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HUNTSVILLE, ALABAMA

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(NASA TMX 51215)

ACTUAL TRAJECTORY OF MERCURY-REDSTONE FLIGHT TEST MR-2 (U)

By

Harold Ledford 4 apr. 1961

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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(U) ABSTRACT

The actual trajectories for capsule and booster of Mercury-Redstone test flight MR-2 are presented in this report. The main parameters presented are position, velocity, acceleration, trajectory angle, Mach number and dynamic pressure.

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April 4, 1961 Report No. MTP-AERO-61-30

ACTUAL TRAJECTORY OF MERCURY-REDSTONE FLIGHT TEST MR-2 (U)

By

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NATIONAL SECURITY INFORMATION
UNAUTHORIZED DISCLOSURE SUBJECT
TO CRIMINAL SANCTIONS

MARSHALL SPACE FLIGHT CENTER
FLIGHT EVALUATION BRANCH
AEROBALLISTICS DIVISION

[redacted]

INTRODUCTION

(C) Mercury-Redstone test flight MR-2 was launched from AMR on 31 January 1961 at 1154:51 EST. MR-2 was the second of a series of flights which are designed to qualify the Mercury-Redstone for brief manned space flights.

The trajectories for both capsule and booster are presented in this report. The capsule trajectory was established to show its position in reference to that of the booster from separation to impact. The official capsule trajectory will be published by Space Task Group.

(U) The following tracking data was available for establishing the post flight trajectory of both capsule and booster:

0.0 - 21.53 sec :	Fixed Camera
0.0 - 485.0 sec :	Dovap
3.25 - 137.75 sec:	Theodolite
8.5 - 133.0 sec :	Azusa
0.0 - 352.9 sec :	FPS-16 Radar 1.16 (Capsule)
353.0 - 570.0 sec:	FPS-16 Radar 3.16 (Capsule)

All times are referenced to Range Zero. Liftoff occurred .88 sec after Range Zero.

The origin of the coordinate systems used for capsule and booster trajectories is launch pad 5 which has the following geographical coordinates (based on the Clarke Spheroid of 1866):

Geodetic Latitude:	28.439139° N
Longitude :	80.573521° W

Mach number and dynamic pressure are based on measured Cape meteorological data to 32.8 km altitude in the ascent and adjusted to the 1959 ARDC Atmosphere at 47.0 km. The 1959 ARDC Atmosphere was used above 47.0 km for the capsule and booster trajectories in both ascent and descent. Grand Bahama Island Atmosphere was used below 47.0 km in the descent.

The smoothing and differentation procedures used in these calculations round off the large transients that occur around cutoff; consequently, variables in this interval, 138 ± 3 sec, should not be used in any performance estimates.

The large velocity gain imparted to the capsule by the escape rockets eliminated any close approach between capsule and booster.

(C) BOOSTER TRAJECTORY

The booster trajectory presented in this report was established from the following data:

0.0 - 12.0 sec	:	Fixed Camera
12.5 - 250.0 sec	:	Dovap
250.0 - Impact	:	Computed trajectory using Dovap positions and velocities as initial conditions at 250.0 sec.

Tables IB through IIIB contain the first section of the booster trajectory, 0.0 - 250.0 sec, which is based principally on Dovap data. Variables are given in 0.5 sec intervals through powered flight and in 5.0 sec intervals thereafter. Figure 1 is a comparison of other tracking data with the reference trajectory during powered flight. The maximum average deviations in the position coordinates were:

	Deviations
Theodolite	4 m
Azusa	12 m

Tables IVB and VB form the second section of the booster trajectory, 250.0 - 497.43 sec, with variables given in 5.0 sec intervals. This section is a calculated trajectory using Dovap positions and velocities as initial conditions at 250.0 sec.

Tables VIB through VIIIB form the dive phase (100 km altitude to impact) of the computed booster trajectory, 497.43 sec to impact, with variables given in 5.0 sec intervals. An aerodynamic drag coefficient, consistent with an assumption of a tumbling booster, was used in the calculations for this section of the trajectory. The adjustments which were applied to the product of the ballistic coefficient $\left(\frac{C_D A}{m}\right)$ and density resulted in an impact time which was identical to that of loss of signal from aircraft telemetry in the target area.

(C) IMPACT POINT (BOOSTER)

The geographic location of the impact point determined from the precalculated trajectory was:

Geodetic Latitude	:	27.074569° N
Longitude	:	75.696979° W

The miss distances of the post flight trajectory with reference to the predicted impact point were:

Range (km)	Cross Range (km)	Radial (km)
81.05 over	13.72 right	82.20

The excessive range was directly attributable to a higher than predicted cutoff velocity. The lateral velocity also exceeded that which was predicted. This additional lateral velocity, which caused a significant change in the yaw plane, reached a maximum of 33 m/s at cutoff.

The booster impact locations from both the predicted and post flight trajectories are shown in Figure 2.

(C) CAPSULE TRAJECTORY

Tables IC through IIIC contain the first section of the capsule trajectory, 135.0 - 300.0 sec, with variables given in 5.0 sec intervals. This section is based on FPS-16 Radar 1.16 data.

Tables IVC and VC contain the second section of the capsule trajectory, 300.0 - 532.41 sec, with variables given in 5.0 sec intervals. This section is a computed trajectory using FPS-16 Radar 1.16 positions and velocities as initial conditions at 300.0 sec.

Tables VIC through VIIIC form the dive phase (100 km altitude to impact) of the computed capsule trajectory, 532.41 sec to impact, with variables given in 5.0 sec intervals. In these calculations it was assumed that both the drogue and main chute deployed at the predicted altitudes (25,000 ft and 10,000 ft respectively). Radiosonde winds from Grand Bahama Island were used from 26.5 km altitude to impact. The adjustments which were applied to the product of the ballistic coefficient and density resulted in an impact time consistent with that of capsule telemetry.

(C) IMPACT POINT (CAPSULE)

The capsule impact point determined from the predicted trajectory was:

Geodetic Latitude: 27.167083° N
Longitude : 76.041723° W

[redacted]

The differences between impact locations of both the post flight trajectory and Sofar Bomb with reference to the predicted impact location are shown in the table below:

	Range (km)	Cross Range (km)	Radial (km)
Reference Trajectory	198.04 over	24.78 right	199.58
Sofar Bomb	200.91 over	26.42 right	202.64

The additional range of the capsule was partially due to a higher than predicted booster cutoff velocity. A large impulse was also imparted to the capsule by the escape rocket's firing plus the fact that the retro-rockets are not fired in the abort mode. The extra cross-range was attributed to the excessive velocity in the yaw plane at booster cutoff and the escape rocket's firing at an angle of approximately 8.1 deg to the right of the flight path.

The capsule impact locations from the precalculated trajectory, reference trajectory, and Sofar Bomb are shown in Figure 2.

The tables in this report were prepared by the Data Reduction Branch and Trajectory Applications Unit of Computation Laboratory.

See page 5 for a list of trajectory symbols and their definitions.

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(U) APPENDIX

Symbols	Definitions
X Y Z	Cartesian coordinates with X Z plane tangent to the earth's surface at the launch site. The positve X coordinate is 105.00° E of N; the positve Z coordinate is 195.00° E of N. The positive Y coordinate is perpendicular upward from the X Z plane at the point of tangency.
X sph Y sph Z sph	Curvilinear coordinates oriented in the same manner as the Cartesian coordinates above and based on an earth radius of 6373334.6 m.
Vg	Earth-fixed geometric missile velocity.
$\dot{V}g$	Tangential missile acceleration.
Mach	Ratio of velocity of missile to local velocity of sound.
Q	Dynamic pressure
Theta P	The angle between the earth-fixed missile velocity and the launch vertical. Defined mathematically as $\cos^{-1} \dot{Y}/Vg$.
Theta Y	The angle between the earth-fixed missile velocity and its projection into the XY plane. Defined mathematically as $\sin^{-1} \dot{Z}/Vg$.
Alt.	Altitude, height above the geoid as represented by the Clarke Spheroid of 1866.
Range	Distance along the surface of the earth.
Theta P.L.	The angle between the earth-fixed missile velocity and the local vertical. Defined mathematically as $\cos^{-1}\left[\frac{X\dot{X} + (Y + r_o)\dot{Y} + Z\dot{Z}}{Vg\sqrt{X^2 + (Y + r_o)^2 + Z^2}}\right]$
Cartesian Z	See Cartesian Z above

(U) APPENDIX (Cont.)

X DST Y DST Z DST	Space-fixed velocity components, oriented as the Cartesian coordinates, with the effect of the initial velocity of the earth taken out.
AT	Acceleration along the longitudinal axis of the missile (angle of attack always assumed to be zero).
Drag	Aerodynamic drag of the missile ($C_d \cdot q \cdot A$).

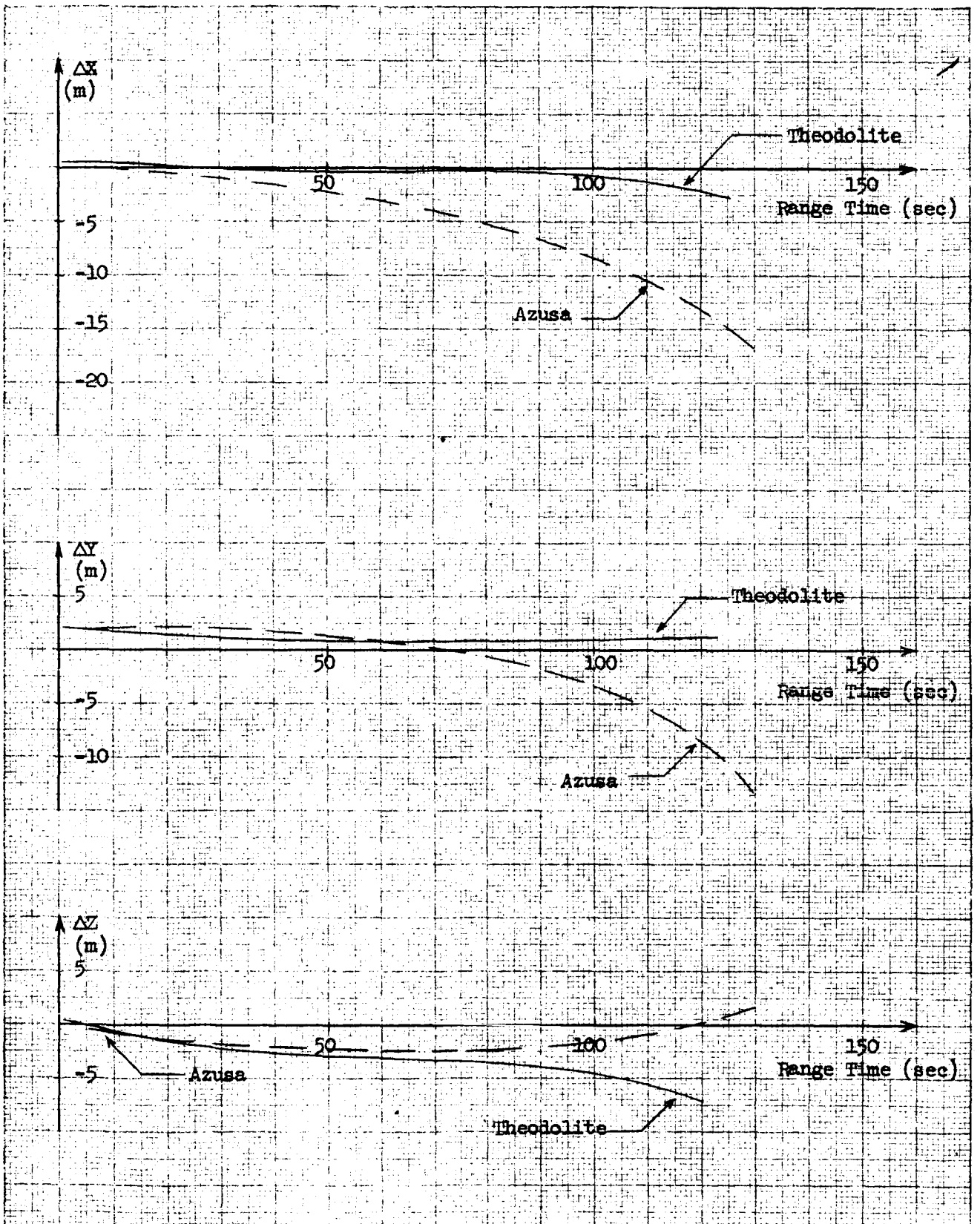

Fig. 1	TRACKING COMPARISONS (OTHER - REFERENCE)
MR-2	

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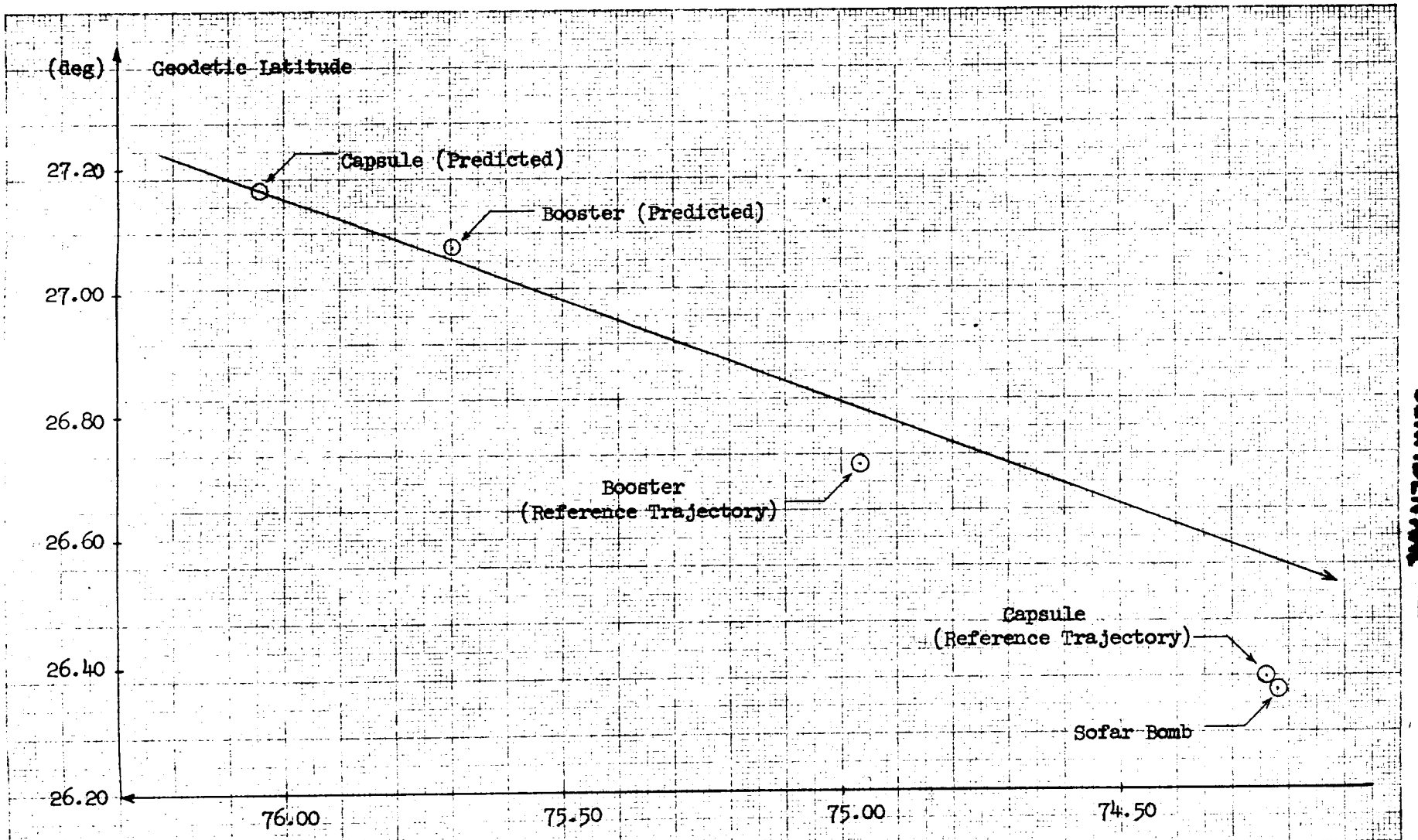

Fig. 2	IMPACT AREA
MR-2	

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BOOSTER

Table IB

T SEC	X M	Y M	Z M	VG M/SEC
+0000000.5	+0000000.0	+0000000.0	+0000000.0	+0000.0000
+0000001.0	+0000000.0	+0000000.0	+0000000.0	+0000.0190
+0000001.5	-0000000.5	+0000000.6	-0000000.4	+0003.8011
+0000002.0	-0000000.6	+0000001.6	-0000000.1	+0002.6377
+0000002.5	-0000000.5	+0000003.2	-0000000.3	+0003.7068
+0000003.0	-0000000.5	+0000005.3	-0000000.3	+0004.9024
+0000003.5	-0000000.5	+0000008.2	-0000000.2	+0006.0941
+0000004.0	-0000000.4	+0000011.4	-0000000.2	+0007.3445
+0000004.5	-0000000.4	+0000015.5	-0000000.4	+0008.6271
+0000005.0	-0000000.4	+0000020.0	-0000000.2	+0009.9273
+0000005.5	-0000000.2	+0000025.4	-0000000.4	+0011.2442
+0000006.0	-0000000.4	+0000031.3	-0000000.2	+0012.5854
+0000006.5	-0000000.1	+0000038.0	-0000000.3	+0013.9529
+0000007.0	+0000000.2	+0000045.3	-0000000.4	+0015.3437
+0000007.5	+0000000.5	+0000053.4	-0000000.7	+0016.7590
+0000008.0	+0000000.4	+0000062.1	-0000000.5	+0018.1964
+0000008.5	+0000000.6	+0000071.5	-0000000.7	+0019.6395
+0000009.0	+0000000.8	+0000081.7	-0000000.7	+0021.0664
+0000009.5	+0000000.9	+0000092.5	-0000000.8	+0022.4613
+0000010.0	+0000001.3	+0000104.2	-0000001.0	+0023.8366
+0000010.5	+0000001.2	+0000116.4	-0000000.9	+0025.2456
+0000011.0	+0000001.6	+0000129.6	-0000001.0	+0026.7288
+0000011.5	+0000001.6	+0000143.3	-0000000.9	+0028.2748
+0000012.0	+0000001.8	+0000158.1	-0000000.9	+0029.8443
+0000012.5	+0000003.7	+0000171.8	-0000001.0	+0031.4205
+0000013.0	+0000004.0	+0000188.5	-0000001.4	+0033.0185
+0000013.5	+0000004.2	+0000205.5	-0000001.3	+0034.6438
+0000014.0	+0000004.5	+0000223.1	-0000001.2	+0036.2939
+0000014.5	+0000004.7	+0000241.7	-0000001.2	+0037.9680
+0000015.0	+0000005.0	+0000261.4	-0000001.5	+0039.6657
+0000015.5	+0000005.2	+0000281.7	-0000001.3	+0041.3860
+0000016.0	+0000005.5	+0000302.9	-0000001.3	+0043.1282
+0000016.5	+0000005.8	+0000324.9	-0000001.3	+0044.8910
+0000017.0	+0000005.7	+0000348.0	-0000001.6	+0046.6735
+0000017.5	+0000005.9	+0000371.7	-0000001.8	+0048.4748
+0000018.0	+0000005.9	+0000396.4	-0000002.0	+0050.2949
+0000018.5	+0000006.2	+0000421.7	-0000002.0	+0052.1338
+0000019.0	+0000006.3	+0000448.2	-0000002.3	+0053.9919
+0000019.5	+0000006.3	+0000476.1	-0000002.6	+0055.8698
+0000020.0	+0000006.7	+0000503.9	-0000002.5	+0057.7683

[redacted]

T SEC	X M	Y M	Z M	VG M/SEC
+0000020.5	+0000006.7	+0000533.5	-0000002.7	+0059.6883
+0000021.0	+0000006.9	+0000563.7	-0000002.7	+0061.6308
+0000021.5	+0000007.1	+0000595.2	-0000002.9	+0063.5961
+0000022.0	+0000007.1	+0000627.4	-0000003.0	+0065.5835
+0000022.5	+0000007.4	+0000660.6	-0000002.9	+0067.5916
+0000023.0	+0000007.6	+0000695.0	-0000003.2	+0069.6186
+0000023.5	+0000007.6	+0000730.3	-0000003.3	+0071.6632
+0000024.0	+0000007.6	+0000766.5	-0000003.1	+0073.7248
+0000024.5	+0000007.6	+0000804.3	-0000003.5	+0075.8027
+0000025.0	+0000007.7	+0000842.4	-0000003.4	+0077.8959
+0000025.5	+0000007.8	+0000881.8	-0000003.6	+0080.0039
+0000026.0	+0000007.9	+0000922.6	-0000003.3	+0082.1259
+0000026.5	+0000007.8	+0000964.2	-0000003.6	+0084.2615
+0000027.0	+0000008.2	+0001006.7	-0000003.6	+0086.4100
+0000027.5	+0000008.4	+0001050.5	-0000004.1	+0088.5711
+0000028.0	+0000008.4	+0001095.5	-0000003.6	+0090.7446
+0000028.5	+0000008.6	+0001141.2	-0000004.0	+0092.9303
+0000029.0	+0000009.1	+0001188.3	-0000004.2	+0095.1285
+0000029.5	+0000009.7	+0001236.3	-0000004.4	+0097.3393
+0000030.0	+0000009.9	+0001285.6	-0000004.8	+0099.5632
+0000030.5	+0000010.8	+0001335.8	-0000005.2	+0101.8003
+0000031.0	+0000010.7	+0001387.4	-0000005.0	+0104.0514
+0000031.5	+0000011.1	+0001440.4	-0000005.6	+0106.3174
+0000032.0	+0000011.4	+0001494.2	-0000005.9	+0108.5992
+0000032.5	+0000012.5	+0001548.8	-0000006.4	+0110.8972
+0000033.0	+0000013.5	+0001604.6	-0000006.5	+0113.2118
+0000033.5	+0000014.7	+0001661.7	-0000007.1	+0115.5435
+0000034.0	+0000015.9	+0001720.2	-0000007.6	+0117.8941
+0000034.5	+0000017.0	+0001779.8	-0000007.9	+0120.2655
+0000035.0	+0000018.6	+0001840.5	-0000008.1	+0122.6603
+0000035.5	+0000020.2	+0001902.3	-0000008.5	+0125.0805
+0000036.0	+0000021.9	+0001965.5	-0000008.7	+0127.5278
+0000036.5	+0000023.4	+0002030.0	-0000009.1	+0130.0041
+0000037.0	+0000026.3	+0002095.3	-0000009.0	+0132.5104
+0000037.5	+0000027.8	+0002162.4	-0000009.3	+0135.0473
+0000038.0	+0000030.5	+0002230.4	-0000009.1	+0137.6147
+0000038.5	+0000033.0	+0002299.7	-0000009.3	+0140.2122
+0000039.0	+0000037.0	+0002370.3	-0000009.0	+0142.8391
+0000039.5	+0000038.7	+0002442.6	-0000009.3	+0145.4948
+0000040.0	+0000042.8	+0002515.9	-0000009.4	+0148.1784

[redacted]

[redacted]

T SEC	X M	Y M	Z M	VG M/SEC
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+0000041.5	+0000054.9	+0002743.3	-0000008.1	+0156.3895
+0000042.0	+0000060.0	+0002822.1	-0000007.3	+0159.1782
+0000042.5	+0000063.9	+0002902.6	-0000008.0	+0161.9922
+0000043.0	+0000068.5	+0002984.7	-0000008.5	+0164.8311
+0000043.5	+0000073.4	+0003067.6	-0000007.5	+0167.6946
+0000044.0	+0000080.6	+0003151.7	-0000007.2	+0170.5827
+0000044.5	+0000085.5	+0003237.6	-0000005.8	+0173.4955
+0000045.0	+0000092.7	+0003324.8	-0000005.2	+0176.4338
+0000045.5	+0000099.9	+0003413.5	-0000005.3	+0179.3985
+0000046.0	+0000106.8	+0003502.5	-0000003.9	+0182.3908
+0000046.5	+0000115.4	+0003595.1	-0000003.4	+0185.4121
+0000047.0	+0000123.1	+0003688.3	-0000002.7	+0188.4637
+0000047.5	+0000132.2	+0003782.9	-0000001.8	+0191.5468
+0000048.0	+0000140.9	+0003879.1	-0000000.5	+0194.6624
+0000048.5	+0000151.4	+0003976.5	+0000000.8	+0197.8111
+0000049.0	+0000162.0	+0004075.6	+0000001.7	+0200.9933
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+0000050.0	+0000184.4	+0004279.6	+0000003.8	+0207.4584
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+0000051.0	+0000209.3	+0004487.3	+0000007.0	+0214.0552
+0000051.5	+0000222.4	+0004595.0	+0000008.0	+0217.4010
+0000052.0	+0000237.1	+0004703.5	+0000009.7	+0220.7772
+0000052.5	+0000252.5	+0004813.6	+0000011.2	+0224.1839
+0000053.0	+0000268.0	+0004925.9	+0000012.8	+0227.6217
+0000053.5	+0000284.3	+0005038.5	+0000014.3	+0231.0913
+0000054.0	+0000301.3	+0005154.1	+0000015.7	+0234.5936
+0000054.5	+0000318.7	+0005271.0	+0000016.8	+0238.1291
+0000055.0	+0000338.8	+0005389.2	+0000018.8	+0241.6983
+0000055.5	+0000358.8	+0005508.8	+0000020.8	+0245.3019
+0000056.0	+0000380.6	+0005630.5	+0000022.6	+0248.9406
+0000056.5	+0000402.1	+0005754.5	+0000024.2	+0252.6151
+0000057.0	+0000424.9	+0005880.7	+0000026.3	+0256.3255
+0000057.5	+0000448.5	+0006008.6	+0000027.9	+0260.0718
+0000058.0	+0000473.1	+0006138.2	+0000030.0	+0263.8538
+0000058.5	+0000499.0	+0006268.5	+0000031.9	+0267.6706
+0000059.0	+0000526.4	+0006397.8	+0000033.8	+0271.5209
+0000059.5	+0000555.3	+0006531.3	+0000036.3	+0275.4027
+0000060.0	+0000583.4	+0006668.8	+0000038.5	+0279.3139

[redacted]

[redacted]

T SEC	X M	Y M	Z M	VG M/SEC
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+0000061.5	+0000675.3	+0007084.4	+0000046.7	+0291.1972
+0000062.0	+0000708.5	+0007227.2	+0000049.3	+0295.1984
+0000062.5	+0000743.1	+0007371.7	+0000052.3	+0299.2149
+0000063.0	+0000778.9	+0007518.1	+0000055.5	+0303.2445
+0000063.5	+0000816.2	+0007666.1	+0000058.2	+0307.2851
+0000064.0	+0000854.4	+0007816.0	+0000061.5	+0311.3355
+0000064.5	+0000893.8	+0007967.8	+0000064.9	+0315.3956
+0000065.0	+0000934.6	+0008121.1	+0000068.2	+0319.4657
+0000065.5	+0000976.7	+0008276.2	+0000071.9	+0323.5476
+0000066.0	+0001019.7	+0008433.3	+0000075.6	+0327.6440
+0000066.5	+0001064.1	+0008592.1	+0000079.1	+0331.7586
+0000067.0	+0001110.1	+0008752.6	+0000083.1	+0335.8959
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+0000068.0	+0001206.0	+0009078.7	+0000091.2	+0344.2596
+0000068.5	+0001255.5	+0009244.7	+0000095.3	+0348.4980
+0000069.0	+0001307.3	+0009412.1	+0000099.2	+0352.7822
+0000069.5	+0001359.6	+0009581.6	+0000103.4	+0357.1181
+0000070.0	+0001413.1	+0009753.1	+0000107.5	+0361.5118
+0000070.5	+0001468.4	+0009926.1	+0000112.0	+0365.9688
+0000071.0	+0001524.3	+0010101.4	+0000116.2	+0370.4939
+0000071.5	+0001582.7	+0010278.3	+0000120.2	+0375.0913
+0000072.0	+0001642.3	+0010457.3	+0000124.1	+0379.7644
+0000072.5	+0001703.6	+0010638.1	+0000128.1	+0384.5162
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+0000074.0	+0001896.5	+0011193.2	+0000140.3	+0399.2600
+0000074.5	+0001964.4	+0011382.1	+0000144.6	+0404.3410
+0000075.0	+0002034.2	+0011573.2	+0000148.6	+0409.5062
+0000075.5	+0002105.8	+0011766.3	+0000153.1	+0414.7555
+0000076.0	+0002179.4	+0011961.7	+0000157.1	+0420.0892
+0000076.5	+0002254.4	+0012159.3	+0000161.6	+0425.5078
+0000077.0	+0002332.1	+0012358.8	+0000166.4	+0431.0115
+0000077.5	+0002411.0	+0012560.8	+0000170.9	+0436.6013
+0000078.0	+0002492.3	+0012764.9	+0000175.7	+0442.2784
+0000078.5	+0002576.0	+0012971.1	+0000180.7	+0448.0442
+0000079.0	+0002662.1	+0013179.5	+0000186.2	+0453.9004
+0000079.5	+0002749.0	+0013390.6	+0000191.8	+0459.8486
+0000080.0	+0002839.8	+0013603.5	+0000197.6	+0465.8905

[redacted]

T SEC	X M	Y M	Z M	VG M/SEC
+0000080.5	+0002931.7	+0013819.1	+0000203.7	+0472.0281
+0000081.0	+0003025.9	+0014037.1	+0000210.0	+0478.2627
+0000081.5	+0003121.7	+0014257.7	+0000216.3	+0484.5957
+0000082.0	+0003220.7	+0014480.5	+0000222.9	+0491.0281
+0000082.5	+0003322.0	+0014705.8	+0000229.4	+0497.5609
+0000083.0	+0003426.2	+0014933.6	+0000236.1	+0504.1951
+0000083.5	+0003532.2	+0015164.0	+0000242.8	+0510.9312
+0000084.0	+0003640.5	+0015397.2	+0000249.7	+0517.7700
+0000084.5	+0003751.4	+0015633.0	+0000255.9	+0524.7126
+0000085.0	+0003864.1	+0015871.7	+0000262.6	+0531.7598
+0000085.5	+0003978.4	+0016113.6	+0000269.3	+0538.9124
+0000086.0	+0004096.3	+0016357.8	+0000275.5	+0546.1716
+0000086.5	+0004216.2	+0016605.1	+0000281.9	+0553.5388
+0000087.0	+0004338.2	+0016855.5	+0000288.6	+0561.0158
+0000087.5	+0004463.0	+0017108.9	+0000295.1	+0568.6043
+0000088.0	+0004590.4	+0017365.1	+0000301.4	+0576.3063
+0000088.5	+0004720.5	+0017624.3	+0000308.3	+0584.1235
+0000089.0	+0004853.4	+0017886.5	+0000314.7	+0592.0581
+0000089.5	+0004989.1	+0018151.8	+0000320.9	+0600.1118
+0000090.0	+0005127.2	+0018420.4	+0000327.6	+0608.2865
+0000090.5	+0005267.1	+0018692.7	+0000334.2	+0616.5832
+0000091.0	+0005410.5	+0018967.8	+0000341.0	+0625.0032
+0000091.5	+0005556.3	+0019246.4	+0000347.5	+0633.5479
+0000092.0	+0005705.9	+0019528.2	+0000353.8	+0642.2187
+0000092.5	+0005858.0	+0019813.5	+0000359.8	+0651.0170
+0000093.0	+0006011.5	+0020102.9	+0000366.4	+0659.9441
+0000093.5	+0006168.7	+0020395.4	+0000372.3	+0669.0018
+0000094.0	+0006329.3	+0020691.5	+0000378.4	+0678.1918
+0000094.5	+0006492.6	+0020991.3	+0000384.9	+0687.5155
+0000095.0	+0006658.0	+0021295.2	+0000391.6	+0696.9750
+0000095.5	+0006826.8	+0021602.7	+0000398.3	+0706.5717
+0000096.0	+0006998.5	+0021914.2	+0000404.4	+0716.3068
+0000096.5	+0007173.6	+0022229.3	+0000411.3	+0726.1817
+0000097.0	+0007352.3	+0022548.2	+0000417.9	+0736.1978
+0000097.5	+0007534.0	+0022871.1	+0000424.5	+0746.3559
+0000098.0	+0007720.0	+0023197.5	+0000431.2	+0756.6569
+0000098.5	+0007909.1	+0023528.1	+0000437.9	+0767.1011
+0000099.0	+0008101.4	+0023862.9	+0000444.3	+0777.6891
+0000099.5	+0008298.1	+0024201.4	+0000451.5	+0788.4214
+0000100.0	+0008498.8	+0024543.8	+0000458.2	+0799.2981

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T SEC	X M	Y M	Z M	VG M/SEC
+0000100.5	+0008702.2	+0024891.0	+0000465.0	+0810.3195
+0000101.0	+0008909.6	+0025242.2	+0000471.7	+0821.4853
+0000101.5	+0009121.8	+0025597.2	+0000478.9	+0832.7955
+0000102.0	+0009337.4	+0025956.7	+0000486.5	+0844.2505
+0000102.5	+0009556.0	+0026321.1	+0000493.7	+0855.8511
+0000103.0	+0009779.5	+0026689.4	+0000500.8	+0867.5981
+0000103.5	+0010006.0	+0027062.7	+0000508.3	+0879.4927
+0000104.0	+0010237.0	+0027440.3	+0000515.8	+0891.5360
+0000104.5	+0010472.4	+0027822.3	+0000523.2	+0903.7297
+0000105.0	+0010712.5	+0028208.8	+0000531.5	+0916.0751
+0000105.5	+0010956.4	+0028600.0	+0000539.2	+0928.5743
+0000106.0	+0011205.0	+0028995.8	+0000547.8	+0941.2289
+0000106.5	+0011457.0	+0029396.8	+0000555.9	+0954.0402
+0000107.0	+0011715.4	+0029801.8	+0000564.3	+0967.0096
+0000107.5	+0011977.1	+0030212.0	+0000573.1	+0980.1383
+0000108.0	+0012244.6	+0030626.5	+0000582.3	+0993.4273
+0000108.5	+0012516.5	+0031046.1	+0000591.4	+1006.8775
+0000109.0	+0012793.5	+0031470.4	+0000600.9	+1020.4901
+0000109.5	+0013075.9	+0031899.4	+0000610.1	+1034.2663
+0000110.0	+0013362.9	+0032333.8	+0000619.4	+1048.2076
+0000110.5	+0013654.4	+0032773.4	+0000629.5	+1062.3154
+0000111.0	+0013951.5	+0033217.8	+0000638.9	+1076.5913
+0000111.5	+0014254.3	+0033667.3	+0000649.3	+1091.0377
+0000112.0	+0014561.9	+0034122.1	+0000660.0	+1105.6569
+0000112.5	+0014873.7	+0034582.9	+0000670.6	+1120.4512
+0000113.0	+0015192.2	+0035048.2	+0000681.1	+1135.4228
+0000113.5	+0015514.9	+0035519.6	+0000692.5	+1150.5742
+0000114.0	+0015844.6	+0035995.7	+0000704.4	+1165.9077
+0000114.5	+0016178.8	+0036477.9	+0000715.5	+1181.4256
+0000115.0	+0016518.2	+0036965.9	+0000727.6	+1197.1302
+0000115.5	+0016864.1	+0037459.1	+0000740.1	+1213.0240
+0000116.0	+0017216.5	+0037957.6	+0000752.3	+1229.1097
+0000116.5	+0017572.7	+0038463.2	+0000765.3	+1245.3900
+0000117.0	+0017936.5	+0038973.4	+0000778.4	+1261.8676
+0000117.5	+0018306.0	+0039489.8	+0000792.1	+1278.5452
+0000118.0	+0018681.6	+0040012.2	+0000805.6	+1295.4257
+0000118.5	+0019062.3	+0040541.2	+0000818.9	+1312.5117
+0000119.0	+0019450.1	+0041075.9	+0000833.3	+1329.8048
+0000119.5	+0019845.0	+0041616.1	+0000848.1	+1347.3070
+0000120.0	+0020245.3	+0042163.1	+0000862.2	+1365.0204

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T SEC	X M	Y M	Z M	VG M/SEC
+0000120.5	+0020652.0	+0042716.5	+0000877.4	+1382.9472
+0000121.0	+0021066.2	+0043275.7	+0000893.0	+1401.0901
+0000121.5	+0021487.2	+0043841.3	+0000908.5	+1419.4522
+0000122.0	+0021912.7	+0044414.5	+0000924.6	+1438.0368
+0000122.5	+0022348.5	+0044992.5	+0000939.5	+1456.8478
+0000123.0	+0022788.8	+0045578.2	+0000955.9	+1475.8900
+0000123.5	+0023238.7	+0046169.5	+0000972.6	+1495.1696
+0000124.0	+0023692.4	+0046769.3	+0000988.5	+1514.6928
+0000124.5	+0024155.6	+0047374.8	+0001005.8	+1534.4656
+0000125.0	+0024625.2	+0047987.7	+0001022.0	+1554.4943
+0000125.5	+0025102.3	+0048607.4	+0001039.5	+1574.7856
+0000126.0	+0025587.0	+0049234.2	+0001056.8	+1595.3459
+0000126.5	+0026079.4	+0049868.0	+0001074.7	+1616.1847
+0000127.0	+0026578.8	+0050509.6	+0001092.4	+1637.2959
+0000127.5	+0027087.5	+0051157.6	+0001109.0	+1658.6672
+0000128.0	+0027601.7	+0051814.5	+0001128.0	+1680.3221
+0000128.5	+0028126.9	+0052477.2	+0001145.7	+1702.3080
+0000129.0	+0028658.0	+0053149.0	+0001163.5	+1724.6467
+0000129.5	+0029199.0	+0053827.5	+0001183.3	+1747.3126
+0000130.0	+0029748.8	+0054513.7	+0001202.1	+1770.2719
+0000130.5	+0030305.2	+0055209.2	+0001220.0	+1793.5218
+0000131.0	+0030871.8	+0055911.7	+0001240.1	+1817.0673
+0000131.5	+0031445.0	+0056623.8	+0001259.4	+1840.9155
+0000132.0	+0032030.1	+0057342.1	+0001279.0	+1865.0709
+0000132.5	+0032623.4	+0058069.2	+0001299.4	+1889.5447
+0000133.0	+0033226.3	+0058804.4	+0001319.6	+1914.2941
+0000133.5	+0033836.4	+0059549.5	+0001339.7	+1939.5401
+0000134.0	+0034459.2	+0060301.2	+0001359.4	+1965.0858
+0000134.5	+0035089.4	+0061063.0	+0001380.8	+1990.9563
+0000135.0	+0035729.8	+0061833.4	+0001401.2	+2017.2029
+0000135.5	+0036379.3	+0062613.3	+0001422.2	+2043.6494
+0000136.0	+0037039.3	+0063402.0	+0001444.1	+2070.9674
+0000136.5	+0037710.4	+0064199.3	+0001466.4	+2098.3383
+0000137.0	+0038391.0	+0065006.6	+0001487.9	+2126.2666
+0000137.5	+0039082.7	+0065822.8	+0001509.0	+2153.9746
+0000138.0	+0039783.1	+0066648.6	+0001531.3	+2176.1103
+0000138.5	+0040492.1	+0067479.1	+0001551.9	+2191.4200
+0000139.0	+0041211.6	+0068307.6	+0001565.3	+2193.6140
+0000139.5	+0041929.8	+0069134.0	+0001580.5	+2187.4611
+0000140.0	+0042645.0	+0069959.8	+0001598.8	+2183.0611

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T SEC	X M	Y M	Z M	VG M/SEC
+0000145.0	+0049754.9	+0078119.3	+0001824.5	+2146.7721
+0000150.0	+0056855.8	+0086044.8	+0002055.8	+2111.2998
+0000155.0	+0063973.9	+0093718.2	+0002273.9	+2075.5345
+0000160.0	+0071055.4	+0101170.7	+0002507.4	+2037.6414
+0000165.0	+0078132.3	+0108369.1	+0002743.2	+2003.4091
+0000170.0	+0085219.0	+0115329.3	+0002983.3	+1969.3374
+0000175.0	+0092267.3	+0122077.3	+0003224.5	+1935.6466
+0000180.0	+0099311.0	+0128588.4	+0003476.3	+1902.3077
+0000185.0	+0106340.1	+0134868.7	+0003730.3	+1869.9337
+0000190.0	+0113368.3	+0140909.6	+0003983.2	+1838.2511
+0000195.0	+0120377.0	+0146728.1	+0004240.2	+1807.2761
+0000200.0	+0127378.9	+0152313.0	+0004503.4	+1776.9532
+0000205.0	+0134367.5	+0157672.3	+0004773.7	+1747.5958
+0000210.0	+0141338.3	+0162810.8	+0005043.3	+1718.7025
+0000215.0	+0148305.5	+0167714.2	+0005315.4	+1690.9318
+0000220.0	+0155263.4	+0172391.3	+0005588.9	+1664.1298
+0000225.0	+0162201.9	+0176850.3	+0005865.7	+1637.4846
+0000230.0	+0169132.1	+0181077.5	+0006139.9	+1612.1610
+0000235.0	+0176059.0	+0185069.5	+0006421.7	+1587.5994
+0000240.0	+0182973.7	+0188834.9	+0006700.0	+1563.6170
+0000245.0	+0189871.0	+0192377.9	+0006985.0	+1540.5421
+0000250.0	+0196761.6	+0195688.0	+0007270.0	+1518.5440

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BOOSTER
Table IIB

T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000000.5	+0000000.0	-0000000.1	+0000000.0	+000.00000
+0000001.0	-0000000.0	-0000000.1	-0000000.0	-000.38046
+0000001.5	-0000000.4	+0000000.3	-0000000.2	+000.67488
+0000002.0	-0000000.6	+0000001.6	-0000000.2	+002.39443
+0000002.5	-0000000.5	+0000003.1	-0000000.3	+002.09414
+0000003.0	-0000000.5	+0000005.3	-0000000.3	+002.21007
+0000003.5	-0000000.5	+0000008.0	-0000000.3	+002.52443
+0000004.0	-0000000.4	+0000011.4	-0000000.3	+002.56209
+0000004.5	-0000000.4	+0000015.4	-0000000.3	+002.58599
+0000005.0	-0000000.3	+0000020.0	-0000000.3	+002.60863
+0000005.5	-0000000.3	+0000025.3	-0000000.3	+002.63960
+0000006.0	-0000000.1	+0000031.3	-0000000.4	+002.69282
+0000006.5	+0000000.0	+0000037.9	-0000000.4	+002.75020
+0000007.0	+0000000.2	+0000045.2	-0000000.5	+002.80565
+0000007.5	+0000000.3	+0000053.2	-0000000.5	+002.85702
+0000008.0	+0000000.4	+0000061.9	-0000000.6	+002.88836
+0000008.5	+0000000.6	+0000071.4	-0000000.6	+002.87640
+0000009.0	+0000000.7	+0000081.6	-0000000.7	+002.82674
+0000009.5	+0000000.9	+0000092.5	-0000000.7	+002.76896
+0000010.0	+0000001.1	+0000104.1	-0000000.8	+002.75163
+0000010.5	+0000001.3	+0000116.3	-0000000.8	+002.81581
+0000011.0	+0000002.0	+0000129.1	-0000000.9	+002.94072
+0000011.5	+0000002.4	+0000142.8	-0000000.9	+003.06125
+0000012.0	+0000002.7	+0000157.3	-0000001.0	+003.13529
+0000012.5	+0000003.1	+0000172.6	-0000001.0	+003.17908
+0000013.0	+0000003.5	+0000188.8	-0000001.1	+003.22561
+0000013.5	+0000003.9	+0000205.6	-0000001.1	+003.27554
+0000014.0	+0000004.2	+0000223.4	-0000001.2	+003.32446
+0000014.5	+0000004.5	+0000241.9	-0000001.3	+003.37205
+0000015.0	+0000004.8	+0000261.4	-0000001.3	+003.41830
+0000015.5	+0000005.1	+0000281.6	-0000001.4	+003.46293
+0000016.0	+0000005.3	+0000302.8	-0000001.5	+003.50543
+0000016.5	+0000005.6	+0000324.7	-0000001.6	+003.54559
+0000017.0	+0000005.8	+0000347.6	-0000001.7	+003.58394
+0000017.5	+0000006.0	+0000371.4	-0000001.8	+003.62143
+0000018.0	+0000006.1	+0000396.1	-0000001.9	+003.65885
+0000018.5	+0000006.3	+0000421.7	-0000002.1	+003.69681
+0000019.0	+0000006.4	+0000448.3	-0000002.2	+003.73574
+0000019.5	+0000006.5	+0000475.7	-0000002.3	+003.77605
+0000020.0	+0000006.6	+0000504.1	-0000002.4	+003.81819

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T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000020.5	+0000006.8	+0000533.4	-0000002.5	+003.86229
+0000021.0	+0000006.9	+0000563.8	-0000002.6	+003.90777
+0000021.5	+0000007.0	+0000595.1	-0000002.8	+003.95310
+0000022.0	+0000007.1	+0000627.4	-0000002.8	+003.99615
+0000022.5	+0000007.1	+0000660.7	-0000002.9	+004.03565
+0000023.0	+0000007.2	+0000695.0	-0000003.0	+004.07203
+0000023.5	+0000007.3	+0000730.3	-0000003.1	+004.10651
+0000024.0	+0000007.4	+0000766.6	-0000003.2	+004.13968
+0000024.5	+0000007.5	+0000804.1	-0000003.2	+004.17138
+0000025.0	+0000007.6	+0000842.4	-0000003.3	+004.20149
+0000025.5	+0000007.7	+0000881.9	-0000003.3	+004.23022
+0000026.0	+0000007.8	+0000922.4	-0000003.4	+004.25777
+0000026.5	+0000007.9	+0000964.1	-0000003.5	+004.28427
+0000027.0	+0000008.1	+0001006.7	-0000003.6	+004.30980
+0000027.5	+0000008.2	+0001050.4	-0000003.8	+004.33458
+0000028.0	+0000008.4	+0001095.3	-0000003.9	+004.35909
+0000028.5	+0000008.7	+0001141.2	-0000004.1	+004.38380
+0000029.0	+0000009.0	+0001188.3	-0000004.3	+004.40897
+0000029.5	+0000009.3	+0001236.3	-0000004.5	+004.43460
+0000030.0	+0000009.7	+0001285.6	-0000004.8	+004.46082
+0000030.5	+0000010.1	+0001335.9	-0000005.1	+004.48798
+0000031.0	+0000010.7	+0001387.4	-0000005.4	+004.51672
+0000031.5	+0000011.3	+0001439.9	-0000005.7	+004.54747
+0000032.0	+0000011.9	+0001493.7	-0000006.0	+004.57971
+0000032.5	+0000012.7	+0001548.5	-0000006.4	+004.61250
+0000033.0	+0000013.6	+0001604.6	-0000006.8	+004.64596
+0000033.5	+0000014.6	+0001661.8	-0000007.1	+004.68156
+0000034.0	+0000015.8	+0001720.1	-0000007.4	+004.72115
+0000034.5	+0000017.0	+0001779.6	-0000007.7	+004.76545
+0000035.0	+0000018.5	+0001840.3	-0000008.1	+004.81421
+0000035.5	+0000020.0	+0001902.3	-0000008.3	+004.86688
+0000036.0	+0000021.8	+0001965.4	-0000008.6	+004.92308
+0000036.5	+0000023.7	+0002029.7	-0000008.8	+004.98222
+0000037.0	+0000025.8	+0002095.3	-0000008.9	+005.04315
+0000037.5	+0000028.1	+0002162.1	-0000009.1	+005.10442
+0000038.0	+0000030.5	+0002230.3	-0000009.1	+005.16508
+0000038.5	+0000033.3	+0002299.7	-0000009.2	+005.22470
+0000039.0	+0000036.1	+0002370.4	-0000009.2	+005.28296
+0000039.5	+0000039.3	+0002442.4	-0000009.2	+005.33958
+0000040.0	+0000042.6	+0002515.8	-0000009.1	+005.39459

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T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000040.5	+0000046.3	+0002590.4	-0000009.0	+005.44815
+0000041.0	+0000050.1	+0002666.4	-0000008.8	+005.50053
+0000041.5	+0000054.3	+0002743.8	-0000008.6	+005.55202
+0000042.0	+0000058.8	+0002822.6	-0000008.3	+005.60282
+0000042.5	+0000063.6	+0002902.8	-0000008.0	+005.65300
+0000043.0	+0000068.6	+0002984.3	-0000007.6	+005.70250
+0000043.5	+0000074.1	+0003067.3	-0000007.2	+005.75154
+0000044.0	+0000079.8	+0003151.6	-0000006.6	+005.80075
+0000044.5	+0000086.0	+0003237.4	-0000006.1	+005.85088
+0000045.0	+0000092.5	+0003324.6	-0000005.5	+005.90260
+0000045.5	+0000099.5	+0003413.3	-0000004.8	+005.95652
+0000046.0	+0000106.8	+0003503.4	-0000004.1	+006.01305
+0000046.5	+0000114.8	+0003595.1	-0000003.3	+006.07237
+0000047.0	+0000123.0	+0003688.1	-0000002.4	+006.13434
+0000047.5	+0000132.0	+0003782.7	-0000001.5	+006.19845
+0000048.0	+0000141.2	+0003878.8	-0000000.5	+006.26413
+0000048.5	+0000151.2	+0003976.4	+0000000.6	+006.33080
+0000049.0	+0000161.5	+0004075.6	+0000001.7	+006.39801
+0000049.5	+0000172.6	+0004176.3	+0000002.9	+006.46525
+0000050.0	+0000184.1	+0004278.6	+0000004.1	+006.53184
+0000050.5	+0000196.4	+0004382.3	+0000005.4	+006.59713
+0000051.0	+0000209.2	+0004487.8	+0000006.7	+006.66062
+0000051.5	+0000222.9	+0004594.8	+0000008.1	+006.72223
+0000052.0	+0000237.1	+0004703.3	+0000009.5	+006.78288
+0000052.5	+0000252.1	+0004813.6	+0000010.9	+006.84413
+0000053.0	+0000267.9	+0004925.4	+0000012.5	+006.90711
+0000053.5	+0000284.4	+0005038.9	+0000014.0	+006.97177
+0000054.0	+0000301.8	+0005153.9	+0000015.6	+007.03763
+0000054.5	+0000320.0	+0005270.7	+0000017.2	+007.10442
+0000055.0	+0000339.1	+0005389.1	+0000018.9	+007.17252
+0000055.5	+0000358.9	+0005509.3	+0000020.5	+007.24211
+0000056.0	+0000379.8	+0005630.9	+0000022.3	+007.31303
+0000056.5	+0000401.5	+0005754.5	+0000024.1	+007.38478
+0000057.0	+0000424.3	+0005879.6	+0000026.0	+007.45679
+0000057.5	+0000447.9	+0006006.5	+0000027.9	+007.52855
+0000058.0	+0000472.7	+0006135.1	+0000029.9	+007.59996
+0000058.5	+0000498.2	+0006265.5	+0000032.0	+007.66749
+0000059.0	+0000525.0	+0006397.6	+0000034.2	+007.73291
+0000059.5	+0000552.7	+0006531.4	+0000036.4	+007.79387
+0000060.0	+0000581.6	+0006667.0	+0000038.8	+007.85023

[redacted]

T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000060.5	+0000611.5	+0006804.4	+0000041.3	+007.90132
+0000061.0	+0000642.5	+0006943.6	+0000043.9	+007.94629
+0000061.5	+0000674.7	+0007084.5	+0000046.5	+007.98529
+0000062.0	+0000708.0	+0007227.3	+0000049.3	+008.01868
+0000062.5	+0000742.6	+0007371.8	+0000052.2	+008.04695
+0000063.0	+0000778.2	+0007518.1	+0000055.3	+008.07073
+0000063.5	+0000815.2	+0007666.1	+0000058.4	+008.09127
+0000064.0	+0000853.3	+0007815.9	+0000061.6	+008.11048
+0000064.5	+0000892.7	+0007967.6	+0000064.9	+008.12985
+0000065.0	+0000933.3	+0008120.9	+0000068.4	+008.15117
+0000065.5	+0000975.3	+0008276.1	+0000072.0	+008.17699
+0000066.0	+0001018.4	+0008432.9	+0000075.6	+008.20953
+0000066.5	+0001062.8	+0008591.7	+0000079.4	+008.25019
+0000067.0	+0001108.5	+0008752.1	+0000083.2	+008.30041
+0000067.5	+0001155.5	+0008914.4	+0000087.1	+008.36158
+0000068.0	+0001203.8	+0009078.5	+0000091.0	+008.43489
+0000068.5	+0001253.4	+0009244.3	+0000095.0	+008.52032
+0000069.0	+0001304.3	+0009412.0	+0000099.0	+008.61792
+0000069.5	+0001356.6	+0009581.5	+0000103.1	+008.72762
+0000070.0	+0001410.3	+0009752.9	+0000107.2	+008.84875
+0000070.5	+0001465.4	+0009926.1	+0000111.3	+008.98044
+0000071.0	+0001521.9	+0010101.3	+0000115.4	+009.12112
+0000071.5	+0001579.9	+0010278.3	+0000119.5	+009.26949
+0000072.0	+0001639.4	+0010457.4	+0000123.6	+009.42409
+0000072.5	+0001700.5	+0010638.3	+0000127.7	+009.58336
+0000073.0	+0001763.1	+0010821.2	+0000131.8	+009.74604
+0000073.5	+0001827.5	+0011006.2	+0000135.9	+009.91127
+0000074.0	+0001893.5	+0011193.2	+0000140.0	+010.07824
+0000074.5	+0001961.2	+0011382.3	+0000144.2	+010.24619
+0000075.0	+0002030.7	+0011573.4	+0000148.4	+010.41440
+0000075.5	+0002102.1	+0011766.6	+0000152.7	+010.58297
+0000076.0	+0002175.3	+0011961.9	+0000157.1	+010.75217
+0000076.5	+0002250.5	+0012159.4	+0000161.7	+010.92206
+0000077.0	+0002327.6	+0012359.1	+0000166.3	+011.09324
+0000077.5	+0002406.7	+0012560.9	+0000171.1	+011.26636
+0000078.0	+0002487.8	+0012764.9	+0000176.2	+011.44236
+0000078.5	+0002571.0	+0012971.2	+0000181.3	+011.62154
+0000079.0	+0002656.4	+0013179.8	+0000186.7	+011.80372
+0000079.5	+0002743.8	+0013390.6	+0000192.2	+011.98939
+0000080.0	+0002833.5	+0013603.9	+0000198.0	+012.17889

[redacted]

T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000080.5	+0002925.3	+0013819.5	+0000203.8	+012.37172
+0000081.0	+0003019.3	+0014037.4	+0000209.9	+012.56722
+0000081.5	+0003115.6	+0014257.9	+0000216.0	+012.76493
+0000082.0	+0003214.2	+0014480.8	+0000222.4	+012.96491
+0000082.5	+0003315.0	+0014706.3	+0000228.7	+013.16674
+0000083.0	+0003418.1	+0014934.3	+0000235.2	+013.36995
+0000083.5	+0003523.4	+0015164.9	+0000241.7	+013.57461
+0000084.0	+0003631.2	+0015398.3	+0000248.3	+013.78116
+0000084.5	+0003741.2	+0015634.3	+0000254.9	+013.98943
+0000085.0	+0003853.6	+0015873.1	+0000261.5	+014.19944
+0000085.5	+0003968.3	+0016114.7	+0000268.1	+014.41135
+0000086.0	+0004085.5	+0016359.1	+0000274.7	+014.62579
+0000086.5	+0004205.1	+0016606.4	+0000281.3	+014.84350
+0000087.0	+0004327.0	+0016856.7	+0000287.8	+015.06479
+0000087.5	+0004451.6	+0017109.9	+0000294.4	+015.28986
+0000088.0	+0004578.5	+0017366.2	+0000300.9	+015.51857
+0000088.5	+0004708.1	+0017625.5	+0000307.4	+015.75105
+0000089.0	+0004840.0	+0017887.9	+0000313.9	+015.98766
+0000089.5	+0004974.8	+0018153.5	+0000320.3	+016.22796
+0000090.0	+0005111.9	+0018422.4	+0000326.8	+016.47100
+0000090.5	+0005251.9	+0018694.4	+0000333.1	+016.71609
+0000091.0	+0005394.4	+0018969.9	+0000339.6	+016.96423
+0000091.5	+0005539.8	+0019248.6	+0000345.9	+017.21503
+0000092.0	+0005687.7	+0019530.9	+0000352.3	+017.46854
+0000092.5	+0005838.5	+0019816.6	+0000358.6	+017.72482
+0000093.0	+0005992.0	+0020105.8	+0000365.0	+017.98424
+0000093.5	+0006148.4	+0020398.6	+0000371.3	+018.24712
+0000094.0	+0006307.6	+0020695.0	+0000377.7	+018.51308
+0000094.5	+0006469.9	+0020995.1	+0000384.1	+018.78256
+0000095.0	+0006635.2	+0021298.9	+0000390.4	+019.05569
+0000095.5	+0006803.3	+0021606.4	+0000396.9	+019.33147
+0000096.0	+0006974.7	+0021917.7	+0000403.3	+019.60954
+0000096.5	+0007149.3	+0022232.9	+0000409.8	+019.89050
+0000097.0	+0007327.2	+0022551.8	+0000416.2	+020.17391
+0000097.5	+0007508.2	+0022874.9	+0000422.8	+020.45891
+0000098.0	+0007692.8	+0023201.6	+0000429.3	+020.74501
+0000098.5	+0007880.7	+0023532.6	+0000436.1	+021.03208
+0000099.0	+0008072.3	+0023867.4	+0000442.7	+021.32020
+0000099.5	+0008267.2	+0024206.4	+0000449.5	+021.60896
+0000100.0	+0008466.2	+0024549.4	+0000456.2	+021.89802

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T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000100.5	+0008668.4	+0024896.8	+0000463.1	+022.18726
+0000101.0	+0008874.6	+0025248.2	+0000470.0	+022.47596
+0000101.5	+0009084.5	+0025604.0	+0000477.1	+022.76507
+0000102.0	+0009298.3	+0025964.1	+0000484.2	+023.05532
+0000102.5	+0009516.0	+0026328.5	+0000491.4	+023.34717
+0000103.0	+0009737.6	+0026697.3	+0000498.7	+023.64128
+0000103.5	+0009963.2	+0027070.6	+0000506.2	+023.93732
+0000104.0	+0010192.9	+0027448.4	+0000513.7	+024.23651
+0000104.5	+0010426.8	+0027830.8	+0000521.4	+024.53847
+0000105.0	+0010665.0	+0028217.7	+0000529.2	+024.84402
+0000105.5	+0010907.3	+0028609.2	+0000537.2	+025.15321
+0000106.0	+0011154.2	+0029005.4	+0000545.3	+025.46540
+0000106.5	+0011405.4	+0029406.3	+0000553.6	+025.78040
+0000107.0	+0011661.3	+0029811.9	+0000562.0	+026.09758
+0000107.5	+0011921.7	+0030222.3	+0000570.6	+026.41730
+0000108.0	+0012186.9	+0030637.5	+0000579.4	+026.73899
+0000108.5	+0012456.6	+0031057.6	+0000588.3	+027.06227
+0000109.0	+0012731.4	+0031482.5	+0000597.5	+027.38825
+0000109.5	+0013010.9	+0031912.6	+0000606.8	+027.71702
+0000110.0	+0013295.3	+0032347.5	+0000616.3	+028.04864
+0000110.5	+0013584.8	+0032787.6	+0000625.9	+028.38298
+0000111.0	+0013879.3	+0033232.8	+0000635.9	+028.72138
+0000111.5	+0014178.8	+0033683.1	+0000646.0	+029.06474
+0000112.0	+0014483.4	+0034138.8	+0000656.3	+029.41264
+0000112.5	+0014793.4	+0034599.8	+0000666.9	+029.76507
+0000113.0	+0015108.5	+0035066.3	+0000677.7	+030.12206
+0000113.5	+0015429.1	+0035538.1	+0000688.8	+030.48407
+0000114.0	+0015754.9	+0036015.4	+0000700.1	+030.85063
+0000114.5	+0016086.2	+0036498.3	+0000711.7	+031.22172
+0000115.0	+0016423.1	+0036986.9	+0000723.5	+031.59737
+0000115.5	+0016765.5	+0037481.1	+0000735.7	+031.97852
+0000116.0	+0017113.6	+0037981.0	+0000748.1	+032.36497
+0000116.5	+0017467.6	+0038486.8	+0000760.8	+032.75696
+0000117.0	+0017827.2	+0038998.4	+0000773.7	+033.15421
+0000117.5	+0018192.9	+0039515.9	+0000787.0	+033.55716
+0000118.0	+0018564.3	+0040039.4	+0000800.4	+033.96577
+0000118.5	+0018942.1	+0040569.0	+0000814.3	+034.37855
+0000119.0	+0019325.8	+0041104.7	+0000828.2	+034.79451
+0000119.5	+0019716.0	+0041646.5	+0000842.6	+035.21470
+0000120.0	+0020112.2	+0042194.6	+0000857.0	+035.63946

[redacted]

T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000120.5	+0020515.0	+0042748.9	+0000871.9	+036.06878
+0000121.0	+0020924.1	+0043309.8	+0000886.8	+036.50365
+0000121.5	+0021339.9	+0043877.0	+0000902.1	+036.94539
+0000122.0	+0021762.1	+0044450.8	+0000917.6	+037.39411
+0000122.5	+0022191.3	+0045031.1	+0000933.3	+037.85116
+0000123.0	+0022627.0	+0045618.3	+0000949.1	+038.31969
+0000123.5	+0023069.9	+0046211.9	+0000965.2	+038.80071
+0000124.0	+0023519.4	+0046812.6	+0000981.5	+039.29362
+0000124.5	+0023976.4	+0047420.0	+0000998.0	+039.79929
+0000125.0	+0024440.0	+0048034.7	+0001014.7	+040.31766
+0000125.5	+0024911.4	+0048656.1	+0001031.5	+040.84897
+0000126.0	+0025389.7	+0049285.0	+0001048.5	+041.39182
+0000126.5	+0025875.8	+0049920.9	+0001065.8	+041.94500
+0000127.0	+0026369.1	+0050564.3	+0001083.2	+042.51288
+0000127.5	+0026870.5	+0051214.9	+0001100.8	+043.11017
+0000128.0	+0027379.4	+0051873.4	+0001118.6	+043.74281
+0000128.5	+0027896.3	+0052539.2	+0001136.5	+044.39033
+0000129.0	+0028421.0	+0053212.7	+0001154.6	+045.02051
+0000129.5	+0028954.1	+0053894.0	+0001172.9	+045.62091
+0000130.0	+0029495.2	+0054583.2	+0001191.5	+046.20682
+0000130.5	+0030044.8	+0055280.5	+0001210.3	+046.79359
+0000131.0	+0030602.7	+0055985.9	+0001229.3	+047.38956
+0000131.5	+0031169.3	+0056699.5	+0001248.5	+047.99910
+0000132.0	+0031744.6	+0057421.4	+0001268.0	+048.63391
+0000132.5	+0032328.7	+0058151.7	+0001287.6	+049.31297
+0000133.0	+0032921.6	+0058890.5	+0001307.6	+050.06532
+0000133.5	+0033523.7	+0059637.8	+0001327.5	+050.56646
+0000134.0	+0034135.1	+0060393.9	+0001347.5	+051.04308
+0000134.5	+0034755.5	+0061158.9	+0001367.8	+051.49498
+0000135.0	+0035385.6	+0061932.9	+0001388.3	+051.92278
+0000135.5	+0036025.1	+0062716.0	+0001409.1	+052.32652
+0000136.0	+0036674.4	+0063508.4	+0001429.8	+052.70832
+0000136.5	+0037333.8	+0064309.8	+0001451.2	+053.06333
+0000137.0	+0038003.0	+0065120.9	+0001472.5	+053.39260
+0000137.5	+0038682.3	+0065941.8	+0001494.4	+053.69638
+0000138.0	+0039370.6	+0066771.4	+0001516.1	+053.97894
+0000138.5	+0040067.4	+0067606.3	+0001535.0	+019.96391
+0000139.0	+0040773.4	+0068439.5	+0001549.3	-010.58040
+0000139.5	+0041479.3	+0069270.3	+0001563.2	-010.40309
+0000140.0	+0042180.6	+0070101.4	+0001581.2	-007.51943

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T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000145.0	+0049150.2	+0078312.1	+0001802.5	-007.23253
+0000150.0	+0056098.7	+0086294.3	+0002025.3	-007.00196
+0000155.0	+0063039.2	+0094039.3	+0002241.8	-007.40561
+0000160.0	+0069941.7	+0101560.4	+0002468.1	-007.37386
+0000165.0	+0076828.9	+0108837.6	+0002697.6	-006.58098
+0000170.0	+0083698.3	+0115890.1	+0002929.7	-006.96347
+0000175.0	+0090528.4	+0122732.4	+0003163.9	-006.65462
+0000180.0	+0097337.6	+0129348.9	+0003405.9	-006.59328
+0000185.0	+0104128.1	+0135737.5	+0003651.0	-006.37948
+0000190.0	+0110901.0	+0141900.3	+0003896.9	-006.26900
+0000195.0	+0117653.8	+0147841.0	+0004145.3	-006.12948
+0000200.0	+0124388.9	+0153558.4	+0004398.6	-005.98487
+0000205.0	+0131102.8	+0159058.0	+0004656.6	-005.79532
+0000210.0	+0137798.7	+0164338.3	+0004915.7	-005.73236
+0000215.0	+0144476.8	+0169398.8	+0005177.5	-005.39089
+0000220.0	+0151142.2	+0174238.0	+0005440.4	-005.35120
+0000225.0	+0157791.9	+0178858.8	+0005703.2	-005.25143
+0000230.0	+0164426.1	+0183259.2	+0005968.6	-004.91275
+0000235.0	+0171051.7	+0187433.4	+0006237.8	-004.93155
+0000240.0	+0177661.3	+0191389.7	+0006507.0	-004.68417
+0000245.0	+0184256.2	+0195126.8	+0006778.4	-004.54321
+0000250.0	+0190836.9	+0198644.3	+0007052.2	-004.18323

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BOOSTER
Table IIIB

T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000000.5	+00.009126	+00000.611	+000.00000	+000.00000
+0000001.0	+00.009172	+00000.617	+096.90757	-047.80354
+0000001.5	+00.008412	+00000.519	+043.91010	-000.27806
+0000002.0	+00.012224	+00001.096	+002.78384	-000.57210
+0000002.5	+00.014564	+00001.556	+003.55105	-001.92202
+0000003.0	+00.016995	+00002.118	+000.18674	+000.07618
+0000003.5	+00.020053	+00002.948	+000.57735	+000.31337
+0000004.0	+00.023408	+00004.016	+000.71135	+000.02161
+0000004.5	+00.026908	+00005.304	+000.74689	-000.19642
+0000005.0	+00.030515	+00006.818	+000.78373	-000.23544
+0000005.5	+00.034231	+00008.574	+000.92263	-000.28031
+0000006.0	+00.038054	+00010.589	+001.09623	-000.34404
+0000006.5	+00.041965	+00012.867	+001.18792	-000.37947
+0000007.0	+00.045944	+00015.410	+001.15613	-000.36753
+0000007.5	+00.049995	+00018.231	+001.04111	-000.33278
+0000008.0	+00.054121	+00021.342	+000.90100	-000.29614
+0000008.5	+00.058281	+00024.722	+000.79769	-000.26281
+0000009.0	+00.062423	+00028.328	+000.80043	-000.24053
+0000009.5	+00.066510	+00032.117	+000.95384	-000.23881
+0000010.0	+00.070568	+00036.108	+001.22348	-000.25253
+0000010.5	+00.074728	+00040.433	+001.46080	-000.25657
+0000011.0	+00.079084	+00045.217	+001.54931	-000.23897
+0000011.5	+00.083608	+00050.457	+001.50676	-000.21325
+0000012.0	+00.088202	+00056.058	+001.42677	-000.19800
+0000012.5	+00.092826	+00061.979	+001.35871	-000.19576
+0000013.0	+00.097520	+00068.276	+001.28260	-000.19750
+0000013.5	+00.102298	+00074.982	+001.19034	-000.20131
+0000014.0	+00.107155	+00082.100	+001.08982	-000.20795
+0000014.5	+00.112091	+00089.640	+000.98553	-000.21679
+0000015.0	+00.117108	+00097.622	+000.88168	-000.22691
+0000015.5	+00.122203	+00106.050	+000.78202	-000.23734
+0000016.0	+00.127369	+00114.921	+000.69002	-000.24731
+0000016.5	+00.132605	+00124.243	+000.60862	-000.25618
+0000017.0	+00.137908	+00134.017	+000.53964	-000.26324
+0000017.5	+00.143276	+00144.250	+000.48328	-000.26772
+0000018.0	+00.148712	+00154.948	+000.43820	-000.26893
+0000018.5	+00.154213	+00166.120	+000.40203	-000.26642
+0000019.0	+00.159784	+00177.776	+000.37202	-000.25999
+0000019.5	+00.165425	+00189.926	+000.34572	-000.24966
+0000020.0	+00.171129	+00202.560	+000.32127	-000.23578

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T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000020.5	+00.176847	+00215.579	+000.29750	-000.21893
+0000021.0	+00.182641	+00229.115	+000.27378	-000.19991
+0000021.5	+00.188513	+00243.181	+000.25013	-000.17972
+0000022.0	+00.194461	+00257.778	+000.22721	-000.15942
+0000022.5	+00.200480	+00272.898	+000.20633	-000.14015
+0000023.0	+00.206568	+00288.534	+000.18903	-000.12314
+0000023.5	+00.212719	+00304.679	+000.17653	-000.10968
+0000024.0	+00.218922	+00321.307	+000.16946	-000.10079
+0000024.5	+00.225172	+00338.408	+000.16813	-000.09714
+0000025.0	+00.231481	+00356.006	+000.17280	-000.09908
+0000025.5	+00.237849	+00374.088	+000.18388	-000.10664
+0000026.0	+00.244273	+00392.650	+000.20179	-000.11943
+0000026.5	+00.250752	+00411.680	+000.22688	-000.13679
+0000027.0	+00.257276	+00431.148	+000.25923	-000.15793
+0000027.5	+00.263801	+00450.929	+000.29861	-000.18200
+0000028.0	+00.270385	+00471.169	+000.34446	-000.20807
+0000028.5	+00.277027	+00491.865	+000.39599	-000.23511
+0000029.0	+00.283728	+00513.005	+000.45230	-000.26208
+0000029.5	+00.290489	+00534.593	+000.51259	-000.28795
+0000030.0	+00.297102	+00555.895	+000.57623	-000.31164
+0000030.5	+00.303685	+00577.290	+000.64280	-000.33208
+0000031.0	+00.310319	+00599.034	+000.71216	-000.34831
+0000031.5	+00.317007	+00621.130	+000.78444	-000.35961
+0000032.0	+00.323748	+00643.564	+000.85999	-000.36535
+0000032.5	+00.330684	+00667.012	+000.93952	-000.36482
+0000033.0	+00.337727	+00691.029	+001.02404	-000.35734
+0000033.5	+00.344792	+00715.244	+001.11451	-000.34275
+0000034.0	+00.351818	+00739.388	+001.21138	-000.32168
+0000034.5	+00.358979	+00764.230	+001.31454	-000.29542
+0000035.0	+00.366369	+00790.191	+001.42340	-000.26540
+0000035.5	+00.373848	+00816.592	+001.53715	-000.23285
+0000036.0	+00.381423	+00843.452	+001.65497	-000.19862
+0000036.5	+00.389096	+00870.842	+001.77611	-000.16333
+0000037.0	+00.396873	+00898.787	+001.90007	-000.12750
+0000037.5	+00.404761	+00927.230	+002.02664	-000.09164
+0000038.0	+00.412760	+00956.144	+002.15594	-000.05611
+0000038.5	+00.420774	+00985.212	+002.28817	-000.02113
+0000039.0	+00.428852	+01014.572	+002.42362	+000.01321
+0000039.5	+00.437033	+01044.305	+002.56266	+000.04695
+0000040.0	+00.445274	+01074.229	+002.70563	+000.08027

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T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000040.5	+00.453456	+01103.926	+002.85289	+000.11339
+0000041.0	+00.461727	+01133.845	+003.00475	+000.14653
+0000041.5	+00.470086	+01163.967	+003.16152	+000.17984
+0000042.0	+00.478283	+01193.335	+003.32342	+000.21339
+0000042.5	+00.486517	+01222.611	+003.49063	+000.24714
+0000043.0	+00.494811	+01251.858	+003.66342	+000.28103
+0000043.5	+00.503312	+01282.096	+003.84215	+000.31506
+0000044.0	+00.511914	+01312.552	+004.02717	+000.34929
+0000044.5	+00.520586	+01342.951	+004.21856	+000.38377
+0000045.0	+00.529531	+01374.667	+004.41606	+000.41836
+0000045.5	+00.538591	+01406.579	+004.61914	+000.45275
+0000046.0	+00.547741	+01438.469	+004.82717	+000.48647
+0000046.5	+00.557111	+01471.419	+005.03952	+000.51906
+0000047.0	+00.566582	+01504.350	+005.25580	+000.55014
+0000047.5	+00.576120	+01537.179	+005.47586	+000.57938
+0000048.0	+00.585684	+01569.809	+005.69973	+000.60651
+0000048.5	+00.595350	+01602.290	+005.92764	+000.63134
+0000049.0	+00.605181	+01635.329	+006.15992	+000.65380
+0000049.5	+00.615138	+01668.400	+006.39696	+000.67396
+0000050.0	+00.625277	+01701.772	+006.63907	+000.69194
+0000050.5	+00.635724	+01736.417	+006.88647	+000.70791
+0000051.0	+00.646288	+01770.765	+007.13935	+000.72207
+0000051.5	+00.657019	+01805.557	+007.39785	+000.73470
+0000052.0	+00.667867	+01840.057	+007.66191	+000.74604
+0000052.5	+00.678829	+01874.478	+007.93111	+000.75619
+0000053.0	+00.689910	+01908.744	+008.20461	+000.76517
+0000053.5	+00.701213	+01943.254	+008.48147	+000.77313
+0000054.0	+00.712859	+01978.877	+008.76098	+000.78061
+0000054.5	+00.724620	+02013.964	+009.04268	+000.78838
+0000055.0	+00.736261	+02047.660	+009.32625	+000.79720
+0000055.5	+00.748087	+02081.012	+009.61137	+000.80764
+0000056.0	+00.760272	+02115.658	+009.89773	+000.82004
+0000056.5	+00.772612	+02149.589	+010.18499	+000.83457
+0000057.0	+00.784716	+02181.518	+010.47283	+000.85131
+0000057.5	+00.796952	+02212.497	+010.76093	+000.87024
+0000058.0	+00.809093	+02242.197	+011.04906	+000.89125
+0000058.5	+00.821386	+02271.013	+011.33706	+000.91420
+0000059.0	+00.833932	+02300.351	+011.62498	+000.93888
+0000059.5	+00.846614	+02328.724	+011.91291	+000.96505
+0000060.0	+00.859345	+02356.223	+012.20097	+000.99239

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T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000060.5	+00.871863	+02380.930	+012.48926	+001.02057
+0000061.0	+00.883965	+02402.045	+012.77782	+001.04921
+0000061.5	+00.896403	+02423.588	+013.06659	+001.07802
+0000062.0	+00.909093	+02444.785	+013.35533	+001.10674
+0000062.5	+00.922501	+02468.708	+013.64365	+001.13513
+0000063.0	+00.936151	+02491.947	+013.93093	+001.16290
+0000063.5	+00.949952	+02514.682	+014.21637	+001.18971
+0000064.0	+00.963673	+02535.127	+014.49905	+001.21516
+0000064.5	+00.977195	+02552.803	+014.77812	+001.23880
+0000065.0	+00.991072	+02570.890	+015.05300	+001.26023
+0000065.5	+01.005040	+02587.332	+015.32339	+001.27913
+0000066.0	+01.018695	+02600.685	+015.58921	+001.29522
+0000066.5	+01.034132	+02621.071	+015.85057	+001.30824
+0000067.0	+01.051108	+02646.870	+016.10776	+001.31789
+0000067.5	+01.066160	+02661.445	+016.36121	+001.32396
+0000068.0	+01.081499	+02675.155	+016.61151	+001.32634
+0000068.5	+01.097154	+02688.205	+016.85938	+001.32503
+0000069.0	+01.113424	+02702.696	+017.10567	+001.32012
+0000069.5	+01.130660	+02719.254	+017.35126	+001.31178
+0000070.0	+01.148447	+02735.708	+017.59714	+001.30032
+0000070.5	+01.165354	+02746.272	+017.84425	+001.28627
+0000071.0	+01.183108	+02758.221	+018.09347	+001.27037
+0000071.5	+01.201619	+02771.019	+018.34554	+001.25356
+0000072.0	+01.220520	+02783.218	+018.60098	+001.23694
+0000072.5	+01.239307	+02792.531	+018.86017	+001.22161
+0000073.0	+01.258031	+02798.650	+019.12334	+001.20868
+0000073.5	+01.276699	+02801.582	+019.39057	+001.19913
+0000074.0	+01.296713	+02808.393	+019.66179	+001.19377
+0000074.5	+01.316873	+02812.952	+019.93676	+001.19318
+0000075.0	+01.336845	+02813.727	+020.21518	+001.19775
+0000075.5	+01.356857	+02811.706	+020.49663	+001.20761
+0000076.0	+01.378270	+02813.081	+020.78057	+001.22263
+0000076.5	+01.399434	+02810.647	+021.06634	+001.24240
+0000077.0	+01.420422	+02804.426	+021.35323	+001.26623
+0000077.5	+01.442264	+02798.604	+021.64045	+001.29316
+0000078.0	+01.467411	+02802.625	+021.92717	+001.32202
+0000078.5	+01.493019	+02805.285	+022.21246	+001.35157
+0000079.0	+01.516031	+02795.263	+022.49534	+001.38053
+0000079.5	+01.533383	+02762.527	+022.77479	+001.40767
+0000080.0	+01.549527	+02724.295	+023.04985	+001.43191

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T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000080.5	+01.568140	+02693.644	+023.31961	+001.45233
+0000081.0	+01.591023	+02676.097	+023.58325	+001.46822
+0000081.5	+01.613909	+02656.372	+023.84012	+001.47915
+0000082.0	+01.638581	+02640.661	+024.08974	+001.48496
+0000082.5	+01.668674	+02639.771	+024.33184	+001.48574
+0000083.0	+01.695624	+02625.661	+024.56637	+001.48181
+0000083.5	+01.720394	+02602.265	+024.79349	+001.47364
+0000084.0	+01.744900	+02575.890	+025.01348	+001.46180
+0000084.5	+01.772159	+02555.355	+025.22680	+001.44688
+0000085.0	+01.800248	+02534.557	+025.43404	+001.42943
+0000085.5	+01.829459	+02514.276	+025.63582	+001.41001
+0000086.0	+01.861820	+02499.827	+025.83281	+001.38916
+0000086.5	+01.893902	+02481.677	+026.02553	+001.36738
+0000087.0	+01.924701	+02457.471	+026.21435	+001.34510
+0000087.5	+01.953428	+02425.752	+026.39948	+001.32268
+0000088.0	+01.979195	+02385.069	+026.58098	+001.30036
+0000088.5	+02.005715	+02345.065	+026.75879	+001.27832
+0000089.0	+02.034948	+02310.130	+026.93273	+001.25668
+0000089.5	+02.065843	+02277.441	+027.10262	+001.23559
+0000090.0	+02.092957	+02235.057	+027.26831	+001.21516
+0000090.5	+02.119588	+02190.787	+027.42979	+001.19549
+0000091.0	+02.148711	+02150.529	+027.58716	+001.17661
+0000091.5	+02.176735	+02107.097	+027.74064	+001.15856
+0000092.0	+02.199545	+02053.942	+027.89069	+001.14134
+0000092.5	+02.229632	+02014.468	+028.03799	+001.12495
+0000093.0	+02.259058	+01973.083	+028.18341	+001.10947
+0000093.5	+02.294556	+01941.355	+028.32793	+001.09497
+0000094.0	+02.330809	+01909.119	+028.47261	+001.08152
+0000094.5	+02.357217	+01859.766	+028.61838	+001.06917
+0000095.0	+02.378978	+01803.842	+028.76597	+001.05792
+0000095.5	+02.408445	+01760.075	+028.91588	+001.04770
+0000096.0	+02.438463	+01716.824	+029.06835	+001.03842
+0000096.5	+02.469763	+01674.973	+029.22338	+001.02993
+0000097.0	+02.501016	+01633.094	+029.38076	+001.02210
+0000097.5	+02.526551	+01583.809	+029.54007	+001.01484
+0000098.0	+02.552263	+01535.366	+029.70072	+001.00811
+0000098.5	+02.575083	+01484.389	+029.86209	+001.00190
+0000099.0	+02.594745	+01431.535	+030.02352	+000.99624
+0000099.5	+02.623480	+01389.381	+030.18445	+000.99118
+0000100.0	+02.663164	+01358.765	+030.34444	+000.98684

CONFIDENTIAL

T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000100.5	+02.697170	+01322.092	+030.50320	+000.98335
+0000101.0	+02.735797	+01289.457	+030.66065	+000.98086
+0000101.5	+02.768147	+01251.375	+030.81691	+000.97946
+0000102.0	+02.798813	+01211.878	+030.97226	+000.97919
+0000102.5	+02.833031	+01175.976	+031.12713	+000.98002
+0000103.0	+02.871544	+01143.490	+031.28201	+000.98189
+0000103.5	+02.894191	+01098.797	+031.43739	+000.98467
+0000104.0	+02.928923	+01063.861	+031.59370	+000.98822
+0000104.5	+02.975703	+01037.678	+031.75131	+000.99241
+0000105.0	+03.018271	+01008.096	+031.91041	+000.99710
+0000105.5	+03.047556	+00970.213	+032.07104	+001.00215
+0000106.0	+03.078274	+00933.841	+032.23305	+001.00746
+0000106.5	+03.116984	+00903.019	+032.39611	+001.01297
+0000107.0	+03.163804	+00876.745	+032.55975	+001.01865
+0000107.5	+03.205303	+00847.539	+032.72345	+001.02452
+0000108.0	+03.232899	+00811.806	+032.88667	+001.03061
+0000108.5	+03.282107	+00787.357	+033.04893	+001.03700
+0000109.0	+03.324334	+00759.769	+033.20975	+001.04376
+0000109.5	+03.367254	+00732.978	+033.36872	+001.05095
+0000110.0	+03.393439	+00699.562	+033.52551	+001.05860
+0000110.5	+03.425076	+00669.407	+033.67988	+001.06674
+0000111.0	+03.473391	+00646.373	+033.83175	+001.07542
+0000111.5	+03.511970	+00620.218	+033.98114	+001.08464
+0000112.0	+03.556122	+00596.509	+034.12818	+001.09441
+0000112.5	+03.595489	+00571.929	+034.27307	+001.10470
+0000113.0	+03.632590	+00547.230	+034.41605	+001.11545
+0000113.5	+03.669949	+00523.165	+034.55734	+001.12654
+0000114.0	+03.707570	+00499.753	+034.69717	+001.13785
+0000114.5	+03.745634	+00477.555	+034.83579	+001.14925
+0000115.0	+03.784032	+00456.190	+034.97344	+001.16057
+0000115.5	+03.822700	+00435.416	+035.11033	+001.17165
+0000116.0	+03.861747	+00415.514	+035.24659	+001.18237
+0000116.5	+03.901233	+00396.594	+035.38231	+001.19259
+0000117.0	+03.941001	+00378.212	+035.51748	+001.20223
+0000117.5	+03.981054	+00360.403	+035.65204	+001.21122
+0000118.0	+04.021451	+00343.263	+035.78587	+001.21948
+0000118.5	+04.062457	+00327.302	+035.91889	+001.22699
+0000119.0	+04.103756	+00311.815	+036.05098	+001.23370
+0000119.5	+04.145351	+00296.803	+036.18203	+001.23960
+0000120.0	+04.187238	+00282.257	+036.31199	+001.24465

CONFIDENTIAL

T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000120.5	+04.229424	+00268.182	+036.44083	+001.24882
+0000121.0	+04.272105	+00254.935	+036.56854	+001.25211
+0000121.5	+04.315495	+00242.708	+036.69513	+001.25456
+0000122.0	+04.359198	+00230.850	+036.82059	+001.25620
+0000122.5	+04.403222	+00219.388	+036.94495	+001.25708
+0000123.0	+04.447570	+00208.329	+037.06821	+001.25724
+0000123.5	+04.492262	+00197.636	+037.19038	+001.25672
+0000124.0	+04.537299	+00187.338	+037.31154	+001.25562
+0000124.5	+04.552087	+00169.881	+037.43175	+001.25405
+0000125.0	+04.611504	+00161.861	+037.55108	+001.25210
+0000125.5	+04.671699	+00154.094	+037.66958	+001.24990
+0000126.0	+04.732693	+00146.569	+037.78734	+001.24752
+0000126.5	+04.794512	+00139.295	+037.90440	+001.24514
+0000127.0	+04.857140	+00132.262	+038.02079	+001.24270
+0000127.5	+04.920539	+00125.472	+038.13717	+001.23943
+0000128.0	+04.984780	+00118.917	+038.25394	+001.23526
+0000128.5	+05.050002	+00112.613	+038.37041	+001.23139
+0000129.0	+05.124955	+00113.032	+038.48539	+001.22906
+0000129.5	+05.220797	+00107.947	+038.59843	+001.22823
+0000130.0	+05.319082	+00102.921	+038.71022	+001.22776
+0000130.5	+05.419891	+00097.960	+038.82152	+001.22693
+0000131.0	+05.523319	+00093.072	+038.93265	+001.22545
+0000131.5	+05.629485	+00088.265	+039.04353	+001.22309
+0000132.0	+05.738498	+00083.548	+039.15388	+001.21996
+0000132.5	+05.850500	+00078.927	+039.26379	+001.21546
+0000133.0	+05.965472	+00074.407	+039.37246	+001.21079
+0000133.5	+06.084216	+00070.009	+039.48232	+001.19988
+0000134.0	+06.206260	+00065.724	+039.58922	+001.19409
+0000134.5	+06.331820	+00061.559	+039.69164	+001.19316
+0000135.0	+06.461205	+00057.522	+039.79463	+001.19275
+0000135.5	+06.594007	+00053.608	+039.89839	+001.19034
+0000136.0	+06.732575	+00049.856	+040.01977	+001.18359
+0000136.5	+06.874425	+00046.229	+040.12371	+001.19675
+0000137.0	+07.021432	+00042.752	+040.21104	+001.17441
+0000137.5	+07.171225	+00039.397	+040.29617	+001.19940
+0000138.0	+07.305949	+00036.001	+040.38766	+001.11941
+0000138.5	+07.422139	+00032.614	+040.71349	+000.87986
+0000139.0	+07.493252	+00029.121	+041.09340	+000.70148
+0000139.5	+07.538625	+00025.770	+040.94126	+000.83126
+0000140.0	+07.591548	+00022.792	+040.76225	+001.10077

T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000145.0	+08.242191	+00005.976	+041.48251	+001.21514
+0000150.0	+08.181383	+00001.308	+042.36162	+001.21404
+0000155.0	+07.677120	+00000.273	+043.22720	+001.24529
+0000160.0	+06.981458	+00000.061	+044.01537	+001.32768
+0000165.0	+05.745877	+00000.016	+045.09819	+001.35804
+0000170.0	+04.664208	+00000.005	+045.84134	+001.39913
+0000175.0	+04.007579	+00000.003	+046.76375	+001.45354
+0000180.0	+03.554117	+00000.001	+047.74277	+001.52812
+0000185.0	+03.217112	+00000.001	+048.78323	+001.55532
+0000190.0	+02.953433	+00000.001	+049.82109	+001.59840
+0000195.0	+02.739682	+00000.000	+050.88776	+001.64471
+0000200.0	+02.561804	+00000.000	+051.97819	+001.71692
+0000205.0	+02.411119	+00000.000	+053.09210	+001.76676
+0000210.0	+02.316743	+00000.000	+054.24885	+001.80655
+0000215.0	+02.238316	+00000.000	+055.46831	+001.85747
+0000220.0	+02.182032	+00000.000	+056.72275	+001.88319
+0000225.0	+02.130154	+00000.000	+057.96908	+001.92859
+0000230.0	+02.081690	+00000.000	+059.35511	+001.98401
+0000235.0	+02.035785	+00000.000	+060.73726	+002.02800
+0000240.0	+01.992051	+00000.000	+062.12795	+002.06840
+0000245.0	+01.950797	+00000.000	+063.56288	+002.12340
+0000250.0	+01.912132	+00000.000	+065.05421	+002.16792

BOOSTER
Table IVB

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS
250.00	198638.3	103.0273	7271.89
255.00	201935.8	106.5765	7560.18
260.00	205014.3	110.1215	7851.10
265.00	207874.4	113.6623	8144.57
270.00	210516.1	117.1993	8440.61
275.00	212939.6	120.7329	8739.15
280.00	215144.9	124.2634	9040.12
285.00	217132.3	127.7911	9343.44
290.00	218902.0	131.3162	9649.12
295.00	220453.9	134.8392	9957.06
300.00	221788.2	138.3602	10267.24
305.00	222905.0	141.8797	10579.62
310.00	223804.4	145.3978	10894.09
315.00	224486.4	148.9150	11210.65
320.00	224951.1	152.4314	11529.28
325.00	225198.4	155.9474	11849.84
	APEX OF BOOSTER		
328.33	225242.6	158.2878	12064.30
330.00	225228.5	159.4634	12172.32
335.00	225041.3	162.9795	12496.68
340.00	224636.7	166.4963	12822.85
345.00	224014.9	170.0137	13150.77
350.00	223175.7	173.5323	13480.41
355.00	222119.1	177.0524	13811.71
360.00	220844.9	180.5741	14144.62
365.00	219353.3	184.0978	14479.08
370.00	217643.8	187.6239	14815.00
375.00	215716.7	191.1526	15152.40
380.00	213571.7	194.6842	15491.21
385.00	211208.6	198.2191	15831.35
390.00	208627.3	201.7575	16172.71
395.00	205827.6	205.2998	16515.36
400.00	202809.5	208.8463	16859.15
405.00	199572.6	212.3971	17204.06
410.00	196116.8	215.9529	17550.04
415.00	192441.8	219.5137	17897.00
420.00	188547.3	223.0800	18244.94
425.00	184433.3	226.6520	18593.78
430.00	180099.3	230.2300	18943.42
435.00	175544.9	233.8144	19293.86

[redacted]

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS
440.00	170770.3	237.4056	19645.00
445.00	165774.7	241.0038	19996.81
450.00	160557.9	244.6094	20349.27
455.00	155119.7	248.2227	20702.22
460.00	149459.6	251.8440	21055.68
465.00	143577.3	255.4738	21409.59
470.00	137472.4	259.1121	21763.85
475.00	131144.5	262.7596	22118.48
480.00	124593.1	266.4166	22473.32
485.00	117817.8	270.0833	22828.34
490.00	110818.1	273.7601	23183.51
495.00	103593.8	277.4474	23538.75
497.43	100000.0	279.2440	23711.47

[redacted]

[redacted]

BOOSTER
Table VB

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
250.00	1518.537	5.885477	0.000	63.2903
255.00	1498.425	5.807528	0.000	64.7678
260.00	1479.420	5.733867	0.000	66.2842
265.00	1461.559	5.664642	0.000	67.8385
270.00	1444.880	5.599999	0.000	69.4298
275.00	1429.420	5.540081	0.000	71.0567
280.00	1415.215	5.485025	0.000	72.7175
285.00	1402.299	5.434965	0.000	74.4102
290.00	1390.704	5.390028	0.000	76.1326
295.00	1380.461	5.350329	0.000	77.8821
300.00	1371.598	5.315976	0.000	79.6559
305.00	1364.138	5.287063	0.000	81.4508
310.00	1358.103	5.263673	0.000	83.2634
315.00	1353.510	5.245874	0.000	85.0902
320.00	1350.374	5.233717	0.000	86.9274
325.00	1348.702	5.227239	0.000	88.7711
	APEX OF BOOSTER			
328.33	1348.405	5.226085	0.000	90.0000
330.00	1348.501	5.226459	0.000	90.6173
335.00	1349.771	5.231380	0.000	92.4621
340.00	1352.507	5.241986	0.000	94.3015
345.00	1356.703	5.258246	0.000	96.1315
350.00	1362.345	5.280113	0.000	97.9484
355.00	1369.416	5.307522	0.000	99.7484
360.00	1377.898	5.340394	0.000	101.5283
365.00	1387.766	5.378640	0.000	103.2847
370.00	1398.993	5.422154	0.000	105.0148
375.00	1411.551	5.470823	0.000	106.7159
380.00	1425.406	5.524522	0.000	108.3857
385.00	1440.525	5.583121	0.000	110.0220
390.00	1456.873	5.646483	0.000	111.6232
395.00	1474.414	5.714465	0.000	113.1879
400.00	1493.109	5.786922	0.000	114.7147
405.00	1512.920	5.863708	0.000	116.2029
410.00	1533.811	5.944674	0.000	117.6519
415.00	1555.742	6.029673	0.000	119.0613
420.00	1578.676	6.118560	0.000	120.4308
425.00	1602.576	6.211192	0.000	121.7606
430.00	1627.406	6.307427	0.000	123.0508
435.00	1653.131	6.407128	0.000	124.3019

[redacted]

[redacted]

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
440.00	1679.715	6.510163	0.000	125.5143
445.00	1707.127	6.616403	0.000	126.6886
450.00	1735.333	6.725725	0.000	127.8256
455.00	1764.304	6.838010	0.000	128.9260
460.00	1794.011	6.953144	0.000	129.9907
465.00	1824.424	7.071020	0.000	131.0205
470.00	1855.519	7.191534	0.001	132.0166
475.00	1887.268	7.314588	0.001	132.9797
480.00	1919.650	7.440090	0.002	133.9110
485.00	1952.640	7.567952	0.004	134.8114
490.00	1986.217	7.698088	0.010	135.6819
495.00	2020.358	7.830410	0.041	136.5234
497.43	2037.152	7.895499	0.079	136.9224

[redacted]

BOOSTER
Table VIB

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS	DRAG KG
	ALTITUDE EQUALS TO 100KMS.			
497.43	100000.0	279.2440	23711.47	1.78
500.00	96143.9	281.1456	23894.02	3.80
505.00	88468.6	284.8549	24249.23	19.37
510.00	80567.8	288.5754	24604.28	97.94
515.00	72444.4	292.3058	24958.96	377.96
520.00	64109.7	296.0414	25312.71	1186.73
525.00	55596.5	299.7676	25664.11	3198.16
530.00	46989.1	303.4486	26009.69	8623.14
535.00	38523.6	306.9855	26340.15	24753.86
540.00	30863.8	310.1073	26630.33	54413.50
545.00	25068.4	312.3967	26841.97	59123.62
550.00	21386.3	313.7820	26969.04	39958.43
555.00	19115.4	314.5687	27040.29	22881.62
560.00	17595.2	315.0305	27081.24	14241.47
565.00	16429.8	315.3247	27106.39	9098.62
570.00	15441.8	315.5237	27122.38	7529.32
575.00	14570.6	315.6590	27132.32	6626.41
580.00	13779.3	315.7509	27138.05	6104.46
585.00	13045.6	315.8131	27140.95	5794.94
590.00	12356.6	315.8549	27141.92	5602.46
595.00	11703.4	315.8827	27141.58	5475.15
600.00	11080.5	315.9011	27140.44	5384.93
605.00	10483.3	315.9132	27138.71	5317.98
610.00	9908.6	315.9211	27136.68	5269.61
615.00	9354.1	315.9263	27134.46	5232.27
620.00	8817.9	315.9298	27132.17	5201.30
625.00	8298.2	315.9322	27129.85	5175.02
630.00	7793.8	315.9338	27127.53	5152.59
635.00	7303.4	315.9350	27125.23	5133.53
640.00	6826.3	315.9359	27122.97	5117.27
645.00	6361.3	315.9367	27120.78	5103.34
650.00	5908.0	315.9373	27118.61	5091.23
655.00	5465.5	315.9379	27116.53	5080.70
660.00	5033.4	315.9384	27114.47	5071.30
665.00	4611.1	315.9389	27112.48	5062.81
670.00	4198.1	315.9394	27110.51	5055.05
675.00	3794.1	315.9398	27108.59	5047.71
680.00	3398.6	315.9402	27106.72	5040.87
685.00	3011.4	315.9406	27104.91	5034.28
690.00	2631.8	315.9410	27103.12	5028.01

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS	DRAG KG
695.00	2259.8	315.9414	27101.38	5021.89
700.00	1894.9	315.9417	27099.65	5015.98
705.00	1536.8	315.9421	27097.97	5010.23
710.00	1185.2	315.9425	27096.33	5004.56
715.00	839.6	315.9428	27094.71	4999.13
720.00	500.0	315.9431	27093.11	4993.78
725.00	166.0	315.9435	27091.54	4988.55
727.52	-0.0	315.9436	27090.75	4985.69

BOOSTER
Table VIIB

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
		ALTITUDE EQUALS TO 100KMS.		
497.43	2037.152	7.895499	0.079	136.9224
500.00	2055.033	7.964802	0.169	137.3371
505.00	2090.163	8.100958	0.862	138.1238
510.00	2125.418	8.237600	4.357	138.8847
515.00	2159.532	7.639760	16.814	139.6209
520.00	2189.072	7.115190	52.792	140.3347
525.00	2205.688	6.657522	142.271	141.0299
530.00	2189.184	6.511181	383.603	141.7153
535.00	2074.290	6.472854	1101.183	142.4137
540.00	1719.796	5.636581	2420.602	143.2005
545.00	1147.451	3.841567	2630.133	144.2854
550.00	689.965	2.353035	1777.564	146.0331
555.00	425.849	1.472931	1017.896	148.8126
560.00	293.483	1.024240	633.536	152.7090
565.00	230.940	0.809207	478.347	157.2488
570.00	194.055	0.678067	395.843	161.8159
575.00	170.403	0.592036	348.374	166.0109
580.00	154.506	0.532816	320.933	169.5792
585.00	143.170	0.489528	304.661	172.4389
590.00	134.581	0.455958	294.541	174.6293
595.00	127.723	0.428627	287.848	176.2492
600.00	122.024	0.405580	283.105	177.4136
605.00	117.145	0.385542	279.585	178.2306
610.00	112.873	0.367989	277.042	178.7915
615.00	109.039	0.352341	275.079	179.1688
620.00	105.558	0.338228	273.451	179.4175
625.00	102.372	0.325409	272.069	179.5777
630.00	99.438	0.313702	270.890	179.6783
635.00	96.720	0.302953	269.888	179.7400
640.00	94.185	0.293039	269.033	179.7771
645.00	91.809	0.283851	268.301	179.7987
650.00	89.569	0.275301	267.664	179.8116
655.00	87.449	0.267315	267.110	179.8190
660.00	85.436	0.259833	266.616	179.8238
665.00	83.518	0.252802	266.170	179.8268
670.00	81.689	0.246181	265.762	179.8287
675.00	79.940	0.239930	265.376	179.8299
680.00	78.269	0.234019	265.017	179.8310
685.00	76.672	0.228422	264.670	179.8317
690.00	75.145	0.223110	264.341	179.8322

[redacted]

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
695.00	73.686	0.218061	264.019	179.8327
700.00	72.293	0.213254	263.708	179.8331
705.00	70.964	0.208670	263.405	179.8336
710.00	69.698	0.204289	263.108	179.8336
715.00	68.494	0.200093	262.822	179.8345
720.00	67.349	0.196067	262.541	179.8347
725.00	66.263	0.192194	262.266	179.8352
727.52	65.736	0.190294	262.115	179.8349

[redacted]

BOOSTER
Table VIIIB

TIME SECONDS	XDST M/SEC	YDST M/SEC	ZDST M/SEC	AT M/SEC SQ.
	ALTITUDE EQUALS TO 100KMS.			
497.43	1216.503	-1679.953	36.9312	-0.0036
500.00	1213.747	-1704.252	37.0472	-0.0076
505.00	1208.286	-1751.563	37.2736	-0.0388
510.00	1202.525	-1798.661	37.4916	-0.1964
515.00	1195.774	-1844.504	37.6642	-0.7579
520.00	1186.202	-1886.212	37.6916	-2.3796
525.00	1169.457	-1916.676	37.3336	-6.4128
530.00	1135.267	-1918.525	36.0163	-17.2908
535.00	1050.962	-1835.280	31.9005	-49.6354
540.00	848.239	-1543.354	21.0779	-109.1077
545.00	544.714	-1057.683	4.3636	-118.5522
550.00	306.986	-666.140	-8.8636	-80.1230
555.00	169.156	-439.494	-16.5497	-45.8813
560.00	96.740	-326.237	-20.5449	-28.5564
565.00	57.737	-273.246	-22.6263	-18.2442
570.00	32.697	-241.390	-23.9524	-15.0975
575.00	15.770	-220.219	-24.8569	-13.2870
580.00	4.211	-205.389	-25.4905	-12.2404
585.00	-3.664	-194.410	-25.9440	-11.6198
590.00	-8.957	-185.872	-26.2742	-11.2338
595.00	-12.440	-178.969	-26.5192	-10.9786
600.00	-14.665	-173.225	-26.7049	-10.7976
605.00	-16.029	-168.335	-26.8498	-10.6634
610.00	-16.818	-164.094	-26.9666	-10.5664
615.00	-17.225	-160.327	-27.0647	-10.4915
620.00	-17.387	-156.939	-27.1503	-10.4294
625.00	-17.398	-153.864	-27.2275	-10.3767
630.00	-17.319	-151.054	-27.2992	-10.3318
635.00	-17.190	-148.467	-27.3672	-10.2935
640.00	-17.034	-146.069	-27.4328	-10.2609
645.00	-16.868	-143.831	-27.4969	-10.2330
650.00	-16.700	-141.731	-27.5599	-10.2087
655.00	-16.534	-139.752	-27.6223	-10.1876
660.00	-16.374	-137.879	-27.6843	-10.1688
665.00	-16.221	-136.103	-27.7460	-10.1517
670.00	-16.076	-134.413	-27.8074	-10.1362
675.00	-15.939	-132.805	-27.8687	-10.1215
680.00	-15.809	-131.274	-27.9298	-10.1078
685.00	-15.687	-129.816	-27.9908	-10.0945
690.00	-15.573	-128.428	-28.0517	-10.0820
695.00	-15.466	-127.107	-28.1124	-10.0697

TIME SECONDS	XDST M/SEC	YDST M/SEC	ZDST M/SEC	AT M/SEC SQ.
700.00	-15.366	-125.852	-28.1729	-10.0578
705.00	-15.274	-124.661	-28.2333	-10.0463
710.00	-15.189	-123.532	-28.2935	-10.0349
715.00	-15.111	-122.465	-28.3534	-10.0241
720.00	-15.039	-121.456	-28.4132	-10.0133
725.00	-14.975	-120.506	-28.4727	-10.0028
727.52	-14.945	-120.047	-28.5026	-9.9971

CAPSULE
Table IC

T SEC	X M	Y M	Z M	VG M/SEC
+0000135.0	+0035732.2	+0061846.2	+0001401.7	+2013.8720
+0000140.0	+0042744.5	+0070132.9	+0001631.0	+2324.6371
+0000145.0	+0050274.7	+0078902.9	+0001978.0	+2294.6727
+0000150.0	+0057794.6	+0087437.9	+0002319.7	+2257.2591
+0000155.0	+0065303.0	+0095738.7	+0002661.0	+2222.2746
+0000160.0	+0072799.3	+0103805.6	+0002983.5	+2186.1088
+0000165.0	+0080283.3	+0111656.8	+0003340.3	+2152.4836
+0000170.0	+0087768.7	+0119258.8	+0003699.5	+2117.8116
+0000175.0	+0095305.9	+0126585.4	+0004041.7	+2085.7513
+0000180.0	+0102722.0	+0133776.2	+0004415.7	+2052.7425
+0000185.0	+0110169.3	+0140701.4	+0004785.6	+2019.6692
+0000190.0	+0117622.8	+0147390.8	+0005132.5	+1988.0836
+0000195.0	+0125089.2	+0153826.2	+0005508.0	+1957.6035
+0000200.0	+0132511.0	+0160068.9	+0005885.8	+1925.6135
+0000205.0	+0139945.1	+0166061.8	+0006248.7	+1896.3395
+0000210.0	+0147362.6	+0171843.4	+0006602.8	+1867.1998
+0000215.0	+0154759.7	+0177393.6	+0007025.1	+1838.6849
+0000220.0	+0162180.7	+0182708.9	+0007413.6	+1811.2591
+0000225.0	+0169555.5	+0187806.3	+0007792.9	+1782.1808
+0000230.0	+0176933.8	+0192678.6	+0008176.3	+1758.2773
+0000235.0	+0184353.2	+0197275.6	+0008577.6	+1732.0697
+0000240.0	+0191698.1	+0201704.9	+0009001.0	+1705.4295
+0000245.0	+0199036.7	+0205907.5	+0009359.1	+1682.5244
+0000250.0	+0206365.3	+0209893.6	+0009795.5	+1660.6479
+0000255.0	+0213710.3	+0213623.0	+0010186.8	+1638.8937
+0000260.0	+0221072.9	+0217100.6	+0010603.8	+1615.8245
+0000265.0	+0228348.9	+0220435.6	+0011009.4	+1597.0397
+0000270.0	+0235671.2	+0223488.9	+0011424.1	+1579.5946
+0000275.0	+0243013.8	+0226277.4	+0011894.3	+1558.2079
+0000280.0	+0250267.4	+0228934.6	+0012272.3	+1542.3807
+0000285.0	+0257519.1	+0231358.1	+0012694.0	+1527.3614
+0000290.0	+0264824.4	+0233486.5	+0013205.8	+1511.9328
+0000295.0	+0272096.4	+0235430.9	+0013545.5	+1497.6642
+0000300.0	+0279309.5	+0237189.8	+0013968.5	+1484.7947

[redacted]

CAPSULE
Table IIC

T SEC	X SPH M	Y SPH M	Z SPH M	VG DOT M/SEC SQ
+0000135.0	+0035392.1	+0061943.3	+0001380.5	+053.18847
+0000140.0	+0042281.1	+0070273.1	+0001616.9	+010.32358
+0000145.0	+0049658.4	+0079099.4	+0001948.0	-007.44180
+0000150.0	+0057004.6	+0087702.9	+0002277.8	-007.16247
+0000155.0	+0064331.8	+0096072.1	+0002619.6	-007.17104
+0000160.0	+0071627.6	+0104221.5	+0002948.8	-006.84602
+0000165.0	+0078891.6	+0112156.3	+0003293.5	-007.04763
+0000170.0	+0086143.3	+0119856.3	+0003645.5	-006.52694
+0000175.0	+0093386.6	+0127327.2	+0003972.9	-006.50850
+0000180.0	+0100599.9	+0134587.8	+0004325.6	-006.59979
+0000185.0	+0107794.2	+0141623.9	+0004677.2	-006.52652
+0000190.0	+0114961.7	+0148443.0	+0005022.9	-006.06056
+0000195.0	+0122124.6	+0155030.2	+0005383.8	-006.30848
+0000200.0	+0129257.9	+0161407.1	+0005740.6	-006.19152
+0000205.0	+0136373.7	+0167561.0	+0006094.8	-005.83772
+0000210.0	+0143474.6	+0173496.9	+0006449.3	-005.77836
+0000215.0	+0150560.5	+0179211.7	+0006820.9	-005.50837
+0000220.0	+0157629.4	+0184709.4	+0007203.2	-005.71252
+0000225.0	+0164678.5	+0189991.2	+0007572.8	-005.35531
+0000230.0	+0171713.1	+0195054.3	+0007943.5	-004.47665
+0000235.0	+0178757.7	+0199879.7	+0008325.4	-005.80718
+0000240.0	+0185757.6	+0204515.3	+0008705.6	-004.59144
+0000245.0	+0192750.9	+0208927.3	+0009062.9	-004.77697
+0000250.0	+0199741.4	+0213113.8	+0009465.4	-004.14859
+0000255.0	+0206728.9	+0217079.3	+0009865.7	-004.58283
+0000260.0	+0213686.4	+0220848.8	+0010229.5	-004.23326
+0000265.0	+0220642.3	+0224385.9	+0010631.9	-003.54040
+0000270.0	+0227602.4	+0227695.2	+0011047.5	-003.93785
+0000275.0	+0234547.4	+0230799.3	+0011439.4	-004.28140
+0000280.0	+0241464.7	+0233703.1	+0011828.9	-002.73720
+0000285.0	+0248387.5	+0236378.8	+0012245.4	-002.77688
+0000290.0	+0255311.0	+0238832.8	+0012651.8	-002.81329
+0000295.0	+0262219.5	+0241085.5	+0013036.9	-003.15760
+0000300.0	+0269106.3	+0243135.5	+0013450.9	-001.81634

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CAPSULE
Table IIIC

T SEC	MACH	Q KG/M SQ	THETA P DEG	THETA Y DEG
+0000135.0	+06.451154	+00057.290	+039.36837	+001.46079
+0000140.0	+08.099100	+00025.224	+040.37167	+002.21275
+0000145.0	+08.891961	+00006.937	+040.98271	+001.64180
+0000150.0	+08.746982	+00001.138	+041.78492	+001.74825
+0000155.0	+08.042030	+00000.211	+042.55763	+001.78971
+0000160.0	+07.308824	+00000.045	+043.30361	+001.73910
+0000165.0	+05.590348	+00000.011	+044.07156	+002.00165
+0000170.0	+04.619691	+00000.004	+045.08596	+001.84686
+0000175.0	+04.012340	+00000.002	+045.86693	+001.92745
+0000180.0	+03.580955	+00000.001	+046.77962	+002.07109
+0000185.0	+03.254258	+00000.001	+047.63116	+002.01831
+0000190.0	+02.997150	+00000.001	+048.62845	+002.11426
+0000195.0	+02.788165	+00000.000	+049.66896	+002.20337
+0000200.0	+02.623892	+00000.000	+050.51028	+002.18463
+0000205.0	+02.526625	+00000.000	+051.64960	+002.24855
+0000210.0	+02.451441	+00000.000	+052.67737	+002.29640
+0000215.0	+02.390454	+00000.000	+053.75032	+002.47652
+0000220.0	+02.333111	+00000.000	+054.95487	+002.50541
+0000225.0	+02.275699	+00000.000	+055.93556	+002.45140
+0000230.0	+02.226777	+00000.000	+057.39632	+002.60849
+0000235.0	+02.176720	+00000.000	+058.49467	+002.64033
+0000240.0	+02.132166	+00000.000	+059.60931	+002.61220
+0000245.0	+02.093398	+00000.000	+060.99773	+002.60671
+0000250.0	+02.056823	+00000.000	+062.38971	+003.06122
+0000255.0	+02.021247	+00000.000	+063.73245	+002.78422
+0000260.0	+01.984806	+00000.000	+065.01751	+002.71332
+0000265.0	+01.954407	+00000.000	+066.59359	+003.25029
+0000270.0	+01.926354	+00000.000	+068.14114	+003.01222
+0000275.0	+01.894131	+00000.000	+069.35609	+003.00265
+0000280.0	+01.868894	+00000.000	+071.01863	+003.16065
+0000285.0	+01.845958	+00000.000	+072.60406	+003.28817
+0000290.0	+01.822721	+00000.000	+074.14345	+003.14950
+0000295.0	+01.801375	+00000.000	+075.66608	+003.12267
+0000300.0	+01.782181	+00000.000	+077.36010	+003.38956

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CAPSULE
Table IVC

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA F.L. DEGREES
300.00	1484.781	5.754648	0.000	74.8882
305.00	1473.603	5.711325	0.000	76.4956
310.00	1463.678	5.672857	0.000	78.1260
315.00	1455.029	5.639335	0.000	79.7771
320.00	1447.676	5.610838	0.000	81.4464
325.00	1441.638	5.587436	0.000	83.1310
330.00	1436.930	5.569187	0.000	84.8282
335.00	1433.562	5.556136	0.000	86.5349
340.00	1431.545	5.548317	0.000	88.2479
345.00	1430.883	5.545750	0.000	89.9642
345.10	1430.883	5.545752	0.000	90.0000
350.00	1431.577	5.548442	0.000	91.6804
355.00	1433.627	5.556385	0.000	93.3934
360.00	1437.026	5.569560	0.000	95.0998
365.00	1441.766	5.587932	0.000	96.7968
370.00	1447.836	5.611456	0.000	98.4811
375.00	1455.219	5.640072	0.000	100.1499
380.00	1463.899	5.673712	0.000	101.8006
385.00	1473.854	5.712294	0.000	103.4305
390.00	1485.061	5.755730	0.000	105.0374
395.00	1497.494	5.803921	0.000	106.6190
400.00	1511.128	5.856762	0.000	108.1735
405.00	1525.933	5.914143	0.000	109.6993
410.00	1541.880	5.975947	0.000	111.1949
415.00	1558.936	6.042054	0.000	112.6590
420.00	1577.072	6.112342	0.000	114.0906
425.00	1596.254	6.186687	0.000	115.4891
430.00	1616.450	6.264962	0.000	116.8537
435.00	1637.628	6.347043	0.000	118.1842
440.00	1659.756	6.432805	0.000	119.4801
445.00	1682.801	6.522125	0.000	120.7416
450.00	1706.734	6.614882	0.000	121.9687
455.00	1731.523	6.710959	0.000	123.1615
460.00	1757.139	6.810238	0.000	124.3203
465.00	1783.552	6.912609	0.000	125.4457
470.00	1810.735	7.017963	0.000	126.5381
475.00	1838.660	7.126196	0.000	127.5980
480.00	1867.303	7.237206	0.000	128.6261
485.00	1896.636	7.350897	0.000	129.6231
490.00	1926.638	7.467178	0.000	130.5897
495.00	1957.286	7.585959	0.000	131.5267

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
500.00	1988.557	7.707158	0.000	132.4348
505.00	2020.431	7.830694	0.001	133.3148
510.00	2052.889	7.956492	0.001	134.1675
515.00	2085.912	8.084481	0.002	134.9938
520.00	2119.482	8.214592	0.004	135.7944
525.00	2153.583	8.346760	0.010	136.5701
530.00	2188.197	8.480915	0.045	137.3218
532.41	2205.030	8.546154	0.093	137.6751

CAPSULE
Table VC

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS
300.00	243127.1	145.3774	13964.10
305.00	244948.7	149.1036	14403.76
310.00	246555.3	152.8275	14845.67
315.00	247947.3	156.5492	15289.80
320.00	249124.6	160.2692	15736.13
325.00	250087.5	163.9878	16184.53
330.00	250835.8	167.7052	16634.96
335.00	251369.7	171.4219	17087.40
340.00	251689.2	175.1380	17541.76
345.00	251794.3	178.8539	17998.00
345.10	251794.2	178.9314	18007.54
350.00	251684.9	182.5699	18456.06
355.00	251361.3	186.2863	18915.88
360.00	250823.2	190.0035	19377.42
365.00	250070.6	193.7216	19840.61
370.00	249103.6	197.4412	20305.35
375.00	247922.0	201.1624	20771.66
380.00	246525.7	204.8856	21239.46
385.00	244914.7	208.6109	21708.67
390.00	243088.9	212.3389	22179.18
395.00	241048.3	216.0698	22651.06
400.00	238792.6	219.8040	23124.14
405.00	236321.6	223.5416	23598.42
410.00	233635.3	227.2831	24073.82
415.00	230733.4	231.0287	24550.26
420.00	227615.8	234.7788	25027.73
425.00	224282.4	238.5337	25506.15
430.00	220732.8	242.2937	25985.42
435.00	216966.9	246.0592	26465.53
440.00	212984.3	249.8304	26946.37
445.00	208784.8	253.6078	27427.91
450.00	204368.4	257.3915	27910.14
455.00	199734.4	261.1821	28392.88
460.00	194882.9	264.9797	28876.15
465.00	189813.3	268.7848	29359.89
470.00	184525.3	272.5975	29843.97
475.00	179018.7	276.4185	30328.45
480.00	173293.0	280.2479	30813.13
485.00	167347.9	284.0861	31297.99
490.00	161183.1	287.9335	31783.00
495.00	154798.1	291.7904	32268.06

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS
500.00	148192.4	295.6572	32753.14
505.00	141365.7	299.5341	33238.15
510.00	134317.6	303.4218	33723.01
515.00	127047.4	307.3204	34207.68
520.00	119554.8	311.2303	34692.06
525.00	111839.3	315.1520	35176.12
530.00	103900.2	319.0859	35659.80
532.41	100000.1	320.9832	35892.38

[redacted]

CAPSULE
Table VIC

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA F.L. DEGREES
	ALTITUDE EQUALS TO 100KMS.			
532.41	2205.030	8.546154	0.093	137.6751
535.00	2223.297	8.616952	0.215	138.0502
540.00	2258.788	8.754509	1.260	138.7560
545.00	2294.211	8.747479	7.069	139.4403
559.46	2361.215	7.005971	223.907	141.3129
550.00	2327.195	8.010132	28.034	140.1030
555.00	2353.692	7.427826	90.053	140.7487
560.00	2360.347	7.003398	251.871	141.3809
565.00	2306.496	7.040246	787.028	142.0119
570.00	2070.578	6.605975	2196.184	142.6819
575.00	1508.947	5.008783	3604.138	143.4449
575.48	1446.265	4.834351	3662.030	143.5775
580.00	893.540	3.045006	2793.056	144.7430
585.00	523.411	1.812903	1565.891	146.8455
590.00	353.652	1.199693	926.075	148.0985
595.00	269.636	0.893664	641.704	149.9357
600.00	226.588	0.739441	524.374	150.8770
605.00	198.808	0.644085	462.652	152.1857
610.00	179.821	0.587506	440.672	152.7453
615.00	165.252	0.534621	412.935	153.3201
620.00	154.300	0.495992	397.778	154.1484
625.00	145.365	0.464490	387.124	155.4486
630.00	138.527	0.439996	382.685	156.1616
635.00	132.992	0.417940	378.060	156.4203
640.00	128.039	0.399475	376.249	156.7470
645.00	123.202	0.382383	373.987	157.7059
650.00	118.754	0.366968	372.272	158.7941
651.16	117.818	0.363592	371.900	159.0017
651.16	117.818	0.363592	371.900	159.0017
651.35	117.228	0.361606	368.898	158.9688
651.35	117.228	0.361606	368.898	158.9688
652.00	113.982	0.350791	350.496	158.6584
657.00	99.435	0.303093	279.546	157.6197
662.00	92.996	0.282554	257.780	158.1443
667.00	89.007	0.270618	250.106	159.7427
672.00	86.234	0.262452	248.282	161.0822
677.00	84.084	0.254993	246.922	161.8103
682.00	81.981	0.248448	246.602	163.1066
687.00	8[illegible].037	0.242157	246.133	164.3207
692.00	78.338	0.236276	245.847	165.3548

[redacted]

TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
697.00	76.644	0.230743	245.702	166.6438
702.00	74.944	0.225326	245.284	168.7218
707.00	73.323	0.220818	246.404	171.0214
707.39	73.190	0.220484	246.525	171.1815
707.39	73.190	0.220484	246.525	171.1815
709.39	77.906	0.234793	284.767	172.2722
709.39	77.906	0.234793	284.767	172.2722
710.08	61.908	0.186595	180.936	171.2781
710.08	61.908	0.186595	180.936	171.2781
713.39	31.374	0.094382	47.034	167.2543
713.39	31.374	0.094382	47.034	167.2543
716.49	11.536	0.032475	5.607	150.1512
716.49	11.536	0.032475	5.607	150.1512
717.00	10.919	0.030432	4.927	148.6907
722.00	10.433	0.029228	4.570	149.3819
727.00	10.294	0.029143	4.568	150.9821
732.00	10.167	0.029062	4.568	152.6120
737.00	10.057	0.028985	4.569	154.1282
742.00	9.972	0.028905	4.570	155.3752
747.00	9.899	0.028826	4.570	156.5046
752.00	9.840	0.028746	4.570	157.5093
757.00	9.792	0.028667	4.570	158.3804
762.00	9.754	0.028588	4.570	159.1159
767.00	9.726	0.028509	4.571	159.7015
772.00	9.705	0.028430	4.571	160.1775
777.00	9.691	0.028352	4.571	160.5688
782.00	9.681	0.028273	4.571	160.8923
787.00	9.676	0.028194	4.571	161.1596
792.00	9.676	0.028116	4.571	161.3759
797.00	9.682	0.028037	4.570	161.5367
802.00	9.692	0.027959	4.570	161.6584
807.00	9.708	0.027880	4.570	161.7400
812.00	9.730	0.027802	4.570	161.7724
817.00	9.761	0.027722	4.569	161.7387
822.00	9.807	0.027642	4.569	161.6474
827.00	9.869	0.027564	4.568	161.3536
832.00	9.949	0.027485	4.568	160.8271
837.00	10.046	0.027407	4.568	160.0749
842.00	10.160	0.027329	4.568	159.1327
847.00	10.279	0.027251	4.569	158.1564
852.00	10.403	0.027173	4.569	157.1379

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TIME SECONDS	VG. M/SEC.	MACH	Q. KG/M SQ.	THETA P.L. DEGREES
857.00	10.538	0.027095	4.569	156.0275
862.00	10.680	0.027017	4.570	154.8713
867.00	10.824	0.026939	4.570	153.7168
872.00	10.957	0.026863	4.571	152.6548
877.00	11.070	0.026787	4.572	151.7549
882.00	11.172	0.026709	4.572	150.9473
887.00	11.265	0.026632	4.573	150.2188
892.00	11.349	0.026554	4.573	149.5536
897.00	11.436	0.026476	4.573	148.8869
902.00	11.537	0.026399	4.573	148.1416
907.00	11.632	0.026322	4.573	147.4485
912.00	11.717	0.026246	4.573	146.8245
917.00	11.790	0.026171	4.574	146.2881
922.00	11.849	0.026094	4.574	145.8360
927.00	11.901	0.026020	4.574	145.4459
932.00	11.924	0.025946	4.575	145.2060
937.00	11.913	0.025873	4.576	145.1468
942.00	11.860	0.025802	4.577	145.3093
947.00	11.739	0.025736	4.580	145.8112
952.00	11.444	0.025668	4.582	147.3244
957.00	11.133	0.025596	4.582	149.0835
962.00	10.842	0.025524	4.582	150.8819
967.00	10.593	0.025450	4.581	152.5390
972.00	10.404	0.025376	4.579	153.8580
977.00	10.377	0.025296	4.575	153.9392
982.00	10.443	0.025222	4.574	153.2448
987.00	10.590	0.025149	4.572	151.9562
992.00	10.825	0.025077	4.570	150.1307
997.00	11.161	0.025004	4.569	147.8223
998.76	12.245	0.028222	0.583	149.8180

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CAPSULE
Table VIIC

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS	DRAG KG
	ALTITUDE EQUALS TO 100KMS.			
532.41	100000.1	320.9832	35892.38	0.42
535.00	95737.3	323.0322	36142.98	0.99
540.00	87350.0	326.9912	36625.60	5.78
545.00	78738.6	330.9631	37107.58	32.43
559.46	52675.9	342.4778	38491.27	1032.45
550.00	69896.4	334.9505	37589.07	128.85
555.00	60864.9	338.9361	38067.90	414.62
560.00	51680.1	342.9040	38542.07	1161.40
565.00	42483.4	346.7942	39004.41	3628.55
570.00	33722.8	350.4207	39432.85	10143.20
575.00	26468.5	353.3531	39780.96	16794.86
575.48	25892.1	353.5807	39806.36	17085.74
580.00	21667.0	355.2247	39999.71	12708.56
585.00	18849.8	356.2611	40115.73	7226.21
590.00	17066.6	356.8734	40176.43	3739.45
595.00	15755.5	357.2986	40211.53	2382.52
600.00	14685.5	357.6260	40234.29	1869.29
605.00	13754.9	357.8977	40258.61	1611.42
610.00	12916.8	358.1324	40285.83	1515.40
615.00	12149.6	358.3424	40330.07	1404.35
620.00	11434.1	358.5317	40383.72	1342.66
625.00	10756.8	358.7024	40433.66	1299.22
630.00	10109.4	358.8576	40476.86	1278.95
635.00	9487.9	359.0041	40515.85	1258.98
640.00	8889.0	359.1432	40551.31	1249.41
645.00	8309.9	359.2741	40583.44	1238.81
650.00	7748.1	359.3940	40616.52	1230.50
651.16	7620.1	359.4204	40624.61	1228.72
651.16	7620.1	359.4204	40624.61	1228.72
651.35	7599.3	359.4246	40625.94	1794.28
651.35	7599.3	359.4246	40625.94	1794.28
652.00	7529.0	359.4392	40630.52	1703.15
657.00	7039.4	359.5449	40664.57	1353.33
662.00	6595.4	359.6418	40696.07	1246.25
667.00	6171.4	359.7294	40723.68	1208.28
672.00	5758.7	359.8074	40748.08	1198.91
677.00	5354.9	359.8797	40773.19	1191.86
682.00	4959.0	359.9463	40798.92	1189.91
687.00	4570.1	360.0064	40823.44	1187.29
692.00	4187.9	360.0609	40848.87	1185.58

[redacted]

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS	DRAG KG
697.00	3811.9	360.1102	40873.68	1184.59
702.00	3441.6	360.1529	40893.00	1182.30
707.00	3076.6	360.1874	40905.43	1187.49
707.39	3048.1	360.1898	40906.12	1188.05
707.39	3048.1	360.1898	40906.12	803.26
709.39	2898.2	360.2013	40909.10	928.69
709.39	2898.2	360.2013	40909.10	1373.18
710.08	2849.4	360.2050	40909.88	4879.18
710.08	2849.4	360.2050	40909.88	4879.18
713.39	2720.1	360.2189	40911.21	1268.18
713.39	2720.1	360.2189	40911.21	1268.18
716.49	2663.5	360.2292	40911.70	1326.75
716.49	2663.5	360.2292	40911.70	1326.75
717.00	2658.6	360.2307	40911.79	1165.82
722.00	2613.6	360.2456	40912.90	1081.31
727.00	2568.7	360.2594	40914.44	1080.96
732.00	2523.5	360.2724	40916.45	1080.99
737.00	2478.3	360.2847	40919.06	1081.19
742.00	2432.9	360.2961	40922.38	1081.24
747.00	2387.6	360.3069	40926.51	1081.31
752.00	2342.1	360.3170	40931.51	1081.35
757.00	2296.6	360.3265	40937.36	1081.38
762.00	2251.1	360.3355	40944.13	1081.43
767.00	2205.4	360.3438	40951.74	1081.49
772.00	2159.8	360.3517	40960.17	1081.50
777.00	2114.1	360.3591	40969.37	1081.51
782.00	2068.3	360.3660	40979.31	1081.53
787.00	2022.5	360.3724	40990.00	1081.51
792.00	1976.6	360.3782	41001.36	1081.49
797.00	1930.6	360.3835	41013.39	1081.46
802.00	1884.7	360.3881	41026.15	1081.43
807.00	1838.6	360.3920	41039.49	1081.37
812.00	1792.4	360.3952	41053.38	1081.32
817.00	1746.1	360.3976	41067.78	1081.16
822.00	1699.6	360.3990	41082.59	1081.03
827.00	1652.9	360.3994	41097.75	1080.96
832.00	1605.9	360.3985	41113.11	1080.93
837.00	1558.8	360.3964	41128.66	1080.93
842.00	1511.4	360.3930	41144.24	1080.98
847.00	1463.8	360.3883	41159.68	1081.03
852.00	1415.9	360.3823	41174.80	1081.08

[redacted]

TIME SECONDS	ALT. METERS	RANGE NAUT. MILES	CART. Z METERS	DRAG KG
857.00	1367.9	360.3751	41189.48	1081.16
862.00	1319.6	360.3667	41203.66	1081.25
867.00	1271.1	360.3572	41217.31	1081.35
872.00	1222.4	360.3466	41230.56	1081.61
877.00	1173.8	360.3353	41243.62	1081.77
882.00	1124.9	360.3234	41256.65	1081.86
887.00	1076.1	360.3108	41269.72	1081.95
892.00	1027.2	360.2979	41282.90	1082.05
897.00	978.3	360.2845	41296.31	1082.01
902.00	929.2	360.2708	41310.16	1082.09
907.00	880.1	360.2567	41324.50	1082.14
912.00	831.0	360.2422	41339.38	1082.18
917.00	781.9	360.2276	41354.81	1082.32
922.00	732.8	360.2126	41370.72	1082.30
927.00	683.8	360.1975	41386.97	1082.41
932.00	634.9	360.1823	41403.45	1082.57
937.00	585.9	360.1670	41420.03	1082.76
942.00	537.0	360.1517	41436.56	1083.05
947.00	488.4	360.1366	41452.86	1083.78
952.00	440.0	360.1222	41468.37	1084.20
957.00	392.1	360.1088	41482.70	1084.24
962.00	344.5	360.0964	41495.82	1084.17
967.00	297.4	360.0849	41507.91	1083.94
972.00	250.4	360.0742	41519.17	1083.61
977.00	203.8	360.0639	41530.37	1082.66
982.00	157.1	360.0537	41541.41	1082.28
987.00	110.5	360.0430	41553.50	1081.53
992.00	63.8	360.0316	41566.86	1081.47
997.00	16.6	360.0193	41581.83	1081.11
998.76	-0.0	360.0147	41587.55	138.00

[redacted]

CAPSULE

Table VIIIC

TIME SECONDS	XDST M/SEC	YDST M/SEC	ZDST M/SEC	AT M/SEC SQ.
		ALTITUDE EQUALS TO 100KMS.		
532.41	1266.087	-1855.418	59.4327	-0.0036
535.00	1262.955	-1879.909	59.5256	-0.0083
540.00	1256.806	-1927.132	59.7033	-0.0489
545.00	1250.274	-1974.014	59.8621	-0.2745
559.46	1211.142	-2077.839	58.8988	-8.7364
550.00	1242.134	-2018.547	59.3132	-1.0903
555.00	1230.252	-2057.310	59.7023	-3.5004
560.00	1207.908	-2078.781	58.7343	-9.8275
565.00	1154.965	-2047.866	55.5167	-30.7041
570.00	1012.559	-1857.680	45.6448	-85.8297
575.00	717.481	-1379.640	25.1594	-142.1146
575.48	684.459	-1326.324	22.3415	-144.5761
580.00	404.611	-849.616	1.3922	-107.5374
585.00	217.830	-529.524	-14.3740	-61.1408
590.00	138.579	-379.316	-20.5369	-31.6425
595.00	96.559	-306.076	-25.1206	-20.1604
600.00	76.776	-267.709	-25.2719	-15.8176
605.00	62.363	-243.533	-25.2792	-13.6355
610.00	53.980	-226.377	-23.0293	-12.8240
615.00	47.103	-213.243	-19.9132	-11.8834
620.00	41.201	-203.685	-19.3657	-11.3614
625.00	35.351	-196.320	-20.9219	-10.9938
630.00	31.746	-190.407	-22.0185	-10.8222
635.00	29.627	-185.403	-22.8031	-10.6533
640.00	27.558	-180.982	-23.5395	-10.5722
645.00	24.211	-176.981	-23.9919	-10.4826
650.00	20.684	-173.314	-23.3932	-10.4123
651.16	20.009	-172.527	-23.3309	-10.3979
651.16	20.009	-172.527	-23.3309	-10.3972
651.35	19.938	-171.942	-23.3326	-15.1828
651.35	19.938	-171.942	-23.3326	-15.1828
652.00	19.806	-160.656	-23.3722	-14.4113
657.00	18.204	-154.213	-23.9500	-11.4516
662.00	15.781	-148.326	-24.6859	-10.5[illegible]
667.00	12.404	-145.150	-25.5019	-10.2[illegible]
672.00	9.764	-142.972	-25.8313	-10.1445
677.00	8.116	-141.168	-25.4828	-10.0[illegible]
682.00	5.816	-139.526	-25.7093	-10.0[illegible]
687.00	3.708	-137.964	-25.8015	-10.0466
692.00	1.855	-136.557	-25.5474	-10.0[illegible]
697.00	-0.02[illegible]	-135.192	-26.2651	-10.0[illegible]

[redacted]

TIME SECONDS	XDST M/SEC	YDST M/SEC	ZDST M/SEC	AT M/SEC SQ.
702.00	-2.742	-133.855	-27.6035	-10.0044
707.00	-5.636	-132.490	-28.9834	-10.0483
707.39	-5.832	-132.372	-29.0911	-10.0530
707.39	-5.832	-132.372	-29.0911	-6.7970
709.39	-7.279	-137.142	-29.4268	-7.8584
709.39	-7.279	-137.142	-29.4268	-12.4203
710.08	-5.925	-121.182	-30.0282	-44.1318
710.08	-5.925	-121.182	-30.0282	-44.1318
713.39	-3.783	-90.670	-31.1974	-11.4706
713.39	-3.783	-90.670	-31.1974	-11.4706
716.49	-1.912	-70.214	-31.5137	-12.0004
716.49	-1.912	-70.214	-31.5137	-12.0004
717.00	-1.883	-69.548	-31.5195	-10.5447
722.00	-2.239	-69.281	-31.5028	-9.7803
727.00	-2.613	-69.389	-31.4654	-9.7772
732.00	-2.987	-69.499	-31.4128	-9.7774
737.00	-3.341	-69.608	-31.3396	-9.7793
742.00	-3.649	-69.716	-31.2399	-9.7797
747.00	-3.945	-69.825	-31.1290	-9.7804
752.00	-4.229	-69.934	-31.0104	-9.7807
757.00	-4.503	-70.042	-30.8880	-9.7810
762.00	-4.768	-70.151	-30.7649	-9.7814
767.00	-5.015	-70.261	-30.6568	-9.7820
772.00	-5.254	-70.371	-30.5564	-9.7821
777.00	-5.493	-70.482	-30.4604	-9.7822
782.00	-5.734	-70.592	-30.3687	-9.7824
787.00	-5.981	-70.702	-30.2825	-9.7822
792.00	-6.241	-70.812	-30.1992	-9.7820
797.00	-6.515	-70.921	-30.1177	-9.7817
802.00	-6.807	-71.030	-30.0440	-9.7815
807.00	-7.122	-71.138	-29.9793	-9.7809
812.00	-7.462	-71.246	-29.9256	-9.7805
817.00	-7.832	-71.354	-29.8849	-9.7790
822.00	-8.279	-71.460	-29.8599	-9.7779
827.00	-8.761	-71.565	-29.8507	-9.7772
832.00	-9.264	-71.669	-29.8590	-9.7769
837.00	-9.782	-71.773	-29.8862	-9.7769
842.00	-10.308	-71.876	-29.9340	-9.7774
847.00	-10.834	-71.977	-30.0282	-9.7779
852.00	-11.351	-72.077	-30.1589	-9.7[illegible]
857.00	-11.854	-72.178	-30.3010	-9.7790

[redacted]

TIME SECONDS	XDST M/SEC	YDST M/SEC	ZDST M/SEC	AT M/SEC SQ.
862.00	-12.332	-72.279	-30.4464	-9.7798
867.00	-12.779	-72.380	-30.5871	-9.7807
872.00	-13.162	-72.483	-30.7000	-9.7830
877.00	-13.466	-72.589	-30.7721	-9.7845
882.00	-13.731	-72.696	-30.8257	-9.7853
887.00	-13.963	-72.804	-30.8613	-9.7862
892.00	-14.168	-72.914	-30.8791	-9.7871
897.00	-14.360	-73.024	-30.8710	-9.7867
902.00	-14.557	-73.134	-30.8265	-9.7874
907.00	-14.735	-73.244	-30.7734	-9.7878
912.00	-14.894	-73.354	-30.7194	-9.7882
917.00	-15.032	-73.465	-30.6721	-9.7895
922.00	-15.154	-73.576	-30.6410	-9.7893
927.00	-15.276	-73.687	-30.6393	-9.7903
932.00	-15.366	-73.797	-30.6636	-9.7918
937.00	-15.413	-73.907	-30.7179	-9.7935
942.00	-15.410	-74.018	-30.8067	-9.7961
947.00	-15.325	-74.125	-30.9491	-9.8025
952.00	-15.019	-74.235	-31.2408	-9.8065
957.00	-14.678	-74.347	-31.5525	-9.8068
962.00	-14.345	-74.459	-31.8519	-9.8062
967.00	-14.054	-74.573	-32.1156	-9.8042
972.00	-13.835	-74.686	-32.3214	-9.8011
977.00	-13.839	-74.803	-32.3589	-9.7926
982.00	-13.977	-74.917	-32.2927	-9.7888
987.00	-14.222	-75.032	-32.1421	-9.7851
992.00	-14.573	-75.146	-31.9079	-9.7818
997.00	-15.036	-75.260	-31.5860	-9.7786
998.76	-15.397	-76.399	-31.4470	-1.2482

[redacted]

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