

IBEX Operations

Pre-SpinDown MAC

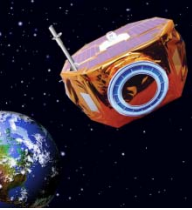
Flight Dynamics Group

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John Carrico, Lisa Policastri, Ryan Lebois, Marissa Intelisano

19 Jun 2011

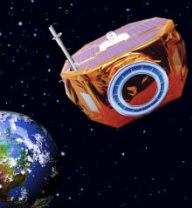
2011 Day 170



Contents



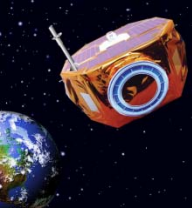
- Maneuver Goals
- Orbit & Tracking Status
- Maneuver Assessment
- Eclipses
- Orbit Evolution



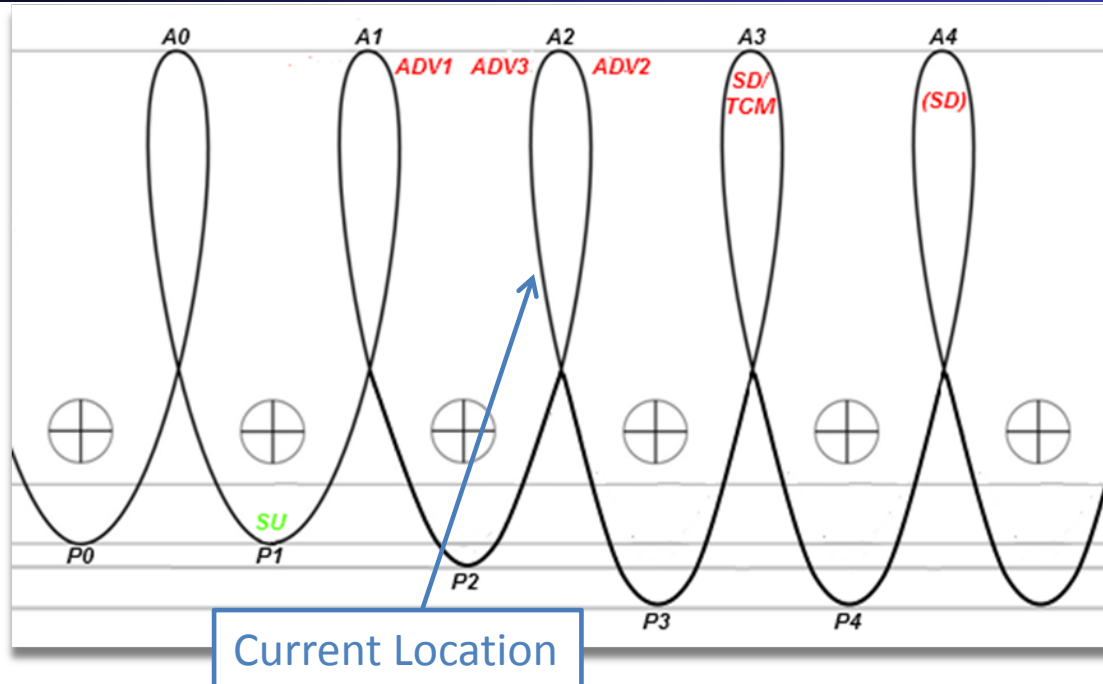
Maneuver Sequence Goals



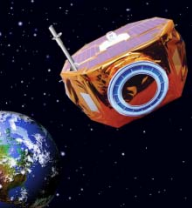
1. Avoid eclipses longer than 4 hours
 - 30% penumbra duration + umbra duration
 2. Minimize time in radiation belts
 - Raise perigee
 3. Apogee Radius less than 55 R_e
 4. Rotate Apogee towards helionose
 5. No more ΔV maneuvers for at least 10 years
- The team choose an orbit with an orbit period in a 3:1 ratio with the Lunar orbit period (~9.1 days)
 - 3 maneuvers at apogee to raise perigee and establish the orbit period



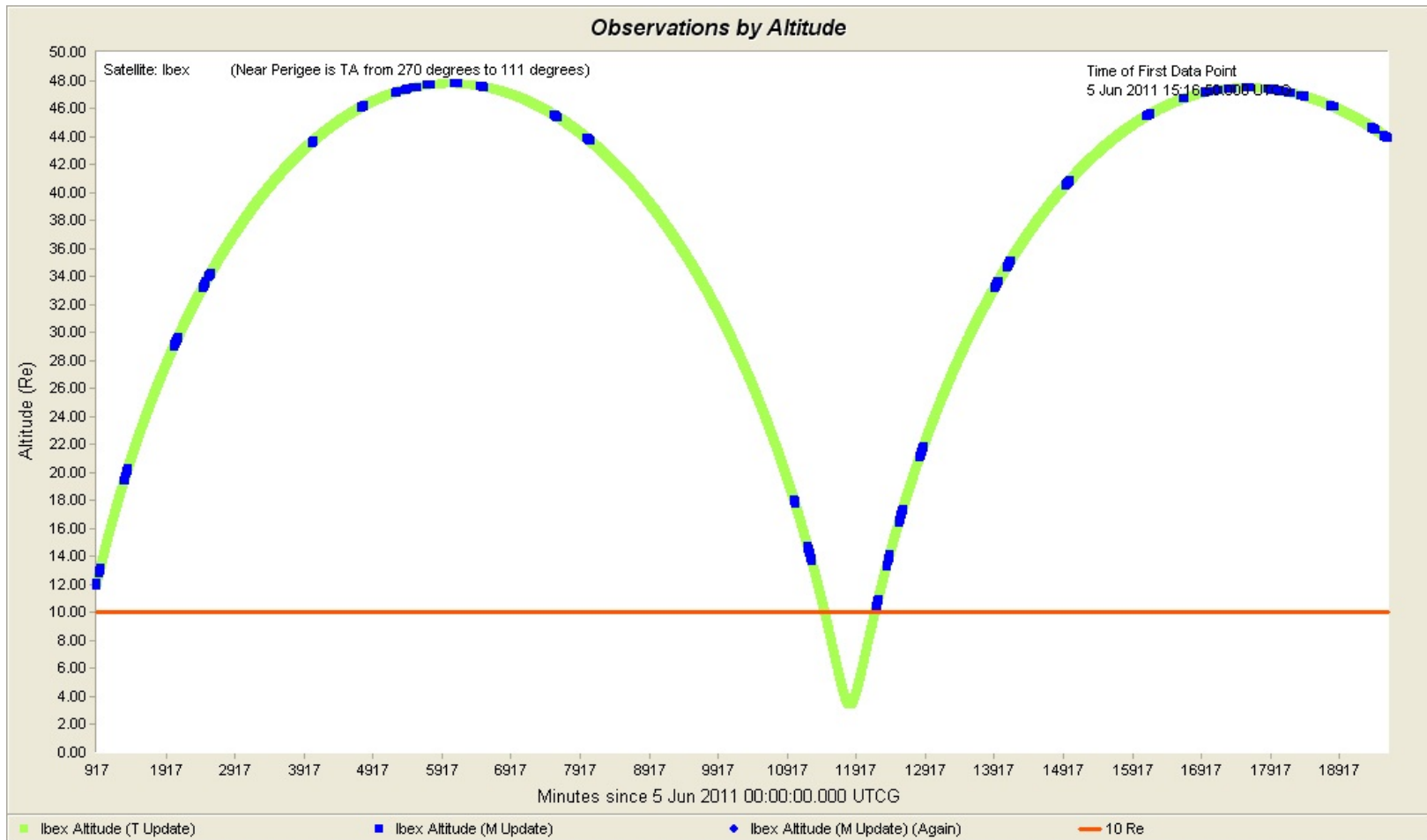
Burn Plan

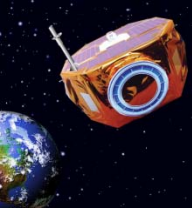


- ADV1 Ignition = 08 Jun 2011 20:00 UTCG } A1
- ADV2 Ignition = 16 Jun 2011 19:00 UTCG } A2
- ADV3 Ignition = 17 Jun 2011 11:00 UTCG } A2
- Orbit period target measured at A4 (~5 July 2011 00:34)

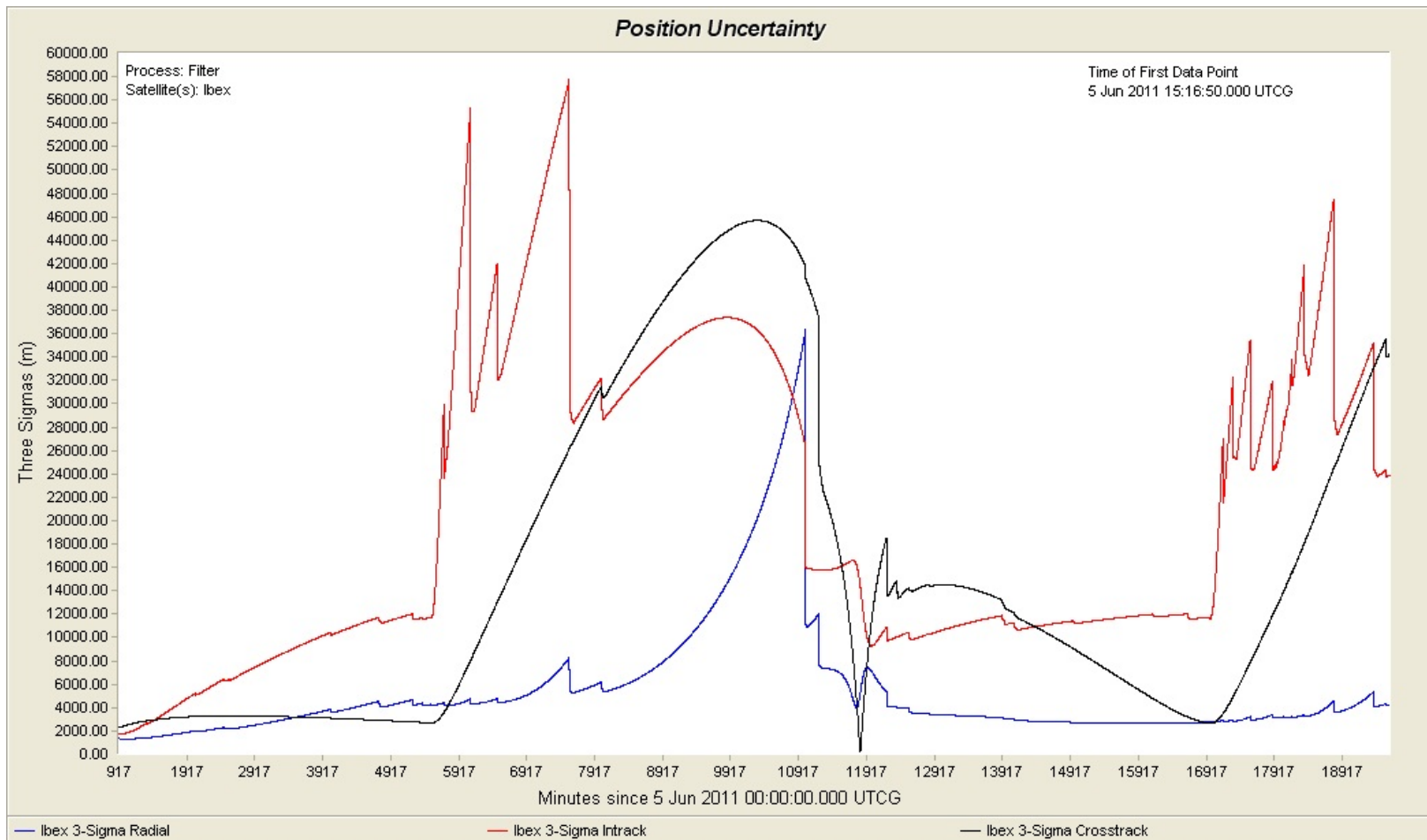


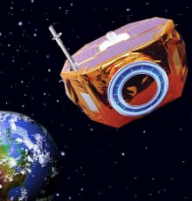
Tracking Measurements in Blue





Orbit Position Uncertainty

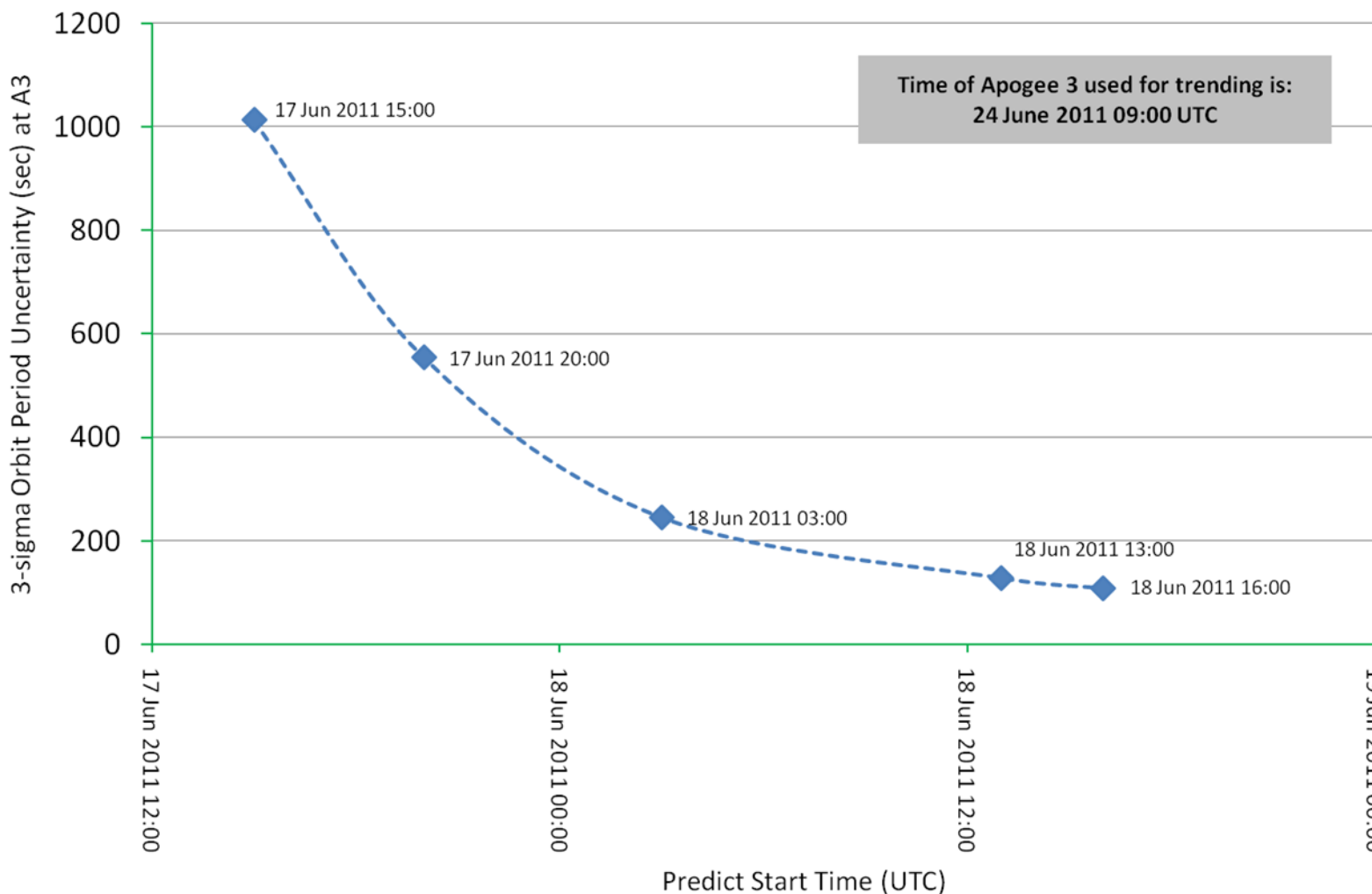


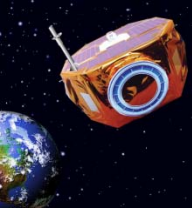


Orbit Period Uncertainty Trend



Orbit Period Uncertainty (3-sigma) at Apogee 3 from each Post-ADV3 Tracking Contact



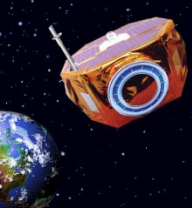


Maneuver Reconstruction



Maneuver name	Time of Last Filtered Tracking Measurement (UTCG)	Inertial Delta-V (m/sec, deg)						Percent Corrected Mag/Planned Mag
		DVx	DVy	DVz	Mag	Ra	Dec	
ADV1	Planned	37.650425	65.272803	70.420233	103.136329	60.022946	43.061882	
ADV1	13 Jun 2011 23:00:00.000	35.03575	59.658083	64.914992	94.871212	59.575313	43.176127	-8.014%
ADV2	Planned	31.762728	55.067324	59.41664	87.015046	60.023733	43.065328	
ADV2	18 Jun 2011 15:00:00.000	31.981892	54.153461	59.699721	86.715025	59.434797	43.508233	-0.345%
ADV3	Planned	28.8251	49.974331	53.921394	78.967315	60.023733	43.065328	
ADV3	18 Jun 2011 15:00:00.000	30.039387	50.671414	55.329075	80.816232	59.339389	43.206377	2.341%

- Updated propulsion model after ADV1 (Scaled SINDA model)

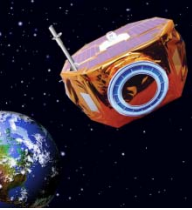


Perigee Raising

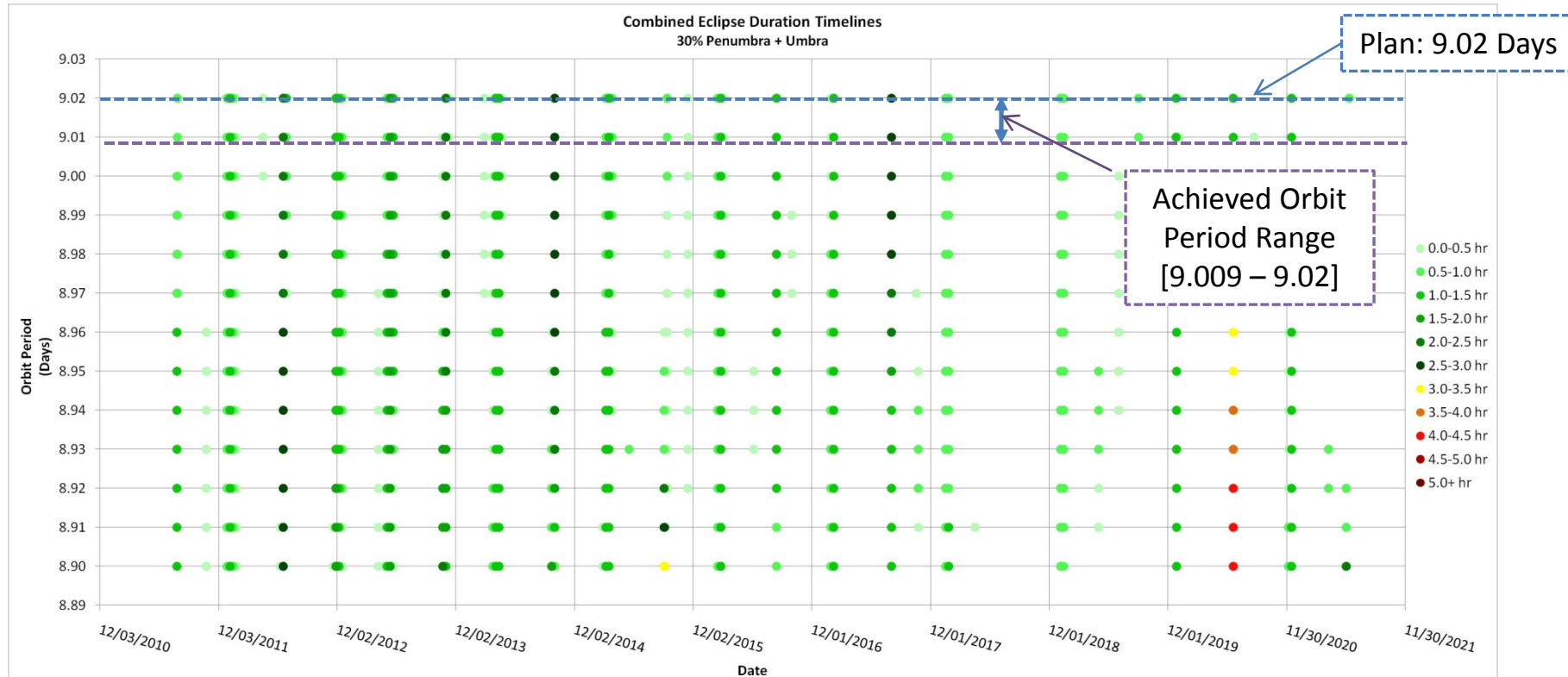


Time of Perigee (UTCG)	Perigee Radius (Re)
5 Jun 2011 08:22	2.71
13 Jun 2011 05:11	4.41
21 Jun 2011 14:59	8.31
30 Jun 2011 11:42	8.33
9 Jul 2011 12:54	8.09
18 Jul 2011 09:18	7.67

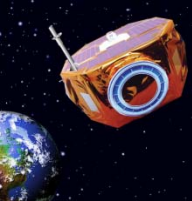
Time of Apogee (UTCG)	Apogee Radius (Re)
1 Jun 2011 13:20	48.5
9 Jun 2011 04:42	48.7
17 Jun 2011 04:49	48.4
26 Jun 2011 01:27	48.5
5 Jul 2011 00:36	49.2 (Orbit Period = 9.015 Day)
13 Jul 2011 23:31	48.9



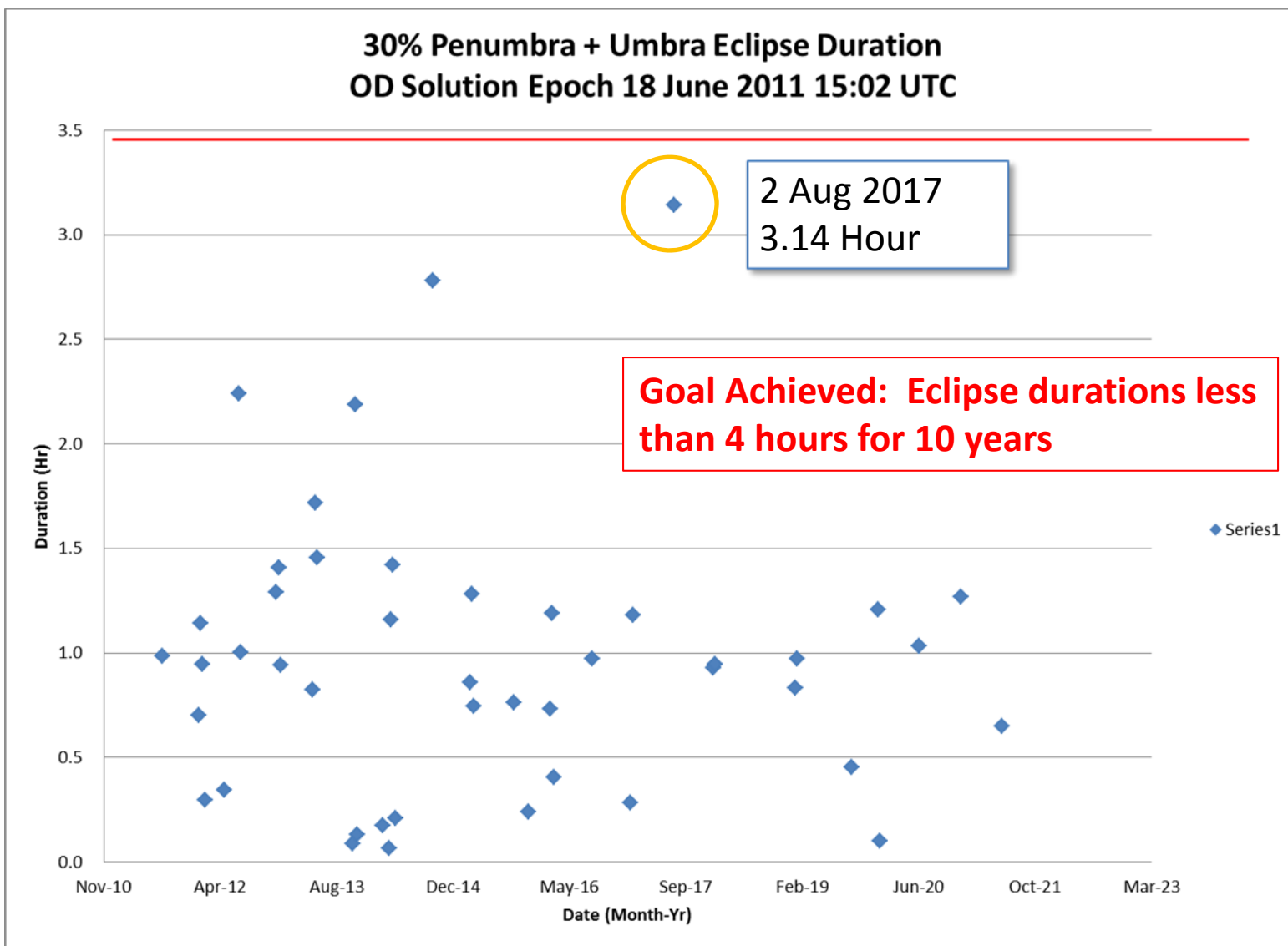
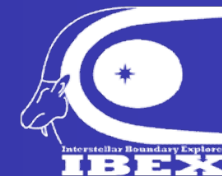
Orbit Period Planning

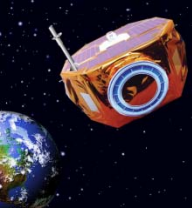


- Planned ADV3 as 600 Second burn = 9.02 Day period
- Current OD: ~ 9.015 Day Period (± 0.005)

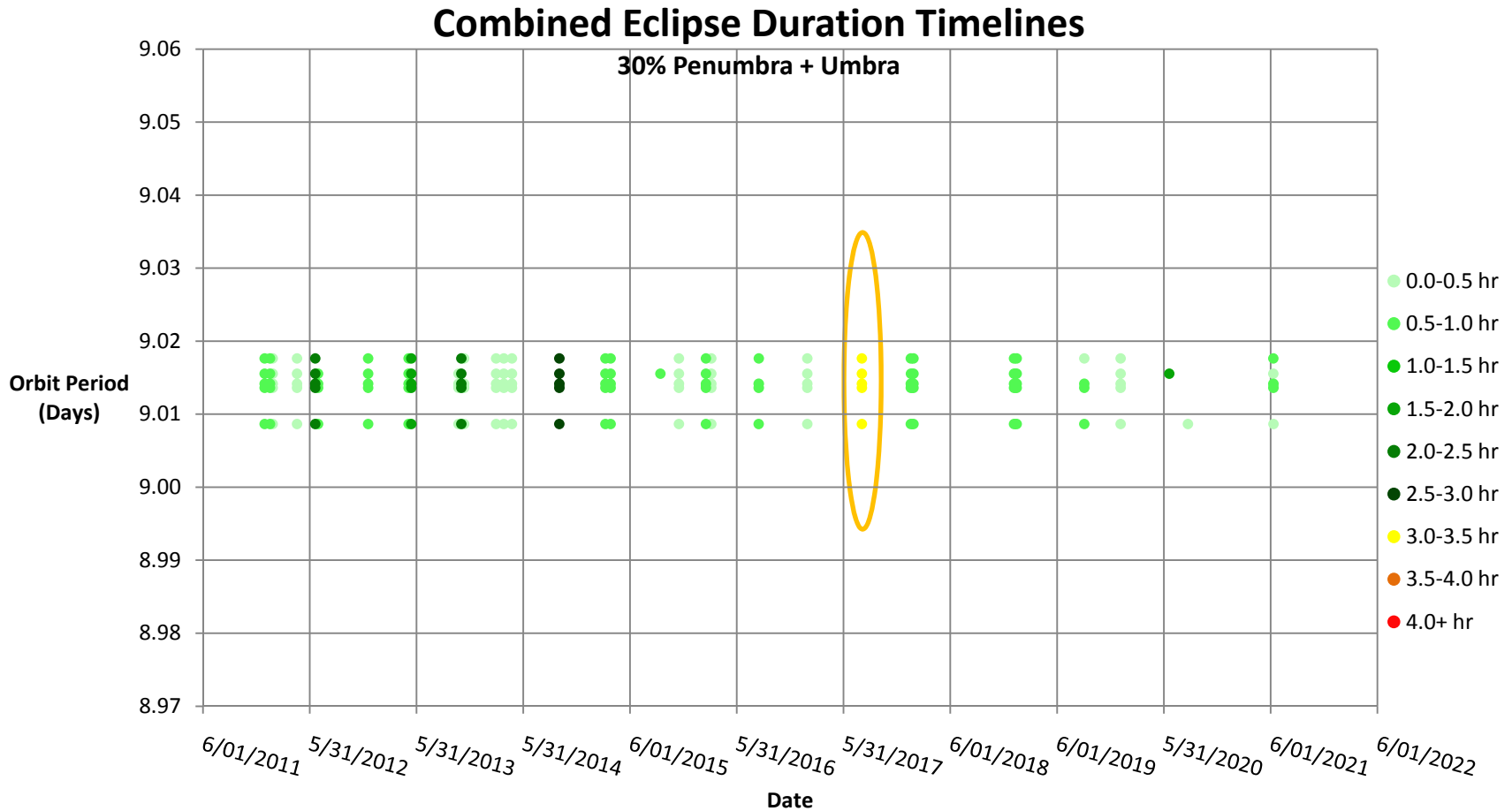


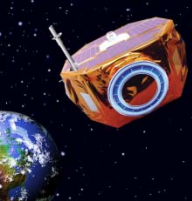
Current OD Eclipses 10 Years



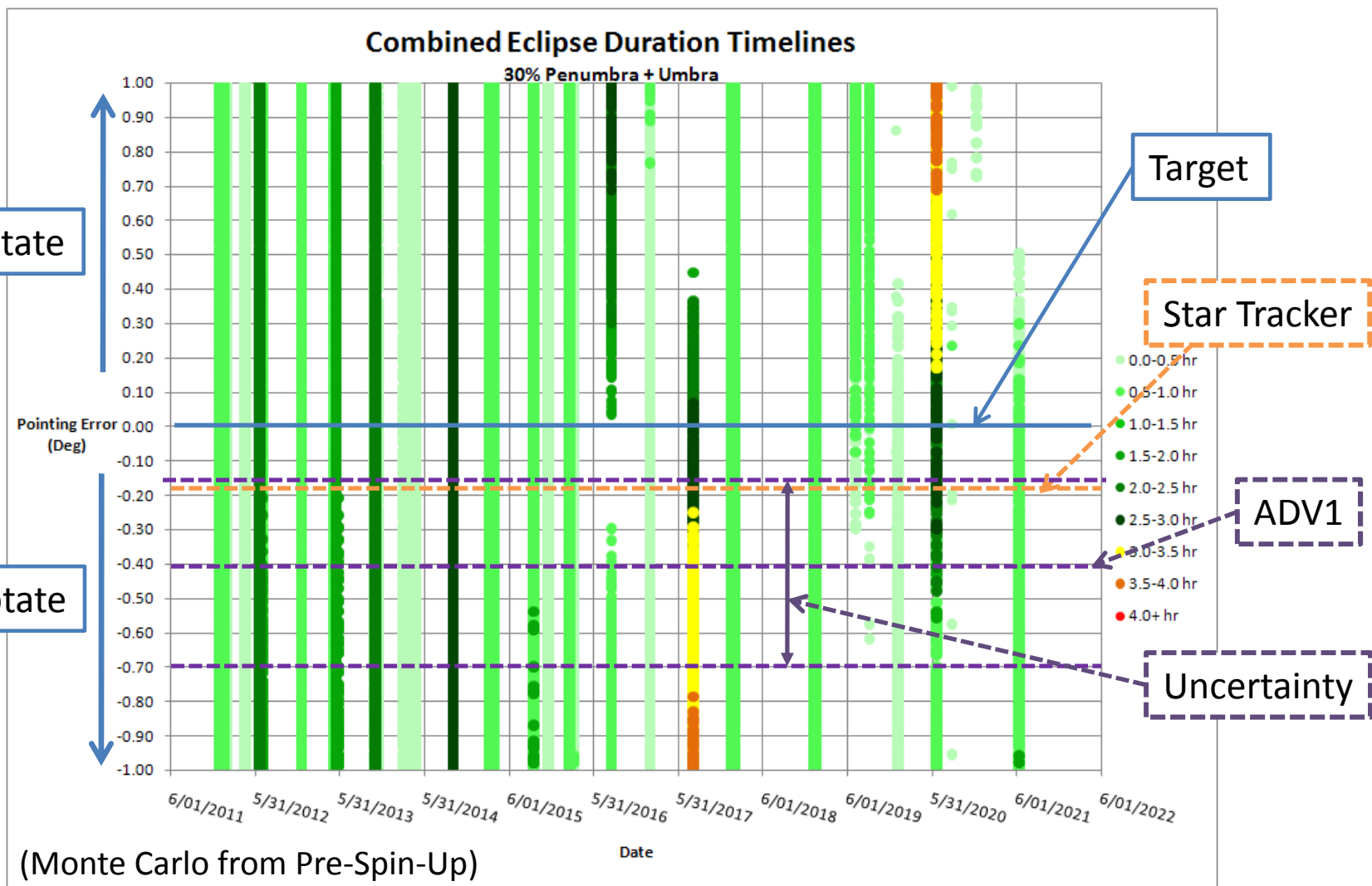


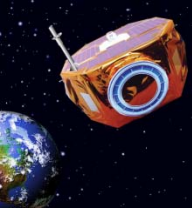
Monte Carlo (425 Runs)





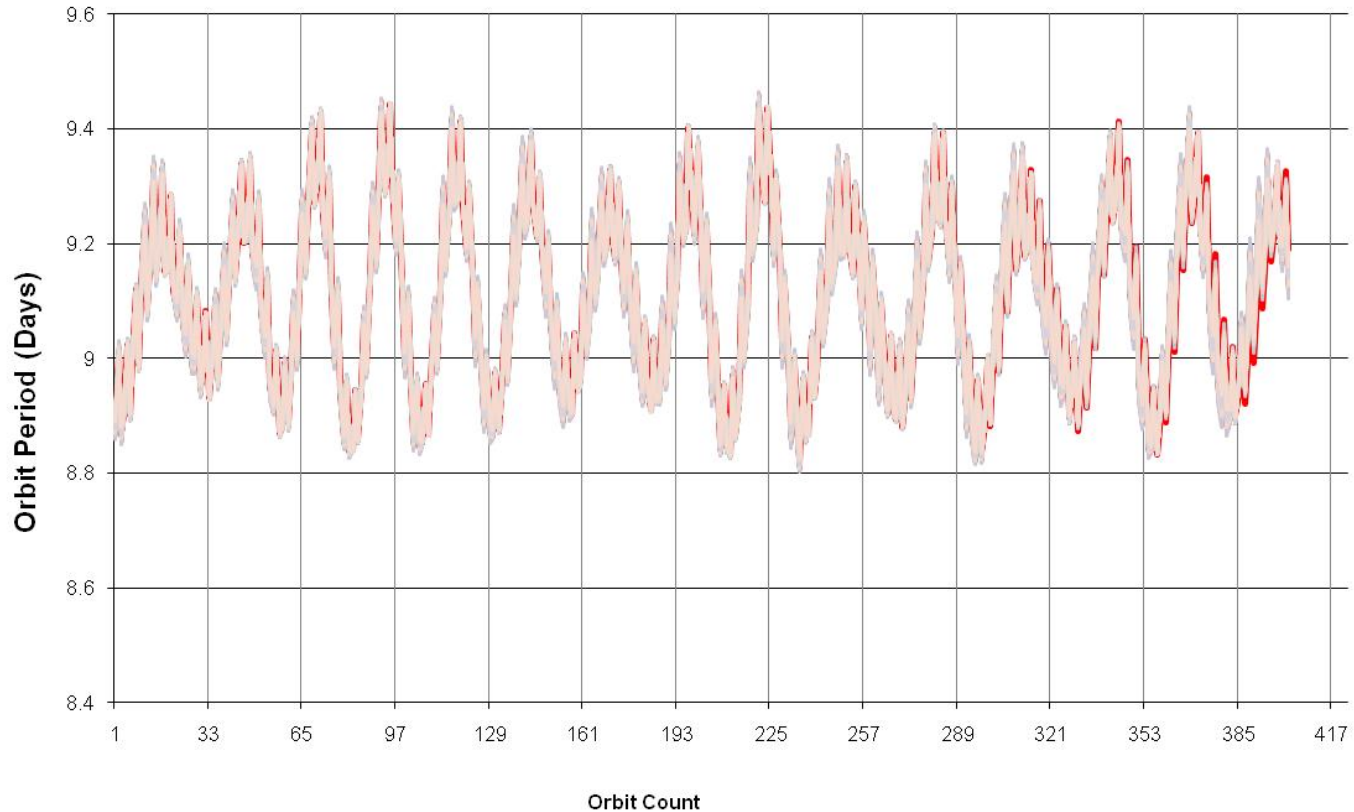
Monte Carlo - Pointing



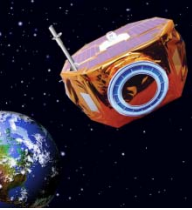


Orbit Period

IBEX Full Monte Carlo Orbit Period History (425 Runs, 255 Shown)



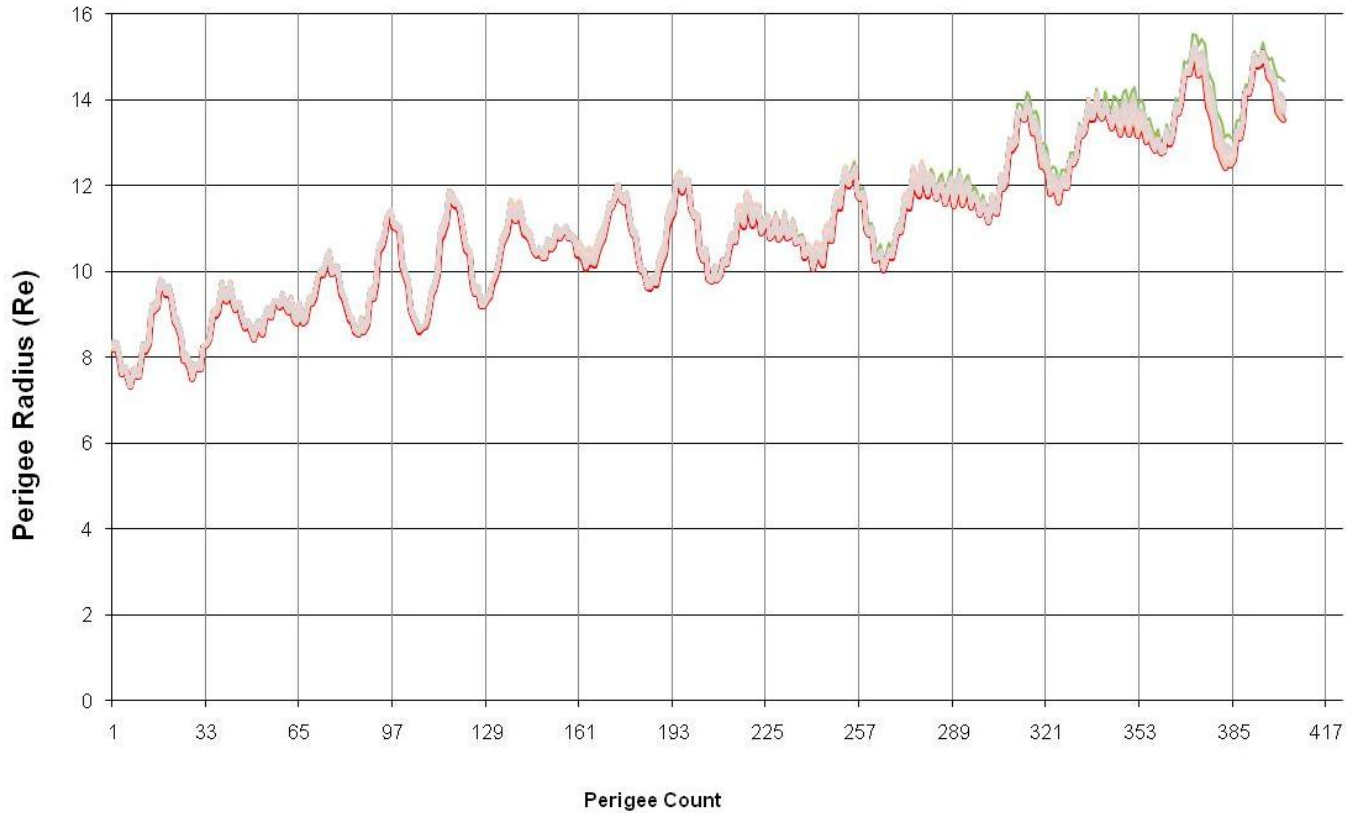
Goal Achieved: 3:1 Lunar Synchronous



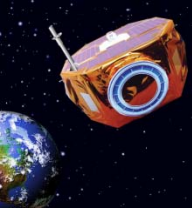
Perigee Radius



IBEX Full Monte Carlo Perigee History (425 Runs, 255 Shown)

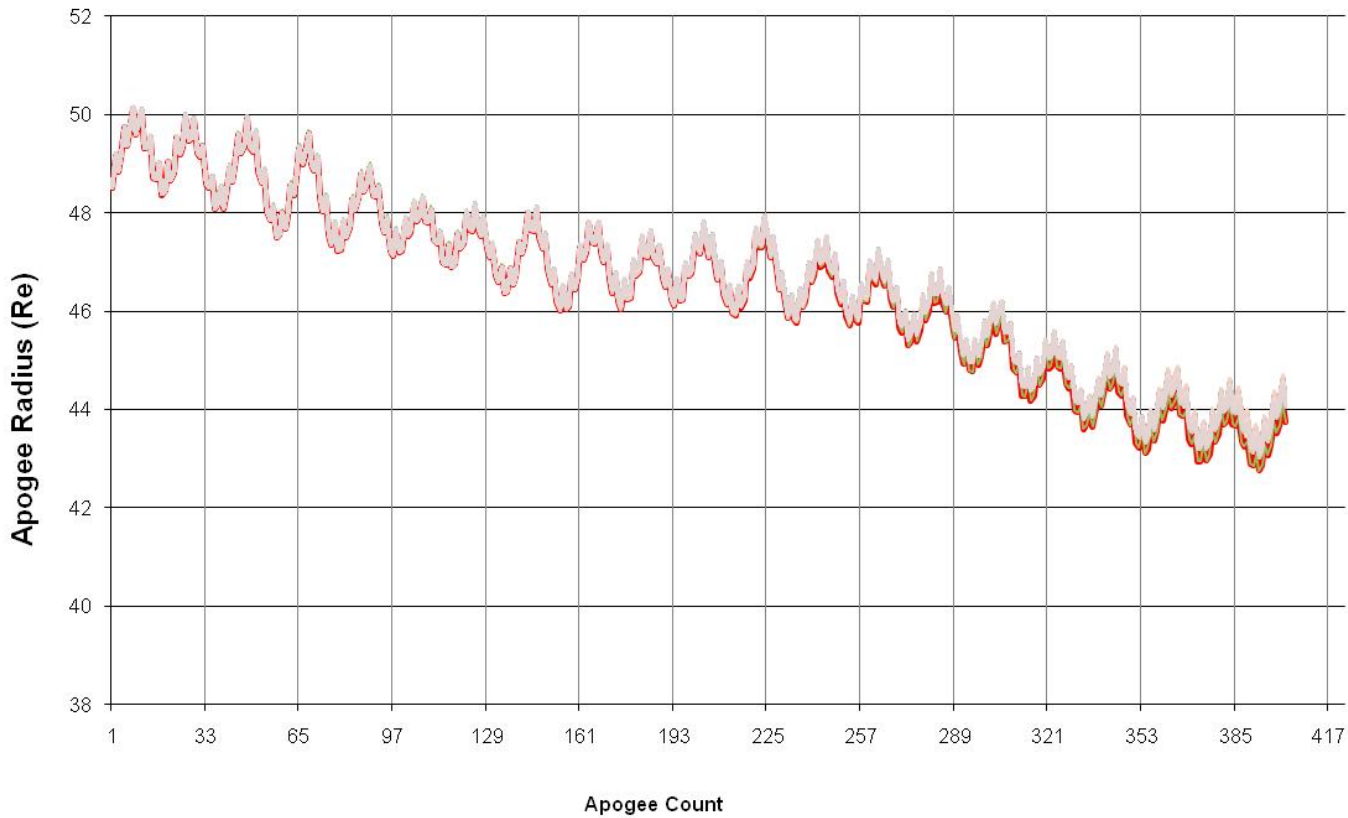


Goal Achieved: Out of radiation belts

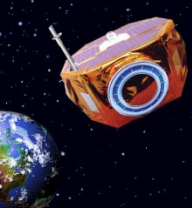


Apogee Radius

IBEX Full Monte Carlo Apogee History (425 Runs, 255 Shown)



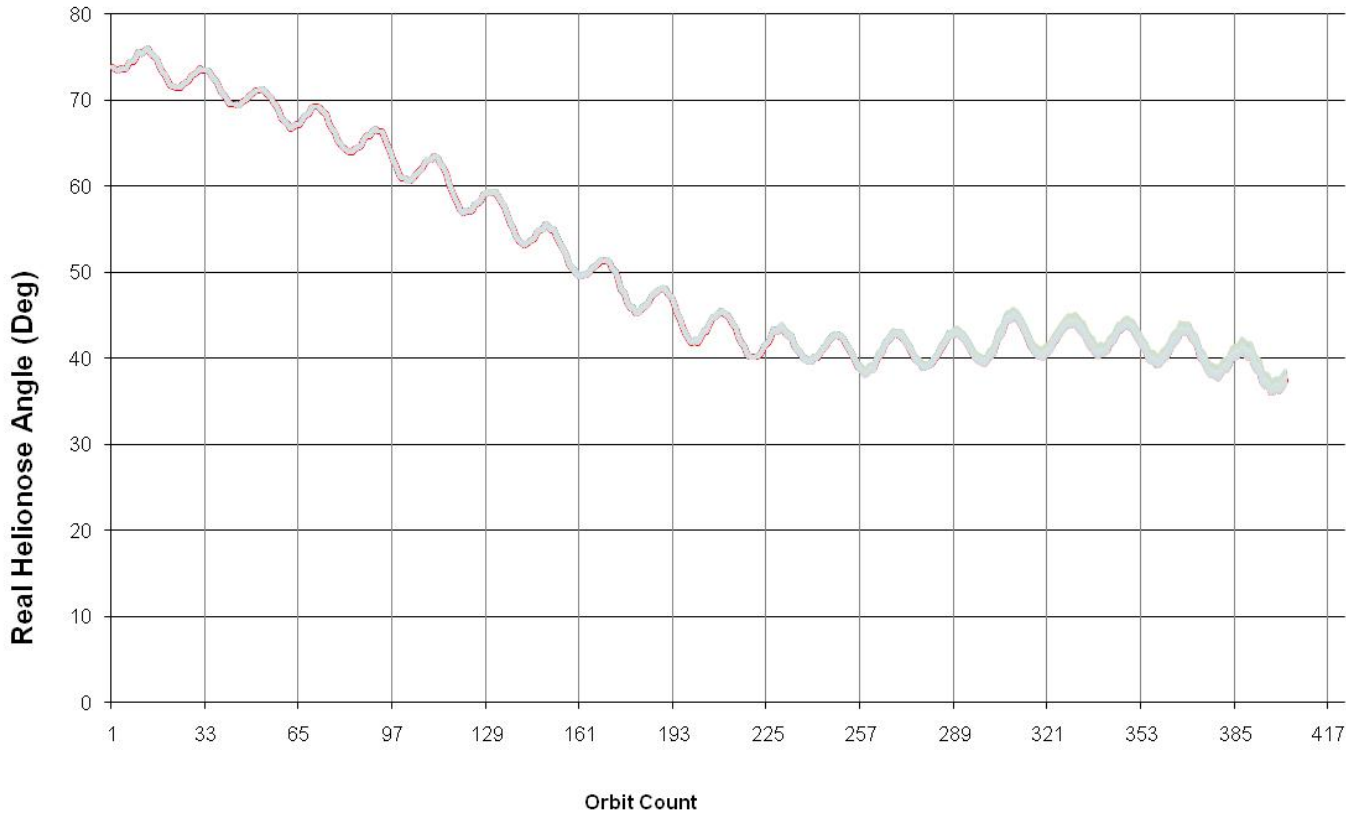
Goal Achieved: Apogee less than 55 Re



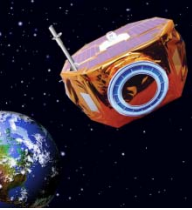
Real Helionose Angle



IBEX Full Monte Carlo Real Helionose Angle History (425 Runs, 255 Shown)



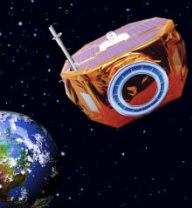
Goal Achieved: Apogee rotated towards helionose



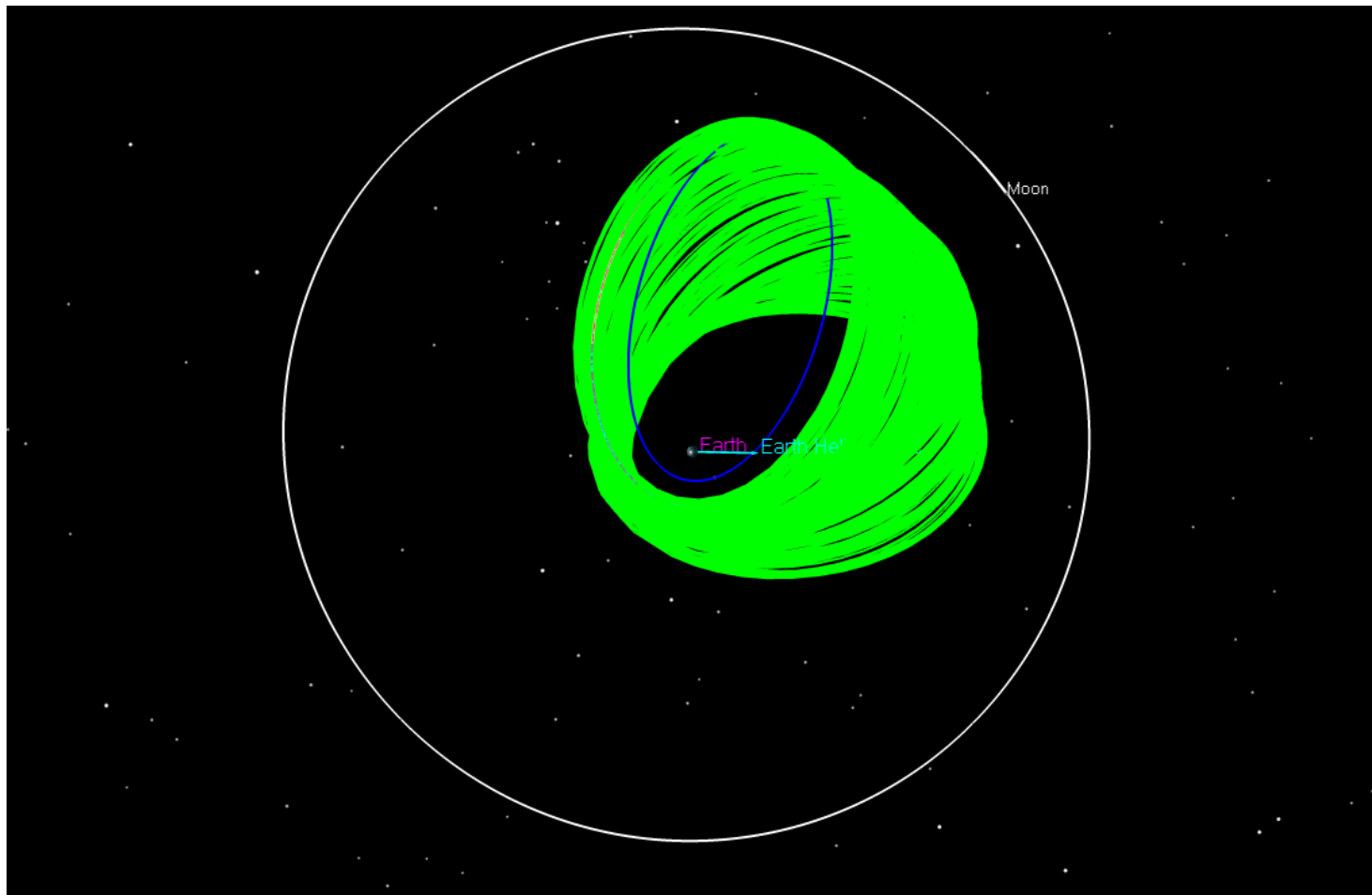
Conclusion



1. No eclipses longer than 4 hours
 - 30% penumbra duration + umbra duration
2. Minimized time in radiation belts
 - Raise perigee above 7 Re
3. Apogee Radius always less than 55 Re
4. Apogee Rotated towards helionose
5. **No more ΔV maneuvers needed for at least 10 years!**



IBEX's New Orbit: 10 Years



IBEX FDG Apogee Perigee Times Report
 Created: 18 Jun 2011 18:06:23 EDT

Time of Perigee (UTCG)	Perigee Altitude (Re)	Perigee Radius (Re)
21 Jun 2011 14:59:32.683	7.314862	8.314859
30 Jun 2011 11:42:21.038	7.325118	8.325116
9 Jul 2011 12:54:05.954	7.089046	8.089042
18 Jul 2011 09:17:42.980	6.671054	7.671051
27 Jul 2011 06:30:57.323	6.797445	7.797442
5 Aug 2011 08:13:45.531	6.535474	7.535468
14 Aug 2011 05:22:47.007	6.335266	7.335260
23 Aug 2011 04:58:00.146	6.725332	7.725325
1 Sep 2011 08:52:41.548	6.546048	7.546036
10 Sep 2011 08:02:09.328	6.561964	7.561951
19 Sep 2011 10:23:46.686	7.225961	8.225946
28 Sep 2011 16:55:05.657	7.181797	8.181776
7 Oct 2011 18:13:32.427	7.338283	8.338263
16 Oct 2011 22:10:52.711	8.100831	9.100812

Time of Apogee (UTCG)	Apogee Altitude (Re)	Apogee Radius (Re)
Not in Pass	Not in Pass	Not in Pass
26 Jun 2011 01:27:02.816	47.536728	48.536725
5 Jul 2011 00:36:16.611	48.194014	49.194011
13 Jul 2011 23:31:09.000	47.873340	48.873337
22 Jul 2011 19:55:19.083	48.126618	49.126614
31 Jul 2011 19:40:01.694	48.748803	49.748799
9 Aug 2011 19:01:30.428	48.377594	49.377588
18 Aug 2011 16:55:49.981	48.682252	49.682244
27 Aug 2011 19:04:03.360	49.132636	50.132628
5 Sep 2011 20:25:39.664	48.598075	49.598063
14 Sep 2011 20:40:01.003	48.809542	49.809527
24 Sep 2011 01:35:44.726	49.054302	50.054286
3 Oct 2011 05:20:48.553	48.333726	49.333707
12 Oct 2011 07:30:32.860	48.358205	49.358183

IBEX_CrossingTimes_2011_169_02_54_v001

IBEX FDG Crossing Times Report
 Created: 18 Jun 2011 18:52:40 EDT

18	Jun	2011	18:39:34.573	43_Re
18	Jun	2011	22:35:55.996	42_Re
19	Jun	2011	00:47:56.669	200_deg
19	Jun	2011	02:09:27.546	41_Re
19	Jun	2011	05:25:10.299	40_Re
19	Jun	2011	08:26:26.919	39_Re
19	Jun	2011	11:15:41.649	38_Re
19	Jun	2011	13:54:41.539	37_Re
19	Jun	2011	16:24:48.689	36_Re
19	Jun	2011	18:47:07.745	35_Re
19	Jun	2011	21:02:30.731	34_Re
19	Jun	2011	23:11:40.290	33_Re
20	Jun	2011	01:15:11.937	32_Re
20	Jun	2011	03:13:35.663	31_Re
20	Jun	2011	05:07:17.113	30_Re
20	Jun	2011	06:56:38.470	29_Re
20	Jun	2011	08:41:59.131	28_Re
20	Jun	2011	10:23:36.237	27_Re
20	Jun	2011	12:01:45.104	26_Re
20	Jun	2011	13:36:39.578	25_Re
20	Jun	2011	15:08:32.338	24_Re
20	Jun	2011	16:37:35.036	23_Re
20	Jun	2011	18:03:58.787	22_Re
20	Jun	2011	19:27:54.006	21_Re
20	Jun	2011	20:49:31.317	20_Re
20	Jun	2011	22:09:01.233	19_Re
20	Jun	2011	23:26:34.653	18_Re
21	Jun	2011	00:42:23.565	17_Re
21	Jun	2011	01:56:41.257	16_Re
21	Jun	2011	03:09:43.750	15_Re
21	Jun	2011	04:21:51.102	14_Re
21	Jun	2011	05:18:58.194	270_deg
21	Jun	2011	05:33:30.218	13_Re
21	Jun	2011	06:45:19.915	12_Re
21	Jun	2011	07:58:21.399	11_Re
21	Jun	2011	09:14:23.679	10_Re
21	Jun	2011	10:37:20.572	9_Re
21	Jun	2011	12:19:28.693	8_Re
21	Jun	2011	14:59:33.307	Periapsis
21	Jun	2011	17:39:36.999	8_Re
21	Jun	2011	19:21:45.663	9_Re
21	Jun	2011	20:44:43.020	10_Re
21	Jun	2011	22:00:45.706	11_Re
21	Jun	2011	23:13:47.602	12_Re
22	Jun	2011	00:25:37.639	13_Re
22	Jun	2011	01:37:17.032	14_Re
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22	Jun	2011	04:02:27.155	16_Re
22	Jun	2011	05:16:44.817	17_Re
22	Jun	2011	06:12:41.330	110_deg
22	Jun	2011	06:32:33.484	18_Re
22	Jun	2011	07:50:06.543	19_Re
22	Jun	2011	09:09:35.804	20_Re
22	Jun	2011	10:31:12.137	21_Re
22	Jun	2011	11:55:05.998	22_Re
22	Jun	2011	13:21:27.741	23_Re
22	Jun	2011	14:50:27.905	24_Re
22	Jun	2011	16:22:17.378	25_Re
22	Jun	2011	17:57:07.819	26_Re
22	Jun	2011	19:35:11.719	27_Re

I BEX_CrossingTimes_2011_169_02_54_v001

22	Jun	2011	21: 16: 42. 745	28_Re
22	Jun	2011	23: 01: 56. 011	29_Re
23	Jun	2011	00: 51: 08. 423	30_Re
23	Jun	2011	02: 44: 39. 087	31_Re
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23	Jun	2011	08: 54: 56. 659	34_Re
23	Jun	2011	11: 09: 56. 998	35_Re
23	Jun	2011	13: 31: 48. 644	36_Re
23	Jun	2011	16: 01: 22. 436	37_Re
23	Jun	2011	18: 39: 41. 415	38_Re
23	Jun	2011	20: 22: 45. 339	155_deg
23	Jun	2011	21: 28: 05. 440	39_Re
24	Jun	2011	00: 28: 18. 325	40_Re
24	Jun	2011	03: 42: 39. 407	41_Re
24	Jun	2011	07: 14: 23. 487	42_Re
24	Jun	2011	11: 08: 18. 013	43_Re
24	Jun	2011	15: 32: 00. 270	44_Re
24	Jun	2011	20: 39: 04. 629	45_Re
25	Jun	2011	02: 58: 48. 476	46_Re
25	Jun	2011	12: 08: 52. 003	47_Re
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28	Jun	2011	15: 37: 16. 284	35_Re
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29	Jun	2011	07: 09: 13. 932	27_Re
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29	Jun	2011	11: 53: 11. 650	24_Re
29	Jun	2011	13: 21: 58. 447	23_Re
29	Jun	2011	14: 48: 07. 845	22_Re
29	Jun	2011	16: 11: 50. 355	21_Re
29	Jun	2011	17: 33: 16. 311	20_Re
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29	Jun	2011	23: 52: 50. 239	15_Re
30	Jun	2011	01: 04: 53. 378	14_Re
30	Jun	2011	02: 00: 06. 634	270_deg
30	Jun	2011	02: 16: 29. 513	13_Re
30	Jun	2011	03: 28: 17. 620	12_Re
30	Jun	2011	04: 41: 19. 251	11_Re
30	Jun	2011	05: 57: 24. 242	10_Re
30	Jun	2011	07: 20: 28. 837	9_Re

I BEX_CrossingTimes_2011_169_02_54_v001

30	Jun	2011	09: 03: 02. 394	8_Re
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30	Jun	2011	14: 20: 45. 432	8_Re
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30	Jun	2011	22: 19: 02. 448	14_Re
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1	Jul	2011	11: 30: 30. 743	24_Re
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1	Jul	2011	23: 20: 20. 595	31_Re
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2	Jul	2011	03: 19: 24. 756	33_Re
2	Jul	2011	05: 26: 44. 720	34_Re
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2	Jul	2011	09: 59: 40. 308	36_Re
2	Jul	2011	12: 26: 39. 056	37_Re
2	Jul	2011	15: 01: 49. 238	38_Re
2	Jul	2011	17: 31: 37. 725	155_deg
2	Jul	2011	17: 46: 20. 446	39_Re
2	Jul	2011	20: 41: 41. 149	40_Re
2	Jul	2011	23: 49: 48. 208	41_Re
3	Jul	2011	03: 13: 19. 992	42_Re
3	Jul	2011	06: 56: 01. 777	43_Re
3	Jul	2011	11: 03: 33. 660	44_Re
3	Jul	2011	15: 45: 14. 964	45_Re
3	Jul	2011	21: 18: 36. 484	46_Re
4	Jul	2011	04: 25: 33. 780	47_Re
4	Jul	2011	16: 29: 57. 398	48_Re
5	Jul	2011	00: 35: 23. 924	Apoapsis
5	Jul	2011	08: 40: 38. 465	48_Re
5	Jul	2011	20: 43: 53. 000	47_Re
6	Jul	2011	03: 49: 42. 814	46_Re
6	Jul	2011	09: 21: 57. 738	45_Re
6	Jul	2011	14: 02: 33. 355	44_Re
6	Jul	2011	18: 09: 00. 814	43_Re
6	Jul	2011	21: 50: 39. 022	42_Re
6	Jul	2011	23: 07: 32. 627	200_deg
7	Jul	2011	01: 13: 08. 165	41_Re
7	Jul	2011	04: 20: 13. 484	40_Re
7	Jul	2011	07: 14: 33. 406	39_Re
7	Jul	2011	09: 58: 04. 456	38_Re
7	Jul	2011	12: 32: 15. 354	37_Re
7	Jul	2011	14: 58: 15. 546	36_Re
7	Jul	2011	17: 17: 00. 636	35_Re
7	Jul	2011	19: 29: 16. 002	34_Re
7	Jul	2011	21: 35: 39. 277	33_Re

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7	Jul	2011	23: 36: 42. 121	32_Re
8	Jul	2011	01: 32: 51. 494	31_Re
8	Jul	2011	03: 24: 30. 647	30_Re
8	Jul	2011	05: 11: 59. 790	29_Re
8	Jul	2011	06: 55: 36. 715	28_Re
8	Jul	2011	08: 35: 37. 215	27_Re
8	Jul	2011	10: 12: 15. 456	26_Re
8	Jul	2011	11: 45: 44. 295	25_Re
8	Jul	2011	13: 16: 15. 509	24_Re
8	Jul	2011	14: 44: 00. 034	23_Re
8	Jul	2011	16: 09: 08. 186	22_Re
8	Jul	2011	17: 31: 49. 867	21_Re
8	Jul	2011	18: 52: 14. 793	20_Re
8	Jul	2011	20: 10: 32. 739	19_Re
8	Jul	2011	21: 26: 53. 862	18_Re
8	Jul	2011	22: 41: 29. 091	17_Re
8	Jul	2011	23: 54: 30. 736	16_Re
9	Jul	2011	01: 06: 13. 326	15_Re
9	Jul	2011	02: 16: 54. 904	14_Re
9	Jul	2011	03: 26: 59. 391	13_Re
9	Jul	2011	03: 34: 35. 842	270_deg
9	Jul	2011	04: 37: 00. 773	12_Re
9	Jul	2011	05: 47: 51. 593	11_Re
9	Jul	2011	07: 01: 02. 685	10_Re
9	Jul	2011	08: 19: 39. 423	9_Re
9	Jul	2011	09: 52: 19. 893	8_Re
9	Jul	2011	12: 52: 44. 725	Periapsis
9	Jul	2011	15: 53: 08. 277	8_Re
9	Jul	2011	17: 25: 48. 693	9_Re
9	Jul	2011	18: 44: 25. 273	10_Re
9	Jul	2011	19: 57: 36. 074	11_Re
9	Jul	2011	21: 08: 26. 571	12_Re
9	Jul	2011	22: 18: 27. 562	13_Re
9	Jul	2011	23: 28: 31. 628	14_Re
10	Jul	2011	00: 39: 12. 774	15_Re
10	Jul	2011	01: 50: 54. 952	16_Re
10	Jul	2011	03: 03: 56. 263	17_Re
10	Jul	2011	03: 33: 16. 722	110_deg
10	Jul	2011	04: 18: 31. 247	18_Re
10	Jul	2011	05: 34: 52. 251	19_Re
10	Jul	2011	06: 53: 10. 304	20_Re
10	Jul	2011	08: 13: 35. 558	21_Re
10	Jul	2011	09: 36: 17. 910	22_Re
10	Jul	2011	11: 01: 27. 175	23_Re
10	Jul	2011	12: 29: 13. 404	24_Re
10	Jul	2011	13: 59: 46. 930	25_Re
10	Jul	2011	15: 33: 19. 023	26_Re
10	Jul	2011	17: 10: 01. 396	27_Re
10	Jul	2011	18: 50: 07. 341	28_Re
10	Jul	2011	20: 33: 51. 233	29_Re
10	Jul	2011	22: 21: 29. 213	30_Re
11	Jul	2011	00: 13: 19. 496	31_Re
11	Jul	2011	02: 09: 42. 848	32_Re
11	Jul	2011	04: 11: 03. 186	33_Re
11	Jul	2011	06: 17: 48. 359	34_Re
11	Jul	2011	08: 30: 31. 175	35_Re
11	Jul	2011	10: 49: 50. 799	36_Re
11	Jul	2011	13: 16: 34. 674	37_Re
11	Jul	2011	15: 51: 41. 268	38_Re
11	Jul	2011	17: 17: 37. 339	155_deg
11	Jul	2011	18: 36: 24. 095	39_Re
11	Jul	2011	21: 32: 17. 846	40_Re
12	Jul	2011	00: 41: 28. 162	41_Re

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12	Jul	2011	04: 06: 48. 110	42_Re
12	Jul	2011	07: 52: 28. 032	43_Re
12	Jul	2011	12: 04: 55. 094	44_Re
12	Jul	2011	16: 55: 09. 419	45_Re
12	Jul	2011	22: 45: 08. 724	46_Re
13	Jul	2011	06: 34: 51. 210	47_Re
13	Jul	2011	23: 29: 09. 862	Apoapsis
14	Jul	2011	16: 22: 14. 247	47_Re
15	Jul	2011	00: 10: 31. 275	46_Re
15	Jul	2011	05: 59: 06. 562	45_Re
15	Jul	2011	10: 47: 58. 116	44_Re
15	Jul	2011	14: 59: 03. 643	43_Re
15	Jul	2011	18: 43: 23. 122	42_Re
15	Jul	2011	21: 34: 05. 117	200_deg
15	Jul	2011	22: 07: 23. 630	41_Re
16	Jul	2011	01: 15: 15. 411	40_Re
16	Jul	2011	04: 09: 51. 432	39_Re
16	Jul	2011	06: 53: 17. 234	38_Re
16	Jul	2011	09: 27: 07. 405	37_Re
16	Jul	2011	11: 52: 35. 356	36_Re
16	Jul	2011	14: 10: 39. 449	35_Re
16	Jul	2011	16: 22: 07. 020	34_Re
16	Jul	2011	18: 27: 37. 119	33_Re
16	Jul	2011	20: 27: 42. 438	32_Re
16	Jul	2011	22: 22: 50. 700	31_Re
17	Jul	2011	00: 13: 25. 686	30_Re
17	Jul	2011	01: 59: 48. 029	29_Re
17	Jul	2011	03: 42: 15. 776	28_Re
17	Jul	2011	05: 21: 04. 899	27_Re
17	Jul	2011	06: 56: 29. 649	26_Re
17	Jul	2011	08: 28: 42. 873	25_Re
17	Jul	2011	09: 57: 56. 292	24_Re
17	Jul	2011	11: 24: 20. 707	23_Re
17	Jul	2011	12: 48: 06. 211	22_Re
17	Jul	2011	14: 09: 22. 393	21_Re
17	Jul	2011	15: 28: 18. 546	20_Re
17	Jul	2011	16: 45: 03. 880	19_Re
17	Jul	2011	17: 59: 47. 796	18_Re
17	Jul	2011	19: 12: 40. 212	17_Re
17	Jul	2011	20: 23: 52. 047	16_Re
17	Jul	2011	21: 33: 35. 903	15_Re
17	Jul	2011	22: 42: 06. 996	14_Re
17	Jul	2011	23: 49: 44. 950	13_Re
18	Jul	2011	00: 38: 51. 334	270_deg
18	Jul	2011	00: 56: 56. 783	12_Re
18	Jul	2011	02: 04: 22. 742	11_Re
18	Jul	2011	03: 13: 08. 979	10_Re
18	Jul	2011	04: 25: 20. 499	9_Re
18	Jul	2011	05: 45: 54. 611	8_Re
18	Jul	2011	07: 35: 57. 389	7_Re
18	Jul	2011	09: 15: 10. 436	Periapsis
18	Jul	2011	10: 54: 22. 603	7_Re
18	Jul	2011	12: 44: 25. 906	8_Re
18	Jul	2011	14: 05: 00. 616	9_Re
18	Jul	2011	15: 17: 12. 651	10_Re
18	Jul	2011	16: 25: 59. 408	11_Re
18	Jul	2011	17: 33: 25. 808	12_Re
18	Jul	2011	18: 40: 38. 122	13_Re
18	Jul	2011	19: 48: 16. 438	14_Re
18	Jul	2011	20: 56: 47. 790	15_Re
18	Jul	2011	22: 06: 31. 769	16_Re
18	Jul	2011	22: 54: 56. 441	110_deg
18	Jul	2011	23: 17: 43. 576	17_Re

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19	Jul	2011	00: 30: 35. 726	18_Re
19	Jul	2011	01: 45: 19. 078	19_Re
19	Jul	2011	03: 02: 03. 466	20_Re
19	Jul	2011	04: 20: 58. 204	21_Re
19	Jul	2011	05: 42: 12. 421	22_Re
19	Jul	2011	07: 05: 55. 291	23_Re
19	Jul	2011	08: 32: 16. 329	24_Re
19	Jul	2011	10: 01: 25. 280	25_Re
19	Jul	2011	11: 33: 32. 854	26_Re
19	Jul	2011	13: 08: 50. 546	27_Re
19	Jul	2011	14: 47: 30. 889	28_Re
19	Jul	2011	16: 29: 47. 789	29_Re
19	Jul	2011	18: 15: 56. 796	30_Re
19	Jul	2011	20: 06: 15. 454	31_Re
19	Jul	2011	22: 01: 03. 757	32_Re
20	Jul	2011	00: 00: 44. 701	33_Re
20	Jul	2011	02: 05: 45. 025	34_Re
20	Jul	2011	04: 16: 36. 157	35_Re
20	Jul	2011	06: 33: 55. 515	36_Re
20	Jul	2011	08: 58: 28. 273	37_Re
20	Jul	2011	11: 31: 09. 877	38_Re
20	Jul	2011	12: 12: 52. 418	155_deg
20	Jul	2011	14: 13: 09. 686	39_Re
20	Jul	2011	17: 05: 56. 486	40_Re
20	Jul	2011	20: 11: 27. 160	41_Re
20	Jul	2011	23: 32: 21. 079	42_Re
21	Jul	2011	03: 12: 25. 675	43_Re
21	Jul	2011	07: 17: 26. 066	44_Re
21	Jul	2011	11: 56: 54. 106	45_Re
21	Jul	2011	17: 28: 57. 406	46_Re
22	Jul	2011	00: 38: 06. 061	47_Re
22	Jul	2011	13: 32: 17. 615	48_Re
22	Jul	2011	19: 52: 07. 552	Apoapsis
23	Jul	2011	02: 11: 56. 496	48_Re
23	Jul	2011	15: 05: 42. 258	47_Re
23	Jul	2011	22: 14: 26. 868	46_Re
24	Jul	2011	03: 46: 07. 072	45_Re
24	Jul	2011	08: 25: 12. 859	44_Re
24	Jul	2011	12: 29: 52. 292	43_Re
24	Jul	2011	16: 09: 36. 862	42_Re
24	Jul	2011	18: 19: 02. 835	200_deg
24	Jul	2011	19: 30: 11. 861	41_Re
24	Jul	2011	22: 35: 24. 759	40_Re
25	Jul	2011	01: 27: 54. 966	39_Re
25	Jul	2011	04: 09: 39. 399	38_Re
25	Jul	2011	06: 42: 06. 878	37_Re
25	Jul	2011	09: 06: 26. 796	36_Re
25	Jul	2011	11: 23: 34. 625	35_Re
25	Jul	2011	13: 34: 15. 571	34_Re
25	Jul	2011	15: 39: 07. 075	33_Re
25	Jul	2011	17: 38: 40. 593	32_Re
25	Jul	2011	19: 33: 22. 885	31_Re
25	Jul	2011	21: 23: 36. 974	30_Re
25	Jul	2011	23: 09: 42. 877	29_Re
26	Jul	2011	00: 51: 58. 164	28_Re
26	Jul	2011	02: 30: 38. 410	27_Re
26	Jul	2011	04: 05: 57. 551	26_Re
26	Jul	2011	05: 38: 08. 189	25_Re
26	Jul	2011	07: 07: 21. 846	24_Re
26	Jul	2011	08: 33: 49. 173	23_Re
26	Jul	2011	09: 57: 40. 160	22_Re
26	Jul	2011	11: 19: 04. 338	21_Re
26	Jul	2011	12: 38: 10. 988	20_Re

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26	Jul	2011	13: 55: 09. 359	19_Re
26	Jul	2011	15: 10: 08. 960	18_Re
26	Jul	2011	16: 23: 19. 891	17_Re
26	Jul	2011	17: 34: 53. 370	16_Re
26	Jul	2011	18: 45: 02. 449	15_Re
26	Jul	2011	19: 54: 03. 049	14_Re
26	Jul	2011	21: 02: 15. 903	13_Re
26	Jul	2011	21: 38: 07. 829	270_deg
26	Jul	2011	22: 10: 09. 854	12_Re
26	Jul	2011	23: 18: 28. 387	11_Re
27	Jul	2011	00: 28: 24. 062	10_Re
27	Jul	2011	01: 42: 17. 008	9_Re
27	Jul	2011	03: 05: 55. 425	8_Re
27	Jul	2011	05: 08: 42. 373	7_Re
27	Jul	2011	06: 27: 12. 597	Periapsis
27	Jul	2011	07: 45: 41. 816	7_Re
27	Jul	2011	09: 48: 29. 558	8_Re
27	Jul	2011	11: 12: 08. 877	9_Re
27	Jul	2011	12: 26: 02. 734	10_Re
27	Jul	2011	13: 35: 59. 314	11_Re
27	Jul	2011	14: 44: 18. 752	12_Re
27	Jul	2011	15: 52: 13. 645	13_Re
27	Jul	2011	17: 00: 27. 371	14_Re
27	Jul	2011	18: 09: 28. 750	15_Re
27	Jul	2011	19: 19: 38. 456	16_Re
27	Jul	2011	20: 26: 36. 783	110_deg
27	Jul	2011	20: 31: 12. 343	17_Re
27	Jul	2011	21: 44: 23. 385	18_Re
27	Jul	2011	22: 59: 22. 638	19_Re
28	Jul	2011	00: 16: 20. 103	20_Re
28	Jul	2011	01: 35: 25. 078	21_Re
28	Jul	2011	02: 56: 46. 660	22_Re
28	Jul	2011	04: 20: 33. 901	23_Re
28	Jul	2011	05: 46: 56. 115	24_Re
28	Jul	2011	07: 16: 02. 815	25_Re
28	Jul	2011	08: 48: 04. 362	26_Re
28	Jul	2011	10: 23: 11. 813	27_Re
28	Jul	2011	12: 01: 37. 187	28_Re
28	Jul	2011	13: 43: 33. 742	29_Re
28	Jul	2011	15: 29: 16. 230	30_Re
28	Jul	2011	17: 19: 01. 215	31_Re
28	Jul	2011	19: 13: 07. 467	32_Re
28	Jul	2011	21: 11: 56. 455	33_Re
28	Jul	2011	23: 15: 52. 980	34_Re
29	Jul	2011	01: 25: 25. 996	35_Re
29	Jul	2011	03: 41: 09. 697	36_Re
29	Jul	2011	06: 03: 44. 999	37_Re
29	Jul	2011	08: 34: 01. 593	38_Re
29	Jul	2011	10: 14: 30. 247	155_deg
29	Jul	2011	11: 13: 00. 875	39_Re
29	Jul	2011	14: 02: 00. 283	40_Re
29	Jul	2011	17: 02: 39. 914	41_Re
29	Jul	2011	20: 17: 13. 161	42_Re
29	Jul	2011	23: 48: 44. 790	43_Re
30	Jul	2011	03: 41: 44. 034	44_Re
30	Jul	2011	08: 03: 11. 594	45_Re
30	Jul	2011	13: 05: 16. 178	46_Re
30	Jul	2011	19: 12: 53. 141	47_Re
31	Jul	2011	03: 38: 45. 403	48_Re
31	Jul	2011	19: 35: 19. 124	Apoapsis
1	Aug	2011	11: 31: 09. 236	48_Re
1	Aug	2011	19: 56: 01. 618	47_Re
2	Aug	2011	02: 02: 39. 434	46_Re

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2	Aug	2011	07: 03: 45. 514	45_Re
2	Aug	2011	11: 24: 15. 282	44_Re
2	Aug	2011	15: 16: 17. 377	43_Re
2	Aug	2011	18: 46: 52. 481	42_Re
2	Aug	2011	20: 19: 42. 296	200_deg
2	Aug	2011	22: 00: 29. 798	41_Re
3	Aug	2011	01: 00: 14. 062	40_Re
3	Aug	2011	03: 48: 18. 634	39_Re
3	Aug	2011	06: 26: 23. 579	38_Re
3	Aug	2011	08: 55: 46. 293	37_Re
3	Aug	2011	11: 17: 28. 137	36_Re
3	Aug	2011	13: 32: 18. 756	35_Re
3	Aug	2011	15: 40: 59. 020	34_Re
3	Aug	2011	17: 44: 03. 073	33_Re
3	Aug	2011	19: 41: 59. 811	32_Re
3	Aug	2011	21: 35: 13. 975	31_Re
3	Aug	2011	23: 24: 06. 884	30_Re
4	Aug	2011	01: 08: 57. 462	29_Re
4	Aug	2011	02: 50: 01. 992	28_Re
4	Aug	2011	04: 27: 35. 156	27_Re
4	Aug	2011	06: 01: 50. 123	26_Re
4	Aug	2011	07: 32: 58. 808	25_Re
4	Aug	2011	09: 01: 12. 119	24_Re
4	Aug	2011	10: 26: 40. 142	23_Re
4	Aug	2011	11: 49: 32. 338	22_Re
4	Aug	2011	13: 09: 57. 716	21_Re
4	Aug	2011	14: 28: 05. 026	20_Re
4	Aug	2011	15: 44: 02. 946	19_Re
4	Aug	2011	16: 58: 00. 348	18_Re
4	Aug	2011	18: 10: 06. 580	17_Re
4	Aug	2011	19: 20: 31. 926	16_Re
4	Aug	2011	20: 29: 28. 226	15_Re
4	Aug	2011	21: 37: 09. 723	14_Re
4	Aug	2011	22: 43: 54. 695	13_Re
4	Aug	2011	23: 44: 30. 175	270_deg
4	Aug	2011	23: 50: 08. 132	12_Re
5	Aug	2011	00: 56: 26. 931	11_Re
5	Aug	2011	02: 03: 50. 955	10_Re
5	Aug	2011	03: 14: 11. 014	9_Re
5	Aug	2011	04: 31: 40. 562	8_Re
5	Aug	2011	06: 12: 04. 534	7_Re
5	Aug	2011	08: 08: 03. 787	Periapsis
5	Aug	2011	10: 04: 01. 561	7_Re
5	Aug	2011	11: 44: 25. 540	8_Re
5	Aug	2011	13: 01: 54. 923	9_Re
5	Aug	2011	14: 12: 14. 731	10_Re
5	Aug	2011	15: 19: 38. 471	11_Re
5	Aug	2011	16: 25: 56. 957	12_Re
5	Aug	2011	17: 32: 10. 085	13_Re
5	Aug	2011	18: 38: 54. 784	14_Re
5	Aug	2011	19: 46: 36. 086	15_Re
5	Aug	2011	20: 55: 32. 316	16_Re
5	Aug	2011	21: 28: 54. 621	110_deg
5	Aug	2011	22: 05: 57. 795	17_Re
5	Aug	2011	23: 18: 04. 363	18_Re
6	Aug	2011	00: 32: 02. 435	19_Re
6	Aug	2011	01: 48: 01. 354	20_Re
6	Aug	2011	03: 06: 10. 118	21_Re
6	Aug	2011	04: 26: 37. 524	22_Re
6	Aug	2011	05: 49: 32. 453	23_Re
6	Aug	2011	07: 15: 04. 017	24_Re
6	Aug	2011	08: 43: 21. 872	25_Re
6	Aug	2011	10: 14: 36. 291	26_Re

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6	Aug	2011	11: 48: 58. 403	27_Re
6	Aug	2011	13: 26: 40. 399	28_Re
6	Aug	2011	15: 07: 55. 764	29_Re
6	Aug	2011	16: 52: 59. 561	30_Re
6	Aug	2011	18: 42: 08. 766	31_Re
6	Aug	2011	20: 35: 42. 695	32_Re
6	Aug	2011	22: 34: 03. 526	33_Re
7	Aug	2011	00: 37: 36. 984	34_Re
7	Aug	2011	02: 46: 53. 235	35_Re
7	Aug	2011	05: 02: 28. 077	36_Re
7	Aug	2011	07: 25: 04. 581	37_Re
7	Aug	2011	09: 55: 35. 381	38_Re
7	Aug	2011	10: 25: 49. 394	155_deg
7	Aug	2011	12: 35: 05. 995	39_Re
7	Aug	2011	15: 24: 59. 773	40_Re
7	Aug	2011	18: 27: 05. 611	41_Re
7	Aug	2011	21: 43: 50. 580	42_Re
8	Aug	2011	01: 18: 41. 925	43_Re
8	Aug	2011	05: 16: 48. 763	44_Re
8	Aug	2011	09: 46: 30. 507	45_Re
8	Aug	2011	15: 02: 58. 682	46_Re
8	Aug	2011	21: 40: 33. 951	47_Re
9	Aug	2011	07: 51: 48. 508	48_Re
9	Aug	2011	18: 54: 47. 833	Apoapsis
10	Aug	2011	05: 57: 29. 861	48_Re
10	Aug	2011	16: 07: 54. 651	47_Re
10	Aug	2011	22: 44: 41. 318	46_Re
11	Aug	2011	04: 00: 22. 072	45_Re
11	Aug	2011	08: 29: 17. 512	44_Re
11	Aug	2011	12: 26: 39. 106	43_Re
11	Aug	2011	16: 00: 46. 206	42_Re
11	Aug	2011	18: 41: 32. 494	200_deg
11	Aug	2011	19: 16: 47. 864	41_Re
11	Aug	2011	22: 18: 11. 265	40_Re
12	Aug	2011	01: 07: 23. 414	39_Re
12	Aug	2011	03: 46: 13. 144	38_Re
12	Aug	2011	06: 16: 03. 743	37_Re
12	Aug	2011	08: 38: 00. 659	36_Re
12	Aug	2011	10: 52: 56. 464	35_Re
12	Aug	2011	13: 01: 34. 161	34_Re
12	Aug	2011	15: 04: 29. 479	33_Re
12	Aug	2011	17: 02: 12. 514	32_Re
12	Aug	2011	18: 55: 08. 919	31_Re
12	Aug	2011	20: 43: 40. 795	30_Re
12	Aug	2011	22: 28: 07. 383	29_Re
13	Aug	2011	00: 08: 45. 569	28_Re
13	Aug	2011	01: 45: 50. 325	27_Re
13	Aug	2011	03: 19: 35. 035	26_Re
13	Aug	2011	04: 50: 11. 778	25_Re
13	Aug	2011	06: 17: 51. 575	24_Re
13	Aug	2011	07: 42: 44. 568	23_Re
13	Aug	2011	09: 05: 00. 219	22_Re
13	Aug	2011	10: 24: 47. 490	21_Re
13	Aug	2011	11: 42: 15. 024	20_Re
13	Aug	2011	12: 57: 31. 327	19_Re
13	Aug	2011	14: 10: 45. 013	18_Re
13	Aug	2011	15: 22: 05. 072	17_Re
13	Aug	2011	16: 31: 41. 272	16_Re
13	Aug	2011	17: 39: 44. 741	15_Re
13	Aug	2011	18: 46: 28. 672	14_Re
13	Aug	2011	19: 52: 09. 775	13_Re
13	Aug	2011	20: 57: 10. 556	12_Re
13	Aug	2011	21: 11: 13. 376	270_deg

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13	Aug	2011	22: 02: 03. 704	11_Re
13	Aug	2011	23: 07: 41. 159	10_Re
14	Aug	2011	00: 15: 36. 239	9_Re
14	Aug	2011	01: 29: 11. 448	8_Re
14	Aug	2011	02: 59: 18. 526	7_Re
14	Aug	2011	05: 15: 16. 281	Periapsis
14	Aug	2011	07: 31: 12. 951	7_Re
14	Aug	2011	09: 01: 20. 582	8_Re
14	Aug	2011	10: 14: 56. 412	9_Re
14	Aug	2011	11: 22: 52. 016	10_Re
14	Aug	2011	12: 28: 29. 982	11_Re
14	Aug	2011	13: 33: 23. 645	12_Re
14	Aug	2011	14: 38: 24. 822	13_Re
14	Aug	2011	15: 44: 06. 300	14_Re
14	Aug	2011	16: 50: 50. 532	15_Re
14	Aug	2011	17: 58: 54. 200	16_Re
14	Aug	2011	18: 07: 51. 752	110_deg
14	Aug	2011	19: 08: 30. 478	17_Re
14	Aug	2011	20: 19: 50. 433	18_Re
14	Aug	2011	21: 33: 03. 798	19_Re
14	Aug	2011	22: 48: 19. 435	20_Re
15	Aug	2011	00: 05: 45. 928	21_Re
15	Aug	2011	01: 25: 31. 703	22_Re
15	Aug	2011	02: 47: 45. 320	23_Re
15	Aug	2011	04: 12: 35. 521	24_Re
15	Aug	2011	05: 40: 11. 694	25_Re
15	Aug	2011	07: 10: 43. 766	26_Re
15	Aug	2011	08: 44: 22. 515	27_Re
15	Aug	2011	10: 21: 19. 746	28_Re
15	Aug	2011	12: 01: 48. 508	29_Re
15	Aug	2011	13: 46: 03. 364	30_Re
15	Aug	2011	15: 34: 20. 704	31_Re
15	Aug	2011	17: 26: 59. 141	32_Re
15	Aug	2011	19: 24: 20. 002	33_Re
15	Aug	2011	21: 26: 47. 965	34_Re
15	Aug	2011	23: 34: 51. 878	35_Re
16	Aug	2011	01: 49: 05. 864	36_Re
16	Aug	2011	04: 10: 10. 811	37_Re
16	Aug	2011	06: 38: 56. 450	38_Re
16	Aug	2011	07: 08: 18. 144	155_deg
16	Aug	2011	09: 16: 24. 335	39_Re
16	Aug	2011	12: 03: 52. 242	40_Re
16	Aug	2011	15: 03: 00. 926	41_Re
16	Aug	2011	18: 16: 05. 009	42_Re
16	Aug	2011	21: 46: 11. 564	43_Re
17	Aug	2011	01: 37: 54. 347	44_Re
17	Aug	2011	05: 58: 23. 659	45_Re
17	Aug	2011	11: 00: 11. 559	46_Re
17	Aug	2011	17: 09: 25. 885	47_Re
18	Aug	2011	01: 45: 27. 208	48_Re
18	Aug	2011	16: 47: 30. 301	Apoapsis
19	Aug	2011	07: 49: 49. 897	48_Re
19	Aug	2011	16: 26: 13. 553	47_Re
19	Aug	2011	22: 35: 50. 598	46_Re
20	Aug	2011	03: 38: 01. 626	45_Re
20	Aug	2011	07: 58: 54. 696	44_Re
20	Aug	2011	11: 51: 01. 918	43_Re
20	Aug	2011	15: 21: 33. 693	42_Re
20	Aug	2011	16: 26: 21. 080	200_deg
20	Aug	2011	18: 35: 03. 872	41_Re
20	Aug	2011	21: 34: 39. 619	40_Re
21	Aug	2011	00: 22: 35. 643	39_Re
21	Aug	2011	03: 00: 32. 786	38_Re

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21	Aug	2011	05: 29: 48. 907	37_Re
21	Aug	2011	07: 51: 25. 636	36_Re
21	Aug	2011	10: 06: 12. 783	35_Re
21	Aug	2011	12: 14: 51. 309	34_Re
21	Aug	2011	14: 17: 55. 411	33_Re
21	Aug	2011	16: 15: 54. 011	32_Re
21	Aug	2011	18: 09: 11. 862	31_Re
21	Aug	2011	19: 58: 10. 354	30_Re
21	Aug	2011	21: 43: 08. 141	29_Re
21	Aug	2011	23: 24: 21. 932	28_Re
22	Aug	2011	01: 02: 06. 128	27_Re
22	Aug	2011	02: 36: 33. 995	26_Re
22	Aug	2011	04: 07: 57. 486	25_Re
22	Aug	2011	05: 36: 27. 540	24_Re
22	Aug	2011	07: 02: 14. 308	23_Re
22	Aug	2011	08: 25: 27. 332	22_Re
22	Aug	2011	09: 46: 15. 743	21_Re
22	Aug	2011	11: 04: 48. 434	20_Re
22	Aug	2011	12: 21: 14. 300	19_Re
22	Aug	2011	13: 35: 42. 489	18_Re
22	Aug	2011	14: 48: 22. 736	17_Re
22	Aug	2011	15: 59: 25. 848	16_Re
22	Aug	2011	17: 09: 04. 410	15_Re
22	Aug	2011	18: 17: 33. 751	14_Re
22	Aug	2011	19: 25: 13. 803	13_Re
22	Aug	2011	20: 06: 33. 353	270_deg
22	Aug	2011	20: 32: 32. 212	12_Re
22	Aug	2011	21: 40: 10. 483	11_Re
22	Aug	2011	22: 49: 17. 401	10_Re
23	Aug	2011	00: 02: 04. 332	9_Re
23	Aug	2011	01: 23: 50. 289	8_Re
23	Aug	2011	03: 18: 55. 402	7_Re
23	Aug	2011	04: 49: 06. 252	Periapsis
23	Aug	2011	06: 19: 15. 598	7_Re
23	Aug	2011	08: 14: 21. 353	8_Re
23	Aug	2011	09: 36: 07. 882	9_Re
23	Aug	2011	10: 48: 55. 452	10_Re
23	Aug	2011	11: 58: 02. 978	11_Re
23	Aug	2011	13: 05: 41. 845	12_Re
23	Aug	2011	14: 13: 00. 930	13_Re
23	Aug	2011	15: 20: 41. 635	14_Re
23	Aug	2011	16: 29: 11. 629	15_Re
23	Aug	2011	17: 38: 50. 821	16_Re
23	Aug	2011	18: 39: 19. 665	110_deg
23	Aug	2011	18: 49: 54. 527	17_Re
23	Aug	2011	20: 02: 35. 295	18_Re
23	Aug	2011	21: 17: 03. 845	19_Re
23	Aug	2011	22: 33: 29. 850	20_Re
23	Aug	2011	23: 52: 02. 374	21_Re
24	Aug	2011	01: 12: 50. 230	22_Re
24	Aug	2011	02: 36: 02. 200	23_Re
24	Aug	2011	04: 01: 47. 329	24_Re
24	Aug	2011	05: 30: 14. 802	25_Re
24	Aug	2011	07: 01: 34. 651	26_Re
24	Aug	2011	08: 35: 57. 593	27_Re
24	Aug	2011	10: 13: 35. 209	28_Re
24	Aug	2011	11: 54: 40. 273	29_Re
24	Aug	2011	13: 39: 26. 968	30_Re
24	Aug	2011	15: 28: 11. 180	31_Re
24	Aug	2011	17: 21: 10. 868	32_Re
24	Aug	2011	19: 18: 46. 515	33_Re
24	Aug	2011	21: 21: 21. 704	34_Re
24	Aug	2011	23: 29: 23. 865	35_Re

I BEX_CrossingTimes_2011_169_02_54_v001

25	Aug	2011	01: 43: 25. 256	36_Re
25	Aug	2011	04: 04: 04. 285	37_Re
25	Aug	2011	06: 32: 07. 333	38_Re
25	Aug	2011	08: 35: 50. 210	155_deg
25	Aug	2011	09: 08: 31. 321	39_Re
25	Aug	2011	11: 54: 27. 460	40_Re
25	Aug	2011	14: 51: 26. 893	41_Re
25	Aug	2011	18: 01: 29. 596	42_Re
25	Aug	2011	21: 27: 19. 136	43_Re
26	Aug	2011	01: 12: 48. 904	44_Re
26	Aug	2011	05: 23: 53. 007	45_Re
26	Aug	2011	10: 10: 18. 113	46_Re
26	Aug	2011	15: 50: 39. 839	47_Re
26	Aug	2011	23: 10: 36. 519	48_Re
27	Aug	2011	12: 24: 16. 435	49_Re
27	Aug	2011	18: 54: 11. 419	Apoapsi s
28	Aug	2011	01: 24: 06. 659	49_Re
28	Aug	2011	14: 37: 25. 553	48_Re
28	Aug	2011	21: 57: 01. 788	47_Re
29	Aug	2011	03: 37: 02. 835	46_Re
29	Aug	2011	08: 23: 06. 789	45_Re
29	Aug	2011	12: 33: 49. 947	44_Re
29	Aug	2011	16: 18: 58. 297	43_Re
29	Aug	2011	19: 44: 26. 169	42_Re
29	Aug	2011	20: 22: 44. 438	200_deg
29	Aug	2011	22: 54: 06. 947	41_Re
30	Aug	2011	01: 50: 44. 195	40_Re
30	Aug	2011	04: 36: 17. 879	39_Re
30	Aug	2011	07: 12: 19. 134	38_Re
30	Aug	2011	09: 39: 59. 159	37_Re
30	Aug	2011	12: 00: 14. 861	36_Re
30	Aug	2011	14: 13: 52. 607	35_Re
30	Aug	2011	16: 21: 30. 785	34_Re
30	Aug	2011	18: 23: 41. 633	33_Re
30	Aug	2011	20: 20: 52. 557	32_Re
30	Aug	2011	22: 13: 27. 056	31_Re
31	Aug	2011	00: 01: 45. 744	30_Re
31	Aug	2011	01: 46: 06. 376	29_Re
31	Aug	2011	03: 26: 44. 844	28_Re
31	Aug	2011	05: 03: 55. 271	27_Re
31	Aug	2011	06: 37: 50. 392	26_Re
31	Aug	2011	08: 08: 41. 752	25_Re
31	Aug	2011	09: 36: 39. 937	24_Re
31	Aug	2011	11: 01: 54. 772	23_Re
31	Aug	2011	12: 24: 35. 498	22_Re
31	Aug	2011	13: 44: 50. 934	21_Re
31	Aug	2011	15: 02: 49. 661	20_Re
31	Aug	2011	16: 18: 40. 232	19_Re
31	Aug	2011	17: 32: 31. 407	18_Re
31	Aug	2011	18: 44: 32. 448	17_Re
31	Aug	2011	19: 54: 53. 569	16_Re
31	Aug	2011	21: 03: 46. 571	15_Re
31	Aug	2011	22: 11: 25. 684	14_Re
31	Aug	2011	23: 18: 09. 216	13_Re
1	Sep	2011	00: 16: 49. 662	270_deg
1	Sep	2011	00: 24: 22. 252	12_Re
1	Sep	2011	01: 30: 41. 908	11_Re
1	Sep	2011	02: 38: 08. 512	10_Re
1	Sep	2011	03: 48: 34. 019	9_Re
1	Sep	2011	05: 06: 15. 467	8_Re
1	Sep	2011	06: 47: 22. 368	7_Re
1	Sep	2011	08: 41: 46. 838	Periapsi s
1	Sep	2011	10: 36: 09. 194	7_Re

I BEX_CrossingTimes_2011_169_02_54_v001

1	Sep	2011	12: 17: 16. 065	8_Re
1	Sep	2011	13: 34: 57. 107	9_Re
1	Sep	2011	14: 45: 22. 179	10_Re
1	Sep	2011	15: 52: 48. 312	11_Re
1	Sep	2011	16: 59: 07. 482	12_Re
1	Sep	2011	18: 05: 20. 072	13_Re
1	Sep	2011	19: 12: 03. 252	14_Re
1	Sep	2011	20: 19: 42. 178	15_Re
1	Sep	2011	21: 28: 35. 232	16_Re
1	Sep	2011	22: 04: 54. 598	110_deg
1	Sep	2011	22: 38: 56. 758	17_Re
1	Sep	2011	23: 50: 58. 601	18_Re
2	Sep	2011	01: 04: 51. 124	19_Re
2	Sep	2011	02: 20: 43. 664	20_Re
2	Sep	2011	03: 38: 45. 155	21_Re
2	Sep	2011	04: 59: 04. 326	22_Re
2	Sep	2011	06: 21: 49. 983	23_Re
2	Sep	2011	07: 47: 11. 111	24_Re
2	Sep	2011	09: 15: 17. 275	25_Re
2	Sep	2011	10: 46: 18. 595	26_Re
2	Sep	2011	12: 20: 26. 033	27_Re
2	Sep	2011	13: 57: 51. 578	28_Re
2	Sep	2011	15: 38: 48. 472	29_Re
2	Sep	2011	17: 23: 31. 485	30_Re
2	Sep	2011	19: 12: 17. 241	31_Re
2	Sep	2011	21: 05: 24. 617	32_Re
2	Sep	2011	23: 03: 15. 250	33_Re
3	Sep	2011	01: 06: 14. 185	34_Re
3	Sep	2011	03: 14: 50. 724	35_Re
3	Sep	2011	05: 29: 39. 546	36_Re
3	Sep	2011	07: 51: 22. 252	37_Re
3	Sep	2011	10: 20: 49. 497	38_Re
3	Sep	2011	11: 17: 25. 085	155_deg
3	Sep	2011	12: 59: 04. 071	39_Re
3	Sep	2011	15: 47: 25. 451	40_Re
3	Sep	2011	18: 47: 36. 831	41_Re
3	Sep	2011	22: 01: 56. 484	42_Re
4	Sep	2011	01: 33: 37. 280	43_Re
4	Sep	2011	05: 27: 22. 923	44_Re
4	Sep	2011	09: 50: 42. 678	45_Re
4	Sep	2011	14: 56: 50. 925	46_Re
4	Sep	2011	21: 13: 59. 513	47_Re
5	Sep	2011	06: 12: 45. 887	48_Re
5	Sep	2011	20: 13: 49. 815	Apoapsis
6	Sep	2011	10: 14: 56. 852	48_Re
6	Sep	2011	19: 13: 45. 467	47_Re
7	Sep	2011	01: 30: 56. 704	46_Re
7	Sep	2011	06: 37: 08. 027	45_Re
7	Sep	2011	11: 00: 31. 265	44_Re
7	Sep	2011	14: 54: 20. 766	43_Re
7	Sep	2011	18: 26: 05. 768	42_Re
7	Sep	2011	19: 58: 35. 619	200_deg
7	Sep	2011	21: 40: 29. 945	41_Re
8	Sep	2011	00: 40: 46. 140	40_Re
8	Sep	2011	03: 29: 12. 597	39_Re
8	Sep	2011	06: 07: 32. 483	38_Re
8	Sep	2011	08: 37: 05. 249	37_Re
8	Sep	2011	10: 58: 53. 659	36_Re
8	Sep	2011	13: 13: 48. 346	35_Re
8	Sep	2011	15: 22: 30. 885	34_Re
8	Sep	2011	17: 25: 35. 936	33_Re
8	Sep	2011	19: 23: 32. 764	32_Re
8	Sep	2011	21: 16: 46. 442	31_Re

I BEX_CrossingTimes_2011_169_02_54_v001

8	Sep	2011	23: 05: 38. 543	30_Re
9	Sep	2011	00: 50: 27. 940	29_Re
9	Sep	2011	02: 31: 31. 241	28_Re
9	Sep	2011	04: 09: 03. 198	27_Re
9	Sep	2011	05: 43: 17. 065	26_Re
9	Sep	2011	07: 14: 24. 820	25_Re
9	Sep	2011	08: 42: 37. 417	24_Re
9	Sep	2011	10: 08: 04. 990	23_Re
9	Sep	2011	11: 30: 57. 050	22_Re
9	Sep	2011	12: 51: 22. 642	21_Re
9	Sep	2011	14: 09: 30. 553	20_Re
9	Sep	2011	15: 25: 29. 519	19_Re
9	Sep	2011	16: 39: 28. 465	18_Re
9	Sep	2011	17: 51: 36. 810	17_Re
9	Sep	2011	19: 02: 04. 922	16_Re
9	Sep	2011	20: 11: 04. 764	15_Re
9	Sep	2011	21: 18: 50. 743	14_Re
9	Sep	2011	22: 25: 41. 388	13_Re
9	Sep	2011	23: 22: 57. 818	270_deg
9	Sep	2011	23: 32: 02. 086	12_Re
10	Sep	2011	00: 38: 30. 413	11_Re
10	Sep	2011	01: 46: 07. 532	10_Re
10	Sep	2011	02: 56: 47. 213	9_Re
10	Sep	2011	04: 14: 51. 950	8_Re
10	Sep	2011	05: 57: 07. 734	7_Re
10	Sep	2011	07: 49: 27. 894	Periapsis
10	Sep	2011	09: 41: 46. 324	7_Re
10	Sep	2011	11: 24: 02. 615	8_Re
10	Sep	2011	12: 42: 07. 953	9_Re
10	Sep	2011	13: 52: 48. 124	10_Re
10	Sep	2011	15: 00: 25. 724	11_Re
10	Sep	2011	16: 06: 54. 509	12_Re
10	Sep	2011	17: 13: 15. 648	13_Re
10	Sep	2011	18: 20: 06. 721	14_Re
10	Sep	2011	19: 27: 53. 117	15_Re
10	Sep	2011	20: 36: 53. 362	16_Re
10	Sep	2011	21: 15: 34. 101	110_deg
10	Sep	2011	21: 47: 21. 887	17_Re
10	Sep	2011	22: 59: 30. 580	18_Re
11	Sep	2011	00: 13: 29. 861	19_Re
11	Sep	2011	01: 29: 29. 046	20_Re
11	Sep	2011	02: 47: 37. 071	21_Re
11	Sep	2011	04: 08: 02. 640	22_Re
11	Sep	2011	05: 30: 54. 519	23_Re
11	Sep	2011	06: 56: 21. 642	24_Re
11	Sep	2011	08: 24: 33. 495	25_Re
11	Sep	2011	09: 55: 40. 105	26_Re
11	Sep	2011	11: 29: 52. 314	27_Re
11	Sep	2011	13: 07: 21. 959	28_Re
11	Sep	2011	14: 48: 22. 095	29_Re
11	Sep	2011	16: 33: 07. 260	30_Re
11	Sep	2011	18: 21: 53. 785	31_Re
11	Sep	2011	20: 15: 00. 184	32_Re
11	Sep	2011	22: 12: 47. 634	33_Re
12	Sep	2011	00: 15: 40. 601	34_Re
12	Sep	2011	02: 24: 07. 635	35_Re
12	Sep	2011	04: 38: 42. 450	36_Re
12	Sep	2011	07: 00: 05. 363	37_Re
12	Sep	2011	09: 29: 05. 310	38_Re
12	Sep	2011	11: 00: 34. 550	155_deg
12	Sep	2011	12: 06: 42. 710	39_Re
12	Sep	2011	14: 54: 13. 691	40_Re
12	Sep	2011	17: 53: 16. 532	41_Re

I BEX_CrossingTimes_2011_169_02_54_v001

12	Sep	2011	21: 06: 01. 988	42_Re
13	Sep	2011	00: 35: 30. 765	43_Re
13	Sep	2011	04: 26: 05. 369	44_Re
13	Sep	2011	08: 44: 34. 151	45_Re
13	Sep	2011	13: 42: 39. 589	46_Re
13	Sep	2011	19: 44: 04. 521	47_Re
14	Sep	2011	03: 55: 54. 989	48_Re
14	Sep	2011	20: 27: 01. 838	Apoapsis
15	Sep	2011	12: 59: 18. 106	48_Re
15	Sep	2011	21: 12: 32. 092	47_Re
16	Sep	2011	03: 15: 20. 397	46_Re
16	Sep	2011	08: 14: 48. 720	45_Re
16	Sep	2011	12: 34: 40. 589	44_Re
16	Sep	2011	16: 26: 38. 397	43_Re
16	Sep	2011	19: 21: 08. 103	200_deg
16	Sep	2011	19: 57: 30. 669	42_Re
16	Sep	2011	23: 11: 40. 056	41_Re
17	Sep	2011	02: 12: 07. 404	40_Re
17	Sep	2011	05: 01: 03. 604	39_Re
17	Sep	2011	07: 40: 07. 070	38_Re
17	Sep	2011	10: 10: 34. 058	37_Re
17	Sep	2011	12: 33: 25. 118	36_Re
17	Sep	2011	14: 49: 29. 310	35_Re
17	Sep	2011	16: 59: 27. 081	34_Re
17	Sep	2011	19: 03: 52. 263	33_Re
17	Sep	2011	21: 03: 13. 572	32_Re
17	Sep	2011	22: 57: 55. 583	31_Re
18	Sep	2011	00: 48: 19. 629	30_Re
18	Sep	2011	02: 34: 44. 381	29_Re
18	Sep	2011	04: 17: 26. 392	28_Re
18	Sep	2011	05: 56: 40. 408	27_Re
18	Sep	2011	07: 32: 39. 726	26_Re
18	Sep	2011	09: 05: 36. 467	25_Re
18	Sep	2011	10: 35: 41. 809	24_Re
18	Sep	2011	12: 03: 06. 209	23_Re
18	Sep	2011	13: 27: 59. 577	22_Re
18	Sep	2011	14: 50: 31. 516	21_Re
18	Sep	2011	16: 10: 51. 530	20_Re
18	Sep	2011	17: 29: 09. 283	19_Re
18	Sep	2011	18: 45: 34. 922	18_Re
18	Sep	2011	20: 00: 19. 497	17_Re
18	Sep	2011	21: 13: 35. 608	16_Re
18	Sep	2011	22: 25: 38. 320	15_Re
18	Sep	2011	23: 36: 46. 595	14_Re
19	Sep	2011	00: 37: 21. 185	270_deg
19	Sep	2011	00: 47: 25. 902	13_Re
19	Sep	2011	01: 58: 12. 943	12_Re
19	Sep	2011	03: 10: 05. 356	11_Re
19	Sep	2011	04: 24: 44. 895	10_Re
19	Sep	2011	05: 45: 46. 230	9_Re
19	Sep	2011	07: 23: 56. 531	8_Re
19	Sep	2011	10: 10: 52. 160	Periapsis
19	Sep	2011	12: 57: 45. 732	8_Re
19	Sep	2011	14: 35: 56. 584	9_Re
19	Sep	2011	15: 56: 58. 344	10_Re
19	Sep	2011	17: 11: 38. 272	11_Re
19	Sep	2011	18: 23: 31. 125	12_Re
19	Sep	2011	19: 34: 18. 642	13_Re
19	Sep	2011	20: 44: 58. 502	14_Re
19	Sep	2011	21: 56: 07. 425	15_Re
19	Sep	2011	23: 08: 10. 903	16_Re
20	Sep	2011	00: 21: 27. 938	17_Re
20	Sep	2011	01: 15: 56. 494	110_deg

I BEX_CrossingTimes_2011_169_02_54_v001

20	Sep	2011	01: 36: 13. 583	18_Re
20	Sep	2011	02: 52: 40. 440	19_Re
20	Sep	2011	04: 10: 59. 602	20_Re
20	Sep	2011	05: 31: 21. 154	21_Re
20	Sep	2011	06: 53: 54. 786	22_Re
20	Sep	2011	08: 18: 49. 996	23_Re
20	Sep	2011	09: 46: 16. 402	24_Re
20	Sep	2011	11: 16: 23. 777	25_Re
20	Sep	2011	12: 49: 22. 685	26_Re
20	Sep	2011	14: 25: 23. 992	27_Re
20	Sep	2011	16: 04: 39. 951	28_Re
20	Sep	2011	17: 47: 23. 662	29_Re
20	Sep	2011	19: 33: 49. 712	30_Re
20	Sep	2011	21: 24: 14. 416	31_Re
20	Sep	2011	23: 18: 56. 184	32_Re
21	Sep	2011	01: 18: 16. 002	33_Re
21	Sep	2011	03: 22: 38. 017	34_Re
21	Sep	2011	05: 32: 30. 317	35_Re
21	Sep	2011	07: 48: 25. 941	36_Re
21	Sep	2011	10: 11: 04. 247	37_Re
21	Sep	2011	12: 41: 12. 804	38_Re

IBEX FDG Stati on Vi ew Peri ods Report
 Created: 18 Jun 2011 18:00:53 EDT

Strand Name Range (Re)	Start Time (UTCG) Stop Range (Re)	Stop Time (UTCG)	Start
AUWA01 To Forward 46.774972	18 Jun 2011 00:00:00.000 46.938893	18 Jun 2011 02:12:55.893	
APL To Forward 46.677006	18 Jun 2011 03:59:50.896 44.468219	18 Jun 2011 16:08:09.491	
USAK01 To Forward 46.042558	18 Jun 2011 08:11:26.129 43.057459	18 Jun 2011 22:01:18.239	
USHI 01 To Forward 45.832140	18 Jun 2011 09:24:06.048 43.234444	18 Jun 2011 21:20:31.124	
AUWA01 To Forward 44.463456	18 Jun 2011 16:14:09.911 42.232964	18 Jun 2011 23:03:51.357	
APL To Aft 28.398197	20 Jun 2011 08:25:16.476 24.813081	20 Jun 2011 14:02:57.863	
USAK01 To Aft 28.380653	20 Jun 2011 09:11:42.871 24.952706	20 Jun 2011 14:03:15.439	
USHI 01 To Aft 27.667949	20 Jun 2011 10:46:21.696 25.016359	20 Jun 2011 14:03:40.294	
AUWA01 To Aft 17.403039	21 Jun 2011 01:04:07.038 14.329849	21 Jun 2011 05:00:58.664	
USAK01 To Aft 17.065000	21 Jun 2011 01:12:41.705 10.382658	21 Jun 2011 09:53:29.024	
APL To Forward 16.772574	22 Jun 2011 03:55:54.254 18.953247	22 Jun 2011 06:39:40.162	
USHI 01 To Forward 18.699170	22 Jun 2011 06:22:11.422 25.799605	22 Jun 2011 16:13:44.735	
AUWA01 To Forward 21.511822	22 Jun 2011 09:59:54.509 30.734729	23 Jun 2011 00:32:54.504	
APL To Forward 32.146391	23 Jun 2011 03:15:52.625 36.088959	23 Jun 2011 11:38:56.557	
USHI 01 To Forward 34.270656	23 Jun 2011 07:33:15.497 38.588369	23 Jun 2011 17:54:56.117	
USAK01 To Forward 36.217964	23 Jun 2011 11:54:26.583 36.727352	23 Jun 2011 13:06:55.402	
AUWA01 To Forward 36.467296	23 Jun 2011 12:29:14.014 41.093136	24 Jun 2011 01:03:57.457	
APL To Forward 41.757652	24 Jun 2011 03:17:23.697 44.328819	24 Jun 2011 13:01:14.423	
USHI 01 To Forward 43.105949	24 Jun 2011 07:59:48.640 45.522206	24 Jun 2011 18:46:42.916	
USAK01 To Forward 43.479710	24 Jun 2011 09:26:18.012 45.156595	24 Jun 2011 16:44:55.329	
AUWA01 To Forward 44.458879	24 Jun 2011 13:30:06.681 46.666673	25 Jun 2011 01:18:46.512	
APL To Forward 46.931751	25 Jun 2011 03:19:06.546 48.020835	25 Jun 2011 13:56:16.064	
USHI 01 To Forward 47.547817	25 Jun 2011 08:17:16.920 48.294407	25 Jun 2011 19:24:27.607	
USAK01 To Forward 47.585043	25 Jun 2011 08:39:08.310 48.292193	25 Jun 2011 18:26:15.593	
AUWA01 To Forward 48.060885	25 Jun 2011 14:14:18.842 48.440886	26 Jun 2011 01:29:10.892	
APL To Forward 48.411043	26 Jun 2011 03:21:22.876 47.886674	26 Jun 2011 14:44:52.590	
USAK01 To Forward 48.308100	26 Jun 2011 08:05:12.218 47.406948	26 Jun 2011 19:54:21.229	
USHI 01 To Forward 48.288898	26 Jun 2011 08:32:56.760 47.360617	26 Jun 2011 19:59:32.112	

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AUWA01 To Forward	26 Jun 2011 14: 55: 44. 523	27 Jun 2011 01: 38: 46. 354
47. 890369	46. 654692	
APL To Forward	27 Jun 2011 03: 25: 13. 741	27 Jun 2011 15: 38: 09. 414
46. 362023	43. 906086	
USAK01 To Forward	27 Jun 2011 07: 33: 27. 292	27 Jun 2011 21: 36: 18. 230
45. 661395	42. 349079	
USHI 01 To Forward	27 Jun 2011 08: 50: 48. 017	27 Jun 2011 20: 49: 23. 550
45. 413542	42. 569569	
AUWA01 To Forward	27 Jun 2011 15: 43: 48. 002	28 Jun 2011 01: 50: 29. 029
43. 900681	41. 067993	
APL To Forward	28 Jun 2011 03: 33: 09. 681	28 Jun 2011 16: 54: 54. 457
40. 495270	35. 315196	
USAK01 To Forward	28 Jun 2011 06: 55: 14. 227	29 Jun 2011 00: 44: 18. 951
39. 352803	31. 526970	
USHI 01 To Forward	28 Jun 2011 09: 17: 25. 592	28 Jun 2011 21: 53: 26. 812
38. 478162	32. 984868	
AUWA01 To Forward	28 Jun 2011 16: 57: 46. 541	29 Jun 2011 02: 11: 51. 708
35. 310027	30. 740783	
APL To Forward	29 Jun 2011 03: 56: 09. 715	29 Jun 2011 07: 17: 27. 595
29. 761644	27. 249488	
USAK01 To Forward	29 Jun 2011 05: 31: 15. 494	29 Jun 2011 08: 00: 44. 371
28. 872056	27. 201521	
AUWA01 To Aft	29 Jun 2011 21: 10: 41. 647	30 Jun 2011 10: 42: 49. 332
18. 089367	8. 046438	
USAK01 To Aft	29 Jun 2011 22: 04: 34. 363	30 Jun 2011 07: 42: 59. 538
16. 742786	9. 623250	
USHI 01 To Aft	29 Jun 2011 22: 41: 36. 395	30 Jun 2011 02: 26: 39. 319
16. 433377	13. 742119	
AUWA01 To Forward	30 Jun 2011 12: 37: 02. 913	30 Jun 2011 20: 17: 47. 558
8. 005258	13. 180121	
APL To Forward	1 Jul 2011 02: 52: 35. 068	1 Jul 2011 07: 30: 46. 978
18. 576827	22. 089531	
USHI 01 To Forward	1 Jul 2011 05: 48: 46. 019	1 Jul 2011 15: 55: 25. 175
20. 859141	27. 703375	
AUWA01 To Forward	1 Jul 2011 09: 51: 55. 237	2 Jul 2011 00: 01: 27. 718
23. 775619	32. 252966	
APL To Forward	2 Jul 2011 02: 40: 10. 483	2 Jul 2011 11: 11: 06. 928
33. 558966	37. 371564	
USHI 01 To Forward	2 Jul 2011 07: 00: 11. 676	2 Jul 2011 17: 23: 26. 314
35. 603934	39. 728180	
USAK01 To Forward	2 Jul 2011 10: 44: 37. 095	2 Jul 2011 13: 10: 13. 834
37. 208556	38. 184366	
AUWA01 To Forward	2 Jul 2011 11: 58: 48. 694	3 Jul 2011 00: 29: 21. 769
37. 715155	42. 103713	
APL To Forward	3 Jul 2011 02: 41: 39. 169	3 Jul 2011 12: 28: 00. 020
42. 732187	45. 198840	
USHI 01 To Forward	3 Jul 2011 07: 24: 52. 934	3 Jul 2011 18: 12: 17. 824
44. 025204	46. 333200	
USAK01 To Forward	3 Jul 2011 08: 47: 40. 038	3 Jul 2011 16: 13: 24. 893
44. 367250	45. 995289	
AUWA01 To Forward	3 Jul 2011 12: 56: 06. 730	4 Jul 2011 00: 43: 15. 736
45. 321127	47. 423743	
APL To Forward	4 Jul 2011 02: 43: 10. 839	4 Jul 2011 13: 20: 44. 195
47. 674553	48. 709313	
USHI 01 To Forward	4 Jul 2011 07: 41: 30. 886	4 Jul 2011 18: 48: 32. 438
48. 261992	48. 964479	
USAK01 To Forward	4 Jul 2011 08: 02: 33. 449	4 Jul 2011 17: 50: 33. 188
48. 296010	48. 965092	
AUWA01 To Forward	4 Jul 2011 13: 38: 32. 584	5 Jul 2011 00: 53: 07. 577
48. 747921	49. 098085	
APL To Forward	5 Jul 2011 02: 45: 12. 593	5 Jul 2011 14: 07: 32. 604
49. 065967	48. 545041	
USAK01 To Forward	5 Jul 2011 07: 29: 30. 798	5 Jul 2011 19: 15: 24. 171

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48. 960223		48. 078572			
USHI 01 To Forward	5 Jul	2011 07: 56: 29. 669		5 Jul	2011 19: 22: 14. 454
48. 941558		48. 029446			
AUWA01 To Forward	5 Jul	2011 14: 18: 24. 341		6 Jul	2011 01: 02: 12. 957
48. 549032		47. 339466			
APL To Forward	6 Jul	2011 02: 48: 42. 209		6 Jul	2011 14: 58: 34. 020
47. 053486		44. 674904			
USAK01 To Forward	6 Jul	2011 06: 58: 36. 240		6 Jul	2011 20: 52: 35. 613
46. 366236		43. 183279			
USHI 01 To Forward	6 Jul	2011 08: 13: 28. 983		6 Jul	2011 20: 10: 11. 990
46. 132545		43. 376404			
AUWA01 To Forward	6 Jul	2011 15: 04: 19. 163		7 Jul	2011 01: 13: 13. 188
44. 669790		41. 909483			
APL To Forward	7 Jul	2011 02: 55: 55. 675		7 Jul	2011 16: 10: 25. 985
41. 352704		36. 379604			
USAK01 To Forward	7 Jul	2011 06: 22: 02. 905		7 Jul	2011 23: 41: 04. 393
40. 220814		32. 875912			
USHI 01 To Forward	7 Jul	2011 08: 38: 23. 300		7 Jul	2011 21: 09: 37. 720
39. 406757		34. 121039			
AUWA01 To Forward	7 Jul	2011 16: 13: 15. 181		8 Jul	2011 01: 32: 37. 839
36. 375601		31. 911012			
APL To Forward	8 Jul	2011 03: 16: 06. 953		8 Jul	2011 09: 37: 22. 370
30. 969854		26. 405453			
USAK01 To Forward	8 Jul	2011 05: 09: 26. 285		8 Jul	2011 09: 31: 50. 463
29. 937361		26. 952777			
AUWA01 To Aft	8 Jul	2011 23: 23: 44. 212		9 Jul	2011 04: 14: 53. 205
17. 137659		13. 207602			
USAK01 To Aft	8 Jul	2011 23: 40: 31. 244		9 Jul	2011 08: 08: 16. 022
16. 651626		10. 021593			
APL To Forward	10 Jul	2011 02: 24: 16. 313		10 Jul	2011 06: 30: 21. 950
17. 302553		20. 562378			
USHI 01 To Forward	10 Jul	2011 05: 20: 42. 269		10 Jul	2011 15: 15: 43. 671
19. 648726		26. 695483			
AUWA01 To Forward	10 Jul	2011 09: 08: 26. 492		10 Jul	2011 23: 24: 41. 442
22. 543928		31. 459000			
APL To Forward	11 Jul	2011 02: 04: 09. 755		11 Jul	2011 10: 35: 18. 091
32. 821757		36. 770669			
USHI 01 To Forward	11 Jul	2011 06: 24: 09. 912		11 Jul	2011 16: 47: 48. 248
34. 939703		39. 206392			
USAK01 To Forward	11 Jul	2011 10: 07: 42. 626		11 Jul	2011 12: 36: 05. 522
36. 593724		37. 621431			
AUWA01 To Forward	11 Jul	2011 11: 23: 11. 804		11 Jul	2011 23: 53: 23. 710
37. 126503		41. 651716			
APL To Forward	12 Jul	2011 02: 05: 37. 645		12 Jul	2011 11: 53: 00. 301
42. 298972		44. 836984			
USHI 01 To Forward	12 Jul	2011 06: 49: 09. 734		12 Jul	2011 17: 36: 58. 829
43. 629254		45. 997226			
USAK01 To Forward	12 Jul	2011 08: 10: 36. 681		12 Jul	2011 15: 39: 34. 004
43. 974982		45. 655853			
AUWA01 To Forward	12 Jul	2011 12: 20: 59. 818		13 Jul	2011 00: 07: 22. 065
44. 961330		47. 107414			
APL To Forward	13 Jul	2011 02: 07: 10. 118		13 Jul	2011 12: 45: 43. 487
47. 362556		48. 407539			
USHI 01 To Forward	13 Jul	2011 07: 05: 48. 820		13 Jul	2011 18: 13: 11. 323
47. 958005		48. 656358			
USAK01 To Forward	13 Jul	2011 07: 25: 40. 693		13 Jul	2011 17: 16: 22. 733
47. 990412		48. 659287			
AUWA01 To Forward	13 Jul	2011 13: 03: 25. 174		14 Jul	2011 00: 17: 12. 255
48. 445856		48. 775778			
APL To Forward	14 Jul	2011 02: 09: 12. 296		14 Jul	2011 13: 32: 29. 706
48. 737658		48. 160657			
USAK01 To Forward	14 Jul	2011 06: 52: 44. 382		14 Jul	2011 18: 41: 14. 459
48. 613505		47. 656674			

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USHI 01 To Forward 48. 591946	14 Jul 2011 07: 20: 46. 823 47. 609003	14 Jul 2011 18: 46: 53. 708
AUWA01 To Forward 48. 163564	14 Jul 2011 13: 43: 17. 991 46. 872905	15 Jul 2011 00: 26: 14. 567
APL To Forward 46. 570322	15 Jul 2011 02: 12: 42. 588 44. 046203	15 Jul 2011 14: 23: 46. 095
USAK01 To Forward 45. 843063	15 Jul 2011 06: 21: 44. 309 42. 459316	15 Jul 2011 20: 19: 21. 500
USHI 01 To Forward 45. 591518	15 Jul 2011 07: 37: 49. 937 42. 672634	15 Jul 2011 19: 35: 07. 076
AUWA01 To Forward 44. 039608	15 Jul 2011 14: 29: 33. 218 41. 126055	16 Jul 2011 00: 37: 13. 774
APL To Forward 40. 537639	16 Jul 2011 02: 20: 03. 389 35. 247647	16 Jul 2011 15: 37: 35. 269
USAK01 To Forward 39. 349502	16 Jul 2011 05: 44: 30. 318 31. 433536	16 Jul 2011 23: 17: 43. 479
USHI 01 To Forward 38. 472852	16 Jul 2011 08: 03: 15. 082 32. 846856	16 Jul 2011 20: 36: 38. 376
AUWA01 To Forward 35. 239692	16 Jul 2011 15: 40: 45. 068 30. 514016	17 Jul 2011 00: 57: 13. 489
APL To Forward 29. 501072	17 Jul 2011 02: 41: 43. 011 25. 868880	17 Jul 2011 07: 25: 41. 003
USAK01 To Forward 28. 497043	17 Jul 2011 04: 25: 03. 960 26. 088461	17 Jul 2011 07: 49: 04. 186
AUWA01 To Aft 17. 016025	17 Jul 2011 20: 15: 15. 953 7. 203949	18 Jul 2011 08: 22: 35. 426
USAK01 To Aft 15. 694690	17 Jul 2011 21: 06: 50. 051 8. 646809	18 Jul 2011 06: 07: 41. 411
USHI 01 To Aft 15. 374676	17 Jul 2011 21: 43: 34. 688 12. 490795	18 Jul 2011 01: 25: 15. 928
AUWA01 To Forward 7. 074319	18 Jul 2011 10: 02: 42. 960 15. 693320	18 Jul 2011 20: 46: 23. 113
APL To Forward 19. 725631	19 Jul 2011 01: 37: 19. 223 24. 091696	19 Jul 2011 07: 27: 07. 301
USHI 01 To Forward 22. 343437	19 Jul 2011 04: 59: 59. 666 28. 990854	19 Jul 2011 15: 02: 04. 050
AUWA01 To Forward 25. 354436	19 Jul 2011 09: 15: 15. 562 33. 365737	19 Jul 2011 22: 58: 22. 220
APL To Forward 34. 583921	20 Jul 2011 01: 30: 28. 143 38. 405017	20 Jul 2011 10: 19: 29. 483
USHI 01 To Forward 36. 614021	20 Jul 2011 05: 56: 06. 615 40. 621092	20 Jul 2011 16: 24: 38. 762
USAK01 To Forward 37. 839014	20 Jul 2011 08: 51: 40. 257 39. 433943	20 Jul 2011 12: 58: 28. 852
AUWA01 To Forward 38. 703954	20 Jul 2011 11: 02: 15. 652 42. 846534	20 Jul 2011 23: 22: 16. 423
APL To Forward 43. 429302	21 Jul 2011 01: 31: 38. 347 45. 786693	21 Jul 2011 11: 29: 10. 062
USHI 01 To Forward 44. 665797	21 Jul 2011 06: 18: 13. 863 46. 811707	21 Jul 2011 17: 09: 33. 517
USAK01 To Forward 44. 930518	21 Jul 2011 07: 26: 20. 277 46. 549071	21 Jul 2011 15: 24: 43. 550
AUWA01 To Forward 45. 892936	21 Jul 2011 11: 54: 53. 405 47. 776687	21 Jul 2011 23: 34: 53. 860
APL To Forward 47. 989609	22 Jul 2011 01: 33: 05. 677 48. 837521	22 Jul 2011 12: 19: 06. 460
USHI 01 To Forward 48. 492137	22 Jul 2011 06: 33: 57. 144 48. 980383	22 Jul 2011 17: 44: 10. 529
USAK01 To Forward 48. 507042	22 Jul 2011 06: 45: 21. 081 49. 003888	22 Jul 2011 16: 55: 40. 030
AUWA01 To Forward 48. 868969	22 Jul 2011 12: 35: 27. 517 48. 986949	22 Jul 2011 23: 44: 16. 893
APL To Forward	23 Jul 2011 01: 35: 15. 335	23 Jul 2011 13: 04: 58. 770

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48. 915327		48. 120407					
USAK01 To Forward	23 Jul	2011 06: 13: 51. 530		23 Jul	2011 18: 19: 05. 088		
48. 710478		47. 507055					
USHI 01 To Forward	23 Jul	2011 06: 48: 43. 581		23 Jul	2011 18: 17: 30. 324		
48. 673153		47. 474068					
AUWA01 To Forward	23 Jul	2011 13: 14: 53. 782		23 Jul	2011 23: 53: 21. 465		
48. 121359		46. 641310					
APL To Forward	24 Jul	2011 01: 39: 09. 356		24 Jul	2011 13: 56: 55. 592		
46. 307808		43. 521107					
USAK01 To Forward	24 Jul	2011 05: 43: 22. 466		24 Jul	2011 19: 59: 32. 345		
45. 519748		41. 773759					
USHI 01 To Forward	24 Jul	2011 07: 06: 13. 453		24 Jul	2011 19: 06: 41. 116		
45. 219911		42. 047697					
AUWA01 To Forward	24 Jul	2011 14: 02: 08. 277		25 Jul	2011 00: 04: 59. 748		
43. 515001		40. 415357					
APL To Forward	25 Jul	2011 01: 47: 31. 744		25 Jul	2011 15: 15: 11. 339		
39. 791980		34. 110512					
USAK01 To Forward	25 Jul	2011 05: 05: 29. 171		25 Jul	2011 23: 21: 29. 531		
38. 571173		29. 825186					
USHI 01 To Forward	25 Jul	2011 07: 33: 27. 891		25 Jul	2011 20: 13: 04. 595		
37. 581011		31. 580151					
AUWA01 To Forward	25 Jul	2011 15: 18: 20. 201		26 Jul	2011 00: 27: 50. 273		
34. 101103		29. 174043					
APL To Forward	26 Jul	2011 02: 13: 35. 904		26 Jul	2011 03: 47: 16. 889		
28. 095181		26. 856840					
USAK01 To Forward	26 Jul	2011 03: 32: 10. 940		26 Jul	2011 04: 47: 59. 062		
27. 298563		26. 417788					
USAK01 To Aft	26 Jul	2011 17: 49: 48. 854		27 Jul	2011 04: 37: 49. 636		
15. 961550		8. 060157					
USHI 01 To Aft	26 Jul	2011 18: 08: 25. 821		27 Jul	2011 03: 32: 55. 690		
15. 707341		8. 616100					
APL To Aft	26 Jul	2011 18: 25: 22. 421		26 Jul	2011 19: 57: 06. 914		
16. 063158		14. 874722					
AUWA01 To Aft	26 Jul	2011 21: 06: 47. 114		27 Jul	2011 05: 19: 54. 025		
13. 864325		7. 218918					
AUWA01 To Forward	27 Jul	2011 07: 04: 28. 796		27 Jul	2011 20: 43: 52. 856		
6. 929432		18. 011674					
APL To Forward	28 Jul	2011 00: 55: 32. 007		28 Jul	2011 07: 16: 53. 401		
21. 319877		25. 842520					
USHI 01 To Forward	28 Jul	2011 04: 30: 51. 193		28 Jul	2011 14: 32: 00. 130		
23. 969757		30. 290030					
AUWA01 To Forward	28 Jul	2011 08: 51: 49. 001		28 Jul	2011 22: 24: 10. 568		
26. 898640		34. 461670					
APL To Forward	29 Jul	2011 00: 53: 48. 475		29 Jul	2011 09: 48: 31. 193		
35. 614223		39. 337232					
USHI 01 To Forward	29 Jul	2011 05: 21: 21. 369		29 Jul	2011 15: 51: 24. 751		
37. 585724		41. 462910					
USAK01 To Forward	29 Jul	2011 08: 05: 31. 565		29 Jul	2011 12: 35: 27. 175		
38. 693037		40. 377687					
AUWA01 To Forward	29 Jul	2011 10: 29: 38. 865		29 Jul	2011 22: 46: 52. 664		
39. 616004		43. 607375					
APL To Forward	30 Jul	2011 00: 55: 25. 883		30 Jul	2011 10: 55: 09. 443		
44. 168340		46. 466415					
USHI 01 To Forward	30 Jul	2011 05: 42: 45. 160		30 Jul	2011 16: 34: 40. 468		
45. 372365		47. 461394					
USAK01 To Forward	30 Jul	2011 06: 47: 58. 602		30 Jul	2011 14: 52: 07. 616		
45. 618814		47. 212833					
AUWA01 To Forward	30 Jul	2011 11: 20: 17. 947		30 Jul	2011 22: 59: 08. 382		
46. 568370		48. 403258					
APL To Forward	31 Jul	2011 00: 57: 00. 296		31 Jul	2011 11: 43: 28. 990		
48. 611149		49. 450770					
USHI 01 To Forward	31 Jul	2011 05: 58: 03. 850		31 Jul	2011 17: 08: 11. 488		
49. 106740		49. 598395					

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USAK01 To Forward 49. 120466	31 Jul 2011 06: 08: 41. 339 49. 620882	31 Jul 2011 16: 19: 52. 658
AUWA01 To Forward 49. 482153	31 Jul 2011 11: 59: 37. 439 49. 618143	31 Jul 2011 23: 08: 15. 209
APL To Forward 49. 552161	1 Aug 2011 00: 59: 07. 579 48. 810522	1 Aug 2011 12: 27: 45. 860
USAK01 To Forward 49. 364179	1 Aug 2011 05: 38: 12. 930 48. 234469	1 Aug 2011 17: 40: 12. 184
USHI 01 To Forward 49. 330072	1 Aug 2011 06: 12: 21. 624 48. 197558	1 Aug 2011 17: 40: 19. 100
AUWA01 To Forward 48. 812488	1 Aug 2011 12: 37: 40. 143 47. 405597	1 Aug 2011 23: 16: 59. 431
APL To Forward 47. 086889	2 Aug 2011 01: 02: 48. 841 44. 440138	2 Aug 2011 13: 17: 15. 902
USAK01 To Forward 46. 329908	2 Aug 2011 05: 08: 52. 083 42. 796000	2 Aug 2011 19: 15: 04. 405
USHI 01 To Forward 46. 052789	2 Aug 2011 06: 29: 03. 302 43. 031627	2 Aug 2011 18: 27: 26. 605
AUWA01 To Forward 44. 434780	2 Aug 2011 13: 22: 33. 897 41. 458972	2 Aug 2011 23: 27: 59. 122
APL To Forward 40. 861770	3 Aug 2011 01: 10: 30. 819 35. 491877	3 Aug 2011 14: 29: 19. 887
USAK01 To Forward 39. 664153	3 Aug 2011 04: 33: 18. 960 31. 654817	3 Aug 2011 22: 08: 22. 099
USHI 01 To Forward 38. 760574	3 Aug 2011 06: 54: 18. 696 33. 073983	3 Aug 2011 19: 27: 49. 997
AUWA01 To Forward 35. 485173	3 Aug 2011 14: 32: 18. 002 30. 723720	3 Aug 2011 23: 48: 24. 737
APL To Forward 29. 702423	4 Aug 2011 01: 32: 51. 341 26. 212783	4 Aug 2011 06: 03: 58. 166
USAK01 To Forward 28. 671318	4 Aug 2011 03: 18: 03. 699 26. 388254	4 Aug 2011 06: 30: 53. 879
AUWA01 To Aft 17. 040031	4 Aug 2011 19: 12: 02. 770 7. 087872	5 Aug 2011 07: 18: 26. 352
USAK01 To Aft 15. 750818	4 Aug 2011 20: 03: 27. 247 8. 638510	5 Aug 2011 04: 56: 14. 577
USHI 01 To Aft 15. 430285	4 Aug 2011 20: 40: 17. 901 12. 778062	5 Aug 2011 00: 02: 11. 374
AUWA01 To Forward 6. 940506	5 Aug 2011 08: 55: 08. 819 15. 706755	5 Aug 2011 19: 40: 14. 086
APL To Forward 19. 632005	6 Aug 2011 00: 20: 05. 696 24. 290489	6 Aug 2011 06: 30: 28. 150
USHI 01 To Forward 22. 377005	6 Aug 2011 03: 50: 31. 004 29. 078041	6 Aug 2011 13: 53: 48. 361
AUWA01 To Forward 25. 477037	6 Aug 2011 08: 11: 29. 179 33. 468997	6 Aug 2011 21: 47: 36. 569
APL To Forward 34. 678926	7 Aug 2011 00: 17: 35. 548 38. 579942	7 Aug 2011 09: 14: 20. 523
USHI 01 To Forward 36. 742308	7 Aug 2011 04: 45: 42. 671 40. 791910	7 Aug 2011 15: 16: 56. 464
USAK01 To Forward 37. 873866	7 Aug 2011 07: 26: 22. 880 39. 686639	7 Aug 2011 12: 05: 08. 694
AUWA01 To Forward 38. 868402	7 Aug 2011 09: 55: 18. 640 43. 014478	7 Aug 2011 22: 11: 18. 086
APL To Forward 43. 596868	8 Aug 2011 00: 19: 33. 234 45. 992236	8 Aug 2011 10: 21: 57. 911
USHI 01 To Forward 44. 849996	8 Aug 2011 05: 07: 40. 753 47. 021167	8 Aug 2011 16: 00: 46. 844
USAK01 To Forward 45. 093747	8 Aug 2011 06: 09: 47. 122 46. 772361	8 Aug 2011 14: 21: 33. 299
AUWA01 To Forward 46. 095811	8 Aug 2011 10: 46: 43. 561 47. 991597	8 Aug 2011 22: 23: 52. 381
APL To Forward	9 Aug 2011 00: 21: 24. 457	9 Aug 2011 11: 10: 33. 212

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48. 206886		49. 077116	
USHI 01 To Forward	9 Aug 2011 05: 23: 16. 200		9 Aug 2011 16: 34: 32. 737
48. 720087		49. 227675	
USAK01 To Forward	9 Aug 2011 05: 31: 04. 417		9 Aug 2011 15: 49: 12. 789
48. 730460		49. 251041	
AUWA01 To Forward	9 Aug 2011 11: 26: 21. 097		9 Aug 2011 22: 33: 12. 991
49. 108493		49. 244288	
APL To Forward	10 Aug 2011 00: 23: 49. 013		10 Aug 2011 11: 55: 07. 376
49. 176084		48. 398289	
USAK01 To Forward	10 Aug 2011 05: 00: 59. 871		10 Aug 2011 17: 09: 53. 404
48. 980763		47. 791360	
USHI 01 To Forward	10 Aug 2011 05: 37: 51. 220		10 Aug 2011 17: 06: 59. 286
48. 942384		47. 761238	
AUWA01 To Forward	10 Aug 2011 12: 04: 45. 784		10 Aug 2011 22: 42: 13. 232
48. 399945		46. 938887	
APL To Forward	11 Aug 2011 00: 27: 51. 775		11 Aug 2011 12: 45: 19. 667
46. 608619		43. 841182	
USAK01 To Forward	11 Aug 2011 04: 31: 50. 893		11 Aug 2011 18: 46: 25. 023
45. 827623		42. 109464	
USHI 01 To Forward	11 Aug 2011 05: 54: 59. 863		11 Aug 2011 17: 54: 51. 567
45. 528780		42. 375569	
AUWA01 To Forward	11 Aug 2011 12: 50: 28. 806		11 Aug 2011 22: 53: 39. 776
43. 835468		40. 745960	
APL To Forward	12 Aug 2011 00: 36: 11. 738		12 Aug 2011 14: 00: 00. 530
40. 124094		34. 478052	
USAK01 To Forward	12 Aug 2011 03: 55: 58. 270		12 Aug 2011 21: 52: 21. 267
38. 893960		30. 323409	
USHI 01 To Forward	12 Aug 2011 06: 21: 21. 299		12 Aug 2011 18: 58: 06. 368
37. 922279		31. 945033	
AUWA01 To Forward	12 Aug 2011 14: 03: 11. 786		12 Aug 2011 23: 15: 39. 813
34. 468393		29. 506419	