

# Flight Plan

## STS-83

(FRR Cycle Trajectory)

Mission Operations Directorate  
Operations Division

Final  
February 21, 1997

| <u>EVENT</u> | <u>CST</u>  |      |          |
|--------------|-------------|------|----------|
| Launch       | 13:01       | Thur | April 3  |
| KSC Landing  | 06:37 (CDT) | Sat  | April 19 |

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas

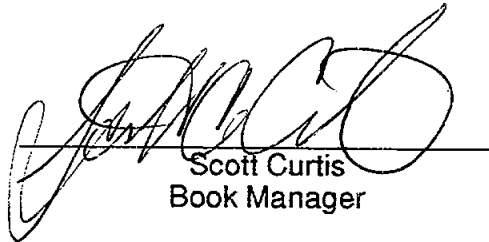


MISSION OPERATIONS DIRECTORATE

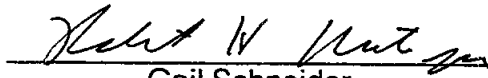
**STS-83 FLIGHT PLAN**

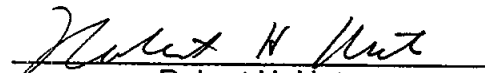
FINAL  
February 21, 1997


PREPARED BY:


  
Scott Curtis  
Book Manager

APPROVED BY:

  
Gail Schneider  
Lead, Flight Planning  
and Pointing Group

  
Robert H. Nute  
Chief, Flight Planning Branch

  
Larry Davis  
Chief, Operations Division

  
Brock R. Stone  
Acting Director,  
Mission Operations

This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes must be submitted on JSC Form 482 to DO3/FDF Manager.

Additional distribution of this book for official use must be requested in writing to DO3/FDF Manager. The request must include justification and requester's name, organization, position, and phone number. Contractor requests are made through the NASA or DOD organization supported. Deletions, reduction in quantity, or change of address may be submitted to DO3/FDF Management Office, (281) 244-1184.

Incorporates the following:

482#: FLT PLN-1854

Exemption #: 83

AREAS OF TECHNICAL RESPONSIBILITY

|                       |               |          |
|-----------------------|---------------|----------|
| Book Manager/Lead FAO | DO4/S. Curtis | 244-1085 |
| Lead FAO Planner      | DO4/A. Cofrin | 244-1170 |
| Lead Pointer          | DO4/S. Patano | 244-1137 |

FLIGHT PLAN  
STS-83

**LIST OF EFFECTIVE PAGES**

FINAL 02/21/97

|                |          |            |        |
|----------------|----------|------------|--------|
| Sign Off ..... | * 83/FIN | 3-9 .....  | 83/FIN |
| ii .....       | * 83/FIN | 3-10 ..... | 83/FIN |
| iii .....      | * 83/FIN | 3-11 ..... | 83/FIN |
| iv .....       | * 83/FIN | 3-12 ..... | 83/FIN |
| v .....        | * 83/FIN | 3-13 ..... | 83/FIN |
| vi .....       | * 83/FIN | 3-14 ..... | 83/FIN |
| 1-1 .....      | 83/FIN   | 3-15 ..... | 83/FIN |
| 1-2 .....      | 83/FIN   | 3-16 ..... | 83/FIN |
| 1-3 .....      | 83/FIN   | 3-17 ..... | 83/FIN |
| 1-4 .....      | 83/FIN   | 3-18 ..... | 83/FIN |
| 2-1 .....      | 83/FIN   | 3-19 ..... | 83/FIN |
| 2-2 .....      | 83/FIN   | 3-20 ..... | 83/FIN |
| 2-3 .....      | 83/FIN   | 3-21 ..... | 83/FIN |
| 2-4 .....      | 83/FIN   | 3-22 ..... | 83/FIN |
| 2-5 .....      | 83/FIN   | 3-23 ..... | 83/FIN |
| 2-6 .....      | 83/FIN   | 3-24 ..... | 83/FIN |
| 2-7 .....      | 83/FIN   | 3-25 ..... | 83/FIN |
| 2-8 .....      | 83/FIN   | 3-26 ..... | 83/FIN |
| 2-9 .....      | 83/FIN   | 3-27 ..... | 83/FIN |
| 2-10 .....     | 83/FIN   | 3-28 ..... | 83/FIN |
| 2-11 .....     | 83/FIN   | 3-29 ..... | 83/FIN |
| 2-12 .....     | 83/FIN   | 3-30 ..... | 83/FIN |
| 2-13 .....     | 83/FIN   | 3-31 ..... | 83/FIN |
| 2-14 .....     | 83/FIN   | 3-32 ..... | 83/FIN |
| 2-15 .....     | 83/FIN   | 3-33 ..... | 83/FIN |
| 2-16 .....     | 83/FIN   | 3-34 ..... | 83/FIN |
| 2-17 .....     | 83/FIN   | 3-35 ..... | 83/FIN |
| 2-18 .....     | 83/FIN   | 3-36 ..... | 83/FIN |
| 2-19 .....     | 83/FIN   | 3-37 ..... | 83/FIN |
| 2-20 .....     | 83/FIN   | 3-38 ..... | 83/FIN |
| 2-21 .....     | 83/FIN   | 3-39 ..... | 83/FIN |
| 2-22 .....     | 83/FIN   | 3-40 ..... | 83/FIN |
| 2-23 .....     | 83/FIN   | 3-41 ..... | 83/FIN |
| 2-24 .....     | 83/FIN   | 3-42 ..... | 83/FIN |
| 2-25 .....     | 83/FIN   | 3-43 ..... | 83/FIN |
| 2-26 .....     | 83/FIN   | 3-44 ..... | 83/FIN |
| 2-27 .....     | 83/FIN   | 3-45 ..... | 83/FIN |
| 2-28 .....     | 83/FIN   | 3-46 ..... | 83/FIN |
| 2-29 .....     | 83/FIN   | 3-47 ..... | 83/FIN |
| 2-30 .....     | 83/FIN   | 3-48 ..... | 83/FIN |
| 2-31 .....     | 83/FIN   | 3-49 ..... | 83/FIN |
| 2-32 .....     | 83/FIN   | 3-50 ..... | 83/FIN |
| 2-33 .....     | 83/FIN   | 3-51 ..... | 83/FIN |
| 2-34 .....     | 83/FIN   | 3-52 ..... | 83/FIN |
| 3-1 .....      | 83/FIN   | 3-53 ..... | 83/FIN |
| 3-2 .....      | 83/FIN   | 3-54 ..... | 83/FIN |
| 3-3 .....      | 83/FIN   | 3-55 ..... | 83/FIN |
| 3-4 .....      | 83/FIN   | 3-56 ..... | 83/FIN |
| 3-5 .....      | 83/FIN   | 3-57 ..... | 83/FIN |
| 3-6 .....      | 83/FIN   | 3-58 ..... | 83/FIN |
| 3-7 .....      | 83/FIN   | 3-59 ..... | 83/FIN |
| 3-8 .....      | 83/FIN   | 3-60 ..... | 83/FIN |

\* - Omit from flight book

|      |          |
|------|----------|
| 3-61 | 83/FIN   |
| 3-62 | 83/FIN   |
| 3-63 | 83/FIN   |
| 3-64 | 83/FIN   |
| 3-65 | 83/FIN   |
| 3-66 | 83/FIN   |
| 3-67 | 83/FIN   |
| 3-68 | 83/FIN   |
| 3-69 | 83/FIN   |
| 3-70 | 83/FIN   |
| 3-71 | 83/FIN   |
| 3-72 | 83/FIN   |
| 3-73 | 83/FIN   |
| 3-74 | 83/FIN   |
| 3-75 | 83/FIN   |
| 3-76 | 83/FIN   |
| 3-77 | 83/FIN   |
| 3-78 | 83/FIN   |
| 3-79 | 83/FIN   |
| 3-80 | 83/FIN   |
| 3-81 | 83/FIN   |
| 3-82 | 83/FIN   |
| 3-83 | 83/FIN   |
| 3-84 | 83/FIN   |
| 3-85 | 83/FIN   |
| 3-86 | 83/FIN   |
| 3-87 | 83/FIN   |
| 3-88 | 83/FIN   |
| 3-89 | 83/FIN   |
| 3-90 | 83/FIN   |
| 3-91 | 83/FIN   |
| 3-92 | 83/FIN   |
| 3-93 | 83/FIN   |
| 3-94 | 83/FIN   |
| 4-1  | 83/FIN   |
| 4-2  | 83/FIN   |
| 4-3  | 83/FIN   |
| 4-4  | 83/FIN   |
| 5-i  | * 83/FIN |
| 5-ii | * 83/FIN |
| 5-1  | * 83/FIN |
| 5-2  | * 83/FIN |
| 5-3  | * 83/FIN |
| 5-4  | * 83/FIN |
| 6-1  | * 83/FIN |
| 6-2  | * 83/FIN |
| 6-3  | * 83/FIN |
| 6-4  | * 83/FIN |

\* - Omit from flight book

CONTENTS

PAGE

|                         |     |
|-------------------------|-----|
| INTRODUCTION .....      | vi  |
| OVERVIEW TIMELINE ..... | 1-1 |
| SUMMARY TIMELINE .....  | 2-1 |
| DETAILED TIMELINE ..... | 3-1 |
| DAP TABLE .....         | 4-1 |
| ATTITUDE TIMELINE ..... | 5-1 |
| FLIGHT PLAN NOTES ..... | 6-1 |

## INTRODUCTION

The STS-83 Flight Plan is the Flight Data File article that contains the on-orbit timeline. It does not contain the detailed timelines that are covered in the Ascent, Post Insertion, Deorbit Prep, and Entry Checklists.

This on-orbit timeline satisfies the objectives specified in the Flight Definition and Requirements Directive and the requirements of the STS-83 Flight Requirements Document. The Flight Plan, as part of the Flight Data File, meets the specifications of the Engineering Cycle version of the STS-83 Flight Initialization Data Pack.

The flight profile used for this Flight Plan is for a launch date of April 3, 1997, at 13:01 CST. Orbiter inertial attitudes are expressed relative to a Mean of 1950 (M50) reference frame.

JSC-22359, Crew Scheduling Constraints (Appendix K, CPMP), Basic, Rev B, January 1992 has been used to build the timelines contained in this Flight Plan. The following Appendix K Exemption has been approved for STS-83:

#83 – Allows Blue Team to wake up 14:30 hours before landing time to provide the Red Team with 8 hours of sleep prior to entry.

The timeline formats used in the Flight Plan are based on JSC-19933, Timeline Format Definitions and Standard Notes, Rev C, May 1990.

OVERVIEW TIMELINE



STS-83 FINAL  
OVERVIEW TIMELINE

19:01 GMTLO

|     |      |     |           |         |   |   |   |         |   |   |   |    |    |      |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|-----------|---------|---|---|---|---------|---|---|---|----|----|------|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 0/   | 0   | 1         | 2       | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12   | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    | Asc | P/I       |         |   |   |   | 7 hrs   |   |   |   |    |    | FD 2 |    |    |    |    |    |    |    |    |    |    |    |    |
| 1   | B    | Asc | P/I       | S/L Act |   |   |   | MSL OPS |   |   |   |    |    |      |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. | Asc | -ZLV,+YVV |         |   |   |   |         |   |   |   |    |    |      |    |    |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

|     |      |   |   |   |   |   |   |         |   |   |   |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|---|---|---|---|---|---|---------|---|---|---|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 1/   | 0 | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13  | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |   |   |   |   |   |   |         |   |   |   |    |    |    | FD3 |    |    |    |    |    |    |    |    |    |    |    |
| 2   | B    |   |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |   |   |   |   |   |   |         |   |   |   |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |

|     |      |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 2/   | 0   | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 3   | B    | FD3 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

|     |      |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 3/   | 0   | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 4   | B    | FD4 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

|     |      |     |   |   |   |   |   |         |   |   |   |    |    |    |     |              |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|---|---|---|---|---|---------|---|---|---|----|----|----|-----|--------------|----|----|----|----|----|----|----|----|----|----|
| MET | 4/   | 0   | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13  | 14           | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |   |   |   |   |   |         |   |   |   |    |    |    |     |              |    |    |    |    |    |    |    |    |    |    |
| 5   | B    | FD5 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    | FD6 | PS2 OFF-DUTY |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |   |   |   |   |   |         |   |   |   |    |    |    |     |              |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

|     |      |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 5/   | 0   | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 6   | B    | FD6 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

|     |      |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 6/   | 0   | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 7   | B    | FD7 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

|     |      |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 7/   | 0   | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 8   | B    | FD8 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

|     |      |     |              |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|-----|--------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 8/   | 0   | 1            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |     |              |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 9   | B    | FD9 | PS1 OFF-DUTY |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |     |              |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

|     |      |      |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|------|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 9/   | 0    | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |      |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10  | B    | FD10 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |      |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

|     |      |      |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|------|------|---|---|---|---|---|---------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| MET | 10/  | 0    | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| FD  | R    |      |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 11  | B    | FD11 |   |   |   |   |   | MSL OPS |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|     | Att. |      |   |   |   |   |   |         |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

**STS-83 FINAL  
OVERVIEW TIMELINE**

| MET  | 11/0              | 1         | 2       | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12   | 13        | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|------|-------------------|-----------|---------|---|---|---|---|---|---|---|----|----|------|-----------|----|----|----|----|----|----|----|----|----|----|----|
| FD   | R                 | [Pattern] |         |   |   |   |   |   |   |   |    |    | FD13 | MSL OPS   |    |    |    |    |    |    |    |    |    |    |    |
| 12   | B                 | FD12      | MSL OPS |   |   |   |   |   |   |   |    |    |      | [Pattern] |    |    |    |    |    |    |    |    |    |    |    |
| Att. | 45 BIAS -ZLV,-XVV |           |         |   |   |   |   |   |   |   |    |    |      |           |    |    |    |    |    |    |    |    |    |    |    |

| MET  | 12/0              | 1         | 2            | 3 | 4 | 5 | 6            | 7 | 8 | 9 | 10 | 11        | 12   | 13           | 14 | 15 | 16 | 17           | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|------|-------------------|-----------|--------------|---|---|---|--------------|---|---|---|----|-----------|------|--------------|----|----|----|--------------|----|----|----|----|----|----|----|
| FD   | R                 | [Pattern] |              |   |   |   |              |   |   |   |    |           | FD14 | PS2 OFF-DUTY |    |    |    | MS3 OFF-DUTY |    |    |    |    |    |    |    |
| 13   | B                 | FD13      | MS1 OFF-DUTY |   |   |   | PS1 OFF-DUTY |   |   |   |    | [Pattern] |      |              |    |    |    |              |    |    |    |    |    |    |    |
| Att. | 45 BIAS -ZLV,-XVV |           |              |   |   |   |              |   |   |   |    |           |      |              |    |    |    |              |    |    |    |    |    |    |    |

| MET  | 13/0              | 1         | 2       | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12   | 13   | 14        | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|------|-------------------|-----------|---------|---|---|---|---|---|---|---|----|----|------|------|-----------|----|----|----|----|----|----|----|----|----|----|
| FD   | R                 | [Pattern] |         |   |   |   |   |   |   |   |    |    | CREW | FD15 | MSL OPS   |    |    |    |    |    |    |    |    |    |    |
| 14   | B                 | FD14      | MSL OPS |   |   |   |   |   |   |   |    |    |      | CONF | [Pattern] |    |    |    |    |    |    |    |    |    |    |
| Att. | 45 BIAS -ZLV,-XVV |           |         |   |   |   |   |   |   |   |    |    |      |      |           |    |    |    |    |    |    |    |    |    |    |

imu ↑  
mnvr

| MET  | 14/0              | 1         | 2       | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12  | 13   | 14        | 15 | 16 | 17 | 18         | 19 | 20 | 21 | 22 | 23 | 24 |
|------|-------------------|-----------|---------|---|---|---|---|---|---|---|----|----|-----|------|-----------|----|----|----|------------|----|----|----|----|----|----|
| FD   | R                 | [Pattern] |         |   |   |   |   |   |   |   |    |    | FCS | FD16 | MSL OPS   |    |    |    | CABIN STOW |    |    |    |    |    |    |
| 15   | B                 | FD15      | MSL OPS |   |   |   |   |   |   |   |    |    |     | C/O  | [Pattern] |    |    |    |            |    |    |    |    |    |    |
| Att. | 45 BIAS -ZLV,-XVV |           |         |   |   |   |   |   |   |   |    |    |     |      |           |    |    |    |            |    |    |    |    |    |    |

\*D/O Brief      \*RCS Hot Fire

Orb ↓ Adj

| MET  | 15/0              | 1          | 2 | 3 | 4 | 5            | 6         | 7 | 8    | 9            | 10 | 11   | 12           | 13 | 14  | 15          | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|------|-------------------|------------|---|---|---|--------------|-----------|---|------|--------------|----|------|--------------|----|-----|-------------|----|----|----|----|----|----|----|----|----|
| FD   | R                 | [Pattern]  |   |   |   |              |           |   |      |              |    |      | DEORBIT PREP |    | D/O | KSC LANDING |    |    |    |    |    |    |    |    |    |
| 16   | B                 | CABIN STOW |   |   |   | SL, PL DEACT |           |   | MEAL | DEORBIT PREP |    | *TIG | 15/16:36     |    |     |             |    |    |    |    |    |    |    |    |    |
| Att. | 45 BIAS -ZLV,-XVV |            |   |   |   |              | -ZLV, YVV |   |      | IMU/VERIF    |    |      | [Pattern]    |    |     |             |    |    |    |    |    |    |    |    |    |

↑ imu  
mnvr

|              |             |                  |            |
|--------------|-------------|------------------|------------|
| Blue Sleep = | Red Sleep = | Post/Pre Sleep = | Handover = |
|--------------|-------------|------------------|------------|

Inherent in the above timeline is the following Appendix K Violation:  
Blue awake Flight Day 16 = 14.5 hours (14 hrs max), per App. K 2.1.3C

**This Page Intentionally Blank**

**SUMMARY TIMELINE**

# SUMMARY TIMELINE

| MET                        | Day 000             | 000/00   | 01             | 02        | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11         | 12            |  |
|----------------------------|---------------------|--|----------------|-----------|----|----|----|----|----|----|----|----|------------|---------------|--|
| RED<br>FD1                 | CDR<br>J. Halseil   | DIRECT<br>LAUNCH<br>INSERTION  | POST INSERTION | PRE SLEEP |    |    |    |    |    |    |    |    | POST SLEEP |               |  |
|                            | PLT<br>S. Still     |  | POST INSERTION | PRE SLEEP |    |    |    |    |    |    |    |    | POST SLEEP |               |  |
|                            | MS3<br>D. Thomas    |  | POST INSERTION | PRE SLEEP |    |    |    |    |    |    |    |    |            | POST SLEEP    |  |
|                            | PS2<br>G. Linteris  |  | POST INSERTION | PRE SLEEP |    |    |    |    |    |    |    |    |            | POST SLEEP    |  |
| BLUE<br>FD1                | MS2<br>M. Gernhardt | POST INSERTION   | MEAL           | SEE       |    |    |    |    |    |    |    |    | PRE SLEEP  | H/O PRE SLEEP |  |
|                            | MS1<br>J. Voss      | POST INSERTION   | SL ACTIVATION  | MEAL      |    |    |    |    |    |    |    |    | PRE SLEEP  | H/O PRE SLEEP |  |
|                            | PS1<br>R. Crouch    | POST INSERTION   | MOD-PREP       | MEAL      |    |    |    |    |    |    |    |    | PRE SLEEP  | H/O PRE SLEEP |  |
| DAY/NIGHT ORBIT            |                     |  |                |           |    |    |    |    |    |    |    |    |            |               |  |
| TDRS                       |                     |  |                |           |    |    |    |    |    |    |    |    |            |               |  |
| ATTITUDE FREE/H2O IN A/G 2 |                     |  |                |           |    |    |    |    |    |    |    |    |            |               |  |
| NOTES                      |                     | <p style="text-align: center;">*55° BIAS</p> <p style="text-align: center;">*APU HTR DEACT<br/>*APU HTR RECONFIG</p> <p style="text-align: right;">*SL FIRE/SMOKE TEST</p> |                |           |    |    |    |    |    |    |    |    |            |               |  |

| MET                             |              | Day 000           |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         | 001/00 |  |
|---------------------------------|--------------|-------------------|------------|----------|---------|----------|-----|-----------------|-----------|------------|---------------|-----------------|------------|------------|----------|---------|-----|----------|---------|----------|-----|-----|-----|-------|---------|--------|--|
| R<br>E<br>D<br>F<br>D<br>2      | CDR          | POST SLEEP        | ERGO SETUP | EXERCISE |         |          |     | MEAL            | PGBA30BS  |            |               |                 |            |            |          |         |     |          |         |          | IMU | MNV | H/O | PMCC  | OCCAD/L |        |  |
|                                 | J. Halsell   |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
|                                 | PLT          | ERGO SETUP        | ERGO SETUP | EXERCISE |         |          |     | CRYO 02 SNSR CK | MEAL      | WDAS SETUP | WDAS DATA RET | FILTER CLEANING |            |            |          |         |     |          |         |          |     |     |     | SAREX | H/O     |        |  |
|                                 | S. Still     |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| M<br>S<br>3                     | POST SLEEP   | D/P               | LF1ACT     | COR      | TPR1-MS | PC3VDACT | COR | EXP1FAC         | EXP2CKEPP | COR        | MEAL          | LF6ION1         | COR        | TPR2-MS    | EXERCISE |         |     |          | H/O     |          |     |     |     |       |         |        |  |
|                                 | D. Thomas    |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| P<br>S<br>2                     | POST SLEEP   | D/P               | PC3VDACT   |          |         |          | COR | TPR1-PS         | PC8SHACT  | COR        | MEAL          | CL1SETUP        | COR        | CL2CHECK   | TPR2-PS  | CL3PREP | COR | EXERCISE |         |          |     | H/O |     |       |         |        |  |
|                                 | G. Linteris  |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| B<br>L<br>U<br>E<br>F<br>D<br>1 | MS2          | SLEEP             |            |          |         |          |     |                 |           |            |               |                 |            | POST SLEEP | H/O      |         |     |          | PC6MON  |          |     |     |     |       |         |        |  |
|                                 | M. Gernhardt |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
|                                 | MS1          | SLEEP             |            |          |         |          |     |                 |           |            |               |                 |            | POST SLEEP | H/O      |         |     |          | D/P     | CL4START |     |     |     |       |         |        |  |
| J. Voss                         |              |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| PS1                             | SLEEP        |                   |            |          |         |          |     |                 |           |            |               |                 | POST SLEEP | H/O        |          |         |     | D/P      | GBX1FAC |          |     |     |     |       |         |        |  |
| R. Crouch                       |              |                   |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| DAY/NIGHT                       |              | ORBIT             |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| TDRS                            |              | E W               |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| ATTITUDE                        |              | FREE/H2O IN       |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| A/G 2                           |              | 55 BIAS -ZLV -XVV |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
| NOTES                           |              | VRME 1330         |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |
|                                 |              | ØT1 *55°BIAS      |            |          |         |          |     |                 |           |            |               |                 |            |            |          |         |     |          |         |          |     |     |     |       |         |        |  |

| MET               |                     | 001/00      |           | 01              | 02      | 03         | 04                               | 05                               | 06       | 07                               | 08  | 09       | 10      | 11                               | 12         |          |          |           |         |
|-------------------|---------------------|-------------|-----------|-----------------|---------|------------|----------------------------------|----------------------------------|----------|----------------------------------|-----|----------|---------|----------------------------------|------------|----------|----------|-----------|---------|
| Day 001           |                     |             |           |                 |         |            |                                  |                                  |          |                                  |     |          |         |                                  |            |          |          |           |         |
| RED<br>FD2        | CDR<br>J. Halseil   |             |           | PRE SLEEP       |         |            |                                  |                                  |          | SLEEP                            |     |          |         | DSO<br>493                       | POST SLEEP |          |          |           |         |
|                   | PLT<br>S. Still     |             |           | PRE SLEEP       |         |            |                                  |                                  |          | SLEEP                            |     |          |         | RED<br>DSO<br>493                | POST SLEEP |          |          |           |         |
|                   | MS3<br>D. Thomas    |             |           | PRE SLEEP       |         |            |                                  |                                  |          | SLEEP                            |     |          |         | FD3<br>DSO<br>493                | POST SLEEP |          |          |           |         |
|                   | PS2<br>G. Linteris  | SAREX<br>@  |           | PRE SLEEP       |         |            |                                  |                                  |          | SLEEP                            |     |          |         |                                  | POST SLEEP |          |          |           |         |
| BLUE<br>FD2       | MS2<br>M. Gernhardt | FC<br>PRG\$ | JA<br>NOT | TE<br>PC<br>ACT |         |            | P/<br>TV17                       | PA<br>O<br>E<br>V<br>E<br>N<br>T | MEAL     |                                  |     | EXERCISE | RESERVE | PRE SLEEP                        |            |          |          |           |         |
|                   | MS1<br>J. Voss      | CL6T09P     |           | COR             | TPR1-MS | DC1CNFG    | COR                              | PA<br>O<br>E<br>V<br>E<br>N<br>T | MEAL     | DC2CHECK                         | COR | PRE-SLIP | TPR2-MS | DC2CHECK                         | COR        | EXERCISE | RESERVE  | PRE SLEEP |         |
|                   | PS1<br>R. Crouch    | GBX1FAC     | TPR1-PS   | GBX1FAC         | COR     | SAREX<br>@ | PA<br>O<br>E<br>V<br>E<br>N<br>T | MEAL                             | PRE-SLIP | TE<br>M<br>I<br>V<br>E<br>R<br>T | COR | GBX1IFFD | TPR2-PS | TE<br>M<br>I<br>V<br>E<br>R<br>T | COR        | GBX1IFFD | GBX1IFFD | EXERCISE  | RESERVE |
| DAY/NIGHT ORBIT   |                     | 17          |           | 18              |         | 19         |                                  | 20                               |          | 21                               |     | 22       |         | 23                               |            | 24       |          | 25        |         |
| TDRS E W          |                     |             |           |                 |         |            |                                  |                                  |          |                                  |     |          |         |                                  |            |          |          |           |         |
| ATTITUDE          |                     |             |           |                 |         |            |                                  |                                  |          |                                  |     |          |         |                                  |            |          |          |           |         |
| FREE/H2O IN A/G 2 |                     |             |           |                 |         |            |                                  |                                  |          |                                  |     |          |         |                                  |            |          |          | FREE/H2O  |         |
| NOTES             |                     | @E3         |           | ΔDSO 623        |         | @E1        |                                  |                                  |          |                                  |     |          |         |                                  |            |          |          |           |         |
|                   |                     | \$MANUAL    |           | VDT0 684        |         |            |                                  |                                  |          |                                  |     |          |         |                                  |            |          |          |           |         |





| MET         |                     | Day 002     |          |          |          |          |           |                  |          |          |          |          |          |          |            |          |         |         |         |
|-------------|---------------------|-------------|----------|----------|----------|----------|-----------|------------------|----------|----------|----------|----------|----------|----------|------------|----------|---------|---------|---------|
|             |                     | 00          | 01       | 02       | 03       | 04       | 05        | 06               | 07       | 08       | 09       | 10       | 11       | 12       |            |          |         |         |         |
| RED<br>FD3  | CDR<br>J. Halsell   | PRE SLEEP   |          |          |          | SLEEP    |           |                  |          |          |          |          |          | DSO493   | POST SLEEP |          |         |         |         |
|             | PLT<br>S. Still     | PRE SLEEP   |          |          |          | SLEEP    |           |                  |          |          |          |          |          | DSO493   | POST SLEEP |          |         |         |         |
|             | MS3<br>D. Thomas    | PRE SLEEP   |          |          |          | SLEEP    |           |                  |          |          |          |          |          | DSO493   | POST SLEEP |          |         |         |         |
|             | PS2<br>G. Linteris  | PRE SLEEP   |          |          |          | SLEEP    |           |                  |          |          |          |          |          |          | POST SLEEP |          |         |         |         |
| BLUE<br>FD3 | MS2<br>M. Gernhardt | PC6MON      | PC6MON   |          |          | P/TV17   | PAO EVENT | MEAL             |          | EXERCISE |          |          | OSMODUL  | OSMODUL  | RESERVE    | PSLEEP   |         |         |         |
|             | MS1<br>J. Voss      | DC04B011    |          | DC04B012 | DC04B013 | TPR1-MS  | PAO EVENT | DC04B014         | MEAL     | DC04B015 | TPR2-MS  | DC04B016 | EXERCISE |          | RESERVE    | PSLEEP   |         |         |         |
|             | PS1<br>R. Crouch    | GBX1IFFD    | GBX2IFFD | LF2LPS1  | TPR1-PS  | CL4START | CL9T12P   | CLASPP           | GBX6IFFD | MEAL     | CL10T13P | CL20SHUT | EM3ZINL  | EMEXCHG  | TPR2-PS    | EXERCISE | EM3ZINL | LF2LPSA | RESERVE |
| DAY/NIGHT   |                     | 33          |          | 34       |          | 35       |           | 36               |          | 37       |          | 38       |          | 39       |            | 40       |         | 41      |         |
| TDRS        |                     | E           |          | W        |          | E        |           | W                |          | E        |          | W        |          | E        |            | W        |         | E       |         |
| ATTITUDE    |                     | FREE/H2O IN |          | FREE/H2O |          | FREE/H2O |           | 55 BIAS -ZLV -XV |          | FREE/H2O |          | FREE/H2O |          | FREE/H2O |            | FREE/H2O |         |         |         |
| A/G 2       |                     |             |          |          |          |          |           |                  |          |          |          |          |          |          |            |          |         |         |         |
| NOTES       |                     |             |          |          |          |          |           |                  |          |          |          |          |          |          |            |          |         |         |         |

| MET                             |                     | Day 002   |     | 12     | 13        | 14       | 15 | 16       | 17       | 18    | 19 | 20       | 21      | 22       | 23                 | 003/00   |            |
|---------------------------------|---------------------|---|-----|--------|-----------|----------|----|----------|----------|-------|----|----------|---------|----------|--------------------|----------|------------|
| R<br>E<br>D<br>F<br>D<br>4      | CDR<br>J. Halsell   | H/O   |     | PC6MON | PC9MVID   | PGBA3OBS |    | EXERCISE | MEAL     |       |    | OSMODUL  | OSMODUL |          | PAGEVENT<br>P/TV17 | PMC-OCCL | IMUNVR     |
|                                 | PLT<br>S. Still     | H/O   |     | OCAD/L | SINIMOT   |          |    | STIEROM  | MEAL     |       |    |          |         | EXERCISE | PAGEVENT           | RESERVE  | PSLEEP     |
|                                 | MS3<br>D. Thomas    | H/O   | D/P |        | EXERCISE  |          |    | TPR1-MS  | GBX1FSDC | MEAL  |    | GBX2FSDC | TPR2-MS | GBX2FSDC | OSMODUL            | RESERVE  | PSLEEP     |
|                                 | PS2<br>G. Linteris  | H/O   | D/P |        |           | DC05B021 |    | TPR1-PS  |          | MEAL  |    | DC05B022 |         | TPR2-PS  | DC05B024           | EXERCISE | RESERVE    |
| B<br>L<br>U<br>E<br>F<br>D<br>3 | MS2<br>M. Gernhardt | H/O   |     |        | PRE SLEEP |          |    |          |          | SLEEP |    |          |         | DSO493   |                    |          | POST SLEEP |
|                                 | MS1<br>J. Voss      | H/O   |     |        | PRE SLEEP |          |    |          |          | SLEEP |    |          |         | DSO493   |                    |          | POST SLEEP |
|                                 | PS1<br>R. Crouch    | H/O   |     |        | PRE SLEEP |          |    |          |          | SLEEP |    |          |         | DFD4     |                    |          | POST SLEEP |
| DAY/NIGHT                       |                     | [Day/Night Cycle: Day 002 (Days 12-19), Day 003 (Days 20-23), Day 004 (Days 24-27)] |     |        |           |          |    |          |          |       |    |          |         |          |                    |          |            |
| ORBIT                           |                     | [Orbit Data: 41, 42, 43, 44, 45, 46, 47, 48, 49]                                    |     |        |           |          |    |          |          |       |    |          |         |          |                    |          |            |
| TORS                            |                     | [TORS Data: E, W, 55 BIAS -2LV -XVV]  |     |        |           |          |    |          |          |       |    |          |         |          |                    |          |            |
| ATTITUDE                        |                     | [Attitude Data: FREE/H2O]   |     |        |           |          |    |          |          |       |    |          |         |          |                    |          |            |
| FREE/H2O IN A/G 2               |                     | [Free/H2O Data: FREE/H2O]   |     |        |           |          |    |          |          |       |    |          |         |          |                    |          |            |
| NOTES                           |                     | [Notes Section]   |     |        |           |          |    |          |          |       |    |          |         |          |                    |          |            |

| MET         |                     | 003/00          |           |          |           |           |           |          |          |          |            |          |          |          |         |          |          |          |         |
|-------------|---------------------|-----------------|-----------|----------|-----------|-----------|-----------|----------|----------|----------|------------|----------|----------|----------|---------|----------|----------|----------|---------|
| Day 003     |                     | 01              | 02        | 03       | 04        | 05        | 06        | 07       | 08       | 09       | 10         | 11       | 12       |          |         |          |          |          |         |
| RED<br>FD4  | CDR<br>J. Halsell   | MZLVVR          | PRE SLEEP |          |           |           | SLEEP     |          |          |          | POST SLEEP |          |          |          |         |          |          |          |         |
|             | PLT<br>S. Still     | H/O             | PRE SLEEP |          |           |           | SLEEP     |          |          |          | POST SLEEP |          |          |          |         |          |          |          |         |
|             | MS3<br>D. Thomas    | H/O             | PRE SLEEP |          |           |           | SLEEP     |          |          |          | POST SLEEP |          |          |          |         |          |          |          |         |
|             | PS2<br>G. Linteris  | H/O             | PRE SLEEP |          |           |           | SLEEP     |          |          |          | POST SLEEP |          |          |          |         |          |          |          |         |
| BLUE<br>FD4 | MS2<br>M. Gernhardt | H/O             | PC6MON    | PC6MON   | PC6MON    | PC6MON    | T15TEMP   | MEAL     |          | EXERCISE |            | RESERVE  |          | PSLEEP   |         |          |          |          |         |
|             | MS1<br>J. Voss      | H/O             | D/P       | DC06B031 |           |           | TPR1-MS   | DC06B032 | DC06B033 | DC06B034 | MEAL       | DC06B035 | CL4START | CL11T01E | TPR2-MS | CL11T01E | EXERCISE | RESERVE  | PSLEEP  |
|             | PS1<br>R. Crouch    | H/O             | D/P       | EXERCISE | TEEMEXCHG | TEEMEXCHG | TEEMEXCHG | TPR1-MS  | TPR1-MS  | LF2LPSS  | GBX1FSDC   | MEAL     | GBX3FSDC | GBX2FSDC | TPR2-PS | GBX3FSDC | GBX2FSDC | CL12T02E | RESERVE |
| DAY/NIGHT   |                     | ORBIT           |           |          |           |           |           |          |          |          |            |          |          |          |         |          |          |          |         |
| TDRS        |                     | E W             |           |          |           |           |           |          |          |          |            |          |          |          |         |          |          |          |         |
| ATTITUDE    |                     | FREE/H2O IN     |           |          |           |           |           |          |          |          |            |          |          |          |         |          |          |          |         |
| A/G 2       |                     | 55° BIAS (+XVV) |           |          |           |           |           |          |          |          |            |          |          |          |         |          |          |          |         |
| NOTES       |                     | 55° BIAS (+XVV) |           |          |           |           |           |          |          |          |            |          |          |          |         |          |          |          |         |

| MET                             |                     | Day 003  |           | 12              | 13       | 14       | 15       | 16       | 17       | 18       | 19       | 20       | 21       | 22       | 23       | 004/00     |          |          |          |           |           |         |         |
|---------------------------------|---------------------|--|-----------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|----------|----------|----------|-----------|-----------|---------|---------|
| R<br>E<br>D<br>F<br>D<br>5      | CDR<br>J. Halsell   | H/O  | EXERCISE  | PC6MON          | PC9MVID  | PC10MVID | PC11MVID | PC12MVID | PC13MVID | MEAL     | SAREX@   | OSMODUL  | OSMODUL  |          | PMC-OCCA | RESERVE    | PSLEEPP  |          |          |           |           |         |         |
|                                 | PLT<br>S. Still     | H/O  | OCCAD/L   | FILTER CLEANING |          |          |          |          | MEAL     |          |          |          | EXERCISE | SAREX@   | RESERVE  | PSLEEPP    |          |          |          |           |           |         |         |
|                                 | MS3<br>D. Thomas    | H/O  | D/P       | EXERCISE        | GBX4FSDC | GBX5FSDC | LF5MET1  | TPR1-MS  | GBX1BDND | MEAL     | GBX2BDND | GBX3BDND | GBX4BDND | GBX5BDND | TPR2-MS  | GBX1BDND   | GBX2BDND | GBX3BDND | GBX6BDND | ITEM6ZICU | ITEM6ZICU | RESERVE | PSLEEPP |
|                                 | PS2<br>G. Linteris  | H/O  | D/P       | DC07B041        | DC07B042 | DC07B043 | DC07B044 | TPR1-PS  | MEAL     | DC07B045 | TPR2-PS  | DC08B051 | DC3FILM  | EXERCISE | RESERVE  | PSLEEPP    |          |          |          |           |           |         |         |
| B<br>L<br>U<br>E<br>F<br>D<br>4 | MS2<br>M. Gernhardt | H/O  | PRE SLEEP |                 |          |          |          |          | SLEEP    |          |          |          |          |          | DSO493   | POST SLEEP |          |          |          |           |           |         |         |
|                                 | MS1<br>J. Voss      | H/O  | PRE SLEEP |                 |          |          |          |          | SLEEP    |          |          |          |          |          | DSO493   | POST SLEEP |          |          |          |           |           |         |         |
|                                 | PS1<br>R. Crouch    | H/O  | PRE SLEEP |                 |          |          |          |          | SLEEP    |          |          |          |          |          | DSO493   | POST SLEEP |          |          |          |           |           |         |         |
| DAY/NIGHT                       |                     |  |           |                 |          |          |          |          |          |          |          |          |          |          |          |            |          |          |          |           |           |         |         |
| ORBIT                           |                     |  |           |                 |          |          |          |          |          |          |          |          |          |          |          |            |          |          |          |           |           |         |         |
| TDRS                            |                     |  |           |                 |          |          |          |          |          |          |          |          |          |          |          |            |          |          |          |           |           |         |         |
| ATTITUDE                        |                     |  |           |                 |          |          |          |          |          |          |          |          |          |          |          |            |          |          |          |           |           |         |         |
| FREE/H2O IN A/G 2               |                     |  |           |                 |          |          |          |          |          |          |          |          |          |          |          |            |          |          |          |           |           |         |         |
| NOTES                           |                     | <p style="text-align: center;">@P1</p> <p style="text-align: right;">@E2</p> |           |                 |          |          |          |          |          |          |          |          |          |          |          |            |          |          |          |           |           |         |         |

| MET                        |                     | Day 004   |           |              |              |              |             |              |              |              |              |              |                   |                  |             |                  |         |             |
|----------------------------|---------------------|---|-----------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|-------------------|------------------|-------------|------------------|---------|-------------|
|                            |                     | 004/00  | 01        | 02           | 03           | 04           | 05          | 06           | 07           | 08           | 09           | 10           | 11                | 12               |             |                  |         |             |
| RED<br>FD5                 | CDR<br>J. Halsell   | H/O   | PRE SLEEP |              |              |              | SLEEP       |              |              |              |              |              | DSO<br>493        | POST SLEEP       |             |                  |         |             |
|                            | PLT<br>S. Still     | H/O   | PRE SLEEP |              |              |              | SLEEP       |              |              |              |              |              | RED<br>DSO<br>493 | POST SLEEP       |             |                  |         |             |
|                            | MS3<br>D. Thomas    | H/O   | PRE SLEEP |              |              |              | SLEEP       |              |              |              |              |              | FD6<br>DSO<br>493 | POST SLEEP       |             |                  |         |             |
|                            | PS2<br>G. Linteris  | H/O   | PRE SLEEP |              |              |              | SLEEP       |              |              |              |              |              |                   | POST SLEEP       |             |                  |         |             |
| BLUE<br>FD5                | MS2<br>M. Gernhardt | H/O   | SAREX @   | NOXON        | NOXON        | NOXON        | NOXON       | NOXON        | NOXON        | NOXON        | NOXON        | NOXON        | NOXON             | NOXON            |             |                  |         |             |
|                            | MS1<br>J. Voss      | H/O   | D/P       | GBX6<br>BDND | CL4<br>START | CL13<br>TO3E | TPR1-<br>MS | CL13<br>TO3E | CL13<br>TO3E | GBX1<br>CHT  | LF5<br>MET4  | EXERCISE     | MEAL              | BLUE<br>OFF-DUTY | PFC-<br>OCA | BLUE<br>OFF-DUTY | RESERVE | PS<br>SLEEP |
|                            | PS1<br>R. Crouch    | H/O   | D/P       | EXERCISE     | DC08<br>B052 | SAREX @      | TPR1-<br>PS | TEM<br>EXCHG | TPR1-<br>PS  | TEM<br>EXCHG | DC08<br>B053 | QSM<br>2D15K | MEAL              | BLUE<br>OFF-DUTY | PFC-<br>OCA | BLUE<br>OFF-DUTY | RESERVE | PS<br>SLEEP |
| DAY/NIGHT ORBIT            |                     | [Timeline with shaded blocks for day/night and orbit] |           |              |              |              |             |              |              |              |              |              |                   |                  |             |                  |         |             |
| TDRS E/W                   |                     | [Timeline with shaded blocks for TDRS E/W]            |           |              |              |              |             |              |              |              |              |              |                   |                  |             |                  |         |             |
| ATTITUDE FREE/H2O IN A/G 2 |                     | [Timeline with shaded blocks for attitude and water]  |           |              |              |              |             |              |              |              |              |              |                   |                  |             |                  |         |             |
| NOTES                      |                     | @E17 @E4  |           |              |              |              |             |              |              |              |              |              |                   |                  |             |                  |         |             |

| MET         |                     | Day 004                   |           | 12       | 13           | 14        | 15           | 16           | 17           | 18       | 19       | 20       | 21           | 22           | 23         | 005/00                        |               |
|-------------|---------------------|---------------------------|-----------|----------|--------------|-----------|--------------|--------------|--------------|----------|----------|----------|--------------|--------------|------------|-------------------------------|---------------|
| RED<br>FD6  | CDR<br>J. Halsell   | H/O                       | EXERCISE  | PCC6MON  | OCAD/L       | PFC - OCA | MEAL         | PCC9MVID     | MEAL         | PCC9MVID | SAREX @  | RESERVE  | RESERVE      | RESERVE      | RESERVE    | MZLV<br>MNV<br>*PSL<br>E<br>P |               |
|             | PLT<br>S. Still     | H/O                       |           |          |              | PFC - OCA | MEAL         |              | MEAL         |          |          | EXERCISE | RESERVE      |              |            | PSL<br>E<br>P                 |               |
|             | MS3<br>D. Thomas    | H/O                       | D/P       | LF5MET2  | GBX2CHT      | GBX3CHT   | GBX4CHT      | GBX5CHT      | GBX4CHT      | GBX3CHT  | EXERCISE | MEAL     | RED OFF-DUTY | RED OFF-DUTY | SAREX @    | RESERVE                       | PSL<br>E<br>P |
|             | PS2<br>G. Linteris  | H/O                       | D/P       | EXERCISE | RED OFF-DUTY | PFC - OCA | RED OFF-DUTY | RED OFF-DUTY | RED OFF-DUTY | MEAL     | CL4START | CL14T04E | RED OFF-DUTY | RESERVE      | RESERVE    | PSL<br>E<br>P                 |               |
| BLUE<br>FD5 | MS2<br>M. Gernhardt | H/O                       | PRE SLEEP |          |              |           |              |              | SLEEP        |          |          |          |              | DSO493       | POST SLEEP |                               |               |
|             | MS1<br>J. Voss      | H/O                       | PRE SLEEP |          |              |           |              |              | SLEEP        |          |          |          |              | DSO493       | POST SLEEP | SAREX @                       |               |
|             | PS1<br>R. Crouch    | H/O                       | PRE SLEEP |          |              |           |              |              | SLEEP        |          |          |          |              | DSO493       | POST SLEEP |                               |               |
| DAY/NIGHT   |                     | [Day/Night Cycle Diagram] |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |
| ORBIT       |                     | [Orbit Cycle Diagram]     |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |
| TDRS        |                     | [TDRS Cycle Diagram]      |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |
| ATTITUDE    |                     | 55 BIAS -ZLV +XVV         |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |
| FREE/H2O IN |                     | [Free/H2O In Diagram]     |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |
| A/G 2       |                     | [A/G 2 Diagram]           |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |
| NOTES       |                     | @E5 @E13 @E7 *55 BIAS     |           |          |              |           |              |              |              |          |          |          |              |              |            |                               |               |

| MET                             |                     | 005/00 |            | 01                     | 02                               | 03                               | 04                               | 05                              | 06                               | 07                               | 08       | 09                          | 10                               | 11                               | 12                          |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
|---------------------------------|---------------------|--------|------------|------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|----------------------------------|----------------------------------|----------|-----------------------------|----------------------------------|----------------------------------|-----------------------------|-----------------------------|----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------|----------------------------------|---------|
| Day 005                         |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| R<br>E<br>D<br>F<br>D<br>6      | CDR<br>J. Halsell   | H/O    | PRE SLEEP  |                        |                                  |                                  |                                  | SLEEP                           |                                  |                                  |          |                             | DSO<br>493                       | POST SLEEP                       |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
|                                 | PLT<br>S. Still     | H/O    | PRE SLEEP  |                        |                                  |                                  |                                  | SLEEP                           |                                  |                                  |          |                             | RED<br>DSO<br>493                | POST SLEEP                       |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
|                                 | MS3<br>D. Thomas    | H/O    | PRE SLEEP  |                        |                                  |                                  |                                  | SLEEP                           |                                  |                                  |          |                             | FD7<br>DSO<br>493                | POST SLEEP                       |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
|                                 | PS2<br>G. Linteris  | H/O    | PRE SLEEP  |                        |                                  |                                  |                                  | SLEEP                           |                                  |                                  |          |                             | POST SLEEP                       |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| B<br>L<br>U<br>E<br>F<br>D<br>6 | MS2<br>M. Gernhardt | H/O    | PCC<br>NON | TO<br>8<br>D<br>C<br>E | TO<br>8<br>D<br>C<br>E           | O<br>C<br>A<br>D<br>/            | MEAL                             |                                 |                                  |                                  |          | SL<br>CNDS<br>TK<br>DUMP    | TO<br>5<br>M<br>O<br>D<br>U<br>L | TO<br>5<br>M<br>O<br>D<br>U<br>L | EXERCISE                    | P<br>/<br>T<br>V<br>1<br>7  | PA<br>O<br>E<br>V<br>E<br>N<br>T | RESERVE                     | PS<br>L<br>E<br>E<br>P      |                             |                             |                             |                             |                                 |                                  |         |
|                                 | MS1<br>J. Voss      | H/O    | D/P        | DC09B061               |                                  |                                  | DC<br>0<br>9<br>B<br>0<br>6<br>2 | T<br>P<br>R<br>1<br>-<br>M<br>S | DC<br>0<br>9<br>B<br>0<br>6<br>3 | DC<br>0<br>9<br>B<br>0<br>6<br>4 | DC09B065 | MEAL                        | CL<br>4<br>S<br>T<br>A<br>R<br>T | T<br>P<br>R<br>2<br>-<br>M<br>S  | CL16T05E                    |                             | EXERCISE                         | RESERVE                     | PS<br>L<br>E<br>E<br>P      |                             |                             |                             |                             |                                 |                                  |         |
|                                 | PS1<br>R. Crouch    | H/O    | D/P        | EXERCISE               | CL<br>4<br>S<br>T<br>A<br>R<br>T | CL<br>1<br>5<br>T<br>1<br>4<br>E | CL<br>1<br>5<br>T<br>1<br>4<br>E | T<br>P<br>R<br>1<br>-<br>P<br>S | CL20SHUT                         | L<br>F<br>4<br>S<br>E<br>M<br>5  | MEAL     | GB<br>X<br>2<br>C<br>H<br>T | GB<br>X<br>3<br>C<br>H<br>T      | GB<br>X<br>4<br>C<br>H<br>T      | GB<br>X<br>6<br>C<br>H<br>T | GB<br>X<br>4<br>C<br>H<br>T | GB<br>X<br>2<br>C<br>H<br>T      | GB<br>X<br>4<br>C<br>H<br>T | GB<br>X<br>7<br>C<br>H<br>T | GB<br>X<br>4<br>C<br>H<br>T | GB<br>X<br>3<br>C<br>H<br>T | GB<br>X<br>3<br>C<br>H<br>T | GB<br>X<br>9<br>C<br>H<br>T | L<br>T<br>4<br>S<br>E<br>M<br>5 | PA<br>O<br>E<br>V<br>E<br>N<br>T | RESERVE |
| DAY/NIGHT                       |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| ORBIT                           |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| TDRS                            |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| ATTITUDE                        |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| FREE/H2O IN                     |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| A/G 2                           |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |
| NOTES                           |                     |        |            |                        |                                  |                                  |                                  |                                 |                                  |                                  |          |                             |                                  |                                  |                             |                             |                                  |                             |                             |                             |                             |                             |                             |                                 |                                  |         |

| MET                             |                     | Day 005                  |           | 12      | 13      | 14       | 15      | 16       | 17       | 18       | 19   | 20       | 21       | 22      | 23       | 006/00   |          |          |            |         |        |
|---------------------------------|---------------------|--------------------------|-----------|---------|---------|----------|---------|----------|----------|----------|------|----------|----------|---------|----------|----------|----------|----------|------------|---------|--------|
| R<br>E<br>D<br>F<br>D<br>7      | CDR<br>J. Halsell   | H/O                      | EXERCISE  | PC6MON  | PC9MVID | PGBA3OBS |         |          |          | MEAL     |      | SAREX@   |          | OSMODUL | SAREX@   | OSMODUL  | PMC-OCA  | RESERVE  | PSLEEP     |         |        |
|                                 | PLT<br>S. Still     | H/O                      |           | OCA D/L |         |          |         |          |          | MEAL     |      | SINIMOT  |          | STERROM |          | EXERCISE | SAREX@   | RESERVE  | PSLEEP     |         |        |
|                                 | MS3<br>D. Thomas    | H/O                      | D/P       |         | LF4SEM3 | TEM8ZICO | TPR1-MS | OSM2DISK |          | EXERCISE | MEAL | GBX1IFFD | GBX6IFFD | TPR2-MS | LF3DIMSI | TEMEXCHG | GBX1IFFD | GBX3IFFD | GBX6IFFD   | RESERVE | PSLEEP |
|                                 | PS2<br>G. Linteris  | H/O                      | D/P       |         |         | DC10B071 |         | TPR1-PS  | DC10B072 |          | MEAL | DC10B073 | CL4START |         | CL17T06E | TPR2-PS  | CL17T06E |          | EXERCISE   | RESERVE | PSLEEP |
| B<br>L<br>U<br>E<br>F<br>D<br>6 | MS2<br>M. Gernhardt | H/O                      | PRE SLEEP |         |         |          |         |          |          | SLEEP    |      |          |          |         |          |          | DSO493   |          | POST SLEEP |         |        |
|                                 | MS1<br>J. Voss      | H/O                      | PRE SLEEP |         |         |          |         |          |          | SLEEP    |      |          |          |         |          |          | DSO493   |          | POST SLEEP |         |        |
|                                 | PS1<br>R. Crouch    | H/O                      | PRE SLEEP |         |         |          |         |          |          | SLEEP    |      |          |          |         |          |          |          |          | POST SLEEP |         |        |
| DAY/NIGHT                       |                     | [Day/Night Cycle: 88-96] |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |
| ORBIT                           |                     | [Orbit Data]             |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |
| TDRS                            |                     | [TDRS Data]              |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |
| ATTITUDE                        |                     | [Attitude Data]          |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |
| FREE/H2O IN                     |                     | [Free/H2O In Data]       |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |
| A/G 2                           |                     | [A/G 2 Data]             |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |
| NOTES                           |                     | [Notes]                  |           |         |         |          |         |          |          |          |      |          |          |         |          |          |          |          |            |         |        |



| MET               |                     | 006/00                          |           |          |          |          |          |          |          |          |         |            |          | 01       |          |         |          |          |         |        |  |  |  |  |  | 02 |              |  |  |  |  |  |  |  |  |  |  | 03 |            |  |  |  |  |  |  |  |  |  |  | 04 |  |  |  |  |  |  |  |  |  |  |  | 05 |  |  |  |  |  |  |  |  |  |  |  | 06 |  |  |  |  |  |  |  |  |  |  |  | 07 |  |  |  |  |  |  |  |  |  |  |  | 08 |  |  |  |  |  |  |  |  |  |  |  | 09 |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |  |  |  |  |  |  |  | 11 |  |  |  |  |  |  |  |  |  |  |  | 12 |  |  |  |  |  |  |  |  |  |  |  |
|-------------------|---------------------|---------------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|---------|------------|----------|----------|----------|---------|----------|----------|---------|--------|--|--|--|--|--|----|--------------|--|--|--|--|--|--|--|--|--|--|----|------------|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
| RED<br>FD7        | CDR<br>J. Halsell   | H/O                             | PRE SLEEP |          |          |          |          |          |          |          |         |            |          |          | SLEEP    |         |          |          |         |        |  |  |  |  |  |    | DISO 493     |  |  |  |  |  |  |  |  |  |  |    | POST SLEEP |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
|                   | PLT<br>S. Still     | H/O                             | PRE SLEEP |          |          |          |          |          |          |          |         |            |          |          | SLEEP    |         |          |          |         |        |  |  |  |  |  |    | RED DISO 493 |  |  |  |  |  |  |  |  |  |  |    | POST SLEEP |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
|                   | MS3<br>D. Thomas    | H/O                             | PRE SLEEP |          |          |          |          |          |          |          |         |            |          |          | SLEEP    |         |          |          |         |        |  |  |  |  |  |    | FD8 DISO 493 |  |  |  |  |  |  |  |  |  |  |    | POST SLEEP |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
|                   | PS2<br>G. Linteris  | H/O                             | PRE SLEEP |          |          |          |          |          |          |          |         |            |          |          | SLEEP    |         |          |          |         |        |  |  |  |  |  |    | DISO 493     |  |  |  |  |  |  |  |  |  |  |    | POST SLEEP |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| BLUE<br>FD7       | MS2<br>M. Gernhardt | H/O                             | PC6MMON   | DC11B081 | DC11B082 | SAREX @  | MEAL     | EXERCISE | RESERVE  | PSLEEP   |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
|                   | MS1<br>J. Voss      | H/O                             | D/P       | DC11B081 | DC11B082 | TPR1-MS  | DC11B083 | MEAL     | CL19T08E | CL20SHUT | CL21END | CL22SINITG | TPR2-MS  | CL23INCK | EXERCISE | RESERVE | PSLEEP   |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
|                   | PS1<br>R. Crouch    | H/O                             | D/P       | EXERCISE | CL4START | CL18T07E | TPR1-PS  | CL18T07E | CL18T07E | GBX2FLT  | SAREX @ | MEAL       | TEMGALLE | DC12B091 | DC12B091 | TPR2-PS | DC12B092 | DC12B093 | RESERVE | PSLEEP |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| DAY/NIGHT         |                     | 96 97 98 99 100 101 102 103 104 |           |          |          |          |          |          |          |          |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| ORBIT             |                     | E W                             |           |          |          |          |          |          |          |          |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| TDRS              |                     | FREE/H2O                        |           |          |          |          |          |          |          |          |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| ATTITUDE          |                     | 55 BIAS -ZLV -XVV               |           |          |          |          |          |          |          |          |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| FREE/H2O IN A/G 2 |                     | FREE/H2O                        |           |          |          |          |          |          |          |          |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
| NOTES             |                     | @P3 @E11                        |           |          |          |          |          |          |          |          |         |            |          |          |          |         |          |          |         |        |  |  |  |  |  |    |              |  |  |  |  |  |  |  |  |  |  |    |            |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |

| MET                                       |                     | Day 006            |             | 12          | 13            | 14              | 15              | 16              | 17              | 18              | 19              | 20              | 21              | 22              | 23              | 007/00          |               |
|---|---------------------|--------------------|-------------|-------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| R<br>E<br>D<br>F<br>I<br>E<br>L<br>D      | CDR<br>J. Halsell   | H/O                | EXERCISE    | P C 6 M O N | P C 9 M V I D | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P G B A 3 O B S | P M C - O C A |
|   | PLT<br>S. Still     | H/O                | O C A D / L |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | P S L E E P   |
|   | MS3<br>D. Thomas    | H/O                | D/P         | EXERCISE    | GBX1CHT       | GBX2CHT         | GBX3CHT         | GBX4CHT         | GBX5CHT         | GBX6CHT         | GBX7CHT         | GBX8CHT         | GBX9CHT         | GBX10CHT        | GBX11CHT        | GBX12CHT        | P S L E E P   |
|   | PS2<br>G. Linteris  | H/O                | D/P         | EXERCISE    | CS24STRT      | CS25SOLIC       | CS26T03A        | CS27T03A        | CS28T03A        | CS29T03A        | CS30T03A        | CS31T03A        | CS32T03A        | CS33T03A        | CS34T03A        | CS35T03A        | P S L E E P   |
| B<br>L<br>U<br>E<br>F<br>I<br>E<br>L<br>D | MS2<br>M. Gernhardt | H/O                | PRE SLEEP   |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | POST SLEEP    |
|   | MS1<br>J. Voss      | H/O                | PRE SLEEP   |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | POST SLEEP    |
|   | PS1<br>R. Crouch    | H/O                | PRE SLEEP   |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | POST SLEEP    |
| DAY/NIGHT                                 |                     | [Day/Night Cycle]  |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |
| ORBIT                                     |                     | [Orbit Data]       |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |
| TORS                                      |                     | [TORS Data]        |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |
| ATTITUDE                                  |                     | [Attitude Data]    |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |
| FREE/H2O IN                               |                     | [Free/H2O In Data] |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |
| A/G 2                                     |                     | [A/G 2 Data]       |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |
| NOTES                                     |                     | [Notes]            |             |             |               |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |               |



| MET                             |                     | Day 007                              |               | 12                 | 13      | 14       | 15            | 16 | 17       | 18    | 19        | 20        | 21       | 22       | 23       | 008/00                 |                        |         |
|---------------------------------|---------------------|--------------------------------------|---------------|--------------------|---------|----------|---------------|----|----------|-------|-----------|-----------|----------|----------|----------|------------------------|------------------------|---------|
| R<br>E<br>D<br>F<br>9           | CDR<br>J. Halsell   | H/O                                  | EXERCISE      | PCCMON             | PC9MVID | PG8A3OBS | WDAS DATA RET |    |          | MEAL  | PAO EVENT |           |          |          | RESERVE  | PS<br>R<br>E<br>E<br>P |                        |         |
|                                 | PLT<br>S. Still     | H/O                                  | WCOM<br>PIACT | FILTER<br>CLEANING | O CAD/L | WDAS S/U | WDAS DATA RET |    | P/TV17   | MEAL  | PAO EVENT | SAREX @   |          | EXERCISE | RESERVE  | PS<br>R<br>E<br>E<br>P |                        |         |
|                                 | MS3<br>D. Thomas    | H/O                                  | D/P           | EXERCISE           |         | LF3DIMS2 | GBX4IFFD      |    | GBX6IFFD | MEAL  | GBX1BDND  | ITEMEXCHG |          | GBX3BDND | GBX6BDND | RESERVE                | PS<br>R<br>E<br>E<br>P |         |
|                                 | PS2<br>G. Linteris  | H/O                                  | D/P           | DC15B121           |         | DC3FILM  | DC15B122      |    | TPR1-PS  | MEAL  | CS24STRT  | CS28T10A  | CS28T10A | TPR2-PS  | CS28T10A | SAREX @                | EXERCISE               | RESERVE |
| B<br>L<br>U<br>E<br>F<br>D<br>8 | MS2<br>M. Gernhardt | H/O                                  | PRE SLEEP     |                    |         |          |               |    |          | SLEEP |           |           |          |          |          | DSO<br>493             | POST SLEEP             |         |
|                                 | MS1<br>J. Voss      | H/O                                  | PRE SLEEP     |                    |         |          |               |    |          | SLEEP |           |           |          |          |          | DSO<br>493             | POST SLEEP             |         |
|                                 | PS1<br>R. Crouch    | H/O                                  | PRE SLEEP     |                    |         |          |               |    |          | SLEEP |           |           |          |          |          | 9                      | POST SLEEP             |         |
| DAY/NIGHT                       |                     | [Bar chart showing day/night cycle]  |               |                    |         |          |               |    |          |       |           |           |          |          |          |                        |                        |         |
| ORBIT                           |                     | 120 121 122 123 124 125 126 127 128  |               |                    |         |          |               |    |          |       |           |           |          |          |          |                        |                        |         |
| TDRS                            |                     | [Bar chart showing TDRS activity]    |               |                    |         |          |               |    |          |       |           |           |          |          |          |                        |                        |         |
| ATTITUDE                        |                     | FREE/H2O IN A/G 2                    |               |                    |         |          |               |    |          |       |           |           |          |          |          |                        |                        |         |
| FREE/H2O IN A/G 2               |                     | FREE/H2O FREE/H2O -55 BIAS -ZLV -XVV |               |                    |         |          |               |    |          |       |           |           |          |          |          |                        |                        |         |
| NOTES                           |                     | VRME 1330 @E14 @E15                  |               |                    |         |          |               |    |          |       |           |           |          |          |          |                        |                        |         |





| MET          |                     | 009/00                                       |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
|--------------|---------------------|--|--------------------|-------------------|------------|------------|--------------------|----------|--------------|--------------|----------|--------------------|--------------------|------------|----------|----------|--------------|
| Day 009      |                     | 01   | 02                 | 03                | 04         | 05         | 06                 | 07       | 08           | 09           | 10       | 11                 | 12                 |            |          |          |              |
| RED<br>FD10  | CDR<br>J. Halsell   | -M<br>ZNLV<br>R<br>U<br>*                    | PRE SLEEP          | SLEEP             |            |            |                    |          |              |              |          |                    | DSO<br>493         | POST SLEEP |          |          |              |
|              | PLT<br>S. Still     | H/O  | PRE SLEEP          | SLEEP             |            |            |                    |          |              |              |          |                    | RED<br>DSO<br>493  | POST SLEEP |          |          |              |
|              | MS3<br>D. Thomas    | H/O  | PRE SLEEP          | SLEEP             |            |            |                    |          |              |              |          |                    | FD11<br>DSO<br>493 | POST SLEEP |          |          |              |
|              | PS2<br>G. Linteris  | H/O  | PRE SLEEP          | SLEEP             |            |            |                    |          |              |              |          |                    |                    | POST SLEEP |          |          |              |
| BLUE<br>FD10 | MS2<br>M. Gernhardt | H/O  | PSETT<br>VUP<br>17 | PAO<br>EVENT<br>Δ | PC6<br>MON | PC6<br>MON | SL CNDS<br>TK DUMP | MEAL     | TO5<br>MODUL | TO5<br>MODUL | EXERCISE | PSETT<br>VUP<br>17 | PAO<br>EVENT       | RESERVE    |          |          |              |
|              | MS1<br>J. Voss      | H/O  | D/P                | PAO<br>EVENT      | DC188151   | DC188152   | TPR1-MS            | DC188153 | MEAL         | CS29106A     | CS29106A | CS29106A           | TPR2-MS            | GBX6BDND   | CS29106A | EXERCISE | RESERVE      |
|              | PS1<br>R. Crouch    | H/O  | D/P                | PAO<br>EVENT      | EXERCISE   | EM15PSL    | TPR1-PS            | GBX5BDND | MEAL         | GBX1BDND     | GBX2BDND | GBX3BDND           | LF3DIMS6           | TPR2-PS    | DC19B161 | DC19B162 | PAO<br>EVENT |
| DAY/NIGHT    |                     | [Shaded bars indicating day/night cycle]     |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
| ORBIT        |                     | 144 145 146 147 148 149 150 151 152          |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
| TDRS         |                     | [Shaded bars indicating TDRS activity]       |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
| ATTITUDE     |                     | [Shaded bars indicating attitude]            |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
| FREE/H2O IN  |                     | FREE/H2O FREE/H2O 55 BIAS -ZLV -XVV FREE/H2O |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
| A/G 2        |                     | [Shaded bars indicating A/G 2 activity]      |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |
| NOTES        |                     | * 55° BIAS<br>ΔSL AIR SAMPLE                 |                    |                   |            |            |                    |          |              |              |          |                    |                    |            |          |          |              |

| MET          | Day 009             | 12                | 13       | 14                 | 15   | 16       | 17      | 18       | 19      | 20                 | 21                   | 22                  | 23                   | 010/00           |                  |
|--------------|---------------------|-------------------|----------|--------------------|--|----------|---------|----------|---------|--------------------|----------------------|---------------------|----------------------|------------------|------------------|
| RED<br>FD11  | CDR<br>J. Halsell   | H/O               | EXERCISE | PC66NOM<br>PC9MVID | NOZS<br>NOZS<br>NOZS<br>NOZS<br>NOZS<br>NOZS<br>NOZS<br>NOZS | PC4VDPHY |         | MEAL     |         | 05MODUL<br>05MODUL |                      |                     | RESERVE              | PS<br>RLEE<br>EP |                  |
|              | PLT<br>S. Still     | H/O               |          | OCA                |  | PC4VDPHY |         | MEAL     |         |                    |                      | EXERCISE            | RESERVE              | PS<br>RLEE<br>EP |                  |
|              | MS3<br>D. Thomas    | H/O               | D/P      | EXERCISE           | EM1315S  | GBX1FSDC | TPR1-MS | GBX1FSDC | MEAL    | GBX2FSDC           | TPR2-MS<br>GBX3FSDC  | GBX2FSDC            | TEM14NI              | RESERVE          | PS<br>RLEE<br>EP |
|              | PS2<br>G. Linteris  | H/O               | D/P      | EXERCISE           | QSM2DISK   | DC19B163 | DC3FILM | DC19B163 | TPR1-PS | MEAL               | CS24STRT<br>CS30T09A | CS30T09A<br>TPR2-PS | CS30T09A<br>CS30T09A | CS41SHUT         | RESERVE          |
| BLUE<br>FD10 | MS2<br>M. Gernhardt | H/O               |          | PRE SLEEP          |  |          |         |          |         |                    |                      |                     | DSO493               | POST SLEEP       |                  |
|              | MS1<br>J. Voss      | H/O               |          | PRE SLEEP          |  |          |         |          |         |                    |                      |                     | DSO493               | POST SLEEP       |                  |
|              | PS1<br>R. Crouch    | H/O               |          | PRE SLEEP          |  |          |         |          |         |                    |                      |                     | 11                   | POST SLEEP       |                  |
| DAY/NIGHT    |                     | [Day/Night Cycle] |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |
| ORBIT        |                     | [Orbit Cycle]     |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |
| TDRS         |                     | [TDRS Cycle]      |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |
| ATTITUDE     |                     | [Attitude Cycle]  |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |
| FREE/H2O IN  |                     | [Free/H2O Cycle]  |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |
| A/G 2        |                     | [A/G 2 Cycle]     |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |
| NOTES        |                     | [Notes]           |          |                    |  |          |         |          |         |                    |                      |                     |                      |                  |                  |



| MET          |                     | Day 010                                |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
|--------------|---------------------|--|-----------|----------------------------|--------------------------------------|---------------------------------|---------------------------------|--|--------------------------------------|--------------------------------------|----------|--------------------------------------|--|--------------------------------------|---------------------------------|--------------------------------------|
|              |                     | 01/00                                  | 01        | 02                         | 03                                   | 04                              | 05                              | 06   | 07                                   | 08                                   | 09       | 10                                   | 11   | 12                                   |                                 |                                      |
| RED<br>FD11  | CDR<br>J. Halsell   | P<br>M<br>C<br>-<br>O<br>C<br>A<br>H/O | PRE SLEEP | SLEEP                      |                                      |                                 |                                 |  |                                      |                                      |          |                                      | D<br>S<br>O<br>4<br>9<br>3                     | POST SLEEP                           |                                 |                                      |
|              | PLT<br>S. Still     | PRE SLEEP H/O                          | PRE SLEEP | SLEEP                      |                                      |                                 |                                 |  |                                      |                                      |          |                                      | R<br>E<br>D<br>D<br>S<br>O<br>4<br>9<br>3      | POST SLEEP                           |                                 |                                      |
|              | MS3<br>D. Thomas    | PRE SLEEP H/O                          | PRE SLEEP | SLEEP                      |                                      |                                 |                                 |  |                                      |                                      |          |                                      | F<br>D<br>1<br>2<br>D<br>S<br>O<br>4<br>9<br>3 | POST SLEEP                           |                                 |                                      |
|              | PS2<br>G. Linteris  | PRE SLEEP H/O                          | PRE SLEEP | SLEEP                      |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  | POST SLEEP                           |                                 |                                      |
| BLUE<br>FD11 | MS2<br>M. Gernhardt | POST SLEEP H/O                         | EXERCISE  | P<br>C<br>6<br>M<br>O<br>N |                                      |                                 |                                 | P<br>S<br>E<br>T<br>T<br>V<br>U<br>P<br>1<br>7 | MEAL                                 | P<br>A<br>O<br>E<br>V<br>E<br>N<br>T |          |                                      |  |                                      |                                 |                                      |
|              | MS1<br>J. Voss      | POST SLEEP H/O                         | D/P       | DC20B171                   |                                      |                                 | T<br>P<br>R<br>1<br>-<br>M<br>S | DC20B172                                       | C<br>S<br>2<br>4<br>S<br>T<br>R<br>T | MEAL                                 | CS31T04A | C<br>S<br>3<br>1<br>T<br>0<br>4<br>A | T<br>P<br>R<br>2<br>-<br>M<br>S                | C<br>S<br>3<br>1<br>T<br>0<br>4<br>A | EXERCISE                        |                                      |
|              | PS1<br>R. Crouch    | POST SLEEP H/O                         | D/P       | EXERCISE                   | G<br>B<br>X<br>1<br>F<br>S<br>D<br>C | L<br>F<br>3<br>D<br>I<br>M<br>S | T<br>P<br>R<br>1<br>-<br>P<br>S | G<br>B<br>X<br>3<br>F<br>S<br>D<br>C           | GBX2FSDC                             |                                      | MEAL     | P<br>A<br>O<br>E<br>V<br>E<br>N<br>T | G<br>B<br>X<br>3<br>F<br>S<br>D<br>C           | GBX2FSDC                             | T<br>P<br>R<br>2<br>-<br>P<br>S | G<br>B<br>X<br>2<br>F<br>S<br>D<br>C |
| DAY/NIGHT    |                     | [Day/Night Cycle]                      |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
| ORBIT        |                     | 160 161 162 163 164 165 166 167 168    |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
| TDRS         |                     | [TDRS Schedule]                        |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
| ATTITUDE     |                     | 55 BIAS -ZLV -XVV                      |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
| FREE/H2O IN  |                     | FREE/H2O                               |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
| A/G 2        |                     |  |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |
| NOTES        |                     |  |           |                            |                                      |                                 |                                 |  |                                      |                                      |          |                                      |  |                                      |                                 |                                      |



| MET              |                     | Day 011                              |                                   | 01/00                                | 01                                   | 02                         | 03                         | 04                         | 05                              | 06                                   | 07                                   | 08                         | 09                         | 10                                | 11 | 12         |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
|------------------|---------------------|--------------------------------------|-----------------------------------|--------------------------------------|--------------------------------------|----------------------------|----------------------------|----------------------------|---------------------------------|--------------------------------------|--------------------------------------|----------------------------|----------------------------|-----------------------------------|----|------------|--------------------------------------|--------------------------------------|--------------------------------------|---|---------------------------------|----------|----------|--------------------------------------|--|----------|--|--|--|--|
| RED<br>FD<br>12  | CDR<br>J. Halsell   | P<br>M<br>C<br>-<br>O<br>C<br>C<br>A | O<br>C<br>A<br>H/O                | PRE SLEEP                            |                                      |                            |                            |                            |                                 | SLEEP                                |                                      |                            |                            | RED<br>D<br>S<br>O<br>4<br>9<br>3 |    | POST SLEEP |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
|                  | PLT<br>S. Still     |                                      | PRE SLEEP/H/O                     | PRE SLEEP                            |                                      |                            |                            |                            |                                 | SLEEP                                |                                      |                            |                            | RED<br>D<br>S<br>O<br>4<br>9<br>3 |    | POST SLEEP |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
|                  | MS3<br>D. Thomas    |                                      | PRE SLEEP/H/O                     | PRE SLEEP                            |                                      |                            |                            |                            |                                 | SLEEP                                |                                      |                            |                            | RED<br>D<br>S<br>O<br>4<br>9<br>3 |    | POST SLEEP |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
|                  | PS2<br>G. Linteris  |                                      | PRE SLEEP/H/O                     | PRE SLEEP                            |                                      |                            |                            |                            |                                 | SLEEP                                |                                      |                            |                            |                                   |    | POST SLEEP |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| BLUE<br>FD<br>12 | MS2<br>M. Gernhardt |                                      | POST SLEEP H/O                    | P<br>A<br>O<br>E<br>V<br>E<br>N<br>T | P<br>C<br>6<br>M<br>O<br>N           | P<br>C<br>6<br>M<br>O<br>N | P<br>C<br>6<br>M<br>O<br>N | P<br>C<br>6<br>M<br>O<br>N | P<br>C<br>6<br>M<br>O<br>N      | P<br>C<br>6<br>M<br>O<br>N           | P<br>C<br>6<br>M<br>O<br>N           | P<br>C<br>6<br>M<br>O<br>N | P<br>C<br>6<br>M<br>O<br>N |                                   |    | MEAL       |                                      | EXERCISE                             |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
|                  | MS1<br>J. Voss      |                                      | POST SLEEP H/O                    | P<br>A<br>O<br>E<br>V<br>E<br>N<br>T | D/P                                  |                            | DC22B191                   |                            | T<br>P<br>R<br>1<br>-<br>M<br>S | T<br>O<br>5<br>M<br>O<br>D<br>U<br>L | T<br>O<br>5<br>M<br>O<br>D<br>U<br>L |                            |                            |                                   |    | MEAL       | C<br>S<br>2<br>4<br>S<br>T<br>R<br>T | C<br>S<br>3<br>3<br>T<br>O<br>2<br>A | T<br>P<br>R<br>2<br>-<br>M<br>S      | C<br>O<br>R<br>D<br>I<br>N<br>A<br>T<br>E<br>C<br>O<br>O<br>R<br>D<br>I<br>N<br>A<br>T<br>E |                                 | EXERCISE |          |                                      |  |          |  |  |  |  |
|                  | PS1<br>R. Crouch    | P<br>S<br>O<br>L<br>S<br>E<br>T      | S<br>A<br>R<br>E<br>X<br>P<br>H/O | P<br>S<br>O<br>L<br>S<br>E<br>T      | P<br>A<br>O<br>E<br>V<br>E<br>N<br>T | D/P                        | GBX1BDND                   |                            | GBX2BDND                        | T<br>P<br>R<br>1<br>-<br>P<br>S      |                                      | GBX4BDND                   |                            |                                   |    | MEAL       | GBX6BDND                             | GBX6BDND                             | T<br>E<br>M<br>1<br>7<br>N<br>I<br>C | T<br>P<br>R<br>2<br>-<br>P<br>S   | L<br>F<br>5<br>M<br>E<br>T<br>B |          | CSLM1SET | C<br>S<br>L<br>M<br>2<br>R<br>N<br>L |  | EXERCISE |  |  |  |  |
| DAY/NIGHT        |                     |                                      |                                   |                                      |                                      |                            |                            |                            |                                 |                                      |                                      |                            |                            |                                   |    |            |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| ORBIT            |                     | 176                                  |                                   | 177                                  |                                      | 178                        |                            | 179                        |                                 | 180                                  |                                      | 181                        |                            | 182                               |    | 183        |                                      | 184                                  |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| TDRS             |                     | E                                    |                                   | W                                    |                                      |                            |                            |                            |                                 |                                      |                                      |                            |                            |                                   |    |            |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| ATTITUDE         |                     |                                      |                                   |                                      |                                      |                            |                            |                            |                                 |                                      |                                      |                            |                            |                                   |    |            |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| FREE/H2O IN      |                     |                                      |                                   |                                      |                                      |                            |                            |                            |                                 |                                      |                                      |                            |                            |                                   |    |            |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| A/G 2            |                     |                                      |                                   |                                      |                                      |                            |                            |                            |                                 |                                      |                                      |                            |                            |                                   |    |            |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |
| NOTES            |                     | ΦP6                                  |                                   |                                      |                                      |                            |                            |                            |                                 |                                      |                                      |                            |                            |                                   |    |            |                                      |                                      |                                      |   |                                 |          |          |                                      |  |          |  |  |  |  |

| MET                                  | Day 011             | 12                                  | 13          | 14   | 15                               | 16                                  | 17   | 18        | 19                   | 20                  | 21                  | 22                               | 23       | 012/00                                     |        |
|--------------------------------------|---------------------|-------------------------------------|-------------|--|----------------------------------|-------------------------------------|------|-----------|----------------------|---------------------|---------------------|----------------------------------|----------|--|--------|
| R<br>E<br>D<br>F<br>D<br>1<br>3      | CDR<br>J. Haisell   | H/O                                 | EXERCISE    | PC6MMON<br>PC9MVID<br>PGBA30BS<br>PGBA30BS<br>PGBA30BS |                                  |                                     | MEAL | PAO EVENT | IO5MODUL<br>IO5MODUL | MCD SAMPLE COLL     |                     | CSLM3PWR<br>CSLM4SPU<br>CSLM2RN2 | RESERVE  | PSLEED                                     |        |
|                                      | PLT<br>S. Still     | H/O                                 | WCS<br>COMP |  |                                  | OCA                                 | MEAL | PAO EVENT | SAREX<br>Φ           | MCD SAMPLE COLL     |                     | EXERCISE                         | RESERVE  | PSLEED                                     |        |
|                                      | MS3<br>D. Thomas    | H/O                                 | D/P         | EXERCISE   | TO9EXP                           | TPR1-MS<br>T07CM-1                  | MEAL | PAO EVENT | LF5METS              |                     | TPR2-MS<br>TEM18ZNT | OL1MGBX<br>OL1MGBX               | RESERVE  | PSLEED                                     |        |
|                                      | PS2<br>G. Linteris  | H/O                                 | D/P         |  | CS24STRT<br>CS34TT12A<br>TPR1-PS | CS34TT12A<br>CS34TT12A<br>CS34TT12A | MEAL | PAO EVENT | CS35TO4B<br>CS35TO4B | CS35TO4B<br>TPR2-PS | CS35TO4B            | CS41SHUT<br>CS41SHUT             | EXERCISE | RESERVE                                    | PSLEED |
| B<br>L<br>U<br>E<br>F<br>D<br>1<br>2 | MS2<br>M. Gernhardt | H/O                                 | RESERVE     | PRE SLEEP  |                                  |                                     |      |           |                      |                     |                     |                                  |          | BLU<br>E<br>F<br>D<br>1<br>3<br>POST SLEEP |        |
|                                      | MS1<br>J. Voss      | H/O                                 | RESERVE     | PRE SLEEP  |                                  |                                     |      |           |                      |                     |                     |                                  |          | BLU<br>E<br>F<br>D<br>1<br>3<br>POST SLEEP |        |
|                                      | PS1<br>R. Crouch    | H/O                                 | RESERVE     | PRE SLEEP  | SAREX<br>Φ                       |                                     |      |           |                      |                     |                     |                                  |          | BLU<br>E<br>F<br>D<br>1<br>3<br>POST SLEEP |        |
| DAY/NIGHT                            |                     | [Day/Night Cycle]                   |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |
| ORBIT                                |                     | 184 185 186 187 188 189 190 191 192 |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |
| TDRS                                 |                     | [TDRS Schedule]                     |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |
| ATTITUDE                             |                     | 45 BIAS -ZLV -XVV                   |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |
| FREE/H2O IN                          |                     | H2O H2O                             |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |
| A/G 2                                |                     | ΦE16 ΦE18                           |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |
| NOTES                                |                     | ΩDT0 677                            |             |  |                                  |                                     |      |           |                      |                     |                     |                                  |          |  |        |

| MET               |                     | Day 012  |                |            |  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      |                                      |  |                                 |               |
|-------------------|---------------------|--|----------------|------------|--|---------------------------------|--------------------------------------|---------------------------------|---------------|----|---------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|---------------------------------|---------------|
|                   |                     | 012/00   | 01             | 02         | 03   | 04                              | 05                                   | 06                              | 07            | 08 | 09                              | 10                                   | 11                                   | 12                                   |                                      |  |                                 |               |
| RED<br>FD13       | CDR<br>J. Halsell   | P<br>M<br>C<br>-<br>O<br>C<br>A  | OCA H/O        | PRE SLEEP  | SLEEP  |                                 |                                      |                                 |               |    |                                 |                                      |                                      | DSO<br>493                           | POST SLEEP                           |  |                                 |               |
|                   | PLT<br>S. Still     |  | PRE SLEEP H/O  | PRE SLEEP  | SLEEP  |                                 |                                      |                                 |               |    |                                 |                                      |                                      | RED<br>DSO<br>493                    | POST SLEEP                           |  |                                 |               |
|                   | MS3<br>D. Thomas    |  | PRE SLEEP H/O  | PRE SLEEP  | SLEEP  |                                 |                                      |                                 |               |    |                                 |                                      |                                      | FD14<br>DSO<br>493                   | POST SLEEP                           |  |                                 |               |
|                   | PS2<br>G. Linteris  |  | PRE SLEEP H/O  | PRE SLEEP  | SLEEP  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      | POST SLEEP                           |  |                                 |               |
| BLUE<br>FD13      | MS2<br>M. Gernhardt |  | POST SLEEP H/O | POST SLEEP | P<br>C<br>6<br>M<br>O<br>N                               | 0<br>5<br>M<br>O<br>D<br>U<br>L | 0<br>5<br>M<br>O<br>D<br>U<br>L      | MEAL                            |               |    | T<br>1<br>2<br>S<br>A<br>M<br>S | EXERCISE                             |                                      |                                      |                                      |  |                                 |               |
|                   | MS1<br>J. Voss      | P<br>S<br>L<br>E<br>E<br>P<br>S<br>A<br>R<br>E<br>X<br>P<br>S<br>L<br>E<br>E<br>P<br>H/O | POST SLEEP H/O | POST SLEEP | D/P  | BLUE OFF-DUTY                   |                                      | P<br>F<br>C<br>-<br>O<br>C<br>A | BLUE OFF-DUTY |    | MEAL                            | C<br>S<br>2<br>4<br>S<br>T<br>R<br>T | C<br>S<br>3<br>6<br>T<br>O<br>7<br>A | C<br>S<br>3<br>6<br>T<br>O<br>7<br>A | C<br>S<br>3<br>6<br>T<br>O<br>7<br>A | C<br>S<br>3<br>6<br>T<br>O<br>7<br>A                     |                                 |               |
|                   | PS1<br>R. Crouch    | POST SLEEP H/O   | POST SLEEP     | D/P        | B<br>L<br>U<br>E<br>O<br>F<br>F<br>-<br>D<br>U<br>T<br>Y | T<br>P<br>R<br>1<br>-<br>P<br>S | C<br>S<br>L<br>M<br>3<br>P<br>W<br>R | L<br>F<br>F<br>P<br>S<br>2      | DC23B201      |    | D<br>C<br>3<br>F<br>I<br>L<br>M | T<br>E<br>M<br>1<br>9<br>1<br>8<br>S | MEAL                                 |                                      | EXERCISE                             | B<br>L<br>U<br>E<br>O<br>F<br>F<br>-<br>D<br>U<br>T<br>Y | P<br>F<br>C<br>-<br>O<br>C<br>A | BLUE OFF-DUTY |
| DAY/NIGHT ORBIT   |                     | [ORBIT TRACK]  |                |            |  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      |                                      |  |                                 |               |
| TDRS              |                     | [TDRS TRACK]   |                |            |  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      |                                      |  |                                 |               |
| ATTITUDE          |                     | [ATTITUDE TRACK]   |                |            |  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      |                                      |  |                                 |               |
| FREE/H2O IN A/G 2 |                     | [FREE/H2O TRACK]   |                |            |  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      |                                      |  |                                 |               |
| NOTES             |                     | ΦP4  |                |            |  |                                 |                                      |                                 |               |    |                                 |                                      |                                      |                                      |                                      |  |                                 |               |

| MET          | Day 012             | 12                  | 13  | 14                                   | 15              | 16                                   | 17              | 18  | 19             | 20  | 21                                 | 22                               | 23                                 | 013/00  |         |             |
|--------------|---------------------|---------------------|---|--------------------------------------|-----------------|--------------------------------------|-----------------|---|----------------|---|------------------------------------|----------------------------------|------------------------------------|---|---------|-------------|
| RED<br>FD14  | CDR<br>J. Halsell   | H/O                 | PC66MON<br>C S L M 4 S P U<br>C S L M 2 R R N 4<br>P C C 9 M V I D<br>C S L M 3 P W R | C S L M 4 S P U<br>C S L M 2 R R N 3 | C S L M 3 P W R | C S L M 4 S P U<br>C S L M 2 R R N 3 | MEAL            | C S L M 3 P W R<br>C S L M 4 S P U<br>C S L M 2 R R N 5 | DOBTOS<br>677@ | C S L M 3 P W R<br>C S L M 4 S P U<br>C S L M 2 R R N 6 | EXERCISE                           | RESERVE                          | PS<br>SLEEP                        |   |         |             |
|              | PLT<br>S. Still     | H/O                 | OCA   |                                      |                 |                                      | PFC<br>-<br>OCA | MEAL  | DOBTOS<br>677@ |   |                                    | EXERCISE                         | RESERVE                            | PS<br>SLEEP   |         |             |
|              | MS3<br>D. Thomas    | H/O                 | D/P   | L F 2 L P S S                        | I O S M O D U L | I O S M O D U L                      | T P R 1 - M S   | I T E M E X C H G<br>I T E M 2 O C O P                  | EXERCISE       | MEAL  | RED OFF-DUTY                       | PFC<br>-<br>OCA                  | RED OFF-DUTY                       |   | RESERVE | PS<br>SLEEP |
|              | PS2<br>G. Linteris  | H/O                 | EXERCISE  | RED OFF-DUTY                         |                 |                                      |                 | PFC<br>-<br>OCA   | MEAL           | D/P   | C S 2 4 S T R T<br>C S 3 7 T O 8 A | C S 3 7 T O 8 A<br>T P R 2 - P S | C S 3 7 T O 8 A<br>E X P 4 R E C F | C S L M 3 P W R<br>C S L M 4 S P U<br>C S L M 2 R R N 6 | RESERVE | PS<br>SLEEP |
| BLUE<br>FD13 | MS2<br>M. Gernhardt | H/O                 | PRE SLEEP   |                                      |                 |                                      | SLEEP           |   |                |   |                                    |                                  |                                    | B<br>L<br>U<br>E  |         |             |
|              | MS1<br>J. Voss      | EXERCISE            | H/O   | PRE SLEEP                            |                 |                                      |                 | SLEEP   |                |   |                                    |                                  |                                    |   | F<br>D  |             |
|              | PS1<br>R. Crouch    | BLUE<br>OFF-DUTY    | H/O   | PRE SLEEP                            |                 |                                      |                 | SLEEP   |                |   |                                    |                                  |                                    |   | 1<br>4  |             |
| DAY/NIGHT    |                     | [Day/Night Cycle]   |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |
| ORBIT        |                     | [Orbit Cycle]       |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |
| TDRS         |                     | [TDRS Cycle]        |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |
| ATTITUDE     |                     | [Attitude Cycle]    |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |
| FREE/H2O IN  |                     | [Free/H2O In Cycle] |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |
| A/G 2        |                     | [A/G 2 Cycle]       |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |
| NOTES        |                     | [Notes]             |   |                                      |                 |                                      |                 |   |                |   |                                    |                                  |                                    |   |         |             |

@ D10 677

| MET          |                     | Day 013                    |                                 |               |                                 |                            |                                      |                                 |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
|--------------|---------------------|----------------------------|---------------------------------|---------------|---------------------------------|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|----------|
|              |                     | 013/00                     | 01                              | 02            | 03                              | 04                         | 05                                   | 06                              | 07                                   | 08                                   | 09                                   | 10                                   | 11                                   | 12                                   |                                      |                                      |                                      |                                      |                                      |                                      |          |
| RED<br>FD14  | CDR<br>J. Halsell   | PS<br>SLEEP                | I<br>M<br>U<br>M<br>N<br>V<br>R | H<br>/<br>O   | P<br>M<br>C<br>-<br>O<br>C<br>A | O<br>C<br>A                | PRE<br>SLEEP                         | SLEEP                           |                                      |                                      |                                      |                                      | D<br>S<br>O<br>4<br>9<br>3           | POST<br>SLEEP                        |                                      |                                      |                                      |                                      |                                      |                                      |          |
|              | PLT<br>S. Still     | PRE<br>SLEEP               | H<br>/<br>O                     | PRE<br>SLEEP  | SLEEP                           |                            |                                      |                                 |                                      | R<br>E<br>D                          | D<br>S<br>O<br>4<br>9<br>3           | POST<br>SLEEP                        |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
|              | MS3<br>D. Thomas    | PRE<br>SLEEP               | H<br>/<br>O                     | PRE<br>SLEEP  | SLEEP                           |                            |                                      |                                 |                                      | F<br>D<br>1<br>5                     | D<br>S<br>O<br>4<br>9<br>3           | POST<br>SLEEP                        |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
|              | PS2<br>G. Linteris  | PRE<br>SLEEP               | H<br>/<br>O                     | PRE<br>SLEEP  | SLEEP                           |                            |                                      |                                 |                                      |                                      |                                      | POST<br>SLEEP                        |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
| BLUE<br>FD14 | MS2<br>M. Gernhardt | D<br>S<br>O<br>4<br>9<br>3 | POST<br>SLEEP                   | H<br>/<br>O   | POST<br>SLEEP                   | P<br>C<br>C<br>M<br>O<br>N |                                      |                                 | I<br>O<br>5<br>M<br>O<br>D<br>U<br>L | MEAL                                 |                                      | EXERCISE                             |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
|              | MS1<br>J. Voss      | D<br>S<br>O<br>4<br>9<br>3 | POST<br>SLEEP                   | H<br>/<br>O   | POST<br>SLEEP                   | D<br>/<br>P                | DC24B211                             |                                 | T<br>P<br>R<br>1<br>-<br>M<br>S      | DC24B221                             |                                      | MEAL                                 | C<br>S<br>2<br>4<br>S<br>T<br>R<br>T | C<br>S<br>3<br>8<br>T<br>1<br>3<br>A | C<br>S<br>3<br>8<br>T<br>1<br>3<br>A | C<br>S<br>3<br>8<br>T<br>1<br>3<br>A | C<br>S<br>3<br>8<br>T<br>1<br>3<br>A | C<br>S<br>3<br>8<br>T<br>1<br>3<br>A |                                      |                                      |          |
|              | PS1<br>R. Couch     | POST<br>SLEEP              | H<br>/<br>O                     | POST<br>SLEEP | D<br>/<br>P                     | LF4SEM2                    | C<br>S<br>L<br>M<br>4<br>S<br>P<br>U | T<br>P<br>R<br>1<br>-<br>P<br>S | T<br>E<br>M<br>2<br>1<br>1<br>6<br>S | T<br>E<br>M<br>E<br>X<br>C<br>H<br>G | C<br>S<br>L<br>M<br>2<br>R<br>N<br>7 | C<br>S<br>L<br>M<br>3<br>P<br>W<br>R | C<br>S<br>L<br>M<br>4<br>S<br>P<br>U | MEAL                                 | C<br>S<br>L<br>M<br>2<br>R<br>N<br>8 | C<br>S<br>L<br>M<br>3<br>P<br>W<br>R | L<br>F<br>4<br>S<br>E<br>M<br>4      | T<br>P<br>R<br>2<br>-<br>P<br>S      | C<br>S<br>L<br>M<br>4<br>S<br>P<br>U | C<br>S<br>L<br>M<br>2<br>R<br>N<br>9 | EXERCISE |
| DAY/NIGHT    |                     | E                          |                                 | W             |                                 | E                          |                                      | W                               |                                      | E                                    |                                      | W                                    |                                      | E                                    |                                      | W                                    |                                      | E                                    |                                      | W                                    |          |
| ORBIT        |                     | 208                        |                                 | 209           |                                 | 210                        |                                      | 211                             |                                      | 212                                  |                                      | 213                                  |                                      | 214                                  |                                      | 215                                  |                                      | 216                                  |                                      |                                      |          |
| TDRS         |                     | E                          |                                 | W             |                                 | E                          |                                      | W                               |                                      | E                                    |                                      | W                                    |                                      | E                                    |                                      | W                                    |                                      | E                                    |                                      | W                                    |          |
| ATTITUDE     |                     |                            |                                 |               |                                 |                            |                                      |                                 |                                      | 45 BIAS -ZLV -XVV                    |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
| FREE/H2O IN  |                     |                            |                                 |               |                                 |                            |                                      | FREE/H2O                        |                                      |                                      |                                      | H2O                                  |                                      |                                      |                                      | H2O                                  |                                      |                                      |                                      |                                      |          |
| A/G 2        |                     |                            |                                 |               |                                 |                            |                                      |                                 |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |
| NOTES        |                     | 45° BIAS                   |                                 |               |                                 |                            |                                      |                                 |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |                                      |          |

| MET                                  |                     | Day 013                |     | 12       | 13        | 14            | 15                  | 16            | 17       | 18   | 19                 | 20    | 21       | 22 | 23      | 014/00                      |
|--------------------------------------|---------------------|------------------------|-----|----------|-----------|---------------|---------------------|---------------|----------|------|--------------------|-------|----------|----|---------|-----------------------------|
| R<br>E<br>D<br>F<br>D<br>1<br>5      | CDR<br>J. Halsell   |                        | H/O | EXERCISE | PCGMON    | PC9MVID       | PC9MVID             | PC9MVID       |          | MEAL |                    |       |          |    | RESERVE | PS<br>R<br>L<br>E<br>E<br>P |
|                                      | PLT<br>S. Still     | PS<br>/TT<br>VUP<br>17 | H/O |          | SAREX     | WDAS<br>SETUP | WDAS<br>DATA<br>RET | WDAS<br>SETUP | EXERCISE | MEAL | FILTER<br>CLEANING |       | EXP8TRAN |    | RESERVE | PS<br>R<br>L<br>E<br>E<br>P |
|                                      | MS3<br>D. Thomas    |                        | H/O | D/P      | EXERCISE  |               |                     |               | LF6ION2  | MEAL |                    |       | EXP8TRAN |    | RESERVE | PS<br>R<br>L<br>E<br>E<br>P |
|                                      | PS2<br>G. Linteris  |                        | H/O | D/P      | EXERCISE  |               |                     |               | DC25RTRN | MEAL |                    |       |          |    | RESERVE | PS<br>R<br>L<br>E<br>E<br>P |
| B<br>L<br>U<br>E<br>F<br>D<br>1<br>4 | MS2<br>M. Gernhardt |                        | H/O |          | PRE SLEEP |               |                     |               |          |      |                    | SLEEP |          |    |         | B<br>L<br>U<br>E            |
|                                      | MS1<br>J. Voss      | EXERCISE               | H/O |          | PRE SLEEP |               |                     |               |          |      |                    | SLEEP |          |    |         | F<br>D                      |
|                                      | PS1<br>R. Couch     | EXERCISE               | H/O |          | PRE SLEEP |               |                     |               |          |      |                    | SLEEP |          |    |         | 1<br>5                      |
| DAY/NIGHT                            |                     | [Day/Night Cycle]      |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
| ORBIT                                |                     | [Orbit Data]           |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
| TDRS                                 |                     | [TDRS Data]            |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
| ATTITUDE                             |                     | [Attitude Data]        |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
| FREE/H2O IN                          |                     | [Free/H2O In Data]     |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
| A/G 2                                |                     | [A/G 2 Data]           |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
| NOTES                                |                     | ΦB1 @ DTO 677          |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |
|                                      |                     | VRME 1330              |     |          |           |               |                     |               |          |      |                    |       |          |    |         |                             |



| MET          |                     | Day 014   |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
|--------------|---------------------|-----------|---------------------------------|--|------------|-----|----------|----|----|----------|----|----|----------------------------|------------|--|----------|----------|
|              |                     | 014/00    | 01                              | 02   | 03         | 04  | 05       | 06 | 07 | 08       | 09 | 10 | 11                         | 12         |  |          |          |
| RED<br>FD15  | CDR<br>J. Halsell   | PRE SLEEP | P<br>M<br>C<br>-<br>O<br>C<br>A | O<br>C<br>A<br>H/<br>O<br>P<br>R<br>E<br>S<br>L<br>E<br>E<br>P |            |     |          |    |    | SLEEP    |    |    |                            | POST SLEEP |  |          |          |
|              | PLT<br>S. Still     | PRE SLEEP |                                 | H/<br>O<br>P<br>R<br>E<br>S<br>L<br>E<br>E<br>P                |            |     |          |    |    | SLEEP    |    |    | <b>R<br/>E<br/>D</b>       | POST SLEEP |  |          |          |
|              | MS3<br>D. Thomas    | PRE SLEEP |                                 | H/<br>O<br>P<br>R<br>E<br>S<br>L<br>E<br>E<br>P                |            |     |          |    |    | SLEEP    |    |    | <b>F<br/>D<br/>1<br/>6</b> | POST SLEEP |  |          |          |
|              | PS2<br>G. Linteris  | PRE SLEEP |                                 | H/<br>O<br>P<br>R<br>E<br>S<br>L<br>E<br>E<br>P                |            |     |          |    |    | SLEEP    |    |    |                            | POST SLEEP |  |          |          |
| BLUE<br>FD15 | MS2<br>M. Gernhardt | SLEEP     | POST SLEEP                      | H/<br>O  | POST SLEEP |     |          |    |    | PC5VDDCT |    |    | MEAL                       |            |  | CS46DINT | EXERCISE |
|              | MS1<br>J. Voss      | SLEEP     | POST SLEEP                      | H/<br>O  | POST SLEEP | D/P |          |    |    | CS40T11A |    |    |                            | MEAL       |  |          | CS46DINT |
|              | PS1<br>R. Couch     | SLEEP     | POST SLEEP                      | H/<br>O  | POST SLEEP | D/P | EXERCISE |    |    | PC5VDDCT |    |    |                            | MEAL       |  |          | CS46DINT |
| DAY/NIGHT    |                     |           |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
| ORBIT        |                     |           |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
| TDRS         |                     | E         |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
| ATTITUDE     |                     | W         |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
| FREE/H2O IN  |                     |           |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
| A/G 2        |                     |           |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |
| NOTES        |                     |           |                                 |  |            |     |          |    |    |          |    |    |                            |            |  |          |          |

| MET              |                     | Day 014           |     | 12        | 13                     | 14                | 15        | 16   | 17                          | 18  | 19   | 20       | 21         | 22      | 23       | 015/00  |            |            |  |
|------------------|---------------------|-------------------|-----|-----------|------------------------|-------------------|-----------|--|-----------------------------|---|--|----------|------------|---------|----------|---------|------------|------------|--|
| RED<br>FD<br>16  | CDR<br>J. Halsell   | D/O BRIEF         | H/O | FCS C/O   | RC SR HOT              | RC SR HOT         | RC SR HOT | EXERCISE   | SIN<br>MOT                  |   | ST<br>MOM                                  | MEAL     | CABIN STOW |         |          |         |            |            |  |
|                  | PLT<br>S. Still     | D/O BRIEF         | H/O | FCS C/O   | RC SR HOT              |                   | PPOVS/U   | L<br>-<br>1<br>C<br>H<br>E<br>C<br>K<br>C<br>O<br>M<br>M | PC11MDCT                    | L<br>C<br>H<br>E<br>C<br>K<br>C<br>O<br>M<br>M<br>U | DO<br>T<br>O<br>S<br>/<br>S<br>T<br>O<br>W | MEAL     | CABIN STOW |         |          |         | EXERCISE   |            |  |
|                  | MS3<br>D. Thomas    | D/O BRIEF         | H/O | D/P       |                        |                   |           | EXERCISE   | EX<br>P<br>9<br>D<br>A<br>C | PC11MDCT  | TPR1-MS                                    | EXP9DAC  | MEAL       | GBX9CHT | GBX3OFF  | TPR2-MS | QSM2DISK   | CABIN STOW |  |
|                  | PS2<br>G. Linteris  | D/O BRIEF         | H/O | D/P       | EXERCISE               | GBX1CHT           | GBX2CHT   | GBX3CHT  | TPR1-PS                     | GBX4CHT   | GBX5CHT                                    | GBX3CHT  | GBX4CHT    | MEAL    | TEM26DCT | TPR2-PS | CABIN STOW |            |  |
| BLUE<br>FD<br>15 | MS2<br>M. Gernhardt | D/O BRIEF         | H/O | FCS C/O   | RC<br>S<br>H<br>/<br>F | PRE SLEEP         |           | SLEEP  |                             |   |  |          |            |         |          |         |            |            |  |
|                  | MS1<br>J. Voss      | D/O BRIEF         | H/O | EXERCISE  | PRE SLEEP              |                   | SLEEP     |  |                             |   |  |          |            |         |          |         |            |            |  |
|                  | PS1<br>R. Couch     | D/O BRIEF         | H/O | PRE SLEEP |                        | SLEEP             |           |  |                             |   |  |          |            |         |          |         |            |            |  |
| DAY/NIGHT        |                     | ORBIT             |     |           |                        |                   |           |  |                             |   |  |          |            |         |          |         |            |            |  |
| TDRS             |                     | E W               |     |           |                        |                   |           |  |                             |   |  |          |            |         |          |         |            |            |  |
| ATTITUDE         |                     | FREE/H2O IN       |     |           |                        |                   |           |  |                             |   |  |          |            |         |          |         |            |            |  |
| A/G 2            |                     | 45 BTAS -ZLV -XVV |     |           |                        |                   |           |  |                             |   |  |          |            |         |          |         |            |            |  |
| NOTES            |                     | ▲APU HTR ACT      |     |           |                        | ΦAPU HTR RECONFIG |           |  |                             |   |  | @DTS 677 |            |         |          |         |            |            |  |

| MET               |                     | 015/00               |             |             |                       |            |                                 |            |     |     |                                 |                                      |                                      |                            |   |        |   |      |   |
|-------------------|---------------------|----------------------|-------------|-------------|-----------------------|------------|---------------------------------|------------|-----|-----|---------------------------------|--------------------------------------|--------------------------------------|----------------------------|---|--------|---|------|---|
| Day 015           |                     | 01                   | 02          | 03          | 04                    | 05         | 06                              | 07         | 08  | 09  | 10                              | 11                                   | 12                                   |                            |   |        |   |      |   |
| RED<br>FD16       | CDR<br>J. Halsell   | PRE SLEEP            | RCS<br>BURN | SLEEP       |                       |            |                                 |            |     |     |                                 | POST SLEEP                           | EL<br>GOC<br>RESS<br>+               | M<br>XN<br>STR             | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |        |   |      |   |
|                   | PLT<br>S. Still     | PRE SLEEP            | RCS<br>BURN | SLEEP       |                       |            |                                 |            |     |     |                                 | POST SLEEP                           | EGRESS<br>LOC                        |                            | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |        |   |      |   |
|                   | MS3<br>D. Thomas    | PRE SLEEP            | H/O         | SLEEP       |                       |            |                                 |            |     |     |                                 | POST SLEEP                           |                                      |                            | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |        |   |      |   |
|                   | PS2<br>G. Linteris  | PRE SLEEP            | H/O         | SLEEP       |                       |            |                                 |            |     |     |                                 | POST SLEEP                           |                                      |                            | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |        |   |      |   |
| BLUE<br>FD15      | MS2<br>M. Gernhardt | SLEEP                | H/O         | PS<br>SLEEP | M<br>Z<br>L<br>V<br>R | POST SLEEP | K<br>S<br>U<br>T<br>O<br>B<br>W | CABIN STOW |     |     | T<br>S<br>T<br>E<br>C<br>W      | ERGO<br>STOW                         | S<br>F<br>A<br>M<br>P<br>L<br>E      | O<br>C<br>T<br>A<br>O<br>W | P<br>W<br>R<br>U<br>P                     | MEAL   | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |      |   |
|                   | MS1<br>J. Voss      | SLEEP                | H/O         | POST SLEEP  |                       | POST SLEEP |                                 | CABIN STOW |     |     | T<br>P<br>R<br>I<br>-<br>M<br>S | S<br>A<br>M<br>S<br>3<br>D<br>A<br>C | Q<br>S<br>M<br>3<br>D<br>A<br>C<br>T | H<br>P<br>2<br>C<br>H      | SL-DEACT                                  | EGRESS | SL-DEACT                                  | MEAL | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |
|                   | PS1<br>R. Couch     | SLEEP                | H/O         | POST SLEEP  |                       | POST SLEEP |                                 | CABIN STOW |     |     | L<br>F<br>9<br>D<br>A<br>C<br>T | T<br>P<br>R<br>I<br>-<br>P<br>S      | PL-DEACT                             |                            | O<br>6<br>E<br>G<br>R<br>E<br>S<br>S      | EGRESS |   | MEAL | D<br>P<br>E<br>R<br>O<br>R<br>B<br>I<br>T |
| DAY/NIGHT ORBIT   |                     | 240                  | 241         | 242         | 243                   | 244        | 245                             | 246        | 247 | 248 |                                 |                                      |                                      |                            |   |        |   |      |   |
| TDRS              |                     | [TDRS Activity Bars] |             |             |                       |            |                                 |            |     |     |                                 |                                      |                                      |                            |   |        |   |      |   |
| ATTITUDE          |                     | [Attitude Profile]   |             |             |                       |            |                                 |            |     |     |                                 |                                      |                                      |                            |   |        |   |      |   |
| FREE/H2O IN A/G 2 |                     | [Free/H2O Profile]   |             |             |                       |            |                                 |            |     |     |                                 |                                      |                                      |                            |   |        |   |      |   |
| NOTES             |                     | *-ZLV, -YVV          |             |             |                       |            |                                 | XDT0 684   |     |     | +DS0 331                        |                                      |                                      |                            |   |        |   |      |   |

MET Day 015 12 13 14 15 16 17 18 19 20 21 22 23 016/00

|                                      |                     |  |                                 |                                      |
|--------------------------------------|---------------------|--|---------------------------------|--------------------------------------|
| R<br>E<br>D<br>F<br>D<br>1<br>7      | CDR<br>J. Halsell   | DEORBIT PREP                             |                                 |                                      |
|                                      | PLT<br>S. Still     | DEORBIT PREP                             |                                 |                                      |
|                                      | MS3<br>D. Thomas    | DEORBIT PREP                             | D<br>E<br>O<br>R<br>B<br>I<br>T | K<br>S<br>C                          |
|                                      | PS2<br>G. Linteris  | DEORBIT PREP                             |                                 |                                      |
| B<br>L<br>U<br>E<br>F<br>D<br>1<br>6 | MS2<br>M. Gernhardt | DEORBIT PREP                             | B<br>U<br>R<br>N<br>*           | L<br>A<br>N<br>D<br>I<br>N<br>G<br>* |
|                                      | MS1<br>J. Voss      | DEORBIT PREP                             |                                 |                                      |
|                                      | PS1<br>R. Couch     | DEORBIT PREP                             |                                 |                                      |
| DAY/NIGHT                            |                     |  |                                 |                                      |
| ORBIT                                |                     |  |                                 |                                      |
| TDRS                                 |                     |  |                                 |                                      |
| ATTITUDE                             |                     |  |                                 |                                      |
| FREE/H2O IN                          |                     |  |                                 |                                      |
| A/G 2                                |                     |  |                                 |                                      |
| NOTES                                |                     | @ TIG = 15/15:36<br>% KSC LND = 15/16:36 |                                 |                                      |

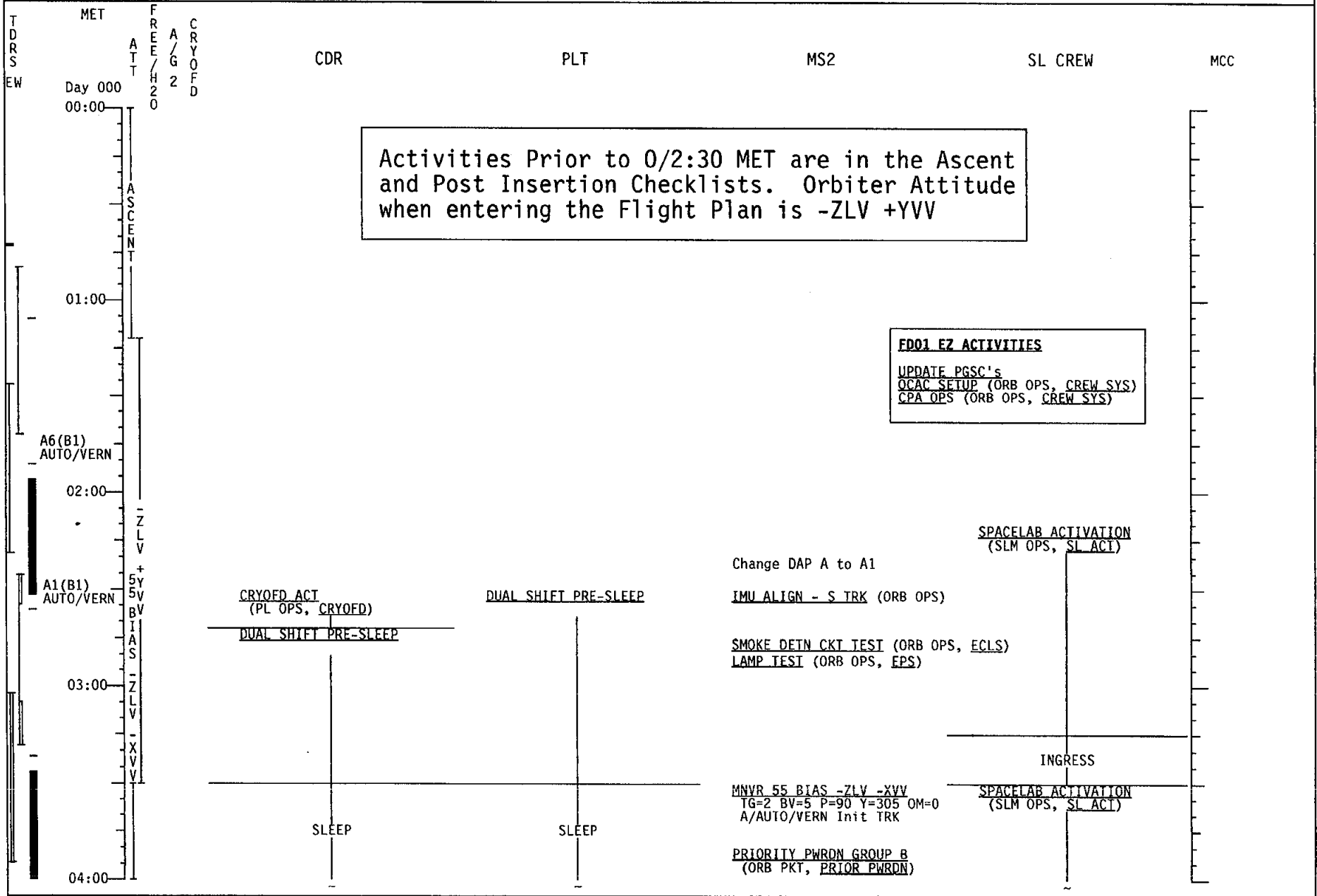
**This Page Intentionally Blank**

DETAILED TIMELINE

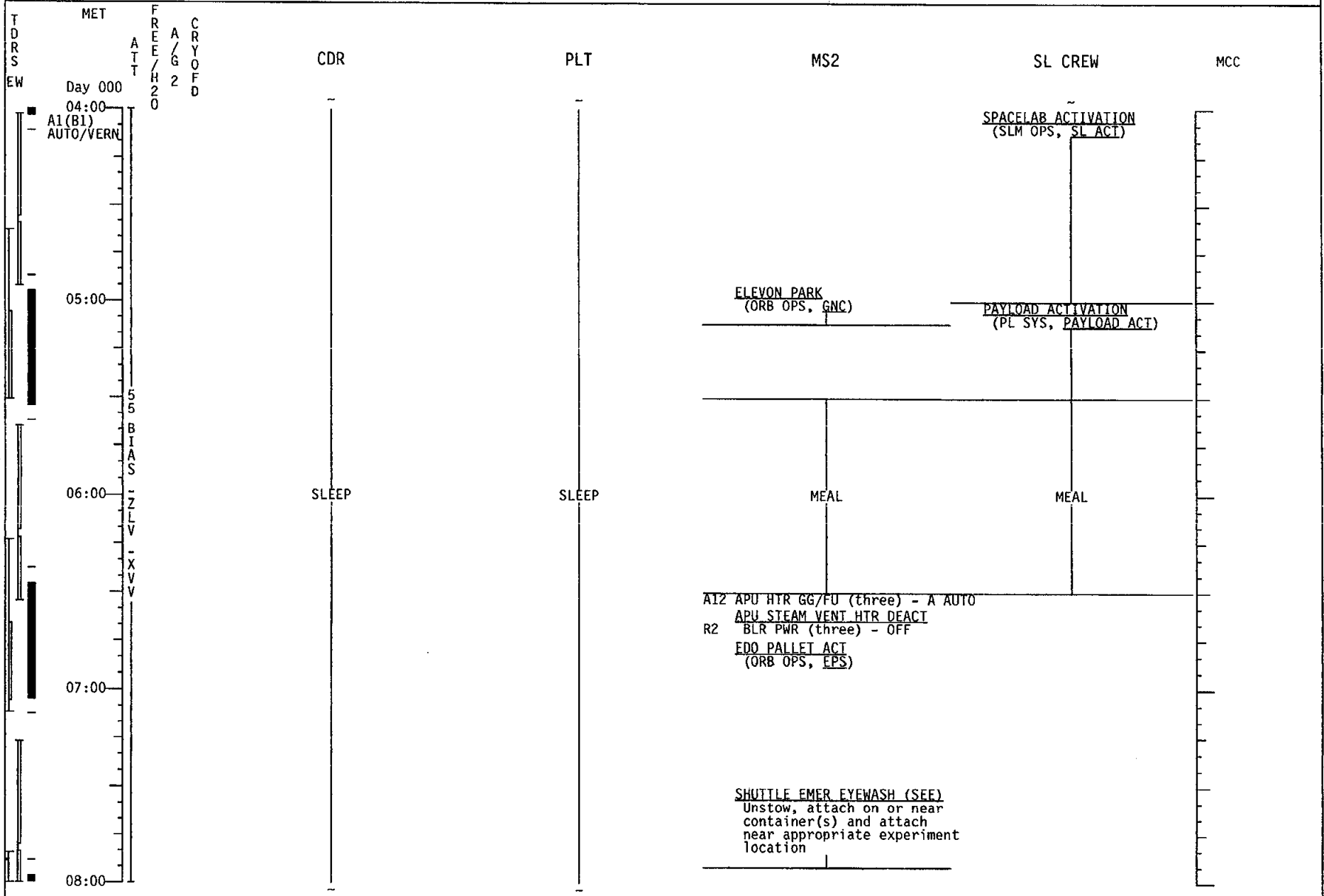
DETAILED  
TIMELINE

# DETAILED TIMELINE

STS-83 ( FD 01 )

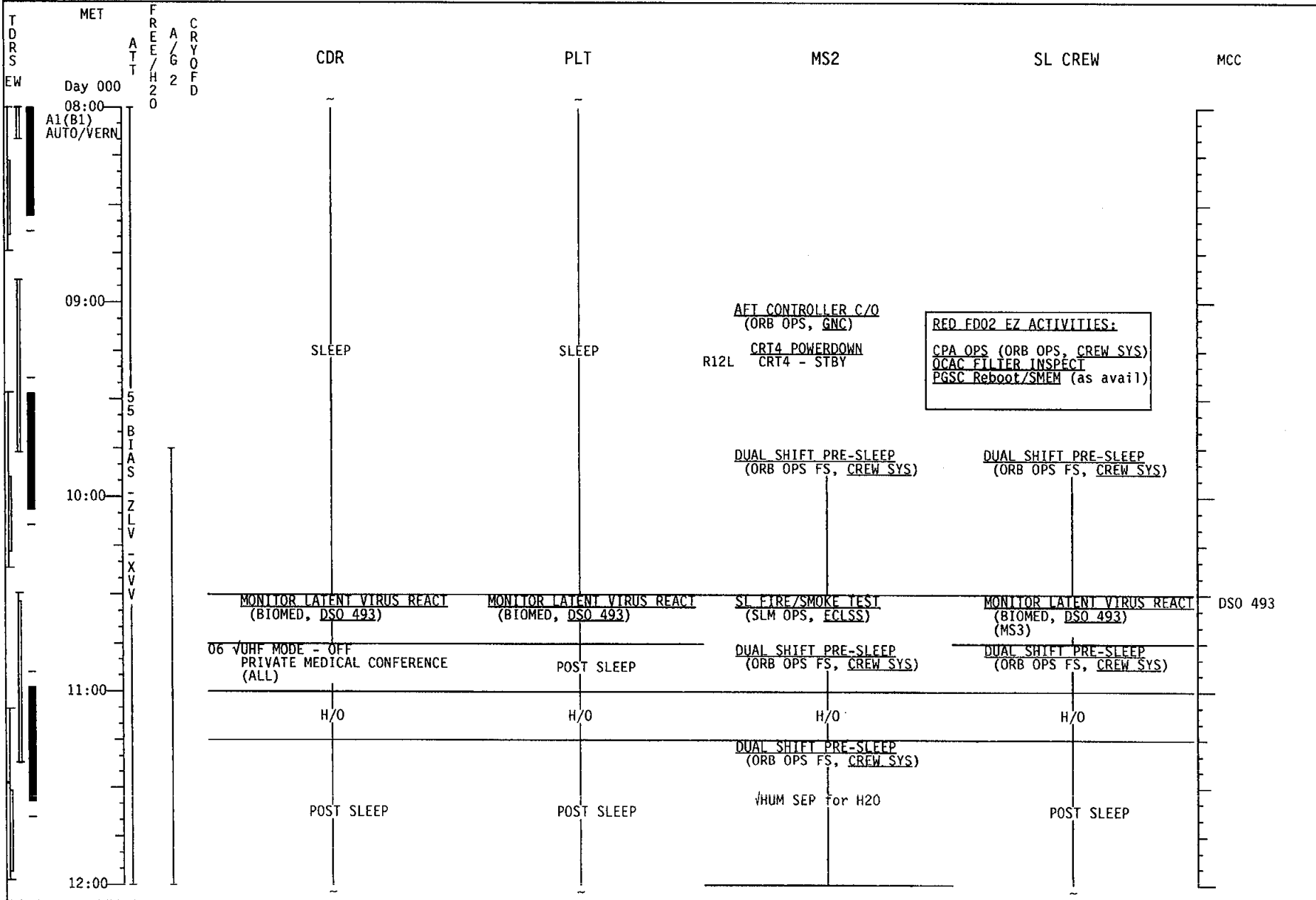


STS-83 ( FD 01 )

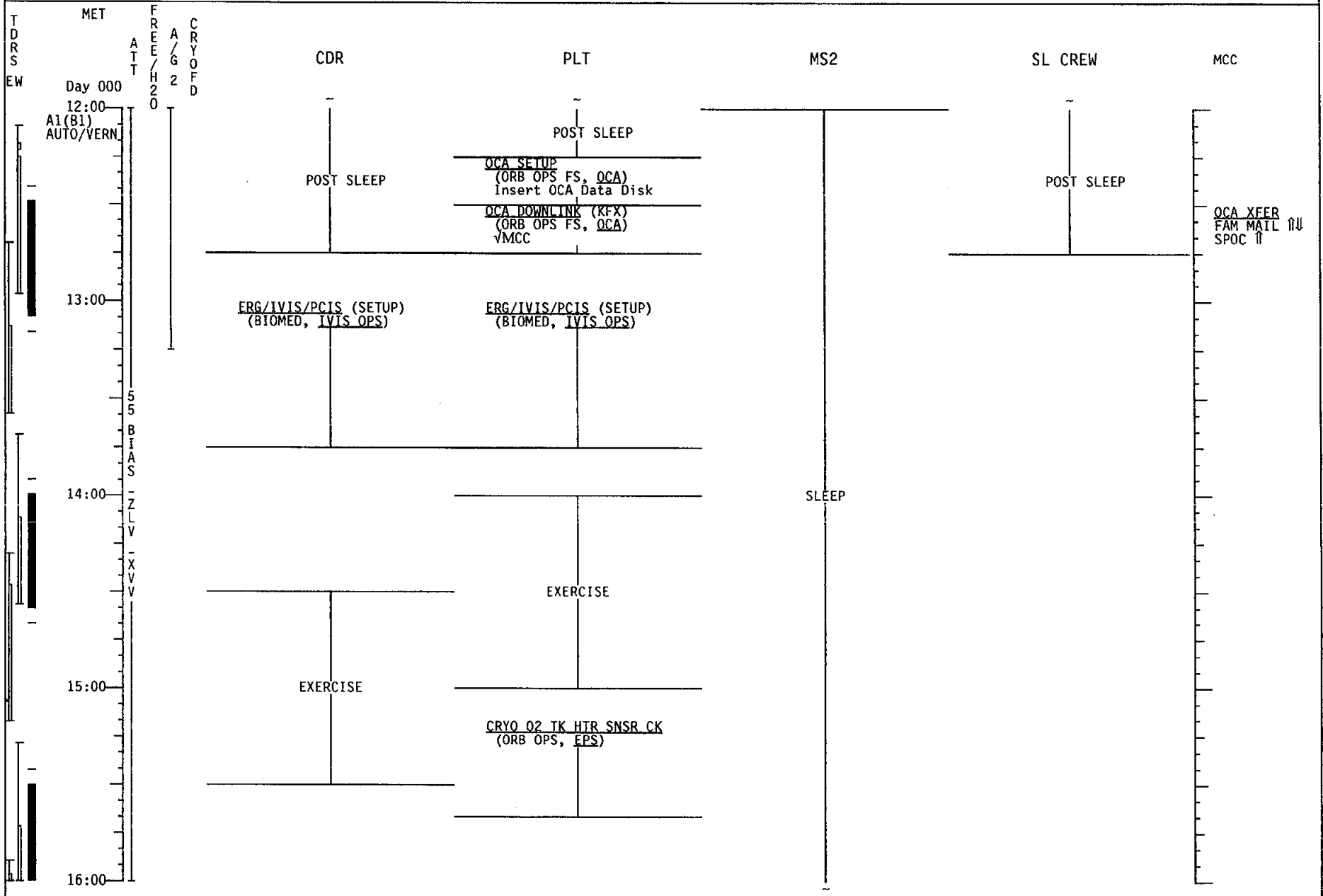




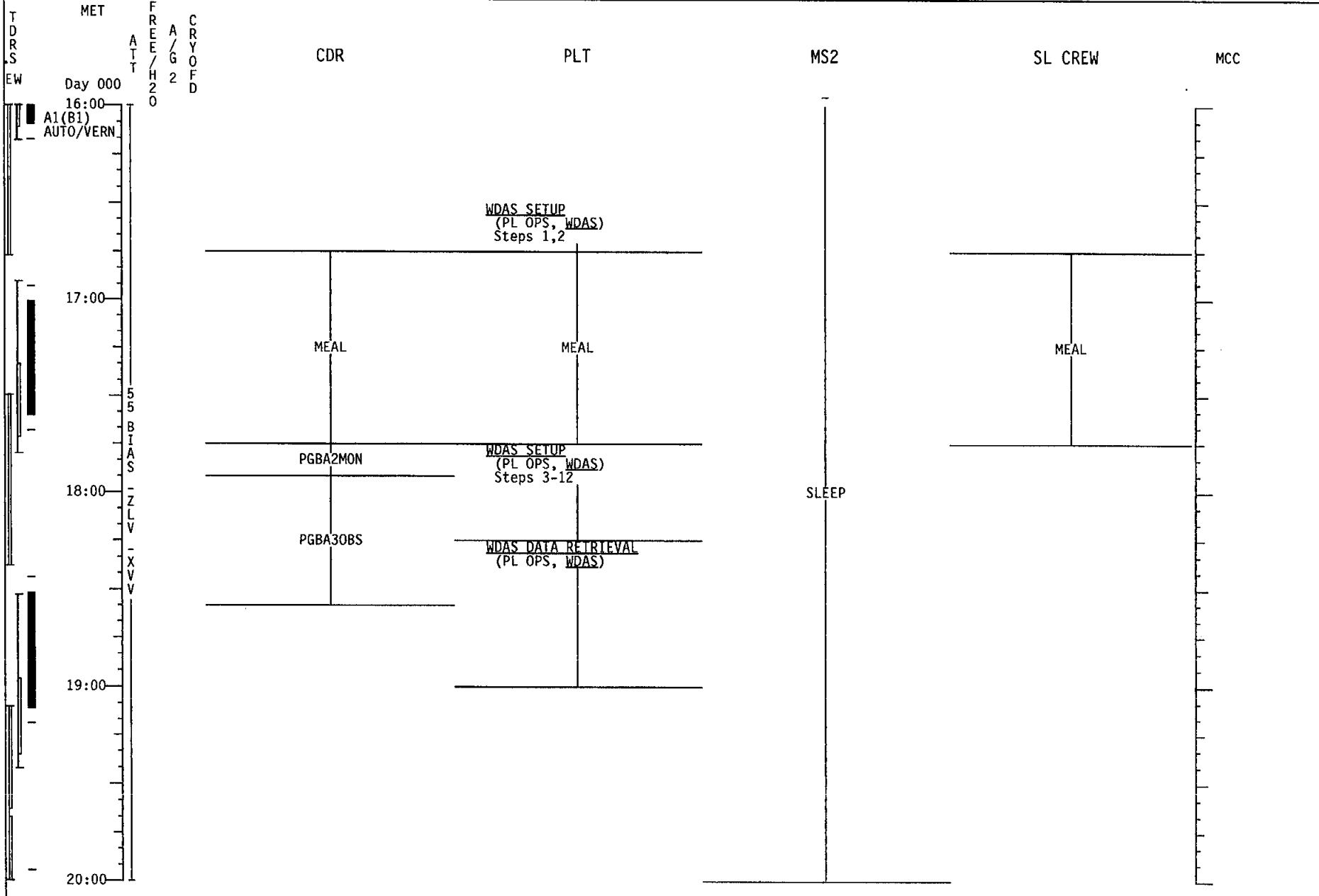
# STS-83 ( RED FD 02 )



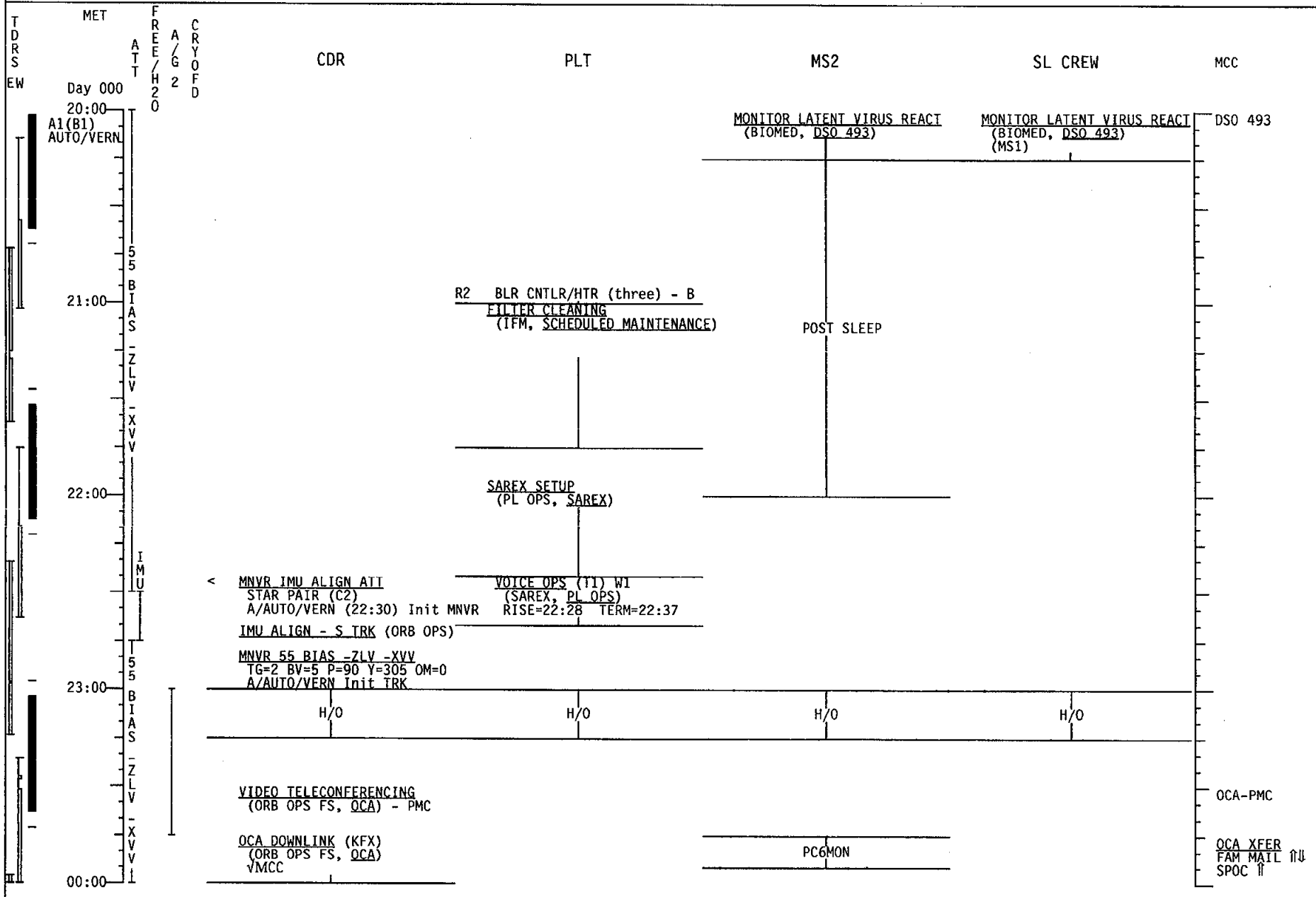
# STS-83 ( RED FD 02 )



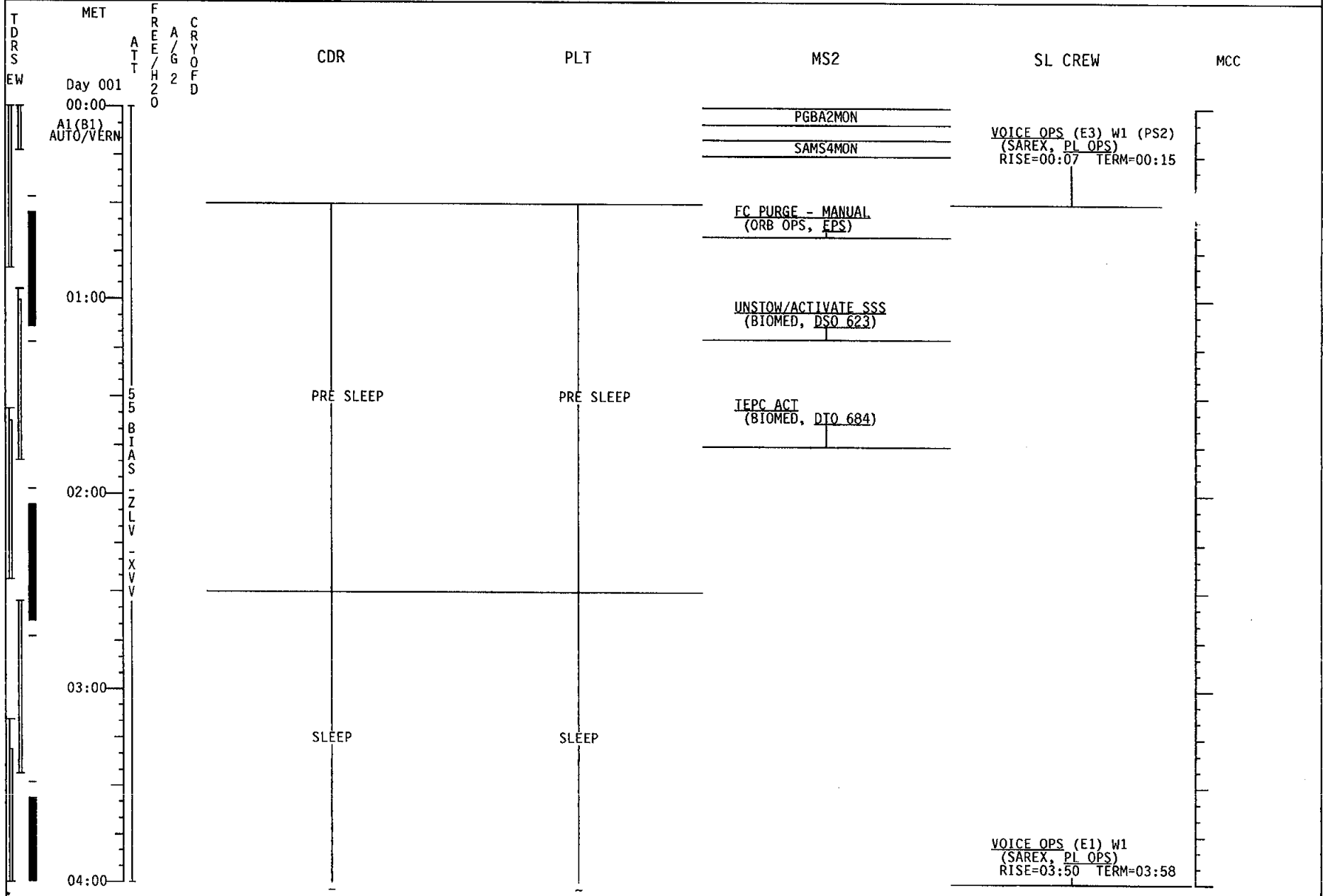
# STS-83 ( RED FD 02 )



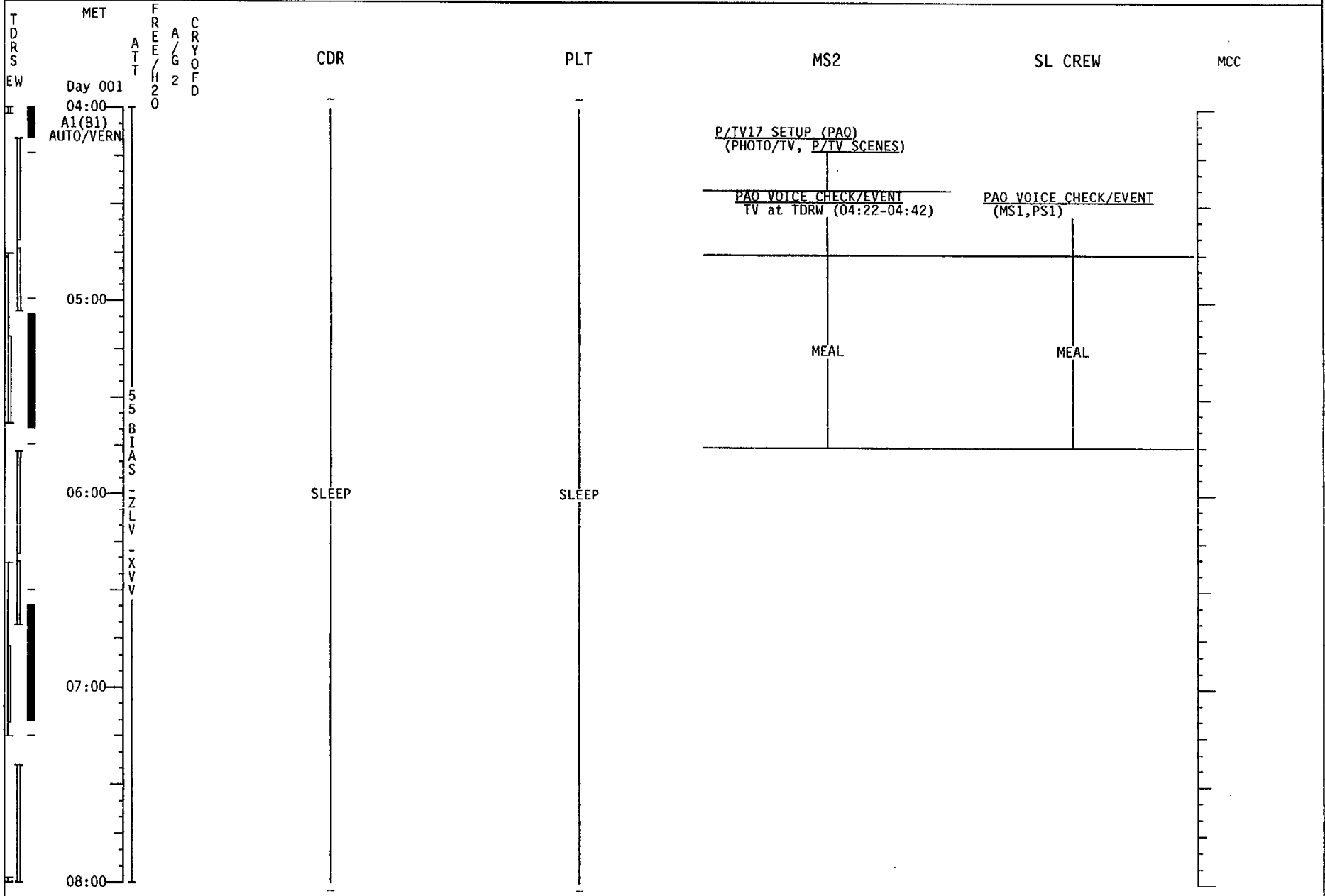
# STS-83 ( RED FD 02 )



# STS-83 ( BLUE FD 02 )

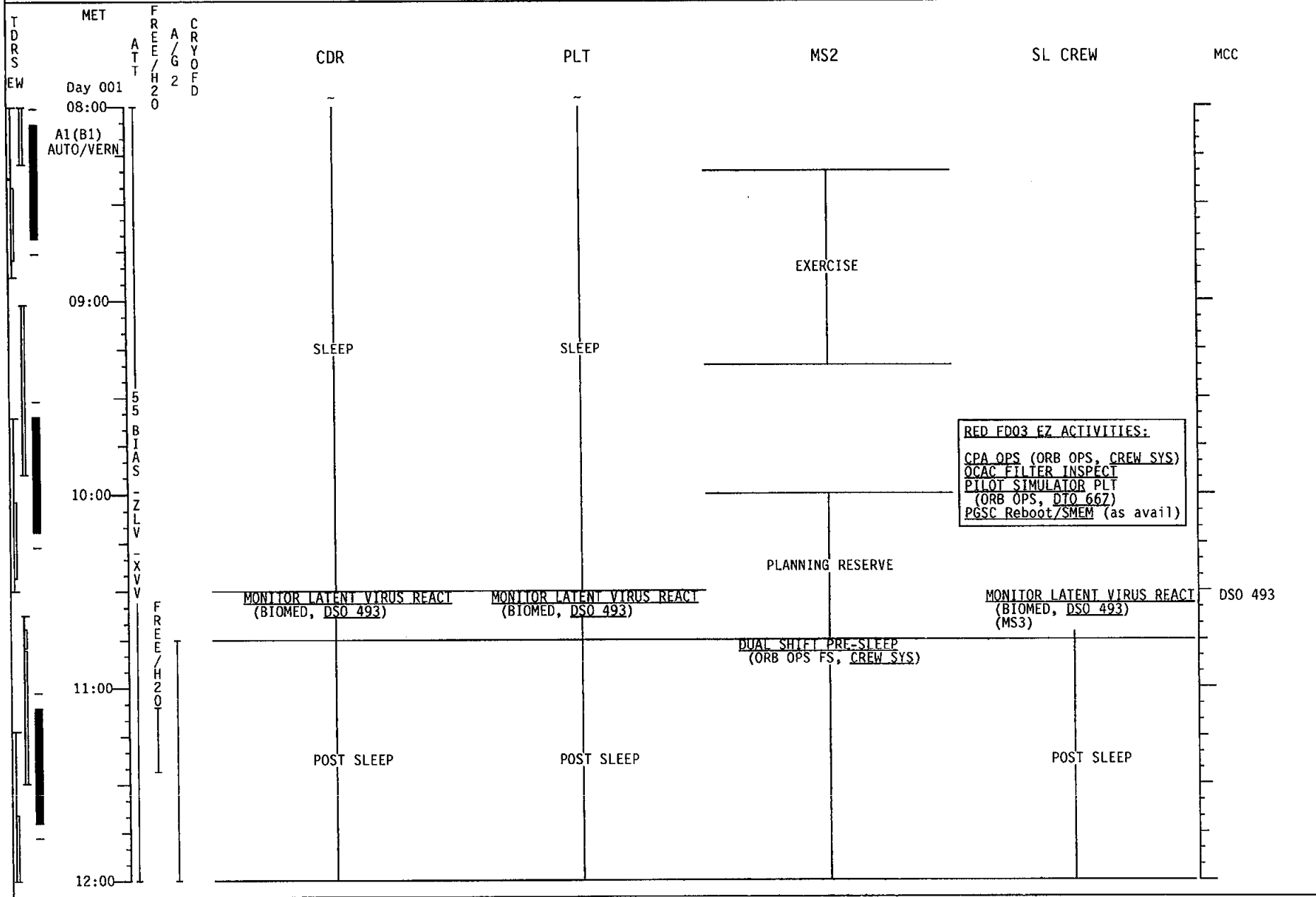


# STS-83 ( BLUE FD 02 )

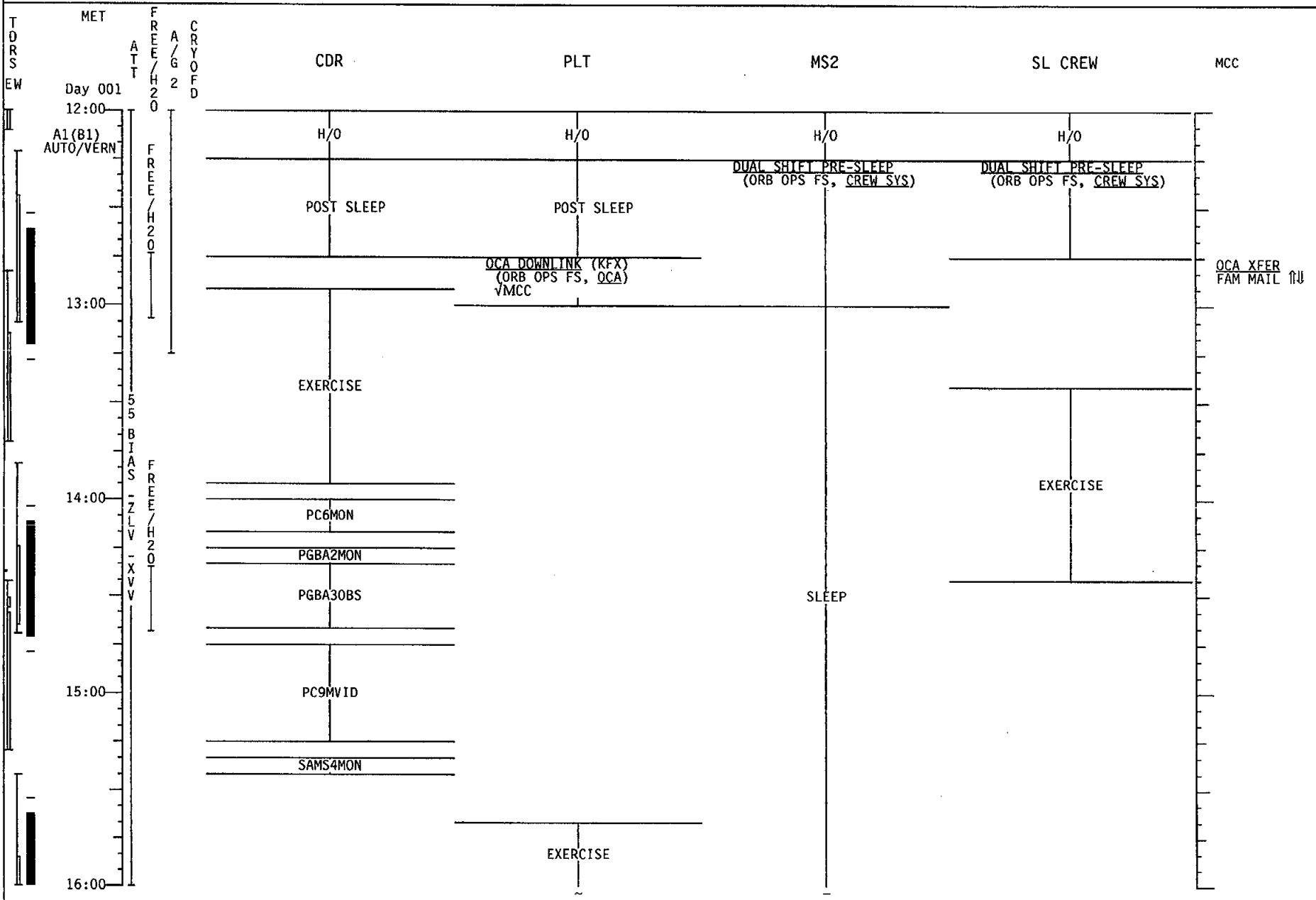


TDRS  
 EW  
 MET  
 Day 001  
 04:00  
 A1(B1)  
 AUTO/VERN  
 ATT  
 FREE/H 20  
 A/G 2  
 CRY OF D  
 55  
 BIAS  
 ZLV  
 XVV  
 06:00  
 07:00  
 08:00

# STS-83 ( BLUE FD 02 )

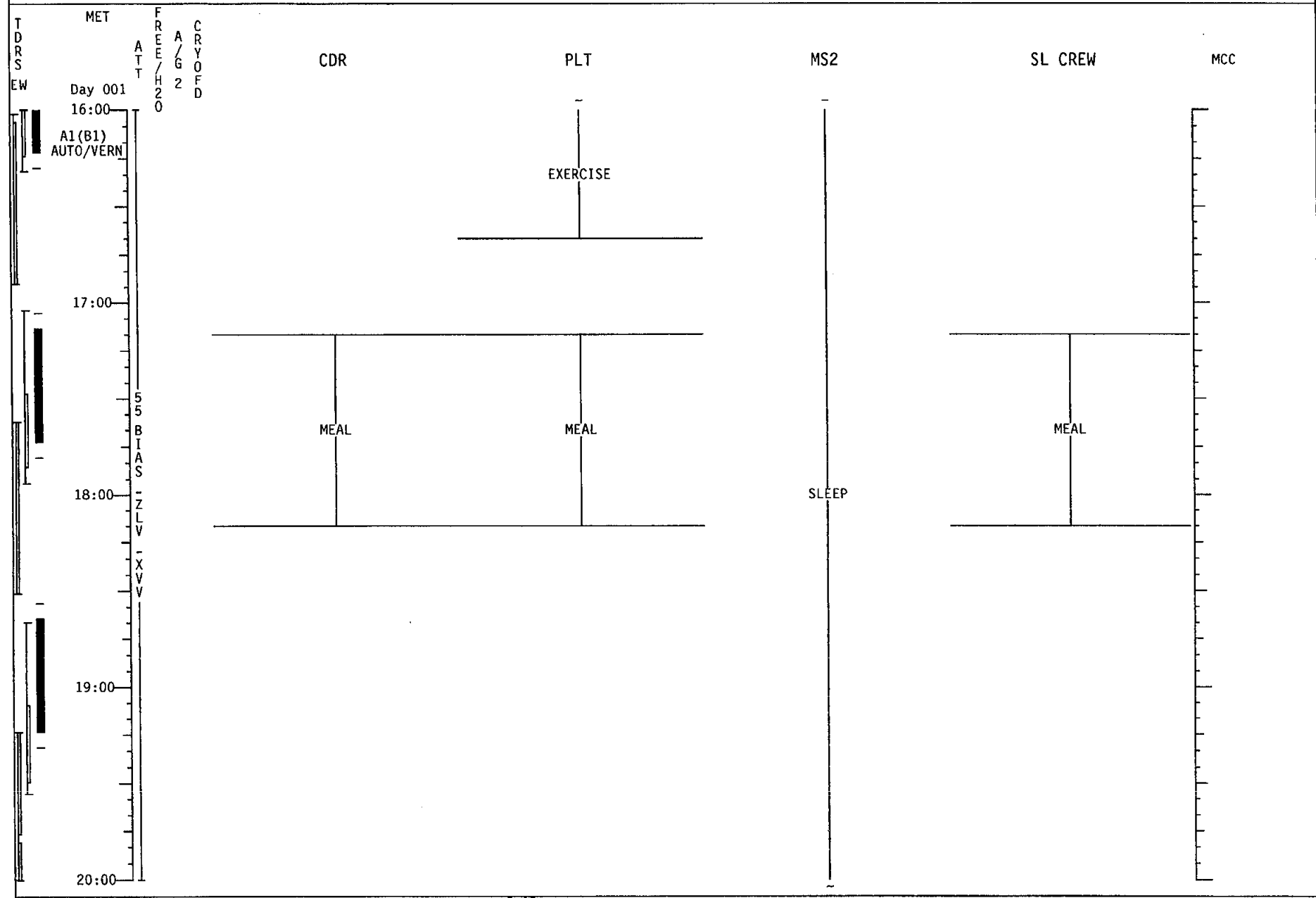


STS-83 ( RED FD 03 )

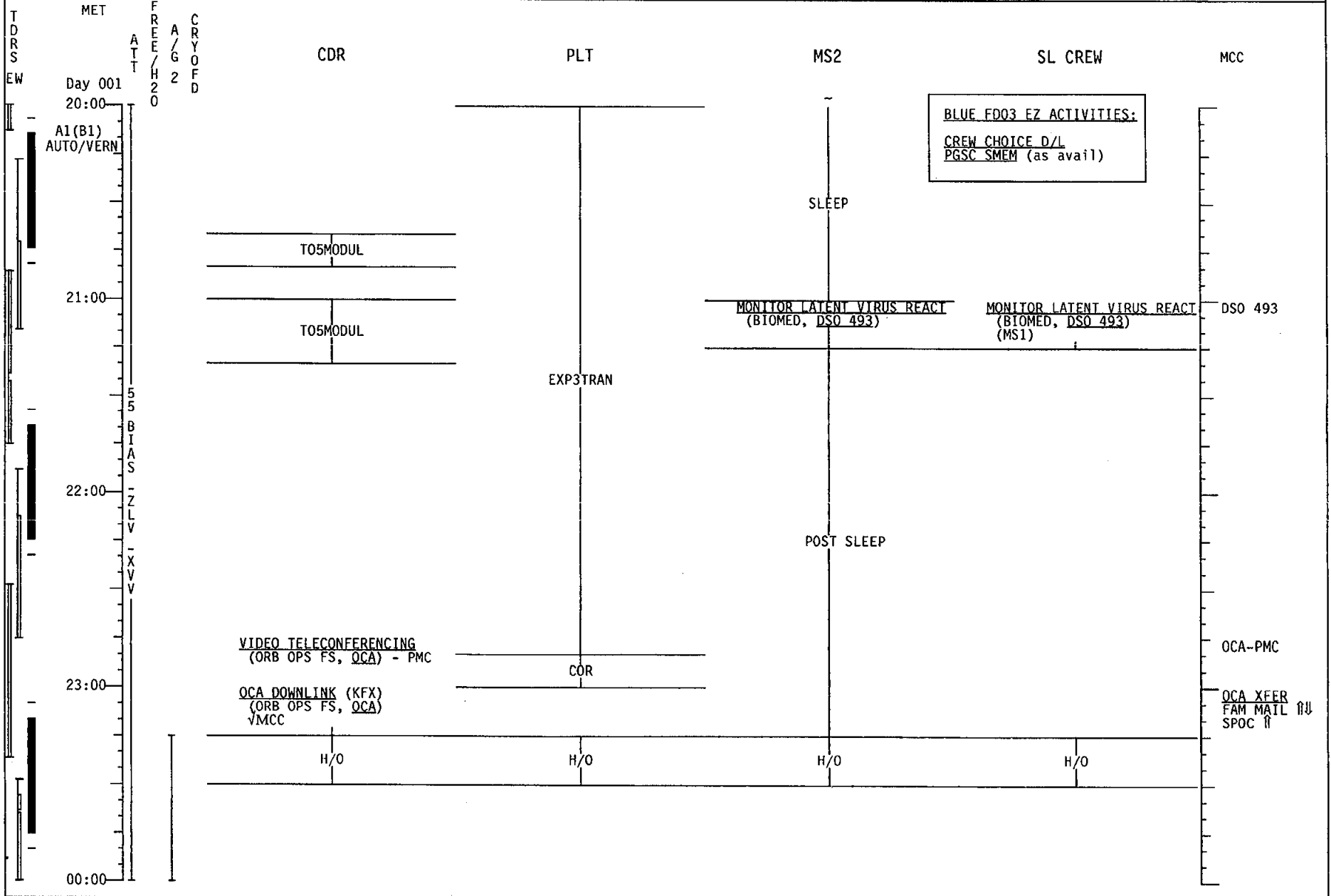




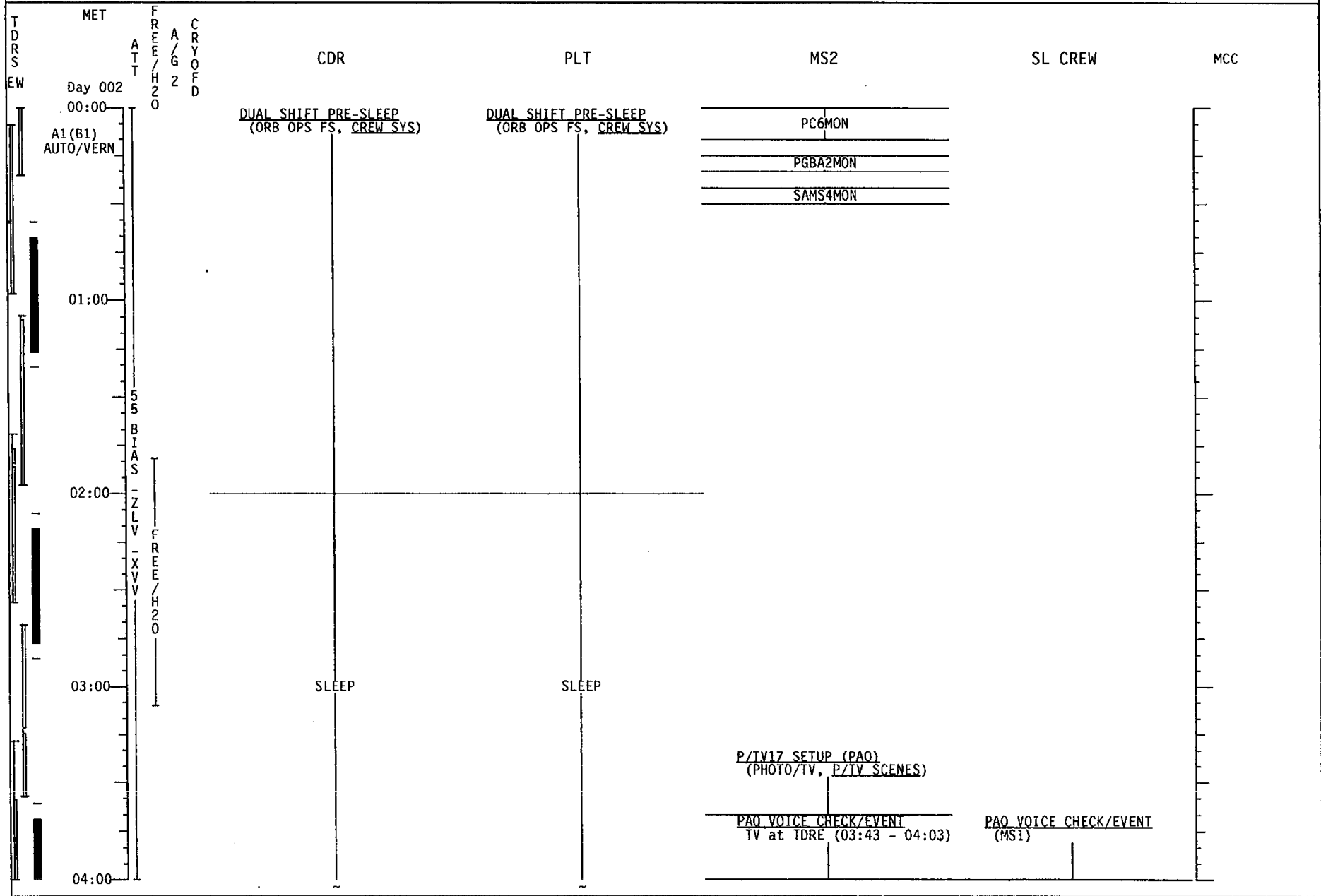
# STS-83 ( RED FD 03 )



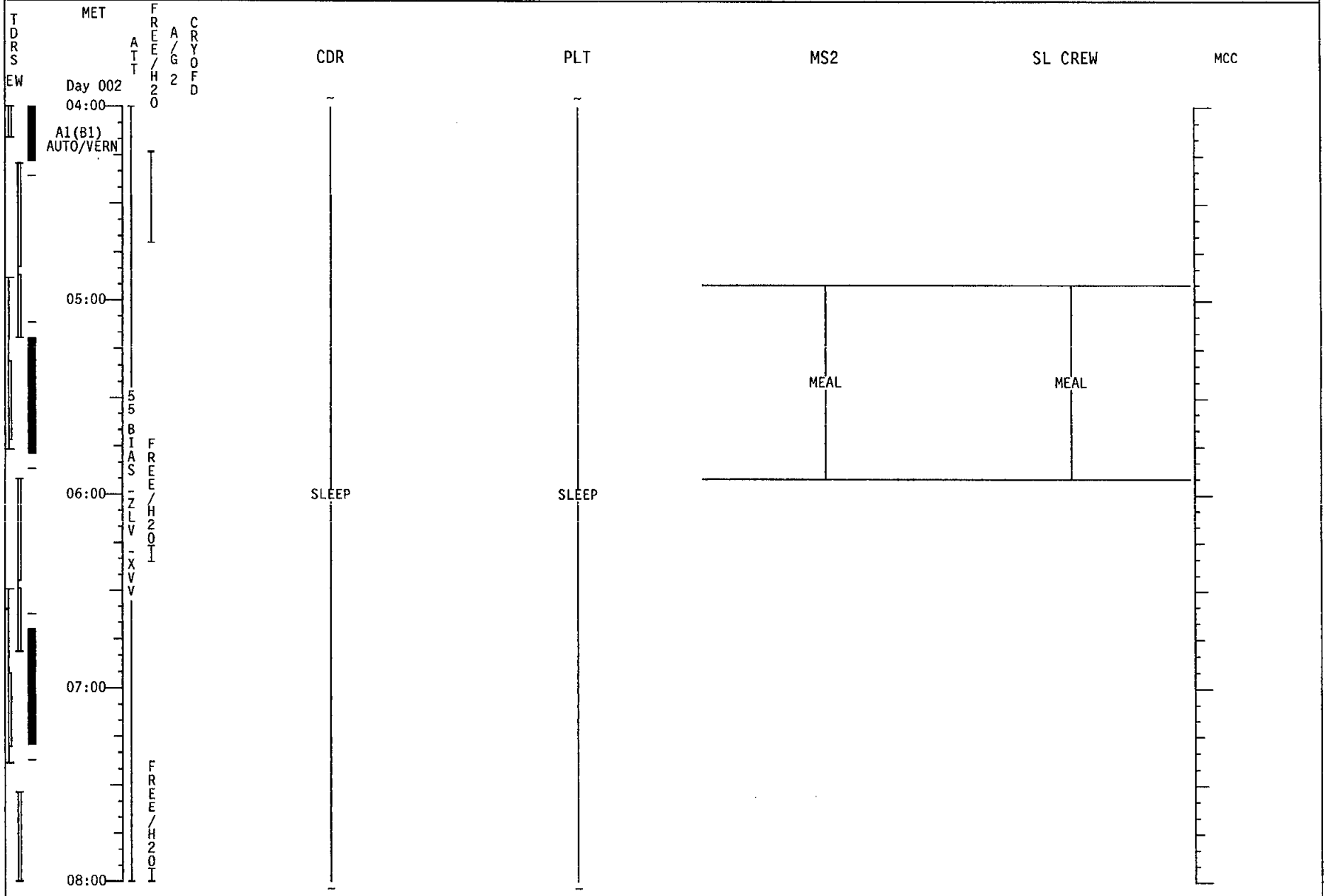
# STS-83 ( BLUE FD 03 )



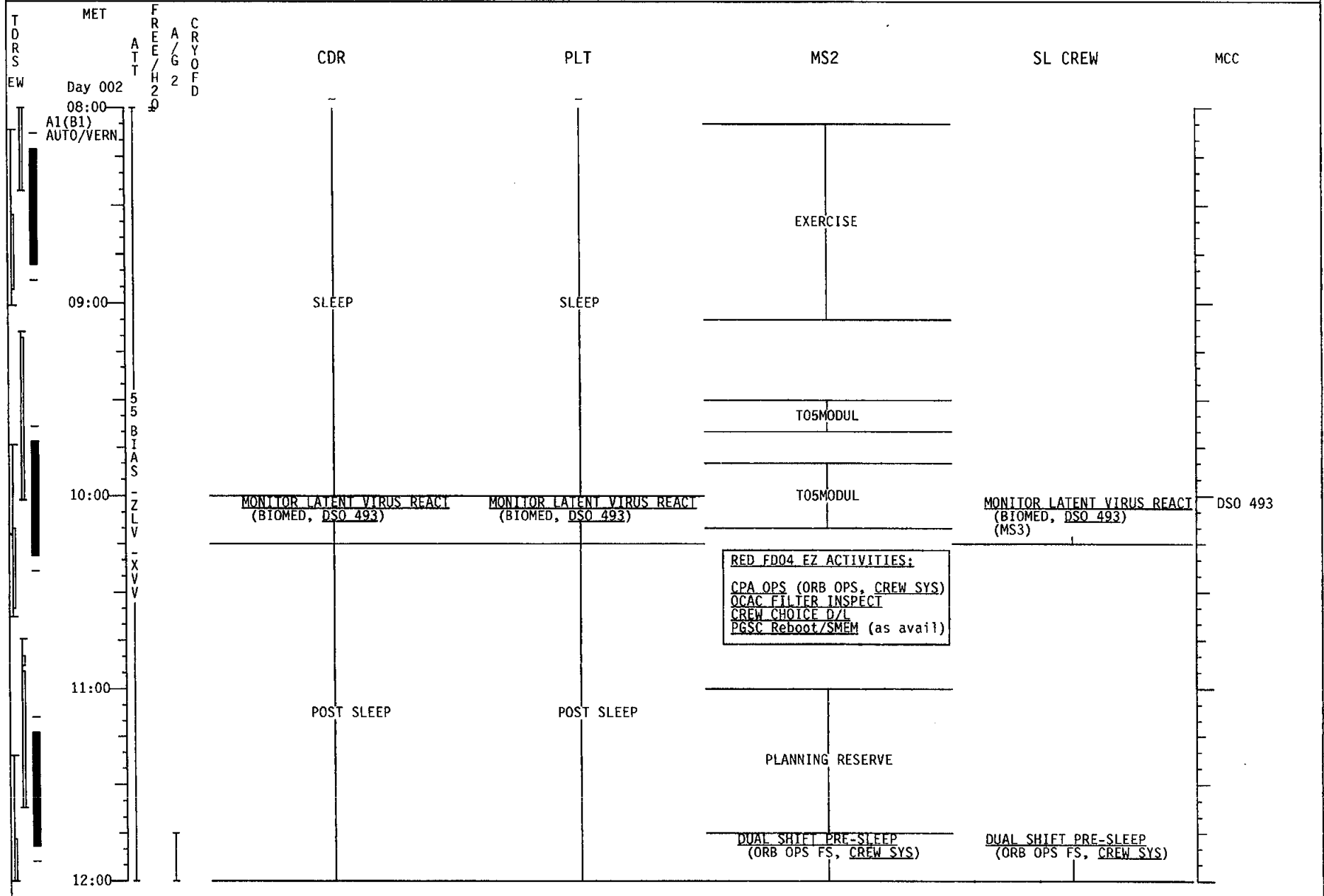
STS-83 ( BLUE FD 03 )



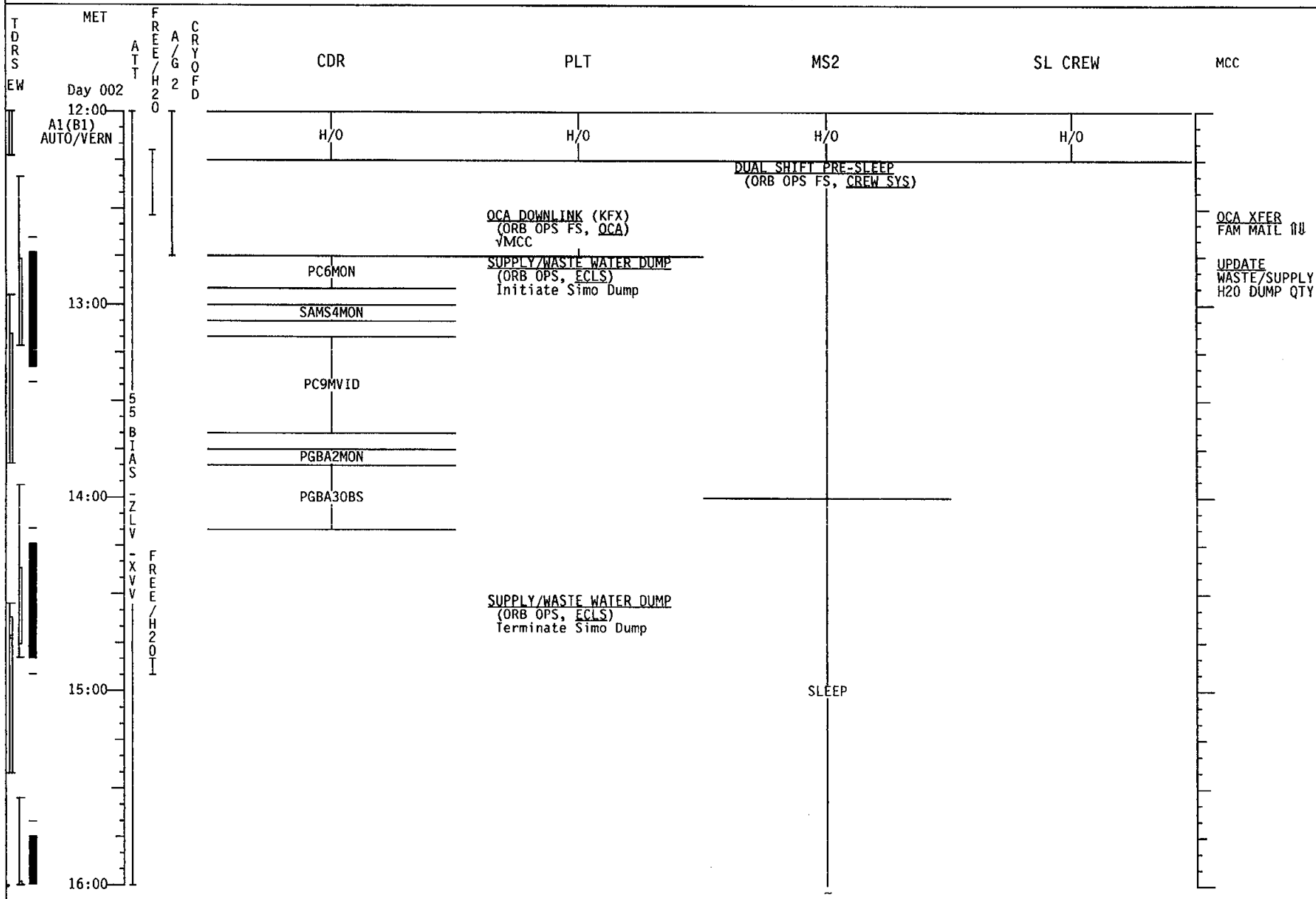
# STS-83 ( BLUE FD 03 )



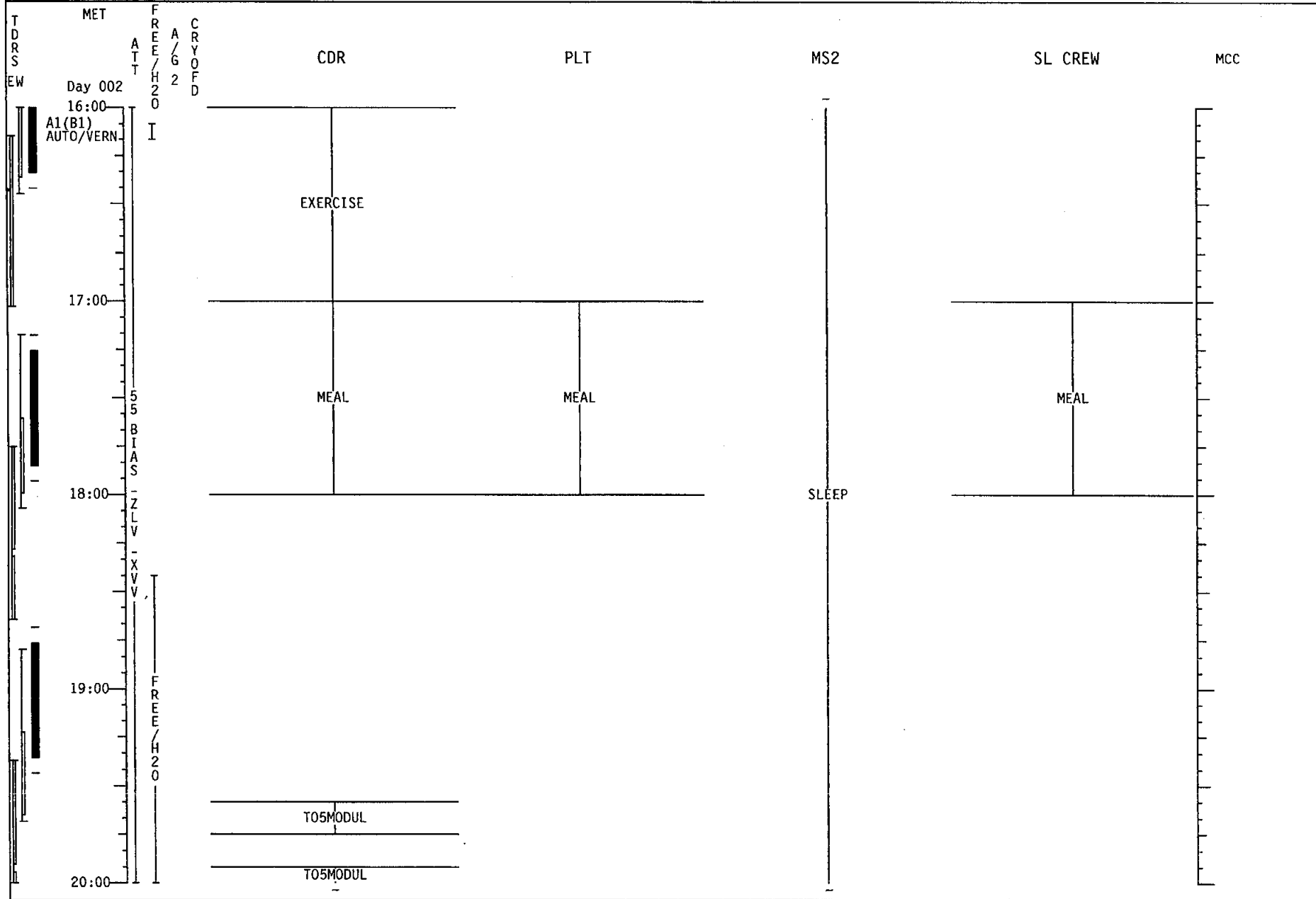
STS-83 ( BLUE FD 03 )



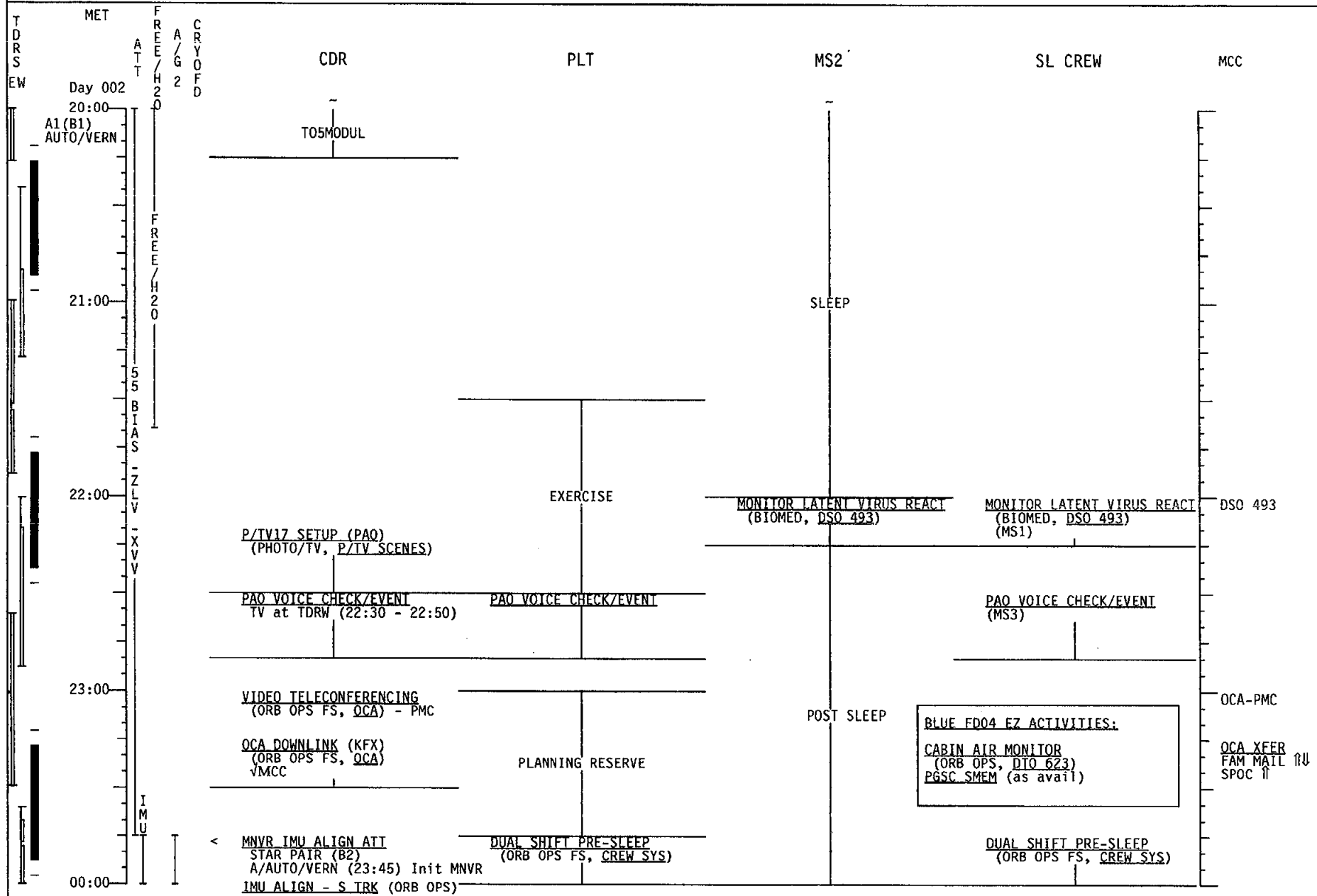
# STS-83 ( RED FD 05 )



STS-83 ( RED FD 04 )

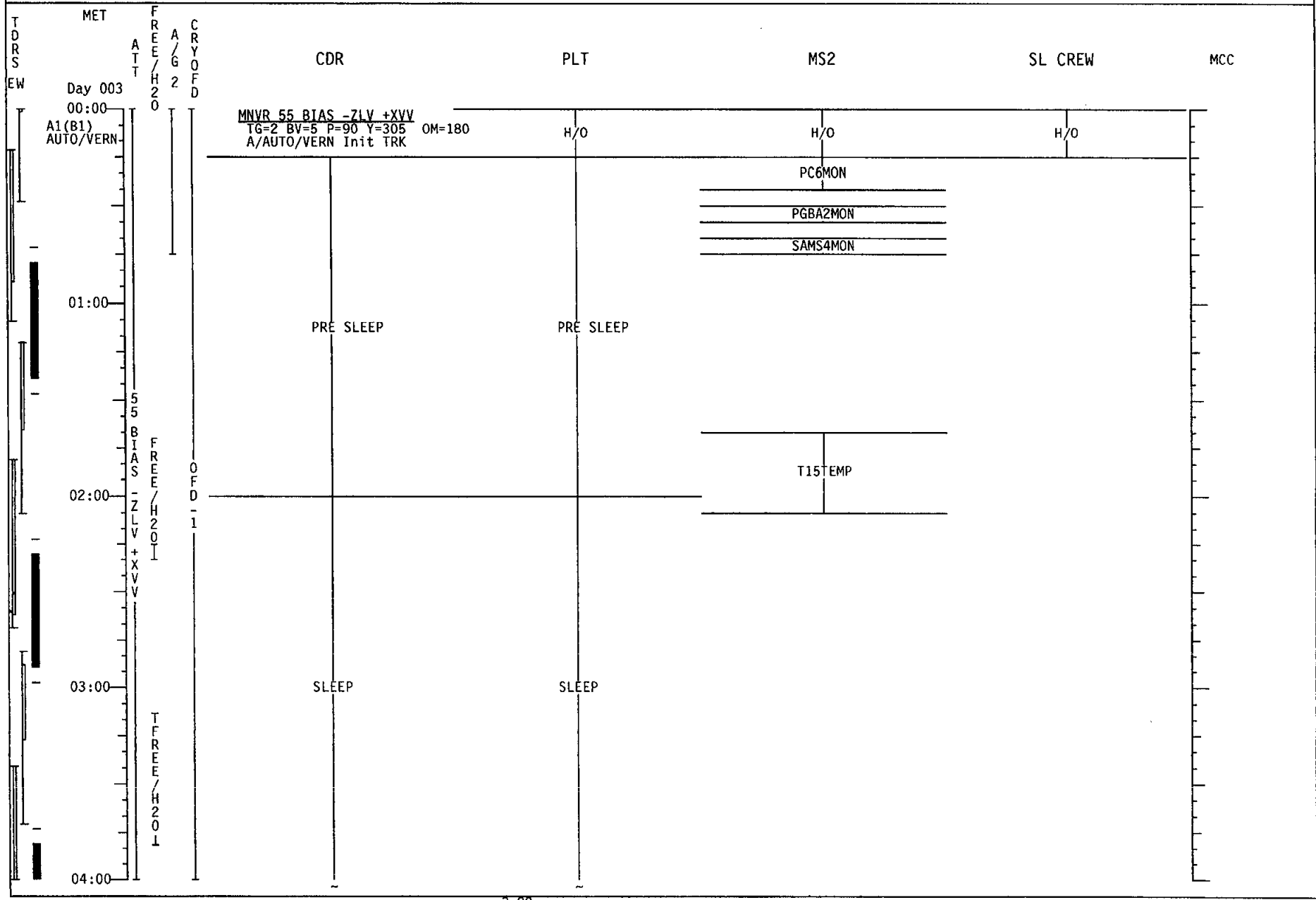


STS-83 ( RED FD 04 )

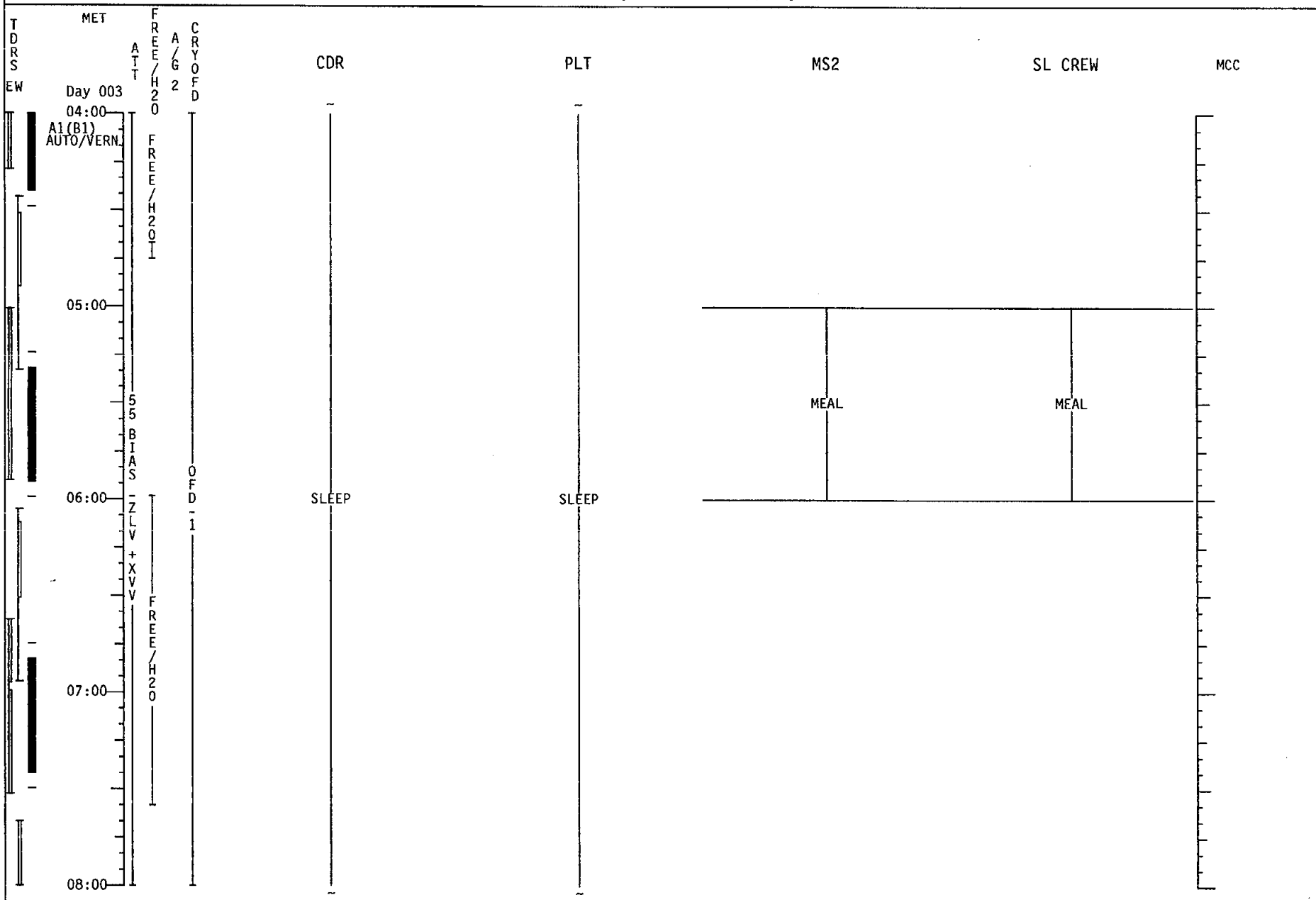




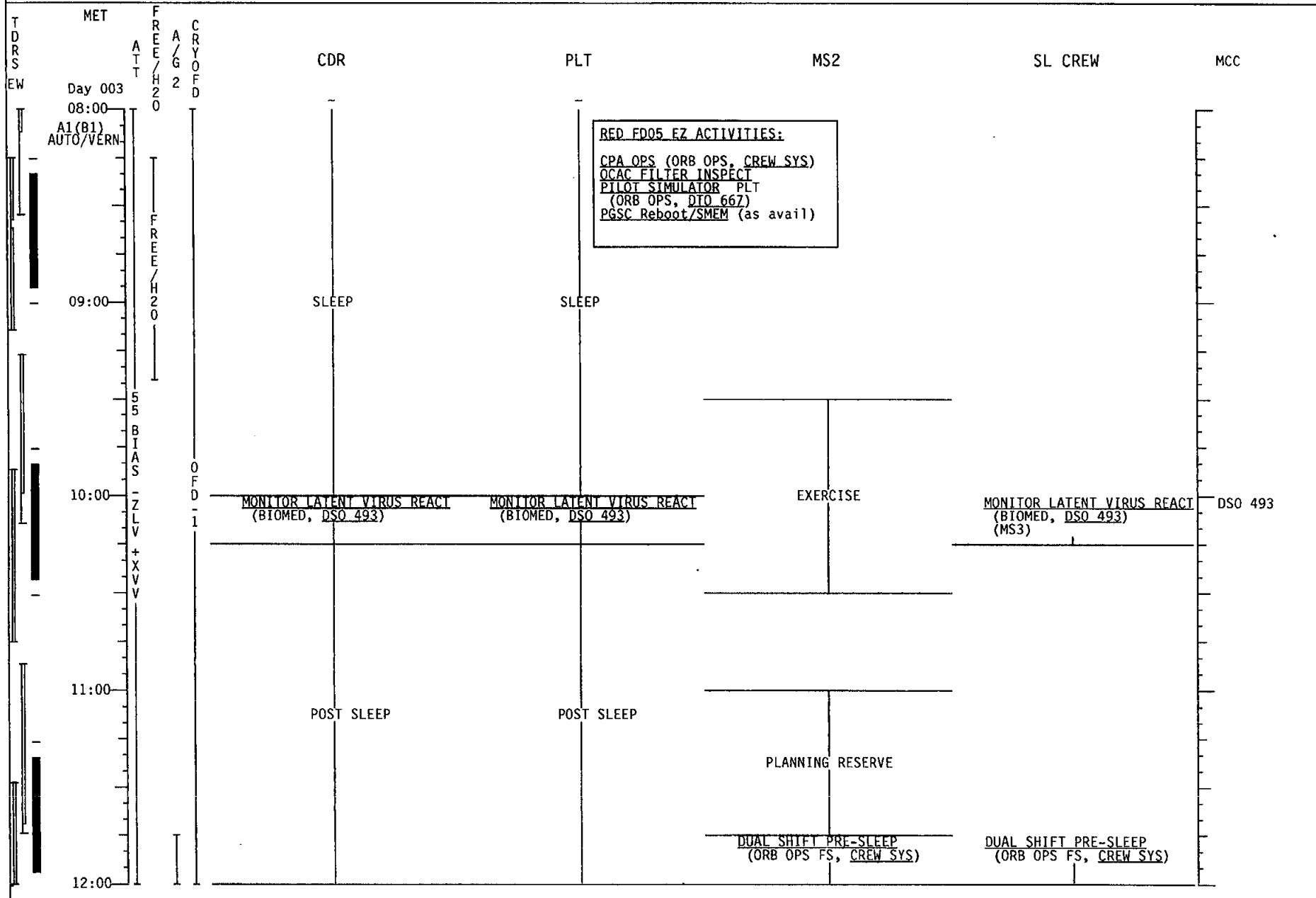
# STS-83 ( BLUE FD 04 )



STS-83 ( BLUE FD 04 )

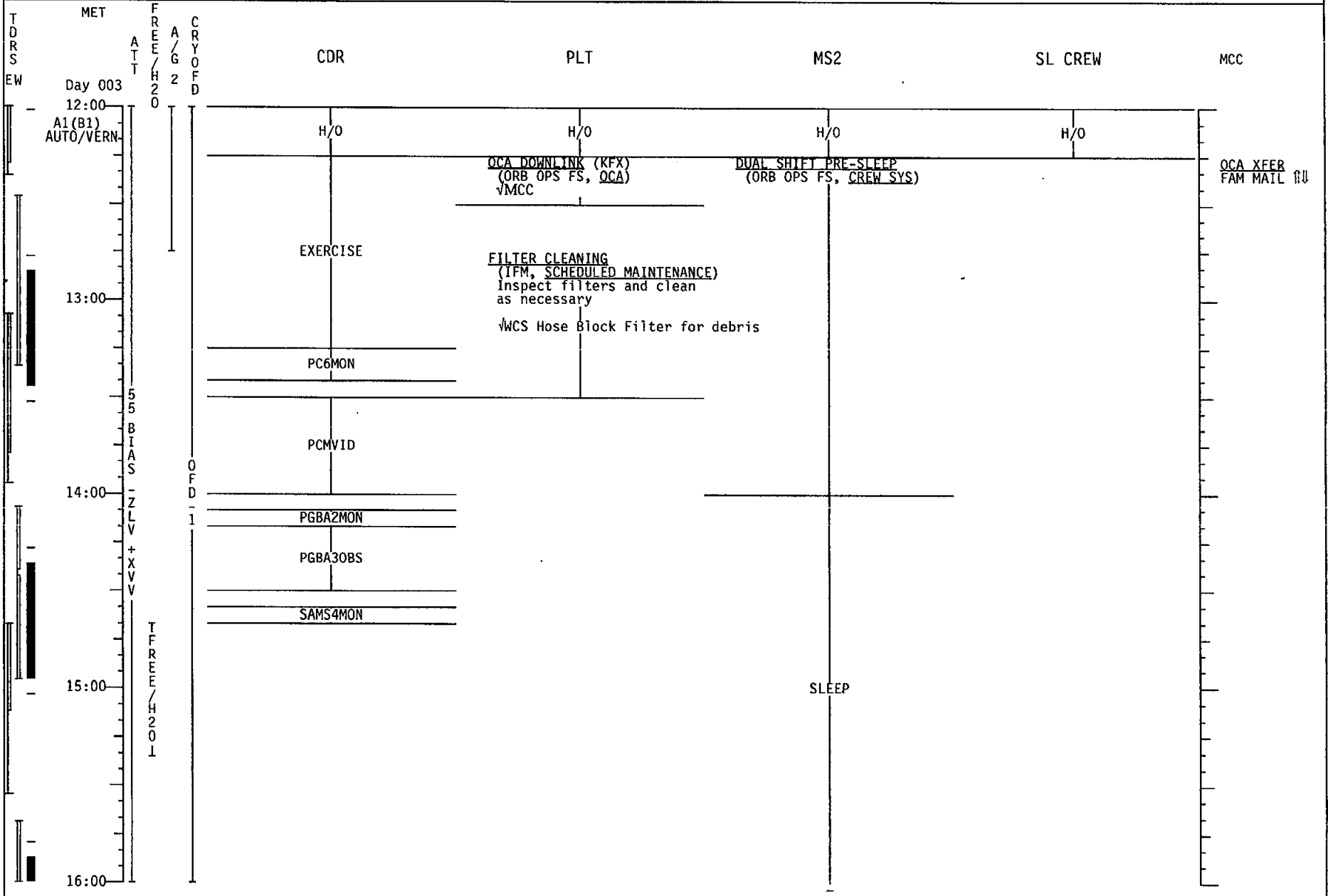


# STS-83 ( BLUE FD 04 )

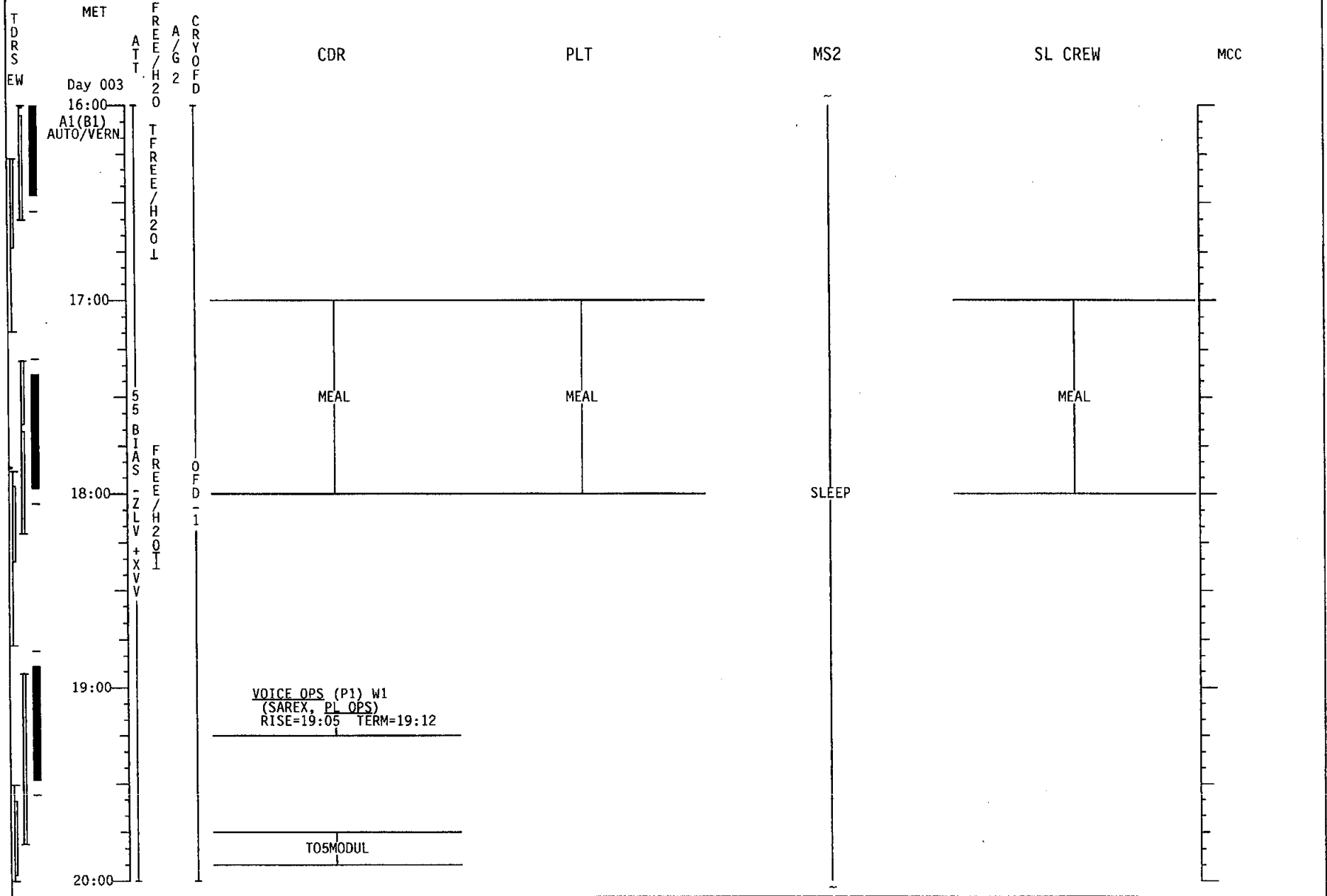


**RED FD05 EZ ACTIVITIES:**  
 CPA OPS (ORB OPS, CREW SYS)  
 QCAC FILTER INSPECT  
 PILOT SIMULATOR PLT  
 (ORB OPS, DIO 667)  
 PGSC Reboot/SMEM (as avail)

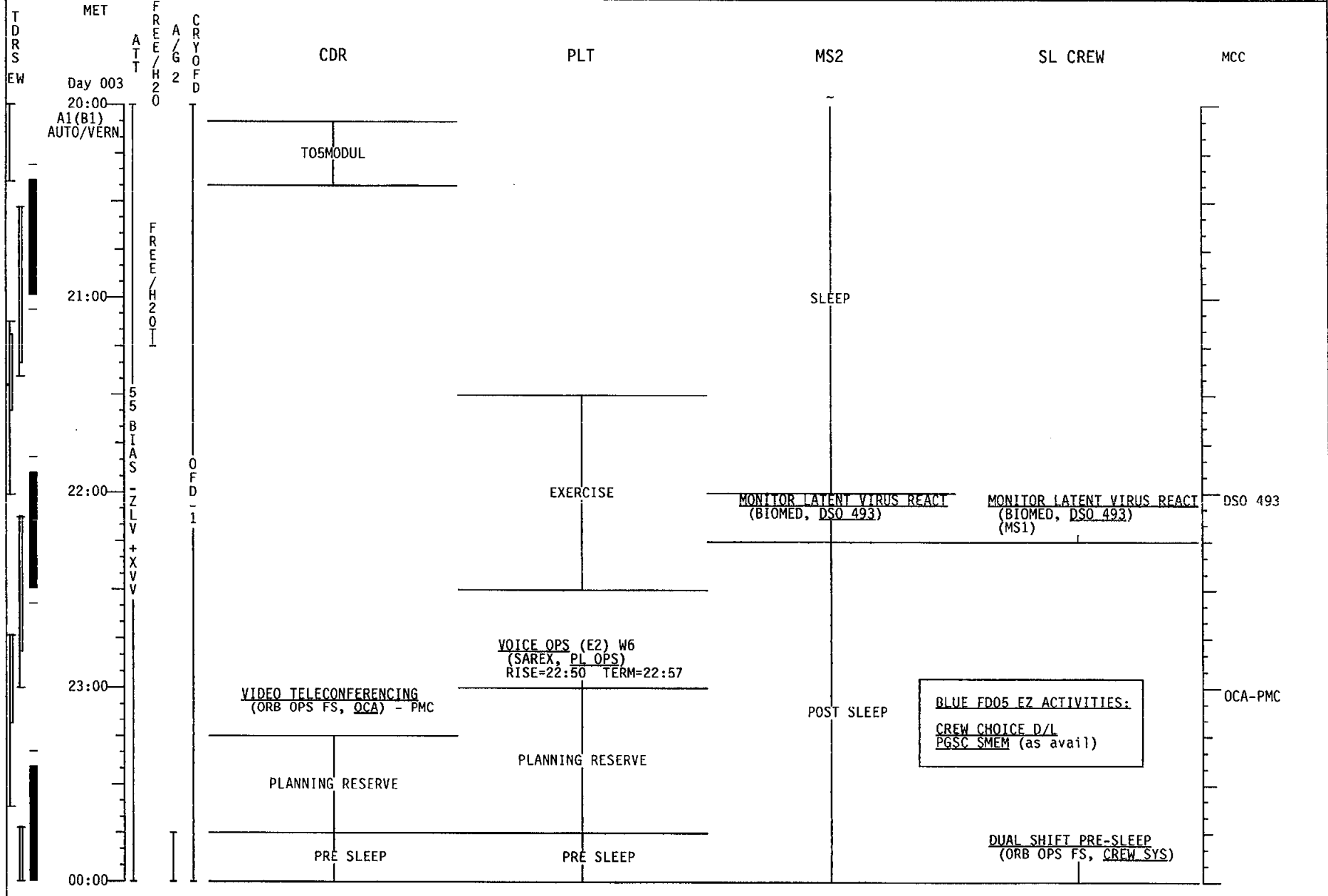
# STS-83 ( RED FD 05 )



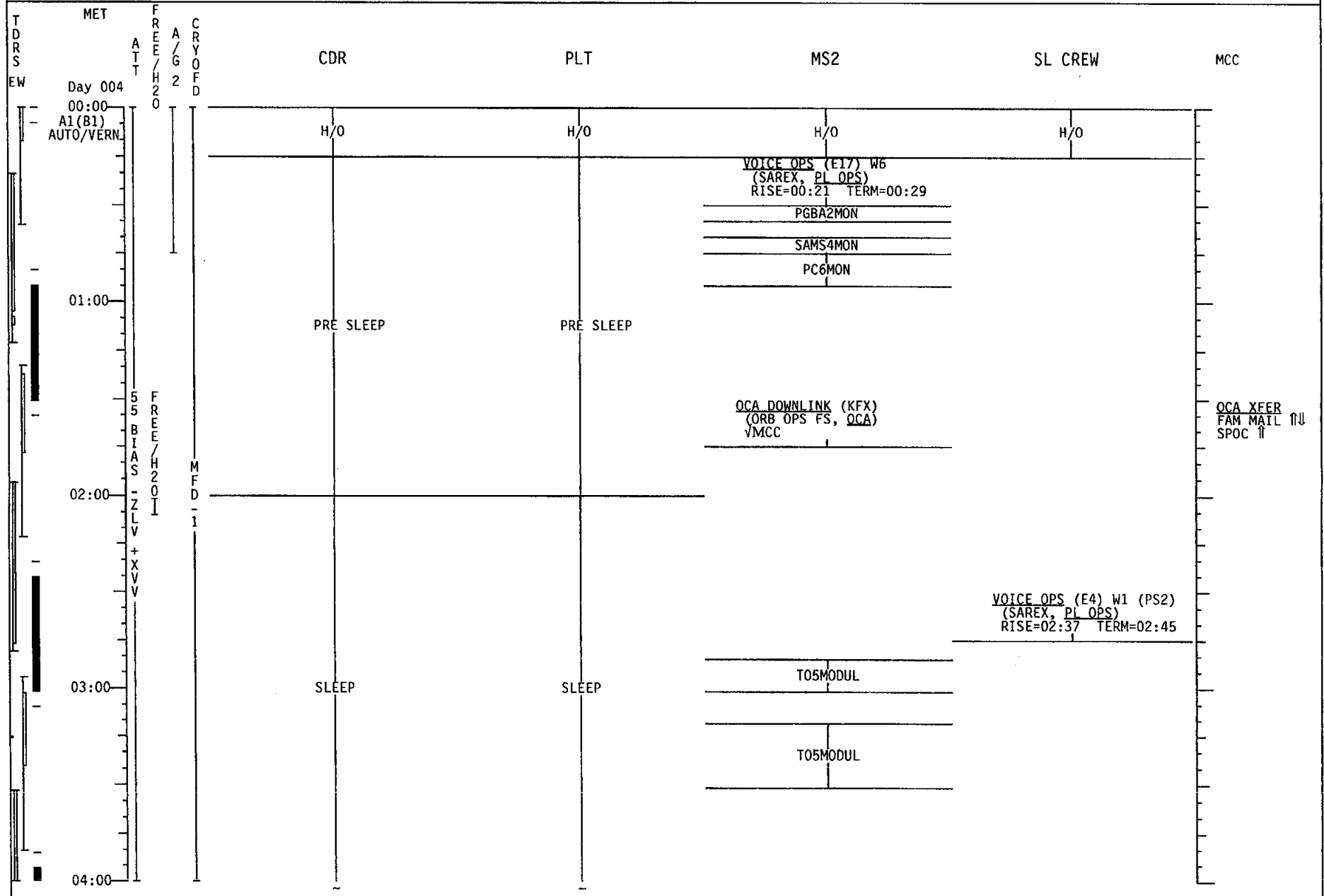
STS-83 ( RED FD 05 )



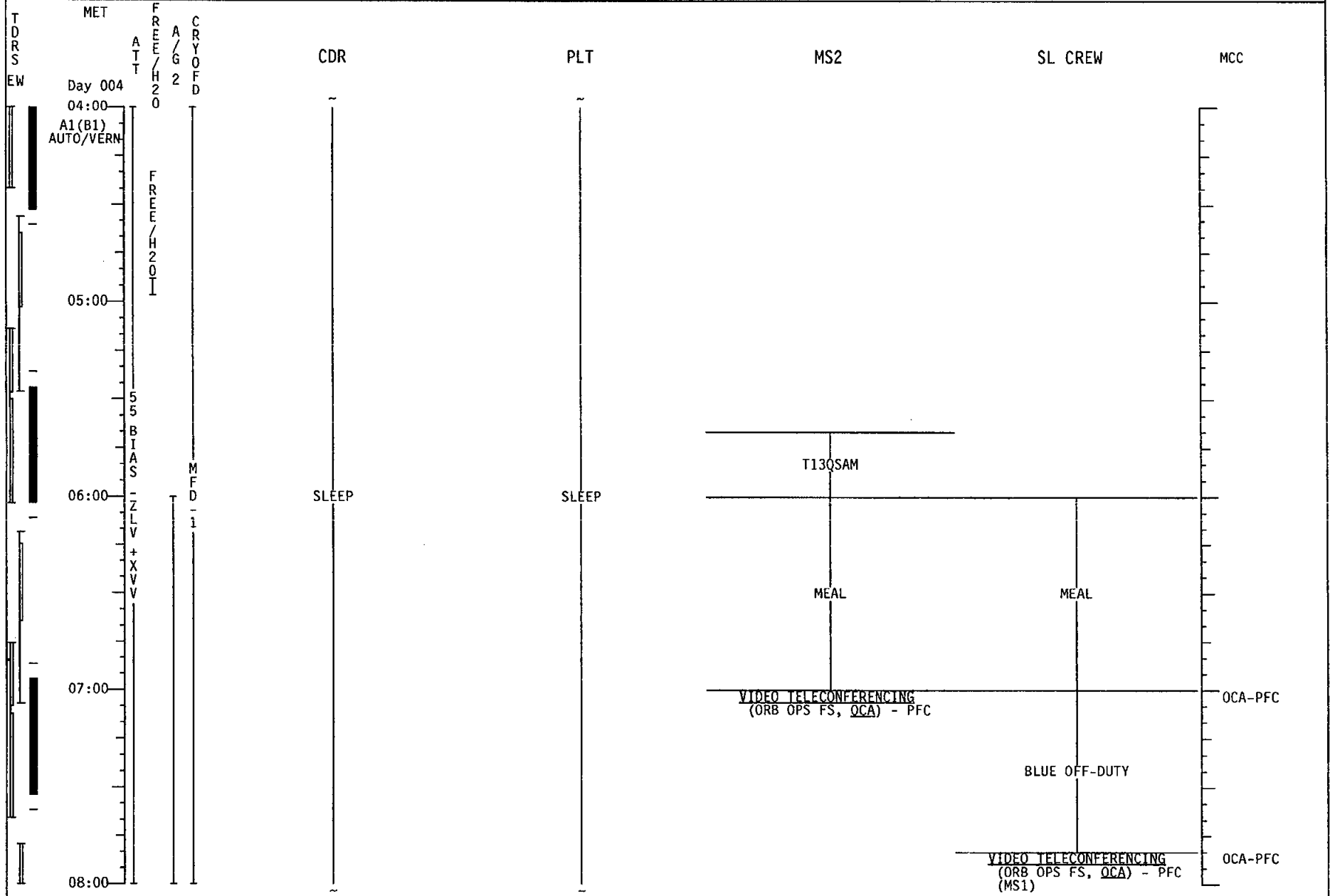
# STS-83 ( RED FD 05 )



# STS-83 ( BLUE FD 05 )

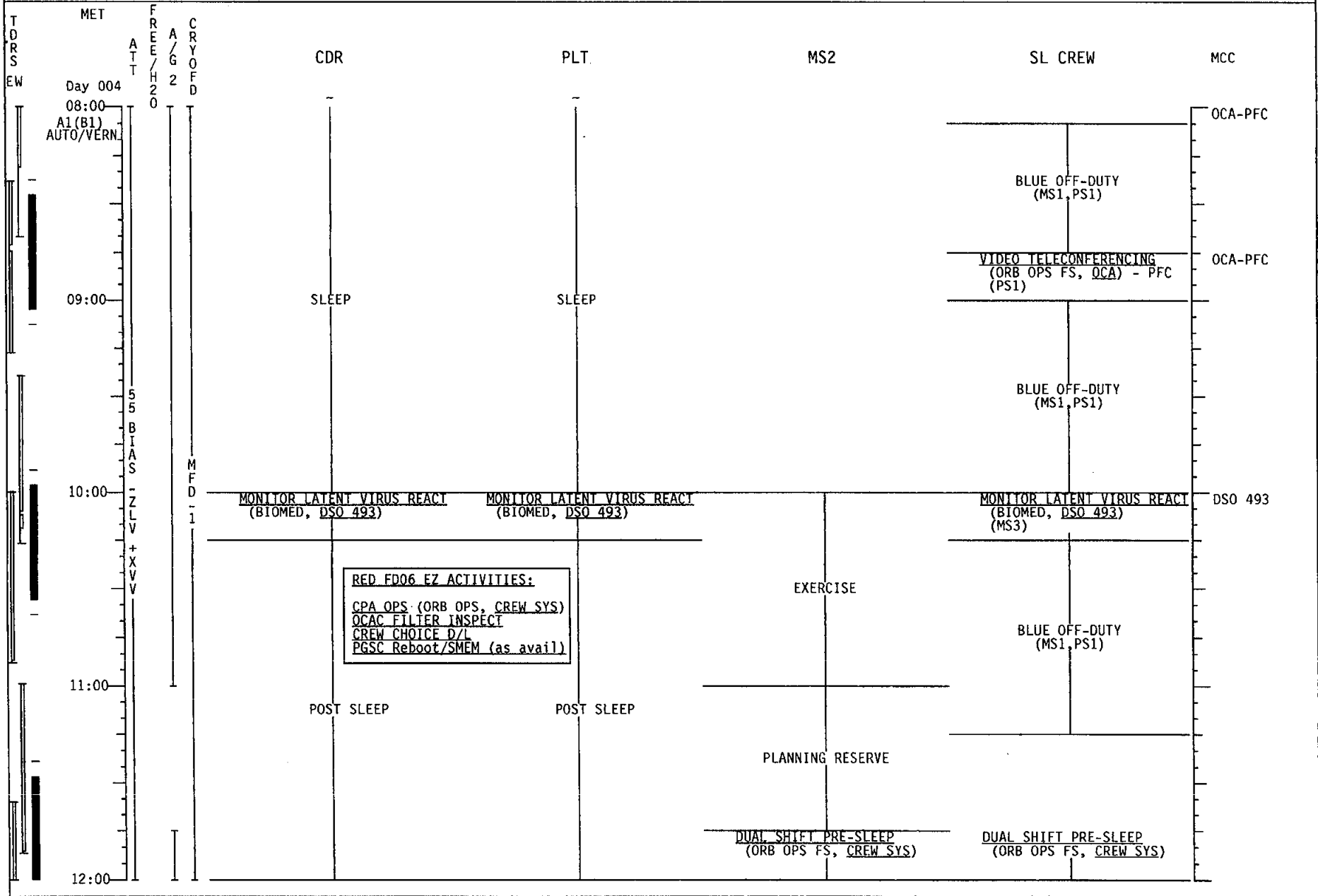


# STS-83 ( BLUE FD 05 )

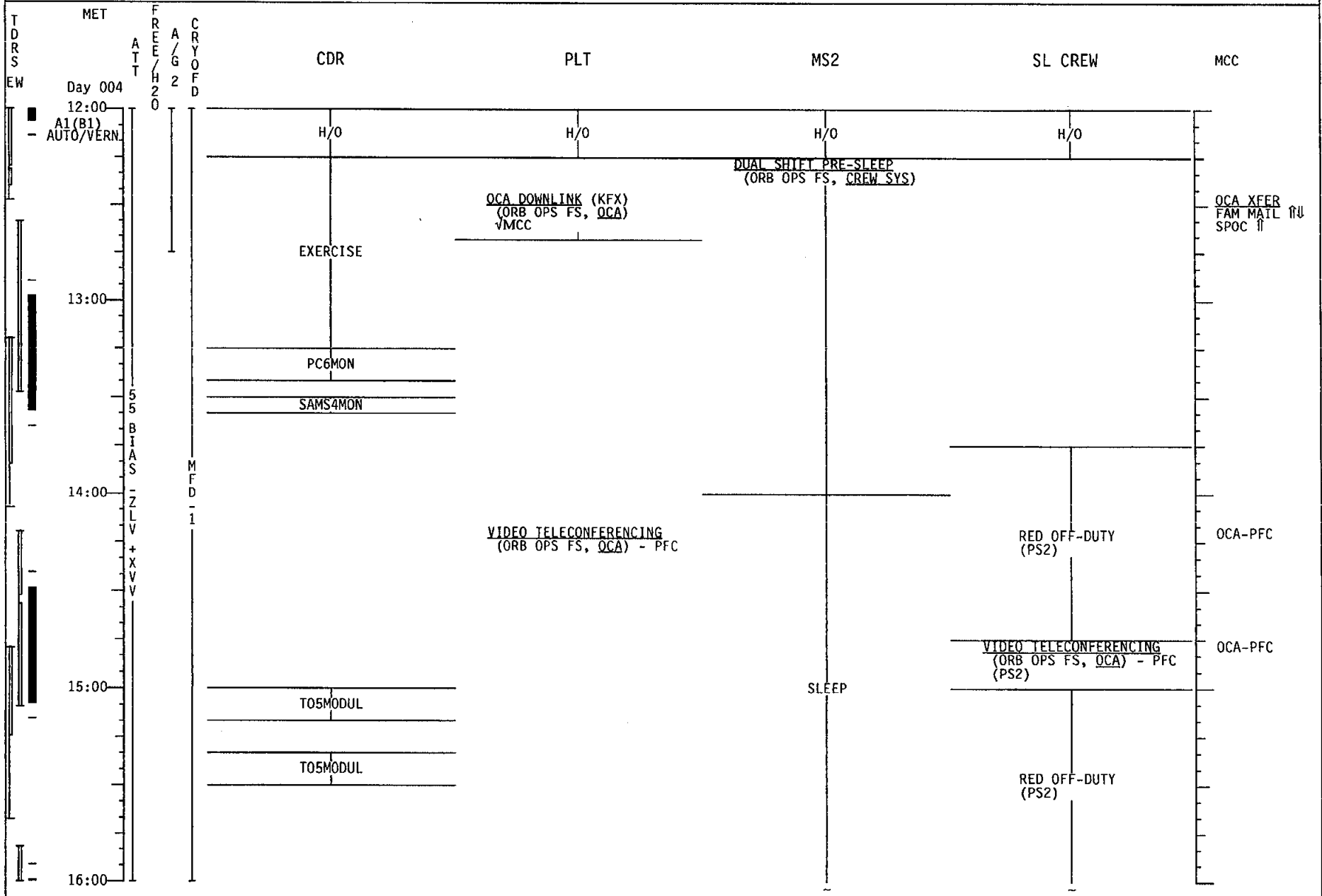




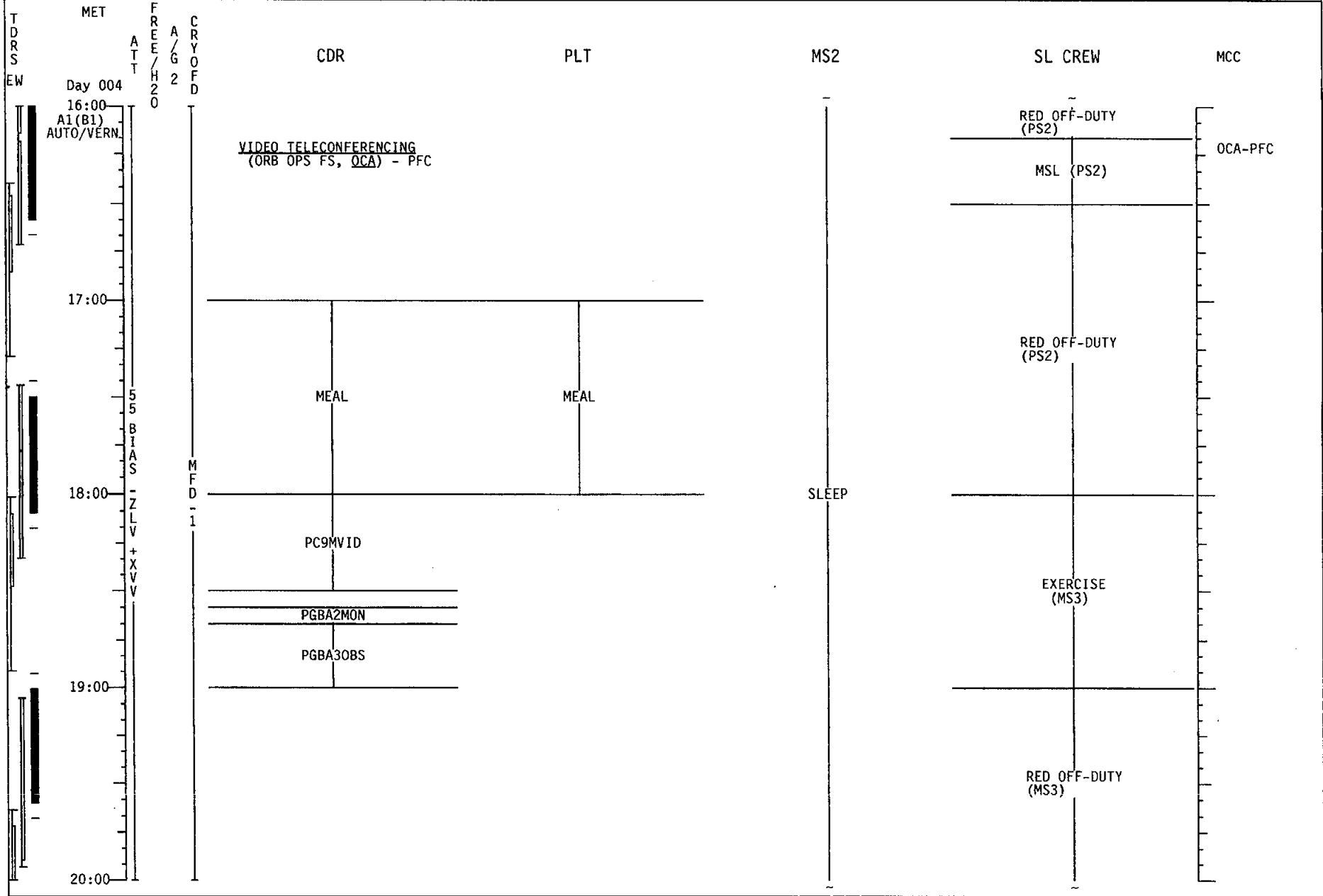
# STS-83 ( BLUE FD 05 )



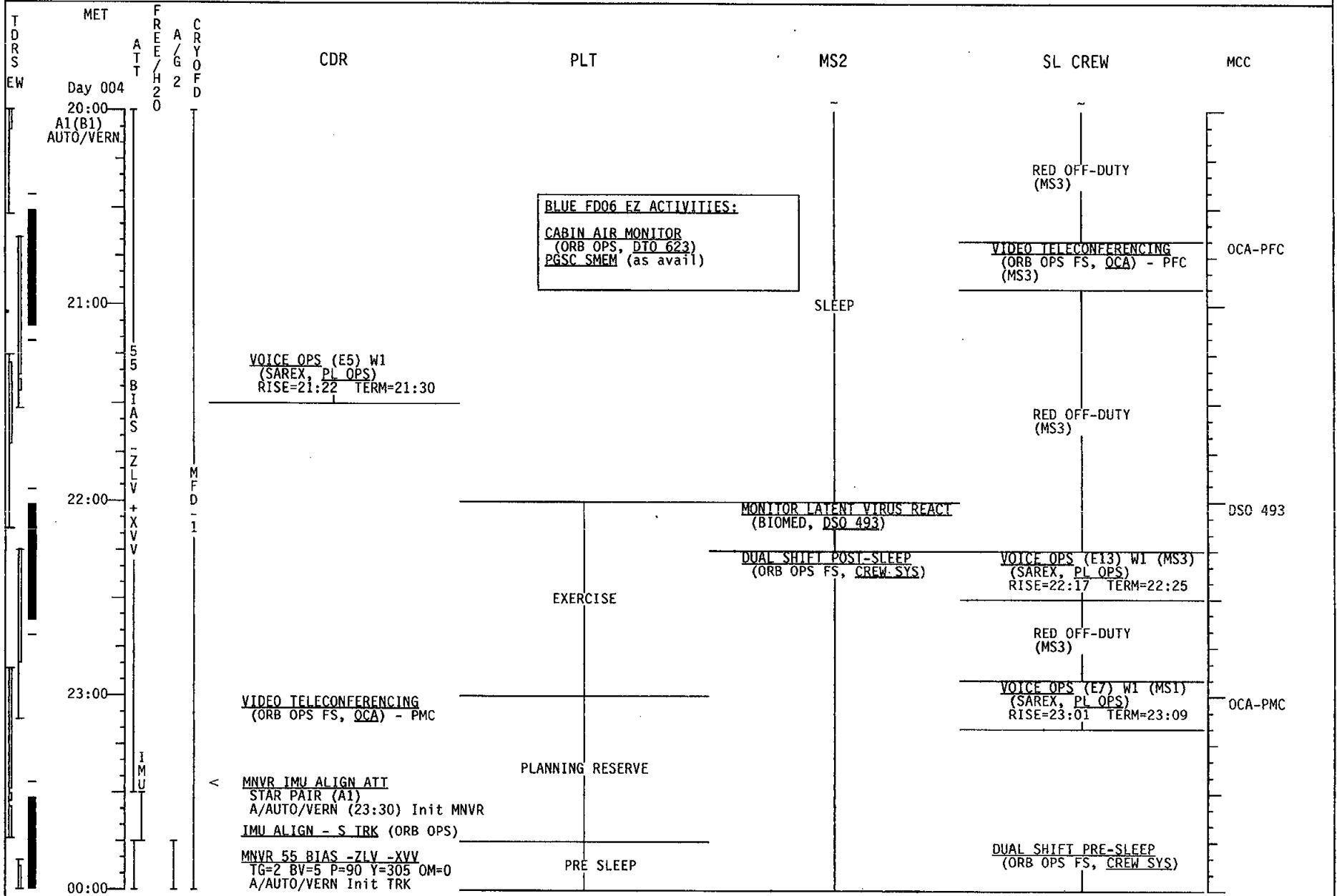
# STS-83 ( RED FD 06 )



STS-83 ( RED FD 06 )

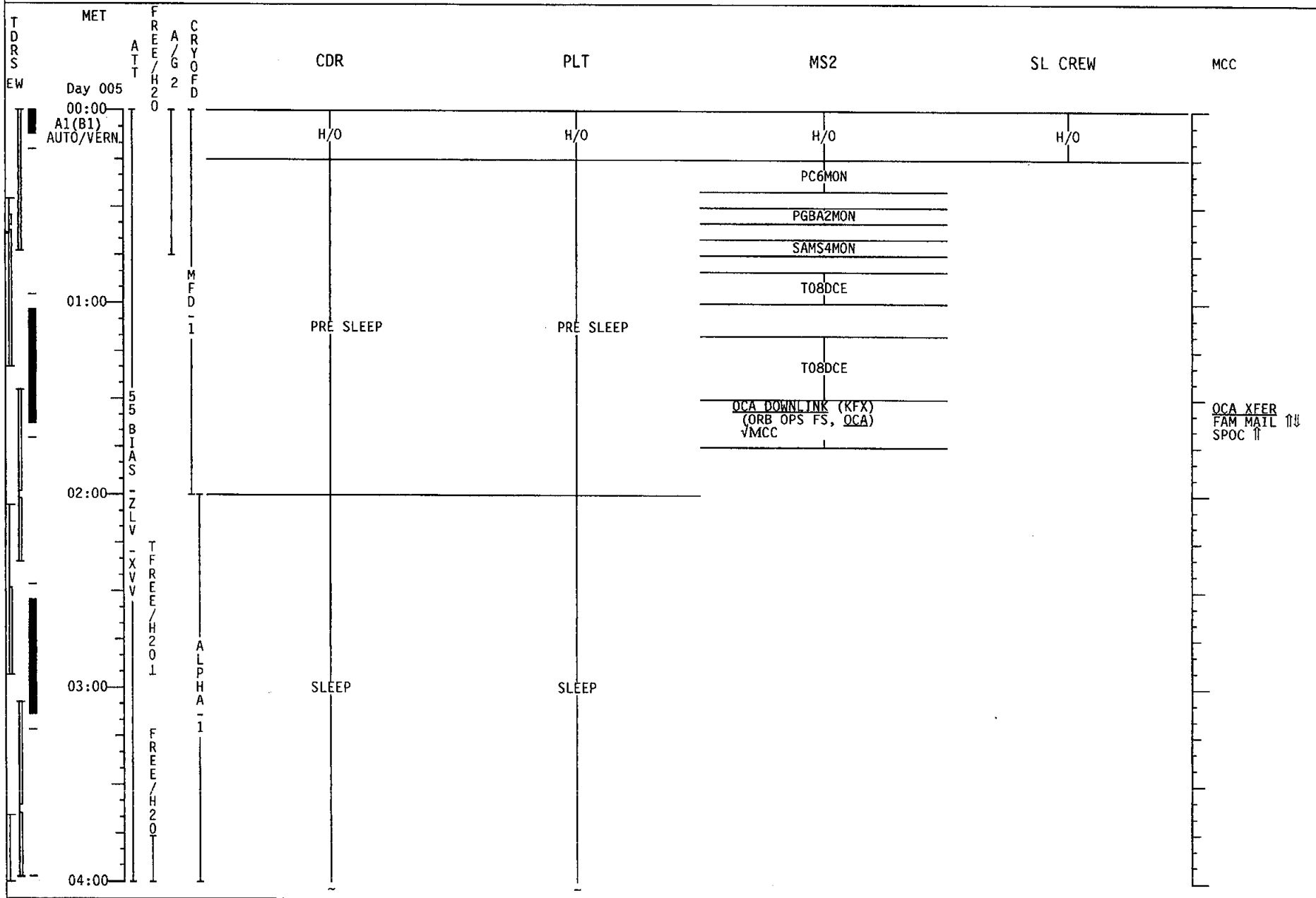


# STS-83 ( RED FD 06 )

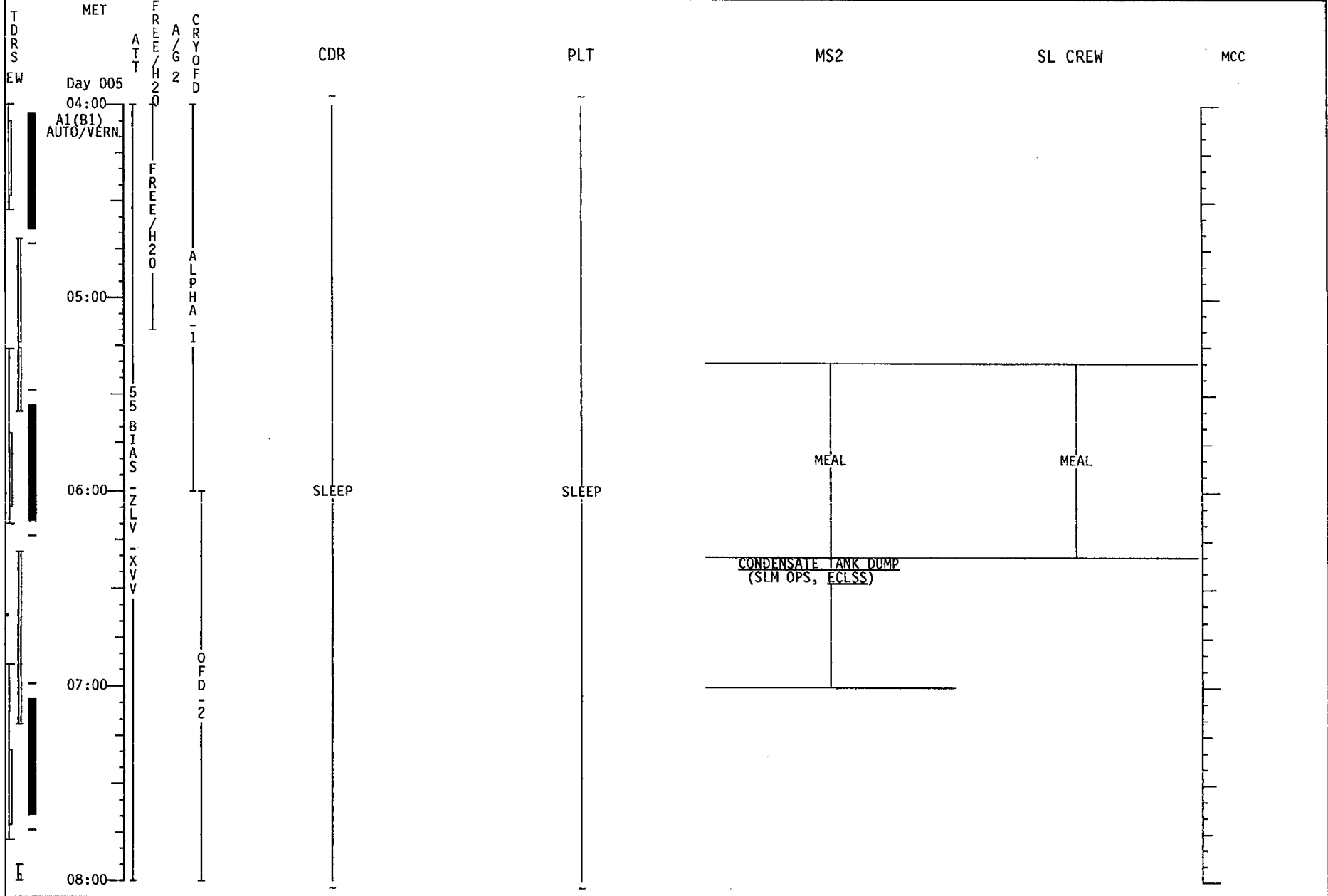


**BLUE FD06 EZ ACTIVITIES:**  
 CABIN AIR MONITOR  
 (ORB OPS, DTO 623)  
 PGSC S MEM (as avail)

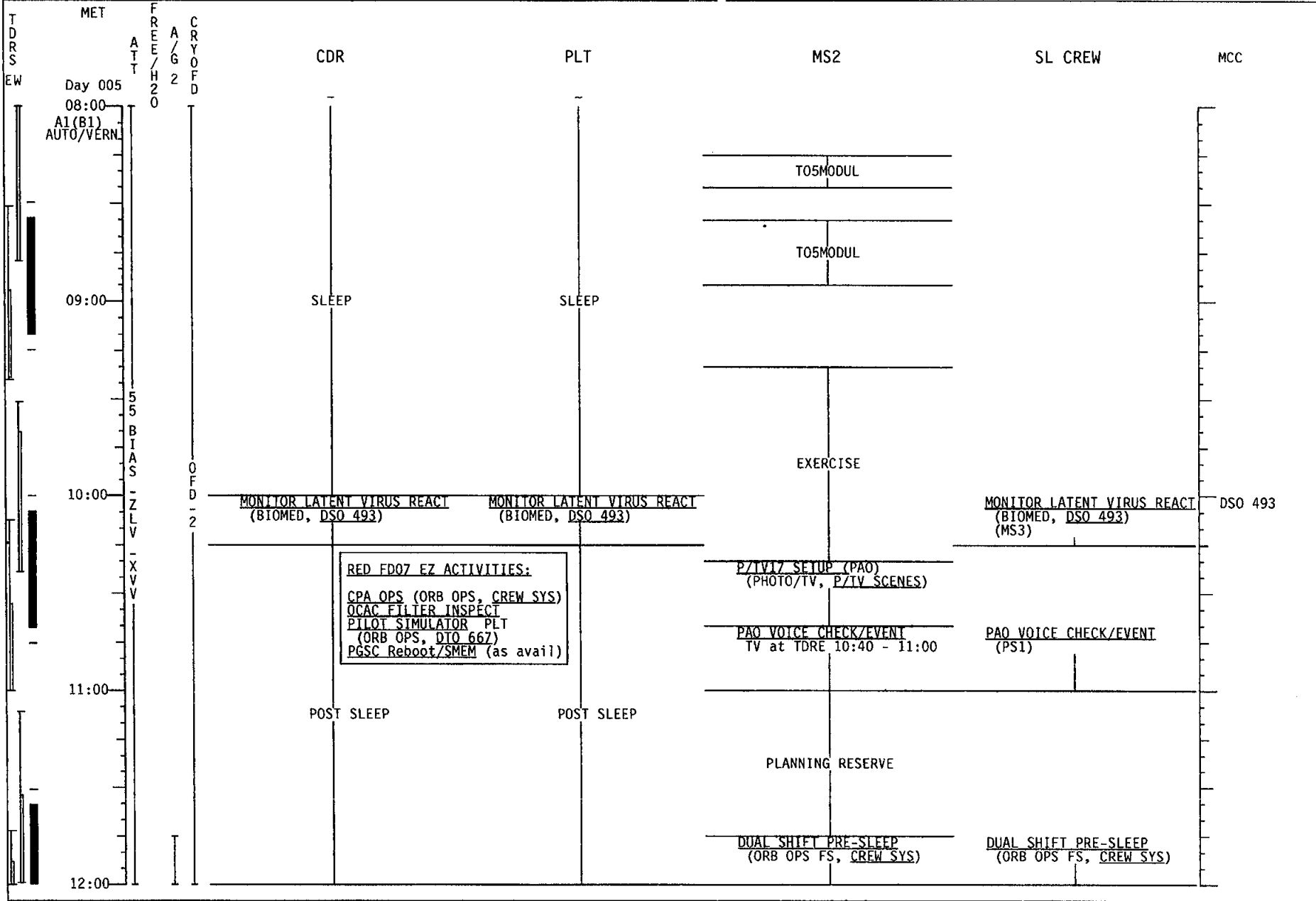
STS-83 ( BLUE FD 06 )



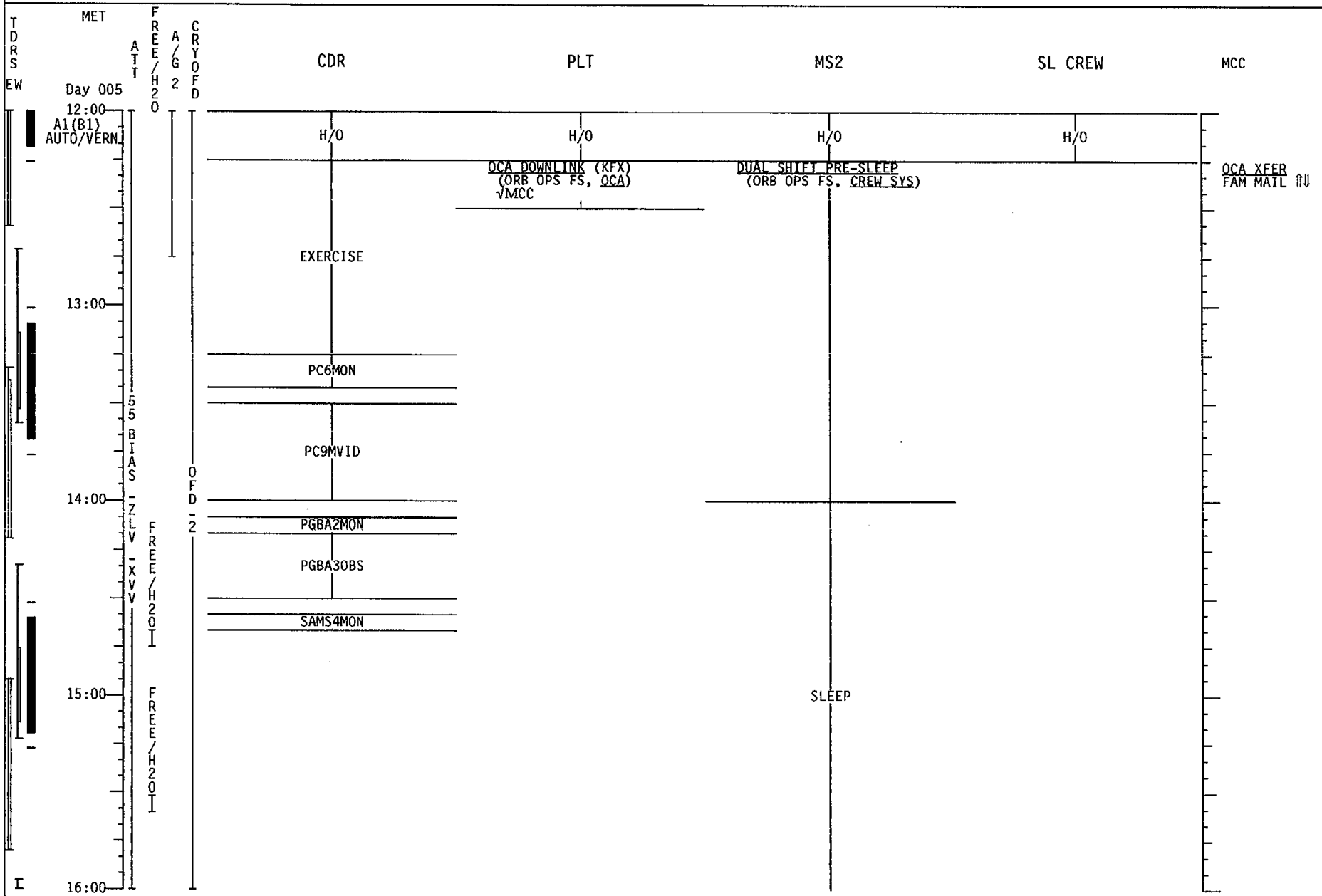
# STS-83 ( BLUE FD 06 )



# STS-83 ( BLUE FD 06 )

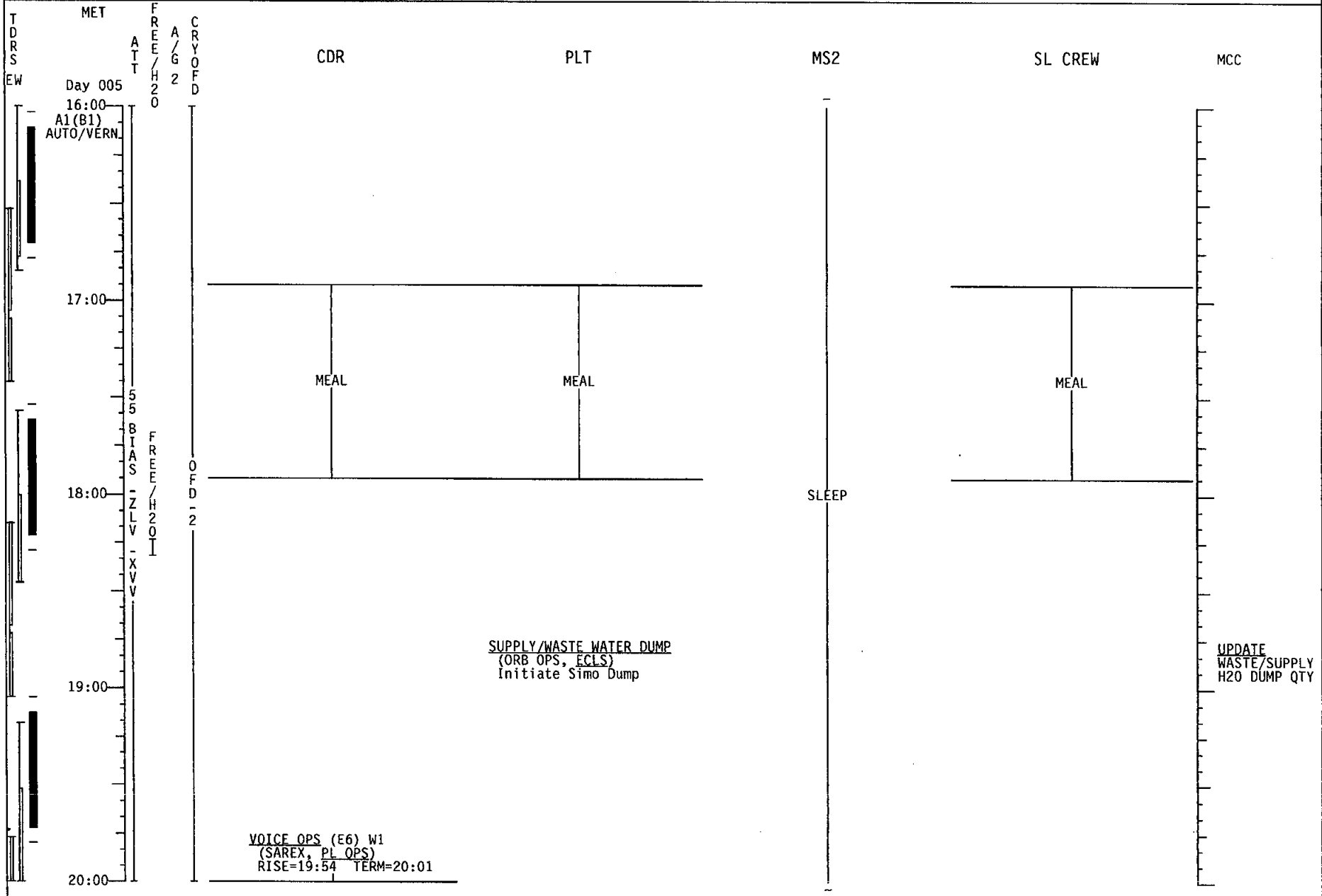


# STS-83 ( RED FD 07 )

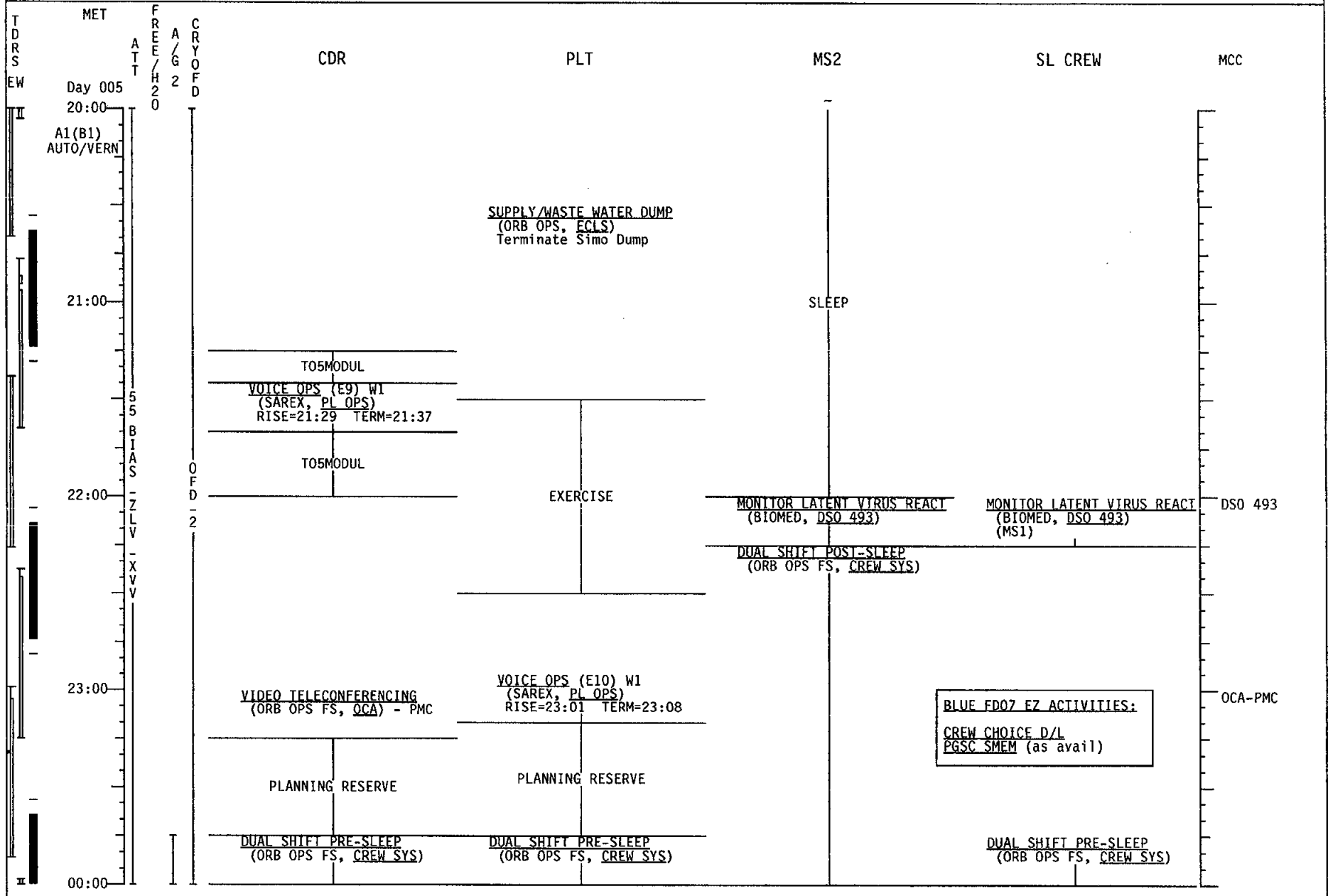




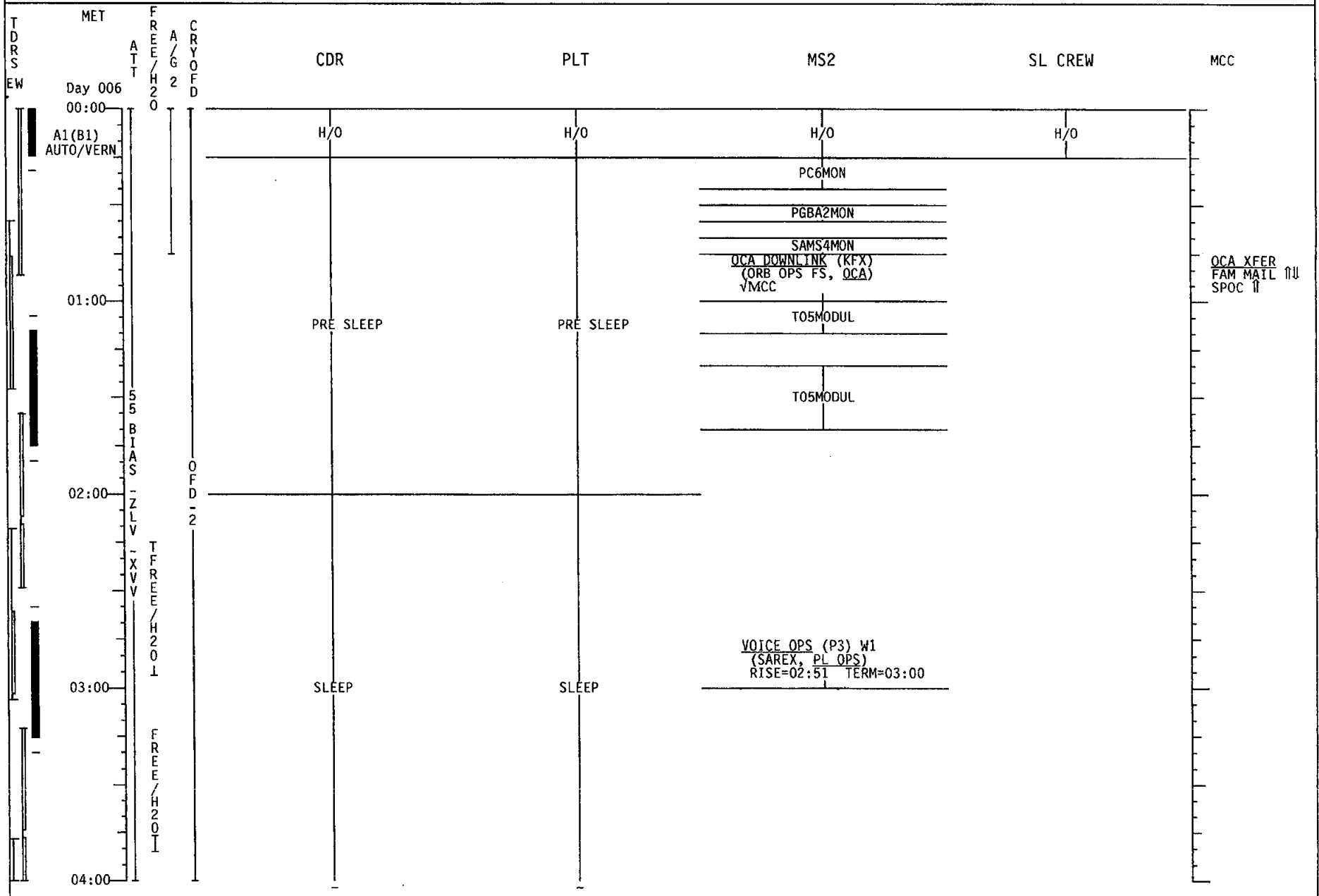
STS-83 ( RED FD 07 )



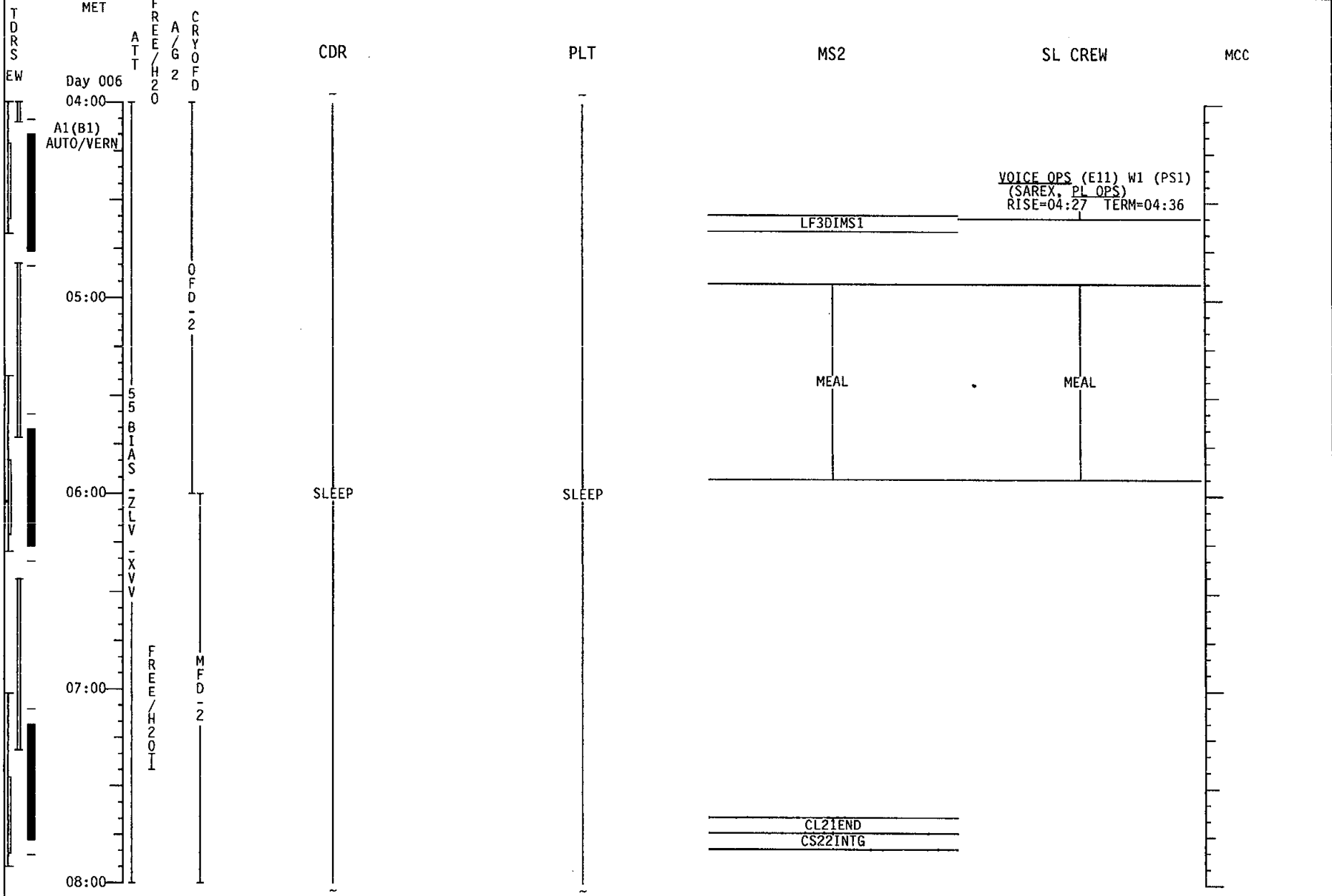
# STS-83 ( RED FD 07 )



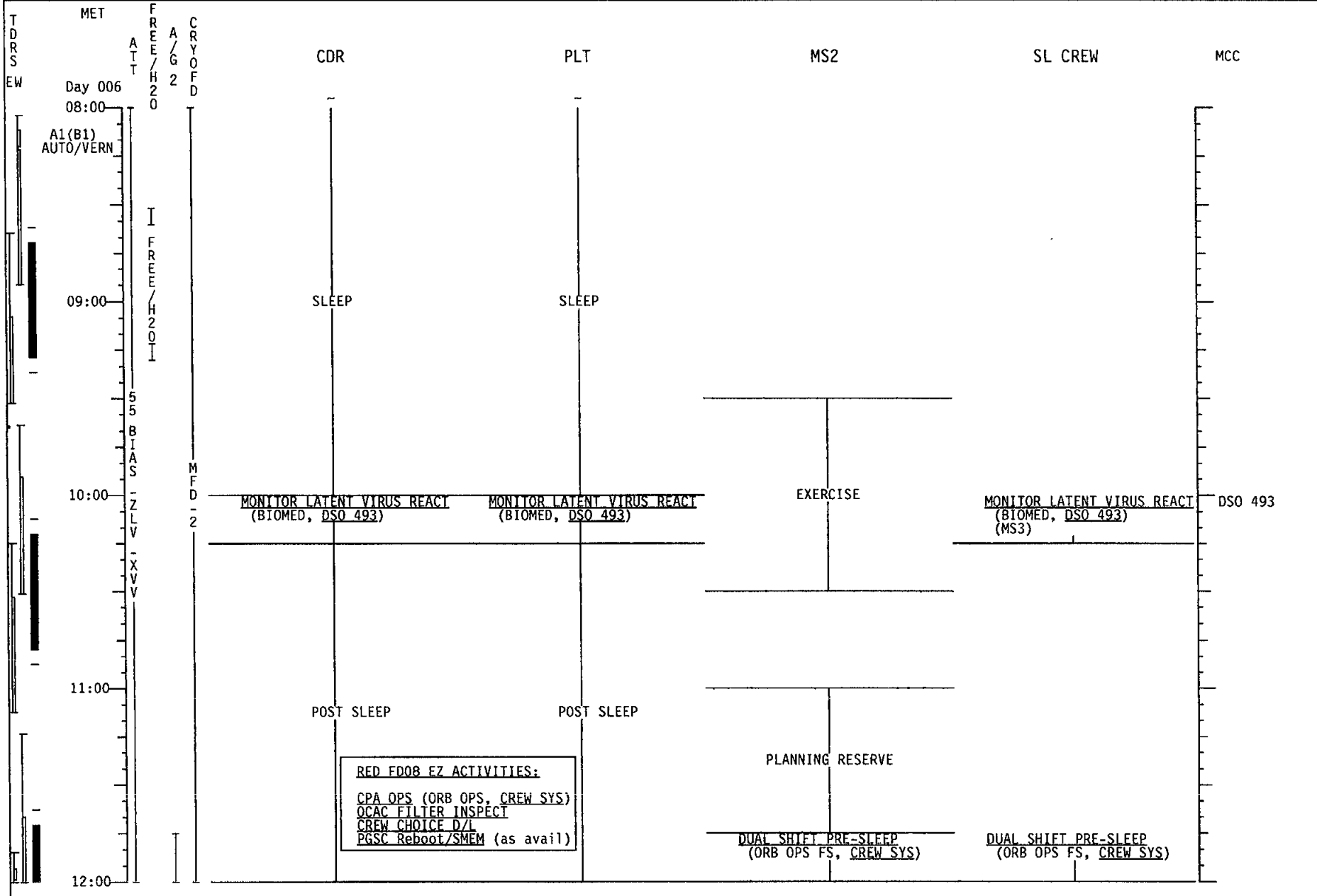
STS-83 ( BLUE FD 07 )



STS-83 ( BLUE FD 07 )

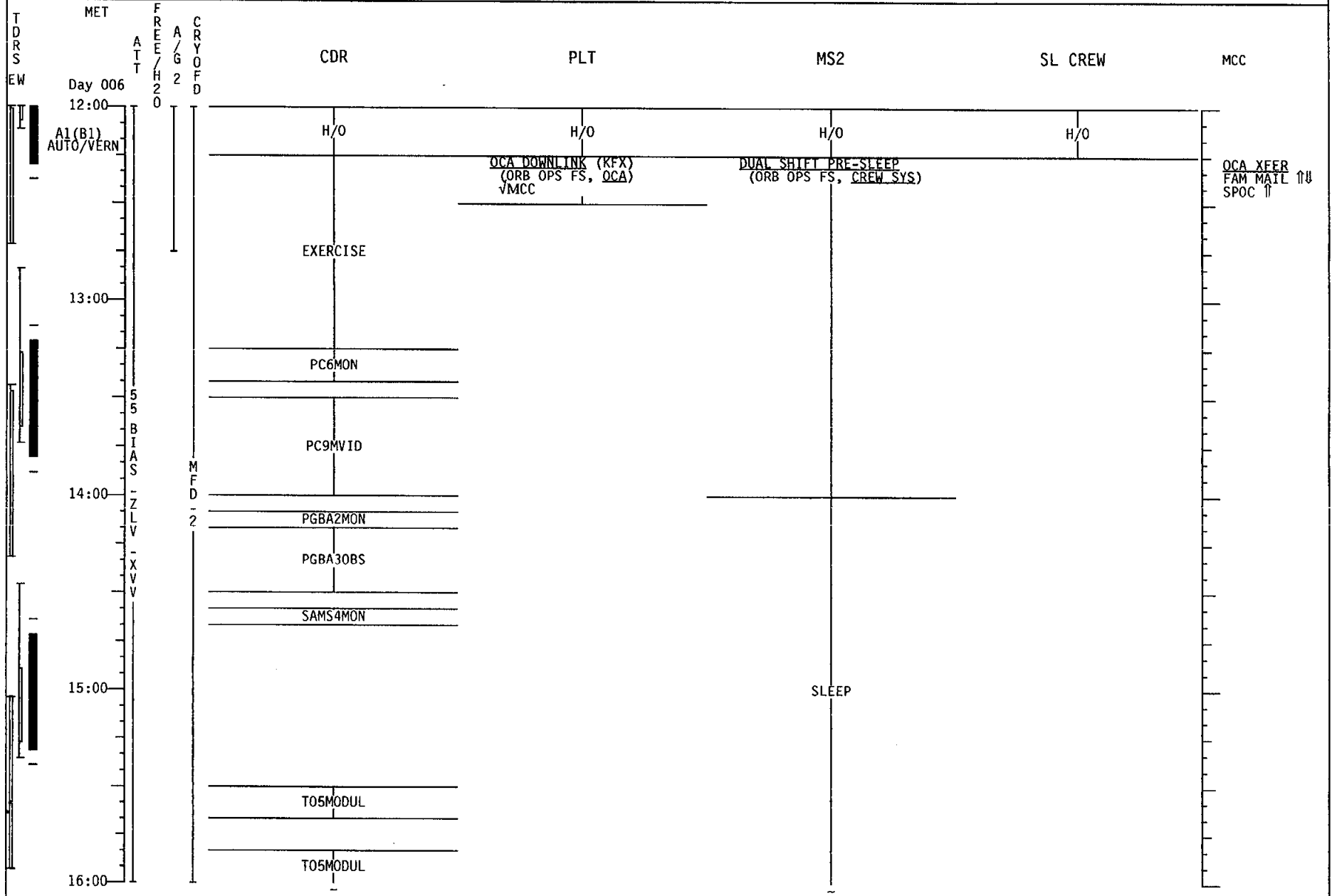


# STS-83 ( BLUE FD 07 )

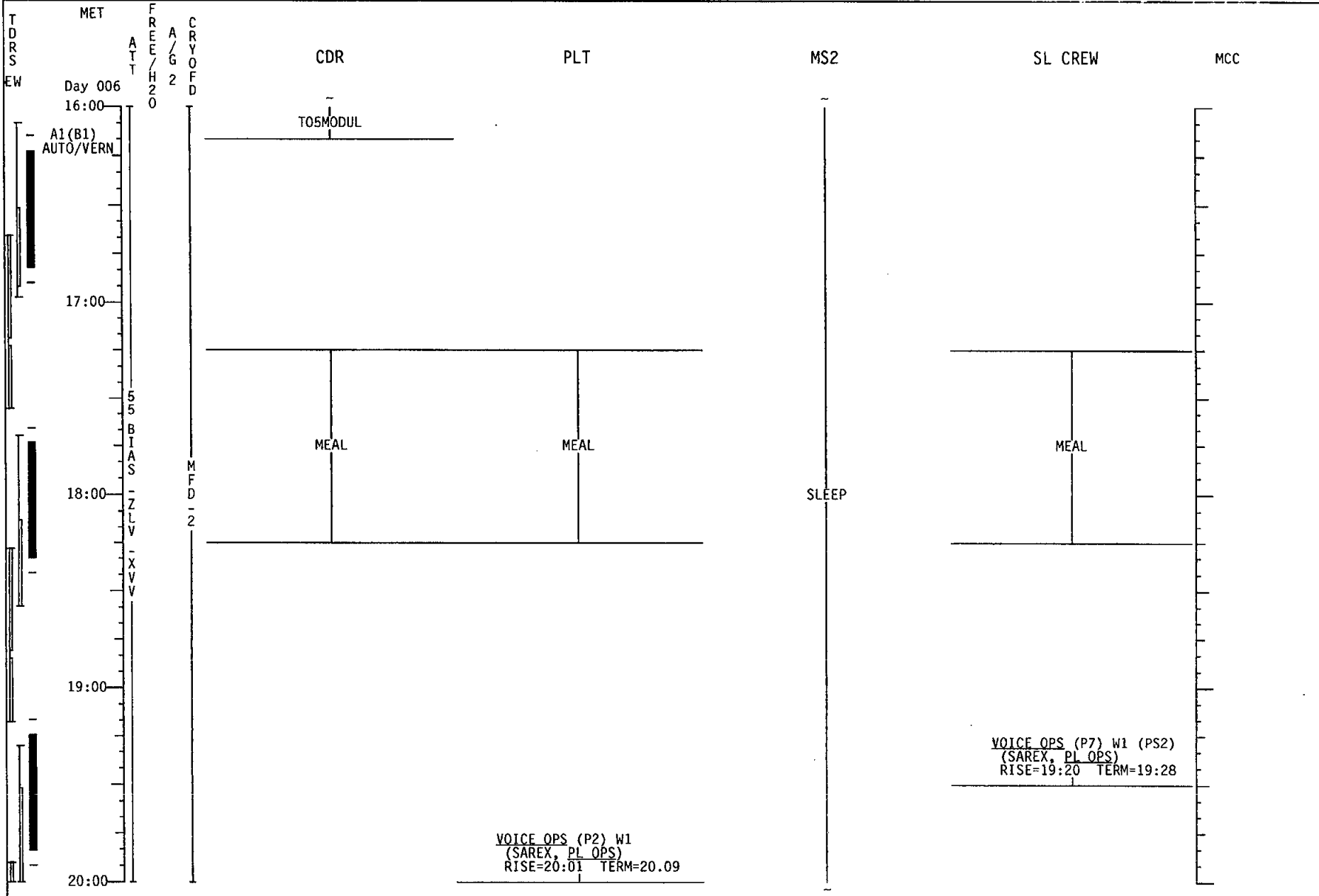


**RED F008 EZ ACTIVITIES:**  
 CPA OPS (ORB OPS, CREW SYS)  
 OCAC FILTER INSPECT  
 CREW CHOICE D/L  
 PGSC Reboot/SMEM (as avail)

# STS-83 ( RED FD 08 )



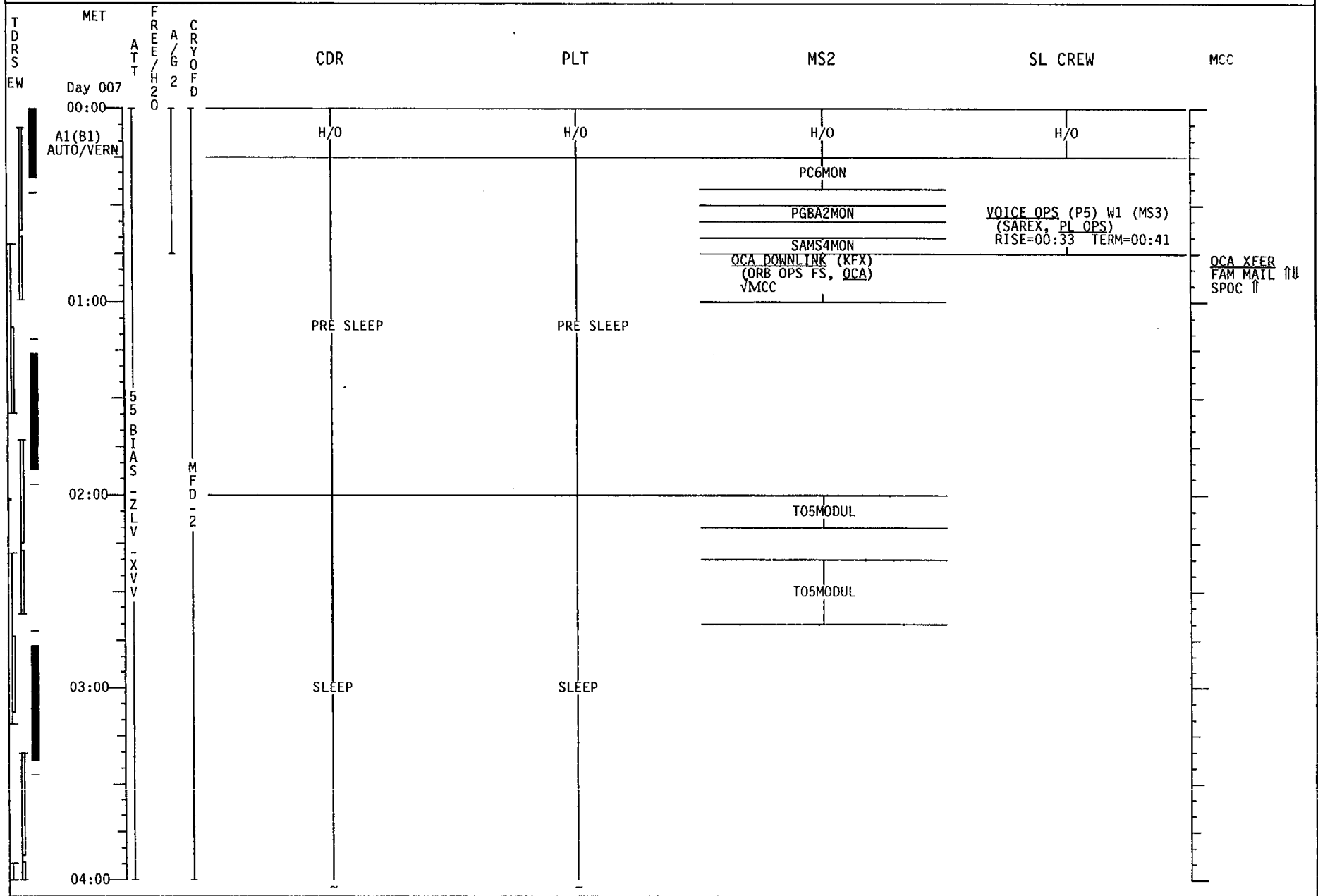
STS-83 ( RED FD 08 )





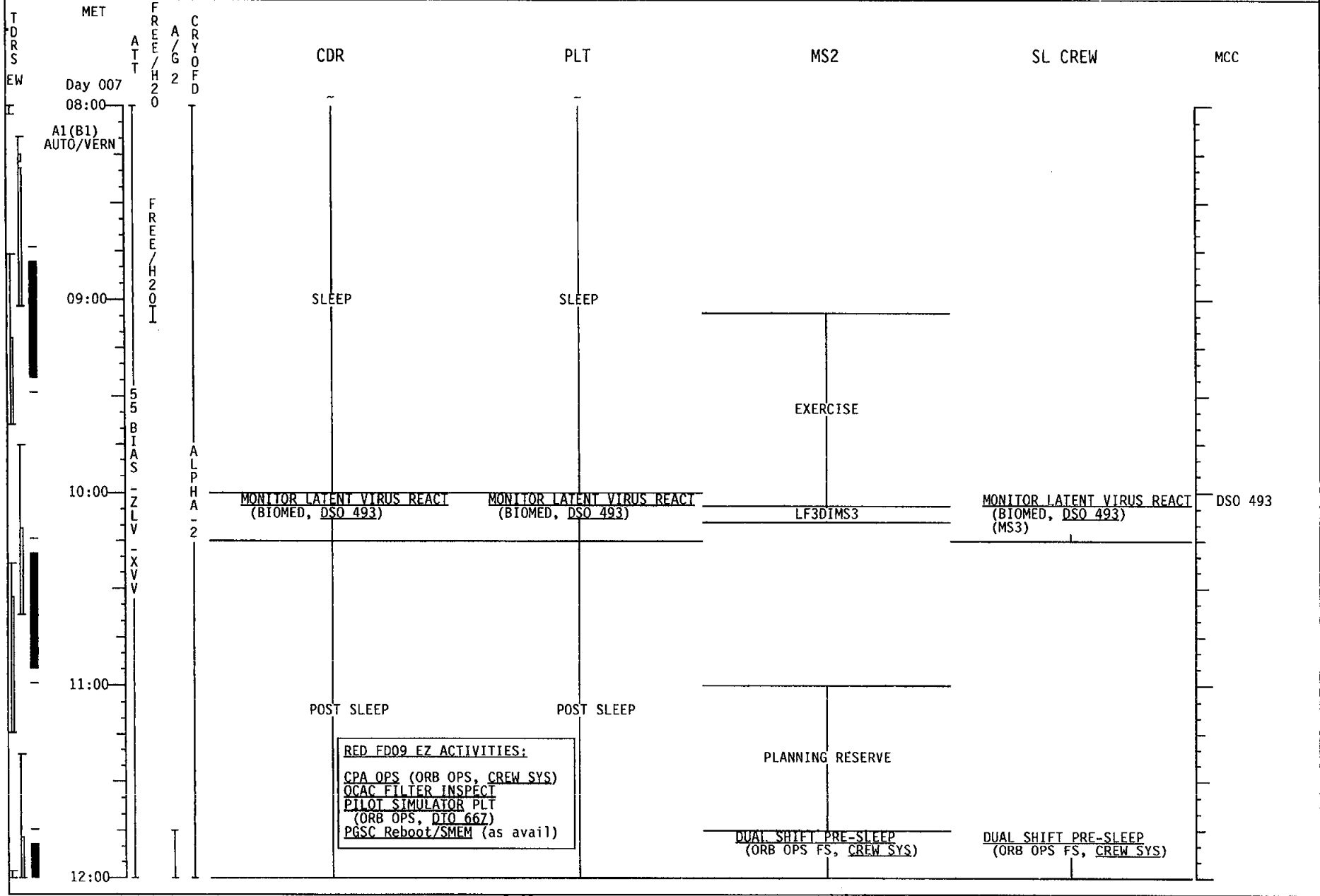


STS-83 ( BLUE FD 08 )

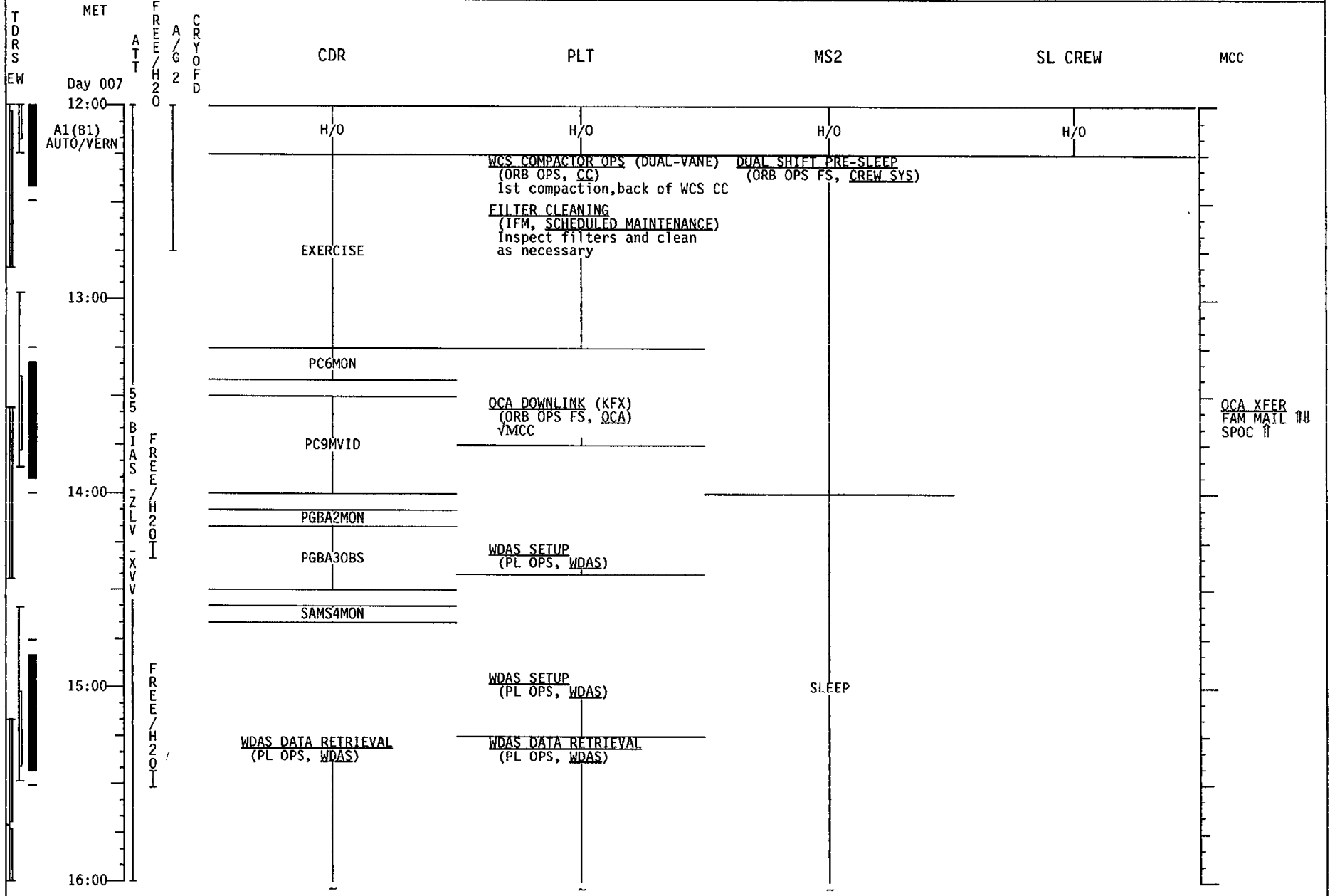




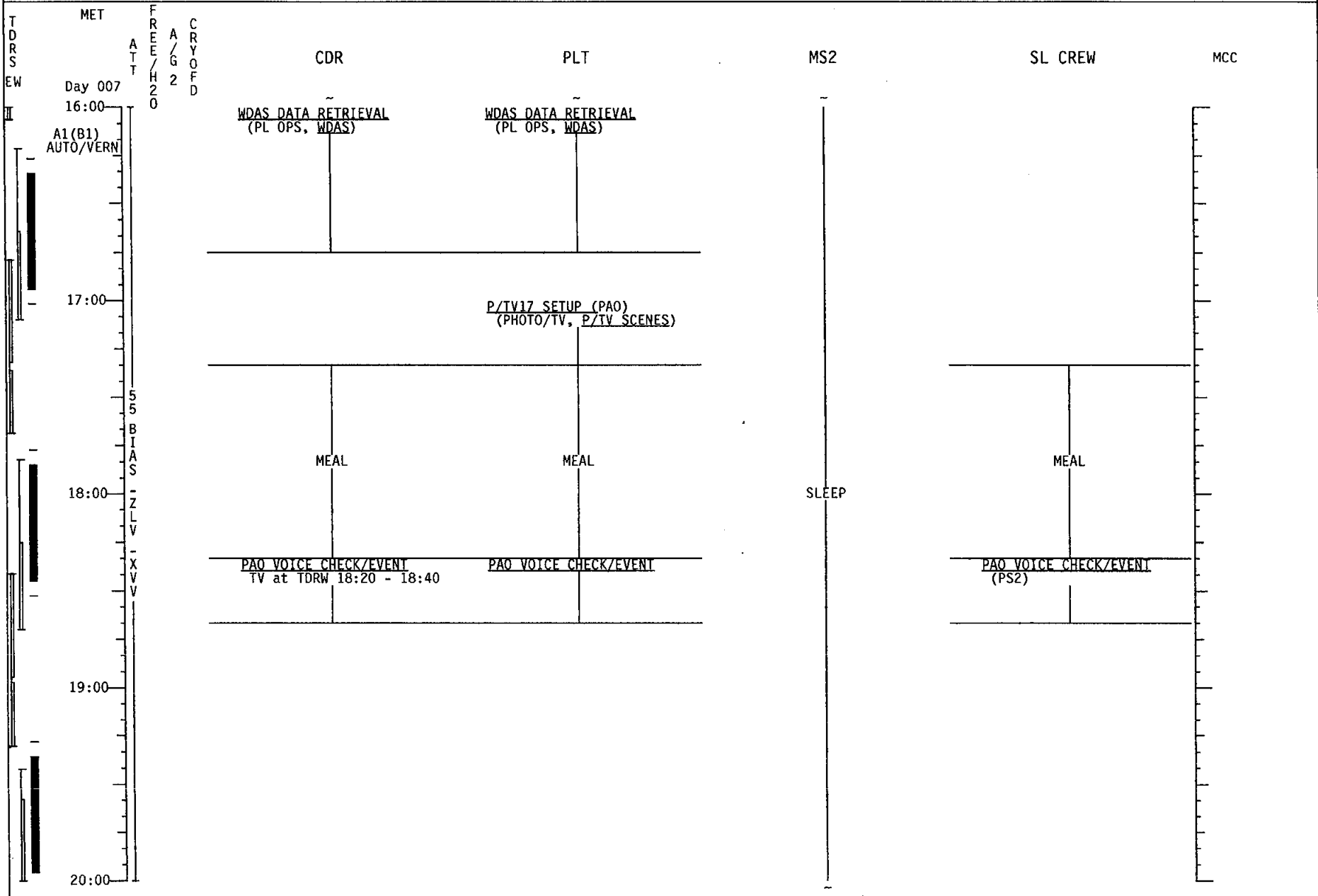
# STS-83 ( BLUE FD 08 )



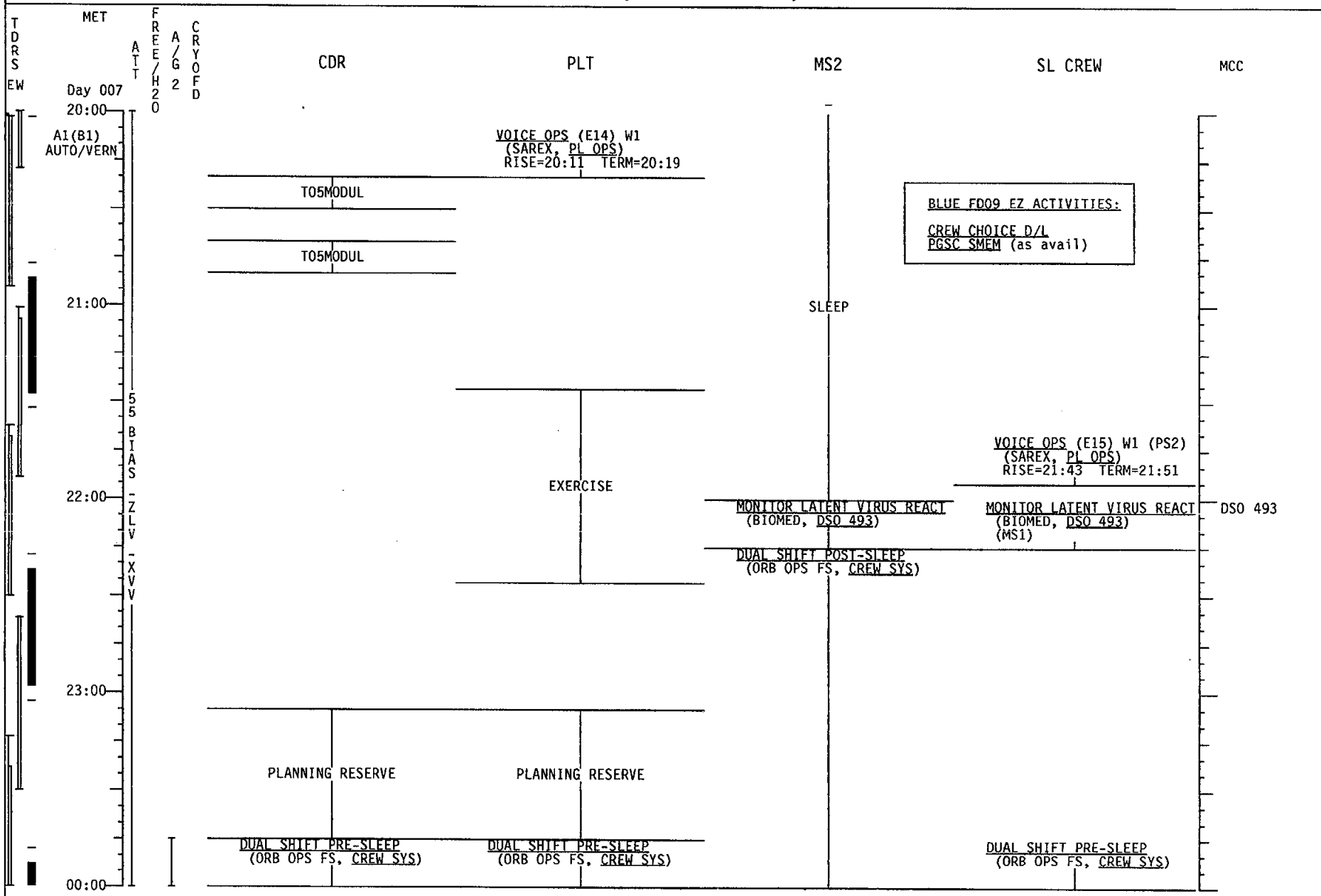
# STS-83 ( RED FD 09 )



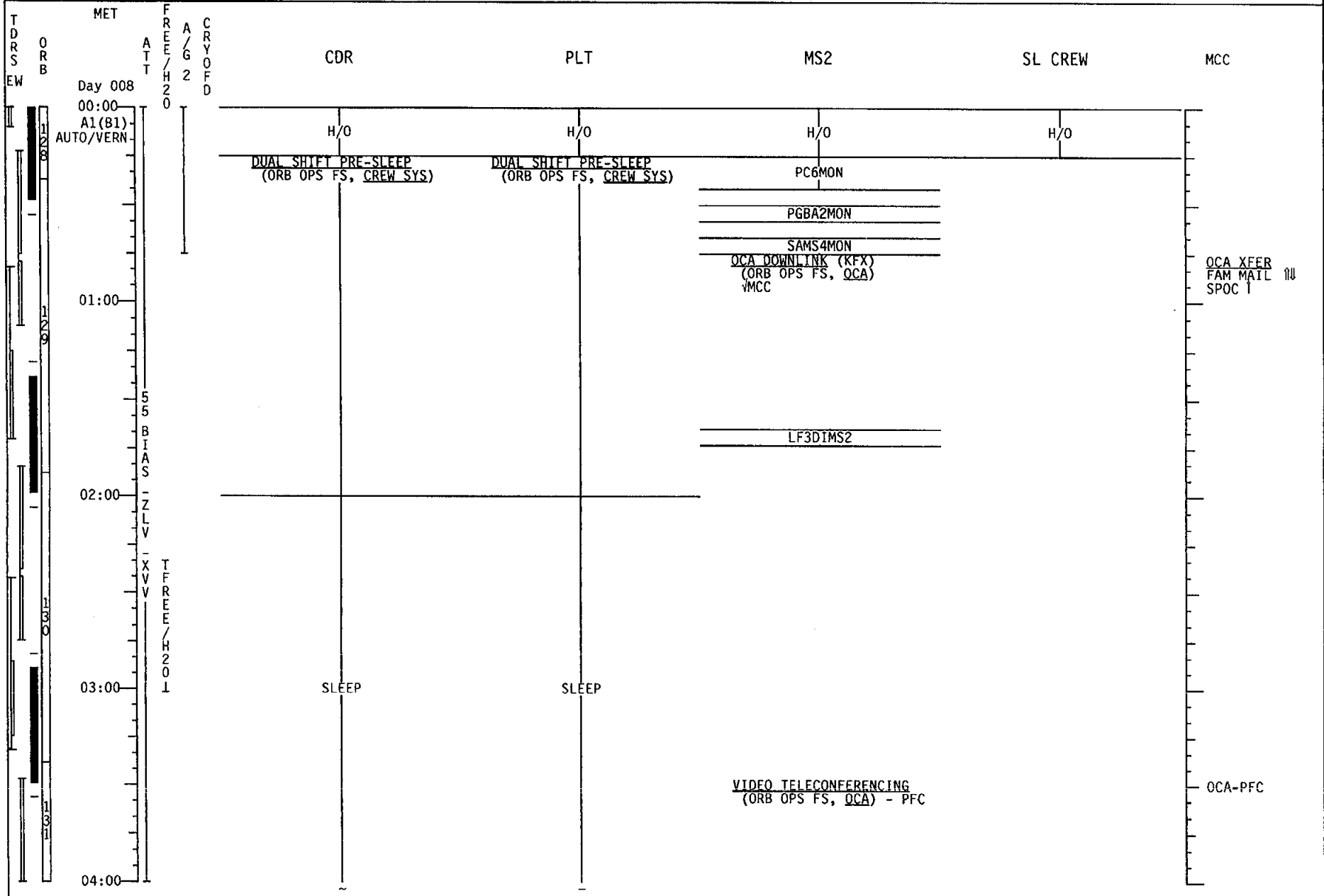
# STS-83 ( RED FD 09 )



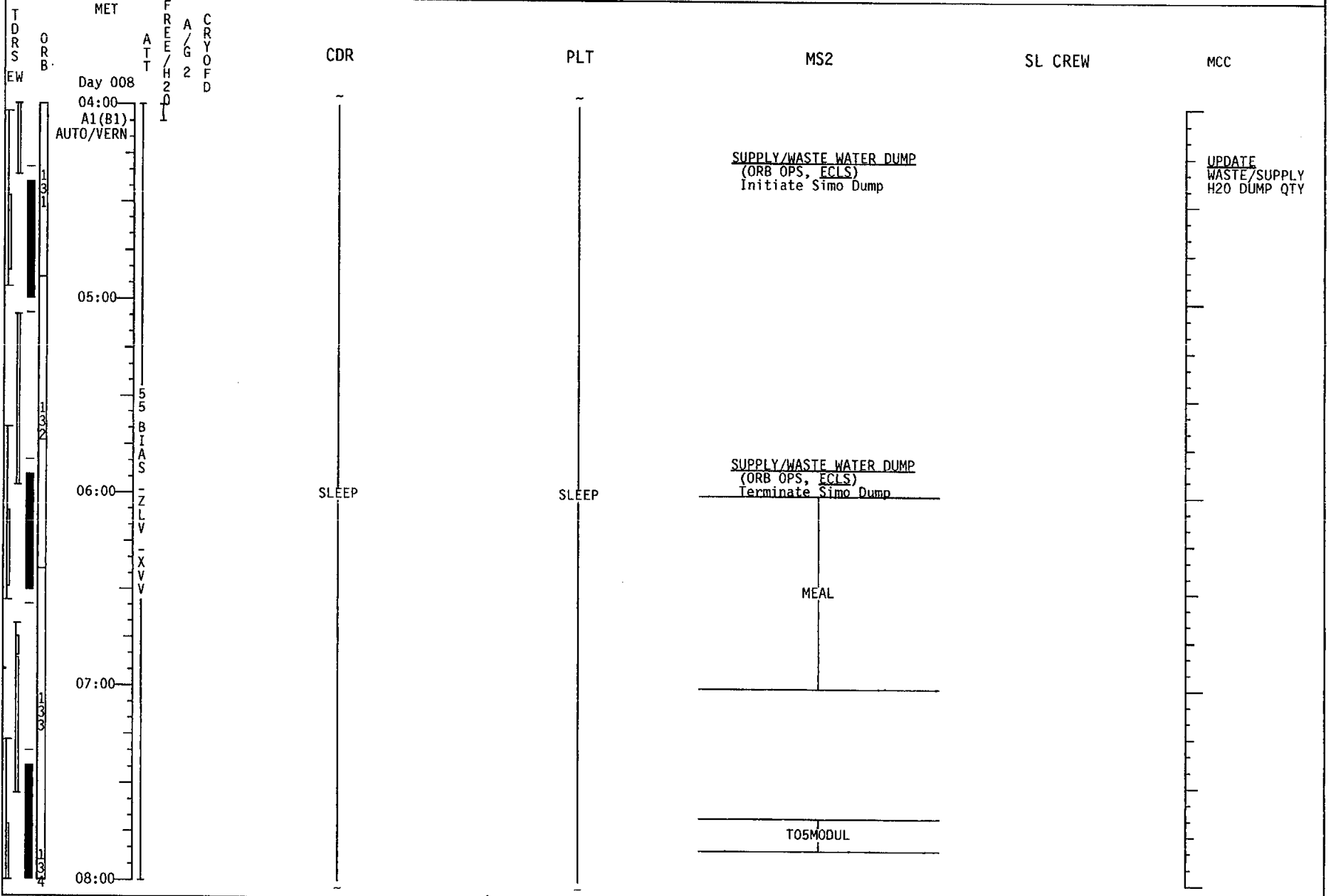
STS-83 ( RED FD 09 )



# STS-83 ( BLUE FD 09 )

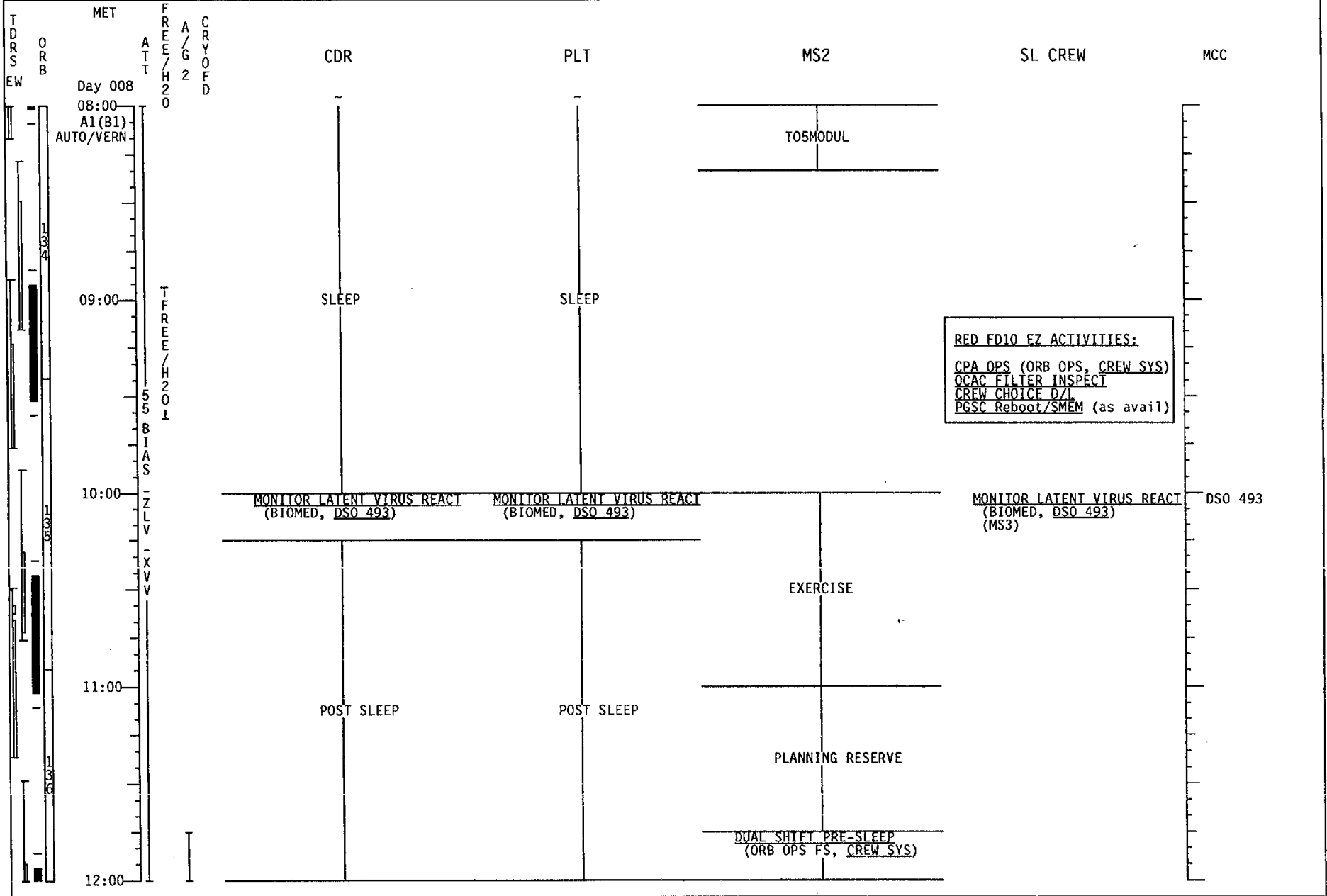


STS-83 ( BLUE FD 09 )



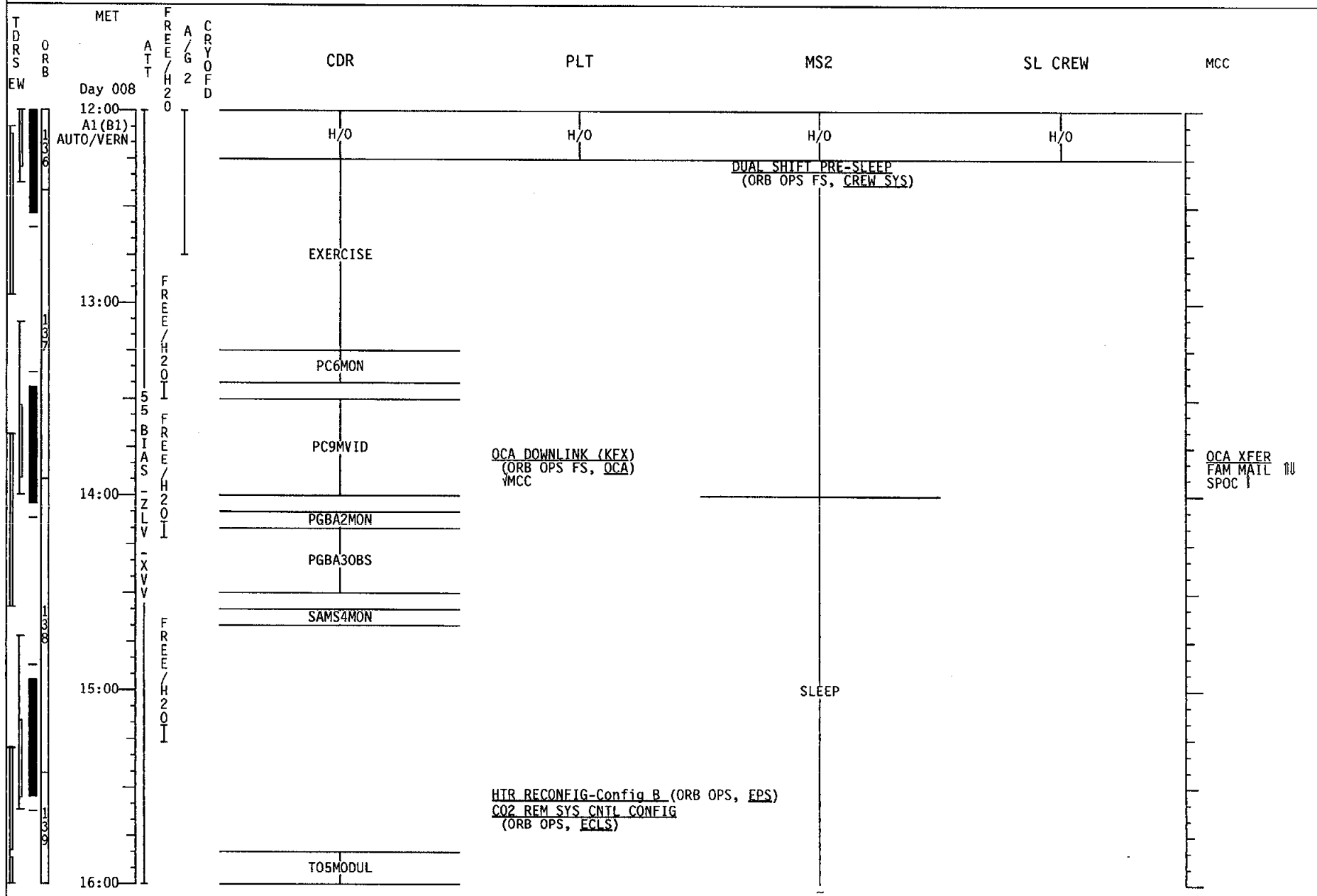


# STS-83 ( BLUE FD 09 )

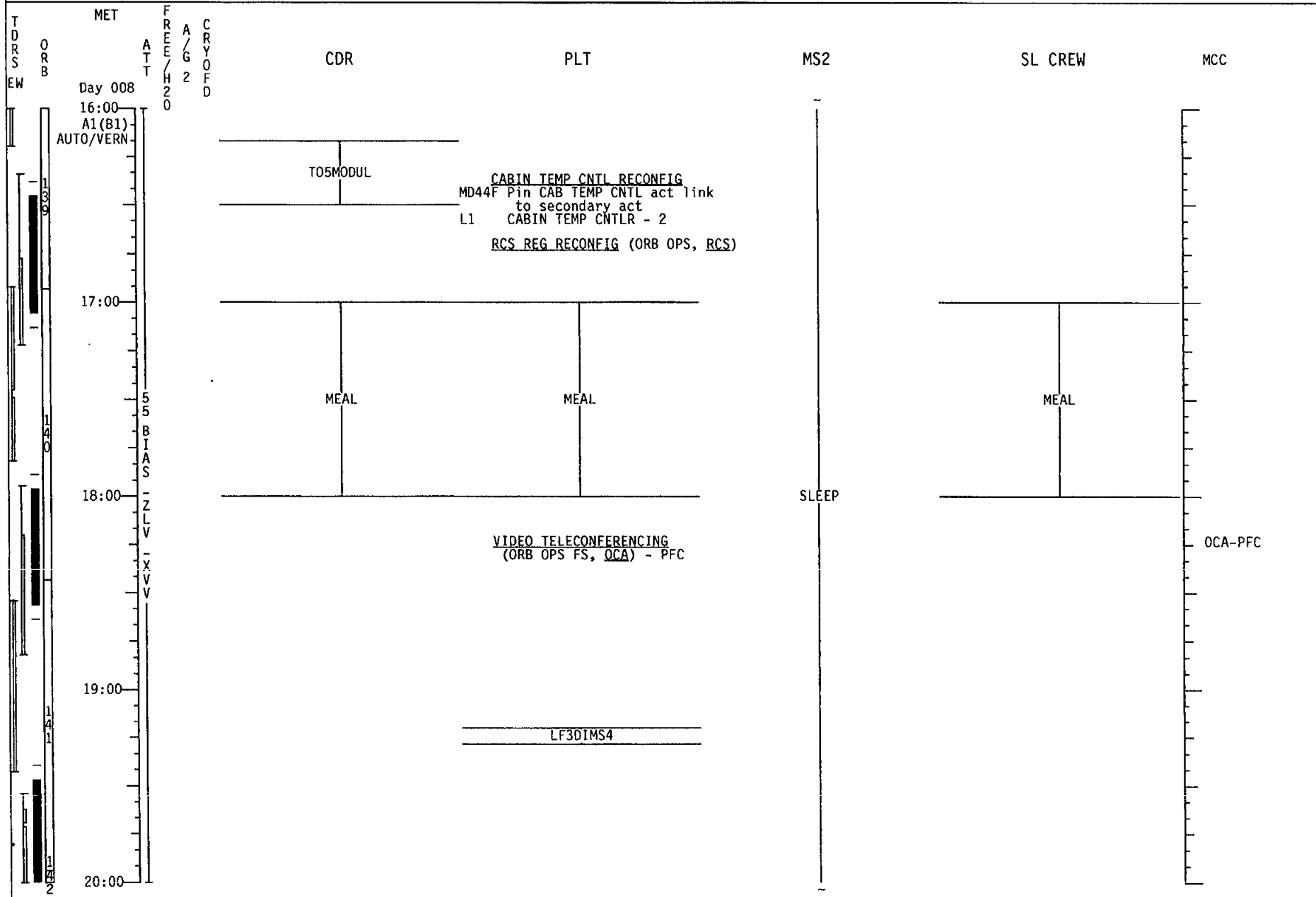


**RED FD10 EZ ACTIVITIES:**  
 CPA OPS (ORB OPS, CREW SYS)  
 OCAC FILTER INSPECT  
 CREW CHOICE D/L  
 PGSC Reboot/SMEM (as avail)

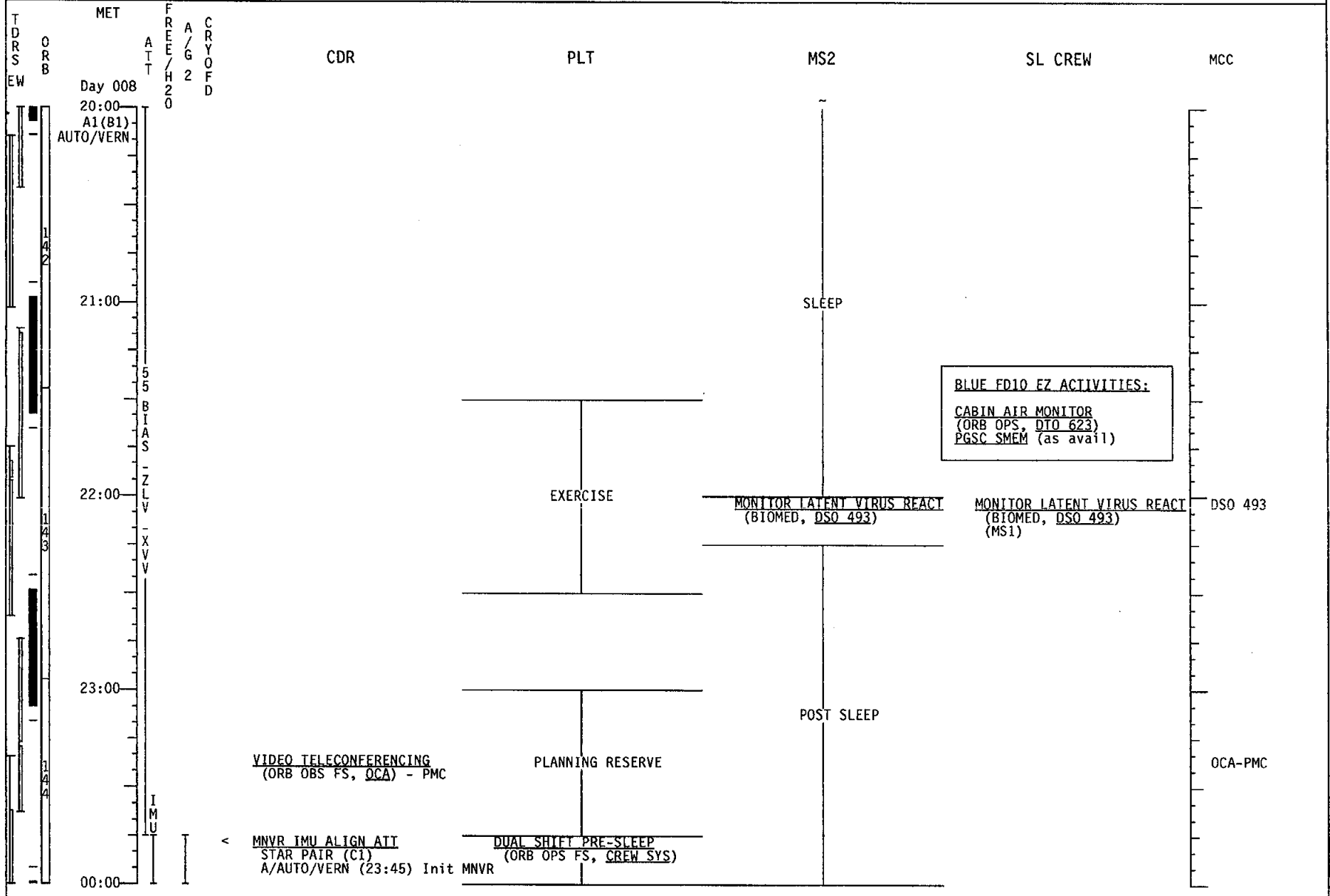
# STS-83 ( RED FD 10 )



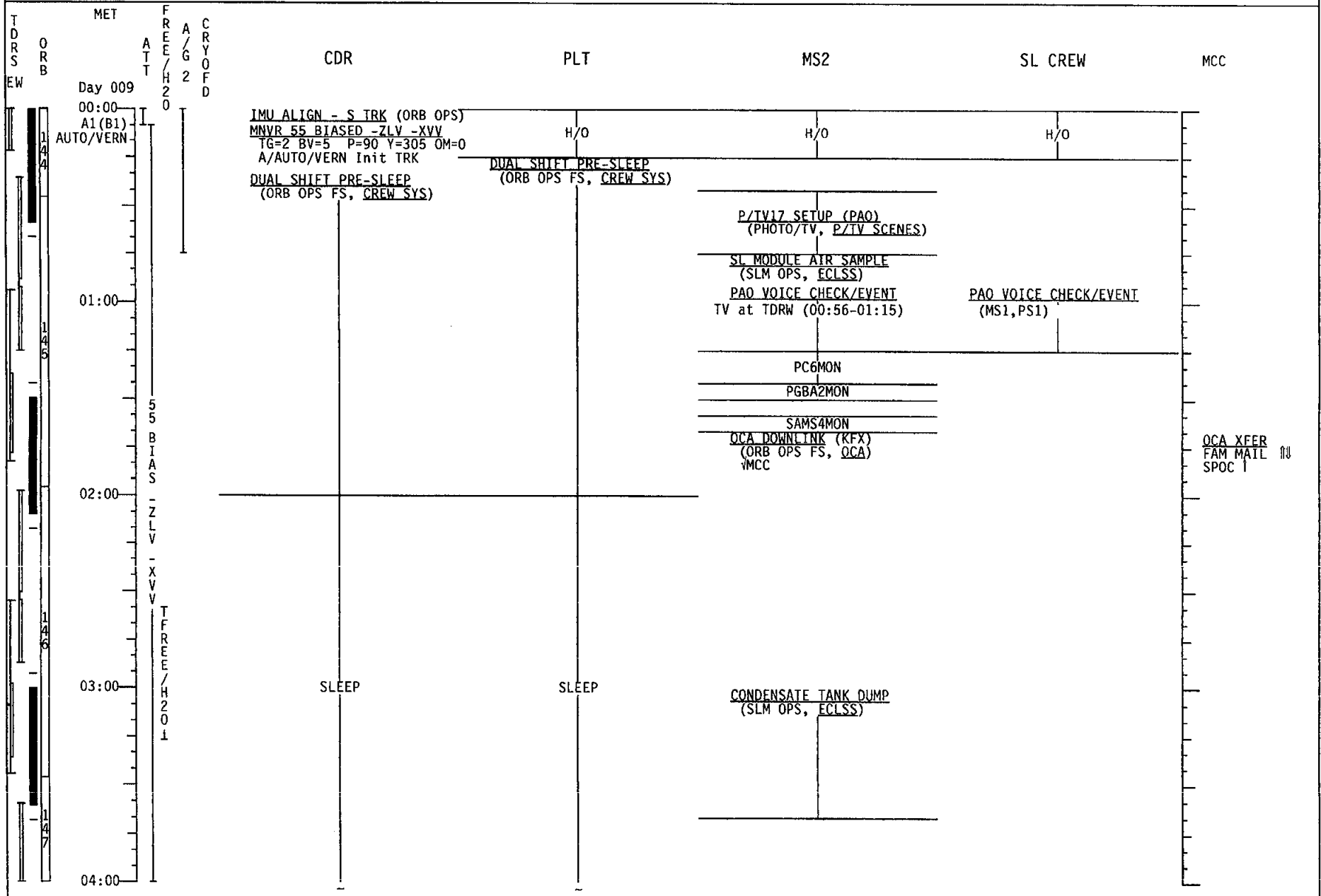
STS-83 ( RED FD 10 )



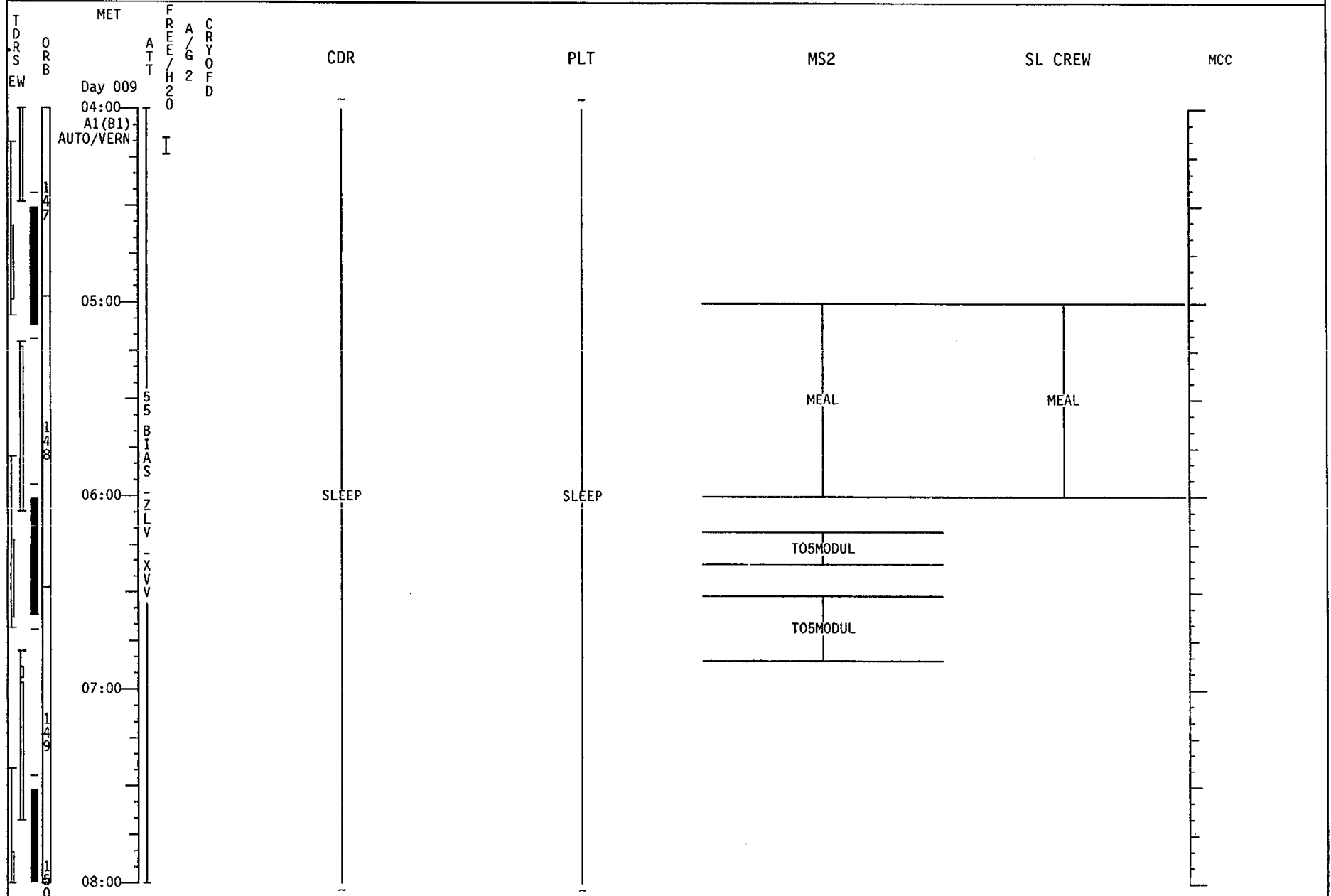
# STS-83 ( RED FD 10 )



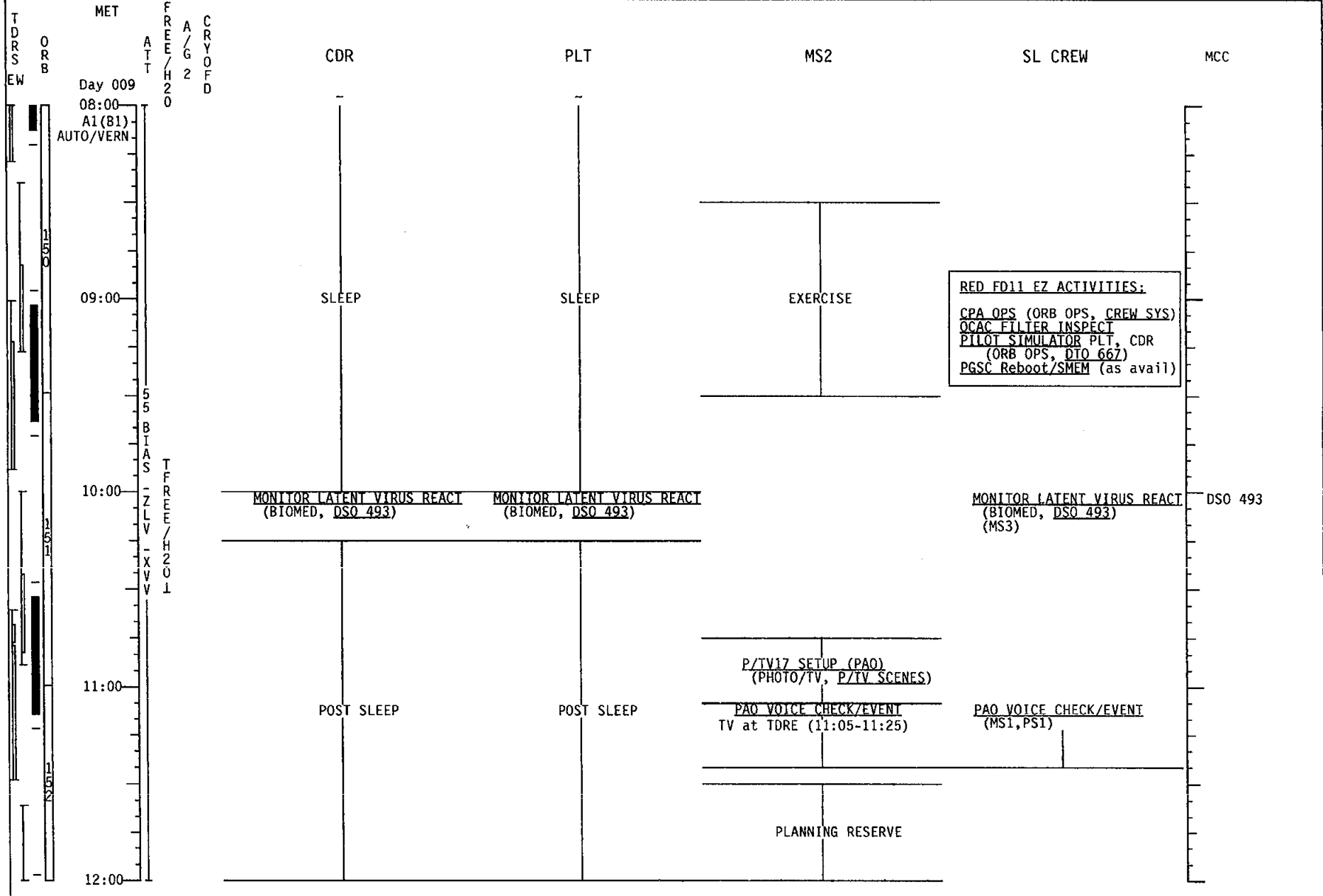
# STS-83 (BLUE FD 10)



# STS-83 (BLUE FD 10)

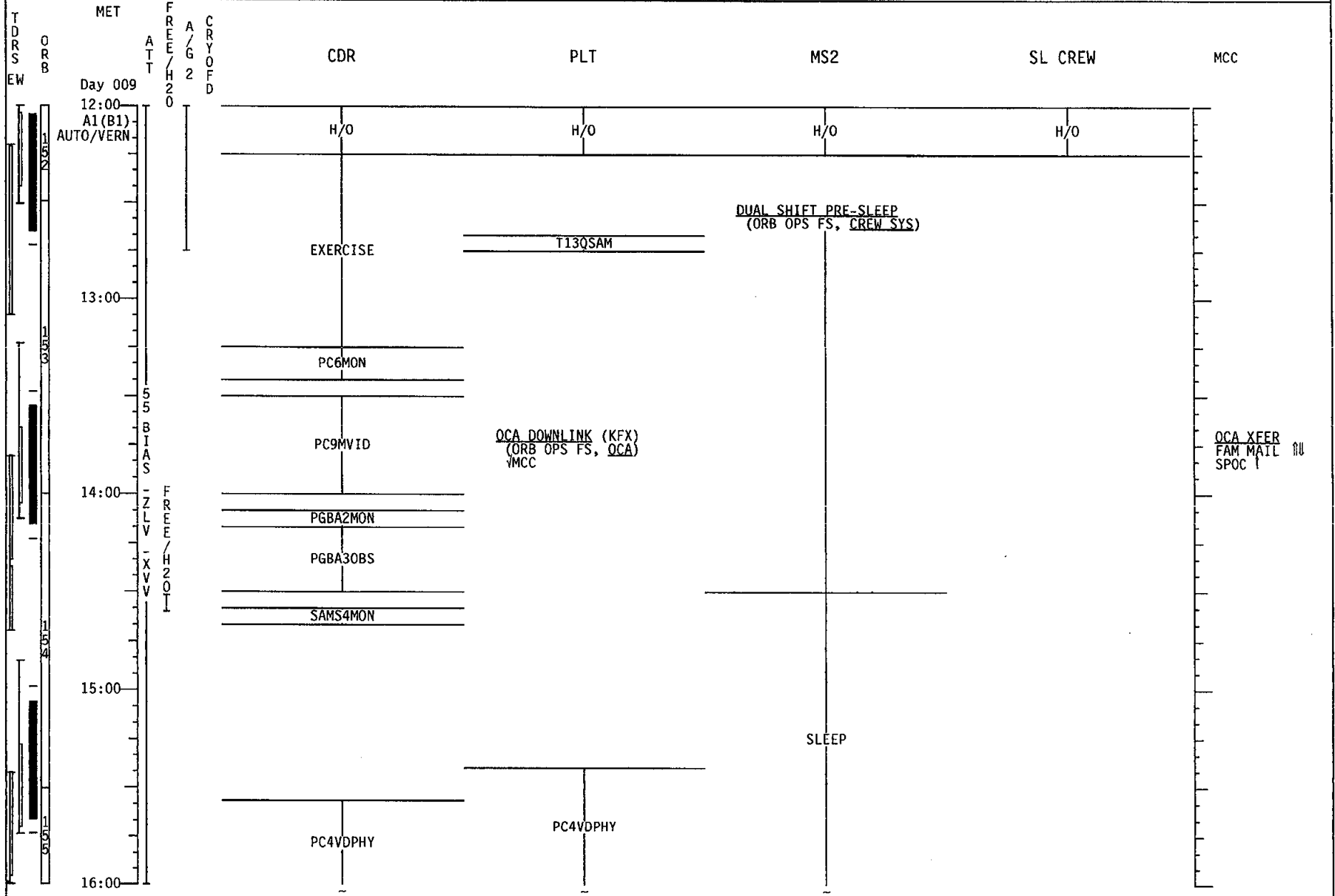


# STS-83 (BLUE FD 10)



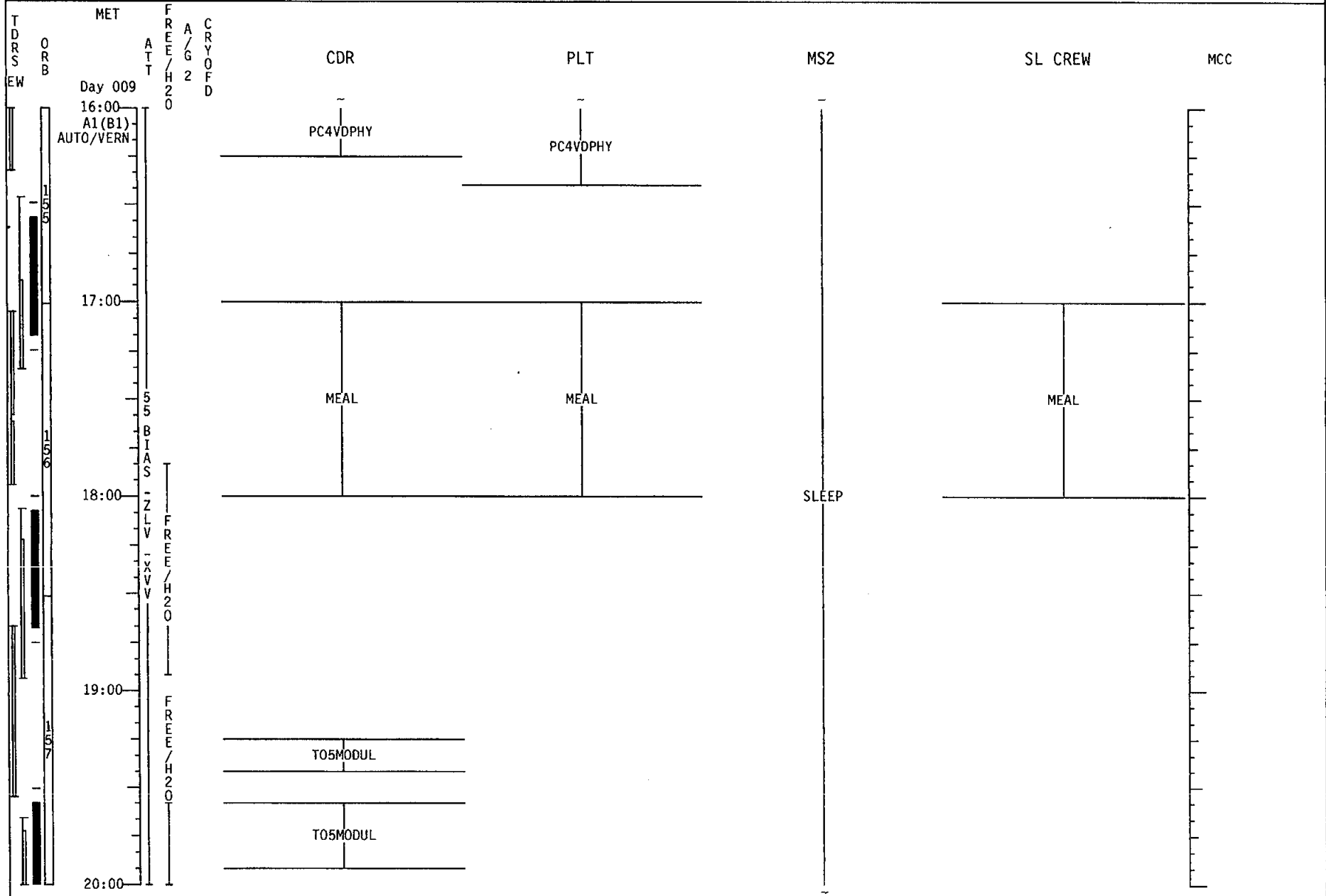
**RED FD11 EZ ACTIVITIES:**  
 CPA OPS (ORB OPS, CREW SYS)  
 OCAC FILTER INSPECT  
 PILOT SIMULATOR PLT, CDR  
 (ORB OPS, DTO 667)  
 PGSC Reboot/SMEM (as avail)

# STS-83 (BLUE FD 10)

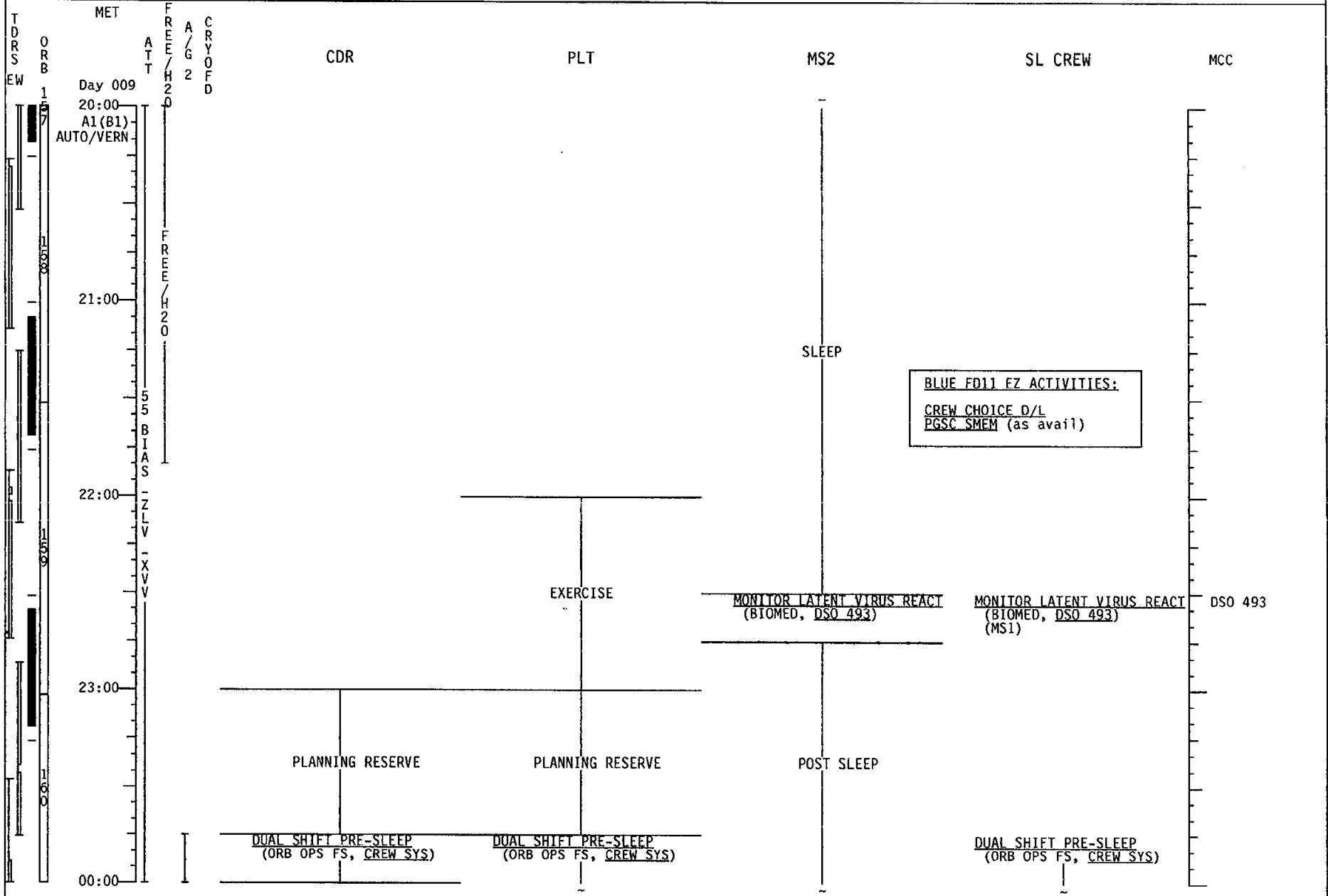




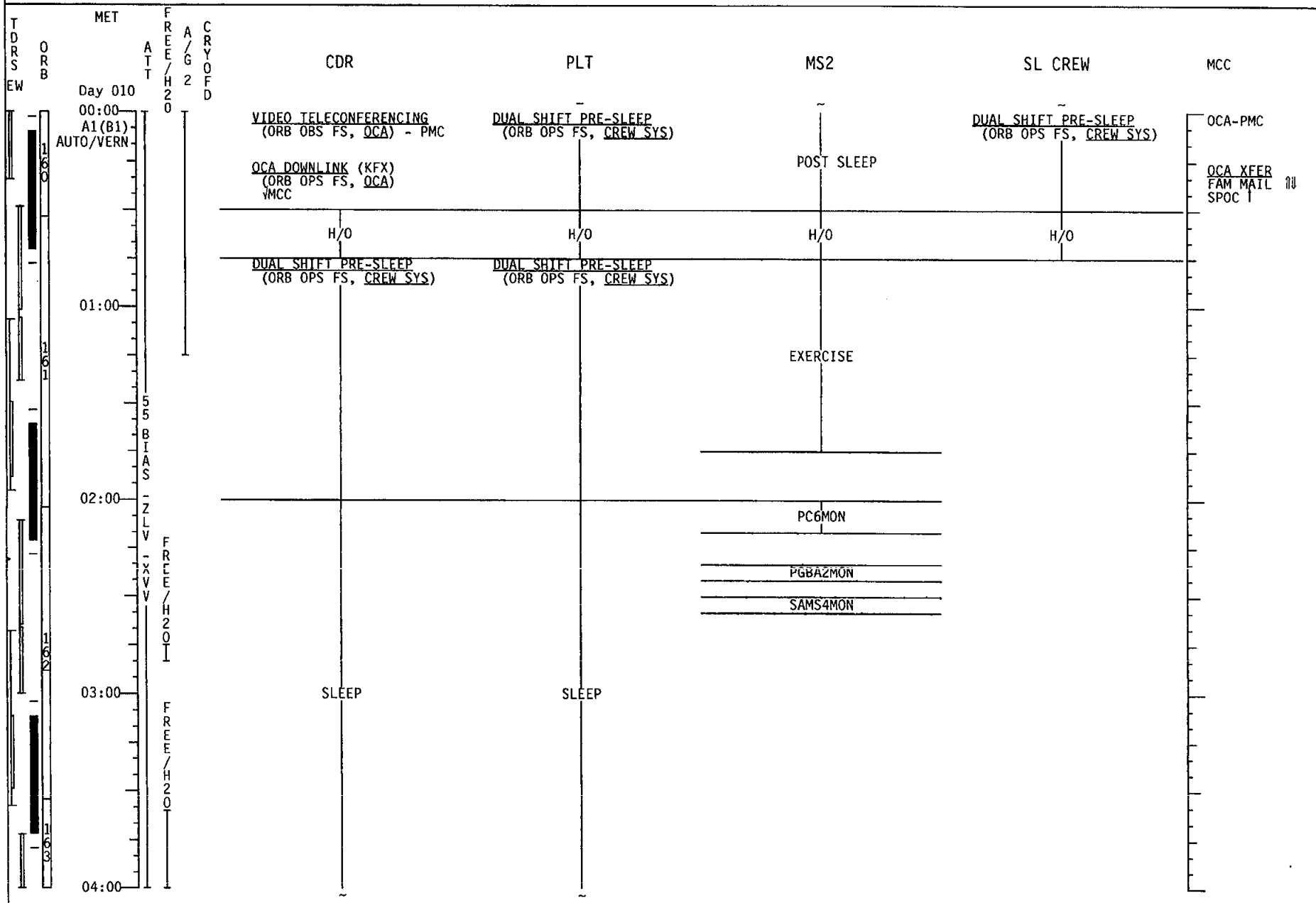
# STS-83 (BLUE FD 10)



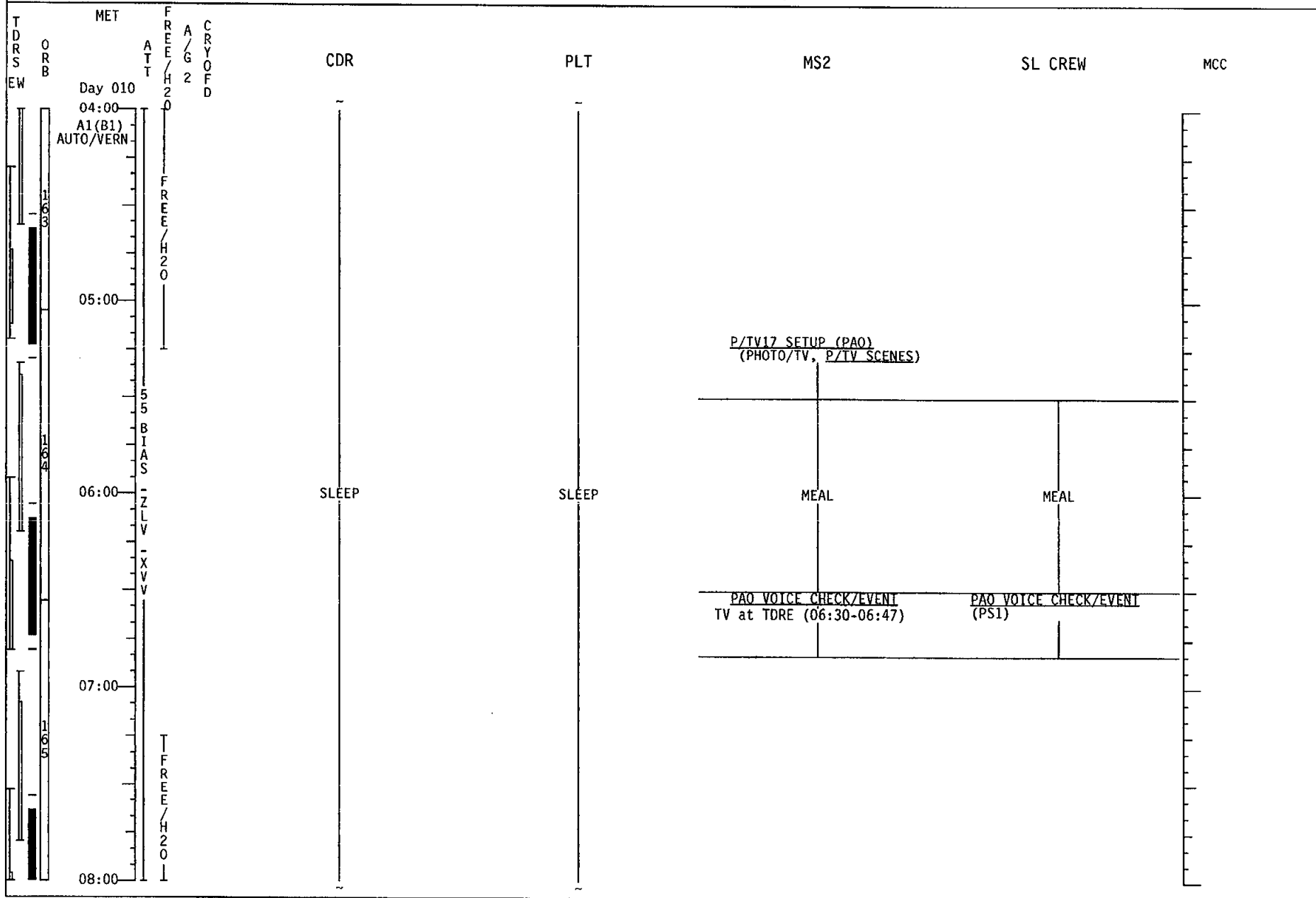
# STS-83 (BLUE FD 10)



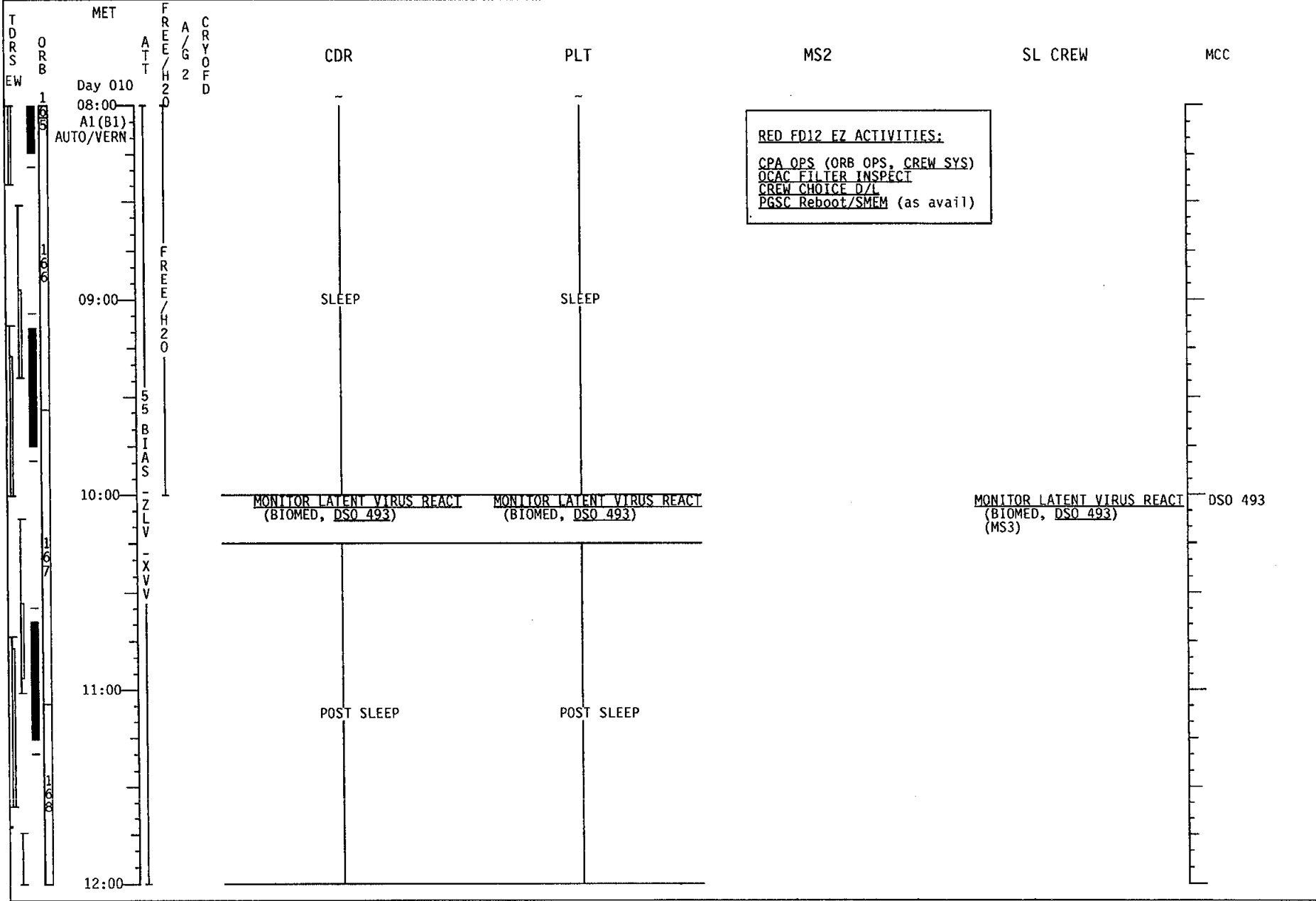
# STS-83 ( BLUE FD 11 )



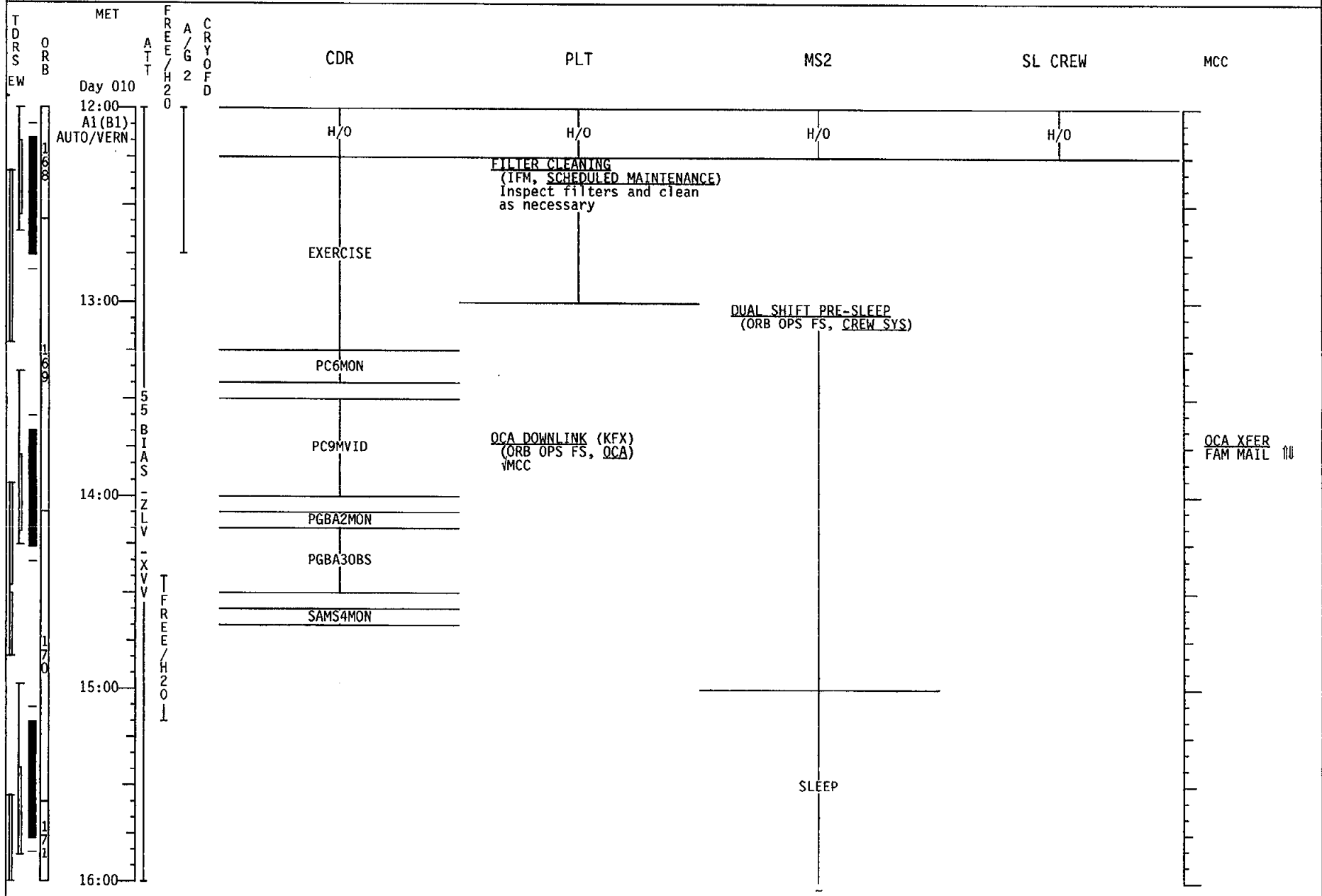
# STS-83 ( BLUE FD 11 )



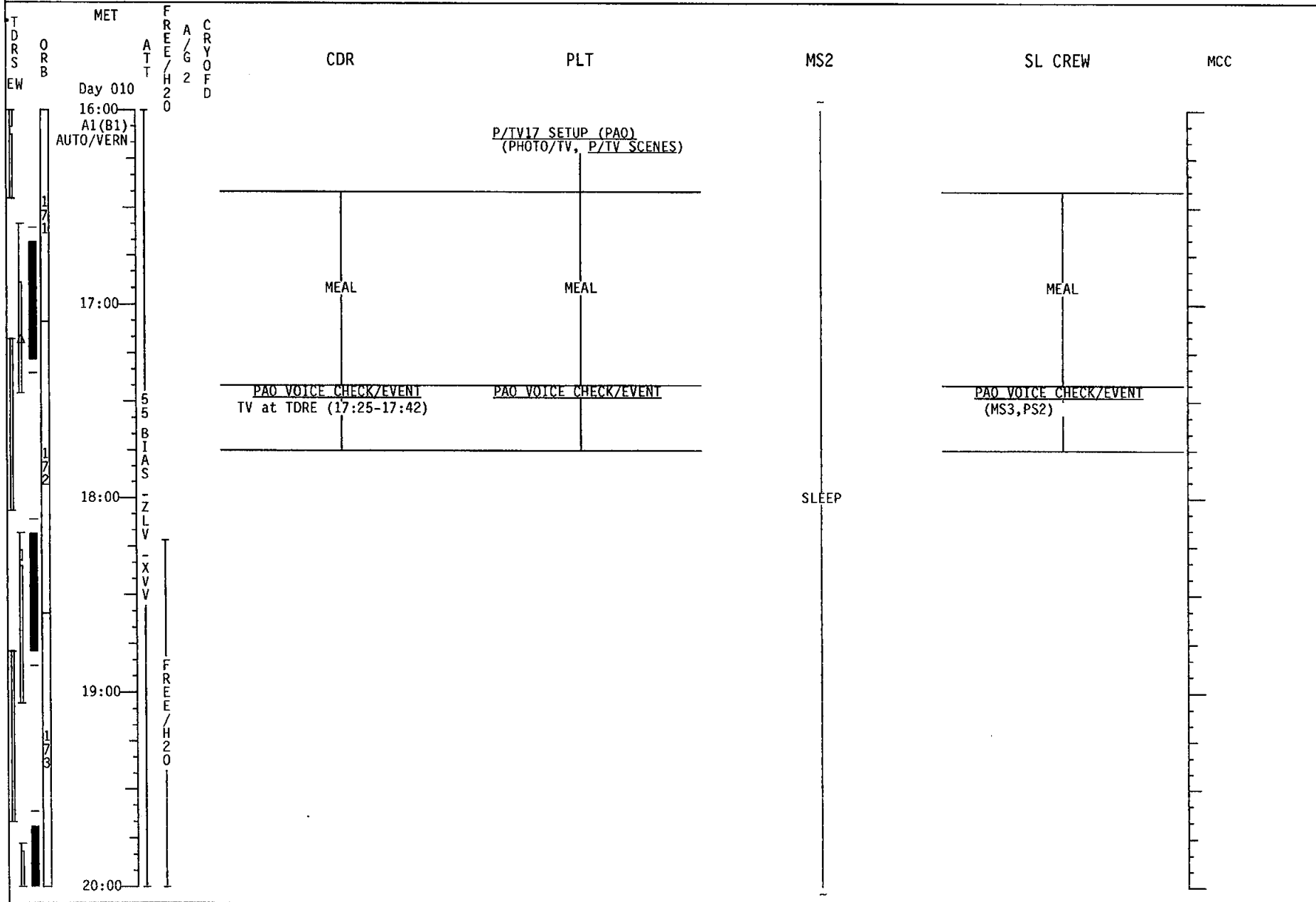
STS-83 (BLUE FD 11)



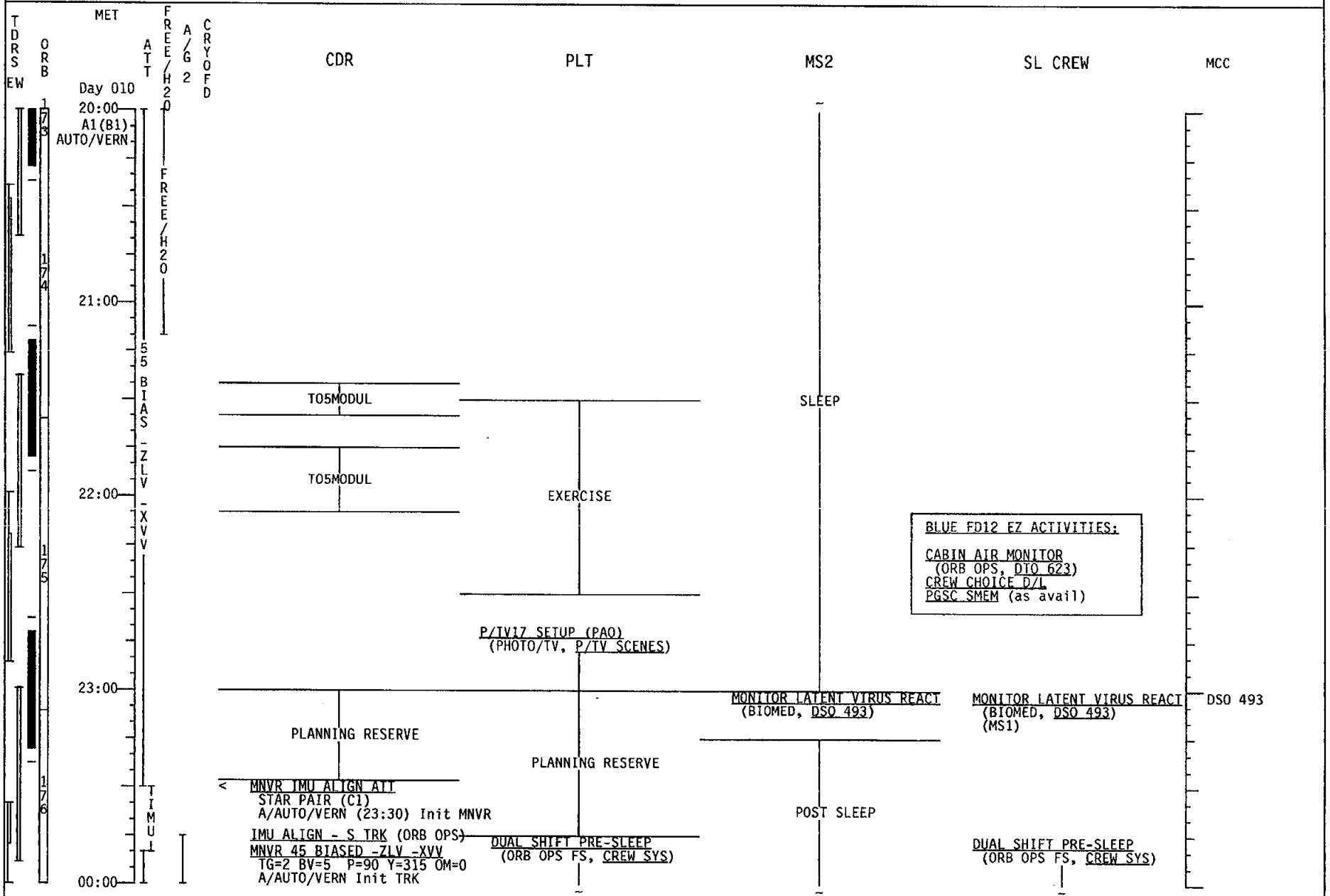
# STS-83 ( RED FD 12 )



# STS-83 ( RED FD 12 )



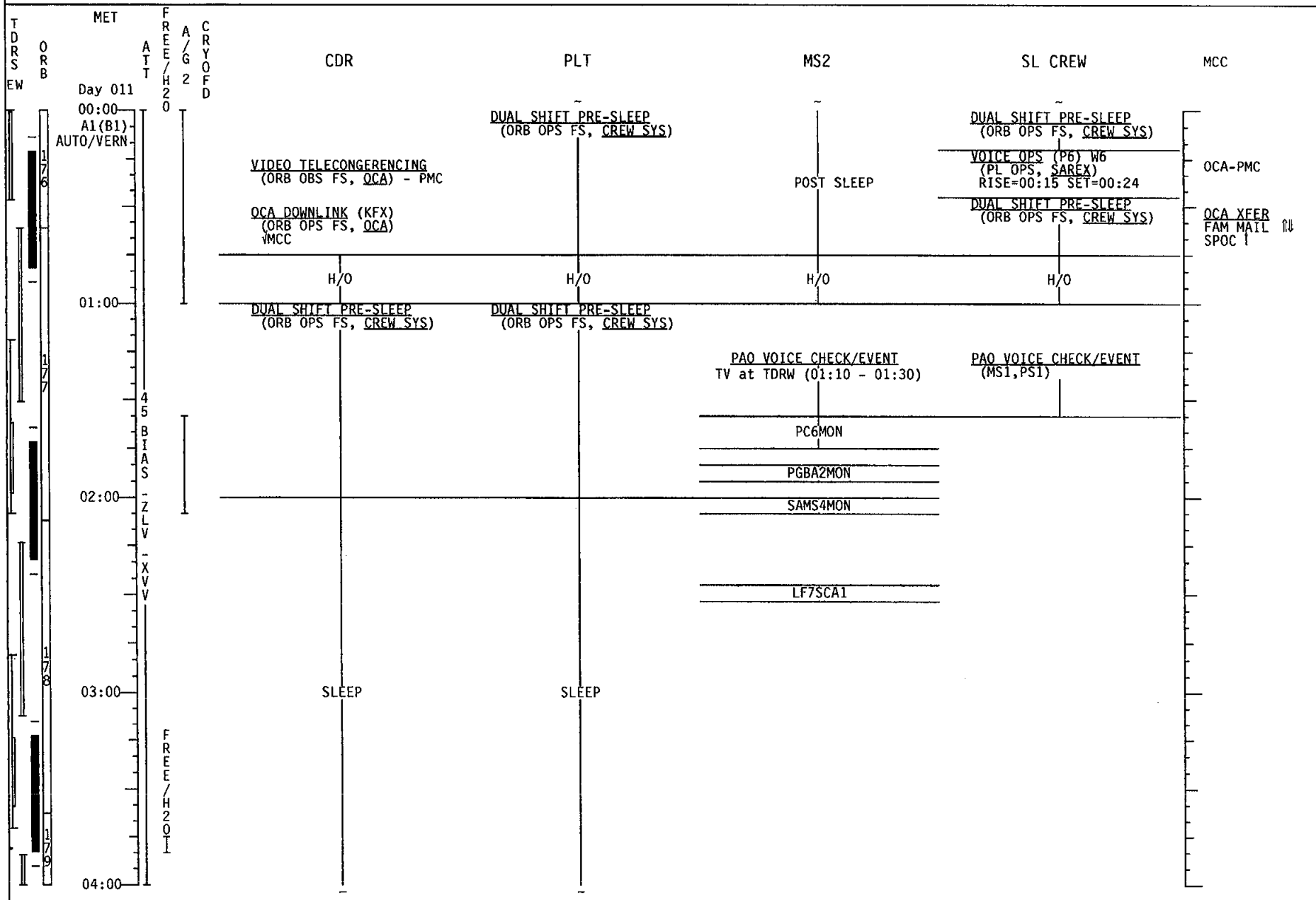
# STS-83 ( RED FD 12 )



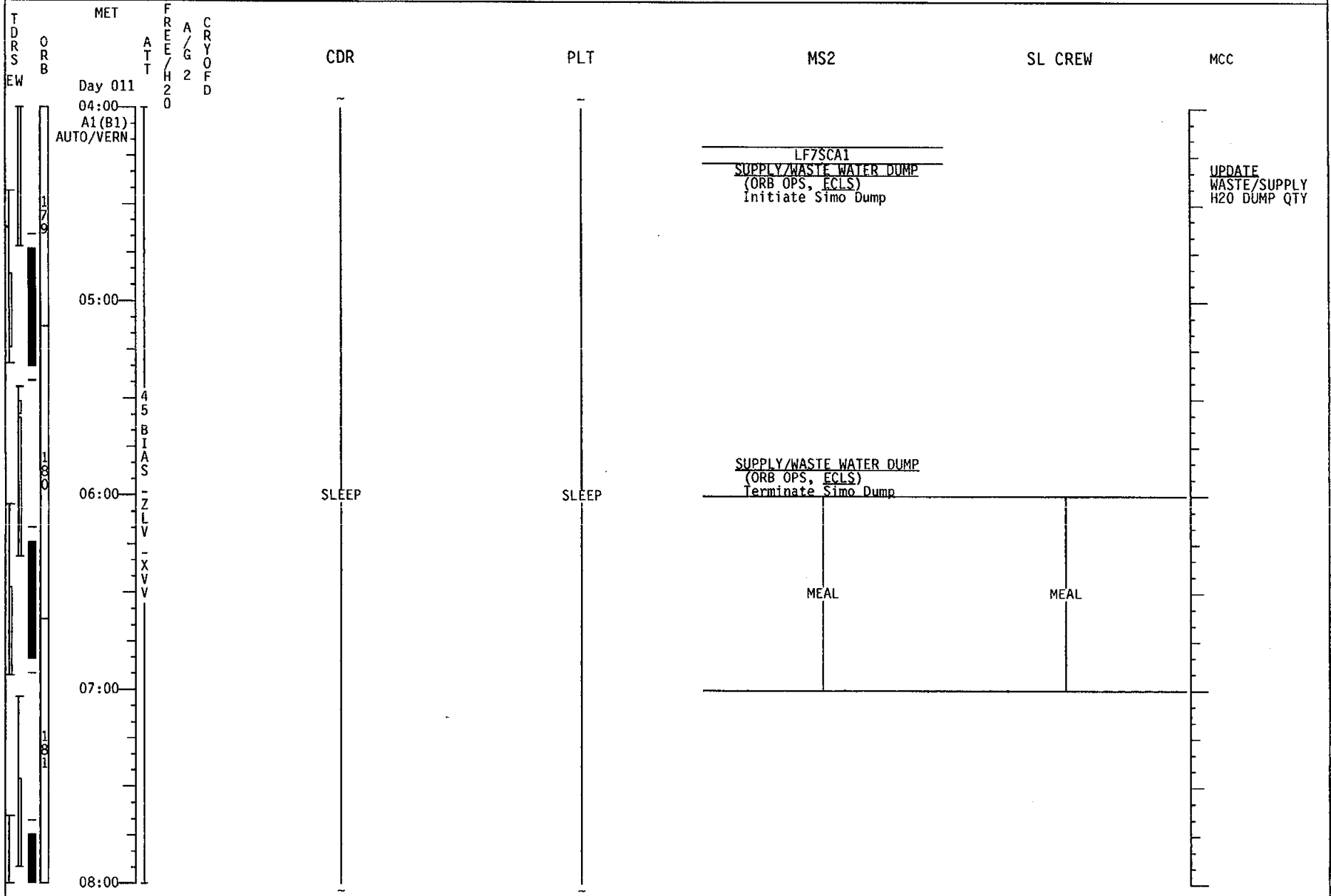
**BLUE FD12 EZ ACTIVITIES:**  
 CABIN AIR MONITOR  
 (ORB OPS, DIO 623)  
 CREW CHOICE D/L  
 PGSC SMEM (as avail)



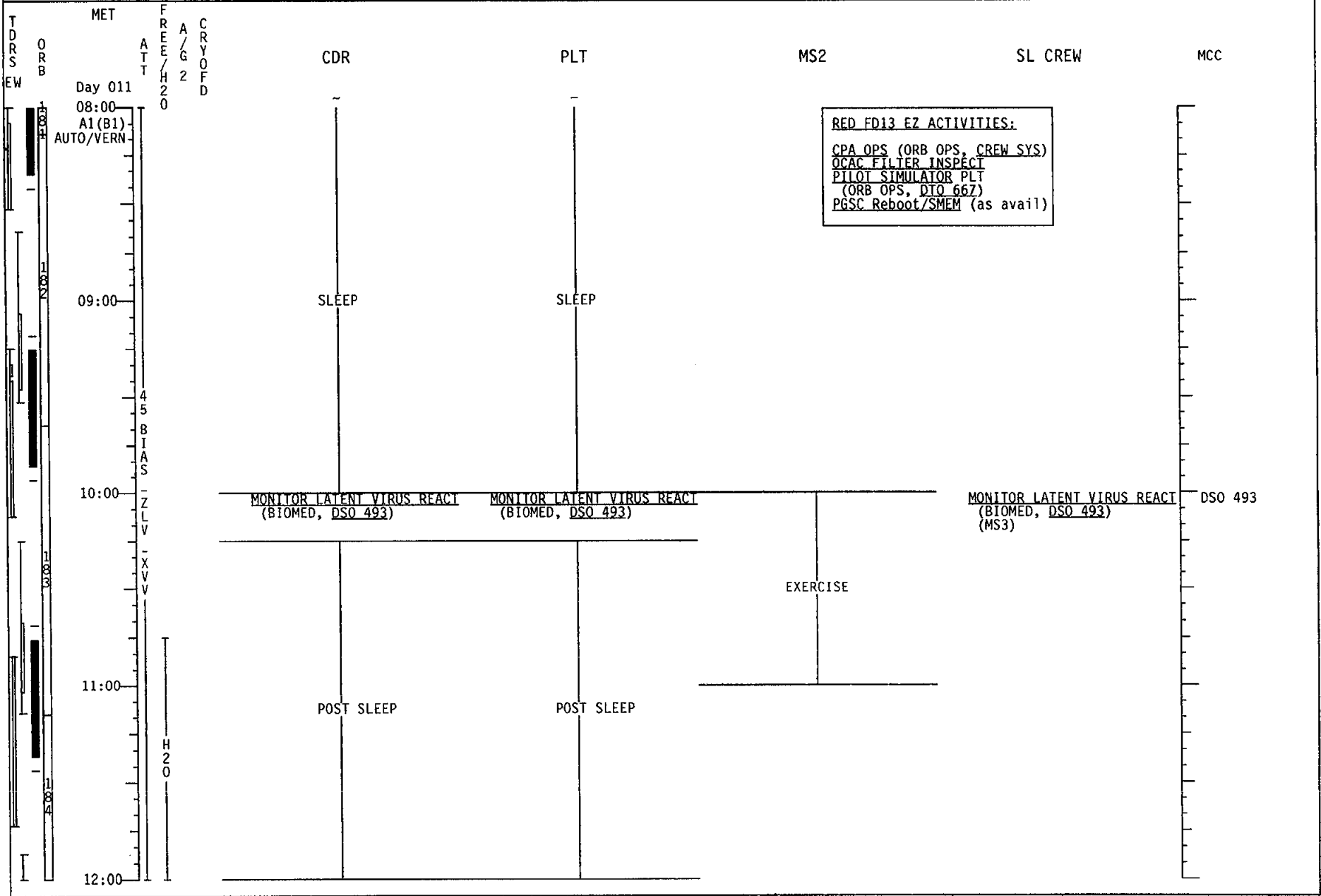
# STS-83 ( BLUE FD 12 )



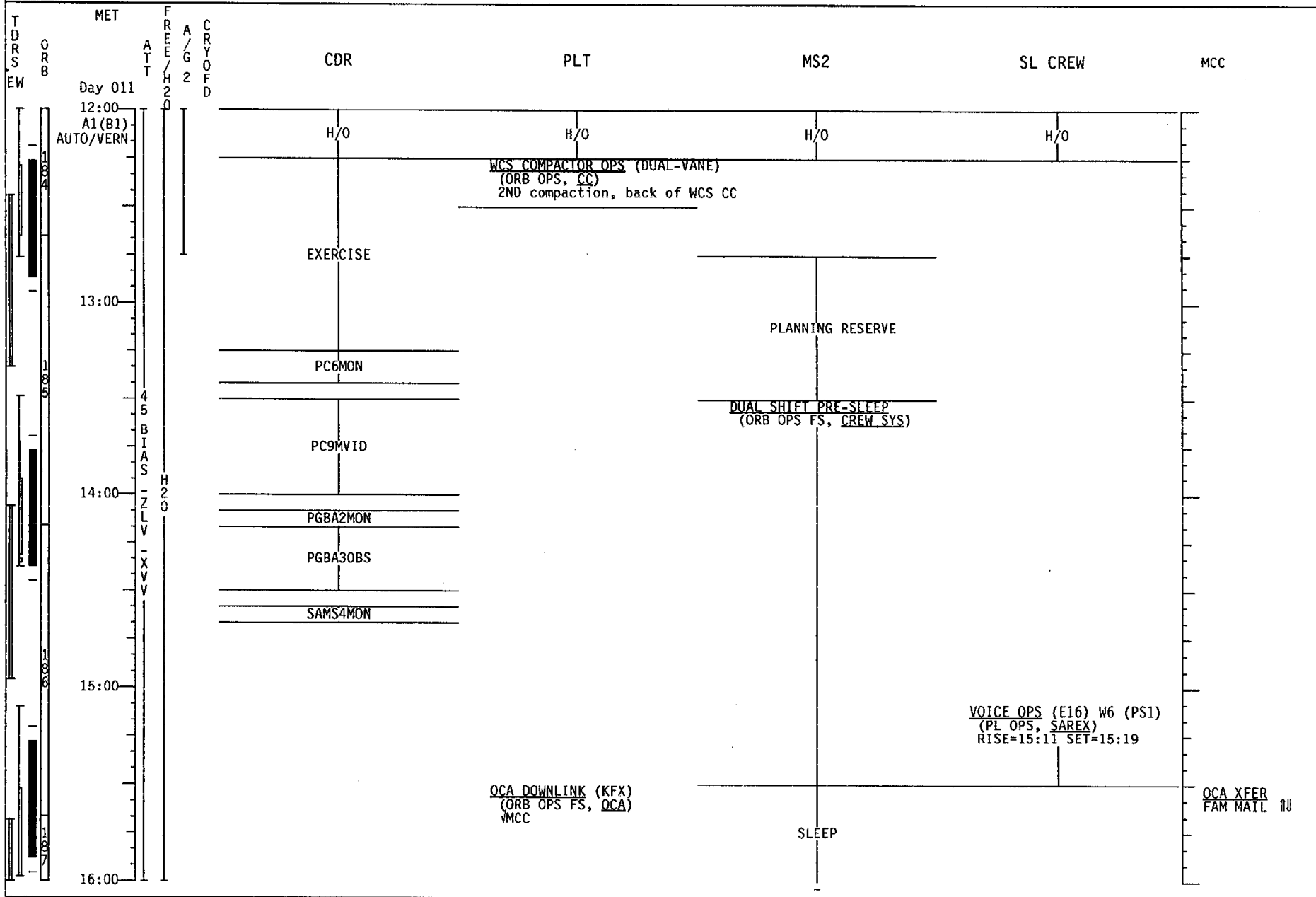
# STS-83 ( BLUE FD 12 )



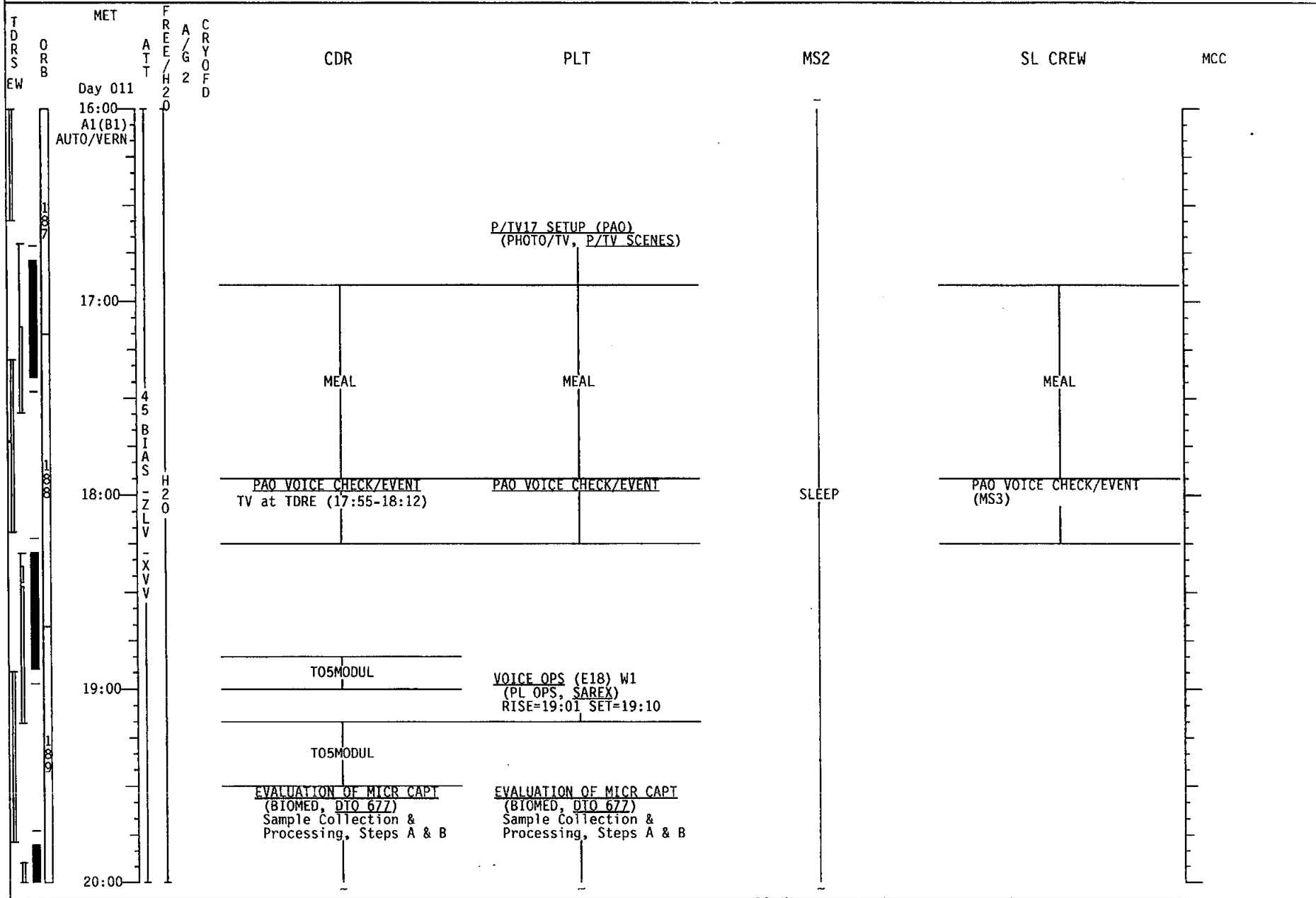
# STS-83 ( BLUE FD 12 )



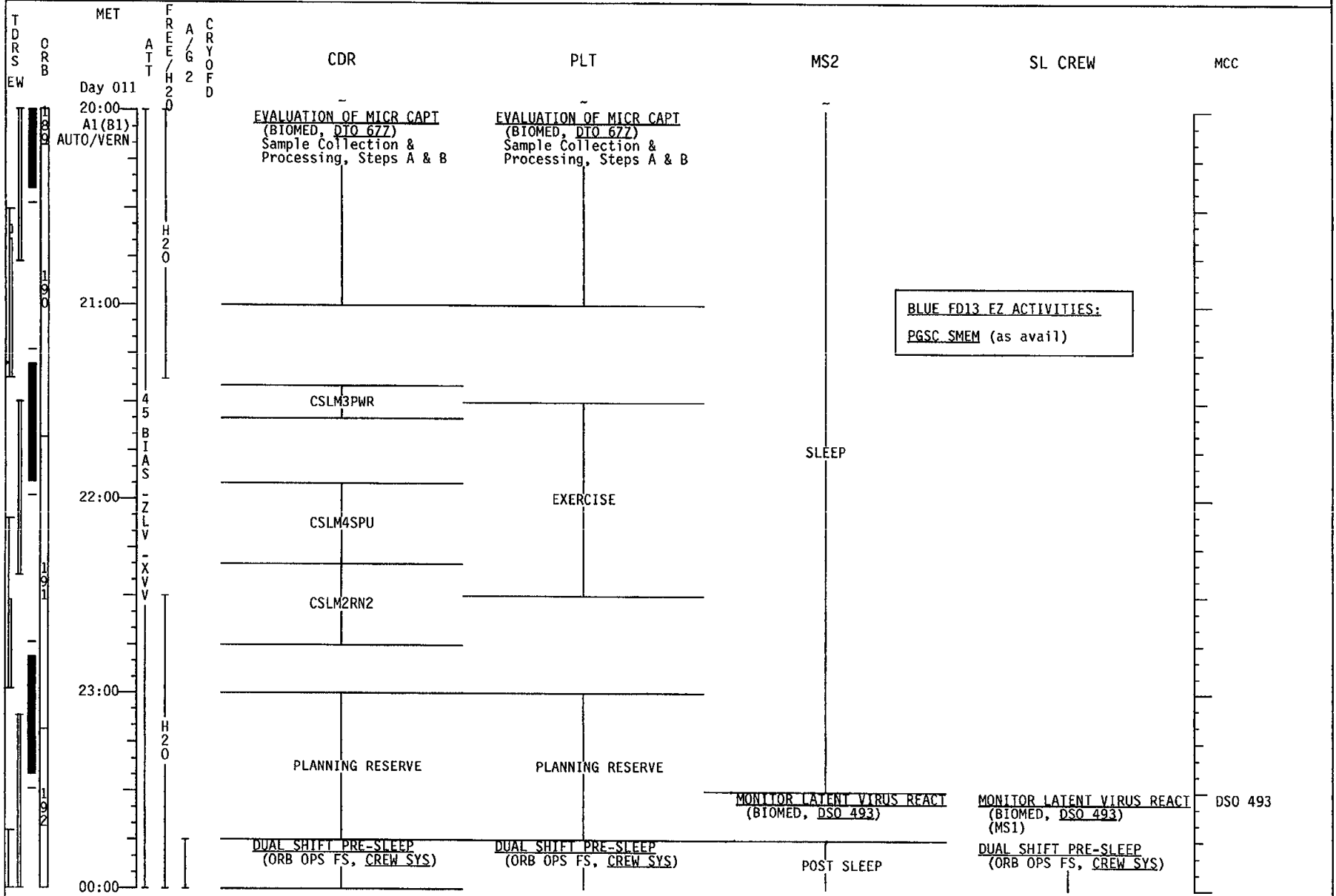
STS-83 ( RED FD 13 )



# STS-83 ( RED FD 13 )

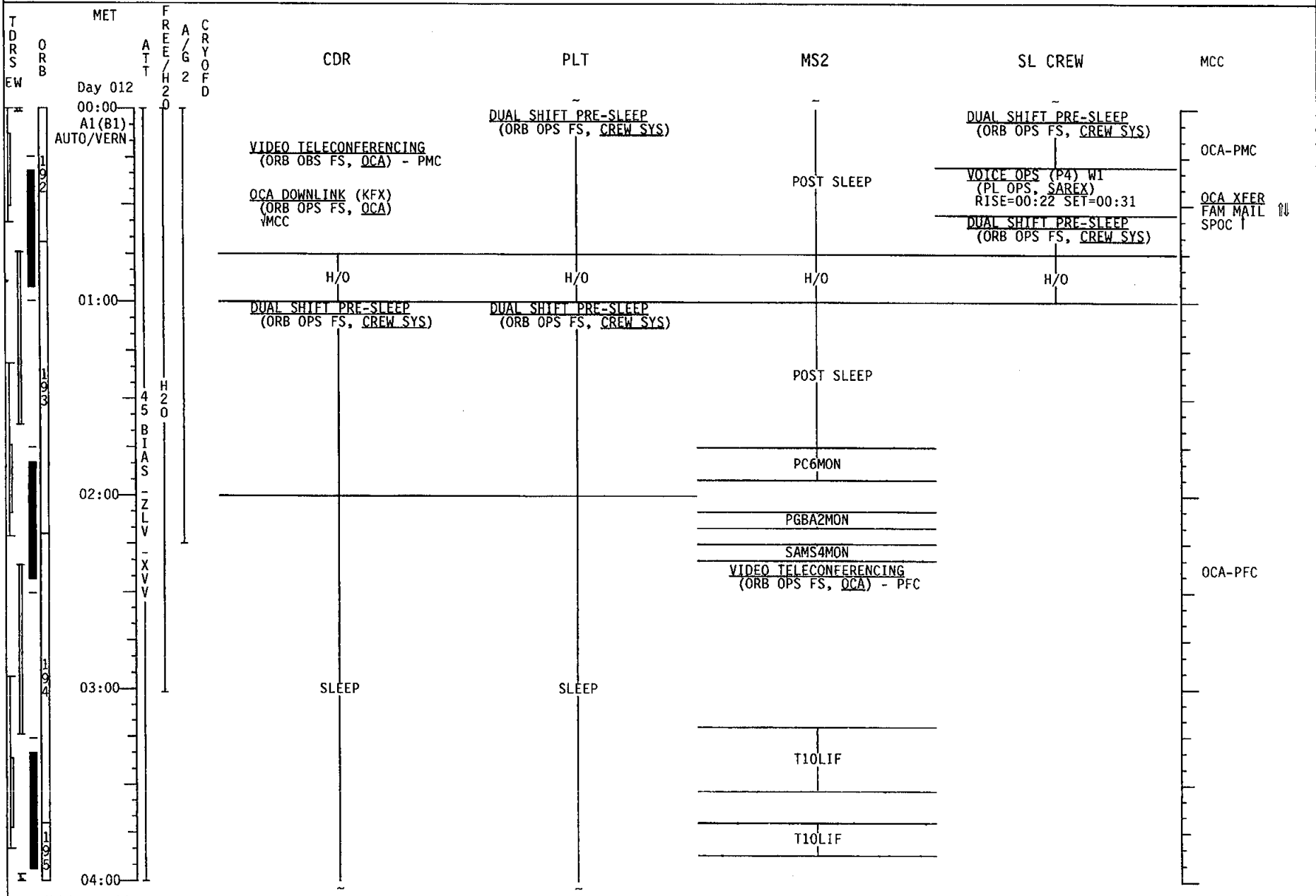


# STS-83 ( RED FD 13 )

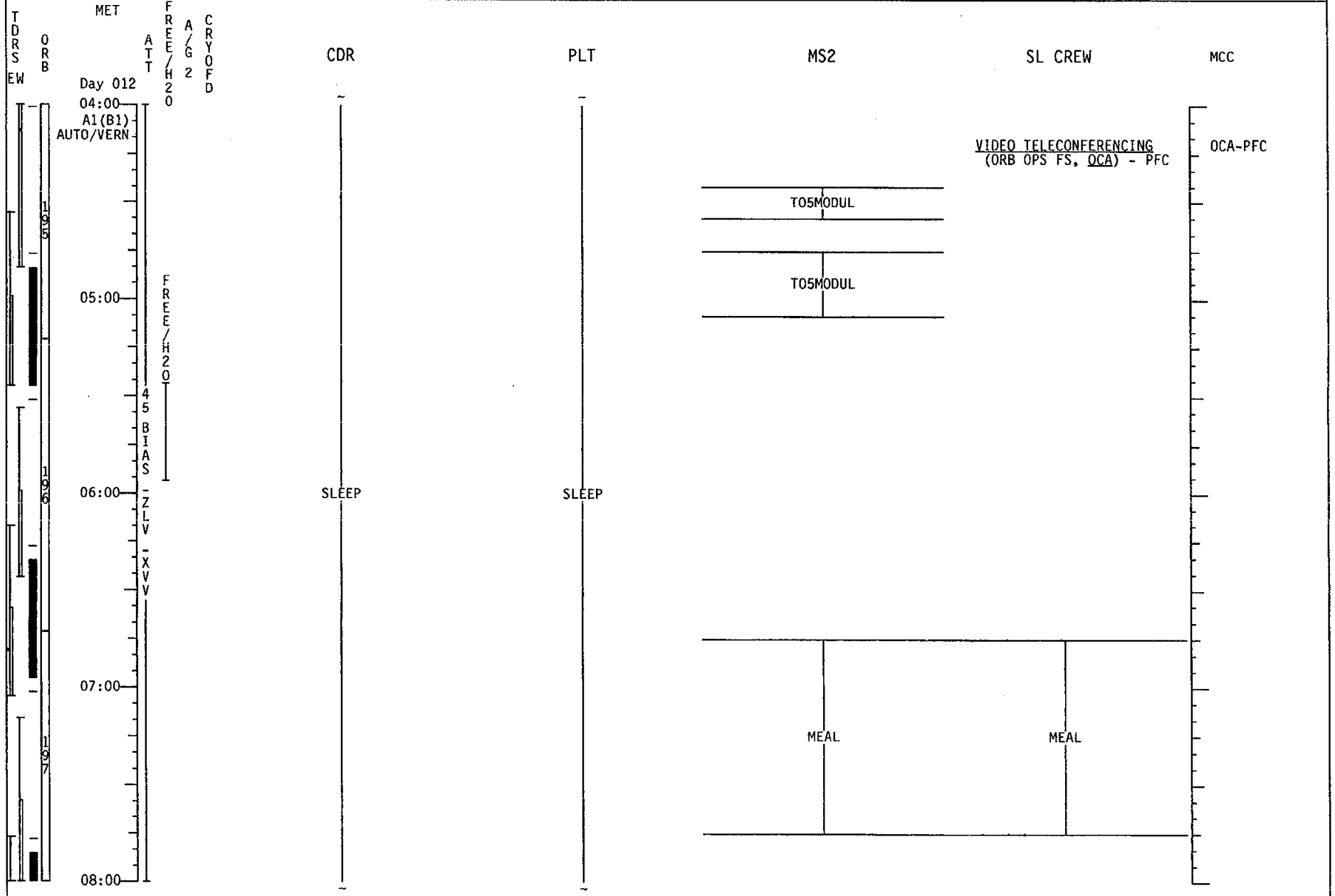


BLUE FD13 EZ ACTIVITIES:  
PGSC SMEM (as avail)

# STS-83 (BLUE FD 13)

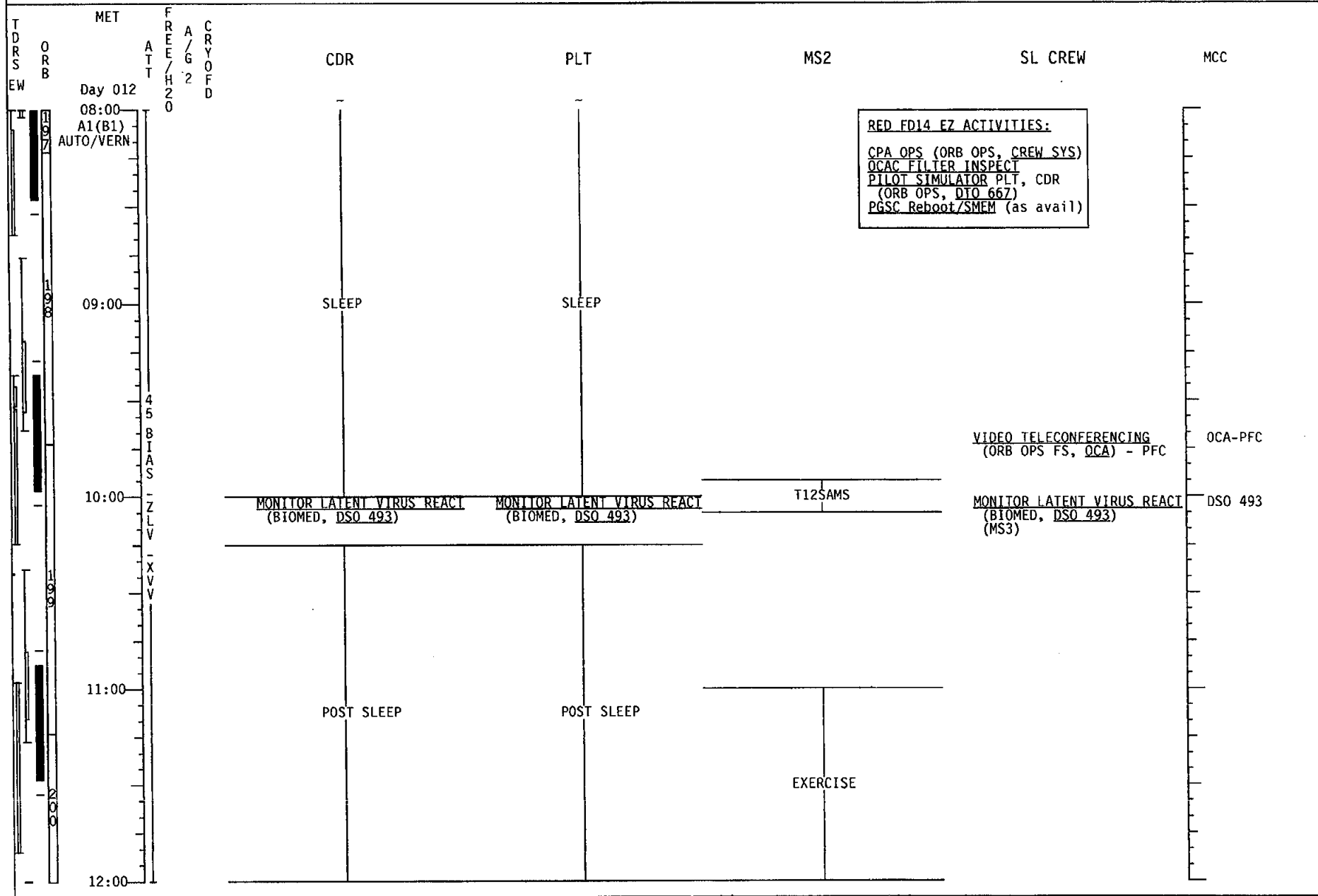


# STS-83 ( BLUE FD 13 )

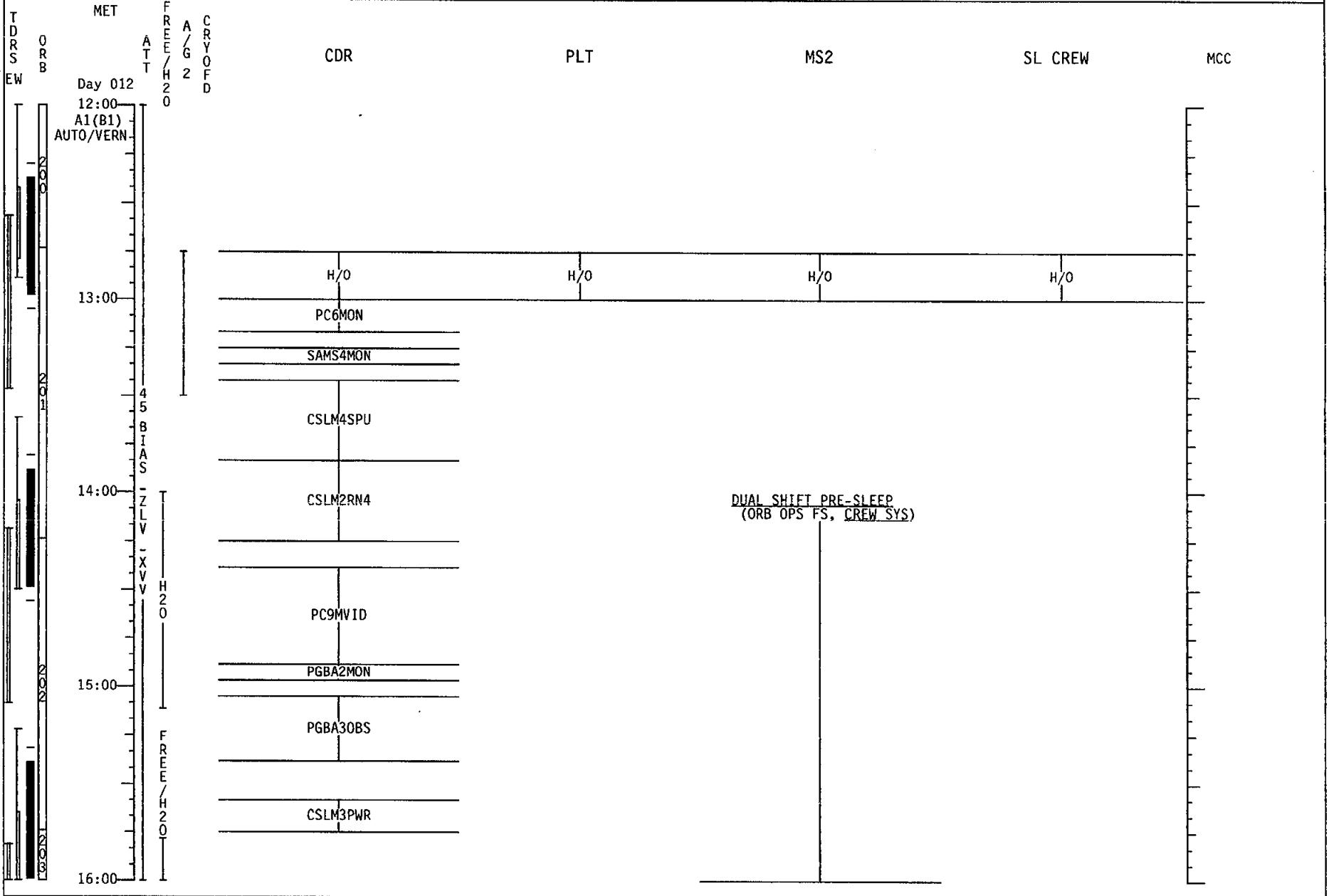




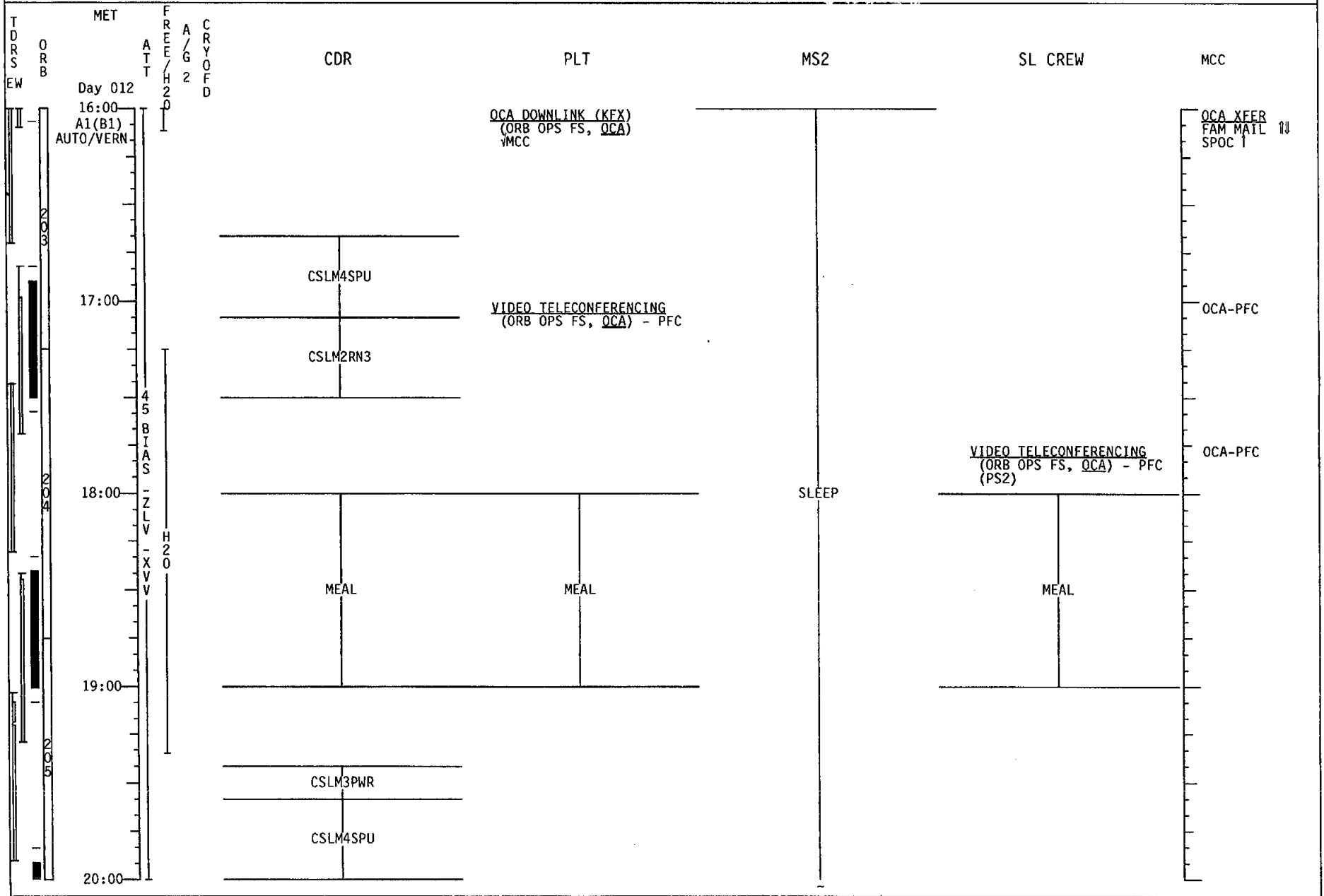
# STS-83 ( BLUE FD 13 )



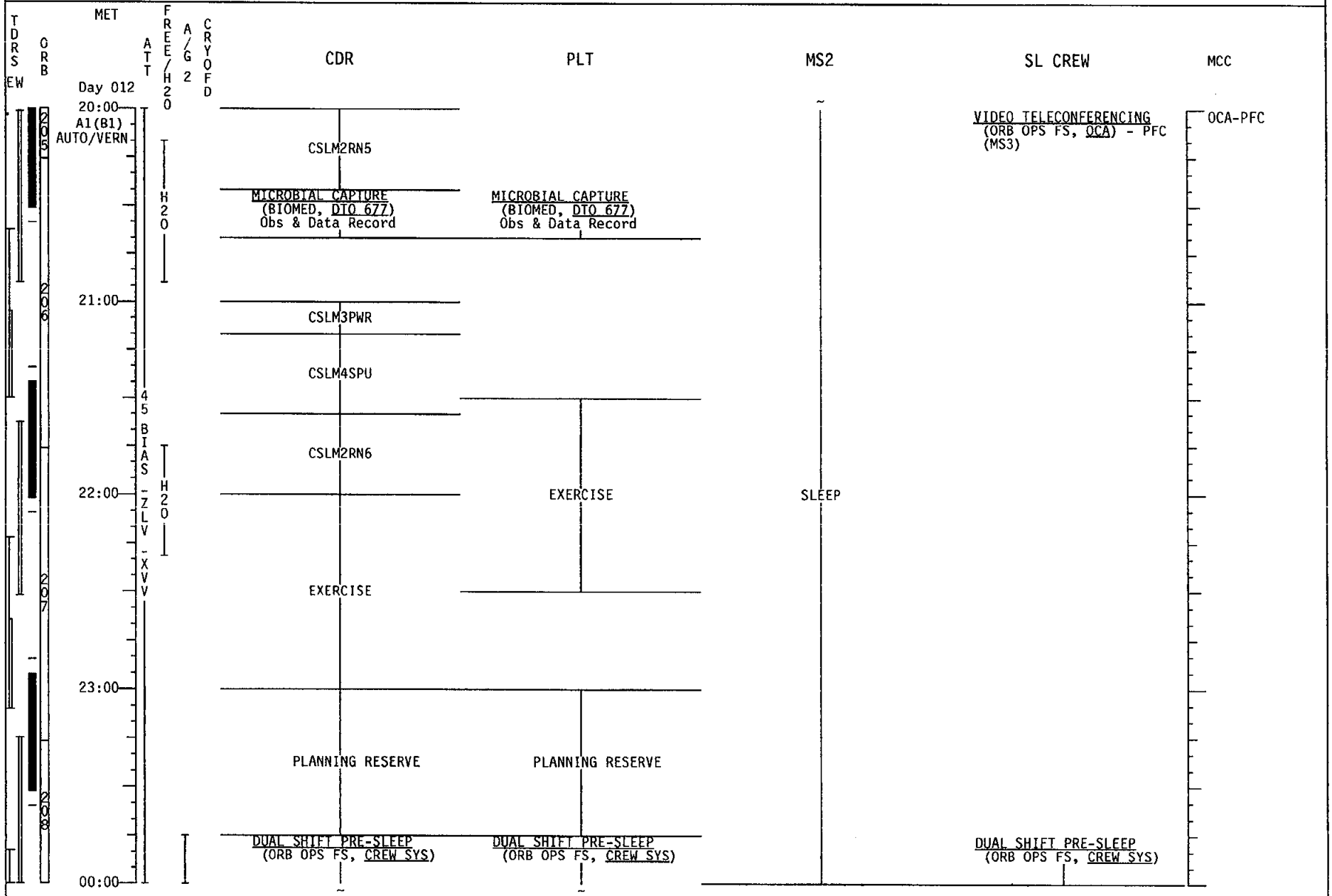
# STS-83 ( RED FD 14 )



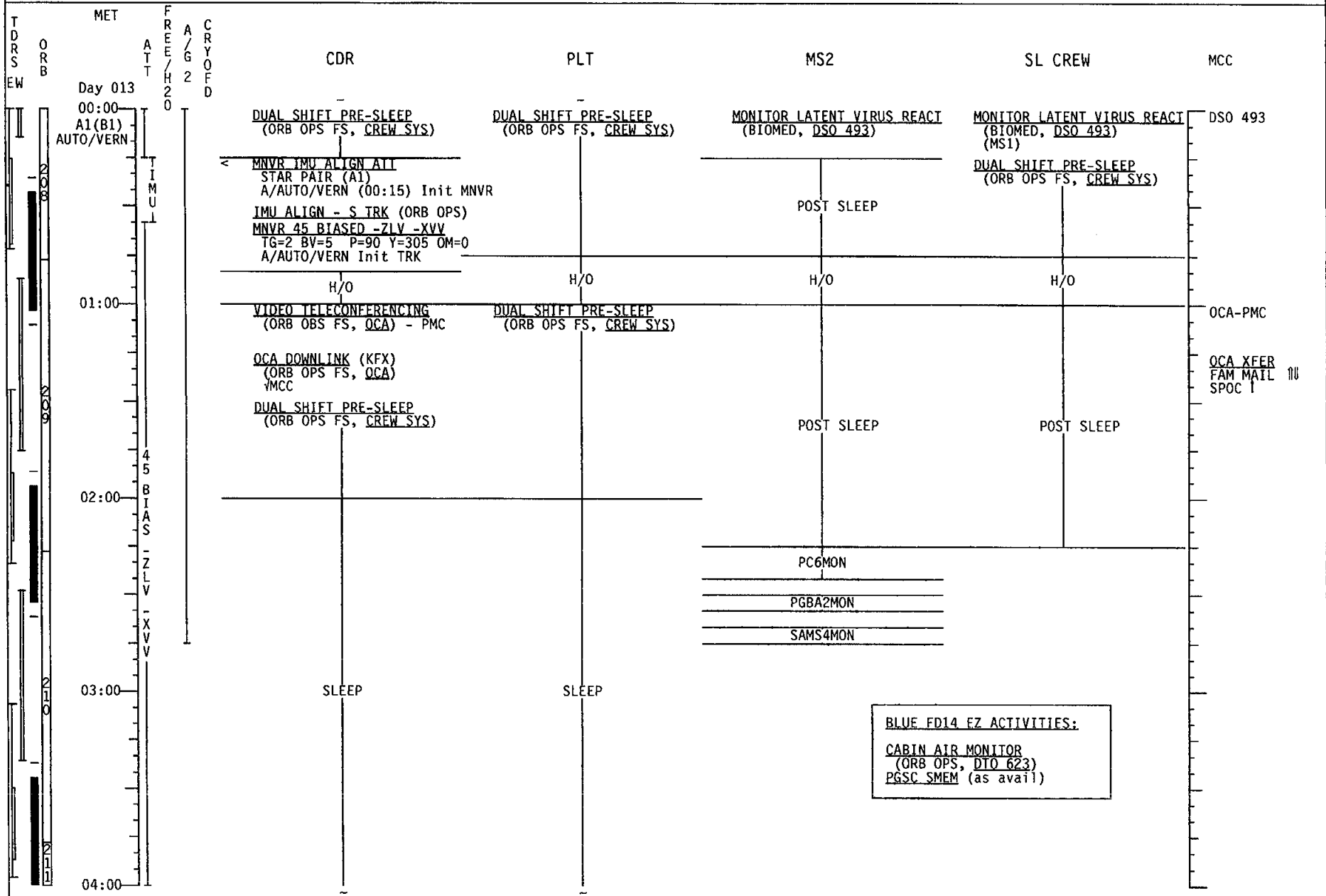
STS-83 ( RED FD 14 )



# STS-83 ( RED FD 14 )

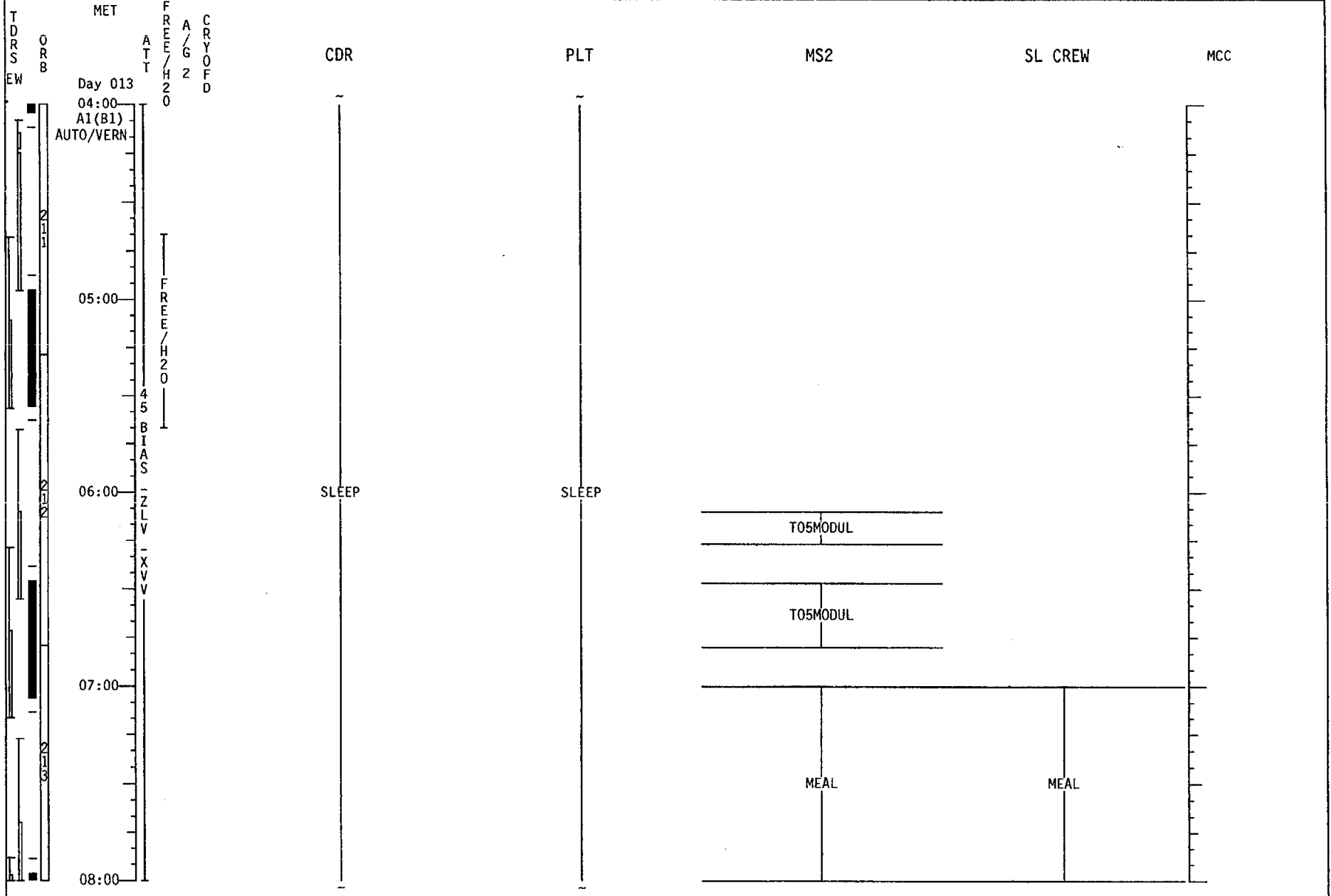


# STS-83 ( BLUE FD 14 )

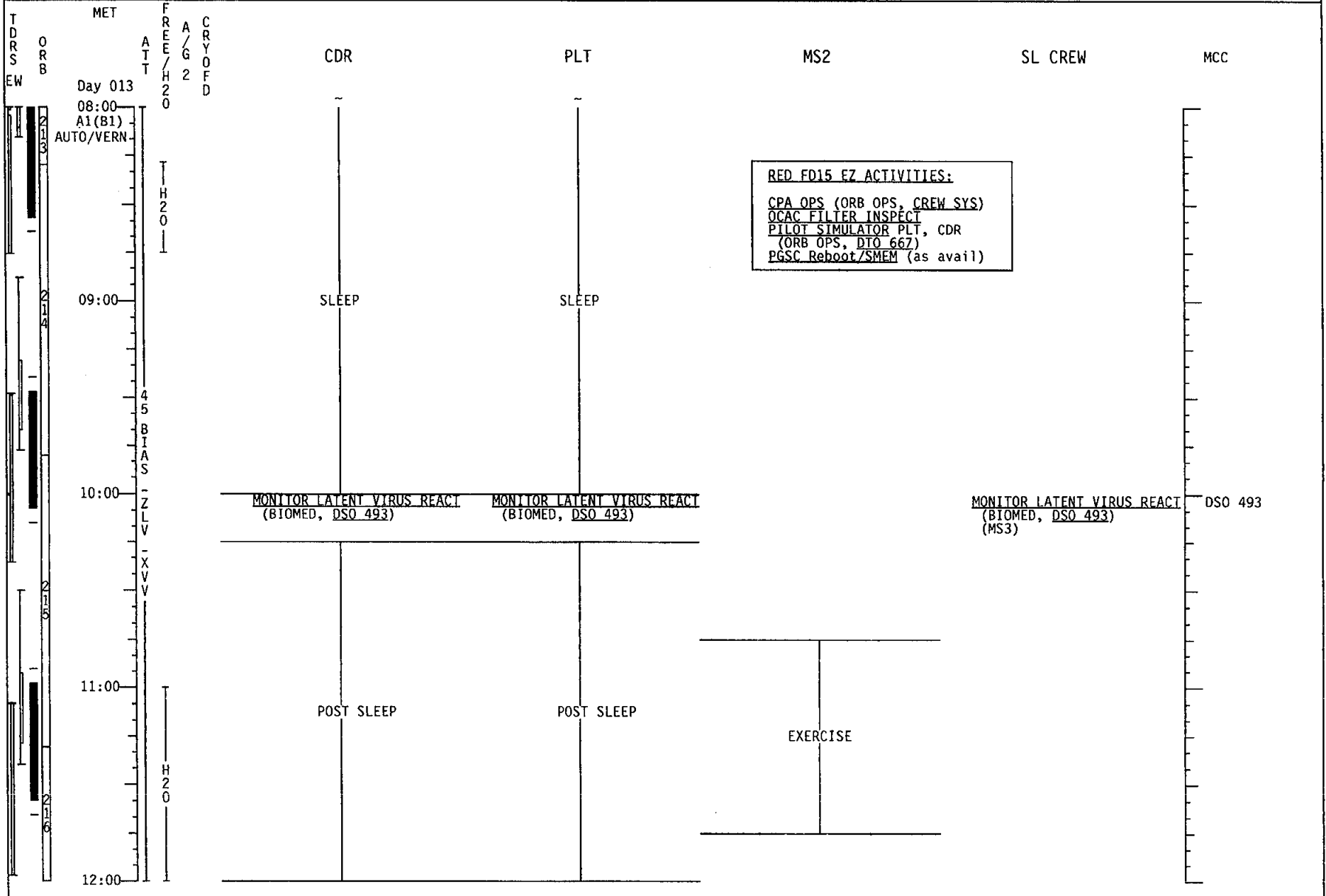


**BLUE FD14 EZ ACTIVITIES:**  
 CABIN AIR MONITOR  
 (ORB OPS, DTO 623)  
 PGSC SMEM (as avail)

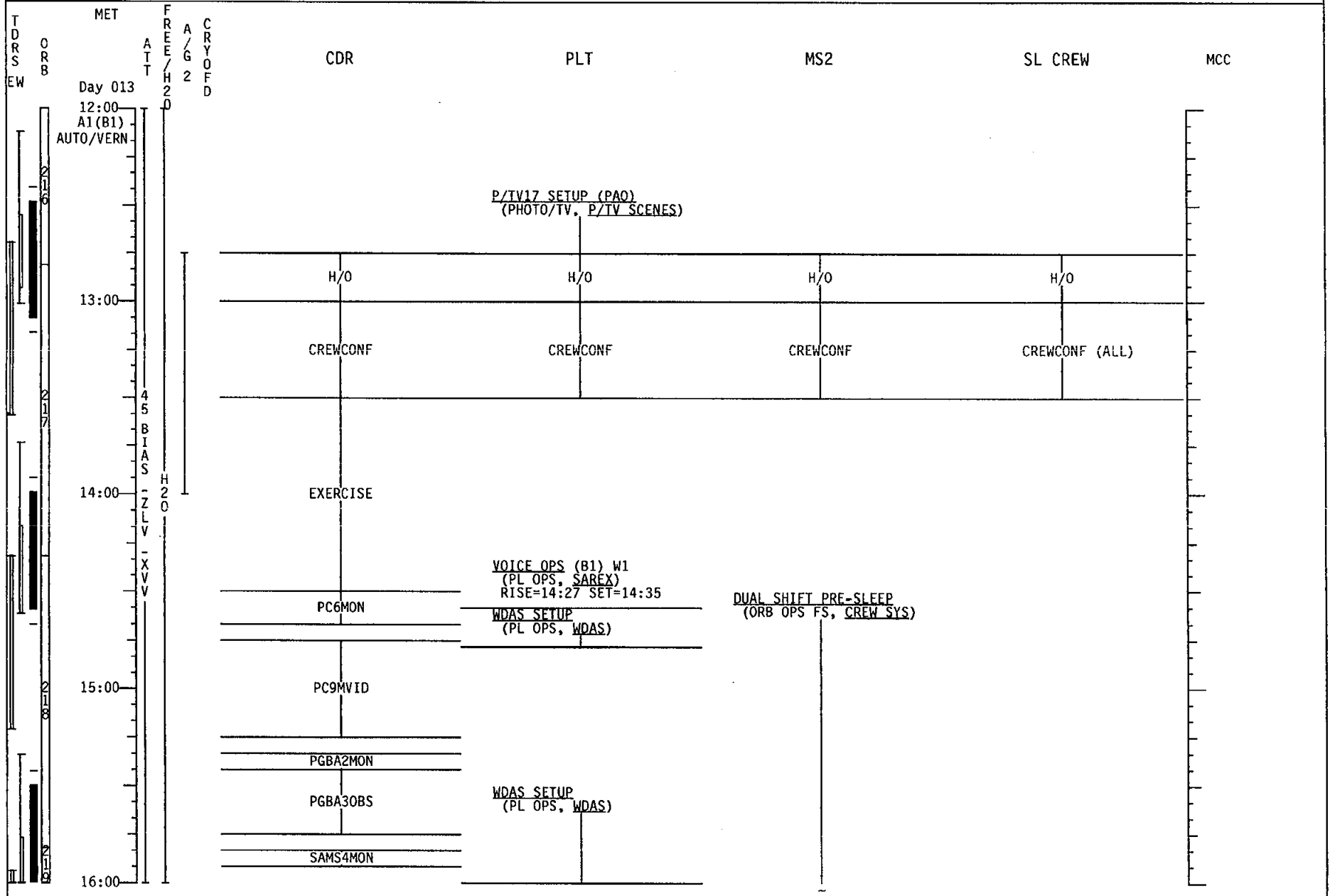
# STS-83 ( BLUE FD 14)



# STS-83 ( BLUE FD 14)

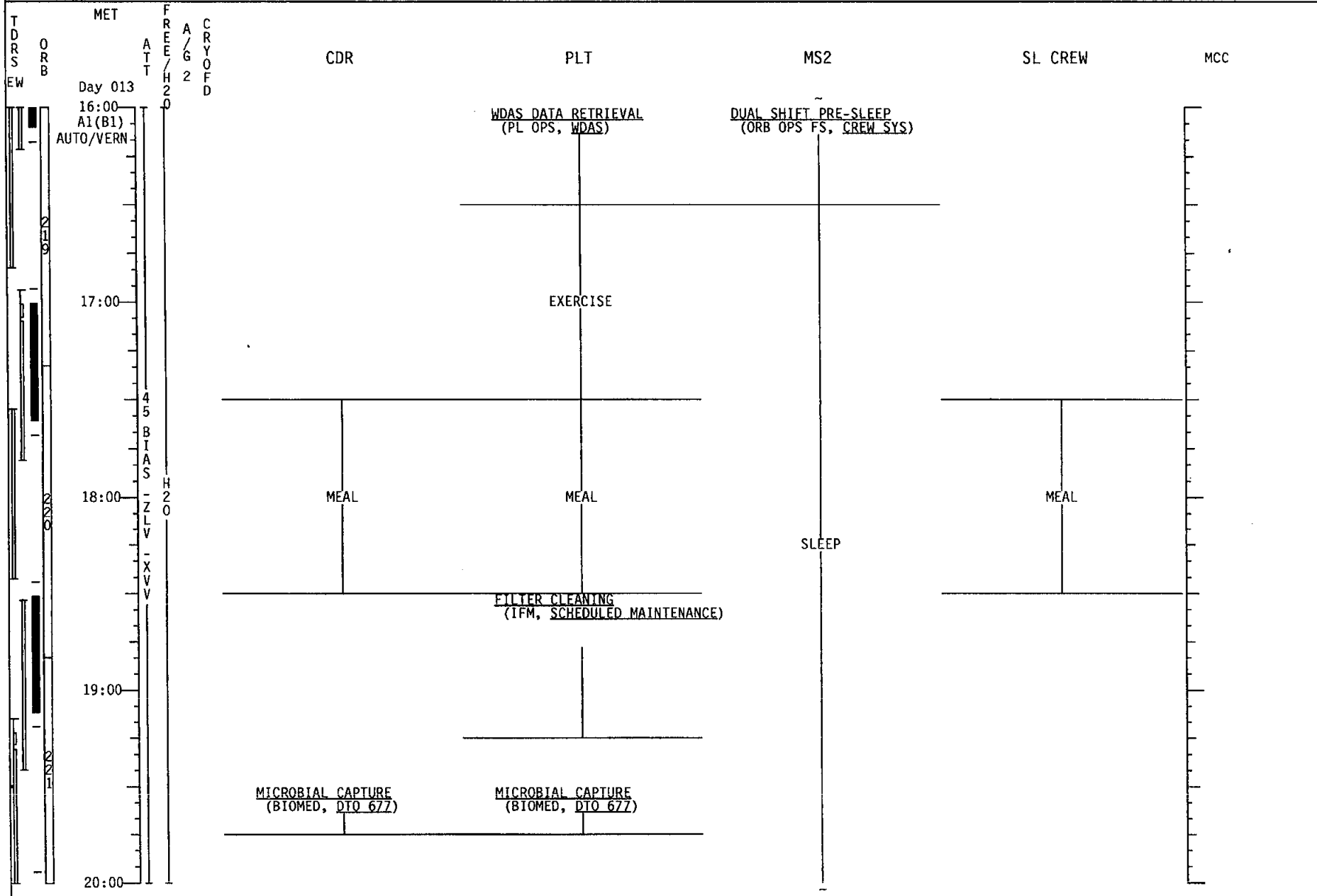


# STS-83 ( RED FD 15 )

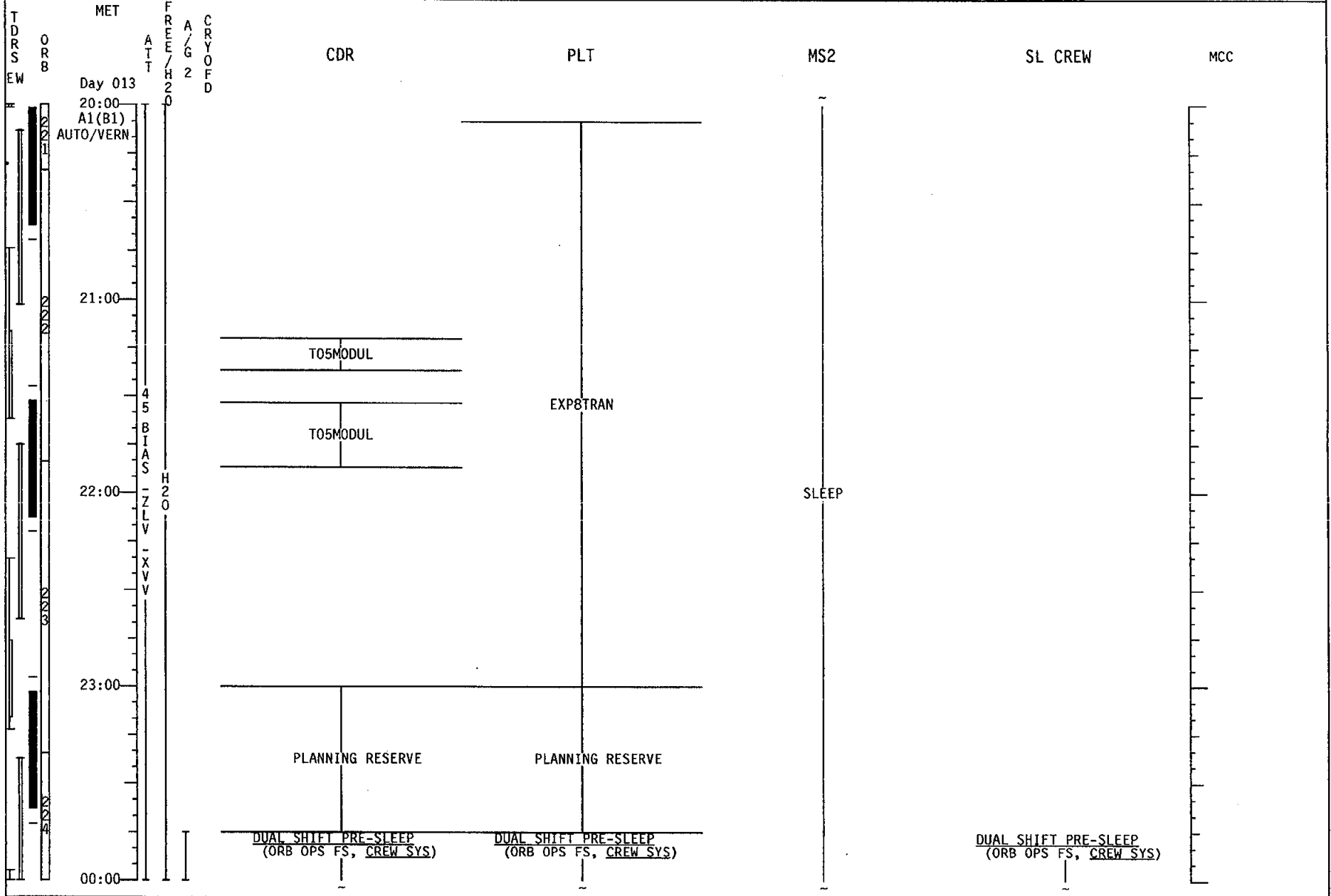




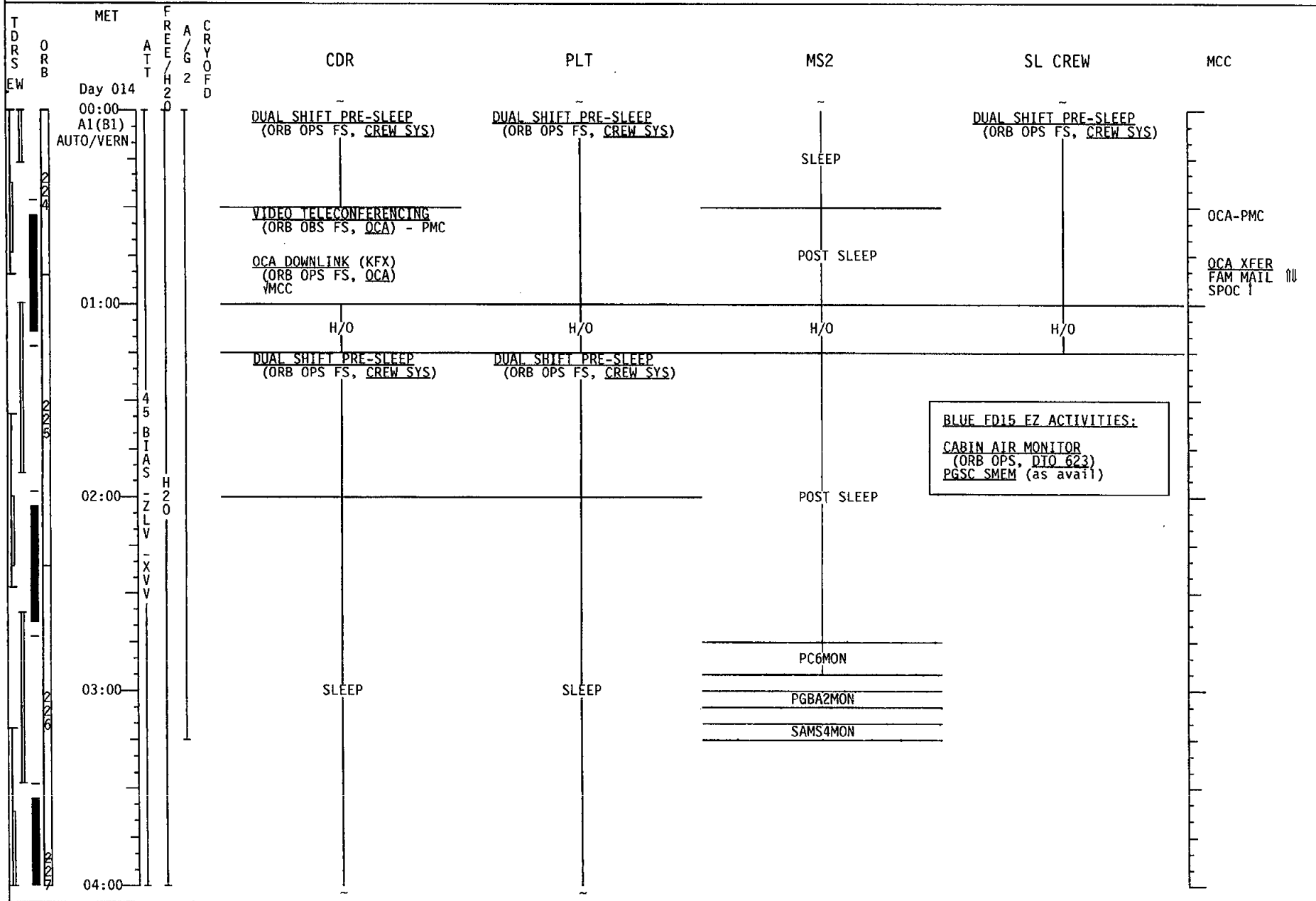
# STS-83 ( RED FD 15 )



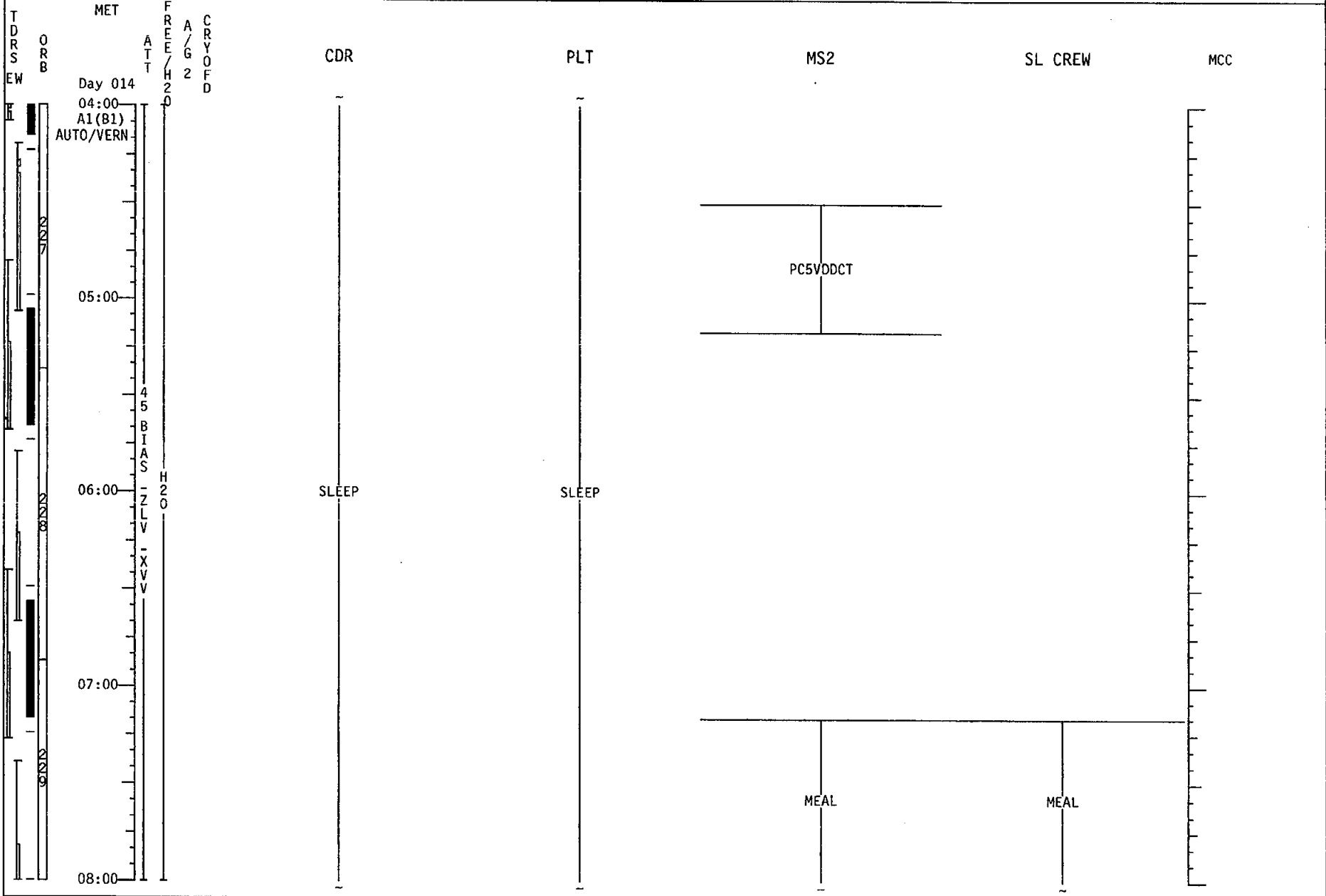
# STS-83 ( RED FD 15 )



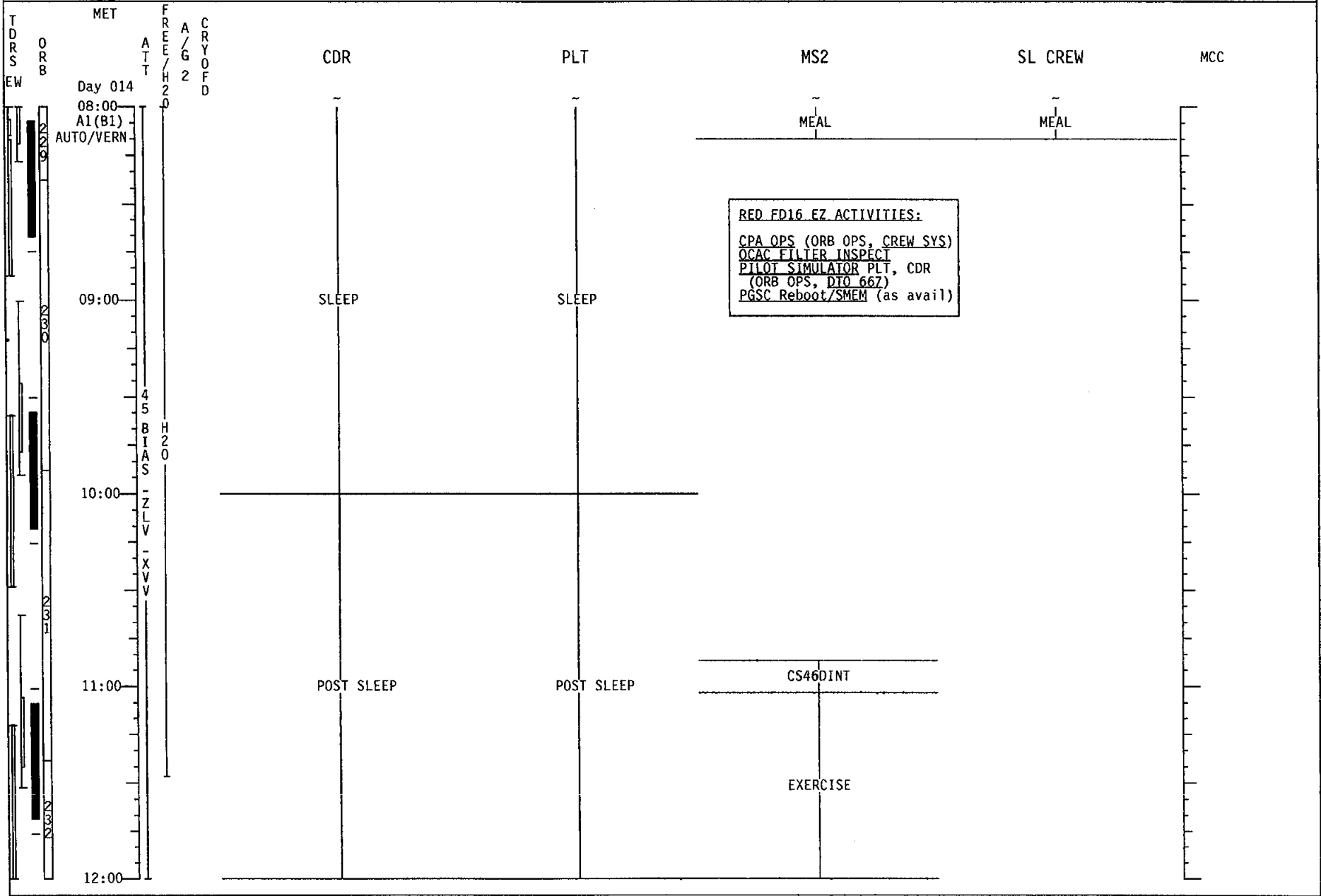
# STS-83 ( RED FD 15 )



# STS-83 ( BLUE FD 15)



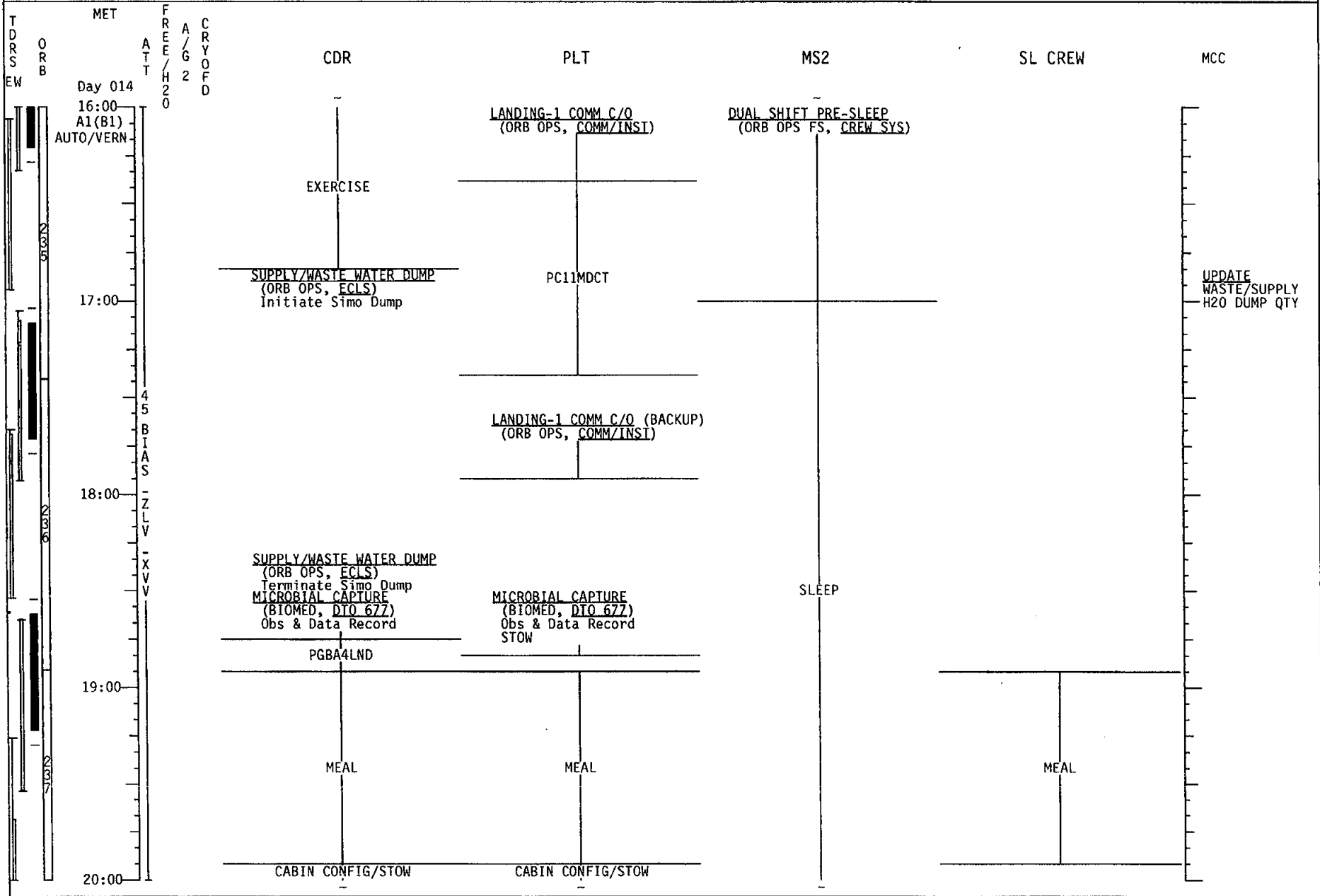
# STS-83 ( BLUE FD 15)



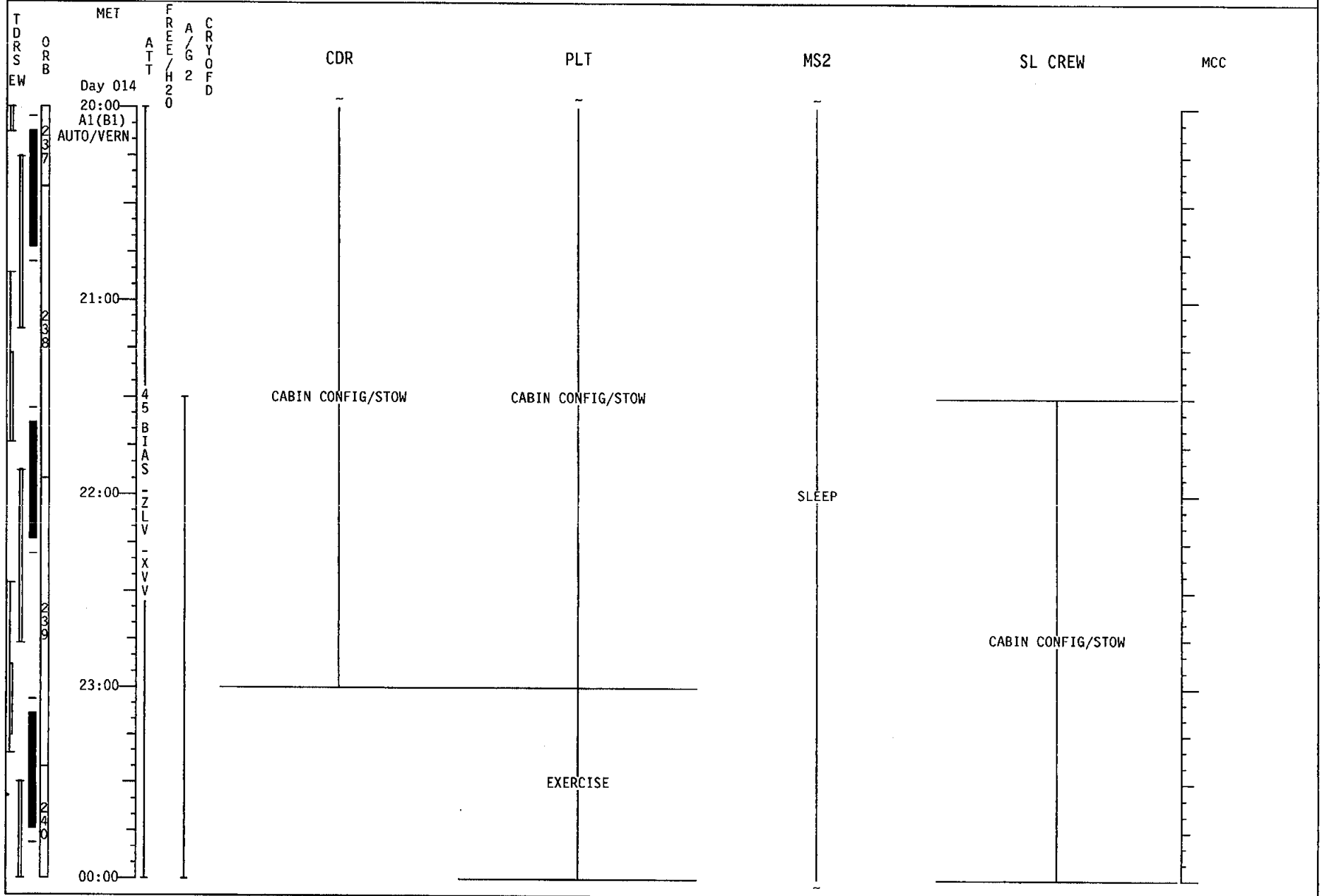
# STS-83 ( RED FD 16 )

|   | MET  | CDR   | PLT  | MS2   | SL CREW                           | MCC |
|---|--|---|--|---|-----------------------------------|-----|
| <p style="text-align: center;">T D R S<br/>E W</p> <p style="text-align: center;">O R B</p> <p style="text-align: center;">A T T</p> <p style="text-align: center;">F R E E / H 2 0</p> <p style="text-align: center;">A / G 2</p> <p style="text-align: center;">C R Y O F D</p> <p style="text-align: center;">4 5<br/>B I A S</p> <p style="text-align: center;">Z L L V</p> <p style="text-align: center;">X V V</p> <p style="text-align: center;">16:00</p> | <p>Day 014</p> <p>12:00</p> <p>A1(B1)</p> <p>AUTO/VERN</p> <p>13:00</p> <p>14:00</p> <p>15:00</p> <p>16:00</p> | <p>D/O BRIEF</p> <hr/> <p>APU STEAM VENT HTR ACT<br/>R2 VBLR CNTLR/HTR(three) -B<br/>PWR (three) -ON</p> <hr/> <p>H/O</p> <hr/> <p>FCS CHECKOUT<br/>(ORB OPS, GNC)</p> <hr/> <p>RCS HOT FIRE TEST<br/>(ORB OPS, RCS)<br/>Config DAP: A/AUTO/VERN</p> <hr/> <p>APU HTR RECONFIG (ORB OPS)<br/>PGBA2MON</p> <hr/> <p>PGBA30BS</p> <hr/> <p>SAMS4MON</p> <hr/> <p>EXERCISE</p> | <p>D/O BRIEF</p> <hr/> <p>H/O</p> <hr/> <p>FCS CHECKOUT<br/>(ORB OPS, GNC)</p> <hr/> <p>RCS HOT FIRE TEST<br/>(ORB OPS, RCS)</p> <hr/> <p>P/TV20 (PPOV/MINI-CAM)<br/>(PHOTO/TV, P/TV SCENES)</p> | <p>D/O BRIEF</p> <hr/> <p>H/O</p> <hr/> <p>FCS CHECKOUT<br/>(ORB OPS, GNC)</p> <hr/> <p>RCS HOT FIRE TEST<br/>(ORB OPS, RCS)</p> <hr/> <p>DUAL SHIFT PRE-SLEEP<br/>(ORB OPS FS, CREW SYS)</p> | <p>D/O BRIEF</p> <hr/> <p>H/O</p> |     |

# STS-83 ( RED FD 16 )

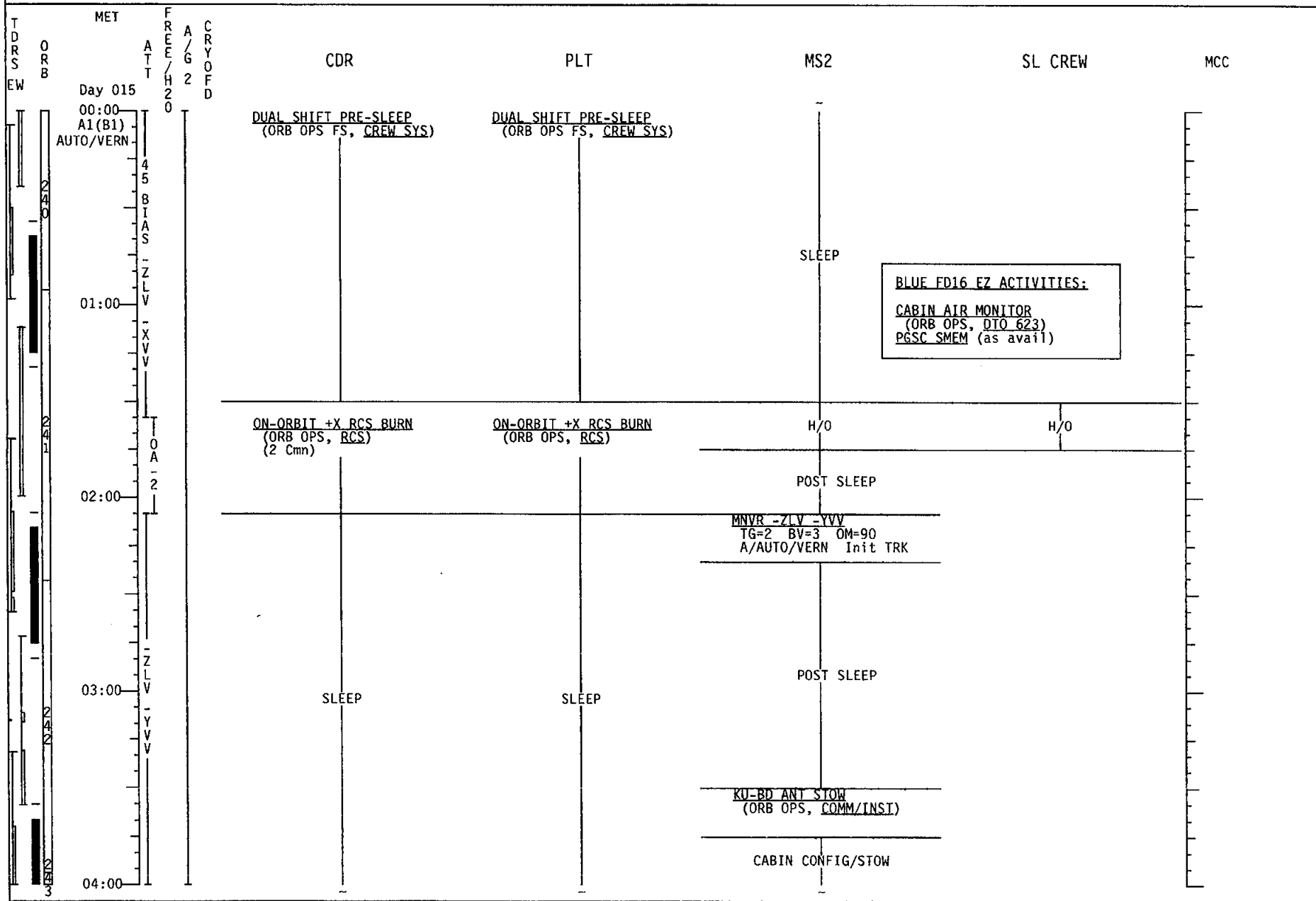


# STS-83 ( RED FD 16 )

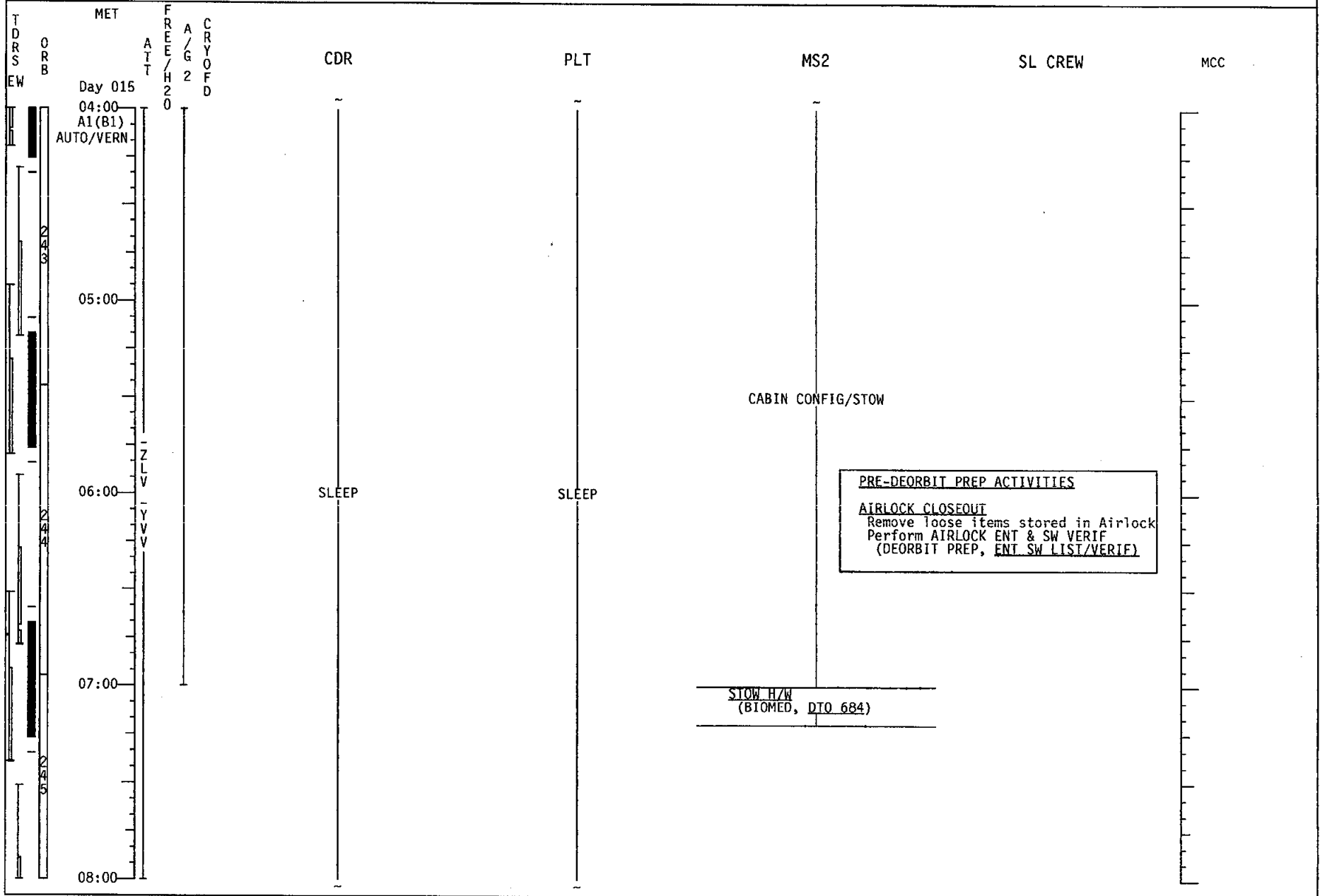




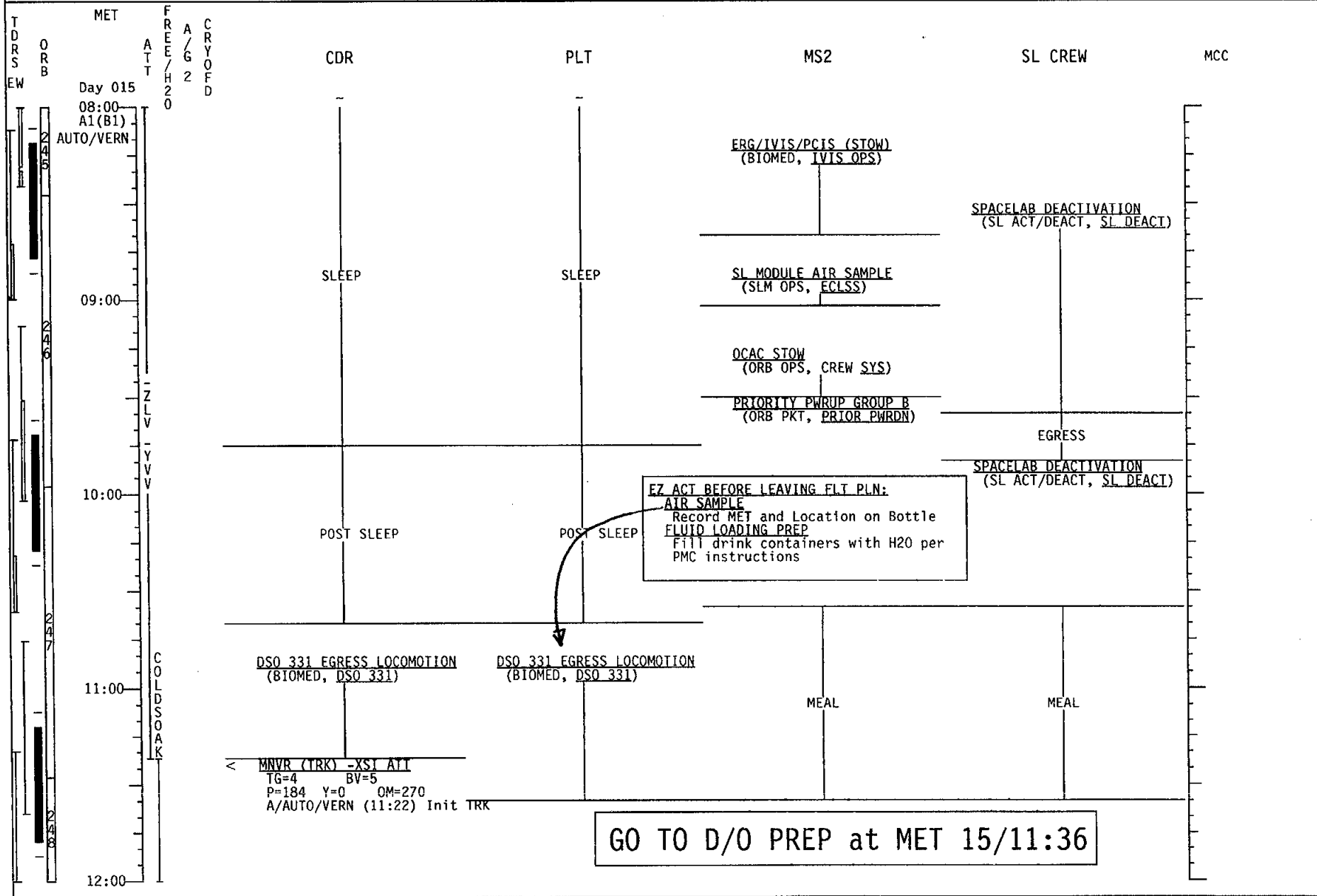
# STS-83 ( RED FD 16 )



# STS-83 ( BLUE FD 16)



# STS-83 ( BLUE FD 16)



DAP TABLE

DAP TABLE

### DAP TABLE

| <u>DAP</u> | <u>PURPOSE</u>                  | <u>DAP</u> | <u>PURPOSE</u>                  |
|------------|---------------------------------|------------|---------------------------------|
| A1         | - NOMINAL                       | B1         | - NOMINAL                       |
| A2         | - PTC                           |            | OMS & RCS BURNS                 |
| A3         | - GG                            | B2         | - LOSS OF VERN<br>(TAIL ONLY)   |
| A4         | - PRE/POST DEPLOY               | B3         | - LOSS OF VERN<br>(NOSE & TAIL) |
| A5         | - LOSS OF VERN<br>(NOSE & TAIL) | B4         | - SSUS DEPLOY                   |
| A6         | - LOSS OF VERN<br>(TAIL ONLY)   | B5         | - COAS CAL                      |
| A7         | - RENDEZVOUS                    | B7         | - RENDEZVOUS                    |
| A8         | - PROX OPS                      | B8         | - PROX OPS                      |

CNT ACC = 0    UNLOADED RMS  
           = 1-5   NOT USED

| UNIV PTG   |  |
|--|--|
| TGT ID = 1 Orbiting Vehicle<br>= 2 Earth ctr<br>= 3 Earth tgt<br>Input LAT ( $\pm 90$ )<br>LON ( $\pm 180$ , + = East)<br>ALT (-3444.0 to 20000.0 nm)<br>= 4 Sun ctr<br>= 5 Celestial tgt<br>Input RA (0-359.99)<br>DEC ( $\pm 90$ )<br>= 11-110 Nav Stars |  |
| BODY VECT = 1 +X*<br>= 2 -X*<br>= 3 -Z*<br>= 4 -Y Star Tracker*<br>= 5 Optional<br>Input P (0-359.99)<br>Y (270-359.99, 0-90)<br>* input OM $\rightarrow$ OM (0-359.99)  |  |
| MON AXIS = 1 +X<br>= 2 -X  |  |

**STS-83 GENERIC DAP A CONFIGURATIONS**

|             | ITEM # | A1      | A2     | A3     | A4                     | A5                       | A6                                | A7     | A8       |
|-------------|--------|---------|--------|--------|------------------------|--------------------------|-----------------------------------|--------|----------|
| <b>PRI</b>  |        |         |        |        |                        |                          |                                   |        |          |
| ROT RATE    | 10     | 0.2000  | 0.4000 | 0.2000 | 0.5000                 | 0.2000                   | 0.2000                            | 0.2000 | 0.2000   |
| ATT DB      | 11     | 5.00    | 1.00   | 1.00   | 3.00                   | 5.00                     | 5.00                              | 2.00   | 2.00     |
| RATE DB     | 12     | 0.20    | 0.20   | 0.20   | 0.20                   | 0.20                     | 0.20                              | 0.20   | 0.20     |
| ROT PLS     | 13     | 0.10    | 0.10   | 0.10   | 0.10                   | 0.10                     | 0.10                              | 0.10   | 0.10     |
| COMP        | 14     | .000    | .000   | .000   | .000                   | .000                     | .000                              | .000   | .000     |
| P OPTION    | 15     | ALL     | ALL    | ALL    | ALL                    | ALL                      | TAIL                              | ALL    | ALL      |
| Y OPTION    | 16     | ALL     | ALL    | TAIL   | ALL                    | ALL                      | TAIL                              | ALL    | ALL      |
| TRAN PLS    | 17     | 0.10    | 0.10   | 0.10   | 0.10                   | 0.10                     | 0.10                              | 0.10   | 0.05     |
| <b>ALT</b>  |        |         |        |        |                        |                          |                                   |        |          |
| RATE DB     | 18     | 0.200   | 0.200  | 0.200  | 0.200                  | 0.070                    | 0.070                             | 0.200  | 0.200    |
| JET OPT     | 19     | ALL     | ALL    | ALL    | ALL                    | ALL                      | TAIL                              | ALL    | ALL      |
| # JETS      | 20     | 2       | 2      | 2      | 2                      | 1                        | 1                                 | 2      | 2        |
| ON TIME     | 21     | 0.08    | 0.08   | 0.08   | 0.08                   | 0.08                     | 0.08                              | 0.08   | 0.08     |
| DELAY       | 22     | 0.00    | 0.00   | 0.00   | 0.00                   | 0.00                     | 0.00                              | 0.00   | 0.00     |
| <b>VERN</b> |        |         |        |        |                        |                          |                                   |        |          |
| ROT RATE    | 23     | 0.2000  | 0.4000 | 0.0080 | 0.2000                 | 0.2000                   | 0.2000                            | 0.2000 | 0.2000   |
| ATT DB      | 24     | 1.000   | 1.000  | 0.070  | 1.000                  | 1.000                    | 1.000                             | 1.000  | 1.000    |
| RATE DB     | 25     | .020    | .020   | .010   | .020                   | .020                     | .020                              | .020   | .020     |
| ROT PLS     | 26     | 0.010   | 0.010  | 0.010  | 0.010                  | 0.010                    | 0.010                             | 0.010  | 0.010    |
| COMP        | 27     | .000    | .000   | .000   | .000                   | .000                     | .000                              | .000   | .000     |
| CNTL ACC    | 28     | 0       | 0      | 0      | 0                      | 0                        | 0                                 | 0      | 0        |
| PURPOSE     |        | NOMINAL | PTC    | GG     | PRE/<br>POST<br>DEPLOY | LOSS OF<br>VERN<br>(N/T) | LOSS OF<br>VERN<br>(TAIL<br>ONLY) | RNDZ   | PROX OPS |

**STS-83 GENERIC DAP B CONFIGURATIONS**

|             | ITEM # | B1                         | B2                                | B3                       | B4             | B5          | B7     | B8       |
|-------------|--------|----------------------------|-----------------------------------|--------------------------|----------------|-------------|--------|----------|
| <b>PRI</b>  |        |                            |                                   |                          |                |             |        |          |
| ROT RATE    | 30     | 0.5000                     | 0.2000                            | 0.2000                   | 0.2000         | 0.2000      | 0.5000 | 0.2000   |
| ATT DB      | 31     | 3.00                       | 3.00                              | 3.00                     | 0.30           | 3.00        | 2.00   | 2.00     |
| RATE DB     | 32     | 0.20                       | 0.20                              | 0.20                     | 0.20           | 0.20        | 0.20   | 0.20     |
| ROT PLS     | 33     | 0.04                       | 0.04                              | 0.04                     | 0.04           | 0.04        | 0.04   | 0.04     |
| COMP        | 34     | .000                       | .000                              | .000                     | .000           | .000        | .000   | .000     |
| P OPTION    | 35     | ALL                        | TAIL                              | ALL                      | TAIL           | TAIL        | ALL    | ALL      |
| Y OPTION    | 36     | ALL                        | TAIL                              | ALL                      | TAIL           | TAIL        | ALL    | ALL      |
| TRAN PLS    | 37     | 0.10                       | 0.02                              | 0.02                     | 0.02           | 0.02        | 0.05   | 0.01     |
| <b>ALT</b>  |        |                            |                                   |                          |                |             |        |          |
| RATE DB     | 38     | 0.200                      | 0.070                             | 0.070                    | 0.200          | 0.200       | 0.200  | 0.200    |
| JET OPT     | 39     | ALL                        | TAIL                              | ALL                      | ALL            | ALL         | ALL    | ALL      |
| # JETS      | 40     | 2                          | 1                                 | 1                        | 2              | 2           | 2      | 2        |
| ON TIME     | 41     | 0.08                       | 0.08                              | 0.08                     | 0.08           | 0.08        | 0.08   | 0.08     |
| DELAY       | 42     | 0.00                       | 0.00                              | 0.00                     | 0.00           | 0.00        | 0.00   | 0.00     |
| <b>VERN</b> |        |                            |                                   |                          |                |             |        |          |
| ROT RATE    | 43     | 0.2000                     | 0.2000                            | 0.2000                   | 0.0080         | 0.0160      | 0.2000 | 0.2000   |
| ATT DB      | 44     | 1.000                      | 1.000                             | 1.000                    | 0.100          | 0.033       | 1.000  | 1.000    |
| RATE DB     | 45     | .020                       | .020                              | .020                     | .010           | .020        | .020   | .020     |
| ROT PLS     | 46     | 0.002                      | 0.002                             | 0.002                    | 0.002          | 0.002       | 0.002  | 0.002    |
| COMP        | 47     | .000                       | .000                              | .000                     | .000           | .000        | .000   | .000     |
| CNTL ACC    | 48     | 0                          | 0                                 | 0                        | 0              | 0           | 0      | 0        |
| PURPOSE     |        | NOM<br>OMS<br>RCS<br>BURNS | LOSS OF<br>VERN<br>(TAIL<br>ONLY) | LOSS OF<br>VERN<br>(N/T) | SSUS<br>DEPLOY | COAS<br>CAL | RNDZ   | PROX OPS |

4-4

FLI PLN/83/FIN

The sections following this divider page will not be included in flight copies.



**This Page Intentionally Blank**

**ATTITUDE TIMELINE**

ATTITUDE  
TIMELINE

Attitude Timeline

| MET/GMT   | MNVR OPTION  | DAF   | E/S                    | REF ATT/REMARKS                      | EVENT  |
|---|--|---|------------------------|--------------------------------------|--|
| 1<br>000/01:12:00 MET<br>22:57<br>093/20:13:00 GMT<br>23:57           | TGT=2<br>BV=3<br>P= 90.00<br>Y= 0.00<br>OM=270.00  | A6<br>AUTO<br>ALT<br>RATE 0.2000<br>DB AT 5.00<br>DB RT 0.070   | EARTH<br>R 0<br>P 90   | LVLH R= 0.00<br>P=180.00<br>Y= 90.00 | -ZLV +YVV<br>Nose South<br>Post Insertion<br>SOPA            |
| 2<br>000/03:30:00 MET<br>38:32<br>093/22:31:00 GMT<br>39:32           | TGT=2<br>BV=5<br>P= 90.00<br>Y=305.00<br>OM= 0.00  | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | EARTH<br>R 305<br>P 90 | LVLH R= 55.00<br>P=180.00<br>Y= 0.00 | BIAS -ZLV -XVV<br>55 deg roll                                |
| 3<br>000/22:30:00 MET<br>39:53<br>094/17:31:00 GMT<br>40:53           | INRTL R=139.00<br>MNVR P=166.00<br>Y= 38.00        | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | SUN<br>R 321<br>P 128  |                                      | IMU Align<br>Star Pair C2<br>-Y:18 CAPELLA<br>-Z:57 ACAMAR   |
| 4<br>000/22:45:00 MET<br>59:50<br>094/17:46:00 GMT<br>18:00:50        | TGT=2<br>BV=5<br>P= 90.00<br>Y=305.00<br>OM= 0.00  | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | EARTH<br>R 305<br>P 90 | LVLH R= 55.00<br>P=180.00<br>Y= 0.00 | BIAS -ZLV -XVV<br>55 deg roll                                |
| 5<br>002/23:45:00 MET<br>53:45<br>096/18:46:00 GMT<br>54:45           | INRTL R=328.00<br>MNVR P=339.00<br>Y= 39.00        | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | SUN<br>R 334<br>P 27   |                                      | IMU Align<br>Star Pair B2<br>-Y:27 DENEBO<br>-Z:99 GAMMA GRU |
| 6<br>003/00:00:00 MET<br>14:59<br>096/19:01:00 GMT<br>15:59           | TGT=2<br>BV=5<br>P= 90.00<br>Y=305.00<br>OM=180.00 | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | EARTH<br>R 305<br>P 90 | LVLH R=235.00<br>P= 0.00<br>Y= 0.00  | BIAS -ZLV +XVV<br>Nose Forward<br>55 deg roll                |
| 7<br>004/23:30:00 MET<br>43:04<br>098/18:31:00 GMT<br>44:04           | INRTL R= 2.00<br>MNVR P= 27.00<br>Y=291.00         | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | SUN<br>R 121<br>P 89   |                                      | IMU Align<br>Star Pair A2<br>-Y:20 ARCTURUS<br>-Z:17 ACRUX   |
| 8<br>004/23:50:00 MET<br>005/00:04:37<br>098/18:51:00 GMT<br>19:05:37 | TGT=2<br>BV=5<br>P= 90.00<br>Y=305.00<br>OM= 0.00  | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | EARTH<br>R 305<br>P 90 | LVLH R= 55.00<br>P=180.00<br>Y= 0.00 | BIAS -ZLV -XVV<br>55 deg roll                                |
| 9<br>006/23:15:00 MET<br>26:20<br>100/18:16:00 GMT<br>27:20           | INRTL R=139.00<br>MNVR P=166.00<br>Y= 38.00        | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | SUN<br>R 317<br>P 123  |                                      | IMU Align<br>Star Pair C2<br>-Y:18 CAPELLA<br>-Z:57 ACAMAR   |
| 10<br>006/23:30:00 MET<br>43:44<br>100/18:31:00 GMT<br>44:44          | TGT=2<br>BV=5<br>P= 90.00<br>Y=305.00<br>OM= 0.00  | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | EARTH<br>R 305<br>P 90 | LVLH R= 55.00<br>P=180.00<br>Y= 0.00 | BIAS -ZLV -XVV<br>55 deg roll                                |
| 11<br>008/23:45:00 MET<br>58:11<br>102/18:46:00 GMT<br>59:11          | INRTL R=139.00<br>MNVR P=166.00<br>Y= 38.00        | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | SUN<br>R 316<br>P 122  |                                      | IMU Align<br>Star Pair C2<br>-Y:18 CAPELLA<br>-Z:57 ACAMAR   |
| 12<br>009/00:05:00 MET<br>11:42<br>102/19:06:00 GMT<br>12:42          | TGT=2<br>BV=5<br>P= 90.00<br>Y=305.00<br>OM= 0.00  | A1<br>AUTO<br>VERN<br>RATE 0.2000<br>DB AT 1.000<br>DB RT 0.020 | EARTH<br>R 305<br>P 90 | LVLH R= 55.00<br>P=180.00<br>Y= 0.00 | BIAS -ZLV -XVV<br>55 deg roll                                |

\*\*\* ALL ATTITUDES IN MEAN OF 1950 \*\*\*  
\*\*\* PYR EULER SEQUENCE \*\*\*

Attitude Timeline

| MET/GMT  | MNVR OPTION   | DAP  | E/S                    | REF ATT/REMARKS                        | EVENT  |
|--|---|--|------------------------|--|--|
| 13<br>010/23:30:00 MET<br>44:07<br>104/18:31:00 GMT<br>45:07           | INRTL R=132.00<br>MNVR P=348.00<br>Y=339.00                               | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | SUN<br>R 315<br>P 43   |  | IMU Align<br>Star Pair C1<br>-Y:57 ACAMAR<br>-Z:18 CAPELLA |
| 14<br>010/23:50:00 MET<br>011/00:04:18<br>104/18:51:00 GMT<br>19:05:18 | TGT=2<br>BV=5<br>P= 90.00<br>Y=315.00<br>OM= 0.00                         | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | EARTH<br>R 315<br>P 90 | LVLH R= 45.00<br>P=180.00<br>Y= 0.00   | BIAS -ZLV -XVY<br>45 deg roll                              |
| 15<br>013/00:15:00 MET<br>28:37<br>106/19:16:00 GMT<br>29:37           | INRTL R=289.00<br>MNVR P=184.00<br>Y= 55.00                               | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | SUN<br>R 147<br>P 100  |  | IMU Align<br>Star Pair A1<br>-Y:17 ACRUX<br>-Z:20 ARCTURUS |
| 16<br>013/00:35:00 MET<br>49:13<br>106/19:36:00 GMT<br>50:13           | TGT=2<br>BV=5<br>P= 90.00<br>Y=315.00<br>OM= 0.00                         | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | EARTH<br>R 315<br>P 90 | LVLH R= 45.00<br>P=180.00<br>Y= 0.00   | BIAS -ZLV -XVY<br>45 deg roll                              |
| 17<br>015/01:35:00 MET<br>39:26<br>108/20:36:00 GMT<br>40:26           | INRTL R=217.00<br>MNVR P=305.00<br>Y=305.00                               | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | SUN<br>R 195<br>P 89   |  | Orbit Adjust<br>+X RCS<br>TV ROLL 180<br>TIG 15/01:45      |
| 18<br>015/01:50:00 MET<br>57:50<br>108/20:51:00 GMT<br>58:50           | TGT=2<br>BV=3<br>P= 90.00<br>Y= 0.00<br>OM= 90.00                         | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | EARTH<br>R 360<br>P 90 | LVLH R= 0.00<br>P=180.00<br>Y=270.00   | -ZLV -YVY<br>Thermal Cond.                                 |
| 19<br>015/11:22:00 MET<br>35:25<br>109/06:23:00 GMT<br>36:25           | TGT=4 RA= 26.561<br>BV=5 DEC= 10.975N<br>P=184.00<br>Y= 0.00<br>OM=270.00 | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | SUN<br>R 180<br>P 176  | INRTL R=204.95<br>P=171.80<br>Y=335.60 | Rad Coldsoak   |
| 20<br>015/12:38:00 MET<br>42:30<br>109/07:39:00 GMT<br>43:30           | INRTL R=202.00<br>MNVR P=219.00<br>Y=312.00                               | A1 RATE 0.2000<br>AUTO DB AT 1.000<br>VERN DB RT 0.020 | SUN<br>R 148<br>P 135  |  | IMU<br>-Y:25 REGULUS<br>-Z:15 HADAR                        |
| 21<br>015/12:48:00 MET<br>50:22<br>109/07:49:00 GMT<br>51:22           | INRTL R=281.00<br>MNVR P=322.00<br>Y=323.00                               | B1 RATE 0.5000<br>AUTO DB AT 3.00<br>PRI DB RT 0.20    | SUN<br>R 144<br>P 68   |  | Verif<br>-Y:29 ALKAID<br>-Z:30 ANTARES                     |
| 22<br>015/12:56:00 MET<br>13:00:07<br>109/07:57:00 GMT<br>08:01:07     | INRTL R= 72.00<br>MNVR P=136.00<br>Y=340.00                               | B1 RATE 0.5000<br>AUTO DB AT 3.00<br>PRI DB RT 0.20    | SUN<br>R 90<br>P 150   |  | Comm   |
| 23<br>015/15:20:00 MET<br>25:33<br>109/10:21:00 GMT<br>26:33           | INRTL R=242.00<br>MNVR P=356.00<br>Y= 2.00                                | TRN RATE 0.5000<br>AUTO DB AT 3.50<br>PRI DB RT 0.20   | SUN<br>R 226<br>P 25   |  | Deorbit Burn<br>OMS Retro<br>TV ROLL 180<br>TIG 15/15:36   |

\*\*\* ALL ATTITUDES IN MEAN OF 1950 \*\*\*  
\*\*\* PYR EULER SEQUENCE \*\*\*

**This Page Intentionally Blank**

**FLIGHT PLAN NOTES**

FLIGHT PLAN NOTES  
(CONSTRAINTS AND GUIDELINES)

A. FLIGHT DESCRIPTION

Orbiter: OV102/Columbia  
 Inclination: 28.5°  
 Insertion Altitude: 160 X 160 nm  
 Duration: 16 days

B. MAJOR EVENTS

| <u>EVENT</u> | <u>MET</u> | <u>DATE</u> | <u>CST</u> | <u>GMT</u> | <u>ΔV</u> | <u>HA/HP</u> |
|--------------|------------|-------------|------------|------------|-----------|--------------|
| Launch       | 00/00:00   | 04/03/97    | 13:01      | 19:01      | ***       | *****        |
| OMS2 C/O     | 00/00:42   | 04/03/97    | 13:43      | 19:43      | 220.7     | 160/163      |
| Orbit Adjust | 15/01:45   | 04/18/97    | 14:46      | 20:46      | 0.0       | 154/160      |
| Deorbit      | 15/15:36   | 04/19/97    | 05:37      | 11:37      | 259.0     | ***/**       |
| Landing      | 15/16:36   | 04/19/97    | 06:37      | 12:37      | ***       | ***/**       |

C. LANDING OPPORTUNITIES

|             |             | <u>Landing Orbit No.</u> | <u>Site</u> | <u>Local Time</u> | <u>MET</u> |
|-------------|-------------|--------------------------|-------------|-------------------|------------|
| Nominal     | Primary     | 251                      | KSC         | 07:37             | 15/16:36   |
|             | 1 Rev Late  | 252                      | KSC         | 09:13             | 15/18:12   |
|             | Weather Alt | 253                      | EDW         | 07:40             | 15/19:39   |
| 1 Day Late  | Primary     | 267                      | KSC         | 07:39             | 16/14:38   |
|             | 1 Rev Late  | 268                      | KSC         | 09:14             | 16/18:13   |
|             | Weather Alt | 269                      | EDW         | 07:41             | 16/19:40   |
| 2 Days Late | Primary     | 283                      | KSC         | 07:40             | 17/16:39   |
|             | 1 Rev Late  | 284                      | KSC         | 09:15             | 17/18:14   |
|             | Weather Alt | 285                      | EDW         | 07:41             | 17/19:40   |

D. CREW

CDR – Jim Halsell  
 PLT – Susan Still  
 MS1 – Janice Voss  
 MS2 – Mike Gernhardt  
 MS3 – Don Thomas  
 PS1 – Greg Linteris  
 PS2 – Roger Crouch

1. BLUE Team: MS2, MS1, PS1  
 RED Team: CDR, PLT, MS3, PS2

Each team works approximately 12 hours followed by 12 hours off duty. This allows continuous 24-hour/day payload operations.

2. The Payload Commander is MS1. The crewmembers responsible for performing an EVA, should one become necessary, are MS2 and MS3.

FLIGHT PLAN NOTES

## E. COMMUNICATIONS

### SHUTTLE

TDRS Support: East (41° W), West (174° W)

Ground Sites: MIL and BDA

Contingency RTS: DGS, GTS, HTS, MIL, BDA, OTS, and VTS

## F. IMU ALIGNS

Routine IMU aligns are expected to occur every 48 hours. If stars of opportunity are not available in the flown attitude, the orbiter will be required to maneuver to an IMU attitude for alignment.

## G. OFF DUTY

Off duty periods for the crew are scheduled for flight days 5, 9, and 13.

## H. PAYLOADS

### 1. Microgravity SpaceLab (MSL-1)

MSL consists of a complement of experiments which focus on microgravity materials processing technology and other science and research requiring the low-gravity environment of Earth orbit.

The following is a list of the MSL experiments:

- a. Space Acceleration Measurement System (SAMS)
- b. Large Isothermal Furnace (LIF)
- c. Protein Crystal Growth-Single Locker Thermal Enclosure System (PCG-STES)
- d. Microgravity Measurement Assembly (MMA)
- e. Electromagnetic Containerless Processing Facility (TEMPUS)
- f. Quasi-Steady Acceleration Measurement (QSAM)
- g. Middeck Glovebox (MGBX)
- h. Orbital Acceleration Research Experiment (OARE)
- i. Astro-Plant Growth Bioprocessing Apparatus (ASTRO-PGBA)
- j. Fiber Supported Droplet Combustion Experiment (FSDC-2)
- k. Physics of Hard Spheres Experiment (PHASE)
- l. Combustion Module (CM-1)
- m. Droplet Combustion Experiment (DCE)
- n. Coarsening in Solid-Liquid Mixtures (CSLM)
- o. Capillary Heat Transfer (CHT)
- p. Internal Flows in a Free Drop (IFFD)
- q. Bubble and Drop Nonlinear Dynamics (BDND)

### 2. Cryogenic Flexible Diode (CRYOFD)

The CRYOFD is a hitchhiker canister designed to demonstrate the in-space performance of a methane and an oxygen flexible, cryogenic, diode heat pipe.

### 3. Shuttle Amateur Radio Experiment - II (SAREX-II) Config B

SAREX-II is a flight deck payload capable of two-way communication with amateur radio stations in the Line of Sight (LOS) of the orbiter. The antenna is mounted in either Window 1 or 6.



I. ON-ORBIT DTOs

1. Cabin Air Monitoring (DTO 623)

This DTO will use the solid sorbent sampler to continuously sample the orbiter atmosphere throughout the flight.

2. Portable In-Flight Landing Operations Trainer (PILOT) (DTO 667)

This DTO consists of a laptop PC with landing software and a spare RHC (essentially a landing simulator). The DTO will attempt to verify that the simulator will assist the CDR and PLT in maintaining a high level of proficiency for approach and landing on EDO missions.

3. Evaluation of Microbial Capture Device in Microgravity (DTO 677)

This DTO will demonstrate the zero-gravity operation of water sampling hardware proposed for the microbiological characterization of spacecraft potable water. Six microbial capture devices (MCDs) will be processed during the last 5 days of the flight using both shuttle drinking water and ground supplied water.

4. Radiation Measurements in Shuttle Crew Compartment (DTO 684)

This DTO will measure the linear energy transfer spectrum of the complex space radiation in the crew compartments. The data will provide accurate measurements of biologically effective dose equivalent and evaluate risk of single event upsets (SEUs) in shuttle avionics.

J. ON-ORBIT DSOs

1. Interaction of the Space Shuttle Launch and Entry Suit and Sustained Weightlessness on Egress Locomotion (DSO 331)

This DSO will identify the impact of the Launch Entry Suit/Advanced Crew Escape Suit (LES/ACES) and sustained weightlessness on egress locomotion mechanical efficiency as measured by oxygen consumption and gait alteration.

2. Monitoring Latent Virus Reactivation and Shedding in Astronauts (DSO 493)

This DSO will study spaceflight-induced immunocompetence focusing on the potential for reactivation and dissemination (shedding) of latent viruses. Saliva samples will be collected daily from participating crewmembers.

K. ON-ORBIT RMEs

1. Wireless Data Acquisition System (RME 1330)

This RME will demonstrate the Wireless Instrumentation System (WIS) to provide temperature measurements that can be used to determine if payload hardware is approaching its thermal limits in near real time.

FLIGHT DATA FILE  
Distribution  
70 FLT PLN FSP FIN

---

\*\* JSC \*\*

AP3/BRANCH DISTRIBUTION (10)  
AP3/PAO DISTRIBUTION (50)  
AP5/SCHOER, R.K.  
CA/LEESTMA, D.C.  
CA44/BERTRAND, O.J.  
CB/CHIEF  
CB/FAMILY ESCORT MGR  
DA2/STONE, B.R.  
DA82/ACTION CENTER  
DF22/DPS FDF REP (7)  
DF24/INCO FDF REP (3)  
DF42/EVA (6)  
DF44/ROBOTICS SECTION (5)  
DF54/CREW SYSTEMS  
DF62/GNC SECTION HEAD  
DF63/PROP  
DF63/SECTION HEAD  
DF73/LEAD EGIL  
DF73/SYSTEMS LIBRARY  
DF8/EECOM LIBRARY (3)  
DJ4/QUICK, T.K. (3)  
DM11/CHIEF  
DM22/FLIGHT DESIGN GROUP  
DM22/HEAD (2)  
DM41/LOWES, F.B.  
DM42/HEAD (7)  
DM43/HEAD  
DM46/ENTRY FDO  
DM46/LSO  
DM46/STS CONT SUPPORT OFF  
DO12/OPS SAFETY OFFICE  
DO35/FDF LIBRARY  
DO4/BOOK MANAGER FLT PLN (20)  
DO4/FAO TEAM (20)  
DO4/SHUTTLE FLT PLANNING (3)  
DO44/HEAD  
DO45/SECTION HEAD  
DO6/LIBRARY (18)  
DP/CHIEF  
DT23/DPS/NAV SECT (4)  
DT33/BORDELON, M.  
DT33/SHUTTLE COMM SECTION (2)  
DT35/PAYLOADS TRAINING (3)

DT35/ROWEN, G.C.  
DT46/SIM SUP OFFICE  
DT48/TRAINING SYS SECTION (2)  
DT66/CONTROL PROP (4)  
DT68/TEAM LEAD  
EA42/MANAGER  
EC/CTSD LIBRARY  
EC3/ROTTER, H.A.  
EC5/CHANG, C.M.  
EC5/COUNTS, B.R. (2)  
EE2/RCA SUPPORT  
EG/CRITELLI, S. (2)  
EG/LIBRARY  
EG1/KANIPE, D.B.  
EG2/STRAHAN, A.  
EP2/JENKINS, L.W.  
ER4/HESS, C. (3)  
ER611/MC FADIN, L. (2)  
ES3/CHANG, Y. PHD  
ES32/SERNA, R.  
ES62/DAVIS, R.  
EV/LIV-16/LIBRARY  
EV14-LIB/ASD-14-LIB  
EV3/LEONARD, A.L. (2)  
EV44-ASD/ASD-44-LIB  
FA22/WAGSTER, L.R.  
FA4/EVA & CREW SYS (3)  
GF/LIEBERGOT, S.A.  
GF/LODEN, H.A.  
HMFP2/SNOW, T.J.  
IA161/BAHR, P.A.  
JL5/SUPPORT (2)  
MA3/MANAGER  
MER-30/LIBRARY (10)  
MS5/LIBRARY  
MT2/CONWELL, J.J.  
MT3/CUSTOMER SUPT SPEC (4)  
MT3/LEAD FIM  
MT3/MANAGER (3)  
NS2/CHIEF  
NS4/LIBRARY (2)  
OA/WARD, D.K.  
PS33/STI LIBRARY (3)  
PS4/CLINTON, S.  
PS4/MCGUYER, M. (2)  
SD/HATCHER, D.  
SD/WATSON, T.L. (5)  
SD24/LAMOREUX, J.A. (4)  
SD26/PANDER, L. (5)  
SD5/CHARLES, J.B.  
SN3/CHRISTIANSEN, E.  
SN3/HARDY, A.C.  
SN5/EOL

SN5/GAUNCE, M.  
SP3/HOLDEN, T.  
SP33/JOHNSON, M.L.  
SP43/CHRISTOPHER, K.  
SP44/KLOERIS, V.  
ZR1/GOLDSTEIN, D. CAPT. (5)  
ZR1/USAF TECHNICAL LIBRARY (3)  
ZS8/ASSGND LEAD FORECASTER

---

\*\* JSC OFFSITE \*\*

3700 BAY AREA BLVD  
SUITE 600  
P O BOX 58487  
HOUSTON, TX 77258  
6402A/SILVA, E. (3)

---

ALLIED SIGNAL-HOUSTON  
B33B-555/OSD DOCUMENT CNTL (5)

---

CAE LINK-HOUSTON  
TSC/LIBRARY

---

LOCKHEED-HOUSTON  
C70/KEENER, J.F.

---

MCDONNELL DOUGLAS-HST TWR 1  
16055 SPACE CENTER BLVD  
HOUSTON, TX 77062  
B1/BROUSSARD, A.

---

RSOC-HOUSTON  
R12A/SMITH, W.E.  
R12B-16/SAIL/GN&C  
R16C/PROX OPS LIBRARY  
R16C/RNDZ LIBRARY  
R16C/TRAJECTORY LIBRARY  
R16E/COOPER, D.  
R16E/KOCEN, M.H.  
R16E/NAVIGATION LIBRARY  
R16E/TRAJ OPS SUPPORT (3)  
R16H/FRENCH, J.  
R21M/WARD, P.A.  
ZC01/DISTEFANO, F.J.

---

ZC01/HIPPS, D.L.  
ZC20/MEREDITH, M.

---

UNISYS GOV'T SYSTEMS GROUP-HST  
B32F/BLD9/GARDNER, J.A.  
U03D/HOPE, A.J.  
U03D/IV&T MANAGER

---

BOEING AEROSPACE-HOUSTON  
P O BOX 58747  
HOUSTON, TX 77058  
HC-18/STOKELD, R.  
HF-10/TRAVLOS, J.A.  
HF-10/WIBLE, L.  
HS-30/WYLIE, S.

---

CALSPAN/JOHNSON OPERATIONS  
P O BOX 580668  
HOUSTON, TX 77258-0668  
F6E4S/GOFFNEY, B.

---

HONEYWELL-HOUSTON  
2525 BAY AREA BLVD  
SUITE 150  
HOUSTON, TX 77058  
GEDERBERG, T.

---

KRUG INTERNATIONAL-HST  
1290 HERCULES DRIVE  
SUITE 120  
HOUSTON TX 77058  
HMFP2/WEDGEWORTH, B.L.

---

ROCKWELL-HOUSTON  
ZC01/ASUNCION, C.  
ZC01/BATTLE, H.H.  
ZC01/WOODALL, J.W.  
ZC01-555/DE VAULT, G.M.  
ZC01-555/TAYLOR, J.T.  
ZC03-17/BRYAN, L.W.

---