Fermilab

UPC No. 97

Normal Doubler Lattice

Attached is a SYNCH output for the present, normal doubler lattice. This has been designed by T. Collins and is for the case of the new, shorter dipoles. The integrated dipole field, when cooled down, has been taken to be 241". Changes in this length will slightly change the lattice, but hopefully not by too much.

This lattice has two high-beta sections at long straights F and A for extraction, and the values given are for 1000 GeV.

D.E. Johnson
March 23, 1979

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                DOUBLER LATTICE USING TWO SHELL NORMAL QUADS AND SPECIAL
                LENGTH MATCHING QUADS.  ALL QUADS RUN AT SAME EXCITATION
                CORRESPONDING TO THE 35 TURN DIPOLE.

                21 FOOT DIPOLES

                LATTICE WITH COLLIN'S HIGH BETA IN SECTS. F & A

                ALL QUANTITIES GIVEN AT THE END OF THE ELEMENT.
                ALL QUANTITIES IN UNITS OF M, KG, KG/M, KG-M.

                23 MAR 79 DE JOHNSON

***  BRHO    =          //  33387.702
***  BZ      =          //  44.27664
***  GF      =          //  760.32056
***  GD      =          //  -760.32056
***  BL      =          //  6.1214
***  QL      =          //  1.67894
***  QLS     =          //  0.8146
***  O       DRF        //  0.2794
***  OO      DRF        //  2.29616
***  OOO     DRF        //  0.4445
                NORMAL CELL
***  B       MAG        //  BL        O.        BRHO      BZ        $
***  QF      MAG        //  QL        QF        BRHO
***  QD      MAG        //  QL        QD        BRHO
                HALF CELL
***  .HC     BML        //  OO   B    O    B    O    B    O    B    OOO
***  HC      MMM        //  .HC
                MEDIUM STRAIGHT
***  MS1     DRF        //  14.67866
***  MS2     DRF        //  0.8636
                REGULAR LATTICE
***  QFS     MAG        //  QLS       QF        BRHO
***  QDS     MAG        //  QLS       QD        BRHO
***  .NC     BML        //    2( HC   QD   HC   QF       ) MS1  B    O    B    MS2   12(
  *                     //  QD   HC   QF   HC       )
                LONG STRAIGHT
***  QL1     =          //  2.1011
***  QL2     =          //  2.5248
***  D1      DRF        //  8.1915
***  D2      DRF        //  3.8191
***  D3      DRF        //  1.7907
***  LS      DRF        //  26.5970
***  Q1      MAG        //  QL1       QF        BRHO
***  Q2      MAG        //  QL2       QD        BRHO
***  -Q1     MAG        //  QL1       QD        BRHO
***  -Q2     MAG        //  QL2       QF        BRHO
                LONG STRAIGHT LATTICE
***  .LSS    BML        //  QFS  D1   B    O    B    O    B    OOO  Q1   D2   Q2   LS
  *                     //  LS   -Q2  D2   -Q1  D3   B    O    B    O    B    O    B
  *                     //  OOO  QDS  HC

                HIGH BETA LONG STRAIGHT F & A
***  QHL1    =          //  0.6477
***  QHL2    =          //  2.2908
***  QHL3    =          //  2.5248
***  QH1     MAG        //  QHL1      QF        BRHO
***  QH2     MAG        //  QHL2      QD        BRHO
***  QH3     MAG        //  QHL3      QF        BRHO
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***   -QH3    MAG             //  QHL3        GD          BRHO
***   -QH2    MAG             //  QHL2        GF          BRHO
***   -QH1    MAG             //  QHL1        GD          BRHO
***   DH1     DRF             //  8.1359
***   DH2     DRF             //  3.8519
***   DH3     DRF             //  1.7351
***   LSF     DRF             //  26.5970

***   .LSF    BML             //  QH1  DH1  B    0    B    0    B    000  QH2  DH2  QH3  LSF
  *                           //  LSF  -QH3 DH2  -QH2 DH3  B    0    B    0    B    0    B
  *                           //  000  -QH1 HC
                    HIGH BETA LONG STRAIGHT A
***   LSA     DRF             //  26.5970

***   .LSA    BML             //  QH1  DH1  B    0    B    0    B    000  QH2  DH2  QH3  LSA
  *                           //  LSA  -QH3 DH2  -QH2 DH3  B    0    B    0    B    0    B
  *                           //  000  -QH1 HC

***           PAGE            //
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*** RING CYC // 4(.NC QD HC .LSS QF) .NC QD HC .LSF QF
* // .NC QD HC .LSA QF

POS		S	PSIX	BETAX	ALPHAX	XEQ	DXEQ	PSIY	BETAY	ALPHAY	YEQ	DYEQ
0		0.0000	0.00000	97.974272	1.87454	1.852962	-.03031	0.00000	28.902623	-.57714	0.00000	0.00000
1	HC	28.0645	.08817	29.045773	.58156	1.428016	.00216	.08861	97.551289	-1.86782	0.00000	0.00000
2	QD	29.7434	.09747	29.045739	-.58154	1.477769	.05742	.09132	97.556027	1.86506	0.00000	0.00000
3	HC	57.8079	.18564	97.972487	-1.87450	3.514768	.08989	.17978	28.984476	.57751	0.00000	0.00000
4	QF	59.4868	.18834	97.972402	1.87455	3.551872	-.04593	.18911	28.994419	-.58356	0.00000	0.00000
5	HC	87.5513	.27652	29.044397	.58153	2.688507	-.01346	.27729	98.090644	-1.87734	0.00000	0.00000
6	QD	89.2302	.28582	29.044365	-.58151	2.752424	.09000	.27998	98.092409	1.87631	0.00000	0.00000
7	HC	117.2947	.37400	97.970700	-1.87451	5.703874	.12247	.36810	29.029454	.58376	0.00000	0.00000
8	QF	118.9736	.37669	97.970761	1.87448	5.725215	-.09719	.37741	29.020955	-.57859	0.00000	0.00000
9	MS1	133.6523	.40938	52.867889	1.19821	4.298607	-.09719	.43677	55.916751	-1.25371	0.00000	0.00000
10	B	139.7737	.43065	39.924963	.91619	3.728525	-.08907	.45204	72.984958	-1.53448	0.00000	0.00000
11	O	140.0531	.43177	39.416593	.90332	3.703639	-.08907	.45265	73.846014	-1.54732	0.00000	0.00000
12	B	146.1745	.46022	30.083922	.62130	3.183249	-.08095	.46432	94.506394	-1.82767	0.00000	0.00000
13	MS2	147.0381	.46487	29.045177	.58151	3.113338	-.08095	.46575	97.697405	-1.86734	0.00000	0.00000
14	QD	148.7170	.47417	29.045268	-.58157	3.076424	.03675	.46846	97.691160	1.87098	0.00000	0.00000
15	HC	176.7815	.56234	97.975082	-1.87458	4.533251	.06922	.55697	28.915794	.57885	0.00000	0.00000
16	QF	178.4604	.56504	97.975099	1.87457	4.503501	-.10447	.56632	28.916994	-.57958	0.00000	0.00000
17	HC	206.5249	.65321	29.045545	.58157	1.997312	-.07200	.65480	97.761990	-1.87237	0.00000	0.00000
18	QD	208.2038	.66251	29.045468	-.58152	1.939589	.00287	.65750	97.768312	1.86868	0.00000	0.00000
19	HC	236.2683	.75069	97.970995	-1.87448	2.445597	.03534	.74579	29.023807	.58005	0.00000	0.00000
20	QF	237.9472	.75338	97.970921	1.87452	2.426218	-.05830	.75510	29.027547	-.58232	0.00000	0.00000
21	HC	266.0117	.84156	29.044288	.58152	1.215720	-.02583	.84328	97.973912	-1.87324	0.00000	0.00000
22	QD	267.6906	.85086	29.044308	-.58153	1.211123	.02032	.84598	97.969534	1.87579	0.00000	0.00000
23	HC	295.7551	.93904	97.971962	-1.87454	2.206985	.05279	.93427	28.965783	.58218	0.00000	0.00000
24	QF	297.4340	.94174	97.972051	1.87449	2.224217	-.03237	.94360	28.958774	-.57791	0.00000	0.00000
25	HC	325.4985	1.02991	29.045716	.58153	1.741234	.00010	1.03209	97.604987	-1.86696	0.00000	0.00000
26	QD	327.1774	1.03921	29.045766	-.58156	1.797585	.06739	1.03479	97.603409	1.86788	0.00000	0.00000
27	HC	355.2419	1.12738	97.974667	-1.87455	4.114362	.09986	1.12331	28.941099	.57793	0.00000	0.00000
28	QF	356.9208	1.13008	97.974614	1.87458	4.148883	-.05896	1.13265	28.946986	-.58151	0.00000	0.00000
29	HC	384.9853	1.21825	29.044932	.58156	2.919864	-.02649	1.22099	97.922876	-1.87510	0.00000	0.00000
30	QD	386.6642	1.22755	29.044842	-.58150	2.969136	.08549	1.22369	97.927977	1.87213	0.00000	0.00000
31	HC	414.7287	1.31573	97.969834	-1.87447	5.794044	.11797	1.31188	29.034572	.58190	0.00000	0.00000
32	QF	416.4076	1.31843	97.969820	1.87448	5.805017	-.10497	1.32119	29.032688	-.58076	0.00000	0.00000
33	HC	444.4721	1.40660	29.044625	.58150	3.284835	-.07249	1.40943	97.835283	-1.86968	0.00000	0.00000
34	QD	446.1510	1.41590	29.044704	-.58155	3.267811	.05211	1.41214	97.827992	1.87393	0.00000	0.00000
35	HC	474.2155	1.50408	97.974036	-1.87458	5.155709	.08458	1.50057	28.925020	.58044	0.00000	0.00000
36	QF	475.8944	1.50678	97.974108	1.87454	5.131601	-.11314	1.50991	28.921400	-.57824	0.00000	0.00000
37	HC	503.9589	1.59495	29.045848	.58156	2.381949	-.08067	1.59844	97.643186	-1.86932	0.00000	0.00000
38	QD	505.6378	1.60425	29.045825	-.58154	2.321916	.00877	1.60115	97.647011	1.86709	0.00000	0.00000
39	HC	533.7023	1.69242	97.972864	-1.87451	2.993748	.04125	1.68956	28.988874	.57856	0.00000	0.00000
40	QF	535.3812	1.69512	97.972774	1.87456	2.966685	-.07331	1.69888	28.995518	-.58260	0.00000	0.00000
41	HC	563.4457	1.78329	29.044407	.58154	1.334826	-.04084	1.78710	98.006649	-1.87526	0.00000	0.00000
42	QD	565.1246	1.79260	29.044361	-.58151	1.308593	.00942	1.78980	98.006901	1.87512	0.00000	0.00000
43	HC	593.1891	1.88077	97.970337	-1.87450	1.998669	.04190	1.87800	29.006726	.58272	0.00000	0.00000
44	QF	594.8680	1.88347	97.970393	1.87447	2.004453	-.03504	1.88731	29.000366	-.57885	0.00000	0.00000
45	HC	622.9325	1.97164	29.045243	.58151	1.446584	-.00257	1.97569	97.676779	-1.86709	0.00000	0.00000
46	QD	624.6114	1.98095	29.045332	-.58157	1.488899	.05325	1.97840	97.671046	1.87043	0.00000	0.00000
47	HC	652.6759	2.06912	97.975120	-1.87458	3.408823	.08572	2.06692	28.917235	.57863	0.00000	0.00000
48	QF	654.3548	2.07181	97.975130	1.87458	3.442379	-.04596	2.07627	28.919286	-.57988	0.00000	0.00000

49	HC	682.4193	2.15998	29.045490	.58157	2.573144	-.01347	2.16473	97.787040	-1.87280	0.00000	0.00000
50	QD	684.0982	2.16929	29.045408	-.58152	2.638447	.08571	2.16743	97.793475	1.86913	0.00000	0.00000
51	HC	712.1627	2.25746	97.970811	-1.87447	5.469308	.11818	2.25570	29.027900	.58035	0.00000	0.00000
52	QF	713.8416	2.26016	97.970741	1.87451	5.491000	-.09248	2.26501	29.030876	-.58216	0.00000	0.00000
53	HC	741.9061	2.34833	29.044302	.58151	3.321307	-.06000	2.35319	97.958565	-1.87274	0.00000	0.00000
54	QD	743.5850	2.35764	29.044329	-.58153	3.326653	.06641	2.35589	97.953511	1.87568	0.00000	0.00000
55	HC	771.6495	2.44581	97.972187	-1.87455	5.615901	.09888	2.44420	28.958465	.58197	0.00000	0.00000
56	QF	773.3284	2.44851	97.972277	1.87450	5.600857	-.11670	2.45353	28.951702	-.57786	0.00000	0.00000
57	HC	801.3929	2.53668	29.045753	.58154	2.751225	-.08423	2.54203	97.601978	-1.86716	0.00000	0.00000
58	QD	803.0718	2.54598	29.045796	-.58156	2.697062	.01937	2.54474	97.601256	1.86758	0.00000	0.00000
59	HC	831.1363	2.63415	97.974530	-1.87455	3.666171	.05184	2.63325	28.947515	.57792	0.00000	0.00000
60	QF	832.8152	2.63685	97.974471	1.87458	3.635236	-.08849	2.64258	28.953813	-.58175	0.00000	0.00000
61	HC	860.8797	2.72502	29.044867	.58156	1.577351	-.05602	2.73091	97.942545	-1.87532	0.00000	0.00000
62	QD	862.5586	2.73433	29.044779	-.58150	1.533184	.00313	2.73360	97.947091	1.87267	0.00000	0.00000
63	HC	890.6231	2.82250	97.969805	-1.87447	2.046509	.03560	2.82179	29.032676	.58211	0.00000	0.00000
64	QFS	891.4377	2.82381	99.550444	-.05613	2.059991	-.00254	2.82631	28.546399	.01784	0.00000	0.00000
65	D1	899.6292	2.83682	101.146168	-.13867	2.039195	-.00254	2.87100	30.605460	-.26921	0.00000	0.00000
66	B	905.7506	2.84636	103.221484	-.20036	2.048500	.00558	2.90085	35.212233	-.48334	0.00000	0.00000
67	O	906.0300	2.84679	103.334230	-.20317	2.050059	.00558	2.90211	35.485058	-.49313	0.00000	0.00000
68	B	912.1514	2.85610	106.199185	-.26486	2.109057	.01370	2.92720	42.832542	-.70713	0.00000	0.00000
69	O	912.4308	2.85651	106.347973	-.26767	2.112884	.01370	2.92824	43.230419	-.71691	0.00000	0.00000
70	B	918.5522	2.86553	110.002567	-.32935	2.221573	.02181	2.94858	53.316589	-.93072	0.00000	0.00000
71	000	918.9967	2.86617	110.297354	-.33383	2.231270	.02181	2.94990	54.150918	-.94628	0.00000	0.00000
72	Q1	921.0978	2.86928	100.929295	4.64206	2.165121	-.08425	2.95567	64.187856	-3.98973	0.00000	0.00000
73	D2	924.9169	2.87659	68.730905	3.78883	1.843351	-.08425	2.96332	98.506486	-4.99632	0.00000	0.00000
74	Q2	927.4417	2.88302	59.656810	-.02259	1.760867	.01813	2.96710	109.343537	.91382	0.00000	0.00000
75	LS	954.0387	2.94917	72.722603	-.46866	2.242953	.01813	3.01534	72.605952	.46745	0.00000	0.00000
76	LS	980.6357	2.99734	109.516166	-.91472	2.725039	.01813	3.08158	59.612293	.02109	0.00000	0.00000
77	-Q2	983.1605	3.00111	98.659294	5.00469	2.574293	-.13609	3.08801	68.688056	-3.78801	0.00000	0.00000
78	D2	986.9796	3.00874	64.283171	3.99641	2.054554	-.13609	3.09532	100.880936	-4.64143	0.00000	0.00000
79	-Q1	989.0807	3.01450	54.228128	.94850	1.867943	-.04303	3.09843	110.251446	.33208	0.00000	0.00000
80	D3	990.8714	3.01993	50.943505	.88577	1.790894	-.04303	3.10103	109.094426	.31405	0.00000	0.00000
81	B	996.9928	3.04120	41.411956	.67133	1.552353	-.03491	3.11011	105.619904	.25354	0.00000	0.00000
82	O	997.2722	3.04228	41.039549	.66155	1.542600	-.03491	3.11054	105.479015	.25072	0.00000	0.00000
83	B	1003.3936	3.06838	34.253077	.44711	1.353752	-.02679	3.11990	102.780214	.19014	0.00000	0.00000
84	O	1003.6730	3.06969	34.005965	.43732	1.346266	-.02679	3.12033	102.674748	.18733	0.00000	0.00000
85	B	1009.7944	3.10040	29.964570	.22289	1.207110	-.01867	3.12992	100.752413	.12670	0.00000	0.00000
86	O	1010.0738	3.10188	29.842754	.21310	1.201893	-.01867	3.13036	100.682401	.12388	0.00000	0.00000
87	B	1016.1952	3.13551	28.546436	-.00133	1.112429	-.01056	3.14009	99.537060	.06322	0.00000	0.00000
88	000	1016.6397	3.13799	28.554542	-.01690	1.107737	-.01056	3.14081	99.482853	.05873	0.00000	0.00000
89	QDS	1017.4543	3.14250	29.039393	-.58129.	1.107496	.00996	3.14212	97.899035	1.87575	0.00000	0.00000
90	HC	1045.5187	3.23070	97.952663	-1.87427	1.812729	.04244	3.23051	28.922476	.58125	0.00000	0.00000
91	QF	1047.1977	3.23339	97.953065	1.87403	1.825346	-.02749	3.23986	28.915982	-.57729	0.00000	0.00000
92	HC	1075.2621	3.32157	29.045737	.58132	1.479536	.00498	3.32844	97.561789	-1.86756	0.00000	0.00000
93	QD	1076.9411	3.33088	29.046522	-.58179	1.535736	.06232	3.33115	97.564987	1.86570	0.00000	0.00000
94	HC	1105.0055	3.41904	97.994689	-1.87501	3.710298	.09479	3.41963	28.973563	.57758	0.00000	0.00000
95	QF	1106.6845	3.42174	97.994867	1.87491	3.749302	-.04858	3.42895	28.982599	-.58308	0.00000	0.00000
96	HC	1134.7489	3.50989	29.049327	.58180	2.811542	-.01611	3.51717	98.051515	-1.87685	0.00000	0.00000
97	QD	1136.4279	3.51919	29.048680	-.58141	2.874931	.09202	3.51987	98.054153	1.87531	0.00000	0.00000
98	HC	1164.4923	3.60736	97.960527	-1.87410	5.883020	.12449	3.60800	29.031406	.58333	0.00000	0.00000
99	QF	1166.1713	3.61006	97.959870	1.87448	5.901994	-.10201	3.61731	29.024484	-.57912	0.00000	0.00000
100	MS1	1180.8499	3.64276	52.857980	1.19814	4.404597	-.10201	3.67666	55.939150	-1.25447	0.00000	0.00000
101	B	1186.9713	3.66403	39.916143	.91608	3.804994	-.09389	3.69192	73.017200	-1.53533	0.00000	0.00000
102	O	1187.2507	3.66515	39.407833	.90321	3.778761	-.09389	3.69253	73.878732	-1.54818	0.00000	0.00000
103	B	1193.3721	3.69360	30.076670	.62116	3.228850	-.08578	3.70420	94.550165	-1.82862	0.00000	0.00000

104	MS2	1194.2357	3.69825	29.038170	.58137	3.154774	-.08578	3.70563	97.742827	-1.86830	0.00000	0.00000
105	QD	1195.9147	3.70756	29.038322	-.58146	3.111014	.03337	3.70833	97.736869	1.87177	0.00000	0.00000
106	HC	1223.9791	3.79575	97.967429	-1.87466	4.473069	.06584	3.79681	28.923837	.57940	0.00000	0.00000
107	QF	1225.6581	3.79844	97.968209	1.87421	4.439631	-.10546	3.80615	28.923680	-.57930	0.00000	0.00000
108	HC	1253.7225	3.88661	29.050633	.58150	1.905583	-.07299	3.89463	97.735694	-1.87147	0.00000	0.00000
109	QD	1255.4015	3.89591	29.051083	-.58178	1.843215	-.00170	3.89734	97.740731	1.86854	0.00000	0.00000
110	HC	1283.4659	3.98406	97.992116	-1.87477	2.220982	.03077	3.98567	29.010253	.57969	0.00000	0.00000
111	QF	1285.1449	3.98676	97.991669	1.87503	2.201184	-.05423	3.99498	29.014365	-.58220	0.00000	0.00000
112	HC	1313.2093	4.07493	29.044027	.58175	1.104980	-.02175	4.08319	97.966065	-1.87355	0.00000	0.00000
113	QD	1314.8883	4.08423	29.043232	-.58127	1.103721	.02025	4.08589	97.963244	1.87520	0.00000	0.00000
114	HC	1342.9527	4.17242	97.949439	-1.87404	2.097465	.05272	4.17416	28.977149	.58214	0.00000	0.00000
115	QF	1344.6317	4.17512	97.949298	1.87412	2.118069	-.02830	4.18349	28.970963	-.57838	0.00000	0.00000
116	HC	1372.6961	4.26331	29.041005	.58126	1.749297	.00417	4.27193	97.642364	-1.86739	0.00000	0.00000
117	QD	1374.3751	4.27261	29.041691	-.58168	1.812814	.07190	4.27464	97.639832	1.86887	0.00000	0.00000
118	HC	1402.4395	4.36078	97.985745	-1.87498	4.256232	.10437	4.36314	28.938274	.57833	0.00000	0.00000
119	QF	1404.1185	4.36348	97.986394	1.87460	4.293719	-.05996	4.37248	28.942607	-.58097	0.00000	0.00000
120	HC	1432.1829	4.45163	29.051930	.58171	3.036696	-.02748	4.46085	97.876857	-1.87416	0.00000	0.00000
121	QD	1433.8619	4.46094	29.051744	-.58160	3.088045	.08898	4.46355	97.881768	1.87130	0.00000	0.00000
122	HC	1461.9263	4.54910	97.976534	-1.87437	6.010750	.12145	4.55178	29.027206	.58135	0.00000	0.00000
123	QF	1463.6053	4.55179	97.975748	1.87483	6.020593	-.10979	4.56109	29.026731	-.58106	0.00000	0.00000
124	HC	1491.6697	4.63997	29.039338	.58156	3.365042	-.07732	4.64933	97.863804	-1.87060	0.00000	0.00000
125	QD	1493.3487	4.64928	29.038917	-.58130	3.342421	.05023	4.65203	97.857738	1.87414	0.00000	0.00000
126	HC	1521.4131	4.73747	97.953392	-1.87430	5.177565	.08270	4.74042	28.938366	.58082	0.00000	0.00000
127	QF	1523.0921	4.74017	97.953867	1.87402	5.149638	-.11579	4.74976	28.934277	-.57833	0.00000	0.00000
128	HC	1551.1565	4.82835	29.046409	.58133	2.325716	-.08332	4.83827	97.648057	-1.86894	0.00000	0.00000
129	QD	1552.8355	4.83765	29.047197	-.58181	2.259377	.00387	4.84098	97.650312	1.86763	0.00000	0.00000
130	HC	1580.8999	4.92581	97.995677	-1.87501	2.793556	.03634	4.92941	28.977017	.57857	0.00000	0.00000
131	QF	1582.5789	4.92851	97.995785	1.87494	2.764736	-.07049	4.93873	28.982925	-.58216	0.00000	0.00000
132	HC	1610.6433	5.01666	29.048895	.58181	1.212133	-.03802	5.02699	97.970943	-1.87488	0.00000	0.00000
133	QD	1612.3223	5.02597	29.048191	-.58138	1.186734	.00760	5.02969	97.972225	1.87414	0.00000	0.00000
134	HC	1640.3867	5.11414	97.958386	-1.87407	1.825562	.04007	5.11790	29.010351	.58234	0.00000	0.00000
135	QF	1642.0657	5.11684	97.957757	1.87443	1.833839	-.03026	5.12722	29.005516	-.57940	0.00000	0.00000
136	HC	1670.1301	5.20503	29.038271	.58135	1.410121	.00221	5.21556	97.722995	-1.86801	0.00000	0.00000
137	QD	1671.8091	5.21434	29.038490	-.58148	1.459370	.05677	5.21827	97.717353	1.87130	0.00000	0.00000
138	HC	1699.8735	5.30252	97.969397	-1.87471	3.478229	.08924	5.30675	28.923829	.57918	0.00000	0.00000
139	QF	1701.5525	5.30522	97.970188	1.87424	3.515425	-.04517	5.31610	28.924426	-.57954	0.00000	0.00000
140	HC	1729.6169	5.39338	29.050969	.58153	2.673287	-.01270	5.40456	97.756185	-1.87194	0.00000	0.00000
141	QD	1731.2959	5.40268	29.051360	-.58176	2.737996	.09020	5.40727	97.761460	1.86886	0.00000	0.00000
142	HC	1759.3603	5.49084	97.990952	-1.87473	5.694853	.12267	5.49558	29.014748	.57994	0.00000	0.00000
143	QF	1761.0393	5.49353	97.990450	1.87503	5.716801	-.09666	5.50489	29.018288	-.58210	0.00000	0.00000
144	HC	1789.1037	5.58170	29.043446	.58174	3.429653	-.06419	5.59310	97.956469	-1.87317	0.00000	0.00000
145	QD	1790.7827	5.59100	29.042668	-.58126	3.431393	.06627	5.59580	97.952991	1.87520	0.00000	0.00000
146	HC	1818.8471	5.67919	97.949135	-1.87405	5.716900	.09875	5.68409	28.970702	.58200	0.00000	0.00000
147	QF	1820.5261	5.68189	97.949061	1.87410	5.698410	-.12065	5.69342	28.964583	-.57828	0.00000	0.00000
148	HC	1848.5905	5.77008	29.041500	.58126	2.737940	-.08818	5.78187	97.635653	-1.86747	0.00000	0.00000
149	QD	1850.2695	5.77939	29.042221	-.58170	2.676646	.01478	5.78458	97.633828	1.86854	0.00000	0.00000
150	HC	1878.3339	5.86756	97.987344	-1.87500	3.516934	.04725	5.87308	28.943037	.57828	0.00000	0.00000
151	QF	1880.0129	5.87025	97.987951	1.87464	3.483138	-.08729	5.88242	28.947846	-.58120	0.00000	0.00000
152	HC	1908.0773	5.95841	29.051804	.58173	1.458968	-.05482	5.97077	97.896091	-1.87442	0.00000	0.00000
153	QD	1909.7563	5.96771	29.051551	-.58158	1.413019	-.00021	5.97347	97.900645	1.87177	0.00000	0.00000
154	HC	1937.8207	6.05587	97.974553	-1.87433	1.832757	.03226	6.06169	29.026812	.58157	0.00000	0.00000
155	QFS	1938.6353	6.05718	99.554881	-.05589	1.845142	-.00189	6.06621	28.541339	.01740	0.00000	0.00000
156	D1	1946.8268	6.07019	101.146713	-.13843	1.829635	-.00189	6.11090	30.608040	-.26969	0.00000	0.00000
157	B	1952.9482	6.07973	103.219057	-.20011	1.842893	.00622	6.14075	35.221020	-.48386	0.00000	0.00000
158	O	1953.2276	6.08016	103.331666	-.20293	1.844632	.00622	6.14201	35.494137	-.49365	0.00000	0.00000

159	B	1959.3490	6.08946	106.193594	-.26461	1.907582	.01434	6.16709	42.848270	-.70769	0.00000	0.00000
160	O	1959.6284	6.08988	106.342243	-.26742	1.911589	.01434	6.16813	43.246460	-.71747	0.00000	0.00000
161	B	1965.7498	6.09889	109.993754	-.32910	2.024231	.02246	6.18847	53.339718	-.93132	0.00000	0.00000
162	OOO	1966.1943	6.09954	110.288315	-.33358	2.034215	.02246	6.18978	54.174578	-.94688	0.00000	0.00000
163	Q1	1968.2954	6.10265	100.920133	4.64186	1.979222	-.07437	6.19555	64.216688	-3.99167	0.00000	0.00000
164	D2	1972.1145	6.10995	68.723285	3.78862	1.695203	-.07437	6.20319	98.551977	-4.99874	0.00000	0.00000
165	Q2	1974.6393	6.11638	59.649186	-.02239	1.627401	.02001	6.20697	109.394542	.91416	0.00000	0.00000
166	LS	2001.2363	6.18255	72.705343	-.46850	2.159637	.02001	6.25519	72.637392	.46785	0.00000	0.00000
167	LS	2027.8333	6.23073	109.492083	-.91462	2.691873	.02001	6.32141	59.621115	.02154	0.00000	0.00000
168	-Q2	2030.3581	6.23450	98.638088	5.00351	2.548152	-.13248	6.32784	68.695687	-3.78797	0.00000	0.00000
169	D2	2034.1772	6.24214	64.270093	3.99547	2.042204	-.13248	6.33515	100.887832	-4.64128	0.00000	0.00000
170	-Q1	2036.2783	6.24790	54.217633	.94817	1.862684	-.03983	6.33826	110.256948	.33257	0.00000	0.00000
171	D3	2038.0690	6.25333	50.934168	.88545	1.791353	-.03983	6.34086	109.098188	.31453	0.00000	0.00000
172	B	2044.1904	6.27460	41.406352	.67104	1.572363	-.03172	6.34994	105.617831	.25401	0.00000	0.00000
173	O	2044.4698	6.27568	41.034107	.66126	1.563501	-.03172	6.35037	105.476679	.25119	0.00000	0.00000
174	B	2050.5912	6.30179	34.251002	.44685	1.394203	-.02360	6.35973	102.772237	.19060	0.00000	0.00000
175	O	2050.8706	6.30309	34.004035	.43707	1.387609	-.02360	6.36016	102.666518	.18778	0.00000	0.00000
176	B	2056.9920	6.33380	29.965640	.22266	1.268003	-.01548	6.36975	100.738735	.12714	0.00000	0.00000
177	O	2057.2714	6.33529	29.843953	.21287	1.263678	-.01548	6.37019	100.668479	.12432	0.00000	0.00000
178	B	2063.3928	6.36891	28.550268	-.00153	1.193764	-.00736	6.37993	99.517886	.06364	0.00000	0.00000
179	OOO	2063.8373	6.37139	28.558551	-.01710	1.190491	-.00736	6.38064	99.463304	.05915	0.00000	0.00000
180	QDS	2064.6519	6.37590	29.043787	-.58157	1.193485	.01472	6.38195	97.879104	1.87580	0.00000	0.00000
181	HC	2092.7164	6.46408	97.975758	-1.87466	2.032215	.04719	6.47038	28.908759	.58098	0.00000	0.00000
182	QF	2094.3953	6.46678	97.975976	1.87453	2.045727	-.03118	6.47973	28.902337	-.57707	0.00000	0.00000
183	HC	2122.4598	6.55494	29.047225	.58158	1.596156	.00129	6.56834	97.545650	-1.86770	0.00000	0.00000
184	QD	2124.1387	6.56425	29.047200	-.58157	1.649845	.06301	6.57105	97.550333	1.86497	0.00000	0.00000
185	HC	2152.2032	6.65241	97.974655	-1.87450	3.843774	.09548	6.65952	28.983326	.57744	0.00000	0.00000
186	QF	2153.8821	6.65511	97.974418	1.87464	3.879662	-.05296	6.66884	28.993431	-.58359	0.00000	0.00000
187	HC	2181.9466	6.74328	29.043471	.58155	2.818960	-.02049	6.75702	98.093524	-1.87745	0.00000	0.00000
188	QD	2183.6255	6.75259	29.043314	-.58146	2.875154	.08779	6.75972	98.095462	1.87632	0.00000	0.00000
189	HC	2211.6900	6.84077	97.966056	-1.87444	5.764378	.12026	6.84783	29.031201	.58380	0.00000	0.00000
190	QF	2213.3689	6.84347	97.966176	1.87437	5.780104	-.10162	6.85714	29.022674	-.57862	0.00000	0.00000
191	MS1	2228.0476	6.87616	52.866009	1.19813	4.288395	-.10162	6.91650	55.918739	-1.25371	0.00000	0.00000
192	B	2234.1690	6.89743	39.923969	.91612	3.691164	-.09351	6.93177	72.986826	-1.53446	0.00000	0.00000
193	O	2234.4484	6.89855	39.415636	.90325	3.665039	-.09351	6.93238	73.847872	-1.54731	0.00000	0.00000
194	B	2240.5698	6.92699	30.083701	.62124	3.117500	-.08539	6.94405	94.507989	-1.82765	0.00000	0.00000
195	MS2	2241.4334	6.93164	29.045048	.58146	3.043759	-.08539	6.94548	97.698952	-1.86731	0.00000	0.00000
196	QD	2243.1123	6.94095	29.045310	-.58162	2.997074	.02948	6.94819	97.692513	1.87106	0.00000	0.00000
197	HC	2271.1768	7.02911	97.979552	-1.87469	4.249956	.06195	7.03671	28.914448	.57887	0.00000	0.00000
198	QF	2272.8557	7.03181	97.979637	1.87464	4.217180	-.10079	7.04605	28.915527	-.57952	0.00000	0.00000
199	HC	2300.9202	7.11998	29.046655	.58162	1.814290	-.06831	7.13453	97.756927	-1.87230	0.00000	0.00000
200	QD	2302.5991	7.12928	29.046459	-.58150	1.756907	-.00041	7.13724	97.763354	1.86855	0.00000	0.00000
201	HC	2330.6636	7.21745	97.969251	-1.87440	2.171057	.03206	7.22553	29.024004	.57999	0.00000	0.00000
202	QF	2332.3425	7.22015	97.969021	1.87453	2.155007	-.05108	7.23484	29.027945	-.58239	0.00000	0.00000
203	HC	2360.4070	7.30833	29.042831	.58149	1.147022	-.01061	7.32302	97.979667	-1.87336	0.00000	0.00000
204	QD	2362.0859	7.31763	29.042849	-.58150	1.152453	.02511	7.32572	97.975331	1.87589	0.00000	0.00000
205	HC	2390.1504	7.40581	97.969985	-1.87455	2.282858	.05759	7.41400	28.966856	.58225	0.00000	0.00000
206	QF	2391.8293	7.40851	97.970228	1.87441	2.305631	-.03060	7.42333	28.959678	-.57788	0.00000	0.00000
207	HC	2419.8938	7.49668	29.046689	.58151	1.872353	.00187	7.51182	97.601816	-1.86685	0.00000	0.00000
208	QD	2421.5727	7.50598	29.046859	-.58162	1.935940	.07428	7.51453	97.600071	1.86786	0.00000	0.00000
209	HC	2449.6372	7.59415	97.979237	-1.87462	4.446226	.10675	7.60305	28.939370	.57788	0.00000	0.00000
210	QF	2451.3161	7.59685	97.979119	1.87469	4.481605	-.06484	7.61238	28.945297	-.58149	0.00000	0.00000
211	HC	2479.3806	7.68502	29.044999	.58161	3.087626	-.03236	7.70073	97.921705	-1.87514	0.00000	0.00000
212	QD	2481.0595	7.69432	29.044739	-.58145	3.132337	.08591	7.70343	97.927002	1.87205	0.00000	0.00000
213	HC	2509.1240	7.78250	97.965281	-1.87437	5.968902	.11838	7.79162	29.035990	.58190	0.00000	0.00000

214	QF	2510.8029	7.78520	97.965206	1.87441	5.974982	-.11118	7.80093	29.034217	-.58082	0.00000 0.00000
215	HC	2538.8674	7.87337	29.043556	.58145	3.280465	-.07871	7.88917	97.840165	-1.86974	0.00000 0.00000
216	QD	2540.5463	7.88268	29.043759	-.58157	3.252758	.04552	7.89187	97.832758	1.87406	0.00000 0.00000
217	HC	2568.6108	7.97085	97.975975	-1.87466	4.955954	.07800	7.98030	28.924721	.58050	0.00000 0.00000
218	QF	2570.2897	7.97355	97.976200	1.87453	4.927292	-.11196	7.98964	28.920901	-.57817	0.00000 0.00000
219	HC	2598.3542	8.06172	29.047309	.58158	2.210885	-.07949	8.07817	97.637375	-1.86920	0.00000 0.00000
220	QD	2600.0331	8.07102	29.047279	-.58157	2.147342	.00339	8.08088	97.641170	1.86699	0.00000 0.00000
221	HC	2628.0976	8.15919	97.974647	-1.87449	2.667971	.03586	8.16930	28.987894	.57849	0.00000 0.00000
222	QF	2629.7765	8.16189	97.974401	1.87464	2.642359	-.06620	8.17862	28.994714	-.58264	0.00000 0.00000
223	HC	2657.8410	8.25006	29.043389	.58155	1.209953	-.03373	8.26684	98.010140	-1.87538	0.00000 0.00000
224	QD	2659.5199	8.25936	29.043228	-.58145	1.191752	.01194	8.26953	98.010553	1.87514	0.00000 0.00000
225	HC	2687.5844	8.34754	97.965850	-1.87444	1.952290	.04441	8.35773	29.008441	.58277	0.00000 0.00000
226	QF	2689.2633	8.35024	97.965978	1.87436	1.963726	-.03086	8.36705	29.002028	-.57887	0.00000 0.00000
227	HC	2717.3278	8.43842	29.045239	.58146	1.523304	.00161	8.45542	97.677605	-1.86705	0.00000 0.00000
228	QD	2719.0067	8.44772	29.045498	-.58162	1.575196	.06053	8.45813	97.671673	1.87051	0.00000 0.00000
229	HC	2747.0712	8.53589	97.979750	-1.87469	3.699560	.09300	8.54665	28.915760	.57863	0.00000 0.00000
230	QF	2748.7501	8.53859	97.979815	1.87465	3.735935	-.04990	8.55600	28.917712	-.57982	0.00000 0.00000
231	HC	2776.8146	8.62675	29.046515	.58162	2.760980	-.01743	8.64446	97.782392	-1.87283	0.00000 0.00000
232	QD	2778.4935	8.63606	29.046305	-.58150	2.820488	.08870	8.64717	97.788953	1.86901	0.00000 0.00000
233	HC	2806.5580	8.72423	97.968682	-1.87439	5.735346	.12117	8.73544	29.028311	.58030	0.00000 0.00000
234	QF	2808.2369	8.72693	97.968462	1.87452	5.753516	-.09964	8.74475	29.031483	-.58223	0.00000 0.00000
235	HC	2836.3014	8.81511	29.042841	.58148	3.382724	-.06717	8.83293	97.964443	-1.87286	0.00000 0.00000
236	QD	2837.9803	8.82441	29.042882	-.58151	3.377892	.06138	8.83563	97.959407	1.87579	0.00000 0.00000
237	HC	2866.0448	8.91259	97.970601	-1.87457	5.526162	.09386	8.92393	28.959358	.58204	0.00000 0.00000
238	QF	2867.7237	8.91529	97.970850	1.87442	5.505639	-.11817	8.93327	28.952413	-.57782	0.00000 0.00000
239	HC	2895.7882	9.00346	29.046815	.58152	2.614791	-.08570	9.02176	97.598213	-1.86704	0.00000 0.00000
240	QD	2897.4671	9.01276	29.046967	-.58161	2.553733	.01258	9.02447	97.597339	1.86755	0.00000 0.00000
241	HC	2925.5316	9.10092	97.978927	-1.87461	3.332334	.04505	9.11298	28.945830	.57787	0.00000 0.00000
242	QF	2927.2105	9.10362	97.978790	1.87469	3.300781	-.08244	9.12232	28.952194	-.58174	0.00000 0.00000
243	HC	2955.2750	9.19179	29.044809	.58161	1.412854	-.04996	9.21064	97.942102	-1.87537	0.00000 0.00000
244	QD	2956.9539	9.20110	29.044551	-.58145	1.373656	.00302	9.21334	97.946849	1.87260	0.00000 0.00000
245	HC	2985.0184	9.28927	97.965108	-1.87437	1.884025	.03549	9.30153	29.034211	.58212	0.00000 0.00000
246	QFS	2985.8330	9.29058	99.545647	-.05611	1.898648	.00036	9.30604	28.547954	.01781	0.00000 0.00000
247	D1	2994.0245	9.30359	101.141123	-.13866	1.901624	.00036	9.35073	30.607296	-.26921	0.00000 0.00000
248	B	3000.1459	9.31313	103.216293	-.20035	1.928694	.00848	9.38058	35.214109	-.48334	0.00000 0.00000
249	O	3000.4253	9.31356	103.329034	-.20316	1.931063	.00848	9.38184	35.486932	-.49312	0.00000 0.00000
250	B	3006.5467	9.32287	106.193880	-.26485	2.007825	.01660	9.40693	42.834304	-.70711	0.00000 0.00000
251	O	3006.8261	9.32329	106.342664	-.26766	2.012463	.01660	9.40797	43.232173	-.71690	0.00000 0.00000
252	B	3012.9475	9.33230	109.997186	-.32935	2.138917	.02472	9.42831	53.318079	-.93070	0.00000 0.00000
253	OOO	3013.3920	9.33294	110.291969	-.33383	2.149904	.02472	9.42963	54.152382	-.94625	0.00000 0.00000
254	Q1	3015.4931	9.33606	100.924419	4.64182	2.093806	-.07767	9.43540	64.189336	-3.98976	0.00000 0.00000
255	D2	3019.3122	9.34336	68.727687	3.78863	1.797187	-.07767	9.44305	98.508221	-4.99635	0.00000 0.00000
256	Q2	3021.8370	9.34979	59.654114	-.02262	1.728345	.02248	9.44683	109.345160	.91389	0.00000 0.00000
257	LS	3048.4340	9.41595	72.721573	-.46870	2.326142	.02248	9.49507	72.604417	.46750	0.00000 0.00000
258	LS	3075.0310	9.46411	109.517897	-.91478	2.923940	.02248	9.56131	59.608952	.02111	0.00000 0.00000
259	-Q2	3077.5558	9.46788	98.661076	5.00473	2.769651	-.14321	9.56775	68.684094	-3.78778	0.00000 0.00000
260	D2	3081.3749	9.47552	64.284616	3.99646	2.222709	-.14321	9.57505	100.874978	-4.64114	0.00000 0.00000
261	-Q1	3083.4760	9.48128	54.229519	.94848	2.029405	-.04233	9.57817	110.244885	.33207	0.00000 0.00000
262	D3	3085.2667	9.48670	50.944959	.88575	1.953604	-.04233	9.58077	109.087902	.31404	0.00000 0.00000
263	B	3091.3881	9.50798	41.413549	.67133	1.719334	-.03421	9.58985	105.613530	.25352	0.00000 0.00000
264	O	3091.6675	9.50905	41.041145	.66154	1.709775	-.03421	9.59027	105.472648	.25071	0.00000 0.00000
265	B	3097.7889	9.53516	34.254690	.44712	1.525197	-.02609	9.59963	102.774041	.19013	0.00000 0.00000
266	O	3098.0683	9.53646	34.007576	.43733	1.517906	-.02609	9.60007	102.668585	.18731	0.00000 0.00000
267	B	3104.1897	9.56717	29.966076	.22290	1.383020	-.01798	9.60965	100.746486	.12668	0.00000 0.00000
268	O	3104.4691	9.56865	29.844252	.21312	1.377997	-.01798	9.61009	100.676486	.12386	0.00000 0.00000

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269	B	3110.5905	9.60228	28.547706	-.00131	1.292803	-.00986	9.61983	99.531426	.06319	0.00000 0.00000
270	OOO	3111.0350	9.60476	28.555790	-.01688	1.288421	-.00986	9.62054	99.477240	.05871	0.00000 0.00000
271	QDS	3111.8496	9.60927	29.040620	-.58129	1.290117	.01403	9.62185	97.893547	1.87562	0.00000 0.00000
272	HC	3139.9140	9.69746	97.952119	-1.87421	2.109375	.04650	9.71025	28.922336	.58118	0.00000 0.00000
273	QF	3141.5930	9.70016	97.952356	1.87407	2.119271	-.03477	9.71960	28.916047	-.57736	0.00000 0.00000
274	HC	3169.6574	9.78835	29.044350	.58130	1.568940	-.00230	9.80818	97.567167	-1.86769	0.00000 0.00000
275	QD	3171.3364	9.79765	29.045090	-.58175	1.615659	.05825	9.81089	97.570444	1.86578	0.00000 0.00000
276	HC	3199.4008	9.88581	97.991652	-1.87499	3.676061	.09072	9.89936	28.974871	.57765	0.00000 0.00000
277	QF	3201.0798	9.88851	97.991963	1.87481	3.709400	-.05122	9.90869	28.983763	-.58306	0.00000 0.00000
278	HC	3229.1442	9.97666	29.049998	.58177	2.697471	-.01875	9.99690	98.049315	-1.87675	0.00000 0.00000
279	QD	3230.8232	9.98597	29.049498	-.58147	2.752693	.08489	9.99960	98.051768	1.87532	0.00000 0.00000
280	HC	3258.887610.07413		97.965411	-1.87419	5.560507	.11736	10.08774	29.029655	.58330	0.00000 0.00000
281	QF	3260.566610.07683		97.964730	1.87458	5.577923	-.09672	10.09705	29.022736	-.57909	0.00000 0.00000
282	MS1	3275.245210.10953		52.860209	1.19821	4.158188	-.09672	10.15640	55.936832	-1.25446	0.00000 0.00000
283	B	3281.366610.13080		39.917478	.91615	3.590973	-.08860	10.17166	73.014841	-1.53533	0.00000 0.00000
284	D	3281.646010.13192		39.409129	.90328	3.566217	-.08860	10.17227	73.876374	-1.54818	0.00000 0.00000
285	B	3287.767410.16037		30.077196	.62122	3.048694	-.08049	10.18394	94.547887	-1.82863	0.00000 0.00000
286	MS2	3288.631010.16502		29.038597	.58142	2.979187	-.08049	10.18537	97.740570	-1.86831	0.00000 0.00000
287	QD	3290.310010.17433		29.038583	-.58141	2.938739	.03205	10.18807	97.734799	1.87168	0.00000 0.00000
288	HC	3318.374410.26251		97.963485	-1.87456	4.263641	.06452	10.27655	28.925032	.57938	0.00000 0.00000
289	QF	3320.053410.26521		97.964168	1.87416	4.234690	-.09882	10.28589	28.925015	-.57937	0.00000 0.00000
290	HC	3348.117810.35338		29.049350	.58145	1.886994	-.06635	10.37436	97.741101	-1.87155	0.00000 0.00000
291	QD	3349.796810.36268		29.049891	-.58178	1.835294	.00443	10.37707	97.746055	1.86866	0.00000 0.00000
292	HC	3377.861210.45084		97.992867	-1.87484	2.385267	.03690	10.46540	29.010280	.57976	0.00000 0.00000
293	QF	3379.540210.45354		97.992585	1.87500	2.370417	-.05450	10.47471	29.014187	-.58213	0.00000 0.00000
294	HC	3407.604610.54170		29.045433	.58177	1.266523	-.02203	10.56292	97.960531	-1.87343	0.00000 0.00000
295	QD	3409.283610.55100		29.044674	-.58130	1.270012	.02621	10.56562	97.957643	1.87511	0.00000 0.00000
296	HC	3437.348010.63918		97.952308	-1.87405	2.431014	.05868	10.65390	28.975909	.58207	0.00000 0.00000
297	QF	3439.027010.64188		97.952029	1.87422	2.450869	-.03515	10.66322	28.969876	-.57840	0.00000 0.00000
298	HC	3467.091410.73007		29.040279	.58129	1.889935	-.00268	10.75167	97.644878	-1.86749	0.00000 0.00000
299	QD	3468.770410.73938		29.040822	-.58162	1.946371	.07027	10.75438	97.642526	1.86886	0.00000 0.00000
300	HC	3496.834810.82755		97.980892	-1.87489	4.343951	.10274	10.84288	28.940021	.57837	0.00000 0.00000
301	QF	3498.513810.83025		97.981573	1.87450	4.375925	-.06485	10.85221	28.944338	-.58100	0.00000 0.00000
302	HC	3526.578210.91841		29.051562	.58166	2.981409	-.03238	10.94058	97.878755	-1.87414	0.00000 0.00000
303	QD	3528.257210.92771		29.051544	-.58165	3.022660	.08179	10.94328	97.883475	1.87139	0.00000 0.00000
304	HC	3556.321611.01587		97.980599	-1.87447	5.743475	.11426	11.03151	29.025930	.58137	0.00000 0.00000
305	QF	3558.000611.01857		97.979905	1.87488	5.749901	-.10664	11.04082	29.025324	-.58100	0.00000 0.00000
306	HC	3586.065011.10674		29.040590	.58161	3.182632	-.07417	11.12907	97.858539	-1.87053	0.00000 0.00000
307	QD	3587.744011.11605		29.040072	-.58129	3.159463	.04642	11.13177	97.852567	1.87401	0.00000 0.00000
308	HC	3615.808411.20424		97.952434	-1.87423	4.887913	.07890	11.22016	28.938444	.58076	0.00000 0.00000
309	QF	3617.487411.20694		97.952745	1.87405	4.862918	-.10851	11.22950	28.934559	-.57840	0.00000 0.00000
310	HC	3645.551811.29512		29.044988	.58131	2.243188	-.07604	11.31800	97.653695	-1.86907	0.00000 0.00000
311	QD	3647.230811.30442		29.045746	-.58177	2.186533	.00819	11.32071	97.656005	1.86772	0.00000 0.00000
312	HC	3675.295211.39259		97.992981	-1.87500	2.841991	.04066	11.40914	28.978173	.57863	0.00000 0.00000
313	QF	3676.974211.39528		97.993230	1.87485	2.818803	-.06814	11.41846	28.983920	-.58213	0.00000 0.00000
314	HC	3705.038611.48344		29.049675	.58179	1.332191	-.03566	11.50672	97.968086	-1.87478	0.00000 0.00000
315	QD	3706.717611.49274		29.049109	-.58144	1.314656	.01467	11.50942	97.969194	1.87413	0.00000 0.00000
316	HC	3734.782011.58091		97.963197	-1.87415	2.151808	.04714	11.59764	29.008605	.58230	0.00000 0.00000
317	QF	3736.461011.58361		97.962530	1.87454	2.161408	-.03576	11.60695	29.003798	-.57937	0.00000 0.00000
318	HC	3764.525411.67180		29.038578	.58140	1.583355	-.00329	11.69530	97.721435	-1.86804	0.00000 0.00000
319	QD	3766.204411.68110		29.038629	-.58143	1.628862	.05779	11.69801	97.715987	1.87122	0.00000 0.00000
320	HC	3794.268811.76929		97.965216	-1.87460	3.676280	.09026	11.78649	28.925173	.57916	0.00000 0.00000
321	QF	3795.947811.77199		97.965921	1.87419	3.708844	-.05168	11.79584	28.925891	-.57960	0.00000 0.00000
322	HC	3824.012211.86016		29.049750	.58147	2.684112	-.01921	11.88430	97.761258	-1.87201	0.00000 0.00000
323	QD	3825.691211.86946		29.050242	-.58177	2.738130	.08280	11.88700	97.766427	1.86888	0.00000 0.00000

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324	HC	3853.755611.95761	97.992114	-1.87480	5.518240	.11637	11.97531	29.014557	.58000	0.00000	0.00000
325	QF	3855.434611.96031	97.991774	1.87500	5.535365	-.09608	11.98462	29.017895	-.58203	0.00000	0.00000
326	HC	3883.499012.04847	29.044880	.58175	3.264597	-.06361	12.07283	97.950720	-1.87305	0.00000	0.00000
327	QD	3885.178012.05778	29.044124	-.58130	3.262002	.06050	12.07553	97.947198	1.87510	0.00000	0.00000
328	HC	3913.242412.14596	97.951653	-1.87406	5.385413	.09297	12.16383	28.969625	.58193	0.00000	0.00000
329	QF	3914.921412.14866	97.951434	1.87419	5.367911	-.11371	12.17315	28.963675	-.57831	0.00000	0.00000
330	HC	3942.985812.23685	29.040668	.58128	2.602412	-.08124	12.26161	97.638811	-1.86759	0.00000	0.00000
331	QD	3944.664812.24616	29.041255	-.58164	2.548534	.01671	12.26432	97.637154	1.86855	0.00000	0.00000
332	HC	3972.729212.33433	97.982581	-1.87492	3.443100	.04918	12.35281	28.944767	.57832	0.00000	0.00000
333	QF	3974.408212.33703	97.983234	1.87454	3.414874	-.08263	12.36215	28.949536	-.58122	0.00000	0.00000
334	HC	4002.472612.42518	29.051558	.58168	1.521628	-.05015	12.45050	97.897279	-1.87439	0.00000	0.00000
335	QD	4004.151612.43448	29.051475	-.58163	1.485618	.00703	12.45320	97.901635	1.87185	0.00000	0.00000
336	HC	4032.216012.52264	97.978840	-1.87443	2.108461	.03950	12.54142	29.025397	.58158	0.00000	0.00000
337	QFS	4033.030612.52395	99.559277	-.05592	2.124647	.00019	12.54594	28.539892	.01743	0.00000	0.00000
338	D1	4041.222112.53696	101.151515	-.13846	2.126186	.00019	12.59064	30.606193	-.26968	0.00000	0.00000
339	B	4047.343512.54650	103.224128	-.20013	2.152182	.00831	12.62049	35.219032	-.48386	0.00000	0.00000
340	O	4047.622912.54693	103.336748	-.20295	2.154503	.00831	12.62174	35.492146	-.49365	0.00000	0.00000
341	B	4053.744312.55623	106.198911	-.26462	2.230191	.01642	12.64683	42.846281	-.70769	0.00000	0.00000
342	O	4054.023712.55665	106.347570	-.26744	2.234780	.01642	12.64786	43.244475	-.71748	0.00000	0.00000
343	B	4060.145112.56566	109.999283	-.32912	2.360160	.02454	12.66821	53.337879	-.93134	0.00000	0.00000
344	OOO	4060.589612.56631	110.293858	-.33359	2.371069	.02454	12.66952	54.172754	-.94690	0.00000	0.00000
345	Q1	4062.690712.56942	100.925195	4.64209	2.303584	-.08824	12.67529	64.214765	-3.99161	0.00000	0.00000
346	D2	4066.509812.57672	68.726694	3.78882	1.966588	-.08824	12.68293	98.549533	-4.99867	0.00000	0.00000
347	Q2	4069.034612.58316	59.652096	-.02238	1.882847	.02110	12.68671	109.392119	.91408	0.00000	0.00000
348	LS	4095.631612.64932	72.707078	-.46847	2.444159	.02110	12.73493	72.638393	.46780	0.00000	0.00000
349	LS	4122.228612.69750	109.491473	-.91456	3.005470	.02110	12.80115	59.624259	.02151	0.00000	0.00000
350	-Q2	4124.753412.70127	98.637306	5.00352	2.841955	-.14906	12.80758	68.699461	-3.78821	0.00000	0.00000
351	D2	4128.572512.70891	64.269279	3.99547	2.272677	-.14906	12.81488	100.893582	-4.64156	0.00000	0.00000
352	-Q1	4130.673612.71467	54.216757	.94820	2.069409	-.04604	12.81800	110.263314	.33257	0.00000	0.00000
353	D3	4132.464312.72009	50.933182	.88548	1.986958	-.04604	12.82060	109.104546	.31453	0.00000	0.00000
354	B	4138.585712.74137	41.405072	.67106	1.729954	-.03793	12.82968	105.624136	.25401	0.00000	0.00000
355	O	4138.865112.74245	41.032816	.66128	1.719357	-.03793	12.83010	105.482981	.25120	0.00000	0.00000
356	B	4144.986512.76856	34.249549	.44686	1.512045	-.02981	12.83946	102.778439	.19061	0.00000	0.00000
357	O	4145.265912.76986	34.002578	.43707	1.503717	-.02981	12.83990	102.672715	.18779	0.00000	0.00000
358	B	4151.387312.80057	29.964154	.22266	1.346096	-.02169	12.84948	100.744787	.12715	0.00000	0.00000
359	O	4151.666712.80206	29.842468	.21287	1.340036	-.02169	12.84992	100.674523	.12433	0.00000	0.00000
360	B	4157.788112.83569	28.548887	-.00155	1.232108	-.01357	12.85966	99.523740	.06366	0.00000	0.00000
361	OOO	4158.232612.83816	28.557182	-.01712	1.226075	-.01357	12.86037	99.469142	.05917	0.00000	0.00000
362	QDS	4159.047212.84268	29.042422	-.58156	1.224266	.00913	12.86168	97.884826	1.87592	0.00000	0.00000
363	HC	4187.111712.93085	97.975275	-1.87470	1.905969	.04160	12.95011	28.909118	.58104	0.00000	0.00000
364	QF	4188.790612.93355	97.975660	1.87447	1.914217	-.03183	12.95946	28.902493	-.57701	0.00000	0.00000
365	HC	4216.855113.02172	29.048488	.58158	1.446648	.00065	13.04807	97.540621	-1.86757	0.00000	0.00000
366	QD	4218.534013.03102	29.048540	-.58161	1.494425	.05657	13.05078	97.545202	1.86490	0.00000	0.00000
367	HC	4246.598513.11918	97.978431	-1.87454	3.507633	.08904	13.13926	28.981881	.57738	0.00000	0.00000
368	QF	4248.277413.12188	97.978085	1.87474	3.543556	-.04648	13.14858	28.992110	-.58360	0.00000	0.00000
369	HC	4276.341913.21005	29.043083	.58159	2.664734	-.01401	13.23676	98.095009	-1.87753	0.00000	0.00000
370	QD	4278.020813.21936	29.042764	-.58140	2.726949	.08852	13.23946	98.097140	1.87629	0.00000	0.00000
371	HC	4306.085313.30754	97.961144	-1.87434	5.636661	.12099	13.32757	29.032926	.58383	0.00000	0.00000
372	QF	4307.764213.31024	97.961254	1.87428	5.657677	-.09609	13.33688	29.024423	-.57865	0.00000	0.00000
373	MS1	4322.442913.34293	52.863528	1.19806	4.247255	-.09609	13.39623	55.921350	-1.25373	0.00000	0.00000
374	B	4328.564313.36420	39.922352	.91606	3.683923	-.08797	13.41151	72.989638	-1.53448	0.00000	0.00000
375	O	4328.843713.36532	39.414057	.90318	3.659344	-.08797	13.41211	73.850692	-1.54732	0.00000	0.00000
376	B	4334.965113.39377	30.082892	.62118	3.145704	-.07985	13.42378	94.510913	-1.82765	0.00000	0.00000
377	MS2	4335.828713.39842	29.044341	.58140	3.076745	-.07985	13.42521	97.701883	-1.86731	0.00000	0.00000
378	QD	4337.507613.40772	29.044756	-.58165	3.040522	.03647	13.42792	97.695268	1.87117	0.00000	0.00000

379	HC	4365.572113.49589	97.982798	-1.87479	4.489605	.06894	13.51644	28.913425	.57889	0.00000	0.00000
380	QF	4367.251013.49859	97.983007	1.87467	4.460791	-.10308	13.52578	28.914345	-.57945	0.00000	0.00000
381	HC	4395.315513.58675	29.048055	.58166	1.993438	-.07061	13.61427	97.751263	-1.87221	0.00000	0.00000
382	QD	4396.994413.59605	29.047801	-.58151	1.937938	.00414	13.61697	97.757750	1.86843	0.00000	0.00000
383	HC	4425.058913.68422	97.969526	-1.87435	2.479634	.03662	13.70527	29.023755	.57993	0.00000	0.00000
384	QF	4426.737813.68692	97.969129	1.87458	2.461487	-.05835	13.71458	29.027901	-.58245	0.00000	0.00000
385	HC	4454.802313.77510	29.041539	.58149	1.249386	-.02588	13.80276	97.984891	-1.87349	0.00000	0.00000
386	QD	4456.481213.78440	29.041486	-.58146	1.245779	.02156	13.80545	97.980646	1.87596	0.00000	0.00000
387	HC	4484.545713.87259	97.966348	-1.87452	2.276498	.05403	13.89373	28.968243	.58231	0.00000	0.00000
388	QF	4486.224613.87528	97.966706	1.87431	2.293574	-.03380	13.90306	28.960931	-.57786	0.00000	0.00000
389	HC	4514.289113.96346	29.047137	.58148	1.770543	-.00133	13.99155	97.600000	-1.86675	0.00000	0.00000
390	QD	4515.968013.97276	29.047466	-.58168	1.825418	.06705	13.99426	97.598064	1.86788	0.00000	0.00000
391	HC	4544.032514.06092	97.984162	-1.87472	4.132643	.09952	14.08278	28.937633	.57785	0.00000	0.00000
392	QF	4545.711414.06362	97.984047	1.87478	4.166015	-.05998	14.09212	28.943550	-.58145	0.00000	0.00000
393	HC	4573.775914.15179	29.045652	.58167	2.908342	-.02751	14.18047	97.919112	-1.87515	0.00000	0.00000
394	QD	4575.454814.16109	29.045235	-.58141	2.955510	.08400	14.18317	97.924591	1.87195	0.00000	0.00000
395	HC	4603.519314.24927	97.961881	-1.87426	5.738343	.11647	14.27136	29.037103	.58187	0.00000	0.00000
396	QF	4605.198214.25196	97.961687	1.87438	5.748604	-.10431	14.28067	29.035480	-.58088	0.00000	0.00000
397	HC	4633.262714.34015	29.042176	.58140	3.246820	-.07184	14.36890	97.845728	-1.86983	0.00000	0.00000
398	QD	4634.941614.34945	29.042444	-.58157	3.229683	.05131	14.37160	97.838250	1.87419	0.00000	0.00000
399	HC	4663.006114.43763	97.975911	-1.87471	5.095344	.08379	14.46003	28.924865	.58056	0.00000	0.00000
400	QF	4664.685014.44033	97.976303	1.87448	5.071847	-.11163	14.46937	28.920841	-.57811	0.00000	0.00000
401	HC	4692.749514.52849	29.048629	.58159	2.364750	-.07915	14.55791	97.632002	-1.86907	0.00000	0.00000
402	QD	4694.428414.53779	29.048664	-.58161	2.306735	.00968	14.56061	97.635717	1.86691	0.00000	0.00000
403	HC	4722.492914.62596	97.978140	-1.87453	3.003842	.04215	14.64904	28.986580	.57843	0.00000	0.00000
404	QF	4724.171814.62865	97.977774	1.87474	2.977953	-.07282	14.65836	28.993544	-.58266	0.00000	0.00000
405	HC	4752.236314.71683	29.042883	.58159	1.359846	-.04035	14.74658	98.012316	-1.87548	0.00000	0.00000
406	QD	4753.915214.72613	29.042565	-.58140	1.335253	.01090	14.74927	98.012914	1.87513	0.00000	0.00000
407	HC	4781.979714.81431	97.960924	-1.87434	2.066660	.04337	14.83747	29.010190	.58280	0.00000	0.00000
408	QF	4783.658614.81701	97.961056	1.87427	2.072720	-.03619	14.84678	29.003775	-.57890	0.00000	0.00000
409	HC	4811.723114.90519	29.044642	.58140	1.482687	-.00372	14.93515	97.679875	-1.86704	0.00000	0.00000
410	QD	4813.402014.91450	29.045061	-.58166	1.524221	.05346	14.93786	97.673757	1.87060	0.00000	0.00000
411	HC	4841.466515.00266	97.983300	-1.87479	3.450098	.08593	15.02638	28.914569	.57865	0.00000	0.00000
412	QF	4843.145415.00536	97.983478	1.87469	3.482689	-.04732	15.03573	28.916379	-.57975	0.00000	0.00000
413	HC	4871.209915.09352	29.047874	.58167	2.580400	-.01484	15.12420	97.776977	-1.87275	0.00000	0.00000
414	QD	4872.888815.10283	29.047592	-.58150	2.638474	.08439	15.12690	97.783621	1.86888	0.00000	0.00000
415	HC	4900.953315.19100	97.968537	-1.87433	5.432501	.11687	15.21518	29.028280	.58024	0.00000	0.00000
416	QF	4902.632215.19369	97.968151	1.87456	5.453188	-.09235	15.22449	29.031657	-.58229	0.00000	0.00000
417	HC	4930.696715.28187	29.041496	.58148	3.286908	-.05988	15.31267	97.969971	-1.87298	0.00000	0.00000
418	QD	4932.375615.29118	29.041479	-.58147	3.291351	.06520	15.31536	97.965003	1.87588	0.00000	0.00000
419	HC	4960.440115.37936	97.967260	-1.87454	5.546818	.09768	15.40366	28.960601	.58211	0.00000	0.00000
420	QF	4962.119015.38206	97.967634	1.87432	5.531980	-.11526	15.41300	28.953503	-.57779	0.00000	0.00000
421	HC	4990.183515.47023	29.047380	.58149	2.722980	-.08279	15.50150	97.595712	-1.86694	0.00000	0.00000
422	QD	4991.862415.47953	29.047685	-.58167	2.670363	.01977	15.50420	97.594657	1.86755	0.00000	0.00000
423	HC	5019.926915.56770	97.983848	-1.87470	3.650784	.05224	15.59272	28.944083	.57783	0.00000	0.00000
424	QF	5021.605815.57039	97.983700	1.87479	3.621010	-.08752	15.60205	28.950461	-.58171	0.00000	0.00000
425	HC	5049.670315.65856	29.045349	.58166	1.590410	-.05505	15.69038	97.940189	-1.87539	0.00000	0.00000
426	QD	5051.349215.66786	29.044929	-.58141	1.548314	.00463	15.69308	97.945127	1.87251	0.00000	0.00000
427	HC	5079.413715.75604	97.961418	-1.87426	2.103966	.03711	15.78127	29.035483	.58210	0.00000	0.00000
428	QH1	5080.061415.75708	99.460283	-.43250	2.117920	.00595	15.78485	28.574296	.13220	0.00000	0.00000
429	DH1	5088.197315.76963	107.287781	-.52960	2.166293	.00595	15.83063	28.780115	-.15750	0.00000	0.00000
430	B	5094.318715.77844	114.218679	-.60266	2.227534	.01406	15.86294	32.040700	-.37513	0.00000	0.00000
431	O	5094.598115.77883	114.556375	-.60599	2.231463	.01406	15.86432	32.253105	-.38508	0.00000	0.00000
432	B	5100.719515.78706	122.422519	-.67905	2.342396	.02218	15.89218	38.299386	-.60261	0.00000	0.00000
433	O	5100.998915.78742	122.802902	-.68238	2.348594	.02218	15.89334	38.638905	-.61256	0.00000	0.00000

434	B	5107.120315.79509	131.604293	-.79544	2.507219	.02030	15.91617	47.469216	-.82993	0.00000	0.00000
435	000	5107.564815.79562	132.278237	-.76075	2.522687	.03030	15.91764	48.214049	-.84574	0.00000	0.00000
436	QH2	5109.855615.79824	152.560909	-8.44314	2.745731	.16637	15.92520	46.430947	1.59286	0.00000	0.00000
437	DH2	5113.707515.80155	224.635341	-10.26826	3.386556	.16637	15.94037	35.290207	1.29941	0.00000	0.00000
438	QH3	5116.232315.80323	243.427071	3.18908	3.553661	-.03560	15.95227	33.960249	-.74741	0.00000	0.00000
439	LSF	5142.829315.82967	106.247893	1.96861	2.606802	-.03560	16.02530	106.184439	-1.96809	0.00000	0.00000
440	LSF	5169.426315.90264	33.990233	.74815	1.659942	-.03560	16.05175	243.341574	-3.18877	0.00000	0.00000
441	-QH3	5171.951115.91453	35.320614	-1.30033	1.689816	.05955	16.05343	224.560310	10.26401	0.00000	0.00000
442	DH2	5175.803015.92969	46.468406	-1.59378	1.919197	.05955	16.05674	152.515203	8.43978	0.00000	0.00000
443	-QH2	5178.093815.93724	48.251095	.84683	1.939375	-.04211	16.05936	132.242256	.75970	0.00000	0.00000
444	DH3	5179.828915.94314	45.419560	.78508	1.866311	-.04211	16.06147	129.641865	.73900	0.00000	0.00000
445	B	5185.950315.96695	37.141526	.56724	1.633390	-.03399	16.06925	121.033052	.66730	0.00000	0.00000
446	O	5186.229715.96815	36.827329	.55730	1.623892	-.03399	16.06962	120.661097	.66396	0.00000	0.00000
447	B	5192.351115.99698	31.337982	.33946	1.440663	-.02587	16.07797	112.972117	.59208	0.00000	0.00000
448	O	5192.630515.99841	31.151071	.32951	1.433434	-.02587	16.07836	112.642197	.58874	0.00000	0.00000
449	B	5198.751916.03137	28.450410	.11167	1.299898	-.01776	16.08729	105.875169	.51670	0.00000	0.00000
450	O	5199.031316.03293	28.390785	.10173	1.294936	-.01776	16.08771	105.587373	.51335	0.00000	0.00000
451	B	5205.152716.06746	28.478811	-.11611	1.211092	-.00964	16.09721	99.744162	.44117	0.00000	0.00000
452	000	5205.597216.06994	28.589065	-.13193	1.206808	-.00964	16.09792	99.354328	.43585	0.00000	0.00000
453	-QH1	5206.244916.07353	29.050027	-.58203	1.206324	.00814	16.09896	97.852176	1.87597	0.00000	0.00000
454	HC	5234.309416.16167	98.014322	-1.87535	1.860462	.04062	16.18744	28.887354	.58061	0.00000	0.00000
455	QF	5235.988316.16437	98.014373	1.87532	1.868532	-.03105	16.19680	28.880884	-.57667	0.00000	0.00000
456	HC	5264.052816.25251	29.050827	.58203	1.422586	.00142	16.28546	97.516145	-1.86781	0.00000	0.00000
457	QD	5265.731716.26181	29.049504	-.58122	1.470894	.05644	16.28817	97.523098	1.86376	0.00000	0.00000
458	HC	5293.796216.34999	97.944119	-1.87367	3.480327	.08891	16.37663	28.997634	.57717	0.00000	0.00000
459	QF	5295.475116.35269	97.943090	1.87427	3.516899	-.04558	16.38595	29.009529	-.58441	0.00000	0.00000
460	HC	5323.539616.44090	29.033261	.58117	2.663409	-.01311	16.47407	98.161224	-1.87847	0.00000	0.00000
461	QD	5325.218516.45020	29.033790	-.58149	2.727113	.08940	16.47676	98.162208	1.87789	0.00000	0.00000
462	HC	5353.283016.53840	97.971163	-1.87493	5.661538	.12187	16.56484	29.032266	.58457	0.00000	0.00000
463	QF	5354.961916.54109	97.972584	1.87410	5.683223	-.09618	16.57415	29.021218	-.57785	0.00000	0.00000
464	MS1	5369.640616.57378	52.877424	1.19806	4.271501	-.09618	16.63353	55.888549	-1.25252	0.00000	0.00000
465	B	5375.762016.59505	39.935783	.91613	3.707627	-.08806	16.64881	72.941041	-1.53310	0.00000	0.00000
466	O	5376.041416.59617	39.427445	.90326	3.683024	-.08806	16.64942	73.801325	-1.54594	0.00000	0.00000
467	B	5382.162816.62460	30.094870	.62134	3.168842	-.07994	16.66110	94.443631	-1.82611	0.00000	0.00000
468	MS2	5383.026416.62925	29.056047	.58156	3.099806	-.07994	16.66253	97.631910	-1.86574	0.00000	0.00000
469	QD	5384.705316.63855	29.056626	-.58191	3.064177	.03727	16.66523	97.624569	1.87002	0.00000	0.00000
470	HC	5412.769816.72669	98.002819	-1.87482	4.535706	.06974	16.75381	28.898788	.57804	0.00000	0.00000
471	QF	5414.448716.72938	98.001838	1.87539	4.506748	-.10405	16.76316	28.901697	-.57981	0.00000	0.00000
472	HC	5442.513216.81755	29.041155	.58186	2.012187	-.07158	16.85165	97.786051	-1.87354	0.00000	0.00000
473	QD	5444.192116.82685	29.039819	-.58105	1.955646	.00387	16.85436	97.794724	1.86848	0.00000	0.00000
474	HC	5472.256616.91506	97.930922	-1.87372	2.489788	.03634	16.94260	29.045576	.58041	0.00000	0.00000
475	QF	5473.935516.91775	97.930914	1.87373	2.470664	-.05900	16.95190	29.049411	-.58275	0.00000	0.00000
476	HC	5502.000017.00596	29.039702	.58105	1.240490	-.02653	17.04003	98.005400	-1.87316	0.00000	0.00000
477	QD	5503.678917.01526	29.041032	-.58186	1.235502	.02055	17.04273	97.998739	1.87704	0.00000	0.00000
478	HC	5531.743417.10343	98.001528	-1.87539	2.237917	.05303	17.13103	28.951689	.58247	0.00000	0.00000
479	QF	5533.422317.10612	98.002519	1.87481	2.254550	-.03332	17.14036	28.942834	-.57708	0.00000	0.00000
480	HC	5561.486817.19426	29.056671	.58191	1.745074	-.00085	17.22891	97.536253	-1.86591	0.00000	0.00000
481	QD	5563.165717.20356	29.056105	-.58157	1.799946	.06656	17.23162	97.535600	1.86629	0.00000	0.00000
482	HC	5591.230217.29172	97.972516	-1.87410	4.093541	.09903	17.32017	28.939732	.57715	0.00000	0.00000
483	QF	5592.909117.29441	97.971106	1.87492	4.127355	-.05697	17.32951	28.948174	-.58228	0.00000	0.00000
484	HC	5620.973617.38261	29.033872	.58149	2.897996	-.02650	17.41782	97.990642	-1.87670	0.00000	0.00000
485	QD	5622.652517.39191	29.033349	-.58117	2.946542	.08464	17.42051	97.996696	1.87317	0.00000	0.00000
486	HC	5650.717017.48012	97.943373	-1.87427	5.747382	.11711	17.50865	29.050790	.58273	0.00000	0.00000
487	QF	5652.395917.48282	97.944396	1.87368	5.758419	-.10403	17.51795	29.047082	-.58048	0.00000	0.00000
488	HC	5680.460417.57100	29.049487	.58123	3.264473	-.07156	17.60618	97.807244	-1.86845	0.00000	0.00000

489	QD	5662.139317.58030	29.050799	-.58203	3.248379	.05228	17.60888	97.797658	1.87404	0.00000	0.00000	
490	HC	5710.203817.66844	98.014035	-1.87531	5.141275	.08476	17.69737	28.903257	.58003	0.00000	0.00000	
491	QF	5711.882717.67114	98.013983	1.87534	5.117924	-.11242	17.70672	28.899701	-.57787	0.00000	0.00000	
492	HC	5739.947217.75928	29.049969	.58202	2.388434	-.07995	17.79530	97.616232	-1.86951	0.00000	0.00000	
493	QD	5741.626117.76859	29.048616	-.58120	2.329829	.00977	17.79800	97.622399	1.86591	0.00000	0.00000	
494	HC	5769.690617.85677	97.942189	-1.87366	3.029506	.04224	17.88640	29.004070	.57832	0.00000	0.00000	
495	QF	5771.369517.85947	97.941241	1.87421	3.002949	-.07370	17.89572	29.012446	-.58342	0.00000	0.00000	
496	HC	5799.434017.94767	29.033665	.58115	1.360087	-.04123	17.98388	98.073941	-1.87624	0.00000	0.00000	
497	QD	5801.112917.95698	29.034286	-.58152	1.334005	.01000	17.98657	98.073125	1.87672	0.00000	0.00000	
498	HC	5829.177418.04517	97.974208	-1.87498	2.040119	.04247	18.07474	29.006827	.58348	0.00000	0.00000	
499	QF	5830.856318.04787	97.975615	1.87416	2.045529	-.03606	18.08406	28.997915	-.57806	0.00000	0.00000	
500	HC	5858.920818.13602	29.056484	.58160	1.459185	-.00359	18.17247	97.607640	-1.86551	0.00000	0.00000	
501	QD	5860.599718.14532	29.056949	-.58189	1.500185	.05269	18.17518	97.601099	1.86933	0.00000	0.00000	
502	HC	5888.664218.23346	98.000293	-1.87474	3.404381	.06516	18.26377	28.902055	.57779	0.00000	0.00000	
503	QF	5890.343118.23616	97.999230	1.87536	3.437149	-.04633	18.27311	28.906038	-.58021	0.00000	0.00000	
504	HC	5918.407618.32432	29.040175	.58183	2.562403	-.01386	18.36158	97.819583	-1.87418	0.00000	0.00000	
505	QD	5920.086518.33363	29.038890	-.58104	2.621562	.08471	18.36428	97.828247	1.86913	0.00000	0.00000	
506	HC	5948.151018.42183	97.930994	-1.87376	5.424503	.11718	18.45250	29.049760	.58081	0.00000	0.00000	
507	QF	5949.829918.42453	97.931106	1.87369	5.445972	-.09174	18.46180	29.052513	-.58248	0.00000	0.00000	
508	HC	5977.894418.51273	29.040664	.58105	3.296813	-.05927	18.54994	97.981514	-1.87246	0.00000	0.00000	
509	QD	5979.573318.52204	29.042037	-.58189	3.302610	.06622	18.55264	97.974068	1.87680	0.00000	0.00000	
510	HC	6007.637818.61020	98.003950	-1.87541	5.586491	.09869	18.64096	28.942414	.58216	0.00000	0.00000	
511	QF	6009.316718.61290	98.004853	1.87488	5.572068	-.11578	18.65030	28.934038	-.57706	0.00000	0.00000	
512	HC	6037.381218.70103	29.056274	.58194	2.748460	-.08331	18.73886	97.537023	-1.86627	0.00000	0.00000	
513	QD	6039.060118.71033	29.055599	-.58153	2.695782	.02022	18.74157	97.537508	1.86598	0.00000	0.00000	
514	HC	6067.124618.79849	97.968981	-1.87404	3.688757	.05269	18.83011	28.948868	.57720	0.00000	0.00000	
515	QF	6068.803518.80119	97.967579	1.87485	3.658513	-.08852	18.83944	28.957704	-.58257	0.00000	0.00000	
516	HC	6096.868018.88938	29.033476	.58145	1.599756	-.05605	18.92772	98.013423	-1.87688	0.00000	0.00000	
517	QD	6098.546918.89869	29.033069	-.58120	1.556259	.00396	18.93042	98.018628	1.87385	0.00000	0.00000	
518	HC	6126.611418.98690	97.946002	-1.87435	2.092982	.03643	19.01855	29.046945	.58297	0.00000	0.00000	
519	QH1	6127.259118.98794	99.445125	-.43281	2.106552	.00544	19.02213	28.584739	.13291	0.00000	0.00000	
520	DH1	6135.395019.00049	107.278033	-.52995	2.150780	.00544	19.06791	28.778628	-.15674	0.00000	0.00000	
521	B	6141.516419.00930	114.213399	-.60303	2.208902	.01355	19.10022	32.029673	-.37434	0.00000	0.00000	
522	O	6141.795819.00968	114.551306	-.60637	2.212689	.01355	19.10160	32.241631	-.38428	0.00000	0.00000	
523	B	6147.917219.01791	122.422274	-.67946	2.320503	.02167	19.12947	38.277870	-.60177	0.00000	0.00000	
524	O	6148.196619.01828	122.802886	-.68279	2.326558	.02167	19.13063	38.616920	-.61172	0.00000	0.00000	
525	B	6154.318019.02594	131.609458	-.75588	2.484064	.02979	19.15347	47.436689	-.82905	0.00000	0.00000	
526	OOO	6154.762519.02648	132.283792	-.76118	2.497306	.02979	19.15495	48.180738	-.84486	0.00000	0.00000	
527	QH2	6157.053319.02910	152.569356	-8.44402	2.717627	.16448	19.16251	46.397696	1.59195	0.00000	0.00000	
528	DH2	6160.905219.03241	224.651557	-10.26940	3.351169	.16448	19.17769	35.263839	1.29853	0.00000	0.00000	
529	QH3	6163.430019.03409	243.446707	3.18894	3.516152	-.03537	19.18960	33.934692	-.74687	0.00000	0.00000	
530	LSA	6190.027019.06053	106.269905	1.96867	2.575422	-.03537	19.26268	106.137595	-1.96783	0.00000	0.00000	
531	LSA	6216.624019.13347	34.004043	.74840	1.634692	-.03537	19.28914	243.288561	-3.18880	0.00000	0.00000	
532	-QH3	6219.148819.14536	35.335070	-1.30085	1.663307	.05831	19.29082	224.514812	10.26120	0.00000	0.00000	
533	DH2	6223.000719.16051	46.486987	-1.59433	1.887913	.05831	19.29413	152.488933	8.43759	0.00000	0.00000	
534	-QH2	6225.291519.16805	48.269900	.84729	1.907158	-.04168	19.29675	132.222679	.75884	0.00000	0.00000	
535	DH3	6227.026619.17395	45.436792	.78554	1.834845	-.04168	19.29886	129.625217	.73817	0.00000	0.00000	
536	B	6233.148019.19775	37.153306	.56768	1.604577	-.03356	19.30664	121.026351	.66651	0.00000	0.00000	
537	O	6233.427419.19895	36.838864	.55774	1.595200	-.03356	19.30701	120.654836	.66318	0.00000	0.00000	
538	B	6239.548819.22778	31.344232	.33988	1.414624	-.02544	19.31536	112.975175	.59134	0.00000	0.00000	
539	O	6239.828219.22920	31.157083	.32994	1.407516	-.02544	19.31575	112.645666	.58800	0.00000	0.00000	
540	B	6245.949619.26216	28.451303	.11209	1.276631	-.01732	19.32468	105.887326	.51601	0.00000	0.00000	
541	O	6246.229019.26372	28.391448	.10214	1.271791	-.01732	19.32510	105.599913	.51267	0.00000	0.00000	
542	B	6252.350419.29826	28.474522	-.11571	1.190599	-.00920	19.33460	99.764758	.44054	0.00000	0.00000	
543	OOO	6252.794919.30074	28.584422	-.13153	1.186507	-.00920	19.33531	99.375485	.43522	0.00000	0.00000	

544 -QH1	6253.442619.30432	29.044823	-.58155	1.186208	.00328	19.33635	97.873939	1.87567	0.00000	0.00000
545 HC	6281.507019.39249	97.974211	-1.87458	1.844147	.04075	19.42479	28.908842	.58092	0.00000	0.00000
546 QF	6283.186019.39519	97.974272	1.87454	1.852962	-.03031	19.43413	28.902623	-.57714	0.00000	0.00000

POS	S	PSIX	BETAX	ALPHAX	XEQ	DXEQ	PSIY	BETAY	ALPHAY	YEQ	DYEQ

R=1000.00010 TGAM=(18.73552, 0.00000) THETA= 6.28318501 QX= 19.39519 QY= 19.43413

MAXIMA BETAX(529)= 243.44671 XEQ=(123)= 6.02059 BETAY(440)= 243.34157 YEQ(546)= 0.00000
MINIMA BETAX(450)= 28.39079 XEQ=(113)= 1.10372 BETAY(337)= 28.53989 YEQ(546)= 0.00000
CONTRIBUTIONS TO CHROMATICITY (DNU/(DP/P)) FROM MAGNETS EXPLICITLY IN RING CHRX = -22.5125, CHRY = -22.4846