STS-135/ULF7

FD 07 Execute Package

MSG	Page(s)	Title
051	1 - 15	FD07 Flight Plan Revision
052	16 - 17	FD07 Mission Summary
053	18 - 19	FD07 Transfer Message
054	20 - 24	Resupply Stowage Platform (RSP) Strut R&R

Approved by FAO:
J. Mintz

Approved by OpsPlan:
K. Howel

Last Updated: Jul 14 2011 4:08 AM GMT
***JEDI** (**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

Top 10 reasons O3 FDO was late today:

10. Coasting, what's the hurry.
9. Too many DAMs on the way to work today
8. He's traumatized by flight asking what the NOTAMs mean
7. Orbit 3 hours are rough, he wishes he was on Orbit 1
6. His home OIGN- clock was set incorrectly
5. He was pulled over on the way in and the officer asked "Do you know how fast you were going?" FDO responded "In which reference frame?"
4. Pink shirt was still in the dryer
3. Handover is non-critical and can be slipped in one rev increments
2. The next burn isn't until FD12, what is he even here for?
1. Over-burned leaving a stoplight and ran out of gas

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MSG 051 (28-0550) - FD07 FLIGHT PLAN REVISION

MSG INDEX

1. Due to continually running ~700 watts under the predicted power level, margin is now 8 hours.

   For today's cryo config, O2 tanks 2 & 4 and H2 tanks 2 & 5 will be active. H2 tank 5 may deplete today, so there may be a post-depletion cryo reconfig before the pre-sleep config tonight.

   R1 O2,H2 MANF VLV TK2 (two) - OP (tb-OP)
   A11 CRYO TK4 HTR O2 B – OFF

2. **WHC/WCS OPS:** WHC is operational and you can resume usage at your convenience. Use of the WHC versus the WCS will build further margin in the waste tank and assist ISS. Since Waste H2O rates are below predicts, the post-undocking Condensate CWC dump will be deleted.

3. **Fergy:** We copied Sandy's comment during the transfer brief yesterday about the broken #10 Torque Tip but we need some clarification - Was this the Torque Tip Driver, 3/8-in Drive or the Torque Tip Screwdriver?

4. The TriDAR team would like to thank you for your excellent troubleshooting on FD03 and is happy to report that they have received great data. More than 70,000 data and telemetry files have been downlinked from the PGSC and the support team is busy pouring over the data. Early analysis indicates that the system has outperformed the docking results received from STS-128 and STS-131.

5. Below is information about the Santiago ground station for the ground pass at MET 5/18:25:54

   The Santiago station provided on-orbit communication support for early shuttle flights, then left the Space Shuttle family as the TDRS satellite network developed and matured. In recent years the Santiago site was asked to support shuttle flights once again, allowing the flight control team to maximize use of the K-Band communication link via the TDRS satellites. Santiago has provided excellent support and their efforts are appreciated.

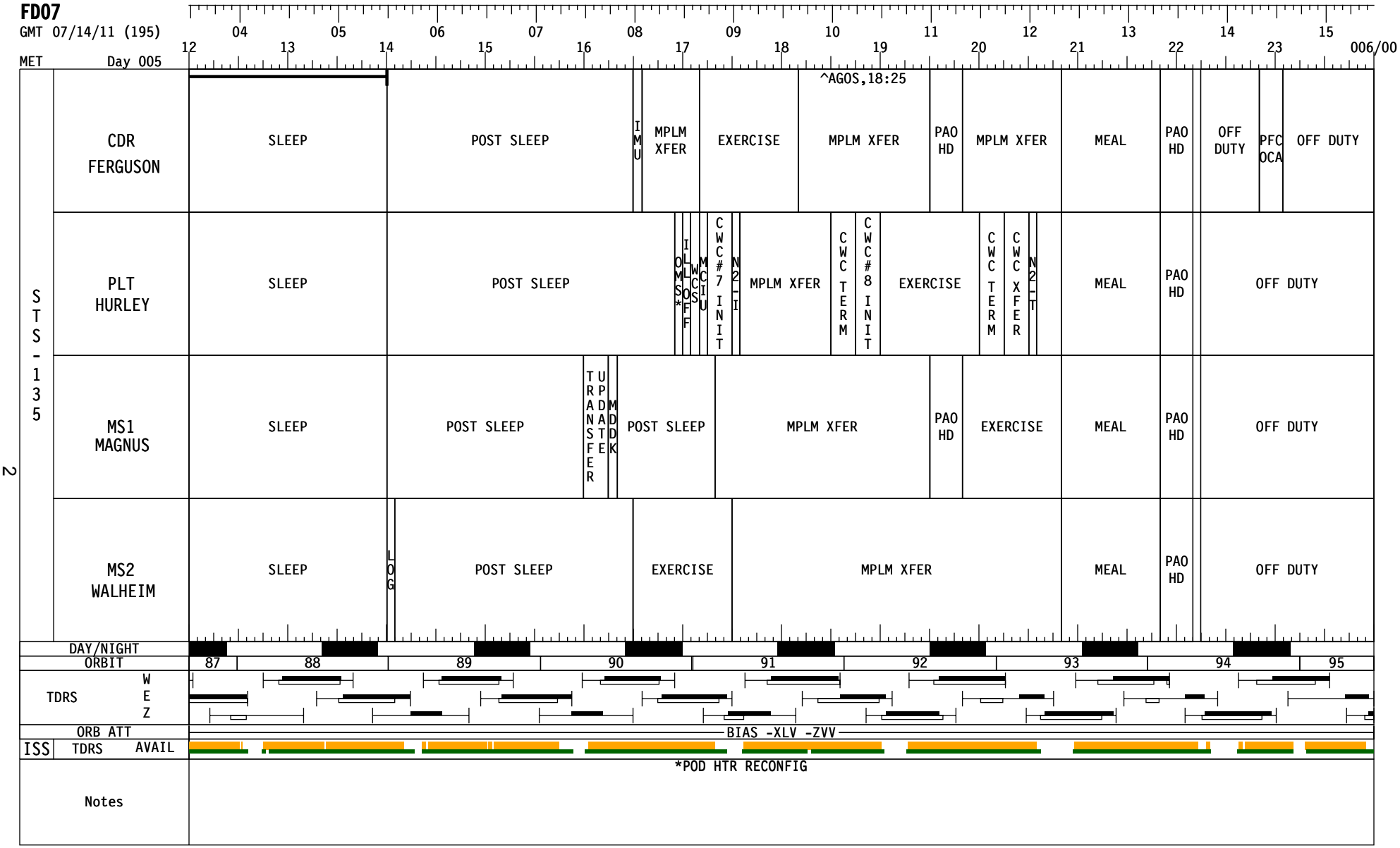
6. Crew Choice Downlink KU Opportunities:

   Please allow 1-2 minutes to lock up on Ku-band. Check with MCC before starting playback.

   Pre-Sleep Evening of FD07

TDRS	AOS	LOS	Delta (min)	Notes
W-171	6/02:05	6/02:39	34	
E-TDS	6/04:27	6/04:53	26	

7. Replace Pages 2-22 through 2-25 and 3-68 Through 3-77.


FD07
GMT 07/14/11 (195)
MET Day 005
12 13 14 15 16 17 18 19 20 21 22 23 006/00
04 05 06 07 08 09 10 11 12 13 14 15
STS-135
CDR FERGUSON
SLEEP
POST SLEEP
IMU
MPLM XFER
EXERCISE
^AGOS,18:25
MPLM XFER
PAO HD
MPLM XFER
MEAL
PAO HD
OFF DUTY
PFC OCA
OFF DUTY
PLT HURLEY
SLEEP
POST SLEEP
OMS*
ILOS
MCIU
CWC#7 INIT
N2-I
MPLM XFER
CWC TERM
CWC#8 INIT
EXERCISE
CWC TERM
CWC XFER
N2-T
MEAL
PAO HD
OFF DUTY
MS1 MAGNUS
SLEEP
POST SLEEP
TRANSFER
UPADTE
MDDK
POST SLEEP
MPLM XFER
PAO HD
EXERCISE
MEAL
PAO HD
OFF DUTY
MS2 WALHEIM
SLEEP
LOG
POST SLEEP
EXERCISE
MPLM XFER
MEAL
PAO HD
OFF DUTY
DAY/NIGHT
ORBIT
87 88 89 90 91 92 93 94 95
TDRS W E Z
ORB ATT
BIAS -XLV -ZVV
ISS TDRS AVAIL
*POD HTR RECONFIG
Notes

FD07

GMT 07/14/11 (195): 04 05 06 07 08 09 10 11 12 13 14 15

MET Day 005: 12 13 14 15 16 17 18 19 20 21 22 23 006/00

3

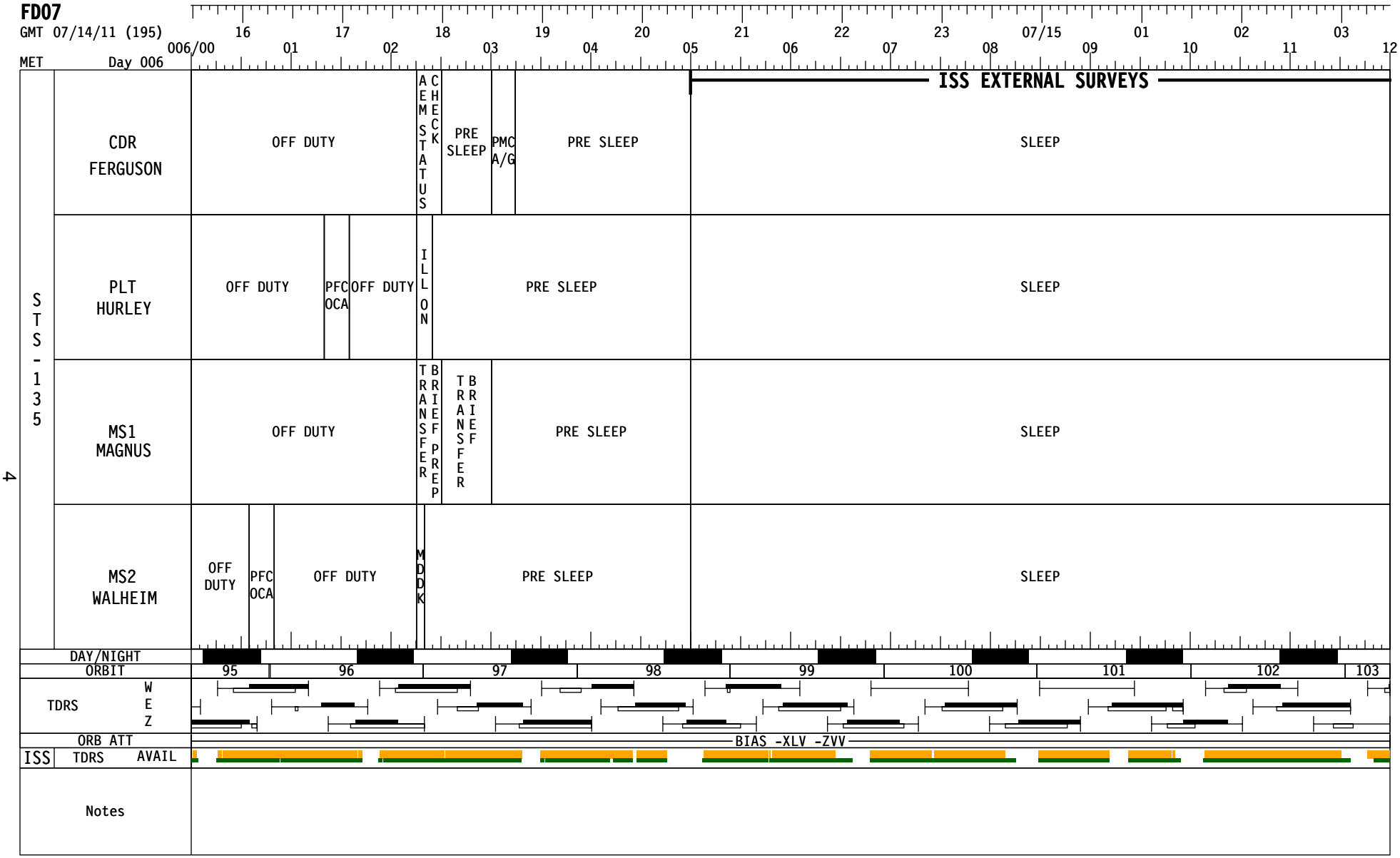
ISS

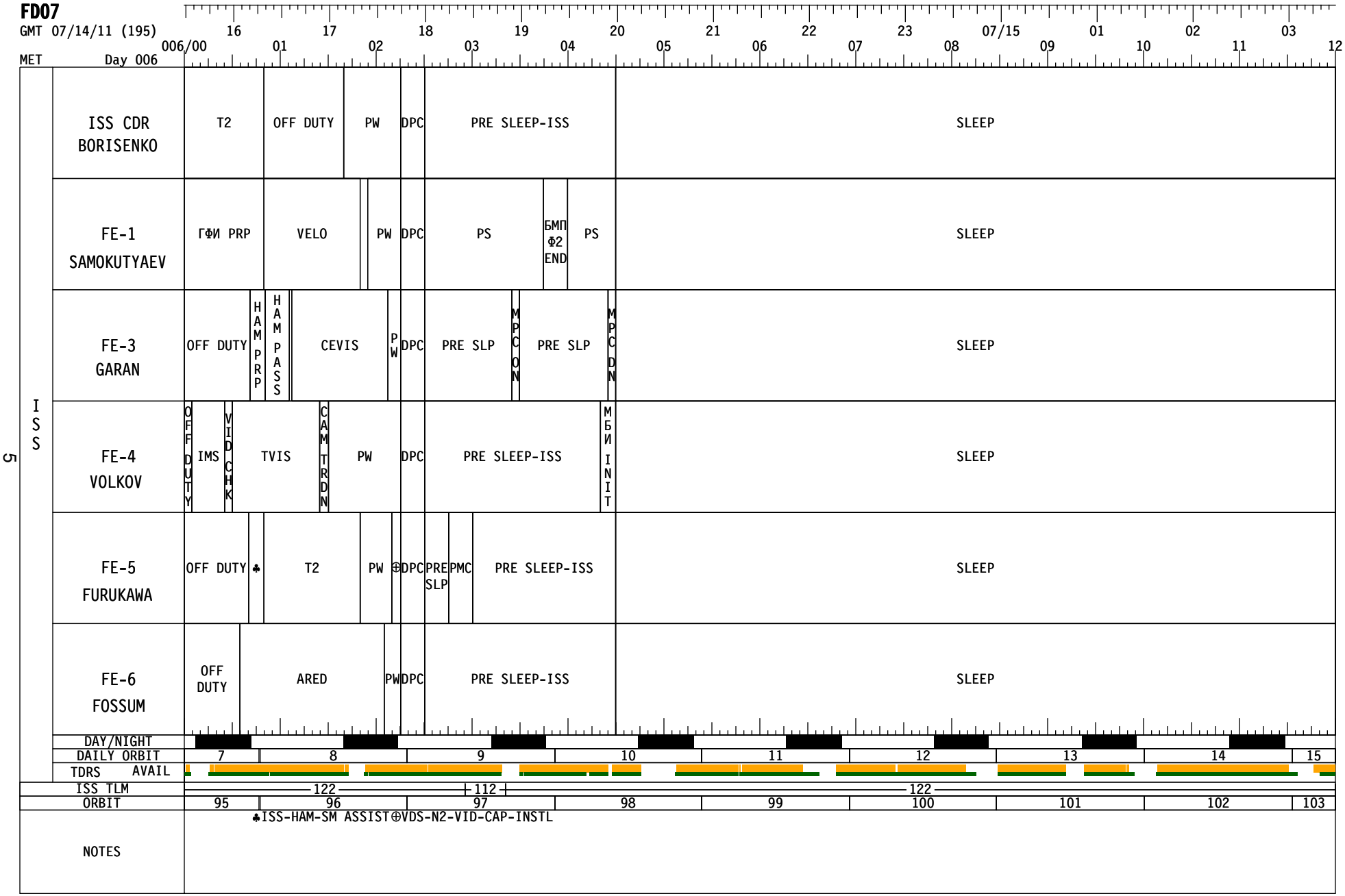
Crew	Activities (in time order)
ISS CDR BORISENKO	SLEEP; POST SLEEP; DPC; PW; CMS-TVIS GYRO-PT1; CMS--TVIS; SPD-TRQ; CMS-TVIS; GYRO-R&R; PT3; DAK-VFY; ♣; DAKON DNLD; ARED; MEAL; T2
FE-1 SAMOKUTYAEV	SLEEP; POST SLEEP; ГФИ 17 PREP; DPC; БМП Ф2; INIT; PW; AK-1M SAMPL БИ1; ИПД SMP; RHAM; PASS; СОЖ; T2; MEAL; СОГС; ИП-1 MON; ГФИ 17 D/L END; ГФИ PRP
FE-3 GARAN	SLEEP; SALIVA; POST SLEEP; DPC; PW; ARED; CWC AUD; N2S-CQ-CLEAN; WW OFFLD; WW OFFLD; PT2; MEAL; OFF DUTY
FE-4 VOLKOV	SLEEP; POST SLEEP; DPC; PW; CMS-TVIS GYRO-PT1; CMS-TVIS; GYRO-R&R; PT3; RHAM; PASS; CMS TVIS SPEED CHAR; ⊕; VELO; MEAL; OFF DUTY
FE-5 FURUKAWA	SLEEP; SALIVA; POST SLEEP; DPC; PW; MPLM XFER; ARED; PAO S/U; MPLM XFER; ♦; ®; ♥; Δ; MEAL; PAO-D; OFF DUTY
FE-6 FOSSUM	SLEEP; SALIVA; POST SLEEP; DPC; PW; VCAN2; ♠; T2; ϕ; CONDS SMPL; •; LP TRM; PAO S/U; RTN SVCA; MEAL; OFF DUTY

DAY/NIGHT	
DAILY ORBIT	14, 15, 1, 2, 3, 4, 5, 6, 7
TDRS AVAIL	
ISS TLM	122, 112, 122
ORBIT	87, 88, 89, 90, 91, 92, 93, 94, 95

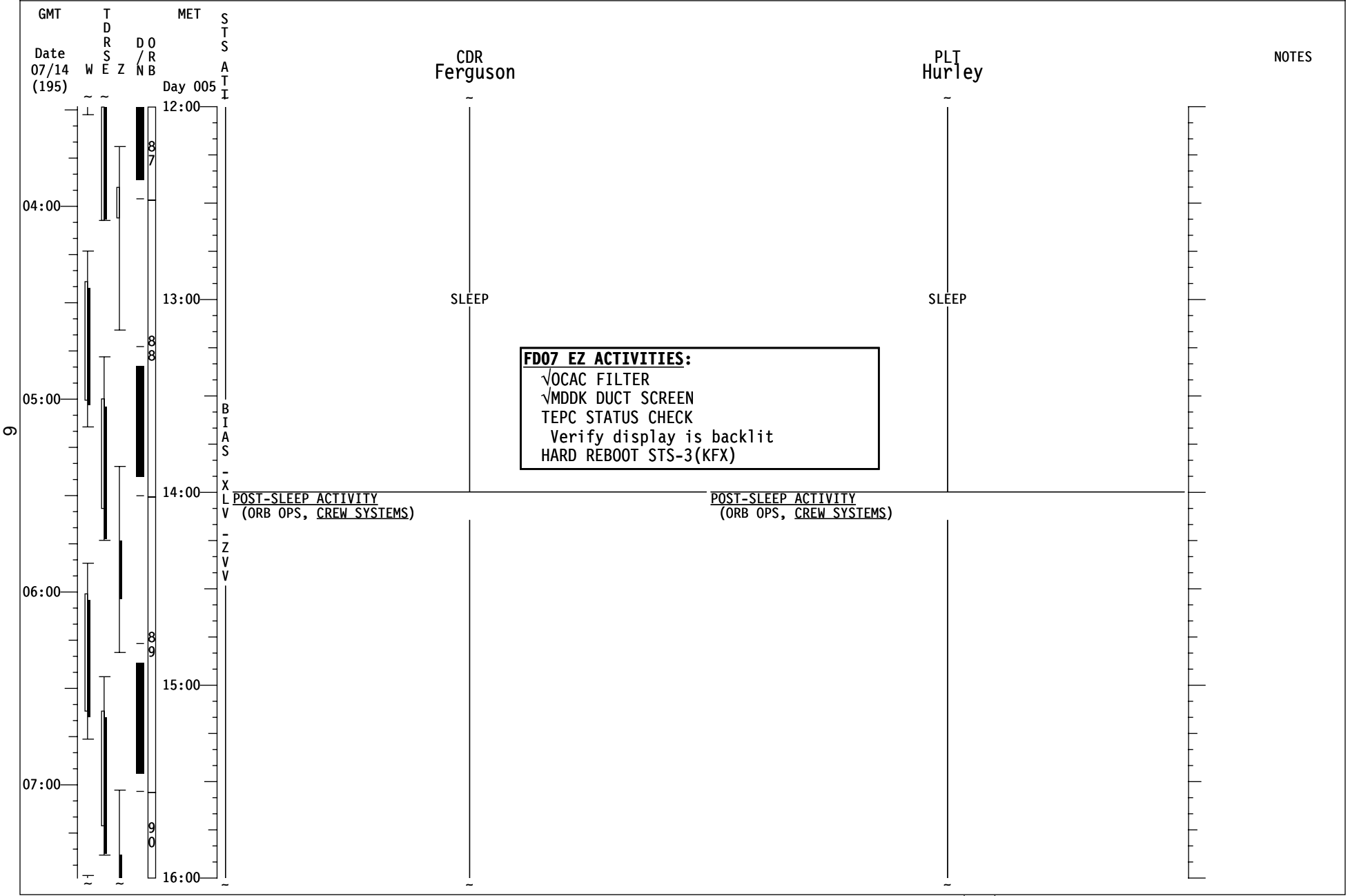
NOTES

♠EMU-LOOP SCRUB-INIT
ϕEMU-LOOP SCRUB-RCNFG
♣CTTC-УКВ2Д-С/О
⊕TVIS DNLK
•HTCH STOW RPLC
♦CSPN-ITEM-GTHR3
®CSPN-2 SMPL-PREP
♥CSPN-2MEU-ATTACH 1G
ΔCSPN-MELFI-AAE RTRV

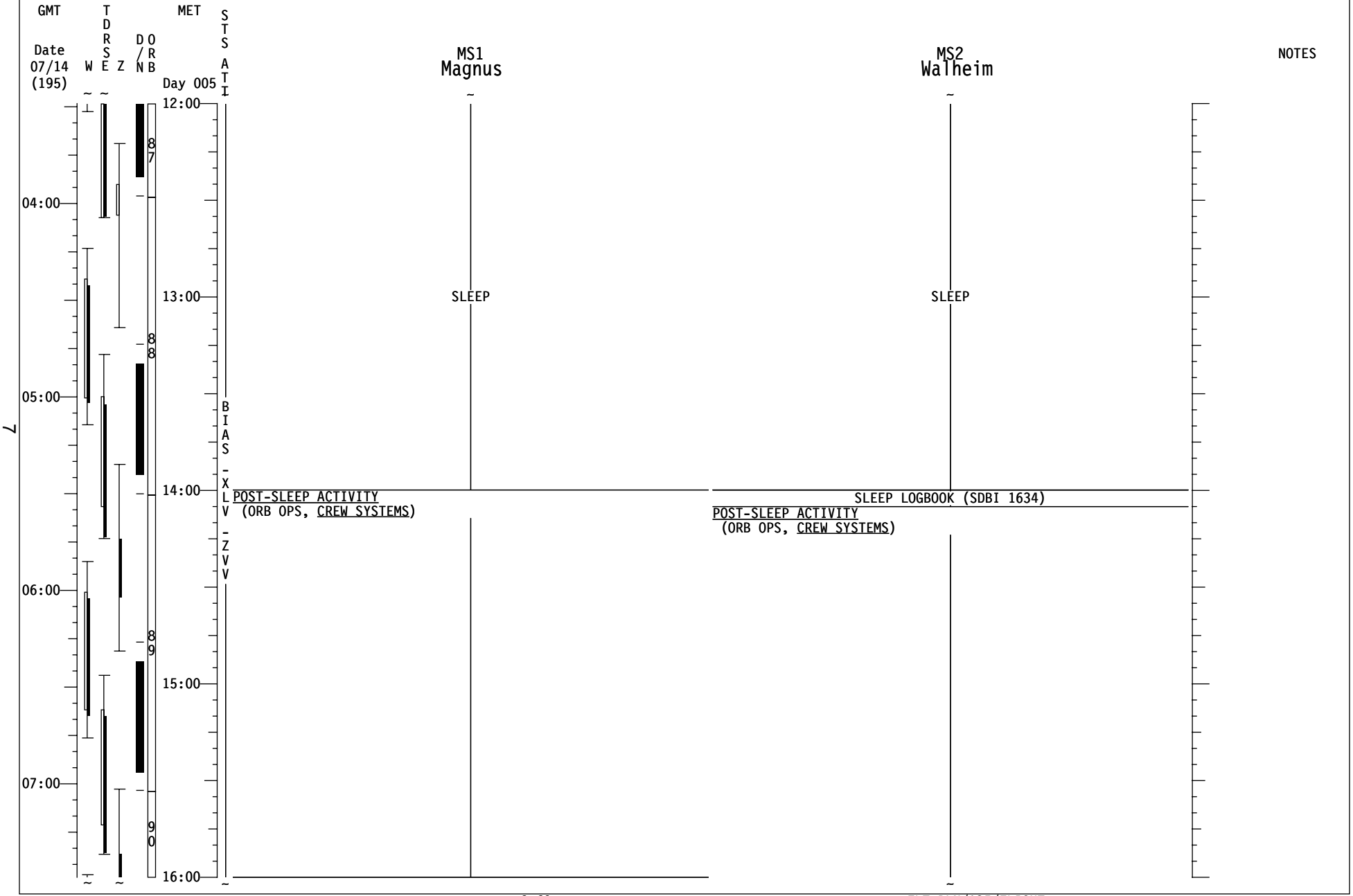

FD07
GMT 07/14/11 (195)
MET Day 006
006/00 16 17 18 19 20 21 22 23 07/15 01 02 03
01 02 03 04 05 06 07 08 09 10 11 12
ISS EXTERNAL SURVEYS
STS-135
CDR FERGUSON
OFF DUTY
AE MSTATUS
CHECK
PRE SLEEP
PMC A/G
PRE SLEEP
SLEEP
PLT HURLEY
OFF DUTY
PFC OCA
OFF DUTY
ILL ON
PRE SLEEP
SLEEP
MS1 MAGNUS
OFF DUTY
TRANSFER
BRIEF PREP
TRANSFER
BRIEF
PRE SLEEP
SLEEP
MS2 WALHEIM
OFF DUTY
PFC OCA
OFF DUTY
MDDK
PRE SLEEP
SLEEP
DAY/NIGHT
ORBIT
95 96 97 98 99 100 101 102 103
TDRS W E Z
ORB ATT
BIAS -XLV -ZVV
ISS TDRS AVAIL
Notes


FD07
GMT 07/14/11 (195)
MET Day 006
006/00 16 17 18 19 20 21 22 23 07/15 01 02 03
01 02 03 04 05 06 07 08 09 10 11 12
ISS
5
ISS CDR BORISENKO
T2
OFF DUTY
PW
DPC
PRE SLEEP-ISS
SLEEP
FE-1 SAMOKUTYAEV
ГФИ PRP
VELO
PW
DPC
PS
БМП Ф2 END
PS
SLEEP
FE-3 GARAN
OFF DUTY
HAM PRP
HAM PASS
CEVIS
PW
DPC
PRE SLP
MPC ON
PRE SLP
MPC DN
SLEEP
FE-4 VOLKOV
OFF DUTY
IMS
VIDCHK
TVIS
CAMTRDN
PW
DPC
PRE SLEEP-ISS
МБИ INIT
SLEEP
FE-5 FURUKAWA
OFF DUTY
♣
T2
PW
⊕
DPC
PRE SLP
PMC
PRE SLEEP-ISS
SLEEP
FE-6 FOSSUM
OFF DUTY
ARED
PW
DPC
PRE SLEEP-ISS
SLEEP
DAY/NIGHT
DAILY ORBIT 7 8 9 10 11 12 13 14 15
TDRS AVAIL
ISS TLM 122 112 122
ORBIT 95 96 97 98 99 100 101 102 103
♣ISS-HAM-SM ASSIST⊕VDS-N2-VID-CAP-INSTL
NOTES

STS-135/ULF7 FD07



STS-135/ULF7 FD07



STS-135/ULF7 FD07

GMT Date 07/14 (195) | TDRS W E Z | D/N | ORB | MET Day 005 | STS ATT

Orbits: 90, 91, 92

MET times: 16:00, 17:00, 18:00, 19:00, 20:00

GMT times: 08:00, 09:00, 10:00, 11:00

STS ATT: BIAS -XLV -ZVV

<AGOS, 18:25

CDR Ferguson

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

TRANSFER OPS
Ref. MPLM Transfer Lists and MSG 053

EXERCISE
ARED if Available

B N2 REPRESS USING PAYLOAD N2 VALVES
(ORB OPS, ECLS)Steps 3-7, working parenthetical () steps. In Step 1, H/W FDA already INH. MCC will TMBU S/W FDA.

TRANSFER OPS
Ref. MPLM Transfer Lists and MSG 053

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: (10:46 - 11:29)
Ref. MSG 049

TRANSFER OPS
Ref. MPLM Transfer Lists and MSG 053

PLT Hurley

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

A WCS CRADLE - AUTO INIBIT
Inspect hose block filter, change if req'd
WCS CRADLE - AUTO

A14 RCS/OMS HTR L POD - A OFF
- B AUTO

ILLUMINATOR OPS (Cue Card, TV) ILLUMINATOR OFF - ALL

WCS FILTER CHECK A

L17 Check MCIU filter screen

SHUTTLE/ISS H2O CONTAINER FILL (HC)(ORB OPS, ECLS)
Perform CWC FILL #7, Ref. MSG 031

N2 REPRESS INIT B

TRANSFER OPS
Ref. MPLM Transfer Lists and MSG 053

SHUTTLE/ISS H2O CONTAINER FILL (HC)
(ORB OPS, ECLS)
Perform FILL TERMINATION, Ref. MSG 031

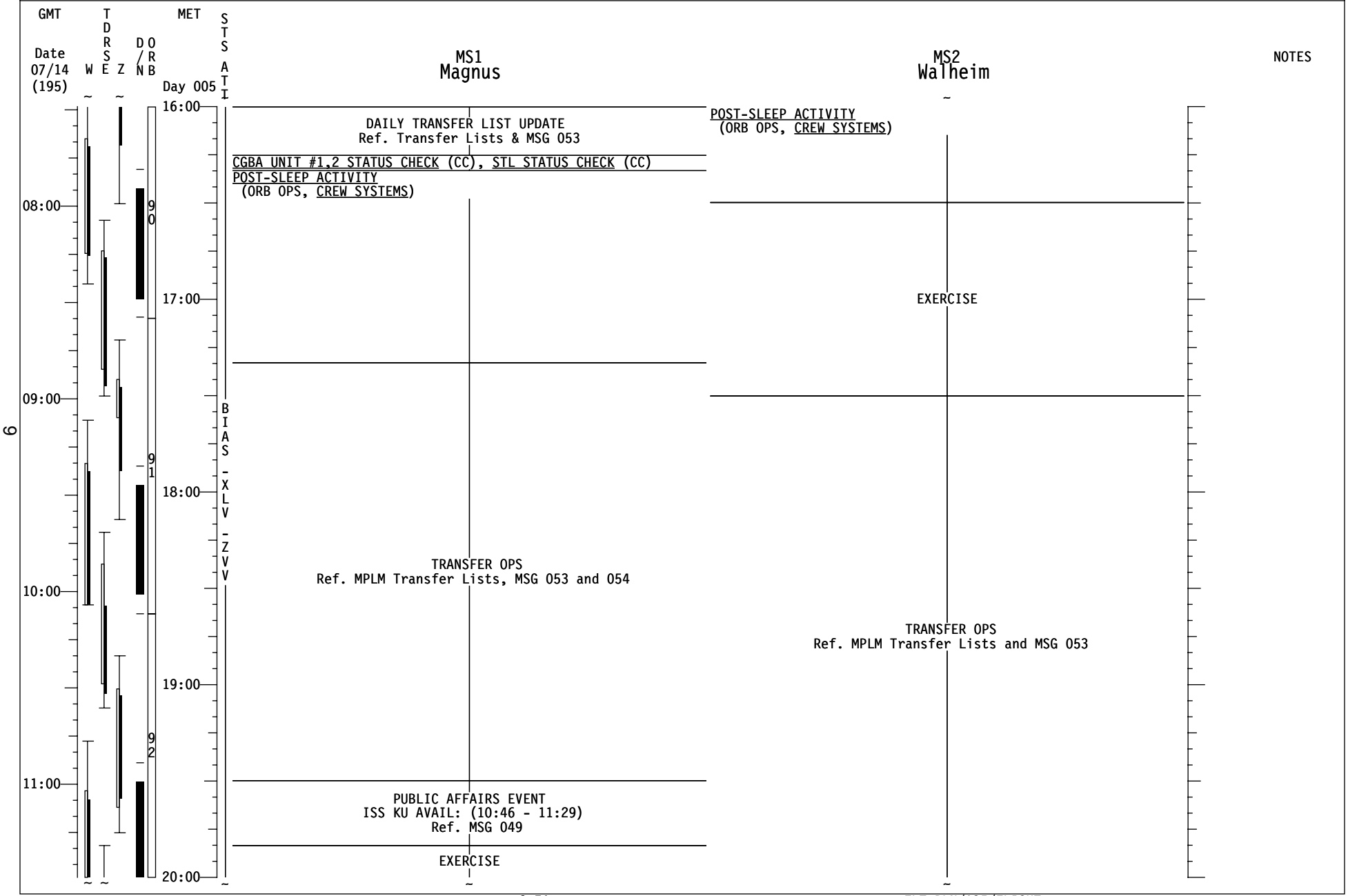
SHUTTLE/ISS H2O CONTAINER FILL (HC)
(ORB OPS, ECLS)
Perform CWC FILL #8, Ref. MSG 031

EXERCISE
ARED if Available

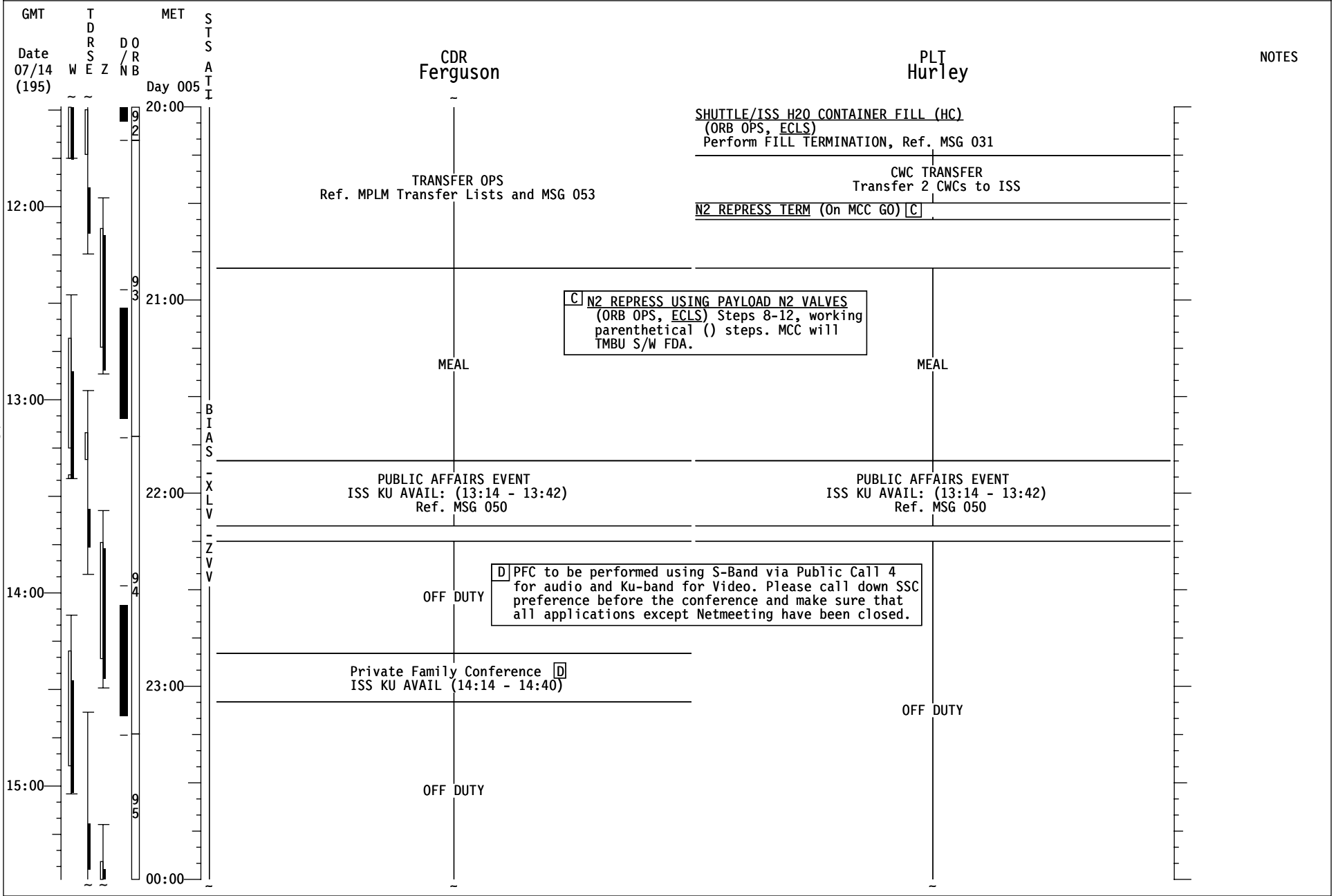
NOTES

8

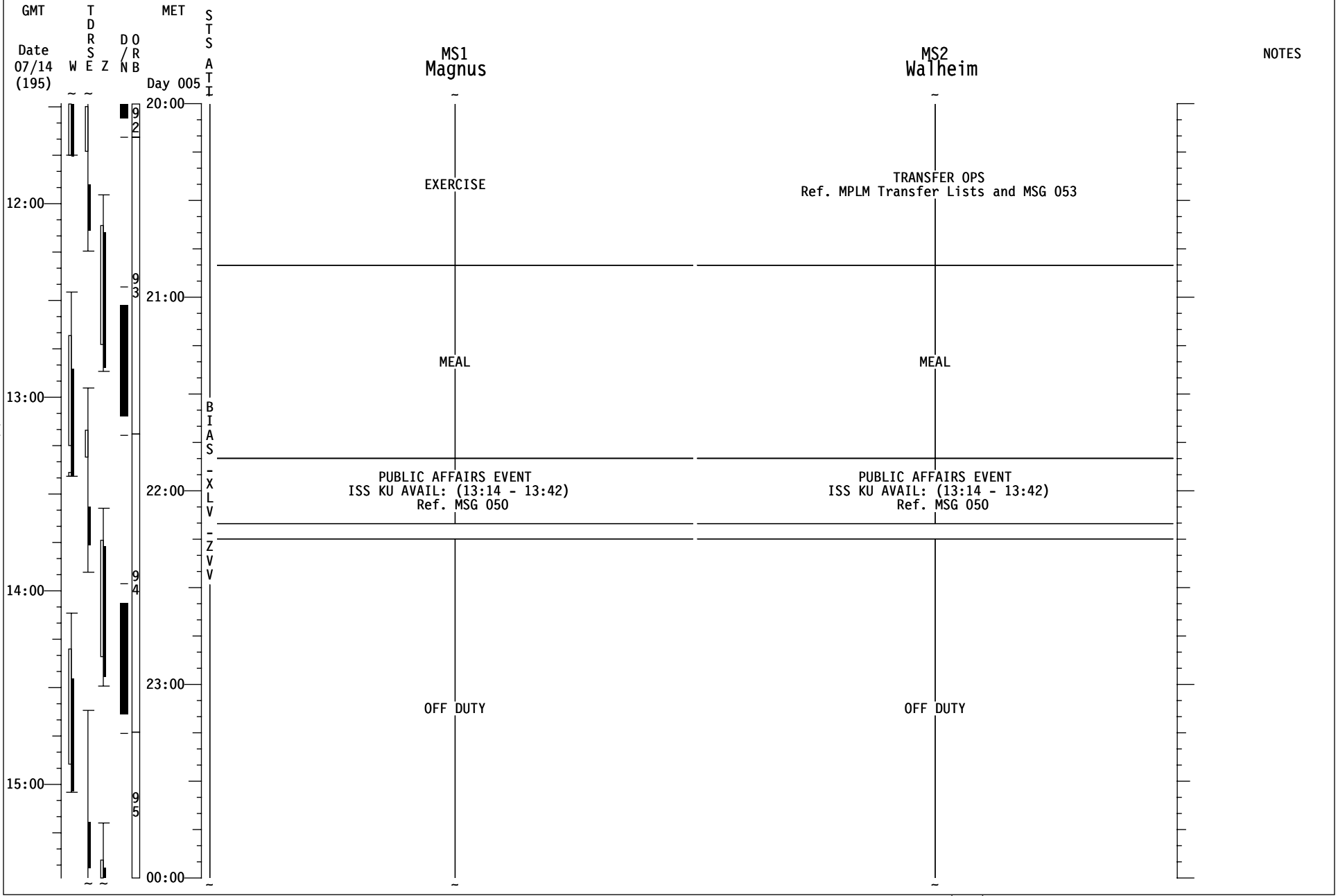
STS-135/ULF7 FD07



STS-135/ULF7 FD07



STS-135/ULF7 FD07



STS-135/ULF7 FD07

GMT
Date
07/14
(195)

MET
Day 006

TDRS W E Z
D/N
ORB 95 96 97
STS ATI
BIAS-XLV-ZVV

00:00
16:00
17:00
18:00
19:00
01:00
02:00
03:00
04:00

CDR
Ferguson

PLT
Hurley

NOTES

OFF DUTY

D PFC to be performed using S-Band via Public Call 4 for audio and Ku-band for Video. Please call down SSC preference before the conference and make sure that all applications except Netmeeting have been closed.

OFF DUTY

Private Family Conference D
ISS KU AVAIL (16:23 - 17:08)

OFF DUTY

AEM UNIT #1,2,3 CHECK (Cue Card)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

ILLUMINATOR OPS (Cue Card, TV)
ILLUMINATOR ON - A,D

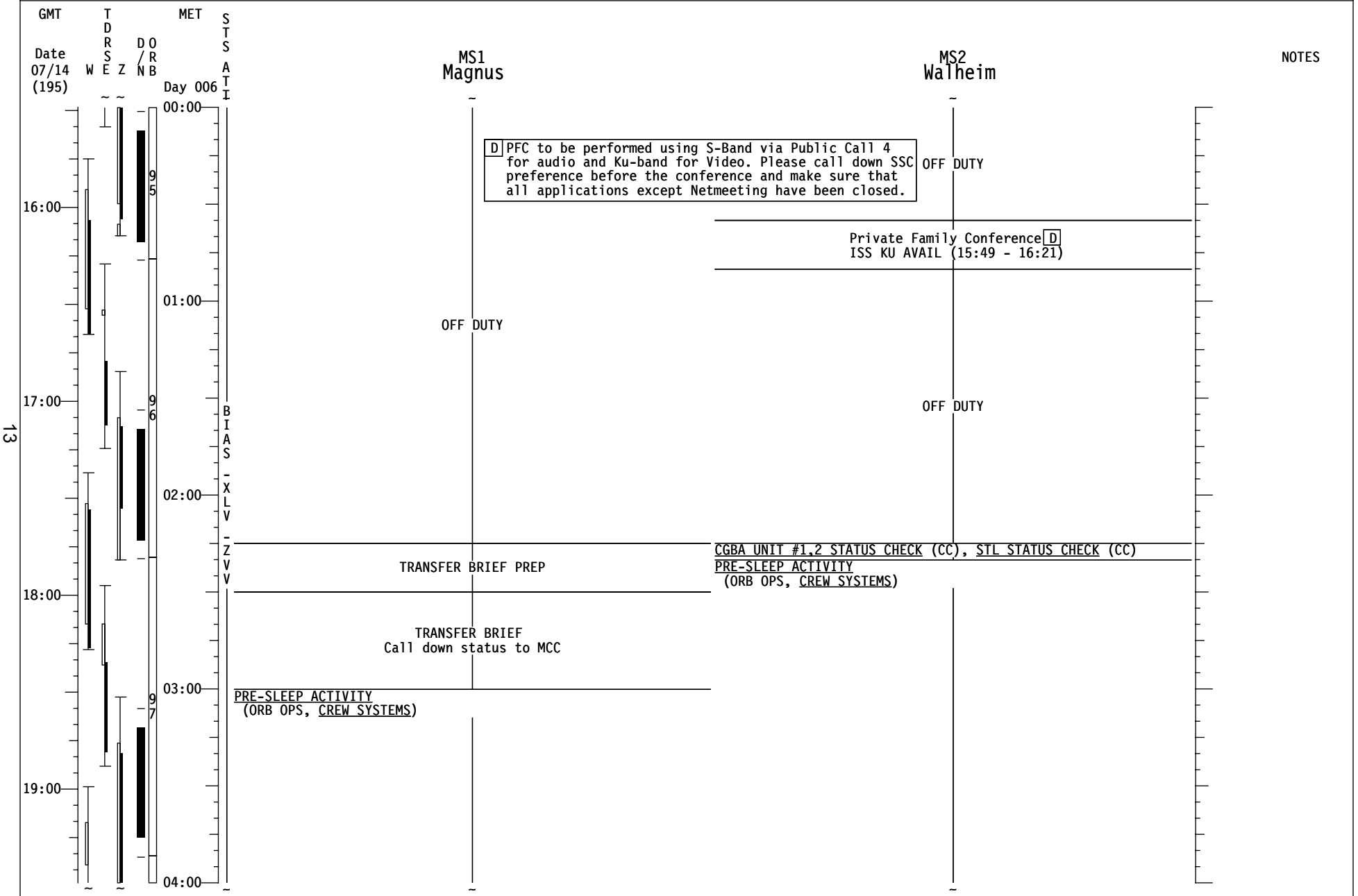
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

CHECK ISS AIRLOCK ATU CONFIG
L9 PAYLOAD STATION A/G (two) - OFF
PRIVATE MEDICAL CONFERENCE VIA A/G 2

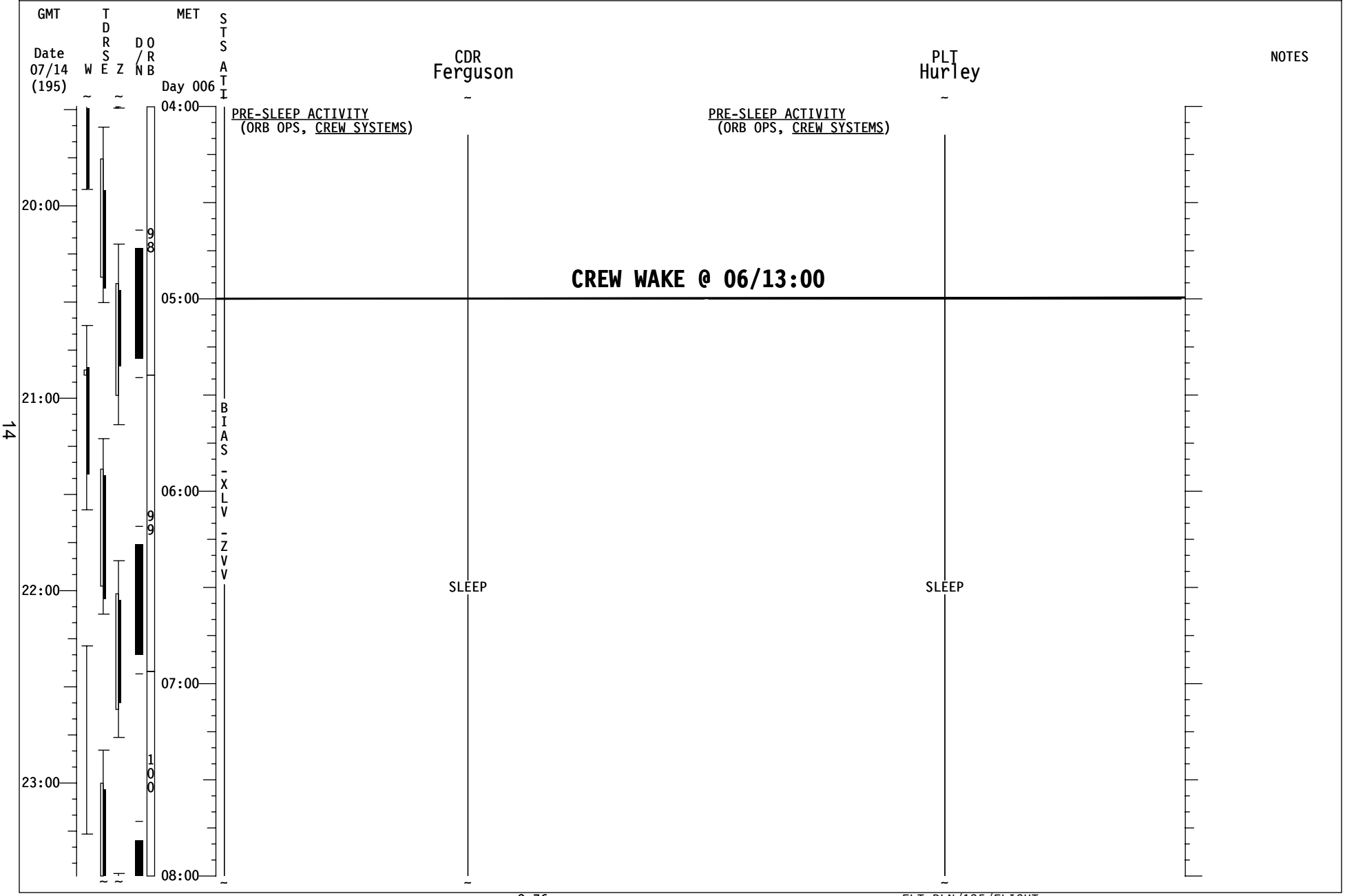
PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYSTEMS)

12

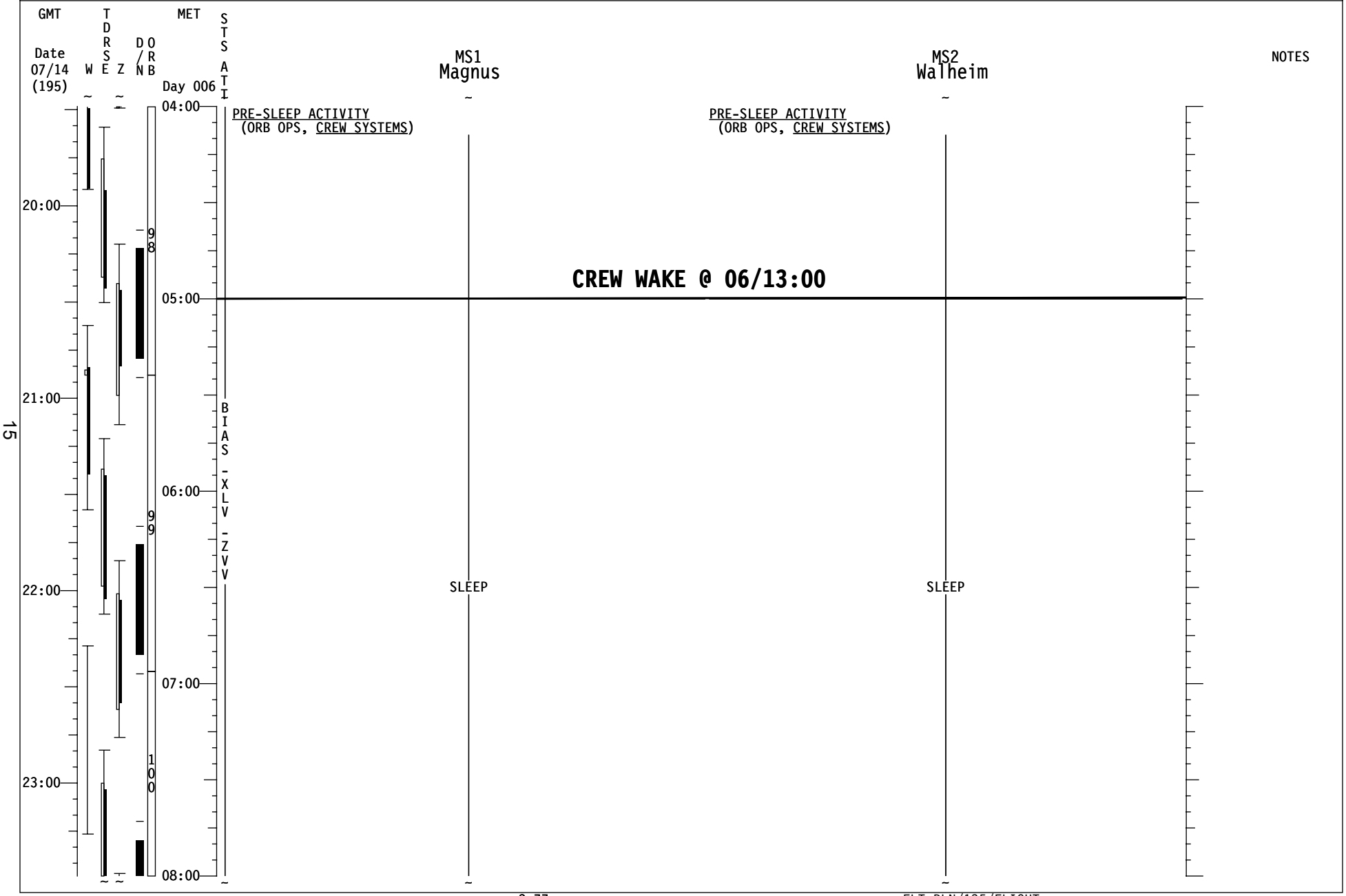
STS-135/ULF7 FD07



STS-135/ULF7 FD07



STS-135/ULF7 FD07



"Good Morning, Atlantis and thank you for calling the Mission Control Automated Call Center. We are experiencing an unusually high call volume on the TDRS to White Sands link, due to multiple vehicles utilizing the satellite. Your patience is appreciated."

"Please choose from one of the 135 options below..."

“Press or say “1” for Space or Ground Network Techno-Babble.”
“Press or say “2” for an NDC password reset.”
“Press or say “3” for MPC/Crew Choice playback.”
“Press or say “4” if you are experiencing unexpected RFI.”
“Press or say “5” if you would like to perform a TDRS handover.”
“Press or say “6” For Windows 7 migration issues.”

<**ONE ORBIT SHIFT LATER**>

“Press or say "135" to request a launch hold.”

<**BEEP - SELECTION MADE**>

"*Stand by while we connect your call*…"

<HOLD MUSIC> “Ground Control to Major Tom, Ground Control to Major Tom, take your protein pills and put your helmet on…”

"We apologize for the delay, please remain on the Air-to-Ground lines, your call is very important to us."

<HOLD MUSIC> “This is Major Tom to Ground Control, I'm stepping through the door and I'm floating in a most peculiar way…”

"*Thank you for holding, we are only able to process low data rate at this time, would you like to remain on the line*?"

<**UNINTELLIGIBLE COMMENT**> *"#*&$*@!!!"*

“*I’m sorry, I didn’t catch that… we’ll have GC work on the echoes*."

"*Please try your call again later…and KUDOS to you all from the Ground Control and Operations Support Team*! *Goodbye.*"

"*Atlantis/ISS, we are now resuming operational audio communications*."

-GC and the OST

MSG 052 - FD07 MISSION SUMMARY

YOUR CURRENT ORBIT IS: 213 X 206 NM

NOTAMS -

EDW - EDW 22L/04R IN USE. EDT 22R/04L EMERGENCY DAY USE ONLY
EDW - LAKEBED RWYS **GREEN**
EDW RWY 22L MLS AZIMUTH SINGLE STRING
NOR - LAKEBED RWYS GREEN
NTU - RWY 05L/23R AND 14R/32L CLSD
MRN - RWY 20 ALS OUT OF SERVICE
FMI - TACAN NIM53 DECOMMISSIONED
BEJ - CLOSED UNTIL 15 JULY
ESN - RWY 03R/21L CLSD
ESN - TACAN BAG78 OUT OF SERVICE
GUA - TACAN UNZ105 OUT OF SERVICE
FFA - NOT USABLE. IN CARETAKER STATUS
YQX - TACAN YQX74 DME ONLY
YYR - TACAN UYR40 DME ONLY
YYT - TACAN UYT23 DME ONLY
YJT - TACAN YJT78 DME ONLY
BEN - NOT USABLE. NOT SUPPORTED
IKF - NOT USABLE. NO AGREEMENT

NEXT 2 PLS OPPORTUNITIES:

EDW22 ORB 94 – 5/22:32 SKC 7 220/14P22
EDW22 ORB 110 – 6/23:10 SKC 7 220/10P16

OMS TANK FAIL CAPABILITY:

NO

LEAKING OMS PRPLT BURN:

ALWAYS BURN RETROGRADE

OMS QUANTITIES(%):

L OMS OX = 37.90 R OMS OX = 37.74
FU = 37.97 FU = 37.32

DELTA V AVAILABLE:

OMS	362 FPS
ARCS (TOTAL ABOVE QTY1)	34 FPS
TOTAL IN THE AFT	396 FPS
ARCS (TOTAL ABOVE QTY2)	63 FPS
FRCS (ABOVE QTY 1)	34 FPS
AFT QTY 1	84 %
AFT QTY 2	46 %

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

END OF PAGE 2 OF 2, MSG 052

Good morning, Sandy!

Thank you, and the rest of the crew, for all the hard work yesterday, which continues to keep you ahead of schedule on transfer. Today you should focus on finishing up packing the backside locations of the RSPs and then enjoy your off-duty time this afternoon.

Transfer Status:

- Middeck: 59% complete
- MPLM: 48% complete
- TOTAL: 49% complete

The Transfer List Excel file, FD07_Transfer_List_STS135.xls, locations are:

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

Transfer Notes

- **TVIS Gyro stowage:** In order to help you stow the TVIS Gyro in the F1_K1 location, OSO has uplinked **MSG 54 (28-0558) Resupply Stowage Platform (RSP) R&R** detailing the RSP strut removal plan we talked about last night. In summary, you'll be removing two struts from the left rear of the F1 RSP, folding out the vertical fence, stowing the gyro in the K1 location, and replacing the fence and struts. We've looked at alternate stowage locations for the gyro; however, all other options drive additional hardware location changes. Additionally, please wait to complete this activity until we receive confirmation that the new gyro has successfully spun up later today.

FD07 Choreography

- **Middeck Return Item 727:** Pack condensate sample
- Complete any RSP backside items not completed on FD06
- Stow return items in RSR blocked locations while RSP fences are folded

Please incorporate uplink pages as follows (we've listed the updates in the order they printed out for you):

MIDDECK TRANSFER LIST BOOK

In the Middeck Transfer List **RETURN** tab

Replace the following pages:

Return 1
Return 2
Return 6
Return 10

Add the following page:

Return 11

MPLM RETURN TRANSFER LIST BOOK

In the MPLM Return Transfer List **RETURN** tab
Replace the following page:
Return 38

FD08 Choreography

- Pack old PGT for return in MPLM after PGT C/O
- Transfer CubeLab Module-7 LMA Pack 2 (s/n 1001) to middeck.
- LiOH Swap:
  - 20 unused STS-135 cans from middeck to ISS
  - 7 unused STS-132 and STS-133 cans from ISS to middeck
  - 6 used STS-134 cans from ISS to middeck (if found)
- Uninstall pivot pin brackets at A2, A4, F2, & F4 RSPs and stow in MPLM for return (if backsides are complete).
- Transfer Micro-4 samples from ISS (CGBA-5) to middeck (CGBA-2).
- Continue packing MPLM for return.

Have a great day!

- STS-135 Transfer Team

28-0558 (MSG 054) RESUPPLY STOWAGE PLATFORM (RSP) STRUT R&R

OBJECTIVE:
Remove and replace RSP struts for access to rear fence stowage volume.

LOCATION:
MPLM

DURATION:
20 minutes

CREW:
One

MATERIALS:
None

PARTS:
None

TOOLS:
Digital Camera
ISS IVA Toolbox:
Drawer 1:
3/4” Combination Wrench (if required)

REFERENCED PROCEDURE:
None

1. ACCESSING

√Stowage removed from MPL1F2 Rack Bay for access to side of MPL1F1 Rack.

2. REMOVE RSP REAR STRUTS

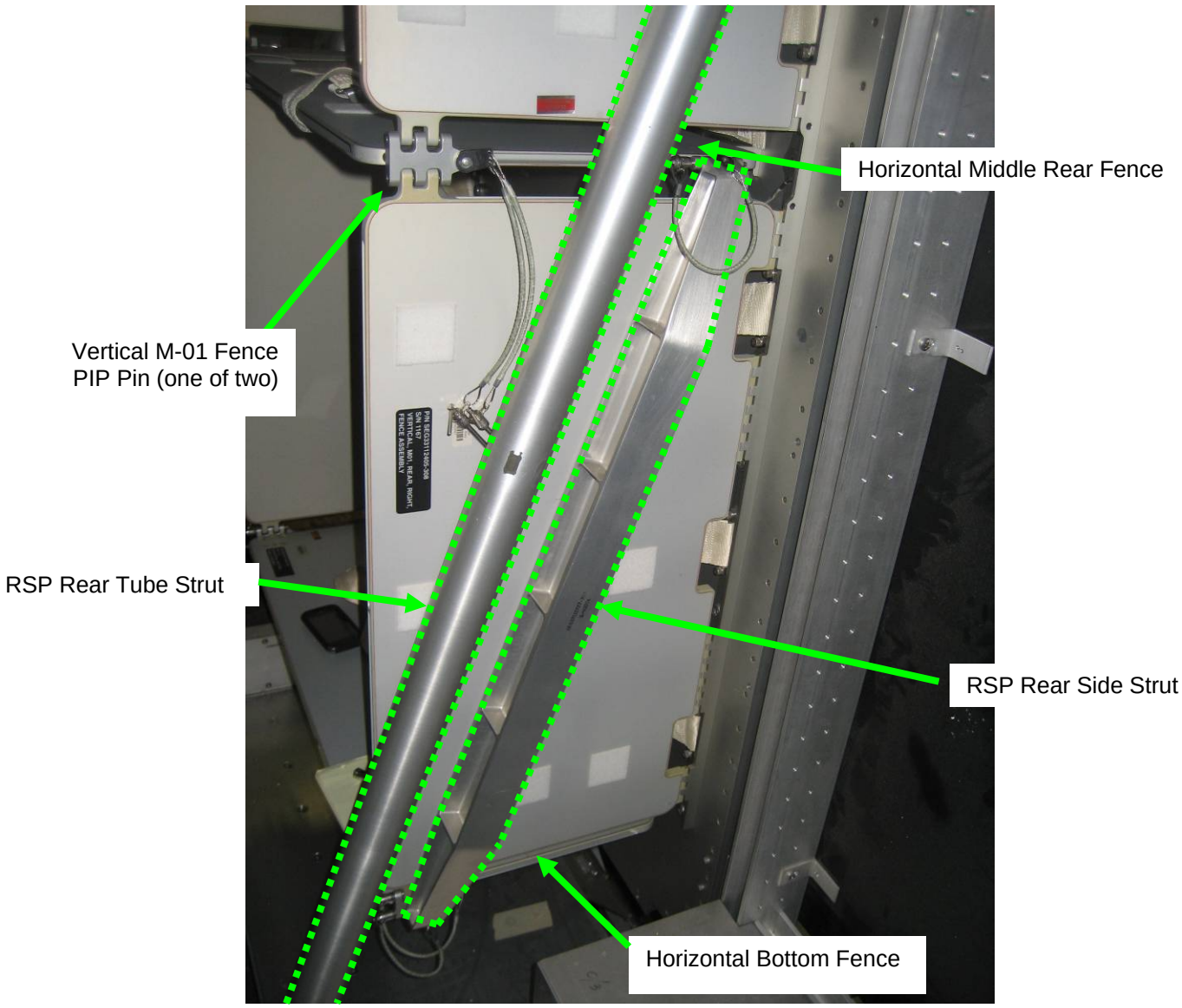


Figure 1.- Overview of RSP rear parts with rack still rotated up.

2.1 Remove RSP Rear Side Strut from Horizontal Middle Rear Fence and Horizontal Bottom Rear Fence, tethered PIP pins (two). Temporarily stow.
Refer to Figure 1.

NOTE
PIP pins secure adjacent fences to one another and are at the corners of adjacent M-01 and M-02 fences.

2.3 Remove tethered PIP pins (two) securing Vertical M-01 Fence to Horizontal Middle Rear Fence and Horizontal Bottom Fence.
Refer to Figure 1.

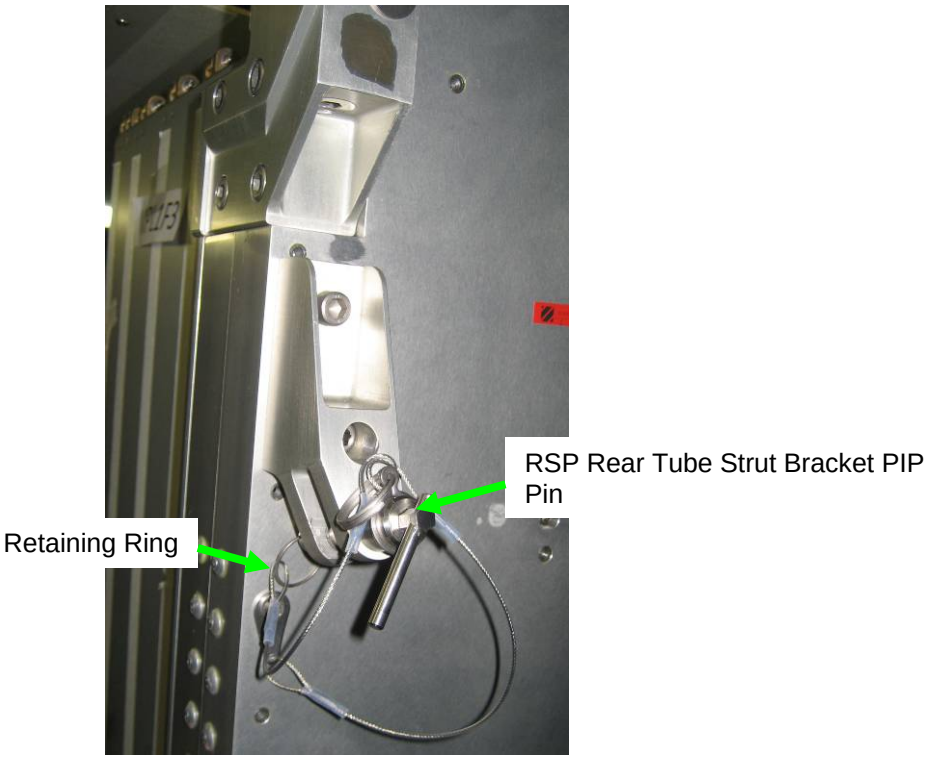


Figure 2. - Top RSP Rear Tube Strut Bracket.

2.4 Remove retaining rings from PIP pins on RSP Rear Tube Struts (two, one per PIP pin).
Refer to Figure 2.

2.5 Remove RSP Rear Tube Strut, PIP pins (two).
Temporarily stow.
Refer to Figure 2.

NOTE
1. The Jam Nuts on either end of the RSP Rear Tube Strut are threaded in opposite directions (Left-Hand and Right-Hand threads). 2. Both Jam Nuts will need to be loosened to allow adjustment of the RSP Rear Tube Strut.

****
* If PIP Pins cannot be removed from RSP Rear Tube Strut
* | Brackets,
* | 2.5.1 Loosen RSP Rear Tube Strut Jam Nuts (two), as
* | required (3/4" Combination Wrench).
* |
* | 2.5.2 Turn RSP Rear Tube Strut to lengthen or shorten, as
* | required.
* |
* | 2.5.3 Remove PIP pins (two).
****

2.6 Swing Vertical M-01 Fence into MPL1F2 Rack Bay for stowage volume access.

3. STOWAGE

3.1 Stow hardware in RSP volume per transfer list.

4. INSTALL RSP REAR STRUTS

4.1 Swing Vertical M-01 Fence until aligned with PIP Pin clevices on Horizontal Middle Rear Fence and Horizontal Bottom Fence.
Install PIP Pins (two) into Vertical M-01 Fence clevices.
Refer to Figure 1.

4.2 Align RSP Rear Tube Strut into RSP Rear Tube Strut Brackets.
Install PIP pins (two).
√PIP Pins install easily (not forced), with some free wiggle.
Refer to Figure 2.

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* If PIP Pins cannot be easily installed into RSP Rear Tube Strut
* | Brackets,
* | 4.2.1 Loosen RSP Rear Tube Strut Jam Nuts (two), as
* | required (3/4" Combination Wrench).
* |
* | 4.2.2 Turn RSP Rear Tube Strut to lengthen or shorten, as
* | required.
* |
* | 4.2.3 Install PIP pins (two).
* | √PIP Pins install easily (not forced), with some free
* | wiggle.
* |
* | 4.2.4 Hand tighten RSP Rear Tube Strut Jam Nuts (two).
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4.3 Install retaining rings on PIP pins on RSP Rear Tube Struts (two, one per PIP pin).
Refer to Figure 2.

4.4 Install RSP Rear Side Strut (P/N SEG33112727-301) on Horizontal Middle Rear Fence and Horizontal Bottom Rear Fence, tethered PIP pins (two).
Refer to Figure 1.

5. CLOSEOUT

5.1 Photo document rear RSP configuration (Digital Camera).

5.2 Notify **MCC-H** of task completion.