TABLE 3

Finding list of Fe II transitions and log *gf* values

λ_{vac} (Å)	λ_{air} (Å)	σ (cm^{-1})		log *gf*	$Un._{log gf}$ (± dex)	log *gf* Raassen	Upper Level Term	Upper Level E(cm^{-1})	Lower Level Term	Lower Level E(cm^{-1})
1588.687		62945.04	x	-2.33		-2.83	$x^4D_{3.5}$	62945.038	$a^6D_{4.5}$	0.000
1608.537		62168.29		-2.19	0.10	-2.19	$y^4G_{3.5}$	64040.886	$a^4F_{4.5}$	1872.567
1610.923		62076.20		-1.12	0.06	-1.04	$y^4G_{4.5}$	63948.790	$a^4F_{4.5}$	1872.567
1611.200		62065.53		-1.86	0.08	-1.87	$y^4F_{3.5}$	62065.521	$a^6D_{4.5}$	0.000
1621.252		61680.74	x	-2.46		-2.40	$y^4F_{3.5}$	62065.521	$a^6D_{3.5}$	384.790
1623.093		61610.75		-1.20	0.06	-1.09	$y^4G_{3.5}$	64040.886	$a^4F_{3.5}$	2430.097
1625.523		61518.66		-0.80	0.05	-0.70	$y^4G_{4.5}$	63948.790	$a^4F_{3.5}$	2430.097
1633.909		61202.91		-0.91	0.06	-0.80	$y^4G_{3.5}$	64040.886	$a^4F_{2.5}$	2837.950
1637.400		61072.44		-0.94	0.06	-0.85	$x^4D_{3.5}$	62945.038	$a^4H_{3.5}$	21711.917
1661.325		60192.93	x	-2.50		-2.38	$y^4F_{3.5}$	62065.521	$a^4F_{4.5}$	1872.567
1663.698		60107.06	x	-2.33		-2.48	$x^4D_{3.5}$	62945.038	$a^4F_{4.5}$	1872.567
1676.857		59635.39		-1.64	0.06	-1.64	$y^4F_{3.5}$	62065.521	$a^4F_{3.5}$	2430.097
1688.404		59227.54		-2.06	0.08	-1.90	$y^4F_{3.5}$	62065.521	$a^4F_{2.5}$	2837.950
1785.922		55993.48	x	-2.22		-2.77	$y^4G_{4.5}$	63948.790	$a^4D_{3.5}$	7955.299
1796.980		55648.93	x	-2.38		-2.94	$y^4G_{3.5}$	64040.886	$a^4D_{2.5}$	8391.938
1818.522		54989.72		-1.65	0.05	-1.60	$x^4D_{3.5}$	62945.038	$a^4D_{3.5}$	7955.299
1833.077		54553.08	x	-2.69		-2.05	$x^4D_{3.5}$	62945.038	$a^4F_{2.5}$	2837.950
1863.114		53673.57	x	-2.91		-2.99	$y^4F_{3.5}$	62065.521	$a^4D_{2.5}$	8391.938
2021.403	2020.751	49470.59		-1.05	0.05	-0.88	$x^4D_{3.5}$	62945.038	$a^4P_{2.5}$	13474.411
2057.991	2057.332	48591.08		-1.85	0.06	-1.62	$y^4F_{3.5}$	62065.521	$a^4P_{2.5}$	13474.411
2074.851	2074.189	48196.24		-1.93	0.07	-1.86	$y^4G_{3.5}$	64040.886	$a^2G_{4.5}$	15844.650
2078.823	2078.160	48104.15		-1.74	0.06	-1.64	$y^4G_{4.5}$	63948.790	$a^2G_{4.5}$	15844.650
2097.690	2097.024	47671.48		-2.25	0.09	-2.14	$y^4G_{3.5}$	64040.886	$a^2G_{3.5}$	16369.360
2123.125	2122.454	47100.39		-2.59	0.10	-2.55	$x^4D_{3.5}$	62945.038	$a^2G_{4.5}$	15844.650
2147.045	2146.370	46575.63		-2.40	0.07	-2.26	$x^4D_{3.5}$	62945.038	$a^2G_{3.5}$	16369.360
2188.370	2187.685	45696.12		-1.78	0.04	-1.64	$y^4F_{3.5}$	62065.521	$a^2G_{3.5}$	16369.360
2293.128	2292.421	43608.55		-2.18	0.06	-2.25	$y^4G_{4.5}$	63948.790	$a^2H_{5.5}$	20340.300
2297.587	2296.879	43523.93		-1.94	0.05	-2.13	$y^4G_{3.5}$	64040.886	$a^2D2_{2.5}$	20516.960
2312.935	2312.223	43235.12		-2.22	0.07	-2.52	$y^4G_{3.5}$	64040.886	$a^2H_{4.5}$	20805.770
2351.921	2351.201	42518.44		-0.22	0.05	-0.20	$y^4G_{4.5}$	63948.790	$a^4H_{5.5}$	21430.359
2355.198	2354.478	42459.27		-0.27	0.05	-0.22	$y^4G_{3.5}$	64040.886	$a^4H_{4.5}$	21581.638
2356.929	2356.208	42428.09		-2.33	0.14	-2.48	$x^4D_{3.5}$	62945.038	$a^2D2_{2.5}$	20516.960
2360.317	2359.596	42367.18		-0.73	0.05	-0.70	$y^4G_{4.5}$	63948.790	$a^4H_{4.5}$	21581.638
2362.447	2361.725	42328.99		-0.79	0.05	-0.85	$y^4G_{3.5}$	64040.886	$a^4H_{3.5}$	21711.917
2367.598	2366.875	42236.90		-1.53	0.06	-1.67	$y^4G_{4.5}$	63948.790	$a^4H_{3.5}$	21711.917
2373.083	2372.359	42139.27		-2.35	0.10	-2.55	$x^4D_{3.5}$	62945.038	$a^2H_{4.5}$	20805.770
2374.480	2373.755	42114.49	b	-		-1.80	$x^4D_{3.5}$	62945.038	$b^4P_{2.5}$	20830.582
2406.822	2406.090	41548.57		-1.85	0.07	-2.01	$y^4F_{3.5}$	62065.521	$a^2D2_{2.5}$	20516.960
2415.244	2414.510	41403.69		-2.53	0.15	-3.73	$y^4G_{3.5}$	64040.886	$b^4F_{4.5}$	22637.205
2420.628	2419.892	41311.60		-1.71	0.12	-1.90	$y^4G_{4.5}$	63948.790	$b^4F_{4.5}$	22637.205
2423.669	2422.933	41259.76		-1.68	0.07	-1.96	$y^4F_{3.5}$	62065.521	$a^2H_{4.5}$	20805.770
2425.124	2424.390	41235.01		-0.95	0.04	-0.91	$y^4F_{3.5}$	62065.521	$b^4P_{2.5}$	20830.582
2425.233	2424.497	41233.14	x	-2.23		-2.68	$x^4D_{3.5}$	62945.038	$a^4D_{2.5}$	8391.938
2425.386	2424.650	41230.54		-1.34	0.06	-1.40	$y^4G_{3.5}$	64040.886	$b^4F_{3.5}$	22810.357
2430.816	2430.078	41138.45		0.23	0.05	0.23	$y^4G_{4.5}$	63948.790	$b^4F_{3.5}$	22810.357
2432.999	2432.261	41101.54		0.05	0.05	0.07	$y^4G_{3.5}$	64040.886	$b^4F_{2.5}$	22939.358
2470.117	2469.371	40483.91		-1.79	0.05	-1.81	$y^4F_{3.5}$	62065.521	$a^4H_{4.5}$	21581.638
2478.092	2477.343	40353.63		-0.90	0.04	-0.89	$y^4F_{3.5}$	62065.521	$a^4H_{3.5}$	21711.917

TABLE 3—*Continued*

λ_{vac} (Å)	λ_{air} (Å)	σ (cm^{-1})		log *gf*	$Un._{loggf}$ ($\pm$ dex)	log *gf* Raassen	Upper Level Term	Upper Level E(cm^{-1})	Lower Level Term	Lower Level E(cm^{-1})
2480.907	2480.158	40307.84		0.06	0.05	0.04	$x^4D_{3.5}$	62945.038	$b^4F_{4.5}$	22637.205
2491.610	2490.858	40134.70		-0.18	0.05	-0.20	$x^4D_{3.5}$	62945.038	$b^4F_{3.5}$	22810.357
2499.644	2498.891	40005.69	b	-		-1.14	$x^4D_{3.5}$	62945.038	$b^4F_{2.5}$	22939.358
2536.248	2535.486	39428.33		-0.24	0.04	-0.25	$y^4F_{3.5}$	62065.521	$b^4F_{4.5}$	22637.205
2547.434	2546.670	39255.18		-0.21	0.04	-0.21	$y^4F_{3.5}$	62065.521	$b^4F_{3.5}$	22810.357
2555.834	2555.067	39126.18		-0.81	0.04	-0.82	$y^4F_{3.5}$	62065.521	$b^4F_{2.5}$	22939.358
2596.053	2595.277	38520.01		-2.77	0.07	-1.83	$y^4G_{4.5}$	63948.790	$a^4G_{5.5}$	25428.784
2615.366	2614.586	38235.56		-1.56	0.06	-2.12	$y^4G_{3.5}$	64040.886	$a^4G_{4.5}$	25805.328
2627.483	2626.699	38059.24		-1.79	0.06	-2.14	$y^4G_{3.5}$	64040.886	$a^4G_{3.5}$	25981.629
2647.000	2646.212	37778.62		-1.82	0.06	-1.90	$y^4G_{4.5}$	63948.790	$b^2H_{5.5}$	26170.181
2653.356	2652.566	37688.12		-1.43	0.05	-1.56	$y^4G_{3.5}$	64040.886	$b^2H_{4.5}$	26352.766
2659.855	2659.064	37596.03	x	-2.55		-2.58	$y^4G_{4.5}$	63948.790	$b^2H_{4.5}$	26352.766
2692.535	2691.736	37139.71		-1.36	0.05	-1.47	$x^4D_{3.5}$	62945.038	$a^4G_{4.5}$	25805.328
2705.379	2704.577	36963.39		-1.84	0.06	-2.00	$x^4D_{3.5}$	62945.038	$a^4G_{3.5}$	25981.629
2710.789	2709.986	36889.63		-2.12	0.13	-2.91	$x^4D_{3.5}$	62945.038	$a^4G_{2.5}$	26055.423
2722.869	2722.062	36725.97		-0.90	0.05	-1.11	$y^4G_{3.5}$	64040.886	$a^2F_{3.5}$	27314.922
2729.713	2728.905	36633.88		-0.86	0.05	-0.97	$y^4G_{4.5}$	63948.790	$a^2F_{3.5}$	27314.922
2732.817	2732.008	36592.28		-1.20	0.05	-1.31	$x^4D_{3.5}$	62945.038	$b^2H_{4.5}$	26352.766
2745.708	2744.896	36420.48		-1.49	0.05	-1.60	$y^4G_{3.5}$	64040.886	$a^2F_{2.5}$	27620.412
2757.845	2757.030	36260.20		-1.13	0.04	-1.24	$y^4F_{3.5}$	62065.521	$a^4G_{4.5}$	25805.328
2771.321	2770.503	36083.88	b	-		-2.56	$y^4F_{3.5}$	62065.521	$a^4G_{3.5}$	25981.629
2776.998	2776.178	36010.11		-1.61	0.04	-1.62	$y^4F_{3.5}$	62065.521	$a^4G_{2.5}$	26055.423
2800.119	2799.294	35712.76		-0.84	0.04	-0.87	$y^4F_{3.5}$	62065.521	$b^2H_{4.5}$	26352.766
2806.614	2805.787	35630.12		-1.52	0.05	-1.60	$x^4D_{3.5}$	62945.038	$a^2F_{3.5}$	27314.922
2877.647	2876.803	34750.61		-1.02	0.04	-1.10	$y^4F_{3.5}$	62065.521	$a^2F_{3.5}$	27314.922
2903.169	2902.318	34445.12		-2.05	0.06	-2.12	$y^4F_{3.5}$	62065.521	$a^2F_{2.5}$	27620.412
2971.561	2970.694	33652.34		-1.36	0.05	-1.60	$y^4G_{3.5}$	64040.886	$b^2G_{4.5}$	30388.542
2979.715	2978.846	33560.25		-2.02	0.08	-2.29	$y^4G_{4.5}$	63948.790	$b^2G_{4.5}$	30388.542
3005.132	3004.256	33276.41		-2.03	0.07	-2.16	$y^4G_{3.5}$	64040.886	$b^2G_{3.5}$	30764.485
3071.584	3070.691	32556.49		-1.84	0.05	-2.01	$x^4D_{3.5}$	62945.038	$b^2G_{4.5}$	30388.542
3102.788	3101.888	32229.08		-1.98	0.10	-2.57	$y^4G_{3.5}$	64040.886	$b^2F_{2.5}$	31811.822
3107.465	3106.564	32180.57		-1.66	0.05	-1.89	$x^4D_{3.5}$	62945.038	$b^2G_{3.5}$	30764.485
3129.915	3129.008	31949.75		-2.48	0.18	-2.70	$y^4G_{4.5}$	63948.790	$b^2F_{3.5}$	31999.048
3156.867	3155.953	31676.98		-2.30	0.06	-2.61	$y^4F_{3.5}$	62065.521	$b^2G_{4.5}$	30388.542
3168.863	3167.946	31557.06	b	-		-2.66	$x^4D_{3.5}$	62945.038	$b^4D_{2.5}$	31387.948
3178.453	3177.534	31461.84		-0.68	0.05	-0.89	$x^4D_{3.5}$	62945.038	$b^4D_{3.5}$	31483.176
3194.781	3193.857	31301.05		-1.33	0.04	-1.44	$y^4F_{3.5}$	62065.521	$b^2G_{3.5}$	30764.485
3212.002	3211.074	31133.23		-2.58	0.14	-2.85	$x^4D_{3.5}$	62945.038	$b^2F_{2.5}$	31811.822
3259.713	3258.773	30677.55		-0.92	0.04	-1.15	$y^4F_{3.5}$	62065.521	$b^4D_{2.5}$	31387.948
3270.711	3269.768	30574.39		-2.18	0.08	-2.42	$y^4G_{3.5}$	64040.886	$c^2G_{4.5}$	33466.463
3274.438	3273.494	30539.59		-1.96	0.07	-2.22	$y^4G_{3.5}$	64040.886	$c^2G_{3.5}$	33501.253
3280.592	3279.647	30482.30		-2.03	0.07	-2.23	$y^4G_{4.5}$	63948.790	$c^2G_{4.5}$	33466.463
3305.379	3304.428	30253.71		-2.57	0.10	-2.71	$y^4F_{3.5}$	62065.521	$b^2F_{2.5}$	31811.822
3325.963	3325.006	30066.48		-2.35	0.09	-2.85	$y^4F_{3.5}$	62065.521	$b^2F_{3.5}$	31999.048
3396.307	3395.332	29443.75		-2.30	0.09	-2.43	$x^4D_{3.5}$	62945.038	$c^2G_{3.5}$	33501.253
3496.622	3495.621	28599.03		-2.42	0.06	-2.46	$y^4F_{3.5}$	62065.521	$c^2G_{4.5}$	33466.463
3500.882	3499.881	28564.23		-2.20	0.06	-2.37	$y^4F_{3.5}$	62065.521	$c^2G_{3.5}$	33501.253

NOTE.—Columns are as follows λ_{vac}, vacuum wavelength; λ_{air}, wavelength in air for $\lambda > 2000$Å; σ, vacuum wavenumber (Ritz wavenumbers rounded down to seven significant figures from Johansson (private communication)); log *gf* (this work); uncertainty (dex) in log *gf*, log *gf* Raassen (calculated) (1999); Term and energy of the upper and lower energy levels involved in each transition. The level energies are taken from Sugar and Corliss (1985). Annotations indicate: x, transition not observed in this work or in that of Johansson; and b, a blended line. For lines annotated with x, the maximum possible branching fraction has been estimated giving a maximum possible log *gf* for that transition; for these lines it may be advisable to use the calculated values of Raassen (1999) for log *gf*. No uncertainty in log *gf* is given for transitions annotated x.