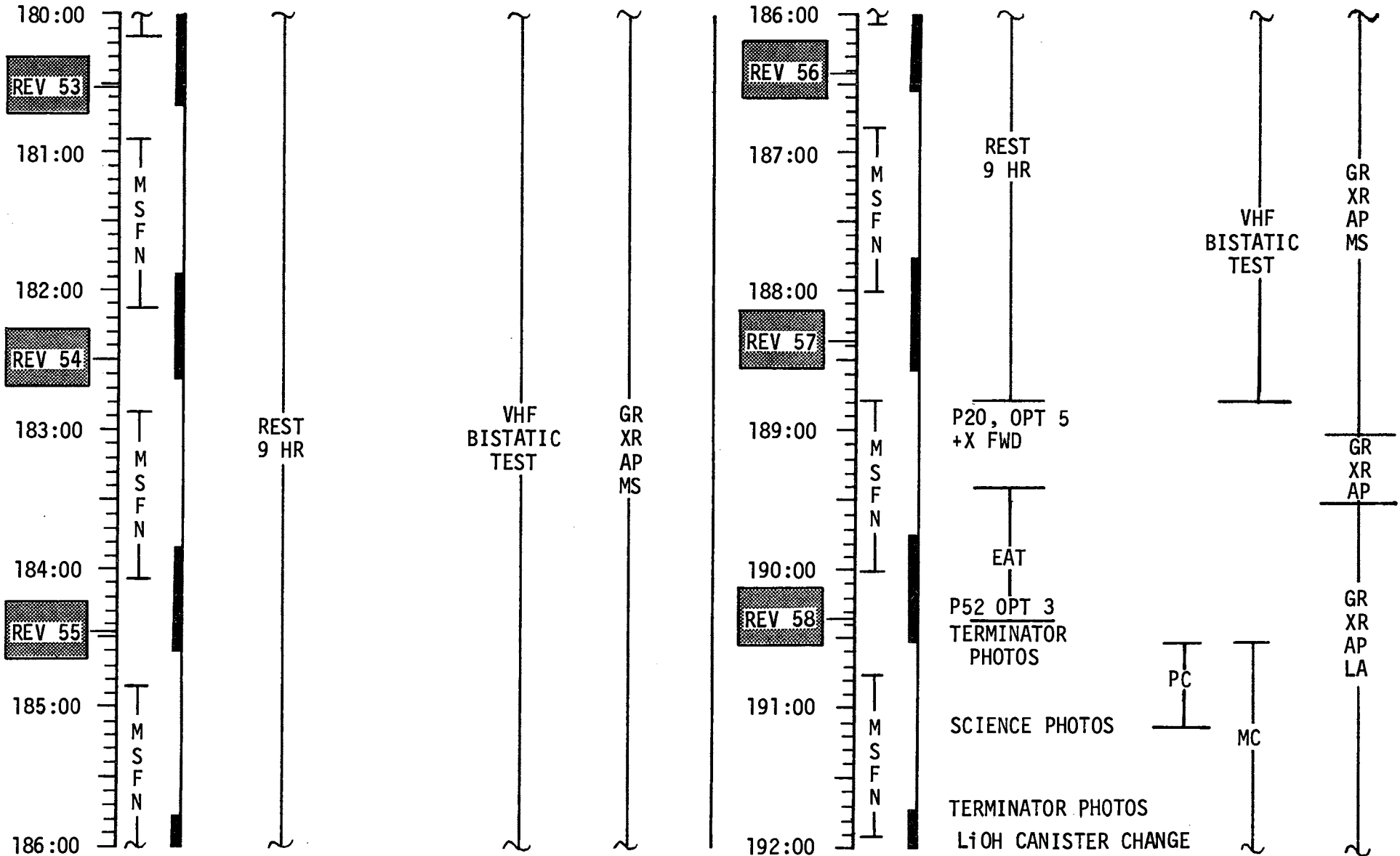
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	168:00 - 180:00	8/46 - 52	5 - 15

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM

CSM



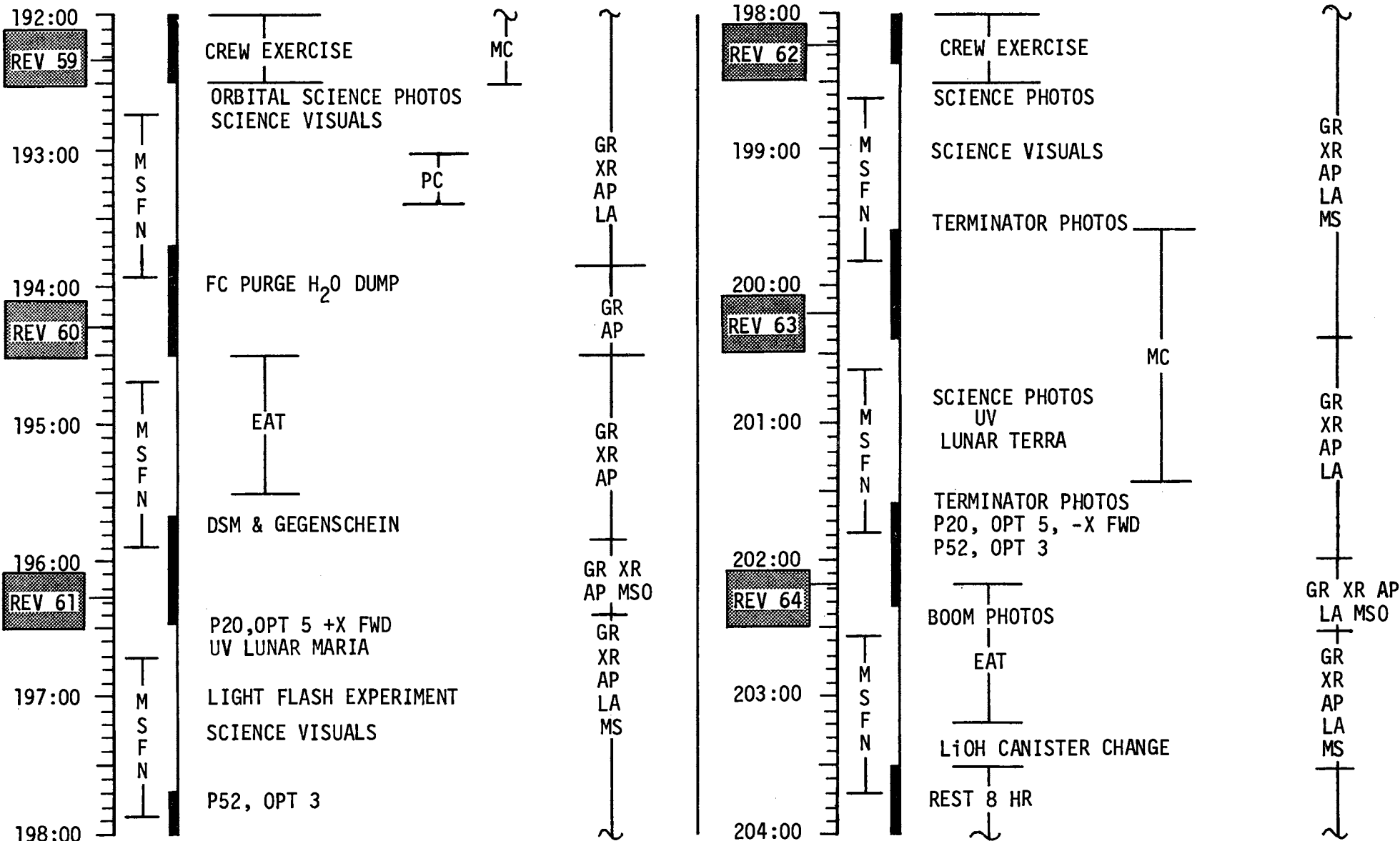
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	180:00 - 192:00	8-9/52 - 58	5 - 16

FLIGHT PLANING BRANCH

CSM

FLIGHT PLAN

CSM



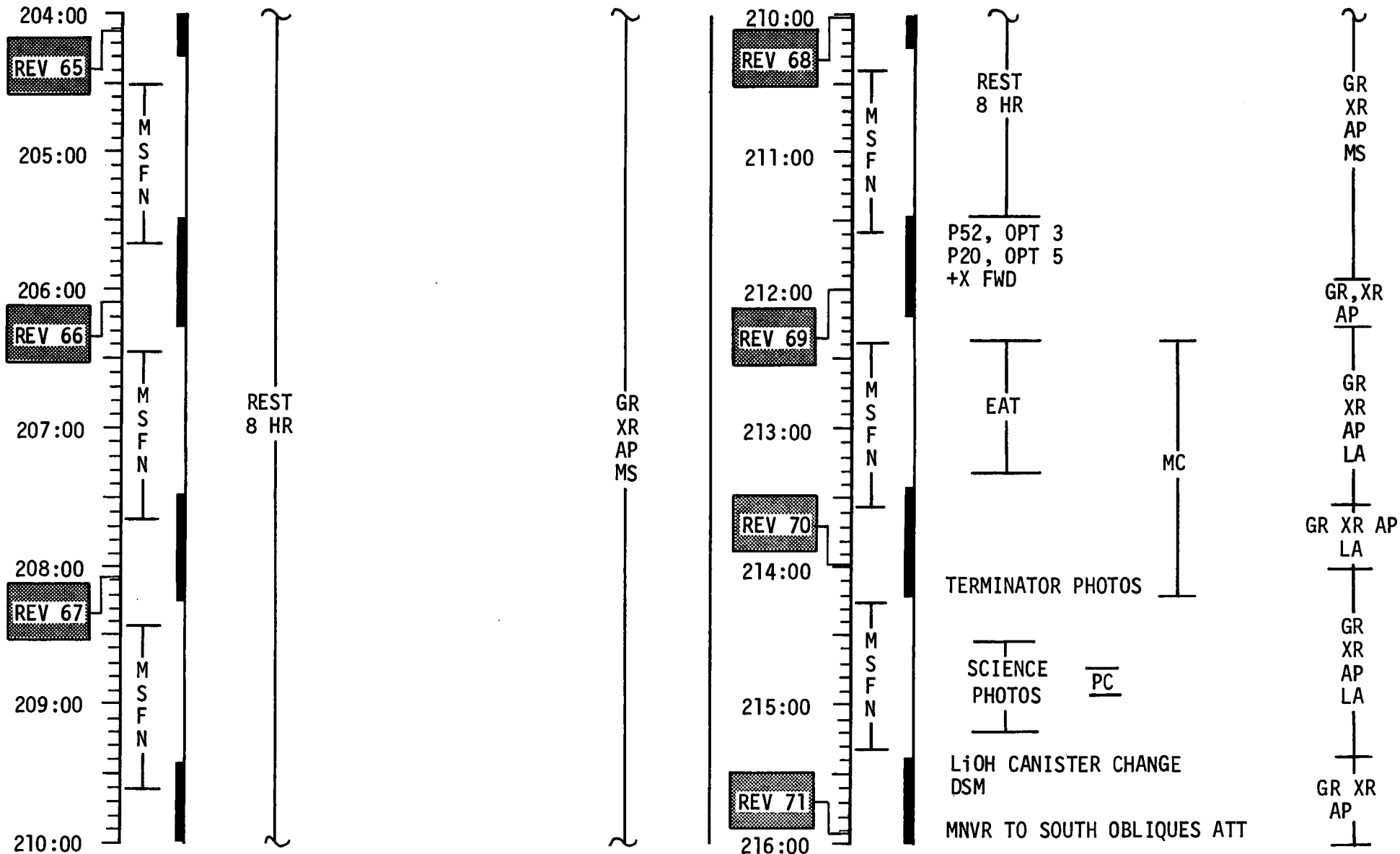
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	192:00 - 204:00	9/58 - 64	5 - 17

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM

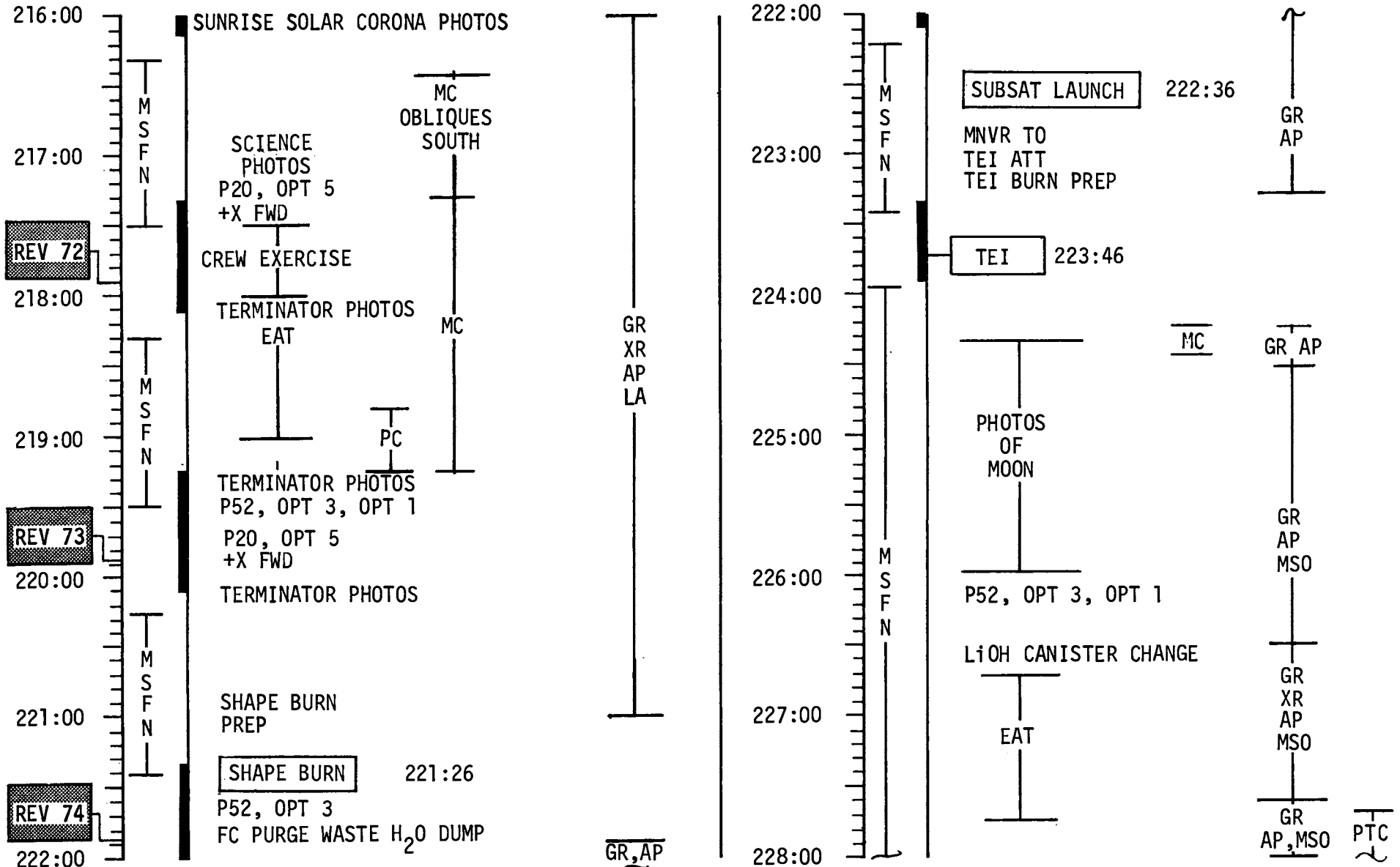
CSM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	204:00 - 216:00	9 - 10/64-71	5 - 18

FLIGHT PLANNING BRANCH

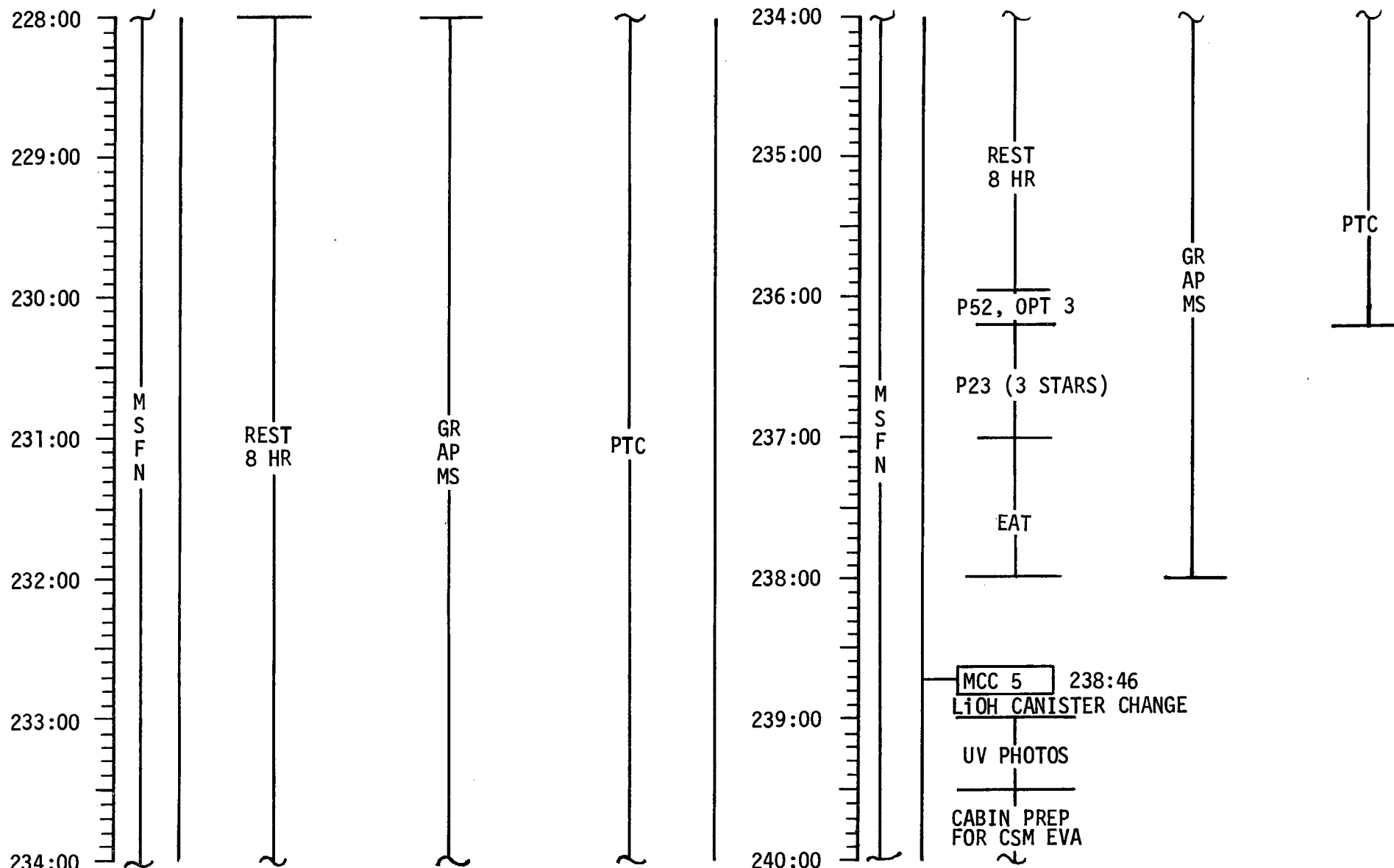
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	216:00 - 228:00	10/71 - TEC	5 - 19

FLIGHT PLANNING BRANCH

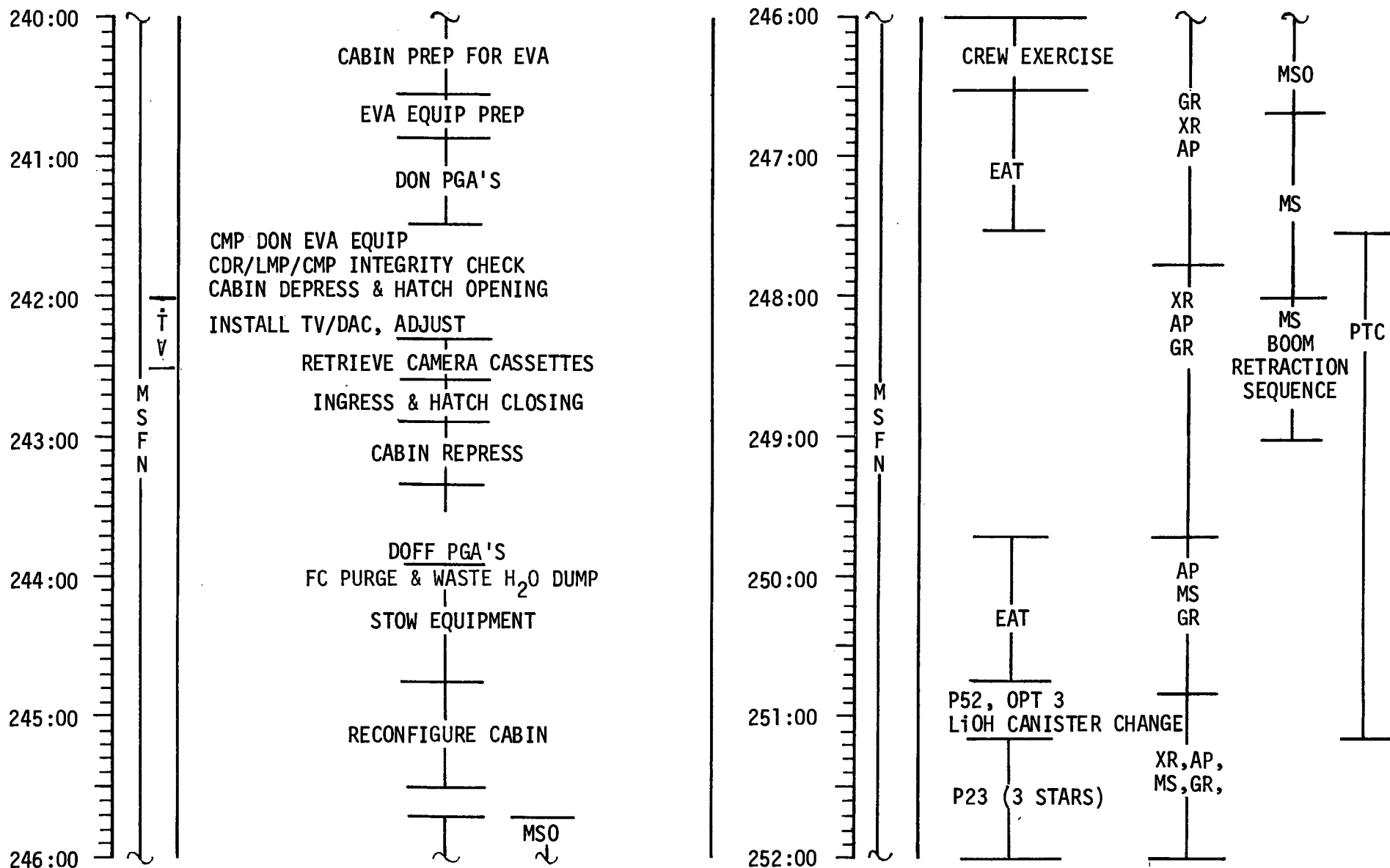
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	228:00 - 240:00	10 - 11/TEC	5 - 20

FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	240:00 - 252:00	11/TEC	5 - 21

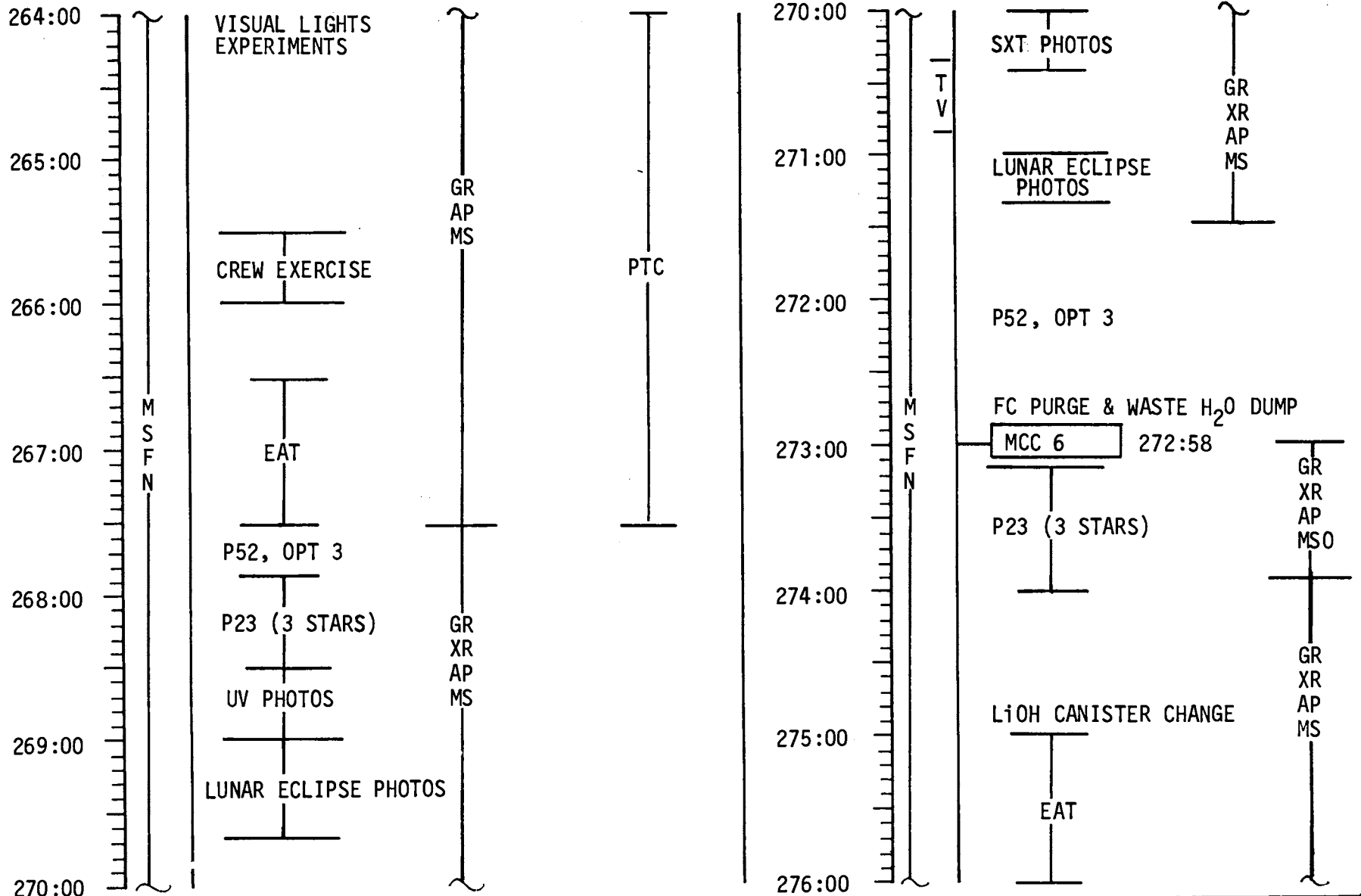
FLIGHT PLANNING BRANCH

FLIGHT PLANNING BRANCH



FLIGHT PLANNING BRANCH

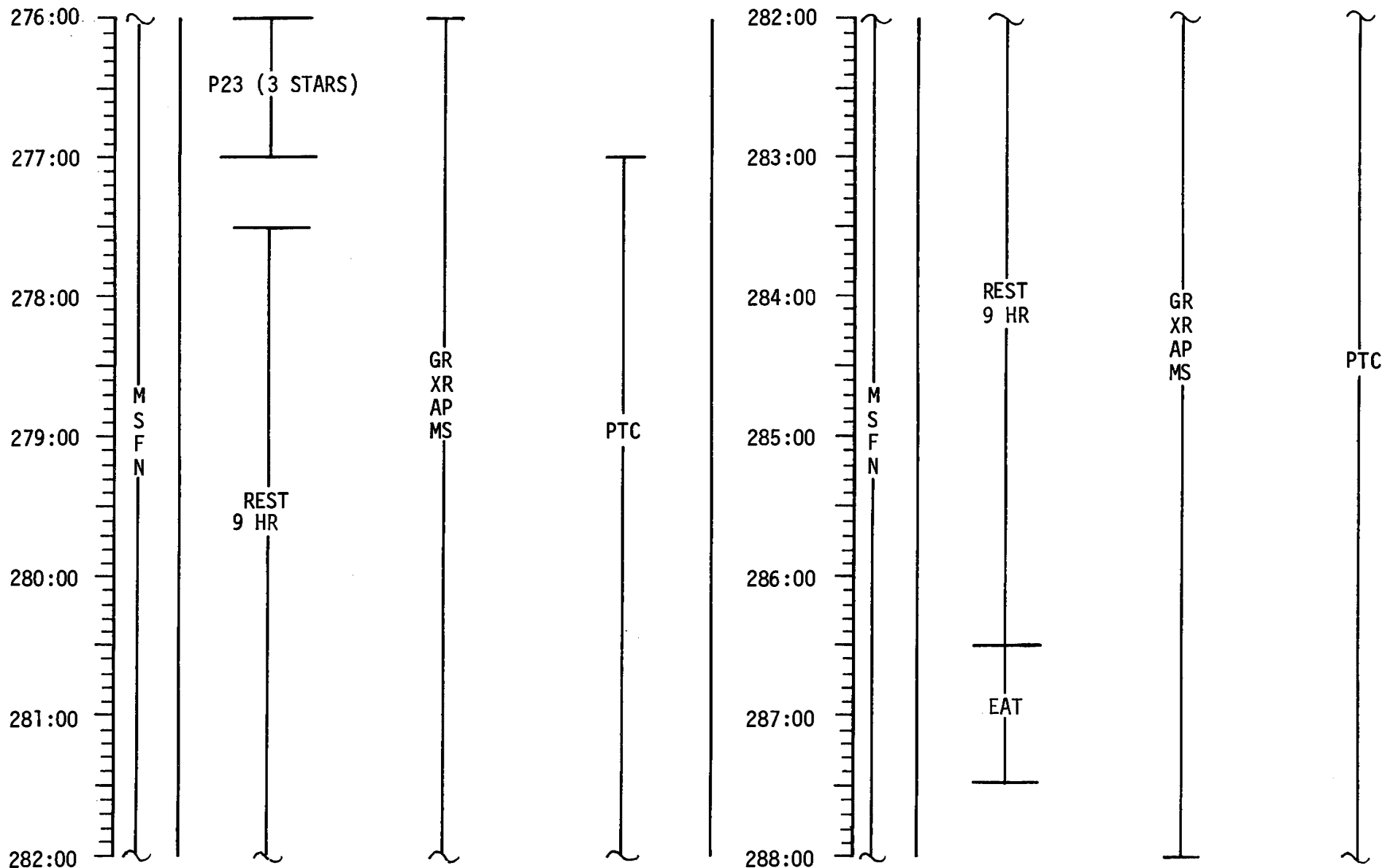
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	264:00 - 276:00	12 / TEC	5 - 23

FLIGHT PLANNING BRANCH

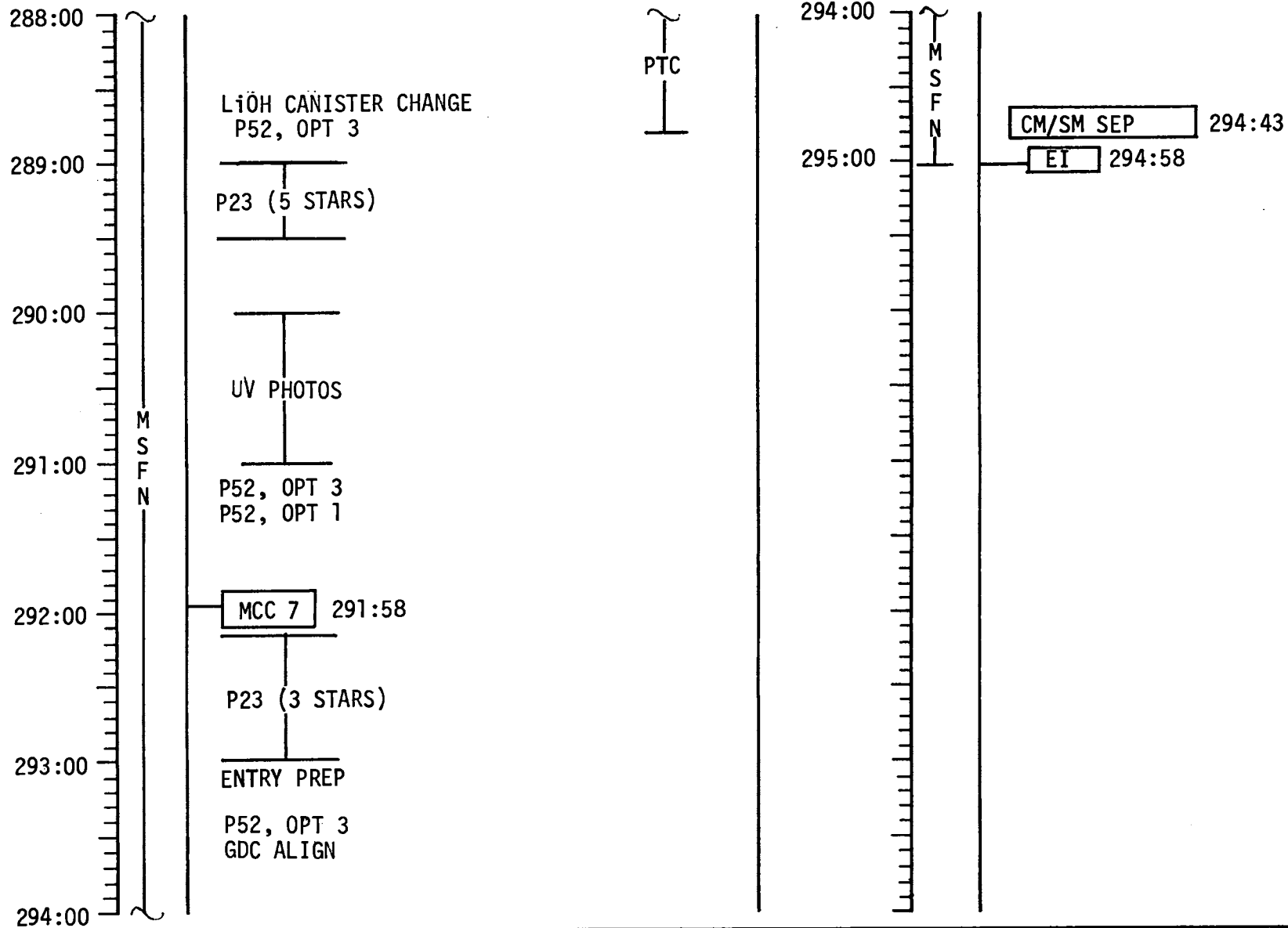
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	276:00 - 288:00	12 - 13/TEC	5 - 24

FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	6/21/71	288:00 - 295:00	13/TEC - EI	5 - 25

SECTION 6 - ALTERNATE MISSION TIMELINES



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SECTION 6 - ALTERNATE MISSION TIMELINES



EARTH ORBIT ALTERNATE MISSION

Assumptions

- 1) Safe insertion orbit has been achieved by the S-IVB.
- 2) A Systems failure has resulted in a NO/GO for TLI.

Constraints

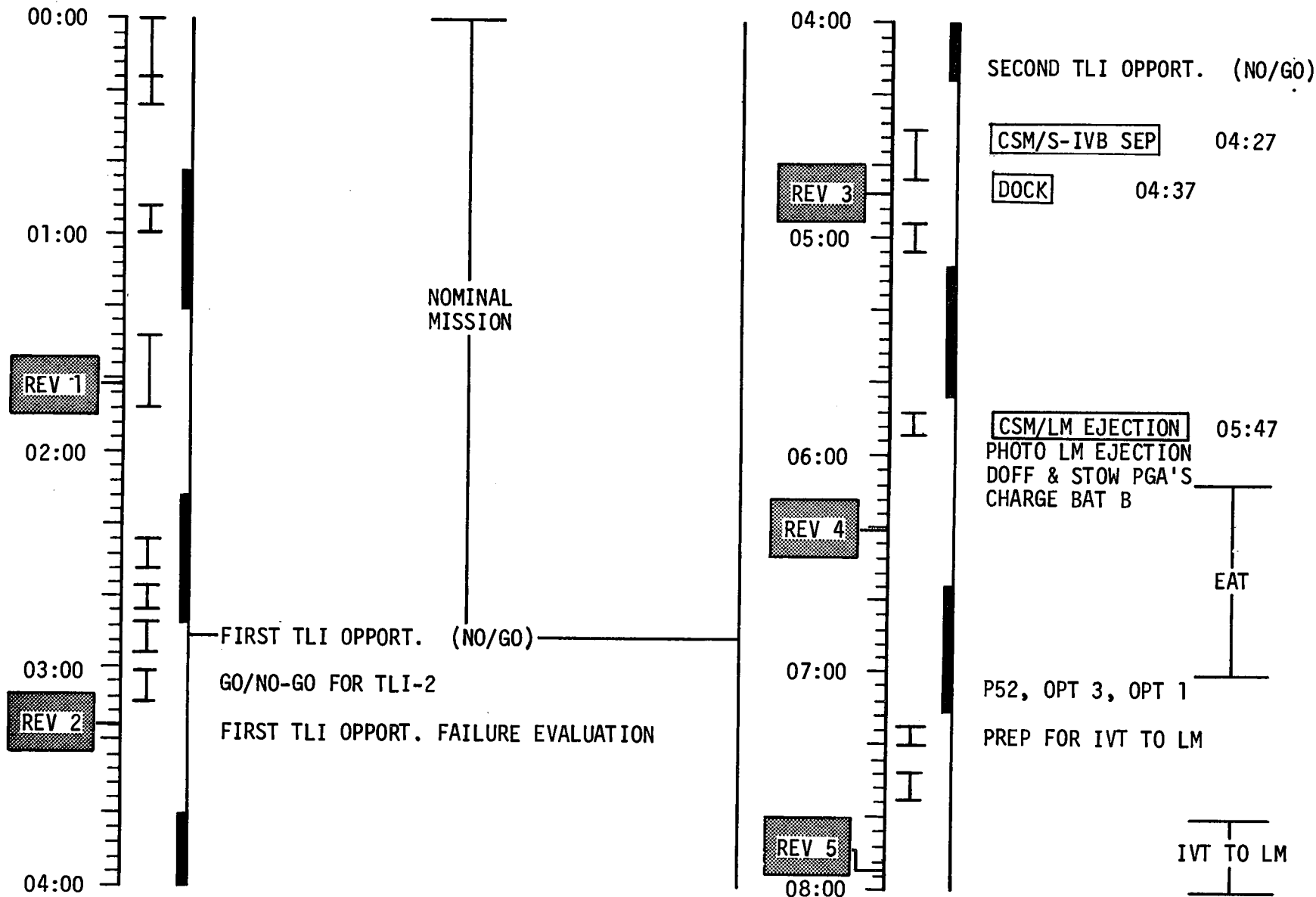
- 1) Maintain SM-RCS deorbit capability.
- 2) Photography over U.S.
- 3) LM to be jettisoned for water impact.

Sequence of Events

This alternate mission is initiated by a systems failure which will not allow TLI. The alternate mission timeline is entered at the nominal time of TLI and allows for a failure checkout period followed by a possible second TLI opportunity. If the second TLI is not performed, the CSM executes T.D.&E and prepares the LM for an ocean impact. The CSM executes five SPS burns to position itself for photographic coverage over the U.S. All the Sim bay experiments are activated and an EVA is planned to retrieve the film canisters.

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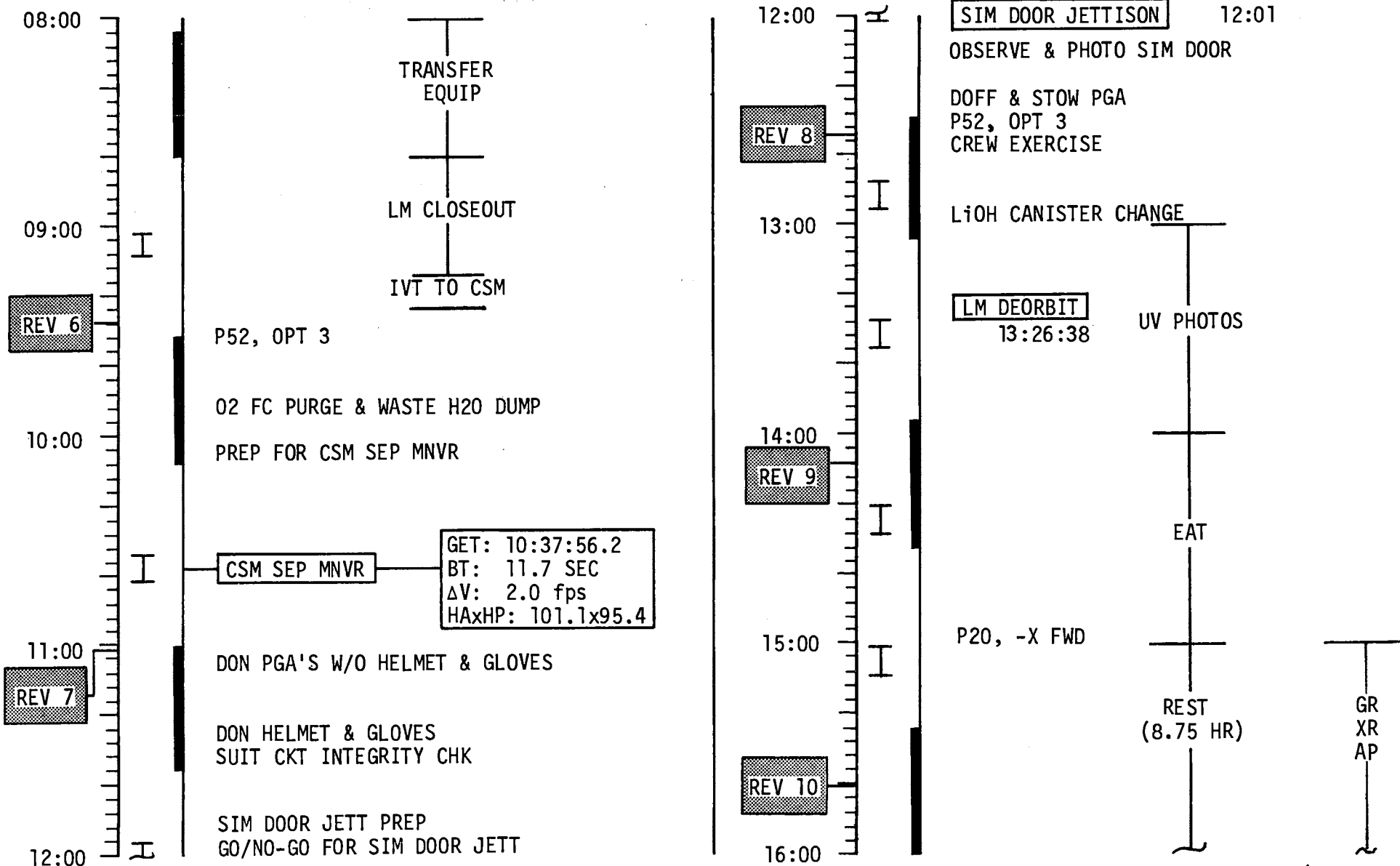
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	00:00 - 08:00	1/1-5	6-3

FLIGHT PLANNING BRANCH

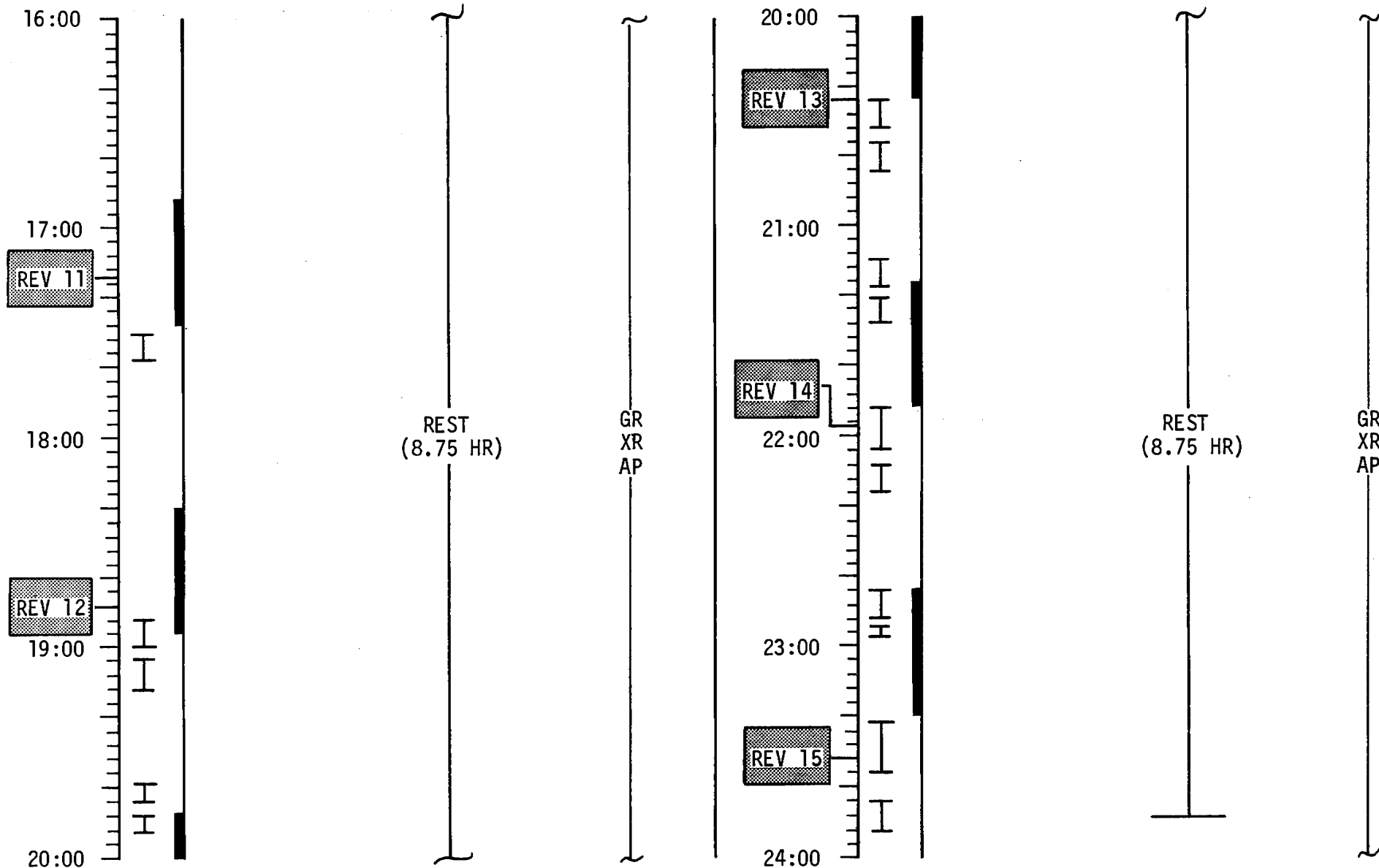
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	08:00 - 16:00	1/5-10	6-4

FLIGHT PLANNING BRANCH

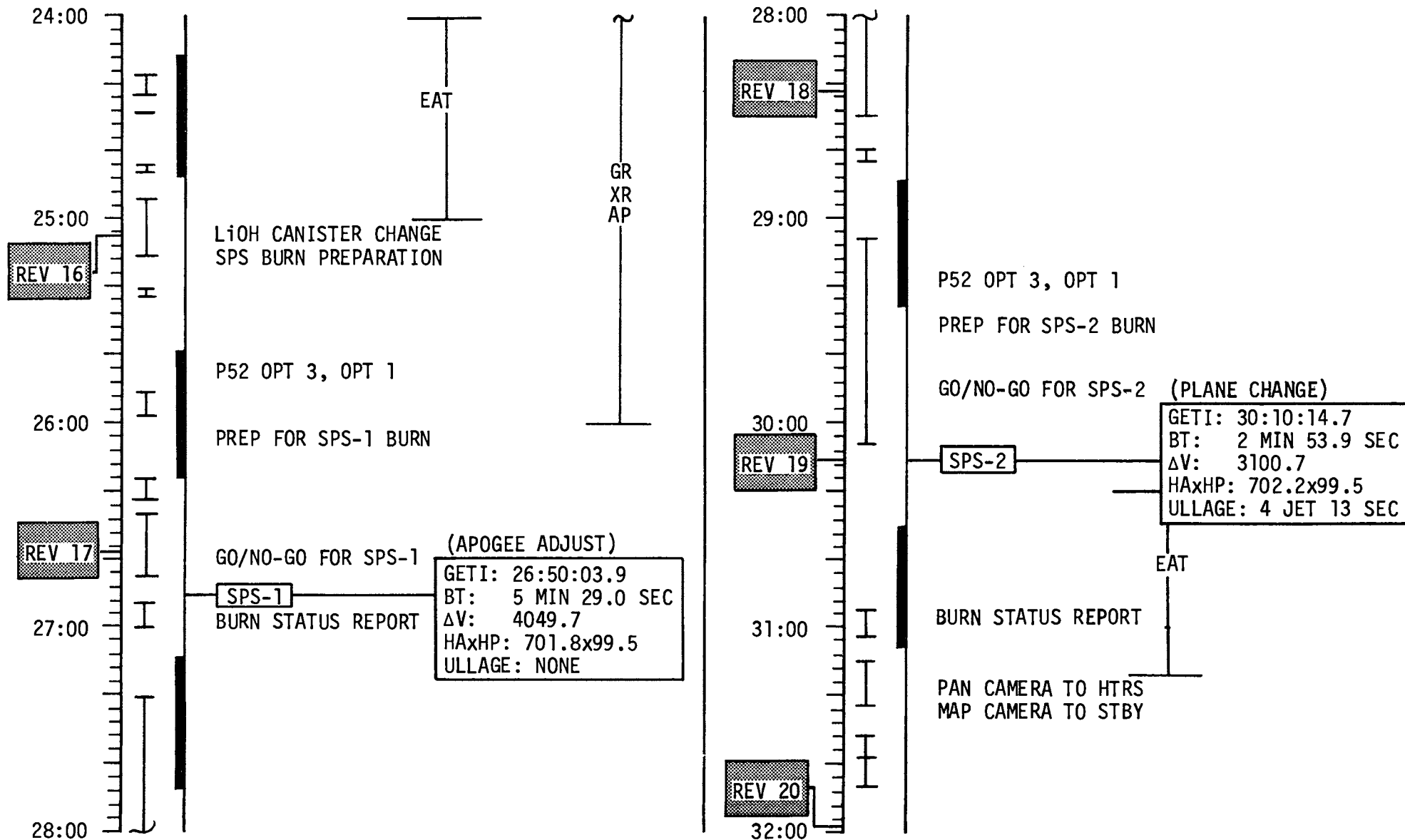
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	16:00 - 24:00	1/10-15	6-5

FLIGHT PLANNING BRANCH

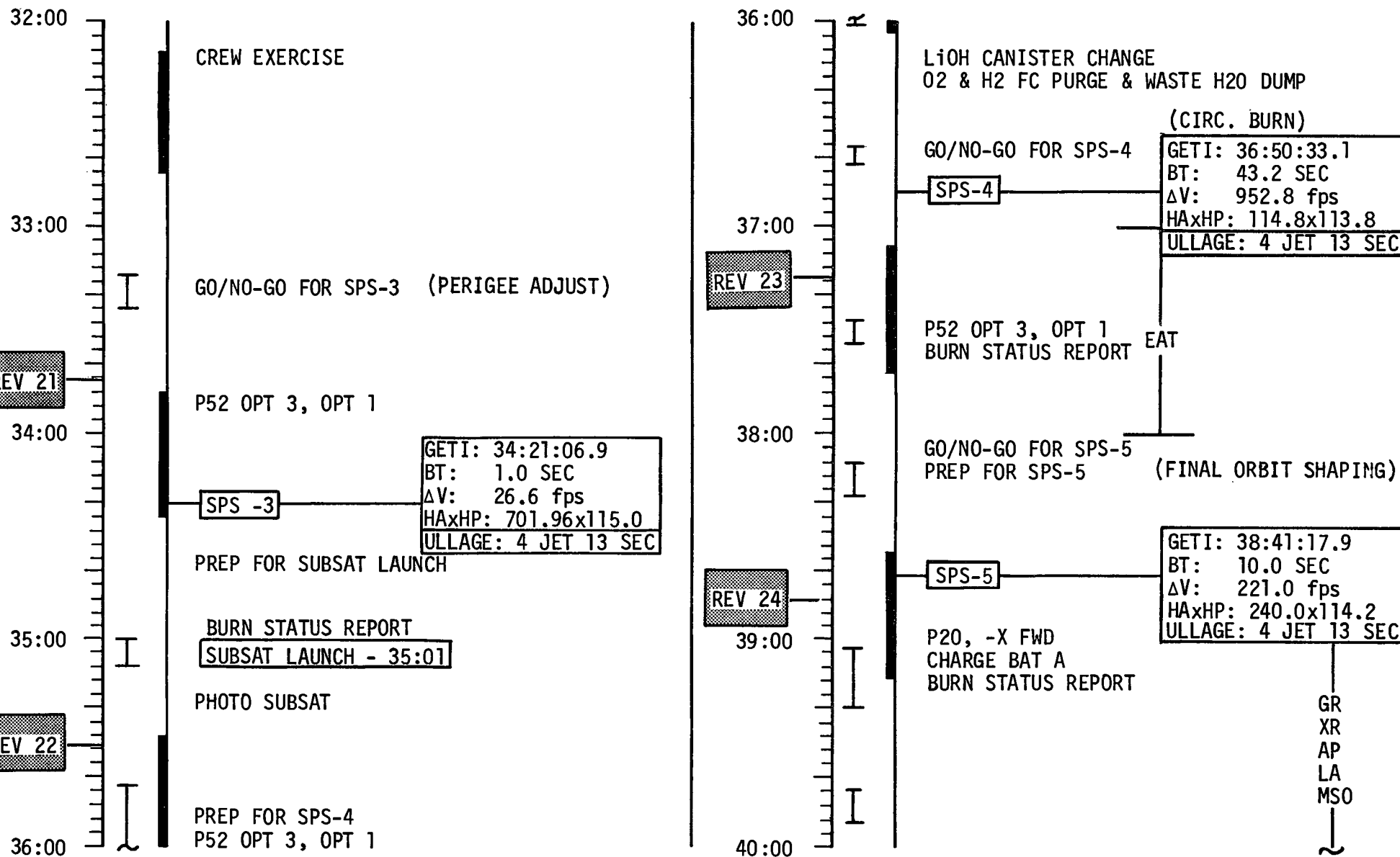
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	24:00 - 32:00	2/15-20	6/6

FLIGHT PLANNING BRANCH

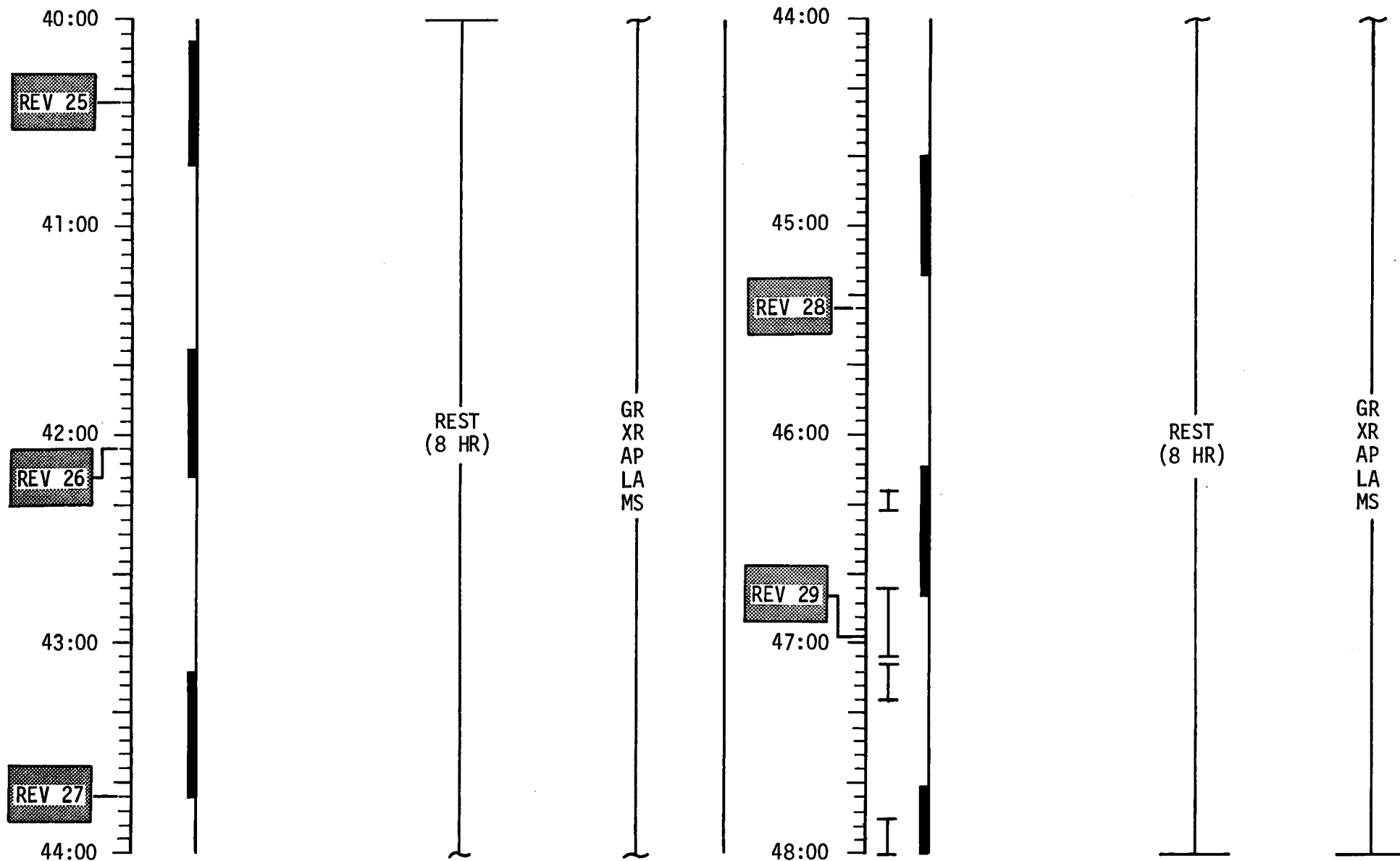
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	32:00 - 40:00	2/20-24	6-7

FLIGHT PLANNING BRANCH

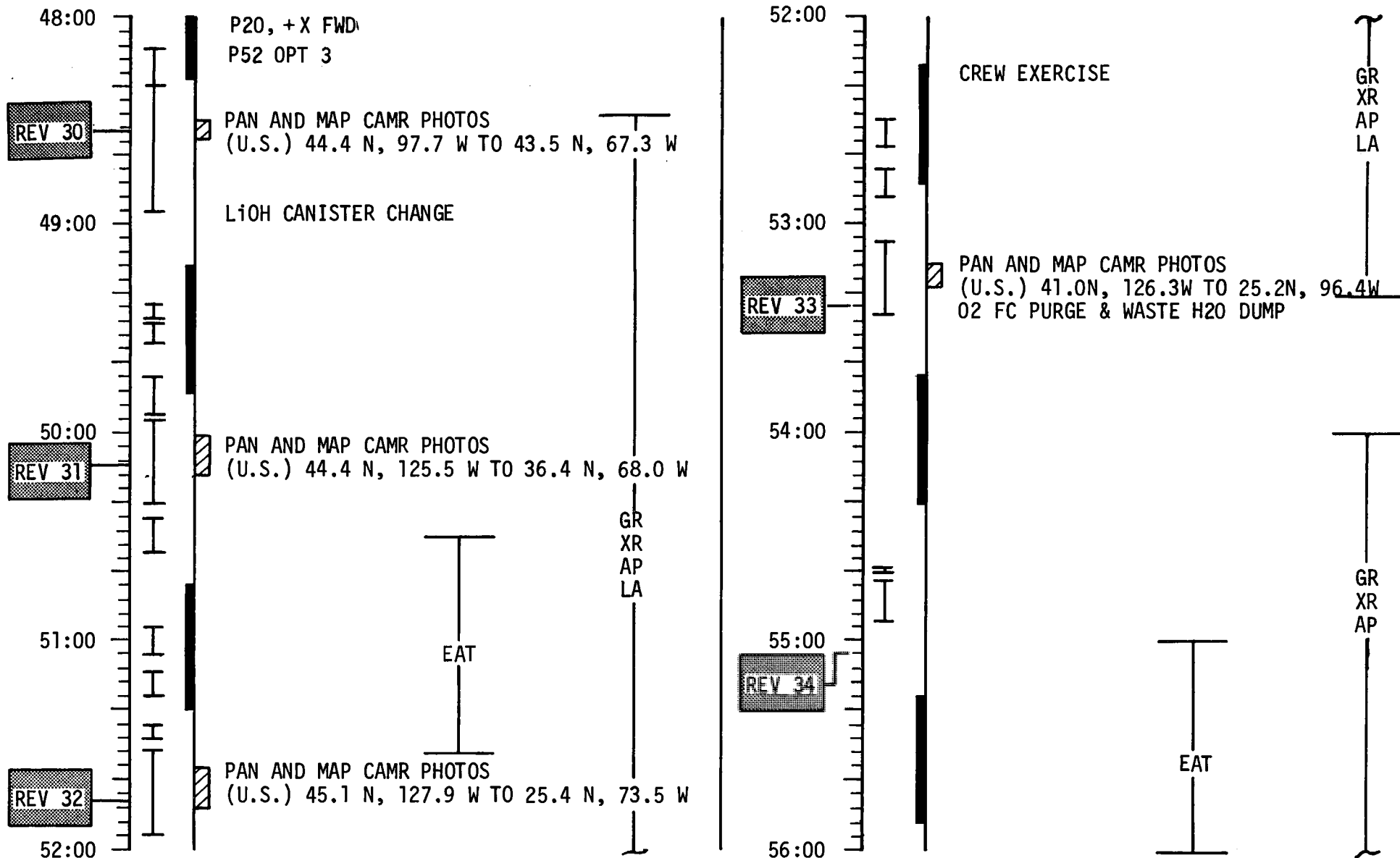
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	40:00 - 48:00	2/24-29	6-8

FLIGHT PLANNING BRANCH

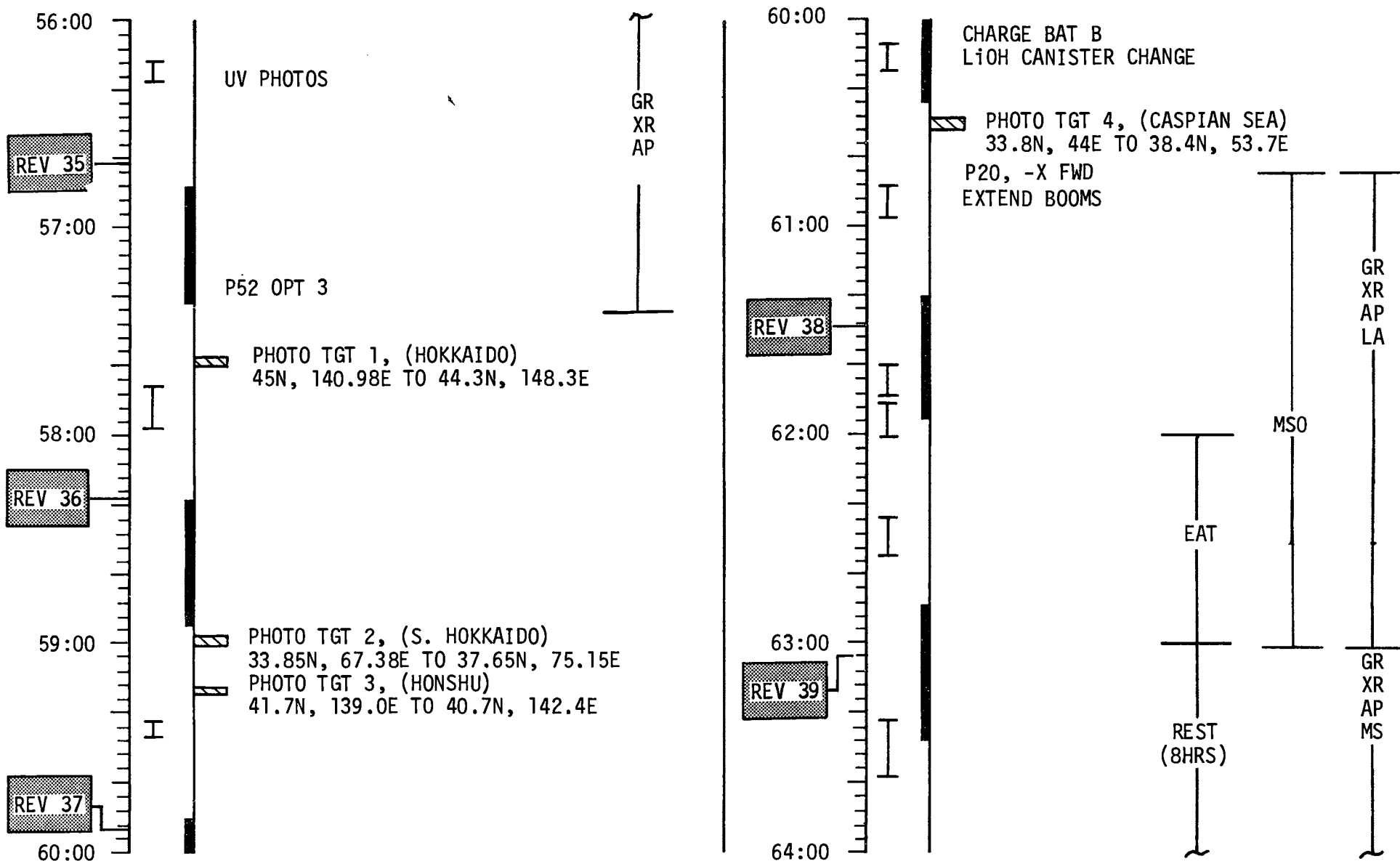
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	48:00 - 56:00	2/29-34	6-9

FLIGHT PLANNING BRANCH

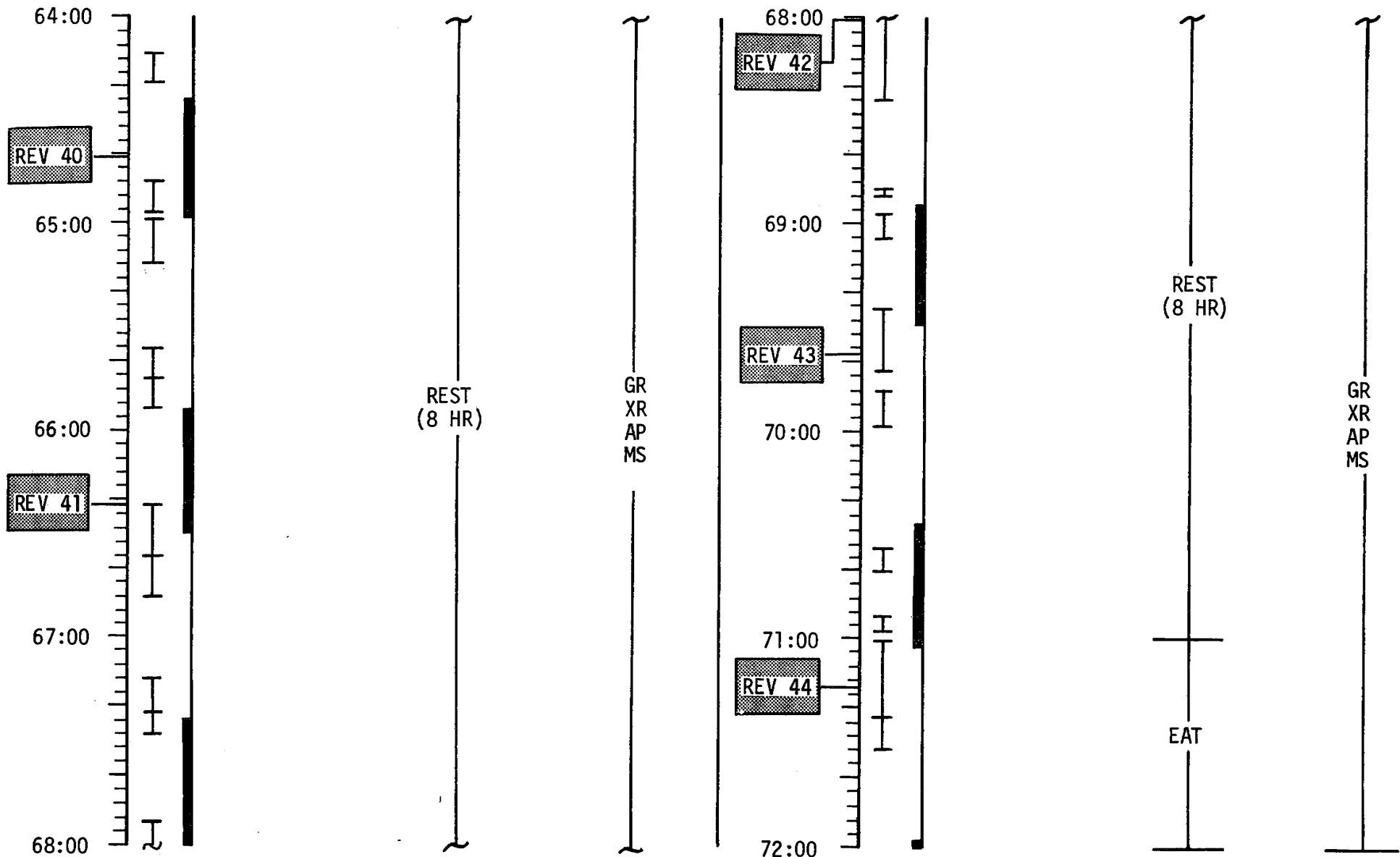
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	56:00 - 64:00	2/34-39	6-10

FLIGHT PLANNING BRANCH

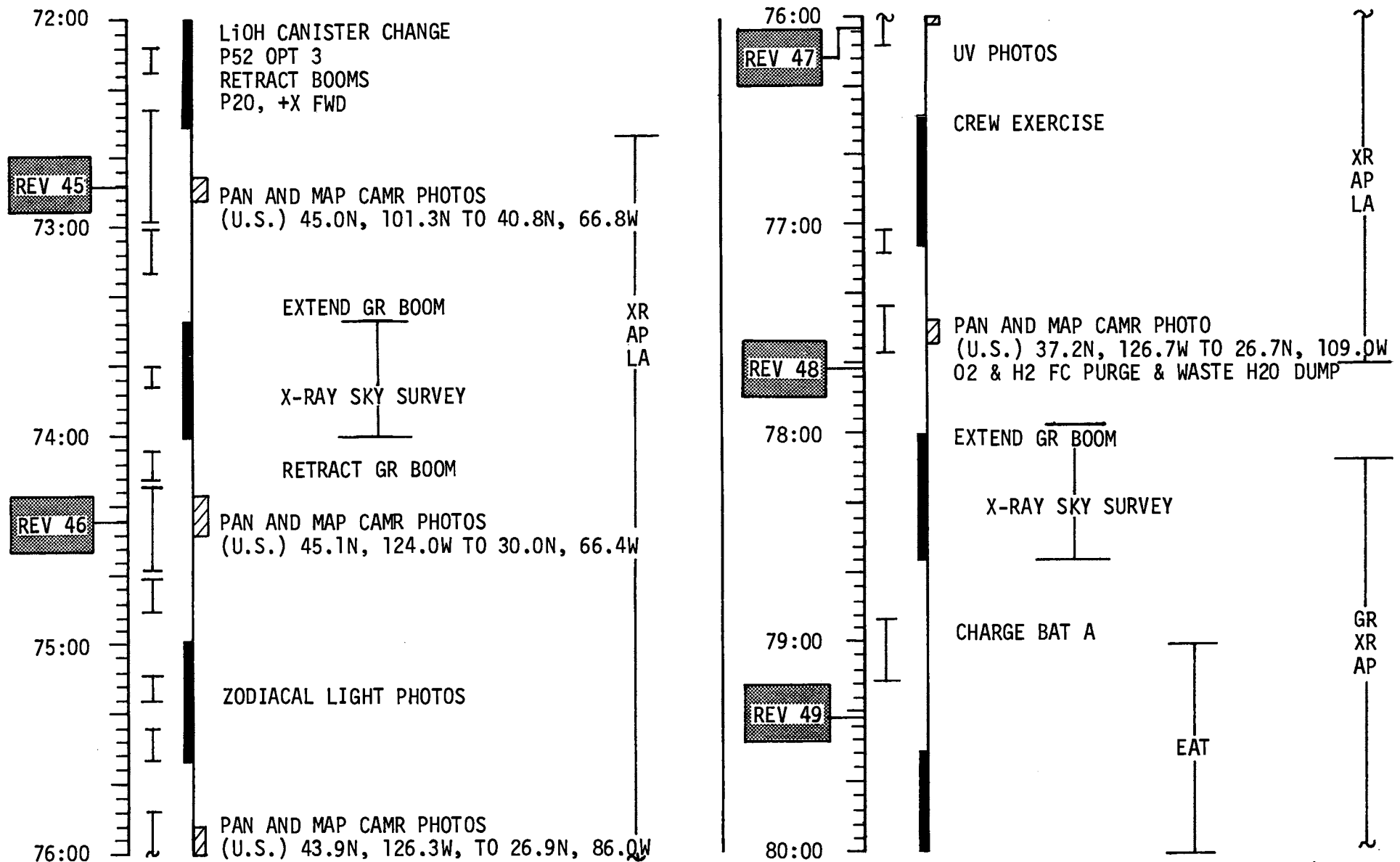
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	64:00 - 72:00	2/39-44	6-11

FLIGHT PLANNING BRANCH

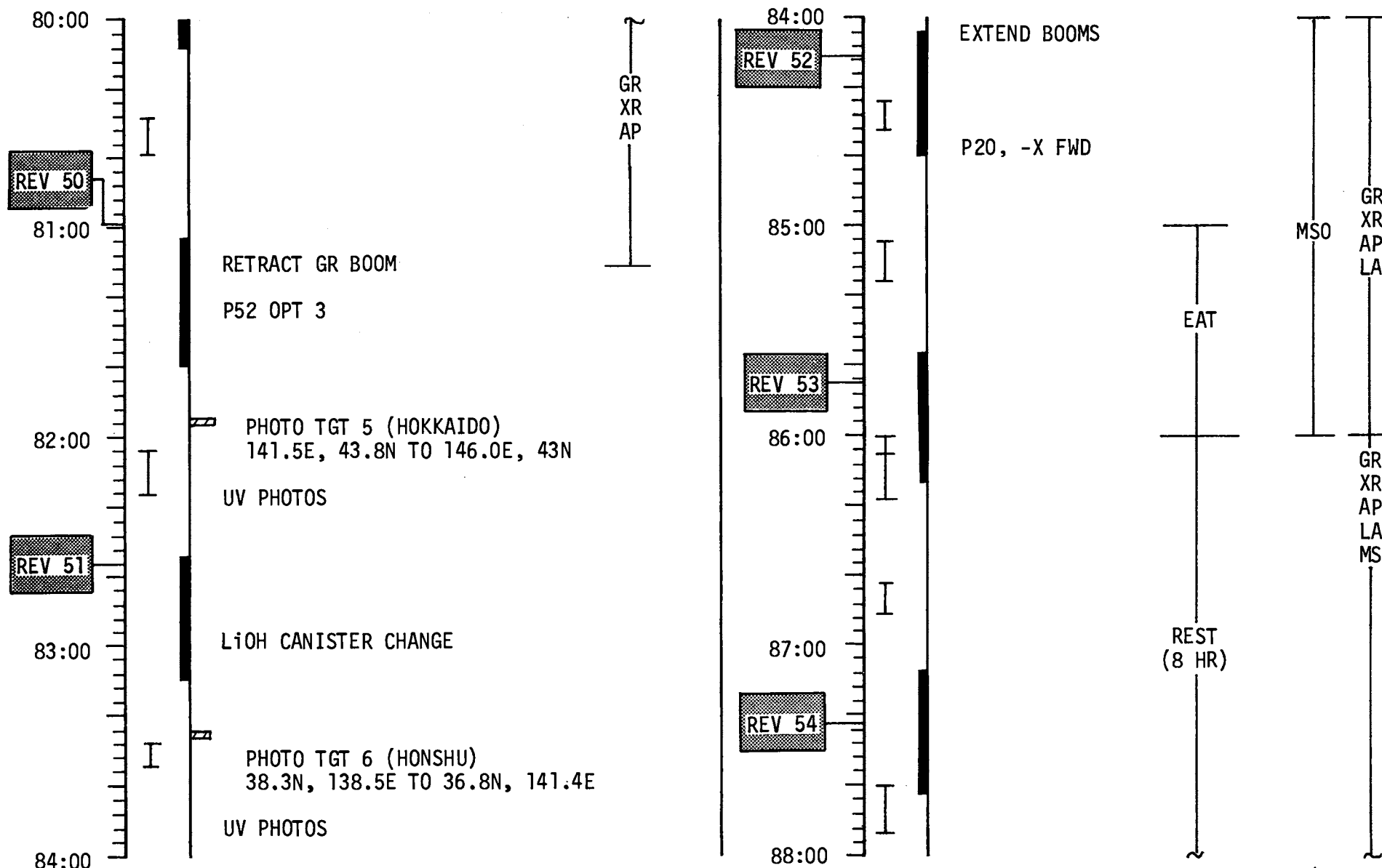
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	72:00 - 80:00	3/44-49	6-12

FLIGHT PLANNING BRANCH

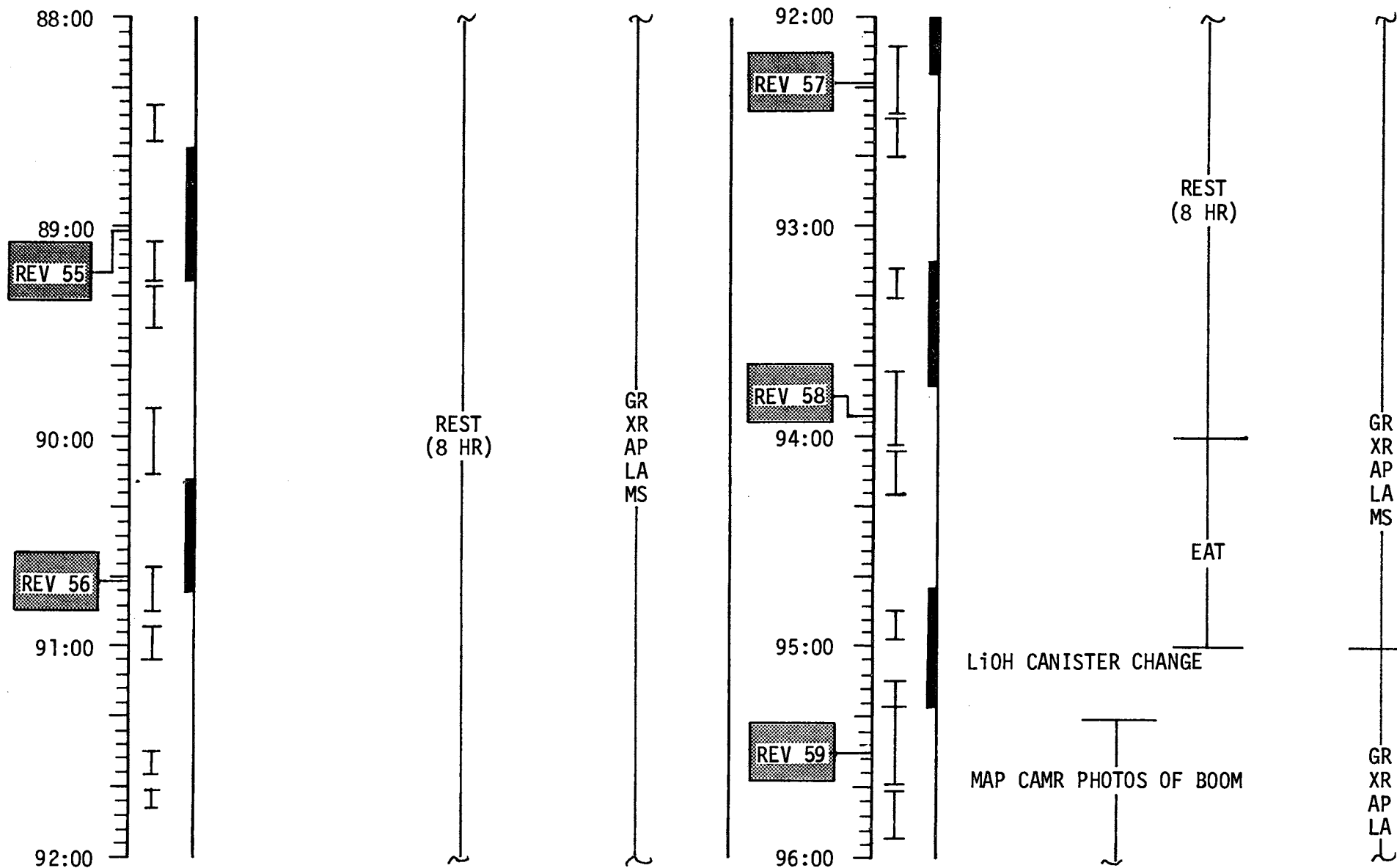
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	80:00 - 88:00	3/49-54	6-13

FLIGHT PLANNING BRANCH

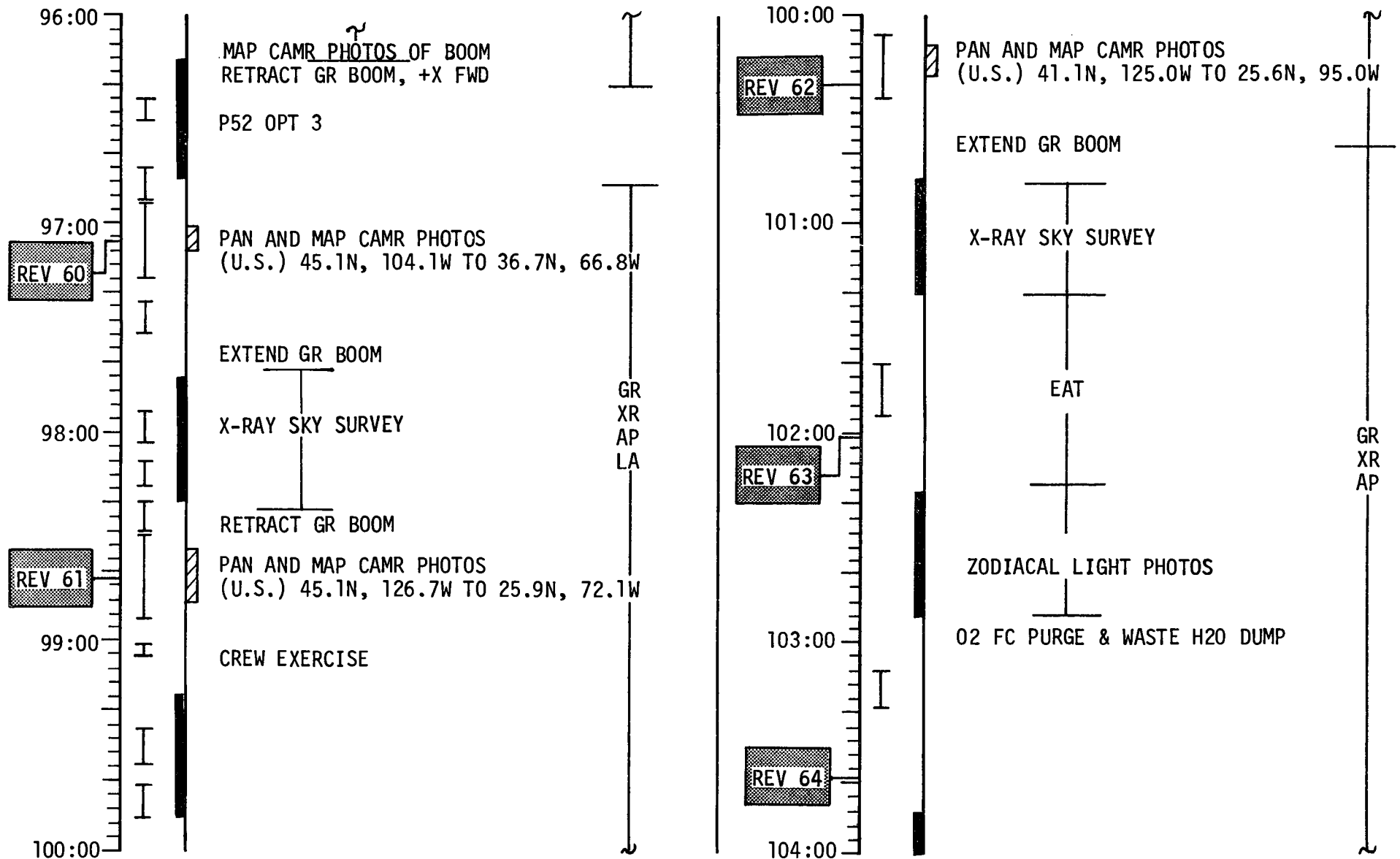
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	88:00 - 96:00	3-4/54-59	6-14

FLIGHT PLANNING BRANCH

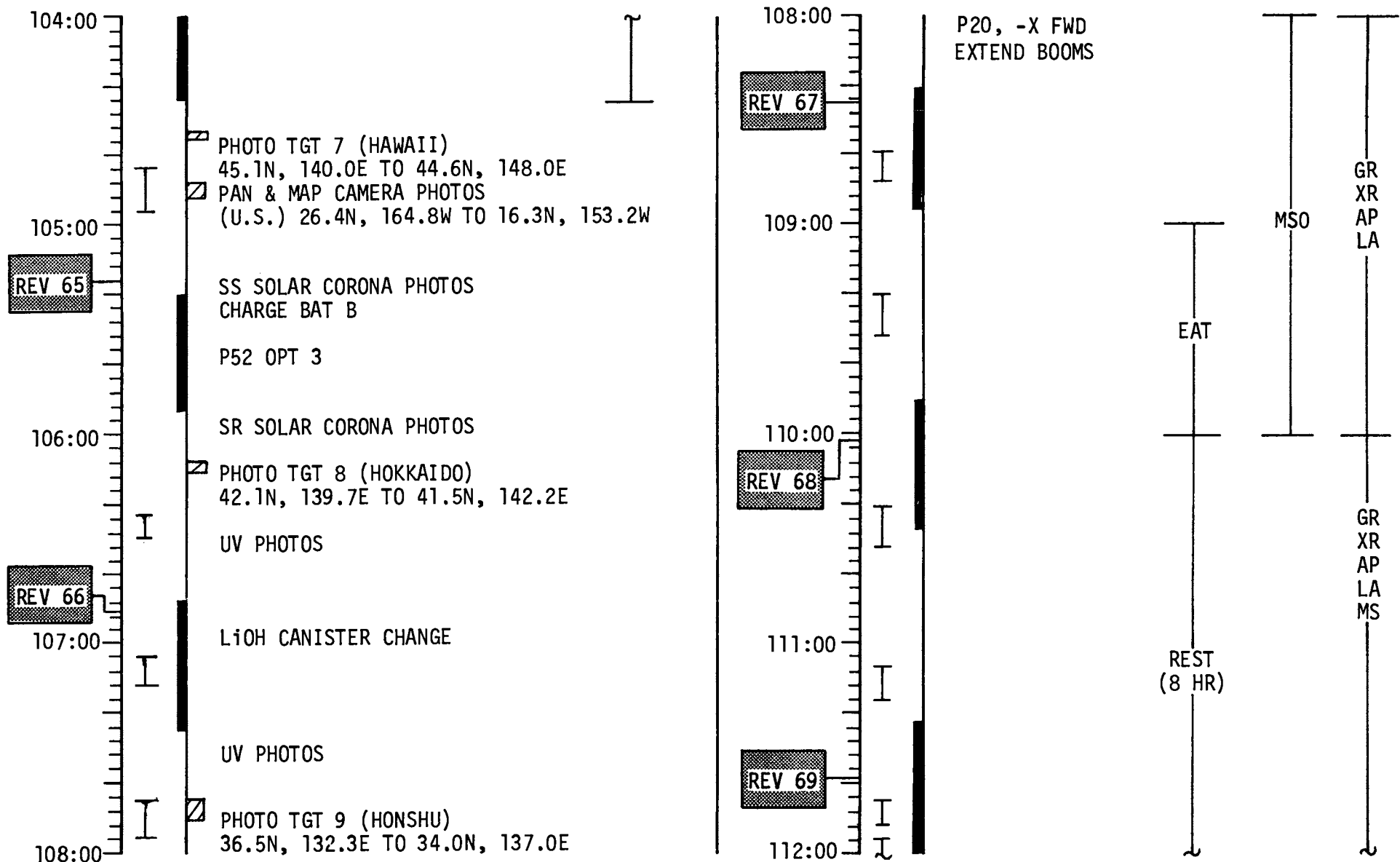
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	96:00 - 104:00	4/59-64	6-15

FLIGHT PLANNING BRANCH

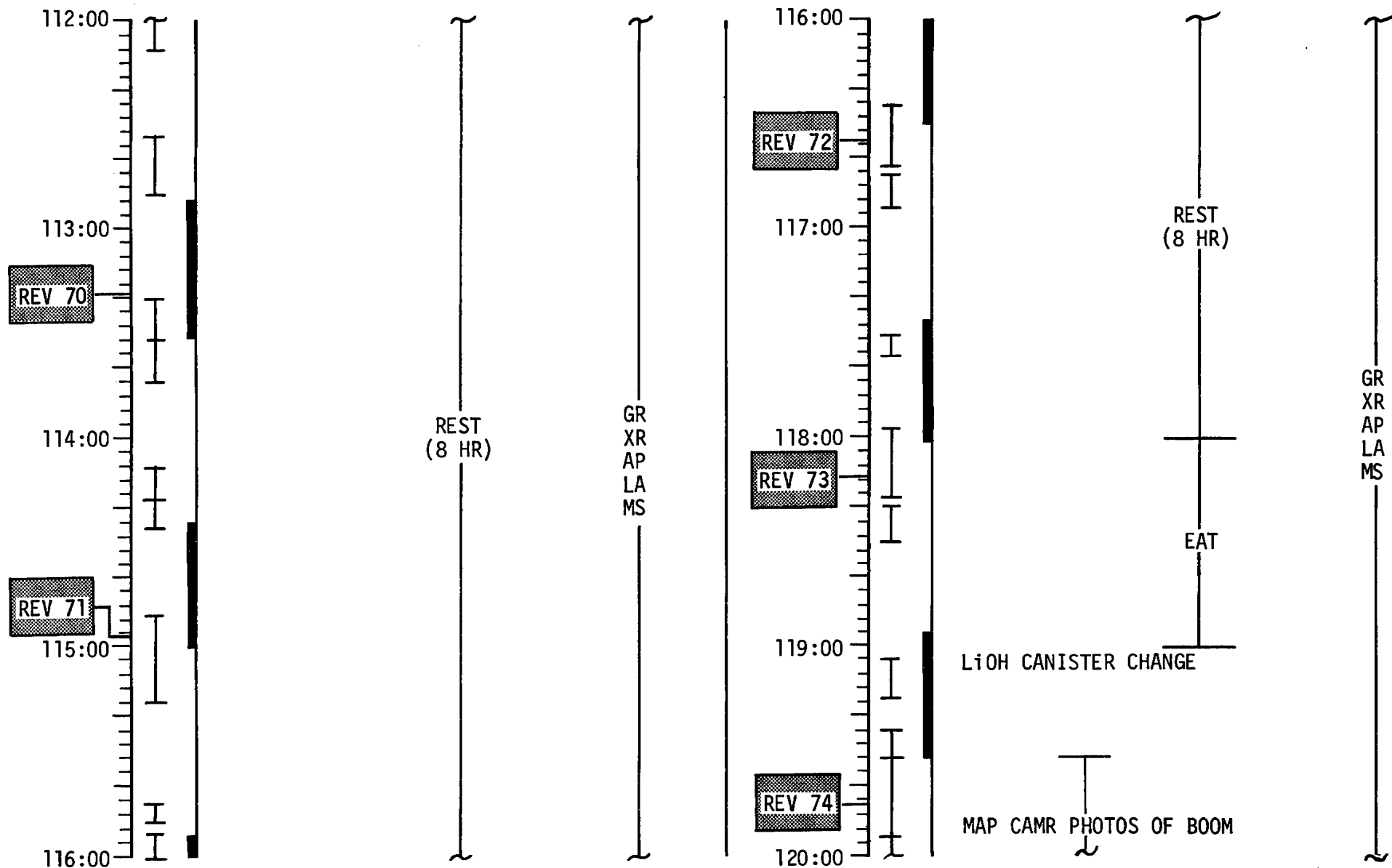
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	104:00 - 112:00	4/64-69	6-16

FLIGHT PLANNING BRANCH

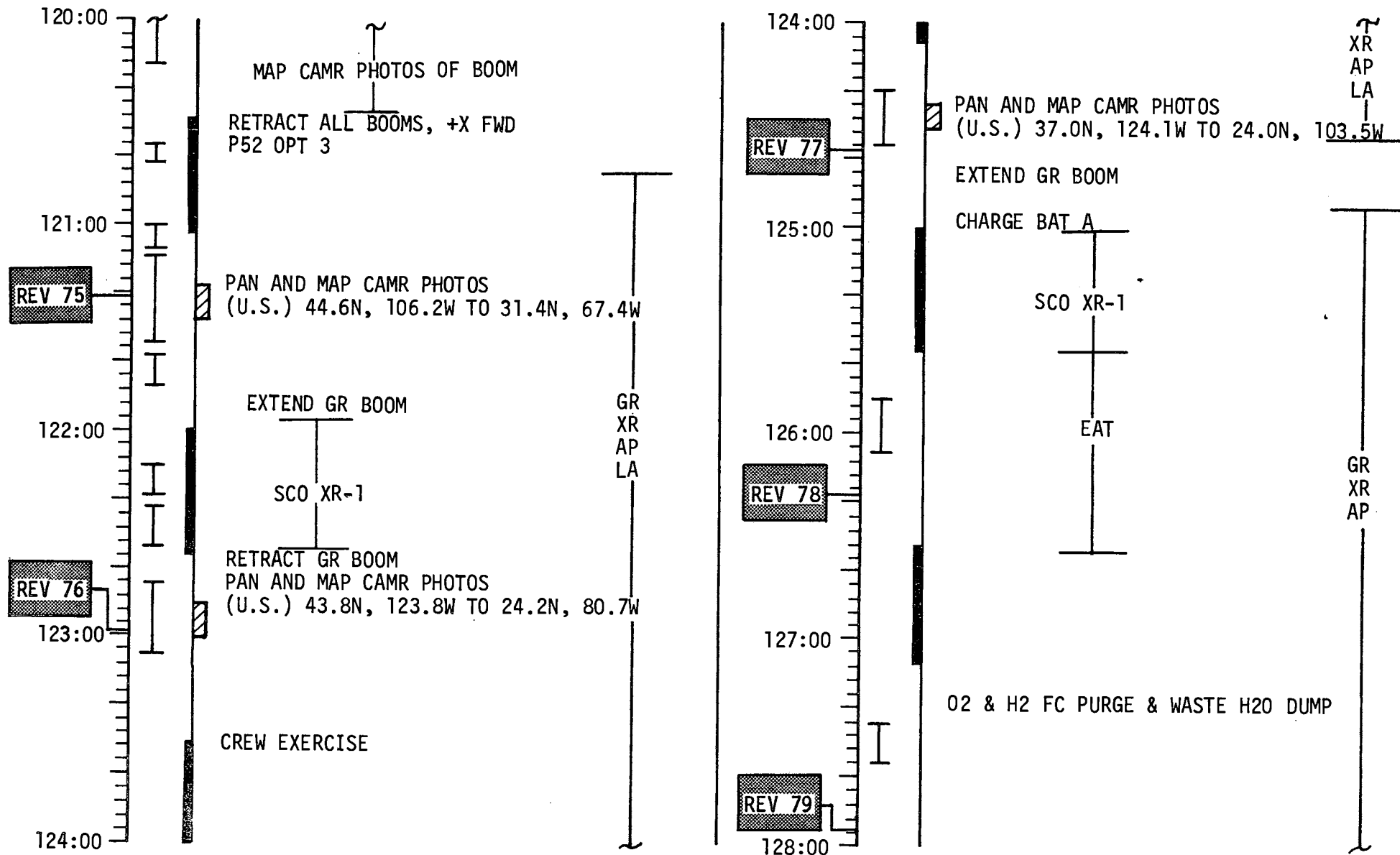
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	112:00 - 120:00	4-5/69-74	6-17

FLIGHT PLANNING BRANCH

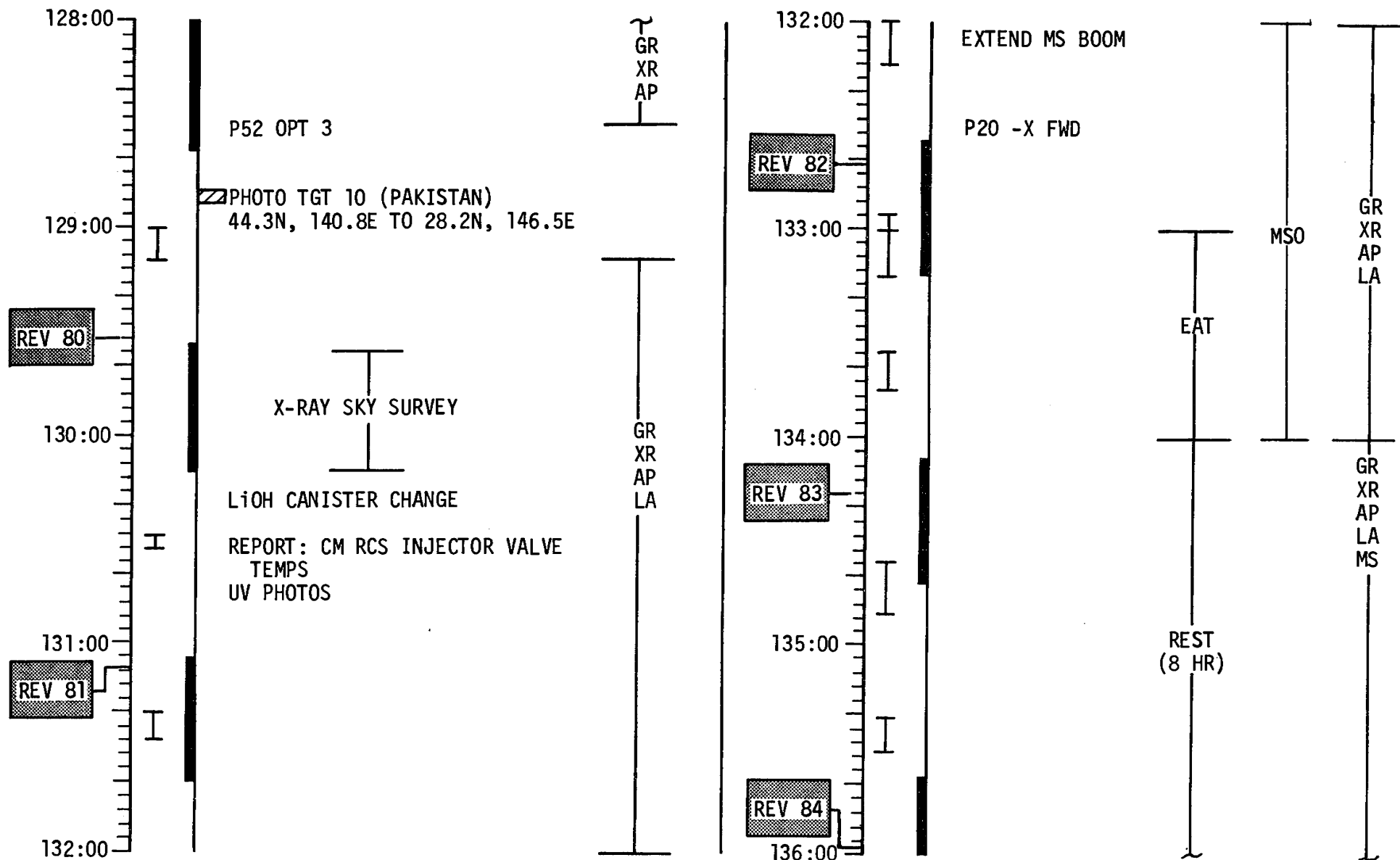
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	120:00 - 128:00	5/74-79	6-18

FLIGHT PLANNING BRANCH

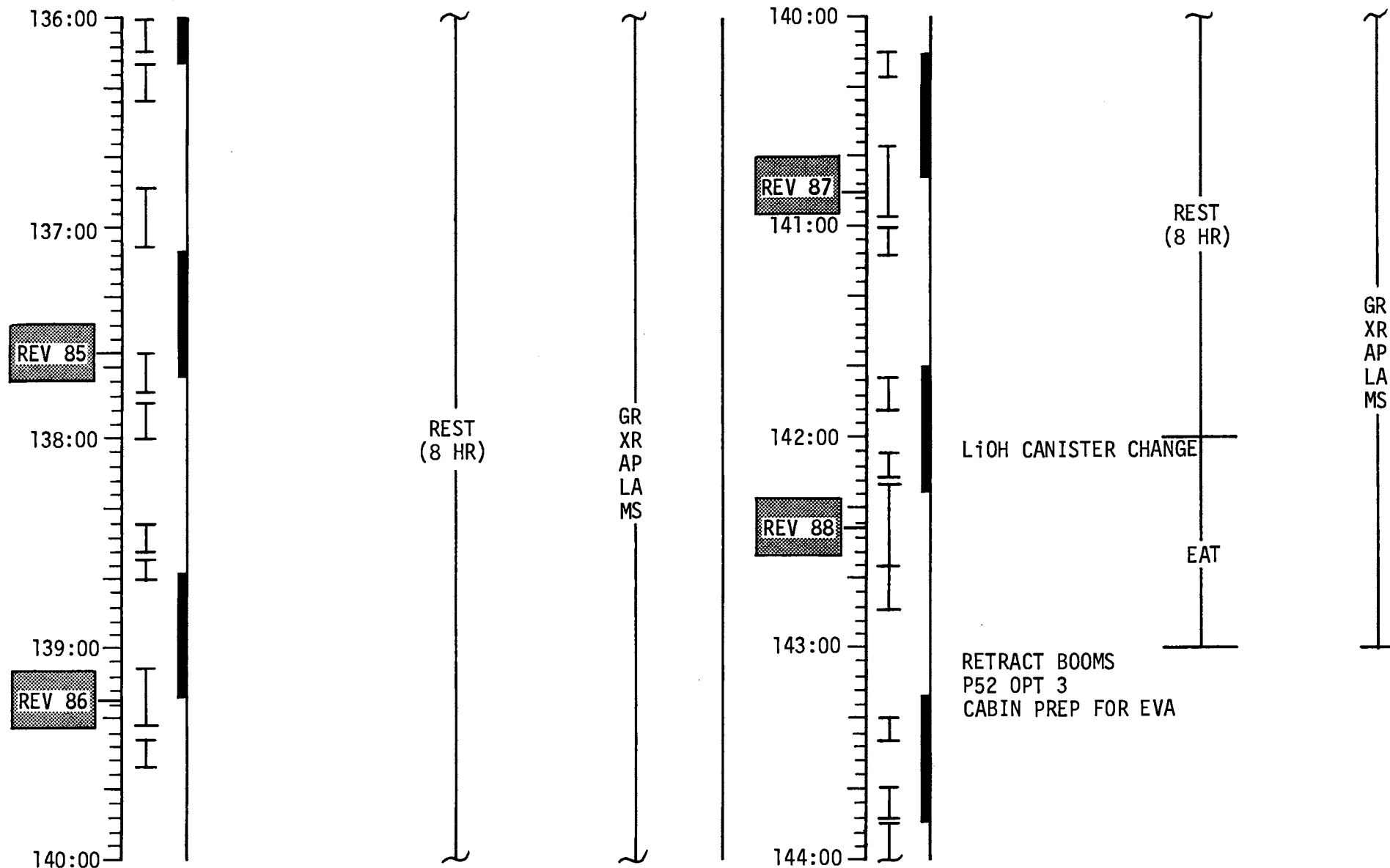
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	128:00 - 136:00	5/79-84	6-19

FLIGHT PLANNING BRANCH

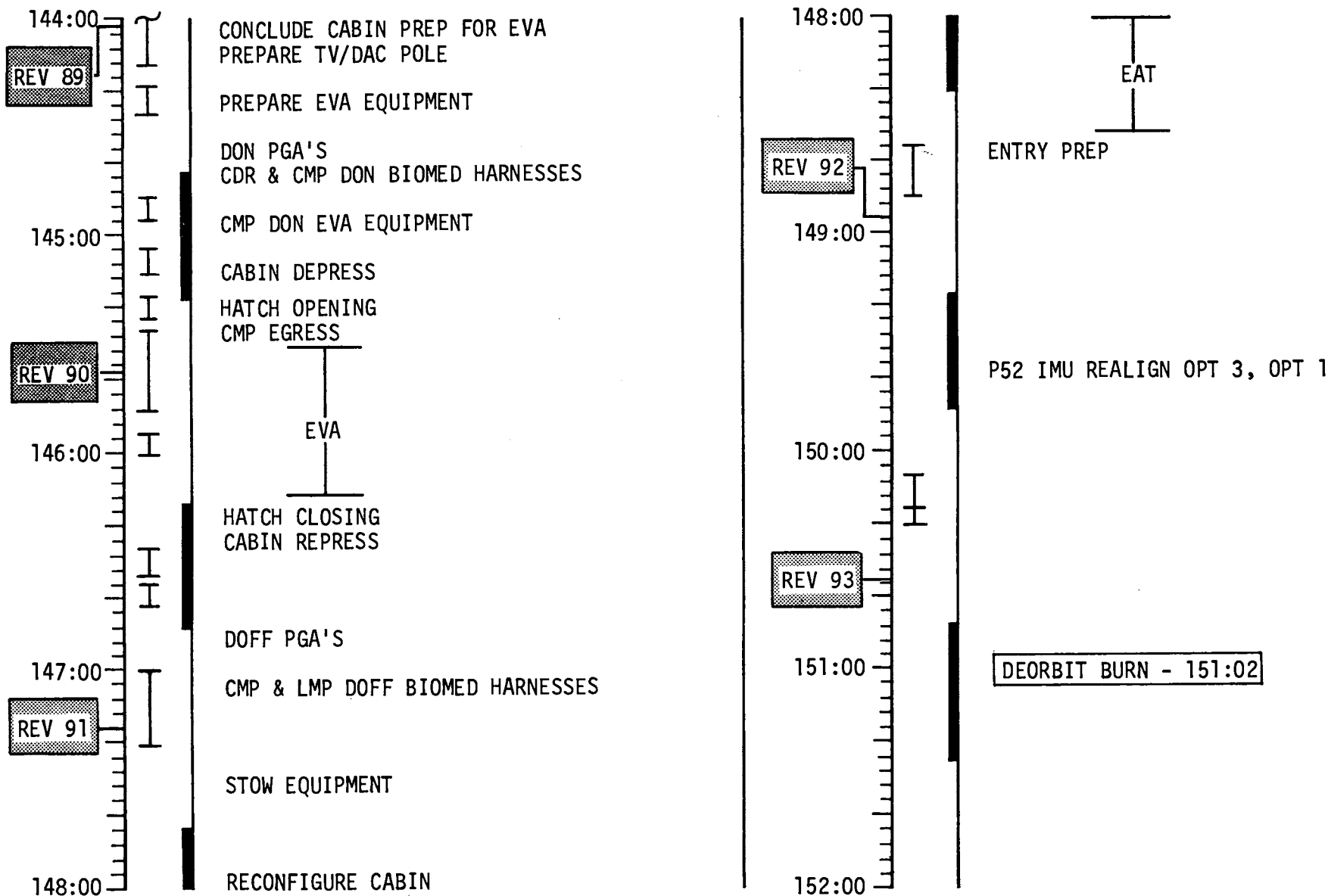
EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	136:00 - 144:00	5-6/84-88	6-20

FLIGHT PLANNING BRANCH

EARTH ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	144:00 - 152:00	6/89-93	6-21

FLIGHT PLANNING BRANCH

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CSM ONLY ALTERNATE MISSION

Assumptions

- 1) Nominal TLI Burn has been achieved by the S-IVB.
- 2) A systems failure during T.D.&E or a LM Jettison during TLC has resulted in a CSM-only Alternate Mission.

Constraints

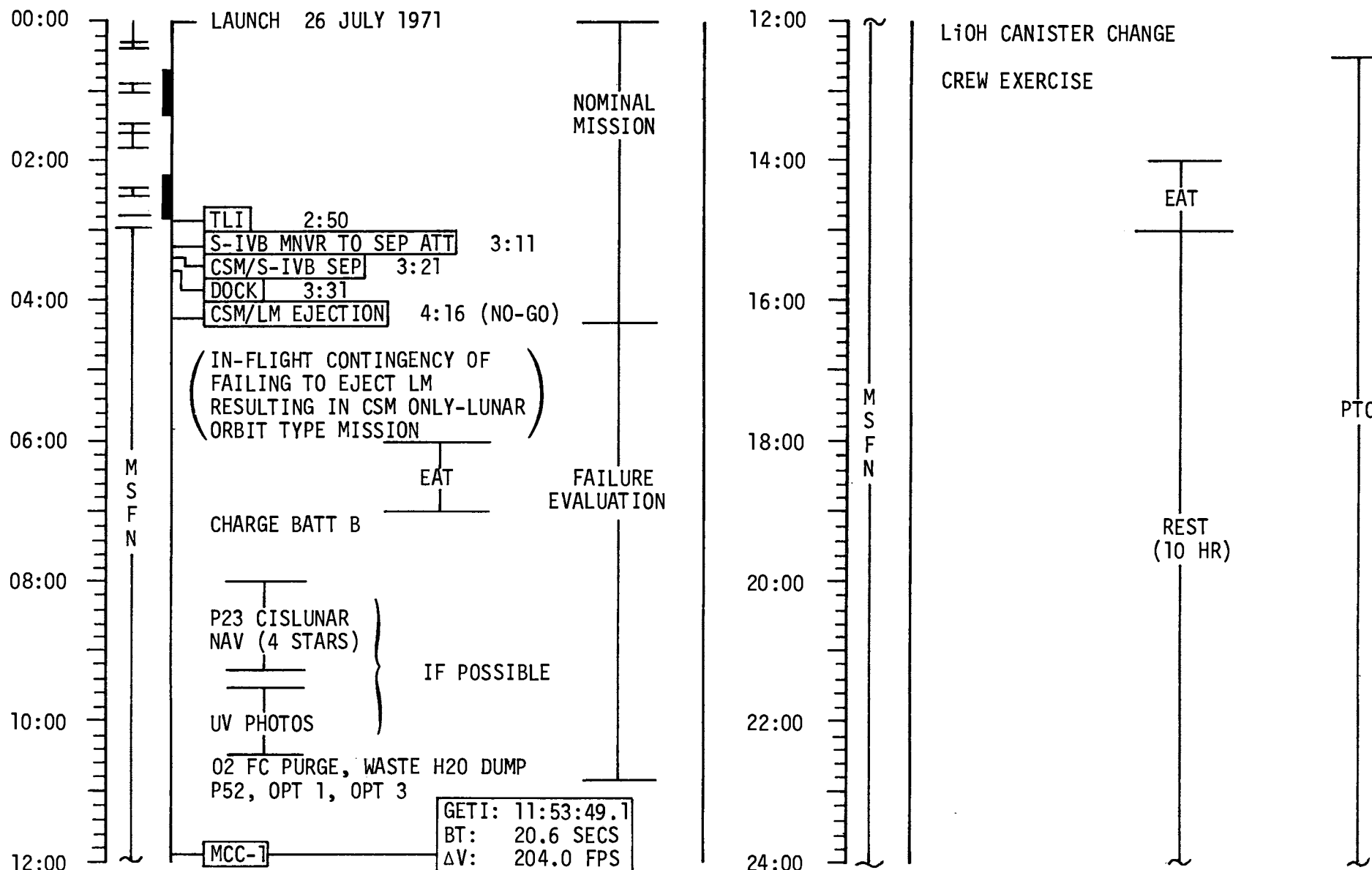
- 1) SPS midcourse burn to return to a free return trajectory.
- 2) Adherence to the nominal flight plan as much as possible.
- 3) Maximize inclination in lunar orbit within SPS limits.
- 4) Maintain any rev TEI capability.
- 5) Obtain sim bay experiments data.

Sequence of Events

This alternate mission is initiated by a failure to eject the LM at T.D.&E. or a LM Jettison during TLC. An SPS midcourse will be performed to return to a free return trajectory, placing LOI approximately four hours earlier than the nominal time. The CSM will perform an LOI-1 and LOI-2 sequence to maximize inclination. Six days are planned in lunar orbit operating all the sim bay equipment and expending all the pan and mapping camera film. The shaping burn, sub-satellite jettison and the TEI burn will occur at approximately the same time.

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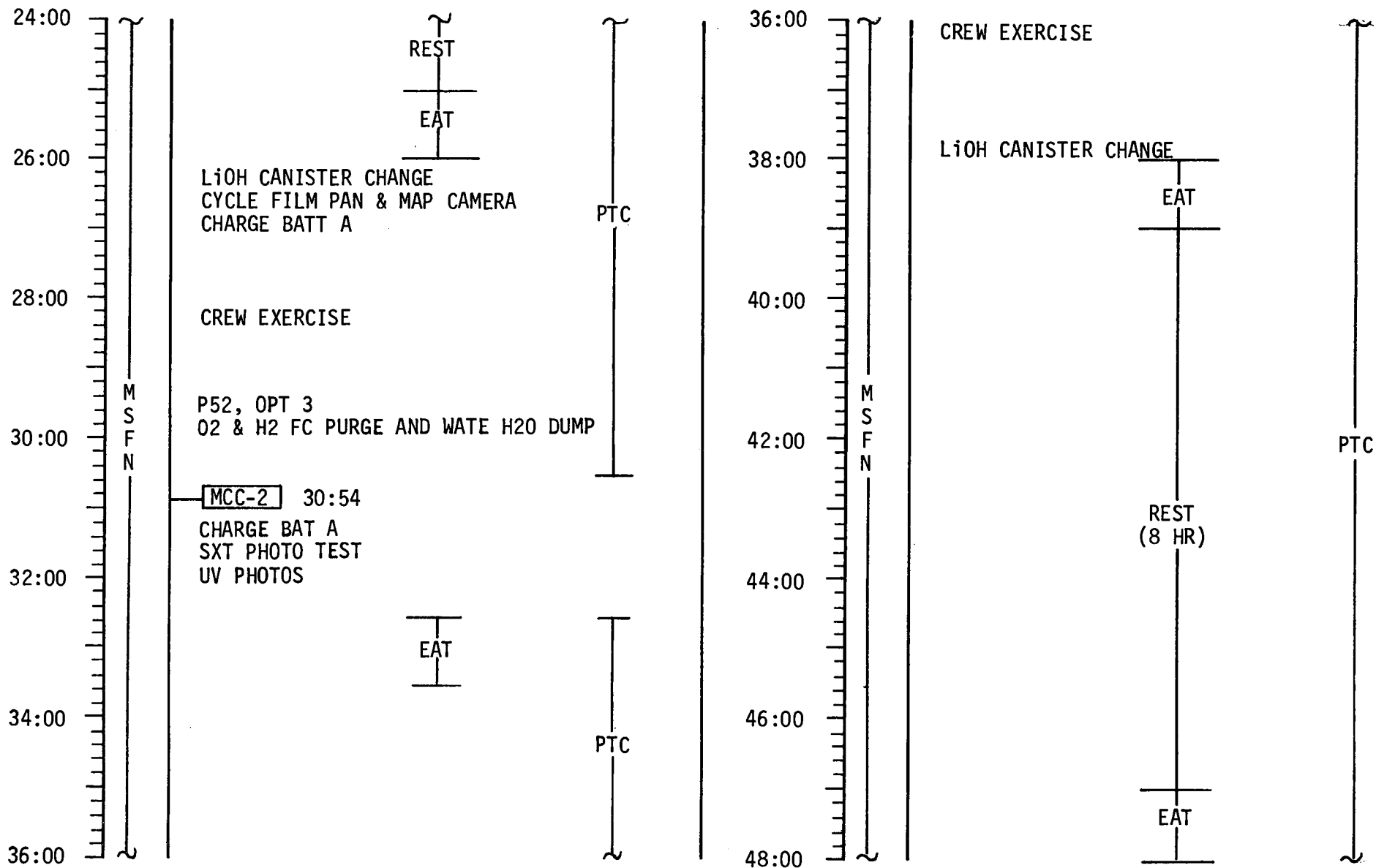
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	00:00 - 24:00	1/TLC	6-25

FLIGHT PLANNING BRANCH

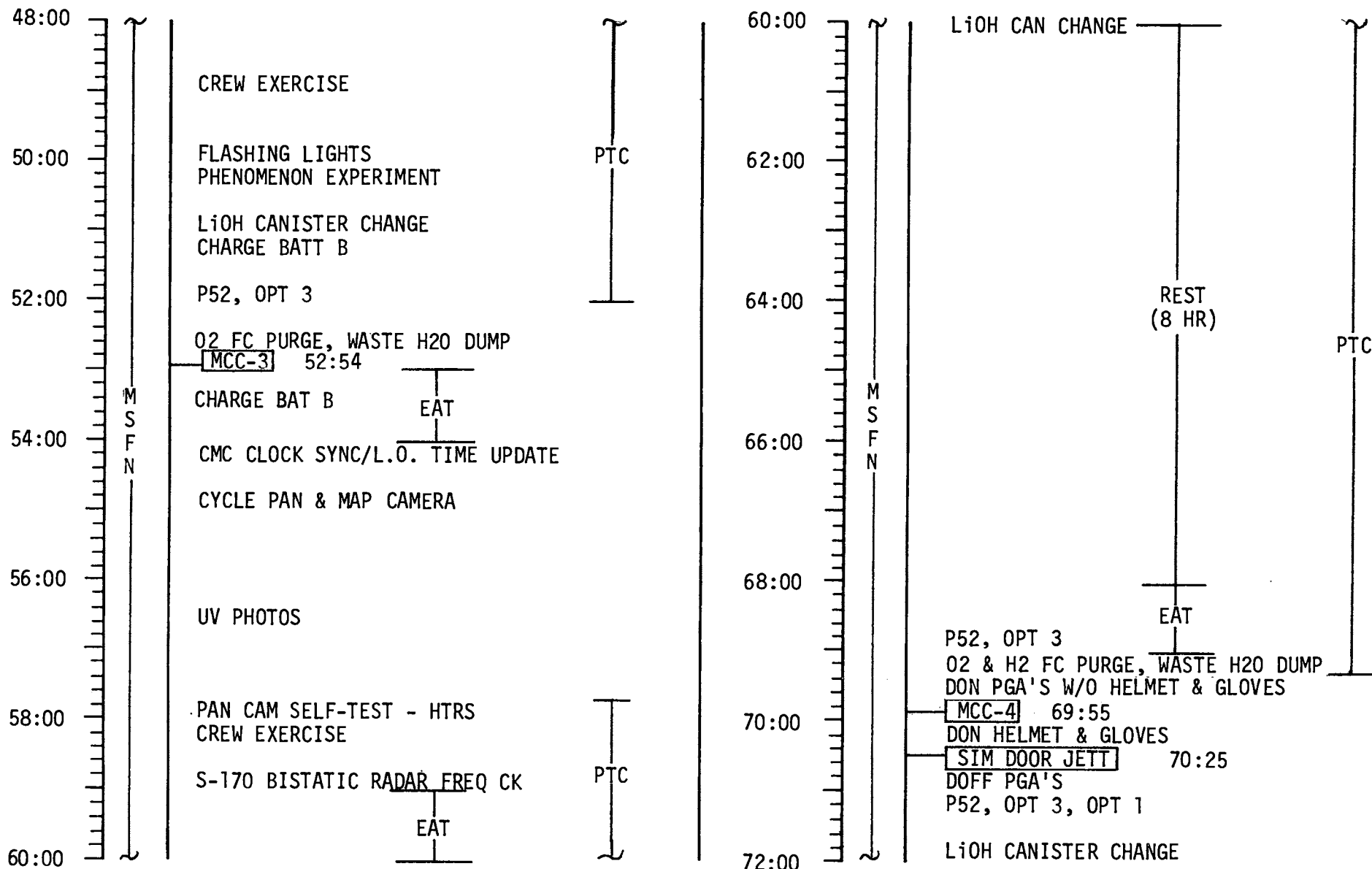
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	24:00 - 48:00	2/TLC	6-26

FLIGHT PLANNING BRANCH

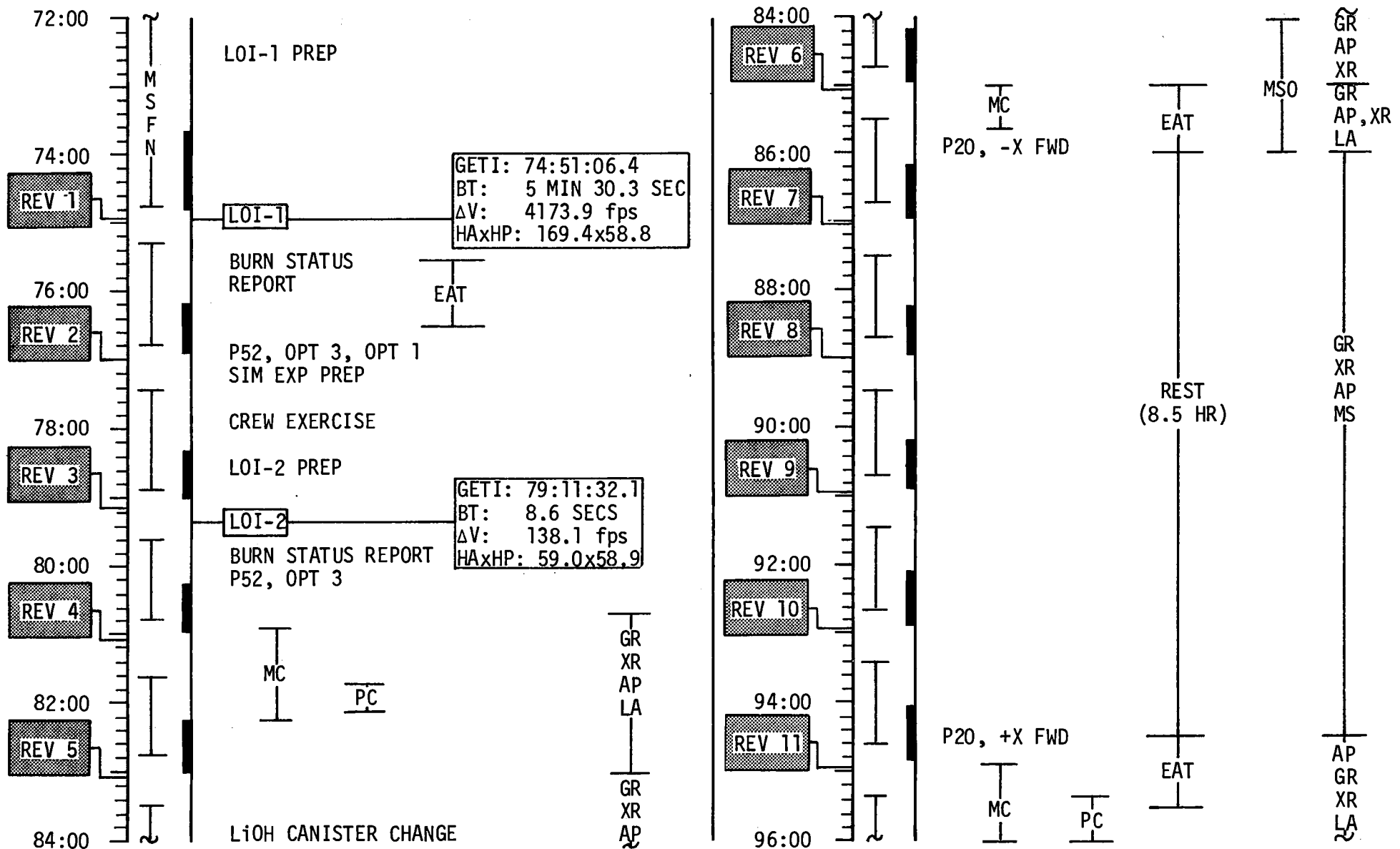
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	48:00 - 72:00	3/TLC	6-27

FLIGHT PLANNING BRANCH

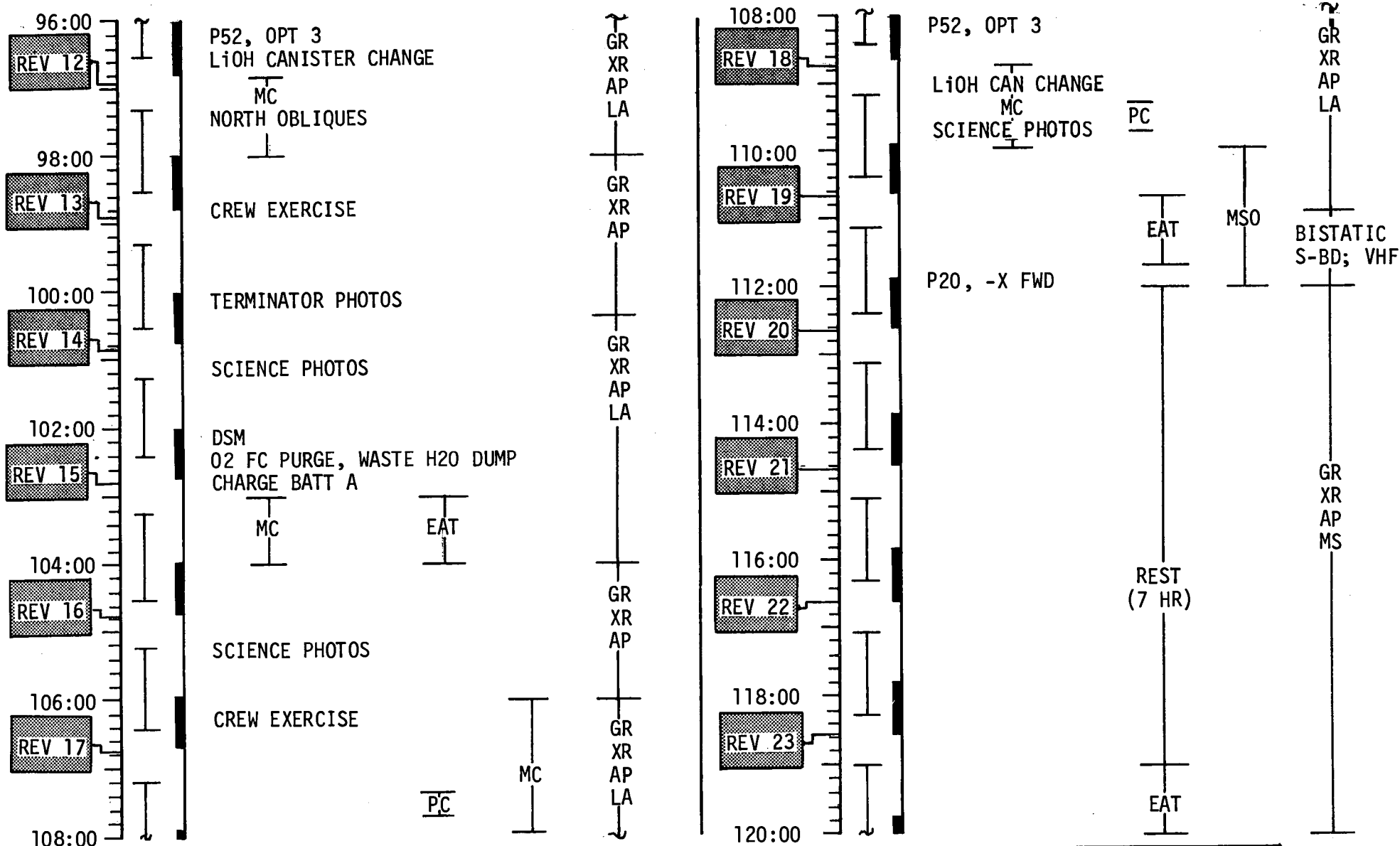
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	72:00 - 96:00	4/1-11	6-28

FLIGHT PLANNING BRANCH

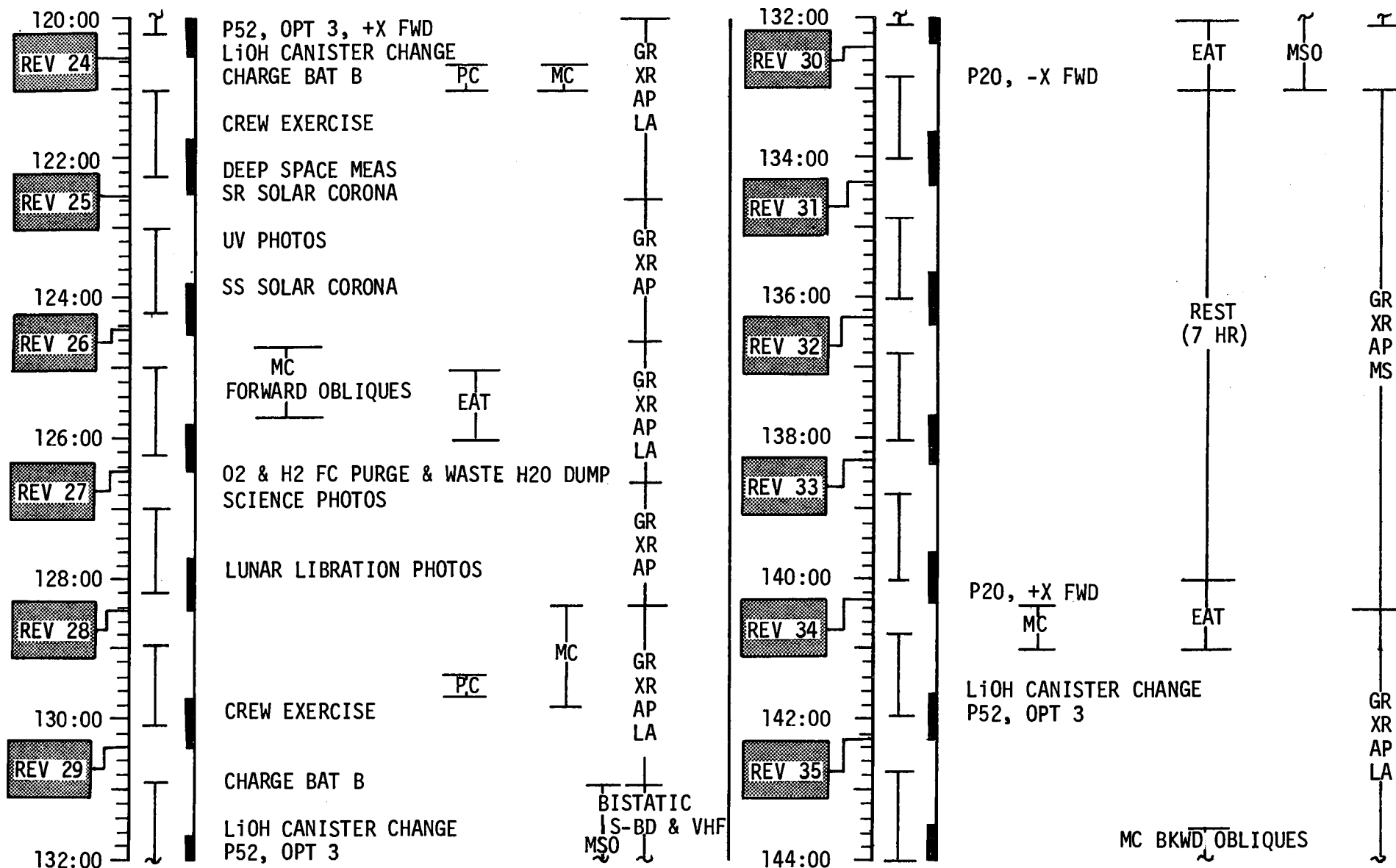
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	96:00 - 120:00	5/11-23	6-29

FLIGHT PLANNING BRANCH

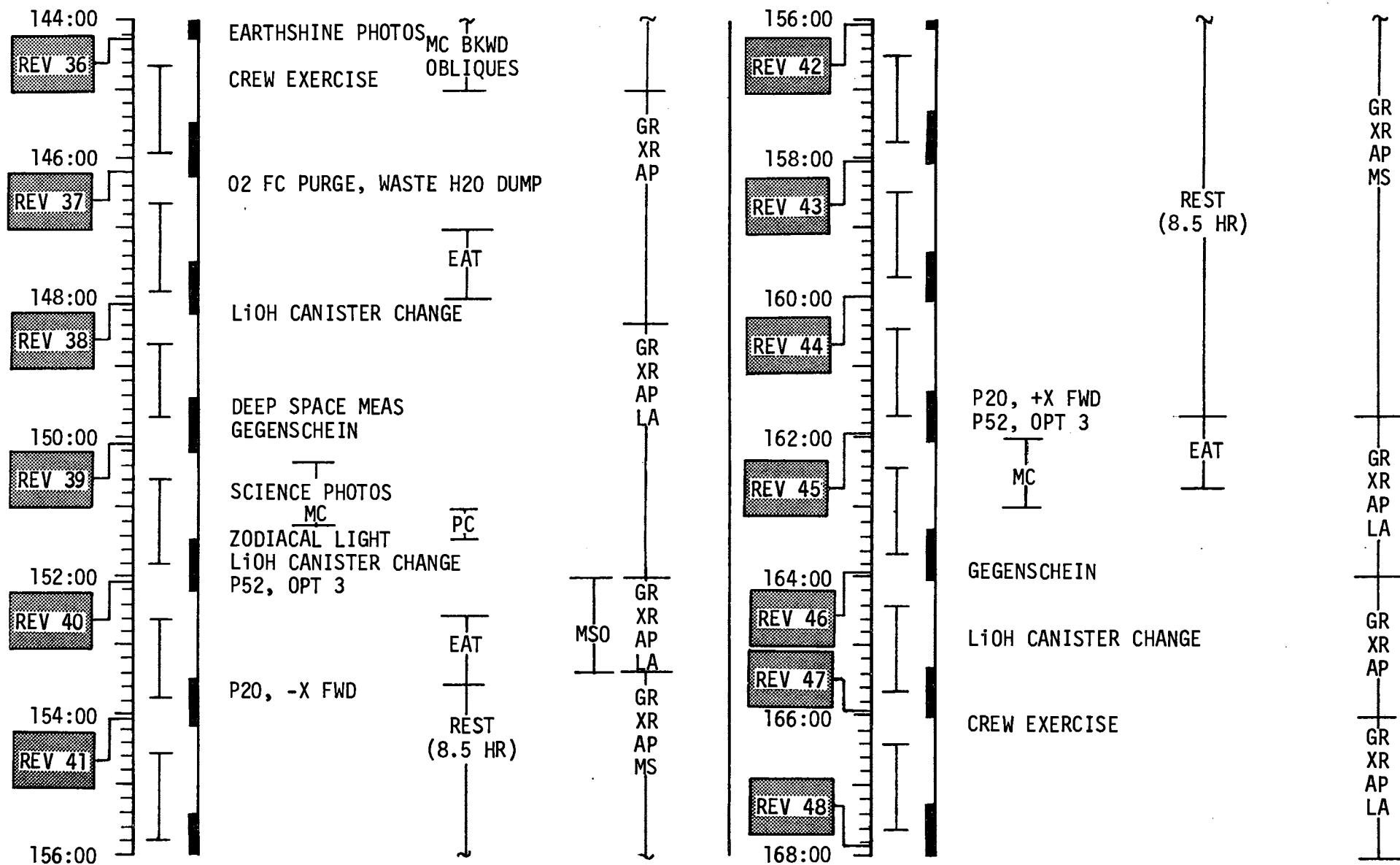
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	120:00 - 144:00	6/23-35	6-30

FLIGHT PLANNING BRANCH

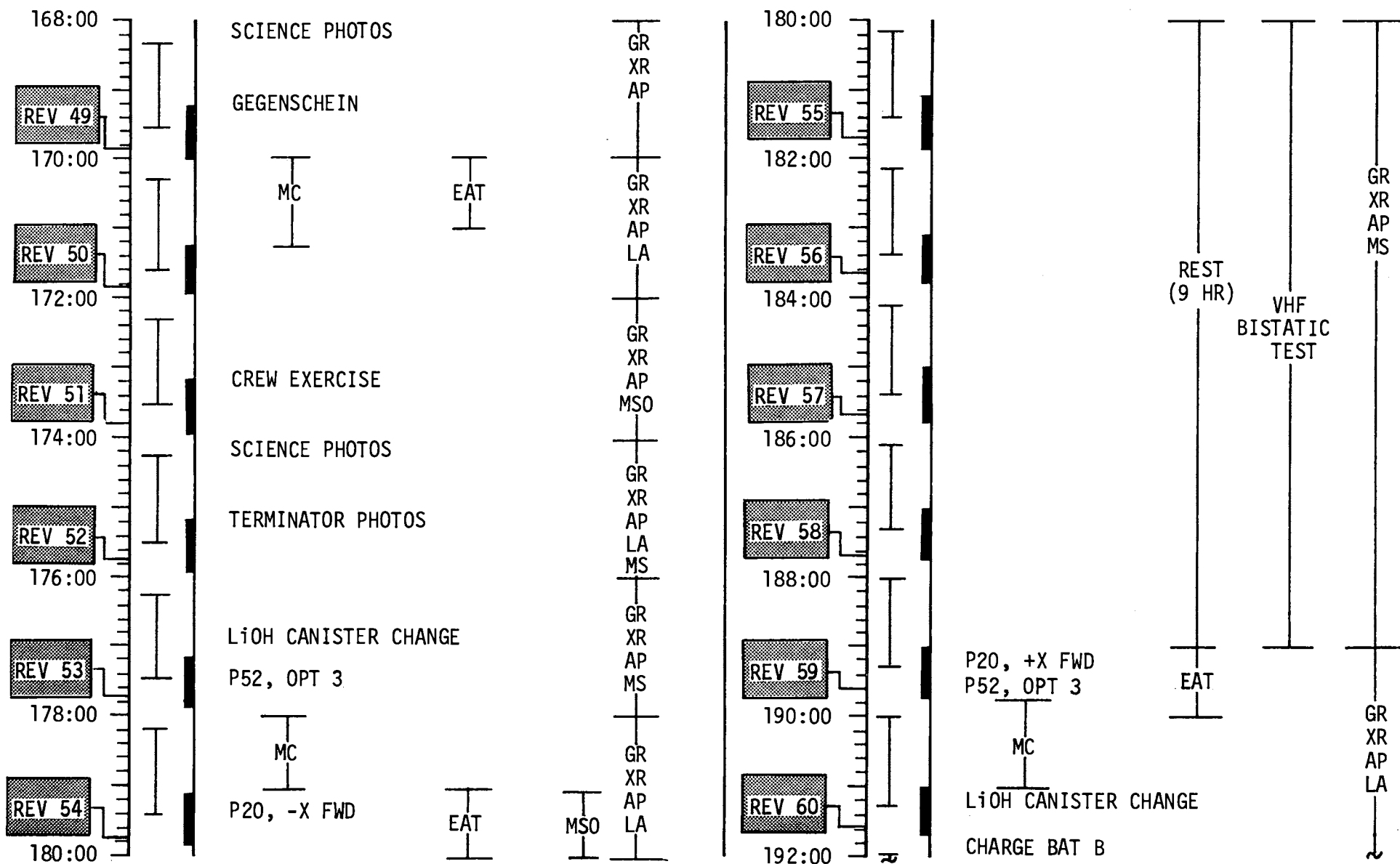
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	144:00 - 168:00	7/36-48	6-31

FLIGHT PLANNING BRANCH

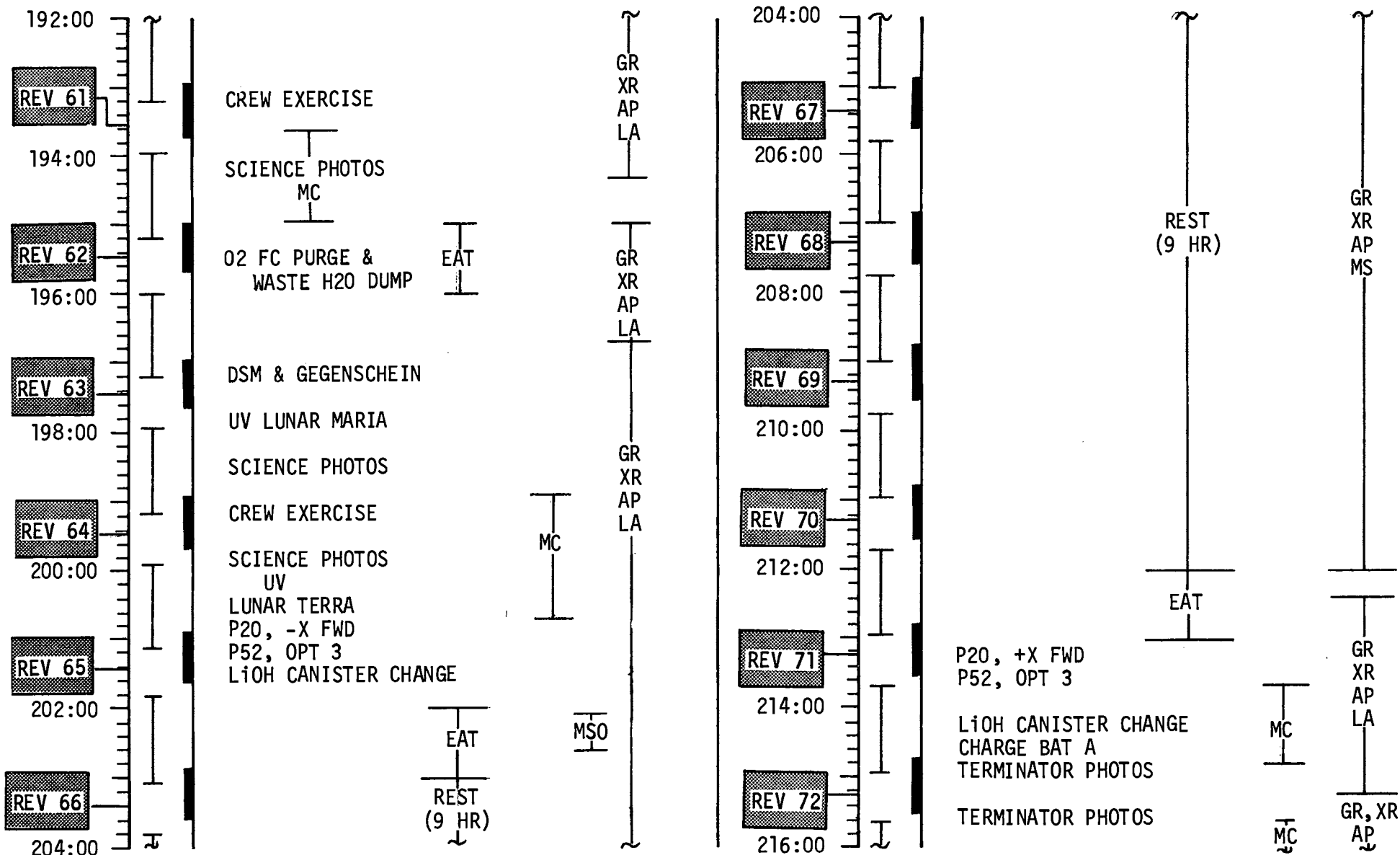
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	168:00 - 192:00	8/48-60	6-32

FLIGHT PLANNING BRANCH

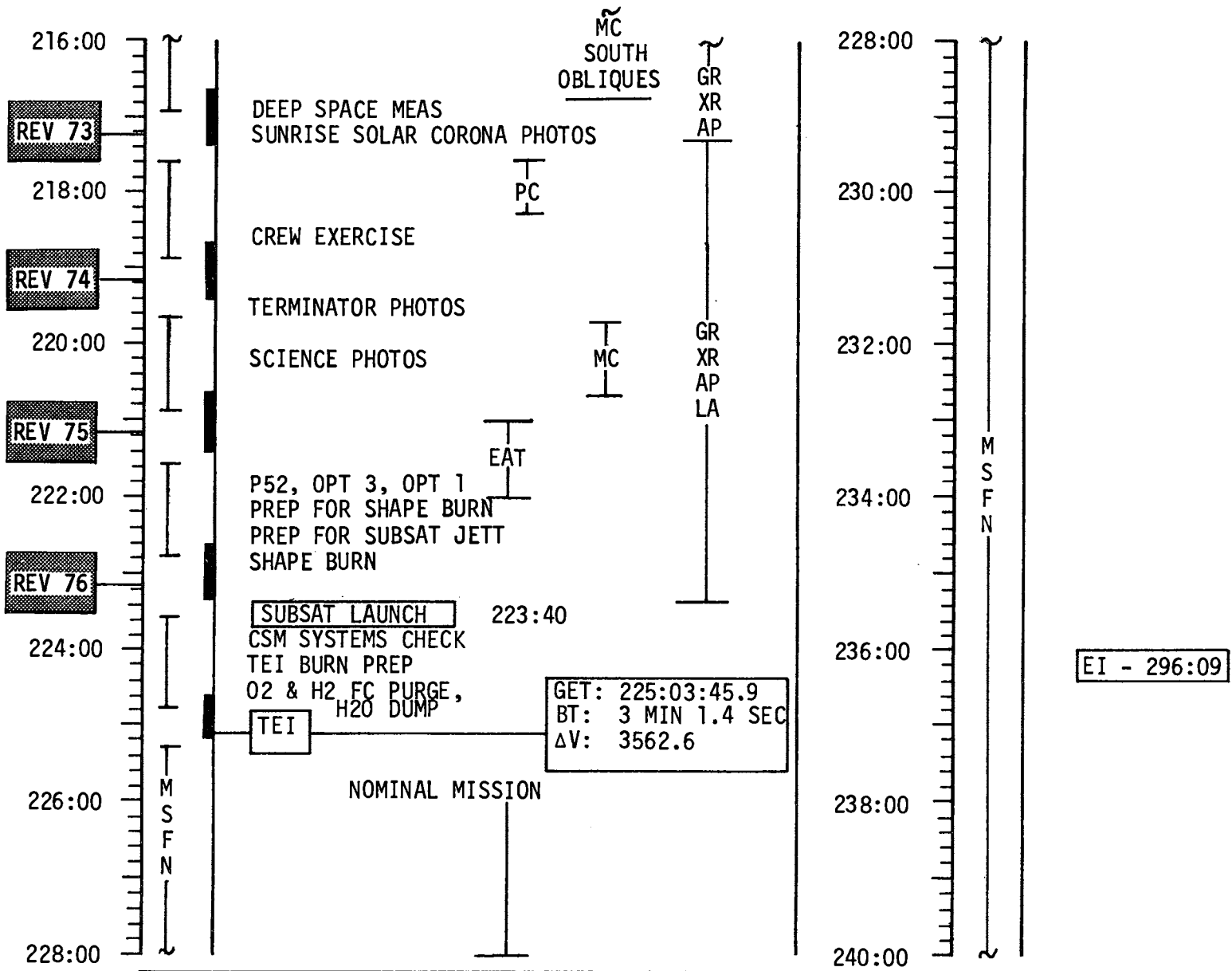
CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26)	7/6/71	192:00 - 216:00	9/61-72	6-33

FLIGHT PLANNING BRANCH

CSM ONLY ALTERNATE FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	216:00 - 240:00	10/73-TEC	6-34

FLIGHT PLANNING BRANCH

CSM/LM ALTERNATE MISSION - GOOD DPS

Assumptions

- 1) Nominal TLI burn has been achieved by the S-IVB.
- 2) A systems failure during TLC has resulted in a NO/GO for landing.

Constraints

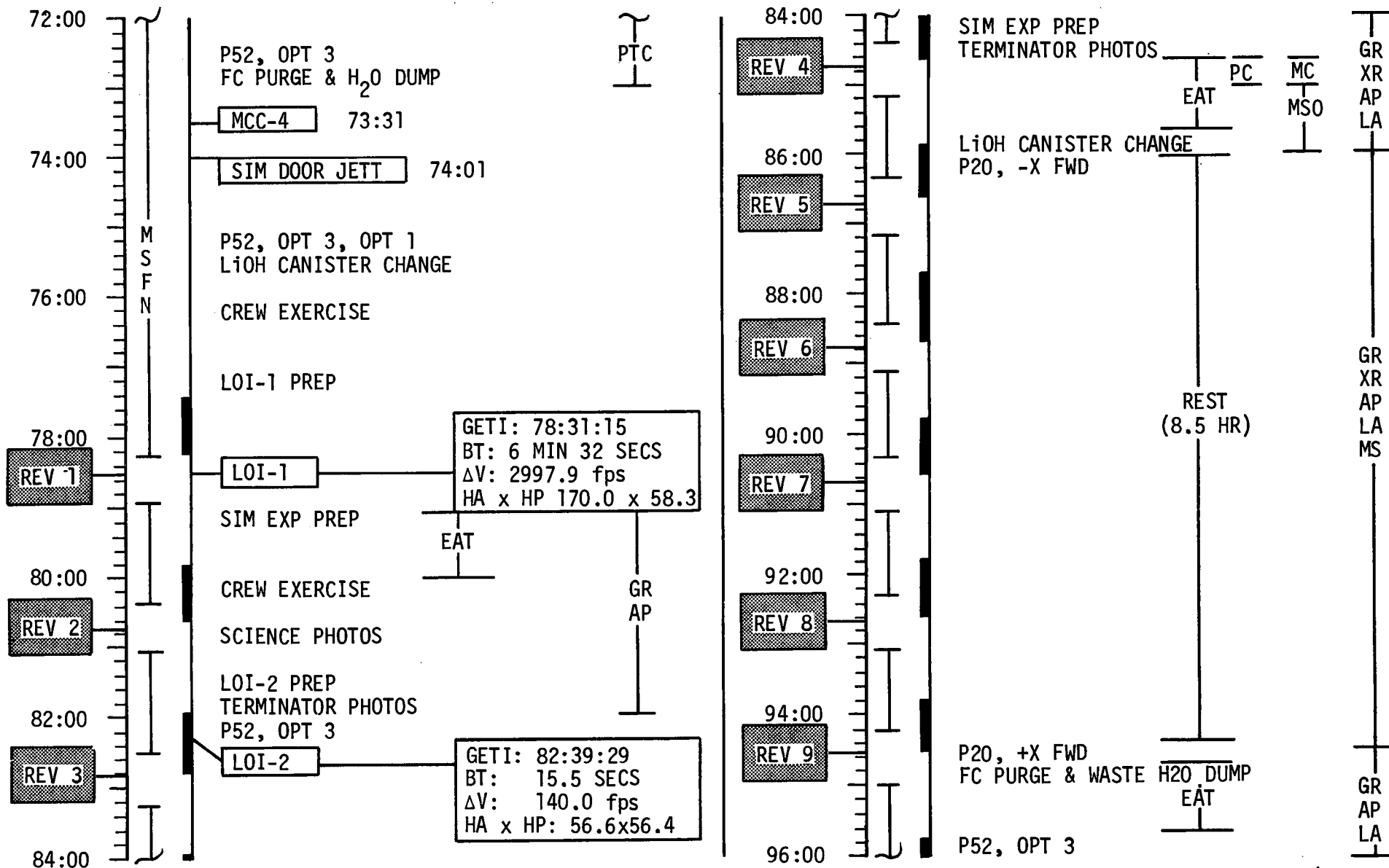
- 1) Maintain DPS TEI Capability.
- 2) Adhere to nominal flight plan through LOI-1.
- 3) Obtain sim bay experiments data.
- 4) DPS TEI

Sequence of Events

This alternate mission is initiated by a systems failure other than the DPS which will not allow a landing mission. The nominal mission is followed through LOI-I at which time an LOI-2 burn is performed in place of DOI. Four days are planned in lunar orbit with all the sim bay experiments being operated as well as all pan and mapping camera film being expended. The sub-satellite is jettisoned one revolution prior to TEI with the DPS being utilized for the TEI burn.

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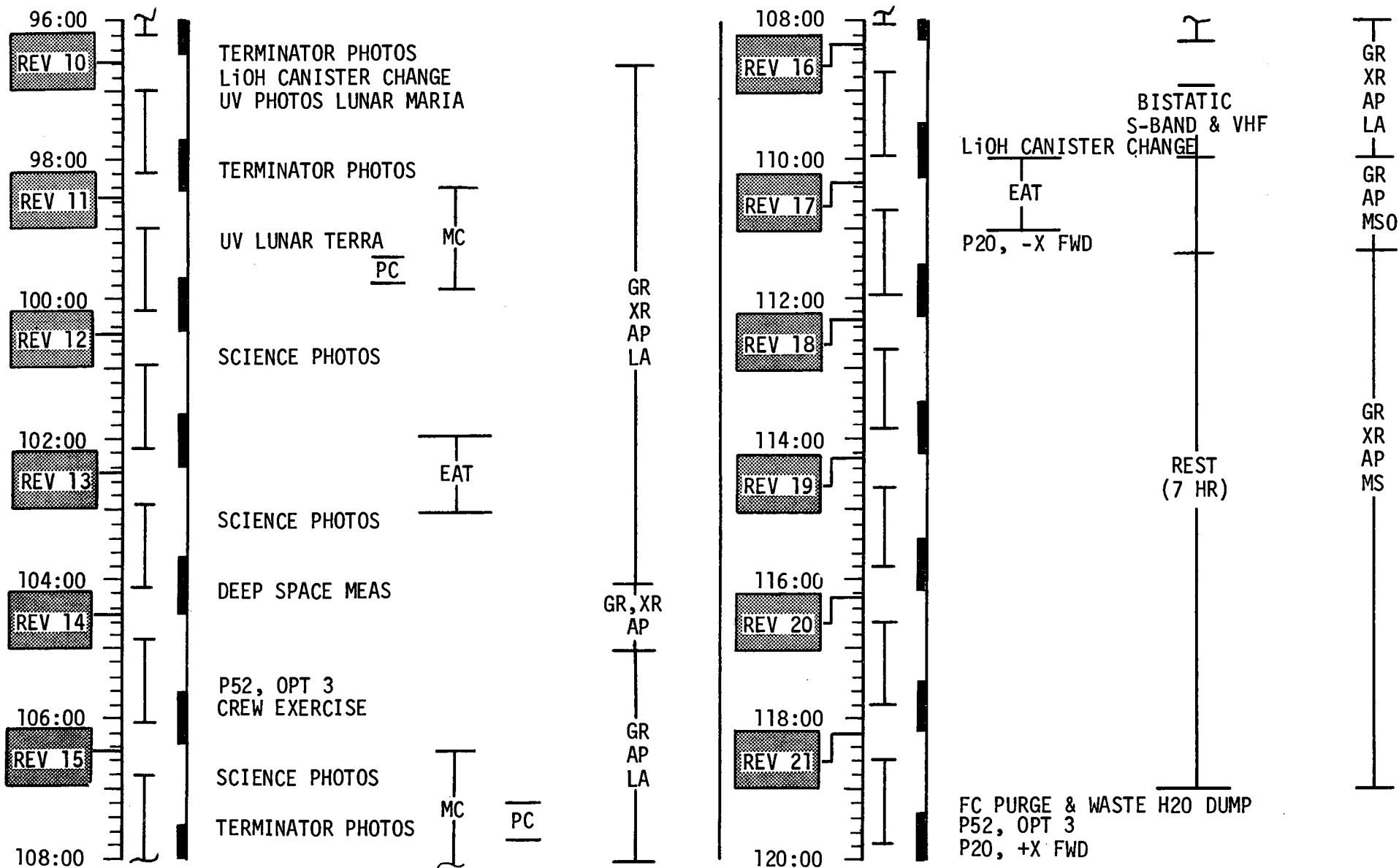
CSM/LM ALTERNATE MISSION FLIGHT PLAN - GOOD DPS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	72:00 - 96:00	4/1-9	6-37

FLIGHT PLANNING BRANCH

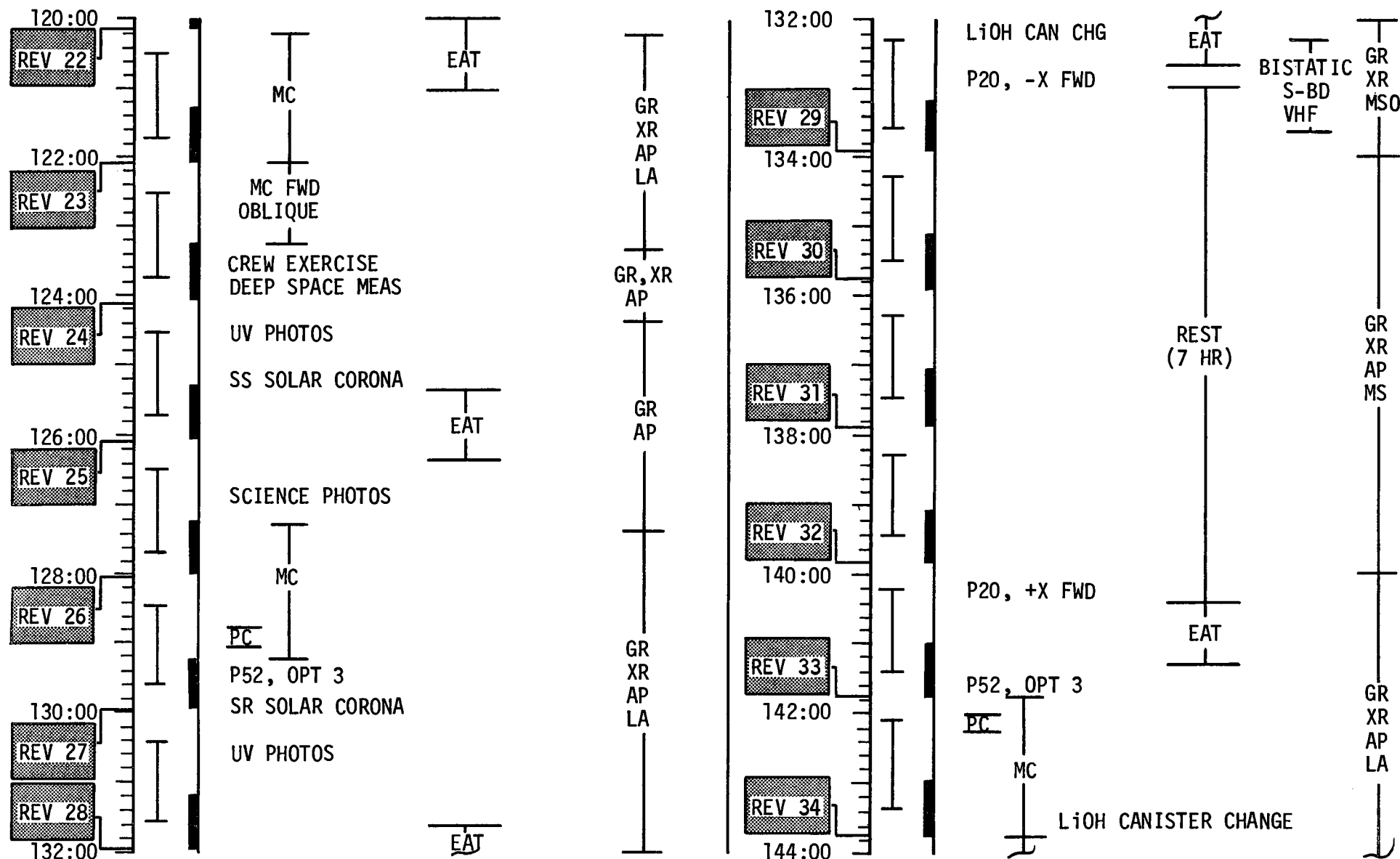
CSM/LM ALTERNATE MISSION FLIGHT PLAN - GOOD DPS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	96:00 - 120:00	5/10-21	6-38

FLIGHT PLANNING BRANCH

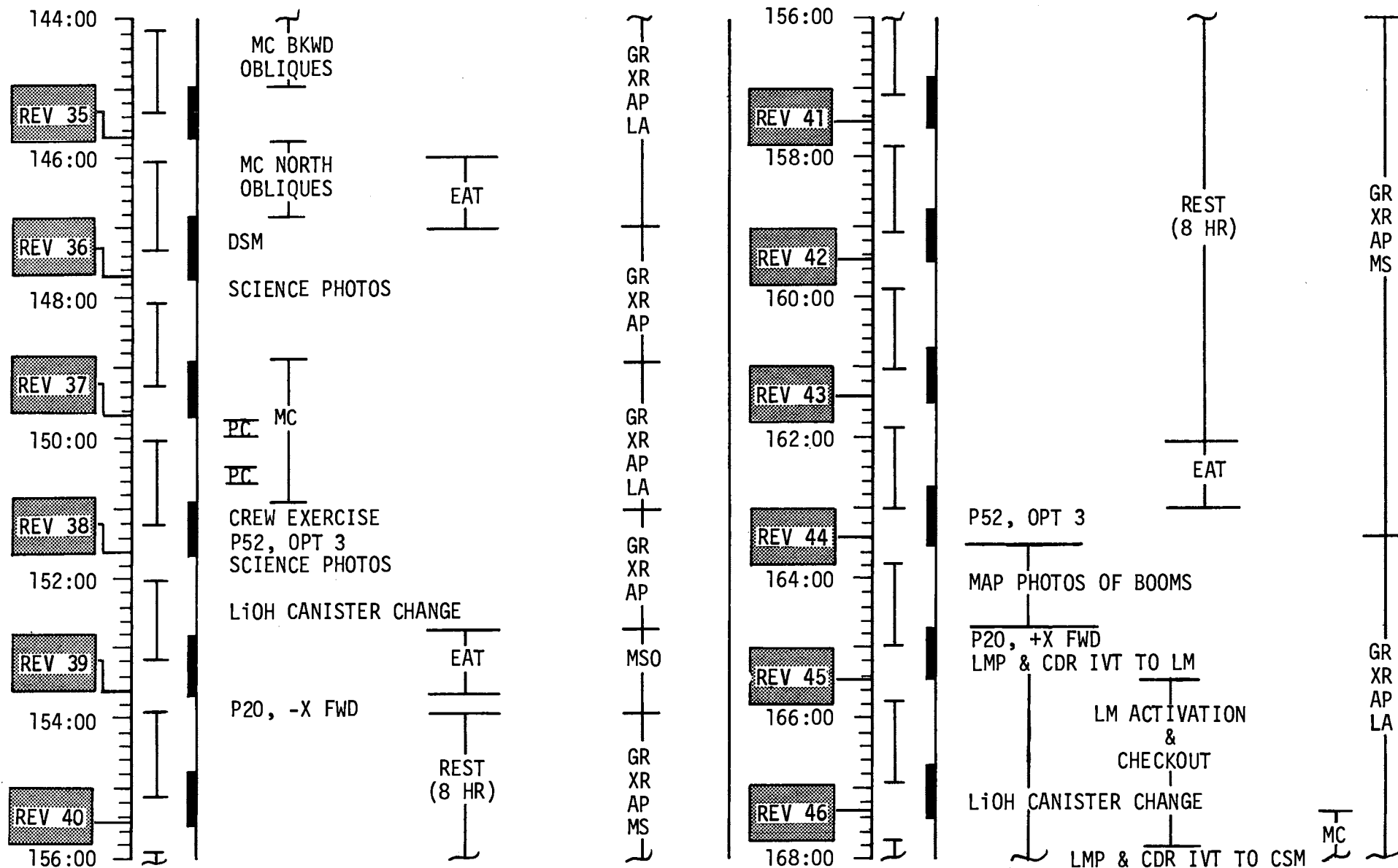
CSM/LM ALTERNATE MISSION FLIGHT PLAN - GOOD DPS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	120:00 - 144:00	6/22-34	6-39

FLIGHT PLANNING BRANCH

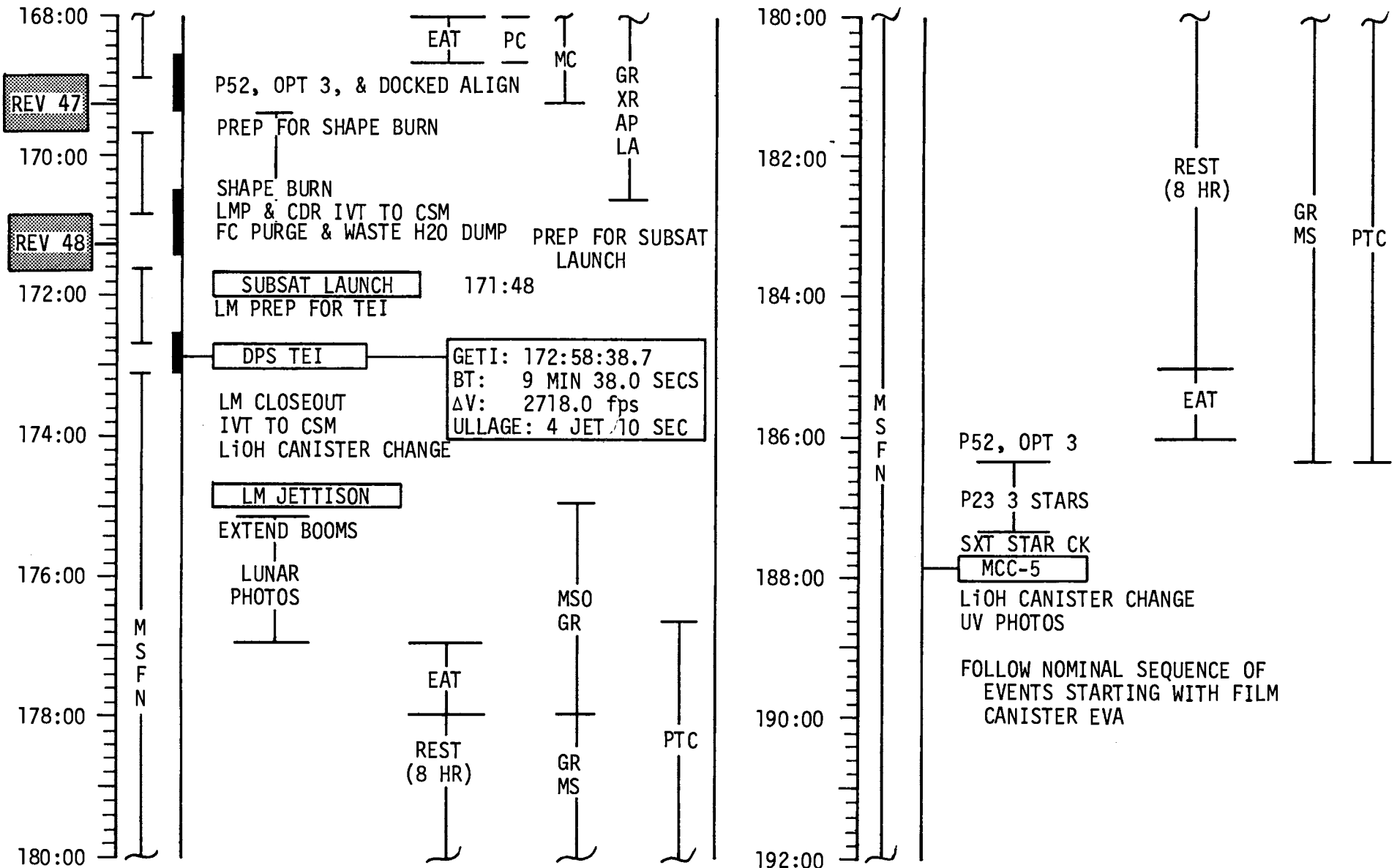
CSM/LM ALTERNATE MISSION FLIGHT PLAN - GOOD DPS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	144:00 - 168:00	7/35-46	6-40

FLIGHT PLANNING BRANCH

CSM/LM ALTERNATE MISSION FLIGHT PLAN - GOOD DPS



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 15	FINAL (7/26) CHANGE A	7/6/71	168:00 - 192:00	8/TEC	6-41

FLIGHT PLANNING BRANCH

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CSM/LM ALTERNATE MISSION - BAD DPS

Assumptions

- 1) Nominal LOI and DOI Burns have been achieved by the SPS.
- 2) A systems failure while in lunar orbit has resulted in a NO/GO for landing.

Constraints

- 1) Jettison LM to a lunar impact.
- 2) Circularize to a 60 n.m. orbit.
- 3) Adhere to the nominal flight plan as much as possible.
- 4) Obtain sim bay experiments data.

Sequence of Events

This alternate mission is initiated by a systems failure with the DPS which will not allow a landing mission. The LM is jettisoned and the CSM circularizes at approximately the nominal time. The nominal flight plan is followed up to the plane change at which time the nominal activities will be adjusted to the new ground track. The shaping burn, sub-satellite jettison and TEI will occur at approximately the nominal time.

