

|                                |            |                   |                               |              |                   |  |                       |   |
|--------------------------------|------------|-------------------|-------------------------------|--------------|-------------------|--|-----------------------|---|
| TITAN FLYBYT56 SEGMENT         |            | 2009-157T05:12:00 |                               | 002T01:45:00 | 2009-159T06:57:00 |  |                       |   |
| SP_112TI_WAYPTTURN157_PRIME    |            | 2009-157T05:12:00 |                               | 000T00:40:00 | 2009-157T05:52:00 | NEG_Y TO TITAN   | NEG_X TO 67.0/16.0    |   |
| NEW WAYPOINT                   |            | 2009-157T05:52:00 |                               | 002T01:43:00 | 2009-159T07:35:00 | NEG_Y TO TITAN   | NEG_X TO 67.0/16.0    |   |
| SP_112TI_DEADTIME157_PRIME     |            | 2009-157T05:52:00 |                               | 000T00:15:49 | 2009-157T06:07:49 | NEG_Y TO TITAN   | NEG_X TO 67.0/16.0    |   |
| CIRS_112TI_FIRNADCMP001_PRIME  | C, I, U, V | 2009-157T06:07:49 | GMB_E112_TITAN56-000T13:52:12 | 000T03:52:12 | 2009-157T10:00:01 | CIRS_FP1 TO TITAN                                      | PIC                   |   |
| ISS_112TI_PHOTOMWAC001_PRIME   | C, V       | 2009-157T10:00:01 | GMB_E112_TITAN56-000T10:00:00 | 000T01:00:00 | 2009-157T11:00:01 | ISS_NAC TO TITAN (0.0,3.0,0.0 DEG. OFFSET)             | NEG_X TO SUN          |   |
| VIMS_112TI_MEDRESDRK001_PRIME  | C, I, R    | 2009-157T11:00:01 | GMB_E112_TITAN56-000T09:00:00 | 000T03:50:00 | 2009-157T14:50:01 | VIMS_IR TO TITAN                                       | NEG_X TO 67.0/16.0    |   |
| BEGIN CUSTOM PERIOD            |            | 2009-157T14:50:01 | GMB_E112_TITAN56-000T05:10:00 | 000T00:00:01 | 2009-157T14:50:02 | NEG_Y TO TITAN   | NEG_X TO 67.0/16.0    |   |
| RADAR_112TI_T56INRADO01_PRIME  |            | 2009-157T14:50:01 | GMB_E112_TITAN56-000T05:10:00 | 000T03:10:00 | 2009-157T18:00:01 | NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET)              | NEG_Y TO NTP          | PICK UP AT NEG_Y TO TITAN, NEG_X TO 67.0/16.0; HAND OFF AT NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET), NEG_X TO NTP. USE ZNDARY_Y_NTP(0.0,30) AND -X_NTP(0.0,30) FOR POLARIZATIONS.        |
| RADAR_112TI_T56INSCATO01_PRIME | M          | 2009-157T18:00:01 | GMB_E112_TITAN56-000T02:00:00 | 000T00:48:00 | 2009-157T18:48:01 | NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET)              | NEG_X TO NTP          | PICK UP AT NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET), NEG_X TO NTP; HAND OFF AT NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET), NEG_X TO NTP.  |
| ENGR_112SC_RADRCS157_PRIME     | M          | 2009-157T18:48:01 | GMB_E112_TITAN56-000T01:12:00 | 000T00:01:00 | 2009-157T18:49:01 | NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET)              | NEG_X TO NTP          | PICK UP AT NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET), NEG_X TO NTP; HAND OFF AT NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET), NEG_X TO NTP. (0.5,0.5,0.5) DEADBAND                           |
| RADAR_112TI_T56IHISAR001_PRIME | M          | 2009-157T18:49:01 | GMB_E112_TITAN56-000T01:11:00 | 000T00:41:00 | 2009-157T19:30:01 | NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET)              | NEG_X TO NTP          | PICK UP AT NEG_Z TO TITAN (0.0,0.0,30.0 DEG. OFFSET), NEG_X TO NTP; HAND OFF AT NEG_Z TO TITAN, NEG_X TO NTP.   |
| RADAR_112TI_T56INALTO01_PRIME  | M          | 2009-157T19:30:01 | GMB_E112_TITAN56-000T00:30:00 | 000T00:12:00 | 2009-157T19:42:01 | NEG_Z TO TITAN   | POS_Y TO NTP          | PICK UP AT NEG_Z TO TITAN, NEG_X TO NTP; HAND OFF AT NEG_Z TO TITAN (0.0,0.0,-20.0 DEG. OFFSET), NEG_X TO TITAN_SC_RAM.   |
| BEGIN DUAL PLAYBACK SCIENCE    |            | 2009-157T19:42:01 | GMB_E112_TITAN56-000T00:18:00 | 000T00:00:01 | 2009-157T19:42:02 |  |                       |   |
| RADAR_112TI_T56INOSAR001_PRIME | M          | 2009-157T19:42:01 | GMB_E112_TITAN56-000T00:18:00 | 000T00:36:00 | 2009-157T20:18:01 | NEG_Z TO TITAN   | NEG_X TO TITAN_SC_RAM | PICK UP AT NEG_Z TO TITAN (0.0,0.0,-20.0 DEG. OFFSET), NEG_X TO TITAN_SC_RAM; HAND OFF AT NEG_Z TO TITAN, NEG_X TO TITAN_SC_RAM.  |
| 112TI (T) T56 TITAN INBOU...   |            | 2009-157T20:00:00 |                               | 000T00:00:01 | 2009-157T20:00:01 |  |                       |   |
| END DUAL PLAYBACK SCIENCE      |            | 2009-157T20:18:01 | GMB_E112_TITAN56+000T00:18:00 | 000T00:00:01 | 2009-157T20:18:02 |  |                       |   |
| RADAR_112TI_T56OUTALTO01_PRIME | M          | 2009-157T20:18:01 | GMB_E112_TITAN56+000T00:18:00 | 000T00:14:00 | 2009-157T20:32:01 | NEG_Z TO TITAN (0.0,0.0,20.0 DEG. OFFSET)              | NEG_X TO NTP          | PICK UP AT NEG_Z TO TITAN, NEG_X TO TITAN_SC_RAM; HAND OFF AT UVIS_FUV TO 206.885/49.313 (0.082,0.0,0.0 DEG. OFFSET), NEG_Z TO NTP.   |
| ENGR_112SC_DFPWBIAS157_PPS     | C, M, U, V | 2009-157T20:32:01 | GMB_E112_TITAN56+000T00:32:00 | 000T00:21:05 | 2009-157T20:53:06 | UVIS_FUV TO 206.885/49.313 (0.082,0.0,0.0 DEG. OFFSET) | NEG_Z TO NTP          | PICK UP AT UVIS_FUV TO 206.885/49.313 (0.082,0.0,0.0 DEG. OFFSET), NEG_Z TO NTP; HAND OFF AT UVIS_FUV TO 206.885/49.313 (0.082,0.0,0.0 DEG. OFFSET), NEG_Z TO NTP. (0.5,0.5,0.5) DEADBAND |
| UVIS_112ST_ETAUIMATI002_PRIME  | C, M, V    | 2009-157T20:53:10 | GMB_E112_TITAN56+000T00:53:09 | 000T00:47:51 | 2009-157T21:41:01 | UVIS_FUV TO 206.885/49.313 (0.082,0.0,0.0 DEG. OFFSET) | NEG_Z TO NTP          | PICK UP AT UVIS_FUV TO 206.885/49.313 (0.082,0.0,0.0 DEG. OFFSET), NEG_Z TO NTP; HAND OFF AT NEG_Y TO TITAN, NEG_X TO 67.0/16.0.  |
| END CUSTOM PERIOD              |            | 2009-157T21:41:01 | GMB_E112_TITAN56+000T01:41:00 | 000T00:00:01 | 2009-157T21:41:02 | NEG_Y TO TITAN   | NEG_X TO 67.0/16.0    |   |
| UVIS_112TI_EUVFUV001_PRIME     | C, I, M, V | 2009-157T21:41:01 | GMB_E112_TITAN56+000T01:41:00 | 000T07:19:00 | 2009-158T05:00:01 | UVIS_FUV TO TITAN (0.0,0.0,5.443 DEG. OFFSET)          | POS_X TO 246.0/-21.4  |   |
| CIRS_112TI_FIRNADCMP002_PRIME  | C, I, U, V | 2009-158T05:00:01 | GMB_E112_TITAN56+000T09:00:00 | 000T05:00:00 | 2009-158T10:00:01 | CIRS_FP1 TO TITAN                                      | PIC                   |   |
| VIMS_112TI_GLOBMAP001_PRIME    | C, I       | 2009-158T10:00:01 | GMB_E112_TITAN56+000T14:00:00 | 000T09:02:48 | 2009-158T19:02:49 | VIMS_IR TO TITAN                                       | POS_X TO 244.0/-22.7  |   |
| SP_112TI_DEADTIME158_PRIME     |            | 2009-158T19:02:49 | GMB_E112_TITAN56+000T23:02:48 | 000T00:14:11 | 2009-158T19:17:00 | NEG_Y TO TITAN   | NEG_X TO 67.0/16.0    |   |
| SP_112EA_DLTURN158_PRIME       |            | 2009-158T19:17:00 |                               | 000T00:40:00 | 2009-158T19:57:00 | XBAND TO EARTH   | NEG_X TO NEP          |   |
| SP_112EA_G34BWGSEQ158_PRIME    | C          | 2009-158T19:57:00 |                               | 000T01:16:00 | 2009-158T21:13:00 | XBAND TO EARTH   | ROLLING               | NEG_X TO NEP  |
| SP_112EA_G70METSEQ158_PRIME    | C          | 2009-158T21:13:00 |                               | 000T04:35:00 | 2009-159T01:48:00 | XBAND TO EARTH   | ROLLING               | NEG_X TO NEP  |
| SP_112EA_C70METNON159_PRIME    | C          | 2009-159T01:48:00 |                               | 000T04:25:00 | 2009-159T06:13:00 | XBAND TO EARTH   | ROLLING               | NEG_X TO NEP  |