

STS-127/2JA

FD 14 Execute Package



MSG	Page(s)	Title
132A	1 - 17	FD14 Flight Plan Revision (pdf)
133	18 - 19	FD14 Mission Summary (pdf)
131	20	FD14 Transfer Message (pdf)
134	21 - 22	Post EVA 5 Tool Stow (pdf)
135	23	Post Undock Burn Plan (pdf)

Approved by FAO: T. Melroy

Last Updated: Jul 28 2009 6:15AM GMT

JEDI (Joint Execute package **D**evelopment and **I**ntegration), v2.04.0003

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MSG 132A - FD14 FLIGHT PLAN REVISION

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MSG INDEX

<u>MSG NO.</u>	<u>TITLE</u>
131	FD14 Transfer Message (20-0633)
132A	FD4 Flight Plan Revision
133	FD14 Mission Summary
134	Post EVA 5 Tool Stow (20-0632)
135	Post Undock Burn Plan

1. POST SLEEP CRYO CONFIG

For today's cryo config, O2 and H2 tanks 1 and 4 will be active. H2 tank 4 will be depleted today.

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

A11 CRYO TK4 HTRS H2 A,B (two) - AUTO

2. EVA TOOL STOW

We have added 35 mins of EVA Tool Stow for Chris and Tom at MET 12/14:00 (GMT 12:03) to help Koichi finish stowing the last of the tools. Reference MSG 134 (20-0632) for the Tool Stow Matrix.

3. LOMS GN2 TANK P ON MEDS DISPLAY

The GMEM uplinked on FD11 changed the lower OPS 2 PASS C&W limit for the L OMS GN2 tank pressure from 1200 psi to 500 psi. However, the OMS/MPS MEDS display uses a hardcoded limit of 1200 psi not affected by the GMEM. When the OMS GN2 tank pressure falls below 1200 psi, the color of the associated pressure bar can be expected to change to red.

4. WASTE WATER DUMP

Perform a Waste dump using SUPPLY/WASTE WATER DUMP (ORB OPS, ECLS), pg 5-2. Perform steps E, G, and I. MCC will TMBU FDA in steps B and K.

Waste dump valve open time will be ~45 minutes. Dump waste tank to 5%.

5. SHUTTLE CONDENSATE COLLECTION TEARDOWN DETAILS

Ensure the Waste Water Dump is complete prior to performing this activity.

Perform TEARDOWN of SHUTTLE CONDENSATE COLLECTION (ORB OPS, ECLS) p. 5-40. Place the Y-Y Condensate Hose a ziplock bag and stow in MF57C. Temp stow CWC s/n 5108 for dumping on FD15.

END OF PAGE 1 OF 17, MSG 132A

MSG 132A - FD14 FLIGHT PLAN REVISION

1 6. POST UNDOCK BURN PLAN

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7. REPLACE PAGES 2-48 THROUGH 2-52 AND 3-150 THROUGH 3-159.

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END OF PAGE 2 OF 17, MSG 132A

FD14

FD13

GMT 07/27/09 (208)

MET Day_012 012/00 23 01 01 02 03 04 05 06 07 08 09 10 11 12

CDR POLANSKY	PRE SLEEP	SLEEP	POST SLEEP
PLT HURLEY	PRE SLEEP	SLEEP	POST SLEEP EXER
MS1 CASSIDY	PRE SLEEP	SLEEP	POST SLEEP
MS2 PAYETTE	PRE SLEEP	SLEEP	POST SLEEP
MS3 MARSHBURN	PRE SLEEP	SLEEP	POST SLEEP
MS4 WOLF	PRE SLEEP	SLEEP	POST SLEEP
DAY/NIGHT ORBIT	191	192	193
W	194	195	196
E	197	198	
Z			
TDRS			
ORB ATT			
SSRMS_POS			
NOTES			
			#STATUS CHECK

S T S - 1 2 7

REPLANNED

FD14

FD13		GMT 07/27/09 (208)		012/00		23 01		07/28		01 03		02 04		03 05		04 06		05 07		06 08		07 09		08 10		09 11		10 12		
ISS		Day 012		AVAIL																										
D	FE-2	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	HAND OVER																						
N	ISS CDR	PSIO	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	TOPY OBT CONF																						
E	PADALKA	RLIN	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
X	ISS CDR	EEIO	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
P	PADALKA	ECPR	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
1	FE-1	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	HAND OVER																						
9	BARRATT	DRSLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
U	FE-2 EXP20	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	HAND OVER																						
P	KOPRA	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
E	FE-3	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	HAND OVER																						
X	ROMANENKO	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
P	FE-4	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	HAND OVER																						
2	THIRSK	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
0	FE-5	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW	HAND OVER																						
	DE WINNE	PRE SLEEP	SLEEP	POST SLEEP	MO SLEEP 8	POST SLEEP	PM DPC PW																							
	DAY/NIGHT																													
	ORBIT																													
	SSRMS POS																													
	NOTES	^SALIVA *BLOOD																												

REPLANNED

FD14

GMT 07/28/09 (209)

MET Day_012

22 21 20 19 18 17 16 15 14 13 12 11 10 09 08 07 06 05 04 03 02 01 00

Day	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
CDR POLANSKY																						
PLT HURLEY																						
MS1 CASSIDY																						
MS2 PAYETTE																						
MS3 MARSHBURN																						
MS4 WOLF																						
DAY/NIGHT ORBIT																						
TDRS																						
ORB ATT																						
SSRMS_POS																						
NOTES																						

*12/19:23

REPLANNED

FD14

GMT 07/28/09 (209)

MET Day 012 ISS TDRS AVAIL

ISS	TDRS	AVAIL	12	13	14	15	16	17	18	19	20	21	22	23	24
D N	FE-2 WAKATA	HAND OVER	EXERCISE TVIS	EVA TOOL STOW	MEAL	F W HATCH A E R L C L O S E	MIDDAY-MEAL	UNDOCK DPS	FLYAROUND	SEP	EXERCISE	PRE SLEEP			
E X P	ISS CDR PADALKA	S D O W N N O L C D R	MBM 20 CDR EXE	IMS	EXERCISE ARE	F W HATCH A E R L C L O S E	MIDDAY-MEAL	RODNIK	TVIS	TVIS HYG	A U P R E D S L E E P	PS R L M B M - 1 6	PRE SLEEP		
1 9	FE-1 BARRATT	B L D O P R	EXERCISE ARE	DCB	DCB PACK	F W HATCH A E R L C L O S E	MIDDAY-MEAL	PMA2 D P R C N F B	EXERCISE CEVIS	EXERCISE CEVIS	PMA2 L K C K I N I T	P W D P C P W	PRE SLEEP		
U P	FE-2 EXP20 KOPRA	HAND OVER	EXERCISE CEVIS	DCB RVM	DCB PACK	F W HATCH A E R L C L O S E	MIDDAY-MEAL		VID SU	BISE SETUP	BISE O P S	P W D P C P W	PRE SLEEP		
E X P	FE-3 ROMANENKO	B L D O P R	EXERCISE TVIS	COX MNT	EXERCISE TVIS	F W HATCH A E R L C L O S E	MIDDAY-MEAL	CCGO INV		VELO	P W D P C P W	PRE SLEEP			
2 0	FE-4 THIRSK	B L D O P R	EXERCISE TVIS	EXERCISE TVIS	GSC	F W HATCH A E R L C L O S E	MIDDAY-MEAL		EXERCISE ARE	EXERCISE ARE	P W D P C P W	PRE SLEEP			
	FE-5 DE WINNE	B L D O P R	ARE	ARE	FSL	F W HATCH A E R L C L O S E	MIDDAY-MEAL	DUCT RMV	UNDK VIDEO	PCS P/D	P W D P C P W	PRE SLEEP			
DAY/NIGHT ORBIT SSRMS POS															
*EXERCISE TVIS @BL00D															
^DISCNCT															
*12/19:23															
NODE2 PDGF @ WS4															

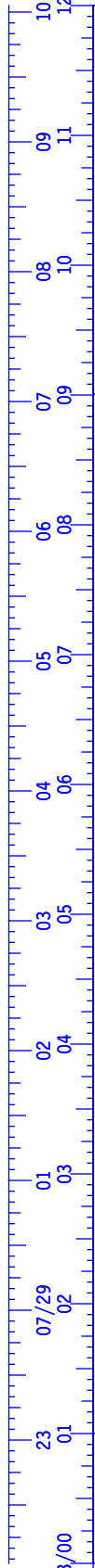
REPLANNED

FD15

FD14

GMT 07/28/09 (209)

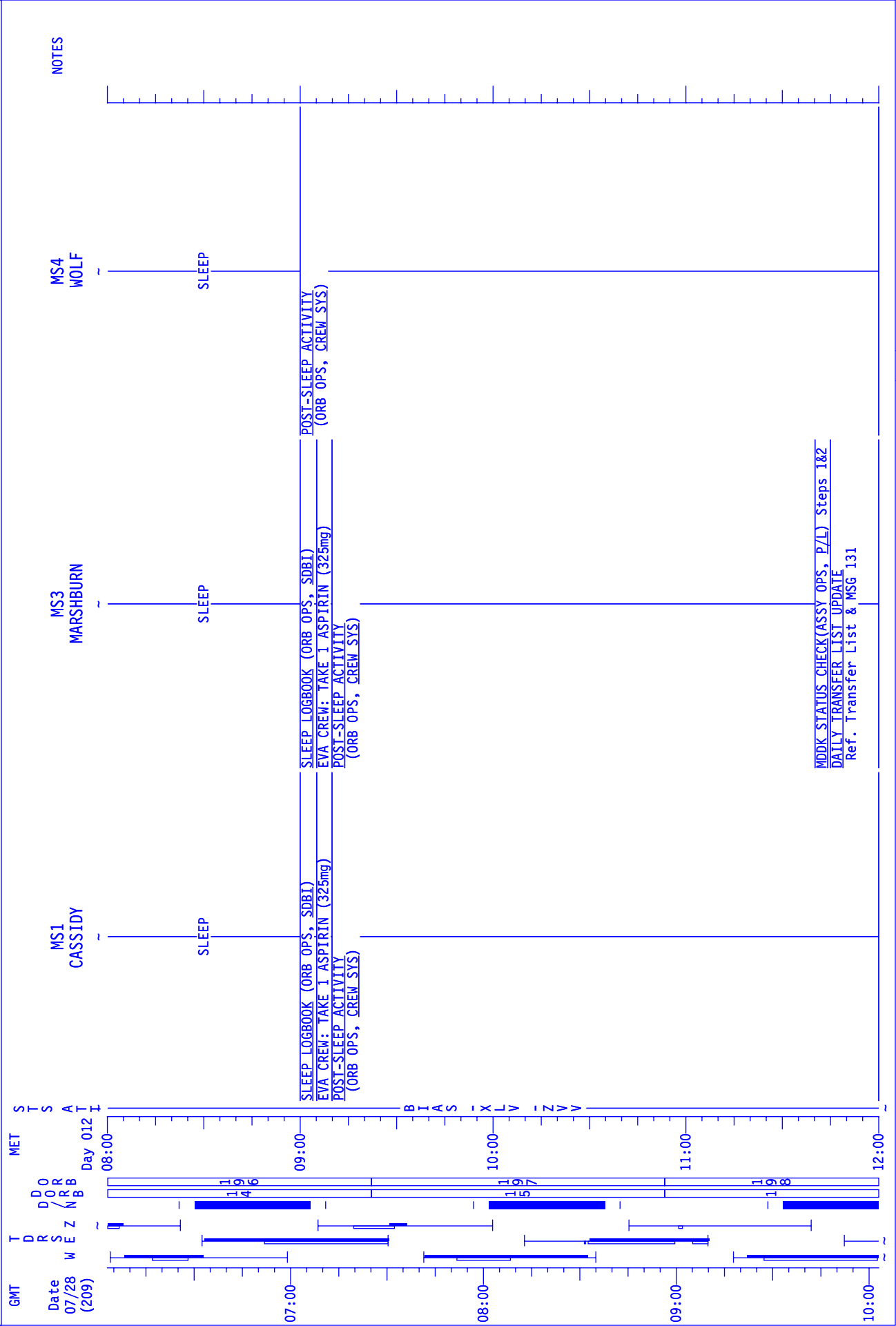
MET Day_013



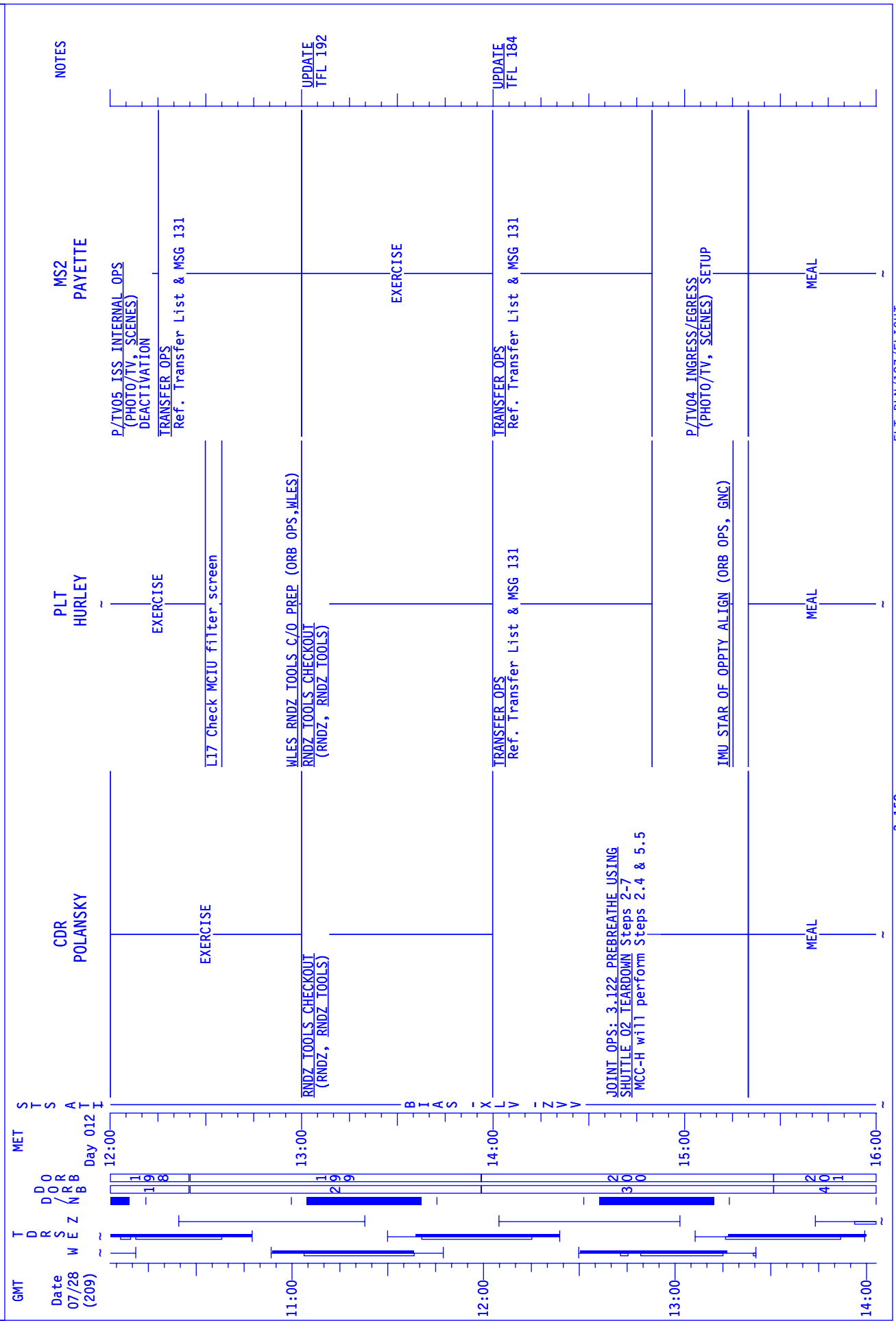
CDR POLANSKY	PRE SLEEP	SLEEP	POST SLEEP
PLT HURLEY	PRE SLEEP	SLEEP	POST SLEEP OBSS UNBERTH
MS1 CASSIDY	PRE SLEEP	SLEEP	POST SLEEP
MS2 PAYETTE	PRE SLEEP	SLEEP	POST SLEEP OBSS UNBERTH
MS3 MARSHBURN	PRE SLEEP	SLEEP	POST SLEEP
MS4 WOLF	PRE SLEEP	SLEEP	POST SLEEP
MS5 WAKATA	PRE SLEEP	SLEEP	POST SLEEP
DAY/NIGHT ORBIT	206	207 208 209 210 211 212 213 214	
TDRS	W	E	Z
ORB ATT		-ZLV -XVW	*FILTER CK

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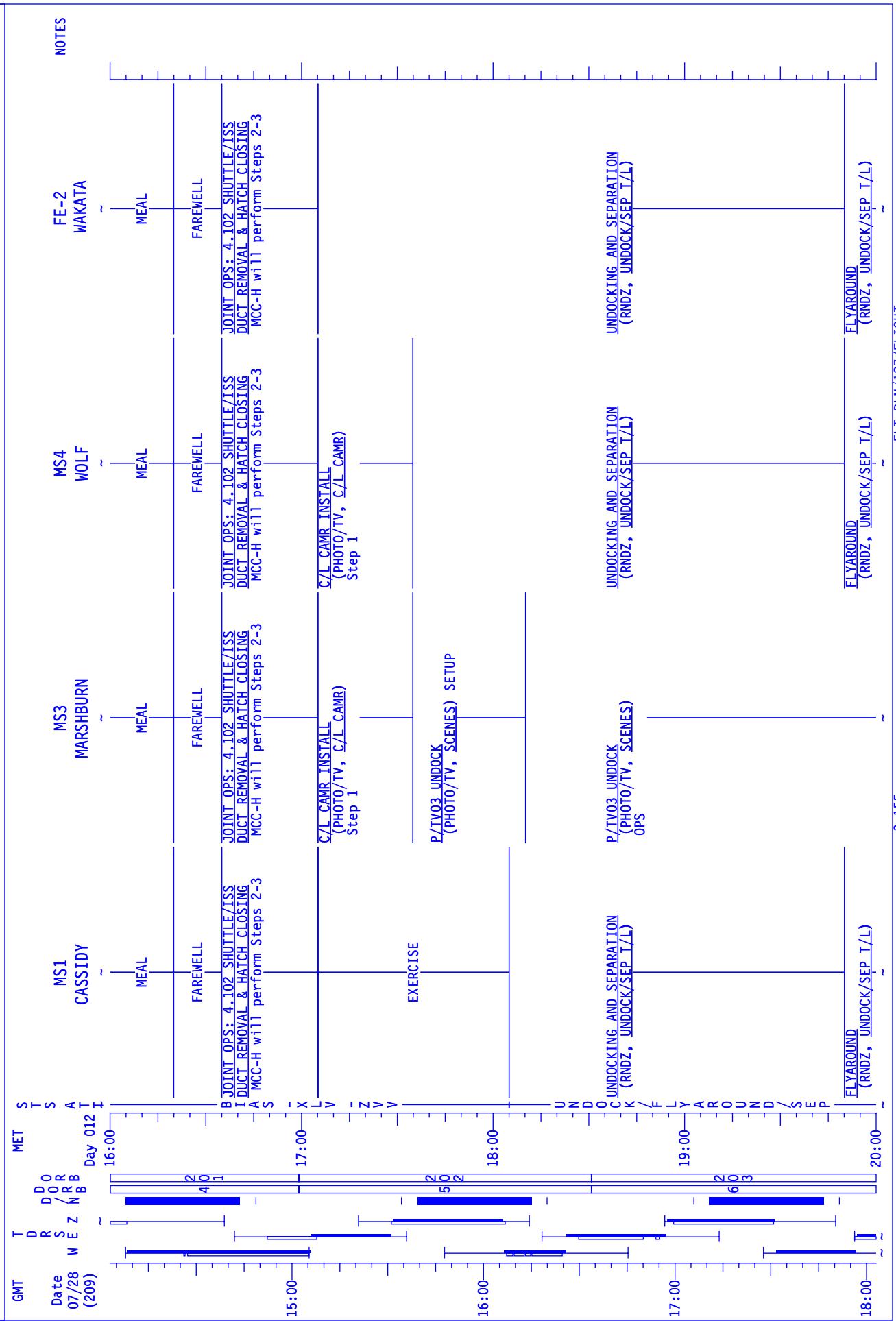
STS-127 FD (14)



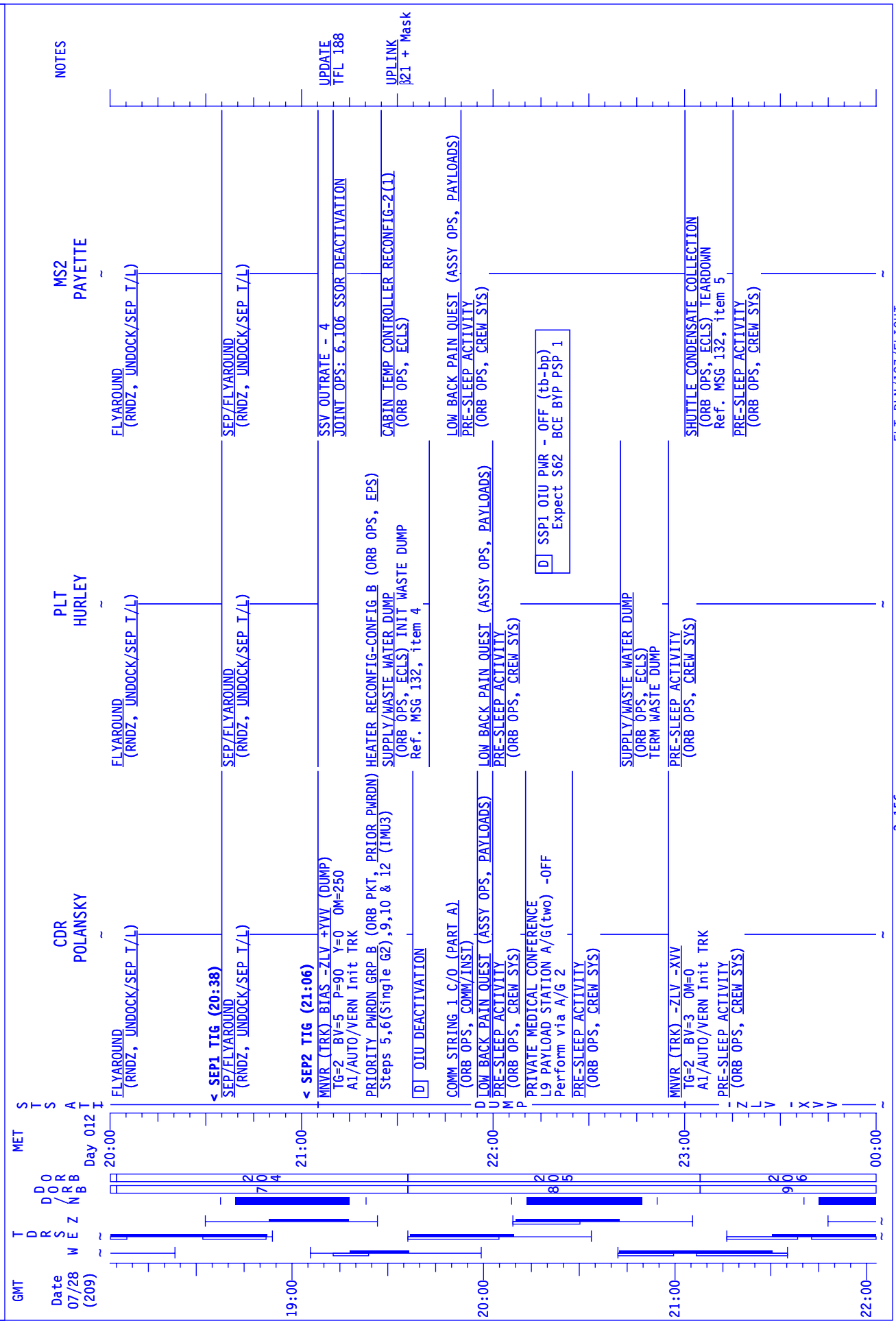
STS-127 FD (14)



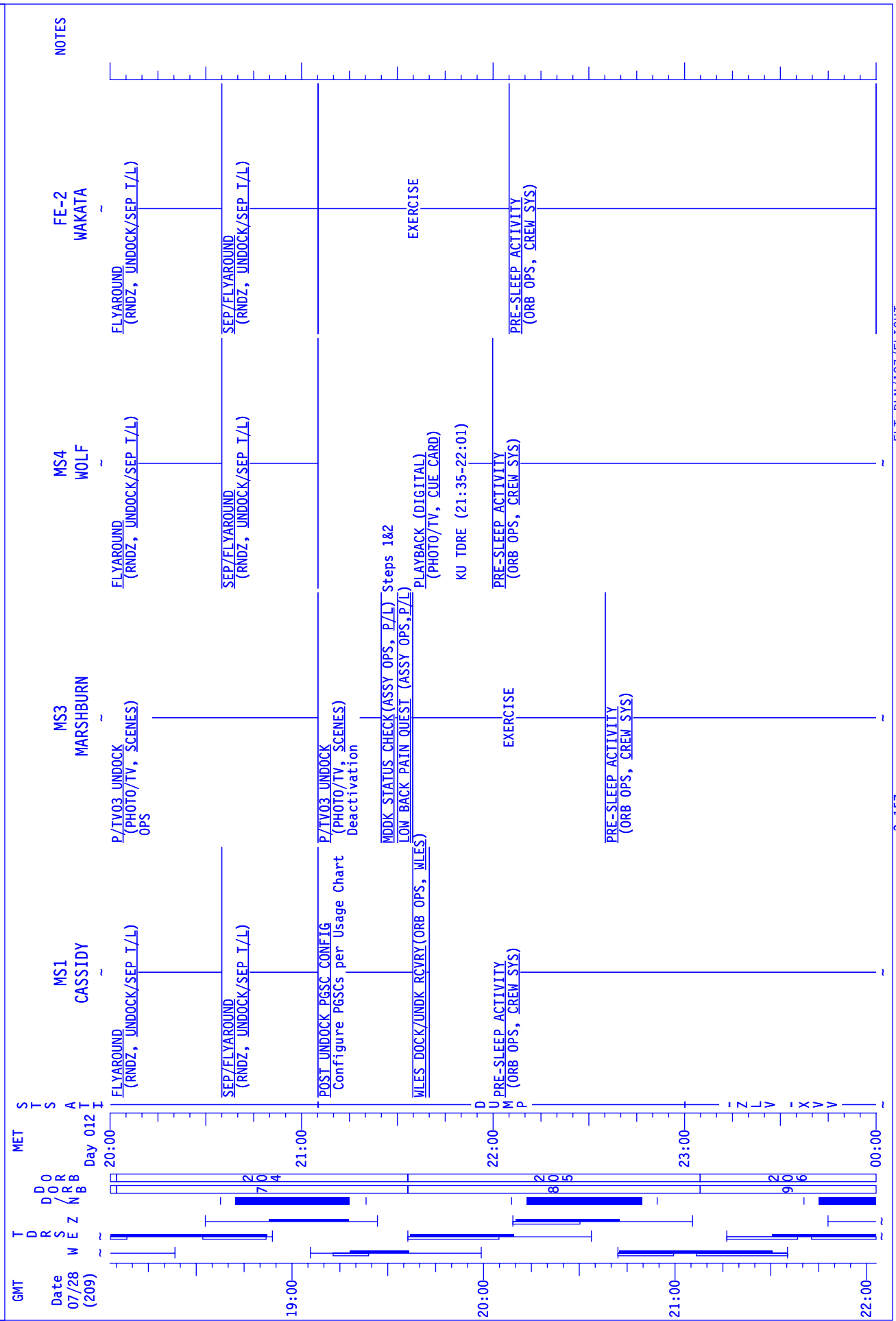
STS-127 FD (14)



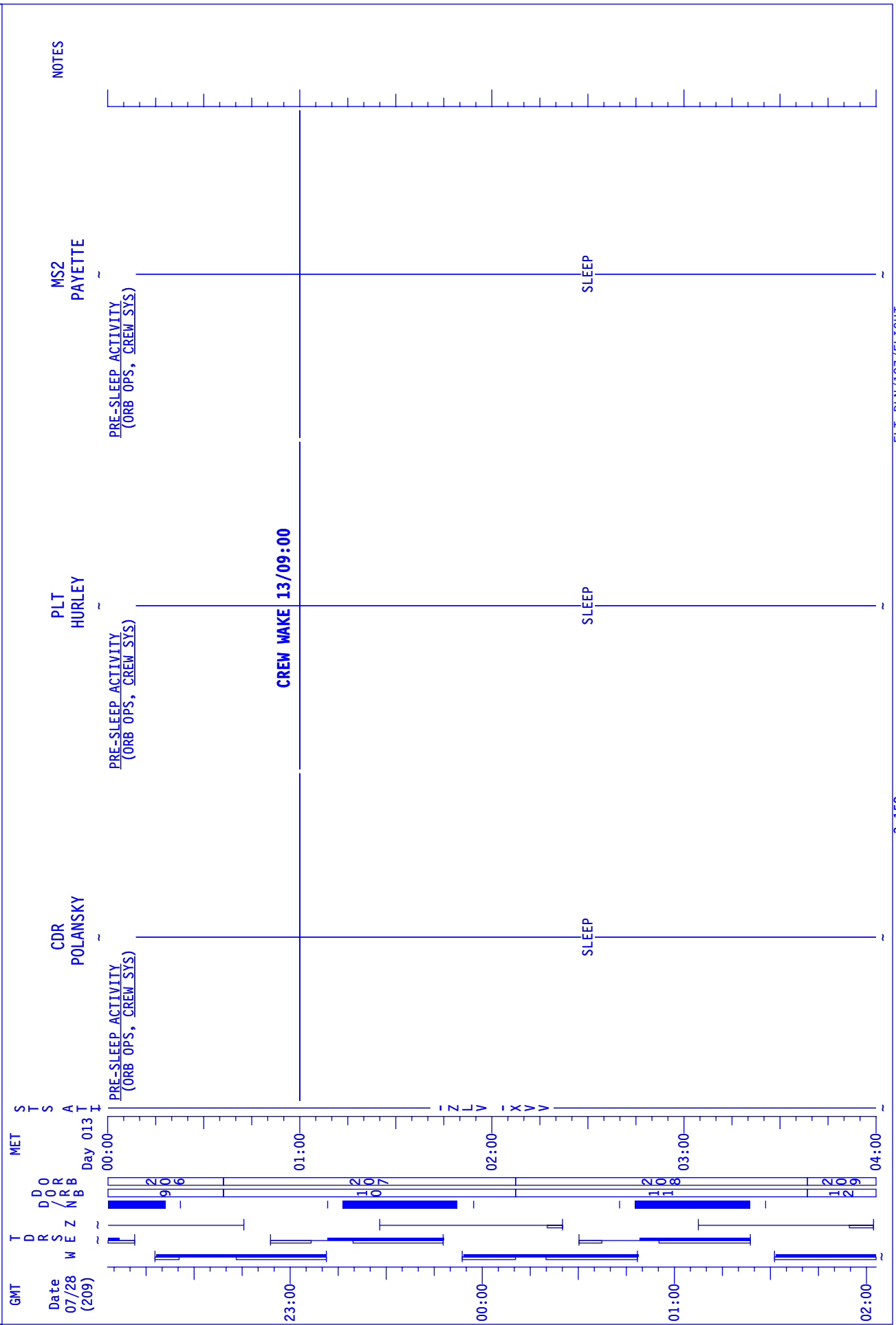
STS-127 FD (14)



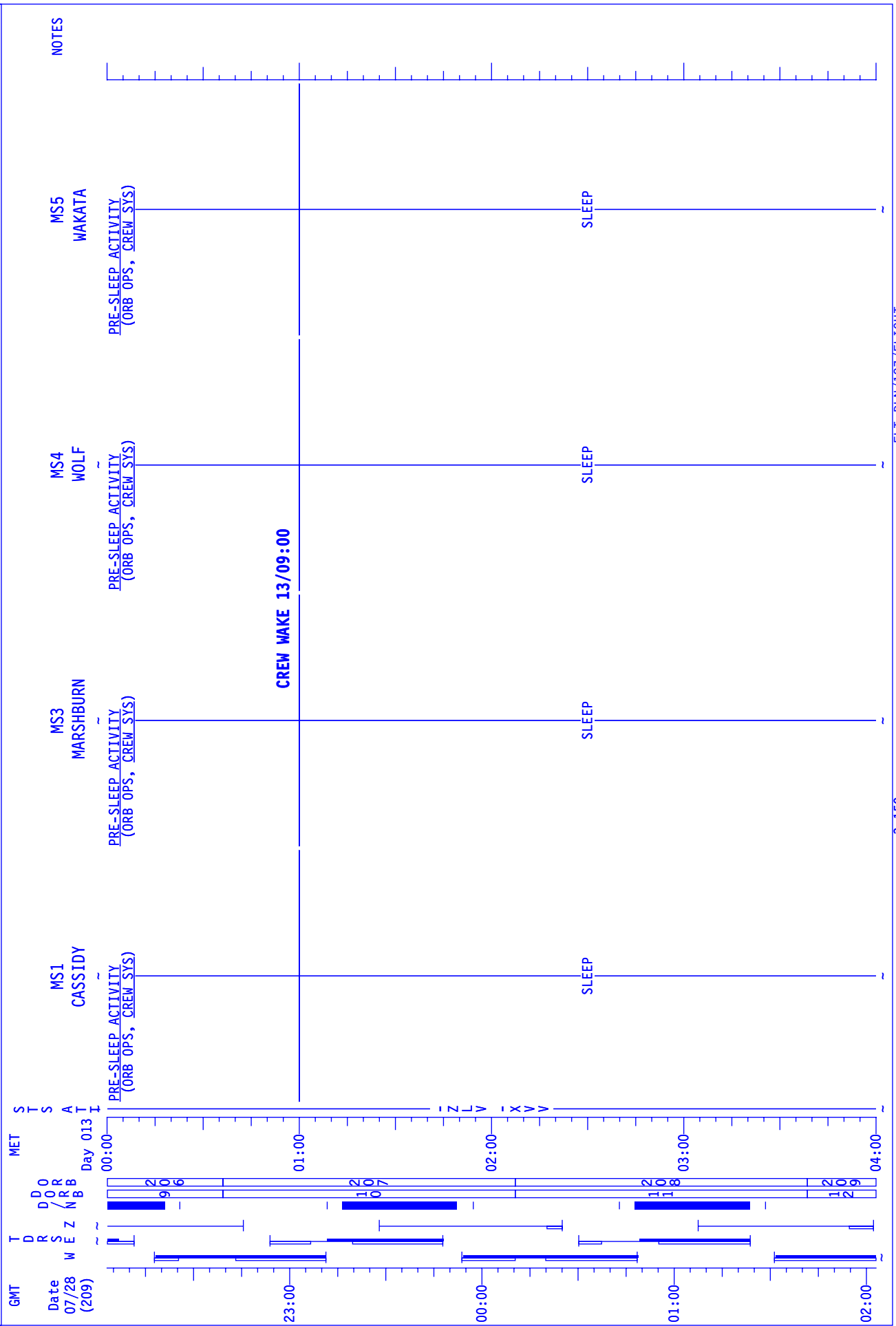
STS-127 FD (14)



STS-127 FD (14)



STS-127 FD (14)



MSG 133 - FD14 MISSION SUMMARY

1 Good morning, Endeavour!

2
3 Happy undocking day to you! It has been a spectacular and successful docked phase, but
4 all good things must come to an end. During the flyaround, please take a moment to admire
5 the new hardware and new capabilities that you have given to the International Space
6 Station through your hard work and dedication...and don't forget to take lots of pictures!

7
8
9 YOUR CURRENT ORBIT IS: 188 X 186 NM

10
11 NOTAMS:

12
13 **NOTAMS –THREE CHANGES**

- 14
15 EDW - EDW IN USE. EDT ELS DAY / VFR ONLY.
16 EDW - LAKEBED RWY 15/33 - GREEN. RWY 18L - UNUSABLE.
17 NOR - LAKEBED RUNWAYS GREEN.
18 FMH - RWY 05/23 CLOSED.
19 DOV - RWY 01/19 CLOSED.
20 GUA - RWY 24R END LIGHTS OTS.
21 GUA - RWY 06R/24L CLOSED.
22 INN - CLOSED.
23 AMB - CLOSED.
24 ESN - RWY 03R/21L CLOSED.
25 IKF - NOT USABLE. NO AGREEMENT.
26 BEN - NOT RECOMMENDED/NOT SUPPORTED.
27 **YHZ - AERODROME LIGHTS OTS.**
28 **KBO - RWY 14L/32R CLOSED.**
29 **PTN - RWY 14/32 CLOSED.**

30
31 NEXT 2 PLS OPPORTUNITIES:

32
33 EDW22 ORB 204 – 12/20:54 FEW300 7 220/11P19
34 EDW22 ORB 219 – 13/19:41 FEW150 7 220/10P17

35
36 OMS TANK FAIL CAPABILITY:

37
38 L OMS FAILS: NO
39 R OMS FAILS: NO

40
41 LEAKING OMS PRPLT BURN:

42
43 L OMS LEAK: ALWAYS BURN RETROGRADE
44 R OMS LEAK: ALWAYS BURN RETROGRADE

45
46 OMS QUANTITIES(%)

47
48 Subtract interconnect counter for current OMS quantities.

49
50 L OMS OX = 39.5 R OMS OX = 39.7
51 FU = 39.1 FU = 39.4

END OF PAGE 1 OF 2, MSG 133

MSG 133 - FD14 MISSION SUMMARY

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DELTA V AVAILABLE:

OMS	393 FPS
<u>ARCS (TOTAL ABOVE QTY1)</u>	<u>30 FPS</u>
TOTAL IN THE AFT	423 FPS
ARCS (TOTAL ABOVE QTY2)	61 FPS
FRCS (ABOVE QTY 1)	22 FPS
AFT QTY 1	79 %
AFT QTY 2	41 %

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

END OF PAGE 2 OF 2, MSG 133

MSG 131 (20-0633) - FD14 TRANSFER MESSAGE

Page 1 of 1

1 Tom and Dave,

2

3 You're finally at the end of the transfer road! We greatly appreciate all your hard work and
4 your *perspicacity* throughout the mission. Please note that we have added a couple extra
5 items to your transfer list today that require special attention prior to undock.

6

7 Remaining Transfer Items

8

9 As you requested, we've included a list below of all the items remaining that need to be
10 transferred.

11

12 • **Resupply Item:** 805

13

14 • **Return Items:** 403, 403.1, 403.2, 403.3, 700, 701, 702, 703, 706, 707, 708, 709,
15 710, 711, 712, 713, 714, 715, 716, 913

16

17

18 The Transfer List Excel file, FD14_Transfer_List_ST5127.xls, locations are:

19 • Shuttle: **C:\OCA-up\transfer** (KFX machine)

20 • Station: **K:\OCA-up\transfer**

21

22

23 **Please update Transfer List book as follows:**

24

25 In the **RESUPPLY** tab:

26 Replace the following page:

27 Resupply-13

28

29

30 In the **RETURN** tab:

31 Replace the following pages:

32 Return-10

33 Return-16

34

35

36 Have a great last day of transfer, and we'll see you on the ground!

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38 - The 2J/A Transfer Team

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Page 1 of 1, MSG 131 (20-0633)

Note: This matrix assumes message 20-0628 Post EVA5 Tool Deconfig has been completed

ISS TEMP STOW Bag						
#	LOCATION	ITEM NAME	P/N	S/N	B/C	Notes
Type: Restow						
Note: Restow the following from the ISS Temp Stow mesh bag IMS Plan: No						
1	A/L100_Behind Closeout	ISS GP Caddy	SEG33113531-301	-	-	
2	1.0 CTB: MWS Hardware, S/N 1013, B/C 002308J	Compound Cutter	SED33104404-305	1011	-	
3		Wire Tie Caddy Assy	SEG33111586-301	REPORT	-	
4	A/L100_Behind Closeout	Small EVA Trash Bags [QTY: 2]	SEG33106678-301	1006 1007	-	May have been stowed per 2J/A EVA5 Tool Deconfig
5	A/L100_Behind Closeout	EVA Ratchet	SEG33106927-303	1016	-	
6	1.0 CTB: EVA Miscellaneous Tools #2, S/N 1161, B/C 004155J	7/16 x 2" Rigid [QTY: 2]	SEG33106930-301	REPORT	-	
7		Socket Caddy	SEG33106938-301	1010	-	
8		Right Angle Drive	SEG33106925-305	1020	-	STOW in ziplock bag; LABEL "Used for 2J/A VE cameras above A7;Contact MCC-H before use"
9		7/16 x 6" Wobble	SEG33106931-301	1007	004343J	
10		Detent Release Tools [QTY: 2]	SEG33121385	1002 1003	-	Keep on orbit
11	A/L1_Crewlock	Round Scoops [QTY: 3]	SEG33107677-301	1001 1002 1004	-	
12	Crewlock BAG #4, S/N 1009	Round Torque Multiplier	SEG33106294-301	1002	-	
13	A/L1_Crewlock	32" Long Wire Ties	SDG33108130-003	-	-	Please perform total count of Long wire ties and call down

14	AL100_Behind Closeout Ziplock Bag	Short Wire Ties	SDG33108130-001	-	-	Please perform total count of Short Wire ties and call down
15	JPM1D3 Behind Hard Dummy Panel 2.0 CTB: CTB-J-D2, S/N 1008, B/C 2CTB0003N	LTA ISS2 Cap (ISS2 Mode Plug)	C11C947001-1	001	-	Keep on orbit
16	NOD1S1 Jettison Stowage Bag: For 34P #1	VE I/F Cable [QTY: 2]	NFTCA170133G12 NFTCA170133G11	001 001	-	
17		VE MLI [QTY: 4]	NFTCA631124P01-1-1 NFTCA631124P01-1-2 (upper) NFTCA631124P01-2-1 NFTCA631124P01-2-2 (lower)	001 001 001 001	MLIVEU11N MLIVEU12N MLIVEU21N MLIVEU22N	
18		VE Launch Lock [QTY: 2]	006464564G1	FEJ936- 001/002	-	

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Post-Undock Plan

PRELIMINARY

Event	Time	DV	Notes for Execute Package
FD14			
UNDOCK	12/19:23:00	-	
SEP-1	12/20:38:00	*DVZ = -1.5fps	6 second +X burn per Rendezvous Checklist
SEP-2	12/21:06:00	DVX = -10fps	42 second +X burn per Rendezvous Checklist
FD15			
SEITE-1	13/19:25:33	*DVZ = -17fps	The plume from this 2-OMS burn will be observed with an optical sensor on board STP Sat. This is part of the Shuttle Exhaust Ion Turbulence Experiments (SEITE) payload of opportunity.
SEP-3	13/22:13:00	DVX = -11 fps	This OMS-L burn is set up to lower our orbit for payload deploys and also to better align our conjunction with the SEITE C/NOFS satellite. This burn size may be modified to optimize the C/NOFS conjunction.
FD16 (EOM-1)			
SEITE-2	14/13:00:21	*DVZ = +17fps	This 2 OMS burn will be performed just before the Shuttle passes below the C/NOFS satellite so it can fly through the plume from the burn. This is also part of the SEITE payload of opportunity.
OA	14/13:17:56	DVX = -5.2 fps	The purpose of this multi-axis burn is to complete the orbit lowering required to deploy the payloads safely below the ISS. This burn size may be modified if SEP-3 is changed.
DRAGONSAT Deploy	14/14:30:00	-	
ANDE-2 Deploy	14/19:19:00	-	ANDE-2 Deploy was moved so that the deploy may be observed by Millstone Hill, near MIT in Boston.
SEP-4	14/19:45:00	DVX = +0.5fps	This burn ensures a good long term opening rate from the ANDE-2 payload.

* - indicates radial burn