KG
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793

1926phae.proj..794

Measurements of the Wavelengths of
Spectrum Lines in Stars
in the red region.

Courtier Comparator — 1926.

C. T. Chase

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1926phar.proj..340

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Page

2.	α scorpii	– Ma	--- 4860 – 5895	
8.	δ can. maj.	– cF8	--- 4860 – 5712	} H.C. 300
13.	"	– "	--- 3900 – 4980	
26.	γ Cygni	– F8 p	--- 3800 – 5030	
48.	α Cygni	– A_2 p	--- 3750 – 5020	(to check α Pisc. Aust.)
59.	α Pisc. Aust.	– A_3	--- 4820 – 5370	
62.	α Aquilae	– G_0	--- 4960 – 5820	(double, lines displaced).
72.	ε scorpii	– K_0	--- 4860 – 5900	
86.	α Tucanae	– K_2	--- 4860 – 5900	
~~98.~~	~~π Puppis~~	~~– K_5~~	~~--- 4860 – 5900~~	

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1926phae.proj.7140

Prism spectrograms measured by means of a Gaertner Comparator.

Hartmann reduction formula used.

for identifications,

Kayser – Vol. 6.
Russell – Ap.J. 61 – 1925. (underlined, series relations known).

n = scale reading. I = intensity (estimated). (10 = brightest line on plate).

Measures by C.T. Chase – 1926-7.

at

Harvard College Observatory

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2

Ma

Nov. 17, '26. α scorpii - plate X8729, spectrum (1.)

1. $\lambda_1 = 4861.33$
2. $\lambda_2 = 5371.50$
3. $\lambda_3 = 5889.96$
4. $2-1 = 510.17$
5. $3-2 = 518.46$
6. $n_1 = 4.4585$
7. $n_2 = 6.1017$
8. $n_3 = 7.3145$
9. $7-6 = 1.6432$
10. $8-7 = 1.2128$

11. $4/9 = 310.473$
12. $5/10 = 427.490$
13. $11/12 = 0.726269$
14. $7-13 = 0.273731$
15. $6 \times 13 = 3.23807$
16. $8-15 = 4.07643$
17. $16/14 = 14.8921 = n_0$
18. $17-6 = 10.4336$
19. $17-7 = 8.7904$
20. $17-8 = 7.5776$
21. $\lambda_1 = 4861.33$
22. $11 \times 19 = 2129.18$
23. $21-22 = 2132.15 = \lambda_0$
24. $22 \times 18 = 28,475.17 = C$
25. $24/20 = 3757.81$
26. $23+25 = 5889.96 = \lambda_3$ (check).

	n_1	n_2	n_3
	4.4582	6.1018	7.3146
	85	20	49
	84	19	44
	81	20	43
	83	20	44
	87	14	45
	86	17	46
	83	13	48
	90	15	46
	85	17	43
	4.4585	6.1017	7.3145

$$\lambda = \lambda_0 + \frac{C}{n - n_0}$$

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1926phae..proj..194C

n	n-n₀	$\frac{c}{n-n_0}$	λ	I	Identifications.
4.4585	———	———	4861.3	4	Hβ 4861.3
.4732	10.4189	2733.03	4865.2	2	
.4987	.3934	2739.74	4871.9	1	Fe 4872.1
.5135	.3786	2743.64	4875.8	1	V 4875.5
.5364	.3557	2749.71	4881.9	2	V 4881.6, Fe 4882.2
.5492	.3429	2753.11	4885.3	1	Ti 4885.1
.5558	.3363	2754.87	4887.0	1	
.5714	.3207	2759.03	4891.2	2w	Fe 4891.5, 4890.8
.5839	.3082	2762.38	4894.5	1	
.6050	.2871	2768.05	4900.2	1	Ti 4899.9, Ba+ 4900.0, V+ 4900.1
.6189	.2732	2771.79	4903.9	1	
.6425	.2496	2778.17	4910.3	1w	Fe 4910.0
.6560	.2361	2781.84	4914.0	1w	Ti 4913.6
.6791	.2130	2788.13	4920.3	3w	Fe 4920.5
.6954	.1967	2792.59	4924.7	2w	Fe+ 4923.9 + Ti 4925.4
.7285	.1636	2801.68	4933.8	2	Ba+ 4934.1
.7465	.1456	2806.65	4938.8	3	Fe 4938.8
.8125	.0796	2825.03	4957.2	3w	Fe 4957.6, 4957.3
.8407	.0514	2832.96	4965.1	1w	Cr 4964.9
.9008	9.9913	2850.00	4982.2	1	V 4982.1
.9308	.9613	2858.58	4990.7	1	
.9437	.9484	2862.29	4994.4	1	Fe 4994.1
.9640	.9281	2868.14	5000.3	1	
.9850	.9071	2874.22	5006.4	1	Fe 5006.1
5.0111	.8810	2881.81	5014.0	2w	Ti 5014.3, 5014.2
.0364	.8557	2890.94	5036.1	2	Ti 5035.9
.1024	.7897	2908.69	5040.8	5	Fe 5041.1
.1377	.7544	2919.21	5051.4	2w	Fe 5051.6
.1592	.7329	2925.66	5057.8	1	

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1926phae.proj..7140

n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
5.1670	9.7251	2928.01	5060.2	2	
.1824	.7097	2932.65	5064.8	3	Ti 5064.7
.1939	.6982	2936.13	5068.3	1	Th 5068.0
.2067	.6854	2940.01	5072.2	1	
.2210	.6711	2944.36	5076.5	1	
.2315	.6606	2947.56	5079.7	4	Fe 5079.7
.2437	.6484	2951.28	5083.4	2	Fe 5083.3
.2957	.5964	2967.28	5099.4	2	
.3307	.5614	2978.14	5110.3	2W	Fe 5110.4
.3730	.5191	2991.37	5123.5	3	Fe 5123.7
.3865	.5056	2995.62	5127.8	3W	Fe 5127.4
.4195	.4726	3006.06	5138.2	1W	V 5138.4
.4337	.4584	3010.57	5142.7	3	Fe 5142.9
.4485	.4436	3015.29	5147.4	2W	Ti 5147.5
.4612	.4309	3019.35	5151.5	3WW	Fe 5151.9, 5150.8
.5099	.3822	3035.02	5167.2	10	Mg 5167.4, Fe 5167.5 (b_4)
.5266	.3655	3040.43	5172.6	4	Mg 5172.7 (b_2)
.5607	.3314	3051.54	5183.7	4	Mg 5183.7 (b_1)
.5889	.3032	3060.79	5192.9	3W	Ti 5193.0
.6274	.2647	3073.51	5205.7	5-	V+ 5205.7
.6404	.2517	3077.83	5210.0	5W	Ti 5210.4
.6596	.2325	3084.23	5216.4	1	Fe 5216.3
.6892	.2029	3094.15	5226.3	7	Fe 5225.5 + 5227.2 + 26.9
.7129	.1792	3102.14	5234.3	2	Nd 5234.2
.7339	.1582	3109.25	5241.4	1W	
.7515	.1406	3115.24	5247.4	5	Fe 5247.1
.7622	.1299	3118.89	5251.0	5	Fe 5250.7
.7750	.1171	3123.28	5255.4	3	Nd 5255.5
.8029	.0892	3132.86	5265.0	4W	Cr 5265.6 + 5264.2

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n	n - n₀	c/(n·n₀)	λ	I	
5.8174	9.0747	3137.86	5270.0	7w	Ca 5270.3, Fe 5269.5 + 5270.4
.8342	.0579	3143.68	5275.8	1	Ca 5276.0
.8557	.0364	3151.16	5283.3	2w	Ti 5283.5
.8705	.0216	3156.33	5288.5	1	
.8837	.0084	3160.96	5293.1	1	Nd 5293.2
.8975	8.9946	3165.81	5298.0	5	Cr 5298.0, 5298.3
.9085	.9836	3169.68	5301.8	2	Se 5301.9
.9250	.9671	3175.52	5307.7	1	Fe 5307.4
.9394	.9527	3180.62	5312.8	1	
.9841	.9080	3196.58	5328.7	6	Fe 5328.4, 5328.5
.9973	.8948	3201.33	5333.5	1	
6.0177	.8744	3208.69	5340.8	3	Ta 5341.0
.0316	.8605	3213.72	5345.9	1	Cr 5345.8
.0427	.8494	3217.75	5349.9	2w	Ca 5349.5, Se 5349.7
.0775	.8146	3230.45	5362.6	1	Fe 5362.8, Zn 5362.5
.1017	—	—	5371.5	5	Fe 5371.5
.1175	.7746	3245.18	5377.3	1	Mn 5377.6
.1329	.7592	3250.89	5383.0	1w	Fe 5383.4
.1525	.7396	3258.18	5390.3	1	
.1719	.7202	3265.43	5397.6	3	
.1948	.6973	3274.02	5406.2	3w	Fe 5405.8
.2062	.6859	3278.32	5410.5	3	Cr 5410.8
.2187	.6734	3283.05	5415.2	1	Fe 5415.2, V 5415.3
.2338	.6583	3288.77	5420.9	1	
.2461	.6460	3293.45	5425.6	1	Th 5425.7, Hg 5425.3
.2581	.6340	3298.03	5430.2	2	
.2710	.6211	3302.96	5435.1	3w	W 5435.1, Fe 5434.5
.3039	.5882	3315.61	5447.8	3	
.3247	.5674	3323.67	5455.8	3w	Fe 5455.6

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1926phae.proj..7940

n	$n-n_0$	$\frac{e}{n-n_0}$	λ	I	
6.3387	8.5534	3329.10	5461.3	1	
.3772	.5149	3344.16	5476.3	2W	Fe 5476.6, Lu 5476.7
.3930	.4991	3350.37	5482.5	2W	
.4057	.4864	3355.39	5487.5	1	
.4158	.4763	3359.39	5491.5	1	
.4331	.4590	3366.26	5498.4	1	Nb 5498.6
.4433	.4488	3370.32	5502.5	1	
.4545	.4376	3374.79	5506.9	2	Fe 5506.8
.4742	.4179	3382.69	5514.8	2W	Ti 5514.4, 5514.5
.5079	.3842	3396.29	5528.4	1W	Mg 5528.4
.5259	.3662	3403.60	5535.8	1W	Ba 5535.5
.5507	.3414	3413.72	5545.9	1W	Ag 5545.6
.6026	.2895	3435.09	5567.2	1	
.6688	.2233	3462.74	5594.9	1	
.6837	.2084	3469.03	5601.2	1W	Ca 5601.3
.7245	.1676	3486.36	5618.5	1W	
.7416	.1505	3493.67	5625.8	1	Ir 5625.5
.8178	.0743	3526.64	5658.8	1	Fe 5658.8
.8282	.0639	3531.19	5663.3	1	
.8436	.0485	3537.85	5670.1	1W	Pd 5670.1
.8695	.0226	3549.37	5681.5	1W	
.8857	.0064	3556.55	5688.7	1	Nd 5688.5
.9028	7.9893	3564.16	5696.3	1	Gd 5696.2
.9154	.9767	3569.79	5701.9	1W	Fe 5701.6
.9297	.9624	3576.20	5708.4	1W	Nd 5708.2
.9390	.9531	3580.39	5712.5	1	La 5712.4
.9740	.9181	3596.21	5728.4	1	
7.0310	.8611	3622.29	5754.4	1	Ni 5754.7
.0494	.8427	3630.79	5762.9	1W	Fe 5763.0, Er 5762.8

background very dark

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
7.0945	7.7976	3651.79	5783.9	2W	Cd 5783.9, Cr 5783.9
.1066	.7855	3657.46	5789.6	1	
.1263	.7658	3666.74	5798.9	1	
.1393	.7528	3672.89	5805.0	1	Ni 5805.2
.1634	.7287	3684.34	5816.5	1	Fe 5816.3
.2062	.6859	3704.86	5837.0	1W	
.2371	.6550	3719.81	5852.0	1	
.2468	.6453	3724.53	5856.7	1	
.2649	.6272	3733.38	5865.5	1	
.2949	.5972	3748.11	5880.3	1	La 5880.6
.3145	—	—	5890.0	5	Na 5890.0
—	—	—	5895.9	4	Na 5895.9

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1926phae.proj...794C

8 cF8 (cf. N.C. 300)

Dec. 1 δ Canis Majoris. Plate 4 10156. spectrum ①.

1. λ_1 = 4861.33
2. λ_2 = 5167.38
3. λ_3 = 5528.42
4. 2-1 = 306.05
5. 3-2 = 361.04
6. n_1 = 4.4612
7. n_2 = 5.5152
8. n_3 = 6.5086
9. 7-6 = 1.0540
10. 8-7 = 0.9934

11. 4/9 = 290.370
12. 5/10 = 363.439
13. 11/12 = .798951
14. 7-13 = .201049
15. 6×13 = 3.56428
16. 8·15 = 2.94432
17. 16/14 = 14.6448 = n_0
18. 17-6 = 10.1836
19. 17-7 = 9.1296
20. 17-8 = 8.1362
21. λ_1 = 4861.33
22. 11 × 19 = 2650.96
23. 21-22 = 2210.37 = λ_0
24. 22 × 18 = 26,996.32 = c
25. 24/20 = 3318.05
26. 23+25 = 5528.42 = λ_3 (check)

	n_1	n_2	n_3
	4.4607	5.5146	6.5086
	22	38	45
	15	48	80
	13	41	86
	07	53	94
	07	57	84
	08	63	86
	20	59	84
	21	56	90
	01	59	78
	4.4612	5.5152	6.5086

$$\lambda = \lambda_0 + \frac{c}{n - n_0}$$

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	Identification.
4.4612	——	——	4861.3	5	H_β 4861.3
.4789	10.1659	2655.58	4866.0	2	Ni 4866.3
.5029	.1419	2661.86	4872.2	2	Sr 4872.5, Fe 4872.2
.5236	.1212	2667.30	4877.7	3	
.5481	.0967	2673.78	4884.2	3	Sm 4884.0
.5781	.0667	2681.74	4892.1	2	Sr 4892.0
.6113	.0335	2690.62	4901.0	3	Cu 4900.8
.6239	.0209	2694.00	4904.4	1	V 4904.4, Ni 4904.4, Cl 4904.7
.6493	9.9955	2700.85	4911.2	2	Ti^+ 4911.2, Nb 4911.0
.6870	.9578	2711.07	4921.4	1	Rh 4921.6, Nd 4921.7, X 4921.5
.6995	.9453	2714.48	4924.9	2	O 4924.6
.7341	.9107	2723.95	4934.3	2	Ba^+ 4934.1
.7520	.8928	2728.89	4939.3	1	Fe 39.6
.8198	.8250	2747.72	4958.1	3	Ti 4958.3
.9109	.7345	2773.26	4983.6	2	Na 4983.3
.9442	.7006	2782.85	4993.3	1	
.9665	.6783	2789.37	4999.7	1	Ti 4999.5, Zr 4999.5
.9863	.6585	2795.08	5005.5	1	Fe 5005.7, Pr 5005.5
5.0102	.6346	2802.02	5012.4	1	Fe 5012.1
.0338	.6110	2808.89	5019.3	2	Sr 5019.4, O 5019.3
.0611	.5837	2816.89	5027.3	1	U 5027.4
.0725	.5723	2820.25	5030.6	1	
.0924	.5524	2826.13	5036.5	1	Ti 5036.5
.1085	.5363	2830.90	5041.3	2	Ca 5041.6, Fe 5041.1, Pr 5041.3
.1380	.5068	2839.68	5050.1	2	Fe 5049.8
.1925	.4523	2856.06	5066.4	1	
.2122	.4326	2862.02	5072.4	1	Ti^+ 5072.3
.2368	.4080	2869.51	5079.9	1	Fe 5079.7, Ca 5079.7
.2614	.3834	2877.03	5087.4	1	Ti 5087.1, V^+ 5087.4

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n	n-n₀	a/(n-n₀)	λ	I	
5.3012	9.3436	2889.28	5099.7	3	Ni 5099.9
.3276	.3172	2897.47	5107.8	1	Fe 5107.5
.3385	.3063	2900.86	5111.2	1	
.3785	.2663	2913.39	5123.8	1	Cr 5123.5, Fe 5123.7, Nd 5123.8
.4745	.1703	2943.89	5154.3	4	Ti+ 5154.1
.4952	.1496	2950.55	5160.9	1	I 5161.2, Ce 5161.1
.5152	.1296	2957.01	5167.4	7	Mg 5167.4, Fe 5167.5 (b4)
.5306	.1142	2962.01	5172.4	4	Mg 5172.7 (b2)
.5655	.0793	2973.39	5183.8	2	Mg 5183.7 (b1)
.5829	.0619	2979.10	5189.5	1	Nb 5189.2
.5929	.0519	2982.39	5192.8	1	Os 5192.9, Nd 5192.6 Nb 5193.0, V 5193.0, Ti 5193.0
.6058	.0390	2986.65	5197.0	2	
.6321	.0127	2995.36	5205.7	2	Pb 5205.5, V+ 5205.7, Re 5205.8
.6456	8.9992	2998.86	5210.2	1	Ti 5210.4
.6643	.9805	3006.10	5216.5	2	Fe 5216.3
.6944	.9504	3016.21	5226.6	6	Fe 5226.9, Ti+ 5226.6
.7170	.9278	3023.85	5234.2	3	Nd 5234.2
.7593	.8855	3038.24	5248.6	1	Sm 5248.5, Co 5248.9
.7806	.8642	3045.54	5255.9	1	Cr 5255.9
.8013	.8435	3052.67	5263.0	4	Fe 5263.3
.8213	.8235	3059.59	5270.0	3	Ca 5270.3
.8369	.8079	3065.01	5275.4	3	Cr 5275.7, 5276.2, 0 5275.1
.8597	.7851	3072.97	5283.3	2	Fe 5283.6, Ti 5283.5
.9022	.7426	3087.90	5298.3	1	Pr 5298.0 Cr 5298.0, Ti 5298.4, Ce 5298.3
.9143	.7305	3092.18	5302.6	1	Fe 5302.3, Ba 5302.8
.9279	.7169	3097.01	5307.4	1	Fe 5307.4, Tm 5307.1
.9546	.6902	3106.52	5316.9	3	Fe+ 5316.6, 5316.8
.9811	.6637	3116.03	5326.4	2	
.9903	.6545	3119.34	5329.7	3	Cr 5329.8, Ag 5329.7, Rh 5329.7 O 5329.6

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1926phae.proj.[illegible]40

n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
6.0118	8.6330	3127.11	5337.5	2	
.0227	.6221	3131.06	5341.4	1	Mn 5341.1, Ne 5341.1
.0348	.6100	3135.46	5345.8	1	Cr 5345.8, Mg 5345.6, S 5345.6
.0829	.5619	3153.07	5363.4	4	
.1050	.5398	3161.23	5371.6	4	Fe 5371.5, Ni 5371.3
.1330	.5118	3171.63	5382.0	3	
.1758	.4690	3187.66	5398.0	2	
.1958	.4490	3195.21	5405.6	3	Fe 5405.8
.2225	.4223	3205.34	5415.7	1	
.2487	.3961	3215.34	5425.7	2	Th 5425.7
.2643	.3805	3221.32	5431.7	1	Nd 5431.5
.2731	.3717	3224.71	5435.1	2	W 5435.1, O 5435.2
.3056	.3392	3237.28	5447.7	4	
.3295	.3153	3246.58	5457.0	3	
.3481	.2967	3253.86	5464.0	1	
.3833	.2615	3267.73	5478.1	4	
.4397	.2051	3290.19	5500.6	1	
.4482	.1966	3293.60	5504.0	1	Sr 5504.2, Ti 5503.9
.4639	.1809	3299.92	5510.3	2	Ni 5510.0
.5086	———	———	5528.4	6	Mg 5528.4, Se 5528.4
.5287	.1161	3326.27	5536.6	4	Cr 5536.3
.5523	.0925	3335.97	5546.3	2	
.6565	7.9883	3379.48	5589.9	3	Ca 5590.1, Cr 5589.9
.7227	.9221	3407.72	5618.1	2	Sc 5517.9
.7452	.8996	3417.43	5627.8	1	V 5627.6, Nd 5627.6,
.7815	.8633	3433.20	5643.6	2	Sc 5643.5
.8200	.8248	3450.10	5660.5	5	W 5660.5, Ra 5660.7
.8331	.8117	3455.88	5666.3	1	N^+ 5666.5
.8444	.8004	3460.89	5671.3	3	Nd 5671.1

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ν	$\nu - \nu_0$	$\frac{c}{\nu-\nu_0}$	λ		I	
6.8800	7.7648	3476.76	5687.1	weak background line	2	Sc 5686.8
.8890	.7558	3480.79	5691.2		1	U 5691.4, Nb 5691.5
.9369	.7079	3502.42	5712.8		2	

and a faint trace of the D lines of sodium.

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1926phae.proj.0794

(cf H.C. 300)

Dec. 9 δ Canis Majoris. – plate X 8274, spectrum ①.

1. $\lambda_1 = 4101.74$
2. $\lambda_2 = 4340.47$
3. $\lambda_3 = 4861.33$
4. 2 – 1 = 238.73
5. 3 – 2 = 520.86
6. $n_1 = 2.3020$
7. $n_2 = 3.7325$
8. $n_3 = 6.0119$
9. 7 – 6 = 1.4305
10. 8 – 7 = 2.2794

		n_1	n_2	n_3
11.	4/9 = 166.886			
12.	5/10 = 228.508	2.3021	3.7325	6.0115
13.	11/12 = .730329	22	31	18
14.	1 – 13 = .269671	17	25	19
15.	6 × 13 = 1.68122	17	26	19
16.	8 – 15 = 4.33068	20	23	23
17.	16/14 = 16.0591 = n_0	14	24	23
		26	22	24
18.	17 – 6 = 13.7571	21	25	23
19.	17 – 7 = 12.3266	27	19	17
20.	17 – 8 = 10.0472	15	25	12
21.	λ_1 = 4101.74	2.3020	3.7325	6.0119

22. 11 × 19 = 2057.14
23. 21 – 22 = 2044.60 = λ_0

24. 22 × 18 = 28,300.28 = C

25. 24/20 = 2816.73
26. 23 + 25 = 4861.33 = λ_3 (check)

$$\lambda = \lambda_0 + \frac{c}{n - n_0}$$

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n	n-n₀	c/(n-n₀)	λ	I	Identification.
0.8162	15.2429	1856.62	3901.2	2	Th 3901.3
.8432	.2159	1859.92	3904.5	1	Ti 3904.8
.8722	.1869	1863.47	3908.1	1	Pr 3908.0, 3908.4
.9307	.1284	1870.67	3915.3	2	Dy 3915.6, Li 3915.0, In 3915.4, Th 3915.4
.9455	.1136	1872.50	3917.1	1	Fe 3917.2, Cu 3917.3
.9985	.0606	1879.09	3923.7	1	He 3923.5, Ru 3923.5
———	———	———	———	∞	Ca+ 3933.7
1.1727	14.8864	1901.08	3945.7	2	Pr 3945.6
.2299	.8292	1908.42	3953.0	2	Co 3953.0, Fe 3952.7
.2615	.7976	1912.49	3957.1	1	Ca 3957.1
.2760	.7831	1914.37	3959.0	1	Cd 3958.7, Rh 3958.9
.3010	.7581	1917.61	3962.2	1	Nd 3962.2
———	———	———	———	∞	Ca+ 3968.5, He 3970.1
.4569	.6022	1938.08	3982.7	3	O 3982.8, Nd 3982.4, Ti 3982.5, Y 3982.6
.4713	.5878	1940.00	3984.6	1	Ru 3984.9, Rh 3984.4
.5269	.5322	1947.42	3992.0	1	Ir 3992.1, Nd 3991.8, A 3992.0
.5567	.5024	1951.42	3996.0	1	Rh 3996.2, Ta 3996.2, Th 3996.1
.5696	.4895	1953.16	3997.8	2	Fe 3998.1, Rh 3998.0, Co 3997.9
.5825	.4766	1954.90	3999.5	2	Th 3999.4, Ce 3999.3
.5937	.4654	1956.41	4001.0	1	K 4001.2
.6073	.4518	1958.25	4002.9	1 w	Th 4002.6, Fe 4003.2
.6288	.4303	1961.17	4005.8	2	V 4005.7, Th 4005.5
.6596	.3995	1965.36	4010.0	1	Fe 4009.7
.6808	.3783	1968.26	4012.9	1½	Th 4012.8, Er 4012.6
.6969	.3622	1970.47	4015.1	1 w	
.7138	.3453	1972.79	4017.4	1	Cu 4017.6
.7236	.3355	1974.14	4018.7	1	Fe 4018.5
.7477	.3114	1977.47	4022.1	1	Ru 4022.2, Fe 4021.9, Nd 4021.8
.7590	.3001	1979.03	4023.6	1	Fe 4023.7, V 4023.4

underexposed - much background

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ν	$\nu-\nu_0$	$\frac{c}{\nu-\nu_0}$	λ	I	
1.7712	14.2879	1980.72	4025.3	3	Ti^+ 4025.1, He^+ 4025.6, F 4025.1
.7949	.2642	1984.01	4028.6	1/2	Ti^+ 4028.4, 8 4028.9
.8127	.2464	1986.49	4031.1	2w	Mn 4030.8, Ca 4031.0
.8278	.2313	1988.59	4033.2	1	Sm 4033.1 Mn 4033.1, Ba 4033.0, Nb 4033.2
.8373	.2218	1989.92	4034.5	1	Mn 4034.5, A 4034.8
.8461	.2130	1991.16	4035.8	1	Cr 4035.6 Mn 4035.7, Zr 4035.9, V 4035.6
.8570	.2021	1992.68	4037.3	1/2	Ca 4037.0, Gd 4037.4
.8846	.1745	1996.56	4041.2	2	Mn 4041.4
.8974	.1617	1998.37	4043.0	1	La 4042.9
.9195	.1396	2001.49	4046.1	3	Dy 4046.0 Fe 4045.8, A 4045.9, Nb 4046.0
.9395	.1196	2004.33	4048.9	1	Mn 4048.8, Zr 4048.7
.9510	.1081	2005.96	4050.6	1	Zr 4050.3, Ni 4050.5, Dy 4050.6
.9616	.0975	2007.47	4052.1	1	
.9737	.0854	2009.19	4053.8	1/2	Ti^+ 4053.8, Nb 4053.9
2.0435	.0156	2019.20	4063.8	5	Sm 4063.6 Fe 4063.6, Gd 4063.5, Mn 4063.6
.0659	13.9932	2022.43	4067.0	3	Os 4066.7, Fe 4067.0, Fe 4067.3
.0977	.9614	2027.04	4071.6	2	Fe 4071.8
.1113	.9478	2029.01	4073.6	1	Gd 4073.8
.1410	.9181	2033.34	4077.9	5	Ca 4078.0, Dy 4078.0 Sr^+ 4077.7, Rh 4077.6, Hg 4077.8
.1544	.9047	2035.30	4079.9	1w	Pr 4079.8, Fe 4079.9 Mn 4079.4, 4079.2, Nb 4079.7,
.1767	.8824	2038.57	4083.2	1	Mn 4083.0, Pr 4083.4, Ba 4083.1
.1929	.8662	2040.95	4085.6	1	Fe 4085.3 Ag 4085.8, Zr 4085.7, Gd 4085.6
.2030	.8561	2042.44	4087.0	2	La 4086.7
.2144	.8447	2044.12	4088.7	1	Si^{+++} 4088.9, Ni 4088.4
.2263	.8328	2045.88	4090.5	1	V 4090.6, Zr 4090.5
.2392	.8199	2047.79	4092.4	1	Co 4092.4, Sm 4092.3, Sr 4092.6 Fe 4092.5, Ca 4092.7, V 4092.7
.2662	.7929	2051.80	4096.4	1w	
.2790	.7801	2053.71	4098.3	1w	Gd 4098.6, Fe 4098.2, Ca 4098.1 Ca 4098.6, Cr 4098.2, -98.0, -97.7
.3020	———	———	———	7	Ns 4101.7

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
2.3234	13.7357	2060.35	4105.0	1	V 4105.2, 4104.8, Ta 4105.0 (O 4105.0, Cr 4104.8)
.3388	.7203	2062.66	4107.3	1	Sm 4107.4, Mo 4107.5, Fe 4107.5 (Re 4107.5)
.3540	.7051	2064.95	4109.6	2	V 4109.8, Fe 4109.8, X 4109.7 (Nd 4109.5, Se 4109.4)
.3637	.6954	2066.41	4111.0	2	Cr 4110.9, As 4111.1, Mn 4110.9 (O 4110.9)
.3763	.6828	2068.31	4112.9	1	Ti 4112.7, Ru 4112.8.
.3880	.6711	2070.08	4114.7	1	Fe 4114.5
.4118	.6473	2073.69	4118.3	2	Sm 4118.6, Fe 4118.6, Pr 4118.5 (Ce 4118.2)
.4190	.6401	2074.79	4119.4	1	Ru 4119.7, As 4119.7, Mo. 4119.6 (O 4119.3, Nd 4119.3)
.4436	.6155	2078.53	4123.1	3	La 4123.2
.4556	.6035	2080.37	4125.0	1w	Y 4124.9, Lu 4124.7
.4772	.5819	2083.68	4128.3	2W	Y 4128.3, V 4128.1, Fe 4128.7
.4922	.5669	2085.98	4130.6	1	Ba+ 4130.7, Si 30.9, Cl 30.8, Pr 30.8 (Sd 30.4,)
.5021	.5570	2087.50	4132.1	2	Li 4132.3, V 4132.0, Fe 4132.1 (Sd 32.3, A 31.8)
.5102	.5489	2088.75	4133.4	1	Se 33.7, Nd 33.4, I 33.2
.5179	.5412	2089.94	4134.5	1 ½	V 4134.5, Fe 4134.3, K 34.7 (Fe 34.7)
.5367	.5224	2092.84	4137.4	½W	Ce 37.6, Nd 37.1, Sd 37.1
.5760	.4831	2098.94	4143.5	3	Ne 4143.8, O 43.8, Mo 43.6 (Fe 43.4)
.5910	.4681	2101.28	4145.9	1	X 45.7, Ru 45.8, O 45.9, Ry 46.1
.6015	.4576	2102.92	4147.5	1	Fe 4147.7
.6116	.4475	2104.50	4149.1	1½	Ny 49.1, Zr 49.2, K 49.2, Fe 49.4
.6210	.4381	2105.97	4150.6	½	~~Fe~~
.6290	.4301	2107.23	4151.8	1	La 52.0, Ce 52.0
.6442	.4149	2109.62	4154.2	1½	Se 53.9, Rh 54.4, Fe 54.5, Ru 54.5
.6570	.4021	2111.63	4156.2	1½	Zr 56.2, Nd 56.2, A 56.1
.6658	.3933	2113.02	4157.6	½	As 57.5, Fe 57.8, Cl 57.9
.6727	.3864	2114.11	4158.7	1	Fe 58.8, A 58.6
.6884	.3707	2116.59	4161.2	2	Zr 61.2
.7035	.3556	2118.98	4163.6	2	Nb 63.6, Ti 63.7
.7152	.3439	2120.84	4165.4	½	Ce 65.6, Se 65.5, Sc 65.2

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n.	n-n₀	c/(n-n₀)	λ	I	
2.7255	13.3336	2122.47	4167.1	1	Mg 4167.4
.7558	.3033	2127.31	4171.9	2	Ga Fe 72.1 4172.1, U 71.6, Pr 71.8, Ti 71.9
.7663	.2928	2128.99	4173.6	5	Fe 4173.5
.7772	.2819	2130.74	4175.3	1	W 75.6, Nd 75.6, Os 75.6, Fe 75.6
.7902	.2689	2132.83	4177.4	2	Fe 4177.6, Nd 77.3, Y 77.5, Cu 77.7
.7996	.2595	2134.34	4178.9	4	Fe 4178.9, Ga 79.0
.8157	.2434	2136.93	4181.5	1	Fe 81.8
.8314	.2277	2139.47	4184.1	½ W	Gd 84.3, Lu 84.3, Sm 83.8
.8495	.2096	2142.40	4187.0	2W	Fe 4187.1, La 87.3
.8664	.1927	2145.15	4189.8	½	V Cu 90.0 4189.9, Pr 89.5, S 89.7, Os 89.9, O 89.9
.8757	.1834	2146.66	4191.3	1W	V Pr 91.6, Dy 91.6 4191.6, Fe 4191.5, Nb 90.9, A 91.0
.8869	.1722	2148.48	4193.1	½	X 93.1
.9024	.1567	2151.02	4195.6	1W	Fe 95.3, Ge 95.6
.9192	.1399	2153.77	4198.4	2	Fe 4198.3, Ge 98.1, A 98.3, Ce 98.7
.9410	.1181	2157.35	4202.0	1½	Rb 4201.8, Fe 4202.0, V 02.3
.9577	.1014	2160.10	4204.7	1½	Y 04.7, Cu 05.0
.9691	.0900	2161.98	4206.6	1	Fe 4206.7, Dy 06.5, Sm 06.6, Pr 06.9
.9810	.0781	2163.94	4208.5	1	X 08.5
.9890	.0701	2165.27	4209.9	½	V 4209.9, Cl 09.7
.9986	.0605	2166.86	4211.5	½	Nb 11.7, Dy 11.7, Nd 11.3
3.0101	.0490	2168.77	4213.4	¾	X 13.6, Dy 13.2
.0220	.0371	2170.75	4215.4	3	Dy 15.2, Sb 15.4 + Rh 15.6, X 15.6 Rb 4215.6, Sb 4215.5, Ge 15.1
.0336	.0255	2172.68	4217.3	1	Fe 17.6 I 17.1, Gd 17.2, Ru 17.3, La 17.6
.0463	.0128	2174.80	4219.4	1W	Sb 19.1, Fe 19.4
.0634	12.9957	2177.67	4222.3	2	Fe P 22.2 4222.2, A 22.6, Ce 22.6
.0775	.9816	2180.03	4224.6	2W	Fe 24.2,
.0904	.9687	2182.20	4226.8	5	Ca 26.7, Ge 26.7
.1062	.9529	2184.86	4229.5	½	Sm 29.7, Nb 29.5, Nb 29.2
.1272	.9319	2188.41	4233.0	3	Fe V 32.9 4232.7, Fe 4233.2, O 33.3

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
3.1418	12.9173	2190.88	4235.5	3	Y^+ V35.8 4235.7, Mn 4235.3, I 35.5
.1568	.9023	2193.43	4238.0	2	Y 38.2,
.1659	.8932	2194.94	4239.5	2	Mn 4239.7, Zr 39.3
.1805	.8786	2197.47	4242.1	2	Er 42.2, Tm 42.2,
.2067	.8524	2201.94	4246.5	4	Se 4246.8, Ru 46.7, P 46.7, F 46.3
.2156	.8435	2203.47	4248.1	½	Se 48.0
.2270	.8321	2205.43	4250.0	2	Fe 4250.1, La 50.0
.2385	.8206	2207.41	4252.0	1	Gd 51.8, C 52.0
.2492	.8099	2209.25	4253.9	1	S 53.6, Gd 53.6
.2598	.7993	2211.08	4255.7	½	Mn 55.5
.2719	.7872	2213.17	4257.8	1	Mn 4257.7, Zr 58.0
.2849	.7742	2215.42	4260.0	1½	Bi 59.7
.2936	.7655	2216.93	4261.5	½	Other.
.3067	.7524	2219.21	4263.8	½ w	La 63.6, I 63.8, Nb 64.0
.3234	.7357	2222.12	4266.7	½	C^+ 4267.0, Tb 66.4, A 66.5
.3350	.7241	2224.15	4268.8	1	V 68.6
.3483	.7108	2226.48	4271.1	4	Fe 4271.2
.3589	.7002	2228.33	4272.9	1	Y 72.6
.3696	.6895	2230.21	4274.8	2	Ti 4274.6, Ce 4274.8, Nd 75.1
.3861	.6730	2233.12	4277.7	1	A 77.5
.3983	.6608	2235.27	4279.9	½ w	Sm 79.7, Pr 80.1, Se 80.2, La 80.3
.4112	.6479	2237.55	4282.2	1	Se 82.2, Pr 82.4, Nd 82.5 Fe 4282.4, Th 82.1, I 82.0, Zr 82.2
.4203	.6388	2239.16	4283.8	½ w	Ca 4283.0, Mn 4284.1, V 84.0
.4418	.6173	2242.97	4287.6	1	Ti 4287.4, Ti^+ 4287.9
.4529	.6062	2244.95	4289.6	5	Ca 4289.4, Ca 4289.7
.4779	.5812	2249.41	4294.0	3	Pr 93.9, O 94.0 Ti^+ 4294.1, Fe 4294.1, Mo 93.9
.4884	.5707	2251.29	4295.9	2	V 96.1 Ti 95.8, Pm 95.9, La 96.1, Gd 96.1
.5079	.5512	2254.79	4299.4	6	Os 99.4, Ti 99.4, Nb 99.6 Ti 4299.6, Fe 4299.3, F 99.1
.5235	.5356	2257.59	4302.2	7	Os 02.1, Bi 02.1, W 02.1 Ca 4302.5, Ti 4301.9, Y 4302.3

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	n	n-n₀	a/(n-n₀)	λ	I	
5	3.5399	12.5192	2260.55	4305.2	2	Sr⁺ 4305.5, Fe 05.5
	.5528	.5063	2262.88	4307.5	2	Ca 07.4 4307.7, V 4307.2, Ru 07.6
	.5614	.4977	2264.44	4309.0	2	Dy 08.7, Th 08.7, Sm 09.0, Se 09.0
	.5800	.4791	2267.81	4312.4	1	Mn 4312.6
46.3	.5899	.4692	2269.61	4314.2	4	Se⁺ 4314.1, Nd 14.5
	.6024	.4567	2271.89	4316.5	1	Se 16.4
	.6118	.4473	2273.61	4318.2	½	Atmos.
	.6242	.4349	2275.87	4320.5	2	Sc⁺ 4320.7, Se 20.4
	.6490	.4101	2280.42	4325.0	4	Sc⁺ 4325.0, Nd 25.3 Ti 25.1, Dy 25.1
	.6768	.3823	2285.54	4330.1	2	V 4330.0
	.6937	.3654	2288.67	4333.3	1½	A 33.5
	.7156	.3435	2292.73	4337.3	5	Cr 4337.6 Th 37.6, Fe 4337.1, Mn 37.1
	.7325	———	———	———	10	Hγ 4340.5
	.7510	.3081	2299.32	4343.9	2	Cl 43.7
	.7667	.2924	2302.26	4346.9	1w	Fe 47.2, Sm 46.9
	.7910	.2681	2306.82	4351.4	5	Nd 51.3, O 51.4, Mn 51.6
	.8061	.2530	2309.66	4354.3	2	Sc⁺ 54.6, Ru 54.1, La 54.4, S 54.6
	.8298	.2293	2314.14	4358.7	3w	Hg 58.3, Y⁺ 58.7, ~~Nd 58.4~~ Dy 58.5
1	.8435	.2156	2316.73	4361.3	1w	Ru 61.2, S 61.5, Sr 61.7, Sm 60.7
	.8599	.1992	2319.85	4364.5	1w	Ce 64.6
3	.8751	.1840	2322.74	4367.3	2	Th 67.3, Fe 67.6
2.2	.8843	.1748	2324.50	4369.1	2	Fe⁺ 69.4, Mo 69.1, Y 69.2, O 69.3
0	.8929	.1662	2326.14	4370.7	1½	Mg 70.8, Zr 80.0
	.9125	.1466	2329.89	4374.5	6	Sc⁺ 74.5, Dy 74.2, Se 74.3, Rh 74.8
	.9378	.1213	2334.76	4379.4	1	V 79.2, Ag 79.3, A 79.6
3.9	.9630	.0961	2339.62	4384.2	8 w	Mg 84.6 V 84.7, Cr 84.7, V 84.7, Fe 83.6, Se 84.8
6.1	.9747	.0844	2341.89	4386.5	1 w	Ti⁺ 86.8, Rh 86.9, Ce 86.8, Cr 86.4
1	.9971	.0620	2346.23	4390.8	2	Mg 90.6 Mn 90.7, Th 91.1, Fe 91.0, Sm 91.0
2.3	4.0175	.0416	2350.21	4394.8	7	Ti⁺ 95.0, Dy 95.0, Os 94.9

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1926phae.proj..794C

n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
H.0319	12.0272	2353.02	H397.6	1	Ru 97.8, Ir 99.5, Ti 99.8, Cr 99.9
.0437	.0154	2355.33	H399.9	6	Ti+ 99.8, AH400.1
.0668	11.9923	2359.87	H404.5	1/2	Fe 04.8, Ag 04.4, Ti 04.3
.0862	.9729	2363.69	H408.3	1/2 w	V 08.5, 08.2, Fe 08.9, Pr 08.8
.0994	.9597	2366.30	H410.9	1/2 w	Nd 11.1, Ce 10.7
.1198	.9393	2370.34	H414.9	2	Pr 14.6, Sm 14.9, Fe 15.1, O 14.9, Y 14.8
.1335	.9256	2373.07	H417.7	7	Ti+ 17.7, Sm 17.6
.1557	.9034	2377.50	H422.1	1w	Y+ 22.6, Sd 22.5, V 21.6, Cr 22.6, Fe 22.6
.1703	.8888	2380.42	H425.0	1/4	Ba 25.0
.1808	.8783	2382.52	H427.1	1	Ti 27.1, Fe 27.3, Ag 27.2
.1947	.8644	2385.31	H429.9	1w	Ti+ 29.5, V 29.8, La 29.9, Ag 30.2
.2194	.8397	2390.29	H434.9	2	Ca 35.0, Sm 35.1, Mo 35.0
.2531	.8060	2397.11	H441.7	1	V 41.7, Ba 41.8
.2626	.7965	2399.04	H443.6	8	Ti+ 43.8, O 43.3
.2784	.7807	2402.26	H446.9	1w	Fe I 46.8, F 46.6, 47.0, Nd 47.2, Mn 47.2
.2954	.7637	2405.73	H450.3	2w	Ti+ 50.5, Ce 50.7, Pr 49.9
.3159	.7432	2409.93	H454.5	1w	Ca Fe 54.4, 54.8, Sc 54.9, Zr 54.8, Sm 54.7
.3359	.7232	2414.04	H458.6	1/2 w	Fe 59.1, Ag 58.6, Sm 58.5, Mn 58.3
.3482	.7109	2416.58	H461.2	2	Zr 61.2, Ag 61.1, Mn 61.1
.3623	.6968	2419.49	H464.1	1	S 64.8, I 64.4
.3728	.6863	2421.66	H466.3	1/4	Fe 66.6, Sd 66.5, Ag 66.4
.3834	.6757	2423.86	H468.5	3	Ti+ 68.5, Pr 68.7, Mo 68.3
.3938	.6653	2426.02	H470.6	2	Zr 70.6, Ni 70.5
.4029	.6562	2427.92	H472.5	1	U 72.3, Mn 72.8, Ba 72.6, Sm 72.4
.4181	.6410	2431.09	H475.7	1	Ca 75.4, Fe 76.0, Ag 75.5
.4338	.6253	2434.37	H479.0	1/2	Sd 78.8
.4451	.6140	2436.74	H481.3	3	Mg+ Sd 81.1, 81.3, 81.1, Ti 81.3, Tm 81.3
.4562	.6029	2439.07	H483.7	1/2	S 83.5
.4653	.5938	2440.98	H485.6	1/4	atmos.

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n	n-n₀	$\frac{c}{n-n_0}$	λ	I	
4.4798	11.5793	2444.04	4488.6	3	V 88.9, Ti 88.3, Cu 88.3
.4912	.5679	2446.45	4491.1	2	Fe+ 91.4, Mn 91.3
.5050	.5541	2449.37	4494.0	2	
.5181	.5410	2452.15	4496.8	2	Cr 96.9, Zn 97.0
.5388	.5203	2456.56	4501.2	4	Ti+ 01.3, V 01.0
.5713	.4878	2463.51	4508.1	2	Fe+ 08.3
.6048	.4543	2470.71	4515.3	2	Fe+ 15.3, U 15.3, Mg 15.2, Sm 15.1
.6166	.4425	2473.26	4517.9	1½	Ti 18.0, Ru 17.8, Pr 17.6
.6271	.4320	2475.53	4520.1	2	Fe+ 20.2
.6374	.4217	2477.76	4522.4	2	Fe+ La 22.4, A 22.2, 22.6, Cr 22.6, Eu 22.6, Tm 22.6
.6482	.4109	2480.11	4524.7	1	Be+ X 24.7, 25.0, S 25.0, Ba 25.0, Sm 24.7
.6568	.4023	2481.98	4526.6	½	Ca 26.9, Ca 26.7, Cr 26.5, Cl 26.3
.6674	.3917	2484.29	4528.9	2	Fe 28.6, Rh 28.7,
.6784	.3807	2486.69	4531.3	½	Mn 31.6, Sm 31.4, Fe 31.2, Co 31.0
.6904	.3687	2489.32	4533.9	5	Ti+ 34.0, Fe+ 34.2, Pr 34.2, Co 34.0
.7142	.3449	2494.54	4539.1	½ w	Ba 38.8
.7246	.3345	2496.83	4541.4	2w	Fe+ 41.5, Nd 41.3, Pd 41.2, Pt 41.1
.7395	.3196	2500.11	4544.7	2w	Ti 44.7, Cr 44.6
.7620	.2971	2505.09	4549.7	3	Fe+ Co 49.6, Ti 49.6, V 49.6, 49.5, Au 49.5, La 49.5, S 49.5
.7730	.2861	2507.53	4552.1	½	W 51.9, 52.4, Pt 52.4, Os 52.2, Ta 51.9
.7855	.2736	2510.31	4554.9	4w	Ba+ Pt 54.8, Cr 55.0, Os 55.1, Ti 55.5, 54.0, Fe 54.5, Sm 54.4, Pt 54.6
.8018	.2573	2513.95	4558.6	1	Au 58.9, Cr 58.6, La 58.5
.8256	.2335	2519.28	4563.9	2	Ti+ 63.8, Fe 63.9, Th 63.7
.8330	.2261	2520.94	4565.5	1w	Cr 65.5, Fe 65.7, Co 65.6, Pt 65.2
.8443	.2148	2523.48	4568.1	1w	In 68.1
.8608	.1983	2527.19	4571.8	3	Ti+ 72.0, Fe 72.1, V 71.8, Rh 71.7,
.8792	.1799	2531.35	4576.0	1w	Fe+ 76.3, Mg 76.2, Eu 75.8
.8970	.1621	2535.39	4580.0	1w	V 80.4, Cr 80.1, La 80.1, Ba 79.7
.9122	.1469	2538.85	4583.5	5	Fe+ 83.8

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ν	$\nu - \nu_0$	$\frac{c}{\nu-\nu_0}$	λ	I	
4.9322	11.1269	2543.41	4588.0	1	Cr 88.2, P 87.9, Au 87.7
.9408	.1183	2545.38	4590.0	1	Ti+ 90.0, A 89.9, P 89.8
.9510	.1081	2547.72	4592.3	1w	Fe X92.0 92.7, Ni 92.5, Ru 92.5
.9638	.0953	2550.65	4595.3	½	Th 95.4, Sm 95.1
.9774	.0817	2553.78	4598.4	¼	Fe 98.1
.9874	.0717	2556.09	4600.7	1w	Cr 00.7, Cl 4601.0, Ni 00.4
.9966	.0625	2558.22	4602.8	½	Li 03.0, Fe Zn 02.6 02.9, X 03.0, Th 02.9
5.0080	.0511	2560.86	4605.5	½w	V 06.2, Mn 05.4
.0207	.0384	2563.80	4608.4	½w	Fe 07.7, K 08.3
.0347	.0244	2567.06	4611.7	½	Th 11.8
.0423	.0168	2568.83	4613.4	½	Cr W 13.3 13.4, Fe 13.2, Co 13.4, La 13.4
.0550	.0041	2571.79	4616.4	1w	Cr 16.1, In 16.4, Nb 16.1
.0691	10.9900	2575.09	4619.7	2w	V Ta 19.5, Th 19.5, Ce 19.4 19.8, Rh 19.9, La 19.9, Ba 20.0
.0910	.9681	2580.24	4624.8	½w	Fe 25.1, Th 25.1,
.1109	.9482	2584.93	4629.5	3	Ti Zn 29.8 29.3, Fe+ 29.3, Co 29.3
.1306	.9285	2589.58	4634.2	1w	Nd Ba 33.9 34.2, Cr 34.1, Zn 34.0
.1430	.9161	2592.53	4637.1	½w	Fe 37.5,
.1667	.8924	2598.17	4642.8	½w	K 42.2, Ni+ 43.1, Rh 43.2
.1821	.8770	2601.85	4646.5	1w	V U 46.6 46.4, Cr 46.2, Sm 46.7
.1928	.8663	2604.41	4649.0	1w	O 49.1, Nb 49.0, Ni 48.7
.2051	.8540	2607.36	4652.0	½w	Cr 52.2, Ba 52.0, X 52.0
.2155	.8436	2609.86	4654.5	1w	Fe Co 54.3 54.5, 54.6, Ni+ 54.6, Ru 54.3
.2256	.8335	2612.29	4656.9	2w	Ti 56.5, Fe+ 57.0, Sm 56.7
.2522	.8069	2618.72	4663.3	1w	Co 63.4, Al 63.4,
.2678	.7913	2622.51	4667.1	2	Fe+ U 66.9 66.8, Ni+ 67.3, Nb 67.3
.2810	.7781	2625.72	4670.3	3	V 70.5
.3161	.7430	2634.30	4678.9	½w	Co P 78.9, Ba 79.1 78.2, Nb 78.5, Ba 78.7, Fe 78.9
.3306	.7285	2637.86	4682.5	½w	Ti 81.9, Ru 82.2, V 82.3, Co 82.4
.3674	.6917	2646.94	4691.5	½w	Ti 91.3, Fe 91.4, Ba 91.6

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
5.3976	10.6615	2654.44	4699.0	1 W	Ti 98.8, Ra 99.3, O 99.2, Dy 98.7
.4147	.6444	2658.70	4703.3	1W	Mg 03.0, La 03.3
.4363	.6228	2664.11	4708.7	2W	Ne 08.9, Ti+ 08.7
.4608	.5983	2670.27	4714.9	½W	Ne 15.3, Ti 15.3, Ni 14.4
.4814	.5777	2675.47	4720.1	½	La 19.9, Sm 19.8, Br 19.8
.4949	.5642	2678.89	4723.5	½W	Ti 23.2, Rh 23.8,
.5103	.5488	2682.80	4727.4	½W	Mn 27.5, P 27.5
.5265	.5326	2686.92	4731.5	1½	Fe+ 31.5, Dy 31.8, Er 31.6, U 31.6, Mo 31.5
.5352	.5239	2689.14	4733.7	¼	Se 34.1, Tm 33.3 Fe 33.6, Br 33.7, Rh 33.9
.5482	.5109	2692.47	4737.1	½W	Se 37.7, Fe 36.8, Cr 37.0, Pr 36.7 Cr 37.4, Co 37.2
.5628	.4963	2696.21	4740.8	½W	Se 41.0, Th 40.4, Se 41.0,
.5691	.4900	2697.83	4742.4	¼	Sc 42.6, Br 42.7, Se 42.3
.5755	.4836	2699.48	4744.1	¼	Se 43.8, Br 43.8
.5838	.4753	2701.62	4746.2	¼	Atmos.
.5933	.4658	2704.07	4748.7	¼	La 48.7
.6161	.4430	2709.98	4754.6	½W	Mn 54.0, Co 54.4
.6358	.4233	2715.10	4759.7	¼	Dy 60.0, Er 59.7
.6512	.4079	2719.12	4763.7	4W	Se 63.6,
.6823	.3768	2727.26	4771.9	½	Fe 71.7
.6999	.3592	2731.90	4776.5	½W	V 76.4, Br 76.4
.7136	3455	2735.52	4780.1	1½	Br 80.3, Co 80.0
.7265	.3326	2738.93	4783.5	½	Mn 83.4, Pr 83.4
.7392	.3199	2742.30	4786.9	1	Y+ Mi 86.6 86.6, Mo 87.1, Se 86.8, Mg 86.6
.7498	.3093	2745.12	4789.7	1	Fe 89.7, Nd 89.4, Cr 89.4
.7613	.2978	2748.19	4792.8	1	Au 92.6, Ti 92.5, Co 92.9
.7859	.2732	2754.77	4799.4	1W	Cd 99.9, Ti 99.8, V 99.8, Mo 99.5
.8092	.2499	2761.03	4805.6	2	Ti 05.4, Zr 05.9
.8193	.2398	2763.75	4808.4	¼	I 08.2, Th 08.1
.8357	.2234	2768.19	4812.8	½W	Ti 12.3, Dy 12.7, Ta 12.7, Co 13.5

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n	n-n₀	$\frac{c}{n-n_0}$	λ	I	
5.8786	10.1805	2779.85	4824.5	3	Zr 24.3
.8956	.1635	2784.50	4829.1	¼ w	Cr 29.4, Mn 29.3, Ni 29.0
.9093	.1498	2788.26	4832.9	½ w	V 32.4, Th 32.8, Mn 33.4
.9223	.1368	2791.84	4836.4	½ w	atmos.
.9354	.1237	2795.45	4840.1	½	Th 40.4, Co 40.3, Y 39.9
.9510	.1081	2799.76	4844.4	¼	Y 44.3, Sm 44.2
.9673	.0918	2804.28	4848.9	4	Ba 48.8, Cr 48.9
.9915	.0676	2811.03	4855.6	5	Fe 55.7, Ni 55.4
6.0119	———	———	———	8	Hβ 4861.3
.0245	.0346	2820.27	4864.9	3 w	V 64.7
.0363	.0228	2823.59	4868.2	½	Ti 68.3, Co 67.9, Mn 68.0
.0496	.0095	2827.34	4871.9	2	Fe 72.2, Cr 72.1
.0585	.0006	2829.86	4874.5	1	Ag 74.2
.0708	9.9883	2833.34	4877.9	1 w	Ca 78.1, Fe 78.2
.0938	.9653	2839.88	4884.5	2 w	Y⁺ 83.7, 84.0 Sm, Ti 85.1, Zr 85.6
.1189	.9402	2847.05	4891.7	2	Fe 91.5, Cr 92.0
.1313	.9278	2850.61	4895.2	1 w	atmos. V 00.6, Cr 00.8
.1492	.9099	2855.76	4900.4	2 w	Y⁺ 00.1, Ti 99.9, Zr 00.0, Cr 00.1
.1603	.8988	2858.97	4903.6	1½ w	Fe 03.3
.1718	.8873	2862.29	4906.9	½	Cr 07.2
.1875	.8716	2866.84	4911.4	2	Ti⁺ 11.2, Zr 11.7
.1981	.8610	2869.92	4914.5	½	atmos.
.2190	.8401	2876.02	4920.6	2 w	Ti 19.9, Fe 20.5, Cr 20.9
.2324	.8267	2879.84	4924.5	2	O 24.6
.2662	.7929	2889.88	4934.5	2 w	Ba⁺ 34.1
.2824	.7767	2894.67	4939.3	2	Fe 39.6
.3076	.7515	2902.15	4946.8	1 w	Fe 46.4
.3452	.7139	2913.38	4958.0	2 w	Ti 58.3, Fe 57.6
.4278	.6313	2938.37	4983.0	4 w	Na 82.9,

out of focus

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F8 β (cf. N.C. 300)

Dec. No. 20. γ Cygni - plate C 18578, spectrum ④.

1. λ_1 = 4101.74
2. λ_2 = 4340.47
3. λ_3 = 4861.33
4. 2-1 = 238.73
5. 3-2 = 520.86
6. n_1 = 2.9014
7. n_2 = 3.9765
8. n_3 = 5.6962
9. 7-6 = 1.0751
10. 8-7 = 1.7197

11. 4/9 = 222.054
12. 5/10 = 302.878
13. 11/12 = .733147
14. 1-13 = .266853
15. 6×13 = 2.12715
16. 8-15 = 3.56905
17. 16/14 = 13.3746 = n_0
18. 17-6 = 10.4732
19. 17-7 = 9.3981
20. 17-8 = 7.6784
21. λ_1 = 4101.74
22. 11×19 = 2086.89
23. 21-22 = 2014.85 = λ_0
24. 22×18 = 21,856.42 = C
25. 24/20 = 2846.48
26. 23+25 = 4861.33 = λ_3 (check)

n_1	n_2	n_3
2.9018	3.9762	5.6967
12	66	60
11	70	67
15	59	58
17	67	59
14	66	62
12	62	59
17	62	62
13	69	64
12	67	63
2.9014	3.9765	5.6962

$$\lambda = \lambda_0 + \frac{C}{n - n_0}$$

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	Identification.
1.2009	12.1737	1795.38	3810.2	1	
.2354	.1392	1800.48	3815.3	1	Fe 15.8 ?
.2476	.1270	1802.29	3817.1	1	
.2837	.0909	1807.68	3822.5	1	V 3822.0 ?
.3117	.0629	1811.87	3826.7	1	
.3628	.0118	1819.58	3834.4	1	Mn 34.4, Fe 34.2
.3842	11.9904	1822.83	3837.7	1	
.4060	.9686	1826.15	3841.0	1	V 40.8 Mn 3841.1, Fe 41.1
.4193	.9553	1828.18	3843.0	1	
.4309	.9437	1829.95	3844.8	1	
.4484	.9262	1832.64	3847.5	1	
.4746	.9000	1836.67	3851.5	2	
.5161	.8585	1843.10	3858.0	2	Fe 56.4?
.5320	.8426	1845.58	3860.4	2	Fe 59.91?
.5396	.8350	1846.76	3861.6	2	
.5621	.8125	1850.28	3865.1	1	V 64.9
.5772	.7974	1852.65	3867.5	1	
.5875	.7871	1854.27	3869.1	1	
.6008	.7738	1856.36	3871.2	1	
.6193	.7553	1859.28	3874.1	4	Co 73.9
.6407	.7339	1862.67	3877.5	1	
.6551	.7195	1864.96	3879.8	3	
.6700	.7046	1867.34	3882.2	1	Co 81.9
.6800	.6946	1868.93	3883.8	2	Cr 83.3 ?
.6869	.6877	1870.04	3884.9	1	Cr 85.2
.6995	.6751	1872.05	3886.9	3	Cr 86.8, Fe 87.1
.7202	.6544	1875.38	3890.2	3	
.7338	.6408	1877.57	3892.4	2	
.7477	.6269	1879.82	3894.7	1	Co 95.0

band spectra — weak background

New reduction 3800 - 3950 on page 44

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ν	$\nu - \nu_0$	$\frac{c}{\nu - \nu_0}$	λ	I	
1.7610	11.6136	1881.97	3896.8	2	
.7771	.5975	1884.58	3899.4	2	Fe 99.7
.7875	.5871	1886.27	3901.1	3	
.8096	.5650	1889.88	3904.7	3	Ti 04.8
.8240	.5506	1892.23	3907.1	3	
.8403	.5343	1894.91	3909.8	1	Ba 09.9
.8486	.5260	1896.27	3911.1	1	
.8571	.5175	1897.67	3912.5	1	
.8714	.5032	1900.03	3914.9	3	
.8868	.4878	1902.58	3917.4	3	Fe 17.2
.9012	.4734	1904.96	3919.8	1	Cr 19.2 ?
.9219	.4627	1906.74	3921.6	1	La$^+$ 21.5
.9275	.4471	1909.34	3924.2	1	Ti 24.5
.9421	.4325	1911.78	3926.6	2	
.9594	.4152	1914.68	3929.5	2	
				∞	Ca$^+$ 3933.7
2.0172	.3574	1924.42	3939.3	1	
.0256	.3490	1925.85	3940.7	1	Fe 40.9
.0361	.3385	1927.63	3942.5	2	
.0504	.3242	1930.06	3944.9	2	
.0590	.3156	1931.53	3946.4	1	
.0701	.3045	1933.43	3948.3	1	
.0765	.2981	1934.52	3949.4	1	
.0822	.2924	1935.50	3950.4	1	
.0870	.2876	1936.32	3951.2	1	
.0967	.2779	1937.99	3952.8	1	
.1037	.2709	1939.19	3954.0	1	
.1228	.2518	1942.48	3957.3	3	Ca 57.1
.1329	.2417	1944.23	3959.1	1	

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
2.1497	11.2249	1947.14	3962.0	2	
.1654	.2092	1949.86	3964.7	1	
.1720	.2026	1951.01	3965.9	1	Fe 66.1
				8	Ca^+ 3968.5
.2095	.1651	1957.57	3972.4	2	Ca 3972.6
.2209	.1537	1959.57	3974.4	2	
.2380	.1366	1962.58	3977.4	1	
.2468	.1278	1964.13	3979.0	1	Co 78.7
.2507	.1239	1964.82	3979.7	1	
.2680	.1066	1967.88	3982.7	5	
.2791	.0955	1969.85	3984.7	2	
.2947	.0799	1972.62	3987.5	1	
.3002	.0744	1973.60	3988.5	1	La^+ 88.5
.3069	.0677	1974.79	3989.6	1	Ti 89.8
.3129	.0617	1975.86	3990.7	1	
.3192	.0554	1976.99	3991.8	1	
.3244	.0502	1977.92	3992.8	1	
.3357	.0389	1979.95	3994.8	1	
.3426	.0320	1981.18	3996.0	1	
.3531	.0215	1983.07	3997.9	2	
.3618	.0128	1984.64	3999.5	2	
.3702	.0044	1986.15	4001.0	1	
.3785	10.9961	1987.65	4002.5	1	
.3843	.9903	1988.71	4003.6	1	
.3975	.9771	1991.09	4005.9	7	
.4060	.9686	1992.64	4007.5	1	
.4133	.9613	1993.96	4008.8	1	Ti 08.9
.4195	.9551	1995.09	4009.9	1	
.4359	.9387	1998.08	4012.9	3	Ti^+ 12.4?

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n	n-n₀	$\frac{a}{n-n_0}$	λ	I	
2.4473	10.9273	2000.17	4015.0	2	
.4521	.9225	2001.05	4015.9	1	
.4632	.9114	2003.08	4017.9	1+	Mn 18.1
.4676	.9070	2003.89	4018.7	1+	
.4792	.8954	2006.02	4020.9	1	Co 20.9
.4858	.8888	2007.24	4022.1	2	
.4960	.8786	2009.12	4024.0	2	Sc 23.7
.5036	.8710	2010.53	4025.4	5	Ti^+ 25.1
.5217	.8529	2013.88	4028.7	2	Ti^+ 28.4
.5330	.8416	2015.98	4030.8	3	Mn 30.8
.5395	.8351	2017.19	4032.0	1	La^+ 31.7
.5465	.8281	2018.49	4033.3	2	Sc 33.0, Mn 33.1, Sb 33.6
.5530	.8216	2019.70	4034.6	1	Mn 34.5
.5602	.8144	2021.05	4035.9	1	Mn 35.7
.5667	.8079	2022.26	4037.1	1	
.5701	.8045	2022.90	4037.8	1-	
.5896	.7850	2026.56	4041.4	3	Mn 41.4
.5985	.7761	2028.23	4043.1	1-	
.6049	.7697	2029.44	4044.3	1-	
.6150	.7596	2031.34	4046.2	6	Fe 45.8?
.6301	.7445	2034.20	4049.1	1	Mn 48.8
.6403	.7343	2036.13	4051.0	1	
.6487	.7259	2037.72	4052.6	1	
.6563	.7183	2039.17	4054.0	2	Ti^+ 53.8
.6624	.7122	2040.33	4055.2	1-	Ti 55.0, Mn 55.6?
.6690	.7056	2041.59	4056.4	1-	
.6763	.6983	2042.98	4057.8	1-	Pt 57.8, Mn 58.0
.6822	.6924	2044.11	4059.0	1-	Mn 58.9
.6872	.6874	2045.06	4059.9	1-	

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n	$n-n_0$	$\frac{a}{n-n_0}$	λ	I	
2.6952	10.6794	2046.60	4061.5	1–	Mn 61.7
2.7075	.6671	2048.96	4063.8	5	Fe 63.6
.7173	.6573	2050.84	4065.7	1	
.7271	.6475	2052.73	4067.6	4	
.7346	.6400	2054.18	4069.0	1	
.7428	.6318	2055.76	4070.6	1	
.7494	.6252	2057.04	4071.9	3	Fe 71.8
.7582	.6164	2058.74	4073.6	2	
.7660	.6086	2060.25	4075.1	1	
.7702	.6044	2061.07	4075.9	2	Co 76.1
.7761	.5985	2062.22	4077.1	3	
.7809	.5937	2063.15	4078.0	8	Sr^{+} 77.7
.7917	.5829	2065.26	4080.1	1	
.7973	.5773	2066.35	4081.2	1	
.8095	.5651	2068.74	4083.6	2	V 83.7, Mn 83.6
.8180	.5566	2070.40	4085.3	2	
.8279	.5467	2072.35	4087.2	2	
.8370	.5376	2074.14	4089.0	1	Si^{+++} 88.9
.8458	.5288	2075.87	4090.7	1	V 90.6
.8557	.5189	2077.82	4092.7	1	Ca 92.7, V 92.7, Fe 92.5
.8652	.5094	2079.70	4094.6	1–	Ca 94.9
.8758	.4988	2081.80	4096.7	1	
.8854	.4892	2083.71	4098.6	1	Ca 98.6
.8928	.4818	2085.18	4100.0	1-	V - 99.8
.9014	———	———	———	7	H_δ 4101.7
.9087	.4659	2088.35	4103.2	1-	
.9173	.4573	2090.06	4104.9	1-	V 05.2, 04.8
.9242	.4504	2091.44	4106.3	1-	
.9307	.4439	2092.74	4107.6	1	

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n	n-no	$\frac{c}{n-n_0}$	λ	I	
2.9413	10.4333	2094.87	4109.7	2	V 09.8
.9484	.4262	2096.30	4111.2	1	Cr 11.7, 11.5, 10.8
.9579	.4167	2098.21	4113.1	1	
.9666	.4080	2099.96	4114.8	1	
.9770	.3976	2102.06	4116.9	1-	V 16.7
.9854	.3892	2103.76	4118.6	3	
.9911	.3835	2104.92	4119.8	1	
.9972	.3774	2106.16	4121.0	1-	
3.0001	.3745	2106.75	4121.6	1-	Bi 21.9, 21.5
.0063	.3683	2108.00	4122.9	2	
.0101	.3645	2108.78	4123.6	2	V 23.6
.0170	.3576	2110.18	4125.0	1	
.0223	.3523	2111.26	4126.1	1	
.0332	.3414	2113.49	4128.3	3	Y 28.3, V 28.1
.0390	.3356	2114.67	4129.5	1	Cr 29.2
.0462	.3284	2116.15	4131.0	1	Ba^+ 30.7
.0525	.3221	2117.44	4132.3	2	Li 32.3, V 32.0, Fe 32.1
.0576	.3170	2118.49	4133.3	1	
.0656	.3090	2120.13	4135.0	2	
.0764	.2982	2122.35	4137.2	2	
.0821	.2925	2123.53	4138.4	1	
.0896	.2850	2125.08	4139.9	1-	Fe 39.9
.1005	.2741	2127.33	4142.2	1	
.1075	.2671	2128.78	4143.6	4	Fe 43.9
.1201	.2545	2131.40	4146.3	1	
.1256	.2490	2132.54	4147.4	1	Fe 47.7
.1362	.2384	2134.75	4149.6	2	
.1479	.2267	2137.19	4152.0	1	Fe 52.2
.1599	.2147	2139.70	4154.6	3	

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ν	$\nu - \nu_0$	$\frac{\circ}{\text{m.m.}}$	λ	I	
3.1687	10.2059	2141.55	4156.4	3	
.1754	.1992	2142.95	4157.8	1-	
.1804	.1942	2144.01	4158.9	1	
.1921	.1825	2146.47	4161.3	3	
.2031	.1715	2148.79	4163.6	2	
.2125	.1621	2150.78	4165.6	1-	
.2198	.1548	2152.32	4167.2	1	
.2313	.1433	2154.76	4169.6	1-	
.2365	.1381	2155.87	4170.7	1-	
.2426	.1320	2157.17	4172.0	3	Zr 72.1
.2510	.1236	2158.96	4173.8	4	Y 74.1, Fe+ 73.5
.2578	.1168	2160.41	4175.3	1-	
.2624	.1122	2161.39	4176.2	1-	
.2687	.1059	2162.74	4177.6	3	Fe 77.6
.2753	.0993	2164.15	4179.0	5	Fe+ 78.9
.2882	.0864	2166.92	4181.8	2	
.2992	.0754	2169.29	4184.1	3	
.3134	.0612	2172.35	4187.2	3	Fe 87.1
.3318	.0428	2176.33	4191.2	3	Fe 91.5
.3526	.0220	2180.84	4195.7	2	
.3655	.0091	2183.65	4198.5	4	Fe 98.3
.3818	9.9928	2187.22	4202.1	2	Rb 01.8, Fe 02.0
.3947	.9799	2190.04	4204.9	3	
.4032	.9714	2191.91	4206.8	1	Fe 06.7
.4129	.9617	2194.05	4208.9	1	
.4196	.9550	2195.52	4210.4	1	Fe 10.4
.4272	.9474	2197.20	4212.1	1-	
.4340	.9406	2198.70	4213.6	1-	
.4436	.9310	2200.83	4215.7	5	Rb 15.6, Sr+ 15.5

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n	n-no	c/(n-no)	λ	I	
3.4499	9.9247	2202.22	4217.1	1	
.4629	.9117	2205.11	4220.0	1	
.4734	.9012	2207.45	4222.3	2	Fe 22.2
.4835	.8911	2209.71	4224.6	2	
.4945	.8801	2212.17	4227.0	5	Ca 26.7
.5067	.8679	2214.90	4229.8	1-	Fe 29.8
.5136	.8610	2216.45	4231.3	1-	
.5175	.8571	2217.33	4232.2	1-	
.5222	.8524	2218.38	4233.2	4	Fe 33.6?, Fe^+ 33.2
.5340	.8406	2221.05	4235.9	2	Y^+ 35.7, Fe 36.0
.5448	.8298	2223.49	4238.3	2	
.5519	.8227	2225.09	4239.9	1	Fe 39.9
.5627	.8119	2227.54	4242.4	2	
.5744	.8002	2230.20	4245.1	1-	
.5823	.7923	2232.00	4246.9	3	Sc^+ 46.8
.5894	.7852	2233.62	4248.5	1-	
.5969	.7777	2235.33	4250.2	2	Fe 50.1
.6065	.7681	2237.53	4252.4	1-	
.6142	.7604	2239.30	4254.2	1-	Cr 54.3
.6219	.7527	2241.06	4255.9	1-	
.6315	.7431	2243.27	4258.1	2-	Fe 58.4, Fe^+ 58.2
.6408	.7338	2245.41	4260.3	2-	Fe 60.5
.6478	.7268	2247.03	4261.9	1-	
.6560	.7186	2248.93	4263.8	1-	
.6718	.7028	2252.59	4267.4	1-	C^+ 67.3
.6786	.6960	2254.17	4269.0	1-	
.6850	.6856	2256.59	4271.4	3	Fe 71.2
.6969	.6777	2258.43	4273.3	1-	Li 73.3
.7036	.6710	2260.00	4274.9	1	Ti 74.6, Cr 74.8

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n	$n-n_0$	$\frac{s}{n-n_0}$	λ	I	
3.7161	9.6585	2262.92	4277.8	1−	
.7257	.6489	2265.17	4280.0	1	
.7367	.6379	2267.76	4282.6	1	Fe 82.4
.7430	.6316	2269.24	4284.1	1−	
.7509	.6237	2271.10	4286.0	1−	Ti 86.0
.7580	.6166	2272.78	4287.6	1	Ti 87.4, Ti+ 87.9
.7679	.6067	2275.12	4290.0	4	Ti+ 90.2, Cr 89.7
.7857	.5889	2279.35	4294.2	2	Ti+ 94.1, Fe 94.1
.7944	.5802	2281.42	4296.3	2	Fe+ 96.6
.8081	.5665	2284.68	4299.5	5	Ti 99.6, Fe 99.3
.8206	.5540	2287.67	4302.5	4	Ca 02.5
.8331	.5415	2290.67	4305.5	2	Sr+ 05.5, Sc+ 05.7
.8425	.5321	2292.93	4307.8	1	Ca 07.7, Ti+ 07.9, Fe 07.9
.8487	.5259	2294.42	4309.3	2	Y+ 09.6
.8632	.5114	2297.92	4312.8	1	Ti+ 12.9
.8704	.5042	2299.66	4314.5	5	Sc+ 14.1?, Ti 14.8
.8787	.4959	2301.67	4316.5	1	
.8858	.4888	2303.39	4318.2	1	
.8957	.4789	2305.80	4320.7	2	Sc+ 20.7, Ti+ 21.0
.9018	.4728	2307.28	4322.1	1−	
.9155	.4591	2310.62	4325.5	4	Fe 25.8
.9359	.4387	2315.62	4330.5	2	Ti+ 30.7
.9488	.4258	2318.79	4333.6	1	
.9656	.4090	2322.93	4337.8	6	Ti+ 37.9, Cr 37.6
.9765	——	——	——	10	Hγ 4340.5
.9914	.3832	2329.31	4344.2	2	Ti+ 44.3, Cr 44.5
4.0041	.3705	2332.47	4347.3	1	Fe 47.2
.0206	.3540	2336.59	4351.4	4	Cr 51.1
.0340	.3406	2339.94	4354.8	1+	Ca 55.1, Sc+ 54.6

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
4.04442	9.3304	2342.50	4357.4	1-	
.0508	.3238	2344.15	4359.0	2	Y^+ 58.7
.0649	.3097	2347.71	4362.6	1-	
.0738	.3008	2349.95	4364.8	1-	
.0846	.2900	2352.68	4367.5	2	Ti^+ 67.7
.0948	.2798	2355.27	4370.1	2	
.1125	.2621	2359.77	4374.6	5	Sc^+ 74.5
.1325	.2421	2364.88	4379.7	1	
.1433	.2313	2367.64	4382.5	1	
.1488	.2258	2369.05	4383.9	3	Fe 83.6
.1525	.2221	2370.00	4384.9	4	Mg^+ 84.6, Sc^+ 84.8, V 84.7, G 85.0
.1633	.2113	2372.78	4387.6	1	
.1751	.1995	2375.83	4390.7	1+	Mg^+ 90.6
.1906	.1840	2379.84	4394.7	4	Ti^+ 95.0
.2036	.1710	2383.21	4398.1	1	Y^+ 98.0
.2116	.1630	2385.29	4400.1	4	Sc^+ 00.4, Ti^+ 99.8
.2285	.1461	2389.70	4404.6	1+	Fe 04.8
.2430	.1316	2393.49	4408.3	2	V 08.5, 08.2, Fe 08.4
.2534	.1212	2396.22	4411.1	1	
.2685	.1061	2400.19	4415.0	2	Fe 15.1
.2782	.0964	2402.75	4417.6	2	Ti^+ 17.7
.2957	.0789	2407.39	4422.2	1+	
.3068	.0678	2410.33	4425.2	1-	Ca 25.4
.3150	.0596	2412.51	4427.4	1-	Ti 27.1, Fe 27.3
.3273	.0473	2415.79	4430.6	1	Fe 30.6
.3366	.0380	2418.28	4433.1	1-	
.3435	.0311	2420.13	4435.0	1	Ca 35.0
.3702	.0044	2427.30	4442.2	1	Fe 42.4
.3754	8.9992	2428.71	4443.6	5	Ti^+ 43.8

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n	n-no	$\frac{c}{n \cdot n_o}$	λ	I	
4.3889	8.9857	2432.36	4447.2	1-	
.4004	.9742	2435.47	4450.3	1	Ti+50.5
.4094	.9652	2437.92	4452.8	1-	
.4186	.9560	2440.42	4455.3	1	Ti 55.3
.4300	.9446	2443.53	4458.4	1-	
.4421	.9325	2446.84	4461.7	1	Fe 61.7
.4525	.9221	2449.69	4464.5	1-	
.4610	.9136	2452.03	4466.9	1-	
.4678	.9068	2453.90	4468.8	1	Ti+68.5
.4768	.8978	2456.38	4471.2	1-	Ti 71.2
85.0 .4831	.8915	2458.12	4473.0	1-	Fe+72.9
.4937	.8809	2461.06	4475.9	1-	
.5017	.8729	2463.28	4478.1	1-	
.5129	.8617	2466.39	4481.2	1+	Mg+81.3, 81.1, Ti 81.3
.5231	.8515	2469.23	4484.1	1-	
.5399	.8347	2473.93	4488.8	2	Ti 89.1
.5477	.8269	2476.11	4491.0	1	
.5590	.8156	2479.29	4494.1	1	
.5689	.8057	2482.08	4496.9	1-	Cr 96.9
.5848	.7898	2486.57	4501.4	1+	Ti+01.3
.6085	.7661	2493.29	4508.1	1	Fe+08.3
.6223	.7523	2497.22	4512.1	1-	
.6294	.7452	2499.25	4514.1	1-	
.6331	.7415	2500.31	4515.2	1	~~Ti 50~~ Fe+15.3
.6437	.7309	2503.34	4518.2	1-	Ti 18.0
.6520	.7226	2505.72	4520.6	1-	
.6601	.7145	2508.05	4522.9	1	Ti 22.8, Fe+22.6
.6675	.7071	2510.18	4525.0	1-	Ba+25.0
.6759	.6987	2512.61	4527.5	1-	Ti 27.5, 27.3

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n	n-n0	$\frac{9}{n-n_0}$	λ	I	
4.6811	8.6935	2514.11	4529.0	1	
.6891	.6855	2516.43	4531.3	1-	Fe 31.2
.6990	.6756	2519.30	4534.2	2	Ti+ 34.0, Fe+ 34.2
.7050	.6696	2521.04	4535.9	1	Ti 36.0, 35.9, 35.6, Zr 35.8
.7184	.6562	2524.94	4539.8	1-	Zr 40.0
.7235	.6511	2526.43	4541.3	1	Fe+ 41.5
.7359	.6387	2530.06	4544.9	1	Ti 44.7
.7521	.6225	2534.81	4549.7	2	Ti+ 49.6, Fe+ 49.5
.7610	.6136	2537.43	4552.3	1-	Ti 52.6
.7706	.6040	2540.26	4555.1	3	Ca 55.3
.7838	.5908	2544.17	4559.0	1	
.7904	.5842	2546.12	4561.0	1-	
.7996	.5750	2548.85	4563.7	2	Ti+ 63.8
.8069	.5677	2551.02	4565.9	1	
.8163	.5583	2553.83	4568.7	1-	
.8273	.5473	2557.11	4572.0	1+	Ti+ 72.0
.8367	.5379	2559.93	4574.8	1-	
.8453	.5293	2562.51	4577.4	1	V 77.2
.8537	.5209	2565.04	4579.9	1	Ca 80.1
.8659	.5087	2568.71	4583.6	3	Fe+ 83.8
.8813	.4933	2573.37	4588.2	1-	
.8880	.4866	2575.40	4590.3	1-	Ti+ 90.0
.8956	.4790	2577.71	4592.6	1	Fe 92.7
.9033	.4713	2580.05	4594.9	1-	
.9151	.4595	2583.65	4598.5	1-	
.9232	.4514	2586.13	4601.0	1	Ca 00.7
.9389	.4357	2590.94	4605.8	1-	
.9453	.4293	2592.91	4607.8	1-	
.9556	.4190	2596.08	4610.9	1-	

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n	n-n₀	$\frac{\varrho}{n-n_0}$	λ	I	
4.9642	8.4104	2598.74	4613.6	1−	Cr 13.4, Ca+ 13.4
.9745	.4001	2601.92	4616.8	1	
.9836	.3910	2604.75	4619.6	1	V 19.8
.9893	.3853	2606.52	4621.4	1−	
.9997	.3749	2609.75	4624.6	1−	
5.0069	.3677	2612.00	4626.9	1−	
.0141	.3605	2614.25	4629.1	1	Ti 29.3, Fe+ 29.3
.0310	.3436	2619.54	4634.4	1−	
.0381	.3365	2621.77	4636.6	1−	
.0449	.3297	2623.91	4638.8	1−	
.0537	.3209	2626.69	4641.5	1−	
.0610	.3136	2628.99	4643.8	1−	V 43.7
.0683	.3063	2631.31	4646.2	1−	V 46.4, Cr 46.2
.0785	.2961	2634.54	4649.4	1−	
.0872	.2874	2637.31	4652.2	1−	Cr 52.2
.0957	.2789	2640.01	4654.9	1−	Fe 54.6
.1028	.2718	2642.28	4657.1	1+	Fe+ 57.0
.1147	.2599	2646.09	4660.9	1−	
.1229	.2517	2648.72	4663.6	1	
.1270	.2476	2650.03	4664.9	1−	
.1353	.2393	2652.70	4667.6	1+	Ti 67.6
.1446	.2300	2655.70	4670.6	1+	V 70.5
.1563	.2183	2659.48	4674.3	1−	
.1643	.2103	2662.07	4676.9	1−	
.1707	.2039	2664.15	4679.0	1−	
.1814	.1932	2667.63	4682.5	1−	
.1930	.1816	2671.41	4686.3	1−	
.2004	.1742	2673.83	4688.7	1−	
.2108	.1638	2677.24	4692.1	1−	

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n	n-n₀	a/(n-n₀)	λ	I	
5.2189	8.1557	2679.89	4694.7	1-	
.2312	.1434	2683.94	4698.8	1	Ti 98.8
.2445	.1301	2688.33	4703.2	1	
.2602	.1144	2693.53	4708.4	1	Ti⁺ 08.7
.2798	.0948	2700.06	4714.9	1-	
.2940	.0806	2704.80	4719.7	1-	
.3054	.0692	2708.62	4723.5	1-	Ti 23.2
.3211	.0535	2713.90	4728.8	1-	Sc 28.8
.3300	.0446	2716.91	4731.8	1-	Fe⁺ 31.5
.3455	.0291	2722.15	4737.0	1-	Fe 36.8
.3562	.0184	2725.78	4740.6	1-	
.3673	.0073	2729.56	4744.4	1-	
.3804	7.9942	2734.03	4748.9	1-	
.3929	.9817	2738.32	4753.2	1-	Sc 53.2
.4016	.9730	2741.30	4756.2	1-	
.4118	.9628	2744.82	4759.7	1-	
.4210	.9536	2747.99	4762.8	1	
.4262	.9484	2749.79	4764.6	1	
.4323	.9423	2751.90	4766.8	1-	V 66.6
.4383	.9363	2753.98	4768.8	1-	
.4502	.9244	2758.12	4773.0	1-	Fe 72.8
.4718	.9028	2765.66	4780.5	1-	
.4818	.8928	2769.16	4784.0	1-	Sr 84.3
.4907	.8839	2772.29	4787.1	1-	
.4972	.8774	2774.57	4789.4	1-	
.5047	.8699	2777.22	4792.1	1-	
.5185	.8561	2782.10	4797.0	1-	V 96.9
.5247	.8499	2784.29	4799.1	1	
.5317	.8429	2786.78	4801.6	1-	

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n	n-n₀	c/(n-n₀)	λ	I	
5.5430	7.8316	2790.80	4805.7	1	Ti 05.4, Zr 05.9
.5501	.8245	2793.33	4808.2	1-	
.5617	.8129	2797.48	4812.3	1-	Ti 12.3
.5673	.8073	2799.48	4814.3	1-	
.5783	.7963	2803.43	4818.3	1-	
.5863	.7883	2806.31	4821.2	1-	
.5946	.7800	2809.31	4824.2	2	Zr 24.3
.6043	.7703	2812.82	4827.7	1-	V 27.5
.6104	.7642	2815.03	4829.9	1-	
.6175	.7571	2817.60	4832.5	1-	V 32.4
.6249	.7497	2820.29	4835.1	1-	
.6314	.7432	2822.66	4837.5	1-	
.6355	.7391	2824.16	4839.0	1-	
.6426	.7320	2826.75	4841.6	1-	
.6505	.7241	2829.64	4844.5	1-	
.6626	.7120	2834.08	4848.9	2	
.6728	.7018	2837.83	4852.7	1-	
.6818	.6928	2841.15	4856.0	3	Ti 56.0
.6962	———	———	———	8	H_β 4861.3
.7065	.6681	2850.30	4865.2	1	
.7171	.6575	2854.25	4869.1	1-	
.7243	.6503	2856.94	4871.8	2	Fe 72.2 ?; 71.3?
.7327	.6419	2860.08	4874.9	1	
.7414	.6332	2863.34	4878.2	1	Ca 78.1, Fe 78.2
.7461	.6285	2865.10	4880.0	1-	
.7519	.6227	2867.28	4882.1	1-	Ti 82.3
.7597	.6149	2870.22	4885.1	1	Ti 85.1
.7694	.6052	2873.88	4888.7	1-	Fe 89.0
.7769	.5977	2876.72	4891.6	1+	Fe 91.5

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n	n-n₀	c/(n-n₀)	λ	I	
5.7886	7.5860	2881.15	4896.0	1-	
.7992	.5754	2885.18	4900.0	1	Ba+ 00.0, Y+ 00.1, Ti 99.9
.8111	.5635	2889.72	4904.6	1	
.8218	.5528	2893.82	4908.7	1-2	
.8296	.5450	2896.81	4911.7	2	
.8481	.5265	2903.93	4918.8	1	
.8540	.5206	2906.21	4921.1	2	
.8621	.5125	2909.34	4924.2	2	Fe+ 23.9
.8721	.5025	2913.22	4928.1	1-	Ti 28.4
.8878	.4868	2919.33	4934.2	2	Ba+ 34.1
.9015	.4731	2924.68	4939.5	2	Fe 39.7
.9114	.4632	2928.56	4943.4	1	
.9202	.4544	2932.02	4946.9	1	
.9321	.4425	2936.70	4951.6	1	
.9394	.4352	2939.59	4954.4	1-	
.9472	.4274	2942.67	4957.5	2	Fe 57.6, 57.3
.9606	.4140	2947.99	4962.8	1	
.9724	.4022	2952.69	4967.5	1+	
.9813	.3933	2956.25	4971.1	1	
.9882	.3864	2959.01	4973.9	1-	
.9993	.3753	2963.43	4978.3	1-	Ti 78.2
6.0121	.3625	2968.61	4983.5	3	
.0244	.3502	2973.58	4988.4	1	
.0312	.3434	2976.34	4991.2	1	Ti 91.1
.0389	.3357	2979.46	4994.3	1	Fe 94.1
.0454	.3292	2982.10	4997.0	1	Ti 97.1
.0557	.3189	2986.30	5001.2	1	Ti 01.0
.0666	.3080	2990.75	5005.6	3	
.0848	.2898	2998.22	5013.1	3	Ti 13.3

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n	$n-n_0$	$\frac{e}{n-n_0}$	λ	I	
6.0988	7.2758	3003.99	5018.8	3	Fe^+ 18.5
.1078	.2668	3007.71	5022.6	1	Ti 22.9
.1202	.2544	3012.85	5027.7	1	

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1926phae.proj...7940

(of N.C. 300)

Jan. 4. V Cygni - New reduction of region 3800 – 3930 using new standards. plate C 18578 spectrum (H).

1. $\lambda_1 = 3856.37$ → 9.91
2. $\lambda_2 = 3883.34$
3. $\lambda_3 = 3919.18$
4. 2-1 = 26.44 → 3.43
5. 3-2 = 35.84
6. $n_1 = 1.5461$ → 320
7. $n_2 = 1.6800$
8. $n_3 = 1.9012$
9. 7-6 = .1639 → 480
10. 8-7 = .2212

11. 11/9 = 158.311
12. 5/10 = 162.025
13. 11/12 = 0.977078
14. I - 13 = 0.022922
15. 6 × 13 = 1.49688
16. 8 - 15 = 0.40432
17. 16/14 = 17.6389 = n_0

18. 17 - 6 = 16.1069
19. 17 - 7 = 15.9589
20. 17 - 8 = 15.7377
21. λ_1 = 3859.91
22. 11 × 18 = 2526.47
23. 21 - 22 = 1333.44 = λ_0

24. 22 × 18 = 40,693.60 = C

25. 24/20 = 2585.74
26. 23 + 25 = 3919.18 = λ_3 (check)

$$\lambda = \lambda_0 + \frac{C}{n - n_0}$$

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1926phae..proj..794C

n	n-n0	$\frac{c}{n-n_0}$	λ	I	
1.2009	16.4380	2475.58	3809.0	1	
.2354	.4035	2480.79	3814.2	1	
.2476	.3913	2482.63	3816.1	1	
.2837	.3552	2488.11	3821.6	1	
.3117	.3272	2492.38	3825.8	1	
.3628	.2761	2500.21	3833.7	1	
.3842	.2547	2503.50	3836.9	1	
.4060	.2329	2506.86	3840.3	1	
.4193	.2196	2508.91	3842.4	1	
.4309	.2080	2510.71	3844.2	1	
.4484	.1905	2513.42	3846.9	1	
.4746	.1643	2517.50	3850.9	2	
.5161	.1228	2523.98	3857.4	2	
.5320	———	———	———	2	Fe 59.9
.5396	.0993	2527.66	3861.1	2	
.5621	.0768	2531.20	3864.6	1	
.5772	.0617	2533.58	3867.0	1	
.5875	.0514	2535.21	3868.7	1	
.6008	.0381	2537.31	3870.8	1	
.6183	.0196	2540.24	3873.7	4	
.6407	15.9982	2543.64	3877.1	1	
.6551	.9838	2545.93	3879.4	3	
.6700	.9689	2548.30	3881.7	1	
.6800	———	———	———	2	Cr 83.3
.6869	.9520	2551.00	3884.4	1	
.6995	.9394	2553.02	3886.5	3	
.7202	.9187	2556.34	3889.8	3	
.7338	.9051	2558.53	3892.0	2	
.7447	.8942	2560.28	3893.7	1	

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n	$n-n_0$	$\frac{e}{n-n_0}$	λ	I	
1.7610	15.8779	2562.91	3896.4	2	
.7771	.8618	2565.51	3899.0	2	
.7875	.8514	2567.19	3900.6	3	
.8096	.8293	2570.78	3904.2	3	
.8240	.8149	2573.12	3906.6	3	Fe 06.5
.8403	.7986	2575.77	3909.2	1	
.8486	.7903	2577.13	3910.6	1	
.8571	.7818	2578.51	3912.0	1	
.8714	.7675	2580.85	3914.3	3	
.8868	.7521	2583.38	3916.8	3	
.9012	———	———	———	1	Ca 19.2
.9119	.7380	2585.69	3919.1	1	
.9275	.7114	2590.07	3923.5	1	
.9421	.6968	2592.48	3925.9	2	
.9594	.6795	2595.34	3928.8	2	
———	———	———	———	∞	Ca^{+} 33.7
2.0172	.6217	2604.94	3938.4	1	
.0256	.6133	2606.34	3939.8	1	
.0361	.6028	2608.10	3941.5	2	
.0504	.5885	2610.49	3943.9	2	
.0590	.5799	2611.93	3945.4	1	
.0701	.5688	2613.79	3947.2	1	
.0765	.5624	2614.87	3948.3	1	
.0822	.5567	2615.82	3949.3	1	
.0870	.5519	2616.63	3950.1	1	
.0967	.5422	2618.27	3951.7	1	
.1037	.5352	2619.44	3952.9	1	
.1228	.5161	2622.67	3956.1	3	
.1329	.5060	2624.38	3957.8	1	

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A-0

Jan. 8. α Cygni – plate C 18483 – spectrum ①.

1. λ_1 = 4101.74
2. λ_2 = 4340.47
3. λ_3 = 4861.33
4. 2 − 1 = 238.73
5. 3 − 2 = 520.86
6. n_1 = 2.9446
7. n_2 = 4.0237
8. n_3 = 5.7524
9. 7 − 6 = 1.0791
10. 8 − 7 = 1.7287

11. 4/9 = 221.231
12. 5/10 = 301.302
13. 11/12 = .734250
14. I − 13 = .26575
15. 6 × 13 = 2.16207
16. 8 − 15 = 3.59033
17. 16/14 = 13.5102 = n_0
18. 17 − 6 = 10.5656
19. 17 − 7 = 9.4865
20. 17 − 8 = 7.7578
21. λ_1 = 4101.74
22. 11 × 19 = 2098.71
23. 21 − 22 = 2003.03 = λ_0
24. 22 × 18 = 22174.13 = C
25. 24/20 = 2858.30
26. 23 + 25 = 4861.33 = λ_3 (check)

n_1	n_2	n_3
2.9447	4.0242	5.7525
47	37	23
40	34	25
48	36	25
44	39	21
43	32	26
47	34	22
47	42	25
46	32	23
47	42	27
2.9446	4.0237	5.7524

$$\lambda = \lambda_0 + \frac{C}{n - n_0}$$

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1926phae.proj..794

n	n-n₀	$\frac{a}{n-n_0}$	λ	I	Identifications.
0.8390	12.6712	1749.96	3753.0	W	H_K 50.2
.9827	.5275	70.04	3773.1	w	H_i 70.6
1.1685	.3417	96.68	3799.7	W	H_θ 97.9
.4217	.0885	1834.32	3837.4	W	H_M 35.4
.5535	11.9567	54.54	3852.6		
.5941	.9161	60.85	3863.9		
.6565	.8537	70.65	3873.7		
.6959	.8143	76.89	3879.9		
.7610	.7492	87.29	3890.3	W	H_ζ 89.1
.8304	.6798	98.50	3901.5		
.8627	.6475	1903.77	3906.8		
.9094	.6008	11.43	3914.5		
2.0289	.4813	31.33	3934.4	6	Ca^+ 33.7
.0438	.4664	33.84	3936.9	1	
.0560	.4542	35.89	3938.9	1	
.2320	.2782	66.11	3969.1	10	Ca^+ 68.5
.2408	.2694	67.64	3970.7	10	H_ϵ 70.1
.4238	.0864	2000.12	4003.2	1	
.4376	.0726	02.61	4005.6	1	
.4784	.0318	10.02	4013.1	1	
.4938	.0164	12.83	4015.9	1	
.5423	10.9679	21.73	4024.8	1	Se 23.7
.7686	.7416	64.32	4067.4	1	
.7915	.7187	68.73	4071.8	1	
.8225	.6877	74.73	4077.8	1	Sr^+ 77.7
.9446	——	——	——	10	H_δ 01.7
3.0484	.4618	2119.53	4122.6	1	
.0765	.4337	25.24	4128.3	2	Y 28.3, V 28.1
.0905	.4197	28.10	4131.1	2	

two groups — many many faint lines

new Radiation see §53

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n	n-no	$\frac{a}{n-no}$	λ	I	
3.2469	10.2633	2160.53	4163.6	1	
.2858	.2244	68.75	4171.8	1	Sa 72.1
.2933	.2169	70.34	4173.4	3	Fe^+ 73.5
.3189	.1913	75.79	4178.8	3	Fe^+ 78.9
.5669	9.9433	2230.06	4233.1	3	Fe^+ 33.2
.5809	.9293	33.20	4236.2	1-	Fe 36.0
.5948	.9154	36.33	4239.4	1-	Mn 39.7
.6073	.9029	39.16	4242.2	1	
.6272	.8830	43.66	4246.7	1	Sc^+ 46.8
.6764	.8338	54.89	4257.9	1	Mn 57.7, Fe^+ 58.2
.6945	.8157	59.05	4262.1	1	
.7418	.7684	69.99	4273.0	1	
.7922	.7180	81.76	4284.8	1	
.8147	.6955	87.05	4290.1	1	Ti^+ 90.2
.8237	.6865	89.18	4292.2	1	
.8302	.6800	90.72	4293.8	1	Ti^+ 94.1
.8403	.6699	93.11	4296.1	1	Ti 95.8
.8570	.6532	97.08	4300.1	2	Ti^+ 00.1
.8692	.6410	99.98	4303.0	2	Fe^+ 03.2
.8890	.6212	2304.72	4307.8	1	Ca 07.7, Ti^+ 07.9, Fe 07.9
.9080	.6022	09.28	4312.3	1	Mn 12.6
.9159	.5943	11.18	4314.2	2	Sc^+ 14.1
.9422	.5680	17.53	4320.6	1	Sc^+ 20.7
.9632	.5470	22.63	4325.7	1	Fe 25.8
4.0237	———	———	———	10	Hγ 40.5
4.0691	.4411	48.68	4351.7	2	Mg 51.9, Ca 51.8, Fe^+ 51.8
.1376	.3726	65.85	4368.9	1	
.1599	.3503	71.49	4374.5	1	Sc^+ 74.5
.2006	.3096	81.86	4384.9	2	Mg^+ 84.6, Sc^+ 84.8, V 84.7 Ca 85.0

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1926phae.proj...194C

n	n-no	$\frac{a}{n-no}$	λ	I	
4.2251	9.2851	2388.14	4391.2	1	
.2400	.2702	91.98	4395.0	2	Ti+ 95.0, V 95.2
.2584	.2518	96.74	4399.8	1	Ti+ 99.8
.3252	.1850	2414.16	4417.2	2	
.4248	.0854	40.63	4443.7	1	Ti+ 43.8
.4529	.0573	48.21	4451.2	1	Ti 50.9
.5155	8.9947	65.24	4468.3	1	Ti+ 68.5
.5634	.9468	78.44	4481.5	4	Mg+ 81.3, Ti 81.3
.5905	.9197	85.97	4489.0	1	Ti 89.1, Fe+ 89.2
.6006	.9096	88.79	4491.8	1	Cr 91.7
.6217	.8885	94.70	4497.7	1	
.6338	.8764	98.10	4501.1	1	Ti+ 01.3
.6593	.8509	2505.30	4508.3	2	Fe+ 08.3
.6848	.8254	12.54	4515.6	2	Fe+ 15.3
.7012	.8090	17.21	4520.2	2	Fe+ 20.2
.7098	.8004	19.67	4522.7	2	Ti 22.8, Fe+ 22.6
.7338	.7764	26.56	4529.6	1	Ti+ 29.5
.7497	.7605	31.15	4534.2	2	Ti+ 34.0, Fe+ 34.2
.7761	.7341	38.80	4541.8	1	Fe+ 41.5
.7874	.7228	42.09	4545.1	1	
.8034	.7068	46.76	4549.8	3	Ti+ 49.6, Fe+ 49.5
.8231	.6871	52.54	4555.6	2	Ti 55.5, Fe+ 55.9
.8342	.6760	55.80	4558.8	1	
.8506	.6596	60.64	4563.7	1	Ti+ 63.8
.8607	.6495	63.63	4566.7	1	
.8791	.6311	69.10	4572.1	1	Ti+ 72.0
.8947	.6155	73.75	4576.8	1	
.9049	.6053	76.80	4579.8	1	Cr 80.1
.9194	.5908	81.15	4584.2	3	

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1926phae.proj.7740

n.	n-n0	$\frac{Q}{n-n_0}$	λ	I	
4.9330	8.5772	2585.24	4588.3	2	
.9454	.5648	88.98	4592.0	1	
5.0680	.4422	2626.58	4629.6	2	Zn 29.9, Ti 29.3, Fe^+ 29.3
.0832	.4270	31.32	4634.4	2	
.1090	.4012	39.40	4642.4	1	
.1265	.3837	44.91	4647.9	1	
.3857	.1245	2729.29	4732.3	1	
.6509	7.8593	2821.39	4824.4	1	Zn 24.3
.6830	.8272	32.96	4836.0	1	
.7037	.8065	40.47	4843.5	1	Fe 43.2
.7176	.7926	45.54	4848.6	1	
.7524	—	—	—	10	Na 61.3
.7927	.7175	73.23	4876.3	1	
.9191	.5911	2921.07	4924.1	3	Fe^+ 23.9
6.1563	.3539	3015.29	5018.3	3	Fe^+ 18.4

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1926phae.proj.:78:40

Jan. 11 α Cygni - new reduction 3750 - H100. Plate C 18483 - D.

1. λ_1 = 3797.90
2. λ_2 = 3889.05
3. λ_3 = 3970.08
4. 2 - 1 = 91.15
5. 3 - 2 = 81.03
6. n_1 = 1.1685
7. n_2 = 1.7610
8. n_3 = 2.2408
9. 7 - 6 = .5925
10. 8 - 7 = .4798

11. 4/9 = 153.840
12. 5/10 = 168.883
13. 11/12 = .910927
14. 1 - 13 = .089073
15. 6 x 13 = 1.06442
16. 8 - 15 = 1.17638
17. 16/14 = 13.2069 = n_0

18. 17 - 6 = 12.0384
19. 17 - 7 = 11.4459
20. 17 - 8 = 10.9661
21. λ_1 = 3797.90
22. 11 x 19 = 1760.84
23. 21 - 22 = 2037.06 = λ_0

24. 22 x 18 = 21,197.70 = C

25. 24/20 = 1933.02
26. 23 + 25 = 3970.08 = λ_3 (check)

$$\lambda = \lambda_0 + \frac{Q}{n - n_0}$$

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1926phae.proj..784

n	n − n0	$\frac{Q}{n-n_0}$	λ	I	Identifications.
0.8390	12.3679	1713.93	3751.0	w	N_R 50.2
.9827	.2242	34.08	3771.1	w	Ni 70.6
1.1685	———	———	———	v	N_O 97.9
.4217	11.7852	98.67	3835.7	w	N_M 35.4
.5535	.6534	1819.01	3856.1		V 55.9, Fe 56.4
.5941	.6128	25.37	3862.4		
.6565	.5504	35.24	3872.3		
.6959	.5710	41.52	3878.6		Fe 78.6
.7610	———	———	———	w	N_S 89.1
.8304	.3765	63.29	3900.4		Ti^+ 00.5
.8627	.3442	68.59	3905.7		
.9094	.2975	76.32	3913.4		Ti^+ 13.5
2.0289	.1780	96.38	3933.4	6	Ca^+ 33.7
.0438	.1631	98.91	3936.0	1	
.0560	.1509	1900.99	3938.1	1	
.2320	10.9749	31.47	3968.5	10	Ca^+ 68.5
.2408	———	———	———	10	N_E 70.1
.4238	.7831	65.83	4002.9	1	
.4376	.7693	68.35	4005.4	1	
.4784	.7285	75.83	4012.9	1	
.4938	.7131	78.67	4015.7	1	
.5423	.6646	87.67	4024.7	1	Ti 24.6
.7686	.4383	2030.76	4067.8	1	
.7915	.4154	35.23	4072.3	1	
.8225	.3844	41.30	4078.4	1	Ti 78.5

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1926phae.proj..784

56 [illegible]59

A_3

Jan. 12. α Piscis Australis – plate K 8929 spectrum ②.

1.	λ_1 = 4101.74	6.	n_1 = 1.0834
2.	λ_2 = 4340.47	7.	n_2 = 2.5103
3.	λ_3 = 4861.33	8.	n_3 = 4.7895
4.	2 – 1 = 238.73	9.	7 – 6 = 1.4269
5.	3 – 2 = 520.86	10.	8 – 7 = 2.2792

		n_1	n_2	n_3
11.	4/9 = 167.307			
12.	5/10 = 228.528	1.0831	2.5104	4.7908
13.	11/12 = .732107	33	106	894
14.	I – 13 = .267893	40	096	880
15.	6 × 13 = .793165	28	103	910
16.	8 – 15 = 3.99634	26	110	900
17.	16/14 = 14.9177 = n_0	44	108	900
		36	104	897
18.	17 – 6 = 13.8343	38	103	887
19.	17 – 7 = 12.4074	28	105	883
20.	17 – 8 = 10.1282	31	092	887
21.	λ_1 = 4101.74	1.0834	2.5103	4.7895

22. 11 × 19 = 2075.84

23. 21 – 22 = 2025.90 = λ_0

24. 22 × 18 = 28,717.79 = e

25. 24/10 = 2835.43

26. 23 + 25 = 4861.33 = λ_3 (check)

$$\lambda = \lambda_0 + \frac{e}{n - n_0}$$

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1926phae.proj.17940

n	n-n₀	$\frac{9}{n-n_0}$	λ	I	Identifications.
H.6545	10.2632	2798.13	4824.0	1	Zr 24.3
.8014	.1163	2838.76	4864.7	3	V 64.7
.8265	.0912	45.83	4871.7	1	Sr 72.5, Fe 72.2
.8439	.0738	50.74	4876.6	1	Ca 78.1, Fe 78.2
.8534	.0643	53.43	4879.3	1	Ti+
.8669	.0508	57.26	4883.2	1	Y+ 83.7
.8830	.0347	61.85	4887.8	1	
.8966	.0211	65.73	4891.6	1	Fe 91.5
.9923	9.9254	93.36	4919.3	1	Ti 19.9,
5.0077	.9100	97.86	4923.8	1	Fe+ 23.9
.0460	.8717	2909.10	4935.0	1	Ba++ 34.1
.0594	.8583	13.06	4939.0	1	Fe 39.6
.1239	.7938	32.24	4958.1	1	Ti 58.3, Fe 57.6
.2053	.7124	56.82	4982.7	1	Na 82.9
.3211	.5966	92.50	5018.4	1	Fe+ 18.4
.3759	.5418	3009.68	5035.6	1	
.3939	.5238	15.37	5041.3	1	Ca 41.6
.4417	.4760	30.58	5056.5	1	
.4821	.4356	43.56	5069.5	1	
.4983	.4194	48.79	5074.7	1	
.5339	.3838	60.36	5086.3	1	
.5683	.3494	71.62	5097.5	1	
.5787	.3390	75.04	5100.9	1	
.7745	.1432	3140.89	5166.8	2	Mg 67.4
.7902	.1275	46.29	5172.2	2	Mg 72.7
.8203	.0974	56.70	5182.6	1	Mg 83.7
.8387	.0790	63.10	5189.0	1	Ca 88.9
.9431	8.9746	99.90	5225.8	1	~~Ti 25.1~~ Sr 25.1
.9629	.9548	3206.97	5232.9	1	

new reduction 59

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1926phae.proj.7940

n	n-no	$\frac{a}{n-n_0}$	λ	I	
5.9812	8.9365	3213.54	5239.4	1	Sr 38.5
.9965	.9212	19.05	5245.0	1	
6.0202	.8975	27.62	5253.5	1	
.0404	.8773	34.97	5260.9	1	
.0556	.8621	40.52	5266.4	1	
.0647	.8530	43.85	5269.8	1	Ca 70.3
.0768	.8409	48.29	5274.2	1	
.0961	.8216	55.39	5281.3	1	
.1881	.7296	89.70	5315.6	1	Fe^+ 16.6?
.2126	.7051	98.96	5324.9	1	
.2480	.6697	3312.43	5338.3	1	37.5?
.2607	.6570	17.29	5343.2	1	~~Ne 43.3~~ (cf. p11).
.3099	.6078	36.25	5362.2	1	~~Xe~~ 63.4?
.3228	.5949	41.26	5367.2	1	

Owing to the quality of this plate, these measures may be effected to be more inaccurate than others made under the same conditions but with better plates.

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1926phae.proj.17940

A3

Jan. 13. α Pisc. Aust. - plate 48929 spectrum ② - new reduction.

1. λ_1 = 4923.92
2. λ_2 = 5172.70
3. λ_3 = 5316.62
4. 2-1 = 248.78
5. 3-2 = 143.92
6. n_1 = 5.0077
7. n_2 = 5.7902
8. n_3 = 6.1881
9. 7-6 = 0.7825
10. 8-7 = 0.3979

11. 4/9 = 317.930
12. 5/10 = 361.699
13. 11/12 = 0.878991
14. 1-13 = 0.121009
15. 6×13 = 4.40172
16. 8-15 = 1.78638
17. 16/14 = 14.7624 = n_0

18. 12-6 = 9.2547
19. 12-7 = 8.9722
20. 12-8 = 8.5743
21. λ_1 = 4923.92
22. 11×19 = 2852.53
23. 21-22 = 2071.39 = λ_0

24. 18×22 = 27,825.57 = c

25. 24/20 = 3245.23
26. 23+25 = 5316.62 = λ_3 (check)

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1926phae.proj..7940

n	n-no	$\frac{\text{Q}}{\text{n-no}}$	λ	I	
4.6545	10.1079	2752.85	4824.2	1	Zr 24.3
.8014	9.9610	93.45	4864.8	3	V 64.7
.8205	.9359	2800.51	4871.9		
.8439	.9185	05.42	4876.8		(cf. p52)
.8534	.9090	08.11	4879.5		
.8669	.8955	11.94	4883.3		Y^+ 83.7
.8830	.8794	16.52	4887.9		
.8966	.8658	20.41	4891.8		Fe 91.5
.9923	.7701	48.03	4919.4		
5.0077	———	———	———		Fe^+ 23.9 (cf. p52)
.0460	.7164	63.77	4935.2		
.0594	.7030	67.73	4939.1		Fe 38.8
.1239	.6385	86.92	4958.3		Ti 58.3
.2053	.5571	2911.51	4982.9		Na 82.9
.3211	.4413	47.22	5018.6		Fe^+ 18.4 (cf p52)
.3759	.3865	64.42	5035.8		Ti 35.9
.3939	.3685	70.12	5041.5		Ca 41.6, Fe 41.1, 41.8
.4417	.3207	85.95	5056.7		
.4821	.2803	98.35	5069.7		
.4983	.2641	3003.59	5075.0		
.5339	.2285	15.18	5086.6		
.5683	.1941	26.46	5097.9		
.5787	.1837	29.89	5101.3		
.7745	8.9879	95.89	5167.3	2	Mg 67.4, Fe 67.5
.7902	———	———	———	2	Mg 72.7
.8203	.9421	3111.75	5183.1		Mg 83.7
.8387	.9237	18.16	5189.6		
.9431	.8193	55.08	5226.5		Fe 26.9
.9629	.7995	62.18	5233.6		

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1926phae.proj.7940

n	n-no	$\frac{c}{n-no}$	λ	I	
5.9812	8.7812	3168.77	5240.2		
.9965	.7659	74.30	5245.7		
6.0202	.7422	82.90	5254.3		
.0404	.7220	90.27	5261.7		Ca 61.7
.0556	.7068	95.84	5267.2		
.0647	.6977	99.19	5270.6		Ca 70.3, Fe 70.4
.0768	.6856	3203.64	5275.0		Cr 75.2
.0961	.6663	10.78	5282.2		Ti 82.4
.1881	——	——	——		Fe+ 16.6
.2126	.5498	54.53	5325.9		Fe+ 25.6
.2480	.5144	68.06	5339.5		
.2607	.5017	72.94	5344.3		
.3099	.4525	91.99	5363.4		(see p11)
.3228	.4396	97.02	5368.4		

The quality of this plate was poor and lines were very indistinct.

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1926phae.proj..7740

G_0 (double-see note at end, #71)

Jan. 17 α Aurigae – plate X8109.

1.	$\lambda_1 = 5172.70$	6.	$n_1 = 4.4810$	3
2.	$\lambda_2 = 5328.04$	7.	$n_2 = 5.1479$	
3.	$\lambda_3 = 5658.84$	8.	$n_3 = 6.3609$	
4.	$2-1 = 155.34$	9.	$7-6 = 0.6669$	
5.	$3-2 = 330.80$	10.	$8-7 = 1.2130$	

		n_1	n_2	n_3	
11.	$4/9 = 232.928$				
12.	$5/10 = 272.712$	4.4810	5.1476	6.3613	
13.	$11/12 = 0.854117$	06	79	08	
14.	$5-13 = 0.145883$	00	78	07	
15.	$6 \times 13 = 3.82730$	10	77	07	
16.	$8-15 = 2.53360$	08	80	06	4
17.	$16/14 = 17.3673 = n_0$	13	81	08	
		15	77	11	
18.	$17-6 = 12.8863$	13	82	10	
19.	$17-7 = 12.2194$	09	86	08	
20.	$17-8 = 11.0064$	11	77	14	
21.	$\lambda_1 = 5172.70$	4.4810	5.1479	6.3609	

22. $11 \times 19 = 2846.24$

23. $21-22 = 2326.46 = \lambda_0$

24. $18 \times 22 = 36,677.50 = e$

25. $24/20 = 3332.38$

26. $23+25 = 5658.84 = \lambda_3$ (check)

$$\lambda = \lambda_0 + \frac{e}{n - n_0}$$

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1926phae..proj..1..140

n	n - no	c / (n - no)	λ	I	Identifications.
3.4414	13.9259	2633.76	4960.2		
.5763	.7910	59.52	4986.0		
.6900	.6773	81.63	5008.1		
.7509	.6164	93.63	5020.1		Ti 20.0
.7970	.5703	2702.78	5029.2		
.8365	.5308	10.67	5037.1		
.8629	.5044	15.97	5042.4		
.9009	.4664	23.63	5050.1		
.9147	.4526	26.42	5052.9		
.9776	.3897	39.23	5065.7		
.9941	.3732	42.61	5069.1		Fe 68.8, Ti+ 69.1
4.0119	.3554	46.27	5072.7		Ti+ 72.3
.0510	.3163	54.33	5080.8		
.1416	.2257	73.20	5099.7	w	
.1898	.1775	83.34	5109.8		
.2583	.1090	97.89	5124.4		
.2744	.0929	2801.33	5127.8		
.3243	.0430	12.05	5138.5		
.3329	.0344	13.90	5140.4		
.3445	.0228	16.41	5142.9		Fe 42.9
.3632	.0041	20.46	5146.9		
.3951	12.9722	27.39	5153.9		Na 53.6, Ti+ 54.1
.4331	.9342	35.70	5162.2	1 d?	
.4418	.9255	37.61	5164.1	1	
.4492	.9181	39.23	5165.7	1	
———	———	———	———	5	Mg 67.4, Fe 67.5
———	———	———	———	4	Fe+ 69.0
———	———	———	———	9	Mg 72.7
———	———	———	———	10	Mg 83.7

weak background

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1926phae.proj.7940

n	n-no	$\frac{\varrho}{n-no}$	λ	I	
4.55512	12.8161	2861.83	5188.3	1w	Ti+88.7
.5659	.8014	65.12	5191.6	2	Fe 91.5
.5844	.7829	69.26	5195.7	2	
.5951	.7722	71.67	5198.1	1	
.6027	.7646	73.38	5199.8	1	
.6115	.7558	75.36	5201.8	1	Pr 01.5
.6284	.7389	79.17	5205.6	3	Y+05.7
.6388	.7285	81.53	5208.0	2	
.6475	.7198	83.50	5210.0	1	
.6527	.7146	84.68	5211.1	1	
.6735	.6938	89.40	5215.9	2w	Fe 16.3, 15.2
.7103	.6570	97.80	5224.3	1	Ti 24.6
.7195	.6478	99.91	5226.4	8	Ti+26.6, Fe 25.5, 27.2, 26.9
.7461	.6212	2906.02	5232.5	2	
.7542	.6131	07.89	5234.4	2	Fe 34.6
.7902	.5771	16.21	5242.7	1	
.8077	.5596	20.28	5246.7	2	
.8208	.5465	23.33	5249.8	2	
.8327	.5346	26.10	5252.6	1	
.8394	.5279	27.67	5254.1	2	
.8480	.5193	29.68	5256.1	1	
.8571	.5102	31.81	5258.3	1	
.8691	.4982	34.62	5261.1	2	
.8753	.4920	36.08	5262.5	4	
.8847	.4826	38.29	5264.8	5	Fe+64.8
.9030	.4643	42.60	5269.1	5	
.9274	.4399	48.38	5274.8	3w	Fe+76.0
.9430	.4243	52.08	5278.5	1	
.9536	.4137	54.60	5281.1	1	

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1926phae.proj.0794

n	n-n₀	$\frac{a}{n-n_0}$	λ	I	
4.9624	12.4049	2956.69	5283.2	3w	Fe 83.6, Ti 83.5
.9826	.3847	61.52	5288.0	1w	
5.0008	.3665	65.88	5292.3	1	
.0198	.3475	70.44	5296.9	4	Cr 96.7, Ti 97.3
.0367	.3306	74.51	5301.0	1	Cr 01.0, Cr 00.7
.0426	.3247	75.93	5302.4	1	Fe 02.3
.0587	.3086	79.83	5306.3	1w	
.0712	.2961	82.86	5309.3	1	
.0834	.2839	85.82	5312.3	1	
.0923	.2700	89.20	5315.7	2w	Fe+ 16.6
.1097	.2576	92.23	5318.7	1	
.1150	.2523	93.52	5320.0	1	
.1291	.2382	96.97	5323.4	2w	Fe 24.2
———	———	———	———	85	Fe 28.0
———	———	———	———	3	Fe 28.5
.1645	.2028	3005.66	5332.1	1w	
.1813	.1860	09.81	5336.3	1w	Ti+ 36.8
.1950	.1723	13.19	5339.7	3	Fe 40.0
.2160	.1513	18.40	5344.9	1	
.2227	.1446	20.07	5346.5	1	
.2299	.1374	21.86	5348.3	2	Cr 48.3
.2457	.1216	25.80	5352.3	1w	
.2654	.1019	30.72	5357.2	1	
.2765	.0908	33.50	5360.0	1	
.2840	.0833	35.39	5361.9	1	
.2902	.0771	36.95	5363.4	2	
.2969	.0704	38.63	5365.1	1	
.3029	.0644	40.14	5366.6	1	
.3125	.0548	42.56	5369.0	2	

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1926phae.proj..794C

n	n-n₀	$\frac{c}{n-n_0}$	λ	I	
5.3193	12.0480	3044.28	5370.7	3	
.3263	.0410	46.05	5372.5	1	
.3333	.0340	47.82	5374.3	1	
.3408	.0265	49.72	5376.2	1	
.3548	.0125	53.28	5379.7	1W	
.3631	.0042	55.39	5381.9	1	
.3690	11.9983	56.89	5383.4	1	
.3767	.9906	58.85	5385.3	1	
.3816	.9857	60.11	5386.6	1	
.3892	.9781	62.05	5388.5	1W	
.3951	.9722	63.56	5390.0	1	
.4020	.9653	65.32	5391.8	1W	
.4088	.9585	67.07	5393.5	1	Fe 93.2
.4198	.9475	69.89	5396.4	3	Ti 96.6
.4298	.9375	72.46	5398.9	1	
.4362	.9311	74.11	5400.6	1	Ne 00.6
.4477	.9196	77.07	5403.5	2	
.4526	.9147	78.34	5404.8	2	
.4588	.9085	79.94	5406.4	1	
.4697	.8976	82.76	5409.2	2W	Cr 09.8, Ti 08.9
.4869	.8804	87.23	5413.7	1W	
.4936	.8737	88.97	5415.4	1	
.4988	.8685	90.32	5416.8	1	
.5092	.8581	93.03	5419.5	2W	Mn 20.4, Ti⁺ 18.8
.5170	.8503	95.07	5421.5	1	
.5249	.8424	97.13	5423.6	2	
.5317	.8356	98.91	5425.4	1	Fe⁺ 25.3
.5444	.8229	3102.24	5428.7	3	
.5550	.8123	05.03	5431.5	1	

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1926phae.proj.1940

n	n-n₀	e/(n-n₀)	λ	I	
5.5602	11.8071	3106.39	5432.9	1	mn 32.6
.5668	.8005	08.13	5434.6	2w	Fe 34.5
.5767	.7906	10.74	5437.2	1	
.5895	.7778	14.12	5440.6	1w	
.6091	.7582	19.31	5445.8	4	
.6262	.7411	23.86	5450.3	1w	
.6371	.7302	26.76	5453.2	1	
.6426	.7247	28.23	5454.7	3	
.6551	.7122	31.56	5458.0	1	
.6708	.6965	35.77	5462.2	3w	
.6835	.6838	39.18	5465.6	1	Ag 65.5
.6949	.6724	42.24	5468.7	1	
.7018	.6655	44.10	5470.6	1	mn 70.6
.7084	.6589	45.88	5472.3	1	
.7154	.6519	47.77	5474.2	1	Ti 74.3
.7229	.6444	49.80	5476.3	3	
.7392	.6281	54.21	5480.7	2w	mn 81.4, Sr 80.8
.7494	.6179	56.98	5483.4	1	Cr 83.3
.7610	.6063	60.14	5486.6	2w	
.7697	.5976	62.51	5489.0	1	
.7838	.5835	66.96	5492.8	2w	
.7957	.5716	69.61	5496.1	1	
.8013	.5660	71.15	5497.6	1	Fe 97.5
.8161	.5512	75.21	5501.7	2w	Fe 01.5
.8291	.5382	78.79	5505.3	2w	mn 05.9
.8410	.5263	82.07	5508.5	1	
.8498	.5175	84.50	5511.0	1w	
.8594	.5079	87.16	5513.6	1w	Ti 14.5, 14.4, 12.5
.8700	.4973	90.10	5516.6	1	mn 16.8

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1926phae.proj..784C

n	$n-n_0$	$\frac{a}{n-n_0}$	λ	I	
5.8853	11.4820	3194.35	5520.8	1	
.9101	.4572	3201.26	5527.7	2	
.9232	.4441	04.93	5531.4	1w	
.9346	.4327	08.12	5534.6	2w	
.9462	.4211	11.38	5537.8	1	Mn 37.8
.9530	.4143	13.29	5539.8	1	
.9641	.4032	16.42	5542.9	1w	
.9735	.3938	19.08	5545.5	1w	
6.0008	.3665	26.81	5553.3	1w	
.0105	.3568	29.56	5556.0	1	
.0341	.3332	36.29	5562.8	1w	
.0553	.3120	42.35	5568.8	1w	
.0657	.3016	45.34	5571.8	1	
.0722	.2951	47.20	5573.7	1	
.0816	.2857	49.91	5576.4	1	Fe 76.1
.0912	.2761	52.68	5579.1	1	
.0993	.2680	55.01	5581.5	1	
.1215	.2458	61.44	5587.9	3w	
.1402	.2271	66.87	5593.3	1w	V 93.0
.1505	.2168	69.87	5596.3	1	
.1555	.2118	71.33	5597.8	1	
.1633	.2040	73.61	5600.1	2	
.1720	.1953	76.15	5602.6	2w	Ca 02.8, Fe 03.0
.1910	.1763	81.72	5608.2	1	
.2029	.1644	85.22	5611.7	1	
.2157	.1516	88.99	5615.5	2w	Fe 15.7
.2235	.1438	91.29	5617.8	1	
.2353	.1320	94.78	5621.2	1	
.2490	.1183	98.84	5625.3	2w	V 24.9, 24.6

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1926phae.proj.7940

n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I	
6.2698	11.0975	3305.02	5631.5	1W	
.2825	.0848	08.81	5635.3	1	
.2908	.0765	11.29	5637.8	1	
.2997	.0676	13.95	5640.4	1	
.3094	.0579	16.86	5643.3	1W	
.3207	.0466	20.25	5646.7	1	
.3293	.0380	22.84	5649.3	1	
.3385	.0288	25.61	5652.1	1	
.3484	.0189	28.60	5655.1	1W	
———	———	———	———	3	Fe 58.8
.3699	10.9974	35.11	5661.6	1	
.3810	.9863	38.48	5664.9	1	
.3903	.9770	41.30	5667.8	1	
.4048	.9625	45.72	5672.2	1	Sc 71.8
.4171	.9502	49.48	5675.9	1W	Ni^+ 76.0, Ti 75.4
.4259	.9414	52.18	5678.6	1	
.4331	.9342	54.38	5680.8	1	Zn 80.9
.4420	.9253	57.12	5683.6	2W	Na 82.7, Sc^+ 84.2
.4506	.9167	59.76	5686.2	1	Ni^+ 86.2, Sc 86.8
.4589	.9084	62.32	5688.8	2W	Na 88.2, Ti 89.5
.4698	.8975	65.68	5692.1	1	
.4770	.8903	67.91	5694.4	1	
.4852	.8821	70.44	5696.9	1	
.4886	.8788	71.47	5697.9	1	
.4951	.8722	73.51	5700.0	1	Cu 00.3, Sc 00.1
.5038	.8635	76.21	5702.7	1	Ti 02.7
.5131	.8542	79.11	5705.6	1	
.5214	.8459	81.69	5708.2	2	
.5311	.8362	84.72	5711.2	2W	Mg 11.1, Sc 11.8

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1926phae.proj..794C

n	n-no	$\frac{c}{n \cdot n_0}$	λ	I	
6.5367	10.8306	3386.47	5712.9	1	
.5478	.8195	89.94	5716.4	1w	Ti 16.5
.5573	.8100	92.92	5719.4	1w	
.5659	.8014	95.62	5722.1	1	
.5750	.7923	98.49	5725.0	1	
.5857	.7816	3401.86	5728.3	1	
.5950	.7723	04.80	5731.3	1	
.6023	.7650	07.11	5733.6	1	
.6096	.7577	09.42	5735.9	1	
.6190	.7483	12.40	5738.9	1	
.6274	.7399	15.07	5741.5	1	
.6330	.7343	16.85	5743.3	1w	V 43.4
.6449	.7224	20.64	5747.1	1w	h^+ 47.3
.6534	.7139	23.36	5749.8	2w	
.6631	.7042	26.46	5752.9	1	
.6702	.6971	28.73	5755.2	3w	
.6827	.6846	32.74	5759.2	1	
.6930	.6743	36.06	5762.5	2w	
.7006	.6667	38.50	5765.0	2w	
.7090	.6583	41.22	5767.7	1	h^+ 67.5
.7183	.6490	44.22	5770.7	1w	
.7264	.6409	46.84	5773.3	1	
.7315	.6358	48.50	5775.0	1	
.7368	.6305	50.21	5776.7	1	
.7465	.6208	53.37	5779.8	1	
.7558	.6115	56.39	5782.9	3w	Cu 82.2, K 82.8, V 82.6
.7665	.6008	59.88	5786.3	3w	
.7893	.5780	67.34	5793.8	1	
.8058	.5615	72.76	5799.2	1	

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1926phae.proj.7940

n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I
6.8115	10.5558	3474.63	5801.1	1
.8212	.5461	77.83	5804.3	1
.8264	.5409	79.54	5806.0	1w
.8336	.5337	81.92	5808.4	2w
.8422	.5251	84.77	5811.2	1
.8490	.5183	87.02	5813.5	1
.8618	.5055	91.27	5817.7	1w

and faint traces of lines as far as the D lines.

Double star - Capella - lines doubled due to both stars and some displaced, thus hindering identification.

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1926phae.proj..784C

72 K0

Jan. 28 Ecorfii – plate X 8755 spectrum (2).

1. $\lambda_1 = 4861.33$
2. $\lambda_2 = 5172.70$
3. $\lambda_3 = 5889.96$
4. $x-1 = 311.37$
5. $3-2 = 717.26$
6. $n_1 = 4.2041$
7. $n_2 = 5.2685$
8. $n_3 = 7.0538$
9. $7-6 = 1.0644$
10. $8-7 = 1.7853$

11. $4/9 = 292.531$
12. $5/10 = 401.759$
13. $11/12 = .728125$
14. $1-13 = \sout{3.0644}\ .271875$
15. $6 \times 13 = \sout{3.99269}\ 3.06111$
16. $8-15 = 3.99269$
17. $16/14 = 14.6858 = n_0$
18. $17-6 = 10.4817$
19. $17-7 = 9.4173$
20. $17-8 = 7.6320$
21. $\lambda_1 = 4861.33$
22. $11 \times 19 = 2754.85$
23. $21-22 = 2106.48 = \lambda_0$
24. $18 \times 22 = 28,875.51 = e$
25. $24/20 = 3283.48$
26. $23+25 = 5889.96 = \lambda_3$ (check)

n_1	n_2	n_3
4.2040	5.2686	7.0536
41	84	48
37	88	27
32	80	45
47	86	51
45	89	20
44	84	50
39	84	31
42	79	20
45	87	48
4.2041	5.2685	7.0538

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1926phae.proj.0194

n	n-no	$\frac{e}{n-no}$	λ	I	Identification
				2	Hβ 61.3
H.2137	10.4721	2757.38	4863.9	1-	
.2234	.4624	59.93	4866.4	1-	
.2370	.4488	63.52	4870.0	1+	
.2425	.4433	64.98	4871.5	1	
.2505	.4353	67.10	4873.6	1	
.2820	.4038	75.48	4882.0	1	
.2866	.3992	76.70	4883.2	1	
.2916	.3942	78.04	4884.5	1	
.2978	.3880	79.70	4886.2	1	
.3069	.3789	82.14	4888.6	1+	
.3143	.3715	84.12	4890.6	1+w	Fe 91.5, 90.8
.3231	.3627	86.49	4893.0	1-	
.3470	.3388	92.93	4899.4	1+	
.3544	.3314	94.93	4901.4	1	
.3630	.3228	97.26	4903.7	1	
.3861	.2997	2803.53	4910.0	1+	
.3935	.2923	05.54	4912.0	1	
.4008	.2850	07.54	4914.0	1	
.4088	.2770	09.72	4916.2	1-	
.4144	.2714	11.25	4917.7	1-	
.4192	.2666	12.57	4919.1	1	Fe 19.0
.4250	.2608	14.16	4920.6	2	Fe 20.5
.4315	.2543	15.94	4922.4	1	
.4363	.2495	17.26	4923.7	1	
.4433	.2425	19.19	4925.7	1	
.4552	.2306	22.47	4929.0	1	
.4660	.2198	25.45	4931.9	1	
.4743	.2115	27.74	4934.2	1	Ba+ 34.1

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1926phae.proj..74C

n	$n - n_0$	$\frac{c}{n \cdot n_0}$	λ	I
4.4814	10.2044	2829.71	4936.2	1
.4887	.1971	31.74	4938.2	1
.4947	.1911	33.40	4939.9	2w
.5016	.1842	35.32	4941.8	1
.5145	.1713	38.92	4945.4	1w
.5221	.1637	41.04	4947.5	1
.5270	.1588	42.41	4948.9	1
.5397	.1461	45.97	4952.5	1w
.5473	.1385	48.10	4954.6	1
.5546	.1312	50.16	4956.6	2
.5622	.1236	52.30	4958.8	2
.5699	.1159	54.47	4961.0	1
.5791	.1067	57.07	4963.6	1
.5863	.0995	59.10	4965.6	1
.5947	.0911	61.48	4968.0	2
.6025	.0833	63.70	4970.2	1w
.6165	.0693	67.68	4974.2	1w
.6278	.0580	70.90	4977.4	1+
.6352	.0506	73.01	4979.5	1-
.6401	.0457	74.41	4980.9	1
.6478	.0380	76.62	4983.1	1
.6529	.0329	78.08	4984.6	1
.6587	.0271	79.75	4986.2	1
.6672	.0186	82.19	4988.7	1-
.6720	.0138	83.57	4990.1	1
.6782	.0076	85.36	4991.8	1-
.6853	.0005	87.41	4993.9	1-
.6911	9.9947	89.08	4995.6	1-
.6984	.9874	91.19	4997.7	1

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1926phae..proj..

n	$n - n_0$	$\frac{e}{n-n_0}$	λ	I
4.7044	9.9814	2892.93	4999.4	1−
.7112	.9746	94.90	5001.4	1−
.7197	.9661	97.37	5003.9	1w
.7258	.9600	99.15	5005.6	1
.7331	.9527	2901.27	5007.8	1
.7406	.9452	03.46	5009.9	1−
.7481	.9377	05.65	5012.1	1
.7556	.9302	07.85	5014.3	1
.7638	.9220	10.25	5016.7	1−
.7702	.9156	12.13	5018.6	1−
.7775	.9083	14.27	5020.8	1w
.7853	.9005	16.57	5023.1	1
.7955	.8903	19.58	5026.1	1w
.8041	.8817	22.12	5028.6	1w
.8140	.8718	25.05	5031.5	1−
.8211	.8647	27.16	5033.6	1−
.8244	.8614	28.13	5034.6	1
.8329	.8529	30.66	5037.1	1w
.8407	.8451	32.98	5039.5	3w
.8463	.8395	34.65	5041.1	3
.8567	.8291	37.76	5044.2	1w
.8663	.8195	40.63	5047.1	1
.8725	.8133	42.49	5049.0	2
.8798	.8060	44.68	5051.2	1
.8857	.8001	46.45	5052.9	1+
.8908	.7950	47.98	5054.5	1−
.9006	.7852	50.94	5057.4	1
.9096	.7762	53.65	5060.1	1
.9198	.7660	56.74	5063.2	1w

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1926phae.proj..784C

ν	$\nu-\nu_0$	$\frac{c}{\nu-\nu_0}$	λ	I	
4.9267	9.7591	2958.83	5065.3	2	
.9365	.7493	61.80	68.3	1w	
.9453	.7405	64.48	71.0	1-	
.9522	.7336	66.58	73.1	1w	
.9612	.7246	69.33	75.8	1-	
.9689	.7169	71.68	78.2	1	
.9754	.7104	73.67	80.2	2	
.9830	.7028	76.00	82.5	1	
.9894	.6964	77.96	84.4	1	
.9951	.6907	79.71	86.2	1	Cd. 85.9
5.0027	.6831	82.05	88.5	1-	
.0099	.6759	84.27	90.8	1w	
.0199	.6659	87.36	93.8	1	
.0307	.6551	90.70	97.2	2w	
.0390	.6468	93.27	99.8	1+	
.0458	.6400	95.38	5101.9	1	
.0533	.6325	97.72	04.2	1w	
.0599	.6259	99.77	06.3	1	
.0674	.6184	3002.11	08.6	2w	
.0767	.6091	05.02	11.5	1	
.0852	.6006	07.68	14.2	1	
.0946	.5912	10.63	17.1	1w	
.1074	.5784	14.65	21.1	1	
.1182	.5676	18.05	24.5	3	
.1274	.5584	20.96	27.4	2	
.1357	.5501	23.58	30.1	2w	
.1441	.5417	26.24	32.7	1	
.1556	.5302	29.90	36.4	1	
.1641	.5217	32.60	39.1	1+	

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1926phae..proj..77

ν	$\nu - \nu_0$	$\frac{c}{\nu - \nu_0}$	λ	I	
5.1685	9.5173	3034.00	5140.5	1-	
.1765	.5093	36.55	43.0	1	
.1875	.4983	40.07	46.6	1	
.1959	.4899	42.76	49.2	1W	
.2059	.4799	45.97	52.5	1W	
.2115	.4743	47.77	54.3	1-	
.2267	.4591	52.67	59.2	1W	
.2422	.4436	57.68	64.2	1W	
.2524	.4334	60.99	67.5	10	Fe 67.5, Mg 67.4
				8	Mg 72.7
.3020	.3838	77.17	83.7	9	Mg 83.7
.3178	.3680	82.36	88.8	1	Ca 88.9
.3279	.3579	85.68	92.2	2	
.3368	.3490	88.62	95.1	2W	
.3484	.3374	92.46	98.9	1	
.3549	.3309	94.61	5201.1	1	
.3673	.3185	98.73	05.2	3	Ca 06.1, 04.5
.3770	.3088	3101.96	08.4	2	Ca 08.4
.3815	.3043	03.45	09.9	3	Ti 10.4 ?
.3908	.2950	06.56	13.0	1	
.3970	.2888	08.64	15.1	1W	
.4058	.2800	11.58	18.1	1W	
.4131	.2727	14.03	20.5	1W	
.4214	.2644	16.82	23.3	1	
.4269	.2589	18.68	25.2	1	
.4333	.2525	20.83	27.3	4	Fe 27.2
.4444	.2414	24.58	31.1	1	
.4493	.2365	26.24	32.7	1	Fe 33.0
.4544	.2314	27.97	34.5	2	

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1926phae.proj..78

n	n-n0	$\frac{e}{n-n_0}$	λ	I	
5.4626	9.2232	3130.75	5237.2	1	
.4708	.2150	33.53	40.0	1	
.4779	.2079	35.95	42.4	1	
.4846	.2012	38.23	44.7	1W	
.4938	.1920	41.37	47.9	2	
.5037	.1821	44.76	51.2	2W	
.5138	.1720	48.22	54.7	2	
.5216	.1642	50.90	57.4	1	
.5253	.1605	52.18	58.7	1	
.5307	.1551	54.03	60.5	1	
.5368	.1490	56.14	62.6	1+	
.5418	.1440	57.86	64.3	3	
.5467	.1391	59.56	66.0	5	
.5512	.1346	61.11	67.6	3	
.5588	.1270	63.75	70.2	5	Fe 70.4
.5657	.1201	66.14	72.6	1	
.5738	.1120	68.95	75.4	1	
.5835	.1023	72.33	78.8	1W	
.5960	.0898	76.69	83.2	2	
.6000	.0858	78.09	84.6	1+	
.6050	.0808	79.84	86.3	1	
.6100	.0758	81.59	88.1	1W	
.6182	.0676	84.47	91.0	1W	
.6257	.0601	87.11	93.6	1W	
.6355	.0503	90.56	97.0	3	
.6424	.0434	92.99	99.5	2	
.6468	.0390	94.55	5301.0	2	
.6540	.0318	97.09	03.6	1+	
.6653	.0205	3201.10	07.6	1W	

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1926phae..proj...794C

n	$n - n_0$	$\frac{c}{n-n_0}$	λ	I	
5.6749	9.0109	320451	5311.0	1	
.6828	.0030	07.32	13.8	1W	
.7011	8.9847	13.85	20.3	1W	
.7172	.9686	19.62	26.1	3W	> Fe 28.0
.7261	.9597	22.82	29.3	4W	
.7359	.9499	26.35	32.8	1	
.7418	.9440	28.48	35.0	1	
.7482	.9376	30.79	37.3	1	
.7560	.9298	33.61	40.1	1W	
.7627	.9231	36.04	42.5	1	
.7686	.9172	38.18	44.7	1	
.7760	.9098	40.87	47.4	1	
.7837	.9021	43.67	50.2	1W	
.7906	.8952	46.19	52.7	1	
.7959	.8899	48.12	54.6	1-	
.8009	.8849	49.95	56.4	1W-	
.8090	.8768	52.92	59.4	1	
.8163	.8695	55.60	62.1	1	
.8245	.8613	58.61	65.1	1W+	
.8319	.8539	61.33	67.8	1	
.8371	.8487	63.25	69.7	2	
.8428	.8430	65.35	71.8	3	Fe 71.5
.8470	.8388	66.90	73.4	1	
.8584	.8274	71.12	77.6	1W	
.8686	.8172	74.91	81.4	1	
.8745	.8113	77.10	83.6	1-	
.8814	.8044	79.67	86.2	1-	
.8918	.7940	83.55	90.0	1	
.8965	.7893	85.30	91.8	1-	

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1926phae.proj...784C

n	n-n₀	$\frac{\Theta}{n-n_0}$	λ	I	
5. 9037	8.7821	3288.00	5394.5	1W	Mn 94.7
.9097	.7761	90.24	5396.7	1	
.9158	.7700	92.53	5399.0	1W	
.9224	.7634	95.01	5401.5	1	
.9293	.7565	97.61	5404.1	1	
.9361	.7497	3300.17	5406.7	3	
.9396	.7462	01.49	5408.0	2	
.9449	.7409	03.49	5410.0	1	Cr 09.8
.9502	.7356	05.50	5412.0	2	
.9530	.7328	0656	5413.0	1	
.9596	.7262	09.06	5415.5	1	
.9701	.7157	13.04	5419.5	1W	Mn 20.4
.9771	.7087	15.71	5422.2	1	
.9836	.7022	18.18	5424.7	1	
.9881	.6977	19.90	5426.4	1-	
.9934	.6924	21.93	5428.4	1	Mg 28.4
.9979	.6879	23.65	5430.1	1	
6. 0021	.6837	25.25	5431.7	1+	
.0073	.6785	27.25	5433.7	1+	
.0118	.6740	28.97	5435.5	2	
.0184	.6674	31.51	5438.0	1	
.0240	.6618	33.66	5440.1	1	
.0305	.6553	36.16	5442.6	1+	
.0356	.6502	38.13	5444.6	1	
.0411	.6447	40.26	5446.7	2	Fe 46,9
.0480	.6378	42.92	5449.4	2W	
.0568	.6290	46.33	5452.8	1	
.0632	.6226	48.82	5455.3	2W	Fe 55.6
.0690	.6168	51.07	5457.6	2W	

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1926phae..proj..279C

n	n·n₀	c/(n·n₀)	λ	I	
6.0758	8.6100	3353.72	5460.2	1—	
.0857	.6001	57.58	5464.1	1W	
.0926	.5932	60.27	5466.8	1	
.0998	.5860	63.09	5469.6	1	
.1057	.5801	65.40	5471.9	1	
.1132	.5726	68.35	5474.8	1W	
.1221	.5637	71.85	5478.3	1+	
.1301	.5557	75.00	5481.5	1	
.1354	.5504	77.09	5483.6	1	Co 83.3
.1434	.5424	80.26	5486.7	1	
.1518	.5340	83.58	5490.1	1W	
.1621	.5237	87.67	5494.2	1	
.1699	.5159	90.78	5497.3	1W	Fe 97.5
.1922	.4936	99.68	5506.2	1W	Fe 06.8
.2000	.4858	3402.80	5509.3	1	
.2061	.4797	05.25	5511.7	1	
.2131	.4727	08.06	5514.5	2	
.2240	.4618	12.45	5518.9	1W	
.2354	.4504	17.06	5523.5	1W	
.2438	.4420	20.46	5526.9	1	
.2504	.4354	23.13	5529.6	2	
.2569	.4289	25.77	5532.3	1	
.2634	.4224	28.42	5534.9	1	
.2705	.4153	31.31	5537.8	1	
.2773	.4085	34.08	5540.6	1	
.2853	.4005	37.36	5543.8	2	
.2923	.3935	40.22	5546.7	1	
.3200	.3658	51.61	5558.1	1W	
.3334	.3524	57.15	5563.6	1W	

rockysound dark

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1926phae.proj..794C

n	n-n0	$\frac{c}{n-n_0}$	λ	I	
6.3442	8.3416	3461.63	5568.1	1W	
.3553	.3305	66.24	5572.7	1W	
.3721	.3137	73.24	5579.7	1W	
.3831	.3027	77.84	5584.3	1W	
.3927	.2931	81.87	5588.4	3W	Ca 88.8
.4026	.2832	86.03	5592.5	2	
.4097	.2761	89.02	5595.5	2	
.4181	.2677	92.57	5599.1	1	
.4271	.2587	96.37	5602.9	2W	Ca 02.8
.4337	.2521	99.17	5605.7	1	
.4399	.2459	3501.80	5608.3	1	
.4467	.2391	04.69	5611.2	1	
.4530	.2328	07.37	5613.9	1	
.4623	.2235	11.34	5617.8	2	
.4693	.2165	14.33	5620.8	1	
.4775	.2083	17.84	5624.3	2	
.4855	.2003	21.27	5627.8	2	
.4943	.1915	25.06	5631.5	1	
.5016	.1842	28.20	5634.7	1	
.5120	.1738	32.69	5639.2	1W	
.5195	.1663	35.93	5642.4	1	
.5268	.1590	39.10	5645.6	1W	
.5347	.1511	42.53	5649.0	1W	
.5465	.1393	47.66	5654.1	1W	
.5504	.1354	49.37	5655.9	1	
.5579	.1279	52.64	5659.1	2	
.5644	.1214	55.48	5662.0	2	
.5718	.1140	58.73	5665.2	2	
.5863	.0995	65.10	5671.6	2W	Sc 71.8

(Background dark)

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1926phae.proj..794C

n	n-no	c/(n-no)	λ	I	
6.5966	8.0892	3569.64	5676.1	1w	
.6031	.0827	72.51	5679.0	1+	
.6087	.0771	74.98	5681.5	1+	
.6161	.0697	78.26	5684.7	1+	) Se 8.68 ?
.6253	.0605	82.35	5688.8	1+	
.6292	.0566	84.08	5690.6	1	
.6365	.0493	87.33	5693.8	1w	
.6442	.0416	90.77	5697.3	1	
.6493	.0365	93.05	5699.5	1+	Se 00.1
.6559	.0299	96.00	5702.5	1w	
.6602	.0206	3600.17	5706.7	1w	
.6741	.0117	04.17	5710.7	3	Se 11.8 ?
.6799	.0059	06.78	5713.3	2	many weak lines
.6843	.0015	08.76	5715.2	1	
.6912	7.9946	11.88	5718.4	1w	
.7188	.9670	24.39	5730.9	1w	
.7662	.9196	46.08	5752.6	1	
.7719	.9139	48.71	5755.2	3	
.7822	.9036	53.46	5759.9	1w	
.7878	.8980	56.05	5762.5	3	
.7938	.8920	58.83	5765.3	2	
.8007	.8851	62.03	5768.5	2	
.8068	.8790	64.87	5771.4	2	
.8134	.8724	67.94	5774.4	3	
.8203	.8655	71.16	5777.6	1+	
.8270	.8588	74.29	5780.8	2	
.8329	.8529	77.05	5783.5	3	
.8396	.8462	80.19	5786.7	3	
.8455	.8403	82.96	5789.4	1w	

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1926phae.proj..794C

n	$n - n_0$	$\frac{a}{n - n_0}$	λ	I	
6.8531	7.8327	3686.53	5793.0	1	
.8647	.8211	92.00	5798.5	1w	
.8726	.8132	95.73	5802.2	2	
.8831	.8027	3700.71	5807.2	3w	
.8896	.7962	03.79	5810.3	2	
.8985	.7873	08.03	5814.5	1w	
.9061	.7797	11.65	5818.1	1w	
.9127	.7731	14.80	5821.3	1	
.9215	.7643	19.01	5825.5	1w	
.9387	.7471	27.27	5833.8	w	
.9520	.7338	33.68	5840.2	w	
.9592	.7266	37.16	5843.6	w	
.9695	.7163	42.14	5848.6	w	
.9772	.7086	45.88	5852.4	w	
.9848	.7010	49.58	5856.1	w	
.9922	.6936	53.19	5859.7	w	
———	———	———	———	5	na
———	———	———	———	5	na

much background

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1926phae.proj.1940

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1926phae.proj...794

K_2

February 3. α Tucanae · plate 48946 spectrum ①

1. $\lambda_1 = 4861.33$
2. $\lambda_2 = 5172.70$
3. $\lambda_3 = 5889.96$
4. $2-1 = 311.37$
5. $3-2 = 717.26$
6. $n_1 = 4.2000$
7. $n_2 = 5.2690$
8. $n_3 = 7.0572$
9. $7-6 = 1.0690$
10. $8-7 = 1.7882$

11. $4/9 = 291.272$		n_1	n_2	n_3
12. $5/10 = 401.107$		4.1996	5.2690	7.0575
13. $11/12 = .72617$		.2002	82	63
14. $I-13 = .27383$		.2002	87	67
15. $6 \times 13 = 3.04991$		.1998	97	70
16. $8-15 = 4.0073$		.1998	90	69
17. $16/14 = 14.6343 = n_0$		.2001	95	72
		.2000	87	75
18. $17-6 = 10.4343$		.2003	88	80
19. $17-7 = 9.3653$		.2001	90	77
20. $17-8 = 7.5771$		.1997	96	75
21. $\lambda_1 = 4861.33$		4.2000	5.2690	7.0572

22. $11 \times 19 = 2727.85$
23. $21-22 = 2133.48 = \lambda_0$

24. $18 \times 22 = 28,463.21 = e$

25. $24/20 = 3756.48$
26. $23+25 = 5889.96 = \lambda_3$ (check)

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1926phae.proj.5794

n	n - no	$\frac{e}{n-no}$	λ	I	Identification.
				2	Hβ
H. 2062	10.4281	2729.47	4863.0	1	
.2146	.4197	31.67	4865.2	1	
.2241	.4102	34.17	4867.7	1W	
.2417	.3926	38.80	4872.3	2	Sr 72.5
.2493	.3850	40.80	4874.3	1	
.2577	.3766	43.02	4876.5	1W	
.2653	.3690	45.03	4878.5	1-	
.2776	.3567	48.29	4881.8	1	
.2840	.3503	49.99	4883.5	1W	
.2963	.3380	53.26	4886.7	2W	
.3150	.3193	58.25	4891.7	4W	Fe 91.5, 90.7
.3240	.3103	60.66	4894.1	1W	
.3387	.2956	64.60	4898.1	1	
.3486	.2857	67.26	4900.7	2	
.3627	.2716	71.06	4904.5	2W	
.3718	.2625	73.52	4907.0	1	
.3832	.2511	76.60	4910.1	2W	
.3906	.2437	78.61	4912.1	2	
.3962	.2381	80.13	4913.6	1	
.4012	.2331	81.48	4915.0	1-	
.4093	.2250	83.69	4917.2	1	
.4141	.2202	85.00	4918.5	1	
.4197	.2146	86.52	4920.0	4W	Fe 20.5, 19.0
.4246	.2097	87.86	4921.3	4W	
.4315	.2028	89.75	4923.2	1	
.4403	.1940	92.15	4925.6	2	
.4516	.1827	95.25	4928.7	1W	
.4719	.1624	2800.84	4934.3	2W	Be+ 34.1

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1926phae.proj...794C

n	n-no	$\frac{a}{n \cdot no}$	λ	I	
4.4851	10.1492	2804.48	4938.0	2	
.4882	.1461	05.34	4938.8	2	
.4936	.1407	06.83	4940.3	1	
.5580	.0763	24.77	4958.3	5	
.5638	.0705	26.39	4959.9	1	
.5738	.0605	29.20	4962.7	2w	Sn 62.2
.5848	.0495	32.30	4965.8	3w	
.5925	.0418	34.47	4968.0	2w	
.6041	.0302	37.75	4971.2	1w	
.6150	.0193	40.84	4974.3	1w	
.6220	.0123	42.82	4976.3	1	
.6296	.0047	44.98	4978.5	2	
.6373	9.9970	47.18	4980.7	1	
.6441	.9902	49.11	4982.6	4	Ti 81.8?
.6522	.9821	51.42	4984.9	2	
.6590	.9753	53.37	4986.9	2	
.6666	.9677	55.54	4989.0	1	
.6742	.9601	57.72	4991.2	1w	Ti 91.1
.6869	.9474	61.37	4994.9	1	
.6964	.9379	64.11	4997.6	1w	
.7057	.9286	66.79	5000.3	1w	
.7186	.9157	70.52	5004.0	1	
.7266	.9077	72.84	5006.3	3w	Fe 66.1
.7330	.9013	74.69	5008.2	1	
.7440	.8903	77.91	5011.4	1w	
.7532	.8811	80.57	5014.1	3w	
.7639	.8704	83.69	5017.2	1	
.7750	.8593	86.94	5020.4	1w	
.7841	.8502	89.61	5023.1	2	

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1926phae..proj..67940

m	m-m0	$\frac{a}{m-m_0}$	λ	I	
4.7966	9.8377	2893.28	5026.8	1W	
.8027	.8316	95.07	5028.6	3W	
.8138	.8205	98.35	5031.8	1	
.8224	.8119	2900.89	5034.4	1	
.8282	.8061	02.60	5036.1	2	
.8395	.7948	05.95	5039.4	3W	
.8461	.7882	07.91	5041.4	7W	
.8552	.7791	10.62	5044.1	1	
.8718	.7625	15.57	5049.1	2W	
.8765	.7578	16.97	5050.5	2	
.8838	.7505	19.15	5052.6	2	
.8926	.7417	21.79	5055.3	1	
.9004	.7339	24.13	5057.6	1	
.9079	.7264	26.39	5059.9	1	
.9156	.7187	28.71	5062.2	1	
.9242	.7101	31.30	5064.8	3	
.9303	.7040	33.14	5066.6	2	
.9349	.6994	34.53	5068.0	2	
.9413	.6930	36.47	5070.0	2	
.9493	.6850	38.90	5072.4	2W	
.9627	.6716	42.97	5076.5	1W	
.9746	.6597	46.59	5080.1	4	
.9811	.6532	48.58	5082.1	2	Sc 81.6
.9869	.6474	50.35	5083.8	2	Sc 83.7
.9972	.6371	53.50	5087.0	1-	Sc 87.0
5.0109	.6237	57.71	5091.2	1W	
.0240	.6103	61.74	5095.2	1	
.0305	.6038	63.74	5097.2	2	
.0386	.5957	66.25	5099.7	3W	

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1926phae.proj...794C

m	m-m0	a/(m-m0)	λ	I	
5.0476	9.5867	2969.03	5102.5	1	
.0555	.5788	71.48	5105.0	1	
.0679	.5664	75.33	5108.8	2w	
.0760	.5583	77.85	5111.3	1w	
.0852	.5491	80.72	5114.2	2	
.0936	.5407	83.35	5116.8	1	
.1029	.5314	86.26	5119.7	1	
.1159	.5184	90.34	5123.8	4w	
.1234	.5109	92.69	5126.2	1	
.1298	.5045	94.71	5128.2	2	
.1373	.4970	97.07	5130.6	2w	
.1460	.4883	99.82	5133.3	1	
.1563	.4780	3003.08	5136.6	1	
.1650	.4693	05.84	5139.3	1w	
.1751	.4592	09.05	5142.5	1w	
.1895	.4448	13.64	5147.1	1w	
.2016	.4327	17.50	5151.0	1	
.2079	.4264	19.52	5153.0	1	
.2147	.4196	21.70	5155.2	1w	
.2267	.4076	25.55	5159.0	1w-	
———	———	———	———	10	Mg 67.4, Fe 67.5
———	———	———	———	10	Mg 72.7
———	———	———	———	10	Mg 83.7
.3161	.3182	54.58	5188.1	1	
.3303	.3040	59.24	5192.7	3	Ti 93.0
.3371	.2972	61.48	5195.0	2	
.3688	.2655	71.96	5205.4	3w	Cr 06.1, 04.5
.3780	.2563	75.01	5208.5	5w	Cr 08.4
.3826	.2517	76.54	5210.0	3	Ti 10.4

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1926phae.proj..374C

n	n-n₀	$\frac{q}{n-n_0}$	λ	I	
5.4021	9.2322	3083.04	5216.5	1	
.4122	.2221	86.41	5219.9	1	
.4326	.2017	93.26	5226.7	5W	Fe 27 2
.4539	.1804	3100.43	5233.9	2	
.4714	.1629	06.35	5239.8	1-	
.4784	.1559	08.73	5242.2	1-	
.4935	.1408	13.86	5247.3	2W	
.5031	.1312	17.14	5250.6	2W	
.5154	.1189	21.34	5254.8	2W	
.5444	.0899	31.30	5264.8	5W	
.5588	.0755	36.27	5269.8	5	Fe 69.5, 70.4
.5677	.0666	39.35	5272.8	1	
.5760	.0583	42.22	5275.7	2	
.5889	.0454	46.70	5280.2	1	
.5972	.0371	49.60	5283.1	2W	
.6069	.0274	52.98	5286.5	1-	
.6135	.0208	55.29	5288.8	1-	
.6210	.0133	57.91	5291.4	1-	
.6394	8.9949	64.37	5297.9	3	
.6489	.9854	67.72	5301.2	2W	
.6602	.9741	71.71	5305.2	1-	
.6692	.9651	74.89	5308.4	1-	
.6788	.9555	78.29	5311.8	1-	
.6914	.9429	82.77	5316.3	1-	
.7012	.9331	86.26	5319.7	1W	
.7110	.9233	89.76	5323.2	1-	
.7253	.9090	94.88	5328.4	6	Fe 28.0, 28.5
.7400	.8943	3200.16	5333.6	1	
.7505	.8838	03.95	5337.4	1-	

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1926phae.proj...

n	n-no	c/m.no	λ	I	
5.7591	8.8752	3207.05	5340.5	2	
.7650	.8693	09.18	5342.7	1	
.7732	.8611	12.15	5345.6	1	
.7824	.8519	15.49	5349.0	1W	Cr 48.3
.7923	.8420	19.09	5352.6	1	
.8025	.8318	22.81	5356.3	1	
.8145	.8198	27.19	5360.7	1	
.8192	.8151	28.92	5362.4	1	
.8272	.8071	31.85	5365.3	1	
.8324	.8019	33.76	5367.2	1	
.8423	.7920	37.40	5370.9	3	Fe 71.5
.8785	.7558	50.78	5384.3	1	
.8941	.7402	56.59	5390.1	2	
.9016	.7327	59.38	5392.9	1	
.9117	.7226	63.16	5396.6	2W	Fe 97.1
.9351	.6992	71.93	5405.4	3	Fe 05.8
.9460	.6883	76.04	5409.5	2	Cr 09.8
.9721	.6622	85.91	5419.4	1	
.9848	.6495	90.73	5424.2	1	
.9989	.6354	96.11	5429.6	2	Fe 29.7
6.0078	.6265	99.51	5433.0	2	
.0162	.6181	3302.72	5436.2	2	
.0311	.6032	08.44	5441.9	1	
.0375	.5968	10.91	5444.4	1	
.0437	.5906	13.30	5446.8	2W	Fe 46.9
.0503	.5790	17.78	5451.3	1	
.0644	.5699	21.30	5454.8	2W	Fe 55.6
.0846	.5497	29.15	5462.6	1W	
.1013	.5330	35.66	5469.1	1	

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1926phae.proj.0714

n	n-n₀	$\frac{e}{n-n_0}$	λ	I	
6.1068	8.5275	3337.81	5471.3	1	
.1131	.5212	40.28	5473.8	1	
.1200	.5143	42.99	5476.5	1w	
.1324	.5019	47.86	5481.3	1w	
.1461	.4882	53.27	5486.8	1	
.1543	.4800	56.51	5490.0	1	
.1614	.4729	59.32	5492.8	1	
.1713	.4630	63.25	5496.7	1	
.1825	.4518	67.71	5501.2	1	Fe 01.5
.1957	.4386	72.98	5506.5	1w	Fe 06.8
.2142	.4201	80.39	5513.9	2w	
.2323	.4020	87.67	5521.2	1	
.2484	.3859	94.17	5527.7	1	
.2723	.3620	3403.88	5537.4	1	
.2873	.3470	09.99	5543.5	1	
.2968	.3375	13.88	5547.4	1	
.3160	.3183	21.76	5555.2	1	
.3387	.2956	31.12	5564.6	1	
.3579	.2764	39.08	5572.6	1	
.3709	.2634	44.49	5578.0	1	
.3821	.2522	49.17	5582.7	1	
.3960	.2383	54.99	5588.5	2w	Ca 88.8
.4062	.2281	59.27	5592.8	1	
.4263	.2080	67.74	5601.2	1	Ca 01.3
.4412	.1931	74.05	5607.5	1	
.4478	.1865	76.85	5610.3	1	
.4561	.1782	80.38	5613.9	1	
.4628	.1715	83.23	5616.7	1	
.4775	.1573	89.29	5622.8	1	

Last Continuum

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ν	$\nu - \nu_0$	$\frac{e}{\nu - \nu_0}$	λ	I	
6.4849	8.1494	3492.68	5626.2	2	
.5033	.1310	3500.58	5634.1	1	
.5104	.1239	03.64	5637.1	1w	
.5235	.1108	09.30	5642.8	1	
.5330	.1013	13.41	5646.9	1	
.5426	.0917	17.58	5651.1	1w	
.5538	.0805	22.46	5655.9	1	
.5619	.0724	25.99	5659.5	1	
.5743	.0600	31.42	5664.9	1	
.5795	.0548	33.70	5667.2	1	
.5893	.0450	38.00	5671.5	1	Se 71.8
.6052	.0291	45.01	5678.5	1	
.6212	.0131	52.08	5685.6	1w	Se 86.8
.6350	7.9993	58.21	5691.7	1	
.6438	.9905	62.13	5695.6	1	
.6513	.9830	65.48	5699.0	1	
.6595	.9748	69.14	5702.6	1	
.6724	.9619	74.93	5708.4	2	Se 08.6
.6800	.9543	78.34	5711.8	2	Se 11.8
.6897	.9446	82.71	5716.2	1	
.6994	.9349	87.09	5720.6	1	
.7110	.9233	92.34	5725.8	1	
.7199	.9144	96.38	5729.9	1	
.7262	.9081	99.25	5732.7	1	
.7376	.8967	3604.44	5737.9	1	
.7461	.8882	08.33	5741.8	1	
.7578	.8765	13.69	5747.2	1	
.7640	.8703	16.53	5750.0	1	
.7714	.8629	19.94	5753.4	2	

dark background

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n	$n-n_0$	$\frac{c}{n-n_0}$	λ	I
6.7880	7.8463	3627.60	5761.1	2
.7997	.8346	33.01	5766.5	1
.8072	.8271	36.49	5770.0	1
.8130	.8213	39.19	5772.7	1
.8184	.8159	41.71	5775.2	1
.8255	.8088	45.02	5778.5	1
.8354	.7989	49.64	5783.1	2w
.8435	.7908	53.44	5786.9	1
.8491	.7852	56.07	5789.6	1
.8560	.7783	59.31	5792.8	1
.8636	.7707	62.89	5796.4	1
.8703	.7640	66.05	5799.5	1
.8793	.7550	70.30	5803.8	1
.8881	.7462	74.47	5808.0	1w
.8976	.7367	78.99	5812.5	1w
.9060	.7283	82.98	5816.5	1w
.9181	.7162	88.76	5822.2	1
.9250	.7093	92.06	5825.5	1
.9333	.7010	96.04	5829.5	1
.9399	.6944	99.21	5832.7	1
.9478	.6865	3703.01	5836.5	1
.9560	.6783	06.97	5840.5	1
.9638	.6705	10.74	5844.2	1
.9738	.6605	15.58	5849.1	1w
.9842	.6501	20.63	5854.1	1
.9910	.6433	23.94	5857.4	3
.9979	.6364	27.31	5860.8	1
7.0081	.6262	32.29	5865.8	1
.0218	.6125	39.01	5872.5	1

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ν	$\nu - \nu_0$	$\frac{c}{\nu - \nu_0}$	λ	I	
7.0338	7.6005	3744.91	5878.4	2w	
.0419	.5924	48.91	5882.4	1	
———	———	———	———	9	na
———	———	———	———	6	na

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K_5

Fel. 5. π Puppis - plate X8932 - spectrum ②.

1. λ_1 =
2. λ_2 =
3. λ_3 =
4. 2-1 =
5. 3-2 =
6. m_1 =
7. m_2 =
8. m_3 =
9. 7-6 =
10. 8-7 =

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