

STS-120/10A

FD 10 Execute Package



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101	19	FD09 MMT Summary (pdf)
102	---	Pregather List – Solar Array Hinge Stabilizer Construction (pdf – Not Distributed)
103	---	EMU Wrist Disconnect Taping Procedure (pdf – Not Distributed)

Approved by FAO: Roger Smith

Last Updated: Nov 1 2007 1:02AM GMT

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

MSG 096B - FD10 FLIGHT PLAN REVISION

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MSG INDEX

<u>MSG NO.</u>	<u>TITLE</u>
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103	EMU Wrist Disconnect Taping Procedure (16-0153)

1. Former President George Bush and First Lady Barbara Bush will be visiting the JSC Mission Control Center on Thursday.

Former President Bush had visited with JSC leadership and the flight control teams following the space shuttle Columbia accident. Bush Sr. had expressed his interest in returning to Mission Control when we returned to flight. Last year, Mr. Coats and Bush Sr. corresponded and Mr. Coats invited him to visit. It has taken a few missions to finally match up schedules.

His purpose for visiting is to hear a little about the mission and to express his support to the crew and to all of the people supporting the mission. We are not doing a full tour with briefings.

This is an informal visit. They will visit the Shuttle FCR, and via the Flt Director console, will make a call up to you and the crew. So far, the timeliners have scheduled only Pam and Peggy for the event, but you're welcome to invite other crew members to participate if available. It's appropriate to address Mr. Bush as "Mr. President."

The plan is to conduct the crew portion of this event from the WFCR, with shuttle CAPCOM coordinating Bush Sr.'s call to you.

2. LiOH Changeouts

Starting with the pre-sleep LiOH changeout today, you will be using LiOH cans from STS-121 (Transfer List Item 720). As a reminder, these older cans will likely have more dust than newer cans, so don PPE when you perform the changeout. Masks and gloves are stowed in the LiOH volume, and goggles are located in the CCK (MA9N). Masks should only be used once and should be disposed of in the dry trash after use. If you find the masks insufficient, you may don a QDM for additional protection.

MSG 096B - FD10 FLIGHT PLAN REVISION

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3. In order to to support the Solar Array Repair activity using the SSRMS grappled to the OBSS on EVA 4, the following Robotics activities will need to be performed by Tani & Wilson.

FD10

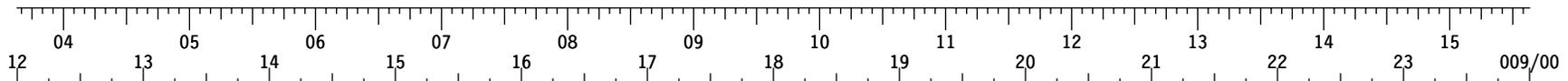
- You will be maneuvering the SSRMS into a MT Translation configuration.
- The Ground will then perform a MT translation to WS3.
- You will then grapple, unberth, and maneuver the OBSS to a MT Translation configuration.
- The Ground will then perform a MT Translation back to WS8.
- Also there will be a Robotics Conference to discuss the plan & Robotics procedures for EVA4.

FD11

- The SRMS will be maneuvered to an EVA Viewing position.
- You will support the EVA (EVA Support procedures will be uplinked today prior to the Crew Conference).
- You will then hand the OBSS back off the SRMS, and maneuver the SSRMS to a Translation Stow configuration.
- The SRMS will then maneuver with the OBSS to the Undock position.

4. REPLACE PAGES 2-34, 2-36, AND 3-104 THROUGH 3-113.

GMT 11/01/07 (305)
 Day 008
 MET



S T S - 1 2 0	FD10	CDR MELROY	SLEEP	LOG	POST SLEEP				PWR FILL #2	PWR FILL #3	PWR FILL #4	CINCT #7	EXERCISE	CTE CR #7	CXWFCR	RPRS*		MEAL	RPRS*		OUNSLCH		ROBO EVA CONF	
		PLT ZAMKA	SLEEP	LOG	POST SLEEP		EXERCISE		WCS*				SAW HINGE TOOL GATHR	SOLAR ARRAY HINGE			MEAL	SOLAR ARRAY HINGE		OUNSLCH		SOLAR ARRAY HINGE		
		MS1 PARAZYNSKI	SLEEP	LOG	POST SLEEP		BATT SWAP		EXERCISE					EVA PROC REVIEW	EVA CONF			MEAL			SOLAR ARRAY HINGE		ROBO EVA CONF *	
		MS2 WILSON	SLEEP	LOG	POST SLEEP		MCSN IUMRS*		TRANSFER					P/TV08 EXT SURV	TRANSFER			MEAL			OBSS UNBERTH/TRANS		ROBO EVA CONF ⊕	
		MS3 WHEELLOCK	SLEEP	LOG	POST SLEEP		BATT SWAP	EMU GLOVE RESIZE							EVA PROC REVIEW	EVA CONF			MEAL		EXERCISE		ROBO EVA CONF	
		MS4 NESPOLI	SLEEP	LOG	POST SLEEP		CDM COMP								EVA PROC REVIEW	EVA CONF			MEAL		TERM*	EXERCISE		ROBO EVA CONF
		FE-2 DN ANDERSON	SLEEP (8.5)		POST SLEEP	PREP WORK	DPCA	QD12 DCNCT	N2 C/O PNL PHOTO DOC	N1STB GUIDE ASSY INS							MIDDAY-MEAL	CAWUCDIT	CSA			EXERCISE TVIS		ZSR LOADING
E X P 1 6		ISS CDR WHITSON	SLEEP (8.5)	IMMN*	POST SLEEP	PREP WORK	DPCA	EXERCISE TVIS	EXERCISE CEVIS				SAW HINGE TOOL GATHR	SOLAR ARRAY HINGE			MIDDAY-MEAL			SOLAR ARRAY HINGE				
		FE-1 MALENCHENKO	SLEEP (8.5)	MBM12	POST SLEEP	DPCA	MBM12	ORIENTATION	φ-CB-BT7-MNT					EXERCISE VELO	MIDDAY-MEAL			φ-CB ΓXT MNT FE1	φ-CB Πφ MNT	IMN-1	EXERCISE TVIS		COX MNT	
U P		FE-2 UP TANI	SLEEP (8.5)	IMMN*	POST SLEEP	PREP WORK	DPCA	RED CORD REPLACE	SM SNRV MRS*	CMS RED CAL			CEVIS				MIDDAY-MEAL	CAWUCDIT	EVA DCS CNFG	DT CURN	OBSS UNBERTH/TRANS		ROBO EVA CONF	

DAY/NIGHT ORBIT

TDRS W -171, E -46, Z -275

ORB ATT SSRMS: PDGF3 WS8, BIAS -XLV +ZVV, WS3

NOTES: *DEACT, *FILTER CK, *COMPACT, *COMPLETE, *N2 INIT, *N2 TERM, *EMU, *SOLAR ARR, ⊕EXERCISE, MT TRANS WS 3, FLT PLN/120/FLIGHT

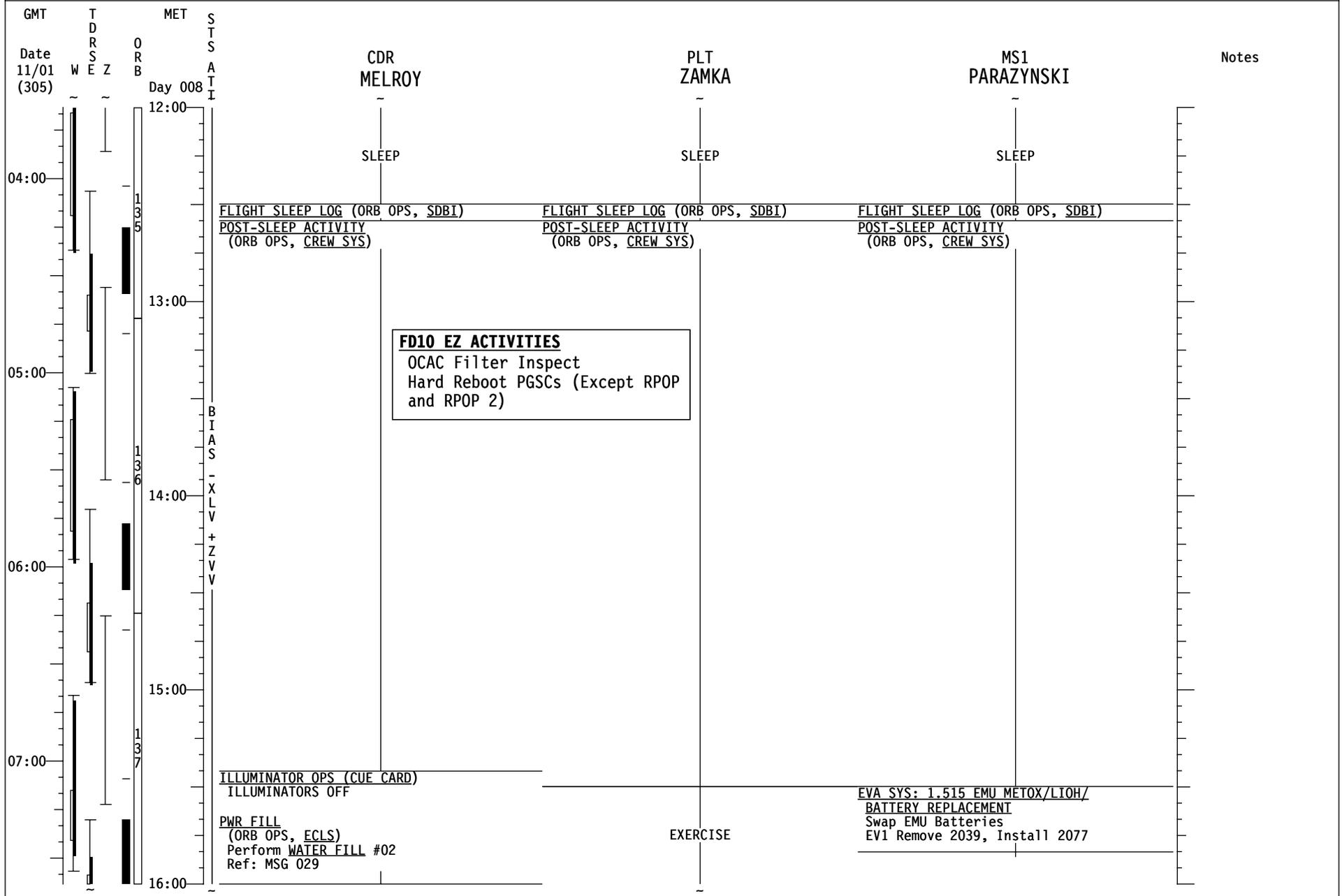
GMT 11/01/07 (305)
 Day 009
 MET



S T S - 1 2 0	FD10			P/TV 05 S/U	V C I A P L L	EVA PROC RVW	I M P M C J A /G	PRE SLEEP		SLEEP			
	PLT ZAMKA	SOLAR ARRAY HINGE					PRE SLEEP	CREW CHOICE D/L	PRE SLEEP		SLEEP		
	MS1 PARAZYNSKI	*	EVA TOOL CONFIG	PRE SLEEP	EVA PROC RVW	PRE SLEEP		MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP (A/L)			
	MS2 WILSON	EXERCISE			X B F R E I E E F	EVA PROC RVW	PRE SLEEP			SLEEP			
	MS3 WHEELLOCK		EVA TOOL CONFIG	PRE SLEEP	EVA PROC RVW	PRE SLEEP		MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP (A/L)			
	MS4 NESPOLI		EVA TOOL CONFIG	PRE SLEEP	EVA PROC RVW	PRE SLEEP		MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP			
	FE-2 DN ANDERSON	⊕	DPC	E X I M S E D I T	EVA PROC RVW	FFQ	P R O R E R P K	PRE SLEEP		SLEEP (8.5)			
E X P 1 6	ISS CDR WHITSON	SOLAR ARRAY HINGE		V C I A P L L	EVA PROC RVW	P W	PRE SLEEP		SLEEP (A/L)				
	FE-1 MALENCHENKO	COX MNT	DPC		B M P Φ 2 M N T	EVA PROC RVW	P W R O R E R P K	PRE SLEEP		SLEEP (A/L)			
U P	FE-2 UP TANI	C H R G	DPC		EVA PROC RVW	FFQ	P W R O R E R P K	PRE SLEEP		SLEEP (8.5)			
DAY/NIGHT													
ORBIT													
TDRS													
ORB ATT													
SSRMS													
NOTES		*SOLAR ARRAY HINGE ⊕ZSR LOADING MT TRANS WS 8 BIAS -XLV +ZVV WS3 WS8											

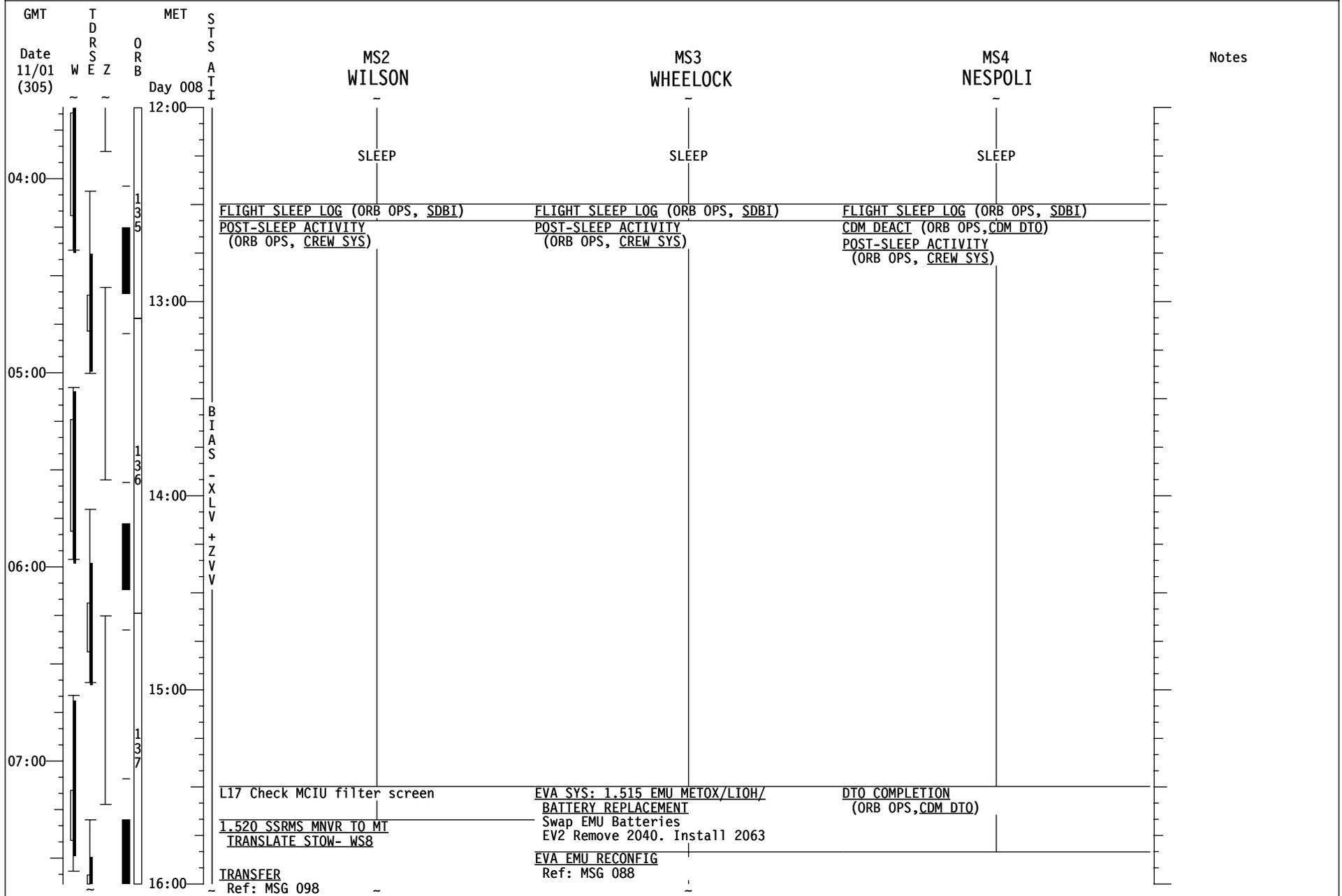
STS-120 FD 10

REPLANNED



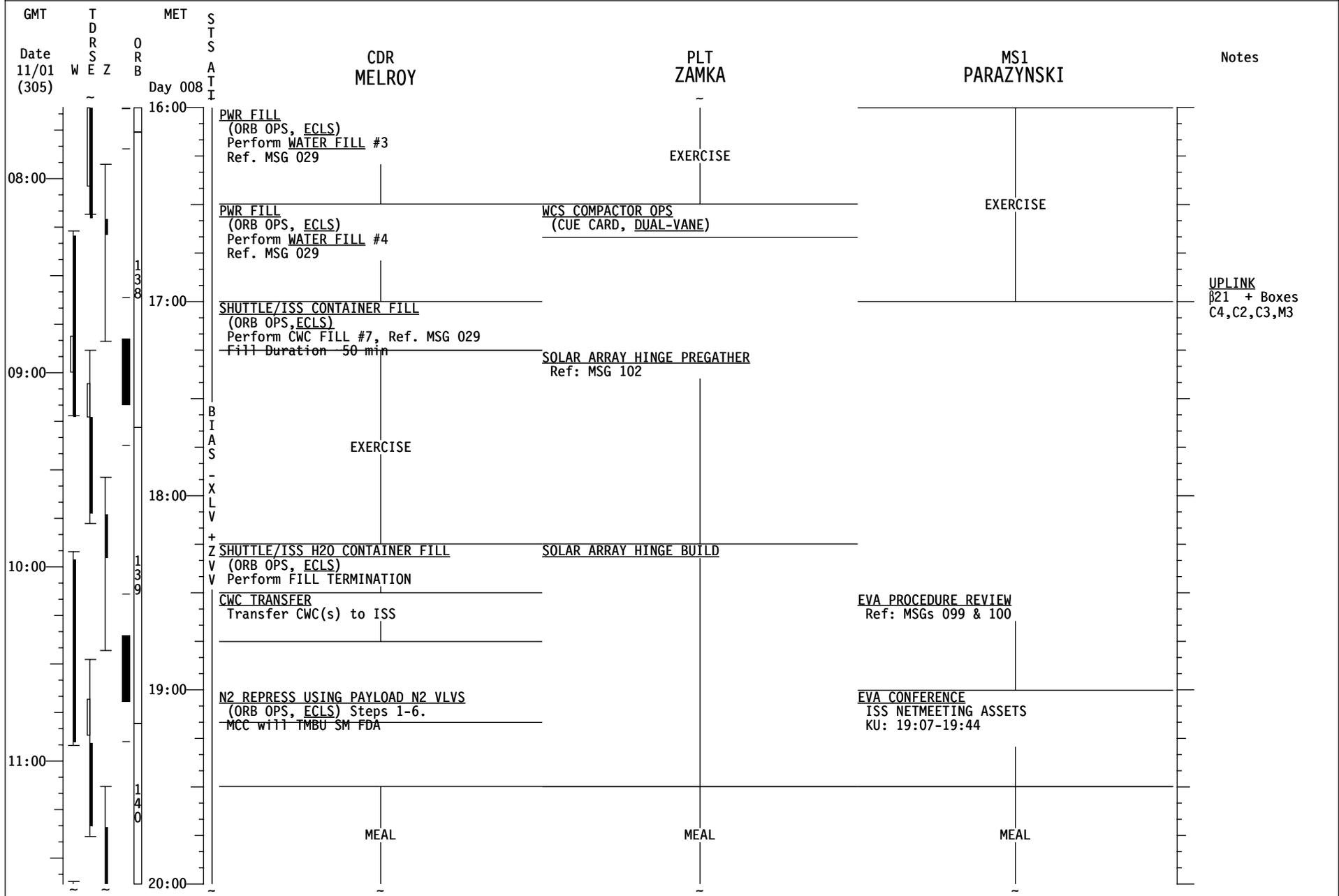
STS-120 FD10

REPLANNED



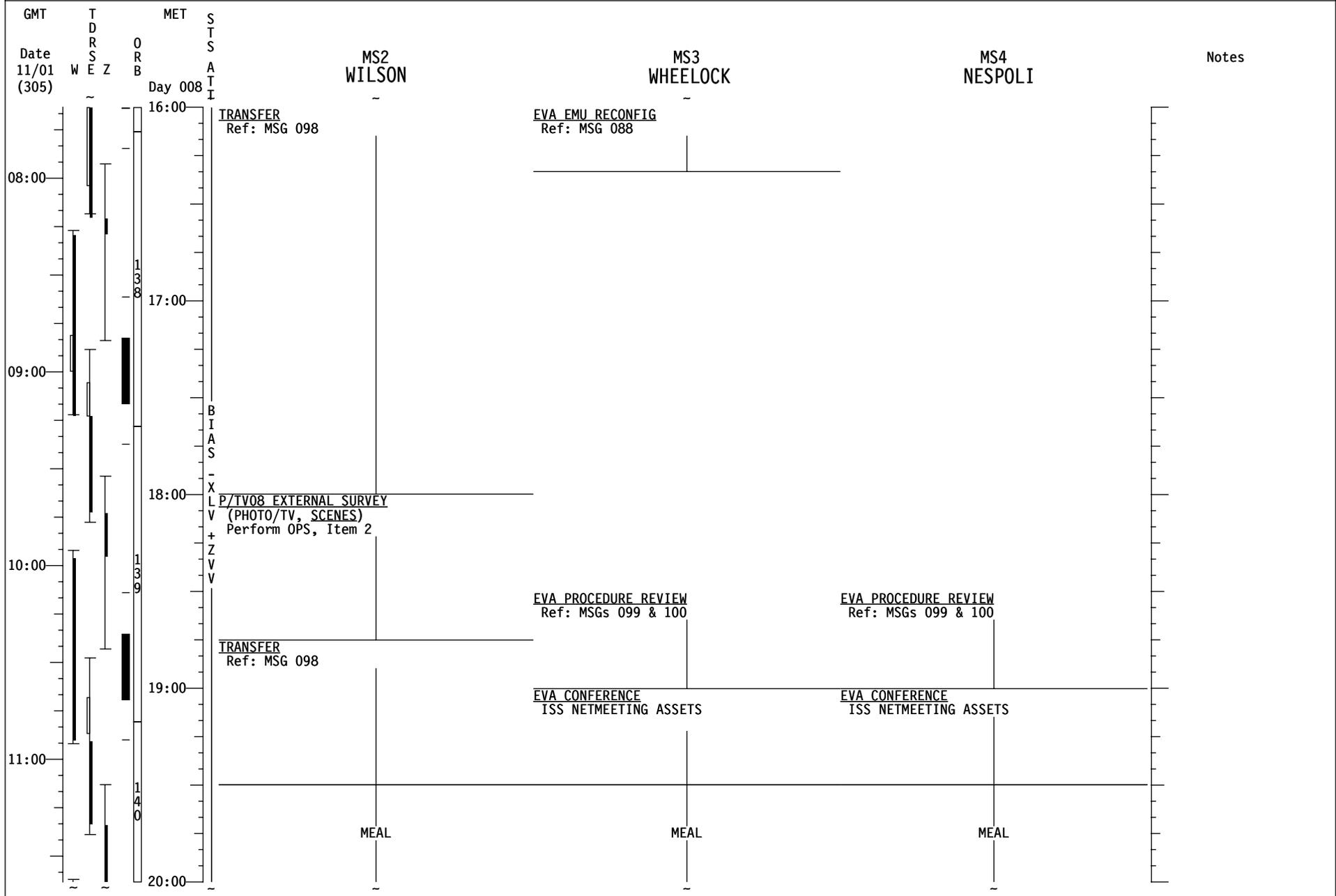
STS-120 FD10

REPLANNED



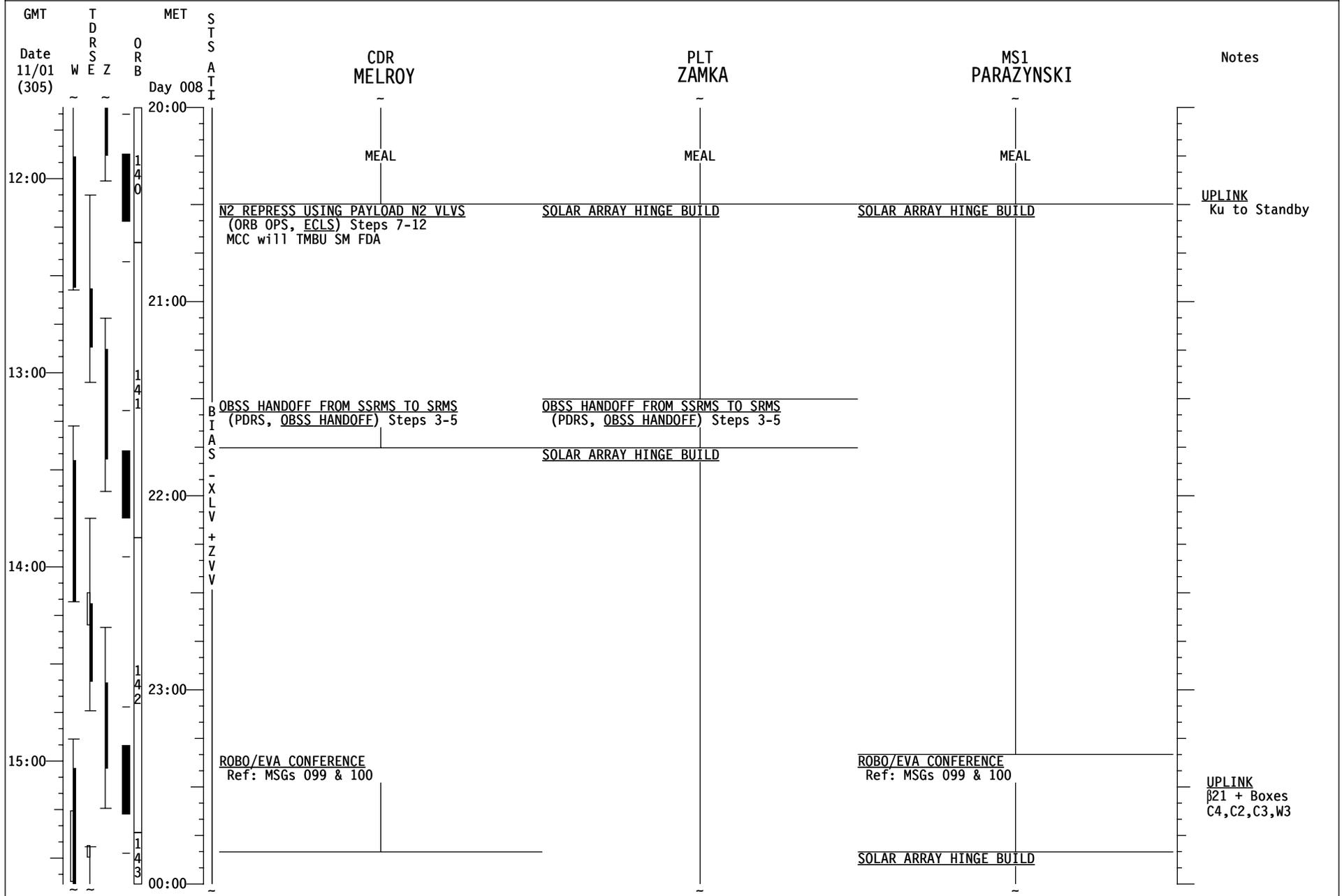
STS-120 FD10

REPLANNED



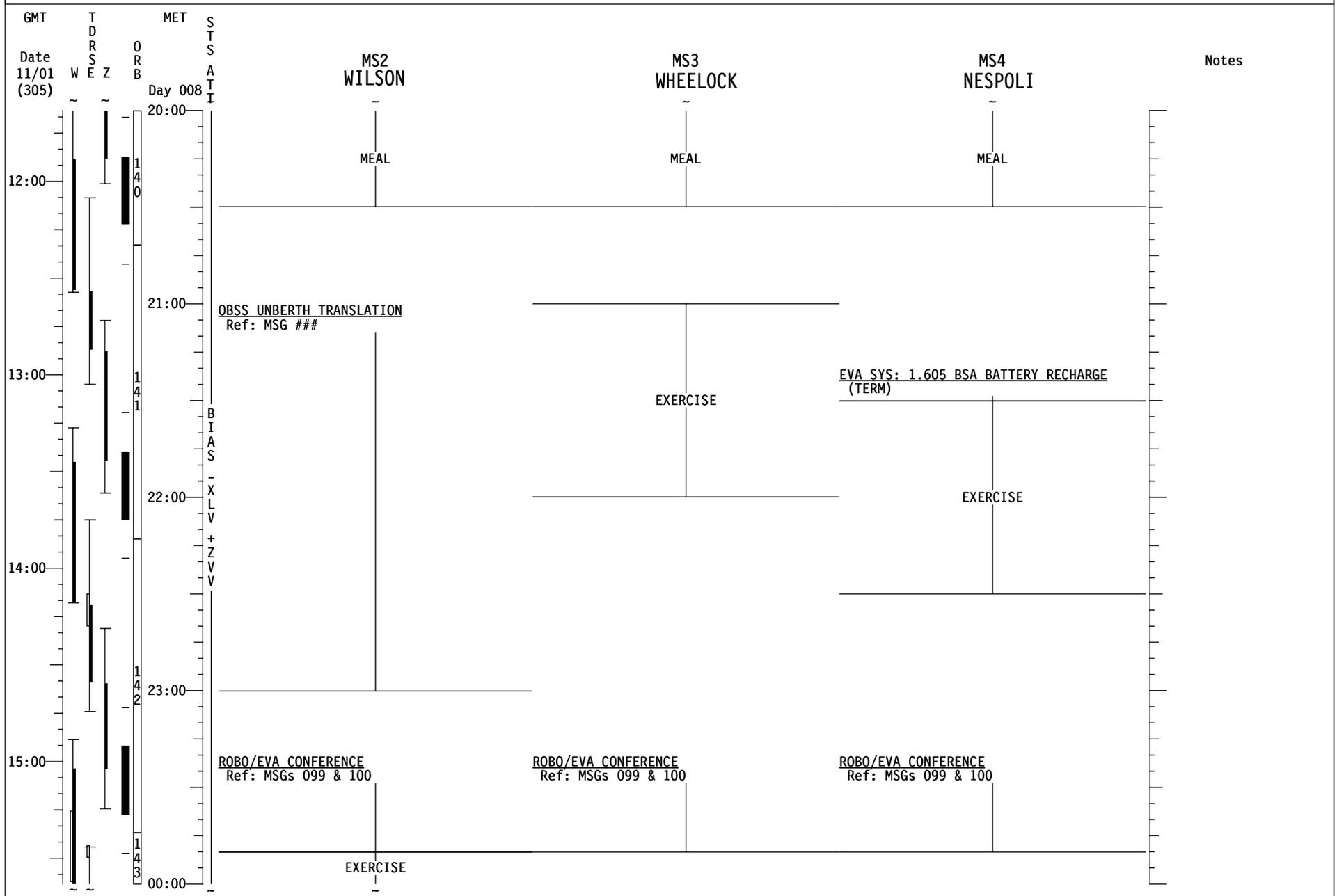
STS-120 FD 10

REPLANNED



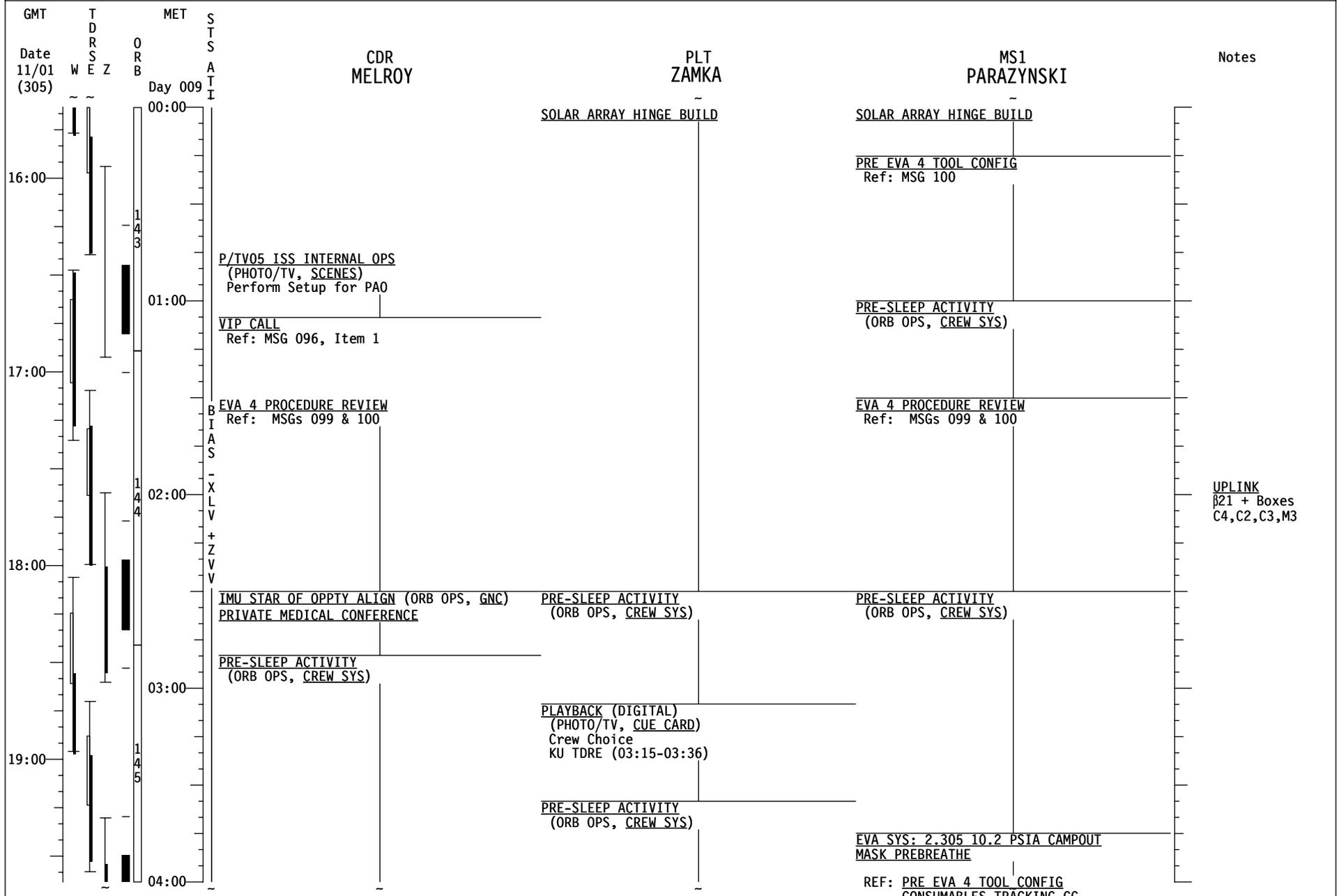
STS-120 FD 10

REPLANNED



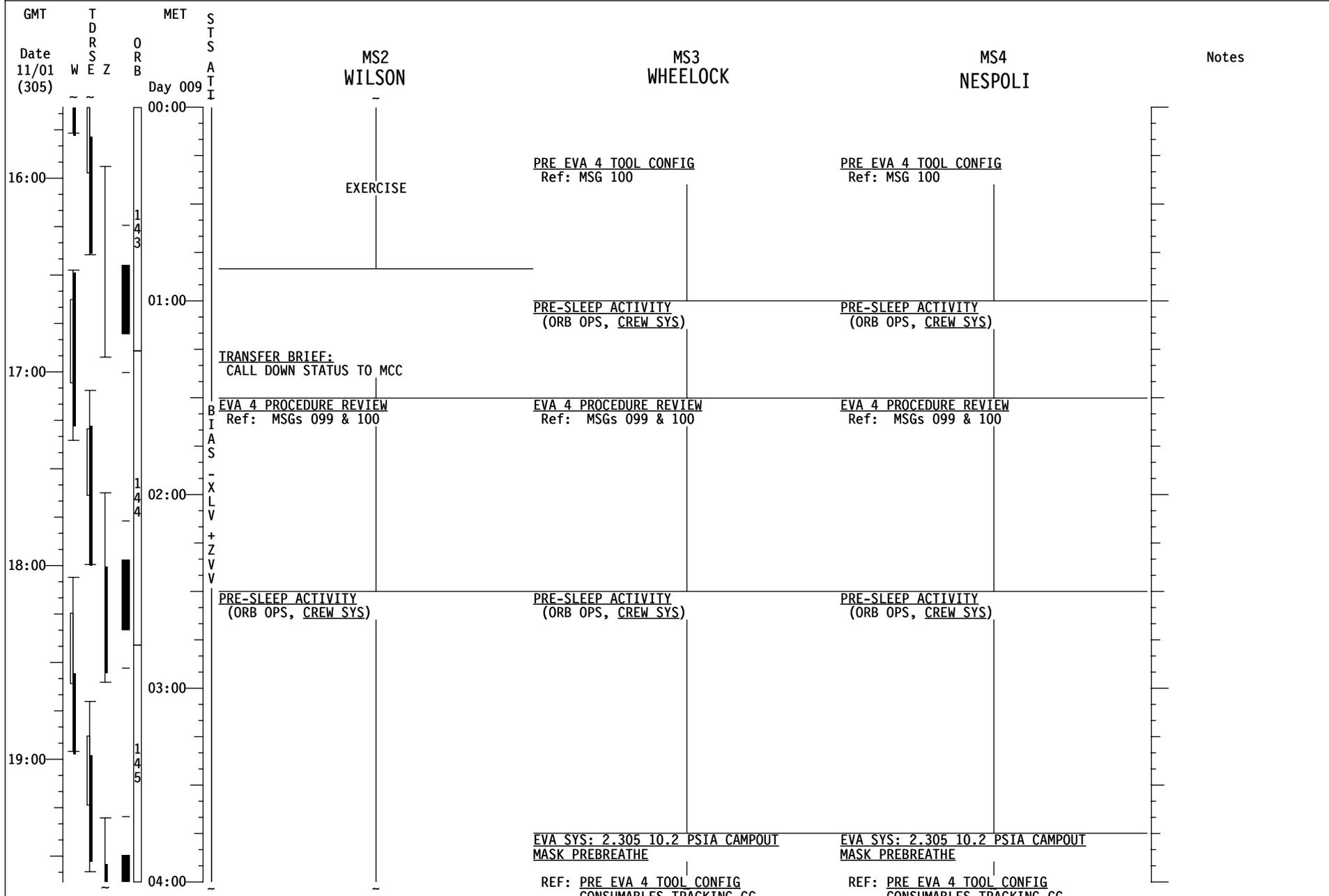
STS-120 FD10

REPLANNED



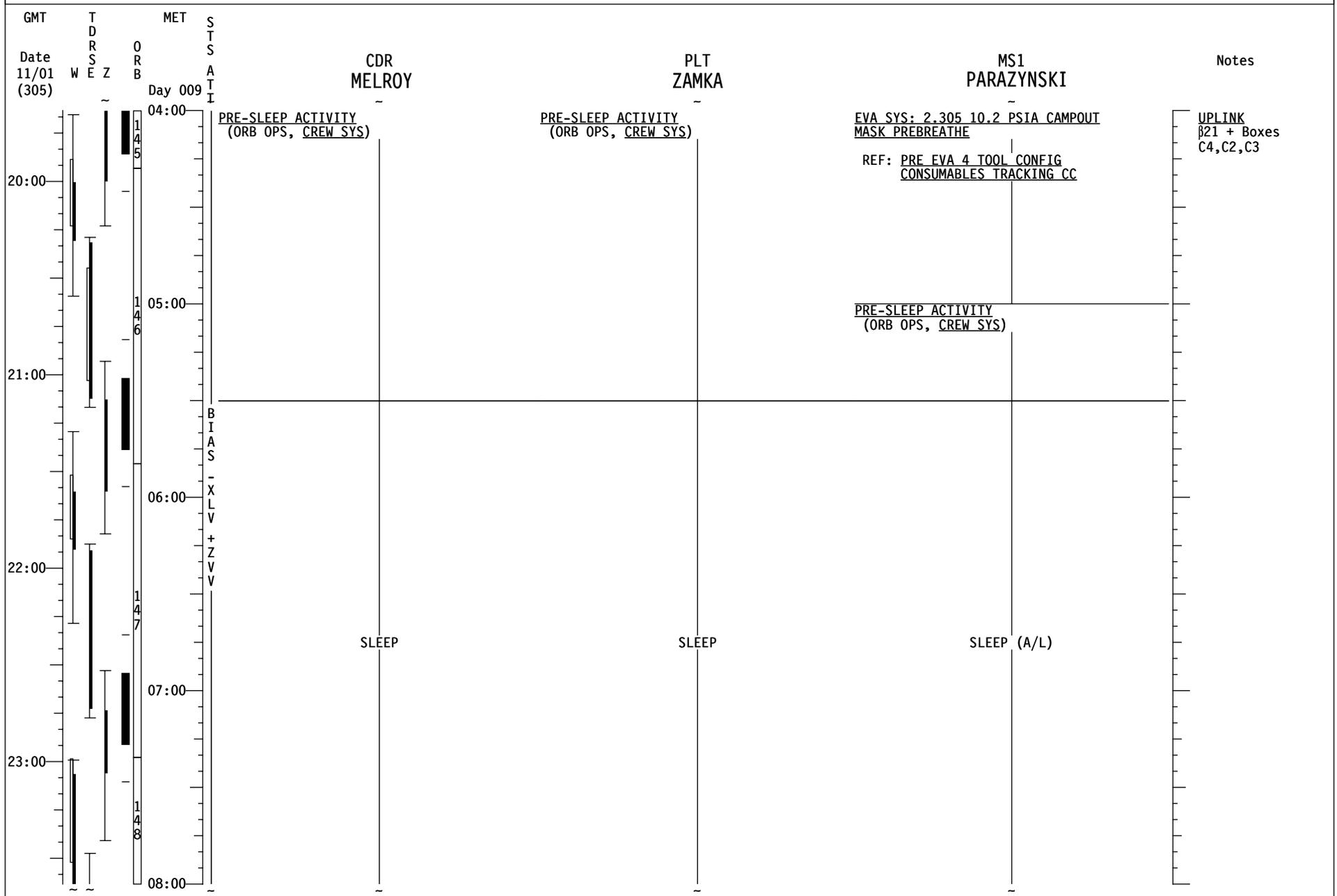
STS-120 FD 10

REPLANNED



STS-120 FD10

PRELIMINARY REPLANNED



MSG 097 (16-0143) - FD10 MISSION SUMMARY

Page 1 of 2

1
2 Good Morning Discovery!!!

3
4 Right now, change is the only constant in your world!!! Thanks for being so very adaptable!

5
6 Today your time has been filled with EVA 4 preparations. In addition you will notice that you
7 are going to bed an hour and a half later than previously planned. This is because landing
8 will now be on a descending opportunity. Your sleep time will be shifting later every day.

9
10 Have a great day preparing for tomorrow!!!

11
12
13
14
15
16 YOUR CURRENT ORBIT IS: 188 X 181 NM

17 NOTAMS:

18
19
20 EDW – RWY 15/33 ELS ONLY. RWY 18L – CLOSED.

21 NOR – GREEN.

22 WAL – RWY 04/22 CLOSED.

23 NTU – RWY 23L CLOSED 1100-2100Z.

24 RWY 32L/14R CLOSED

25 RWY 05R FIRST 3000' CLOSED, 8997' REMAINING

26 NKT – FIRST 1000' OF RWY 23L & 32R CLOSED.

27 LAJ REQUIRES 30 MIN. NOTICE TO CLEAR RWY 2300-0900Z DAILY EXCEPT
28 SUNDAY

29 FFA – ASCENT ONLY.

30 ZZA – FIRST 600M OF RWY 30L NOT AVAILABLE. 10,200' REMAINING.

31 WAK – UNUSABLE.

32 AMB – UNUSABLE.

33 JDG – DIEGO GARCIA: CLOSED 1800 - 0100Z.

34 IKF – NO AGREEMENT FOR USE.

35 AWG – NO AGREEMENT FOR USE.

36 BEN – POLITICALLY NOT RECOMMENDED/NOT SUPPORTED.

37 38 NEXT 2 PLS OPPORTUNITIES:

39
40 EDW04 ORB 141 – 8/21:31 (FEW300 050/06P12)

41 EDW04 ORB 157 – 9/21:54 (SCT250 060/12P19)

42 43 OMS TANK FAIL CAPABILITY:

44
45 L OMS FAIL: NO

R OMS FAIL: NO

46 47 LEAKING OMS PRPLT BURN:

48
49 L OMS LEAK: ALWAYS BURN RETROGRADE

50 R OMS LEAK: ALWAYS BURN RETROGRADE

MSG 097 (16-0143) - FD10 MISSION SUMMARY

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OMS QUANTITIES(%)

L OMS OX = 33.5 R OMS OX = 33.5
FU = 33.1 FU = 33.4

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:

OMS	334 FPS
<u>ARCS (TOTAL ABOVE QTY1)</u>	<u>44 FPS</u>
TOTAL IN THE AFT	378 FPS
ARCS (TOTAL ABOVE QTY2)	78 FPS
FRCS (ABOVE QTY 1)	16 FPS
AFT QTY 1	77 %
AFT QTY 2	39 %

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

MSG 098 (16-0144) - FD10 TRANSFER MESSAGE

Page 1 of 8

1
2 Good morning Doug, Stephanie, and Dan,
3

4 With all the changes to the transfer plan, there will be a lot of shuffling when it comes
5 time to stow the middeck. We will try to get you as many details as early as possible about
6 the return stow plan. Thanks for your patience.
7

8 The Transfer List Excel file, FD10_TransferList_STS120.xls, is located on the KFX machine
9 in **C:\OCA-up\transfer**.

10
11 For ISS, the Transfer List Excel file, FD10_TransferList_STS120.xls, is located in **K:\OCA-**
12 **up\transfer**.

13 14 Transfer Notes

- 15 • We were a little surprised to not find a second foam applicator in the ISS Leak Kit
16 during the swap. We've sharpened our pencils a little bit and have an alternate
17 location to look for the second return foam applicator. Please take a look at
18 NOD1O4_E1 inside 0.5 CTB S/N 1204, aka the "Generic/Strange Tool Bag" for the
19 additional foam applicator for return. If you find it there, it is GO to return in MF28E
20 per the original transfer plan. If it's not located, MMACS has confirmed you're still in
21 a good configuration with only one foam applicator for return. Please report your
22 findings (or not findings ☺)
- 23 • Per the LiOH Cuecard, EECOM would like you to begin using the ISS LiOH (Return
24 Item 720) beginning FD10 Night. We've reflected these items in today's
25 choreography below.
- 26 • The return plan for LiOH is being discussed on the ground. The current plan has a
27 straight swap of QTY 9 used LiOH (Item 103) to be transferred to ISS in exchange
28 for QTY 9 unused to Shuttle (Item 720). While Item 103 is currently 'GO' for transfer
29 to ISS, please keep in mind we *may* ask you to bring some of those cans back to
30 Shuttle for return, so you may want to keep them together and either stowed in the
31 'Stowage at Undock' location (which should be easily accessible), or temp stowed in
32 the Middeck until you hear further from us. Please let us know what (if anything) you
33 decide – and we'll hopefully have more words for you soon.
- 34 • Item 142 has been deleted (PGSC planned for transfer to ISS). Due to the issues
35 experienced with the PGSCs on Shuttle, this laptop will be kept as a spare on the
36 Orbiter.
37

38 Questions/Answers for the crew

- 39 • **A:** We've verified we're happy with the final stowage location you proposed for
40 resupply Item 101 Mounting Strip Assy – 4. Just let us know when you've stowed
41 this item in the 3.0 S/N 1066 at FGB_102 and we'll mark Item 101 as complete.
- 42 • **Q:** We copied the ISS crew reported the resupply CSA-CPs passed checkout,
43 meaning the returning CSA-CPs (Item 412.1) are GO for return. Can you confirm
44 these ISS crew stowed these for return in bag 412 yesterday?
- 45 • **A:** To close the loop on a previous question, we've verified the SARJ shavings are
46 GO for return in the returning CDK. The early destow requirement is met with this
47 return location. No further crew action is required.
48
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MSG 098 (16-0144) - FD10 TRANSFER MESSAGE

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Choreography (items for transfer today)

- **Item 720 (LiOH for use on Shuttle)**
- **Any additional items as time permits**

Please incorporate uplink pages as follows:

In **RESUPPLY** tab

Replace Page(s):

Resupply – 1

Resupply – 12

In **SWAP** tab

Swap - 2

In **RETURN** tab

Replace Page(s):

Return – 4

Return – 5

Return – 6

Changes to the Transfer List are detailed below:

In **RESUPPLY** tab

Item 101: Updated 'Stowage at Undock' location

Item 103: Updated Item Name column with can #'s

Item 142: Item Deleted

In **SWAP** tab

Item 103: Updated Item Name column with can #'s

Item 720: Updated **Constraints**

In **RETURN** tab

Item 404: Updated 'Temp Stow' location

Item 405: Updated **Comments

Item 412.1: Updated 'Temp Stow' location, Updated **Constraints**

Item 412.2: Updated **Constraints**

Item 720: Updated **Constraints**

Have a great day – call us if you need us!

- The 10A Transfer Team

MSG 101 (16-0151) - FD09 MMT SUMMARY

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FD 09 MMT Summary

The MMT met to review mission progress, orbiter & ISS status, EVA 3 results, and EVA 4 options. Discovery continues to perform exceedingly well. The MMT addressed several topics today regarding mission content and planning. The MMT reviewed the IMMT decision that EVA 4, and EVA 5 if required will focus on stabilization and repair of the 4B solar array. In addition, preliminary options for EVA 4 were presented. Based on the desire to improve the timeline and sleep shifting, the MMT concurred with the recommendation to plan for descending deorbit opportunities.

Sleep Shifting Plan - The MMT reviewed a proposal to switch from ascending deorbit opportunities to descending deorbit opportunities. Typically, ascending deorbit opportunities are used because they require about 15-20 fps less for deorbit. Additionally, descending opportunities during the summer months are at risk from noctilucent clouds; however, there are no concerns for November landing opportunities. Since propellant margins can easily accommodate the additional propellant costs, the change significantly improves the crews timeline and sleep shift, and provides a daylight landing for KSC/EDW, the MMT concurred with the proposal.

EVA Options - The MMT reviewed preliminary plans to stabilize and repair the 4B solar array. There are challenges with this task and the teams are working very hard to be sure that all the concerns and possibilities are addressed. A primary concern for this EVA is how to access/reach the damaged solar array blanket. The preliminary option is to use the OBSS attached to the SSRMS at Worksite 8 to reach the damaged area without requiring a retract of the 4B. Once EVA access is achieved, various IFM options are being considered to stabilize/repair the damaged area. The team is also assessing the impacts to leaving the OBSS on the SSRMS for extended periods of time. These options will continue to be worked overnight and finalized at the IMMT in the morning. As always the on-console team will keep you apprised of the details in the Execute Package.

EVA Equipment - The results of the post EVA 3 glove inspection were presented. Doug's right hand glove was declared not usable for subsequent docked EVAs due to the lost RTV. The other 3 gloves from EVA 3 are acceptable for nominal operations.

Analysis of the glove damage suggests that it may be occurring when the crewmember is performing a rotational type hand maneuver. Couple that with video review and timing of glove inspections, the EVA team suspects the active collar mechanisms could be causing the damage to the gloves. As a result, the EVA team is recommending that the over glove be worn anytime the crew member is touching the active collar mechanisms of the WIF, APFR and IAPFR.

Also, an anomaly with EMU #3004 (Scott's EMU) was presented to the team. This EMU is showing early signs of sublimator degradation. Ground testing has shown that this type of degradation typically can be recovered if the sublimator is powered off. The proposed plan is to not use this EMU for subsequent docked EVAs and return it with Discovery.