1899phme.proj.1330w

KG
11366
v.826

12 inch Horizontal Telescope

XII

Records

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1999phae.proj.1330w

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1889phac.proj..1E10W

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1890phot.proj.1888W

J. D. 4787 = a

(Friday.)

pole May 12, 1899 (Friday).

11 22.0	26	+89 30'	62.8	
	1098	+08	H. 2.	
	1095	+05		
	1088	-02		
	1081	-09		
	4362	13-11		
	10.90+2	±.06 ↓		
11. 22,8	35	+89° 41'	62.2	
	987	-09		
	993	-03		
	1003	+07		
	1002	+06		
	3985	13-12		
	9.96+1	±.06 ↓		
11 23.4	37	+89° 43'	62.8	
	1009	+13		
	1002	+06		
	994	-02		
	980	-16		
	3985	19-18		
	9.96+1	±.09 ↓		
11 24.5	83 (1)	+89° 54'	63.2	
	1092	+12		
	1088	+08		
	1073	-07		
	1068	-12		
	4321	20-19		
	10.80+1	±.10 ↓		
11 27.9	3422	-10° 0'	32.5	8.2
	805	+11		
	795	+01		
	788	-06		
	789	-05		
	3177	12-11		
	794+1	±.06 ↓		

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1899phae.proj.1830W

May 12, 1899.

11	29.3	3433	+10° 0'	30.3	10.5
		1134	-15	H. 2.	
		1143	-06		
		1149	00		
		1171	+22		
		4597	22-21		
		11.49+1	±.11 √		
11	30.0	3434	-10° 0'	30.7	9.0
		848	-02		
		858	+08		
		850	00		
		842	-08		
		3398	8-10		
		8.50-2	±.04 √		
11	30.9	3444	-10° 2'	29.3	10.8
		1161	+13		
		1149	+01		
		1141	-07		
		1143	-05		
		4594	14-12		
		11.48+2	±.06 √		
11	31.7	3448	-9° 56'	29.1	9.6
		1059	+13		
		1043	-03		
		1043	-03		
		1041	-05		
		4186	13-11		
		10.46+2	±.06 √		
11	32.4	3452	-9° 58'	29.1	9.2
		964	+01		
		959	-04		
		962	-01		
		966	+03		
		3851	4-5		
		9631	±.02 √		

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

11 33.0	3453	−9° 58′	29.5	10.6
	1069	−09		
	1071	−07		
	1072	−06		
	1098	+20		
	4310	20−22		
	10.78−2	±10 ✓		
11 34.0	3456	−9° 59′	30.3	9.8
	1017	+16		
	1004	+03		
	1002	+01		
	980	−21		
	4003	20−21		
	10.01−1	±10 ✓		
11 34.9	3462	−9° 59′	29.9	11.0
	1143	−12		
	1152	−03		
	1153	−02		
	1172	+17		
	4620	17−17		
	11.55−0	±08 ✓		
11 35.8	3469	−9° 59′	28.3	10.0
	1147	−08		
	1154	−01		
	1158	+03		
	1160	+05		
	4619	8−9		
	11.55−1	±04 ✓		
11 36.8	3475	−9° 57	26.3	9.6
	1108	+02		
	1057	−09		
	1107	+01		
	1113	+07		
	4425	10−9		
	11.06+1	±.05 ✓		

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1899phae.proj.1830W

May 12, 1899

11	39.6	~~3427~~	−19°45′	33.7	9.4
		1079	+07	H. 21.	
		1084	+12		
		1074	+02		
		1052	−20		
		4289	21−20		
		10.72+1	±10 ✓		
11	42.6	~~3434~~	−20°1′	38.9	10.5
		1150	+05		
		1149	+04		
		1143	−02		
		1138	−07		
		4580	9−9		
		11.45−	±04 ✓		
11	43.2	3434	−19°58′	38.6	9.0
		954	+02		
		957	+05		
		949	−03		
		946	−06		
		3806	7−9		
		9.52−2	±04 ✓		
11	44.0	3444	−20°3′	37.3	10.4
		1128	+02		
		1131	+05		
		1125	−01		
		1121	−05		
		4505	7−6		
		11.26+1	±03 ✓		
11	44.9	3448	−20°2′	37.3	10.3
		1143	−09		
		1161	+09		
		1152	00		
		1151	−01		
		4607	9−10		
		11.52−1	±05 ✓		

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

11 45.7	3469	-20°1'6	33.4	9.3
	992	-08		
	1003	+03		
	1002	+02		
	1003	+03		
	4000	8-8		
	10.00	±.04 ✓		
11 46.3	3477	-20°2'	32.0	9.7
	1028	+10		
	1023	+05		
	1007	-11		
	1013	-05		
	4071	15-16		
	10.18-1	±.08 ✓		
11 47.0	3484	-20°8'	31.4	8.6
	943	+03		
	938	-02		
	941	+01		
	939	-01		
	3761	4-3		
	9.40+1	±.02 ✓		
11 47.6	3490	-20°7'	30.7	9.9
	1114	+05		
	1111	+02		
	1097	-12		
	1115	+06		
	4437	13-12		
	11.09+1	±.06 ✓		
11 48.3	3457	-20°3'	29.1	10.5
	1111	+07		
	1102	-02		
	1097	-07		
	1107	+03		
	4417	10-9		
	11.04+1	±.05 ✓		

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1899phae.proj.1830W

May 12, 1899.

11	49.1	3499	−20° 9′	δ 28.7		10.6
		1211	+22			
		1183	−06			
		1180	−09			
		1182	−07			
		4755	22−22			
		11.89	±11 ↓			
11	45.8	3504	−20° 7′	28.3		9.1
		998	−01			
		999	00			
		1002	+03			
		998	−01			
		3997	3−2			
		9.996	±.01 ↓			
12	3.0	R. Corvi.	−18° 20′	51.8		
				t. susp.		
				g seen.		
				r not seen.		
12	8.2	T. Virginis	−5° 12′	61.5		10.0
				g seen.		
				r susp.		
12	12.4	g. Virginis	−3° 38′	46.3		9.0
				g seen.		

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May 12, 1899. J.D. 4787 = a

12	17.6	3483	−9° 58′	65.1	8.6
		521	+21		
		893	−07		
		895	−05		
		892	−08		
		3601	21−20		
		9.00+1	±.10 ↓		
12	18.1	3485	−9° 58′	64.6	9.3
		598	+07		
		591	00		
		588	−03		
		988	−03		
		3965	7−6		
		9.9 1+1	±.03 ↓		
12	19.5	3488	−9° 49′	64.5 − 4.2 = 60.3	9.6
	15.3	1072	+09 50 +1	D.S. 4 fol. 0m 1 N. 3.	
	4.2				
	.99	1065	+02	−9° 3489, 9.6 F. 0.1, N. 2	
	878	1053	−10		
	378				
	4.2	1061	−02		
		4251	11−12		
		10.63−1	±.06 ↓		
12	20.2	3501	−9° 56′	60.3	10.0
		1059	+05		
		1050	−04		
		1054	00		
		1055	+01		
		4218	6−4		
		10.54+2	±.02 ↓		
12	20.8	3504	−9° 49′	55.1	8.4
		575	+23		
		557	+05		
		943	−09		
		933	−19		
		3808	28−28		
		9.5−2	±14 ↓		

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May 12, 1899.

12	22,6	3505	−9°56'6	60.8	9.6
		1022	+11	H. 2.	
		1008	−03		
		1004	−07		
		1009	−02		
		4043	11-12		
		10.11-1	±.06 ✓		
12	23.5	3518	−9°52'	56.2	9.9
		1172	+16		
		1158	+02		
		1149	−07		
		1144	+2		
		4623	18-19		
		11.56-1	±.09 ✓		
12	24,1	3536	−9°57'	50.3	9.4
		982	−03		
		983	−02		
		987	+02		
		988	+03		
		3940	5-5		
		9.85	±.02 ✓		
12	24.8	3546	−9°52'	48.5	9.0
		1029	+03		
		1025	−01		
		1032	+06		
		1018	−08		
		4104	9-9		
		10.26	±.04 ✓		
12	25,6	3555	−9°57'	46.7	9.5
		1061	00		
		1063	+02		
		1062	+01		
		1059	−02		
		4245	3-2		
		10.61+1	±.01 ✓		

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May 12, 1899. J.D. 4787=a

12 26.2	3 5 5 4	-10° 0' 0	46.9	9.8
	1063	-03		
	1063	-03		
	1063	-03		
	1073	+07		
	4262	7-9		
	10.66-2	±.04		
12 26.8	3560	-9° 58'	46.9	9.8
	1069	-14		
	1086	+03		
	1091	+08		
	1087	+04		
	4333	15-14		
	10.83+1	±.07		
12 27.5	3564	-9° 58'	46.1	9.2
	1028	-02		
	1029	-01		
	1032	+02		
	1030	00		
	4119	2-3		
	10.30-1	±.01		
12 28.2	3580	-9° 57'	42.0	9.2
	983	-22		
	1007	+02		
	1016	+11		
	1014	+09		
	4020	22-22		
	10.05	±.11		
12 28.7	3581	-9° 56'	42.6	9.4
	978	-10		
	985	-03		
	988	00		
	1002	+14		
	3953	14-13		
	9.88+1	±.07		

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1899phae.proj.1830W

May 12, 1899.

12	29.2	3591	-9°574	40.3	10.6
		1163	-05		
		1162	-06		
		1172	+04		
		1174	+06		
		4671	10-11		
		11.68-81	±.05 ✓		
12	31.0	3518	-19°51'	63.2	10.5
		1162	+18		
		1143	-01		
		1148	+04		
		1124	-20		
		4577	22-21		
		11.44+1	±.11 ✓		
12	31.5	3519	-19°55'	63.6	9.6
		1099	+10	29.	
		1092	+03		
		1083	-06		
		1082	-07		
		4356	13-13		
		10.89	±.06 ✓		
12	31.9	3519	-19°53'	63.9	10.0
		1153	+14		
		1143	+04		
		1134	-05		
		1127	-12		
		4557	18-17		
		11.39+1	±.09 ✓		
12	34.1	3536	-19°46'	61.9 -1.5 60.4	9.8
	32.5 / 1.6 / .94 / 64 / 144 / 15	1164	+05 50 FH	10. 11.0 Jne. 0.4	8.3.
		1151	-08		
		1147	-12		
		1175	+16		
		4637	21-20 ✓		
		11.59+1	±.10		

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May 12, 1899. J.D. 4787 = a

12 34.7	35 46	−19° 5′	60.3	11.0
34.7 / 0	1218	+18	58 / +4	
	1203	+03		
	1197	−03		
	1180	−20		
	4798	21−23		
	12.00−2	±.11 ✓		
12 35.1	35 47	−19° 5′	60.7	5.8
	1082	+12		
	1078	+08		
	1063	−07		
	1057	−13		
	4280	20−20		
	10.70	±.10 ✓		
12 35.6	35 50	−19° 5′	59.8	10.4
	1168	+08		
	1169	+09		
	1148	−12		
	1157	−03		
	4642	17−15		
	11.60+2	±.08 ✓		
12 36.1	35 51	−19° 5′	59.6	5.6
	1092	+04		
	1084	−04		
	1082	−06		
	1093	+05		
	4351	9−10		
	10.88−1	±.05 ✓		
12 36.9	35 58	−19° 5′	49.2	10.8
	1179	+08		
	1180	+09		
	1161	−10		
	1163	−08		
	4683	17−18		
	11.71−1	±.09 ✓		

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1899phae.proj.1830W

May 12, 1899

12 38.0 3604 −19° 53′ 48.5 +10.6 = 59.1 9.7

49.3 / 11.3 / .94 / 452 / 1017 / 10.6

1098 +04 (59 / +6)
1098 +04
1092 −02
1087 −07
4375 / 10.94−1 8−9 ±.04 ✓

12 38.6 3608 −19° 47′ 47.5 10.2

50.8 / 12.2 / .94 / 488 / 1098 / 11.5

1213 −03 (54 / −7)
1208 −08
1213 −03
1231 +15
4865 / 12.16+6 15=14 ±.07 ✓

12 43.3 3607 −19° 51′ 53.4 +7.0 = 60.4 8.6

50.8 / 7.5 / .94 / 800 / 675 / 7.0

1088 +05 (54 / +3)
1082 −01
1080 −03
1081 −02
4331 / 10.83−1 5−6 ±.03 ✓

12 44.0 3617 −19° 57′ 57.3 7.5

717 +07
706 −04
704 −06
712 +02
2839 / 7.10−1 9−10 ±.05 ✓

12 44.5 3618 −19° 54′ 51.2 9.8

1038 +02
1037 +01
1033 −03
1037 +01
4145 / 10.36+1 4−3 ±.02 ✓

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

12 45.0 3619 −19°52′ 51.7 8.7

942 +03 52
937 −02 0
935 −04
941 +02
5−6
±.03 ✓

Comment. −19° 3647, 9.5 | 3755 / 9.39−1

12 48.3 3646 87 −19°48′ 45.5 +14.8 = 60.3 S. 6

13 4.0 1039 +06 5−4 +6 a D. 9.5 Jan. 0m 1 S. 5−
4.2 15.7 1032 −01 E. 8.6 Jan. 0m 3 S. 8.
15.9 .94 1019 −14 47 b −19° 3646, 8.7 P. 0.2 S. 7
.94 628 1042 +09 ±1 14.9
636 1413 15−15 60.4
1431 8.4 ±.08 ✓
14.9 14.8 4132 / 10.33

12 55.5 3655 −19°57′ 48.2 +12.2 = 60.4 S. 8

8.5 1046 +16 5−9 +2 D. 8.5− Jan. 0m 2 N. 10.
13.0 1031 +01 −19° 3654, 8.8 P. 0.1 N. 9
.94 1023 −07
520 1026 −08
1170 17−15
12.2 ±.08 ✓

12 56.2 3660 −19°57′ 47.0 8.6

949 +05
952 +08
940 −04
934 −10
13−14
3775 / 9.44−1 ±.07 ✓

12 56.9 3665 −19°57′ 46.2 S. 8

1012 +11
1004 +03
997 −04
990 −11
14−15
4003 / 10.01−1 ±.07 ✓

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1899phae.proj.1830W

May 12, 1899.

12 57.3	3666	−19° 5′ 3	46.7	9.9
	1019	−09		
	1028	05		
	1026	−02		
	1040	+12		
	4113	12−17		
	10.28+1	±.06 ✓		
12 57.7	3668	−19° 5′ 3	47.1	9.4
	1060	+08		
	1058	+06		
	1043	−09		
	1048	−04		
	4209	14−13		
	10.52+1	±.07 ✓		
12 59.3	3671	−19° 5′ 3	46.4	9.7
	1059	+17		
	1048	+06		
	1037	−05		
	1023	−19		
	4167	23−24		
	10.42−1	±.12 ✓		
12 59.9	3673	−19° 5′ 5	46.4	9.9
	1103	−01		
	1106	+02		
	1108	+04		
	1099	−05		
	4416	6−6		
	11.04	±.03 ✓		
13 0.5	3678	−19° 5′ 1	45.8	9.5
	1034	+06		
	1025	−03		
	1018	−10		
	1033	+05		
	4110	11−13		
	10.28−2	±.06 ✓		

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

13	1.1	3679	-19° 58'	46.2	9.7
		1042	+02		
		1038	-02		
		1033	-07		
		1048	+08		
		4161	10-9		
		10.40+1	±.05√		
13	2.0	3684	-19° 58'	44.8	10.1
		1143	+12		
		1132	+01		
		1118	-13		
		1130	-01		
		4523	13-14		
		11.3 9-1	±.07√		
13	2.4	3687	-19° 57'	44.7	9.7
		997	-06		
		1001	-02		
		995	-08		
		1020	+17		
		4013	17-16		
		10.03+1	±.08√		
13	3.3	3697	-19° 53'	39.2	8.6
		938	-12		
		956	+06		
		963	+13		
		943	-07		
		3800	19-19		
		9.50	±.10√		
13	5.8	W. Virginia 25.	-20 5'3	48.2	7.2
		735	+15		
		723	+03		
		712	-08		
		709	-11		
		2879	18-19		
		7.20-1	±.09√		

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1899phae.proj.1830W

May 12, 1899.

13	6.8	W. Tau.	−2° 38′	49.3	10.5
		1063	+09	H. 2.	
		1051	−03		
		1052	−02		
		1052	−02		
		4218	9−7		
		10.54+2	±.04		
13	7.3	F.	−2° 42′	47.9	9.8
		1104	+06		
		1099	+01		
		1099	+01		
		1091	−07		
		4393	8−7		
		10.98+1	±.04		
13	7.9	V. Tau.	−2° 27′	48.8	10.5
		1098	−03		
		1102	+01		
		1100	−01		
		1103	+02		
		4403	3−4		
		10.01−1	±.02		
13	8.6	D.	−2° 53′	51.2	
		737	+13		
		726	+02		
		718	−06		
		713	−11		
		2894	15−17		
		7.24−2	±.08		
13	9.4	W.	−2° 37′	51.8	
		1017	+11		
		1003	−03		
		1003	−03		
		1001	−05		
		4024	11−11		
		10.06	±.06		

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

13	9.9	♃	−2° 41′	50.4	
		1070	05		
		1068	−02		
		1073	+03		
		1071	+01		
		4282	4-2		
		1070.5+2	±.02 ✓		
13	10.4	ν Vir.	−2° 26′	51.2	
		1132	+06		
		1133	+07		
		1123	−03		
		1118	−08		
		4506	13-11		
		1126+2	±.06 ✓		
13	11.1	♎	−2° 53′	53.3	
		718	+01		
		718	+01		
		718	+01		
		713	−04		
		2867	3-4		
		717.1	±.02 ✓		
13	11.7	ν.	−2° 37′	54.1	
		1016	−04		
		1018	−02		
		1021	+01		
		1023	+03		
		4078	4-6		
		1019.5-2	±.02 ✓		
13	12.3	♃.	−2° 40′	52.8	
		1098	+10		
		1089	+01		
		1087	−01		
		1079	−09		
		4353	11-10		
		1088+1	±.05 ✓		

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13	12.7	V. Vir.	−2° 27′	5-3.6	
		1121	+06		
		1119	+04		
		1109	−06		
		1112	−03		
		4461	10-9		
		11.15+1	±.05 ✓		
13	14.8	3619	−9° 50′	76.8	9.4
		1098	+05		
		1087	−06		
		1088	−05		
		1099	+06		
		4372	11-11		
		10.93	±.06 ✓		
13	15.3	3623	−9° 50′	76.8	9.3
		987	−21		
		1012	+04	3628 too bright = 5.0 mag.	
		1012	+04		
		1022	+14		
		4033	22-21		
		10.08+1	±.11 ✓		
13	16.3	Comp. 3628	−9° 54′	76.2	10.5
		1187	+17		
		1178	+08		
		1159	−11		
		1158	±12		
		4682	25-23		
		11.70+2	±.12 ✓		
13	17.1	3631	−9° 51′	76.8	9.8
		1127	+04		
		1139	+16		
		1114	−09		
		1113	−10		
		4493	20-19		
		11.23+1	±.10 ✓		

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13 17.7	3634	−9°52'		76.6	9.6
	1099	+05			
	1094	00			
	1093	−01			
	1091	−03			
	4377	5−4			
	10.94+1	±.02 ✓			
13 18.8	3651	−9°50'		71.0	9.5
	1064	+09	29.8.0 fol. 0.1 N. 2.		
	1052	−03	−9°36 52, 8.7 F. 0.1 N. 2		
	1047	−08			
	1056	+01			
	4219	10−11			
	10.55−1	±.05 ✓			
13 19.5	3671	−9°53'		66.0	10.0
14.3	1084	+10	55	5.1	
5.2	1071	−03	+2	60.9	
.99	1069	−05			
468	1072	−02			
468	4296	10−10			
5.1	10.74 9.5	±.05 ✓			
13 20.0	3673	−9°53'		66.0	9.6
14.8	1053	−08	55	5.1	
5.2	1054	−07	+2	60.9	
.99	1069	+08			
468	1069	+08			
468	4245	16−15			
5.1	10.61+1	±.08 ✓			
13 20.5	3675	−9°55'		65.9	9.2
15.4	938	+10	56	5.0	
5.1	924	−04	+1	60.9	
.99	922	−06			
459	928	00			
459	3712	10−10			
5.0	9.28	±.05 ✓			

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13	21,9	3687	-9° 48'	65.3		9.6
	17.5	1160	-02	51	18.2.	
	4.4	1171	+09	+3	4.4	
	.99	1159	-03		60.9	
	346	1159	-03			
	346	4649	9-8			
	4.4	11.62+1	±.04 ✓			
13	22.5	3692	-9° 48'	64.0		9.1
	19.3	956	+16	50	3.2	
	3.2	923	-17	+2	60.8	
	.99	937	-03			
	288	946	+06			
	288	3762	22-20			
	3.2	9.40+2	±.10 ✓			
13	23,1	3694	-9° 52'	64.2		10.2
	19.7	1078	-03	55	3.4	
	3.4	1071	-10	+3	60.8	
	.99	1070	-11			
	306	1106	+25			
	306	4325	25-24			
	3.4	10.81+1	±.12 ✓			
13	23.6	3695	-9° 52'	64.8		9.0
	19.7	977	+06	54	3.9	
	3.9	965	-02	+1	60.9	
	.99	965	-02			
	351	968	-03			
	351	3883	6-7			
	3.9	9.71-1	±.03 ✓			
13	24.1	3700	-9° 52'	64.1		10.2
	20.9	1168	+09	53	3.2	
	3.2	1157	-02	+1	60.9	
	.99	1152	-07			
	288	1159	0			
	288	4636	9-9			
	3.2	5.8	±.04 ✓			

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May 12, 1899 J.D. 4787 = a

13 24.7	3702	−9°56′	63.7		2.6
22.0	909	+21	58 / +2	2.6	
2.7	893	+05		61.1	
.98	874	−14			
216	877	−11			
243	3553	26−25			
2.6	8.88+1	±.13 ✓			
13 25.4	3717	−9°57′	59.2		9.9
27.1	1102	+13	59 / +2	1.7	
1.7	1091	+02		60.9	
.98	1087	−02			
136	1077	−12			
153	4357	15−14			
1.7	10.89+1	±.07 ✓			
13 26.0	3719	−9°58′	59.8		2.8
	912	+02			
	910	00			
	909	−01			
	911	+01			
	3642	3−2			
	9.10+2	±.01 ✓			
13 26.5	3723	−9°58′	59.6		10.0
27.9	1088	+17	60 / +2	1.4	
1.4	1072	+01		61.0	
.98	1060	−11			
112	1063	−08			
126	4283	18−19			
1.4	10.71−1	±.09 ✓			
13 27.0	3726	−9°54′	59.3		8.7
	967	+03			
	957	−07			
	959	−05			
	973	+09			
	3856	12−12			
	9.64	±.06 ✓			

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98 May 12, 1899.

13	27.7	3732	-9°48'	5-8.7		10.3
	30.1	1138	+10	50	2.4	
	2.4	1123	-05	+2	61.1	
	.99	1132	+04			
	21.6	1121	-07			
	216	4514	14-15			
	2.4	11.28+2	±.06 ✓			
13	28.9	3739	-9°56'	57.5		9.2
	32.2	1013	+13	5-7	3.2	
	3.3	1002	+02	+1	60.7	
	.98	997	-03			
	264	989	-11			
	297	4001	15-14			
	3.2	10.00+1	±.07 ✓			
13	29.5	3740	-9°47'	58.0		10.2
	32.5	1167	-07	51	3.0	
	3.0	1184	+10	+4	61.0	
	.99	1172	-02			
	2.970	1173	-01			
		4696	10-10			
		11.74	±.05 ✓			
13	30.2	3746	-9°57'	57.3		9.9
		1108	+08			
		1102	+02			
		1096	-04			
		1094	-06			
		4400	10-10			
		11.00	±.05 ✓			
13	30.8	3753	-9°49'	56.3		8.9
		990	+10			
		984	+04			
		969	-11			
		975	-05			
		3918	14-16			
		9.792	±.08 ✓			

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May 12, 1899. J.D. 4787 = a

13 31.4	3760	-9°5'7		5-31.6	10.6
	1148	+15			
	1134	+01			
	1122	-11			
	1127	-06			
	4531	16-17			
	11.33-1	±.08 ✓			
13 31.9	3763	-9°5-6'		5-35-	10.4
	1112	-08			
	1118	-02			
	1131	+11			
	1119	-01			
	4480	11-11			
	11.20	±.06 ✓			
13 32.4	3765-	-9°5-3'		56.0	10.2
	1113	-02			
	1113	-02			
	1113	-02			
	1121	+06			
	4460	6-6			
	11.15	±.03 ✓			
13 33.1	3776	-9°5-7'		5-4.2	10.1
	1144	+06			
	1148	+10			
	1139	+01			
	1122	-16			
	4553	17-16			
	11.38+1	±.08 ✓			
13 33.7	3779	-9°5-6'		5-3.8	9.7
	1042	+09			
	1032	-01			
	1028	-05-			
	1029	-04			
	4131	9-10			
	10.33-1	±.05- ✓			

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13	35.0	3780	−9° 55′	55.2	9.8
		1098	+24	H. 2.	
		1080	+06		
		1068	−06		
		1049	−25		
		4295	30–31		
		10.74–1	±.15 ✓		
13	35.6	3781	−9° 47′	55.3	9.9
		1053	+03		
		1053	+03		
		1044	−06		
		1049	−01		
		4199	6–7		
		10.50–1	±.03 ✓		
13	36.2	3793	−9° 55′	52.1	7.8
		847	+24		
		833	+10		
		804	−19		
		807	−16		
		3291	34–35		
		8.23–1	±.17 ✓		
13	36.8	3795	−9° 56′	52.2	10.5
		1122	−21		
		1147	+04		
		1133	−10		
		1169	+26		
		4571	30–31		
		11.43–1	±.15 ✓		
13	37.5	3806	−9° 53′	50.0	9.6
		1069	+02		
		1068	+01		
		1067	00		
		1063	−04		
		4267	3–4		
		1067–1	±.02 ✓		

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13 38.1	3808	−9°5′7	50.3	10.8
	1167	−10		
	1178	+01		
	1182	+05		
	1182	+05		
	4709	10 ±.05		
	1177+1			
13 38.6	3809	−9°5′7	50.6	8.9
	982	+05		
	970	−07		
	979	+02		
	976	−01		
	3907	7–8 ±.04		
	977+1			
13 39.3	3821	−9°5′2	49.5	9.3
	997	+01		
	1003	+07		
	992	−04		
	991	−05		
	3983	8–9 ±.04		
	996+1			
13 40.8	3825	−9°5′6	50.3	~~+0.2~~ 9.8
	1167	−09	19. ~~+20~~ fol. 0m.2 S. 5.	
	1182	+06	E. 11.0 fre. 0m.2 S. 1.	
	1179	+03	−10°3796, 9.1 Fl. 0.2 S. 5	
	1175	−01		
	4703	9–10 ±.05		
	1176+1			
13 41.5	3248	−9°5′1	44.4	9.1
	1058	+14		
	1042	−02		
	1041	−03		
	1034	−10		
	4175	14–15 ±.07		
	1044+1			

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May 12, 1899.

13	42.1	3852	−9°52′6	44.2	9.4
		1054	−09		
		1073	+10		
		1069	+06		
		1057	−06		
		4253	16−15		
		10.633+1	±.08 ✓		
13	44.0	3734	−19°54′	66.7	9.6
		1064	−10		
		1066	−08		
		1088	+14		
		1078	+04		
		4296	18−18		
		10.74	±.09 ✓		
13	44.6	3735	−19°48′	67.0	9.8
		1063	−03		
		1069	+03		
		1067	+01		
		1067	+01		
		4266	5−3		
		10.66+2	±.02 ✓		
13	45.1	3737	−19°52′	66.8	9.6
		1039	+02		
		1039	+02		
		1036	−01		
		1035	−02		
		4149	4−3		
		10.37+1	±.02 ✓		
13	45.6	3738	−19°52′	67.0	9.2
		942	−18		
		958	−02		
		970	+10		
		968	+08		
		3838	18−20		
		9.60−2	±.10 ✓		

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13 46.2	3742	−19°508		67.0	10.2
	1119	−05			
	1122	−02			
	1129	+05			
	1128	+04			
	4498	9−7			
	11.244+2	±.04 ✓			
13 46.8	3755	−19°48′		64.5	8.7
	941	−17			
	960	+02			
	963	+05			
	967	+09			
	3831	16−17			
	9.58−1	±.08 ✓			
13 47.4	3764	−19°52′		62.2	9.7
	1038	+04			
	1037	+03			
	1029	−05			
	1032	−02			
	4136	7−7			
	10.34	±.04 ✓			
13 48.0	3773	−19°48′		60.8	9.4
	1067	+01	+05		
	1058	−08	−04		
	1059	−07	−03		
	1062	−0′	05		
	4246		5−7		
1062−2	10.6642		±.03 ✓		
13 49.2	3779	−19°50′		60.9−.1 = 60.8	10.0
49.1	1062	05	56 +6	LO: 10.2 fol. 0m / N. 2.	
.1					
.94	1058	−04			
.1	1038	−04			
	1069	+07			
	4247	7−8			
	10.62−1	±.04 ✓			

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13	57.6	3804	-19° 49'	63.2	10.1
		1142	-15		
		1151	-06		
		1158	+01		
		1176	+19		
		4627	20-21		
		1157-1	±10 ✓		
13	58.3	3800	-19° 52'	64.0	10.6
		1189	-03		
		1183	-09		
		1190	-02		
		1207	+15		
		4769	15-14		
		1192+1	±07 ✓		
13	59.0	3807	-19° 52'	63.2	9.5
		1069	-03		
		1077	+05		
		1073	+01		
		1070	-02		
		4289	6-5		
		1072+1	±03 ✓		
13	59.6	3809	-19° 47'	63.0	9.3
		1031	+14		
		1014	-03		
		1004	-13		
		1018	+01		
		4067	15-16		
		1017-1	±08 ✓		
14	0.2	3814	-19° 54'	62.4	10.4
		1132	+06		
		1121	-05		
		1121	-05		
		1130	+04		
		4504	10-10		
		1126	±05 ✓		

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14	0,8	3816	−19°53′	62.9	9.6
		1013	−13		
		1034	+08		
		1028	+02		
		1027	+01		
		4102.2-2	11−13 ±.06 ✓		
14	1,4	3821	−19°50′	61.8	9.6
		998	05		
		994	−04		
		993	−05		
		1008	+10		
		3993 9.98+1	10−9 ±.05 ✓		
14	1,8	3824	−19°46′	61.8	9.4
		1039	+13		
		1030	+04		
		1022	−04		
		1012	−14		
		4103 10.26-1	17−18 ±.09 ✓		
14	2,4	3831	−19°48′	59.8	9.6
		1032	−17		
		1043	−06		
		1061	+12		
		1061	+12		
		4197 10.49+1	24−23 ±.12 ✓		
14	4,9	3848	−19°52′	56.4	10.4
		1135	−01		
		1137	+01		
		1138	+02		
		1132	−04		
		4542 11.36-3	3−5 ±.02 ✓		

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May 12, 1899.

14	6.0	3851	−19° 5-2'	56.8	9.6
		1068	+18	H. 2.	
		1056	+06		
		1042	−08		
		1033	−17		
		4199	24-25		
		10.50-1	±.12		
14	8.3	3865	−19° 58'	54.8	10.4
		1159	−01	D. 7.5 pre. Om 5. 8.6.	
		1161	+01	−20° 3814, 8.5 P.04 8.6	
		1162	+02		
		1158	−02		
		4640	3-3		
		11.60	±.02		
14	9.2	3873	−19° 52'	54.4	10.2
		1127	+14	D. 10.5 fol. Om 1 N. 2,	
		1121	+08		
		1102	−11		
		1102	−11		
		4452	22-22		
		11.13	±.11		
14	9.8	3876	−19° 49'	54.1	9.1
		962	+11		
		949	−02		
		944	−07		
		948	−03		
		3803	11-12		
		9.5-1-1	±.06		
14	14.1	S. Boss.	+53° 53'	65.9	8.2
		921	+11	D. E.	
		908	−02		
		904	−06		
		907	−03		
		3640	11-11		
		9.10	±.06		

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May 12, 1899. J.D. 4787 = a

14 15,0 a +54° 01' 62.7 7.8

809 +09
806 +06
793 -07
793 -07
3201 15-14
8.90+1 ±.07√

14 15,8 b +54° 20' 63.2 +1.8 = 65.0 9.8

18.9 1071 +04 21 20. dbl.
3.1 1063 -04 -1
.58 1062 -04
248 1072 +05
155 4269 9-8
1.8 10.67+1 ±.04√

14 16.3 c +54°18' 63.0 8.2

19.5 538 +11 16
3.2 532 +05 +2
.58 548 +01
256 531 -16
160 3789 17-16
1.9 9.47+1 ±.08√

17.2

14 19.2 m +54°20' 63.5 ~~63.6~~ 11.6

1230
19.4 1262 -02 20
.2 1221 0
.58 1201 -11
.116 1239 +07
1239 +07
4929 14-13
12.32+1 ±.07√

Light varying
N's clouds seen

2.2
.58
176
110
1.3

1.3
64.8

14 20.7 o +54°18' 65,6 - 0.8 = 64.8 13.0

19.1 19.3 1410 -02 19 0 pre. m 0.1 2 8.2.
1.6 1.4 1404 -08 -1 0 Rec. me 0.1 81
.58 .58 1414 +02 9 " " 0.3 8 2
128 112 1420 +08 18 9
80 70 5648 10-10
.9 .8 14.12 ±.05

64.7

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1899phae.proj.1830W

May 12, 1899.

14	22.8	S. Boston	+54°16'		66.8		
					1.9		
					64.9		
	19.5	911	-01	16	Var. seems to change		
	3.3	912	05	0	rapidly at intervals.		
	.58						
	264	911	-01				
	165						
	1.9	913	+01		H. 2.		
		3647	1-2				
		9.12-1	±.01 ✓				
14	23,4	—	+54°12'		66.9		12.5
					2.1		
	19.8	1310	+14	11			
	3.6	1292	-04	+1	64.8		
	.59						
	324	1286	-10				
	180						
	2.1	1297	+01				
		5185	15-14				
		1296+1	±.07 ✓				
14	24.0	—	+54°3'		67.3		9.4
					29. Σ.		
		1052	+08				
		1047	+03				
		1038	-06				
		1039	-05				
		4176	11-11				
		10.44	±.06 ✓				
14	25.0	—	+53°53'		67.4		8.7
					29. Γ.		
		988	-06				
		981	-13				
		1002	+08				
		1004	+10				
		3975	18-19				
		9.94-1	±.09 ✓				
14	25.9	—	+53°31'		67.5		8.2
		934	-04				
		930	-08				
		947	+09				
		941	+03				
		3752	12-12				
		9.38	±.06 ✓				

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

14 27.4	~~D.L.~~	+54°15'		68.5		10.2
	1177	+04				
	1172	-01				
	1169	-04				
	1173	00				
	4691	4-5				
	11.73-1	±.02 ✓				
14 27.9	C.	+54°18'		69.7		
19.5	934	-09	16	4.9		
8.4	941	-02	+2	64.8		
.58						
67.2	950	+07				
420	947	+04				
4.9	3772	11-11				
	9.43	±.06 ✓				
14 30.5	L	+54°13		70.0		11.3
21.7	1251	+08	13	20. 5.1		
8.8	1239	-04	0	64.9		
.58				E. 10.2 pre. 0.5 N. 2		
704	1242	-01				
440	1240	-03				
5.1	4972	8-8				
	12.43	±.04 ✓				
14 31.1	C	+54°12'		70.0		8.5
	889	+09		20.		
	882	+02				
	882	+02				
	868	-12				
	3521	13-12				
	8.80+1	±.06 ✓				
14 31.7	L	+54°18'		70.2		10.4
22.4	1100	00	17	20. 5.4		
9.3	1098	-02	+1	64.8		
.58	1097	-03				
744	1103	+03				
465	4398	3-5				
5.4	11.00-2	±.02 ✓				

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1899phae.proj.1830W

May 12, 1899.

14 32.5 b. +5°44' 70.0 9.5

848 +09
833 −06
834 −05
842 +03
3357 12−11
8.39+1 ±06 ↓

14 36.1 R. Cam. +84°6' 66.0 − 1.1 = 64.9 8.4

24.9 875 −03 17 R. Camelopardi.
11.2 880 +02 −11
.10 874 −04
1.120 882 +04
9 3511 6−7
8.78−1 ±03 ↓

2.2 = 64.7

14 39.3 k +84°18' 66.9 − ~~1.6 = 65.3~~ 12.0

17.8 1300 +08 29 O not seen.
21.5 15.5 1295 +03 −11
.10 .10 1293 +01
2.2 15.50 1282 −10
5170 12−10
12.92+2 ±.06 ↓

14 41.6 m +84°1' 67.4 − 2.8 = 64.6 12.3

18.3 1332 −16 12 10, 12.5 pre. ✓ mo N.S.
28.3 1344 −04 −11
.10 1353 +05
28 1361 +13
5390 18−20
13.48−2 ±.10 ↓

14 42.2 R. Cam. +84°8' 66.7

24.9 898 −06 17 1.7
17.3 902 −02 −9 65.0
.10 913 +09
1.7 902 −02
3615 9−10
9.04−1 ±.05 ↓

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

14 43.0	m	+84°5'		66.9	12.2
225	1313	-23	16	2.0	
20.5	1328	-08	-11	64.9	
10	1337	+01			
20	1365	+29			
	5343	30-31			
	13.36 -1	±.15 ✓			
14 43.6	m (2)	+84°7'		67.0	
225	1373	+09	16	2.1	
21.1	1367	+03	-9	64.9	
10	1357	-07			
2.1	1357	-07			
	5454	12-14			
	13.67 -2	±.06 ✓			
14 45.2	L	+84°12'		66.3	10.8
	1152	+05	+18		
	1130	-17	-04		
	1123	-24	-11		
	1132		-02		
4537	4587	18-19			
11341	14471	±.09 ✓			
14 46.3	S	+84°3		66.4	10.2
	1114	+10		D.1	
	1110	+06			
	1096	-08			
	1094	-10			
	4414	16-18			
	11.04 -2	±.08 ✓			
14 46.9	R. Cam	+84°7'		67.1	
	880	+18			
	869	+07			
	852	-10			
	847	-15			
	3448	25-25			
	861	±13 ✓			

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1899phae.proj.1830W

May 12, 1899.

14	48.6	e	+84°2'.4	66.7	8.9
		990	-08	8.2.	
		1007	+09		
		1004	+06		
		992	-06		
		3993	15-14		
		998+1	±.07		
14	50.3	c	+83°59'	66.7	9.2
		943	+03	9.	
		941	+01		
		942	+02		
		933	-07		
		3759	6-7		
		940-1	±.03		
14	51.1	b	+84°9'	66.9	12.2
		1272	-16		
		1291	+03		
		1293	+05		
		1298	+10		
		5154	18-16		
		1288+2	±.08		
14	52.1	f	+84°3'	65.3	9.6
		1062	+26	10.	
		1038	+02		
		1025	-11		
		1020	-16		
		4145	28-27		
		1036+1	±.14		
14	52.6	d	+84°7'	65.3	9.5
		998	+10		
		996	+08		
		994	-14		
		982	-06		
		3958	18-20		
		988-2	±.10		

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1899phae.proj.1830W

May 12, 1899. J.D. 4787 = a

14 53.4 a +84° 9' 6 64.0 +8 = 64.8 7.6

15 1.6 713 +10 20 = 11 R. Cornelia Pardi.
8.2 700 -03
.10 693 -10 29.
.8 707 +04
2813 14-13
2813 +1 +07 ✓

14 54.5 26 +89° 31' 65.4
1051 +13
1033 -05
1031 -07
1037 -01
4152 13-13
1038 +06 ✓

14 54.9 35 +89° 32' 64.5
961 -05
970 +04
966 00
967 +01
3864 5-5
966 +02 ✓

14 55.4 37 +89° 38' 64.8
968 +03
967 +02
962 -03
963 -02
3860 5-5
965 +02 ✓

14 55.9 89 (1) +89° 95-2' 64.4
1072 +09
1062 -01
1061 -02
1057 -07
4251 9-10
1063 +05 ✓

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1899phae.proj.1830W

S.D. 4787 = a

May 12, 1899.

14 56.4	h	+89°43'6	6 4.5	1.
	1279	-04	~~H.~~	
	1285	+02	~~S. H.~~	
	1286	+03	~~D. C.~~	
	1283	00		
	5 1 3 3	5-4		
	1 2 8 3 +1	±.02 ✓		
14 57.0	k	+89°42'	6 4.8	1.
	1399	+05	~~H.~~	
	1399	+05	~~S. H.~~	
	1392	-02	~~D. C.~~	
	1384	-10		
	5574 ~~4 5 7 4~~	10-12		
	1394-2 ~~1 1 4 4~~ -2	±.06 ✓		
14 57.1	l	+89°43'	6 5.0	1
	1392	-15	H. 2.	
	1407	00	S. H. 2.	
	1408	+01	D. C. 3.	
	1422	+15		
	5629	16-15		
	1407 +1	±.08 ✓		

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1899phae.proj.1830W

May 15, 1899. (Monday).

	Pole		
13 53.8	26	+89°29′	60.2 Engines
	1100		14.3. Clouds early
	1093		in evening, now
	1092		passing off.
	1087		
13 54.5	35	+89°33′	59.3
	1014		
	1019		
	1022		
	1026		
13 55.2	37	+89°40′	59.8
	1016		
	1004		
	994		
	1005		
13 55.9	89 (1)	+89°51′	59.7
	1052		
	1053		
	1048		
	1057		
13 56.4	h	+89°44′	59.4
	1263		
	1272		
	1282		
	1289		

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1899phae.proj.1830W

May. 15, 1899.

Clouds which may have affected preceding stars.

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1899phae.proj.1830W

J.D. 4792

May 17, 1899. (Wednesday.)

14	3.0	—	-18°50'	60.0
		1146	-18	Experiments with
		1159	-05	Horizontal Shot.
		1188	+24	
		1163	-01	Cloudy. Jupiter in field
		4656	24-24	
		11.64	±12 ↓	
14	4.7	—	-10°50'	60.3
		1143	+01	
		1147	+05	
		1159	+17	
		1121	-21	
		4570	23-21	
		11.42+2	±11 ↓	
14	5.1	—	-10°50'	61.4
		1146	+14	
		1140	+08	
		1100	-32	
		1141	+09	
		4527	31-32	
		11.32-1	±16 ↓	
			-10 50	67.8 EBW
		11.48	+08	Cloudy. Jupe. in field.
		10.90	-50	
		11.71	+31	
		11.53	+13	
		4562	52-50	
		11.40+2	±26 ↓	
				EBW.
		11.85	+15	
		11.80	+10	
		11.60	-10	
		11.55	-15	
		4680	25-25	
		11.70	±12 ↓	

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1899phae.proj.1830W

May 17, 1899.

2 16 30	———	73.2	−10 50	E.B.W.	12
~~2 16 30~~	11.46	~~+20~~ +19			
	11.44	+18 +17			
	11.30	+04 +03			
	10.84	−39 −40			
4507	~~45 07~~		39-40		
11.27-up	~~11.26~~		±.20		
14 34.0	35	+89° 33'	60.3	W.M.R.	
	11 58	+.33			
	11 11	−.14			
	11 32	+.07			
	11 00	−.25			
	11.01	~~+.19~~ .20			
14 35.0	35	+89° 32'	60.3	WMR	1
	10 82	0.13 −14			
	10 51	0.44 −45			
	11 19	0.24 23			
	11 30	0.35 34			
	43.82	1.16	57-59		
	10.9 −6 −2	0.29	±.29		
14 38.0	35	+89° 32	60.3	WMR	1
	11 03	+.02			
	10 89	−.12			
	10 91	−.10			
	11 21	+.20			
	44.04	.44			
	11.01	±0.11			
14 40.5	60r 35	~~89~~ 66.32	6.0.4	EBW.	15
	10.67	0.09 −07			
	10.48	0.28 −26			
	10.80	0.04 06			
	11.00	0.24 26			
	42.95	0.65 32-33			
	10.74	0.16 ±.16			

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1899phae.proj.1830W

May 17, 1899.

14	42.5	35			E B W.
		11.37	+32		
		10.02	-03		
		11.14	+09		
		10.66	-39		
		44.19	41-42		
		11.05-1	±.21 ✓		
		35			E B W.
		11.13	+01		
		11.22	+10		
		10.02	-10		
		11.11	-01		
		44.48	11-11		
		11.12	±.06 ✓		
14	58.0	35	+89° 32'	Cw. 4	W. M. R.
		1141	+09		
		1138	+06		
		1129	-03		
		1118	-14		
		4526	15-17		
		11.32-2	±.08 ✓		
15	3.0	35	+89° 32'	Cw. 4	W. M. R.
		1103	-15		
		1129	+11		
		1109	-09		
		1131	+13		
		44.72	+24 -24 ✓		
		11.18	±.12		
15	10.0	35	+89° 32'	Cw. 4	W. M. R.
		1117		St. S. St. S. D. C. S.	
		1132		Clouds most of evening.	
		1191		Clouds over pole.	

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1899phae.proj.1830W

Monday. May 22. 1899

A U tube pressure gauge has been applied to the gas pipe supplying the "Welsbach" burner used for the artificial star. This gauge is attached just inside the cock of the bracket supporting the burner. It is provided with a scale of centimeters & tenths from which readings are to be taken. A three-way relief attachment allows the water in the tube to return to the normal whenever the gas is shut off from the gauge.

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1899phae.proj.1830W

Tuesday May 23. 1899

5.00 P.M Eastern Time Gauge 4.5 – 8.3
Diff. 3.8

Miss Walker are the marks 12.04 and 12.73 interchanged on this plate?

H.S.L.

I think not, according to the positions in [illegible]

+28° 2251 8.49
+29. 2448 9.83
+29 2452 10.25
1204 11.67 1273

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1899phae.proj.1830W

May 23 1899 (Tuesday)

Mean Time				
7	18.0	45	79	Range to measure Pibs pressure of gas.
	23.	45	78	Wibs
	24	45	78	" " Wolbach Lyfield.
7	24.0	45	78	P. " " "
8	2.0	45	76	W. " " "
8	59.0	45	77	W. " " "
9	53.0	45	80	W. " " "
10	45.0	45	81	W " " "

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1899phae.proj.1830W

J.D. 4799 = b

Wednesday May 24. 1899

5h 00 ~~Rm.~~ (Easton) Pressure gauge 8.3 − 4.5 = 3.8 cm. Column fluctuates rapidly between 8.3 and 8.1 during inspection. 9. obsr.

7 49.0 44 7s Gas burning.

pole

12 32.5	26	+89°29'	57.4	
	1094	+10	58.2.	
	1092	+08		
	1078	−06		
	1072	−12		
	4336	18−18		
	10.84	±09 ↓		
12 33.1	35	+89°38'	56.9	
	980	−03		
	978	−05		
	979	−04		
	996	+13		
	3933	13−12		
	9.833+1	±06 ↓		
12 33.9	37	+89°41'	57.2	
	993	−09		
	1001	−01		
	1007	+05		
	1005	+03		
	4006	8−10		
	10.02−2	±04 ↓		
12 34.8	89 (1)	+89°54'	57.4	
	1101	+21		
	1083	+03		
	1074	−06		
	1062	−18		
	4320	24−24		
	10.80	±12 ↓		

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1899phae.proj.1830W

May. 24, 1899.

Pressure Gauges.

8 10.5 45 74 Varies 74 to 76.

12	44.8	623	+70°21'	80.3		10.0
		1073	+14	29.		
		1061	+02			
		1051	-08			
		1052	-07			
		4237	16-15			
		10.59+1	±.08 ↓			
12	46.2	627	+70°19'	79.3 -21.6 = 57.7		9.6
	40.8	1027	+07 (5-9, +20)	29.5 Jne. 0 — 1 N.8		
	65.4					
	.33	1022	+02	+70°675, 9.2, P.0+ N 8		
	1962					
	1962	1021	+01			
	21.6	1008	-12			
		4078	10-12			
		10.20-2	±.06 ↓			
12	47.0	635	+70° 0'	76.0		9.4
		973	-07 (51, +19)			
		978	-02			
		982	+02			
		988	+08			
		3921	10-9			
		9.80+1	±.05 ↓			
12	47.6	636	+70° 9'	75.8		7.6
		772	+19 (0, +9)			
		749	-04			
		749	-04			
		741	-12			
		3011	19-20 ↓			
		7.53	±.10			

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1899phae.proj.1830W

May 24, 1899. J.D. 4799 = b

12 48.4		645	+69° 56'		73.9 − 16.5 = 57.4		8.8
11 59.9		845	+04	5-3 / +3	10.10.0 pre., 0.00 S.1.		
48.5		842	+01				
.34		835	−02				
1940		839	−02				
1455		3365	5-4				
16.5		8.41+1	±.02 ✓				
12 49.4		653	+69 56'		72.0		9.8
		995	−03				
		1002	+04				
		994	−04				
		1000	+02				
		3991	6-7				
		9.98-1	±.03 ✓				
12 50.1		652	+69 52'		71.3		9.6
		975	+10				
		968	−01				
		962	−07				
		967	−02				
		3876	10-10				
		9.69	±.05 ✓				
12 50.7		656	+69° 50'		71.7		9.9
		1002	−07		20.1		
		1011	+02				
		1018	+09				
		1004	−05				
		4035	11-12				
		10.09-1	±.06 ✓				
12 54.0		662	+69° 48'		69.2		9.7
		1023	+08				
		1017	+02				
		997	−18				
		1023	+08				
		4060	18-18				
		10.15	±.09 ✓				

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1899phae.proj.1830W

May 24, 1899.

12	58.2	388	+79°40'	66.2		9.3
		1030	+32	—	18.3	
		999	+01			
		992	−06			
		970	−28			
		3999	33−34			
		9.998−1	±.17 ✓			
12	58.8	388 (2)	+79°40'	66.3		
		962	−02			
		953	−11			
		969	+05			
		974	+10			
		3858	15−13			
		9.644+2	±.07 ✓			
12	59.4	390	+79°45'	6514		9.0
		913	+09			
		907	+03			
		901	−03			
		896	−08			
		3617	12−11			
		9.044+1	±.04 XX			
13	0.4	392	+79°33'	64.3		10.0
		1088	+24	20.		
		1068	+04			
		1060	−04			
		1041	−23			
		4257	28−27			
		10.674+1	±.14 ✓			
13	1.0	394	+79°42'	6443		8.6
12	22.7	911	−05	79 59		
	38.3	922	+06	−17		
	.17	910	−06	8.5		
	2681	923	+07	57.8		
	883	3666	13−11			
	6.5	9.166+2	±.06 ✓			

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1899phae.proj.1830W

+80° 389, 6.7 [illegible]

May 24, 1899. J.D. 4799 = b

13	7.3	397	+75°43'		63.8 − 5.6 = 58.2		7.8
12	34.4 / 32.9 / .17 / 2303 / 329 / 5.6	32.8 / 34.5 / .17 / 2415 / 345 / 5.9	769	+01	80 / 0 / −17	Var. ?	
			761	−07		19.10.5 pre. 1mo N O.	
			769	+01			
			773	+05	80 / 1 / −18	5.9 / 57.9	
			7.68	7−7 ±.04 ↓			
13	9.2	414	+75°30'		59.0 − 1.0 = 58.0		10.2
	3.7 / 5.5 / .18 / 440 / 55 / 1.0	1089	−08	50 / −20	19.10.5 fol. 2mo S. 2.		
		1058	+01				
		1094	+01				
		1102	+05				
		4087 / 10.9	7−8 ±.04 ↓				
13	14.1	1425	+60°42'		91.8		9.4
12	3.8 / 70.3 / .50 / 35.2	1034	08	54 / +48	19. 35.2 / 56.6		
		1038	+04				
		1032	−02				
		1032	−02				
		4136 / 10.34	4−4 ±.02 ↓				
13	15.0	1432	+60°43'		89.9		10.2
12	8.2 / 66.8 / .50 / 33.4	1052	59 −06	59 / +44	83.4 / 56.5		
		1062	+04				
		1053	−05				
		1066	+08				
		4233 / 10.5871	12−11 ±.06 ↓				
13	17.2	1436	+60°32'		88.1		9.7
	14.5 / 62.7 / .50 / 31.4	1032	+10	56 / +36	31.4 / 56.7		
		1017	−05				
		1018	−04				
		1020	−02				
		4087 / 10.87	10−11 ±.05 ↓				

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1899phae.proj.1830W

May 24, 1899.

13	19.9	1440	+60° 25' 6		86.4	10.5
		1162	+01		10.	
		1158	-03			
		1161	0			
		1164	+03			
		4645	4-3			
		11.61+1	±.02 ✓			
13	21.8	1449	+60° 15'		83.8	9.2
		1042	+04			
		1041	+03			
		1039	+01			
		1030	-08			
		4152	8-8			
		10.38	±.04 ✓			
13	22.8	1468	+60° 13'		76.8	8.5
		922	+01			
		923	+02			
		921	0			
		918	-03			
		3684	3-3			
		9.21	±.02 ✓			
13	24.2	1474	+59° 5-1'		74.5	9.4
		973	-17			
		988	-02			
		993	+03			
		1005	+15			
		3959	18-19			
		9.90-1	±.09 ✓			
13	25.3	1485	+59° 48'		69.6	9.5
		978	-16			
		992	-02			
		996	+02			
		1009	+15			
		3975	17-18			
		9.94+1	±.09			

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13 25.8	1486	+59°47'	65.3	8.9
	508	-12		
	512	-08		
	528	+08		
	531	+11		
	3679	19-20		
	9.20-1	±10 ✓		
13 27.5	1501	+59°41'	64.9	9.8
	1038	-03		
	1041	05		
	1042	+01		
	1043	+02		
	4164	3-3		
	10.41	±02 ✓		
13 28.3	1510	+59°42'	61.2	10.2
	1163	-02		
	1160	-05		
	1169	+04		
	1168	+03		
	4660	7-7		
	11.65-	±04 ✓		
13 28.8	1515	+59°34'	59.8 - 2.2 = 57.6	9.8
24.4	1153	+03 -12	50 -16	20. 9.0 pic. 1 m s 8.2.
+4.4	1155	+05 -10	+59°1514, 9.1 P.12 8.2	
.50	1152	+02 -13		
2.2	1141	-09		
	4601	10-9		
11.50+1	+1.65+1	±05 ✓		
13 30.0	1525	+59°42'	55.1	9.2
	968	+07		
	960	-01		
	962	+01		
	955	-06		
	3845	8-7		
	9.61+1	±04 ✓		

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13	31.2	1528	+59°42'6	54.3	9.3	
		1010	+08	H. 3.		
		1003	+01			
		999	-03			
		996	-06			
		4008	9-9			
		10.02	±.04 ↓			
13	31.7	1529	+59°43'	54.8	10.2	
		1132	+05			
		1121	-06			
		1133	+06			
		1123	-04			
		4509	11-10			
		11.27+1	±.05 ↓			
13	32.6	1532	+59°43'	52.0	9.8	
		1072	-13			
		1101	+16			
		1090	+05			
		1078	-07			
		4341	21-20			
		10.85+1	±.10 ↓			
13	33.3	1534	+59°39'	51.0	9.3	
		1035	+18			
		1009	-08			
		1005	-12			
		1020	+03			
		4069	21-20			
		10.17+1	±.10 ↓			
13	35.2	1545	+59°43'	48.7 +8.8 = 57.5	9.6	
	52.7	1082	+14	53	10. 9.8 pre. 0.2	11.2.
	17.5	1071	+03	-10		
	.50	1064	-04			
	8.8	1055	-13			
		427 X 2	17-19			
		10.68=1	±.08 ↓			

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13 35.7 D 1545 +59°46' 49.0

52.5 / 16.8 / .50 / 8.4 — 8.4 / 57.4

1149	+07	56 / −10
1148	+06	
1135	−07	
1137	−05	
4569	13−12	
1142+1	±.06 ✓	

13 37.6 1552 +59°43' 46.9 9.4

1013	+04
1007	−02
1012	+03
1005	−04
4037	7−6
1009+1	±.03 ✓

10.9.0 fol. 0~, S. 5~

+59° 1553, 8.7 F. 0.0, 8 4.

13 38.4 1553 +59°49' 46.9 9.6

962	−10
972	05
982	+10
973	+01
3889	11−10
972+1	±.05 ✓

10.9.5~ fol. 0~, 5− S 5~

+59° 1556, 9.1 F. 0.3 8 7

13 41.0 696 +70 11' 66.2 8.8

852	+07
848	+03
841	−04
839	−06
3380	10−10
845~	±.05~ ✓

13 47.7 696 +69°42' 68.7 7.5~

727	+03
726	+02
714	−10
729	+05~
2896	10−10
724	±.05~ ✓

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13	48.5	704	+69°43'	65.2 − 7.1 = 58.1	9.6	
	27.5 / 21.0	1053	+27 70 0 / −17	D. 9.0 Jpr. 1m.0 IV. 3.		
	.84 / 840 / 630 / 7.1	1015	−11	+70° 743, 89 P. 0.8 N. 1		
		1018	−08			
		1020	−06			
		4106 / 10.26+2	27−25 / ±13 ↓			
13	49.5	706	+69°39'	64.7	9.8	
		1058	+07			
		1049	−02			
		1046	−05			
		1052	+01			
		4205 / 10.5−1+1	8−7 / ±.04 ↓			
13	50.2	708	+69°42'	63.9	10.5	
		1123	+07			
		1127	+11			
		1112	−04			
		1102	−14			
		4464 / 11.16	18−18 / ±.09 ↓			
13	51.2	713	+69°34'	62.3	9.6	
		1055	+18			
		1037	−08			
		1026	−11			
		1030	−07			
		4148 / 10.37	18−18 / ±.09 ↓			
13	51.9	716	+69°35'	61.8	7.8	
		806	−07			
		808	−05			
		817	+04			
		820	+07			
		3251 / 8.13−1	11−12 / ±.06 ↓			

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13 58.2	718	+69° 34'	63.4	9.2
	949	+05		
	950	+06		
	943	-01		
	934	-10		
	8776	11-11		
	9.44	±.06 ✓		
13 58.9	719	+69° 41'	63.2	9.3
	988	+02		
	997	+11		
	982	-04		
	976	-10		
	3943	13-14		
	9.86-1	±.07 ✓		
14 0.0	723	+69° 36'	62.2	7.7
	781	+09		
	780	+08		
	773	+01		
	752	-20		
	3086	18-20 ✓		
	7.72-2	±.10		
14 0.7	726	+69° 40'	61.6	8.4
	854	-08		
	862	00		
	864	+02		
	870	+08		
	3450	10-8		
	8.62+2	±.04 ✓		
14 3.0	734	+69° 34'	58.6-7=57.9	9.4
1.0	991	-09	54 / -20	20.10.5 fol. 0 — 18.8.
2.0	1010	+10		
.34	1003	+03		
.7	994	-06		
	3998	13-15 ✓		
	1.000-.7=.99	±.07		

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14	5.9	738	+69°33'6	56.1	9.6
		1036	+09	18.3.	
		1029	+02		
		1031	+04		
		1012	-15		
		4108 / 10.27	15-15 ±.08		
14	6.9	742	+69°41'	55.2 +2.9 = 58.1	10.5
	15.3 / 8.4 / .34 / 336 / 252 / 29	1072	+04 59/78	Obl.	
		1068	00	D. 11.0 fol. 0 = 1 11.0	
		1071	+03		
		1061	-07		
		4272 / 8.68	7 ±.04		
14	7.5	743	+69°39'	55.3	8.0
		836	-08		
		842	-02		
		851	+07		
		848	+04		
		3377 / 8.44+1	11-10 ±.05		
14	8.4	749	+69°41'	52.2	8.2
		810	+13		
		793	-04		
		792	-05		
		793	-04		
		3188 / 7.97	13-13 ±.06		
14	9.1	751	+69°43'	52.0	8.9
		869	+06		
		858	-05		
		862	-01		
		862	-01		
		3451 / 8.63-1	6-7 ±.03		

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				Pressure	Gauge.
9	44.5	45	79	Gas burning.	
9	44.8	45	80	"	8.
		pole			
14	11.3	26	+89°30'	5-8.5-	
		1123	-02		
		1123	-02		
		1122	-03		
		1133	+08		
		4501	8-7		
		11.25+1	±.04		
14	11.9	35	+89°33'	5-7.8	
		1062	+19		
		1038	-05		
		1037	-06		
		1036	-07		
		4173	19-18		
		10.43+1	±.09		
14	12.4	37	+89°40'	5-7.9	
		1041	+11		
		1032	+02		
		1023	-07		
		1024	-06		
		4120	13-13		
		10.30	±.06		
14	13.0	89 (1)	+89°54'	5-7.8	
		1088	-27		
		1128	+13		
		1123	+08		
		1120	+05		
		4459	26-27		
		11.15-1	±.13		

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May 24, 1899.

14	17.1	1560	+59°40'	63.9	9.2		
		962	-06				
		971	+03				
		967	-01				
		973	+05				
		3873	8-7				
		9.688+1	±.04 ✓				
14	18.1	1563	+59°43'	62.7-4.9=57.8	10.2		
	8.3	1123	+05	5-6			
	9.8	1118	00	-13			
	.50	1118	00				
	4.9	1113	-05				
		4472	5-5				
		11.18	±.02 ✓				
14	19.1	1566 8.3	+59°42'	62.3-4.6=57.7	9.6		
	9.8	977	-01	5-5			
	9.3	981	+03	-13			
	.50	976	-02				
	4.6	977	-01				
		3911	3-4				
		9.778-1	±.02 ✓				
14	19.6	1566	+59°43'	62.8			
	9.9	970	+08	5-6	4.8		
	9.7	961	-01	-13	58.0		
	.50	958	-04				
	4.8	958	-04				
		3847	8-9				
		9.612-1	±.04 ✓				
14	20.4	1575	+59°44'	60.3	8.8		
	14.8	920	-03	5-8	2.8		
	5.6	928	+05	-14	57.5		
	.50	921	-02				
	2.8	922	-01				
		3691	5-6				
		9.223-1	±.03 ✓				

10 bl.
10.5.2 fol. 0 — 1 IV. 1.

10.11.0 fol. 0 — 1 IV. 2.

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14	22.1	1581	+59°43'	59.2		9.8
		1117	+19	29. 10. 0 fol. 0		8.2
		1104	+06			
		1089	−09			
		1082	−16			
		4392	25−25			
		10.98	±.12			
14	24.3	1583	+59°41'	58.5		10.2
		1121	−19	29. 9. 5 fol. 0		9.8
		1140	00	+60° 1540, 9.4, P. 0.1 K. 8		
		1141	+01			
		1160	+20			
		4562	21−19			
		11.402	±.10			
14	25.2	1586	+59°42'	57.7		9.6
		1042	+06			
		1039	+03			
		1032	−04			
		1032	−04			
		4145	9−8			
		10.361	±.04			
14	28.3	436	+79°35'	62.8		9.9
		1000	−03			
		1000	−03			
		1003	00			
		1016	+07			
		4013	7−6			
		10.033	±.03			
14	29.0	443	+79°38'	60.2		7.9
		818	−02			
		814	−06			
		823	+03			
		826	+06			
		3281	9−8			
		8.201	±.04			

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May 24, 1899.

14	30.3	446	+79° 37'	59.4	8.6	1
		920	-06	58.3.		
		921	-05			
		930	+04			
		932	+06			
		3703	10-11			
		9.26-1	±.05 ✓			
14	35.2	466	+79° 46'	49.3	8.2	1
		964	+04			
		962	+02			
		960	00			
		952	-08			
		3838	6-8			
		9.60-2	±.04 ✓			
14	39.4	764	+69° 34'	58.3	8.5	1
		909	+08	D. 9.2 fol. 1 — 0 8.8.		
		898	-03	+69° 765, 8.9 ∓ 1.0 8.7		
		901	00			
		897	-04			
		3605	8-7			
		9.01+1	±.04 ✓			
14	40.1	769	+69° 38'	56.3	9.4	1
		1003	+04			
		1003	+04			
		998	-01			
		993	-06			
		3997	8-7			
		9.99+1	±.04 ✓			
14	40.8	772	+69° 32'	55.6	8.8	1
		871	+0R -23			
		890	+21 -04			
		901	+07			
		915	+21			
		3577	28-27			
		8.94+1	±.14 ✓			

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May 24 1899. J.D. 4799=b

14 41.3	773	+69°35'	55.4	9.0
	963	+16		
	945	-02		
	939	-08		
	942	-05		
	3789	16-15		
	9.47+1	±.08		
14 43.3	778	+69°43'	53.2	10.3
	1087	+06		
	1072	-09		
	1082	+01		
	1083	+02		
	4324	9-9		
	10.81	±.04		
14 45.0	783	+69°39'	51.9	9.4
	952	-07	20. 10.2 fre.	1m5	17.5.
	957	05	2. 10.2 fre.	1m0	N. 10.
	960	+03		
	961	+04		
	3828	7-7		
	9.57	±.04		
14 46.0	786	+69°44'	49.4	8.7
	872	-14		
	893	+07		
	891	+05		
	890	+04		
	3546	16-17		
	8.86+2	±.08		
14 46.7	788	+69°47'	49.2	9.1
	908	-03		
	903	-08		
	911	00		
	922	+11		
	3644	11-11		
	9.11	±.06		

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May 24, 1899.

14	47.4	791	+69°43'	48.9	9.7	
		1032	+06			
		1022	-04			
		1022	-04			
		1028	+02			
		4104	8-8			
		10.26	±04 ✓			
14	48.1	754	+69°50'	47.8	10.6	
		1128	+12			
		1119	+03			
		1110	-06			
		1108	-08			
		4465	15-14			
		11.16+1	±.07 ✓			
14	50.4	797	+69°48'	47.0	9.0	
		939	+04			
		939	+04	~~+615~~		
		931	-04			
		932	-03			
		3741	8-7			
		9.35+1	±.04 ✓			
14	51.7	Comp. 1615	+69°46'	60.2	11.2	
		1220	+02	1615 too brt = 5.0 mag.		
		1213	-05			
		1230	+12			
		1211	-07			
		4874	14-12 ✓			
		12.18+2	±.08			
14	52.6	1617	+69°35'	59.7	9.3	
		978	+05			
		972	-01			
		970	-03			
		973	05			
		3893	5-4 ✓			
		9.73+1	±.02			

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May 24, 1899. J.D. 4799 = h

14 53.3	16 20	+59° 43'	58.1		8.6
	830	-06			
	835	-01			
	837	+01			
	843	+07			
	3345	8-7			
	8.36+1	±.04 ✓			
14 54.4	16 27	+59° 44'	52.2		9.4
15 5.7	1058	+17 54	20bl. 5.6		
11.3	1034	-07 -10	58.8		
.50	1033	-08	D. 11.0 Jne. 0.m1		S. 2.
5.6	1040	-01			
	4165	17-16			
	10.41+1	±.08 ✓			
14 55.0	16 36	+59° 30'	49.6		8.8
	932	-01			
	928	-05			
	941	+08			
	930	-03			
	3731	8-9			
	9.33-1	±.04 ✓			
14 55.8	16 44	+59° 47'	46.8		9.6
	992	-08			
	1002	+02			
	991	-09			
	1016	+16			
	4001	18-17			
	10.01+1	±.09			
15 20.4	16 67	+59° 48'	45.9		9.6
	988	+02	14.3.		
	987	+01			
	978	-08			
	990	+04			
	3943	7-8			
	9.86+1	±.04 ✓			

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1899phae.proj.1830W

May 24, 1899.

15	21.1	1674 8.5	+59°50'	52 −2	47.8	10.5 58.3	9.6	
	42.1 21.0 .50 10.5	1028	+33		20 bl.			
		995	08		D.9.8 fol. 0.7		1 N. 0	
		978	−17					
		978	−17					
		3979 9.95-1	33-34 ±.17 ✓					
15	21.6	21674	+59°50'		48.0			
	42.2 20.6 .50 10.6	1024	+16	52 −2	10.3 58.3			
		1009	+01					
		1010	+02					
		987	−21					
		4030 10.08-2	19-21 ±.10 ✓					
15	22.1	1676	+59°48'		47.5		9.8	
	43.3 21.8 .50 10.6	964	+06	52 −4	10.6 58.1			
		956	−02					
		959	+01					
		952	−06					
		3833 9.58-1	7-8 ±.04 ✓					
15	22.7	1678 8.2	+59°51'		47.2		8.4	
42.9	44.6 21.9 .50 11.0	843	+05	56 −5	11.0 58.2			
		842	+04					
		841	+03					
		824	−14					
		3350 8.38-2	12-14 ±.06 ✓					
15	23.4	1684	+59°51'		45.8		9.4	
		956	+10					
		939	−07					
		940	−06					
		950	+04					
		3785 9.46+1	13+14 ±.07 ✓					

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May 24, 1899 J.D. 4799-4

15 25.8	813	+69°48'	51.4	8.4
	789	+17		
	787	+15		
	762	-10		
	752	-20		
	3090	32-30		
	7.72+2	±.16		
15 26.6	821	+69°48'	49.8	10.4
	1058	-02		
	1060	00		
	1058	-02		
	1062	+02		
	4238	2-4		
	10.60-2	±.02		
15 27.1	822	+69°51'	49.9	9.0
	920	-03		
	912	-11		
	930	+07		
	931	+08		
	3693	15-14		
	9.23+1	±.07		
15 27.8	826	+69°49'	49.4	8.8
	888	+19		
	869	00		
	860	-09		
	859	-10		
	3476	19-19		
	8.69	±.10		
15 28.3	827	+69°51'	49.8	10.3
	1045	-10		
	1054	-01		
	1062	+07		
	1060	+05		
	4221	12-11		
	10.55+1	±.06		

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Pole May 24, 1899.

15 29.3	26	+89°32'	59.2	
	1098	-14		
	1113	+01		
	1112	00		
	1123	+11		
	4446	12-14		
	11.12-2	±.06 ↓		
15 30.0	35	+89°33'	58.3	
	1022	+05		
	1017	00		
	1017	00		
	1011	-06		
	4067	5-6		
	10.14-1	±.03 ↓		
15 30.5	37	+89°39'	58.4	
	1023	+01		
	1025	+03		
	1022	00		
	1020	-02		
	4090	4-2		
	10.22+2	±.02 ↓		
15 31.3	89 (1)	+89°51'	58.0	
	1098	+05	2 too ft.	
	1096	+03	14.3	
	1089	-04	9.14.3	
	1089	-04	29.6.2.	
	4372	8-8	Bright Moon	
	10.93	±.04 ↓		
			Pressure Gauge.	
11 7.5	45	85	Gas burning.	
12 58.0	45	86	" " "	

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1899phae.proj.1830W

89°3

Pole — May 24 1899 — J.D. 4799=b

3 39 14	35	+89 27	58.3	wants
	~~10.79~~ ~~+0.6~~	+03		.37
	10.48	−28		.26 .35
	10.95	+19		
	10.81	+05		
	4303	27-28		
	10.76-1	±.14		
	37	+89 24	58.4	
3 42.5	10.77	−02		
	10.89	+10		
	10.70	−09		
	~~10.81~~	+02		
	4317	12-11		
	10.79+1	±.06		
3 44.0	26	+89 28	59.3	
	11.47	−15		
	11.75	+13		
	11.64	+02		
	11.61	−01		
	4647	15-16		
	11.62-1	±.08		
3 46.6	89.1	+89 9	58.0	
B	11.63	−04		
	11.89	+22		
	11.51	−16		
	11.65	−02		
	4668	22-22		
	11.67	±.11		
3 49.4	35	+89 28	58.3	
	10.70	~~+89 28~~ −02		
	10.78	+06		
	10.60	−12		
	10.82	+10		
	4290	16-14		
	10.72+2	±.08		

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May 24 · 1899

3 50.9	37	#89 20	58.4	Waits
	10.28	-42		
	10.73	+03		
	10.73	+03		
	11.05	+35		
	4279	41-42		
	10.70-1	±.21		
3 52.3	26	+89. 27	59.3	
	11.40	05		
	11.41	+01		
	11.40	05		
	11.38	-02		
	4559	1-2		
	11.40-1	±.01		
3 54.3	89.1	+89. 10	57.9	
	11.08	+05		
	11.16	+13		
	10.74	-29		
	11.14	+11		
	4412	29-29		
	11.03	±.14		
3 56.3	35	+89 27	58.4	
	10.71	-09		
	10.78	-02		
	10.71	-09		
	10.98	+18		
	4318	18-20		
	10.80-2	±.10		
3 57.8	37	+89 20	58.6	
	10.71	-21		
	10.85	-07		
	10.98	+06		
	11.16	+24		
	4370	30-28		
	[illegible]	±.14		

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May 24 1899 J.D. 4799-5

3 59.1	26	+89 25	59.3	Waite Obs.
	11.59	+07		
	11.40	-12		
	11.25	-27		
	11.82	+30		
	4606	37-39		
	11.52-2	±.19		
1.4	89.1	+89 10	57.9	
	11.18	-01		
	11.38	+19		
	11.24	+05		
	10.96	-23		
	4476	24-24		
	11.19	±.12		
16 10.0	35	+89° 32'	58.4	Reed Obs.
	1117	05		
	1125	+08		
	1116	-01		
	1109	-08		
	4467	8-9		
	11.17-1	±.04		
16 12.8	37	+89° 39'	58.4	
	1106	-19		
	1128	+03		
	1141	+16		
	1124	-01		
	4499	19-20		
	11.25-1	±.10		
16 17.5	26	+89° 33'	59.4	
	1169	+03		
	1174	+08		
	1170	+04		
	1152	-14		
	4665	15-14		
	11.66+1	±.04		

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1899phae.proj.1830W

May 24, 1899.

16	22.0	89 (1)	+89°50'	57.9	Reed Obs.
		1149	-31		
		1216	+36		
		1186	+06		
		1171	-09		
		4722	42-40		
		1180+2	±.20		
16	25.8	33	+89°33'	58.5	
		1134	-01		
		1136	+01		
		1136	+01		
		1133	-02		
		4539	2-3		
		1135-1	±.01		
16	30.0	37	+89°40'	58.5	
		1148	+02		
		1147	+01		
		1142	-04		
		1148	+02		
		4585	5-4		
		1146+1	±.02		
16	34.9	26	+89°36'	59.4	
		1219	+05		
		1227	+13		
		1208	-06		
		1202	-12		
		4856	18-18		
		1214	±.09		
16	41.8	89 (1)	+89°50'	57.9	
		1191	-01		
		1193	+01		
		1192	00		
		1193	+01		
		4769	2-1		
		1192+1	±.01		

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1899phae.proj.1830W

May 24, 1899. J.D. 4799-h

Read Obs.

16 46.0	35	+89°31'	58.7	
	1115	-08		
	1119	-04		
	1138	+15		
	1120	-03		
	4492	15 - 15		
	11.23	±.08		
16 48.6	37	+89°40'	58.4	
	1128	-24		
	1146	-06		
	1172	+20		
	1163	+11		
	4609	31 - 30		
	11.52+1	±.15		
16 50.30	26	+89°37'	59.5	
	1212	+20 +13		
	1177	-15 -22		
	1222	+30 +23		
	1185	-07 -14		
4796	4796	36 - 36		
11.99	11.992	±.18		
16 58.1	89 (1)	+89°49'	57.9	
	1160	-14		
	1171	-03		
	1182	+08		
	1184	+10		
	4697	18 - 17		
	11.74+1	±.09		

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1899phae.proj.1830W

J.D. 4799-h May 24 - 1899

4 9.0	35	+89 31	58.7	Waites
	10 50	-18		
	10.53	-15		
	10.91	+23		
	10.77	+09		
	4271	32-33		
	10.68-1	±.16		
4 10.0	37	89 40	58.6	
	11.31	+28		
	11.19	+16		
	10.71	-32		
	10.90	-13		
	4411	44-45		
	11.03-1	±.22		
4 10.6	26	89 38	59.5	
	11.50	-01		
	11.40	-11		
	11.36	-15		
	11.77	+26		
	4603	26-27		
	11.81-1	±.13		
4 11.7	89.1	89.48	58.7	
	10.96	-23		
	11.01	-18		
	11.32	+13		
	11.46	+27		
	4475	40-41		
	11.19-1	±.20		

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1899phae.proj.1830W

J.D. 48 n=c

May 25, 1899. (Thursday.)

12 32.8	pole 26	+89° 29'	58.3	
	1202	+24	H. 2.	
	1181	+03	Pressure Gauge.	
	1169	-09	8h 2m.0 45 76	Gas burning.
	1158	-20		
	4718	-29 +27		
	1178-2	±.14 √		
12 33.7	35	+89° 38'	57.8	
	1062	+12		
	1050	00		
	1043	-07		
	1043	-07		
	4198	12-14		
	1050-2	±.06 √		
12 34.3	37	+89° 41'	58.2	
	1048	+01		
	1043	-04		
	1048	+01		
	1048	+01		
	4187	3-4		
	1046-1	±.02 √		
12 35.6	89 (1)	+89° 54'	58.3	
	1179	+04		
	1168	-07		
	1180	+05		
	1173	-02		
	4799	9-9		
	1199-	±.04 √		
12 37.8	623	+70° 12'	79.1	10.0
	1049	-19	D.	
	1078	+10		
	1074	+06		
	1072	+04		
	4273	20-19		
	1068-1	±.10 √		

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1899phae.proj.1830W

May 25, 1899.

12	39.8	627	+70°12' 6	78.0		9.6
		1053	+11	14.3		
		1042	or	19.		
		1034	-08			
		1039	-03			
		4168	11-11			
		10.42	±.06 ✓			
12	40.8	635	+69°53'	74.8		9.4
		971	-03 51			
		974	or +2			
		973	-01			
		980	+06			
		3898	6-4			
		9.74+2	±.02 ✓			
12	41.4	636	+70°3'	74.8		8.0
	53.1	784	or 70 0 +3	16.4		
	48.3	782	-02	58.4		
	.34	789	+05			
	1932	782	-02			
	1449	3137	5-4			
	16.4	7.84+1	±.02 ✓			
b		645 -7.8				
+69°646, 9.3						
12	42.3		+69° 51'	72.8		9.3
12 1.7 b	59.9 a	920	+09 5-3 a	10. 14.4 a		
40.6	42.4		-2	58.4		
.35	.34	912	+01	assumed +69° 64?		
2030	1696					
1218	1272	912	+01 47 b	14.2 b		
14.2	14.4		+4	58.6		
assumed		900	-11			
+69° 651, 9.4		3644	11-17			
		9.11	±.06 ✓			
12	43.3	653 9.3 a	+69° 38'	71.1 -12.4=58.7 a		9.7
5.6 b	6.7 a					
37.7	36.6	1033	-03 5-8 a	10. 10.0		
.35	.34		-20			
1885	1464	1031	-05	+69° 650, 9.5 P. 04 S2		
1131	1098					
13.2	12.4	1038	+02 43 b	13.2 b		
			-5			
		1043	+07	57.9		
		4145	9-8			
		10.36+1	±.04 ✓			

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1899phae.proj.1830W

May 25, 1899. J.D. 4800 = C

12 44.9 | 653 | +69°51' | 71.1 | 9.6

6.7 / 38.2 / .34 / 15.28 / 11.46 / 18.0

1028	+02	58 / -9
1024	-02	
1022	-04	
1028	±02	
4102	4-6	
10.26-2	±.02 ✓	

13.0 / 58.1

12 45.7 | 655 | +69°49' | 70.8 | 9.4

990	+10	58 / -9
995	+15	
972	-08	
962	-18	
3919	25-26	
9.80-1	±.13 ✓	

12 46.3 | 656 | +69°46' | 71.0 | 9.8

1040	-02	59 / -7
1035	-07	
1043	+01	
1049	+07	
4167	8-9	
10.42-1	±.04 ✓	

12 48.7 | 662 | +69°43' | 68.2 - 10.0 = 58.2 | 9.3

19.4 / 29.3 / .34 / 11.72 / 8.79 / 10.0

1058	+10	55 / -12
1052	+04	
1042	-06	
1042	-06	
4194	14-12	
10.484-2	±.06 ✓	

D. 5.0 fol. 5 m. 0 N. 5

+70°700, 4.7 Fl. 4.4 N. 5

12 55.9 | 1436 | +60°2' | 78.3 - 20.7 = 57.6 | 9.4

14.5 / 41.4 / .50 / 20.7

998	-04	56 / +6
989	-13	
1002	0	
1018	+16	
4007	16-17	
10.03-1	±.08 ✓	

D. 9.2 fol. 0 m. 5 S. 10.

+59°1487, 9.0 Fl. 0.8 S. 12

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1899phae.proj.1830W

May 25, 1899.

12	57.3	1440	+60°1'	56	76.2 − 19.0 = 57.2	10.2
	19.3	1152	+01	+5	19.~~0~~	
	38.0	1152	+01		E. 10.0 Jpre. 0.5 N. 6.	
	.50	1152	+01			
	19.0	1148	−03			
		4604	3−3			
		11.51	±02 ✓			
12	58.0	1449	+59°48'		72.8	9.2
		1021	+05			
		1012	−04			
		1012	−04			
		1017	+01			
		4062	6−8			
		10.16-2	±04 ✓			
12	59.0	1468	+59°38'		65.3	8.8
		895	−08 −13			
		908	+05 05			
		912	+09 +04			
		918	+10			
		3633	14−13			
		9.08+1	±.07 ✓			
12	59.9	1474	+59°37'		63.2	9.3
		995	+01			
		994	00			
		997	+03			
		992	−02			
		3978	4−2			
		9.94+2	±02 ✓			
13	0.8	1485	+59°41'		58.2	9.3
		985	−07			
		993	+01			
		1001	+09			
		990	−02			
		3969	10−9			
		9.92+1	±.05 ✓			

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May 25, 1899. J.D. 14800 = C

13	1.5	1486	+5°41'	57.8	9.0
		878	-07		
		880	-05		
		888	+03		
		893	+08		
		3539	11-12		
		8.8 15-1	±06 √		
13	2.2	1501	+5°39'	53.0	10.0
		1060	-04		
		1069	+05		
		1063	-01		
		1062	-02		
		4254	5-7		
		10.64-2	±.03 √		
13	3.0	1510	+5°47'	49.2	10.5
		1180	+12		
		1157	-09		
		1169	+01		
		1162	-06		
		4670	13-15		
		11.68-2	±.07 √		
13	3.8	1515	+5°42'	47.8	10.6
		1173	+07	49.1	
		1163	-03		
		1167	+01		
		1161	-05		
		4664	8-8		
		11.66	±.04 √		
13	4.7	1525	+5°56'	43.2	9.0
		951	+10		
		941	00		
		931	-10		
		941	00		
		3764	10-10		
		941	±.05 √		

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1899phae.proj.1830W

May 25, 1899.

13	5.7	1528	+59°55'6	42.4	9.7
		1001	+07	14.3.	
		994	08		
		990	-04		
		992	-02		
		3977	7-6		
		994+1	±.03 √		
13	6.2	1529	+59°58'	42.8	10.4
		1093	-23		
		1111	-05		
		1118	+02		
		1142	+26		
		4464	28-28		
		1116	±.14 √		
		+80° 38' 9, 6.7 Corrected			
13	9.5	~~397~~	+79°42'	65.2	8.5
		763	-02 80 0 -18	59.2	
		773	+08		
		772	+07		
		753	-12 80 1 -19	59.0	
		765+1	15-14 ±.07 √		
13	10.4	414	+79°29'	60.2	9.8
		1102	+10 50 -21	59.0	
		1091	-01		
		1088	-04		
		1087	-05		
		4368	10-10		
		1092	±.05 √		
13	21.5	2222	+49°44'	5-64	9.8
		1070	+05	14.4	
		1068	+03		
		1069	+04		
		1052	-13		
		4259	12-13		
		1065-1	±.06 √		

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May 25, 1899. J.D. 480 = C

13	22.1	2223	+49°44'	5-4.8	8.4
		8555	+15		
		847	+07		
		837	-03		
		819	-21		
		3358	-24+22		
		8.40-2	±.12 ✓		
13	23.7	2225	+49°43'	5-4.6	10.8
		1098	-01		
		1092	-07		
		1093	-06		
		1112	+13		
		4395	13-14		
		10.99-1	±.07 ✓		
13	23.4	2229	+49°42'	5-3.9	10.3
		1052	-05		
		1052	-05		
		1053	-04		
		1070	+13		
		4227	13-14		
		10.54+1	±.07 ✓		
13	24.2	2238	+49°43'	4-9.7	10.0
		1069	-01		
		1068	-02		
		1072	+02		
		1072	+02		
		4281	4-3		
		10.70+1	±.02 ✓		
13	24.9	2239	+49°43'	4-9.2	9.5
		951	+01		
		951	+01		
		948	-02		
		952	+02		
		3802	4-2 ✓		
		9.50+2	±.02		

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1899phae.proj.1830W

May 25, 1899.

13	26.5	2243	+49°43'	49.2	10.5
		1154	+10	Clouds in left, but not confirmed.	
		1151	+07		
		1143	-01	19.	
		1130	-14		
		4578	17-15		
		11.4+2	±.08 ✓		
13	27.8	~~2252~~	+49°42'	43.2	7.5
		762	+02		
		762	+02		
		763	+03		
		752	-08		
		3039	7-8		
		7.60-1	±.04 ✓		
13	29.3	2252	+49°51'	44.2	8.8
		913	-06		
		918	-01		
		922	+03		
		922	+03		
		3675	6-7		
		9.1 5-1	±.03 ✓		
13	30.0	2256	+49°55'	43.0	8.5
		830	+14		
		818	+02		
		811	-05		
		805	-11		
		3264	16-16		
		8.16	±.08 ✓		
13	30.6	2267	+49°59'	39.3	11.0
		1133	-07		
		1147	+07		
		1140	00		
		1142	+02		
		4562	9-7		
		11.40+2	±.04 ✓		

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1899phae.proj.1830W

May 25, 1899. J.D. 4800 = C

13 33.6	696	+69°36'	64.8	7.5
	722	+25		
	708	-09		
	729	+12		
	709	-08		
	2868	17-17		
	717	±08 ✓		
13 34.4	704	+69°41'	61.2	9.6
	1009	+05	29.	
	1003	-01		
	1002	-02		
	1001	-03		
	4015	5-6		
	10.04-1	±.03 ✓		
13 35.1	706	+69°35'	60.4	10.0
	1052	-02		
	1059	+05		
	1048	-06		
	1058	+04		
	4217	9-8		
	10.54+1	±.04 ✓		
13 35.8	708	+69°40'	60.0	9.9
	1100	-04		
	1102	-02		
	1108	+04		
	1107	+03		
	4417	7-6		
	11.04+1	±.03 ✓		
13 36.6	713	+69°34'	58.0	9.6
	1079	+09		
	1072	+02		
	1067	-03		
	1062	-08		
	4280	11-11		
	10.70	±.06 ✓		

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1899phae.proj.1830W

May 25, 1899

13	37.2	716	+69°39'	5 7.8	8.2	
		871	+14			
		857	or			
		852	−05			
		848	−09			
		3428	14−14			
		8.57	±07 ✓			
13	37.9	718	+69°32	57.2	9.7	
		931	+03			
		928	or			
		930	+02			
		924	−04			
		3713	5−4			
		9.28+1	±02 ✓			
13	38.6	719	+69°38'	57.2	9.4	
		942	−01			
		949	+06			
		943	or			
		937	−06			
		3771	6−7			
		9.43	±03 ✓			
13	39.4	923	+69°33'	56.1	7.9	
		787	+07			
		773	−07			
		779	−01			
		780	or			
		3119	7−8			
		7.80+1	±04 ✓			
13	40.1	726	+69°40'	5 5.3	8.6	
		832	+03			
		828	−01			
		827	−02			
		830	+01			
		3317	4−3			
		8.29+1	±02 ✓			

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1899phae.proj.1830W

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J.D. 4800=C

13 4 11	734	+69° 41'	54	52.0		9.6
14 1.0	972	+04	-13	20, 6.8		
19.9	961	-07		58.8		
.34	968	or				
796	973	+05				
597	3874	9-7				
6.8	9.68	±.04 ✓				
b	738	9.3				
~~170° 777, 91~~						
13 41.9		+69° 38'		49.7		11.0
b a	1172	-21	52 a	10.0 ~~+148~~ a 59.7 ~~-64.5~~		
8.6 11.4 25.3 43.4	1193	or	-14	Identic.		
267 29.5 .34 .34	1198	+0570	2 b	Right limb shutter was damp.		
.34 1180 1736	1209	+16	-24	9.1 b		
1068 885 1302	4772	21-21		58.8		
801 10.0 148	11.938	±.10 ✓				
9.1						
13 46.1	742	9.3 +69° 40'		50.2		9.4
14 11.4	1038	or	52	8.6		
25.3	1033	-05	-12	Trap, 58.8		
.34	1033	-05				
1012	1049	+11				
759	4153	11-10				
8.6	10.3871	±.05 ✓				
13 47.3	742	+69° 50'		49.3		10.2
	1080	-20		A.		
	1099	-01		20.		
	1109	+09				
	1113	+13				
	4401	22-21				
	11.001	±.11 ✓				
13 48.0	743	+69° 43'		49.6		8.7
	851	-18				
	880	+11				
	872	+03				
	873	+04				
	3476	18-18				
	8.69	±.09 ✓				

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13	49.5	749	+69 51' 6	46.5	8.6	
		801	+11	48.4		
		786	-04			
		780	-10			
		791	+01			
		3158	12-14			
		7.90-2	±.06 √			
13	50.2	751	+69 05 2'	46.2	8.9	
		848	-04			
		848	-04			
		850	-02			
		861	+09			
		3487	9-10			
		8.35-1	±.05 √			
13	51.3	764	+69 59'	42.3	9.2	
		903	-02			
		895	-10			
		902	-03			
		921	+16			
		3621	16-15			
		9.05+1	±.08 √			
13	52.2	765	+70° 10'	40.9	10.6	
		1017	-09			
		1013	-13			
		1039	+13			
		1035	+09			
		4104	22-22			
		10.26	±.11 √			
13	53.1	772	+70° 8'	39.9	2.4	
		930	-06			
		934	-02			
		943	+07			
		938	+02			
		3745	9-8			
		9.36+1	±.04 √			

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May 25, 1899. J.D. 48 00 = C

13 53.6	773	+8° 8' 6	39.8	9.4
	939	-09		
	950	+02		
	948	00		
	957	+09		
	3794	11-9		
	948+2	±.05 √		
14 0.6	1532	+5° 9' 44	67.2	10.6
	1140	+08		
	1138	+06		
	1129	-03		
	1119	-13		
	4526	14-16		
	1132-2	±.08 √		
14 1.2	1534	+5° 9' 40	66.2	9.6
	1042	00		
	1045	+03		
	1031	-11		
	1050	+08		
	4168	11-11		
	1042	±.06 √		
14 2.3	1505	+5° 9' 41	63.4	10.8
	1123	+04	D.	
	1117	-02		
	1119	00		
	1117	-02		
	4476	4-4		
	1119	±.02 √		
14 3.0	1532	+5° 9' 39	60.8	9.8
	1049	-03	L9.	
	1042	-10		
	1054	+02		
	1062	+10		
	4207	12-13		
	1052-1	±.06 √		

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May 25, 1899.

14	3.8	15 55 5	+59°42'	60.7		9.8
		571	+01	40.		
		563	-07			
		565	-05			
		579	+09			
		3878	10-12			
		9.70-2	±.06 ✓			
14	5.0	15 60	+59 36'	58.6		9.9
		949	-04			
		947	-06			
		958	+05			
		959	+06			
		3813	11-10			
		9.53+1	±.05 ✓			
14	6.0	15 63	+59°42'	57.3		10.6
	8.3	1117	-08	56 / -14	40. 1.2 / 58.5	
	2.3	1121	-04			
	.50	1130	+05			
	1.2	1132	+07			
		4500	12-12			
		11.25-	±.06 ✓			
14	7.0	15 66	+59°42'	57.1		9.6
	9.8	1019	-02	55 / -13	40. 1.4 / 58.5	
	2.8	1021	00			
	.50	1027	+06			
	1.4	1018	-03			
		4085	6-5			
		10.21+1	±.03 ✓			
14	8.1	40 1566	+59°42'	58.0		9.3
	"	1019	+17			
		1001	-01			
		989	-13			
		1001	-01			
		4010	17-15			
		10.02+2	±.08 ✓			

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May 25 1899 J.D. 48 05 = C

14	10.1	1575	+59 46		56.3	8.7
	14.8	941	+15	58	2.4	
	4.7	920	-06	-14	58.7	
	.50	925	-01			
	2.4	919	-07			
		3705	15-14			
		9.267+1	±27 ✓			
14	10.9	1581	+59 44		54.8	10.2
		1152	+09			
		1148	+05			
		1141	-02			
		1131	-12			
		4572	14-14			
		11.43	±07 ✓			
14	11.7	~~1583~~	+59°52'		53.8	9.5
		1051	+07		191	
		1042	-02			
		1041	-03			
		1041	-03			
		4175	7-8			
		10.441.3	±.04 ✓			
14	13.6	~~1588~~	+59°42'		54.0	10.3
		1160	-05		19.	
		1163	-02			
		1170	+05			
		1167	+02			
		4660	7-7			
		11.65	±.04 ✓			
14	14.4	1586	+59°46'		53.2	10.1
		1093	+08			
		1079	-06			
		1080	-05			
		1088	+03			
		4340	11-11			
		10.85	±.06 ✓			

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May 25, 1899.

14	19.5	436	+79° 34	62.2	9.7	1
		1022	-03	H. 4.		
		1023	-02	Mapa.		
		1022	-03			
		1033	+08			
		4100	8-8			
		10.25	±.04 √			
14	20.3	443	+79°40'	59.8	8.4	
		839	+06			
		841	+08			
		830	-03			
		823	-10			
		3333	14-13			
		8.3331	±.07 √			
14	21.0	446	+79°38'	58.8	9.4	
		949	+02			
		949	+02			
		947	0			
		943	-04			
		3788	4-4			
		9.47	±.02 √			
14	25.0	2279	+49° 52'	71.7	9.6	
		1030	-16	Mapa.		
		1046	0			
		1058	+12			
		1052	+06			
		4186	18-16			
		10.466	±.08 √			
14	31.6	2285	+49°47'	71.3	9.5	
		993	-08	Mapa.		
		1002	+01			
		1002	+01			
		1008	+07			
		4005	9-8			
		10.011	±.04 √			

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14 32.2	2289	+49°47′	70.5	11.0
	1173	-02		
	1172	-03		
	1171	-04		
	1183	+08		
	4699	8-9		
	11.75-1	±.04 ✓		
14 33.0	2291	+49°52′	70.2	8.4
	858	+07 +06		
	846	-05 -06		
	848	-03 -04		
	856	+05 +04		
	3408	1 10-10		
	8.5x2	±.05 ✓		
14 33.5	2297	+49°51′	69.2	11.0
	1120	-15		
	1141	+06		
	1142	+07		
	1138	+03		
	4541	16-15		
	11.35+1	±.08 ✓		
14 34.4	2299	+49°50′	68.1	9.3
	876	-16		
	891	-01		
	894	+02		
	908	+16		
	3569	18-17		
	8.92+1	±.09 ✓		
14 35.2	2300	+49°48′	68.3	10.7
	1134	+05		
	1122	-07		
	1128	-01		
	1132	+03		
	4516	8-8		
	11.29	±.04 ✓		

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May 25, 1899.

14 36.0	2302	+49°45'	66.9	9.2
	991	-10		
	1000	-01		
	1009	+08		
	1003	+02		
	4003	10-11		
	10.01-1	±.05 ✓		
14 36.9	2307	+49°47'	65.8	9.4
	956	-08		
	978	+14		
	961	-03		
	959	-05		
	3854	14-16		
	9.64-2	±.08 ✓		
14 40.9	2340	+49°50'	↓-1.3+7.2=58.5	10.5
52.1	1132	-12 57	29.6.0 pre. 1m.0 N.15;	
11.2		-7		
.64	1147	+03	+50°2126, 6.0, P0.5, N. 15	
448				
672	1146	+02		
7.2				
	1151	+07		
	4576	12-12		
	11.44	±.06 ✓		
14 41.5	2343	+49°51'	50.7	10.9
	1147	+05		
	1143	+01		
	1144	+02		
	1132	-10		
	4566	8-10		
	11.42-2	±.04 ✓		
14 42.0	2345	+49°56'	49.8	11.0
	1182	+08		
	1177	+03		
	1170	-04		
	1169	-05		
	4698	11-9		
	11.74+2	±.05 ✓		

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May 25, 1899.

J.D. 4800 = C

14 42.9	2358	+49° 53′		44.9	8.8
4.3	938	+16	54 / −1	13.7	
21.4	931	+09		58.6	
.64	917	−05			
856	903	−19			
1284	3689	25−24			
13.7	9.224+1	±.12 √			
14 43.6	2365	+49° 53′		42.4	9.7
8.9	1062	−08	52 / +1	16.2	
25.3	1069	−01		58.6	
.64	1076	+06		~~Probable~~	
1012	1072	+02		Annual.	
1518	4279	8−9			
16.2	10.70−1	±.04 √			
14 48.1	2365(2)	+49° 50′		45.5 +13.3 = 58.8	9.8
8.9	1066	+10	52 / −2	29 10.5 Pol. 1 − 0 S. 5.	
20.8	1060	+04		+49° 2367, 9.5 F. 1.1 S. 6	
.64	1052	−04			
832	1048	−08			
1248	4226	14−12			
13.3	10.56+2	±.06 √			
14 48.9	2378	+49° 58′		41.9	9.1
	993	+20			
	978	+05			
	967	−06			
	954	−19			
	3892	25−25			
	9.73	±.12 √			
14 49.8	2388	+50° 13′		37.1	9.2
	1014	+18		29. 9.2 Pol. 0 − 1 N. 10.	
	1001	+05		+50° 2180, 8.6, F. 0.2 N. 10	
	988	−08			
	982	−14			
	3985	23−22			
	996+1	±.11 √			

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May 25, 1899.

14	51.2	2389	+50°10'	37.8	9.8	1
		1029	-05	38.4		
		1033	-01			
		1038	+04			
		1038	+04			
		4138	8-6			
		10.34+2	±.04 ✓			
14	51.8	2390	+50° 2'	37.7	10.4	
		1018	+06			
		1003	-09			
		1009	-03			
		1017	+05			
		4047	11-12			
		10.12-1	±.06 ✓			
14	52.5	2393	+50°12'	37.8	10.2	1
		1078	-16			
		1080	-14			
		1098	+04			
		1120	+26			
		4376	30-30			
		10.94	±.15 ✓			
14	55.6	Comp. 1615	+59°47'	63.4	11.2	
		1248	+13	1615 two bnds. = 6.0 mag.		
		1241	+06			
		1228	-07			
		1222	-13			
		4939	19-20 ✓			
		12.35-1	±.10			
14	56.5	1617	+59°42'	63.0	9.2	1
		969	-04			
		971	-02			
		978	+05			
		973	05			
		3891	5-6			
		9.73-1	±.03 ✓			

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May 25, 1899. J.D. 4800 = c

14 5 7.1	1620	+59°47'	61.3	8.4
	847	+07		
	840	00		
	840	00		
	831	-09		
	3368	7-9		
	8.4 0-2	±04 ✓		
14 5 7.9	1631	+59°45'	5 5.3	9.8
	1039	+13	19.	
	1024	-02		
	1021	-05		
	1018	-08		
	4102	13-15		
	10.26-2	±.07 ✓		
14 5 8.6	1636	+59°45'	5 2.8	8.7
	930	+08		
	928	+06		
	921	-01		
	909	-13		
	3688	14-14		
	9.22	±.07 ✓		
15 0.5	1644	+59°44'	50.3	9.7
	964	+06		
	962	+04		
	962	+04		
	945	-13		
	3833	14-13		
	9.5-8+1	±.07 ✓		
15 2.1	1667	+60°2'	42.0 +17.5 = 59.5	9.4
37.1 / 35.0 .50 / 17.5-	1011	+14 54/+8	19. 8.5- fol. 2 m.o 8.6.	
	1009	+12	+59° 1669, 8.5, F. 12 S. 5	
	989	-08		
	978	-19		
	3987	26-27		
	9.97-1	±.13 ✓		

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8.5 May 25, 1899.

15	2.9	1674	+60°5'2		40.0		9.6
	42.1	1022	+11	52	29.	19.6	
	39.2	1019	+08	+13		59.6	
	.50	1009	−02		16.4		
	19.6	995	−16				
		4045	18−18				
		10.11+1	±.09 ↓				
15	5.0	1674	+60°4'		40.8		9.8
		1039	+15				
		1021	−03				
		1019	−05				
		1018	−06				
		4097	15−14				
		10.24+1	±.07 ↓				
15	5.6	1676	+60°4'		40.5		9.7
	43.3	950	−17	52	18.8		
	22.3	957	−10	+12	59.3		
37.7	.50	977	+10				
.50	11.2	984	+17				
18.8		3868	27−27				
		9.67	±.14 ↓				
15	6.3	1678	+60°8'		40.2		8.2
	44.6	816	+05	56	19.2		
	38.3	812	+01	+12	59.4		
	.50	815	+04				
	19.2	801	−10				
		3244	10−10				
		8.11	±.05 ↓				
15	7.0	1684	+60°10'		38.8		7.5
		938	+12				
		925	−01				
		921	−05				
		919	−07				
		3703	12−13				
		9.26+1	±.06 ↓				

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15 13.7	778	+69°40'	64.7	10.5	
	1100	+09			
	1083	-08			
	1091	08			
	1090	-01			
	4364	9-9			
	10.91	±.04 ✓			
15 14.4	783	+69°38'	63.6	9.0	
	969	+03	19. E.		
	975	+09			
	962	-04			
	958	-08			
	3864	12-12			
	9.66	±.06 ✓			
15 15.1	786	+69°38'	61.0	8.9	
	853	-17			
	861	-09			
	882	+12			
	882	+12			
	3478	24-26			
	8.69-2	±.12 ✓			
15 15.8	788	+69°40'	60.8	9.4	
	940	+14			
	932	+06			
	918	-08			
	914	-12			
	3704	20-20			
	9.26	±.10 ✓			
15 16.3	791	+69°36'	60.2	10.2	
	1043	+11			
	1040	+08			
	1022	-10			
	1021	-11			
	4126	19-21			
	10.32-2	±.10 ✓			

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May 25, 1899.

15	17.0	794	+69°41′	-9.2	11.0
		1118	+05		
		1120	+07		
		1111	-02		
		1102	-11		
		4435	12-13		
		11.13-1	±.06 ✓		
15	17.7	797	+69°41′	-7.8	9.3
		931	-03		
		933	-01		
		933	-01		
		938	+04		
		3735	4-5		
		9.34-1	±.02 ✓		
15	18.5	813	+69°50′	50.2	7.5
		809	+08		
		797	-04		
		796	-05		
		802	+01		
		3204	9-9		
		8.01	±.04 ✓		
15	19.3	821	+69°53′	48.8	10.3
		1091	-13		
		1103	-01		
		1113	+09		
		1107	+03		
		4414	12-14		
		16.04-2	±.06 ✓		
15	19.8	822	+69°58′	48.8	9.6
		943	+04		
		941	+02		
		934	-05		
		938	-01		
		3756	6-6		
		9.39	±.03 ✓		

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1899phae.proj.1830W

May 25, 1899. J.D. 4800 = c

15 20.4	826	+69°50'	48.3	9.2
	881	+15		
	863	-03		
	860	-06		
	862	-04		
	3466	15-13		
	8.66+2	±.07 √		
15 21.0	827	+69°57'	48.4	10.5
	1047	+05		
	1033	-09		
	1028	-14		
	1058	+16		
	4166	21-23		
	10.42-2	±.11 √		
15 23.9	466	+79°32'	57.6	9.3
	972	+14		
	958	00		
	952	-06		
	948	-10		
	3830	14-16		
	9.58-2	±.08 √		
15 26.4	426	+79°51'	51.6	9.8
	1053	-05	Mag.	
	1059	+01		
	1062	+04		
	1058	00		
	4232	5-5		
	10.58	±.02 √		
15 27.1	488	+79°49'	51.0	10.1
	1102	+22		
	1079	-01		
	1070	-10		
	1070	-10		
	4321	22-21		
	10.81+1	±.11 √		

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Pole May 25, 1899.

15 28.0	26	+89°32'	60.7	
	1121	+02		
	1117	-02		
	1120	+01		
	1118	-01		
	4476	3 3 ±02 ✓		
	11.19			
15 28.5	35	+89°32'	59.8	
	1032	+04		
	1021	-07		
	1031	+03		
	1028	05		
	4112	7 7 ±04 ✓		
	10.28			
15 29.0	37	+89°40'	59.9	
	1062	+16		
	1050	+04		
	1039	-07		
	1034	-12		
	4185	20-19		
	10.46+1	±.10 ✓		
15 29.8	89 (i)	+89°53'	59.4	
	1102	-02	St. 4.	
	1093	-11	S. St. 4.	
	1101	-03	O. C. 4.	
	1120	+16	Thin scattering clouds in	
	4416	16-16	W now nearing meridian,	
	11.04	±.08 ✓		
			Pressure Gauge.	
11 1.0	45 83	Gas burning.		

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1899phae.proj.1830W

May 25 1899

D. 4800 = C

3 40.3	26	+89.32	60.7	Waite
	11.81	-17		cloudy
	12.20	+22		
	11.91	-07		
	11.99	+01		
	47.91	23-24		
	11.98-1	±12.		
3 41.3	35	89°31'	59.8	
	11.09	~~-12~~ ~~89-31~~		cloudy
	10.92	-29		
	11.15	-06		
	~~11.68~~	+47		
	~~44.84~~ 11.21	47-47 ±24		
3 44	37	89.38	59.9	
	11.51	-03		
	11.34	-20		
	11.63	+09		
	11.66	+12		
	46.14	21-23		
	11.54-2	±11		
3 45	+89.1	89 50	59.3	
	11.76	-17		
	12.02	+09		
	12.09	+16		
	11.85	-08		
	47.73	25-25		
	11.93	±12		

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1899phae.proj.1830W

May 25 1899

3	46.5	26	89 31	60.8	Waits
		11.86	-09		
		11.80	-15		
		11.88	-07		
		12.26	+31		
		47 80	31-31		
		11.95	±16		
3	47.4	35	89 33	59.8	
		11.39	+08		
		11.23	-08		
		11.13	-18		
		11.49	+18		
		45 24	26-26		
		11.31	±13		
3	49.3	34	89 39	59.9	
		11.17	-13		
		11.47	+17		
		11.58	+28		
		10.99	-31		
		45 21	45-44		
		11.30+1	±22		
3	51.8	89.1	89 50	59.9	
		11.68	-06		
		11.61	-13		
		11.96	+22		
		11.73	-01		
		46 98	22-20		
		11.74+2	±10		

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1899phae.proj.1830W

May 25 1899

J.D. 4805=C

3	54.0	26	89.32	60.8	White
		11.73	+02		cloudy
		11.81	+10		
		11.71	00		
		11.60	-11		
		4685	12-11		
		11.71+1	±.06		
3	55.0	35	89.33	59.9	
		11.19	+09		cloudy
		11.39	+29		
		10.84	-26		
		11.00	-10		
	56.9	4442	38-36		
		11.10+2	±.18		
3	56.9	37	89.40	59.9	
		10.85	-07		cloudy
		11.08	+16		
		10.94	+02		
		10.81	-11		
		4368	18-18		
		10.92	±.09		
3	53.2	+89.1		59.4	
		11.69	+10		
		11.28	-31		
		11.79	+20		
		11.60	+01		
		4636	31-31		
		11.59	±.16		

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1899phae.proj.1830W

May 25 1899

4	0.3	·26	+89.3	60:8	Waite
		11.58	-14		Cloudy
		11.57	-15		
		11.97	+25		
		11.74	+02		
		4686	27-29		
		11.72-2	±.14		
4	1.2	35	89.31	59.9	"
		11.04	-08 ~~89.31~~		
		11.16	+04		
		11.50	+38		
		10.78	-34		
		4448	42-42		
		11.42	±.21		
4	2.1	~~+89.40~~	+89.40	59.9	"
		11.57	-05		
		11.68	+06		
		11.54	-08		
		11.74	+09		
		4650	15-13		
		11.62+2	±.07		
4	3.1	89.1	89.50	59.3	"
		11.94	-28		
		12.22	or		
		12.41	+19		
		12.32	+10		
		4889	29-28		
		12.22+1	±.14		

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1899phae.proj.1830W

Pole May 25, 1899. J.D. 48 00 = C

16 7.4	26	+89° 35'	60.8	Read Obs. Cloudy.
	1211	-04		
	1192	-23		
	1228	+13		
	1228	+13		
	4855	26-27		
	1213-1	±.13		
16 11.0	35	+89° 32'	5-9.9	
	1139	-01		
	1144	+04		
	1140	00		
	1135	-05		
	4558	4-6		
	1140-2	±.02		
16 13.5	37	+89° 38'	59.9	
	1131	-04		
	1150	+15		
	1119	-16		
	1141	+06		
	4541	21-20		
	1135+1	±.10		
16 15.5	89 (1)	+89° 50'	59.2	
	1191	-23		
	1234	+20		
	1219	+05		
	1212	-02		
	4856	25-25		
	1214	±.12		
16 20.5	26	+89° 33'	60.8	
	1210	+07		
	1211	+08		
	1192	-11		
	1198	-05		
	4811	15-16		
	1203-1	±.08		

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1899phae.proj.1830W

J.D. 4805.0 May 25, 1899.

16	21.7	35	+89° 32'	60.0
		1168	+02	
		1248	-18	
		1177	+11	
		1170	+04	
		4663	17-18	
		1166-1	±.09	
16	23.0	37	+89° 40'	60.0
		1178	-22	
		1186	-14	
		1210	+10	
		1225	+25	
		4799	35-36	
		1200-1	±.18	
16	24.5	89(1)	+89° 50'	59.3
		1196	-22	
		1200	-18	
		1245	+27	
		1230	+12	
		4871	39-40	
		1218-1	±.20	

Passing clouds over Pole during all of settings by Reed & Waller

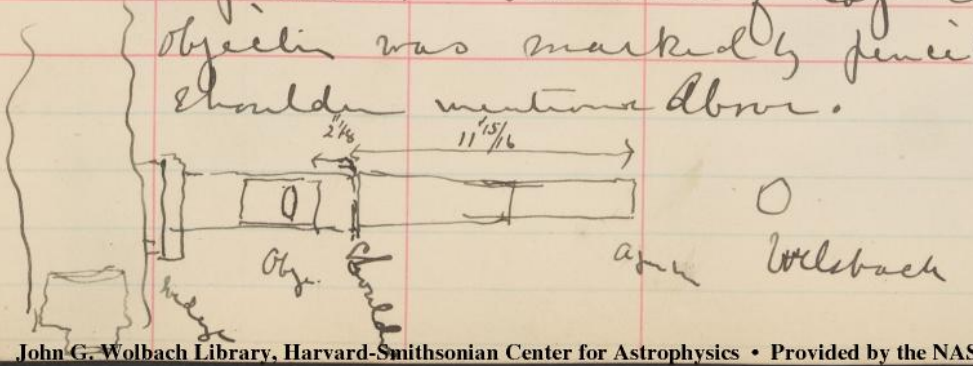
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1899phae.proj.1830W

Friday May 26 1899

Examined Phot. this P.M.; also notes which I made when trying various forms and arrangements in preliminary experiments recorded in Book 101 pp 1–52. From these notes I find that focal length of Micrcoscopic objective was determined at 3".2. Its aperture was cut down to 6".6. The reduction of the pinhole used as artificial star was 3 times. The distance from aperture to image should be 17".1, and ~~the distance~~ from aperture to Welsbach about 25". These notes were found on pages 34, 37, 40 & 42 of Book 101

In reexamining photometer as set up I found Welsbach about 6" from aperture; & the distance of aperture from shoulder of tube bearing wedge & micrs. objective equals 11 15/16". This tube is made in two sections. The joint of joining I marked by a scratch in the brass about 7/8" from aperture of pinhole. The end of ~~Obj~~ cell of bearing Micrs. Objective was marked by pencil at 2 1/8 from shoulder mentioned above.



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1899phae.proj.1830W

Friday May 26 1899

Having arranged a 1½" eyepiece for objective and a 2" eyepiece for ocular of a compound microscope, I examined map of bright stars and moved microscope objective to bring focus of artificial star into same plane. This changed distance between shoulders from 2½ to 2". It is marked scratch.

A further examination showed that the non-coincidence of pencils could be remedied in part by rotating the reflector in main tube. To correct in other co-ordinate recommended that aperture of microscope objective be placed eccentrically.

Considerable dust & waxy appearance was noticed on reflector. This was properly cleaned.

The wedge was also observed to be dirty but was not cleaned.

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Friday May 26 1899.

A smaller aperture was put in microscopic objective. Eccentrically. By rotating aperture and ~~eye~~ reflector separately, movement in two coordinates was obtained, by which a final adjustment was made.

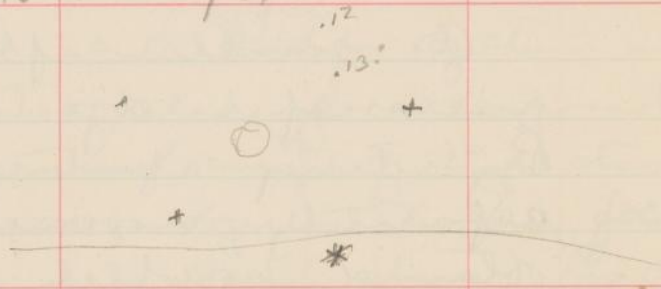
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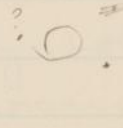
May 26, 1899.

14 21.5 m 3. +29°618' 98.0

Set on m 3.



14 40.0 Mk + +2°46' 27.0



34	1.3	26	189 31	62.1	Waite
		12.53	-12 89 31		
		12.83	+18		
		12.68	+03		
		12.57	-08		
		5061	21-20		
		12.65+1	±.10		
3	3.1	35	89 35	61.2	
		12.00	-01		
		12.04	+03		
		11.90	-11		
		12.11	+10		
		4805	13-12		
		12.01+1	±.06		
3	4.2	37	89 40	61.3	
		12.18	+08		
		12.11	+01		
		12.03	-07		
		12.09	-03		
		4839	9-10		
		12.1	±.05		

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1899phae.proj.1830W

May 26, 1899

3 5.2	89.1	89 54	61.0	Waite
	12.48	-08		
	12.69	+13		
	12.52	-04		
	12.56	05		
	50 25	13-12		
	12.56+1	±06		
3 7.4	89.3	-89 54	61.4	
	11.46	+01		
	11.67	+17		
	11.50	+05		
	11.22	-23		
	45 80	23-28		
	11.45	±12		
389 9.1	26	89 32	62.1	
	12.78	-08		
	12.82	-04		
	13.01	+15		
	12.84	-02		
	51 45	15-14		
	12,86+1	±07		
3 10.8	35	89 34	61.2	
	12.12	+07		
	11.89	-16 ~~89 34~~		
	12.09	+04		
	12.11	+06		
	48 21	17-16		
	12.05+1	±08		
3 12.0	37	89 41	61.4	
	12.06	-05		
	12.01	-10		
	12.22	+11		
	12.15	+04		
	48 44	15-15		
	12.11	±08		

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1899phae.proj.1830W

May 26 1899

3	8.1	89.1	89 54	61.1	Waite
		12.72	-02.		
		12.89	+15		
		12.61	-14		
		12.72	-02		
		5094	15-17		
		12.74-2	±.08		
3	15.0	89.3	-89 53	61.4	
		11.46	+13		
		10.96	-37		
		11.40	+07		
		11.51	+18		
		4533	37-38		
		11.33+1	±.19		

Artificial star altered by moving gas burner against north wall of room

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1899phae.proj.1830W

May 30 1899 (Tuesday).

No record.

Set on M3 and selected region
28°59'

Set on M5 and selected region

1450 2 42 386

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1899phae.proj.1830W

J 4806 = d

Pole May 31/1899 (Wednesday)

13 38.5	26	+89°29'	60.7	
	1217	+16	H. 4.	
	1202	+01		
	1197	-04		
	1189	-12		
	4805	17-16		
	12.01+1	±.08 ✓		
13 39.1	35	+89°34'	60.2	
	1080	-01		
	1075	-06		
	1081	05		
	1087	+06		
	4323	6-7		
	10.81-1	±.03 ✓		
13 39.7	37	+89°40'	60.5	
	1126	+13		
	1108	-05		
	1109	-04		
	1108	-05		
	4451	13-14		
	11.13-1	±.07 ✓		
13 40.4	89 (11)	+89°55'	60.3	
	1131	+03		
	1122	-06		
	1128	05		
	1133	+05		
	4514	8-6		
	11.28+2	±.04 ✓		
13 40.9	2	+89°46'	60.2	
	1319	-18		
	1332	-05		
	1351	+14		
	1347	+10		
	5349	24-23		
	13.37+1	±.12 ✓		

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1899phae.proj.1830W

May 31, 1899. J.D. 4806 = d

13 42.3 Mossin 3 + 28°56' 6.5.0

b

+29°2427, 9.3, assumed

13 48.9 ~~+29°2432~~ +29°48' 78.1 9.8

a a a a

25.0 28.5 27.1 1139 +06 5-3 / -5 = 14.7 / 60.4 8.3 P.0.6 8 19

23.9 20.4 21.8 1133 00 E. 9.5 Jupe, 0 - 3 N. 15

.87 .87 .87 1132 -01

1473 1428 1526

1912 1832 1744 1129 -04 5-8 / -10 20.8 / 5-7.2 19.0 / 5-9.1 b D. +29°2426 9.3 P.10 8.15

208 17.7 19.0 6-5 / ±.03 5-4 / -6 b E. +30°2418, 9.5 P.0.5 N.14

4533 11.33+1

13 50.0 +19°2692 +19°48' 76.4 8.6

31.0 1008 +12 5-4 / -6 20. 17.9 / 5-8.5

19.0 998 +02 Much brighter than

.94 989 -07 Jupe. *.

760 989 -07

1710 14-14 / ±.07

17.9

3984

996

13 51.3 +19°2704 +19°52' 74.3 8.5-

34.7 1032 +05- 5-9 / -7 20. 15.6 / 5-8.7

16.6 1029 +02

.94 1022 -05-

664 1024 -03

1494 7-8 / ±.04

15.6

4107

1026.75-1

13 52.1 +19°2708 +19°51' 73.3 9.2

36.4 1049 05- 5-8 / -7 20. 14.8 / 5-8.5-

15.7 1038 -11

.94 1043 -06

628

1413 1066 +17 17-17 / ±.08

14.8

4196

1049

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1899phae.proj.1830W

May 31, 1899.

13 54.3 +29°2460 +29°47'

43.4
10.9
.87
763
872
9.483

1082
1087
1093
1099
4361
10.9 0+1

-08 5-2 -7
-03
+03
+09
12-11
±.06

68.3 -9.5 58.8
14.4

9.6

+28° 2251

13 56.4 +28°31'

35.8 h
20.6
.88
1648
1648
18.1

35.5 a
20.9
.87
1463
1672
18.2

a of H.A. Vol. 38, p. 238.

968
973
969
995
3905
9.76+1

-08
-03
-07
+19
19-18
±.09

77.2
+9 29 a 3 -12 +2
18.2 a 59.0

56 h -5-
18.1 h 59.1

9.2

+29° 2448

13 57.3

35.1 b
22.2
.87
1554
1776
19.3

35.5 a
21.8
.87
1526
1744
19.0

1106
1130
1104
1118
4458
11.144+2

-08
+16
-10
+04
20-18
±.10

78.5
29 a 4 +4
19.0 a 59.5

11 h -3
19.3 h 59.2

9.2

+29° 2452

13 58.1

35.8
22.3
.87
1561
1784
19.4

35.2 a
22.9
.87
1603
1832
19.9

1149
1162
1160
1153
4624
11.56

-07
+06
+04
-03
10-10
±.05

78.4
8 a +4
19.9 a 58.5

17 h -5
19.4 h 59.0

9.5

13h 58.9

36.0 2
22.9
.87
1603
1832
19.9

35.2 = 2 of H.A. Vol. 38, p. 238

1290
1283
1288
1300
5161
12.90+1

or 29
-07
-02
+10
10-9
±.05

78.9
5
20.6
58.3

29 3.2 h -5-
19.9 2 h 59.0

10.6

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1899phae.proj.1830W

May 31, 1899. J.D. 4806 = d

13	59.5	d'	+28°58'		79.1		11.0
	36.2 h ?	1328	-10	29	5 3 h ?	20.81 ?	
	23.81	1337	-01		-5	588 h	
	.87	1338	00			59.0	
	1687	1347	+09				
	1848	5 3 5 9	9-11				
	2081	13.38-2	±05 ✓				
14	1,3	e	+28°57'		81.0		12.4
	? h 13 35.1 a	1354	-02	29	4 a	22.8 a	
	36.0 26.2	1383	-13		-7	58.2	
	25.3 .87	1387	-09				
	1767 1834	1422	+26		h	22.0 h	
	2096 2096	5 7 3 8 6	26-24	29	2 ?	21.9	
	228 219 220	13.96+2	±12 ✓		-5	59.0 ?	
14	2,1	f	+29°3'		81.8		12.6
	35.9 ? 35.1	1391	-13	29	4	23.5	
	26.2 27.0	1399	-05		-1	58.3	
	.87 .87	1411	+07				
	1834 1890	1414	+10	+ 29	8 ?	22.8 ?	
	2096 2160	5 6 1 5	17-18		-5	59.0	
	228 23.5	14.04-1	±09 ✓				
14	3.1	g	+29°4'		82.5		13.0
					Fainter than artificial * at 14.67 (index)		
14	14.8	R. Camelop.	+84°6'		59.9		8.8
		997	-06		D. E. ✓		
		1001	-02				
		1004	+01				
		1010	+07				
		4012	8-8				
		1003	±04				

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1899phae.proj.1830W

May 31, 1899.

14	17.0	0	+84°7' b	60.8	13.2	
		1453	-07	14.4		
		1458	-02			
		1467	+07			
		1464	+04			
		5842	11-9			
		14.60+2	±.05			
14	18.5	R	+84°17'	61.0	12.2	
		1372	+09			
		1363	00			
		1339	-04			
		1358	-05			
		5452	9-9			
		13.63	±.04			
14	20.6	m	+84°2'	61.3 -.7 = 60.6	12.5	
13.3		1413	-18 12	D. 12.0 fre. 1, 0 17.5.		
7.3		1421	-10 -10			
.10		1442	+11			
.7		1447	+16			
		5723	27-28			
		14.31-1	±.14			
14	21.5	δ	+84°12'	60.9 — 60.9	8.8	
21.4		989	00 24	D. E. F.		
.1		993	+04 -12	B. 11.2 fol. 2 : 0 S. 2.		
.10		992	+03			
0		983	-06			
		3957	7-6			
		9.894+1	±.03			
14	22.1	9 (δ)	+84° 10'	60.7		
		1222	-05			
		1221	-06			
		1232	+05			
		1232	+05			
		4907	10-11			
		12.27+1	±.05			

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1899phae.proj.1830W

May 31, 1899. J.D. 4806=d

14 22.6	R. Cam.	+84° 6'.6	60.7	
	1069	+03		
	1073	+07		
	1064	-02		
	1057	-09		
	4263	10-11		
	18.66-1	±05		
14 23.4	m	+84° 6'	61.0	11.8
	1420	00		
	1423	+03		
	1418	-02		
	1418	-02		
	5679	3-4		
	14.20-1	±02		
14 24.9	l	+84° 11'	60.4	10.8
	1282	+19		
	1263	00		
	1257	-06		
	1250	-13		
	5052	19-19		
	12.63	±10		
14 25.7	g	+84° 4'	60.3	10.4
	1234	+10	19.	
	1219	-05		
	1221	-03		
	1223	-01		
	4897	10-9		
	12.24+1	±05		
14 26.5	e	+84° 20'	60.6	9.4
	1129	-11		
	1133	-07		
	1138	-02		
	1158	+18		
	4558	18-20		
		±10		

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1899phae.proj.1830W

May 31, 1899.

14	28.7	l	+84°10'	60.6	12.5		1
		1395	-02	14.5.			
		1397	0				
		1398	+01				
		1399	+02				
		5589	3-2				
		13.96+1	±.01				
14	29.4	e	+83°59'	60.7	8.9		1
		1053	+11				
		1049	+07				
		1038	-04				
		1029	-13				
		4169	18-17				
		10.42+1	±.07				
14	30.4	f	+84°3'	59.3	9.6		1
	45.8	1169	+03	14 10. Σ. 1.5			
	15.4	1171	+05	-11 60.8			
	.10	1164	-02				
	1.5	1158	-08				
		4662	8-10				
		11.66-2	±.04				
14	31.0	d	+84°7'	59.3	9.6		1
	46.8	1111	-01	17 20. Σ. 1.6			
	15.8	1107	-05	-10 60.9			
	.10	1120	+08				
	1.6	1112	0				
		4450	8-6				
		11.12+2	±.04				
14	31.8	a	+84°11'	58.0	8.2		1
15	1.6	823	-19	20 20.			
	29.8	841	-01	-9 61.0			
	.10	857	+15				
		849	+07				
		3370	22-20				
		8.43+2	±.10				

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1999phae.proj.1830W

May 31, 1899. J.D. 4806 = d

14 37.6	~~2487~~	+29°53'	93.2	9.8
	1057	-09	Maps.	
	1063	-01		
	1069	+03		
	1072	+06		
	4269	9-10		
	10.67-1	±.05 ↓		
14 46.4	2487	+30°18'	100.5	9.4
	1119	-17	Map in error., Star	
	1132	-04	at 13 45.0 Dec. +29°35'	
	1148	+12	not seen.	
	1143	+07	29.9.0 Sol. 0.5 N.8.	
	4542	19-21	+30° 2478, 9.5, F. 0.2 N 8	
	11.36-2	±.10 ↓		
14 47.0	2495	+30°16'	99.2	8.9
	1052	-09		
	1107	+06		
	1104	+03		
	1102	+01		
	4405	10-9		
	11.01+1	±.05 ↓		
14 47.4	2496	+30°15'	99.2	9.6
	1117	-16		
	1129	-04		
	1139	+06		
	1147	+14		
	4532	20-20		
	11.33	±.10 ↓		
14 48.1	2498	+30°11'	99.0	5.2
	1079	+01		
	1078	00		
	1078	00		
	1079	+01		
	4314	2-0		
	10.78+2	.10 ↓		

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1899phae.proj.1830W

May 31, 1899.

14 49.3	2500	+30°12'6	99.8	9.6	1
	1120	+02	14.5		
	1113	-05			
	1117	-01			
	1122	+04			
	4472	6-6			
	11.18	±.03 ✓			
14 49.8	2503	+30°10'	98.9	9.6	1
3.8	1127	+07 57	40.0		
46.0	1123	+03 +19	58.9		
.87	1118	-02			
3220	1112	-08			
3680	4480	10-10			
40.0	11.20	±.05 ✓			
14 57.0	2513	+30° 9'	95.1 - 36.0 = 59.1	9.8	
9.6	1169	+14 53	D, 10.2 Jupiter = 38.1,		
41.4	1159	+04 +16			
.87	1150	-05			
2898	1143	-12			
3312	4621	13-17			
36.0	11.55+1	±.09 ✓			
14 51.6	2519	+30°11'	93.8	9.3	1
11.2	1082	-08 29 50	35.1		
40.4	1080	-10 +21	58.7		
.87	1092	+02			
2828	1108	+18			
3232	4362	20-18			
35.1	10.90+2	±.10 ✓			
14 52.2	2522	+30°21'	93.8	9.8	1
11.6	1123	-11 29 58	35.3		
40.6	1132	-02 +23	58.5		
.87	1139	+05			
2842	1140	+06			
3248	4534	11-13			
35.3	11.34-2	±.06 ✓			

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1899phae.proj.1830W

May 31, 1899. J.D. 4806 = d

14 54.3	2527	+30° 6' ✓	94.2	9.6
	1232	+08	10, 9.5 pec. 0.6 S.U.	
	1230	+06	+29° 25' 25", 9.5 P. 0.7 S. 8	
	1222	-02		
	1213	-11		
	4897	14-13		
	1224+1	±.07 ✓		
14 55.1	2529	+30° 0'	91.8	8.8
	1092	-01		
	1098	+05		
	1093	00		
	1090	-03		
	4373	5-4		
	1093+1	±.02 ✓		
14 55.8	2533	+30° 3'	90.7	9.4
	1107	+10		
	1091	-06		
	1096	-01		
	1095	-02		
	4389	10-9		
	1097+1	±.05 ✓		
14 56.5	2538	+30° 2'	89.3	8.2
	938	+03	53 / +7	
	943	+08		
	932	-03		
	928	-07		
	3741	11-10		
	935+1	±.05 ✓		
14 57.1	2540	+30° 2'	88.8	9.2
	1158	+07	54 / +8	
	1152	+01		
	1144	-07		
	1151	00		
	4605	8-7		
	1151+1	±.04 ✓		

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1899phae.proj.1830W

May 31, 1899.

15	0,3	2543	+30°46		90,2 - 30.5 = 59.7	10.5	
14	25.2	1325	-06	53	14.4		
	35.1	1339	+08	+11	D. 10, 3 fol. D ~ 3 8.2		
	.87	1325	-02				
	2457	1332	+01				
	2808	5325	9-8				
	30.5	1331+1	±.04 ↓				
15	0,8	D2543	+30°3'		90,2		
14	25.5	1269	00	51	30.7		
	35.3	1268	-01	+12	59.5		
	87	1272	+03				
	2471	1268	-01				
	2824	5077	3-2				
	30.7	1269+1	±.01 ↓				
15	1.5	2558	+30°2'		86.0	9.7	
14	30.8	1189	+02	56	26.7		
	30.7	1190	+03	+6	59.3		
	87	1188	+01				
	2449	1180	-07				
	2456	4747	6-7				
	18.0	1186+1	±.03 ↓				
	26.7						
15	2,2	2563	+30°1'		85,3 - 26,0 = 59.3	10.0	
14	32.3	1236	+04	59	D. 10.2 fac. 0 ~ 1 IV.1		
	29.9	1223	-09	+2			
	.87	1230	-02				
	2093	1241	+09				
	2392	4930	13-11				
	26.0	1232+2	±.06 ↓				
15	2,7	D2563	+30°2'		85,8		
14	32.2	1330	00	0	26.5		
	30.5	1327	-03	+2	59.3		
	.87	1336	+06				
	2135	1325	-05				
	2440	5318	6-8				
	26.5	1330-2	±.04 ↓				

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May 31, 1899. J.D. 4806 = d

15 3.5	2567	+29°51'	84.2	10.0	
	1232	+02	51/0		
	1221	-09			
	1242	+12			
	1226	-04			
	4921	14 -13			
	12.30+1	±.07 ✓			
15 4.9	2572	+30°0'	83.3	9.8	
	1289	+07	58/+2		
	1280	-02			
	1281	-01			
	1278	-04			
	5128	7-7			
	12.82	±.04 ✓			
15 5.7	2583	+29°58'	78.0	9.9	
	1264	+02			
	1267	+05			
	1263	+01			
	1252	-10			
	5046	8-10			
	12.62-2	±.04 ✓			
15 6.3	2570	+29°49'	76.8	8.6	
46.5 / 19.8 / .87 / 1386 / 1584 / 17.2	27.4 / 38.9 / .87 / 2723 / 8112 / 33.8	1002	+05	46/+3	53.8 / 3.0 / 17.2 / 59.6
		997	+02	51/-2	
		991	-04		
		992	-03		
		3980	7-7		
		9.95	±.04 ✓		
15 7.3	2598	+29°48'	74.9	9.6	
	1162	+04			
	1169	+11			
	1158	05			
	1144	-14			
	4633	15-14			
	11.58+1	±.07 ✓			

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May 31, 1899.

15	9.0	2607	+29°52'		72.9	10.8	
		1357	+07	58	14.4.		
		1343	-07	-6			
		1341	-09				
		1358	+08				
		5399	15-16				
		13.50-1	±.08				
15	9.5	2610	+29°47'		72.3	10.0	
		1228	-03	59			
		1231	00	-6			
		1231	00				
		1234	+03				
		4924	3-3				
		12.31	±.02				
15	10.1	2614	+29°48'		70.5	8.6	
		1089	+11	54			
		1079	+01	-6			
		1070	-08				
		1072	-06				
		4310	12-14				
		1078-2	±.06				
15	10.8	2617	+29°57'		70.5 -11.1 = 59.4	9.6	
14	58.0	1179	+15	56	D. 10.5 fol. 0 = 08.1.		
	12.8	1167	+03	-5			
	.87	1157	-07				
	896	1152	-12				
	1024	4655	18-19				
	11.1	11.64-1	±.09				
15	11.1	2617	+29°50		71.2		
14	58.0	1263	+17	55	11.4		
	13.1	1252	+06	-5	59.8		
	.87	1246	+02				
	917	1219	-27				
	1048	4982	25-27				
	11.4	12.46-2	±.13				

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May 31, 1899 J.D. 4806=d

15 11.8	2619	+29°47'6	71.2	10.2	
	1231	-14 -07			
	1234	-11 -04			
	1233	-12 -05			
	1252	+14			
12.38-2	4918	14-16			
	1245	±.08 ↓			
15 12.5	2622	+29°53'	70.3	8.6	
	1029	+06			
	1010	-13			
	1020	-03			
	1034	+11			
	4093	17-16			
	10.23+1	±.08 ↓			
15 13.8	Incomplete	+2°39'	61.0		
15 16.4	+0°3334	+0°10'	64.7	9.4	
	1113	-03	10.		
	1112	-04			
	1129	+13			
	1108	-08			
	4462	13-15			
	11.16-2	±.07 ↓			
15 17.2	+9°3016	+9°55'	65.7	8.5	
	1023	+05	10.		
	1014	-04			
	1020	+02			
	1017	-01			
	4074	7-5			
	10.18+3	±.03 ↓			

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1899phae.proj.1330W

May 31, 1899.

15	18.6	−0° 2950	+0° 0' 2	65.9	9.4	
		1108	+11	14.3.		
		1092	−05	10.2.		
		1091	−06			
		1098	+01			
		4389	12−11			
		10.97+1	±.06 ↓			
15	20.0	+0° 3345	+0° 8'	65.8	8.9	
		1100	+08			
		1098	+06			
		1092	00			
		1080	−12			
		4370	14−12			
		10.92+2	±.06 ↓			
15	21.0	+0° 3356	+1° 2'	60.4	9.8	
		1128	−01			
		1130	+01			
		1129	00			
		1130	+01			
		4517	2−1			
		11.29+1	±.01 ↓			
15	23.0	Comp. of 6.2	+2° 22'	69.5	10.2	
		1258	+17			
		1232	−09			
		1232	−09			
		1241	00			
		4963	17−18			
		12.41−1	±.09 ↓			
15	23.5	a	+2° 20'	70.9	9.8	
13.5		1187	+07 9	10.0		
10.0		1175	−05 +11	60.9		
		1182	+02			
		1176	−04			
		4720	9−9 ↓			

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1899phae..proj..1830W

May 31, 1899. JD 4806=d

15 25,8	a'	+2°34'		71.9	10.2
14.6 / 11.2	1241	+10	24	11.2 / 60.7	
	1223	-08	+10		
	1229	-02			
	1232	+01			
	4925	11-10			
	12.31	±.05 ✓			
15 26,2	b	+2°31'		72.9	10.6
	1219	-09			
	1223	-05			
	1230	+02			
	1242	+14			
	4914	16-14			
	12.28+2	±.08 ✓			
15 26,8	c	+2°36'		73.4	11.0
	1293	-10			
	1303	00			
	1308	+05			
	1309	+06			
	5213	11-10			
	13.03+1	±.05 ✓			
15 27,3	d	+2°27'		74.0	11.5
	1306	-09			
	1320	+05			
	1315	00			
	1319	+04			
	5260	9-9			
	13.15	±.04 ✓			
15 28.8	e	+2° 31'		75.8	13.0
	1149	-237	13	Azeuma 1449	
	1467	+81	05	Bright Image does	
	1467	+81	05	not disappear.	
	1463	+77	01	Comparison difficult.	
	5546	239-237	11-13		
14.62-2	13.86		±.06		

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1899phae.proj.1830W

May 31, 1899.

15 30.5 k. +2° 30' 77.5 1
H. 3.
h, k. l seen, but
< comps. *

15 31.5 e +2° 38' 79.2 10.5 1

12.8 (1900) 1298 -09 24 18.7
18.7 1310 +03 +14 60.5
1308 +01
1311 +04
5227 8-9
13.07-1 ±.04 ✓

15 32.1 Tau. 2. ? +2° 37' 79.5 10.4 1

13.2 1238 -08 24 18.9
18.9 1247 +01 +13 60.6
1245 -01
1252 +06
4982 7-9
12.46-2 ±.04 ✓

15 33.4 f. +2° 38' 81.4 12.2 15

12.7 (1900) 1432 +23 25 20.7
20.7 1400 -09 +13 60.7
1401 -08
1404 -05
5637 23-22
14.09+1 ±.11 ✓

15 34.0 g +2° 40' 81.8 12.0 15

12.7 (1900) 1385 +01 27 21.3
21.3 1379 -05 +13 60.5
1384 00
1387 +03
5535 4-5
13.84-1 ±.02 ✓

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1899phae.proj.1830W

May 31, 1899. J.D. 4806 = d

15 36.3	2637	+30° 3'	84.7	8.9
	1100	00		
	1095	-05		
	1102	+02		
	1102	+02		
	4399	4-5		
	11.00-1	±.02 √		
15 36.9	2642	+30° 2'	83.4	9.3
	1159	+05		
	1153	-01		
	1154	00		
	1149	-05		
	4615	5-6		
	11.5-4-1	±.03 √		
15 37.3	2643	+29° 54'	83.5	8.8
	~~1069~~			
	~~8~~ 1.8	+04		
	1069	+04		
	1060	-05		
	1062	-03		
	4260	8-8		
	10.65	±.04 √		
15 38.1	2650	+29° 39'	82.2	8.8
	1108	+09		
	1089	-10		
	1102	+03		
	1097	-02		
	4396	12-12		
	10.99	±.06 √		
15 38.7	2652	+30° 0'	82.2	9.6
	1158	00		
	1152	-06		
	1161	+03		
	1162	+04		
	4633	7-6		
	11.58+1	±.03 √		

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1899phae.proj.1830W

May 31, 1899.

15 40.0 | 2655 | +29°58' | 82.0 | 9.5
Th. 4
1122 +04
1113 −05
1118 00
1119 +01
4472 5−5
11.18 ±02 ✓

15 40.7 | 2665 | +29°59' | 77.8 | 10.8
1269 −04 −09
1273 00 −05
1268 +05 +10
1282 +0 +04
5112 14−14
12.78 ±07 ✓

15 43.1 | 2673 | +29°53' | 76.8 −16.8 = 60.0 | 9.8
23.8 | 1238 −20 | 57 −4 | D. 8.5 fol. 0.7 − 6 S. 8.
19.3 | 1257 −01 | Σ. 9.8 fol. 0.7 − 2 N. 3.
.87 | 1264 +06
1351 | 1271 +13
1544 | 5030 19−21
16.8 | 12.58−2 ±10 ✓
+30° 2666, 9.5 | +29° 2677, 9.0 F. 0.7 S. 8
+30° 2666, 9.5 F. 0.2 N. 3

15 43.7 Σ 2673 | +29°58' | 76.9
24.0 | 1270 −07 30 | 0 −2
19.7 | 1275 −02
.87 | 1281 +04
1379 | 1281 +04
1576 | 5107 8−9
17.1 | 12.77−1 ±04 ✓
17.1
59.8

15 44.8 | 2681 9.0 | +29°49' | 74.9 −15.4 = 59.5 | 9.2
27.1 | 1142 +03 | 51 −2 | D. 9.5 fol. 0.7 − 1 S. 1.
17.7 | 1140 +01
.87 | 1142 +03
1239 | 1133 −06
1416 | 4557 7−6
15.4 | 11.39+1 ±03 ✓

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1899phae.proj.1830W

May 31, 1899

J.D. 4806=d

15 45.5	10 2681	+29°49'6	76.1		
27.0	1224	-06	50	16.1	
18.5	1222	-08	-1	60.0	
.87	1231	+01			
1295	1241	+11			
1480	4918	12-14			
16.1	12.30-2	±.06 ✓			
15 46.1	2683	+29°30'	75.2		10.2
	1230	-02			
	1230	-02			
	1232	00			
	1236	+04			
	4928	4-4			
	12.32	±.02 ✓			
15 46.8	26	+89°32'	62.3		
	1185	+11			
	1172	-02			
	1171	-03			
	1169	-05			
	4697	11-10			
	11.74+1	±.05			
15 47.3	35	+89°33'	61.4		
	1126	+05			
	1118	-03			
	1121	00			
	1118	-03			
	4483	5-6			
	11.21-1	±.03			
15 47.8	37	+89°38'	61.5		
	1097	-04			
	1095	-06			
	1102	+01			
	1109	+08			
	4403	9-10			
	11.01-1	±.05			

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1899phae.proj.1230W

J.D. 4806 cd May 31, 1899.

15	48.4	89 (1)	+89° 52'	61.0
		1180	-02	
		1181	-01	
		1181	-01	
		1186	+04	
		4728	4-4	
		11.82	±.02	
15	49.1	h	+89° 43'	61.2
		1418	00	H. 4.
		1415	-03	S. H. 4.
		1417	-01	D. C. 5.
		1422	+04	Thin cirrus clouds apparently covered sky throughout evening
		5672	4-4	
		14.18	±.02	

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1899phae.proj.1830W

May 31 1899

J.D. 4806=d

Waite

3	54.7	26	89 34	62.3	
		11.56	-16		
		11.96	+04		
		11.71	-01		
		11.84	+12		
		4687	16-17		
		11.72-1	±.08		
3	51.3	35	89 32	61.4	
		10.83	+09		
		10.44	-30		
		10.98	+24		
		10.71	-03		
		4396	33-33		
	~~52~~	10.74	±.16		
3	52.2	39	89 40	61.6	
		11.11	+09		
		10.99	-03		
		10.90	-12		
		11.10	+08		
		4410	17-15		
		11.02+2	±.08		
3	53.4	+89.1	89 50	60.9	
		11.48	-09		
		11.54	-03		
		11.69	+12		
		11.57	00		
		4628	12-12		
		11.57	±.06		
~~4~~	1.6	~~26~~ 5	89 43	61.1	
		13.44	00		
		13.24	-20		
		13.48	+04		
		13.60	+16		
		5376	20-20		
		13.44	±.10		

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1899phae.proj.1830W

May #31 1899

4	3.0	26	89 30	62.3	Waite	1
		12.16	+47			
		11.28	-41			
		11.64	-05			
		11.69	05			
		46.77	47-46			
		11.69+1	±.23			
4	4.3	35		61.4		1
		10.81	+10 89 30			
		10.71	05			
		10.70	-01			
		10.63	-08			
		42.85	10-9			
		10.71+1	±.05			
4	5.2	37	89 38	61.6		1
		11.11	-02			
		11.11	-02			
		11.12	-01			
		11.19	+06			
		44.53	6-5			
		11.13+1	±.03			
4	6.3	89.1	89 49	60.9		1
		11.64				
		12.07				
		11.30				
		11.96				
		11.50				
4	8.2	4	89 43	61.1		1
		13.59	+20			
		13.40	+01			
		13.24	-15			
		13.32	-07			
		53.55	21-22			
		13.39-1	±.11			

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1899phae.proj.1830W

May 31, 1899. J. 24806=d Reed Obs.

16 14.7	26	+89°33'	62.3	
	1264	+12		
	1250	-02		
	1256	+04		
	1238	-14		
	5008	16-16		
	12.52	±.08		
16 16.8	35	+89°34'	61.5	
	1177	+05		
	1166	-06		
	1173	+01		
	1173	+01		
	4689	7-6		
	11.72+1	±.03		
16 18.3	37	+89°38'	61.5	
	1158	+15		
	1141	-02		
	1133	-10		
	1141	-02		
	4573	15-14		
	11.43+1	±.07		
16 20.2	89 (1)	+89°49'	60.9	
	1264	+34		
	1195	-35		
	1223	-07		
	1237	+07		
	4919	41-42		
	12.30-1	±.21		
16 23.3	2	+89°42'	61.2	
	1343	+07		
	1331	-05		
	1328	-08		
	1344	+08		
	5346	15-13		
	13.36+2	±.07		

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1899phae.proj.1230W

May 31, 1899

16	25.6	26	+89 °34'	62.4	Read Obs.
		1235	-07		
		1240	-02		
		1246	+04		
		1247	+05		
		4968	9-9		
		12.42	±.04		
16	27.5	35	+89 °33'	61.6	
		1249	+56		
		1178	-15		
		1182	-11		
		1162	-31		
		4771	56-57		
		11.93-1	±.23		
16	29.5	37	+89 °39'	61.6	
		1183	-23		
		1209	+03		
		1198	-08		
		1233	+27		
		4823	30-31		
		12.06-1	±.15		
16	31.1	89 (1)	+89 °49'	60.9	
		1238	+10		
		1278	+50		
		1185	-43		
		1212	-16		
		4913	60-59		
		12.28+1	±.30		
16	34.1	26	89 38	62.4	Waite
		11.61	+15		
		11.33	-13		
		11.34	-12		
		11.58	+12		
		4586	27-25		
		11.46+2	±.13		

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1899phae.proj.1830W

May 31 1899 J.D. 4806=d

Waite

16 35.2	35	~~35~~ 89	6.6	
	10.93	-06 ~~10.93~~		
	11.26	+27		
	10.68	-31		
	11.09	+10		
	4396	37-37		
	1099	±18		
16 36.6	37	89 39	61.6	"
	10.98	-24		
	11.36	+14		
	11.34	+12		
	11.20	-02		
	4488	26-26		
	11.22	±13		
16 37.2	89.1	89 49	60.9	"
	11.38	+11		
	11.24	-03		
	11.16	±11		
	11.30	+03		
	4508	14-14		
	11.27	±.07		
	"	89 42	61.2	"
16 38.5	13.39	+12		
	13.23	-04		
	13.12	-15		
	13.35	+08		
	5309	20-19		
	13.27+1	±.10		
16 40.1	26	89 37	62.4	"
	11.53	+08 +07		
	11.12	-38 -34		
	11.82	+47 +36		
	11.86	-09 -10		
	11.46-1 4583	43-44		
	1.43+4	±.22		

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1899phae.proj.1830W

J.D. 4806 = d May 31 '99

16	41.1	35	89 31	62.7	Waite
		11.40	+20		
		11.36	+14		
		11.22	+02		
		10.83	-37		
		44 8 / 11.20+1	36-37 ±.18		
16	42.2	37	89 40	61.6	"
		11.42	+16		
		11.36	+10		
		10.96	-30		
		11.31	+05		
		45 0 5 / 11.26+1	31-30 ±.15		
16	43.4	89.1	89	60.9	"
		11.65	-04		
		11.78	+09		
		11.92	+23		
		11.40	-29		
		46 7 5 / 11.69-1	32-33 ±.16		
16	44.3	4	89 43	61.2	"
		13.73	+07		
		13.63	-03		
		13.68	+02		
		13.56	-08		
		54 6 2 / 13.66-2	9-11 ±.05		

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1899phae.proj.1830W

J.D 4807 = e

Pole — June 1, 1899. (Thursday)

13 38.9	26	+89° 29'	61.8	
	1223	+01	Pressure Gauge.	
	1224	+02	6.40	
	1222	00	~~13 37.5~~ 44	73 Sasturning
	1218	-04		
	4887	3-4	18.4.	
	12.22-1	±.02		
13 39.9	35	+89° 37'	61.0	
	1164	-03 -02		
	1166	-01 00		
	1163	-04 -03		
	1173	+06 +07		
	4666	6- 7-5		
	11.66+2	±.03		
13 40.5	37	+89° 41'	61.3	
	1177	-02		
	1175	00		
	1181	+02		
	1180	+01		
	4713	3-2		
	11.78+1	±.01		
13 41.4	89 (1)	+89° 54'	61.2	
	1219	+09		
	1207	-03		
	1205	-05		
	1209	-01		
	4840	9-9		
	12.10	±.04		
13 42.7	1	+89° 46'	61.2	
	1409	00		
	1403	-06		
	1415	+06		
	1409	00		
	5636	6-6		
	14.09	±.03		

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1899phae.proj.1830W

June 1, 1899.

13 45.0	2662	+39° 45'	70.7	9.8	13
	1069	-05			
	1074	00			
	1073	-01			
	1082	+08			
	4298	8-6			
	10.74+2	±04			
13 45.5	2663	+39° 45'	71.1	8.4	13
	965	-05			
	969	-01			
	974	+04			
	972	+02			
	3880	6-6			
	9.70	±03			
13 47.1	2674	+39° 43'	68.3	11.0	13
36.7	1403	07 +02 5-6 -13	8.0		
10.4	1398	-12	60.3		
.77	1417	+07			
728	1422	+12			
728	5640	19-19			
8.0	14.10	±10			
13 47.5	2675	+39° 44'	68.4 -8.1 60.3	8.6	13
37.0	1102	-05 59 -15	10.10.2 fol. 2m 184.		
10.5	1105	-02			
.77	1108	+01			
735	1112	+05			
735	4427	6-7			
8.1	1107-1	±03			
13 48.1	20 2675	+39° 42'	688		13
37.1	1261	-13 55 -13	8.5		
11.0	1261	-13	60.3		
.77	1289	+15			
770	1286	±12			
770	5097	27.26			
8.5	2.7444	±13			

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1899phae.proj.1830w

June 1, 1899. J.D. 4807 = e

13 48.9	2685	+35° 42'	63.7		9.4
	1145	+11	10. 10.0	Jne. 0m.3	N. 1.
	1132	-02			
	1129	-05			
	1128	-06			
	4534	11-13			
	11.34-2	±.06 ✓			
13 50.0	2697	+35° 39'	61.3		9.8
	1155	+28			
	1153	-14			
	1150	-17			
	1170	+03			
	4668	31-31			
	11.67	±.16 ✓			
13 52.8	+29° 24 32	+29° 49'	80. S -21.1		8.9
28.5	1062	-29	5-3	59. Σ. S-9.4	
24.3	1067	+05	-4		
87	1039	-03			
1901	1061	-01			
1944	4249	5-4			
21.1	10.62+1	±.02 ✓			
13 53.2	+29° 26 92	+19° 47'	81.8		9.4
	1158	-17	59.		
	1180	+05			
	1180	+05			
	1181	+06			
	4699	16-17			
	11.75-1	±.08 ✓			
13 54.1	+19° 26 92	+19° 49'	81.3		8.6
31.0	1021	+05	5H	59. 21.7	
23.1	1015	+03	-5	59.6	
94					
928					
2079	1012	-04			
21.91	1012	-04			
	4064	8-8			
	10.16	±.04 ✓			

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1899phae.proj.1220W

June 1, 1899.

13 56.3 +19°2704 +19°53' 79.8 − 20.3 = 59.5 9.0

34.7 / 21.6 / .94 / 864 / 1944 / 20.3 — 1041, 1053, 1067, 1063 — 4224 — 10.56

−15 −03 +11 +07 — 18 − 18 — ±.09 ✓ — 59 / −6 — 14.4 — 19.

13 56.9 +19°2708 +19°51' 78.9 9.4

36.4 / 20.5 / .94 / 820 / 1845 / 19.3 — 1059, 1065, 1088, 1088 — 4300 — 10.75

−16 −10 +13 +13 — 26 − 26 — ±.13 ✓ — 58 / −4 — 10. — 19.3 / 59.6

14 0.8 +29°2460 +29° 47' 75.3 9.6

13 43.4 / 57.4 / .87 / 1218 / 1392 / 19.7 / 15.1 — 1087, 1089, 1100, 1101 — 4377 — 10.944

−07 −05 +06 +07 — 13 − 12 — ±.06 ✓ — 52 / −5 — 10. E. F. — 49. / 15.1 / 60.2

14 1.9 −a +28°54' 83.0 9.2

15 1.6 / 35.8 / 26.1 / .88 / 2088 / 2088 / 23.0 +29°2448 — 981, 989, 990, 999 — 3959 — 9.898 = 9.90 − 1

−0928 −01 −00 +09 — 9 − 10 — ±.05 ✓ — 56 / −2 — 23.0 / 60.0

14 3.1 C +29°10' 84.3 9.6

13 35.1 / 28.0 / .87 / 1960 / 2240 / 24.4 — 1098, 1109, 1121, 1123 — 4451 — 11.1 3 − 1

−15 −04 +08 +10 — 18 − 19 — ±.09 ✓ — 11 / −1 — 24.4 / 59.9

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1899phae.proj.1830W

+29°2452

June 1, 1899. J.D. 4807=e

14 3.9 b +29°17' 84.2

13 35.8 / 28.1 / 87 / 1967 / 2248 / 24.4

1117 −42 17/0 24.4 / 59.8 14.4

1161 +02

1201 +42

1158 −01

44-43

4637 / 11.59+1 ±.22 ✓

14 4.8 b (2) +29°17' 85.3 9.8

1172 +10

1167 +05

16 13 38.5 +28 47 12.73 9:3 e Messier 3 ✓

13 36.4 +29 1

14 5.5 d 4806 12.78 05 11.0

13 36.3 / 29.2 / 87 / 2044 / 2336 / 25.4

e 4807 12.57 -16

f 4808 12.85 12 / 2.20 / 17-16

12.73+1

14 6.1 12.4

e b 36.4 / 29.7 / 87 / 2079 / 2376 / 25.8

a 86.3 / 29.8 / 87 / 2086 / 2384 / 25.9

1324 −03 3/0 a 25.9 / 60.3 a

1325 −02

1327 00

1332 +05 5=5 ±.02 ✓ 1/+2 b 25.8 / 60.4 b

5308 / 13.27

14 6.8 12.2

d b 36.3 / 30.5 / 81 / 2135 / 2440 / 26.5

e +29°3' 86.8

a 86.4 / 30.4 / 87 / 2128 / 2432 / 26.4

1432 +30 1/+2 a 26.4 / 60.4 a

1398 −04

1389 −13

1387 −15 3/0 b 26.5 / 60.3 b

5606 / 1402-2 30-32 ±.16 ✓

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1899phae.proj.1830W

+29°2452

June 1, 1899. J.D. 4807=e

14 3.9 b +29°17' 84.2

13 35.8 / 28.1 / 87 / 1967 / 2248 / 24.4

1117 −42 17/0 24.4 / 59.8 14.4

1161 +02

1201 +42

1158 −01

44−43

4637 / 11.59+1 ±.22 ✓

14 4.8 b (2) +29°17' 85.3 9.8

1172 +10

1167 +05

16 13 38.4 +28 48 11.67 9.3 d Messier 3 ✓

13 36.3 +29 2

14 5.5 d 4806 11.72 +05 11.0

13 36.3 / 29.2 / 87 / 2044 / 2336 / 25.4

e 4807 11.67 00

f 4808 11.61 −06 / 200 5−6

11.67−1

14 6.1 12.4

e b 36.4 / 29.7 / 87 / 2079 / 2376 / 25.8

86.3 a / 29.8 / .87 / 2086 / 2384 / 25.9

1324 −03 3/0 a 25.9 a / 60.8

1325 −02

1327 00

1332 +05 / 5−5 ±.02 ✓ 1/+2 b 25.8 b / 60.4

5308 / 1327

14 6.8 12.2

d e +29 3' 86.8

b 36.3 / 30.5 / 87 / 2135 / 2440 / 26.5

36.4 a / 30.4 / .87 / 2128 / 2432 / 26.4

1432 +30 1/+2 a 26.4 a / 60.4

1398 −04

1389 −13

1387 −15 / 30−32 ±.16 ✓ 3/0 b 26.5 b / 60.3

5606 / 1402−2

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1899phae.proj.1830W

+29°2452

June 1, 1899. J.D. 4807 = e

14 3.9 b +29°17' 84.2

13 35.8 / 28.1 / .87 / 1967 / 2248 / 24.4 — 1117, 1161, 1201, 1158 — −42, +02, +42, −01 — 44−43 — ±.22 ✓ — 17/0 — 24.4 / 59.8 — 14.4

14 4.8 b (2) +29°17' 85.3 9.8

1172 +10

1127 −45

16 13 38.4 +28 49 12.04 9.3 d' Messier 3 ✓

13 36.3 +29 3.

14 5.5 d 4806 12.20 16 — 11.0

13 36.3 / 29.2 / .87 / 2044 / 2336 / 25.4

e 4807 11.82 22

f 4808 12.09 .11 — .05 / .21−22

12.04−1

14 6.1 — 12.4

e 36.4 / 29.7 / .87 / 2079 / 2376 / 25.8 — b 86.3 a / 29.8 / .87 / 2086 / 2384 / 25.9 — 1324, 1325, 1327, 1332 — 5308 / 1327 — −03, −02, 00, +05 — 5−5 — ±.02 ✓ — 3/0 a — +1/+2 b — 25.9 a / 60.5 — 25.8 b / 60.4

14 6.8 — 12.2

d e +29 3'

b 36.3 / 30.5 / .87 / 2135 / 2440 / 26.5 — a 86.4 / 30.4 / .87 / 2128 / 2432 / 26.4 — 1432, 1398, 1389, 1387 — 5606 / 1402−2 — +30, −04, −13, −15 — 30−32 — ±.16 ✓ — 1/+2 a — 3/0 b — 26.4 a / 60.4 — 26.5 b / 60.3

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+29°2452

June 1, 1899. J.D. 4807=e

14 3.9 b +29°17' 84.2

13 35.8 / 28.1 / 87 / 1967 / 2248 / 24.4

1117 −42 17/0 24.4/59.8 14.4.
1161 +02
1201 +42
1158 −01
4637 44-43
11.59+1 ±.22 ✓

14 4.8 b (2) +29°17' 85.3 9.8

1172 +10
1167 +05
1159 −03
1152 −10
4650 15-13
11.62+2 ±.07 ✓

14 5.5 d +29°3' 85.7 11.0

13 36.3 / 29.2 / 87 / 2044 / 2336 / 25.4

1322 +10 2/+1 25.X/60.3
1310 −02
1305 −07
1309 −03
5246 10-12
13.12-2 ±.06 ✓

14 6.1 d +29°3' 86.2 12.4

e 364 / 29.7 / 87 / 2079 / 2376 / 25.8

b 86.3 / 29.8 / .87 / 2086 / 2384 / 25.9

1324 −03 3/0 a 25.9/60.3 a
1325 −02
1327 00
1332 +05 1/+2 b 25.8/60.4 b
5308 5-5
13.27 ±.02 ✓

14 6.8 e +29°3' 86.8 12.2

d 363 / 305 / 81 / 2135 / 2440 / 26.5

b 86.4 / 30.4 / .87 / 2128 / 2432 / 26.4

1432 +30 1/+2 a 26.4/60.4 a
1398 −04
1389 −13
1387 −15 3/0 b 26.5/60.3 b
5606 32-32
14.02-2 ±.16 ✓

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1899phae.proj.1830W

June 1, 1899.

14	7.3	f	+29°7'	87.7	12.5	
		1450	00			
		1449	-01			
		1451	+01			
		1450	00			
		5800	1-1			
		14.50	±.00 ✓			
14	9.5	g	+29°7'	69.5		
				g 0.2 < artificial * at 1467!		
14	12.1	2709	+39°43'	74.2 − 13.6 = 60.6	9.3	
	54.4	1057	-03	5-2	D. 8.0 Jupiter IV. 7.	
	17.7	1062	+02	-9	+39°2708, 6.5 P. 0.1 S. 8	
	.77	1061	+01		Assumed. for N and S.	
	1239	1062	+02		See Bk 30 p 189.	
	1239					
	13.6	4242	5-3			
		10.60+2	±.02 ✓			
14	12.7	2711	+39°48'	74.3	9.4	
	54.8	1049	+07	5-5	13.8	
	17.9	1039	-03	-9	60.5	
	.77	1039	-03			
	1253	1039	-03			
	1253					
	13.8	4166	7-9			
		10.462-2	±.04 ✓			
14	13.4	2715	+39°45'	72.3	10.6	
	58.2	1278	+01	5-6	11.7	
	15.2	1282	+05	-9	60.6	
	.77	1268	-09			
	1064	1281	+04			
	1064					
	11.7	5109	10-9			
		12.77+1	±.05 ✓			

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1899phae..proj..1830W

June 1, 1899. J.D. 4807=e

14 14.0	2716	+39°47'		72.7	10.1
	1178	-03			
	1169	-12			
	1172	-09			
	1205	+24			
	4774	24-24			
	11.81	±.12 ✓			
14 14.7	2721	+39°49'		71.3	10.3
	1253	-02			
	1261	+06			
	1252	-03			
	1255	00			
	5021	6-5			
	12.55+1	±.03 ✓			
14 15.3	2723	+39°48'		70.9	9.8
	1219	+09			
	1211	+01			
	1206	-04			
	1205	-05			
	4841	10-9			
	12.10+1	±.05 ✓			
14 16.0	2725	+39°49'		71.2	8.89
	1093	00			
	1098	+05			
	1086	-07			
	1095	+02			
	4372	7-7			
	10.93	±.04 ✓			
14 16.7	2739	+39°48'		66.8	8.3
	883	-13			
	898	+02			
	898	+02			
	907	+11			
	3586	15-13			
	8.96+3	±.07 ✓			

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1899phae.proj.1830W

June 1, 1899.

14 24.1	2743	+39°48'	70.3	9.9	
	1202	+07			
	1196	+01			
	1193	-02			
	1188	-07			
	4779	8-9			
	11.95+1	±.04			
14 24.7	2746	+39°43'	69.8	9.5	
	1122	-02			
	1126	+02			
	1127	+03			
	1122	-02			
	4495	5-4			
	11.24+1	±.02			
14 25.6	2752	+39°42'	69.5	10.5	
	1253	-03			
	1253	-03			
	1259	+03			
	1259	+03			
	5024	6-6			
	12.56	±.03			
14 26.3	2760	+39°48'	67.2	7.2	
	919	+09			
	918	+08			
	906	-04			
	898	-12			
	3693	17-16			
	9.46+1	±.08			
14 27.0	2765	+39°47'	64.3	9.6	
	1122	-17			
	1143	+04			
	1143	+04			
	1148	+09			
	4556	17-17			
	11.39	±.08			

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1899phae.proj.1830W

June 1, 1899. J.D. 4807=e

14 27.8	2772	+39°42'	63.8		9.8
	1178	-07			
	1189	+04			
	1191	+06			
	1182	-03			
	4740	10-10			
	11.85	±.05 √			
14 28.5	2781	+39°43'	60.3		9.3
	1153	-20			
	1179	+06			
	1178	+05			
	1182	+09			
	4692	20-20			
	11.73	±.10 √			
14 29.2	2782	+39°47'	5-9.8		9.7
	1167	+05			
	1159	-03			
	1160	-02			
	1164	+02			
	4650	7-5			
	11.62+2	±.03 √			
14 31.6	R. Cam.	+84°5'	62.5-		9.0
	1133	+13	14.5-		
	1121	+01			
	1119	-01			
	1109	-11			
	4482	14-12			
	11.20+2	±.06			
14 33.9	n	+84°0'	64.1		12.3
	1438	-08	LD not seen.		
	1444	-02	Star taken last night		
	1447	+01	Prob. 1.m0 8.8.		
	1453	+07	Ident.		
	5783	8-10			
	1446.2	±.04			

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June 1, 1899.

14 36.5	k	+84° 18'		63.8	12.5		1
17.8	1442	+06	29	1.9			
18.7	1433	-03	-11	61.9			
.10	1432	-04					
1.9	1439	+03					
	5746	9-7					
	1436+2	±.04					
14 38.5	δ	+84° 13'		63.7 -1.7 = 62.0	8.6		1
21.4	1018	-10	24	D. E. F. G.			
17.1	1022	-06	-11				
.10	1042	+14					
1.7	1032	+04					
	4114	18-16					
	1028+2	±.08					
14 39.5	δ (b)	+84° 11'		63.3	11.2		1
23.4 ~~21.4~~	1268	-08	~~24~~	~~1.8~~			
16.5 ~~18.1~~	1273	-03	-18	61.5			
.10 ~~.10~~	1282	+06	22				
1.6 ~~1.8~~	1279	+03	-11	1.6			
	5102	9-11		~~61.7~~ 61.7			
	1276-2	±.05					
14 40.0	R1	+84° 7'		63.3			1
24.9	1094	+03	17	1.5			
15.1	1088	-03	-10	61.8			
.10	1093	+02					
1.5	1090	-01					
	4365	5-4					
	1091+1	±.02					
14 41.0	m	+84° 5'		63.8	12.8		1
	1467			0.1 < 1467.			

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June 1, 1899. J.D. 4807 = e

14 41.9	h	+84° 10'	63.2	11.8	
	1318	-06			
	1321	-03			
	1321	-03			
	1335	+11			
	5295	11-12			
	13.24-1	±06			
14 42.9	-9	+84° 2'	63.1	11.4	
	1280	08	20.		
	1269	-11			
	1278	-02			
	1293	+13			
	5120	13-13			
	12.80	±.06			
14 43.5	e	+84° 0'	63.0	9.0	
	1084	+18			
	1069	+03			
	1053	-13			
	1058	-08			
	4264	21-21			
	10.66	±.10			
14 44.3	e	+84° 20'	63.2	10.0	
	1146	+08			
	1138	00			
	1136	-02			
	1133	-05			
	4553	8-7			
	11.38+1	±04			
14 45.3	e	+84° 10'	63.3	12.2	
31.3	1443	-03	21	1.4	
14.0	1436	-10	-11	61.9	
.10	1441	-05			
.14	1462	+16			
	5782	16-18			
	1446-2	±08			

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June 1, 1899.

14	46.9	R. Cam.	+84°7'		64.0		
	24.9	1111	+07	17	14.5	2.2	
	22.0	1108	+04	−10		61.8	
	.10	1096	−08				
	22	1102	−02				
		4417	11−10				
		1104+1	±05				
14	48.3	f	+84°1'		62.2	10.2	
		1192	−03		60.E.		
		1197	+02				
		1191	−04				
		1201	+06				
		7781	8−7				
		11.8.5+1	±04				
14	48.9	d	+84°6'		62.2	9.6	
		1152	−02		60.E.		
		1148	−06				
		1154	00				
		1162	+08				
		4616	8−8				
		11.5−4	±04				
14	49.6	a	+84°9'		60.8	7.7	
15	1.6	929	+05	20	60.	1.2	
	12.0	921	−03	−11		62.0	
	.10	924	00				
	12	922	−02				
		3696	5−5				
		9.24	±02				
14	51.0	2785	+39°49'		75.3	9.5	
		1169	+10				
		1162	+03				
		1152	−07				
		1153	−06				
		4636	13−13				
		11.5.9	±06				

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June 1, 1899. J.D. 4807=e

14 51.6	2787	+35°49'	75.3		10.6
	1217	-17			
	1233	-01			
	1242	+08			
	1242	+08			
	4934	16-18			
	1234-2	±08 ✓			
14 52.2	2788	+39°44'	75.9		9.7
	1140	+16			
	1123	-01			
	1117	-07			
	1118	-06			
	4498	16-14			
	1124+2	±08 ✓			
14 52.7	2785	+39°57'	76.2		10.8
	1262	-03	20. 11.5 fol. 0 = 1 IV. 0.		
	1264	-01			
	1266	+01			
	1267	+02			
	5059	3-4			
	1265-1	±02 ✓			
14 53.7	2799	+39°52'	70.7		9.8
	1196	+13			
	1178	-05			
	1179	-04			
	1180	-03			
	4733	13-12			
	1183+1	±06 ✓			
14 54.4	2800	+39°43'	71.0-10.2 60.8		9.3
41.1	1120	+09 51 -8	20. 9.1 fol. 0 = 2 IV. 3		
13.3					
.77	1108	-03			
931					
931	1108	-03			
10.2					
	1107	-04			
	4443	9-10			
	1111-1	±05 ✓			

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1899phae.proj,1830W

June 1, 1899.

14 58.3	D2820	+39°49'		73.9 −13.1=	9.2	
41.3	1128	00	5-4	74.5 60.8		
17.0	1121	−07	−5	Var.?		
.77	1123	−05				
1190	1141	+13		2820 two bri.		
1190	4513	13−12				
13.1	11.28+1	±.06 √				
14 59.4	Comp 2820	+39°44'		65.2	11.0	
	1285	−04	−11			
	1293	+04	−03			
	1300	+11	+04			
	1307	+8	+11			
	5185		15−14			
12.96+1	12.89		±.07 √			
14 59.9	2823	+39°48'		65.0	9.0	
	1069	−07				
	1072	−04				
	1077	+01				
	1087	+11				
	4305	12−11				
	10.76+1	±.06 √				
15 0.8	2836	+39°50'		58.9	9.4	
	1148	−06	−09			
	1157	+03	00			
	1159	+05	+02			
	1163	+09	+06			
	4627	8−9				
	11.57+1	±.04 √				
15 1.2	2837	+39°50'		59.0	8.9	
	1042	+02				
	1034	−06				
	1042	+02				
	1042	+02				
	4160	6−6				
	10.40	±.03 √				

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June 1, 1899. J.D. 4807=e

15 2,2	2851	+39°43'	56.0	9,6
	1172	00		
	1174	+02		
	1171	-01		
	1173	+01		
	4690	3-1		
	1172+2	±.01 ✓		
15 5,1	2866	+39°52'	52.8	9.8
	1238	+16	20.8.9 fol. 0m.8	18.1.
	1220	-02		
	1211	-11		
	1218	-04		
	4887	16-17		
	1221-1	±.08 ✓		
15 7,1	2870	+39°52'	51.0	9.6
	1228	-04	20.9.5 fol. 0m.2	18.8.
	1233	+01	Σ.9.3 " 0m.4	18.0.
	1233	+01		
	1234	+02		
	4928	4-4		
	1232	±.02 ✓		
15 7,6	2872	+39°57'	50.2	8.9
	1080	-09		
	1082	-07		
	1098	+09		
	1097	+08		
	4357	17-16		
	1089+1	±.08 ✓		
15 8,2	2873	+39°53'	50.2	10.2
	1174	-07		
	1181	00		
	1188	+07		
	1181	00		
	4724	7-7		
	1181	±.04 ✓		

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June 1, 1899.

15	10,0	2878	+39°52'	45.4	9.9	1
		1250	+02	14.4.		
		1238	-10	10.9.6 fol. 07=3	17.6.	
		1252	+04			
		1253	+05			
		4993	11-10			
		12,48+1	±05 ↓			
15	10.9	2884	+39°49'	48.5	9.0	1
		1117	+02			
		1109	-06			
		1120	+05			
		1113	-02			
		4459	7-8			
		11.15-1	±04 ↓			
15	11.6	2887	+39°48'	47.7	10.2	1
		1207	+13			
		1193	-01			
		1188	-06			
		1187	-07			
		4775	13-14			
		11.94-1	±07 ↓			
15	12.1	2888	+39°54'	48.0	8.8	1
		1070	-01			
		1064	-07			
		1072	+01			
		1077	+06			
		4283	7-8			
		10.71-1	±04 ↓			
15	12.7	2890	+39°50'	47.1		1
		1115	+11			
		1107	+03			
		1102	-02			
		1093	-11			
		4417	14-13			
		11.04+1	±07 ↓			

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June 1, 1899. J.D. 4807=e

15	14.3	Messier +0°3334	+0°9'	63.5	9.0
		1134	+20	L9.	
		1119	+05		
		1102	−12		
		1101	−13		
		4456	25−25		
		11.14	±12 ✓		
15	15.1	+9°3016	+9°51'	64.5	8.6
		987	+04	L9.	
		988	+05		
		973	−10		
		984	+01		
		3932	10−10		
		9.83	±05 ✓		
15	16.1	−0°2950	−0°3'	64.2	9.4
		1094	00	L9.E.	
		1092	−02		
		1092	−02		
		1100	+06		
		4378	6−4		
		10.94+2	±02 ✓		
15	17.0	+0°3345	+0°6'	63.5	9.3
		1098	+09	L9.E.	
		1089	00		
		1088	−01		
		1082	−07		
		4357	9−8		
		10.89+1	±04 ✓		
15	18.0	+0°3356	+10'2	58.4	9.4
		1152	+08	L9.E.	
		1146	+02		
		1138	−06		
		1140	−04		
		4576	10−10		
		11.44	±05 ✓		

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June 1, 1899.

15	20.3	Comp. 67	+2° 22'	67.8	11.2	
		1221	-04	H. 4.		
		1222	-03			
		1228	+03			
		1228	+03			
		4899	6-7			
		12.225-1	±03			
15	20,8	a	+2° 21'	69.1	9.6	
		1148	-12			
		1151	-09			
		1162	+02			
		1177	+17			
		4638	19-21			
		11,60-2	±.10			
15	22.2	~~c~~ d	+2° 27'	69.9	11.8	
		1329	-13			
		1338	-04			
		1349	+07			
		1354	+12			
		5370	19-17			
		13.42+2	±.09			
15	22,8	b	+2° 31'	70.3	10.8	
		1274	+01			
		1274	+01			
		1274	+01			
		1269	-04			
		5091	3-4			
		12.73-1	±02			
15	23.6	c	+2° 34'	70.8	11.3	
		1359	+08			
		1357	+06			
		1343	-08			
		1346	-07			
		5403	14-15			
		13.51-1	±07			

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June 1, 1899. J.D. 4807 = e

15⁻ 24.1	a'	+2° 34	71.2	10.9
	1275	+03		
	1267	-05		
	1271	-01		
	1277	+05		
	5090	8-6		
	12.72+2	±04 ✓		
15⁻ 25.0	h	+2° 32'	73.2	
			h 0.5 < 1467	
			k & l two ft.	
15⁻ 25.8	e	+2° 35'	74.6	11.2
	1338	-05		
	1343	05		
	1340	-03		
	1350	+07		
	5371	7-8		
	13.43-1	±04 ✓		
15⁻ 26.6	Var. 2 ?	+2° 37'	75.2	11.2
	1302	+03		
	1301	+02		
	1288	-11		
	1304	+05		
	5195	10-11		
	12.99-1	±.05 ✓		
15⁻ 27.3	f	+2° 37'	76.0	12.5⁻
	1460	+09		
	1458	+07		
	1443	-08		
	1442	-09		
	5803	16-17		
	14.5-1-1	±.08 ✓		

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June 1, 1899.

15 29.0 g +2° 40' 77.3 13.0

1447 −09 Ht. 5.
1443 −13
1468 +12
1465 +09
5823 21−29 2
14.56−1 ±.10 ✓

15 34.6 2896 87 +39° 47' 61.7 9.2

35.4 34.2 1148 +07 53 −6 .3 61.4
1.8 .4 1142 +02
.77 .77 1135 −06 40 0 −13 ~~61.7~~
1.26 .308 1138 −03
1.26 4564 9−9
1.4 11.41 ±.04 ✓

15 35.3 2902 +39° 43' 60.5 +7 = 61.2 9.8

36.2 1173 +11 52 −9 10.2 fol. 0 − 2 IV. 1.
.9 1158 −04
.77 1157 −05
.693 1159 −03
4647 11−12
1.62−1 ±.06 ✓

15 35.7 2902 +39° 44' 60.8 10.2

36.4 1164 −07 53 −9 .5 61.3
.7 1172 +01
.77 1171 00
.539 1178 +07
4685 8−9
1.71+1 ±.04 ✓

15 36.2 2904 +39° 52' 60.3 9.0

37.4 1063 −02 40 0 −8 .9 61.2
1.2 1061 −04
.77 1062 −03
.924 1074 +09
4260 9−9
1.065 ±.04 ✓

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June 1, 1899. J.D. 4807 = e

15 36.8	2908	+39°47'	5 9.6	9.7
	1095	+03		
	1082	−10		
	1092	05		
	1098	+06		
	4367	9−10		
	10.9 2−1	±.05 ✓		
15 37.5	2920	+39°44'	5 3.9	10.3
	1168	−08		
	1171	−05		
	1182	+06		
	1182	+06		
	4703	12−13		
	11.7 6−1	±.06 ✓		
15 38.1	2926	+39°50'	5 4.3	10.5
	1243	+08	54 / −4	
	1239	+04		
	1223	−12		
	1234	−01		
	4939	12−13		
	12.3 5−1	±.06 ✓		
15 38.8	2933 7.7	+39°48'	5 7.9	8.5
51.0 / 12.2 / .77 / 854 / 834 / 9.4	1043	+20	51 / −3	9.4 / 61.3
	1024	+01		
	1018	−05		
	1008	−15		
	4093	21−20		
	10.2 3+1	±.10 ✓		
15 43.2	2960 9.2	+39° 3'	43.9 +17.6 X = 61.5	9.6
6.10 / 2.08 / .77 / 1596 / 1596 / 17.6 / 1610 / 17.X	1207	+11	55 / +8	10.5.6 fol. 0 m 0 8.2.
	1200	+04	+39°29 9.9.5 P. 0.1 8.7	
	1193	−03		
	1184	−12		
	4784	15−15		
	11.96	±.08 ✓		

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1899phae.proj.1830W

June 1, 1899.

15 44.5	2960	+40° 0′	45.2 +16.5 =	61.7	9.8		
16 5.9	1182	+01 48	16.5				
21.4 .77	1182	+01 +12	Corona around Jupiter				
1498 1498	1182	+01					
16.5	1177	−04					
	4723	3−4					
	1.81−1	±02					
15 45.2	2967	+40° 3′	42.3		9.5		
	1103	+03					
	1099	−01					
	1102	+02					
	1094	−06					
	4398	5−7					
	1.095−2	±03					
15 46.3	26	+89° 33′	63.2				
	1257	+05					
	1257	+05					
	1252	0					
	1244	−08					
	5010	10−8					
	12.52+2	±04					
15 46.7	35	+89° 32′	62.2				
	1174	+21					
	1161	+08					
	1144	−09					
	1133	−20					
	4612	29−29					
	11.53	±14					
15 47.2	37	+89° 39′	62.3				
	1142	−03					
	1147	+02					
	1142	−03					
	1148	+03					
	4579	5−6					
	11.45−1	±03					

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1899phae.proj.1830W

June 1, 1899. J.D. 4807=e

15 48.0	89(1)	+89°5-3	~~62.1~~ 61.8	
	1213	-01		
	1207	-07		
	1212	-02		
	1226	+12		
	4858	12-10		
	12.144+2	±.06		
15 48.5	L	+89°44'	62.0	
	1403	-01	H. 5	
	1402	-02	G. H. 5	
	1402	-02	H. C. 5	
	1410	+06	Thin clouds of perhaps varying density covering sky.	
	5617	6-5		
	14.044+1	±.03		

Pressure Gauge.

11 10. 45 80 Gas burning.

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1899phae.proj.1830W

J.D. 4808 = f

June 2, 1899 (Friday).

		Pole				
13	5.7	26	+89° 28'	59.2		
		1232	-09			
		1235	-06			
		1239	-02			
		1258	+17			
		4964	17-17			
		12.41	±08 ✓			
13	6.7	35	+89° 35'	58.4		
		1139	-17		1241	+47
		1158	+02		1156	-38
		1161	+05		1161	-33
		1168	+12		1220	+26
		4626	19-17		378	73-71
		11.56+2	±09 ✓			
13	7.2	37	+89° 40'	58.9	1194	
		1152	-09			
		1149	-12			
		1163	+02			
		1180	+19			
		4644	21-21			
		11.61	±00 ✓			
13	9.7	89 (1)	+89° 53'	59.0		
		1174	-28			
		1190	-12			
		1204	+02			
		1238	+36			
		4806	38-40			
		12.02-2	±20 ✓			
13	10.5	89(1) 2.	+89° 54'	59.0		
		1203	-17			
		1221	+01			
		1222	+02			
		1234	+14			
		4880	17-17			
		12.20	±08 ✓			

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1899phae.proj.1830w

June 2, 1899.

13 21.8	35 ~~46~~	−20°20′	100.0	9.8
	1263	+09		
	1270	+16	3547 not seen.	
	1249	−05		
	1235	−19		
	5017	25−24		
	12.5 4+1	±12 √		
13 23.5	3550	−20°20′	100.0	10.5
	1290	−11		
	1292	−09		
	1311	+10		
	1311	+10		
	5204	20−20		
	13.01	±10 √		
13 24.4	3551	−20°16′	100.7	10.0
	1258	−14		
	1269	−03		
	1272	05		
	1287	+15		
	5086	15−17		
	12.72	±.08 √		
13 26.8	3598	−20°10′	92.5	10.0
	1318	−05		
	1327	+04		
	1330	+07		
	1317	−06		
	5292	11−11		
	13.23	±.06 √		
13 27.5	3604	−20°13′	91.5	9.8
	1260	−01		
	1267	+06		
	1262	+01		
	1255	−06		
	5044	7−7		
	12.61	±.04 √		

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1899phae.proj.1830W

June 2, 1899.

13 28.8	3608	-20° 9'	91.5	9.6	13
	1248	+06	10.	11. 2.	
	1237	-05			
	1231	-11			
	1250	+08			
	4966	14-16			
	12.42-2	±.08 ✓			
13 29.5	3617	-20° 11'	89.5	7.8	13
	879	-05			
	872	-12			
	894	+10			
	889	+05			
	3534	15-17			
	8.844-2	±.08 ✓			
13 30.1	3618	-20° 8'	89.8	9.9	13
	1161	-15			
	1178	+02			
	1191	+15			
	1175	-01			
	4705	17-16			
	11.76+1	±.08 ✓			
13 30.7	3615	-20° 5'	90.0	9.3	13
	1117	-06			
	1120	-03			
	1128	+05			
	1128	+05			
	4493	10-9			
	11.23+1	±.05 ✓			
13 35.1	3646	-20° 2'	85.3-29.2=56.1	9.2	13
4.0 / 31.1 / .94 / 1244 / 2799 / 29.2	1070	-19 54 / +14 +8	10.8. 0 fol. 0.m 6 S12.		
	1067	+11	E.S. 0 fol. 0.m 1 N5.		
	1048	-08	-20° 3787, 7.5 F. 0.4 S. 12		
	1038	-18	-19° 3647, 9.5 F. 0.2 N 7		
	4223	25-26 ✓			
	10.56-1	±.13			

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1899phae.proj.1830w

June 2, 1899. J.D. 4808 = f

13 35.8	3655	−20° 4′	81.5		9.7
	1163	−05	20.		
	1177	+09			
	1169	+01			
	1164	−04			
	4673	10−9			
	11.6811	±.05 ✓			
13 36.4	3660	−19° 57′	80.3		9.0
10.3	1063	−17 5−2 +5	24.5		
26.1	1082	+02	55.8		
.94	1085	+05			
1044	1089	+09			
2349	4319	16−17			
24.5	10.8614	±.08 ✓			
13 37.3	3665	−19° 56′	79.8		9.7
	1163	+06			
	1154	−03			
	1153	−04			
	1158	+01			
	4628	7−7			
	11.5757	±.04 ✓			
13 37.5	3666	−19° 59′	80.0		9.9
	1191	+03			
	1182	−06			
	1187	−01			
	1191	+03			
	4751	6−7			
	11.8878	±.03 ✓			
13 38.0	3668	−19° 58′	80.2		9.6
12.2	1186	−02 5−5	24.3		
25.8	1187	−01 +3	55.9		
.94	1191	+03			
1032	1189	+01			
2322	4753	4−3			
24.3	11.8816	±.02 ✓			

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1899phae.proj.1830W

June 2, 1899.

13	38.8	D 3671 / 3674	-19° 59'		79.5	10.6	
	13.5 / 25.3 / .94 / 1012 / 2277 / 23.8	1272	+03	5 / +3	23.8 / 56.1		
		1268	-01				
		1265	-04				
		1272	+03				
		5077 / 12.676+1	±03 ✓	6-5			
13	39.7	3673	-19° 58'		80.1 - 24.1 = 56.0	9.5	
	14.1 / 25.6 / .94 / 1024 / 2304 / 24.1	1173	-03	5 / +4	D. 10.5 - Jan. 06 S 2.		
		1171	-05				
		1182	+06				
		1180	+04				
		4706 / 11.76+2	±04 ✓	10-8			
13	40.2	3673	-20° 0'		80.3	9.8	
		1221	-15				
		1223	-13				
		1244	+08				
		1255	+19				
		4943 / 12.36-1	±.14 ✓	27-28			
13	41.0	3678	-19° 58'		79.2	9.5	
		1164	-04				
		1168	00				
		1165	-03				
		1176	+08				
		4673 / 11.68+1	±04 ✓	8-7			
13	41.4	3679	-20° 2'		79.7	9.7	
		1142	00				
		1144	+02				
		1140	-02				
		1143	+01				
		4569 / 11.42+1	±.01 ✓	3-2			

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1899phae.proj.1830W

June 2, 1899. J.D. 4808 = f

13 42.0	3684	-20° 2'		78.0	10.0
	1280	-04			
	1279	-05			
	1293	+09			
	1282	-02			
	5134	9-11			
	12.84-2	±.05 ✓			
13 42.6	3687	-20° 0'		78.0	9.2
	1178	+10			
	1170	+02			
	1165	-03			
	1160	-08			
	4673	12-11			
	11.68+1	±.06 ✓			
13 43.7	3697	-19° 53'		73.2	9.1
	1059	+01			
	1053	+01			
	1060	+02			
	1053	-03			
	4233	4-3			
	10.58+1	±.02 ✓			
13 44.5	3734	-19° 3'		62.4	9.7
	1178	-18			
	1202	+06			
	1199	+03			
	1207	+11			
	4786	20-18			
	11.96+2	±.10 ✓			
13 45.1	3735	-19° 48'		62.8	9.8
	1193	-12			
	1197	-08			
	1200	-05			
	1229	+24			
	4819	24-25			
	12.05-1	±.12 ✓			

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1899phae.proj.1830W

June 2, 1899.

13	47.6	3737	-19°54'	64.4	9.3	1
		1181	-01	H. 3.		
		1188	+06			
		1178	-04			
		1182	00			
		4729	6-5			
		1.8 2+1	±03 ✓			
13	48.0	3738	-19°54'	64.8	9.2	1
		1138	+07			
		1136	+05			
		1132	+01			
		1118	-13			
		4524	13-13			
		1.31	±06 ✓			
13	48.5	3742	-19°54'	64.7	10.1	1
		1248	-09			
		1259	+02			
		1260	+03			
		1260	+03			
		5027	8-9			
		12.57-1	±.04 ✓			
13	50.2	Means 3 +29°2432	+29°46'	76.8	8.8	1
		1038	-02	D. E.		
		1039	-01			
		1041	+01			
		1040	00			
		4158	1-3			
		1040.2	±.01 ✓			
13	51.5	+19°2652	+19°47'	77.0		1
		974	-02	D.		
		973	-03			
		973	-03			
		982	+06			
		3902	6-8			
		976.2	±.04 ✓			

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1899phae.proj.1830W

June 2, 1899.

J.D. +808 = f

13	52.3	+19°27'04	+18°51'	74.2	9.0
		1045	+16		
		1028	-01		
		1021	-08		
		1021	-08		
		4115	16-17		
		10.29-1	±.08 ✓		
13	53.0	+19°27'08	+19°19'	73.3	9.4
				20.1	
		1057	-13		
		1072	08		
		1080	+08		
		1078	+06		
		4289	14-13		
		10.72+1	±.07 ✓		
13	54.2	+29°24'60	+29°42'	67.8	9.5-
		1088	+05	20. E. F.	
		1080	-03		
		1083	08		
		1080	-03		
		4331	5-6		
		10.83-1	±.03 ✓		
13	55.4	a	+28°50'	75.2	9.2
		979	+11		
		958	-10		
		961	-07		
		973	+05		
		3871	16-17		
		9.68-1	±.08 ✓		
13	56.8	c	+29 8'	78.2	9.5-
		1098	-12		
		1111	+01		
		1117	+07		
		1112	+02		
		4438	10-12		
		11.09-1	±.06 ✓		

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1899phae.proj.1830W

June 2, 1899.

13 5-7.4	δ	1147	+29°11'		77.0	9.8
		1161	-10			
		1159	+04			
		1161	+02			
		4628	+04			
		1157	10-10 ±.05 ✓			
13 58.0	d		+28°57'		77.0	10.8
36.3		1275	-11	29 2	18.9	
21.7		1284	-02	-5	58.1	
.87		1282	-04			
1519		1301	+15			
1736		5142	15-17			
18.9		12.86+2	±.08 ✓			
13 58.5	d		+28°57'		77.3	11.2
36.3		1330	-04	3	19.3	
22.2		1341	+07	-7	58.0	
.87		1339	+05			
1554		1328	-06			
1776		5338	12-10			
19.3		13.34+2	±.06 ✓			
13 59.5	e		+28°56'		78.5	12.2
36.4		1428	+18	29 1	20.1	
23.1		1417	+07	-5	58.4	
.87		1400	-10			
1617		1393	-17			
1848		5638	25-27			
20.1		14.10-2	±.13 ✓			
14 0.1	f		+29°0'		78.9	12.5
		1418	-18			
		1447	+11			
		1440	+04			
		1438	+02			
		5743	17-18			
		14.36-1	±.09 ✓			

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1899phae.proj.1830W

Messier 3. = N.G.C. 5272

13h 37.6m +28° 5′3″. (1900). (See Vol. 38, p. 2.)

	X.	Y.	X Sec. d / 900 = .0013					
d	−223.6	−101.8	−.3	−2′	13	37.3	+28°	51′
d′								
e	−242.5	−195.3	−.3	−3	13	37.3	+28	50
f	−301.4	−158.4	−.4	−3	13	37.2	+28	50
a	−9.4	−217.8	0	−4	13	37.6	+28	49
b	−263.6	+41.9	−.3	+1	13	37.3	+28	54
c	−27.4	−168.6	0	−3	13	37.6	+28	50

Bk. XII, pp. 118 1855 Pos. assumed. ✓

d	13h 36.0m	+29	3	4	36.3	29	2
d′	36.4	+29	3	3	36.3	"	3
e	36.0	+29	2	3	36.4	"	1
f	35.9	+29	8	8	36.0	"	12
					36.4	"	7
a	35.8	+28	56	= DM. +28°2251	35.8	28	56
b	35.1	+29	11	= " +29°2448	35.1	29	12
c	35.8	+29	17	= " +29°2452	35.8	"	17
M3	35.5	+29	7				7

fd = 4

fe = 5

fc = 5

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1899phae.proj.1830W

Wollaston

d	d'	e	f	a	c	b	Cll
66	56	57	63	51	68	72	67
63	63	63	67	54	70	77	82
57	56	56	60	50	68	71	75
7	7	6	12	0	17	11	TE
9	9	9	13	0	16	13	
7	6	6	10	0	18	11	
8	7	7	12	0	17	12	

	x	y		R.A. 1855 h m	Dec. 1855 ° ′	
Cl	68	65	355	13 35.5	+29 7′	
a	65	1	+230 0.3 −6,40 −11	13 35.8	+28 56	
c	64	122	+240 0.3 +570 +10	35.8	+29 17	
b	121	93	−330 0.4 +280 +5	35.1	+29 11	
d	28	37	+600 8 −280 −5	36.3	+29 2 bad	✓
d'	26	42	+620 8 −230 −4	36.3	+29 3	✓
e	19	30	+690 9 −350 −6	36.4	+29 1	✓
f	50	97	+380 5 +320 +5	36.0	+29 12	✓
f'	18	67	+700 9 +20 0			

900 60 / 48 / 432 — 875 / 9 / 5 — 1 / 9×875 — 1143/2 / 1.27

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1899phae.proj.1830W

June 2, 1899. J.D. 4808 = f

14	0.7	-g	+29°0′	79.8	13.5	
				g = 0.2 < 1467		
14	3.2	37 5-5	-19°3-2′	75.3	9.2	
		1118	-04			
		1112	-10			
		1128	+06			
		1131	+09			
		4489	15-14			
		1.2241	±.07 ✓			
14	3.9	3764	-19°57′	73.2	9.4	
		1177	+08			
		1172	+03			
		1159	-10			
		1168	-01			
		4676	11-11			
		1.169	±.06 ✓			
14	4.6	3773	-19°3-2′	71.9	9.3	
	48.0	1203	+14 5-1 -1	15.6		
	16.6	1192	+03	56.3		
	.94	1180	-09			
	664	1181	-08			
	1494	4756	17-17			
	15.6	1.189	±.08 ✓			
14	5.2	3779	-19°5-7′	71.3 - 15.1 = 56.2	9.7	
19	49.1	1152	-03 56 -1	21		
	16.1	1177	+02			
	.94	1174	-01			
	644	1176	+01			
	1449	4699	3-4			
	15.1	1.175	±.02 ✓			

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1899phae.proj.1330W

June 2, 1899.

14	7.5	29 3779	* -19°55'		73.3-17.2=56.1	10.4	1
	49.2	1282	-01	54	~~18.3~~		
	18.3	1282	-01	-1			
	.94	1285	+02				
	732	1283	00				
	1647	5 1 3 2	2-2				
	17.2	12.83	±01 ✓				
14	8.5	3780	-19°5-9'		74.2-18.0=56.2	10.0	1
	49.3	1248	-02	60	10.E.		
	19.2	1245	-05	-1			
	.94	1248	-02				
	768	1259	+09				
	1728	5 0 0 0	9-9				
	18.0	12.50	±04 ✓				
14	9.3	3782	-19°5-7'		74.3	8.6	1
		1031	-02				
		1030	-03				
		1032	-01				
		1044	+07				
		4 1 3 3	7-6				
		10.33+1	±03 ✓				
14	10.0	3783	-19°5-2'		74.8	9.8	1
		1258	-11				
		1264	-05				
		1282	+13				
		1273	+04				
		5 0 7 7	17-16				
		12.69+1	±.08 ✓				
14	10.7	3784	-19°5-9'		75.2	9.9	1
		1237	-10				
		1245	+02				
		1255	+08				
		1247	00				
		4 9 8 8	10-10				
		12.47	±.05 ✓				

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1899phae..proj..1830W

Epoch 1899.

J.D. 4808=f

14	11.5	3787	-19°57'		75.3	10.2
		1221	+18			
		1310	+07			
		1303	07			
		1278	-25			
		5212	25-25			
		13.03 ×	±.12 ✓			
14	12.3	3792	-19°58'		74.8	10.2
		1323	+26 +24			
		1293	-04 -06			
		1292	-05 -07			
		1289	-08 -10			
		5197	24-23			
		12.974	±.12 ✓			
14	12.9	3793	-19°55'		75.2	9.8
		1261	+03			
		1250	-08			
		1259	+01			
		1261	+03			
		5031	7-8			
		12.58-1	±.04 ✓			
14	13.4	3794	-19°56'		74.9	9.2
		1152	+21			
		1132	+01			
		1118	-13			
		1123	-08			
		4525	22-21			
		11.31+1	±.11 ✓			
14	14.0	3795	-19°52'		74.9	9.9
		1262	-06			
		1258	-10			
		1270	+02			
		1280	+12			
		5070	14-16 ✓			
		12.68-2	±.08			

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1899phae.proj.1830W

3801, 9 ?
Arcturus

2 , 1899.

14	14.5	3807	-19°54'	74.7	10.5	
18	55.1	1288	-14 55	18.2		
	19.4	1302	08 -1	5-6.5		
	.94	1312	+10			
	776	1304	+02			
	1746	5 2 0 6	12-14			
	18.2	13.0 2-2	±.06 ↓			
14	15.4	3800	-19°57'	75.7	10.5	
	55.0	1309	-13 57	19.2		
	20.4	1319	-03 0	5-6.5		
	.94	1327	+05			
	816	1332	+10			
	1896	5 2 8 7	15-16			
	19.2	13.2 2-1	±.08 ↓			
14	16.1	3801	-19°58'	76.2	9.1	
	55.1	1280	08 55	19.7		
	21.0	1278	-02 +1	56.5		
	.94	1282	+02			
	840	1281	+01			
	1990	5 1 2 1	3-2			
	19.7	12.8 0+1	±.01 ↓			
14	17.2	3807	-19°55'	75.9	9.6	
		1200	+08			
		1190	-02			
		1188	-04			
		1189	-03			
		4767	8-9			
		11.92-1	±.04 ↓			
14	17.8	3809	-19°51'	75.6	9.2	
		1118	-08			
		1121	-05			
		1134	+08			
		1132	+06			
		4505	14-13			
		11.26+1	±.07 ↓			

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1899phae.proj.1830W

June 2, 1899. J.D. 4808 = f

14 18.5	3814	-19°59'	74.9	10.2
	1269	-02		
	1262	-09		
	1269	-02		
	1283	+12		
	5083	12-13		
	1271-1	±.06 ✓		
14 18.9	3816	-19 3-9'	75.2	9.3
	1159	+08		
	1147	-04		
	1150	-01		
	1149	-02		
	4605	8-7		
	11.5-1+1	±.04 ✓		
14 19.6	3821	-19 3-7'	74.2	9.3
	1138	+06		
	1133	+01		
	1132	0		
	1127	-05		
	4530	7-5		
	11.32+2	±.03 ✓		
14 20.2	3824	-19°51'	74.2	9.4
	1135	-06		
	1142	+01		
	1145	+04		
	1141	0		
	4563	5-6		
	11.41-1	±.03 ✓		
14 21.0	3831	-19 25-2'	72.3	9.5
	1192	0		
	1192	0		
	1189	-03		
	1196	+04		
	4769	4-3		
	11.92+1	±.02 ✓		

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1899phae.proj.1830W

June 2, 1899.

14	24.2	3848	-19°58'	69.8	9.8		
	9.8	1222	-14	58	14.3.		
		1220	-16	0			
		1249	+13				
		1253	+17				
		4944	30-30				
		12.36	±.15 ✓				
14	24.8	3851	-19°56'	69.8	9.6		
	10.3	1162	+01	56	13.6		
	14.5	1157	-04	0	56.2		
	.94	1162	+01				
	580	1162	+01				
	1305	4643	3-4				
	13.6	11.611	±.02 ✓				
Accumulation of 3865 ?							
14	25.8 a	3865	-19°59'	66.3	10.5		
14.8 b	14.9	1319	-01	60 a	D: 10.2 a		
11.0	10.9	1318	-02	-1	56.1	E. 9.5 fol. o.m. N. 5.	
.94	.94	1317	-03	20 3			
440	436	1324	+04	-4 b	10.3 b		
990	981	5278	4-6		56.0		
10.5	10.2	13.20-2	±.02 ✓				
14	26.4	3873	-19°56'	66.0	9.8		
	16.3	1264	-09	60	D: 9.5		
	10.1	1242	-11	-4	56.5		
	.94	1253	00				
	404	1273	+20				
	909	5032	20-20				
	9.5	12.83	±.10 ✓				
14	27.3	3876	-19°52'	66.0	8.7		
		1077	+06	54			
		1067	-04	-2			
		1067	-04				
		1072	+01				
		4283	7-8				
		10.71-1	±.04 ✓				

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June 2, 1899. J.D. 4808 = f

14 28.1	3883	-19 51'	65.4	9.6	
	1164	-14	Obl. A, B.		
	1187	+09			
	1182	+04			
	1181	+03			
	4714	16-17			
	11.78+2	±.08 ✓			
14 28.8	3888	-19 °51'	64.3	7.6	
20.2	982	-04	55	8.1	
8.6	981	-05	-4	56.2	
.94	982	-04			
844	998	+12			
774	3943	12-13			
8.1	9.857	±.06 ✓			
14 29.4	3896	-19 °49'	63.0	9.4	
	1148	+02			
	1141	-05			
	1143	-03			
	1153	+07			
	4585	9-8			
	11.461	±.04 ✓			
14 30.0	3897	-19 °52'	63.4	9.8	
	1212	+14			
	1183	-15			
	1204	+06			
	1195	-03			
	4794	20-18			
	11.982	±.10 ✓			
14 30.7	3901	-19 °57'	62.3	9.4	
	1152	-04			
	1151	-05			
	1167	+11			
	1154	-02			
	4624	11-11			
	11.56	±.06 ✓			

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June 2, 1899.

14	33.2	3905	−19°54′		61.8 −5.5 = 56.3	9.3	
	27.4 / 5.8 / .94 / 23.2 / 5.22 / 5.5	1128	−04	59 / −5	17.3.		
		1119	−13		10.9.5 fric. 0.7 = 1 IV. 4.		
		1143	+11				
		1137	+05				
		4527 / 11.32−1	16−17 / ±.08 ✓				
14	33.9	3912	−19°52′		60.7	9.9	1
		1234	−02				
		1231	−05				
		1241	+05				
		1239	+03				
		4945 / 12.36+1	8−7 / ±.04 ✓				
14	34.6	3924	−19°50′		59.7	9.8	1
		1258	−14				
		1272	00				
		1281	+09				
		1278	+06				
		5089 / 12.72+1	15−14 / ±.07 ✓				
14	36.1	3936	−19°48′		59.7	9.2	1
		1182	+02				
		1180	00				
		1178	−02				
		1178	−02				
		4718 / 11.80−2	2−4 / ±.02 ✓				
14	36.7	3937	−19°50′		60.1	9.4	1
		1198	+06				
		1183	−09				
		1190	−02				
		1196	+04				
		4767 / 11.92−1	10−11 / ±.05 ✓				

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June 2, 1899. J.D. 4808=f

14 37.3	3949	-19°47'	s-7.8	9.6
	1191	+07		
	1180	-04		
	1181	-03		
	1182	-02		
	4734	7-9		
	11.84-2	±04 ↓		
14 37.9	3950	-19 47'	s-7.8	9.0
	1092	-08		
	1100	00		
	1100	00		
	1106	+06		
	4398	6-8		
	11.0.6-2	±04 ↓		
14 38.6	3957	-19°52'	s8.0	9.8
	1273	-07		
	1284	+04		
	1283	+03		
	1281	+01		
	5121	8-7		
	12.8.0+1	±04 ↓		
14 39.3	3953	-19°47'	s-7.7	9.7
	1256	-06		
	1261	-01		
	1262	00		
	1271	+09		
	5050	9-7		
	12.6.2+2	±04 ↓		
14 40.0	3961	-19°50'	s6.3	9.4
	1243	00		
	1252	+09		
	1239	-04		
	1237	-06		
	4971	9-10		
	12.4.3-1	±05 ↓		

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June 2, 1899.

14	41.4	3969	−19°50′	56.1	9.2	
		1120	−13	H. 3.		
		1125	−08			
		1141	+08			
		1147	+14			
		4553	22−21			
		11.3371	±.11 ✓			
14	42.2	3984	−19°53′	50.5	8.8	
		1042	−09			
		1047	−04			
		1047	−04			
		1069	+18			
		4205	18−17			
		10.51+1	±.09 ✓			
14	42.8	3987	−19°49′	51.0	8.0	
		1018	−05			
		1019	−04			
		1022	−01			
		1032	+09			
		4091	9−10			
		10.23−1	±.05 ✓			
14	44.9	+0°3334	+0°11′	31.8	9.0	
15	10.2	1102	05 7	10. 25.3		
	25.3	1097	−05 +4	57.1		
		1098	−04			
		1111	+09			
		4408	9−9			
		11.0822	±.04 ✓			
14	45.8	+9°3016	+9°59′	33.3	6.8	
		1009	−12	10.		
		1018	−03			
		1032	+11			
		1024	+03			
		4083	14−15			
		11.3241	±.07 ✓			

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June 2, 1899. J.D. 4808 = f

14 46.7 −0°29'56 −0°2' 32.9 9.2

	1072	00	9. Σ.
	1071	−01	
	1073	+01	
	1072	00	
	4288	1−1	
	10.72	±.00 ✓	

14 47.5 +0°33'45 +0°8' 32.0 9.4

15 12.9 / 25.4

	1100	+20	4 / +4
	1081	+01	9. Σ. 25.4 / 57.4
	1069	−11	
	1072	−08	
	4322	−19+21	
	10.80+2	±.10 ✓	

14 48.6 +0°33'56 +1°3' 27.0 9.2

19.0 18.0 / 30.4 24.4

	1093	−03 +0	59 / +6 +4
	1100	+04	9. Σ. 24.4 / 51.4 30.4 / 57.4
	1091	−05	
	1098	+02	
+2°29'44"	5043822	6−8	
	10.96−2	±.04 ✓	

14 49.6 Ref. 6.2 +2°24' 34.9 10.8

15 12.0 / 22.4

	1210	−12	19 / +5
	1207	−06	22.4 / 57.3
	1232	+09	
	1234	+11	
	4893	20−19	
	12.23+1	±.10 ✓	

14 50.2 a +2°20' 36.4 9.6

11.1 / 20.8

	1148	−06	18 / +2
	1141	−13	20.8 / 57.2
	1145	−09	
	1180	+26	
	4614	26−28	
	11.54−2	±.14 ✓	

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1899phae.proj.1220W

June 2, 1899.

14 51.6	d	+2° 28'	37.2	11.2	
	1312	00	38.3.		
	1313	+01			
	1310	-02			
	1313	+01			
	5248	2-2			
	13,12	±.01			
14 52.2	b	+2° 32'	37.6	10.6	
	1243	+01 +09			
	1227	-15 -07			
	1228	-14 -06			
	1239	-0 +05			
	4937 4967	14-13			
	12.34+1 13.42-1	±.07			
14 52.7	c	+2° 33	38.0	10.8	
	1279	-10			
	1291	+02			
	1293	+04			
	1294	+05			
	5157	11-10			
	12.89+1	±.05			
14 52.3	a	+2° 35'	38.2	9.6	
	1189	+07			
	1178	-04	h 0.3 <1467		
	1180	-02			
	1180	-02			
	4727	7-8			
	11.82-1	±.04			
14 54.7	e	+2° 37'	41.3	10.5	
	1295	-01			
	1290	-06			
	1294	-02			
	1304	+08			
	5183	8-9			
	13.96-1	±.04			

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June 2, 1899.

J.D. 4808 = f

14 55.4	Var 2.	+2° 35'	41.7	11.0
	1232	+15		
	1224	+07		
	1203	-14		
	1208	-09		
	4867	22-23		
	12.17-1	±.11 ✓		
14 55.9	f	+2° 38'	42.8	12.2
	1372	-09		
	1368	-13		
	1392	+11		
	1393	+12		
	5525	23-22		
	13.8 1+1	±.11 ✓		
14 56.6	-9	+2° 40'	43.7	12.2
	1390	+08		
	1383	+01		
	1377	-05		
	1377	-05		
	5527	9-10		
	13.8 2-1	±.08 ✓		
14 58.2	3990	-19° 50'	64.1	9.1
	1153	+17		
	1142	+06		
	1120	-16		
	1127	-09		
	4542	23-25		
	11.36-2	±.12 ✓		
14 58.8	3992	-19° 55'	64.2	9.7
	1217	+09		
	1208	08		
	1209	+01		
	1201	-08		
	4834	10-8		
	12.087+2	±.04 ✓		

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June 2, 1899.

15	0.2	4003	-19°48'	62.5	8.9
		1077	+01	14.3.	
		1076	00		
		1073	-03		
		1079	+03		
		4305	4-3		
		10.76+1	±.02 ✓		
15	0.9	4019	-19°47'	59.8	8.4
		1048	-01		
		1041	-08		
		1050	+01		
		1057	+08		
		4196	9-9		
		10.49	±.04 ✓		
15	1.5	4033	-19°48'	57.3	9.4
		1092	+13		
		1081	+02		
		1073	-06		
		1069	-10		
		4315	15-16		
		10.79-1	±.08 ✓		
15	2.1	4035	-19°48'	57.3	10.5
		1257	-08		
		1271	+06		
		1269	+04		
		1264	-01		
		5061	10-9		
		12.65+1	±.05 ✓		
15	2.8	4036	-19°52'	57.8	8.2
		922	-02		
		922	-02		
		925	+01		
		929	+05		
		3698	6-4		
		9.24+2	±.02 ✓		

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June 2, 1899. J.D. 4808=f

15 3.4	4037	-19°45'	56.2	10.0
	1252	-14		
	1281	+15		
	1267	+01		
	1262	-04		
	5062	16-18		
	12.66-2	±08 ✓		
15 4.1	4049	-19°55'	56.7	9.5
	1179	-12		
	1183	+08		
	1188	-03		
	1214	+23		
	4764	23-23		
	11.94	±12 ✓		
15 4.8	4053	-19°48'	56.7	9.8
	1213	-07		
	1213	-07		
	1226	+06		
	1230	+10		
	4882	16-14		
	12.20+2	±08 ✓		
15 5.4	4058	-19°46'	56.1	9.8
	1259	-05		
	1253	-11		
	1264	08		
	1280	+16		
	5056	16-16		
	12.64	±08 ✓		
15 6.1	4062	-19°49'	53.0	9.3
	1109	-11		
	1128	+08		
	1128	+08		
	1117	-03		
	4482	16-14		
	11.20+2	±08 ✓		

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1899phae.proj.1830W

June 2, 1899.

15 9.6	4067	-19°48'	56.8	9.3	
	1179	+10	11.3		
	1172	+03			
	1161	-08			
	1163	-06			
	4675	13-14			
	11.69-1	±07			
15 10.3	4080	-19°53'	54.9	9.9	
	1272	+08			
	1269	+05			
	1258	-06			
	1258	-06			
	5057	13-12			
	12.64+1	±06			
15 10.9	4082	-19°49'	54.8	9.6	
	1179	+04			
	1167	-08			
	1176	+01			
	1179	+04			
	4701	9-8			
	11.75+1	±04			
15 11.4	4083	-19°52'	53.2	9.8	
	1219	-06			
	1223	-02			
	1228	+03			
	1229	+04			
	4899	7-8			
	12.25-1	±04			
15 12.1	4084	-19°47'	55.8	11.0	
	1393	+11			
	1391	+09			
	1378	-04			
	1364	-18			
	5526	20-22			
	13.82-2	±10			

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June 2, 1899. J.D. 4808 = f

15 12.8	4089.	-19°51'	5-5.1	9.5
	1231	+07		
	1227	+03		
	1223	-01		
	1213	-11		
	4894	10-12		
	1223.5	±.06		
15 13.6	4054	-19°50'	5-3.0	10.0
	1303	+07	Obl. A.B.	
	1285	-11		
	1297	+01		
	1299	+03		
	5184	11-11		
	1296	±.06		
15 14.4	4101	-19°52'	5-3.3	9.8
	1263	-07		
	1268	-02		
	1276	+06		
	1272	+02		
	5079	8-9		
	1269.75	±.04		
15 15.0	4104	-19°54'	5-3.5-	8.6
	1082	+08		
	1073	-01		
	1071	-03		
	1071	-03		
	4297	8-7		
	1074.25	±.04		
15 17.3	4115-	-19046'	5-3.7	9.8
	1294	+11		
	1282	-01		
	1277	-06		
	1278	-05		
	5131	11-12		
	1283.1	±.06		

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June 2, 1899.

15 19.0	4116	−19°51′	5 5.1	10.8	
	1405	+15	H. 3.		
	1397	+07			
	1379	−11			
	1380	−10			
	5 5 6 1	22 −21			
	13.90+1	±11 ✓			
15 20.0	4146	−19°46′	5 1.1	9.8	
	1272	+08			
	1267	+03			
	1264	0			
	1253	−11			
	5 0 5 6	11 −11			
	12.64	±06 ✓			
15 20.9	4149	−19°47′	5 1.1	10.0	
	1289	+01	D. 11.0 Jan. 10 = 2 N.O.		
	1284	−04			
	1281	−07			
	1297	+09			
	5 1 2.8 5 7 −1	10 −11			
		±05 ✓			
15 21.7	4153	−19°51′	5 0.8	8.8	
	1127	+09			
	1127	+09			
	1112	−06			
	1106	−12			
	4472	18 −18			
	11.18	±09 ✓			
15 22.3	4156	−19°48′	5 1.3	9.6	
	1219	+05			
	1214	0			
	1211	−03			
	1212	−02			
	4856	5 −5			
	12.14	±02 ✓			

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June 2, 1899. J.D. 4808=f

15 23.2	4158	-19°46'	5-1.7	9.2	
	1234	+04	29.11.0 phae.	0m, 1	8.1'
	1232	+02			
	1228	-02			
	1228	-02			
	4922	6-4			
	12.30+2	±02 ✓			
15 23.9	4164	-19°47'	50.8	8.6	
	1060	+08			
	1048	-04			
	1045	-07			
	1057	+05			
	4211	13-11			
	10.5-272	±06 ✓			
15 24.5	4170	-19°45'	50.8	10.4	
	1194	+01			
	1187	-06			
	1188	-05			
	1202	+09			
	4771	10-11			
	11.93-1	±05 ✓			
15 25.3	4183	-19°49'	49.5-	9.6	
	1224	+06			
	1217	-01			
	1219	+01			
	1213	-05			
	4873	7-6			
	12.1871	±03 ✓			
15 27.8	4184	-19°50'	5-2.0	11.5-	
	1311	+10			
	1293	-08			
	1303	+02			
	1297	-04			
	5204	12-12			
	13.96	±06 ✓			

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June 2, 1899.

15 29.7	4198	-19°48'	52.0	9.6	
	1179	+15	H. 3.		
	1159	-05			
	1159	-05			
	1161	-03			
	4656	15-13			
	11.64+2	±07 ✓			
15 30.2	4199	-19°45'	52.2	9.9	
	1228	-06			
	1233	-01			
	1238	+04			
	1237	+03			
	4936	7-7			
	12.34	±04 ✓			
15 30.9	4250	-19°46'	52.2	9.9	
	1248	-20			
	1266	-02			
	1273	+05			
	1285	+17			
	5072	22-22			
	12.68	±.11 ✓			
15 31.4	4201	-19°46'	52.8	9.3	
	1223	+01			
	1220	-02			
	1223	+01			
	1222	00			
	4888	2-2			
	12.22	±.01 ✓			
15 32.1	4209	-19°47'	51.7	10.2	
	1310	+01			
	1308	-01			
	1309	00			
	1308	-01			
	5235	1-2			
	1309-1	±.01 ✓			

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June 2, 1899. J.D. 4808 = f

15 32.6	4212	-19°49'	51.9	9.5
	1233	05		
	1232	-01		
	1234	+01		
	1232	-01		
	4931	1-2		
	12.33-1	±.01 ✓		
15 33.3	4221	-19 45'	50.4	8.7
	1092	+12		
	1081	+01		
	1072	-08		
	1073	-07		
	4318	13-15		
	10.80-2	±07 ✓		
15 33.9	4227	-19°44'	50.0	8.3
	1012	05		
	1018	+06		
	1010	-02		
	1006	-06		
	4046	6-8		
	10.12-2	±04 ✓		
15 35.4	4230	-19°51'	51.3	10.0
	1227	-09	29.5.0 fol. 0 ~ 1	8.3.
	1238	+02	-20° 4331, 8.5 Fl. 0.0 S. 3	
	1240	+04		
	1240	+04		
	4945	10-9		
	12.36+1	±.05 ✓		
15 36.1	4243	-19°48'	49.3	10.2
	1295	+07		
	1289	-03		
	1289	-03		
	1290	-02		
	5167	7-8		
	12.92-1	±.04 ✓		

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1899phae.proj.1830W

June 2, 1899.

15 37.4	4248	−19°47′	50.2	9.4
	1182	+03	M. 3.	
	1179	00		
	1182	+03		
	1173	−06		
	4716	6−6		
	1179	±03 ✓		
15 38.1	4250	−19°52′	50.3	9.9
	1258	+04		
	1251	−03		
	1253	−01		
	1253	−01		
	5015	4−5		
	1254−1	±02 ✓		
15 38.6	4252	−19°52′	50.3	10.2
	1307	−07		
	1310	−04		
	1318	+04		
	1319	+05		
	5254	9−11		
	1314−2	±05 ✓		
15 39.3	4253	−19°46′	50.9	7.8
	1069	+06		
	1060	−03		
	1057	−06		
	1067	+04		
	4253	10−9		
	1063+1	±05 ✓		
15 40.0	4255	−19°50′	51.2	10.5
	1328	−06		
	1336	+02		
	1334	00		
	1338	+04		
	5336	6−6		
	1334	±03 ✓		

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June 2, 1899. J.D. 4808 = f

15 40.6	4259	−19°49'		−1.4	5.4
	1203	+06			
	1189	−08			
	1192	−00			
	1203	+06			
	4787	12-13			
	14.87	±.06			
15 41.4	4272	−19°52'		48.8	10.3
	1283	−06			
	1283	−06			
	1292	+03			
	1299	+10			
	5157	13-12			
	12.89	±.06			
15 42.1	4276	−19°52'		47.9	8.8
51.6	1092	+01	60	8.9	
9.5	1085	−06	+8	56.8	
.94	1092	+01			
380	1096	+05			
8856	4365	7-6			
8.9	10.91	±.03			
15 43.5	4283	−19°46'		48.8+8.2=57.0	5.8
52.2	1273	+07	5-3	20.10.0 fac. 0 = 2 N.0	
8.7	1270	+04	+7		
.94	1260	−06			
348	1260	−06			
783	5063	11-12			
8.2	12.66	±.06			
15 44.1	4283	−19°47'		49.3	
52.0	1289	−05	5-3	7.4	
7.9	1293	−01	+6	56.7	
.94	1293	−01			
316	1300	+06			
711	5175	6-7			
7.4	12.94	±.03			

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June 2, 1899.

15 46.0	4301	-19°49'	47.2	10.5	
	1300	-05	J.H.		
	1303	-02			
	1308	+03			
	1308	+03			
	5219	6-7			
	13.05-1	±03 ✓			
15 46.4	4303	-19°47'	47.3	8.8	
	1112	+21			
	1093	+02			
	1080	-11			
	1080	-11			
	4365	23-22			
	10.91+1	±11 ✓			
15 47.1	4313	-19°45'	46.3	9.2	
	1171	+11			
	1152	-08			
	1162	+02			
	1156	-04			
	4641	13-12			
	11.60+1	±.06 ✓			
15 47.8	4318	-19°50'	45.2	9.8	
	1222	05			
	1226	+04			
	1221	-01			
	1221	-01			
	4890	4-2			
	12.22+2	±.02 ✓			
15 48.3	4319	-19°49'	45.3	10.2	
	1321	-10			
	1332	+01			
	1334	+03			
	1338	+07			
	5325	11-10			
	13.31+1	±.05 ✓			

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June 2, 1899. J.D. 4808 = f

15 48.8	4320	-19 45'	45.7	5.7
	1268	-02		
	1279	+09		
	1267	-03		
	1268	-02		
	5082	9-7		
	12.70+2	±.04 ✓		
15 49.2	4321	-19 °35'	45.9	10.0
	1287	-09		
	1290	-06		
	1302	+06		
	1305	+09		
	5184	15-15		
	12.96	±.08 ✓		
15 50.4	26	+89 °33'	61.0	
	1218	+03		
	1218	+03		
	1208	-07		
	1216	+01		
	4860	7-7		
	1215	±.04 ✓		
15 50.8	35	+89 °32'	60.0	
	1127	+01		
	1120	-06		
	1127	+01		
	1128	+02		
	4502	4-6		
	11.26-2	±.02 ✓		
15 57.3	37	+89 °39'	60.2	
	1102	-07		
	1115	+06		
	1110	+01		
	1108	-01		
	4435	7-8		
	1109-4	±.04 ✓		

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J.D. 4808 = June 2, 1899.

15	51.9	89 (1)	+89°50'	-9.6	
		1193	00		
		1174	-19		
		1202	+09		
		1203	+10		
		4772	19-19		
		1193	±10 ↓		
15	52.5	h	+89°42'	-9.8	
		1401	-05	H. 3.	
		1402	-04	S.H. 3.	
		1398	-08	D.C. 2.	
		1422	+16		
		5623	16-17		
		1406-1	±08 ↓		
16	3.0	Messier 13	+37°0'	33.0	

Pressure Gauge.

11:02 43 82. Gathering.

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June 2, 1899. J.D. 4808 = f

16 26.5	R, Draco	+66°50'	58.4	Reed Obs.
	1012	+16		
	989	-09		
	1003	+07		
	981	-15		
	3985	23-22		
	996+1	±11		
16 32.0	f	+66°50'	60.1	
	1037	-08		
	1048	+03		
	1057	+12		
	1037	-08		
	4179	15-16		
	1045-1	±08		
16 33.6	R, Draco	+66°51'	61.0	
	991	-09		
	992	-08		
	988	-12		
	1030	+30		
	4001	30-29		
	1000+1	±15		
16 35.5	f	+66°49'	61.5	
	982	-09		
	976	-15		
	998	+07		
	1007	+16		
	3963	23-24		
	991-1	±12		
16 37.0	R, Draco	+66°51'	62.5	
	1049	+29		
	968	-52		
	1007	-13		
	1057	+37		
	4081	66-65		
	1020+1	±33		

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June 2, 1899.

16	39.0	R. Draco	+66°51'	63.3	Red Obs.
		995	-16		
		1008	-03		
		1002	-09		
		1038	+27		
		4043	27-28		
		10.11-1	±.14		
16	40.9	"	+66°50'	63.7	
		1038	-18		
		1067	+11		
		1063	+07		
		1056	00		
		4224	18-18		
		10.56	±.09		
16	43.0	R. Draco	+66°52'	64.9	
		1056	+11		
		1039	-06		
		1030	-15		
		1055	+10		
		4180	21-21		
		10.45	±.10		
16	44.8	"	+66°52'	65.3	
		1067	+35		
		1013	-19		
		1026	-06		
		1023	-09		
		4129	35-34		
		10.32+1	±.17		
16	46.5	R. Draco	+66°52'	66.3	
		1021	+10		
		1009	-02		
		1012	+01		
		1003	-08		
		4045	11-10		
		10.11+1	±.05		

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June 2, 1899

J.D. 4808 = f
Waite

6 51.3	R Draco	65 58	67.8	
	9.61	-13		
	9.83	+09		
	9.72	-02		
	9.78	+04		
	38 97	13-15		
	9.74-2	±07		
52.6	f		68.1	
	10.20	65. 54 +14		
	10.36	+23		
	10.11	-02		
	9.79	-34		
	40 53	37-36		
	10.13+1	±.18		
53.8	R Draco.	65 58	69.1	
	9.51	-17		
	9.87	+19		
	9.87	+19		
	9.46	-22		
	38 71	38-39		
	9.68-1	±.19		
54.9	f	65 54	69.3	
	9.86	+36		
	9.61	+11		
	9.24	-26		
	9.30	-20		
	38 01	47-46		
	9.50+1	±.23		
55.4	R Draco	65 58	69.9	
	9.27	+02		
	9.39	+14		
	9.01	-24		
	9.33	+08		
	37 00	24-24		
	9.25-	±.12		

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June 2 1899

16	57.6	R Drac.	66 00	70.8	Waite
		10.20	+07		
		9.86	-27		
		10.04	-09		
		10.43	+30		
		40 53	37-36		
		10.13+1	±.18 66.00		
16	59.1	S		70.8	4+6
		9.89	+09		
		9.69	-11		
		9.89	+09		
		9.74	-06		
		39 21	18-17		
		9.80+1	±.09		
17	0.2	R Drac.	66 3	71.5	
		10.21	+16		
		10.02	-03		
		10.07	+02		
		9.90	-15		
		40 20	18-18		
		10.05+1	±.09		
17	1.6	S	67.3	71.8	
		10.40	+42 +19		
		9.81	-17 -10		
		10.13	+15 +22		
		9.59	-39 -32		
		39 63 ~~39 93~~	41-42		
		9.91-1 ~~9.98+1~~	±.21		
17	3.1	R Drac.			
		9.79	-13		
		10.19	+27		
		9.69	-23		
		10.01	+09		
		39 68	36-36		
		9.92	±.18		

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June 2 1899

J.D. 4808 = f

19	4.0	f	67.3	72.8	Waite
		9.88	+04		
		9.79	-05		
		9.55	-29		
		10.16	+32		
		39 38	36 -34		
		9.84+2	±.18		

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