

Sequence: EJ02CC Created: 06/14/93 Begin: 93-187/16:15:00.000 Finish: 93-239/11:00:00.000

| YR | DOY | Time         | PSID           | Command | Parameters       | Description                      | GCM | O | S | RIM            | MF | I |
|----|-----|--------------|----------------|---------|------------------|----------------------------------|-----|---|---|----------------|----|---|
| 93 | 187 | 21:25:05.466 | 20K3A          | 40T1P   | 1                | PCT Heater 1 ON (primary relay)  |     |   |   | 1,950,415:64:0 |    |   |
| 93 | 187 | 21:25:10.800 | 20K3B          | 40T1P   | 2                | PCT Heater 1 ON (primary relay)  |     |   |   | 1,950,415:72:0 |    |   |
| 93 | 188 | 14:44:04.133 | 20A4B          | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 1,951,443:24:0 |    |   |
| 93 | 188 | 15:05:04.133 | 20A4F          | 7SLEW   | DIS,POS,0.0      | Stator movement                  |     |   |   | 1,951,464:03:0 |    |   |
| 93 | 188 | 15:07:04.133 | 20A4H          | 7MODE   | SPNL             | All-Spin Mod                     |     |   |   | 1,951,466:01:0 |    |   |
| 93 | 188 | 15:09:04.133 | 20A4I          | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 1,951,467:90:0 |    |   |
| 93 | 188 | 15:15:04.066 | 20A4K          | 7VENT   | 0.6,1.333,8      | ALERT -- Thruster fire           |     |   |   | 1,951,473:84:0 |    |   |
| 93 | 188 | 15:15:04.733 | 20A4L          | 7VENT   | 0.6,11.022,8     | ALERT -- Thruster fire           |     |   |   | 1,951,473:85:0 |    |   |
| 93 | 188 | 15:16:04.733 | 20A4M          | 7VENT   | 0.6,1.333,6      | ALERT -- Thruster fire           |     |   |   | 1,951,474:84:0 |    |   |
| 93 | 188 | 15:16:05.400 | 20A4N          | 7VENT   | 0.6,11.022,6     | ALERT -- Thruster fire           |     |   |   | 1,951,474:85:0 |    |   |
| 93 | 188 | 15:20:18.066 | 20A4Q          | 7VENT   | 0.6,1.333,7      | ALERT -- Thruster fire           |     |   |   | 1,951,479:09:0 |    |   |
| 93 | 188 | 15:20:18.733 | 20A4R          | 7VENT   | 0.6,11.022,7     | ALERT -- Thruster fire           |     |   |   | 1,951,479:10:0 |    |   |
| 93 | 188 | 15:21:18.733 | 20A4S          | 7VENT   | 0.6,1.333,1      | ALERT -- Thruster fire           |     |   |   | 1,951,480:09:0 |    |   |
| 93 | 188 | 15:21:19.400 | 20A4T          | 7VENT   | 0.6,11.022,1     | ALERT -- Thruster fire           |     |   |   | 1,951,480:10:0 |    |   |
| 93 | 188 | 15:23:32.066 | 20A4V          | 7MODE   | CRU              | Dual-Spin Mo                     |     |   |   | 1,951,482:27:0 |    |   |
| 93 | 188 | 15:35:00.066 | 498A4B         | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 1,951,493:58:0 |    |   |
| 93 | 188 | 16:07:00.066 | 498A4D         | 7MODE   | INT              | Dual-Spin Mo                     |     |   |   | 1,951,525:26:0 |    |   |
| 93 | 188 | 16:09:01.400 | 498A4F         | 7BURN   | LAT,0.0,90.0,1,0 | ALERT -- Thruster fire           |     |   |   | 1,951,527:26:0 |    |   |
| 93 | 188 | 16:22:26.066 | 498A4G         | 7BURN   | LAT,179.745998,- | ALERT -- Thruster fire           |     |   |   | 1,951,540:50:0 |    |   |
| 93 | 188 | 16:35:51.400 | 498A4I         | 7BURN   | LAT,179.745998,- | ALERT -- Thruster fire           |     |   |   | 1,951,553:75:0 |    |   |
| 93 | 188 | 16:49:16.066 | 498A4J         | 7BURN   | LAT,0.0,90.0,1,0 | ALERT -- Thruster fire           |     |   |   | 1,951,567:08:0 |    |   |
| 93 | 188 | 17:02:41.400 | 498A4L         | 7BURN   | PULZ,0.0,90.0,1, | ALERT -- Thruster fire           |     |   |   | 1,951,580:33:0 |    |   |
| 93 | 188 | 17:16:01.400 | 498A4N         | 7BURN   | PULZ,0.0,90.0,1, | ALERT -- Thruster fire           |     |   |   | 1,951,593:50:0 |    |   |
| 93 | 188 | 18:15:02.066 | 490A412A4B     | 7MODE   | INT              | Dual-Spin Mo                     |     |   |   | 1,951,651:83:0 |    |   |
| 93 | 188 | 18:17:52.066 | 490A476A6A     | 6TMCHG  | ELSLRS           | NO DNL                           |     |   |   | 1,951,654:65:0 |    |   |
| 93 | 188 | 18:20:00.066 | 490A412A4D     | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 1,951,656:75:0 |    |   |
| 93 | 188 | 16:30:00.000 | 490A412A4E     | 7VECT   | RTH              | Inertial vect update U           |     |   |   | 1,951,660:86:0 |    |   |
| 93 | 188 | 18:24:14.066 | 490A412A4F     | 7TURN   | 1,RTH            | ALERT -- Thruster fire           |     |   |   | 1,951,661:01:0 |    |   |
| 93 | 188 | 18:28:02.066 | 490A412A406A4A | 7STAR   | 1,1701,278.81399 | Star catalog update              |     |   |   | 1,951,664:70:0 |    |   |
| 93 | 188 | 18:28:04.066 | 490A412A406A4B | 7STAR   | 2,159,27.236,89. | Star catalog update              |     |   |   | 1,951,664:73:0 |    |   |
| 93 | 188 | 18:28:06.066 | 490A412A406A4C | 7STAR   | 3,172,89.077999, | Star catalog update              |     |   |   | 1,951,664:76:0 |    |   |
| 93 | 188 | 18:28:08.066 | 490A412A406A4D | 7STAR   | 4,395,305.426998 | Star catalog update              |     |   |   | 1,951,664:79:0 |    |   |
| 93 | 188 | 18:28:10.066 | 490A412A406A4E | 7STAR   | 5,0,0.0,0.0      | Star catalog update              |     |   |   | 1,951,664:82:0 |    |   |
| 93 | 188 | 18:28:12.066 | 490A412A406A4F | 7STAR   | 6,0,0.0,0.0      | Star catalog update              |     |   |   | 1,951,664:85:0 |    |   |
| 93 | 188 | 19:43:10.733 | 490A412A4K     | 7MODE   | CRU              | Dual-Spin Mo                     |     |   |   | 1,951,739:08:0 |    |   |
| 93 | 188 | 19:45:12.733 | 490A412A4M     | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 1,951,741:09:0 |    |   |
| 93 | 189 | 17:05:05.400 | 20L3A          | 40T1PR  | 1                | PCT Heater 1 OFF (primary relay) |     |   |   | 1,953,006:83:0 |    |   |
| 93 | 189 | 17:05:10.733 | 20L3B          | 40T1PR  | 2                | PCT Heater 1 OFF (primary relay) |     |   |   | 1,953,007:00:0 |    |   |
| 93 | 193 | 16:03:19.800 | 444A443A4B     | 7MODE   | INT              | Dual-Spin Mo                     |     |   |   | 1,958,642:49:0 |    |   |
| 93 | 193 | 16:38:59.800 | 20DA6A         | 6DMSC   | RDY,2            | Tape stopped                     |     |   |   | 1,958,677:74:0 |    |   |

4-03

4-04

| YR | DOY | Time         | PSID            | Command | Parameters       | Description            | GCM | O | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|------------------------|-----|---|---|----------------|----|---|
| 93 | 193 | 16:45:15.133 | 192GA4A         | 7CONE   | 10.0,175.0       | Check S/P Position     |     |   |   | 1,958,684:00:0 |    |   |
| 93 | 193 | 16:48:15.800 | 165GA4A         | 7TMOT   | DIS,TMC          | Target motion compensa |     |   |   | 1,958,686:89:0 |    |   |
| 93 | 193 | 16:48:16.466 | 165GA4B         | 7SCAN   | NORM,192.308998, | Check S/P Position     |     |   |   | 1,958,686:90:0 |    |   |
| 93 | 193 | 16:53:20.466 | 176GA6A         | 6TMCHG  | NCGHCM           | Dnlmk                  |     |   |   | 1,958,692:00:0 |    |   |
| 93 | 193 | 16:56:56.466 | 118GA110A111A4A | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.43            |     |   |   | 1,958,695:51:0 |    |   |
| 93 | 93/ | 16:57:05.800 | 118GA110A111A4B | 7STRP   | -0.0006,-0.0005, | Slew =,2.41            |     |   |   | 1,958,695:65:0 |    |   |
| 93 | 193 | 16:57:10.466 | 118GA110A111A4C | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.43            |     |   |   | 1,958,695:72:0 |    |   |
| 93 | 193 | 16:57:22.466 | 175GA422A6A     | 6DMSC   | R115,0           | Record 115.2kbps       |     |   |   | 1,958,695:90:0 |    |   |
| 93 | 193 | 16:57:53.800 | 175GA422A6B     | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,958,696:46:0 |    |   |
| 93 | 193 | 16:58:29.133 | 20GA4A          | 7SAFE   | UNSTOW           | Check S/P Position     |     |   |   | 1,958,697:08:0 |    |   |
| 93 | 193 | 17:05:31.800 | 20EA6A          | 6DMSC   | S115,3           | Slew 115.2kbps         |     |   |   | 1,958,704:05:0 |    |   |
| 93 | 193 | 17:06:03.133 | 20EA6B          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,958,704:52:0 |    |   |
| 93 | 193 | 17:14:59.800 | 444B443A4A      | 7MODE   | CRU              | Dual-Spin Mo           |     |   |   | 1,958,713:38:0 |    |   |
| 93 | 193 | 18:15:03.133 | 423A6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,958,772:74:0 |    |   |
| 93 | 193 | 18:15:09.133 | 423A6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,958,772:83:0 |    |   |
| 93 | 193 | 18:16:22.466 | 423A6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,958,774:11:0 |    |   |
| 93 | 193 | 18:16:31.133 | 423A6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,958,774:24:0 |    |   |
| 93 | 193 | 18:18:02.466 | 423A6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,958,775:70:0 |    |   |
| 93 | 193 | 18:18:09.800 | 423A6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,958,775:81:0 |    |   |
| 93 | 193 | 23:15:03.133 | 423B6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,959,069:47:0 |    |   |
| 93 | 193 | 23:15:09.133 | 423B6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,959,069:56:0 |    |   |
| 93 | 193 | 23:16:22.466 | 423B6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,959,070:75:0 |    |   |
| 93 | 193 | 23:16:31.133 | 423B6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,959,070:88:0 |    |   |
| 93 | 193 | 23:18:02.466 | 423B6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,959,072:43:0 |    |   |
| 93 | 193 | 23:18:09.800 | 423B6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,959,072:54:0 |    |   |
| 93 | 194 | 20:10:03.066 | 423C6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,960,310:66:0 |    |   |
| 93 | 194 | 20:10:09.066 | 423C6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,960,310:75:0 |    |   |
| 93 | 194 | 20:11:22.400 | 423C6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,960,312:03:0 |    |   |
| 93 | 194 | 20:11:31.066 | 423C6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,960,312:16:0 |    |   |
| 93 | 194 | 20:13:02.400 | 423C6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,960,313:62:0 |    |   |
| 93 | 194 | 20:13:09.733 | 423C6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,960,313:73:0 |    |   |
| 93 | 197 | 17:13:44.266 | 20D4B           | 7STAT   | +17.45,0.0,90.0  | Stator inertial point  |     |   |   | 1,964,408:80:0 |    |   |
| 93 | 197 | 17:16:44.266 | 20D4C           | 7SAFE   | UNSTOW           | Check S/P Position     |     |   |   | 1,964,411:77:0 |    |   |
| 93 | 198 | 06:15:04.266 | 423D6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,965,181:57:0 |    |   |
| 93 | 198 | 06:15:10.266 | 423D6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,965,181:66:0 |    |   |
| 93 | 198 | 06:16:23.600 | 423D6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,965,182:85:0 |    |   |
| 93 | 198 | 06:16:32.266 | 423D6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,965,183:07:0 |    |   |
| 93 | 198 | 06:18:03.600 | 423D6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,965,184:53:0 |    |   |
| 93 | 198 | 06:18:10.933 | 423D6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,965,184:64:0 |    |   |
| 93 | 198 | 11:00:04.266 | 423E6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,965,463:45:0 |    |   |
| 93 | 198 | 11:00:10.266 | 423E6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,965,463:54:0 |    |   |
| 93 | 198 | 11:01:23.600 | 423E6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,965,464:73:0 |    |   |

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| YR | DOY | Time         | PSID            | Command | Parameters       | Description            | GCM | O | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|------------------------|-----|---|---|----------------|----|---|
| 93 | 198 | 11:01:32.266 | 423E6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,965,464:86:0 |    |   |
| 93 | 198 | 11:03:03.600 | 423E6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,965,466:41:0 |    |   |
| 93 | 198 | 11:03:10.933 | 423E6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,965,466:52:0 |    |   |
| 93 | 198 | 16:00:04.200 | 423F6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,965,760:18:0 |    |   |
| 93 | 198 | 16:00:10.200 | 423F6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,965,760:27:0 |    |   |
| 93 | 198 | 16:01:23.533 | 423F6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,965,761:46:0 |    |   |
| 93 | 198 | 16:01:32.200 | 423F6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,965,761:59:0 |    |   |
| 93 | 198 | 16:03:03.533 | 423F6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,965,763:14:0 |    |   |
| 93 | 198 | 16:03:10.866 | 423F6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,965,763:25:0 |    |   |
| 93 | 198 | 21:00:04.200 | 423G6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,966,056:82:0 |    |   |
| 93 | 198 | 21:00:10.200 | 423G6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,966,057:00:0 |    |   |
| 93 | 198 | 21:01:23.533 | 423G6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,966,058:19:0 |    |   |
| 93 | 198 | 21:01:32.200 | 423G6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,966,058:32:0 |    |   |
| 93 | 203 | 21:47:19.933 | 444C443A4B      | 7MODE   | INT              | Dual-Spin Mo           |     |   |   | 1,973,224:48:0 |    |   |
| 93 | 203 | 22:23:11.933 | 192GB4A         | 7CONE   | 10.0,175.0       | Check S/P Position     |     |   |   | 1,973,260:00:0 |    |   |
| 93 | 203 | 22:26:12.600 | 165GB4A         | 7TMOT   | DIS,TMC          | Target motion compensa |     |   |   | 1,973,262:89:0 |    |   |
| 93 | 203 | 22:26:13.266 | 165GB4B         | 7SCAN   | NORM,192.299999, | Check S/P Position     |     |   |   | 1,973,262:90:0 |    |   |
| 93 | 203 | 22:31:17.266 | 176GB6A         | 6TMCHG  | NCGHCM           | Dnlmk                  |     |   |   | 1,973,268:00:0 |    |   |
| 93 | 203 | 22:34:53.266 | 118GB110A111A4A | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.42            |     |   |   | 1,973,271:51:0 |    |   |
| 93 | 03/ | 22:35:02.600 | 118GB110A111A4B | 7STRP   | -0.0006,-0.0005, | Slew =,2.41            |     |   |   | 1,973,271:65:0 |    |   |
| 93 | 203 | 22:35:07.266 | 118GB110A111A4C | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.42            |     |   |   | 1,973,271:72:0 |    |   |
| 93 | 203 | 22:35:19.266 | 175GB422A6A     | 6DMSC   | R115,0           | Record 115.2kbps       |     |   |   | 1,973,271:90:0 |    |   |
| 93 | 203 | 22:35:50.600 | 175GB422A6B     | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,973,272:46:0 |    |   |
| 93 | 203 | 22:36:25.266 | 20GB4A          | 7SAFE   | UNSTOW           | Check S/P Position     |     |   |   | 1,973,273:07:0 |    |   |
| 93 | 203 | 22:43:27.933 | 20EB6A          | 6DMSC   | S115,3           | Slew 115.2kbps         |     |   |   | 1,973,280:04:0 |    |   |
| 93 | 203 | 22:43:59.266 | 20EB6B          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,973,280:51:0 |    |   |
| 93 | 203 | 22:54:59.933 | 444D443A4A      | 7MODE   | CRU              | Dual-Spin Mo           |     |   |   | 1,973,291:41:0 |    |   |
| 93 | 204 | 00:55:03.266 | 423I6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,973,410:17:0 |    |   |
| 93 | 204 | 00:55:09.266 | 423I6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,973,410:26:0 |    |   |
| 93 | 204 | 00:56:22.600 | 423I6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,973,411:45:0 |    |   |
| 93 | 204 | 00:56:31.266 | 423I6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,973,411:58:0 |    |   |
| 93 | 204 | 00:58:02.600 | 423I6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,973,413:13:0 |    |   |
| 93 | 204 | 00:58:09.933 | 423I6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,973,413:24:0 |    |   |
| 93 | 204 | 14:56:03.933 | 423J6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,974,241:87:0 |    |   |
| 93 | 204 | 14:56:09.933 | 423J6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,974,242:05:0 |    |   |
| 93 | 204 | 14:57:23.266 | 423J6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,974,243:24:0 |    |   |
| 93 | 204 | 14:57:31.933 | 423J6J          | 6TMCHG  | ELS              | NO DNL                 |     |   |   | 1,974,243:37:0 |    |   |
| 93 | 204 | 14:59:03.266 | 423J6K          | 6DMSC   | S7,1             | Slew 7.68kbps          |     |   |   | 1,974,244:83:0 |    |   |
| 93 | 204 | 14:59:10.600 | 423J6L          | 6DMSC   | RDY,2            | Tape stopped           |     |   |   | 1,974,245:03:0 |    |   |
| 93 | 204 | 22:22:03.866 | 423K6A          | 6TMCHG  | LPB              | NO DNL                 |     |   |   | 1,974,683:05:0 |    |   |
| 93 | 204 | 22:22:09.866 | 423K6B          | 6DMSC   | P7,2             | Playback 7.68kbps      |     |   |   | 1,974,683:14:0 |    |   |
| 93 | 204 | 22:23:23.200 | 423K6I          | 6DMSC   | RDY,0            | Tape stopped           |     |   |   | 1,974,684:33:0 |    |   |

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| YR | DOY | Time         | PSID   | Command | Parameters   | Description                     | GCM | O | S | RIM            | MF | I |
|----|-----|--------------|--------|---------|--------------|---------------------------------|-----|---|---|----------------|----|---|
| 93 | 204 | 22:23:31.866 | 423K6J | 6TMCHG  | ELS          | NO DNL                          |     |   |   | 1,974,684:46:0 |    |   |
| 93 | 204 | 22:25:03.200 | 423K6K | 6DMSC   | S7,1         | Slew 7.68kbps                   |     |   |   | 1,974,686:01:0 |    |   |
| 93 | 204 | 22:25:10.533 | 423K6L | 6DMSC   | RDY,2        | Tape stopped                    |     |   |   | 1,974,686:12:0 |    |   |
| 93 | 205 | 14:58:03.866 | 423L6A | 6TMCHG  | LPB          | NO DNL                          |     |   |   | 1,975,668:10:0 |    |   |
| 93 | 205 | 14:58:09.866 | 423L6B | 6DMSC   | P7,2         | Playback 7.68kbps               |     |   |   | 1,975,668:19:0 |    |   |
| 93 | 205 | 14:59:23.200 | 423L6I | 6DMSC   | RDY,0        | Tape stopped                    |     |   |   | 1,975,669:38:0 |    |   |
| 93 | 205 | 14:59:31.866 | 423L6J | 6TMCHG  | ELS          | NO DNL                          |     |   |   | 1,975,669:51:0 |    |   |
| 93 | 205 | 15:01:03.200 | 423L6K | 6DMSC   | S7,1         | Slew 7.68kbps                   |     |   |   | 1,975,671:06:0 |    |   |
| 93 | 205 | 15:01:10.533 | 423L6L | 6DMSC   | RDY,2        | Tape stopped                    |     |   |   | 1,975,671:17:0 |    |   |
| 93 | 205 | 21:38:03.800 | 423M6A | 6TMCHG  | LPB          | NO DNL                          |     |   |   | 1,976,063:65:0 |    |   |
| 93 | 205 | 21:38:09.800 | 423M6B | 6DMSC   | P7,2         | Playback 7.68kbps               |     |   |   | 1,976,063:74:0 |    |   |
| 93 | 205 | 21:39:23.133 | 423M6I | 6DMSC   | RDY,0        | Tape stopped                    |     |   |   | 1,976,065:02:0 |    |   |
| 93 | 205 | 21:39:31.800 | 423M6J | 6TMCHG  | ELS          | NO DNL                          |     |   |   | 1,976,065:15:0 |    |   |
| 93 | 205 | 21:41:03.133 | 423M6K | 6DMSC   | S7,1         | Slew 7.68kbps                   |     |   |   | 1,976,066:61:0 |    |   |
| 93 | 205 | 21:41:10.466 | 423M6L | 6DMSC   | RDY,2        | Tape stopped                    |     |   |   | 1,976,066:72:0 |    |   |
| 93 | 206 | 20:20:03.800 | 423N6A | 6TMCHG  | LPB          | NO DNL                          |     |   |   | 1,977,410:68:0 |    |   |
| 93 | 206 | 20:20:09.800 | 423N6B | 6DMSC   | P7,2         | Playback 7.68kbps               |     |   |   | 1,977,410:77:0 |    |   |
| 93 | 206 | 20:21:23.133 | 423N6I | 6DMSC   | RDY,0        | Tape stopped                    |     |   |   | 1,977,412:05:0 |    |   |
| 93 | 206 | 20:21:31.800 | 423N6J | 6TMCHG  | ELS          | NO DNL                          |     |   |   | 1,977,412:18:0 |    |   |
| 93 | 206 | 20:23:03.133 | 423N6K | 6DMSC   | S7,1         | Slew 7.68kbps                   |     |   |   | 1,977,413:64:0 |    |   |
| 93 | 206 | 20:23:10.466 | 423N6L | 6DMSC   | RDY,2        | Tape stopped                    |     |   |   | 1,977,413:75:0 |    |   |
| 93 | 207 | 01:06:03.800 | 423O6A | 6TMCHG  | LPB          | NO DNL                          |     |   |   | 1,977,693:55:0 |    |   |
| 93 | 207 | 01:06:09.800 | 423O6B | 6DMSC   | P7,2         | Playback 7.68kbps               |     |   |   | 1,977,693:64:0 |    |   |
| 93 | 207 | 01:07:23.133 | 423O6I | 6DMSC   | RDY,0        | Tape stopped                    |     |   |   | 1,977,694:83:0 |    |   |
| 93 | 207 | 01:07:31.800 | 423O6J | 6TMCHG  | ELS          | NO DNL                          |     |   |   | 1,977,695:05:0 |    |   |
| 93 | 208 | 21:55:05.666 | 20M3A  | 40T1P   | 1            | PCT Heater 1 ON (primary relay) |     |   |   | 1,980,353:08:0 |    |   |
| 93 | 208 | 21:55:11.000 | 20M3B  | 40T1P   | 2            | PCT Heater 1 ON (primary relay) |     |   |   | 1,980,353:16:0 |    |   |
| 93 | 209 | 14:44:04.266 | 20E4B  | 7SAFE   | UNSTOW       | Check S/P Position              |     |   |   | 1,981,350:89:0 |    |   |
| 93 | 209 | 15:05:04.266 | 20E4F  | 7SLEW   | DIS,POS,0.0  | Stator movement                 |     |   |   | 1,981,371:68:0 |    |   |
| 93 | 209 | 15:07:04.266 | 20E4H  | 7MODE   | SPNL         | All-Spin Mod                    |     |   |   | 1,981,373:66:0 |    |   |
| 93 | 209 | 15:09:04.266 | 20E4I  | 7SAFE   | UNSTOW       | Check S/P Position              |     |   |   | 1,981,375:64:0 |    |   |
| 93 | 209 | 15:15:04.266 | 20E4K  | 7VENT   | 0.6,1.333,8  | ALERT -- Thruster fire          |     |   |   | 1,981,381:58:0 |    |   |
| 93 | 209 | 15:15:04.933 | 20E4L  | 7VENT   | 0.6,11.022,8 | ALERT -- Thruster fire          |     |   |   | 1,981,381:59:0 |    |   |
| 93 | 209 | 15:16:04.933 | 20E4M  | 7VENT   | 0.6,1.333,6  | ALERT -- Thruster fire          |     |   |   | 1,981,382:58:0 |    |   |
| 93 | 209 | 15:16:05.600 | 20E4N  | 7VENT   | 0.6,11.022,6 | ALERT -- Thruster fire          |     |   |   | 1,981,382:59:0 |    |   |
| 93 | 209 | 15:20:18.266 | 20E4Q  | 7VENT   | 0.6,1.333,7  | ALERT -- Thruster fire          |     |   |   | 1,981,386:74:0 |    |   |
| 93 | 209 | 15:20:18.933 | 20E4R  | 7VENT   | 0.6,11.022,7 | ALERT -- Thruster fire          |     |   |   | 1,981,386:75:0 |    |   |
| 93 | 209 | 15:21:18.933 | 20E4S  | 7VENT   | 0.6,1.333,1  | ALERT -- Thruster fire          |     |   |   | 1,981,387:74:0 |    |   |
| 93 | 209 | 15:21:19.600 | 20E4T  | 7VENT   | 0.6,11.022,1 | ALERT -- Thruster fire          |     |   |   | 1,981,387:75:0 |    |   |
| 93 | 209 | 15:23:32.266 | 20E4V  | 7MODE   | CRU          | Dual-Spin Mo                    |     |   |   | 1,981,390:01:0 |    |   |
| 93 | 209 | 15:34:59.600 | 498B4B | 7SAFE   | UNSTOW       | Check S/P Position              |     |   |   | 1,981,401:31:0 |    |   |
| 93 | 209 | 16:06:59.600 | 498B4D | 7MODE   | INT          | Dual-Spin Mo                    |     |   |   | 1,981,432:90:0 |    |   |

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| YR | DOY | Time         | PSID            | Command | Parameters       | Description                      | GCM | O | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|----------------------------------|-----|---|---|----------------|----|---|
| 93 | 209 | 16:09:00.933 | 498B4F          | 7BURN   | LAT,0.0,90.0,1,0 | ALERT -- Thruster fire           |     |   |   | 1,981,434:90:0 |    |   |
| 93 | 209 | 16:22:25.600 | 498B4G          | 7BURN   | LAT,179.745998,- | ALERT -- Thruster fire           |     |   |   | 1,981,448:23:0 |    |   |
| 93 | 209 | 16:35:50.933 | 498B4I          | 7BURN   | LAT,179.745998,- | ALERT -- Thruster fire           |     |   |   | 1,981,461:48:0 |    |   |
| 93 | 209 | 16:49:15.600 | 498B4J          | 7BURN   | LAT,0.0,90.0,1,0 | ALERT -- Thruster fire           |     |   |   | 1,981,474:72:0 |    |   |
| 93 | 209 | 17:02:40.933 | 498B4L          | 7BURN   | PULZ,0.0,90.0,1, | ALERT -- Thruster fire           |     |   |   | 1,981,488:06:0 |    |   |
| 93 | 209 | 17:16:00.933 | 498B4N          | 7BURN   | PULZ,0.0,90.0,1, | ALERT -- Thruster fire           |     |   |   | 1,981,501:23:0 |    |   |
| 93 | 209 | 17:29:22.933 | 498B4O          | 7MODE   | CRU              | Dual-Spin Mo                     |     |   |   | 1,981,514:43:0 |    |   |
| 93 | 210 | 21:35:05.533 | 20N3A           | 40T1PR  | 1                | PCT Heater 1 OFF (primary relay) |     |   |   | 1,983,181:60:0 |    |   |
| 93 | 210 | 21:35:10.866 | 20N3B           | 40T1PR  | 2                | PCT Heater 1 OFF (primary relay) |     |   |   | 1,983,181:68:0 |    |   |
| 93 | 217 | 23:08:44.533 | 20F4B           | 7STAT   | +17.45,0.0,90.0  | Stator inertial point            |     |   |   | 1,993,243:47:0 |    |   |
| 93 | 217 | 23:11:44.533 | 20F4C           | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 1,993,246:44:0 |    |   |
| 93 | 221 | 15:40:05.666 | 20O3A           | 40T1P   | 1                | PCT Heater 1 ON (primary relay)  |     |   |   | 1,998,496:46:0 |    |   |
| 93 | 221 | 15:40:11.000 | 20O3B           | 40T1P   | 2                | PCT Heater 1 ON (primary relay)  |     |   |   | 1,998,496:54:0 |    |   |
| 93 | 223 | 22:53:02.200 | 490B412A4B      | 7MODE   | INT              | Dual-Spin Mo                     |     |   |   | 2,001,773:04:0 |    |   |
| 93 | 223 | 22:55:52.866 | 490B476A6A      | 6TMCHG  | ELSLRS           | NO DNL                           |     |   |   | 2,001,775:78:0 |    |   |
| 93 | 223 | 22:58:00.200 | 490B412A4D      | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 2,001,777:87:0 |    |   |
| 93 | 223 | 16:30:00.000 | 490B412A4E      | 7VECT   | RTH              | Inertial vect update U           |     |   |   | 2,001,782:07:0 |    |   |
| 93 | 223 | 23:02:14.200 | 490B412A4F      | 7TURN   | 1,RTH            | ALERT -- Thruster fire           |     |   |   | 2,001,782:13:0 |    |   |
| 93 | 223 | 23:06:04.200 | 490B412A406A4A  | 7VECT   |                  | Inertial vect update U           |     |   |   | 2,001,785:82:0 |    |   |
| 93 | 223 | 23:06:06.200 | 490B412A406A4B  | 7STAR   | 1,714,297.091999 | Star catalog update              |     |   |   | 2,001,785:85:0 |    |   |
| 93 | 223 | 23:06:08.200 | 490B412A406A4C  | 7STAR   | 2,159,27.236,89. | Star catalog update              |     |   |   | 2,001,785:88:0 |    |   |
| 93 | 223 | 23:06:10.200 | 490B412A406A4D  | 7STAR   | 3,377,95.124,-17 | Star catalog update              |     |   |   | 2,001,786:00:0 |    |   |
| 93 | 223 | 23:06:12.200 | 490B412A406A4E  | 7STAR   | 4,0,0.0,0.0      | Star catalog update              |     |   |   | 2,001,786:03:0 |    |   |
| 93 | 223 | 23:06:14.200 | 490B412A406A4F  | 7STAR   | 5,0,0.0,0.0      | Star catalog update              |     |   |   | 2,001,786:06:0 |    |   |
| 93 | 223 | 23:06:14.200 | 490B412A406A4G  | 7STAR   | 6,0,0.0,0.0      | Star catalog update              |     |   |   | 2,001,786:09:0 |    |   |
| 93 | 224 | 00:17:12.866 | 490B412A4K      | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 2,001,856:27:0 |    |   |
| 93 | 224 | 01:09:29.533 | 192GC4A         | 7CONE   | 10.0,175.0       | Check S/P Position               |     |   |   | 2,001,908:00:0 |    |   |
| 93 | 224 | 01:12:30.200 | 165GC4A         | 7TMOT   | DIS,TMC          | Target motion compensa           |     |   |   | 2,001,910:89:0 |    |   |
| 93 | 224 | 01:12:30.866 | 165GC4B         | 7SCAN   | NORM,192.330999, | Check S/P Position               |     |   |   | 2,001,910:90:0 |    |   |
| 93 | 224 | 01:17:34.866 | 176GC6A         | 6TMCHG  | NCGHCM           | Dnlk                             |     |   |   | 2,001,916:00:0 |    |   |
| 93 | 224 | 01:21:10.866 | 118GC110A111A4A | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.63                      |     |   |   | 2,001,919:51:0 |    |   |
| 93 | 224 | 01:21:20.200 | 118GC110A111A4B | 7STRP   | -0.0006,-0.0005, | Slew =,2.62                      |     |   |   | 2,001,919:65:0 |    |   |
| 93 | 224 | 01:21:24.866 | 118GC110A111A4C | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.63                      |     |   |   | 2,001,919:72:0 |    |   |
| 93 | 224 | 01:21:36.866 | 175GC422A6A     | 6DMSC   | R115,0           | Record 115.2kbps                 |     |   |   | 2,001,919:90:0 |    |   |
| 93 | 224 | 01:22:08.200 | 175GC422A6B     | 6DMSC   | RDY,0            | Tape stopped                     |     |   |   | 2,001,920:46:0 |    |   |
| 93 | 224 | 01:22:42.866 | 20GC4A          | 7SAFE   | UNSTOW           | Check S/P Position               |     |   |   | 2,001,921:07:0 |    |   |
| 93 | 224 | 01:29:44.866 | 20EC6A          | 6DMSC   | S115,3           | Slew 115.2kbps                   |     |   |   | 2,001,928:03:0 |    |   |
| 93 | 224 | 01:30:16.200 | 20EC6B          | 6DMSC   | RDY,2            | Tape stopped                     |     |   |   | 2,001,928:50:0 |    |   |
| 93 | 224 | 15:01:00.133 | 444E443A4A      | 7MODE   | CRU              | Dual-Spin Mo                     |     |   |   | 2,002,730:34:0 |    |   |
| 93 | 225 | 11:46:04.133 | 423Q6A          | 6TMCHG  | LPB              | NO DNL                           |     |   |   | 2,003,961:69:0 |    |   |
| 93 | 225 | 11:46:10.133 | 423Q6B          | 6DMSC   | P7,2             | Playback 7.68kbps                |     |   |   | 2,003,961:78:0 |    |   |
| 93 | 225 | 11:47:23.466 | 423Q6I          | 6DMSC   | RDY,0            | Tape stopped                     |     |   |   | 2,003,963:06:0 |    |   |

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| YR | DOY | Time         | PSID   | Command | Parameters  | Description                             | GCM | O | S | RIM            | MF | I |
|----|-----|--------------|--------|---------|-------------|---|-----|---|---|----------------|----|---|
| 93 | 225 | 11:47:32.133 | 423Q6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,003,963:19:0 |    |   |
| 93 | 225 | 11:49:03.466 | 423Q6K | 6DMSC   | S7,1        | Slew 7.68kbps                           |     |   |   | 2,003,964:65:0 |    |   |
| 93 | 225 | 11:49:10.800 | 423Q6L | 6DMSC   | RDY,2       | Tape stopped                            |     |   |   | 2,003,964:76:0 |    |   |
| 93 | 225 | 16:32:04.066 | 423R6A | 6TMCHG  | LPB         | NO DNL                                  |     |   |   | 2,004,244:56:0 |    |   |
| 93 | 225 | 16:32:10.066 | 423R6B | 6DMSC   | P7,2        | Playback 7.68kbps                       |     |   |   | 2,004,244:65:0 |    |   |
| 93 | 225 | 16:33:23.400 | 423R6I | 6DMSC   | RDY,0       | Tape stopped                            |     |   |   | 2,004,245:84:0 |    |   |
| 93 | 225 | 16:33:32.066 | 423R6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,004,246:06:0 |    |   |
| 93 | 225 | 16:35:03.400 | 423R6K | 6DMSC   | S7,1        | Slew 7.68kbps                           |     |   |   | 2,004,247:52:0 |    |   |
| 93 | 225 | 16:35:10.733 | 423R6L | 6DMSC   | RDY,2       | Tape stopped                            |     |   |   | 2,004,247:63:0 |    |   |
| 93 | 226 | 07:00:05.400 | 20P3A  | 37F2PR  | 1           | Shield Flash Heater OFF (primary relay) |     |   |   | 2,005,103:09:0 |    |   |
| 93 | 226 | 07:00:10.733 | 20P3B  | 37F2PR  | 2           | Shield Flash Heater OFF (primary relay) |     |   |   | 2,005,103:17:0 |    |   |
| 93 | 226 | 14:39:04.066 | 423S6A | 6TMCHG  | LPB         | NO DNL                                  |     |   |   | 2,005,557:03:0 |    |   |
| 93 | 226 | 14:39:10.066 | 423S6B | 6DMSC   | P7,2        | Playback 7.68kbps                       |     |   |   | 2,005,557:12:0 |    |   |
| 93 | 226 | 14:40:23.400 | 423S6I | 6DMSC   | RDY,0       | Tape stopped                            |     |   |   | 2,005,558:31:0 |    |   |
| 93 | 226 | 14:40:32.066 | 423S6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,005,558:44:0 |    |   |
| 93 | 226 | 14:42:03.400 | 423S6K | 6DMSC   | S7,1        | Slew 7.68kbps                           |     |   |   | 2,005,559:90:0 |    |   |
| 93 | 226 | 14:42:10.733 | 423S6L | 6DMSC   | RDY,2       | Tape stopped                            |     |   |   | 2,005,560:10:0 |    |   |
| 93 | 226 | 22:16:04.000 | 423T6A | 6TMCHG  | LPB         | NO DNL                                  |     |   |   | 2,006,009:01:0 |    |   |
| 93 | 226 | 22:16:10.000 | 423T6B | 6DMSC   | P7,2        | Playback 7.68kbps                       |     |   |   | 2,006,009:10:0 |    |   |
| 93 | 226 | 22:17:23.333 | 423T6I | 6DMSC   | RDY,0       | Tape stopped                            |     |   |   | 2,006,010:29:0 |    |   |
| 93 | 226 | 22:17:32.000 | 423T6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,006,010:42:0 |    |   |
| 93 | 226 | 22:19:03.333 | 423T6K | 6DMSC   | S7,1        | Slew 7.68kbps                           |     |   |   | 2,006,011:88:0 |    |   |
| 93 | 226 | 22:19:10.666 | 423T6L | 6DMSC   | RDY,2       | Tape stopped                            |     |   |   | 2,006,012:08:0 |    |   |
| 93 | 227 | 03:02:04.000 | 423U6A | 6TMCHG  | LPB         | NO DNL                                  |     |   |   | 2,006,291:79:0 |    |   |
| 93 | 227 | 03:02:10.000 | 423U6B | 6DMSC   | P7,2        | Playback 7.68kbps                       |     |   |   | 2,006,291:88:0 |    |   |
| 93 | 227 | 03:03:23.333 | 423U6I | 6DMSC   | RDY,0       | Tape stopped                            |     |   |   | 2,006,293:16:0 |    |   |
| 93 | 227 | 03:03:32.000 | 423U6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,006,293:29:0 |    |   |
| 93 | 227 | 03:05:03.333 | 423U6K | 6DMSC   | S7,1        | Slew 7.68kbps                           |     |   |   | 2,006,294:75:0 |    |   |
| 93 | 227 | 03:05:10.666 | 423U6L | 6DMSC   | RDY,2       | Tape stopped                            |     |   |   | 2,006,294:86:0 |    |   |
| 93 | 227 | 07:48:04.000 | 423V6A | 6TMCHG  | LPB         | NO DNL                                  |     |   |   | 2,006,574:66:0 |    |   |
| 93 | 227 | 07:48:10.000 | 423V6B | 6DMSC   | P7,2        | Playback 7.68kbps                       |     |   |   | 2,006,574:75:0 |    |   |
| 93 | 227 | 07:49:23.333 | 423V6I | 6DMSC   | RDY,0       | Tape stopped                            |     |   |   | 2,006,576:03:0 |    |   |
| 93 | 227 | 07:49:32.000 | 423V6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,006,576:16:0 |    |   |
| 93 | 227 | 07:51:03.333 | 423V6K | 6DMSC   | S7,1        | Slew 7.68kbps                           |     |   |   | 2,006,577:62:0 |    |   |
| 93 | 227 | 07:51:10.666 | 423V6L | 6DMSC   | RDY,2       | Tape stopped                            |     |   |   | 2,006,577:73:0 |    |   |
| 93 | 227 | 14:55:04.000 | 423W6A | 6TMCHG  | LPB         | NO DNL                                  |     |   |   | 2,006,997:03:0 |    |   |
| 93 | 227 | 14:55:10.000 | 423W6B | 6DMSC   | P7,2        | Playback 7.68kbps                       |     |   |   | 2,006,997:12:0 |    |   |
| 93 | 227 | 14:56:23.333 | 423W6I | 6DMSC   | RDY,0       | Tape stopped                            |     |   |   | 2,006,998:31:0 |    |   |
| 93 | 227 | 14:56:32.000 | 423W6J | 6TMCHG  | ELS         | NO DNL                                  |     |   |   | 2,006,998:44:0 |    |   |
| 93 | 228 | 20:44:03.933 | 20G4B  | 7SAFE   | UNSTOW      | Check S/P Position                      |     |   |   | 2,008,766:34:0 |    |   |
| 93 | 228 | 21:05:03.933 | 20G4F  | 7SLEW   | DIS,POS,0.0 | Stator movement                         |     |   |   | 2,008,787:13:0 |    |   |
| 93 | 228 | 21:07:03.933 | 20G4H  | 7MODE   | SPNL        | All-Spin Mod                            |     |   |   | 2,008,789:11:0 |    |   |

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| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 228 | 21:09:03.933 | 20G4I           | 7SAFE   | UNSTOW           | Check S/P Position                         |     |    |   | 2,008,791:09:0 |    |   |
| 93 | 228 | 21:15:03.933 | 20G4K           | 7VENT   | 0.6,1.333,8      | ALERT -- Thruster fire                     |     |    |   | 2,008,797:03:0 |    |   |
| 93 | 228 | 21:15:04.600 | 20G4L           | 7VENT   | 0.6,11.022,8     | ALERT -- Thruster fire                     |     |    |   | 2,008,797:04:0 |    |   |
| 93 | 228 | 21:16:04.600 | 20G4M           | 7VENT   | 0.6,1.333,6      | ALERT -- Thruster fire                     |     |    |   | 2,008,798:03:0 |    |   |
| 93 | 228 | 21:16:05.266 | 20G4N           | 7VENT   | 0.6,11.022,6     | ALERT -- Thruster fire                     |     |    |   | 2,008,798:04:0 |    |   |
| 93 | 228 | 21:20:17.933 | 20G4Q           | 7VENT   | 0.6,1.333,7      | ALERT -- Thruster fire                     |     |    |   | 2,008,802:19:0 |    |   |
| 93 | 228 | 21:20:18.600 | 20G4R           | 7VENT   | 0.6,11.022,7     | ALERT -- Thruster fire                     |     |    |   | 2,008,802:20:0 |    |   |
| 93 | 228 | 21:21:18.600 | 20G4S           | 7VENT   | 0.6,1.333,1      | ALERT -- Thruster fire                     |     |    |   | 2,008,803:19:0 |    |   |
| 93 | 228 | 21:21:19.266 | 20G4T           | 7VENT   | 0.6,11.022,1     | ALERT -- Thruster fire                     |     |    |   | 2,008,803:20:0 |    |   |
| 93 | 228 | 21:23:31.933 | 20G4V           | 7MODE   | CRU              | Dual-Spin Mo                               |     |    |   | 2,008,805:37:0 |    |   |
| 93 | 228 | 21:34:59.933 | 498C4B          | 7SAFE   | UNSTOW           | Check S/P Position                         |     |    |   | 2,008,816:68:0 |    |   |
| 93 | 228 | 22:06:59.933 | 498C4D          | 7MODE   | INT              | Dual-Spin Mo                               |     |    |   | 2,008,848:36:0 |    |   |
| 93 | 228 | 22:09:01.266 | 498C4F          | 7BURN   | LAT,0.0,90.0,1,0 | ALERT -- Thruster fire                     |     |    |   | 2,008,850:36:0 |    |   |
| 93 | 228 | 22:22:25.933 | 498C4G          | 7BURN   | LAT,179.745998,- | ALERT -- Thruster fire                     |     |    |   | 2,008,863:60:0 |    |   |
| 93 | 228 | 22:35:51.266 | 498C4I          | 7BURN   | LAT,179.745998,- | ALERT -- Thruster fire                     |     |    |   | 2,008,876:85:0 |    |   |
| 93 | 228 | 22:49:15.933 | 498C4J          | 7BURN   | LAT,0.0,90.0,1,0 | ALERT -- Thruster fire                     |     |    |   | 2,008,890:18:0 |    |   |
| 93 | 228 | 23:02:41.266 | 498C4L          | 7BURN   | PULZ,0.0,90.0,1, | ALERT -- Thruster fire                     |     |    |   | 2,008,903:43:0 |    |   |
| 93 | 228 | 23:16:01.266 | 498C4N          | 7BURN   | PULZ,0.0,90.0,1, | ALERT -- Thruster fire                     |     |    |   | 2,008,916:60:0 |    |   |
| 93 | 229 | 00:56:43.933 | 20ZU3Q          | 37HR    | CMD,37HR,20ZU3Q, | Replacement Heaters OFF                    |     |    |   | 2,009,016:24:0 |    |   |
| 93 | 229 | 00:57:11.933 | 20ZU3R          | 37A     | CMD,37A,20ZU3R,, | NIMS Power ON                              | 260 | 00 |   | 2,009,016:66:0 |    |   |
| 93 | 229 | 00:59:13.266 | 20ZU4A          | 37IST   | 1,2,0,OFF,0,0,0  | Chopper ON, Sync, Chopper (Ref)            | 2R0 | 00 |   | 2,009,018:66:0 |    |   |
| 93 | 229 | 15:25:00.533 | 192GD4A         | 7CONE   | 10.0,175.0       | Check S/P Position                         | 2R0 | 00 |   | 2,009,875:00:0 |    |   |
| 93 | 229 | 20:25:05.200 | 20Q3A           | 40T1PR  | 1                | PCT Heater 1 OFF (primary relay)           | 2R0 | 00 |   | 2,010,171:71:0 |    |   |
| 93 | 229 | 20:25:10.533 | 20Q3B           | 40T1PR  | 2                | PCT Heater 1 OFF (primary relay)           | 2R0 | 00 |   | 2,010,171:79:0 |    |   |
| 93 | 229 | 20:32:21.866 | 165GD4A         | 7TMOT   | DIS,TMC          | Target motion compensa                     | 2R0 | 00 |   | 2,010,178:89:0 |    |   |
| 93 | 229 | 20:32:22.533 | 165GD4B         | 7SCAN   | NORM,192.330999, | Check S/P Position                         | 2R0 | 00 |   | 2,010,178:90:0 |    |   |
| 93 | 229 | 20:37:26.533 | 176GD6A         | 6TMCHG  | NCGHCM           | Dnlk                                       | 2R0 | 00 |   | 2,010,184:00:0 |    |   |
| 93 | 229 | 20:39:23.200 | 157JA156A121A4A | 37IOP   | 3,0              | Long Map, Grating Start Position =0        | 2R3 | 00 |   | 2,010,185:84:0 |    |   |
| 93 | 229 | 20:41:02.533 | 118GD110A111A4A | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.63                                | 2R3 | 00 |   | 2,010,187:51:0 |    |   |
| 93 | 29/ | 20:41:11.866 | 118GD110A111A4B | 7STRP   | -0.0006,-0.0005, | Slew =,2.62                                | 2R3 | 00 |   | 2,010,187:65:0 |    |   |
| 93 | 229 | 20:41:16.533 | 118GD110A111A4C | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.63                                | 2R3 | 00 |   | 2,010,187:72:0 |    |   |
| 93 | 229 | 20:41:24.533 | 157JA156A121B4A | 37IST   | 1,2,1,OFF,1,1,1  | Chopper ON, Sync, Chopper (Ref)OPCALGain S | 4R3 | 00 |   | 2,010,187:84:0 |    |   |
| 93 | 229 | 20:41:28.533 | 175GD422A6A     | 6DMSC   | R115,0           | Record 115.2kbps                           | 4R3 | 00 |   | 2,010,187:90:0 |    |   |
| 93 | 229 | 20:41:59.866 | 175GD422A6B     | 6DMSC   | RDY,0            | Tape stopped                               | 4R3 | 00 |   | 2,010,188:46:0 |    |   |
| 93 | 229 | 20:42:35.200 | 20GD4A          | 7SAFE   | UNSTOW           | Check S/P Position                         | 4R3 | 00 |   | 2,010,189:08:0 |    |   |
| 93 | 229 | 20:48:29.200 | 157JA156A121C4A | 37IOP   | 0,0              | Safe, Grating Start Position =0            | 4R0 | 00 |   | 2,010,194:84:0 |    |   |
| 93 | 229 | 20:49:37.866 | 20ED6A          | 6DMSC   | S115,3           | Slew 115.2kbps                             | 4R0 | 00 |   | 2,010,196:05:0 |    |   |
| 93 | 229 | 20:50:09.200 | 20ED6B          | 6DMSC   | RDY,2            | Tape stopped                               | 4R0 | 00 |   | 2,010,196:52:0 |    |   |
| 93 | 229 | 21:05:59.866 | 20H4A           | 7MODE   | CRU              | Dual-Spin Mo                               | 4R0 | 00 |   | 2,010,212:22:0 |    |   |
| 93 | 229 | 22:56:59.866 | 20H4B           | 7STAT   | +17.45,0.0,90.0  | Stator inertial point                      | 4R0 | 00 |   | 2,010,322:02:0 |    |   |
| 93 | 229 | 22:59:59.866 | 20H4C           | 7SAFE   | UNSTOW           | Check S/P Position                         | 4R0 | 00 |   | 2,010,324:90:0 |    |   |
| 93 | 230 | 04:25:03.866 | 423Z6A          | 6TMCHG  | LPB              | NO DNL                                     | 4R0 | 00 |   | 2,010,646:44:0 |    |   |

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| YR | DOY | Time         | PSID       | Command | Parameters | Description            | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|------------|---------|------------|------------------------|-----|----|---|----------------|----|---|
| 93 | 230 | 04:25:09.866 | 423Z6B     | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,010,646:53:0 |    |   |
| 93 | 230 | 04:26:23.200 | 423Z6I     | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,010,647:72:0 |    |   |
| 93 | 230 | 04:26:31.866 | 423Z6J     | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,010,647:85:0 |    |   |
| 93 | 230 | 04:28:03.200 | 423Z6K     | 6DMSC   | S7,1       | Slew 7.68kbps          | 4R0 | 00 |   | 2,010,649:40:0 |    |   |
| 93 | 230 | 04:28:10.533 | 423Z6L     | 6DMSC   | RDY,2      | Tape stopped           | 4R0 | 00 |   | 2,010,649:51:0 |    |   |
| 93 | 230 | 12:00:03.866 | 423AA6A    | 6TMCHG  | LPB        | NO DNL                 | 4R0 | 00 |   | 2,011,096:44:0 |    |   |
| 93 | 230 | 12:00:09.866 | 423AA6B    | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,011,096:53:0 |    |   |
| 93 | 230 | 12:01:23.200 | 423AA6I    | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,011,097:72:0 |    |   |
| 93 | 230 | 12:01:31.866 | 423AA6J    | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,011,097:85:0 |    |   |
| 93 | 230 | 12:03:03.200 | 423AA6K    | 6DMSC   | S7,1       | Slew 7.68kbps          | 4R0 | 00 |   | 2,011,099:40:0 |    |   |
| 93 | 230 | 12:03:10.533 | 423AA6L    | 6DMSC   | RDY,2      | Tape stopped           | 4R0 | 00 |   | 2,011,099:51:0 |    |   |
| 93 | 230 | 21:26:03.800 | 423AB6A    | 6TMCHG  | LPB        | NO DNL                 | 4R0 | 00 |   | 2,011,656:24:0 |    |   |
| 93 | 230 | 21:26:09.800 | 423AB6B    | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,011,656:33:0 |    |   |
| 93 | 230 | 21:27:23.133 | 423AB6I    | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,011,657:52:0 |    |   |
| 93 | 230 | 21:27:31.800 | 423AB6J    | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,011,657:65:0 |    |   |
| 93 | 230 | 21:29:03.133 | 423AB6K    | 6DMSC   | S7,1       | Slew 7.68kbps          | 4R0 | 00 |   | 2,011,659:20:0 |    |   |
| 93 | 230 | 21:29:10.466 | 423AB6L    | 6DMSC   | RDY,2      | Tape stopped           | 4R0 | 00 |   | 2,011,659:31:0 |    |   |
| 93 | 231 | 02:12:03.800 | 423AC6A    | 6TMCHG  | LPB        | NO DNL                 | 4R0 | 00 |   | 2,011,939:11:0 |    |   |
| 93 | 231 | 02:12:09.800 | 423AC6B    | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,011,939:20:0 |    |   |
| 93 | 231 | 02:13:23.133 | 423AC6I    | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,011,940:39:0 |    |   |
| 93 | 231 | 02:13:31.800 | 423AC6J    | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,011,940:52:0 |    |   |
| 93 | 231 | 02:15:03.133 | 423AC6K    | 6DMSC   | S7,1       | Slew 7.68kbps          | 4R0 | 00 |   | 2,011,942:07:0 |    |   |
| 93 | 231 | 02:15:10.466 | 423AC6L    | 6DMSC   | RDY,2      | Tape stopped           | 4R0 | 00 |   | 2,011,942:18:0 |    |   |
| 93 | 231 | 06:58:03.800 | 423AD6A    | 6TMCHG  | LPB        | NO DNL                 | 4R0 | 00 |   | 2,012,221:89:0 |    |   |
| 93 | 231 | 06:58:09.800 | 423AD6B    | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,012,222:07:0 |    |   |
| 93 | 231 | 06:59:23.133 | 423AD6I    | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,012,223:26:0 |    |   |
| 93 | 231 | 06:59:31.800 | 423AD6J    | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,012,223:39:0 |    |   |
| 93 | 231 | 07:01:03.133 | 423AD6K    | 6DMSC   | S7,1       | Slew 7.68kbps          | 4R0 | 00 |   | 2,012,224:85:0 |    |   |
| 93 | 231 | 07:01:10.466 | 423AD6L    | 6DMSC   | RDY,2      | Tape stopped           | 4R0 | 00 |   | 2,012,225:05:0 |    |   |
| 93 | 231 | 14:44:03.800 | 423AE6A    | 6TMCHG  | LPB        | NO DNL                 | 4R0 | 00 |   | 2,012,682:78:0 |    |   |
| 93 | 231 | 14:44:09.800 | 423AE6B    | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,012,682:87:0 |    |   |
| 93 | 231 | 14:45:23.133 | 423AE6I    | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,012,684:15:0 |    |   |
| 93 | 231 | 14:45:31.800 | 423AE6J    | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,012,684:28:0 |    |   |
| 93 | 231 | 14:47:03.133 | 423AE6K    | 6DMSC   | S7,1       | Slew 7.68kbps          | 4R0 | 00 |   | 2,012,685:74:0 |    |   |
| 93 | 231 | 14:47:10.466 | 423AE6L    | 6DMSC   | RDY,2      | Tape stopped           | 4R0 | 00 |   | 2,012,685:85:0 |    |   |
| 93 | 232 | 06:05:03.733 | 423AF6A    | 6TMCHG  | LPB        | NO DNL                 | 4R0 | 00 |   | 2,013,593:67:0 |    |   |
| 93 | 232 | 06:05:09.733 | 423AF6B    | 6DMSC   | P7,2       | Playback 7.68kbps      | 4R0 | 00 |   | 2,013,593:76:0 |    |   |
| 93 | 232 | 06:06:23.066 | 423AF6I    | 6DMSC   | RDY,0      | Tape stopped           | 4R0 | 00 |   | 2,013,595:04:0 |    |   |
| 93 | 232 | 06:06:31.733 | 423AF6J    | 6TMCHG  | ELS        | NO DNL                 | 4R0 | 00 |   | 2,013,595:17:0 |    |   |
| 93 | 233 | 14:01:20.333 | 444F443A4B | 7MODE   | INT        | Dual-Spin Mo           | 4R0 | 00 |   | 2,015,488:87:0 |    |   |
| 93 | 233 | 14:40:49.000 | 192GE4A    | 7CONE   | 10.0,175.0 | Check S/P Position     | 4R0 | 00 |   | 2,015,528:00:0 |    |   |
| 93 | 233 | 14:43:49.666 | 165GE4A    | 7TMOT   | DIS,TMC    | Target motion compensa | 4R0 | 00 |   | 2,015,530:89:0 |    |   |



| YR | DOY | Time         | PSID            | Command | Parameters       | Description                         | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|-------------------------------------|-----|----|---|----------------|----|---|
| 93 | 233 | 14:43:50.333 | 165GE4B         | 7SCAN   | NORM,192.334999, | Check S/P Position                  | 4R0 | 00 |   | 2,015,530:90:0 |    |   |
| 93 | 233 | 14:48:54.333 | 176GE6A         | 6TMCHG  | NCGHCM           | Dnlmk                               | 4R0 | 00 |   | 2,015,536:00:0 |    |   |
| 93 | 233 | 14:50:51.000 | 157JB156A121A4A | 37IOP   | 1,0              | Full Map, Grating Start Position =0 | 4R1 | 00 |   | 2,015,537:84:0 |    |   |
| 93 | 233 | 14:52:30.333 | 118GE110A111A4A | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.63                         | 4R1 | 00 |   | 2,015,539:51:0 |    |   |
| 93 | 33/ | 14:52:39.666 | 118GE110A111A4B | 7STRP   | -0.0006,-0.0005, | Slew =,2.62                         | 4R1 | 00 |   | 2,015,539:65:0 |    |   |
| 93 | 233 | 14:52:44.333 | 118GE110A111A4C | 7STRP   | 0.0,-0.0005,14,0 | Slew =,2.63                         | 4R1 | 00 |   | 2,015,539:72:0 |    |   |
| 93 | 233 | 14:52:52.333 | 157JB156A121B4A | 37IST   | 0,0,1,ON,0,1,0   | ECALGain State 2                    | 2R1 | 00 |   | 2,015,539:84:0 |    |   |
| 93 | 233 | 14:52:56.333 | 175GE422A6A     | 6DMSC   | R115,0           | Record 115.2kbps                    | 2R1 | 00 |   | 2,015,539:90:0 |    |   |
| 93 | 233 | 14:53:27.666 | 175GE422A6B     | 6DMSC   | RDY,0            | Tape stopped                        | 2R1 | 00 |   | 2,015,540:46:0 |    |   |
| 93 | 233 | 14:54:02.333 | 20GE4A          | 7SAFE   | UNSTOW           | Check S/P Position                  | 2R1 | 00 |   | 2,015,541:07:0 |    |   |
| 93 | 233 | 14:59:57.000 | 157JB156A121C4A | 37IOP   | 0,0              | Safe, Grating Start Position =0     | 2R0 | 00 |   | 2,015,546:84:0 |    |   |
| 93 | 233 | 15:01:05.000 | 20EE6A          | 6DMSC   | S115,3           | Slew 115.2kbps                      | 2R0 | 00 |   | 2,015,548:04:0 |    |   |
| 93 | 233 | 15:01:36.333 | 20EE6B          | 6DMSC   | RDY,2            | Tape stopped                        | 2R0 | 00 |   | 2,015,548:51:0 |    |   |
| 93 | 233 | 15:05:04.333 | 423AH6A         | 6TMCHG  | LPB              | NO DNL                              | 2R0 | 00 |   | 2,015,551:90:0 |    |   |
| 93 | 233 | 15:05:10.333 | 423AH6B         | 6DMSC   | P7,2             | Playback 7.68kbps                   | 2R0 | 00 |   | 2,015,552:08:0 |    |   |
| 93 | 233 | 15:06:23.666 | 423AH6I         | 6DMSC   | RDY,0            | Tape stopped                        | 2R0 | 00 |   | 2,015,553:27:0 |    |   |
| 93 | 233 | 15:06:32.333 | 423AH6J         | 6TMCHG  | ELS              | NO DNL                              | 2R0 | 00 |   | 2,015,553:40:0 |    |   |
| 93 | 233 | 15:08:03.666 | 423AH6K         | 6DMSC   | S7,1             | Slew 7.68kbps                       | 2R0 | 00 |   | 2,015,554:86:0 |    |   |
| 93 | 233 | 15:08:11.000 | 423AH6L         | 6DMSC   | RDY,2            | Tape stopped                        | 2R0 | 00 |   | 2,015,555:06:0 |    |   |
| 93 | 233 | 18:00:00.333 | 444G443A4A      | 7MODE   | CRU              | Dual-Spin Mo                        | 2R0 | 00 |   | 2,015,725:00:0 |    |   |
| 93 | 233 | 21:45:04.333 | 423AI6A         | 6TMCHG  | LPB              | NO DNL                              | 2R0 | 00 |   | 2,015,947:54:0 |    |   |
| 93 | 233 | 21:45:10.333 | 423AI6B         | 6DMSC   | P7,2             | Playback 7.68kbps                   | 2R0 | 00 |   | 2,015,947:63:0 |    |   |
| 93 | 233 | 21:46:23.666 | 423AI6I         | 6DMSC   | RDY,0            | Tape stopped                        | 2R0 | 00 |   | 2,015,948:82:0 |    |   |
| 93 | 233 | 21:46:32.333 | 423AI6J         | 6TMCHG  | ELS              | NO DNL                              | 2R0 | 00 |   | 2,015,949:04:0 |    |   |
| 93 | 233 | 21:48:03.666 | 423AI6K         | 6DMSC   | S7,1             | Slew 7.68kbps                       | 2R0 | 00 |   | 2,015,950:50:0 |    |   |
| 93 | 233 | 21:48:11.000 | 423AI6L         | 6DMSC   | RDY,2            | Tape stopped                        | 2R0 | 00 |   | 2,015,950:61:0 |    |   |
| 93 | 234 | 04:16:04.333 | 423AJ6A         | 6TMCHG  | LPB              | NO DNL                              | 2R0 | 00 |   | 2,016,334:27:0 |    |   |
| 93 | 234 | 04:16:10.333 | 423AJ6B         | 6DMSC   | P7,2             | Playback 7.68kbps                   | 2R0 | 00 |   | 2,016,334:36:0 |    |   |
| 93 | 234 | 04:17:23.666 | 423AJ6I         | 6DMSC   | RDY,0            | Tape stopped                        | 2R0 | 00 |   | 2,016,335:55:0 |    |   |
| 93 | 234 | 04:17:32.333 | 423AJ6J         | 6TMCHG  | ELS              | NO DNL                              | 2R0 | 00 |   | 2,016,335:68:0 |    |   |
| 93 | 234 | 04:19:03.666 | 423AJ6K         | 6DMSC   | S7,1             | Slew 7.68kbps                       | 2R0 | 00 |   | 2,016,337:23:0 |    |   |
| 93 | 234 | 04:19:11.000 | 423AJ6L         | 6DMSC   | RDY,2            | Tape stopped                        | 2R0 | 00 |   | 2,016,337:34:0 |    |   |
| 93 | 234 | 11:46:04.266 | 423AK6A         | 6TMCHG  | LPB              | NO DNL                              | 2R0 | 00 |   | 2,016,779:32:0 |    |   |
| 93 | 234 | 11:46:10.266 | 423AK6B         | 6DMSC   | P7,2             | Playback 7.68kbps                   | 2R0 | 00 |   | 2,016,779:41:0 |    |   |
| 93 | 234 | 11:47:23.600 | 423AK6I         | 6DMSC   | RDY,0            | Tape stopped                        | 2R0 | 00 |   | 2,016,780:60:0 |    |   |
| 93 | 234 | 11:47:32.266 | 423AK6J         | 6TMCHG  | ELS              | NO DNL                              | 2R0 | 00 |   | 2,016,780:73:0 |    |   |
| 93 | 234 | 11:49:03.600 | 423AK6K         | 6DMSC   | S7,1             | Slew 7.68kbps                       | 2R0 | 00 |   | 2,016,782:28:0 |    |   |
| 93 | 234 | 11:49:10.933 | 423AK6L         | 6DMSC   | RDY,2            | Tape stopped                        | 2R0 | 00 |   | 2,016,782:39:0 |    |   |
| 93 | 234 | 16:29:04.266 | 423AL6A         | 6TMCHG  | LPB              | NO DNL                              | 2R0 | 00 |   | 2,017,059:22:0 |    |   |
| 93 | 234 | 16:29:10.266 | 423AL6B         | 6DMSC   | P7,2             | Playback 7.68kbps                   | 2R0 | 00 |   | 2,017,059:31:0 |    |   |
| 93 | 234 | 16:30:23.600 | 423AL6I         | 6DMSC   | RDY,0            | Tape stopped                        | 2R0 | 00 |   | 2,017,060:50:0 |    |   |
| 93 | 234 | 16:30:32.266 | 423AL6J         | 6TMCHG  | ELS              | NO DNL                              | 2R0 | 00 |   | 2,017,060:63:0 |    |   |

| YR | DOY | Time         | PSID    | Command | Parameters  | Description                     | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|---------|---------|-------------|---------------------------------|-----|----|---|----------------|----|---|
| 93 | 234 | 16:32:03.600 | 423AL6K | 6DMSC   | S7,1        | Slew 7.68kbps                   | 2R0 | 00 |   | 2,017,062:18:0 |    |   |
| 93 | 234 | 16:32:10.933 | 423AL6L | 6DMSC   | RDY,2       | Tape stopped                    | 2R0 | 00 |   | 2,017,062:29:0 |    |   |
| 93 | 234 | 23:43:04.266 | 423AM6A | 6TMCHG  | LPB         | NO DNL                          | 2R0 | 00 |   | 2,017,488:43:0 |    |   |
| 93 | 234 | 23:43:10.266 | 423AM6B | 6DMSC   | P7,2        | Playback 7.68kbps               | 2R0 | 00 |   | 2,017,488:52:0 |    |   |
| 93 | 234 | 23:44:23.600 | 423AM6I | 6DMSC   | RDY,0       | Tape stopped                    | 2R0 | 00 |   | 2,017,489:71:0 |    |   |
| 93 | 234 | 23:44:32.266 | 423AM6J | 6TMCHG  | ELS         | NO DNL                          | 2R0 | 00 |   | 2,017,489:84:0 |    |   |
| 93 | 234 | 23:46:03.600 | 423AM6K | 6DMSC   | S7,1        | Slew 7.68kbps                   | 2R0 | 00 |   | 2,017,491:39:0 |    |   |
| 93 | 234 | 23:46:10.933 | 423AM6L | 6DMSC   | RDY,2       | Tape stopped                    | 2R0 | 00 |   | 2,017,491:50:0 |    |   |
| 93 | 235 | 05:57:04.266 | 423AN6A | 6TMCHG  | LPB         | NO DNL                          | 2R0 | 00 |   | 2,017,858:33:0 |    |   |
| 93 | 235 | 05:57:10.266 | 423AN6B | 6DMSC   | P7,2        | Playback 7.68kbps               | 2R0 | 00 |   | 2,017,858:42:0 |    |   |
| 93 | 235 | 05:58:23.600 | 423AN6I | 6DMSC   | RDY,0       | Tape stopped                    | 2R0 | 00 |   | 2,017,859:61:0 |    |   |
| 93 | 235 | 05:58:32.266 | 423AN6J | 6TMCHG  | ELS         | NO DNL                          | 2R0 | 00 |   | 2,017,859:74:0 |    |   |
| 93 | 237 | 23:05:05.400 | 20R3A   | 40T1P   | 1           | PCT Heater 1 ON (primary relay) | 2R0 | 00 |   | 2,021,723:40:0 |    |   |
| 93 | 237 | 23:05:10.733 | 20R3B   | 40T1P   | 2           | PCT Heater 1 ON (primary relay) | 2R0 | 00 |   | 2,021,723:48:0 |    |   |
| 93 | 239 | 10:51:02.000 | 20AH4B  | 7SLEW   | DIS,POS,0.0 | Stator movement                 | 2R0 | 00 |   | 2,023,845:73:0 |    |   |

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| YR | DOY | Time         | PSID            | Command | Parameters       | Description                               | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|---|-----|----|---|----------------|----|---|
| 93 | 239 | 11:00:00.333 |                 | DMS:    | READY            | RDY, TRACK 2, REV, TIC 4372 +/- 23;       |     |    |   | 2,023,854:63:0 |    |   |
| 93 | 239 | 20:00:04.333 |                 | DMS:    | *RUNUP           | S806, TRACK *1, *FWD, TIC 4372 +/- 23;    |     |    |   | 2,024,388:75:0 |    |   |
| 93 | 239 | 20:00:04.333 | 20AG6A          | 6DMSC   | S806,1           | DMS Control Tape slew 806.4kb             |     |    |   | 2,024,388:75:0 |    |   |
| 93 | 239 | 20:00:09.533 |                 | DMS:    | *SLEW            | S806, TRACK 1, FWD, TIC *4437 +/- 26;     |     |    |   | 2,024,388:82:8 |    |   |
| 93 | 239 | 20:02:00.800 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC 7177 +/- 26;       |     |    |   | 2,024,390:67:7 |    |   |
| 93 | 239 | 20:02:00.800 |                 | DMS:    | *AUTOSTOP        | S806, TRACK 1, FWD, TIC *7177 +/- 26;     |     |    |   | 2,024,390:67:7 |    |   |
| 93 | 239 | 20:02:03.466 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *7188 +/- 27;      |     |    |   | 2,024,390:71:7 |    |   |
| 93 | 239 | 20:07:04.333 | 20AG6B          | 6DMSR   | CMD,6DMSR,20AG6B | Tape recorder rewind                      |     |    |   | 2,024,395:68:0 |    |   |
| 93 | 239 | 20:07:04.333 |                 | DMS:    | *REWIND          | S806, TRACK *4, *REV, TIC 7188 +/- 27;    |     |    |   | 2,024,395:68:0 |    |   |
| 93 | 239 | 20:12:09.466 |                 | DMS:    | *READY           | RDY, TRACK *1, *FWD, TIC * 201 +/- 0;     |     |    |   | 2,024,400:70:7 |    |   |
| 93 | 240 | 05:55:02.333 | 490A412A4B      | 7MODE   | INT              | AACS INERTIAL MODE                        |     |    |   | 2,024,977:23:0 |    |   |
| 93 | 240 | 05:57:57.666 | 490A476A6A      | 6TMCHG  | ELSLRS           | 10 BPS TDM / LRS Rec 7.68kb/s             |     |    |   | 2,024,980:13:0 |    |   |
| 93 | 240 | 06:00:00.333 | 490A412A4D      | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                       |     |    |   | 2,024,982:15:0 |    |   |
| 93 | 240 | 06:04:10.333 | 490A412A4E      | 7VECT   | RTH              | Inert vect update UTC                     |     |    |   | 2,024,986:26:0 |    |   |
| 93 | 240 | 06:04:14.333 | 490A412A4F      | 7TURN   | 1,RTH            | ALERT Thruster                            |     |    |   | 2,024,986:32:0 |    |   |
| 93 | 240 | 06:08:02.333 | 490A412A406A4A  | 7STAR   | 1,484,121.997999 | Star catalog update                       |     |    |   | 2,024,990:10:0 |    |   |
| 93 | 240 | 06:08:04.333 | 490A412A406A4B  | 7STAR   | 2,425,331.274998 | Star catalog update                       |     |    |   | 2,024,990:13:0 |    |   |
| 93 | 240 | 06:08:06.333 | 490A412A406A4C  | 7STAR   | 3,150,319.349998 | Star catalog update                       |     |    |   | 2,024,990:16:0 |    |   |
| 93 | 240 | 06:08:08.333 | 490A412A406A4D  | 7STAR   | 4,159,27.236,89. | Star catalog update                       |     |    |   | 2,024,990:19:0 |    |   |
| 93 | 240 | 06:08:10.333 | 490A412A406A4E  | 7STAR   | 5,0,0.0,0.0      | Star catalog update                       |     |    |   | 2,024,990:22:0 |    |   |
| 93 | 240 | 06:08:12.333 | 490A412A406A4F  | 7STAR   | 6,0,0.0,0.0      | Star catalog update                       |     |    |   | 2,024,990:25:0 |    |   |
| 93 | 240 | 07:04:31.666 |                 | DMS:    | *RUNUP           | R7, TRACK 1, FWD, TIC 201 +/- 0;          |     |    |   | 2,025,045:89:0 |    |   |
| 93 | 240 | 07:04:31.666 | 175ES422A6A     | 6DMSC   | R7,0             | DMS Control Tape runup 7.68kps            |     |    |   | 2,025,045:89:0 |    |   |
| 93 | 240 | 07:04:33.000 | 176ES6A         | 6TMCHG  | ELSLRS           | 10 BPS TDM / LRS Rec 7.68kb/s             |     |    |   | 2,025,046:00:0 |    |   |
| 93 | 240 | 07:04:33.133 |                 | DMS:    | *RECORD          | R7, TRACK 1, FWD, TIC * 202 +/- 0;        |     |    |   | 2,025,046:00:2 |    |   |
| 93 | 240 | 07:27:13.000 | 490A412A4K      | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                       |     |    |   | 2,025,068:38:0 |    |   |
| 93 | 240 | 11:22:21.666 | 165IA4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion               |     |    |   | 2,025,300:89:0 |    |   |
| 93 | 240 | 11:22:22.333 | 165IA4B         | 7SCAN   | NORM,192.081999, | Check S/P Position                        |     |    |   | 2,025,300:90:0 |    |   |
| 93 | 240 | 11:24:43.000 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *3860 +/- 0;       |     |    |   | 2,025,303:28:0 |    |   |
| 93 | 240 | 11:24:43.000 | 175ES422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                     |     |    |   | 2,025,303:28:0 |    |   |
| 93 | 240 | 11:24:44.266 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *3861 +/- 0;       |     |    |   | 2,025,303:29:9 |    |   |
| 93 | 240 | 11:25:20.333 | 128IA149A131A4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6      | 7   | 06 |   | 2,025,303:84:0 |    |   |
| 93 | 240 | 11:26:16.333 | 117JA           | CSMOS   | GS               | ***** GROUP START CSMOS                   | 7   | 06 |   | 2,025,304:77:0 |    |   |
| 93 | 240 | 11:26:21.000 | 128IA149A131B4A | 37IST   | 1,2,0,OFF,0,1,1  | Chopper ON, Sync, Chopper (Ref)Gain State | 4R7 | 06 |   | 2,025,304:84:0 |    |   |
| 93 | 240 | 11:26:21.666 | 175JA422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp            | 4R7 | 06 |   | 2,025,304:85:0 |    |   |
| 93 | 240 | 11:26:21.666 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 3861 +/- 0;        | 4R7 | 06 |   | 2,025,304:85:0 |    |   |
| 93 | 240 | 11:26:24.333 | 165IA4C         | 7VECT   |                  | Inert vect update UTC                     | 4R7 | 06 |   | 2,025,304:89:0 |    |   |
| 93 | 240 | 11:26:25.000 | 165IA4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                | 4R7 | 06 |   | 2,025,304:90:0 |    |   |
| 93 | 240 | 11:26:25.666 | 117JA105A106A4A | 7STRP   | 0.004,0.0,0,0,0, | Slew =,0.76                               | 4R7 | 06 |   | 2,025,305:00:0 |    |   |
| 93 | 240 | 11:26:25.666 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *3863 +/- 0;       | 4R7 | 06 |   | 2,025,305:00:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 11:26:25.666 | 176JA6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R7 | 06 |   | 2,025,305:00:0 |    |   |
| 93 | 240 | 11:26:30.000 | IDUNRTURXM01+   |         | -----START-----  |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 11:26:30.000 | IDUSROTATIO1*   |         | -----START-----  |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 11:26:35.000 | 117JA11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R7 | 06 |   | 2,025,305:14:0 |    |   |
| 93 | 240 | 11:26:45.666 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *3881 +/- 0;        | 4R7 | 06 |   | 2,025,305:30:0 |    |   |
| 93 | 240 | 11:26:45.666 | 175JA422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R7 | 06 |   | 2,025,305:30:0 |    |   |
| 93 | 240 | 11:26:46.866 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *3882 +/- 0;        | 4R7 | 06 |   | 2,025,305:31:8 |    |   |
| 93 | 240 | 11:27:26.333 | 116IA4A         | 7STRP   | -0.002,0.00001,0 | Slew =0,1.0                                | 4R7 | 06 |   | 2,025,306:00:0 |    |   |
| 93 | 240 | 11:27:30.000 | IDUNRTURXM01+   |         | -----STOP-----   |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 11:28:26.333 | 175IA422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R7 | 06 |   | 2,025,306:90:0 |    |   |
| 93 | 240 | 11:28:26.333 |                 | DMS:    | *RUNUP           | R115, TRACK 1, FWD, TIC 3882 +/- 0;        | 4R7 | 06 |   | 2,025,306:90:0 |    |   |
| 93 | 240 | 11:28:27.000 | 176IA6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R7 | 06 |   | 2,025,307:00:0 |    |   |
| 93 | 240 | 11:28:30.333 |                 | DMS:    | *RECORD          | R115, TRACK 1, FWD, TIC *3888 +/- 1;       | 4R7 | 06 |   | 2,025,307:05:0 |    |   |
| 93 | 240 | 11:28:57.666 | 175IA422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R7 | 06 |   | 2,025,307:46:0 |    |   |
| 93 | 240 | 11:28:57.666 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *3984 +/- 1;        | 4R7 | 06 |   | 2,025,307:46:0 |    |   |
| 93 | 240 | 11:28:58.866 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *3985 +/- 1;        | 4R7 | 06 |   | 2,025,307:47:8 |    |   |
| 93 | 240 | 11:51:41.666 |                 | DMS:    | *RUNUP           | R115, TRACK 1, FWD, TIC 3985 +/- 1;        | 4R7 | 06 |   | 2,025,329:90:0 |    |   |
| 93 | 240 | 11:51:41.666 | 175IB422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R7 | 06 |   | 2,025,329:90:0 |    |   |
| 93 | 240 | 11:51:42.333 | 176IB6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R7 | 06 |   | 2,025,330:00:0 |    |   |
| 93 | 240 | 11:51:45.666 |                 | DMS:    | *RECORD          | R115, TRACK 1, FWD, TIC *3992 +/- 1;       | 4R7 | 06 |   | 2,025,330:05:0 |    |   |
| 93 | 240 | 11:54:39.666 | 128JD149A131A4A | 37IOP   | 1,0              | Full Map, Grating Start Position =0        | 4R1 | 00 |   | 2,025,332:84:0 |    |   |
| 93 | 240 | 11:54:44.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *4620 +/- 1;        | 4R1 | 00 |   | 2,025,333:00:0 |    |   |
| 93 | 240 | 11:54:44.333 | 175IB422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R1 | 00 |   | 2,025,333:00:0 |    |   |
| 93 | 240 | 11:54:45.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *4621 +/- 2;        | 4R1 | 00 |   | 2,025,333:01:8 |    |   |
| 93 | 240 | 11:55:35.666 | 117JB           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R1 | 00 |   | 2,025,333:77:0 |    |   |
| 93 | 240 | 11:55:40.333 | 128JD149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R1 | 00 |   | 2,025,333:84:0 |    |   |
| 93 | 240 | 11:55:45.000 | 117JB105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.06                                | 4R1 | 00 |   | 2,025,334:00:0 |    |   |
| 93 | 240 | 11:55:45.000 | 176JB6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R1 | 00 |   | 2,025,334:00:0 |    |   |
| 93 | 240 | 11:55:49.000 | IDUNRT90FM01+   |         | -----START-----  |  | 4R1 | 00 |   |                | :  | : |
| 93 | 240 | 11:55:50.333 | 117JB105A106B4A | 7STRP   | -0.0025,0.0,0,0, | Slew =,1.25                                | 4R1 | 00 |   | 2,025,334:08:0 |    |   |
| 93 | 240 | 11:55:51.000 | 175JB422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R1 | 00 |   | 2,025,334:09:0 |    |   |
| 93 | 240 | 11:55:51.000 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 4621 +/- 2;         | 4R1 | 00 |   | 2,025,334:09:0 |    |   |
| 93 | 240 | 11:55:55.000 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *4622 +/- 2;        | 4R1 | 00 |   | 2,025,334:15:0 |    |   |
| 93 | 240 | 11:55:57.000 | 117JB105A106B4B | 7STRP   | 0.00475,0.0,0,0, | Slew =,0.06                                | 4R1 | 00 |   | 2,025,334:18:0 |    |   |
| 93 | 240 | 11:57:24.333 | 117JB11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R1 | 00 |   | 2,025,335:58:0 |    |   |
| 93 | 240 | 11:57:32.333 | 175JB422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R1 | 00 |   | 2,025,335:70:0 |    |   |
| 93 | 240 | 11:57:32.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *4708 +/- 2;        | 4R1 | 00 |   | 2,025,335:70:0 |    |   |
| 93 | 240 | 11:57:33.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *4709 +/- 2;        | 4R1 | 00 |   | 2,025,335:71:8 |    |   |
| 93 | 240 | 11:58:51.000 | IDUNRT90FM01+   |         | -----STOP-----   |  | 4R1 | 00 |   |                | :  | : |
| 93 | 240 | 12:05:47.000 | 128JE149A131A4A | 37IOP   | 5,2              | Short Map, Grating Start Position =2       | 4R5 | 02 |   | 2,025,343:84:0 |    |   |
| 93 | 240 | 12:06:47.666 | 128JE149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R5 | 02 |   | 2,025,344:84:0 |    |   |
| 93 | 240 | 12:06:56.000 | IDUNRT15SM01+   |         | -----START-----  |  | 4R5 | 02 |   |                | :  | : |

| YR | DOY | Time         | PSID            | Command | Parameters                    | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|-------------------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 12:06:56.333 | 117JC           | CSMOS   | GS                            | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,345:06:0 |    |   |
| 93 | 240 | 12:07:22.333 | 117JC105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11  |  | 4R5 | 02 |   | 2,025,345:45:0 |    |   |
| 93 | 240 | 12:07:27.666 | 117JC105A106B4A | 7STRP   | -0.005,0.0,0,0,0 Slew =0,2.5  |  | 4R5 | 02 |   | 2,025,345:53:0 |    |   |
| 93 | 240 | 12:07:31.666 |                 | DMS:    | *RUNUP                        | R28, TRACK 1, FWD, TIC 4709 +/- 2;         | 4R5 | 02 |   | 2,025,345:59:0 |    |   |
| 93 | 240 | 12:07:31.666 | 175JC422A6A     | 6DMSC   | R28,0                         | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,345:59:0 |    |   |
| 93 | 240 | 12:07:35.666 |                 | DMS:    | *RECORD                       | R28, TRACK 1, FWD, TIC *4710 +/- 3;        | 4R5 | 02 |   | 2,025,345:65:0 |    |   |
| 93 | 240 | 12:07:37.666 | 117JC105A106B4B | 7STRP   | 0.005,0.0,0,0,0, Slew =,0.11  |  | 4R5 | 02 |   | 2,025,345:68:0 |    |   |
| 93 | 240 | 12:08:43.000 | 175JC422A6B     | 6DMSC   | RDY,0                         | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,346:75:0 |    |   |
| 93 | 240 | 12:08:43.000 |                 | DMS:    | *RUNDOWN                      | RDY, TRACK 1, FWD, TIC *4769 +/- 3;        | 4R5 | 02 |   | 2,025,346:75:0 |    |   |
| 93 | 240 | 12:08:43.666 | 117JC11A        | CSMOS   | GE                            | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,346:76:0 |    |   |
| 93 | 240 | 12:08:44.200 |                 | DMS:    | *READY                        | RDY, TRACK 1, FWD, TIC *4770 +/- 3;        | 4R5 | 02 |   | 2,025,346:76:8 |    |   |
| 93 | 240 | 12:10:26.000 | IDUNRT15SM01+   |         | -----STOP-----                |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:13:57.000 | 116IB4A         | 7STRP   | -0.00227,0.00001 Slew =0,1.0  |  | 4R5 | 02 |   | 2,025,352:00:0 |    |   |
| 93 | 240 | 12:14:57.000 |                 | DMS:    | *RUNUP                        | R115, TRACK 1, FWD, TIC 4770 +/- 3;        | 4R5 | 02 |   | 2,025,352:90:0 |    |   |
| 93 | 240 | 12:14:57.000 | 175IC422A6A     | 6DMSC   | R115,0                        | DMS Control Tape runup 115.2kb             | 4R5 | 02 |   | 2,025,352:90:0 |    |   |
| 93 | 240 | 12:14:57.666 | 176IC6A         | 6TMCHG  | NCGHCM                        | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R5 | 02 |   | 2,025,353:00:0 |    |   |
| 93 | 240 | 12:15:01.000 |                 | DMS:    | *RECORD                       | R115, TRACK 1, FWD, TIC *4777 +/- 3;       | 4R5 | 02 |   | 2,025,353:05:0 |    |   |
| 93 | 240 | 12:15:28.333 |                 | DMS:    | *RUNDOWN                      | RDY, TRACK 1, FWD, TIC *4873 +/- 3;        | 4R5 | 02 |   | 2,025,353:46:0 |    |   |
| 93 | 240 | 12:15:28.333 | 175IC422A6B     | 6DMSC   | RDY,0                         | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,353:46:0 |    |   |
| 93 | 240 | 12:15:29.533 |                 | DMS:    | *READY                        | RDY, TRACK 1, FWD, TIC *4874 +/- 3;        | 4R5 | 02 |   | 2,025,353:47:8 |    |   |
| 93 | 240 | 12:18:51.000 | 117JD           | CSMOS   | GS                            | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,356:77:0 |    |   |
| 93 | 240 | 12:19:00.333 | 176JD6A         | 6TMCHG  | ELSMPW                        | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R5 | 02 |   | 2,025,357:00:0 |    |   |
| 93 | 240 | 12:19:00.333 | 117JD105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11  |  | 4R5 | 02 |   | 2,025,357:00:0 |    |   |
| 93 | 240 | 12:19:04.000 | IDUNRT30SM01+   |         | -----START-----               |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:19:05.666 | 117JD105A106B4A | 7STRP   | -0.0023,0.0,0,0, Slew =,1.25  |  | 4R5 | 02 |   | 2,025,357:08:0 |    |   |
| 93 | 240 | 12:19:09.666 |                 | DMS:    | *RUNUP                        | R28, TRACK 1, FWD, TIC 4874 +/- 3;         | 4R5 | 02 |   | 2,025,357:14:0 |    |   |
| 93 | 240 | 12:19:09.666 | 175JD422A6A     | 6DMSC   | R28,0                         | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,357:14:0 |    |   |
| 93 | 240 | 12:19:13.666 |                 | DMS:    | *RECORD                       | R28, TRACK 1, FWD, TIC *4875 +/- 4;        | 4R5 | 02 |   | 2,025,357:20:0 |    |   |
| 93 | 240 | 12:19:15.666 | 117JD105A106B4B | 7STRP   | 0.0045,0.0,0,0,0 Slew =,0.11  |  | 4R5 | 02 |   | 2,025,357:23:0 |    |   |
| 93 | 240 | 12:20:16.333 | 117JD11A        | CSMOS   | GE                            | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,358:23:0 |    |   |
| 93 | 240 | 12:20:21.000 |                 | DMS:    | *RUNDOWN                      | RDY, TRACK 1, FWD, TIC *4935 +/- 4;        | 4R5 | 02 |   | 2,025,358:30:0 |    |   |
| 93 | 240 | 12:20:21.000 | 175JD422A6B     | 6DMSC   | RDY,0                         | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,358:30:0 |    |   |
| 93 | 240 | 12:20:22.200 |                 | DMS:    | *READY                        | RDY, TRACK 1, FWD, TIC *4936 +/- 4;        | 4R5 | 02 |   | 2,025,358:31:8 |    |   |
| 93 | 240 | 12:22:06.000 | IDUNRT30SM01+   |         | -----STOP-----                |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:30:11.666 | 117JE           | CSMOS   | GS                            | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,368:06:0 |    |   |
| 93 | 240 | 12:30:12.000 | IDUNRT15SM02+   |         | -----START-----               |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:30:37.666 | 117JE105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11  |  | 4R5 | 02 |   | 2,025,368:45:0 |    |   |
| 93 | 240 | 12:30:43.000 | 117JE105A106B4A | 7STRP   | -0.00475,0.0,0,0, Slew =0,2.5 |  | 4R5 | 02 |   | 2,025,368:53:0 |    |   |
| 93 | 240 | 12:30:47.000 |                 | DMS:    | *RUNUP                        | R28, TRACK 1, FWD, TIC 4936 +/- 4;         | 4R5 | 02 |   | 2,025,368:59:0 |    |   |
| 93 | 240 | 12:30:47.000 | 175JE422A6A     | 6DMSC   | R28,0                         | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,368:59:0 |    |   |
| 93 | 240 | 12:30:51.000 |                 | DMS:    | *RECORD                       | R28, TRACK 1, FWD, TIC *4937 +/- 4;        | 4R5 | 02 |   | 2,025,368:65:0 |    |   |
| 93 | 240 | 12:30:53.000 | 117JE105A106B4B | 7STRP   | 0.005,0.00004,0, Slew =,0.11  |  | 4R5 | 02 |   | 2,025,368:68:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 12:31:53.666 | 117JE11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,369:68:0 |    |   |
| 93 | 240 | 12:31:58.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *4996 +/- 4;        | 4R5 | 02 |   | 2,025,369:75:0 |    |   |
| 93 | 240 | 12:31:58.333 | 175JE422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,369:75:0 |    |   |
| 93 | 240 | 12:31:59.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *4997 +/- 5;        | 4R5 | 02 |   | 2,025,369:76:8 |    |   |
| 93 | 240 | 12:33:41.000 | IDUNRT15SM02+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:37:12.333 | 116IC4A         | 7STRP   | -0.00247,-0.0000 | Slew =0,1.0                                | 4R5 | 02 |   | 2,025,375:00:0 |    |   |
| 93 | 240 | 12:38:12.333 |                 | DMS:    | *RUNUP           | R115, TRACK 1, FWD, TIC 4997 +/- 5;        | 4R5 | 02 |   | 2,025,375:90:0 |    |   |
| 93 | 240 | 12:38:12.333 | 175ID422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R5 | 02 |   | 2,025,375:90:0 |    |   |
| 93 | 240 | 12:38:13.000 | 176ID6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R5 | 02 |   | 2,025,376:00:0 |    |   |
| 93 | 240 | 12:38:16.333 |                 | DMS:    | *RECORD          | R115, TRACK 1, FWD, TIC *5004 +/- 5;       | 4R5 | 02 |   | 2,025,376:05:0 |    |   |
| 93 | 240 | 12:38:43.666 | 175ID422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,376:46:0 |    |   |
| 93 | 240 | 12:38:43.666 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *5100 +/- 5;        | 4R5 | 02 |   | 2,025,376:46:0 |    |   |
| 93 | 240 | 12:38:44.866 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *5101 +/- 5;        | 4R5 | 02 |   | 2,025,376:47:8 |    |   |
| 93 | 240 | 12:42:06.333 | 117JF           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,379:77:0 |    |   |
| 93 | 240 | 12:42:15.666 | 117JF105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,380:00:0 |    |   |
| 93 | 240 | 12:42:15.666 | 176JF6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R5 | 02 |   | 2,025,380:00:0 |    |   |
| 93 | 240 | 12:42:20.000 | IDUNRT30SM02+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:42:21.000 | 117JF105A106B4A | 7STRP   | -0.00225,0.0,0,0 | Slew =,1.25                                | 4R5 | 02 |   | 2,025,380:08:0 |    |   |
| 93 | 240 | 12:42:25.000 | 175JF422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,380:14:0 |    |   |
| 93 | 240 | 12:42:25.000 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 5101 +/- 5;         | 4R5 | 02 |   | 2,025,380:14:0 |    |   |
| 93 | 240 | 12:42:29.000 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *5102 +/- 6;        | 4R5 | 02 |   | 2,025,380:20:0 |    |   |
| 93 | 240 | 12:42:31.000 | 117JF105A106B4B | 7STRP   | 0.0045,0.0,0,0,0 | Slew =,0.11                                | 4R5 | 02 |   | 2,025,380:23:0 |    |   |
| 93 | 240 | 12:43:31.666 | 117JF11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,381:23:0 |    |   |
| 93 | 240 | 12:43:36.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *5162 +/- 6;        | 4R5 | 02 |   | 2,025,381:30:0 |    |   |
| 93 | 240 | 12:43:36.333 | 175JF422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,381:30:0 |    |   |
| 93 | 240 | 12:43:37.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *5163 +/- 6;        | 4R5 | 02 |   | 2,025,381:31:8 |    |   |
| 93 | 240 | 12:45:22.000 | IDUNRT30SM02+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:53:27.000 | 117JG           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,391:06:0 |    |   |
| 93 | 240 | 12:53:27.000 | IDUNRT15SM03+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:53:53.000 | 117JG105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,391:45:0 |    |   |
| 93 | 240 | 12:53:58.333 | 117JG105A106B4A | 7STRP   | -0.005,0.0,0,0,0 | Slew =0,2.5                                | 4R5 | 02 |   | 2,025,391:53:0 |    |   |
| 93 | 240 | 12:54:02.333 | 175JG422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,391:59:0 |    |   |
| 93 | 240 | 12:54:02.333 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 5163 +/- 6;         | 4R5 | 02 |   | 2,025,391:59:0 |    |   |
| 93 | 240 | 12:54:06.333 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *5164 +/- 6;        | 4R5 | 02 |   | 2,025,391:65:0 |    |   |
| 93 | 240 | 12:54:08.333 | 117JG105A106B4B | 7STRP   | 0.005,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,391:68:0 |    |   |
| 93 | 240 | 12:55:09.000 | 117JG11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,392:68:0 |    |   |
| 93 | 240 | 12:55:13.666 | 175JG422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,392:75:0 |    |   |
| 93 | 240 | 12:55:13.666 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *5223 +/- 6;        | 4R5 | 02 |   | 2,025,392:75:0 |    |   |
| 93 | 240 | 12:55:14.866 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *5224 +/- 6;        | 4R5 | 02 |   | 2,025,392:76:8 |    |   |
| 93 | 240 | 12:56:56.000 | IDUNRT15SM03+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:57:30.000 | IDUNRTURXM02+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 12:57:30.000 | IDUSROTATI01*   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 12:58:21.666 | 128JF149A131A4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6       | 4R7 | 06 |   | 2,025,395:84:0 |    |   |
| 93 | 240 | 12:58:30.000 | IDUSROTATIO2*   |         | -----START-----  |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 12:58:55.666 | 165IB4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 4R7 | 06 |   | 2,025,396:44:0 |    |   |
| 93 | 240 | 12:58:56.333 | 165IB4B         | 7SCAN   | NORM,192.112999, | Check S/P Position                         | 4R7 | 06 |   | 2,025,396:45:0 |    |   |
| 93 | 240 | 12:59:17.666 | 117JH           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R7 | 06 |   | 2,025,396:77:0 |    |   |
| 93 | 240 | 12:59:22.333 | 128JF149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R7 | 06 |   | 2,025,396:84:0 |    |   |
| 93 | 240 | 12:59:23.000 | 175JH422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R7 | 06 |   | 2,025,396:85:0 |    |   |
| 93 | 240 | 12:59:23.000 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 5224 +/- 6;         | 4R7 | 06 |   | 2,025,396:85:0 |    |   |
| 93 | 240 | 12:59:25.666 | 165IB4C         | 7VECT   |                  | Inert vect update UTC                      | 4R7 | 06 |   | 2,025,396:89:0 |    |   |
| 93 | 240 | 12:59:26.333 | 165IB4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                 | 4R7 | 06 |   | 2,025,396:90:0 |    |   |
| 93 | 240 | 12:59:27.000 | 117JH105A106A4A | 7STRP   | 0.004,0.0,0,0,0, | Slew =,0.76                                | 4R7 | 06 |   | 2,025,397:00:0 |    |   |
| 93 | 240 | 12:59:27.000 | 176JH6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R7 | 06 |   | 2,025,397:00:0 |    |   |
| 93 | 240 | 12:59:27.000 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *5226 +/- 7;        | 4R7 | 06 |   | 2,025,397:00:0 |    |   |
| 93 | 240 | 12:59:31.000 | IDUNRTURXM02+   |         | -----STOP-----   |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 12:59:36.333 | 117JH11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R7 | 06 |   | 2,025,397:14:0 |    |   |
| 93 | 240 | 12:59:47.000 | 175JH422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R7 | 06 |   | 2,025,397:30:0 |    |   |
| 93 | 240 | 12:59:47.000 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *5243 +/- 7;        | 4R7 | 06 |   | 2,025,397:30:0 |    |   |
| 93 | 240 | 12:59:48.200 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *5244 +/- 7;        | 4R7 | 06 |   | 2,025,397:31:8 |    |   |
| 93 | 240 | 13:00:27.666 | 116ID4A         | 7STRP   | -0.002,0.00001,0 | Slew =0,1.3                                | 4R7 | 06 |   | 2,025,398:00:0 |    |   |
| 93 | 240 | 13:01:27.666 | 175IE422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R7 | 06 |   | 2,025,398:90:0 |    |   |
| 93 | 240 | 13:01:27.666 |                 | DMS:    | *RUNUP           | R115, TRACK 1, FWD, TIC 5244 +/- 7;        | 4R7 | 06 |   | 2,025,398:90:0 |    |   |
| 93 | 240 | 13:01:28.333 | 176IE6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R7 | 06 |   | 2,025,399:00:0 |    |   |
| 93 | 240 | 13:01:31.666 |                 | DMS:    | *RECORD          | R115, TRACK 1, FWD, TIC *5251 +/- 7;       | 4R7 | 06 |   | 2,025,399:05:0 |    |   |
| 93 | 240 | 13:04:25.666 | 128JG149A131A4A | 37IOP   | 5,2              | Short Map, Grating Start Position =2       | 4R5 | 02 |   | 2,025,401:84:0 |    |   |
| 93 | 240 | 13:04:30.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *5879 +/- 7;        | 4R5 | 02 |   | 2,025,402:00:0 |    |   |
| 93 | 240 | 13:04:30.333 | 175IE422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,402:00:0 |    |   |
| 93 | 240 | 13:04:31.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *5880 +/- 8;        | 4R5 | 02 |   | 2,025,402:01:8 |    |   |
| 93 | 240 | 13:05:21.666 | 117JI           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,402:77:0 |    |   |
| 93 | 240 | 13:05:26.333 | 128JG149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R5 | 02 |   | 2,025,402:84:0 |    |   |
| 93 | 240 | 13:05:31.000 | 117JI105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.06                                | 4R5 | 02 |   | 2,025,403:00:0 |    |   |
| 93 | 240 | 13:05:31.000 | 176JI6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R5 | 02 |   | 2,025,403:00:0 |    |   |
| 93 | 240 | 13:05:35.000 | IDUNRT90FM02+   |         | -----START-----  |  | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 13:05:36.333 | 117JI105A106B4A | 7STRP   | -0.0025,0.0,0,0, | Slew =,1.25                                | 4R5 | 02 |   | 2,025,403:08:0 |    |   |
| 93 | 240 | 13:05:37.000 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 5880 +/- 8;         | 4R5 | 02 |   | 2,025,403:09:0 |    |   |
| 93 | 240 | 13:05:37.000 | 175JI422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,403:09:0 |    |   |
| 93 | 240 | 13:05:41.000 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *5881 +/- 8;        | 4R5 | 02 |   | 2,025,403:15:0 |    |   |
| 93 | 240 | 13:05:43.000 | 117JI105A106B4B | 7STRP   | 0.00475,0.0,0,0, | Slew =,0.06                                | 4R5 | 02 |   | 2,025,403:18:0 |    |   |
| 93 | 240 | 13:07:10.333 | 117JI11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,404:58:0 |    |   |
| 93 | 240 | 13:07:18.333 | 175JI422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,404:70:0 |    |   |
| 93 | 240 | 13:07:18.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *5967 +/- 8;        | 4R5 | 02 |   | 2,025,404:70:0 |    |   |
| 93 | 240 | 13:07:19.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *5968 +/- 8;        | 4R5 | 02 |   | 2,025,404:71:8 |    |   |
| 93 | 240 | 13:08:37.000 | IDUNRT90FM02+   |         | -----STOP-----   |  | 4R5 | 02 |   |                | :  | : |

| YR | DOY | Time         | PSID            | Command | Parameters         | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|--------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 13:15:33.000 | 128JH149A131A4A | 37IOP   | 5,2                | Short Map, Grating Start Position =2       | 4R5 | 02 |   | 2,025,412:84:0 |    |   |
| 93 | 240 | 13:16:33.666 | 128JH149A131B4A | 37IST   | 0,2,0,OFF,0,1,1    | Gain State 4                               | 4R5 | 02 |   | 2,025,413:84:0 |    |   |
| 93 | 240 | 13:16:42.000 | IDUNRT15SM04+   |         | -----START-----    |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:16:42.333 | 117JJ           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,414:06:0 |    |   |
| 93 | 240 | 13:17:08.333 | 117JJ105A106A4A | 7STRP   | 0.00001,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,414:45:0 |    |   |
| 93 | 240 | 13:17:13.666 | 117JJ105A106B4A | 7STRP   | -0.005,0.0,0,0,0   | Slew =0,2.5                                | 4R5 | 02 |   | 2,025,414:53:0 |    |   |
| 93 | 240 | 13:17:17.666 |                 | DMS:    | *RUNUP             | R28, TRACK 1, FWD, TIC 5968 +/- 8;         | 4R5 | 02 |   | 2,025,414:59:0 |    |   |
| 93 | 240 | 13:17:17.666 | 175JJ422A6A     | 6DMSC   | R28,0              | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,414:59:0 |    |   |
| 93 | 240 | 13:17:21.666 |                 | DMS:    | *RECORD            | R28, TRACK 1, FWD, TIC *5969 +/- 9;        | 4R5 | 02 |   | 2,025,414:65:0 |    |   |
| 93 | 240 | 13:17:23.666 | 117JJ105A106B4B | 7STRP   | 0.005,0.00004,0,   | Slew =,0.11                                | 4R5 | 02 |   | 2,025,414:68:0 |    |   |
| 93 | 240 | 13:18:24.333 | 117JJ11A        | CSMOS   | GE                 | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,415:68:0 |    |   |
| 93 | 240 | 13:18:29.000 | 175JJ422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,415:75:0 |    |   |
| 93 | 240 | 13:18:29.000 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 1, FWD, TIC *6029 +/- 9;        | 4R5 | 02 |   | 2,025,415:75:0 |    |   |
| 93 | 240 | 13:18:30.200 |                 | DMS:    | *READY             | RDY, TRACK 1, FWD, TIC *6030 +/- 9;        | 4R5 | 02 |   | 2,025,415:76:8 |    |   |
| 93 | 240 | 13:20:12.000 | IDUNRT15SM04+   |         | -----STOP-----     |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:23:43.000 | 116IE4A         | 7STRP   | -0.00227,-0.0000   | Slew =0,1.0                                | 4R5 | 02 |   | 2,025,421:00:0 |    |   |
| 93 | 240 | 13:24:43.000 |                 | DMS:    | *RUNUP             | R115, TRACK 1, FWD, TIC 6030 +/- 9;        | 4R5 | 02 |   | 2,025,421:90:0 |    |   |
| 93 | 240 | 13:24:43.000 | 175IF422A6A     | 6DMSC   | R115,0             | DMS Control Tape runup 115.2kb             | 4R5 | 02 |   | 2,025,421:90:0 |    |   |
| 93 | 240 | 13:24:43.666 | 176IF6A         | 6TMCHG  | NCGHCM             | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R5 | 02 |   | 2,025,422:00:0 |    |   |
| 93 | 240 | 13:24:47.000 |                 | DMS:    | *RECORD            | R115, TRACK 1, FWD, TIC *6036 +/- 9;       | 4R5 | 02 |   | 2,025,422:05:0 |    |   |
| 93 | 240 | 13:25:14.333 | 175IF422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,422:46:0 |    |   |
| 93 | 240 | 13:25:14.333 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 1, FWD, TIC *6132 +/- 9;        | 4R5 | 02 |   | 2,025,422:46:0 |    |   |
| 93 | 240 | 13:25:15.533 |                 | DMS:    | *READY             | RDY, TRACK 1, FWD, TIC *6133 +/- 9;        | 4R5 | 02 |   | 2,025,422:47:8 |    |   |
| 93 | 240 | 13:28:37.000 | 117JK           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,425:77:0 |    |   |
| 93 | 240 | 13:28:46.333 | 117JK105A106A4A | 7STRP   | 0.00001,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,426:00:0 |    |   |
| 93 | 240 | 13:28:46.333 | 176JK6A         | 6TMCHG  | ELSMPW             | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R5 | 02 |   | 2,025,426:00:0 |    |   |
| 93 | 240 | 13:28:50.000 | IDUNRT30SM03+   |         | -----START-----    |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:28:51.666 | 117JK105A106B4A | 7STRP   | -0.0023,0.0,0,0,0, | Slew =,1.25                                | 4R5 | 02 |   | 2,025,426:08:0 |    |   |
| 93 | 240 | 13:28:55.666 |                 | DMS:    | *RUNUP             | R28, TRACK 1, FWD, TIC 6133 +/- 9;         | 4R5 | 02 |   | 2,025,426:14:0 |    |   |
| 93 | 240 | 13:28:55.666 | 175JK422A6A     | 6DMSC   | R28,0              | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,426:14:0 |    |   |
| 93 | 240 | 13:28:59.666 |                 | DMS:    | *RECORD            | R28, TRACK 1, FWD, TIC *6135 +/- 10;       | 4R5 | 02 |   | 2,025,426:20:0 |    |   |
| 93 | 240 | 13:29:01.666 | 117JK105A106B4B | 7STRP   | 0.0045,0.0,0,0,0   | Slew =,0.11                                | 4R5 | 02 |   | 2,025,426:23:0 |    |   |
| 93 | 240 | 13:30:02.333 | 117JK11A        | CSMOS   | GE                 | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,427:23:0 |    |   |
| 93 | 240 | 13:30:07.000 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 1, FWD, TIC *6194 +/- 10;       | 4R5 | 02 |   | 2,025,427:30:0 |    |   |
| 93 | 240 | 13:30:07.000 | 175JK422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,427:30:0 |    |   |
| 93 | 240 | 13:30:08.200 |                 | DMS:    | *READY             | RDY, TRACK 1, FWD, TIC *6195 +/- 10;       | 4R5 | 02 |   | 2,025,427:31:8 |    |   |
| 93 | 240 | 13:31:52.000 | IDUNRT30SM03+   |         | -----STOP-----     |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:39:57.666 | 117JL           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,437:06:0 |    |   |
| 93 | 240 | 13:39:58.000 | IDUNRT15SM05+   |         | -----START-----    |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:40:23.666 | 117JL105A106A4A | 7STRP   | 0.00001,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,437:45:0 |    |   |
| 93 | 240 | 13:40:29.000 | 117JL105A106B4A | 7STRP   | -0.00475,0.0,0,0,0 | Slew =0,2.5                                | 4R5 | 02 |   | 2,025,437:53:0 |    |   |
| 93 | 240 | 13:40:33.000 |                 | DMS:    | *RUNUP             | R28, TRACK 1, FWD, TIC 6195 +/- 10;        | 4R5 | 02 |   | 2,025,437:59:0 |    |   |



| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 13:40:33.000 | 175JL422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,437:59:0 |    |   |
| 93 | 240 | 13:40:37.000 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *6196 +/- 10;       | 4R5 | 02 |   | 2,025,437:65:0 |    |   |
| 93 | 240 | 13:40:39.000 | 117JL105A106B4B | 7STRP   | 0.005,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,437:68:0 |    |   |
| 93 | 240 | 13:41:39.666 | 117JL11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,438:68:0 |    |   |
| 93 | 240 | 13:41:44.333 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *6255 +/- 10;       | 4R5 | 02 |   | 2,025,438:75:0 |    |   |
| 93 | 240 | 13:41:44.333 | 175JL422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,438:75:0 |    |   |
| 93 | 240 | 13:41:45.533 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *6256 +/- 11;       | 4R5 | 02 |   | 2,025,438:76:8 |    |   |
| 93 | 240 | 13:43:27.000 | IDUNRT15SM05+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:46:58.266 | 116IF4A         | 7STRP   | -0.00247,0.00001 | Slew =0,1.0                                | 4R5 | 02 |   | 2,025,444:00:0 |    |   |
| 93 | 240 | 13:47:58.266 |                 | DMS:    | *RUNUP           | R115, TRACK 1, FWD, TIC 6256 +/- 11;       | 4R5 | 02 |   | 2,025,444:90:0 |    |   |
| 93 | 240 | 13:47:58.266 | 175IG422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R5 | 02 |   | 2,025,444:90:0 |    |   |
| 93 | 240 | 13:47:58.933 | 176IG6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R5 | 02 |   | 2,025,445:00:0 |    |   |
| 93 | 240 | 13:48:02.266 |                 | DMS:    | *RECORD          | R115, TRACK 1, FWD, TIC *6263 +/- 11;      | 4R5 | 02 |   | 2,025,445:05:0 |    |   |
| 93 | 240 | 13:48:29.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *6359 +/- 11;       | 4R5 | 02 |   | 2,025,445:46:0 |    |   |
| 93 | 240 | 13:48:29.600 | 175IG422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,445:46:0 |    |   |
| 93 | 240 | 13:48:30.800 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *6360 +/- 11;       | 4R5 | 02 |   | 2,025,445:47:8 |    |   |
| 93 | 240 | 13:51:52.266 | 117JM           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,448:77:0 |    |   |
| 93 | 240 | 13:52:01.600 | 117JM105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,449:00:0 |    |   |
| 93 | 240 | 13:52:01.600 | 176JM6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R5 | 02 |   | 2,025,449:00:0 |    |   |
| 93 | 240 | 13:52:06.000 | IDUNRT30SM04+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 13:52:06.933 | 117JM105A106B4A | 7STRP   | -0.0024,0.0,0,0, | Slew =,1.25                                | 4R5 | 02 |   | 2,025,449:08:0 |    |   |
| 93 | 240 | 13:52:10.933 | 175JM422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,449:14:0 |    |   |
| 93 | 240 | 13:52:10.933 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 6360 +/- 11;        | 4R5 | 02 |   | 2,025,449:14:0 |    |   |
| 93 | 240 | 13:52:14.933 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *6362 +/- 12;       | 4R5 | 02 |   | 2,025,449:20:0 |    |   |
| 93 | 240 | 13:52:16.933 | 117JM105A106B4B | 7STRP   | 0.0045,0.0,0,0,0 | Slew =,0.11                                | 4R5 | 02 |   | 2,025,449:23:0 |    |   |
| 93 | 240 | 13:53:17.600 | 117JM11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,450:23:0 |    |   |
| 93 | 240 | 13:53:22.266 | 175JM422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,450:30:0 |    |   |
| 93 | 240 | 13:53:22.266 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *6421 +/- 12;       | 4R5 | 02 |   | 2,025,450:30:0 |    |   |
| 93 | 240 | 13:53:23.466 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *6422 +/- 12;       | 4R5 | 02 |   | 2,025,450:31:8 |    |   |
| 93 | 240 | 13:55:08.000 | IDUNRT30SM04+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 14:03:12.933 | 117JN           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,460:06:0 |    |   |
| 93 | 240 | 14:03:13.000 | IDUNRT15SM06+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 14:03:38.933 | 117JN105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,460:45:0 |    |   |
| 93 | 240 | 14:03:44.266 | 117JN105A106B4A | 7STRP   | -0.005,0.0,0,0,0 | Slew =0,2.5                                | 4R5 | 02 |   | 2,025,460:53:0 |    |   |
| 93 | 240 | 14:03:48.266 | 175JN422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,460:59:0 |    |   |
| 93 | 240 | 14:03:48.266 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 6422 +/- 12;        | 4R5 | 02 |   | 2,025,460:59:0 |    |   |
| 93 | 240 | 14:03:52.266 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *6423 +/- 12;       | 4R5 | 02 |   | 2,025,460:65:0 |    |   |
| 93 | 240 | 14:03:54.266 | 117JN105A106B4B | 7STRP   | 0.005,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,460:68:0 |    |   |
| 93 | 240 | 14:04:54.933 | 117JN11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,461:68:0 |    |   |
| 93 | 240 | 14:04:59.600 | 175JN422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,461:75:0 |    |   |
| 93 | 240 | 14:04:59.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *6482 +/- 12;       | 4R5 | 02 |   | 2,025,461:75:0 |    |   |
| 93 | 240 | 14:05:00.800 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *6483 +/- 12;       | 4R5 | 02 |   | 2,025,461:76:8 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 14:06:42.000 | IDUNRT15SM06+   |         | -----STOP-----   |  | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 14:07:06.933 | 128JI149A131A4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6       | 4R7 | 06 |   | 2,025,463:84:0 |    |   |
| 93 | 240 | 14:07:16.000 | IDUSROTATIO2*   |         | -----STOP-----   |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 14:07:40.933 | 165JA4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 4R7 | 06 |   | 2,025,464:44:0 |    |   |
| 93 | 240 | 14:07:41.600 | 165JA4B         | 7SCAN   | NORM,192.158998, | Check S/P Position                         | 4R7 | 06 |   | 2,025,464:45:0 |    |   |
| 93 | 240 | 14:08:02.933 | 117JO           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R7 | 06 |   | 2,025,464:77:0 |    |   |
| 93 | 240 | 14:08:07.600 | 128JI149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R7 | 06 |   | 2,025,464:84:0 |    |   |
| 93 | 240 | 14:08:08.266 | 175JO422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R7 | 06 |   | 2,025,464:85:0 |    |   |
| 93 | 240 | 14:08:08.266 |                 | DMS:    | *RUNUP           | R28, TRACK 1, FWD, TIC 6483 +/- 12;        | 4R7 | 06 |   | 2,025,464:85:0 |    |   |
| 93 | 240 | 14:08:10.933 | 165JA4C         | 7VECT   |                  | Inert vect update UTC                      | 4R7 | 06 |   | 2,025,464:89:0 |    |   |
| 93 | 240 | 14:08:11.600 | 165JA4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                 | 4R7 | 06 |   | 2,025,464:90:0 |    |   |
| 93 | 240 | 14:08:12.266 |                 | DMS:    | *RECORD          | R28, TRACK 1, FWD, TIC *6485 +/- 13;       | 4R7 | 06 |   | 2,025,465:00:0 |    |   |
| 93 | 240 | 14:08:12.266 | 117JO105A106A4A | 7STRP   | 0.004,0.0,0,0,0, | Slew =,0.76                                | 4R7 | 06 |   | 2,025,465:00:0 |    |   |
| 93 | 240 | 14:08:12.266 | 176JO6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R7 | 06 |   | 2,025,465:00:0 |    |   |
| 93 | 240 | 14:08:16.000 | IDUSROTATIO3*   |         | -----START-----  |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 14:08:16.000 | IDUNRTURXM03+   |         | -----START-----  |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 14:08:21.600 | 117JO11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R7 | 06 |   | 2,025,465:14:0 |    |   |
| 93 | 240 | 14:08:32.266 | 175JO422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R7 | 06 |   | 2,025,465:30:0 |    |   |
| 93 | 240 | 14:08:32.266 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *6502 +/- 13;       | 4R7 | 06 |   | 2,025,465:30:0 |    |   |
| 93 | 240 | 14:08:33.466 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *6503 +/- 13;       | 4R7 | 06 |   | 2,025,465:31:8 |    |   |
| 93 | 240 | 14:10:13.600 | 116IG4A         | 7STRP   | -0.002,0.00001,0 | Slew =0,1.0                                | 4R7 | 06 |   | 2,025,467:00:0 |    |   |
| 93 | 240 | 14:10:18.000 | IDUNRTURXM03+   |         | -----STOP-----   |  | 4R7 | 06 |   |                | :  | : |
| 93 | 240 | 14:11:13.600 | 175IH422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R7 | 06 |   | 2,025,467:90:0 |    |   |
| 93 | 240 | 14:11:13.600 |                 | DMS:    | *RUNUP           | R115, TRACK 1, FWD, TIC 6503 +/- 13;       | 4R7 | 06 |   | 2,025,467:90:0 |    |   |
| 93 | 240 | 14:11:14.266 | 176IH6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R7 | 06 |   | 2,025,468:00:0 |    |   |
| 93 | 240 | 14:11:17.600 |                 | DMS:    | *RECORD          | R115, TRACK 1, FWD, TIC *6510 +/- 13;      | 4R7 | 06 |   | 2,025,468:05:0 |    |   |
| 93 | 240 | 14:14:11.600 | 128JJ149A131A4A | 37IOP   | 1,0              | Full Map, Grating Start Position =0        | 4R1 | 00 |   | 2,025,470:84:0 |    |   |
| 93 | 240 | 14:14:16.266 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 1, FWD, TIC *7138 +/- 13;       | 4R1 | 00 |   | 2,025,471:00:0 |    |   |
| 93 | 240 | 14:14:16.266 | 175IH422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R1 | 00 |   | 2,025,471:00:0 |    |   |
| 93 | 240 | 14:14:17.466 |                 | DMS:    | *READY           | RDY, TRACK 1, FWD, TIC *7139 +/- 14;       | 4R1 | 00 |   | 2,025,471:01:8 |    |   |
| 93 | 240 | 14:14:20.266 | 20ET6A          | 6DMSC   | RDY,2            | DMS Control Tape stop                      | 4R1 | 00 |   | 2,025,471:06:0 |    |   |
| 93 | 240 | 14:14:20.266 |                 | DMS:    | READY            | RDY, TRACK *2, *REV, TIC 7139 +/- 14;      | 4R1 | 00 |   | 2,025,471:06:0 |    |   |
| 93 | 240 | 14:15:07.600 | 117JP           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R1 | 00 |   | 2,025,471:77:0 |    |   |
| 93 | 240 | 14:15:12.266 | 128JJ149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R1 | 00 |   | 2,025,471:84:0 |    |   |
| 93 | 240 | 14:15:16.933 | 117JP105A106A4A | 7STRP   | 0.0001,0.0,0,0,0 | Slew =,0.06                                | 4R1 | 00 |   | 2,025,472:00:0 |    |   |
| 93 | 240 | 14:15:16.933 | 176JP6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R1 | 00 |   | 2,025,472:00:0 |    |   |
| 93 | 240 | 14:15:21.000 | IDUNRT90FM03+   |         | -----START-----  |  | 4R1 | 00 |   |                | :  | : |
| 93 | 240 | 14:15:22.266 | 117JP105A106B4A | 7STRP   | -0.002,0.0,0,0,0 | Slew =,1.01                                | 4R1 | 00 |   | 2,025,472:08:0 |    |   |
| 93 | 240 | 14:15:22.933 | 175JP422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R1 | 00 |   | 2,025,472:09:0 |    |   |
| 93 | 240 | 14:15:22.933 |                 | DMS:    | *RUNUP           | R28, TRACK 2, REV, TIC 7139 +/- 14;        | 4R1 | 00 |   | 2,025,472:09:0 |    |   |
| 93 | 240 | 14:15:26.933 |                 | DMS:    | *RECORD          | R28, TRACK 2, REV, TIC *7137 +/- 14;       | 4R1 | 00 |   | 2,025,472:15:0 |    |   |
| 93 | 240 | 14:15:28.933 | 117JP105A106B4B | 7STRP   | 0.004,0.0,0,0,0, | Slew =,0.06                                | 4R1 | 00 |   | 2,025,472:18:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 14:17:09.600 | 117JP11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R1 | 00 |   | 2,025,473:78:0 |    |   |
| 93 | 240 | 14:17:20.933 | 175JP422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R1 | 00 |   | 2,025,474:04:0 |    |   |
| 93 | 240 | 14:17:20.933 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *7037 +/- 14;       | 4R1 | 00 |   | 2,025,474:04:0 |    |   |
| 93 | 240 | 14:17:22.133 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *7036 +/- 14;       | 4R1 | 00 |   | 2,025,474:05:8 |    |   |
| 93 | 240 | 14:18:23.000 | IDUNRT90FM03+   |         | -----STOP-----   |  | 4R1 | 00 |   | :              | :  |   |
| 93 | 240 | 14:25:18.933 | 128JK149A131A4A | 37IOP   | 5,2              | Short Map, Grating Start Position =2       | 4R5 | 02 |   | 2,025,481:84:0 |    |   |
| 93 | 240 | 14:26:19.600 | 128JK149A131B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R5 | 02 |   | 2,025,482:84:0 |    |   |
| 93 | 240 | 14:26:28.000 | IDUNRT15SM07+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 14:26:28.266 | 117JQ           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,483:06:0 |    |   |
| 93 | 240 | 14:26:54.266 | 117JQ105A106A4A | 7STRP   | 0.0001,0.0,0,0,0 | Slew =,0.11                                | 4R5 | 02 |   | 2,025,483:45:0 |    |   |
| 93 | 240 | 14:26:59.600 | 117JQ105A106B4A | 7STRP   | -0.004,0.0,0,0,0 | Slew =,1.25                                | 4R5 | 02 |   | 2,025,483:53:0 |    |   |
| 93 | 240 | 14:27:03.600 |                 | DMS:    | *RUNUP           | R28, TRACK 2, REV, TIC 7036 +/- 14;        | 4R5 | 02 |   | 2,025,483:59:0 |    |   |
| 93 | 240 | 14:27:03.600 | 175JQ422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,483:59:0 |    |   |
| 93 | 240 | 14:27:07.600 |                 | DMS:    | *RECORD          | R28, TRACK 2, REV, TIC *7035 +/- 15;       | 4R5 | 02 |   | 2,025,483:65:0 |    |   |
| 93 | 240 | 14:27:09.600 | 117JQ105A106B4B | 7STRP   | 0.004,0.0,0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,483:68:0 |    |   |
| 93 | 240 | 14:28:23.600 | 117JQ11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,484:88:0 |    |   |
| 93 | 240 | 14:28:28.266 | 175JQ422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,485:04:0 |    |   |
| 93 | 240 | 14:28:28.266 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *6964 +/- 15;       | 4R5 | 02 |   | 2,025,485:04:0 |    |   |
| 93 | 240 | 14:28:29.466 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *6963 +/- 15;       | 4R5 | 02 |   | 2,025,485:05:8 |    |   |
| 93 | 240 | 14:29:58.000 | IDUNRT15SM07+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 14:33:28.933 | 116IH4A         | 7STRP   | -0.002201,0.0,0, | Slew =,1.01                                | 4R5 | 02 |   | 2,025,490:00:0 |    |   |
| 93 | 240 | 14:34:28.933 |                 | DMS:    | *RUNUP           | R115, TRACK 2, REV, TIC 6963 +/- 15;       | 4R5 | 02 |   | 2,025,490:90:0 |    |   |
| 93 | 240 | 14:34:28.933 | 175II422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 4R5 | 02 |   | 2,025,490:90:0 |    |   |
| 93 | 240 | 14:34:29.600 | 176II6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 4R5 | 02 |   | 2,025,491:00:0 |    |   |
| 93 | 240 | 14:34:32.933 |                 | DMS:    | *RECORD          | R115, TRACK 2, REV, TIC *6956 +/- 15;      | 4R5 | 02 |   | 2,025,491:05:0 |    |   |
| 93 | 240 | 14:37:01.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *6434 +/- 15;       | 4R5 | 02 |   | 2,025,493:46:0 |    |   |
| 93 | 240 | 14:37:01.600 | 175II422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,493:46:0 |    |   |
| 93 | 240 | 14:37:02.800 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *6433 +/- 15;       | 4R5 | 02 |   | 2,025,493:47:8 |    |   |
| 93 | 240 | 14:38:22.933 | 117JR           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 4R5 | 02 |   | 2,025,494:77:0 |    |   |
| 93 | 240 | 14:38:32.266 | 117JR105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 4R5 | 02 |   | 2,025,495:00:0 |    |   |
| 93 | 240 | 14:38:32.266 | 176JR6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R5 | 02 |   | 2,025,495:00:0 |    |   |
| 93 | 240 | 14:38:36.000 | IDUNRT30SM05+   |         | -----START-----  |  | 4R5 | 02 |   | :              | :  |   |
| 93 | 240 | 14:38:37.600 | 117JR105A106B4A | 7STRP   | -0.00225,0.0,0,0 | Slew =,1.25                                | 4R5 | 02 |   | 2,025,495:08:0 |    |   |
| 93 | 240 | 14:38:41.600 | 175JR422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R5 | 02 |   | 2,025,495:14:0 |    |   |
| 93 | 240 | 14:38:41.600 |                 | DMS:    | *RUNUP           | R28, TRACK 2, REV, TIC 6433 +/- 15;        | 4R5 | 02 |   | 2,025,495:14:0 |    |   |
| 93 | 240 | 14:38:45.600 |                 | DMS:    | *RECORD          | R28, TRACK 2, REV, TIC *6431 +/- 16;       | 4R5 | 02 |   | 2,025,495:20:0 |    |   |
| 93 | 240 | 14:38:47.600 | 117JR105A106B4B | 7STRP   | 0.0045,0.0,0,0,0 | Slew =,0.11                                | 4R5 | 02 |   | 2,025,495:23:0 |    |   |
| 93 | 240 | 14:39:48.266 | 117JR11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R5 | 02 |   | 2,025,496:23:0 |    |   |
| 93 | 240 | 14:39:52.933 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *6372 +/- 16;       | 4R5 | 02 |   | 2,025,496:30:0 |    |   |
| 93 | 240 | 14:39:52.933 | 175JR422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R5 | 02 |   | 2,025,496:30:0 |    |   |
| 93 | 240 | 14:39:54.133 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *6371 +/- 16;       | 4R5 | 02 |   | 2,025,496:31:8 |    |   |
| 93 | 240 | 14:41:38.000 | IDUNRT30SM05+   |         | -----STOP-----   |  | 4R5 | 02 |   | :              | :  |   |

| YR | DOY | Time         | PSID            | Command | Parameters  | Description             | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|---|-------------------------|-----|----|---|----------------|----|---|
| 93 | 240 | 14:49:43.600 | 117JS           | CSMOS   | GS  | ***** GROUP START CSMOS | 4R5 | 02 |   | 2,025,506:06:0 |    |   |
| 93 | 240 | 14:49:44.000 | IDUNRT15SM08+   |         | -----START-----                                   |                         | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 14:50:09.600 | 117JS105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11                      |                         | 4R5 | 02 |   | 2,025,506:45:0 |    |   |
| 93 | 240 | 14:50:14.933 | 117JS105A106B4A | 7STRP   | -0.0045,0.0,0,0, Slew =0,2.5                      |                         | 4R5 | 02 |   | 2,025,506:53:0 |    |   |
| 93 | 240 | 14:50:18.933 | 175JS422A6A     | 6DMSC   | R28,0 DMS Control Tape runup 28.8kbp              |                         | 4R5 | 02 |   | 2,025,506:59:0 |    |   |
| 93 | 240 | 14:50:18.933 |                 | DMS:    | *RUNUP R28, TRACK 2, REV, TIC 6371 +/- 16;        |                         | 4R5 | 02 |   | 2,025,506:59:0 |    |   |
| 93 | 240 | 14:50:22.933 |                 | DMS:    | *RECORD R28, TRACK 2, REV, TIC *6370 +/- 16;      |                         | 4R5 | 02 |   | 2,025,506:65:0 |    |   |
| 93 | 240 | 14:50:24.933 | 117JS105A106B4B | 7STRP   | 0.00425,0.00004, Slew =,0.11                      |                         | 4R5 | 02 |   | 2,025,506:68:0 |    |   |
| 93 | 240 | 14:51:25.600 | 117JS11A        | CSMOS   | GE  | ***** GROUP END CSMOS   | 4R5 | 02 |   | 2,025,507:68:0 |    |   |
| 93 | 240 | 14:51:30.266 |                 | DMS:    | *RUNDOWN RDY, TRACK 2, REV, TIC *6310 +/- 16;     |                         | 4R5 | 02 |   | 2,025,507:75:0 |    |   |
| 93 | 240 | 14:51:30.266 | 175JS422A6B     | 6DMSC   | RDY,0 DMS Control Tape stop                       |                         | 4R5 | 02 |   | 2,025,507:75:0 |    |   |
| 93 | 240 | 14:51:31.466 |                 | DMS:    | *READY RDY, TRACK 2, REV, TIC *6309 +/- 17;       |                         | 4R5 | 02 |   | 2,025,507:76:8 |    |   |
| 93 | 240 | 14:53:13.000 | IDUNRT15SM08+   |         | -----STOP-----                                    |                         | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 14:56:44.266 | 116II4A         | 7STRP   | -0.002021,-0.000 Slew =0,1.0                      |                         | 4R5 | 02 |   | 2,025,513:00:0 |    |   |
| 93 | 240 | 14:57:44.266 | 175IJ422A6A     | 6DMSC   | R115,0 DMS Control Tape runup 115.2kb             |                         | 4R5 | 02 |   | 2,025,513:90:0 |    |   |
| 93 | 240 | 14:57:44.266 |                 | DMS:    | *RUNUP R115, TRACK 2, REV, TIC 6309 +/- 17;       |                         | 4R5 | 02 |   | 2,025,513:90:0 |    |   |
| 93 | 240 | 14:57:44.933 | 176IJ6A         | 6TMCHG  | NCGHCM NO CHANGE / 115.2 comp image + NIMS + PW   |                         | 4R5 | 02 |   | 2,025,514:00:0 |    |   |
| 93 | 240 | 14:57:48.266 |                 | DMS:    | *RECORD R115, TRACK 2, REV, TIC *6303 +/- 17;     |                         | 4R5 | 02 |   | 2,025,514:05:0 |    |   |
| 93 | 240 | 15:00:16.933 | 175IJ422A6B     | 6DMSC   | RDY,0 DMS Control Tape stop                       |                         | 4R5 | 02 |   | 2,025,516:46:0 |    |   |
| 93 | 240 | 15:00:16.933 |                 | DMS:    | *RUNDOWN RDY, TRACK 2, REV, TIC *5780 +/- 17;     |                         | 4R5 | 02 |   | 2,025,516:46:0 |    |   |
| 93 | 240 | 15:00:18.133 |                 | DMS:    | *READY RDY, TRACK 2, REV, TIC *5779 +/- 17;       |                         | 4R5 | 02 |   | 2,025,516:47:8 |    |   |
| 93 | 240 | 15:01:38.266 | 117JT           | CSMOS   | GS  | ***** GROUP START CSMOS | 4R5 | 02 |   | 2,025,517:77:0 |    |   |
| 93 | 240 | 15:01:47.600 | 117JT105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11                      |                         | 4R5 | 02 |   | 2,025,518:00:0 |    |   |
| 93 | 240 | 15:01:47.600 | 176JT6A         | 6TMCHG  | ELSMPW 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N |                         | 4R5 | 02 |   | 2,025,518:00:0 |    |   |
| 93 | 240 | 15:01:52.000 | IDUNRT30SM06+   |         | -----START-----                                   |                         | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 15:01:52.933 | 117JT105A106B4A | 7STRP   | -0.00225,0.0,0,0, Slew =,1.25                     |                         | 4R5 | 02 |   | 2,025,518:08:0 |    |   |
| 93 | 240 | 15:01:56.933 | 175JT422A6A     | 6DMSC   | R28,0 DMS Control Tape runup 28.8kbp              |                         | 4R5 | 02 |   | 2,025,518:14:0 |    |   |
| 93 | 240 | 15:01:56.933 |                 | DMS:    | *RUNUP R28, TRACK 2, REV, TIC 5779 +/- 17;        |                         | 4R5 | 02 |   | 2,025,518:14:0 |    |   |
| 93 | 240 | 15:02:00.933 |                 | DMS:    | *RECORD R28, TRACK 2, REV, TIC *5778 +/- 18;      |                         | 4R5 | 02 |   | 2,025,518:20:0 |    |   |
| 93 | 240 | 15:02:02.933 | 117JT105A106B4B | 7STRP   | 0.0045,0.0,0,0,0 Slew =,0.11                      |                         | 4R5 | 02 |   | 2,025,518:23:0 |    |   |
| 93 | 240 | 15:03:03.600 | 117JT11A        | CSMOS   | GE  | ***** GROUP END CSMOS   | 4R5 | 02 |   | 2,025,519:23:0 |    |   |
| 93 | 240 | 15:03:08.266 | 175JT422A6B     | 6DMSC   | RDY,0 DMS Control Tape stop                       |                         | 4R5 | 02 |   | 2,025,519:30:0 |    |   |
| 93 | 240 | 15:03:08.266 |                 | DMS:    | *RUNDOWN RDY, TRACK 2, REV, TIC *5719 +/- 18;     |                         | 4R5 | 02 |   | 2,025,519:30:0 |    |   |
| 93 | 240 | 15:03:09.466 |                 | DMS:    | *READY RDY, TRACK 2, REV, TIC *5718 +/- 18;       |                         | 4R5 | 02 |   | 2,025,519:31:8 |    |   |
| 93 | 240 | 15:04:54.000 | IDUNRT30SM06+   |         | -----STOP-----                                    |                         | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 15:12:58.933 | 117JU           | CSMOS   | GS  | ***** GROUP START CSMOS | 4R5 | 02 |   | 2,025,529:06:0 |    |   |
| 93 | 240 | 15:12:59.000 | IDUNRT15SM09+   |         | -----START-----                                   |                         | 4R5 | 02 |   |                | :  | : |
| 93 | 240 | 15:13:24.933 | 117JU105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11                      |                         | 4R5 | 02 |   | 2,025,529:45:0 |    |   |
| 93 | 240 | 15:13:30.266 | 117JU105A106B4A | 7STRP   | -0.0045,0.0,0,0, Slew =0,2.5                      |                         | 4R5 | 02 |   | 2,025,529:53:0 |    |   |
| 93 | 240 | 15:13:34.266 | 175JU422A6A     | 6DMSC   | R28,0 DMS Control Tape runup 28.8kbp              |                         | 4R5 | 02 |   | 2,025,529:59:0 |    |   |
| 93 | 240 | 15:13:34.266 |                 | DMS:    | *RUNUP R28, TRACK 2, REV, TIC 5718 +/- 18;        |                         | 4R5 | 02 |   | 2,025,529:59:0 |    |   |
| 93 | 240 | 15:13:38.266 |                 | DMS:    | *RECORD R28, TRACK 2, REV, TIC *5716 +/- 18;      |                         | 4R5 | 02 |   | 2,025,529:65:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters         | Description                                | GCM | O S | RIM            | MF I |
|----|-----|--------------|-----------------|---------|--------------------|--|-----|-----|----------------|------|
| 93 | 240 | 15:13:40.266 | 117JU105A106B4B | 7STRP   | 0.0045,0.0,0,0,0   | Slew =,0.11                                | 4R5 | 02  | 2,025,529:68:0 |      |
| 93 | 240 | 15:14:40.933 | 117JU11A        | CSMOS   | GE                 | ***** GROUP END CSMOS                      | 4R5 | 02  | 2,025,530:68:0 |      |
| 93 | 240 | 15:14:45.600 | 175JU422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 4R5 | 02  | 2,025,530:75:0 |      |
| 93 | 240 | 15:14:45.600 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 2, REV, TIC *5657 +/- 18;       | 4R5 | 02  | 2,025,530:75:0 |      |
| 93 | 240 | 15:14:46.800 |                 | DMS:    | *READY             | RDY, TRACK 2, REV, TIC *5656 +/- 18;       | 4R5 | 02  | 2,025,530:76:8 |      |
| 93 | 240 | 15:16:28.000 | IDUNRT15SM09+   |         | -----STOP-----     |  | 4R5 | 02  | :              | :    |
| 93 | 240 | 15:17:02.000 | IDUSROTATIO3*   |         | -----STOP-----     |  | 4R5 | 02  | :              | :    |
| 93 | 240 | 15:17:53.600 | 128JL149A131A4A | 37IOP   | 7,6                | Fixed Map, Grating Start Position =6       | 4R7 | 06  | 2,025,533:84:0 |      |
| 93 | 240 | 15:18:27.600 | 165JB4A         | 7TMOT   | DIS,TMC            | Disable IVP - Target Motion                | 4R7 | 06  | 2,025,534:44:0 |      |
| 93 | 240 | 15:18:28.266 | 165JB4B         | 7SCAN   | NORM,192.276999,   | Check S/P Position                         | 4R7 | 06  | 2,025,534:45:0 |      |
| 93 | 240 | 15:18:49.600 | 117JV           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 4R7 | 06  | 2,025,534:77:0 |      |
| 93 | 240 | 15:18:54.266 | 128JL149A131B4A | 37IST   | 0,2,0,OFF,0,1,2    | Gain State 3                               | 3R7 | 06  | 2,025,534:84:0 |      |
| 93 | 240 | 15:18:54.933 | 175JV422A6A     | 6DMSC   | R28,0              | DMS Control Tape runup 28.8kbp             | 3R7 | 06  | 2,025,534:85:0 |      |
| 93 | 240 | 15:18:54.933 |                 | DMS:    | *RUNUP             | R28, TRACK 2, REV, TIC 5656 +/- 18;        | 3R7 | 06  | 2,025,534:85:0 |      |
| 93 | 240 | 15:18:57.600 | 165JB4C         | 7VECT   |                    | Inert vect update UTC                      | 3R7 | 06  | 2,025,534:89:0 |      |
| 93 | 240 | 15:18:58.266 | 165JB4D         | 7TMOT   | ENA,TMC            | Enable IVP - Target Motion                 | 3R7 | 06  | 2,025,534:90:0 |      |
| 93 | 240 | 15:18:58.933 |                 | DMS:    | *RECORD            | R28, TRACK 2, REV, TIC *5655 +/- 19;       | 3R7 | 06  | 2,025,535:00:0 |      |
| 93 | 240 | 15:18:58.933 | 176JV6A         | 6TMCHG  | ELSMPW             | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R7 | 06  | 2,025,535:00:0 |      |
| 93 | 240 | 15:18:58.933 | 117JV105A106A4A | 7STRP   | 0.0045,0.0,0,0,0   | Slew =,0.76                                | 3R7 | 06  | 2,025,535:00:0 |      |
| 93 | 240 | 15:19:03.000 | IDUSROTATIO4*   |         | -----START-----    |  | 3R7 | 06  | :              | :    |
| 93 | 240 | 15:19:03.000 | IDUNRTURXM04+   |         | -----START-----    |  | 3R7 | 06  | :              | :    |
| 93 | 240 | 15:19:10.933 | 117JV11A        | CSMOS   | GE                 | ***** GROUP END CSMOS                      | 3R7 | 06  | 2,025,535:18:0 |      |
| 93 | 240 | 15:19:18.933 | 175JV422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 3R7 | 06  | 2,025,535:30:0 |      |
| 93 | 240 | 15:19:18.933 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 2, REV, TIC *5637 +/- 19;       | 3R7 | 06  | 2,025,535:30:0 |      |
| 93 | 240 | 15:19:20.133 |                 | DMS:    | *READY             | RDY, TRACK 2, REV, TIC *5636 +/- 19;       | 3R7 | 06  | 2,025,535:31:8 |      |
| 93 | 240 | 15:19:59.600 | 116IJ4A         | 7STRP   | -0.0025,0.0,0,0,0, | Slew =,1.31                                | 3R7 | 06  | 2,025,536:00:0 |      |
| 93 | 240 | 15:20:04.000 | IDUNRTURXM04+   |         | -----STOP-----     |  | 3R7 | 06  | :              | :    |
| 93 | 240 | 15:20:59.600 |                 | DMS:    | *RUNUP             | R115, TRACK 2, REV, TIC 5636 +/- 19;       | 3R7 | 06  | 2,025,536:90:0 |      |
| 93 | 240 | 15:20:59.600 | 175IK422A6A     | 6DMSC   | R115,0             | DMS Control Tape runup 115.2kb             | 3R7 | 06  | 2,025,536:90:0 |      |
| 93 | 240 | 15:21:00.266 | 176IK6A         | 6TMCHG  | NCGHCM             | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R7 | 06  | 2,025,537:00:0 |      |
| 93 | 240 | 15:21:03.600 |                 | DMS:    | *RECORD            | R115, TRACK 2, REV, TIC *5629 +/- 19;      | 3R7 | 06  | 2,025,537:05:0 |      |
| 93 | 240 | 15:23:57.600 | 128JM149A131A4A | 37IOP   | 1,0                | Full Map, Grating Start Position =0        | 3R1 | 00  | 2,025,539:84:0 |      |
| 93 | 240 | 15:24:02.266 | 175IK422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 3R1 | 00  | 2,025,540:00:0 |      |
| 93 | 240 | 15:24:02.266 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 2, REV, TIC *5001 +/- 19;       | 3R1 | 00  | 2,025,540:00:0 |      |
| 93 | 240 | 15:24:03.466 |                 | DMS:    | *READY             | RDY, TRACK 2, REV, TIC *5000 +/- 20;       | 3R1 | 00  | 2,025,540:01:8 |      |
| 93 | 240 | 15:24:53.600 | 117JW           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 3R1 | 00  | 2,025,540:77:0 |      |
| 93 | 240 | 15:24:58.266 | 128JM149A131B4A | 37IST   | 0,2,0,OFF,0,1,2    | Gain State 3                               | 3R1 | 00  | 2,025,540:84:0 |      |
| 93 | 240 | 15:25:02.933 | 117JW105A106A4A | 7STRP   | 0.00001,0.0,0,0,0, | Slew =,0.06                                | 3R1 | 00  | 2,025,541:00:0 |      |
| 93 | 240 | 15:25:02.933 | 176JX6A         | 6TMCHG  | ELSMPW             | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R1 | 00  | 2,025,541:00:0 |      |
| 93 | 240 | 15:25:07.000 | IDUNRT90FM04+   |         | -----START-----    |  | 3R1 | 00  | :              | :    |
| 93 | 240 | 15:25:08.266 | 117JW105A106B4A | 7STRP   | -0.0025,0.0,0,0,0, | Slew =,1.25                                | 3R1 | 00  | 2,025,541:08:0 |      |
| 93 | 240 | 15:25:08.933 | 175JX422A6A     | 6DMSC   | R28,0              | DMS Control Tape runup 28.8kbp             | 3R1 | 00  | 2,025,541:09:0 |      |

| YR | DOY | Time         | PSID            | Command | Parameters        | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|-------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 15:25:08.933 |                 | DMS:    | *RUNUP            | R28, TRACK 2, REV, TIC 5000 +/- 20;        | 3R1 | 00 |   | 2,025,541:09:0 |    |   |
| 93 | 240 | 15:25:12.933 |                 | DMS:    | *RECORD           | R28, TRACK 2, REV, TIC *4999 +/- 20;       | 3R1 | 00 |   | 2,025,541:15:0 |    |   |
| 93 | 240 | 15:25:14.933 | 117JW105A106B4B | 7STRP   | 0.00524,0.0,0,0,  | Slew =,0.06                                | 3R1 | 00 |   | 2,025,541:18:0 |    |   |
| 93 | 240 | 15:27:16.266 | 117JW11A        | CSMOS   | GE                | ***** GROUP END CSMOS                      | 3R1 | 00 |   | 2,025,543:18:0 |    |   |
| 93 | 240 | 15:27:24.266 | 175JX422A6B     | 6DMSC   | RDY,0             | DMS Control Tape stop                      | 3R1 | 00 |   | 2,025,543:30:0 |    |   |
| 93 | 240 | 15:27:24.266 |                 | DMS:    | *RUNDOWN          | RDY, TRACK 2, REV, TIC *4884 +/- 20;       | 3R1 | 00 |   | 2,025,543:30:0 |    |   |
| 93 | 240 | 15:27:25.466 |                 | DMS:    | *READY            | RDY, TRACK 2, REV, TIC *4883 +/- 20;       | 3R1 | 00 |   | 2,025,543:31:8 |    |   |
| 93 | 240 | 15:28:09.000 | IDUNRT90FM04+   |         | -----STOP-----    |  | 3R1 | 00 |   | :              | :  |   |
| 93 | 240 | 15:31:06.933 | 116IN4A         | 7STRP   | -0.00275,0.00000  | Slew =0,1.3                                | 3R1 | 00 |   | 2,025,547:00:0 |    |   |
| 93 | 240 | 15:32:06.933 | 175IL422A6A     | 6DMSC   | R115,0            | DMS Control Tape runup 115.2kb             | 3R1 | 00 |   | 2,025,547:90:0 |    |   |
| 93 | 240 | 15:32:06.933 |                 | DMS:    | *RUNUP            | R115, TRACK 2, REV, TIC 4883 +/- 20;       | 3R1 | 00 |   | 2,025,547:90:0 |    |   |
| 93 | 240 | 15:32:07.600 | 176IL6A         | 6TMCHG  | NCGHCM            | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R1 | 00 |   | 2,025,548:00:0 |    |   |
| 93 | 240 | 15:32:10.933 |                 | DMS:    | *RECORD           | R115, TRACK 2, REV, TIC *4876 +/- 21;      | 3R1 | 00 |   | 2,025,548:05:0 |    |   |
| 93 | 240 | 15:35:04.933 | 128JN149A131A4A | 37IOP   | 5,2               | Short Map, Grating Start Position =2       | 3R5 | 02 |   | 2,025,550:84:0 |    |   |
| 93 | 240 | 15:35:09.600 |                 | DMS:    | *RUNDOWN          | RDY, TRACK 2, REV, TIC *4248 +/- 21;       | 3R5 | 02 |   | 2,025,551:00:0 |    |   |
| 93 | 240 | 15:35:09.600 | 175IL422A6B     | 6DMSC   | RDY,0             | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,551:00:0 |    |   |
| 93 | 240 | 15:35:10.800 |                 | DMS:    | *READY            | RDY, TRACK 2, REV, TIC *4247 +/- 21;       | 3R5 | 02 |   | 2,025,551:01:8 |    |   |
| 93 | 240 | 15:36:05.600 | 128JN149A131B4A | 37IST   | 0,2,0,OFF,0,1,2   | Gain State 3                               | 3R5 | 02 |   | 2,025,551:84:0 |    |   |
| 93 | 240 | 15:36:10.266 | 176JY6A         | 6TMCHG  | ELSMPW            | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R5 | 02 |   | 2,025,552:00:0 |    |   |
| 93 | 240 | 15:36:14.000 | IDUNRT15SM10+   |         | -----START-----   |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 15:36:14.266 | 117JX           | CSMOS   | GS                | ***** GROUP START CSMOS                    | 3R5 | 02 |   | 2,025,552:06:0 |    |   |
| 93 | 240 | 15:36:40.266 | 117JX105A106A4A | 7STRP   | 0.00001,0.0,0,0,  | Slew =,0.11                                | 3R5 | 02 |   | 2,025,552:45:0 |    |   |
| 93 | 240 | 15:36:45.600 | 117JX105A106B4A | 7STRP   | -0.00263,0.0,0,0, | Slew =,1.31                                | 3R5 | 02 |   | 2,025,552:53:0 |    |   |
| 93 | 240 | 15:36:49.600 |                 | DMS:    | *RUNUP            | R28, TRACK 2, REV, TIC 4247 +/- 21;        | 3R5 | 02 |   | 2,025,552:59:0 |    |   |
| 93 | 240 | 15:36:49.600 | 175JY422A6A     | 6DMSC   | R28,0             | DMS Control Tape runup 28.8kbp             | 3R5 | 02 |   | 2,025,552:59:0 |    |   |
| 93 | 240 | 15:36:53.600 |                 | DMS:    | *RECORD           | R28, TRACK 2, REV, TIC *4246 +/- 21;       | 3R5 | 02 |   | 2,025,552:65:0 |    |   |
| 93 | 240 | 15:36:55.600 | 117JX105A106B4B | 7STRP   | 0.00525,0.0,0,0,  | Slew =,0.11                                | 3R5 | 02 |   | 2,025,552:68:0 |    |   |
| 93 | 240 | 15:38:16.266 | 117JX11A        | CSMOS   | GE                | ***** GROUP END CSMOS                      | 3R5 | 02 |   | 2,025,554:07:0 |    |   |
| 93 | 240 | 15:38:20.933 | 175JY422A6B     | 6DMSC   | RDY,0             | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,554:14:0 |    |   |
| 93 | 240 | 15:38:20.933 |                 | DMS:    | *RUNDOWN          | RDY, TRACK 2, REV, TIC *4169 +/- 21;       | 3R5 | 02 |   | 2,025,554:14:0 |    |   |
| 93 | 240 | 15:38:22.133 |                 | DMS:    | *READY            | RDY, TRACK 2, REV, TIC *4168 +/- 21;       | 3R5 | 02 |   | 2,025,554:15:8 |    |   |
| 93 | 240 | 15:39:44.000 | IDUNRT15SM10+   |         | -----STOP-----    |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 15:43:14.933 | 116IK4A         | 7STRP   | -0.002631,0.0000  | Slew =0,1.0                                | 3R5 | 02 |   | 2,025,559:00:0 |    |   |
| 93 | 240 | 15:44:14.933 | 175IM422A6A     | 6DMSC   | R115,0            | DMS Control Tape runup 115.2kb             | 3R5 | 02 |   | 2,025,559:90:0 |    |   |
| 93 | 240 | 15:44:14.933 |                 | DMS:    | *RUNUP            | R115, TRACK 2, REV, TIC 4168 +/- 21;       | 3R5 | 02 |   | 2,025,559:90:0 |    |   |
| 93 | 240 | 15:44:15.600 | 176IM6A         | 6TMCHG  | NCGHCM            | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R5 | 02 |   | 2,025,560:00:0 |    |   |
| 93 | 240 | 15:44:18.933 |                 | DMS:    | *RECORD           | R115, TRACK 2, REV, TIC *4161 +/- 22;      | 3R5 | 02 |   | 2,025,560:05:0 |    |   |
| 93 | 240 | 15:47:17.600 | 175IM422A6B     | 6DMSC   | RDY,0             | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,563:00:0 |    |   |
| 93 | 240 | 15:47:17.600 |                 | DMS:    | *RUNDOWN          | RDY, TRACK 2, REV, TIC *3533 +/- 22;       | 3R5 | 02 |   | 2,025,563:00:0 |    |   |
| 93 | 240 | 15:47:18.800 |                 | DMS:    | *READY            | RDY, TRACK 2, REV, TIC *3532 +/- 22;       | 3R5 | 02 |   | 2,025,563:01:8 |    |   |
| 93 | 240 | 15:48:08.933 | 117JY           | CSMOS   | GS                | ***** GROUP START CSMOS                    | 3R5 | 02 |   | 2,025,563:77:0 |    |   |
| 93 | 240 | 15:48:18.266 | 117JY105A106A4A | 7STRP   | 0.00001,0.0,0,0,  | Slew =,0.11                                | 3R5 | 02 |   | 2,025,564:00:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters                   | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 15:48:18.266 | 176JZ6A         | 6TMCHG  | ELSMPW                       | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R5 | 02 |   | 2,025,564:00:0 |    |   |
| 93 | 240 | 15:48:22.000 | IDUNRT30SM07+   |         | -----START-----              |  | 3R5 | 02 |   |                | :  | : |
| 93 | 240 | 15:48:23.600 | 117JY105A106B4A | 7STRP   | -0.0027,0.0,0,0, Slew =,1.25 |  | 3R5 | 02 |   | 2,025,564:08:0 |    |   |
| 93 | 240 | 15:48:27.600 | 175JZ422A6A     | 6DMSC   | R28,0                        | DMS Control Tape runup 28.8kbp             | 3R5 | 02 |   | 2,025,564:14:0 |    |   |
| 93 | 240 | 15:48:27.600 |                 | DMS:    | *RUNUP                       | R28, TRACK 2, REV, TIC 3532 +/- 22;        | 3R5 | 02 |   | 2,025,564:14:0 |    |   |
| 93 | 240 | 15:48:31.600 |                 | DMS:    | *RECORD                      | R28, TRACK 2, REV, TIC *3531 +/- 22;       | 3R5 | 02 |   | 2,025,564:20:0 |    |   |
| 93 | 240 | 15:48:33.600 | 117JY105A106B4B | 7STRP   | 0.0055,0.0,0,0,0 Slew =,0.11 |  | 3R5 | 02 |   | 2,025,564:23:0 |    |   |
| 93 | 240 | 15:49:40.933 | 117JY11A        | CSMOS   | GE                           | ***** GROUP END CSMOS                      | 3R5 | 02 |   | 2,025,565:33:0 |    |   |
| 93 | 240 | 15:49:45.600 |                 | DMS:    | *RUNDOWN                     | RDY, TRACK 2, REV, TIC *3466 +/- 22;       | 3R5 | 02 |   | 2,025,565:40:0 |    |   |
| 93 | 240 | 15:49:45.600 | 175JZ422A6B     | 6DMSC   | RDY,0                        | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,565:40:0 |    |   |
| 93 | 240 | 15:49:46.800 |                 | DMS:    | *READY                       | RDY, TRACK 2, REV, TIC *3465 +/- 23;       | 3R5 | 02 |   | 2,025,565:41:8 |    |   |
| 93 | 240 | 15:51:24.000 | IDUNRT30SM07+   |         | -----STOP-----               |  | 3R5 | 02 |   |                | :  | : |
| 93 | 240 | 15:54:22.266 | 116IO4A         | 7STRP   | -0.00281,0.00000 Slew =0,1.3 |  | 3R5 | 02 |   | 2,025,570:00:0 |    |   |
| 93 | 240 | 15:55:22.266 | 175IN422A6A     | 6DMSC   | R115,0                       | DMS Control Tape runup 115.2kb             | 3R5 | 02 |   | 2,025,570:90:0 |    |   |
| 93 | 240 | 15:55:22.266 |                 | DMS:    | *RUNUP                       | R115, TRACK 2, REV, TIC 3465 +/- 23;       | 3R5 | 02 |   | 2,025,570:90:0 |    |   |
| 93 | 240 | 15:55:22.933 | 176IN6A         | 6TMCHG  | NCGHCM                       | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R5 | 02 |   | 2,025,571:00:0 |    |   |
| 93 | 240 | 15:55:26.266 |                 | DMS:    | *RECORD                      | R115, TRACK 2, REV, TIC *3458 +/- 23;      | 3R5 | 02 |   | 2,025,571:05:0 |    |   |
| 93 | 240 | 15:58:24.933 |                 | DMS:    | *RUNDOWN                     | RDY, TRACK 2, REV, TIC *2830 +/- 23;       | 3R5 | 02 |   | 2,025,574:00:0 |    |   |
| 93 | 240 | 15:58:24.933 | 175IN422A6B     | 6DMSC   | RDY,0                        | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,574:00:0 |    |   |
| 93 | 240 | 15:58:26.133 |                 | DMS:    | *READY                       | RDY, TRACK 2, REV, TIC *2829 +/- 23;       | 3R5 | 02 |   | 2,025,574:01:8 |    |   |
| 93 | 240 | 15:59:25.600 | 176EA6A         | 6TMCHG  | ELSMPW                       | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R5 | 02 |   | 2,025,575:00:0 |    |   |
| 93 | 240 | 15:59:29.600 | 117JZ           | CSMOS   | GS                           | ***** GROUP START CSMOS                    | 3R5 | 02 |   | 2,025,575:06:0 |    |   |
| 93 | 240 | 15:59:30.000 | IDUNRT15SM11+   |         | -----START-----              |  | 3R5 | 02 |   |                | :  | : |
| 93 | 240 | 15:59:55.600 | 117JZ105A106A4A | 7STRP   | 0.00001,0.0,0,0, Slew =,0.11 |  | 3R5 | 02 |   | 2,025,575:45:0 |    |   |
| 93 | 240 | 16:00:00.933 | 117JZ105A106B4A | 7STRP   | -0.003,0.0,0,0,0 Slew =,1.31 |  | 3R5 | 02 |   | 2,025,575:53:0 |    |   |
| 93 | 240 | 16:00:04.933 |                 | DMS:    | *RUNUP                       | R28, TRACK 2, REV, TIC 2829 +/- 23;        | 3R5 | 02 |   | 2,025,575:59:0 |    |   |
| 93 | 240 | 16:00:04.933 | 175EA422A6A     | 6DMSC   | R28,0                        | DMS Control Tape runup 28.8kbp             | 3R5 | 02 |   | 2,025,575:59:0 |    |   |
| 93 | 240 | 16:00:08.933 |                 | DMS:    | *RECORD                      | R28, TRACK 2, REV, TIC *2828 +/- 24;       | 3R5 | 02 |   | 2,025,575:65:0 |    |   |
| 93 | 240 | 16:00:10.933 | 117JZ105A106B4B | 7STRP   | 0.006,0.0,0,0,0 Slew =,0.11  |  | 3R5 | 02 |   | 2,025,575:68:0 |    |   |
| 93 | 240 | 16:01:18.266 | 117JZ11A        | CSMOS   | GE                           | ***** GROUP END CSMOS                      | 3R5 | 02 |   | 2,025,576:78:0 |    |   |
| 93 | 240 | 16:01:22.933 |                 | DMS:    | *RUNDOWN                     | RDY, TRACK 2, REV, TIC *2763 +/- 24;       | 3R5 | 02 |   | 2,025,576:85:0 |    |   |
| 93 | 240 | 16:01:22.933 | 175EA422A6B     | 6DMSC   | RDY,0                        | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,576:85:0 |    |   |
| 93 | 240 | 16:01:24.133 |                 | DMS:    | *READY                       | RDY, TRACK 2, REV, TIC *2762 +/- 24;       | 3R5 | 02 |   | 2,025,576:86:8 |    |   |
| 93 | 240 | 16:02:59.000 | IDUNRT15SM11+   |         | -----STOP-----               |  | 3R5 | 02 |   |                | :  | : |
| 93 | 240 | 16:06:30.266 | 116IL4A         | 7STRP   | -0.00301,0.00000 Slew =0,1.0 |  | 3R5 | 02 |   | 2,025,582:00:0 |    |   |
| 93 | 240 | 16:07:30.266 |                 | DMS:    | *RUNUP                       | R115, TRACK 2, REV, TIC 2762 +/- 24;       | 3R5 | 02 |   | 2,025,582:90:0 |    |   |
| 93 | 240 | 16:07:30.266 | 175IO422A6A     | 6DMSC   | R115,0                       | DMS Control Tape runup 115.2kb             | 3R5 | 02 |   | 2,025,582:90:0 |    |   |
| 93 | 240 | 16:07:30.933 | 176IO6A         | 6TMCHG  | NCGHCM                       | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R5 | 02 |   | 2,025,583:00:0 |    |   |
| 93 | 240 | 16:07:34.266 |                 | DMS:    | *RECORD                      | R115, TRACK 2, REV, TIC *2755 +/- 24;      | 3R5 | 02 |   | 2,025,583:05:0 |    |   |
| 93 | 240 | 16:10:32.933 | 175IO422A6B     | 6DMSC   | RDY,0                        | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,586:00:0 |    |   |
| 93 | 240 | 16:10:32.933 |                 | DMS:    | *RUNDOWN                     | RDY, TRACK 2, REV, TIC *2127 +/- 24;       | 3R5 | 02 |   | 2,025,586:00:0 |    |   |
| 93 | 240 | 16:10:34.133 |                 | DMS:    | *READY                       | RDY, TRACK 2, REV, TIC *2126 +/- 24;       | 3R5 | 02 |   | 2,025,586:01:8 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 16:11:24.266 | 117EA           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R5 | 02 |   | 2,025,586:77:0 |    |   |
| 93 | 240 | 16:11:33.600 | 176EB6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R5 | 02 |   | 2,025,587:00:0 |    |   |
| 93 | 240 | 16:11:33.600 | 117EA105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R5 | 02 |   | 2,025,587:00:0 |    |   |
| 93 | 240 | 16:11:38.000 | IDUNRT30SM08+   |         | -----START-----  |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 16:11:38.933 | 117EA105A106B4A | 7STRP   | -0.00275,0.0,0,0 | Slew =,1.25                                | 3R5 | 02 |   | 2,025,587:08:0 |    |   |
| 93 | 240 | 16:11:42.933 | 175EB422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 3R5 | 02 |   | 2,025,587:14:0 |    |   |
| 93 | 240 | 16:11:42.933 |                 | DMS:    | *RUNUP           | R28, TRACK 2, REV, TIC 2126 +/- 24;        | 3R5 | 02 |   | 2,025,587:14:0 |    |   |
| 93 | 240 | 16:11:46.933 |                 | DMS:    | *RECORD          | R28, TRACK 2, REV, TIC *2125 +/- 25;       | 3R5 | 02 |   | 2,025,587:20:0 |    |   |
| 93 | 240 | 16:11:48.933 | 117EA105A106B4B | 7STRP   | 0.00575,0.0,0,0, | Slew =,0.11                                | 3R5 | 02 |   | 2,025,587:23:0 |    |   |
| 93 | 240 | 16:13:02.933 | 117EA11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 3R5 | 02 |   | 2,025,588:43:0 |    |   |
| 93 | 240 | 16:13:07.600 | 175EB422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,588:50:0 |    |   |
| 93 | 240 | 16:13:07.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *2054 +/- 25;       | 3R5 | 02 |   | 2,025,588:50:0 |    |   |
| 93 | 240 | 16:13:08.800 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *2053 +/- 25;       | 3R5 | 02 |   | 2,025,588:51:8 |    |   |
| 93 | 240 | 16:14:40.000 | IDUNRT30SM08+   |         | -----STOP-----   |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 16:17:37.600 | 116IP4A         | 7STRP   | -0.00301,0.00000 | Slew =0,1.3                                | 3R5 | 02 |   | 2,025,593:00:0 |    |   |
| 93 | 240 | 16:18:37.600 |                 | DMS:    | *RUNUP           | R115, TRACK 2, REV, TIC 2053 +/- 25;       | 3R5 | 02 |   | 2,025,593:90:0 |    |   |
| 93 | 240 | 16:18:37.600 | 175IP422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 3R5 | 02 |   | 2,025,593:90:0 |    |   |
| 93 | 240 | 16:18:38.266 | 176IP6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R5 | 02 |   | 2,025,594:00:0 |    |   |
| 93 | 240 | 16:18:41.600 |                 | DMS:    | *RECORD          | R115, TRACK 2, REV, TIC *2046 +/- 25;      | 3R5 | 02 |   | 2,025,594:05:0 |    |   |
| 93 | 240 | 16:21:40.266 | 175IP422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,597:00:0 |    |   |
| 93 | 240 | 16:21:40.266 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *1418 +/- 25;       | 3R5 | 02 |   | 2,025,597:00:0 |    |   |
| 93 | 240 | 16:21:41.466 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *1417 +/- 26;       | 3R5 | 02 |   | 2,025,597:01:8 |    |   |
| 93 | 240 | 16:22:40.933 | 176EC6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R5 | 02 |   | 2,025,598:00:0 |    |   |
| 93 | 240 | 16:22:44.933 | 117EB           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R5 | 02 |   | 2,025,598:06:0 |    |   |
| 93 | 240 | 16:22:45.000 | IDUNRT15SM12+   |         | -----START-----  |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 16:23:10.933 | 117EB105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R5 | 02 |   | 2,025,598:45:0 |    |   |
| 93 | 240 | 16:23:16.266 | 117EB105A106B4A | 7STRP   | -0.0034,0.0,0,0, | Slew =,1.31                                | 3R5 | 02 |   | 2,025,598:53:0 |    |   |
| 93 | 240 | 16:23:20.266 | 175EC422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 3R5 | 02 |   | 2,025,598:59:0 |    |   |
| 93 | 240 | 16:23:20.266 |                 | DMS:    | *RUNUP           | R28, TRACK 2, REV, TIC 1417 +/- 26;        | 3R5 | 02 |   | 2,025,598:59:0 |    |   |
| 93 | 240 | 16:23:24.266 |                 | DMS:    | *RECORD          | R28, TRACK 2, REV, TIC *1416 +/- 26;       | 3R5 | 02 |   | 2,025,598:65:0 |    |   |
| 93 | 240 | 16:23:26.266 | 117EB105A106B4B | 7STRP   | 0.007,0.0,0,0,0, | Slew =,0.11                                | 3R5 | 02 |   | 2,025,598:68:0 |    |   |
| 93 | 240 | 16:23:36.933 | 128JA149A131A4A | 37IST   | 0,2,0,OFF,0,1,2  | Gain State 3                               | 3R5 | 02 |   | 2,025,598:84:0 |    |   |
| 93 | 240 | 16:24:34.266 | 117EB11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 3R5 | 02 |   | 2,025,599:79:0 |    |   |
| 93 | 240 | 16:24:37.600 | 128JA149A131B4A | 37IOP   | 3,0              | Long Map, Grating Start Position =0        | 3R3 | 00 |   | 2,025,599:84:0 |    |   |
| 93 | 240 | 16:24:41.600 | 175EC422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R3 | 00 |   | 2,025,599:90:0 |    |   |
| 93 | 240 | 16:24:41.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 2, REV, TIC *1348 +/- 26;       | 3R3 | 00 |   | 2,025,599:90:0 |    |   |
| 93 | 240 | 16:24:42.800 |                 | DMS:    | *READY           | RDY, TRACK 2, REV, TIC *1347 +/- 26;       | 3R3 | 00 |   | 2,025,600:00:8 |    |   |
| 93 | 240 | 16:25:16.266 | 165JC4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 3R3 | 00 |   | 2,025,600:51:0 |    |   |
| 93 | 240 | 16:25:16.933 | 165JC4B         | 7SCAN   | NORM,192.912998, | Check S/P Position                         | 3R3 | 00 |   | 2,025,600:52:0 |    |   |
| 93 | 240 | 16:25:36.933 | 117EC           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R3 | 00 |   | 2,025,600:82:0 |    |   |
| 93 | 240 | 16:25:42.266 | 175ED422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 3R3 | 00 |   | 2,025,600:90:0 |    |   |
| 93 | 240 | 16:25:42.266 |                 | DMS:    | *RUNUP           | R28, TRACK 2, REV, TIC 1347 +/- 26;        | 3R3 | 00 |   | 2,025,600:90:0 |    |   |



| YR | DOY | Time         | PSID            | Command | Parameters         | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|--------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 16:25:42.933 | 176ED6A         | 6TMCHG  | ELSMPW             | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R3 | 00 |   | 2,025,601:00:0 |    |   |
| 93 | 240 | 16:25:44.933 | 165JC4C         | 7VECT   |                    | Inert vect update UTC                      | 3R3 | 00 |   | 2,025,601:03:0 |    |   |
| 93 | 240 | 16:25:45.600 | 165JC4D         | 7TMOT   | ENA,TMC            | Enable IVP - Target Motion                 | 3R3 | 00 |   | 2,025,601:04:0 |    |   |
| 93 | 240 | 16:25:46.266 | 117EC105A106A4A | 7STRP   | 0.0063,0.0,0,0,0   | Slew =,0.03                                | 3R3 | 00 |   | 2,025,601:05:0 |    |   |
| 93 | 240 | 16:25:46.266 |                 | DMS:    | *RECORD            | R28, TRACK 2, REV, TIC *1345 +/- 27;       | 3R3 | 00 |   | 2,025,601:05:0 |    |   |
| 93 | 240 | 16:25:47.000 | IDUNIDAGLM01+   |         | -----START-----    |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:26:14.000 | IDUNRT15SM12+   |         | -----STOP-----     |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:26:48.000 | IDUSROTATIO4*   |         | -----STOP-----     |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:29:32.266 | 117EC11A        | CSMOS   | GE                 | ***** GROUP END CSMOS                      | 3R3 | 00 |   | 2,025,604:71:0 |    |   |
| 93 | 240 | 16:29:34.933 | 116IM4A         | 7STRP   | -0.003303,0.0000   | Slew =0,1.0                                | 3R3 | 00 |   | 2,025,604:75:0 |    |   |
| 93 | 240 | 16:29:38.266 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 2, REV, TIC *1141 +/- 27;       | 3R3 | 00 |   | 2,025,604:80:0 |    |   |
| 93 | 240 | 16:29:38.266 | 175ED422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 3R3 | 00 |   | 2,025,604:80:0 |    |   |
| 93 | 240 | 16:29:39.466 |                 | DMS:    | *READY             | RDY, TRACK 2, REV, TIC *1140 +/- 27;       | 3R3 | 00 |   | 2,025,604:81:8 |    |   |
| 93 | 240 | 16:29:44.933 | 175IQ422A6A     | 6DMSC   | R115,0             | DMS Control Tape runup 115.2kb             | 3R3 | 00 |   | 2,025,604:90:0 |    |   |
| 93 | 240 | 16:29:44.933 |                 | DMS:    | *RUNUP             | R115, TRACK 2, REV, TIC 1140 +/- 27;       | 3R3 | 00 |   | 2,025,604:90:0 |    |   |
| 93 | 240 | 16:29:45.600 | 176IQ6A         | 6TMCHG  | NCGHCM             | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R3 | 00 |   | 2,025,605:00:0 |    |   |
| 93 | 240 | 16:29:48.933 |                 | DMS:    | *RECORD            | R115, TRACK 2, REV, TIC *1134 +/- 27;      | 3R3 | 00 |   | 2,025,605:05:0 |    |   |
| 93 | 240 | 16:29:50.000 | IDUSFINROT01-   |         | -----START-----    |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:30:50.000 | IDUNIDAGLM01+   |         | -----STOP-----     |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:31:50.933 | 117ED           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 3R3 | 00 |   | 2,025,607:06:0 |    |   |
| 93 | 240 | 16:32:39.600 | 117ED105A106A4A | 7STRP   | 0.00001,0.0,0,0,0  | Slew =,0.03                                | 3R3 | 00 |   | 2,025,607:79:0 |    |   |
| 93 | 240 | 16:32:45.600 | 117ED105A106B4A | 7STRP   | -0.00365,0.0,0,0,0 | Slew =,2.01                                | 3R3 | 00 |   | 2,025,607:88:0 |    |   |
| 93 | 240 | 16:32:47.600 | 175IQ422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 3R3 | 00 |   | 2,025,608:00:0 |    |   |
| 93 | 240 | 16:32:47.600 | 176EF6A         | 6TMCHG  | ELSMPW             | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R3 | 00 |   | 2,025,608:00:0 |    |   |
| 93 | 240 | 16:32:47.600 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 2, REV, TIC * 506 +/- 27;       | 3R3 | 00 |   | 2,025,608:00:0 |    |   |
| 93 | 240 | 16:32:48.800 |                 | DMS:    | *READY             | RDY, TRACK 2, REV, TIC * 505 +/- 27;       | 3R3 | 00 |   | 2,025,608:01:8 |    |   |
| 93 | 240 | 16:32:48.933 |                 | DMS:    | *RUNUP             | R28, TRACK 2, REV, TIC 505 +/- 27;         | 3R3 | 00 |   | 2,025,608:02:0 |    |   |
| 93 | 240 | 16:32:48.933 | 175EF422A6A     | 6DMSC   | R28,0              | DMS Control Tape runup 28.8kbp             | 3R3 | 00 |   | 2,025,608:02:0 |    |   |
| 93 | 240 | 16:32:52.000 | IDUNIDAFIN01*   |         | -----START-----    |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:32:52.933 |                 | DMS:    | *RECORD            | R28, TRACK 2, REV, TIC * 503 +/- 28;       | 3R3 | 00 |   | 2,025,608:08:0 |    |   |
| 93 | 240 | 16:32:52.933 | 117ED105A106B4B | 7STRP   | 0.00795,0.0,0,0,0  | Slew =,0.03                                | 3R3 | 00 |   | 2,025,608:08:0 |    |   |
| 93 | 240 | 16:33:52.000 | IDUSFINROT01-   |         | -----STOP-----     |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:36:54.266 | 117IA           | CSMOS   | GS                 | ***** GROUP START CSMOS                    | 3R3 | 00 |   | 2,025,612:06:0 |    |   |
| 93 | 240 | 16:37:33.600 | 117ED11A        | CSMOS   | GE                 | ***** GROUP END CSMOS                      | 3R3 | 00 |   | 2,025,612:65:0 |    |   |
| 93 | 240 | 16:37:34.266 | 165IC4A         | 7TMOT   | DIS,TMC            | Disable IVP - Target Motion                | 3R3 | 00 |   | 2,025,612:66:0 |    |   |
| 93 | 240 | 16:37:34.933 | 165IC4B         | 7SCAN   | NORM,193.872,8.2   | Check S/P Position                         | 3R3 | 00 |   | 2,025,612:67:0 |    |   |
| 93 | 240 | 16:37:35.600 | 175EF422A6B     | 6DMSC   | RDY,0              | DMS Control Tape stop                      | 3R3 | 00 |   | 2,025,612:68:0 |    |   |
| 93 | 240 | 16:37:35.600 |                 | DMS:    | *RUNDOWN           | RDY, TRACK 2, REV, TIC * 255 +/- 28;       | 3R3 | 00 |   | 2,025,612:68:0 |    |   |
| 93 | 240 | 16:37:36.800 |                 | DMS:    | *READY             | RDY, TRACK 2, REV, TIC * 254 +/- 28;       | 3R3 | 00 |   | 2,025,612:69:8 |    |   |
| 93 | 240 | 16:37:39.600 |                 | DMS:    | READY              | RDY, TRACK *3, *FWD, TIC 254 +/- 28;       | 3R3 | 00 |   | 2,025,612:74:0 |    |   |
| 93 | 240 | 16:37:39.600 | 20EU6A          | 6DMSC   | RDY,3              | DMS Control Tape stop                      | 3R3 | 00 |   | 2,025,612:74:0 |    |   |
| 93 | 240 | 16:37:40.266 | 175IR422A6A     | 6DMSC   | R403,0             | DMS Control Tape runup 403.2kb             | 3R3 | 00 |   | 2,025,612:75:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 16:37:40.266 |                 | DMS:    | *RUNUP           | R403, TRACK 3, FWD, TIC 254 +/- 28;        | 3R3 | 00 |   | 2,025,612:75:0 |    |   |
| 93 | 240 | 16:37:40.933 | 165IC4C         | 7VECT   |                  | Inert vect update UTC                      | 3R3 | 00 |   | 2,025,612:76:0 |    |   |
| 93 | 240 | 16:37:41.600 | 165IC4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                 | 3R3 | 00 |   | 2,025,612:77:0 |    |   |
| 93 | 240 | 16:37:42.266 | 176IR6A         | 6TMCHG  | NCGIM4           | NO CHANGE / 403.2 KBPS IMAGE + 1/8 NIMS RE | 3R3 | 00 |   | 2,025,612:78:0 |    |   |
| 93 | 240 | 16:37:42.933 | 117IA105A106A4A | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R3 | 00 |   | 2,025,612:79:0 |    |   |
| 93 | 240 | 16:37:44.066 |                 | DMS:    | *RECORD          | R403, TRACK 3, FWD, TIC * 276 +/- 31;      | 3R3 | 00 |   | 2,025,612:80:7 |    |   |
| 93 | 240 | 16:38:26.000 | IDUNIDAFIN01*   |         | -----STOP-----   |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:38:27.600 | 117IA105A106B4A | 7STRP   | -0.0023,0.0029,0 | Slew =,4.11                                | 3R3 | 00 |   | 2,025,613:55:0 |    |   |
| 93 | 240 | 16:38:34.266 | 117IA105A106B4B | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R3 | 00 |   | 2,025,613:65:0 |    |   |
| 93 | 240 | 16:39:02.266 | 117IA105A106C4A | 7STRP   | 0.0052,0.00025,0 | Slew =,4.11                                | 3R3 | 00 |   | 2,025,614:16:0 |    |   |
| 93 | 240 | 16:39:08.933 | 117IA105A106C4B | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R3 | 00 |   | 2,025,614:26:0 |    |   |
| 93 | 240 | 16:39:36.933 | 117IA105A106D4A | 7STRP   | 0.0005,-0.00725, | Slew =,4.11                                | 3R3 | 00 |   | 2,025,614:68:0 |    |   |
| 93 | 240 | 16:39:43.600 | 117IA105A106D4B | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R3 | 00 |   | 2,025,614:78:0 |    |   |
| 93 | 240 | 16:39:56.000 | IDUS6COLOR01-   |         | -----START-----  |  | 3R3 | 00 |   | :              | :  |   |
| 93 | 240 | 16:40:11.600 | 117IA105A106E4A | 7STRP   | -0.0067,-0.0004, | Slew =,4.11                                | 3R3 | 00 |   | 2,025,615:29:0 |    |   |
| 93 | 240 | 16:40:18.266 | 117IA105A106E4B | 7STRP   | 0.00001,0.0,0,0, | Slew =,0.11                                | 3R3 | 00 |   | 2,025,615:39:0 |    |   |
| 93 | 240 | 16:40:46.266 | 117IA11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 3R3 | 00 |   | 2,025,615:81:0 |    |   |
| 93 | 240 | 16:40:46.266 | 165JE4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 3R3 | 00 |   | 2,025,615:81:0 |    |   |
| 93 | 240 | 16:40:46.933 | 165JE4B         | 7SCAN   | NORM,194.094,12. | Check S/P Position                         | 3R3 | 00 |   | 2,025,615:82:0 |    |   |
| 93 | 240 | 16:40:48.266 | 128JC149A131A4A | 37IOP   | 5,2              | Short Map, Grating Start Position =2       | 3R5 | 02 |   | 2,025,615:84:0 |    |   |
| 93 | 240 | 16:40:49.600 | 117EE           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R5 | 02 |   | 2,025,615:86:0 |    |   |
| 93 | 240 | 16:40:52.933 | 175IR422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R5 | 02 |   | 2,025,616:00:0 |    |   |
| 93 | 240 | 16:40:52.933 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 3, FWD, TIC *2600 +/- 31;       | 3R5 | 02 |   | 2,025,616:00:0 |    |   |
| 93 | 240 | 16:40:52.933 | 176EG6A         | 6TMCHG  | NCGHCM           | NO CHANGE / 115.2 comp image + NIMS + PW   | 3R5 | 02 |   | 2,025,616:00:0 |    |   |
| 93 | 240 | 16:40:55.733 |                 | DMS:    | *READY           | RDY, TRACK 3, FWD, TIC *2604 +/- 32;       | 3R5 | 02 |   | 2,025,616:04:2 |    |   |
| 93 | 240 | 16:40:56.266 |                 | DMS:    | *RUNUP           | R115, TRACK 3, FWD, TIC 2604 +/- 32;       | 3R5 | 02 |   | 2,025,616:05:0 |    |   |
| 93 | 240 | 16:40:56.266 | 175EG422A6A     | 6DMSC   | R115,0           | DMS Control Tape runup 115.2kb             | 3R5 | 02 |   | 2,025,616:05:0 |    |   |
| 93 | 240 | 16:40:57.000 | IDUNIDACHM01*   |         | -----START-----  |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 16:40:57.600 | 165JE4C         | 7VECT   |                  | Inert vect update UTC                      | 3R5 | 02 |   | 2,025,616:07:0 |    |   |
| 93 | 240 | 16:40:58.266 | 165JE4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                 | 3R5 | 02 |   | 2,025,616:08:0 |    |   |
| 93 | 240 | 16:40:58.933 | 117EE105A106A4A | 7STRP   | 0.014151,0.0,0,0 | Slew =,0.11                                | 3R5 | 02 |   | 2,025,616:09:0 |    |   |
| 93 | 240 | 16:41:00.266 |                 | DMS:    | *RECORD          | R115, TRACK 3, FWD, TIC *2610 +/- 32;      | 3R5 | 02 |   | 2,025,616:11:0 |    |   |
| 93 | 240 | 16:43:14.933 | 117EE105A106B4A | 7STRP   | -0.013351,-0.010 | Slew =,3.96                                | 3R5 | 02 |   | 2,025,618:31:0 |    |   |
| 93 | 240 | 16:43:28.933 | 117EE105A106B4B | 7STRP   | 0.017152,0.002,0 | Slew =,0.11                                | 3R5 | 02 |   | 2,025,618:52:0 |    |   |
| 93 | 240 | 16:44:50.933 | 128IC149A131A4A | 37IST   | 1,2,0,OFF,0,1,2  | Chopper ON, Sync, Chopper (Ref)Gain State  | 3R5 | 02 |   | 2,025,619:84:0 |    |   |
| 93 | 240 | 16:45:00.000 | IDUS6COLOR01-   |         | -----STOP-----   |  | 3R5 | 02 |   | :              | :  |   |
| 93 | 240 | 16:45:51.600 | 128IC149A131B4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6       | 3R7 | 06 |   | 2,025,620:84:0 |    |   |
| 93 | 240 | 16:46:00.266 | 117IB           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R7 | 06 |   | 2,025,621:06:0 |    |   |
| 93 | 240 | 16:46:13.600 | 117EE11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 3R7 | 06 |   | 2,025,621:26:0 |    |   |
| 93 | 240 | 16:46:15.600 | 165ID4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 3R7 | 06 |   | 2,025,621:29:0 |    |   |
| 93 | 240 | 16:46:16.266 | 165ID4B         | 7SCAN   | NORM,196.606998, | Check S/P Position                         | 3R7 | 06 |   | 2,025,621:30:0 |    |   |
| 93 | 240 | 16:46:23.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 3, FWD, TIC *3747 +/- 32;       | 3R7 | 06 |   | 2,025,621:41:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 16:46:23.600 | 175EG422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R7 | 06 |   | 2,025,621:41:0 |    |   |
| 93 | 240 | 16:46:24.800 |                 | DMS:    | *READY           | RDY, TRACK 3, FWD, TIC *3748 +/- 33;       | 3R7 | 06 |   | 2,025,621:42:8 |    |   |
| 93 | 240 | 16:46:28.933 |                 | DMS:    | *RUNUP           | R403, TRACK 3, FWD, TIC 3748 +/- 33;       | 3R7 | 06 |   | 2,025,621:49:0 |    |   |
| 93 | 240 | 16:46:28.933 | 175IS422A6A     | 6DMSC   | R403,0           | DMS Control Tape runup 403.2kb             | 3R7 | 06 |   | 2,025,621:49:0 |    |   |
| 93 | 240 | 16:46:29.600 | 165ID4C         | 7VECT   |                  | Inert vect update UTC                      | 3R7 | 06 |   | 2,025,621:50:0 |    |   |
| 93 | 240 | 16:46:30.266 | 165ID4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                 | 3R7 | 06 |   | 2,025,621:51:0 |    |   |
| 93 | 240 | 16:46:30.933 | 117IB105A106A4A | 7STRP   | 0.014501,-0.001, | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,621:52:0 |    |   |
| 93 | 240 | 16:46:30.933 | 176IS6A         | 6TMCHG  | NCGIM4           | NO CHANGE / 403.2 KBPS IMAGE + 1/8 NIMS RE | 3R7 | 06 |   | 2,025,621:52:0 |    |   |
| 93 | 240 | 16:46:31.000 | IDUNHISPAT01+   |         | -----START-----  |  | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:46:31.000 | IDUSHIRES 01*   |         | -----START-----  |  | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:46:32.733 |                 | DMS:    | *RECORD          | R403, TRACK 3, FWD, TIC *3770 +/- 36;      | 3R7 | 06 |   | 2,025,621:54:7 |    |   |
| 93 | 240 | 16:46:52.266 | 117IB105A106B4A | 7STRP   | 0.005,-0.007,0,0 | Slew =0,4.7                                | 3R7 | 06 |   | 2,025,621:84:0 |    |   |
| 93 | 240 | 16:46:56.933 | 117IB105A106B4B | 7STRP   | -0.021103,0.0006 | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,622:00:0 |    |   |
| 93 | 240 | 16:47:01.000 | IDUNIDACHM01*   |         | -----STOP-----   |  | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:47:26.933 | 117IB105A106C4A | 7STRP   | 0.0,-0.0077,0,0, | Slew =0,4.7                                | 3R7 | 06 |   | 2,025,622:45:0 |    |   |
| 93 | 240 | 16:47:31.600 | 117IB105A106C4B | 7STRP   | 0.027507,0.001,0 | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,622:52:0 |    |   |
| 93 | 240 | 16:48:10.266 | 117IB105A106D4A | 7STRP   | 0.003,-0.007,0,0 | Slew =0,4.7                                | 3R7 | 06 |   | 2,025,623:19:0 |    |   |
| 93 | 240 | 16:48:14.933 | 117IB105A106D4B | 7STRP   | -0.027007,-0.001 | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,623:26:0 |    |   |
| 93 | 240 | 16:48:53.600 | 117IB105A106E4A | 7STRP   | 0.0058,-0.007,0, | Slew =0,4.7                                | 3R7 | 06 |   | 2,025,623:84:0 |    |   |
| 93 | 240 | 16:48:58.266 | 117IB105A106E4B | 7STRP   | 0.027507,0.0028, | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,624:00:0 |    |   |
| 93 | 240 | 16:49:36.933 | 117IB105A106F4A | 7STRP   | 0.003,-0.007,0,0 | Slew =0,4.7                                | 3R7 | 06 |   | 2,025,624:58:0 |    |   |
| 93 | 240 | 16:49:41.600 | 117IB105A106F4B | 7STRP   | -0.020003,-0.002 | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,624:65:0 |    |   |
| 93 | 240 | 16:50:11.600 | 117IB105A106G4A | 7STRP   | 0.0065,-0.0062,0 | Slew =0,4.7                                | 3R7 | 06 |   | 2,025,625:19:0 |    |   |
| 93 | 240 | 16:50:16.266 | 117IB105A106G4B | 7STRP   | 0.019502,0.003,0 | Slew =0,0.8                                | 3R7 | 06 |   | 2,025,625:26:0 |    |   |
| 93 | 240 | 16:50:44.266 | 117IB11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 3R7 | 06 |   | 2,025,625:68:0 |    |   |
| 93 | 240 | 16:50:44.266 | 165IE4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 3R7 | 06 |   | 2,025,625:68:0 |    |   |
| 93 | 240 | 16:50:44.933 | 165IE4B         | 7SCAN   | NORM,213.132,68. | Check S/P Position                         | 3R7 | 06 |   | 2,025,625:69:0 |    |   |
| 93 | 240 | 16:50:50.266 | 117IC           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R7 | 06 |   | 2,025,625:77:0 |    |   |
| 93 | 240 | 16:50:50.933 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 3, FWD, TIC *6947 +/- 36;       | 3R7 | 06 |   | 2,025,625:78:0 |    |   |
| 93 | 240 | 16:50:50.933 | 175IS422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R7 | 06 |   | 2,025,625:78:0 |    |   |
| 93 | 240 | 16:50:53.733 |                 | DMS:    | *READY           | RDY, TRACK 3, FWD, TIC *6951 +/- 37;       | 3R7 | 06 |   | 2,025,625:82:2 |    |   |
| 93 | 240 | 16:50:56.266 | 20EV6A          | 6DMSC   | RDY,4            | DMS Control Tape stop                      | 3R7 | 06 |   | 2,025,625:86:0 |    |   |
| 93 | 240 | 16:50:56.266 |                 | DMS:    | READY            | RDY, TRACK *4, *REV, TIC 6951 +/- 37;      | 3R7 | 06 |   | 2,025,625:86:0 |    |   |
| 93 | 240 | 16:50:57.600 |                 | DMS:    | *RUNUP           | R403, TRACK 4, REV, TIC 6951 +/- 37;       | 3R7 | 06 |   | 2,025,625:88:0 |    |   |
| 93 | 240 | 16:50:57.600 | 175IT422A6A     | 6DMSC   | R403,0           | DMS Control Tape runup 403.2kb             | 3R7 | 06 |   | 2,025,625:88:0 |    |   |
| 93 | 240 | 16:50:58.266 | 165IE4C         | 7VECT   |                  | Inert vect update UTC                      | 3R7 | 06 |   | 2,025,625:89:0 |    |   |
| 93 | 240 | 16:50:58.933 | 165IE4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion                 | 3R7 | 06 |   | 2,025,625:90:0 |    |   |
| 93 | 240 | 16:50:59.600 | 117IC105A106A4A | 7STRP   | 0.002,0.0,0,0,0, | Slew =,0.89                                | 3R7 | 06 |   | 2,025,626:00:0 |    |   |
| 93 | 240 | 16:51:01.400 |                 | DMS:    | *RECORD          | R403, TRACK 4, REV, TIC *6929 +/- 40;      | 3R7 | 06 |   | 2,025,626:02:7 |    |   |
| 93 | 240 | 16:51:04.000 | IDUSENCNTR01*   |         | -----START-----  |  | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:51:04.000 | IDUSHIRES 01*   |         | -----STOP-----   |  | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:51:04.000 | IDUNIDACA 01+   |         | -----START-----  |  | 3R7 | 06 |   |                | :  | : |

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| YR | DOY | Time         | PSID            | Command | Parameters       | Description                          | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--------------------------------------|-----|----|---|----------------|----|---|
| 93 | 240 | 16:51:04.000 | IDUNHISPAT01+   |         | -----STOP-----   |                                      | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:51:04.933 | 117IC105A106B4A | 7STRP   | 0.012501,-0.002, | Slew =,5.92                          | 3R7 | 06 |   | 2,025,626:08:0 |    |   |
| 93 | 240 | 16:51:10.266 | 117IC105A106B4B | 7STRP   | 0.0055,0.0,0,0,0 | Slew =,0.89                          | 3R7 | 06 |   | 2,025,626:16:0 |    |   |
| 93 | 240 | 16:51:18.933 | 117IC105A106C4A | 7STRP   | -0.011,-0.008,0, | Slew =,5.92                          | 3R7 | 06 |   | 2,025,626:29:0 |    |   |
| 93 | 240 | 16:51:27.600 | 117IC105A106C4B | 7STRP   | 0.020003,-0.0005 | Slew =,0.89                          | 3R7 | 06 |   | 2,025,626:42:0 |    |   |
| 93 | 240 | 16:51:53.600 | 117IC105A106D4A | 7STRP   | -0.012001,-0.007 | Slew =,5.92                          | 3R7 | 06 |   | 2,025,626:81:0 |    |   |
| 93 | 240 | 16:52:02.266 | 117IC105A106D4B | 7STRP   | 0.020003,0.0,0,0 | Slew =,0.89                          | 3R7 | 06 |   | 2,025,627:03:0 |    |   |
| 93 | 240 | 16:52:28.266 | 117IC105A106E4A | 7STRP   | -0.012001,-0.007 | Slew =,5.92                          | 3R7 | 06 |   | 2,025,627:42:0 |    |   |
| 93 | 240 | 16:52:36.933 | 117IC105A106E4B | 7STRP   | 0.013001,-0.0003 | Slew =,0.89                          | 3R7 | 06 |   | 2,025,627:55:0 |    |   |
| 93 | 240 | 16:52:54.266 | 117IC105A106F4A | 7STRP   | 0.01,-0.007,0,0, | Slew =,5.92                          | 3R7 | 06 |   | 2,025,627:81:0 |    |   |
| 93 | 240 | 16:53:02.933 | 117IC105A106F4B | 7STRP   | 0.002,0.0,0,0,0, | Slew =,0.89                          | 3R7 | 06 |   | 2,025,628:03:0 |    |   |
| 93 | 240 | 16:53:04.000 | IDUNIDACA 01+   |         | -----STOP-----   |                                      | 3R7 | 06 |   |                | :  | : |
| 93 | 240 | 16:53:08.266 | 117IC11A        | CSMOS   | GE               | ***** GROUP END CSMOS                | 3R7 | 06 |   | 2,025,628:11:0 |    |   |
| 93 | 240 | 16:53:09.600 | 175IT422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                | 3R7 | 06 |   | 2,025,628:13:0 |    |   |
| 93 | 240 | 16:53:09.600 | 165LA4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion          | 3R7 | 06 |   | 2,025,628:13:0 |    |   |
| 93 | 240 | 16:53:09.600 | 176MA6A         | 6TMCHG  | ELSLRS           | 10 BPS TDM / LRS Rec 7.68kb/s        | 3R7 | 06 |   | 2,025,628:13:0 |    |   |
| 93 | 240 | 16:53:09.600 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 4, REV, TIC *5352 +/- 40; | 3R7 | 06 |   | 2,025,628:13:0 |    |   |
| 93 | 240 | 16:53:10.266 | 165LA4B         | 7SCAN   | NORM,355.856998, | Check S/P Position                   | 3R7 | 06 |   | 2,025,628:14:0 |    |   |
| 93 | 240 | 16:53:12.400 |                 | DMS:    | *READY           | RDY, TRACK 4, REV, TIC *5348 +/- 41; | 3R7 | 06 |   | 2,025,628:17:2 |    |   |
| 93 | 240 | 16:53:12.933 | 175MA422A6A     | 6DMSC   | R7,0             | DMS Control Tape runup 7.68kps       | 3R7 | 06 |   | 2,025,628:18:0 |    |   |
| 93 | 240 | 16:53:12.933 |                 | DMS:    | *RUNUP           | R7, TRACK 4, REV, TIC 5348 +/- 41;   | 3R7 | 06 |   | 2,025,628:18:0 |    |   |
| 93 | 240 | 16:53:14.400 |                 | DMS:    | *RECORD          | R7, TRACK 4, REV, TIC *5347 +/- 41;  | 3R7 | 06 |   | 2,025,628:20:2 |    |   |
| 93 | 240 | 16:53:27.600 | 117LA           | CSMOS   | GS               | ***** GROUP START CSMOS              | 3R7 | 06 |   | 2,025,628:40:0 |    |   |
| 93 | 240 | 16:53:35.600 | 165LA4C         | 7VECT   |                  | Inert vect update UTC                | 3R7 | 06 |   | 2,025,628:52:0 |    |   |
| 93 | 240 | 16:53:36.266 | 165LA4D         | 7TMOT   | ENA,TMC          | Enable IVP - Target Motion           | 3R7 | 06 |   | 2,025,628:53:0 |    |   |
| 93 | 240 | 16:53:36.933 | 117LA105A106A4A | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,628:54:0 |    |   |
| 93 | 240 | 16:53:47.600 | 117LA105A106A4B | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,628:70:0 |    |   |
| 93 | 240 | 16:53:52.266 | 117LA105A106A4C | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,628:77:0 |    |   |
| 93 | 240 | 16:54:02.933 | 117LA105A106A4D | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,629:02:0 |    |   |
| 93 | 240 | 16:54:07.600 | 117LA105A106A4E | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,629:09:0 |    |   |
| 93 | 240 | 16:54:18.266 | 117LA105A106A4F | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,629:25:0 |    |   |
| 93 | 240 | 16:54:22.933 | 117LA105A106A4G | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,629:32:0 |    |   |
| 93 | 240 | 16:54:33.600 | 117LA105A106A4H | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,629:48:0 |    |   |
| 93 | 240 | 16:54:38.266 | 117LA105A106A4I | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,629:55:0 |    |   |
| 93 | 240 | 16:54:48.933 | 117LA105A106A4J | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,629:71:0 |    |   |
| 93 | 240 | 16:54:53.600 | 117LA105A106A4K | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,629:78:0 |    |   |
| 93 | 240 | 16:55:04.266 | 117LA105A106A4L | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,630:03:0 |    |   |
| 93 | 240 | 16:55:08.933 | 117LA105A106A4M | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,630:10:0 |    |   |
| 93 | 240 | 16:55:19.600 | 117LA105A106A4N | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,630:26:0 |    |   |
| 93 | 240 | 16:55:24.266 | 117LA105A106A4O | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,630:33:0 |    |   |
| 93 | 240 | 16:55:34.933 | 117LA105A106A4P | 7STRP   | -0.015401,0.0017 | Slew =,7.95                          | 3R7 | 06 |   | 2,025,630:49:0 |    |   |
| 93 | 240 | 16:55:39.600 | 117LA105A106A4Q | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01                          | 3R7 | 06 |   | 2,025,630:56:0 |    |   |

| YR | DOY | Time         | PSID             | Command | Parameters       | Description           | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|------------------|---------|------------------|-----------------------|-----|----|---|----------------|----|---|
| 93 | 240 | 16:55:50.266 | 117LA105A106A4R  | 7STRP   | -0.015401,0.0017 | Slew =,7.95           | 3R7 | 06 |   | 2,025,630:72:0 |    |   |
| 93 | 240 | 16:55:54.933 | 117LA105A106A4S  | 7STRP   | 0.015301,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,630:79:0 |    |   |
| 93 | 240 | 16:56:05.600 | 117LA105A106B4A  | 7STRP   | -0.026006,0.011, | Slew =,7.95           | 3R7 | 06 |   | 2,025,631:04:0 |    |   |
| 93 | 240 | 16:56:06.000 | IDUSENCNTR01*    |         | -----STOP-----   |                       | 3R7 | 06 |   | :              | :  |   |
| 93 | 240 | 16:56:11.600 | 117LA105A106B4B  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,631:13:0 |    |   |
| 93 | 240 | 16:56:20.933 | 117LA105A106C4A  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,631:27:0 |    |   |
| 93 | 240 | 16:56:25.600 | 117LA105A106C4B  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,631:34:0 |    |   |
| 93 | 240 | 16:56:34.933 | 117LA105A106C4C  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,631:48:0 |    |   |
| 93 | 240 | 16:56:39.600 | 117LA105A106C4D  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,631:55:0 |    |   |
| 93 | 240 | 16:56:48.933 | 117LA105A106C4E  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,631:69:0 |    |   |
| 93 | 240 | 16:56:53.600 | 117LA105A106C4F  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,631:76:0 |    |   |
| 93 | 240 | 16:57:02.933 | 117LA105A106C4G  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,631:90:0 |    |   |
| 93 | 240 | 16:57:07.600 | 117LA105A106C4H  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,632:06:0 |    |   |
| 93 | 240 | 16:57:16.933 | 117LA105A106C4I  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,632:20:0 |    |   |
| 93 | 240 | 16:57:21.600 | 117LA105A106C4J  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,632:27:0 |    |   |
| 93 | 240 | 16:57:30.933 | 117LA105A106C4K  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,632:41:0 |    |   |
| 93 | 240 | 16:57:35.600 | 117LA105A106C4L  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,632:48:0 |    |   |
| 93 | 240 | 16:57:44.933 | 117LA105A106C4M  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,632:62:0 |    |   |
| 93 | 240 | 16:57:49.600 | 117LA105A106C4N  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,632:69:0 |    |   |
| 93 | 240 | 16:57:58.933 | 117LA105A106C4O  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,632:83:0 |    |   |
| 93 | 240 | 16:58:03.600 | 117LA105A106C4P  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,632:90:0 |    |   |
| 93 | 240 | 16:58:12.933 | 117LA105A106C4Q  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,633:13:0 |    |   |
| 93 | 240 | 16:58:17.600 | 117LA105A106C4R  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,633:20:0 |    |   |
| 93 | 240 | 16:58:26.933 | 117LA105A106C4S  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,633:34:0 |    |   |
| 93 | 240 | 16:58:31.600 | 117LA105A106C4T  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,633:41:0 |    |   |
| 93 | 240 | 16:58:40.933 | 117LA105A106C4U  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,633:55:0 |    |   |
| 93 | 240 | 16:58:45.600 | 117LA105A106C4V  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,633:62:0 |    |   |
| 93 | 240 | 16:58:54.933 | 117LA105A106C4W  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,633:76:0 |    |   |
| 93 | 240 | 16:58:59.600 | 117LA105A106C4X  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,633:83:0 |    |   |
| 93 | 240 | 16:59:08.933 | 117LA105A106C4Y  | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,634:06:0 |    |   |
| 93 | 240 | 16:59:13.600 | 117LA105A106C4Z  | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,634:13:0 |    |   |
| 93 | 240 | 16:59:22.933 | 117LA105A106C4AA | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,634:27:0 |    |   |
| 93 | 240 | 16:59:27.600 | 117LA105A106C4AB | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,634:34:0 |    |   |
| 93 | 240 | 16:59:36.933 | 117LA105A106C4AC | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,634:48:0 |    |   |
| 93 | 240 | 16:59:41.600 | 117LA105A106C4AD | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,634:55:0 |    |   |
| 93 | 240 | 16:59:50.933 | 117LA105A106C4AE | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,634:69:0 |    |   |
| 93 | 240 | 16:59:55.600 | 117LA105A106C4AF | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,634:76:0 |    |   |
| 93 | 240 | 17:00:04.933 | 117LA105A106C4AG | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,634:90:0 |    |   |
| 93 | 240 | 17:00:09.600 | 117LA105A106C4AH | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,635:06:0 |    |   |
| 93 | 240 | 17:00:18.933 | 117LA105A106C4AI | 7STRP   | -0.013001,-0.001 | Slew =,7.95           | 3R7 | 06 |   | 2,025,635:20:0 |    |   |
| 93 | 240 | 17:00:23.600 | 117LA105A106C4AJ | 7STRP   | 0.014001,0.0,0,0 | Slew =,2.01           | 3R7 | 06 |   | 2,025,635:27:0 |    |   |
| 93 | 240 | 17:00:32.933 | 117LA11A         | CSMOS   | GE               | ***** GROUP END CSMOS | 3R7 | 06 |   | 2,025,635:41:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters        | Description                 | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|-------------------|-----------------------------|-----|----|---|----------------|----|---|
| 93 | 240 | 17:00:45.600 | 165LB4A         | 7TMOT   | DIS,TMC           | Disable IVP - Target Motion | 3R7 | 06 |   | 2,025,635:60:0 |    |   |
| 93 | 240 | 17:00:46.266 | 165LB4B         | 7SCAN   | NORM,9.555,23.00  | Check S/P Position          | 3R7 | 06 |   | 2,025,635:61:0 |    |   |
| 93 | 240 | 17:01:03.600 | 117LB           | CSMOS   | GS                | ***** GROUP START CSMOS     | 3R7 | 06 |   | 2,025,635:87:0 |    |   |
| 93 | 240 | 17:01:11.600 | 165LB4C         | 7VECT   |                   | Inert vect update UTC       | 3R7 | 06 |   | 2,025,636:08:0 |    |   |
| 93 | 240 | 17:01:12.266 | 165LB4D         | 7TMOT   | ENA,TMC           | Enable IVP - Target Motion  | 3R7 | 06 |   | 2,025,636:09:0 |    |   |
| 93 | 240 | 17:01:12.933 | 117LB105A106A4A | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,636:10:0 |    |   |
| 93 | 240 | 17:01:18.266 | 117LB105A106A4B | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,636:18:0 |    |   |
| 93 | 240 | 17:01:22.933 | 117LB105A106A4C | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,636:25:0 |    |   |
| 93 | 240 | 17:01:28.266 | 117LB105A106A4D | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,636:33:0 |    |   |
| 93 | 240 | 17:01:32.933 | 117LB105A106A4E | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,636:40:0 |    |   |
| 93 | 240 | 17:01:38.266 | 117LB105A106A4F | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,636:48:0 |    |   |
| 93 | 240 | 17:01:42.933 | 117LB105A106A4G | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,636:55:0 |    |   |
| 93 | 240 | 17:01:48.266 | 117LB105A106A4H | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,636:63:0 |    |   |
| 93 | 240 | 17:01:52.933 | 117LB105A106A4I | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,636:70:0 |    |   |
| 93 | 240 | 17:01:58.266 | 117LB105A106A4J | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,636:78:0 |    |   |
| 93 | 240 | 17:02:02.933 | 117LB105A106A4K | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,636:85:0 |    |   |
| 93 | 240 | 17:02:08.266 | 117LB105A106A4L | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,637:02:0 |    |   |
| 93 | 240 | 17:02:12.933 | 117LB105A106A4M | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,637:09:0 |    |   |
| 93 | 240 | 17:02:18.266 | 117LB105A106A4N | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,637:17:0 |    |   |
| 93 | 240 | 17:02:22.933 | 117LB105A106A4O | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,637:24:0 |    |   |
| 93 | 240 | 17:02:28.266 | 117LB105A106A4P | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,637:32:0 |    |   |
| 93 | 240 | 17:02:32.933 | 117LB105A106A4Q | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,637:39:0 |    |   |
| 93 | 240 | 17:02:38.266 | 117LB105A106A4R | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,637:47:0 |    |   |
| 93 | 240 | 17:02:42.933 | 117LB105A106A4S | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,637:54:0 |    |   |
| 93 | 240 | 17:02:48.266 | 117LB105A106A4T | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,637:62:0 |    |   |
| 93 | 240 | 17:02:52.933 | 117LB105A106A4U | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,637:69:0 |    |   |
| 93 | 240 | 17:02:58.266 | 117LB105A106A4V | 7STRP   | -0.0085,-0.001,0  | Slew =,4.43                 | 3R7 | 06 |   | 2,025,637:77:0 |    |   |
| 93 | 240 | 17:03:02.933 | 117LB105A106A4W | 7STRP   | 0.009,0.0,0,0,0,  | Slew =,3.51                 | 3R7 | 06 |   | 2,025,637:84:0 |    |   |
| 93 | 240 | 17:03:08.266 | 117LB11A        | CSMOS   | GE                | ***** GROUP END CSMOS       | 3R7 | 06 |   | 2,025,638:01:0 |    |   |
| 93 | 240 | 17:03:26.933 | 165KA4A         | 7TMOT   | DIS,TMC           | Disable IVP - Target Motion | 3R7 | 06 |   | 2,025,638:29:0 |    |   |
| 93 | 240 | 17:03:27.600 | 165KA4B         | 7SCAN   | NORM,206.303999,  | Check S/P Position          | 3R7 | 06 |   | 2,025,638:30:0 |    |   |
| 93 | 240 | 17:05:12.933 | 117KA           | CSMOS   | GS                | ***** GROUP START CSMOS     | 3R7 | 06 |   | 2,025,640:06:0 |    |   |
| 93 | 240 | 17:05:40.933 | 117KA105A106A4A | 7STRP   | 0.005,0.0,0,0,0,  | Slew =,0.04                 | 3R7 | 06 |   | 2,025,640:48:0 |    |   |
| 93 | 240 | 17:07:53.600 | 117KA105A106A4B | 7STRP   | -0.005,0.0,0,0,0, | Slew =12.01                 | 3R7 | 06 |   | 2,025,642:65:0 |    |   |
| 93 | 240 | 17:07:58.266 | 117KA105A106A4C | 7STRP   | 0.005,0.0,0,0,0,  | Slew =,0.04                 | 3R7 | 06 |   | 2,025,642:72:0 |    |   |
| 93 | 240 | 17:10:10.933 | 117KA105A106A4D | 7STRP   | -0.005,0.0,0,0,0, | Slew =12.01                 | 3R7 | 06 |   | 2,025,644:89:0 |    |   |
| 93 | 240 | 17:10:15.600 | 117KA105A106A4E | 7STRP   | 0.005,0.0,0,0,0,  | Slew =,0.04                 | 3R7 | 06 |   | 2,025,645:05:0 |    |   |
| 93 | 240 | 17:12:28.266 | 117KA105A106A4F | 7STRP   | -0.005,0.0,0,0,0, | Slew =12.01                 | 3R7 | 06 |   | 2,025,647:22:0 |    |   |
| 93 | 240 | 17:12:32.933 | 117KA105A106A4G | 7STRP   | 0.005,0.0,0,0,0,  | Slew =,0.04                 | 3R7 | 06 |   | 2,025,647:29:0 |    |   |
| 93 | 240 | 17:14:45.600 | 117KA105A106A4H | 7STRP   | -0.005,0.0,0,0,0, | Slew =12.01                 | 3R7 | 06 |   | 2,025,649:46:0 |    |   |
| 93 | 240 | 17:14:50.266 | 117KA105A106A4I | 7STRP   | 0.005,0.0,0,0,0,  | Slew =,0.04                 | 3R7 | 06 |   | 2,025,649:53:0 |    |   |
| 93 | 240 | 17:17:02.933 | 117KA11A        | CSMOS   | GE                | ***** GROUP END CSMOS       | 3R7 | 06 |   | 2,025,651:70:0 |    |   |

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| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 240 | 17:18:33.600 | 165KB4A         | 7TMOT   | DIS,TMC          | Disable IVP - Target Motion                | 3R7 | 06 |   | 2,025,653:24:0 |    |   |
| 93 | 240 | 17:18:34.266 | 165KB4B         | 7SCAN   | NORM,278.968998, | Check S/P Position                         | 3R7 | 06 |   | 2,025,653:25:0 |    |   |
| 93 | 240 | 17:22:15.600 | 157KB156A121A4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6       | 3R7 | 06 |   | 2,025,656:84:0 |    |   |
| 93 | 240 | 17:22:24.000 | IDUNBORCAL01+   |         | -----START-----  |  | 3R7 | 06 |   | :              | :  |   |
| 93 | 240 | 17:22:24.266 | 175MA422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R7 | 06 |   | 2,025,657:06:0 |    |   |
| 93 | 240 | 17:22:24.266 | 117KB           | CSMOS   | GS               | ***** GROUP START CSMOS                    | 3R7 | 06 |   | 2,025,657:06:0 |    |   |
| 93 | 240 | 17:22:24.266 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 4, REV, TIC *4936 +/- 41;       | 3R7 | 06 |   | 2,025,657:06:0 |    |   |
| 93 | 240 | 17:22:25.533 |                 | DMS:    | *READY           | RDY, TRACK 4, REV, TIC *4935 +/- 41;       | 3R7 | 06 |   | 2,025,657:07:9 |    |   |
| 93 | 240 | 17:22:33.600 | 175KA422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 3R7 | 06 |   | 2,025,657:20:0 |    |   |
| 93 | 240 | 17:22:33.600 |                 | DMS:    | *RUNUP           | R28, TRACK 4, REV, TIC 4935 +/- 41;        | 3R7 | 06 |   | 2,025,657:20:0 |    |   |
| 93 | 240 | 17:22:37.600 | 117KB105A106A4A | 7STRP   | 0.006,0.0,0,0,0, | Slew =,0.08                                | 3R7 | 06 |   | 2,025,657:26:0 |    |   |
| 93 | 240 | 17:22:37.600 |                 | DMS:    | *RECORD          | R28, TRACK 4, REV, TIC *4934 +/- 41;       | 3R7 | 06 |   | 2,025,657:26:0 |    |   |
| 93 | 240 | 17:22:37.600 | 176KA6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 3R7 | 06 |   | 2,025,657:26:0 |    |   |
| 93 | 240 | 17:23:16.266 | 157KB156A121B4A | 37IST   | 0,2,0,OFF,0,1,1  | Gain State 4                               | 4R7 | 06 |   | 2,025,657:84:0 |    |   |
| 93 | 240 | 17:23:56.933 | 117KB105A106A4B | 7STRP   | -0.006,0.0011,0, | Slew =11.77                                | 4R7 | 06 |   | 2,025,658:54:0 |    |   |
| 93 | 240 | 17:24:03.600 | 117KB105A106A4C | 7STRP   | 0.006,0.0,0,0,0, | Slew =,0.08                                | 4R7 | 06 |   | 2,025,658:64:0 |    |   |
| 93 | 240 | 17:25:22.933 | 117KB105A106A4D | 7STRP   | -0.006,0.0011,0, | Slew =11.77                                | 4R7 | 06 |   | 2,025,660:01:0 |    |   |
| 93 | 240 | 17:25:29.600 | 117KB105A106A4E | 7STRP   | 0.006,0.0,0,0,0, | Slew =,0.08                                | 4R7 | 06 |   | 2,025,660:11:0 |    |   |
| 93 | 240 | 17:26:48.933 | 117KB11A        | CSMOS   | GE               | ***** GROUP END CSMOS                      | 4R7 | 06 |   | 2,025,661:39:0 |    |   |
| 93 | 240 | 17:27:18.933 | 157KB156A121C4A | 37IOP   | 0,0              | Safe, Grating Start Position =0            | 4R0 | 00 |   | 2,025,661:84:0 |    |   |
| 93 | 240 | 17:27:24.933 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 4, REV, TIC *4681 +/- 41;       | 4R0 | 00 |   | 2,025,662:02:0 |    |   |
| 93 | 240 | 17:27:24.933 | 175KA422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 4R0 | 00 |   | 2,025,662:02:0 |    |   |
| 93 | 240 | 17:27:26.133 |                 | DMS:    | *READY           | RDY, TRACK 4, REV, TIC *4680 +/- 41;       | 4R0 | 00 |   | 2,025,662:03:8 |    |   |
| 93 | 240 | 17:31:30.000 | IDUNBORCAL01+   |         | -----STOP-----   |  | 4R0 | 00 |   | :              | :  |   |
| 93 | 240 | 18:45:02.266 | 490B412A4B      | 7MODE   | INT              | AACS INERTIAL MODE                         | 4R0 | 00 |   | 2,025,738:72:0 |    |   |
| 93 | 240 | 18:47:59.600 | 490B476A6A      | 6TMCHG  | ELSLRS           | 10 BPS TDM / LRS Rec 7.68kb/s              | 4R0 | 00 |   | 2,025,741:65:0 |    |   |
| 93 | 240 | 18:50:00.266 | 490B412A4D      | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                        | 4R0 | 00 |   | 2,025,743:64:0 |    |   |
| 93 | 240 | 18:54:10.266 | 490B412A4E      | 7VECT   | RTH              | Inert vect update UTC                      | 4R0 | 00 |   | 2,025,747:75:0 |    |   |
| 93 | 240 | 18:54:14.266 | 490B412A4F      | 7TURN   | 1,RTH            | ALERT Thruster                             | 4R0 | 00 |   | 2,025,747:81:0 |    |   |
| 93 | 240 | 18:58:02.266 | 490B412A406A4A  | 7STAR   | 1,6217,100.72899 | Star catalog update                        | 4R0 | 00 |   | 2,025,751:59:0 |    |   |
| 93 | 240 | 18:58:04.266 | 490B412A406A4B  | 7STAR   | 2,714,297.091999 | Star catalog update                        | 4R0 | 00 |   | 2,025,751:62:0 |    |   |
| 93 | 240 | 18:58:06.266 | 490B412A406A4C  | 7STAR   | 3,159,27.236,89. | Star catalog update                        | 4R0 | 00 |   | 2,025,751:65:0 |    |   |
| 93 | 240 | 18:58:08.266 | 490B412A406A4D  | 7STAR   | 4,296,98.705999, | Star catalog update                        | 4R0 | 00 |   | 2,025,751:68:0 |    |   |
| 93 | 240 | 18:58:10.266 | 490B412A406A4E  | 7STAR   | 5,0,0.0,0.0      | Star catalog update                        | 4R0 | 00 |   | 2,025,751:71:0 |    |   |
| 93 | 240 | 18:58:12.266 | 490B412A406A4F  | 7STAR   | 6,0,0.0,0.0      | Star catalog update                        | 4R0 | 00 |   | 2,025,751:74:0 |    |   |
| 93 | 240 | 20:16:10.933 | 490B412A4K      | 7MODE   | CRU              | AACS CRUISE MODE                           | 4R0 | 00 |   | 2,025,828:85:0 |    |   |
| 93 | 240 | 20:18:12.933 | 490B412A4M      | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                        | 4R0 | 00 |   | 2,025,830:86:0 |    |   |
| 93 | 240 | 21:50:05.600 | 20X3A           | 40T1PR  | CMD,40T1PR,20X3A | PCT Heater 1 OFF (primary relay)           | 4R0 | 00 |   | 2,025,921:74:0 |    |   |
| 93 | 240 | 21:50:10.933 | 20X3B           | 40T1PR  | CMD,40T1PR,20X3B | PCT Heater 1 OFF (primary relay)           | 4R0 | 00 |   | 2,025,921:82:0 |    |   |
| 93 | 240 | 21:51:06.266 | 20X3C           | 40T2R   | CMD,40T2R,20X3C, | PCT Heater 2 OFF                           | 4R0 | 00 |   | 2,025,922:74:0 |    |   |
| 93 | 240 | 21:51:11.600 | 20X3D           | 40T2R   | CMD,40T2R,20X3D, | PCT Heater 2 OFF                           | 4R0 | 00 |   | 2,025,922:82:0 |    |   |
| 93 | 241 | 00:48:18.266 | 444B443A4A      | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                        | 4R0 | 00 |   | 2,026,098:06:0 |    |   |

| YR | DOY | Time         | PSID            | Command | Parameters       | Description                                | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|-----------------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 241 | 00:52:18.266 | 444B443A4B      | 7MODE   | SPNL             | AACS ALL-SPIN LOW                          | 4R0 | 00 |   | 2,026,102:02:0 |    |   |
| 93 | 241 | 01:01:18.266 | 444B443A4C      | 7CLK    | 17.45,0.0        | Check S/P Position                         | 4R0 | 00 |   | 2,026,110:84:0 |    |   |
| 93 | 241 | 03:52:15.600 | 192EH4A         | 7CONE   | 17.0,54.88       | Check S/P Position                         | 4R0 | 00 |   | 2,026,280:00:0 |    |   |
| 93 | 241 | 03:52:16.266 | 192EH4B         | 7CLK    | 17.0,244.07      | Check S/P Position                         | 4R0 | 00 |   | 2,026,280:01:0 |    |   |
| 93 | 241 | 04:00:16.933 | 175EH422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 4R0 | 00 |   | 2,026,287:85:0 |    |   |
| 93 | 241 | 04:00:16.933 |                 | DMS:    | *RUNUP           | R28, TRACK 4, REV, TIC 4680 +/- 41;        | 4R0 | 00 |   | 2,026,287:85:0 |    |   |
| 93 | 241 | 04:00:20.933 |                 | DMS:    | *RECORD          | R28, TRACK 4, REV, TIC *4679 +/- 42;       | 4R0 | 00 |   | 2,026,288:00:0 |    |   |
| 93 | 241 | 04:00:20.933 | 176EH6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 4R0 | 00 |   | 2,026,288:00:0 |    |   |
| 93 | 241 | 04:00:24.000 | IDUNPCTCAL01+   |         | -----START-----  |  | 4R0 | 00 |   | :              | :  |   |
| 93 | 241 | 04:01:16.933 | 157EG156A121A4A | 37IOP   | 3,0              | Long Map, Grating Start Position =0        | 4R3 | 00 |   | 2,026,288:84:0 |    |   |
| 93 | 241 | 04:02:17.600 | 157EG156A121B4A | 37IST   | 0,2,0,OFF,0,1,3  | Gain State 1                               | 1R3 | 00 |   | 2,026,289:84:0 |    |   |
| 93 | 241 | 04:03:18.266 | 157EG156A121C4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6       | 1R7 | 06 |   | 2,026,290:84:0 |    |   |
| 93 | 241 | 04:04:18.933 | 157EG156A121D4A | 37IOP   | 0,0              | Safe, Grating Start Position =0            | 1R0 | 00 |   | 2,026,291:84:0 |    |   |
| 93 | 241 | 04:06:24.933 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 4, REV, TIC *4359 +/- 42;       | 1R0 | 00 |   | 2,026,294:00:0 |    |   |
| 93 | 241 | 04:06:24.933 | 175EH422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 1R0 | 00 |   | 2,026,294:00:0 |    |   |
| 93 | 241 | 04:06:26.133 |                 | DMS:    | *READY           | RDY, TRACK 4, REV, TIC *4358 +/- 42;       | 1R0 | 00 |   | 2,026,294:01:8 |    |   |
| 93 | 241 | 04:09:26.933 | 192EH4C         | 7CONE   | 17.0,153.0       | Check S/P Position                         | 1R0 | 00 |   | 2,026,297:00:0 |    |   |
| 93 | 241 | 04:15:05.600 | 20Y3A           | 40HRP   | CMD,40HRP,20Y3A, | RCT Heater ON (primary relay)              | 1R0 | 00 |   | 2,026,302:53:0 |    |   |
| 93 | 241 | 04:15:10.933 | 20Y3B           | 40HRP   | CMD,40HRP,20Y3B, | RCT Heater ON (primary relay)              | 1R0 | 00 |   | 2,026,302:61:0 |    |   |
| 93 | 241 | 04:16:00.266 | 444A443A4A      | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                        | 1R0 | 00 |   | 2,026,303:44:0 |    |   |
| 93 | 241 | 04:20:00.266 | 444A443A4B      | 7MODE   | CRU              | AACS CRUISE MODE                           | 1R0 | 00 |   | 2,026,307:40:0 |    |   |
| 93 | 241 | 04:45:04.266 | 20V4A           | 7SAFE   | UNSTOW           | S/P TO 153 deg cone                        | 1R0 | 00 |   | 2,026,332:21:0 |    |   |
| 93 | 241 | 04:49:57.000 | IDUNPCTCAL01+   |         | -----STOP-----   |  | 1R0 | 00 |   | :              | :  |   |
| 93 | 242 | 18:30:04.866 | 20W4A           | 7STAT   | 17.45,113.074,22 | Stator inertial point                      | 1R0 | 00 |   | 2,028,572:32:0 |    |   |
| 93 | 242 | 19:05:06.866 | 192JB4A         | 7CONE   | 17.0,130.0       | Check S/P Position                         | 1R0 | 00 |   | 2,028,607:00:0 |    |   |
| 93 | 242 | 19:12:07.533 | 175EI422A6A     | 6DMSC   | R28,0            | DMS Control Tape runup 28.8kbp             | 1R0 | 00 |   | 2,028,613:85:0 |    |   |
| 93 | 242 | 19:12:07.533 |                 | DMS:    | *RUNUP           | R28, TRACK 4, REV, TIC 4358 +/- 42;        | 1R0 | 00 |   | 2,028,613:85:0 |    |   |
| 93 | 242 | 19:12:11.533 |                 | DMS:    | *RECORD          | R28, TRACK 4, REV, TIC *4356 +/- 42;       | 1R0 | 00 |   | 2,028,614:00:0 |    |   |
| 93 | 242 | 19:12:11.533 | 176EI6A         | 6TMCHG  | ELSMPW           | 10 BPS TDM-NO NIMS R/T / 28.8 KBPS PWS + N | 1R0 | 00 |   | 2,028,614:00:0 |    |   |
| 93 | 242 | 19:12:15.000 | IDUNRCTCAL01+   |         | -----START-----  |  | 1R0 | 00 |   | :              | :  |   |
| 93 | 242 | 19:13:07.533 | 157EH156A121A4A | 37IOP   | 1,0              | Full Map, Grating Start Position =0        | 1R1 | 00 |   | 2,028,614:84:0 |    |   |
| 93 | 242 | 19:14:08.200 | 157EH156A121B4A | 37IST   | 0,2,0,OFF,0,1,2  | Gain State 3                               | 3R1 | 00 |   | 2,028,615:84:0 |    |   |
| 93 | 242 | 19:15:13.533 | 192JB4B         | 7CONE   | 17.0,0.0         | Check S/P Position                         | 3R1 | 00 |   | 2,028,617:00:0 |    |   |
| 93 | 242 | 19:19:11.533 | 157EH156A121C4A | 37IOP   | 5,2              | Short Map, Grating Start Position =2       | 3R5 | 02 |   | 2,028,620:84:0 |    |   |
| 93 | 242 | 19:21:12.866 | 157EH156A121D4A | 37IOP   | 7,6              | Fixed Map, Grating Start Position =6       | 3R7 | 06 |   | 2,028,622:84:0 |    |   |
| 93 | 242 | 19:22:13.533 | 157EH156A121E4A | 37IOP   | 0,0              | Safe, Grating Start Position =0            | 3R0 | 00 |   | 2,028,623:84:0 |    |   |
| 93 | 242 | 19:22:18.200 | 175EI422A6B     | 6DMSC   | RDY,0            | DMS Control Tape stop                      | 3R0 | 00 |   | 2,028,624:00:0 |    |   |
| 93 | 242 | 19:22:18.200 |                 | DMS:    | *RUNDOWN         | RDY, TRACK 4, REV, TIC *3823 +/- 42;       | 3R0 | 00 |   | 2,028,624:00:0 |    |   |
| 93 | 242 | 19:22:19.400 |                 | DMS:    | *READY           | RDY, TRACK 4, REV, TIC *3822 +/- 43;       | 3R0 | 00 |   | 2,028,624:01:8 |    |   |
| 93 | 242 | 19:22:22.000 | IDUNRCTCAL01+   |         | -----STOP-----   |  | 3R0 | 00 |   | :              | :  |   |
| 93 | 242 | 19:24:19.533 | 192JB4C         | 7CONE   | 17.0,153.0       | Check S/P Position                         | 3R0 | 00 |   | 2,028,626:00:0 |    |   |
| 93 | 242 | 19:28:05.533 | 20Z3A           | 40HRPR  | CMD,40HRPR,20Z3A | RCT Heater OFF (primary relay)             | 3R0 | 00 |   | 2,028,629:66:0 |    |   |



| YR | DOY | Time         | PSID   | Command | Parameters       | Description                            | GCM | O  | S | RIM            | MF | I |
|----|-----|--------------|--------|---------|------------------|--|-----|----|---|----------------|----|---|
| 93 | 242 | 19:28:10.866 | 20Z3B  | 40HRPR  | CMD,40HRPR,20Z3B | RCT Heater OFF (primary relay)         | 3R0 | 00 |   | 2,028,629:74:0 |    |   |
| 93 | 242 | 19:36:00.200 |        | DMS:    | *RUNUP           | S7, TRACK 4, REV, TIC 3822 +/- 43;     | 3R0 | 00 |   | 2,028,637:50:0 |    |   |
| 93 | 242 | 19:36:00.200 | 20QC6A | 6DMSC   | S7,4             | DMS Control Tape slew 7.68kbp          | 3R0 | 00 |   | 2,028,637:50:0 |    |   |
| 93 | 242 | 19:36:01.666 |        | DMS:    | *SLEW            | S7, TRACK 4, REV, TIC *3821 +/- 43;    | 3R0 | 00 |   | 2,028,637:52:2 |    |   |
| 93 | 242 | 19:48:00.200 | 20QC6B | 6DMSC   | RDY,3            | DMS Control Tape stop                  | 3R0 | 00 |   | 2,028,649:38:0 |    |   |
| 93 | 242 | 19:48:00.200 |        | DMS:    | *RUNDOWN         | RDY, TRACK 4, REV, TIC *3653 +/- 43;   | 3R0 | 00 |   | 2,028,649:38:0 |    |   |
| 93 | 242 | 19:48:01.466 |        | DMS:    | *READY           | RDY, TRACK *3, *FWD, TIC *3652 +/- 43; | 3R0 | 00 |   | 2,028,649:39:9 |    |   |
| 93 | 242 | 20:00:00.200 | 20YU4A | 37IOP   | CMD,37IOP,20YU4A | , Grating Start Position =37           | 3R0 | 00 |   | 2,028,661:26:0 |    |   |
| 93 | 242 | 20:01:00.866 | 20YU3A | 37AR    | CMD,37AR,20YU3A  | NIMS Power OFF                         |     |    |   | 2,028,662:26:0 |    |   |
| 93 | 242 | 20:01:20.866 | 20YU3B | 37H     | CMD,37H,20YU3B,, | Replacement Heaters ON                 |     |    |   | 2,028,662:56:0 |    |   |
| 93 | 242 | 20:06:05.533 | 20AH3A | 40T2    | CMD,40T2,20AH3A  | PCT Heater 2 ON                        |     |    |   | 2,028,667:28:0 |    |   |
| 93 | 242 | 20:06:10.866 | 20AH3B | 40T2    | CMD,40T2,20AH3B  | PCT Heater 2 ON                        |     |    |   | 2,028,667:36:0 |    |   |
| 93 | 242 | 20:12:05.533 | 20AA3A | 37F2P   | CMD,37F2P,20AA3A | Shield Flash Heater ON (primary relay) |     |    |   | 2,028,673:22:0 |    |   |
| 93 | 242 | 20:12:10.866 | 20AA3B | 37F2P   | CMD,37F2P,20AA3B | Shield Flash Heater ON (primary relay) |     |    |   | 2,028,673:30:0 |    |   |