STS-127 / 2JA

FD 06 Execute Package

MSG	Page(s)	Title
041A	1 - 13	FD6 Flight Plan Revision **(pdf)**
042B	14 - 15	FD6 Mission Summary **(pdf)**
043	16	FD6 Transfer Message **(pdf)**
044A	17 - 22	FD6 TLI Burn Humor **(pdf)**

Approved by FAO: *T. Melroy*

Last Updated: Jul 20 2009 9:53AM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v2.04.0003*

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MSG 041A - FD06 FLIGHT PLAN REVISION

MSG INDEX

MSG NO.	TITLE
041A	FD6 Flight Plan Revision
042B	FD6 Mission Summary
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044A	FD6 TLI Burn Humor

1. POST SLEEP CRYO CONFIG

   For today's cryo config, O2 tanks 3 and 4 and H2 tank 5 will be active.

   R1 O2,H2 MANF VLV TK1 (two) - OP (tb-OP)
   O2 TK3 HTRS A,B (two) - AUTO

   A11 CRYO TK4 HTRS O2 A,B (two) - AUTO

   A15 CRYO TK5 HTRS O2 A,B (two) - OFF

2. JPM WINDOW SHUTTER

   The JPM Aft window shutter needs to be closed prior to EVA 2 and must remain closed until the end of the event.

3. LiOH EXCHANGE

   1. Transfer 2 Mesh Bags from ISS NOD1S4_D2 to Shuttle containing the following 10 LiOH cans:
      STS-124 Cans 27 & 28
      STS-126 Cans 24 thru 31
      Reference Transfer List Return Item 721.

   2. Exchange used STS-127 LiOH cans 1 thru 10 with the ISS Stockpile cans. Verify that all of the cans to be transferred back to ISS have LiOH socks (blue covers) installed.

   3. Transfer STS-127 LiOH cans 1 thru 10 (used) to ISS. Stow the cans in NOD1S4_D2.
      Reference Transfer List Resupply Item 10.

4. REPLACE PAGES 2-18 THROUGH 2-21 AND 3-56 THROUGH 3-63.

END OF PAGE 1 OF 13, MSG 041A

NO UNISOLATED EXERCISE
[ORU & VE INSTALL]

REPLANNED

FD06
GMT 07/20/09 (201)

MET Day 004

12 13 14 15 16 17 18 19 20 21 22 23 005/00

STS-127

CDR POLANSKY	SLEEP	POST SLEEP	PMC A/G	POST SLEEP	XFR	UPDAT	ILUM^	INHIB	PAD	N2 XFR#	EXERCISE		P/TV 07 S/U	P/TV 07 EVA SUPT			MEAL	P/TV 07 EVA SUPT					
PLT HURLEY	SLEEP	POST SLEEP					MCIU*	CWC-I FILL (7,8,9)			CWC-I XFER (3)			SSRMS EVA 2 SUPT							LIOH EXCHG	EXER	
MS1 CASSIDY	SLEEP	LOG	POST SLEEP		HYG BRK/ HATCH CLS	CAMPOUT EVA PREP		EMU	PURGE	EMU PREBREATHE		C_LK DPRS	PDPS	IVA SUPPORT EVA 2							P-RPS	RPRS	
MS2 PAYETTE	SLEEP	POST SLEEP												SSRMS EVA 2 SUPT							EXER		
MS3 MARSHBURN	SLEEP	POST SLEEP	HYG BRK/ PREBREATHE			CAMPOUT EVA PREP		EMU	PURGE	EMU PREBREATHE		C_LK DPRS	PDPS	EGRS	SETUP	ICC ORU XFERS			JEF FWD VE INSTALL		CLNUP & INGRS	P-RPS	RPRS
			14.7 RPRS		10.2 DPRS											EVA 2 - 6:30							
MS4 WOLF	SLEEP	POST SLEEP	HYG BRK/ PREBREATHE			CAMPOUT EVA PREP		EMU	PURGE	EMU PREBREATHE		C_LK DPRS	PDPS	EGRS	SETUP	ICC ORU XFERS				JEF FWD VE INSTALL	CLNUP & INGRS	P-RPS	RPRS

DAY/NIGHT

ORBIT: 72 73 74 75 76 77 78 79 80

TDRS W E Z

ORB ATT: BIAS -XLV -ZVV

SSRMS POS: MBS PDGF3 @ WS7

NOTES: ^OFF #TERM
*FILTER CK

NO UNISOLATED EXERCISE
[ORU & VE INSTALL]

REPLANNED

FD06
GMT 07/20/09 (201)
MET Day 004

12 | 11 13 | 12 14 | 13 15 | 14 16 | 15 17 | 16 18 | 17 19 | 18 20 | 19 21 | 20 22 | 21 23 | 22 005/00

ISS TDRS AVAIL

DN	FE-2 WAKATA	SLEEP; PILL; POST SLEEP; JPM; PW; DPC; ARED; EXERCISE ARED; HANDOVER; EVA2 CAM OPS; MIDDAY-MEAL; EVA2 CAM OPS; HANDOVER
EXP19	ISS CDR PADALKA	SLEEP; POST SLEEP; PW; DPC; PW; DOSE PUMP R&R; ORU REPLACE; WHC PNL R&R; ПЗЭ-МО-5; ЭЛКТ БЖ ЗИП MNT; EXERCISE CEVIS; MIDDAY-MEAL; СИ-EVA-AUDIT; КОБ2; СОГС CMS ANLZ20; IMS; EXERCISE TVIS
	FE-1 BARRATT	SLEEP; SLEEP; POST SLEEP; TEST; HYG BRK/ HATCH CLS; CAMPOUT EVA PREP; EMU PURGE; EMU PREBREATHE; C_LK DPRS; PDPS; LOCD PHOTO; MIDDAY-MEAL; EXERCISE TVIS; EXERCISE CEVIS; EMU-T; GLOVE; P-RPS; RPRS
UP	FE-2 EXP20 KOPRA	SLEEP; SLEEP; POST SLEEP; PW; DPC; ADAPT; HANDOVER; RSP C/O; TOVIS; O/V; MIDDAY-MEAL; IMAK UNPACK; ADAPT; WINSCAT TEST; CEVIS; SWAPIS; CO/VIS; HANDOVER; OHA TEST
EXP20	FE-3 ROMANENKO	SLEEP; POST SLEEP; PW; DPC; PW; ЕДВ FILL; СОЖ MNT; ПЗЭ-МО-5; СВО СРВК ВУ MNT; MIDDAY-MEAL; СИ-EVA-AUDIT; EXERCISE TVIS; VELO
	FE-4 THIRSK	SLEEP; PILL; URN CLCT; URN IN1; BLD DRAW; RCS/U; RCCNFG; SLEEP; POST SLEEP; BLD INS; PW; POST SLEEP; URN CLCT; URN INS; POST SLEEP; ISS PRINTER R&R; WHC ACT; RSP C/O; URN CLCT; URN INS; MIDDAY-MEAL; CWCI FILL 1; UNLOCK; CWCI FILL 2; RLT T/S; URN CLCT; URN INS; PRE SLEEP; EXERCISE CEVIS
	FE-5 DE WINNE	SLEEP; SLEEP; POST SLEEP; BLD OPER; POST SLEEP; PW; DPC; PW; DOSE PUMP R&R; ORU REPLACE; WHC PNL R&R; EXERCISE TVIS; MIDDAY-MEAL; GLCR MOTOR RPLC; GLCR BLWR INSTL; SSK/MAS T+5; ERNO RMVL; ARED

DAY/NIGHT

ORBIT: 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80

SSRMS POS: MBS PDGF3 @ WS7

NOTES

3

FD06

GMT 07/20/09 (201)

MET Day 005

005/00 23 01 07/21 02 01 03 02 04 03 05 04 06 05 07 06 08 07 09 08 10 09 11 10 12

STS-127

CDR POLANSKY	IMU; MUS; PRE SLEEP; PMC A/G; PRE SLEEP	SLEEP
PLT HURLEY	EXER; ILUMS*; MUS; PRE SLEEP	SLEEP
MS1 CASSIDY	RPRS; POST EVA W/H2O,METOX; BSA-I; PRE SLEEP	SLEEP; ISS EXTERNAL SURVEY
MS2 PAYETTE	EXER; PTVO6; MUS; PRE SLEEP	SLEEP
MS3 MARSHBURN	RPRS; POST EVA W/H2O,METOX; MUS; PRE SLEEP	SLEEP
MS4 WOLF	RPRS; POST EVA W/H2O,METOX; PRE SLEEP	SLEEP

DAY/NIGHT

ORBIT: 80 81 82 83 84 85 86 87 88

TDRS W E Z

ORB ATT: BIAS -XLV -ZVV

SSRMS POS: MBS PDGF3 @ WS7

*ON

NOTES

4

FD06

GMT 07/20/09 (201)

MET Day 005

ISS	TDRS AVAIL	005/00	23 01	07/21 02	01 03	02 04	03 05	04 06	05 07	06 08	07 09	08 10	09 11	10 12
DN	FE-2 WAKATA	PW	DPC	IMAGE	TVIS	PRE SLEEP	SLEEP							
EXP 19	ISS CDR PADALKA	♣	TVIS HYG	DPC	PW	PRE SLEEP	SLEEP							
EXP 19	FE-1 BARRATT	RPRS	POST EVA W/H20,METOX	REBA-I	PRE SLEEP	SLEEP								
UP	FE-2 EXP20 KOPRA	⊕	PW	DPC	PW	PRE SLEEP	PMC	PRE SLEEP	SLEEP					
EXP 20	FE-3 ROMANENKO	VELO	TVIS HYG	DPC	И П-1	PW	PRE SLEEP	SLEEP						
EXP 20	FE-4 THIRSK	♦	PW	DPC	IRED	EXDL	PRE SLEEP	SLEEP						
EXP 20	FE-5 DE WINNE	ARED	®	DPC	PW	PRE SLEEP	SLEEP							

DAY/NIGHT										
ORBIT	80	81	82	83	84	85	86	87	88	
SSRMS POS	MBS PDGF3 @ WS7									

NOTES

♣EXERCISE TVIS
⊕OHA TEST
♦EXERCISE CEVIS
®ARED STOW

STS-127 FD (06)

GMT Date 07/20 (201) | W | T D R S E | Z | D/N | D O R B | O R B | MET Day 004 | STS ATI

CDR POLANSKY | PLT HURLEY | MS2 PAYETTE | NOTES

12:00 — 11:00 — 12:00 — 13:00 — 14:00

13:00 — 14:00 — 15:00 — 16:00

BIAS - XLV - ZVV

14 72 — 15 73 — 14 74 — 25 75

SLEEP

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

PRIVATE MEDICAL CONFERENCE
L9 PAYLOAD STATION A/G(two) -OFF
Perform via A/G 2

POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)

FD06 EZ ACTIVITES:
TEPC (ORB OPS, CREW SYS)
CHECK STATUS
√OCAC FILTER & MDDK DUCT SCREEN
HARD REBOOT ALL PGSCs EXCEPT:
STS-7(WLES),STS-6(RPOP2),
& OCA ROUTER.

DAILY TRANSFER LIST UPDATE
Ref. Transfer List & MSG 043

TV (ILLUMINATOR OPS) (PHOTO/TV, CC)
ILLUMINATORS OFF - ALL
EVA 2 INHIBIT PAD
(EVA, TIMELINES)
On MCC-H Go
R13L MMU GN2 SPLY ISOL VLV A - CL (tb-CL)
EXERCISE

L17 Check MCIU filter screen
CWC-I FILL (ORB OPS, CWC-I FILL)
Fill CWC-Is #7, 8, 9 Ref. MSG 029

STS-127 FD (06)

GMT Date 07/20 (201) | W | TDRS E | Z | D/N | DORB 14 | DORB 15 | DORB 2 | ORB 72 | ORB 73 | ORB 74 | ORB 75 | MET Day 004 | STS ATT

11:00 12:00 13:00 14:00

12:00 13:00 14:00 15:00 16:00

BIAS-XLV-ZVV

MS1 CASSIDY	MS3 MARSHBURN	MS4 WOLF	NOTES
SLEEP	SLEEP	SLEEP	
SLEEP LOGBOOK (ORB OPS, SDBI) POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
	EVA SYS: 1.211 HYGIENE BREAK Start no earlier than 8:40 hrs from the end of: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE MCC-H performs Steps 1-4,16-20 & 23	EVA SYS: 1.211 HYGIENE BREAK Start no earlier than 8:40 hrs from the end of: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE MCC-H performs Steps 1-4,16-20 & 23	
EVA SYS: 1.211 HYGIENE BREAK Steps 21-25 MCC-H performs Step 23			
EVA SYS: 1.216 EVA PREP	EVA SYS: 1.216 EVA PREP	EVA SYS: 1.216 EVA PREP	
EVA SYS: 1.220 EMU PURGE	EVA SYS: 1.220 EMU PURGE	EVA SYS: 1.220 EMU PURGE	

STS-127 FD (06)

GMT Date 07/20 (201) | W | TDRSE | Z | D/N | DORB | ORB | MET Day 004 | STS ATI

CDR POLANSKY | PLT HURLEY | MS2 PAYETTE | NOTES

16:00 — 17:00 — 18:00 — 19:00 — 20:00

15:00 — 16:00 — 17:00 — 18:00

2 3 4 | 7 5 | 7 6 | 7 7

BIAS-XLV-ZVV

EXERCISE

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

P/TV07 EVA
(PHOTO/TV, SCENES) OPS
Ref. ICC BACKOFF TO EVA 2 VIEWING
(PDRS, VIEWING SUPPORT) Step 4
as required for EE viewing

CWC-I FILL (ORB OPS, CWC-I FILL)
Fill CWC-Is #7, 8, 9 Ref. MSG 029

CWC-I TRANSFER
Transfer 3 CWC-Is to ISS

ROBO: 3.101 EVA 2 - ORU TRANSFER

ROBO: 3.101 EVA 2 - ORU TRANSFER

UPLINK
β21 + Mask
Box 2,4,8

NO UNISOL EXERCISE

[DURING ORU & VE INSTL]

STS-127 FD (06)

GMT Date 07/20 (201) | W | TDRS E | Z | D/N | DORB 2 | DORB 3 | DORB 4 | ORB 75 | ORB 76 | ORB 77 | MET Day 004 | STS ATT BIAS -XLV -ZVV | MS1 CASSIDY | MS3 MARSHBURN | MS4 WOLF | NOTES

GMT	MET
15:00	16:00
16:00	17:00
17:00	18:00
18:00	19:00
	20:00

MS1 CASSIDY

- EVA SYS: 1.220 EMU PURGE
- EVA SYS: 1.225 EMU PREBREATHE
- EVA SYS: CREWLOCK DEPRESS (CC)
- EVA SYS: CREWLOCK POST DEPRESS (CC)
- IVA SUPPORT FOR EVA 2

MS3 MARSHBURN

- EVA SYS: 1.220 EMU PURGE
- EVA SYS: 1.225 EMU PREBREATHE
- EVA SYS: CREWLOCK DEPRESS (CC)
- EVA SYS: CREWLOCK POST DEPRESS (CC)
- EVA SYS: CREWLOCK EGRESS (CC)
- EVA 2 SETUP
- ICC ORU TRANSFERS
- EXERCISE CONSTRAINT

MS4 WOLF

- EVA SYS: 1.220 EMU PURGE
- EVA SYS: 1.225 EMU PREBREATHE
- EVA SYS: CREWLOCK DEPRESS (CC)
- EVA SYS: CREWLOCK POST DEPRESS (CC)
- EVA SYS: CREWLOCK EGRESS (CC)
- EVA 2 SETUP
- ICC ORU TRANSFERS
- EXERCISE CONSTRAINT

NOTES

NO UNISOL EXERCISE

[DURING ORU & VE INSTL]

STS-127 FD (06)

GMT Date 07/20 (201) | W | TDRSE | Z | D/N | DORB | ORB | MET Day 004 | STS ATI

CDR POLANSKY | PLT HURLEY | MS2 PAYETTE | NOTES

20:00 — 21:00 — 22:00 — 23:00 — 00:00

P/TVO7 EVA
(PHOTO/TV, SCENES) OPS
Ref. ICC BACKOFF TO EVA 2 VIEWING
(PDRS, VIEWING SUPPORT) Step 4
as required for EE viewing

ROBO: 3.101 EVA 2 - ORU TRANSFER

ROBO: 3.101 EVA 2 - ORU TRANSFER

NO UNISOL EXERCISE
[DURING ORU & VE INSTL]

MEAL

P/TVO7 EVA
(PHOTO/TV, SCENES) OPS

BIAS-XLV-ZVV

LiOH EXCHANGE PART A
Ref. Transfer List: resupply item 10
& return item 721
Ref. MSG 041,item 3

EXERCISE

EXERCISE

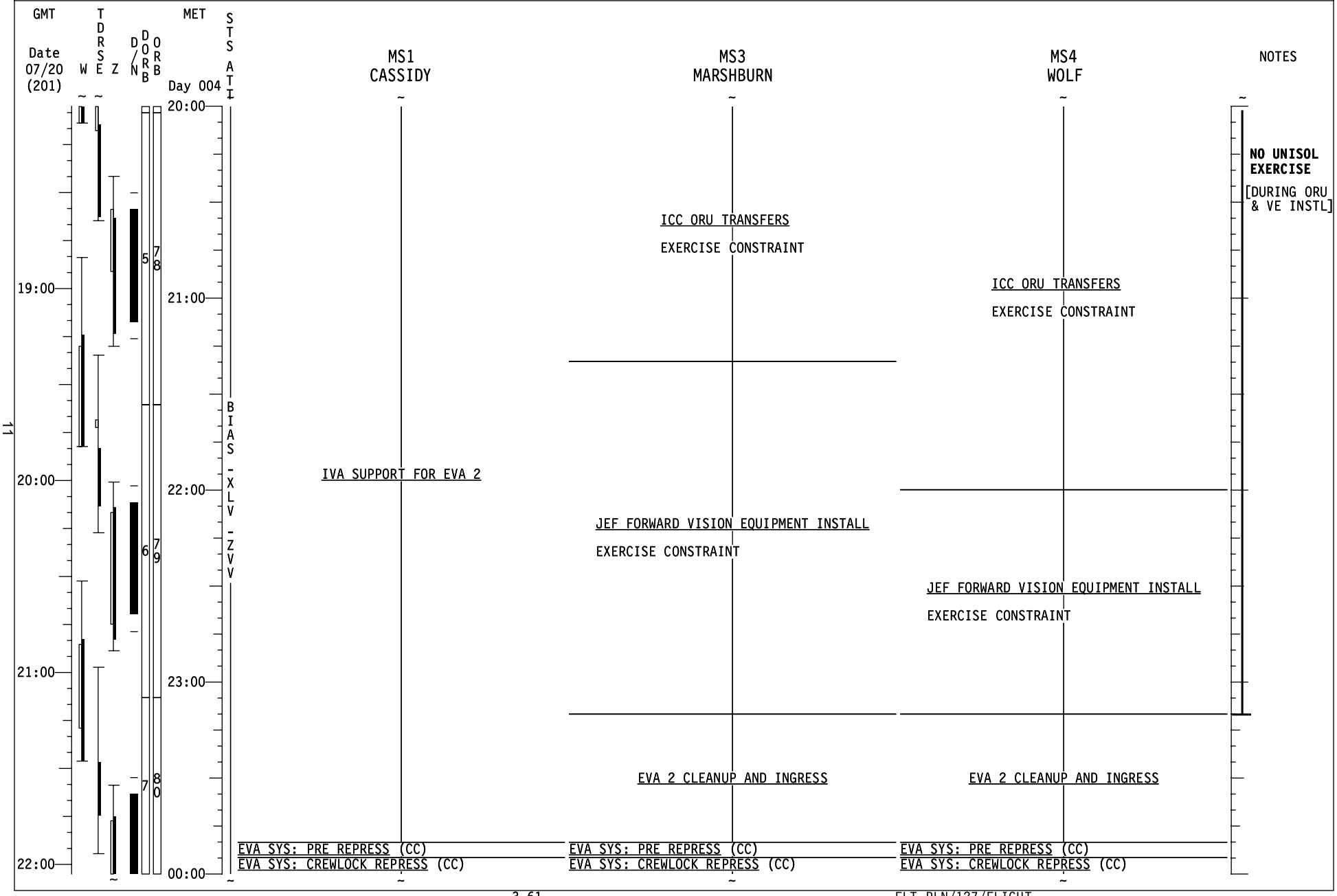
UPLINK
β21 + Mask
Box 2,4

19:00 — 20:00 — 21:00 — 22:00

5 6 7 7 8 9 0

10

STS-127 FD (06)


GMT
Date 07/20 (201)
W
TDRSE
Z
D/N
DORB
ORB
MET
Day 004
STS ATT
BIAS -XLV -ZVV
19:00
20:00
21:00
22:00
21:00
22:00
23:00
00:00
5
6
7
7
8
9
0
MS1 CASSIDY
IVA SUPPORT FOR EVA 2
MS3 MARSHBURN
ICC ORU TRANSFERS
EXERCISE CONSTRAINT
JEF FORWARD VISION EQUIPMENT INSTALL
EXERCISE CONSTRAINT
EVA 2 CLEANUP AND INGRESS
MS4 WOLF
ICC ORU TRANSFERS
EXERCISE CONSTRAINT
JEF FORWARD VISION EQUIPMENT INSTALL
EXERCISE CONSTRAINT
EVA 2 CLEANUP AND INGRESS
NOTES
NO UNISOL EXERCISE
[DURING ORU & VE INSTL]
EVA SYS: PRE REPRESS (CC)
EVA SYS: CREWLOCK REPRESS (CC)
EVA SYS: PRE REPRESS (CC)
EVA SYS: CREWLOCK REPRESS (CC)
EVA SYS: PRE REPRESS (CC)
EVA SYS: CREWLOCK REPRESS (CC)

STS-127 FD (06)

GMT Date 07/20 (201) | W | T D R S E | Z | D/N | D O R B | O R B | MET Day 005 | STS ATT

CDR POLANSKY | PLT HURLEY | MS2 PAYETTE | NOTES

23:00 00:00 01:00 02:00

00:00 01:00 02:00 03:00 04:00

7 8 9 10 | 80 81 82 83

BIAS-XLV-ZVV

CDR POLANSKY

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

LOW BACK PAIN QUEST (ASSY OPS, PAYLOADS)
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PRIVATE MEDICAL CONFERENCE
L9 PAYLOAD STATION A/G(two) -OFF
Perform via A/G 2
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PLT HURLEY

EXERCISE

TV (ILLUMINATOR OPS) (PHOTO/TV, CC)
ILLUMINATORS ON - A,D
LOW BACK PAIN QUEST (ASSY OPS, PAYLOADS)
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

CREW WAKE 5/12:00

MS2 PAYETTE

EXERCISE

A KEEL 2 PWR(JLE) - ON
√2 ILL PWR(JLE) - ON

P/TV06 ROBOTICS OPERATIONS A

LOW BACK PAIN QUEST (ASSY OPS, PAYLOADS)
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

STS-127 FD (06)

GMT Date 07/20 (201) | W | TDRS E | TDRS Z | D/N | DORB 7 | DORB 8 | DORB 9 | DORB 10 | ORB 80 | ORB 81 | ORB 82 | ORB 83

MET Day 005 | STS ATI | BIAS-XLV-ZVV

MET	MS1 CASSIDY	MS3 MARSHBURN	MS4 WOLF	NOTES
00:00	EVA SYS: CREWLOCK REPRESS (CC) EVA SYS: 1.240 POST EVA With H2O & METOX Steps 37 & 66 not req'd MCC will perform Steps 43 & 67 Ref: 127 EMU CTCC In Step 60, temp stow HL Batts for BSA Init	EVA SYS: CREWLOCK REPRESS (CC) EVA SYS: 1.240 POST EVA With H2O & METOX Steps 37 & 66 not req'd MCC will perform Steps 43 & 67 Ref: 127 EMU CTCC In Step 60, temp stow HL Batts for BSA Init	EVA SYS: CREWLOCK REPRESS (CC) EVA SYS: 1.240 POST EVA With H2O & METOX Steps 37 & 66 not req'd MCC will perform Steps 43 & 67 Ref: 127 EMU CTCC In Step 60, temp stow HL Batts for BSA Init	
01:00	EVA SYS: 1.605 BSA BATTERY RECHARGE INIT Ref: 127 EMU CTCC Ref: 127 BATTERY RECHRG PLAN CC Ref: MSG 038 PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	LOW BACK PAIN QUEST (ASSY OPS, PAYLOADS) PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
02:00				
03:00				
04:00		CREW WAKE 5/12:00		

MSG 042B - FD06 MISSION SUMMARY

Good Morning Endeavour!!!

Thanks for another great day!!!! The video you sent down last night showing JEF installation was spectacular!

To commemorate the 40th anniversary of the lunar landing, your STS-127 flight control teams have taken a look at an opportunity later today to send you all to the moon! Ref MSG044 for the burn pad and associated procedures and have a safe trip! (special thanks to Dan Adamo, retired FDO)

Have a great EVA day!

YOUR CURRENT ORBIT IS: 189 X 186 NM

NOTAMS:

NOTAMS – NO CHANGE

EDW - EDW IN USE. EDT ELS DAY / VFR ONLY.
EDW - LAKEBED RWY 15/33 - GREEN. RWY 18L - UNUSABLE.
NOR - LAKEBED RUNWAYS GREEN.
FMH - RWY 05/23 CLOSED.
GUA - RWY 24R END LIGHTS OTS.
GUA - RWY 06R/24L CLOSED.
INN - CLOSED.
IKF - NOT USABLE. NO AGREEMENT.
BEN - NOT RECOMMENDED/NOT SUPPORTED.

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 80 – 4/23:57 FEW120 SCT250 7 230/18P25
EDW22 ORB 95 – 5/22:47 FEW100 SCT250 7 230/16P23

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

L OMS LEAK: ALWAYS BURN RETROGRADE
R OMS LEAK: ALWAYS BURN RETROGRADE

OMS QUANTITIES(%)

Subtract interconnect counter for current OMS quantities.

L OMS OX = 39.5 R OMS OX = 39.7
FU = 39.1 FU = 39.4

END OF PAGE 1 OF 2, MSG 042B

MSG 042B - FD06 MISSION SUMMARY

DELTA V AVAILABLE:

OMS	399 FPS
ARCS (TOTAL ABOVE QTY1)	43 FPS
TOTAL IN THE AFT	442 FPS
ARCS (TOTAL ABOVE QTY2)	74 FPS
FRCS (ABOVE QTY 1)	28 FPS
AFT QTY 1	81 %
AFT QTY 2	43 %

THERE ARE NO FAILURE/IMPACT/WORK AROUNDS FOR TODAY.

END OF PAGE 2 OF 2, MSG 042B

Mark,

Looks like yesterday was another great day of transfer! Despite not having any scheduled transfer time today, we wanted to address the open issues from last night's brief.

Transfer Notes

- **Wakata Misc. Ziplock Stowage Location** – Please stow this ziplock (pulled out of Bag 411) in MF14H once these food trays are empty. Note that you may need to clam-shell the food trays to accommodate this bag. Your transfer list has been updated to reflect this with Return item 904.

- **Return Bag 411 (MF57O)** – The Grab Sample Containers (GSC) in Bag 411 need to have soft goods packed around them for return. With the removal of the Wakata Misc. ziplock from this CTB, please confirm that there are other soft goods stowed in Bag 411 protecting the GSCs. If not, please use any soft goods (towels, clothing, etc.) to protect the GSCs.

- **Return Bag 602** – We copied you could not locate Bag 602 at LAB1O3. This bag should be a 0.5 CTB of Wakata crew preference items that we thought was stowed at LAB1O3 pre-flight. Please ask Koichi if he knows where it is stowed.

The Transfer List Excel file, FD06_Transfer_List_STS127.xls, locations are:

- Shuttle: **C:\OCA-up\transfer** (KFX machine)
- Station: **K:\OCA-up\transfer**

Please update Transfer List book as follows:

In the **RETURN** tab:

Pen & Ink on page Return-14:
Item 727 – update notes as follows:
WAS: Transfer after GLACIER R&R activity on FD05.
IS: Transfer after GLACIER R&R activity on FD**06**.

Replace the following page:
Return-15

Have a great day!

- The 2J/A Transfer Team

MSG 044A (20-0516) - FD6 TLI Burn Humor

To commemorate the 40th anniversary of the first Lunar landing by the crew of Apollo 11:

About once every 10 days the Moon moves through the ISS orbit plane. This Zero Moon Beta (ZMB) condition affords the opportunity to target a minimal-propellant transfer departing from the ISS orbit several days earlier. During STS-127/2JA, a ZMB occurs at 206/14:55 GMT (9/16:52 MET), and the crew should see the last quarter Moon rising and setting near the Vbar in this timeframe.

A hypothetical Trans-Lunar Injection (TLI) burn has been targeted from the Shuttle/ISS vicinity with TIG at 201/15:53:30 GMT (4/17:50 MET) on the southbound leg of Shuttle Orbit 76 (ISS Orbit 1122). Posigrade (PEG-7 DVX) velocity change is 10,188.1 ft/s (3105.3 m/s). This impulse could hypothetically place the stack on a free-return cislunar trajectory. Closest approach to the Moon, or pericynthion, would occur at 204/13:24:36 GMT (7/15:21 MET) at a height 100 km (54 nm) above the Moon's farside.

A maneuver PAD is attached along with all pertinent information required to execute the dual OMS TLI. Config 3 reboost has been offered as a downmode if needed. Good luck!!!

END OF PAGE 1 OF 6, MSG 044A (20-0516)

MSG 044A (20-0516) - FD6 TLI Burn Humor

ORBIT MANEUVER PAD FOR TLI (Trans Lunar Injection, LUNAR ORB OPS, pg. 9-2)

OMS BOTH	1	X
L	2	
R	3	
RCS SEL	4	
		+X
		-X
		MULTI-AXIS
TV ROLL	5	000
TRIM LOAD P	6	(+)5.8
LY	7	(-)6.4
RY	8	(+)3.0
WT	9	905602
TIG	10	04/17:50:20.5
TGT PEG 7 ΔVX	19	(+)1018 8.1
ΔVY	20	(+)0191.3
ΔVZ	21	(+)0173.5

BURN ATT

R	24	042
P	25	079
Y	26	041

ΔVTOT	10191
TGO	83400
VGO X	(+)9836.7
VGO Y	(+)0000.0
VGO Z	(+)2665.2

TGT	HA	HP
	239394	(+)188

NOTES

OMS GMBL CK:

	PRE	POST-BURN
L PRI	X	
L SEC	X	
R PRI	X	
R SEC	X	
NONE		X

RCS I'CNCT:

- [ ] L OMS → RCS
- [ ] R OMS → RCS
- [X] NONE

DOWN MODE OPTIONS:

- [ ] 2 OMS → 1 OMS
- [X] 2 OMS → Config 3
- [ ] 1 OMS → RCS
- [ ] NONE

See attached reboost PAD.

OMS HE REG TEST: [ ] NONE

	L GPC	L OP	L CL	R GPC	R OP	R CL
A		X			X	
B		X			X	

-X RCS BURNS: N/A

ORBIT BURN MONITOR

GPC FILL-INS 1 (3)

- [X] CRIT BURN
- [ ] NON-CRIT BURN

MAX TIG SLIP 40 Yrs

- [X] DO NOT UPDATE TIG
- [ ] UPDATE TIG AFTER [ ] MIN.

FLIGHT NOTES:

Downmode option: 2 OMS to Config 3 reboost - see attached reboost PAD for details.
Expect sloppy control and very large pitch rate due to the OMS engines being unable to trim through the CG.
Expect quantity low alarm
Treat the loss of GPC3 as second gimbal fail on the right.

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AUTO REBOOST – CONFIG 3, TLI

CAUTION

Executing this procedure will result in a trans-lunar trajectory.
May cause loads exceedences.
Propellant may not be available for return to earth.
Crew is advised to pack a change of clothes.

NOTE

Allow 5 min between establishing reboost attitude and reboost start time for DAP accelerations to converge. Steps 1-2 may be performed prior to completion of maneuver to reboost attitude.

1. Select Reboost Configuration

   GNC 20 DAP CONFIG
   REBOOST CFG – ITEM 8 + 3 EXEC
   INTVL – ITEM 9 + 2 . 0 0 EXEC

2. Set up Future Reboost

   NOTE

   START TIME = In attitude MET + 2 minutes.

   √MCC for duration. If no OMS burn is performed prior to downmoding, total reboost duration will be 154/07:20:19.69.

   Due to limitations with reboost duration in the onboard flight software, several reboosts of duration 24:00:00.00 will be required to achieve the required delta V.

   For no preceding OMS burn, 154 reboosts will be required followed by a 155th with a duration of 7:20:19.69.

   GNC UNIV PTG
   DURATION – ITEM 27 + 24 + 00 + 00.00 EXEC
   START TIME – ITEM 1 + _ _ + _ _ + _ _ + _ _ EXEC

   RBST – ITEM 25 EXEC (FUT - *)

3. Select appropriate Reboost Rotation DAP

When in attitude and prior to START TIME,
C3 DAP: A11/AUTO/VERN

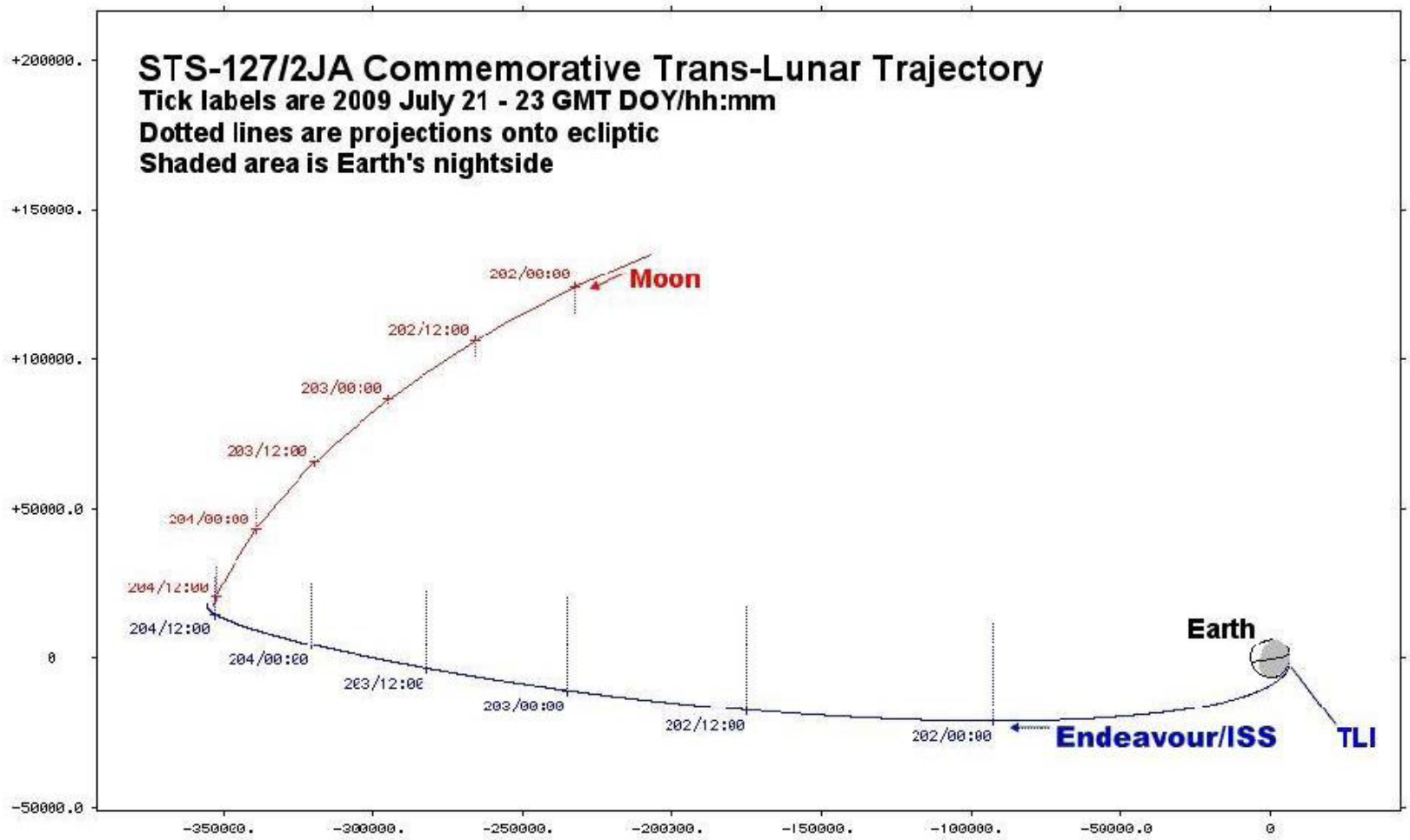
NOTE

Reboost can be aborted with an Item 26 on
UNIV PTG or by selecting FREE on the DAP

When desired total delta V achieved continue to step 4.
If additional delta V required, go to step 2.

4. Post Reboost Configuration

Load DAP: A12
Return to FLIGHT PLAN Attitude



Km Units View From Y=332.0°, P= 0.0°, R= 65.0° Sun Illumination
Earth-Centered J2<E Coordinate System
STS-127/2JA mated TLI targeting

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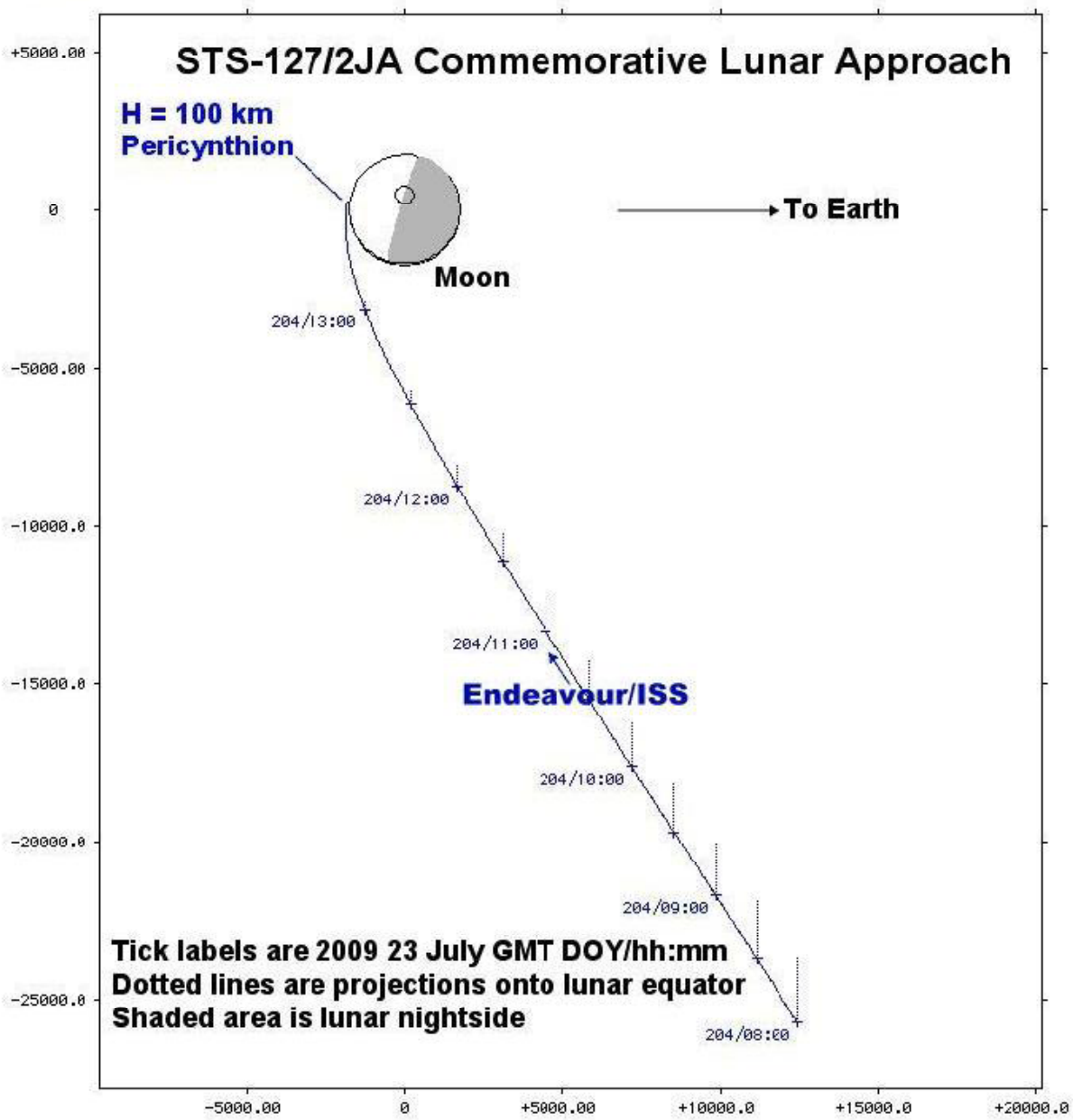

Km Units View From Y= 0.0°, P= 0.0°, R= 16.0° Sun Illumination
Moon-Centered EPM Coordinate System @ 2009y 204d (7-23) 13:24:36 UTC
STS-127/2JA mated TLI targeting

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