APPENDIX D

FINAL SITE COORDINATES FOR DEBUNCHER RING.
COORDINATES ARE GIVEN AT BEND CENTER
AND DOWNSTREAM END OF EACH MAGNET.
COORDINATES ARE LISTED IN CLOCKWISE MANNER.

MAIN RING STATION A0 IS X=0.0, Y=0.0

3 OCT 1983. DE JOHNSON

NAME	LENGTH(IN)	X(FEET)	Y(FEET)	THETA(RAD)	S(METERS)
D1O		-467.852	-1393.030	.523599	0.0000
D1OQ	27.60	-467.277	-1392.034	.523599	.3505
D1Q2		-460.581	-1380.437	.523599	
D1Q2	27.60	-460.006	-1379.441	.523599	4.7828
D1Q3		-453.310	-1367.843	.523599	
D1Q3	27.60	-452.735	-1366.847	.523599	9.2151
D1Q4		-446.039	-1355.250	.523599	
D1Q4	27.60	-445.464	-1354.254	.523599	13.6474
D1Q5		-438.769	-1342.656	.523599	
D1Q5	32.60	-438.089	-1341.480	.523599	18.1432
D1Q6		-431.498	-1330.063	.523599	
D1Q6	32.60	-430.819	-1328.886	.523599	22.5755
D1Q7		-424.227	-1317.469	.523599	
D1Q7	27.60	-423.652	-1316.473	.523599	26.9443
D1B7		-420.591	-1311.171	.523599	
D1B7	65.37	-419.009	-1308.950	.618799	29.6402
D1Q8		-416.372	-1305.246	.618799	
D1Q8	27.60	-415.705	-1304.310	.618799	31.3766
D1B8		-412.153	-1299.322	.618799	
D1B8	65.37	-410.368	-1297.262	.713998	34.0725
D1Q9		-407.390	-1293.826	.713998	
D1Q9	27.60	-406.637	-1292.957	.713998	35.8089
D1Q10		-397.868	-1282.836	.713998	
D1Q10	27.60	-397.115	-1281.967	.713998	40.2412
D1Q11		-388.345	-1271.846	.713998	
D1Q11	27.60	-387.592	-1270.977	.713998	44.6735
D1B11		-383.582	-1266.349	.713998	
D1B11	65.37	-381.609	-1264.468	.809198	47.3693
D1Q12		-378.319	-1261.331	.809198	
D1Q12	27.60	-377.486	-1260.537	.809198	49.1058
D1B12		-373.055	-1256.312	.809198	
D1B12	65.37	-370.912	-1254.627	.904398	51.8016
D1Q13		-367.338	-1251.816	.904398	
D1Q13	27.60	-366.434	-1251.105	.904398	53.5381
D1B13		-361.621	-1247.320	.904398	
D1B13	65.37	-359.328	-1245.846	.999598	56.2339
D1Q14		-355.503	-1243.388	.999598	
D1Q14	27.60	-354.535	-1242.766	.999598	57.9704
D1B14		-349.384	-1239.456	.999598	
D1B14	65.37	-346.962	-1238.207	1.094797	60.6662
D1Q15		-342.920	-1236.123	1.094797	
D1Q15	27.60	-341.898	-1235.596	1.094797	62.4027
D1B15		-336.456	-1232.791	1.094797	
D1B15	65.37	-333.925	-1231.778	1.189997	65.0985
D1Q16		-329.704	-1230.088	1.189997	
D1Q16	27.60	-328.636	-1229.660	1.189997	66.8350
D1B16		-322.952	-1227.385	1.189997	
D1B16	65.37	-320.336	-1226.617	1.285197	69.5308
D1Q17		-315.974	-1225.336	1.285197	
D1Q17	27.60	-314.870	-1225.012	1.285197	71.2673
D1B17		-308.995	-1223.287	1.285197	
D1B17	65.37	-306.319	-1222.771	1.380397	73.9631
D1Q18		-301.854	-1221.910	1.380397	
D1Q18	27.60	-300.725	-1221.693	1.380397	75.6996
D1B18		-294.712	-1220.534	1.380397	
D1B18	65.37	-291.999	-1220.275	1.475597	78.3954
D1Q19		-287.472	-1219.843	1.475597	
D1Q19	27.60	-286.328	-1219.733	1.475597	80.1319
D1B19		-280.232	-1219.151	1.475597	
D1B19	65.37	-277.507	-1219.151	1.570796	82.8277

NAME	LENGTH (IN)	X (FEET)	Y (FEET)	RHO (KGAUSS)	S (METERS)
D2OQ		-272.959	-1219.151	1.570796	
D2O		-272.959	-1219.151	1.570796	
D2OQ	27.60	-271.809	-1219.151	1.570796	84.56
D2B19		-265.687	-1219.151	1.570796	
D2B19	65.37	-262.973	-1219.410	1.665996	87.260
D2Q19		-258.447	-1219.843	1.665996	
D2Q19	27.60	-257.302	-1219.952	1.665996	88.99
D2B18		-251.207	-1220.534	1.665996	
D2B18	65.37	-248.530	-1221.050	1.761196	91.692
D2Q18		-244.065	-1221.910	1.761196	
D2Q18	27.60	-242.936	-1222.128	1.761196	93.42
D2B17		-236.924	-1223.287	1.761196	
D2B17	65.37	-234.308	-1224.055	1.856396	96.12
D2Q17		-229.945	-1225.336	1.856396	
D2Q17	27.60	-228.842	-1225.660	1.856396	97.861
D2B16		-222.967	-1227.385	1.856396	
D2B16	65.37	-220.437	-1228.398	1.951595	100.55
D2Q16		-216.215	-1230.088	1.951595	
D2Q16	27.60	-215.148	-1230.515	1.951595	102.293
D2B15		-209.463	-1232.791	1.951595	
D2B15	65.37	-207.041	-1234.040	2.046795	104.98
D2Q15		-202.999	-1236.123	2.046795	
D2Q15	27.60	-201.977	-1236.650	2.046795	106.725
D2B14		-196.535	-1239.456	2.046795	
D2B14	65.37	-194.241	-1240.930	2.141995	109.42
D2Q14		-190.416	-1243.388	2.141995	
D2Q14	27.60	-189.449	-1244.010	2.141995	111.158
D2B13		-184.298	-1247.320	2.141995	
D2B13	65.37	-182.155	-1249.005	2.237195	113.85
D2Q13		-178.581	-1251.816	2.237195	
D2Q13	27.60	-177.677	-1252.527	2.237195	115.59
D2B12		-172.864	-1256.312	2.237195	
D2B12	65.37	-170.891	-1258.193	2.332395	118.284
D2Q12		-167.600	-1261.331	2.332395	
D2Q12	27.60	-166.768	-1262.124	2.332395	120.02
D2B11		-162.337	-1266.349	2.332395	
D2B11	65.37	-160.552	-1268.409	2.427594	122.718
D2Q11		-157.574	-1271.846	2.427594	
D2Q11	27.60	-156.821	-1272.715	2.427594	124.45
D2Q10		-148.051	-1282.836	2.427594	
D2Q10	27.60	-147.298	-1283.705	2.427594	128.887
D2Q9		-138.529	-1293.826	2.427594	
D2Q9	27.60	-137.775	-1294.695	2.427594	133.31
D2B8		-133.766	-1299.322	2.427594	
D2B8	65.37	-132.185	-1301.543	2.522794	136.015
D2Q8		-129.547	-1305.246	2.522794	
D2Q8	27.60	-128.880	-1306.183	2.522794	137.75
D2B7		-125.328	-1311.171	2.522794	
D2B7	65.37	-123.966	-1313.531	2.617994	140.44
D2Q7		-121.692	-1317.469	2.617994	
D2Q7	27.60	-121.117	-1318.465	2.617994	142.184
D2Q6		-114.421	-1330.063	2.617994	
D2Q6	32.60	-113.742	-1331.239	2.617994	146.67
D2Q5		-107.150	-1342.656	2.617994	
D2Q5	32.60	-106.471	-1343.833	2.617994	151.112
D2Q4		-99.879	-1355.250	2.617994	
D2Q4	27.60	-99.304	-1356.246	2.617994	155.48
D2Q3		-92.609	-1367.843	2.617994	
D2Q3	27.60	-92.034	-1368.839	2.617994	159.913
D2Q2		-85.338	-1380.437	2.617994	
D2Q2	27.60	-84.763	-1381.432	2.617994	164.34

NAME	LENGTH(IN)	X(FEET)	Y(FEET)	THETA(RAD)	S(METERS)
D3OQ		-78.067	-1393.030	2.617994	
D3O		-78.067	-1393.030	2.617994	
D3OQ	27.60	-77.492	-1394.026	2.617994	168.7779
D3Q2		-70.796	-1405.623	2.617994	
D3Q2	27.60	-70.221	-1406.619	2.617994	173.2102
D3Q3		-63.525	-1418.217	2.617994	
D3Q3	27.60	-62.950	-1419.213	2.617994	177.6425
D3Q4		-56.254	-1430.810	2.617994	
D3Q4	27.60	-55.679	-1431.806	2.617994	182.0748
D3Q5		-48.984	-1443.404	2.617994	
D3Q5	32.60	-48.304	-1444.580	2.617994	186.5706
D3Q6		-41.713	-1455.997	2.617994	
D3Q6	32.60	-41.034	-1457.174	2.617994	191.0029
D3Q7		-34.442	-1468.591	2.617994	
D3Q7	27.60	-33.867	-1469.587	2.617994	195.3717
D3B7		-30.806	-1474.889	2.617994	
D3B7	65.37	-29.673	-1477.369	2.713194	198.0675
D3Q8		-27.784	-1481.505	2.713194	
D3Q8	27.60	-27.307	-1482.551	2.713194	199.8040
D3B8		-24.763	-1488.121	2.713194	
D3B8	65.37	-23.871	-1490.696	2.808394	202.4998
D3Q9		-22.384	-1494.993	2.808394	
D3Q9	27.60	-22.008	-1496.080	2.808394	204.2363
D3Q10		-17.628	-1508.735	2.808394	
D3Q10	27.60	-17.252	-1509.822	2.808394	208.6686
D3Q11		-12.872	-1522.477	2.808394	
D3Q11	27.60	-12.496	-1523.564	2.808394	213.1009
D3B11		-10.493	-1529.350	2.808394	
D3B11	65.37	-9.851	-1531.999	2.903593	215.7967
D3Q12		-8.779	-1536.418	2.903593	
D3Q12	27.60	-8.508	-1537.536	2.903593	217.5332
D3B12		-7.064	-1543.486	2.903593	
D3B12	65.37	-6.676	-1546.184	2.998793	220.2290
D3Q13		-6.029	-1550.685	2.998793	
D3Q13	27.60	-5.865	-1551.823	2.998793	221.9655
D3B13		-4.994	-1557.884	2.998793	
D3B13	65.37	-4.864	-1560.606	3.093993	224.6610
D3Q14		-4.648	-1565.148	3.093993	
D3Q14	27.60	-4.593	-1566.297	3.093993	226.3978
D3B14		-4.302	-1572.413	3.093993	
D3B14	65.37	-4.432	-1575.136	3.189193	229.0936
D3Q15		-4.648	-1579.678	3.189193	
D3Q15	27.60	-4.703	-1580.826	3.189193	230.8301
D3B15		-4.994	-1586.942	3.189193	
D3B15	65.37	-5.382	-1589.640	3.284392	233.5259
D3Q16		-6.029	-1594.141	3.284392	
D3Q16	27.60	-6.193	-1595.279	3.284392	235.2624
D3B16		-7.064	-1601.340	3.284392	
D3B16	65.37	-7.707	-1603.989	3.379592	237.9582
D3Q17		-8.779	-1608.408	3.379592	
D3Q17	27.60	-9.050	-1609.525	3.379592	239.6947
D3B17		-10.493	-1615.476	3.379592	
D3B17	65.37	-11.385	-1618.052	3.474792	242.3905
D3Q18		-12.872	-1622.349	3.474792	
D3Q18	27.60	-13.248	-1623.435	3.474792	244.1270
D3B18		-15.251	-1629.221	3.474792	
D3B18	65.37	-16.383	-1631.701	3.569992	246.8228
D3Q19		-18.272	-1635.837	3.569992	
D3Q19	27.60	-18.750	-1636.883	3.569992	248.5593
D3B19		-21.293	-1642.453	3.569992	
D3B19	65.37	-22.656	-1644.813	3.665192	251.2551

NAME	LENGTH(IN)	X(FEET)	Y(FEET)	Z(METRES)	
D4OQ		-24.930	-1648.751	3.665192	
D4O		-24.930	-1648.751	3.665192	
D4OQ	27.60	-25.505	-1649.747	3.665192	252.9916
D4B19		-28.566	-1655.050	3.665192	
D4B19	65.37	-30.147	-1657.270	3.760391	255.6874
D4Q19		-32.785	-1660.974	3.760391	
D4Q19	27.60	-33.452	-1661.911	3.760391	257.423
D4B18		-37.004	-1666.898	3.760391	
D4B18	65.37	-38.789	-1668.958	3.855591	260.119
D4Q18		-41.766	-1672.395	3.855591	
D4Q18	27.60	-42.519	-1673.264	3.855591	261.8562
D4B17		-46.529	-1677.891	3.855591	
D4B17	65.37	-48.502	-1679.772	3.950791	264.552
D4Q17		-51.793	-1682.910	3.950791	
D4Q17	27.60	-52.625	-1683.704	3.950791	266.2885
D4B16		-57.056	-1687.929	3.950791	
D4B16	65.37	-59.199	-1689.614	4.045991	268.984
D4Q16		-62.773	-1692.425	4.045991	
D4Q16	27.60	-63.677	-1693.136	4.045991	270.7208
D4B15		-68.490	-1696.921	4.045991	
D4B15	65.37	-70.783	-1698.394	4.141190	273.416
D4Q15		-74.608	-1700.853	4.141190	
D4Q15	27.60	-75.576	-1701.475	4.141190	275.1531
D4B14		-80.727	-1704.785	4.141190	
D4B14	65.37	-83.150	-1706.034	4.236390	277.848
D4Q14		-87.191	-1708.117	4.236390	
D4Q14	27.60	-88.213	-1708.644	4.236390	279.585
D4B13		-93.656	-1711.450	4.236390	
D4B13	65.37	-96.186	-1712.463	4.331590	282.2812
D4Q13		-100.408	-1714.153	4.331590	
D4Q13	27.60	-101.475	-1714.581	4.331590	284.017
D4B12		-107.159	-1716.856	4.331590	
D4B12	65.37	-109.775	-1717.624	4.426790	286.7135
D4Q12		-114.138	-1718.905	4.426790	
D4Q12	27.60	-115.241	-1719.229	4.426790	288.450
D4B11		-121.116	-1720.954	4.426790	
D4B11	65.37	-123.793	-1721.470	4.521990	291.1458
D4Q11		-128.257	-1722.331	4.521990	
D4Q11	27.60	-129.387	-1722.548	4.521990	292.882
D4Q10		-142.536	-1725.083	4.521990	
D4Q10	27.60	-143.666	-1725.300	4.521990	297.3146
D4Q9		-156.815	-1727.835	4.521990	
D4Q9	27.60	-157.944	-1728.052	4.521990	301.746
D4B8		-163.957	-1729.211	4.521990	
D4B8	65.37	-166.670	-1729.470	4.617189	304.4427
D4Q8		-171.197	-1729.902	4.617189	
D4Q8	27.60	-172.341	-1730.012	4.617189	306.179
D4B7		-178.437	-1730.594	4.617189	
D4B7	65.37	-181.162	-1730.594	4.712389	308.879
D4Q7		-185.710	-1730.594	4.712389	
D4Q7	27.60	-186.860	-1730.594	4.712389	310.6115
D4Q6		-200.251	-1730.594	4.712389	
D4Q6	32.60	-201.610	-1730.594	4.712389	315.107
D4Q5		-214.793	-1730.594	4.712389	
D4Q5	32.60	-216.151	-1730.594	4.712389	319.5396
D4Q4		-229.335	-1730.594	4.712389	
D4Q4	27.60	-230.485	-1730.594	4.712389	323.908
LGRF		-236.605	-1730.594	4.712389	
LGRF	84.00	-240.105	-1730.594	4.712389	326.8408
D4Q3		-243.876	-1730.594	4.712389	
D4Q3	27.60	-245.026	-1730.594	4.712389	328.340
D4Q2		-258.418	-1730.594	4.712389	
D4Q2	27.60	-259.568	-1730.594	4.712389	332.773
LGRF		-265.689	-1730.594	4.712389	
LGRF	84.00	-269.189	-1730.594	4.712389	335.705

NAME	LENGTH (IN)	X (FEET)	Y (FEET)	THETA (RAD)	
D50Q		-272.960	-1730.594	4.712389	
D50		-272.960	-1730.594	4.712389	
D50Q	27.60	-274.110	-1730.594	4.712389	337.2053
LGRF		-280.230	-1730.594	4.712389	
LGRF	84.00	-283.730	-1730.594	4.712389	340.1377
D5Q2		-287.501	-1730.594	4.712389	
D5Q2	27.60	-288.651	-1730.594	4.712389	341.6376
LGRF		-294.772	-1730.594	4.712389	
LGRF	84.00	-298.272	-1730.594	4.712389	344.5700
D5Q3		-302.043	-1730.594	4.712389	
D5Q3	27.60	-303.193	-1730.594	4.712389	346.0699
LGRF		-309.314	-1730.594	4.712389	
LGRF	84.00	-312.814	-1730.594	4.712389	349.0023
D5Q4		-316.585	-1730.594	4.712389	
D5Q4	27.60	-317.735	-1730.594	4.712389	350.5022
LGRF		-323.751	-1730.594	4.712389	
LGRF	84.00	-327.251	-1730.594	4.712389	353.4029
D5Q5		-331.126	-1730.594	4.712389	
D5Q5	32.60	-332.485	-1730.594	4.712389	354.9980
LGRF		-338.397	-1730.594	4.712389	
LGRF	84.00	-341.897	-1730.594	4.712389	357.8669
D5Q6		-345.668	-1730.594	4.712389	
D5Q6	32.60	-347.026	-1730.594	4.712389	359.4303
LGRF		-353.043	-1730.594	4.712389	
LGRF	84.00	-356.543	-1730.594	4.712389	362.3310
D5Q7		-360.210	-1730.594	4.712389	
D5Q7	27.60	-361.360	-1730.594	4.712389	363.7991
D5B7		-367.482	-1730.594	4.712389	
D5B7	65.37	-370.196	-1730.335	4.807589	366.4949
D5Q8		-374.722	-1729.902	4.807589	
D5Q8	27.60	-375.867	-1729.793	4.807589	368.2314
D5B8		-381.962	-1729.211	4.807589	
D5B8	65.37	-384.639	-1728.695	4.902789	370.9272
D5Q9		-389.104	-1727.835	4.902789	
D5Q9	27.60	-390.233	-1727.617	4.902789	372.6637
SMRF		-393.827	-1726.924	4.902789	
SMRF	59.06	-396.243	-1726.459	4.902789	374.5293
SMRF		-398.659	-1725.993	4.902789	
SMRF	59.06	-401.076	-1725.527	4.902789	376.0293
D5Q10		-403.383	-1725.083	4.902789	
D5Q10	27.60	-404.512	-1724.865	4.902789	377.0960
SMRF		-408.106	-1724.172	4.902789	
SMRF	59.06	-410.522	-1723.707	4.902789	378.9616
D5Q11		-417.662	-1722.331	4.902789	
D5Q11	27.60	-418.791	-1722.113	4.902789	381.5283
D5B11		-424.803	-1720.954	4.902789	
D5B11	65.37	-427.418	-1720.186	4.997988	384.2241
D5Q12		-431.781	-1718.905	4.997988	
D5Q12	27.60	-432.885	-1718.581	4.997988	385.9606
D5B12		-438.760	-1716.856	4.997988	
D5B12	65.37	-441.290	-1715.843	5.093188	388.6564
D5Q13		-445.512	-1714.153	5.093188	
D5Q13	27.60	-446.579	-1713.726	5.093188	390.3929
D5B13		-452.263	-1711.450	5.093188	
D5B13	65.37	-454.686	-1710.201	5.188388	393.0887
D5Q14		-458.728	-1708.117	5.188388	
D5Q14	27.60	-459.750	-1707.590	5.188388	394.8252
D5B14		-465.192	-1704.785	5.188388	
D5B14	65.37	-467.485	-1703.311	5.283588	397.5210
D5Q15		-471.311	-1700.853	5.283588	
D5Q15	27.60	-472.278	-1700.231	5.283588	399.2575
D5B15		-477.429	-1696.921	5.283588	
D5B15	65.37	-479.572	-1695.236	5.378788	401.9533
D5Q16		-483.146	-1692.425	5.378788	
D5Q16	27.60	-484.050	-1691.714	5.378788	403.6898
D5B16		-488.863	-1687.929	5.378788	
D5B16	65.37	-490.835	-1686.048	5.473987	406.3856
D5Q17		-494.126	-1682.910	5.473987	
D5Q17	27.60	-494.959	-1682.117	5.473987	408.1221
D5B17		-499.390	-1677.891	5.473987	
D5B17	65.37	-501.175	-1675.831	5.569187	410.8179
D5Q18		-504.153	-1672.395	5.569187	
D5Q18	27.60	-504.906	-1671.526	5.569187	412.5544
D5B18		-508.915	-1666.898	5.569187	
D5B18	65.37	-510.497	-1664.678	5.664387	415.2502
D5Q19		-513.134	-1660.974	5.664387	
D5Q19	27.60	-513.801	-1660.037	5.664387	416.9867
D5B19		-517.353	-1655.050	5.664387	
D5B19	65.37	-518.716	-1652.689	5.759587	419.6825

D60Q		-520.989	-1648.751	5.759587	
D60		-520.989	-1649.751	5.759587	
D60Q	27.60	-521.564	-1647.755	5.759587	421.4190
D6B19		-524.626	-1642.453	5.759587	
D6B19	65.37	-525.758	-1639.973	5.854787	424.1148
D6Q19		-527.647	-1635.837	5.854787	
D6Q19	27.60	-528.125	-1634.791	5.854787	425.851
D6B18		-530.668	-1629.221	5.854787	
D6B18	65.37	-531.560	-1626.646	5.949986	428.547
D6Q18		-533.047	-1622.349	5.949986	
D6Q18	27.60	-533.423	-1621.262	5.949986	430.2834
D6B17		-535.426	-1615.476	5.949986	
D6B17	65.37	-536.068	-1612.827	6.045186	432.979
D6Q17		-537.140	-1608.408	6.045186	
D6Q17	27.60	-537.411	-1607.290	6.045186	434.7159
D6B16		-538.855	-1601.340	6.045186	
D6B16	65.37	-539.243	-1598.642	6.140386	437.411
D6Q16		-539.890	-1594.141	6.140386	
D6Q16	27.60	-540.054	-1593.003	6.140386	439.1482
D6B15		-540.925	-1586.942	6.140386	
D6B15	65.37	-541.055	-1584.219	6.235586	441.844
D6Q15		-541.271	-1579.677	6.235586	
D6Q15	27.60	-541.326	-1578.529	6.235586	443.5805
D6B14		-541.617	-1572.413	6.235586	
D6B14	65.37	-541.487	-1569.690	6.330785	446.276
D6Q14		-541.271	-1565.148	.047600	
D6Q14	27.60	-541.216	-1563.999	.047600	448.012
D6B13		-540.925	-1557.884	.047600	
D6B13	65.37	-540.537	-1555.185	.142800	450.708
D6Q13		-539.890	-1550.685	.142800	
D6Q13	27.60	-539.726	-1549.546	.142800	452.445
D6B12		-538.855	-1543.486	.142800	
D6B12	65.37	-538.212	-1540.837	.238000	455.1409
D6Q12		-537.140	-1536.418	.238000	
D6Q12	27.60	-536.869	-1535.300	.238000	456.877
D6B11		-535.426	-1529.350	.238000	
D6B11	65.37	-534.534	-1526.774	.333199	459.5732
D6Q11		-533.047	-1522.477	.333199	
D6Q11	27.60	-532.671	-1521.390	.333199	461.305
D6Q10		-528.291	-1508.735	.333199	
D6Q10	27.60	-527.915	-1507.648	.333199	465.7420
D6Q9		-523.535	-1494.993	.333199	
D6Q9	27.60	-523.159	-1493.907	.333199	470.174
D6B8		-521.156	-1488.120	.333199	
D6B8	65.37	-520.024	-1485.641	.428399	472.870
D6Q8		-518.135	-1481.505	.428399	
D6Q8	27.60	-517.657	-1480.459	.428399	474.6064
D6B7		-515.113	-1474.889	.428399	
D6B7	65.37	-513.751	-1472.529	.523599	477.302
D6Q7		-511.477	-1468.591	.523599	
D6Q7	27.60	-510.902	-1467.595	.523599	479.0389
D6Q6		-504.206	-1455.997	.523599	
D6Q6	32.60	-503.527	-1454.821	.523599	483.534
D6Q5		-496.935	-1443.404	.523599	
D6Q5	32.60	-496.256	-1442.227	.523599	487.9670
D6Q4		-489.664	-1430.810	.523599	
D6Q4	27.60	-489.089	-1429.814	.523599	492.335
D6Q3		-482.394	-1418.217	.523599	
D6Q3	27.60	-481.819	-1417.221	.523599	496.7681
D6Q2		-475.123	-1405.623	.523599	
D6Q2	27.60	-474.548	-1404.627	.523599	501.200
D10Q		-467.852	-1393.030	.523599	
D10	0.00	-467.852	-1393.030	.523599	505.2822

* END OF LISTING **

APPENDIX D.

Synch Run Debuncher Lattice

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 DRSM   RUN
C       DEBUNCHER RING LATTICE          A. G. RUGGIERO
C       THERE ARE --- THREE --- LONG STRAIGHT SECTIONS WITH ZERO DISPERSION
C       EACH LONG STRAIGHT SECTION HAS BEEN BRIDGED WITH REGULAR CELL QUADS
C       HARMONIC NUMBER IS      90
C       TWO QUADRUPOLE LENGTHS :  27.6 AND 32.6 INCHES
C       APRIL 9,1983.           A. G. RUGGIERO
C
 BRHO   =               29.6501
 BO     =               1.7
 RHOI   =               BO              /               BRHO
 LB     =               1.660402
C
 LQ     =               0.35052
 LQS    =               0.41402
C
 KF     =               0.336518
 KD     =               -0.329293
C
 OD     DRF             1.0354310
 OS     DRF             0.3
 O      DRF             0.7354310
 LC     DRF             1.660402
 S      DRF             0.3731264
 R      DRF             0.1667764
 Z      DRF             0.3604264
C
 B      MAG             LB              0.              1.              RHOI            $
C
 QF     MAG             LQ              KF              1.
 QD     MAG             LQ              KD              1.
C
 SF     SXTP            0.0             0.14073         1.
 SD     SXTP            0.0             -0.21342        1.
 .OF1   BML             OS      SF      O
 .OD1   BML             OS      SD      O
 .OF2   BML             O       SF      OS
 .OD2   BML             O       SD      OS
 .C     BML             QF      .OF1    B       .OD2    QD      QD      .OD1    B       .OF2    QF
 .C1    BML             QF      OD      B       OD      QD      QD      OD      B       .OF2    QF
 .LA    BML             S       S       S       S       S       S       S       S       S       S
 .LB    BML             R       R       R       R       R       R       R       R       R       R
 .LZ    BML             Z       Z       Z       Z       Z       Z       Z       Z       Z       Z
 .CH    BML             QF      .OF1    B       .OD2    QD
 .CS    BML             QF      .OF1    LC      .OD2    QD      QD      .OD1    LC      .OF2    QF
 .CS1   BML             QF1     .LA     QD1     QD1     .LA     QF2
 .CS2   BML             QF2     .LA     QD2     QD2     .LB     QF3
 .CS3   BML             QF3     .LZ     QD3     QD3     .LB     QF
 .CT    BML             .CS1    .CS2    .CS3    .C1     .CS
 KF1    =               0.377469
 KD1    =               0.347140
 KF2    =               0.358912
 KD2    =               0.386791
 KF3    =               0.324942
 KD3    =               0.324586
 QF1    MAG             LQ              KF1             1.
 QF2    MAG             LQ              KF2             1.
 QF3    MAG             LQS             KF3             1.
 QD1    MAG             LQ              -KD1            1.
 QD2    MAG             LQ              -KD2            1.
 QD3    MAG             LQS             -KD3            1.
 .SP    BML             .CT     .C      .C      .C      .C      .CH
        CYC         -3  .SP
 DP     =               -0.02
```

```
V     PVEC                                                    DP
CHR   SUB
AGR   FXPT   2  -3 V     .SP          1

      INCR   1     DP          .005
      END
      CALL   9     CHR
      FIN
      STOP
```

SYNCH RUN DRSM

```
                DEBUNCHER RING LATTICE      A. G. RUGGIERO
                THERE ARE --- THREE I--- LONG STRAIGHT SECTIONS WITH ZERO DISPERSION
                EACH LONG STRAIGHT SECTION HAS BEEN BRIDGED WITH REGULAR CELL QUADS
                HARMONIC NUMBER IS          90
                TWO QUADRUPOLE LENGTHS :  27.6 AND 32.6 INCHES
                APRIL 9,1983.               A. G. RUGGIERO

***   BRHO    =             //  29.6501
***   BO      =             //  1.7
***   RHOI    =             //  BO          /          BRHO
***   LB      =             //  1.660402

***   LQ      =             //  0.35052
***   LQS     =             //  0.41402

***   KF      =             //  0.336518
***   KD      =             //  -0.329283

***   QQ      DRF           //  1.0354310
***   QS      DRF           //  0.3
***   Q       DRF           //  0.7354310
***   LC      DRF           //  1.660402
***   S       DRF           //  0.3731264
***   R       DRF           //  0.3667764
***   Z       DRF           //  0.3604264

***   B       MAG           //  LB          Q.          1.          RHOI      $

***   QF      MAG           //  LQ          KF          1.
***   QD      MAG           //  LQ          KD          1.

***   SF      SXTP          //  0.0         0.14073     1.
***   SD      SXTP          //  0.0         -0.21342    1.
***   .QF1    BML           //  QS    SF    Q
***   .QD1    BML           //  QS    SD    Q
***   .QF2    BML           //  Q     SF    QS
***   .QD2    BML           //  Q     SD    QS
***   .C      BML           //  QF    .QF1  B     .QD2  QD    QD    .QD1  B     .QF2  QF
***   .C1     BML           //  QF    QQ    B     QQ    QD    QD    QQ    B     .QF2  QF
***   .LA     BML           //  S     S     S     S     S     S     S     S     S     S
***   .LB     BML           //  R     R     R     R     R     R     R     R     R     R
***   .LZ     BML           //  Z     Z     Z     Z     Z     Z     Z     Z     Z     Z
***   .CH     BML           //  QF    .QF1  B     .QD2  QD
***   .CS     BML           //  QF    .QF1  LC    .QD2  QD    QD    .QD1  LC    .QF2  QF
***   .CS1    BML           //  QF1   .LA   QD1   QD1   .LA   QF2
***   .CS2    BML           //  QF2   .LA   QD2   QD2   .LB   QF3
***   .CS3    BML           //  QF3   .LZ   QD3   QD3   .LB   QF
***   .CT     BML           //  .CS1  .CS2  .CS3  .C1   .CS
***   KF1     =             //  0.377469
***   KD1     =             //  0.347140
***   KF2     =             //  0.358812
***   KD2     =             //  0.386791
***   KF3     =             //  0.324942
***   KD3     =             //  0.324586
***   QF1     MAG           //  LQ          KF1         1.
***   QF2     MAG           //  LQ          KF2         1.
***   QF3     MAG           //  LQS         KF3         1.
***   QD1     MAG           //  LQ          -KD1        1.
***   QD2     MAG           //  LQ          -KD2        1.
***   QD3     MAG           //  LQS         -KD3        1.
***   .SP     BML           //  .CT   .C    .C    .C    .C    .CH
```

	POS		S(M)	NUX	NUY	BETAX(M)	BETAY(M)	ETAX(M)	ETAY(M)	ETAS(M)	ALPHAX	ALPHAY	DETAX	DETAY
1	0		0.0000	0.00000	0.00000	17.83321	5.73406	-.00091	0.00000	0.00000	0.00000	0.00000	-.00000	0.00000
2	1	QF1	.3505	.00318	.00957	17.02564	6.02589	-.00089	0.00000	0.00000	2.26819	-.84539	.00012	0.00000
3	2	S	.7236	.00685	.01892	15.38325	6.69638	-.00085	0.00000	0.00000	2.13352	-.95156	.00012	0.00000
4	3	S	1.0968	.01092	.02734	13.86135	7.44610	-.00080	0.00000	0.00000	1.99886	-1.05774	.00012	0.00000
5	4	S	1.4699	.01545	.03491	12.39994	8.27506	-.00076	0.00000	0.00000	1.86420	-1.16391	.00012	0.00000
6	5	S	1.8430	.02052	.04172	11.05902	9.18324	-.00071	0.00000	0.00000	1.72953	-1.27008	.00012	0.00000
7	6	S	2.2162	.02622	.04787	9.81860	10.17066	-.00067	0.00000	0.00000	1.59487	-1.37626	.00012	0.00000
8	7	S	2.5893	.03266	.05342	8.67867	11.23732	-.00062	0.00000	0.00000	1.46020	-1.48243	.00012	0.00000
9	8	S	2.9624	.03995	.05846	7.63924	12.38320	-.00058	0.00000	0.00000	1.32554	-1.58861	.00012	0.00000
10	9	S	3.3355	.04826	.06303	6.70030	13.60832	-.00054	0.00000	0.00000	1.19088	-1.69478	.00012	0.00000
11	10	S	3.7087	.05774	.06720	5.86185	14.91267	-.00049	0.00000	0.00000	1.05621	-1.80096	.00012	0.00000
12	11	S	4.0818	.06858	.07101	5.12390	16.29626	-.00045	0.00000	0.00000	.92155	-1.90713	.00012	0.00000
13	12	QD1	4.4323	.08001	.07435	4.72597	16.94478	-.00041	0.00000	0.00000	.22980	-.08334	.00007	0.00000
14	13	QD1	4.7828	.09183	.07769	4.79246	16.18270	-.00040	0.00000	0.00000	-.42219	2.05979	.00002	0.00000
15	14	S	5.1560	.10380	.08154	5.14175	14.69068	-.00039	0.00000	0.00000	-.51393	1.93891	.00002	0.00000
16	15	S	5.5291	.11492	.08579	5.55950	13.28886	-.00038	0.00000	0.00000	-.60566	1.81803	.00002	0.00000
17	16	S	5.9022	.12517	.09050	6.04570	11.97726	-.00038	0.00000	0.00000	-.69739	1.69715	.00002	0.00000
18	17	S	6.2753	.13457	.09573	6.60037	10.75586	-.00037	0.00000	0.00000	-.78913	1.57626	.00002	0.00000
19	18	S	6.6485	.14318	.10157	7.22348	9.62468	-.00036	0.00000	0.00000	-.88086	1.45538	.00002	0.00000
20	19	S	7.0216	.15104	.10811	7.91506	8.58370	-.00035	0.00000	0.00000	-.97260	1.33450	.00002	0.00000
21	20	S	7.3947	.15820	.11545	8.67509	7.63293	-.00035	0.00000	0.00000	-1.06433	1.21361	.00002	0.00000
22	21	S	7.7678	.16475	.12371	9.50358	6.77237	-.00034	0.00000	0.00000	-1.15607	1.09273	.00002	0.00000
23	22	S	8.1410	.17072	.13303	10.40053	6.00202	-.00033	0.00000	0.00000	-1.24780	.97185	.00002	0.00000
24	23	S	8.5141	.17618	.14354	11.36593	5.32188	-.00033	0.00000	0.00000	-1.33954	.85097	.00002	0.00000
25	24	QF2	8.8646	.18096	.15446	11.81366	4.98611	-.00031	0.00000	0.00000	.08104	.12100	.00006	0.00000
26	25	QF2	9.2151	.18577	.16556	11.25562	5.14721	-.00029	0.00000	0.00000	1.48753	-.58732	.00010	0.00000
27	26	S	9.5883	.19131	.17661	10.18529	5.62188	-.00025	0.00000	0.00000	1.38103	-.68482	.00010	0.00000
28	27	S	9.9614	.19745	.18670	9.19443	6.16930	-.00021	0.00000	0.00000	1.27452	-.78232	.00010	0.00000
29	28	S	10.3345	.20426	.19589	8.28305	6.78949	-.00018	0.00000	0.00000	1.16802	-.87981	.00010	0.00000
30	29	S	10.7076	.21182	.20422	7.45116	7.48243	-.00014	0.00000	0.00000	1.06152	-.97731	.00010	0.00000
31	30	S	11.0808	.22023	.21178	6.69873	8.24812	-.00010	0.00000	0.00000	.95501	-1.07481	.00010	0.00000
32	31	S	11.4539	.22958	.21864	6.02579	9.08658	-.00007	0.00000	0.00000	.84851	-1.17230	.00010	0.00000
33	32	S	11.8270	.23997	.22484	5.43233	9.99779	-.00003	0.00000	0.00000	.74201	-1.26980	.00010	0.00000
34	33	S	12.2001	.25147	.23054	4.91834	10.98176	.00000	0.00000	0.00000	.63550	-1.36729	.00010	0.00000
35	34	S	12.5733	.26413	.23571	4.48383	12.03849	.00004	0.00000	0.00000	.52900	-1.46479	.00010	0.00000
36	35	S	12.9464	.27795	.24043	4.12881	13.16797	.00008	0.00000	0.00000	.42250	-1.56229	.00010	0.00000
37	36	QD2	13.2969	.29170	.24456	4.05811	13.64450	.00011	0.00000	0.00000	-.21764	.22541	.00011	0.00000
38	37	QD2	13.6474	.30496	.24873	4.44371	12.86320	.00015	0.00000	0.00000	-.89980	1.96912	.00013	0.00000
39	38	R	14.0142	.31716	.25354	5.15854	11.46976	.00020	0.00000	0.00000	-1.04916	1.83005	.00013	0.00000
40	39	R	14.3810	.32768	.25895	5.98294	10.17834	.00025	0.00000	0.00000	-1.19853	1.69097	.00013	0.00000
41	40	R	14.7478	.33676	.26505	6.91691	8.98853	.00030	0.00000	0.00000	-1.34789	1.55190	.00013	0.00000
42	41	R	15.1145	.34463	.27198	7.96044	7.90154	.00034	0.00000	0.00000	-1.49726	1.41283	.00013	0.00000
43	42	R	15.4813	.35148	.27988	9.11354	6.91616	.00039	0.00000	0.00000	-1.64662	1.27375	.00013	0.00000
44	43	R	15.8481	.35749	.28892	10.37621	6.03280	.00044	0.00000	0.00000	-1.79599	1.13468	.00013	0.00000
45	44	R	16.2149	.36277	.29930	11.74844	5.25147	.00048	0.00000	0.00000	-1.94535	.99561	.00013	0.00000
46	45	R	16.5816	.36746	.31122	13.23024	4.57214	.00053	0.00000	0.00000	-2.09471	.85653	.00013	0.00000
47	46	R	16.9484	.37163	.32490	14.82161	3.99484	.00058	0.00000	0.00000	-2.24408	.71746	.00013	0.00000
48	47	R	17.3152	.37536	.34049	16.52254	3.51955	.00062	0.00000	0.00000	-2.39344	.57839	.00013	0.00000
49	48	QF3	17.7292	.37919	.36009	17.59682	3.28856	.00066	0.00000	0.00000	-.15295	-.01013	.00004	0.00000
50	49	QF3	18.1432	.38299	.37964	16.76654	3.53696	.00066	0.00000	0.00000	2.12099	-.60095	-.00005	0.00000

	POS		S(M)	NUX	NUY	BETAX(M)	BETAY(M)	ETAX(M)	ETAY(M)	ETAS(M)	ALPHAX	ALPHAY	DETAX	DETAY
1	50	Z	18.5037	.38657	.39487	15.28022	4.02015	.00064	0.00000	0.00000	2.00279	-.73965	-.00005	0.00000
2	51	Z	18.8641	.39051	.40822	13.87911	4.60332	.00062	0.00000	0.00000	1.88459	-.87836	-.00005	0.00000
3	52	Z	19.2245	.39486	.41986	12.56320	5.28648	.00061	0.00000	0.00000	1.76639	-1.01706	-.00005	0.00000
4	53	Z	19.5849	.39966	.43000	11.33250	6.06962	.00059	0.00000	0.00000	1.64818	-1.15576	-.00005	0.00000
5	54	Z	19.9454	.40500	.43983	10.18701	6.95275	.00057	0.00000	0.00000	1.52998	-1.29447	-.00005	0.00000
6	55	Z	20.3058	.41095	.44656	9.12672	7.93586	.00055	0.00000	0.00000	1.41178	-1.43317	-.00005	0.00000
7	56	Z	20.6662	.41761	.45334	8.15164	9.01896	.00054	0.00000	0.00000	1.29358	-1.57187	-.00005	0.00000
8	57	Z	21.0266	.42507	.45932	7.26176	10.20204	.00052	0.00000	0.00000	1.17537	-1.71058	-.00005	0.00000
9	58	Z	21.3871	.43345	.46462	6.45709	11.48511	.00050	0.00000	0.00000	1.05717	-1.84928	-.00005	0.00000
10	59	Z	21.7475	.44288	.46934	5.73763	12.86816	.00049	0.00000	0.00000	.93897	-1.98799	-.00005	0.00000
11	60	QD3	22.1615	.45493	.47424	5.31343	13.81588	.00048	0.00000	0.00000	.10456	-.25847	.00002	0.00000
12	61	QD3	22.5755	.46718	.47906	5.55797	13.28051	.00050	0.00000	0.00000	-.70614	1.52751	.00008	0.00000
13	62	R	22.9423	.47720	.48365	6.11223	12.19376	.00053	0.00000	0.00000	-.80503	1.43545	.00008	0.00000
14	63	R	23.3091	.48631	.48865	6.73904	11.17455	.00056	0.00000	0.00000	-.90393	1.34339	.00008	0.00000
15	64	R	23.6759	.49455	.49411	7.43839	10.22286	.00059	0.00000	0.00000	-1.00283	1.25134	.00008	0.00000
16	65	R	24.0426	.50203	.50009	8.21029	9.33871	.00062	0.00000	0.00000	-1.10172	1.15928	.00008	0.00000
17	66	R	24.4094	.50880	.50663	9.05474	8.52208	.00065	0.00000	0.00000	-1.20062	1.06722	.00008	0.00000
18	67	R	24.7762	.51494	.51381	9.97172	7.77298	.00068	0.00000	0.00000	-1.29951	.97516	.00008	0.00000
19	68	R	25.1430	.52053	.52167	10.96126	7.09141	.00071	0.00000	0.00000	-1.39841	.88311	.00008	0.00000
20	69	R	25.5098	.52561	.53029	12.02334	6.47737	.00074	0.00000	0.00000	-1.49731	.79105	.00008	0.00000
21	70	R	25.8765	.53026	.53971	13.15796	5.93086	.00077	0.00000	0.00000	-1.59620	.69899	.00008	0.00000
22	71	R	26.2433	.53450	.54999	14.36514	5.45187	.00080	0.00000	0.00000	-1.69510	.60693	.00008	0.00000
23	72	QF	26.5938	.53823	.56047	14.96786	5.27437	.00081	0.00000	0.00000	-.00064	-.09356	-.00001	0.00000
24	73	QF	26.9443	.54206	.57082	14.36601	5.58670	.00079	0.00000	0.00000	1.69392	-.80974	-.00011	0.00000
25	74	QD	27.9798	.55510	.59625	11.14690	7.58130	.00068	0.00000	0.00000	1.41504	-1.11660	-.00011	0.00000
26	75	B	29.6402	.58473	.62408	7.19525	12.02095	.00948	0.00000	-.00256	.96850	-1.54511	.09516	0.00000
27	76	QD	30.6756	.61110	.63615	5.47840	15.52277	.17801	0.00000	.00256	.68961	-1.83688	.09516	0.00000
28	77	QD	31.0261	.62159	.63965	5.23999	16.19062	.21521	0.00000	.00256	-.00032	-.04267	.11778	0.00000
29	78	QD	31.3766	.63208	.64314	5.47886	15.58099	.26114	0.00000	.00256	-.69031	1.75836	.14518	0.00000
30	79	QD	32.4121	.65844	.65509	7.19732	12.22123	.41146	0.00000	.00256	-.96935	1.48644	.14518	0.00000
31	80	B	34.0725	.68806	.68208	11.15222	7.92087	.73112	0.00000	.05574	-1.41614	1.09177	.24045	0.00000
32	81	Q	34.8079	.69765	.69846	13.38093	6.46470	.90796	0.00000	.05574	-1.61434	.88825	.24045	0.00000
33	82	SF	34.8079	.69765	.69846	13.38093	6.46470	.90796	0.00000	.05574	-1.61434	.88825	.24045	0.00000
34	83	QS	35.1079	.70109	.70616	14.37378	5.95666	.98009	0.00000	.05574	-1.69519	.80523	.24045	0.00000
35	84	QF	35.4584	.70487	.71584	14.97619	5.66064	1.04360	.05574	.00032	.05089	.12068	0.00000
36	85	QF	35.8090	.70865	.72558	14.37335	5.88332	1.06411	0.00000	.05574	1.69577	-.69492	-.00406	0.00000
37	86	QS	36.1090	.71209	.73341	13.38015	6.32296	1.06290	0.00000	.05574	1.61488	-.77053	-.00406	0.00000
38	87	SF	36.1090	.71209	.73341	13.38015	6.32296	1.06290	0.00000	.05574	1.61488	-.77053	-.00406	0.00000
39	88	Q	36.8444	.72168	.75034	11.15073	7.59263	1.05991	0.00000	.05574	1.41658	-.95590	-.00406	0.00000
40	89	LC	38.5048	.75136	.77882	7.18993	11.46188	1.05318	0.00000	.05574	.96887	-1.37441	-.00406	0.00000
41	90	Q	39.2402	.76936	.78819	5.91070	13.61977	1.05019	0.00000	.05574	.77056	-1.55978	-.00406	0.00000
42	91	SD	39.2402	.76936	.78819	5.91070	13.61977	1.05019	0.00000	.05574	.77056	-1.55978	-.00406	0.00000
43	92	QS	39.5402	.77776	.79158	5.47263	14.57832	1.04898	0.00000	.05574	.68967	-1.63539	-.00406	0.00000
44	93	QD	39.8907	.78826	.79531	5.23399	15.14279	1.06884	0.00000	.05574	.00032	.04679	.11775	0.00000
45	94	QD	40.2413	.79876	.79905	5.47217	14.51447	1.13208	0.00000	.05574	-.68898	1.72150	.24434	0.00000
46	95	QS	40.5413	.80716	.80246	5.90981	13.50615	1.20538	0.00000	.05574	-.76983	1.63958	.24434	0.00000
47	96	SD	40.5413	.80716	.80246	5.90981	13.50615	1.20538	0.00000	.05574	-.76983	1.63958	.24434	0.00000
48	97	Q	41.2767	.82516	.81196	7.18788	11.24225	1.38508	0.00000	.05574	-.96802	1.43875	.24434	0.00000
49	98	LC	42.9371	.86485	.84147	11.14544	7.21730	1.79079	0.00000	.05574	-1.41548	.98533	.24434	0.00000
50	99	Q	43.6725	.88445	.85942	13.37317	5.91571	1.97048	0.00000	.05574	-1.61367	.78450	.24434	0.00000

POS	S(M)	NUX	NUY	BETAX(M)	BETAY(M)	ETAX(M)	ETAY(M)	ETAS(M)	ALPHAX	ALPHAY	DETAX	DETAY
100 SF	43.6725	.86445	.85942	13.37317	5.91571	1.97048	0.00000	.05574	-1.61367	.78450	.24434	0.00000
101 QS	43.9725	.86789	.86782	14.36562	5.46959	2.04378	0.00000	.05574	-1.69452	.70258	.24434	0.00000
102 QF	44.3230	.87167	.87833	14.96791	5.22666	2.08673	0.00000	.05574	.00000	-.00000	-.00011	0.00000
103 QF	44.6736	.87545	.88884	14.36562	5.46959	2.04371	0.00000	.05574	1.69452	-.70258	-.24456	0.00000
104 QS	44.9736	.87889	.89724	13.37317	5.91571	1.97034	0.00000	.05574	1.61367	-.78450	-.24456	0.00000
105 SF	44.9736	.87889	.89724	13.37317	5.91571	1.97034	0.00000	.05574	1.61367	-.78450	-.24456	0.00000
106 Q	45.7090	.88849	.91519	11.14544	7.21730	1.79048	0.00000	.05574	1.41548	-.98533	-.24456	0.00000
107 B	47.3694	.91813	.94401	7.19273	11.16210	1.46400	0.00000	.20951	.96869	-1.37970	-.14929	0.00000
108 Q	48.1048	.93611	.95441	5.91368	13.33215	1.35421	0.00000	.20951	.77050	-1.57101	-.14929	0.00000
109 SD	48.1048	.93611	.95441	5.91368	13.33215	1.35421	0.00000	.20951	.77050	-1.57101	-.14929	0.00000
110 QS	48.4048	.94451	.95786	5.47563	14.29817	1.30942	0.00000	.20951	.68966	-1.64905	-.14929	0.00000
111 QD	48.7553	.95500	.96166	5.23710	14.88411	1.28332	0.00000	.20951	.00000	-.00000	-.00016	0.00000
112 QD	49.1059	.96550	.96546	5.47563	14.29817	1.30930	0.00000	.20951	-.68965	1.64905	.14895	0.00000
113 QS	49.4059	.97389	.96892	5.91367	13.33215	1.35399	0.00000	.20951	-.77050	1.57101	.14895	0.00000
114 SD	49.4059	.97389	.96892	5.91367	13.33215	1.35399	0.00000	.20951	-.77050	1.57101	.14895	0.00000
115 Q	50.1413	.99188	.97852	7.19272	11.16211	1.46354	0.00000	.20951	-.96869	1.37970	.14895	0.00000
116 B	51.8017	1.02152	1.00813	11.14541	7.21732	1.78946	0.00000	.36321	-1.41547	.98533	.24423	0.00000
117 Q	52.5371	1.03111	1.02609	13.37313	5.91573	1.96907	0.00000	.36321	-1.61366	.78450	.24423	0.00000
118 SF	52.5371	1.03111	1.02609	13.37313	5.91573	1.96907	0.00000	.36321	-1.69451	.70258	.24423	0.00000
119 QS	52.8371	1.03456	1.03448	14.36558	5.46960	2.04234	0.00000	.36321	-1.69451	.70258	.24423	0.00000
120 QF	53.1876	1.03834	1.04500	14.96786	5.22668	2.08528	0.00000	.36321	.00000	-.00000	-.00006	0.00000
121 QF	53.5382	1.04212	1.05551	14.36557	5.46961	2.04230	0.00000	.36321	1.69451	-.70258	-.24434	0.00000
122 QS	53.8382	1.04556	1.06391	13.37312	5.91573	1.96900	0.00000	.36321	1.61367	-.78451	-.24434	0.00000
123 SF	53.8382	1.04556	1.06391	13.37312	5.91573	1.96900	0.00000	.36321	1.61367	-.78451	-.24434	0.00000
124 Q	54.5736	1.05515	1.08186	11.14540	7.21733	1.78931	0.00000	.36321	1.41547	-.98534	-.24434	0.00000
125 B	56.2340	1.08480	1.11147	7.19271	11.16215	1.46320	0.00000	.51690	.96869	-1.37971	-.14906	0.00000
126 Q	56.9694	1.10278	1.12107	5.91365	13.33220	1.35357	0.00000	.51690	.77050	-1.57102	-.14906	0.00000
127 SD	56.9694	1.10278	1.12107	5.91365	13.33220	1.35357	0.00000	.51690	.77050	-1.57102	-.14906	0.00000
128 QS	57.2694	1.11117	1.12453	5.47561	14.29822	1.30886	0.00000	.51690	.68965	-1.64905	-.14906	0.00000
129 QD	57.6200	1.12167	1.12833	5.23708	14.88417	1.28282	0.00000	.51690	-.00000	.00000	.00000	0.00000
130 QD	57.9705	1.13217	1.13213	5.47561	14.29822	1.30886	0.00000	.51690	-.68965	1.64905	.14906	0.00000
131 QS	58.2705	1.14056	1.13559	5.91365	13.33220	1.35357	0.00000	.51690	-.77050	1.57102	.14906	0.00000
132 SD	58.2705	1.14056	1.13559	5.91365	13.33220	1.35357	0.00000	.51690	-.77050	1.57102	.14906	0.00000
133 Q	59.0059	1.15855	1.14519	7.19271	11.16215	1.46320	0.00000	.51690	-.96869	1.37971	.14906	0.00000
134 B	60.6663	1.18819	1.17480	11.14540	7.21733	1.78931	0.00000	.67058	-1.41547	.98534	.24434	0.00000
135 Q	61.4017	1.19778	1.19275	13.37312	5.91573	1.96900	0.00000	.67058	-1.61367	.78451	.24434	0.00000
136 SF	61.4017	1.19778	1.19275	13.37312	5.91573	1.96900	0.00000	.67058	-1.61367	.78451	.24434	0.00000
137 QS	61.7017	1.20123	1.20115	14.36557	5.46961	2.04230	0.00000	.67058	-1.69451	.70258	.24434	0.00000
138 QF	62.0523	1.20500	1.21166	14.96786	5.22668	2.08528	0.00000	.67058	-.00000	.00000	.00006	0.00000
139 QF	62.4028	1.20878	1.22218	14.36558	5.46960	2.04234	0.00000	.67058	1.69451	-.70258	-.24423	0.00000
140 QS	62.7028	1.21223	1.23057	13.37313	5.91573	1.96907	0.00000	.67058	1.61366	-.78450	-.24423	0.00000
141 SF	62.7028	1.21223	1.23057	13.37313	5.91573	1.96907	0.00000	.67058	1.61366	-.78450	-.24423	0.00000
142 Q	63.4382	1.22182	1.24852	11.14541	7.21732	1.78946	0.00000	.67058	1.41547	-.98533	-.24423	0.00000
143 B	65.0986	1.25146	1.27814	7.19272	11.16211	1.46354	0.00000	.82428	.96869	-1.37970	-.14895	0.00000
144 Q	65.8340	1.26945	1.28774	5.91367	13.33215	1.35399	0.00000	.82428	.77050	-1.57101	-.14895	0.00000
145 SD	65.8340	1.26945	1.28774	5.91367	13.33215	1.35399	0.00000	.82428	.77050	-1.57101	-.14895	0.00000
146 QS	66.1340	1.27784	1.29120	5.47563	14.29817	1.30930	0.00000	.82428	.68965	-1.64905	-.14895	0.00000
147 QD	66.4846	1.28834	1.29500	5.23710	14.88411	1.28332	0.00000	.82428	-.00000	.00000	.00016	0.00000
148 QD	66.8351	1.29883	1.29879	5.47563	14.29817	1.30942	0.00000	.82428	-.68966	1.64905	.14929	0.00000
149 QS	67.1351	1.30723	1.30225	5.91368	13.33215	1.35421	0.00000	.82428	-.77050	1.57101	.14929	0.00000

POS		S(M)	NUX	NUY	BETAX(M)	BETAY(M)	ETAX(M)	ETAY(M)	ETAS(M)	ALPHAX	ALPHAY	DETAX	DETAY
150	SD	67.1351	1.30723	1.30225	5.91368	13.33215	1.35421	0.00000	.82428	-.77050	1.57101	.14929	0.00000
151	Q	67.8705	1.32521	1.31185	7.19273	11.16210	1.46400	0.00000	.82428	-.96869	1.37970	.14929	0.00000
152	B	69.5309	1.35485	1.34147	11.14544	7.21730	1.79048	0.00000	.97806	-1.41548	.98533	.24456	0.00000
153	Q	70.2663	1.36445	1.35942	13.37317	5.91571	1.97034	0.00000	.97806	-1.61367	.78450	.24456	0.00000
154	SF	70.2663	1.36445	1.35942	13.37317	5.91571	1.97034	0.00000	.97806	-1.61367	.78450	.24456	0.00000
155	OS	70.5663	1.36789	1.36782	14.36562	5.46959	2.04371	0.00000	.97806	-1.69452	.70258	.24456	0.00000
156	QF	70.9169	1.37167	1.37833	14.96791	5.22666	2.08673	0.00000	.97806	.00000	-.00000	.00011	0.00000
157	QF	71.2674	1.37545	1.38884	14.36562	5.46959	2.04378	0.00000	.97806	1.69452	-.70258	-.24434	0.00000
158	OS	71.5674	1.37889	1.39724	13.37317	5.91571	1.97048	0.00000	.97806	1.61367	-.78450	-.24434	0.00000
159	SF	71.5674	1.37889	1.39724	13.37317	5.91571	1.97048	0.00000	.97806	1.61367	-.78450	-.24434	0.00000
160	Q	72.3028	1.38849	1.41519	11.14544	7.21730	1.79079	0.00000	.97806	1.41548	-.98533	-.24434	0.00000
161	B	73.9632	1.41813	1.44480	7.19273	11.16210	1.46467	0.00000	1.13188	.96869	-1.37970	-.14907	0.00000
162	B	74.6986	1.43611	1.45440	5.91368	13.33215	1.35504	0.00000	1.13188	.77050	-1.57101	-.14907	0.00000
163	SD	74.6986	1.43611	1.45440	5.91368	13.33215	1.35504	0.00000	1.13188	.77050	-1.57101	-.14907	0.00000
164	OS	74.9986	1.44451	1.45786	5.47563	14.29817	1.31032	0.00000	1.13188	.68966	-1.64905	-.14907	0.00000
165	QD	75.3492	1.45500	1.46166	5.23710	14.88411	1.28431	0.00000	1.13188	.00000	-.00000	.00016	0.00000
166	QD	75.6997	1.46550	1.46546	5.47563	14.29817	1.31043	0.00000	1.13188	-.68965	1.64905	.14940	0.00000
167	OS	75.9997	1.47389	1.46892	5.91367	13.33215	1.35526	0.00000	1.13188	-.77050	1.57101	.14940	0.00000
168	SD	75.9997	1.47389	1.46892	5.91367	13.33215	1.35526	0.00000	1.13188	-.77050	1.57101	.14940	0.00000
169	Q	76.7351	1.49188	1.47852	7.19272	11.16211	1.46513	0.00000	1.13188	-.96869	1.37970	.14940	0.00000
170	B	78.3955	1.52152	1.50813	11.14541	7.21732	1.79180	0.00000	1.28577	-1.41547	.98533	.24468	0.00000
171	Q	79.1310	1.53111	1.52608	13.37313	5.91573	1.97175	0.00000	1.28577	-1.61366	.78450	.24468	0.00000
172	SF	79.1310	1.53111	1.52608	13.37313	5.91573	1.97175	0.00000	1.28577	-1.61366	.78450	.24468	0.00000
173	OS	79.4310	1.53456	1.53448	14.36558	5.46960	2.04515	0.00000	1.28577	-1.69451	.70258	.24468	0.00000
174	QF	79.7815	1.53834	1.54500	14.96786	5.22668	2.08819	0.00000	1.28577	.00000	-.00000	.00006	0.00000
175	QF	80.1320	1.54212	1.55551	14.36557	5.46961	2.04519	0.00000	1.28577	1.69451	-.70258	-.24457	0.00000
176	OS	80.4320	1.54556	1.56391	13.37312	5.91573	1.97182	0.00000	1.28577	1.61367	-.78451	-.24457	0.00000
177	SF	80.4320	1.54556	1.56391	13.37312	5.91573	1.97182	0.00000	1.28577	1.61367	-.78451	-.24457	0.00000
178	Q	81.1674	1.55515	1.58186	11.14540	7.21733	1.79196	0.00000	1.28577	1.41547	-.98534	-.24457	0.00000
179	B	82.8278	1.58479	1.61147	7.19271	11.16215	1.46547	0.00000	1.43968	.96869	-1.37971	-.14929	0.00000
180	Q	83.5633	1.60278	1.62107	5.91365	13.33220	1.35567	0.00000	1.43968	.77050	-1.57102	-.14929	0.00000
181	SD	83.5633	1.60278	1.62107	5.91365	13.33220	1.35567	0.00000	1.43968	.77050	-1.57102	-.14929	0.00000
182	OS	83.8633	1.61117	1.62453	5.47561	14.29822	1.31088	0.00000	1.43968	.68965	-1.64905	-.14929	0.00000
183	QD	84.2138	1.62167	1.62833	5.23708	14.88417	1.28481	0.00000	1.43968	.00000	-.00000	-.00000	0.00000
184	REFL	168.4276	3.24334	3.25666	17.83321	5.73406	-.00091	0.00000	2.87937	.00000	-.00000	-.00000	0.00000

CIRCUMFERENCE = 505.2827[illegible] M THETX = 6.28318638 RAD NUX = 9.73002 DNUX/(DP/P) = .39620
(DS/S)/RADIUS = .0270988[illegible] M THETY(183) = 0.00000000 RAD NUY = 9.76997 DNUY/(DP/P) = .39105
TGAM = (7.64818, 0.00000)

MAXIMA	--- BETX(1) =	17.83321	BETY(12) =	16.94478	ETAX(174) =	2.08819	ETAY(184) =	0.00000
MINIMA	--- BETX(36) =	4.05811	BETY(48) =	3.28856	ETAX(33) =	.00000	ETAY(184) =	0.00000

```
***  DP      =                //  =0.02
***  V       PVEC             //                                          DP
***  CHR     SUB     0    0 //
*****************************************************************************
***  AGR     FXPT    ?   -3 //  V     .SP          1
*                           //
***          INCR    1      //  DP          .005
***          END     0    0 //
*****************************************************************************
```

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V

X_2 = 0.00000000 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = -.02000000 1.00000000

7X7 MATRIX FOR AGR

.06055299	17.87971570	0.00000000	0.00000000	0.00000000	.03138991	.00026699
-.05572423	.06055299	0.00000000	0.00000000	0.00000000	.00186192	.00001584
0.00000000	0.00000000	-.02881698	5.10131547	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.19586508	-.02881698	0.00000000	0.00000000	0.00000000
-.00186192	-.03138991	0.00000000	0.00000000	1.00000000	-2.83177215	.06130947
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.06055299 -.99816498), C(1) = 1.00000000, MU(1) = 1.51020627 RAD, Q(1) = .72107038
1/LMD1 = (.06055299 -.99816498), C(2) = 1.00000000, MU(2) = -1.51020627 RAD, Q(2) = .27892962

Y... LMD3 = (-.02881698 .99958470), C(3) = 1.00000000, MU(3) = 1.59961729 RAD, Q(3) = .76376100
1/LMD3 = (-.02881698 -.99958470), C(4) = 1.00000000, MU(4) = -1.59961729 RAD, Q(4) = .23623900

EIGENVALUE = (.06055299, .99816498), EIGENVECTOR = (4.23232626, 0.00000000)
(.00000000, -.23627668)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.06055299, -.99816498), EIGENVECTOR = (4.23232626, 0.00000000)
(.00000000, -.23627668)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.02881698, .99958470), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.25907833, 0.00000000)
(.00000000, .44265840)

EIGENVALUE = (-.02881698, -.99958470), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.25907833, 0.00000000)
(.00000000, -.44265840)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00034772	0.00000000	0.00000000	0.00000000	0.00000000	-.02000000	1.00000000
ETA ORBIT	.03341318	.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES.

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.232325 0.000000	0.000000 0.000000	-.236277 0.000000	1.570796 0.000000	0.000000 2.259078	0.000000 0.000000	0.000000 .442658	0.000000 1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.91	5.10	0.00	0.00	.03341	.00000	0.000000	0.000000	-.3477	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	17.08	5.37	2.32	-.78	.03262	-.00452	0.000000	0.000000	-.3395	.0466	0.0000	0.0000
2	S	.72	.01	.02	15.40	6.00	2.18	-.89	.03093	-.00452	0.000000	0.000000	-.3222	.0466	0.0000	0.0000
3	S	1.10	.01	.03	13.83	6.71	2.04	-1.01	.02924	-.00452	0.000000	0.000000	-.3048	.0466	0.0000	0.0000
4	S	1.47	.02	.04	12.35	7.50	1.90	-1.12	.02756	-.00452	0.000000	0.000000	-.2874	.0466	0.0000	0.0000
5	S	1.84	.02	.05	10.98	8.37	1.76	-1.23	.02587	-.00452	0.000000	0.000000	-.2700	.0466	0.0000	0.0000
6	S	2.22	.03	.05	9.72	9.33	1.62	-1.34	.02418	-.00452	0.000000	0.000000	-.2526	.0466	0.0000	0.0000
7	S	2.59	.03	.06	8.56	10.38	1.49	-1.45	.02249	-.00452	0.000000	0.000000	-.2353	.0466	0.0000	0.0000
8	S	2.96	.04	.06	7.50	11.50	1.35	-1.57	.02081	-.00452	0.000000	0.000000	-.2179	.0466	0.0000	0.0000
9	S	3.34	.05	.07	6.55	12.71	1.21	-1.68	.01912	-.00452	0.000000	0.000000	-.2005	.0466	0.0000	0.0000
10	S	3.71	.06	.07	5.70	14.01	1.07	-1.79	.01743	-.00452	0.000000	0.000000	-.1831	.0466	0.0000	0.0000
11	S	4.08	.07	.08	4.96	15.38	.93	-1.90	.01575	-.00452	0.000000	0.000000	-.1657	.0466	0.0000	0.0000
12	QD1	4.43	.08	.08	4.56	16.05	.24	.02	.01450	-.00263	0.000000	0.000000	-.1529	.0269	0.0000	0.0000
13	QD1	4.78	.09	.09	4.61	15.36	-.41	1.93	.01389	-.00086	0.000000	0.000000	-.1468	.0083	0.0000	0.0000
14	S	5.16	.11	.09	4.95	13.97	-.50	1.81	.01357	-.00086	0.000000	0.000000	-.1437	.0083	0.0000	0.0000
15	S	5.53	.12	.09	5.36	12.65	-.59	1.70	.01325	-.00086	0.000000	0.000000	-.1406	.0083	0.0000	0.0000
16	S	5.90	.13	.10	5.84	11.43	-.69	1.58	.01293	-.00086	0.000000	0.000000	-.1374	.0083	0.0000	0.0000
17	S	6.28	.14	.10	6.39	10.29	-.78	1.47	.01261	-.00086	0.000000	0.000000	-.1343	.0083	0.0000	0.0000
18	S	6.65	.15	.11	7.01	9.23	-.88	1.36	.01229	-.00086	0.000000	0.000000	-.1312	.0083	0.0000	0.0000
19	S	7.02	.15	.12	7.70	8.27	-.97	1.24	.01197	-.00086	0.000000	0.000000	-.1281	.0083	0.0000	0.0000
20	S	7.39	.16	.12	8.46	7.38	-1.07	1.13	.01165	-.00086	0.000000	0.000000	-.1250	.0083	0.0000	0.0000
21	S	7.77	.17	.13	9.29	6.59	-1.16	1.01	.01133	-.00086	0.000000	0.000000	-.1219	.0083	0.0000	0.0000
22	S	8.14	.18	.14	10.19	5.87	-1.25	.90	.01101	-.00086	0.000000	0.000000	-.1188	.0083	0.0000	0.0000
23	S	8.51	.18	.15	11.16	5.25	-1.35	.78	.01069	-.00086	0.000000	0.000000	-.1157	.0083	0.0000	0.0000
24	QF2	8.86	.19	.16	11.61	4.96	.08	.05	.01015	-.00221	0.000000	0.000000	-.1102	.0229	0.0000	0.0000
25	QF2	9.22	.19	.18	11.05	5.18	1.48	-.68	.00915	-.00347	0.000000	0.000000	-.0998	.0364	0.0000	0.0000
26	S	9.59	.20	.19	9.99	5.72	1.38	-.78	.00785	-.00347	0.000000	0.000000	-.0862	.0364	0.0000	0.0000
27	S	9.96	.20	.20	9.00	6.34	1.27	-.89	.00656	-.00347	0.000000	0.000000	-.0726	.0364	0.0000	0.0000
28	S	10.33	.21	.21	8.09	7.04	1.16	-.99	.00526	-.00347	0.000000	0.000000	-.0590	.0364	0.0000	0.0000
29	S	10.71	.22	.21	7.27	7.82	1.05	-1.10	.00397	-.00347	0.000000	0.000000	-.0454	.0364	0.0000	0.0000
30	S	11.08	.23	.22	6.52	8.67	.94	-1.20	.00267	-.00347	0.000000	0.000000	-.0319	.0364	0.0000	0.0000
31	S	11.45	.24	.23	5.86	9.61	.84	-1.31	.00138	-.00347	0.000000	0.000000	-.0183	.0364	0.0000	0.0000
32	S	11.83	.25	.23	5.28	10.62	.73	-1.41	.00008	-.00347	0.000000	0.000000	-.0047	.0364	0.0000	0.0000
33	S	12.20	.26	.24	4.77	11.71	.62	-1.51	-.00121	-.00347	0.000000	0.000000	.0089	.0364	0.0000	0.0000
34	S	12.57	.27	.24	4.35	12.88	.51	-1.62	-.00251	-.00347	0.000000	0.000000	.0225	.0364	0.0000	0.0000
35	S	12.95	.29	.25	4.01	14.13	.40	-1.72	-.00380	-.00347	0.000000	0.000000	.0361	.0364	0.0000	0.0000
36	QD2	13.30	.30	.25	3.95	14.66	-.23	.24	-.00512	-.00409	0.000000	0.000000	.0498	.0423	0.0000	0.0000
37	QD2	13.65	.31	.26	4.35	13.81	-.92	2.15	-.00669	-.00491	0.000000	0.000000	.0660	.0503	0.0000	0.0000
38	R	14.01	.33	.26	5.08	12.29	-1.08	2.00	-.00849	-.00491	0.000000	0.000000	.0844	.0503	0.0000	0.0000
39	R	14.38	.34	.26	5.93	10.87	-1.23	1.85	-.01030	-.00491	0.000000	0.000000	.1029	.0503	0.0000	0.0000
40	R	14.75	.35	.27	6.89	9.57	-1.39	1.70	-.01210	-.00491	0.000000	0.000000	.1213	.0503	0.0000	0.0000
41	R	15.11	.35	.28	7.96	8.37	-1.54	1.55	-.01390	-.00491	0.000000	0.000000	.1398	.0503	0.0000	0.0000
42	R	15.48	.36	.28	9.15	7.29	-1.70	1.40	-.01570	-.00491	0.000000	0.000000	.1582	.0503	0.0000	0.0000
43	R	15.85	.37	.29	10.45	6.31	-1.85	1.26	-.01750	-.00491	0.000000	0.000000	.1766	.0503	0.0000	0.0000
44	R	16.21	.37	.30	11.87	5.44	-2.01	1.11	-.01931	-.00491	0.000000	0.000000	.1951	.0503	0.0000	0.0000
45	R	16.58	.38	.31	13.40	4.69	-2.16	.96	-.02111	-.00491	0.000000	0.000000	.2135	.0503	0.0000	0.0000
46	R	16.95	.38	.33	15.04	4.04	-2.32	.81	-.02291	-.00491	0.000000	0.000000	.2320	.0503	0.0000	0.0000
47	R	17.32	.38	.34	16.80	3.51	-2.48	.66	-.02471	-.00491	0.000000	0.000000	.2504	.0503	0.0000	0.0000
48	QF3	17.73	.39	.36	17.91	3.22	-.15	.06	-.02602	-.00138	0.000000	0.000000	.2640	.0148	0.0000	0.0000
49	QF3	18.14	.39	.38	17.04	3.41	2.21	-.53	-.02584	.00223	0.000000	0.000000	.2626	-.0215	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
50	Z	18.50	.39	.40	15.49	3.84	2.09	-.66	-.02504	.00223	0.000000	0.000000	.2548	-.0215	0.0000	0.0000
51	Z	18.86	.40	.41	14.03	4.36	1.96	-.80	-.02423	.00223	0.000000	0.000000	.2471	-.0215	0.0000	0.0000
52	Z	19.22	.40	.43	12.66	4.99	1.84	-.93	-.02343	.00223	0.000000	0.000000	.2353	-.0215	0.0000	0.0000
53	Z	19.58	.41	.44	11.38	5.71	1.71	-1.07	-.02262	.00223	0.000000	0.000000	.2316	-.0215	0.0000	0.0000
54	Z	19.95	.41	.45	10.19	6.53	1.59	-1.21	-.02181	.00223	0.000000	0.000000	.2238	-.0215	0.0000	0.0000
55	Z	20.31	.42	.45	9.09	7.45	1.46	-1.34	-.02101	.00223	0.000000	0.000000	.2161	-.0215	0.0000	0.0000
56	Z	20.67	.43	.46	8.08	8.47	1.34	-1.48	-.02020	.00223	0.000000	0.000000	.2083	-.0215	0.0000	0.0000
57	Z	21.03	.43	.47	7.16	9.59	1.21	-1.61	-.01940	.00223	0.000000	0.000000	.2006	-.0215	0.0000	0.0000
58	Z	21.39	.44	.47	6.33	10.79	1.09	-1.75	-.01859	.00223	0.000000	0.000000	.1928	-.0215	0.0000	0.0000
59	Z	21.75	.45	.48	5.58	12.10	.97	-1.88	-.01779	.00223	0.000000	0.000000	.1851	-.0215	0.0000	0.0000
60	QD3	22.16	.46	.48	5.14	12.99	.13	-.23	-.01737	-.00019	0.000000	0.000000	.1814	.0035	0.0000	0.0000
61	QD3	22.58	.48	.49	5.36	12.46	-.67	1.48	-.01795	-.00262	0.000000	0.000000	.1880	.0287	0.0000	0.0000
62	R	22.94	.49	.49	5.88	11.40	-.77	1.39	-.01891	-.00262	0.000000	0.000000	.1986	.0287	0.0000	0.0000
63	R	23.31	.50	.50	6.48	10.42	-.87	1.29	-.01987	-.00262	0.000000	0.000000	.2091	.0287	0.0000	0.0000
64	R	23.68	.50	.50	7.15	9.51	-.97	1.20	-.02083	-.00262	0.000000	0.000000	.2196	.0287	0.0000	0.0000
65	R	24.04	.51	.51	7.90	8.66	-1.06	1.11	-.02179	-.00262	0.000000	0.000000	.2302	.0287	0.0000	0.0000
66	R	24.41	.52	.52	8.71	7.88	-1.16	1.01	-.02276	-.00262	0.000000	0.000000	.2407	.0287	0.0000	0.0000
67	R	24.78	.53	.53	9.60	7.18	-1.26	.92	-.02372	-.00262	0.000000	0.000000	.2512	.0287	0.0000	0.0000
68	R	25.14	.53	.53	10.57	6.54	-1.36	.82	-.02468	-.00262	0.000000	0.000000	.2618	.0287	0.0000	0.0000
69	R	25.51	.54	.54	11.60	5.97	-1.46	.73	-.02564	-.00262	0.000000	0.000000	.2723	.0287	0.0000	0.0000
70	R	25.88	.54	.55	12.71	5.47	-1.56	.63	-.02661	-.00262	0.000000	0.000000	.2829	.0287	0.0000	0.0000
71	R	26.24	.55	.57	13.89	5.04	-1.66	.54	-.02757	-.00262	0.000000	0.000000	.2934	.0287	0.0000	0.0000
72	QF	26.59	.55	.58	14.48	4.90	-.01	-.13	-.02790	.00076	0.000000	0.000000	.2972	-.0069	0.0000	0.0000
73	QF	26.94	.56	.59	13.87	5.22	1.68	-.82	-.02704	.00412	0.000000	0.000000	.2886	-.0423	0.0000	0.0000
74	QD	27.98	.57	.61	10.69	7.27	1.40	-1.15	-.02278	.00412	0.000000	0.000000	.2447	-.0423	0.0000	0.0000
75	R	29.64	.60	.64	6.81	11.89	.94	-1.62	-.06463	.10134	0.000000	0.000000	-1.4371	-1.9867	0.0000	0.0000
76	QD	30.68	.63	.66	5.17	15.57	.65	-1.93	.16956	.10134	0.000000	0.000000	-3.4943	-1.9867	0.0000	0.0000
77	QD	31.03	.64	.66	4.95	16.30	-.02	-.10	.20892	.12401	0.000000	0.000000	-4.2678	-2.4423	0.0000	0.0000
78	QD	31.38	.65	.66	5.19	15.71	-.69	1.76	.25711	.15191	0.000000	0.000000	-5.2182	-2.9990	0.0000	0.0000
79	QD	32.41	.68	.67	6.93	12.35	-.99	1.49	.41440	.15191	0.000000	0.000000	-8.3234	-2.9990	0.0000	0.0000
80	B	34.07	.71	.70	10.97	8.04	-1.46	1.10	.74644	.24921	0.000000	0.000000	-14.9031	-4.9441	0.0000	0.0000
81	D	34.81	.72	.72	13.26	6.57	-1.67	.90	.92971	.24921	0.000000	0.000000	-18.5392	-4.9441	0.0000	0.0000
82	SF	34.81	.72	.72	13.26	6.57	-1.70	.92	.92971	.25171	0.000000	0.000000	-18.5392	-4.9688	0.0000	0.0000
83	OS	35.11	.72	.72	14.31	6.05	-1.79	.83	1.00522	.25171	0.000000	0.000000	-20.0298	-4.9688	0.0000	0.0000
84	QF	35.46	.72	.73	14.97	5.74	-.07	.05	1.07128	.12379	0.000000	0.000000	-21.3382	-2.4704	0.0000	0.0000
85	QE	35.81	.73	.74	14.40	5.97	1.67	-.72	1.09139	-.00943	0.000000	0.000000	-21.7495	.1319	0.0000	0.0000
86	OS	36.11	.73	.75	13.42	6.42	1.59	-.79	1.08856	-.00943	0.000000	0.000000	-21.7099	.1319	0.0000	0.0000
87	SF	36.11	.73	.75	13.42	6.42	1.55	-.77	1.08856	-.00601	0.000000	0.000000	-21.7099	.0980	0.0000	0.0000
88	D	36.84	.74	.77	11.28	7.69	1.36	-.95	1.08415	-.00601	0.000000	0.000000	-21.6378	.0980	0.0000	0.0000
89	LC	38.50	.77	.80	7.46	11.55	.94	-1.37	1.07417	-.00601	0.000000	0.000000	-21.4751	.0980	0.0000	0.0000
90	D	39.24	.79	.81	6.21	13.69	.76	-1.55	1.06976	-.00601	0.000000	0.000000	-21.4030	.0980	0.0000	0.0000
91	SD	39.24	.79	.81	6.21	13.69	.78	-1.61	1.06976	-.01104	0.000000	0.000000	-21.4030	.1479	0.0000	0.0000
92	OS	39.54	.79	.81	5.76	14.69	.71	-1.69	1.06645	-.01104	0.000000	0.000000	-21.3586	.1479	0.0000	0.0000
93	QD	39.89	.80	.81	5.53	15.28	-.03	.04	1.08508	.11774	0.000000	0.000000	-21.7488	-2.3819	0.0000	0.0000
94	QD	40.24	.81	.82	5.80	14.64	-.76	1.76	1.14956	.25151	0.000000	0.000000	-23.0400	-5.0104	0.0000	0.0000
95	OS	40.54	.82	.82	6.28	13.60	-.84	1.68	1.22501	.25151	0.000000	0.000000	-24.5431	-5.0104	0.0000	0.0000
96	SD	40.54	.82	.82	6.28	13.60	-.81	1.61	1.22501	.24490	0.000000	0.000000	-24.5431	-4.9448	0.0000	0.0000
97	D	41.28	.84	.83	7.62	11.38	-1.00	1.41	1.40512	.24490	0.000000	0.000000	-28.1796	-4.9448	0.0000	0.0000
98	LC	42.94	.87	.86	11.69	7.42	-1.44	.98	1.81174	.24490	0.000000	0.000000	-36.3900	-4.9448	0.0000	0.0000
99	D	43.67	.88	.88	13.95	6.12	-1.64	.78	1.99185	.24490	0.000000	0.000000	-40.0265	-4.9448	0.0000	0.0000

PRYOR CORP 14852GU

	POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
1	100	SF	43.67	.88	.88	13.95	6.12	-1.72	.82	1.99185	.25646	0.000000	0.000000	-40.0265	-5.0598	0.0000	0.0000
	101	OS	43.97	.89	.88	15.00	5.66	-1.80	.74	2.06878	.25646	0.000000	0.000000	-41.5445	-5.0598	0.0000	0.0000
	102	QF	44.32	.88	.89	15.64	5.40	-.61	.00	2.11370	-.00123	0.000000	0.000000	-42.4323	.0119	0.0000	0.0000
	103	QF	44.67	.89	.90	14.99	5.66	1.81	-.73	2.06793	-.25887	0.000000	0.000000	-41.5362	5.0831	0.0000	0.0000
2	104	OS	44.97	.89	.91	13.93	6.12	1.73	-.82	1.99026	-.25887	0.000000	0.000000	-40.0113	5.0831	0.0000	0.0000
3																	
	105	SF	44.97	.89	.91	13.93	6.12	1.65	-.78	1.99026	-.24732	0.000000	0.000000	-40.0113	4.9682	0.0000	0.0000
4	106	O	45.71	.90	.93	11.65	7.42	1.45	-.97	1.80838	-.24732	0.000000	0.000000	-36.3576	4.9682	0.0000	0.0000
5	107	B	47.37	.93	.96	7.53	11.28	1.01	-1.35	1.48030	-.15002	0.000000	0.000000	-29.7461	3.0230	0.0000	0.0000
6	108	O	48.10	.95	.97	6.24	13.39	.81	-1.53	1.36997	-.15002	0.000000	0.000000	-27.5229	3.0230	0.0000	0.0000
	109	SD	48.10	.95	.97	6.24	13.39	.85	-1.61	1.36997	-.15831	0.000000	0.000000	-27.5229	3.1055	0.0000	0.0000
7																	
8	110	OS	48.40	.95	.97	5.75	14.39	.77	-1.69	1.32247	-.15831	0.000000	0.000000	-26.5913	3.1055	0.0000	0.0000
9	111	QD	48.05	.96	.97	5.47	14.99	.04	.00	1.29454	-.00165	0.000000	0.000000	-26.0460	.0164	0.0000	0.0000
	112	QD	49.10	.97	.98	5.70	14.38	-.69	1.70	1.32131	-.15494	0.000000	0.000000	-26.5797	-3.0720	0.0000	0.0000
10	113	OS	49.40	.98	.98	6.13	13.39	-.76	1.62	1.36779	.15494	0.000000	0.000000	-27.5013	-3.0720	0.0000	0.0000
11	114	SD	49.40	.98	.98	6.13	13.39	-.73	1.54	1.36779	.14667	0.000000	0.000000	-27.5013	-2.9896	0.0000	0.0000
12																	
	115	O	50.14	1.00	.99	7.34	11.27	-.91	1.35	1.47565	.14667	0.000000	0.000000	-29.6999	-2.9896	0.0000	0.0000
13	116	B	51.79	1.03	1.02	11.03	7.40	-1.32	.98	1.79819	.24396	0.000000	0.000000	-36.2561	-4.9348	0.0000	0.0000
14	117	O	52.53	1.04	1.04	13.11	6.11	-1.51	.78	1.97761	.24396	0.000000	0.000000	-39.8853	-4.9348	0.0000	0.0000
15	118	SF	52.53	1.04	1.04	13.11	6.11	-1.58	.82	1.97761	.25540	0.000000	0.000000	-39.8853	-5.0490	0.0000	0.0000
	119	OS	52.83	1.04	1.05	14.09	5.64	-1.66	.73	2.05423	.25540	0.000000	0.000000	-41.4000	-5.0490	0.0000	0.0000
16																	
17	120	QF	53.18	1.05	1.06	14.67	5.39	.03	.00	2.09909	-.00051	0.000000	0.000000	-42.2871	.0052	0.0000	0.0000
18	121	QF	53.53	1.05	1.07	14.04	5.64	1.72	-.73	2.05388	-.25640	0.000000	0.000000	-41.3964	5.0592	0.0000	0.0000
	122	OS	53.83	1.05	1.07	13.04	6.11	1.64	-.81	1.97696	-.25640	0.000000	0.000000	-39.8786	5.0592	0.0000	0.0000
19	123	SF	53.83	1.05	1.07	13.04	6.11	1.56	-.78	1.97696	-.24496	0.000000	0.000000	-39.8786	4.9451	0.0000	0.0000
20	124	O	54.57	1.06	1.09	10.88	7.39	1.37	-.97	1.79680	-.24496	0.000000	0.000000	-36.2418	4.9451	0.0000	0.0000
21																	
	125	B	56.22	1.09	1.12	7.08	11.25	.93	-1.35	1.47261	-.14766	0.000000	0.000000	-29.6686	2.9999	0.0000	0.0000
22	126	O	56.96	1.11	1.13	5.85	13.37	.74	-1.53	1.36402	-.14766	0.000000	0.000000	-27.4624	2.9999	0.0000	0.0000
23	127	SD	56.96	1.11	1.13	5.85	13.37	.77	-1.61	1.36402	-.15590	0.000000	0.000000	-27.4624	3.0820	0.0000	0.0000
24	128	OS	57.26	1.12	1.13	5.41	14.36	.69	-1.69	1.31725	-.15590	0.000000	0.000000	-26.5378	3.0820	0.0000	0.0000
	129	QD	57.61	1.13	1.14	5.18	14.96	-.00	-.00	1.29005	.00018	0.000000	0.000000	-25.9997	-.0012	0.0000	0.0000
25																	
26	130	QD	57.96	1.14	1.14	5.42	14.36	-.70	1.69	1.31737	.15627	0.000000	0.000000	-26.5386	-3.0844	0.0000	0.0000
27	131	OS	58.26	1.15	1.15	5.87	13.37	-.78	1.61	1.36426	.15627	0.000000	0.000000	-27.4639	-3.0844	0.0000	0.0000
	132	SD	58.26	1.15	1.15	5.87	13.37	-.75	1.53	1.36426	.14803	0.000000	0.000000	-27.4639	-3.0023	0.0000	0.0000
28	133	O	59.00	1.17	1.15	7.11	11.25	-.94	1.35	1.47312	.14803	0.000000	0.000000	-29.6719	-3.0023	0.0000	0.0000
29	134	B	60.65	1.20	1.18	10.96	7.40	-1.38	.97	1.79792	.24533	0.000000	0.000000	-36.2491	-4.9475	0.0000	0.0000
30																	
	135	O	61.39	1.21	1.20	13.14	6.11	-1.58	.78	1.97835	.24533	0.000000	0.000000	-39.8876	-4.9475	0.0000	0.0000
31	136	SF	61.39	1.21	1.20	13.14	6.11	-1.66	.81	1.97835	.25678	0.000000	0.000000	-39.8876	-5.0617	0.0000	0.0000
32	137	OS	61.69	1.21	1.21	14.16	5.64	-1.74	.73	2.05538	.25678	0.000000	0.000000	-41.4061	-5.0617	0.0000	0.0000
	138	QF	62.04	1.21	1.22	14.79	5.39	-.04	-.00	2.10069	.00070	0.000000	0.000000	-42.2975	-.0065	0.0000	0.0000
33	139	QF	62.39	1.22	1.23	14.21	5.65	1.67	-.74	2.05586	-.25541	0.000000	0.000000	-41.4106	5.0490	0.0000	0.0000
34																	
35	140	OS	62.69	1.22	1.24	13.23	6.11	1.59	-.82	1.97924	-.25541	0.000000	0.000000	-39.8959	5.0490	0.0000	0.0000
36	141	SF	62.69	1.22	1.24	13.23	6.11	1.52	-.78	1.97924	-.24396	0.000000	0.000000	-39.8959	4.9347	0.0000	0.0000
	142	O	63.42	1.23	1.26	11.13	7.41	1.33	-.98	1.79983	-.24396	0.000000	0.000000	-36.2668	4.9347	0.0000	0.0000
37	143	B	65.08	1.26	1.28	7.41	11.27	.92	-1.35	1.47730	-.14666	0.000000	0.000000	-29.7106	2.9896	0.0000	0.0000
38	144	O	65.82	1.28	1.29	6.19	13.40	.74	-1.54	1.36944	-.14666	0.000000	0.000000	-27.5120	2.9896	0.0000	0.0000
39																	
	145	SD	65.82	1.28	1.29	6.19	13.40	.77	-1.62	1.36944	-.15495	0.000000	0.000000	-27.5120	3.0720	0.0000	0.0000
40	146	OS	66.12	1.29	1.30	5.75	14.39	.70	-1.70	1.32296	-.15495	0.000000	0.000000	-26.5904	3.0720	0.0000	0.0000
41	147	QD	66.47	1.30	1.30	5.52	14.99	-.03	-.00	1.29622	.00184	0.000000	0.000000	-26.0569	-.0176	0.0000	0.0000
42	148	QD	66.82	1.31	1.31	5.79	14.39	-.77	1.69	1.32426	.15871	0.000000	0.000000	-26.6028	-3.1080	0.0000	0.0000
	149	OS	67.12	1.31	1.31	6.28	13.40	-.85	1.61	1.37187	.15871	0.000000	0.000000	-27.5352	-3.1080	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.12	1.31	1.31	6.28	13.40	-.81	1.53	1.37187	.15040	0.000000	0.000000	-27.5352	-3.0255	0.0000	0.0000
151	D	67.85	1.33	1.32	7.62	11.28	-1.01	1.35	1.48248	.15040	0.000000	0.000000	-29.7603	-3.0255	0.0000	0.0000
152	B	69.51	1.36	1.35	11.68	7.42	-1.45	.98	1.81118	.24770	0.000000	0.000000	-36.3757	-4.9706	0.0000	0.0000
153	D	70.25	1.37	1.36	13.95	6.12	-1.64	.78	1.99335	.24770	0.000000	0.000000	-40.0313	-4.9706	0.0000	0.0000
154	SF	70.25	1.37	1.36	13.95	6.12	-1.72	.82	1.99335	.25927	0.000000	0.000000	-40.0313	-5.0857	0.0000	0.0000
155	OS	70.55	1.37	1.37	15.01	5.66	-1.81	-.74	2.07113	.25927	0.000000	0.000000	-41.5570	-5.0857	0.0000	0.0000
156	QF	70.90	1.37	1.38	15.65	5.40	.00	.00	2.11697	.00124	0.000000	0.000000	-42.4535	-.0119	0.0000	0.0000
157	QF	71.25	1.38	1.39	15.00	5.66	1.81	-.74	2.07199	-.25684	0.000000	0.000000	-41.5653	5.0623	0.0000	0.0000
158	OS	71.55	1.38	1.40	13.94	6.12	1.73	-.82	1.99494	-.25684	0.000000	0.000000	-40.0466	5.0623	0.0000	0.0000
159	SF	71.55	1.38	1.40	13.94	6.12	1.65	-.78	1.99494	-.24526	0.000000	0.000000	-40.0466	4.9472	0.0000	0.0000
160	D	72.28	1.39	1.42	11.67	7.42	1.45	-.98	1.81457	-.24526	0.000000	0.000000	-36.4083	4.9472	0.0000	0.0000
161	B	73.94	1.42	1.45	7.80	11.28	1.01	-1.35	1.48990	-.14796	0.000000	0.000000	-29.8316	3.0020	0.0000	0.0000
162	D	74.68	1.44	1.46	6.26	13.40	.81	-1.53	1.38109	-.14796	0.000000	0.000000	-27.6238	3.0020	0.0000	0.0000
163	SD	74.68	1.44	1.46	6.26	13.40	.85	-1.61	1.38109	-.15635	0.000000	0.000000	-27.6238	3.0851	0.0000	0.0000
164	OS	74.98	1.44	1.46	5.77	14.39	.77	-1.69	1.33418	-.15635	0.000000	0.000000	-26.6983	3.0851	0.0000	0.0000
165	QD	75.33	1.45	1.46	5.50	14.99	.04	.00	1.30718	.00175	0.000000	0.000000	-26.1624	-.0171	0.0000	0.0000
166	QD	75.68	1.46	1.47	5.72	14.39	-.69	1.70	1.33542	.15993	0.000000	0.000000	-26.7103	-3.1199	0.0000	0.0000
167	OS	75.98	1.47	1.47	6.16	13.40	-.77	1.62	1.38340	.15993	0.000000	0.000000	-27.6463	-3.1199	0.0000	0.0000
168	SD	75.98	1.47	1.47	6.16	13.40	-.73	1.53	1.38340	.15152	0.000000	0.000000	-27.6463	-3.0367	0.0000	0.0000
169	D	76.71	1.49	1.48	7.37	11.27	-.92	1.35	1.49483	.15152	0.000000	0.000000	-29.8796	-3.0367	0.0000	0.0000
170	B	78.37	1.52	1.51	11.08	7.41	-1.33	.98	1.82537	.24882	0.000000	0.000000	-36.5136	-4.9819	0.0000	0.0000
171	D	79.10	1.53	1.53	13.17	6.11	-1.51	.78	2.00836	.24882	0.000000	0.000000	-40.1774	-4.9819	0.0000	0.0000
172	SF	79.10	1.53	1.53	13.17	6.11	-1.59	.82	2.00836	.26052	0.000000	0.000000	-40.1774	-5.0978	0.0000	0.0000
173	OS	79.40	1.53	1.54	14.15	5.65	-1.67	.74	2.08652	.26052	0.000000	0.000000	-41.7068	-5.0978	0.0000	0.0000
174	QF	79.76	1.54	1.55	14.73	5.39	.03	.00	2.13247	.00060	0.000000	0.000000	-42.6044	-.0059	0.0000	0.0000
175	QF	80.11	1.54	1.56	14.10	5.65	1.73	-.73	2.08694	-.25934	0.000000	0.000000	-41.7109	5.0863	0.0000	0.0000
176	OS	80.41	1.54	1.56	13.09	6.11	1.65	-.81	2.00914	-.25934	0.000000	0.000000	-40.1850	5.0863	0.0000	0.0000
177	SF	80.41	1.54	1.56	13.09	6.11	1.57	-.78	2.00914	-.24763	0.000000	0.000000	-40.1850	4.9703	0.0000	0.0000
178	D	81.14	1.55	1.58	10.92	7.40	1.38	-.97	1.82703	-.24763	0.000000	0.000000	-36.5296	4.9703	0.0000	0.0000
179	B	82.80	1.58	1.61	7.10	11.25	.94	-1.35	1.49845	-.15033	0.000000	0.000000	-29.9147	3.0252	0.0000	0.0000
180	D	83.53	1.60	1.62	5.86	13.37	.74	-1.53	1.38789	-.15033	0.000000	0.000000	-27.6898	3.0252	0.0000	0.0000
181	SD	83.53	1.60	1.62	5.86	13.37	.78	-1.61	1.38789	-.15878	0.000000	0.000000	-27.6698	3.1087	0.0000	0.0000
182	OS	83.83	1.61	1.62	5.42	14.36	.70	-1.69	1.34026	-.15878	0.000000	0.000000	-26.7572	3.1087	0.0000	0.0000
183	QD	84.18	1.62	1.63	5.18	14.96	.00	-.00	1.31253	-.00000	0.000000	0.000000	-26.2143	.0000	0.0000	0.0000
184	REFL	168.37	3.24	3.25	17.91	5.10	-.00	-.00	.03341	-.00000	0.000000	0.000000	-.3477	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.1081 M THETX = 6.28318638 RAD NUX = 9.72107 DNUX/(DP/P) = .32692
(DS/S)/RADIUS = .0068208 M THETY(183) = 0.00000000 RAD NUY = 9.76376 DNUY/(DP/P) = .43820
TGAM = (7.71077, 0.00000)

MAXIMA	--- BETX(1) =	17.91259	BETY(77) =	16.29623	ETAX(174) =	2.13247	ETAY(184) =	0.00000
MINIMA	--- BETX(36) =	3.95271	BETY(48) =	3.21594	ETAX(32) =	.00008	ETAY(184) =	0.00000

*** INCR 1 // DP .005000 VALUE = -.015000

SUB. CHR . ITER. 2

PRYOR CORP. 1485268

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V
X = -.00034772 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = -.01500000 1.00000000
2

7X7 MATRIX FOR AGR

.05547951	17.88030476	0.00000000	0.00000000	0.00000000	.02442197	.00016680
-.05575532	.05547951	0.00000000	0.00000000	0.00000000	.00144164	.00000985
0.00000000	0.00000000	-.03127569	5.25435730	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.19013207	-.03127569	0.00000000	0.00000000	0.00000000
-.00144164	-.02442197	0.00000000	0.00000000	1.00000000	-2.84351346	.04525735
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.05547951 -.99845983), C(1) = 1.00000000, MU(1) = 1.51528832 RAD, Q(1) = .72349688
1/LMD1 = (.05547951 -.99845983), C(2) = 1.00000000, MU(2) = -1.51528832 RAD, Q(2) = .27650312

Y... LMD3 = (-.03127569 -.99951080), C(3) = 1.00000000, MU(3) = 1.60207712 RAD, Q(3) = .76493548
1/LMD3 = (-.03127569 -.99951080), C(4) = 1.00000000, MU(4) = -1.60207712 RAD, Q(4) = .23506452

EIGENVALUE = (.05547951, .99845983), EIGENVECTOR = (4.23177103, 0.00000000)
(-.00000000, -.23630768)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.05547951, -.99845983), EIGENVECTOR = (4.23177103, 0.00000000)
(-.00000000, -.23630768)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.03127569, .99951080), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.29279938, 0.00000000)
(-.00000000, .43614806)

EIGENVALUE = (-.03127569, -.99951080), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.29279938, 0.00000000)
(-.00000000, -.43614806)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00019630	0.00000000	0.00000000	0.00000000	0.00000000	-.01500000	1.00000000
ETA ORBIT	.02585647	.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.231771	0.000000	-.236308	1.570796	0.000000	0.000000	0.000000	0.000000
	0.000000	0.000000	0.000000	0.000000	2.292799	0.000000	-.436148	1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.91	5.26	0.00	0.00	.02586	.00000	0.000000	0.000000	-.1963	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	17.08	5.51	2.31	-.80	.02525	-.00347	0.000000	0.000000	-.1917	.0262	0.0000	0.0000
2	S	.72	.01	.02	15.41	6.17	2.17	-.91	.02395	-.00347	0.000000	0.000000	-.1819	.0262	0.0000	0.0000
3	S	1.10	.01	.03	13.84	6.89	2.03	-1.02	.02265	-.00347	0.000000	0.000000	-.1722	.0262	0.0000	0.0000
4	S	1.47	.02	.04	12.37	7.69	1.90	-1.13	.02136	-.00347	0.000000	0.000000	-.1624	.0262	0.0000	0.0000
5	S	1.84	.02	.05	11.01	8.57	1.76	-1.24	.02006	-.00347	0.000000	0.000000	-.1526	.0262	0.0000	0.0000
6	S	2.22	.03	.05	9.75	9.54	1.62	-1.35	.01877	-.00347	0.000000	0.000000	-.1429	.0262	0.0000	0.0000
7	S	2.59	.03	.06	8.59	10.58	1.48	-1.46	.01747	-.00347	0.000000	0.000000	-.1331	.0262	0.0000	0.0000
8	S	2.96	.04	.06	7.54	11.71	1.34	-1.57	.01618	-.00347	0.000000	0.000000	-.1234	.0262	0.0000	0.0000
9	S	3.34	.05	.07	6.59	12.93	1.20	-1.68	.01488	-.00347	0.000000	0.000000	-.1136	.0262	0.0000	0.0000
10	S	3.71	.06	.07	5.75	14.22	1.06	-1.79	.01359	-.00347	0.000000	0.000000	-.1038	.0262	0.0000	0.0000
11	S	4.09	.07	.08	5.00	15.60	.93	-1.90	.01229	-.00347	0.000000	0.000000	-.0941	.0262	0.0000	0.0000
12	QD1	4.43	.08	.08	4.60	16.26	.24	.03	.01133	-.00201	0.000000	0.000000	-.0869	.0150	0.0000	0.0000
13	QD1	4.78	.09	.08	4.66	15.55	-.41	1.96	.01087	-.00063	0.000000	0.000000	-.0835	.0045	0.0000	0.0000
14	S	5.16	.11	.09	5.00	14.13	-.50	1.84	.01064	-.00063	0.000000	0.000000	-.0818	.0045	0.0000	0.0000
15	S	5.53	.12	.09	5.41	12.80	-.60	1.73	.01040	-.00063	0.000000	0.000000	-.0801	.0045	0.0000	0.0000
16	S	5.90	.13	.10	5.89	11.55	-.69	1.61	.01017	-.00063	0.000000	0.000000	-.0784	.0045	0.0000	0.0000
17	S	6.28	.14	.10	6.44	10.40	-.78	1.50	.00993	-.00063	0.000000	0.000000	-.0767	.0045	0.0000	0.0000
18	S	6.65	.15	.11	7.06	9.32	-.88	1.38	.00970	-.00063	0.000000	0.000000	-.0750	.0045	0.0000	0.0000
19	S	7.02	.15	.11	7.75	8.34	-.97	1.26	.00946	-.00063	0.000000	0.000000	-.0733	.0045	0.0000	0.0000
20	S	7.39	.16	.12	8.51	7.44	-1.06	1.15	.00923	-.00063	0.000000	0.000000	-.0716	.0045	0.0000	0.0000
21	S	7.77	.17	.13	9.34	6.62	-1.16	1.03	.00899	-.00063	0.000000	0.000000	-.0699	.0045	0.0000	0.0000
22	S	8.14	.17	.14	10.23	5.90	-1.25	.91	.00876	-.00063	0.000000	0.000000	-.0682	.0045	0.0000	0.0000
23	S	8.51	.18	.15	11.20	5.26	-1.34	.80	.00852	-.00063	0.000000	0.000000	-.0665	.0045	0.0000	0.0000
24	QF2	8.86	.18	.16	11.65	4.96	.08	.07	.00811	-.00170	0.000000	0.000000	-.0635	.0129	0.0000	0.0000
25	QF2	9.22	.19	.17	11.10	5.16	1.49	-.65	.00734	-.00270	0.000000	0.000000	-.0576	.0206	0.0000	0.0000
26	S	9.59	.19	.18	10.03	5.69	1.38	-.76	.00633	-.00270	0.000000	0.000000	-.0499	.0206	0.0000	0.0000
27	S	9.96	.20	.19	9.04	6.29	1.27	-.86	.00532	-.00270	0.000000	0.000000	-.0422	.0206	0.0000	0.0000
28	S	10.33	.21	.20	8.13	6.97	1.16	-.96	.00431	-.00270	0.000000	0.000000	-.0345	.0206	0.0000	0.0000
29	S	10.71	.22	.21	7.31	7.73	1.05	-1.06	.00331	-.00270	0.000000	0.000000	-.0268	.0206	0.0000	0.0000
30	S	11.08	.22	.22	6.56	8.56	.95	-1.17	.00230	-.00270	0.000000	0.000000	-.0191	.0206	0.0000	0.0000
31	S	11.45	.23	.22	5.90	9.47	.84	-1.27	.00129	-.00270	0.000000	0.000000	-.0114	.0206	0.0000	0.0000
32	S	11.83	.24	.23	5.31	10.45	.73	-1.37	.00028	-.00270	0.000000	0.000000	-.0037	.0206	0.0000	0.0000
33	S	12.20	.26	.24	4.80	11.52	.62	-1.48	-.00073	-.00270	0.000000	0.000000	.0040	.0206	0.0000	0.0000
34	S	12.57	.27	.24	4.38	12.66	.52	-1.58	-.00174	-.00270	0.000000	0.000000	.0117	.0206	0.0000	0.0000
35	S	12.95	.28	.25	4.04	13.88	.41	-1.68	-.00274	-.00270	0.000000	0.000000	.0194	.0206	0.0000	0.0000
36	QD2	13.30	.30	.25	3.98	14.39	-.23	.23	-.00377	-.00315	0.000000	0.000000	.0271	.0238	0.0000	0.0000
37	QD2	13.65	.31	.25	4.37	13.56	-.91	2.10	-.00497	-.00375	0.000000	0.000000	.0362	.0282	0.0000	0.0000
38	R	14.01	.32	.26	5.10	12.07	-1.07	1.96	-.00635	-.00375	0.000000	0.000000	.0465	.0282	0.0000	0.0000
39	R	14.38	.33	.26	5.94	10.69	-1.22	1.81	-.00773	-.00375	0.000000	0.000000	.0569	.0282	0.0000	0.0000
40	R	14.75	.34	.27	6.89	9.42	-1.38	1.66	-.00910	-.00375	0.000000	0.000000	.0672	.0282	0.0000	0.0000
41	R	15.11	.35	.28	7.96	8.25	-1.53	1.52	-.01048	-.00375	0.000000	0.000000	.0775	.0282	0.0000	0.0000
42	R	15.48	.36	.28	9.14	7.19	-1.68	1.37	-.01186	-.00375	0.000000	0.000000	.0879	.0282	0.0000	0.0000
43	R	15.85	.36	.29	10.43	6.24	-1.84	1.22	-.01323	-.00375	0.000000	0.000000	.0982	.0282	0.0000	0.0000
44	R	16.21	.37	.30	11.83	5.40	-1.99	1.08	-.01461	-.00375	0.000000	0.000000	.1085	.0282	0.0000	0.0000
45	R	16.58	.37	.31	13.35	4.66	-2.15	.93	-.01599	-.00375	0.000000	0.000000	.1188	.0282	0.0000	0.0000
46	R	16.95	.38	.33	14.98	4.03	-2.30	.78	-.01737	-.00375	0.000000	0.000000	.1292	.0282	0.0000	0.0000
47	R	17.32	.38	.34	16.73	3.51	-2.46	.64	-.01874	-.00375	0.000000	0.000000	.1395	.0282	0.0000	0.0000
48	QF3	17.73	.39	.36	17.83	3.24	-.15	.04	-.01975	-.00109	0.000000	0.000000	.1471	.0085	0.0000	0.0000
49	QF3	18.14	.39	.38	16.97	3.44	2.19	-.55	-.01964	.00163	0.000000	0.000000	.1465	-.0117	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
50	Z	18.50	.39	.40	15.44	3.89	2.06	-.68	-.01905	.00163	0.000000	0.000000	.1423	-.0117	0.0000	0.0000
51	Z	18.86	.40	.41	13.99	4.43	1.94	-.82	-.01847	.00163	0.000000	0.000000	.1381	-.0117	0.0000	0.0000
52	Z	19.22	.40	.42	12.64	5.07	1.82	-.96	-.01788	.00163	0.000000	0.000000	.1339	-.0117	0.0000	0.0000
53	Z	19.58	.41	.43	11.37	5.81	1.70	-1.09	-.01729	.00163	0.000000	0.000000	.1297	-.0117	0.0000	0.0000
54	Z	19.95	.41	.44	10.19	6.64	1.57	-1.23	-.01670	.00163	0.000000	0.000000	.1255	-.0117	0.0000	0.0000
55	Z	20.31	.42	.45	9.10	7.58	1.45	-1.36	-.01612	.00163	0.000000	0.000000	.1213	-.0117	0.0000	0.0000
56	Z	20.67	.42	.46	8.10	8.61	1.33	-1.50	-.01553	.00163	0.000000	0.000000	.1171	-.0117	0.0000	0.0000
57	Z	21.03	.43	.47	7.19	9.74	1.20	-1.64	-.01494	.00163	0.000000	0.000000	.1129	-.0117	0.0000	0.0000
58	Z	21.39	.44	.47	6.36	10.97	1.08	-1.77	-.01436	.00163	0.000000	0.000000	.1087	-.0117	0.0000	0.0000
59	Z	21.75	.45	.48	5.63	12.30	.96	-1.91	-.01377	.00163	0.000000	0.000000	.1045	-.0117	0.0000	0.0000
60	QD3	22.16	.46	.48	5.19	13.20	.13	-.23	-.01348	-.00023	0.000000	0.000000	.1026	.0024	0.0000	0.0000
61	QD3	22.58	.47	.49	5.41	12.67	-.68	1.50	-.01396	-.00211	0.000000	0.000000	.1065	.0166	0.0000	0.0000
62	R	22.94	.48	.49	5.95	11.60	-.78	1.40	-.01474	-.00211	0.000000	0.000000	.1126	.0166	0.0000	0.0000
63	R	23.31	.49	.50	6.55	10.61	-.88	1.31	-.01551	-.00211	0.000000	0.000000	.1187	.0166	0.0000	0.0000
64	R	23.68	.50	.50	7.23	9.68	-.98	1.21	-.01629	-.00211	0.000000	0.000000	.1248	.0166	0.0000	0.0000
65	R	24.04	.51	.51	7.99	8.83	-1.08	1.12	-.01706	-.00211	0.000000	0.000000	.1308	.0166	0.0000	0.0000
66	R	24.41	.52	.52	8.81	8.04	-1.17	1.03	-.01784	-.00211	0.000000	0.000000	.1369	.0166	0.0000	0.0000
67	R	24.78	.52	.52	9.71	7.32	-1.27	.93	-.01861	-.00211	0.000000	0.000000	.1430	.0166	0.0000	0.0000
68	R	25.14	.53	.53	10.68	6.67	-1.37	.84	-.01939	-.00211	0.000000	0.000000	.1491	.0166	0.0000	0.0000
69	R	25.51	.53	.54	11.72	6.09	-1.47	.75	-.02016	-.00211	0.000000	0.000000	.1552	.0166	0.0000	0.0000
70	R	25.88	.54	.55	12.84	5.58	-1.57	.65	-.02094	-.00211	0.000000	0.000000	.1613	.0166	0.0000	0.0000
71	R	26.24	.54	.56	14.03	5.13	-1.67	.56	-.02171	-.00211	0.000000	0.000000	.1674	.0166	0.0000	0.0000
72	QF	26.59	.55	.57	14.62	4.98	.01	-.12	-.02199	.00053	0.000000	0.000000	.1696	-.0037	0.0000	0.0000
73	QF	26.94	.55	.58	14.01	5.30	1.69	-.81	-.02134	.00316	0.000000	0.000000	.1648	-.0237	0.0000	0.0000
74	QD	27.498	.56	.61	10.81	7.33	1.40	-1.14	-.01807	.00316	0.000000	0.000000	.1402	-.0237	0.0000	0.0000
75	B	29.64	.60	.64	6.91	11.89	.95	-1.60	.06734	.09989	0.000000	0.000000	-1.1018	-1.4746	0.0000	0.0000
76	QD	30.68	.62	.65	5.24	15.52	.66	-1.91	.17076	.09989	0.000000	0.000000	-2.6287	-1.4746	0.0000	0.0000
77	QD	31.03	.63	.65	5.02	16.23	-.01	-.08	.20960	.12244	0.000000	0.000000	-3.2033	-1.8152	0.0000	0.0000
78	QD	31.38	.64	.66	5.26	15.63	-.69	1.75	.25720	.15011	0.000000	0.000000	-3.9099	-2.2305	0.0000	0.0000
79	QD	32.41	.67	.67	6.99	12.28	-.98	1.48	.41262	.15011	0.000000	0.000000	-6.2194	-2.2305	0.0000	0.0000
80	B	34.07	.70	.70	11.00	7.99	-1.44	1.09	.74136	.24689	0.000000	0.000000	-11.1178	-3.6818	0.0000	0.0000
81	Q	34.81	.71	.71	13.27	6.53	-1.65	.89	.92293	.24689	0.000000	0.000000	-13.8255	-3.6818	0.0000	0.0000
82	SF	34.81	.71	.71	13.27	6.53	-1.68	.90	.92293	.24873	0.000000	0.000000	-13.8255	-3.6954	0.0000	0.0000
83	QS	35.11	.72	.72	14.30	6.02	-1.76	.82	.99755	.24873	0.000000	0.000000	-14.9341	-3.6954	0.0000	0.0000
84	QF	35.46	.72	.73	14.94	5.72	-.05	.05	1.06294	.12306	0.000000	0.000000	-15.9080	-1.8422	0.0000	0.0000
85	QF	35.81	.72	.74	14.37	5.95	1.67	-.71	1.08321	-.00783	0.000000	0.000000	-16.2166	.0880	0.0000	0.0000
86	QS	36.11	.73	.75	13.39	6.40	1.59	-.79	1.08086	-.00783	0.000000	0.000000	-16.1901	.0880	0.0000	0.0000
87	SF	36.11	.73	.75	13.39	6.40	1.56	-.77	1.08086	-.00532	0.000000	0.000000	-16.1901	.0693	0.0000	0.0000
88	Q	36.84	.74	.76	11.23	7.67	1.37	-.96	1.07695	-.00532	0.000000	0.000000	-16.1392	.0693	0.0000	0.0000
89	LC	38.50	.76	.79	7.38	11.54	.95	-1.37	1.06812	-.00532	0.000000	0.000000	-16.0241	.0693	0.0000	0.0000
90	Q	39.24	.78	.80	6.12	13.70	.76	-1.56	1.06421	-.00532	0.000000	0.000000	-15.9732	.0693	0.0000	0.0000
91	SQ	39.24	.78	.80	6.12	13.70	.78	-1.60	1.06421	-.00903	0.000000	0.000000	-15.9732	.0969	0.0000	0.0000
92	QS	39.54	.79	.80	5.68	14.68	.70	-1.68	1.06150	-.00903	0.000000	0.000000	-15.9441	.0969	0.0000	0.0000
93	QD	39.89	.80	.81	5.44	15.27	-.02	.04	1.08052	.11792	0.000000	0.000000	-16.2384	-1.7822	0.0000	0.0000
94	QD	40.24	.81	.81	5.71	14.63	-.74	1.75	1.14474	.24980	0.000000	0.000000	-17.2020	-3.7347	0.0000	0.0000
95	QS	40.54	.82	.82	6.18	13.61	-.83	1.67	1.21968	.24980	0.000000	0.000000	-18.3224	-3.7347	0.0000	0.0000
96	SQ	40.54	.82	.82	6.18	13.61	-.80	1.62	1.21968	.24492	0.000000	0.000000	-18.3224	-3.6984	0.0000	0.0000
97	Q	41.29	.84	.82	7.50	11.37	-1.00	1.42	1.39980	.24492	0.000000	0.000000	-21.0423	-3.6984	0.0000	0.0000
98	LC	42.94	.86	.85	11.54	7.39	-1.44	.98	1.80646	.24492	0.000000	0.000000	-27.1831	-3.6984	0.0000	0.0000
99	Q	43.67	.87	.87	13.80	6.09	-1.63	.78	1.98658	.24492	0.000000	0.000000	-29.9030	-3.6984	0.0000	0.0000

PRYOR CORP. 14652GB

	POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
1	100	SF	43.67	.87	.87	13.80	6.09	-1.69	.81	1.98658	.25347	0.000000	0.000000	-29.9030	-3.7622	0.0000	0.0000
2	101	OS	43.97	.88	.88	14.84	5.63	-1.78	.73	2.06262	.25347	0.000000	0.000000	-31.0317	-3.7622	0.0000	0.0000
3	102	QF	44.32	.88	.89	15.47	5.37	.00	.00	2.10706	-.00086	0.000000	0.000000	-31.6522	.0066	0.0000	0.0000
4	103	QF	44.67	.88	.90	14.83	5.62	1.78	-.73	2.06202	-.25515	0.000000	0.000000	-31.0271	3.7752	0.0000	0.0000
5	104	OS	44.97	.89	.91	13.79	6.09	1.70	-.81	1.98548	-.25515	0.000000	0.000000	-29.8945	3.7752	0.0000	0.0000
6	105	SF	44.97	.89	.91	13.79	6.09	1.64	-.78	1.98548	-.24660	0.000000	0.000000	-29.8945	3.7114	0.0000	0.0000
7	106	O	45.71	.90	.93	11.52	7.38	1.44	-.98	1.80412	-.24660	0.000000	0.000000	-27.1650	3.7114	0.0000	0.0000
8	107	B	47.37	.93	.95	7.48	11.27	1.00	-1.36	1.47647	-.14982	0.000000	0.000000	-22.2222	2.2601	0.0000	0.0000
9	108	O	48.10	.94	.96	6.16	13.40	.80	-1.54	1.36628	-.14982	0.000000	0.000000	-20.5601	2.2601	0.0000	0.0000
10	109	SD	48.10	.94	.96	6.16	13.40	.83	-1.60	1.36628	-.15595	0.000000	0.000000	-20.5601	2.3059	0.0000	0.0000
11	110	OS	48.40	.95	.97	5.68	14.38	.75	-1.68	1.31950	-.15595	0.000000	0.000000	-19.8683	2.3059	0.0000	0.0000
12	111	QD	48.75	.96	.97	5.42	14.98	.03	.00	1.29206	-.00118	0.000000	0.000000	-19.4640	.0093	0.0000	0.0000
13	112	QD	49.10	.97	.98	5.64	14.38	-.69	1.69	1.31867	-.15355	0.000000	0.000000	-19.8618	-2.2869	0.0000	0.0000
14	113	OS	49.40	.98	.98	6.08	13.39	-.77	1.61	1.36474	.15355	0.000000	0.000000	-20.5478	-2.2869	0.0000	0.0000
15	114	SD	49.40	.98	.98	6.08	13.39	-.74	1.55	1.36474	.14743	0.000000	0.000000	-20.5478	-2.2412	0.0000	0.0000
16	115	O	50.14	1.00	.99	7.31	11.25	-.93	1.36	1.47316	.14743	0.000000	0.000000	-22.1961	-2.2412	0.0000	0.0000
17	116	B	51.80	1.03	1.02	11.07	7.35	-1.35	.98	1.79686	.24421	0.000000	0.000000	-27.1076	-3.6925	0.0000	0.0000
18	117	O	52.53	1.04	1.03	13.19	6.05	-1.54	.78	1.97646	.24421	0.000000	0.000000	-29.8232	-3.6925	0.0000	0.0000
19	118	SF	52.53	1.04	1.03	13.19	6.05	-1.59	.81	1.97646	.25270	0.000000	0.000000	-29.8232	-3.7560	0.0000	0.0000
20	119	OS	52.83	1.04	1.04	14.17	5.59	-1.67	.73	2.05227	.25270	0.000000	0.000000	-30.9500	-3.7560	0.0000	0.0000
21	120	QF	53.18	1.04	1.05	14.76	5.34	.02	.00	2.09667	-.00037	0.000000	0.000000	-31.6100	.0030	0.0000	0.0000
22	121	QF	53.53	1.05	1.06	14.14	5.59	1.72	-.72	2.05201	-.25343	0.000000	0.000000	-30.9479	3.7619	0.0000	0.0000
23	122	OS	53.83	1.05	1.07	13.13	6.04	1.63	-.80	1.97599	-.25343	0.000000	0.000000	-29.8193	3.7619	0.0000	0.0000
24	123	SF	53.83	1.05	1.07	13.13	6.04	1.58	-.78	1.97599	-.24494	0.000000	0.000000	-29.8193	3.6984	0.0000	0.0000
25	124	O	54.57	1.06	1.09	10.96	7.33	1.38	-.97	1.79585	-.24494	0.000000	0.000000	-27.0994	3.6984	0.0000	0.0000
26	125	B	56.23	1.09	1.12	7.11	11.20	-.94	1.35	1.47094	-.14816	0.000000	0.000000	-22.1780	2.2471	0.0000	0.0000
27	126	O	56.96	1.11	1.13	5.87	13.32	.75	-1.54	1.36198	-.14816	0.000000	0.000000	-20.5254	2.2471	0.0000	0.0000
28	127	SD	56.96	1.11	1.13	5.87	13.32	.77	-1.60	1.36198	-.15426	0.000000	0.000000	-20.5254	2.2927	0.0000	0.0000
29	128	OS	57.26	1.12	1.13	5.43	14.30	.69	-1.68	1.31570	-.15426	0.000000	0.000000	-19.8376	2.2927	0.0000	0.0000
30	129	QD	57.61	1.13	1.14	5.19	14.90	-.00	-.00	1.28877	.00010	0.000000	0.000000	-19.4372	-.0005	0.0000	0.0000
31	130	QD	57.96	1.14	1.14	5.43	14.30	-.70	1.68	1.31577	.15446	0.000000	0.000000	-19.8380	-2.2937	0.0000	0.0000
32	131	OS	58.26	1.15	1.14	5.88	13.32	-.78	1.60	1.36210	.15446	0.000000	0.000000	-20.5261	-2.2937	0.0000	0.0000
33	132	SD	58.26	1.15	1.14	5.88	13.32	-.75	1.54	1.36210	.14836	0.000000	0.000000	-20.5261	-2.2481	0.0000	0.0000
34	133	O	59.00	1.15	1.15	7.13	11.20	-.95	1.35	1.47121	.14836	0.000000	0.000000	-22.1794	-2.2481	0.0000	0.0000
35	134	B	60.66	1.19	1.18	11.00	7.33	-1.39	.97	1.79644	.24514	0.000000	0.000000	-27.1024	-3.6994	0.0000	0.0000
36	135	O	61.39	1.20	1.20	13.19	6.05	-1.59	.78	1.97672	.24514	0.000000	0.000000	-29.8231	-3.6994	0.0000	0.0000
37	136	SF	61.39	1.20	1.20	13.19	6.05	-1.64	.80	1.97672	.25362	0.000000	0.000000	-29.8231	-3.7629	0.0000	0.0000
38	137	OS	61.69	1.21	1.21	14.20	5.59	-1.73	.72	2.05281	.25362	0.000000	0.000000	-30.9519	-3.7629	0.0000	0.0000
39	138	QF	62.04	1.21	1.22	14.82	5.34	-.03	-.00	2.09752	.00047	0.000000	0.000000	-31.6144	-.0035	0.0000	0.0000
40	139	QF	62.39	1.22	1.23	14.24	5.60	1.68	-.73	2.05314	-.25270	0.000000	0.000000	-30.9544	3.7560	0.0000	0.0000
41	140	OS	62.69	1.22	1.24	13.25	6.06	1.60	-.81	1.97733	-.25270	0.000000	0.000000	-29.8276	3.7560	0.0000	0.0000
42	141	SF	62.69	1.22	1.24	13.25	6.06	1.54	-.79	1.97733	-.24421	0.000000	0.000000	-29.8276	3.6925	0.0000	0.0000
43	142	O	63.43	1.23	1.25	11.13	7.36	1.35	-.98	1.79773	-.24421	0.000000	0.000000	-27.1120	3.6925	0.0000	0.0000
44	143	B	65.09	1.26	1.28	7.35	11.26	.93	-1.36	1.47403	-.14743	0.000000	0.000000	-22.2005	2.2412	0.0000	0.0000
45	144	O	65.82	1.28	1.29	6.11	13.40	.75	-1.55	1.36561	-.14743	0.000000	0.000000	-20.5523	2.2412	0.0000	0.0000
46	145	SD	65.82	1.28	1.29	6.11	13.40	.77	-1.61	1.36561	-.15356	0.000000	0.000000	-20.5523	2.2869	0.0000	0.0000
47	146	OS	66.12	1.28	1.30	5.67	14.39	.69	-1.69	1.31954	-.15356	0.000000	0.000000	-19.8662	2.2869	0.0000	0.0000
48	147	QD	66.47	1.29	1.30	5.44	14.99	-.03	-.00	1.29295	.00127	0.000000	0.000000	-19.4685	-.0098	0.0000	0.0000
49	148	QD	66.82	1.30	1.30	5.71	14.39	-.75	1.68	1.32044	.15616	0.000000	0.000000	-19.8731	-2.3069	0.0000	0.0000
50	149	OS	67.12	1.31	1.31	6.18	13.41	-.83	1.60	1.36729	.15616	0.000000	0.000000	-20.5652	-2.3069	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.12	1.31	1.31	6.18	13.41	-.80	1.54	1.36729	.15002	0.000000	0.000000	-20.5652	-2.2611	0.0000	0.0000
151	O	67.86	1.33	1.32	7.51	11.27	-1.00	1.36	1.47762	.15002	0.000000	0.000000	-22.2280	-2.2611	0.0000	0.0000
152	B	69.52	1.36	1.35	11.54	7.38	-1.44	-.98	1.80560	.24680	0.000000	0.000000	-27.1726	-3.7124	0.0000	0.0000
153	O	70.25	1.37	1.36	13.80	6.09	-1.64	.78	1.98710	.24680	0.000000	0.000000	-29.9028	-3.7124	0.0000	0.0000
154	SF	70.25	1.37	1.36	13.80	6.09	-1.69	.81	1.98710	.25536	0.000000	0.000000	-29.9028	-3.7763	0.0000	0.0000
155	OS	70.55	1.37	1.37	14.84	5.63	-1.78	.73	2.06471	.25536	0.000000	0.000000	-31.0357	-3.7763	0.0000	0.0000
156	QF	70.90	1.37	1.38	15.47	5.37	.00	.00	2.10879	.00086	0.000000	0.000000	-31.7010	-.0066	0.0000	0.0000
157	QF	71.25	1.38	1.39	14.84	5.63	1.78	-.73	2.06431	-.25367	0.000000	0.000000	-31.0403	3.7633	0.0000	0.0000
158	OS	71.55	1.38	1.40	13.79	6.09	1.70	-.81	1.98821	-.25367	0.000000	0.000000	-29.9113	3.7633	0.0000	0.0000
159	SF	71.55	1.38	1.40	13.79	6.09	1.64	-.78	1.98821	-.24511	0.000000	0.000000	-29.9113	3.6994	0.0000	0.0000
160	O	72.29	1.39	1.42	11.53	7.38	1.44	-.98	1.80795	-.24511	0.000000	0.000000	-27.1907	3.6994	0.0000	0.0000
161	B	73.95	1.42	1.45	7.50	11.27	1.00	-1.36	1.48277	-.14833	0.000000	0.000000	-22.2677	2.2481	0.0000	0.0000
162	O	74.68	1.44	1.46	6.17	13.40	.80	-1.54	1.37368	-.14833	0.000000	0.000000	-20.6144	2.2481	0.0000	0.0000
163	SD	74.68	1.44	1.46	6.17	13.40	.83	-1.60	1.37368	-.15451	0.000000	0.000000	-20.6144	2.2941	0.0000	0.0000
164	OS	74.98	1.44	1.46	5.70	14.39	.75	-1.68	1.32733	-.15451	0.000000	0.000000	-19.9262	2.2941	0.0000	0.0000
165	QD	75.33	1.45	1.46	5.43	14.99	.03	.00	1.30056	.00123	0.000000	0.000000	-19.5272	-.0095	0.0000	0.0000
166	QD	75.69	1.46	1.47	5.66	14.38	-.69	1.69	1.32819	.15701	0.000000	0.000000	-19.9329	-2.3136	0.0000	0.0000
167	OS	75.98	1.47	1.47	6.10	13.39	-.77	1.61	1.37530	.15701	0.000000	0.000000	-20.6270	-2.3136	0.0000	0.0000
168	SD	75.98	1.47	1.47	6.10	13.39	-.74	1.55	1.37530	.15082	0.000000	0.000000	-20.6270	-2.2675	0.0000	0.0000
169	O	76.72	1.49	1.48	7.33	11.25	-.93	1.36	1.48622	.15082	0.000000	0.000000	-22.2946	-2.2675	0.0000	0.0000
170	B	78.38	1.52	1.51	11.10	7.36	-1.35	.98	1.81552	.24761	0.000000	0.000000	-27.2497	-3.7188	0.0000	0.0000
171	O	79.11	1.53	1.53	13.22	6.06	-1.54	.78	1.99762	.24761	0.000000	0.000000	-29.9846	-3.7188	0.0000	0.0000
172	SF	79.11	1.53	1.53	13.22	6.06	-1.60	.81	1.99762	.25623	0.000000	0.000000	-29.9846	-3.7830	0.0000	0.0000
173	OS	79.41	1.53	1.53	14.20	5.60	-1.68	.73	2.07449	.25623	0.000000	0.000000	-31.1195	-3.7830	0.0000	0.0000
174	QF	79.76	1.54	1.55	14.79	5.34	.03	.00	2.11964	.00042	0.000000	0.000000	-31.7854	-.0033	0.0000	0.0000
175	QF	80.11	1.54	1.56	14.17	5.59	1.72	-.72	2.07478	-.25540	0.000000	0.000000	-31.1218	3.7766	0.0000	0.0000
176	OS	80.41	1.54	1.56	13.16	6.05	1.64	-.80	1.99816	-.25540	0.000000	0.000000	-29.9888	3.7766	0.0000	0.0000
177	SF	80.41	1.54	1.56	13.16	6.05	1.58	-.78	1.99816	-.24678	0.000000	0.000000	-29.9888	3.7124	0.0000	0.0000
178	O	81.15	1.55	1.58	10.98	7.33	1.39	-.97	1.81668	-.24678	0.000000	0.000000	-27.2586	3.7124	0.0000	0.0000
179	B	82.81	1.58	1.61	7.12	11.20	.95	-1.35	1.48874	-.14999	0.000000	0.000000	-22.3142	2.2611	0.0000	0.0000
180	O	83.54	1.60	1.62	5.87	13.32	.75	-1.54	1.37843	-.14999	0.000000	0.000000	-20.6513	2.2611	0.0000	0.0000
181	SD	83.54	1.60	1.62	5.87	13.32	.78	-1.60	1.37843	-.15621	0.000000	0.000000	-20.6513	2.3073	0.0000	0.0000
182	OS	83.84	1.61	1.62	5.43	14.30	.69	-1.68	1.33157	-.15621	0.000000	0.000000	-19.9591	2.3073	0.0000	0.0000
183	QD	84.19	1.62	1.63	5.19	14.90	-.00	.00	1.30429	.00000	0.000000	0.000000	-19.5561	-.0000	0.0000	0.0000
184	REFL	168.38	3.24	3.25	17.91	5.26	-.00	.00	.02586	-.00000	0.000000	0.000000	-.1963	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.1621 M THETX = 6.28318638 RAD NUX = 9.72350 DNUX/(DP/P) = -.34422
(DS/S)/RHO[M] = .8868879 M THETY(183) = 0.00000000 RAD NUY = 9.76494 DNUY/(DP/P) = .43404
TGAM = (7.69520, 0.00000)

MAXIMA --- BETX(184) = 17.90789 BETY(12) = 16.26276 ETAX(174) = 2.11964 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 3.97527 BETY(48) = 3.23781 ETAX(32) = .00028 ETAY(184) = 0.00000

*** INCR = I // DP .005000 VALUE = -.010000

SUB. CHR. ITER. 3

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V

X = -.00019630 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = -.01000000 1.00000000
2

7X7 MATRIX FOR AGR

.05067066	17.96977943	0.00000000	0.00000000	0.00000000	.01668046	.00008116
-.05581672	.05067066	0.00000000	0.00000000	0.00000000	.00098074	.00000477
0.00000000	0.00000000	-.03433320	5.41052687	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.18460702	-.03433320	0.00000000	0.00000000	0.00000000
-.00098074	-.01668046	0.00000000	0.00000000	1.00000000	-2.85536107	.02970060
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.05067066 .99871542), C(1) = 1.00000000, MU(1) = 1.52010396 RAD, Q(1) = .72579618
1/LMD1 = (.05067066 -.99871542), C(2) = 1.00000000, MU(2) = -1.52010396 RAD, Q(2) = .27420382

Y... LMD3 = (-.03433320 .99941044), C(3) = 1.00000000, MU(3) = 1.60513628 RAD, Q(3) = .76639612
1/LMD3 = (-.03433320 -.99941044), C(4) = 1.00000000, MU(4) = -1.60513628 RAD, Q(4) = .23360388

EIGENVALUE = (.05067066, .99871542), EIGENVECTOR = (4.22998394, 0.00000000)
(0.00000000, -.23640752)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.05067066, -.99871542), EIGENVECTOR = (4.22998394, 0.00000000)
(0.00000000, -.23640752)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.03433320, .99941044), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.32673990, -.00000000)
(.00000000, .42978590)

EIGENVALUE = (-.03433320, -.99941044), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.32673990, .00000000)
(.00000000, -.42978590)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00009590	0.00000000	0.00000000	0.00000000	0.00000000	-.01000000	1.00000000
ETA ORBIT	.01757078	.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	6.229986	0.000000	-.236408	1.570796	0.000000	0.000000	0.000000	0.000000
	0.000000	0.000000	0.000000	0.000000	2.326740	-.000000	.429786	1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.89	5.41	0.00	0.00	.01757	.00000	0.000000	0.000000	-.0859	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	17.07	5.69	2.30	-.81	.01716	-.00234	0.000000	0.000000	-.0839	.0114	0.0000	0.0000
2	S	.72	.01	.02	15.41	6.34	2.16	-.92	.01629	-.00234	0.000000	0.000000	-.0796	.0114	0.0000	0.0000
3	S	1.10	.01	.03	13.85	7.07	2.02	-1.03	.01541	-.00234	0.000000	0.000000	-.0754	.0114	0.0000	0.0000
4	S	1.47	.02	.04	12.39	7.88	1.89	-1.14	.01454	-.00234	0.000000	0.000000	-.0711	.0114	0.0000	0.0000
5	S	1.84	.02	.04	11.03	8.77	1.75	-1.25	.01366	-.00234	0.000000	0.000000	-.0669	.0114	0.0000	0.0000
6	S	2.22	.03	.05	9.78	9.74	1.61	-1.36	.01279	-.00234	0.000000	0.000000	-.0626	.0114	0.0000	0.0000
7	S	2.59	.03	.06	8.63	10.80	1.47	-1.47	.01192	-.00234	0.000000	0.000000	-.0584	.0114	0.0000	0.0000
8	S	2.96	.04	.06	7.58	11.93	1.34	-1.58	.01104	-.00234	0.000000	0.000000	-.0541	.0114	0.0000	0.0000
9	S	3.34	.05	.07	6.63	13.15	1.20	-1.68	.01017	-.00234	0.000000	0.000000	-.0499	.0114	0.0000	0.0000
10	S	3.71	.06	.07	5.79	14.45	1.06	-1.79	.00930	-.00234	0.000000	0.000000	-.0456	.0114	0.0000	0.0000
11	S	4.08	.07	.07	5.05	15.82	.93	-1.90	.00842	-.00234	0.000000	0.000000	-.0414	.0114	0.0000	0.0000
12	QD1	4.43	.08	.08	4.64	16.48	.24	.05	.00778	-.00134	0.000000	0.000000	-.0383	.0065	0.0000	0.0000
13	QD1	4.78	.09	.08	4.71	15.76	-.41	1.99	.00747	-.00041	0.000000	0.000000	-.0368	.0019	0.0000	0.0000
14	S	5.16	.10	.09	5.05	14.31	-.51	1.88	.00732	-.00041	0.000000	0.000000	-.0361	.0019	0.0000	0.0000
15	S	5.53	.12	.09	5.46	12.96	-.60	1.76	.00717	-.00041	0.000000	0.000000	-.0354	.0019	0.0000	0.0000
16	S	5.90	.13	.09	5.94	11.69	-.69	1.64	.00702	-.00041	0.000000	0.000000	-.0347	.0019	0.0000	0.0000
17	S	6.28	.14	.10	6.49	10.51	-.78	1.52	.00687	-.00041	0.000000	0.000000	-.0339	.0019	0.0000	0.0000
18	S	6.65	.14	.11	7.11	9.42	-.88	1.40	.00672	-.00041	0.000000	0.000000	-.0332	.0019	0.0000	0.0000
19	S	7.02	.15	.11	7.80	8.41	-.97	1.29	.00657	-.00041	0.000000	0.000000	-.0325	.0019	0.0000	0.0000
20	S	7.39	.16	.12	8.56	7.50	-1.06	1.17	.00641	-.00041	0.000000	0.000000	-.0318	.0019	0.0000	0.0000
21	S	7.77	.17	.13	9.39	6.67	-1.16	1.05	.00626	-.00041	0.000000	0.000000	-.0311	.0019	0.0000	0.0000
22	S	8.14	.17	.14	10.29	5.93	-1.25	.93	.00611	-.00041	0.000000	0.000000	-.0304	.0019	0.0000	0.0000
23	S	8.51	.18	.15	11.25	5.28	-1.34	.82	.00596	-.00041	0.000000	0.000000	-.0296	.0019	0.0000	0.0000
24	QF2	8.86	.18	.16	11.70	4.96	-.08	.09	.00569	-.00115	0.000000	0.000000	-.0283	.0056	0.0000	0.0000
25	QF2	9.22	.19	.17	11.15	5.15	1.49	-.63	.00516	-.00185	0.000000	0.000000	-.0257	.0091	0.0000	0.0000
26	S	9.59	.19	.18	10.08	5.66	1.38	-.73	.00447	-.00185	0.000000	0.000000	-.0224	.0091	0.0000	0.0000
27	S	9.96	.20	.19	9.09	6.24	1.27	-.83	.00378	-.00185	0.000000	0.000000	-.0190	.0091	0.0000	0.0000
28	S	10.33	.21	.20	8.18	6.90	1.16	-.93	.00309	-.00185	0.000000	0.000000	-.0156	.0091	0.0000	0.0000
29	S	10.71	.21	.21	7.35	7.64	1.06	-1.03	.00240	-.00185	0.000000	0.000000	-.0122	.0091	0.0000	0.0000
30	S	11.08	.22	.22	6.60	8.45	.95	-1.14	.00171	-.00185	0.000000	0.000000	-.0088	.0091	0.0000	0.0000
31	S	11.45	.23	.22	5.94	9.33	.84	-1.24	.00102	-.00185	0.000000	0.000000	-.0055	.0091	0.0000	0.0000
32	S	11.83	.24	.23	5.35	10.29	.73	-1.34	.00033	-.00185	0.000000	0.000000	-.0021	.0091	0.0000	0.0000
33	S	12.20	.25	.23	4.84	11.33	.63	-1.44	-.00035	-.00185	0.000000	0.000000	.0013	.0091	0.0000	0.0000
34	S	12.57	.27	.24	4.41	12.44	.52	-1.54	-.00104	-.00185	0.000000	0.000000	.0047	.0091	0.0000	0.0000
35	S	12.95	.28	.24	4.06	13.63	.41	-1.64	-.00173	-.00185	0.000000	0.000000	.0081	.0091	0.0000	0.0000
36	QD2	13.30	.30	.25	4.00	14.13	-.23	.23	-.00243	-.00213	0.000000	0.000000	.0115	.0104	0.0000	0.0000
37	QD2	13.65	.31	.25	4.39	13.32	-.91	2.06	-.00324	-.00252	0.000000	0.000000	.0154	.0122	0.0000	0.0000
38	R	14.01	.32	.26	5.12	11.86	-1.06	1.91	-.00416	-.00252	0.000000	0.000000	.0199	.0122	0.0000	0.0000
39	R	14.38	.33	.26	5.95	10.51	-1.21	1.77	-.00509	-.00252	0.000000	0.000000	.0244	.0122	0.0000	0.0000
40	R	14.75	.34	.27	6.90	9.27	-1.37	1.62	-.00601	-.00252	0.000000	0.000000	.0289	.0122	0.0000	0.0000
41	R	15.11	.35	.27	7.96	8.13	-1.52	1.48	-.00694	-.00252	0.000000	0.000000	.0333	.0122	0.0000	0.0000
42	R	15.48	.36	.28	9.13	7.10	-1.67	1.34	-.00786	-.00252	0.000000	0.000000	.0378	.0122	0.0000	0.0000
43	R	15.85	.36	.29	10.41	6.17	-1.82	1.19	-.00878	-.00252	0.000000	0.000000	.0423	.0122	0.0000	0.0000
44	R	16.21	.37	.30	11.80	5.35	-1.98	1.05	-.00971	-.00252	0.000000	0.000000	.0468	.0122	0.0000	0.0000
45	R	16.58	.37	.31	13.31	4.63	-2.13	.90	-.01063	-.00252	0.000000	0.000000	.0513	.0122	0.0000	0.0000
46	R	16.95	.38	.33	14.93	4.02	-2.28	.76	-.01156	-.00252	0.000000	0.000000	.0558	.0122	0.0000	0.0000
47	R	17.32	.38	.34	16.66	3.52	-2.43	.62	-.01248	-.00252	0.000000	0.000000	.0602	.0122	0.0000	0.0000
48	QF3	17.73	.38	.36	17.75	3.26	-.15	.02	-.01316	-.00076	0.000000	0.000000	.0636	.0038	0.0000	0.0000
49	QF3	18.14	.39	.38	16.90	3.48	2.16	-.57	-.01311	.00104	0.000000	0.000000	.0633	-.0049	0.0000	0.0000

	POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
1	50	Z	18.50	.39	.40	15.38	3.94	2.04	-.70	-.01273	.00104	0.000000	0.000000	.0616	-.0049	0.0000	0.0000
2	51	Z	18.86	.39	.41	13.95	4.49	1.92	-.84	-.01236	.00104	0.000000	0.000000	.0598	-.0049	0.0000	0.0000
3	52	Z	19.22	.40	.42	12.61	5.15	1.80	-.98	-.01198	.00104	0.000000	0.000000	.0580	-.0049	0.0000	0.0000
4	53	Z	19.68	.40	.43	11.36	5.90	1.68	-1.11	-.01160	.00104	0.000000	0.000000	.0563	-.0049	0.0000	0.0000
5	54	Z	19.95	.41	.44	10.19	6.75	1.56	-1.25	-.01123	.00104	0.000000	0.000000	.0545	-.0049	0.0000	0.0000
6																	
7	55	Z	20.31	.41	.45	9.11	7.70	1.44	-1.39	-.01085	.00104	0.000000	0.000000	.0528	-.0049	0.0000	0.0000
8	56	Z	20.67	.42	.46	8.12	8.75	1.32	-1.52	-.01048	.00104	0.000000	0.000000	.0510	-.0049	0.0000	0.0000
9	57	Z	21.03	.43	.46	7.22	9.90	1.19	-1.66	-.01010	.00104	0.000000	0.000000	.0492	-.0049	0.0000	0.0000
10	58	Z	21.39	.44	.47	6.40	11.15	1.07	-1.80	-.00973	.00104	0.000000	0.000000	.0475	-.0049	0.0000	0.0000
11	59	Z	21.75	.45	.47	5.67	12.49	.95	-1.93	-.00935	.00104	0.000000	0.000000	.0457	-.0049	0.0000	0.0000
12																	
13	60	QD3	22.16	.46	.48	5.23	13.41	.12	-.24	-.00918	-.00022	0.000000	0.000000	.0449	.0012	0.0000	0.0000
14	61	QD3	22.58	.47	.48	5.47	12.87	-.69	1.51	-.00953	-.00149	0.000000	0.000000	.0467	.0074	0.0000	0.0000
15	62	R	22.94	.48	.49	6.01	11.80	-.79	1.41	-.01008	-.00149	0.000000	0.000000	.0495	.0074	0.0000	0.0000
16	63	R	23.31	.49	.49	6.62	10.80	-.89	1.32	-.01063	-.00149	0.000000	0.000000	.0522	.0074	0.0000	0.0000
17	64	R	23.68	.50	.50	7.31	9.86	-.99	1.23	-.01117	-.00149	0.000000	0.000000	.0549	.0074	0.0000	0.0000
18																	
19	65	R	24.04	.51	.51	8.07	9.00	-1.08	1.13	-.01172	-.00149	0.000000	0.000000	.0576	.0074	0.0000	0.0000
20	66	R	24.41	.51	.51	8.90	8.20	-1.18	1.04	-.01226	-.00149	0.000000	0.000000	.0603	.0074	0.0000	0.0000
21	67	R	24.78	.52	.52	9.81	7.47	-1.28	.95	-.01281	-.00149	0.000000	0.000000	.0631	.0074	0.0000	0.0000
22	68	R	25.14	.53	.53	10.78	6.81	-1.38	.86	-.01335	-.00149	0.000000	0.000000	.0658	.0074	0.0000	0.0000
23	69	R	25.51	.53	.54	11.83	6.21	-1.48	.76	-.01390	-.00149	0.000000	0.000000	.0685	.0074	0.0000	0.0000
24																	
25	70	R	25.88	.54	.55	12.96	5.69	-1.58	.67	-.01444	-.00149	0.000000	0.000000	.0712	.0074	0.0000	0.0000
26	71	R	26.24	.54	.56	14.15	5.23	-1.68	.58	-.01499	-.00149	0.000000	0.000000	.0740	.0074	0.0000	0.0000
27	72	QF	26.59	.54	.57	14.74	5.07	.01	-.11	-.01519	.00033	0.000000	0.000000	.0750	-.0015	0.0000	0.0000
28	73	QF	26.94	.55	.58	14.14	5.39	1.69	-.81	-.01476	.00213	0.000000	0.000000	.0729	-.0103	0.0000	0.0000
29	74	QD	27.98	.56	.61	10.93	7.40	1.41	-1.13	-.01256	.00213	0.000000	0.000000	.0622	-.0103	0.0000	0.0000
30																	
31	75	B	29.64	.59	.63	7.01	11.91	.96	-1.58	.07073	.09836	0.000000	0.000000	-.7526	-.9727	0.0000	0.0000
32	76	QD	30.68	.62	.65	5.32	15.49	.67	-1.88	.17258	.09836	0.000000	0.000000	-1.7597	-.9727	0.0000	0.0000
33	77	QD	31.03	.63	.65	5.09	16.18	-.01	-.07	.21087	.12087	0.000000	0.000000	-2.1391	-1.1992	0.0000	0.0000
34	78	QD	31.38	.64	.65	5.33	15.59	-.69	1.75	.25790	.14838	0.000000	0.000000	-2.6062	-1.4749	0.0000	0.0000
35	79	QD	32.41	.67	.66	7.05	12.24	-.97	1.48	.41153	.14838	0.000000	0.000000	-4.1333	-1.4749	0.0000	0.0000
36																	
37	80	B	34.07	.70	.69	11.04	7.96	-1.43	1.09	.73710	.24465	0.000000	0.000000	-7.3752	-2.4374	0.0000	0.0000
38	81	D	34.81	.71	.71	13.29	6.50	-1.64	.89	.91702	.24465	0.000000	0.000000	-9.1678	-2.4374	0.0000	0.0000
39	82	SF	34.81	.71	.71	13.29	6.50	-1.65	.90	.91702	.24585	0.000000	0.000000	-9.1678	-2.4434	0.0000	0.0000
40	83	OS	35.11	.71	.72	14.31	5.99	-1.74	.81	.99078	.24585	0.000000	0.000000	-9.9008	-2.4434	0.0000	0.0000
41	84	QF	35.46	.71	.73	14.94	5.69	-.03	.05	1.05553	.12229	0.000000	0.000000	-10.5452	-1.2211	0.0000	0.0000
42																	
43	85	QF	35.81	.72	.73	14.35	5.92	1.68	-.71	1.07591	-.00641	0.000000	0.000000	-10.7508	.0521	0.0000	0.0000
44	86	OS	36.11	.72	.74	13.37	6.37	1.60	-.78	1.07398	-.00641	0.000000	0.000000	-10.7352	.0521	0.0000	0.0000
45	87	SF	36.11	.72	.74	13.37	6.37	1.58	-.77	1.07398	-.00476	0.000000	0.000000	-10.7352	.0439	0.0000	0.0000
46	88	D	36.84	.73	.76	11.19	7.64	1.39	-.96	1.07048	-.00476	0.000000	0.000000	-10.7030	.0439	0.0000	0.0000
47	89	LC	38.50	.76	.79	7.30	11.52	.95	-1.38	1.06258	-.00476	0.000000	0.000000	-10.6301	.0439	0.0000	0.0000
48																	
49	90	D	39.24	.78	.80	6.04	13.68	.76	-1.56	1.05908	-.00476	0.000000	0.000000	-10.5979	.0439	0.0000	0.0000
50	91	SD	39.24	.78	.80	6.04	13.68	.77	-1.59	1.05908	-.00719	0.000000	0.000000	-10.5979	.0560	0.0000	0.0000
51	92	OS	39.54	.79	.80	5.60	14.66	.70	-1.67	1.05692	-.00719	0.000000	0.000000	-10.5811	.0560	0.0000	0.0000
52	93	QD	39.89	.80	.80	5.37	15.24	-.01	.04	1.07627	.11797	0.000000	0.000000	-10.7783	-1.1849	0.0000	0.0000
53	94	QD	40.24	.81	.81	5.62	14.61	-.72	1.74	1.14019	.24802	0.000000	0.000000	-11.4174	-2.4744	0.0000	0.0000
54																	
55	95	OS	40.54	.81	.81	6.08	13.59	-.81	1.66	1.21460	.24802	0.000000	0.000000	-12.1598	-2.4744	0.0000	0.0000
56	96	SD	40.54	.81	.81	6.08	13.59	-.79	1.62	1.21460	.24482	0.000000	0.000000	-12.1598	-2.4584	0.0000	0.0000
57	97	D	41.28	.83	.82	7.39	11.34	-.99	1.43	1.39465	.24482	0.000000	0.000000	-13.9678	-2.4584	0.0000	0.0000
58	98	LC	42.94	.86	.85	11.40	7.34	-1.43	.98	1.80115	.24482	0.000000	0.000000	-18.0498	-2.4584	0.0000	0.0000
59	99	D	43.67	.87	.87	13.65	6.04	-1.63	.79	1.98120	.24482	0.000000	0.000000	-19.8578	-2.4584	0.0000	0.0000

PRYOR CORP. 14852GB

	POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
	100	SF	43.67	.87	.87	13.65	6.04	-1.67	.80	1.98120	.25044	0.000000	0.000000	-19.8578	-2.4865	0.0000	0.0000
	101	OS	43.97	.87	.88	14.68	5.58	-1.75	.72	2.05634	.25044	0.000000	0.000000	-20.6038	-2.4865	0.0000	0.0000
	102	QF	44.22	.88	.89	15.30	5.33	-.00	.00	2.10029	-.00055	0.000000	0.000000	-21.0405	.0031	0.0000	0.0000
1	103	QF	44.67	.88	.90	14.67	5.58	1.75	-.72	2.05596	-.25152	0.000000	0.000000	-20.6016	2.4926	0.0000	0.0000
2	104	OS	44.97	.88	.90	13.65	6.04	1.67	-.80	1.98050	-.25152	0.000000	0.000000	-19.8538	2.4926	0.0000	0.0000
3																	
	105	SF	44.97	.88	.90	13.65	6.04	1.63	-.78	1.98050	-.24530	0.000000	0.000000	-19.8538	2.4645	0.0000	0.0000
4	106	O	45.71	.99	.92	11.39	7.34	1.43	-.98	1.79966	-.24590	0.000000	0.000000	-18.0413	2.4645	0.0000	0.0000
5	107	B	47.37	.92	.95	7.39	11.24	.99	-1.36	1.47243	-.14962	0.000000	0.000000	-14.7564	1.5020	0.0000	0.0000
6	108	O	48.10	.94	.96	6.08	13.39	.79	-1.55	1.36239	-.14962	0.000000	0.000000	-13.6518	1.5020	0.0000	0.0000
	109	SD	48.10	.94	.96	6.08	13.39	.81	-1.59	1.36239	-.15365	0.000000	0.000000	-13.6518	1.5221	0.0000	0.0000
7																	
8	110	OS	48.40	.95	.96	5.62	14.37	.73	-1.67	1.31630	-.15365	0.000000	0.000000	-13.1952	1.5221	0.0000	0.0000
9	111	QD	48.75	.96	.97	5.36	14.96	.02	.00	1.28933	-.00077	0.000000	0.000000	-12.9286	.0044	0.0000	0.0000
	112	QD	49.18	.97	.97	5.59	14.36	-.69	1.68	1.31576	-.15209	0.000000	0.000000	-13.1921	-1.5131	0.0000	0.0000
10	113	OS	49.40	.98	.98	6.03	13.38	-.77	1.60	1.36138	-.15209	0.000000	0.000000	-13.6460	-1.5131	0.0000	0.0000
11	114	SD	49.40	.98	.98	6.03	13.38	-.75	1.56	1.36138	-.14807	0.000000	0.000000	-13.6460	-1.4930	0.0000	0.0000
12																	
	115	O	50.14	1.00	.98	7.27	11.23	-.94	1.37	1.47028	-.14807	0.000000	0.000000	-14.7440	-1.4930	0.0000	0.0000
13	116	B	51.80	1.02	1.01	11.10	7.31	-1.37	.98	1.79493	-.24434	0.000000	0.000000	-18.0140	-2.4555	0.0000	0.0000
14	117	O	52.53	1.03	1.03	13.26	6.00	-1.56	.79	1.97462	-.24434	0.000000	0.000000	-19.8199	-2.4555	0.0000	0.0000
15	118	SF	52.53	1.03	1.03	13.26	6.00	-1.60	.80	1.97462	-.24993	0.000000	0.000000	-19.8199	-2.4835	0.0000	0.0000
	119	OS	52.83	1.04	1.04	14.24	5.55	-1.68	.72	2.04960	-.24993	0.000000	0.000000	-20.5649	-2.4835	0.0000	0.0000
16																	
17	120	QF	53.18	1.04	1.05	14.84	5.30	-.02	.00	2.09352	-.00025	0.000000	0.000000	-21.0014	.0015	0.0000	0.0000
18	121	QF	53.53	1.05	1.06	14.22	5.54	1.71	-.71	2.04943	-.25042	0.000000	0.000000	-20.5639	2.4863	0.0000	0.0000
	122	OS	53.83	1.05	1.07	13.22	5.99	1.63	-.79	1.97430	-.25042	0.000000	0.000000	-19.8180	2.4863	0.0000	0.0000
19	123	SF	53.83	1.05	1.07	13.22	5.99	1.59	-.78	1.97430	-.24483	0.000000	0.000000	-19.8180	2.4584	0.0000	0.0000
20	124	O	54.57	1.06	1.09	11.02	7.28	1.39	-.97	1.79425	-.24483	0.000000	0.000000	-18.0100	2.4584	0.0000	0.0000
21																	
	125	B	56.23	1.09	1.12	7.14	11.17	.65	-1.36	1.46879	-.14855	0.000000	0.000000	-14.7353	1.4959	0.0000	0.0000
22	126	O	56.96	1.11	1.13	5.89	13.30	.76	-1.55	1.35954	-.14855	0.000000	0.000000	-13.6352	1.4959	0.0000	0.0000
23	127	SD	56.96	1.11	1.13	5.89	13.30	.77	-1.58	1.35954	-.15257	0.000000	0.000000	-13.6352	1.5159	0.0000	0.0000
24	128	OS	57.26	1.12	1.13	5.45	14.28	.69	-1.66	1.31377	-.15257	0.000000	0.000000	-13.1804	1.5159	0.0000	0.0000
	129	QD	57.61	1.13	1.13	5.21	14.87	-.00	-.00	1.28713	-.00004	0.000000	0.000000	-12.9156	-.0002	0.0000	0.0000
25																	
26	130	QD	57.97	1.14	1.14	5.45	14.28	-.69	1.66	1.31380	.15266	0.000000	0.000000	-13.1805	-1.5162	0.0000	0.0000
27	131	OS	58.27	1.14	1.14	5.89	13.30	-.78	1.58	1.35960	.15266	0.000000	0.000000	-13.6354	-1.4962	0.0000	0.0000
	132	SD	58.27	1.14	1.14	5.89	13.30	-.76	1.55	1.35960	.14864	0.000000	0.000000	-13.6354	-1.4962	0.0000	0.0000
28	133	O	59.00	1.16	1.15	7.15	11.17	-.96	1.36	1.46891	.14864	0.000000	0.000000	-14.7357	-1.4962	0.0000	0.0000
29	134	B	60.66	1.19	1.18	11.04	7.28	-1.40	.97	1.79451	.24491	0.000000	0.000000	-18.0109	-2.4587	0.0000	0.0000
30																	
	135	O	61.40	1.20	1.20	13.24	6.00	-1.60	.78	1.97463	.24491	0.000000	0.000000	-19.8191	-2.4587	0.0000	0.0000
31	136	SF	61.40	1.20	1.20	13.24	6.00	-1.63	.79	1.97463	.25050	0.000000	0.000000	-19.8191	-2.4866	0.0000	0.0000
32	137	OS	61.70	1.21	1.21	14.25	5.54	-1.72	.71	2.04978	.25050	0.000000	0.000000	-20.5651	-2.4866	0.0000	0.0000
33	138	QF	62.05	1.21	1.22	14.87	5.30	-.02	-.00	2.09389	.00029	0.000000	0.000000	-21.0028	-.0016	0.0000	0.0000
	139	QF	62.40	1.21	1.23	14.27	5.55	1.68	-.72	2.04998	-.24993	0.000000	0.000000	-20.5663	2.4835	0.0000	0.0000
34																	
35	140	OS	62.70	1.22	1.23	13.29	6.01	1.60	-.80	1.97500	-.24993	0.000000	0.000000	-19.8212	2.4835	0.0000	0.0000
36	141	SF	62.70	1.22	1.23	13.29	6.01	1.57	-.79	1.97500	-.24434	0.000000	0.000000	-19.8212	2.4555	0.0000	0.0000
	142	O	63.43	1.23	1.25	11.13	7.31	1.37	-.98	1.79531	-.24434	0.000000	0.000000	-18.0153	2.4555	0.0000	0.0000
37	143	B	65.09	1.26	1.28	7.29	11.23	.94	-1.37	1.47066	-.14807	0.000000	0.000000	-14.7454	1.4930	0.0000	0.0000
38	144	O	65.83	1.27	1.29	6.04	13.39	.75	-1.56	1.36176	-.14807	0.000000	0.000000	-13.6474	1.4930	0.0000	0.0000
39																	
	145	SD	65.83	1.27	1.29	6.04	13.39	.77	-1.60	1.36176	-.15209	0.000000	0.000000	-13.6474	1.5131	0.0000	0.0000
40	146	OS	66.13	1.28	1.29	5.60	14.37	.69	-1.68	1.31614	-.15209	0.000000	0.000000	-13.1934	1.5131	0.0000	0.0000
41	147	QD	66.48	1.29	1.30	5.37	14.97	-.02	-.00	1.28971	.00081	0.000000	0.000000	-12.9300	-.0046	0.0000	0.0000
42	148	QD	66.83	1.30	1.30	5.63	14.38	-.73	1.67	1.31671	.15374	0.000000	0.000000	-13.1967	-1.5224	0.0000	0.0000
	149	OS	67.13	1.31	1.31	6.09	13.40	-.81	1.59	1.36283	.15374	0.000000	0.000000	-13.6534	-1.5224	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.13	1.31	1.31	6.09	13.40	-.79	1.55	1.36283	.14971	0.000000	0.000000	-13.6534	-1.5023	0.0000	0.0000
151	O	67.86	1.33	1.32	7.40	11.25	-.99	1.37	1.47293	.14971	0.000000	0.000000	-14.7582	-1.5023	0.0000	0.0000
152	B	69.52	1.36	1.34	11.40	7.34	-1.43	.98	1.80031	.24599	0.000000	0.000000	-18.0437	-2.4649	0.0000	0.0000
153	O	70.26	1.37	1.36	13.65	6.04	-1.63	.79	1.98121	.24599	0.000000	0.000000	-19.8564	-2.4649	0.0000	0.0000
154	SF	70.26	1.37	1.36	13.65	6.04	-1.67	.80	1.98121	.25161	0.000000	0.000000	-19.8564	-2.4929	0.0000	0.0000
155	OS	70.56	1.37	1.37	14.68	5.58	-1.75	.72	2.05669	.25161	0.000000	0.000000	-20.6043	-2.4929	0.0000	0.0000
156	QF	70.91	1.37	1.38	15.30	5.33	.00	.00	2.10105	.00055	0.000000	0.000000	-21.0432	-.0031	0.0000	0.0000
157	QF	71.26	1.38	1.39	14.68	5.58	1.75	-.72	2.05708	-.25053	0.000000	0.000000	-20.6064	2.4868	0.0000	0.0000
158	OS	71.56	1.38	1.40	13.65	6.04	1.67	-.80	1.98192	-.25053	0.000000	0.000000	-19.8604	2.4868	0.0000	0.0000
159	SF	71.56	1.38	1.40	13.65	6.04	1.63	-.79	1.98192	-.24491	0.000000	0.000000	-19.8604	2.4588	0.0000	0.0000
160	O	72.29	1.39	1.42	11.40	7.34	1.43	-.98	1.80180	-.24491	0.000000	0.000000	-18.0521	2.4588	0.0000	0.0000
161	B	73.95	1.42	1.45	7.39	11.25	.99	-1.37	1.47621	-.14864	0.000000	0.000000	-14.7768	1.4962	0.0000	0.0000
162	O	74.69	1.44	1.46	6.08	13.39	.79	-1.55	1.36690	-.14864	0.000000	0.000000	-13.6765	1.4962	0.0000	0.0000
163	SD	74.69	1.44	1.46	6.08	13.39	.81	-1.59	1.36690	-.15269	0.000000	0.000000	-13.6765	1.5164	0.0000	0.0000
164	OS	74.99	1.44	1.46	5.62	14.37	.73	-1.67	1.32109	-.15269	0.000000	0.000000	-13.2215	1.5164	0.0000	0.0000
165	QD	75.34	1.45	1.46	5.36	14.96	.02	.00	1.29456	.00079	0.000000	0.000000	-12.9575	-.0045	0.0000	0.0000
166	QD	75.69	1.46	1.47	5.60	14.37	-.69	1.68	1.32165	.15429	0.000000	0.000000	-13.2247	-1.5256	0.0000	0.0000
167	OS	75.99	1.47	1.47	6.03	13.38	-.77	1.60	1.36794	.15429	0.000000	0.000000	-13.6824	-1.5256	0.0000	0.0000
168	SD	75.99	1.47	1.47	6.03	13.38	-.75	1.56	1.36794	.15024	0.000000	0.000000	-13.6824	-1.5054	0.0000	0.0000
169	B	76.72	1.49	1.48	7.28	11.23	-.94	1.37	1.47843	.15024	0.000000	0.000000	-14.7895	-1.5054	0.0000	0.0000
170	B	78.38	1.52	1.51	11.11	7.31	-1.37	.98	1.80667	.24651	0.000000	0.000000	-18.0800	-2.4679	0.0000	0.0000
171	O	79.12	1.53	1.53	13.27	6.01	-1.56	.79	1.98797	.24651	0.000000	0.000000	-19.8950	-2.4679	0.0000	0.0000
172	SF	79.12	1.53	1.53	13.27	6.01	-1.60	.80	1.98797	.25216	0.000000	0.000000	-19.8950	-2.4961	0.0000	0.0000
173	OS	79.42	1.53	1.53	14.26	5.55	-1.68	.72	2.06361	.25216	0.000000	0.000000	-20.6438	-2.4961	0.0000	0.0000
174	QF	79.77	1.54	1.55	14.85	5.30	.02	.00	2.10802	.00027	0.000000	0.000000	-21.0830	-.0015	0.0000	0.0000
175	QF	80.12	1.55	1.56	14.24	5.54	1.71	-.71	2.06380	-.25163	0.000000	0.000000	-20.6449	2.4930	0.0000	0.0000
176	OS	80.42	1.54	1.56	13.23	6.00	1.63	-.79	1.98831	-.25163	0.000000	0.000000	-19.8969	2.4930	0.0000	0.0000
177	SF	80.42	1.54	1.56	13.23	6.00	1.59	-.78	1.98831	-.24598	0.000000	0.000000	-19.8969	2.4649	0.0000	0.0000
178	O	81.15	1.55	1.58	11.03	7.28	1.40	-.97	1.80741	-.24598	0.000000	0.000000	-18.0842	2.4649	0.0000	0.0000
179	B	82.81	1.58	1.61	7.15	11.17	.95	-1.36	1.48004	-.14971	0.000000	0.000000	-14.7987	1.5024	0.0000	0.0000
180	O	83.55	1.60	1.62	5.89	13.30	.76	-1.55	1.36994	-.14971	0.000000	0.000000	-13.6938	1.5024	0.0000	0.0000
181	SD	83.55	1.60	1.62	5.89	13.30	.77	-1.58	1.36994	-.15377	0.000000	0.000000	-13.6938	1.5226	0.0000	0.0000
182	OS	83.85	1.61	1.62	5.45	14.28	.69	-1.66	1.32381	-.15377	0.000000	0.000000	-13.2370	1.5226	0.0000	0.0000
183	QD	84.20	1.62	1.63	5.21	14.87	-.00	.00	1.29695	.00000	0.000000	0.000000	-12.9711	-.0000	0.0000	0.0000
184	REFL	168.40	3.24	3.26	17.89	5.41	-.00	.00	.01757	-.00000	0.000000	0.000000	-.0859	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.1958 M THETX = 6.28318638 RAD NUX = 9.72580 DNUX/(DP/P) = .36142
(DS/S)/RADIAN = .01969961 M THETY(183) = 0.00000000 RAD NUY = 9.76640 DNUY/(DP/P) = .42451
TGAM = (7.67958, 0.00000)

MAXIMA --- BETX(184) = 17.89276 BETY(12) = 16.48226 ETAX(174) = 2.10802 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 4.00033 BETY(48) = 3.25713 ETAX(32) = .00033 ETAY(184) = 0.00000

*** INCR 1 // DP .005000 VALUE = -.005000

SUB. CHR = ITER. 4

PRYOR CORP. 14855GB

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V
X_2 = -.00008590 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = -.00500000 1.00000000

7X7 MATRIX FOR AGR

.04612244	17.84869784	0.00000000	0.00000000	0.00000000	.00822691	.00002195
-.05590731	.04612244	0.00000000	0.00000000	0.00000000	.00048218	.00000129
0.00000000	0.00000000	-.03787803	5.56903798	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.17930660	-.03787803	0.00000000	0.00000000	0.00000000
-.00048218	-.00822691	0.00000000	0.00000000	1.00000000	-2.86731298	.01462072
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.04612244 .99893579), C(1) = 1.00000000, MU(1) = 1.52465752 RAD, Q(1) = .72797034
1/LMD1 = (.04612244 -.99893579), C(2) = 1.00000000, MU(2) = -1.52465752 RAD, Q(2) = .27202966

Y... LMD3 = (-.03787803 .99928237), C(3) = 1.00000000, MU(3) = 1.60868342 RAD, Q(3) = .76808976
1/LMD3 = (-.03787803 -.99928237), C(4) = 1.00000000, MU(4) = -1.60868342 RAD, Q(4) = .23191024

EIGENVALUE = (.04612244, .99893579), EIGENVECTOR = (4.22702174, -.00000000)
(0.00000000, .23657319)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.04612244, -.99893579), EIGENVECTOR = (4.22702174, .00000000)
(0.00000000, -.23657319)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.03787803, .99928237), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.36072814, 0.00000000)
(-.00000000, .42359812)

EIGENVALUE = (-.03787803, -.99928237), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.36072814, 0.00000000)
(-.00000000, -.42359812)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00001959	0.00000000	0.00000000	0.00000000	0.00000000	-.00500000	1.00000000
ETA ORBIT	.00862470	.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.227022 0.000000	-.000000 0.000000	.236573 0.000000	1.570796 0.000000	0.000000 2.360728	0.000000 0.000000	0.000000 .423598	0.000000 1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.87	5.57	0.00	0.00	.00862	.00000	0.000000	0.000000	-.0196	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	17.05	5.86	2.28	-.83	.00842	-.00114	0.000000	0.000000	-.0191	.0026	0.0000	0.0000
2	S	.72	.01	.02	15.40	6.52	2.15	-.94	.00800	-.00114	0.000000	0.000000	-.0182	.0026	0.0000	0.0000
3	S	1.10	.01	.03	13.85	7.26	2.01	-1.04	.00757	-.00114	0.000000	0.000000	-.0172	.0026	0.0000	0.0000
4	S	1.47	.02	.04	12.40	8.08	1.88	-1.15	.00715	-.00114	0.000000	0.000000	-.0162	.0026	0.0000	0.0000
5	S	1.84	.02	.04	11.05	8.98	1.74	-1.26	.00672	-.00114	0.000000	0.000000	-.0153	.0026	0.0000	0.0000
6	S	2.22	.03	.05	9.80	9.96	1.60	-1.37	.00630	-.00114	0.000000	0.000000	-.0143	.0026	0.0000	0.0000
7	S	2.59	.03	.05	8.66	11.02	1.47	-1.47	.00587	-.00114	0.000000	0.000000	-.0133	.0026	0.0000	0.0000
8	S	2.96	.04	.06	7.61	12.16	1.33	-1.58	.00545	-.00114	0.000000	0.000000	-.0124	.0026	0.0000	0.0000
9	S	3.34	.05	.06	6.67	13.38	1.20	-1.69	.00502	-.00114	0.000000	0.000000	-.0114	.0026	0.0000	0.0000
10	S	3.71	.06	.07	5.83	14.68	1.06	-1.80	.00459	-.00114	0.000000	0.000000	-.0105	.0026	0.0000	0.0000
11	S	4.08	.07	.07	5.09	16.06	.92	-1.90	.00417	-.00114	0.000000	0.000000	-.0095	.0026	0.0000	0.0000
12	QD1	4.43	.08	.08	4.69	16.71	.23	.07	.00386	-.00065	0.000000	0.000000	-.0088	.0015	0.0000	0.0000
13	QD1	4.78	.09	.08	4.75	15.97	-.42	2.03	.00371	-.00019	0.000000	0.000000	-.0085	.0004	0.0000	0.0000
14	S	5.16	.10	.08	5.10	14.50	-.51	1.91	.00364	-.00019	0.000000	0.000000	-.0083	.0004	0.0000	0.0000
15	S	5.53	.12	.09	5.51	13.12	-.60	1.79	.00357	-.00019	0.000000	0.000000	-.0081	.0004	0.0000	0.0000
16	S	5.90	.13	.09	5.99	11.83	-.69	1.67	.00350	-.00019	0.000000	0.000000	-.0080	.0004	0.0000	0.0000
17	S	6.28	.14	.10	6.55	10.63	-.79	1.55	.00343	-.00019	0.000000	0.000000	-.0078	.0004	0.0000	0.0000
18	S	6.65	.14	.10	7.17	9.52	-.88	1.43	.00336	-.00019	0.000000	0.000000	-.0077	.0004	0.0000	0.0000
19	S	7.02	.15	.11	7.86	8.50	-.97	1.31	.00329	-.00019	0.000000	0.000000	-.0075	.0004	0.0000	0.0000
20	S	7.39	.16	.12	8.62	7.56	-1.06	1.19	.00322	-.00019	0.000000	0.000000	-.0073	.0004	0.0000	0.0000
21	S	7.77	.17	.13	9.45	6.72	-1.16	1.07	.00315	-.00019	0.000000	0.000000	-.0072	.0004	0.0000	0.0000
22	S	8.14	.17	.14	10.34	5.96	-1.25	.95	.00308	-.00019	0.000000	0.000000	-.0070	.0004	0.0000	0.0000
23	S	8.51	.18	.15	11.31	5.30	-1.34	.83	.00301	-.00019	0.000000	0.000000	-.0069	.0004	0.0000	0.0000
24	QF2	8.86	.18	.16	11.76	4.97	.08	.10	.00287	-.00056	0.000000	0.000000	-.0066	.0013	0.0000	0.0000
25	QF2	9.22	.19	.17	11.20	5.15	1.49	-.61	.00261	-.00091	0.000000	0.000000	-.0060	.0021	0.0000	0.0000
26	S	9.59	.19	.18	10.13	5.64	1.38	-.71	.00227	-.00091	0.000000	0.000000	-.0052	.0021	0.0000	0.0000
27	S	9.96	.20	.19	9.14	6.20	1.27	-.81	.00193	-.00091	0.000000	0.000000	-.0044	.0021	0.0000	0.0000
28	S	10.33	.21	.20	8.23	6.84	1.17	-.91	.00159	-.00091	0.000000	0.000000	-.0037	.0021	0.0000	0.0000
29	S	10.71	.21	.21	7.40	7.56	1.06	-1.01	.00125	-.00091	0.000000	0.000000	-.0029	.0021	0.0000	0.0000
30	S	11.08	.22	.21	6.65	8.34	.95	-1.10	.00091	-.00091	0.000000	0.000000	-.0021	.0021	0.0000	0.0000
31	S	11.45	.23	.22	5.98	9.21	.84	-1.20	.00057	-.00091	0.000000	0.000000	-.0014	.0021	0.0000	0.0000
32	S	11.83	.24	.23	5.39	10.14	.74	-1.30	.00023	-.00091	0.000000	0.000000	-.0006	.0021	0.0000	0.0000
33	S	12.20	.25	.23	4.88	11.15	.63	-1.40	-.00011	-.00091	0.000000	0.000000	.0002	.0021	0.0000	0.0000
34	S	12.57	.27	.24	4.45	12.23	.52	-1.50	-.00045	-.00091	0.000000	0.000000	.0010	.0021	0.0000	0.0000
35	S	12.95	.28	.24	4.10	13.39	.42	-1.60	-.00079	-.00091	0.000000	0.000000	.0017	.0021	0.0000	0.0000
36	QD2	13.30	.29	.25	4.03	13.88	-.22	.23	-.00113	-.00104	0.000000	0.000000	.0025	.0024	0.0000	0.0000
37	QD2	13.65	.31	.25	4.42	13.09	-.90	2.01	-.00152	-.00122	0.000000	0.000000	.0034	.0028	0.0000	0.0000
38	R	14.01	.32	.26	5.14	11.66	-1.06	1.87	-.00197	-.00122	0.000000	0.000000	.0044	.0028	0.0000	0.0000
39	R	14.38	.33	.26	5.97	10.34	-1.21	1.73	-.00242	-.00122	0.000000	0.000000	.0054	.0028	0.0000	0.0000
40	R	14.75	.34	.27	6.91	9.13	-1.36	1.59	-.00287	-.00122	0.000000	0.000000	.0065	.0028	0.0000	0.0000
41	R	15.11	.35	.27	7.96	8.01	-1.51	1.45	-.00331	-.00122	0.000000	0.000000	.0075	.0028	0.0000	0.0000
42	R	15.48	.35	.28	9.12	7.01	-1.66	1.30	-.00376	-.00122	0.000000	0.000000	.0085	.0028	0.0000	0.0000
43	R	15.85	.36	.29	10.39	6.10	-1.81	1.16	-.00421	-.00122	0.000000	0.000000	.0095	.0028	0.0000	0.0000
44	R	16.21	.36	.30	11.77	5.30	-1.96	1.02	-.00466	-.00122	0.000000	0.000000	.0105	.0028	0.0000	0.0000
45	R	16.58	.37	.31	13.27	4.60	-2.11	.88	-.00511	-.00122	0.000000	0.000000	.0115	.0028	0.0000	0.0000
46	R	16.95	.37	.33	14.87	4.01	-2.26	.74	-.00555	-.00122	0.000000	0.000000	.0125	.0028	0.0000	0.0000
47	R	17.32	.38	.34	16.59	3.52	-2.41	.60	-.00600	-.00122	0.000000	0.000000	.0135	.0028	0.0000	0.0000
48	QF3	17.73	.38	.36	17.67	3.27	-.15	.01	-.00634	-.00036	0.000000	0.000000	.0143	.0009	0.0000	0.0000
49	QF3	18.14	.39	.38	16.83	3.51	2.14	-.56	-.00632	.00048	0.000000	0.000000	.0143	-.0011	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MR)	DYCO (MR)
50	Z	18.50	.39	.40	15.33	3.98	2.02	-.72	-.00614	.00048	0.000000	0.000000	.0139	-.0011	0.0000	0.0000
51	Z	18.86	.39	.41	13.92	4.55	1.90	-.86	-.00597	.00048	0.000000	0.000000	.0135	-.0011	0.0000	0.0000
52	Z	19.22	.40	.42	12.59	5.22	1.78	-1.00	-.00580	.00048	0.000000	0.000000	.0131	-.0011	0.0000	0.0000
53	Z	19.58	.40	.43	11.35	5.99	1.66	-1.14	-.00562	.00048	0.000000	0.000000	.0127	-.0011	0.0000	0.0000
54	Z	19.95	.41	.44	10.19	6.86	1.54	-1.27	-.00545	.00048	0.000000	0.000000	.0123	-.0011	0.0000	0.0000
55	Z	20.31	.41	.45	9.12	7.82	1.42	-1.41	-.00528	.00048	0.000000	0.000000	.0120	-.0011	0.0000	0.0000
56	Z	20.67	.42	.46	8.14	8.89	1.30	-1.55	-.00511	.00048	0.000000	0.000000	.0116	-.0011	0.0000	0.0000
57	Z	21.03	.43	.46	7.24	10.05	1.18	-1.69	-.00493	.00048	0.000000	0.000000	.0112	-.0011	0.0000	0.0000
58	Z	21.39	.44	.47	6.43	11.32	1.07	-1.82	-.00476	.00048	0.000000	0.000000	.0108	-.0011	0.0000	0.0000
59	Z	21.75	.44	.47	5.70	12.68	.95	-1.96	-.00459	.00048	0.000000	0.000000	.0104	-.0011	0.0000	0.0000
60	QD3	22.16	.46	.48	5.28	13.62	-.11	-.25	-.00452	-.00013	0.000000	0.000000	.0103	.0003	0.0000	0.0000
61	QD3	22.58	.47	.48	5.51	13.08	-.70	1.52	-.00470	-.00075	0.000000	0.000000	.0107	.0017	0.0000	0.0000
62	R	22.94	.48	.49	6.06	12.00	-.80	1.43	-.00498	-.00075	0.000000	0.000000	.0113	.0017	0.0000	0.0000
63	R	23.31	.49	.49	6.69	10.99	-.90	1.33	-.00525	-.00075	0.000000	0.000000	.0119	.0017	0.0000	0.0000
64	R	23.68	.50	.50	7.39	10.04	-.99	1.24	-.00553	-.00075	0.000000	0.000000	.0126	.0017	0.0000	0.0000
65	R	24.04	.50	.50	8.14	9.17	-1.09	1.15	-.00580	-.00075	0.000000	0.000000	.0132	.0017	0.0000	0.0000
66	R	24.41	.51	.51	8.98	8.36	-1.19	1.06	-.00608	-.00075	0.000000	0.000000	.0139	.0017	0.0000	0.0000
67	R	24.78	.52	.52	9.89	7.62	-1.29	.96	-.00636	-.00075	0.000000	0.000000	.0145	.0017	0.0000	0.0000
68	R	25.14	.52	.52	10.89	6.95	-1.39	.87	-.00663	-.00075	0.000000	0.000000	.0151	.0017	0.0000	0.0000
69	R	25.51	.53	.53	11.93	6.34	-1.49	.78	-.00691	-.00075	0.000000	0.000000	.0158	.0017	0.0000	0.0000
70	R	25.88	.53	.54	13.06	5.81	-1.59	.68	-.00719	-.00075	0.000000	0.000000	.0164	.0017	0.0000	0.0000
71	R	26.24	.54	.55	14.26	5.34	-1.69	.59	-.00746	-.00075	0.000000	0.000000	.0170	.0017	0.0000	0.0000
72	QF	26.59	.54	.56	14.86	5.17	.00	-.10	-.00757	.00014	0.000000	0.000000	.0173	-.0003	0.0000	0.0000
73	QF	26.94	.54	.57	14.26	5.49	1.69	-.81	-.00737	.00103	0.000000	0.000000	.0168	-.0023	0.0000	0.0000
74	QD	27.98	.56	.60	11.04	7.48	1.41	-1.12	-.00630	.00103	0.000000	0.000000	.0144	-.0023	0.0000	0.0000
75	B	29.64	.59	.63	7.10	11.96	.96	-1.56	.07479	.09679	0.000000	0.000000	-.3863	-.4811	0.0000	0.0000
76	QD	30.69	.61	.64	5.40	15.49	.68	-1.86	.17500	.09679	0.000000	0.000000	-.8845	-.4811	0.0000	0.0000
77	QD	31.03	.63	.64	5.17	16.17	-.00	-.06	.21275	.11931	0.000000	0.000000	-1.0723	-.5942	0.0000	0.0000
78	QD	31.38	.64	.65	5.40	15.57	-.69	1.75	.25922	.14673	0.000000	0.000000	-1.3039	-.7316	0.0000	0.0000
79	QD	32.41	.66	.66	7.12	12.22	-.97	1.48	.41114	.14673	0.000000	0.000000	-2.0614	-.7316	0.0000	0.0000
80	B	34.07	.69	.69	11.09	7.93	-1.42	1.09	.73368	.24250	0.000000	0.000000	-3.6708	-1.2104	0.0000	0.0000
81	Q	34.81	.70	.70	13.33	6.48	-1.62	.89	.91202	.24250	0.000000	0.000000	-4.5610	-1.2104	0.0000	0.0000
82	SF	34.81	.70	.70	13.33	6.48	-1.63	.89	.91202	.24309	0.000000	0.000000	-4.5610	-1.2118	0.0000	0.0000
83	QS	35.11	.71	.71	14.33	5.97	-1.71	.81	.98495	.24309	0.000000	0.000000	-4.9245	-1.2118	0.0000	0.0000
84	QF	35.46	.71	.72	14.95	5.67	-.02	.05	1.04907	.12150	0.000000	0.000000	-5.2444	-.6070	0.0000	0.0000
85	QF	35.81	.71	.73	14.36	5.90	1.69	-.70	1.06953	-.00515	0.000000	0.000000	-5.3471	.0230	0.0000	0.0000
86	QS	36.11	.72	.74	13.37	6.34	1.61	-.78	1.06799	-.00515	0.000000	0.000000	-5.3402	.0230	0.0000	0.0000
87	SF	36.11	.72	.74	13.37	6.34	1.60	-.77	1.06799	-.00434	0.000000	0.000000	-5.3402	.0210	0.0000	0.0000
88	Q	36.84	.73	.75	11.16	7.62	1.40	-.96	1.06480	-.00434	0.000000	0.000000	-5.3248	.0210	0.0000	0.0000
89	LC	38.50	.76	.78	7.24	11.49	-.96	-1.38	1.05759	-.00434	0.000000	0.000000	-5.2899	.0210	0.0000	0.0000
90	Q	39.24	.77	.79	5.97	13.66	.77	-1.56	1.05439	-.00434	0.000000	0.000000	-5.2745	.0210	0.0000	0.0000
91	SD	39.24	.77	.79	5.97	13.66	.77	-1.58	1.05439	-.00554	0.000000	0.000000	-5.2745	.0240	0.0000	0.0000
92	QS	39.54	.78	.80	5.53	14.63	.69	-1.65	1.05273	-.00554	0.000000	0.000000	-5.2673	.0240	0.0000	0.0000
93	QD	39.89	.79	.80	5.30	15.20	-.01	.04	1.07236	.11791	0.000000	0.000000	-5.3663	-.5907	0.0000	0.0000
94	QD	40.24	.80	.80	5.54	14.57	-.71	1.73	1.13596	.24620	0.000000	0.000000	-5.6842	-1.2295	0.0000	0.0000
95	QS	40.54	.81	.81	5.99	13.55	-.79	1.65	1.20982	.24620	0.000000	0.000000	-6.0530	-1.2295	0.0000	0.0000
96	SD	40.54	.81	.81	5.99	13.55	-.78	1.63	1.20982	.24463	0.000000	0.000000	-6.0530	-1.2255	0.0000	0.0000
97	Q	41.28	.83	.82	7.29	11.30	-.93	1.43	1.38973	.24463	0.000000	0.000000	-6.9543	-1.2255	0.0000	0.0000
98	LC	42.94	.86	.85	11.27	7.28	-1.42	.98	1.79591	.24463	0.000000	0.000000	-8.9892	-1.2255	0.0000	0.0000
99	Q	43.67	.87	.86	13.51	5.98	-1.62	.79	1.97581	.24463	0.000000	0.000000	-9.8905	-1.2255	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCC (MM)	DXCO (MR)	YCC (MM)	DYCO (MR)
100	SF	43.67	.87	.86	13.51	5.98	-1.64	.79	1.97581	.24740	0.000000	0.000000	-9.8905	-1.2324	0.0000	0.0000
101	OS	43.97	.87	.87	14.52	5.53	-1.72	.71	2.05003	.24740	0.000000	0.000000	-10.2602	-1.2324	0.0000	0.0000
102	QF	44.32	.87	.88	15.13	5.28	.00	.00	2.09349	-.00030	0.000000	0.000000	-10.4768	.0010	0.0000	0.0000
103	QF	44.67	.88	.89	14.52	5.53	1.72	-.71	2.04982	-.24798	0.000000	0.000000	-10.2595	1.2344	0.0000	0.0000
104	OS	44.97	.88	.90	13.51	5.98	1.64	-.79	1.97543	-.24798	0.000000	0.000000	-9.8862	1.2344	0.0000	0.0000
105	SF	44.97	.88	.90	13.51	5.98	1.62	-.79	1.97543	-.24521	0.000000	0.000000	-9.8862	1.2275	0.0000	0.0000
106	O	45.71	.89	.92	11.27	7.28	1.42	-.98	1.79509	-.24521	0.000000	0.000000	-8.9864	1.2275	0.0000	0.0000
107	B	47.37	.92	.95	7.29	11.21	.98	-1.37	1.46826	-.14944	0.000000	0.000000	-7.3491	.7487	0.0000	0.0000
108	O	48.10	.94	.96	6.00	13.37	.78	-1.56	1.35835	-.14944	0.000000	0.000000	-6.7984	.7487	0.0000	0.0000
109	SO	48.10	.94	.96	6.00	13.37	.79	-1.58	1.35835	-.15143	0.000000	0.000000	-6.7984	.7536	0.0000	0.0000
110	OS	48.40	.95	.96	5.55	14.34	.71	-1.66	1.31292	-.15143	0.000000	0.000000	-6.5724	.7536	0.0000	0.0000
111	QO	48.75	.96	.96	5.30	14.93	.01	.00	1.28640	-.00043	0.000000	0.000000	-6.4405	.0015	0.0000	0.0000
112	QO	49.10	.97	.97	5.53	14.34	-.69	1.67	1.31262	.15056	0.000000	0.000000	-6.5713	-.7507	0.0000	0.0000
113	OS	49.40	.98	.97	5.97	13.36	-.77	1.59	1.35779	.15056	0.000000	0.000000	-6.7965	-.7507	0.0000	0.0000
114	SO	49.40	.98	.97	5.97	13.36	-.76	1.57	1.35779	.14857	0.000000	0.000000	-6.7965	-.7457	0.0000	0.0000
115	O	50.14	.99	.98	7.23	11.20	-.96	1.38	1.46705	.14857	0.000000	0.000000	-7.3450	-.7457	0.0000	0.0000
116	B	51.80	1.02	1.01	11.13	7.26	-1.39	.99	1.79244	.24434	0.000000	0.000000	-8.9774	-1.2245	0.0000	0.0000
117	O	52.54	1.03	1.03	13.32	5.96	-1.59	.79	1.97214	.24434	0.000000	0.000000	-9.8780	-1.2245	0.0000	0.0000
118	SF	52.54	1.03	1.03	13.32	5.96	-1.61	.79	1.97214	.24710	0.000000	0.000000	-9.8780	-1.2314	0.0000	0.0000
119	OS	52.84	1.04	1.04	14.31	5.51	-1.69	.71	2.04627	.24710	0.000000	0.000000	-10.2474	-1.2314	0.0000	0.0000
120	QF	53.19	1.04	1.05	14.91	5.26	.01	.00	2.08971	-.00014	0.000000	0.000000	-10.4639	.0005	0.0000	0.0000
121	QF	53.54	1.04	1.06	14.30	5.50	1.70	-.71	2.04617	-.24738	0.000000	0.000000	-10.2471	1.2324	0.0000	0.0000
122	OS	53.84	1.05	1.07	13.30	5.95	1.62	-.79	1.97196	-.24738	0.000000	0.000000	-9.8774	1.2324	0.0000	0.0000
123	SF	53.84	1.05	1.07	13.30	5.95	1.60	-.78	1.97196	-.24462	0.000000	0.000000	-9.8774	1.2255	0.0000	0.0000
124	O	54.57	1.06	1.08	11.09	7.24	1.41	-.98	1.79206	-.24462	0.000000	0.000000	-8.9761	1.2255	0.0000	0.0000
125	B	56.23	1.09	1.11	7.17	11.15	.96	-1.37	1.46620	-.14885	0.000000	0.000000	-7.3421	.7467	0.0000	0.0000
126	O	56.97	1.10	1.12	5.90	13.31	.76	-1.56	1.35673	-.14885	0.000000	0.000000	-6.7929	.7467	0.0000	0.0000
127	SO	56.97	1.10	1.12	5.90	13.31	.77	-1.58	1.35673	-.15083	0.000000	0.000000	-6.7929	.7516	0.0000	0.0000
128	OS	57.27	1.11	1.13	5.46	14.27	.69	-1.65	1.31148	-.15083	0.000000	0.000000	-6.5674	.7516	0.0000	0.0000
129	QO	57.62	1.12	1.13	5.22	14.86	-.00	-.00	1.28514	.00001	0.000000	0.000000	-6.4361	-.0000	0.0000	0.0000
130	QO	57.97	1.13	1.13	5.46	14.27	-.69	1.65	1.31149	.15086	0.000000	0.000000	-6.5674	-.7517	0.0000	0.0000
131	OS	58.27	1.14	1.14	5.90	13.31	-.77	1.58	1.35675	.15086	0.000000	0.000000	-6.7930	-.7517	0.0000	0.0000
132	SO	58.27	1.14	1.14	5.90	13.31	-.76	1.56	1.35675	.14888	0.000000	0.000000	-6.7930	-.7467	0.0000	0.0000
133	O	59.00	1.16	1.15	7.17	11.15	-.96	1.37	1.46624	.14888	0.000000	0.000000	-7.3421	-.7467	0.0000	0.0000
134	B	60.66	1.19	1.18	11.09	7.24	-1.41	.98	1.79213	.24465	0.000000	0.000000	-8.9763	-1.2255	0.0000	0.0000
135	O	61.40	1.20	1.20	13.31	5.95	-1.60	.78	1.97205	.24465	0.000000	0.000000	-8.8776	-1.2255	0.0000	0.0000
136	SF	61.40	1.20	1.20	13.31	5.95	-1.62	.79	1.97205	.24741	0.000000	0.000000	-9.8776	-1.2324	0.0000	0.0000
137	OS	61.70	1.20	1.20	14.30	5.50	-1.70	.71	2.04627	.24741	0.000000	0.000000	-10.2473	-1.2324	0.0000	0.0000
138	QF	62.05	1.21	1.21	14.91	5.26	-.01	-.00	2.08981	.00015	0.000000	0.000000	-10.4641	-.0005	0.0000	0.0000
139	QF	62.40	1.21	1.22	14.32	5.51	1.69	-.71	2.04638	-.24711	0.000000	0.000000	-10.2477	1.2314	0.0000	0.0000
140	OS	62.70	1.21	1.23	13.33	5.96	1.61	-.79	1.97225	-.24711	0.000000	0.000000	-9.8782	1.2314	0.0000	0.0000
141	SF	62.70	1.21	1.23	13.33	5.96	1.59	-.79	1.97225	-.24434	0.000000	0.000000	-9.8782	1.2245	0.0000	0.0000
142	O	63.43	1.22	1.25	11.13	7.26	1.39	-.99	1.79255	-.24434	0.000000	0.000000	-8.9777	1.2245	0.0000	0.0000
143	B	65.09	1.25	1.28	7.24	11.20	.96	-1.38	1.46716	-.14857	0.000000	0.000000	-7.3452	.7457	0.0000	0.0000
144	O	65.83	1.27	1.29	5.97	13.36	.76	-1.57	1.35790	-.14857	0.000000	0.000000	-6.7968	.7457	0.0000	0.0000
145	SO	65.83	1.27	1.29	5.97	13.36	.77	-1.59	1.35790	-.15056	0.000000	0.000000	-6.7968	.7507	0.0000	0.0000
146	OS	66.13	1.28	1.29	5.54	14.34	.69	-1.67	1.31273	-.15056	0.000000	0.000000	-6.5715	.7507	0.0000	0.0000
147	QO	66.48	1.29	1.30	5.30	14.93	-.01	-.00	1.28651	.00044	0.000000	0.000000	-6.4407	-.0015	0.0000	0.0000
148	QO	66.83	1.30	1.30	5.55	14.34	-.71	1.66	1.31304	.15146	0.000000	0.000000	-6.5726	-.7537	0.0000	0.0000
149	OS	67.13	1.31	1.30	6.00	13.37	-.79	1.58	1.35848	.15146	0.000000	0.000000	-6.7987	-.7537	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.13	1.31	1.30	6.00	13.37	-.78	1.56	1.35848	.14947	0.000000	0.000000	-6.7987	-.7487	0.0000	0.0000
151	D	67.87	1.33	1.31	7.29	11.21	-.98	1.37	1.46840	.14947	0.000000	0.000000	-7.3493	-.7487	0.0000	0.0000
152	B	69.53	1.36	1.34	11.27	7.28	-1.42	.98	1.79528	.24524	0.000000	0.000000	-8.9868	-1.2275	0.0000	0.0000
153	D	70.26	1.37	1.36	13.51	5.98	-1.62	.79	1.97563	.24524	0.000000	0.000000	-9.8896	-1.2275	0.0000	0.0000
154	SF	70.26	1.37	1.36	13.51	5.98	-1.64	.79	1.97563	.24801	0.000000	0.000000	-9.8896	-1.2345	0.0000	0.0000
155	OS	70.56	1.37	1.37	14.52	5.53	-1.72	.71	2.05004	.24801	0.000000	0.000000	-10.2599	-1.2345	0.0000	0.0000
156	QF	70.91	1.37	1.38	15.13	5.28	.00	.00	2.09371	.00030	0.000000	0.000000	-10.4772	-.0010	0.0000	0.0000
157	QF	71.26	1.38	1.39	14.52	5.53	1.72	-.71	2.05025	-.24742	0.000000	0.000000	-10.2606	1.2325	0.0000	0.0000
158	OS	71.56	1.38	1.40	13.51	5.98	1.64	-.79	1.97602	-.24742	0.000000	0.000000	-9.8909	1.2325	0.0000	0.0000
159	SF	71.56	1.38	1.40	13.51	5.98	1.62	-.79	1.97602	-.24465	0.000000	0.000000	-9.8909	1.2256	0.0000	0.0000
160	D	72.30	1.39	1.42	11.27	7.28	1.42	-.98	1.79609	-.24465	0.000000	0.000000	-8.9895	1.2256	0.0000	0.0000
161	B	73.96	1.42	1.45	7.29	11.21	.98	-1.37	1.47019	-.14888	0.000000	0.000000	-7.3554	.7468	0.0000	0.0000
162	D	74.69	1.44	1.46	6.00	13.37	.78	-1.56	1.36070	-.14888	0.000000	0.000000	-6.8062	.7468	0.0000	0.0000
163	SD	74.69	1.44	1.45	6.00	13.37	.79	-1.58	1.36070	-.15087	0.000000	0.000000	-6.8062	.7517	0.0000	0.0000
164	OS	74.99	1.44	1.46	5.55	14.34	.71	-1.66	1.31543	-.15087	0.000000	0.000000	-6.5806	.7517	0.0000	0.0000
165	QD	75.34	1.45	1.46	5.30	14.93	.01	.00	1.28916	.00043	0.000000	0.000000	-6.4496	-.0015	0.0000	0.0000
166	QD	75.69	1.47	1.47	5.54	14.34	-.69	1.67	1.31574	.15176	0.000000	0.000000	-6.5817	-.7547	0.0000	0.0000
167	OS	75.99	1.47	1.47	5.97	13.36	-.77	1.59	1.36127	.15176	0.000000	0.000000	-6.8081	-.7547	0.0000	0.0000
168	SD	75.99	1.47	1.47	5.97	13.36	-.76	1.57	1.36127	.14977	0.000000	0.000000	-6.8081	-.7498	0.0000	0.0000
169	D	76.73	1.49	1.48	7.24	11.20	-.96	1.38	1.47141	.14977	0.000000	0.000000	-7.3595	-.7498	0.0000	0.0000
170	B	78.39	1.52	1.51	11.13	7.26	-1.39	.99	1.79878	.24554	0.000000	0.000000	-8.9986	-1.2286	0.0000	0.0000
171	D	79.12	1.53	1.53	13.32	5.96	-1.59	.79	1.97935	.24554	0.000000	0.000000	-9.9021	-1.2286	0.0000	0.0000
172	SF	79.12	1.53	1.53	13.32	5.96	-1.61	.79	1.97935	.24832	0.000000	0.000000	-9.9021	-1.2355	0.0000	0.0000
173	OS	79.42	1.53	1.53	14.31	5.51	-1.69	.71	2.05385	.24832	0.000000	0.000000	-10.2728	-1.2355	0.0000	0.0000
174	QF	79.78	1.54	1.54	14.91	5.26	.01	.00	2.09755	.00015	0.000000	0.000000	-10.4901	-.0005	0.0000	0.0000
175	QF	80.13	1.54	1.56	14.30	5.50	1.70	-.71	2.05395	-.24802	0.000000	0.000000	-10.2731	1.2345	0.0000	0.0000
176	OS	80.43	1.54	1.56	13.30	5.95	1.62	-.79	1.97955	-.24802	0.000000	0.000000	-9.9028	1.2345	0.0000	0.0000
177	SF	80.43	1.54	1.56	13.30	5.95	1.60	-.78	1.97955	-.24525	0.000000	0.000000	-9.9028	1.2276	0.0000	0.0000
178	D	81.16	1.55	1.58	11.09	7.24	1.41	-.98	1.79918	-.24525	0.000000	0.000000	-9.0000	1.2276	0.0000	0.0000
179	B	82.82	1.58	1.61	7.17	11.15	.96	-1.37	1.47230	-.14947	0.000000	0.000000	-7.3625	.7488	0.0000	0.0000
180	D	83.56	1.60	1.62	5.90	13.31	.76	-1.56	1.36237	-.14947	0.000000	0.000000	-6.8118	.7488	0.0000	0.0000
181	SD	83.56	1.60	1.62	5.90	13.31	.77	-1.58	1.36237	-.15147	0.000000	0.000000	-6.8118	.7538	0.0000	0.0000
182	OS	83.86	1.61	1.62	5.46	14.27	.69	-1.65	1.31693	-.15147	0.000000	0.000000	-6.5857	.7538	0.0000	0.0000
183	QD	84.21	1.62	1.63	5.22	14.86	-.00	.00	1.29047	.00000	0.000000	0.000000	-6.4540	-.0000	0.0000	0.0000
184	REFL	168.41	3.24	3.26	17.87	5.57	-.00	.00	.00862	-.00000	0.000000	0.000000	-.0196	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.2394 M THETX = 6.28318638 RAD NUX = 9.72797 DNUX/(DP/P) = .37870
(OS/S)/RDBIBS = .8070255 M THETY(183) = 0.00000000 RAD NUY = 9.76809 DNUY/(DP/P) = .41000
TGAM = (7.66390, 0.00000)

MAXIMA --- BETX(184) = 17.86771 BETY(12) = 16.71017 ETAX(174) = 2.09755 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 4.02794 BETY(48) = 3.27399 ETAX(33) = -.00011 ETAY(184) = 0.00000

*** INCR 1 // DP .005000 VALUE = 0.000000

SUB. CHR , ITER. 5

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V

X = -.00001959 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = 0.00000000 1.00000000
2

7X7 MATRIX FOR AGR

.04182933	17.81760225	C.00000000	0.00000000	0.00000000	-.00087646	-.00000000
-.05602607	.04182933	0.00000000	0.00000000	0.00000000	-.00005125	-.00000000
0.00000000	0.00000000	-.04180826	5.72904571	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.17424404	-.04180826	0.00000000	0.00000000	0.00000000
.00005125	.00087646	0.00000000	0.00000000	1.00000000	-2.87936746	-.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.04182933 -.99912477), C(1) = 1.00000000, MU(1) = 1.52895479 RAD, Q(1) = .73002214
1/LMD1 = (.04182933 -.99912477), C(2) = 1.00000000, MU(2) = -1.52895479 RAD, Q(2) = .26997786

Y... LMD3 = (-.04180826 .99912565), C(3) = 1.00000000, MU(3) = 1.61261677 RAD, Q(3) = .76996779
1/LMD3 = (-.04180826 -.99912565), C(4) = 1.00000000, MU(4) = -1.61261677 RAD, Q(4) = .23003221

EIGENVALUE = (.04182933, .99912477), EIGENVECTOR = (4.22293860, 0.00000000)
(0.00000000, -.23680193)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.04182933, -.99912477), EIGENVECTOR = (4.22293860, 0.00000000)
(0.00000000, -.23680193)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.04180826, .99912565), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.39458958, 0.00000000)
(.00000000, .41760810)

EIGENVALUE = (-.04180826, -.99912565), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.39458958, 0.00000000)
(.00000000, -.41760810)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000
ETA ORBIT	-.00091473	-.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3			DX1 DX3		Y1 Y3			DY1 DY3
0	4.222933 0.000001	0.000000 0.000000	.236802 0.000000	1.570796 0.000000	0.000000 2.394590	0.000000 0.000000	0.000000 .417608	0.000000 1.570796	

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.83	5.73	0.00	0.00	-.00091	-.00000	0.000000	0.000000	-.0000	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	17.03	6.03	2.27	-.85	-.00089	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
2	S	.72	.01	.02	15.38	6.70	2.13	-.95	-.00085	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
3	S	1.10	.01	.03	13.84	7.45	2.00	-1.06	-.00080	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
4	S	1.47	.02	.03	12.40	8.28	1.86	-1.16	-.00076	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
5	S	1.84	.02	.04	11.06	9.18	1.73	-1.27	-.00071	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
6	S	2.22	.03	.05	9.82	10.17	1.59	-1.38	-.00067	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
7	S	2.59	.03	.05	8.68	11.24	1.46	-1.48	-.00062	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
8	S	2.96	.04	.06	7.64	12.38	1.33	-1.59	-.00058	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
9	S	3.34	.05	.06	6.70	13.61	1.19	-1.69	-.00054	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
10	S	3.71	.06	.07	5.86	14.91	1.06	-1.80	-.00049	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
11	S	4.09	.07	.07	5.12	16.30	.92	-1.91	-.00045	.00012	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
12	QD1	4.43	.08	.07	4.73	16.94	.23	.08	-.00041	.00007	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
13	QD1	4.78	.09	.08	4.79	16.18	-.42	2.06	-.00040	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
14	S	5.16	.10	.08	5.14	14.69	-.51	1.94	-.00039	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
15	S	5.53	.11	.09	5.56	13.29	-.61	1.82	-.00038	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
16	S	5.90	.13	.09	6.05	11.98	-.70	1.70	-.00038	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
17	S	6.28	.13	.10	6.60	10.76	-.79	1.58	-.00037	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
18	S	6.65	.14	.10	7.22	9.62	-.88	1.46	-.00036	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
19	S	7.02	.15	.11	7.92	8.58	-.97	1.33	-.00035	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
20	S	7.39	.16	.12	8.68	7.63	-1.06	1.21	-.00035	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
21	S	7.77	.16	.12	9.50	6.77	-1.16	1.09	-.00034	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
22	S	8.14	.17	.13	10.40	6.00	-1.25	.97	-.00033	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
23	S	8.51	.18	.14	11.37	5.32	-1.34	.85	-.00033	.00002	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
24	QF2	8.86	.18	.15	11.81	4.99	.08	.12	-.00031	.00006	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
25	QF2	9.22	.19	.17	11.26	5.15	1.49	-.59	-.00029	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
26	S	9.59	.19	.18	10.19	5.62	1.38	-.68	-.00025	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
27	S	9.96	.20	.19	9.19	6.17	1.27	-.78	-.00021	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
28	S	10.33	.20	.20	8.28	6.79	1.17	-.88	-.00018	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
29	S	10.71	.21	.20	7.45	7.48	1.06	-.98	-.00014	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
30	S	11.08	.22	.21	6.70	8.25	.96	-1.07	-.00010	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
31	S	11.45	.23	.22	6.03	9.09	.85	-1.17	-.00007	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
32	S	11.83	.24	.22	5.43	10.00	.74	-1.27	-.00003	.00010	0.000000	0.000000	-.0000	.0000	0.0000	0.0000
33	S	12.20	.25	.23	4.92	10.98	.64	-1.37	.00000	.00010	0.000000	0.000000	.0000	.0000	0.0000	0.0000
34	S	12.57	.25	.24	4.48	12.04	.53	-1.46	.00004	.00010	0.000000	0.000000	.0000	.0000	0.0000	0.0000
35	S	12.95	.28	.24	4.13	13.17	.42	-1.56	.00008	.00010	0.000000	0.000000	.0000	.0000	0.0000	0.0000
36	QD2	13.30	.29	.24	4.06	13.64	-.22	.22	.00011	.00011	0.000000	0.000000	.0000	.0000	0.0000	0.0000
37	QD2	13.65	.30	.25	4.44	12.86	-.90	1.97	.00015	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
38	R	14.01	.32	.25	5.16	11.47	-1.05	1.83	.00020	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
39	R	14.38	.33	.26	5.98	10.18	-1.20	1.69	.00025	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
40	R	14.75	.34	.27	6.92	8.99	-1.35	1.55	.00030	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
41	R	15.11	.34	.27	7.96	7.90	-1.50	1.41	.00034	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
42	R	15.48	.35	.28	9.11	6.92	-1.65	1.27	.00039	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
43	R	15.85	.36	.29	10.38	6.03	-1.80	1.13	.00044	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
44	R	16.21	.36	.30	11.75	5.25	-1.95	1.00	.00048	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
45	R	16.58	.37	.31	13.23	4.57	-2.09	.86	.00053	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
46	R	16.95	.37	.32	14.82	3.99	-2.24	.72	.00058	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
47	R	17.32	.38	.34	16.52	3.52	-2.39	.58	.00062	.00013	0.000000	0.000000	.0000	.0000	0.0000	0.0000
48	QF3	17.73	.38	.36	17.60	3.29	-.15	-.01	.00066	.00004	0.000000	0.000000	.0000	.0000	0.0000	0.0000
49	QF3	18.14	.38	.38	16.77	3.54	2.12	-.60	.00066	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
50	Z	18.50	.39	.39	15.23	4.02	2.00	-.74	.00064	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
51	Z	18.86	.39	.41	13.88	4.60	1.88	-.88	.00062	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
52	Z	19.22	.39	.42	12.56	5.29	1.77	-1.02	.00061	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
53	Z	19.58	.40	.43	11.33	6.07	1.65	-1.16	.00059	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
54	Z	19.95	.41	.44	10.19	6.95	1.53	-1.29	.00057	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
55	Z	20.31	.41	.45	9.13	7.94	1.41	-1.43	.00055	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
56	Z	20.67	.42	.45	8.15	9.02	1.29	-1.57	.00054	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
57	Z	21.03	.43	.46	7.26	10.20	1.18	-1.71	.00052	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
58	Z	21.39	.43	.46	6.46	11.49	1.06	-1.85	.00050	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
59	Z	21.75	.44	.47	5.74	12.87	.94	-1.99	.00049	-.00005	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
60	QD3	22.16	.45	.47	5.31	13.82	.10	-.26	.00048	.00002	0.000000	0.000000	.0000	.0000	0.0000	0.0000
61	QD3	22.58	.47	.48	5.56	13.28	-.71	1.53	.00050	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
62	R	22.94	.48	.48	6.11	12.19	-.81	1.44	.00053	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
63	R	23.31	.49	.49	6.74	11.17	-.90	1.34	.00056	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
64	R	23.68	.49	.49	7.44	10.22	-1.00	1.25	.00059	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
65	R	24.04	.50	.50	8.21	9.34	-1.10	1.16	.00062	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
66	R	24.41	.51	.51	9.05	8.52	-1.20	1.07	.00065	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
67	R	24.78	.51	.51	9.97	7.77	-1.30	.98	.00068	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
68	R	25.14	.52	.52	10.96	7.09	-1.40	.88	.00071	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
69	R	25.51	.53	.53	12.02	6.48	-1.50	.79	.00074	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
70	R	25.88	.53	.54	13.16	5.93	-1.60	.70	.00077	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
71	R	26.24	.53	.55	14.37	5.45	-1.70	.61	.00080	.00008	0.000000	0.000000	.0000	.0000	0.0000	0.0000
72	QF	26.59	.54	.56	14.97	5.27	-.00	-.09	.00081	-.00001	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
73	QF	26.94	.54	.57	14.37	5.59	1.69	-.81	.00079	-.00011	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
74	QD	27.98	.56	.60	11.15	7.58	1.42	-1.12	.00068	-.00011	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
75	B	29.64	.58	.62	7.20	12.02	.97	-1.55	.07948	.09516	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
76	QD	30.68	.61	.64	5.49	15.52	.69	-1.84	.17801	.09516	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
77	QD	31.03	.62	.64	5.24	16.19	-.00	-.04	.21521	.11778	0.000000	0.000000	.0000	.0000	0.0000	0.0000
78	QD	31.38	.63	.64	5.49	15.58	-.69	1.76	.26114	.14518	0.000000	0.000000	.0000	.0000	0.0000	0.0000
79	QD	32.41	.66	.66	7.20	12.22	-.97	1.49	.41146	.14518	0.000000	0.000000	.0000	.0000	0.0000	0.0000
80	B	34.07	.69	.68	11.15	7.92	-1.42	1.09	.73112	.24045	0.000000	0.000000	.0000	.0000	0.0000	0.0000
81	Q	34.81	.70	.70	13.38	6.46	-1.61	.89	.90796	.24045	0.000000	0.000000	.0000	.0000	0.0000	0.0000
82	SF	34.81	.70	.70	13.38	6.46	-1.61	.89	.90796	.24045	0.000000	0.000000	.0000	.0000	0.0000	0.0000
83	QS	35.11	.70	.71	14.37	5.96	-1.70	.81	.98009	.24045	0.000000	0.000000	.0000	.0000	0.0000	0.0000
84	QF	35.46	.70	.72	14.98	5.66	.00	.05	1.04360	.12068	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
85	QF	35.81	.71	.73	14.37	5.88	1.70	-.69	1.06411	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
86	QS	36.11	.71	.73	13.38	6.32	1.61	-.77	1.06290	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
87	SF	36.11	.71	.73	13.39	6.32	1.61	-.77	1.06290	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
88	Q	36.84	.72	.75	11.15	7.59	1.42	-.96	1.05991	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
89	LF	38.50	.75	.78	7.19	11.46	.97	-1.37	1.05318	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
90	Q	39.24	.77	.79	5.91	13.62	.77	-1.56	1.05019	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
91	SD	39.24	.77	.79	5.91	13.62	.77	-1.56	1.05019	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
92	QS	39.54	.78	.79	5.47	14.58	.69	-1.64	1.04898	-.00406	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
93	QD	39.89	.79	.80	5.23	15.14	.00	.05	1.06884	.11775	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
94	QD	40.24	.80	.80	5.47	14.51	-.69	1.72	1.13208	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
95	QS	40.54	.81	.80	5.91	13.51	-.77	1.64	1.20538	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
96	SD	40.54	.81	.80	5.91	13.51	-.77	1.64	1.20538	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
97	Q	41.28	.83	.81	7.19	11.24	-.97	1.44	1.38508	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
98	LC	42.94	.85	.84	11.15	7.22	-1.42	.99	1.79079	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
99	Q	43.67	.86	.86	13.37	5.92	-1.61	.78	1.97048	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
100	SF	43.67	.86	.86	13.37	5.92	-1.61	.78	1.97048	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
101	OS	43.97	.87	.87	14.37	5.47	-1.69	.70	2.04378	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
102	QF	44.32	.87	.88	14.97	5.23	-.00	-.00	2.08673	-.00011	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
103	QF	44.67	.88	.89	14.37	5.47	1.69	-.70	2.04371	-.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
104	OS	44.97	.88	.90	13.37	5.92	1.61	-.78	1.97034	-.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
105	SF	44.97	.88	.90	13.37	5.92	1.61	-.78	1.97034	-.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
106	O	45.71	.89	.92	11.15	7.22	1.42	-.99	1.79048	-.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
107	B	47.37	.92	.94	7.19	11.16	.97	-1.38	1.46400	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
108	O	48.10	.94	.95	5.91	13.33	.77	-1.57	1.35421	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
109	SD	48.10	.94	.95	5.91	13.33	.77	-1.57	1.35421	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
110	OS	48.40	.94	.96	5.48	14.30	.69	-1.65	1.30942	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
111	QD	48.76	.96	.96	5.24	14.88	.00	-.00	1.28332	-.00016	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
112	QD	49.11	.97	.97	5.48	14.30	-.69	1.65	1.30930	.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
113	OS	49.41	.97	.97	5.91	13.33	-.77	1.57	1.35399	.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
114	SD	49.41	.97	.97	5.91	13.33	-.77	1.57	1.35399	.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
115	O	50.14	.99	.98	7.19	11.16	-.97	1.38	1.46354	.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
116	B	51.80	1.02	1.01	11.15	7.22	-1.42	.99	1.78946	.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
117	O	52.54	1.03	1.03	13.37	5.92	-1.61	.78	1.96907	.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
118	SF	52.54	1.03	1.03	13.37	5.92	-1.61	.78	1.96907	.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
119	OS	52.84	1.03	1.03	14.37	5.47	-1.69	.70	2.04234	.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
120	QF	53.19	1.04	1.04	14.97	5.23	.00	-.00	2.08528	-.00006	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
121	QF	53.54	1.04	1.06	14.37	5.47	1.69	-.70	2.04230	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
122	OS	53.84	1.05	1.06	13.37	5.92	1.61	-.78	1.96900	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
123	SF	53.84	1.05	1.06	13.37	5.92	1.61	-.78	1.96900	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
124	O	54.57	1.06	1.08	11.15	7.22	1.42	-.99	1.78931	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
125	B	56.23	1.08	1.11	7.19	11.16	.97	-1.38	1.46320	-.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
126	O	56.97	1.10	1.12	5.91	13.33	.77	-1.57	1.35357	-.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
127	SD	56.97	1.10	1.12	5.91	13.33	.77	-1.57	1.35357	-.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
128	OS	57.27	1.11	1.12	5.48	14.30	.69	-1.65	1.30886	-.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
129	QD	57.62	1.12	1.13	5.24	14.88	-.00	.00	1.28282	.00000	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
130	QD	57.97	1.13	1.13	5.48	14.30	-.69	1.65	1.30886	.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
131	OS	58.27	1.14	1.14	5.91	13.33	-.77	1.57	1.35357	.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
132	SD	58.27	1.14	1.14	5.91	13.33	-.77	1.57	1.35357	.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
133	O	59.01	1.16	1.15	7.19	11.16	-.97	1.38	1.46320	.14906	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
134	B	60.67	1.19	1.17	11.15	7.22	-1.42	.99	1.78931	.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
135	O	61.40	1.20	1.19	13.37	5.92	-1.61	.78	1.96900	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
136	SF	61.40	1.20	1.19	13.37	5.92	-1.61	.78	1.96900	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
137	OS	61.70	1.20	1.20	14.37	5.47	-1.69	.70	2.04230	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
138	QF	62.05	1.21	1.21	14.97	5.23	-.00	.00	2.08528	.00006	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
139	QF	62.40	1.21	1.22	14.37	5.47	1.69	-.70	2.04234	-.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
140	OS	62.70	1.21	1.23	13.37	5.92	1.61	-.78	1.96907	-.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
141	SF	62.70	1.21	1.23	13.37	5.92	1.61	-.78	1.96907	-.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
142	O	63.44	1.22	1.25	11.15	7.22	1.42	-.99	1.78946	-.24423	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
143	B	65.10	1.25	1.28	7.19	11.16	.97	-1.38	1.46354	-.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
144	O	65.83	1.27	1.29	5.91	13.33	.77	-1.57	1.35399	-.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
145	SD	65.83	1.27	1.29	5.91	13.33	.77	-1.57	1.35399	-.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
146	OS	66.13	1.28	1.29	5.48	14.30	.69	-1.65	1.30930	-.14895	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
147	QD	66.48	1.29	1.29	5.24	14.88	-.00	.00	1.28332	.00016	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
148	QD	66.84	1.30	1.30	5.48	14.30	-.69	1.65	1.30942	.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
149	OS	67.14	1.31	1.30	5.91	13.33	-.77	1.57	1.35421	.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000

POS		S (M)	OX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.14	1.31	1.30	5.91	13.33	-.77	1.57	1.35421	.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
151	O	67.87	1.33	1.31	7.19	11.16	-.97	1.38	1.46400	.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
152	B	69.53	1.35	1.34	11.15	7.22	-1.42	.99	1.79048	.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
153	O	70.27	1.36	1.36	13.37	5.92	-1.61	.78	1.97034	.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
154	SF	70.27	1.36	1.36	13.37	5.92	-1.61	.78	1.97034	.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
155	OS	70.57	1.37	1.37	14.37	5.47	-1.69	-.70	2.04371	-.24456	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
156	QF	70.92	1.37	1.38	14.97	5.23	.00	-.00	2.06673	.00011	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
157	QF	71.27	1.38	1.39	14.37	5.47	1.69	-.70	2.04378	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
158	OS	71.57	1.38	1.40	13.37	5.92	1.61	-.78	1.97048	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
159	SF	71.57	1.39	1.40	13.37	5.92	1.61	-.78	1.97048	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
160	O	72.30	1.39	1.42	11.15	7.22	1.42	-.99	1.79079	-.24434	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
161	B	73.96	1.42	1.44	7.19	11.16	.97	-1.38	1.46467	-.14907	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
162	O	74.70	1.44	1.45	5.91	13.33	.77	-1.57	1.35504	-.14907	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
163	SD	74.70	1.44	1.45	5.91	13.33	.77	-1.57	1.35504	-.14907	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
164	OS	75.00	1.44	1.46	5.48	14.30	.69	-1.65	1.31032	-.14907	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
165	QD	75.35	1.46	1.46	5.24	14.88	.00	-.00	1.28431	.00016	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
166	QD	75.70	1.47	1.47	5.48	14.30	-.69	1.65	1.31043	.14940	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
167	OS	76.00	1.47	1.47	5.91	13.33	-.77	1.57	1.35526	.14940	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
168	SD	76.00	1.47	1.47	5.91	13.33	-.77	1.57	1.35526	.14940	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
169	O	76.74	1.49	1.48	7.19	11.16	-.97	1.38	1.46513	.14940	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
170	B	78.40	1.52	1.51	11.15	7.22	-1.42	.99	1.79180	.24468	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
171	O	79.13	1.53	1.53	13.37	5.92	-1.61	.78	1.97175	.24468	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
172	SF	79.13	1.53	1.53	13.37	5.92	-1.61	.78	1.97175	.24468	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
173	OS	79.43	1.53	1.53	14.37	5.47	-1.69	.70	2.04515	.24468	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
174	QF	79.78	1.54	1.54	14.97	5.23	.00	-.00	2.08819	.00006	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
175	QF	80.13	1.54	1.56	14.37	5.47	1.69	-.70	2.04519	-.24457	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
176	OS	80.43	1.55	1.56	13.37	5.92	1.61	-.78	1.97182	-.24457	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
177	SF	80.43	1.55	1.56	13.37	5.92	1.61	-.78	1.97182	-.24457	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
178	O	81.17	1.56	1.58	11.15	7.22	1.42	-.99	1.79196	-.24457	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
179	B	82.83	1.58	1.61	7.19	11.16	.97	-1.38	1.46547	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
180	O	83.56	1.60	1.62	5.91	13.33	.77	-1.57	1.35567	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
181	SD	83.56	1.60	1.62	5.91	13.33	.77	-1.57	1.35567	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
182	OS	83.86	1.61	1.62	5.48	14.30	.69	-1.65	1.31088	-.14929	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
183	QD	84.21	1.62	1.63	5.24	14.88	-.00	.00	1.28481	.00000	0.000000	0.000000	.0000	-.0000	0.0000	0.0000
184	REFL	168.43	3.24	3.26	17.83	5.73	-.00	.00	-.00091	.00000	0.000000	0.000000	-.0000	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.2827 M THETX = 6.28318638 RAD NUX = 9.73002 DNUX/(DP/P) = .39620
(DS/S)/RADIUS = .0370988 M THETY(183) = 0.00000000 RAD NUY = 9.76997 DNUY/(DP/P) = .39105
TGAM = (7.64818, 0.00000)

MAXIMA	--- BETX(184) =	17.83321	BETY(12) =	16.94478	ETAX(174) =	2.08819	ETAY(184) =	0.00000
MINIMA	--- BETX(36) =	4.05811	BETY(48) =	3.28856	ETAX(33) =	.00000	ETAY(184) =	0.00000

*** INCR L // DP .005000 VALUE = .005000

SUB.: CHR , ITER. 6

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V
X = -.00000000 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = .00500000 1.00000000
2

7X7 MATRIX FOR AGR

	.03773456	17.77701740	0.00000000	0.00000000	0.00000000	-.01056744	.00002498
	-.05617210	.03778456	0.00000000	0.00000000	0.00000000	-.00001690	.00000146
	0.00000000	0.00000000	-.04603245	5.88965712	0.00000000	0.00000000	0.00000000
	0.00000000	0.00000000	-.16942939	-.04603245	0.00000000	0.00000000	0.00000000
	.00001690	.01056744	0.00000000	0.00000000	1.00000000	-2.89152294	-.01417847
	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.03778456 .99928591), C(1) = 1.00000000, MU(1) = 1.53300277 RAD, Q(1) = .73195490
1/LMD1 = (.03778456 -.99928591), C(2) = 1.00000000, MU(2) = -1.53300277 RAD, Q(2) = .26804510

Y... LMD3 = (-.04603245 .99893995), C(3) = 1.00000000, MU(3) = 1.61684505 RAD, Q(3) = .77198664
1/LMD3 = (-.04603245 -.99893995), C(4) = 1.00000000, MU(4) = -1.61684505 RAD, Q(4) = .22801336

EIGENVALUE = (.03778456, .99928591), EIGENVECTOR = (4.21778626, 0.00000000)
(.00000000, .23709120)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.03778456, -.99928591), EIGENVECTOR = (4.21778626, 0.00000000)
(.00000000, -.23709120)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.04603245, .99893995), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.42814890, .00000000)
(.00000000, .41183636)

EIGENVALUE = (-.04603245, -.99893995), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.42814890, -.00000000)
(.00000000, -.41183636)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00002944	0.00000000	0.00000000	0.00000000	0.00000000	.00500000	1.00000000
ETA ORBIT	-.01098241	-.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.217786 0.000000	0.000000 0.000000	.237091 0.000000	1.570796 0.000000	0.000000 2.428149	0.000000 .000000	0.000000 .411836	0.000000 1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.79	5.90	0.00	0.00	-.01098	-.00000	0.000000	0.000000	-.0294	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	16.90	6.19	2.25	-.86	-.01073	.00143	0.000000	0.000000	-.0288	.0038	0.0000	0.0000
2	S	.72	.01	.02	15.36	6.88	2.12	-.97	-.01020	.00143	0.000000	0.000000	-.0273	.0038	0.0000	0.0000
3	S	1.10	.01	.03	13.83	7.64	1.98	-1.07	-.00966	.00143	0.000000	0.000000	-.0259	.0038	0.0000	0.0000
4	S	1.47	.02	.03	12.40	8.47	1.85	-1.18	-.00913	.00143	0.000000	0.000000	-.0245	.0038	0.0000	0.0000
5	S	1.84	.02	.04	11.06	9.39	1.72	-1.28	-.00859	.00143	0.000000	0.000000	-.0230	.0038	0.0000	0.0000
6	S	2.22	.03	.05	9.83	10.39	1.59	-1.39	-.00806	.00143	0.000000	0.000000	-.0216	.0038	0.0000	0.0000
7	S	2.59	.03	.05	8.70	11.46	1.45	-1.49	-.00753	.00143	0.000000	0.000000	-.0202	.0038	0.0000	0.0000
8	S	2.96	.04	.06	7.66	12.61	1.32	-1.60	-.00699	.00143	0.000000	0.000000	-.0187	.0038	0.0000	0.0000
9	S	3.34	.05	.06	6.73	13.84	1.19	-1.70	-.00646	.00143	0.000000	0.000000	-.0173	.0038	0.0000	0.0000
10	S	3.71	.06	.07	5.90	15.15	1.05	-1.81	-.00593	.00143	0.000000	0.000000	-.0158	.0038	0.0000	0.0000
11	S	4.08	.07	.07	5.16	16.54	.92	-1.91	-.00539	.00143	0.000000	0.000000	-.0144	.0038	0.0000	0.0000
12	QD1	4.43	.08	.07	4.76	17.18	.23	.10	-.00500	.00081	0.000000	0.000000	-.0134	.0022	0.0000	0.0000
13	QD1	4.78	.09	.08	4.83	16.40	-.43	2.09	-.00482	.00021	0.000000	0.000000	-.0129	.0006	0.0000	0.0000
14	S	5.16	.10	.08	5.19	14.99	-.52	1.97	-.00474	.00021	0.000000	0.000000	-.0127	.0006	0.0000	0.0000
15	S	5.53	.11	.08	5.61	13.46	-.61	1.85	-.00466	.00021	0.000000	0.000000	-.0124	.0006	0.0000	0.0000
16	S	5.90	.12	.09	6.10	12.13	-.70	1.73	-.00458	.00021	0.000000	0.000000	-.0122	.0006	0.0000	0.0000
17	S	6.28	.13	.09	6.65	10.89	-.79	1.60	-.00450	.00021	0.000000	0.000000	-.0120	.0006	0.0000	0.0000
18	S	6.65	.14	.10	7.28	9.74	-.88	1.48	-.00442	.00021	0.000000	0.000000	-.0118	.0006	0.0000	0.0000
19	S	7.02	.15	.11	7.97	8.68	-.97	1.36	-.00434	.00021	0.000000	0.000000	-.0116	.0006	0.0000	0.0000
20	S	7.39	.16	.11	8.73	7.71	-1.07	1.24	-.00426	.00021	0.000000	0.000000	-.0113	.0006	0.0000	0.0000
21	S	7.77	.16	.12	9.56	6.83	-1.16	1.11	-.00418	.00021	0.000000	0.000000	-.0111	.0006	0.0000	0.0000
22	S	8.14	.17	.13	10.46	6.05	-1.25	.99	-.00410	.00021	0.000000	0.000000	-.0109	.0006	0.0000	0.0000
23	S	8.51	.18	.14	11.43	5.35	-1.34	.87	-.00402	.00021	0.000000	0.000000	-.0107	.0006	0.0000	0.0000
24	QF2	8.86	.18	.15	11.88	5.00	.08	.14	-.00386	.00071	0.000000	0.000000	-.0102	.0019	0.0000	0.0000
25	QF2	9.22	.18	.16	11.32	5.15	1.49	-.57	-.00353	.00117	0.000000	0.000000	-.0094	.0031	0.0000	0.0000
26	S	9.59	.19	.17	10.25	5.61	1.38	-.66	-.00309	.00117	0.000000	0.000000	-.0082	.0031	0.0000	0.0000
27	S	9.96	.20	.18	9.25	6.14	1.28	-.76	-.00265	.00117	0.000000	0.000000	-.0070	.0031	0.0000	0.0000
28	S	10.33	.20	.19	8.34	6.74	1.17	-.85	-.00222	.00117	0.000000	0.000000	-.0059	.0031	0.0000	0.0000
29	S	10.71	.21	.20	7.51	7.42	1.06	-.95	-.00178	.00117	0.000000	0.000000	-.0047	.0031	0.0000	0.0000
30	S	11.08	.22	.21	6.75	8.16	.96	-1.05	-.00134	.00117	0.000000	0.000000	-.0035	.0031	0.0000	0.0000
31	S	11.45	.23	.22	6.09	8.98	.85	-1.14	-.00091	.00117	0.000000	0.000000	-.0023	.0031	0.0000	0.0000
32	S	11.83	.24	.22	5.48	9.86	.75	-1.24	-.00047	.00117	0.000000	0.000000	-.0012	.0031	0.0000	0.0000
33	S	12.20	.25	.23	4.96	10.82	.64	-1.33	-.00003	.00117	0.000000	0.000000	-.0000	.0031	0.0000	0.0000
34	S	12.57	.26	.23	4.52	11.85	.53	-1.43	.00040	.00117	0.000000	0.000000	.0012	.0031	0.0000	0.0000
35	S	12.95	.28	.24	4.17	12.96	.43	-1.52	.00084	.00117	0.000000	0.000000	.0023	.0031	0.0000	0.0000
36	QD2	13.30	.29	.24	4.09	13.42	-.21	.22	.00127	.00131	0.000000	0.000000	.0035	.0035	0.0000	0.0000
37	QD2	13.65	.30	.25	4.47	12.65	-.90	1.93	.00177	.00152	0.000000	0.000000	.0048	.0041	0.0000	0.0000
38	R	14.01	.32	.25	5.18	11.29	-1.04	1.79	.00232	.00152	0.000000	0.000000	.0063	.0041	0.0000	0.0000
39	R	14.38	.33	.26	6.00	10.02	-1.19	1.66	.00288	.00152	0.000000	0.000000	.0078	.0041	0.0000	0.0000
40	R	14.75	.33	.26	6.93	8.86	-1.34	1.52	.00344	.00152	0.000000	0.000000	.0093	.0041	0.0000	0.0000
41	R	15.11	.34	.27	7.97	7.79	-1.49	1.38	.00399	.00152	0.000000	0.000000	.0108	.0041	0.0000	0.0000
42	R	15.48	.35	.28	9.11	6.83	-1.63	1.25	.00455	.00152	0.000000	0.000000	.0123	.0041	0.0000	0.0000
43	R	15.85	.36	.29	10.36	5.97	-1.78	1.11	.00511	.00152	0.000000	0.000000	.0138	.0041	0.0000	0.0000
44	R	16.21	.36	.30	11.73	5.20	-1.93	.97	.00566	.00152	0.000000	0.000000	.0153	.0041	0.0000	0.0000
45	R	16.58	.37	.31	13.20	4.54	-2.08	.83	.00622	.00152	0.000000	0.000000	.0168	.0041	0.0000	0.0000
46	R	16.95	.37	.32	14.77	3.98	-2.22	.70	.00677	.00152	0.000000	0.000000	.0183	.0041	0.0000	0.0000
47	R	17.32	.37	.34	16.46	3.52	-2.37	.56	.00733	.00152	0.000000	0.000000	.0198	.0041	0.0000	0.0000
48	QF3	17.73	.38	.36	17.53	3.30	-.15	-.03	.00775	.00051	0.000000	0.000000	.0209	.0013	0.0000	0.0000
49	QF3	18.14	.38	.38	16.70	3.56	2.10	-.62	.00775	-.00053	0.000000	0.000000	.0209	-.0015	0.0000	0.0000

POS		S (M)	DX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
50	Z	18.50	.38	.39	15.23	4.06	1.98	-.76	.00755	-.00053	0.000000	0.000000	.0264	-.0015	0.0000	0.0000
51	Z	18.86	.39	.41	13.84	4.65	1.87	-.90	.00736	-.00053	0.000000	0.000000	.0198	-.0015	0.0000	0.0000
52	Z	19.22	.39	.42	12.54	5.35	1.75	-1.04	.00717	-.00053	0.000000	0.000000	.0193	-.0015	0.0000	0.0000
53	Z	19.58	.40	.43	11.32	6.15	1.63	-1.18	.00698	-.00053	0.000000	0.000000	.0188	-.0015	0.0000	0.0000
54	Z	19.95	.40	.44	10.18	7.04	1.52	-1.32	.00678	-.00053	0.000000	0.000000	.0183	-.0015	0.0000	0.0000
55	Z	20.31	.41	.44	9.13	8.04	1.40	-1.45	.00659	-.00053	0.000000	0.000000	.0177	-.0015	0.0000	0.0000
56	Z	20.67	.42	.45	8.16	9.14	1.28	-1.59	.00640	-.00053	0.000000	0.000000	.0172	-.0015	0.0000	0.0000
57	Z	21.03	.42	.46	7.28	10.34	1.17	-1.73	.00621	-.00053	0.000000	0.000000	.0167	-.0015	0.0000	0.0000
58	Z	21.39	.43	.46	6.48	11.64	1.05	-1.87	.00601	-.00053	0.000000	0.000000	.0161	-.0015	0.0000	0.0000
59	Z	21.75	.44	.47	5.77	13.04	.93	-2.01	.00582	-.00053	0.000000	0.000000	.0156	-.0015	0.0000	0.0000
60	QD3	22.16	.45	.47	5.35	14.01	.10	-.27	.00576	.00023	0.000000	0.000000	.0154	.0006	0.0000	0.0000
61	QD3	22.58	.46	.48	5.60	13.47	-.71	1.53	.00602	.00102	0.000000	0.000000	.0161	.0027	0.0000	0.0000
62	R	22.94	.47	.48	6.16	12.38	-.81	1.44	.00639	.00102	0.000000	0.000000	.0171	.0027	0.0000	0.0000
63	R	23.31	.48	.49	6.70	11.36	-.91	1.35	.00676	.00102	0.000000	0.000000	.0181	.0027	0.0000	0.0000
64	R	23.68	.49	.49	7.49	10.40	-1.01	1.26	.00713	.00102	0.000000	0.000000	.0191	.0027	0.0000	0.0000
65	R	24.04	.50	.50	8.27	9.51	-1.11	1.17	.00751	.00102	0.000000	0.000000	.0201	.0027	0.0000	0.0000
66	R	24.41	.51	.50	9.12	8.68	-1.21	1.08	.00788	.00102	0.000000	0.000000	.0211	.0027	0.0000	0.0000
67	R	24.78	.51	.51	10.04	7.93	-1.31	.99	.00825	.00102	0.000000	0.000000	.0221	.0027	0.0000	0.0000
68	R	25.14	.52	.52	11.04	7.24	-1.41	.90	.00863	.00102	0.000000	0.000000	.0230	.0027	0.0000	0.0000
69	R	25.51	.52	.53	12.10	6.61	-1.50	.80	.00900	.00102	0.000000	0.000000	.0240	.0027	0.0000	0.0000
70	R	25.88	.53	.54	13.24	6.06	-1.60	.71	.00937	.00102	0.000000	0.000000	.0250	.0027	0.0000	0.0000
71	R	26.24	.53	.55	14.46	5.57	-1.70	.62	.00974	.00102	0.000000	0.000000	.0260	.0027	0.0000	0.0000
72	QF	26.59	.54	.56	15.06	5.38	-.00	-.09	.00990	-.00014	0.000000	0.000000	.0264	-.0004	0.0000	0.0000
73	QF	26.94	.54	.57	14.46	5.69	1.69	-.81	.00965	-.00129	0.000000	0.000000	.0257	-.0035	0.0000	0.0000
74	QD	27.98	.55	.59	11.24	7.69	1.42	-1.11	.00832	-.00129	0.000000	0.000000	.0222	-.0035	0.0000	0.0000
75	B	29.64	.58	.62	7.28	12.11	.97	-1.53	.08477	.09351	0.000000	0.000000	.4093	.4705	0.0000	0.0000
76	QD	30.68	.61	.63	5.56	15.53	.70	-1.82	.18159	.09351	0.000000	0.000000	.8965	.4705	0.0000	0.0000
77	QD	31.03	.62	.63	5.31	16.24	.00	-.03	.21824	.11628	0.000000	0.000000	1.0807	.5837	0.0000	0.0000
78	QD	31.38	.63	.64	5.55	15.62	-.69	1.77	.26366	.14372	0.000000	0.000000	1.3085	.7204	0.0000	0.0000
79	QD	32.41	.65	.65	7.27	12.24	-.97	1.49	.41247	.14372	0.000000	0.000000	2.0544	.7204	0.0000	0.0000
80	B	34.07	.68	.68	11.22	7.92	-1.41	1.10	.72943	.23850	0.000000	0.000000	3.6419	1.1944	0.0000	0.0000
81	D	34.81	.69	.69	13.44	6.46	-1.61	.89	.90483	.23850	0.000000	0.000000	4.5203	1.1944	0.0000	0.0000
82	SF	34.81	.69	.69	13.44	6.46	-1.60	.89	.90483	.23793	0.000000	0.000000	4.5203	1.1929	0.0000	0.0000
83	DS	35.11	.70	.70	14.43	5.95	-1.68	.80	.97621	.23793	0.000000	0.000000	4.8782	1.1929	0.0000	0.0000
84	QF	35.46	.70	.71	15.02	5.65	.02	.05	1.03913	.11985	0.000000	0.000000	5.1935	.5998	0.0000	0.0000
85	QF	35.81	.70	.72	14.40	5.87	1.71	-.69	1.05966	-.00312	0.000000	0.000000	5.2958	-.0178	0.0000	0.0000
86	DS	36.11	.71	.73	13.41	6.31	1.62	-.76	1.05872	-.00312	0.000000	0.000000	5.2905	-.0178	0.0000	0.0000
87	SF	36.11	.71	.73	13.41	6.31	1.63	-.77	1.05872	-.00390	0.000000	0.000000	5.2905	-.0198	0.0000	0.0000
88	D	36.84	.72	.75	11.15	7.57	1.43	-.95	1.05585	-.00390	0.000000	0.000000	5.2759	-.0198	0.0000	0.0000
89	LC	38.51	.75	.77	7.15	11.43	.98	-1.37	1.04937	-.00390	0.000000	0.000000	5.2430	-.0198	0.0000	0.0000
90	D	39.24	.77	.78	5.86	13.58	.78	-1.56	1.04650	-.00390	0.000000	0.000000	5.2285	-.0198	0.0000	0.0000
91	SD	39.24	.77	.78	5.86	13.58	.77	-1.54	1.04650	-.00274	0.000000	0.000000	5.2285	-.0169	0.0000	0.0000
92	DS	39.54	.77	.79	5.42	14.53	.69	-1.61	1.04568	-.00274	0.000000	0.000000	5.2234	-.0169	0.0000	0.0000
93	QD	39.89	.78	.79	5.18	15.08	.01	.05	1.06572	.11749	0.000000	0.000000	5.3229	.5867	0.0000	0.0000
94	QD	40.24	.79	.79	5.41	14.45	-.67	1.71	1.12859	.24245	0.000000	0.000000	5.6374	1.2140	0.0000	0.0000
95	DS	40.54	.80	.80	5.83	13.45	-.75	1.63	1.20133	.24245	0.000000	0.000000	6.0016	1.2140	0.0000	0.0000
96	SD	40.54	.80	.80	5.83	13.45	-.76	1.65	1.20133	.24398	0.000000	0.000000	6.0016	1.2178	0.0000	0.0000
97	D	41.28	.82	.81	7.10	11.13	-.96	1.44	1.38075	.24398	0.000000	0.000000	6.8972	1.2178	0.0000	0.0000
98	LC	42.94	.85	.84	11.03	7.14	-1.41	.99	1.78585	.24398	0.000000	0.000000	8.9192	1.2178	0.0000	0.0000
99	D	43.67	.86	.86	13.24	5.84	-1.61	.78	1.96528	.24398	0.000000	0.000000	9.8148	1.2178	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
100	SF	43.67	.86	.86	13.24	5.84	-1.59	.77	1.96528	.24128	0.000000	0.000000	9.8148	1.2110	0.0000	0.0000
101	OS	43.97	.86	.86	14.22	5.40	-1.67	.69	2.03767	.24128	0.000000	0.000000	10.1781	1.2110	0.0000	0.0000
102	QF	44.32	.87	.87	14.81	5.16	.00	.00	2.08010	.00002	0.000000	0.000000	10.3911	-.0002	0.0000	0.0000
103	QF	44.67	.87	.89	14.22	5.40	1.67	-.69	2.03768	-.24125	0.000000	0.000000	10.1780	-1.2115	0.0000	0.0000
104	OS	44.97	.88	.89	13.24	5.84	1.59	-.77	1.96530	-.24125	0.000000	0.000000	9.8146	-1.2115	0.0000	0.0000
105	SF	44.97	.88	.89	13.24	5.84	1.61	-.78	1.96530	-.24395	0.000000	0.000000	9.8146	-1.2182	0.0000	0.0000
106	O	45.71	.89	.91	11.02	7.14	1.41	-.99	1.78590	-.24395	0.000000	0.000000	8.9187	-1.2182	0.0000	0.0000
107	B	47.37	.92	.94	7.10	11.10	.96	-1.39	1.45971	-.14917	0.000000	0.000000	7.2911	-.7443	0.0000	0.0000
108	O	48.11	.93	.95	5.83	13.28	.76	-1.58	1.35001	-.14917	0.000000	0.000000	6.7437	-.7443	0.0000	0.0000
109	SO	48.11	.93	.95	5.83	13.28	.75	-1.56	1.35001	-.14724	0.000000	0.000000	6.7437	-.7394	0.0000	0.0000
110	OS	48.41	.94	.95	5.40	14.24	-.67	-1.64	1.30584	-.14724	0.000000	0.000000	6.5219	-.7394	0.0000	0.0000
111	QO	48.76	.95	.96	5.18	14.82	-.01	-.00	1.28013	.00002	0.000000	0.000000	6.3927	-.0003	0.0000	0.0000
112	QO	49.11	.96	.96	5.42	14.24	-.69	1.63	1.30586	.14728	0.000000	0.000000	6.5217	.7388	0.0000	0.0000
113	OS	49.41	.97	.97	5.85	13.29	-.77	1.55	1.35004	.14728	0.000000	0.000000	6.7433	.7388	0.0000	0.0000
114	SO	49.41	.97	.97	5.85	13.29	-.78	1.57	1.35004	.14921	0.000000	0.000000	6.7433	.7436	0.0000	0.0000
115	O	50.14	.99	.98	7.15	11.12	-.98	1.38	1.45978	.14921	0.000000	0.000000	7.2902	.7436	0.0000	0.0000
116	B	51.80	1.02	1.01	11.16	7.17	-1.44	.98	1.78603	.24399	0.000000	0.000000	8.9167	1.2175	0.0000	0.0000
117	O	52.54	1.03	1.02	13.42	5.88	-1.64	.78	1.96547	.24399	0.000000	0.000000	9.8121	1.2175	0.0000	0.0000
118	SF	52.54	1.03	1.02	13.42	5.88	-1.62	.77	1.96547	.24130	0.000000	0.000000	9.8121	1.2108	0.0000	0.0000
119	OS	52.84	1.03	1.03	14.41	5.44	-1.70	.69	2.03786	.24130	0.000000	0.000000	10.1753	1.2108	0.0000	0.0000
120	QF	53.19	1.04	1.04	15.02	5.20	-.01	-.00	2.08030	.00001	0.000000	0.000000	10.3882	-.0001	0.0000	0.0000
121	QF	53.54	1.04	1.05	14.43	5.44	1.68	-.70	2.03787	-.24128	0.000000	0.000000	10.1752	-1.2110	0.0000	0.0000
122	OS	53.84	1.04	1.06	13.44	5.89	1.60	-.78	1.96548	-.24128	0.000000	0.000000	9.8119	-1.2110	0.0000	0.0000
123	SF	53.84	1.04	1.06	13.44	5.89	1.62	-.79	1.96548	-.24398	0.000000	0.000000	9.8119	-1.2178	0.0000	0.0000
124	O	54.58	1.05	1.08	11.20	7.20	1.42	-.99	1.78605	-.24398	0.000000	0.000000	8.9163	-1.2178	0.0000	0.0000
125	B	56.24	1.08	1.11	7.21	11.19	.98	-1.39	1.45982	-.14920	0.000000	0.000000	7.2895	-.7438	0.0000	0.0000
126	O	56.97	1.10	1.12	5.93	13.38	.78	-1.59	1.35010	-.14920	0.000000	0.000000	6.7425	-.7438	0.0000	0.0000
127	SD	56.97	1.10	1.12	5.93	13.38	.77	-1.57	1.35010	-.14727	0.000000	0.000000	6.7425	-.7390	0.0000	0.0000
128	OS	57.27	1.11	1.12	5.49	14.35	.69	-1.65	1.30592	-.14727	0.000000	0.000000	6.5208	-.7390	0.0000	0.0000
129	QO	57.62	1.12	1.13	5.25	14.93	-.00	-.00	1.28019	-.00000	0.000000	0.000000	6.3917	-.0000	0.0000	0.0000
130	QO	57.97	1.13	1.13	5.49	14.35	-.69	1.65	1.30592	.14727	0.000000	0.000000	6.5208	.7390	0.0000	0.0000
131	OS	58.27	1.14	1.13	5.93	13.38	-.77	1.57	1.35010	.14727	0.000000	0.000000	6.7425	.7390	0.0000	0.0000
132	SD	58.27	1.14	1.13	5.93	13.38	-.78	1.59	1.35010	.14920	0.000000	0.000000	6.7425	.7438	0.0000	0.0000
133	O	59.01	1.16	1.14	7.22	11.19	-.98	1.39	1.45982	.14920	0.000000	0.000000	7.2895	.7438	0.0000	0.0000
134	B	60.67	1.19	1.17	11.20	7.20	-1.43	.99	1.78605	.24398	0.000000	0.000000	8.9163	1.2178	0.0000	0.0000
135	O	61.41	1.20	1.19	13.44	5.89	-1.62	.79	1.96548	.24398	0.000000	0.000000	9.8119	1.2178	0.0000	0.0000
136	SF	61.41	1.20	1.19	13.44	5.89	-1.61	.78	1.96548	.24128	0.000000	0.000000	9.8119	1.2110	0.0000	0.0000
137	OS	61.71	1.20	1.20	14.43	5.44	-1.69	.70	2.03786	.24128	0.000000	0.000000	10.1752	1.2110	0.0000	0.0000
138	QF	62.06	1.20	1.21	15.03	5.20	.01	.00	2.08029	-.00001	0.000000	0.000000	10.3882	.0001	0.0000	0.0000
139	QF	62.41	1.21	1.22	14.42	5.44	1.70	-.69	2.03786	-.24130	0.000000	0.000000	10.1753	-1.2108	0.0000	0.0000
140	OS	62.71	1.21	1.23	13.42	5.88	1.62	-.77	1.96547	-.24130	0.000000	0.000000	9.8120	-1.2108	0.0000	0.0000
141	SF	62.71	1.21	1.23	13.42	5.88	1.64	-.78	1.96547	-.24399	0.000000	0.000000	9.8120	-1.2175	0.0000	0.0000
142	O	63.44	1.22	1.25	11.16	7.18	1.44	-.98	1.78603	-.24399	0.000000	0.000000	8.9166	-1.2175	0.0000	0.0000
143	B	65.10	1.25	1.28	7.15	11.12	.98	-1.38	1.45977	-.14921	0.000000	0.000000	7.2901	-.7436	0.0000	0.0000
144	O	65.84	1.27	1.29	5.86	13.29	.78	-1.57	1.35004	-.14921	0.000000	0.000000	6.7433	-.7436	0.0000	0.0000
145	SD	65.84	1.27	1.29	5.86	13.29	.77	-1.55	1.35004	-.14728	0.000000	0.000000	6.7433	-.7388	0.0000	0.0000
146	OS	66.14	1.28	1.29	5.42	14.25	.69	-1.63	1.30585	-.14728	0.000000	0.000000	6.5216	-.7388	0.0000	0.0000
147	QO	66.49	1.29	1.29	5.18	14.83	.01	.00	1.28012	-.00002	0.000000	0.000000	6.3926	.0003	0.0000	0.0000
148	QO	66.84	1.30	1.30	5.41	14.24	-.67	1.64	1.30583	.14724	0.000000	0.000000	6.5218	.7394	0.0000	0.0000
149	OS	67.14	1.31	1.30	5.83	13.28	-.75	1.56	1.35001	.14724	0.000000	0.000000	6.7437	.7394	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.14	1.31	1.30	5.83	13.28	-.76	1.58	1.35001	.14917	0.000000	0.000000	6.7437	.7443	0.0000	0.0000
151	Q	67.87	1.32	1.31	7.10	11.10	-.96	1.39	1.45971	.14917	0.000000	0.000000	7.2910	.7443	0.0000	0.0000
152	B	69.54	1.35	1.34	11.03	7.14	-1.41	.99	1.78589	.24394	0.000000	0.000000	8.9186	1.2182	0.0000	0.0000
153	Q	70.27	1.36	1.36	13.24	5.84	-1.61	.78	1.96529	.24394	0.000000	0.000000	9.8145	1.2182	0.0000	0.0000
154	SF	70.27	1.36	1.36	13.24	5.84	-1.59	.77	1.96529	.24125	0.000000	0.000000	9.8145	1.2115	0.0000	0.0000
155	QS	70.57	1.37	1.37	14.22	5.40	-1.67	.69	2.03767	.24125	0.000000	0.000000	10.1779	1.2115	0.0000	0.0000
156	QF	70.92	1.37	1.38	14.81	5.16	.00	.00	2.08009	-.00002	0.000000	0.000000	10.3910	.0002	0.0000	0.0000
157	QF	71.27	1.37	1.39	14.22	5.40	1.67	-.69	2.03765	-.24128	0.000000	0.000000	10.1781	-1.2110	0.0000	0.0000
158	QS	71.57	1.38	1.40	13.24	5.84	1.59	-.77	1.96527	-.24128	0.000000	0.000000	9.8147	-1.2110	0.0000	0.0000
159	SF	71.57	1.38	1.40	13.24	5.84	1.61	-.78	1.96527	-.24398	0.000000	0.000000	9.8147	-1.2178	0.0000	0.0000
160	Q	72.31	1.39	1.41	11.02	7.14	1.41	-.99	1.78584	-.24398	0.000000	0.000000	8.9192	-1.2178	0.0000	0.0000
161	B	73.97	1.42	1.44	7.10	11.10	.96	-1.39	1.45961	-.14920	0.000000	0.000000	7.2923	-.7438	0.0000	0.0000
162	Q	74.70	1.44	1.45	5.83	13.28	.76	-1.58	1.34989	-.14920	0.000000	0.000000	6.7453	-.7438	0.0000	0.0000
163	SD	74.70	1.44	1.45	5.83	13.28	.75	-1.56	1.34989	-.14727	0.000000	0.000000	6.7453	-.7390	0.0000	0.0000
164	QS	75.00	1.44	1.46	5.41	14.24	.67	-1.64	1.30571	-.14727	0.000000	0.000000	6.5236	-.7390	0.0000	0.0000
165	QD	75.35	1.46	1.46	5.18	14.82	-.01	-.00	1.27298	-.00002	0.000000	0.000000	6.3946	.0003	0.0000	0.0000
166	QD	75.71	1.47	1.47	5.42	14.25	-.69	1.63	1.30569	.14722	0.000000	0.000000	6.5238	.7397	0.0000	0.0000
167	QS	76.01	1.47	1.47	5.86	13.29	-.77	1.55	1.34986	.14722	0.000000	0.000000	6.7457	.7397	0.0000	0.0000
168	SD	76.01	1.47	1.47	5.86	13.29	-.78	1.57	1.34986	.14915	0.000000	0.000000	6.7457	.7445	0.0000	0.0000
169	Q	76.74	1.49	1.48	7.15	11.12	-.98	1.38	1.45955	.14915	0.000000	0.000000	7.2932	.7445	0.0000	0.0000
170	B	78.40	1.52	1.51	11.16	7.17	-1.44	.98	1.78570	.24393	0.000000	0.000000	8.9211	1.2184	0.0000	0.0000
171	Q	79.14	1.53	1.53	13.42	5.88	-1.64	.78	1.96510	.24393	0.000000	0.000000	9.8172	1.2184	0.0000	0.0000
172	SF	79.14	1.53	1.53	13.42	5.88	-1.62	.77	1.96510	.24123	0.000000	0.000000	9.8172	1.2117	0.0000	0.0000
173	QS	79.44	1.54	1.53	14.42	5.44	-1.70	.69	2.03747	.24123	0.000000	0.000000	10.1807	1.2117	0.0000	0.0000
174	QF	79.79	1.54	1.55	15.02	5.20	-.01	-.00	2.07989	-.00001	0.000000	0.000000	10.3938	.0001	0.0000	0.0000
175	QF	80.14	1.54	1.56	14.43	5.44	1.69	-.70	2.03746	-.24125	0.000000	0.000000	10.1808	-1.2115	0.0000	0.0000
176	QS	80.44	1.55	1.56	13.44	5.89	1.61	-.78	1.96509	-.24125	0.000000	0.000000	9.8174	-1.2115	0.0000	0.0000
177	SF	80.44	1.55	1.56	13.44	5.89	1.62	-.79	1.96509	-.24394	0.000000	0.000000	9.8174	-1.2182	0.0000	0.0000
178	Q	81.17	1.56	1.58	11.20	7.20	1.42	-.99	1.78568	-.24394	0.000000	0.000000	8.9214	-1.2182	0.0000	0.0000
179	B	82.84	1.59	1.61	7.22	11.19	.98	-1.39	1.45950	-.14917	0.000000	0.000000	7.2939	-.7443	0.0000	0.0000
180	Q	83.57	1.60	1.62	5.93	13.38	.78	-1.59	1.34980	-.14917	0.000000	0.000000	6.7465	-.7443	0.0000	0.0000
181	SD	83.57	1.60	1.62	5.93	13.38	.77	-1.57	1.34980	-.14724	0.000000	0.000000	6.7465	-.7394	0.0000	0.0000
182	QS	83.87	1.61	1.62	5.49	14.35	.69	-1.65	1.30563	-.14724	0.000000	0.000000	6.5247	-.7394	0.0000	0.0000
183	QD	84.22	1.62	1.63	5.25	14.93	-.00	.00	1.27991	.00000	0.000000	0.000000	6.3955	-.0000	0.0000	0.0000
184	REFL	168.44	3.24	3.26	17.79	5.90	-.00	.00	-.01098	.00000	0.000000	0.000000	-.0294	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.3257 M THETX = 6.28318638 RAD NUX = 9.73195 DNUX/(DP/P) = .41404
(DS/S)/RAD/2PI = .0079863 M THETY(183) = 0.00000000 RAD NUY = 9.77199 DNUY/(DP/P) = .36832
TGAM = (7.63240, 0.00000)

MAXIMA --- BETX(184) = 17.78972 BETY(12) = 17.18421 ETAX(120) = 2.08030 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 4.09089 BETY(48) = 3.30098 ETAX(33) = -.00003 ETAY(184) = 0.00000

INCR 1 // DP .005000 VALUE = .010000

SUB. CHR , ITER. 7

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V
X = -.00002944 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = .01000000 1.00000000
2

7X7 MATRIX FOR AGR

	.03398034	17.72745044	0.00000000	0.00000000	0.00000000	-.02078433	.00010538
	-.05634456	.03398034	0.00000000	0.00000000	0.00000000	-.00121228	.00000615
	0.00000000	0.00000000	-.05047040	6.04994201	0.00000000	0.00000000	0.00000000
	0.00000000	0.00000000	-.16486980	-.05047040	0.00000000	0.00000000	0.00000000
	.00121228	.02078433	0.00000000	0.00000000	1.00000000	-2.90377804	-.02793087
	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.03398034 .99942250), C(1) = 1.00000000, MU(1) = 1.53680944 RAD, Q(1) = .73377246
1/LMD1 = (.03398034 -.99942250), C(2) = 1.00000000, MU(2) = -1.53680944 RAD, Q(2) = .26622754

Y... LMD3 = (-.05047040 .99872556), C(3) = 1.00000000, MU(3) = 1.62128818 RAD, Q(3) = .77410808
1/LMD3 = (-.05047040 -.99872556), C(4) = 1.00000000, MU(4) = -1.62128818 RAD, Q(4) = .22589192

EIGENVALUE = (.03398034, .99942250), EIGENVECTOR = (4.21161417, 0.00000000)
(0.00000000, .23743865)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.03398034, -.99942250), EIGENVECTOR = (4.21161417, 0.00000000)
(0.00000000, -.23743865)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

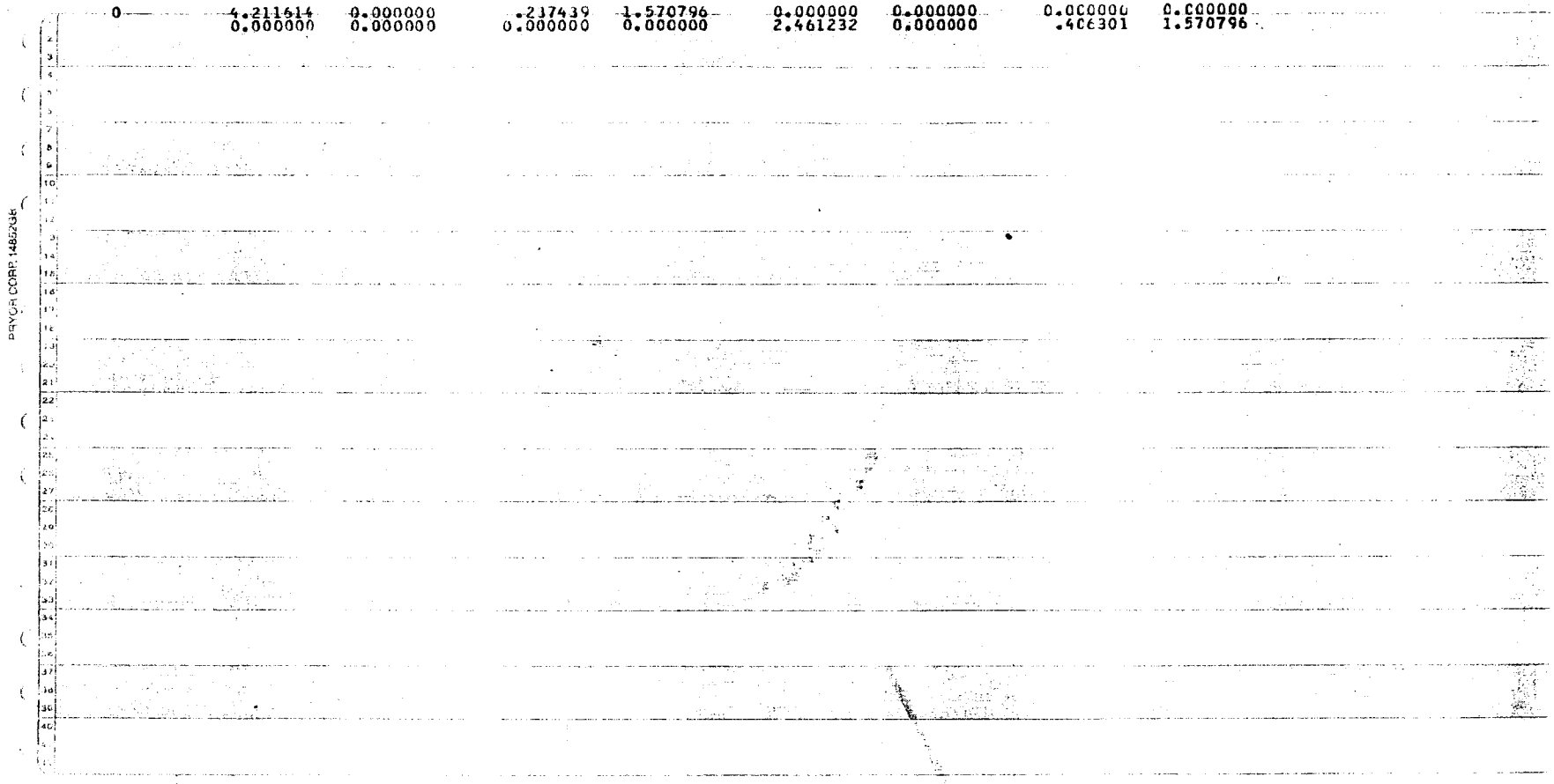
EIGENVALUE = (-.05047040, .99872556), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.46123184, 0.00000000)
(.00000000, .40630061)

EIGENVALUE = (-.05047040, -.99872556), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.46123184, 0.00000000)
(.00000000, -.40630061)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00010986	0.00000000	0.00000000	0.00000000	0.00000000	.01000000	1.00000000
ETA ORBIT	-.02151543	-.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.211614 0.000000	0.000000 0.000000	.237439 0.000000	1.570796 0.000000	0.000000 2.461232	0.000000 0.000000	0.000000 .406301	0.000000 1.570796



BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.74	6.06	0.00	0.00	-.02152	-.00000	0.000000	0.000000	-.1099	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	16.94	6.36	2.23	-.88	-.02103	.00278	0.000000	0.000000	-.1073	.0143	0.0000	0.0000
2	S	.72	.01	.02	15.32	7.05	2.10	-.98	-.01999	.00278	0.000000	0.000000	-.1020	.0143	0.0000	0.0000
3	S	1.10	.01	.03	13.81	7.83	1.97	-1.09	-.01895	.00278	0.000000	0.000000	-.0967	.0143	0.0000	0.0000
4	S	1.47	.02	.03	12.38	8.67	1.84	-1.19	-.01791	.00278	0.000000	0.000000	-.0914	.0143	0.0000	0.0000
5	S	1.84	.02	.04	11.06	9.60	1.71	-1.29	-.01687	.00278	0.000000	0.000000	-.0860	.0143	0.0000	0.0000
6	S	2.22	.03	.05	9.84	10.60	1.57	-1.40	-.01583	.00278	0.000000	0.000000	-.0807	.0143	0.0000	0.0000
7	S	2.59	.03	.05	8.71	11.69	1.44	-1.50	-.01480	.00278	0.000000	0.000000	-.0754	.0143	0.0000	0.0000
8	S	2.96	.04	.06	7.68	12.84	1.31	-1.60	-.01376	.00278	0.000000	0.000000	-.0700	.0143	0.0000	0.0000
9	S	3.34	.05	.06	6.76	14.08	1.18	-1.71	-.01272	.00278	0.000000	0.000000	-.0647	.0143	0.0000	0.0000
10	S	3.71	.06	.06	5.93	15.39	1.05	-1.81	-.01168	.00278	0.000000	0.000000	-.0594	.0143	0.0000	0.0000
11	S	4.08	.07	.07	5.19	16.79	.91	-1.92	-.01064	.00278	0.000000	0.000000	-.0541	.0143	0.0000	0.0000
12	QD1	4.43	.08	.07	4.80	17.43	.22	.11	-.00988	.00156	0.000000	0.000000	-.0502	.0080	0.0000	0.0000
13	QD1	4.78	.09	.07	4.87	16.63	-.43	2.13	-.00954	.00040	0.000000	0.000000	-.0484	.0021	0.0000	0.0000
14	S	5.16	.10	.08	5.23	15.09	-.52	2.00	-.00940	.00040	0.000000	0.000000	-.0476	.0021	0.0000	0.0000
15	S	5.53	.11	.08	5.66	13.64	-.61	1.88	-.00925	.00040	0.000000	0.000000	-.0468	.0021	0.0000	0.0000
16	S	5.90	.12	.09	6.15	12.29	-.71	1.75	-.00910	.00040	0.000000	0.000000	-.0460	.0021	0.0000	0.0000
17	S	6.28	.13	.09	6.71	11.02	-.80	1.63	-.00895	.00040	0.000000	0.000000	-.0452	.0021	0.0000	0.0000
18	S	6.65	.14	.10	7.34	9.85	-.89	1.51	-.00880	.00040	0.000000	0.000000	-.0445	.0021	0.0000	0.0000
19	S	7.02	.15	.10	8.03	8.78	-.98	1.38	-.00866	.00040	0.000000	0.000000	-.0437	.0021	0.0000	0.0000
20	S	7.39	.16	.11	8.80	7.79	-1.07	1.26	-.00851	.00040	0.000000	0.000000	-.0429	.0021	0.0000	0.0000
21	S	7.77	.16	.12	9.63	6.90	-1.16	1.14	-.00836	.00040	0.000000	0.000000	-.0421	.0021	0.0000	0.0000
22	S	8.14	.17	.13	10.53	6.10	-1.25	1.01	-.00821	.00040	0.000000	0.000000	-.0413	.0021	0.0000	0.0000
23	S	8.51	.17	.14	11.49	5.39	-1.34	.89	-.00806	.00040	0.000000	0.000000	-.0405	.0021	0.0000	0.0000
24	QF2	8.86	.18	.15	11.94	5.03	.08	.16	-.00775	.00138	0.000000	0.000000	-.0389	.0071	0.0000	0.0000
25	QF2	9.22	.18	.16	11.38	5.16	1.49	-.55	-.00710	.00230	0.000000	0.000000	-.0356	.0117	0.0000	0.0000
26	S	9.59	.19	.17	10.31	5.61	1.38	-.64	-.00624	.00230	0.000000	0.000000	-.0312	.0117	0.0000	0.0000
27	S	9.96	.20	.18	9.32	6.12	1.28	-.74	-.00538	.00230	0.000000	0.000000	-.0268	.0117	0.0000	0.0000
28	S	10.33	.20	.19	8.40	6.70	1.17	-.83	-.00452	.00230	0.000000	0.000000	-.0225	.0117	0.0000	0.0000
29	S	10.71	.21	.20	7.57	7.36	1.07	-.92	-.00366	.00230	0.000000	0.000000	-.0181	.0117	0.0000	0.0000
30	S	11.08	.22	.21	6.81	8.08	.96	-1.02	-.00281	.00230	0.000000	0.000000	-.0137	.0117	0.0000	0.0000
31	S	11.45	.23	.21	6.13	8.88	.86	-1.11	-.00195	.00230	0.000000	0.000000	-.0093	.0117	0.0000	0.0000
32	S	11.83	.24	.22	5.53	9.74	.75	-1.21	-.00109	.00230	0.000000	0.000000	-.0050	.0117	0.0000	0.0000
33	S	12.20	.25	.23	5.01	10.68	.65	-1.30	-.00023	.00230	0.000000	0.000000	-.0006	.0117	0.0000	0.0000
34	S	12.57	.26	.23	4.57	11.68	.54	-1.39	.00063	.00230	0.000000	0.000000	.0039	.0117	0.0000	0.0000
35	S	12.95	.27	.24	4.20	12.76	.43	-1.49	.00149	.00230	0.000000	0.000000	.0082	.0117	0.0000	0.0000
36	QD2	13.30	.29	.24	4.13	13.21	-.21	.22	.00234	.00256	0.000000	0.000000	.0125	.0131	0.0000	0.0000
37	QD2	13.65	.30	.25	4.51	12.46	-.89	1.89	.00330	.00293	0.000000	0.000000	.0174	.0151	0.0000	0.0000
38	R	14.01	.31	.25	5.21	11.12	-1.04	1.76	.00438	.00293	0.000000	0.000000	.0230	.0151	0.0000	0.0000
39	R	14.38	.32	.26	6.03	9.87	-1.18	1.62	.00545	.00293	0.000000	0.000000	.0285	.0151	0.0000	0.0000
40	R	14.75	.33	.26	6.95	8.73	-1.33	1.49	.00653	.00293	0.000000	0.000000	.0341	.0151	0.0000	0.0000
41	R	15.11	.04	.27	7.98	7.69	-1.48	1.35	.00760	.00293	0.000000	0.000000	.0396	.0151	0.0000	0.0000
42	R	15.48	.35	.28	9.11	6.75	-1.62	1.22	.00868	.00293	0.000000	0.000000	.0451	.0151	0.0000	0.0000
43	R	15.85	.35	.29	10.36	5.90	-1.77	1.08	.00975	.00293	0.000000	0.000000	.0507	.0151	0.0000	0.0000
44	R	16.21	.36	.30	11.71	5.16	-1.91	.95	.01083	.00293	0.000000	0.000000	.0562	.0151	0.0000	0.0000
45	R	16.58	.36	.31	13.17	4.51	-2.06	.81	.01191	.00293	0.000000	0.000000	.0618	.0151	0.0000	0.0000
46	R	16.95	.37	.32	14.73	3.96	-2.21	.68	.01298	.00293	0.000000	0.000000	.0673	.0151	0.0000	0.0000
47	R	17.32	.37	.34	16.40	3.52	-2.35	.54	.01406	.00293	0.000000	0.000000	.0729	.0151	0.0000	0.0000
48	QF3	17.73	.37	.36	17.46	3.31	-.15	-.04	.01488	-.00101	0.000000	0.000000	.0771	.0051	0.0000	0.0000
49	QF3	18.14	.38	.38	16.64	3.58	2.08	-.63	.01488	-.00097	0.000000	0.000000	.0770	-.0052	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCC (MM)	DXCO (MR)	YCC (MM)	DYCO (MR)
50	Z	18.50	.38	.39	15.18	4.09	1.97	-.77	.01453	-.00097	0.000000	0.000000	.0751	-.0052	0.0000	0.0000
51	Z	18.86	.39	.41	13.81	4.70	1.85	-.91	.01418	-.00097	0.000000	0.000000	.0733	-.0052	0.0000	0.0000
52	Z	19.22	.39	.42	12.51	5.41	1.74	-1.05	.01383	-.00097	0.000000	0.000000	.0714	-.0052	0.0000	0.0000
53	Z	19.58	.40	.43	11.30	6.22	1.62	-1.19	.01348	-.00097	0.000000	0.000000	.0695	-.0052	0.0000	0.0000
54	Z	19.95	.40	.44	10.18	7.13	1.50	-1.33	.01313	-.00097	0.000000	0.000000	.0676	-.0052	0.0000	0.0000
55	Z	20.31	.41	.44	9.13	8.14	1.39	-1.48	.01278	-.00097	0.000000	0.000000	.0657	-.0052	0.0000	0.0000
56	Z	20.67	.41	.45	8.17	9.26	1.27	-1.62	.01243	-.00097	0.000000	0.000000	.0638	-.0052	0.0000	0.0000
57	Z	21.03	.42	.46	7.30	10.47	1.16	-1.76	.01208	-.00097	0.000000	0.000000	.0620	-.0052	0.0000	0.0000
58	Z	21.39	.43	.46	6.51	11.79	1.04	-1.90	.01173	-.00097	0.000000	0.000000	.0601	-.0052	0.0000	0.0000
59	Z	21.75	.44	.47	5.80	13.21	.93	-2.04	.01138	-.00097	0.000000	0.000000	.0582	-.0052	0.0000	0.0000
60	QD3	22.16	.45	.47	5.38	14.18	.09	-.28	.01128	.00052	0.000000	0.000000	.0576	.0024	0.0000	0.0000
61	QD3	22.58	.46	.47	5.64	13.65	-.72	1.54	.01181	.00204	0.000000	0.000000	.0602	.0102	0.0000	0.0000
62	R	22.94	.47	.48	6.20	12.56	-.82	1.45	.01256	.00204	0.000000	0.000000	.0640	.0102	0.0000	0.0000
63	R	23.31	.48	.48	6.84	11.53	-.92	1.36	.01331	.00204	0.000000	0.000000	.0677	.0102	0.0000	0.0000
64	R	23.68	.49	.49	7.54	10.57	-1.02	1.27	.01405	.00204	0.000000	0.000000	.0715	.0102	0.0000	0.0000
65	R	24.04	.50	.50	8.33	9.67	-1.11	1.18	.01480	.00204	0.000000	0.000000	.0752	.0102	0.0000	0.0000
66	R	24.41	.50	.50	9.18	8.84	-1.21	1.09	.01555	.00204	0.000000	0.000000	.0790	.0102	0.0000	0.0000
67	R	24.78	.51	.51	10.10	8.08	-1.31	1.00	.01630	.00204	0.000000	0.000000	.0828	.0102	0.0000	0.0000
68	R	25.14	.52	.52	11.10	7.38	-1.41	.91	.01705	.00204	0.000000	0.000000	.0865	.0102	0.0000	0.0000
69	R	25.51	.52	.52	12.17	6.75	-1.51	.82	.01780	.00204	0.000000	0.000000	.0903	.0102	0.0000	0.0000
70	R	25.88	.52	.53	13.32	6.18	-1.61	.72	.01855	.00204	0.000000	0.000000	.0940	.0102	0.0000	0.0000
71	R	26.24	.53	.54	14.53	5.68	-1.71	.63	.01929	.00204	0.000000	0.000000	.0978	.0102	0.0000	0.0000
72	QF	26.59	.53	.55	15.14	5.49	-.01	-.08	.01961	-.00023	0.000000	0.000000	.0994	-.0013	0.0000	0.0000
73	QF	26.94	.54	.56	14.55	5.81	1.69	-.82	.01914	-.00249	0.000000	0.000000	.0969	-.0128	0.0000	0.0000
74	QD	27.98	.55	.59	11.33	7.80	1.42	-1.11	.01656	-.00249	0.000000	0.000000	.0836	-.0128	0.0000	0.0000
75	R	29.64	.58	.62	7.37	12.21	.98	-1.53	.09064	.09184	0.000000	0.000000	.8443	.9305	0.0000	0.0000
76	QD	30.68	.60	.63	5.63	15.66	.70	-1.81	.18573	.09184	0.000000	0.000000	1.8078	.9305	0.0000	0.0000
77	QD	31.03	.61	.63	5.39	16.31	.00	-.02	.22183	.11482	0.000000	0.000000	2.1724	1.1571	0.0000	0.0000
78	QD	31.38	.62	.63	5.63	15.69	-.70	1.78	.26675	.14237	0.000000	0.000000	2.6244	1.4303	0.0000	0.0000
79	QD	32.41	.65	.65	7.35	12.29	-.97	1.50	.41417	.14237	0.000000	0.000000	4.1054	1.4303	0.0000	0.0000
80	R	34.07	.68	.67	11.30	7.94	-1.41	1.10	.72860	.23667	0.000000	0.000000	7.2595	2.3734	0.0000	0.0000
81	D	34.81	.69	.69	13.51	6.47	-1.60	.90	.90265	.23667	0.000000	0.000000	9.0050	2.3734	0.0000	0.0000
82	SF	34.81	.69	.69	13.51	6.47	-1.58	.89	.90265	.23554	0.000000	0.000000	9.0050	2.3677	0.0000	0.0000
83	QS	35.11	.69	.70	14.49	5.96	-1.66	.81	.97331	.23554	0.000000	0.000000	9.7153	2.3677	0.0000	0.0000
84	QF	35.46	.70	.71	15.07	5.66	.03	.06	1.03566	.11900	0.000000	0.000000	10.3414	1.1925	0.0000	0.0000
85	QF	35.81	.70	.72	14.45	5.87	1.72	-.68	1.05618	-.00234	0.000000	0.000000	10.5456	-.0313	0.0000	0.0000
86	QS	36.11	.70	.72	13.44	6.30	1.63	-.75	1.05548	-.00234	0.000000	0.000000	10.5362	-.0313	0.0000	0.0000
87	SF	36.11	.70	.72	13.44	6.30	1.65	-.76	1.05548	-.00388	0.000000	0.000000	10.5362	-.0391	0.0000	0.0000
88	D	36.84	.71	.74	11.16	7.56	1.45	-.95	1.05263	-.00388	0.000000	0.000000	10.5075	-.0391	0.0000	0.0000
89	LC	38.51	.74	.77	7.11	11.40	.99	-1.36	1.04618	-.00388	0.000000	0.000000	10.4427	-.0391	0.0000	0.0000
90	D	39.24	.76	.78	5.81	13.54	.78	-1.55	1.04333	-.00388	0.000000	0.000000	10.4139	-.0391	0.0000	0.0000
91	SD	39.24	.76	.78	5.81	13.54	.77	-1.52	1.04333	-.00160	0.000000	0.000000	10.4139	-.0276	0.0000	0.0000
92	QS	39.54	.77	.78	5.37	14.47	.69	-1.59	1.04285	-.00160	0.000000	0.000000	10.4057	-.0276	0.0000	0.0000
93	QD	39.89	.78	.79	5.13	15.02	.02	.06	1.06303	.11714	0.000000	0.000000	10.6050	1.1689	0.0000	0.0000
94	QD	40.24	.79	.79	5.35	14.39	-.66	1.70	1.12551	.24054	0.000000	0.000000	11.2306	2.4125	0.0000	0.0000
95	QS	40.54	.80	.79	5.77	13.39	-.74	1.62	1.19767	.24054	0.000000	0.000000	11.9544	2.4125	0.0000	0.0000
96	SD	40.54	.80	.79	5.77	13.39	-.75	1.66	1.19767	.24355	0.000000	0.000000	11.9544	2.4275	0.0000	0.0000
97	D	41.28	.82	.80	7.01	11.11	-.95	1.45	1.37678	.24355	0.000000	0.000000	13.7397	2.4275	0.0000	0.0000
98	LC	42.94	.85	.83	10.91	7.06	-1.40	.99	1.78117	.24355	0.000000	0.000000	17.7704	2.4275	0.0000	0.0000
99	D	43.67	.86	.85	13.12	5.76	-1.60	.78	1.96028	.24355	0.000000	0.000000	19.5557	2.4275	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
100	SF	43.67	.86	.85	13.12	5.76	-1.56	.77	1.96028	.23823	0.000000	0.000000	19.5557	2.4009	0.0000	0.0000
101	OS	43.97	.86	.86	14.08	5.33	-1.64	.68	2.03175	.23823	0.000000	0.000000	20.2759	2.4009	0.0000	0.0000
102	QF	44.32	.87	.87	14.66	5.09	.00	.00	2.07367	.00009	0.000000	0.000000	20.6982	.0001	0.0000	0.0000
103	QF	44.67	.87	.88	14.08	5.33	1.64	-.68	2.03181	-.23806	0.000000	0.000000	20.2760	-2.4008	0.0000	0.0000
104	OS	44.97	.87	.89	13.11	5.76	1.57	-.76	1.96039	-.23806	0.000000	0.000000	19.5557	-2.4008	0.0000	0.0000
105	SF	44.97	.87	.89	13.11	5.76	1.60	-.78	1.96039	-.24338	0.000000	0.000000	19.5557	-2.4274	0.0000	0.0000
106	O	45.71	.88	.91	10.91	7.05	1.40	-.98	1.78140	-.24338	0.000000	0.000000	17.7705	-2.4274	0.0000	0.0000
107	B	47.37	.91	.94	7.00	11.02	.95	-1.39	1.45546	-.14909	0.000000	0.000000	14.5248	-1.4843	0.0000	0.0000
108	O	48.11	.93	.95	5.75	13.21	.75	-1.59	1.34581	-.14909	0.000000	0.000000	13.4332	-1.4843	0.0000	0.0000
109	SO	48.11	.93	.95	5.75	13.21	.73	-1.55	1.34581	-.14529	0.000000	0.000000	13.4332	-1.4653	0.0000	0.0000
110	OS	48.41	.94	.95	5.33	14.16	.65	-1.63	1.30223	-.14529	0.000000	0.000000	12.9936	-1.4653	0.0000	0.0000
111	QO	48.76	.95	.96	5.11	14.74	-.02	-.01	1.27687	.00013	0.000000	0.000000	12.7377	.0001	0.0000	0.0000
112	QO	49.11	.96	.96	5.36	14.17	-.69	1.61	1.30232	.14555	0.000000	0.000000	12.9937	1.4655	0.0000	0.0000
113	OS	49.41	.97	.96	5.79	13.23	-.77	1.53	1.34598	.14555	0.000000	0.000000	13.4333	1.4655	0.0000	0.0000
114	SO	49.41	.97	.96	5.79	13.23	-.79	1.57	1.34598	.14935	0.000000	0.000000	13.4333	1.4845	0.0000	0.0000
115	O	50.14	.99	.97	7.10	11.06	-.99	1.38	1.45582	.14935	0.000000	0.000000	14.5251	1.4845	0.0000	0.0000
116	B	51.81	1.02	1.00	11.16	7.13	-1.46	.98	1.78221	.24364	0.000000	0.000000	17.7711	2.4276	0.0000	0.0000
117	O	52.54	1.03	1.02	13.46	5.84	-1.66	.78	1.96140	.24364	0.000000	0.000000	19.5564	2.4276	0.0000	0.0000
118	SF	52.54	1.03	1.02	13.46	5.84	-1.62	.76	1.96140	.23833	0.000000	0.000000	19.5564	2.4010	0.0000	0.0000
119	OS	52.84	1.03	1.03	14.45	5.40	-1.70	.68	2.03290	.23833	0.000000	0.000000	20.2767	2.4010	0.0000	0.0000
120	QF	53.19	1.04	1.04	15.07	5.17	-.02	-.01	2.07482	.00005	0.000000	0.000000	20.6990	.0000	0.0000	0.0000
121	QF	53.54	1.04	1.05	14.48	5.42	1.67	-.70	2.03293	-.23824	0.000000	0.000000	20.2768	-2.4009	0.0000	0.0000
122	OS	53.84	1.04	1.06	13.50	5.86	1.59	-.78	1.96146	-.23824	0.000000	0.000000	19.5565	-2.4009	0.0000	0.0000
123	SF	53.84	1.04	1.06	13.50	5.86	1.63	-.80	1.96146	-.24355	0.000000	0.000000	19.5565	-2.4276	0.0000	0.0000
124	O	54.58	1.05	1.08	11.24	7.19	1.43	-1.01	1.78234	-.24355	0.000000	0.000000	17.7712	-2.4276	0.0000	0.0000
125	B	56.24	1.08	1.11	7.23	11.23	.98	-1.41	1.45610	-.14926	0.000000	0.000000	14.5252	-1.4845	0.0000	0.0000
126	O	56.97	1.10	1.12	5.94	13.45	.78	-1.61	1.34632	-.14926	0.000000	0.000000	13.4335	-1.4845	0.0000	0.0000
127	SO	56.97	1.10	1.12	5.94	13.45	.77	-1.57	1.34632	-.14546	0.000000	0.000000	13.4335	-1.4654	0.0000	0.0000
128	OS	57.27	1.11	1.12	5.50	14.42	.69	-1.65	1.30269	-.14546	0.000000	0.000000	12.9939	-1.4654	0.0000	0.0000
129	QO	57.63	1.12	1.12	5.27	15.00	-.00	-.00	1.27728	.00000	0.000000	0.000000	12.7379	.0000	0.0000	0.0000
130	QO	57.98	1.13	1.13	5.50	14.42	-.69	1.65	1.30269	.14547	0.000000	0.000000	12.9939	1.4654	0.0000	0.0000
131	OS	58.28	1.14	1.13	5.94	13.45	-.77	1.57	1.34633	.14547	0.000000	0.000000	13.4335	1.4654	0.0000	0.0000
132	SO	58.28	1.14	1.13	5.94	13.45	-.78	1.61	1.34633	.14927	0.000000	0.000000	13.4335	1.4845	0.0000	0.0000
133	O	59.01	1.15	1.14	7.24	11.23	-.98	1.41	1.45611	.14927	0.000000	0.000000	14.5253	1.4845	0.0000	0.0000
134	B	60.67	1.18	1.17	11.26	7.20	-1.44	1.00	1.78237	.24356	0.000000	0.000000	17.7712	2.4276	0.0000	0.0000
135	O	61.41	1.19	1.19	13.52	5.87	-1.64	.80	1.96149	.24356	0.000000	0.000000	19.5565	2.4276	0.0000	0.0000
136	SF	61.41	1.19	1.19	13.52	5.87	-1.60	.78	1.96149	.23824	0.000000	0.000000	19.5565	2.4009	0.0000	0.0000
137	OS	61.71	1.20	1.20	14.50	5.42	-1.68	.70	2.03296	.23824	0.000000	0.000000	20.2768	2.4009	0.0000	0.0000
138	QF	62.06	1.20	1.21	15.09	5.18	.02	.01	2.07486	-.00004	0.000000	0.000000	20.6990	-.0000	0.0000	0.0000
139	QF	62.41	1.20	1.22	14.48	5.41	1.71	-.68	2.03294	-.23833	0.000000	0.000000	20.2768	-2.4010	0.0000	0.0000
140	OS	62.71	1.21	1.23	13.48	5.84	1.63	-.76	1.96144	-.23833	0.000000	0.000000	19.5565	-2.4010	0.0000	0.0000
141	SF	62.71	1.21	1.23	13.48	5.84	1.66	-.78	1.96144	-.24364	0.000000	0.000000	19.5565	-2.4276	0.0000	0.0000
142	O	63.44	1.22	1.24	11.19	7.14	1.46	-.98	1.78225	-.24364	0.000000	0.000000	17.7711	-2.4276	0.0000	0.0000
143	B	65.11	1.25	1.27	7.12	11.08	.99	-1.38	1.45586	-.14935	0.000000	0.000000	14.5251	-1.4845	0.0000	0.0000
144	O	65.84	1.27	1.28	5.81	13.25	.79	-1.57	1.34602	-.14935	0.000000	0.000000	13.4333	-1.4845	0.0000	0.0000
145	SO	65.84	1.27	1.28	5.81	13.25	.77	-1.53	1.34602	-.14555	0.000000	0.000000	13.4333	-1.4655	0.0000	0.0000
146	OS	66.14	1.27	1.29	5.37	14.19	.69	-1.61	1.30236	-.14555	0.000000	0.000000	12.9937	-1.4655	0.0000	0.0000
147	QO	66.49	1.28	1.29	5.12	14.76	.02	.01	1.27691	-.00013	0.000000	0.000000	12.7377	-.0001	0.0000	0.0000
148	QO	66.84	1.30	1.30	5.34	14.18	-.65	1.63	1.30227	.14529	0.000000	0.000000	12.9936	1.4653	0.0000	0.0000
149	OS	67.14	1.30	1.30	5.76	13.22	-.73	1.55	1.34586	.14529	0.000000	0.000000	13.4332	1.4653	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.14	1.30	1.30	5.76	13.22	-.75	1.59	1.34586	.14910	0.000000	0.000000	13.4332	1.4843	0.0000	0.0000
151	Q	67.88	1.32	1.31	7.01	11.03	-.95	1.39	1.45551	.14910	0.000000	0.000000	14.5248	1.4843	0.0000	0.0000
152	B	69.54	1.35	1.34	10.91	7.06	-1.40	.99	1.78147	.24339	0.000000	0.000000	17.7706	2.4274	0.0000	0.0000
153	Q	70.28	1.36	1.36	13.11	5.76	-1.60	.78	1.96046	.24339	0.000000	0.000000	19.5558	2.4274	0.0000	0.0000
154	SF	70.28	1.36	1.36	13.11	5.76	-1.56	.76	1.96046	.23807	0.000000	0.000000	19.5558	2.4008	0.0000	0.0000
155	OS	70.58	1.37	1.37	14.08	5.33	-1.64	.68	2.03189	.23807	0.000000	0.000000	20.2760	2.4008	0.0000	0.0000
156	QF	70.93	1.37	1.38	14.66	5.09	.00	.00	2.07374	-.00009	0.000000	0.000000	20.6982	-.0001	0.0000	0.0000
157	QF	71.28	1.37	1.39	14.08	5.33	1.64	-.68	2.03183	-.23824	0.000000	0.000000	20.2760	-2.4009	0.0000	0.0000
158	OS	71.58	1.38	1.40	13.11	5.76	1.56	-.76	1.96035	-.23824	0.000000	0.000000	19.5557	-2.4009	0.0000	0.0000
159	SF	71.58	1.38	1.40	13.11	5.76	1.60	-.78	1.96035	-.24356	0.000000	0.000000	19.5557	-2.4276	0.0000	0.0000
160	Q	72.31	1.39	1.41	10.91	7.06	1.40	-.98	1.78123	-.24356	0.000000	0.000000	17.7704	-2.4276	0.0000	0.0000
161	B	73.97	1.42	1.44	7.00	11.03	.95	-1.39	1.45499	-.14927	0.000000	0.000000	14.5245	-1.4845	0.0000	0.0000
162	Q	74.71	1.44	1.45	5.75	13.22	.75	-1.59	1.34522	-.14927	0.000000	0.000000	13.4327	-1.4845	0.0000	0.0000
163	SD	74.71	1.44	1.45	5.75	13.22	.73	-1.55	1.34522	-.14547	0.000000	0.000000	13.4327	-1.4654	0.0000	0.0000
164	OS	75.01	1.44	1.46	5.34	14.17	.65	-1.63	1.30158	-.14547	0.000000	0.000000	12.9931	-1.4654	0.0000	0.0000
165	QD	75.36	1.46	1.46	5.12	14.75	-.02	-.01	1.27615	-.00013	0.000000	0.000000	12.7371	-.0001	0.0000	0.0000
166	QD	75.71	1.47	1.47	5.36	14.18	-.69	1.61	1.30149	.14520	0.000000	0.000000	12.9931	1.4652	0.0000	0.0000
167	OS	76.01	1.47	1.47	5.80	13.24	-.77	1.53	1.34505	.14520	0.000000	0.000000	13.4326	1.4652	0.0000	0.0000
168	SD	76.01	1.47	1.47	5.80	13.24	-.79	1.57	1.34505	.14900	0.000000	0.000000	13.4326	1.4843	0.0000	0.0000
169	Q	76.75	1.49	1.48	7.11	11.07	-.99	1.38	1.45463	.14900	0.000000	0.000000	14.5242	1.4843	0.0000	0.0000
170	B	78.41	1.52	1.51	11.18	7.13	-1.46	.98	1.78044	.24329	0.000000	0.000000	17.7698	2.4274	0.0000	0.0000
171	Q	79.14	1.53	1.53	13.47	5.84	-1.66	.78	1.95936	.24329	0.000000	0.000000	19.5550	2.4274	0.0000	0.0000
172	SF	79.14	1.53	1.53	13.47	5.84	-1.62	.76	1.95936	.23798	0.000000	0.000000	19.5550	2.4007	0.0000	0.0000
173	OS	79.44	1.54	1.53	14.47	5.41	-1.71	.68	2.03076	.23798	0.000000	0.000000	20.2752	2.4007	0.0000	0.0000
174	QF	79.79	1.54	1.55	15.08	5.18	-.02	-.01	2.07261	-.00004	0.000000	0.000000	20.6974	-.0000	0.0000	0.0000
175	QF	80.14	1.54	1.56	14.49	5.42	1.68	-.70	2.03073	-.23807	0.000000	0.000000	20.2752	-2.4008	0.0000	0.0000
176	OS	80.44	1.55	1.56	13.51	5.87	1.60	-.78	1.95931	-.23807	0.000000	0.000000	19.5550	-2.4274	0.0000	0.0000
177	SF	80.44	1.55	1.56	13.51	5.87	1.63	-.80	1.95931	-.24338	0.000000	0.000000	19.5550	-2.4274	0.0000	0.0000
178	Q	81.18	1.56	1.58	11.25	7.19	1.43	-1.01	1.78032	-.24338	0.000000	0.000000	17.7698	-2.4274	0.0000	0.0000
179	B	82.84	1.59	1.61	7.24	11.23	.98	-1.41	1.45437	-.14909	0.000000	0.000000	14.5240	-1.4843	0.0000	0.0000
180	Q	83.58	1.60	1.62	5.94	13.45	.78	-1.61	1.34472	-.14909	0.000000	0.000000	13.4324	-1.4843	0.0000	0.0000
181	SD	83.58	1.60	1.62	5.94	13.45	.77	-1.57	1.34472	-.14529	0.000000	0.000000	13.4324	-1.4653	0.0000	0.0000
182	OS	83.88	1.61	1.63	5.50	14.42	.69	-1.65	1.30114	-.14529	0.000000	0.000000	12.9928	-1.4653	0.0000	0.0000
183	QD	84.23	1.62	1.63	5.27	15.00	-.00	.00	1.27576	.00000	0.000000	0.000000	12.7369	-.0000	0.0000	0.0000
184	REFL	168.46	3.24	3.26	17.74	6.06	-.00	-.00	-.02152	.00000	0.000000	0.000000	-.1099	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.3686 M THETX = 6.28318638 RAD NUX = 9.73377 DNUX/(DP/P) = .43232
(DS/S)/RADIUS = .0272379 M THETY(183) = 0.00000000 RAD NUY = 9.77411 DNUY/(DP/P) = .34253
TGAM = (7.61658, 0.00000)

MAXIMA --- BETX(184) = 17.73709 BETY(12) = 17.42648 ETAX(138) = 2.07486 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 4.12630 BETY(48) = 3.31143 ETAX(33) = -.00023 ETAY(184) = 0.00000

*** INCR 1 // DP .005000 VALUE = .015000

SUB. CHR , ITER. 8

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V
X_2 = -.00010986 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = .01500000 1.00000000

7X7 MATRIX FOR AGR

.03040808	17.66739186	0.00000000	0.00000000	0.00000000	-.03146645	.00024846
-.05654271	.03040808	0.00000000	0.00000000	0.00000000	-.00183500	.00001449
0.00000000	0.00000000	-.05505360	6.20894356	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.16056984	-.05505360	0.00000000	0.00000000	0.00000000
.00183500	.03146645	0.00000000	0.00000000	1.00000000	-2.91613147	-.04127261
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.03040808 .99953757), C(1) = 1.00000000, MU(1) = 1.54038355 RAD, Q(1) = .73547897
1/LMD1 = (.03040808 -.99953757), C(2) = 1.00000000, MU(2) = -1.54038355 RAD, Q(2) = .26452103

Y... LMD3 = (-.05505360 .99848340), C(3) = 1.00000000, MU(3) = 1.62587778 RAD, Q(3) = .77629945
1/LMD3 = (-.05505360 -.99848340), C(4) = 1.00000000, MU(4) = -1.62587778 RAD, Q(4) = .22370055

EIGENVALUE = (.03040808, .99953757), EIGENVECTOR = (4.20446983, 0.00000000)
(0.00000000, -.23784212)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.03040808, -.99953757), EIGENVECTOR = (4.20446983, 0.00000000)
(0.00000000, -.23784212)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.05505360, .99848340), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.49366685, .00000000)
(.00000000, .40101588)

EIGENVALUE = (-.05505360, -.99848340), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.49366685, -.00000000)
(.00000000, -.40101588)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00024288	0.00000000	0.00000000	0.00000000	0.00000000	.01500000	1.00000000
ETA ORBIT	-.03245329	-.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.204470 0.000000	0.000000 0.000000	-.237842 0.000000	1.570796 0.000000	0.000000 2.493667	0.000000 .000000	0.000000 .401016	0.000000 1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.68	6.22	0.00	0.00	-.03245	-.00000	0.000000	0.000000	-.2429	0.0000	0.0000	0.0000
1	QF1	.35	.00	.01	16.89	6.53	2.22	-.89	-.03172	.00417	0.000000	0.000000	-.2374	.0314	0.0000	0.0000
2	S	.72	.01	.02	15.28	7.23	2.09	-1.00	-.03017	.00417	0.000000	0.000000	-.2256	.0314	0.0000	0.0000
3	S	1.10	.01	.03	13.78	8.01	1.95	-1.10	-.02861	.00417	0.000000	0.000000	-.2139	.0314	0.0000	0.0000
4	S	1.47	.02	.03	12.37	8.87	1.82	-1.20	-.02706	.00417	0.000000	0.000000	-.2022	.0314	0.0000	0.0000
5	S	1.84	.02	.04	11.05	9.81	1.69	-1.30	-.02550	.00417	0.000000	0.000000	-.1905	.0314	0.0000	0.0000
6	S	2.22	.03	.04	9.84	10.82	1.56	-1.41	-.02395	.00417	0.000000	0.000000	-.1787	.0314	0.0000	0.0000
7	S	2.59	.03	.05	8.72	11.91	1.43	-1.51	-.02239	.00417	0.000000	0.000000	-.1670	.0314	0.0000	0.0000
8	S	2.96	.04	.05	7.70	13.07	1.30	-1.61	-.02084	.00417	0.000000	0.000000	-.1553	.0314	0.0000	0.0000
9	S	3.34	.05	.06	6.78	14.32	1.17	-1.72	-.01928	.00417	0.000000	0.000000	-.1436	.0314	0.0000	0.0000
10	S	3.71	.06	.06	5.95	15.64	1.04	-1.82	-.01773	.00417	0.000000	0.000000	-.1318	.0314	0.0000	0.0000
11	S	4.08	.07	.07	5.23	17.03	.91	-1.92	-.01617	.00417	0.000000	0.000000	-.1201	.0314	0.0000	0.0000
12	QD1	4.43	.08	.07	4.84	17.67	.22	.13	-.01504	.00232	0.000000	0.000000	-.1116	.0176	0.0000	0.0000
13	QD1	4.78	.09	.07	4.91	16.86	-.44	2.16	-.01454	.00056	0.000000	0.000000	-.1077	.0045	0.0000	0.0000
14	S	5.16	.10	.08	5.27	15.29	-.53	2.03	-.01433	.00056	0.000000	0.000000	-.1060	.0045	0.0000	0.0000
15	S	5.53	.11	.08	5.70	13.82	-.62	1.91	-.01412	.00056	0.000000	0.000000	-.1044	.0045	0.0000	0.0000
16	S	5.90	.12	.09	6.20	12.45	-.71	1.78	-.01391	.00056	0.000000	0.000000	-.1027	.0045	0.0000	0.0000
17	S	6.28	.13	.09	6.76	11.16	-.80	1.66	-.01370	.00056	0.000000	0.000000	-.1010	.0045	0.0000	0.0000
18	S	6.65	.14	.10	7.39	9.97	-.89	1.53	-.01349	.00056	0.000000	0.000000	-.0993	.0045	0.0000	0.0000
19	S	7.02	.15	.10	8.09	8.89	-.98	1.41	-.01328	.00056	0.000000	0.000000	-.0977	.0045	0.0000	0.0000
20	S	7.39	.16	.11	8.86	7.87	-1.07	1.28	-.01307	.00056	0.000000	0.000000	-.0960	.0045	0.0000	0.0000
21	S	7.77	.16	.12	9.69	6.96	-1.16	1.16	-.01286	.00056	0.000000	0.000000	-.0943	.0045	0.0000	0.0000
22	S	8.14	.17	.13	10.59	6.15	-1.25	1.03	-.01265	.00056	0.000000	0.000000	-.0926	.0045	0.0000	0.0000
23	S	8.51	.17	.14	11.56	5.43	-1.34	.91	-.01244	.00056	0.000000	0.000000	-.0910	.0045	0.0000	0.0000
24	QF2	8.86	.18	.15	12.01	5.05	.08	.17	-.01197	.00207	0.000000	0.000000	-.0874	.0156	0.0000	0.0000
25	QF2	9.22	.18	.16	11.45	5.18	1.49	-.53	-.01099	.00349	0.000000	0.000000	-.0801	.0260	0.0000	0.0000
26	S	9.59	.19	.17	10.38	5.61	1.39	-.62	-.00969	.00349	0.000000	0.000000	-.0704	.0260	0.0000	0.0000
27	S	9.96	.19	.18	9.38	6.11	1.28	-.71	-.00839	.00349	0.000000	0.000000	-.0607	.0260	0.0000	0.0000
28	S	10.33	.20	.19	8.47	6.67	1.18	-.81	-.00709	.00349	0.000000	0.000000	-.0510	.0260	0.0000	0.0000
29	S	10.71	.21	.20	7.63	7.31	1.07	-.90	-.00579	.00349	0.000000	0.000000	-.0413	.0260	0.0000	0.0000
30	S	11.08	.22	.21	6.87	8.02	.97	-.99	-.00449	.00349	0.000000	0.000000	-.0316	.0260	0.0000	0.0000
31	S	11.45	.23	.21	6.19	8.79	.86	-1.08	-.00319	.00349	0.000000	0.000000	-.0219	.0260	0.0000	0.0000
32	S	11.83	.24	.22	5.59	9.63	.76	-1.18	-.00189	.00349	0.000000	0.000000	-.0122	.0260	0.0000	0.0000
33	S	12.20	.25	.22	5.06	10.55	.65	-1.27	-.00058	.00349	0.000000	0.000000	-.0025	.0260	0.0000	0.0000
34	S	12.57	.26	.23	4.61	11.53	.55	-1.36	.00072	.00349	0.000000	0.000000	.0072	.0260	0.0000	0.0000
35	S	12.95	.27	.23	4.25	12.58	.44	-1.45	.00202	.00349	0.000000	0.000000	.0169	.0260	0.0000	0.0000
36	QD2	13.30	.29	.24	4.16	13.01	-.20	.22	.00330	.00364	0.000000	0.000000	.0265	.0289	0.0000	0.0000
37	QD2	13.65	.30	.24	4.54	12.27	-.89	1.86	.00473	.00437	0.000000	0.000000	.0373	.0331	0.0000	0.0000
38	R	14.01	.31	.25	5.25	10.96	-1.03	1.73	.00633	.00437	0.000000	0.000000	.0494	.0331	0.0000	0.0000
39	R	14.38	.32	.25	6.06	9.74	-1.18	1.59	.00793	.00437	0.000000	0.000000	.0616	.0331	0.0000	0.0000
40	R	14.75	.33	.26	6.97	8.62	-1.32	1.46	.00953	.00437	0.000000	0.000000	.0737	.0331	0.0000	0.0000
41	R	15.11	.34	.27	7.99	7.59	-1.47	1.33	.01114	.00437	0.000000	0.000000	.0859	.0331	0.0000	0.0000
42	R	15.48	.34	.28	9.12	6.67	-1.61	1.19	.01274	.00437	0.000000	0.000000	.0980	.0331	0.0000	0.0000
43	R	15.85	.35	.29	10.35	5.84	-1.75	1.06	.01434	.00437	0.000000	0.000000	.1102	.0331	0.0000	0.0000
44	R	16.21	.36	.30	11.69	5.11	-1.90	.93	.01594	.00437	0.000000	0.000000	.1223	.0331	0.0000	0.0000
45	R	16.58	.36	.31	13.14	4.48	-2.04	.79	.01754	.00437	0.000000	0.000000	.1345	.0331	0.0000	0.0000
46	R	16.95	.37	.32	14.69	3.95	-2.19	.66	.01915	.00437	0.000000	0.000000	.1466	.0331	0.0000	0.0000
47	R	17.32	.37	.34	16.35	3.51	-2.33	.53	.02075	.00437	0.000000	0.000000	.1588	.0331	0.0000	0.0000
48	QF3	17.73	.37	.36	17.39	3.32	-.15	-.05	.02198	-.00154	0.000000	0.000000	.1680	.0114	0.0000	0.0000
49	QF3	18.14	.38	.38	16.59	3.60	2.07	-.65	.02202	-.00136	0.000000	0.000000	.1681	-.0110	0.0000	0.0000

POS		S (M)	DX	DY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
50	Z	18.50	.38	.39	15.14	4.12	1.95	-.79	.02152	-.00136	0.000000	0.000000	.1641	-.0110	0.0000	0.0000
51	Z	18.86	.38	.40	13.77	4.74	1.84	-.93	.02103	-.00136	0.000000	0.000000	.1602	-.0110	0.0000	0.0000
52	Z	19.22	.39	.42	12.49	5.46	1.72	-1.07	.02054	-.00136	0.000000	0.000000	.1562	-.0110	0.0000	0.0000
53	Z	19.58	.39	.43	11.29	6.28	1.61	-1.21	.02005	-.00136	0.000000	0.000000	.1522	-.0110	0.0000	0.0000
54	Z	19.95	.40	.43	10.17	7.20	1.49	-1.35	.01956	-.00136	0.000000	0.000000	.1483	-.0110	0.0000	0.0000
55	Z	20.31	.40	.44	9.14	8.23	1.38	-1.49	.01907	-.00136	0.000000	0.000000	.1443	-.0110	0.0000	0.0000
56	Z	20.67	.41	.45	8.19	9.36	1.26	-1.64	.01858	-.00136	0.000000	0.000000	.1403	-.0110	0.0000	0.0000
57	Z	21.03	.42	.45	7.31	10.59	1.15	-1.78	.01809	-.00136	0.000000	0.000000	.1363	-.0110	0.0000	0.0000
58	Z	21.39	.43	.46	6.53	11.92	1.04	-1.92	.01760	-.00136	0.000000	0.000000	.1324	-.0110	0.0000	0.0000
59	Z	21.75	.44	.46	5.82	13.36	.92	-2.06	.01711	-.00136	0.000000	0.000000	.1284	-.0110	0.0000	0.0000
60	QD3	22.16	.45	.47	5.41	14.35	.09	-.29	.01701	.00087	0.000000	0.000000	.1273	.0058	0.0000	0.0000
61	QD3	22.58	.46	.47	5.67	13.82	-.72	1.54	.01784	.00315	0.000000	0.000000	.1333	.0230	0.0000	0.0000
62	R	22.94	.47	.48	6.24	12.73	-.82	1.45	.01899	.00315	0.000000	0.000000	.1417	.0230	0.0000	0.0000
63	R	23.31	.48	.48	6.83	11.69	-.92	1.36	.02014	.00315	0.000000	0.000000	.1502	.0230	0.0000	0.0000
64	R	23.68	.49	.49	7.59	10.73	-1.02	1.27	.02130	.00315	0.000000	0.000000	.1586	.0230	0.0000	0.0000
65	R	24.04	.49	.49	8.37	9.83	-1.12	1.18	.02245	.00315	0.000000	0.000000	.1671	.0230	0.0000	0.0000
66	R	24.41	.50	.50	9.23	8.99	-1.22	1.09	.02361	.00315	0.000000	0.000000	.1755	.0230	0.0000	0.0000
67	R	24.78	.51	.51	10.16	8.22	-1.32	1.00	.02476	.00315	0.000000	0.000000	.1839	.0230	0.0000	0.0000
68	R	25.14	.51	.51	11.16	7.52	-1.41	.91	.02592	.00315	0.000000	0.000000	.1924	.0230	0.0000	0.0000
69	R	25.51	.52	.52	12.23	6.88	-1.51	.82	.02707	.00315	0.000000	0.000000	.2008	.0230	0.0000	0.0000
70	R	25.88	.52	.53	13.38	6.31	-1.61	.74	.02823	.00315	0.000000	0.000000	.2093	.0230	0.0000	0.0000
71	R	26.24	.53	.54	14.60	5.80	-1.71	.65	.02938	.00315	0.000000	0.000000	.2177	.0230	0.0000	0.0000
72	QF	26.59	.53	.55	15.21	5.61	-.01	-.08	.02989	-.00028	0.000000	0.000000	.2213	-.0026	0.0000	0.0000
73	QF	26.94	.53	.56	14.62	5.92	1.68	-.82	.02919	-.00370	0.000000	0.000000	.2159	-.0281	0.0000	0.0000
74	QD	27.98	.55	.58	11.41	7.93	1.41	-1.12	.02536	-.00370	0.000000	0.000000	.1868	-.0281	0.0000	0.0000
75	R	29.64	.58	.61	7.45	12.33	.98	-1.52	.09704	.09016	0.000000	0.000000	1.3075	1.3798	0.0000	0.0000
76	QD	30.68	.60	.62	5.71	15.77	.71	-1.80	.19039	.09016	0.000000	0.000000	2.7362	1.3798	0.0000	0.0000
77	QD	31.03	.61	.63	5.46	16.41	.00	-.01	.22595	.11341	0.000000	0.000000	3.2778	1.7206	0.0000	0.0000
78	QD	31.38	.62	.63	5.70	15.78	-.70	1.79	.27041	.14113	0.000000	0.000000	3.9505	2.1303	0.0000	0.0000
79	QD	32.41	.65	.64	7.44	12.36	-.97	1.52	.41654	.14113	0.000000	0.000000	6.1562	2.1303	0.0000	0.0000
80	B	34.07	.68	.67	11.38	7.97	-1.41	1.11	.72862	.23494	0.000000	0.000000	10.8573	3.5378	0.0000	0.0000
81	D	34.81	.68	.68	13.59	6.48	-1.60	.91	.90140	.23494	0.000000	0.000000	13.4591	3.5378	0.0000	0.0000
82	SF	34.81	.68	.68	13.59	6.48	-1.57	.89	.90140	.23327	0.000000	0.000000	13.4591	3.5253	0.0000	0.0000
83	QS	35.11	.69	.69	14.56	5.97	-1.65	.81	.97138	.23327	0.000000	0.000000	14.5167	3.5253	0.0000	0.0000
84	QF	35.46	.69	.70	15.13	5.67	.04	.06	1.03319	.11815	0.000000	0.000000	15.4493	1.7781	0.0000	0.0000
85	QF	35.81	.70	.71	14.50	5.88	1.73	-.67	1.05367	-.00170	0.000000	0.000000	15.7547	-.0412	0.0000	0.0000
86	QS	36.11	.70	.72	13.49	6.30	1.65	-.74	1.05316	-.00170	0.000000	0.000000	15.7424	-.0412	0.0000	0.0000
87	SF	36.11	.70	.72	13.49	6.30	1.67	-.76	1.05316	-.00398	0.000000	0.000000	15.7424	-.0584	0.0000	0.0000
88	D	36.85	.71	.74	11.18	7.55	1.47	-.94	1.05023	-.00398	0.000000	0.000000	15.6994	-.0584	0.0000	0.0000
89	LC	38.51	.74	.76	7.08	11.37	1.00	-1.36	1.04362	-.00398	0.000000	0.000000	15.6025	-.0584	0.0000	0.0000
90	D	39.24	.76	.77	5.77	13.50	.79	-1.54	1.04070	-.00398	0.000000	0.000000	15.5595	-.0584	0.0000	0.0000
91	SD	39.24	.76	.77	5.77	13.50	.77	-1.50	1.04070	-.00060	0.000000	0.000000	15.5595	-.0330	0.0000	0.0000
92	QS	39.54	.77	.78	5.33	14.42	.69	-1.57	1.04052	-.00060	0.000000	0.000000	15.5466	-.0330	0.0000	0.0000
93	QD	39.89	.78	.78	5.08	14.96	.02	.07	1.06080	.11671	0.000000	0.000000	15.8489	1.7464	0.0000	0.0000
94	QD	40.24	.79	.79	5.30	14.33	-.64	1.70	1.12286	.23861	0.000000	0.000000	16.7820	3.5955	0.0000	0.0000
95	QS	40.54	.80	.79	5.70	13.33	-.72	1.62	1.19444	.23861	0.000000	0.000000	17.8607	3.5955	0.0000	0.0000
96	SD	40.54	.80	.79	5.70	13.33	-.74	1.67	1.19444	.24306	0.000000	0.000000	17.8607	3.6291	0.0000	0.0000
97	D	41.28	.81	.80	6.94	11.04	-.94	1.46	1.37320	.24306	0.000000	0.000000	20.5296	3.6291	0.0000	0.0000
98	LC	42.94	.84	.83	10.81	6.98	-1.39	.99	1.77678	.24306	0.000000	0.000000	26.5554	3.6291	0.0000	0.0000
99	D	43.67	.85	.85	13.00	5.68	-1.59	.78	1.95553	.24306	0.000000	0.000000	29.2243	3.6291	0.0000	0.0000

POS		S (M)	DX	DY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCG (MM)	DXCG (MR)	YCG (MM)	DYCG (MR)
100	SF	43.67	.85	.85	13.00	5.68	-1.54	.76	1.95553	.23520	0.000000	0.000000	29.2243	3.5699	0.0000	0.0000
101	OS	43.97	.86	.86	13.94	5.25	-1.61	.67	2.02609	.23520	0.000000	0.000000	30.2953	3.5699	0.0000	0.0000
102	QF	44.32	.86	.87	14.52	5.01	.00	.00	2.06748	.00010	0.000000	0.000000	30.9232	.0006	0.0000	0.0000
103	QF	44.67	.87	.88	13.94	5.24	1.62	-.67	2.02616	-.23499	0.000000	0.000000	30.2957	-3.5688	0.0000	0.0000
104	OS	44.97	.87	.89	12.99	5.67	1.54	-.75	1.95567	-.23499	0.000000	0.000000	29.2250	-3.5688	0.0000	0.0000
105	SF	44.97	.87	.89	12.99	5.67	1.60	-.77	1.95567	-.24286	0.000000	0.000000	29.2250	-3.6280	0.0000	0.0000
106	O	45.71	.88	.91	10.79	6.96	1.40	-.98	1.77706	-.24286	0.000000	0.000000	26.5569	-3.6280	0.0000	0.0000
107	B	47.37	.91	.94	6.91	10.92	.94	-1.39	1.45127	-.14905	0.000000	0.000000	21.7019	-2.2205	0.0000	0.0000
108	O	48.11	.93	.95	5.67	13.12	.74	-1.59	1.34165	-.14905	0.000000	0.000000	20.0690	-2.2205	0.0000	0.0000
109	SD	48.11	.93	.95	5.67	13.12	.72	-1.53	1.34165	-.14343	0.000000	0.000000	20.0690	-2.1781	0.0000	0.0000
110	OS	48.41	.94	.95	5.26	14.06	.64	-1.61	1.29862	-.14343	0.000000	0.000000	19.4155	-2.1781	0.0000	0.0000
111	QD	48.76	.95	.95	5.05	14.64	-.02	-.02	1.27359	.00016	0.000000	0.000000	19.0352	.0009	0.0000	0.0000
112	QD	49.11	.96	.96	5.29	14.08	-.69	1.58	1.29873	.14376	0.000000	0.000000	19.4161	2.1799	0.0000	0.0000
113	OS	49.41	.97	.96	5.73	13.15	-.77	1.51	1.34186	.14376	0.000000	0.000000	20.0701	2.1799	0.0000	0.0000
114	SD	49.41	.97	.96	5.73	13.15	-.79	1.56	1.34186	.14938	0.000000	0.000000	20.0701	2.2222	0.0000	0.0000
115	O	50.14	.99	.97	7.05	10.99	-1.00	1.37	1.45172	.14938	0.000000	0.000000	21.7043	2.2222	0.0000	0.0000
116	B	51.81	1.02	1.00	11.16	7.08	-1.47	.97	1.77805	.24319	0.000000	0.000000	26.5622	3.6297	0.0000	0.0000
117	O	52.54	1.03	1.02	13.48	5.80	-1.68	.77	1.95690	.24319	0.000000	0.000000	29.2316	3.6297	0.0000	0.0000
118	SF	52.54	1.03	1.02	13.48	5.80	-1.63	.75	1.95690	.23532	0.000000	0.000000	29.2316	3.5705	0.0000	0.0000
119	OS	52.84	1.03	1.03	14.49	5.37	-1.71	.67	2.02750	.23532	0.000000	0.000000	30.3028	3.5705	0.0000	0.0000
120	QF	53.19	1.03	1.04	15.10	5.15	-.03	-.02	2.06890	.00006	0.000000	0.000000	30.9307	.0003	0.0000	0.0000
121	QF	53.54	1.04	1.05	14.52	5.40	1.66	-.70	2.02754	-.23520	0.000000	0.000000	30.3030	-3.5699	0.0000	0.0000
122	OS	53.84	1.04	1.06	13.55	5.84	1.58	-.79	1.95698	-.23520	0.000000	0.000000	29.2320	-3.5699	0.0000	0.0000
123	SF	53.84	1.04	1.06	13.55	5.84	1.64	-.81	1.95698	-.24307	0.000000	0.000000	29.2320	-3.6291	0.0000	0.0000
124	O	54.58	1.05	1.08	11.28	7.19	1.44	-1.02	1.77821	-.24307	0.000000	0.000000	26.5630	-3.6291	0.0000	0.0000
125	B	56.24	1.08	1.10	7.25	11.29	.99	-1.43	1.45206	-.14927	0.000000	0.000000	21.7062	-2.2216	0.0000	0.0000
126	O	56.98	1.10	1.11	5.95	13.54	.79	-1.63	1.34229	-.14927	0.000000	0.000000	20.0723	-2.2216	0.0000	0.0000
127	SD	56.98	1.10	1.11	5.95	13.54	.76	-1.57	1.34229	-.14364	0.000000	0.000000	20.0723	-2.1793	0.0000	0.0000
128	OS	57.28	1.11	1.12	5.51	14.51	.68	-1.65	1.29919	-.14364	0.000000	0.000000	19.4185	-2.1793	0.0000	0.0000
129	QD	57.63	1.12	1.12	5.28	15.09	-.00	-.00	1.27411	.00001	0.000000	0.000000	19.0379	.0000	0.0000	0.0000
130	QD	57.98	1.13	1.13	5.52	14.51	-.69	1.65	1.29920	.14367	0.000000	0.000000	19.4186	2.1793	0.0000	0.0000
131	OS	58.28	1.13	1.13	5.95	13.54	-.77	1.57	1.34230	.14367	0.000000	0.000000	20.0724	2.1793	0.0000	0.0000
132	SD	58.28	1.13	1.13	5.95	13.54	-.79	1.63	1.34230	.14929	0.000000	0.000000	20.0724	2.2217	0.0000	0.0000
133	O	59.01	1.15	1.14	7.27	11.30	-.99	1.43	1.45209	.14929	0.000000	0.000000	21.7063	2.2217	0.0000	0.0000
134	B	60.68	1.19	1.17	11.32	7.20	-1.45	1.02	1.77827	.24310	0.000000	0.000000	26.5633	3.6292	0.0000	0.0000
135	O	61.41	1.19	1.19	13.60	5.86	-1.65	.81	1.95705	.24310	0.000000	0.000000	29.2323	3.6292	0.0000	0.0000
136	SF	61.41	1.19	1.19	13.60	5.86	-1.59	.79	1.95705	.23522	0.000000	0.000000	29.2323	3.5700	0.0000	0.0000
137	OS	61.71	1.19	1.19	14.58	5.41	-1.67	.70	2.02762	.23522	0.000000	0.000000	30.3033	3.5700	0.0000	0.0000
138	QF	62.06	1.20	1.20	15.16	5.17	.02	.02	2.06899	-.00005	0.000000	0.000000	30.9311	-.0003	0.0000	0.0000
139	QF	62.41	1.20	1.22	14.55	5.39	1.71	-.67	2.02759	-.23532	0.000000	0.000000	30.3031	-3.5705	0.0000	0.0000
140	OS	62.71	1.21	1.22	13.54	5.82	1.63	-.75	1.95699	-.23532	0.000000	0.000000	29.2320	-3.5705	0.0000	0.0000
141	SF	62.71	1.21	1.22	13.54	5.82	1.69	-.77	1.95699	-.24319	0.000000	0.000000	29.2320	-3.6297	0.0000	0.0000
142	O	63.45	1.22	1.24	11.21	7.10	1.48	-.98	1.77815	-.24319	0.000000	0.000000	26.5626	-3.6297	0.0000	0.0000
143	B	65.11	1.24	1.27	7.08	11.03	1.01	-1.38	1.45181	-.14938	0.000000	0.000000	21.7047	-2.2222	0.0000	0.0000
144	O	65.85	1.26	1.28	5.76	13.20	.80	-1.57	1.34195	-.14938	0.000000	0.000000	20.0704	-2.2222	0.0000	0.0000
145	SD	65.85	1.26	1.28	5.76	13.20	.77	-1.51	1.34195	-.14376	0.000000	0.000000	20.0704	-2.1799	0.0000	0.0000
146	OS	66.15	1.27	1.29	5.32	14.13	.69	-1.59	1.29882	-.14376	0.000000	0.000000	19.4165	-2.1799	0.0000	0.0000
147	QD	66.50	1.28	1.29	5.07	14.69	.02	.02	1.27369	-.00015	0.000000	0.000000	19.0355	-.0008	0.0000	0.0000
148	QD	66.85	1.29	1.29	5.28	14.11	-.64	1.62	1.29871	.14345	0.000000	0.000000	19.4159	2.1782	0.0000	0.0000
149	OS	67.15	1.30	1.30	5.69	13.16	-.72	1.54	1.34175	.14345	0.000000	0.000000	20.0694	2.1782	0.0000	0.0000

POS		S (M)	DX	DY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.15	1.30	1.30	5.69	13.16	-.74	1.60	1.34175	.14907	0.000000	0.000000	20.0644	2.2205	0.0000	0.0000
151	D	67.88	1.32	1.31	6.92	10.95	-.94	1.40	1.45138	.14907	0.000000	0.000000	21.7024	2.2205	0.0000	0.0000
152	B	69.55	1.35	1.34	10.80	6.97	-1.39	.99	1.77721	.24288	0.000000	0.000000	26.5575	3.6281	0.0000	0.0000
153	D	70.28	1.36	1.36	12.99	5.67	-1.59	.78	1.95583	.24288	0.000000	0.000000	29.2257	3.6281	0.0000	0.0000
154	SF	70.28	1.36	1.36	12.99	5.67	-1.54	.75	1.95583	.23501	0.000000	0.000000	29.2257	3.5689	0.0000	0.0000
155	QS	70.58	1.37	1.36	13.94	5.25	-1.62	-.67	2.02634	-.23501	0.000000	0.000000	30.2964	3.5689	0.0000	0.0000
156	QF	70.93	1.37	1.38	14.51	5.01	.00	.00	2.06766	-.00010	0.000000	0.000000	30.9239	-.0006	0.0000	0.0000
157	QF	71.28	1.37	1.39	13.94	5.24	1.62	-.67	2.02627	-.23522	0.000000	0.000000	30.2960	-3.5700	0.0000	0.0000
158	QS	71.58	1.38	1.40	12.99	5.67	1.54	-.75	1.95570	-.23522	0.000000	0.000000	29.2250	-3.5700	0.0000	0.0000
159	SF	71.58	1.38	1.40	12.99	5.67	1.59	-.77	1.95570	-.24308	0.000000	0.000000	29.2250	-3.6292	0.0000	0.0000
160	D	72.32	1.39	1.41	10.79	6.96	1.39	-.98	1.77693	-.24308	0.000000	0.000000	26.5560	-3.6292	0.0000	0.0000
161	B	73.98	1.42	1.44	6.91	10.94	.94	-1.40	1.45077	-.14928	0.000000	0.000000	21.6991	-2.2216	0.0000	0.0000
162	B	74.72	1.44	1.45	5.68	13.14	.74	-1.59	1.34098	-.14928	0.000000	0.000000	20.0652	-2.2216	0.0000	0.0000
163	SD	74.72	1.44	1.45	5.69	13.14	.72	-1.54	1.34098	-.14366	0.000000	0.000000	20.0652	-2.1793	0.0000	0.0000
164	QS	75.02	1.44	1.46	5.27	14.08	.64	-1.62	1.29789	-.14366	0.000000	0.000000	19.4114	-2.1793	0.0000	0.0000
165	QD	75.37	1.46	1.46	5.06	14.66	-.02	-.02	1.27277	-.00016	0.000000	0.000000	19.0306	-.0008	0.0000	0.0000
166	QD	75.72	1.47	1.47	5.31	14.11	-.69	1.59	1.29778	.14334	0.000000	0.000000	19.4108	2.1776	0.0000	0.0000
167	QS	76.02	1.48	1.47	5.74	13.18	-.77	1.51	1.34078	.14334	0.000000	0.000000	20.0641	2.1776	0.0000	0.0000
168	SD	76.02	1.48	1.47	5.74	13.18	-.80	1.57	1.34078	.14896	0.000000	0.000000	20.0641	2.2199	0.0000	0.0000
169	B	76.75	1.49	1.48	7.07	11.01	-1.00	1.37	1.45033	.14896	0.000000	0.000000	21.6967	2.2199	0.0000	0.0000
170	B	78.41	1.52	1.51	11.19	7.09	-1.48	.97	1.77596	.24277	0.000000	0.000000	26.5508	3.6275	0.0000	0.0000
171	D	79.15	1.53	1.53	13.51	5.81	-1.68	.77	1.95450	.24277	0.000000	0.000000	29.2186	3.6275	0.0000	0.0000
172	SF	79.15	1.53	1.53	13.51	5.81	-1.63	.75	1.95450	.23491	0.000000	0.000000	29.2186	3.5683	0.0000	0.0000
173	QS	79.45	1.54	1.54	14.52	5.38	-1.71	.67	2.02497	.23491	0.000000	0.000000	30.2890	3.5683	0.0000	0.0000
174	QF	79.80	1.54	1.55	15.13	5.16	-.02	-.02	2.06629	-.00005	0.000000	0.000000	30.9165	-.0003	0.0000	0.0000
175	QF	80.15	1.54	1.56	14.55	5.41	1.67	-.70	2.02493	-.23501	0.000000	0.000000	30.2889	-3.5688	0.0000	0.0000
176	QS	80.45	1.55	1.57	13.57	5.85	1.59	-.79	1.95443	-.23501	0.000000	0.000000	29.2182	-3.5688	0.0000	0.0000
177	SF	80.45	1.55	1.57	13.57	5.85	1.64	-.81	1.95443	-.24287	0.000000	0.000000	29.2182	-3.6280	0.0000	0.0000
178	D	81.19	1.56	1.58	11.30	7.20	1.44	-1.02	1.77582	-.24287	0.000000	0.000000	26.5500	-3.6280	0.0000	0.0000
179	B	82.85	1.59	1.61	7.26	11.29	.99	-1.43	1.45001	-.14906	0.000000	0.000000	21.6950	-2.2205	0.0000	0.0000
180	D	83.58	1.60	1.62	5.95	13.54	.79	-1.63	1.34039	-.14906	0.000000	0.000000	20.0620	-2.2205	0.0000	0.0000
181	SD	83.58	1.60	1.62	5.95	13.54	.76	-1.57	1.34039	-.14345	0.000000	0.000000	20.0620	-2.1782	0.0000	0.0000
182	QS	83.88	1.61	1.63	5.52	14.51	.68	-1.65	1.29735	-.14345	0.000000	0.000000	19.4086	-2.1782	0.0000	0.0000
183	QD	84.24	1.62	1.63	5.28	15.09	-.00	.00	1.27230	.00000	0.000000	0.000000	19.0281	-.0000	0.0000	0.0000
184	REFL	168.47	3.25	3.26	17.68	6.22	-.00	-.00	-.03245	.00000	0.000000	0.000000	-.2429	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.4113 M THETX = 6.28318638 RAD NUX = 9.73548 DNUX/(DP/P) = .45114
(DS/S)/[illegible] = .0174808 M THETY(183) = 0.00000000 RAD NUY = 9.77630 DNUY/(DP/P) = .31448
TGAM = (7.60070, 0.00000)

MAXIMA --- BETX(184) = 17.67757 BETY(12) = 17.66947 ETAX(138) = 2.06899 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 4.16436 BETY(48) = 3.32012 ETAX(33) = -.00058 ETAY(184) = 0.00000

*** INCR 1 // DP .005000 VALUE = .020000

SUB.I CHR , ITER. 9

CALCULATION OF THE EQUILIBRIUM ORBIT AND BETATRON FUNCTIONS OF AGR .
INITIAL REFERENCE RAY DEFINED BY V
X = -.00024288 DX = 0.00000000 Y = 0.00000000 DY = 0.00000000 DS = 0.00000000 DP/P = .02000000 1.00000000
2

7X7 MATRIX FOR AGR

.02705862	17.60331730	0.00000000	0.00000000	0.00000000	-.04255458	.00046025
-.05676588	.02705862	0.00000000	0.00000000	0.00000000	-.00248283	.00002685
0.00000000	0.00000000	-.05972548	6.36568879	0.00000000	0.00000000	0.00000000
0.00000000	0.00000000	-.15653182	-.05972548	0.00000000	0.00000000	0.00000000
.00248283	.04255458	0.00000000	0.00000000	1.00000000	-2.92858206	-.05421840
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000

EIGENVALUES OF THE 4X4 SUBMATRIX

X... LMD1 = (.02705862 .99963385); C(1) = 1.00000000, MU(1) = 1.54373440 RAD, Q(1) = .73707888
1/LMD1 = (.02705862 -.99963385); C(2) = 1.00000000, MU(2) = -1.54373440 RAD, Q(2) = .26292112

Y... LMD3 = (-.05972548 .99821484); C(3) = 1.00000000, MU(3) = 1.63055738 RAD, Q(3) = .77853380
1/LMD3 = (-.05972548 -.99821484); C(4) = 1.00000000, MU(4) = -1.63055738 RAD, Q(4) = .22146620

EIGENVALUE = (.02705862, .99963385), EIGENVECTOR = (4.19639907, -.00000000)
(0.00000000, -.23829955)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (.02705862, -.99963385), EIGENVECTOR = (4.19639907, .00000000)
(0.00000000, -.23829955)
(0.00000000, 0.00000000)
(0.00000000, 0.00000000)

EIGENVALUE = (-.05972548, .99821484), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.52528669, 0.00000000)
(-.00000000, .39599464)

EIGENVALUE = (-.05972548, -.99821484), EIGENVECTOR = (0.00000000, 0.00000000)
(0.00000000, 0.00000000)
(2.52528669, 0.00000000)
(-.00000000, -.39599464)

	X	DX	Y	DY	DS	DP/P	
EQ ORBIT	-.00042983	0.00000000	0.00000000	0.00000000	0.00000000	.02000000	1.00000000
ETA ORBIT	-.04373807	-.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000

EIGENVECTORS 1 AND 3 IN POLAR COORDINATES

POS	X1 X3		DX1 DX3		Y1 Y3		DY1 DY3	
0	4.196399 0.000000	-.000000 0.000000	.238300 0.000000	1.570796 0.000000	0.000000 2.525287	0.000000 0.000000	0.000000 .395995	0.000000 1.570796

BETATRON FUNCTIONS OF AGR

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
0		0.00	0.00	0.00	17.61	6.38	0.00	0.00	-.04374	-.00000	0.000000	0.000000	-.4298	0.0000	0.0000	0.0000
1	QF1	.36	.00	.01	16.83	6.69	2.20	-.91	-.04276	.00558	0.000000	0.000000	-.4201	.0553	0.0000	0.0000
2	S	.72	.01	.02	15.24	7.41	2.07	-1.01	-.04068	.00558	0.000000	0.000000	-.3994	.0553	0.0000	0.0000
3	S	1.10	.01	.02	13.74	8.20	1.94	-1.11	-.03860	.00558	0.000000	0.000000	-.3788	.0553	0.0000	0.0000
4	S	1.47	.02	.03	12.34	9.07	1.81	-1.21	-.03652	.00558	0.000000	0.000000	-.3582	.0553	0.0000	0.0000
5	S	1.84	.02	.04	11.04	10.01	1.68	-1.32	-.03444	.00558	0.000000	0.000000	-.3375	.0553	0.0000	0.0000
6	S	2.22	.03	.04	9.84	11.03	1.55	-1.42	-.03235	.00558	0.000000	0.000000	-.3169	.0553	0.0000	0.0000
7	S	2.59	.03	.05	8.73	12.13	1.42	-1.52	-.03027	.00558	0.000000	0.000000	-.2962	.0553	0.0000	0.0000
8	S	2.96	.04	.05	7.72	13.30	1.29	-1.62	-.02819	.00558	0.000000	0.000000	-.2756	.0553	0.0000	0.0000
9	S	3.34	.05	.06	6.80	14.55	1.16	-1.72	-.02611	.00558	0.000000	0.000000	-.2549	.0553	0.0000	0.0000
10	S	3.71	.06	.06	5.98	15.88	1.03	-1.83	-.02403	.00558	0.000000	0.000000	-.2343	.0553	0.0000	0.0000
11	S	4.08	.07	.07	5.26	17.28	.91	-1.93	-.02195	.00558	0.000000	0.000000	-.2136	.0553	0.0000	0.0000
12	QD1	4.43	.08	.07	4.87	17.91	.21	.14	-.02044	.00308	0.000000	0.000000	-.1986	.0308	0.0000	0.0000
13	QD1	4.78	.09	.07	4.95	17.08	-.44	2.19	-.01978	.00071	0.000000	0.000000	-.1919	.0076	0.0000	0.0000
14	S	5.16	.10	.07	5.32	15.50	-.53	2.06	-.01951	.00071	0.000000	0.000000	-.1890	.0076	0.0000	0.0000
15	S	5.53	.11	.08	5.75	14.00	-.62	1.94	-.01925	.00071	0.000000	0.000000	-.1862	.0076	0.0000	0.0000
16	S	5.90	.12	.08	6.25	12.61	-.71	1.81	-.01898	.00071	0.000000	0.000000	-.1833	.0076	0.0000	0.0000
17	S	6.28	.13	.09	6.81	11.30	-.81	1.68	-.01871	.00071	0.000000	0.000000	-.1805	.0076	0.0000	0.0000
18	S	6.65	.14	.09	7.45	10.10	-.90	1.56	-.01845	.00071	0.000000	0.000000	-.1776	.0076	0.0000	0.0000
19	S	7.02	.15	.10	8.15	8.98	-.99	1.43	-.01818	.00071	0.000000	0.000000	-.1748	.0076	0.0000	0.0000
20	S	7.39	.16	.11	8.92	7.96	-1.08	1.30	-.01792	.00071	0.000000	0.000000	-.1719	.0076	0.0000	0.0000
21	S	7.77	.16	.12	9.76	7.04	-1.17	1.18	-.01765	.00071	0.000000	0.000000	-.1691	.0076	0.0000	0.0000
22	S	8.14	.17	.12	10.66	6.21	-1.26	1.05	-.01738	.00071	0.000000	0.000000	-.1663	.0076	0.0000	0.0000
23	S	8.51	.17	.13	11.63	5.47	-1.35	.92	-.01712	.00071	0.000000	0.000000	-.1634	.0076	0.0000	0.0000
24	QF2	8.86	.18	.15	12.08	5.08	.08	.19	-.01651	.00277	0.000000	0.000000	-.1572	.0275	0.0000	0.0000
25	QF2	9.22	.18	.16	11.52	5.20	1.49	-.51	-.01519	.00472	0.000000	0.000000	-.1443	.0461	0.0000	0.0000
26	S	9.59	.19	.17	10.45	5.61	1.39	-.60	-.01343	.00472	0.000000	0.000000	-.1271	.0461	0.0000	0.0000
27	S	9.96	.19	.18	9.45	6.10	1.28	-.69	-.01167	.00472	0.000000	0.000000	-.1099	.0461	0.0000	0.0000
28	S	10.33	.20	.19	8.54	6.65	1.18	-.79	-.00991	.00472	0.000000	0.000000	-.0927	.0461	0.0000	0.0000
29	S	10.71	.21	.20	7.70	7.27	1.07	-.88	-.00815	.00472	0.000000	0.000000	-.0755	.0461	0.0000	0.0000
30	S	11.08	.22	.20	6.93	7.96	.97	-.97	-.00639	.00472	0.000000	0.000000	-.0582	.0461	0.0000	0.0000
31	S	11.45	.22	.21	6.25	8.71	.86	-1.06	-.00463	.00472	0.000000	0.000000	-.0410	.0461	0.0000	0.0000
32	S	11.83	.23	.22	5.64	9.54	.76	-1.15	-.00287	.00472	0.000000	0.000000	-.0238	.0461	0.0000	0.0000
33	S	12.20	.25	.22	5.11	10.43	.66	-1.24	-.00111	.00472	0.000000	0.000000	-.0066	.0461	0.0000	0.0000
34	S	12.57	.26	.23	4.66	11.39	.55	-1.33	.00065	.00472	0.000000	0.000000	.0106	.0461	0.0000	0.0000
35	S	12.95	.27	.23	4.29	12.41	.45	-1.42	.00241	.00472	0.000000	0.000000	.0278	.0461	0.0000	0.0000
36	QD2	13.30	.28	.24	4.21	12.84	-.20	.23	.00413	.00514	0.000000	0.000000	.0447	.0509	0.0000	0.0000
37	QD2	13.65	.30	.24	4.58	12.10	-.88	1.83	.00604	.00581	0.000000	0.000000	.0638	.0581	0.0000	0.0000
38	R	14.01	.31	.25	5.28	10.81	-1.03	1.70	.00817	.00581	0.000000	0.000000	.0851	.0581	0.0000	0.0000
39	R	14.38	.32	.25	6.09	9.61	-1.17	1.57	.01030	.00581	0.000000	0.000000	.1064	.0581	0.0000	0.0000
40	R	14.75	.33	.26	7.00	8.51	-1.31	1.44	.01243	.00581	0.000000	0.000000	.1277	.0581	0.0000	0.0000
41	R	15.11	.34	.27	8.01	7.50	-1.46	1.30	.01456	.00581	0.000000	0.000000	.1490	.0581	0.0000	0.0000
42	R	15.48	.34	.27	9.13	6.60	-1.60	1.17	.01670	.00581	0.000000	0.000000	.1703	.0581	0.0000	0.0000
43	R	15.85	.35	.28	10.36	5.79	-1.74	1.04	.01883	.00581	0.000000	0.000000	.1917	.0581	0.0000	0.0000
44	R	16.21	.35	.29	11.68	5.07	-1.88	.91	.02096	.00581	0.000000	0.000000	.2130	.0581	0.0000	0.0000
45	R	16.58	.36	.31	13.12	4.45	-2.03	.78	.02309	.00581	0.000000	0.000000	.2343	.0581	0.0000	0.0000
46	R	16.95	.36	.32	14.66	3.93	-2.17	.64	.02522	.00581	0.000000	0.000000	.2556	.0581	0.0000	0.0000
47	R	17.32	.37	.34	16.30	3.51	-2.31	.51	.02735	.00581	0.000000	0.000000	.2769	.0581	0.0000	0.0000
48	QF3	17.73	.37	.36	17.34	3.33	-.15	-.07	.02900	.00211	0.000000	0.000000	.2932	.0203	0.0000	0.0000
49	QF3	18.14	.37	.38	16.53	3.62	2.05	-.66	.02909	-.00169	0.000000	0.000000	.2936	-.0185	0.0000	0.0000

POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
50	Z	18.50	.38	.39	15.10	4.15	1.94	-.80	.02847	-.00169	0.000000	0.000000	.2869	-.0185	0.0000	0.0000
51	Z	18.86	.38	.40	13.74	4.77	1.82	-.94	.02786	-.00169	0.000000	0.000000	.2802	-.0185	0.0000	0.0000
52	Z	19.22	.39	.41	12.47	5.50	1.71	-1.08	.02725	-.00169	0.000000	0.000000	.2736	-.0185	0.0000	0.0000
53	Z	19.58	.39	.42	11.28	6.34	1.60	-1.23	.02664	-.00169	0.000000	0.000000	.2669	-.0185	0.0000	0.0000
54	Z	19.95	.40	.43	10.17	7.27	1.48	-1.37	.02603	-.00169	0.000000	0.000000	.2602	-.0185	0.0000	0.0000
55	Z	20.31	.40	.44	9.14	8.31	1.37	-1.51	.02542	-.00169	0.000000	0.000000	.2535	-.0185	0.0000	0.0000
56	Z	20.67	.41	.45	8.19	9.45	1.26	-1.65	.02481	-.00169	0.000000	0.000000	.2468	-.0185	0.0000	0.0000
57	Z	21.03	.42	.45	7.33	10.70	1.14	-1.80	.02420	-.00169	0.000000	0.000000	.2401	-.0185	0.0000	0.0000
58	Z	21.39	.42	.46	6.54	12.04	1.03	-1.94	.02359	-.00169	0.000000	0.000000	.2335	-.0185	0.0000	0.0000
59	Z	21.75	.43	.46	5.84	13.49	.92	-2.08	.02298	-.00169	0.000000	0.000000	.2268	-.0185	0.0000	0.0000
60	QD3	22.16	.45	.47	5.44	14.50	.08	-.30	.02289	.00128	0.000000	0.000000	.2253	.0111	0.0000	0.0000
61	QD3	22.58	.46	.47	5.70	13.98	-.73	1.54	.02405	.00433	0.000000	0.000000	.2361	.0414	0.0000	0.0000
62	R	22.94	.47	.48	6.27	12.88	-.83	1.45	.02564	.00433	0.000000	0.000000	.2512	.0414	0.0000	0.0000
63	R	23.31	.48	.48	6.91	11.85	-.93	1.36	.02723	.00433	0.000000	0.000000	.2664	.0414	0.0000	0.0000
64	R	23.68	.48	.49	7.63	10.88	-1.02	1.28	.02882	.00433	0.000000	0.000000	.2816	.0414	0.0000	0.0000
65	R	24.04	.49	.49	8.41	9.98	-1.12	1.19	.03041	.00433	0.000000	0.000000	.2967	.0414	0.0000	0.0000
66	R	24.41	.50	.50	9.27	9.14	-1.22	1.10	.03200	.00433	0.000000	0.000000	.3119	.0414	0.0000	0.0000
67	R	24.78	.50	.50	10.21	8.36	-1.32	1.01	.03359	.00433	0.000000	0.000000	.3271	.0414	0.0000	0.0000
68	R	25.14	.51	.51	11.21	7.66	-1.42	.92	.03518	.00433	0.000000	0.000000	.3422	.0414	0.0000	0.0000
69	R	25.51	.52	.52	12.29	7.01	-1.52	.83	.03677	.00433	0.000000	0.000000	.3574	.0414	0.0000	0.0000
70	R	25.88	.52	.53	13.43	6.43	-1.62	.74	.03836	.00433	0.000000	0.000000	.3726	.0414	0.0000	0.0000
71	R	26.24	.52	.54	14.66	5.92	-1.71	.66	.03995	.00433	0.000000	0.000000	.3878	.0414	0.0000	0.0000
72	QF	26.59	.53	.55	15.27	5.72	-.02	-.08	.04066	-.00030	0.000000	0.000000	.3943	-.0040	0.0000	0.0000
73	QF	26.94	.53	.56	14.68	6.04	1.68	-.83	.03974	-.00492	0.000000	0.000000	.3850	-.0492	0.0000	0.0000
74	DO	27.98	.54	.58	11.48	8.06	1.41	-1.12	.03465	-.00492	0.000000	0.000000	.3340	-.0492	0.0000	0.0000
75	B	29.64	.57	.61	7.52	12.47	.98	-1.52	.10393	.08848	0.000000	0.000000	1.8010	1.8188	0.0000	0.0000
76	DO	30.68	.60	.62	5.78	15.90	.71	-1.80	.19555	.08848	0.000000	0.000000	3.6842	1.8188	0.0000	0.0000
77	QD	31.03	.61	.62	5.53	16.54	.00	.00	.23058	.11206	0.000000	0.000000	4.3992	2.2746	0.0000	0.0000
78	QD	31.38	.62	.63	5.78	15.90	-.71	1.81	.27461	.14000	0.000000	0.000000	5.2894	2.8210	0.0000	0.0000
79	DO	32.41	.64	.64	7.52	12.44	-.98	1.53	.41957	.14000	0.000000	0.000000	8.2103	2.8210	0.0000	0.0000
80	B	34.07	.67	.66	11.47	8.01	-1.41	1.12	.72947	.23333	0.000000	0.000000	14.4395	4.6883	0.0000	0.0000
81	D	34.81	.68	.68	13.68	6.51	-1.60	.92	.90108	.23333	0.000000	0.000000	17.8874	4.6883	0.0000	0.0000
82	SF	34.81	.68	.68	13.68	6.51	-1.56	.90	.90108	.23113	0.000000	0.000000	17.8874	4.6663	0.0000	0.0000
83	DS	35.11	.68	.69	14.64	6.00	-1.64	.82	.97042	.23113	0.000000	0.000000	19.2873	4.6663	0.0000	0.0000
84	QF	35.46	.69	.70	15.20	5.69	.05	.07	1.03170	.11729	0.000000	0.000000	20.5223	2.3566	0.0000	0.0000
85	QF	35.81	.69	.71	14.57	5.90	1.74	-.66	1.05212	-.00119	0.000000	0.000000	20.9282	-.0483	0.0000	0.0000
86	QS	36.11	.69	.71	13.55	6.32	1.66	-.74	1.05176	-.00119	0.000000	0.000000	20.9138	-.0483	0.0000	0.0000
87	SF	36.11	.69	.71	13.55	6.32	1.70	-.75	1.05176	-.00420	0.000000	0.000000	20.9138	-.0784	0.0000	0.0000
88	D	36.85	.70	.73	11.21	7.56	1.48	-.94	1.04867	-.00420	0.000000	0.000000	20.8561	-.0784	0.0000	0.0000
89	LC	38.51	.73	.76	7.07	11.36	1.01	-1.35	1.04170	-.00420	0.000000	0.000000	20.7258	-.0784	0.0000	0.0000
90	D	39.24	.75	.77	5.73	13.48	.80	-1.53	1.03861	-.00420	0.000000	0.000000	20.6682	-.0784	0.0000	0.0000
91	SD	39.24	.75	.77	5.73	13.48	.78	-1.47	1.03861	.00025	0.000000	0.000000	20.6682	-.0337	0.0000	0.0000
92	DS	39.54	.76	.77	5.29	14.38	.69	-1.54	1.03868	.00025	0.000000	0.000000	20.6580	-.0337	0.0000	0.0000
93	QD	39.89	.77	.78	5.04	14.90	.03	.08	1.05902	.11620	0.000000	0.000000	21.0572	2.3187	0.0000	0.0000
94	QD	40.24	.78	.78	5.25	14.27	-.62	1.69	1.12065	.23668	0.000000	0.000000	22.2943	4.7634	0.0000	0.0000
95	DS	40.54	.79	.78	5.65	13.28	-.70	1.61	1.19165	.23668	0.000000	0.000000	23.7233	4.7634	0.0000	0.0000
96	SD	40.54	.79	.78	5.65	13.28	-.73	1.68	1.19165	.24253	0.000000	0.000000	23.7233	4.8222	0.0000	0.0000
97	D	41.28	.81	.79	6.87	10.97	-.93	1.47	1.37002	.24253	0.000000	0.000000	27.2697	4.8222	0.0000	0.0000
98	LC	42.94	.84	.82	10.71	6.89	-1.38	.99	1.77273	.24253	0.000000	0.000000	35.2766	4.8222	0.0000	0.0000
99	D	43.67	.85	.84	12.89	5.59	-1.58	.78	1.95110	.24253	0.000000	0.000000	38.8230	4.8222	0.0000	0.0000

PRYOR CORP. 14852G6

	POS		S (M)	QX	QY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
1	100	SF	43.67	.85	.84	12.89	5.59	-1.51	.75	1.95110	.23219	0.000000	0.000000	38.8230	4.7183	0.0000	0.0000
2	101	QS	43.97	.86	.85	13.82	5.16	-1.59	.66	2.02075	.23219	0.000000	0.000000	40.2385	4.7183	0.0000	0.0000
3	102	QF	44.32	.86	.86	14.38	4.93	.01	.01	2.06162	.00007	0.000000	0.000000	41.0684	.0010	0.0000	0.0000
4	103	QF	44.67	.86	.87	13.81	5.16	1.60	-.65	2.02080	-.23205	0.000000	0.000000	40.2392	-4.7163	0.0000	0.0000
5	104	QS	44.97	.87	.88	12.87	5.57	1.52	-.74	1.95118	-.23205	0.000000	0.000000	38.8243	-4.7163	0.0000	0.0000
6																	
7	105	SF	44.97	.87	.88	12.87	5.57	1.59	-.77	1.95118	-.24240	0.000000	0.000000	38.8243	-4.8203	0.0000	0.0000
8	106	Q	45.71	.88	.90	10.68	6.85	1.39	-.97	1.77292	-.24240	0.000000	0.000000	35.2793	-4.8203	0.0000	0.0000
9	107	B	47.37	.91	.93	6.81	10.81	.93	-1.39	1.44719	-.14907	0.000000	0.000000	28.8236	-2.9529	0.0000	0.0000
10	108	Q	48.11	.93	.94	5.59	13.01	.73	-1.59	1.33756	-.14907	0.000000	0.000000	26.6519	-2.9529	0.0000	0.0000
11	109	SD	48.11	.93	.94	5.59	13.01	.70	-1.52	1.33756	-.14169	0.000000	0.000000	26.6519	-2.8786	0.0000	0.0000
12																	
13	110	QS	48.41	.94	.95	5.19	13.94	.62	-1.60	1.29505	-.14169	0.000000	0.000000	25.7883	-2.8786	0.0000	0.0000
14	111	QD	48.76	.95	.95	4.99	14.52	-.03	-.02	1.27033	.00011	0.000000	0.000000	25.2857	.0016	0.0000	0.0000
15	112	QD	49.11	.96	.95	5.23	13.97	-.68	1.56	1.29513	.14191	0.000000	0.000000	25.7894	2.8818	0.0000	0.0000
16	113	QS	49.41	.97	.96	5.67	13.06	-.77	1.48	1.33771	.14191	0.000000	0.000000	26.6540	2.8818	0.0000	0.0000
17	114	SD	49.41	.97	.96	5.67	13.06	-.80	1.56	1.33771	.14930	0.000000	0.000000	26.6540	2.9561	0.0000	0.0000
18																	
19	115	Q	50.15	.99	.97	7.00	10.91	-1.01	1.36	1.44750	.14930	0.000000	0.000000	28.8280	2.9561	0.0000	0.0000
20	116	B	51.81	1.02	1.00	11.16	7.02	-1.49	.96	1.77361	.24263	0.000000	0.000000	35.2891	4.8235	0.0000	0.0000
21	117	Q	52.54	1.02	1.02	13.51	5.75	-1.70	.76	1.95204	.24263	0.000000	0.000000	38.8364	4.8235	0.0000	0.0000
22	118	SF	52.54	1.02	1.02	13.51	5.75	-1.63	.73	1.95204	.23227	0.000000	0.000000	38.8364	4.7194	0.0000	0.0000
23	119	QS	52.84	1.03	1.03	14.51	5.34	-1.71	.65	2.02172	.23227	0.000000	0.000000	40.2522	4.7194	0.0000	0.0000
24																	
25	120	QF	53.19	1.03	1.04	15.13	5.12	-.03	-.03	2.06260	.00004	0.000000	0.000000	41.0823	.0006	0.0000	0.0000
26	121	QF	53.55	1.04	1.05	14.56	5.38	1.65	-.71	2.02175	-.23219	0.000000	0.000000	40.2526	-4.7183	0.0000	0.0000
27	122	QS	53.85	1.04	1.06	13.59	5.83	1.57	-.79	1.95209	-.23219	0.000000	0.000000	38.8371	-4.7183	0.0000	0.0000
28	123	SF	53.85	1.04	1.06	13.59	5.83	1.65	-.82	1.95209	-.24255	0.000000	0.000000	38.8371	-4.8224	0.0000	0.0000
29	124	Q	54.58	1.05	1.07	11.32	7.19	1.44	-1.03	1.77372	-.24255	0.000000	0.000000	35.2906	-4.8224	0.0000	0.0000
30																	
31	125	B	56.24	1.08	1.10	7.26	11.36	.99	-1.45	1.44775	-.14922	0.000000	0.000000	28.8314	-2.9550	0.0000	0.0000
32	126	Q	56.98	1.10	1.11	5.95	13.65	.79	-1.66	1.33801	-.14922	0.000000	0.000000	26.6581	-2.9550	0.0000	0.0000
33	127	SD	56.98	1.10	1.11	5.95	13.65	.76	-1.58	1.33801	-.14183	0.000000	0.000000	26.6581	-2.8807	0.0000	0.0000
34	128	QS	57.28	1.10	1.12	5.52	14.62	.68	-1.66	1.29546	-.14183	0.000000	0.000000	25.7939	-2.8807	0.0000	0.0000
35	129	QD	57.63	1.11	1.12	5.29	15.21	-.00	-.00	1.27069	.00001	0.000000	0.000000	25.2907	.0001	0.0000	0.0000
36																	
37	130	QD	57.98	1.12	1.12	5.53	14.62	-.69	1.65	1.29547	.14185	0.000000	0.000000	25.7940	2.8809	0.0000	0.0000
38	131	QS	58.28	1.13	1.13	5.97	13.66	-.77	1.57	1.33803	.14185	0.000000	0.000000	26.6583	2.8809	0.0000	0.0000
39	132	SD	58.28	1.13	1.13	5.97	13.66	-.80	1.65	1.33803	.14924	0.000000	0.000000	26.6583	2.9552	0.0000	0.0000
40	133	Q	59.02	1.15	1.14	7.29	11.33	-1.00	1.45	1.44778	.14924	0.000000	0.000000	28.8316	2.9552	0.0000	0.0000
41	134	B	60.68	1.18	1.17	11.39	7.22	-1.46	1.03	1.77379	.24257	0.000000	0.000000	35.2912	4.8226	0.0000	0.0000
42																	
43	135	Q	61.42	1.19	1.18	13.68	5.86	-1.66	.82	1.95218	.24257	0.000000	0.000000	38.8379	4.8226	0.0000	0.0000
44	136	SF	61.42	1.19	1.18	13.68	5.86	-1.59	.79	1.95218	.23221	0.000000	0.000000	38.8379	4.7185	0.0000	0.0000
45	137	QS	61.72	1.19	1.19	14.66	5.41	-1.66	.71	2.02185	.23221	0.000000	0.000000	40.2534	4.7185	0.0000	0.0000
46	138	QF	62.07	1.20	1.20	15.24	5.16	.03	.02	2.06270	-.00003	0.000000	0.000000	41.0831	-.0005	0.0000	0.0000
47	139	QF	62.42	1.20	1.21	14.62	5.38	1.72	-.66	2.02183	-.23227	0.000000	0.000000	40.2531	-4.7194	0.0000	0.0000
48																	
49	140	QS	62.72	1.20	1.22	13.61	5.80	1.64	-.74	1.95214	-.23227	0.000000	0.000000	38.8373	-4.7194	0.0000	0.0000
50	141	SF	62.72	1.20	1.22	13.61	5.80	1.71	-.77	1.95214	-.24263	0.000000	0.000000	38.8373	-4.8235	0.0000	0.0000
51	142	Q	63.45	1.21	1.24	11.25	7.08	1.50	-.97	1.77371	-.24263	0.000000	0.000000	35.2899	-4.8235	0.0000	0.0000
52	143	B	65.11	1.24	1.27	7.06	10.99	1.02	-1.37	1.44761	-.14930	0.000000	0.000000	28.8289	-2.9561	0.0000	0.0000
53	144	Q	65.85	1.26	1.28	5.71	13.15	.81	-1.56	1.33781	-.14930	0.000000	0.000000	26.6548	-2.9561	0.0000	0.0000
54																	
55	145	SD	65.85	1.26	1.28	5.71	13.15	.77	-1.49	1.33781	-.14191	0.000000	0.000000	26.6548	-2.8818	0.0000	0.0000
56	146	QS	66.15	1.27	1.28	5.27	14.07	.69	-1.56	1.29523	-.14191	0.000000	0.000000	25.7903	-2.8818	0.0000	0.0000
57	147	QD	66.50	1.28	1.29	5.02	14.61	.03	.03	1.27043	-.00010	0.000000	0.000000	25.2866	-.0015	0.0000	0.0000
58	148	QD	66.85	1.29	1.29	5.23	14.03	-.62	1.61	1.29516	.14171	0.000000	0.000000	25.7892	2.8788	0.0000	0.0000
59	149	QS	67.15	1.30	1.29	5.62	13.09	-.70	1.53	1.33767	.14171	0.000000	0.000000	26.6529	2.8788	0.0000	0.0000

POS		S (M)	DX	DY	BX (M)	BY (M)	AX	AY	EX (M)	EXP	EY (M)	EYP	XCO (MM)	DXCO (MR)	YCO (MM)	DYCO (MR)
150	SD	67.15	1.30	1.29	5.62	13.03	-.73	1.61	1.33767	.14910	0.000000	0.000000	26.6529	2.9531	0.0000	0.0000
151	D	67.89	1.32	1.30	6.84	10.87	-.93	1.41	1.44732	.14910	0.000000	0.000000	28.8247	2.9531	0.0000	0.0000
152	B	69.55	1.35	1.34	10.69	6.47	-1.38	.98	1.77309	.24242	0.000000	0.000000	35.2808	4.8205	0.0000	0.0000
153	D	70.29	1.36	1.35	12.88	5.58	-1.58	.77	1.95137	.24242	0.000000	0.000000	38.8259	4.8205	0.0000	0.0000
154	SF	70.29	1.36	1.35	12.88	5.58	-1.52	.74	1.95137	.23208	0.000000	0.000000	38.8259	4.7165	0.0000	0.0000
155	QS	70.59	1.36	1.36	13.81	5.16	-1.59	.66	2.02100	-.23208	0.000000	0.000000	40.2408	4.7165	0.0000	0.0000
156	QF	70.94	1.37	1.37	14.37	4.93	.00	.00	2.06182	-.00007	0.000000	0.000000	41.0701	-.0010	0.0000	0.0000
157	QF	71.29	1.37	1.39	13.81	5.16	1.60	-.66	2.02095	-.23221	0.000000	0.000000	40.2401	-4.7185	0.0000	0.0000
158	QS	71.59	1.38	1.39	12.87	5.57	1.52	-.74	1.95128	-.23221	0.000000	0.000000	38.8246	-4.7185	0.0000	0.0000
159	SF	71.59	1.38	1.39	12.87	5.57	1.59	-.77	1.95128	-.24256	0.000000	0.000000	38.8246	-4.8224	0.0000	0.0000
160	D	72.32	1.39	1.41	10.68	6.86	1.39	-.98	1.77290	-.24256	0.000000	0.000000	35.2780	-4.8224	0.0000	0.0000
161	B	73.99	1.42	1.44	6.83	10.84	.93	-1.40	1.44691	-.14923	0.000000	0.000000	28.8186	-2.9551	0.0000	0.0000
162	B	74.72	1.44	1.45	5.60	13.05	.73	-1.60	1.33716	-.14923	0.000000	0.000000	26.6453	-2.9551	0.0000	0.0000
163	SD	74.72	1.44	1.45	5.60	13.05	.70	-1.53	1.33716	-.14185	0.000000	0.000000	26.6453	-2.8808	0.0000	0.0000
164	QS	75.02	1.44	1.46	5.21	13.99	.62	-1.60	1.29461	-.14185	0.000000	0.000000	25.7811	-2.8808	0.0000	0.0000
165	QD	75.37	1.46	1.46	5.00	14.56	-.03	-.02	1.26982	-.00011	0.000000	0.000000	25.2776	-.0015	0.0000	0.0000
166	QD	75.72	1.47	1.47	5.25	14.02	-.69	1.56	1.29453	.14163	0.000000	0.000000	25.7800	2.8777	0.0000	0.0000
167	QS	76.02	1.48	1.47	5.69	13.11	-.77	1.49	1.33702	.14163	0.000000	0.000000	26.6433	2.8777	0.0000	0.0000
168	SD	76.02	1.48	1.47	5.69	13.11	-.80	1.56	1.33702	.14901	0.000000	0.000000	26.6433	2.9520	0.0000	0.0000
169	B	76.76	1.49	1.48	7.03	10.95	-1.02	1.37	1.44661	.14901	0.000000	0.000000	28.8143	2.9520	0.0000	0.0000
170	B	78.42	1.52	1.51	11.20	7.05	-1.50	.97	1.77224	.24234	0.000000	0.000000	35.2685	4.8193	0.0000	0.0000
171	D	79.16	1.53	1.53	13.56	5.78	-1.71	.76	1.95047	.24234	0.000000	0.000000	38.8128	4.8193	0.0000	0.0000
172	SF	79.16	1.53	1.53	13.56	5.78	-1.63	.73	1.95047	.23200	0.000000	0.000000	38.8128	4.7154	0.0000	0.0000
173	QS	79.46	1.54	1.54	14.56	5.36	-1.72	.65	2.02007	.23200	0.000000	0.000000	40.2274	4.7154	0.0000	0.0000
174	QF	79.81	1.54	1.55	15.19	5.14	-.03	-.02	2.06088	-.00004	0.000000	0.000000	41.0566	-.0005	0.0000	0.0000
175	QF	80.16	1.54	1.56	14.61	5.40	1.66	-.71	2.02004	-.23207	0.000000	0.000000	40.2271	-4.7164	0.0000	0.0000
176	QS	80.46	1.55	1.57	13.64	5.85	1.58	-.79	1.95042	-.23207	0.000000	0.000000	38.8121	-4.7164	0.0000	0.0000
177	SF	80.46	1.55	1.57	13.64	5.85	1.65	-.82	1.95042	-.24241	0.000000	0.000000	38.8121	-4.8203	0.0000	0.0000
178	D	81.19	1.56	1.58	11.35	7.21	1.45	-1.03	1.77214	-.24241	0.000000	0.000000	35.2671	-4.8203	0.0000	0.0000
179	B	82.86	1.59	1.61	7.28	11.37	1.00	-1.45	1.44640	-.14908	0.000000	0.000000	28.8112	-2.9530	0.0000	0.0000
180	D	83.59	1.60	1.62	5.96	13.65	.80	-1.65	1.33676	-.14908	0.000000	0.000000	26.6395	-2.9530	0.0000	0.0000
181	SD	83.59	1.60	1.62	5.96	13.65	.76	-1.58	1.33676	-.14171	0.000000	0.000000	26.6395	-2.8788	0.0000	0.0000
182	QS	83.89	1.61	1.63	5.53	14.62	.68	-1.65	1.29425	-.14171	0.000000	0.000000	25.7759	-2.8788	0.0000	0.0000
183	QD	84.24	1.62	1.63	5.29	15.21	-.00	.00	1.26950	.00000	0.000000	0.000000	25.2730	-.0000	0.0000	0.0000
184	REFL	158.48	3.25	3.26	17.61	6.38	.00	-.00	-.04374	.00000	0.000000	0.000000	-.4298	0.0000	0.0000	0.0000

CIRCUMFERENCE = 505.4538 M THETX = 6.28318638 RAD NUX = 9.73708 DNUX/(DP/P) = .47056
(DS/S)/RHOZBS = .0079085 M THETY(183) = 0.00000000 RAD NUY = 9.77853 DNUY/(DP/P) = .28502
TGAM = (7.58479, 0.00000)

MAXIMA --- BETX(184) = 17.60977 BETY(12) = 17.91103 ETAX(138) = 2.06270 ETAY(184) = 0.00000
MINIMA --- BETX(36) = 4.20509 BETY(48) = 3.32724 ETAX(34) = .00065 ETAY(184) = 0.00000

*** INCR 1 // DP 0.000000 VALUE = -.020000

*** FIN 0 0 // CORE USE SUMMARY

		MAXIMUM	USED	UNUSED
STORE	(ELEMENT STORAGE)	9600 (LMAX)	1911	7689
INFF	(ELEMENT DEFINITIONS)	400 (MAX)	79	321

END OF SYNCH RUN DRSM
15.03.03.HYJ11,T1000,HP.
15.03.03.JOB CLASS = P3, PRIORITY = HP.
15.03.03.USER,91046,.
15.03.03.CHARGE,G112.