1928phae.proj..923H

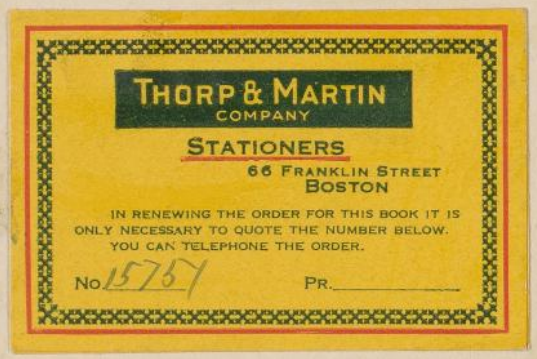
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L. Hufnagel

Sept 1928 – Jan 1930

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Rectangular slit 2m.063 wide
4.267 long

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2

MC 6449 Readings — O Point

N	Type	m	O point	CF	~Hβ	CF	1st Hγ	CF	Gb	CF	4227	CF	4184	O point	Remarks
				3.92	2.30	3.95	2.40	3.90	2.30	3.85	2.30	3.87	2.25		
4	F8 +.12	8.7	2.30	.593	.362	.597	.380	.591	.362	.585	.362	.588	.352	2.30	
								3.82	2.30	3.85	2.70	3.80	3.19		
5	K2 +.14	8.9	"					.582	.362	.585	.431	.580	.504	"	
								3.84	2.58	3.85	2.82	3.81	3.05		
6	K2 +.14	9.1	"					.584	.412	.585	.450	.581	.484	"	
7	K2														too faint
10	G5														too faint
				(3.52)	(1.80	(3.52)	(1.75)	3.67	2.15	3.60	2.38	3.62	2.60		
12	K0 +.14	9.1	2.40	.547	.255	.553	.243	.585	.332	.556	.377	.559	.415	2.40	
				3.62	2.20	3.65	2.01	3.52	2.60	3.60	2.90	3.63	3.10		
20	K2 +.18	9.5	"	.559	.342	.582	.303	.546	.415	.556	.462	.580	.491	"	
21	K5 +.18	9.5													too faint
				3.75	1.45	3.81	1.30	3.75	1.92	3.74	2.35	3.65	2.90		
23	K2 +.14	8.9	2.40	.584	.161	.581	.114	.574	.283	.573	.371	.562	.462	"	near A star
			2.20					4.10	3.05	4.12	3.50	4.17	3.70	2.20	
27	K5 +.18	9.4						.613	.484	.615	.544	.620	.568	.342	
				3.76	(0.50)	3.80	(0.25)	3.79	0.53	3.70	0.30	3.75	1.18		
31	K0 +.03	7.4	2.40	.575	9.699	.580	9.398	.579	9.724	.568	9.845	.574	.072	2.40	first two uncertain
				3.80	0.35	3.85	0.22	3.78	0.40	3.77	0.57	3.82	0.90		
32	K0 00	7.2	"	.580	9.544	.585	9.342	.577	9.602	0.576	9.748	.582	9.954	"	
				3.81	0.35	3.77	0.25	3.76	0.35	3.82	0.35	3.77	2.40		
34	F5 00	7.0	"	.581	9.544	.576	9.398	.575	9.544	.582	9.544	.576	9.602	"	
				3.52	1.90	3.57	1.75	3.52	2.20	3.52	2.40	3.52	2.45		
40	K0 +.14	8.9	"	.547	.279	.553	.243	.547	.342	.547	.380	.547	.389	"	
			2.20	3.90	3.30	4.45	3.00	3.92	3.46	4.49	3.75	4.47	3.85	2.20	
41	K0 +.18	9.5		.591	.519	.648	.477	.593	.539	.645	.574	.650	.585		
42	K2 +.20	9.8													too faint
			2.26					4.47	1.32	4.54	1.81	4.49	1.84	2.26	
44	G5 +.07	8.0						.650	.121	.657	.258	652	265		
			2.30					4.32	2.00	4.35	2.30	4.28	2.80	2.30	
49	K0 +.10	8.5						635	.301	638	362	631	447		
53	G0														too faint
				4.47	3.05	4.52	4.60	4.47	3.70	4.55	3.90	4.50	4.30		
60	F8 +.10	8.6	2.30	650	484	655	663	650	588	658	591	653	633	2.30	uncertain
								4.70	1.90	4.70	2.25	4.62	2.52		
66	K0 +.08	8.2	"					672	279	672	352	665	410	"	on the edge
								3.62	2.10	3.65	2.50	3.65	2.80		
68	K0 +.14	9.0	"					559	322	562	398	562	447	"	
71	G0														too faint

Correction to gr. magn. 6.94 — 10.80 +.13
according to H Ann Vol 71 p 224

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N	A $\log \frac{dF}{H\beta}$	B $\log \frac{dF}{H\gamma + [O\,III]}$	C $\log \frac{dF}{g}$	D $\log \frac{dF}{4227}$	E $\log \frac{dF}{4154}$	D-C in Steps	E-D
4	.231	.217	.229	.223	.236		
5			.220	.154	.076		
6			.172	.135	.097		
	.292	.310	.233	.179	.144		
	.217	.259	.131	.094	.069		
	.413	.467	.291	.202	.100		
			.129	.071	.052		
	.876	1.162	.855	.723	.502		
	1.036	1.243	.975	.828	.628		
	.937	1.168	1.031	1.038	.974		
	.268	.310	.205	.167	.158		
	.072	.171	.054	.071	.065		
			.529	.399	.387		
			.334	.276	.184		
	.166	9.992	.082	.067	.020		
			.393	.320	.255		
			.237	.164	.115		

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4

NC 4449 Readings – O Point

N	Type	m	O Point	CF	~Mag	CF	Mag Hr	CF	G	CF	4209	CF	4184	OP	Remarks
				1.				3.79	2.29	3.79	2.29	3.76	2.24	2.12	
4			2.20					.579	360	579	366	585	350	326	OP 2.16
								3.71	2.25	3.65	2.60	3.65	3.00		
5			2.20					569	352	562	415	562	477	2.20	
								3.78	2.35	3.82	2.82	3.82	3.13		
6			"					577	407	582	450	582	484	"	
7															
10															
								3.88	2.35	3.87	2.55	3.96	2.80		
12			2.25					589	371	588	407	598	447	2.25	
								3.88	2.75	3.85	3.05	3.90	3.40		
20			"					589	439	585	484	591	531	"	
								4.03	2.95	4.02	3.37	4.02	3.55		
21			"					605	470	604	528	604	550	"	
								4.26	2.20	4.20	2.75	4.17	3.25		
23			"					629	342	623	439	620	512	"	
								3.94	2.88	3.85	3.26	3.98	3.53		
27			2.25					596	459	585	513	600	548	2.30	2.27
								4.24	.62	4.17	.82	4.16	1.15		
31			2.30					627	9.792	620	9.914	619	061	2.30	
								4.17	.45	4.18	.60	4.15	.90		
32			"					620	9.653	621	9.778	618	9.954	"	
				4.25	.32	4.25	.20	4.20	.40	4.23	.40	4.25	.45		
34			"	628	9.508	628	9.301	623	9.602	626	1602	628	9.653	2.29	2.30
								3.94	2.52	4.14	2.77	4.04	2.85		
40			2.29					596	481	617	442	606	455	2.28	2.28
								4.22	3.30	4.17	3.50	4.22	3.60		
41			2.30					625	579	620	544	625	556	2.30	
42															
								4.39	1.22	4.34	1.72	4.32	2.17		
44			2.30					624	088	637	236	635	336	2.25	2.28
								4.30	2.00	4.17	2.30	4.17	2.75		
49			2.30					635	301	620	362	620	439	2.32	2.30
55															
60															
								4.45	1.88	4.50	2.25	4.40	2.40		
66			2.30					648	274	653	352	643	380	2.30	on the edge
								3.55	2.10	3.55	2.45	3.55	2.75		
68			"					530	322	530	389	530	459	"	
71															

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A	B	C	D	E			
Log $\frac{cF}{H\delta}$	Log $\frac{cF}{H\delta + K\delta}$	Log $\frac{cF}{G}$	Log $\frac{cF}{4227}$	Log $\frac{cF}{4184}$	$(D-C)^m$	$(E-D)^m$	near reduction
		.239 761	.239 761	.245 755	.00	−.02	+.10 −.15
		.217 783	.147 853	.085 915	+.33	+.32	+.51 +.36
		.170 830	.132 868	.098 902	+.20	+.20	+.34 +.05
		.218 782	.181 819	.151 849	+.15	+.15	d +.32 +.05
		.150 850	.101 899	.060 940	+.27	+.25	+.40 +.25
		.135 865	.074 926	.054 946	+.29	+.14	? .43 +.06
		.287 713	.184 816	.108 892	+.39	+.38	+.60 +.30
		.137 863	.072 928	.052 948	+.37	+.17	d +.47 +.05
		.835 165	.706 294	.558 442	+.20	+.34	
		.967 033	.843 157	.664 336	+.18	+.32	
1.060	1.327	1.021	1.024	.975 025	.00	+.04	
		.195 805	.175 825	.151 849	+.08	+.12	d +.25 +.03
		.106 894	.076 924	.069 931	+.18	+.02	d +.25 −.02
		.538 462	.401 599	.299 701	+.47	+.23	
		.334 666	.258 742	.181 819	+.27	+.33	+.45 +.28
		.374 626	~~.301~~ 699	.263 737	+.24	+.14	+.50 +.06
		.228 772	.161 839	.111 889	+.31	+.24	+.49 +.16

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6

Mc 6449 Readings – O Point

N	Type m	OP	Cf	Ps	Cf	Mean 2	Cf	G	Cf	Yerg	Cf	Yerg	Remarks		
4		2.49	3.70 568	2.10 322	3.65 562	1.80 285	3.68 566	2.10 322	3.67 565	2.10 322	3.70 568	2.17 336	2.50		2.50
5		2.50					3.69 559	2.20 342	3.67 565	2.62 418	3.60 556	3.00 477	"		
6		2.50					3.74 573	2.49 396	3.74 573	2.74 438	3.69 567	2.99 476	2.52		2.57
7															
10															
12	/	2.50					3.82 582	2.25 352	3.78 577	2.51 400	3.87 588	2.65 423	2.59		
20		2.59					3.80 580	2.53 403	3.78 577	2.68 428	3.80 580	3.23 509	2.55		
21		2.55					3.92 593	2.90 462	3.90 591	3.25 517	3.90 591	3.00 477	2.55		
23		2.55					4.18 621	2.08 318	4.09 612	2.58 412	4.05 607	3.03 481	2.50		2.52
27	/	2.50					3.80 580	2.75 439	3.82 582	3.20 508	3.90 591	3.40 531	2.50		
31		"					3.22 508	.55 9.740	4.12 615	.80 9.903	4.13 616	1.15 .081	"		
32		"					4.09 612	.45 9.653	4.12 .615	.56 9.748	4.25 628	.90 9.954	"		
34		"	4.11 .614	.40 9.602	4.16 619	.21 9.322	4.07 610	.42 9.623	4.19 622	.40 9.602	4.17 .620	.50 9.699	"		
40	/	"					4.02 604	2.45 389	3.98 600	2.70 431	3.97 599	2.80 447	"		
41	/	"					4.10 613	3.20 505	4.02 604	3.40 531	4.10 613	3.55 550	"		
42															
44		"					4.26 629	1.15 061	4.15 618	1.62 210	4.16 619	2.10 322	"		
49		"					4.07 610	1.82 280	3.98 600	2.18 338	4.05 607	2.60 415	"		
55															
60		"					4.22 625	2.65 423	4.22 625	2.60 415	4.27 630	2.80 431	"		
66		"					4.32 635	1.82 280	4.32 635	2.10 322	4.30 633	2.40 380	"		
68		"					3.46 539	2.05 318	3.42 534	2.32 365	3.40 531	2.65 423	"		
71															

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A	B	C	D	E	(D−C)″		(E−D)″		New reduct.	
Log $\frac{\alpha f}{H\delta}$	Log $\frac{\alpha f}{H\gamma}$ near	Log $\frac{\alpha f}{H\beta}$	Log $\frac{\alpha f}{H\gamma}$	Log $\frac{\alpha f}{H\delta K}$						
.246	.307	.244 756	.243 757	.232 768	.00	.00	+.01	+.03	+.13	−.10
		.217 783	.147 853	079 921	+.33	+.47	+.36	+.38	+.50	+.29
		177 823	135 865	91 909	+.19	+.21	+.27	+.31	+.33	+.14
		230 770	177 823	165 835	+.22	+.26	+.07	+.06	d? +.40	−.09
		177 823	149 851	71 929	+.17		+.44		+.32	+.27
		131 869	79 921	114 886	+.31		−.19		? +.43	−.30
		303 797	200 800	126 874	+.41		+.36		+.14	+.27
		141 859	74 926	60 940	+.39		+.06		d +.45	+.03
		768 232	712 288	555 445	+.10		+.34			
		1.059	867	674			+.31			
1.012	1.297	987	1.020	921	−.05		+.15			
		215 785	169 831	152 848	+.25		+.08		d +.34	+.02
		108 892	73 927	63 937	+.21		+.03		d +.30	.00
		568 432	408 592	297 703	+.45		+.35		+.6	
		350 650	262 738	192 808	+.33		+.28		+.60	+.22
		202 798	210 790	199 801	−.03		+.03		+.07	−.07
		375 625	313 687	253 747	+.23		+.20		+.45	+.16
		221 779	169 831	108 892	+.22		+.21		+.41	+.19

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8

Mc 6449 Readings – O Point

N	Type	m	OP	clf	Hβ	clf	Hβ+Hγ/2	clf	G	clf	4129	clf	4184	OP	Remarks
2	Ao	+3 9.4	2.50	3.61	2.75	3.65	2.53	3.65	2.55	3.65	2.55	3.62	2.55	2.50	
				534	439	562	403	562	407	562	407	559	407		
16	"	+3 8.9 .82	"	3.90	2.10	3.96	1.60	3.87	1.60	3.85	1.60	3.74	1.65	"	
				591	322	598	204	588	204	585	204	573	217		
22	"	+2 7.4 ✓	"	4.10	.60	4.19	.35	4.15	.40	4.15	.40	4.17	.45		
				613	9.778	622	9.544	618	9.602	618	9.602	620	9.653		
39	"		"	3.5	2.9	3.8	2.3	3.72	2.2	3.75	2.55	3.62	2.60		too faint
73	"	+3 9.5	"	3.85	2.90	3.82	2.50	3.72	2.52	3.75	2.55	3.62	2.60	"	
				585	462	582	398	571	401	574	407	559	415		
76	"	+3 9.4	2.45	3.58	3.28	3.26	2.43	3.48	2.48	3.70	2.58	3.65	2.68	2.50	2.47
				554	576	573	386	542	394	568	412	582	428		
79	"	+2 8.6 ✓	2.50	3.77	2.20	3.77	1.60	3.72	1.74	3.72	1.80	3.69	1.85	2.50	
				576	342	586	204	581	241	581	230	567	267		
90	"	+2 8.6 8.6	2.55	4.17	2.23	4.14	1.60	4.12	1.75	4.07	1.80	4.07	1.73	2.45	
				620	348	617	204	615	243	610	255	610	238		
98	"	+3 9.4 9.5	2.50	4.38	3.56	4.28	3.23	4.33	3.23	4.28	3.23	4.23	3.23	2.45	2.47
				641	554	631	509	636	509	631	509	626	509		
100	"														
111	"														
113	"														
144	"	+3 9.9 9.8	2.35	4.33	3.45	4.35	3.23	4.23	3.37	4.20	3.23	4.26	3.28	2.40	2.37
				636	538	638	509	626	528	623	509	629	576		
151	"	+3 9.9 9.7	2.40	4.00	3.02	4.08	2.80	3.97	2.78	3.97	2.80	3.93	2.90	"	2.40
				602	480	611	447	599	444	599	447	594	462		
154	"	+2 8.8 ✓	2.40	3.93	2.60	4.05	2.17	3.98	2.25	3.98	2.25	3.93	2.24	"	
				594	415	607	336	600	352	600	352	594	358		
166	"	+2 7.7 ✓													
167	"														Nov. 24.
181	"														
2		+30 9.4	2.33	3.68	3.23	3.70	2.59	3.68	2.68	3.74	2.58	3.69	2.73		
				586	509	568	413	586	428	573	412	567	436	2.40	2.37
16		+27 8.9 8.2	2.40	3.99	2.15	4.02	1.47	3.92	1.65	3.91	1.60	3.82	1.75	2.40	
				601	332	604	167	593	217	592	204	582	243		
22		+16 7.4	"	4.22	0.70	4.29	0.35	4.25	0.45	4.25	0.40	4.22	0.50	"	
				625	9.845	632	9.544	.628	9.653	628	9.602	625	9.699		
73		+31 9.5	"	3.80	2.90	3.82	2.50	3.73	2.58	3.72	2.60	3.65	2.65	"	
				580	462	582	398	572	412	571	415	562	423		
76		+30 9.4	"	3.53	2.98	3.53	2.48	3.68	2.58	3.65	2.63	3.68	2.76		
				548	474	548	394	586	412	582	420	586	441	2.45	2.42
79		+23 8.6	2.45	3.73	2.28	3.69	1.73	3.90	1.93	3.88	1.83	3.97	2.03		
				582	358	567	238	591	286	589	262	599	308	2.50	2.47
90		+25 8.7 8.6	2.50	4.13	2.24	4.18	1.67	4.24	1.87	4.17	1.75	4.16	1.82		
				616	350	621	223	627	272	626	243	619	260	2.46	2.48
98		+30 9.4	2.52	4.29	3.69	4.29	3.24	4.24	3.24	4.24	3.24	4.24	3.29		
				632	567	632	511	627	509	627	511	627	517	2.50	2.54
144		+34 9.8	2.50	4.22	3.50	4.26	3.25	4.05	3.44	4.02	3.25	4.20	3.30		
				625	544	629	519	607	537	604	519	623	519	2.50	
151		+34 9.7	"	4.07	3.15	4.12	2.75	4.10	2.99	4.10	2.85	4.00	2.85		
				610	498	615	439	613	476	613	455	603	455	"	
154		+25 8.8	"	4.11	2.69	4.13	2.29	4.21	2.34	4.10	2.44	4.16	2.39		
				614	430	616	360	624	369	613	387	619	378	2.52	2.51
166		+18 7.7	"	4.02	.90	4.06	.60	4.06	.70	4.07	.68	4.02	.74		
				604	9.954	609	9.778	609	9.845	610	9.833	604	9.869	2.50	Nov 28.

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1926phae.proj..92GH

2.42 L

2.51 2.48 2.47

	A	B	C	D	E		
	$\frac{cf}{n_p}$	$Ly\frac{cf}{4\lambda 4\lambda r^2}$	$Ly\frac{cf}{q}$	$Ly\frac{cf}{4027}$	$Ly\frac{cf}{4184}$	$(D-C)^{4}$	$(E-D)^{4}$
	119	.159	.153	155	152		
	269	394	384	381	356		
	25	1.078	1.016	1.016	967		
	123	184	170	167	144		
	38	127	148	156	134		
	234	372	330	341	300		
	272	413	372	355	372		
	87	122	127	122	117		
	98	129	98	124	113		
	122	164	155	152	132		
	179	271	248	248	236		
9.4	57	155 157	138 146	161 157	131 141		
8.9	269	437 415	374 380	388 384	339 348		
7.4	780 807	1.088 1083	975 995	1.026 1021	976 971		
9.5	118 120	184	166 165	156 161	139 141		
9.4	74	154 140	152 150	142 149	125 130		
8.6	214 224	329 350	305 312	327 334	291 295		
8.7	266 269	398 405	355 362	377 366	359 362		
9.4	65 26	121 121	128 127	116 124	110 113		
9.9	81 89	110 120	70 84	85 104	104 105		
9.9	112 117	176 120	137 147	158 155	148 140		
8.8	184 182	256 263	255 260	226 237	241 238		
7.7	650	831	767	777	735		

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	A	B	C	D	E	
	$\frac{cF}{H\beta}$	$Ly\frac{cF}{H\gamma+H\delta+He}$	$Ly\frac{cF}{\gamma}$	$Ly\frac{cF}{4127}$	$Ly\frac{cF}{4184}$	$(D-C)^{\frac{1}{4}}(E-D)^{\frac{1}{4}}$
	19	.159	.155	155	152	
	69	394	384	381	356	
	25	1.078	1.016	1.016	967	
	23	184	170	167	144	
	38	127	148	156	134	
	234	372	330	341	300	
	272	413	372	355	372	
	87	122	127	122	117	
	98	129	98	124	113	
	122	164	155	152	132	
	179	271	248	248	236	
9.4	57	155 157	138 146	161 158	131 141	
8.9	269	437 415	376 380	388 384	339 348	
7.4	780 807	1.088 1.043	975 995	1.026 1021	976 971	
9.5	118 120	184	166 165	156 161	139 141	
9.4	74	154 140	152 150	142 149	125 130	
8.6	214 224	329 350	305 317	327 334	291 295	
8.7	266 269	398 405	355 362	377 366	359 362	
9.4	65 76	121 121	128 127	116 124	110 113	
9.9	81 89	110 120	70 84	85 104	104 105	
9.9	112 117	176 170	137 147	158 155	148 140	
8.8	184 189	256 263	255 260	226 237	241 238	
7.7	650	831	764	777	735	

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	A	B	C	D	E	
	$\log \frac{cF}{H_\beta}$	$\log \frac{cF}{H_\beta \lambda\lambda_2}$	$\log \frac{cF}{\gamma}$	$\log \frac{cF}{4471}$	$\log \frac{cF}{4184}$	$(D-C)^4 (E-D)^4$
	.119	.159	.153	155	152	
	.269	394	384	381	356	
	835	1.078	1.016	1.016	967	
	123	184	170	167	144	
	38	127	148	156	134	
	234	372	330	341	300	
	272	413	372	355	372	
	87	122	127	122	117	
	98	129	98	124	113	
	122	164	155	152	132	
	179	271	248	248	236	
9.4	57	155 157	138 146	161 154	131 141	
8.9	269	437 415	374 380	388 384	339 348	
7.4	780 807	1,088 1,083	975 995	1,026 1021	976 971	
9.5	118 120	184	166 165	156 161	139 141	
9.4	74	154 140	152 150	142 149	125 130	
8.6	214 204	329 350	305 317	327 334	291 295	
8.7	266 269	398 405	355 362	377 266	359 362	
9.4	65 76	121 121	128 127	116 124	110 113	
9.9	81 89	110 120	70 84	85 104	104 105	
9.9	112 117	176 120	137 147	158 155	148 140	
8.8	184 192	256 263	255 250	226 237	241 234	
7.7	650	831	764	777	735	

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MC 6449 Readings – 0 Point

	Type	m	gr	OP	clf	Ns	clf	Nicker 2	clf	G	clf	Yey	clf	Y184	OP	Remarks
72	Kz															two point
83	Fs	9.2		2.56	3.62 539	2.82 450	3.70 568	2.52 401	3.67 565	2.62 418	3.54 549	2.72 435	3.62 539	2.82 450	2.60	2.58
89	Fs	7.5	7.4	2.67	3.87 588	.57 9.756	3.93 594	.37 9.568	3.82 582	.52 9.716	3.78 577	.57 9.758	3.80 580	.63 9.799	2.60	2.63
95	Ko															
99	Ko	8.5	8.5 +.2	2.60					3.83 583	1.93 286	3.95 597	2.08 318	3.98 600	2.53 403	2.65	2.62
103	Fs															
104	Fs	8.9	8.8	2.65	3.00 477	2.23 348	3.05 484	2.18 338	3.08 489	2.41 382	3.07 489	2.44 387	3.05 484	2.53 403	2.60	"
110	Fs															
112	Ko		9.3 +.3													overlapping
116	Ko	9.0	9.0 +.3	2.65					3.23 509	2.68 428	3.18 502	2.93 467	3.18 502	3.03 481	2.60	on the edge
118	K	7.0	7.0	2.60					3.32 521	.44 9.643	3.21 506	.56 9.748	3.26 513	.73 9.863	2.68	2.64
124	Ko	8.6	8.7 +.2	2.68	3.39 530	1.42 152	3.34 524	1.22 086	3.38 529	1.57 196	3.41 533	1.97 294	3.47 540	2.02 305	2.68	
125	Ko															
126	Ko															
131	Kz	9.5	9.5 -.3	2.67					3.44 537	2.57 410	3.52 547	2.82 450	3.55 550	2.93 467	2.70	2.68
139	Ko	9.4		2.70	3.70 568	2.08 318	3.65 562	2.08 318	3.75 574	2.50 398	3.65 562	2.80 447	3.72 570	3.10 491	2.70	
141	Fs															
145	Ko	8.6	8.5 -.2	2.70					3.95 597	1.85 267	3.95 596	2.16 334	3.95 597	2.50 398	2.70	
146	Ks	9.8	9.8 +.3	"					3.70 568	2.65 423	3.75 574	3.20 505	3.80 580	3.40 531	"	
147	Gs															
148	Ks	9.0	8.9 +.3	"	3.84 584	1.87 272	3.92 593	1.52 181	3.87 589	2.32 365	3.86 587	2.87 442	3.82 582	2.92 465	2.67	2.68
149	Kz															
153	Gs															
158	Ko	8.9	8.9 +.3	2.70	3.79 579	2.00 301	3.94 596	1.45 161	3.86 587	2.08 318	3.81 581	2.50 398	3.78 577	3.00 477	2.70	

Correction to int. scale above

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A	B	C	D	E			
L_y clf H_A	L_y clf H_A+H_{AV}	L_y clf C_y	L_y clf $4\pi_y$	L_y clf $4\pi R^2$	D-C	E-D	
129	167	147 853	114 886	119 881	+.16	−.03	+.29 −.13
832	825	846	821	781	+.04	+.06	
		297 703	279 721	197 803	+.18	+.30	+.23 +.27
129	146	107 893	10.2 898	81 919	+.03	+.13	+.19 .00
		81 919	35 965	21 979	+.30	+.10	d +.86 +.02
		878	758	650	+.16	+.23	
378	438	333 667	239 761	235 765	+.35	+.02	d +.62 −.13
		873 127	903 97	917 83	+.16	+.09	d +.26 .00
250	244	824 176	885 115	921 79	+.31	+.22	+.45 +.12
		670 330	738 262	801 199	+.26	+.24	+.45 +.23
		815 145	931 69	957 49	+.40	+.14	d +.53 +.04
312	412	776 224	855 145	883 117	+.37	+.13	d +.53 +.04
278	435	731 269	817 183	900 100	+.40	+.42	+.59 +.33

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12

MC 6443 Readings — 0 Point Volt 5.0

Nr	Type	m	OP	clf	Vb	clf	Vb/Vg	clf	Vg	clf	Vg	clf	Vg/Vb	OP	Remarks mean 0 Point
6	Ao	8.3 +.21	2.45	3.38 529	1.96 292	3.41 533	1.46 164	3.41 533	1.56 193	3.41 533	1.56 193	3.41 533	1.66 220	2.43	2.44
28	"	8.7 +.25	2.45	3.33 522	2.50 398	3.35 525	2.10 322	3.35 525	2.23 348	3.25 512	2.13 328	3.30 519	2.28 358	2.40	2.42
31	"	8.3 +.21	2.45	3.28 516	2.13 328	3.30 519	1.58 199	3.33 522	1.78 250	3.33 522	1.68 225	3.33 522	1.78 250	2.49	2.47
84	"	8.9 +.27	2.45	3.50 544	2.70 431	3.47 540	2.40 380	3.52 546	2.55 407	3.50 544	2.45 389	3.52 547	2.45 389	2.46	2.45
86	"	8.8 +.27	2.50	3.42 534	2.40 380	3.45 538	205 312	3.44 535	2.15 332	3.47 540	2.10 322	3.45 538	2.28 358	2.50	2.50
93	"	9.1 +.27	2.50	3.50 544	2.63 420	3.48 542	2.38 377	3.48 542	2.38 377	3.42 534	2.43 386	3.45 538	2.43 386	2.45	2.47
94	"	8.6 +.25	2.50	3.37 525	2.30 362	3.42 534	1.90 279	3.42 534	2.00 301	3.35 525	2.01 303	3.42 534	2.05 312	2.50	2.50
97	"	9.8 +.33													low Count
110	"	9.5 +.31	2.50	3.50 544	2.85 455	3.45 550	2.65 423	3.52 547	2.70 431	3.45 538	2.70 431	3.50 544	2.70 431	2.50	2.50
133	"	9.1 +.31													no Change
138	"	9.5 +.31	2.50					3.30 519	2.70 431	3.32 521	2.70 431	3.37 528	2.75 439	2.50	2.50
139	"	8.9 +.27	2.55	3.28 519	2.51 400	3.28 519	2.16 334	3.33 522	2.21 346	3.33 522	2.22 346	3.28 516	2.30 362	2.53	2.54
															9.XII
6			2.50	3.36 526	1.86 270	3.38 529	1.46 164	3.46 539	1.56 193	3.46 539	1.57 179	3.46 539	1.56 193	2.59	2.54
28			2.60	3.30 519	2.40 380	3.32 521	2.00 301	3.32 521	2.18 338	3.30 519	2.10 322	3.32 521	2.20 342	2.60	2.60
31			2.60	3.28 516	2.01 303	3.32 521	1.60 204	3.37 528	1.70 230	3.37 528	1.68 225	3.35 525	1.80 255	2.60	2.60
84			2.66	3.45 538	2.57 410	3.45 538	2.35 371	3.50 544	2.45 389	3.45 538	2.47 393	3.50 544	2.45 389	2.65	2.65
86			2.65	3.47 540	2.41 382	3.47 540	2.10 322	3.50 544	2.15 332	3.40 531	2.05 312	3.37 528	2.10 322	2.65	2.65
93			2.65	3.38 529	2.58 412	3.35 525	2.33 367	3.43 535	2.33 367	3.43 535	2.39 378	3.45 538	2.43 386	2.70	2.67
94			2.68	3.33 522	2.23 348	3.33 522	1.89 296	3.38 522	1.91 281	3.37 528	1.96 292	3.38 529	2.91 303	2.70	2.69
110			2.65	3.46 539	2.70 431	3.45 538	2.60 415	3.46 539	2.60 415	3.42 534	2.65 428	3.45 538	2.70 431	2.65	2.65
139			2.65	3.32 521	2.45 389	3.32 521	2.10 322	3.33 522	2.25 352	3.30 519	2.25 352	3.30 519	2.30 362	2.65	2.65 Volt 5.0
															11.XII

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A	B	C	D	E			
Log $\frac{\alpha F}{\pi_5}$	Log $\frac{\alpha F}{\pi_{5\alpha\gamma}}$	Log $\frac{\alpha F}{\alpha}$	Log $\frac{\alpha F}{4\alpha\gamma}$	Log $\frac{\alpha F}{4\pi\alpha}$	$(D-C)^4$	$(E-D)^4$	
237	369	340	340	313			
124	203	177	184	161			
188	320	272	297	272			
113	160	139	155	158			
154	226	203	218	180			
124	165	165	148	152			
153	255	233	222	232			
89	127	116	107	113			
		88	90	89			
119	185	176	176	154			
8.5	256 247	365 362	657 346 342	650 360 357	670 346 330		mean from B,D,E 347
8.9	139 131	220 211	820 183 180	810 197 190	831 179 169		187
8.5	213 200	317 318	715 298 285	700 303 300	729 270 271		293
9.2	128 120	167 162	813 155 147	850 145 150	844 155 156		154
9.1	158 150	218 222	793 212 207	781 219 220	807 206 193		210
9.4	117 120	158 162	884 168 166	848 157 152	848 152 152		158
8.8	174 163	246 250	763 241 237	771 236 229	771 226 229		237
9.8	108 90	123 125	880 124 120	889 106 111	890 107 110		117
9.2	132 125	199 192	807 170 173	829 166 171	848 157 152		172

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Mc 6443 Readings — O Point x1.8 Voltage 4.9

No	Type	m	OP	Clf	Ns	Clf	Ns/Std	clf	G	Clf	Yzy	Clf	Y154	OP	Remarks
7	F5		2.54	3.38 529	2.52 401	3.34 524	2.15 .332	3.38 529	2.43 386	3.30 519	2.38 377	3.33 522	2.38 377	2.50	2.52
8	Ko		2.55	3.30 519	0.65 9.813	3.31 520	.35 9.544	3.32 521	.65 9.813	3.30 519	.80 9.903	3.34 524	1.00 .000	2.54	2.53
9	F5		2.50	3.37 528	2.00 301	3.35 525	1.80 255	3.37 528	2.20 342	3.40 531	2.30 362	3.40 531	2.62 418	2.50	2.50
12	Ko		2.54					3.31 520	2.26 354	3.38 529	2.46 391	3.37 528	2.56 408	2.54	2.54
30	Ko		2.45	3.65 562	1.18 072	3.63 560	0.65 9.813	3.58 554	1.03 013	3.53 548	1.26 100	3.50 544	1.56 193	2.50	2.47
32	Ko														
41	Ko		2.54	3.46 539	1.86 270	3.48 542	1.46 164	3.44 537	2.10 322	3.51 545	2.33 367	3.46 539	2.46 391	2.54	
44	F5		2.54	3.47 540	2.17 336	3.47 540	1.87 272	3.47 540	2.12 326	3.47 540	2.17 336	3.52 547	2.32 361	2.52	2.53
57	Ko		2.57					3.59 555	2.39 378	3.55 550	2.59 413	3.60 556	2.71 433	2.57	2.57
58	K5		2.54					3.46 539	1.81 288	3.43 535	2.26 354	3.51 545	2.56 408	2.54	2.54
76	Go		2.54	3.50 544	1.75 243	3.56 551	1.62 210	3.62 559	2.04 310	3.57 553	2.20 342	3.55 550	2.15 332	2.45	2.50
36	F2		2.60	3.15 498	2.10 322	3.15 498	1.85 287	3.17 561	2.00 301	3.20 505	2.00 301	3.22 508	2.10 322	2.60	
44	F5		260					3.35 525	2.20 342	3.35 525	2.10 322	3.30 519	2.10 322	259	260
Stars common with Lindblad's stars															
6	A0		2.51	3.46 539	2.05 302	3.47 540	1.40 146	3.50 544	1.62 210	3.50 544	1.55 190	3.47 540	1.60 204	2.50	250
7	F5		250					3.42 534	2.45 389	3.40 531	2.40 380	3.40 531	2.45 389	2.50	2.50
43	A2		2.50	3.43 535	.98 9.991	3.48 542	.68 9.833	3.43 0.535	.83 9.919	3.49 543	0.78 9.892	3.45 538	.88 9.944	2.55	2.52
51	Ko		2.55	3.50 544	2.00 307	3.42 534	1.85 267	3.45 538	2.25 352	3.42 534	2.45 389	3.40 531	2.55 407	2.55	
51	Ko														
57	A3		2.60	3.20 505	2.30 362	3.20 505	2.05 312	3.22 508	2.20 342	3.28 516	2.20 342	3.18 502	2.20 342	2.60	2.60
58	K5		2.60					3.30 519	1.70 230	3.30 519	2.20 342	3.30 519	2.50 398	2.60	2.60
76	Go		2.64					3.38 529	1.86 270	3.41 533	2.06 314	3.38 529	2.11 324	2.65	2.64
95	95														
129	Ko		2.60					3.25 512	1.80 255	3.25 512	2.10 322	3.25 512	2.10 322	2.60	
29	Ko														
45	K5														

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143	142	145			
708	616	524			
186	169	113			
166 834	138 862	120 880			
541 459	448 532	351 649			
215	178	148	+.21	+.20	
214	204	182	+.06	+.12	
177	137	123	+.30	+.15	
281	181	137	+.49	+.30	
249	211	218	+.20	−.05	
					Lindblad
334	354	336	−.10	+.10	
145	151	142	−.03	+.08	
186	145	124	+.27	+.19	g +.30 +.30
166	174	160			
289	177	121	+.49	+.49 +.38	g +.56 +.40
259	219	205	+.20	+.09	d +.13 +.12
257	190	190	+.34	.00	d +.34 −.05

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1928phae.proj..92CH

MC 4413 Readings – 0 Point 18. XII. Voltage 4.9

N	Type	m	OP	CF	4½	CF	4½	CF	4½	CF	4½	OP	Remarks
1	Ao												
4													
23	9.7	9.4 Dr	2.80			3.52	2.00	3.55	1.85	3.52	1.90	2.80	
						547	301	550	267	547	279		
28	9.8	9.4 "	"			3.90	2.40	3.90	2.35	3.90	2.40	"	
						591	380	591	371	591	380		
41	10.6	10.4	"			3.95	3.25	3.95	3.25	3.95	3.25	"	
						597	512	597	512	597	512		
44	10.0	10.4	"			3.63	2.53	3.63	2.53	3.60	2.63	2.85	2.82
						560	403	560	403	556	420		
64	8.5	8.1	"			3.92	1.10	3.85	1.08	3.80	1.15	2.80	
						593	041	585	033	580	061		
90	9.9	9.3	"			3.90	2.80	3.90	2.20	4.00	2.72	"	
						591	447	591	431	602	435		
99	8.9	8.9	"			4.18	2.08	4.03	2.08	4.18	2.03	2.85	2.82
						621	318	605	318	621	307		
102	9.7	9.3	2.85			4.65	2.95	4.55	2.80	4.55	2.85	2.85	
						667	470	658	447	658	455		
117	9.9	10.3	2.85			4.60	3.15	4.55	3.10	4.47	3.15	2.85	
						663	498	658	491	650	498		
118	8.9	8.9	2.85			4.33	2.63	4.33	2.88	4.43	2.93	2.89	2.47
						636	452	636	459	646	467		
123	7.2	7.2	2.85			4.60	0.45	4.57	0.45	4.57	0.55	2.85	
						663	9.653	660	9.653	660	9.740		
171	9.6	9.4	2.85			3.48	1.61	3.48	1.58	3.43	1.58	2.80	2.82
						542	207	542	199	535	199		
190	7.1	7.4	2.85			3.28	0.18	3.28	0.18	3.28	0.18	2.80	2.82
						516	9.255	516	9.255	516	9.255		
199	8.9	8.4	2.85			3.45	.95	3.42	.95	3.43	1.10	2.85	
						538	9.978	534	9.978	535	041		
202	8.9	8.9	"			3.25	.95	3.30	.90	3.33	.95	"	
						519	9.978	519	9.954	522	9.978		
205	10.2	10.4	"			3.15	2.20	3.15	2.25	3.32	2.33	"	
						498	342	498	352	521	367		
242	9.2	8.9	"			4.35	2.00	4.40	1.95	4.20	2.00	"	
						638	301	643	290	623	301		
243	8.5	8.8	"			4.50	1.25	4.45	1.25	4.45	1.25	"	
						653	097	648	097	648	097		
257	10.0	10.2	"			3.85	2.50	3.90	2.45	3.90	2.50	"	
						585	394	591	389	585	398		
260	9.2	9.7	2.80			3.92	1.50	3.92	1.60	3.92	1.55	2.80	
						593	176	593	204	593	190		
264	8.9	9.0	2.85			3.69	1.20	3.67	1.20	3.65	1.20	2.85	
						567	079	565	079	562	079		
289	10.0	10.0	"			3.75	2.35	3.90	2.30	3.82	2.45	"	
						574	371	591	362	582	389		
292	8.5	8.4	"			3.92	1.10	3.92	1.15	3.90	1.25	"	
						593	041	593	061	591	097		
294	7.5	7.7	"			3.99	.39	3.89	.39	3.94	.44	2.87	2.86
						611	9.591	590	9.591	596	9.643		
308	8.9	8.9	"			4.45	2.70	4.60	2.65	4.60	2.65	2.85	
						648	431	663	423	663	422		

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$\log \frac{R}{cR}$

Intre

10.0	4	246	9.754	283	266
10.1	28	211	9.749	220	210
10.9	41	85	9.915	85	85
10.3	44	157	9.843	157	136
8.7	64	552	9.448	552	579
10.2	90	144	.856	160	167
9.2	99	303	.697	287	314
10.0	102	197	.803	211	203
10.2	117	165	.835	167	152
9.2	118	184	.856	177	179
7.3	123	1.010	8.990	1.007	900
9.8	181	335	.665	343	336
7.2	190	1.261	8.739	1.265	1.265
9.2	199	580	.460	556 X	494
9.2	202	531	469	565	544
10.5	205	156	846	146	154
9.5	242	337	663	353	322
8.7	243	556	444	551	551
10.3	257	187	813	202	187
9.5	260	416	584	389	403
9.2	264	488	512	486	483
10.3	289	203	797	229	193
8.7	292	552	448	532	494
7.7	294	1.010	8.960	999	953
9.2	308	217	.783	240	240

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Nebula 4413 Readings - Point 20.XII Vol 4.9

N	Type	m	OP	cf	4413	cf	4413	cf	4413	OP	Remarks
2	Ko										on the edge
12	Ko		2.70	3.40	4.40	3.40	.55	3.35	.65	2.70	
				530	9.602	531	740	525	9.873		
13	F8		"	3.30	.80	3.10	.70	3.00	.75	2.70	
				579	9.903	491	845	477	875		
59	G5		"	4.03	2.03	4.15	2.98	4.13	2.43	2.65	2.67
				605	308	618	358	616	386		
62	K5		2.65	3.73	1.58	3.83	2.03	3.90	2.38	2.80	2.72
				572	199	583	307	591	377		
107	Ko		2.80	4.70	2.70	4.70	3.10	4.71	3.55	2.80	2.80
				672	431	672	491	673	550		
116	Ko		"	4.55	1.80	4.65	2.05	4.62	2.35	"	
				658	255	667	312	665	381		
131	Ko		2.85	4.38	.68	4.38	.75	4.38	1.05	2.80	2.82
				641	9.833	641	875	641	021		
132	Ko		2.80	4.20	2.30	4.20	2.70	4.15	2.90	2.80	
				623	362	623	431	618	462		
144	F8		2.85	4.15	.75	4.15	.75	4.10	.80	2.85	
				618	9.875	618	9.875	612	903		
145	F8		2.85	3.95	.75	3.95	.65	3.95	.70	"	
				597	875	597	813	597	845		
148	G0		2.80	4.00	.90	3.90	1.00	4.00	1.05	2.80	
				602	954	591	000	602	021		
											2.I.
196	Ko		2.20	3.83	1.73	3.73	1.98	3.83	1.93		Vol. 4.9 - 4.9
				583	238	572	297	583	286	2.15	207
250	G5		2.25	4.80	1.40	4.80	1.77	4.80	2.05		
				681	204	681	248	681	312	2.25	
258	G5		2.25	4.55	.65	4.45	.65	4.40	.80		
				658	.813	648	813	643	903	2.25	
277	Ko		2.25	4.75	1.20	4.87	1.45	4.82	1.80		
				677	079	688	161	683	255	2.25	
286	G5		2.30	4.53	1.63	4.53	1.68	4.48	1.83		
				656	212	656	225	651	262	2.25	2.27
364	Ko		2.20	5.30	1.20	5.30	1.55	5.40	2.10		
				724	079	724	190	732	322	2.20	
379	G5		2.25	5.15	.35	5.25	.50	5.26	.75		
				712	9.544	720	699	721	875	2.25	
382	G0		2.20	5.15	2.50	5.05	2.75	5.20	3.00		
				712	398	703	439	716	477	2.20	
409	Ko		2.20.	5.20	1.70	5.20	2.00	5.20	2.60		
				716	230	716	301	716	415	2.20	
413	Ko		2.20	5.40	2.50	5.55	3.00	5.60	3.30		
				732	398	744	477	748	519	2.20	
446	Ko		2.50	5.65	3.65	5.60	4.10	5.60	4.30		7.I. Vol 4.94
				752	562	748	613	748	633	2.50	
446	K2		2.25	5.25	1.05	5.35	1.40	5.25	1.65		
				720	021	728	146	720	217	2.25	
461	G0		2.30	5.05	2.70	4.90	2.80	4.90	3.10		
										2.30	uncertain
462	Ko		2.30	5.00	240	5.05	2.90	5.10	3.50		
										2.30	

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N

12	929	071	.791		.712				
13	.616	384	.648	352	602	398			
59	297	703	260	740	230	770	+08	.11	
62	373	627	276	724	214	786	+.33	.20	
	241	759	181	819	123	877			
	403	597	355	645	294	706			
	808	192	766	234	620	380			
	261	739	192	808	156	844			
	743	257	743	257	710	290			
	722	278	784	216	752	248			
	648	352	591	409	581	419			d
	345		275		297	703			d?
	471		433		369				
	845		835		740				
	598		527		428				
	414		431		389				
	645		534		410				
	1.168		1.021		846				
	314		264		239				
	486		415		301				
	334		267		229				

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MC Δ444 Int Readings – α Peri A. 4.9 Volts. 8. I

N	Type	m	OP	clf	413	clf	4227	clf	4184	OP	
				2.73	.50	2.73	.45	2.75	.45		
18	Ao	7.7	2.30	436	9.699	436	9.653	439	9.653	2.30	
33	"	9.4	2.30	2.85	1.90	2.83	1.90	2.90	1.90		
				455	279	450	279	462	279	2.30	
62	"	9.1	2.30	2.85	1.40	2.90	1.35	2.85	1.40		
				455	146	462	130	455	146	2.30	
88	"	9.2	2.30	2.80	1.50	2.80	1.50	2.80	1.55		
				447	176	447	176	447	190	2.30	
97	"	9.0	2.30	2.61	1.58	2.61	1.53	2.58	1.63		
				417	199	417	199	412	212	2.25	2.27
129	"	9.5	2.25	2.58	1.88	2.63	1.88	2.58	1.83		
				412	274	420	274	412	262	2.30	2.27
130	"	9.4	2.30	2.55	1.80	2.60	1.70	2.55	1.80		
				407	230	415	230	407	255	2.30	
133	"	9.4	2.30	2.50	1.75	2.45	1.80	2.50	1.80		
				398	243	389	255	398	255	2.30	
1	A2	9.3	2.30	2.40	1.35	2.40	1.30	2.37	1.32		
				380	130	380	114	375	121	2.30	
16	"	9.6	2.30	2.60	1.85	2.65	1.85	2.65	1.90		
				415	267	423	267	423	279	2.30	
24	"	8.5	2.30	2.73	1.03	2.75	1.03	2.75	1.13		
				436	013	439	013	439	053	2.25	2.27
48	"		2.25	2.80	1.65	2.73	1.60	2.75	1.65		
				447	217	436	204	439	212	2.25	
80	"	7.0	2.30	3.08	.23	3.03	.23	3.03	.28		
				489	9.362	481	9.362	481	9.447	2.25	2.27
103	"	8.9	2.25	2.80	1.40	2.82	1.35	2.75	1.45		
				447	146	450	130	439	161	2.25	
128	"		2.25	2.57	1.65	2.55	1.70	2.60	1.70		
				410	217	407	230	415	230	2.25	
3	K5		2.30	2.42	1.35	2.48	1.65	2.50	1.90		
				384	130	394	217	398	279	2.30	
12	K0		2.30	2.48	1.79	2.61	1.88	2.58	2.13		
				394	253	417	274	412	328	2.25	2.27
13	G5		2.25	2.58	1.88	2.58	1.98	2.68	2.08		
				412	274	412	297	428	318	2.30	"
29	K2	9.6	2.30	2.85	1.90	2.85	2.10	2.85	230		
				455	279	455	322	455	362	2.30	
32	K0		2.30	2.72	1.20	2.74	2.05	2.72	2.25		
				435	280	438	312	435	352	2.30	
38	K0		2.30	2.81	1.23	2.78	1.45	2.78	1.63		
				449	090	444	161	444	212	2.25	2.27
73	K0		2.30	2.85	1.40	2.82	1.75	2.90	2.00		
				455	146	450	243	462	301	2.30	
82	G5		2.30	2.78	1.05	2.78	1.25	2.78	1.35		
				444	021	444	097	444	180	2.30	
83	G5		2.30	2.45	1.95	2.45	2.10	2.68	2.10		
				389	290	389	322	428	322	2.30	uncert.
87	G5		2.30	2.70	.90	2.70	1.05	2.68	1.30		
				431	9.954	431	021	428	114	2.30	
90	K0		2.30	2.70	1.70	2.68	1.95	2.65	2.10		
				431	230	428	290	423	322	2.30	
109	K0		2.30	2.69	.18	2.71	.23	2.71	.33		
				430	9.255	433	9.362	433	9.519	2.25	2.27
110	K0		2.25	2.60	1.80	2.65	1.90	2.65	1.98		
				415	255	423	279	423	297	2.25	

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7.7	0.737	783	786		
9.4	176	171	183		
9.1	309	332 ✓	309		
9.2	271	271 ✓	257		
9.0	218	218	200		
9.5	138	146	150		
9.4	177	185	152		
9.4	155	184	143		
9.3	250	266	254		
9.6	148	156	144		
8.5	423	426	386		
	280	282	222		
7.0	1.127	1.119	1.034		
8.9	301	320	278		
	193	177	185		
	254	177	119	+.24	+.14
	141	143	84		
	138	115	110	+.05 d	-.03
	176	133	93	+.13	+.06
	205	126	83	+.28	+.14
	359	283	232	+.84	+.10
	309	207	161	+.40	+.08
	423	347	314	+.40	.00
	99	67	102		
	477	410	314	+.40	+.21
	201	138	101	+.21 d	+.07
	1.175	1.071	914		
	160	144	126	+. d	

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22

MC 5404 — A_2 as standard — Vh 5.0 2.1

N	Type	m	Readings – 0 Point							
17		8.5	2.20	3.37	.95	3.44	.96	3.40	.95	2.10	2.15
				528	978	537	982	531	978		
33		(9.0)	2.10	3.75	1.15	3.65	1.10	3.50	1.24	2.10	
				574	061	562	041	544	093		
90		8.6	2.10	4.10	1.83	4.13	1.98	4.13	2.08	2.15	2.12
				613	262	616	297	616	318		
103		9.4	2.14	4.07	2.40	4.05	2.30	4.05	2.50	2.15	2.15
				610	380	607	362	607	398		
(131)			2.20	3.45	2.50	3.45	2.50	3.45	2.50	2.20	
				538	398	538	298	538	398		
(134)		9.8	2.20	2.45	1.40	2.40	1.40	2.40	1.45	2.20	
				389	146	380	146	389	161		
179		8.2	2.20	4.08	.88	4.13	.83	4.13	.88	2.15	2.17
				611	944	616	919	616	919		

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550	555	553
373	321	451
351	329	298
230	245	209
140	140	140
243	234	228
667	697	697

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MC 6673 Vol 4.84 · 3.I Readings — 0 Point

N	Type	m	OP	Cl	Glass	Cl	4707	Cl	4184	OP	
4	Ko	9.4	2.30	2.90	1.95	2.90	1.94	2.88	2.00		
				462	290	462	288	459	301	2.30	
9		9.3	2.20	2.98	1.48	2.98	1.53	2.98	1.58		
				474	170	474	185	474	199	2.25	2.22
11		8.3	2.25	3.08	.98	3.10	1.03	3.08	1.03		
				489	9.991	491	013	489	013	2.30	2.27
29		9.4	2.30	3.15	1.80	3.05	1.80	3.11	1.90		
				498	255	484	255	493	289	2.30	
41		9.4	2.30	3.08	1.75	3.07	1.75	3.07	1.82		
				489	243	487	243	487	260	2.30	
53		9.5	2.30	2.98	1.88	2.92	1.81	2.92	1.90		
				474	284	465	258	465	289	2.30	
54		9.4	2.30	2.92	1.63	2.85	1.63	2.88	1.73		
				465	212	455	212	459	238	2.25	2.27
56		9.9	2.25	2.73	2.15	2.80	2.15	2.73	2.20		
				436	332	447	332	436	342	2.25	
62											
87		10.3	2.30	3.25	2.60	3.18	2.55	3.20	2.55		
				519	415	502	407	505	407	2.30	
90		9.8	2.25	3.15	2.20	3.15	2.30	3.20	2.40		
				498	342	498	362	505	380	2.25	
92		9.4	2.30	3.15	2.40	3.10	2.45	3.12	2.45		
				498	380	491	389	494	389	2.30	
147		7.4	2.30	3.10	.60	3.20	.57	3.20	.63		
				491	9.779	505	9.756	505	9.799	2.30	
149		9.5	2.30	3.18	2.13	3.15	2.20	3.15	2.20		
				502	328	498	342	498	342	2.30	
157		9.8	2.30	2.83	1.50	2.72	1.55	2.81	1.65		
				452	176	435	176	449	217	2.30	
169		9.8	2.30	2.95	2.00	2.85	2.00	2.85	2.10		
				470	301	455	301	455	322	2.30	
6		10.4	2.30	2.88	2.48	2.88	2.48	2.88	2.48		
				459	394	459	394	459	394	2.25	2.27
											Vol 4.81
21	Ko		2.40	3.05	1.40	2.95	1.75	3.00	2.07		
				484	146	470	243	477	316	2.30	2.35
25	Ko		2.30	3.08	.85	3.05	.90	2.98	1.20		
				489	9.929	484	9.954	474	079	2.20	
47	g5		2.30	2.87	2.02	2.90	2.20	2.86	2.35		
				458	305	462	342	456	371	2.30	
81	Ko		2.30	3.08	1.63	3.15	1.93	3.13	1.98		
				489	212	498	286	496	297	2.35	2.32
89	g5		2.30	3.10	2.10	3.15	2.15	3.15	2.45		
				491	322	498	332	498	389	2.10	2.20
94	g5		2.15	3.20	1.08	3.15	1.18	3.18	1.23		
				505	033	498	072	502	090	2.10	2.12
101	g5		2.12	3.19	1.26	3.14	1.39	3.12	1.59		
				504	110	497	114	494	201	2.10	2.11
110	g5		2.10	3.02	1.20	3.01	1.30	3.00	1.30		
				480	079	479	114	477	114	2.10	
127	K2		2.10	3.00	1.85	3.00	2.20	2.90	2.50		
				477	267	477	342	462	398	2.10	
131	Ko		2.12	3.10	2.40	2.98	2.58	2.83	2.73		
				491	386	474	412	452	436	2.12	

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9.4	172	828	174	826	158	842	
9.3	304	646	289	711	275	725	
8.3	498	502	478	522	476	524	
9.4	243	757	229	771	214	786	
9.4	246	754	244	756	227	773	
9.5	200	800	207	793	186	814	
9.4	253	747	243	757	221	779	
9.9	104	896	115	885	94	904	
10.3	104	896	95	905	98	902	
9.8	156	844	186	814	125	875	
9.4	118	882	102	898	105	895	
7.4	712	288	749	251	706	294	
9.5	174	826	156	844	158	842	
9.8	276	724	259	741	232	768	
9.8	169	831	154	846	133	867	
10.4	65	935	65	935	65	935	
	338	662	227	773	161	839	+.49 +.20
	560	440	530	470	395	605	+.20 +.46
	153	847	120	880	85	915	+.11 +.09
	272	728	212	788	199	801	+.28 -.02
	169	831	166	834	109	891	-.02 +.19
	472	528	426	574	412	588	+.25 -.05
	394	606	383	617	293	707	+.10 +.29
	401	599	365	635	363	637	+.19 -.08
	210	790	135	865	68	932	+.30 +.22
	105	895	62	938	16	984	+.13 +.14

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MC 6673 Readings – 0 Point 4.1. Volt 5.0 St. region 41* Hg clear film

	Type	m									
			cf	Gk	cb	Gy	cf	Gk	op		
4	Ao	2.10	2.91	1.98	2.85	1.96	2.88	1.98	2.05	2.07	
			464	297	455	292	459	292			
6		2.10	2.80	2.50	2.82	2.45	2.88	2.50	2.10		
			447	398	450	389	455	398			
9		2.15	2.88	1.43	2.93	1.48	2.94	1.53	2.20	2.17	
			459	155	467	170	468	185			
11		2.20	3.00	1.03	2.99	.98	2.98	1.03	2.15	2.17	
			477	013	476	.991	474	013			
41		2.15	2.88	1.45	2.91	1.68	2.88	1.68	2.20	2.17	
			459	217	464	225	459	225			
53		2.20	2.87	1.80	2.77	1.73	2.63	1.83	2.15	2.17	
			458	255	442	238	420	262			
54		2.15	2.60	1.15	2.30	1.10	2.20	1.20	2.25	2.20	Vol 4.9
			415	061	362	041	362	079			
56		2.20	2.63	2.03	2.59	1.98	2.53	1.98	2.15	2.17	Sl. sq 5.00
			420	308	413	297	403	297			
62											
87		2.15	2.98	2.40	2.95	2.35	2.95	2.35	2.25	2.20	
			474	380	470	371	470	371			
90		2.20	2.95	2.10	2.95	2.15	2.95	2.25	2.20		
			470	322	470	332	470	352			
92		2.10	3.05	2.45	3.00	2.43	3.00	2.40	2.10		
			484	389	477	386	477	380			
147		2.10	3.00	.45	2.98	.45	3.00	.50	2.10		
			477	9.653	474	9.653	477	9.699			
149		2.10	3.00	2.00	3.00	2.00	3.00	2.00	2.10		
			477	301	477	301	477	301			
157		2.10	2.70	1.90	2.65	1.90	2.65	1.98	2.10	Vol 4.9	Sl. 4.95
			431	279	423	279	423	297			
169			on the edge								
21	Ko	2.20	2.81	1.40	2.80	1.70	2.87	2.00	2.20		
			449	146	447	230	458	301			
25	Ko	2.20	2.90	.90	2.92	1.14	2.92	1.15	2.20		
			462	9.954	465	057	465	061			
47	gs	2.20	2.63	1.93	2.61	2.10	2.63	2.18	2.15	2.17	
			420	286	417	322	420	338			
71	Ko	2.20	2.83	1.48	2.83	1.73	2.83	1.74	2.25	2.27	
			452	170	452	238	452	240			
89	gs	2.25	2.87	2.00	2.92	2.20	2.90	2.37	2.25		
			458	301	465	342	462	375			
94	gs	2.25	3.06	1.06	2.98	1.24	3.01	1.11	2.22	2.24	
			486	025	474	093	479	045			
101	gs	2.25	3.02	1.20	2.98	1.38	2.97	1.58	2.25		
			480	079	474	140	473	199			
110	gs	2.25	2.97	1.22	2.97	1.34	2.95	1.42	2.24	2.23	
			473	086	473	127	470	152			
127	Ko	2.25	3.00	1.90	3.00	2.15	2.90	2.45	2.25		
			477	279	477	332	462	389			
131	Ko	2.25	2.95	2.36	2.87	2.55	2.87	2.70	2.25		
			470	373	458	407	458	431			

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9.4	167	833	163	837	162	838					
10.4	49	951	61	939	57	943					
9.3	304	696	297	703	283	717					
8.3	464	536	485	515	461	539					
9.4	242	758	239	761	234	766					
9.5	203	797	204	796	158	742					
9.4	354	646	321	679	283	717					
9.9	112	888	116	884	106	894					
~~10.3~~											
10.3	94	906	99	901	99	901					
9.8	148	852	138	862	118	882					
9.4	95	905	91	909	97	903					
7.4	824	176	821	179	778	222					
9.5	176	824	176	824	176	824					
9.8	152	848	144	856	126	874					

303	697	217	783	157	843	+.48	+.14	+.48	1	+.17	3
508	492	408	592	404	596 ×	−.03	−.09	+.08	12	+.20	26
134	866	95	905	82	918 ×	+.29	−.10	+.20	9	.00	9 d
282	718	214	786	212	788	+.39	−.14	+.33	5	−.08	6 d
157	843	123	877	87	913 ×	+.29	0.01	+.13	15	+.9	10
461	539	381	619	434	566 ×	+.40	−.20	+.32	7	−.12	7
401	599	334	666	274	726 ×	+.33	+.09	+.21	11	+.19	10
387	613	346	654	318	682 ×	+.26	−.02	+.22	3	−.05	3 d
198	802	145	855	73	927	+.34	+.18	+.12	2	+.20	2
97	903	57	949	27	973	+.34	−.09	+.23	10	+.06	8 d

± .05

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MC 6444 Reading - 0 Point Vols. 4.8 12-1 Second time meas.

NV	Type	m									
18	Ao	8.0	2.50	3.63	.61	3.59	.61	3.61	.58	2.48	2.49
				580	9.785	555	9.785	558	9.848		
33		9.49	2.55	3.75	2.55	3.75	2.55	3.75	2.55	2.55	
				584	407	584	407	584	407		
54		8.9	2.60	3.77	1.60	3.75	1.60	3.75	1.60	2.60	
				586	204	584	204	584	204		
62		8.4	2.60	3.80	1.95	3.85	1.90	3.85	1.95	2.60	
				580	290	585	279	585	290		
88		9.1	2.60	3.70	2.00	3.75	2.00	3.70	2.10	2.60	
				568	301	584	301	568	322		
97		10.1	2.60	3.35	2.10	3.36	2.15	3.36	2.15	2.70	2.65
				525	322	526	332	526	332		
129		9.6	2.60	3.38	2.48	3.43	2.48	3.38	2.48	2.65	2.62
				529	394	535	394	529	394		
130		9.2	2.65	3.45	2.25	3.37	2.25	3.35	2.35	2.65	
				538	352	528	352	525	371		
133		10.6	2.65	3.35	2.38	3.28	2.38	3.18	2.43	2.60	2.62
				525	377	516	377	502	386		
1	A2	8.8	2.60	3.25	1.80	3.20	1.75	3.20	1.85	2.60	
				519	255	505	243	505	267		
16		9.7	2.60	3.50	2.45	3.52	2.45	3.55	2.48	2.60	
				544	389	547	389	550	394		
24		8.7	2.60	3.60	1.43	3.68	1.43	3.68	1.48	2.65	2.62
				556	155	566	155	566	180		
48		9.0	2.65	3.60	2.10	3.62	2.10	3.65	2.15	2.65	
				556	322	559	322	562	332		
70		6.95	2.65	4.03	.28	4.05	.28	4.00	.33	2.70	2.67
				605	9.447	607	9.442	602	9.519		
103		8.8	2.70	3.63	1.73	3.63	1.78	3.54	1.83	2.65	2.67
				580	238	580	250	549	262		
128		9.3	2.65	3.42	1.70	3.47	1.73	3.46	1.75	2.65	
				534	230	540	238	539	243		
3		9.1	2.65	3.23	1.73	3.27	2.28	3.30	2.48	2.70	2.67
				509	238	515	358	519	394		
12		9.5	2.70	3.40	2.40	3.50	2.55	3.45	2.60	2.60	2.65
				531	380	544	407	538	447		
13		9.9	2.60	3.50	2.52	3.52	2.70	3.50	280	2.60	
				544	401	547	432	544	447		
32		9.24	2.60	3.66	2.31	3.66	2.76	3.68	3.06	2.68	2.64
				573	364	573	441	576	486		
38		8.82	2.68	3.69	1.64	3.74	1.94	3.74	2.19	2.65	2.66
				587	215	583	288	583	340		
73		8.8	2.65	3.67	2.00	3.85	2.46	3.80	2.70	2.65	
				588	301	585	380	580	431		
82		8.9	2.65	3.70	1.46	3.75	1.73	3.68	1.88	2.60	2.62
				568	164	584	238	566	284		
87		8.47	2.60	3.65	1.38	3.68	1.53	3.68	1.78	2.65	2.62
		Comp Star		562	140	566	185	566	250		
90		9.7	2.65	3.60	2.45	3.55	2.70	3.55	2.85	2.65	
				556	389	550	431	550	455		
109		7.52	2.65	3.65	.32	3.62	.35	3.60	.50	2.65	
				562	9.505	559	9.544	556	9.699		
110		9.5	2.65	3.43	2.23	3.43	2.53	3.50	2.63	2.70	2.67
				585	348	585	403	594	420		
126		9.2	2.70	3.48	2.28	3.43	2.48	3.38	2.88	2.68	2.67
				542	358	585	394	529	459		

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7.7			775	225	770	810			
9.4			167	837	167	167			
(9.1)			372	628	370	370			
9.1			290	710	306	295			
9.2			267	733	273	246			
9.0			203	797	194	194			
9.5			135	865	141	135			
9.4			186	814	176	154			
9.4			148	852	139	116			
9.3			264	786	262	238			
9.6			155	845	158	156			
8.5			401	599	411	396			
(9.3)			234	726	237	230			
7.0			1.158	8.842	1.160	1.083			
8.9			322	678	310	287			
(9.6)			304	696	312	296			
	γ_m	γ_m mean							
p.20	+.24	+.14 +.20 +.09	271		157	125	d? +.37	+.04	
	~~+.05 -.03~~		151		137	91	+.04	+.07	
	+.05 -.03	+.	143		115	97	d +.13	-.05	
	+.28 +.14	+.26 +.12	199		122	80	+.25	+.10	
	+.34 +.10	+.30 +.13	352		285	233	+.25	+.17	
	+.40 +.08	+.35 +.17	287		205	149	+.30	+.27	
			404		336	292	+.16	+.07	
			422		381	316	+.08	+.12	
	+.21 +.07	+.14 +.04	147		119	95	d +.17	+.02	
			1.057		1.015	857			
			187		132	124	d +.25	+.00	
			184		141	70	+.15	+.15	

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Mc 4444 Readings – o Point

Continued from p. 20

N	Type	m									
126	Kr	2.25	2.58	1.73	2.58	1.83	2.53	2.13	2.30	2.27	
136	Kr	2.30	2.45	1.70	2.45	2.00	2.05	2.10	2.30		
163	Ko	2.30	2.53	1.58	2.53	1.88	2.48	1.88	2.25	2.27	

Mc 4444 continued from p 28

N	Type	m									
136	9.2	2.65	3.28	2.33	3.28	2.63	3.25	2.83	2.70	2.67	
163	9.3	2.20	3.31	2.06	3.36	2.51	3.36	2.71	2.68	2.69	

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Mc 4898 Vol 4.93

N	Type	m	OP									
				CF	PB	CF	427	CF	Yellow			
18	Ao		2.20	4.00	2.98	3.98	3.00	3.93	2.98			
				602	474	600	477	594	474	2.15	2.17	
19	"		2.19	3.90	2.60	3.88	2.50	3.88	2.60			
				591	415	589	398	589	415	2.20	2.20	
21	"		2.20	3.93	2.98	3.93	2.93	3.98	2.98			
				594	474	594	467	600	474	2.25	2.22	
24	"		2.25	3.83	2.58	3.80	2.53	3.78	2.58			
				583	412	580	403	577	412	2.20	2.22	
40	"		2.20	3.88	3.00	3.75	2.95	3.76	2.92			
				589	477	574	470	585	465	2.20		
44	"		2.15	3.95	2.60	3.90	2.60	3.93	2.60			
				597	415	591	415	594	415	2.15		
53	"		2.15	3.58	2.65	3.60	2.60	3.60	2.65			
				554	423	556	415	556	423	2.15		
54	"		2.15	3.08	2.23	3.13	2.28	3.18	2.33			
				489	348	496	358	502	367	2.20	2.17	
68	"		2.20	3.50	2.78	3.53	2.78	3.58	2.78			
				544	444	548	444	554	444	2.25	2.27	
101	"		2.25	3.75	2.50	3.75	2.40	3.80	2.45			
				584	398	584	380	580	389	2.25		
111	"		2.25	3.90	2.85	3.85	2.75	3.85	2.90			
				591	455	585	439	585	462	2.25		
115	"		2.25	3.85	2.53	3.93	2.53	3.98	2.63			
				585	403	594	403	600	420	2.30	2.27	
126	"		2.25	3.90	2.90	3.90	2.90	3.88	2.90			
				591	462	591	462	589	462	2.25	2.30	
127	"		2.35	3.88	2.28	3.88	2.28	3.86	2.28			
				589	358	589	358	587	358	2.30	2.32	
136	"		2.30	3.73	2.83	3.68	2.73	3.83	2.83			
				582	452	566	436	580	452	2.25	2.27	
139	"		2.60	3.91	2.51	3.86	2.57	3.83	2.51			
				592	400	587	400	583	400	2.58	2.59	
149	"		2.58	3.90	2.80	3.90	2.80	3.90	2.80			
				591	472	591	472	591	472	2.62	2.60	
234	"		2.20	3.20	2.80	3.20	2.70	3.20	2.75			
				568	472	568	431	568	439	2.20		
249	2		2.20	3.85	1.35	3.90	1.40	3.85	1.40			
				585	130	591	146	585	146	2.60	2.65	
260	2		2.60	3.98	2.88	4.10	2.90	4.03	2.90			
				600	459	613	462	605	462	2.65	2.62	
			Vol 4.9									
39			2.40	4.03	1.73	3.98	2.08	4.01	2.38			
			Vol. 4.94	605	238	600	318	603	377	2.05	2.07	
41			2.05	4.03	1.43	4.08	1.83	4.03	2.18			
				605	155	611	262	605	338	2.10	2.07	
124			2.05	3.95	2.20	3.90	2.50	3.93	2.35			
				597	342	591	398	594	439	2.05		
135			2.10	3.98	2.85	3.92	2.20	3.95	2.30			
				600	455	593	342	597	362	2.10		
32	A2											
80	"											
130	"											
160												
187												

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128	123	120
176	191	174
120	127	126
171	177	155
112	104	110
182	176	179
131	141	133
141	138	135
100	104	110
176	194	191
136	146	123
182	191	180
129	129	127
231	231	229
120	130	108
192	187	183
119	119	119
96	137	129
455	445	439
141	151	143
367	282	226
450	349	267
255	193	155
145	251	235

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$\frac{H_\beta + H_\gamma}{2}$

MC 4898 Sel $H_\beta + (40\text{Å})$, $H_\gamma + (40\text{Å})$ $H_\delta - (40\text{Å})$ $H_\varepsilon + (40\text{Å})$

N	Type	m												
23	B9			5.46	3.43	5.46	2.58	5.43	2.63	5.43	2.73	5.48	3.58	
		2.70	737	535	737	412	735	420	735	436	739	554	2.75	2.72
			5.55	2.25	5.53	1.45	5.53	1.50	5.55	1.55	5.55	1.95		
37		2.75	744	352	743	161	743	176	744	190	744	290	2.75	
			5.40	4.15	5.55	3.27	5.55	3.35	5.55	3.40	5.55	4.25		
42		2.75	732	618	744	575	744	525	744	531	744	628	2.75	
			5.05	3.35	5.15	2.20	5.25	2.75	5.27	2.80	5.15	3.55		
46		2.75	703	525	712	431	720	439	722	447	712	550	2.75	
			5.38	3.28	5.28	2.48	5.23	2.43	5.28	2.48	5.28	358		
47		2.75	731	516	723	394	718	386	723	394	723	554	2.70	2.72
			4.65	2.65	4.50	2.00	4.20	2.05	4.10	2.00	3.75	2.25		
65		2.70	667	423	653	301	623	312	613	300	584	352	2.80	2.75
			5.20	3.00	5.10	2.25	5.10	2.35	5.20	2.40	5.10	2.95		
86		2.80	716	477	708	352	708	371	716	380	708	470	2.80	
			5.26	1.10	5.20	.70	5.10	.80	5.20	.70	5.20	.85		
87		2.80	721	041	716	9.845	708	9.845	716	9.845	716	9.929	2.80	
			5.35	4.00	5.27	3.30	5.40	3.25	5.30	3.40	5.25	4.00		
103		2.80	728	602	722	579	732	572	724	531	720	602	2.80	
			5.27	3.20	5.25	2.40	5.30	2.60	5.20	2.50	5.20	3.30		
104		2.80	722	505	720	380	724	415	716	398	716	579	2.80	
			5.30	3.70	5.31	3.10	5.25	3.10	5.28	3.10	5.20	3.90		
107		2.80	724	568	725	491	720	491	723	491	716	591	2.80	
			5.40	2.40	5.40	1.80	5.50	1.75	5.40	1.95	5.40	2.60		
117		2.80	732	380	732	255	740	243	732	290	732	415	2.80	
			5.50	3.20	5.45	2.50	5.40	2.30	5.45	2.30	5.40	3.60		
122		2.80	740	505	736	398	732	431	736	431	736	556	2.80	
			5.50	2.95	5.54	2.20	5.45	2.20	5.45	2.20	5.45	3.00		
136		2.80	740	470	744	342	736	342	736	342	736	477	2.80	
			4.65	.35	4.50	.20	4.50	.20	4.50	.20	4.60	.50		
71	B5	2.80	667	9.544	653	9.301	653	9.301	653	9.301	663	9.699	2.80	
			5.10	.75	5.00	.40	5.00	.40	4.90	.40	5.00	.60		
75	B3	2.80	708	9.875	699	9.402	699	9.402	690	9.402	699	9.778	2.80	
			5.00	1.90	4.85	1.40	(4.45)	1.40	5.10	1.50	4.95	2.10		
83	B8	2.80	699	279	686	146	(686)	146	708	176	695	322	2.80	
			5.10	1.70	5.00	1.20	4.95	1.20	4.80	1.20	5.85	1.75		
84	B8	2.80	708	230	699	079	695	079	681	079	712	243	2.80	
			5.25	1.88	4.83	1.23	5.13	1.33	(5.13)	1.33	(5.13)	1.88		
85	B8	2.80	720	274	684	090	710	124	710	124	710	274	2.75	2.77
			5.35	1.25	5.35	.75	5.35	.75	5.35	.75	5.45	1.15		
152	B5	2.75	728	097	728	9.875	728	9.875	728	9.875	728	061	2.75	
			5.03	1.53	5.03	1.03	5.00	.98	4.88	.98	4.93	1.48		
227	B8	2.75	702	185	702	013	702	9.991	688	9.991	693	120	2.80	2.77
			5.20	2.20	5.20	2.00	5.20	2.00	5.10	2.00	5.20	2.60		
245	B8	2.80	724	431	716	301	716	301	708	301	716	415	2.80	
			5.35	2.73	5.23	1.98	5.18	1.98	5.25	1.93	5.23	2.78		
248	B8	2.80	728	486	719	297	714	297	720	286	719	444	2.75	2.77

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202	325	315	299	185
392	582	567	554	454
114	229	219	213	118
178	281	281	275	162
215	329	332	329	169
244	352	311	313	222
239	356	337	336	238
680	871	863	861	787
126	203	220	193	118
217	340	309	318	197
156	234	229	232	125
352	477	497	442	317
235	338	301	305	180
270	402	394	394	259
1.123	1.352	1.352	1.352	.964
.833	1.297	1.297	1.288	.921
420	540	540	532	373
478	620	616	602	469
446	594	586	586	436
631	853	863	853	667
517	689	711	697	523
293	415	415	407	301
292	422	417	434	275

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Mc 4413 remeasured 24.I.1929 Vol. 4.9

N	Type	m	Cet	Reg													
			2.20	2.17	2.20	657	651	662	4.84	2.64	4.84	2.67	4.79	2.59			
23	Ao	2.23	342	336	342				685	422	685	427	680	413	2.10	2.16	
			2.15	2.19	2.05	603	614	583	5.36	3.21	5.32	3.13	5.36	3.31			
28		2.18	332	340	312				729	507	726	496	729	520	2.10	2.14	
			1.75	1.75	1.75	511	511	511	5.40	4.65	5.40	4.65	5.40	4.65			
41		2.10	243	243	243				732	667					2.10		
			1.32	1.52	1.50	426	492	483	4.95	3.63	4.90	3.38	4.93	3.43			
44		2.10	121	182	176				665	580	670	529	693	535	2.15	2.12	
			3.20	3.45	3.43	797	817	833	5.11	1.91	5.16	1.91	5.04	1.61			
64		2.15	505	538	535				708	281	721	233	702	207	2.12	2.14	
90																	
			2.65	2.35	2.80	648	631	687	5.95	3.30	5.50	3.15	5.75	2.95			
99		2.15	423	371	447				775	579	740	498	760	470	2.15		
			2.70	2.46	2.60	642	601	626	6.15	3.45	6.17	3.41	6.15	3.35			
102		2.15	431	391	415				789	538	790	533	789	550	2.15		
			1.80	1.85	1.60	447	466	465	6.42	4.62	6.32	4.47	6.17	4.57			
117		2.15	255	267	255				808	665	801	650	790	660	2.11	2.13	
			3.56	3.57	3.50	764	764	750	6.13	2.57	6.15	2.58	6.23	2.73			
118		2.10	557	553	544				787	410	789	412	794	436	2.15	2.12	
			5.60	5.55	5.55	945	954	941	6.34	.74	6.29	.74	6.34	.79			
123		2.02	748	744	744				803	9.869	790	9.869	803	9.898	2.20	2.21	
			2.73	2.60	2.60				4.80	2.07	4.70	2.10	4.70	2.10			
171		2.20	436	415	415				681	316	672	322	672	322	2.20		
			4.28	4.16	4.43				4.45	.17	4.33	.17	4.60	.17			
190		2.15	631	619	646				648	230	636	220	663	230	2.15		
			3.22	3.35	3.37				4.77	1.55	4.87	1.52	4.84	1.47			
199		2.12	508	525	528				679	190	688	182	685	167	2.15	2.13	
			3.05	3.20	3.20				4.35	1.30	4.45	1.25	4.50	1.30			
202		2.15	484	505	505				638	114	648	097	653	114	2.15		
			1.15	1.28	1.35				4.33	3.18	4.43	3.15	4.48	3.13			
205		2.15	061	107	130				636	502	646	498	657	496	2.20	217	
			3.27	3.32	3.15				6.09	2.82	6.12	2.80	5.97	2.82			
242		2.22	575	521	498				744	450	787	447	776	450	2.15	2.18	
			4.47	4.50	4.45				6.27	1.80	6.27	1.77	6.27	1.82			
243		207	650	653	648				797	255	797	248	797	260	2.10	2.08	
			2.00	2.03	2.00				5.40	3.40	5.38	3.35	5.40	3.40			
257		2.10	301	308	301				732	531	721	525	732	521	2.10	2.10	
			3.40	3.38	3.45				5.42	2.02	5.48	2.10	5.55	2.10			
260		2.10	531	529	538				734	305	739	322	744	322	2.10	2.10	
			3.70	3.42	3.70				5.20	1.50	5.12	1.70	5.10	1.80			
264		2.10	568	534	531				716	176	709	230	708	230	2.10		
			1.95	2.15	2.20				5.20	3.25	5.30	3.15	5.45	3.25			
289		2.10	290	332	342				716	512	724	498	736	512	2.10		
			3.80	3.80	3.75				5.50	1.70	5.45	1.65	5.45	1.75			
292		205	580	580	574				740	280	736	247	736	243	205		
			4.90	4.85	4.90				5.50	0.60	5.40	.55	5.45	.55			
294		2.10	690	686	690				740	9.778	.733	9.740	736	9.740	2.10		

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23	263	258	267	
28	222	230	209	
41	165	65	65	
44	135	161	158	
64	427	488	495	x
90				
99	256	242	290	x
102	257	257	239	x
117	143	151	120	
118	377	377	258	xx
123	934	921	905	
171	365	350	350	
190	1.418	1.406	1.433	
199	489	506	578	
202	524	537	539	
205	134	148	155	
242	334	340	326	
243	542	549	537	
257	201	206	201	
260	429	417	422	
264	(570)	479	478	
289	204	226	224	
292	510	519	495	
294	982	993	996	

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NC 4413 26.I.29 remeasured again, because O Point changed

N	Type	m																	
23		10.0	2.38	2.51	2.47	2.42	Δ 95	687	682	5.07	2.56	5.08	2.61	5.03	2.61				
				400	393	384	495			705	408	706	417	702	417	2.40	2.39		
28		10.1	2.40	2.55	2.65	2.52	653	669	649	5.68	3.13	5.68	3.03	5.65	3.13				
				407	423	401	450			754	496	754	481	752	496	2.45	2.42		
41		10.9	2.45	.97	1.10	1.06	9.231	9.298	9.281	5.45	4.48	5.53	4.43	5.54	4.48				
				9.987	041	025	179			736	651	743	646	744	657	2.50	2.47		
44		10.3	2.50	1.68	1.87	1.82	9.522	559	548	5.05	3.37	5.17	3.30	5.15	3.33				
				225	272	260	333			703	528	713	579	712	522	2.50			
64		8.7	2.50	4.05	4.25	4.23	863	884	882	5.55	1.50	5.55	1.30	5.53	1.32				
				607	628	626	936			744	176	744	114	744	124	2.40	2.45		
99		10.2	2.55	3.45	3.10	3.45	747	729	747	6.18	2.73	5.78	2.68	6.18	2.73				
				538	491	538	639			791	426	762	428	791	426	2.50	2.52		
99		9.2	2.40	3.30	2.85	3.45	734	707	742	6.10	2.80	5.60	2.75	6.25	2.80				
				519	455	538	542			785	447	748	429	796	447	2.50	2.45		
102		10.0	2.50	2.45	2.60	2.55	576	602	594	6.50	4.05	6.50	3.90	6.50	3.95				
				389	415	407	376			813	609	813	591	813	597	2.50			
117		10.2	2.50	2.10	2.00	2.02	509	491	497	6.50	4.40	6.45	4.45	6.42	4.40				
				322	301	305	323			813	643	810	648	808	643	2.50			
118		9.2	2.50	3.83	3.70	3.65	770	762	763	6.50	2.67	6.40	2.70	6.30	2.65				
				583	568	562	589			813	427	806	431	799	423	2.50			
123		7.3	2.50	5.85	5.85	5.90	9 53	9 53	9 53	6.52	.67	6.52	.67	657	.67				
				767	767	771	897			814	9.826	814	826	816	826	2.47	2.48		
171		9.9	2.50	2.62	2.62	2.62	722	727	727	4.97	2.35	4.92	230	(4.92	230)				
				418	418	418	527			696	371	691	362	691	362	2.50			
190		7.2	2.50	4.60	4.60	4.60	993	993	993	4.68	.08	4.68	.08	4.68	.08				
				663	663	663	984			670	8.903	670	903	670	903	2.57	2.52		
199		9.2	2.52	3.60	3.65	3.60	858	864	858	4.99	1.39	4.99	1.34	4.99	1.39				
				556	562	556	721			698	143	698	127	698	143	2.50	2.51		
202		9.2	2.55	3.26	3.40	3.30	861	861	858	4.49	1.23	4.68	1.28	4.58	1.28				
				573	531	579	726			652	090	670	107	661	107	2.50	2.52		
205		10.5	2.55	1.35	1.35	1.25	482	472	449	4.45	3.10	4.55	3.20	4.45	3.20				
				130	130	097	303			648	491	658	505	648	505	2.54			
242		9.5	2.55	3.40	3.25	3.05	740	728	715	6.18	2.88	6.08	2.83	5.88	2.83				
				531	512	484	550			791	444	784	452	769	452	2.50	2.52		
243		8.7	2.52	4.63	4.50	4.50	862	852	852	6.37	1.74	6.32	1.82	6.32	1.82				
				666	653	653	728			804	240	801	260	801	260	2.55	2.53		
257		10.3	2.50	1.83	1.95	2.05	526	554	566	5.45	3.62	5.45	3.50	5.55	3.50				
				262	290	312	336			726	559	726	544	744	544	2.50			
260		9.5	2.52	3.48	3.55	3.48	790	800	790	5.65	2.17	5.62	2.07	5.65	2.17				
				542	550	542	617			752	336	750	316	752	336	2.55	2.53		
264		9.2	2.55	3.57	3.60	3.60	829	849	829	5.30	1.73	5.33	1.73	5.33	1.73				
				553	556	556	675			724	238	727	238	727	238	2.50	2.52		
289		10.3	2.50	1.90	2.00	1.95	543	537	550	5.45	3.55	5.55	3.55	5.50	3.55				
				279	301	290	349			736	550	744	550	740	550	2.50			
292		8.7	2.50	3.71	3.60	3.65	828	824	822	5.51	1.80	5.40	1.80	5.50	1.85				
				569	556	562	673			741	255	732	255	740	267	2.50			
294		7.7	2.50	5.00	4.98	4.95	951	950	947	5.60	.60	5.58	.60	5.60	.65				
				699	697	695	893			748	9.778	747	9.778	748	813	2.50			
308		9.2	2.55	2.70	2.65	2.65	637	636	636	6.23	3.53	6.13	3.48	6.13	3.48				
				431	423	423	434			794	548	787	542	787	542	2.60	2.58		

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23	10.0	297	289	285
28	10.1	258	273	256
41	10.9	85	97	93
44	10.3	175	194	190
64	8.7	568	620	623
99	10.2	355	334	353
99	9.2	338	309	349
102	10.0	206	222	216
117	10.2	170	162	165
118	9.2	386	375	376
123	7.3	988	988	990
171	9.9	325	329	329
190	7.2	1.767	1.767	1.767
199	9.2	555	571	555
202	9.2	562	563	554
205	10.5	157	153	143
242	9.5	347	332	317
243	8.7	564	541	541
259	10.3	177	182	200
260	9.5	416	434	416
264	9.2	486	489	489
289	10.3	186	194	190
292	8.7	486	477	473
294	7.7	970	969	935
308	9.2	286	245	243

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Type M

12	+.30 +.20	2.50	4.30	4.08	3.90	963	939	924	4.68	.38	4.70	.62	4.65	.75	2.50				
			633	611	591				671	9.580	672	9.792	667	875					
13	+.30 +.12	2.50	3.68	3.35	3.10	925	897	887	4.38	.20	4.25	.90	4.00	.90	2.50				
			566	525	491				641	845	628	954	602	954					
39	+.04 +.50	2.50	2.90	3.00	2.30	722	733	614	5.50	2.60	5.54	2.54	5.60	3.30	2.50				
			462	477	362				740	415	744	405	748	519					
62	+.25 +.35	2.50	330	2.63	2.35	800	697	648	5.23	1.93	5.28	2.65	5.28	2.93	2.45	2.47			
			519	420	371				719	286	723	423	723	467					
107	+.25 +.35	2.50	2.90	2.40	1.80	649	567	442	6.50	3.60	6.50	4.10	6.50	4.80	2.50				
			462	380	285				813	556	813	613	813	672					
116		2.55	2.95	3.63	3.05	673	763	690	6.27	3.32	6.27	2.64	6.22	3.17	2.52	2.53			
			470	580	484				797	521	797	422	794	501					
131		2.50	5.12	4.88	4.63	930	917	891	6.02	.90	5.90	1.02	5.95	1.32	2.50				
			709	688	666				779	957	771	809	775	121					
132		2.50	2.50	2.08	1.70	651	569	479	5.58	3.08	5.61	3.53	5.63	3.93	2.55	2.52			
			398	318	230				747	489	749	548	751	594					
144		2.50	4.52	4.50	4.35	913	905	886	5.52	1.00	5.60	1.10	5.65	1.20	2.50				
			685	653	638				742	000	748	041	752	079					
145		2.58	4.72	4.72	4.52	929	929	910	556	.84	5.56	.84	5.56	1.04	2.55	2.56			
			674	624	655				745	924	745	924	745	017					
148		2.55	4.08	3.95	3.85	891	876	861	585	1.17	5.25	1.20	5.30	1.45	2.55				
			611	596	585				720	068	720	114	724	161					
196		2.60	2.45	1.90	1.60	723	623	538	4.63	2.18	4.53	2.63	4.63	3.03	2.55	2.57			
			389	279	204				666	338	656	420	666	481					
250		2.60	3.75	3.50	3.25	820	793	758	5.68	1.93	5.63	2.13	5.68	2.43	2.55	2.54			
			574	544	572				754	286	751	328	754	386					
258		2.50	4.75	4.75	4.50	949	937	913	5.35	.60	5.50	.75	5.50	1.00	2.50				
			677	677	653				728	9.778	740	9.875	740	000					
277		2.55	4.15	4.00	3.68	871	848	810	5.58	1.43	5.68	1.68	5.70	2.08	2.50	2.52			
			618	602	566				747	155	754	225	756	318					
286		2.55	3.75	3.40	3.20	843	804	774	5.38	1.63	5.33	1.93	5.38	2.18	2.50	2.52			
			574	531	505				731	212	727	286	731	338					
364		2.55	4.80	4.60	4.05	876	858	806	6.38	1.58	6.28	1.78	6.33	2.28	2.50	2.52			
			681	663	607				805	199	805	250	801	358					
379		2.50	5.65	5.65	5.50	963	956	944	6.15	.50	6.25	.60	6.25	.75	2.50				
			752	752	740				789	9.699	796	9.778	796	9.875					
382		2.50	3.25	3.00	2.90	725	692	670	6.12	2.87	6.10	3.10	6.20	3.30	2.50				
			572	477	462				787	459	785	491	792	519					
409		2.50	4.10	3.48	3.02	833	783	705	6.03	1.93	5.88	2.40	5.95	2.93	2.47	2.47			
			613	542	480				780	286	769	380	775	467					
413		2.45	3.32	2.95	2.40	718	665	593	6.35	3.03	6.38	3.43	6.43	3.73	2.50	2.47			
			521	470	380				803	481	805	535	787	582					
441		2.50	5.10	5.07	4.95	909	901	892	6.30	1.20	6.37	1.20	6.35	1.40	2.50				
			708	705	695				799	079	804	114	803	146					
440		2.50	2.10	1.72	1.20	496	409	259	6.70	4.60	6.72	5.00	6.60	5.40	2.50				
			322	236	079				826	663	827	699	820	732					
462		2.50	2.99	2.62	2.17	697	636	557	6.01	3.02	6.06	3.44	6.01	3.84	2.42	2.46			
			476	418	336				779	480	782	536	779	584					
446		2.42	5.30	4.80	4.25	927	884	841	6.27	0.97	6.21	1.47	6.12	1.87	2.44	2.43			
			724	681	628				797	9.987	797	167	787	272					

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C	D	E	D−C	E−D
1.090	880	792	+.40	+.35
796	674	648	+.35	+.09
325	339	229	−.09	+.45
433	300	256	+.52	+.16
257	200	141	+.24	+.33
276	375	293	−.41	+.31
825	762	654	+.18	+.32
258	201	157	+.24	+.26
742	707	673	+.10	+.08
821	821	728	.00	+.27
652	606	563	+.13	+.25
328	286	185	+.36	+.28
468	423	368	+.18	+.20
950	865	740	+.22	+.37
592	529	438	+.19	+.33
579	441	393	+.21	+.17
606	585	443	+.17	+.42
1.089	1.018	1.021	+.10	.00
328	294	273	+.22	+.02
494	389	308	+.40	+.32
322	270	2.15	+.20	+.22
720	690	657	+.16	+.04
163	128	98	+.17	+.16
299	246	195	+21	+.25
810	630	515	+.54	+.39

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N	Type	m	V-R						U-P	B-P	B-V					
12		2.10	4.35	4.25	3.82	966	957	922	4.70	.35	4.75	.50	4.57	.75	2.10	
			638	628	582				672	9.544	677	699	660	805		
13		2.08	3.58	3.60	3.48	907	909	897	4.44	.86	4.44	.84	4.42	.94	2.05	2.06
			554	556	542				647	9.985	647	924	645	9.973		
59		2.10	2.72	2.42	2.28	705	654	610	5.37	2.65	5.37	2.95	5.60	3.32	2.10	
			435	384	358				730	423	730	470	748	521		
62		2.10	3.60	2.95	2.34	821	739	646	5.43	1.83	5.38	2.43	5.29	2.95	2.05	2.07
			536	470	369				735	262	731	386	728	470		
107		2.10	3.05	2.55	1.85	668	591	457	6.55	3.50	6.50	3.95	6.45	4.60	2.10	
			484	407	267				816	544	816	597	810	663		
116		2.10	4.04	3.66	3.13	805	763	698	6.32	2.28	6.25	2.67	6.28	3.15	2.10	
			606	566	496				801	358	803	427	798	498		
131		2.10	5.12	4.85	4.68	924	913	890	5.95	.83	5.93	1.08	6.03	1.35	2.05	2.07
			709	686	670				775	9.919	773	033	780	130		
144		2.05	4.60	4.52	4.28	912	907	882	5.63	1.03	5.60	1.08	5.61	1.33	2.10	2.07
			663	655	631				757	013	748	033	749	124		
145		2.10	4.74	4.65	4.60	925	913	916	5.63	.89	5.68	1.03	5.58	.98	2.05	2.07
			676	667	663				757	949	754	013	747	991		
148		2.05	4.02	3.92	3.95	878	863	865	5.32	1.30	5.37	1.45	5.40	1.45	2.05	
			604	593	597				726	114	726	161	732	161		
196		2.05	2.42	1.98	1.72	717	624	560	4.65	2.23	4.71	2.73	4.75	3.03	2.10	2.07
			384	297	236				667	348	673	436	676	481		
250		2.10	3.95	3.43	3.38	830	781	773	5.85	1.90	5.68	2.25	5.70	2.32	2.10	
			597	535	529				767	279	754	352	756	365		
258		2.10	4.75	4.67	4.45	941	927	912	5.45	.70	5.52	.85	5.45	1.00	2.00	2.05
			677	669	648				736	9.845	742	9.989	736	000		
277		2.00	4.15	3.90	3.69	871	840	804	5.59	1.44	5.64	1.74	5.79	2.10	2.02	2.07
			618	591	567				747	158	757	241	763	322		
286		2.05	3.68	3.40	3.25	830	799	772	5.43	1.75	5.40	2.00	5.50	2.25	2.05	
			566	531	512				736	243	732	301	740	352		
364		2.10	4.80	4.50	3.90	889	861	799	6.20	1.40	6.20	1.70	6.20	2.30	2.10	
			681	653	591				792	146	792	230	792	362		
379		2.15	5.75	5.63	5.31	969	960	940	6.18	.43	6.18	.55	6.09	.78	2.10	2.12
			760	757	725				791	9.633	791	740	785	892		
382		2.10	3.15	2.92	2.87	716	685	670	6.05	2.90	6.02	3.10	6.02	3.15	2.10	
			498	465	450				782	462	780	491	780	498		
409		2.08	4.15	3.35	2.95	841	766	704	5.99	1.84	5.74	2.39	5.84	2.89	1.95	2.01
			618	525	470				777	265	759	378	766	461		
413		2.03	3.30	3.00	2.45	720	671	597	6.29	2.99	6.39	3.39	6.19	3.74	2.00	2.01
			579	477	389				799	476	806	530	792	573		
441		2.05	5.10	5.10	4.92	896	896	882	6.48	1.38	6.48	1.38	6.45	1.53	1.90	1.97
			708	708	692				812	140	812	140	810	185		
440		2.03	2.00	1.75	1.10	474	413	221	6.71	4.71	6.76	5.01	6.61	5.51	2.05	2.04
			301	243	041				827	673	830	700	820	741		
462		2.00	2.98	2.54	1.98	661	628	520	5.93	2.98	5.99	3.45	5.98	4.00	2.00	
			474	405	297				773	470	777	538	777	602		
446		2.02	5.40	4.85	4.66	934	888	863	6.28	.88	6.28	1.43	6.38	1.72	2.02	
			732	686	668				798	9.944	798	153	805	286		

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4227-4 4227+4184

				Δ		Δ	mean		Δ²	Δ²
1.128	978	785	+.43	2	+.57	10	+.41	+.44	4	100
712	723	672	−.03	19	+.15	3	+16	+.12	361	9
307	260	227	+.28	19	+15	15	+.09	+.30	361	225
473	345	253	+.46	2	+.40	12	+.48	+.28	4	144
272	219	147	+.26	1	+44	6	+25	+.38	1	36
443	376	300	+.27		+.27	2		+29		4
856	740	650	+.86	9	+.23	4	+27	+27	81	16
738	715	625	+.06	2	+.24	8	+08	+16	4	64
802	741	756	+.20	10	−.03	15	+10	+12	100	225
612	569	571	+15	1	.00	12	+14	+12	1	144
319	237	195	+.22	7	+19	4	+29	+23	49	16
488	402	391	+.34	8	+.01	9	26	+10	64	81
891	813	786	+.19	1	+.27	5	20	32	1	25
589	570	441	+.22	1	+.31	1	21	32	1	1
493	431	388	+.28	4	+.12	3	24	15	16	9
646	562	430	+.28	6	+.57	5	22	46	36	25
1.158	1.051	893	+.27	9	+.26	13	18	13	81	169
320	289	282	+.22	0	+01	0	22	01	0	6
572	381	305	+.50	5	+.25	3	45	28	25	9
323	276	219	+.21	1	+.23	1	20	22	1	1
672	672	625	.00	8	+13	5	08	08	64	25
154	130	79	+11	3	+.26	5	14	21	9	25
303	239	175	+.24	2	+.32	4	22	28	4	16
854	645	569	+52	1	+.23	6	53	31	1	64

$$\varepsilon = \sqrt{\frac{\Sigma \delta^2}{2n}}$$

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44 Mag reduced to int scale

MC 6449 & measured, O Point subtracted

CLT−O
R−O
CL−R / CLT−OP

N	Type	m	O Point	CLT	9 Mag	CLT	4 Mag	CLT	4 Mag	OP Mag	O.P. mean
2		9.7	3.95	349	249	349	239	344	237	3.98	3.96
				543	396	543	378	537	375		
16		8.5	3.95	355	157	350	135	350	150	3.95	3.95
				550	196	544	130	544	176		
22		7.6	4.00	378	.43	378	28	378	38	3.95	3.97
				582	9.632	577	447	572	580		
73		9.8	3.95	346	240	342	228	342	225	3.95	3.90
				538	380	534	358	534	352		
76		9.7	3.85	333	238	336	233	338	243	3.90	3.87
				522	377	529	367	529	386		
79		8.8	3.85	355	175	350	170	355	175	3.85	
				550	243	544	230	544	243		
90		8.9	3.90	372	160	361	158	360	160		
				577	204	558	176	556	204	3.90	
98		9.8	3.90	380	290	380	280	380	280		
				580	462	580	447	570	447	3.90	
144		10.1	3.88	381	301	381	291	381	291	3.90	3.89
				581	479	581	464	581	464		
157		10.0	3.85	374	259	371	254	374	249	3.88	3.86
				573	413	569	405	573	413		
154		9.0	3.88	381	201	379	201	379	201		
				581	303	579	303	579	303	3.90	3.89
99	Ko	8.7	3.95	390	165	385	195	385	228		
				591	217	585	290	585	358	3.85	3.90
116	Ko	9.3	3.90	410	275	410	300	410	310		
				613	439	613	477	613	491	3.90	
118	K		3.90	410	30	410	40	410	60		
				613	477	613	602	613	778	3.90	
124	Ko	8.9	3.95	350	160	355	195	360	225		
				544	204	550	290	556	352	3.95	
145	Ko	8.7	"	385	170	380	205	390	240		
				585	230	580	312	591	380	3.85	3.90
148	Ks	9.2	"	395	225	395	280	395	290		
				597	352	592	447	597	462	3.95	
158	Ko	9.2	"	405	265	405	305	405	305		
				607	423	607	484	607	484	3.95	
6	Ks	9.4	3.95	345	220	345	250	335	270		
				538	342	538	398	525	431	4.05	4.00
12	Ko	9.4	4.05	350	198	346	228	355	243		
				544	297	538	358	550	386	4.00	4.02
20	Ks	9.8	3.95	353	243	343	273	348	303		
				548	382	535	436	542	481	4.00	3.97
21	Ks	9.8	4.05	360	285	345	310	345	315		
				556	455	538	491	537	498	4.05	
23	Ks	9.2	4.05	370	190	370	235	365	285		
				568	279	568	371	562	455	4.05	
27	Ks	9.7	4.00	348	186	348	207	348	242		
				542	270	542	316	542	394	4.05	4.02
31	Ko	7.6	4.00	383	43	368	73	353	88		
				583	633	566	863	545	944	3.95	3.97
32	Ko	7.4	3.95	350	29	360	50	360	69		
				544	402	556	694	556	859	3.95	2
40	Ko	9.2	3.90	340	200	345	225	342	280		
				531	301	538	352	534	432	3.90	
44	Ks	8.2	3.90	373	83	371	143	368	178		
				570	419	561	155	566	280	3.85	3.87

CLT−Rep (9 Mag)	4 Mag	4 Mag	9.45	9.498	9.492			
100	110	107						
000	041	029	K	K	K	.147	165	.162
198	215	200						
297	332	301	9.747	.788	.757	354	414	368
335	350	340						
525	544	531	9.948	9.967	954	.944	1.130	.997
105	114	117						
021	057	064	9.483	523	534	158	176	182
95	105	95						
.978	021	.978	.456	.492	449	145	162	143
180	180	180						
255	255	255	705	711	711	307	314	301
212	211	200						
326	324	301	755	766	745	367	382	352
90	100	100						
9.954	000	000	9.374	420	420	118	133	133
80	90	90						
9.903	954	954	9.322	373	373	109	117	117
115	117	115						
061	068	061	484	499	488	100	164	160
180	178	178						
255	250	250	674	671	671	278	276	276
225	190	157	761	694	611			
352	279	196				374	295	227
135	110	100	517	428	387			
130	041	000				174	136	122
380	370	350	967	953	931			
580	568	544				1.136	1.011	.835
190	160	135	734	654	584			
278	204	130				340	260	204
215	175	150	747	663	585			
332	243	176				355	268	211
170	115	105	633	464	424			
230	061	024				245	150	135
140	100	100	539	393	393			
146	000	000				184	123	123
125	95	65	539	440	288			
097	978	813				196	140	94
152	118	106	638	534	475			
182	072	025				247	180	164
110	70	45	9.493	9.319	9.111			
041	9.845	9.633				162	99	61
75	35	40	319	006	064			
875	544	602				101	47	40
180	135	80	687	562	341			
265	130	903				289	197	107
162	138	100	668	598	458			
210	140	000				272	226	148
340	295	265	948	901	875			
531	470	422				950	703	604
321	310	291	962	935	908			
506	491	464				1.082	.857	.717
140	120	112	615	541	515			
146	078	049				.230	.186	.172
290	228	190	892	787	713			
462	358	279				.651	.416	.316

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R-O / α-O	4200-4	4187-4149
9.853	9.835	9.838
646	586	632
.056	8.870	.003
.842	824	818
.855	.838	857
.693	686	699
633	618	648
882	867	867
898	883	883
900	836	840
722	724	724
	+.31	+.37
	+.37	+.18
	+.04	+.10
	+.36	+.36
	+.33	+.34
	(+.70	+.17)
	(.56	.00)
	+.38	( )
	+.43	+.21
	( )	( )
	+.26	+.58

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NGC 6441

Type A. N=6

Opmt

CLF − R / CLF

	M8.5	3.90	1.98	3.86	1.88	3.93	1.73	1.72	1.92	1.98	2.20	692	708	748			
		541	297	589	274	594	238		283	297	342						
28	8.95	3.79	2.52	3.85	2.47	3.84	2.52	1.73	1.27	1.38	1.32	525	555	537			
		574	401	585	393	584	401		104	140	121						
31	8.5	3.89	2.00	3.93	1.90	3.90	1.90	1.75	1.89	2.03	2.00	686	714	710			
		590	301	594	279	591	279		276	308	301						
84	9.2	4.02	2.83	4.00	2.77	3.98	2.83	1.78	1.19	1.23	1.15	472	488	461			
		604	482	602	442	600	452		076	090	061						
93	9.4	4.00	2.78	4.03	2.75	4.00	2.75	1.75	1.22	1.28	1.25	484	502	495			
		602	444	605	439	602	439		086	107	097						
94	8.8	3.81	2.19	3.84	2.19	3.82	2.24	1.76	1.62	1.65	1.68	629	633	643			
		581	340	584	340	582	350		210	217	225						
110	9.8	3.94	3.04	4.01	3.05	3.99	3.14	1.76	.90	.96	.85	359	379	328			
		596	483	603	484	601	497		954	982	929						
139	9.2	4.05	2.75	4.05	2.80	4.02	2.75	1.75	1.30	1.25	1.27	507	490	500			
		607	439	607	447	604	439		114	097	104						
57	K0	4.04	2.64	4.04	2.94	4.04	3.09	1.76	1.40	1.10	.95	540	435	372	+.49	+.13	
		606	422	606	468	606	490		146	041	978						
58	K5	3.97	2.58	3.93	2.88	3.90	3.03	1.77	1.39	1.05	.87	544	427	349	+.50	+.18	
		599	412	594	459	591	481		143	021	940						
76	G0	4.08	2.23	4.05	2.43	3.98	2.48	1.77	1.85	1.62	1.50	658	603	576	+.22	+.10	
		611	348	607	386	600	394		267	210	176						
129	K0	3.98	2.28	4.00	2.59	4.00	2.64	1.76	1.70	1.41	1.36	630	547	532	+.40	+.06	
		600	358	602	413	602	422		230	149	134						
45	K5	4.13	3.08	4.10	3.43	4.08	3.73	1.77	1.05	.67	.35	405	213	8933			
		616	489	613	535	611	572		021	826	544						
41	K0	4.03	2.36	4.11	2.71	3.98	2.81	1.74	1.67	1.40	1.17	618	532	468	+.42	+.19	
		605	373	614	433	600	449		223	146	068						
30	K0	3.89	1.17	3.96	1.44	3.96	1.74	1.76	2.72	2.52	2.22	845	803	748	+.6		
		590	068	598	158	598	241		435	401	346						
12	K0	3.71	2.43	3.76	2.86	3.71	2.96	1.79	1.28	.90	.75	538	379	306	+.69	+.15	
		562	386	575	456	569	471		107	954	875						
8	K0	3.83	.75	3.73	.98	3.73	1.18	1.77	3.08	2.75	2.45	906	867	829			
		583	9.875	572	9.991	580	072		489	439	389						

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Glass 4m 4854

R cef	R cef	R cef
9.706	.685	.644
.822	.808	.817
.711	~~.685~~	.688
848	840	852
842	834	837
759	756	768
887	881	896
832	840	835
816	862	884
813	865	890
737	779	794
758	811	820
873	922	961
768	819	849
478	560	643
817	881	9.02
392	419	.572

Liebler

+.30	+.26	54
+.56	+.40	58
+.13	+.12	76
+.34	-.05	129

+?

+.28	+.23	+.49	+.33	+.12	+.18	+.13	+.14
+.49	+.53	+.50	+.51	+.30	+.42	+.18	+.30
+.23	+.17	+.22	+.21	-.15	+.05	+.10	0
—	+.31	+.40	+.35	—	.00	+.06	+.03

Residuals

-5	-10	+16	25 ✓
-2	+2	-1	100 ✓
+2	-4	+1	256 ✓
	-4	+5	4 ✓
			4 ✓
			1 ✓
			4 ✓
			16 ✓
			1 ✓
			16 ✓
			25 ✓
			452 / 11
			44 / 41
			11 ✓

$$\sqrt{\frac{\Sigma \delta^2}{n}} = .06$$

L-H	
-.03	+.16
+.05	+.10
-.08	+.12
-.01	-.08
-.07/4	+.07
-.02	

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Meburg 1.IV.1928 Vel. 5.8

16	8.5	3.75	7.40	4.85	7.35	2.85	6.95	3.20	6.45	3.85	817	589	663	775
			869	686	866	455	842	505	810	585				
2	9.7	4.00			6.16	4.66	5.90	4.50	5.80	4.50		823	882	890
					785	663	771	653	763	653				
79	8.8	3.80	6.20	4.70	6.25	3.00	6.20	3.30	6.20	4.20	880	681	723	827
			792	672	796	477	796	579	796	623				
90	8.9	3.80	6.70	4.65	6.55	2.80	6.65	3.25	6.70	4.10	841	631	689	787
			826	667	816	447	823	572	826	613				
151	10.0	3.90			6.65	5.10	6.60	5.60	6.60	5.80		885	928	943
					823	705	820	748	820	763				
154	9.0	3.90	6.55	5.00	6.62	3.70	6.60	4.00	6.60	4.80	883	747	782	861
			816	699	821	588	820	602	820	681				
		m												
12 Ko		9.4 4.05	6.45	4.10	6.45	4.20			6.45	5.45	803	813		926
			810	613	810	623			810	736				
20 Kg		9.8 "	6.45	4.75	6.45	5.05			6.45	6.25	867	893		986
			8.10	677	810	703			810	796				
27 Kf d		9.8												
40 Kg d		9.2 4.05	6.75	4.85	6.85	4.55			6.75	5.75	857	822		931
			829	686	836	658			829	760				
41 Kg d		9.8 "												
49 Ko g		8.75												
60 Ko		8.8												
66 Ko g		8.4												
68 Ko g		9.3 3.90	6.10	3.30	5.80	3.90			5.90	5.00	734	828		928
			785	579	763	591			771	699				
99	g	8.7 Ko												
124 Ko		8.9												
131 Kg d		9.8 3.95	6.25	4.65	6.25	4.85			6.25	6.05	871	890		986
			796	667	796	686			796	782				
139 Ko		9.7 3.90	6.90	4.90	6.90	5.30			6.90	6.20	851	885		953
			839	690	839	724			839	792				
146 Kg d		10.1 "	6.85	5.00	6.85	6.00			7.2	6.9	863	942		982
			836	699	836	778			857	839				
145 Kg		8.7 3.95	6.90	4.25	6.90	3.95			6.90	6.45	789	758		971
			839	628	839	597			839	810				
148 Kg d		9.2 3.95	7.25	4.40		4.65			7.05	6.15	783	807		941
			860	643	860	667			848	789				
158 Kg		9.2 3.90	7.20	3.30		4.60				6.60	662	806		963
			857	579	857	663			857	820				

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MC 6673 remeasured 5.IV Vol 1 5.1 – 5.1 Time 2h

V	Type	m	mean O.P.															
49.0	9.4	3.33	5.02	4.07	5.02	3.30	5.05	3.49	5.09	3.67	5.08	3.92	909	821	836	858	887	
			701	610	701	521	707	543	707	585	706	593						
69.7	10.4																	
9 8.7	9.3	3.34	5.16	3.47	5.19	2.33	5.26	2.54	5.30	2.91	5.21	3.36	827	652	684	740	808	
			713	540	715	367	721	405	724	464	718	526						
11 8.1	8.3	3.44	5.22	2.91	5.38	1.46	5.35	1.81	5.37	2.11	5.33	2.71	746	433	530	594	706	
			718	464	731	164	728	258	730	324	727	433						
29 8.6	9.4	3.53	5.28	4.21	5.32	2.97	5.30	3.42	5.32	3.78	5.32	3.87	901	747	784	816	862	
			723	629	726	473	724	508	726	540	726	588						
41 8.6	9.4	3.60	5.10	3.60	5.18	2.60	5.20	2.90	5.10	3.20	5.10	3.35	848	706	746	797	842	
			708	556	714	420	716	462	708	505	708	550						
53 9.0	9.5	"			4.85	2.93	4.95	3.15	4.95	3.30	4.95	3.60		781	803	824	861	
					686	467	695	498	695	579	695	556						
54 8.8	9.4	3.62	4.58	3.02	4.88	2.38	4.90	2.93	4.98	3.03	5.00	3.63	819	689	777	784	861	
			661	480	688	377	690	467	697	481	699	580						
56 9.5	9.9	3.70	4.72	3.45	4.80	3.75	4.80	3.80	4.80	3.95				864	893	899	916	
			674	538	681	584	681	580	681	597								
87 10.2	10.3	3.75			5.45	4.40	5.45	4.50	5.45	4.75				907	917	941		
					736	643	736	653	736	677								
90 9.5	9.8	"			5.53	3.65	5.42	3.95	5.45	4.10	5.45	4.45		819	863	877	912	
					743	562	734	597	736	613	736	648						
92 9.5	9.4	"			5.43	3.90	5.40	4.10	5.43	4.40				856	881	908		
					735	591	732	613	735	643								
147 7.1	7.4	"	5.80	1.75	5.65	1.75	5.70	.85	5.65	1.15	5.65	1.55	480	123	280	309	438	
			763	243	752	9.876	756	9.929	752	061	752	190						
149 9.5	9.5	"			5.65	3.63	5.70	3.75	5.75	3.85	5.65	4.15		810	818	825	866	
					752	562	756	574	760	585	752	618						

↑ Dep. | estimated ↑ int. scale

																			grad
21 V 8.9	3.50	4.91	2.62	5.15	1.78	5.20	2.65	5.20	3.52	5.20	3.92	g	Ko	727	538	707	831	877	−2.18
		691	418	712	250	716	423	716	547	716	593								
25 V 8.2	"	5.25	1.80	5.35	.95	5.30	1.60	5.28	2.15	5.28	2.95	g	Ko	535	250	480	612	747	−2.31
		720	255	728	.978	724	209	720	332	723	470								
47 V 9.5	3.78	4.62	3.17	4.80	2.67	4.83	3.37	4.82	3.77	4.87	4.12	d	g5	836	796	844	893	927	−1.25
		665	501	681	427	684	528	683	586	688	615								
71 V 9.1	3.70	5.00	3.50	5.10	2.10	5.10	2.80	5.05	3.10	5.10	3.88	d	Ko	845	614	739	788	881	−1.48
		669	514	708	322	708	447	703	491	708	589								
89 V 9.2		5.50	3.60	5.50	2.97	5.50	3.75	5.45	4.30	5.50	4.80		g5	816	733	884	897	957	−1.57
		740	556	740	473	740	584	736	633	724	681								
94 V 8.4	3.70	5.40	1.72	5.47	1.10	5.50	1.65	5.43	2.13	5.42	2.70	(d	g5	504	303	477	593	696	−1.75
		732	226	738	041	740	217	735	328	735	431								
101 V 8.6	3.70	5.50	3.20	5.58	1.50	5.58	2.20	5.58	2.80	5.58	3.30	C	g5	765	429	595	700	772	−1.48
		740	565	747	176	747	342	747	447	747	549								
110 8.8	"	5.38	2.65	5.42	1.62	5.40	2.10	5.40	2.58	5.48	2.85	d	g5	692	476	590	680	716	−1.75
		731	423	734	210	732	322	732	412	739	455								
127 V 9.2	3.85	5.76	3.00	5.70	2.40	6.55	3.33	5.35	4.29	5.35	4.63		K2	717	624	778	904	980	−2.69
		760	477	756	380	744	522	728	632	728	658								
131 10.4	"	5.55	4.10	5.55	3.75	5.55	4.60			5.55	5.40	d	K2	928	830	919		986	−1.14
		744	692	744	584	744	663			744	738								

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T (relative to 10,000)	dK	gK	dG5	gG
3900	5400	3900	5200	4600
3700	4800	3700	4400	4800
5200	5700	3400	4600	4700
d 4800		3700	5000	
4600				
4400				
4800				
4400				
3400				
d 5400				

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I 37511 Hyades

N	Type	mv	op	cf	H_3	cf	H_{δ}	cf	H_{γ}	cf	H_5	cf	H_{ε}	cf	H_9
12	F_0	7.55	2.70	1.90	.45	1.90	.25	2.00	.30	2.00	.38	2.02	.60	2.06	.65
				279	9.653	279	398	301	9.477	301	9.580	.305	.778	314	813
14	A_5	5.30													
27	A_3														
29	F_2														
30	F_2														
31	F_0	5.92	2.99	1.71	.41	1.69	.16	1.71	.16	1.69	.11	1.71	.21	1.71	.41
				233	613	228	204	233	204	228	041	233	322	233	613
59	F_0	4.99	3.00	1.70	.20	1.60	.05	1.60	.05	1.58	.05	1.60	.10	1.60	.15
				230	301	204	8.699	204	8.699	199	8.699	204	9.000	204	9.176
65	F_0	6.38	3.00	1.50	.50	1.50	.20	1.50	.18	1.50	.20	1.50	.25	1.50	.40
				176	9.699	176	9.301	176	9.255	176	9.301	0.176	9.398	176	9.602
67	F_2	6.94	2												
68	F_0	5.00	2.95	1.55	.25	1.55	.05	1.55	.10	1.55	.13	1.55	.13	1.55	.15
				190	9.398	190	699	190	9.000	190	9.114	190	9.114	0.190	9.176
69	F_0	5.80	2.85	1.46	.70	1.45	.30	1.45	.30	1.45	.35	1.45	.47	1.45	.65
				161	845	161	9.477	161	9.477	161	544	161	9.672	161	9.813
70	F_0	5.91	2.72	1.56	.38	1.53	.13	1.48	.18	1.57	.13	1.48	.28	1.48	.33
				193	9.580	185	9.114	170	9.255	179	9.114	170	9.447	170	9.519
72	F_0	8.59	2.70	1.60	.50	1.60	.15	1.61	20	1.60	.20	1.60	.35	1.60	.42
				204	699	204	176	207	301	204	301	204	544	204	623
79	F_0	3.74	2.68	1.62	1.32	1.62	.82	1.62	.92	1.62	97	1.62	1.92	1.62	1.17
				210	121	210	914	210	964	210	968	210	009	210	068
83	F_0	4.89	2.66	1.44	.14	1.46	.04	1.46	.04	1.46	.04	1.46	.14	1.46	.14
				158	146	164	8.602	164	8.602	164	8.602	164	9.146	164	9.146

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7.55	9.374	9.119	9.176	9.259	9.473	9.500
5.92	9.380	8.976	8.971	8.813	9.089	9.380
4.99	9.171	8.495	8.495	8.500	8.796	8.972
6.38	9.523	9.125	9.079	9.125	9.222	9.425
6.94						
5.00	9.208	8.509	8.800	8.924	8.924	8.986
5.80	9.684	9.316	9.316	9.383	9.511	9.652
5.91	9.397	8.929	9.085	8.935	9.277	9.349
8.59	9.495	8.972	9.094	9.097	9.340	9.419
3.74	9.911	9.704	9.754	9.758	9.799	9.858
4.69	8.988	8.438	8.438	8.438	8.982	8.982

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2	Fo	5.7	3.15	3.60	1.00	3.50	.32	3.58	.35	3.47	.38	3.45	.47	3.55	.66
				.556	.000	544	9.505	550	544	540	9.580	538	9.672	550	9.820
31	Fo	5.92	3.13	3.45	1.24	3.37	.37	3.37	.39	3.35	.39	3.37	.52	3.37	.77
				538	093	528	568	528	591	525	591	528	756	528	886
57	Fo	6.16	3.10	3.28	1.00	3.25	.38	3.30	.40	3.30	.53	3.30	.65	3.35	.85
				576	000	572	9.580	579	602	579	699	579	813	525	929
59	Fo	4.99	3.11	3.27	.29	3.12	.11	3.10	.19	3.11	.14	3.14	.19	3.14	.24
				575	591	494	041	491	279	493	146	497	279	493	380
65	Fo	6.38	3.15	3.13	1.10	3.12	.29	3.07	.55	3.00	.50	3.05	.70	3.05	1.00
				496	041	494	591	487	740	477	699	484	845	484	000
68	Fo	5.00	3.20	3.00	.40	3.00	.12	2.95	.20	2.98	.15	2.98	.20	3.00	.30
				477	602	477	079	470	301	474	176	474	301	477	477
69	Fo	5.80	3.20	3.00	.65	3.02	.30	3.00	.25	2.98	.30	2.92	.41	2.95	.50
				477	813	480	477	477	398	474	477	465	613	470	629
70	Fo	5.91	3.21	2.99	.99	2.99	.29	2.97	.29	2.97	.34	2.94	.59	2.95	.68
				476	996	476	462	473	462	473	531	466	771	470	833
77	Fo	6.25	3.23	3.22	1.27	3.18	.42	3.23	.47	3.17	.52	3.18	3.17	0.98	
				508	104	502	623	509	672	501	716	502	501	991	857
79	Fo	3.74	3.25	3.15	2.37	3.20	1.75	3.20	1.90	3.25	2.05	3.15	2.10	3.15	2.40
				498	442	505	243	505	279	512	312	498	322	498	380
83	Fo	4.89	3.22	2.98	.43	2.98	.13	2.88	.10	2.88	.13	2.88	.18	2.88	.26
				474	633	474	114	459	000	459	114	459	285	459	415
85	Fo	7.01	3.25	3.05	1.55	3.05	.65	3.05	.85	3.05	1.00	3.15	1.15	3.15	1.30
				484	190	484	813	484	929	484	000	498	061	498	114
133	A5	5.02	3.30	3.08	.40	3.02	.12	3.05	.20	3.08	.20	3.10	.20	3.10	.40
				489	602	480	079	484	301	489	301	491	301	491	602
80	Ao	4.99	3.30	2.95	1.40	3.00	.65	2.95	.83	2.95	1.10	3.00	1.20	2.95	1.60
				470	146	477	813	470	919	470	041	477	114	470	204
82	Ao	7.98	3.30	3.00	2.15	2.98	1.40	3.00	1.60	3.00	1.75	3.00	1.85	3.00	2.15
				477	332	474	146	477	204	477	243	477	267	477	332
90	Ao	7.55	3.30	2.85	1.70	2.88	1.45	2.88	1.40	2.85	1.40	2.85	165	2.85	1.95
				455	230	459	161	459	146	455	146	455	217	455	290
159	Ao	6.87	320	3.40	1.55	3.40	.70	3.40	.70	3.40	.80	3.50	1.05	3.50	1.40
				531	190	531	9.845	531	9.845	521	903	544	021	544	146

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5.75	9.444	8.961	8.994	9.040	9.134	9.270
5.92	9.555	9.040	9.063	9.066	9.228	9.360
6.16	9.484	9.068	9.083	9.189	9.294	9.404
4.99	9.076	8.547	8.788	8.653	8.782	8.887
6.38	9.545	9.097	9.253	9.222	9.361	9.516
5.00	9.125	8.622	8.831	8.702	8.827	9.000
5.80	9.336	8.997	8.921	9.003	8.948	9.229
5.91	9.523	8.986	8.989	9.058	9.303	9.363
6.25	9.596	9.14	9.163	9.215	9.353	9.490
3.84	9.944	9.738	9.774	9.860	9.834	9.889
4.89	9.157	8.640	8.541	8.655	8.796	8.956
7.01	9.706	9.329	9.445	9.516	9.563	9.616
5.02	9.113	8.579	8.817	8.812	8.810	9.111
4.99	9.676	9.336	9.449	9.571	9.637	9.734
7.98	9.855	9.672	9.727	9.766	9.790	9.855
7.55	9.775	9.702	9.687	9.691	9.762	9.835
6.87	9.659	9.314	9.314	9.372	9.477	9.602

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I 9856 May 2

N	Type	m												
			3.71	1.04	3.64	0.21	3.63	.26	3.46	.26	3.64	.36	3.61	.61
12	F_0	3.04	569	013	561	322	560	.415	579	.415	561	.556	558	.785
			3.71	1.25	3.78	.33	3.83	0.38	3.78	.43	3.78	.53	3.78	.93
31	F_0	3.07	.887	.097	577	519	583	580	577	633	572	725	572	968
			3.78	1.15	3.75	.35	3.78	.45	3.85	.45	3.85	.50	3.85	.70
51	F_0	3.10	574	061	574	544	572	653	585	653	585	699	585	8.945
			4.00	.70	3.75	.20	3.85	.75	3.90	.25	3.90	.25	3.90	.25
49	A_3	3.20	602	845	574	201	585	398	591	398	591	398	591	398
			3.55	.30	3.45	.00	3.30	.03	3.42	.00	3.30	.00	3.30	.10
59	F_0	3.20	580	477	538	−∞	579	8.477	534	−∞	544	−∞	579	9.000
			3.20	1.15	3.27	.25	3.20	.40	3.21	.40	3.20	.55	3.25	1.10
65	F_0	3.10	505	061	575	9.398	505	602	582	9.602	505	740	572	041
			3.35	1.95	3.40	.90	3.30	1.05	3.30	1.10	3.30	1.20	3.30	1.50
67	F_2	3.20	525	290	531	954	579	021	579	041	579	079	579	176
			3.00	.42	3.00	−.06	3.00	−.03	3.00	−.03	3.00	.07	3.00	.12
68	F_0	3.28	477	623	477	8.778	477	8.477	477	8.477	477	8.841	477	079
			3.10	0.95	3.08	.20	3.10	.20	3.10	.20	3.10	.35	3.00	.45
69	F_0	3.20	491	9.929	489	9.301	491	8.301	491	8.301	491	8.544	477	653
			3.15	.90	3.05	.20	3.05	.25	3.15	.30	3.10	.45	3.10	.75
70	F_0	3.15	498	9.954	484	301	484	398	498	477	491	653	491	875
			3.37	1.31	3.44	.52	3.37	.52	3.37	.57	3.45	.57	3.45	1.02
77	F_0	3.23	528	117	537	9.716	528	9.216	528	756	538	758	538	009
			3.00	.20	2.85	.05	2.80	.05	2.80	.10	2.80	.10	2.80	.15
79	F_0	3.30	477	301	455	8.699	447	8.699	447	9.000	447	9.000	447	176
			3.10	.20	3.35	.05	3.05	.05		.05		.05		.15
83	F_0	3.25	491	477	525	8.699	484	8.699	484	8.699		8.699		9.176
			3.50	0.75	3.37	.20	3.40	.17	3.37	.17	3.37	.26	3.32	.45
92	F_0	3.25	544	9.875	528	301	531	230	528	230	528	398	521	653

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	$H\beta$	$H\gamma$	$H\delta$	$H\zeta$	$H\varepsilon$	$H\eta$
5.75	9.444	8.761	8.855	8.876	8.995	9.227
5.92	9.210	8.942	8.997	9.056	9.148	9.396
6.16	9.484	8.970	9.076	9.068	9.114	9.260
4.89	9.243	8.727	8.813	8.807	8.807	8.807 ✓
4.99	8.927	—	7.958	—	—	8.481
6.38	9.556	8.883	9.097	9.095	9.235	9.329
—	9.765	8.423	9.502	9.522	9.580	9.657
5.00	9.146	8.301	8.000	8.000	8.368	8.602
5.60	9.438	8.812	8.810	8.810	9.053	9.176
5.91	9.456	8.817	8.914	8.979	9.162	9.384
6.25	9.589	9.179	9.188	9.228	9.218	9.471
3.74	9.824	8.244	8.252	8.553	8.553	8.729
4.89	8.986	8.144	8.215	8.215	8.215	8.692
5.54	9.331	8.773	8.699	8.702	8.870	9.132

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Mc 6448 VH 5.3

Ao			1	1	1	1	1	1	1	1	1	1
4	9.4	305	4.05	3.45	4.05	2.85	4.10	3.05	4.05	3.05	3.95	3.25
			607	538	607	415	613	484	607	484	597	572
9	9.3	3,10	4.00	2.90	4.00	1.95	3.95	2.10	4.00	2.20	4.00	2.80
			602	462	602	290	597	322	602	342	602	447
11	8.3	3.10	3.90	2.20	3.90	1.15	3.85	1.15	3.88	1.40	3.80	1.80
			591	342	591	061	585	061	589	146	580	295
24	8.9 A2	3.10	3.65	2.00	3.67	1.05	3.70	1.40	3.75	1.40	3.75	2.00
			562	307	565	021	568	146	574	146	574	307
22	6.62	3.10	3.90	1.50	4.00	.20	4.00	.20	4.00	.20		
			591	176	602	307	602	307	602			
41	8.6	3.15	3.65	2.15	3.65	2.10	3.65	2.15	3.65	2.35	3.70	2.60
			562	423	562	322	562	332	562	371	588	415
33	8.6	3,20	3.55	2.00	3.60	1.40	3.60	1.80		1.75		1.80
			550	307	556	146	556	285	556	243	556	282
25	8.2	3.10	3.50	1.47	365	.60	3.65	.95		1.25		2.05
			544	167	562	778	562	978		097	562	312
71	9.1	3.12	3.48	1.88	3.48	1.48	3.48	1.88	3.48	2.38	3.48	2.63
			542	274	542	170	542	274	542	377	542	420
47	9.5	3.20	3.40	2.20	3.60	1.05	3.60	1.70	3.60	2.50	360	300
			531	342	558	021	558	230	558	398	558	477
94	8.4	3.20	3.60	1.50	3.70	.70	3.70	1.10	3.70	1.30	3.70	1.95
			556	176	588	845	588	041	588	114	588	290
Mc 6448		remeasured			V.el	5.3						
4	9.4	2.97	4.09	3.28	4.09	2.88	4.18	2.93	4.03	3.03	4.05	3.33
			612	576	612	459	621	467	605	481	607	522
9	9.3	2.95	4.05	3.05	4.10	1.96	4.15	2.05	4.12	2.25	4.00	2.55
			607	484	613	292	618	312	615	352	602	407
11	8.3	2.92	4.08	2.58	4.08	1.20	4.08	1.43	4.08	1.58	4.08	1.83
			611	412	611	079	611	155	611	199	611	282
22	6.6	2.91	4.09									
			612									
24	8.2	2.93	3.72	2.22	3.72	1.07	3.82	1.32	3.79	1.52	3.79	1.82
			581	346	571	029	582	124	579	182	589	260
29	9.4	2.96	3.89	3.24	2.89	2.34	3.89	2.59	3.94	2.54	3.99	2.84
			590	571	590	369	590	413	596	405	601	453
41	8.6	2.96	3.79	2.89	3.84	2.09	3.84	2.39	3.94	2.39	3.94	2.94
			579	461	584	320	584	378	596	378	596	468
33	8.6	2.96	3.79	2.54	3.79	1.54	3.84	1.24	3.84	1.79	3.84	2.04
			579	405	579	188	584	241	584	253	584	310
57	(7.8)	2.96	4.05	1.74	4.06	.64	4.06	.79	4.06	.94	4.06	1.29
			606	241	609	9.806	609	9.858	609	9.973	609	111
71	9.2	2.97	3.63	2.87	3.63	1.43	3.63	1.83	3.63	2.27	3.63	2.63
			560	458	560	155	560	262	560	356	560	420
25	8.2	3.00	3.75	1.40	3.75	.45	3.80	.80	3.70	1.15	3.72	180
			574	146	574	653	580	9.903	568	041	571	255
(81)	8.9	3.00	3.70	9.25	3.80	1.10	3.80	1.70	3.80	2.50	3.80	3.35
			568	352	580	041	580	9.230	580	398	580	525
47	9.5	3.00	4.00	3.55	4.02	2.45	4.02	2.85	4.05	3.20	4.10	3.40
			602	550	604	389	604	455	607	579	613	531
94	8.4	3.00	3.95	1.10	3.95	.85	3.95	1.20	3.90	1.40	3.85	1.90
			597	041	601	9.929	597	079	591	146	585	279

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9.931	9.848	9.871	9.877	9.915
9.860	9.688	9.725	9.740	9.845
9.751	9.471	9.476	9.557	9.675
9.739	9.556	9.578	9.562	9.727
9.585	9.699	9.699		
9.861	9.760	9.770	9.809	9.847
9.751	9.590	9.699	687	699

9.623	9.216	9.416	9.535	9.750
9.732	9.628	9.732	9.835	9.878
9.811	9.565	9.674	9.842	9.921
9.620	9.277	9.473	9.546	9.722

9.4	9.904	9.847	9.846	9.876	9.915
9.3	9.877	9.679	9.694	9.737	9.805
8.3	9.801	9.468	9.544	9.588	9.687

8.2	9.775	9.458	9.539	9.603	9.681
9.4	9.921	9.779	9.823	9.809	9.852
8.6	9.882	9.736	9.794	9.782	9.872
8.6	9.826	9.609	9.657	9.669	9.726
7.8	9.635	9.197	9.289	9.364	9.502

9.898	9.595	9.702	9.796	9.860
9.572	9.079	9.323	9.493	9.684
9.784	9.461	9.650	9.818	9.945
9.948	9.785	9.851	9.912	9.958
9.444	9.328	9.482	9.555	9.694

Grad NGC 6648 Grad NGC 6613

2.94 (3200)	2.31 (3200)	2.64
1.98 (4100)	1.48 (4800)	1.21
1.69 (4500)	1.25 (5200)	1.03
2.44 (4000	1.75 (4400)	1.32

(3350)	2.75	2.31	Δ = .44	1936
4600	1.60	1.48	.12	144
5000	1.30	1.25	.05	25
4300	1.88	1.75	.13	169

3274 / 4 = .0568

± .24

1.21 (5200)
2.64 (3400)
2.23 (3900)
1.03
1.32 (5000)

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Mc 6444

															Gr.	Temp.	
18	Ao	7.67	m=8.0	2.74	2.82 450	1.16 064	2.81 449	.41 9.613	2.81 .449	.56 9.748	2.78 444	.66 9.820	2.81 .449	1.01 .004			
33	"		9.5	"	3.16		3.01 479	2.01 303	3.01 479	2.16 334	3.01 479	2.26 354	3.01 479	2.46 391			
62	"		8.4	2.76	3.14 497	2.26 354	3.14 497	1.49 173	3.14 497	1.62 210	3.14 497	1.79 253	3.14 492	1.99 299			
88	"	9.03	9.1	2.78	2.82 450	2.02 305	2.79 446	1.47 167	2.79 446	1.62 210	2.79 446	1.72 236	2.79 446	1.97 294			
97	"		10.1	2.80			2.95 470	1.90 279	2.95 470	1.95 290	2.95 470	2.00 301	2.95 470	2.20 342			
129	"		9.6	2.80			2.72 435	1.95 290	2.72 435	2.15 332	2.72 435	2.20 342	2.72 435	2.40 380			
130	"		9.2	2.80			2.65 423	1.70 230	2.65 423	2.00 301	2.65 423	2.10 322	2.65 423	2.22 346			
133	"		10.6	2.80	2.40	1.10	2.70 431	1.90 279	2.70 431	2.00 301	2.70 431	2.05 312	2.60 415	2.15 332			
1	Ar		8.8	2.80	2.40 380	1.90 279	2.40 380	1.35 130	2.40 380	1.50 176	2.40 380	1.60 204	2.40 380	1.65 217			
16			9.7	2.82			2.70 431	1.93 286	2.70 431	2.08 318	2.70 431	2.13 328	2.70 431	2.33 367			
24			8.7	2.80	2.70 431	1.60 204	2.70 431	1.05 021	2.70 431	1.25 097	2.70 431	1.32 121	2.70 431	1.45 161			
70			7.0	2.80	3.20 505	.83 9.919	3.20 505	.80 9.903	3.20 505	.90 9.954	3.20 505	.90 9.954	3.20 505	.92 9.964			
103		8.83	8.8	2.80	2.80 447	2.10 322	2.80 447	1.45 161	2.80 447	1.60 204	2.80 447	1.70 230	2.80 447	1.90 279			
3	Ks		9.1	2.80	2.45 389	1.40 146	2.45 389	.95 9.978	2.45 389	1.40 146	2.45 389	1.90 279	2.50 398	2.00 301	−2.30	3700	d?
12	Ko		9.5	2.80	2.70 431	1.70 230	2.70 431	1.35 130	2.70 431	1.80 255	2.70 431	2.10 322	2.60 415	2.40 380	−2.30	3700	
13	Gs		9.9	2.80	2.60 415	1.95 290	2.60 415	1.70 230	2.60 415	1.95 290	2.65 423	2.10 322	2.60 415	2.40 380	−1.33	5000	d
29	Ko		9.6	2.82	2.90 462	1.93 286	2.90 462	1.88 274	2.93 467	2.38 377	2.93 467	2.63 420	2.93 477	2.83 452			
32	Ko		9.2	2.82	2.87 458	1.73 238	2.87 458	1.48 170	2.86 456	2.03 308	2.86 456	2.33 367	2.88 459	2.58 412	−1.80	4300	
38	Ko		8.8	2.85	2.80 447	1.35 130	2.80 447	.90 9.954	2.80 447	1.30 114	2.80 447	1.65 217	2.80 447	2.15 332	−2.02	4000	
73	Ko		8.8	2.85	3.13 460	1.55 190	3.13 460	1.05 021	3.13 460	1.65 217	3.05 484	2.15 332	3.05 484	2.50 398	−1.91	4200	
82	Gs		8.9	2.85	2.85 455	1.15 061	2.85 455	.85 9.924	2.87 458	1.15 061	2.85 455	1.45 161	2.85 455	1.90 279	−1.77	4300	
83	Gs		8	2.85													
87	Gs	8.30	8.5	2.85	2.80 447	1.33 124	2.80 447	.67 9.826	2.80 447	1.05 021	2.80 447	1.43 155	2.80 447	1.65 217	−1.10	5400	
90	Ko		9.7	2.85	2.75 439	2.05 312	2.75 439	1.70 230	2.75 439	2.15 332	2.75 439	2.35 371	2.75 439	2.65 423	−1.20	5300	d
109	Ko		7.5	2.85	2.77 442	.20 9.301	2.77 442	.15 9.176	2.75 442	.20 301	2.70 431	.37 568	2.70 431	.70 845			
110	Ko		9.5	2.85	2.65 423	1.70 230	2.60 415	1.55 190	2.60 415	1.80 255	2.60 415	1.95 290	2.63 420	2.30 362	−.92	5900	d

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N	D2						Estimate Tutx
18	8.0	9.614	9.164	9.299	9.376	9.555	7.7
33	9.5		9.824	9.853	9.875	9.912	9.4
62	8.4	9.857	9.676	9.713	9.756	9.802	9.1
88	9.1	9.855	9.721	9.764	9.790	9.848	9.2
97	10.1		9.807	9.820	9.831	9.872	9.0
129	9.6		9.855	9.897	9.907	9.945	9.5
130	9.2		9.807	9.878	9.899	9.923	9.4
133	10.6		9.848	9.870	9.881	9.917	9.4
1	8.8	9.899	9.750	9.796	9.824	9.837	9.3
16	9.7		9.855	9.887	9.897	9.936	9.6
21	8.7	9.773	9.590	9.666	9.690	9.730	8.5
70	7.0	9.414	9.390	9.449	449	9.459	7.0
103	8.8	9.875	9.714	9.757	9783	9.832	8.9
3	9.1	9.757	9589	9757	9890	9.903	
12	9.5	9.799	9.699	9.824	9.891	9.965	
13	9.9	9.875	9.815	9.875	9.899	9.960	
24	9.6	9.824	9.812	9.910	9.953	9.975	
32	9.2	9.780	9.712	9.852	9.911	9.952	
38	8.8	9.683	9.507	9.667	9.770	9.885	
73	8.8	9.730	9.561	9.757	9.848	9.914	
82	8.9	9.606	9.474	9.603	9.706	9824	
87	8.5	9.677	9.379	9.574	9708	9.770	
90	9.7	9.873	9.791	9.893	9.932	9984	
109	7.5	8.859	8734	8.879	9137	9383	
110	9.5	9.807	9774	.840	885	942	

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62

NGC 6443 Internal.

N	Type	m	2.80																
				3.42	2.40	3.39	1.45	3.38	1.75	3.38	1.80	3.30	2.20						
6	Ao	8.5	2.80	574	380	530	161	529	243	529	285	579	342	846	631	714	726	823	
88	"	8.9	2.82	3.33	2.73	3.38	2.18	3.38	3.33	3.38	2.38	3.38	2.58						
				524	436	529	338	529	367	529	377	529	412	912	884	838	848	883	
31	"	8.5	2.87	3.33	2.56	3.35	1.63	3.38	1.83	3.35	1.88	3.33	2.13						
				524	408	525	212	529	262	525	274	522	328	884	687	733	779	806	
84	"	9.2	3.00	3.65	2.90	3.60	2.55	3.65	3.00	3.70	3.10	3.70	3.20						
				582	462	556	407	582	477	568	491	568	505	900	849	915	923	937	
86	"	9.1	3.00	3.50	2.70	3.50	2.10	3.50	2.70	3.45	2.80	3.55	2.60						
				544	431	544	322	544	431	538	481	550	415	887	778	887	893	905	
93	"	9.4	3.00	3.50	2.75	3.50	2.40	3.50	2.70	3.50	2.80	3.55	2.95						
				544	439	544	380	544	431	544	447	544	470	895	836	887	903	926	
94	"	8.8	3.00	3.30	2.15	3.35	1.90	3.30	2.30	3.30	2.40	3.30	2.70						
				519	439	525	279	525	362	525	380	525	481	920	757	837	855	906	
139	"	9.2	3.02	3.50	2.90	3.50	2.35	3.50	2.60	3.50	2.75	3.50	3.00						
				544	462	544	371	544	415	544	439	544	477	918	827	871	895	933	
		Int.																	
57	Ko	9.1	3.00	3.40	2.22	3.40	1.90	3.40	2.40	3.40	2.60	3.40	3.12						
				531	346	531	279	531	380	531	415	531	494	815	748	849	884	963	
58	Ko	8.6	3.00	3.50	1.55	3.50	0.90	3.50	2.10	3.50	2.65	3.50	3.25						
				544	190	544	9.957	544	322	544	423	544	512	646	410	778	879	968	
76	Ko	8.95	3.00	3.60	2.00	3.60	1.60	3.60	2.20	3.62	2.10	3.55	2.75						
				556	301	556	204	556	342	559	322	550	439	745	648	786	763	889	
129	Ko	8.95	3.00	3.60	2.10	3.60	1.50	3.55	2.35	3.60	2.35	3.60	3.25						
				556	322	556	176	550	371	556	371	556	512	766	620	821	815	956	
45	Ko	9.2	3.00	3.55	2.50	3.60	2.18	3.55	2.95	3.50	3.15	3.50	3.45						
				550	380	556	338	550	470	544	498	544	538	830	782	920	952	994	
41	Ko	8.95	2.90	3.55	2.35	3.55	1.60	3.55	2.15	3.55	2.55	3.55	3.15						
				550	371	550	204	550	332	544	407	550	498	821	654	782	863	948	
30	Ko	7.75	2.90	3.31	.80	3.40	.60	3.35	1.00	3.35	1.35	3.35	1.85						
				520	9.903	531	9.778	525	000	525	130	525	267	383	247	475	605	742	
12	Ko	9.1	2.90	3.55	2.05	3.55	1.80	3.52	2.50	3.50	2.70	3.55	3.40						
				550	312	550	255	547	398	544	431	550	531	752	705	851	887	981	
8	Ko	7.75	2.90	3.45	.60	3.50	.40	3.50	.65	3.50	1.10	3.50	1.60						
				538	9.778	544	9.602	544	813	544	041	544	204	240	058	269	497	660	

gr

1.38 g (4900)

3.02 g 3.100

1.74 d 4.400

1.64 d 4500

1.42 4900

2.30 3700

1.80 4300

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NGC 6449

N	Type	m Futon																		
193		7.6	2.60	4.00 602	.60 9.778	3.98 600	.35 9.544	4.00 602	.60 9.778	4.00 602	1.15 061	4.00 602	1.70 230	9.176	8.944	9.176	9.457	9.628		
12 d	Ro	9.4	2.55	3.58 550	2.00 301	3.53 548	1.50 176	3.50 544	2.00 301	3.50 544	2.45 389	3.55 550	3.05 484	9.751	9.608	9.757	9.845	9.934	-2.47 ✓	3600
23	R2	9.2	2.60	3.80 580	1.90 279	3.80 580	1.40 146	3.80 580	1.90 279	3.75 574	2.80 447	3.70 568	3.40 531	9.699	9.566	9.699	9.873	9.963	-3.16 ✓	3100
27 d	R5	9.7	2.55	3.60 556	2.55 407	3.60 556	1.85 267	3.60 556	2.57 410	3.60 556	3.15 498	3.60 556	3.50 544	9.851	9.711	9.856	9.942	9.988	-2.70 ✓	3400
31	Ro	7.6	2.55	3.900 591	0.65 9.813	3.90 591	.25 9.380	3.90 591	.45 9.653	3.90 591	.95 978	3.90 591	1.65 217	9.228	8.789	9.062	9.387	9.626		
32	Ro	7.3	2.55	3.85 585	.60 9.778	3.82 582	.15 9.176	3.80 580	.25 398	3.80 580	.60 778	3.80 580	1.05 021	9.193	8.594	8.818	9.198	9.441		
40 d	Ro	9.2	2.60	3.60 556	2.00 301	3.62 559	1.70 230	3.65 562	2.12 326	3.60 556	2.40 380	3.55 550	3.00 477	9.745	9.671	.764	.824	.927	-1.91 ✓	4100
41 d	Ro	9.8	2.60	3.70 568	2.70 431	3.70 568	2.50 398	3.70 568	3.15 498	3.70 568	3.50 544			.863	.830	.930	.976		-2.11 ✓	3800
44	R2	8.2	2.60	3.92 593	1.40 146	3.92 593	.50 .699	3.92 593	1.00 000	3.52 547	1.80 255	3.92 593	2.20 342	.553	.106	.407	.708	.749		
66	Ro	8.4	2.60	4.20 623	2.10 322	4.20 623	1.05 021	4.20 623	1.50 176	4.15 618	2.10 322	4.15 618	2.50 398	.699	.398	.553	.704	.780		
68	Ro	9.3	2.60	3.25 572	1.70 230	3.25 572	1.20 079	3.25 572	1.75 243	3.25 572	2.40 380	3.20 505	2.60 415	718	567	734	868	910	-3.31 ✓	300
99	Ro	8.7	2.60	4.00 602	2.15 332	4.00 602	1.20 079	4.00 602	1.75 243	4.00 602	2.45 389	4.00 602	2.65 423	730	477	641	787	821	-2.62	350
116 d	Ro	9.3	2.60	4.30 633	2.65 423	4.30 633	2.15 332	4.30 633	2.70 431	4.20 623	3.05 484	4.10 613	3.50 544	790	699	798	861	931	-2.83 ✓	330
118	R	7.1	2.65	4.15 618	.45 9.653	4.15 618	.15 176	4.15 618	.30 477	4.15 618	.65 813	4.15 618	.85 9.929	9.03	8.538	8.859	9.195	9.311		
124 d	Ro	8.9	2.65	3.45 538	1.75 243	3.35 525	1.15 061	3.40 531	1.65 217	3.45 538	2.15 332	3.45 538	2.45 389	.705	.536	.686	.794	.857	-2.32 ✓	3700
131 d	R2	9.8	2.65	3.65 562	2.50 398	3.65 562	2.25 352	3.55 550	2.75 439	3.65 562	3.05 484	3.75 574	3.35 525	.836	.790	.889	.922	.951	-1.86	5000
139	Ro	9.8	2.67	3.78 577	2.58 412	3.78 577	2.08 318	3.78 577	2.63 420	3.78 577	3.13 496	3.73 572	3.33 522	.835	.741	.843	.919	.950	-2.45 ✓	3600
145	Ro	8.7	2.65	4.00 602	1.95 290	4.00 602	1.25 097	4.00 602	1.75 243	4.00 602	2.45 389	4.00 602	3.05 484	.688	495	641	787	882	-2.98 ✓	3200
146 d	R5	10.1	2.65	3.85 585	2.75 439	3.85 585	2.55 407	3.85 585	3.25 572	3.85 585	3.60 556	3.85 585	3.75 584	854	822	927	971	989	-1.73 ✓	4400
148 d	R5	9.2	2.65	3.95 597	2.15 332	3.95 597	1.45 161	3.95 597	2.40 380	3.95 597	2.80 447	3.95 597	3.30 519	735	564	783	850	922	-3.42 ✓	2900
158	Ro	9.2	2.65	3.97 599	1.75 243	4.05 607	1.45 161	4.00 602	2.10 322	4.00 602	3.05 484	4.00 602	3.35 525	649	554	720	882	923	-5.15 ✓	2100
49	Ro	8.7	2.60	3.90 591	1.90 279	3.90 591	1.10 041	3.90 591	1.65 217	3.85 585	2.35 371	3.85 585	2.70 431	688	450	626	786	826	-2.39 ✓	3600
20	R2	9.8	2.60	3.58 554	2.40 380	3.55 550	2.00 301	3.50 544	2.35 371	3.50 544	3.00 477	3.50 544	3.30 519	826	751	827	933	975	-2.76 ✓	3000

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Nebula	Ao																							
	Number																							
2	9.7	2.50			3.38	2.30	3.35	2.50	3.40	2.55	3.40	2.70												
					529	362	525	398	531	407	531	431	9	833	873	876	900	0	168	127	124			
16	8.5	2.50	3.70	2.30	3.70	1.40	3.70	1.60	3.45	1.70	3.40	2.10												
			568	362	568	146	568	204	538	230	531	322	794	578	636	692	791		422	364	304			
22	7.6	2.50	3.90	1.00	4.00	.30	4.00	.50	3.90	.60	3.80	.90												
			591	000	602	477	602	699	591	778	580	954	409	8875	9.097	9187	9.384							
73	9.8	2.50	3.65	2.65	3.65	2.40	3.70	2.60	3.70	2.68	3.70	2.80												
			562	423	562	380	568	415	568	428	568	447	861	818	847	860	879		182	153	140			
76	9.7	2.52	3.53	3.08	3.52	2.38	3.48	2.68	3.58	2.83	3.53	2.98												
			548	489	547	377	542	428	554	452	550	474	941	830	886	898	924		180	114	102			
79	8.8	2.55	3.63	2.65	3.65	1.55	3.65	1.90	3.65	2.15	3.63	2.25												
			560	423	562	190	562	279	562	332	560	352	863	628	717	770	792		372	253	230			
90	8.8	2.60	3.90	2.50	3.90	1.40	3.90	1.70	3.90	1.90	3.90	2.40												
			591	398	591	146	591	230	591	279	591	380	807	555	639	688	789		445	361	312			
98	9.7	2.60	4.10	3.53	4.10	3.00	4.10	3.10	4.10	3.30	4.10	3.40												
			613	550	613	477	613	491	613	519	613	531	937	864	878	906	918		136	122	84			
144	10.1	2.60			3.90	3.00	3.90	3.30	3.90	3.40	3.90	3.50												
					591	477	591	519	591	531	591	544		886	928	940	953		114	072	60			
157	10.0	2.60	3.95	3.35	3.95	2.60	3.95	3.00	3.95	3.10	3.95	3.40												
			597	525	597	415	597	477	597	491	597	531	928	818	880	894	934		182	120	106			
184	9.1	2.65	4.05	2.95	4.05	2.05	4.05	2.30	4.05	2.35	4.05	2.65												
			607	470	607	312	607	362	607	371	607	423	863	705	755	764	816		295	286	286			
166	9.9	2.65	4.20	1.65	4.20	.70	4.20	.85	4.20	.95	4.20	1.35												
			623	217	623	845	623	929	623	978	623	130	594	222	306	355	507		778	694	645			

$K_0 - K_5$ Mean 9 Dw 3800

mean 9 Gi 3150

Dw K_0 3700 g 3150

K_2 (5000) 3050

K_5 3800

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Mc 10336 In 6673

28	9.3	2.20	616 4.13	398 2.50	4 3	.218						
29	9.4	2.20	600 3.98	447 2.80		153						
91			614 4.12	572 3.25		102						
92	9.4		614 4.12	531 3.40		083						
90	9.8		613 4.10	531 3.40		082						
41	9.4		613 4.10	431 2.70		182						
54	9.4		614 4.11	439 2.75		175						
53	9.5		623 4.20	484 3.05		139						
172	7.4		600 3.98	9.884 .70		716						
165			618 4.15	407 2.55		211						
186			633 4.30	322 2.10		311						
157	9.8		623 4.20	531 3.40		092						
147	7.4		613 4.10	9.903 .80		710						
69			4.00 602	3.20 505	4.00 602	2.55 407	4.00 602	3.15 498	4.00 602	3.30 579	4.00 602	3.70 568
101			4.00 602		4.10 613	1.65 217	4.10 613	2.05 312	4.10 613	2.30 362	4.10 613	2.65 423
110			4.00 602		4.00 602	2.20 342	4.00 602	2.10 322	4.00 602	2.30 362	4.00 602	2.50 398
94			3.96 597	1.10 041	4.00 602	1.30 114	4.00 602	1.50 176	4.00 602	1.75 243	4.00 602	2.40 380
25			3.95 597	2.05 312	3.95 597	1.00 000	3.95 597	1.50 176	3.95 597	1.60 204	3.95 597	2.30 362
71			3.90 591		3.90 591	1.90 279	3.90 591	2.30 362	3.90 591	2.55 407	3.90 591	2.90 462

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,097	,195	,104	,083	,084
	396	301	257	190
	260	280	240	204
556	488	426	359	322
285	397	421	313	235
	312	229	164	129

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NGC 4413

2	2.50	4.40	.85	4.40	.20	4.40	.70	4.35	.75	4.35	1.00
		643	544	643	301	643	845	638	875	638	000
24	2.52	4.73	1.80	4.73	1.18	4.73	1.68	4.78	2.18	4.80	2.48
		675	230	675	072	675	225	679	336	681	354
59	2.56	5.04	2.84	5.14	2.04	5.24	2.69	5.24	3.14	5.34	3.74
		702	453	711	310	719	430	719	470	728	573
62	2.60	4.85	1.35	4.80	1.30	4.80	1.90	4.70	280	4.65	3.40
		686	130	681	114	681	279	672	447	667	531
107	2.60	5.65	3.25	5.75	3.20	5.80	3.70	5.75	4.30		
		752	572	760	505	763	568	760	633		
116	2.60	5.60	2.40	5.60	2.04	5.60	2.40	5.20	305	5.60	3.50
		748	380	748	310	748	380	756	484	748	544
131	2.62	5.33	.83	5.33	.68	5.33	.88	5.33	1.33	5.33	1.78
		728	9.919	728	833	728	944	728	124	728	250
132	2.67	5.43	2.83	5.33	2.43	4.98	2.93	4.98	3.53		
		735	452	728	386	697	467	697	548		
144	2.67	5.03	1.38	4.98	.88	4.98	1.03	4.98	1.33	4.98	1.53
		702	140	697	9.944	697	013	697	140	697	185
145	2.65	5.05	1.35	5.10	.85	4.85	1.15	4.85	1.25	5.00	1.55
		703	130	708	9.924	686	061	686	097	699	190
23	2.55	4.70	2.85	4.70	2.50	4.75	2.65	4.75	2.65	4.75	2.95
		672	455	672	398	677	423	677	423	677	420
28	"	5.30	4.15	5.27	3.10	5.30	3.25	5.30	3.35	5.30	3.55
		724	618	722	491	724	512	724	525	724	550
64	"	5.20	3.27	5.20	1.50	5.25	1.55	5.25	1.65	5.25	1.95
		716	575	716	176	720	190	720	217	720	290
99	"	5.15	3.15	5.15	1.95	5.15	3.45	5.15	3.85		
		712	498	712	470	712	538	712	585		
131	260	4.80	3.80	4.80	2.60	4.80	2.60	4.80	3.10		
		681	580	681	415	681	415	681	491		
173	260	6.00	1.80	6.00	.75	6.00	.90	6.00	0.90	6.00	1.10
		778	255	778	875	778	9.954	778	954	778	041
199	2.65	4.60	2.50	4.65	1.85	4.65	1.75	4.80	1.55	4.55	1.95
		663	407	667	130	667	161	663	190	658	290
242	2.70	5.70	3.20	5.70	1.80	5.70	1.90	5.60	2.05	5.45	2.40
		756	505	756	255	756	279	748	312	786	380
292	2.80	5.10	3.20	5.15	1.75	5.02	1.80	5.00	1.95	4.90	2.40
		708	505	712	243	701	255	699	290	690	386

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7.7	8.901	8.658	9.202	9.237	9.362
8.8	9.555	9.397	9.550	9.659	9.713
8.7	9.751	9.599	9.711	9.757	9.825
8.6	9.444	9.433	9.598	9.775	9.864
9.3	9.760	9.745	9.805	9.873	
9.1	632	562	632	728	796
	9.191	9.105	9.216	9.396	9.522
	9.717	9.658	9.770	9.857	
	9.738	9.247	9.316	9.447	9.488
	9.427	9.221	9.375	9.411	9.491
10.0	783	726	746	746	793
10.1	894	769	788	801	826
8.7	799	460	470	497	520
10.2	786	758	826	873	
9.9	899	734	734	810	
7.3	477	097	9.176	176	263
9.2	744	463	494	527	632
9.5	749	499	523	564	644
8.7	797	531	554	591	690

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NGC 4413

Hyades

13	10.0	2.63			4.78	2.62	4.77	2.62	4.87	2.69	4.77	3.07			
					679	418	679	418	658	430	679	487			
28	10.1	2.63	5.27	4.47	5.30	3.22	5.35	3.22	5.32	3.27	5.32	3.47			
			722	650	724	508	728	508	726	575	726	540			
44	10.3	2.65			4.75	3.05	4.67	3.35	4.75	3.35	4.80	3.50			
					677	484	669	525	677	525	681	544			
64	8.7	2.65	5.15	3.05	5.20	1.45	5.17	1.55	5.17	1.45	5.17	1.85			
			712	484	716	161	713	190	713	161	713	262			
102	10.0	2.70			6.25	3.80	6.20	3.90	5.90	4.00					
					796	580	792	591	741	602					
190	7.2	2.80	4.35	.90	4.30	.30	4.30	.30	4.30	.40					
			638	954	633	477	633	477	633	602					
199	9.2	2.80	4.50	2.55	4.60	1.40	4.60	1.60	4.55	1.60	4.40	2.10			
			653	407	663	146	663	204	658	204	643	322			
213	8.7	2.75	5.80	3.57	5.85	1.95	5.75	1.90	5.65	2.05	5.65	2.45			
			763	553	767	290	760	279	752	312					
260	9.5	2.80			5.19	2.20	5.10	2.31	5.15	2.40					
					715	342	708	364	712	380					
292	8.7	2.80	5.10	3.15	5.10	1.85	5.05	1.75	5.00	1.85					
			708	498	708	267	703	243	699	267					
12	7.7+.0	2.75	4.15	.35	4.25	.25	4.25	.40	4.25	.75	4.20	1.15			
			618	544	628	398	628	602	628	875	623	861			
59	8.7+1	2.75	5.00	2.95	5.00	2.10	5.10	2.65	5.20	3.05	5.20	3.45			
			699	470	699	322	708	423	716	484	716	528		−.96	5800
62	8.6+1	2.75	4.82	1.35	4.70	1.25	4.65	1.90	4.65	2.80	4.55	3.25			
			683	130	672	097	667	279	667	447	658	572		−4.11	2500
107	9.3+1	2.77	5.63	3.08	5.73	2.93	5.78	3.53	5.73	4.28					
			757	489	758	467	762	548	758	631				−3.16	3500
131	8.2	2.80	5.12	.80	5.25	.70	5.30	.90	5.22	1.30	5.10	1.80			
			709	903	720	845	724	954	718	114	708	265			
132	9.9	2.80	5.05	2.80	5.05	2.40	5.07	2.90	5.10	3.50			Ko	−2.58	3500
			703	447	703	380	705	462	708	594					
144	8.1	2.80	4.95	1.70	4.95	.90	4.95	1.10	4.95	1.45	5.10	1.60			
			695	230	695	954	695	041	695	161	708	204	F8	−1.99	4700
145	8.1	2.82	5.03	1.13	5.03	.83	4.80	1.08	4.78	1.28	4.98	1.38			
			702	053	702	919	681	033	679	107	697	140	F8	−4.23	2500
250	8.2	2.40	4.50	2.10	4.60	1.70	4.65	2.05	4.60	2.40	4.60	2.95			
			653	322	663	230	667	312	663	380	663	470	G5	−.	
258	7.8	2.42	4.33	1.04	4.33	1.23	4.33	1.08	4.28	1.28	4.28	1.60			
			636	033	636	090	636	033	631	072	631	204	G5	−2.24	3800
277	8.8	2.45	4.55	2.05	4.55	1.50	4.55	1.80	4.60	2.05	4.45	2.45			
			658	312	658	176	658	255	663	312	648	389	Ko	−3.60	2800
364	8.0	2.50	5.10	1.60	5.05	1.15	5.05	1.40	5.05	2.00	5.05	2.30			
			708	204	703	061	703	146	703	301	703	362	Ko	−3.31	3000
399		2.50	4.80	.80	4.90	.85	5.15	.80	5.15	1.30	5.05	1.80			
			681	903	690	929	712	903	712	114	703	265	G		
409	8.9	2.55	5.05	2.15	4.95	1.55	4.75	2.25	4.90	2.55	5.00	3.05			
			699	332	695	190	677	352	690	407	699	484	Ko	−1.91	4100
441	7.6	2.57	5.13	1.43	5.28	1.38	5.18	1.63	5.38	1.78	5.16	1.83			
			710	155	723	140	714	212	731	250	714	262			
446	7.0	2.52	5.03	.98	4.98	.93	4.98	.98	5.08	1.76	5.23	2.58			
			702	991	697	968	697	991	706	250	719	412			

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						mean values from p 69, 71
10.0		739	739	742	808	783, 732, 742, 744, 800
10.1	928	784	780	789	814	911, 774, 784, 795, 820
10.3		807	856	848	863	807, 856, 848, 863
6.7	772	445	477	448	554	780 430 473 475 537
10.0		784	799	831		786 758 826 873
7.2	9.316	8.844	8844	969		9.316 8.844 8.844 8.969
9.2	854	483	541	546	679	799 470 519 537 655
8.7	790	523	519	560		790 523 519 560
9.5		627	656	668		627 658 668
6.7	790	559	540	568		793 545 547 581 690
	8.9	368.770	89	749.247	9.438	
	771	823	715	748	822	760 610 713 750 822
6.7	447	425	612	780	854	
	738	709	786	873		749 727 796 873
	9.194	9.125	9.230	.296	547	
	744	647	757	836		
	585	259	346	466	496	
	351	217	352	428	443	
	669	567	645	817	807	
	397	454	397	441	573	
	654	518	597	649	741	
	496	358	443	598	659	
	222	239	191	402	552	
	633	495	675	717	785	
	445	417	498	519	548	
	289	271	294	544	693	

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Reductions for MC 6042, Spectra measured with Steton on Photometer. Ash. Laboratory

Nr	S/o	Int	m	OP	clf	H/K	clf	H5	clf	H5	OP
69	A_0			8.10	27.35	21.28	27.47	21.00	27.35	21.45	8.31
"	"			8.31	27.10	21.20	27.78	21.52	27.73	21.60	8.49
130	"			8.41	27.86	21.73	27.55	22.45	27.97	22.72	8.59
104	"			8.62	26.55	21.25	26.77	21.71	26.90	21.60	8.88
177	"			8.40	26.80	20.65	27.20	20.77	27.15	20.90	8.48
244	"			8.41	27.68	18.20	27.44	18.49	27.95	18.92	8.50
20	"			8.45	27.52	19.65	28.06	20.03	28.15	20.69	8.56
153	"			8.58	26.21	13.59	26.89	14.05	27.04	14.32	8.60

H5 mean 21.15? and 21.02

one measure other uncertain 25.82

			9.13.		H/3		H/K mean		H8		9/5		4227		4180		H5
57	K_0	8.60 9.00	18.10	26.95	18.68	26.55	15.10	27.55	17.28	27.55	18.40	27.65	19.40	26.80	2091	27.82	21.81

	Corrected for O.P.		clf	R	clf	R	clf	R
69	8.92	21586	19.25	13.18	19.27	12.80	19.05	13.15
			1.2844	1.1199	1.2849	1.1072	1.2799	1.1189
"			18.79	12.89	19.41	13.15	19.30	13.17
			1.2739	1.1102	1.2880	1.1189	1.2856	1.1196
130	8.6	21475	19.39	13.26	19.02	13.92	19.38	14.13
			1.2876	1.1225	1.2792	1.1436	1.2874	1.1501
104	8.5	21639	17.86	12.56	17.99	12.93	18.03	12.73
			1.2579	1.0990	1.2550	1.1116	1.2580	1.1048
177	8.4	21460	18.40	12.25	18.76	12.33	18.71	12.46
			1.2648	1.0681	1.2732	1.0910	1.2721	1.0955
24	8.0	21603	19.23	9.75	18.99	10.04	19.50	10.47
			1.2840	0.9890	1.2788	1.0017	1.2900	1.0200
153	7.01		18.11	5.00	18.29	5.45	18.44	5.72
			1.2579	.6990	1.2622	.7364	1.2658	.7574

				9/8													
57	Rs	7.96	21580	9.50	18.35	10.05	17.92	6.40	18.89	8.62	18.86	9.71	18.98	10.68	18.05	12.16	19.04	1303
				.9772	1.2636	1.0022	1.2533	.8089	1.2762	.9385	1.2755	.9872	1.2771	1.0286	1.2565	1.0849	1.2797	1.1149
					9.7386		9.6556		9.6593		9.7117		9.7515		9.8284		9.8352	

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Continued. Reductions for NC 6042

Nr	Sp	mv	OP	CF	$\frac{H_\beta+H_\delta}{2}$	CF	H_γ	CF	H_δ	OP
8			5.95	28.76	8.60	28.69	8.30	28.77	8.69	6.10
77			6.10	29.18	9.00	29.11	16.00	29.33	10.40	6.40
44			6.32	29.45	10.56	29.02	10.61	29.		
40			6.60	29.52	16.85	29.43	16.95	29.		
113			6.98	28.45	10.21	28.60	10.89	29.		

	OP	9.13		$\frac{H_\beta+H_\delta}{2}$		H_δ				
50	7.52	28.40	30.47	24.00	30.50	27.				
76	7.51	17.89	29.23	15.08	30.20	17.				
85	7.41	24.60	29.30	22.20	29.20	28.				
147	7.39	20.62	28.60	18.40	28.50	20.				
156	7.38	12.99	28.26	11.30	28.40	12.				
141	6.92	19.03	27.97	15.60	28.02	17.				
112	7.00	18.60	28.04	15.69	28.00	17.				

		H_γ		H_δ						
50		28.50	28.61	7.57						
76		28.29	28.89	7.41						
85		29.05	25.00	7.39						
147		28.43	20.80	7.38						
156		28.30	13.21	7.18						
141		28.50	21.00	7.04						
112		28.05	20.35	7.05						

76 d
112 g
141 g
156 g
85 50 d

Corrected for Zero point

8	5.62		22.76	2.60	22.64	2.25	22.									216608
			1.3572	.4150	1.3549	.3522	1.3									
77	6.68		22.90	2.80	22.81	3.70	22.									21 65-1,
			1.3598	.4472	1.3581	5682	1.3									
44	Bg 7.02		23.04	4.15	22.52	431	22.									215366
			1.3628	.4181	1.3524	6345	1.3									
40	8.0		22.79	10.12	22.58	10.10	22.									216108
			1.3572	0052	1.3537	0043	1.3									
113	6.42		21.34	3.10	21.36	365	21.									215242
			1.3292	4914	1.3296	5623	1.3851	6296	0.062	29.232	7.2943					

																$\frac{H_\beta+H_\delta}{2}$	H_γ	H_δ		
50	R_2	9.5	215283	19.89	22.95	16.48	22.98	19.79	22.94	20.38	22.88	20.39	22.86	20.69	22.98	21.09				
				2986	3608	2170	3614	2965	3606	3092	3595	3094	3591	3158	3614	3241	9.8562	9.9351	9.9486	9.9499	9.9567	9.9627
76	Ro	8.32	216896	10.38	21.75	7.60	22.72	9.66	22.86	10.70	22.76	10.57	22.34	11.17	22.84	11.44						
				0162	3375	8808	3564	9850	3591	0294	3570	0241	3491	0441	3587	0564	9.5143	9.6289	9.6703	9.6714	9.6990	9.6997
85	g5	8.8	216878	17.20	21.90	14.80	21.80	16.40	22.22	16.91	22.81	17.31	22.26	17.70	21.65	17.60						
				2355	2404	1703	3385	2148	3467	2281	3581	2383	3475	2480	3355	2455	9.7299	9.8763	9.8814	9.8802	9.9005	9.9100
147	g5	9.0	215028	13.24	21.22	11.02	21.12	13.70	21.24	13.22	21.23	13.32	21.31	13.34	21.05	13.42						
				1219	3268	0422	3247	1038	3272	1213	3270	1245	3286	1252	3233	1278	9.7154	9.7891	9.7941	7975	7966	8045
156	g5	8.98	214608	5.61	20.92	3.96	21.18	4.90	21.13	6.46	21.01	5.32	21.12	5.94	21.20	6.11						
				7490	3206	5977	3245	6911	3249	8102	3224	7259	3247	7738	3263	7860	9771	3666	4853	4935	449	4597
141	Ro	8.24	215385	12.11	21.03	8.66	21.06	10.94	21.08	12.02	21.01	12.70	21.09	13.38	20.96	13.96						
				0831	3228	9375	3235	0390	3239	0799	3224	1038	3241	1265	3214	1149	6147	7135	7560	7814	8024	7935
112	Ro	7.97	215340	11.58	21.02	8.67	20.98	10.13	21.03	11.09	21.03	11.68	20.98	13.19	21.03	13.48						
				0637	3226	9360	3218	0056	3228	0449	3228	0674	3218	1202	3228	1297	6154	6838	7221	7446	7984	8069

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Continued. Reductions for NC 6042

Nr	Sp	m	OP	CF	$\frac{N_1+N_2}{2}$	CF	N_2	CF	N_3	OP
8			5.95	28.76	8.60	28.69	8.30	28.77	8.69	6.10
77			6.10	29.18	9.00	29.11	10.00	29.33	10.40	6.40
44			6.32	29.45	10.56	29.02	10.81	29.11	10.91	6.60
40			6.60	29.52	16.85	29.43	16.93	29.69	17.11	6.98
113			6.98	28.45	10.21	28.60	10.89	29.01	11.64	7.38

		OP	9.B		$\frac{N_3+N_4}{2}$		N_4		915		4227		4180		45	
50		7.52	28.40	30.47	24.00	30.50	27.30	30.46	27.90	30.40	27.91	30.38	28.21	30.50	28.61	7.57
76		7.51	17.89	29.23	15.08	30.20	17.11	30.31	18.15	30.21	18.02	29.79	18.62	30.29	18.89	7.41
85		7.41	24.60	29.30	22.20	29.20	23.80	29.62	24.31	30.21	24.81	29.66	25.10	29.05	25.00	7.39
147		7.39	20.62	28.60	18.40	28.59	20.08	28.62	20.60	28.61	20.30	28.69	20.72	28.43	20.80	7.38
156		7.38	12.99	28.26	11.30	28.40	12.20	28.37	13.70	28.20	12.51	28.26	13.08	28.30	13.21	7.10
141		6.92	19.03	27.97	15.60	28.02	17.90	28.06	19.00	28.01	19.30	28.11	20.40	28.00	21.00	7.04
112		7.00	18.60	28.04	15.69	28.00	17.15	28.05	18.11	28.05	18.70	28.00	20.21	28.05	20.38	7.05

Corrected for Zero point

8	5.62		22.76	2.60	22.64	2.25	22.67	2.59									216608
			1.3572	.4150	1.3549	.3522	1.3554	.4135	9.0578	8.9973	9.0579						
77	6.68		22.90	2.80	22.81	3.70	22.93	4.00									21 65-1,
			1.2598	.4472	1.3581	5682	1.3604	6020	9.0879	9.2101	9.2217						
44	B9 7.02		23.04	4.15	22.52	4.31	22.52	4.32									215566
			1.2626	.6181	1.3526	6345	1.3524	6355	9.2558	9.2819	9.2829						
40	8.0		22.29	10.12	22.58	10.10	22.71	10.13									216108
			1.3572	0052	1.3527	0043	1.3582	0056	9.6475	9.6509	9.6494						
113	6.42		21.34	3.10	21.36	3.65	21.63	4.26									215242
			1.3292	4914	1.3296	5623	1.3851	6294	9.0022	9.2327	9.2943						

																	$\frac{N_1+N_2}{2}$	N_2	N_3	N_4
50	R_2 9.5	215253	19.89	22.95	16.48	22.98	19.79	22.94	20.38	22.88	20.39	22.86	20.69	22.98	21.09					
			2986	3608	2170	3614	2965	3606	3092	3595	3094	3591	3158	3614	3241		9.8562	9.9357	9.9483	9.9499
76	Ro 8.32	216396	10.38	21.75	7.60	22.72	9.66	22.86	10.70	22.76	10.57	22.34	11.17	22.84	11.44					
			0162	3375	8808	3584	9850	3591	0294	3570	0241	3491	0481	3587	0584		9.5143	9.6389	9.6703	9.6671
85	g5 8.8	216878	17.20	21.90	14.80	21.80	16.40	22.22	16.91	22.81	17.31	22.26	17.70	21.65	17.60					
			2355	2404	1703	3385	2148	3467	2281	3581	2383	3475	2480	3355	2455		9.7299	9.8763	9.8814	9.8802
147	g5 9.0	215028	13.24	21.22	11.02	21.12	12.70	21.24	13.22	21.23	13.32	21.31	13.34	21.05	13.42					
			1219	3268	0422	3247	1038	3272	1213	3270	1245	3286	1252	3233	1278		9.7154	9.7891	9.7941	9.7975
156	g5 8.95	214608	5.61	20.98	3.98	21.18	4.90	21.18	6.46	21.01	5.32	21.12	5.94	21.20	6.11					
			7490	3206	5977	3245	6011	3249	8102	3224	7259	3247	7738	3263	7860		9771	3606	4853	4085
141	Ro 8.34	215385	12.11	21.03	8.66	21.06	10.94	21.08	12.02	21.01	12.70	21.09	13.38	20.96	13.96					
			0831	3228	9375	3235	0390	3239	0799	3224	1038	3241	1265	3214	1149		6147	7135	7560	7814
112	Ro 7.97	215344	11.58	21.02	8.67	20.98	10.13	21.03	11.09	21.03	11.68	20.98	13.19	21.03	13.48					
			0637	3226	9360	3218	0056	3228	0449	3228	0671	3218	1202	3228	1297		6154	6838	7221	7446

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MC 5396

Sp	Nr	Int	m	OP	cor	$\frac{H_\gamma + H_\delta}{2}$	cor	H_γ	cor	H_δ	OP
A3	22	5	8.9	7.57	24.91	20.00	24.98	20.17	25.02	21.22	7.66
A0	54	8	7.9	7.66	24.93	14.55	24.94	15.05	24.60	15.09	7.98
A2	88	5	9.3	8.30	24.82	20.06	24.92	20.47	24.83	20.50	8.30
A0	89	8	7.25	8.30	24.90	11.58	24.90	12.15	24.60	12.55	8.30
"	"	"	5	8.30	24.15	11.58	24.18	12.15	24.65	12.55	8.30
A2	101	7	8.6	8.30	25.02	16.58	25.11	17.28	24.93	18.04	8.64
A0	118	4	9.2	8.64	26.55	22.56	26.44	22.25	26.52	22.40	9.00
A2	122	9	7.6	9.00	25.65	14.00	25.73	14.90	25.80	15.45	9.20
135	103		8.6	9.20	26.30	18.60	26.31	19.31	26.22	20.19	9.42

Corrected for O.P.

17.31	12.40	17.35	12.54	17.26	13.58				
2383	0934	2393	0983	2396	1323				
17.22	6.79	16.43	7.19	16.69	7.13				
2360	8319	2287	8567	2225	8531				
16.52	11.76	16.62	12.17	16.53	12.20				
2180	0704	2206	0853	2183	0864				
16.60	3.28	16.60	3.85	16.30	4.25				
2201	5759	2201	5855	2122	6284				
15.85	3.28	15.38	3.85	16.35	4.45				
2000	5759	1870	5855	2135	6284				
16.67	8.17	16.64	8.75	16.34	9.40				
2219	9122	2212	9420	2132	9731				
17.91	13.86	17.68	13.43	17.69	13.46				
2531	M18	2475	7281	2477	1291				
16.64	4.96	16.65	5.79	16.65	6.27				
2211	6955	2214	7627	2214	7973				
17.10	9.36	17.04	10.00	16.87	10.81				
2330	9713	2315	0000	2271	0338				

cf. one side only

cf. two sides

one spike

Sp	Nr	Int	m	OP	cor	$\frac{H_\gamma + H_\delta}{2}$	cor	H_γ	cor	H_δ	OP
G0	5		8.9	9.42	20.31	16.14	20.27	17.10	20.24	17.50	9.65
G0	69		8.5	9.65	19.63	15.35	19.61	16.00	19.60	16.57	9.70
G0	24		9.6	9.70	25.24	21.95	25.09	22.57	25.22	22.40	9.58
K0	45		9.2	9.58	25.16	18.40	25.15	20.30	25.20	21.80	9.60

10.89	6.68	10.77	7.56	10.66	7.88				
0370	8298	0322	8756	0278	8965				
9.98	5.69	9.95	6.33	9.92	6.82				
9991	7587	9978	8014	9965	8338				
15.54	12.27	15.43	12.93	15.61	12.81				
1915	0888	1884	1116	1934	1076				
15.56	8.80	15.55	10.70	15.60	12.20				
1920	9448	1917	0294	1931	0864				

22. XI. 1929

Sp	Nr	Int	m	OP	cor	$\frac{H_\gamma + H_\delta}{2}$	cor	H_γ	cor	H_δ	OP	
A3	22		8.9	6.51	23.40	18.29	23.58	19.35	23.45	19.16	6.09	
	54		7.9	6.09	23.48	12.67	23.36	13.48	23.15		7.00	
	101		8.6	7.00	23.31	13.70	23.34	15.12	23.02	15.85	7.00	HD
K0	23		9.99	7.00	23.61	20.00	23.69	21.63	23.92	22.28	7.00	77823
G5	12		10.2	7.00	24.10	19.00	24.18	20.45	24.13	21.40	7.00	78300
G5	46		10.1	7.00	23.90	20.51	24.00	21.80	23.68	22.10	7.00	77025
G5	8		9.82	7.00	24.16	19.96	24.29	21.68	24.36	22.05	7.00	78823
K0	28		8.8	7.20	24.57	17.90	24.55	20.38	24.70	22.40	7.00	77507
K5	13		8.87	7.48	25.00	15.91	25.04	19.05	25.25	22.17	7.00	78348
G5	21		8.4	7.70	25.22	14.96	25.24	16.25	25.62	18.80	7.78	77776
K0	11		8.48	7.80	24.90	17.60	24.90	17.75	25.17	20.55	7.75	78347
K2	51		7.83	7.75	24.80	12.00	24.87	15.10	24.95	19.00	7.80	76942

16.89	11.78								
2276	0712								
17.39	6.58								
2403	8182								
16.31	6.70								
2125	8269								
16.61	13.00	16.69	14.03	16.92	15.28				
2204	1139	2225	1471	2284	1841				
17.10	12.00	17.18	13.45	17.13	14.40				
2330	0792	2350	1287	2338	1584				
16.90	13.51	17.00	14.80	16.68	16.10				
2279	1307	2305	1703	2224	1790				
17.16	12.96	17.29	14.68	17.26	15.05				
2345	1126	2378	1667	2396	1775				
17.37	12.73	17.41	13.28	17.64	15.37				
2398	1048	2408	1232	2465	1867				
17.52	8.57	17.72	11.81	18.09	16.09				
2435	9299	2485	0723	2584	2066				
17.52	6.74	17.60	8.50	17.90	11.03				
2435	8257	2455	9284	2529	0426				
17.10	9.80	17.10	9.95	17.32	13.05				
2330	9972	2330	9978	2398	1186				
17.00	4.20	17.07	7.30	17.15	11.20				
2305	6233	2322	8633	2343	0492				

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77775	9.8551	9.8590	9.8927			
77123	9.5959	9.6280	9.6306			
77857	9.8524	9.8647	9.8681			
77986 (13)	9.2958	9.3654	9.4162			
"	9.3159	3985	9.4149			
78634	9.6903	9.7208	9.7599			
79215	9.8887	9.8806	9.8814			
79127	9.4944	9.5413	9.5759			
78771	9.7383	9.7685	9.8067			
78609	9.7878	9.8434	9.8687			
76542	9.7569	9.8036	9.8373			
77893	9.8973	9.9232	9.9142			
76793	9.7528	9.8377	9.8933			
	9.8436					
	9.5779					
	9.6136			gr		
	9.8935	9.9246	9.9537	-.92	5200	
	9.8462	9.8937	9.9246	-1.38	4300	
	9.9028	9.9398	9.9568	-1.61	4500	
	9.8781	9.9289	9.9379	-1.38	4900	
	9.8650	9.8824	9.9402	-1.06	5500	
	9.6864	9.8238	9.9402	-2.87	3300	
	9.5852	9.6839	9.7897	-1.89	4000	
	9.7582	9.7648	9.8758			
	9.3928	9.6311	9.8149	-4.87	2400	

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1928phae.proj..923H

RX Virginis $11^h 57^m 20^s$ $-4° 58' .0$ (BD)

Period unknown $-7.4 - 9.0?$ Ko

Kayser 4318

$11^h 59^m 38^s - 5° 13' .0$ (1900.0)

Comparison Stars H.A. 47 by Fleming (No 66)

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1928phae.proj..922H

Center	N.	Date	Estimate		Julian Day
12h 00 +1.9	Ac 131	Dec 16, 1898	971	8.20	
-12 00 4.1	323	May 17, 1899	931	8.32	
11 55 -0.5	601	Dec 15, 1899	911	8.36	
11 58 0.0	713	Feb 6, 1900	941	8.23	15057
11 54 -0.5	781	Feb 23, 1900	901	8.17	74
11 54 +0.2	1274	Feb 2, 1901	901	8.17	437
11 52 0.0	1304	Feb 27, 1901	921	8.35	443
11 53 0.8	1343	March 16, 1901	951	8.26	460
11 54 0.0	1505	Jun 6, 1901	951	8.26	542
11 57 -0.4	2169	Jan 5, 1902	971	8.20	755
11 52 -0.4	2196	Jan 16, 1902	981	8.20	766
11 55 +0.5	2387	Mar 4, 1902	971	8.20	813
11 57 -0.7	2596	May 3, 1902	=1	8.11	901
11 53 -0.3	3298	Dec 23, 1902	971	8.20	16107
11 53 0.0	3208	Jan 22 1903	1re	8.03	137
11 52 -0.2	3205	Jan 31 1903	951	8.26	146
11 54 0	3341	Feb 22, 1903	971	8.20	168
11 56 -0.1	3349	Feb 23, 1903	1re	8.03 if estimate acc. to Hartwig 8.17 ave. 981	169
11 52 +0.8	3472	Apr 1, 1903	981	8.17	206
11 57 -0.1	3539	Apr 29, 1903	971	8.20	225
11 50 +0.5	3566	Apr 29 "	981	8.17	234
11 53 +0.1	3659	May 21	981	8.17	256
11 52 0.0	3686	May 26	981	8.20	261
11 53 -0.1	3698	May 30	981	8.23	265
11 53 -0.1	4410	Dec 20, 1903	961	8.23	469
11 54 +0.2	4546	Jan 18, 1904	981	8.17	498
11 52 -0.3	4644	Feb 15	971	8.14	526
11 52 0.0	4753	March 16	1re	8.07	556
11 53 -0.2	4824	April 2	991	8.14	583
11 53 0.1	4837	Apr 13	1re	8.03	584

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1928phae.proj..922H

Center		N	Date	Estimate		Julian Day
11	57 −0.3	4894	May 7, 1904	g 9 f 8.14		16608
11	58 +0.7	4956	June 12	g 9 f 8.14		644
11	53 +0.5	5020	Dec 4, 1904	g 6 f 8.23 :		819
11	52 +0.4	5837	Jan 14, 1905	g 8 f 8.17		860
11	54 +0.4	5950	Feb 4	g 5 f 8.26		891
11	52 +0.6	6080	Feb 27	= f 8.11		904
11	55 −0.1	6106	Mar 2	g 4 f 8.29		907
11	53 +0.5	6176	Mar 15	g 2 f 8.35		920
11	54 +0.2	6266	Apr 6	g 8 f 8.32		942
11	54 +0.3	6381	May 10	g 2 f 8.35		976
11	53 +0.5	6413	June 3	g 2 f 8.14		17000
11	54 −0.1	7295	Feb 17, 1906	g 9 f 8.14 f 8 e	7.83	259
11	56 −0.2	7341	Mar 1	g 8 f 8.17 = e	7.71	221
11	51 −0.2	7419	Mar 25	f e 8.03 f 2 e	7.99	295
11	54 +0.4	7433	Apr 1	f 2 e 8.03 f 1 e	8.07	302
11	53 −0.3	7489	Apr 18	g 6 f 8.20 = f	8.11	319
11	53 −0.3	7598	June 11	g 4 f 8.29 f 4 e	7.95	373
11	50 +0.5	8129	Jan 9, 1907	= f 8.11 g 9 f	8.14	585
11	52 +0.5	8160	Jan 16	g 7 f 8.20 f 1 e	8.07	592
11	56 +0.6	8188	Jan 23	g 9 f 8.14 f 2 e	8.03	599
11	54 +0.4	8227	Feb 8	g 4 f 8.29 f 5 e	7.91	615
11	52 +0.5	8249	Feb 12	g 7 f 8.20 f 6 e	7.87	619
11	46 +0.5	8265	Feb 18	f 1 e 8.07 f 7 e	7.83	625
11	50 +0.4	8339	Mar 9	g 7 f 8.20 = e	7.71	644
11	50 +0.8	9028	Feb 2, 1908	~ f 8.11 g 6 f 2	8.23	971
11	54 +1.0	9335	Mar 12	~ f 8.11 f 3 e	7.99	19013
11	54 +0.5	9420	Apr 26	g 8 f 8.17 f 3 e	7.99	58
11	50 +0.3	9468	May 9	g 4 f 8.29 f 7 e	7.83	71
11	54 0.0	10129	Dec 31, 1908	g 6 f 8.23 f 9 e	7.75	307
11	55 +0.6	7153	Jan 7, 1906	g f 8.03 = f	7.71	17218
12	00 0.0	8133	Dec 22, 1905	g 6 f 8.23 < 1	L7.71	202

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11 54 +0.5	MC 10161	Jan 18/1910	g1e	8.07	f3e	7.99	18325
11 53 +0.3	10207	Feb 3	g7f	8.20	f6e	7.87	341
11 54 -0.5	10357	Mar 22	=f	8.11	f5e	7.91	388
11 52 +0.6	10438	Apr 17	g8f	8.17	e1d	7.67	414
11 53 -0.1	10486	May 6	g4f	8.38	f5e	7.91	433
11 54 +0.5	10506	May 15	g6f	8.23	f9e	7.75	442
11 52 0.0	10520	May 25	g5f	8.26	e7e	7.83	452
11 54 +0.1	10560	Jun 15	g5f	8.26	e1e	8.03	473
11 54 0.0	11314	Jan 16/1910	f2e	8.03	=e	7.81	688
11 54 0.2	11330	Jan 22	g5f	8.26	e3d	7.60	694
11 54 0.2	11360	Feb 6	g6f	8.23	f7e:	trans 2)	709
11 58 0.0	11425	Mar 4	g5f	8.26	f4e	7.95	735
11 58 -0.3	11480	Mar 15	g8f	8.20	f5e	7.91	746
11 53 -0.3	11540	Mar 28	f9e	8.07	=e:	7.81	759
11 56 -0.8	11554	Apr 2	g3f	8.14	f8e	7.79	768
11 54 -0.5	11615	May 5	f1e	8.03	=e (f9e)	7.74	797
11 52 +1.5	11624	May 6	g6f	8.23	e5d	7.52	798
11 54 +0.5	12815	Dec 25/1911	g6f	8.23	e3d	7.60	19 396
11 56 -0.8	12858	Jan 16/1912	g4f	8.14	e6d	7.48	416
11 56 0.0	12915	Feb 10	g5f	8.26	e4d	7.56	443
11 58 0.0	12944	Feb 23	g4f	8.29	f9e	7.75	456
11 54 +0.3	12957	Feb 27	g8f	8.17	f1e	8.07	460
12 00 0.0	13087	Apr 11	g3f	8.32	e5d	7.52	473
11 57 -0.1	13103	Apr 21	g4f	8.29	e5d	7.52	483
11 54 -0.3	13142	May 19	g2f	8.20	e3d	7.60	542
12 00 0.0	13178	Jun 14	g8f	8.17	f9e	7.75	568
12 00 0.0	13586	Dec 16	g6f	8.23	e6d	7.63	753
11 58 +1.0	13774	Feb 12/1913	g5f	8.26	e7d	7.44	811
11 57 +0.6	13823	Feb 25			e5d	7.52	824
11 57 +0.5	13837	Mar 2	g3f	8.32	e3d	7.60	829
11 57 -1.2	13876	Mar 6	g8f	8.17	f7e	7.83	833

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11	57	+0.4	13864 Aug 8/1913	g5f		8.26	e2d	7.63	19835
11	56	0.0	13942 Aug 9	g4f		8.29	f3e:	7.91	867
11	58	0.5	14008 May 7	g6f		8.23	f3e	7.91	895
12	00	0.0	14050 May 31	g7f		8.20	f8e	7.79	919
11	56	+0.4	14677 Dec 16	g4f::		8.29	e4d::	7.56	20118
11	54	0.0	14806 Jan 22/1914	g5f		8.26	e6d	7.48	155
11	57	+0.5	14819 Jan 31	g4f		8.29	e8d	7.41	164
11	56	+0.3	14836 Feb 4	g3f		8.32	e5d	7.60	168
11	57	-0.7	14908 Feb 24	g6f		8.23	e5d	7.52	188
11	57	+0.1	14936 Mar 8	g4f		8.29	e2d	7.63	200
12	03	+1.2	14986 Mar 18	g6f		8.23	e3d	7.60	210
12	02	+1.0	15029 Mar 26	f2e		8.03	f7e	7.83	218
12	02	+0.7	15093 Apr 14	g9f		8.14	=e	7.71	237
12	58	+0.8	15108 Apr 18	g6f:		8.23	f7e	7.83	241
11	54	+1.0	15132 Apr 24	g5f		8.26	e5d	7.52	247
11	58	+0.8	15214 May 29	f2e::		7.99	f3e::	7.91	282
12	00	0.0	16044 Jan 13/1915	g7f		8.20	e5d	7.52	571
12	00	0.0	16116 Feb 17	g5f:		8.26	~~e4d~~	8.11	546
12	00	0.0	16186 Apr 4	g2f		8.35	=f	8.11	602
12	00	0.0	16625 Jun 12	g3f		8.32	f4e	7.95	661
12	00	0.0	17107 Dec 11	g3f		8.32	f2e	8.03	843
12	00	0.0	17298 Feb 7/1916	g2f		8.35	f2e	8.03	901
12	00	0.0	17497 Apr 7	g5f		8.26	=f	8.11	961
12	00	0.0	17642 Jun 1	g2f		8.35	f3e	7.99	21016
12	00	00	18300 Dec 13	g2f:		8.35	=e:	7.71	211
12	00	0.0	18340 Dec 23	g9f		8.14	f4e	7.95	221
11	57	+0.4	18509 Feb 21/1917	g2f		8.35	=f (f1e)	8.11	262
11	56	+0.3	18593 Jul 21	g4f		8.29	=e	7.71	281
11	57	+0.6	18749 Apr 3	g5f:		8.26	e3d:	7.60	322
11	55	+0.5	19611 Dec 15	g6f		8.23	f7e	7.83	578
12	01	0.0	19750 Feb 4/1918	g6f		8.23	e4d	7.56	629

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12	00	+1.0	19819	Feb 13/1918	95	8.26	e6 d	7.48	21638
11	58	+1.0	20050	Apr 15	93	8.32	e3 d	7.60	699
11	56	+0.5	20174	June 7	=	8.11	= e	8.11	752
11	55	+1.0	20840	Dec 18	98	8.17	/4e	7.95	946
11	53	+0.4	21146	Feb 1/1919	96	8.23	/7e	7.83	991
11	56	+1.1	21105	Feb 9	95	8.26	e2 d	7.63	999
11	53	+1.0	21168	Feb 19	93	8.32	e4 d	7.56	22009
11	57	+0.8	21352	Apr 19	95	8.26	e3 d	7.60	58
11	57	+1.0	21492	Apr 27	98	8.17	/7e	7.83	76
12	00	0.0	22397	Feb 15/1920	95	8.26	/2e	8.03	380
12	00	0.0	22448	Feb 26	94	8.17	98	8.17	381
12	00	0.0	23165	Dec 20	99	8.14	e2 d	7.63	679
12	00	0.0	AR812	March 28/1913	94	8.32	= e	7.71	19855
11	58	+1.5	AM781	May 11/1901	95	8.26	/8e	7.79	15516
12	00	+0.8	792	May 21	95	8.26	e4 d	7.56	526
12	00	+0.2	814	May 28	95	8.26	e5 d	7.52	533
11	58	+1.2	1233	May 2/1902	96	8.23	e4 d	7.56	872
11	59	+1.1	1267	May 26	92	8.20	~d (e9 d)	7.33	896
12	00	+1	1481	July 8	92	8.29	~d	7.33	989
11	58	+1.0	1930	May 13/1903	=	8.11	e2 d	7.63	16248
12	00	-0.3	1949	May 18	97	8.20	= e	7.71	253
11	58	+0.9	2126	July 15	95	8.26	e5 d	7.52	311
11	58	+0.5	2489	Mar 23/1904	97	8.20	/8e	7.79	563
11	58	+1.0	2527	Apr 12	98	8.17	/1e	8.07	583
12	00	+0.2	2586	May 2	95	8.26	/1e	8.07	603
11	57	+0.5	2723	June 7	97	8.20	/5e	7.91	639
11	58	-0.5	2743	June 12	95	8.26	/7e	7.83	646
12	00	0	2804	July 5	97	8.20	/2e	7.87	665
11	56	+0.3	2863	July 22	94	8.29	= e	7.71	684
11	58	0.0	3312	January 10/1905	95	8.26	/1e	8.07	856

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		3368						
12	00	−0.5	March 6	98	8.20	e3d	7.60	16911
11	58	−0.3	3387, Mar 17	94	8.29	e3d	7.60	922
11	58	−0.1	3411 Mar 29	95	8.26	f7e	7.83	934
11	54	−0.3	3461 Apr 21	95	8.32	f6e	7.87	957
11	58	−0.2	3511 May 10/1905	95	8.32	f6e	7.79	986
12	00	0	3547 May 22	95	8.26	f7e	7.83	988
11	58	−0.8	3692 July 6	94	8.29	e2d	7.63	17033
11	56	+0.8	4055 Jan 26/1906	94	8.29	f9e	7.75	238
11	58	−1.1	4119 Feb 17	97	8.20	e2d	7.63	259
11	59	−0.8	4154 March 28	96	8.23	e2d	7.63	298
11	57	−0.5	4214 May 10	99	8.14	=f	8.11	341
11	58	−0.6	4232 May 14	98	8.14	~f f1e	8.07	355
11	56	−1.1	4262 May 28	95	8.26	f5e	7.91	359
11	58	+0.5	4324 June 16	96	8.23	=e	7.71	378
11	58	−1.1	4390 July 12	95	8.26	e5d	7.52	404
12	02	−0.6	4754 March 24/1907	95	8.26	e2d	7.63	659
11	58	−0.2	4792 May 2	96	8.23	g7f	8.20	698
11	58	−1.0	4814 May 9	97	8.20	f1e	8.07	705
12	00	−0.6	4830 May 13	94	8.29	<f	8.11	709
11	58	−0.3	5318 Feb 29/1908	94	8.29	f1e	8.07	18001
12	00	−0.2	5329 March 25	99	8.14	f1e	8.07	26
11	59	−0.2	5473 May 19	96	8.23	f3e	7.99	81
11	58	+0.5	5488 May 21	95	8.26	=f(f1e)	8.11	83
11	56	−0.5	5557 June 15	97	8.20	f1e	8.03	108
12	00	+0.2	5968 March 17	94	8.29	f4e	7.95	383
11	58	+0.5	5970 March 18/1909	98	8.17	f6e	7.87	384
								408
12	01	+0.2	6032 Apr 11	95	8.32	=e	7.71	422
12	00	0.0	6067 Apr 25	98	8.17	e9d	7.37	439
12	00	+0.3	6117 May 12	95	8.26	e3d	7.67	441
12	01	+0.5	6127 May 14	94	8.29	=e	7.71	

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12 04	0.0	6147	May 19	gg1	8.14	fbe	7.87	446
12 04	-0.2	6158	May 24	gg1	8.14	fge	7.79	457
11 59	+0.8	6164	May 25	=f	8.11	fge	7.75	452
12 03	+0.1	6214	June 12	=f	8.11	fge	7.99	470
12 03	0.0	6274	June 23	gg1	8.14	f	8.11	481
11 58	+1.0	6309	July 6	=f	8.11	fge	7.83	494
12 02	+0.8	6317	July 7	g5f	8.26	fgc	7.79	495
12 02	-1.0	6858	Apr 3/1910	g81	8.17	=e	7.71	765
12 02	-0.5	6914	May 7	=f	8.11	=e	7.71	799
12 10	-.1	6940	May 28	g5f	8.17	fge	7.75	820
12 02	-.3	6993	Jun 5	g8f	8.20	fde	8.07	828
12 00	0.0	7055	July 1	g8f	8.32	=f	8.11	854
12 02	-.2	7065	July 3	g3f	8.32	fge	8.03	856
12 02	+.5	8140	May 4/12	g5f	8.26	efd	7.67	19 528
12 02	0.0	8193	May 18	g4f	8.29	efd	7.63	541
11 59	+.1	8262	May 27	g4f	8.29	=e	7.71	550
12 00	+0.1	8304	June 8	g8f	8.20	efd	7.44	561
12 00	-.9	8391	July 5	g3f	8.32	f2e	8.03	589
11 58	-.3	8438	July 11	g3f	8.32	fge	8.03	595
12 00	0.0	8453	July 15	g5f	8.26	fgc	7.79	599
11 57	+.8	8864	May 5/13	g5f	8.26	=e	7.71	893
12 02	+.4	8956	May 27	g3f	8.32	efd	7.60	910
12 03	+.4	9037	June 9	g3f	8.32	efd	7.52	20028
12 03	+1.8	9104	June 25	g4f	8.29	fge	7.83	20044
11 59	+.8	9843	June 10/1914	g5f	8.26	fgc	7.91	294
11 54	-.4	9861	Jun 15	g6f	8.23	fge	7.83	299
11 56	0.0	9867	Jun 16	g3f	8.32	fdge	7.95	300
11 57	0.0	9880	" 20	=f	8.11	fgc	7.79	304
11 59	+.8	10535	May 3/1915	g3f	8.32	fge	8.03	621
						fge	7.99	
11 59	+.8	10566	May 8	g3f	8.26			626

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2 00	+.5	10785	July 12/1915	g3f	8.32	=f	8.11	691
11 58	+1.5	10793	July 13	g4f	8.29	=f	8.11	692
11 54	-.3	11669	May 6/1916	g6f	8.23	e2d	7.63	990
11 57	0.0	11766	May 21	g2f	8.35	e3d	7.60	1005
12 00	0.0	11811	May 26	g2f	8.35	e4f	7.56	1010
11 58	-.8	12233	July 22	g3f	8.32	e4d	7.56	1067
11 58	-6.8	12253	July 24	g8f	8.17	fre	8.03	1069
11 57	0.0	12279	July 28	g2f	8.35	e1d	7.67	1073
11 56	0.0	13119	May 13/1917	g1f	8.38	f9e	7.75	1862
11 57	0.0	13171	May 20	g3f	8.32	e3d	7.60	1869
11 58	0.0	13949	May 5/1918	g8f	8.32	e2d	7.63	719
11 59	-.1	14241	July 31	g5f	8.26	f5e	7.91	806
12 00	0.0	14718	May 23/1919	g7f	8.20	e1d	7.67	2102
12 00	0.0	14727	May 26	g4f	8.29	e5d	7.52	107
12 00	-.0	15758	May 7/1920	g1f	(8.38e)d	7.44	452
12 00	0.0	15780	May 13	g6f	8.23 =e	7.71	458
12 00	0.0 nr	23406	Feb 6/1921	g5f	8.26 =e	7.71	727
12 00	0.0	23483	Feb 28	g8f	8.17 =e	7.71	749
12 00	0.0	23597	Apr 2	g7f	8.20 =e	7.71	782
12 00	0.0	23657	Apr 26	g4f	8.29 =f	8.11	806
12 00	0.0	23749	June 2	g4f	8.29 f9e	7.75	843
12 0	0.0	24451	Dec 7	g5f	8.26 f9e	7.75	3031
12 0	0.0	24556	" 31	g4f	8.29 fre	7.63	3053
12 0	0.0	25142	Feb 14/1923	g8f	8.17 fre		
12 0	0.0	25216	Apr 6	g4f	8.29 =e		
"	"	25243	May 7	g4f	8.29 =e (Pan)		
"	"	25549	Jan 3/1924	g6f	8.23 e3d		23788
"	"	25731	Dec 25	g6f	8.23 f9e		24145

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1200 0.0	25818	Mar 24/1925	95f	8.26	fge	7.75	24230
" "	25939	Jun 13/14	93f	8.32	fbe	7.87	315
" "	26276	Apr 2/3/1926	94f	8.35	fbe	7.87	608
" "	26281	Apr 6/7	~f:	8.11	gse	8.32	612
" "	26717	Mar 4/7/1927	95f	8.26	fbe	7.87	944
"	26781	March 9/10	93f	8.32	fbe	7.99	949
" "	26826	May 7/8	95f	8.26	e3d	7.60	25008
" "	26834	May 17/18	~f:	8.11	fbe	7.87	018
"	26867	Jan 15/16	99f	8.14	e4d	7.56	25261
"	27126	Dec 21/22 1928	91f	8.26	fbe	7.99	25602
"	27182	Jan 6/7 1929	94f	8.29	fbe	7.99	25618
	27311	Feb 12/13	94f	8.17	e3d	7.60	25655
	27333	Mar 1/2	99f	8.14	e3d	7.60	25672
	27357	Mar 18/19	96f	8.23	fbe	7.83	25689
	27362	Mar 19/20	97f	8.20	fbe	7.91	25690
" "	27492	Jun 1/2	99f	8.14	99f	8.14	25764
	AM 1535	May 26/1921	97f	8.20	=e	7.71	22836
	15697	Apr 20/1922	95f	8.26	fbe	7.99	23165
	15780	May 16	95f	8.26	fbe	7.99	191
	15781	June 23	95f	8.26	fbe	7.87	229
	15946	July 14	93f	8.32	fbe	8.03	250
	16150	Mar 2/	96f	8.23	fbe	7.95	481
	16202	Apr 16/1923	94f	8.29	=e:	7.71	526
	16249	May 4	92f	8.20	e2d	7.63	574

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12h 51m	−0.6	BD 1266, Febr 19, 1907	g8	8.32	fpe	7.83 (sequence)	15425
13 00	+5.0	12769 Dec 4/14	g7	8.20	fpe	7.87	19375.
12 58	+.6	16118 Febr 17/1915	g5	8.26	gpf	8.17	20546
13 00	0.0	16241 March 11/1915	g5	8.26	fpe	8.07	568
13 00	0.0	16285 Mar 14	g5	8.26	fpe	7.99	581
13 00	0.0	16430 May 6	g5	8.26	fpe	7.99	624
13.0	0.	17201 Jan 7/1916	g8	8.32	gpf	8.11	870
〃	〃	17465 Mar 31	g5	8.26	fpe	7.79	954
12 54	+.3	18446 Jan 16/17	g7	8.29	gpf	8.14	21248
12 52	+.4	19318 Jan 20/1918	g5	8.26	fpe	7.99	664
12 53	0.0	19903 Mar 7/1918	g6	8.23	fpe	7.83	660
12 54	+.0	19984 Mar 16	g7	8.20	fge	7.75	669
12 55	+.5	20087 May 2	g5	8.26	fpe	8.03	716
12 56	+.5	21013 Jan 26/1919	g4	8.29	fpe	7.99	985
12 57	+.5	21219 Mar 1	g7	8.35	epd	7.67	22019
12 56	+.8	21261 Mar 10	g5	8.26	fpe	7.95	028
12 55	+1.0	21805 Mar 25	g6	8.23	fpe	7.91	043
12 56	+.5	21454 May 19	g7	8.35	epe	7.71	098
13 00	0.0	22248 Jan 13/1920	g8	8.17	epd	7.67	337
13 00	0.0	22291 Jan 19/1920	g7	8.20	epd	7.63	343
〃	〃	22341 Jan 31	g8	8.17	fge	7.75	358
12 56	+.5	AM 10457 Apr 29/1915	g4	8.29	fpe	8.03	20608
12 59	+.5	10628 Jan 5	g5	8.26	fpe	7.71	654
12 58	+1.0	10686 Jun 6	g8	8.32	fpe	7.79	655
12 57	0.0	10667 Jun 12	g7	8.20	epd	7.63	661
12 58	.3	10696 Jun 18	g7	8.20	fpe	7.91	662
12 58	−.3	12396 Aug 18	g7	8.29	epd	7.67	21093
12 58	0.0	12346 Aug 18/1916	g5	8.26	epd	7.63	94
12 58	0.0	13926 Sep 30/1918	g6	8.23	fpe	7.91	714

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12 58	0.0	14033	Jun 6 / 1916	94	8.29	/3c	7.99	21 757
12 58	-.2	14045	Jun 10	95	8.26	/1c	8.07	755
12 59	0.0	14057	Jun 12	95	8.26	/3c	7.99	757
13 00	0.0	14748	Jun 2 / 1919	93	8.32	/2c	8.03	22 112
13 00	0	14924	Aug 16	93	8.32	/2c	7.83	187
13 00	0	15242	Jun 8 / 1920	96	8.23	/8c	7.79	484

AI Plates

12 00	0.0	15802	Mar 12 / 1917	98		=e (e2d?)	7.71	21 300
"	"	15813	Mar 13	97		/8e :	7.79	304
		15853	Mar 24	97		e2d	7.63	312
		15885	Mar 28	97		e2d	7.63	316
		16055	Jun 20			/3e :	7.99	400
		16669	Dec 26			/7c	7.83	589
		16696	Jan 10 / 1918	99		/8c	7.79	604 v
		16822	Feb 11			/3e	7.99	636 v
		16850	Feb 17	98		/3e	7.99	642
		16870	Feb 20	95		/1c	8.03	645
		16877	Feb 21	99		/3e	7.91	646
		16928	Mar 8	95		/0c	7.79	661
		16944	Mar 15	94		~/2c	8.03	668
		17044	Apr 4	98		/2c	7.83	688
		17048	Apr 5	98		/3c	7.99	689
		17063	Apr 14	96		/2c	8.03	698

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12h	0°	B2	19266, Jan 2	95	8.17	esd	7.52	22 326	
			19337, Jan 14	95	8.26	esd	7.44	338	
			19356 Jan 17	93	8.32	esd	7.37	341	
			19369 Jan 19	98	8.17	esd	7.44	343	
			19396 Jan 28	96	8.23	esd	7.41	352	
13h	0		19463 Feb 11	95	8.26	gge	8.20	366	
			19474 Feb 15	98	8.17	gge	8.20	370	
			19511 Feb 20	95	8.26	gge	7.95	375	
			19524 Feb 26	94	8.29	98	8.17	381	
			19582 Mar 11	93	8.32	fge	7.99	395	
			19609 Mar 27	95	8.26	fge	7.95	411	
			19692 May 6	99	8.14	fge	7.79	457	
			19703 May 16	95	8.20	fge	7.99	461	
13	0		19642 Apr 9	94	8.29	fge	8.03	424	
			20389 Feb 6	94	8.35	fge	8.03	727	
			20422 Feb 12	95	8.26	fge	7.99	733	
			20432 Feb 14	98	8.17	fge	8.07	735	
			20444 Feb 16	93	8.32	fge	7.91	737	
12			20495 Mar 3	95	8.26	fge	7.99	752	
			20508 Mar 10	99	8.14	fge	8.03	759	
			20569 Mar 29	98	8.17	fge	8.03	778	
13			20585 Apr 1	93	8.32	fge	7.91	781	
12			20651 May 1	95	8.32	fge	7.99	811	
			20659 May 9	94	8.29	98	8.17	819	
			20669 May 11	93	8.32	95	8.26	821	
			20705 May 26	96	8.23	fge	7.95	836	
13			20782 June 2	95	8.26	fge	7.95	843	
13			20758 Jun 7	98	8.32	fge	7.95	848	
13			20765 Jun 8	93	8.32	fge	8.03	849	
			21394 Dec 7	95	8.26	fge	8.03	23021	
12			21507 Jan 5	94	8.35	fge	8.03	23060	

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1928phae.proj..92H

12	0	21543	Jan 21	96	8.23	13e	7.99	23076
13		21572	Jan 26	98	8.32	98	8.20	23081
12		21584	Jan 30	94	8.35	98	8.17	85
13		21620	Feb 23	92	8.20	13e	7.99	109
		21663	Mar 6	94	8.29	13e	8.32	120
12		21695	Mar 23	98	8.32	98	8.17	137
13		21771	Apr 29	98	8.26	13e	7.91	124

7.4–8.3

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1928phae.proj..922H

The Magn. of the Comparison Stars for S Vulpeculae were taken from the sequence for SY Cygni and reduced to the international scale

Comp St. 1900

Designation	BD	α	δ	Ph Mag
d	+27° 3526	19 45 12	+27 10.7	10.10
e	27 3520	19 44 28	27 18.6	10.43
f		19 44 36	27 16.9	10.61
g	26 3672	19 44 4	27 6.4	10.91
i		19 44 28	27 20.8	11.31
j		19 44 39	27 25.6	11.68
k		19 43 28	27 9.2	12.19

Variable +26° 3654 $19^h\ 44^m\ 18^s$ +27° 2.2

afterwards (printing the paper on S Vulpeculae) I changed the designation of the comparison stars

a ..... d
b ..... e
c ..... f
d ..... g
e i
f ..... j
g ..... k

} and making estimates

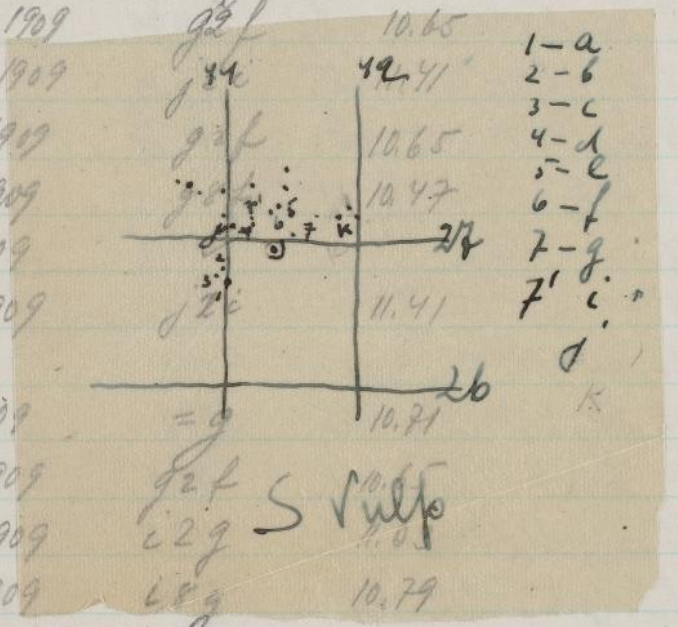
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1928phae.proj., o4SH

S Vulpeculae $19^h 42^m 57^s +26° 55'.7$

$P = 67.5$ $8.4 - 9.8$

Center	N	Date	Estimate		Jul. day old
$19^h 54^m +30°.3$	AC 9804	Oct 12, 1908	= f	10.41	2 418227
19 50 29.9	9960	Nov 27. 1908	j 2 i	11.41	18 273
19 53 29.5	10049	Dec 14. 1908	g 3 f	10.62	18 290
19 54 30.2	10575	May 20 1909	i 5 j	11.29	18 447
19 54 29.7	10589	June 25, 1909	= g	10.71	18 483
19 54 29.5	10597	June 28, 1909	= g	10.71	18 486
19 56 29.1	10632	July 14. 1909	g 2 f	10.65	18 502
19 57 29.7	10702	July 10, 1909	j 4 i	11.41	18 529
19 58 29.8	10808	Sept. 8, 1909	g 4 f	10.65	18 558
1956 29.4	10843	Sept 29 1909	j 4 i	10.47	18 579
19 52 29.7	10895	Oct 8 1909	g 3 f	10.62	18 588
1956 29.8	10909	Oct 12 1909	j 2 i	11.41	18 592
1956 30.0	11001				
19 55 29.8	11016	Nov 6 1909	= g	10.71	18 617
19 54 29.9	11050	Nov 15, 1909	g 2 f	10.65	18 626
1956 29.0	11074	Nov 26, 1909	i 2 g	10.93	18 637
19 54 29.6	11096	Nov 30, 1909	i 4 g	10.79	18 641
20 01 29.5	11109	Dec 4, 1909	i 4 g	10.95	18 645
19 54 29.2	11686	May 29, 1910	i 6 g	10.87	18 821
19 57 29.3	11718	June 7, 1910	= g	10.71	18 830
19 54 29.3	11773	July 9, 1910	j 2 i	11.41	18 862
1956 28.2	11815	July 30, 1910	j 4 i	11.33	18 883
19 58 29.3	11828	Aug 2, 1910	= i	11.11	18 886
19 56 29.3	11940	Sept 20, 1910	= j	11.48	18 935
19 54 29.0	11996	Sept 22, 1910	j 5 i	11.30	18 937
19 58 29.9	11954	Sept. 23, 1910	↓		18 938
20.00 30.0	11869	Aug 20, 1910	f 2 e	10.87	18 904
19 54 28.9	11994	Oct 4. 1910	j	11.48	18 949



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1928phae.proj..923

S Vulpeculae $19^h42^m57^s +26°55'.7$

P = 67.5 8.4 – 9.8

Center	N	Date	Estimate		Jul. day old
$19^h54^m +30°.3$	AC 9804	Oct 12, 1908	= f	10.41	2 418 227
19 50 29.9	9960	Nov 27. 1908	j 2 i	11.41	18 273
19 53 29.5	10049	Dec 14. 1908	g 3 f	10.62	18 290
19 54 30.2	10575	May 20 1909	i 5 j	11.29	18 447
19 54 29.7	10589	June 25, 1909	= g	10.71	18 483
19 54 29.5	10597	June 28, 1909	= g	10.71	18 486
19 56 29.1	10632	July 14. 1909	g 2 f	10.65	18 502
19 57 29.7	10702	July 10, 1909	j 2 i	11.41	18 529
1958 29.8	10808	Sept. 8, 1909	g 2 f	10.65	18 558
1956 29.4	10843	Sept 29 1909	g 8 f	10.47	18 579
1952 29.7	10895	Oct 8 1909	✓		18 588
1956 29.8	10909	Oct 12 1909	j 2 i	11.41	18 592
1956 30.0	11001				
19 55 29.8	11016	Nov 6, 1909	= g	10.71	18 617
19 54 29.9	11050	Nov 15, 1909	g 2 f	10.65	18 626
1956 29.0	11074	Nov 26, 1909	i 2 g	11.03	18 637
1954 29.6	11096	Nov 30, 1909	i 8 g	10.79	18 641
20 01 29.5	11109	Dec 4, 1909	i 4 g	10.95	18 645
19 54 29.2	11686	May 29, 1910	i 6 g	10.87	18 821
19 57 29.3	11718	June 7, 1910	= g	10.71	18 830
19 54 29.3	11773	July 9, 1910	j 2 i	11.41	18 862
1956 28.2	11815	July 30, 1910	j 4 i	11.33	18 883
19 58 29.3	11828	Aug 2, 1910	= i	11.11	18 886
19 56 29.3	11940	Sept 20, 1910	= j	11.48	18 935
19 54 29.0	11946	Sept 22, 1910	j 5 i	11.30	18 937
19 58 29.9	11954	Sept. 23, 1910	✓		18 938
20.00 30.0	11869	Aug 20, 1910	f 2 e	10.87	18 904
19 54 28.9	11994	Oct 4, 1910	j	11.48	18 949

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1928phae.proj..92H

Center		N	Date	Estimate		Jul Day	
9^h56^m	+29.5	12406	June 29, 1911	j2i	11.41	19217	19
19 56	29.8	12455	July 19, 1911	g6f	10.53	237	20
19 56	29.6	12476	July 31, 1911	g2f	10.65	249	19
19 58	29.2	12492	Aug 14, 1911	i5g	10.91	263	19
20 00	30.0	12514	Aug 20, 1911	j&i	11.26	269	19
20 02	30.1	12554	Sept 12, 1911	j2i	11.41	292	19
19 56	30.0	12754	Nov 27, 1911	=g	10.81	368	20
19 56	29.3	13085	Apr 10, 1912	i8g	10.87	503	19
20 04	31.0	13195	July 3, 1912	i8g	10.79	587	20
20 05	31.0	13212	July 6, 1912	i8g	10.79	590	19
20 03	30.4	13246	Sept 22, 1912	j4i	11.37	668	19
20 02	30.2	13256	Sept 26, 1912	~		672	19
20 02	30.8	13281	Oct. 2, 1912	=j	11.48	678	19
20 05	30.7	13544	Dec. 3, 1912	j3i	11.38	740	20
19 58	29.8	14097	June 17, 1913	i5g	10.91	936	20
19 58	28.9	14180	July 15, 1913	K5j	11.73	964	19
19 59	30.0	14184	July 16 1913	=K	11.99	965	19
19 58	30.0	14195	July 21, 1913	j3i	11.38	970	19
19 58	29.5	14201	July 22, 1913	j4i	11.33	971	19
19 59	30.0	14247	Aug 8, 1913	—	V poor plate	988	20
19 58	29.5	14261	Aug 16, 1913	~	V.V " "	996	19
19 57	29.3	14291	Aug 24, 1913	i8g	10.79	20004	20
19 57	29.8	14299	Aug 25, 1913	i8g	10.79	5	20
19 56	30.0	14313	Aug 31, 1913	j3i	11.38	11	20
20 12	28.2	14321	Sept. 2, 1913	——	very poor	13	19
19 56	29.3	14351	Sept. 10, 1913	i5g	10.91	21	19
19 59	29.5	14401	Sept 26, 1913	g		37	20
19 58	29.6	14428	Oct 5, 1913	j5i	11.30	46	952
19 56	29.5	14499	Nov 3, 1913	i6g	10.87	75	19
19 57	30.6	14595	Nov 25, 1913	j2i	11.41	97	19

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1999phae.proj.: 923H

Center	N	Date	Estimate			Jul Day
1958 +29.7	14609	Dec 3, 1913	i2g	11.03		20105
20 01 29.5	15191	May 18, 1914	⌣			281
1956 29.4	15253	June 11, 1914	⌣	poor		295
1958 29.3	15422	Aug. 31, 1914	j2i	11.41		376
1952 28.8	15441	Sept. 8, 1914	K5j	11.73 ?	regions	384
1953 29.9	15448	Sept 9, 1914	K8j	11.58 ?		385
20 00 28.9	15482	Sept 15, 1914	=j	11.48		391
1956 28.9	15484	Sept 14, 1914	K8j	11.58		390
2016 29.9	15496	Sept 12, 1914	i8g	10.79		393
1956 29.8	15561	Oct. 2, 1914	i5g	10.91		408
1956 28.1	15595	Oct. 10, 1914	i8g	10.79		416
1958 28.2	15625	Oct. 21, 1914	⌣			427
1956 29.5	16641	Aug 11, 1915	⌣			721
20.00 30.0	16847	Oct 16, 1915	=k	11.99		787
20 01 29.9	17059	Dec 1, 1915	i5g	10.91		833
1958 29.3	17517	Apr 12, 1916	i8g	10.79		966
1956 30.3	17666	Jun 21, 1916	i5j	11.30		21036
1956 29.8	17759	Aug 4, 1916	⌣			80
1957 29.6	17761	Aug 7, 1916	i5g	10.91		83
20 01 30.2	17820	Aug 25, 1916	i5g	10.83		21104
1954 30.5	17963	Oct 3, 1916	j5i	11.30		21140
20.00 30.0	18026	Oct 17, 1916	i8g	10.79		21154
20.00 30.0	18302	Dec 14, 1916	i5g	10.91		21212
20 00 30.0	18361	Dec 29, 1916	g2f	10.65		27
1956 29.9	18614	Feb 28, 1917	=f	10.41		88
1958 29.9	18806	Apr 29, 1917	j5i	11.30		348
2000 30.0	18895	June 17, 1917	Kj	11.89		397
952 30.0	19019	Aug 8, 1917	⌣			449
1956 30.0	19027	Aug 12, 1917	=i	11.11		21453 ⌣
1959 30.0	15337	July 20, 1914	g2f	NJ (10.65)		20334 ⌣

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1928phae.proj..92H

Center		N	Date		Estimate		Jul. Day
20^{h}00^m	+30.0	19050	Aug 25, 1917	11.41	j2i	poor	21466
19 53	30.0	19230	Oct 2, 1917	10.37	f2e		504
19 56	30.5	19242	Oct 4, 1917	10.79	i8g		506
19 55	29.8	19279	Oct 14, 1917	10.65	g2f		516
20 00	30.0	19591	Dec 12, 1917	10.79	i8g		575 ✓
			⟷				
19 54	29.5	9896	Nov 12, 1908	11.84	K3j		18258
20 05	30.7	13223	Jul 15, 1912	10.71	=g	v. poor	19599
20 06	31.2	13226	Jul 19 1912	10.83	i7g		603
20 03	30.4	13319	Oct 8, 1912	11.48	=j		684
20 02	30.3	13357	Oct 18, 1912	11.79	K4j		694
20 02	30.3	13399	Oct 29, 1912	11.41	j2i		705
20 04	30.7	13427	Nov 3, 1912	10.79	i8g		710
19 58	30.0	14129	Jun 30, 1913		✓		949
19 58	30.0	15296	Jun 23, 1914		✓		20307 ✓
19 58	30.4	15313	Jul 4, 1914	11.11	=i	v. poor	318
19 58	30.0	15316	Jul 8, 1914		✓	v. poor	322
19 58	29.8	15391	Aug 23, 1914	11.74	R5j		368
19 56	30.0	15416	Aug 30, 1914	11.84	K3j		375
19 58	29.5	15512	Sept 20, 1914	10.37	f2e		396
19 59	29.9	15720	Nov 23, 1914	11.22	j7i		460 ✓
19 58	30.4	15814	Dec 3, 1914	10.71	=g	v. poor	470
19 56	29.0	16141	Febr 19, 1915	10.34	f4e	logged	548
20 00	29.0	16400	Apr 13, 1915	10.32	f5e		601
19 52	30.1	16648	Aug 13, 1915	11.48	=j		723 ✓
			⟷				
19 56	30.0	20219	June 19, 1918	g2f		10.65	21764
19 57	30.0	20343	Aug 3, 1918	=i		11.11	809 ✓
19 54	30.0	20383	Aug 18, 1918	j5i		11.29	824
19 55	29.5	20389	Aug 19, 1918	j5i		11.29	825

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Cluster		N	Date	Estimate		Jul Day
20 00	+30.0	20587	Oct 10, 1918.	✓		21877
19 56	30.8	21211	Feb 27, 1919	✓		22017
19 55	30.5	21330	Apr 2, 1919	✓	foggy.	057
19 55	30.4	21577	June 11, 1919	i5g	10.91	121
19 55	30.8	21552	Jun 22, 1919	j4i	11.33	132
20 00	30.0	21664	Aug 4, 1919	j5e	10.32	175 ✓
20 00	30.0	21697	Aug 15, 1919	✓	poor	186
20.00	30.0	21719	Aug 21, 1919	i		192
19 59	30.0	21915	Oct 18, 1919	g2f	10.65	250 ✓
20 00	30.0	22093	Dec 10, 1919	g5f	10.56	303
20 00	30.0	22132	Dec 20, 1919	g8f	10.47	313
20 00.	30.0	22605	Apr 18, 1920	✓	foggy	431
20 00.	30.0	22687	Jun 22, 1920	✓	VV poor	498
20 00	30.0	22800	Aug 8, 1920	✓	"	545 ✓
20 00	30.0	22816	Aug 20, 1920	✓		557
20 00	30.0	22931	Oct 3, 1920	i5g	10.91	607
20 00	30.0	22976	Oct 13, 1920	✓		617
20 00	30.0	23146	Dec 18, 1920	i5g	10.91	677
20 00	30.0	23201	Dec 29, 1920	✓		688 ✓
19 42	26.1	AM 3023	Sept 8/9 1904		milky way	
19 40	26.7	AM 5056	Aug 12/13 1907			
20 50	29.5	Ac 988	Sept 4 1900	j5i	11.29	15267 ✓
20 54	29.9	Bz 1170	Jan 24, 1901	✓	VV poor	409
20 52	29.5	1592	Jun 26, 1904	j2e	10.37	15562 ✓
20 52	30.0	1613	July 14, 1901	✓	VP	580
20 53	29.5	1639	Aug 4, 1901	✓	with edge	601
20 56	29.5	1663	Aug 18, 1901	✓	with edge	615
20 59	29.7	1695	Aug 29, 1901	✓	with edge	626

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1928phae.proj..922H

Center		N	Date	Estimate			Jul Day	
18 54	-30°.0	AC 21444	May 14, 1919	✓			22093 ✓	19
18 55	30.5	21490	May 31, 1919	✓			110	19
18 55	30.1	21613	July 20, 1919	✓			160	19
18 56	30.5	21619	July 23, 1919	✓			163	19
19 00	30.0	21774	Sept 4, 1919	k5j	11.74		206	19
18 48	29.1	22180	Jan 2, 1920	✓		vvp	326	19
18 40	30.0	22190	Jan 2, 1920	✓		vvp	326	19
19 00	30.0	22262	Jan 14, 1920	✓		vvp	338	19
19 00	30.0	22331	Jan 30, 1920	j5i	11.29		354	19
19 00	30.0	22490	March 6, 1920	i5g	10.91		390 ✓	19
19 00	30.0	22661	May 30, 1920	✓			475	19
19 00	30.0	22707	July 3, 1920	✓		vp	509	19
19 00	30.0	22732	July 13, 1920	✓		vp	570	19
19 00	30.0	22785	July 28, 1920	✓		vp	534 ✓	19
19 00	30.0	22851	Sept 3, 1920	i3g	10.99		581 ✓	19
19 00	30.0	23034	Nov 5, 1920	k8j	11.58		634 ✓	19
1901	30.0	23052	Nov 12, 1920	i8g	10.79		641 ✓	19
20 0	30	AC 12	Jun 30, 1898	g2f	10.65		14471	19
20 29	30.0	AC 13	Jun 30, 1898	g2f	10.65		14471	19
20 01	30.0	AC 21	July 20, 1898	✓		vp	491	19
19 58	32.5	AC 133	Dec 19, 1898	j5i	11.29		643	19
20 0	30.5	AC 326	Aug 23, 1899	✓		vvp	890	19
19 58	29.9	AC 418	Sept 5, 1899	✓		vvp	903	19
20 3	30.0	AC 425	Sept 13, 1899	j5i	11.38		911	19
19 56	29.6	AC 512	Nov 6, 1899	j3(g)i	11.38	MB	14965 ✓	19
19 55	29.5	AC 861	May 21, 1900	g2f	10.65		15161	19
19 57	29.6	AC 918	July 9, 1900	j7g(i)	11.21	MB	210	19
19 50	29.9	AC 1016	Sept 25, 1900	g2f	10.47		288	19
19 54	30.0	AC 1954	Nov 9, 1901	c5f	10.41		15693 ✓	19
19 58	31.1	2492	Apr 15, 1902	✓		vvp	858	19

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1928phae.proj.:625H

Center	N	Date	Estimate			Jul Day
19 54 +30.4	IC 2572	May 21, 1902	10.47	g8f	p	15891 ✓
19 56 29.9	IC 2635	June 19, 1902	11.18	j8(g)i	NN	920
19 56 30.0	2678	July 10, 1902	11.58	K8j		941
19 53 30.3	2738	Aug 12, 1902	10.62	g3f		974
19 54 30.3	2772	Aug 23, 1902	11.48	=j		985
19 57 29.8	2791	Aug 29, 1902	10.91	i5g		991
19 54 30.5	2838	Sept 14, 1902	11.89	K2j		16007
19 54 30.7	2844	Sept 15, 1902		2	p	6
19 54 29.3	2886	Oct 7, 1902	10.47	g8f		16030
19 58 29.9	2888	Oct 10, 1902	10.32	f5e		33
19 57 29.3	2895	Oct 12, 1902	10.32	f5e	p	35
19 54 29.7	2924	Oct 22, 1902	10.56	g5f		45
19 57 28.6	2978	Nov 7, 1902	11.29	j5(e)i	? ii	16061 ✓
19 54 29.5	3404	Mar 6, 1903	10.62	g3f		180
19 56 30.0	3571	Apr 29, 1903		2	vp	234
19 56 30.0	3594	May 6, 1903		—	p	241
19 54 30.0	3675	May 23, 1903	10.62	g3f		258
19 56 29.2	3730	June 23, 1903	11.29	j5i		289
19 54 30.5	3767	July 15, 1903	10.39	f1e		311
19 52 29.5	3804	Aug 7, 1903	11.48	=j		334
19 58 29.5	3844	Aug 18, 1903		2	vp	345
19 52 29.4	3893	Sept 2, 1903	11.29	j5i		360
19 54 29.5	3946	Sept 18, 1903	10.56	g5f	p	376
19 54 29.0	4004	Sept 29, 1903	10.95	i6g		387 ✓
19 52 30.3	4031	Oct 6, 1903	10.65	g2j	p	394 ✓
19 52 29.5	4149	Nov 1, 1903	11.58	K8j		420
19.9 29.6	4226	Nov 25, 1903	10.32	f5e		444
19 56 29.2	4243	Dec 1, 1903	10.99	(i8g)	? p	450 ✓
19 54 29.9	4439	Mar 12, 1904	11.84	K2j		552
19 53 29.6	4456	Mar 16, 1904	11.18	j5i		556 ✓

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Center		N	Date	Estimate		Jul Day	
19h54m	429°.2	Pc 4913	May 16, 1904	H7j	11.63	16627	19
19 58	29.7	4964	June 13, 1904	92f	10.65	645	19
19 56	30.5	4973	June 15, 1904	f7c	10.28	647	19
19 55	30.3	5033	July 2, 1904	(i6g)?	(10.87 i6g)	664	19
19 57	30.5	5072	July 18, 1904	~~(i7j)~~	j4c 11.38	680	19
19 53	30.6	5112	July 30, 1904	H8j	11.58	692 ✓	19
19 54	30.2	5117	July 31, 1904	H5j	11.73	693	20
19 54	29	5163	Aug 22, 1904	✓		715	19
19 54	29.5	5182	Aug 26, 1904	f6c	10.30	719	19
19 56	30.0	5235	Sept 7, 1904	i5j	11.29	731	19
19 56	30.5	5303	Sept 30, 1904	H8j	11.58	754 ✓	19
19 55	29.9	5330	Oct 4, 1904	i5g	10.91	758	19
19 58	29.5	5384	Oct 17, 1904	j5i	11.11	771	19
19 52	30.0	5396	Oct 20, 1904	j8i	11.18	774	19
19 56	29.9	5495	Nov 8, 1904	95f	10.56	793	19
19 58	29.6	5502	Nov 9, 1904	=g	10.71	794	19
19 53	30.3	5532	Nov 15, 1904	i6g	10.87	800	19
19 55	30.2	5649	Dec 2, 1904	j7i	11.21 v	817 ✓	19
19 53	30.3	6190	Mar 16, 1905	✓	vp	921 ✓	20
19 56	30.3	6341	May 1, 1905	H6j	11.68	967 ✓	19
20 00	30.3	6422	June 6, 1905	i8g	10.79	17003 ✓	19
19 57	30.5	6450	June 17, 1905	✓	vp	14	19
19 52	29.5	6550	July 26, 1905	e5d	10.06	53	19
19 54	29.5	6586	Aug 7, 1905	✓	vp	65	19
19 50	29.8	6615	Aug 21, 1905	j5i	11.29	79	19
19 54	29.3	6640	Aug 29, 1905	j3i	11.21	88	19
19 52	29.0	6685	Sept 13, 1905	=j	11.48 vp	102	19
19 53	29.9	6760	Oct 1, 1905	✓	vp	120	
19 54	29.3	6892	Oct 26, 1905	i3g	10.99	145 ✓	
19 55	29.5	7162	Jan 10, 1906	—	vp	17221	

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Center	N	Date	Estimate			Jul day
1958 +29.5	7476	Apr 16, 1906	—			17317
1952 29.7	7618	June 15, 1906	Ky;	11.79		377
1952 29.5	7669	July 17, 1906	f5e	10.32		409
1956 29.8	7733	Aug 19, 1906	j5i	11.29	p	442
1952 29.5	7788	Sept 5, 1906	i8g	10.79		459 ✓
1950 29.5	7795	Sept 6, 1906	i8g	10.79		460
2000 30.0	7868	Oct 2, 1906	✓		vvp	486
1955 30.2	7916	Oct 13, 1906	i5g	10.91		497
1954 29.5	7993	Nov 8, 1906	i2g	11.03		523
1952 30.0	8055	Nov 25, 1906	f5e	: 10.32	vp	540
1959 29.8	8078	Dec 2, 1906	e2d	:: 10.16		547
1956 29.7	8115	Dec 19, 1906	i3g	10.99		564 ✓
1952 28.5	8548	June 12, 1907	g2f	10.65		739
1958 29.8	8623	July 19, 1907	—		vp	776
1953 30.3	8668	Aug 9, 1907	—		vp	797
1958 29.6	8694	Aug 14, 1907	=g	10.71		802
1953 28.9	8716	Aug 22, 1907	✓		vvp	810 ✓
1953 29.9	8889	Oct 18, 1907	j7i	11.21		867 ✓
2000 35.7	8987	Nov 12, 1907	—		vvvp	892 ✓
1952 30.0	9528	Cl. T' June 8, 1908	=g	10.71	broken, mended	18101
1954 29.8	9536	June 10, 1908	✓			18103
1952 30.5	9618	July 9, 1908	=j	11.48		132
1954 30.8	9635	July 15, 1908	j5i	11.29		138
1953 30.1	9720	Aug 20, 1908	j7i	11.21		174
1953 30.1	9736	Sept 9, 1908	—		vp	194
1956 29.5	9778	Oct 3, 1908	g5f	10.47		218
1954 29.4	9798	Oct 7, 1908	f5e	10.32	o	18222 ✓

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1928phae.proj..92H

Center		N	Date	Estimate			Jul day
19h04m	+15°.0	NC10 (E4383)	June 23, 1898	✓		vp	14464 ✓
19.1	+15.0	94	Nov 1, 1898	i2g	11.03		595
18 59	15.0	297	Apr 21, 1899	j7c	11.21		766
19 00	15.0	346	June 9, 1899	g2f	10.65		815 ✓
19 00	15.0	378	Aug 6, 1899	f3e	10.36	vp	873
19 00	15.0	809	Apr 9, 1900	=K	11.99	vp	15719
19 00	15.0	882	June 11, 1900	K1j	11.94		182 ✓
18 50	14.8	961	Aug 15, 1900	—		vvp	247
18 53	14.8	1492	May 13, 1901	—		"	518
18 58	14.5	1536	June 13, 1901	g5f	10.56		549 ✓
18 55	13.9	1660	Aug 16, 1901	—			613
18 54	14.0	1688	Aug 28, 1901	—		vp	625
18 53	14.8	1717	Sept 6, 1901	—			634
18 57	14.5	1723	Sept 7, 1901	✓		✓p	635
18 53	14.5	1814	Oct 1, 1901	=g	10.71	vvp	659
19 00	15.0	1849	Oct 5, 1901	✓		p	666
18 54	14.5	1862	Oct 15, 1901	j5i	11.29		673
18 56	15.0	1926	Oct 30, 1901	g4f	10.50		688 ✓
18 58	14.9	2029	Dec 1, 1901	j5i	11.29		790
19 9	18.9	2041	Dec 4, 1901	=g	: 10.71	vvp	723
19 9	18.8	2052	Dec 5, 1901	j5i	11.29		724
19 10	18.7	2061	Dec 6, 1901	j2i	: 11.81		725
19 8	19.0	2069	Dec 10, 1901	=K	11.99	vvp	729 ✓
19 9	18.8	2120	Jan 9, 1902	✓		vvvp	759
19 10	18.6	2186	Jan 13, 1902	g8f	: 10.47	vvp	763
19 6	18.9	2192	Jan 15, 1902	i8g	: 10.79		765
19 6	18.9	2193	Jan 16, 1902	✓		vvvp	766
19 5	18.9	2198	Jan 17, 1902	✓		"	767
19 9	19.0	2209	Jan 18, 1902	f8e	: 10.31		768
19 8	18.8	2217	Jan 19, 1902	f5e	10.81		769 ✓

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Center	N	Date	Estimate		Jul Day
19 9 +18.8	2240	Jan 24, 1902	gsf	10.56	15774
19 7 18.8	2254	Jan 28, 1902	—		vvp 777
19 6 18.9	2267	Feb 3, 1902	i7g	10.83	784
19 8 18.7	2270	Feb 4, 1902	i2g	10.87	785
19 10 18.7	2289	Feb 6, 1902	i5g	10.91	787
19 6 19.4	2299	Feb 7, 1902	″		vvp 788
19 8 19.0	2302	Feb 8, 1902	″		vvp 789
19 6 19.1	2305	Feb 9, 1902	isg	10.99	790
19 5 19.0	2316	Feb 10, 1902	j5i :	11.29	vp 791
19 10 18.9	2341	Feb 15, 1902	j2i	11.41	796
19 7 19.0	2350	Feb 19, 1902	″		vvp 800
19 6 18.7	2353	Feb 20, 1902	″		p 801
19 8 18.8	2354	Feb 20, 1902	″		801
19 6 18.8	2355	Feb 20, 1902	j3i	11.38	801
19 6 18.8	2356	Feb 20, 1902	j2i	11.41	801 ✓
19 6 19.1	2386	Mar 6, 1902	″ :	11.48	815
19 9 19.2	2438	Mar 26, 1902	—		835 ✓
18 52 -14.3	2526	May 5, 1902	1sf	11.73	875
18 53 14.9	2555	May 15, 1902	j2i	11.21	885
18 52 14.8	2600	June 1, 1902	gsf	10.47	902 ✓
18 54 15.1	2683	July 11, 1902	″	p	942
19 6 15.3	2706	July 29, 1902	″	vp	960
19 04 18.5	2707	July 29, 1902	″		960
18 53 14.9	2709	July 29, 1902	″		961 ✓
18 54 15.0	2729	Aug 7, 1902	″		969
18 54 15.1	2770	Aug 23, 1902	″		985
19 9 19.5	2774	Aug 25, 1902	″	marked	987
19 10 19.0	2776	Aug 25, 1902	″	11	987
18 54 15.3	2783	Aug 27, 1902	(1sf :)	11.29	989 ✓
18 53 15.2	2822	Sept 8, 1902	j5i :		16001 ✓

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1928phae.proj..92H

Center		N	Date	Estimate		Jul Day
$18^h 58^m$	+15°.0	2854	Oct 4, 1902	i4g	10.95	1602.7
19 9	19.0	2874	Oct 8, 1902	g3f	10.62	31
18 53	15.3	2906	Oct 17, 1902	g5f	10.56	40
19 12	19.0	2962	Nov 1, 1902	=g	10.81	55
18 53	14.8	2985	Nov 8, 1902	j5i	11.29	62
19 8	19.5	3056	Dec 8, 1902	i8g	10.79	92
19 6	19.3	3057	Dec 8, 1902	"	"	92
18 53	15.2	3261	Feb 7, 1903	—	"	153
18 52	15.0	3475	Apr 6, 1903	j5i	11.29	211
18 53	15.2	3564	Apr 28, 1903	g5f	10.56	233
18 57	14.6	3667	May 22, 1903	i3g	10.99	257
18 52	14.1	3683	May 25, 1903	j5i	11.29	260
18 55	14.3	3713	June 1, 1903	"		267
18 54	15.0	3826	May 14, 1903	=i	11.11	341
18 59	15.0	3833	May 15, 1903	"		342
18 54	14.9	3884	Sept 3, 1903	"	"	361
18 52	14.8	3894	Sept 6, 1903	j4i	11.33	364
18 54	14.0	3901	Sept 7, 1903	j8i	11.18	365
18 54	14.0	3923	Sept 12, 1903	g3f	10.62	370
18 56	14.5	3987	Sept 25, 1903	g5f	10.56	383
18 53	14.8	4028	Oct 3, 1903	"		391
18 54	14.8	4037	Oct 14, 1903	K8j	11.58	402
18 53	14.0	4065	Oct 20, 1903	" (=K?)	11.99	408
18 58	15.0	4109	Oct 27, 1903	K7j	11.63	415
18 55	14.2	4124	Oct 29, 1903	K7j	11.63	417
18 52	15.0	4156	Nov 3, 1903	=K	" 11.99	422
18 59	15.1	4748	Mar 15, 1904	j5i	11.18	555
18 54	14.5	4805	Apr 4, 1904	g2f	10.65	575
18 53	14.2	4906	May 2, 1904	"	"	603
18 58	15.0	4954	June 11, 1904	"		643

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1998phae.proj.: 0420H

Aster	N	Date	Estimate			Jul Day
18h54m +15.0	5045	July 9, 1904	j5r	11.29		671
18 55 14.8	5069	July 17, 1904	″			679 ✓
18 56 15.5	5107	July 29, 1904	j6i	11.26		691
18 54 15.0	5201	Aug 29, 1904	g3f	10.62		722
18 53 14.8	5212	Aug 31, 1904	g4f	10.59		724
18 58 15.2	5221	Sept 4, 1904	=g	10.81		728
18 55 14.6	5234	Sept 7, 1904	″			731
18 55 15.1	5244	Sept 15, 1904	i2g	10.99		739
18 53 15.2	5336	Oct 6, 1904	j8i	11.18		760
18 55 15.2	5392	Oct 18, 1904	j5r	11.29		772
18 54 15.2	5406	Oct 22, 1904	″		p	776
18 58 14.8	5424	Nov 2, 1904	g2f	10.65		787
18 54 15.0	5483	Nov 5, 1904	g7f	10.50		790
18 53 14.8	5562	Nov 19 1904	g5f ::	10.56	vp	804 ✓
18 52 15.0	6022	Feb 10, 1905	″		vvp	894
18 54 14.8	6087	Feb 28, 1905	=j :	11.48	p	905
18 54 16.0	6181	Mar 15, 1905	″		vvp	920
18 57 15.2	6231	Mar 29, 1905	g2f :	10.65	p	934
18 53 14.9	6333	Apr 30, 1905	R7j ::	11.63		966
18 56 15.0	6364	May 8, 1905	j3i	11.38		974
18 55 15.4	6432	June 9, 1905	″			17006 ✓
18 53 15.0	6454	June 24, 1905	″		mean	21
18 53 14.8	6483	July 3, 1905	″		..	30
18 54 15.0	6533	July 21, 1905	=g : :	10.81	mean	48
18 53 15.2	6586	July 27, 1905	g2f	10.65		54
1852 15.0	6590	Aug 10, 1905	i7g	10.83		68
18 53 14.9	6650	Sept 10, 1905	″		p	99
18 55 14.0	6736	Sept 26, 1905	u3g	10.99		115
18 54 15.0	6809	Nov 9 1905	j7i	11.21		159
18 53 14.8	7058	Nov 27, 1905	j5r	11.29		177 ✓

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Cenber		N	Date	Estimate		Jun Day
18h53m	+16°.4	7080	Dec 5, 1905	g3f	10.62	17185
18 55	14.5	7606	Jun 12, 1906	j5i	11.29	374
18 55	14.4	7620	Jun 15, 1906			377
18 54	15.0	7668	July 16, 1906			408
18 54	15.2	7680	July 25, 1906	i8g	10.79	417
18 56	15.0	7695	July 12, 1906	=j	11.48	435
18 55	14.3	7715	July 16, 1906	j3i	11.38	439
19 00	15.0	7727	July 18, 1906	j4i:	11.33	441
19 00	15.0	7780	July 19, 1906	j1i:	11.44	442
18 53	15.2	7767	Sept 1, 1906	i2g	11.03	455
18 52	15.5	7794	Sept 6, 1906	i2g	11.03	460
18 55	15.	7950	Oct 29, 1906	g3f	10.62	573
18 54	14.3	8517	May 22, 1907		vp edge	718
18 54	14.0	8601	July 9, 1907			766
18 54	15.2	8630	July 26, 1907	=j?	vp 11.48	783
18 53	15.0	8649	July 2, 1907			790
18 53	14.3	8652	July 4, 1907			792
18 54	14.5	8691	July 14, 1907	g2f	10.65	802
18 53	15.0	8722	July 26, 1907	g7f	10.50	814
18 54	14.9	8835	Oct 7, 1907			856
18 54	14.5	8875	Oct 16, 1907	(j1e)		865
18 56	15.1	8904	Oct 22, 1907	g1f:	10.65	871
18 52	15.0	8919	Oct 24, 1907	i4e	10.84	873
18 54	15.5	8981	Nov 2, 1907		vp	887
18 55	14.0	9002	Nov 16, 1907		vp	896
18 56	15.2	9020	Nov 22, 1907	Kej	11.89	907
18 52	14.7	9508	Jun 2, 1908	i8g:	10.79	1809 5
18 54	15.0	9516	Jun 5, 1908			98
18 55	15.2	9612	July 8, 1908	=j	11.48	131
18 53	15.3	9650	July 22, 1908			150

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Center	N	Date	Estimate		Jul Day
18h54m +15.5°	9680	Aug 24, 1908	✓		18 178
18 56 15.2	9753	Sept 26, 1908	✓	Vp	211
18 54 15.2	9769	Oct 2, 1908	=f	10.41	217
1900 15.0	9820	Oct 14, 1908	=g	10.81	229
18 52 14.6	9838	Oct 21, 1908	ig	10.95	236
18 52 15.0	9875	Nov 5, 1908	ji	11.41	251
18 54 15.7	9895	Nov 12, 1908	ji	11.33	258
18 53 15.5	9905	Nov 13, 1908	✓		259
18 52 15.5	9919	Nov 16, 1908	✓		262
18 54 15.0	10304	Mar 11, 1909	gj	10.65	377 ✓
18 53 14.1	10569	June 16, 1909	✓	p	474
18 54 15.0	10621	July 7, 1909	=g?	10.81 vp	495
18 54 15.3	10643	July 19, 1909	ig	10.99	507
18 56 15.0	10650	July 21, 1909	✓	vp	509
18 54 15.0	10695	July 28, 1909	✓		576
18 56 15.0	10702	Aug 13, 1909	✓		532
18 57 15.0	10736	Aug 21, 1909	✓	vp	540
18 54 14.8	10794	Sept 6, 1909	=g	10.81	556
18 54 14.9	10886	Sept 20, 1909	✓		570
18 55 14.8	10895	Oct 7, 1909	✓		587
18 56 14.8	10908	Oct 12, 1909	✓		592
18 55 14.9	10943	Oct 19, 1909	Rej	11.58	599
18 54 15.1	11028	Nov 9, 1909	gj	10.62	18620
18 56 14.6	11521	Mar 21, 1910	+gj	10.65	752
18 58 14.6	11541	Mar 28, 1910	=j	10.41	759
18 56 14.2	11688	May 31, 1910	✓	p	823
18 52 14.5	11717	June 7, 1910	✓		830
18 54 14.5	11723	June 19, 1910	gj	10.89	842
18 54 14.8	11737	June 28, 1910	ig	10.99	857
18 56 14.0	11742	July 29, 1910	jg	11.29	852

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Center		N	Date	Estimate		Jul Day
18 58m	13°.6	11753	July 5, 1910	✓		18 858
18 59	14.1	11767	July 8, 1910	✓	yp	861
58	14.0	11772	July 9, 1910	✓		862
57	14.0	11787	July 14, 1910	✓	p	867
54	13.9	11834	July 5, 1910	✓		889
54	14.0	11840	July 6, 1910	✓		890
54	14.2	11868	July 20, 1910	gzj	10.65	904
55	14.2	11887	July 29, 1910	✓		913
55	14.3	11925	Sept 14, 1910	✓		929
59	14.2	11939	Sept 20, 1910	jic	11.44	18 935
58	14.8	12385	May 27, 1911	i5g	10.91	1 9184
55	14.2	12403	June 8, 1911	j8i	11.18.	196
57	14.2	12422	July 3, 1911	✓	vp	221
56	14.8	12438	July 8, 1911	i5g	10.91 p	226
58	15.0	12450	July 8, 1911	=g : :	10.81 vvp	236
58	14.8	12470	July 26, 911	gzj : :	1065 vvp	244
54	14.2	12490	July 14, 1911	=g : :	10.81 vvp	263
56	14.3	12507	July 19, 1911	k5j : :	11.73	268
55	14.0	12516	July 21, 1911	✓		270
1901	14.8	12537	Sept 2, 1911	=k : :	11.99	282
00	14.2	12567	Sept 16, 1911	✓		296
1858	14.5	12597	Sept 30, 1911	i9g	10.75	310
1900	14.8	12620	Oct 9, 1911	i2g	11.03	319
1856	14.3	13039	March 29, 1912	✓		491
1902	15.8	13165	June 8, 1912	k2j	11.63	562
1904	16.0	13205	July 5, 1912	g4f	10.59	589
1905	16.1	13211	July 6, 1912	g3f	10.62	590
1902	15.9	13259	Sept 22, 1912	k5j	11.73	673
1902	15.6	13273	Sept 30, 1912	j1c	11.44	676
1902	16.5	13332	Oct 15, 1912	✓		691

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Center	N	Date	Estimate		Jul. Day
19h04m+16.5	13370	Oct 20, 1912	K7j	11.63	19696
18 54 15.0	14071	June 9, 1913	g2f	10.65	928
18 58 14.9	14085	June 12, 1913	g3f	10.62	931
18 58 14.5	14092	June 14, 1913	i6g	10.87	933
18 56 15.3	14124	June 29, 1913	i4g	11.03	948
56 15.3	14155	July 8, 1913	〃		957
56 15.4	14166	July 11, 1913	j4i	10.87	960
58 15.4	14200	July 22, 1913	j4i	11.33	971
58 14.5	14214	July 26, 1913	j5i	11.29	975
1902 13.7	14220	July 27, 1913	〃		976
18 58 15.1	14238	Aug 3, 1913	〃		983
58 15.0	14266	Aug 19, 1913	f2e	10.37	999
59 15.2	14290	Aug 24, 1913	g6f	10.53	20004
57 14.4	14298	Aug 25, 1913	g1f	10.68	20005
55 15.2	14312	Aug 31, 1913	i5g	10.91	20011
59 15.0	14334	Sept 6, 1913	i2g	11.03	17
53 15.9	14357	Sept 13, 1913	〃	2p	24
54 15.0	14381	Sept 16, 1913	〃		27
57 15.2	14464	Oct 27, 1913	g4f	10.59	68
58 14.8	15152	May 1, 1914	〃		254
56 15.0	15167	May 9, 1914	>g::	10.71 vvs	262
1900 15.2	15212	May 23, 1914	〃		276
18 58 15.2	15228	June 1, 1914	i5g	10.91	285
58 14.2	15274	June 17, 1914	g3i	11.38	301
1900 15.8	15284	June 22, 1914	〃		306
18 54 14.7	15303	June 25, 1914	K4j:	11.79	309
18 58 14.7	15309	July 3, 1914	f:::	11.48	317
18 56 14.5	15331	July 19, 1914	g6f	10.53	333
59 15.0	15342	July 21, 1914	g1f	10.50	335
1900 14.8	15354	July 24, 1914	g8f	10.47	340

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1928phae.proj..92H

Center		N	Date		Estimate	Jul. Day
1902m	+15.5	15365	July 13, 1914		~	20358
18 58	14.5	15390	July 23	j8i	11.18	368
18 59	15.5	15408	" 26.	j5i	11.29	381
57	15.3	15439	Sept 7	j2i	11.41	383
55	14.1	15447	Sept 9	j3i	11.38	385
57	15.0	15451	Sept 10	j4i	11.33	386
58	14.3	15466	Sept 13	~	this pair logged	389
59	15.0	15481	Sept. 15	i2g	11.03	391
1902	14.9	15489	Sept 16	i5g	10.91	392
1900	15.0	15505	Sept 18	g4f	10.59	394
1900	15.3	15517	Sept 21	g3f	10.62	397
18 57	14.8	15525	Sept 22	visible but	faint comp. lines	logged
18 56	15.3	15539	Sept 27	=f	10.41	403
18 58	14.8	15552	Oct 1	g8f:	logged	10.47 407
18 56	15.4	15560	Oct 2	g8f:	"	10.47 408
18 55	15.3	15568	Oct 3	f3e:	"	10.36 409
18 56	15.3	15596	Oct 11	g2f		10.65 417
57	15.3	15604	Oct 12	g4f		10.59 418
56	13.5	16355	Mar 30, 1915	i3g		10.99 587
1900	14.4	16377	Apr 7	~		nps logged 595
18 56	14.8	16395	Apr 12	g2f:		10.65 600
56	14.3	16633	Aug 10, 1915	—		720
54	14.8	16657	Aug 16	e2i:		11.11 726
57	15.0	16667	Oct 22	i3g		10.99 793
55	14.8	17053	Dec 1	i8g		10.79 833
1901	15.0	17492	Apr 6, 1916	~		nps 960
18 55	15.5	17665	Jun 20	~		21035
55	14.1	17771	Aug 12	~		21088
58	15.5	17886	Aug 31	j8i		11.18 107
18 59	13.7	17981	Oct 7	i7g:		10.83 144

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1929phae.proj..92H

Center		N	Date	Estimate			Jul Day
19[h]00[m]	+15°.0	18801	Dec 14, 1916	i7g ::	10.83	vvp	21212
"	"	18580	Feb 8, 1917	"		vvp	268
"	"	18753	Apr 3, 1917	"		"	322
"	"	18887	Jun 4, 1917	"			384
1854	15.5	19016	Aug 8, 1917	=g ::	10.71		449
1856	15.2	19031	Aug 18, 1917	"			459
53	15.8	19064	Aug 20, 1917	"			468
1854	15.4	19209	Oct 2, 1917	g7f	10.50		504
1857	15.3	19341	Dec 3, 1917	g8f	10.47		566
59	14.5	19840	Feb 17, 1918	"		vvp	642
1856	15.5	20215	Jun 18, 1918	g7f	10.50		763
56	15.0	20334	Aug 1, 1918	"			807
54	15.5	20360	Aug 13, 1918	"		vvp	819
54	14.8	20388	Aug 19, 1918	g2f :	10.65		825
54	15.0	20560	Oct 3, 1918	"			870
55	15.8	21139	Feb 12, 1919	i5r	11.29		22002
57	15.3	21332	Apr 7, 1919	i8g	10.79		56
54	14.8	21514	Jun 10, 1919	g3f	10.62		120
53	15.2	21516	Jn 11	=g	10.81		121
53	15.5	21663	Aug 4, 1919	"			175
54	15.0	21724	Aug 22	"			193
1900	15.3	21868	Oct 6, 1919	g7f	10.50		238
1900	15.0	22372	Feb 9, 1920	"		vp	364
00	15.0	22677	Jun 14, 1920	"			490
00	15.0	22959	Oct 9, 1920	i2g	11.03		607
00	15.0	22985	Oct 15, 1920	"			613
00	15.0	23145	Dec 18, 1920	"		vvp	677

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1928phae.proj..923H

Center		N.	Date	Estimate		First Day
18 h 58 m	+17.° 8	AM 53	Aug 3, 1899	g2f	10.65	14870
19 00	17.4	102	Aug 21	g3 1 :	10.62	888
18 47	14.3	121	Aug 26	i5g	10.91	893
19 06	17.5	199	Oct 10	i8g	10.79	938
19 02	17.3	247	Oct 26	1	vp	954
19 01	20.7	570	Jun 25 — 1900	—	—	15196
19 02	20.9	547	July 24 1900	= f	10.41	225
18 59	21.4	563	July 26	f2e	10.37	227
19 00	21.4	599	Aug 30	Kg	11.89	262
18 59	21.8	657	Sept 15	g8f	: 10.47	278
19 02	15.7	861	Jun 20, 1901	g8f	10.47	556
18 58	15.7	870	Jun 21, 1901	= f	10.41	557
18 56	16	881	Jun 24, 1901	g8f	10.47	560
18 59	16.1	957	Aug 3	1	vp	600
19 00	15.9	989	Aug 12	j3i	11.38	609
19 00	15.5	1000	Aug 21	g8f :	10.47	618
19 02	15.7	1088	Oct 4	1		662
18 57	15.8	1202	Apr 14, 1902	2		854
18 59	15.5	1215	Apr 28	j5i	11.29	868
18 59	15.9	1312	Jun 7	i6g	10.87	908
18 58	14.7	1344	Jun 12	i6g	10.95	913
18 58	15.5	1354	Jun 13	g8f	10.68	914
18 59	15.5	1385	Jun 24	j8i	11.18	925
18 58	15.1	1493	Aug 9	g2f	10.65	971
18 59	8.8	1561	Sept 23	j5i :	11.29 on the edge	16016
18 58	15.4	1623	Oct 9	= g	10.81	32
19 02	15.1	1691	Oct 11	g8f	10.56	84
18 58	14.8	1876	Apr 21, 1903	j9i	11.15	226
58	14.0	1888	Apr 25	—		230
19 02	15.0	1992	Jun 2	—	vp on the edge	268

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1929phae.proj.:023H

Center	N	Date	Estimate		Jul Day
1900	+14.8	2035 June 15, 1903	j5i	11.29	16281
"	14.5	2062 Jun 22, "			288
"	15.0	2185 Aug 11 "	j2i	11.41	338
1903	14.5	2201 Aug 13	j5i	11.29	340
1858	14.8	2584 Apr 12, 1904	g8j	10.56	583
1858	14.5	2662 May 19, 1904	j2i	11.41	620
1857	15.2	2670 May 23	=j	11.48	624
1858	14.8	2703 June 3	k9j	11.53	635
"	15.2	2778 June 23	g8j	10.56	655
"	14.8	2826 July 7	=i	11.11	669
1857	15.2	2857 July 21	j3i	11.38	683
1858	15.0	3091 Sept 30	=j	11.48	754
1858	14.8	3108 Oct 4 1904			758
1901	15.4	3149 Oct 26, 1904	g8j	10.47	780
1900	13.8	3456 Apr 12, 1905	k5j	11.73	948
1859	13.8	3485 Apr 28, 1905	k9j	11.94	963
1900	13.5	3525 May 11, 1905	j2i	11.14	977
1859	13.5	3572 June 2	j1i	10.39	999
1856	14.0	3632 June 13	g2j	10.65	17010
1856	14.8	3648 Jun 21	j8i	11.18	17018
"	14.3	3712 July 11	j4i	11.33	38
1902	14.1	3757 July 27	g4j	10.59	54
1900	14.5	3753 July 29	g3j	10.62	56
1858	14.0	3763 Aug 8	g8j	10.53	66
1858	14.5	3776 Aug 10	g6j	10.53	68
1900	14.5	3800 Aug 18	i9g	10.75	76
1859	8.5	3840 Sept 1	j8i	: 11.18 on the edge	90
1900	13.5	3897 Sept 19	k8j	11.58	108
1855	8.8	3905 Sept 20/21	j5i	: 11.29 on the edge	109
1857	7.8	3910 Sept 22	j5i	: 11.29 "	111

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1928phae.proj..922H

Center		N	Date	Estimate		Jul Day	
18 56ª	+8.1	3912	Sept 25-28 1905	i9g	114	10.75	
58	14.0	3952	Oct 16	g7 1	17 135	10.50	
59	14.5	4165	Apr 18, 1906	i2g	17 319	11.03	
19 01	14.1	4256	May 25	j8i	17 356	11.18	
18 54	14.5	4295	June 12	j3i	374	11.38	
18 58	13.5	4332	June 16	i	378		
18 59	13.5	4344	June 23	=j:	385	11.48	
55	13.5	4355	Jun 29	g2f	391	10.65	
58	13.5	4411	July 17	=g	Drain	409	10.81
57	7.8	4428	July 23	i	on the edge vy		415
58	13.5	4432	July 24	i5g	10.91		416
59	8.8	4438	July 25	=g:	10.71 on the edge		417
58	14.0	4456	Aug 6	i8g	10.79		429
59	14.6	4479	Aug 9	j5i:	11.29		432
19 00	13.2	4606	Oct 6	i4g	10.95		490
19 01	14.0	4528	Aug 24	j1i	11.41		447
18 57	13.8	4861	May 23 1907	j6i	11.26		719
58	13.9	4889	June 1	j5i	11.29		728
19 00	13.8	4981	July 3	i3g	10.99		760
18 56	13.7	5040	Aug 4	j1i	11.44		792
59	14.1	5098	Aug 27	=f	10.41		815
58	14.0	5110	Aug 31	g5f	10.56		819
56	14.3	5115	Sept 1 1907	g2f	10.65		820
58	14.9	5362	Apr 4. 1908	i5g	10.91	18	036
58	14	5538	June 6	i5g	10.91		99
59	15.0	5563	Jun 16	j6i	10.26		109
58	14.0	5588	Jun 21	j3i	11.38		114
19 00	8.6	5613	June 29		Sky		122
54	15.0	5652	July 9	j5i	11.29		132
56	15.0	5713	Aug 2, 1908	g9f	10.46		156

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Center	N	Date	Estimate		Jul Day
$18^h 56^m$ +15.1	5753	Aug 17, 1908	2		18171
55 14.2	5799	Sept 6	Rgj :	11.58	191
58 14.2	5830	Sept 16	=j : :	11.48	201
1902 14.9	6031	Apr 9 1909	=k :	11.99	406
06 14.5	6140	May 16	ic4g :	10.95	443
05 14.4	6191	May 30	j'4c :	11.33	457
06 14.5	6200	June 8	Rgj	11.58	466
06 15.5	6224	June 13	Rkj	11.63	471
06 15.0	6245	June 18	j'4c	11.33	476
03 14.6	6280	June 23	i6g	10.87	481
59 14.2	6294	June 26	g4 :	10.68	484
1903 14.3	6321	July 7 1909	g4	10.68	495
02 14.6	6412	July 25	i5g	10.91	513
02 14.1	6433	Aug 4	j'4c	11.33	523
00 15.0	6455	Aug 12	Rgj	11.58	531
02 14.4	6570	Aug 24	j'2c	11.41	541
01 14.1	6681	Sept 30	j'7c	11.21	580
00 15.1	6682	Oct 3	j'8c	11.18	583
04 14.2	6944	May 28 1910	i8g	10.79	820
02 14.3	6963	May 31, 1910	g3	10.62	823
02 14.0	6998	June 5, 1910	g2 :	10.65	828
03 14.4	7004	Jun 7	g5	10.56	830
03 14.7	7120	July 12	—	4p	865
00 14.5	7148	July 25	Rgj	11.53	878
02 14.3	7196	Aug 8	g1	10.68	892
02 14.8	7205	Aug 13	g2	10.65	897
00 14.5	7218	Aug 24	i9g	10.75	908
01 14.2	7233	Aug 29	i2g	11.03	913
06 14.1	7246	Sept 1	—		916
858 14.3	7301	Sept 21	—		936

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1928phae.proj..923H

	Center		N	Date	Estimate		Jul Day
19	06	+14.5	7615	July 24, 1911	g8j :	10.47	19243
	02	15.2	7661	Aug 5	i8g	10.79	254
	02	14.1	7697	Aug 19	—		268
18	59	14.3	7699	Aug 24	—		273
19	01	13.8	7735	Aug 29	—		278
	03	15.0	7774	Sept 18	—		298
	04	14.6	7827	Sept 24	g6j :	10.53	304
	04	14.8	7854	Oct 9	g7	10.65	319
	01	13.8	7894	Oct 18	—		328
~~18~~	~~58~~	~~14.3~~	~~7901~~	~~Sept 21~~	—		
19	02	13.8	8159	May 8, 1912	—	9p	531
	03	14.3	8259	May 25	j3i :	11.38 p	548
18	58	13.0	8308	June 8, 1912	Kj :	11.94	562
19	00	13.7	8337	June 13	j8i :	11.18	567
	00	14.1	8374	June 21	g7	10.65	575
	00	13.8	8418	July 8	i4g	10.95	592
	03	13.0	8433	July 10	—		594
	00	13.2	8495	July 20	i1g	11.07	604
	00	15.4	8523	Aug 2, 1912	K8j	11.58	617
	00	14.1	8544	Aug 15, 1912	—		630
	00	13.9	8582	Aug 31	g5	10.47	646
18	59	14.0	8604	Sept 15	=g :	10.81	657
	59	14.0	8636	Sept 13	—		659
	55	14.1	8660	Sept 21	=i :	11.11	667
19	00	15.2	8875	May 6, 1913	—		1899
	00	15.0	8915	May 15	j8i	11.18	903
	04	14.8	8918	May 17	—		905
	08	14.1	8954	May 26	i8g	10.79	914
19	00	14.0	9003	June 5	g7 :	10.68	924
	01	14.2	9069	June 12	=g	10.71	931

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1928phae.proj..923H

Cenber	N	Date	Estimate	Jul	Day
1902 +13.8	9100	June 24, 1913	=i ::	11.11	943
02 15.0	9109	Jun 25	ji :	11.41	944
04 15.0	932	Jun 28	— :		947
02 14.1	9194	July 9	—		958
0 13.9	9286	July 31	—		980
00 14.5	9312	Aug 6	—		986
1901 13.8	9320	Aug 7	=g ::	10.81	987
00 15.0	9397	Sept 3	—		
01 13.4	9457	Sept 10	—		
02 14.0	9457	Sept 17	—		
1857 15.3	9486	Sept 24	—		
1901 14.2	9555	Oct 6	=j ::	11.48	20047
03 14.5	9589	Oct 31	—		
60 15.0	10009	July 31, 1914	i6g	10.87	20345
1858 15.2	10015	Aug 1, 1914	g21	10.65	346
56 15.8	10743	July 2, 1915	g8f	10.47	681
57 14.5	10798	Jul 13	=g ::	10.71	692
58 15.5	10834	July 17	i8g ::	10.79	696
58 17.0	11103	Sept 8	gif	10.68	749
55 15.5	11136	Sep 12	g21	10.68	753
1900 16.8	11277	Sep 28	i 19	11.07	769
1900 14.5	11831	May 27, 1916	=g	10.81	21011
1888 15.0	11877	Jun 2	=g :	10.81	17
58 14.9	11895	Jun 4	—		19
11 14.3	12242	July 22	ki :	11.94	67
11 14.3	12247	July 23	=i :	11.48	68
57 14.3	12272	July 26	ji :	11.21	71
58 13.8	12277	July 27	i7g :	11.07	72

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1928phae.proj..92H

Center		N	Date	Estimate		Jul Day
19h 49m	+11.8	AC 7823	Sept 18, 1906	= g :	10.71	17472
46	+10.0	8797	Sept 26, 1907	= i ::	11.11	845
41	10.2	8853	Oct 10, 1907	"		859
42	9.8	8868	Oct 15	"		
56	+16.0	16268	Mar 14, 1915	j 5i	11.29	20571
57	14.3	16321	Mar 24	R6 j	11.58	581
55	15.4 AC	16456	May 11	i 3 g	10.99	AC 629
57	15.4 AC	16558	July 4	—		683
56	14.3 AC	16597	July 17	i 5 g	10.91	696
57	15.0 AC	16696	Sept 2	g 2 e	10.37	743
20 02	14.9	16983	Nov 13	g 7 1	10.50	813
19 54	14.8	17407	March 16, 1916	= i ::	11.11	939
52	15.0	17631	May 25	i 8 g	10.79	21009
56	15.0	17711	July 5, 1916	j 3 i ::	11.38	050
55	14.8	17859	Sept 16	j 5 i	11.29	123
58	16.0	18137	Nov 8, 1916	—	forged	yo
20 00	15.0	18660	Mar 13, 1917	g 8 1	10.47	301
00	15.0	18951	July 15, 1917	g 2 1	10.65	425
19 54	15.8	19039	Aug 19	j 5 i	11.38	460
4	15.0	19145	Sept 16	g 4 1	10.59	488
59	15.0	19180	Sept 22	g 5 1	10.56	494
59	14.6	19388	Nov 4	R 2 j	11.89	537
58	15.5	19469	Nov 24	i 7 g	10.83	553
55	14.5	19944	March 18, 1918		forged	
58	15.0	20076	Apr 26	g 5 1	10.56	710
56	15.2	20131	May 15	j 7 i	11.33	729
57	15.3	20245	July 3	g 3 1	10.62	778
56	15.2	20262	July 12	—	2p	787
56	15.6	20331	July 29	= K :	11.99	804
58	15.3	20452	Sept 3	R e :	10.37	840

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1928phae.proj...9X2H

Center	N	Date	Estimate		Jul Day
19 57m 45.5	20530	Sept 27, 1918	jgi	21864	11.15
55 15.6	20542	Sept 29	jgi	866	11.29
57 15.0	20690	Nov 12	gpf	910	10.65
57 15.3	20784	Nov 26	igg	924	11.03
57 15.2	21440	Mar 13, 1919	igg	22092	10.99
56 15.3	21581	July 4	—		
55 15.5	21633	July 26	—		
54 15.5	21692	Aug 7	gif ::	178	10.68
54 15.6	21775	Sept 4	igg	206	11.03
2 00 15.0	21831	Sept 26	jgi ::		228 11.41
00 15.0	21848	Sept 28	=g ::		230 10.71
01 15.0	22547	Mar 29, 1920	—		413
00 15.0	22648	May 18, 1920	—		463
00 15.0	22724	July 8	—		514
00 15.0	22755	July 19	—		
0 15.0	22844	Sept 2, 1920	igi (g)	10.79	570
0 15.0	22881	Sept 16	gif ::	10.56	584
0 15.0	23043	Nov 8	=g ::	10.71	637
0 15.0	23082	Nov 26, 1920	gif ::	10.47	655

20h03m +14.1°	BM	6571	Aug 24, 1909	jgi	11.29	18743
1953 13.5	BM	10017	Aug 2, 1917	gif	10.65	20847
2000 15.6		10498	Apr 25, 1918	—		
00 14.2		10639	June 13	jgi ::	11.44	20662
00 15.5		10692	Jun 17	—		
00 16.9		10961	Aug 8	—		
1958 16.7		11005	Aug 17	jgi ::	11.29	20727
57 16.2		11348	Oct 8	—		
56 15.0		11387	Oct 10	—		
2001 14.5		12073	Jun 27, 1916	=g ::	10.71	21069

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1928phae.proj..922H

Center		N	Date	Estimate		Jul. Day
19h 58m	+14.0	12373	Aug 25, 1916	i4g ::	10.95	21101
56	14.2	12378	Aug 26	i5g :	10.91	21102
20 00	15.0	14966	Aug 27 1919	j4i :	11.33	21103
00	15.0	15414	Aug 13, 1920	—		
20h 12m	+39.5	AC2920	Oct 21, 1902	g8f ::	10.47 vp	16044
28	+45.0	3909	Sept 8, 1903	—		
14	40.7	5443	Oct 28 1904	f2e	10.37	16782
12	40.0	5488	Nov 7, 1904	g3f :	10.62	16792
12	40.0	5623	Nov 28	j4i ::	11.33	16813
19 58	43.8	12418	July 2, 1911	—	logged	
58	44.0	12424	July 3	—		
58	44.2	12428	July 5	—	near the edge	
56	44.5	12432	July 7, 1911	i1g ::	11.07	19225
56	44.1	12440	July 9	=g ::	near the edge	10.81 19227
58	44.5	12484	July 12, 1911	g1f ::	" 10.68	19261
20 00	44.9	12494	July 14	=g ::	" 10.81	19263
19 56	43.9	12499	July 16	—	vp	
56	44.0	12508	July 19	—	on the edge	
58	45.5	12530	Sept 1	—	" vp	
20 02	43.9	12564	Sept 14, 1911	=c ::	11.11 "	19294
19 57	43.9	12710	Nov 3, 1911	j8i ::	11.18 on the edge	344
58	44.6	12724	Nov 11	j2i :	11.41 "	352
58	44.6	12730	Nov 13	=j	11.48 "	354
58	44.3	12766	Dec 1	g5f	10.56 "	372
58	44.6	12770	Dec 7	g9f	10.44	378
56	45.0	13022	Mar 22, 1912	j4i	11.33	484
58	44.0	13050	Mar 31	=k i :	11.99 "	493
20 00	44.4	13078	Apr 8	—	vp	
20 4	46.0	13189	July 2, 1912	near the edge		

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1928phae.proj...9Z2H

Center	N	Date	Estimate		Jul Day
$2^h 48^m$ +45.7	13345	Oct 16, 1912	Rzj ::	11.89	19692
5 45.7	13358	Oct 18, 1912	Rzj ::	11.89	694
6 45.0	13545	Dec 3	=i ::	11.11	740
2 45.0	14158	July 8, 1913	=g ::	10.81	952
	Plate	1921			
2000 +30.0	DC 23421	Febr 8, 1921	=g ::	10.81	22729
00 30.0	23659	Apr 26	i5g	10.91 vlp	806
00 30.0	23765	June 5	g2l	10.65	846
00 30.0	23796	June 14	g3l	10.62	855
00 30.0	23903	Aug 3	jRi	11.29	905
00 30.0	24273	Oct 21, 1921	=g	10.81	984
00 30.0	24500	Dec 20	i1g	11.07	23044
00 30.0	24792	June 12, 1922			
00 30.0	24799	June 25, 1922	jIc	11.44	23238.8
00 30.0	24833	Aug 20	i2g :	11.03	287
00 30.0	24949	Oct 30	jRi	11.21	358
00 30.0	24997	Nov 25	i8g	10.79	384
00 30.0	25000	Nov 28	c5g	10.91	387
00 30.0	25254	May 14, 1923	i2g	11.03	554
00 30.0	25264	May 23	jRi :	11.38	563
00 30.0	25277	June 10	jRc :	11.29	581
00 30.0	25294	June 30	g6l	10.53	601
00 30.0	25456	Nov 14	g4l	10.59	736
00 30.0	25511	Dec 9	jRi	11.38	763
00 30.0	25589	July 18, 1924	i8gj	11.58	985
00 30.0	25579	July 14	jRi	11.33	981
00 30.0	25600	July 21	jRgj	11.58	988
00 30.0	25603	July 23	i6gj	11.68	990
00 30.0	25708	Dec 2, 1924	i2gj	11.85	24122

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1928phae.proj..922H

Auter	N	Date		Estimate		Jul Day	
20h 00 +30.0	25866	Apr 17/16	1925	j5i	11.29	24 2[illegible]	
" "	25881	Apr 20		faint than K	.1	12.00	261
	25908	May 17/18		g1f	10.67	24289	
	25929	Jun 5/6		j8i	11.18	24 308	
	25957	July 4/3		j9i	11.15	24335	
	25960	July 3/4		[illegible]	10.81	24336	
	25986	July 9/10		g1f ::	10.68	24342	
	25982	July 30/31		g2f	10.65	24363	
	25986	July 1/2		L2g :	11.03	365	
	26021	July 28/29		K8j ::	11.58	392	
	26039	Sept 21/22		=f	10.41	416	
	26100	Oct 31 Nov 1		j2i	11.41	435	
	26342	Jun 3/4 1926		j9i	11.15	681	
	26392	July 21/22		j9i :	11.15	719	
	26457	Sept 21/22		j3i ::	11.38	781	
	26488	Oct 19/20		L99	10.75	809	
	26499	Oct 24/25		g2f	10.65	813	
	26532	Nov 11/12		L8g	10.91	832	
	26809	Apr 23/24	1927	L4g	10.95	995	
	26945	Oct 8/9	1928	=i :	11.11	25324	
	26966	Oct 15/16		j2i	11.41	25335	
	27006	Oct 31/Nov 1		=g	10.71	25347	
	27015	Nov 6/7		g8f	10.47	25357	
	27117	Dec 24/25		j4i	11.83	4[illegible]02	
20h +30° RH	221	Apr 17/18	1928	g8f	10.47	25354	
"	263	May 7/8	"	g8f	10.56	384	
"	321	June 12/13	"	[illegible]	10.99	25410	11.70
	355	July 15/16		i9g :	10.91	443	
	368	Oct 2/3		[illegible]	[illegible]	522	11.14
	23687	Oct 4/5		i9g	10.75	529	
I	46712	June 12/13	1928	K8j	11.70	25.410	

for Ni spec. about 3-4 brighter

1) Ne
2) I

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1926phae.proj..92SH

Center	N	Date	Estimate		Jul Day
		Aug 5	ΔX		23637
20h 00 +30.8	AX172	1923	j2i	11.47	643
00 "	194	Aug 11	j7i	11.26	649
" "	195	Aug 17	j8i	11.18	696
	215	Sept 3	=i	11.11	723
	287	Oct 30	i3g	10.99	23723
48	AY	Apr 23, 1924	j5i	11.29	23899
	108	June 19	i3g	10.99	986
	135	July 13	j2i	11.41	980
	155	July 19	j3i	11.38	986
	182	Aug 2	j9e	10.25	24000
186	186	Aug 5	e1d	10.21	003
	216	Aug 24	g7j	10.50	022
	256	Nov 10	j5i	10.29	100
	731	Aug 7/8, 1925	g3j	10.62	370
	745	Aug 17/18	i3eg	10.79	380
	872	Sept 26/27	g8j	10.47	420
	852	Nov 3/4	=j	11.48	458
	883	Nov 24/25	j4e	10.34	476
	196	July 12/13, 1926	g11	10.68	709

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1928phae.proj..922H

plotted

Center		N	Date	Estimate		Jul Day
19 h 01 m	+44.8	AC 312	Apr 28, 1899	c g		
18 51	44.8	1268	Feb 19, 1901	g	10.65	15435
19 00	+45	1767	Sept 22, 1901	= c	11.11	650
18 58	45.1	1863	Oct 15, 1901	< K	12.00	673
19 00	45.0	1924	Nov 10	g	10.50	699
18 58	44.5	2014	Nov 28	f 3c	11.38	717
18 58	44.7	2567	May 20, 1902	f 5c	10.32	890
18 55	45.2	2579	May 31	g	10.47	901
18 58	45.1	3048	Dec 6	c g	10.91	16090
18 50	44.3	3550	Apr 27, 1903	= g	10.71	232
18 53	45.5	3906	Sept 8, 1903	= g	10.71	363
18 55	45.1	4021	Oct 2, 1903	= c ?	11.11	390
18 54	44.8	4116	Oct 28	f 3c	11.38	416
53	44.5	4209	Nov 4, 1903	c g	10.79	423
58	45.0	4797	Apr 3, 1904	= g :	10.71	584
58	45.1	4877	May 2, 1904	f 1c	11.29	603
56	44.8	4959	June 12, 1904	≈ f :	10.41	644
54	45.5	5032	July 2	= g :	10.71	664
52	45.2	5181	July 26	g	10.62	719
52	45.2	5209	Aug 30	g	10.47	723
58	45.1	5365	Oct 15	= f :	11.1	765
54	45.0	5522	Nov 14	g	10.62	799
55	45.2	5557	Nov 18	g f :	10.65	803
55	45.8	6180	March 15, 1905	g	10.56	920
52	44.8	6283	Apr 2, 1905	c g	10.87	938
53	45.2	6315	Apr 23	f 5c	11.29	959
52	45	6606	May 18	c g	10.91	17076
52	44.8	6698	Sept 21	f 3c	11.41	17110
56	45.0	6822	Oct 10	g f	10.65	799

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1928phae.proj..9XH

Center	N	Date	Estimate		Jul day
1900 +45.1	7477	Apr 16, 1906	c3g	10.99	17317
1854 44.7	7766	Sept 1, 1906	c3g	10.91	455
54 44.8	7799	Sept 7	c8g	10.79	461
52 44.7	7813	Sept 15	95	10.50	469
53 45.5	8302	Apr 17, 1907	4g	10.91	683
52 45.3	8530	Jun 3	101c	11.21	780
53 45.5	8723	July 26, 1907	94	10.53	814
1900 45.0	8726	July 28	98	10.47	816
1854 44.2	8897	Oct 21, 1907	95	10.53	870
1940 +26.2	AK 16	Jul 28, 1908	95	10.56	18150
45 26.2	18	Jul 29	93	10.62	152
40 26.2	15	Jul 26	94	10.59	149
40 26.2	17	Jul 28	93	10.62	157
1853 43.7	AC 9785	Oct 5, 1908	1	10.41	220
52 44.8	9876	Nov 2	6g	10.91	248
54 45.5	10063	Dec 16	95	10.56	292
54 44.1	10188	Jan 28, 1909	KR	12.00	335
54 44.2	10539	May 31	92	11.33	458
54 44.1	10624	July 8, 1909	94	10.65	496
56 44.8	10883	Sept 2	94	10.65	552
58 45.0	11029	Nov 9, 1909	95	10.47	620
56 44.0	11073	Nov 26	93	10.62	637
56 44.5	11084	Nov 29	95	11.18	640
55 45.1	11187	Dec 21	6g	10.91	642
58 44.2	11419	Mar 2, 1910	KR	12.00	733
59 44.8	11513	Mar 20	c8g	10.79	757
1900 44.1	11603	Apr 26, 1910	2	11.11	788
1854 44.3	11677	May 19	6c	11.11	811

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Center		N	Date	Estimate		First Day	
$18^h 57$	+44.6	12111	Nov 12, 1910	cBg	10.99	18988	
52	44.5	12202	Dec 10, 1910	= f	11.48	19016	
58	44.6	16180	Feb 18, 1915	gf	10.68	20547	
19 00	45.0	16173	Feb 20, 1915	= g i	10.71	556	
18 54	44.9	19601	Dec 15, 1917	cBg	10.79	21578	
59	45.0	20248	June 19, 1918	cBg	10.83	764	
55	45.0	20382	Aug 18, 1918	fBr	11.18	824	
55	45	21206	Feb 26, 1919	cBg	10.79	22016	
55	45.4	21683	Aug 9, 1919	fve	10.84	180	
19 00	45.0	22945	Oct 6, 1920	fBr	11.18	604	
19 00	45	23091	Dec 2, 1920	cBg	10.79	661	

Complementary

20	+20	AY 1420,	Apr 2/3, 1927	cBg	10.87	24973		Spectrum
	"		1482 June 7/8	cBg	10.79	25039		broke
	"		1490 June 15/16	fBc	11.23	47		Prism
	"		1540 Aug 3/4	gBf	10.62	96		"
	"		1548 Aug 5/6	gBf	10.65	098		"
	"		1620 Sept 12/13	Bc	11.29	25136		
			1640 Sept 23/24	gBf	10.59	147		
			1678 Oct 4/5	gBf	10.62	158		
			1684 " 5/6	gBf	10.53	159		
			1693 " 7	gBf	10.59	160		
			1712 11/12	fBc	10.39	165		Spectrum
			1720 13/14	gBf	10.47	167		"
			1773 26/27	gBf	10.47	180		
			1780 27/28	Bc	cBg	181	(10.91	Prism
			1856 Nov 19/20	fBr	11.41	204		Spec
			1877 Dec 1/2	fBr	11.18	216		

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1920phae.proj..9XH

19 +45 NC 24894 Sept 24/19 g81
24948 Oct 30 19 2 f8c
25459 Feb 20 1923 f1e
25385 Sept 17 c8g

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R Sagittae

$20^h 00^m$ +0.0	Hc 23786	June 9/21	dse:	10.28		22850
"	23907	Aug 4	=d:	10.47		22906
"	23947	Aug 14	c3d:	10.52		916
"	23992	Aug 22	e8g	9.86		924
"	24170	Oct 1	d8e:	10.13		964
"	24262	Oct 20	invisible < a	<11.14		983
	24317	Oct 27	"	poor		990
	24335	Oct 29	faint			992
	24441	Dec 7/21	e9g		9.83	23031
	24828	Aug 13/22	g1h:		9.78	280
	24781	May 29/22	d9e		10.13	296
	24886	Sept 25	c3d:		10.53	23323
	24922	Oct 18	d5e:	fair	10.28	346
	25287	June 19/23	g5h		9.68	590
	25304	July 10	d3e:		10.35	611
	25333	Aug 13/23	=e		10.09	645
	25562	June 25/24	faint=c	poor	10.56	962
	25575	July 11	b3c::		10.81	978
	25588	July 18	g3h:	hazy foggy	9.73	985
	25614	Aug 2	e5g:		9.95	24000
	25641	Sept 26	g5h		9.68	24055
	25921	May 27/25	g8h		9.73	24298
	25945	June 16/25	c2d		10.03	318
	25983	July 30/25	g2h		9.75	362
	26003	Aug 18/25	=e:		10.09	24381
	26014	Aug 25/26	=d:	fair foggy	10.47	388
	26053	Sept 25/26	g5h		9.68	419
	26422	Sept 7/25	g1h		9.78	766
	27037	Nov 13/14 1926	c9d	2.5564	10.48	

10.48

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1920phae.proj.:9XH

J.D. 187

$20^{h}+0.0$	AM 15757	May 4-1922	d3c	10.35	23179
	15793	May 18	=b	10.91	23193
	15809	May 23	<c : b invisible		23,98 < 10.74
	15828	May 31	e2g	10.03	23206
	15874	June 19/1922	d3ec	10.17	225
	15901	Jun 28 1922	d4e	10.13	234
	15911	Jun 29	e2g	10.03	235
	15942	July 13	d2e	10.21	249
	15981	July 22	b5c	10.84	258
	15984	July 25	b3c	10.81	261
	16021	Aug 11	g2h	9.75	278
	16054	Sept 7	d5e	10.28	305
	16065	Sept 9	d6e	10.24	307
	16093	Sept 16	d2e	10.39	314
	16108	Oct 11	a1b	11.12	339
	16239	Apr 26-1923	c3d	10.48	536
	16290	June 4-1923	d5e	10.28	595
	16372	Aug 17	d3ec	10.17	649
	16409	Sept 7	d3e	10.21	670
	16421	Sept 25	b2	from page	688 10.91
	16457	Oct 20	g2h :	9.75	23713
	AX124	June 16/1923	=e 1g	10.06	587
	130	June 20	g4h	9.20	591
	179	Aug 8	e6g	9.92	640
	220	Aug 15	=e :	trail figs	642 10.09
	243	Oct 2	d2e	10.39	695
	296	Nov 3	d3e	10.13	727
	552	May 26/1924	d8e	10.17	932
	594	June 7/1924	d8e	10.17	944
	598	June 9/1924	d2e	10.21	946
	615	June 23	c8d	10.49	960

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1928phae.proj..922H

	Plate	Date	Estimate		
20h +0.0					
	AX 658	July 1/1924	b3c	10.81	23968
	719	July 25	g2h	9.83	992
	774	July 26	d2e	10.21	24024
	799	Sept 5	c3d	10.53	24034
	867	Oct 18	d8c	10.17	24077
	895	Oct 28	e1g	10.06	87
	1080	May 23/24-1925	d2e	10.13	295
	1160	June 17/18	=c (d2e)	10.59	319
	1188	Jun 24/25	b1c	10.88	326
	1225	July 20/21	d8e	10.17	352
plotted ↑	1313	Sept 9/10	a7b	10.98	403
	1356	Oct 7/8	d6e	10.24	431
	AY 1571	May 17/18/1927	b1c	10.88	25110
	AX 1627	May 12/13-1926	d4e	10.32	24648
	1648	May 18/18	d5e	10.28	653
	1712	Jun 18/19	b1c	10.88	685
	1713	Jun 19/20	b2c	10.84	686
	1751	July 8/9	d8e	10.17	705
20h29m +7°.0	1762	July 10/11	g2h	9.75	707
20 0	1796	July 12/13	d6e	10.24	714
	1813	July 21/23	e1g	10.06	730
	1843	July 16/17	b7c	10.67	744
	1906	Sept 13/14	d2e	10.13	772
	1935	Oct 2/3	d3e	10.35	791
20 25 +0	2007	Sept 27/28/1927	e2g	10.03	25157
	2008	Sept 28/29	e1g	10.06	25152
	2012	Sep 29/30	d5e	10.28	153
	2021	Oct 1/2	d6e	10.24	155

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1928phae.proj..92H

	Ax 2361	May 14/15	-1928	b5c			10.84	25381
20 ± 0.0	AY 86	May 30, 1924		d8c:	foggy		10.17	23936
	97	June 7	"	g1h			9.78	944
	123	June 30	"	b5c:			10.24	967
	156	July 19	"	g8h			9.60	986
	159	July 20	"	=h (>h)		b1c	9.89	987
	202	Aug 16	"	g1h			9.78	24014
	206	Aug 18	"	g8h			9.73	24016
	238	Sept 6	24035	c1d:		hz	hazy	10.55
	247	Sept 18	047	b2:			"	10.88
	286	Oct 10	069	d2e:	b.	foggy		10.39
	325	Nov 18	108	c2d				10.54
J.D. 2432	677	June 19/20	-1925	Fc	b.	foggy	poor	10.56
	712	July 19/20		e8g			9.95	24357
	717	July 24/25		e8g			9.86	356
	799	Sept 23/24		g2h			9.75	417
	827	Oct 13/14		e2g			10.03	437
	857	Nov 3/4		c1d			10.55	458
	859	Nov 4/5		c1d			10.55	459
	1029	June 16/17	-1926	b?	v.	poor	10.91	683
	1040	July 4/5		e8g			9.86	701
	1115	Aug 29/30		b	y.		10.91	757
	1503	June 21/22	-1927	g6h			9.65	25053
	1522	July 8/9		e9g			9.57	070
	1535	Aug 2/3		c2d	25095		25095	10.54
	1619	Sept 19/20		e1g			25186	10.06
	1630	Sept 16/17		d8c			25140	10.17
	1704	Oct 10/11		c3d			25204	10.53
	1783	Oct 28/29		b5c			25282	10.84
	1810	Nov 4/5		g4h			25-289	9.80

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1928phae.proj..923H

Estimate

19^h06^m $+1°.0$	AX 1783, July 15/6/1926	d8e		10.17	24712
		~~d~~			
$20°$ $+15°$	AC 23675, May 10, 1921	g1h		9.78	22820
	AC 23782 May 27	c3d		10.53	837
	23856 July 21	g5h	6. forged	9.68	892
	24117 Sept 19	g2h		9.75	952
	24161 Sept 27	g2h		9.75	960
	24354 Nov 5	g5h.		9.68	999
	24396 Nov 16	e2g		10.03	23010
	HM 15626 June 28/1921	d8e		10.17	22869
20^h $+30$	AC 23659 Apr 26/1921	e7g		9.89	22806
	23765 June 5	~~6~~3e		10.81	846
	23796 June 14	h2i		9.44	853
	23903 Aug 3	a5b		11.03	905
	23993 Aug 22	g2h		9.75	924
	25294 Jn 30/1923	d2e		10.39	23601
	25277 June 10.	b8c:		10.63	23581
	25264 May 23	g3h		9.73	563
	24500 Dec 20, 1921	b1;		10.91	23044
	24799 June 25, 1922	d5e	10.28	23231	23231
	24833 Aug 20	d2e	10.35		23287
	24895 Sept 28, 1922	b8c::	10.63		23326
	24949 Oct 30	c3d	10.53		358
	24997 Nov 25	d5e::	10.21		384
	25000 Nov 28	e2g	10.03		387
	25254 May 14	c3d	10.54		23554
	1923				
	25456 Nov 14	g2h:	9.75		758

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1929phae.proj. 0XH

R 25511	Dec 19, 1923	g3h :	9.73		23773
25579	July 14, 1924	g2h	9.75		981
25589	July 18	g2h	9.63		985
25600	July 21	fainter than R	v faint		988
25603	July 23, 1924	g7h	9.63		990
25708	Dec 2, 1924	e4g :	9.86		24122
25866	Apr 15/16 1925 -	b2e	10.84		24256
25881	Apr 20, 1925 -	c1d :	10.55 -		261
25908	May 17/18	c3g	10.00		288
25957	July 2/3	c4d :	10.52		334
25960	July 3/4	d3e :	10.35 -		335
25986	July 9/10	e8g :	9.86		341
25982	July 30/31	d4e	10.13		362
25986	Aug 1-2	Le :	10.09		364
26024	Aug 28/29	d5e	10.28		391
26031	Sept 8/9	e6	10.91		402
26039	Sept 21/22	g3h	9.73		415
26087	Oct 7/8	d6e	10.24		431
26105 -	Oct 31/Nov 1	d3e	10.35		455
26342	June 3/4 1926	d6e	10.24		470
26392	July 21/22	=d :	10.47		718
26488	Oct 19/20	=c :	10.56		808
26499	Oct 23/24	d5e	10.28		812
26532	Nov 11/12	d3e	10.35		831
26809	Apr 23/24/[illegible]	c6d	10.52		24994
26945 -	Oct 8/9 - 1928	d4e	10.32		24994
		=a	25528		(25528) 11.14
26966	Oct 15/16	b2e	25535 -		10.81
27006	Oct 31/Nov 1	b9e	25537		10.59

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1928phae.proj..922H

20h +30°

27015	Nov 6/7	1926	7c		10.67	25557
AX 172	Aug 5/1923		c3g		10.00	23637
194	Aug 17		c1g		10.06	649
195	Aug 17		c1g		10.06	649
245	Oct 3		c3d		10.53	696
287	Oct 30		e/g		10.06	723
Ay 48	Apr 23/1924		b5c		10.84	23899
155	July 19/1924		g4h		9.57	986
182	Aug 2 "		=e:	poor trail	10.09	24000
186	Aug 5		=e:		10.09	24003
731	Aug 7/8-1925		e2g		10.03	24370
745	Aug 17/18		=e:	poor	10.09	380
812	Sept 26/27		g4h		9.80	24420
883	Nov 21/22		b6c		10.70	476
1420	Apr 2/3/1927		g8h		9.60	24973
1575	July 4/5		=e::		10.09	25066
1540	July 3/4 1927		=d	10.47	25096	10.47
1548	Aug 5/6		c2d		25098	10.54
1597	Sept 5/6		e9g		25129	9.83
1620	Sept 12/13		e2g		25136	10.03
1640	Sept 23/24		e8g		25147	9.86
1655	Sept 26/27		=e::		25150	10.09
1678	Oct 4/5		=g		25158	9.80
1684	Oct 5/6		e4g		25159	9.97
1693	Oct 6/7		d3e		25160	10.28
1705	Oct 10/11		~~d3e~~e::		25164	10.47
1712	Oct 11/12		d4e		25165	10.32
1720	Oct 13/14		c5d:		25169	10.52
1773	Oct 26/27		b5c		25180	10.81
1780	Oct 27/28		b5c		25187	10.81
1856	Nov 19/20		e3g	9.95	25204	Speidman

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1928phae.proj.gxH

20°+80	AN 1877	Dec 1/2		dre	10.39	25216
20h+80	AI 21976	Sept 22/1922		dbe	10.24	23320
	21988	Sept 25		c2d	10.54	323
	22040	Oct 18		c3d	10.53	346
	22657	Aug 15/1923		e3g	10.00	23647
	22677	Aug 20 "		e2g	10.03	652
0h+80	22707	Sept 6		d2e	10.32	669
	22736	Sept 17		dbe	10.26	680
	22811	Oct 17		d2e	10.21	710
	22884	Nov 12		e8g	9.86	736
21h+15°	AC 23804	June 15/21		g9h	9.57	22856
	23986	Aug 21		e3g	10.00	22923
	24172	Oct 1		e2g	poor	10.03 964
	24319	Oct 27		b8e	10.24	22990
	24453	Dec 8		e4g	9.97	23032
	24797	June 23/1922		dbe	10.24	229
	24813	July 4		c2d	10.54	257
	24840	Aug 30		c7d	10.50	23297
	24853	Sept 8		=e?	10.09	23306
	24890	Sept 26		c3d	10.53	23324
	24939	Oct 24		d8e	10.17	23252
	24960	Nov 1		e3g	10.00	23360
	24990	Nov 10		d2e	10.39	23369
	25282	June 16/1923		=e	10.09	23587
	25310	July 13		=e	10.56	23614
	25387	Aug 15		e1g	10.06	23647

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1928phae.proj..92H

Ac	25349	Aug 20	dfc	10.21	23652
	25359	Aug 30	gch	9.75	602
	25387	Sept 17	d4c	10.32	23680
	25640	Sep 26/1924	gch	9.63	24055
	25416	Oct 30/1923	dfc	10.4	23723
	25486	Dec 7/"	b8c	10.63	23761
	25605	July 25/1924	g5h	9.68	23992
	25942	June 14/15-1925	b5c:	10.74	24316
	26016	Aug 26/27	=c:	10.58	24389
	26102	Oct 29/30	d8c	10.17	24453
	26115	Nov 3/4	=d	10.47	24458
	26149	Nov 24/25	e8g	9.86	24479
	26353	June 16/17-1926	=b::	10.91	24683
	26405	Aug 18/19	c1d::	10.55	24746
	26513	Oct 28/29	c2d	10.54	24817
	26440	Sept 14/15	g4h	9.70	24773
	27038	Nov 13/14-1928	18c	10.63	25564
AX	114	May 22/1923	g8h	9.60	23562
	137	July 6	d8c	10.42	23607
	160	July 23	d5c	10.28	23624
	175	Aug 6	g2h	9.75	23638
	287	Oct 1	d2c	10.39	694
Ay	121	June 27/24	c3d	10.53	23964
	162	July 21/1924	b4c:	9.49	23988
	163	" "	b8c	9.49	"
	168	July 25	g9h	9.54	23992
	172	July 26	g9h	9.57	23993
	239	Sep 6	=c:	10.56	24035
	390	Nov 26	b5c	10.63	24178
	425	July 30/31-1925	g1h::	9.78	24362

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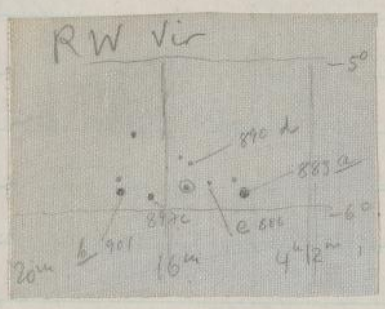
1928phae.proj..9Z3H

Ay 735	Aug 11/12	-1925	e2g	9.89	24384		
1089	July 3/4	-1926	g2h	9.75	24700		
1117	July 30/31	"	g2h = e	10.56	758		
1167	Oct 9/10	"	g2h	9.73	24798		
1214	Nov 5/6	"	e2g	10.93	24825		
1255	Dec 2/3		e2g	9.83	24852		
1491	June 15/16	1927	g2h : f2g		25047	9.78	
1571	June 30/July 1	"	e2g	9.83	25062		
R. H.	1578	July 5/6	"	e2g	9.92	25067	
Bruce	1584	July 25/26	"	g2h	9.75	25118	
a	1589	July 29/30		g2h	9.63	25122	
1624	Sept 15/16	"	g2h	9.78	25139		
1641	Sept 23/24		e2g	10.03	25147		
1674	Oct 1/2		= g	9.80	25155		
1747	Oct 21/22		c1d	10.55	25175		
1787	Oct 27/28		b6e	10.70	25181		
1799	Oct 31/Nov 1		e2g :	9.95	25185		
1848	Nov 14/15		e2g	9.86	25199		
1857	Nov 15/16		e2g	9.95	25200		
21h +80°	Ac 24355	Nov 5/	1924	g2h	9.75	22999	
	24123	Sept 22		g2h	9.75	22955	
21h 0°	Ac 25629	Sept 16/24		= e :	10.56	24047	
21 +80	Ac 23624	May 9/24		g4h :	9.20	22819	
	Ac 23815	July 16		g5h :	9.68	22867	
	Ac 24123	Sept 22		g5h	9.73	22955	

284 observations

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1928phae.proj..92H



3 57	−.3	Ac 11385	Feb 14/1910	c6d	11.23		18717
3h 53m	−.6	Ac 1144	Jan 18/1901	e3f	10.54		15898
3 55	−.3	2378	Mar 3/1902	a3b	11.64		812
3 56	−.1	1951	Nov 3/1901	c3f	10.54		692
4 02	+2.5	Ac 150	Jan 11/1899	b6c	11.41		14666
4 00	0.0	9061	Dec 11/1902	d2e	11.08		17921
3 52	−.2	5404	Oct 24/1902	~c:	11.85		16715

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1928phae.proj..923H

RW Eri MC 7744 Leguneu
HA 85, p. 148

h m					
3 52 -.5	AC 633, Dec 29/1899	≤a:	≤11.70		
3 53 -.1	1177 Jan 26/1901	d2e	11.08	15411	
3 54 .0	1826 Oct 4	~a	~11.70	662	
3 53 -.5	1885 Oct 19	d8e	10.88	677	
3 53 -.5	2026 Nov 30	e3f	10.54	719	
3 54 -.5	2086 Dec 18	c5d	11.25	737	
3 53 +.3	2125 Dec 31	d7e	10.92	750	
3 53 0.0	2172 Jan 9/1902	e1f	10.73	759	
3 54 -.4	2884 Oct 9	e3f	10.54	16032	
3 53 -.3	2949 Oct 29	e5f	10.36	052	
3 53 -.3	2981 Nov 2	~e	~10.82	056	
3 53 0.0	3111 Dec 28	d4e	10.92	112	
3 54 -.3	3147 Jan 26/1902	c5d:	11.25	141	
3 53 -.5	3140 Feb 3	=e	10.82	149	
3 52 0.0	3311 Feb 18	=d	11.14	164	
3 50 0	3359 Feb 25	b5c	11.42	171	
3 54	3991 Sept 25	———			
3 52 -0.8	4120 Oct 28	e3f	10.54	416	
3 52 -1.0	4196 Nov 10	e4f:	10.45	429	
3 48 -1.0	4427 Dec 23	~b:	11.49	472	
3 53 -.2	4487 Dec 25	a8b	11.53	474	
3 54 -.7	4505 Jan 7/1903	~c	~11.35	487	
3 54 -.4	4651 Feb 17	c:	11.35:	528	
3 54 +.5	4692 March 4	a:	10.70:	544	
3 55 0.0	5536 Nov 18	e4f	10.45	803	
3 53 -.2	5609 Nov 26	e2f	10.64	811	
3 50 -1.8	5686 Dec 8	e2f	10.64	823	
3 57 0.0	5695 Dec 9	e2f	10.64	824	
3 57 +.2	5785 Dec 28	c4d	11.16	843	
3 54 -.2	5952 Feb 8/1905	e1f	10.73	884	

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1928phae.proj..92H

3	57	−.3	Ac 11385	Feb 14/1910	c6d	11.23	18717
3	53.m	−.6	Ac 1144	Jan 18/1901	e3f	10.54	15898
3	55	−.3	2378	Mar 3/1902	a3b	11.64	812
3	56	−.1	1951	Mar 3/1901	c3f	10.54	692
4	02	+2.5	Ac 150	Jan 11/1899	b6c	11.41	14666
4	00	0.0	9061	Dec 11/1902	d2e	11.08	17921
3	52	−.2	5404	Oct 21/1904	~c:	11.85	16775

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1928phae.proj..922H

3 55	−0.1	5981	Feb 11/1905	c3f	10.54		888
3 55	−.2	6110	March 3	~6	11.49		908
3 54	−.1	6767	Oct 3	d1e	11.11	17	122
3 54	−.2	6791	Oct 6	b2e	11.46	17	125
3 54	0.0	6870	Oct 21	e4	10.73	17	140
3 54	−.4	6873	Oct 22	d5e	10.98	17	141
3 58	+.1	6954	Nov 8	c4f	10.45	17	158
3 52	−.0	7228	Jan 29/1906	d2e	10.88	17	240
3 54	−.4	7279	Feb 15	c2f	10.64		257
3 52	+.2	7886	Sept 23	b7c	11.39		477
3 52	0.0	7879	Oct 7	c8d	11.18		491
3 54	+.2	7976	Nov 6	d7e	10.92		521
3 54	−.2	8045	Nov 23	b7c	11.39		548
3 55	−1.3	8335	Mar 9/1907	~d	11.14		644
3 54	−.2	8852	Oct 9	d2e	10.92		858
4 03	0.0	9137	Jan 3/1908	c3f	10.54		944
3 54	0.0	9213	Jan 30	e3f	10.54		981
3 56	+.2	9302	Feb 29	b5c	11.42	18	001
3 54	−.2	9823	Oct 14	e3f	10.54		229
3 52	0.0	9901	Nov 12	d2e	11.08		258
3 56	−.3	9982	Dec 2	d3e	11.04		278
3 54	+.9	10080	Dec 21	d1e	11.11		297
3 57	−.5	10284	Mar 1/1909	e2f	10.64	18	367
3 54	0.0	10840	Sept 28	e6f	10.26		578
3 55	−.1	11128	Dec 6	b1e	11.48		647
3 54	−0.3	11385	Feb 14/1910	c9d	11.16		717
3 55	−1.0	12020	Oct 30	d3e	11.04		975
3 55	−.8	12183	Dec 8	d4e	11.34		014
4 00	−1.1	12299	Jan 18/1911	d2e	11.08	19	055
3 58	−.2	12588	Sept 26	b7c	11.39		306
3 58	−1.0	12639	Oct 12	d2e	11.08		322

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1928phae.proj..92H

3 55 −.3	12677	Oct 26 / 1911	e4	10.45	19336
3 53 −.2	12801	Dec 20	d3b	11.64	391
4 05 +1.3	13374	Oct 20 / 1912	e5	10.26	696
4 03 +1.3	13357	Oct 16	e4	10.64	692
4 06 +1.1	13432	Nov 3	e5	10.26	710
4 04 +1.3	13628	Jan 9 / 1913	d2e	11.08	777
4 06 +1.9	13678	Jan 25	d4	10.45	793
4 05 +1.3	13724	Feb 2	e4	10.45	801
4 03 +1.3	13752	Feb 9	e5	10.54	808
3 55 0.0	14458	Oct 22	e5:	10.26	20063
3 56 −.3	14574	Nov 5	e3	10.54	077
4 00 0	15516	Sept 20 / 1914	a5:	11.60	20396
3 58 +.9	15783	Dec 17	d3e	10.92	484
3 58 −.5	15968	Jan 5 / 1915	b1c	11.48	503
3 58 +.3	16031	Jan 20	c5d	11.25	518
4 00 0.0	16852	Oct 16	a5b	11.60	787
3 54 −.2	17121	Dec 30	d8c	11.38	862
3 58 +.3	17863	Feb 29 / 1916	~e	10.82	20923
3 57 +.2	18045	Oct 23 / 1916	e1	10.73	21160
3 55 +.4	18070	Oct 27	d8e:	10.88	164
3 56 +.5	18178	Nov 16	e5	10.57	184
3 58 +.9	18551	Feb 12 / 1917	e5	10.26	272
3 56 +.9	18599	Feb 24	d5e:	10.98	284
3 54 +.3	19311	Oct 20	b7c	11.39	322
3 54 +.7	19405	Nov 5	d5e	11.04	538
3 57 +.3	19589	Dec 7	a5b	11.60	570
3 57 +.3	19785	Feb 5 / 1918	d8e:	10.88	630
4 00 0.0	22054	Dec 2 / 1919	e5	10.54	22295
4 01 +.31	AN 184 / 1899		c5d	11.25	

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4 00	+3.3	AM 147	Sept 8/1899	c8d	11.18	14906	
4 20	+3.2	179	Sept 29	e1	10.73	927	
3 57	+3.5	185	Sept 30	e2	10.64	928	
4 05	+2.4	277	Nov 13	e1 ::	10.73	972	
4 03	+4.1	303	Nov 21	d2e ::	10.92	980	
4 01	+4.5	310	Nov 22	d5e ::	10.98	981	
4 01	+6.1	621	Sept 4/1900	a7f	11.55	15264	
3 59	+5.6	642	Sept 5	b5c	11.42	268	
3 59	+.1	713	Nov 10	a5b	11.04	334	
3 58	0	720	Nov 17	a5b (a5b)	11.00	341	
3 58	+.5	1041	Sept 5/1901	a5b	11.00	633	
3 59	+.1	1109	Nov 8	c2f	10.17	697	
4 00	+.2	1486	July 26/1902	e1	10.73	957	
3 59	+.8	1679	Nov 7/1902	d2e:	10.92	16061	
3 56	+.7	1688	Nov 10	d3e	11.04	064	
3 58	0.0	2453	July 23/1903	d3e	10.88	319	
3 50	-.2	2285	Sept 19	d4e	11.01	377	
3 46	-.5	2293	Sept 29	d8e	10.88	387	
3 58	0.0	2869	Nov 16	c3f:	10.54	435	
4 01	-.4	2456	Jan 16/1904	c2f	10.64	496	
4 00	-.6	2956	Aug 17	c3f	10.54	710	
3 58	0	2986	Aug 22	b3c	11.39	715	
3 45	0	3046	Sept 17	a8b	11.53	741	
3 58	-.5	3044	Sept 20	b7c	11.39	744	
3 55	-.8	3165	Oct 31	c3d	11.20	785	
3 58	-1.1	3190	Nov 4	c5d	11.25	789	
3 58	+.2	3224	Nov 11	~e	~10.82	796	
3 56	-.2	3245	Dec 7	d8e	10.88	822	
3 52	-1.8	3828	Aug 22/1905	d3e	11.16	17080	
4 00	0	3879	Sept 9/1905	c3d	11.20	098	
4 00	-1.1	3978	Nov 16	c3f	10.54	166	

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4.00	-1.1	AM 4043	Jan 25/1907	dye	11.01	17 236
4.00	-1.1	4525	Aug 23	b8c	11.28	446
3.58	-.8	4597	Sept 26	csd	11.29	480
4.00	-1.5	4644	Oct 15	dse	10.88	499
3.59	+.0	4774	Nov 26	~d	11.14	541
3.58	-.5	5762	Sept 17/1907	e4	10.64	836
3.58	.0	5207	Oct 24	d8e	10.88	873
3.56	-.5	5247	Nov 9	b5c	11.42	889
4.00	0.0	5252	Nov 13	c8d	11.18	893
3.53	-.2	5267	Dec 23	e4	10.64	983
3.58	-.5	5847	Sept 20/1908	b7c	11.39	18 205
3.58	-.1	5892	Nov 3	e4	10.64	249
4.04	0.0	5897	Nov 17	d2e	11.08	263
4.00	-.5	6569	Sep 9/1909	e5f	10.54	539
4.02	-.5	6583	Sept 10	e4f	10.48	560
4.02	-.3	6609	Sep 19	e3f	10.54	569
4.01	-.5	6625	Oct 6	d7e	10.92	586
4.02	-.2	6653	Nov 4	d5e	10.98	615
4.02	-1.0	6666	Nov 8	d4e	10.92	619
4.01	-.2	7912	Oct 23/1911	e4	10.64	19 833
3.59	-.6	8763	Nov 18/1912	e4	10.64	725
4.02	-.2	9344	Aug 9/1913	e3f	10.54	19 989
4.06	+.4	9349	Aug 13	e5f	10.54	993
4.02	+.8	9354	Aug 22	d2e	11.08	20007
4.00	.0	9420	Sep 5	~d	11.14	016
4.05	-.8	9607	Nov 24	d8e	10.88	096
4.01	+.9	9624	Jan 15/1914	e4	10.86	148
3.52	+.8	11125	Sept 11	b5e	11.42	887
3.54	-.6	13787	Mar 11/1918	e5f	10.86	21 664

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4 00	0.0	AC	23382	Feb 1/1924	d7e	10.92	22722	
4 00	"		24216	Oct 8	b4c:	11.43	971	
4 00	"		24288	Oct 22	dse	11.29	985	
4 00	"		24528	Dec 28	~e	10.82	23052	
4 00	"		24889	Sept 25/1925	c5d	11.25	323	
4 00	"		25652	Oct 6/1924	e1f	10.73	334	
"	"		26952	Oct 9/10/1928	b2c:	11.46	25329	
4 00	"		27041	Nov 13/14	dse	10.98	25564	
4 00	"		27194	Jan 8/9/1929	dse	10.98	25620	
4 00	"		27291	Feb 5/6	dse	11.04	25648	
4 00	"		27306	Feb 12/13	e1f	10.64	25655	
4 00	"	AM	16575	Jan 2/1924	e1f	10.54	23787	
4 00	"		16549	Jan 9	d8c	10.86	794	
4 00			16576	Jan 17	a8b::	11.53	802	
4 00	"	AX	778	Aug 26/1924	dse	10.98	24024	
4 00	"		828	Sept 22	e1f	10.64	057	
4 00	"		860	Oct 8	e5f	10.36	067	
4 00	"		893	Oct 27	dse	11.04	086	
4 00	"		981	Nov 30	~e	11.25	24120	
4 00	"		1329	Sept 14-15/1925	d4e	11.01	408	
4 00	"		1410	Dec 9/10	d2e	11.08	494	
4 00	"		1438	Dec 19/20	c6d	11.23	504	
4 00	"		1462	Jan 3/4/1926	e1f	10.73	519	
4 00	"		1464	Jan 5/6	d2e	10.86	521	
4 00	"		1521	Feb 1/2	d5e	10.98	548	
4 00	"		1884	Sept 6/7	b5c	11.45	765	
4 00	"		1989	Oct 2/3	~d	11.14	24791	
4 00	"		1981	Nov 4/5	e1f	10.64	826	
4 00	"		2024	Oct 3/4/1927	d5e	10.98	25157	
4 00	"		2046	Oct 27/28	d2e	11.08	181	
4 00	"		2081	Nov 24/25	c5d	11.25	209	

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1928phae.proj..92H

4 00 0°.0	2105	Dec 19/20	d5c	10.98	25 234
	2125	Jan 16/17/1928	d8e	10.92	25 262
	2158	Feb 8/9	d3e	11.04	25 285
4 52 0° −5°	AC 1066	Dec 17/1900	d8c	10.88	15371
452 −4.8	8152	Jan 11/1907	d3c	11.04	17587
455 −0.0	11066	Nov 18/1909	cgd:	11.16	18629
455 −0.0	11227	Dec 30	dgc::	10.85	18681
457 −1	16245	March 29/1915	~d ::	11.14	20569
458 −1.0	16981	Nov 10	d2e:	11.08	20812
500 +1.1	18107	Nov 3/16	e1f:	10.73	21171
444 +1.2	18450	Jan 17/1917	d3c	11.04	21246
454 −1.3	19118	Sept 11/1917	bright?		21483
500 0	19920	Mar 15/1918	d1c	11.11	21668
3 59 +5.6	AM 642	Sept 5/1900	b3c	11.45	15268

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3	55	-15°	M 1837	Oct 6/1901	b5c :		11.42	15664
3	56	-15	15959	Jan 4/1915	c7d		11.20	20502
3	52	-15	16747	Sept 16	~c :		11.35	20757
3	54	-15.2	16988	Nov 13	d3e		11.04	20815
3	56	-14.9	17057	Nov 30	a5b	x	11.60	20832
3	55	-14.8	18189	Jan 6/1916	b3d	x	11.39	20869
3	54	-15.0	17268	Jan 29/1916	b5d	x	11.32	20892
3	57	-15.0	17858	Sept 19/1916	d3e ::		11.08	21116
3	59	-14.5	20902	Jan 4/1919	c8d		11.25	21963
4	00	-15.0	21806	Sept 17	a8b		11.53	22219
4	00	-15.0	22252	Jan 12/1920	d9e		10.85	22386
4	00	-15.0	23057	Nov 12	d3e		11.04	22641
3	56	-15.0	AM 9482	Sept 23/1913	c1 ::		10.73	20084
3	59	-14.8	11364	Oct 12/1915	d3e		10.92	20783
3	57	-14.8	11373	Oct 16	~c		11.35	~~20847~~
3	57	-14.8	11489	Dec 15	b5c		11.42	20847
3	58	-15.8	12660	Oct 22/1916	e2g		10.64	21159
3	56	-15.0	12812	Dec 4/1916	b3c		11.45	21802
3	57	-15.3	17907	Sept 19	d3e :		11.08	21126
3	58	-15.0	18089	Nov 1/1916	e4g		10.45	21169
3	58	-15.0	19394	Nov 4/1917	b7c		11.39	537
3	58	-15.0	19486	Nov 10	c7d		11.20	573
3	56	-14.8	19509	Nov 26	~b :		11.49	559
3	56	-15.0	20536	Sept 27/1918	~c		11.35	21864
4	57	-15.6	AC 651	Jan 3/1900	b6c		11.41	15023
5	06	-15.4	681	Jan 4	c1 :		10.73	15041
4	53	-15.8	1223	Feb 8/1901	d7e		10.92	15424
4	53	-16.0	1827	Oct 4	~b :		11.49	15662
4	53	-15.7	1986	Nov 1/1901	e4g		10.45	15690
5	00	-15.0	2084	Dec 1	~c		10.82	720

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h m						
4 53	-15.3	NC 2145	Jan 3/1902	d2e	~~10.88~~	15753
4 57	-14.8	2202	Jan 17	c4f	10.45	767
4 54	-15.0	2282	Feb 6	d2e	10.92	787
4 50	-15.1	2321	Feb 12	c5d	11.25	15893
4 57	-14.9	2370	Mar 1	a5b :	~~c7f~~ 11.60	~~16030~~
4 54	-15.1	2869	Oct 7	c7f	10.17	16030
4 55	-15.1	2917	Oct 31	c4f	10.45	16053
4 52	-15.0	3094	Dec 23	b5c	11.42	16107
4 54	-15.0	3137	Jan 1/1903	e3f	10.54	16116
4 49	-15.3	3211	Jan 23	d2e :	10.92	138
4 50	-15.6	3298	Feb 14	c4d :	11.27	160
4 52	-14.8	3386	Mar 2	~d :	11.14	16176
4 53	-15.8	4140	Oct 30	~e : :	10.82	418
4 52	-16.0	4189	Nov 9	e2f :	10.64	428
4 53	-15.8	4200	Nov 19	e3f :	10.54	438
4 54	-15.5	4346	Dec 11	b7c :	11.39	460
4 53	-15.6	4368	Dec 14	c2d	11.31	16463
4 50	-15.3	4441	Dec 26	b7c	11.39	475
4 52	-15.5	4572	Jan 10/1904	c2e	11.20	16490
4 52	-15.7	4526	Jan 15	e3f	10.54	16495
4 52	-16.0	4608	Feb 5	e5f	10.36	16516
4 56	-15.2	5268	Sept 20	c7d	11.20	744
4 54	-15.3	5351	Oct 7	d7e	10.92	16761
4 54	-14.8	5526	Nov 28	~e (e)	~ 10.82	16813
4 52	-15.2	5664	Dec 4	e1f	10.73	16819
3 00	-15.0	5782	Dec 29	a5b	11.60	16844
5 00	-15.0	5803	Jan 5/1905	c2d	11.31 NB	857
4 59	-16.0	5825	Sept 16/1904	b8c	11.38	18201
4 58	-15.4	5877	Oct 25	d7e	10.92	18240
4 55	-15.8	5882	Jan 23/1905	e2f :		16869

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4	55	-15.8	5882	Jan 23/1905	~d:	11.14	16869
4	54	-15.5	5980	Feb 11	e4	10.64	16888
4	54	-15.9	6089	Mar 1	c2d	11.29	16906
4	54	-14.8	6926	Nov 1	d8e	10.88	17157
4	58	-14.9	7120	Dec 22	d5e	10.98	17202
4	53	-14.9	7286	Feb 16/1906	e1f	10.73	17258
5	00	-14.6	7863	Sept 30	d3e	10.98	17484
4	54	-14.8	7986	Nov 7	b5c	11.42	522
4	52	-15.0	8143	Jan 9/1907	e4	10.64	17585
4	54	-15.2	8244	Feb 12	~e	~10.82	17619
4	50	-15.1	8319	Mar 6	d2e:	11.08	17641
4	52	-15.5	8961	Nov 3	c5d	11.25	883
4	52	-15.0	9138	Jan 3/1908	e4	10.64	944
4	54	-16.5	9204	Jan 27	e1f	10.73	968
4	54	-15.1	9244	Jan 30	e1f	10.73	17971
5	00	-14.5	9243	Feb 7	d8e:	10.88	979
4	54	-15.0	9252	Feb 8	e4f	10.73	980
4	54	-15.0	9272	Feb 18	~d::	11.14	990
4	54	-15.0	9873	Nov 1	c8e	10.92	18247
4	53	-15.1	9941	Nov 21	e1f	10.73	18267
4	54	-14.5	9963	Nov 28	~e:	10.82	274
4	55	-15.1	9972	Dec 1	d9e	10.85	277
4	55	-15.3	10057	Dec 15	d1e	11.11	291
4	53	-15.2	10154	Jan 15/1909	d5e:	11.08	18312
4	55	-15.2	11024	Nov 6	d5e	10.98	18617
4	54	-15.9	11166	Dec 18	e1f	10.73	18659
4	52	-15.0	11233	Dec 31	e4f	10.54	18672
4	52	-15.0	11246	Jan 4/1910	e4f	10.54	18676
3	00	-16.0	11351	Feb 5	c5d	11.25	18708
4	58	-15.8	12068	Oct 29	d8e	10.83	18924
4	56	-15.5	12071	Oct 30	d3e	11.04	985

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4 58 -15:2	12139	Nov 19	dse:	10.98	995
4 57 -14.4	12165	Dec 2	b8c	11.38	19008
4 59 -15:9	12250	Dec 30	d8e::	10.88	19036
4 59 -15:9	12262	Dec 31	~d?	11.14	19037
4 58 -14.9	12300	Jan 18/1911	e4	10.64	19055
4 58 -15:2	12304	Jan 23	e4:	10.73	19060
4 58 -15.2	12647	Oct 13	e4::	10.73	19323
4 58 -15.0	12690	Oct 28	d2e	11.08	19338
4 58 -15:2	12707	Nov 2/1911	e4	10.73	19343
4 58 -15:3	12760	Nov 29	d1e	11.11	19370
4 58 -15:1	12878	Feb 6 /1912	d1e	11.11	19428
4 58 -14.5	12942	Feb 23	d9e	10.85	19478
5 05 -14.3	13315	Oct 7	~e::	10.82	19683
5 4 -14.6	13341	Oct 15	e4	10.64	19691
5 3 -14.2	13367	Oct 19	e4:	10.73	19695
5 04 -14.8	13433	Nov 3	e5	10.86	710
5 05 -14.3	13560	Dec 7	~d	11.14	744
5 03 -13.9	13629	Jan 9/1913	~d	11.14	19777
5 04 -14.6	13735	Feb 5	e4f	10.45	19804
5 53 -15.2	14487	Oct 31	~d?	11.14	20072
4 57 -15.1	14628	Dec 8	d2e?::	10.92	110
4 57 -15:8	14690	Dec 19	c9d	11.16	20124
4 58 -14.6	14703	Dec 21	b9c	11.39	20129
4 56 -15:2	14912	Feb 28/1914	b5c:	11.42	20189
4 56 -15.1	15545	April 22	b5c	11.45	403
4 59 -14.3	15721	Nov 14	e4f	10.45	20457
4 58 -14.8	15975	Jan 7/1915	d3e	11.04	20505
5 00 -15.0	16122	Feb 18	d5e	10.98	20547
4 55 -15:2	16408	Oct 30	e4	10.64	20801
4 55 -14.8	17172	Dec 30	a3b	11.64	20862
4 54 -14.8	17843	Feb 21/1916	c4e	11.00	20915

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4	57	-14.9	18030	Oct 17/1916	dse:	10.98	21154
4	56	-14.9	18060	Oct 26	er	10.64	21163
4	57	-14.8	18377	Dec 30	~b	11.49	21228
4	57	-14.5	19252	Oct 6/1917	~c:	11.35	508
4	57	-14.8	19575	Dec 10	fa	11.20	21573
4	58	-14.5	19586	Dec 11	~a	11.60	584
4	58	-14.8	19754	Feb 1/1918	b7c	11.39	21626
4	58	-14.5	21040	Feb 11/1919	er	10.54	21991
4	54	-14.8	21081	Feb 6	er	10.64	21996
5	00	-15.2	22104	Dec 14	d8c:	10.88	22307
5	00	-15.0	23124	Dec 11 (1920)	b7c	11.39	21939 22670
5	00	-15.0	AM 585	Nov 18/1909	d7e	10.92	18629
4	59	-15.0	AM 2196	Aug 12/1903	dre	11.06	16339
4	56	-15.2	2206	Aug 19	c5e	11.09	16346
4	59	-15.2	2354	Oct 30	~e:	10.82	16388
4	57	-14.8	2408	Dec 12	~e:	10.82	661
4	58	-15.5	2957	Aug 17/1904	er	10.73	710
4	58	-15.2	3031	Sept 10	c2d	11.31	16784
4	58	-15.5	3219	Nov 11	~e	10.82	16796
4	56	-16.0	3236	Nov 16	er	10.54	16807
4	57	-16.5	3834	Aug 25/1905	e3	10.54	17083
5	06	-14.8	3896	Sept 18	dse	10.98	17107
4	57	-16.0	3987	Oct 5	dse	10.98	17124
4	59	-15.2	4001	Nov 28	cre	11.25	17178
4	58	-16.7	4094	Jan 25/1906	dse	10.98	17286
5	00	-15	4529	Sept 15	bse	11.42	17469
4	58	-15.9	4637	Oct 13	dye	10.92	17497
4	58	-16.2	4645	Oct 15	er	10.73	429
4	57	-15.3	4702	Nov 16	er:	10.73	17587
5	00	-15.8	4723	Dec 13	~e	10.82	17558

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502-15.0	RH 6012	March 30/1909	~e :	10.82	18396
501-15.0	6610	Sept 19	esf	10.54	569
503-15.9	6695	Oct 13/1909	esf	10.73	18593
504-15.2	6698	Oct 21	—d :	11.14	601
505-15.3	6940	Nov 2	c7d	11.20	18613
	~~5803~~	~~Jan 5~~	~~d~~		
452-15.3	10215	Oct 20/1914	esf	10.54	20426
458-14.8	10201	Dec 16	d8e	10.88	20483
458-14.8	11470	Nov 15/1915	a8b:	11.53	20817
400 0	RH 713	Nov 15/16 1928	c7d	11.20	25566
10 2	530	Sept 22/3	a7b	11.55	25572
	719	Nov 20/24	c2d	11.31	25571
	749	Dec 6/7	b8c	11.38	25587
	894	Jan 12/13 /1924	c2d	11.31	25624
	1577	Sept 24/25	a6b	11.68	25879
5h-15°	589	Oct 7/8 /1928	b5c	11.42	25527
	638	Oct 24/25	esf	10.64	25544
	776	Dec 14/15	~e	10.82	25595
	845	Dec 31/Jan 1 /1924	c1d	11.33	25612
	956	Jan 29/29	esf:	10.64	25640
	1548	Oct 7/8	esf:	10.54	25892
400-15.0	AK 352	Dec 7/1923	c5d:	11.25	23761
500-15.0	23413	Feb 8/1921	d8e	10.88	22729
	24458	Dec 8	d5e	10.88	23032
	24493	Dec 9	~e	10.82	23033
	24531	Dec 29	d5e	11.11	053
	24620	Feb 2/1922	c8d	11.18	23088
	24912	Oct 12	b7c ::	11.39	23340

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4 00	-15°.0	Ac 24946	Oct 29/1922	a5b ::	11.60	23357
"	"	25072	Jan 13/1923	a5b *	11.60	23433
"	"	25088	Jan 19	c7d	11.20	23439
"	"	25170	Feb 21	d5e::	10.98	23472
		25407	Apr 26	~e ::	10.82	23719
		25426	Nov 1	d7e	10.92	725
		25467	Nov 19	d3e	11.04	743
		25532	Dec 26	d7e	10.92	780
5 1	0°.0	23281	Jan 17/1924	d1e ::	11.11	22707
"	"	24378	Nov 10/1924	(d1e)	10.95	23004
		26557	Dec 2/3/1926	e1f	10.73	24852
4	-15.0	AX 352	Dec 7/1923	c9d	11.16	23761

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