

## STARK BROADENING PARAMETER TABLES FOR Si XI AND Si XIII

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**SUMMARY:** Using a semiclassical approach, we have calculated electron–, proton–, and He III–impact line widths and shifts for 4 Si XI and 61 Si XIII multiplets as a function of temperature (500 000 K - 6 000 000 K) and perturber density ( $10^{16}\text{cm}^{-3}$  -  $10^{23}\text{cm}^{-3}$ ).

## 1. INTRODUCTION

Due to the high cosmical abundance of silicon, data on its spectral lines, as well as on spectral lines for its various ionization stages are of particular interest for analysis and modelling of stellar plasma. Stark broadening parameters of Si XI and Si XIII spectral lines are obviously of interest not only to astrophysics, as e.g. for the consideration of radiative transfer through subphotospheric layers, but also for the fusion plasmas and laser produced plasmas research. The development of soft x-ray lasers, where Stark broadening data are needed to calculate gain values, model radiation trapping and to consider photoresonant pumping schemes (see e.g. Griem and Moreno, 1990; Fill and Schönig, 1994), additionally increased the interest in such results.

As a continuation of our programme (Dimitrijević, 1996) to obtain as large as possible set of reliable Stark broadening data needed for the consideration and modeling of astrophysical and laboratory plasmas as well as for investigations of laser produced and fusion plasmas, we have calculated within the

semiclassical-perturbation formalism (Sahal–Bréchet, 1969ab, see also Sahal - Bréchet, 1974, Fleurier et al, 1977, Dimitrijević and Sahal - Bréchet, 1984, Dimitrijević et al. 1991, Dimitrijević and Sahal - Bréchet, 1995) electron-, proton-, and He III-impact line widths and shifts for 4 Si XI and 61 Si XIII multiplets. The formalism applied to the problem of Stark broadening of multicharged silicon ion lines, has been reviewed several times, e.g. briefly in Dimitrijević and Sahal - Bréchet, 1995.

## 2. RESULTS AND DISCUSSION

Details of the calculation procedure as well as the complete analysis of the results obtained, will be published in Dimitrijević and Sahal–Bréchet, 1997. Here, only tables of Stark broadening parameters will be shown. Atomic energy levels needed for calculations have been taken from Martin and Zalubas (1983). Our results for 4 Si XI and 61 Si XIII multiplets are shown in Tables 1 and 2, for perturber densities  $10^{18} - 10^{23}\text{cm}^{-3}$  and  $10^{16} - 10^{23}\text{cm}^{-3}$  re-

**Table 1.** This table shows electron-, proton-, and He III-impact broadening parameters for Si XI for perturber densities of  $10^{18} - 10^{23} \text{ cm}^{-3}$  and temperatures from 500,000 up to 4,000,000 K. Stark broadening parameters for densities lower than tabulated, are linear with perturber 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.

PERTURBER DENSITY = 1.E+18cm-3							
PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XI 2S 2P	500000.	0.281E-03	-0.442E-05	0.117E-05	-0.314E-05	0.223E-05	-0.628E-05
303.3 Å	750000.	0.232E-03	-0.408E-05	0.224E-05	-0.466E-05	0.429E-05	-0.933E-05
C= 0.30E+21	1000000.	0.203E-03	-0.436E-05	0.347E-05	-0.608E-05	0.670E-05	-0.122E-04
	2000000.	0.148E-03	-0.496E-05	0.834E-05	-0.104E-04	0.163E-04	-0.210E-04
	3000000.	0.124E-03	-0.472E-05	0.124E-04	-0.133E-04	0.245E-04	-0.269E-04
	5000000.	0.100E-03	-0.443E-05	0.179E-04	-0.169E-04	0.344E-04	-0.341E-04
Si XI 2P 3S	500000.	0.178E-04	0.164E-05	0.117E-05	0.289E-05	0.230E-05	0.581E-05
52.3 Å	750000.	0.152E-04	0.157E-05	0.216E-05	0.360E-05	0.429E-05	0.728E-05
C= 0.12E+19	1000000.	0.137E-04	0.155E-05	0.271E-05	0.416E-05	0.530E-05	0.838E-05
	2000000.	0.107E-04	0.150E-05	0.502E-05	0.531E-05	0.955E-05	0.108E-04
	3000000.	0.925E-05	0.139E-05	0.615E-05	0.593E-05	0.114E-04	0.120E-04
	5000000.	0.775E-05	0.119E-05	0.795E-05	0.677E-05	0.136E-04	0.137E-04
Si XI 2P 3D	500000.	0.191E-04	-0.102E-06	0.471E-06	-0.387E-06	0.908E-06	-0.775E-06
49.2 Å	750000.	0.159E-04	-0.104E-06	0.736E-06	-0.548E-06	0.143E-05	-0.110E-05
C= 0.18E+19	1000000.	0.139E-04	-0.111E-06	0.965E-06	-0.673E-06	0.187E-05	-0.135E-05
	2000000.	0.103E-04	-0.547E-07	0.155E-05	-0.987E-06	0.296E-05	-0.199E-05
	3000000.	0.876E-05	-0.390E-07	0.196E-05	-0.120E-05	0.367E-05	-0.244E-05
	5000000.	0.724E-05	-0.270E-07	0.241E-05	-0.139E-05	0.428E-05	-0.282E-05
Si XI 2P 3D	500000.	0.163E-04	-0.179E-06	0.447E-06	-0.644E-06	0.862E-06	-0.129E-05
46.4 Å	750000.	0.135E-04	-0.161E-06	0.726E-06	-0.874E-06	0.140E-05	-0.176E-05
C= 0.92E+18	1000000.	0.119E-04	-0.171E-06	0.101E-05	-0.107E-05	0.193E-05	-0.215E-05
	2000000.	0.881E-05	-0.127E-06	0.173E-05	-0.149E-05	0.314E-05	-0.301E-05
	3000000.	0.748E-05	-0.921E-07	0.229E-05	-0.173E-05	0.402E-05	-0.352E-05
	5000000.	0.617E-05	-0.697E-07	0.293E-05	-0.197E-05	0.480E-05	-0.401E-05
PERTURBER DENSITY = 1.E+19cm-3							
Si XI 2S 2P	500000.	0.285E-02	-0.431E-04	0.117E-04	-0.311E-04	0.223E-04	-0.611E-04
303.3 Å	750000.	0.234E-02	-0.397E-04	0.224E-04	-0.466E-04	0.429E-04	-0.925E-04
C= 0.30E+22	1000000.	0.204E-02	-0.425E-04	0.347E-04	-0.608E-04	0.670E-04	-0.121E-03
	2000000.	0.148E-02	-0.496E-04	0.834E-04	-0.104E-03	0.163E-03	-0.210E-03
	3000000.	0.124E-02	-0.472E-04	0.124E-03	-0.133E-03	0.245E-03	-0.269E-03
	5000000.	0.100E-02	-0.443E-04	0.179E-03	-0.169E-03	0.344E-03	-0.341E-03
Si XI 2P 3S	500000.	0.179E-03	0.158E-04	0.117E-04	0.287E-04	0.231E-04	0.562E-04
52.3 Å	750000.	0.153E-03	0.153E-04	0.216E-04	0.360E-04	0.429E-04	0.719E-04
C= 0.12E+20	1000000.	0.137E-03	0.152E-04	0.271E-04	0.415E-04	0.530E-04	0.831E-04
	2000000.	0.107E-03	0.149E-04	0.502E-04	0.531E-04	0.955E-04	0.108E-03
	3000000.	0.925E-04	0.139E-04	0.615E-04	0.593E-04	0.114E-03	0.120E-03
	5000000.	0.775E-04	0.119E-04	0.795E-04	0.677E-04	0.136E-03	0.137E-03
Si XI 2P 3D	500000.	0.192E-03	-0.108E-05	0.471E-05	-0.384E-05	0.908E-05	-0.754E-05
49.2 Å	750000.	0.159E-03	-0.105E-05	0.736E-05	-0.548E-05	0.143E-04	-0.109E-04
C= 0.18E+20	1000000.	0.139E-03	-0.108E-05	0.965E-05	-0.672E-05	0.187E-04	-0.134E-04
	2000000.	0.103E-03	-0.544E-06	0.155E-04	-0.987E-05	0.296E-04	-0.199E-04
	3000000.	0.876E-04	-0.387E-06	0.196E-04	-0.120E-04	0.367E-04	-0.243E-04
	5000000.	0.724E-04	-0.267E-06	0.241E-04	-0.139E-04	0.428E-04	-0.282E-04
Si XI 2P 3D	500000.	0.163E-03	-0.183E-05	0.447E-05	-0.639E-05	0.862E-05	-0.125E-04
46.4 Å	750000.	0.135E-03	-0.158E-05	0.726E-05	-0.873E-05	0.140E-04	-0.174E-04
C= 0.92E+19	1000000.	0.119E-03	-0.166E-05	0.101E-04	-0.107E-04	0.193E-04	-0.213E-04
	2000000.	0.881E-04	-0.126E-05	0.173E-04	-0.149E-04	0.314E-04	-0.300E-04
	3000000.	0.748E-04	-0.915E-06	0.229E-04	-0.173E-04	0.402E-04	-0.352E-04
	5000000.	0.617E-04	-0.693E-06	0.293E-04	-0.197E-04	0.480E-04	-0.401E-04

PERTURBER DENSITY = 1.E+20cm-3							
PERTURBERS ARE:		ELECTRONS		PROTONS		He III	
TRANSITION	T(K)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XI 2S 2P	500000.	0.285E-01	-0.427E-03	0.117E-03	-0.298E-03	0.221E-03	-0.562E-03
303.3 Å	750000.	0.234E-01	-0.388E-03	0.224E-03	-0.455E-03	0.428E-03	-0.880E-03
C= 0.30E+23	1000000.	0.204E-01	-0.418E-03	0.347E-03	-0.602E-03	0.670E-03	-0.118E-02
	2000000.	0.148E-01	-0.491E-03	0.834E-03	-0.104E-02	0.163E-02	-0.208E-02
	3000000.	0.124E-01	-0.470E-03	0.124E-02	-0.133E-02	0.245E-02	-0.269E-02
	5000000.	0.100E-01	-0.442E-03	0.179E-02	-0.169E-02	0.344E-02	-0.340E-02
Si XI 2P 3S	500000.	0.179E-02	0.144E-03	0.117E-03	0.271E-03	0.229E-03	0.508E-03
52.3 Å	750000.	0.153E-02	0.142E-03	0.216E-03	0.347E-03	0.428E-03	0.669E-03
C= 0.12E+21	1000000.	0.137E-02	0.141E-03	0.272E-03	0.409E-03	0.529E-03	0.794E-03
	2000000.	0.107E-02	0.141E-03	0.502E-03	0.529E-03	0.953E-03	0.106E-02
	3000000.	0.925E-03	0.135E-03	0.615E-03	0.592E-03	0.114E-02	0.120E-02
	5000000.	0.775E-03	0.118E-03	0.795E-03	0.677E-03	0.136E-02	0.137E-02
Si XI 2P 3D	500000.	0.192E-02	-0.871E-05	0.470E-04	-0.367E-04	0.901E-04	-0.692E-04
49.2 Å	750000.	0.159E-02	-0.890E-05	0.736E-04	-0.534E-04	0.143E-03	-0.103E-03
C= 0.18E+21	1000000.	0.139E-02	-0.964E-05	0.965E-04	-0.665E-04	0.187E-03	-0.130E-03
	2000000.	0.103E-02	-0.459E-05	0.155E-03	-0.986E-04	0.296E-03	-0.197E-03
	3000000.	0.876E-03	-0.329E-05	0.196E-03	-0.120E-03	0.367E-03	-0.243E-03
	5000000.	0.724E-03	-0.262E-05	0.241E-03	-0.139E-03	0.428E-03	-0.281E-03
Si XI 2P 3D	500000.	0.163E-02	-0.149E-04	0.447E-04	-0.610E-04	0.856E-04	-0.115E-03
46.4 Å	750000.	0.135E-02	-0.134E-04	0.726E-04	-0.849E-04	0.140E-03	-0.164E-03
C= 0.92E+20	1000000.	0.119E-02	-0.144E-04	0.101E-03	-0.105E-03	0.193E-03	-0.206E-03
	2000000.	0.881E-03	-0.112E-04	0.173E-03	-0.148E-03	0.314E-03	-0.297E-03
	3000000.	0.748E-03	-0.829E-05	0.229E-03	-0.173E-03	0.402E-03	-0.351E-03
	5000000.	0.617E-03	-0.682E-05	0.293E-03	-0.197E-03	0.480E-03	-0.400E-03
PERTURBER DENSITY = 1.E+21cm-3							
Si XI 2S 2P	500000.	0.285	-0.384E-02	0.115E-02	-0.265E-02	0.213E-02	-0.443E-02
303.3 Å	750000.	0.234	-0.358E-02	0.223E-02	-0.424E-02	0.423E-02	-0.773E-02
C= 0.30E+24	1000000.	0.204	-0.392E-02	0.347E-02	-0.572E-02	0.666E-02	-0.107E-01
	2000000.	0.148	-0.470E-02	0.834E-02	-0.103E-01	0.163E-01	-0.201E-01
	3000000.	0.124	-0.451E-02	0.124E-01	-0.132E-01	0.245E-01	-0.264E-01
	5000000.	0.100	-0.435E-02	0.179E-01	-0.168E-01	0.344E-01	-0.340E-01
Si XI 2P 3S	500000.	0.179E-01	0.949E-03	0.117E-02	0.234E-02	*0.229E-02	*0.372E-02
52.3 Å	750000.	0.152E-01	0.104E-02	0.216E-02	0.312E-02	*0.428E-02	*0.547E-02
C= 0.12E+22	1000000.	0.137E-01	0.109E-02	0.271E-02	0.375E-02	*0.530E-02	*0.675E-02
	2000000.	0.106E-01	0.117E-02	0.501E-02	0.515E-02	*0.954E-02	*0.976E-02
	3000000.	0.923E-02	0.113E-02	0.614E-02	0.581E-02	*0.114E-01	*0.115E-01
	5000000.	0.774E-02	0.109E-02	0.795E-02	0.674E-02	*0.136E-01	*0.136E-01
Si XI 2P 3D	500000.	0.192E-01	-0.379E-04	0.464E-03	-0.325E-03	0.862E-03	-0.541E-03
49.2 Å	750000.	0.159E-01	-0.456E-04	0.731E-03	-0.494E-03	0.140E-02	-0.898E-03
C= 0.18E+22	1000000.	0.139E-01	-0.609E-04	0.963E-03	-0.626E-03	0.185E-02	-0.117E-02
	2000000.	0.103E-01	-0.181E-04	0.155E-02	-0.970E-03	0.296E-02	-0.188E-02
	3000000.	0.876E-02	-0.109E-04	0.196E-02	-0.119E-02	0.367E-02	-0.238E-02
	5000000.	0.724E-02	-0.156E-04	0.241E-02	-0.139E-02	0.428E-02	-0.281E-02
Si XI 2P 3D	500000.	0.163E-01	-0.560E-04	0.442E-03	-0.537E-03		
46.4 Å	750000.	0.135E-01	-0.586E-04	0.722E-03	-0.781E-03		
C= 0.92E+21	1000000.	0.119E-01	-0.811E-04	0.100E-02	-0.987E-03	*0.191E-02	-0.183E-02
	2000000.	0.881E-02	-0.637E-04	0.173E-02	-0.146E-02	*0.314E-02	-0.281E-02
	3000000.	0.748E-02	-0.423E-04	0.229E-02	-0.171E-02	*0.402E-02	-0.342E-02
	5000000.	0.617E-02	-0.497E-04	0.293E-02	-0.197E-02	0.480E-02	-0.399E-02
PERTURBER DENSITY = 1.E+22cm-3							
Si XI 2S 2P	500000.	2.85	-0.243E-01	0.102E-01	-0.174E-01	0.156E-01	-0.201E-01
303.3 Å	750000.	2.34	-0.252E-01	0.217E-01	-0.345E-01	0.367E-01	-0.487E-01
C= 0.30E+25	1000000.	2.04	-0.301E-01	0.343E-01	-0.499E-01	0.636E-01	-0.808E-01
	2000000.	1.48	-0.408E-01	0.832E-01	-0.963E-01	0.161	-0.178
	3000000.	1.24	-0.402E-01	0.124	-0.127	0.244	-0.242
	5000000.	1.00	-0.389E-01	0.179	-0.166	0.343	-0.323
Si XI 2P 3S	500000.	0.163	-0.484E-02				
52.3 Å	750000.	0.141	-0.986E-03				
C= 0.12E+23	1000000.	0.128	0.134E-02				
	2000000.	0.100	0.528E-02				
	3000000.	0.876E-01	0.601E-02				
	5000000.	0.737E-01	0.597E-02				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XI 2P 3D	500000.	0.190	0.161E-02				
49.2 Å	750000.	0.158	0.105E-02				
C= 0.18E+23	1000000.	0.138	0.650E-03	*0.943E-02	-0.534E-02		
	2000000.	0.103	0.669E-03	*0.154E-01	-0.885E-02		
	3000000.	0.873E-01	0.587E-03	*0.196E-01	-0.113E-01		
	5000000.	0.721E-01	0.458E-03	*0.241E-01	-0.136E-01		
Si XI 2P 3D	500000.	0.159	0.216E-02				
46.4 Å	750000.	0.132	0.158E-02	*0.699E-02	-0.609E-02		
C= 0.92E+22	1000000.	0.117	0.100E-02	*0.989E-02	-0.827E-02		
	2000000.	0.867E-01	0.580E-03	*0.172E-01	-0.131E-01		
	3000000.	0.737E-01	0.592E-03	*0.229E-01	-0.161E-01		
	5000000.	0.609E-01	0.444E-03	*0.293E-01	-0.191E-01		
PERTURBER DENSITY = 1.E+23cm-3							
Si XI 2S 2P	500000.	*28.2	*0.391				
303.3 Å	750000.	23.3	0.188				
C= 0.30E+26	1000000.	20.4	0.500E-01	*0.296	-0.306		
	2000000.	14.8	-0.183	0.818	-0.801		
	3000000.	12.4	-0.227	1.23	-1.12		
	5000000.	9.98	-0.253	1.79	-1.53		
Si XI 2P 3S	500000.	*1.09	-0.140				
52.3 Å	750000.	*0.989	-0.104				
C= 0.12E+24	1000000.	*0.922	-0.763E-01				
	2000000.	0.774	-0.221E-01				
	3000000.	0.694	-0.256E-02				
	5000000.	0.600	0.967E-02				
Si XI 2P 3D	500000.						
49.2 Å	750000.	*1.49	*0.275E-01				
C= 0.18E+24	1000000.	*1.32	*0.232E-01				
	2000000.	0.988	0.192E-01				
	3000000.	0.842	0.164E-01				
	5000000.	0.699	0.130E-01				
Si XI 2P 3D	500000.						
46.4 Å	750000.	*1.23	*0.252E-01				
C= 0.92E+23	1000000.	*1.09	*0.206E-01				
	2000000.	0.817	0.163E-01				
	3000000.	0.698	0.149E-01				
	5000000.	0.579	0.118E-01				

**Table 2.** This table shows electron-, proton-, and He III-impact broadening parameters for Si XIII for perturber densities of  $10^{16} - 10^{23} \text{ cm}^{-3}$  and temperatures from 500,000 up to 6,000,000 K. The complete set of data is for the electron density of  $10^{19} \text{ cm}^{-3}$  and for lower densities only data needed for more accurate interpolation are given. Stark broadening parameters for densities lower than tabulated, are linear with perturber 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.

PERTURBER DENSITY = 1.E+16cm-3							
PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS WIDTH(Å) SHIFT(Å)		PROTONS WIDTH(Å) SHIFT(Å)		He III WIDTH(Å) SHIFT(Å)	
Si XIII 3P 3D 26198.6 Å C=0.26E+21	500000.	0.966E-01	0.521E-02	0.255E-01	0.303E-01	0.386E-01	0.607E-01
	750000.	0.818E-01	0.483E-02	0.397E-01	0.370E-01	0.556E-01	0.742E-01
	1000000.	0.728E-01	0.453E-02	0.532E-01	0.408E-01	0.725E-01	0.817E-01
	2000000.	0.554E-01	0.374E-02	0.833E-01	0.488E-01	0.104	0.978E-01
	4000000.	0.426E-01	0.301E-02	0.115	0.585E-01	0.143	0.117
	6000000.	0.368E-01	0.255E-02	0.133	0.633E-01	0.171	0.127
Si XIII 4P 4D 67069.1 Å C=0.93E+20	500000.	2.33	0.214	4.63	2.70	6.11	5.41
	750000.	2.02	0.189	5.46	3.00	7.35	6.00
	1000000.	1.82	0.172	6.09	3.19	8.45	6.39
	2000000.	1.42	0.133	7.49	3.74	11.2	7.48
	4000000.	1.11	0.962E-01	8.67	4.16	14.1	8.35
	6000000.	0.965	0.761E-01	9.01	4.36	15.4	8.74
Si XIII 4D 4F C=0.48E+22	500000.	89.8	-7.00	331.	-169.	413.	-338.
	750000.	77.2	-5.98	380.	-186.	502.	-372.
	1000000.	69.3	-5.29	415.	-199.	579.	-399.
	2000000.	53.6	-3.73	473.	-230.	754.	-460.
	4000000.	41.7	-2.46	535.	-261.	988.	-524.
	6000000.	36.1	-1.72	556.	-284.	0.109E+04	-572.
Si XIII 2S 2P 29103.6 Å C=0.29E+21	500000.	0.282E-01	0.110E-02	0.803E-02	0.121E-01	0.975E-02	0.242E-01
	750000.	0.241E-01	0.971E-03	0.152E-01	0.151E-01	0.187E-01	0.303E-01
	1000000.	0.215E-01	0.880E-03	0.200E-01	0.174E-01	0.237E-01	0.348E-01
	2000000.	0.163E-01	0.681E-03	0.364E-01	0.224E-01	0.452E-01	0.448E-01
	4000000.	0.123E-01	0.512E-03	0.500E-01	0.270E-01	0.651E-01	0.540E-01
	6000000.	0.104E-01	0.422E-03	0.570E-01	0.297E-01	0.788E-01	0.595E-01
Si XIII 3S 3P 3034.7 Å C=0.17E+20	500000.	0.127E-02	-0.342E-04	0.276E-04	-0.539E-04	0.529E-04	-0.108E-03
	750000.	0.108E-02	-0.330E-04	0.493E-04	-0.720E-04	0.891E-04	-0.144E-03
	1000000.	0.960E-03	-0.326E-04	0.739E-04	-0.857E-04	0.127E-03	-0.172E-03
	2000000.	0.737E-03	-0.317E-04	0.149E-03	-0.118E-03	0.218E-03	-0.237E-03
	4000000.	0.572E-03	-0.270E-04	0.260E-03	-0.145E-03	0.319E-03	-0.290E-03
	6000000.	0.495E-03	-0.234E-04	0.339E-03	-0.161E-03	0.376E-03	-0.322E-03
Si XIII 4S 4P 7342.7 Å C=0.42E+20	500000.	0.225E-01	-0.730E-03	0.127E-02	-0.134E-02	0.223E-02	-0.268E-02
	750000.	0.194E-01	-0.703E-03	0.187E-02	-0.162E-02	0.297E-02	-0.324E-02
	1000000.	0.175E-01	-0.720E-03	0.250E-02	-0.185E-02	0.370E-02	-0.371E-02
	2000000.	0.138E-01	-0.639E-03	0.433E-02	-0.228E-02	0.527E-02	-0.457E-02
	4000000.	0.109E-01	-0.502E-03	0.687E-02	-0.271E-02	0.685E-02	-0.542E-02
	6000000.	0.948E-02	-0.447E-03	0.884E-02	-0.297E-02	0.809E-02	-0.596E-02
Si XIII 3P 3D 5341.6 Å C=0.53E+20	500000.	0.368E-02	-0.573E-04	0.134E-03	-0.241E-03	0.258E-03	-0.483E-03
	750000.	0.309E-02	-0.554E-04	0.238E-03	-0.319E-03	0.434E-03	-0.638E-03
	1000000.	0.274E-02	-0.529E-04	0.326E-03	-0.365E-03	0.567E-03	-0.731E-03
	2000000.	0.207E-02	-0.456E-04	0.633E-03	-0.499E-03	0.964E-03	-0.100E-02
	4000000.	0.159E-02	-0.330E-04	0.101E-02	-0.600E-03	0.133E-02	-0.120E-02
	6000000.	0.138E-02	-0.285E-04	0.128E-02	-0.665E-03	0.157E-02	-0.133E-02
Si XIII 4P 4D 12934.9 Å C=0.12E+20	500000.	0.746E-01	-0.533E-03	0.418E-01	0.273E-01	0.508E-01	0.547E-01
	750000.	0.642E-01	-0.681E-03	0.542E-01	0.305E-01	0.641E-01	0.610E-01
	1000000.	0.578E-01	-0.654E-03	0.631E-01	0.327E-01	0.742E-01	0.654E-01
	2000000.	0.452E-01	-0.542E-03	0.843E-01	0.389E-01	0.102	0.779E-01
	4000000.	0.356E-01	-0.530E-03	0.104	0.449E-01	0.138	0.896E-01
	6000000.	0.311E-01	-0.491E-03	0.115	0.480E-01	0.164	0.962E-01

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 4D 4F	500000.	6.65	-0.184	8.67	-5.32	10.5	-10.6
	750000.	5.71	-0.147	11.0	-5.94	13.0	-11.9
C=0.14E+22	1000000.	5.13	-0.128	12.7	-6.38	14.9	-12.8
	2000000.	3.98	-0.801E-01	16.6	-7.46	20.8	-14.9
	4000000.	3.11	-0.421E-01	19.3	-8.54	27.4	-17.1
	6000000.	2.71	-0.241E-01	21.3	-9.14	33.3	-18.4
PERTURBER DENSITY = 1.E+17cm-3							
Si XIII 2S 2P 1200.7 Å	500000.	0.439E-03	-0.103E-04	0.178E-05	-0.143E-04	0.354E-05	-0.285E-04
	750000.	0.369E-03	-0.110E-04	0.455E-05	-0.208E-04	0.902E-05	-0.416E-04
C=0.12E+21	1000000.	0.327E-03	-0.105E-04	0.829E-05	-0.267E-04	0.163E-04	-0.533E-04
	2000000.	0.243E-03	-0.992E-05	0.263E-04	-0.429E-04	0.487E-04	-0.860E-04
	4000000.	0.181E-03	-0.931E-05	0.548E-04	-0.597E-04	0.903E-04	-0.119E-03
	6000000.	0.153E-03	-0.826E-05	0.810E-04	-0.679E-04	0.126E-03	-0.136E-03
Si XIII 4S 4P 9800.1 Å	500000.	0.449	-0.449E-01	0.245	-0.216	0.393	-0.431
	750000.	0.389	-0.419E-01	0.312	-0.242	0.470	-0.485
C=0.14E+21	1000000.	0.351	-0.396E-01	0.366	-0.259	0.533	-0.520
	2000000.	0.276	-0.323E-01	0.511	-0.305	0.697	-0.612
	4000000.	0.217	-0.248E-01	0.672	-0.358	0.893	-0.718
	6000000.	0.189	-0.211E-01	0.741	-0.378	0.983	-0.756
Si XIII 3P 8S 56.6 Å	500000.	0.101E-03	0.189E-04	0.840E-04	0.733E-04	*0.154E-03	*0.146E-03
	750000.	0.885E-04	0.164E-04	0.987E-04	0.801E-04	*0.176E-03	*0.160E-03
C=0.41E+16	1000000.	0.805E-04	0.149E-04	0.108E-03	0.835E-04	*0.185E-03	*0.167E-03
	2000000.	0.635E-04	0.118E-04	0.136E-03	0.978E-04	*0.214E-03	*0.195E-03
	4000000.	0.495E-04	0.863E-05	0.165E-03	0.112E-03	0.232E-03	0.223E-03
	6000000.	0.426E-04	0.682E-05	0.203E-03	0.118E-03	0.280E-03	0.237E-03
Si XIII 4P 5S 243.0 Å	500000.	0.417E-03	0.546E-04	0.223E-03	0.202E-03	0.376E-03	0.404E-03
	750000.	0.364E-03	0.506E-04	0.277E-03	0.223E-03	0.442E-03	0.446E-03
C=0.88E+17	1000000.	0.330E-03	0.469E-04	0.320E-03	0.241E-03	0.491E-03	0.481E-03
	2000000.	0.261E-03	0.374E-04	0.449E-03	0.282E-03	0.640E-03	0.564E-03
	4000000.	0.206E-03	0.294E-04	0.578E-03	0.319E-03	0.776E-03	0.639E-03
	6000000.	0.179E-03	0.246E-04	0.667E-03	0.351E-03	0.886E-03	0.704E-03
Si XIII 4P 6S 156.2 Å	500000.	0.287E-03	0.455E-04	0.173E-03	0.157E-03	0.305E-03	0.313E-03
	750000.	0.252E-03	0.408E-04	0.211E-03	0.174E-03	0.354E-03	0.348E-03
C=0.36E+17	1000000.	0.229E-03	0.374E-04	0.238E-03	0.186E-03	0.386E-03	0.373E-03
	2000000.	0.182E-03	0.298E-04	0.324E-03	0.210E-03	0.488E-03	0.421E-03
	4000000.	0.143E-03	0.229E-04	0.413E-03	0.239E-03	0.573E-03	0.477E-03
	6000000.	0.124E-03	0.191E-04	0.474E-03	0.262E-03	0.631E-03	0.527E-03
Si XIII 4P 7S 128.6 Å	500000.	0.333E-03	0.574E-04	0.230E-03	0.208E-03	0.413E-03	0.415E-03
	750000.	0.292E-03	0.508E-04	0.280E-03	0.227E-03	0.484E-03	0.454E-03
C=0.25E+17	1000000.	0.266E-03	0.461E-04	0.314E-03	0.238E-03	0.525E-03	0.477E-03
	2000000.	0.210E-03	0.369E-04	0.420E-03	0.279E-03	0.646E-03	0.559E-03
	4000000.	0.165E-03	0.276E-04	0.506E-03	0.310E-03	0.699E-03	0.619E-03
	6000000.	0.142E-03	0.225E-04	0.628E-03	0.347E-03	0.865E-03	0.700E-03
Si XIII 4P 8S 115.3 Å	500000.	0.447E-03	0.809E-04	0.357E-03	0.310E-03	*0.645E-03	*0.619E-03
	750000.	0.392E-03	0.704E-04	0.424E-03	0.338E-03	*0.738E-03	*0.674E-03
C=0.17E+17	1000000.	0.357E-03	0.641E-04	0.460E-03	0.353E-03	*0.772E-03	*0.704E-03
	2000000.	0.281E-03	0.505E-04	0.603E-03	0.412E-03	*0.931E-03	*0.827E-03
	4000000.	0.219E-03	0.370E-04	0.741E-03	0.480E-03	0.103E-02	0.962E-03
	6000000.	0.189E-03	0.292E-04	0.901E-03	0.502E-03	0.122E-02	0.101E-02
Si XIII 3P 3D 26198.6 Å	500000.	0.966	0.520E-01	0.255	0.303	0.386	0.606
	750000.	0.818	0.482E-01	0.397	0.370	0.556	0.741
C=0.26E+22	1000000.	0.728	0.452E-01	0.532	0.408	0.725	0.817
	2000000.	0.554	0.374E-01	0.833	0.488	1.04	0.978
	4000000.	0.426	0.301E-01	1.15	0.585	1.43	1.17
	6000000.	0.368	0.255E-01	1.33	0.633	1.71	1.27
Si XIII 2S 2P 29103.6 Å	500000.	0.282	0.110E-01	0.803E-01	0.121	0.975E-01	0.241
	750000.	0.241	0.968E-02	0.152	0.151	0.187	0.303
C=0.29E+22	1000000.	0.215	0.877E-02	0.200	0.174	0.237	0.348
	2000000.	0.163	0.681E-02	0.364	0.224	0.452	0.448
	4000000.	0.123	0.512E-02	0.500	0.270	0.651	0.540
	6000000.	0.104	0.422E-02	0.570	0.297	0.788	0.595

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3S 3P 3034.7 Å C=0.17E+21	500000.	0.127E-01	-0.342E-03	0.276E-03	-0.539E-03	0.529E-03	-0.108E-02
	750000.	0.108E-01	-0.329E-03	0.493E-03	-0.720E-03	0.891E-03	-0.144E-02
	1000000.	0.960E-02	-0.326E-03	0.739E-03	-0.857E-03	0.127E-02	-0.172E-02
	2000000.	0.737E-02	-0.317E-03	0.149E-02	-0.118E-02	0.218E-02	-0.237E-02
	4000000.	0.572E-02	-0.270E-03	0.260E-02	-0.145E-02	0.319E-02	-0.290E-02
	6000000.	0.495E-02	-0.234E-03	0.339E-02	-0.161E-02	0.376E-02	-0.322E-02
Si XIII 4S 4P 7342.7 Å C=0.42E+21	500000.	0.225	-0.730E-02	0.127E-01	-0.134E-01	0.223E-01	-0.267E-01
	750000.	0.194	-0.703E-02	0.187E-01	-0.162E-01	0.297E-01	-0.323E-01
	1000000.	0.175	-0.719E-02	0.250E-01	-0.185E-01	0.370E-01	-0.371E-01
	2000000.	0.138	-0.639E-02	0.433E-01	-0.228E-01	0.527E-01	-0.457E-01
	4000000.	0.109	-0.502E-02	0.687E-01	-0.271E-01	0.685E-01	-0.542E-01
	6000000.	0.948E-01	-0.447E-02	0.884E-01	-0.297E-01	0.809E-01	-0.596E-01
Si XIII 4P 5S 241.2 Å C=0.40E+18	500000.	0.370E-03	0.318E-04	0.858E-04	0.964E-04	0.163E-03	0.193E-03
	750000.	0.323E-03	0.308E-04	0.109E-03	0.107E-03	0.200E-03	0.215E-03
	1000000.	0.293E-03	0.291E-04	0.127E-03	0.115E-03	0.224E-03	0.231E-03
	2000000.	0.232E-03	0.236E-04	0.179E-03	0.138E-03	0.284E-03	0.276E-03
	4000000.	0.183E-03	0.188E-04	0.251E-03	0.158E-03	0.357E-03	0.317E-03
	6000000.	0.160E-03	0.162E-04	0.297E-03	0.169E-03	0.396E-03	0.338E-03
Si XIII 4P 6S 154.8 Å C=0.95E+17	500000.	0.257E-03	0.345E-04	0.105E-03	0.106E-03	0.199E-03	0.211E-03
	750000.	0.225E-03	0.314E-04	0.126E-03	0.117E-03	0.232E-03	0.235E-03
	1000000.	0.205E-03	0.291E-04	0.142E-03	0.126E-03	0.254E-03	0.253E-03
	2000000.	0.163E-03	0.230E-04	0.196E-03	0.146E-03	0.323E-03	0.292E-03
	4000000.	0.129E-03	0.182E-04	0.254E-03	0.166E-03	0.377E-03	0.332E-03
	6000000.	0.112E-03	0.152E-04	0.296E-03	0.179E-03	0.416E-03	0.359E-03
Si XIII 4P 7S 127.4 Å C=0.40E+17	500000.	0.300E-03	0.488E-04	0.166E-03	0.157E-03	0.313E-03	0.314E-03
	750000.	0.263E-03	0.435E-04	0.197E-03	0.173E-03	0.360E-03	0.346E-03
	1000000.	0.240E-03	0.394E-04	0.218E-03	0.185E-03	0.388E-03	0.370E-03
	2000000.	0.190E-03	0.316E-04	0.285E-03	0.212E-03	0.467E-03	0.424E-03
	4000000.	0.149E-03	0.240E-04	0.376E-03	0.240E-03	0.568E-03	0.482E-03
	6000000.	0.129E-03	0.199E-04	0.426E-03	0.250E-03	0.605E-03	0.501E-03
Si XIII 4P 8S 114.3 Å C=0.22E+17	500000.	0.405E-03	0.719E-04	0.266E-03	0.247E-03	*0.497E-03	*0.492E-03
	750000.	0.356E-03	0.630E-04	0.317E-03	0.268E-03	*0.577E-03	*0.534E-03
	1000000.	0.324E-03	0.570E-04	0.350E-03	0.283E-03	*0.614E-03	*0.568E-03
	2000000.	0.256E-03	0.456E-04	0.460E-03	0.316E-03	*0.759E-03	*0.633E-03
	4000000.	0.200E-03	0.337E-04	0.579E-03	0.351E-03	0.868E-03	0.705E-03
	6000000.	0.173E-03	0.272E-04	0.661E-03	0.390E-03	0.936E-03	0.787E-03
Si XIII 3P 3D 5341.6 Å C=0.53E+21	500000.	0.368E-01	-0.573E-03	0.134E-02	-0.241E-02	0.258E-02	-0.483E-02
	750000.	0.309E-01	-0.553E-03	0.238E-02	-0.319E-02	0.434E-02	-0.638E-02
	1000000.	0.274E-01	-0.528E-03	0.326E-02	-0.365E-02	0.567E-02	-0.731E-02
	2000000.	0.207E-01	-0.456E-03	0.633E-02	-0.499E-02	0.964E-02	-1.100E-01
	4000000.	0.159E-01	-0.330E-03	0.101E-01	-0.600E-02	0.133E-01	-0.120E-01
	6000000.	0.138E-01	-0.285E-03	0.128E-01	-0.665E-02	0.157E-01	-0.133E-01
Si XIII 4P 4D 12934.9 Å C=0.12E+21	500000.	0.746	-0.545E-02	0.418	0.273	0.508	0.547
	750000.	0.642	-0.695E-02	0.542	0.305	0.641	0.609
	1000000.	0.578	-0.666E-02	0.631	0.327	0.742	0.654
	2000000.	0.452	-0.542E-02	0.843	0.389	1.02	0.779
	4000000.	0.356	-0.530E-02	1.04	0.449	1.38	0.896
	6000000.	0.311	-0.491E-02	1.15	0.480	1.64	0.962
PERTURBER DENSITY = 1.E+18cm-3							
Si XIII 2S 2P 1200.7 Å C=0.12E+22	500000.	0.445E-02	-0.110E-03	0.178E-04	-0.142E-03	0.354E-04	-0.283E-03
	750000.	0.366E-02	-0.110E-03	0.455E-04	-0.208E-03	0.902E-04	-0.416E-03
	1000000.	0.327E-02	-0.105E-03	0.829E-04	-0.266E-03	0.163E-03	-0.533E-03
	2000000.	0.243E-02	-0.991E-04	0.263E-03	-0.429E-03	0.487E-03	-0.860E-03
	4000000.	0.181E-02	-0.931E-04	0.548E-03	-0.597E-03	0.903E-03	-0.119E-02
	6000000.	0.153E-02	-0.826E-04	0.810E-03	-0.679E-03	0.126E-02	-0.136E-02
Si XIII 3S 3P 4122.7 Å C=0.65E+21	500000.	0.254	-0.169E-01	0.511E-01	-0.672E-01	0.844E-01	-0.133
	750000.	0.217	-0.164E-01	0.760E-01	-0.821E-01	0.118	-0.164
	1000000.	0.194	-0.159E-01	0.102	-0.916E-01	0.155	-0.183
	2000000.	0.150	-0.141E-01	0.161	-0.110	0.224	-0.220
	4000000.	0.116	-0.113E-01	0.223	-0.131	0.297	-0.262
	6000000.	0.101	-0.967E-02	0.264	-0.143	0.352	-0.286

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3S 4P 108.3 Å C=0.17E+18	500000.	0.431E-03	-0.313E-04	0.265E-03	-0.230E-03	0.414E-03	-0.454E-03
	750000.	0.370E-03	-0.299E-04	0.340E-03	-0.256E-03	0.503E-03	-0.512E-03
	1000000.	0.333E-03	-0.291E-04	0.399E-03	-0.276E-03	0.568E-03	-0.552E-03
	2000000.	0.259E-03	-0.237E-04	0.557E-03	-0.329E-03	0.750E-03	-0.660E-03
	4000000.	0.202E-03	-0.182E-04	0.720E-03	-0.372E-03	0.964E-03	-0.748E-03
	6000000.	0.176E-03	-0.150E-04	0.814E-03	-0.401E-03	0.111E-02	-0.803E-03
Si XIII 4S 4P 9800.1 Å C=0.14E+22	500000.	4.49	-0.418	2.45	-2.15	3.93	-4.24
	750000.	3.88	-0.404	3.12	-2.42	4.70	-4.83
	1000000.	3.51	-0.394	3.66	-2.59	5.33	-5.19
	2000000.	2.76	-0.321	5.11	-3.05	6.97	-6.12
	4000000.	2.17	-0.248	6.72	-3.58	8.93	-7.18
	6000000.	1.89	-0.211	7.41	-3.78	9.83	-7.56
Si XIII 2P 4S 29.0 Å C=0.86E+17	500000.	0.136E-04	0.185E-05	0.397E-05	0.581E-05	0.771E-05	0.115E-04
	750000.	0.119E-04	0.184E-05	0.583E-05	0.685E-05	0.110E-04	0.137E-04
	1000000.	0.109E-04	0.180E-05	0.708E-05	0.732E-05	0.131E-04	0.146E-04
	2000000.	0.875E-05	0.152E-05	0.102E-04	0.883E-05	0.176E-04	0.177E-04
	4000000.	0.694E-05	0.121E-05	0.142E-04	0.105E-04	0.224E-04	0.210E-04
	6000000.	0.603E-05	0.106E-05	0.169E-04	0.114E-04	0.251E-04	0.228E-04
Si XIII 2P 5S 25.8 Å C=0.35E+17	500000.	0.267E-04	0.435E-05	0.139E-04	0.149E-04	0.265E-04	0.293E-04
	750000.	0.236E-04	0.419E-05	0.169E-04	0.167E-04	0.313E-04	0.334E-04
	1000000.	0.216E-04	0.395E-05	0.195E-04	0.179E-04	0.353E-04	0.359E-04
	2000000.	0.173E-04	0.318E-05	0.268E-04	0.211E-04	0.451E-04	0.423E-04
	4000000.	0.137E-04	0.256E-05	0.357E-04	0.248E-04	0.548E-04	0.496E-04
	6000000.	0.119E-04	0.217E-05	0.406E-04	0.260E-04	0.589E-04	0.521E-04
Si XIII 2P 6S 24.4 Å C=0.18E+17	500000.	0.519E-04	0.896E-05	0.337E-04	0.330E-04	*0.632E-04	*0.646E-04
	750000.	0.458E-04	0.833E-05	0.402E-04	0.365E-04	*0.732E-04	*0.729E-04
	1000000.	0.419E-04	0.785E-05	0.452E-04	0.394E-04	*0.800E-04	*0.788E-04
	2000000.	0.334E-04	0.628E-05	0.604E-04	0.455E-04	*0.989E-04	*0.911E-04
	4000000.	0.263E-04	0.489E-05	0.812E-04	0.507E-04	*0.124E-03	*0.102E-03
	6000000.	0.228E-04	0.410E-05	0.932E-04	0.547E-04	*0.135E-03	*0.110E-03
Si XIII 2P 7S 23.6 Å C=0.11E+17	500000.	0.950E-04	0.161E-04	*0.716E-04	*0.660E-04		
	750000.	0.837E-04	0.150E-04	*0.844E-04	*0.729E-04		
	1000000.	0.763E-04	0.143E-04	*0.971E-04	*0.768E-04		
	2000000.	0.606E-04	0.114E-04	0.122E-03	0.900E-04		
	4000000.	0.474E-04	0.865E-05	0.159E-03	0.976E-04	*0.238E-03	*0.195E-03
	6000000.	0.409E-04	0.708E-05	0.181E-03	0.113E-03	*0.254E-03	*0.226E-03
Si XIII 2P 8S 23.1 Å C=0.68E+16	500000.	0.163E-03	0.263E-04	*0.139E-03	*0.121E-03		
	750000.	0.143E-03	0.248E-04	*0.164E-03	*0.133E-03		
	1000000.	0.130E-03	0.243E-04	*0.179E-03	*0.138E-03		
	2000000.	0.103E-03	0.191E-04	*0.224E-03	*0.162E-03		
	4000000.	0.802E-04	0.142E-04	*0.272E-03	*0.186E-03		
	6000000.	0.690E-04	0.112E-04	*0.335E-03	*0.197E-03		
Si XIII 3P 4S 112.5 Å C=0.48E+18	500000.	0.316E-03	0.338E-04	0.863E-04	0.112E-03	0.156E-03	0.221E-03
	750000.	0.274E-03	0.332E-04	0.129E-03	0.128E-03	0.224E-03	0.257E-03
	1000000.	0.248E-03	0.323E-04	0.153E-03	0.139E-03	0.255E-03	0.278E-03
	2000000.	0.195E-03	0.271E-04	0.224E-03	0.165E-03	0.341E-03	0.331E-03
	4000000.	0.154E-03	0.214E-04	0.313E-03	0.194E-03	0.442E-03	0.389E-03
	6000000.	0.133E-03	0.187E-04	0.372E-03	0.208E-03	0.514E-03	0.416E-03
Si XIII 3P 5S 76.3 Å C=0.22E+18	500000.	0.284E-03	0.407E-04	0.130E-03	0.137E-03	0.244E-03	0.269E-03
	750000.	0.249E-03	0.390E-04	0.162E-03	0.153E-03	0.292E-03	0.306E-03
	1000000.	0.227E-03	0.369E-04	0.188E-03	0.165E-03	0.326E-03	0.330E-03
	2000000.	0.180E-03	0.297E-04	0.258E-03	0.195E-03	0.411E-03	0.390E-03
	4000000.	0.142E-03	0.238E-04	0.356E-03	0.222E-03	0.529E-03	0.446E-03
	6000000.	0.123E-03	0.201E-04	0.400E-03	0.243E-03	0.554E-03	0.487E-03
Si XIII 3P 6S 65.0 Å C=0.13E+18	500000.	0.405E-03	0.655E-04	0.245E-03	0.238E-03	*0.457E-03	*0.465E-03
	750000.	0.357E-03	0.609E-04	0.292E-03	0.263E-03	*0.525E-03	*0.525E-03
	1000000.	0.325E-03	0.574E-04	0.334E-03	0.285E-03	*0.580E-03	*0.570E-03
	2000000.	0.258E-03	0.460E-04	0.447E-03	0.326E-03	*0.719E-03	*0.653E-03
	4000000.	0.203E-03	0.358E-04	0.594E-03	0.363E-03	*0.885E-03	*0.727E-03
	6000000.	0.176E-03	0.300E-04	0.686E-03	0.393E-03	*0.971E-03	*0.787E-03



PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3P 7S 59.6 Å C=0.67E+17	500000.	0.637E-03	0.104E-03	*0.461E-03	*0.423E-03		
	750000.	0.561E-03	0.972E-04	*0.546E-03	*0.469E-03		
	1000000.	0.511E-03	0.925E-04	*0.627E-03	*0.493E-03		
	2000000.	0.405E-03	0.742E-04	0.796E-03	0.578E-03		
	4000000.	0.317E-03	0.561E-04	0.104E-02	0.626E-03	*0.152E-02	*0.125E-02
	6000000.	0.273E-03	0.460E-04	0.118E-02	0.725E-03	*0.164E-02	*0.145E-02
Si XIII 3P 8S 56.6 Å C=0.41E+17	500000.	0.100E-02	0.159E-03	*0.840E-03	*0.728E-03		
	750000.	0.883E-03	0.150E-03	*0.987E-03	*0.797E-03		
	1000000.	0.803E-03	0.147E-03	*0.108E-02	*0.832E-03		
	2000000.	0.633E-03	0.116E-03	*0.136E-02	*0.978E-03		
	4000000.	0.494E-03	0.863E-04	*0.165E-02	*0.112E-02		
	6000000.	0.425E-03	0.682E-04	*0.203E-02	*0.118E-02		
Si XIII 4P 5S 243.0 Å C=0.88E+18	500000.	0.417E-02	0.511E-03	0.223E-02	0.201E-02	*0.377E-02	*0.396E-02
	750000.	0.364E-02	0.490E-03	0.277E-02	0.223E-02	*0.442E-02	*0.445E-02
	1000000.	0.330E-02	0.466E-03	0.320E-02	0.240E-02	0.491E-02	0.480E-02
	2000000.	0.261E-02	0.372E-03	0.449E-02	0.282E-02	0.640E-02	0.564E-02
	4000000.	0.206E-02	0.294E-03	0.578E-02	0.319E-02	0.776E-02	0.639E-02
	6000000.	0.179E-02	0.246E-03	0.667E-02	0.351E-02	0.886E-02	0.704E-02
Si XIII 4P 6S 156.2 Å C=0.36E+18	500000.	0.287E-02	0.420E-03	0.172E-02	0.156E-02	*0.305E-02	*0.305E-02
	750000.	0.252E-02	0.391E-03	0.211E-02	0.173E-02	*0.354E-02	*0.346E-02
	1000000.	0.229E-02	0.370E-03	0.238E-02	0.186E-02	*0.386E-02	*0.371E-02
	2000000.	0.182E-02	0.295E-03	0.324E-02	0.210E-02	*0.488E-02	*0.421E-02
	4000000.	0.143E-02	0.229E-03	0.413E-02	0.239E-02	*0.573E-02	*0.477E-02
	6000000.	0.124E-02	0.191E-03	0.474E-02	0.262E-02	*0.631E-02	*0.527E-02
Si XIII 4P 7S 128.6 Å C=0.25E+18	500000.	0.332E-02	0.512E-03	*0.230E-02	*0.207E-02		
	750000.	0.292E-02	0.478E-03	*0.280E-02	*0.226E-02		
	1000000.	0.265E-02	0.456E-03	*0.313E-02	*0.237E-02		
	2000000.	0.210E-02	0.365E-03	*0.420E-02	*0.279E-02		
	4000000.	0.165E-02	0.276E-03	0.506E-02	0.310E-02	*0.699E-02	*0.619E-02
	6000000.	0.142E-02	0.225E-03	0.628E-02	0.347E-02	*0.865E-02	*0.700E-02
Si XIII 4P 8S 115.3 Å C=0.17E+18	500000.	0.446E-02	0.683E-03	*0.357E-02	*0.308E-02		
	750000.	0.391E-02	0.644E-03	*0.424E-02	*0.336E-02		
	1000000.	0.356E-02	0.632E-03	*0.460E-02	*0.351E-02		
	2000000.	0.281E-02	0.495E-03	*0.603E-02	*0.412E-02		
	4000000.	0.219E-02	0.370E-03	*0.741E-02	*0.480E-02		
	6000000.	0.189E-02	0.292E-03	*0.901E-02	*0.502E-02		
Si XIII 3P 3D 26198.6 Å C=0.26E+23	500000.	9.67	0.493	2.55	3.03	3.86	6.01
	750000.	8.17	0.470	3.97	3.70	5.56	7.40
	1000000.	7.28	0.449	5.32	4.08	7.25	8.16
	2000000.	5.54	0.372	8.33	4.88	10.4	9.78
	4000000.	4.26	0.301	11.5	5.85	14.3	11.7
	6000000.	3.68	0.255	13.3	6.33	17.1	12.7
Si XIII 3P 4D 111.4 Å C=0.26E+17	500000.	0.408E-03	0.242E-04	0.112E-02	0.648E-03	*0.149E-02	*0.127E-02
	750000.	0.352E-03	0.248E-04	0.130E-02	0.718E-03	*0.178E-02	*0.143E-02
	1000000.	0.316E-03	0.263E-04	0.144E-02	0.773E-03	*0.205E-02	*0.155E-02
	2000000.	0.245E-03	0.206E-04	0.174E-02	0.883E-03	*0.277E-02	*0.177E-02
	4000000.	0.191E-03	0.156E-04	0.200E-02	0.103E-02	*0.351E-02	*0.207E-02
	6000000.	0.165E-03	0.122E-04	0.210E-02	0.110E-02	*0.389E-02	*0.221E-02
Si XIII 3D 4P 110.7 Å C=0.18E+18	500000.	0.431E-03	-0.293E-04	0.285E-03	-0.244E-03	0.440E-03	-0.481E-03
	750000.	0.370E-03	-0.278E-04	0.368E-03	-0.271E-03	0.533E-03	-0.542E-03
	1000000.	0.332E-03	-0.270E-04	0.433E-03	-0.292E-03	0.602E-03	-0.585E-03
	2000000.	0.257E-03	-0.213E-04	0.613E-03	-0.348E-03	0.803E-03	-0.697E-03
	4000000.	0.201E-03	-0.162E-04	0.785E-03	-0.395E-03	0.102E-02	-0.789E-03
	6000000.	0.175E-03	-0.133E-04	0.887E-03	-0.423E-03	0.119E-02	-0.847E-03
Si XIII 3D 4F 110.9 Å C=0.25E+17	500000.	0.237E-03	-0.482E-05	0.821E-03	-0.455E-03	*0.107E-02	-0.893E-03
	750000.	0.201E-03	-0.577E-05	0.953E-03	-0.506E-03	*0.131E-02	-0.101E-02
	1000000.	0.179E-03	-0.737E-05	0.103E-02	-0.546E-03	*0.149E-02	-0.109E-02
	2000000.	0.137E-03	-0.417E-05	0.122E-02	-0.626E-03	*0.204E-02	-0.125E-02
	4000000.	0.106E-03	-0.294E-05	0.136E-02	-0.732E-03	*0.260E-02	-0.147E-02
	6000000.	0.915E-04	-0.159E-05	0.142E-02	-0.768E-03	*0.290E-02	-0.155E-02

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2S 2P 29103.6 Å C=0.29E+23	500000.	2.86	0.108	0.803	1.21	0.976	2.40
	750000.	2.39	0.932E-01	1.52	1.51	1.87	3.02
	1000000.	2.15	0.870E-01	2.00	1.74	2.37	3.48
	2000000.	1.63	0.675E-01	3.64	2.24	4.52	4.48
	4000000.	1.23	0.512E-01	5.00	2.70	6.51	5.40
	6000000.	1.04	0.422E-01	5.70	2.97	7.88	5.95
Si XIII 2S 4P 28.3 Å C=0.28E+17	500000.	0.241E-04	0.623E-06	0.316E-05	0.369E-05	0.537E-05	0.731E-05
	750000.	0.206E-04	0.633E-06	0.478E-05	0.450E-05	0.761E-05	0.899E-05
	1000000.	0.184E-04	0.586E-06	0.619E-05	0.494E-05	0.949E-05	0.988E-05
	2000000.	0.143E-04	0.477E-06	0.943E-05	0.590E-05	0.129E-04	0.118E-04
	4000000.	0.112E-04	0.394E-06	0.135E-04	0.701E-05	0.172E-04	0.141E-04
	6000000.	0.975E-05	0.341E-06	0.162E-04	0.759E-05	0.202E-04	0.152E-04
Si XIII 3S 3P 3034.7 Å C=0.17E+22	500000.	0.127	-0.341E-02	0.276E-02	-0.538E-02	0.529E-02	-0.107E-01
	750000.	0.107	-0.328E-02	0.493E-02	-0.720E-02	0.891E-02	-0.144E-01
	1000000.	0.960E-01	-0.326E-02	0.739E-02	-0.857E-02	0.127E-01	-0.171E-01
	2000000.	0.737E-01	-0.317E-02	0.149E-01	-0.118E-01	0.218E-01	-0.237E-01
	4000000.	0.572E-01	-0.270E-02	0.260E-01	-0.145E-01	0.319E-01	-0.290E-01
	6000000.	0.495E-01	-0.234E-02	0.339E-01	-0.161E-01	0.376E-01	-0.322E-01
Si XIII 3S 4P 105.7 Å C=0.86E+18	500000.	0.364E-03	0.211E-05	0.301E-04	0.352E-04	0.553E-04	0.700E-04
	750000.	0.311E-03	0.232E-05	0.431E-04	0.428E-04	0.743E-04	0.857E-04
	1000000.	0.279E-03	0.180E-05	0.560E-04	0.485E-04	0.924E-04	0.971E-04
	2000000.	0.217E-03	0.801E-06	0.886E-04	0.584E-04	0.127E-03	0.117E-03
	4000000.	0.170E-03	0.562E-06	0.132E-03	0.699E-04	0.165E-03	0.140E-03
	6000000.	0.149E-03	0.477E-06	0.165E-03	0.770E-04	0.193E-03	0.154E-03
Si XIII 4S 4P 7342.7 Å C=0.42E+22	500000.	2.25	-0.722E-01	0.127	-0.134	0.223	-0.265
	750000.	1.94	-0.701E-01	0.187	-0.162	0.297	-0.323
	1000000.	1.75	-0.718E-01	0.250	-0.185	0.370	-0.371
	2000000.	1.38	-0.638E-01	0.433	-0.228	0.527	-0.457
	4000000.	1.09	-0.502E-01	0.687	-0.271	0.685	-0.542
	6000000.	0.948	-0.447E-01	0.884	-0.297	0.809	-0.596
Si XIII 2P 5S 25.3 Å C=0.44E+17	500000.	0.236E-04	0.378E-05	0.103E-04	0.116E-04	0.200E-04	0.229E-04
	750000.	0.209E-04	0.376E-05	0.128E-04	0.129E-04	0.242E-04	0.259E-04
	1000000.	0.191E-04	0.359E-05	0.145E-04	0.140E-04	0.268E-04	0.279E-04
	2000000.	0.154E-04	0.292E-05	0.197E-04	0.165E-04	0.341E-04	0.331E-04
	4000000.	0.122E-04	0.235E-05	0.271E-04	0.191E-04	0.435E-04	0.383E-04
	6000000.	0.106E-04	0.202E-05	0.318E-04	0.208E-04	0.482E-04	0.417E-04
Si XIII 2P 6S 23.9 Å C=0.23E+17	500000.	0.461E-04	0.813E-05	0.253E-04	0.258E-04	*0.485E-04	*0.507E-04
	750000.	0.407E-04	0.766E-05	0.302E-04	0.287E-04	*0.562E-04	*0.573E-04
	1000000.	0.373E-04	0.725E-05	0.343E-04	0.311E-04	*0.622E-04	*0.621E-04
	2000000.	0.298E-04	0.574E-05	0.458E-04	0.354E-04	*0.779E-04	*0.708E-04
	4000000.	0.235E-04	0.458E-05	0.582E-04	0.403E-04	0.907E-04	0.805E-04
	6000000.	0.204E-04	0.385E-05	0.685E-04	0.437E-04	0.102E-03	0.878E-04
Si XIII 2P 7S 23.1 Å C=0.13E+17	500000.	0.846E-04	0.151E-04	0.551E-04	0.519E-04		
	750000.	0.746E-04	0.141E-04	0.652E-04	0.575E-04		
	1000000.	0.681E-04	0.132E-04	0.722E-04	0.615E-04	*0.129E-03	*0.123E-03
	2000000.	0.542E-04	0.106E-04	0.939E-04	0.705E-04	*0.157E-03	*0.141E-03
	4000000.	0.426E-04	0.814E-05	0.122E-03	0.793E-04	*0.188E-03	*0.159E-03
	6000000.	0.368E-04	0.676E-05	0.139E-03	0.828E-04	*0.202E-03	*0.166E-03
Si XIII 2P 8S 22.7 Å C=0.85E+16	500000.	0.146E-03	0.252E-04	*0.105E-03	*0.970E-04		
	750000.	0.128E-03	0.234E-04	*0.125E-03	*0.105E-03		
	1000000.	0.117E-03	0.225E-04	*0.138E-03	*0.111E-03		
	2000000.	0.924E-04	0.179E-04	*0.180E-03	*0.124E-03		
	4000000.	0.723E-04	0.135E-04	*0.225E-03	*0.138E-03		
	6000000.	0.623E-04	0.109E-04	*0.257E-03	*0.154E-03		
Si XIII 3P 4S 111.1 Å C=0.17E+19	500000.	0.283E-03	0.234E-04	0.407E-04	0.638E-04	0.797E-04	0.127E-03
	750000.	0.245E-03	0.230E-04	0.607E-04	0.770E-04	0.116E-03	0.154E-03
	1000000.	0.222E-03	0.228E-04	0.786E-04	0.838E-04	0.147E-03	0.168E-03
	2000000.	0.174E-03	0.198E-04	0.116E-03	0.101E-03	0.198E-03	0.202E-03
	4000000.	0.137E-03	0.157E-04	0.163E-03	0.120E-03	0.252E-03	0.240E-03
	6000000.	0.119E-03	0.139E-04	0.196E-03	0.130E-03	0.282E-03	0.260E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3P 5S 75.3 Å C=0.39E+18	500000.	0.254E-03	0.330E-04	0.906E-04	0.102E-03	0.175E-03	0.202E-03
	750000.	0.223E-03	0.326E-04	0.113E-03	0.114E-03	0.213E-03	0.228E-03
	1000000.	0.203E-03	0.312E-04	0.128E-03	0.123E-03	0.236E-03	0.245E-03
	2000000.	0.161E-03	0.253E-04	0.175E-03	0.145E-03	0.300E-03	0.290E-03
	4000000.	0.128E-03	0.203E-04	0.242E-03	0.168E-03	0.381E-03	0.338E-03
	6000000.	0.111E-03	0.174E-04	0.284E-03	0.183E-03	0.425E-03	0.366E-03
Si XIII 3P 6S 64.1 Å C=0.16E+18	500000.	0.364E-03	0.581E-04	0.182E-03	0.185E-03	*0.348E-03	*0.364E-03
	750000.	0.321E-03	0.546E-04	0.217E-03	0.206E-03	*0.404E-03	*0.412E-03
	1000000.	0.293E-03	0.517E-04	0.247E-03	0.223E-03	*0.445E-03	*0.446E-03
	2000000.	0.233E-03	0.409E-04	0.330E-03	0.254E-03	*0.561E-03	*0.509E-03
	4000000.	0.183E-03	0.326E-04	0.422E-03	0.289E-03	0.654E-03	0.579E-03
	6000000.	0.159E-03	0.274E-04	0.498E-03	0.315E-03	0.733E-03	0.631E-03
Si XIII 3P 7S 58.9 Å C=0.86E+17	500000.	0.575E-03	0.974E-04	0.357E-03	0.336E-03		
	750000.	0.506E-03	0.907E-04	0.422E-03	0.372E-03		
	1000000.	0.462E-03	0.850E-04	0.468E-03	0.398E-03	*0.835E-03	*0.794E-03
	2000000.	0.367E-03	0.683E-04	0.608E-03	0.456E-03	*0.101E-02	*0.915E-03
	4000000.	0.288E-03	0.524E-04	0.792E-03	0.513E-03	*0.122E-02	*0.103E-02
	6000000.	0.249E-03	0.435E-04	0.901E-03	0.536E-03	*0.131E-02	*0.108E-02
Si XIII 3P 8S 55.9 Å C=0.52E+17	500000.	0.911E-03	0.153E-03	*0.639E-03	*0.590E-03		
	750000.	0.801E-03	0.142E-03	*0.761E-03	*0.640E-03		
	1000000.	0.729E-03	0.136E-03	*0.838E-03	*0.677E-03		
	2000000.	0.577E-03	0.109E-03	*0.109E-02	*0.757E-03		
	4000000.	0.451E-03	0.818E-04	*0.137E-02	*0.838E-03		
	6000000.	0.389E-03	0.661E-04	*0.157E-02	*0.934E-03		
Si XIII 4P 5S 241.2 Å C=0.40E+19	500000.	0.370E-02	0.306E-03	0.858E-03	0.962E-03	0.163E-02	0.190E-02
	750000.	0.323E-02	0.302E-03	0.109E-02	0.107E-02	0.200E-02	0.215E-02
	1000000.	0.293E-02	0.290E-03	0.127E-02	0.115E-02	0.224E-02	0.231E-02
	2000000.	0.232E-02	0.235E-03	0.179E-02	0.138E-02	0.284E-02	0.276E-02
	4000000.	0.183E-02	0.188E-03	0.251E-02	0.158E-02	0.357E-02	0.317E-02
	6000000.	0.160E-02	0.162E-03	0.297E-02	0.169E-02	0.396E-02	0.338E-02
Si XIII 4P 6S 154.8 Å C=0.95E+18	500000.	0.257E-02	0.325E-03	0.105E-02	0.105E-02	*0.199E-02	*0.207E-02
	750000.	0.225E-02	0.305E-03	0.126E-02	0.117E-02	*0.232E-02	*0.234E-02
	1000000.	0.205E-02	0.289E-03	0.142E-02	0.126E-02	*0.254E-02	*0.252E-02
	2000000.	0.163E-02	0.228E-03	0.196E-02	0.146E-02	*0.323E-02	*0.292E-02
	4000000.	0.129E-02	0.182E-03	0.254E-02	0.166E-02	0.377E-02	0.332E-02
	6000000.	0.112E-02	0.152E-03	0.296E-02	0.179E-02	0.416E-02	0.359E-02
Si XIII 4P 7S 127.4 Å C=0.40E+18	500000.	0.300E-02	0.447E-03	0.166E-02	0.157E-02		
	750000.	0.263E-02	0.415E-03	0.197E-02	0.173E-02		
	1000000.	0.240E-02	0.389E-03	0.218E-02	0.184E-02	*0.388E-02	*0.368E-02
	2000000.	0.190E-02	0.313E-03	0.285E-02	0.212E-02	*0.467E-02	*0.424E-02
	4000000.	0.149E-02	0.240E-03	0.376E-02	0.240E-02	*0.568E-02	*0.482E-02
	6000000.	0.129E-02	0.199E-03	0.426E-02	0.250E-02	*0.605E-02	*0.501E-02
Si XIII 4P 8S 114.3 Å C=0.22E+18	500000.	0.405E-02	0.631E-03	*0.266E-02	*0.245E-02		
	750000.	0.355E-02	0.587E-03	*0.317E-02	*0.267E-02		
	1000000.	0.323E-02	0.563E-03	*0.350E-02	*0.282E-02		
	2000000.	0.256E-02	0.449E-03	*0.460E-02	*0.316E-02		
	4000000.	0.200E-02	0.337E-03	*0.579E-02	*0.351E-02		
	6000000.	0.173E-02	0.272E-03	*0.661E-02	*0.390E-02		
Si XIII 2P 3D 37.8 Å C=0.27E+18	500000.	0.103E-04	-0.156E-06	0.237E-06	-0.631E-06	0.450E-06	-0.126E-05
	750000.	0.850E-05	-0.108E-06	0.467E-06	-0.854E-06	0.845E-06	-0.171E-05
	1000000.	0.750E-05	-0.102E-06	0.730E-06	-0.104E-05	0.127E-05	-0.208E-05
	2000000.	0.553E-05	-0.851E-07	0.151E-05	-0.145E-05	0.234E-05	-0.290E-05
	4000000.	0.415E-05	-0.380E-07	0.261E-05	-0.181E-05	0.367E-05	-0.362E-05
	6000000.	0.355E-05	-0.292E-07	0.331E-05	-0.201E-05	0.443E-05	-0.403E-05
Si XIII 2P 4D 28.2 Å C=0.57E+16	500000.	0.205E-04	0.762E-07	0.209E-04	0.143E-04	0.265E-04	0.282E-04
	750000.	0.175E-04	0.126E-06	0.268E-04	0.159E-04	0.334E-04	0.318E-04
	1000000.	0.157E-04	0.172E-06	0.307E-04	0.171E-04	0.381E-04	0.342E-04
	2000000.	0.120E-04	0.139E-06	0.402E-04	0.202E-04	0.524E-04	0.405E-04
	4000000.	0.935E-05	0.916E-07	0.490E-04	0.236E-04	0.711E-04	0.472E-04
	6000000.	0.810E-05	0.652E-07	0.529E-04	0.255E-04	0.829E-04	0.512E-04

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3P 3D 5341.6 Å C=0.53E+22	500000.	0.368	-0.572E-02	0.134E-01	-0.241E-01	0.258E-01	-0.480E-01
	750000.	0.309	-0.548E-02	0.238E-01	-0.319E-01	0.434E-01	-0.637E-01
	1000000.	0.274	-0.528E-02	0.326E-01	-0.365E-01	0.567E-01	-0.730E-01
	2000000.	0.207	-0.455E-02	0.633E-01	-0.499E-01	0.964E-01	-0.100
	4000000.	0.159	-0.330E-02	0.101	-0.600E-01	0.133	-0.120
	6000000.	0.138	-0.285E-02	0.128	-0.665E-01	0.157	-0.133
Si XIII 3P 4D 108.6 Å C=0.84E+17	500000.	0.348E-03	0.498E-07	0.308E-03	0.210E-03	0.390E-03	0.414E-03
	750000.	0.298E-03	0.491E-06	0.396E-03	0.234E-03	0.491E-03	0.468E-03
	1000000.	0.267E-03	0.120E-05	0.455E-03	0.251E-03	0.560E-03	0.503E-03
	2000000.	0.207E-03	0.887E-06	0.599E-03	0.297E-03	0.773E-03	0.595E-03
	4000000.	0.161E-03	0.307E-06	0.730E-03	0.347E-03	0.104E-02	0.697E-03
	6000000.	0.140E-03	0.308E-07	0.794E-03	0.377E-03	0.122E-02	0.757E-03
Si XIII 4P 4D 12934.9 Å C=0.12E+22	500000.	7.44	-0.928E-01	4.18	2.73	5.08	5.39
	750000.	6.40	-0.873E-01	5.42	3.04	6.41	6.08
	1000000.	5.77	-0.691E-01	6.31	3.26	7.42	6.53
	2000000.	4.51	-0.570E-01	8.43	3.89	10.2	7.79
	4000000.	3.55	-0.530E-01	10.4	4.49	13.8	8.96
	6000000.	3.11	-0.491E-01	11.5	4.80	16.4	9.62
Si XIII 3D 4P 111.8 Å C=0.97E+18	500000.	0.387E-03	0.949E-05	0.404E-04	0.496E-04	0.751E-04	0.985E-04
	750000.	0.330E-03	0.944E-05	0.582E-04	0.606E-04	0.102E-03	0.121E-03
	1000000.	0.296E-03	0.875E-05	0.758E-04	0.676E-04	0.129E-03	0.135E-03
	2000000.	0.229E-03	0.719E-05	0.116E-03	0.811E-04	0.174E-03	0.162E-03
	4000000.	0.179E-03	0.573E-05	0.168E-03	0.966E-04	0.221E-03	0.193E-03
	6000000.	0.157E-03	0.495E-05	0.206E-03	0.105E-03	0.256E-03	0.211E-03
Si XIII 3D 4F 110.7 Å C=0.87E+17	500000.	0.225E-03	-0.314E-05	0.262E-03	-0.186E-03	0.331E-03	-0.367E-03
	750000.	0.191E-03	-0.339E-05	0.339E-03	-0.207E-03	0.424E-03	-0.413E-03
	1000000.	0.170E-03	-0.387E-05	0.393E-03	-0.223E-03	0.496E-03	-0.446E-03
	2000000.	0.129E-03	-0.170E-05	0.510E-03	-0.265E-03	0.682E-03	-0.531E-03
	4000000.	0.999E-04	-0.889E-06	0.617E-03	-0.308E-03	0.928E-03	-0.617E-03
	6000000.	0.867E-04	-0.247E-06	0.652E-03	-0.332E-03	0.106E-02	-0.663E-03
PERTURBER DENSITY = 1.E+19cm-3							
Si XIII 1S 2P 6.6 Å C=0.37E+18	500000.	0.115E-05	-0.150E-07	0.265E-08	-0.103E-07	0.527E-08	-0.201E-07
	750000.	0.939E-06	-0.745E-08	0.519E-08	-0.156E-07	0.103E-07	-0.308E-07
	1000000.	0.816E-06	-0.731E-08	0.847E-08	-0.206E-07	0.166E-07	-0.409E-07
	2000000.	0.587E-06	-0.390E-08	0.261E-07	-0.376E-07	0.477E-07	-0.753E-07
	4000000.	0.426E-06	-0.331E-08	0.625E-07	-0.587E-07	0.102E-06	-0.118E-06
	6000000.	0.355E-06	-0.200E-08	0.897E-07	-0.713E-07	0.137E-06	-0.143E-06
Si XIII 1S 3P 5.7 Å C=0.12E+17	500000.	0.363E-05	-0.137E-06	0.785E-06	-0.101E-05	0.124E-05	-0.195E-05
	750000.	0.306E-05	-0.124E-06	0.119E-05	-0.124E-05	0.174E-05	-0.244E-05
	1000000.	0.271E-05	-0.120E-06	0.158E-05	-0.140E-05	0.225E-05	-0.277E-05
	2000000.	0.205E-05	-0.105E-06	0.257E-05	-0.169E-05	0.346E-05	-0.338E-05
	4000000.	0.156E-05	-0.841E-07	0.355E-05	-0.202E-05	0.468E-05	-0.405E-05
	6000000.	0.134E-05	-0.699E-07	0.415E-05	-0.223E-05	0.561E-05	-0.447E-05
Si XIII 1S 4P 5.4 Å C=0.44E+16	500000.	0.950E-05	-0.421E-06	0.646E-05	-0.548E-05	*0.100E-04	-0.103E-04
	750000.	0.814E-05	-0.396E-06	0.835E-05	-0.624E-05	*0.123E-04	-0.121E-04
	1000000.	0.730E-05	-0.403E-06	0.977E-05	-0.674E-05	*0.138E-04	-0.131E-04
	2000000.	0.565E-05	-0.375E-06	0.136E-04	-0.804E-05	*0.181E-04	-0.161E-04
	4000000.	0.441E-05	-0.322E-06	0.175E-04	-0.912E-05	*0.234E-04	-0.183E-04
	6000000.	0.383E-05	-0.261E-06	0.197E-04	-0.981E-05	*0.272E-04	-0.197E-04
Si XIII 2S 2P 1200.7 Å C=0.12E+23	500000.	0.454E-01	-0.103E-02	0.178E-03	-0.141E-02	0.354E-03	-0.275E-02
	750000.	0.376E-01	-0.109E-02	0.455E-03	-0.208E-02	0.902E-03	-0.412E-02
	1000000.	0.329E-01	-0.105E-02	0.829E-03	-0.266E-02	0.163E-02	-0.529E-02
	2000000.	0.243E-01	-0.988E-03	0.263E-02	-0.429E-02	0.487E-02	-0.859E-02
	4000000.	0.181E-01	-0.929E-03	0.548E-02	-0.597E-02	0.903E-02	-0.119E-01
	6000000.	0.153E-01	-0.825E-03	0.810E-02	-0.679E-02	0.126E-01	-0.136E-01
Si XIII 2S 3P 37.8 Å C=0.55E+18	500000.	0.169E-03	-0.659E-05	0.352E-04	-0.452E-04	0.556E-04	-0.873E-04
	750000.	0.143E-03	-0.632E-05	0.532E-04	-0.556E-04	0.783E-04	-0.109E-03
	1000000.	0.127E-03	-0.613E-05	0.709E-04	-0.630E-04	0.101E-03	-0.124E-03
	2000000.	0.958E-04	-0.552E-05	0.115E-03	-0.758E-04	0.155E-03	-0.152E-03
	4000000.	0.733E-04	-0.454E-05	0.159E-03	-0.905E-04	0.210E-03	-0.181E-03
	6000000.	0.631E-04	-0.385E-05	0.187E-03	-0.100E-03	0.252E-03	-0.201E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2S 4P 28.2 Å C=0.12E+18	500000.	0.263E-03	-0.118E-04	0.176E-03	-0.149E-03	*0.274E-03	-0.281E-03
	750000.	0.226E-03	-0.113E-04	0.228E-03	-0.170E-03	*0.335E-03	-0.329E-03
	1000000.	0.203E-03	-0.114E-04	0.267E-03	-0.184E-03	*0.378E-03	-0.358E-03
	2000000.	0.157E-03	-0.107E-04	0.370E-03	-0.219E-03	*0.496E-03	-0.439E-03
	4000000.	0.122E-03	-0.923E-05	0.476E-03	-0.249E-03	*0.638E-03	-0.499E-03
	6000000.	0.107E-03	-0.753E-05	0.537E-03	-0.268E-03	*0.743E-03	-0.536E-03
Si XIII 3S 3P 4122.7 Å C=0.65E+22	500000.	2.54	-0.152	0.511	-0.662	0.844	-1.28
	750000.	2.17	-0.149	0.760	-0.819	1.18	-1.61
	1000000.	1.94	-0.147	1.02	-0.915	1.55	-1.81
	2000000.	1.50	-0.136	1.61	-1.10	2.24	-2.20
	4000000.	1.16	-0.112	2.23	-1.31	2.97	-2.62
	6000000.	1.00	-0.959E-01	2.64	-1.43	3.52	-2.86
Si XIII 3S 4P 108.3 Å C=0.17E+19	500000.	0.425E-02	-0.224E-03	0.265E-02	-0.225E-02	*0.414E-02	-0.422E-02
	750000.	0.365E-02	-0.217E-03	0.340E-02	-0.255E-02	*0.503E-02	-0.494E-02
	1000000.	0.328E-02	-0.219E-03	0.399E-02	-0.275E-02	*0.568E-02	-0.537E-02
	2000000.	0.256E-02	-0.206E-03	0.557E-02	-0.328E-02	*0.750E-02	-0.657E-02
	4000000.	0.200E-02	-0.176E-03	0.720E-02	-0.372E-02	*0.964E-02	-0.748E-02
	6000000.	0.174E-02	-0.145E-03	0.814E-02	-0.401E-02	*0.111E-01	-0.803E-02
Si XIII 2P 3S 39.4 Å C=0.38E+19	500000.	0.978E-04	0.787E-05	0.776E-05	0.200E-04	0.153E-04	0.389E-04
	750000.	0.838E-04	0.795E-05	0.151E-04	0.257E-04	0.293E-04	0.507E-04
	1000000.	0.753E-04	0.788E-05	0.192E-04	0.294E-04	0.364E-04	0.581E-04
	2000000.	0.587E-04	0.746E-05	0.377E-04	0.383E-04	0.674E-04	0.767E-04
	4000000.	0.460E-04	0.630E-05	0.559E-04	0.460E-04	0.909E-04	0.921E-04
	6000000.	0.398E-04	0.547E-05	0.685E-04	0.509E-04	0.105E-03	0.102E-03
Si XIII 2P 4S 29.0 Å C=0.86E+18	500000.	0.137E-03	0.170E-04	0.397E-04	0.571E-04	0.770E-04	0.110E-03
	750000.	0.120E-03	0.169E-04	0.583E-04	0.683E-04	0.110E-03	0.134E-03
	1000000.	0.109E-03	0.168E-04	0.708E-04	0.731E-04	0.131E-03	0.144E-03
	2000000.	0.875E-04	0.147E-04	0.102E-03	0.882E-04	0.176E-03	0.177E-03
	4000000.	0.694E-04	0.120E-04	0.142E-03	0.105E-03	0.224E-03	0.210E-03
	6000000.	0.603E-04	0.106E-04	0.169E-03	0.114E-03	0.251E-03	0.228E-03
Si XIII 2P 5S 25.8 Å C=0.35E+18	500000.	0.267E-03	0.370E-04	0.139E-03	0.145E-03		
	750000.	0.236E-03	0.361E-04	0.169E-03	0.166E-03		
	1000000.	0.216E-03	0.347E-04	0.195E-03	0.179E-03		
	2000000.	0.173E-03	0.298E-04	0.268E-03	0.211E-03	*0.451E-03	*0.421E-03
	4000000.	0.137E-03	0.252E-04	0.357E-03	0.248E-03	*0.548E-03	*0.496E-03
	6000000.	0.119E-03	0.213E-04	0.406E-03	0.260E-03	*0.589E-03	*0.521E-03
Si XIII 2P 6S 24.4 Å C=0.18E+18	500000.	0.514E-03	0.680E-04	*0.336E-03	*0.317E-03		
	750000.	0.454E-03	0.640E-04	*0.402E-03	*0.363E-03		
	1000000.	0.415E-03	0.623E-04	*0.452E-03	*0.393E-03		
	2000000.	0.332E-03	0.561E-04	*0.604E-03	*0.453E-03		
	4000000.	0.261E-03	0.477E-04	*0.812E-03	*0.507E-03		
	6000000.	0.226E-03	0.400E-04	*0.932E-03	*0.547E-03		
Si XIII 2P 7S 23.6 Å C=0.11E+18	500000.	0.917E-03	0.103E-03				
	750000.	0.811E-03	0.973E-04				
	1000000.	0.741E-03	0.966E-04				
	2000000.	0.590E-03	0.950E-04				
	4000000.	0.463E-03	0.830E-04				
	6000000.	0.400E-03	0.679E-04				
Si XIII 2P 8S 23.1 Å C=0.68E+17	500000.	0.151E-02	0.138E-03				
	750000.	0.134E-02	0.130E-03				
	1000000.	0.122E-02	0.138E-03				
	2000000.	0.970E-03	0.144E-03				
	4000000.	0.761E-03	0.133E-03				
	6000000.	0.657E-03	0.105E-03				
Si XIII 3P 4S 112.5 Å C=0.48E+19	500000.	0.316E-02	0.305E-03	0.864E-03	0.110E-02	*0.156E-02	*0.210E-02
	750000.	0.274E-02	0.301E-03	0.129E-02	0.128E-02	*0.224E-02	*0.250E-02
	1000000.	0.248E-02	0.298E-03	0.153E-02	0.139E-02	*0.255E-02	*0.272E-02
	2000000.	0.195E-02	0.261E-03	0.224E-02	0.165E-02	0.341E-02	0.330E-02
	4000000.	0.154E-02	0.212E-03	0.313E-02	0.194E-02	0.442E-02	0.389E-02
	6000000.	0.133E-02	0.186E-03	0.372E-02	0.208E-02	0.514E-02	0.416E-02

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3P 5S 76.3 Å C=0.22E+19	500000.	0.284E-02	0.346E-03	0.130E-02	0.133E-02		
	750000.	0.249E-02	0.337E-03	0.162E-02	0.152E-02		
	1000000.	0.227E-02	0.323E-03	0.188E-02	0.165E-02		
	2000000.	0.180E-02	0.278E-03	0.258E-02	0.194E-02	*0.411E-02	*0.388E-02
	4000000.	0.142E-02	0.234E-03	0.356E-02	0.222E-02	*0.529E-02	*0.446E-02
	6000000.	0.123E-02	0.199E-03	0.400E-02	0.243E-02	*0.554E-02	*0.487E-02
Si XIII 3P 6S 65.0 Å C=0.13E+19	500000.	0.401E-02	0.499E-03	*0.245E-02	*0.229E-02		
	750000.	0.354E-02	0.470E-03	*0.292E-02	*0.262E-02		
	1000000.	0.322E-02	0.457E-03	*0.334E-02	*0.284E-02		
	2000000.	0.256E-02	0.411E-03	*0.447E-02	*0.325E-02		
	4000000.	0.202E-02	0.349E-03	*0.594E-02	*0.363E-02		
	6000000.	0.175E-02	0.293E-03	*0.686E-02	*0.393E-02		
Si XIII 3P 7S 59.6 Å C=0.67E+18	500000.	0.617E-02	0.672E-03				
	750000.	0.544E-02	0.634E-03				
	1000000.	0.496E-02	0.630E-03				
	2000000.	0.394E-02	0.618E-03				
	4000000.	0.310E-02	0.539E-03				
	6000000.	0.267E-02	0.441E-03				
Si XIII 3P 8S 56.6 Å C=0.41E+18	500000.	0.934E-02	0.839E-03				
	750000.	0.825E-02	0.791E-03				
	1000000.	0.753E-02	0.839E-03				
	2000000.	0.599E-02	0.876E-03				
	4000000.	0.469E-02	0.809E-03				
	6000000.	0.405E-02	0.638E-03				
Si XIII 4P 5S 243.0 Å C=0.88E+19	500000.	0.413E-01	0.411E-02	*0.223E-01	*0.195E-01		
	750000.	0.361E-01	0.399E-02	*0.277E-01	*0.222E-01		
	1000000.	0.328E-01	0.388E-02	*0.320E-01	*0.239E-01		
	2000000.	0.259E-01	0.339E-02	*0.449E-01	*0.281E-01		
	4000000.	0.205E-01	0.288E-02	*0.578E-01	*0.319E-01		
	6000000.	0.178E-01	0.241E-02	*0.667E-01	*0.351E-01		
Si XIII 4P 6S 156.2 Å C=0.36E+19	500000.	0.284E-01	0.313E-02	*0.173E-01	*0.150E-01		
	750000.	0.249E-01	0.295E-02	*0.211E-01	*0.172E-01		
	1000000.	0.227E-01	0.289E-02	*0.238E-01	*0.185E-01		
	2000000.	0.180E-01	0.261E-02	*0.324E-01	*0.209E-01		
	4000000.	0.142E-01	0.222E-02	*0.413E-01	*0.239E-01		
	6000000.	0.123E-01	0.186E-02	*0.474E-01	*0.262E-01		
Si XIII 4P 7S 128.6 Å C=0.25E+19	500000.	0.322E-01	0.329E-02				
	750000.	0.283E-01	0.311E-02				
	1000000.	0.258E-01	0.310E-02				
	2000000.	0.205E-01	0.303E-02				
	4000000.	0.161E-01	0.265E-02				
	6000000.	0.139E-01	0.216E-02				
Si XIII 4P 8S 115.3 Å C=0.17E+19	500000.	0.416E-01	0.362E-02				
	750000.	0.367E-01	0.341E-02				
	1000000.	0.335E-01	0.361E-02				
	2000000.	0.266E-01	0.376E-02				
	4000000.	0.208E-01	0.347E-02				
	6000000.	0.180E-01	0.274E-02				
Si XIII 2P 3D 39.1 Å C=0.58E+18	500000.	0.116E-03	0.329E-05	0.204E-04	0.293E-04	0.288E-04	0.569E-04
	750000.	0.967E-04	0.331E-05	0.347E-04	0.359E-04	0.466E-04	0.706E-04
	1000000.	0.852E-04	0.326E-05	0.466E-04	0.414E-04	0.606E-04	0.820E-04
	2000000.	0.633E-04	0.289E-05	0.816E-04	0.520E-04	0.104E-03	0.104E-03
	4000000.	0.477E-04	0.273E-05	0.114E-03	0.626E-04	0.146E-03	0.125E-03
	6000000.	0.407E-04	0.235E-05	0.132E-03	0.693E-04	0.176E-03	0.139E-03
Si XIII 2P 4D 28.9 Å C=0.17E+17	500000.	0.221E-03	0.597E-05				
	750000.	0.191E-03	0.592E-05				
	1000000.	0.172E-03	0.636E-05				
	2000000.	0.133E-03	0.728E-05	*0.114E-02	*0.592E-03		
	4000000.	0.103E-03	0.722E-05	*0.128E-02	*0.690E-03		
	6000000.	0.896E-04	0.548E-05	*0.133E-02	*0.734E-03		

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3P 4D 111.4 Å C=0.26E+18	500000.	0.385E-02	0.137E-03				
	750000.	0.332E-02	0.133E-03				
	1000000.	0.299E-02	0.138E-03				
	2000000.	0.233E-02	0.147E-03	*0.174E-01	*0.880E-02		
	4000000.	0.182E-02	0.139E-03	*0.200E-01	*0.103E-01		
	6000000.	0.158E-02	0.108E-03	*0.210E-01	*0.110E-01		
Si XIII 3D 4P 110.7 Å C=0.18E+19	500000.	0.425E-02	-0.199E-03	0.285E-02	-0.238E-02	*0.440E-02	-0.446E-02
	750000.	0.364E-02	-0.191E-03	0.368E-02	-0.270E-02	*0.534E-02	-0.523E-02
	1000000.	0.327E-02	-0.193E-03	0.433E-02	-0.292E-02	*0.602E-02	-0.568E-02
	2000000.	0.254E-02	-0.180E-03	0.613E-02	-0.347E-02	*0.803E-02	-0.694E-02
	4000000.	0.199E-02	-0.156E-03	0.785E-02	-0.395E-02	*0.102E-01	-0.789E-02
	6000000.	0.173E-02	-0.128E-03	0.887E-02	-0.423E-02	*0.119E-01	-0.847E-02
Si XIII 3D 4F 110.9 Å C=0.25E+18	500000.	0.223E-02	-0.989E-05	*0.820E-02	-0.440E-02		
	750000.	0.189E-02	-0.119E-04	*0.953E-02	-0.504E-02		
	1000000.	0.169E-02	-0.165E-04	*0.103E-01	-0.544E-02		
	2000000.	0.130E-02	-0.136E-04	*0.122E-01	-0.624E-02		
	4000000.	0.101E-02	-0.197E-04	*0.136E-01	-0.732E-02		
	6000000.	0.875E-03	-0.808E-05	*0.142E-01	-0.768E-02		
Si XIII 2S 3P 38.2 Å C=0.50E+18	500000.	0.165E-03	0.279E-05	0.184E-04	0.255E-04	0.257E-04	0.495E-04
	750000.	0.139E-03	0.284E-05	0.319E-04	0.314E-04	0.427E-04	0.619E-04
	1000000.	0.124E-03	0.278E-05	0.426E-04	0.364E-04	0.549E-04	0.719E-04
	2000000.	0.935E-04	0.245E-05	0.753E-04	0.457E-04	0.949E-04	0.915E-04
	4000000.	0.716E-04	0.215E-05	0.107E-03	0.549E-04	0.135E-03	0.110E-03
	6000000.	0.616E-04	0.185E-05	0.125E-03	0.612E-04	0.162E-03	0.122E-03
Si XIII 2S 4P 28.3 Å C=0.28E+18	500000.	0.241E-03	0.538E-05	0.316E-04	0.363E-04	0.536E-04	0.698E-04
	750000.	0.206E-03	0.547E-05	0.478E-04	0.449E-04	0.761E-04	0.881E-04
	1000000.	0.184E-03	0.514E-05	0.619E-04	0.493E-04	0.949E-04	0.972E-04
	2000000.	0.143E-03	0.448E-05	0.943E-04	0.589E-04	0.129E-03	0.118E-03
	4000000.	0.112E-03	0.389E-05	0.135E-03	0.701E-04	0.172E-03	0.141E-03
	6000000.	0.975E-04	0.336E-05	0.162E-03	0.759E-04	0.202E-03	0.152E-03
Si XIII 3S 3P 3034.7 Å C=0.17E+23	500000.	1.27	-0.331E-01	0.276E-01	-0.533E-01	0.529E-01	-0.104
	750000.	1.08	-0.320E-01	0.493E-01	-0.719E-01	0.891E-01	-0.142
	1000000.	0.960	-0.319E-01	0.739E-01	-0.856E-01	0.127	-0.170
	2000000.	0.737	-0.315E-01	0.149	-0.118	0.218	-0.237
	4000000.	0.572	-0.269E-01	0.260	-0.145	0.319	-0.290
	6000000.	0.495	-0.233E-01	0.339	-0.161	0.376	-0.322
Si XIII 3S 4P 105.7 Å C=0.86E+19	500000.	0.364E-02	0.135E-04	0.302E-03	0.348E-03	0.552E-03	0.672E-03
	750000.	0.311E-02	0.158E-04	0.431E-03	0.428E-03	0.742E-03	0.841E-03
	1000000.	0.279E-02	0.117E-04	0.560E-03	0.485E-03	0.923E-03	0.957E-03
	2000000.	0.217E-02	0.548E-05	0.886E-03	0.583E-03	0.127E-02	0.117E-02
	4000000.	0.170E-02	0.514E-05	0.132E-02	0.699E-03	0.165E-02	0.140E-02
	6000000.	0.149E-02	0.437E-05	0.165E-02	0.770E-03	0.193E-02	0.154E-02
Si XIII 2P 3S 38.6 Å C=0.49E+19	500000.	0.876E-04	0.680E-05	0.504E-05	0.143E-04	0.100E-04	0.279E-04
	750000.	0.747E-04	0.682E-05	0.973E-05	0.189E-04	0.191E-04	0.373E-04
	1000000.	0.670E-04	0.679E-05	0.136E-04	0.215E-04	0.263E-04	0.426E-04
	2000000.	0.521E-04	0.654E-05	0.262E-04	0.292E-04	0.482E-04	0.585E-04
	4000000.	0.407E-04	0.567E-05	0.400E-04	0.349E-04	0.678E-04	0.700E-04
	6000000.	0.353E-04	0.494E-05	0.488E-04	0.389E-04	0.779E-04	0.779E-04
Si XIII 2P 4S 28.4 Å C=0.11E+19	500000.	0.121E-03	0.151E-04	0.275E-04	0.429E-04	0.539E-04	0.823E-04
	750000.	0.106E-03	0.149E-04	0.408E-04	0.523E-04	0.785E-04	0.103E-03
	1000000.	0.967E-04	0.150E-04	0.526E-04	0.567E-04	0.996E-04	0.112E-03
	2000000.	0.774E-04	0.133E-04	0.749E-04	0.680E-04	0.133E-03	0.136E-03
	4000000.	0.615E-04	0.109E-04	0.105E-03	0.809E-04	0.171E-03	0.162E-03
	6000000.	0.535E-04	0.964E-05	0.125E-03	0.887E-04	0.194E-03	0.178E-03
Si XIII 2P 5S 25.3 Å C=0.44E+18	500000.	0.237E-03	0.334E-04	0.103E-03	0.113E-03	*0.200E-03	*0.214E-03
	750000.	0.209E-03	0.336E-04	0.128E-03	0.129E-03	*0.242E-03	*0.250E-03
	1000000.	0.191E-03	0.325E-04	0.145E-03	0.139E-03	*0.268E-03	*0.271E-03
	2000000.	0.153E-03	0.278E-04	0.197E-03	0.165E-03	*0.341E-03	*0.330E-03
	4000000.	0.122E-03	0.232E-04	0.271E-03	0.191E-03	*0.435E-03	*0.383E-03
	6000000.	0.106E-03	0.200E-04	0.318E-03	0.208E-03	*0.482E-03	*0.417E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 6S 23.9 Å C=0.23E+18	500000.	0.459E-03	0.661E-04	*0.254E-03	*0.249E-03		
	750000.	0.406E-03	0.630E-04	*0.302E-03	*0.286E-03		
	1000000.	0.371E-03	0.610E-04	*0.343E-03	*0.310E-03		
	2000000.	0.297E-03	0.527E-04	*0.458E-03	*0.353E-03		
	4000000.	0.234E-03	0.449E-04	*0.582E-03	*0.403E-03		
	6000000.	0.203E-03	0.378E-04	*0.685E-03	*0.437E-03		
Si XIII 2P 7S 23.1 Å C=0.13E+18	500000.	0.831E-03	0.108E-03				
	750000.	0.734E-03	0.102E-03				
	1000000.	0.671E-03	0.988E-04				
	2000000.	0.534E-03	0.923E-04				
	4000000.	0.420E-03	0.789E-04				
	6000000.	0.363E-03	0.655E-04				
Si XIII 2P 8S 22.7 Å C=0.85E+17	500000.	0.139E-02	0.152E-03				
	750000.	0.123E-02	0.142E-03				
	1000000.	0.112E-02	0.144E-03				
	2000000.	0.891E-03	0.145E-03				
	4000000.	0.700E-03	0.129E-03				
	6000000.	0.604E-03	0.104E-03				
Si XIII 3P 4S 111.1 Å C=0.17E+20	500000.	0.284E-02	0.219E-03	0.408E-03	0.628E-03	0.796E-03	0.121E-02
	750000.	0.245E-02	0.215E-03	0.607E-03	0.768E-03	0.116E-02	0.151E-02
	1000000.	0.222E-02	0.216E-03	0.786E-03	0.837E-03	0.147E-02	0.165E-02
	2000000.	0.174E-02	0.193E-03	0.116E-02	0.101E-02	0.198E-02	0.201E-02
	4000000.	0.137E-02	0.156E-03	0.163E-02	0.120E-02	0.252E-02	0.240E-02
	6000000.	0.119E-02	0.138E-03	0.196E-02	0.130E-02	0.282E-02	0.260E-02
Si XIII 3P 5S 75.3 Å C=0.39E+19	500000.	0.254E-02	0.291E-03	0.905E-03	0.998E-03	*0.175E-02	*0.188E-02
	750000.	0.223E-02	0.291E-03	0.113E-02	0.113E-02	*0.213E-02	*0.220E-02
	1000000.	0.203E-02	0.282E-03	0.128E-02	0.122E-02	*0.236E-02	*0.238E-02
	2000000.	0.161E-02	0.240E-03	0.175E-02	0.145E-02	*0.300E-02	*0.289E-02
	4000000.	0.127E-02	0.201E-03	0.242E-02	0.168E-02	*0.381E-02	*0.338E-02
	6000000.	0.111E-02	0.173E-03	0.284E-02	0.183E-02	*0.425E-02	*0.366E-02
Si XIII 3P 6S 64.1 Å C=0.16E+19	500000.	0.363E-02	0.472E-03	*0.182E-02	*0.179E-02		
	750000.	0.320E-02	0.449E-03	*0.217E-02	*0.205E-02		
	1000000.	0.292E-02	0.435E-03	*0.247E-02	*0.222E-02		
	2000000.	0.232E-02	0.375E-03	*0.330E-02	*0.253E-02		
	4000000.	0.183E-02	0.319E-03	*0.422E-02	*0.289E-02		
	6000000.	0.159E-02	0.269E-03	*0.498E-02	*0.315E-02		
Si XIII 3P 7S 58.9 Å C=0.86E+18	500000.	0.565E-02	0.695E-03				
	750000.	0.498E-02	0.655E-03				
	1000000.	0.455E-02	0.636E-03				
	2000000.	0.362E-02	0.594E-03				
	4000000.	0.284E-02	0.508E-03				
	6000000.	0.246E-02	0.422E-03				
Si XIII 3P 8S 55.9 Å C=0.52E+18	500000.	0.870E-02	0.923E-03				
	750000.	0.768E-02	0.863E-03				
	1000000.	0.700E-02	0.875E-03				
	2000000.	0.556E-02	0.880E-03				
	4000000.	0.437E-02	0.780E-03				
	6000000.	0.377E-02	0.630E-03				
Si XIII 4P 5S 241.2 Å C=0.40E+20	500000.	0.370E-01	0.270E-02	0.858E-02	0.940E-02	*0.163E-01	*0.177E-01
	750000.	0.323E-01	0.270E-02	0.109E-01	0.107E-01	*0.199E-01	*0.207E-01
	1000000.	0.293E-01	0.263E-02	0.127E-01	0.115E-01	*0.224E-01	*0.224E-01
	2000000.	0.232E-01	0.224E-02	0.179E-01	0.138E-01	*0.284E-01	*0.275E-01
	4000000.	0.183E-01	0.186E-02	0.251E-01	0.158E-01	*0.357E-01	*0.317E-01
	6000000.	0.160E-01	0.160E-02	0.297E-01	0.169E-01	*0.396E-01	*0.338E-01
Si XIII 4P 6S 154.8 Å C=0.95E+19	500000.	0.256E-01	0.263E-02	*0.105E-01	*0.102E-01		
	750000.	0.225E-01	0.250E-02	*0.126E-01	*0.117E-01		
	1000000.	0.205E-01	0.243E-02	*0.142E-01	*0.126E-01		
	2000000.	0.163E-01	0.209E-02	*0.196E-01	*0.146E-01		
	4000000.	0.128E-01	0.178E-02	*0.254E-01	*0.166E-01		
	6000000.	0.111E-01	0.150E-02	*0.296E-01	*0.179E-01		



PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 4P 7S 127.4 Å C=0.40E+19	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.295E-01 0.259E-01 0.236E-01 0.188E-01 0.148E-01 0.128E-01	0.318E-02 0.299E-02 0.290E-02 0.272E-02 0.232E-02 0.193E-02				
Si XIII 4P 8S 114.3 Å C=0.22E+19	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.388E-01 0.342E-01 0.311E-01 0.247E-01 0.194E-01 0.168E-01	0.379E-02 0.354E-02 0.359E-02 0.362E-02 0.321E-02 0.259E-02				
Si XIII 2P 3D 37.8 Å C=0.27E+19	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.103E-03 0.854E-04 0.750E-04 0.553E-04 0.415E-04 0.355E-04	-0.122E-05 -0.965E-06 -0.907E-06 -0.816E-06 -0.374E-06 -0.287E-06	0.237E-05 0.467E-05 0.730E-05 0.151E-04 0.261E-04 0.331E-04	-0.625E-05 -0.853E-05 -0.104E-04 -0.145E-04 -0.181E-04 -0.201E-04	0.450E-05 0.845E-05 0.127E-04 0.234E-04 0.367E-04 0.443E-04	-0.122E-04 -0.169E-04 -0.206E-04 -0.290E-04 -0.362E-04 -0.403E-04
Si XIII 2P 4D 28.2 Å C=0.57E+17	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.199E-03 0.170E-03 0.152E-03 0.117E-03 0.913E-04 0.792E-04	-0.227E-05 -0.199E-05 -0.150E-05 -0.154E-06 0.550E-06 0.352E-06	*0.209E-03 *0.268E-03 *0.307E-03 0.402E-03 0.490E-03 0.529E-03	*0.139E-03 *0.158E-03 *0.171E-03 0.202E-03 0.236E-03 0.255E-03	*0.265E-03 *0.334E-03 *0.380E-03 *0.524E-03 *0.711E-03 *0.829E-03	*0.263E-03 *0.307E-03 *0.332E-03 *0.403E-03 *0.472E-03 *0.512E-03
Si XIII 3P 3D 5341.6 Å C=0.53E+23	500000. 750000. 1000000. 2000000. 4000000. 6000000.	3.68 3.09 2.74 2.07 1.59 1.38	-0.521E-01 -0.509E-01 -0.494E-01 -0.441E-01 -0.327E-01 -0.282E-01	0.134 0.238 0.326 0.633 1.01 1.28	-0.239 -0.318 -0.365 -0.499 -0.600 -0.665	0.258 0.434 0.567 0.964 1.33 1.57	-0.464 -0.629 -0.723 -0.999 -1.20 -1.33
Si XIII 3P 4D 108.6 Å C=0.84E+18	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.339E-02 0.290E-02 0.261E-02 0.202E-02 0.158E-02 0.138E-02	-0.452E-04 -0.426E-04 -0.352E-04 -0.138E-04 -0.230E-05 -0.409E-05	*0.308E-02 *0.396E-02 *0.455E-02 0.599E-02 0.730E-02 0.794E-02	*0.205E-02 *0.233E-02 *0.251E-02 0.297E-02 0.347E-02 0.377E-02	*0.390E-02 *0.491E-02 *0.560E-02 *0.774E-02 *0.104E-01 *0.122E-01	*0.386E-02 *0.452E-02 *0.488E-02 *0.593E-02 *0.697E-02 *0.757E-02
Si XIII 3D 4P 111.8 Å C=0.97E+19	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.387E-02 0.330E-02 0.296E-02 0.229E-02 0.179E-02 0.157E-02	0.828E-04 0.833E-04 0.780E-04 0.681E-04 0.566E-04 0.489E-04	0.404E-03 0.582E-03 0.758E-03 0.116E-02 0.168E-02 0.206E-02	0.489E-03 0.605E-03 0.675E-03 0.810E-03 0.966E-03 0.105E-02	0.751E-03 0.102E-02 0.129E-02 0.174E-02 0.221E-02 0.256E-02	0.942E-03 0.119E-02 0.133E-02 0.162E-02 0.193E-02 0.211E-02
Si XIII 3D 4F 110.7 Å C=0.87E+18	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.218E-02 0.185E-02 0.165E-02 0.126E-02 0.975E-03 0.847E-03	0.997E-05 0.653E-05 0.757E-06 0.184E-05 -0.451E-05 0.111E-05	0.262E-02 0.339E-02 0.393E-02 0.510E-02 0.617E-02 0.652E-02	-0.182E-02 -0.206E-02 -0.222E-02 -0.265E-02 -0.308E-02 -0.332E-02	*0.330E-02 *0.423E-02 *0.496E-02 *0.682E-02 *0.928E-02 *0.106E-01	-0.344E-02 -0.400E-02 -0.434E-02 -0.529E-02 -0.617E-02 -0.663E-02
PERTURBER DENSITY = 1.E+20cm-3							
Si XIII 1S 2P 6.6 Å C=0.37E+19	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.115E-04 0.941E-05 0.819E-05 0.588E-05 0.426E-05 0.355E-05	-0.186E-06 -0.817E-07 -0.518E-07 -0.358E-07 -0.324E-07 -0.199E-07	0.265E-07 0.518E-07 0.847E-07 0.261E-06 0.625E-06 0.897E-06	-0.978E-07 -0.151E-06 -0.203E-06 -0.376E-06 -0.587E-06 -0.713E-06	0.524E-07 0.103E-06 0.166E-06 0.477E-06 0.102E-05 0.137E-05	-0.183E-06 -0.290E-06 -0.396E-06 -0.747E-06 -0.117E-05 -0.143E-05
Si XIII 1S 3P 5.7 Å C=0.12E+18	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.357E-04 0.301E-04 0.267E-04 0.202E-04 0.154E-04 0.132E-04	-0.785E-06 -0.737E-06 -0.727E-06 -0.728E-06 -0.670E-06 -0.673E-06	0.784E-05 0.119E-04 0.158E-04 0.257E-04 0.355E-04 0.415E-04	-0.931E-05 -0.118E-04 -0.137E-04 -0.169E-04 -0.202E-04 -0.223E-04	*0.123E-04 *0.174E-04 *0.225E-04 *0.346E-04 *0.468E-04 *0.561E-04	-0.168E-04 -0.219E-04 -0.259E-04 -0.329E-04 -0.404E-04 -0.445E-04

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 1S 4P 5.4 Å C=0.44E+17	500000.	0.885E-04	-0.127E-05				
	750000.	0.761E-04	-0.156E-05				
	1000000.	0.685E-04	-0.167E-05				
	2000000.	0.533E-04	-0.192E-05				
	4000000.	0.419E-04	-0.205E-05				
	6000000.	0.365E-04	-0.237E-05				
Si XIII 2S 2P 1200.7 Å C=0.12E+24	500000.	0.455	-0.981E-02	0.179E-02	-0.134E-01	0.354E-02	-0.250E-01
	750000.	0.377	-0.104E-01	0.454E-02	-0.202E-01	0.900E-02	-0.387E-01
	1000000.	0.331	-0.988E-02	0.829E-02	-0.263E-01	0.163E-01	-0.511E-01
	2000000.	0.243	-0.952E-02	0.263E-01	-0.429E-01	0.487E-01	-0.850E-01
	4000000.	0.181	-0.914E-02	0.548E-01	-0.596E-01	0.903E-01	-0.119
	6000000.	0.153	-0.822E-02	0.810E-01	-0.679E-01	0.126	-0.136
Si XIII 2S 3P 37.8 Å C=0.55E+19	500000.	0.166E-02	-0.385E-04	0.352E-03	-0.417E-03	*0.555E-03	-0.755E-03
	750000.	0.140E-02	-0.403E-04	0.532E-03	-0.528E-03	*0.783E-03	-0.981E-03
	1000000.	0.125E-02	-0.403E-04	0.708E-03	-0.616E-03	*0.101E-02	-0.116E-02
	2000000.	0.946E-03	-0.405E-04	0.115E-02	-0.756E-03	*0.155E-02	-0.148E-02
	4000000.	0.725E-03	-0.377E-04	0.159E-02	-0.903E-03	*0.210E-02	-0.181E-02
	6000000.	0.624E-03	-0.373E-04	0.187E-02	-0.100E-02	*0.252E-02	-0.200E-02
Si XIII 2S 4P 28.2 Å C=0.12E+19	500000.	0.246E-02	-0.367E-04				
	750000.	0.211E-02	-0.468E-04				
	1000000.	0.190E-02	-0.502E-04				
	2000000.	0.148E-02	-0.569E-04				
	4000000.	0.116E-02	-0.604E-04				
	6000000.	0.102E-02	-0.688E-04				
Si XIII 3S 4P 108.3 Å C=0.17E+20	500000.	0.398E-01	-0.966E-03				
	750000.	0.344E-01	-0.113E-02				
	1000000.	0.310E-01	-0.119E-02				
	2000000.	0.243E-01	-0.128E-02				
	4000000.	0.191E-01	-0.127E-02				
	6000000.	0.167E-01	-0.136E-02				
Si XIII 2P 3S 39.4 Å C=0.38E+20	500000.	0.979E-03	0.670E-04	0.775E-04	0.188E-03	0.153E-03	0.346E-03
	750000.	0.838E-03	0.701E-04	0.151E-03	0.247E-03	0.293E-03	0.466E-03
	1000000.	0.754E-03	0.700E-04	0.192E-03	0.288E-03	0.364E-03	0.551E-03
	2000000.	0.588E-03	0.690E-04	0.377E-03	0.383E-03	0.674E-03	0.753E-03
	4000000.	0.459E-03	0.604E-04	0.559E-03	0.459E-03	0.909E-03	0.918E-03
	6000000.	0.398E-03	0.542E-04	0.685E-03	0.509E-03	0.105E-02	0.102E-02
Si XIII 2P 4S 29.0 Å C=0.86E+19	500000.	0.136E-02	0.116E-03	*0.397E-03	*0.518E-03		
	750000.	0.119E-02	0.127E-03	*0.583E-03	*0.639E-03		
	1000000.	0.109E-02	0.129E-03	*0.709E-03	*0.708E-03		
	2000000.	0.870E-03	0.121E-03	*0.102E-02	*0.879E-03		
	4000000.	0.690E-03	0.108E-03	*0.142E-02	*0.105E-02		
	6000000.	0.600E-03	0.104E-03	*0.169E-02	*0.114E-02		
Si XIII 2P 5S 25.8 Å C=0.35E+19	500000.	0.253E-02	0.183E-03				
	750000.	0.225E-02	0.207E-03				
	1000000.	0.206E-02	0.207E-03				
	2000000.	0.166E-02	0.201E-03				
	4000000.	0.132E-02	0.204E-03				
	6000000.	0.115E-02	0.206E-03				
Si XIII 2P 6S 24.4 Å C=0.18E+19	500000.	0.450E-02	0.218E-03				
	750000.	0.403E-02	0.263E-03				
	1000000.	0.371E-02	0.274E-03				
	2000000.	0.300E-02	0.302E-03				
	4000000.	0.239E-02	0.333E-03				
	6000000.	0.208E-02	0.375E-03				
Si XIII 2P 7S 23.6 Å C=0.11E+19	500000.	0.732E-02	0.171E-03				
	750000.	0.661E-02	0.275E-03				
	1000000.	0.612E-02	0.292E-03				
	2000000.	0.499E-02	0.419E-03				
	4000000.	0.399E-02	0.499E-03				
	6000000.	0.348E-02	0.613E-03				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 8S 23.1 Å C=0.68E+18	500000.	0.111E-01	0.761E-04				
	750000.	0.101E-01	0.223E-03				
	1000000.	0.939E-02	0.305E-03				
	2000000.	0.773E-02	0.546E-03				
	4000000.	0.622E-02	0.707E-03				
	6000000.	0.544E-02	0.916E-03				
Si XIII 3P 4S 112.5 Å C=0.48E+20	500000.	0.312E-01	0.201E-02	*0.866E-02	*0.986E-02		
	750000.	0.271E-01	0.218E-02	*0.129E-01	*0.119E-01		
	1000000.	0.245E-01	0.222E-02	*0.153E-01	*0.134E-01		
	2000000.	0.193E-01	0.210E-02	*0.224E-01	*0.164E-01		
	4000000.	0.152E-01	0.188E-02	*0.313E-01	*0.194E-01		
	6000000.	0.132E-01	0.182E-02	*0.372E-01	*0.208E-01		
Si XIII 3P 5S 76.3 Å C=0.22E+20	500000.	0.270E-01	0.171E-02				
	750000.	0.238E-01	0.193E-02				
	1000000.	0.217E-01	0.193E-02				
	2000000.	0.174E-01	0.188E-02				
	4000000.	0.137E-01	0.189E-02				
	6000000.	0.119E-01	0.192E-02				
Si XIII 3P 6S 65.0 Å C=0.13E+20	500000.	0.355E-01	0.163E-02				
	750000.	0.316E-01	0.196E-02				
	1000000.	0.290E-01	0.203E-02				
	2000000.	0.234E-01	0.223E-02				
	4000000.	0.186E-01	0.245E-02				
	6000000.	0.162E-01	0.275E-02				
Si XIII 3P 7S 59.6 Å C=0.67E+19	500000.	0.497E-01	0.117E-02				
	750000.	0.448E-01	0.183E-02				
	1000000.	0.414E-01	0.194E-02				
	2000000.	0.336E-01	0.275E-02				
	4000000.	0.269E-01	0.326E-02				
	6000000.	0.234E-01	0.399E-02				
Si XIII 3P 8S 56.6 Å C=0.41E+19	500000.	0.691E-01	0.522E-03				
	750000.	0.629E-01	0.141E-02				
	1000000.	0.585E-01	0.190E-02				
	2000000.	0.480E-01	0.335E-02				
	4000000.	0.386E-01	0.431E-02				
	6000000.	0.337E-01	0.556E-02				
Si XIII 4P 5S 243.0 Å C=0.88E+20	500000.	0.388	0.185E-01				
	750000.	0.340	0.214E-01				
	1000000.	0.310	0.217E-01				
	2000000.	0.247	0.216E-01				
	4000000.	0.196	0.221E-01				
	6000000.	0.171	0.230E-01				
Si XIII 4P 6S 156.2 Å C=0.36E+20	500000.	0.252	0.990E-02				
	750000.	0.224	0.121E-01				
	1000000.	0.205	0.126E-01				
	2000000.	0.165	0.140E-01				
	4000000.	0.131	0.154E-01				
	6000000.	0.114	0.174E-01				
Si XIII 4P 7S 128.6 Å C=0.25E+20	500000.	0.263	0.574E-02				
	750000.	0.236	0.901E-02				
	1000000.	0.217	0.960E-02				
	2000000.	0.176	0.135E-01				
	4000000.	0.141	0.160E-01				
	6000000.	0.123	0.195E-01				
Si XIII 4P 8S 115.3 Å C=0.17E+20	500000.	*0.312	*0.242E-02				
	750000.	0.283	0.625E-02				
	1000000.	0.263	0.833E-02				
	2000000.	0.215	0.145E-01				
	4000000.	0.173	0.185E-01				
	6000000.	0.151	0.239E-01				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 3D 39.1 Å C=0.58E+19	500000.	0.114E-02	0.170E-04	0.204E-03	0.274E-03	*0.289E-03	*0.502E-03
	750000.	0.954E-03	0.204E-04	0.348E-03	0.342E-03	*0.466E-03	*0.643E-03
	1000000.	0.841E-03	0.206E-04	0.466E-03	0.406E-03	*0.606E-03	*0.773E-03
	2000000.	0.625E-03	0.204E-04	0.816E-03	0.519E-03	*0.104E-02	*0.102E-02
	4000000.	0.471E-03	0.229E-04	0.114E-02	0.624E-03	*0.146E-02	*0.125E-02
	6000000.	0.403E-03	0.228E-04	0.132E-02	0.693E-03	*0.176E-02	*0.138E-02
Si XIII 2P 4D 28.9 Å C=0.17E+18	500000.	0.196E-02	0.103E-04				
	750000.	0.170E-02	0.184E-04				
	1000000.	0.153E-02	0.206E-04				
	2000000.	0.120E-02	0.320E-04				
	4000000.	0.943E-03	0.372E-04				
	6000000.	0.822E-03	0.497E-04				
Si XIII 3P 4D 111.4 Å C=0.26E+19	500000.	0.344E-01	0.403E-03				
	750000.	0.299E-01	0.534E-03				
	1000000.	0.271E-01	0.571E-03				
	2000000.	0.213E-01	0.744E-03				
	4000000.	0.168E-01	0.800E-03				
	6000000.	0.147E-01	0.990E-03				
Si XIII 3D 4P 110.7 Å C=0.18E+20	500000.	0.396E-01	-0.619E-03				
	750000.	0.341E-01	-0.796E-03				
	1000000.	0.308E-01	-0.854E-03				
	2000000.	0.240E-01	-0.958E-03				
	4000000.	0.189E-01	-0.104E-02				
	6000000.	0.165E-01	-0.117E-02				
Si XIII 3D 4F 110.9 Å C=0.25E+19	500000.	0.206E-01	0.106E-03				
	750000.	0.176E-01	0.559E-04				
	1000000.	0.157E-01	0.337E-04				
	2000000.	0.121E-01	0.777E-04				
	4000000.	0.946E-02	0.165E-04				
	6000000.	0.825E-02	-0.609E-04				
Si XIII 2S 3P 38.2 Å C=0.50E+19	500000.	0.164E-02	0.143E-04	0.184E-03	0.238E-03	*0.257E-03	*0.438E-03
	750000.	0.138E-02	0.174E-04	0.319E-03	0.300E-03	*0.426E-03	*0.564E-03
	1000000.	0.123E-02	0.178E-04	0.425E-03	0.357E-03	*0.549E-03	*0.679E-03
	2000000.	0.929E-03	0.174E-04	0.753E-03	0.456E-03	0.949E-03	0.894E-03
	4000000.	0.712E-03	0.178E-04	0.107E-02	0.548E-03	0.135E-02	0.110E-02
	6000000.	0.613E-03	0.180E-04	0.125E-02	0.612E-03	0.162E-02	0.122E-02
Si XIII 2S 4P 28.3 Å C=0.28E+19	500000.	0.239E-02	0.247E-04	*0.315E-03	*0.332E-03		
	750000.	0.204E-02	0.316E-04	*0.478E-03	*0.424E-03		
	1000000.	0.183E-02	0.304E-04	*0.619E-03	*0.480E-03		
	2000000.	0.142E-02	0.302E-04	*0.943E-03	*0.587E-03		
	4000000.	0.111E-02	0.318E-04	*0.135E-02	*0.699E-03	*0.172E-02	*0.140E-02
	6000000.	0.969E-03	0.326E-04	0.162E-02	0.759E-03	*0.202E-02	*0.152E-02
Si XIII 3S 3P 3034.7 Å C=0.17E+24	500000.	12.7	-0.304	0.276	-0.502	0.527	-0.934
	750000.	10.8	-0.299	0.492	-0.694	0.889	-1.32
	1000000.	9.60	-0.299	0.739	-0.843	1.27	-1.63
	2000000.	7.37	-0.301	1.49	-1.18	2.18	-2.33
	4000000.	5.71	-0.262	2.60	-1.45	3.19	-2.89
	6000000.	4.95	-0.232	3.39	-1.61	3.76	-3.21
Si XIII 3S 4P 105.7 Å C=0.86E+20	500000.	0.362E-01	-0.134E-03	0.301E-02	0.321E-02	*0.548E-02	*0.581E-02
	750000.	0.309E-01	-0.551E-04	0.431E-02	0.407E-02	*0.740E-02	*0.755E-02
	1000000.	0.277E-01	-0.754E-04	0.560E-02	0.474E-02	*0.923E-02	*0.895E-02
	2000000.	0.216E-01	-0.772E-04	0.886E-02	0.582E-02	*0.127E-01	*0.114E-01
	4000000.	0.169E-01	-0.111E-04	0.132E-01	0.697E-02	*0.165E-01	*0.139E-01
	6000000.	0.148E-01	0.350E-04	0.165E-01	0.770E-02	*0.193E-01	*0.154E-01
Si XIII 2P 3S 38.6 Å C=0.49E+20	500000.	0.877E-03	0.595E-04	0.502E-04	0.134E-03	0.100E-03	0.249E-03
	750000.	0.748E-03	0.617E-04	0.970E-04	0.182E-03	0.191E-03	0.345E-03
	1000000.	0.671E-03	0.621E-04	0.136E-03	0.211E-03	0.263E-03	0.405E-03
	2000000.	0.522E-03	0.615E-04	0.262E-03	0.292E-03	0.482E-03	0.574E-03
	4000000.	0.407E-03	0.548E-04	0.400E-03	0.349E-03	0.678E-03	0.698E-03
	6000000.	0.353E-03	0.492E-04	0.488E-03	0.389E-03	0.779E-03	0.778E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 4S 28.4 Å C=0.11E+20	500000.	0.121E-02	0.113E-03	0.275E-03	0.391E-03		
	750000.	0.106E-02	0.119E-03	0.409E-03	0.492E-03		
	1000000.	0.965E-03	0.123E-03	0.526E-03	0.551E-03		
	2000000.	0.772E-03	0.116E-03	0.749E-03	0.678E-03		
	4000000.	0.613E-03	0.101E-03	0.105E-02	0.807E-03	*0.171E-02	*0.161E-02
	6000000.	0.534E-03	0.952E-04	0.125E-02	0.887E-03	*0.194E-02	*0.177E-02
Si XIII 2P 5S 25.3 Å C=0.44E+19	500000.	0.230E-02	0.191E-03				
	750000.	0.204E-02	0.220E-03				
	1000000.	0.187E-02	0.220E-03	*0.145E-02	*0.133E-02		
	2000000.	0.150E-02	0.207E-03	*0.197E-02	*0.164E-02		
	4000000.	0.119E-02	0.198E-03	*0.271E-02	*0.190E-02		
	6000000.	0.104E-02	0.195E-03	*0.318E-02	*0.208E-02		
Si XIII 2P 6S 23.9 Å C=0.23E+19	500000.	0.419E-02	0.271E-03				
	750000.	0.374E-02	0.309E-03				
	1000000.	0.344E-02	0.317E-03				
	2000000.	0.277E-02	0.319E-03				
	4000000.	0.221E-02	0.340E-03				
	6000000.	0.192E-02	0.361E-03				
Si XIII 2P 7S 23.1 Å C=0.13E+19	500000.	0.696E-02	0.271E-03				
	750000.	0.626E-02	0.361E-03				
	1000000.	0.578E-02	0.375E-03				
	2000000.	0.469E-02	0.455E-03				
	4000000.	0.374E-02	0.518E-03				
	6000000.	0.326E-02	0.606E-03				
Si XIII 2P 8S 22.7 Å C=0.85E+18	500000.	0.107E-01	0.195E-03				
	750000.	0.968E-02	0.346E-03				
	1000000.	0.897E-02	0.384E-03				
	2000000.	0.734E-02	0.603E-03				
	4000000.	0.589E-02	0.738E-03				
	6000000.	0.514E-02	0.925E-03				
Si XIII 3P 4S 111.1 Å C=0.17E+21	500000.	0.283E-01	0.166E-02	0.407E-02	0.573E-02		
	750000.	0.245E-01	0.172E-02	0.608E-02	0.724E-02		
	1000000.	0.221E-01	0.177E-02	0.787E-02	0.815E-02		
	2000000.	0.174E-01	0.168E-02	0.116E-01	0.100E-01	*0.198E-01	*0.195E-01
	4000000.	0.137E-01	0.145E-02	0.163E-01	0.120E-01	*0.252E-01	*0.239E-01
	6000000.	0.119E-01	0.136E-02	0.196E-01	0.130E-01	*0.282E-01	*0.259E-01
Si XIII 3P 5S 75.3 Å C=0.39E+20	500000.	0.248E-01	0.166E-02				
	750000.	0.218E-01	0.190E-02				
	1000000.	0.199E-01	0.190E-02	*0.128E-01	*0.117E-01		
	2000000.	0.159E-01	0.178E-02	*0.175E-01	*0.144E-01		
	4000000.	0.125E-01	0.171E-02	*0.242E-01	*0.168E-01		
	6000000.	0.109E-01	0.168E-02	*0.284E-01	*0.183E-01		
Si XIII 3P 6S 64.1 Å C=0.16E+20	500000.	0.334E-01	0.192E-02				
	750000.	0.296E-01	0.219E-02				
	1000000.	0.272E-01	0.224E-02				
	2000000.	0.218E-01	0.226E-02				
	4000000.	0.173E-01	0.241E-02				
	6000000.	0.150E-01	0.257E-02				
Si XIII 3P 7S 58.9 Å C=0.86E+19	500000.	0.478E-01	0.173E-02				
	750000.	0.428E-01	0.231E-02				
	1000000.	0.395E-01	0.240E-02				
	2000000.	0.319E-01	0.292E-02				
	4000000.	0.254E-01	0.333E-02				
	6000000.	0.221E-01	0.390E-02				
Si XIII 3P 8S 55.9 Å C=0.52E+19	500000.	0.674E-01	0.117E-02				
	750000.	0.610E-01	0.208E-02				
	1000000.	0.565E-01	0.231E-02				
	2000000.	0.461E-01	0.365E-02				
	4000000.	0.369E-01	0.447E-02				
	6000000.	0.322E-01	0.561E-02				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 4P 5S	500000.	0.363	0.158E-01	*0.859E-01	*0.824E-01		
241.2 Å	750000.	0.317	0.179E-01	*0.110	*0.973E-01		
C=0.40E+21	1000000.	0.288	0.180E-01	*0.127	*0.110		
	2000000.	0.228	0.168E-01	*0.179	*0.137		
	4000000.	0.181	0.159E-01	*0.251	*0.157		
	6000000.	0.158	0.156E-01	*0.297	*0.169		
Si XIII 4P 6S	500000.	0.239	0.107E-01				
154.8 Å	750000.	0.211	0.121E-01				
C=0.95E+20	1000000.	0.193	0.125E-01				
	2000000.	0.154	0.125E-01				
	4000000.	0.122	0.134E-01				
	6000000.	0.107	0.143E-01				
Si XIII 4P 7S	500000.	0.254	0.775E-02				
127.4 Å	750000.	0.226	0.104E-01				
C=0.40E+20	1000000.	0.208	0.108E-01				
	2000000.	0.168	0.132E-01				
	4000000.	0.134	0.151E-01				
	6000000.	0.116	0.178E-01				
Si XIII 4P 8S	500000.	0.306	0.459E-02				
114.3 Å	750000.	0.275	0.832E-02				
C=0.22E+20	1000000.	0.255	0.930E-02				
	2000000.	0.207	0.149E-01				
	4000000.	0.166	0.183E-01				
	6000000.	0.145	0.231E-01				
Si XIII 2P 3D	500000.	0.103E-02	-0.965E-05	0.237E-04	-0.590E-04	0.448E-04	-0.110E-03
37.8 Å	750000.	0.854E-03	-0.695E-05	0.466E-04	-0.824E-04	0.846E-04	-0.157E-03
C=0.27E+20	1000000.	0.750E-03	-0.670E-05	0.730E-04	-0.102E-03	0.127E-03	-0.198E-03
	2000000.	0.553E-03	-0.674E-05	0.151E-03	-0.145E-03	0.234E-03	-0.285E-03
	4000000.	0.415E-03	-0.297E-05	0.261E-03	-0.180E-03	0.367E-03	-0.361E-03
	6000000.	0.355E-03	-0.276E-05	0.331E-03	-0.201E-03	0.443E-03	-0.402E-03
Si XIII 2P 4D	500000.	0.185E-02	-0.256E-04				
28.2 Å	750000.	0.159E-02	-0.242E-04				
C=0.57E+18	1000000.	0.143E-02	-0.218E-04				
	2000000.	0.111E-02	-0.123E-04				
	4000000.	0.866E-03	-0.648E-05				
	6000000.	0.755E-03	0.771E-06				
Si XIII 3P 4D	500000.	0.319E-01	-0.461E-03				
108.6 Å	750000.	0.274E-01	-0.466E-03				
C=0.84E+19	1000000.	0.247E-01	-0.431E-03				
	2000000.	0.192E-01	-0.284E-03				
	4000000.	0.151E-01	-0.194E-03				
	6000000.	0.132E-01	-0.807E-04				
Si XIII 3D 4P	500000.	0.385E-01	0.433E-03	0.403E-02	0.449E-02	*0.745E-02	*0.805E-02
111.8 Å	750000.	0.328E-01	0.517E-03	0.581E-02	0.572E-02	*0.102E-01	*0.106E-01
C=0.97E+20	1000000.	0.294E-01	0.495E-03	0.758E-02	0.659E-02	*0.129E-01	*0.124E-01
	2000000.	0.228E-01	0.488E-03	0.116E-01	0.808E-02	*0.174E-01	*0.157E-01
	4000000.	0.179E-01	0.474E-03	0.168E-01	0.964E-02	*0.222E-01	*0.192E-01
	6000000.	0.156E-01	0.476E-03	0.206E-01	0.105E-01	*0.256E-01	*0.210E-01
Si XIII 3D 4F	500000.	0.205E-01	0.319E-03				
110.7 Å	750000.	0.174E-01	0.266E-03				
C=0.87E+19	1000000.	0.155E-01	0.228E-03				
	2000000.	0.119E-01	0.233E-03				
	4000000.	0.927E-02	0.131E-03				
	6000000.	0.808E-02	0.478E-04	*0.652E-01	-0.332E-01		
PERTURBER DENSITY = 1.E+21cm-3							
Si XIII 1S 2P	500000.	0.115E-03	-0.134E-05	0.261E-06	-0.849E-06	0.493E-06	-0.136E-05
6.6 Å	750000.	0.941E-04	-0.648E-06	0.515E-06	-0.139E-05	0.101E-05	-0.249E-05
C=0.37E+20	1000000.	0.819E-04	-0.461E-06	0.845E-06	-0.191E-05	0.165E-05	-0.355E-05
	2000000.	0.588E-04	-0.264E-06	0.261E-05	-0.371E-05	0.477E-05	-0.718E-05
	4000000.	0.426E-04	-0.273E-06	0.625E-05	-0.586E-05	0.102E-04	-0.116E-04
	6000000.	0.355E-04	-0.167E-06	0.897E-05	-0.712E-05	0.137E-04	-0.142E-04

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 1S 3P 5.7 Å C=0.12E+19	500000.	0.337E-03	0.611E-06				
	750000.	0.285E-03	-0.611E-06				
	1000000.	0.253E-03	-0.141E-05				
	2000000.	0.192E-03	-0.255E-05				
	4000000.	0.147E-03	-0.296E-05				
	6000000.	0.127E-03	-0.390E-05				
Si XIII 1S 4P 5.4 Å C=0.44E+18	500000.	0.770E-03	0.107E-04				
	750000.	0.669E-03	0.426E-05				
	1000000.	0.605E-03	0.980E-06				
	2000000.	0.477E-03	-0.301E-05				
	4000000.	0.379E-03	-0.570E-05				
	6000000.	0.333E-03	-0.109E-04				
Si XIII 2S 2P 1200.7 Å C=0.12E+25	500000.	4.55	-0.742E-01	0.177E-01	-0.116	0.343E-01	-0.185
	750000.	3.77	-0.860E-01	0.454E-01	-0.185	0.896E-01	-0.330
	1000000.	3.31	-0.836E-01	0.828E-01	-0.247	0.163	-0.455
	2000000.	2.43	-0.839E-01	0.263	-0.422	0.487	-0.810
	4000000.	1.81	-0.842E-01	0.548	-0.595	0.903	-1.17
	6000000.	1.53	-0.781E-01	0.810	-0.678	1.26	-1.36
Si XIII 2S 3P 37.8 Å C=0.55E+20	500000.	0.157E-01	-0.322E-05				
	750000.	0.133E-01	-0.914E-04				
	1000000.	0.119E-01	-0.130E-03				
	2000000.	0.903E-02	-0.188E-03				
	4000000.	0.694E-02	-0.206E-03				
	6000000.	0.599E-02	-0.245E-03				
Si XIII 2S 4P 28.2 Å C=0.12E+20	500000.	0.214E-01	0.275E-03				
	750000.	0.186E-01	0.803E-04				
	1000000.	0.168E-01	-0.112E-04				
	2000000.	0.133E-01	-0.124E-03				
	4000000.	0.106E-01	-0.197E-03				
	6000000.	0.928E-02	-0.338E-03				
Si XIII 3S 4P 108.3 Å C=0.17E+21	500000.	0.351	0.266E-02				
	750000.	0.306	-0.968E-03				
	1000000.	0.277	-0.266E-02				
	2000000.	0.220	-0.481E-02				
	4000000.	0.175	-0.576E-02				
	6000000.	0.154	-0.787E-02				
Si XIII 2P 3S 39.4 Å C=0.38E+21	500000.	0.962E-02	0.264E-03	*0.777E-03	*0.157E-02		
	750000.	0.826E-02	0.378E-03	*0.151E-02	*0.218E-02		
	1000000.	0.743E-02	0.420E-03	*0.192E-02	*0.260E-02		
	2000000.	0.580E-02	0.486E-03	*0.377E-02	*0.371E-02		
	4000000.	0.454E-02	0.469E-03	*0.559E-02	*0.457E-02		
	6000000.	0.394E-02	0.468E-03	*0.685E-02	*0.507E-02		
Si XIII 2P 4S 29.0 Å C=0.86E+20	500000.	0.119E-01	-0.765E-04				
	750000.	0.106E-01	0.263E-03				
	1000000.	0.976E-02	0.434E-03				
	2000000.	0.793E-02	0.560E-03				
	4000000.	0.636E-02	0.604E-03				
	6000000.	0.556E-02	0.737E-03				
Si XIII 2P 5S 25.8 Å C=0.35E+20	500000.	0.186E-01	-0.697E-03				
	750000.	0.172E-01	-0.204E-04				
	1000000.	0.161E-01	0.245E-03				
	2000000.	0.135E-01	0.546E-03				
	4000000.	0.110E-01	0.860E-03				
	6000000.	0.970E-02	0.119E-02				
Si XIII 2P 6S 24.4 Å C=0.18E+20	500000.	0.283E-01	-0.148E-02				
	750000.	0.269E-01	-0.523E-03				
	1000000.	0.257E-01	-0.744E-04				
	2000000.	0.221E-01	0.568E-03				
	4000000.	0.184E-01	0.118E-02				
	6000000.	0.163E-01	0.187E-02				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 7S 23.6 Å C=0.11E+20	500000.	*0.408E-01	-0.256E-02				
	750000.	*0.399E-01	-0.112E-02				
	1000000.	0.386E-01	-0.566E-03				
	2000000.	0.341E-01	0.673E-03				
	4000000.	0.288E-01	0.152E-02				
6000000.	0.257E-01	0.279E-02					
Si XIII 2P 8S 23.1 Å C=0.68E+19	500000.	*0.559E-01	-0.360E-02				
	750000.	*0.559E-01	-0.187E-02				
	1000000.	*0.548E-01	-0.106E-02				
	2000000.	0.497E-01	0.819E-03				
	4000000.	0.427E-01	0.180E-02				
6000000.	0.384E-01	0.377E-02					
Si XIII 3P 4S 112.5 Å C=0.48E+21	500000.	0.278	-0.178E-02				
	750000.	0.244	0.401E-02				
	1000000.	0.223	0.696E-02				
	2000000.	0.178	0.936E-02				
	4000000.	0.141	0.102E-01				
6000000.	0.123	0.126E-01					
Si XIII 3P 5S 76.3 Å C=0.22E+21	500000.	0.207	-0.637E-02				
	750000.	0.189	-0.154E-03				
	1000000.	0.175	0.233E-02				
	2000000.	0.145	0.519E-02				
	4000000.	0.117	0.800E-02				
6000000.	0.103	0.110E-01					
Si XIII 3P 6S 65.0 Å C=0.13E+21	500000.	*0.234	-0.107E-01				
	750000.	0.219	-0.370E-02				
	1000000.	0.207	-0.388E-03				
	2000000.	0.176	0.434E-02				
	4000000.	0.146	0.873E-02				
6000000.	0.129	0.137E-01					
Si XIII 3P 7S 59.6 Å C=0.67E+20	500000.	*0.289	-0.165E-01				
	750000.	*0.278	-0.712E-02				
	1000000.	*0.268	-0.350E-02				
	2000000.	0.234	0.456E-02				
	4000000.	0.197	0.100E-01				
6000000.	0.175	0.182E-01					
Si XIII 3P 8S 56.6 Å C=0.41E+20	500000.	*0.361	-0.217E-01				
	750000.	*0.357	-0.112E-01				
	1000000.	*0.348	-0.628E-02				
	2000000.	0.313	0.515E-02				
	4000000.	0.268	0.111E-01				
6000000.	0.241	0.230E-01					
Si XIII 4P 5S 243.0 Å C=0.88E+21	500000.	*3.05	-0.852E-01				
	750000.	2.75	-0.113E-01				
	1000000.	2.54	0.191E-01				
	2000000.	2.08	0.541E-01				
	4000000.	1.68	0.873E-01				
6000000.	1.48	0.127					
Si XIII 4P 6S 156.2 Å C=0.36E+21	500000.	*1.74	-0.704E-01				
	750000.	*1.61	-0.254E-01				
	1000000.	1.51	-0.413E-02				
	2000000.	1.27	0.257E-01				
	4000000.	1.05	0.530E-01				
6000000.	0.926	0.856E-01					
Si XIII 4P 7S 128.6 Å C=0.25E+21	500000.	*1.61	-0.825E-01				
	750000.	*1.53	-0.358E-01				
	1000000.	*1.46	-0.175E-01				
	2000000.	1.26	0.216E-01				
	4000000.	1.05	0.482E-01				
6000000.	0.938	0.888E-01					



PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 4P 8S 115.3 Å C=0.17E+21	500000.	*1.71	-0.949E-01				
	750000.	*1.67	-0.488E-01				
	1000000.	*1.62	-0.271E-01				
	2000000.	*1.44	*0.217E-01				
	4000000.	1.22	0.475E-01				
6000000.	1.10	0.989E-01					
Si XIII 2P 3D 39.1 Å C=0.58E+20	500000.	0.109E-01	0.111E-04	*0.204E-02	*0.227E-02		
	750000.	0.910E-02	0.666E-04	*0.347E-02	*0.298E-02		
	1000000.	0.803E-02	0.863E-04	*0.466E-02	*0.362E-02		
	2000000.	0.599E-02	0.104E-03	*0.816E-02	*0.500E-02		
	4000000.	0.453E-02	0.146E-03	*0.114E-01	*0.622E-02		
	6000000.	0.388E-02	0.161E-03	*0.132E-01	*0.691E-02		
Si XIII 2P 4D 28.9 Å C=0.17E+19	500000.	0.166E-01	-0.624E-04				
	750000.	0.145E-01	0.165E-04				
	1000000.	0.132E-01	0.427E-04				
	2000000.	0.105E-01	0.142E-03				
	4000000.	0.833E-02	0.172E-03				
6000000.	0.732E-02	0.239E-03					
Si XIII 3P 4D 111.4 Å C=0.26E+20	500000.	0.293	-0.154E-02				
	750000.	0.256	0.298E-03				
	1000000.	0.233	0.104E-02				
	2000000.	0.187	0.302E-02				
	4000000.	0.149	0.361E-02				
6000000.	0.131	0.501E-02					
Si XIII 3D 4P 110.7 Å C=0.18E+21	500000.	0.344	0.478E-02				
	750000.	0.299	0.143E-02				
	1000000.	0.271	-0.153E-03				
	2000000.	0.214	-0.202E-02				
	4000000.	0.171	-0.349E-02				
6000000.	0.150	-0.582E-02					
Si XIII 3D 4F 110.9 Å C=0.25E+20	500000.	0.187	0.214E-02				
	750000.	0.160	0.164E-02				
	1000000.	0.143	0.134E-02				
	2000000.	0.111	0.170E-02				
	4000000.	0.876E-01	0.114E-02				
6000000.	0.768E-01	0.893E-03					
Si XIII 2S 3P 38.2 Å C=0.50E+20	500000.	0.159E-01	-0.484E-04	*0.184E-02	*0.198E-02		
	750000.	0.134E-01	0.123E-04	*0.319E-02	*0.262E-02		
	1000000.	0.119E-01	0.395E-04	*0.425E-02	*0.319E-02		
	2000000.	0.905E-02	0.629E-04	*0.753E-02	*0.440E-02		
	4000000.	0.695E-02	0.900E-04	*0.107E-01	*0.546E-02		
	6000000.	0.600E-02	0.116E-03	*0.125E-01	*0.609E-02		
Si XIII 2S 4P 28.3 Å C=0.28E+20	500000.	0.222E-01	-0.122E-03				
	750000.	0.190E-01	0.165E-05				
	1000000.	0.171E-01	0.276E-04				
	2000000.	0.134E-01	0.857E-04				
	4000000.	0.105E-01	0.139E-03				
6000000.	0.923E-02	0.191E-03					
Si XIII 3S 4P 105.7 Å C=0.86E+21	500000.	0.340	-0.372E-02				
	750000.	0.292	-0.271E-02				
	1000000.	0.263	-0.267E-02				
	2000000.	0.206	-0.232E-02				
	4000000.	0.162	-0.157E-02				
6000000.	0.142	-0.835E-03					
Si XIII 2P 3S 38.6 Å C=0.49E+21	500000.	0.872E-02	0.316E-03	0.505E-03	0.114E-02	*0.993E-03	*0.173E-02
	750000.	0.744E-02	0.395E-03	0.973E-03	0.162E-02	*0.191E-02	*0.278E-02
	1000000.	0.667E-02	0.428E-03	0.136E-02	0.192E-02	*0.263E-02	*0.339E-02
	2000000.	0.519E-02	0.475E-03	0.262E-02	0.284E-02	*0.482E-02	*0.528E-02
	4000000.	0.406E-02	0.458E-03	0.400E-02	0.348E-02	*0.678E-02	*0.675E-02
	6000000.	0.351E-02	0.442E-03	0.488E-02	0.388E-02	*0.779E-02	*0.774E-02

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 4S 28.4 Å C=0.11E+21	500000.	0.111E-01	0.906E-04				
	750000.	0.981E-02	0.361E-03				
	1000000.	0.899E-02	0.520E-03				
	2000000.	0.727E-02	0.632E-03				
	4000000.	0.581E-02	0.634E-03				
6000000.	0.508E-02	0.729E-03					
Si XIII 2P 5S 25.3 Å C=0.44E+20	500000.	0.179E-01	-0.553E-03				
	750000.	0.164E-01	0.175E-03				
	1000000.	0.153E-01	0.442E-03				
	2000000.	0.127E-01	0.716E-03				
	4000000.	0.103E-01	0.930E-03				
6000000.	0.907E-02	0.122E-02					
Si XIII 2P 6S 23.9 Å C=0.23E+20	500000.	0.278E-01	-0.138E-02				
	750000.	0.262E-01	-0.354E-03				
	1000000.	0.248E-01	0.143E-03				
	2000000.	0.211E-01	0.676E-03				
	4000000.	0.174E-01	0.129E-02				
6000000.	0.154E-01	0.191E-02					
Si XIII 2P 7S 23.1 Å C=0.13E+20	500000.	*0.403E-01	-0.255E-02				
	750000.	*0.390E-01	-0.101E-02				
	1000000.	0.375E-01	-0.381E-03				
	2000000.	0.328E-01	0.753E-03				
	4000000.	0.275E-01	0.170E-02				
6000000.	0.245E-01	0.287E-02					
Si XIII 2P 8S 22.7 Å C=0.85E+19	500000.	*0.553E-01	-0.389E-02				
	750000.	*0.548E-01	-0.189E-02				
	1000000.	*0.535E-01	-0.109E-02				
	2000000.	0.480E-01	0.865E-03				
	4000000.	0.410E-01	0.207E-02				
6000000.	0.368E-01	0.406E-02					
Si XIII 3P 4S 111.1 Å C=0.17E+22	500000.	0.266	0.141E-02				
	750000.	0.232	0.518E-02				
	1000000.	0.210	0.747E-02				
	2000000.	0.166	0.912E-02				
	4000000.	0.132	0.904E-02				
6000000.	0.115	0.104E-01					
Si XIII 3P 5S 75.3 Å C=0.39E+21	500000.	0.203	-0.489E-02				
	750000.	0.183	0.138E-02				
	1000000.	0.169	0.368E-02				
	2000000.	0.138	0.608E-02				
	4000000.	0.111	0.792E-02				
6000000.	0.972E-01	0.105E-01					
Si XIII 3P 6S 64.1 Å C=0.16E+21	500000.	*0.232	-0.992E-02				
	750000.	0.216	-0.267E-02				
	1000000.	0.203	0.860E-03				
	2000000.	0.171	0.467E-02				
	4000000.	0.140	0.908E-02				
6000000.	0.123	0.135E-01					
Si XIII 3P 7S 58.9 Å C=0.86E+20	500000.	*0.288	-0.165E-01				
	750000.	*0.276	-0.664E-02				
	1000000.	*0.263	-0.261E-02				
	2000000.	0.228	0.472E-02				
	4000000.	0.190	0.108E-01				
6000000.	0.169	0.184E-01					
Si XIII 3P 8S 55.9 Å C=0.52E+20	500000.	*0.361	-0.237E-01				
	750000.	*0.354	-0.116E-01				
	1000000.	*0.344	-0.677E-02				
	2000000.	0.306	0.512E-02				
	4000000.	0.260	0.124E-01				
6000000.	0.233	0.245E-01					

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 4P 5S 241.2 Å C=0.40E+22	500000. 750000. 1000000. 2000000. 4000000. 6000000.	*3.06 2.72 2.50 2.02 1.63 1.43	-0.433E-01 0.145E-01 0.373E-01 0.586E-01 0.747E-01 0.982E-01				
Si XIII 4P 6S 154.8 Å C=0.95E+21	500000. 750000. 1000000. 2000000. 4000000. 6000000.	*1.75 *1.60 1.50 1.24 1.01 0.896	-0.549E-01 -0.154E-01 0.483E-02 0.257E-01 0.502E-01 0.746E-01				
Si XIII 4P 7S 127.4 Å C=0.40E+21	500000. 750000. 1000000. 2000000. 4000000. 6000000.	*1.62 *1.53 *1.45 1.24 1.03 0.912	-0.755E-01 -0.310E-01 -0.123E-01 0.210E-01 0.488E-01 0.835E-01				
Si XIII 4P 8S 114.3 Å C=0.22E+21	500000. 750000. 1000000. 2000000. 4000000. 6000000.	*1.73 *1.67 *1.61 *1.41 1.20 1.07	-0.973E-01 -0.484E-01 -0.284E-01 0.205E-01 0.504E-01 0.100				
Si XIII 2P 3D 37.8 Å C=0.27E+21	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.102E-01 0.849E-02 0.745E-02 0.550E-02 0.413E-02 0.353E-02	0.195E-04 0.171E-04 0.647E-05 -0.131E-04 0.757E-05 -0.654E-05	0.235E-03 0.466E-03 0.730E-03 0.151E-02 0.261E-02 0.331E-02	-0.507E-03 -0.746E-03 -0.947E-03 -0.141E-02 -0.180E-02 -0.201E-02	*0.433E-03 *0.836E-03 *0.126E-02 *0.233E-02 *0.367E-02 *0.443E-02	-0.796E-03 -0.131E-02 -0.172E-02 -0.267E-02 -0.352E-02 -0.401E-02
Si XIII 2P 4D 28.2 Å C=0.57E+19	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.164E-01 0.142E-01 0.128E-01 0.100E-01 0.793E-02 0.694E-02	0.944E-04 0.238E-04 -0.359E-05 0.102E-04 -0.805E-05 -0.219E-04				
Si XIII 3P 4D 108.6 Å C=0.84E+20	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.287 0.248 0.224 0.176 0.140 0.123	0.142E-02 0.469E-05 -0.543E-03 -0.406E-03 -0.779E-03 -0.106E-02				
Si XIII 3D 4P 111.8 Å C=0.97E+21	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.360 0.309 0.278 0.216 0.171 0.150	-0.168E-02 0.140E-03 0.553E-03 0.150E-02 0.202E-02 0.283E-02				
Si XIII 3D 4F 110.7 Å C=0.87E+20	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.189 0.161 0.144 0.111 0.869E-01 0.761E-01	0.246E-02 0.231E-02 0.215E-02 0.259E-02 0.207E-02 0.178E-02				
PERTURBER DENSITY = 1.E+22cm-3							
Si XIII 1S 2P 6.6 Å C=0.37E+21	500000. 750000. 1000000. 2000000. 4000000. 6000000.	0.117E-02 0.949E-03 0.832E-03 0.620E-03 0.468E-03 0.391E-03	-0.972E-04 -0.240E-04 -0.119E-04 -0.193E-05 -0.280E-05 -0.240E-05	0.222E-05 0.498E-05 0.836E-05 0.262E-04 0.628E-04 0.902E-04	-0.529E-05 -0.110E-04 -0.165E-04 -0.349E-04 -0.573E-04 -0.711E-04	0.306E-05 0.860E-05 0.154E-04 0.475E-04 0.103E-03 0.138E-03	-0.503E-05 -0.150E-04 -0.255E-04 -0.637E-04 -0.110E-03 -0.138E-03

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 1S 3P 5.7 Å C=0.12E+20	500000.	0.302E-02	0.602E-04				
	750000.	0.257E-02	0.437E-04				
	1000000.	0.229E-02	0.316E-04				
	2000000.	0.175E-02	0.103E-04				
	4000000.	0.136E-02	0.312E-05				
	6000000.	0.117E-02	0.715E-06				
Si XIII 1S 4P 5.4 Å C=0.44E+19	500000.	*0.635E-02	*0.169E-03				
	750000.	*0.553E-02	*0.121E-03				
	1000000.	*0.504E-02	*0.912E-04				
	2000000.	0.404E-02	0.482E-04				
	4000000.	0.327E-02	0.223E-04				
	6000000.	0.290E-02	0.131E-04				
Si XIII 2S 3P 37.8 Å C=0.55E+21	500000.	0.142	0.303E-02				
	750000.	0.121	0.180E-02				
	1000000.	0.108	0.114E-02				
	2000000.	0.827E-01	-0.748E-05				
	4000000.	0.641E-01	-0.405E-03				
	6000000.	0.556E-01	-0.508E-03				
Si XIII 2S 4P 28.2 Å C=0.12E+21	500000.	*0.177	*0.480E-02				
	750000.	*0.155	*0.321E-02				
	1000000.	*0.141	*0.234E-02				
	2000000.	0.113	0.106E-02				
	4000000.	0.913E-01	0.305E-03				
	6000000.	0.811E-01	0.570E-04				
Si XIII 3S 4P 108.3 Å C=0.17E+22	500000.	*2.85	*0.106				
	750000.	*2.51	*0.667E-01				
	1000000.	*2.29	*0.446E-01				
	2000000.	1.86	0.108E-01				
	4000000.	1.51	-0.466E-02				
	6000000.	1.34	-0.860E-02				
Si XIII 2P 3S 39.4 Å C=0.38E+22	500000.	0.803E-01	-0.488E-02				
	750000.	0.708E-01	-0.233E-02				
	1000000.	0.647E-01	-0.103E-02				
	2000000.	0.517E-01	0.113E-02				
	4000000.	0.411E-01	0.183E-02				
	6000000.	0.358E-01	0.183E-02				
Si XIII 2P 4S 29.0 Å C=0.86E+21	500000.	0.726E-01	-0.840E-02				
	750000.	0.693E-01	-0.494E-02				
	1000000.	0.664E-01	-0.299E-02				
	2000000.	0.581E-01	-0.111E-04				
	4000000.	0.489E-01	0.121E-02				
	6000000.	0.437E-01	0.184E-02				
Si XIII 2P 5S 25.8 Å C=0.35E+21	500000.	*0.889E-01	-0.128E-01				
	750000.	*0.906E-01	-0.794E-02				
	1000000.	0.903E-01	-0.542E-02				
	2000000.	0.848E-01	-0.122E-02				
	4000000.	0.750E-01	0.145E-02				
	6000000.	0.683E-01	0.224E-02				
Si XIII 2P 6S 24.4 Å C=0.18E+21	500000.	*0.108	-0.183E-01				
	750000.	*0.119	-0.115E-01				
	1000000.	*0.123	-0.791E-02				
	2000000.	0.123	-0.215E-02				
	4000000.	0.114	0.195E-02				
	6000000.	0.106	0.278E-02				
Si XIII 2P 7S 23.6 Å C=0.11E+21	500000.	*0.114	-0.255E-01				
	750000.	*0.140	-0.155E-01				
	1000000.	*0.154	-0.114E-01				
	2000000.	*0.169	-0.270E-02				
	4000000.	0.164	0.256E-02				
	6000000.	0.155	0.324E-02				

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 8S 23.1 Å C=0.68E+20	500000.	*0.907E-01	-0.315E-01				
	750000.	*0.142	-0.210E-01				
	1000000.	*0.172	-0.154E-01				
	2000000.	*0.214	-0.334E-02				
	4000000.	*0.223	0.297E-02				
6000000.	*0.216	0.367E-02					
Si XIII 3P 4S 112.5 Å C=0.48E+22	500000.	*1.95	-0.152				
	750000.	*1.78	-0.922E-01				
	1000000.	1.67	-0.577E-01				
	2000000.	1.39	-0.419E-02				
	4000000.	1.15	0.168E-01				
6000000.	1.02	0.275E-01					
Si XIII 3P 5S 76.3 Å C=0.22E+22	500000.	*1.17	-0.124				
	750000.	*1.13	-0.774E-01				
	1000000.	*1.09	-0.531E-01				
	2000000.	0.979	-0.125E-01				
	4000000.	0.843	0.120E-01				
6000000.	0.761	0.194E-01					
Si XIII 3P 6S 65.0 Å C=0.13E+22	500000.	*1.06	-0.139				
	750000.	*1.09	-0.878E-01				
	1000000.	*1.09	-0.604E-01				
	2000000.	*1.05	-0.166E-01				
	4000000.	0.945	0.134E-01				
6000000.	0.870	0.196E-01					
Si XIII 3P 7S 59.6 Å C=0.67E+21	500000.	*0.971	-0.170				
	750000.	*1.10	-0.104				
	1000000.	*1.17	-0.764E-01				
	2000000.	*1.22	-0.184E-01				
	4000000.	*1.16	*0.159E-01				
6000000.	1.09	0.206E-01					
Si XIII 3P 8S 56.6 Å C=0.41E+21	500000.	*0.761	-0.195				
	750000.	*1.04	-0.130				
	1000000.	*1.20	-0.958E-01				
	2000000.	*1.42	-0.210E-01				
	4000000.	*1.44	*0.175E-01				
6000000.	*1.39	*0.220E-01					
Si XIII 2P 3D 39.1 Å C=0.58E+21	500000.	0.102	-0.431E-03				
	750000.	0.853E-01	0.892E-04				
	1000000.	0.753E-01	0.296E-03				
	2000000.	0.563E-01	0.550E-03				
	4000000.	0.428E-01	0.944E-03				
6000000.	0.367E-01	0.902E-03					
Si XIII 2P 4D 28.9 Å C=0.17E+20	500000.	*0.142	-0.651E-03				
	750000.	*0.123	-0.957E-04				
	1000000.	0.112	0.986E-04				
	2000000.	0.894E-01	0.882E-03				
	4000000.	0.722E-01	0.108E-02				
6000000.	0.640E-01	0.110E-02					
Si XIII 3P 4D 111.4 Å C=0.26E+21	500000.	*2.43	-0.349E-01				
	750000.	*2.13	-0.189E-01				
	1000000.	*1.95	-0.109E-01				
	2000000.	1.58	0.914E-02				
	4000000.	1.28	0.146E-01				
6000000.	1.14	0.161E-01					
Si XIII 3D 4P 110.7 Å C=0.18E+22	500000.	*2.81	*0.763E-01				
	750000.	*2.46	*0.506E-01				
	1000000.	*2.24	*0.361E-01				
	2000000.	1.81	0.158E-01				
	4000000.	1.47	0.198E-02				
6000000.	1.31	-0.175E-02					

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3D 4F 110.9 Å C=0.25E+21	500000.	*1.71	*0.162E-01				
	750000.	1.46	0.144E-01				
	1000000.	1.30	0.126E-01				
	2000000.	1.01	0.178E-01				
	4000000.	0.803	0.134E-01				
6000000.	0.707	0.136E-01					
Si XIII 2S 3P 38.2 Å C=0.50E+21	500000.	0.144	-0.109E-02				
	750000.	0.122	-0.518E-03				
	1000000.	0.109	-0.327E-03				
	2000000.	0.839E-01	-0.614E-05				
	4000000.	0.649E-01	0.301E-03				
6000000.	0.562E-01	0.361E-03					
Si XIII 2S 4P 28.3 Å C=0.28E+21	500000.	*0.182	-0.103E-02				
	750000.	*0.158	-0.481E-03				
	1000000.	*0.144	-0.298E-03				
	2000000.	0.115	0.241E-03				
	4000000.	0.923E-01	0.599E-03				
6000000.	0.817E-01	0.700E-03					
Si XIII 3S 4P 105.7 Å C=0.86E+22	500000.	*2.79	*0.166E-01				
	750000.	*2.44	*0.785E-02				
	1000000.	*2.22	*0.959E-03				
	2000000.	1.78	-0.682E-02				
	4000000.	1.43	-0.701E-02				
6000000.	1.27	-0.541E-02					
Si XIII 2P 3S 38.6 Å C=0.49E+22	500000.	0.766E-01	-0.372E-02				
	750000.	0.668E-01	-0.158E-02				
	1000000.	0.606E-01	-0.377E-03				
	2000000.	0.479E-01	0.155E-02				
	4000000.	0.378E-01	0.215E-02				
6000000.	0.329E-01	0.210E-02					
Si XIII 2P 4S 28.4 Å C=0.11E+22	500000.	0.713E-01	-0.853E-02				
	750000.	0.674E-01	-0.479E-02				
	1000000.	0.642E-01	-0.277E-02				
	2000000.	0.555E-01	0.395E-03				
	4000000.	0.463E-01	0.150E-02				
6000000.	0.411E-01	0.206E-02					
Si XIII 2P 5S 25.3 Å C=0.44E+21	500000.	*0.880E-01	-0.140E-01				
	750000.	*0.892E-01	-0.836E-02				
	1000000.	0.885E-01	-0.559E-02				
	2000000.	0.821E-01	-0.958E-03				
	4000000.	0.718E-01	0.153E-02				
6000000.	0.651E-01	0.249E-02					
Si XIII 2P 6S 23.9 Å C=0.23E+21	500000.	*0.108	-0.202E-01				
	750000.	*0.118	-0.130E-01				
	1000000.	*0.121	-0.867E-02				
	2000000.	0.120	-0.267E-02				
	4000000.	0.110	0.192E-02				
6000000.	0.101	0.300E-02					
Si XIII 2P 7S 23.1 Å C=0.13E+21	500000.	*0.117	-0.283E-01				
	750000.	*0.141	-0.176E-01				
	1000000.	*0.153	-0.128E-01				
	2000000.	*0.165	-0.368E-02				
	4000000.	0.158	0.241E-02				
6000000.	0.149	0.339E-02					
Si XIII 2P 8S 22.7 Å C=0.85E+20	500000.	*0.937E-01	-0.369E-01				
	750000.	*0.144	-0.239E-01				
	1000000.	*0.171	-0.178E-01				
	2000000.	*0.209	-0.472E-02				
	4000000.	*0.215	*0.268E-02				
6000000.	*0.208	*0.366E-02					

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 3P 4S 111.1 Å C=0.17E+23	500000.	*1.96	-0.125				
	750000.	*1.78	-0.721E-01				
	1000000.	1.65	-0.422E-01				
	2000000.	1.36	0.455E-02				
	4000000.	1.11	0.196E-01				
6000000.	0.978	0.280E-01					
Si XIII 3P 5S 75.3 Å C=0.39E+22	500000.	*1.18	-0.121				
	750000.	*1.13	-0.734E-01				
	1000000.	*1.09	-0.494E-01				
	2000000.	0.962	-0.918E-02				
	4000000.	0.819	0.120E-01				
6000000.	0.736	0.203E-01					
Si XIII 3P 6S 64.1 Å C=0.16E+22	500000.	*1.07	-0.144				
	750000.	*1.09	-0.930E-01				
	1000000.	*1.09	-0.623E-01				
	2000000.	*1.03	-0.197E-01				
	4000000.	0.922	0.126E-01				
6000000.	0.846	0.204E-01					
Si XIII 3P 7S 58.9 Å C=0.86E+21	500000.	*1.00	-0.182				
	750000.	*1.12	-0.114				
	1000000.	*1.18	-0.831E-01				
	2000000.	*1.21	-0.243E-01				
	4000000.	*1.14	*0.147E-01				
6000000.	1.07	0.209E-01					
Si XIII 3P 8S 55.9 Å C=0.52E+21	500000.	*0.789	-0.223				
	750000.	*1.06	-0.145				
	1000000.	*1.21	-0.108				
	2000000.	*1.40	-0.291E-01				
	4000000.	*1.41	*0.155E-01				
6000000.	*1.35	*0.213E-01					
Si XIII 2P 3D 37.8 Å C=0.27E+22	500000.	0.976E-01	0.147E-02	*0.214E-02	-0.296E-02		
	750000.	0.814E-01	0.126E-02	*0.456E-02	-0.548E-02		
	1000000.	0.716E-01	0.106E-02	*0.723E-02	-0.764E-02		
	2000000.	0.531E-01	0.603E-03	*0.151E-01	-0.124E-01		
	4000000.	0.400E-01	0.653E-03	*0.260E-01	-0.168E-01		
6000000.	0.343E-01	0.541E-03	*0.331E-01	-0.195E-01			
Si XIII 2P 4D 28.2 Å C=0.57E+20	500000.	*0.139	*0.242E-02				
	750000.	*0.120	*0.185E-02				
	1000000.	0.109	0.149E-02				
	2000000.	0.864E-01	0.122E-02				
	4000000.	0.694E-01	0.922E-03				
6000000.	0.613E-01	0.755E-03					
Si XIII 3P 4D 108.6 Å C=0.84E+21	500000.	*2.40	*0.415E-01				
	750000.	*2.09	*0.287E-01				
	1000000.	*1.90	*0.223E-01				
	2000000.	1.52	0.166E-01				
	4000000.	1.23	0.104E-01				
6000000.	1.09	0.767E-02					
Si XIII 3D 4P 111.8 Å C=0.97E+22	500000.	*2.97	-0.254E-01				
	750000.	*2.59	-0.154E-01				
	1000000.	*2.35	-0.114E-01				
	2000000.	1.87	0.824E-04				
	4000000.	1.50	0.453E-02				
6000000.	1.33	0.683E-02					
Si XIII 3D 4F 110.7 Å C=0.87E+21	500000.	*1.73	*0.299E-02				
	750000.	1.47	0.694E-02				
	1000000.	1.31	0.801E-02				
	2000000.	1.02	0.178E-01				
	4000000.	0.803	0.154E-01				
6000000.	0.707	0.162E-01					

PERTURBER DENSITY = 1.E+23cm-3							
PERTURBERS ARE:		ELECTRONS		PROTONS		He III	
TRANSITION	T(K)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 1S 2P 6.6 Å C=0.37E+22	500000.	*0.114E-01	-0.837E-03	0.977E-05	-0.118E-04		
	750000.	0.927E-02	-0.160E-03	0.364E-04	-0.481E-04		
	1000000.	0.813E-02	-0.273E-04	0.713E-04	-0.962E-04		
	2000000.	0.610E-02	0.325E-04	0.258E-03	-0.285E-03		
	4000000.	0.462E-02	0.880E-05	0.626E-03	-0.519E-03		
	6000000.	0.387E-02	0.670E-05	0.900E-03	-0.668E-03		
Si XIII 1S 3P 5.7 Å C=0.12E+21	500000.						
	750000.	*0.227E-01	*0.423E-03				
	1000000.	*0.202E-01	*0.363E-03				
	2000000.	*0.154E-01	*0.224E-03				
	4000000.	0.120E-01	0.160E-03				
	6000000.	0.105E-01	0.126E-03				
Si XIII 1S 4P 5.4 Å C=0.44E+20	500000.						
	750000.						
	1000000.						
	2000000.	*0.333E-01	*0.483E-03				
	4000000.	*0.272E-01	*0.334E-03				
	6000000.	*0.245E-01	*0.266E-03				
Si XIII 2S 3P 37.8 Å C=0.55E+22	500000.						
	750000.	*1.05	*0.263E-01				
	1000000.	*0.939	*0.214E-01				
	2000000.	*0.724	*0.109E-01				
	4000000.	0.568	0.559E-02				
	6000000.	0.496	0.343E-02				
Si XIII 2S 4P 28.2 Å C=0.12E+22	500000.						
	750000.						
	1000000.						
	2000000.	*0.929	*0.137E-01				
	4000000.	*0.762	*0.828E-02				
	6000000.	*0.685	*0.607E-02				
Si XIII 2P 3S 39.4 Å C=0.38E+23	500000.	*0.538	-0.581E-01				
	750000.	*0.485	-0.435E-01				
	1000000.	0.452	-0.330E-01				
	2000000.	0.381	-0.133E-01				
	4000000.	0.317	-0.151E-02				
	6000000.	0.282	0.126E-02				
Si XIII 2P 4S 29.0 Å C=0.86E+22	500000.	*0.329	-0.666E-01				
	750000.	*0.331	-0.499E-01				
	1000000.	*0.332	-0.386E-01				
	2000000.	0.325	-0.164E-01				
	4000000.	0.303	-0.414E-02				
	6000000.	0.284	0.144E-02				
Si XIII 2P 5S 25.8 Å C=0.35E+22	500000.	*0.188	-0.926E-01				
	750000.	*0.244	-0.698E-01				
	1000000.	*0.281	-0.548E-01				
	2000000.	*0.351	-0.242E-01				
	4000000.	0.377	-0.500E-02				
	6000000.	0.374	0.263E-02				
Si XIII 3P 4S 112.5 Å C=0.48E+23	500000.						
	750000.						
	1000000.	*10.6	-0.705				
	2000000.	*9.30	-0.320				
	4000000.	8.08	-0.117				
	6000000.	7.38	-0.188E-01				
Si XIII 3P 5S 76.3 Å C=0.22E+23	500000.						
	750000.						
	1000000.	*5.03	-0.535				
	2000000.	*5.09	-0.245				
	4000000.	*4.91	-0.687E-01				
	6000000.	4.69	0.433E-02				



PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 3D 39.1 Å C=0.58E+22	500000.	*0.966	-0.945E-02				
	750000.	*0.803	-0.401E-02				
	1000000.	*0.707	-0.166E-02				
	2000000.	0.526	0.176E-02				
	4000000.	0.400	0.608E-02				
6000000.	0.344	0.614E-02					
Si XIII 2P 4D 28.9 Å C=0.17E+21	500000.						
	750000.						
	1000000.						
	2000000.	*0.760	*0.347E-02				
	4000000.	*0.617	*0.622E-02				
6000000.	0.551	0.712E-02					
Si XIII 3D 4F 110.9 Å C=0.25E+22	500000.						
	750000.						
	1000000.						
	2000000.	*9.21	*0.961E-01				
	4000000.	7.32	0.863E-01				
6000000.	6.48	0.966E-01					
Si XIII 2S 3P 38.2 Å C=0.50E+22	500000.						
	750000.	*1.05	-0.110E-02				
	1000000.	*0.939	-0.883E-04				
	2000000.	*0.727	*0.802E-03				
	4000000.	0.570	0.283E-02				
6000000.	0.498	0.289E-02					
Si XIII 2S 4P 28.3 Å C=0.28E+22	500000.						
	750000.						
	1000000.						
	2000000.	*0.928	*0.182E-02				
	4000000.	*0.762	*0.408E-02				
6000000.	*0.684	*0.501E-02					
Si XIII 2P 3S 38.6 Å C=0.49E+23	500000.	*0.519	-0.597E-01				
	750000.	*0.467	-0.450E-01				
	1000000.	0.434	-0.340E-01				
	2000000.	0.363	-0.129E-01				
	4000000.	0.300	-0.246E-03				
6000000.	0.266	0.281E-02					
Si XIII 2P 4S 28.4 Å C=0.11E+23	500000.	*0.319	-0.737E-01				
	750000.	*0.321	-0.551E-01				
	1000000.	*0.322	-0.424E-01				
	2000000.	0.315	-0.181E-01				
	4000000.	0.290	-0.454E-02				
6000000.	0.271	0.952E-03					
Si XIII 2P 5S 25.3 Å C=0.44E+22	500000.	*0.184	-0.103				
	750000.	*0.243	-0.771E-01				
	1000000.	*0.282	-0.607E-01				
	2000000.	*0.346	-0.271E-01				
	4000000.	0.366	-0.718E-02				
6000000.	0.360	0.152E-02					
Si XIII 3P 4S 111.1 Å C=0.17E+24	500000.						
	750000.						
	1000000.	*10.5	-0.649				
	2000000.	*9.18	-0.286				
	4000000.	7.91	-0.965E-01				
6000000.	7.20	-0.120E-01					
Si XIII 3P 5S 75.3 Å C=0.39E+23	500000.						
	750000.						
	1000000.	*5.05	-0.537				
	2000000.	*5.06	-0.244				
	4000000.	*4.82	-0.759E-01				
6000000.	4.58	0.124E-02					

PERTURBERS ARE: TRANSITION	T(K)	ELECTRONS		PROTONS		He III	
		WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)	WIDTH(Å)	SHIFT(Å)
Si XIII 2P 3D 37.8 Å C=0.27E+23	500000.	*0.912	0.528E-02				
	750000.	*0.759	0.810E-02				
	1000000.	*0.668	0.813E-02				
	2000000.	0.497	0.656E-02				
	4000000.	0.376	0.754E-02				
6000000.	0.323	0.665E-02					
Si XIII 2P 4D 28.2 Å C=0.57E+21	500000.						
	750000.						
	1000000.						
	2000000.	*0.728	*0.919E-02				
	4000000.	*0.590	*0.857E-02				
6000000.	0.527	0.785E-02					
Si XIII 3D 4F 110.7 Å C=0.87E+22	500000.						
	750000.						
	1000000.						
	2000000.	*9.25	*0.619E-01				
	4000000.	7.33	0.742E-01				
6000000.	6.48	0.918E-01					

spectively. The temperature range is  $T = 500,000 - 4,000,000$  K for Si XI and  $500,000 - 6,000,000$  K for Si XIII. For Si XIII, the complete set of data is given for the perturber density of  $10^{19}\text{cm}^{-3}$ . For lower perturber densities, only data needed for better interpolation are given. Stark broadening parameters for densities lower than tabulated, or for transitions not tabulated for perturber densities lower than  $10^{19}\text{cm}^{-3}$  for Si XIII, are linear with perturber density. The parameter  $c$  (Dimitrijević and Sahal-Bréchet 1984), gives an estimate for 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 Tables 1 and 2, the collision volume ( $V$ ) multiplied by the perturber density ( $N$ ) is much less than one and the impact approximation is valid (Sahal-Bréchet, 1969ab). Values for  $NV > 0.5$  are not given and values for  $0.1 < NV \leq 0.5$  are denoted by an asterisk. When the impact approximation is not valid, the ion broadening contribution may be estimated by using quasistatic approach (Sahal-Bréchet 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 and discussion of the results obtained, will be published in Dimitrijević and Sahal-Bréchet, 1997.

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ТАБЕЛЕ ПАРАМЕТАРА ШТАРКОВОГ ШИРЕЊА  
СПЕКТРАЛНИХ ЛИНИЈА Si XI И Si XIII

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УДК 52–355.3  
*Претходно саопштење*

Користећи семикласичан прилаз, израчунате су ширине и помераји спектралних линија, проузроковани сударима са електронима, протонима и двоструко наелектрисаним јонима

хелијума, за 4 мултиплета Si XI и 61 мултиплет Si XIII. Резултати су дати у функцији температуре и концентрације пертурбера.