

# Kodaikanal Observatory.

## BULLETIN No. XIX.

### LIST OF PROMINENCES OBSERVED BETWEEN 1909 JANUARY 1 AND 1909 JUNE 30.

This list is a continuation of that published in Bulletin No XVII. and contains all prominences recorded both visually and photographically during the first half of 1909.

The methods of observation and the observers are the same as for the last list.

The following table shows the number of days on which observations were made:—

										Days.
Complete visual observations	..	..	..	..	..	..	..	..	..	141
Partial	do.	do.	..	..	..	..	..	..	..	24
No	do.	do.	..	..	..	..	..	..	..	16
Complete spectroheliograph records	..	..	..	..	..	..	..	..	..	139
Partial	do.	do.	..	..	..	..	..	..	..	24
No	do.	do.	..	..	..	..	..	..	..	18

Date and observer.	Hour I.S.T	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
January 4. S.S.	10 17	2	37.5	...	E	50	} Tops meet.  Detached.
	11			11	E	10	
	11			14.5	E	25	
	11			17.5	E	25	
	6			56	E	25	
	11 20			40	W	15	
	59			36	W	20	
	10 58			25.5	W	20	
	57	2		21	W	30	
	41	2		18	W	60	
	38			7.5	W	25	
	36			5	W	10	
	33			29	W	25	
	29			41	W	20	
	26		1.5	55	W	15	
Observed through passing clouds. No prominence plates.							
January 5. A.Y.S.	8 58	.	56	..	E	15	Ca. A faint arch Ca. Bright. Ca. 20'' in Ca. Ca. Faint. 14° broad in Ca. } Base and top connected in Ca, and 30'', 40'', and 20'' high in it.
	58		51		E	20	
	31		49.5		E	Low	
	58	2	44		E	20	
	58		42		E	30	
	30	1.5	39		E	30	
	58		36		E	15	
	27		24		E	10	
	25		13		E	10	
	20		10	3	E	35, 20	
	15			12	E	25	



Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
January 8. —contd.	S.S.	...		65.5	W	10	Very low at 8 <sup>h</sup> 34 <sup>m</sup> .
				58	W	10	Ca.
				50	W	10	Ca.
		2		47	W	25	} Connected.
		2		43.5	W	35	
				32	W	15	Ca.
				26	W	10	20" in Ca.
		12	2		W	30	Ca. A small portion of this, 30" high, is seen in H at lat. + 8° W.
		1	25		W	25	4° broad in Ca
			33		W	10	Ca.
		4	39		W	25	Ca.
			50		W	50 ±	A slanting streak. Shape slightly different and height 40" and 25" in Ca.
			71.5		W	20	Ca. Slants westwards. Ca photograph 8 <sup>h</sup> 20 <sup>m</sup> .
January 9.	A.Y.S.	15	31	...	E	45, 75	Changing. 28° broad, 105" and 50" high in Ca.
			6		E	15	Ca
		1	3.5		E	10	Faint
		3	0.5		E	30	5° broad in Ca.
				8	E	20	Ca.
				13	E	20	
				16	E	10	Ca.
		3	22.5		E	20	A small Ca streak proceeds from this and meets the last prominence
		7	37.5		E	45	
			64.5		E	10	Faint and 45" high in Ca.
			79		E	10	
			82		E	20	Ca. Slants southwards. Seen only at 8 <sup>h</sup> 20 <sup>m</sup> .
		1	52		W	20	} Tops meet.
		1	49.5		W	20	
		2	44		W	45	6° broad in Ca.
			29		W	10	Ca.
			12.5		W	10	
			5		W	25	Slants northwards } See Note 1.
			6		W	20	
		1	9		W	30	
			15		W	30	Ca. } Faint and slender streaks.
			16		W	30	Ca. }
		14	26		W	30, 40	See Note 2.
			34.5		W	20	Ca.
			38.5		W	30	Ca.
			45.5		W	10	
		3	49.5		W	30	See Note 3.
			70.5		W	15	Ca.
							Ca photographs 9 <sup>h</sup> 19 <sup>m</sup> and 8 <sup>h</sup> 20 <sup>m</sup> .
January 10.	S.S.	...	84.5		E	25 ±	Faint.
			78.5		E	15	Hook-like. At 8 <sup>h</sup> 49 <sup>m</sup> the hook-like form was gone 20" high in Ca at 8 <sup>h</sup> 32 <sup>m</sup> , gone at 9 <sup>h</sup> 9 <sup>m</sup> .
			90.5		E	50	Ca. A streak slanting eastwards.
		1.5	45		E	10	
		3	32.5		E	25	
		5	25		E	30	} Form a single connected prominence in Ca extending from + 50° E to + 10° E and 50", 45" and 30" high.
			20		E	20	
			18.5		E	20	
			18.5		E	10	
			14.5		E	10	
		1.5	8		E	15	
			6		E	20	
		2	20		E	30	Faint, 5° broad and 45" high in Ca.
		2	24		E	10	} Connected in Ca.
		1	27.5		E	20	
		4	38		E	40	
			42		E	10	Ca.
			68.5		E	20	Ca.
			78.5		W	20	Very faint in H. Faint and detached in Ca.
			69.5		W	10	

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
January 10. S.S. —contd.	8 32	...	...	55	W	10	Ca.
	13			52	W	40	
	12	2		46	W	35	Top flows southwards.
	32	4		41	W	50	Ca. } Connected in Ca.
	8			37	W	20	
	6			35	W	10	
	9 15			33	W	40	Faint.
	8 32			17	W	10	Ca.
	9 11	2		18	W	20	4° broad and 35" high in Ca.
	8 32			10	W	10	Ca.
	32			9	W	10	Ca.
	9 9	5	0.5		W	100, 80 ±	Top very faint. 11° broad in Ca.
	6		10		W	20	D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> bright; 10" high in Ca.
	8 32		14		W	75	Ca. A detached streak.
	9 4	3	16.5		W	30	
	2	4	24		W	35	Tops connected, 50" and 45" high in Ca.
	0		29.5		W	50 ±	Connected in Ca.
	8 59	2	32		W	30	
	55	1	47		W	40	2° broad in Ca.
	52		82		W	10	
							Ca photographs 8h 32m and 9h 9m.
January 11. A.Y.S.	9 0	...	84.5	...	E	30	Changing rapidly.
	57		71.5		E	30	Ca.
	57	4	48		E	30	Ca.
	8 54	4	40		E	50	8° broad and 25", 45" and 50" high in Ca.
	40	5		2	E	65	50" high in Ca. } Connected in Ca.
	36			11.5	E	40	4° broad and 30" high in Ca. }
	29			17	E	30 ±	Faint. Three thin streaks 90" and 60" high in Ca. at 9h 57m. Changing. Not so high at 8h 33m.
	9 57			21	E	25	Ca.
	57			32	E	20	Ca. An arch.
	57	1		37.5	E	30	Ca. A jet. } Connected in Ca.
	8 24	1		40.5	E	20	
	21			75.5	E	10	20" in Ca.
	9 57			80	E	20	Ca.
	27	2		58	W	20	
	57	1		48.5	W	15	Ca. A streamer from top meets the last prominence.
	24			8	W	10	Changing At 8h 33m in Ca these were thin
	22	1		4.5	W	50	streaks 90" and 70" high extending from
	57			1	W	45	Ca } the equator to - 15° W.
	57	1	4.5		W	50	Ca.
	18	1	10		W	10	
	15		17		W	20	At 8h 14m in Ca, a streak from top of this extends from + 12° to + 19° W.
	57	2	22		W	40	Ca. Streaks extend bothways. One of these meets limb at + 17° W.
	14	5	32.5		W	50	40" in Ca.
	9		43		W	15	
	7		45		W	15	Faint.
	5		47		W	30	10" only in Ca.
	57		86		W	10	Ca.
							Ca photographs 9h 57m, 8h 33m and 8h 14m.
January 12. G.N.	8 3	...	42		E	15	Ca. }
	9 5	1	40		E	30	See Note.
	5		84.5		E	45 ±	
	11 46		30		E	70 ±	
	9 10		3		E	15	
	10	3		0.5	E	35	
	10	1		4	E	30	
	5	4		11	E	60	Ca streamers extend from this to meet the prominences on either side.
	8 50	1		18	E	15	
	50	4		22	E	20	
	50	1		25	E	15	
	3			45	E	40	Ca.
	3	2		57.5	W	15	Ca.
	9 15	2		52	W	50	
	8 3			5	W	25	Ca



Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
January 14. A.Y.S. —contd.	10 1	3	.	1	W	30	Ca Three prominences 25" } Tops connected by only at 9 <sup>h</sup> 27 <sup>m</sup> . } a streak at 9 <sup>h</sup> 27 <sup>m</sup> . Ca. Seen only at 9 <sup>h</sup> 27 <sup>m</sup> . }
	9 27		5.5		W	25	
	10 1		15		W	15	Ca.
	29	3	25.5		W	15	Ca.
	1	1	30.5		W	10	Ca.
	28	5	35.5		W	60 ±	Faint. Filamental. Top flows westwards and is 150" high in Ca.
	20		50		W	10	
	9 27	1	84		W	30	Ca. Seen only at 9 <sup>h</sup> 27 <sup>m</sup> . Ca photographs 10 <sup>h</sup> 1 <sup>m</sup> and 9 <sup>h</sup> 27 <sup>m</sup> .
January 15. S.S.	9 1	..	63	..	E	10	
	8 15		55.5		E	40	Ca.
	59		50		E	10	
	15	0.5	42		E	15	Ca. Slants northwards
	55	0.5	35		E	15	30" high in Ca, and top bends and meets limb at + 28° E. in it.
	9 48		21		E	20	
	8 15		15		E	20	Ca.
	47		14		E	10	60" high in Ca at 8 <sup>h</sup> 15 <sup>m</sup> . } Not seen at 8 <sup>h</sup> 50 <sup>m</sup> . Do.
	47		10.5		E	10	
	46	1.5	7		E	35	Changing. In Ca at 8 <sup>h</sup> 15 <sup>m</sup> this consisted of two small streaks 30" and 40" high.
	45	4.5	1.5		E	10	See Note 1.
	15	9		11.5	E	20	Ca. See Note 2
	15	2		19	E	90	Ca. Top slants as far as — 12° E.
	40			23	E	20	Faint. }
	38			30	E	20	} Tops connected by a Ca streak.
	38			31	W	20	
	35			45	E	10	
	15			49	E	10	Ca.
	33			53	E	10	} Connected and 15" high in Ca.
	33	1	55.5		E	25	
	30		60.5		E	35	} Connected and 30" high in Ca.
	30		65		E	40	
	30		68		E	20	
	26		85		W	10	
	9 39	2	54.5		W	20	
	8 15	1	48.5		W	30	Ca.
	9 35		42		W	30	15" high in Ca.
	34	1	38.5		W	10	
	33	8	23.5		W	50	11" broad in Ca.
	8 15		9		W	15	Ca. Faint.
	15		6		W	10	
	15		8		W	15	Ca. Faint.
	9 27	5	6		W	20	
	21	1	19		W	25	} Connected by a thin Ca streak 75" high.
	18	2	26.5		W	35	
	15	2	33.5		W	150 ±	180" high in Ca
	10		44.5		W	10	Faint.
	8 15	1	74.5		W	10	Ca. Ca photographs 8 <sup>h</sup> 15 <sup>m</sup> and 8 <sup>h</sup> 27 <sup>m</sup> .
January 16. G.N.	9 10	..	68.5	..	E	20	
	8 27		38		E	10	Ca.
	27		19		E	10	Ca.
	27		12		E	20	Ca. Slants northwards
	27	2	10		E	100	Ca.
	9 5	2	8.5		E	80	Eruptive. Metalho. } Tops connected in Ca.
	5	1	3.5		E	30	
	8 27	2		24	E	10	Ca.
	9 0			28	E	20	
	8 27			54	E	20	Ca. Top flows southwards and meets the next prominence.
	55	7	68		E	30, 40	
	27		85.5			15	Ca.
	27		72.5		W	15	Ca.
	9 30	1	55.5		W	10	
	8 27		54		W	40	Ca.
	27		49		W	20	Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Lumb.	Height.	Remarks.
			North.	South.			
1909.	H M.	°	°	°		"	
January 16. —contd.	G.N.	...	..	46	W	40	Ca.
		8 27		30	W	15	30" high in Ca.
		8 27		24	W	10	Ca.
		9 28		23	W	45	Ca. A detached spot seen only at 9 <sup>h</sup> 28 <sup>m</sup> .
		8 27	4	17	W	70	Ca.
		9 25	0 5	6	W	20	
		8 27		Equator.	W	30	Ca. Detached.
		27		3	W	40	Ca. Detached. Seen only at 8 <sup>h</sup> 27 <sup>m</sup> .
		9 14	2	32	W	100 ±	180" in Ca. Bright stem } Form a single pro- is 100" high. Top bends } minence 180" and slightly northward. } 45" high in Ca at 9 <sup>h</sup> 28 <sup>m</sup> .
		8 27	1	40	W	45	Ca.
		27		71.5	W	30	Ca. photographs 8 <sup>h</sup> 27 <sup>m</sup> and 9 <sup>h</sup> 27 <sup>m</sup> .
January 17.	S S.	..	53.5	..	E	10	
		8 35	15		E	40	Ca.
		35	9		E	30	Ca. Bends eastwards.
		35	6		E	10	
		35	2	5	E	30	Slants eastwards.
		9 19	10	17.5	E	40	In Ca top flows eastwards, meets the last promi- nence, and is 40", 60" and 15" high.
		8 35	11	61	E	40, 60	Ca. A small portion of this about 30" high was seen in H at lat. — 63° 5' at 9 <sup>h</sup> 10 <sup>m</sup> .
		35		80.5	E	15	Ca.
		9 8		84.5	E	80	Ca. Detached. Seen only at 9 <sup>h</sup> 8 <sup>m</sup> .
		8		85	E	10	Very faint. Bright and 30" high in Ca at 9 <sup>h</sup> 8 <sup>m</sup> , but was not seen at 8 <sup>h</sup> 35 <sup>m</sup> .
		8 35	1	66.5	W	20	Ca. An arch.
		9 58		58	W	10	
		8 35		38	W	20	Ca. Detached.
9 48	2	21	W	25	6" broad and 40" high in Ca.		
46	8	7	W	10, 15, 20	18" broad, and 20" and 50" high in Ca.		
40		38.5	W	25	40" high in Ca.		
8 35		40	W	15	Ca. Observed through cirrus clouds. Ca photographs, 8 <sup>h</sup> 35 <sup>m</sup> and 9 <sup>h</sup> 8 <sup>m</sup> .		
January 18.	A.Y.S.	...	82.5	...	E	10	
		8 55		74	E	15	Ca.
		13		48	E	10	6" broad in Ca.
		45	8	33	E	50	50" and 70" high in Ca.
		34	1	18.5	E	20	9" broad in Ca.
		30		4.5	E	15	
		20	3	0.5	E	10	
		26	8	15	E	70	Top flows in Ca to — 2° E.
		18	2	40	E	30	4" broad in Ca, and top extends to — 36° E in it.
		14		45	E	10	
		12		51.5	E	10	
		13		82	W	30	Ca.
		9 25		58.5	W	10	
		8 44	1	44	W	10	Ca. Seen only at 8 <sup>h</sup> 44 <sup>m</sup> .
		44	1	39	W	20	Ca. Seen only at 8 <sup>h</sup> 44 <sup>m</sup> .
		44	1	38	W	30	Ca. Do. do.
		9 8	5	11.5	W	75	In Ca it is 100" high, and top flows northwards and meets the next prominence.
		8 18		5	W	20	Ca.
13		9	W	40	Ca. A slender, vertical streak.		
9 4		15	W	10			
2		39	W	10			
8 13	1	39.5	W	45	Ca. Faint, slants westwards.		
9 0		48	W	15	30" high in Ca.		
8 13	1	44.5	W	50	Ca. Ca photographs 8 <sup>h</sup> 13 <sup>m</sup> and 9 <sup>h</sup> 44 <sup>m</sup> .		
January 19.	G.N.	2	60.5	...	E	15	Ca.
		38	48		E	30	Ca. Two prominences meeting each other at top.
		38	37		E	20	Ca. Surmounted by a detached prominence 135" high.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1900.	H. M.	°	°	°		"	
January 19. —contd.	G.N.	..	32	..	E	120	Ca. A detached cloudlet.
			22		E	120	Ca. A streak slanting northwards.
			13		E	30	Ca.
			8		E	20	
		5		10.5	E	30 ±	See Note 1.
	10 0			22	E	20	
	9 38	8		38	E	40	Ca.
	10 0	1		43.5	E	20	
	9 58	1		25	W	30	See Note 2.
	55	11		10	W	55	See Note 3.
	52		Equator.		W	10	
	50	2	8		W	20	
	50		10		W	30	Detached.
	48	3	18.5		W	20	5° broad in Ca.
	9 47		25		W	30	
							Ca photographs 9 <sup>h</sup> 38 <sup>m</sup> , 10 <sup>h</sup> 22 <sup>m</sup> (poor and incomplete on W limb), 9 <sup>h</sup> 25 <sup>m</sup> (focculus).
January 20.	S.S.	...	69.5	.	E	10	
			60.5		E	20	Faint.
	8 57		33		E	10	Very faint.
	56		30		E	30 ±	Very faint. } See Note,
	53		14		E	20 ±	Top very faint. }
	43			41	E	30	
	43			47	E	20	
	43	1		48.5	E	45	Connected in Ca.
	39			51.5	E	15	Ca.
	36			74	E	15	30" high in Ca.
	34			85	W	10	
	39	4		56.5	W	20	Ca.
	9 36			41	W	10	
	8 39			32	W	10	Ca.
	9 33			28	W	15	Slants southwards.
	31			19	W	10	
	30			14	W		
	28	2	5.5		W	30	Top bends and meets limb at +10°W. O slightly displaced to violet in the upper half of the prominence
							A thin Ca streak from top flows westwards and meets limb at +12°W.
	20		17		W	20	
	18		21.5		W	40	Very faint. Slants as far as +27°W.
	15		37		W	15	Very faint. Slants both ways in Ca to +32°W. and +46°W. Differently shaped at 11 <sup>h</sup> 4 <sup>m</sup> in Ca.
	10		45		W	35	Connected with the last in Ca.
	10	1	50		W	15	8° broad in Ca. Ca photographs 8 <sup>h</sup> 39 <sup>m</sup> and 11 <sup>h</sup> 4 <sup>m</sup> .
January 21.	A.Y.S.	2	83.5	...	E	15	Ca.
			63.5		E	10	
		3	55		E	40	Ca.
			51.5		E	15	Ca.
			39.5		E	10	
			28		E	10	Slants eastwards, and is 110" high in Ca.
			18		E	30	Ca. Detached.
			17		E	15	Slants eastwards in Ca.
				13.5	E	10	
		13		47.5	E	80, 20, 30	15° broad, and 40" and 110" high in Ca.
				74	E	10	Ca.
				77	E	15	Ca.
				79	E	15	Ca.
				79.5	W	15	
				67.5	W	10	Ca.
				65.5	W	15	Ca.
				11	W	30	Ca.
	9 13		15		W	30	Detached. 45" in Ca. A thin Ca streak from this flows westwards and meets limb at +9°W.
		2	21		W	40	Bright.
	8	4	49.5		W	30	An arch.
	8 59		81		W	30 ±	Ca photographs 8 <sup>h</sup> 19 <sup>m</sup> and 14 <sup>h</sup> 41 <sup>m</sup>





Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.							
January 25. S.S.	H. M.	°	°	°		"	
	9 40		75.5	...	E	10	Ca.
	8 54		52.5		E	20	
	9 36	2	45.5		E	30	
	31		36.5		E	10	
	29	1	28.5		E	10	25" high in Ca.
	25		11		E	25 ±	Faint
	16	3	6.5		E	40	See Note } Connected and changing in Ca. At 8h 43m shape was slightly different, and height 70", 80" and 60" in it.
	11			16	E	40 ±	
	9			18	E	30	
	9			19	E		C slightly displaced } Connected and 90" and 70" to red. 20" high } high in Ca.
	5	6		31	E	45	
	8 59			55.5	E	10	
	52			84.5	E	10	
	50			74	W	10	
	10 10	4		36	W	15	8° broad, and 10" and 20" high in Ca, and top slants and meets the next prominence in it.
	5	4		28	W	40	50" high in Ca.
	0	18		1	W	40	
	9 55	2	22		W	10	
	47	5	45		W	30, 20	
8 54		57.5		W	10	Ca.	
54		83		W	10	Ca.	
9 42		84.5		W	15	Ca photographs 8h 54m and 8h 43m	
January 26. A.Y.S.	8 31	...	61.5		E	15	Ca.
	31		60.5		E	15	Ca.
	31		51.5		E	16	Ca.
	31		48.5		E	20	Ca.
	10 16		47.5		E	10	20" high in Ca.
	8 31		45.5		E	20	Ca.
	31		41		E	15	Ca.
	31		38		E	10	Ca.
	31		33		E	10	Ca.
	31	6	9		E	20, 70, 90	Ca. Top bends as far as + 1° E. A small portion of this, 10" high, was seen in H at 10h 13m.
	10 9	1		17	E	10	In Ca this consists of small jets intensely bright on focculus plates 40" and 15" high.
	9 42	2		25	E	25	15" in Ca.
	29	1		32	E	15	30" in Ca.
	27			36	E	15	
	8 52			48.5	E	50	Top bends bothways and meets limb at - 89° E and - 48° E.
	46	1		52	E	25	Top flows southwards and meets the next prominence in Ca.
	45			57.5	E	10	
	43			66.5	E	50	40" in Ca.
	31			78.5	E	10	Ca.
	31			79.5	E	10	Ca.
38			83.5	E	10		
31			55.5	W	15	Ca.	
10 38	6		20	W	30, 40	See Note	
25			14	W	10		
8 31	1	8.5		W	10	Ca. An arch.	
10 24	1	11.5		W	10		
22	1	20.5		W	30	40" high in Ca	
21	2	44.5		W	20	8° broad in Ca.	
Ca photographs 8h 31m and 8h 43m.							
January 27. G.N.	11 12	...	37	...	E	40	Ca. Slants northwards.
	12		23		E	15	Ca.
	12		11		E	40	Ca. Faint
	9 26	2	2		E	30	
	25	1		8	E	20	
	11 12			16	E	15	Ca.
	9 24	1		24	E	15	
	24	2		26	E	15	
	11 12			30	E	10	Ca.
	12			32	E	10	Ca.
12			42	E	15	Ca.	

Date and observer.	Hour I.S.T.	Base	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
January 27. G.N. contd.	9 22 11 12 9 22 22 20 37 35 33 33 11 12 9 30 11 12	3 1.5    3 0.5 1 22 3	..       19 32 38.5	44.5 50 55.5 60 62.5 40 28.5 17 14.5	E E E E E W W W W W W	20 20 30 30 65 ± 15 20 10 15 ± 40, 50 30 45	Ca. Faint. Slants eastwards, and is 40" high in Ca. Form a single prominence in Ca 100" high, extending from -60° E to -62° E. Shows displacement to violet for about 0.5 Å.  Ca. Not in Ca. Ca. Ca photograph 11h 12m.
January 28. S.S.	13 40 14 2 9 35 35 14 23 27 9 35 14 37 42 44 44 44 9 35 35 14 46 9 35	1 1   1         4	82 57       36	.  3 6 12.5 46.5 55.5 59.5 84 81.5 81 78.5 76.5 29 28 10	E E E E E E E W W W W W W W W	20 10 10 20 25 20 20 40 10 10 10 10 10 10 10 10 25	Ca. Ca. Ca. Ca. Slants eastwards.  Ca. Ca. Ca. Faint. Seeing very bad. + 40° W to north pole could not be observed. Ca photograph 9h 35m; flocculus only.
January 29. A.Y.S.	8 53 10 29 28 29 8 49 10 29 29 21 8 36 34 10 29 8 30 9 14 50 8 59	4       1 1.5   0.5 1.5	82 87 25 14 10   10 15 30.5 33.5 43.5 50.5 68 20 2 21.5	...    10 15 30.5 33.5 43.5 50.5 68 20	E E E E E E E E E E E E W W W	10 240 60 40 15 ± 40 20 30 30 30 30 30 25 10 ± 35	Bright. Ca. Ca. A streak slanting northwards. Ca. Ca. Ca. Ca. Ca. Ca. Ca. Very faint. 4" broad and 25" high in Ca. Seeing bad. Bright sky and unsteady limb. Ca photograph 10h 29m (poor).
January 30. G.N.	8 44 9 22 31 8 44 44 9 29 29 28 28 20 20 8 44 44 9 39 39 36 35 34	...    1 1.5   3 1 2 0.5 2	47.5 19 2.5  1 15 42.5 49.5 59.5 67 77.5 75.5 20.5 7 14 21 38.5 44.5 48.5	...  1 15 42.5 49.5 59.5 67 77.5 75.5 20.5	E E E E E E E E E E W W W W W W W W	20 15 Low 30 20 10 10 80, 10 20 15 15 25 10 25 15 15 15	Ca. Chromosphere very bright. Ca. A streak slanting southwards. Ca. 20" high in Ca. Faint. Top flows eastwards. Faint. Ca. Tops connected by a Ca streak. Ca photograph 8h 44m (poor).

Date and observer	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
January 31. S.S.	9 14	2	38 5	...	E	120 ±	Faint. Shape slightly different and heights 70" and 25" in Ca.
	10 0		45.5		E	80	Ca. Detached.
	9 11		88		E	30	
	7		Equator.		E	15	
	4	4		17 5	E	85	Top flows eastwards and meets the last prominence. 9° broad and 50" high in Ca
	8 59			48	E	15	
	9 50			79.5	W	10	Faint.
	39	7		16.5	W	70	
	84	4		Equator.	W	25	
	32		17		W	15	
	29	4	39.5		W	20	
	24		59		W	20	Observed through thin cirrus. Ca photograph 10h 0m.
February 1. A.Y.S.	9 45	...	69.5	.	E	10	
	28		47.5		E	35 ±	Very faint Detached. Changing in Ca, 45" high at 8h 42m and 60" high at 9h 44m.
	24		45.5		E	10	
	15		41.5		E	45	Faint.
	13		30		E	10	
	44		25		E	30	Ca. Very faint.
	10		12		E	15	
	0	1		13 5	E	60, 25	Top bends and meets limb at — 6°E Streaks proceed bothways
	8 52	3		25.5	E	10	} Connected in Ca.
	52			29	E	10	
	51			34	E	10	
	9 44			51.5	E	15	Ca. Faint.
	10 10			55.5	W	15	
	9			37	W	20	Very faint. 2° broad in Ca.
	0	9		16.5	W	100	Two big prominences with tops connected. 100" and 75" high in Ca.
	8 49	4	88		W	15	Ca. Seen only at 8h 49m. A thin streak almost parallel to limb.
	9 44	2	38.5		W	10, 20	40" high in Ca
	48		52.5		W	10	
	44		78 5		W	15	Ca. Faint. Ca photographs 9h 44m and 8h 49m.
February 2. G.N.	8 46	3	50	..	E	60	Ca.
	46		47.5		E	15	Ca.
	46	2	45.5		E	30	Ca.
	9 6	2	31		E	25	
	8		10		E	15, 20	Only 10" in Ca.
	1	6		12	E	80, 20, 25	Surmounted in Ca by a detached cloud 100" high.
	8 58			29	E	10	
	40			75	W	15	Ca.
	9 22	4		87	W	45, 25	
	19	3		14.5	W	60	Top flows southwards 70" and 80" high in Ca.
	14		2		W	10	
	13	4	24		W	25	
	8 46	9	30.5		W	100, 135	Ca. Connected with the last. Slants as far as +46°W.
	46		48.5		W	15	Ca.
	9 10		48 5		W	15	
	10		50 5		W	15	Ca photographs 8h 46m and 9h 15m.
February 3. S.S.	8 49	...	49.5	..	E	70	Ca. } Connected in Ca.
	0 6	1	47.5		E	50	
	6		44		E	30	
	6	1	41.5		E	25	
	0		22		E	20	

Date and observer.	Hour I.S.T.		Base.	Latitude.		Limb.	Height.	Remarks.
				North.	South.			
1909.	H.	M.	°	"	"		'	
February 3 — <i>conid.</i>	S.S.	9 0	.	20	.	E	10	
		8 58	1	11	.	E	20	Faint.
		49		Equator.		E	15	Ca.
		9 52		5		E	10	
		8 49		22		E	20	Ca.
		49		26		E	15	Ca.
		49		30		E	15	Ca.
		50		38.5		E	10	
		49		71		E	10	Ca.
		9 3	2	38.5		W	30	20' high in Ca.
				20		W	00, 45	Ca. Bends bothways. A small portion of this 15" high is seen in H.
		9 35		1		W	10	Faint.
		34		3		W	10	
		32		12		W	10	
		30	3	23		W	30	} Form a single connected prominence in Ca, ex- tending from + 31° W to + 12° W and 60' and 45' in height.
		30	2	27.5		W	25	
		25		55.5		W	10	Observed through cirrus. Ca photograph 8 <sup>h</sup> 49 <sup>m</sup> .
February 4.	A.Y.S.	9 14	...	76	...	E	10	
		8 38		70		E	15	Ca.
		9 12		55.5		E	15	
		10	2	48.5		E	40	} Connected in Ca.
		8	3	48.5		E	20	
		6		38.5		E	15	
		5	1	28.5		E	30	Top bends and meets limb at + 20° E.
		8 38		1		E	15	Ca.
		9 3			1	E	25	
		8 38	4		4	E	20	
		52			6.5	E	25	
		55			9.5	E	10	
		47			13	E	10	
		44			23	E	10	Slants northwards. 30' in Ca.
		43			32	E	10	
		40			42	E	20	Faint.
		35			64	E	10	
		35	1		66	E	15	
		38			58.5	W	10	Ca.
		9 39	4		40.5	W	40	
		36	2		20	W	65	100' in Ca. Ca streaks extend to - 16° W.
		8 38	2		10	W	45	Ca. Slants southwards.
		9 32	2	3		W	45	See Note 1.
		30		11		W	25	
		22	15	24.5		W	70	See Note 2. Ca photographs 8 <sup>h</sup> 33 <sup>m</sup> and 8 <sup>h</sup> 55 <sup>m</sup> .
February 5.	G.N.	9 27	2	51.5	..	E	35	
		25		27		E	15	
		25	1	25		E	20	30" high in Ca.
		8 59		3		E	15	
		10 14	6		22	E	40	Ca.
		14			40.5	E	35	Ca.
		8 52			54.5	E	15	
		50	0.5		75.5	W	15	
		10 14			45.5	W	15	Ca. Faint.
		9 37	2		42.5	W	35	
		10 14	13		21.5	W	70	Ca. Faint.
		9 35			5.5	W	15	
		35		1		W	25	} Connected by a streak in Ca.
		10 14		8		W	15	
		14		11.5		W	40	Ca. Detached.
		14		22		W	60	} Connected, and 60" and 85" high in Ca.
		14	1.5	24.5		W	20	
		9 32	4	29		W	60 ±	
		8 52		52.5		W	30	Ca. Detached. Seen only at 8 <sup>h</sup> 52 <sup>m</sup> .
		9 30		58.5		W	15	Seen only at 8 <sup>h</sup> 52 <sup>m</sup> in Ca. Poor weather. Ca photographs 10 <sup>h</sup> 14 <sup>m</sup> and 8 <sup>h</sup> 52 <sup>m</sup> .

Date and observer.	Hour I S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
February 6.	S.S.	...	72	..	E	15	
	9 0	...	54.5		E	10	Ca.
	8 31		53.5		E	10	Ca.
	58		50.5		E	10	
	58		49.5		E	20	
	55		37.5		E	25	45" high in Ca.
	31		34.5		E	10	Ca.
	52		32		E	15	
	48	3	12.5		E	30	40" high in Ca. Slants northwards.
	31			8	E	20	Ca.
	42			22	E	15	
	40			34	E	20	Ca. Seen only at 8 <sup>h</sup> 49 <sup>m</sup> .
	39	5		38	E	70 ± 40 ±	Two faint prominences. 40" only in Ca.
	29			79	W	20	} Slant toward and meet each other.
	27			74.5	W	20	
	31			66	W	10	Ca.
	31			67.5	W	10	Ca.
	9 42	4		40.5	W	30	
	30	1		30.5	W	30	Faint.
	28	0.5		23	W	20	
	8 31	5		18.5	W	50	
	9 23		2		W	10	Ca. A faint arch with another small arch within. Visible in D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> , and 20" high in Ca. A thin Ca. streak from top meets limb at - 5° W.
	20	1		8	W	20	
17			12	W	Low	D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> bright.	
17			15	W	Low	D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> bright.	
17	2		23	W	30	See Note.	
18	2		29	W	20	40" high in Ca.	
9 11			40.5	W	15		
8			57.5	W	15		
8 31			82.5	W	15	Ca. Ca photographs 8 <sup>h</sup> 31 <sup>m</sup> and 8 <sup>h</sup> 49 <sup>m</sup> .	
February 7.	S.S.	...	83	...	E	20	Ca.
	8 25	...	70		E	15	
	18		60.5		E	10	
	8 25	2	50.5		E	15	Ca.
	25	1	46		E	50	Ca. } Connected in Ca.
	9 15	1	40		E	25	5" broad in Ca. }
	14		36.5		E	10	
	12	1	29.5		E	10	20" high in Ca.
	8 25		25		E	20	Ca.
	9 11	6	13		E	30	30" and 40" high in Ca.
	8 25		4		E	30	Ca.
	9 8	1.5	0.5		E	15	
	8 25	1	3.5		E	30	Ca.
	9 0	3		0.5	E	40	Top flows southwards
	3	2		12	E	40	Top flows northwards.
	8 40	2		18	E	10	See Note.
	46	0.5		24	E	25	
	25			26	E	10	Ca.
	42			38	E	25	Faint.
	39			50	E	10	
	36			80	E	10	
	35			83.5	E	10	
	46			82	W	30	Ca. 15" only at 8 <sup>h</sup> 25 <sup>m</sup> .
9 40	7		46	W	25	35" high in Ca.	
8 25	3		33.5	W	10	Ca.	
9 35	1		25	W	25, 70 ±	Top faint, and detached. A Ca. streak from top meets limb at - 32° W.	
8 25				W	15	Ca.	
9 31				W	20		
8 25	11		8	W	75'	Ca. An arch.	
25			11	W	15	Ca.	
9 29			15	W	20		
8 25			68	W	20	Ca. Ca photographs 8 <sup>h</sup> 25 <sup>m</sup> and 8 <sup>h</sup> 46 <sup>m</sup> .	
February 8.	G.N.	...	76.5	..	E	20	Ca.
	8 38	...	52.5		E	15	
	9 12	7	45		E	70	60" high in Ca.







Date and observer.	Hour L.S.T.		Base.	Latitude.		Limb.	Height	Remarks.
				North.	South.			
1909.	H.	M.	°	'	"			
February 12. G.N. —contd.	8	16	...	...	46.5	W	15	Ca. Detached.
	9	9			45.5	W	10	
		8	4		31	W	40	
		8 16			28	W	50	Ca. A slender vertical streak.
		9 6	2		9	W	25	35" high in Ca.
			1		0.5	W	10	A Ca streak from top, 30" high, flows as far as + 4° W.
		8 2		7		W	40	Ca. Seen only at 8 <sup>h</sup> 2 <sup>m</sup> . A streak from top, 30" high, extends as far as + 13° W.
		9 3	1	21.5		W	30	} Tops connected, and 55" high in Ca.
				28		W	25	
				32		W	10	Ca.
			1	47		W	20	
			2	54.5		W	25	Ca.
				59.5		W	15	Ca.
								Ca photographs 8 <sup>h</sup> 16 <sup>m</sup> and 8 <sup>h</sup> 2 <sup>m</sup> .
February 13. A.Y.S.	9	13	...	32.5	..	E	15	40" high in Ca.
	8	18		70		E	10	Ca.
	9	3		40.5		E	35	Base bright. Top faint and 50" high.
		0	4	24		E	20	
		8 50	4	14		E	35	45" high in Ca.
		58		6		E	20	Bright, detached.
		51		Equator.		E	10	
		18		12		E	30	Ca. A slender vertical streak.
		48		15		E	10	
		45	4	35.5		E	40	
		39		44.5		E	10	
		37		69.5		E	10	
		35		71.5		E	10	
		33		71		W	10	
		32		59.5		W	20	
		9 40		49		W	10	
		45	6	44.5		W	40	Faint.
		43	1	32.5		W	20	
		36	12		5	W	25, 35	
	8 18		3		W	30	Ca.	
	9 30		12		W	Low	Bright.	
	8 18		27		W	20	Ca.	
	9 25		32.5		W	35	} Very faint. Connected, and 50", 60", and 15" high in Ca.	
			40.5		W	25		
		2	45.5		W	20	Ca photographs 8 <sup>h</sup> 18 <sup>m</sup> and 8 <sup>h</sup> 23 <sup>m</sup> .	
February 14. A.Y.S.	9	20	4	40.5	...	E	25	
		17	4	17		N	50	
		5			6	E	25	Ca. Detached.
		8 32			9	E	45	Ca. Seen only at 8 <sup>h</sup> 32 <sup>m</sup> .
		32			11	E	25	Ca. Do. do.
		9 14	9		19.5	E	50	
		9			30	E	20	
		6			34.5	E	55	} Connected and 90" high in Ca.
		4	2		26.5	E	25	
		5			38.5	E	10	Ca.
		3			42.5	E	20	
		1	2		59.5	E	10	
		0			69	E	10	Faint.
		8 58			68	W	10	
		47	4		58.5	W	50	
		51			48.5	W	15	
	55	4		44.5	W	50	Top flows southwards and almost meets the last prominence.	
	9 38	27		8.5	W	70		
	5		17		W	15	Ca.	
	26	1	35		W	80 ±	Very faint. 9° broad and 80" high in Ca.	
	24	3	44		W	35	An arch. Ca photographs 9 <sup>h</sup> 5 <sup>m</sup> and 8 <sup>h</sup> 32 <sup>m</sup> .	
February 15. S.S.	9	26	6	41.5	...	E	25	
		24	2	32.5		E	30 ±	Faint. 75" high in Ca.
		21	8	17.5		E	40	60" high in Ca.





Date and observer.	Hour I S.T.	Base.	Latitude		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
February 20. S.S. — <i>conid.</i>	11 37 9 13 11 11 37 9 10 8 8 43 38 34 34 32	.. 2 2 3 3	Equator. 30 32.5 63.5	2 9 16 22 30 49.5 76 8	E E E E E E W W W W W	60 10 25 10 15 20 40 10 10 20 10 20	Ca. Ca. Seen only at 11 <sup>h</sup> 37 <sup>m</sup> in Ca. Two prominences. A Ca streak connects the tops of these, bends and meets limb at 43° E.  Observed through clouds. Ca photographs 11 <sup>h</sup> 37 <sup>m</sup> , 8 <sup>h</sup> 13 <sup>m</sup> , 8 <sup>h</sup> 7 <sup>m</sup> , 10 <sup>h</sup> 23 <sup>m</sup> and 11 <sup>h</sup> 50 <sup>m</sup> . (Flocculus only.)
February 21. G.N.	11 0 9 0 9 46 10 59 9 46 10 55  9 44 11 12 8 8 8 10 43	1 1 2 3 3 3  1 1 1	18.5 8.5 4 3 1  19	45.5 30.5 24.5 13 10.5 5	E E E E E E  W W W W W	20 20 30 15 30 50  15 50 50 45 25 20	} Form a single prominence in Ca 35" high. Ca. Ca. Slants southwards. Two prominences with tops connected by a Ca streak. Faint in Ca.  Ca. 25" high in Ca. 30" high in Ca. 25" high in Ca. } Tops connected by a Ca streak. Ca. Seen only at 10 <sup>h</sup> 43 <sup>m</sup> . Weather poor. Ca photographs 9 <sup>h</sup> 46 <sup>m</sup> and 10 <sup>h</sup> 43 <sup>m</sup> .
February 22. A.Y.S.	10 9 8 23 10 9 8 19 8 19 10 9 9 9 8 17  10 9 8 12  9 7 55 52 47 40  38 38 8 9 8 36 33 30 28	... 3 3 8 1 1.5  5 3 9	19 16 11 9 4.5  39.5 47  78 74.5 34 28.5 18.5 10	11 17 26  39.5 47  78 74.5 34 28.5 18.5 10	E E E E E E  E E E E E E  W W W W W W	10 30 15 10 30 15 15 80  15 40  10 10 35 25 30, 35 25	Ca. } Slant toward, and meet each other. Ca. Ca. Ca. Ca. Base extends to —23° E in Ca. Top slants as far as —32° E. Ca. 70" high in Ca. Differently shaped and 80" high at 7 <sup>h</sup> 52 <sup>m</sup> in Ca.  50" high in Ca.  Changed at 8 <sup>h</sup> 59 <sup>m</sup> . It was a very bright jet 10" high at 7 <sup>h</sup> 52 <sup>m</sup> in Ca. No prominence here. C slightly displaced to red. Very faint in Ca. Ca. 40" high in Ca. Ca photographs 10 <sup>h</sup> 9 <sup>m</sup> , (poor), and 7 <sup>h</sup> 52 <sup>m</sup> , (good flocculus).
February 23. S.S.	8 15 56 15 58 15	... 7 3	36.5 32.5 25.5 18 8.5	...	E E E E E	15 10 35 15 15	Ca. Ca. Ca. Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb	Height	Remarks.	
			North.	South.				
1909.	H. M.	°	°	°		"		
February 23. —contd.	S.S.	8 33	9	.	8.5	E	35	See Note 1.
		29	2	.	17	E	15	
		15			30	E	30	Ca. Slants eastwards.
		27	0.5		30.5	E	15	
		25	4		49	E	25	See Note 2.
		23			61.5	E	20	
		9 30			68	W	10	
		27			60	W	20	Faint.
		8 15			55.5	W	25	Ca.
		9 24			45.5	W	20	Faint.
		22	3		38	W	25	
		17	8		24	W	25	35" high in Ca.
		15			12	W	30	Top bends westwards.
		18			9.5	W	15	
		8 15			4	W	60	Ca. A slender vertical streak.
		9 11	1	2		W	10	
		8		25		W	10	
	5	6	46.5		W	40	Surmounted in Ca by a detached spot 70" high.	
	8 15		50.5		W	10	Ca. photographs 8h 15m, 8h 2m, 8h 5m, 8h 8m and 8h 26m (focculus). 9h 51m, 10h 23m (prominence).	
February 24.	G.N.	8 8	..	12	..	E	15	Ca.
		8 8		8		E	45	Ca. Slants northwards. 80" high at 10h 31m.
		9 8	2	1		E	45	35" high in Ca.
		8 8	1		7	E	15	
		8 8			9	E	45	Ca. } Connected, and surmounted by a small detached spot 45" high in Ca.
		9 4			13	E	20	Ca. }
		8 8	2		17	E	35	Ca.
		9 3	4		27	E	55	
		0	8		41.5	N	85, 30	20" high in Ca.
		8 8	7		48	W	30	Ca.
		9 26	3		28.5	W	25	
		25			24	W	40	
		8 8			15	W	25	Ca.
8 8			12	W	10	Ca.		
8 8			11	W	15	Ca.		
8 8			9	W	20	Ca.		
9 23	2		1	W	30	10" broad, and 55" high in Ca.		
8 8		16		W	30	Ca.		
9 20		46.5		W	25	Slants westwards, and 50" high in Ca. Ca photographs 8h 8m and 10h 31m.		
February 25.	S.S.	9 13	...	72	...	E	15	
		8 9		68		E	20	Ca.
		9 9		47.5		E	10	Ca.
		9 8		30		E	15	25" high in Ca.
		10 39		19		E	20	Ca. Seen only at 10h 39m
		9 8		9		E	35 ±	Slants northwards. Slightly displaced to violet at top. 240" high in Ca.
		0	4	5.5		E	35 ±	Metallic. D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> , b <sub>3</sub> , b <sub>4</sub> bright. } See Note.
		8 58		1.5		E	10	Connected and 70" high in Ca.
		57	1		1.5	E	10	Ca. Detached
		9 9			6	E	30	Ca.
		9 9			8	E	40	
		56	1		15.5	E	15	
		53	1.5		28.5	E	55	
		52			31	E	15	A thin Ca streak connects this with the top of the last prominence.
		50	8		42.5	E	35	
		50			52.5	E	10	
		44			74.5	E	10	
9 38			78	E	10			
38			80	E	10			
8 33	3		24.5	W	30	Base extends to — 21° at 9h 34m.		
9 27	10	20		W	15, 35	See Note 2.		
20	8	42		W	30	70" high in Ca. Ca photographs 8h 9m, 8h 28m and 10h 39m.		
February 26.	G.N.	8 14	...	81	...	E	25	Ca.
		14	4	85.5		E	25, 10	Ca.
		9 35	4	30		E	20, 60	Only 80" high in Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		'	
February 26. G.N. —contd.	8 14	3	20.5	..	E	35	Ca.
	14	16	11		E	60, 45	Ca.
	9 32	2	Equator.		E	15	Shows displacement in C to violet at base for about 1°0' A.
	32			3.5	E	60	Detached 40" high in Ca.
	29	2		11	E	35	12" broad, and 20" high in Ca.
	8 14			26	E	15	Ca.
	9 25	1		30	E	15	
	23			50.5	E	20	
	20			68	E	30	15" high in Ca.
	8 14			12	W	20	Ca.
	14	2		3	W	20	Ca.
	14		Equator.		W	80	Ca. Slants both ways.
	9 45			11.5	W	20	Faint.
	8 14			19	W	10	Ca.
	14			20	W	60	Ca. Detached.
	14			22	W	10	Ca.
	9 42	3		41	W	20	5" broad in Ca.
	38			46.5	W	15	Ca photographs 8 <sup>h</sup> 14 <sup>m</sup> and 8 <sup>h</sup> 26 <sup>m</sup> .
February 27. S.S.	9 42	...	72.5	...	E	10	Ca.
	42		70		E	10	Ca.
	42		55.5		E	10	Ca.
	42		52.5		E	10	Ca.
	15		48		E	10	Almost gone at 9 <sup>h</sup> 16 <sup>m</sup> .
	42		43.5		E	15	Ca.
	42		41.5		E	10	Ca.
	11	12	34.5		E	30, 35	
	42	3	22.5		E	15	Ca
	8		16		E	15	
	42		13		E	30	Ca. Slants as far as + 15° E.
	5	25		12.5	E	65, 80	80" and 50" high in Ca.
	42			36.5	E	20	Ca. Faint.
	8 56			48.5	E	10	
	54			54.5	E	10	
	9 42			81	W	15	Ca.
	8 47			79.5	W	15	
	45			78	W	10	
	42			66.5	W	10	
	9 42	1		54.5	W	15	Ca.
	42	0.5		47.5	W	15	Ca.
	8 43	12		11	W	50	} See Note.
	9 39			7	W	25	
	39			0.5	W	10	
33			12	W	10		
33			15	W	15		
31	2		21	W	45	60" high in Ca.	
27	6		42.5	W	20, 40		
8 12			71.5	W	10	Ca. } Seen only at 8 <sup>h</sup> 12 <sup>m</sup> .	
12			77	W	25	Ca. } Ca photographs 9 <sup>h</sup> 42 <sup>m</sup> , 8 <sup>h</sup> 12 <sup>m</sup> and 11 <sup>h</sup> 41 <sup>m</sup> .	
February 28. G.N.	8 34	.	59.5	...	E	30	Ca.
	54		52.5		E	15	Ca. Seen only at 8 <sup>h</sup> 54 <sup>m</sup> .
	34		48.5		E	25	Ca.
	34	1	44.5		E	20	Ca.
	9 26	3	38		E	40	
	8 34	1	36.5		E	20	Ca
	54		26		E	10	Ca
	9 25		10		E	20	10" high in Ca.
	21	32		9	E	30, 90, 85	70" and 65" high in Ca.
						45, 20	
	10			44.5	E	15	
	9	2		60	E	55	A Ca streak from the middle of it meets limb at -54° E. 30" only in Ca.
	8 34			56.5	W	10	Ca.
	34			40.5	W	10	Ca.
	34			33.5	W	25	Ca.
34	3		26.5	W	15	Ca.	
34			24	W	10	Ca.	
35	14		13	W	95, 70	85" only in Ca.	



Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
March 4. A.Y.S.	8 13	...	...	18	E	10	Surmounted in Ca by a faint detached spot 30" high.
—contd.	13			20	E	15	
	9			47.5	E	10	Ca streaks proceed bothways from top as far as -50° and -55° E.
	7			52.5	E	20	
	7			78	W	10	Faint. 30" high in Ca.
	52			53.5	W	10	
	51	3		41	W	40	Ca
	49			32.5	W	15	
	28			24	W	10	Top flows southwards. 6° broad, and 15" high in Ca.
	48	1		19	W	10	
	46	2		10	W	25	Equator.
	44	2		4	W	25	
	42			2	W	10	Differently shaped in Ca. Extends from +24° to +32° W and 20" and 40" high in it.
	42				W	20	
	34	6		7	W	40	Ca photographs 8h 23m and 9h 29m.
	31	5	15.5		W	20	
	25	5	27.5		W	50	Ca } Two slender vertical streaks.
	22		50.5		W	10	
	21		68.5		W	10	Ca. Seen only at 10h 51m.
March 5. S.S.	8 27	...	74.5	...	E	20	
	27		73.5		E	20	Ca. } Tops connected } 10" high in Ca. } in Ca.
	9 3		62.5		E	15	
	10 51		48.5		E	15	See Note 1.
	8 27	1	33		E	10	
	57	1	30.5		E	20	A Ca streamer from top extends to +10° E. 40" high in Ca.
	55	2	18		E	30, 50	
	52	6	2		E	25, 10	Ca. Slants southwards as far as -23° E.
	48	7		3.5	E	20	
	27			20	E	20	Ca. } Tops connected in Ca. } 50" high in Ca. }
	10 51	2		29	E	15	
	8 43			35.5	E	15	Ca. Detached. Seen only at 10h 51m.
	40			52	E	15	
	9 29			62.5	W	10	Faint.
	29			60.5	W	10	
	26	6		42.5	W	50	Ca. Detached.
	22			26.5	W	15	
	8 27			23	W	15	See Note 2.
	27	3		14.5	W	15	
	10 51			12	W	35	Ca. Detached.
	9 20	1		4.5	W	25	
	8 27			3	W	30	Ca. Detached.
	9 19			0.5	W	10	
	17	11	13.5		W	30	} Tops connected in Ca. }
	12	2	24		W	15	
	9		31		W	30	50" high in Ca. } Tops connected in Ca. }
	8 27		72.5		W	15	
March 6. A.Y.S.	9 5	...	59.5	...	E	10	Ca photographs 8h 27m and 10h 51m.
	3	3	51		E	30	
	8 56	4	33.5		E	40	Very faint.
	24		21		E	35, 45	
	58		20		E	20	See Note 1.
	52		10		E	10	
	48		5.5		E	15	} Connected, and form a single prominence in Ca. } 20" and 25" high }
	48	1	2.5		E	10	
	30	16		12	E	75, 25, 10	A faint Ca streamer from top extends as far as -84° E.
	22	6		23	E	20	
	19			67	W	10	A Ca streamer from top 10" and 30" high flows westwards, and meets limb at -3° W.
	9 26	5		45	W	20, 25	
	22	1		21.5	W	15	See Note 2.
	19	3	12.5		W	30, 50	
	12	2	28		W	30	Almost detached. } Connected in Ca. }



Date and observer.	Hour I.S.T.	Base.	Latitude		Lumb.	Height	Remarks.
			North	South.			
1909.	H. M.	°	°	°		"	
March 6. A.Y.S.	9 8	.	45.5		W	10	
—contd.	8 24	.	56.5		W	10	Ca. Ca photographs 8 <sup>h</sup> 24 <sup>m</sup> , 9 <sup>h</sup> 22 <sup>m</sup> and 10 <sup>h</sup> 13 <sup>m</sup> .
March 7. A.Y.S.	8 48	.	52.5	..	E	10	20" high in Ca.
	44	8	48		E	40 ±	65" high in Ca.
	37		38.5		E	20	Very faint.
	9 18		33.5		E	10	Ca. Faint
	8 35	1	32		E	40	30" high in Ca.
	9 18		14		E	10	Ca.
	8 32		8		E	10	
	27	8		10	E	60 ±	70" high at 10 <sup>h</sup> 0 <sup>m</sup> . In Ca it is 105" and 175" high, and several streamers extend bothways to + 5° and - 20° E.
	20	2		20	E	30	Connected with the last in Ca.
	9 16	8		30.5	E	25	Ca.
	8 17			41	E	15	
	55	2		45.5	W	15	
	54			36.5	W	20	10" high in Ca
	9 26	2		27	W	10	Ca.
	16	7		6.5	W	50, 110	Ca. Faint streamers slanting southwards as far as - 28° W
	16		2		W	10	Ca.
	16	8	11		W	70	Ca. See Note. Observed through thin cirrus. Ca photographs 9 <sup>h</sup> 16 <sup>m</sup> , 9 <sup>h</sup> 41 <sup>m</sup> and 8 <sup>h</sup> 52 <sup>m</sup> .
March 9. A.Y.S.	9 23	...	48.5	...	E	30 ±	8° broad, and 45' high in Ca.
	20	3	43		E	40	
	17		16		E	10	
	8 15		13		E	10	Ca.
	9 12	2	2		E	25	See Note 1.
	6			8	E	10 ±	Slants northwards, and 20" high in Ca.
	6			13	E	15	
	8 59	4		30	E	25	
	55			39	E	15 ±	
	15			78	E	10	Ca.
	53			82	W	20	Chromosphere slightly elevated.
	9 52	5		48	W	20	
	49	5		38.5	W	135	Top flows southwards as far as - 52° W.
	34	1		27	W	25	} See Note 2.
	33	1		24.5	W	20	
	32	2		20	W	30	
	8 15	3		6.5	W	105	
	16		3		W	10	Ca.
	9 27		4.5		W	15	Ca.
	27	1	6.5		W	10	A jet.
	8 15		15		W	45	Ca. Top bends westwards, and almost meets the last prominence. Ca photographs 8 <sup>h</sup> 15 <sup>m</sup> , 8 <sup>h</sup> 38 <sup>m</sup> , 10 <sup>h</sup> 29 <sup>m</sup> , 11 <sup>h</sup> 21 <sup>m</sup> , 12 <sup>h</sup> 8 <sup>m</sup> and 14 <sup>h</sup> 31 <sup>m</sup> .
March 10. S.S.	9 98	.	74.5	...	E	10	
	8 23	2	51.5		E	40	Ca.
	9 22	8	43		E	100	In Ca, it was 100" high at 8 <sup>h</sup> 23 <sup>m</sup> and 110" high at 11 <sup>h</sup> 41 <sup>m</sup> .
	16	4	3		E	40	See Note.
	14			8	E	50	Faint streaks.
	8 23	4		12	E	40	Ca. Faint. An arch enclosing a bright jet 10" high. A small portion of this 10" high was visible in H.
	10	4		25	E	25	} Connected by a Ca streak.
	8	1		30.5	E	20	
	23			42.5	E	25	Ca. A slender vertical streak.
	9 6			55	E	10	
	8 23			82	E	10	Ca.
	59			88	W	25	Faint.
	57	4		38.5	W	70	Slants southwards. About 100" high at 9 <sup>h</sup> 35 <sup>m</sup> .
	51			27	W	20	Faint. 75" high in Ca. Slants northwards, and almost meets the next prominence in Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
March 10. S.S.	8 45	12	..	10	W	40	75" high in Ca.
—contd.	41		1		W	20	Bright, and 10" high in Ca.
	40		2		W	20	
	37	7	7.5		W	35	A curved streak connected to limb at two points.
	31		15		W	25	Faint Slants northwards. 15" high in Ca. Not slanting at 9 <sup>h</sup> 35 <sup>m</sup> .
	9 34		24		W	20	Detached.
	32	3	30		W	20	Faint.
	8 23		78		W	10	Ca
March 11. A.Y.S.	8 45		45.5		E	20	Ca photographs 8 <sup>h</sup> 23 <sup>m</sup> and 11 <sup>h</sup> 41 <sup>m</sup> .
	36	3	42		E	40 ±	Very faint. 135" high in Ca.
	29	1.5	17		E	15	4" broad in Ca. } Connected by a thin streak.
	29	4	10		E	25	
	23			41.5	E	15	
	18			73.5	W	Low	
	17			84	W	10	
	9 18	3		50.5	W	15	8" broad in Ca.
	15	3		41	W	15	
	9			22	W	20	
	7	8		12	W	60	50" and 15" high in Ca.
	1	2	1		W	10	
	8 56		17		W	50	Ca. Slants northwards.
	53		28		W	10	
	58	7	33		W	45	65" high in Ca.
	56		48.5		W	10	Ca. Slants westwards.
	53		68		W	10	Faint.
	50		73.5		W	10	Ca photographs 8 <sup>h</sup> 56 <sup>m</sup> and 9 <sup>h</sup> 15 <sup>m</sup> .
March 12. S.S.	9 12	..	61	..	E	10	Ca.
	8 59	1	52.5		E	15	
	9 12		46.5		E	35	Ca. Detached.
	8 58	3	41		E	35	
	58	0.5	36.5		E	15	
	58		34.5		E	10	
	51	1		7	E	15	
	50	2		25	E	70	10" broad, and 100" high in Ca. Top flows eastwards as far as - 10° E. } Connected in Ca.
	44			31.5	E	20	
	9 12	1		34	E	25	Ca.
	12			69	E	15	Ca.
	12			73.5	W	10	Ca.
	8 37			65	W	10	
	36			51.5	W	10	
	35			45.5	W	15	
	33			35.5	W	10	
	32			29	W	20	
	27			18	W	10	
	25	20		7	W	50, 30	60", and 45" high in Ca.
	9 11		10		W	10	
	9	1	30.5		W	50	60" high in Ca.
	6		41.5		W	20	Top flows westwards, and meets the last prominence.
							Ca photographs 9 <sup>h</sup> 12 <sup>m</sup> and 8 <sup>h</sup> 10 <sup>m</sup> .
March 13. A.Y.S.	8 56	...	82	...	E	10	Faint.
	11		69		E	10	Ca.
	11		61		E	10	Ca.
	50	5	41		E	40	50" in Ca at 8 <sup>h</sup> 11 <sup>m</sup> , and 45" at 9 <sup>h</sup> 19 <sup>m</sup> .
	44		15		E	15	
	42		10		E	Low	Bright.
	11			21	E	10	Ca.
	11			23	E	15	Ca.
	38	1		32.5	E	10	4" broad and 80" high in Ca. } Connected in Ca.
	35	1		38.5	E	10	40" high in Ca.
	38			44.5	E	10	
	30			82.5	W	15	
	9 12			63	W	10	
	8 11			45.5	W	15	Ca.
	11			20	W	10	Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	"	°	'		"	
March 18 —contd.	A.Y.S.	..	..	25	W	120	Ca. A long cloud extending as far as — 4° W and connected to limb at lat. — 25° W.
	8 11	17	7.5		W	25	35" high in Ca.
	9 6	1	34		W	35	Slants westwards.
	2		38		W	10	
	0		46.5		W	10	Ca.
	8 11						Ca photographs 8 <sup>h</sup> 11 <sup>m</sup> and 9 <sup>h</sup> 19 <sup>m</sup> .
March 14.	A.Y.S.	8	45.5	..	E	30	40" high in Ca.
	9 26		18		E	10	
	22		15.5		E	10	
	22			10	E	10	Ca.
	8 35			13	E	10	
	9 20			31.5	E	20	30" high in Ca.
	18	1		38.5	E	25	
	16			48.5	E	10	
	8 49			81	E	low	Bright.
	48			72.5	W	10	
	9 54	0.5		61	W	10	
	8 46			30.5	W	10	
	9 51	1		25	W	45	30" only in Ca.
	49	4		19	W	10	A Ca streak from top meets the base of the last prominence.
	47			4	W	10	
	45	20	12		W	25, 45	
	42		41		W	30	
	38	3	47		W	20	30" high in Ca.
	34	1	53.5		W	20	40" high in Ca.
	33		65		W	10	Ca.
	8 35						Ca photograph 8 <sup>h</sup> 35 <sup>m</sup> .
March 15.	G.N.	...	77	...	E	10	Ca.
	11		51.5		E	15	Ca.
	11		50.5		E	10	Ca.
	11	2	47.5		E	20	Ca.
	11		45.5		E	10	Ca.
	48		43		E	20	Faint, 3° broad, and 30" high in Ca.
	47	1	26		E	20	6° broad in Ca.
	11		20		E	10	Ca.
	46	6	15		E	15	
	45	1	8.5		E	45	See Note.
	11	2		29	E	25	Ca.
	42			31.5	E	25	} Connected in Ca.
	42			34.5	E	20	
	42	2		37.5	E	40	
	42			39.5	E	25	
	11			82.5	E	10	Ca.
	11			78.5	W	10	Ca.
	11			77	W	10	Ca.
	38			70.5	W	20	
	38	1		65.5	W	15	
	37			57.5	W	15	
	11	2		42.5	W	90	Ca. Top flows westwards.
	11			38.5	W	15	Ca.
	9 2	5		28.5	W	20, 40	25" high in Ca.
	4			6	W	25	Top bends in Ca, as far as — 10°; 15" high in Ca.
	0	2	4		W	20	
	8 53	7	18.5		W	40	50" high in Ca. } Connected in Ca.
	54	2	20		W	20	
	52	4	51.5		W	35	Two prominences connected at top.
							Ca photographs 8 <sup>h</sup> 11 <sup>m</sup> and 8 <sup>h</sup> 25 <sup>m</sup> .
March 16.	S.S.	...	77	...	E	30	Ca.
	8 45		67		E	15	
	9 10		46		E	20	
	18	3	36.5		E	30	
	17		34.5		E	30	Ca. Seen only at 11 <sup>h</sup> 35 <sup>m</sup> .
	11 35		31.5		E	30	
	9 15		11.5		E	80, 10, 20	Streamers from top meet limb at — 6° El. 90" and 75" high in Ca.
	10	17			E		

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
March 16. S.S.	8 45	..	..	30	E	15	Ca.
—contd.	57	3		25	E	25	No prominence. F displaced 0.5 Å to red.
	57	2		36	E	25	
	58			48.5	E	25	6° broad in Ca.
	58			77.5	E	10	
	49			74.5	W	15	25" high at 9h 40m.
	49			71	W	10	
	47			60	W	15	
	44	1		32	W	15	At 9h 30m this consisted of two groups of faint filaments 30" high.
	37	6		22	W	40	See Note
	31	1		9.5	W	30	A bank 10" high at 9h 35m. } Connected in Ca.
	29			0.5	W	10	
	9 34		8		W	15	
	8 45		18		W	10	Ca.
	9 38		31.5		W	10	
	31	5	41		W	40, 30	
March 17. A.Y.S.	8 24	..	78.5	...	E	10	Ca. photographs 8h 45m, 8h 20m and 11h 35m.
	24		78.5		E	10	Ca.
	24		60		E	10	Ca.
	50	4	44.5		E	20	
	48		87.5		E	35	25" high in Ca.
	45		88.5		E	40	Slants northwards, and almost meets the last prominence. 30" high in Ca.
	35	11	14.5		E	80	70" and 60" high in Ca. Streamers from top meet limb at — 4°E.
	28			37.5	E	10	
	25	8		47.5	E	30	
	16			83	W	10	Almost detached.
	9 3			65	W	10	
	8 24	2		57.5	W	15	Ca.
	9 2	1		48	W	10	
	8 24			41.5	W	10	Ca.
	59	6		28	W	20	See Note
	58	2	6		W	15	25" high in Ca.
	56	3	27.5		W	20	
	55	5	49		W	30	
	24		60		W	10	Ca.
	24		62		W	10	Ca.
	52		70		W	10	Ca. photographs 8h 24m and 8h 7m.
March 18. G.N.	8 24	..	69	...	E	30, 15	Ca. Seen only at 8h 24m.
	7		64		E	10	Ca.
	7		46.5		E	10	Ca.
	9 4		48.5		E	20	
	8 24		41.5		E	20	Ca. Seen only at 8h 24m.
	7		84.5		E	10	Ca.
	7		28		E	10	Ca.
	9 1	2	22		E	50	4° broad in Ca.
	8 58	4	13		E	20	Eruptive. D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> , b <sub>3</sub> , b <sub>4</sub> bright over the prominence. } Connected, and form a single prominence in Ca 50", and 45" high.
	7	3	8.5		E	40	Ca.
	7		4		E	20	Ca.
	7		2		E	15	Ca.
	51	2		14	E	25	10" high in Ca.
	7			20	E	15	Ca.
	7			22	E	20	Ca.
	7			24	E	35	Ca. Slants southwards.
	49	8		45.5	E	55	40" high in Ca.
	47			54.5	E	20	
	43	4		59.5	W	50	40" high in Ca.
	9 15	0.5		9	W	15	
	8 7	10		1	W	25	Ca.
	9 14	1	26		W	20	A Ca streak connecting the tops of these meets limb at + 34° W.
	12	1.5	28.5		W	20	45" high in Ca.
	8	6	47.5		W	55	Ca.
	8 7		60		W	15	Ca. photographs 8h 7m and 8h 24m.

Date and observer.	Hour I.S.T.		Base	Latitude.		Limb.	Height.	Remarks.
				North.	South.			
1909.	H	M.	.	°	'		"	
March 19.	S.S.	8 7		53 5	.	E	30	Ca.
		9 22		46 5		E	45	Shape slightly different in Ca.
		8 7		43		E	30	Ca. A jet.
		7		42 5		E	10	Ca.
		9 19	12	24		E	60	30" high at 9 <sup>h</sup> 34 <sup>m</sup> , 40" high in Ca. A streamer from top meets the next prominence.
		19		13		E	20	Brighter at 9 <sup>h</sup> 54 <sup>m</sup> .
		8 7		10		E	100	Ca. A slender vertical streak surmounted by a detached dot. } Connected.
		7	2	7		E	100	Ca.
		9 11		4		E	10	
		9	2		7	E	15	
		0	8		20	E	80	See Note.
		8 56			18	E	30	Faint.
		54	4		44 5	E	55	35" high in Ca.
		45			62	E	10	
		45			64	E	15	
		39	7		57	W	85	
		35			51 5	W	10	
		34	1		49 5	W	25	10" high in Ca.
		32			34 5	W	10	25" high at 9 <sup>h</sup> 44 <sup>m</sup> .
		9 43			31 5	W	15	
		8 30			21	W	15	
		9 35			6	W	25	A Ca streamer from top flows as far as the equator.
		37		18		W	20	
		32	3	30		W	25	15" high in Ca
		32		32 5		W	10	
		30	5	47		W	30	
		8 7		51 5		W	85	Ca. Faint. Detached.
		7		76		W	15	Ca.
								Ca photographs 8 <sup>h</sup> 7 <sup>m</sup> and 8 <sup>h</sup> 23 <sup>m</sup> .
March 20.	S.S.	9 34	17	28 5	...	E	90	80" high in Ca.
		24	2	10 5		E	20	See Note.
		8 43		6		E	40	Ca.
		9 23			5	E	20	
		23			6	E	20	
		20			15	E	75	A detached cloudlet. Connected to limb in Ca by two thin streaks.
		8 43		20		E	40	Ca.
		9 16	4	43 5		E	35	60" high in Ca.
		12		51 5		E	10	
		10		74		E	15	
		8		81		W	10	
		8 43		59 5		W	15	Ca.
		43		62		W	15	Ca.
		0 4		52 5		W	85	A streak slanting as far as — 57° W. 115" high in Ca.
		8 57			39 5	W	10	∩ displaced to violet. No displacement, and prominence very faint and almost gone at 8 <sup>h</sup> 59 <sup>m</sup> .
		56			36 5	W	25	
		54	2	32 5		W	30	45" high in Ca.
		53	2	24		W	25	
		52	3	16 5		W	15	
		51	2	10 5		W	35	
		9 49			6	W	25	Slants both ways. 40" high in Ca.
		39		17		W	10	30" high in Ca.
		8 43		23		W	40	Ca. Detached.
		9 37	2	46 5		W	15	25" high in Ca.
		37		52 5		W	45	
		8 43		81		W	10	Ca.
								Ca photographs 8 <sup>h</sup> 43 <sup>m</sup> and 8 <sup>h</sup> 10 <sup>m</sup> .
March 21.	G.N.	8 58	4	30	...	E	60	8° broad, and 70" high in Ca.
		55	4	20		E	15	Differently shaped at 9 <sup>h</sup> 57 <sup>m</sup> in Ca.
		54	3	18 5		E	25	Shows slight displacement to red at +10°. 1° broad in Ca.

Date and observer.	Hour L.S.T.	Base.	Latitude.		Lamb.	Height.	Remarks.
			North.	South.			
1909.							
March 21.	G.N.						
—contd.							
	8 52	4	..	18.5	E	25	27° broad, and 150" high in Ca.
	48	2		38	E	15	Not in Ca.
	9 19	6		46.5	E	70	Ca.
	19			70	E	30	Ca.
	8 45	1		72	E	20	
	9 19			37.5	W	30	Ca.
	19	1		35	W	25	Ca. Slants westwards.
	9			29	W	25	40" high in Ca.
	8	1		17	W	30	
	19			15	W	15	Ca. Detached.
	19			13	W	10	Ca.
	7			8.5	W	10	
	6		6		W	15	25" high in Ca.
	4		40.5		W	15	
	2	4	48.5		W	55	
	2	1	55.5		W	20	
Ca photographs 9 <sup>h</sup> 19 <sup>m</sup> , 9 <sup>h</sup> 57 <sup>m</sup> and 8 <sup>h</sup> 23 <sup>m</sup> .							
March 22.	A.Y.S.						
	8 12	...	55.5	...	E	30	Ca.
	12	1	39		E	30	Ca.
	9 19	2	35.5		E	30 ±	See Note.
	18		1		E	15	
	12			12	E	15 ±	
	12			16	E	60	Ca. Detached.
	12			19	E	70	Ca.
	12			22	E	100	Ca. Detached.
	8 50	2		35	E	25	A Ca streak from base proceeds as far as — 28° E.
	9 12			45.5	E	15	Ca.
	12			66	W	15	Ca.
	12			58.5	W	20	Ca. Top bends as far as — 61° W.
	30	1.5		34.5	W	30	Top bends as far as — 39° W.
	31	2		30	W	15	40" high in Ca.
	12			28	W	10	Ca.
	12			20	W	10	Ca.
	24	1	4		W	30	60" high in Ca.
	12	3	47		W	60	Ca.
	12		53.5		W	15	Ca.
Seeing poor.							
Ca photograph 8 12 <sup>m</sup> . Flocculus 8 <sup>h</sup> 2 <sup>m</sup> .							
March 23.	S.S.						
	10 24	7	11.5	..	E	25	17° broad in Ca.
	17	3		24.5	E	70	Ca. Slants northwards.
	17	2		33.5	E	15	
	17	1		35	E	10	} Tops connected, and 30" high in Ca.
	18			39.5	E	15	
	11			49.5	E	15	
	9			66.5	E	10	
	49			65.5	W	10	
	48			51	W	15	
	17			32.5	W	30	Ca. Faint.
	45	10		25	W	80	
	42	3	3.5		W	30	50" high in Ca.
	38	6	47.5		W	30	Faint in Ca.
	35		55.5		W	25	15" high in Ca.
Seeing poor.							
Ca photograph 10 <sup>h</sup> 17 <sup>m</sup> .							
March 24.	G.N.						
	8 6	..	27	...	E	15	Ca. } Connected by a Ca streak.
	58	5	16.5		E	60	
	6		9		E	10	Ca.
	6		4		E	20	Ca.
	55	1	0.5		E	10	
	6			1	E	15	Ca.
	6	2		3	E	15	Ca.
	6	4		17	E	10	Ca.
	6			21	E	105	Ca. Faint.
	6			33.5	E	10	Ca.
	6			35.5	E	15	Ca.
	6	2		38.5	E	30	Ca.
	50	1.5		48.5	E	15	
	6			61	E	15	Ca.
	9 5	11		25.5	W	95, 65	120" high in Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb	Height.	Remarks.
			North.	South.			
1909.	H. M.	"	°	°		"	
March 24. G.N.	8 6	..	..	14	W	10	Ca.
—contd.	6	7	47	12	W	15	Ca.
	9 1	1	68		W	30	Ca.
	8 6		74.5		W	20	10' high in Ca.
	6		77		W	10	Ca.
						10	Ca.
							Ca photographs 8h 6m and 8h 18m.
March 25. A.Y.S.	9 5	..	81	...	E	10	
	42		80		E	10	Ca. }
	42		79.5		E	15	Ca. } Seen only at 9h 42m.
	42		78.5		E	10	Ca. }
	2	3	66		E	20	
	0	1	54		E	15	
	0		51.5		E	10	
	8 20		47.5		E	20	Ca.
	58		30		E	20	30' high in Ca. }
	20	3	26.5		E	30	Ca. } Connected in Ca.
	50	8	1		E	70	
	46			12.5	E	10	
	44	6		18	E	15	
	41	1		26.5	E	20	
	39			45.5	E	15	
	39			48	E	15	Faint. 30' high in Ca.
	33			82	N	10	
	11 51	4		70.5	W	40	Ca. Seen only at 11h 51m.
	9 25			61	W	20	80' high in Ca.
	25			59.5	W	15	Slants southwards.
	12			58.5	W	10	
	12			50.5	W	15	
	8 20			23.5	W	170, 60	See Note.
	9 10	2		1	W	20	
	8	1	15		W	20	
	8 20		23		W	20	Ca.
	20		33.5		W	15	Ca.
	9 7		36		W	10	
	8 20		48.5		W	35	Ca.
	20	2	53.5		W	15	Ca.
	9 6		59.5		W	10	
	42		78		W	30	Ca. Seen only at 9h 42m.
	8 20		79.5		W	10	Ca.
	20		81		W	10	Ca.
							Observed through thin cirrus.
							Ca photographs 8h 20m, 8h 31m, 9h 42m, 11h 51m and 15h 49m.
March 26 S.S.	9 0	...	88	...	—	15	Faint.
	8 57		41.5		E	10	
	55	6	30.5		E	45	
	9 38	38		10	E	45	A series of connected prominences.
	8 29	2		45.5	E	25	Not in Ca.
	1			49.5	E	20	Ca
	23			78	W	15	
	9 22			58.5	W	20	Nothing here at 8h 18m.
	8 17			32.5	W	10	
	1			19	W	20	Ca. Slants westwards.
	1			15	W	20	Ca.
	14	2		12	W	10	20' high at 9h 20m.
	9 19			3	W	25	40' high in Ca. Ca streaks proceed southwards as far as — 15° W.
	18			1	W	20	35'' high in Ca.
	8 1		11		W	10	Ca.
	1		12		W	10	Ca.
	1		16		W	45	Ca.
	1		27		W	20	Ca.
	9 14	1	31		W	15	O slightly displaced to red at base.
	18		45.5		W	110	Detached.
	10	5	51		W	45	
	8 1		68		W	15	Ca.
							Ca photographs 8h 1m and 8h 17m.

Date and observer.	Hour L.S.T.	Base.	Latitude.		Limb	Height.	Remarks.	
			North.	South.				
1909.								
March 27.	G.N.	9 2	7	34.5	..	E	55, 20	12° broad in Ca.
		8 12		24		E	10	Ca.
		12		20		E	10	Ca.
		9 0	5		0.5	E	85, 20	13° broad in Ca. } Connected, and surmounted by
		8 50	5		14	E	80	See Note a detached cloudlet 90" away
		45	7		24.5	E	90	from limb in Ca.
		12			64	E	10	Ca.
		40	1		74.5	W	20	
		9 15	1		31.5	W	30	8° broad in Ca. }
		15	2		27	W	30	
		15	8		23.5	W	85, 80	Connected in Ca.
		12			18	W	15	
		12			13.5	W	15	40" high in Ca.
		11			7	W	20	30" high in Ca. }
		8 12			15	W	40	Ca. Slants westwards.
		12	3		21.5	W	40	Ca.
		12			32	W	15	Ca.
		12			37.5	W	10	Ca.
		9 8	4		48.5	W	55	65" high in Ca.
		8 12			78.5	W	10	Ca.
12			83	W	10	Ca. photographs 8h 12m and 8h 22m.		
March 28.	S.R.	9 20	1	41.5	..	E	20	30" high in Ca. } Connected, and form a single
		18		37.5		E	50	Ca. Broader at top. } prominence in Ca.
		19	4		34	E	30	
		14			20	E	15	
		18			18	E	10	Ca.
		18			16	E	15	
		10	8		9	E	25	75" high in Ca. Shape slightly different at 9h 7m.
						E	20	Base extends to -15°, and height 30" and 45" in Ca.
		4	2		25	E	45	
		18	3		27.5	E	130	Ca. Thin slanting streaks. } Connected in Ca.
		2			29	E	10	
		1	2		36.5	E	20	
		8 57			33	E	10	Very faint.
		9 38			58	W	25	Not seen at 8h 55m.
		8 42	15		27.5	W	60	45" high in Ca.
		9 35			11	W	25	
		33			10	W	10	
		32	2		19	W	10	20" high in Ca.
29	3		46	W	50 ±	7° broad, and 70" and 85" high in Ca.		
18			50.5	W	10	Ca.		
24			73	W	15	Faint.		
March 29.	A.Y.S.	8 56	.	49.5	..	E	10	
		53		41		E	20	
		54		38.5		E	20 ±	3° broad in Ca.
		53	6		20	E	40	Slants northwards. Nothing here in Ca.
		50			14	E	20	30" high in Ca. } Connected in Ca.
		4			11	E	10	
		4			8	E	40	Ca.
		4			3	E	20	Ca.
		49			1	E	15	
		49				E	10	
		45			8	E	15	
		40	9		25.5	E	75	Changing. A streak from top meets the last prominence.
		33			34	E	20	
		33			37	E	15	8° broad in Ca.
		31			41.5	E	20	Faint.
		4			71	E	15	Ca.
		27			83.5	W	10	
		4			79	W	30	Ca.
9 18	8		32	W	50			
8 4	2		26	W	10	Ca. A faint arch.		
9 10	24	11		W	50, 30	Ca. Small portions of this, 10" high, are visible in H.		



Date and observer.	Hour I.S.T.		Base.	Latitude.		Lumb.	Height.	Remarks.
	H	M.		North.	South.			
1909.			°	°	°		"	
March 29. A.Y.S. —contd.	8	6	1	24	..	W	15	Connected with the last in Ca.
	8	4		27		W	10	Ca.
		4		40.5		W	10	Ca.
	9	5	7	46		W	45	60" high in Ca.
		0		57.5		W	10	
	8	59		67.5		W	10	Faint
		4		88		W	15	Ca.
March 30 G.N	8	54	.	78.5	...	E	20	Ca. photographs 8 <sup>h</sup> 4 <sup>m</sup> and 8 <sup>h</sup> 48 <sup>m</sup> .
		54		78		E	10	Ca. } Seen only at 8 <sup>h</sup> 54 <sup>m</sup> .
		20		51.5		E	15	Ca. Faint.
		54		40.5		E	15	Ca. Seen only at 8 <sup>h</sup> 54 <sup>m</sup> .
		48	8	22		E	40	
		48		12		E	45	85" high in Ca.
		45			5	E	15	
		45			9	E	20	
		20			15	E	20	Ca.
		48	0.5		23	E	20	
		20	8		31.5	E	15	Ca.
		40			39.5	E	15	
		20			75.5	E	10	Ca.
		20			80.5	E	10	Ca.
		56	2		85.5	W	20	
		20			20	W	20	Ca. Slants southwards.
		20			7	W	15	Ca. Slants westwards.
		20		3.5		W	40	Ca. Detached.
		20		8		W	40	Ca. Slants westwards.
		54		19		W	15	Connected by a Ca. streak which extends as
		54		24		W	20	far as +11" W.
		53	2	34.5		W	40	25" high in Ca.
		52	3	46		W	40	80" high in Ca.
March 31. S.S.	9	26	...	45.5	...	E	30	Ca. Faint.
	8	47		41.5		E	15	Faint in Ca.
		7		34		E	10	Ca. Seen only at 8 <sup>h</sup> 7 <sup>m</sup> .
		39	9	27.5		E	45	Surmounted by a detached fragment, which is not
		9			9	E	10	seen in Ca. 60" and 70" high in Ca.
		8			26	E	20	Ca.
		9			37.5	E	15	Ca.
		26			42.5	E	15	Ca.
		26			47.5	E	15	Ca.
		8			61	E	20	Not found at 8 <sup>h</sup> 18 <sup>m</sup> .
		9			64	E	15	
		8			76.5	E	10	
		9			78.5	W	15	Ca.
		3			47.5	W	10	
		41	3		41	W	15	
		39			22.5	W	15	3" broad in Ca.
		26			18	W	30	Ca. Slants westwards.
		8	2		12	W	10	
		9			9	W	20	Ca. A detached dot.
		26	4	9		W	35	Ca.
		8		12		W	10	Very bright at 9 <sup>h</sup> 34 <sup>m</sup> .
		9		18.5		W	20	Not seen at 8 <sup>h</sup> 54 <sup>m</sup> , 70" high
								in Ca. The lower part was
								visible on focculus plates, the
								upper fainter.
		26		30		W	10	Ca.
		32		33		W	10	Ca.
		26		55.5		W	30	Observed through thin cirrus.
April 1. A.Y.S.	9	7	...	69	...	E	15	Ca. photographs 8 <sup>h</sup> 26 <sup>m</sup> , 8 <sup>h</sup> 7 <sup>m</sup> and 8 <sup>h</sup> 14 <sup>m</sup> , (poor).
	8	22		39.5		E	15	Ca. Seen only at 8 <sup>h</sup> 22 <sup>m</sup> .
		43		37		E	10	
	9	7		34		E	10	Ca.



Date and observer.	Hour L.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H M	°	°	°		"	
April 3. —contd.	S.S.		..	30	E	25	60" high in Ca. } Connected in Ca.
	9 20	2		35	E	40	
	19	1		37.5	E	25	} Connected in Ca.
	18			41.5	E	25	
	18			45	E	10	
	14	5		60	E	45	60" high in Ca.
	8 56			77.5	W	15	
	10 12	8		45	W	35	
	9 17			42.5	W	15	
	17	1		28.5	W	45	Ca. Ca. Top flows westwards as far as - 19° W.
	10 8	7		7.5	W	60	21" broad in Ca.
	9 17	9	13.5		W	60, 40	Ca. Thin streaks.
	17		20		W	15	Ca.
	46	1	25.5		W	25	} Connected, and 35" high in Ca.
	45	1	29.5		W	15	
	17		43.5		W	35	Ca. Slants northwards.
	17		66		W	15	Ca. Ca photographs 9h 17m and 9h 26m.
April 4.	A.Y.S.		49.5	..	E	60	Very faint
	11 5	1	3.5		E	50	Ca. Slants northwards
	5			2	E	15	Ca. Faint.
	5			4	E	15	Ca.
	8 56			5	E	10	
	11 5	2		14	E	60	Ca. Slants southwards. }
	5	1		17.5	E	40	Ca. }
	8 53	1		24	E	20	} Connected in Ca.
	11 5	15		32.5	E	75, 70	
	9 21	3		47	W	30	Faint.
	11 5	6		33	W	30	Ca.
	9 18	1		12.5	W	10	25" high in Ca.
	17			9	W	10	
	15	8	2		W	50	A streak from top flows southwards as far as - 3° W. Seeing poor. Ca photographs 11h 5m and 10h 5m (poor).
April 5.	G.N.		63.5	...	E	25	
	8 59		55.5		E	15	
	58	4	51		E	35, 30	7° broad in Ca.
	55	4	5		E	60	80" high in Ca.
	33	2		0	E	60, 10	Ca. Slants northwards.
	33	3		15.5	E	25	Ca. An arch.
	49			35.5	E	120, 80	A cloud extending from - 29° to - 41° E, and connected to limb by a stem. 60", 90" and 100" high in Ca.
	45			54.5	E	35	Faint. 15" high in Ca.
	33			52.5	W	15	Ca.
	33	4		47.5	W	20	Ca.
	33			37.5	W	10	Ca.
	9 7	4		31	W	60	
	8 33			27	W	70	Ca. Detached.
	33			24	W	10	Ca.
	33			19	W	50	Ca. Detached.
	33			12	W	15	Ca.
	9 5	5	2.5		W	75	60" high in Ca. Two Ca streaks from the middle of the prominence proceed southwards to - 4° W. Ca photographs 8h 33m and 8h 10m.
April 6.	S.S.		77.5	...	E	30	Ca.
	1		66.5		E	15	Ca.
	9 0	4	53.5		E	25	
	8 1		41		E	10	Ca.
	54	3	6.5		E	35	55" high in Ca.
	1			9	E	40	Ca.
	1	1		27	E	30	Ca.
	48			28	E	20	Faint.
	48	3		38.5	E	90	80" and 80" high in Ca. Ca streaks proceed both ways to - 45° and - 24° N.
	1	4		55.5	E	15	Ca.
	1	2		72	E	15	Ca.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Lumb.	Height.	Remarks.	
			North.	South.				
1909.	H. M.	°	°	°		"		
April 6. —contd.	S.S.	8 38	...	..	79.5	E	10	Faint.
		35			87.5	W	10	
		28	7		84.5	W	75	65" high in Ca.
		24	1		21.5	W	80	} Tops connected in Ca.
		24	1		19.5	W	20	
		9 22	1		15.5	W	10	Not found at 8h 24m.
		21	2		10	W	10	
		18	2	2		W	30	} See Note.
		10		5		W	10	
		8 1	1	15		W	10	Ca.
		1		36		W	15	Ca.
		1	2	52.5		W	20, 10	Ca.
		1		61.5		W	15	Ca.
		1	1	83.5		W	20	Ca.
							Ca photographs 8h 1m and 8h 14m.	
April 7.	A.Y.S.	8 11	...	81.5		E	20	Ca.
		14	1	78		E	15	} 80" high in Ca. } Seen only at 8h 11m in Ca.
		11		68		E	15	
		12	1	58.5		E	30	4" broad, and 30" and 45" high in Ca.
		11	4	42.5		E	20	Ca.
		28		32		E	15	Ca.
		9		30		E	10	
		8		22		E	10	
		28		19		E	15	Ca.
		28	4	8		E	10	Ca.
		28			84	E	35	Ca. Top flows eastwards.
		5	2	39.5		E	25	
		11		70		W	25	Ca. Seen only at 8h 11m.
		28		52.5		W	20	Ca.
		11		31		W	15	Ca. Seen only at 8h 11m.
		30		25		W	15	
		27	6	20		W	35, 40	
		44		1		W	15	
		21		8		W	10	
		20		16		W	30	} A Ca streak from top extends to +13° } Connected W. Changing, differently shaped at } by a 8h 43m. } streak.
		20	2	22		W	20	
28		33		W	15	Ca.		
17		38		W	10			
41		61.5		W	15	Ca photographs 8h 28m and 8h 11m.		
April 8.	G.N.	9 1	...	31		E	30	Ca. Faint.
		1		58.5		E	20	Ca.
		8 46	5	46		E	20	
		9 1		37		E	15	Ca.
		1		36		E	30	Ca.
		1		33		E	40	Ca.
		1		29		E	30	Ca.
		8 44		24.5		E	45	Top extends to + 23°, 30" high in Ca.
		9 1		13		E	15	Ca. Faint.
		1		9		E	50	Ca. Do.
		1		0		E	50	Ca. Detached, faint.
		8 40	2		11	E	10	20" high in Ca.
		9 1	3		22.5	E	70	Ca.
		8 54			78.5	W	15	Ca. Faint. Seen only at 8h 54m.
		9 1	1		54	W	20	Ca.
		1			51.5	W	15	Ca.
		1			38	W	10	Ca.
		1			36	W	20	Ca.
		8 55	6		31	W	30	} 60" high in Ca. } Connected in Ca.
		55			23	W	35	
		55	3		17.5	W	60	
9 1		10		W	45	Ca. Only 10" high at 8h 54m.		
8 51		14		W	25	} Connected, and 45" high in Ca. The connecting } streak extends to + 23° W. }		
51		20		W	25			
50		30		W	35	Faint. 2" broad, and 70" high in Ca. Ca photographs 8h 1m and 8h 54m.		

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb	Height.	Remarks.
			North	South.			
1909.	H. M.	°	°	°		"	
April 9.	S.S.						
	8 57	...	54.5	..	E	40	Ca. Faint.
	57		53.5		E	80	Ca. Faint.
	9 18	2	49.5		E	20	40" high in Ca.
	8 57		46.5		E	20	Ca.
	9 16		80		E	15	
	14		22		E	15	
	14	1	19		E	10	45" high in Ca.
	12	7	15.5		E	35	Only 3" broad in Ca.
	6	8		9	E	30	40" high in Ca.
	8 57			17	E	15	Ca.
	9 3			19	E	20	
	3	8		21.5	E	20	Faint.
	8 59	8		32	E	100	Top flows eastwards as far as — 25° E.
	9 58			74	E	40	Ca. Slants as far as — 77°.
	52			81	E	10	
	8 38			76	W	20	Ca. Faint. Seen only at 8h 38m.
	44			54.5	W	15	
	43			48.5	W	10	Faint.
	57	2		42.5	W	20	Ca.
	41			40.5	W	10	
	38	1		30.5	W	45	± 90" high in Ca.
	35	1		24.5	W	75	} Connected in Ca.
	35			18.5	W	20	
	35			15	W	10	
	9 40	1	4.5		W	20	
	8 57		27		W	25	Ca.
	57	2	30		W	35	Ca.
	57		33		W	15	Ca.
	9 37		35		W	20	
	30		84		W	20	
							Fine with passing clouds Ca photographs 8h 57m, 8h 38m and 9h 58m.
April 10.	G.N.						
	8 47	5	48	..	E	75	Ca. Two slanting streaks meeting at top.
	47		48.5		E	20	Ca.
	45	4	18		E	60	70" high in Ca.
	47	1		11.5	E	30	Ca.
	47			19	E	30	Ca.
	40	6		80	E	90	± } Connected, and 170" high in Ca.
	38	2		36	E	35	
	32			33.5	W	15	
	47			31	W	110	Ca. A cloud connected to limb at — 31° by a thin filament.
	57	1		16.5	W	30	Bright. Only 10" high in Ca.
	53	2		8	W	10	Ca streaks proceed both ways. 30" and 45" high in Ca.
	47	1	27		W	30	Ca.
	50	7	42		W	30, 15	Ca photographs 8h 47m and 8h 28m.
April 11.	G.N.						
	9 3	1	47	..	E	30	5" broad, and 60" high in Ca.
	8 45		42.5		E	50	Ca. Detached.
	9 2		18		E	45	
	8 59	6	4		E	85	A Ca streak from top flows southwards to — 2° E.
	55	4		80	E	105	} Connected, and 17" broad in Ca.
	55	1		35.5	E	55	
	55	1		38	E	30	
	55			39.5	E	10	
	45	3		55	W	20	Ca.
	45			48.5	W	30	Ca. Detached.
	9 9	2		20	W	35	15" high in Ca.
	8 45	1		14.5	W	15	50" high in Ca.
	45			11	W	30	Ca.
	45			10	W	10	Ca.
	9 7	1	23.5		W	20	± 5" broad, and 60" high in Ca.
	8 45	2	33		W	15	Ca.
	45	2	38.5		W	25	Ca. } Connected.
	9 6	2	44.5		W	25	Ca photograph 8h 45m.





Date and observer.	Hour I.S.T	Base.	Latitude		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
April 16. S.S.	8 3	.	.	28	W	35	Ca. Detached.
—contd.	25	1	.	25.5	W	15	
	9 19		16		W	35	Faint Detached.
	16	4	48.5		W	25	
	16	1	55		W	10	
	8 3		75		W	10	Ca.
	3		83.5		W	30	Ca. Faint.
April 17. A.Y.S.	8 46		84.5	..		15	Ca photographs 8 <sup>h</sup> 3 <sup>m</sup> and 8 <sup>h</sup> 16 <sup>m</sup> .
	7		81		E	20	Ca. Seen only at 8 <sup>h</sup> 46 <sup>m</sup> .
	7		77		E	20	Ca.
	7		67.5		E	15	Ca.
	52	7	29.5		E	40	A Ca streamer from top flows eastwards, and meets the next prominence.
	49	2	21		E	15	
	45		18		E	10	
	45		18		E	10	
	42	4	12		E	50	
	32	5		2.5	E	30	See Note.
	29			8	E	30	45" high in Ca. } Connected in Ca.
	26			22	E	10	
	7			30	E	15	Ca.
	19			33	E	20	
	19	3		36.5	E	40	30" high in Ca.
	13			65.5	W	20	
	9 15	11		36.5	W	40, 45	Faint. 70" high in Ca.
	8 7			23	W	30	Ca.
	7			21	W	15	Ca.
	9 12			10	W	10	
	10		Equator.		W	15	Faint Seen in Ca only at 8 <sup>h</sup> 46 <sup>m</sup> .
	10	1	5.5		W	20	Faint
	5	3	52		W	30	
	1		75		W	10	
	0		82		W	10	
	0		83		W	20	
April 18. S.S.	9 8	6	52.5	..	E	40	Observed partly through thin cirrus.
	8 31		29		E	15	Ca photographs 8 <sup>h</sup> 7 <sup>m</sup> and 8 <sup>h</sup> 46 <sup>m</sup> .
	54	9	0.5		E	70	25" high in Ca.
	51	2		7	E	20	Ca
				12	E	30	25" and 45" high in Ca.
	48			27	E	10	Metallic. D <sub>1</sub> , D <sub>2</sub> , b <sub>1</sub> , b <sub>2</sub> bright. C displaced both ways. Changing.
	47			32	E	15	Detached, bright. Changing. 40" high in Ca.
	45	1		35.5	E	45	
	31			62.5	E	30	Ca.
	40			84	E	10	
	37			72	W	10	
	36			58.5	W	10	
	33	2		39	W	30	5° broad at 10 <sup>h</sup> 30 <sup>m</sup> .
	32			35	W	20	
	31			34	W	40	Slants as far as - 30°. } Connected in Ca.
							25" high in Ca.
	9 31	3	3.5		W	45	Ca. } Connected in Ca.
	8 27		0		W	45	Faint. Detached. } Connected in Ca.
	8 31		38		W	15	Ca.
	9 24	1	49		W	40	50" high in Ca. } Connected in Ca.
	24	2	51.5		W	20	30" high in Ca. } Connected in Ca.
April 19. G.N.	8 1	..	83.5	..	E	15	Passing clouds.
	1		58.5		E	10	Ca photographs 8 <sup>h</sup> 31 <sup>m</sup> and 8 <sup>h</sup> 54 <sup>m</sup> . (Poor.)
	33	8	4		E	45	Ca.
	31			16	E	20	
	29	1		33.5	E	40	Shows slight displacement to red. 30" high in Ca.
	1			69.5	E	45	20" high in Ca.
	27			77	W	20	Ca.
	50	3		37.5	W	20	Faint.
	45			13	W	30	Only 10" high in Ca.
	1			9	W	30	Ca. Slants westwards.
	1	2		2	W	20	Ca.







Date and observer.	Hour I.S.T	Base.	Latitude.		Limb.	Height.	Remarks.
			North	South.			
1909.	H. M.	°	°	°		"	
April 27. - contd.	A.Y.S.			7	E	40	Ca.
	9 7	.		21	W	40	See Note.
	11 14	2			W	15	Ca. Seen only at 11h 7m
	9 28	2	Equator.		W	15	Seen in Ca only at 11h 7m.
	11 7	3	33 5		W	70	Ca. Faint Seen only at 11h 7m. Ca photographs 9h 7m and 11h 7m (poor).
April 28.	S.S.		45		E	45	Differently shaped, and 6° broad in Ca.
	8 40	2	23		E	25	
	16 27		20		E	45	Ca.
	8 27	1		0.5	E	50, 75	Ca. Faint. Slants southwards.
	8 42			2	E	10	
	8 34			32.5	E	20	Faint. 5° broad in Ca.
	16 27			54	E	20	Ca.
	8 15			20.5	W	35	18° broad, and 20" and 25" high in Ca.
	16 27		5		W	25	Ca. Slants as far as + 2° W
	9 6	2	7		W	15	
	16 27		10		W	60	Ca. Slants as far as + 4° W.
	9 5	2	22.5		W	15	7° broad, and 25" high in Ca.
	16 27		42		W	15	
	9 0		49		W	15	Ca.
	9 0		69.5		W	10	Observed through cirrus. Ca photograph 16h 27m.
April 29.	A.Y.S.		84.5		E	15 ±	Faint.
	8 42	..	58.5		E	15	Very faint.
	12	1	40		E	10	Ca. } Connected by a Ca streak.
	41	3	44.5		E	40	
	37	1.5	17.5		E	25 ±	Very faint. } Connected, 10° broad and 60" and 45" high in Ca.
	34		18		E	20	Faint. }
	12			15	E	10	Ca.
	12			16	E	10	Ca.
	29	5	22.5		E	40	9° broad in Ca } Connected in Ca.
	25		32		E	45	
	12		43		E	30	Ca. Top broader.
	10		46		E	10	
	16		81.5		E	—	Low, bright.
	12		78		W	10	Ca.
	15	2	62.5		W	10	
	12		54.5		W	10	Ca.
	12		52		W	15	Ca.
	9 10	16	21		W	25	
	0	2	11		W	40	Three thin Ca streaks from this } Connected in extend to -3° W. Ca.
	8 56		9		W	10	
	54	21	25.5		W	25	Ca photographs 8h 12m and 8h 2m.
April 30.	S.S.		49	..	E	20	Ca.
	54	1	21.5		E	40	Very faint.
	54		17		E	50	Detached. }
	54		18.5		E	50	Do. } Very faint.
	54	1	10.5		E	20	
	52		4		E	10	
	2	2		2	E	25	Ca.
	2			6	E	10	Ca.
	2	3		12.5	E	10, 20	Ca.
	49	2		22.5	E	45	Slants southwards. 5° broad in Ca.
	44			32	E	30	Slants eastwards, and 40" high in Ca.
	48	2		38.5	E	45	7° broad in Ca.
	41			45.5	E	20	
	2			84.5	W	20	Ca.
	32			49	W	20	Very faint.
	29	0		30	W	15	A group of small prominences.
	2	3		21.5	W	30	Ca. Faint.
	26			17	W	25	Detached.
	22	0		12	W	35	D <sub>1</sub> , D <sub>2</sub> bright at base. C slightly } Connected in displaced to red at lat. -11° 5. Ca.
	9 16	8	13		W	15	
	14	7	30.5		W	20, 35	} Connected in Ca.
	10		40		W	10	
	8	1	48		W	35	Faint

Date and observer.	Hour I.S.T	Base.	Latitude.		Limb.	Height.	Remarks.	
			North.	South.				
1909.	H. M.	°	°	°		"		
April 30. —contd.	S.S.	8 2	47	...	W	15	Ca.	
		2	68.5		W	30	Ca.	
		2	88.5		W	25	Ca. Bright at 8 <sup>h</sup> 16 <sup>m</sup> . Ca photographs 8 <sup>h</sup> 2 <sup>m</sup> and 8 <sup>h</sup> 18 <sup>m</sup> .	
May 1.	A.Y.S.	8 40	85	..	E	15	Faint.	
		28	73.5		E	10	Ca.	
		28	54		E	10	Ca.	
		36	49		E	30		
		9 17	5		E	20	Not seen at 8 <sup>h</sup> 32 <sup>m</sup> .	
		8 32	Equator.		E	Low		} Connected in Ca.
		32	2		E	30	Very faint.	
		25	6	30		E	15, 20	40" high in Ca.
		28	2	44		W	20	Ca.
		9 3	3	34.5		W	20	
		2		20		W	15	
		0	3	22.5		W	30	} Connected in Ca.
		8 55		17.5		W	10	
		28		14		W	30	Ca Slants as far as — 16° W.
		54		6		W	15	Very bright.
		53	7	0.5		W	25	
		53	2		6	W	15	
		49	3	30.5		W	25	
		28		44		W	10	
		43		53.5		W	20 ±	Ca. Faint Detached Not in Ca. Observed through thin cirrus Ca photograph 8 <sup>h</sup> 28 <sup>m</sup> .
May 2.	A.Y.S.	8 40	55	...	E	10		
		39	40.5		E	35		
		39	40		E	10	Ca.	
		35	2		E	25, 20	Faint 4° broad in Ca.	
		39	4	5		E	15	} Connected in Ca.
		33		8		E	10	
		39		25		E	10	Ca.
		39		27		E	10	Ca.
		30	4	39		E	30	20" and 40" high in Ca
		59		58		W	10	
		58	3	44.5		W	15	
		55	1	36.5		W	25	15" high in Ca.
		52		20.5		W	10	
		49	2	22		W	35	A Ca streamer from top flows westwards.
		39		5		W	10	Ca.
39	2	9		W	10	Ca.		
45	3	11		W	10	Ca.		
39		18.5		W	15	Faint 25" high in Ca.		
		34		W	30	Ca. Slants northwards. Observed through thin cirrus. Ca photographs 8 <sup>h</sup> 39 <sup>m</sup> and 8 <sup>h</sup> 13 <sup>m</sup> .		
May 5.	S.S.	10 56	50.5	...	E	25, 45	Ca.	
		58	23		E	45	Ca.	
		56	5		E	10	Ca.	
		56	1	0.5		E	25	Ca.
		11 3	10	18		E	25	15" high in Ca
		0		71		E	15	
10 57		51		W	10			
						Faint sun Observed only between 0° E   and — 50° W. Ca photograph (focculus) 10 <sup>h</sup> 56 <sup>m</sup> .		
May 8.	A.Y.S.	10 7	77.5	...	E	10	20" high in Ca	
		5	58		E	20		
		4	51.5		E	30	} Connected in Ca	
		0	46		E	20		
		9 42	6	42		E	70	Ca. Faint.
		58		34		E	10	
		56	8	31.5		E	25	
		8 54	5	6.5		E	30	Ca. Seen only at 8 <sup>h</sup> 54 <sup>m</sup> .
		9 42	1		7.5	E	30	Ca. Faint.
		42	5		12.5	E	40	Ca. An arch.
40	4		28	E	45, 40	} Connected in Ca.		
42			30	E	10		Ca.	

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1908. May 8. —contd.	A.Y.S.						
	π. m.	°	°	°		"	
	9 42	...	..	48	E	10	Ca.
	42			68	E	10	Ca.
	38			70	E	10	
	42			78.5	W	15	Ca.
	42			45	W	20	Ca.
	10 8			28	W	10	
	24			23	W	20	
	21	5		17.5	W	15	
	9 42		7		W	10	Ca.
	10 17	1	23		W	20	
	10	6	35		W	30	40" high in Ca.
	9 42		87		W	10	Ca.
							Passing clouds. Ca photographs 9h 42m and 8h 54m.
May 9.	S.S.						
	9 17	1	55.5	...	E	20	
	17	1	51.5		E	40	
	17	1	49.5		E	25	
	8 54	2	48		E	60	Ca. Faint. } Connected in Ca.
	9 17		46		E	10	
	8 54	1	41.5		E	25	Ca.
	9 15	1	31.5		E	20	40" high in Ca.
	5	2	26		E	20	
	8 54		19		E	20	Ca.
	54		12		E	30	Ca.
	54	1	1.5		E	15	Ca.
	54			7	E	60	Ca. Detached.
	9 0			23.5	E	60, 20	See Note 1.
	8 56	4		36	E	35	
	52	3		53.5	E	60	See Note 2.
	57	1		55	W	55	Top 4° broad. 45" high in Ca.
	45			43	W	10	Surmounted by a detached streak 30" high.
	54			39	W	15	Ca.
	54			35	W	15	Ca.
	42	3		26.5	W	15	
	33	3		16.5	W	30	See Note 3.
	32			12.5	W	25	
	9 29	1	26.5		W	25	40" high in Ca.
	27		33.5		W	10	Faint 45" high in Ca. Passing clouds after 9h 15m. Ca photographs 8h 54m and 8h 20m.
May 10.	G.N.						
	8 36	...	78.5	...	E	10	Ca.
	36		72		E	20	Ca.
	40	10	54		E	30, 45	Faint in Ca at the southern end.
	35	7	32.5		E	70	Faint. Ca streamers from top meet limb at +20° E.
	32		3		E	40	Faint. Top bends, and meets limb at +10° E.
	30	1		6.5	E	60	A Ca streak from top flows southwards to -21° E.
	25	6		37	E	70	
	36			60	E	20	Ca.
	20	1		63.5	E	25	
	18			72.5	E	15	
	33			82.5	E	15	Ca.
	17	1		86.5	E	15	
	15	2		54	W	75	60" high in Ca. Ca streaks extend to -44° and -57° W.
	36			29	W	40	Ca. Slants southwards.
	36	4		15	W	50	Ca.
	36	2		7	W	15	Ca.
	36		5		W	15	Ca.
	36		13		W	15	Ca.
	43	1	26.5		W	50	Slants westwards in Ca.
	36		34		W	45	Ca. Faint. Slants westwards. Ca photographs 8h 36m and 8h 22m.
May 11.	A.Y.S.						
	8 50	...	83.5	...	E	15	
	16		59		E	10	Ca.
	16		58		E	10	Ca.
	43	6	54		E	50	
	16		44		E	10	Ca.
	35		35		E	40	Very faint. Detached. A Ca streamer flows to +22° E.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909,	H. M.	°	°	°		"	
May 11. A.Y.S.	8 16	...	32	..	E	25	Ca. Slants eastwards
<i>—contd.</i>	16		28		E	10	Ca.
	16		27		E	10	Ca.
	31		10		E	10	
	30	1	25		E	50	70" high, and top bends, and meets the last prominence in Ca.
	16			4	E	10	Ca.
	16			5	E	10	Ca.
	16			6	E	10	Ca.
	27	14		15	E	45	60" high in Ca.
	16			28	E	15	Ca.
	21	4		38	E	60	
	16			46	E	20	Ca.
	16	2		51	E	30	Ca.
	16	4		62	W	30	Ca.
	9 0	10		54	W	45	Faint. Part of this is very bright in Ca.
	8 16			47	W	110	Ca. Detached. Connected with the last.
	58			32.5	W	20	Almost detached. Connected to limb, and 5" broad in Ca.
	16			10	W	15	Ca. Detached.
	16	1		7.5	W	10	Ca.
	16		6		W	20	Ca. Slants northwards.
	54	3	25.5		W	45	
	16	3	47.5		W	20	Ca.
							Ca photographs 8 <sup>h</sup> 16 <sup>m</sup> and 8 <sup>h</sup> 34 <sup>m</sup> .
May 12. S.S.	9 2	2	56		E	30	45" high in Ca. } Connected at 9 <sup>h</sup> 45 <sup>m</sup>
	2	2	51		E	25	40" high in Ca. }
	8 1		36		E	35	Ca.
	1		32		E	70	Ca.
	9 43		25		E	20 ±	Very faint.
	8 1		22		E	10	Ca.
	1		18		E	15	Ca.
	57	2	0.5		E	20	11" broad in Ca. }
	56	2		4	E	20	Connected in Ca.
	9 38	2		17	E	10	
	8 1			25	E	15	Ca. Slants eastwards.
	52	2		37	E	30	45" high in Ca.
	42	1		71	W	10	4" broad in Ca.
	1			31	W	45	(Ca. Detached.
	1	1		29	W	10	Ca.
	1			25	W	65	Ca. Detached
	9 27			17	W	50	A streak slanting southwards.
	8 1			14	W	10	Ca.
	1			12	W	10	Ca.
	1				W	25	Ca.
	9 22	4	20		W	35	Bright, and 45" high in Ca.
	8 1	3	28.5		W	70	Ca. Faint.
	9 19		42.5		W	30	Nothing here at 9 <sup>h</sup> 40 <sup>m</sup> . Not seen in Ca.
	19	2	46		W	25	15" high in Ca.
	8 1	2	51		W	15	Ca.
	9 18		62		W	10	
	14		68.5		W	10	O slightly displaced to red near base.
	12		79		W	10	Passing cirrus and cumulus clouds.
							Ca photographs 8 <sup>h</sup> 1 <sup>m</sup> and 8 <sup>h</sup> 16 <sup>m</sup> .
May 13. G.N.	9 5	2	56	...	E	35	
	8 48	2	51		E	35	Ca. } Connected in Ca.
	9 3	6	43		E	35	
	8 46	1	31.5		E	40	Ca. Slants eastwards.
	9 2	8	19		E	45	16" broad in Ca.
	8 58	1	6		E	20	
	57	7		11	E	15	
	55	7		28.5	E	45	
	46			64	E	30	Ca.
	46			71	W	15	Ca.
	46			48	W	10	Ca.
	46	5		30.5	W	100	Ca.
	46	1	11		W	15	Ca.

Date and observer.	Hour I S T	Base	Latitude.		Limb.	Height.	Remarks	
			North	South.				
1909.	H. M.	°	°	°		"		
May 13. —contd.	G.N. 8 46		14	..	W	50	Ca. Detached.	
	46	10	22		W	170	Ca.	
	46	1	50.5		W	20	Ca. Slants westwards. Seeing poor. Ca photographs 8h 46m and 8h 57m	
May 14.	A.Y.S. 9 10	.	57	...	E	10	Ca.	
		1	51.5		W	20	Ca.	
		9	44.5		E	50	Ca. A streamer from top flows } Connected. eastwards.	
		10		31		E	10	Ca.
		10		30		E	10	Ca.
		10 44	2	24		E	60	See Note.
		29	7		19.5	E	20	Faint.
		36			30	E	15	
		34			72.5	E	10	
		11 27			32	W	10	
		9 10			20	W	30	Ca.
		10		23		W	30	Ca.
		10 51	2	50		W	20 ±	Seeing poor. Ca photograph (occulus) 9h 10m.
May 15.	S.S.	8 53	..	58.5	...	E	20	
		53	2	53		E	30	
		50	3	44		E	60	10° broad in Ca. } Connected in Ca.
		46	8	25		E	70	
		39	13	2.5		E	45	
		50	9		18.5	E	30	Ca. Surmounted by a detached streak 75" high.
		50			27	E	20	Ca. Slants southwards.
		50			30	E	10	Ca. Do.
		9 13			72	W	20	
		11	1		42.5	W	50	Faint
		8 50	1		39.5	W	20	Ca.
50	15		28.5	W	135	Ca. Tops extend to - 15° W. Faint in southern portion.		
9 2	5		30.5	W	25	35" high in Ca. (Observed through cirrus. Ca photographs 8h 50m, 8h 28m and 9h 42m.		
May 16.	A.Y.S.	9 3	..	66	...	E	15	Ca.
		3		65		E	35	Ca.
		3		64		E	25	Ca.
		8 54		62		E	10	
		48	14	47		E	40	
		45	3	30		E	30, 15	} Connected in Ca.
		9 3		24		E	15	Ca.
		8 43	3	15.5		E	55	} Connected in Ca.
		36	2	Equator.		E	40	
		9 3	8		15	E	70	Ca. A small portion of this, 15" high, is seen in E.
		3			31	E	15	Ca.
		8 28	5		37.5	E	20	30" high in Ca.
		25	4		46	E	80	40" high in Ca.
		9 3			88	—	20	Ca. Faint.
		3			88.5	W	15	Ca.
		5	1		43.5	W	20	
		5	3		35.5	W	70, 80, 35	See Note.
3			25	W	270	Ca. A detached cloud.		
8 57			19	W	20			
57			17	W	15			
55	1		13	W	15			
9 3			13	W	30	Ca.		
3			42	W	15	Ca.		
8 53	4		50	W	25	45" high in Ca. Ca photographs 9h 3m, 8h 39m and 9h 33m.		
May 17.	G.N.	8 25	...	86.5	...	E	15	Ca.
		25		40		E	15	Ca.
		25		25		E	20	Ca.
		25	4		22	E	30	Ca. An arch.
		25			19	E	10	Ca.

Date and observer.	Hour I S.T.	Base.	Latitude.		Limb.	Height.	Remarks			
			North.	South.						
1909.	H. M.	°	°	°		'				
May 17. —contd.	G.N.	3	16 5		E	40				
					8 28	2	11	E	15	Ca.
					25			E	35	Ca. Slants eastwards.
					25			E	35	Ca. Do.
					25			E	10	Ca.
					25	3		E	35	Ca.
					25	1		E	10	Ca.
					25			W	15	Ca.
					25			W	45	Ca. Detached.
					25			W	30	Ca. Slants westwards.
					40	4.5		W	60	75" high in Ca. } Connected in Ca.
					25			W	45	Ca. Detached. }
					25			W	10	Ca.
					25			W	10	Ca.
					5			W	30	Ca. Seen only at 8h 5m.
					5			W	60	Ca. Do.
					25	3	11.5	W	45	Ca.
34	1	19	W	10	Ca.					
25			W	40	Ca. Slants westwards.					
32	3	50.5	W	30	Ca.					
5	1	59.5	W	20	Ca. Seen only at 8h 5m. Ca. photographs 8h 25m and 8h 5m.					
May 18.	A.Y.S.	2	27	...	E	20	Ca. Seen only at 10h 51m.			
					10 51	9	12.5	E	35	Ca.
					0			E	15	Ca.
					8 20			E	10	Ca.
					20			E	20	Ca.
					10 25	9		E	20	Ca.
					20	1		E	15	Ca.
					8 20			E	20	Ca.
					20			W	20	Ca. Slants westwards.
					20			W	15	Ca.
					10 18	3		W	45	Ca.
					20	9		W	40	Ca.
					29			W	10	Slants westwards, and 25" high in Ca.
					8 20	5	18	W	40	Ca.
10 51		76	W	20	Ca. Seen only at 10h 51m. Seeing poor. Ca. photographs 8h 20m and 10h 51m.					
May 19.	A.Y.S.	2	60	...	E	20	Ca.			
					8 6			E	10	Ca.
					6			E	20	Top flows as far as + 25° W.
					29			E	20	Ca.
					28	1	20.5	E	20	20" high in Ca. } Connected in Ca.
					27	5	13.5	E	35	Ca.
					6			E	20	Ca.
					24	5	2.5	E	15	Ca.
					20	4		E	40	Ca.
					6			E	10	Ca.
					16			E	10	Ca.
					16	2		E	40	Connected in Ca.
					12			E	30	Ca.
					10	2		E	40	Ca.
					8	1		E	15	Slants eastwards, and is 40" high in Ca.
					7	1		E	15	Ca.
					8			W	25	Bright. Nothing here at 8h 56m. } 10" and 15"
					3			W	25	Do do. do. } high in Ca.
					6			W	45	Ca. Faint.
					55	1		W	20	Ca.
					52			W	15	Ca.
51			W	25	± 45" high in Ca.					
47	1		W	10	Ca.					
47	3		W	45	Top extends to - 7° W. 25" high in Ca.					
40	1		W	15	Ca.					
6		1	W	10	Ca.					
6		3	W	15	Ca.					
37	6	29.5	W	85, 45, 20	Faint.					
6		48	W	10	Ca.					
34	5	52.5	W	30	Ca.					
6		58	W	10	Ca.					
6	2	77	W	20	Ca. photographs 8h 6m and 8h 21m.					





Date and observer.	Hour I.S.T.	Base.	Latitude.		Lumb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
May 22. —contd.	S.S.	...	12	.	W	10	
	8 21	...	21	.	W	10	Ca.
	9 9		22		W	60	Ca. Detached.
	9 9	7	36.5		W	15, 30	Ca.
	9 9		50		W	45	Ca. Detached.
	9 19	2	54.5		W	30, 15	7° broad in Ca.
	8 18	2	69		W	25	Ca. Seen only at 8h 18m. Being rather poor. Ca photographs 8h 9m and 8h 18m.
May 23.	G.N.	...	51.5	..	E	10	
	0 0		45		E	15	
	8 31		29		E	10	Ca.
	31		15		E	15	Ca.
	55	1	7 5		E	25	8° broad, and 40" high in Ca.
	53			53	E	15	
	50			68	E	15	
	9 9			38 5	W	15	
	9 9	1.5		35	W	30	15" high in Ca.
	7 7	7		6.5	W	20	
	6 6		5		W	15	A Ca streak from this proceeds as far as + 8° W.
	5 5		16		W	20	
	8 31		34		W	15	Ca.
	31		48		W	20	Ca.
	9 8	2	58.5		W	25	7° broad in Ca. Ca photograph 8h 31m.
May 24.	A.Y.S.	3	38.5	...	E	20	15" and 45" high in Ca.
	11 40	1	28		E	20	10" high in Ca.
	38		19		E	10	
	37		8		E	15	
	35			1	E	10	Ca.
	48			9	E	10	
	34				E	10	
	33	4	54		E	30, 10	A Ca streamer from top flows as far as - 48° E.
	47		41		W	10	
	47	3	38.5		W	20	
	45	2	15		W	20, 15	Ca streamers proceed both ways, and meet limb at - 8° and - 22° W.
	48		21		W	15	Ca. Slants northwards.
	48		25		W	10	Ca.
	48		47		W	25	Ca. Top flows westwards.
	44	6	56		W	25	40" high in Ca. Ca photographs 11h 48m and 11h 40m.
May 25.	S.S.	2	46	...	E	40	} Connected in Ca.
	9 5	4	40		E	40	
	7 58		31		E	10	Ca.
	8 57		27		E	20	30" high in Ca.
	56	1	24		E	35	4° broad and 45" high in Ca.
	4		12		E	20	Ca. Seen only at 8h 4m.
	7 58			4	E	10	Ca.
	58	3	18.5		E	10	Ca. Two small arches connected together.
	8 50	1	38.5		E	10	
	47		43		E	20	2° broad at top.
	45		55		E	15	Slants as far as - 57° E.
	7 58	6	42		W	10	} Connected in Ca.
	9 34	3	37 5		W	40	
	7 58		32		W	15	Ca.
	58		23		W	15	Ca.
	9 31	4	16		W	10	
	30		13		W	20	
	7 58		9		W	15	Ca.
	9 28	9	2.5		W	40	30" high in Ca.
	24		10		W	25	
	7 58	4	15		W	15	O slightly displaced to red near base.
	9 19	4	35		W	20	Ca.
	15	4	40		W	10	20" high in Ca } Connected.
	7 58		52		W	45	O slightly displaced to red near base.
	9 12		62		W	15	Ca. Flows westwards, and meets the last.
			74		W	10	80" high in Ca. Ca photographs 7h 58m and 8h 4m.



Date and observer.	Hour I S.T	Base.	Latitude.		Limb.	Height.	Remarks.	
			North.	South.				
1909.	H. M	°	°	°		"		
May 29. —contd.	G.N.	8 8 8 8 50 44 44 8 8 41	... ... 3 8 2	... ... 48 5 58 5	73 58 44 42 21 16 1	W W W W W W W	15 10 10 35 40 90 60 20	Ca. Ca. Ca. } Connected in Ca. Ca. Slants as far as +10°W. Ca. Faint 5° broad in Ca. Ca photographs 8h 8m and 8h 18m.
May 30.	A.Y.S.	8 36 84 9 39 8 32 8 30 9 39 8 26 23 20 18 55 40 48 44 9 39 8 48 42 39	... 0 5 ... 1 2 8 5 ... 5 3 1 ... 1 39	76 5 60 5 55 49 39 24 ... 14 50	... ... ... 12 5 25 35 5 44 5 72 78 40 17 5 2 0 5 14 50	E E E E E E E E E E E W W W W W W W W W	10 15 10 40 10 15 30 45 10 30 10 85 25 10 30 15 15 20 15	Ca. Very faint. Top flows eastwards. Ca. Bright. 70" high, and top flows southwards in Ca. See Note. Connected with the last, and 20" high in Ca. Not seen at 8h 15m. Ca. A slender vertical streak. Seen only at 8h 40m. Top flows southwards. Differently shaped, and 45" high in Ca. Ca. 6° broad, and 30" high in Ca. 4° broad, and 25" high in Ca. Ca photographs 9h 39m and 8h 40m.
May 31.	G.N.	8 30 44 44 30 30 30 40 40 32 53 52 50 45	... 3 4 4 1 1 2	72 59 47 5 45 44 38 ... 18 5 48	... ... 20 29 40 27 18	E E E E E E E W W W W W	45 15 25 10 10 60 30 30 30 15 45 25	Ca. Seen only at 8h 30m. Ca. Ca. Ca. Faint 18° broad, and 85" } Connected, and form a single high in Ca. } prominence in Ca extending 40" high in Ca. } from -12° to -46°E. Slants southwards. Slants southwards and is 45" high in Ca. Top flows westwards. Ca photographs 8h 30m and 8h 19m.
June 1.	S.S.	10 48 42 35 33 32 30 25 24 45 11 2 10 59 45 55	... ... 3 6 1	42 ... ... 16 21 89	... 19 68 5 79 5 81 80 5 54 5 48 5 45 18 5	M E E E E W W W W W W W W	10 15 15 10 10 10 10 10 50 15 60, 30 10 10	Top flows eastwards. Ca. Detached. Faint. Ca. Seeing bad. Ca photograph (Flocculus) 10h 45m.
June 2.	A.Y.S.	9 46 10 3 3 25 19 44	... 1 2	... 17 18 5 22 64 19 15	17 18 5 22 64 19	E E E E W W	10 25 25 10 20 50	Ca. } Connected in Ca. Very faint. 2° broad in Ca. Seeing bad. Ca photograph (Flocculus) 9h 46m.

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M	°	°	°			
June 8. G.N.	8 44	9	50.5		E	45	Ca.
	44		42		E	20	Ca.
	44		39		E	15	Ca.
	41	5	3.5		E	60	30" high in Ca. Ca streamers from top proceed as far as -9° E.
	44			22	E	20	Ca.
	35	5		38.5	E	60	
	44			80	W	25	Ca.
	44			75	W	15	Ca.
	48	1		21.5	W	15	
	44			Equator	W	15	Ca.
	44	7	20.5		W	60, 45	Ca Ca photograph 8h 44m.
June 9. S.S.	9 12	3	55.5	..	E	35	
	10		44.5		E	10	
	0	24	10		E	55, 35	50" and 70" high in Ca.
	5			6.5	E	25	Not seen at 9h 0m and 9h 35m.
	8 54	1		15.5	E	30	Slants southwards. 20" high in Ca.
	54			18.5	E	15	
	52	3		25.5	E	20	
	50			34	E	10	
	48	3		39.5	E	50	
	41			68.5	E	15	
	28			89	W	20	Ca.
	9 32	2		61	W	20	
	30			49	W	10	
	30			50	W	10	
	8 28	5		42.5	W	20	Ca. } Connected in Ca
	9 27	1		35.5	W	25	40" high in Ca.
	25	3		28.5	W	30	40" high in Ca. } Connected in Ca.
	24	3		21.5	W	40	
	8 28		20		W	30	Ca
	28		24		W	10	Ca
28		28		W	10	Ca.	
28		35		W	20	Ca.	
9 19		44		W	25		
8 28		74		W	10	Ca. Ca photographs 8h 28m, 8h 41m.	
June 10. G.N.	8 52	1	54.5	..	E	25	5" broad, and 60" high in Ca.
	11	6	38		E	60	Ca. Front.
	50	6	20		E	35	A Ca streak from this meets limb at +9° E.
	11		9		E	20	Ca. Detached.
	11		5		E	25, 100	Ca. Two slender vertical streaks 25" high, surmounted by a detached cloud 100" high.
	87		2		E	20	4" broad in Ca.
	11			2	E	30	Ca.
	11			9	E	25	Ca.
	31	2		19	E	70	A Ca streak from the base of this proceeds eastwards, and meets limb at -12° E.
	30			30	E	30	
	28	2		41	E	80	
	11			30	W	60	Ca.
	9 8	1		18.5	W	35	Slants southwards; 55" high in Ca.
	8 19			Equator.	W	20	
	11	18		14	W	40, 70	Ca.
11	3		47.5	W	45	Ca.	
11			56	W	15	Ca Observed through cirrus. Ca photograph 8h 11m.	
June 11. A.Y.S.	9 17	...	71	..	E	20	Ca.
	14	3	55.5		E	50	
	17		38		E	20	Ca.
	17		35		E	10	Ca.
	17		32		E	15	Ca.
	17	6	7		E	20	Ca.
	17			1	E	15	Ca.
	9	1		18.5	E	20	± 3" broad, and 40" high in Ca.
	0	3		28.5	E	35	



Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.							
	H. M.	°	°	°		"	
June 15. A.Y.S.	8 37	...	66	...	E	10	
	37		64		E	15	
	42		46		E	15	Ca.
	42	2	26		E	25	Ca.
	34		23.5		E	10	Faint.
	42		21		E	20	Ca.
	42		15		E	20	Ca.
	32		6		E	80	Detached.
	28	4		6	E	30	
	20	1.5		20	E	30	
	42	3		29.5	E	25	Ca.
	42			72	E	20	Ca.
	42			58	W	10	Ca.
	42	1		46.5	W	85	Ca.
	54	4		22	W	15	
	51			17	W	20	
	50			18	W	10	Detached. } Connected in Ca.
	46	5		23.5	W	35	
42			50	W	25	Ca. Slants westwards. Ca photographs 8h 42m and 9h 7m.	
June 16. G.N.	8 42	...	38	...	E	15	Ca.
	28	1		20	E	10	
	42			69	E	10	Ca.
	25			81	E	10	
	42			48	W	15	Ca.
	42			40	W	10	Ca.
	40			37.5	W	10	
	42	3		10.5	W	20	Ca. Faint.
	42	5		27.5	W	45	Ca. Very faint streaks. Ca photographs 8h 42m and 8h 19m.
	June 17. A.Y.S.	8 22	...	75	...	E	30
51			69		E	10	
32			51		E	20	Ca. Seen only at 8h 32m.
49			42.5		E	15	
48			36		E	10	
47		4		32	E	85	
42		2		19	E	15	
32				8.5	E	25	Ca. } Connected, and seen only at 25" high in Ca. } 8h 32m in Ca.
40				7	E	10	
38		2		7	E	25	
37		1		10.5	E	25	45" high in Ca. } Connected in Ca.
22		3		12.5	E	20	Ca.
35				17	E	20	
32				19	E	30	Ca. Seen only at 8h 32m.
32				22	E	30	Ca. Do. do.
32				33	E	Low	Bright. 10" high in Ca.
32				35	E	Low	Bright. 15" high in Ca.
29		9		44.5	E	45	Faint. 55" high in Ca.
25		1		62.5	E	10	
22				83	W	10	Ca.
9 9				79	W	10	
8 22				75	W	10	Ca.
22				64	W	10	Ca.
22		2		41	W	20, 15	Ca.
22			20	W	45	Ca.	
22	3		16.5	W	75	Ca.	
22	3		9.5	W	10	Ca.	
9 5			2	W	15		
4	1		8	W	15	Connected, and form a single prominence in Ca extending from -3° to +13° W, and 55" high.	
1	1		13	W	80		
8 58			17	W	10		
58			21	W	30	Almost detached. } Connected in Ca.	
55	2		28	W	20	60" high in Ca. }	
22			48	W	10	Ca.	
22			49	W	15	Ca.	
22			88	W	15	Ca.	
Ca photographs 8h 22m and 8h 32m.							
June 18. G.N.	9 30	1	77.5	...	E	20	Ca.
	30		76		E	15	Ca.
	30		70		E	30	Ca.
	6	4		32	E	30	

Date and observer.	Hour I.S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South.			
1909.	H. M.	°	°	°		"	
June 18 -contd.	G.N.	2	11	...	E	40	Ca. } Connected in Ca.
		2	8		E	20	
		2	6		E	30	Ca. } Connected in Ca.
		2	3		E	30	Ca. }
		2		Equator.	E	45	
		6			E	30	40" high in Ca. } Connected in Ca.
		1		13 5	E	15	
				30	E	15	
				49	E	20	
				85.5	E	20	
		8 55		69	W	10	Ca.
		9 30		64	W	15	Ca.
		2		56	W	20	Ca. Seen only at 9h 2m.
		30		31	W	15	Ca.
		13	1	25	W	20	
		13	7	17.5	W	30	20" high in Ca. } Connected in Ca.
		11	1	3	W	15	45" high in Ca.
		10	1	5.5	W	20	35" high in Ca. Ca streamers from top proceed to—2° Detached } Ca streamers proceed } both ways } Connected in Ca.
		10		8	W	30	
		10	2	15	W	45	
30		24	W	15	Ca.		
30		27	W	15	Ca.		
30		56	W	15	Ca.		
30		58	W	15	Ca. Ca photographs 9h 30m and 9h 2m.		
June 19.	G.N.	9	10	..	E	40	Ca.
		1	1		E	30	Ca.
		3		30	E	25	Three prominences close together.
		3		46	E	15	Ca.
		3		48	E	15	Ca.
		3		38	W	15	Ca.
		3		35	W	10	Ca.
		8 55	7	27 5	W	25	
		9 3		15	W	20	Ca. }
		8 59	0.5	9	W	20	Connected in Ca by streaks.
9 3	3	3	W	35			
9 3		27	W	10	Ca. Poor weather Ca photographs (through cirrus) 9h 3m.		
June 20.	A.Y.S.	..	84	...	E	10	
			89.5		E	10	
		1	51.5		E	15	
		1	0.5		E	15	
		2		2	E	25	
		10 7		32	E	20	
		5	1	41.5	E	20	
		4		45	E	45	Top extends both ways.
		0	1	39.5	W	30	
		9 59	2	36	W	30	
		59		33	W	10	
		58	1	21.5	W	30	Slants southwards.
		34	1	18	W	10	
		34		11	W	20	Slants westwards.
0	3	2.5	W	45 ±	See Note.		
8 59	2	31	W	10			
57	3	50.5	W	40			
57		53	W	20	Observed through passing clouds. No prominence plates.		
June 21.	G.N.	...	43	..	E	40	Ca.
			27		E	30	Ca.
		0.5	24		E	10	
		2		1	E	15	Ca.
				33	E	30	Ca.
				39.5	E	50	Ca. Detached, and overhanging 5° of limb.



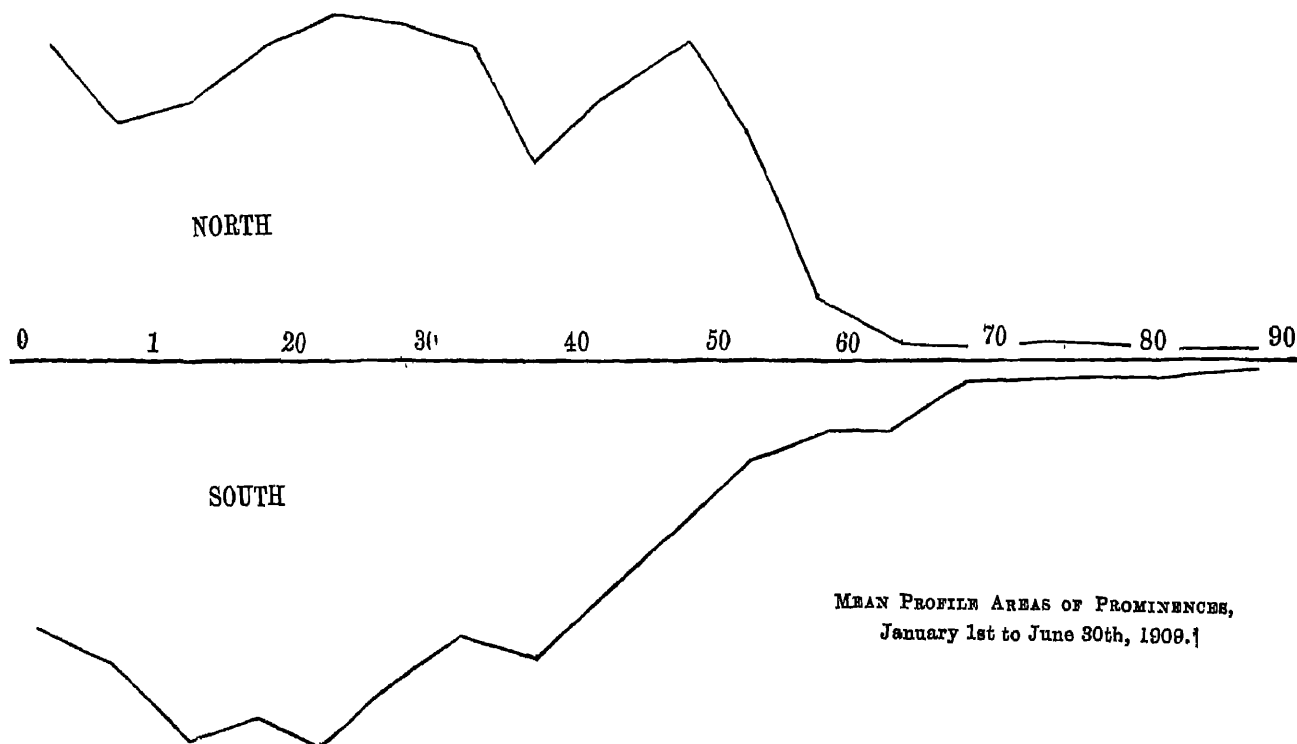
Date and observer.	Hour I S.T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North.	South			
1909.	H. M.	°	°	°		"	
June 21. —contd.	G.N.	1 7 25 25 47 47 47 1 9 25 8 42	... ... ... ... ... ... 30 56 5	46 40 5 21 18 6 5 3 1 5	E W W W W W W W	40 75 20 30 20 45 20 10 40	Ca. A streamer extends to — 50°. Ca. Ca. } Tops connected by streaks in Ca. Ca. Poor weather. Ca photographs (through cirrus) 9 <sup>h</sup> 25 <sup>m</sup> .
June 22.	A.Y.S.	11 58 57 58 10 30 30 11 54 10 30 30 11 41 38 34 34	1 5 ... ... 5 2 2 2 12 4 56 5	41 21 ... ... ... 40 5 27 11 6 24 56 56 5	E E E E W W W W W W W W	20 15 20 10 10 70 10 10 15 55 35 ± 10	Not in Ca. Ca. Ca. Ca. Ca. Seeing bad. Ca photograph (focculus) 10 <sup>h</sup> 30 <sup>m</sup> .
June 23.	G.N.	8 23 39 36 23 23 23 23 9 5 8 23 23 9 3 0 8 58 50 42	... 5 2 3 ... 1 5 5 4 2 3 0 ... 11 6	70 42 5 30 21 5 15 ... ... 82 5 54 49 39 5 26 20 10 5 4 5 14 23 5 56	E E E E E W W W W W W W W W W	40 45 10 40 15 20 10 30 75 20 15 30 30 120 ± 30	Ca. Faint. Archlike. Ca. Faint. Ca. Ca. Ca. Ca. Ca. Ca. Ca. Ca. Was not seen in Ca at 8 <sup>h</sup> 7 <sup>m</sup> , but was visible at 8 <sup>h</sup> 23 <sup>m</sup> and 15 <sup>m</sup> high. See Note. Ca photographs 8 <sup>h</sup> 23 <sup>m</sup> , 8 <sup>h</sup> 7 <sup>m</sup> , 9 <sup>h</sup> 21 <sup>m</sup> , 9 <sup>h</sup> 50 <sup>m</sup> and 9 <sup>h</sup> 55 <sup>m</sup> .
June 24.	A.Y.S.	9 52 30 47 58 58 58 26 58 38 38 58 58 58 58	... 4 1 ... 1 ... 3 3 2 ... 3	81 5 43 30 16 5 9 ... ... 81 5 39 47 5 41 5 26 22 0 11 17 5	E E E E E W W W W W W W W W	10 40, 25 10 20 30 20 20 45 45 20 20 40 10 90	Faint. Ca. Ca. Ca. Faint. Faint and 6° broad in Ca. Ca. } Connected in Ca. Ca. Slants westwards. Ca. Ca. Ca. Slants as far as + 25° W. Observed through thick cirrus. Ca photograph 9 <sup>h</sup> 58 <sup>m</sup> .
June 25.	...	14 5 5 5 5	5 ... ... 2	... ... 18 62	W W W W	80 20 20 15	Ca. Ca. A streak from top flows parallel to limb to — 30° W. Ca. Ca. Two streaks almost vertical. Connected by a horizontal one No visual observations. Ca photograph (focculus) 14 <sup>h</sup> 5 <sup>m</sup> . Incomplete.

Date and observer.	Hour I.S.T.	Base	Latitude.		Lumb.	Height.	Remarks.	
			North.	South.				
1909.								
June 26.	G.N.	9 26	0.5	83.5	...	E	20	
		37		78		E	80	Ca.
		24	6	47		E	40	
		37		12		E	10	Ca.
		20	2		15	E	20	
		37			44	E	90, 100	Ca. A large cloud overhanging 22° of limb, and connected with it by two stems.
		33				E	20	
		33				E	20	
		37				W	10	Ca.
		37	3			W	50	Ca.
		31	6			W	40	
		37				W	10	Ca.
		37				W	10	Ca.
		30				W	20	
		30	6			W	30	Ca streamers extend to - 18° and - 35° W.
		37				W	30	Ca. Detached.
		37			3	W	15	Ca.
		37			5	W	15	Ca.
		37	5		40.5	W	30	Ca.
		27	1		52	W	15	
		27			64	W	15	Ca photograph 9h 37m.
June 27.	A.Y.S.	11 18	2	49	..	E	40	
		18	2	46		E	40	
		18	2	44		E	50	
		9	1	26		E	20	Slants as far as + 29° E.
		31	7		38.5	E	150	Ca. Rather faint.
		5	1		43.5	E	85 ±	Faint. Nothing here in Ca.
		0			70.5	E	10	
		29			87.5	E	20	
		27	1		39.5	W	25	Faint. 3° broad in Ca.
		24				W	10	
		31	12			W	15	Ca.
		31				W	15	Ca.
		31			47	W	10	Ca.
		31			49	W	10	Ca.
15	3		51.5	W	25	Seeing poor; limb unsteady. Ca photograph 11h 31m (poor).		
June 28.	S.S.	8 16	...	80.5	...	E	15	Ca.
		16		68		E	15	Ca.
		9 3	1.5	49		E	45	
		3	2	46		E	75	
		8 57	1	30		E	20	
		57	1	27		E	70	} Tops connected in Ca
		16	5	6.5		E	40	See Note.
		52			4	E	15	
		51	0.5		14	E	20	Surmounted by Ca streaks 4° long.
		50	0.5		23	E	15	Extends to - 20° E in Ca.
		49			26	E	10	
		48	1		32	E	20	A Ca streamer from this extends to - 26° E.
		45	2		48	E	20	Slants eastwards.
		43	1.5		58	E	15	
		16			86.5	W	15	Ca.
		35			52	W	10	
		9 24			40.5	W	50 ±	Faint, detached. Slants southwards. Only 20' high in Ca.
		23				W	10	
		8 16				W	20	Ca. A short detached streak parallel to limb.
9 19	3			W	20			
8 16	0.5		23	W	10	Ca.		
16	0.5		29	W	20	Ca.		
9 18	0.5		56	W	15	Ca photographs 8h 16m and 8h 3m.		
June 29.	G.N.	9 4	4	48	...	E	60	
		4	2	45		E	60	} Connected at top.
		2	9	27.5		E	50	

Date and observer	Hour I. S. T.	Base.	Latitude.		Limb.	Height.	Remarks.
			North	South.			
1909.	H. M.	°	°	°		'	
June 29. G.N. —contd.	9 22 0 22 22 22 22 16 22 22 15 14 12 10 22 9	. 8 5  3   5 1 3 3 1.5	16 5     13 25.5 29 57	...  42.5 81.5 72 47.5  29 24 20 12 6  25.5 29 57	E E E E W W W W W W W W W W W	15 20 70 80 20 20 20 45, 60 15 20 25 10 20	Ca. A Ca streamer extends to + 14' E. Ca. Ca. Ca. Ca. A detached cloudlet hangs over this at a height of 100". Both faint Ca. Ca. Changing. A Ca streamer extends to + 9' W. Ca. Ca photographs 9h 22m and 9h 44m.
June 30. A.Y.S.	8 41 39 31 16 16 9 19 8 16 20 18 18 16 9 5 0 0 8 16 9 0 8 58 55 55 52 52 48	0.5 5 2.5 2 0.5 3 0.5 1 2	59.5 48 29.5 16 14 2   14 25 26 30 31.5 58	...     2 30 56 86.5 72 28 16 18 8.5 6  25 26 30 31.5 58	E E E E E E E E E E E W W W W W W W W W W W	20 10 60 20 40 10 10 15 30 20 20 20 40 10 15 30 25 30 25 30 25 25	Top rather faint. Faint in Ca. Ca. Faint. Slants northwards. Ca. Do. do Low at 8h 25m, 20" high in Ca. Ca. Ca. Low at 9h 13m. 10" high and seen only at 8h 16m in Ca. Ca. } Tops connected in Ca. Ca. A jet } } Connected, and 20" and 45" high in Ca. 15" high in Ca. Ca photographs 8h 16m and 9h 1m.

REMARKS ON THE DISTRIBUTION OF THE PROMINENCES IN  
LATITUDE FOR THE FIRST HALF OF THE YEAR 1909.

The mean daily profile areas in square minutes of arc for each zone of 5 degrees in latitude, for the half-year ending June 30, 1909, are represented graphically in the accompanying diagram.



The total activity in each hemisphere expressed in prominence areas appears to have increased compared with the previous six months and the two hemispheres give sensibly equal areas.

The total mean areas for each hemisphere are given in the following table in which the figures for the previous six months are given for comparison:—

MEAN DAILY PROFILE AREAS OF PROMINENCES.

		1908.	1909.
		July to December.	January to June.
North	.. .. .	1.84	2.28
South	.. .. .	2.09	2.32
Total	..	<u>3.93</u>	<u>4.60</u>

The increase shown in the northern hemisphere is chiefly due to a new development of prominences in the zone 40°—50°. In the south there has been a reduction of areas in the zone 50°—60° and an increase in the region between 10° and 40°.

The polar regions in both hemispheres have become quiescent after a prolonged period of activity in the south.

Metallic prominences have been comparatively infrequent and far more restricted in latitude than during the corresponding period of 1908. Sixteen were recorded in the northern hemisphere between + 2° and + 15° and ten only in the south between — 7° and — 22°.

The highest prominence recorded during the period was photographed on January 12 in latitude + 31° east. It attained a height of 285" and was remarkable chiefly for the amount of detail recorded on the plate, the image resembling in structure the "net-work" nebula in Cygnus.

[ J. E. ]

## NOTES.

1909,

January

7. (1) Lat. + 48°·5 E. Very faint. Top broader. A streak from top arches over, and meets the limb at + 44° E. In Ca the shape of the prominence was slightly different at 11<sup>h</sup> 45<sup>m</sup>, and the height was 45".
- (2) Lat. + 21° E. A small streak from the top arches over the prominence. This arching structure, 45" high, was seen at 8<sup>h</sup> 23<sup>m</sup>, but was gone at 11<sup>h</sup> 45<sup>m</sup> in Ca.
9. (1) Lats. - 12°·5, - 5°, + 6°, and + 9° W. formed a single prominence in Ca at 9<sup>h</sup> 19<sup>m</sup> extending from + 10° to - 14° W. and 70" and 30" high. Changing. Differently shaped, and 75" and 45" high at 8<sup>h</sup> 20<sup>m</sup>.
- (2) Lat. + 26° W. General height in Ca is 50". Certain thin faint streamers at the top which were seen at 8<sup>h</sup> 20<sup>m</sup>, but were gone at 9<sup>h</sup> 19<sup>m</sup>, reached up to 80" in height.
- (3) Lat. + 49°·5 W. An arch. A Ca streak from the top meets the last prominence. This arch was more distinct in Ca at 9<sup>h</sup> 19<sup>m</sup> than at 8<sup>h</sup> 20<sup>m</sup>.
12. Lats. + 42°, + 40°, + 34°·5, and + 30° E. The Ca photograph at 8<sup>h</sup> 3<sup>m</sup> showed a large arched prominence overhanging 25° of the limb (from + 40° E. to + 15° E.) and connected with it by 3 stems. The height was at first 160"; but several subsequent photographs showed changes both in form and height. At 9<sup>h</sup> 30<sup>m</sup> the prominence had not much changed in shape, but the top filaments reached a height of 230". The photograph taken in the afternoon at 14<sup>h</sup> 27<sup>m</sup> indicated that the greater part of the prominence had disappeared, but that a portion of the original arch still remaining had got detached from the limb, and was 285" high.
14. Lats. - 26°, - 30°·5, and - 32°·5 E. Form a single prominence in Ca 45" high, extending from - 23° E. to - 34° E. Shape slightly different at 9<sup>h</sup> 27<sup>m</sup> in Ca.
15. (1) Lat. + 1°·5 E. 20" and 25" at 8<sup>h</sup> 43<sup>m</sup>. Prominences from + 14° E. to - 1° E. had all gone by 9<sup>h</sup> 50<sup>m</sup> except a small one of less than 10" at lat. + 7° E.
- (2) Lat. - 11°·5 E. Ca. A small portion of this, low at 8<sup>h</sup> 40<sup>m</sup> but, 25" at 9<sup>h</sup> 45<sup>m</sup>, was seen in H at lat. - 8° E. Surmounted by a detached cloudlet 60" high.
19. (1) Lat. - 10°·5 E. In Ca it consists of two arches 40" and 50" high, and covering 9° of the limb from - 6° E. to - 15° E., with a small slanting streak from - 6° E. to - 3° E.
- (2) Lat. - 25° W. A Ca streak from the base of this prominence, 60" high, slants as far as - 20° W. This streak was seen only at 9<sup>h</sup> 25<sup>m</sup> on the flocculus plate.
- (3) Lat. - 10° W. Seen in Ca only, on the flocculus plate. A Ca streak 30" high flows westwards from - 4° as far as the equator.
20. Lats. + 33°, + 30°, and + 14° E. Form a single prominence in Ca extending from + 37° to + 10° E., and 80" and 50" high. At 11<sup>h</sup> 25<sup>m</sup> in Ca it had a slightly different form extending from + 35° to - 7° E., and was 75" high.
22. (1) Lat. + 12°·5 E. Showed slight displacement to red in the beginning. Later on the top showed a displacement to violet of about 0·5 Å. Changing. Weather poor for studying bright lines. In Ca this was a big prominence extending from + 18° to + 7° E., and 75", 40" and 30" in height.
- (2) Lat. + 13° W. 40" high in Ca. A Ca streak connects the top of this prominence with the base of the last prominence.
23. (1) Lat. + 10° E. 50" high in Ca. Intensely bright. Shows displacement in most places to red of about 2·0 Å and in two places both ways of about 2·0 Å. The prominence was seen in D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub> and b<sub>4</sub>.
- (2) Lat. - 11° E. Shows displacement to violet of about 2·5 Å at - 8°. At 10<sup>h</sup> 3<sup>m</sup> there was no prominence, but there was a displacement to red of about 3·5 Å in C. At 10<sup>h</sup> 7<sup>m</sup> the prominence had formed. D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b<sub>4</sub> were bright.
- (3) Lat. + 27°·5 W. Ca streamers extend to + 20° W. These extended to + 15° W. at 11<sup>h</sup> 50<sup>m</sup>, and arched towards the prominence at + 10° W.
25. Lat. + 6°·5 E. An arch. Lower half visible in D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>. C displaced both ways in lower half. Maximum amount 0·5 Å to red in F. Prominence changing slightly. 60" and 30" high in Ca.

1909.

- January 26. Lat  $-20^{\circ}$  W. Changing. In Ca, at  $8^{\text{h}} 31^{\text{m}}$  this prominence consisted of streaks extending from  $-4^{\circ}$  to  $-21^{\circ}$  W., and  $10''$ ,  $15''$  and  $30''$  high.
- February 4. (1) Lat.  $+3^{\circ}$  W. Top bends eastwards. Ca streaks from the base of this prominence proceed both ways, and meet the limb at  $-4^{\circ}$  W. and  $+8^{\circ}$  W.  
 (2) Lat  $+24^{\circ}5$  W. Three big prominences with tops connected. A Ca streak connects this with the last prominence.
6. Lat.  $+23^{\circ}$  W.  $55''$  high in Ca. Two Ca streaks from the top proceed eastwards. One meets the prominence at  $+12^{\circ}$ , and the other at  $+15^{\circ}$ .
7. Lat.  $-18^{\circ}$  E. Metallic. Bright lines:  $-7065$ ,  $6677$ ,  $D_1$ ,  $D_2$ ,  $b_1$ ,  $b_2$ ,  $b_3$ ,  $b_4$ ,  $5316.8$ ,  $5276.2$ ,  $5270.4$ ,  $5269.7$ ,  $5018.6$ ,  $5016$  and  $4924.1$ . F displaced  $1.0 \text{ \AA}$  both ways.
10. Lats.  $+49^{\circ}5$  and  $+46^{\circ}$  E. Changing. At  $9^{\text{h}} 42^{\text{m}}$ , the northern arch had disappeared. At  $11^{\text{h}} 20^{\text{m}}$ , a thread joined these two groups
16. (1) Lat.  $+39^{\circ}5$  E.  $14^{\circ}$  broad, and general height  $60''$  in Ca. A detached Ca cloudlet above the prominence is  $105''$  high.  
 (2) Lat.  $-15^{\circ}$  W. Bright jet. In Ca at  $8^{\text{h}} 7^{\text{m}}$  this was a large prominence extending from  $-14^{\circ}$  to  $-19^{\circ}$  W., and  $120''$  high. By  $10^{\text{h}} 13^{\text{m}}$ , the whole prominence had gone except the jet at  $-15^{\circ}$  W.
20. Lat.  $+27^{\circ}5$  E. A cloud connected to limb at two points. Changing. At  $8^{\text{h}} 13^{\text{m}}$  in Ca it was  $100''$  high. At  $11^{\text{h}} 37^{\text{m}}$  the base extended from  $+35^{\circ}$  to  $+20^{\circ}$  E., the height was  $90''$ , and the top flowed eastwards as far as  $+13^{\circ}$  E.
23. (1) Lat.  $-8^{\circ}5$  E. O slightly displaced to violet near the base, and to red near the top at lat.  $7^{\circ}$  E.  $8^{\text{h}} 35^{\text{m}}$ . Metallic.  $7065$ ,  $6677$ ,  $D_1$ ,  $1/2$ ,  $5535.1$ ,  $5316.8$ ,  $5284.2$ ,  $5276.1$ ,  $5244.9$ ,  $5018.6$ ,  $5016$ ,  $4924.1$  and  $4922$  bright. At  $8^{\text{h}} 49^{\text{m}}$  the shape of the prominence was different, and O was displaced to violet over nearly the whole prominence. The changes were shown by successive Ca photographs. At  $8^{\text{h}} 5^{\text{m}}$  it was very bright, and  $45''$  high, at  $9^{\text{h}} 51^{\text{m}}$  it was a jet  $70''$  high, and at  $10^{\text{h}} 38^{\text{m}}$  it consisted of several thin streaks  $70''$  in height.  
 (2) Lat.  $-49^{\circ}$  E.  $6^{\circ}$  broad, and  $100''$  high in Ca at  $10^{\text{h}} 38^{\text{m}}$ , and  $5^{\circ}$  broad, and  $65''$  and  $75''$  high at  $9^{\text{h}} 51^{\text{m}}$ .
25. (1) Lats.  $+9^{\circ}$ ,  $+5^{\circ}5$ ,  $+1^{\circ}5$ , and  $-1^{\circ}5$  E. Connected in Ca. At  $10^{\text{h}} 39^{\text{m}}$  in Ca, these consisted of thin slanting streaks  $70''$  and  $240''$  high, extending from  $+8^{\circ}$  E to  $-5^{\circ}$  E.  
 (2) Lat.  $+20^{\circ}$  W. Changing in Ca. At  $8^{\text{h}} 9^{\text{m}}$  in Ca the prominence extended from  $+19^{\circ}$  to  $+26^{\circ}$  W., and was  $40''$  and  $240''$  high. At  $10^{\text{h}} 39^{\text{m}}$  it was differently shaped, and was only  $40''$  and  $30''$  high.
27. Lats.  $-11^{\circ}$ ,  $-7^{\circ}$  and  $-0^{\circ}5$  W. Connected, and formed a single prominence in Ca at  $9^{\text{h}} 42^{\text{m}}$   $70''$ ,  $60''$  and  $30''$  high. Changing. At  $8^{\text{h}} 12^{\text{m}}$  it was only  $4^{\circ}$  broad, and  $60''$  high.
- March 1. Lat.  $-12^{\circ}$  W. A streamer from the top flows southwards as far as  $-22^{\circ}$ . Changing. Differently shaped and  $75''$  high at  $8^{\text{h}} 16^{\text{m}}$  in Ca.
5. (1) Lat.  $+18^{\circ}$  E. Two prominences with tops connected. Top extends both ways to  $+14^{\circ}$  and  $+24^{\circ}$  E, and is  $60''$  high in Ca.  
 (2) Lat.  $-42^{\circ}5$  W. In Ca at  $8^{\text{h}} 27^{\text{m}}$  it was  $50''$  high. At  $10^{\text{h}} 51^{\text{m}}$  the height was only  $20''$ , and there was a streamer from the top meeting the limb at  $-30^{\circ}$  E.
6. (1) Lat.  $+21^{\circ}$  E. Ca. Top extends both ways to  $+26^{\circ}$  and  $+17^{\circ}$  E. At  $9^{\text{h}} 22^{\text{m}}$  it was an arch extending from  $+16^{\circ}$  E. to  $+21^{\circ}$  E. with a streamer from the top running as far as  $+29^{\circ}$  E.  
 (2) Lat.  $+12^{\circ}5$  W. Ca streamers extend both ways. The highest point was  $100''$  high in Ca at  $8^{\text{h}} 24^{\text{m}}$ , and  $135''$  high at  $10^{\text{h}} 13^{\text{m}}$ .
7. Lat.  $+11^{\circ}$  W. Ca. A small, bright portion of this  $10''$  high was seen in H. Portions of the prominence at  $+9^{\circ}$  and  $+8^{\circ}$  were intensely bright and were visible on flocculus plates ( $8^{\text{h}} 5^{\text{m}}$ ,  $8^{\text{h}} 28^{\text{m}}$ ,  $8^{\text{h}} 35^{\text{m}}$ ) rising out of the spot on the limb.
9. (1) Lat.  $+2^{\circ}$  E. Faint in H. In Ca the main prominence was bright and  $55''$  high and was surmounted by faint slanting streaks  $100''$  high  
 (2) Lats.  $-33^{\circ}5$ ,  $-27^{\circ}$ ,  $-24^{\circ}5$ ,  $-20^{\circ}$ , and  $-6^{\circ}5$  W. Changing in Ca. At  $8^{\text{h}} 15^{\text{m}}$  this prominence extended from the equator to  $-40^{\circ}$  E., and was  $50''$  and  $135''$  in height. Shapes were different at  $10^{\text{h}} 29^{\text{m}}$  and  $14^{\text{h}} 31^{\text{m}}$ . At  $10^{\text{h}} 29^{\text{m}}$ , it was  $40''$  and  $155''$  high with a floating cloudlet  $125''$  away from the limb. At  $14^{\text{h}} 31^{\text{m}}$ , it was only  $40''$  and  $80''$  high.

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10. Lat. + 3° E. Top flows southwards. In Ca it was 70" at 8<sup>h</sup> 23<sup>m</sup>; at 11<sup>h</sup> 41<sup>m</sup> the shape was slightly different, and the height was 65".
15. Lat + 8° 5 E. 35" high in Ca. A Ca streamer from the top meets the last prominence; another proceeds southwards, and meets the limb at - 4° E.
16. Lat - 22° W. Surmounted by a small detached prominence. F displaced 1.5 Å to violet on the detached part at - 21°, slightly in other places. 8<sup>h</sup> 37<sup>m</sup>. Form changing. The southern part was visible in D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>. At 9<sup>h</sup> 37<sup>m</sup> the whole prominence was a compact bank, 20" high, surmounted by a faint streak 10" higher.
17. Lat. - 28° W. Two prominences joined at the top. These were 10" high, and unconnected in Ca at 8<sup>h</sup> 24<sup>m</sup>. At 8<sup>h</sup> 7<sup>m</sup> these were joined, and 20" high.
19. Lat - 20° E. A cloudlet connected to limb by three thin streaks. Bright, and metallic at lat. - 23°. D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b were bright. C slightly displaced both ways at base. At 9<sup>h</sup> 3<sup>m</sup> there was a prominence 20" high at - 21° and C was slightly displaced both ways from - 23° to - 18° at 9<sup>h</sup> 8<sup>m</sup>. At 9<sup>h</sup> 49<sup>m</sup> the cloudlet was connected to the limb by a single streak from - 20° E.
20. Lat. + 10° 5 E. 5° broad, and 60" and 50" high in Ca. C and D<sub>2</sub> were slightly displaced to red near the base. Metallic. 7065, 6677, 4922, D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b<sub>4</sub>, 5018.6, 4924.1 bright. The whole prominence was visible in the last eight of these lines.
22. Lat. + 35° 5 E. 4° broad, and 50" high in Ca. A Ca streak from the top bends, and meets the limb at + 28° E. On the flocculus plate the prominence extends from + 28° E to + 30° E
25. Lat. - 28° 5 W. Ca. A long cloud almost detached from the limb, the northern end being 60" above the limb, and the southern end 170". At 9<sup>h</sup> 42<sup>m</sup> the northern end was only 50" above the chromosphere. At 11<sup>h</sup> 51<sup>m</sup> the northern end was attached to the chromosphere at - 20° W., the other end being 170" high. At 15<sup>h</sup> 49<sup>m</sup> the prominence was not visible.
27. Lat - 14° E. 60" and 20" high in Ca. Metallic. D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, and b<sub>4</sub> bright. The prominence was very bright on the flocculus plates.
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6. Lat. + 2° W. C slightly displaced to violet over the whole prominence. A Ca streak from the top proceeds southwards, and meets the limb at - 7° W.
13. Lat. + 11° 5 E. A thin filament connecting a Ca cloud, extending from + 14° to + 6° E, and 60" in height, to the limb.
14. (1) Lat. + 4° E. Surmounted by a detached cloudlet about 60" high. 35" only in Ca. Changing, and 120" high in Ca at 8<sup>h</sup> 1<sup>m</sup>. Showed displacements to red, at the base of about 2 Å, to violet, at the detached top, of about 5 Å.
- (2) Lat. - 15° E. Slants eastwards. Shows slight displacement to violet. Changing in Ca. Differently shaped at 8<sup>h</sup> 1<sup>m</sup>
17. Lat. + 12° E. Very faint. An arch. Changing in Ca. At 8<sup>h</sup> 7<sup>m</sup> it was a hook-like prominence 50" high. At 8<sup>h</sup> 46<sup>m</sup> it was an arch 50" and 45", extending from + 10° to + 14° E.
21. Lat. + 20° 5 W. A detached jet. In Ca at 8<sup>h</sup> 0<sup>m</sup> this jet was 220" high with a slight elevation of the chromosphere, extending from + 26° to + 20° W. Small streaks from the main prominence meet the chromosphere at + 14° W. These streaks had disappeared by 9<sup>h</sup> 19<sup>m</sup>. At 10<sup>h</sup> 52<sup>m</sup> there was only the main prominence at + 20° 5 W.
23. Lat. - 14° W. Intensely bright. Metallic. D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b<sub>4</sub> bright. F displaced both ways in several places between - 12° and - 16° W. Greatest amount being 2 Å to violet, and 2.2 Å to red at - 12° at 9<sup>h</sup> 45<sup>m</sup>. Bright lines (9<sup>h</sup> 45<sup>m</sup> to 10<sup>h</sup> 0<sup>m</sup>).

4922	He,	b <sub>1</sub> , b <sub>2</sub> , b <sub>3</sub> , b <sub>4</sub>	5269.868 —
24.107	Fe,	5191.629 Fe,	70.558 Fe,
5016	He,	97.743 —	76.169 Fe?
18.629	Fe,	5204.768 Fe,	76.237 Cr?
42.083	Ni,	06.215 Cr, Th,	5316.790 Fe,
51.825	Fe,	08.776 Fe,	23.687 —
5107.823	Fe,	27.362 Fe,	5535.061 Fe,
09.827	Fe,	34.791 —	D <sub>1</sub> , D <sub>2</sub> ,
10.574	Fe,		6677 He,
			7065 He.

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- April 23. The height was only 15" at 9<sup>h</sup> 45<sup>m</sup>, and was less than 10" at 10<sup>h</sup> 5<sup>m</sup>. The direction of the displacement changing rapidly, 10<sup>h</sup> 10<sup>m</sup>. Displacement to violet at top 1.5 Å at 10<sup>h</sup> 12<sup>m</sup>. Displaced both ways at lat. — 13° 5, 2.2 Å to red, and 3.8 Å to violet, close to limb at 10<sup>h</sup> 37<sup>m</sup>; only 1 Å both ways at 10<sup>h</sup> 39<sup>m</sup>; no displacement except at that place. About 2 Å both ways at 2 points at 10<sup>h</sup> 40<sup>m</sup>. Height less than 10" at 10<sup>h</sup> 35<sup>m</sup>, 20" at 10<sup>h</sup> 45<sup>m</sup>. Growing; 25" at 10<sup>h</sup> 50<sup>m</sup>. Not much change in prominence, but F was again displaced about 2 Å both ways at 11<sup>h</sup> 4<sup>m</sup>. [S S.]
25. Lat. — 30° E. A cloudlet connected to limb by a short stem. A streamer from top flows as far as — 23° E. Changing. At 9<sup>h</sup> 25<sup>m</sup> this consisted of two vertical streaks connected at top by another streak.
26. Lat. + 7° 5 W. Ca Faint. The height of the main prominence is only 30". It is surmounted by a detached cloudlet 45" high.
27. Lat. — 21° W. The top bends southwards as far as — 24° W. Changing. Shapes slightly different in Ca at 9<sup>h</sup> 7<sup>m</sup>, and at 11<sup>h</sup> 7<sup>m</sup>.
- May 9. (1) Lat. — 23° 5 E. A streak slanting eastwards, and surmounted by a detached cloudlet. The whole prominence except the two ends had gone by 10<sup>h</sup> 8<sup>m</sup>.
- (2) Lat. — 58° 5 E. Bright at top and base. Changing rapidly. Shape slightly different at 8<sup>h</sup> 54<sup>m</sup>. Streaks at top rapidly vanishing. The prominence was not found in the Ca photograph taken at 8<sup>h</sup> 20<sup>m</sup>.
- (3) Lat. — 16° 5 W. C slightly displaced to red at base at lat. — 15° 5 Metallic. D<sub>1</sub>, D<sub>2</sub>, b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b<sub>4</sub>, 7065, 6677, 5018.6, 5016, 4924.1, and 4922 bright. At 8<sup>h</sup> 37<sup>m</sup> F was displaced both ways for 2 Å at — 15° 5, and 1 Å both ways at — 14° 5. Bright part 20" high at 8<sup>h</sup> 39<sup>m</sup>. At 9<sup>h</sup> 32<sup>m</sup>, prominence was small, and only 10" high. But C was still slightly displaced to red at base.
14. Lat. + 24° E. Top broader. A streamer from the top flows northwards, and meets the one from the top of the prominence at + 44° 5. Another streamer flows eastwards, and meets the limb at + 18° E.
16. Lat. — 35° 5 W. A streamer from the top flows southwards as far as — 41° W. Another Ca streamer meets the limb at — 29° W. The prominence is surmounted by a very faint detached cloudlet 240" high at — 37° W.
26. Lats. + 3° and + 17° W. Connected to limb, and form a single prominence in Ca extending from — 4° to + 24° W, and 80" high.
30. Lat. — 25° E. The top flows eastwards as far as — 20° E. 60" high in Ca. A thin Ca streak from the middle of this prominence, proceeds southwards, and meets the limb at — 33° E.
- June 20. Lat. — 2° 5 W. A streamer from this proceeds southwards, and meets the limb at — 8° W. Changing slightly. This streamer was gone by 9<sup>h</sup> 35<sup>m</sup>.
23. Lat. + 23° 5 W Changing. At 8<sup>h</sup> 7<sup>m</sup>, it was a massive cloud 70" high with a brighter core in the middle and almost but not quite touching the limb throughout. At 8<sup>h</sup> 23<sup>m</sup> it had got farther removed from the limb in places, and was 75" high. At 8<sup>h</sup> 50<sup>m</sup>, when observed in C, it was 120" high and had broken up into streaky patches which showed a displacement to violet of about 3 Å and less in C. At 9<sup>h</sup> 21<sup>m</sup> it had risen to 230"; but by 9<sup>h</sup> 50<sup>m</sup> had fallen to 150".
28. Lat. + 6° 5 E Ca. An irregular arch. A curved Ca streak 120" high floats over it from lat. + 9° to + 2° E. At 8<sup>h</sup> 54<sup>m</sup> there was a very small hydrogen prominence at + 6° E which showed slight displacement of C to red.

KODAIKANAL,  
8th December 1909.

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