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Preliminary report

STARK BROADENING PARAMETER TABLES FOR Y III

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SUMMARY: Using a semiclassical approach, we have calculated electron–, proton–, and ionized helium–impact line widths and shifts for 32 Y III multiplets as a function of temperature and perturber density.

1. INTRODUCTION

Yttrium and its spectral lines are present in spectra of hot stars, as e.g. in the spectrum of ϕ Her (T_{eff} = 11500K, log$g$ = 3.5) and o And (T_{eff} = 9500K, log$g$ =3.5) (Adelman and Lanz, 1987) as well as in other hot stars as e.g. Sirius, where Sadakane and Ueta (1989) have found its overabundance. Moreover, yttrium is commonly associated with slow-neutron-capture nucleosynthesis in stellar interiors (see e.g. Leckrone *et al.* 1993). Consequently, Y III lines are of interest for the diagnostic and modelling of stellar plasmas.

In order to provide the needed Stark broadening data, we have calculated within the semiclassical-perturbation formalism (Sahal-Bréchot, 1969ab) electron-, proton-, and ionized - helium-impact line widths and shifts for 32 Y III multiplets. The formalism used here, has been updated several times (Sahal - Bréchot, 1974, Fleurier et al, 1977, Dimitrijević and Sahal - Bréchot, 1984,Dimitrijević et al. 1991, Dimitrijević and Sahal - Bréchot, 1995). A summary of the formalism is given in Dimitrijević and Sahal - Bréchot, 1995.

2. RESULTS AND DISCUSSION

The analysis of obtained results, details of calculations and the comparison with other theoretical data will be published elsewhere (Dimitrijević and Sahal–Bréchot, 1997). Here, we present only tables of Stark broadening parameters. Atomic energy levels needed for calculations have been taken from Epstein and Reader (1975). Our results for 32 Y III multiplets are shown in Table 1, for perturber densities 10^{14}– 10^{19} cm^{-3} and temperatures T = 10,000 – 300,000 K. We also specify a parameter c (Dimitrijević and Sahal–Bréchot 1984), which gives an estimate of the maximum perturber density for which the line may be treated as isolated when it is divided by the corresponding full width at half maximum. For each value given in Table 1, the collision volume (V) multiplied by the perturber density (N) is much less than one and the impact approximation is valid (Sahal–Bréchot, 1969ab). Values for NV $>$ 0.5 are not given and values for 0.1 $<$ NV $\leq$ 0.5 are denoted by an asterisk. Stark broadening parameters for densities lower than tabulated, are linear with perturber density. When the impact approximation is not valid, the ion broadening contribution may be

Table 1. This table shows electron-, proton-, and ionized helium-impact broadening parameters for Y III, for perturber densities of $10^{14} - 10^{19}$ cm^{-3} and temperatures from 10,000 up to 300,000 K. For electron densities lower than 10^{16}cm^{-3}, only data for higher transitions are presented, since data for lower transitions are linear with electron density. Transitions and averaged wavelengths for the multiplet (in Å) are also given in the table. By dividing c by the corresponding full width at half maximum (Dimitrijević *et al.*, 1991), we obtain an estimate for the maximum perturber density for which the line may be treated as isolated and tabulated data may be used. The asterisk identifies cases for which the collision volume multiplied by the perturber density (the condition for validity of the impact approximation) lies between 0.1 and 0.5. Stark broadening parameters for densities lower than tabulated, are linear with perturber density.

PERTURBER DENSITY = 1.E+14cm-3

PERTURBERS ARE:		ELECTRONS		PROTONS		IONIZED HELIUM	
TRANSITION	T(K)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Y III 6d-6f	10000.	0.757E-02	-0.302E-03	0.627E-03	0.375E-03	0.650E-03	0.308E-03
5585.7 Å	20000.	0.700E-02	-0.189E-03	0.745E-03	0.451E-03	0.746E-03	0.369E-03
C= 0.34E+17	50000.	0.657E-02	-0.122E-03	0.901E-03	0.568E-03	0.845E-03	0.462E-03
	100000.	0.619E-02	-0.804E-04	0.102E-02	0.655E-03	0.910E-03	0.524E-03
	150000.	0.588E-02	-0.111E-03	0.111E-02	0.714E-03	0.946E-03	0.562E-03
	300000.	0.521E-02	-0.950E-04	0.117E-02	0.794E-03	0.986E-03	0.617E-03
Y III 4f-5d	10000.	0.332E-02	0.180E-03	0.119E-03	0.565E-04	0.151E-03	0.522E-04
7942.3 Å	20000.	0.249E-02	0.182E-03	0.179E-03	0.847E-04	0.205E-03	0.742E-04
C= 0.71E+18	50000.	0.191E-02	0.188E-03	0.238E-03	0.122E-03	0.246E-03	0.100E-03
	100000.	0.165E-02	0.159E-03	0.274E-03	0.146E-03	0.277E-03	0.119E-03
	150000.	0.153E-02	0.156E-03	0.298E-03	0.163E-03	0.286E-03	0.132E-03
	300000.	0.135E-02	0.144E-03	0.320E-03	0.186E-03	0.308E-03	0.152E-03
Y III 4f-6d	10000.	0.285E-02	0.106E-02	0.204E-03	0.148E-03	0.234E-03	0.129E-03
5585.7 Å	20000.	0.235E-02	0.767E-03	0.277E-03	0.197E-03	0.278E-03	0.161E-03
C= 0.15E+18	50000.	0.206E-02	0.564E-03	0.352E-03	0.249E-03	0.337E-03	0.203E-03
	100000.	0.189E-02	0.432E-03	0.409E-03	0.290E-03	0.376E-03	0.236E-03
	150000.	0.180E-02	0.388E-03	0.437E-03	0.316E-03	0.391E-03	0.253E-03
	300000.	0.162E-02	0.315E-03	0.508E-03	0.360E-03	0.424E-03	0.287E-03
Y III 4f-7d	10000.	0.153E-02	0.793E-03	0.178E-03	0.133E-03	0.178E-03	0.108E-03
3016.8 Å	20000.	0.137E-02	0.639E-03	0.216E-03	0.160E-03	0.209E-03	0.130E-03
C= 0.24E+17	50000.	0.126E-02	0.463E-03	0.273E-03	0.200E-03	0.248E-03	0.160E-03
	100000.	0.121E-02	0.364E-03	0.307E-03	0.231E-03	0.275E-03	0.187E-03
	150000.	0.116E-02	0.315E-03	0.320E-03	0.244E-03	0.290E-03	0.199E-03
	300000.	0.105E-02	0.240E-03	0.376E-03	0.282E-03	0.318E-03	0.234E-03
Y III 5f-6d	10000.	0.612E-01	0.109E-01	0.378E-02	0.859E-03	0.438E-02	0.747E-03
20955.3 Å	20000.	0.533E-01	0.747E-02	0.460E-02	0.120E-02	0.497E-02	0.103E-02
C= 0.91E+18	50000.	0.489E-01	0.587E-02	0.545E-02	0.159E-02	0.568E-02	0.130E-02
	100000.	0.453E-01	0.432E-02	0.594E-02	0.190E-02	0.593E-02	0.155E-02
	150000.	0.430E-01	0.384E-02	0.613E-02	0.210E-02	0.606E-02	0.169E-02
	300000.	0.383E-01	0.342E-02	0.663E-02	0.234E-02	0.634E-02	0.189E-02
Y III 5f-7d	10000.	0.192E-01	0.729E-02	0.184E-02	0.118E-02	0.189E-02	0.962E-03
9548.4 Å	20000.	0.176E-01	0.574E-02	0.219E-02	0.141E-02	0.217E-02	0.116E-02
C= 0.19E+18	50000.	0.165E-01	0.417E-02	0.269E-02	0.179E-02	0.249E-02	0.143E-02
	100000.	0.158E-01	0.326E-02	0.299E-02	0.203E-02	0.272E-02	0.165E-02
	150000.	0.152E-01	0.286E-02	0.320E-02	0.217E-02	0.276E-02	0.174E-02
	300000.	0.137E-01	0.218E-02	0.349E-02	0.253E-02	0.287E-02	0.195E-02
Y III 6f-7d	10000.	0.437	0.875E-01	0.342E-01	0.119E-03	0.371E-01	0.117E-03
37626.1 Å	20000.	0.413	0.698E-01	0.387E-01	0.224E-03	0.414E-01	0.210E-03
C= 0.15E+19	50000.	0.392	0.508E-01	0.437E-01	0.408E-03	0.446E-01	0.355E-03
	100000.	0.376	0.399E-01	0.459E-01	0.562E-03	0.460E-01	0.459E-03
	150000.	0.359	0.364E-01	0.471E-01	0.623E-03	0.465E-01	0.512E-03
	300000.	0.321	0.271E-01	0.508E-01	0.749E-03	0.473E-01	0.612E-03
Y III 4f-5g	10000.	0.161E-02	-0.339E-04	0.825E-04	-0.522E-04	0.989E-04	-0.453E-04
4041.0 Å	20000.	0.127E-02	-0.382E-04	0.116E-03	-0.718E-04	0.119E-03	-0.588E-04
C= 0.34E+17	50000.	0.101E-02	-0.208E-04	0.145E-03	-0.918E-04	0.142E-03	-0.748E-04
	100000.	0.887E-03	-0.248E-04	0.169E-03	-0.109E-03	0.157E-03	-0.879E-04
	150000.	0.825E-03	-0.164E-04	0.179E-03	-0.117E-03	0.165E-03	-0.949E-04
	300000.	0.731E-03	-0.416E-05	0.208E-03	-0.134E-03	0.175E-03	-0.107E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 4f-6g	10000.	0.257E-02	0.108E-03	0.437E-03	0.427E-03	0.370E-03	0.351E-03
2711.2 Å	20000.	0.217E-02	0.874E-04	0.573E-03	0.509E-03	0.453E-03	0.411E-03
C= 0.71E+15	50000.	0.178E-02	0.581E-04	0.771E-03	0.604E-03	0.581E-03	0.484E-03
	100000.	0.154E-02	0.385E-04	0.963E-03	0.689E-03	0.686E-03	0.575E-03
	150000.	0.140E-02	0.335E-04	0.114E-02	0.733E-03	0.781E-03	0.595E-03
	300000.	0.118E-02	0.236E-04	0.137E-02	0.807E-03	0.100E-02	0.667E-03
Y III 5f-5g	10000.	0.345	-0.130E-01	0.205E-01	-0.135E-01	0.229E-01	-0.117E-01
48267.9 Å	20000.	0.292	-0.169E-01	0.264E-01	-0.174E-01	0.267E-01	-0.143E-01
C= 0.48E+19	50000.	0.251	-0.122E-01	0.334E-01	-0.222E-01	0.319E-01	-0.180E-01
	100000.	0.227	-0.115E-01	0.381E-01	-0.258E-01	0.349E-01	-0.209E-01
	150000.	0.213	-0.902E-02	0.413E-01	-0.278E-01	0.367E-01	-0.226E-01
	300000.	0.188	-0.589E-02	0.459E-01	-0.316E-01	0.410E-01	-0.258E-01
Y III 5f-6g	10000.	0.196E-01	0.520E-03	0.293E-02	0.284E-02	0.247E-02	0.233E-02
7037.7 Å	20000.	0.168E-01	0.337E-03	0.382E-02	0.338E-02	0.306E-02	0.271E-02
C= 0.48E+16	50000.	0.142E-01	0.192E-03	0.519E-02	0.403E-02	0.390E-02	0.320E-02
	100000.	0.124E-01	0.891E-04	0.648E-02	0.459E-02	0.449E-02	0.377E-02
	150000.	0.114E-01	0.832E-04	0.761E-02	0.486E-02	0.525E-02	0.396E-02
	300000.	0.963E-02	0.462E-04	0.927E-02	0.540E-02	0.667E-02	0.447E-02
Y III 6f-6g	10000.	4.21	-0.434E-01	0.488	0.450	0.423	0.367
92725.7 Å	20000.	3.74	-0.250E-01	0.625	0.536	0.525	0.438
C= 0.83E+18	50000.	3.28	-0.485E-01	0.875	0.654	0.666	0.521
	100000.	2.94	-0.446E-01	1.08	0.736	0.727	0.590
	150000.	2.72	-0.349E-01	1.27	0.805	0.881	0.648
	300000.	2.33	-0.325E-01	1.63	0.871	1.03	0.709
Y III 5g-6f	10000.	0.203E-01	0.166E-02	0.177E-02	0.131E-02	0.177E-02	0.107E-02
9042.4 Å	20000.	0.185E-01	0.134E-02	0.215E-02	0.157E-02	0.206E-02	0.128E-02
C= 0.88E+17	50000.	0.169E-01	0.121E-02	0.269E-02	0.198E-02	0.239E-02	0.157E-02
	100000.	0.158E-01	0.971E-03	0.314E-02	0.224E-02	0.268E-02	0.178E-02
	150000.	0.149E-01	0.786E-03	0.328E-02	0.246E-02	0.287E-02	0.194E-02
	300000.	0.131E-01	0.593E-03	0.397E-02	0.273E-02	0.322E-02	0.221E-02

PERTURBER DENSITY = 1.E+15cm-3

Y III 6d-6f	10000.	0.758E-01	-0.308E-02	0.627E-02	0.370E-02	0.650E-02	0.303E-02
5585.7 Å	20000.	0.700E-01	-0.192E-02	0.745E-02	0.450E-02	0.746E-02	0.368E-02
C= 0.34E+18	50000.	0.657E-01	-0.123E-02	0.901E-02	0.568E-02	0.845E-02	0.462E-02
	100000.	0.619E-01	-0.804E-03	0.102E-01	0.655E-02	0.910E-02	0.524E-02
	150000.	0.588E-01	-0.111E-02	0.111E-01	0.714E-02	0.946E-02	0.562E-02
	300000.	0.521E-01	-0.950E-03	0.117E-01	0.794E-02	0.986E-02	0.617E-02
Y III 4f-5d	10000.	0.331E-01	0.193E-02	0.119E-02	0.561E-03	0.151E-02	0.519E-03
7942.3 Å	20000.	0.249E-01	0.185E-02	0.179E-02	0.846E-03	0.205E-02	0.742E-03
C= 0.71E+19	50000.	0.191E-01	0.188E-02	0.238E-02	0.122E-02	0.246E-02	0.100E-02
	100000.	0.165E-01	0.159E-02	0.274E-02	0.146E-02	0.277E-02	0.119E-02
	150000.	0.153E-01	0.156E-02	0.298E-02	0.163E-02	0.286E-02	0.132E-02
	300000.	0.135E-01	0.144E-02	0.320E-02	0.186E-02	0.308E-02	0.152E-02
Y III 4f-6d	10000.	0.285E-01	0.105E-01	0.204E-02	0.146E-02	0.234E-02	0.127E-02
5585.7 Å	20000.	0.235E-01	0.766E-02	0.277E-02	0.196E-02	0.278E-02	0.161E-02
C= 0.15E+19	50000.	0.206E-01	0.563E-02	0.352E-02	0.249E-02	0.337E-02	0.203E-02
	100000.	0.189E-01	0.432E-02	0.409E-02	0.290E-02	0.376E-02	0.236E-02
	150000.	0.180E-01	0.388E-02	0.437E-02	0.316E-02	0.391E-02	0.253E-02
	300000.	0.162E-01	0.315E-02	0.508E-02	0.360E-02	0.424E-02	0.287E-02
Y III 4f-7d	10000.	0.153E-01	0.791E-02	0.178E-02	0.131E-02	0.178E-02	0.106E-02
3016.8 Å	20000.	0.137E-01	0.637E-02	0.216E-02	0.160E-02	0.209E-02	0.130E-02
C= 0.24E+18	50000.	0.126E-01	0.463E-02	0.273E-02	0.200E-02	0.248E-02	0.160E-02
	100000.	0.121E-01	0.364E-02	0.307E-02	0.231E-02	0.275E-02	0.187E-02
	150000.	0.116E-01	0.315E-02	0.320E-02	0.244E-02	0.290E-02	0.199E-02
	300000.	0.105E-01	0.240E-02	0.376E-02	0.282E-02	0.318E-02	0.234E-02
Y III 5f-6d	10000.	0.611	0.109	0.378E-01	0.853E-02	0.438E-01	0.741E-02
20955.3 Å	20000.	0.533	0.747E-01	0.460E-01	0.120E-01	0.497E-01	0.103E-01
C= 0.91E+19	50000.	0.489	0.587E-01	0.545E-01	0.159E-01	0.568E-01	0.130E-01
	100000.	0.453	0.432E-01	0.594E-01	0.190E-01	0.593E-01	0.155E-01
	150000.	0.430	0.384E-01	0.613E-01	0.210E-01	0.606E-01	0.169E-01
	300000.	0.383	0.342E-01	0.663E-01	0.234E-01	0.634E-01	0.189E-01

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 5f-7d	10000.	0.192	0.727E-01	0.184E-01	0.116E-01	0.188E-01	0.947E-02
9548.4 Å	20000.	0.176	0.572E-01	0.219E-01	0.141E-01	0.217E-01	0.116E-01
C= 0.19E+19	50000.	0.165	0.417E-01	0.269E-01	0.179E-01	0.249E-01	0.143E-01
	100000.	0.158	0.326E-01	0.299E-01	0.203E-01	0.272E-01	0.165E-01
	150000.	0.152	0.286E-01	0.320E-01	0.217E-01	0.276E-01	0.174E-01
	300000.	0.137	0.218E-01	0.349E-01	0.253E-01	0.287E-01	0.195E-01
Y III 6f-7d	10000.	4.37	0.876	0.342	0.118E-02	0.371	0.117E-02
37626.1 Å	20000.	4.13	0.699	0.387	0.223E-02	0.414	0.210E-02
C= 0.15E+20	50000.	3.92	0.508	0.437	0.408E-02	0.446	0.355E-02
	100000.	3.76	0.399	0.459	0.562E-02	0.460	0.459E-02
	150000.	3.59	0.364	0.471	0.623E-02	0.465	0.512E-02
	300000.	3.21	0.271	0.508	0.749E-02	0.473	0.612E-02
Y III 4f-5g	10000.	0.162E-01	-0.255E-03	0.825E-03	-0.518E-03	0.989E-03	-0.449E-03
4041.0 Å	20000.	0.127E-01	-0.363E-03	0.115E-02	-0.717E-03	0.119E-02	-0.587E-03
C= 0.34E+18	50000.	0.101E-01	-0.207E-03	0.145E-02	-0.918E-03	0.142E-02	-0.748E-03
	100000.	0.887E-02	-0.248E-03	0.169E-02	-0.109E-02	0.157E-02	-0.879E-03
	150000.	0.825E-02	-0.164E-03	0.179E-02	-0.117E-02	0.165E-02	-0.949E-03
	300000.	0.731E-02	-0.416E-04	0.208E-02	-0.134E-02	0.175E-02	-0.107E-02
Y III 4f-6g	10000.	0.257E-01	0.917E-03	0.436E-02	0.418E-02	0.370E-02	0.341E-02
2711.2 Å	20000.	0.217E-01	0.803E-03	0.573E-02	0.507E-02	0.453E-02	0.409E-02
C= 0.71E+16	50000.	0.178E-01	0.569E-03	0.771E-02	0.604E-02	0.581E-02	0.484E-02
	100000.	0.154E-01	0.385E-03	0.963E-02	0.689E-02	0.686E-02	0.575E-02
	150000.	0.140E-01	0.335E-03	0.114E-01	0.733E-02	0.781E-02	0.595E-02
	300000.	0.118E-01	0.236E-03	0.137E-01	0.807E-02	0.100E-01	0.667E-02
Y III 5f-5g	10000.	3.45	-0.121	0.205	-0.134	0.229	-0.116
48267.9 Å	20000.	2.92	-0.167	0.264	-0.173	0.267	-0.143
C= 0.48E+20	50000.	2.51	-0.122	0.334	-0.222	0.319	-0.180
	100000.	2.27	-0.115	0.381	-0.258	0.349	-0.209
	150000.	2.13	-0.902E-01	0.413	-0.278	0.367	-0.226
	300000.	1.88	-0.589E-01	0.459	-0.316	0.410	-0.258
Y III 5f-6g	10000.	0.196	0.413E-02	0.293E-01	0.278E-01	0.247E-01	0.227E-01
7037.7 Å	20000.	0.168	0.288E-02	0.382E-01	0.337E-01	0.306E-01	0.270E-01
C= 0.48E+17	50000.	0.142	0.184E-02	0.519E-01	0.403E-01	0.390E-01	0.320E-01
	100000.	0.124	0.891E-03	0.648E-01	0.459E-01	0.449E-01	0.377E-01
	150000.	0.114	0.832E-03	0.761E-01	0.486E-01	0.525E-01	0.396E-01
	300000.	0.963E-01	0.462E-03	0.927E-01	0.540E-01	0.667E-01	0.447E-01
Y III 5g-6f	10000.	0.203	0.159E-01	0.177E-01	0.129E-01	0.177E-01	0.105E-01
9042.4 Å	20000.	0.185	0.133E-01	0.215E-01	0.157E-01	0.206E-01	0.128E-01
C= 0.88E+18	50000.	0.169	0.120E-01	0.269E-01	0.198E-01	0.239E-01	0.157E-01
	100000.	0.158	0.971E-02	0.314E-01	0.224E-01	0.268E-01	0.178E-01
	150000.	0.149	0.786E-02	0.328E-01	0.246E-01	0.287E-01	0.194E-01
	300000.	0.131	0.593E-02	0.397E-01	0.273E-01	0.322E-01	0.221E-01
PERTURBER DENSITY = 1.E+16cm-3							
Y III 5s-5p	10000.	0.205E-01	-0.317E-03	0.292E-03	-0.857E-04	0.449E-03	-0.843E-04
2859.6 Å	20000.	0.148E-01	-0.417E-03	0.551E-03	-0.163E-03	0.705E-03	-0.151E-03
C= 0.29E+20	50000.	0.989E-02	-0.423E-03	0.895E-03	-0.288E-03	0.986E-03	-0.252E-03
	100000.	0.771E-02	-0.537E-03	0.106E-02	-0.392E-03	0.112E-02	-0.318E-03
	150000.	0.685E-02	-0.509E-03	0.114E-02	-0.436E-03	0.120E-02	-0.357E-03
	300000.	0.582E-02	-0.473E-03	0.128E-02	-0.519E-03	0.129E-02	-0.424E-03
Y III 5s-6p	10000.	0.604E-02	-0.104E-03	0.329E-03	-0.523E-04	0.413E-03	-0.488E-04
1083.7 Å	20000.	0.464E-02	-0.118E-03	0.465E-03	-0.877E-04	0.520E-03	-0.757E-04
C= 0.13E+19	50000.	0.357E-02	-0.160E-03	0.571E-03	-0.135E-03	0.611E-03	-0.110E-03
	100000.	0.311E-02	-0.125E-03	0.639E-03	-0.162E-03	0.664E-03	-0.133E-03
	150000.	0.291E-02	-0.133E-03	0.667E-03	-0.180E-03	0.682E-03	-0.146E-03
	300000.	0.261E-02	-0.127E-03	0.697E-03	-0.210E-03	0.702E-03	-0.170E-03
Y III 6s-6p	10000.	0.392	-0.857E-01	0.172E-01	-0.802E-02	0.212E-01	-0.719E-02
7676.5 Å	20000.	0.301	-0.641E-01	0.248E-01	-0.119E-01	0.270E-01	-0.103E-01
C= 0.66E+20	50000.	0.239	-0.450E-01	0.313E-01	-0.165E-01	0.322E-01	-0.135E-01
	100000.	0.214	-0.374E-01	0.363E-01	-0.197E-01	0.356E-01	-0.160E-01
	150000.	0.201	-0.320E-01	0.386E-01	-0.218E-01	0.370E-01	-0.175E-01
	300000.	0.182	-0.272E-01	0.418E-01	-0.246E-01	0.395E-01	-0.200E-01

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 5p-6s	10000.	0.224E-01	0.700E-02	0.329E-03	0.556E-03	0.432E-03	0.508E-03
2258.3 Å	20000.	0.163E-01	0.534E-02	0.664E-03	0.837E-03	0.715E-03	0.728E-03
C= 0.66E+19	50000.	0.119E-01	0.368E-02	0.120E-02	0.119E-02	0.110E-02	0.974E-03
	100000.	0.101E-01	0.303E-02	0.154E-02	0.143E-02	0.135E-02	0.116E-02
	150000.	0.926E-02	0.261E-02	0.174E-02	0.158E-02	0.155E-02	0.128E-02
	300000.	0.807E-02	0.213E-02	0.207E-02	0.181E-02	0.175E-02	0.144E-02
Y III 5p-7s	10000.	0.131E-01	0.699E-02	0.496E-03	0.741E-03	0.491E-03	0.642E-03
1324.9 Å	20000.	0.102E-01	0.521E-02	0.902E-03	0.103E-02	0.788E-03	0.838E-03
C= 0.11E+19	50000.	0.880E-02	0.395E-02	0.132E-02	0.132E-02	0.110E-02	0.108E-02
	100000.	0.803E-02	0.308E-02	0.167E-02	0.158E-02	0.138E-02	0.127E-02
	150000.	0.762E-02	0.266E-02	0.188E-02	0.170E-02	0.155E-02	0.134E-02
	300000.	0.683E-02	0.215E-02	0.222E-02	0.198E-02	0.176E-02	0.152E-02
Y III 6p-7s	10000.	0.289	0.127	0.128E-01	0.133E-01	0.143E-01	0.115E-01
5503.3 Å	20000.	0.229	0.946E-01	0.203E-01	0.184E-01	0.192E-01	0.150E-01
C= 0.19E+20	50000.	0.200	0.710E-01	0.274E-01	0.237E-01	0.248E-01	0.193E-01
	100000.	0.186	0.551E-01	0.337E-01	0.278E-01	0.290E-01	0.225E-01
	150000.	0.178	0.475E-01	0.361E-01	0.301E-01	0.310E-01	0.241E-01
	300000.	0.163	0.386E-01	0.431E-01	0.345E-01	0.347E-01	0.274E-01
Y III 5p-5d	10000.	0.208E-01	0.241E-02	0.642E-03	0.375E-03	0.844E-03	0.345E-03
2171.0 Å	20000.	0.154E-01	0.167E-02	0.101E-02	0.583E-03	0.119E-02	0.509E-03
C= 0.53E+19	50000.	0.112E-01	0.150E-02	0.143E-02	0.850E-03	0.147E-02	0.702E-03
	100000.	0.937E-02	0.140E-02	0.168E-02	0.102E-02	0.168E-02	0.835E-03
	150000.	0.855E-02	0.130E-02	0.183E-02	0.113E-02	0.175E-02	0.922E-03
	300000.	0.744E-02	0.119E-02	0.206E-02	0.132E-02	0.186E-02	0.105E-02
Y III 5p-6d	10000.	0.143E-01	0.568E-02	0.106E-02	0.759E-03	0.122E-02	0.656E-03
1306.2 Å	20000.	0.117E-01	0.423E-02	0.146E-02	0.105E-02	0.146E-02	0.854E-03
C= 0.81E+18	50000.	0.102E-01	0.314E-02	0.186E-02	0.135E-02	0.177E-02	0.110E-02
	100000.	0.934E-02	0.251E-02	0.219E-02	0.158E-02	0.200E-02	0.128E-02
	150000.	0.886E-02	0.219E-02	0.233E-02	0.172E-02	0.207E-02	0.137E-02
	300000.	0.795E-02	0.178E-02	0.272E-02	0.196E-02	0.227E-02	0.156E-02
Y III 5p-7d	10000.	0.192E-01	0.101E-01	0.229E-02	0.161E-02	*0.228E-02	*0.129E-02
1089.3 Å	20000.	0.172E-01	0.815E-02	0.279E-02	0.203E-02	0.269E-02	0.164E-02
C= 0.32E+18	50000.	0.157E-01	0.601E-02	0.353E-02	0.260E-02	0.320E-02	0.207E-02
	100000.	0.151E-01	0.476E-02	0.399E-02	0.302E-02	0.355E-02	0.243E-02
	150000.	0.145E-01	0.416E-02	0.416E-02	0.317E-02	0.375E-02	0.259E-02
	300000.	0.131E-01	0.315E-02	0.488E-02	0.368E-02	0.411E-02	0.305E-02
Y III 6p-6d	10000.	0.277	0.970E-01	0.208E-01	0.125E-01	0.236E-01	0.108E-01
5195.3 Å	20000.	0.228	0.716E-01	0.270E-01	0.171E-01	0.276E-01	0.140E-01
C= 0.13E+20	50000.	0.200	0.524E-01	0.342E-01	0.222E-01	0.333E-01	0.180E-01
	100000.	0.185	0.416E-01	0.384E-01	0.258E-01	0.357E-01	0.209E-01
	150000.	0.176	0.360E-01	0.411E-01	0.282E-01	0.374E-01	0.224E-01
	300000.	0.159	0.295E-01	0.460E-01	0.314E-01	0.403E-01	0.257E-01
Y III 6p-7d	10000.	0.149	0.739E-01	0.170E-01	0.115E-01	*0.171E-01	*0.917E-02
2899.1 Å	20000.	0.133	0.598E-01	0.206E-01	0.145E-01	0.200E-01	0.117E-01
C= 0.22E+19	50000.	0.122	0.437E-01	0.258E-01	0.185E-01	0.234E-01	0.148E-01
	100000.	0.117	0.345E-01	0.290E-01	0.215E-01	0.262E-01	0.174E-01
	150000.	0.113	0.298E-01	0.300E-01	0.226E-01	0.275E-01	0.185E-01
	300000.	0.103	0.228E-01	0.354E-01	0.263E-01	0.302E-01	0.217E-01
Y III 4d-5p	10000.	0.105E-01	-0.710E-05	0.222E-03	0.770E-05	0.339E-03	0.769E-05
2380.8 Å	20000.	0.771E-02	0.785E-04	0.410E-03	0.157E-04	0.524E-03	0.155E-04
C= 0.20E+20	50000.	0.517E-02	0.975E-04	0.652E-03	0.357E-04	0.721E-03	0.329E-04
	100000.	0.401E-02	0.779E-04	0.757E-03	0.552E-04	0.815E-03	0.478E-04
	150000.	0.354E-02	0.100E-03	0.809E-03	0.671E-04	0.866E-03	0.575E-04
	300000.	0.299E-02	0.861E-04	0.891E-03	0.844E-04	0.917E-03	0.694E-04
Y III 4d-6p	10000.	0.463E-02	-0.625E-04	0.288E-03	-0.344E-04	0.362E-03	-0.327E-04
1006.9 Å	20000.	0.360E-02	-0.442E-04	0.406E-03	-0.596E-04	0.454E-03	-0.526E-04
C= 0.11E+19	50000.	0.280E-02	-0.703E-04	0.497E-03	-0.938E-04	0.533E-03	-0.781E-04
	100000.	0.246E-02	-0.289E-04	0.555E-03	-0.115E-03	0.577E-03	-0.935E-04
	150000.	0.230E-02	-0.346E-04	0.579E-03	-0.127E-03	0.592E-03	-0.104E-03
	300000.	0.207E-02	-0.356E-04	0.601E-03	-0.151E-03	0.610E-03	-0.121E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	SHIFT(Å)	PROTONS WIDTH(Å)	SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	SHIFT(Å)
Y III 5d-6p	10000.	0.524	-0.339E-01	0.279E-01	-0.848E-02	0.348E-01	-0.776E-02
8892.4 Å	20000.	0.403	-0.314E-01	0.391E-01	-0.128E-01	0.424E-01	-0.111E-01
C= 0.89E+20	50000.	0.317	-0.314E-01	0.475E-01	-0.182E-01	0.500E-01	-0.149E-01
	100000.	0.280	-0.267E-01	0.538E-01	-0.218E-01	0.541E-01	-0.178E-01
	150000.	0.262	-0.257E-01	0.561E-01	-0.241E-01	0.555E-01	-0.197E-01
	300000.	0.236	-0.238E-01	0.594E-01	-0.276E-01	0.579E-01	-0.222E-01
Y III 4d-4f	10000.	0.296E-02	0.117E-04	0.100E-03	-0.743E-05	0.140E-03	-0.735E-05
993.5 Å	20000.	0.224E-02	0.426E-04	0.158E-03	-0.144E-04	0.197E-03	-0.136E-04
C= 0.12E+19	50000.	0.166E-02	0.222E-04	0.222E-03	-0.269E-04	0.241E-03	-0.232E-04
	100000.	0.141E-02	0.497E-04	0.252E-03	-0.370E-04	0.269E-03	-0.305E-04
	150000.	0.130E-02	0.414E-04	0.268E-03	-0.411E-04	0.280E-03	-0.338E-04
	300000.	0.114E-02	0.367E-04	0.285E-03	-0.497E-04	0.291E-03	-0.403E-04
Y III 4d-5f	10000.	0.566E-02	0.223E-03	0.360E-03	0.216E-03	0.428E-03	0.187E-03
810.8 Å	20000.	0.497E-02	0.332E-03	0.498E-03	0.305E-03	0.512E-03	0.248E-03
C= 0.14E+18	50000.	0.438E-02	0.267E-03	0.624E-03	0.393E-03	0.614E-03	0.323E-03
	100000.	0.398E-02	0.255E-03	0.724E-03	0.467E-03	0.678E-03	0.380E-03
	150000.	0.373E-02	0.215E-03	0.787E-03	0.511E-03	0.699E-03	0.405E-03
	300000.	0.328E-02	0.173E-03	0.876E-03	0.567E-03	0.754E-03	0.461E-03
Y III 4d-6f	10000.	0.102E-01	0.883E-03	0.105E-02	0.727E-03	*0.105E-02	*0.581E-03
732.8 Å	20000.	0.959E-02	0.701E-03	0.128E-02	0.915E-03	0.123E-02	0.743E-03
C= 0.58E+17	50000.	0.903E-02	0.720E-03	0.162E-02	0.117E-02	0.146E-02	0.937E-03
	100000.	0.847E-02	0.581E-03	0.185E-02	0.137E-02	0.162E-02	0.110E-02
	150000.	0.800E-02	0.482E-03	0.194E-02	0.143E-02	0.172E-02	0.117E-02
	300000.	0.706E-02	0.396E-03	0.232E-02	0.166E-02	0.189E-02	0.138E-02
Y III 5d-5f	10000.	0.849E-01	0.572E-03	0.470E-02	0.226E-02	0.563E-02	0.193E-02
2835.6 Å	20000.	0.725E-01	0.166E-02	0.629E-02	0.320E-02	0.661E-02	0.264E-02
C= 0.17E+19	50000.	0.632E-01	0.782E-03	0.771E-02	0.416E-02	0.781E-02	0.342E-02
	100000.	0.573E-01	0.731E-03	0.877E-02	0.495E-02	0.844E-02	0.399E-02
	150000.	0.538E-01	0.325E-03	0.935E-02	0.536E-02	0.888E-02	0.434E-02
	300000.	0.474E-01	-0.983E-05	0.107E-01	0.628E-02	0.925E-02	0.485E-02
Y III 5d-6f	10000.	0.899E-01	0.598E-02	0.840E-02	0.566E-02	*0.843E-02	*0.452E-02
2066.3 Å	20000.	0.828E-01	0.434E-02	0.102E-01	0.712E-02	0.989E-02	0.580E-02
C= 0.46E+18	50000.	0.768E-01	0.438E-02	0.128E-01	0.916E-02	0.117E-01	0.739E-02
	100000.	0.718E-01	0.333E-02	0.145E-01	0.106E-01	0.126E-01	0.843E-02
	150000.	0.679E-01	0.260E-02	0.154E-01	0.112E-01	0.138E-01	0.926E-02
	300000.	0.599E-01	0.201E-02	0.183E-01	0.130E-01	0.148E-01	0.108E-01
Y III 6d-6f	10000.	0.758	-0.333E-01	0.625E-01	0.350E-01	*0.646E-01	*0.283E-01
5585.7 Å	20000.	0.700	-0.207E-01	0.744E-01	0.441E-01	0.745E-01	0.358E-01
C= 0.34E+19	50000.	0.657	-0.128E-01	0.900E-01	0.566E-01	0.845E-01	0.460E-01
	100000.	0.619	-0.816E-02	0.102	0.655E-01	0.910E-01	0.524E-01
	150000.	0.588	-0.112E-01	0.111	0.714E-01	0.946E-01	0.562E-01
	300000.	0.521	-0.950E-02	0.117	0.794E-01	0.986E-01	0.617E-01
Y III 4f-5d	10000.	0.331	0.190E-01	0.119E-01	0.544E-02	0.151E-01	0.502E-02
7942.3 Å	20000.	0.249	0.181E-01	0.179E-01	0.838E-02	0.205E-01	0.734E-02
C= 0.71E+20	50000.	0.191	0.188E-01	0.238E-01	0.121E-01	0.246E-01	0.100E-01
	100000.	0.165	0.159E-01	0.274E-01	0.146E-01	0.277E-01	0.119E-01
	150000.	0.153	0.156E-01	0.298E-01	0.163E-01	0.286E-01	0.132E-01
	300000.	0.135	0.144E-01	0.320E-01	0.186E-01	0.308E-01	0.152E-01
Y III 4f-6d	10000.	0.285	0.105	0.204E-01	0.140E-01	0.233E-01	0.121E-01
5585.7 Å	20000.	0.235	0.763E-01	0.277E-01	0.193E-01	0.278E-01	0.158E-01
C= 0.15E+20	50000.	0.206	0.561E-01	0.352E-01	0.249E-01	0.337E-01	0.202E-01
	100000.	0.189	0.431E-01	0.409E-01	0.290E-01	0.376E-01	0.236E-01
	150000.	0.180	0.388E-01	0.437E-01	0.316E-01	0.391E-01	0.253E-01
	300000.	0.162	0.315E-01	0.508E-01	0.360E-01	0.424E-01	0.287E-01
Y III 4f-7d	10000.	0.153	0.783E-01	0.178E-01	0.124E-01	*0.177E-01	*0.988E-02
3016.8 Å	20000.	0.137	0.632E-01	0.216E-01	0.156E-01	0.209E-01	0.126E-01
C= 0.24E+19	50000.	0.126	0.461E-01	0.273E-01	0.199E-01	0.248E-01	0.159E-01
	100000.	0.121	0.363E-01	0.307E-01	0.231E-01	0.275E-01	0.187E-01
	150000.	0.116	0.314E-01	0.320E-01	0.244E-01	0.290E-01	0.199E-01
	300000.	0.105	0.240E-01	0.376E-01	0.282E-01	0.318E-01	0.234E-01

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 5f-6d	10000.	6.11	1.09	0.377	0.825E-01	0.436	0.712E-01
20955.3 Å	20000.	5.33	0.750	0.460	0.118	0.496	0.101
C= 0.91E+20	50000.	4.89	0.585	0.545	0.159	0.568	0.130
	100000.	4.53	0.432	0.594	0.190	0.593	0.155
	150000.	4.30	0.384	0.613	0.210	0.606	0.169
	300000.	3.83	0.342	0.663	0.234	0.634	0.189
Y III 5f-7d	10000.	1.92	0.720	0.183	0.110	*0.187	*0.882E-01
9548.4 Å	20000.	1.76	0.568	0.218	0.138	0.217	0.113
C= 0.19E+20	50000.	1.65	0.415	0.269	0.178	0.249	0.143
	100000.	1.58	0.326	0.299	0.203	0.272	0.165
	150000.	1.52	0.285	0.320	0.217	0.276	0.174
	300000.	1.37	0.218	0.349	0.253	0.287	0.195
Y III 4f-5g	10000.	0.161	-0.238E-02	0.823E-02	-0.498E-02	0.986E-02	-0.429E-02
4041.0 Å	20000.	0.127	-0.355E-02	0.115E-01	-0.707E-02	0.119E-01	-0.577E-02
C= 0.34E+19	50000.	0.101	-0.201E-02	0.145E-01	-0.917E-02	0.142E-01	-0.746E-02
	100000.	0.887E-01	-0.247E-02	0.169E-01	-0.109E-01	0.157E-01	-0.879E-02
	150000.	0.825E-01	-0.163E-02	0.179E-01	-0.117E-01	0.165E-01	-0.949E-02
	300000.	0.731E-01	-0.416E-03	0.208E-01	-0.134E-01	0.175E-01	-0.107E-01
Y III 4f-6g	10000.	0.256	0.384E-02	*0.438E-01	*0.374E-01	*0.366E-01	*0.297E-01
2711.2 Å	20000.	0.216	0.382E-02	*0.576E-01	*0.484E-01	*0.450E-01	*0.388E-01
C= 0.71E+17	50000.	0.178	0.420E-02	*0.771E-01	*0.600E-01	*0.581E-01	*0.480E-01
	100000.	0.153	0.357E-02	*0.963E-01	*0.689E-01	*0.686E-01	*0.575E-01
	150000.	0.140	0.312E-02	*0.114	*0.733E-01	*0.781E-01	*0.595E-01
	300000.	0.118	0.236E-02	0.137	0.807E-01	*0.100	*0.667E-01
Y III 5f-6g	10000.	1.95	0.579E-02	*0.294	*0.249	*0.245	*0.197
7037.7 Å	20000.	1.67	0.111E-02	*0.384	*0.322	*0.304	*0.255
C= 0.48E+18	50000.	1.41	0.872E-02	*0.519	*0.401	*0.390	*0.317
	100000.	1.23	0.711E-02	*0.648	*0.459	*0.449	*0.377
	150000.	1.13	0.685E-02	*0.761	*0.486	*0.525	*0.396
	300000.	0.961	0.462E-02	0.927	0.540	*0.667	*0.447
Y III 5g-6f	10000.	2.03	0.153	0.176	0.121	*0.176	*0.971E-01
9042.4 Å	20000.	1.85	0.125	0.215	0.153	0.206	0.124
C= 0.88E+19	50000.	1.69	0.118	0.269	0.197	0.239	0.156
	100000.	1.58	0.966E-01	0.314	0.224	0.268	0.178
	150000.	1.49	0.783E-01	0.328	0.246	0.287	0.194
	300000.	1.31	0.593E-01	0.397	0.273	0.322	0.221
PERTURBER DENSITY = 1.E+17cm-3							
Y III 5s-5p	10000.	0.205	-0.256E-02	0.289E-02	-0.782E-03	0.444E-02	-0.768E-03
2859.6 Å	20000.	0.148	-0.426E-02	0.550E-02	-0.158E-02	0.703E-02	-0.146E-02
C= 0.29E+21	50000.	0.989E-01	-0.415E-02	0.895E-02	-0.287E-02	0.986E-02	-0.252E-02
	100000.	0.771E-01	-0.538E-02	0.106E-01	-0.391E-02	0.112E-01	-0.317E-02
	150000.	0.685E-01	-0.509E-02	0.114E-01	-0.436E-02	0.120E-01	-0.357E-02
	300000.	0.582E-01	-0.473E-02	0.128E-01	-0.519E-02	0.129E-01	-0.424E-02
Y III 5s-6p	10000.	0.604E-01	-0.107E-02	0.324E-02	-0.475E-03	0.403E-02	-0.440E-03
1083.7 Å	20000.	0.464E-01	-0.117E-02	0.463E-02	-0.844E-03	0.517E-02	-0.724E-03
C= 0.13E+20	50000.	0.357E-01	-0.154E-02	0.571E-02	-0.135E-02	0.611E-02	-0.110E-02
	100000.	0.311E-01	-0.123E-02	0.639E-02	-0.162E-02	0.664E-02	-0.132E-02
	150000.	0.291E-01	-0.133E-02	0.667E-02	-0.180E-02	0.682E-02	-0.146E-02
	300000.	0.261E-01	-0.127E-02	0.697E-02	-0.210E-02	0.702E-02	-0.170E-02
Y III 6s-6p	10000.	3.92	-0.847	0.170	-0.717E-01	0.207	-0.633E-01
7676.5 Å	20000.	3.01	-0.633	0.247	-0.113	0.268	-0.967E-01
C= 0.66E+21	50000.	2.39	-0.444	0.313	-0.164	0.322	-0.134
	100000.	2.14	-0.373	0.363	-0.196	0.356	-0.160
	150000.	2.01	-0.319	0.386	-0.218	0.370	-0.175
	300000.	1.82	-0.271	0.418	-0.246	0.395	-0.200
Y III 5p-6s	10000.	0.224	0.694E-01	0.328E-02	0.499E-02	0.429E-02	0.451E-02
2258.3 Å	20000.	0.163	0.529E-01	0.663E-02	0.797E-02	0.714E-02	0.688E-02
C= 0.66E+20	50000.	0.119	0.367E-01	0.120E-01	0.118E-01	0.110E-01	0.970E-02
	100000.	0.101	0.302E-01	0.154E-01	0.142E-01	0.135E-01	0.116E-01
	150000.	0.926E-01	0.260E-01	0.174E-01	0.158E-01	0.155E-01	0.128E-01
	300000.	0.807E-01	0.213E-01	0.207E-01	0.181E-01	0.175E-01	0.144E-01

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 5p-7s	10000.	0.131	0.689E-01	0.495E-02	0.636E-02	0.489E-02	0.537E-02
1324.9 Å	20000.	0.102	0.513E-01	0.902E-02	0.958E-02	0.789E-02	0.767E-02
C= 0.11E+20	50000.	0.880E-01	0.389E-01	0.132E-01	0.131E-01	0.110E-01	0.107E-01
	100000.	0.803E-01	0.306E-01	0.167E-01	0.157E-01	0.138E-01	0.127E-01
	150000.	0.762E-01	0.264E-01	0.188E-01	0.170E-01	0.155E-01	0.134E-01
	300000.	0.683E-01	0.215E-01	0.222E-01	0.198E-01	0.176E-01	0.152E-01
Y III 6p-7s	10000.	2.89	1.25	0.127	0.114	*0.141	*0.962E-01
5503.3 Å	20000.	2.29	0.932	0.203	0.171	*0.190	*0.136
C= 0.19E+21	50000.	2.01	0.700	0.274	0.236	0.248	0.192
	100000.	1.86	0.547	0.337	0.277	0.290	0.224
	150000.	1.78	0.470	0.361	0.301	0.310	0.241
	300000.	1.63	0.385	0.431	0.345	0.347	0.274
Y III 5p-5d	10000.	0.208	0.236E-01	0.635E-02	0.338E-02	0.830E-02	0.308E-02
2171.0 Å	20000.	0.154	0.164E-01	0.100E-01	0.558E-02	0.119E-01	0.484E-02
C= 0.53E+20	50000.	0.112	0.148E-01	0.143E-01	0.848E-02	0.147E-01	0.700E-02
	100000.	0.937E-01	0.139E-01	0.168E-01	0.102E-01	0.168E-01	0.832E-02
	150000.	0.855E-01	0.130E-01	0.183E-01	0.113E-01	0.175E-01	0.922E-02
	300000.	0.744E-01	0.118E-01	0.206E-01	0.132E-01	0.186E-01	0.105E-01
Y III 5p-6d	10000.	0.143	0.557E-01	0.104E-01	0.651E-02	*0.118E-01	*0.548E-02
1306.2 Å	20000.	0.117	0.415E-01	0.145E-01	0.973E-02	*0.145E-01	*0.777E-02
C= 0.81E+19	50000.	0.102	0.308E-01	0.186E-01	0.134E-01	*0.177E-01	*0.109E-01
	100000.	0.934E-01	0.249E-01	0.219E-01	0.157E-01	0.200E-01	0.127E-01
	150000.	0.886E-01	0.218E-01	0.233E-01	0.172E-01	0.207E-01	0.137E-01
	300000.	0.795E-01	0.178E-01	0.272E-01	0.196E-01	0.227E-01	0.156E-01
Y III 5p-7d	10000.	0.192	0.976E-01	*0.223E-01	*0.128E-01		
1089.3 Å	20000.	0.172	0.791E-01	*0.277E-01	*0.180E-01		
C= 0.32E+19	50000.	0.157	0.584E-01	*0.353E-01	*0.258E-01		
	100000.	0.151	0.468E-01	*0.399E-01	*0.300E-01	*0.355E-01	*0.242E-01
	150000.	0.145	0.410E-01	*0.416E-01	*0.317E-01	*0.375E-01	*0.259E-01
	300000.	0.131	0.314E-01	0.488E-01	0.368E-01	*0.411E-01	*0.305E-01
Y III 6p-6d	10000.	2.77	0.952	0.204	0.107	*0.227	*0.899E-01
5195.3 Å	20000.	2.28	0.703	0.269	0.159	*0.274	*0.128
C= 0.13E+21	50000.	2.00	0.515	0.342	0.221	*0.333	*0.179
	100000.	1.85	0.412	0.384	0.257	*0.357	*0.208
	150000.	1.76	0.360	0.411	0.282	0.374	0.224
	300000.	1.59	0.294	0.460	0.314	0.403	0.257
Y III 6p-7d	10000.	1.49	0.715	*0.165	*0.917E-01		
2899.1 Å	20000.	1.33	0.580	*0.204	*0.129		
C= 0.22E+20	50000.	1.22	0.425	*0.257	*0.184		
	100000.	1.17	0.340	*0.290	*0.214	*0.262	*0.172
	150000.	1.13	0.298	*0.300	*0.226	*0.275	*0.185
	300000.	1.03	0.228	0.354	0.263	*0.302	*0.217
Y III 4d-5p	10000.	0.105	-0.199E-03	0.220E-02	0.704E-04	0.335E-02	0.703E-04
2380.8 Å	20000.	0.771E-01	0.749E-03	0.410E-02	0.153E-03	0.523E-02	0.151E-03
C= 0.20E+21	50000.	0.517E-01	0.913E-03	0.652E-02	0.357E-03	0.721E-02	0.329E-03
	100000.	0.401E-01	0.749E-03	0.757E-02	0.552E-03	0.815E-02	0.478E-03
	150000.	0.354E-01	0.100E-02	0.809E-02	0.671E-03	0.866E-02	0.575E-03
	300000.	0.299E-01	0.861E-03	0.891E-02	0.844E-03	0.917E-02	0.694E-03
Y III 4d-6p	10000.	0.463E-01	-0.749E-03	0.284E-02	-0.313E-03	0.353E-02	-0.296E-03
1006.9 Å	20000.	0.360E-01	-0.430E-03	0.404E-02	-0.574E-03	0.452E-02	-0.504E-03
C= 0.11E+20	50000.	0.280E-01	-0.679E-03	0.497E-02	-0.936E-03	0.533E-02	-0.780E-03
	100000.	0.246E-01	-0.278E-03	0.555E-02	-0.114E-02	0.576E-02	-0.934E-03
	150000.	0.230E-01	-0.345E-03	0.579E-02	-0.127E-02	0.592E-02	-0.104E-02
	300000.	0.207E-01	-0.355E-03	0.601E-02	-0.151E-02	0.610E-02	-0.121E-02
Y III 5d-6p	10000.	5.24	-0.328	0.275	-0.761E-01	*0.339	-0.688E-01
8892.4 Å	20000.	4.03	-0.310	0.390	-0.122	0.421	-0.105
C= 0.89E+21	50000.	3.17	-0.310	0.475	-0.181	0.500	-0.149
	100000.	2.80	-0.265	0.538	-0.218	0.541	-0.178
	150000.	2.62	-0.256	0.561	-0.241	0.555	-0.197
	300000.	2.36	-0.238	0.594	-0.276	0.579	-0.222

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 4d-4f	10000.	0.296E-01	-0.423E-04	0.989E-03	-0.678E-04	0.138E-02	-0.670E-04
993.5 Å	20000.	0.224E-01	0.451E-03	0.158E-02	-0.140E-03	0.196E-02	-0.131E-03
C= 0.12E+20	50000.	0.166E-01	0.222E-03	0.222E-02	-0.268E-03	0.241E-02	-0.232E-03
	100000.	0.141E-01	0.502E-03	0.252E-02	-0.369E-03	0.269E-02	-0.304E-03
	150000.	0.130E-01	0.415E-03	0.268E-02	-0.411E-03	0.280E-02	-0.338E-03
	300000.	0.114E-01	0.367E-03	0.285E-02	-0.497E-03	0.291E-02	-0.403E-03
Y III 4d-5f	10000.	0.566E-01	0.187E-02	0.353E-02	0.187E-02	*0.415E-02	*0.159E-02
810.8 Å	20000.	0.497E-01	0.312E-02	0.496E-02	0.286E-02	*0.508E-02	*0.229E-02
C= 0.14E+19	50000.	0.438E-01	0.253E-02	0.623E-02	0.391E-02	*0.613E-02	*0.321E-02
	100000.	0.398E-01	0.249E-02	0.724E-02	0.465E-02	0.678E-02	0.378E-02
	150000.	0.373E-01	0.214E-02	0.787E-02	0.511E-02	0.699E-02	0.405E-02
	300000.	0.328E-01	0.172E-02	0.876E-02	0.567E-02	0.754E-02	0.461E-02
Y III 4d-6f	10000.	0.102	0.720E-02	*0.102E-01	*0.580E-02		
732.8 Å	20000.	0.959E-01	0.598E-02	*0.126E-01	*0.812E-02		
C= 0.58E+18	50000.	0.903E-01	0.641E-02	*0.162E-01	*0.117E-01		
	100000.	0.847E-01	0.549E-02	*0.185E-01	*0.136E-01	*0.162E-01	*0.109E-01
	150000.	0.800E-01	0.477E-02	*0.194E-01	*0.143E-01	*0.172E-01	*0.117E-01
	300000.	0.706E-01	0.391E-02	*0.232E-01	*0.166E-01	*0.189E-01	*0.138E-01
Y III 5d-5f	10000.	0.849	0.301E-02	0.460E-01	0.198E-01	*0.544E-01	*0.165E-01
2835.6 Å	20000.	0.725	0.145E-01	0.626E-01	0.301E-01	*0.656E-01	*0.245E-01
C= 0.17E+20	50000.	0.632	0.640E-02	0.770E-01	0.414E-01	*0.781E-01	*0.340E-01
	100000.	0.573	0.667E-02	0.877E-01	0.494E-01	0.844E-01	0.397E-01
	150000.	0.538	0.316E-02	0.935E-01	0.536E-01	0.888E-01	0.434E-01
	300000.	0.474	-0.194E-03	0.107	0.628E-01	0.925E-01	0.485E-01
Y III 5d-6f	10000.	0.899	0.475E-01	*0.813E-01	*0.452E-01		
2066.3 Å	20000.	0.828	0.354E-01	*0.100	*0.631E-01		
C= 0.46E+19	50000.	0.768	0.377E-01	*0.128	*0.910E-01		
	100000.	0.718	0.308E-01	*0.145	*0.106	*0.126	*0.837E-01
	150000.	0.679	0.257E-01	*0.154	*0.112	*0.138	*0.926E-01
	300000.	0.599	0.197E-01	*0.183	*0.130	*0.148	*0.108
Y III 6d-6f	10000.	7.58	-0.402	*0.602	*0.284		
5585.7 Å	20000.	7.00	-0.260	*0.735	*0.397		
C= 0.34E+20	50000.	6.57	-0.163	*0.900	*0.562		
	100000.	6.19	-0.966E-01	*1.02	*0.652	*0.909	0.520
	150000.	5.88	-0.115	*1.11	*0.714	*0.946	0.562
	300000.	5.21	-0.972E-01	1.17	0.794	*0.986	0.617
Y III 4f-5d	10000.	3.31	0.181	0.118	0.490E-01	0.148	0.448E-01
7942.3 Å	20000.	2.49	0.177	0.178	0.800E-01	0.204	0.696E-01
C= 0.71E+21	50000.	1.91	0.185	0.238	0.121	0.246	0.999E-01
	100000.	1.65	0.158	0.274	0.146	0.277	0.119
	150000.	1.53	0.155	0.298	0.163	0.286	0.132
	300000.	1.35	0.144	0.320	0.186	0.308	0.152
Y III 4f-6d	10000.	2.85	1.03	0.200	0.120	*0.226	*0.101
5585.7 Å	20000.	2.35	0.748	0.276	0.179	*0.275	*0.144
C= 0.15E+21	50000.	2.06	0.550	0.352	0.247	*0.337	*0.201
	100000.	1.89	0.427	0.409	0.289	0.376	0.235
	150000.	1.80	0.387	0.437	0.316	0.391	0.253
	300000.	1.62	0.315	0.508	0.360	0.424	0.287
Y III 4f-7d	10000.	1.53	0.757	*0.172	*0.987E-01		
3016.8 Å	20000.	1.37	0.613	*0.214	*0.138		
C= 0.24E+20	50000.	1.26	0.447	*0.273	*0.198		
	100000.	1.21	0.358	*0.307	*0.230	*0.275	*0.186
	150000.	1.16	0.314	*0.320	*0.244	*0.290	*0.199
	300000.	1.05	0.239	0.376	0.282	*0.318	*0.234
Y III 5f-7d	10000.	19.2	6.98	*1.76	*0.886		
9548.4 Å	20000.	17.6	5.52	*2.17	*1.23		
C= 0.19E+21	50000.	16.5	4.04	*2.69	*1.77		
	100000.	15.8	3.21	*2.99	*2.02	*2.72	*1.64
	150000.	15.2	2.84	*3.20	*2.17	*2.76	*1.74
	300000.	13.7	2.17	3.49	2.53	*2.87	*1.95

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 4f-5g	10000.	1.62	-0.188E-01	0.809E-01	-0.434E-01	*0.956E-01	-0.366E-01
4041.0 Å	20000.	1.27	-0.310E-01	0.115	-0.664E-01	*0.118	-0.533E-01
C= 0.34E+20	50000.	1.01	-0.165E-01	0.145	-0.913E-01	0.142	-0.743E-01
	100000.	0.887	-0.233E-01	0.169	-0.109	0.157	-0.876E-01
	150000.	0.825	-0.161E-01	0.179	-0.117	0.165	-0.949E-01
	300000.	0.731	-0.394E-02	0.208	-0.134	0.175	-0.107
Y III 4f-6g	10000.	2.37	-0.742E-01				
2711.2 Å	20000.	2.03	-0.414E-01				
C= 0.71E+18	50000.	1.70	-0.222E-01				
	100000.	1.48	0.365E-02				
	150000.	1.35	0.257E-01				
	300000.	1.14	0.181E-01				
Y III 5f-6g	10000.	18.2	-0.678				
7037.7 Å	20000.	15.9	-0.509				
C= 0.48E+19	50000.	13.6	-0.335				
	100000.	12.0	-0.140				
	150000.	11.0	0.321E-01				
	300000.	9.40	0.987E-02				
Y III 5g-6f	10000.	20.3	1.25	*1.70	*0.958		
9042.4 Å	20000.	18.5	1.07	*2.12	*1.34		
C= 0.88E+20	50000.	16.9	1.04	*2.69	*1.96		
	100000.	15.8	0.910	*3.13	*2.22	*2.68	*1.76
	150000.	14.9	0.774	*3.28	*2.46	*2.87	*1.94
	300000.	13.1	0.584	*3.97	*2.73	*3.22	*2.21
PERTURBER DENSITY = 1.E+18cm-3							
Y III 5s-5p	10000.	2.05	-0.248E-01	0.271E-01	-0.594E-02	0.408E-01	-0.580E-02
2859.6 Å	20000.	1.48	-0.415E-01	0.542E-01	-0.142E-01	0.687E-01	-0.129E-01
C= 0.29E+22	50000.	0.989	-0.409E-01	0.893E-01	-0.275E-01	0.982E-01	-0.239E-01
	100000.	0.771	-0.525E-01	0.106	-0.386E-01	0.112	-0.312E-01
	150000.	0.685	-0.503E-01	0.114	-0.435E-01	0.120	-0.355E-01
	300000.	0.582	-0.469E-01	0.128	-0.518E-01	0.129	-0.423E-01
Y III 5s-6p	10000.	0.604	-0.883E-02	*0.287E-01	-0.353E-02		
1083.7 Å	20000.	0.464	-0.107E-01	*0.446E-01	-0.736E-02		
C= 0.13E+21	50000.	0.357	-0.148E-01	*0.566E-01	-0.127E-01	*0.602E-01	-0.102E-01
	100000.	0.311	-0.117E-01	*0.638E-01	-0.158E-01	*0.661E-01	-0.129E-01
	150000.	0.291	-0.129E-01	0.666E-01	-0.179E-01	*0.681E-01	-0.146E-01
	300000.	0.261	-0.125E-01	0.697E-01	-0.209E-01	*0.702E-01	-0.170E-01
Y III 5p-6s	10000.	2.24	0.673	0.315E-01	0.354E-01	*0.404E-01	*0.306E-01
2258.3 Å	20000.	1.63	0.516	0.658E-01	0.670E-01	*0.703E-01	*0.562E-01
C= 0.66E+21	50000.	1.19	0.358	0.120	0.109	*0.109	*0.878E-01
	100000.	1.01	0.295	0.154	0.138	0.136	0.112
	150000.	0.926	0.255	0.174	0.157	0.155	0.128
	300000.	0.807	0.210	0.207	0.181	0.175	0.144
Y III 5p-7s	10000.	*1.31	*0.651	*0.479E-01	*0.372E-01		
1324.9 Å	20000.	1.02	0.489	*0.900E-01	*0.728E-01		
C= 0.11E+21	50000.	0.880	0.374	*0.132	*0.115		
	100000.	0.803	0.293	*0.168	*0.150	*0.138	*0.119
	150000.	0.762	0.256	*0.188	*0.168	*0.155	*0.132
	300000.	0.683	0.211	*0.222	*0.197	*0.175	*0.151
Y III 5p-5d	10000.	2.08	0.223	0.583E-01	0.244E-01	*0.729E-01	*0.215E-01
2171.0 Å	20000.	1.54	0.155	0.981E-01	0.476E-01	*0.114	*0.402E-01
C= 0.53E+21	50000.	1.12	0.143	0.143	0.788E-01	*0.145	*0.642E-01
	100000.	0.937	0.135	0.168	0.996E-01	*0.168	*0.808E-01
	150000.	0.855	0.127	0.183	0.113	*0.175	*0.916E-01
	300000.	0.744	0.117	0.206	0.131	*0.186	*0.104
Y III 5p-6d	10000.	*1.43	*0.518				
1306.2 Å	20000.	1.17	0.388				
C= 0.81E+20	50000.	1.02	0.292	*0.185	*0.116		
	100000.	0.934	0.236	*0.216	*0.149		
	150000.	0.886	0.208	*0.233	*0.170		
	300000.	0.795	0.173	*0.272	*0.195	*0.227	*0.155

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 5p-7d	10000.	*1.91	*0.853				
1089.3 Å	20000.	*1.72	*0.712				
C= 0.32E+20	50000.	1.57	0.536				
	100000.	1.51	0.430				
	150000.	1.45	0.383				
	300000.	1.31	0.301				
Y III 6p-7d	10000.	*14.9	*6.27				
2899.1 Å	20000.	*13.3	*5.24				
C= 0.22E+21	50000.	12.2	3.91				
	100000.	11.7	3.12				
	150000.	11.3	2.75				
	300000.	10.3	2.18				
Y III 4d-5p	10000.	1.05	-0.223E-02	0.205E-01	0.536E-03	0.307E-01	0.536E-03
2380.8 Å	20000.	0.771	0.682E-02	0.403E-01	0.138E-02	0.510E-01	0.136E-02
C= 0.20E+22	50000.	0.517	0.919E-02	0.651E-01	0.346E-02	0.718E-01	0.318E-02
	100000.	0.401	0.749E-02	0.757E-01	0.548E-02	0.814E-01	0.473E-02
	150000.	0.354	0.999E-02	0.809E-01	0.670E-02	0.866E-01	0.574E-02
	300000.	0.299	0.863E-02	0.891E-01	0.844E-02	0.917E-01	0.693E-02
Y III 4d-6p	10000.	0.463	-0.603E-02	*0.251E-01	-0.234E-02		
1006.9 Å	20000.	0.360	-0.364E-02	*0.390E-01	-0.505E-02		
C= 0.11E+21	50000.	0.280	-0.632E-02	*0.493E-01	-0.884E-02	*0.525E-01	-0.729E-02
	100000.	0.246	-0.242E-02	*0.554E-01	-0.112E-01	*0.573E-01	-0.913E-02
	150000.	0.230	-0.316E-02	0.579E-01	-0.126E-01	*0.592E-01	-0.103E-01
	300000.	0.207	-0.344E-02	0.601E-01	-0.151E-01	*0.610E-01	-0.121E-01
Y III 4d-4f	10000.	0.296	0.207E-03	0.910E-02	-0.516E-03	*0.122E-01	-0.508E-03
993.5 Å	20000.	0.224	0.460E-02	0.154E-01	-0.126E-02	*0.189E-01	-0.117E-02
C= 0.12E+21	50000.	0.166	0.238E-02	0.221E-01	-0.258E-02	*0.239E-01	-0.222E-02
	100000.	0.141	0.505E-02	0.251E-01	-0.365E-02	*0.269E-01	-0.300E-02
	150000.	0.130	0.422E-02	0.268E-01	-0.410E-02	0.280E-01	-0.337E-02
	300000.	0.114	0.368E-02	0.285E-01	-0.496E-02	0.291E-01	-0.402E-02
Y III 4d-5f	10000.	*0.566	*0.819E-02				
810.8 Å	20000.	0.497	0.240E-01				
C= 0.14E+20	50000.	0.438	0.208E-01	*0.617E-01	*0.344E-01		
	100000.	0.398	0.216E-01	*0.724E-01	*0.445E-01		
	150000.	0.373	0.186E-01	*0.786E-01	*0.507E-01		
	300000.	0.328	0.160E-01	*0.876E-01	*0.564E-01	*0.753E-01	*0.458E-01
Y III 4d-6f	10000.	*1.00	*0.131E-01				
732.8 Å	20000.	*0.948	*0.207E-01				
C= 0.58E+19	50000.	*0.896	*0.403E-01				
	100000.	0.842	0.354E-01				
	150000.	0.797	0.322E-01				
	300000.	0.703	0.331E-01				
Y III 5d-5f	10000.	*8.48	-0.789E-01				
2835.6 Å	20000.	7.25	0.731E-01				
C= 0.17E+21	50000.	6.31	0.178E-01	*0.760	*0.368		
	100000.	5.73	0.343E-01	*0.880	*0.473		
	150000.	5.37	0.353E-02	*0.935	*0.532		
	300000.	4.74	-0.139E-01	*1.07	*0.625	*0.926	*0.481
Y III 5d-6f	10000.	*8.85	*0.178E-01				
2066.3 Å	20000.	*8.19	*0.516E-01				
C= 0.46E+20	50000.	*7.63	*0.192				
	100000.	7.15	0.158				
	150000.	6.76	0.137				
	300000.	5.97	0.151				
Y III 4f-7d	10000.	*15.3	*6.63				
3016.8 Å	20000.	*13.7	*5.53				
C= 0.24E+21	50000.	12.6	4.11				
	100000.	12.1	3.28				
	150000.	11.6	2.89				
	300000.	10.5	2.29				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	SHIFT(Å)	PROTONS WIDTH(Å)	SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	SHIFT(Å)
Y III 4f-5g	10000.	*16.1	*0.561E-01	*0.697	-0.274		
4041.0 Å	20000.	12.7	-0.151	*1.10	-0.524		
C= 0.34E+21	50000.	10.1	-0.641E-01	*1.44	-0.809		
	100000.	8.87	-0.156	*1.69	-1.04		
	150000.	8.25	-0.977E-01	*1.79	-1.16		
	300000.	7.31	-0.126E-01	*2.08	-1.33	*1.75	-1.06
PERTURBER DENSITY = 1.E+19cm-3							
Y III 5s-5p	10000.	*20.5	-0.161	*0.155	-0.234E-01	*0.187	-0.220E-01
2859.6 Å	20000.	14.8	-0.355	*0.474	-0.100E+00	*0.555	-0.878E-01
C= 0.29E+23	50000.	9.89	-0.372	*0.869	-0.241	*0.934	-0.206
	100000.	7.71	-0.506	*1.05	-0.363	*1.10	-0.289
	150000.	6.85	-0.482	1.14	-0.422	*1.19	-0.342
	300000.	5.82	-0.457	1.28	-0.516	*1.29	-0.421
Y III 5s-6p	10000.						
1083.7 Å	20000.	*4.64	-0.683E-01				
C= 0.13E+22	50000.	3.57	-0.125				
	100000.	3.11	-0.102				
	150000.	2.91	-0.115				
	300000.	2.61	-0.116				
Y III 5p-6s	10000.	*22.4	*5.95	*0.191	*0.804E-01		
2258.3 Å	20000.	*16.3	*4.69	*0.594	*0.351		
C= 0.66E+22	50000.	11.9	3.31	*1.18	*0.827		
	100000.	10.1	2.77	*1.54	*1.20		
	150000.	9.26	2.39	*1.74	*1.47		
	300000.	8.07	2.00	*2.07	*1.79		
Y III 5p-7s	10000.						
1324.9 Å	20000.	*10.2	*4.01				
C= 0.11E+22	50000.	*8.78	*3.22				
	100000.	8.02	2.58				
	150000.	7.61	2.26				
	300000.	6.83	1.91				
Y III 5p-5d	10000.	*20.8	*1.73				
2171.0 Å	20000.	*15.4	*1.25				
C= 0.53E+22	50000.	11.2	1.26				
	100000.	9.37	1.23				
	150000.	8.55	1.16	*1.83	*1.06		
	300000.	7.44	1.10	*2.06	*1.30		
Y III 5p-6d	10000.						
1306.2 Å	20000.						
C= 0.81E+21	50000.	*10.2	*2.38				
	100000.	*9.31	*1.97				
	150000.	8.84	1.76				
	300000.	7.93	1.53				
Y III 5p-7d	10000.						
1089.3 Å	20000.						
C= 0.32E+21	50000.						
	100000.	*14.7	*3.13				
	150000.	*14.2	*2.84				
	300000.	*12.9	*2.36				
Y III 4d-5p	10000.	*10.5	-0.248E-01	*0.116	*0.216E-02	*0.137	*0.215E-02
2380.8 Å	20000.	7.71	0.638E-01	*0.351	*0.101E-01	*0.408	*0.992E-02
C= 0.20E+23	50000.	5.17	0.884E-01	*0.631	*0.316E-01	*0.680	*0.288E-01
	100000.	4.01	0.727E-01	*0.752	*0.527E-01	*0.803	*0.453E-01
	150000.	3.54	0.984E-01	*0.807	*0.659E-01	*0.861	*0.563E-01
	300000.	2.99	0.846E-01	0.891	0.842E-01	*0.916	*0.692E-01
Y III 4d-6p	10000.						
1006.9 Å	20000.	*3.59	-0.115E-01				
C= 0.11E+22	50000.	2.80	-0.483E-01				
	100000.	2.46	-0.137E-01				
	150000.	2.30	-0.231E-01				
	300000.	2.07	-0.284E-01				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å)	ELECTRONS SHIFT(Å)	PROTONS WIDTH(Å)	PROTONS SHIFT(Å)	IONIZED HELIUM WIDTH(Å)	IONIZED HELIUM SHIFT(Å)
Y III 4d-4f	10000.	*2.96	*0.181E-01	*0.425E-01	-0.205E-02		
993.5 Å	20000.	2.23	0.515E-01	*0.125	-0.896E-02		
C= 0.12E+22	50000.	1.66	0.268E-01	*0.211	-0.229E-01		
	100000.	1.41	0.532E-01	*0.248	-0.345E-01		
	150000.	1.30	0.439E-01	*0.267	-0.399E-01		
	300000.	1.14	0.382E-01	*0.285	-0.495E-01		
Y III 4d-5f	10000.						
810.8 Å	20000.						
C= 0.14E+21	50000.	*4.26	*0.677E-01				
	100000.	*3.90	*0.119				
	150000.	3.66	0.103				
	300000.	3.23	0.103				
Y III 4d-6f	10000.						
732.8 Å	20000.						
C= 0.58E+20	50000.						
	100000.	*7.63	*0.100E-01				
	150000.	*7.33	*0.202E-01				
	300000.	*6.58	*0.955E-01				

estimated by using quasistatic approach (Sahal–Bréchot 1991 or Griem 1974). In the region between where neither of these two approximations is valid, a unified type theory should be used. For example in Barnard et al. (1974), a simple analytical formulas for such a case are given. The accuracy of the results obtained decreases when broadening by ion interactions becomes important.

The analysis of present results will be appear elsewhere (Dimitrijević and Sahal–Bréchot, 1997).

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ТАБЕЛЕ ПАРАМЕТАРА ШТАРКОВОГ ШИРЕЊА СПЕКТРАЛНИХ ЛИНИЈА Y III

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Претходно саопштење

Користећи семикласичан прилаз, израчунате су ширине и помераји спектралних линија, проузроковани сударима са електронима, протонима и јонима хелијума, за 32 мултиплета Y III. Итријумове линије су нађене на пример у спектрима ϕ Her (T_{eff} = 11500K, log$g$ = 3.5) и o And (T_{eff} = 9500K, log$g$ =3.5), као и у спектрима других топлих звезда, као што је на пример Сиријус, где је установљена његова много већа заступљеност него на Сунцу. Осим тога, итријум у звездама настаје приликом нуклеосинтезе захватом спорог неутрона, па су подаци о спектралним линијама овог елемента од интереса за астрофизику. Резултати су дати у функцији температуре (10,000 K$\leq T \leq$ 300,000 K) и концентрације пертурбера 10^{14}cm$^{-3} \leq$ N $\leq 10^{19}$cm^{-3}).