

KG
11366
193

Ida E. Hoods.
Book 17
Examination of Special
Objects

RS Canon Ven. for Princeton
W Mrs. Minoris

KG 11366.193

H Ursae Minoris

3 images on plate

 Λ

3-•

2-•

1-•

 $\frac{1}{2}$ revolution between 1 & 2

1 " " 2 & 3

— Book 17 —

Provisional Index

Measures for Princeton Obs.

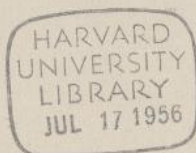
130636 R S Canum Venaticorum

p. 3-

Harvard College Observatory.

Ida E. Woods. Book No. 17.

KG 11366.198



Princeton Works

3

R S Leamm Venaticorum 130636Examination and measures made for
Prof. Dugan of Princeton.

pages 4 to —

Index:

p. 4, Sequence plate

5 " magnitudes

6-9 ^{Estimates} Measures on I plates10-20 " " AC " , plates at $+45^\circ$

21 " " MC "

21 " " A "

Friday, December 2, 1921.

130636

R S Lammie Ven.

Measures on:

I Plates

Var. mbd on I 17733, Ac 23576, MC 12656

Sequence used as marked on I 10994

Magnitudes, measured and reduced by
Miss Walker, Book 9a, page 100.

Instructions: —

Measure

Compl. All ac Plates at $+45^\circ$. Min, only, other regions.

" AI " Min, recent plates.

MC plates, when var. is faint

I " " " "

A " " " "

MD? "

MA? "

R 8 Camm Ven.

Magn. of Sequence

$$c = 8.4$$

$$d = 9.1$$

$$e = 9.0$$

$$e' = 9.4$$

$$f = 9.9$$

$$g = 10.4$$

$$h = 10.5$$

$$k = 11.1$$

$$l = 11.5$$

$$m = 11.6$$

$$n = 11.9$$

R S Cannon Venn.

Limits

1240^h 13^m 28^s
+30^s to +42^s

I 487		Bright
765	Too poor	—
977		Bright
1065		Br.
1223	Too poor	—
1298	Off edge	—
1445	Too poor	—
1446		Br.
3476		Br.
3567	Off edge	—
3615		Br.
3631	Off edge	—
3643	Off edge	—
3771		Br.
5976		Br.
6092		Br.
6095	Off edge	—
6238	Not identified	—
6367	Off edge	—
6317		Br.
6337		Br.
6349		Br.
6367	Off edge	—
6489	June 20, 1892	10.3 12270.661 ^v
6509		Br.
6675		Br.
8450		Br.

R & Cannon View.

I	8487	May 7, 1893	Bright	
	8570		Br.	
	8595		Br.	
	8636		Br.	
	8680		Br.	
	9018	August 2, 1893	10.3	12678.550
	9413		Br.	
	10494		Br.	
	10499		Br.	
	10585		Br.	
	10701		Br.	
	10715		Br.	
	10817		Br.	Extreme edge
	10994		Br.	
	11085		Br.	
	11089		Br.	
?	12369	Feb. 14, 1895	?	1323.9.909
	12425		Br.	Extreme edge
	12542		Br.	
	12574		Br.	
	12662		Br.	
	12701		Br.	
	12755		Br.	
	12835	May 7, 1895	10.4	13321.605
	12974		Br.	
	13891		Br.	
to find	14137		Br.	
	14338		Br.	
	14487		Br.	
	14580		Br.	
	14602			

R S Cannon Venet

I	14661		Br.	
	14703		Br.	
	14964		Br.	
	14988		Br.	
	15144		Br.	
To find	17733			
	17980		Br.	
	18060		Br.	
	20334		Br.	
	20383		Br.	
To find	20483			
	20628		Br.	
	22449		Br.	
	22516		Br.	
	22627		Br.	
	22738		Br.	
	24289		Br.	
	24648		Br.	
	24881	March 17, 1900	10.4	15096.902 ⁷⁹⁹
	25092		Br.	
	25204		Br.	
	26170		Br.	
	26548		Br.	
	26570			Probably high near edge
	26598		Br.	Estimate difficult
	26756		Br.	
	26857		Br.	

I	28368	15777.898 [✓]	10.1 ?	Plate broken - miss well
	28642		Bright	
	28775		Br.	
	29856		Br.	
	30126		Br.	
	30278		Br.	
	30539		Br.	
	32535		Br.	
	32540		Br.	
	32615		Br.	
	32721		Br.	
	33981		Br.	
	34604		Br.	
	36430		Br.	

To find

32778

32801

32802

R. S. Canum Venat.

Estimates of Magn. of Var.

Star near edge ac Plates at $+45^\circ$
 in this region ac 145 Bright
 $+30^\circ$ has center at 193 Br.
 12^h Star too 250 Br.
 near edge for 266 Br. Class C.
 immediate study ac.

Examine plates at $+45^\circ$ first.

$13^h +45^\circ$

Sequence mtd on	ac	Date	Year	Magn.	Var.	Notes
	132	December 18,	1898	146.42	9.06	8.9
	212	Feb. 20,	1899	147.06	8.09	9.0
	241	March 12,	1899	147.26	8.36	8.99
	244	" 17,	"	147.31	-	8.9

Very poor pl.
 1987 * ~~1987~~ conf. by P. T. R. R. R.

Class C. Apparently no change in mag

278	Apr. 10,	1899	147.55	.733	8.9
299	" 22,	"	147.67	.677	8.9
576	Dec. 8,	"	149.97	.937	8.9
628	" 28,	"	150.17	.895	9.08.9
648	Jan. 2,	1900	150.22	.937	8.9
732	Feb. 23,	"	150.74	.837	9.0
814	April 11,	"	151.21	.716	9.0
833	" 26,	"	151.36	.724	8.9
874	June 6,	"	151.77	.613	8.9
896	" 24,	"	151.95	.636	8.9

Poor.

1090 Too poor.

1229	Feb. 8,	1901	154.24	.860	8.9
1248	" 14,	"	154.30	.812	8.9
1381	March 27,	"	154.71	.722	9.0
1440	May 5,	"	155.10	.705	9.0
1520	June 10,	"	155.46	.648	9.0

(* For Class C, see
Bks 29, 30, Mr. King found)

ac	1562	June 21, 1901	15557	⁶⁴⁰ .584	9.0
	1604	July 13, "	15579	.580	9.0
	2207	Jan. 17, 1902	15718	.841	9.0
	2237	Jan. 24, "	15774	.770	8.9
	2266	Feb. 3, "	15784	.857	9.0
	2331	Feb. 14, "	15795	-	9.0
	2383	March 3, "	15812	.726	9.0
	2515	May 1, "	15871	.693	9.0
	2574	May 22, "	15892	.693	9.0
	2615	June 8, "	15909	.643	8.9
	2681	July 11, "	15942	.627	8.9
	2820	Sept 8, "	16001	.537	9.0
	3025	Nov. 28, "	16082	.870	8.9
	3054	Dec. 7, "	16091	.887	8.9
	3174	Jan. 13, 1903	16128	.792	8.9
	3238	Feb. 2, "	16148	.941	9.0
	3272	Feb. 9, "	16155	.917	9.0
	3367	Feb. 26, "	16172	.883	9.0
	3403	March 6, "	16180	.872	9.6 ✓
	3473	April 1, "	16206	.752	8.9
	3508	" 17, "	16222	.707	8.9
	3555	" 27, "	16232	.713	8.8
	3588	May 2, "	16237	.694	8.9
	3681	" 25, "	16260	.681	8.89
	3691	" 27, "	16262	.652	10.5
	3706	" 31, "	16266	.688	8.9
	3720	June 13, "	16279	.630	8.9
	3758	July 7, "	16303	.588	9.0

C.C. No. not
known.

R S Lamm Kevat.

ac	4273	Nov. 26, 1903	16445	.934	8.9	
	4327	Dec. 7, "	16456	.869	8.9	
	4352	" 11, "	16460	.943	8.9	
	4379	" 15, "	16464	.937	8.9	
	4447	" 26, "	16475	.940	8.9	along. mag.
	4470	" 30, "	16479	.940	8.9	" "
	4501	Jan. 5, 1904	16485	.901	8.9	
	4532	" 15, "	16495	.936	8.9	
	4548	" 18, "	16498	.952	8.9	
	4554	" 20, "	16500	.945	8.9	
	4606	Feb. 4, "	16515	.862	9.0	
	4625	" 8, "	16519	.832	9.0	
	4677	" 24, "	16535	.852	8.9	
	4692	" 28, "	16539	.803	8.9	
	4717	Mar. 8, "	16548	.804	8.9	
	4790	April 2, "	16573	.775	8.9	
	4811	April 5, "	16576	.760	9.0	
?	4920	May 21, "	16593	.632	9.5	
	4933	" 27, "	16628	.698	8.9	
	4992	June 19, "	16651	.677	8.9	
	5031	Too poor				
	5093	July 25, "	16687	.576	8.9	
	5188	Too poor				
	5603	Nov. 25, 1904	16810	.931	8.9	
	5669	Dec. 4, "	16819	.907	9.0	
	5756	" 19, "	16834	.873	8.9	
	5819	Jan. 8, 1905	16854	.918	8.9	

26

ac	5887	Jan 23, 1905	16869	.818	8.9	
	5960	Feb 7, "	16884	.726	8.9	
	5994	" 13, "	16890	.754	8.9	
	6058	" 23, "	16900	.815	10.4 10.2	
slide 4455	6094	March 1, "	16906	.726	8.9	
	6158	March 12, "	16917	.697	9.0	
	6207	" 22, "	16927	.759	8.9	
	6273	April 7, "	16943	.632	8.9	
	6320	" 25, "	16961	.674	8.9	
	6361	May 8, "	16974	.669	8.9	
	6367	" 9, "	16975	.681	9.0	
	6405	" 28, "	16994	.599	8.9	
	6429	June 9, "	17006	.669	9.0?	Poor, hazy images
	6460	" 27, "	17024	.585	8.9	
	6491	July 7, "	17034	.590	8.9	
	6542	" 25, "	17052	.579	8.9	
?	6969	Nov. 9, "	17159	.928?		Probably faint.
				Shoest		Poor plate.
	6985	" 11, "	17161	.914	8.9	Very poor.
	7218	Jan 26, 1906	172 ³⁷ 27	.917	8.9	
	7284	Feb 13, "	17257	.934	8.9	
	7342	March 1, "	17271	.909	8.9	
	7393	" 20, "	17290	.771	8.9	
	7409	" 23, "	17293	.806	8.9	
?	7489	April 2, "	17303	.822	..	Very poor
	7467	" 13, "	17314	.631	8.9	
	7471	" 15, "	17316	.607	9.0	

R B Cannon Rev.

ac	7499	April 25,	1906	✓	17326	.667	8.9
	7507	" 27,	"	✓	17328	.620	9.0
	7516	" 29,	"	✓	17330	.629	8.9
	7523	May 1,	"	✓	17332	.583	10.5
	7530	" 3,	"	✓	17334	.654	9.0
	7538	" 10,	"	✓	17341	.652	9.0
	7549	" 14,	"	✓	17345	.681	9.0
	7554	" 15,	"	✓	17346	.660	9.0
	7566	" 20,	"	✓	17351	.664	10.5
	7580	" 29,	"	✓	17360	.619	9.0
	7585	June 3,	"	✓	17365	.624	9.0
	7591	" 4,	"	✓	17366	.691	8.9
<i>data</i>	7628	" 20,	"	✓	17382	833 ⁶⁶⁷	8.9
	7636	" 29,	"	✓	17391	.670	9.0
	7643	July 5,	"	✓	17397	577 ⁶¹⁹	8.9
	7653	" 13,	"	✓	17405	.577	9.0
	7664	" 16,	"	✓	17408	.578	9.0
	7674	" 19,	"	✓	17411	.574	8.9
	7679	" 25,	"	✓	17417	.571	8.9
	7683	Too poor					
	7685	Aug. 8,	1906	✓	17431	.616	8.9
	7687	" 9,	"	✓	17432	.561	9.0
	7699	" 13,	"	✓	17436	.548	8.9
	7713	" 16,	"	✓	17439	.551	8.9
	7729	Too poor					
	7773	Sept. 3,	"	✓	17457	.532	9.0
	8164	Jan. 20,	1907	✓	17596	.886	8.9
	8179	" 22,	"	✓	17598	.850	8.9

Very poor.

" "

" "

" "

26

ac 8241	Feb. 11, 1907	17618.865	8.9	
8295	" 23, "	17630.869	8.9	
8352	March 16, "	17651.745	8.9	
8429	April 17, "	17683.730	9.0	
8466	" 27, "	17693.621	8.9	Poor
8486	May 11, "	17707.639	9.0	
8502	" 14, "	17710.613	9.0	
8533	June 7, "	17734.630	8.9	
8540	" 11, "	17738.575	8.9	
8578	July 1, "	17758.600	8.9	Poor
8615	" 15, "	17772.586	9.0	
8725	Aug. 28, "	17816.540	9.0	Poor
9153	Jan. 6, 1908	17947.928	8.9	
9250	Feb. 7, 1908	17979.900	8.9	✓
9286	Feb. 22, "	17994.757	9.6 (or 9.7)	
9329	March 10, "	18011.832	8.9	
9367	" 25, "	18026.788	8.9	
9430	April 19, "	18051.785	9.0	
9434	" 20, "	18052.841	9.0	
9449	" 24, "	18056.797	9.3	✓
9487	May 18, "	18080.732	9.0	
9538	June 12, "	18105.649	9.0	
9544	June 13, "	18106.675	9.0	
9553	" 16, "	18109.689	10.5	
9592	" 30, "	18123.638	8.9	
10209	Feb. 3, 1909	18341.915	8.9	
10281	May 5, "	18371.825	8.9	
10364	" 26, "	18392.758	10.4	26

R. L. Cannon - Venet.

ac 10413	April 9, 1909	18406.746	8.9	
10467	" 28, "	18425.597	9.0	
10479	May 4, "	18431.642	8.9	
10567	June 16, "	18474.662	8.9	
10604	" 30, "	18488.634	9.6	
10630	July 12, "	18500.586	9.0	
10655	" 24, "	18512.575	9.0	
11106	Nov. 30, "	18641.886	9.0	
11281	Jan. 10, 1910	18682.854	8.9	
11307	" 15, "	18687.822	8.9	
11404	Feb. 21, "	18724.875	8.9	
11437	Mar. 4, "	18735.856	9.0	
11466	Mar. 11, 1910	18742.778	8.9	
11507	" 19, "	18750.734	9.0	
11516	" 21, "	18752.674	10.4	
11555	April 2, "	18764.764	8.9	
11566	" 5, "	18767.709	8.9	
11591	" 16, "	18778.696	8.9	
11644	May 7, "	18799.624	8.9	
11650	" 11, "	18803.617	9.0	
11825	Aug. 2, "	18886.572	9.0	
12373	May 29, 1911	18917.588	8.9	
13043	March 30, 1912	19492.659	8.9	
13520	Nov. 28, "	19735.926	8.9	
13625	Jan. 8, 1913	19776.949	9.0	
13696	" 28, "	19796.908	8.9	
13765	Multiple Image.			
14757	Jan. 10, 1914	10.4	20143.934	21

Find the Contact
filbrob?

ac	15094	April 14, 1914	20237.8708	9.0	
	16139	Feb. 19, 1915	20548.865	9.0	
	16233	March 10, "	20567.863	9.0	
	16290	" 18, "	20575.797	10.5 ^v	
	16367	April 4, "	20592.797	9.0	
	16398	" 13, "	20601.736	8.9	
	16453	May 11, "	20629.670	8.9	
	16475	" 18, "	20636.701	8.9	
	16580	July 12, "	20691.640	8.9	
	16981	Nov. 12, "	20814.924	8.9	
	17253	Jan. 27, 1916	20890.857	8.9	
	17301	Feb. 9, "	20903.903	9.0	
	17369	" 29, "	20923.780	8.9	
?	17413	March 17, "	20940.693	8.9 ?	Images poor - Plate black.
	17474	April 2, "	20956.776	8.8 8.9	
	17521	" 13, "	20967.725	8.9	
	17566	May 5, "	20989.641	8.9	
	17647	June 2, "	21017.621	8.9	
	17729	July 17, "	21062.611	8.9	
	17842	Sept. 2, "	21109.538	8.9	
	18234	Nov. 24, "	21192.925	8.9	
	18246	Dec. 1, "	21199.938	—	Image of var. is defective. Probably bright.
	18251	Dec. 5, 1916	21203.950	9.0	
	18358	" 28, "	21226.866	9.0	
	18416	Jan. 11, 1917	21240.902	8.9	
	18539	Feb. 10, "	21270.797	8.9	
				25	

Dec 19936

R S Lamm Venet.

ac	18557	Too poor		
	18659	March 13, 1917	21301.834	8.9
	18709	" 24, "	21312.797	8.9
	18772	April 13, "	21332.728	8.9
	18793	" 19, "	21338.698	10.7
	18822	May 7, "	21356.707	8.9
	18869	" 30, "	21379.633	8.9
	18888	June 13, "	21393.585	8.9
	18922	" 27, "	21407.634	8.9
	19094	Sept. 8, "	21480.536	8.9
	19581	Dec. 10, "	21573.968	9.8
data?	19640	Jan. 1, 1918	21595.919	8.9
	19782	Feb. 4, 1918	21629.902	8.9
	19809	" 11, "	21636.869	8.9
	19899	March 3, "	21656.848	8.9
Excellent pl. for Min.	19936	" 16, "	21669.842	10.8
	19970	Mar. 23, "	21676.784	8.9
	20052	Apr. 15, "	21699.714	8.9
	20064	" 25, "	21709.668	8.9
	20082	May 1, "	21715.741	8.9
	20129	" 15, "	21729.713	8.9
	20450	Sept. 3, "	21840.540	8.9
	20721	Nov. 23, "	21921.935	8.9
	20779	Dec. 1, "	21929.938	9.0
	20805	" 8, "	21936.905	8.9
	21017	Jan. 29, 1919	21988.889	8.9
	21035	" 31, "	21990.860	8.9

26

ac	21065	Feb. 3, 1919.	21993	.848	9.0
	21124	" 11, "	22001	.814	8.9
	21220	March 1, "	22019	.864	9.9
	21273	" 13, "	22031	.809	8.9
	21306	" 25, "	22043	.804	8.9
	21328	April 2, "	22051	.725	8.9
	21354	" 19, "	22068	.734	8.9
	21418	May 5, "	22084	.712	8.9
	21456	" 19, "	22098	.685	8.9
	21489	" 31, "	22110	.614	8.9
	21572	June 30, "	22140	.621	9.0
	21669	Aug. 7, "	22178	.561	9.0
	21772	Sept. 4, "	22206	.539	9.0
	22037	Nov. 24, "	22287	.929	8.9
	22100	Dec. 10, "	22303	.855	8.9
	22271	Jan. 15, 1920	22339	.827	8.9
	22358	Feb. 7, "	22362	.861	9.0
	22440	" 25, "	22380	.810	9.0
	22488	March 6, "	22390	.837	8.9
	22520	" 21, "	22405	.813	8.9
	22586	April 10, "	22425	.758	8.9
	22645	May 18, "	22463	.665	8.9
	22693	June 25, "	22501	.591	8.9
	23154	Dec. 18, "	22677	.866	9.0
	23257	Jan. 9, 1921	22699	.909	8.9
	23321	Jan. 23, "	22713	.867	8.9
	23407	Feb. 6, "	22727	.866	9.0

Port
GMT = .904

R. S. Carum, Xenat.

ac	23452	Feb. 16, 1921	22737.813	8.9	
	23538	March 18, "	22767.724	8.9	
	23576	" 30, "	22779.732	8.9	
	23583	" 30, "	22779.732	8.9	
	23607	April 5, "	22785.709	9.0	
	23650	" 25, "	22805.674	9.0	
	23770	June 7, "	22848.701	9.0	
	24102	Sept. 16, "	22949.523	8.9	
	24129	" 23, "	22956.503	8.9	
	24409	Nov. 24, "	23018.935	8.9	
sep 30 Cl. C	24564	Jan. 5, 1922		8.9	
		12 exposures. Apparently no change.			
sep 30 Cl. C	24568	Jan. 7, 1922		8.9	
		5 exposures. App. no change.			
p 30 Cl. C	24573	Jan. 10, 1922			
		4 exposures. A change in left-hand (following) me?			
	C 24574	Jan. 15, 1922			
		plate not found			
p 30	C 24583	Jan. 15, 1922			
p 30	C 24584	Jan. 15, 1922			
p 30	L 24585	Jan. 15, 1922		8.9	
p 30	C 24582	Jan. 15, "			

A and MC plates of region.

MC 5442

7739

To find

7826

Off plate

7982

Off plate

12656

To find

a 311 March 3, 1894

Cephene edge

Br. Extreme edge

445 " 26, "

Br.

5410 June 26, 1901

Br.

5865 May 15, 1902

Br. Extreme edge

Early B plates. — none.

R. S. Lamm Venet

AI Plates of region.

Plates at $13^h + 30^\circ$ Sequence
marked on
AI 18488AI 167 Jan. 2, 1901
186 March 30, 1901
AI 190

8.9

9.1?

?

8.9

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8.8?

9.0

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9.1?

9.1?

8.9

8.9

8.9

8.9

22 plates
not exam.Star is too faint
to appear.

Idem, ?

991 April 19, "

735

Too poor

781

Feb. 19, 1903

810

Feb. 23, 1903

841

" 28, "

911

Mar. 19, "

925

Mar. 26, "

928

" 28, "

1002

Apr. 21, "

1054

May 2, "

1093

" 13, "

1125

" 23, "

1158

June 1, "

1192

July 2, "

1203

" 4, "

1744

Nov. 28, "

Slide 2834

* 9.0 barely seen

*

at least 150 AI plates

9.1?

no minima seen, except p. 29.

January 28, 1922,

R S Cannon View

ac Plates at $+30^\circ$

all plates examined — record made of only plates at Min., with estimates of magn. (i.e., all fainter than Max.)

$12^h + 30^\circ$

ac 522 November 12, 1899 14971.924 10.4
 1335 March 12, 1901 15456.721 about 9.5 very poor image
 2285 Feb. 6, 1902 15787.747 9.9
 2529 May 8, " 15878.665 10.0
 4710 March 5, 1904 16545.825 about 10.0 very poor
 6057 Feb. 23, 1905 16900.774 10.6
 6945 Mar. 4, " 17154.890 about 10.7?

plate does not show very ft stars; to be seen but exact estimate is difficult.

7134 Dec 27, 1905 17207.924 9.6
 7377 March 14, 1906 17284.680 9.6
 522-7438 7438 April 2, " 17303.780 10.6

represent examination of about 110 plates.

10381 March 31, 1909 18397.682 10.4
 11240 June 3, 1910 18675.879 10.4
 ? — 11271 " 8, " 18680.860

→ perhaps 9.3 seems slightly different from May. All stars used, are very close to edge of plate.

13124 May 4, 1912 19527.616 10.3 ~~10.4~~
 Images very hazy

ent. dec.

17610 comp. stars marked

25

ac 14099 June 18, 1913 19937.589 9.6
 book? 14850 Feb. 8, 1914 20172.813 Images poor - Var. barely seen.
 Probably 10.4 or 10.5

15114 April 21, 1914 20244.653 9.7[✓]
 Plate 10381 (17610 see above Br.)
 to 17506 17506 April 10, 1916 20964.662 9.5[✓]
 represent exam. of 95 plates.

21379 April 23, 1919 22072.725 10.7[✓]
 21511 June 10, 1919 22120.647[✓] Ft - possibly 10.3 or a
 little brighter.

Var. defective but faint.

Examination of 53 plates 24350 October 30, 1921 22993.915 Ft. or Defective but
 represented estimate uncertain.
 by these estimates. Probably 10.5

21

Plates exam. = 260[✓]
 Thoo Min. = 24[✓]
 Max = 239[✓]

January 5, 1922.

R & Cassini Ven.

ac Plates at $14^h + 30^\circ$

All plates examined, record of magn. made for only those fainter than Max.

No. is given of plates exam. in groups.

representing
examination of
50 plates.

ac 690 January 23, 1900 15043 906 10.5

796 April 5, 1900 15115 824 10.4

1545 June 16, 1901 15552 680 9.8

2546 May 13, 1902 15883 645 10.5

4943 June 9, 1904 16641 658 10.4

6375 May 11, 1905 16977 613 10.1

7742 August 24, 1906 17447 545 10.0

8627 July 26, 1907 17783 581 10.7

10218 Feb. 6, 1909 18344 890 10.2

Poor pl.

Very poor

*
examination of
50 pl.

11584 April 14, 1910 18776 724 10.4

13870 March 9, 1913 19836 821 9.7

14926 Feb. 27, 1914 20191 851 9.5

1511514988 March 18, " 20244 708 10.3?

15177 April 21, " 20268 698 10.3

17300 May 15, " 20901 927 9.4

17487 Feb. 7, 1916 20959 778 10.2

19829 April 5, " 21640 825 10.2

20234 Feb. 15, 1918 21770 626 10.5

20852 June 25, " 21947 906 10.0

23810 Dec. 19, " 22849 691 10.0

June 18, 1921 22849 691 10.0

20 Feb.

difficult

Enter dec.

27

0.1

20.5

Check 906

I check it as 910 by one method
909 is correct by other

Total Exam = 209 ✓

Faint = 20 ✓

Mag. = 189 ✓

Monday, January 9, 1922.

AI Plates.

13^h +30°

all plates to be examined — recording only those fainter than Max.

Begin late plates first.

best AI pl.	21500	Jan. 1, 1922	8.9	
	21508	" 5, "	8.9	Fogged
AI	21514	Jan. 7, 1922	8.9	elong. images.
	21540	Jan. 16, "	8.9	Fogged
	21527	Jan. 12, "	8.9	
			8.9	

These AI plates were looked up by noting date of Min. on AC and finding AI of same date.

AI	12122	Jan. 10, 1914,	20143	.933	10.2	✓
	6589	Feb. 22, 1908	17994	.843	9.4	✓
	13636	March 18, 1915	20575	.745		?

Notice difference in looks of trailed image. Is this real or defective?

"Trailed image at {^{beg.?}_{end.} of eclipse."

Estimates are difficult. 10.2 = beginning
10.7 = end.

30

Note added \rightarrow
 Feb. 7,
 Information from Prof. King. $\left\{ \begin{array}{l} \text{South up, glass up.} \\ \text{Q. C. plates =} \end{array} \right.$
 (13 + 45) ac 2331 marked by
 Prof. King to show
 direction of images. \leftarrow ending \rightarrow beginning.

ac Plates, recently taken, Class C.

\$ ac 24564 Jan. 5, 1922, 23060. Time of St. = 7 45
 " " Ending = 13 42

12 images

all est. 8.9 except left hand image,
 glass up (beginning) (following) which may be 9.3.

ac 24568 Jan. 7 1922 23062 Time of Start. = 8 03
 5 images " " End = 9 59
 all est. 8.9

ac 24573 Jan. 10 23065 Time of Start. = 8 05
 " " End = 10 05
 Note: Left hand image, glass up,
 large & hazy but not bright.
 Poor images
 H " all probably = 8.9

ac 24582 Jan. 15, 1922 23070 Time of Start. = 7 25
 4 images " " End = 9 25
 Var. ≤ 9.0 but ϵ is very faint. Further
 estimate not possible.

ac 24583 Jan. 15, 1922 23070 Time of Start. = 9 25
 4 images " End. = 11 25
 Var. < 9.9 probably. Star f is barely
 seen. Var. 11.30

ac 24584 Jan 15, 1922. 23070 Difficult plate.
 5 images Nos. 1 10.1 ? Images very
 2 9.8 faint & hazy.
 3 9.7
 4 9.5 Time of Start = 11 25
 5 9.3 " End. = 13 55

ac 24585 Jan. 15, 1922. 8.9 23070.967
 1 image

7 recent pl.

February 8, 1922.

RS Can. Venu.
Recent Plates.

24623 Feb. 3

24624

J.D.

ac 24623 Feb. 3, 1922 23089.

6 exposures

Time Beg. = ~~9.27~~ 9.27^m
Time End. = 12.09

No. 1 9.3

2 9.3

3 9.3

4 9.7

5 9.9

6 9.9

ac 24624 5 exposures - Time Beg. 12^h 10.9^m 30^s

No. 1 10.3

Time End. 14.40

2 10.4

3 10.4

4 10.5

5 10.5

February 9, 1922,

Very dark.

R S Can. Var.

Recent Pl.

ac 24633 February 8, 1922 J.D. ✓
23074

4 exposures

Time Beg. = 8 29

m. 1 10.5

Time End. = 10 20

2 10.5

3 10.4

4 10.4

Plate fogged -

May 12, 1922

Q S Camera Yew.

(after three months absence)

Found these plates on table; were evidently
taken after measures were sent to Princeton.
If needed, add to Ledger.

ac 24636	Feb. 13, 1922	13 ^h + 45
24637	" 13, "	"
24638	" 13, "	"
24639	" 13, "	"

Saturday, August 22, 1925

Miss Woods —

Please get photographic
light curve of W Ursae

Minoris $16^h 34^m 49^s$ } 1900
 $+86^\circ 25'.9$ }

A_0 $P=1.7012$

algal.

Mrs. S. will be glad
to do the resulting orbit.

HS

See H. B. 844.

37

Bibliography: (Card Catalogue) this BZ 1924)

Discov. by TH Astbury or Mr. Davidson

(Does not give E)

✓ AN 4655

✓ PA 21-572

AN 194, 413

195, 416

199, 69

195, 416

194, 413

* BZ 1924, 25 +86 240 is suspected.

Potsdam Publ. Nr. 81, p. 17 Hassenstein Observations

Dean B. McLaughlin in Astron. Journal
(Sprail Obs.) Vol. 36, p. 113

Light Curve & Orbit, H. B. 844 Mrs. Shapley & J. E. W.

16 47 51 +86 30.9 (1855)

+86° 244 Magn 8.7

Small variation, 0.9 (Dr. S.)

Star bright — few bright stars near to compare.

Field out of focus in regions of I plates

Marked on AC 13498 *

ac 13546 *

I 18120 region +83°, near edge

I 34046 region +90°, near ^{pl.} edge

Show fr. stars : ac 17789, 17918

39

Examined a great many AC & I plates.
Poorly placed to detect variation on I plates

faint? ac 13514, Nov. 27, 1912 113rd Exp.,
compare with 13546, note stars marked

Polar Seq. marked (partially) on ac 11222

see list On 12612 ^{or 10.0} 9.9 very black but apparently
min. on On 13514 $V=11-12$ = 9.9 good proof.

Estimates of Normal 13546 about = ^{Star} 9 or bright 8.8
Comp. with 13498 trifle fainter than 9 9.0
Polar Seq. 14482 " " " 9.0
15792 8.8

Comparison — Polar — Sequence has been
marked (partially) on ac 13514 & 11222.
Magns. from Miss Walker's paper, exp. 40
marked from print of ac Polar Region.
* These final values include 1922 Correction

Mrs Walker's Magns. Polar Sequence
(from papers)
International Adopted Magns. 1922

1	4.40
2	5.24
3	5.78
4	5.91
5	6.46
6	7.12
7	7.38
8	8.32
9	8.93
10	9.11
11	9.77
12	10.08
13	10.52
14	10.92
15	11.27
16	11.58

Examination for Period

In Card Cat. 2419487.850 + 1.7012

44

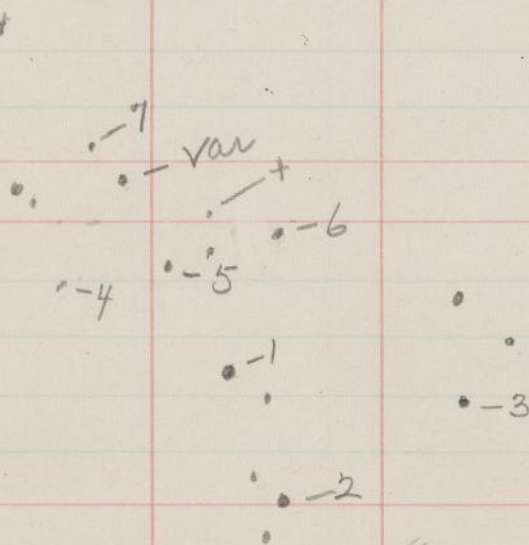
W Ursae Minoris

Range 8.8 to 9.9 or 10.0

Sequence

Plate tinted, N & S,
approximately

Marked on
ac 13514 & 11222
(magn on)
ay 782)



Estimates on ^{ac} 13514, verified by 11222, also by
taking grades.
One Estimate is entered to avoid taking means
to hundredths. Tenths
agreed within 1 in each case.

(Includes
1922
Corr.)

1	7.1
2	8.2
3	8.7
4	9.1
5	9.6
6	10.0
7	10.3

I 16705 & Q 11222

	DM.	(1855)	Magn.
var.	+86° 244	16 47 51	+86 30.9 8.7
1	+85 269	16 6 35	+85 42.7 7.5
2	+85 263	15 50 15	+85 17.7 7.2
3	+85 249	15 16 37	+85 40.8 8.0
4	+85 278	17 0 28	+85 52.8 8.7
5	+86 242	16 31 20	+86 9.3 9.0
6	+86 234	16 7 34	+86 25.5 9.3
7	+86 246	16 58 28	+86 36.9 9.1

H Ursae Minoris

List of plates Ac Var. Normal or
about Normal.

The phases will be computed and
magnitudes examined for all phases
within a certain limit of Minimum.

		Pole Region	Exp.	J.D.	Corr. Helio. T.	Corrected	
905 905 AC	167 Jan. 19, 1899	156 ^m	241	4674.532 ⁵⁶⁸	+0.002	534.570	
895 895	181 Jan. 26	60		4681.680 [✓]	+0.002	682 [✓]	
890 890	185 Feb. 1,	62		4687.542 [✓]	+0.002	544 [✓]	
Too poor	197 Feb. 14,	64		4700.494 [✓]	+0.001	495 [✓]	
Too poor	198 Feb. 14,	55(?)		4700.519 [✓]	+0.001	520 [✓]	
895 900	209 Feb. 20,	68		4706.554 [✓]	+0.001	555 [✓]	
900 900	210 Feb. 20	72 [✓]		4706.604 [✓]	+0.001	605 [✓]	
900 895	217 Feb. 23	63		4709.510 [✓]	+0.001	511 [✓]	
900 900	218 Feb. 23	67		4709.556 [✓]	+0.001	557 [✓]	
905 905	230 Feb. 25	72		4711.618 [✓]	+0.001	619 [✓]	
905 895	231 Feb. 25	72		4711.648 [✓]	+0.001	649 [✓]	
905 905	232 Feb. 25	320 ^m Exp		4711.820 [✓]	+0.001	821 [✓]	
omit	247 Mar. 20	71		4734.527 [✓]	0.000	527 [✓]	
885 880	298 Apr. 22	64		4767.590 [✓]	-0.001	589 [✓]	
895 900	309 Apr. 28,	10		4773.660 [✓]	-0.001	659 [✓]	
omit	331 May 25,	205		4800.684 [✓]	-0.002	682 [✓]	
895 890	338 May 31,	69		4806.667 [✓]	-0.002	665 [✓]	
895 900	376 Aug. 4,	46		4871.759 [✓]	-0.002	589 [✓]	
880 880	381 Aug. 7,	72		4874.3596 [✓]	-0.002	593 [✓]	
900 900	435 Sept. 14,	61		4902.687 [✓]	0.000	687 [✓]	
900 905	439 Sept. 15,	60		4913.592 [✓]	0.000	592 [✓]	
895 895	440 Sept. 15,	61		4913.641 [✓]	0.000	641 [✓]	
900 900	441 Sept. 15,	61		4913.685 [✓]	0.000	685 [✓]	
890 895	445 Sept. 16,	24		4914.7549 [✓]	0.000	549 [✓]	
900 900	516 Nov. 10,	62		4969.876 [✓]	+0.001	877 [✓]	

50 Foo/row 922

			Eff.		Corr. for N.T. ✓	Corr. for Helio.
895 895 AC	550	Nov 24, 1899	76	241 4983.679 ^v	+002	.681
905 905	551	Nov 24, "	64	4983.735 ^v	+002	.757
900 905	621	Dec 24, "	58	5013.899 ^v	+002	.901
900 900	657	Jan 4, 1900	69	241 5024.572 ^v	+002	.574
895 900	658	Jan 4, "	48	5024.613 ^v	+002	.615
895 900	699	Jan 30, "	117	5050.578 ^v	+002	.565
890 895	751	March 11, 1900	61	5090.860 ^v	000	.860
895 900	757	March 13, "	91	5092.612 ^v	000	.612
895? 895	771	" 17, "	66	5096.712 ^v	000	.712
895 900	790	April 2, "	82	5112.658 ^v	000	.658
895 900	793	Apr 3, "	65	5113.825 ^v	000	.825
905 905	853	May 7, "	47	5147.842 ^v	-001	.841
900 900	857	May 11, "	79	5151.781 ^v	-001	.780
905 900	889	June 20, "	70	5191.648 ^v	-002	.646
905 905	891	June 21, "	70	5192.646 ⁵⁸⁸ ^v	-002	.586
895 895	893	" 21, "	75	5192.736 ^v	-002	.734
900 900	895	" 23, "	330	5194.716 ^v	-002	.714
905 900	923	July 16, "	86	5217.626 ^v	-002	.624
895 900	924	" 17, "	70	5218.585 ^v	-002	.583
900 900	925	" 17, "	138	5218.662 ⁸³ ^v	-002	.681
900 900	976	August 29, "	81	5262.548 ⁷¹ ^v	-001	.570
900 900	986	Sept 4, "	60	5267.524 ^v	-001	.523
910 910	999	" 14, "	185	5277.612 ^v	000	.612
900 900	1018	" 26, "	77	5289.582 ^v	000	.582
890 900	1081	Dec 22, "	135	5376.539 ^v	+002	.539
900 900	1095	" 27, "	70	5381.685 ^v	+002	.687
900 900	1120	Jan 2, 1901	78	5387.610 ^v	+002	.612
905 900	1169	" 22, "	27	5407.648 ^v	+002	.650

Ch. 893 Dic

51

	Phase	
	not incl. Helio. Corr.	Corr. for Helio. Time. Mean Alagn.
14983.16552	0.513	.515 ⁸ 8.95 ⁸ 00 00
	.589	.591 ⁸ 9.05 ⁸ 00 00
15013.78640	0.113 ←	.115 ⁸ 9.02 ⁸ 02 03
5023.99336	0.579	.581 ⁸ 9.00 ⁸
	0.620	.622 ⁸ 8.98 ⁸ 03 02
5049.51076	1.0 ⁵ 2	1.054 ⁵ 8.98 ⁵
5090.33860	0.521	.521 ⁵ 8.92 ⁵ 02 03
5092.03976	0.572	.572 ⁵ 8.98 ⁵
5095.44208	1.270	1.270 ⁵ 8.95 ⁵
5112.45368	0.204 ←	.204 ⁵ 8.98 ⁵
← 5146.47688	1.371	1.371 ⁵ 8.98 ⁵
	1.365	1.364 ⁵ 9.05 ⁵
5151.58036	0.201 ←	.200 ⁵ 9.00 ⁵
5190.70704	0.941	.939 ⁵ 9.02 ⁵
5192.40820	0.2 ¹⁸⁰ 38 ←	.178 ¹⁸⁰ 9.05 ¹⁸⁰
	0.328	.326 ¹⁸⁰ 8.95 ¹⁸⁰
5194.10936	0.607	.605 ¹⁸⁰ 9.00 ¹⁸⁰
5216.22444	1.402	1.400 ¹⁸⁰ 9.02 ¹⁸⁰
5217.92560	0.659	.657 ¹⁸⁰ 8.98 ¹⁸⁰
	0.73 ⁵⁷ 6	.755 ⁵⁷ 9.00 ⁵⁷
5260.45460	1.0 ¹¹⁶ 93	1.115 ¹¹⁶ 9.00 ¹¹⁶
5267.25924	0.265	.264 ¹¹⁶ 9.00 ¹¹⁶
5277.46620	0.146 ←	.146 ¹¹⁶ 9.10 ¹¹⁶
5289.37432	0.208 ←	.208 ¹¹⁶ 9.00 ¹¹⁶
5376.13348	0.40 ⁴ 8	.406 ⁴ 8.95 ⁴
5381.23696	0.448	.450 ⁴ 9.00 ⁴
5386.34044	1.270	1.272 ⁴ 9.00 ⁴
5406.75436	0.894	.896 ⁴ 9.02 ⁴

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1322 - other var
 Panel 80,
 1666
 1876

			Eq.		✓	Corr.
895 895 ac	1179 Jan 29, 1901	63	2445414.490	✓	15414.492	18
9.00 895	1215 Feb 7, "	68	5423.535	✓	+002 .536	5
9.00 895	1242 Feb 11, "	60	5427.573	✓	+001 .574	
8.95 8.90	1322 March 6, "	61	5450.763	✓	+001 .764	
9.00 900	1347 " 17, "	68	5461.669	✓	000 .669	
8.95 895	1408 April 13, "	104	5488.671	✓	-001 .670	
9.00 900	1422 " 27, "	77	5502.620 ⁸⁰⁰	✓	-001 .799	
8.90 895	1451 May 8, "	80	5513.615 ⁶	✓	-001 .615	
9.05 905	1471 " 16, "	83	5521.613	✓	-002 .611	
Slide 3190	1476 " 17, "	82	5522.573	✓	Useless	
Test?	1507 June 6, "	53	5542.557 ⁶	✓	-002 .554	
8.95 895	1612 July 14, "	87	5580.681	✓	-002 .679	
9.05 prev 9.05	1702 Aug 30, "	91	5627.775	✓	-001 .774	
8.90 8.95	1731 Sept 8, "	71	5636.633	✓	-001 .632	
8.95 8.95	1764 Sept 21, "	75	5649.813	✓	000 .813	
8.95 8.95	1782 " 25, "	56	5653.616	✓	000 .616	
9.05 9.05	1811 Oct 1, "	15	5659.476	✓	000 .476	
8.95 8.95	1812 Oct 1, "	68	5659.505	✓	000 .505	
8.90 8.90	1856 " 10, "	60	5668.523	✓	000 .523	
8.95 900	1889 " 21, "	63	5679.474	✓	+001 .475	
900 8.95	1895 " 21, "	63	5679.853	✓	+001 .854	
8.95 8.95	1923 " 29, "	81	5687.629	✓	+001 .630	
8.85 8.85 1988	Nov 20, "	63	5709.749	✓	+002 .751	
8.90 8.95	1995 " 21, "	86	5710.608	✓	+002 .610	
8.85 8.85	2010 " 27, "	85	5716.666	✓	+002 .668	
8.95 8.90	2072 Dec 11, "	70	5730.585	✓	+002 .587	
8.80? 8.80	2212 Jan 19, 1902	76	5762.570	✓	+002 .572	
8.85 8.85	2257 " 30, "	81	5780.611	✓	+002 .613	
8.95 8.90	2161 Jan 4, 1902	39	5754.946	✓	+002 .948	

	Min	Phase	Phase Corr. for Relativ. T.	Mean Mag
2	15413.59000	0.900	.902✓	8.95✓
6	5422.06480	1.470	-0.231 ← 1.471✓ - .230✓	8.98✓
4	23.76596	0.405	.406✓	8.98✓
4	27.16828	1.480	-0.222 ← 1.481✓ - .221✓	8.92✓
9	5449.28336	0.478	.470✓	9.00✓
0	5450.98452	.261	.260✓	8.95✓
7	5461.19148	.781	.780✓	9.00✓
5	5488.41004	1.389	- .312 1.389✓ - .312✓	8.98✓
4	5502.01932	.881	.879✓	9.05✓
7	5512.22628	.140	—	—
5	5513.92744	1.411°	- .298 1.411° - .298	—
4	5520.73208	.408	.406✓	8.95✓
7	5522.43324	1.571	- .130 ← 1.570✓ - .131✓	9.05✓
2	5524.13440	.222	← .221✓	8.92✓
3	5541.146	1.494	← 1.494✓ - .207	8.95✓
6	5542.84716	.193	← .193✓	8.95✓
5	5580.27268	.950	.950✓	9.05✓
5	5626.204	.979	.979✓	8.95✓
3	5627.90516	1.491	- .210 ← 1.491✓ - .210✓	8.90✓
5	5636.41096	.534	.535✓	8.98✓
4	5648.31908	.913	.914✓	8.98✓
1	5653.42256	.183	← .184✓	8.95✓
0	5658.526	.188	← .190✓	8.85✓
3	5660.227	1.047	1.049✓	8.92✓
7	5667.032	.301	.303✓	8.85✓
2	5678.940	.604	.603✓	8.92✓
3	5687.446	.469	.471✓	8.80✓
8	5709.561	1.303	1.305✓	8.85✓
	5711.262	1.155	1.157	8.92✓
	5716.365			
	5729.975			
	5769.101			
	5779.308			
	5753.791			

Pon 2469

8.95	890 AC	2315	Feb. 10, 1902	57	2415791.819 ⁹¹⁸	✓	+001	.919
8.95	895	2345	" 19, "	88	15800.697	✓	+001	.698
8.95	895	2392	March 6, "	118	5815.704	✓	+001	.705
9.00	9.00	2422	" 23, "	148	5832.712	✓	000	.712
8.95	895	2449	April 2, "	77	5842.556	✓	000	.556
9.00	9.00	2451	" 2, "	104	5842.652 ⁷³	✓	000	.673
8.90	895	2453	" 3, "	86	5843.537	✓	000	.537
9.00	895	2470	" 14, "	56	5854.630	✓	-001	.629
9.00	8.95	2483	" 17, "	66	5857.743	✓	-001	.742
8.95	895	2490	" 18, "	66	5858.793	✓	-001	.792
9.00	895	2496	" 19, "	113	5859.686	✓	-001	.685
8.90	890	2513	May 1, "	71	5871.593	✓	-001	.592
8.90	890 2519		" 3, "	57	5873.678	✓	-001	.677
8.85	890	2537	" 10, "	69	5880.798	✓	-001	.797
8.90	895	2626	June 14, "	60	5915.585	✓	-002	.583
8.90	8.90 2649	2654	" 28, "	64	5928.768	✓	-002	.766
8.95	895	2654	" 28, "	60	5929.795	✓	-002	.793
8.95	8.95	2690	July 13, "	63	5944.616	✓	-002	.614
8.90	890	2757	August 16, "	64	5978.683	✓	-001	.682
8.95	8.95	2767	" 21, "	73	5983.609	✓	-001	.608
280?		2812	Sept. 4, "	74	5997.858	✓	-001	.857
8.95	895	2819	" 7, "	94	6000.813	✓	-001	.812
9.00	890	2829	" 11, "	64	6004.534	✓	-001	.533
Time of Secondary Min.	8.95 895	2873	October 8, "	58	6031.597	✓	000	.597
	8.95 895	2914	" 20, "	142	6043.846	✓	+001	.847
9.05	9.05	2917	" 21, "	72	6044.545	✓	+001	.546
9.00	895	2937	" 25, "	75	6048.822	✓	+001	.823
8.95	890	2950	" 29, "	79	6052.778	✓	+001	.779
8.95	895	2956	" 31, "	110	6054.591	✓	+001	.592
9.00	9.00	2986	Nov. 8, "	121	6062.535	✓	+001	.536
8.95	890	2649						

✓

Phase	Mean
Corr - Helio. Magn.	
70 ¹ 2 ¹ ✓	8.92✓
976✓	8.95✓
672✓	8.95✓
668✓	9.00✓
305✓	8.95✓
422✓	9.00✓
1.286✓	8.92✓
470✓	8.92 ⁸ ✓
180✓	8.92 ⁸ ✓
1.230✓	8.95✓
423 ² ✓	8.96✓
421✓	8.90✓
805✓	8.90✓
1.120✓	8.88✓
182✓	8.92✓
1.457 ²⁴⁴ ✓	8.92✓ ←
783✓	8.95✓
293✓	8.95✓
338✓	8.90✓
160✓	8.95✓
800✓	—
353✓	8.95✓
671✓	8.95✓ 05 05
517✓	8.95✓ 00 00
859✓	8.92✓
1.558✓	9.05✓
731✓	8.98✓
1.285✓	8.92✓
1397✓	8.95✓
835✓	9.00✓

15791.217 0.602^{70¹2¹}
 5799.722 0.975
 5801.423
 5815.033 .671
 5832.044 .671.668
 5842.251 .305²²
 .401

5843.952 1.286

5854.159 .471

5857.562 .181 ←

1.231^b very poor

5859.263 .424

5871.171 .422

5872.872 .806

5879.677 1.121

5915.401 .184 ←

5927.309 1.459

5929.010 .785

5944.321 .295

5978.244 0.339

5983.448 .161 ←

5997.057 .801

6000.459 .354

6003.862 .672

6031.080 .517

6042.988 .858

6044.689 1.557 -.144 ←

6045.396

6051.494 .730

1.284

6053.195 1.396

6061.701 .834 22

56

Var 2 3010 defective?
3103?
3126 ft

Run 3764, 3802

		Eff		✓	
890 895 AC	2991	Nov. 10, 1902	91	2416064.657	+001 658
9.10 9.05	3010	Nov. 23, "	68	6076886	+002 888
890 890	3013	" 23, "	68	6077.596	+002 .598
890 890	3022	" 28, "	57	6082.687	+002 .689
890 895	3059	December 8, "	61	6092.598	+002 .600
890 890	3067	" 9, "	63	6093.503	+002 .505
895 895	3081	" 18, "	104	6102.776	+002 .778
900 900	3085	" 20, "	60	6104.455	+002 .457
895 895	3103	" 24, "	63	6108.610	+002 .612
895 895	3126	" 31, "	70	6115.511	+002 .513
900 900	3215	Jan. 24, 1903	60	6139.467	+002 .469
895 895	3619	May 12, "	60	6247.566	-002 .564
890 890	3624	" 12, "	75	6247.821	-002 .819
900 900	3626	" 13, "	60	6248.603	-002 .601
9.00 8.95	3634	" 15, "	74	6250.688	-002 .686
895 895	3635	" 15, "	81	6250.755	-002 .753
895 900	3639	" 17, "	84	6252.641	-002 .639
895 895	3671	" 23, "	62	6258.653	-002 .651
900 9.00	3679	" 25, "	59	6260.576	-002 .574
895 895	3744	July 2, "	71	6298.602	-002 .600
895 895	3748	" 3, "	70	6299.629	-002 .627
905 8.9	3766	" 15, "	81	6311.600	-002 .598
905 9.00	3772	" 17, "	67	6313.596	-002 .594
9.20 9.10	3806	August 7, "	90	6334.770	-002 .768
8.80 8.80	3824	" 13, "	60	6340.851	-001 .850
9.05 9.00	3843	" 18, "	87	6345.661	-001 .660
9.00 9.00	3890	Sept. 4, "	69	6362.596	-001 .595
895 900	3921	" 12, "	61	6370.536	-001 .535
900 895	3925	" 12, "	101	6370.746	-001 .745

			Phase Cor. for Helio.	Mean Mag.
16063.402	1.255		1.256✓	8.92✓ $\frac{02}{02} \frac{03}{03}$
⁶⁰⁷⁵ 6077.011	³¹⁰ .585	1.576 -125	1.578✓ -123✓	9.08✓ $\frac{02}{00} \frac{03}{00}$ ←
6082.115	.572		.587✓	8.90✓
			.574✓	8.90✓
6092.322	.276		.278✓	8.92✓
6094.023	1.181		1.183✓	8.90✓
6102.529	.247	←	.249✓	8.95✓
6104.230	.225	←	.227✓	9.00✓
6107.632	.978		.980✓	8.95✓
6114.437	1.074		1.076✓	8.95✓
6138.253	1.214		1.216✓	9.00✓
6247.127	⁴³⁹ 0.492	⁴³⁷	.437✓	8.95✓
	.694	very poor	.692✓	8.90✓
6248.829	1.476	←	1.474✓ -224	9.00✓
6250.530	.158	←	.156✓	8.98✓
	.225	←	.223✓	8.95✓
6252.231	.410		.408✓	8.98✓
6257.334	1.319		1.317✓	8.95✓
6259.036	1.540	-161 ←	1.538✓ -163✓	9.00✓
6298.162	.440		.438✓	8.95✓
6299.863	1.467	-234 ←	1.465✓ -236✓	8.95✓
6310.070	1.530	-171 ←	1.528✓ -173✓	9.02✓
6311.771	.123	←	.121✓	9.02✓
6313.473	.883		.881✓	9.15✓ $\frac{05}{05} \frac{05}{05}$
6333.887	.160	←	.159✓	8.80✓ - ?
6340.691	1.567	-134 ←	1.566✓ -135✓	9.02✓
6344.094	⁴⁵ 1.491	-210 ←	1.490✓ -211✓	9.00✓
6361.105	.925		.924✓	8.98✓
6369.611	1.135		1.134✓	8.98✓

Poor 4050, 4694, 4764, 4767, 4768, 4861, 4915

Exp. J.D. ✓

9.00	9.00	ac	3938	September 14, 1903	91	2416372.785	✓ 000	785	16	
9.60?	9.05?		3968	"	22,	"	70	6380.732	✓ 000	732
895	890		3981	"	24,	"	77	6382.691	✓ 000	691
9.00	9.00		4004	"	28,	"	61	6386.786	✓ 000	786
Too poor			4020	"	30,	"	75	6388.883	✓ 000	883
9.05	9.00		4079	October 21,	"	"	118	6409.736	✓ +001	737
895	9.00		4114	"	27,	"	83	6415.721	✓ +001	722
895	9.00		4185	Nov. 9,	"	"	56	6428.532	✓ +001	533
895	9.00		4249	"	24,	"	58	6443.541	✓ +002	543
895	8.95		4278	"	28,	"	72	6447.705	✓ +002	707
895	8.95		4496	January 5, 1904	"	"	41	6485.616	✓ +002	618
9.00	8.95		4658	February 19,	"	"	22	6530.812	✓ +001	792
895	9.00		4659	"	19,	"	73	6530.861	✓ +001	862
Too poor			4660	"	20,	"	17	6531.523	✓ +001	504
"	"		4661	"	20,	"	62	6531.557	✓ +001	558
8.95	9.00		4665	"	20,	"	32	6531.784	✓ +001	785
8.95	9.00		4666	"	20,	"	65	6531.825	✓ +001	826
8.95	8.90		4669	"	22,	"	77	6533.529	✓ +001	550
8.90	8.95		4680	"	25,	"	67	6536.572	✓ +001	573
8.95	8.95		4709	March 5,	"	"	74	6545.741	✓ +001	761
8.95	8.90		4737	"	12,	"	70	6552.828	✓ 000	828
8.95	8.95		4765	"	24,	"	70	6564.750	✓ 000	749
8.95	8.95		4766	"	26,	"	29	6566.513	✓ 000	513
Poor			4767	"	26,	"	31	6566.559	✓ 000	5
8.85?	8.90	very poor	4770	"	28,	"	41	6568.892	✓ 000	893
9.00	9.00		4911	May 16,	"	"	61	6617.702	✓ -002	700
Too poor			4915	"	20,	"	25	6621.613	✓ -002	613
8.95	9.00		4916	"	20,	"	68	6621.656	✓ -002	654

			Phase Corr. for Delic. T.	Mean Mag	
5	16371.312	1.473	← 1.473 ¹ -228	9.00 ¹ ✓	
2	6379.818	0.914	.914 ¹	9.08 ¹ ✓	very poor, small image
1	81.519	1.172	1.172 ¹ ✓	8.92 ¹ ✓	
6	86.623	.163	← .163 ¹ ✓	9.00 ¹ ✓	
3	88.324	.559	.559 ¹ ✓	—	
37	6408.738	.998	Very poor .999 ¹	9.02 ¹ ✓	
2	6415.542	.179	← .180 ¹ ✓	8.98 ¹ ✓	
33	27.450	1.082	1.082 ³ ✓	8.98 ¹ ✓	
43	42.761	.780	.780 ² ✓	8.98 ¹ ✓	
7	46.163	1.542	1.542 ⁴ ✓ -157	8.95 ¹ ✓	←
8	85.290	.326	.326 ⁸ ✓	8.95 ¹ ✓	
2	6529.520	1.272	1.272 ¹ ✓	8.98 ¹ ✓	
2		1.341	1.342 ¹ ✓	8.98 ¹ ✓	
4	6531.221	.282	.283 ¹ ✓	—	
8		.336	.337 ¹ ✓	—	
		.563	.564 ¹ ✓	8.98 ¹ ✓	
		.604	.605 ¹ ✓	8.98 ¹ ✓	
	6532.922	0.627	Very poor .628 ¹ ✓	8.98 ² ✓	
3	6536.325	.247	← .248 ¹ ✓	8.98 ² ✓	
	6544.830	.931	.931 ¹ ✓	8.95 ¹ ✓	
	6551.635	1.193	1.193 ¹ ✓	8.92 ¹ ✓	
	6563.543	1.206	1.206 ¹ ✓	8.95 ¹ ✓	
3	6565.244	1.269	1.269 ¹ ✓	8.95 ¹ ✓	
		1.315	—	—	
	6566.945	0.246 ¹	← .247 ¹ ✓	8.88 ¹ ✓	
	6616.279	1.423	1.421 ¹ ✓ -280	9.00 ¹ ✓	
	6621.383	.231	←	—	Omit
		.273	.271 ¹ ✓	8.98 ¹ ✓	

Pov 5264 5761 6655

				Exp. J.D.			
900	900	4929	May 24, 1904	10 ^m	2416625.688	✓ -002	.686
895	895	4931	" 27, "	10	6628.563	✓ -002	.561
9.00	9.00	4936	" 28, "	10	6629.711	✓ -002	.709
9.00	9.0	4937	" 28, "	10	6629.733	✓ -002	.731
900	900	5008	June 23, "	30	6655.645	✓ -002	.643
9.2	93	5024	" 27, "	20	6659.688	✓ -002	.686
895	900	5075	July 19, "	33	6681.578	✓ -002	.576
895	895	5304	Sept 30, "	69	6692.54.626	000	.626
900	900	5444	Oct 29, "	70	6782.472	✓ +001	.473
9.00	9.00	5445	October 29, "	70	6783.470	✓ +001	.471
900	900	5449	" 29, "	63	6783.681	✓ +001	.679
905	900	5462	" 31, "	71	6785.568	✓ +001	.569
890	895	5478	November 3, "	78	6788.569	✓ +001	.570
900	900	5544	" 17, "	66	6802.454	✓ +002	.456
890	895	5638	December 1, "	51	6816.484	✓ +002	.486
Pov, black		5761	" 21, "	100	6836.468	✓ +002	.470
895	9.00	5779	" 29, "	91	6844.472	✓ +002	.474
895	895	5891	January 26, 1905	81	6872.489	✓ +002	.491
895	900	6024	Feb 18, "	72	6895.537	✓ +001	.538
900	895	6218	March 26, "	41	6934.570	✓ 000	.570
9.05?	9.05	6286	April 16, "	10	6952.743	✓ -001	.742
Small but black		6309	" 22, "	10	6958.833	✓ -001	.832
9.00	9.00	6554	July 27, "	63			
		6573	August 3, "	60			
895	9.00	6473	July 29, "	103	7026.760	✓ -002	.758
895	900	6554	July 27, "	63	7054.600	✓ -002	.598
900	900	6573	August 3, "	60	7061.749	✓ -002	.747
900	9.00	6627	" 23, "	61	7081.866	✓ -001	.643
Too faint		6655	September 5, "	59	7094.874	✓ -001	.873

		Phase	Corr. for Helio T	Mean Mag
16624.785	0.903		.901✓	9.00✓
28.187	.376		.374✓	8.95✓
	1.524 -177 ←		1.522✓ -179✓	9.00✓
29.888	1.546 -155 ←		1.544✓ -157✓	
55.406	.239 ←		.237✓	9.00✓
58.808	0.880		.878✓ X	9.25✓
80.923	.655		.653✓	8.98✓
6754.073	.553		.553✓	8.95✓
81.292	1.180		1.181✓	9.00✓
82.993	0.477		.478✓	9.00✓
	0.638		.686✓	9.00✓
84.694	0.874		.875✓	9.02✓
88.096	0.473		.474✓	8.92✓
6801.706	.748		.750✓	9.00✓
15.315	1.169		1.171✓	8.92✓
17.016				
35.729	0.739		.741✓	—
44.235	.237 ←		.239✓	8.98✓
71.453	1.036		1.038✓	8.95✓
95.269	.268		.269✓	8.98✓
6930.994	.576		.576✓	8.98✓
51.408	1.335		1.334✓	9.05✓
58.212	.621		.620✓	9.00✓
7026.259	.501		.499✓	8.98✓
53.477	1.123		1.121✓	9.02 8.98✓
60.282	1.467 -234 ←		1.465✓ -236✓	9.00✓
61.983	1.170 948		.947✓	9.00✓
80.696				
82.397	.569		.568✓	—
94.305				

Van 2 7004 62

900 895 AC	6727	September 25, 1905	66 ^m	2417114.546	✓ 000	.546
	6781	October 5, "	60	7124.585	✓ 000	.585
895 890	6824	" 10, "	68	7129.650	✓ 000	.650
895	6923	November 1, "	105	7151.646	✓ +001	.647
	6934	" 2, "	87	7152.765	✓ +001	.766
9.00 900	6963	" 9, "	75	7159.727	✓ +001	.728
900 900	6981	" 11, "	65	7161.708	✓ +001	.709
8.85 895	6993	" 14, "	72	7164.685	✓ +001	.686
895 895	7004	" 18, "	64	7168.568	✓ +002	.570
895 890	7010	" 19, "	42	7169.494	✓ +002	.496
8.90 885	7020	" 20, "	57	7170.506	✓ +002	.508
895 895	7039	" 23, "	63	7173.679	✓ +002	.681
895 8.95	7053	" 25, "	87	7175.674	✓ +002	.676
895 895	7144	January 4, 1906	74	7215.697	✓ +002	.699
895 900	7193	" 22, "	34	7233.568	✓ +002	.570
895 895	7198	" 24, "	100	7235.683	✓ +002	.685
900? 900	7289	February 16, "	75	7258.691	✓ +001	.692
^{reyn} 895 895	7308	" 22, "	57	7264.586	✓ +001	.587
895 895	7325	" 24, "	63	7266.669	✓ +001	.670
	7384	March 18, "	68	7278.577	✓ 000	.577
895 895	7404	" 22, "	63	7292.639	✓ 000	.639
8.95 9.00 9.00	7461	April 8, "	62	7309.580	✓ 000	.580
900 9.00	7635	June 29, "	62	7391.621	✓ -002	.619
910? 905	7675	July 19, "	64	7411.619	✓ -002	.617
900 900	7704	August 14, "	62	7437.682	✓ -001	.681
895 895	7774	Sept 3, "	40	7457.567	✓ +001	.566
895 9.05	7803	" 8, "	56	7462.630	✓ +001	.629
9.00 9.00	7890	October 10, "	75	7494.675	✓ +001 000	.675

		Phase Corr. for Helio. T.	Mean Magn.
17113.018	1.528 -173	← 1528 ^v -173 ^v	8.98 ^v
7114.719	1.360	1.360 ^v	
23.225			
24.926	1.322	1.322 ^v	8.92 ^v
28.328			
50.443	1.203	1.203 ^v	
52.145	.620	.621 ^v	
58.949	.778	.779 ^v	9.00 ^v
60.650	1.058	1.059 ^v	9.00 ^v
64.053	.632	.633 ^v	8.98 ^v
67.455	1.113	1.115 ^v	8.95 ^v
69.156	.338	.340 ^v	8.92 ^v
70.857	1.350	1.352 ^v	8.88 ^v
72.558	1.121	1.123 ^v	8.95 ^v
74.260	1.414	1.416 ^v -285	8.95 ^v
7215.087	.610	.612 ^v	8.95 ^v
32.099	1.469	1.471 ^v -230	8.98 ^v
33.800	0.182	.184 ^v	8.95 ^v
35.501			
57.616	1.075	1.076 ^v	9.00 ^v
64.421	.165	.166 ^v	8.98 ^v
66.122	.547	.548 ^v	8.95 ^v
88.237	0.340	0.340 ^v	
91.640	0.999	.999 ^v	8.95 ^v
7308.651	0.929	.929 ^v	9.00 ^v
90.307	1.385	1.312 ^v	9.00 ^v
7419.721	9.898	.896 ^v	9.08 ^v
37.939	1.444 -257	1.443 ^v -258	9.00 ^v
56.652	.915	.914 ^v	8.95 ^v
61.756	.874	.873 ^v	8.98 ^v
94.078	.597	.598 ^v	9.00 ^v

ran 2 to 8546

895	895	7927	October 15, 1906	105	2417499.556	✓	+001	557
895	900	7935	" 23, "	55	7507.909	✓	+001	910
900	895	7936	" 24, "	87	7508.474	✓	+001	475
Err		8123	Nov. 6, "	61	7521.610	✓	+001	.611
filings defective		8123	Dec 26, "	60	7571.709	✓	+002	.711
900	895	8124	" 26, "	68	7571.754	✓	+002	.756
900	900	8132	Jan 5, 1907	16	7581.561	✓	+002	.563
900	900	8142	" 9, "	66	7585.586	✓	+002	.588
900	895	8168	" 21, "	59	7597.624	✓	+002	.626
900	905	8174	" 22, "	71	7598.623	✓	+002	.625
895	895	8203	" 30, "	60	7606.767	✓	+002	.769
900	905	8246	Feb 12, "	68	7619.625	✓	+001	.626
910	905	8272	" 21, "	62	7628.595	✓	+001	596
895	895	8322	March 6, "	88	7641.645	✓	+001	.646
900	900	8424	April 15, "	72	7681.849	✓	-001	.848
905	900	8442	" 20, "	72	7686.582	✓	-001	.581
895	895	8461	" 24, "	59	7690.711	✓	-001	.710
900	895	8471	May 2, "	168	7698.652	✓	-001	.651
895	895	8487	" 11, "	96	7707.700	✓	-001	.699
895	895	8493	" 12, "	220	7708.771	✓	-002	.769
905	900	8520	" 24, "	63	7720.776	✓	-002	.774
900	900	8546	June 12, "	70	7739.632	✓	-002	.631
895	900	8588	July 3, "	71	7760.753	✓	-002	.751
900	900	8636	" 27, "	65	7784.707	✓	-002	.705
900	900	8661	August 8, "	67	7796.565	✓	+002	.563
895	900	8734	" 27, "	60	7815.788	✓	+001	.787
890	895	8762	Sept 13, "	61	7832.806	✓	000	.806
895	900	8767	" 14, "	65	7833.677	✓	000	.677
895	895	8768	" 14, "	66	7833.726	✓	000	.726

		Phase Corr. for Helio. T.	Mean Magn
17499.181	+0.375	.376✓	8.95✓
7507.687	+0.222	← .223✓	8.98✓
	.787	.788✓	8.98✓
21.296	.314	.315✓	—
70.630	1.079	1.081✓	— Reject
	1.124	1.126✓	8.98✓
80.837	.724	.726✓	9.00✓
84.239	1.347	1.349✓	9.00✓
96.147	1.477	← .224 1.479✓	8.98✓
97.848	.775	.777✓	9.02✓
7606.354	.413	.415✓	8.95✓
18.262	1.363	1.364✓	9.02✓
28.469	.126	← .127✓	9.08✓
40.377	1.268	1.269✓	8.95✓
81.205	.644	.643✓	9.00✓
86.309	.273	.272✓	9.02✓
89.711	1.000	0.999✓	8.95✓
98.217	.435	.434✓	8.98✓
7706.723	.977	.976✓	8.95✓
7708.424	.347	.345✓	8.95✓
20.332	.444	.442✓	9.02✓
39.045	.587	.585✓	9.00✓
59.459	1.294	1.292✓	8.98✓
83.275	1.432	1.430✓	9.00✓
95.183	1.382	1.380✓	9.00✓
96.884	.191	← .190✓	8.98✓
7815.597	.197	← .197✓	8.92✓
32.609	1.068	1.068✓	8.98✓
	1.117	1.117✓	8.95✓

Van. 2 ft. 9200
 Day ft 10147

		Exp.					
8959.00	AO	8784	Sept 17, 1907	80	2417834.630	✓ 000	630
9.10	9.08	8786	" 17, "	65	7834.753	✓ 000	753
9.00	9.00	8802	" 26, "	64	7845.787	✓ 000	787
8.95	8.95	8818	October 1, "	72	7850.866	✓ 000	866
8.95	8.95	8820	" 2, "	74	7851.545	✓ 000	545
8.95 9.00	9.00	9028	November 28, "	20	7908.822	✓ +002	.824
9.00	9.00	9172	Jan 14, 1908	60	7955.640	✓ +002	.642
8.95	8.95	9200	" 25, "	63	7966.642	✓ +002	.644
8.95	8.95	9479	May 16, "	54	8078.580	✓ -002	578
8.90	8.90	9579	June 26, "	65	8119.591	✓ -002	589
9.05	9.05	9638	July 16, "	87	8139.648	✓ -002	.646
9.00	8.95	9642	" 30, "	30	8143.592	✓ -002	.590
8.95	8.95	9832	October 17, "	61	8232.606	✓ +001	.607
8.95	8.95	9917	Nov 15, "	83	8261.842	✓ +002	.844
8.90	8.95	10044	Dec. 12, "	60	8288.809	✓ +002	.811
8.90	8.90	10133	Jan. 1, 1909	60	8308.630	✓ +002	.632
8.90	8.90	10145	" 6, "	68	8313.472	✓ +002	.474
omit		10146	" 6, "	33	8313.537	✓ +002	.539
8.90	8.95	10208	Feb. 3, "	120	8341.986	✓ +002	.624
8.95	9.00	10204	" 3, "	60	8341.698	✓ +002	700
8.85	8.90	10268	" 26, "	60	8364.556	✓ +001	.557
8.85	8.90	10278	March 5, "	120	8371.670	✓ +001	.671
8.95	9.00	10279	" 5, 3 "	60	8371.735	✓ +001	.736
8.80	8.85	10451	April 24, "	66	8412.830	✓ -001	.829
8.95	8.95	10452	" 24, "	62	8421.543	✓ -001	.542
8.95	8.95	10455	" 24, "	66	8421.723	✓ -001	.722
9.00	8.95	10462	" 26, "	68	8423.695	✓ -001	.694
Rijck		10487	May 6, "	62	8433.648	✓ -001	.647
8.85	8.85	10147	Jan 6, "	60	8313.591	✓ +002	.592

		Phase Corr. for Helio. T	Mean Mag.	(Error in date as entered)
17836.011	1.619 - .082	1.619 - .082	9.00	0.619
37.712	1.742 + .041	1.742 + .041	9.08	0.742
44.517	1.270	1.270	9.00	
49.620	1.246	1.246	8.95	
51.321	.224	.224	8.95	
7907.460	1.362	1.364	9.00	
55.092	548	.550	9.00	
65.299	1.343	1.345	8.95	
70.402	991 1.331	1.333	8.92	
8077.576	1.004	1.002	8.95	
8118.403	1.188	1.186	8.90	
8138.817	.831	.829	9.05	
42.220	1.372	1.370	8.98	Cl T' but identified
8232.381	.225	.226	8.95	
8261.301	.541	.543	8.95	
88.51940	.290	.292	8.92	
8307.23216	1.398	1.400	8.90	
12.336	1.136	1.138	8.90	
	1.201	1.203	Omit	
8341.255	1.267	.369	8.92	
8363.370	.443	.445	8.96	
✓	1.186	1.187	8.92	
8370.175	1.495	1.496	8.92	
71.876	1.560 - .141	1.561 - .140	8.98	
8419.509	1.321	1.320	8.82	
21.210	.333	.332	8.95	
2	.513	.512	8.95	
22.911	.784	.783	8.98	
33.118	.530	.529	—	
	1.255	1.257	8.85	

68

Var. 2 br. 12057

8.90	8.90	11222	December 30, 1909	62	8671.496	+002	.498
9.00	9.00	10491	May 8, 1909	51	2418435.261	✓ -001	.660
9.00	9.05	10543	June 1, "	65	8459.588	✓ -002	.586
9.00	9.00	10544	June 1, "	65	8459.643	✓ -002	.641
8.95	8.95	10658	July 24, "	62	8512.713	✓ -002	.711
9.05	9.05	10697	August 7, "	60	8526.801	✓ -002	.799
9.00?	8.95	10751	Aug. 25, "	60	8544.701	✓ -001	.700
8.95	8.95	10844	Sept. 29, "	61	8579.712	✓ 000	.712
8.95	9.00	10883	October 6, "	60	8586.855	✓ 000	.855
9.2	9.15	10927	" 16, "	66	8596.565	✓ +001	.566
8.95	9.00	10928	" 16, "	65	8596.611	✓ +001	.612
8.90	8.95	10967	" 25, "	60	8596.5 8596.644	✓ +001	.645
8.95	8.95	10979	" 28, "	61	8596.5 8596.737	✓ +001	.738
8.95	9.00	10987	" 29, "	60	8609.785	✓ +001	.786
Too poor		11152	Dec. 10, "	60	8651.492	✓ +002	.494
8.90	8.85	11180	" 20, "	30	8661.617	✓ +002	.661
9.00	9.00	11191	" 21, "	60	8662.634	✓ +002	.636
8.95	9.00	11198	" 24, "	66	8665.498	✓ +002	.495
8.90	8.90	11232	" 31, "	76	8672.603	✓ +002	.605
8.90	8.90	11285	January 11, 1910	60	8683.585	✓ +002	.587
Too poor		11342	Feb. 10, "	65	8704.538	✓ +002	.530
"	"	11343	" 1, "	65	8704.616	✓ +002	.618
"	"	11344	" 2, "	73	8705.488	✓ +002	.490
8.95	9.00	11345	" 2, "	65	8705.614	✓ +002	.616
8.95	8.95	11347	" 4, "	75	8707.508	✓ +001	.509
8.90	8.90	11348	" 4, "	65	8707.600	✓ +001	.601
8.95	8.95	11349	" 4, "	65	8707.681	✓ +001	.682
Q T'		11387	" 14, "	30	8717.614	✓ +001	.615
8.95	8.95	11424	March 3, "	60	8734.680	✓ +001	.681

	.216		.218	8.90 ←
			Phase	Mean
			Corr. for Helio. T	Magn.
18434.819	0.842		.841✓	9.00✓
18458.635	.953		.951✓	9.02✓
	1.008		1.006✓	9.00✓
8511.371	1.342		1.340✓	8.95✓
8526.682	.119	←	.117✓	9.05✓
43.693	1.008		1.007✓	Very poor 8.98✓
79.418	.294		.294✓	8.95✓
86.222	.633		.633✓	8.98✓
96.429	.136	←	.137✓	9.18✓
	.182	←	.183✓	8.98✓
8604.935	.709		.710✓	8.92✓
8.337	.400		.401✓	8.95✓
10.039	1.448		1.449✓ ²⁵²	8.98✓
50.866	.626		.628✓	—
61.073	.544 586		.588✓	8.88✓
62.775	1.561	.141 ←	1.563✓	1.39✓ 9.00✓
64.476	1.017		1.019✓	8.98✓
71.280	1.323		1.325✓	8.90✓
83.189	.396		.398✓	8.90✓
8703.602	.926		.928✓	—
	1.014		1.016✓	—
5.304	.184	← mit	.186✓	—
	.310		.312✓	8.98✓
7.005	.503		.504✓	8.95✓
	.595		.596✓	8.90✓
	.676		.677✓	8.95✓
17.212	.402		.403✓	—
34.223	.457		.458✓	8.95✓

Exp.

70

11669 Poor plate, streaked, 10^m exp. On this plate ⁶⁹
 star 8.7 is apparently as bright as br. star near

8	9.2 9.0	11496	March 18 1910	71	18749.662	-.000	.662
8	8.95 8.90	11548	April 1, 1910	30 ^{Eff.}	8763.798	.000	.798
8	8.95 8.90	11430	March 4, 1910	60	2418735.555	+001	.556
8	8.90 8.85	11479	" 15, "	60	8746.686	✓ 000	.686
8	not this. region	11490	" 18, "	71	8748.752	✓ 000	.752
8	Too poor	11597	April 20, "	15	8782.585	✓ -001	.584
8	Too poor	11608	April 20, "	15	8782.709	✓ -001	.708
8	8.95 9.00	11608	" 27, "	10	8789.670	✓ -001	.669
8	Poor	11616	" 28, "	10	8790.609	✓ -001	.608
8	8.95 8.95	11617	" 28, "	10	8790.658	✓ -001	.657
8	8.90 8.95	11662	May 16, "	60	8808.692	✓ -002	.690
8	8.90 8.95	11663	" 16, "	61	8808.735	✓ -002	.733
8	* No est.	11669	" 17, "	10	8809.663	✓ -002	.661
8	9.00 8.95	11738	June 28, "	76	8851.797	✓ -002	.795
8	9.00 8.95	11766	July 8, "	68	8861.679	✓ -002	.677
8	Poor	11872	Aug. 20, "	71	8894.802	✓ -001	.801
8	8.95 9.00	11950	Sept. 22, "	60	8937.766	✓ 000	.766
8	8.95 8.95	12016	October 10, "	65	8955.648	✓ 000	.648
8	8.90 8.95	12017	" 10, "	65	8955.693	✓ 000	.698
8	8.85 8.90	12018	" 19, "	60	8955.738	✓ 000	.738
8	Too poor	12024	" 11, "	5	8956.518	✓ 000	.518
8	8.95 8.95	12025	" 11, "	65	8956.597	✓ 000	.597
8	9.00 9.00	12037	" 13, "	65	8958.541	+001	.542
8	9.00 9.00	12047	" 17, "	60	8962.496	+001	.497
8	9.00 9.00	12048	" 17, "	60	8962.549	+001	.550
8	8.90 8.95	12049	" 17, "	61	8962.604	+001	.605
8	Reject	12056	" 19, "	30	8964.544	+565 +001	—
8	"	12057	" 26, "	45	8971.564	+592 +001	—
8	8.95 9.00	12077	" 31, "	60	8976.603	+001	.604
8	9.00 8.95	12078	" 31, "	45	8976.639	+671 +001	—
8	8.95 8.95	12086	Nov. 1, "	45	8977.629	+660 +001	—

assume 12th exp.

see this sketch
between 1 & 2.

$\frac{1}{2}$ or star. This star is usually
-12
:-87

If this were a real change it would affect
all maxima estimates. Shown
Phase 9.05 ← Dr. Shapley who says the
plate is too poor to
give right.

8763.143 .128
8734.223 .655
~~18434.819~~ 1.332
18746.131 .555
8747.833 .919
~~46.534~~
8781.856 .729
88.660 1.010
90.362 0.247 ←

0.128 Phase
655 Con. fn. Nulis. T 9.05
1.333 ✓ 8.92 ✓
.555 ✓ 8.88 ✓
.919 ✓
.728 ✓
.852 ✓
1.009 ✓ 8.98 ✓
.246 ✓ — Omit

See 12713, is it a
little brighter?
13156? 14072?
See page 134

0.296
8807.373 1.319
1.362

.295 ✓ 8.95 ✓
1.317 ✓ 8.92 ✓
1.360 ✓ 8.92 ✓

8809.074 .589

.587 ✓ —

8851.603 .194 ←

.192 ✓ 8.98 ✓

8860.109 1.570 -131 ←

1.568 ✓ -133 8.98 ✓

8904.339 .463

.462 ✓ —

8936.661 1.105

1.105 ✓ 8.98 ✓

8955.374 .274

.274 ✓ 8.95 ✓

.324

.319 ✓ 8.92 ✓

.364

.364 ✓ 8.88 ✓

1.144

1.144 ✓ —

1.223

1.223 ✓ 8.95 ✓

8957.075 1.466

1.467 ✓ -234 9.00 ✓ ←

8962.179 .317

.318 ✓ 9.00 ✓

.370

.371 ✓ 9.00 ✓

8963.880 .425

.426 ✓ 8.92 ✓

8965.581 .664

.665 ✓ —

8970.685 .875

.876 ✓ —

8975.788 .907

.908 ✓ 8.98 ✓

.815

.816 ✓

.851

.852 ✓

.883

.884 ✓

8977.489 .140 ←

.141 ✓ 8.95 ✓

.171 ←

.172 ✓

which 8.98 — Assume image of 1st exp.

fr. stars 14482

895 895 AC	12094	November 7, 1910	45	2418983.607	575 +002 576	Exp with large cap. +
895 895	12113	" 12, "	60	8988.653	+001	.654
? Rejct	12121	" 16, "	60	8992.601	+002	.603
Rejct	12127	" 17, "	45	8993.518	+002	—
"	12130	" 17, "	30	8993.692	+002	—
880 8.75(?)	12135	" 19, "	56	8995.548	+002	.550
895 900	12136	" 19, "	45	8995.514	+002	.586
Rejct	12137	" 19, "	30	8995.643	+002	—
895 895 1225	12287	Dec 31, 1911	60	9052.454	+002	.456
890 895	12365	April 15, "	52	9142.681	-001	.620
920 9.3	12375	May 21, "	67	9178.772	-002	.770
905 905	12367	May 13, "	31	9248.808	-002	.806
895 900	12375	" 21, "	67	9261.815	-001	.814
9.00 9.00	12475	July 30, "	60	9270.821	-001	.820
9.00 9.00	12485	August 12, "	60	9299.660	000	.660
9.00 9.00	12522	" 21, "	60	9344.605	+001	.606
905 905	12573	Sept 19, "	17	9462.779	+001	.780
905 905	12713	Nov 3, "	76	9547.816	-002	.814
900 900	12970	Feb 29, 1912	60	9550.573	+002	.571
895 900	13145	May 24, "	65	9559.610	-002	.672
905 905	13147	" 27, "	65	9561.605	-002	.603
895 900	13156	June 5, "	60	9561.746	-002	.744
9.00 905	13158	" 7, "	68	9565.628	-002	.626
9.00 9.05	13159	" 7, "	65	9593.614	-002	.612
895 900	13171	" 11, "	60	9663.757	000	.757
9.00 900	13217	July 9, "	60	9673.775	000	.775
9.00 9.00	13241	Sept 17, "	60			
9.00 895	13262	" 27, "	68			

		Phase Corr. for Helio. T.	Mean Mag.	
18982.593	{ 982	{ 983 ^v	8.95 ^v	Assume image of 1 st Exp.
small exp.	{ 1.014	{ 1.015 ^v 9.58 ^v	8.95 ^v	
987.696	0.957	.654 ^v	8.95 ^v	
8991.098	1.503	.505 ^v - .197	—	Rej.
8992.800	0.718	.603 ^v	—	
	.752	.720 ^v	—	
	892 ^v	.754 ^v	—	
	918 ^v	.894 ^v	—	
8994.501	1.047	.920 ^v	—	
	{ 1.083	1.049 ^v	8.78 ^v	
	{ 1.115	{ 1.085 ^v	8.98 ^v	Assume image of 1 st Exp.
		{ 1.117 ^v	8.98 ^v	
9037.030	0.424	.426 ^v	8.95 ^v	
9052.340	0.418	.420 ^v	8.92 ^v	
9142.502	.119	.118 ^v	9.25 ^v	
9169.720	0.862 ⁴	.862 ^v	9.05 ^v	
9178.226	.546	.544 ^v	8.98 ^v	
9247.974	.834	.832 ^v	9.00 ^v	
9261.583	.232	.231 ^v	9.00 ^v	
70.089	.732	.731 ^v	9.00 ^v	
99.008	.652	.652 ^v	9.05 ^v	
9343.239	1.366	1.367 ^v	9.05 ^v	
9462.320	.459	.460 ^v	9.00 ^v	
9547.378	.438	.436 ^v	8.98 ^v	
9547.079	1.494	1.492 ^v	9.05 ^v	
9550.780	- .207	- .209 ^v	9.05 ^v	
9559.286	.326.388	.386 ^v	8.98 ^v	
9560.987	.618	.616 ^v	9.02 ^v	
	.759	.757 ^v	9.02 ^v	
64.389	1.239	1.237 ^v	8.98 ^v	
93.309	.305	.303 ^v	9.00 ^v	
96.63.057	.700	.700 ^v	9.00 ^v	
96.73.264	.511	.511 ^v	8.98 ^v	

Var. 2 ft? 14169

9.00	895	13278	October 1, 1912	60	2419677.850	✓ +000	850
895	900	13347	" 16, "	60	9692.649	✓ +001	659
9.00	900	13382	" 21, "	60	9697.602	✓ +001	603
895	895	13469	November 11, "	75	9718.466	✓ +001	467
895	895	13470	" 11, "	60	9718.723	✓ +001	724
895	900	13498	" 19, "	60	9726.587	✓ +002	589
900	900	13505	" 21, "	60	9728.575	✓ +002	577
cl T'	13546	13552	December 3, "	66	9740.555	✓ +002	557
cl T'	13566	" 9, "	30	2 Pole Exp.	455 +002		
895	900	13646	January 14, 1913	86	9782.470	✓ +002	472
9.00	9.05	13685	" 27, "	69	9795.614	✓ +002	616
895	895	13708	February 1, "	81	9800.488	✓ +002	485
900	900	13782	" 14, "	69	9813.490	✓ +001	491
895	890	13809	" 24, "	46	9823.562	✓ +001	563
900	900	13843	March 6, "	65	9833.628	✓ +001	629
900	900	13853	" 7, "	60	9834.635	✓ +001	636
900	905	13854	" 7, "	60	9834.692	✓ +001	693
900	900	13863	" 8, "	75	9835.693	✓ +001	694
900	895	14072	June 10, "	65	9929.610	✓ -002	608
Room		14077	" 10, "	60	9929.842	✓ -002	821
8.90	8.90	14131	" 30, "	60	9949.824	✓ -002	822
900	900	14187	July 19, "	60	9968.670	✓ -002	668
9.15?	9.10	14260	August 16, "	96	19996.582	✓ -001	581
900	900	14305	" 30, "	72	20010.547	✓ -001	546
9.05	9.10	14338	Sept. 6, "	51	20017.762	✓ -001	761
9.00	895	14413	" 28, "	59	0039.758	✓ 000	758
895	9.00	14467	October 27, "	31	0068.611	✓ +001	612
895	895	14482	" 31, "	65	0072.575	✓ +001	576
9.00	900	14623	December 5, "	60	0107.669	✓ +002	671

Phase
Corr. for
Ref. T.

Mean
Mag

19676.666	1.184	1.184✓	8.98✓
91.976	.673	.674✓	8.98✓
97.080	.522	.522 ³ ✓	9.00✓
9717.494	.972	.973✓	8.95✓
9726.000	1.229	1.230✓	8.95✓
9727.701	0.587	.589✓	8.98✓
19739.609	.874	.876✓	9.00✓
	.948	.948✓	—
		Omit	—
		Omit	—
19782.138	0.332	.334✓	8.98✓
94.046	1.568 -1.33	1.570 -1.31✓	9.02
9795.747			
799.149	1.334	1.336✓	8.95✓
9800.851	.731	.732✓	9.00✓
9812.759	.596	.597✓	8.92✓
9822.966	.455	.456✓	9.00✓
9833.173	1.462	1.463✓ -238	9.00✓
34.874	1.519	1.520✓ -181	9.02✓
9836.575	.819	.820✓	9.00✓
9928.438	1.172	1.170✓	8.98✓
30.139	1.386	1.383✓	—
	1.404	1.402✓	—
9948.852	.972	.970✓	8.90 ✓ Porph
19967.564	1.106	1.104✓	9.00✓
19996.484	.098	.097✓	9.12✓
20008.392	.454	.453✓	9.00✓
10.093			
16.898	.864	.863✓	9.08✓
39.013	.745	.745✓	8.98✓
0067.933	.678	.679✓	8.98✓
71.335	1.240	1.241✓	8.95✓
107.059	.610	.612✓	9.00✓

895	895	AC	14695	December 19, 1913	60	2420121.889	+002	891
895	895		14729	" 29, "	55	0131.808	+002	810
		Proc	14770	January 12, 1914	64	0145.883	+002	835
900	9.00		14901	February 21, "	47	0185.886	+001	887
900	9.00		14915	" 25, "	87	0189.847	+001	848
905	9.10		15016	March 23, "	69	0215.791	000	791
9.05	9.05		15192	May 22, "	69	0275.590	-002	588
895	9.00		15315	July 8, "	66	0325.697	-002	.695
905	9.10		15330	" 19, "	74	0333.667	-002	.665
9.00	9.00		15421	August 31, "	60	0376.602	-001	.601
9.00	9.1		15497	September 17, "	61	0393.573	000	.573
895	895		15546	" 28, "	77	0404.553	000	553
895	9.00		15556	October 1, "	67	0407.727	000	.727
9.4	9.5		15579	" 5, "	65	0411.652	000	.652
9.00	895		15756	Nov. 21, "	60	0458.579	+002	.581
895	895		15791	" 27, "	33	0464.466	+002	468
895	9.00		15792	" 27, "	65	0464.508	+002	.510
895	895		15793	" 27, "	68	0464.580	+002	.582
9.00	9.00		15932	December 26, "	62	0493.510	+002	.512
895	895		15998	January 9, 1915,	60	0507.642	+002	.644
9.00	9.00		16167	February 27, "	40	0556.689	+001	.690
8.90	8.90		16305	March 20, "	60	0577.836	000	.836
9.00	9.00		16390	April 12, "	60	0600.674	-001	.673
9.00	9.00		16418	" 21, "	63	0609.541	-001	.540
890	895		16420	" 21, "	86	0609.645	-001	.644
895	9.00		16421	" 21, "	61	0609.701	-001	.700
8.95	9.00		16487	May 23, "	60	0641.730	-002	.728
9.2	9.15		16670	Aug. 17, "	60	0727.853	-001	.852
8.95	8.95		16419	April 21, "	62	0609.589	-001	.588

		Phase Corr. for Helio. T	Mean Magn
20120.669	1.220	1.222 ✓	8.95 ✓
30.876	.932	.934 ✓	8.95 ✓
44.485	1.348	1.350 ✓	—
85.313	0.573	.574 ✓	9.00 ✓
88.715	1.132	1.133 ✓	9.00 ✓
0214.233	1.558	-143 1.558 ✓ -143 ✓	← 9.08 ✓
215.934		← .114 ✓	9.05 ✓
275.474	.116		
321.406	1.291	1.289 ✓	8.98 ✓
333.314	.353	.351 ✓	9.08 ✓
375.843	.759	.758 ✓	9.00 ✓
392.854	.719	.719 ✓	9.05 ✓
403.061	1.492	1.492 ✓ -209	← 8.95 ✓
4.762		1.263 ✓	8.98 ✓
6.464	1.263		
8.165	.085	.085 ✓	← 9.45 ✓
11.567		1.083 ✓	8.98 ✓
57.498	1.081		
59.200		.165 ✓	← 8.95 ✓
464.303	.163	207 ✓	← 8.98 ✓
	.205		
	.277	.279 ✓	8.95 ✓
0493.223	.287	.289 ✓	9.00 ✓
0506.832	.810	.812 ✓	8.95 ✓
0556.166	.523	.524 ✓	9.00 ✓
0576.580	1.256	1.256 ✓	8.90 ✓
0600.396	.278	.277 ✓	9.00 ✓
0608.902	.639	.638 ✓	9.00 ✓
	.743	.742 ✓	8.98 ✓
	.799	.798 ✓	8.98 ✓
0641.224	.506	.504 ✓	8.98 ✓
0726.282	1.571	1.570 ✓ -131	← 9.18 ✓
27.983			
	.687	.686	8.95

9.00 8.95	AC	16730	September 14, 1915	66	2420755.607	1000	607	2
8.90 8.95		16741	" 15	60	0756.693	1000	693	
9.00 8.95		16797	" 30	60	0771.625	1000	625	
8.95 8.95		16833	October 11	66	0782.784	1000	784	
9.00 9.00		16880	" 24	72	0795.819	+001	820	
8.95 9.00		16944	November 6	61	0808.831	+001	832	
9.00 8.95		17126	December 16	66	0848.494	+002	496	
8.95 8.95		17267	January 29, 1916	60	0892.578	+002	580	
9.00 9.00		17303	February 10	60	0904.534	+001	560	
9.00 9.00		17460	March 30	60	0953.534	1000	534	
9.00 9.00		17515	April 12	60	0966.750	-001	749	
Poor		17738	July 29	64	1074.654	-002	652	
9.00 9.00		17776	August 13	48	1089.821	-001	826	
9.00 8.95		17789	Aug 15	81	1091.696	-001	695	
9.00 9.00		17885	Sept. 14	69	1121.694	1000	694	
9.00 9.00		17892	Sept. 16	84	1123.774	1000	774	
9.00 9.05		17918	" 21	60	1128.636	1000	636	
9.00 8.95		18049	October 24	42	1161.575	+001	576	
8.95 8.95		18078	" 28	62	1165.657	+001	658	
8.95 9.00		18129	November 7	51	1175.679	+001	680	
8.90 8.95		18296	December 13	60	1211.502	+002	504	
omit		18348	" 26	620?	1224.408	+002	657	
8.95 9.00		18357	" 28	60	1226.823	+002	825	
8.95 8.95		18505	February 2, 1917	10	1262.553	+002	555	
8.95 8.95		18506	" 2	10	1262.566	+002	568	
9.00 9.00		18507	" 2	10	1262.599	+002	601	
8.85 8.90		18508	" 2	35	1262.618	+002	620	
		19314	10					
9.20 9.2		18533	Oct. 10	21	1270.563	+001	543	

		Phase Corr. for Helio. T	Mean Magn
20755.201	.406	.406✓	8.98✓
0756.903	1.492	1.492✓ -209 ←	8.98✓
0770.512	1.113	1.113✓	8.98✓
0782.420	.364	.364✓	8.95✓
0794.328	1.491	1.492✓ -209 ←	9.00✓
0807.937	.894	.895✓	8.98✓
0847.064	1.430	1.432✓ -269	8.98✓
0891.294	1.284	1.286✓	8.95✓
0903.202	1.357	1.358✓	9.00✓
0952.536	.998	.998✓	9.00✓
0966.145	.605	.604✓	9.00✓
1073.318	1.336	1.334✓	—
1088.628	1.193	1.192✓	9.00✓
1090.330	1.366	1.365✓	8.98✓
1120.951	.743	.743✓	9.00✓
1122.652	1.122	1.122✓	9.00✓
1127.755	.881	.881✓	9.00✓
1160.077	1.498	1.499✓ -202 ←	8.98✓
1165.781	.476	.477✓	8.95✓
1175.388	.291	.292✓	8.98✓
1211.112	.390	.392✓	8.98✓
1223.020	1.635 -066	—	—
1224.722	1.448 -253	—	—
1226.423	.400	.402✓	8.98✓
1262.147	.406	.408✓	8.95✓
	.419	.421✓	8.95✓
	.452	.454✓	9.00✓
	.471	.473✓	8.88✓
68.952	1.590	1.591✓ -110 ←	9.20✓
1270.653	1.611 -111	—	—

2

		Phase Cor. for Helio. T	Mean Magn.
21272.358 ⁴	.448	.449 [✓]	8.90 [✓]
1282.561	.242	.243 [✓] ←	9.00 [✓]
1311.481	1.126 1.108	1.108 [✓]	8.98 [✓]
	1.141 1.121	1.121 [✓]	8.98 [✓]
1313.182	1.136	1.136 [✓]	8.95 [✓]
1364.217	.486	.484 [✓]	8.98 [✓]
1481.597	1.125	1.124 [✓]	8.82 [✓]
1491.804	.946	.946 [✓]	—
1522.425	.136	.137 [✓] ←	Omit —
	.147	.148 [✓] ←	Omit —
	.185	.186 ←	Omit —
	.476	.477 [✓]	8.92 [✓]
1539.436	1.122	1.123 [✓]	8.95 [✓]
1541.137	1.222	1.223 [✓]	
1544.546			
1578.563	.189	.191 [✓] ←	9.00
1607.483	.385	.387 [✓]	9.00 [✓]
1632.000	.741	.742 [✓]	
1660.219	1.498	1.499 [✓] -202 ←	8.98
1661.920	1.091	1.091 [✓]	9.00 [✓]
1675.529	.658	.657 [✓]	8.95 [✓]
1718.058	1.587	1.585 [✓] -116 ←	9.20 [✓]
1769.093	1.520	1.518 [✓] -183 ←	8.98
1786.104	.387	.385 [✓]	9.00 [✓]
1796.311	.690	.689 [✓]	
1820.128	.728	.727 [✓]	
1843.944	.506	.507 [✓]	8.95 [✓]
1883.070	.175	.176 [✓] ←	8.95
1908.588	.239	.240 [✓] ←	8.90 [✓]
1910.289	.750	.752 [✓]	8.98 [✓]
21929.00180			

21778 short meteor trail?

Exp. J. D.

✓

9.10	905	21009	January 26, 1919	60	2421985.702	+002	704
905	910	21109	February 10, "	56	2000.560	+001	.561
900	9.05	21136	" 12, "	58	2002.807	+001	.808
93	92	21310	March 26, "	60	2044.755	000	.755
		21378	April 23, "	64	2072.681	-001	.680
895	895	21457	May 19, "	60	2098.728	-002	.726
895	900	21473	" 27, "	64	2106.607	-002	.605
		21551	June 22, "	60	2132.692	-002	.690
9.00	9.00	21617	July 23, "	64	2163.606	-002	.604
9.00	9.00	21645	" 29, "	63	2169.746	-002	.744
895	895	21703	August 16, "	60	2187.695	-001	.694
9.00	9.00	21748	" 26, "	69	2197.667	-001	.666
895	900	21778	Sept 4, "	60	2206.793	-001	.792
890	895	21889	October 8, "	67	2240.629	000	.629
890	890	21927	" 20, "	65	2252.683	+001	.684
895	895	21934	" 22, "	67	2254.541	+001	.542
900	900	21935	" 22, "	75	2254.639	+001	.640
895	900	22061	December 3, "	65	2296.681	+002	.683
895	895	22062	" 3, "	60	2296.729	+002	.731
895	900	22107	" 17, "	58	2310.825	+002	.827
905	910	22225	January 10, 1920	60	2334.672	+002	.674
900	895	22284	" 18, "	36	2342.725	+002	.727
900	900	22327	" 30, "	57	2354.786	+002	.788
900	900	22988	October 15, "	62	2613.696	+001	.697
895	895	23024	" 29, "	66	2627.866	+001	.867
900	900	23026	Nov. 1, "	77	2630.541	+001	.542
895	895	23027	" 1, "	54	2630.620	+001	.621
895	895	23029	" 3, "	91	2632.523	+001	.524

Phase
Corr. for Helio. T Mean
Magn.

21985.14008	.562	.564 ✓	9.08 ✓
2000.451	.109	.110 ✓ ←	9.08 ✓
2.152	.655	.656 ✓	9.05 ✓
44.681	.074 ←	.074 ✓ ←	9.25 ✓
71.899	.782	.781 ✓	
97.417	1.311	1.309 ✓	8.95 ✓
2105.922	.685	.683 ✓	8.98 ✓
31.440	1.252	1.250 ✓	
62.061	1.545 -1.56	1.543 -1.58 ✓ ←	9.00 ✓
2163.762			
68.865	.881	.879 ✓	9.00 ✓
87.578	.117	.116 ✓ ←	8.95 ✓
96.084	1.583 -1.18	1.582 -1.19 ✓ ←	9.00 ✓
97.785			
2206.291	.502	.501 ✓	8.98 ✓
40.314	.315	.315 ✓	8.92 ✓
52.222	.461	.462 ✓	8.90 ✓
53.923	.618	.619 ✓	8.95 ✓
	.716	.717 ✓	9.00 ✓
2296.452	.229	.231 ✓ ←	8.98 ✓
	.277	.279 ✓	8.95 ✓
2306.659	1.166	1.168 ✓	8.98 ✓
33.878 ✓	.794	.796 ✓	9.08 ✓
42.384	.341	.343 ✓	8.98 ✓
54.292	.494	.496 ✓	9.00 ✓
2612.868	.828	.829 ✓	9.00 ✓
26.477	1.389	1.390 ✓	8.95 ✓
29.880	.661	.662 ✓	9.00 ✓
	.740	.741 ✓	8.95 ✓
31.581	.942	.943 ✓	8.95 ✓

84

25141	3462.881	+001	Corr. .882 .924	3461.747	1.135 ✓ Corr. 1.178 ✓ Phae
25255	3557.618	-002	.616 .658	3557.012	.604 ✓ .646 ✓

900 900 AC	23030	November 3, 1920	68	2422632-623	+001	624
890 895	23317	Jan. 23, 1921	66	2713.701	+002	703
900 900	23635	April 19, "	62	2799.781	-001	780
895 900	23805	June 16, "	70	2857.637	-002	635
915 915	23806	" 16, "	60	2857.723	-002	721
705 905	23883	July 26, "	64	2897.793	-002	791
Prv	24031	Aug. 27, "	50	2929.699	-001	698
890 895	24142	Sept. 24, "	70	2957.629	000	629
895 895	24210	Oct. 7, "	86	2970.694	000	694
895 895	24241	" 13, "	65	2976.712	+001	713
900 900	24248	" 14, "	70	2977.533	+001	534
900 900	24323	" 27, "	70	2990.796	+001	796
900 895	24551	Dec. 31, "	56	3055.630	+002	632
omit	24594	Jan. 22, 1922	180	3077.797	+002	744
900 900	24606	" 26, "	10	3112.562	+002	564
900 900	24612	" 27, "	86	3082.522	+002	524
omit	24613	" 29, "	149	3084.734	+002	736
p.121 24	24651	Feb. 28, "	60	3109.846	+001	847
omit	24652	" 24, "	121	3110.520	+001	521
900 900	24657	" 28, "	60	3114.524	+001	525
Est. 24895 895 25080	25087	Jan. 19, 1923	178	3437.445	+002	472
93 ent. h. 121	25087	Jan. 19, 1923	178	3439.549	+002	513
94 min. Table	25141	Feb. 11, "	124	3462.902	+001	902
895 895	25154	" 18, "	120	3468.875	+001	876
904 895	25255	May 17, "	120	3557.422	-002	244
895 895	25555	June 16, "	128	3587.586	-002	
Prv	25559	" 22, "	61	3593.624	667 -002	
omit	25571	July 10, "	60	3611.633	636 -002	
omit	25578	" 14, "	65	3615.581	-002	
Black	25578	" 14, "	65	3615.581	-002	
p.121 24668				3119		

		Phase Corr. for Helio. T	Mean Magn
22633.282	31.581 1.042	1.043✓	9.00✓
2713.237	.464	466✓	8.92✓
2799.996	1.486 -215	1.485✓ -216✓	9.00✓
2856.134	1.503 -198	1.501✓ -200✓	8.98✓
2857.835	1.589 -112	1.587✓ -114✓	9.15✓
96.962	.831	829✓	9.05✓
2929.284	.415	414✓	—
56.502	1.127	1.127✓	8.92✓
70.112	.582	582✓	8.95✓
75.215	1.497	1.498✓ -203	8.95✓
76.916	.617	.618✓	9.00✓
90.526	.269	270✓	9.00✓
3055.170	.460	462✓	8.98✓
77.285	^{.457} 875.514	459✓	—
80.687	.875	877✓	9.00✓
82.388	.134	.136✓	9.00✓
84.089	.645	.647✓	—
3109.607	239	240✓	—
	913	914✓	—
13009	1.515 -186	1.516 -185✓	9.00✓
14.710	^{1.242} 3436.230 { 1.283	^{1.244} 1.285	895-895✓
36.825	1.618 -083	1.620 -081	9.35
38.524	37931	1.156	8.95-895✓ see above
62.343	39.132	1.324	8.98✓
3468.552	61.747	1.324	8.95-895✓
3557.012	0.627	6	8.95-895✓
85.932	1.654 -047	1.654 -047	Too poor.
3587.633	0.888 -931	.976	—
92.736	^{9.163} 184 185	.228	—
3611.449			—
3614.851	0.730		—

) inner
- cyfours

86

25648 Too poor

Most of these Pan plates
are poor or black or trailed.

				Exp			
900 900 AC	25582	July 15, 1924	52	24239	82 [✓]	580 [✓]	-002 .578
900 900	25583	July 15, 1924	64	3998	82 [✓]	.637 [✓]	-002 .635
900 895	25606	" 26, "	65	3993	7 [✓]	.559 [✓]	-002 .577
900 900	25608	" 27, "	65	3994	6 [✓]	.641 [✓]	-002 .659
895 895	25610	" 28, "	65	3995	7 [✓]	.688 [✓]	-002 .686
Omit	25611	" 29, "	65	3996		.667	-712 -002
Print, bal	25613	August 1, "	109	3999	69 ³	.672 [✓]	-002
895 895 ^{image}	25615	" 2, "	66	4000		.674 [✓]	-002 .672
895 895	25619	Sept. 3, "	63	4032	59 ²	.676 [✓]	-001 .598 [✓]
895 900	25620	" 3, "	70	4032	65 ⁴	.735 [✓]	-001 .653
895 * 895	25642	" 27, "	60	4056	51 ⁹	.511 [✓]	-585 000
905 * 905	25646	October 3, "	60	4062	52 ⁹	.521 [✓]	-616 000
	25653	" 10, "	60	4069	51 ⁸	.563 [✓]	-610 000
895 895 3 eff	25655	" 17, "	60	4076	56 ³	.564 [✓]	-657 +001

				Corr. m.N.T.	min	Corr. Phase	Mean Magn.
One image	25642	4056.518	000	.518	4055.452	1.066	
		.560		.560		1.108	
		.584		.584		1.132	
One image	25646	4062.529	000	.529	4062.256	.273	
		.572	000	.572		.316	
		.595	000	.595		.339	
895 895	25653	4069.516	000	.516	4069.061	.455	8.95
895 895		.561		.561		.500	8.95
895 895		.587		.587		.526	8.95
895 895	25655	4076.561	+001	562	4075866	.696	8.95
895 895		.603		.604		.738	8.95
895 895		.627		.628		.762	8.95

			Phase		
			Corr. for Helio. T		Mean Magn.
8	23982.302	.278	.276✓		9.00✓
35		.335	.333✓		9.00✓
17	92.509	1.0 ⁷ ₈₀	1.068✓		8.98✓
9	94.210	4 ⁵ ₈₁	449✓		9.00✓
6		1.478	1.476✓	.225 ←	8.95✓
	95.911	0.7 ⁸ ₅₆	754✓	omit	—
	99.314	801.358 379	377✓	omit	—
2	3999	.358 1.360	1.358✓	or average?	8.95✓
1	4001.015-	1.040 .955 ⁶	954✓		8.95✓
3	31.636	1094 1.018	1.017✓		8.98✓
	4055.452	1.067		apparently	8.95✓ exp.
0	62.256	.273 .315 .360			9.05✓
0	69.061	.457 .502 .549			
1	75.866	.697 718 .785			8.95✓

an
agn.95
95
95
95
95
95

88

W Mrs. Minoris

A K plates - Pole region

No A K between 1908 & 1911?

n.g.
PM, not Sel.
Time given GMT

Prov A K	8	July 8, 1908	35	2418131.287	.596	-002	✓
890 895	9	" 8 "	35	8131.319	.647	-002.645	✓
Prov	10	" 8 "	33	8131.398	.685	-002	
895 895	11	" 30 "	35	8133.328	.589	-002.587	✓
895 900	12	" 10 "	35	8133.326	.633	-002.632	✓
895 900	19	August 1? "	42	8155.563		-002.561	✓
9.15 9.10	22	" 15 "	63	8169.550		-001.549	✓
9.00 9.05	23	" 15 "	60	8169.623		-001.622	✓
Prov	30	Sept 19 "	157	8204.583		000	
895 895	31	" 19 "	120	8204.663		000.684	✓
Prov	758	June 18, 1911	49 *	9206.341	.590	-002.588	
895 895	759	" 19 "	36	9207.333	.585	-002.583	
895 895	760	" 19 "	37	9207.385	.636	-002.634	
890 895	761	" 19 "	33	9207.426	.678	-002.676	
	762	" 20 "	33	9208.	.611	-002.609	
895 895	764	" 20 "	33	9208.	.694	-002.692	

time given P.M.

		Corr. Phase	Mean Magn.
18130.31152			—
2.645✓	132.013	1.333✓	8.92✓
2			—
2.587✓		1.574✓ -127✓	8.95✓ ←
2.632✓		1.619✓ -082✓	8.98✓ ←
561✓	8154.12756	1.433✓ (-268)✓	8.98✓
549✓	55.82872	.111✓	9.12✓ ←
622✓	8169.438	.184✓	9.02✓ ←
684✓	8203.461	—	—
588✓		1.223✓	8.95✓
583✓	9205.445	1.143	—
634✓		.437	8.95✓
676✓	9207.146	.488	8.95✓
609✓		.530	8.92✓
692✓	9208.847	1.463 -238	
		1.546 -155	8.95✓

90

W Ursae Minoris

Too far AX 419 16124

but
prominence

AX Plates - Pole Region

							Corr. for H.T. ✓	Corrected
895 895 AX	35	February 10, 1923	75	242	3461.569	✓	+001	.570
900 9.00 - 95	159	April 20, 1923	10		3471.620	✓	-001	.621
9.00 9.10		July 23, "	10		3624.658	✓	-000	.656
895 895	249	October 3, "	10		3696.852	✓	000	.851
8.90 8.95	276	" 17, "	10		3710.578	✓	+001	.563
895 895	277	" 17, "	10		3710.626	✓	+001	.610
8.90 8.8	244	Oct 2 1923	10		3695.614	✓	.000	.614

1922phae.proj.1195W

see p. 103

	Phase Uncorr.		Corr. Phase for Helio. T	Mean Magn.
23460.046	1.523 - .178	1.524	- .177	8.95 ✓
3470.253	1.369 - .332	1.368	- .333	9.00 ✓
3623.357	1.299	1.299		9.00 ✓
3696.507	.344	.344		8.95 ✓
3710.116	.447	.447		8.92 ✓
		.494		8.95 ✓
3694.806		.808		8.85 ✓
3696.507				

W Ursae Minoris

AY Plates - Pole Region

T

Br	AY	66	May 13, 1924	Exp.	2423919.213	692	✓
		234	Sept. 4, "	62	24033	?	-002
Br		782	Sept 8-9 1925	20	24402.213		-001
		778	Sept 1-2 "		Too poor		-
9.0		782	Sept 8-9 "	20	24402.		-001
f 10289		916	Jan 3-4 1926	66	4519.464	492	+002
Br		917	Jan 3-4		4519.547		+002
Br		918	Jan	Poor			
Br		919		Poor			
		920		Too poor			
		952		Too poor			
		953		Too poor			
		954		Too poor			
		955	" "	" "			
		1051	" "	" "			
		1084	" "	" "			

Br. 1085 June 29-30 Sept. 4696.580 -002
 .598
 .612

Images Read S to N when 2 or 3	AY	J.D.	Corr. on Helio.	Corrected	Comp. Min.	Phase Corrected	Mean Magn.
9.00 9.00	66	3919.632	-002	.630	23919.359	.271	9.00
9.00 9.00	"	661		.659		.300	9.00
8.95 9.00	234	4033.537	-001	.536	4033.337	.199	8.98
9.0 9.00	782	4402.692	-001	.691	4402.488	.203	9.00
8.95 8.95	916	4519.492	+002	.494	4518.167 4519.868	1.327	8.95
f. 102 ^{mean} 8.90	917	4519.547	+002	.549		1.382	
8.95 8.90	1085	4696.580	-002	.578	4695.088 4696.789	1.490	8.92
9.20 9.3	omit	.598		.596		1.508	9.25
9.4 9.5		.612		.610		1.522	9.45

S to N. Magns. are doubtful, poor, black plate.

23919.359

4033.337

4402.488

4400.787

4518.162

4519.868

4695.088

4696.789

lean
log.short
exposures

00✓

00✓

98✓

← (62)

00✓

← 20^m

95✓

8.92✓

← 30^m

9.25✓

← 20

9.45✓

← 20

W. Urs. Min. Heliozentrische Zeit. - Geg. Zeit.
See Geschichte und Lit. des Lichttrichsebs, Vol. 3

Current Min. to Dec. of Day, Table III, p. 136,
Geschichte p. 118
h. 118.
same Vol. 3

H. Urs. Min $1635^m + 86^{\circ} 26'$

	^m	^d	Dates change		^m		
Jan 0	+2.8	+0.02		Oct 7	+0.5	.000	Oct 11} v
10	2.7	.002		17	+1.0	+0.01	
20	2.5	.002		27	1.4	.001	
²⁵ 30	^{2.4} 2.3	.002		Nov. 6	1.8	.001	^{.00126} Nov. 14} v
Feb. 9	1.9	.001	Feb 3} (0013) 4}	16	2.2	.001	^{.00154}
19	1.5	.001		26	2.5	.001	^{.00175}
Mar. 1	1.1	.001	Mar 1} v	Dec. 6	2.7	.002	
11	0.7	+0.001	^{.00049}	16	2.8	.002	
21	+0.2	.000		26	2.8	.002	
31	-0.3	.000	Apr. 8} v	36	+2.8	+0.02	
Apr. 10	-0.8	-0.01					
20	-1.3	.001					
30	1.7	.001					
May 10	2.1	.001	May 11} v				
20	2.4	.002	^{.00189}				
30	2.6	.002					
June 9	2.8	.002		d	+0.02	Jan. 0 to Feb. 3	
19	2.9	.002			+0.01	Feb. 4 to March 10	
29	2.9	.002			.000	Mar. 11	April 8
Jul. 9	2.8	.002			-.001	April 9	May 11
19	2.7	.002			-.002	May 12	August 9
29	2.5	.002			-.001	Aug. 10	Sept. 12
Aug 8	2.2	.001	Aug 9} v		.000	Sept. 13	October 11
18	1.8	.001			+0.01	Oct. 12	Nov. 14
28	1.4	.001			+0.02	Nov. 15	
Sept. 7	1.0	-.001	Sept 12} v				
17	-0.5	.000					
27	0.0	.000					

Jan 30 2.30
 Feb 1 2.26
 2 2.22
 3 2.18 001526 ✓
 4 2.14 001498
 5 1.0 -147
 6 0.6 -1442
 7 2.02 001444
 8 1.98 00138
 Feb 9 1.94 001358

1-1.06 mar 2
 Mar 2 1.03
 3 0.98
 4 0.90
 5 0.86
 6 0.82
 7 0.78
 8 0.74 000518 ✓
 9 0.7 00049 ✓
 10 0.7 00049 ✓
 11 0.7 00049 ✓

mar. 31 -0.3 00021

apr. 1 0.35
 2 0.4
 3 0.45
 4 0.5
 5 0.55
 6 0.6
 7 0.65
 8 0.7 00049 ✓
 9 0.75 000525 ✓
 10 -0.8 00056

May 10 2.1 00147 ✓
 11 2.13 001491 ✓
 12 2.16 00151 ✓
 13 2.19
 14 2.22
 15 2.25
 16 2.28
 17 2.31
 18 2.34
 19 2.37
 20 2.4

July 29 2.5 00175
 30 2.47
 31 2.44

Aug 1 2.41 001687
 2 2.38
 3 2.35
 4 2.32 001624
 5 2.29
 6 2.26
 7 2.23
 8 2.2 00154

Aug 8 2.2 00154
 9 2.16 001512 ✓
 10 2.12 001484 ✓
 11 2.08
 12 2.04
 13 2.00
 14 1.96
 15 1.92
 16 1.88
 17 1.84
 18 1.8

Sept 7 1.0 0007
 8 0.95
 9 0.9 00063
 10 0.85
 11 0.8
 12 0.75 000525 ✓
 13 0.7 00049 ✓
 14 0.65
 15 0.6
 16 0.55
 17 0.5

Oct. 7 0.5
 8 0.6
 9 0.6
 10 0.7 00049 ✓
 11 0.75 000525 ✓
 12 0.8
 13 0.8
 14 0.9
 15 0.9
 16 1.0 0007

Nov. 26 2.5 00175
 27
 28
 29
 30

Dec 1 2.6
 2
 3
 4
 5
 6 2.7

Nov. 16 2.2 00154
 17 2.23 00156
 18 2.26
 19 2.29
 20 2.32
 21 2.35
 22 2.38
 23 2.41
 24 2.44
 25 2.47
 26 2.5

Nov. 6 1.8
 7
 8 1.88
 9
 10 1.96
 11
 12 2.04
 13

Nov. 14 2.12 001484 ✓
 15 2.16 001512 ✓
 16 2.2 00154

made independently and
ent. on another
sheet - Copied here

Minima of W Urs. Min.

on Plates

(Including some that on
estimate proved nearer Max.)

2 nd est.	1 st Est. Magn.	AC Plates	Exp.	J.D.	Correction Helio- Time
9.5	9.3	AC202 February 14, 1899	60 ^m	2414700.823	+001
9.2	9.2	620 Dec. 24, 1899	64	5013.852	+002
9.4	9.4	674 January 10, 1900	360	2415030	+002
9.6	9.8	716 February 15, "	62	5066.554	+001
9.5 ^{Reject} Feb. 1 9.7	9.4	907 July 1, "	8	5202.629	-002
9.4	9.2	915 July 6, "	56	5207.815	-002
9.8	9.9	1436 May 3, 1901	63	5508.789	-001
9.9	9.8	1513 June 8, "	89	5544.583	-002
9.9	9.7	1535 " 13, "	82	5549.671	-002
9.4	9.5	1585 " 30, "	73	5566.583	-002
9.3	9.3	2146 January 3, 1902	68	5753.718	+002
9.9	9.9	2286 February 6, "	75	5756.815	+001
9.6	9.6	2444 March 31, "	70	5840.591	000
9.3	9.3	2970 November 2, "	68	6056.673	+001
9.7	9.7	3001 " 19, "	118	6073.624 or 645	+002
9.5?	9.5	3149 January 9, 1903	58	6124.565	+002
9.3	9.2 or 9.3	3633 May 15, "	61	6250.624	-002
9.8	9.7	3654 " 20, "	65	6255.609	-002
9.9	9.9	3798 August 1, "	80	6328.771	-002
9.5	9.3	4701 March 4, 1904	78	6544.753	+001
9.5	9.3	4769 " 26, "	69	6566.878	000
9.9	10.0	5081 July 20, "	62	6682.618	-002
10.0	9.9	5166 August 23, "	61	6716.629	-001
9.9	9.8	5356 October 13, "	79	6767.690	+001
9.0 9.0 = 5441	9.3	5465 November 1, "	62 82	6782.472	+001
9.3	9.3	5465 November 1, "	62	6786.489	+001
9.3	9.0?	6052 Feb. 23, 1905	56	6900.495	+001

* McLaughlin's formula =
 $2422813.605 + 1.70116 E$

Computed by Machine

β

Corr. for Helio. T	Computed Minima	Phase including Corr. for Helio. T.	Mean Magn.
.824	14700.77296	.051	9.40
854	5013.78640	.068	9.20
poor trailed images Reject, Exp of this band = 4 th moonlight test plate			
.555	5066.52236	.033	9.70
.627	5202.61516	.012	9.45
.813	5206.01748	.094	9.30
.788	5207.71864		
.581	5507.12280	-5508.82396	1.665 -.036
.669	5544.54832	-5547.95064	.033
.581	5549.65180		.017
.720	5564.96224		1.619 -.082
.816	5566.66340		
.591	5752.08984	-5753.79100	1.630 -.071
.674	5787.81420		0.002
.647	5840.55016		.041
.567	6056.59748		.077
.622	6073.60908		.038
.607	6022.94272		1.624 -.077
.769	6124.64388		.092
.754	6250.52972		1.675 -.026
.879	53.932		1.687 -.014
.616	6255.63320		1.625 -.076
.628	6327.08192		1.633 -.068
.691	28.78308		1.693 -.008
.490	6543.129		1.682 -.020
.496	44.836		.009
	6565.244		1.181
	66.945		.095
	6680.923		.123
	82.624		
	6714.946		
	16.64756		
	67.68236		
	84.29164		
	86.39512		
	6900.37284		

8 Ton for?

22 but Min.
4307 December 5, 1903 64

16240.709 +002.711

Minima

	ac			Exp.		✓
9.3	9.2 ac	4150	January 7, 1906	67	2417218.578	+002.580
9.4	9202	7268	Feb. 10, "	56	7252.580	+001.581
9.8	98	7280	" 15, "	68	7257.629	+001.630
9.2	92	7306	" 20, "	57	7262.622	+001.623
9.7	96	7435	April 2, "	55	7303.594	000.594
9.5	95	8641	July 29, 1907	58	7786.616	-002.614
9.9	99	8710	August 20, "	62	7808.791	-001.790
100	100	8791	Sept. 25, "	51	7844.495	000.495
omit	—	9603	July 5, 1908	—	2 exp. cannot identify -002	
probably under Max.						
94	9.5	10442	April 22, 1909	61	8419.544	-001.543
9.7	9.8	10974	October 26, "	60	8606.650	+001.651
9.0	91092	11086	Nov. 29, "	60	8640.541	+002.543
-Ton for	92?	11598	April 20, 1910	15	8782.628	-001.627
97	97	12433	July 7, 1911	50	9225.785	-002.783
99	99	12612	October 7, "	62	9317.714	000.714
9.8	98	12664	" 24, "	65	9334.686	+001.687
9.3	9.1	13398	October 29, 1912	70	9705.474	+001.475
9.9	9.8 13514	14089	November 27, "	103	9734.475	+002.477
99	99	14089	June 14, 1913	61	9933.576	-002.578
97 about	97	14112	" 24, "	60	9943.693	-002.691
93	95?	14472	October 28, "	30	20069.564	+001.565
9.5	9.5	14503	Nov. 4, "	60	0076.466 ⁵⁰¹	+001.502
9.6	9.7	14555	" 14, "	75	0086.571	+001.572
9.3 9.4	9.8	15577	October 5, 1914	60	0411.483	000.483
99	97	15578	" 5, "	81	0411.589	000.589
9.1	90?	15747	Nov. 20, "	65	0457.580	+002.582
9.5	9.4	15884	Dec. 17, "	68	0484.608 ⁶⁵³	+002.655
9.7	9.8	16249	March 12, 1915	76	0569.738	000.738

Pred.
min
16240.322

2387

0.389

Computed
Minima

Phase

Mean
Mag.

1 7218.48976	.090	9.25
52.51296	.068	9.30
57.61644	.014	9.80
61.01876	1.604 -097	9.20
62.71992	.046	9.65
7303.54776	1.638 -063	9.50
7784.97604	1.699 -002	9.90
86.677	1.680 -022	10.00
7807.091		
8.79228		
42.81548		
44.51664		

very poor

8419.50872	.034	9.45
8606.63632	.015	9.75
38.85836	1.585 -117	9.10
40.65952		

8781.85580	.771	
83.55696	1.626 -076	9.70
9224.15749	1.694 -007	9.90
25.85856	1.655 -046	9.80
9316.02004	1.590 -111	9.20
17.721	1.673 -028	9.85
9333.03164	.037	9.90
34.73280	1.644 -057	9.70
9703.88452	1.632 -069	9.40
03.58568	.063	9.50

very black

9732.804	1.628 -074	9.65
34.505	1.617 -084	9.35
9933.541	.022	9.80
42.04692	.094	9.05
43.74808	1.639 -062	9.45
200 66.23160	1.664 -037	9.75
67.93276		
69.63392		
76.43856		

very poor

84.944		
86.64552		
0409.86592		
11.567		
57.498		
83.01580		
84.71696		
0566.37264		
68.07386		
69.77486		

Minima

				Exp. 242			
91	91+9220C	16576	July 10, 1915	60	0689.771	-002	.769
9.2	91+9.2	16984	Nov. 13, "	65	0815.556	+001	.557
9.0	90?	17015	" 18, "	48	0820.650	+002	.652
9.8	99	17609	May 19, 1916	66	1003.564	-002	.562
10.1	99	17690	July 27, "	31	1042.689	-002	.687
9.3	92	17943	Sept. 27, "	66	1134.643	000	.643
9.5, 9.3	91	18227	Nov. 22, "	62	1190.791	+002	.793
9.9	98	18464	January 19, 1917	61	1248.580	+002	.582
9.2	90	18534	February 10, "	21	1270.568	+001	.569
10.2	100	18670	March 16, "	62	1304.667	000	.667
9.6	98	18779	April 14, "	60	1333.628	-001	.627
9.2	94	19264	October 11, "	54	1513.821	000	.821
8.9	8.8	19307	" 20, "	87	1522.610	+001	.611
9.5 not found	92	19453	November 12, "	62	1545.762	+001	.763
9.5 9.8	(omit) 92	20063	April 25, 1918	61	1709.625	-001	.624
10.1	99	21398	April 29, 1919	60	1713.707	-001	.706
9.9	98	21972	November 2, "	67	2265.805	+001	.806
9.4	92	22418	February 19, 1920	72	2374.644	+001	.645
9.5	96	22535	March 24, "	86	2408.667	000	.667
-Torpe	95	22786	July 28, "	70	2534.728	-002	.726
9.3	94?	22812	August 19, "	64	2556.808	-001	.807
9.8	99	23140	Dec. 16, "	58	2675.732	+002	.731
see p. 123	9.8	24616	January 30, 1922	?	3085.733		
9.2	9.2	24650	February 23, "	72	3109.705	+001	.706
9.4	9.4	24653	" 24, "		3168.738	C.C.	
9.9	9.9	24668	March 5, "	187	3119.839	+001	.840
9.5	95	25163	February 22, 1923	134	3473.738	+001	.739
9.5 *	98?	25644	October 1, 1924	?	4060.589	000	.589
h. 84		25084					

Computed Minima	Phase	Mean Mag.
20688.85616	.913	9.15
90.55732		
0814.742 ^v	.815	9.20
16.44316	.807	9.00
19.845		
21.54664	1.692 - .009	9.85
1001.86969	1.691 - .010	10.00
3.57076		
1040.99628	.083	9.25
42.697		
1134.56006	.095	9.30
1190.698	.044	9.85
1248.53780	1.617 - .085	9.10
1268.95172	1.692 - .009	10.10
70.65288		
1302.97492	.031	9.70
1304.676	1.603 - .098	9.30
1333.59580	.186	8.85
1512.21760	1.253 omit	h.80
1513.91876	.072	9.65
1522.42456	.002	10.00
1544.53964	1.676 - .025	9.85
46.24080	1.640 - .061	9.30
1709.55216	1.639 - .062	9.55
2078.70388	.111	9.5 <i>Omit</i>
2264.13032	.077	9.35
2265.83148	1.634 - .077	9.85
2373.00456	1.668 - .023	error in decimal in record bk.
74.70572		
2407.02776	.094 ^v	940
2408.72892	.120 ^v	<i>omit</i>
2534.61476		
2556.72984		
2674.10988		
75.81104		
3084.089		
85.79060		
3109.60684		
3118.113		
3119.81380	h.121	
3473.65508	.084	
4060.55528	.034	

* Reject 2 edfs but 1 image
Decimal in doubt. See

record bk.

Phase detected to be small - in other table.
ac 25087 Jan. 19, 1923 10^m 3439.549

Minima

98	98	ac 25650	October 6, 1924	242 JD	4065.611	.000	Corr for Helio.	Minima	Phase
102:	10.3:							24063.958	1.653
99.3	99.3							24065.659	1.693
96	98	25665	Oct. 23, 1924	4082	605.606	9.8	order of		-0
10.0					655.656	10.1	677 short eff.	(is this a real min?)	+0
3 ^d for Jan					686.687			4080.969	1.63
								4082.670	1.68

9.8	9.8	805	Sept 25-26	1925	24419	.497	.000	4419.500	.001
9.8	9.8	806	Sept 25-26	1925	4419	.543	.000		.046

10.2	AY	820	Oct. 5-6, 1925	20 ^m	4429	.703	.000	4428.006	1.697
9.5	94	821	Oct 7-8	"	4431	.479	.000	4431.408	.074
9.0	9.0	826	Oct 12-13	"	4436	.682	+001	4436.512	.178
9.9	9.9	835	Oct 17-18	20	4441	.612	+001	4441.615	.001
99-98-0	882	Nov 20-21	"	26	4475	.578	+002	4475.638	1.643
9.3	95-0			20	"	.636	.638		.000
9405.0	9.5			20	4499	.451	+002	4499.455	.001
9.8-0.6	9.9			20		.481	.483		.028
9.9-1.0	10.2, 101			20		.538	.540		.085

8.9	916	Jan 3-4	1926	4519.	+002				
8.9	917	"	3-4	4519	+002				
8.9	937	"	11-17	4532	.469	+002		4531.777	.694
3 ^d for Jan					.484	.486			.895
					.498	.501			.895

Minima and other plates taken on A.V. plates
which were computed for special Period.

Phase
1.6 53-.048 9.0 AX 27-January 19, 1923 2423439.549 +002 9.0 3439.632
1.93 -008 9.8 28 " 19, " " .649 .651 9.8029 1.632
+018 9.0 905 161 July 25, 1923 10 236.26. 664-002.662 3626.760 1.632
1.637-.064 1.687-.014 017 1.606 -.095

A.V. Plates (the later ones of these were taken
on special computation for W. H. Min.
Minima) J.A. ✓

10.1 9.9 787 Sept 18-19, 1925 20 4412 .692 000 4411.995 000
3 images 863 Nov. 10-11, 1925 4465.
99-10.1 :-1 4465. 448 +001 .449 20 4465.431 .018
98-9.8 :-2 .463 .464 20 .053
97-9.7 :-3 .476 .477 20 .046

97 -004 93-92 864 Nov. 10-11, 1925
90-90 :-1 4465. 496 +001 .497 20 .066
89-8.9 :-2 .540 20 .109
8.9-8.9 :-3 .582 20 .151

882 Nov. 20-21, 1925 p. 102

3-058 9.1 ? 9.3 947 Jan 20-21 1926 20 4536.778 +002 782 4535.179 1.607 -100
10.1 948 " 20-21 20 4536.880 .882 4536.880 .002 .099
Remains 9.9 or 10.0

98 or 9.9 888 Nov. 25-26, 1925 20 4480.738 +002 .749 4480.740 1.700 -001
9.9

90 9.0 1049 May 8-9 1926 4644.739 -001 .738 4644.053 .685 900
91 3 exp. 806 .806 .754 900
836 .835 .782 905

9.2 or 9.1 949 Jan 22-23 20 4538.700 +002 702 4538.581 .121
9.1 or 9.2

2nd Ent.

1926 ^{eff.} ✓
 90-0-6 AY 1050 May 11-12 26 12 49 00 Rain earlier ✓
 20 13 18 00 24647.604 -001.603 4647.455 148 ✓
 20 16 48 00 .622 .621 166 ✓
 89-0-4 89 .767 .766 .311 ✓

Min Phase

Too poor 1051 May 11-12 ✓
 17 57 00 4647 ✓
 18 22 10
 18 42 30

2nd
 9.3-0-6 94 1056 May 14-15 ✓
 20 15 34 00 4650.707 -002.706 4649.157 ✓
 20 17 04 00 .771 .769 1.549 - 152 ✓
 20 18 00 00 .810 .808 1.651 - 089 ✓
 9.0-0-2 91
 8.9-0-1 9.0

1st ✓
 8.9 1063 May 28-29 1841 00 4664.800 -002.798 4664.467 133 ✓
 8.9 Black

12th
 95-0-6 95 1072 June 12-13 15 06 15 ^{eff.} ✓
 20 4679.610 -002.9.0 .608 4678.071 16 ✓
 20 17 11 00 .680 9.3 .688 4679.778 1. ✓
 20 17 32 00 .711 9.5 .709 1. ✓
 93-0-2 93
 90-0-1 9.0

last image is apparently brighter than the others - other stars
 reexam.
 2d image is slightly fainter.

1072

usually

Phase

✓

16,6

311

8

1

—

4

1

1.

728

29

100

cut J.D. Min. & Phase

30	4679.758	9.6	.756	1.680	-.022
20	.776	9.8	.774	1.698	-.003
20	.790	10.2	.788	.016	0.000

$q.6 - 0 - 2$ ⁹⁶ 1074 June 12-13 19 50 00 20 4679.807 $q.7$.805 ^{plate key} .027
 $q.7 - 0 -$ ⁹⁸ assumed 2010 30 20 .821 $q.6$.819 ^{black} .041

$\left. \begin{array}{l} 9.0 \\ 90 \end{array} \right\} 1080 \text{ June } 17-18 \text{ } 1747 \text{ } 20 \text{ } 4684.708 - 002.706 \text{ } 4683.180 \text{ } 1.526 \text{ } 170$

9.30.4 1081 June 19-20 16 24 00 22 46 86.646 - 002 .644 4686.582 .062

81

9.0

8902 0-6 1082 June 19-20 1830 00 20 4686.733 9.1-731 0.149

90 0-2 -89 1850 20 20 .746 9.0 744 .162

90 0-4 -89 1910 40 24 .761² 8.9 759 .178

$1.532 - 170$
 $1.612 - 090$
 $1.633 - 069$

1926 ✓

AY 1083 June 24-25 15 05 00
 Too poor

✓
 Too poor 1084 June 24-25 17 42 00

✓
~~Too poor~~ 1085 June 29-30 15 25 00
 15 55 20
 16 15 50

See p. 92 (include)

9.5 ^{9.3} 1091 July 4-5 ✓ 20 51 00 ²⁰ 47 01 [✓] 789 9.2 787 ^{Min} 4700.191 1.5
 93 - 0 - 9.1 21 11 20 ²⁰ 803 9.3 801 1.6
 92 - 0 - 9.0 21 33 00 20 818 9.5 816 1.6

* 9.5 ^{9.7} 1093 July 11-12 ✓ 19 54 00 ²⁰ 24 08 [✓] 730 9.8 728 ^{4708.691}
~~9.7~~ 20 14 00 ²⁰ 744 9.7 742 0
 9.7 - 0 - 9.9 20 34 45 ²⁰ 751 9.5 756 0.5
 9.8 - 0 - 10.0

Doubtful. Apparently this exp. was cloudy —
 images all very small and about same
 magn. for comp. stars —

$91.0 - 1.2 \text{ AY}$ $1094 \text{ July } 11-12$ $21 \ 51 \ 00$ 24708.002 $1.840 - 90$ $1.845 - 91$ 20808 20823 4708.697 $.111$ $.126$
 $90.0 - 1.89$ 3d exp. not found on plate, even of bright stars,
 assumed probably clouds. May be change of .1 in 2
 exp. of Var.

$1101 \text{ July } 23-24$ $17 \ 40 \ 00$ $20 \ 4720.605$ -002.603 4720.605 4718.904 $1.699 - 002$
 $10.1 - \text{near } 9.9$
 $9.7?$ Plate very poor and black

$9.7 \}$ $1105 \text{ August } 4-5$ $17 \ 51 \ 00$ 23 4732.581 -002.579 4732.513 $.066$
 $9.7 \}$

191
 $1.596 - 106$
 $1.610 - 092$
 $1.625 - 077$

97
 $.031$
 $.045$
 $.059$

Peculiar Object in field

See

ay 1050 May 11-12

1091 July 4-5

See page III

Two images, much alike, diff. in position,
hazy with nucleus,
3 exposures of stars, only 1 image of object.

* — Dr. Fisher saw this.
no conclusion

Also, these
ay 963 street lights and —?
("internal reflections?" Dr. F.)

see one near center

1) spaced like star exposures

2) irregular intensities

3) elongated at right angles, not motion.

ay 952

953

954

955

Too poor

9.7 0-3 962

Feb. 8-9, 1926

20 24555.508

+col

9.5 509

Munira
53.893

9.6 0-6 96

20

.522

9.6 .523

9.5 0-1 94

20

.536

9.7 .537

(NB 1st at top of line)

9.8?

10.0? 0-1 97

Feb. 8-9,

20

4555.556

+col

9.8 .557

9.6 0-3 98

22

.595

10.0 596

20

.651

9.6 652

? 9.2 0-1 92 967

Feb. 13-14

34/6

01

4560.562

+col

563

NB order?
4560.696

8.9 0-2 89

20

581

582

Perhaps
affected by
clouds

? 8.9 0-3 89

20

595

596

Reverse
imagesPoor plate - if images are in
right order,
reversed

9.4

968

Feb. 13-14

20

7 29

4560.619

.620

reversed

9.3

supposed to be 2 exposures, but apparently, 2nd is
spoiled by clouds.

.631

.632

Assumed 1st

Project
2nd
2nd

To be checked if right exp.

Cont. from p. 108

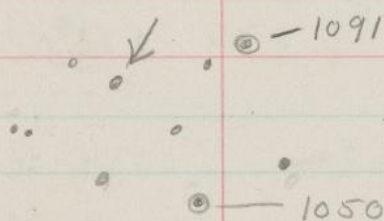
See object round, lazy, black line in center,
found on 1050 and 1091, similar obj.

Phase

1.617 -084

1.631 -070

1.645 -056



N.B. Stars 3 exp.
Object 1

1.665 -036

.003

.059

1049, 1056, 1063, 1072, 1073, 1074, 1080, 1081, 1082, 1093

do not show this but some are proper plates

1.568 -1.33

8.90

1.587 -1.14

8.90

1.601 -1.00

9.20

Plate was
taken opposite
usual direction

from
usual

1.625
-076

1.637 -064

112

89-⁸⁹⁵
 89-⁸⁹⁵
 90-3895

1123

Sept 3

1926 5[✓] 2424762.567[✓]-001.566[✓] Min 24761.43
 10 .573 .572
 20 .584 583

1124

too poor

88-⁸⁸⁰
 10 8.7 880
 20 8.7 880

1125

Sept 3

5 4762.662[✓]-001.661[✓]
 10 .668 .667
 20 .679 .678

98-⁹⁹ 1126
 101-^{10.10.2}
 98-⁹⁸

Sept 7-8, 1926

20 4766.520[✓]-001.519[✓] 24764.83
 20 .535 .534 24766.53
 20 .570 .569

97.
 95.
 94.

1128

Sept 7-8 1926

5 4766.596[✓]-001.595[✓]
 10 .602 .601
 20 .613 .612

1136

Sept 10-11 1926

(20 14 to 20 39)

4769.579[✓]-001.578[✓] 24768.23
 69. 93

1137

Sept 10-11 1926

(20 52 15 to ?)

4769 -001

lin	Phase	
61. 433	1.133	
	1.139	
	1.150	
	1.228	
	1.234	
	1.245	
64. 836	1.683	-0.018
66. 537	1.698	-0.023 ✓
	.032	
	.058	
	.064	
	.075	
68. 238	1.340	
69. 938		

114

90m 91-0-89 } 1139 Sept 10-11, 1926 2424769 ✓
 91 0-91
 9.2-9.2
 0 41 30 to 1-1 30 20 .765 ✓
 1 41 30 to 2 1 30 20 .804 ✓
 2 21 30 to 2 41 30 20 .835 ✓
 Min 24768.23
 24769.93
 831

8.9 } 1147 Sept 14-15, 4773 ✓
 8.9m 90 }
 19 6 to 19 26 20 .519 000 24773.3 41

9.0 } 1148 Sept 14-15 4773 ✓
 9.0 }
 20 6 to 20 26 20 .561 000

Black 1152 Sept 19-20 4778 ✓
 89 }
 89 }
 22 15 to 22 35 20 .636 000 24778.445

90 0 90 } 1153 Sept October 1-2 4790 ✓
 89 0 90 }
 89 0 90 }
 19 35 00 to 19 56 00 21.494 000 24790.353
 19 56 30 20 16 30 20.508 ✓
 20 17 00 20 37 00 20.523 ✓

Phase

238 1.523 -178
939 1.565 -136
1.593 -108

3 3 41 .178

.220

45 .191

53 .141
.155
.170

116

89.89 AY 1157 ✓ October 3-4, 1926 ✓ 2424792-3^{cut.} ✓
 89.89 3 59 00 to 4 20 00 21 .836^{Corr. for Helio. T.} 000 24792.054
 89.89 4 20 30 4 40 30 20 .851
 4 41 00 5 1 00 20 .866

91.90 1158 ✓ Oct. 3-4 ✓ 4792
 91.89 5 10 00 to 5 30 00 20 .885[✓] 000
 5 30 30 5 50 30 20 .899

black 1160 ✓ Oct 4-5 ✓ 4793
 { 92-091092 0 20 00 to 0 40 00 20 .683[✓] 000 24793.755
 { 95-095 0 41 00 1 01 00 20 .697
 { 97-097(096) 1 2 00 1 22 00 20 .711

* very black 1161 ✓ Oct 4-5 ✓ 4793 * Minimum but very poor.
 at Min! 1 31 to 1 51 20 .731[✓] 000 754 Pred.
 99-10.1 9.9 2 00 2 20 20 .752[✓]
 96 doubtful 2 21 2 41 20 .766

images of ft stars do not show in 3d eff. Plate is so fogged that the grades between stars are uncertain. Unfortunately, as it is taken at exact Min. as predicted.

1162 Oct 6-7 ✓ 4795 ✓
 90-0-89 1 11 00 to 1 31 00 20 .713[✓] 000 24795.456
 90-0-89 1 31 15 1 51 15 20 .725[✓]
 90 or 89-90 1 51 45 2 11 45 20 .748[✓]

Phase

154

.782

.797

.812

.831

845

15

1.629 - 0.72

1.643 - 0.58

1.657 - 0.44

1.677 - 0.24

1.698 - 0.03

.011

56

.256

.269

.284

118

Fogged (2)
 94^a 93 - 92
 94 - 93
 95 - 96

1169

Oct. 9-10, 1926 2424798-9

Corr. for Helio. T. Min.

3 4 00 to 3 24 00 20

.782

.000

24797.158

24798.859

3 24 30 to 3 44 30 20

.796

3 45 00 to 4 5 00 20

.810

(2)
 98 - 98
 101 - 100
 99 - 99

1170

Oct 9-10

4798

Exact
 Predicted
 Min.

4 12 00 to 4 33 00 21

.830

.000

4 40

5 00

20

.849

5 0 30

5 20 30

20

.862

Black (2)
 97 - 98
 97 - 101
 96 - 99

1171

Oct 9-10

4798

5 24 30 to 5 44 30 20

.879

.000

5 45

6 5

20

.893

6 5 30

6 25 30

20

.908

Black (2)
 shms many stars
 93 - 93
 96 - 98
 96 - 97

1174

Oct 11-12

4800

20 1 00 to 20 21 00 20

.484

.000

24800.560

20 21 15

20 41 15

20

.497

20 41 30

21 1 30

20

.512

Black (2)
 96 - 95
 102 - 101
 99 - 99
 98

1175

Oct 11-12

4800

21 5 30 to 21 25 30 20

.528

.000

Exact Pred.
 Min.

21 49

22 9

20

.558

22 10

22 30

12

.573

Phase

1.624 -077
1.638 -063
1.652 -049

1.672 -029
1.691 -010
.003

.020
.034
.049

1.625 -076
1.638 -063
1.653 -048

1.669 -032
1.699 -002
.013

98⁰ 98⁰ AY 1176
 97⁰ 10.1
 94⁰ 95⁰ seems faint clouds?

October 11-12, 1926 2424800-1

22 49 00 to 23 9 00 20 .600⁰⁰⁰
 23 10 00 23 30 20 .614
 23 30 15 23 50 15 20 .628

Min. Phase

.040
 .054
 .068

Black c
 89 90⁰ 90⁰
 90⁰ 90⁰
 90⁰ 92⁰

1182

Oct. 14-15

4803

5 12 30 to 5 32 30 20 .857 + 001.858 1.597
 5 33 5 53 20 .871 .872 1.611
 5 53 30 6 13 30 20 .888 .886 1.625
 Pred. 961

4802.261
 24803.962

Black 99⁰
 98⁰

1186

Oct 21-22

4810

3 23 00 to 3 43 00 20 .762 + 001.763 4810.767
 1.697

min Pred. 765

Black 9.8
 9.8

1187

Oct 21-22

4810

4 21 00 to 4 41 00 20 .802 + 001.803 4810.767 + 0

Black 9.7
 9.8

1188

Oct 21-22

4810

5 22 00 to 5 42 00 20 .844 + 001.845

Black 9.1
 9.0

1189

Oct 21-22

4810

6 18 00 to 6 39 00 21 .884 + 001.885

from page 100

1	maps	24668	3119.795	796	3118.113	1.683	-018
2	k.84		839	840	3119.814	026	
97	-104		881	882		068	

$$\begin{array}{r} 97 \\ 11 \\ 25 \end{array} \begin{array}{r} -104 \\ -090 \\ -076 \end{array}$$

25087 3489.549⁰⁰² 551[✓] 3437.931[✓] 1.620[✓] 9.35^{mean}
3439.632 -0.088¹ 1.84

767 ✓
-004

$$.767 + .036$$

4.078

+ 118

122

{ 97.30-98 AY 1190 Oct 23-24, 1926 2424812 min = 4812.468
 { 99.00-99
 { 99.00-97.00
 20 23 00 to 20 43 00 20 .467 ^{tool} 9.9 468 .000
 20 43 15 21 3 15 20 .481 9.9 482 .014
 21 3 30 21 31 30 28 497 9.7 498 030

Pred min. 467

{ 9.6 } 1191 Oct 23-24 24812
 { 98 }
 21 47 25 to 22 7 25 20 525 +001.526 .058

{ 9.2 } 1196 Oct 26-27 24815-6 4814.169
 { 92 } 24815.870
 4 13 to 4 33 20 .784 +001.785 1616
-085

{ 9.5 } 1197 Oct 26-27 24815
 { 94 }
 5 14 to 5 34 20 826 +001.827 1.658
-043

{ 10.2 } 1198 Oct 26-27 24815-6 1.699
 { 10.2 }
 6 13 to 6 33 20 .867 +001.868 -002
 Pred. min. 869

{ 9.20-90 } 1199 Oct 28-29 24817-8 15.870
 { 9.10-90 } 24817.571
 { 9.10-92 } 17.273
 20 41 30 to 21 1 30 20 .466 9.1 +001.467 1.5
 21 2 21 22 20 479 9.1 .480 1.6
 21 22 30 21 42 30 20 494 9.2 .495 1.

2468
Phase
00
114
30

AY 1200 Oct 28-29		24817		24817.571	
96-0-95	21 58 00 to 22 18 00	20	.518	9.3 .519	1.649-.052
95-0-94	22 18 30 22 38 30	20	.533	9.5 .534	1.664-.037
93-0-92	22 39 00 22 59 00	20	.547	9.6 .548	1.678-.023

58

AY 1201 Oct 28-29		24817			
99-0-98	23 13 00 to 23 33 25	20	.570	10.2 .571	.000
102-0-102	23 34 00 23 54 0	20	.584	10.2 .585	.014
102-0-102	23 54 30 0 14 30	20	.599	9.9 .600	.029

6
35

942.5-94		1202 Oct 28-29		24817-8	
97-0-97	0 26 00 to 0 46 00	20	.621	9.8 622	.051
98-0-96	0 46 30 1 6 30	20	.634	9.7 635	.064
	1 7 00 1 27 00	20	.649	9.4 650	.079

58
13

9

2

70

71

73

1

9 exp.	AC 24616	9 exposures of 1 ^h		3084.089	
Assuming	Jan. 30, 1922			Min = 3085.791	
order	J.D. 3085.	60 .567 .569	8.9	8.9	1.480 - .222
South to north	60 .608 .610	8.9	8.9	1.521 - .181	
	60 .650 .652	8.9	9.0	1.563 - .139	
	60 .692 .694	9.0	9.1	1.605 - .097	
1.597 - .104	60 .733 .735	9.4	9.4	1.646 - .056	
1.610 - .091	60 .775 .777	9.9	9.9	1.688 - .014	
1.625 - .076	60 .816 .818	9.8	9.8	.127	
	60 .858 .860	9.5	9.5	.069	
	60 .899 .901	9.3	9.3	.110	

all these
plates black

1926

19273

89.90
89.89
89.89

AY

1203 Oct 31-Nov 1

4820-21

4820.974

Plate
Black

5 21 00

5 41 00 20

.816⁺⁰⁰¹ 8.990 8.17 1.544

5 41 30

6 1 30 20

.831 8.989 8.32 1.559

6 2 00

6 22 0 20

.845 8.989 8.46 1.573

1st 2nd
94 93
91 89
90 89

1204

Oct 31-Nov 1

4820-21

6 28

6 48 20

.863⁺⁰⁰¹ 9.0 8.9 8.64

6 48 30

7 8 30 20

.878 9.1 8.9 8.79

7 9

7 29 20

.892 9.4 9.3 8.93

none
94-94
99-94

1205

Oct 31-Nov 1

4820-1

7 34

7 54 20

.909⁺⁰⁰¹ 9.4 9.4 9.10

7 54 30

8 14 30 20

.923 9.4 9.4 9.24

92.91
94.94
94.94

1209

Jan 4-5

4824-5

4824.376

21 1 0

21 21 20

.460⁺⁰⁰¹ 9.4 9.4 4.61

21 21 15

21 41 15 20

.474 9.4 9.4 4.75

21 41 30

22 01 30 20

.488 9.2 9.1 4.89

1210

Nov 4-5

4824-5

22 12

22 43 31

.513⁺⁰⁰¹ 5.14

22 43 15

23 3 15 20

.531 5.32

23 4 0

23 24 0 20

.545 5.46

						min			Phase
549	-157	AV 1221	Nrr 6-7	4826-7	4826.077				
559	-142	89.90	black	5 4	5 24	.789	8.8	8.9	.790 .713
573	-127	88.89	5 24 30	5 44 30	.803	8.8	8.9	8.04	.727
		88.89	5 45	6 5	.817	8.9	9.0	8.18	.741

4	1.591 -110								
9	1.606 -095								
3	1.620 -081	1222	Nrr 6-7	4826-7					
	89.88	black	6 12	6 33	.837	8.8	9.0	.838	.764
	88.88		6 33 30	6 53 30	.851	8.8	8.8	.852	.775
	88.90		6 54 00	7 14	.866	8.9	8.8	.867	.790
0	1.637 -064								
4	1.651 -050								

	91.90	1223	Nrr 6-7	4826-7					
	90.89	black	7 17 30	7 38 30	.882	8.9	8.9	.883	.806
	89.89		7 39	7 59	.897	9.0	8.9	.898	.821
085			7 59 30	8 20 30	.911	9.1	9.0	.912	.835
099									
113									

.138

.156

.170

Magnus on 9961, 13071, well centered

Examination of I plates for early Minima
Resulting Minima

Corr. = Helio. T
Mean
Magn
9.80

Perhaps 9.8 } 9961 Nov. 20, 1893 11 2412788.698⁶ ✓

(9957 Nov. 20 13 12788.465⁷ ✓ seems normal,
full brightness

9.20 Feb. 1
~~93 94?~~ 17758 April 1, 1897 120 14016788[✓] 9.35[✓]
Include? 2 h exp.

93? 25498 June 26, 1900 30 2415197.648[✓] h.130

9.05 9.1? 29361 Oct 10, 1902 15 16033.540[✓] 9.08[✓]

h.130 93? 29519 Nov 7, 1902 10 16061.614⁵ ✓ h.130

virth Corr.

Helio. T and Phase

Started End. Exp. Mid. Exp. Red. G.M.T. Corr. Computed Min
 I 9961 3 51 4⁰³ 11^m 3 56.5 .530 + .164 = .694 + .002 1.2788.66912
 .027

9957 22 19 22 32 13 22 25.5 .533 + .932 = .465 + .002 1.499 - .202

17758 13 54 15 54 120 14 54 .169 + .619 = .788 ✓ C = 14015.20548
 000 1.583 - .119

25498 16 46 17 16 30 17 1 .936 + .707 = .643 - .002 C = 5197.51168
 .129

29361 21 21 21 36 15 21 28.5 .648 + .892 = .540 .000 C = 6032.78124
 0.759

29519 ~~21 00~~ ~~21~~ 10 10 1 05 .569 + .045 = .614 + .001 C = 6060.000
 1.615 - .085

36104 very br.?

On most I. plates
this region is near S edge
thus, 9.1 is distorted
Few estimates

Apparently normal on these I plates -
hook up later, please.

9.00 895	13071	July 12 1895	24	13387.642	-002	.640
8.90 895	16703	Dec. 7, 1896	14	3901		
very black			241	906	✓	Corr. for Helio. T.
9.00 9.05 I	748	March 3, 1890	85	1430.831	+001	.908
9.0? 9.0	3682	June 7, 1891	62	11891.743	-002	.741
89 ~ 90	3711	June 10, "	61	11894.745	-002	.743
Perhaps 92	5947	Mar. 25, 1892	60	2183.835	000	.835
S edge	6072	April 11, 1892	36	2200.786	-001	.785
omit	6705	Aug. 6, "	17	2317.587	-002	.585
9.05 9.00	7459	Nov. 5, "	16	2408.030	+001	.531
9.0 9.0	8671	June 30, 1893	11	2645.581	-002	.579
90 9.0	9166	Aug. 10, "	25	2686.684	-001	.683
omit +83	9957	Nov. 20, "	13	2788.464	+002	.466
— +83	11522	Oct. 1, 1894	19	3103.597	000	.597
9.00 9.05	11831	Nov. 10, "	18	3143.580	+001	.624
9.1 9.05	12768	May 2, 1895	10	3316.595	-001	.594
9.1? 89	14764	March 31, 1896	10	3658.523	000	.523
omit +83	14912	April 15, "	19	3665.718	-001	.717
omit +84	15209	May 31, 1896	16	3711.630	-002	.628
9.2 9.2	15282	June 10, "	12	3721.730	-002	.728
9.2 or 9.3	15283	" 10, "	11	3721.738	-002	.736
9.2?	15285	" 10, "	10	3721.754	-002	.752
+83 omit	16540	Nov. 14, "	12	3878.862	+001	.863
+83 omit	16755	Dec. 13, "	10	3907.928	+002	.930
8.8? 88	16968	Jan 2, 1897	12	3927.468	+002	.467
+83 omit	17031	Jan 10, "	18	3935.922	+002	.922
+83 omit	17347	Feb. 16, "	11	3972.757	+001	.758
+83 omit	17538	Mar 12, "	14	3996.664	000	.664
+83 omit	18120	May 19, "	25	4064.627	-002	.625

Marks \leftarrow indicates Min. limits -250° to $+250^{\circ}$

McLaughlin's Formula

are given
to hundredths

13387.478	.162		8.98
Comp. Min.	Corrected for H.T.		Mean
	Phase		Magn.
11429.442	1.463 ⁵ -23° \leftarrow		9.02
11890.457	1.284		9.005
11893.859	.884		
11895.560			8.95
2183.056	.779		9.2
2200.068	.717		
2317.448	.137 \leftarrow		9.02
2407.609			9.00
2409.310	.922		9.00
2644.071			
2645.772	1.508 -19° \leftarrow		
2686.600	.083 \leftarrow		
2786.968			
2788.669	1.498 -20° \leftarrow		8.95* ^{Center}
3103.384	.213 \leftarrow		9.02
3142.510	1.114		9.08
3316.029	.565		9.7 9.0
3649.456	1.067		
3651.157			
3664.767	.950		
3710.698	.930		
3720.905	.823 [✓]		9.50
	.831 [✓]		9.25
13877.412	.847		9.2
13879.113	1.458 -250° \leftarrow		
13906.331	1.599 -102° \leftarrow		
3926.745	.722		8.80
3935.251	.671		
3972.676	.082 \leftarrow		
3996.493	.171 \leftarrow		
4064.539	12.086 \leftarrow		

barely on edge, 9.1 not seen

seems slightly fainter — near edge 9.1 distant

At $+83^{\circ}$ but retained
as date is important.
See I 9961, p. 126
Out of focus — near Wedge

Corr.
for
Helio.
T. ✓

		I 18488	Aug. 11, 1897	10 ^m	4148.853	-001	848
9.05?	9.0	21006	Aug 21, 1898	15	4504.567	-002	552
9.1?	9.2	21044	Aug 6 "	63	4508.617	-002	615
9.00	9.00	21518	Oct. 27, "	10	4590.543	+001	544
9.1?	9.1	25499	June 26, 1900	10	5197.663	-002	661
9.0	9.0	25743	Sept 4, 1900	60	5267.526	-001	525
9.0	9.0	27054	June 10, 1901	10	5546.570	-002	568
890	895	27341	Aug 22 "	17	5619.584	-001	583
89	89	30603	May 31, 1903	10	6266.763	-002	761
9.1	9.1?	31628	April 16, 1904	10	6587.785	-001	744
9.0	9.0	34090	June 12, 1906	66	7374.679	-002	677
9.0~	89	34715	June 11, 1907	12	7738.627	-002	633
890	895	36104	July 3, 1909	38	8491.595	-002	593
9.0?	895?	37854	June 27, 1912	12	9581.634	-002	632

(9.1 is about
3 edge)

h.126	93?	92	25498	June 26, 1900	30	sep. 126
	9.1	9.3? h.126	29519	Nov 7, 1902	10	sep. 126
	9.0	895	21726	Nov. 21, 1898	16	4615.478 +002 .480
	895	890	22934	May 25, 1899	11	4800.644 -002 .642
	8.95	895	23490	Sept 14, 1899	10	4912.556 000 .556
	9.1?	9.0?	27035	June 5, 1901	10	5541.729 -002 .727
	9.05	9.05	27441	Sept 7, 1901	13	5635.508 -001 .507
	9.10	9.05	29010	July 13, 1902	10	5944.633 -002 .631
	890	890	33180	July 12, 1905	15	7039.610 -002 .608
	9.0	9.0	34092	June 13, 1906	67	7375.587 -002 .585
	9.0	about 9.0	34093	June 13, 1906	52	7375.634 -002 .632

Mean
Mags.

14147.896	.952		
4503.438	1.114		9.02
4505.140			9.15
4508.542	.073	←	9.00
4590.198	.346		9.10
5197.512	.049	←	9.00
5267.259	.266	very black	9.00
5546.249	.319		9.00
5619.399	.184	←	8.90
6265.840	.921		8.90
6587.359	.385		9.10
7373.295	1.382	-319	9.00
7374.996	1.289		8.95
7737.344	.636		8.92
8490.957	.231	←	8.98

9.25

9.15

9.20

8.98

8.92

8.95

9.05

9.05

9.08

8.90

9.00

9.00

9.00

9.00

4614.014	1.466	-.235	←
4615.715	1.202		
4799.440	.839		
4801.141	.581		
4911.717	.798		
5541.146	.310		
5634.710	1.441	-.260	
5944.321	.0589		
7038.167	.636		
7374.996			
17376.6976	4		

W Ursae Minoris

Broken ac Plates Pole -

if Phase proves desirable, examine plate.
not exam otherwise.

			Exp	Slide	J.D.
Too poor ac	189	February 2, 1899	58	76	2414688.477
9.1 905	203	" 14, "	60	58	14700.870
where?	307	April 28, "	10	4760	14773.547
Unit	804	April 8, 1900	201	263	15118.404
8.90 890	2093	Dec. 21, 1901	62	3626	15740.508
9.00 905	2780	Aug 26, 1902	63	168	15988.669
Too poor	2994	Nov. 14, 1902	72	2823	16068.664
8.90 895	3660	May 21, 1903	67	198	16256.618
9.00 9.00	5464	October 31, 1904	77	2724	6785.669
Poor	7848	Sept. 26, 1906	58	2762	7480.564
Badly broken	8374	March 22, 1907	60	3109	7657.808
9.00 895	8439	April 19, "	60	3004	7685.792
Poor	8840	October 8, "	76	2738	7857.577
Poor	12374	May 20, 1911	12	4133	9177.616
Too poor	13808	Feb. 24, 1913	56	3080	9823.486
Unit	13810	" 24, "	68	3146	9823.627

* McLaughlin's formula, p. 97

Computed Min.	Cor. for Helio. T.	Corrected Phase	
14687.16368	+002	1.515	←
688.86484	+002	.679	←
14700.77296	+001	.871	←
14772.222	-001	.566	
73.923	000	.604	
15117.557	+000	.510	
19.258	-001	.668	←
15740.182	+001	.665	←
15988.551	-002	.618 ⁵	
16068.50560	+001	.670	
16255.633	000	.564	
16784.694	000	.808	
16786.395	-001	.792	
17480.468	000	.577	
17657.389	-002	.613	
17684.608	+001	.487	
86.309	+001	.628	
17856.425			
58.126			
19176.525			
78.226			
19822.966			
9824.667			

Special Examination of Star 3, Est. 8.7

+85° 249

Does it vary about $\frac{1}{2}$ magn.?

See page 71

Normal ^{(?) ac} on 14729, 14915, 12135, 17126, 17789, 23080, about as seen in majority of plates.

Br.

14695

15330

* 14305

14072

15497

16730

16741

25655

* 8123 defective

really br?

ay 234

* AC 2914 purple

Feb. 15, 1927

seen by
Dr. S. and
small variation

Confirmed.

4 h. 5

* I 11831

* ac 15330

ft

** I 12135

15192

* 12121 Poor

12258

* 16305 (or normal?)

16419

17892

* 23317

24248

* 7936

8203

2093 Br. Slide 3626

I 27341

I 36104

* I 16968

* ac 10147

ac ** 1179

Oct 1
9642

6

