

First configuration - Along the X-axis

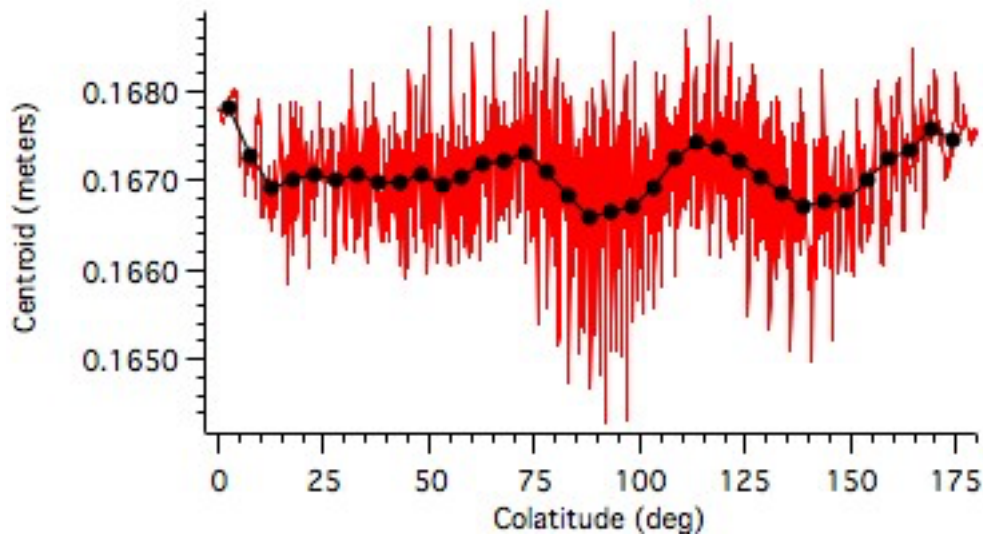


Figure 1.

Longitude(deg)	Colatitude(deg)	Centroid(m)	Cross section
177.500	2.485	0.167819	4.086515
537.500	7.525	0.167267	4.135966
897.500	12.565	0.166931	4.115040
1257.500	17.605	0.167004	4.042665
1617.500	22.645	0.167068	3.971219
1977.500	27.685	0.167013	4.084480
2337.500	32.725	0.167058	4.047710
2697.500	37.765	0.166987	4.092883
3057.500	42.805	0.166974	4.039529
3417.500	47.845	0.167069	3.983167
3777.500	52.885	0.166958	3.997416
4137.500	57.925	0.167046	4.027317
4497.500	62.965	0.167185	4.060584
4857.500	68.005	0.167227	4.024190
5217.500	73.045	0.167290	3.927957
5577.500	78.085	0.167095	3.819175
5937.500	83.125	0.166826	3.733848
6297.500	88.165	0.166599	3.792376
6657.500	93.205	0.166634	3.847498
7017.500	98.245	0.166703	3.896539
7377.500	103.285	0.166908	3.905502
7737.500	108.325	0.167255	3.826837
8097.500	113.365	0.167418	3.829633
8457.500	118.405	0.167376	3.864118
8817.500	123.445	0.167209	3.912108
9177.500	128.485	0.167024	3.939084
9537.500	133.525	0.166865	3.962045
9897.500	138.565	0.166696	3.895693
10257.500	143.605	0.166764	3.900683
10617.500	148.645	0.166767	3.864386
10977.500	153.685	0.167000	3.881683
11337.500	158.725	0.167252	3.928306
11697.500	163.765	0.167332	3.990773
12057.500	168.805	0.167567	4.152859
12417.500	173.845	0.167461	4.520195

First Configuration - Along the Z-axis

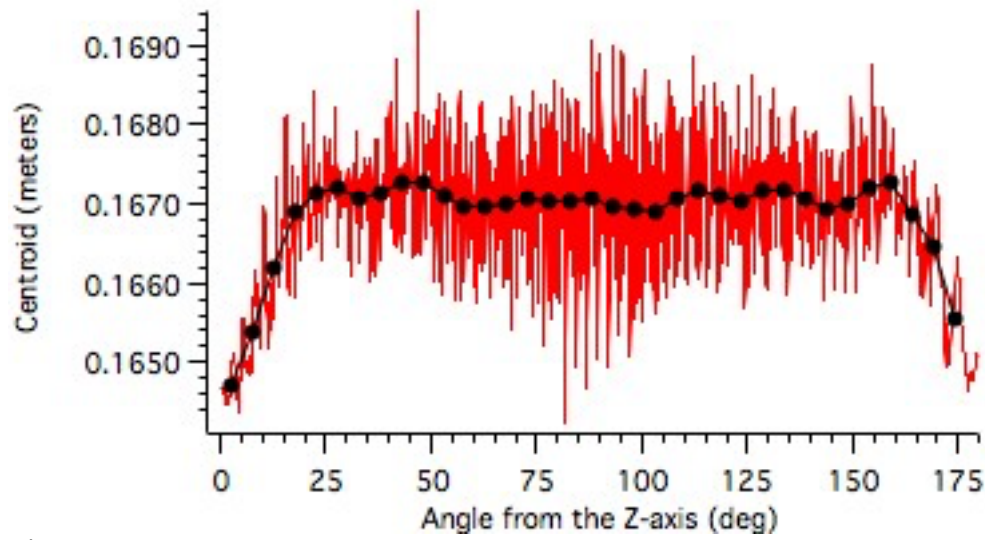


Figure 2.

Longitude(deg)	Colatitude(deg)	Centroid(m)	Cross section
177.500	2.485	0.164698	3.131939
537.500	7.525	0.165388	3.301286
897.500	12.565	0.166193	3.457295
1257.500	17.605	0.166884	3.608239
1617.500	22.645	0.167128	3.836656
1977.500	27.685	0.167209	3.976325
2337.500	32.725	0.167053	4.018068
2697.500	37.765	0.167118	4.028021
3057.500	42.805	0.167279	3.967756
3417.500	47.845	0.167279	3.956231
3777.500	52.885	0.167085	4.013864
4137.500	57.925	0.166973	4.040355
4497.500	62.965	0.166974	4.041363
4857.500	68.005	0.167002	4.043816
5217.500	73.045	0.167066	4.046093
5577.500	78.085	0.167019	3.955532
5937.500	83.125	0.167045	3.861362
6297.500	88.165	0.167053	3.811773
6657.500	93.205	0.166950	3.836027
7017.500	98.245	0.166943	3.870992
7377.500	103.285	0.166897	3.990065
7737.500	108.325	0.167056	4.033697
8097.500	113.365	0.167156	4.018011
8457.500	118.405	0.167099	3.955068
8817.500	123.445	0.167025	3.912565
9177.500	128.485	0.167172	3.892717
9537.500	133.525	0.167161	3.906290
9897.500	138.565	0.167077	3.979891
10257.500	143.605	0.166944	4.010124
10617.500	148.645	0.167001	4.022121
10977.500	153.685	0.167201	3.940006
11337.500	158.725	0.167268	3.821960
11697.500	163.765	0.166870	3.670924
12057.500	168.805	0.166449	3.489057
12417.500	173.845	0.165565	3.477607

Second Configuration - Along the X-axis

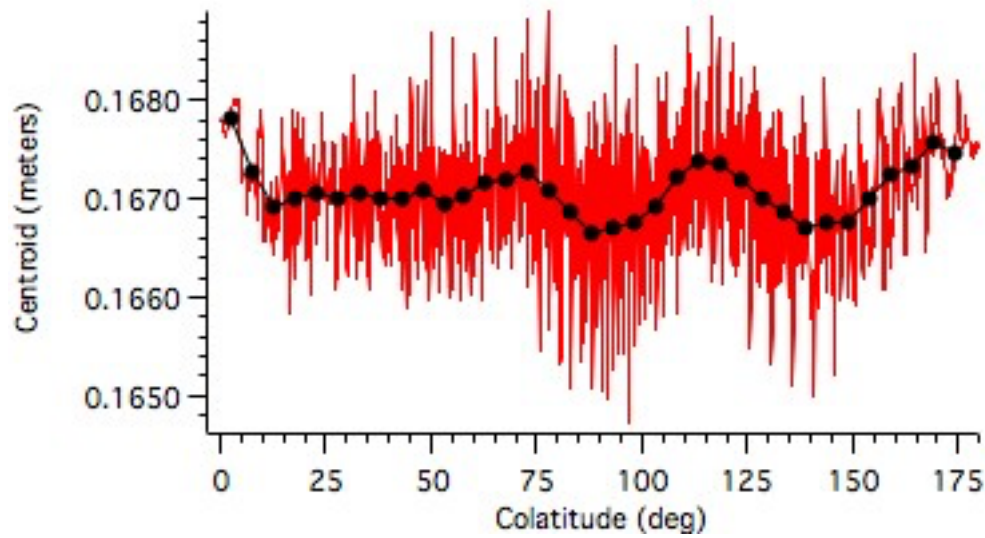
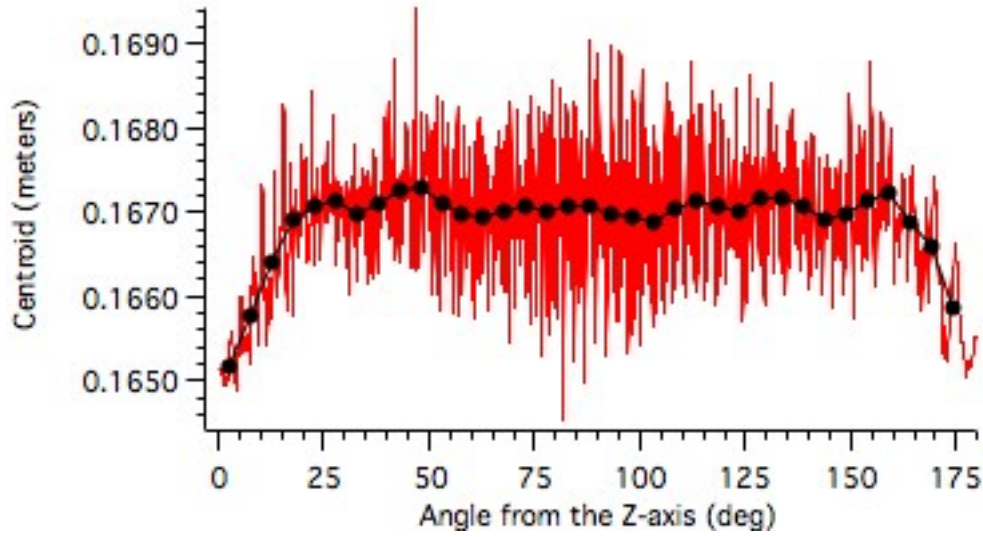


Figure 3.

Longitude(deg)	Colatitude(deg)	Centroid(m)	Cross section
177.500	2.485	0.167819	4.086515
537.500	7.525	0.167267	4.135973
897.500	12.565	0.166930	4.115066
1257.500	17.605	0.167004	4.042697
1617.500	22.645	0.167067	3.971271
1977.500	27.685	0.167012	4.084786
2337.500	32.725	0.167064	4.047861
2697.500	37.765	0.166999	4.092693
3057.500	42.805	0.166992	4.036792
3417.500	47.845	0.167074	3.974964
3777.500	52.885	0.166954	3.988267
4137.500	57.925	0.167031	4.016069
4497.500	62.965	0.167157	4.044792
4857.500	68.005	0.167195	4.014784
5217.500	73.045	0.167260	3.924136
5577.500	78.085	0.167093	3.819307
5937.500	83.125	0.166869	3.738358
6297.500	88.165	0.166660	3.804743
6657.500	93.205	0.166699	3.875382
7017.500	98.245	0.166759	3.912094
7377.500	103.285	0.166917	3.918987
7737.500	108.325	0.167231	3.825035
8097.500	113.365	0.167388	3.815693
8457.500	118.405	0.167360	3.851861
8817.500	123.445	0.167194	3.905488
9177.500	128.485	0.167014	3.932595
9537.500	133.525	0.166868	3.957979
9897.500	138.565	0.166705	3.893144
10257.500	143.605	0.166768	3.899674
10617.500	148.645	0.166770	3.863795
10977.500	153.685	0.167004	3.881283
11337.500	158.725	0.167254	3.928123
11697.500	163.765	0.167332	3.990762
12057.500	168.805	0.167567	4.152859
12417.500	173.845	0.167461	4.520195

Second Configuration - Along the Z-axis



Longitude(deg)	Colatitude(deg)	Centroid(m)	Cross section
177.500	2.485	0.165163	3.238640
537.500	7.525	0.165762	3.438288
897.500	12.565	0.166393	3.545338
1257.500	17.605	0.166927	3.650556
1617.500	22.645	0.167077	3.851598
1977.500	27.685	0.167126	3.968533
2337.500	32.725	0.166982	3.978360
2697.500	37.765	0.167096	4.004150
3057.500	42.805	0.167277	3.949027
3417.500	47.845	0.167286	3.948125
3777.500	52.885	0.167091	4.007280
4137.500	57.925	0.166967	4.033128
4497.500	62.965	0.166957	4.039065
4857.500	68.005	0.166996	4.040289
5217.500	73.045	0.167064	4.046842
5577.500	78.085	0.167024	3.961999
5937.500	83.125	0.167078	3.873698
6297.500	88.165	0.167082	3.825247
6657.500	93.205	0.166981	3.847080
7017.500	98.245	0.166956	3.882876
7377.500	103.285	0.166884	3.993515
7737.500	108.325	0.167052	4.020739
8097.500	113.365	0.167147	4.009970
8457.500	118.405	0.167081	3.950351
8817.500	123.445	0.167021	3.902141
9177.500	128.485	0.167168	3.886603
9537.500	133.525	0.167166	3.897441
9897.500	138.565	0.167070	3.974456
10257.500	143.605	0.166928	4.000685
10617.500	148.645	0.166976	3.998255
10977.500	153.685	0.167151	3.919321
11337.500	158.725	0.167230	3.825988
11697.500	163.765	0.166892	3.698299
12057.500	168.805	0.166584	3.543481
12417.500	173.845	0.165852	3.583190

Comparison of first configuration (black) and second configuration (red)
Along the X-axis

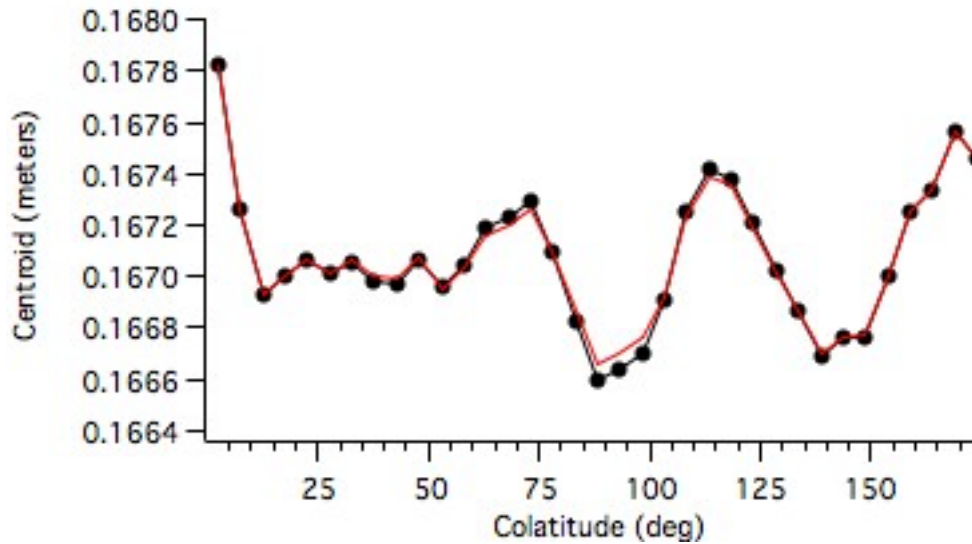


Figure 5. Comparison of Figure 1 (black) and Figure 3 (red).

The two configurations are almost identical with a very small change near the equator (90 deg).

Each point is an average over one revolution of the satellite. The colatitude changes by about 5 degrees on each revolution. The direction of the incident beam does not change much near the poles. These points do not give a good average because of the angular coordinate system. The points near the equator give a good average. The change in the black line from Colatitude 88 to 113 deg the peak to peak change is .8 millimeters. This is within the design goal of one millimeter.

Comparison of first configuration (black) and second configuration (red)
Along the X-axis

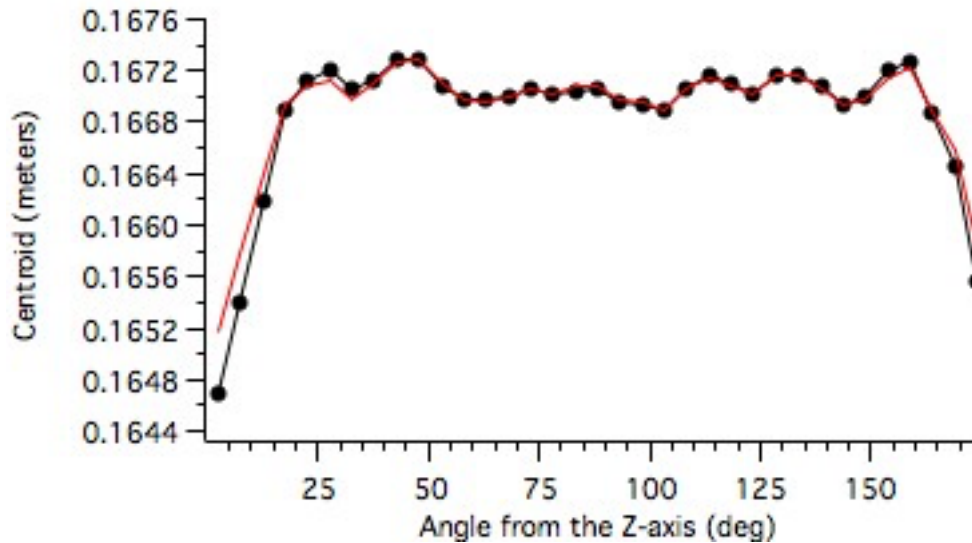


Figure 6. Comparison of Figure 2 (black) with Figure 4 (red)

The two configurations are almost identical except near the +Z and -Z axes on the equator. The middle of the curve is very stable. The peak to peak change over the whole plot is about 2 mm. However, excluding the first 3 and the last 3 points the changes are only .4 mm peak to peak. The first and last points are on the equator and have poor averaging because of the angular coordinate system. The poles are at 90 degrees and have good averaging.

First configuration

Cube	X	Y	Z	Longitude	Latitude	Orientation
1	-0.14316	0.14495	0.01056	134.644	87.032	0.000
2	-0.13812	0.14125	0.05085	134.357	75.565	26.000
3	-0.16502	0.11062	0.04632	146.165	76.877	52.000
4	-0.14722	0.11273	0.08505	142.557	65.360	78.000
5	-0.17004	0.07909	0.08030	155.054	66.821	104.000
6	-0.14975	0.07623	0.11567	153.021	55.458	10.000
7	-0.12437	0.10811	0.12025	138.999	53.881	36.000
8	-0.09375	0.13569	0.12006	124.640	53.947	62.000
9	-0.08527	0.10869	0.15010	128.116	42.624	88.000
10	-0.06663	0.08226	0.17438	129.006	31.260	114.000
11	-0.02729	0.08467	0.18358	107.865	25.854	20.000
12	-0.01628	0.04853	0.19747	108.542	14.532	46.000
13	-0.05586	0.04537	0.19088	140.917	20.657	72.000
14	-0.05010	0.00372	0.19772	175.758	14.257	98.000
15	-0.06446	-0.03497	0.19037	208.478	21.067	4.000
16	-0.02507	-0.04138	0.19818	238.793	13.719	30.000
17	0.02116	-0.04391	0.19809	295.731	13.824	56.000
18	0.04826	-0.01307	0.19778	344.842	14.187	82.000

Table 1. First 18 points in the first configuration.

Second configuration

Cube	X	Y	Z	Longitude	Latitude	Orientation
1	-0.14316	0.14495	0.01056	134.644	87.032	0.000
2	-0.13812	0.14125	0.05085	134.357	75.565	26.000
3	-0.16502	0.11062	0.04632	146.165	76.877	52.000
4	-0.14722	0.11273	0.08505	142.557	65.360	78.000
5	-0.17004	0.07909	0.08030	155.054	66.821	104.000
6	-0.14975	0.07623	0.11567	153.021	55.458	10.000
7	-0.12437	0.10811	0.12025	138.999	53.881	36.000
8	-0.09375	0.13569	0.12006	124.640	53.947	62.000
9	-0.08527	0.10869	0.15010	128.116	42.624	88.000
10	-0.06467	0.08275	0.17489	128.007	30.984	114.000
11	-0.02525	0.08025	0.18584	107.464	24.356	20.000
12	-0.01594	0.04190	0.19901	110.829	12.694	46.000
13	-0.05586	0.04537	0.19088	140.917	20.657	72.000
14	-0.05010	0.00372	0.19772	175.758	14.257	98.000
15	-0.06080	-0.03591	0.19139	210.571	20.251	4.000
16	-0.02082	-0.04030	0.19889	242.677	12.848	30.000
17	0.02116	-0.04391	0.19809	295.731	13.824	56.000
18	0.04445	-0.00743	0.19896	350.513	12.762	82.000

Table 2. First 18 points in the second configuration.