

Timeline for Cassini Rev 84 RSS Occultation of Saturn's Rings on September 10, 2008 (DOY 254)

Essam Marouf 09/03/2008 (v1)

| | ERT UTC OWLT = 1:25:59 | SCET | PDT ERT-7hrs 7:00:00 | Comments |
|--------------------------------------|------------------------------|---------|----------------------------|--|
| DSS-55: Start Precal | 6:30:00 | 5:04:01 | 23:30:00 | |
| Start of RSS3a Op-Mode | 6:32:57 | 5:06:58 | 23:32:57 | S-band is turned ON; Ka-band is already ON |
| DSS-63: Start Precal | 7:00:00 | 5:34:01 | 0:00:00 | |
| DSS-55 & 63 Begin of Track | 8:00:00 | 6:34:01 | 1:00:00 | |
| SNT Measurements (all bands) | TBD | | | Time close to start of the GMB time is preferred |
| Start SP Wypoint Turn to Earth Point | 8:02:59 | 6:37:00 | 1:02:59 | 35 minutes S/C turn to Earth point |
| TWNC ON | 8:37:51 | 7:11:52 | 1:37:51 | |
| TLM OFF | 8:37:56 | 7:11:57 | 1:37:56 | |
| Spacecraft HGA is Earth Pointed | 8:37:59 | 7:12:00 | 1:37:59 | S/X downlink likely detectable shortly before this time |
| Start Ground Moveable Block Deadtime | 8:37:59 | 7:12:00 | 1:37:59 | |
| DSS-55: Enable Monopulse | TBD | | | Enable Monopulse soon after receiver is locked |
| DSS-55: Disable Monopulse | TBD | | | Keep monopulse enabled if ground pointing is problematic |
| Start Free-Space Baseline | 8:58:26 | 7:32:27 | 1:58:26 | Pc/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 42 dB |
| Ring F in | 9:18:51 | 7:52:53 | 2:18:51 | Rings F is only detectable in postprocessing |
| Ring A in | 9:19:18 | 7:53:19 | 2:19:18 | Detectable signals over most of Ring A |
| Enke Gap | 9:19:41 | 7:53:42 | 2:19:41 | Signals are back very briefly to full strength |
| Ring A out | 9:21:07 | 7:55:09 | 2:21:07 | Relatively strong signals in the Cassini Division |
| Ring B in | 9:21:44 | 7:55:45 | 2:21:44 | Signals likely absent over most of Ring B |
| Ring C in | 9:27:09 | 8:01:10 | 2:27:09 | Signals briefly detectable in outer region of Ring C |
| Ring B in | 9:29:20 | 8:03:22 | 2:29:20 | Signals likely absent over most of Ring B |
| Ring B out | 9:34:45 | 8:08:46 | 2:34:45 | Relatively strong signals in the Cassini Division |

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|---------------------------------------|----------|---------|---------|---|
| Ring A in | 9:35:21 | 8:09:23 | 2:35:21 | Detectable signals over most of Ring A |
| Encke gap | 9:36:48 | 8:10:50 | 2:36:48 | Signals are back very briefly to full strength |
| Ring A out | 9:37:11 | 8:11:12 | 2:37:11 | Pc/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 42 dB |
| Ring F | 9:37:37 | 8:11:39 | 2:37:37 | Rings F is only detectable in postprocessing |
| End of Free-Space Baseline | 9:53:26 | 8:27:27 | 2:53:26 | |
| End of Ground Moveable Block Deadtime | 10:25:26 | 8:59:27 | 3:25:26 | Formal end of the Rev 84 RSS ring occultation |
| End of RSS3a Op-Mode | 10:24:59 | 8:59:00 | 3:24:59 | Loss of S-band signal; Ka-band remains ON for SCE |
| Start SP Turn Away from Earth Point | 10:25:59 | 9:00:00 | 3:25:59 | Loss of Ka-band signal |
| TLM ON | 10:27:01 | 9:01:02 | 3:27:01 | |
| TWNC OFF | 10:27:06 | 9:01:07 | 3:27:06 | |
| SNT Measurement | TBD | | | |
| DSS-55 & 63: End of Track | 10:55:00 | 9:29:01 | 3:55:00 | |
| DSS-55 & 63 Postcal | 11:10:00 | 9:44:01 | 4:10:00 | |

Indicates DSS-55 & DSS-63 Realted Activities

DSS-55 Monopulse enable/disable times are decided in realtime & may be updated before experiment

Ring event times are based on the 080520 reference trajectory

Some Ring Edges are known to be noncircular, which will affect ring event times above