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Harvard College Observatory.

Observations with Meridian Circle in zone 50° to 55°.

Zone Stars

Observed Dec. 16 1870 to March 28 1871
by observers C.P.A., A.S., H.G., C.S.P.

During these observations the clock used was mostly fast, and its error large. In making the readings a certain number of seconds was subtracted for clock error. The number employed on each date will be found among the readings of the zero stars.

The figures within circles refer to the chronograph sheets. Those preceding the AR of each star are the numbers by which the stars were indicated in the original lists. When one of these numbers is underscored there is some note about the star in the original record.

The R wires used were D, E, 1 2 3 4 otherwise called m e f g h. When C, 1 2 3 4 (or a b c d) have been used, a note is made within to that effect.

The readings have not been verified. They are mostly by H. Gannett, but many by W. Winlock, and some by E. P. Austin. A few of the last are by W. Hoxie.

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runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ'
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(18) (19)

Date$_1$ = 1870 Dec. 16, 17 Observer E C P Recorder A G

Date$_2$ = Observer Recorder

Ru

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
285	3 41 36	53 10	8.5	41 3.0 4.7	41 28.5	36.9	40.9	45.1	49.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
287	3 43 6	53 6	7.8	42 36.7 38.8	42 59.0	7.1	11.1	15.2	19.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
Dec. 17 (19)													
682	1 13 14	54 41	8.8	1 12 37.5 39.8	13 8.8	17.2	21.6	25.8	30.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
692	21 51	54 11	8.8	20 57.5 58.6	21 24.1 Wires a b c d m	28.4	32.7	37.0	45.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
693	21 59	54 21	8.9	22 30.0 32.0	22 0.8	5.1	9.4	13.5					
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
694	25 1	54 46	9.0	24 16.2 18.6	24 34.2 Wires a b c d m	38.8	43.1	47.1	66.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
696	25 23	54 17	7.7	25 40.1 beginning of break to be taken	25 17.5	25.9	30.1	34.2	38.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
701	28 56	54 14	9.0	28 12.2 15.1	28 30.8 Wires a b c d m	35.8	39.4	43.8	52.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
702	29 18	54 25	7.3	29 38.6 40.7	29 11.5	20.2	24.4	28.7	32.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 25.0	24.9						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 53.8	53.2						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 52.0	49.9						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 45.2	42.8						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 18.9	15.4						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 9.4	6.9						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 59.2	57.6						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 27.2	25.0						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 66.7	64.7						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(12)

Date$_1$ = 1870 Dec. 17 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
715	1 35 54	54 17	9.0	36 16.3	35 48.3	56.9	1.1	5.3	9.7				
				22.4									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
718	36 46	54 12	9.0	37 12.8			36 53.0	57.0	1.4				
				15.3									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
720	37 55	54 8	9.0	38 11.0	37 49.8	58.2	2.6	6.7					
				12.6									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
725	40 39	54 18	8.5	39 53.8	40 10.5	14.9	19.0	23.3	31.9				
				56.0	Wires a b c d m								
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
727	40 52	54 30	8.8	41 19.4	40 46.9	55.4	59.6	4.0	8.3				
				21.3									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
732	43 8	54 16	7.5	42 22.1	42 39.2	43.6	47.8	52.0	0.4				
				23.1	Wires a b	c d	m						
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
733	43 20	54 18	8.0	43 40.9	43 13.8	22.3	26.5	30.9	35.0				
				43.5									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
737	45 22	54 58	6.8	44 41.9	45 16.8	25.2	29.7	34.0	38.6				
				43.4									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
738	46 25	54 6	8.5	46 39.9	46 19.6	28.1	32.5	36.4					
				41.8									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
741	47 42	55 2	7.8	48 19.5	47 37.6	46.2	50.4	54.8	59.2				
				22.1									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 5.9	3.8						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 24.1	23.1						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 11.2	10.0						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 20.1	18.3						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 51.4	49.2						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 31.8	31.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 34.5	32.6						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 55.3	54.2						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 19.3	18.0						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 18.5	16.4						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(10) (20)

Date$_1$ = 1870 Dec. 17,21 Observer E P R
Recorder A S

Date$_2$ = Observer
Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
743	1 50 20	54 57	7.8	49 55.2	50 15.2	23.7	28.0	32.2	36.5				
	κ			57.9									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
765	1 53 51	53 53	6.0	54 27.1	53 43.4	52.0	56.0	0.5	4.6				
	κ			30.3									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
768	2 12 2	54 44	8.3	11 15.4	11 34.8	39.2	43.6	47.8	56.5				
	κ			19.3	Wires a b c d m								
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
769	2 12 10	54 49	7.0	12 36.1	12 13.1	17.4	21.8	26.1					
	κ			42.6									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
Dec. 21 (20)													
748	1 55 17	54 30	9.0	54 20.1	54 48.9	53.4	57.5	1.8	10.4				
	κ			21.7	Wires a b c d m								
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
749	1 55 30	54 57	9.2	56 6.5	55 32.7	37.0	41.3	45.7					
	κ			8.5									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
758	2 1 35	54 41	9.0	0 53.4	1 30.4	38.9	43.1	47.3	51.8				
	κ			56.1									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
757	3 11 54 22		8.9	2 43.5	3 7.5	16.0	20.2	24.3	28.5				
	κ			44.8									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
760	5 10 54 15		8.8	4 31.3	4 42.5	46.9	51.0	55.4	3.8				
	κ			33.9	Wires a b c d m								
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 14.8	12.8						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 47.7	46.0						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 36.4	35.0						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 54.3	51.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 57.0	54.4						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 23.7	21.8						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 53.8	51.4						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 63.4	60.7						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 62.2	60.1						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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Date$_1$ = 1870 Dec. 21 Observer Recorder — Date$_2$ = Observer Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
762	2 5 50	54 43	8.2	5 30.4 34.0	5 43.6	52.3	56.4	0.6	5.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
765	6 59	54 15	8.5	7 13.3 same as line h	6 52.2	0.6	5.0	9.1	13.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
163	9 10	53 59	8.2	8 27.1 29.0	9 4.2	12.5	16.8	21.0	25.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
770	12 13	54 50	9.1	11 27.5 29.5	12 7.5	16.0	20.3	24.5	28.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
772	15 2	54 47	7.0	14 16.5 18.2	14 53.9	2.6	6.8	10.9	15.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
773	16 21	54 41	7.0	15 53.3 54.8	16 14.6	23.1	27.4	32.0	36.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
774	18 28	54 26	8.8	17 50.1 52.2	18 23.1	31.5	35.7	40.0	44.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
775	19 52	54 24	8.0	19 16.0 16.7	19 46.0	54.4	58.8	2.9	7.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
777	21 15	54 46	7.8	20 39.4 41.0	21 8.5	16.9	21.3	25.6	30.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
780	22 25	54 23	8.4	21 56.2 57.7	22 18.0	26.5	30.6	34.8	39.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 41.2	39.5						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 49.9	46.8						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 29.5	26.9						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 44.2	40.3						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 8.1	6.1						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 25.8	23.3						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 61.6	58.3						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 56.0	54.0						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 35.8	35.1						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 9.2	8.0						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(20)

Date$_1$ = 1870 Dec. 21 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
784	2 23 55	54 46	8.0	23 22.0 24.8	23 29.6	33.9 Wires a	38.0 b c	d 42.4 m	51.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
c_1													
785	24 15	54 37	8.0	24 43.7 46.1	24 10.3	18.9	23.2	27.5	31.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
786	27 6	54 59	8.8	26 19.7 21.7	26 58.4	6.7	11.1	15.5	19.6				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
787	29 49	54 39	9.0	30 2.0 3.1	29 43.2	51.8	56.0	0.2	4.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
791	32 21	54 37	9.0	32 34.5 37.8	32 15.0	23.8	28.2	32.2					
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
793	33 59	54 34	6.5	33 31.6 33.4	33 49.6	58.2	2.4	6.8	11.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
794	35 54	54 25	9.0	35 14.6 19.2	35 46.4	54.9	59.2	3.4	7.6				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
795	37 6	54 54	8.5	37 18.8 20.4	37 0.0	8.5	12.7	17.0	21.4				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
796	38 39	54 24	8.6	38 41.0 5.9	38 32.6	41.0	45.2	49.3	53.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
798	40 45	54 57	8.6	40 6.6 9.2	40 39.8	48.4	52.7	56.8	1.4				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 17.1	14.6						30		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_1											
		4 2.8	0.3						35		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_2											
		2 37.7	36.0						15		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_1											
		1 36.2	33.8						35		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_2											
		4 28.0	26.1						35		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_1											
		2 15.0	13.2						40		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_2											
		0 40.8	38.2						50		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_1											
		1 33.4	31.0						20		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_2											
		0 40.2	36.0						50		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_1											
		3 11.0	9.1						15		
d											
$((\delta) - D)\frac{\delta'}{100}$											
δ_2											

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(20) (21)

Date$_1$ = 1870 Dec. 21 Observer / Recorder — Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
800	2 42 22	54 25	8.8	41 46.1 48.1	42 18.1	26.6	30.8	35.2	39.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
801	45 44	54 30	8.8	45 13.2 15.2	45 38.3	47.0	51.0	55.2	59.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
803	47 42	54 42	9.0	47 5.9 10.3	47 38.8	47.2	51.7	55.9	0.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
804	48 58	54 40	9.0	48 28.2 30.9	48 53.0	1.5	5.8	10.0	14.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
806	2 50 45	54 8	8.0	50 11.0 12.1	50 40.0	48.4	52.8	56.8	1.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
(21) 808	3 0 30	54 48	9.1	0 8.0 10.5	28.3	37.0	41.2	45.4	49.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
809	1 53	54 54	9.2	1 25.2 27.9	47.5	56.2	0.3	4.8	9.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
811	3 19	54 51	8.0	2 40.5 41.8	3 12.9	21.8	25.9	30.0	34.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
813	4 25	54 27	9.1	4 3.9 5.9	22.4	30.9	35.0	39.2	43.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
815	6 30	54 50	8.2	5 54.9 50.9	6 24.8	33.2	37.8	42.0	46.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
d		4 65.7	62.7						45		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		0 64.0	61.4						45		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		4 37.6	34.7						30		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		0 42.7	39.9						35		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		3 4.6	2.1						5		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2 13.0	11.6						25		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		1 47.8	46.1						20		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		4 37.3	36.8						20		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		3 32.9	31.0						45		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		0 65.3	62.3						25		
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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Date$_1$ = 1870 Dec. 21 Observer Recorder Date$_2$ = Observer Recorder Ru

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
816	3 8 34	54 31	9.0	7 51.6 53.8	8 28.2	36.8	41.0	45.2	49.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
818	9 26	54 44	8.7	9 48.8 50.4	9 22.4	30.8	35.0	39.2	43.8				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
819	13 26	54 46	8.2	12 50.9 51.9	13 21.0	29.5	34.0	38.0	42.4				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
822	15 42	54 13	8.8	15 2.9 4.5	38.9	45.1	49.2	53.7	58.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
823	18 21	54 44	7.5	17 57.1 18 1.3	18 15.5	24.2	28.4	32.7	37.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
824	19 29	54 6	8.0	19 48.0 50.6	19 22.2	30.6	34.8	39.1	43.3				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
826	20 30	54 56	5.8	20 54.0 56.7	20 23.0	31.8	36.2	40.4	44.8				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
827	22 54	54 45	8.0	22 16.0 18.9	48.0	56.6	1.0	5.2	9.3				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
828	23 57	54 31	5.0	24 5.5 7.1	23 58.8	59.0	3.3	7.4	11.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
829	27 37	54 7	8.8	28 54.8 56.8	27 9.8	14.0	18.2	22.6	30.9				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 31.1	28.6						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 56.8	52.3						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 41.6	40.0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 43.0	41.5						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 13.3	10.2						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 31.8	30.6						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 20.2	19.4						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 62.7	61.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 61.6	59.8						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 47.1	44.3						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.0426A

(21)

Date$_1$ = 1870 Dec. 21 Observer / Recorder

Date$_2$ = Observer / Recorder

Ru

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
830	3 28 13	54 45	6.5	28 32.7	28 7.5	16.2	20.5	25.0	29.0				
				34.7									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
831	30 37	55 2	9.2	29 59.0	30 32.3	41.0	45.3	49.7	54.0				
				30 1.4									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_2												
833	32 20	54 11	9.3	31 53.8	—	57.1	32 1.5	5.8	14.1				
				55.3									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
834	32 24	54 11	9.1	32 31.7	32 17.9	26.2	30.4	34.8	39.1				
				34.0									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
835	35 59	54 39	7.0	35 14.5	~~35.9~~	~~40.0~~	~~44.4~~	~~52.9~~					
				19.3	31.4	35.9	40.0	44.4	52.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
836	36 8	54 43	10.0	35 28.7	35 4.0	12.5	16.9	21.0	25.3				
				35.0									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
837	37 54	54 23	8.5	38 14.9	37 48.7	57.4	1.5	6.7	10.0				
				17.0									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
839	39 52	54 19	8.0	39 12.0	45.6	54.0	58.1	2.8	7.0				
				13.9									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
840	40 51	54 24	8.2	~~5.7~~	40 44.5	53.0	57.4	1.7	5.9				
				41 6.0									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 29.3	27.9						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 62.7	61.3						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 31.2	30.8						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 31.2	30.8						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 25.0	23.2						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 58.0	56.6						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 19.8	17.2						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 33.6	31.6						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 51.0	48.0						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(22)

Date$_1$ = 1871 Jan. 4 Observer E P A Recorder A S Date$_2$ = Observer Recorder Ru

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
811	3 3 19	54 51	8.5	3 50.9 53.2	3 13.1	21.7	26.1	30.3	34.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
813	4 25	54 27	8.8	4 50.3 54.8	4 22.4	31.4	35.2	39.7	43.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
815	6 30	54 50	8.2	5 51.0 52.7	6 25.0	33.6	38.0	42.0	46.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
816	8 34	54 31	9.3	7 52.0 55.3	8 28.6	36.8	41.0	45.4	49.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
818	9 26	54 44	8.2	10 4.3 7.4	9 22.4	31.3	35.4	39.8	43.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
819	13 26	54 46	7.0	12 43.6 45.5	13 21.1	~~29.7~~ 29.7	~~38.7~~ 33.8	~~42~~ 38.4	42.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
822	15 42	54 13	8.0	14 59.8 15 2.5	15 36.9	45.4	49.8	53.9	58.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
823	18 21	54 44	7.7	17 34.2 36.0	18 15.7	24.0	28.7	32.9	37.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
824	19 29	54 6	7.8	19 49.8 52.0	19 22.4	30.9	35.0	39.3	43.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
826	20 30	54 56	7.5	20 5 1.6 54.0	20 23.6	32.0	36.4	40.5	45.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 39.3	37.7						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 50.2	48.4						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 60.0	56.3						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 20.7	19.1						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 34.2	31.4						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 39.2	37.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 36.9	34.8						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 22.0	20.0						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 22.6	21.4						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 13.4	11.4						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(2)

Date$_1$ = 1871 Jan. 4 Observer / Recorder — Date$_2$ = Observer / Recorder — Ru

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
827	3 22 54	54 45	8.3	22 11.4 15.7	22 45.1	57.0	1.1	5.5	9.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
c_1													
828	23 57	54 31	6.5	24 12.8 16.0	23 50.6	54.4	3.3	7.7	11.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
c_2													
829	27 37	54 7	8.1	26 48.7 52.6	27 10.0	14.4	18.1	22.5	31.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
830	28 13	54 45	6.5	28 29.0 31.1	28 7.9	16.4	20.5	25.0	—				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
831	30 37	55.2	9.2	29 46.0 49.9	30 32.5	41.0	45.4	49.6	54.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
835	35 59	54 39	7.8	35 17.8 20.2	31.7	36.1	40.1	44.5	53.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
837	37 54	54 23	8.8	37 18.0 20.5	37 49.0	57.0	1.3	5.8	10.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
840	40 51	54 24	8.2	40 25.3 26.9	44.8	53.2	57.9	1.3	6.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
842	41 26	54 19	8.0										
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
844	46 48	54 31	9.0	46 1.8 5.1	41.0	49.6	53.7	57.8	2.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 58.2	55.2						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 48.2	45.0						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 41.0	38.6						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 23.8	21.2						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 2.6	2.0						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 13.6	11.2						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 52.6	49.9						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 10.9	8.4						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		not observed									
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 59.3	57.5						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(23)

Date$_1$ = 1871 Jan. 13 Observer E P A Recorder A G Date$_2$ = Observer Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
267	3 22 45	54 3	9.1	22 1.0 2.6	12.6	16.8	20.9	25.2	33.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
269	26 9	53 49	8.8	23 21.0 24.5	23 5.7	10.0	14.2	18.2	(last 4 wires)				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
270	24 56	53 9	9.0	25 17.5 20.4	24 4.8	53.2	57.2	1.0	5.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
274	27 31	53 33	8.6	6 34.7 37.3	6 58.0	2.4	6.1	10.5	18.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
275	28 17	53 19	9.2	28 34.6 36.9	59.8	14.2	18.1	22.2	26.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
833	32 20	54 11	9.3	31 51.0 52.1	48.7	53.0	57.0	1.5	9.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
834	32 24	54 11	9.1	32 29.0 31.1	13.5	22.1	26.2	—	34.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
836	36 8	54 43	9.5	35 21.5 23.9	59.8	8.2	12.6	16.7	21.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
838	38 10	54 39	8.5	37 25.1 27.5	58.9	7.3	11.5	15.8	20.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
839	39 52	54 19	8.8	39 13.0 13.8	41.4	49.7	54.0	58.2	2.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 40.1	36.1						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 64.4	59.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 9.0	4.8						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 28.9	25.5						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 32.7	27.1						33		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 21.9	17.4						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 21.9	17.4						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 34.6	31.1						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 18.2	13.6						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 22.7	16.6						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj..426A

(23)

Date$_1$ = 1871 Jan. 13 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2 842	3 41 26	54 19	7.7	40 45.2 46.8	41 15.2	23.8	28.0	32.2	36.4				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
c_1													
2 843	44 22	54 31	9.0	43 42.7 44.3	44 12.2	20.8	24.8	29.1	33.5				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
c_2													
2 844	46 48	54 31	8.8	45 58.4 0.0	46 36.7	45.0	49.2	53.6	58.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
2 845	50 52	54 6	9.7	50 4.2 6.3	41.0	49.3	53.3	57.7	1.8				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
2 846	52 44	54 7	9.2	52 1.0 2.8	12.5	16.9	21.0	25.3	33.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
8 847	53 25	54 22	8.5	53 46.0 49.7	53 14.5	23.1	27.5	31.5	35.8				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
8 849	54 46	54 39	8.3	55 1.2 3.7	34.9	43.5	47.8	51.8	56.3				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
8 850	55 44	54 39	9.0	56 6.3 7.9	55 33.6	42.0	46.3	50.4	54.6				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
8 851	3 59 20	54 29	6.5	58 26.9 29.0	59 7.8	18.3	20.5	24.8	29.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
8 852	4 0 18	54 41	9.4	0 37.0 39.6	0 8.0	16.1	20.3	24.8	29.3				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													

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Runs

T		$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
			1 55.2	49.9						55		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			4 24.0	20.4						40		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			4 59.6	54.9						40		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			4 61.6	57.3						5		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			4 34.5	31.3						5		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			2 60.9	57.0						50		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			2 27.1	23.2						35		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			1 9.6	4.8						35		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			1 31.2	27.6						45		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			4 29.0	24.7						30		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											

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(23)

Date$_1$ = 1871 Jan. 13 Observer Recorder

Date$_2$ = Observer Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
854	4 2 48	54 5	7.0	2 9.2 11.3	2 37.7	46.6	50.0	54.1	58.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
855	4 21	54 11	7.3	3 43.9 46.1	4 9.1	17.4	21.7	26.0	30.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
857	5 17	54 40	9.2	5 43.0 45.8	5 17.7	22.0	26.4	30.7	(last 4 wires)				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
858	7 49	54 9	8.2	6 59.0 7 0.8	7 37.8	46.2	50.5	54.7	58.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
859	8 44	54 19	8.8	9 3.1 4.9	8 33.5	42.4	46.4	50.8	55.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
860	11 4	54 54	8.3	10 22.3 25.1	55.0	2.9	8.2	12.3	16.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
862	11 51	54 13	9.3	11 53.1 56.6	11 31.3	40.0	44.7	48.8	—				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
863	15 23	54 32	8.7	14 29.8 32.6	15 12.5	21.0	25.1	29.3	33.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
864	16 15	54 25	8.8	16 30.0 32.5	16 6.3	14.1	18.2	22.5	26.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
865	17 54	54 18	7.8	18 13.5 16.2	17 43.7	52.2	56.3	0 6	4.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
d		0 58.0	52.4						10		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		3 59.8	56.3						0		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		1 20.9	17.3						35		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		1 48.8	44.5						5		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		0 58.9	54.3						55		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		3 6.8	4.7						20		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		0 36.9	33.0						20		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		4 37.9	33.3						40		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		4 36.2	32.8						45		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2 46.1	42.2						55		
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(23)

Date$_1$ = 1871 Jan. 13 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
867	4 21 2	54 48	8.7	21 37.6 42.8	—	—	21 51.4	9.2	14.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
868	25 12	54 4	9.0	24 16.4 18.9	25 2.3	10.4	14.4	18.9	23.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
869	26 2	54 44	8.0	26 30.8 32.7	25 57.0	59.6	3.9	8.2	12.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
870	27 40	54 17	8.5	27 5.0 5.7	29.6	38.2	42.2	46.2	50.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
872	31 34	54 25	7.8	30 48.2 37.4	41 21.8	30.5	34.6	38.9	43.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
874	33 32	55 1	8.8	32 53.0 55.9	33 23.0	31.6	35.8	40.2	44.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
876	35 33	55 2	9.0	34 51.0 53.7	35 23.6	32.4	36.7	40.7	45.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
882	36 33	55 0	8.8	36 53.1 50.4	36 22.4	31.0	35.4	39.7	44.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
887	39 40	54 50	8.3	38 58.4 01.5	39 30.5	39.2	43.4	47.5	52.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
889	40 49	54 12	8.3	41 23.0 26.2	—	40 46.5	50.9	55.2	59.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
d		3	22.2	18.4					25		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		1	46.2	40.1					10		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		4	25.2	21.5					25		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		3	41.9	37.1					35		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		0	33.4	29.1					50		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		4	27.4	23.8					10		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		3	45.5	42.0					10		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		4	54.5	51.1					10		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		1	11.2	7.9					25		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		3	45.0	40.2					0		
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(23) (26)

Date$_1$ = 1871 Jan. 13, Feb. 1. Observer E P
Recorder N J

Date$_2$ = Observer
Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
992	4 42 39	54 49	7.3	42 0.0 2.0	42 26.7	35.2	39.3	44.0	48.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
1099	4 44 38	55 3	5.8	43 54.5 56.7	44 26.9	35.5	40.0	44.1	48.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
Feb. 1 (26)													
969	6 5 56	54 4	8.8	5 12.4 13.6	5 51.7	0.0	4.2	8.3	12.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
970	8 41	54 14	8.8	8 21.6 23.9	39.0	47.3	51.8	55.9	0.1				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
971	9 32	54 18	9.0	9 58.6 0.1	9 27.6	36.0	40.3	44.7	48.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
972	9 51	54 18	8.2	10 14.0 15.2	—	—	—	10 3.0	7.4				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
975	12 25	54 8	8.5	12 44.2 46.0	12 20.1	28.3	32.6	36.8	41.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
977	15 24	54 36	8.7	14 43.4 44.6	59.7	4.0	8.0	12.6	21.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
978	15 48	54 25	8.0	16 17.0 20.8	15 43.3	51.9	56.0	0.2	4.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													

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1870phae.proj..426A

Runs

T		$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
			0 25.4	21.4						25		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			2 57.9	54.9						10		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			1 41.6	36.2						15		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			3 9.8	3.0						5		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			2 24.5	19.3						0		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			2 24.5	19.3						0		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			2 32.0	26.2						10		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											
			0 35.4	30.1						45		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_1											
			4 23.1	17.6						50		
	d											
	$((\delta) - D)\frac{d'}{100}$											
	δ_2											

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1870phae.proj.1426A

(26)

Date$_1$ = 1871 Feb. 1 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
979	6 17 48	54 57	9.0	17 7.0 8.0	21.7	26.0	30.4	34.7	43.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
981	18 0	54 28	8.0	18 28.2 30.9	—	18 3.5	7.7	14.8	16.2	8			
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
989	21 37	54 52	7.8	21 20.5 21.4	14.3	18.9	23.6	27.2	36.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
990	21 47	54 56	7.5	22 13.8 15.3	—	—	21 56.0	0.8	4.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
993	24 46	54 10	7.5	24 3.6 4.7	41.1	45.5	53.7	57.9	2.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1108	28 31	55 8	9.0	27 49.8 51.2	28 28.2	36.9	41.4	45.6	50.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
991	29 18	54 7	8.8	29 36.0 37.2	22.8	27.0	31.2	35.4	(last 4 wires)				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
999	32 15	54 33	7.8	31 28.0 29.2	32 10.8	19.4	23.6	27.7	32.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1002	33 17	53 59	9.2	33 48.8 49.2	33 15.0	28.6	27.9	32.0	36.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1004	35 0	54 59	8.3	34 23.5 24.4	55.6	4.1	8.3	12.9	17.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 4.7	0.5						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 48.0	44.8						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 8.2	2.8						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 52.3	47.6						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 43.8	39.3						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 20.2	16.5						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 43.4	38.0						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 11.5	7.0						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 38.9	32.3						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 17.1	13.2						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(26)

Date$_1$ = 1871 Feb. 1 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1006	6 36 30	54 28	8.5	36 2.0 5.5	25.9	34.3	38.5	42.9	47.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1008	39 34	54 24	8.8	38 57.6 59.6	39 29.4	37.8	42.0	46.2	50.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1009	40 41	54 34	7.5	40 19.0 20.9	38.1	46.8	51.0	55.1	59.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1011	42 6	54 10	8.0	41 36.4 39.3	42 3.1	11.6	16.0	20.0	24.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1010	43 7	55 2	8.5	43 35.1 36.6	3.0	11.7	15.9	20.3	24.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1012	44 30	54 25	8.8	44 ~~25.6~~ 34.1 51.9 55.6	25.6	34.1	38.2	42.6	47.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1014	45 59	54 24	8.8	45 27.3 30.0	54.2	2.7	7.0	11.2	15.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1018	47 49	54 39	9.0	47 18.5 21.0	46.0	54.8	59.1	3.2	7.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1019	48 55	54 16	8.7	48 35.0 37.6	50.6	59.1	3.3	7.6	11.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1111	50 14	55 7	9.0	49 5.5 5.10	50 10.6	19.2	23.6	27.7	32.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 41.0	35.6						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 49.8	44.0						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 11.9	6.6						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 36.2	32.3						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 33.0	28.6						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 63.2	58.0						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 17.2	11.8						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 19.4	13.8						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 31.7	27.8						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 9.8	5.6						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(26)

Date$_1$ = 1871 Feb. 1 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1022	6 51 18	54 23	8.7	57 43.2 44.8	51 13.6	22.2	26.4	30.6	35.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1023	52 40	54 13	8.3	52 15.1 17.1	36.7	45.1	49.4	53.6	57.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1025	56 8	54 27	9.3	55 30.5 32.6	38 4.3	13.0	17.1	21.4	25.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1028	58 8	54 19	7.8	57 28.5 30.7	58 3.8	12.2	16.4	20.6	25.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1030	6 59 11	54 33	8.7	59 28.7 31.1	59 7.2	15.7	20.0	24.2	—				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1031	7 0 22	54 34	8.5	0 39.3 40.6	59 57.0	1.2	5.4	10.0	18.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1034	2 11	54 6	8.8	1 43.7 46.0	2 8.6	16.9	21.0	25.2	29.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1036	3 56	54 9	8.8	4 21.6 25.1	3 53.2	11.7	6.0	10.0	14.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1114	6 14	55 7	8.2	5 31.0 34.0	6 11.1	19.8	24.2	28.5	32.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1115a	9 28	55 7	8.5	9 36.9 38.0	9 24.1	32.8	—	41.5	45.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 19.8	16.9						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 16.8	11.4						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 26.1	20.6						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 28.1	23.5						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 54.0	49.0						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 57.8	53.9						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 56.9	52.1						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 35.7	30.0						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 68.2	63.3						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 30.0	25.1						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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29

Date$_1$ = 1871 Feb. 1 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1039	7 9 28	55 7	9.0	9 12.2 13.7	25.0	33.4	lost 42.0	42.0	46.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
1040	10 59	54 44	9.2	11 19.3 25.0	10 58.0	6.6	11.0	15.2	19.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1041	13 27	54 20	8.3	12 49.2 51.4	13 23.0	31.4	35.5	39.8	44.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1043	14 37	54 55	7.8	14 9.0 10.7	33.8	42.2	46.8	51.0	55.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1044	19 2	54 21	9.0	18 22.0 24.2	58.2	9.8	11.0	15.0	19.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1045	21 10	54 47	8.8	20 43.7 45.0	21 7.1	15.6	20.0	24.1	28.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1046	21 54	53 58	8.8	22 14.0 18.0	—	—	22 2.1	6.0	10.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
1047	22 47	54 0	9.0	23 19.7 21.2	—	22 54.0	55.1	59.2	3.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
1050	24 0	54 38	8.7	24 29.0 30.8	—	—	24 8.0	12.1	16.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 30.0	25.1						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 56.7	52.4						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 6.9	2.3						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 39.1	34.6						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 28.9	23.5						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 50.0	45.0						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 6.0	1.3						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 36.0	31.6						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 15.9	11.8						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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2D

Date$_1$ = 1871 Feb. 6 Observer EPA Recorder AS Date$_2$ = Observer Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_r	T_g	T_h	Sum	Mean	Red. to T_m	T	Runs
922	5 23 47	54 53	9.0	24 21.3 24.6	23 40.1	48.5	53.0	57.2	1.5					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_1													
924	26 8	54 19	6.0	26 25.9 27.1	25 59.6	26 8.0	12.4	16.6	20.8					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_2													
925	27 51	54 52	8.3	27 11.1 12.9	42.7	51.2	55.7	0.0	4.2					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_1													
927	28 57	54 46	9.2	28 27.8 29.1	50.4	59.1	3.4	7.6	12.1					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_2													
1103	30 1	55 2	7.8	30 22.0 23.8	29 52.6	1.8	5.8	10.0	14.2					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_1													
930	31 28	54 15	9.0	31 0.0 2.4	21.7	30.3	34.4	38.7	42.8					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_2													
932	32 33	54 10	9.0	32 ~~55.9~~ 34 49.0 52.1	25.9	34.2	38.6	42.7	46.8					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_1													
934	33 27	54 47	7.0	33 57.8 41.1	33 18.1	26.7	31.1	35.5	39.8					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_2													
936	34 38	54 43	8.0	35 14.1 16.9	34 32.1	40.8	45.2	49.3	53.8					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_1													
939	37 8	54 25	7.0	36 24.3 27.0	37 0.0	8.4	12.5	16.9	21.0					
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													
	α_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 34.8	34.5						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 56.2	53.4						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 55.0	53.8						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 6.1	5.4						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 43.4	43.1						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 57.0	58.6						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 42.8	40.7						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 10.9	10.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 47.8	45.5						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 35.6	33.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(27)

Date$_1$ = 1871 Feb. 6 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1104	5 38 37	55 4	9.0	39 0.0 2.8	38 30.4	39.1	43.4	47.7	52.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
942	39 33	54 1	9.2	39 59.8 4.0	39 ~~27.0~~ 25.9	34.2	38.2	42.7	46.9				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
1105	40 51	55 13	7.0	41 20.5 24.0	40 44.6	33.1	57.5	1.6	6.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
944	42 49	54 34	9.0	42 12.8 15.8	42.2	51.0	55.2	~~57.6~~	~~3.8~~				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
945	45 12	54 49	9.3	44 ~~33.5~~ 36.1	46.0	50.6	54.6	59.1	~~7.7~~				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
941	45 31	54 29	8.7	~~48~~ ~~23.0~~ 27.1	~~32.7~~	~~37.1~~	~~41.3~~	~~45.6~~	~~53.9~~				
κ				46 5.3 9.1	45 —	—	35.6	39.7	44.0				
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
952 δ Aurigae	49 3	54 16	6.5	~~49~~ ~~54.7~~ 58.5	~~15.0~~	~~23.6~~	~~27.9~~	~~32.1~~	~~36.3~~				
κ				48 23.0 27.1	32.7	37.1	41.3	45.6	53.9				
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
954	49 22	54 17	9.3	~~58~~ ~~15.6~~ 20.1	~~59 37.0~~	~~45.6~~	~~49.7~~	~~54.6~~	~~5.5.4~~				
κ				49 54.7 58.5	15.0	23.6	27.9	32.1	36.3				
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
957	50 41	54 33	9.0	~~54~~ ~~6.6~~ 9.7	~~38.4~~	~~46.7~~	~~50.7~~	~~55.0~~	~~5.9.4~~				
κ				51 18.6	50 37.0	45.6	49.7	54.0	58.4				
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
959	54 45	54 25	8.8	~~56~~ ~~22.0~~ 24.0	~~25.1~~	~~29.7~~	~~33.8~~	~~38.1~~	~~46.7~~				
κ				54 6.0 9.7	38.1	46.7	50.7	55.6	59.4				
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 46.1	44.9						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 37.9	37.3						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 3.7	2.2						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 1.0	0.0						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 12.9	12.6						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 10.9	8.8						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 41.2	40.0						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 35.6	33.4						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 30.8	28.8						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 [illegible]	28.9						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(27) (28)

Date$_1$ = 1871 Feb. 6, 10 Observer E. P. A. Recorder A. S. Date$_2$ = Observer Recorder Runs

Star.	α	δ	Mag.	T_d	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
960	5 56 53	54 41	8.8	57 ~~58.4~~ ~~53.0~~	26.0	34.6	~~38.8~~	~~43.2~~	~~47.5~~				
κ				56 22.0 24.0	25.1	29.7	33.8	38.1	46.7				((δ) -
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
961	5 57 33	54 56	8.5	57 50.4 53.0	26.0	34.6	38.8	43.2	47.5				
κ													((δ) -
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
κ													((δ) -
((δ) — D) $\frac{\kappa'}{100}$													
Feb. 10 (28) a_1													
922	5 23 47	54 53	9.3	23 13.1 14.3	41.9	50.4	54.6	58.8	3.1				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
924	26 8	54 19	6.5	26 28.0 30.1	26 1.2	9.7	14.0	18.2	22.6				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
925	27 51	54 52	8.8	27 24.8 26.4	44.4	53.0	57.0	1.6	5.9				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
927	28 57	54 46	9.2	28 37.0 39.9	52.2	0.7	5.0	9.2	13.7				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
1103	30 1	55 2	8.3	29 39.5 41.7	54.4	3.0	7.8	11.6	15.9				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
930	31 28	54 15	9.0	31 1.0 2.7	23.6	32.0	36.1	40.5	44.6				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
932	32 33	54 10	8.8	3 2 14.0 16.1	27.3	35.7	40.0	44.2	48.5				
κ													((δ)
((δ) — D) $\frac{\kappa'}{100}$													
a_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 4.1	2.4						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 50.6	50.3						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 25.3	20.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 54.7	50.4						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 46.0	42.8						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 57.6	54.8						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 12.2	9.5						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 61.2	56.4						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 8.8	3.8						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.0426A

(28)

Date$_1$ = 1871 Feb. 10 Observer / Recorder

Date$_2$ = Observer / Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
934	5 33 27	54 47	7.8	33 42.1 43.1	33 19.9	28.5	32.8	37.0	41.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	c_1												
939	37 8	54 25	6.5	36 26.8 29.2	37 1.7	10.0	14.2	18.5	22.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_2												
1104	38 37	55 4	9.2	39 0.4 3.0	38 32.0	41.0	45.2	49.5	53.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_1												
942	39 33	54 1	9.0	40 5.6 7.3	—	39 35.8	40.0	44.4	48.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_2												
944	42 49	54 34	9.0	42 7.6 9.6	44.0	52.7	56.7	1.0	5.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_1												
945	45 12	54 49	9.2	44 32.0 33.7	47.9	52.1	56.3	0.6	9.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_2												
947	45 31	54 29	9.0	46 3.6 5.4	—	45 33.0	37.1	41.5	45.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_1												
950	46 40	54 43	8.6	46 57.2 58.1	46 36.0	44.4	48.8	53.0	—				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_2												
952	49 3	54 16	4.0	48 19.7 22.7	34.5	38.8	43.0	47.1	55.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_1												
954	49 22	54 17	9.5	49 43.8 45.2	49 17.9	25.3	29.5	33.6	38.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ))
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 24.5	21.3						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 35.6	31.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 45.8	42.2						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 36.0	31.9						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 6.3	2.4						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 14.0	11.3						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 13.0	9.1						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 33.5	30.5						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_3											
		1 43.5	40.1						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 47.0	42.0						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.426A

(28)

Date$_1$ = 1871 Feb. 10 Observer / Recorder

Date$_2$ = Observer / Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
957	5 50 41	54 33	9.0	50 26.8 29.0	38.6	47.1	51.3	55.6	59.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
959	54 45	54 25	9.0	54 6.4 7.2	39.7	48.2	52.5	56.6	1.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
960	56 53	54 41	8.8	56 17.3 19.5	26.8	31.1	35.3	39.8	48.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
961	5 57 53	54 56	8.5	57 10.5 12.7	29.5	36.2	40.5	44.8	49.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
963	6 0 4	54 3	9.0	59 28.6 29.8	0 1.4	9.6	13.8	18.0	22.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
964	0 43	54 51	9.0	1 20.2 23.0	—	0 46.9	51.0	55.1	59.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
966	2 26	54 0	8.8	2 9.0 12.0	2 20.7	29.3	33.3	37.6	42.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
968	3 24	54 9	8.6	3 5.6 7.0	19.7	28.0	32.3	36.4	40.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
969	5 56	54 4	9.0	5 17.8 19.5	50.5	59.0	3.1	7.2	11.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
970	8 41	54 14	8.8	7 59.5 2.0	8 37.8	46.1	50.5	54.6	58.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 6.5	2.8						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 31.4	29.1						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 8.1	3.6						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 20,0	17,0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 40,7	37.8						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 17,2	14.1						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 39.2	35.3						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 33,0	31.0						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 27,8	23.9						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 13.9	10.5						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(28)

Date$_1$ = 1871 Feb. 10 Observer Recorder

Date$_2$ = Observer Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
971	6 9 32	54 18	9.2	9 56.2 59.1	26.5	34.9	39.3	43.2	47.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
972	9 51	54 18	8.0	10 13.9 15.3	—	9 53.6	—	1.9	6.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
975	12 25	54 8	8.8	12 0.2 1.9	18.9	27.1	31.5	35.4	39.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
977	15 24	54 36	9.0	14 46.1 48.0	58.3	3.0	7.0	11.3	20.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
978	15 48	54 25	7.7	16 17.5 19.0	15 42.0	50.6	55.0	59.2	3.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
979	17 48	54 57	9.0	17 14.7 17.0	20.3	25.0	29.0	33.5	42.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
985	18 38	54 28	7.8	18 11.8 13.3	32.9	41.1	45.4	49.7	54.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
987	19 16	54 52	8.0	19 54.1 56.1	—	19 18.1	23.0	27.3	31.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
989	21 37	54 52	8.5	21 10.0 11.9	~~56.4~~ 13.4	17.6	21.9	26.1	35.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
990	21 47	54 56	7.5	22 ~~50.7~~ 11.5 13.5	—	50.7	55.0	59.3	3.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 13.1	11.0						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 13.1	11.0						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 54.1	50.4						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 24.8	20.1						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 12.5	8.5						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 50.2	47.8						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 44.1	41.3						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 18.6	13.4						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 5.8	1.9						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 42.9	39.2						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(28) (29)

Date$_1$ = 1871 Feb. 10 Observer Recorder

Date$_2$ = Observer Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
991	6 23 4	54 34	8.8	23 27.3 28.5	22 58.2	7.0	11.0	15.4	19.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
993	24 46	54 10	8.5	24 17.6 18.6	40.0	48.3	52.6	56.8	1.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
(29) 1004	35 0	54 59	9.0	34 13.1 15.8	54.5	3.0	7.2	11.6	16.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1006	36 30	54 28	8.8	35 54.6 55.4	36 24.8	33.1	37.1	41.3	46.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1008	39 34	54 24	8.8	38 54.8 55.5	39 26.2	36.7	41.0	45.2	49.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1009	40 41	54 34	8.2	40 49.5 22.2	37.0	45.7	50.0	54.0	58.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1011	42 6	54 10	7.5	41 42.4 44.2	42 2.1	10.4	14.8	19.0	23.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1110	43 7	55 2	7.0	43 35.0 37.7	2.0	10.3	14.6	19.0	23.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1012	44 30	54 25	8.8	44 58.4 0.0	—	44 33.0	37.1	41.5	45.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1014	45 59	54 24	9.0	45 38.7	53.1	1.7	6.0	10.0	14.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 28.2	25.0						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 23.1	18.4						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 13.8	11.1						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 39.2	35.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 41.6	37.3						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 62.6	59.4						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 24.3	20.6						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 23.0	21.4						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 49.2	45.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 61.1	57.1						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj..026A

(29) (39)

Date$_1$ = 1871 Feb. 10, 13 Observer E P A
Recorder A S

Date$_2$ = Observer
Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1018	6 47 49	54 39	8.8	47 22.2 23.9	45.3	53.8	58.0	2.8	6.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
1019	48 55	54 16	8.6	49 7.4 9.1	48 49.5	58.0	2.8	6.4	10.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
1111	50 14	55 7	9.0	50 27.7 29.9	9.4	18.1	22.2	—	31.1				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
1025	56 8	54 27	9.0	55 36.3 35.3	56 3.4	11.9	16.1	20.4	24.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
1028	58 8	54 19	7.8	57 33.0 35.2	58 2.7	11.0	15.2	19.7	23.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
1030	6 59 11	54 33	8.8	58 49.8 53.3	59 6.1	14.6	19.0	23.0	27.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
1031	7 0 22	54 34	8.7	0 3.1 5.5	17.2	25.9	30.1	34.4	38.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													

Feb. 13 (30)

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1686	5 42 43	52 46	8.5	42 4.2 7.3	32.2	40.3	44.5	48.7	52.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
1688	44 2	52 41	8.8	43 28.2 30.1	43 54.6	3.0	6.8	10.6	15.0				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 6.5	2.1						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 60.3	56.4						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 34.4	30.4						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 11.7	6.9						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 16.6	11.6						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 12.0	7.9						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 14.8	10.7						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 35.0	31.4						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 23.7	19.0						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.426A

Date$_1$ = 1871 Feb. 13 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1691	5 45 24	52 57	8.0	44 42.8	45 15.7	24.0	28.0	32.1	36.2				
	κ			44.6									
	((δ) — D) $\frac{\kappa'}{100}$												
	σ_1												
1693	47 5	52 51	8.9	46 19.3	55.7	3.6	7.8	12.0	16.0				
	κ			21.2									
	((δ) — D) $\frac{\kappa'}{100}$												
	σ_2												
1697	49 1	52 38	8.8	48 14.0	29.0	33.0	37.0	41.0	48.4				
	κ			15.9									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1702	51 40	52 49	9.3	50 54.0	51 31.2	39.5	43.5	47.6	51.7				
	κ			1.5	39.5								
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
DM. 52 1030	52 40	52 48	9.0	53 18.0	52 31.6	39.6	43.6	47.8	51.9				
	κ			20.4									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
DM. 52 1033	56 28	52 45	8.9	58 13.0	40.6	46.5	52.7	57.0	1.0				
	κ			15.5									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1704	5 59 11	52 47	8.0	58 84.0	59 2.1	10.0	14.3	18.5	22.7				
	κ			36.0									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1706	6 1 34	52 40	5.8	0 48.6	1 23.0	31.0	35.3	39.5	43.5				
	κ			49.7									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1707	2 40	52 45	8.7	2 16.7	31.4	39.4	43.5	47.6	52.0				
	κ			18.4									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1711	3 53	52 2	6.5	4 6.2	3 41.2	49.2	53.3	57.4	1.4				
	κ			7.9									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 59.9	55.5						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 27.2	21.6						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 62.2	56.9						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 28.0	22.5						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 13.6	8.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 29.9	25.8						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 7.1	1.8						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 45.8	40.9						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 16.9	12.5						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 42.0	39.1						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj...426A

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Date$_1$ = 1871 Feb. 13 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1712	6 5 57	52 12	7.2	5 14.5 16.4	46.1	54.1	58.3	2.3	6.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1714	7 4	52 34	7.0	6 38.0 39.6	53.4	1.7	5.8	9.7	13.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1715	9 26	52 26	8.5	8 37.7 40.4	9 17.1	25.4	29.5	33.6	37.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1717	11 21	52 34	7.0	10 39.9 42.2	11 12.2	20.1	24.2	28.2	32.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1718	17 9	52 38	8.5	16 20.0 23.5	89.2	43.2	47.4	51.4	59.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1719	17 27	52 55	9.2	17 46.5 49.5	17 17.2	25.8	29.8	33.8	37.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1720	18 42	52 31	6.8	19 4.7 7.0	18 30.1	38.4	42.5	46.4	50.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1724	20 20	52 52	7.8	19 46.0 47.1	50.8	54.8	59.1	3.2	—				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1725	20 59	52 53	8.2	20 25.5 27.1	29.4	33.5	37.7	41.9	50.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1726	21 11	52 52	8.2	21 28.0 40.2	4.4	12.4	16.7	20.7	24.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 45.0	41.3						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 57.1	52.0						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 59.9	55.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 37.6	32.9						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 47.5	42.5						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 44.4	39.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 50.4	46.1						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 29.8	28.2						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		5 8.9	6.9						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		5 8.9	6.9						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.1426A

(30)

Date$_1$ = 1871 Feb. 13 Observer / Recorder

Date$_2$ = Observer / Recorder

Run:

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1728a	6 23 47	52 33	9.3	23 11.1 12.3	37.7	45.9	50.0	54.0	58.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
1728b.	23 47	52 33	9.0	23 18.0 19.2	(See notes)								
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
1731	26 57	52 38	9.0	26 13.3 14.8	49.5	57.6	1.6	5.7	10.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
1735	30 19	52 55	9.0	29 45.7 48.2	30 11.7	18.7	22.8	26.8	31.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
1737	31 43	52 41	9.2	31 10.0 12.0	38.1	46.3	50.3	54.4	58.4				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
1739	34 26	52 52	8.8	34 ~~18.3~~ 51.0 53.4	16.3	24.5	28.5	32.7	37.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
1741	35 52	52 22	8.2	35 22.4 24.3	—	51.8	55.7	59.7	4.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
1743	37 48	52 23	9.0	37 6.2 9.0	37.6	45.4	49.5	53.5	57.8				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
1746	39 2	52 37	8.7	38 ~~25.8~~ 31.2	~~37.2~~ 53.0	~~53~~ 1.0	5.1	9.4	13.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
1750	42 18	52 39	8.3	41 37.2 39.2	42 8.6	16.4	20.6	24.6	28.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 33.3	29.7						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 33.3	29.7						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 28.1	22.3						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 53.6	49.2						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 33.8	30.7						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 57.4	53.1						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 21.2	16.5						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 37.0	33.8						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 47.0	42.4						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 37.8	34.2						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.0426A

(30)

Date$_1$ = 1871 Feb. 13 Observer / Recorder

Date$_2$ = Observer / Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1752	6 43 6	52 37	9.0	43 24.7	42 57.4	5.7	9.9	13.9	17.6				
	κ			31.5									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1754	46 4	52 24	8.8	45 18.9	54.2	2.1	6.2	10.2	14.4				
	κ			21.1									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1755	47 34	52 25	9.0	46 52.7	47 24.0	32.0	36.1	40.1	44.2				
	κ			53.5									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1757	49 39	52 43	7.0	48 58.9	49 28.4	36.5	40.6	44.6	48.9				
	κ			1.2									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1759	54 46	52 56	8.8	54 1.0	58.9	46.9	51.0	55.0	59.2				
	κ			4.4									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1763a	55 33	52 56	8.3	55 49.9	55 23.9	32.0	36.3	40.0	44.5				
	κ			51.1									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1763b	55 33	52 56	8.8	55 53.3		See notes							
	κ			55.1									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1766	6 58 15	52 53	9.0	57 32.6	58 5.6	13.8	17.4	21.8	25.9				
	κ			36.2									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1769	7 1 32	52 31	8.5	0 48.6	1 24.6	32.9	37.0	40.7	45.0				
	κ			52.3									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1770	3 23	52 53	8.2	2 42.2	3 13.6	22.0	25.9	30.1	34.4				
	κ			45.7									
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 38.9	36.3						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 41.1	37.1						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 58.0	53.4						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 23.8	19.2						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 57.0	52.6						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 23.8	18.8						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 23.8	18.8						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 6.0	1.2						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 43.8	39.1						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 34.2	29.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.426A

(30) (32)

Date$_1$ = 1871 Feb. 13, 22 Observer E P A Recorder A J

Date$_2$ = Observer Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1773	7 4 45	52 46	7.0	4 2.0 2.9	4 35.8	4 [illegible].0	48.1	52.1	56.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
1775	6 37	52 16	7.5	7 0.5 2.8	6 27.0	35 8	39.8	43.9	47.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_2												
1776	7 7 35	52 20	4.5	8 8.0 10.0	—	7 33.6	37.7	41.7	45.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
Feb. 22 (32)													
1735	6 30 19	52 55	9.0	30 44.0 45.8	—	30 16.1	22.1	26.3	30.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1737	31 43	52 41	9.2	32 8.2 12.9	31 37.7	46.0	49.9	54.0	58.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1739	34 26	52 52	8.5	33 37.0 39.3	34 16.0	24.0	28.0	32.1	36.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1741	35 52	52 22	8.7	35 17.2 20.2	43.1	51.1	55.2	59.3	3.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1743	37 48	52 23	8.7	37 2.7 5.2	36.9	45.1	49.1	53.1	57.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1746	39 2	52 37	8.6	38 29.7 30.7	52.5	0.6	4.7	8.7	12.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
d		2 23.3	19.5						35		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		1 40.7	35.7						5		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		0 44.9	39.5						0		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		2 25.5	21.4						25		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2 5.2	0.6						40		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		0 7.0	1.9						30		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		1 41.5	36.7						0		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		4 55.5	52.4						55		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		0 63.6	58.7						45		
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.1426A

(32)

Date$_1$ = 1871 Feb. 22 Observer / Recorder

Date$_2$ = Observer / Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1750	6 42 18	52 39	8.5	41 34.4 39.0	42 8.8	16.6	20.2	24.2	28.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_1												
1752	43 6	52 37	8.7	43 20.0 22.6	42 57.2	5.5	9.6	13.3	17.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_2												
1754	46 4	52 24	8.8	45 13.6 15.0	53.5	1.7	5.5	9.6	13.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_1												
1755	47 34	52 25	8.8	46 33.7 55.3	47 23.7	31.8	35.7	39.8	43.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_2												
1757	49 39	52 43	6.5	48 52.0 53.2	49 58.0	36.3	40.2	44.2	48.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_1												
1759	54 46	52 56	8.8	54 5.9 7.9	38.3	41.4	50.6	54.7	58.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_2												
1763a	55 33	52 56	8.5	55 41.9 42.4	23.6 55 31.7	35.8	39.9	44.2					
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_1												
1763b	55 33	52 56	9.0	55 46.4 47.8	23.6 55 31.7	35.8	39.9	44.2					
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_2												
1766	58 15	52 53	9.0	57 47.7 48.6	58 5.1	13.0	17.3	21.3	25.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_1												
1767	59 26	52 16	9.2	59 5.2 7.0	16.6	24.6	28.7	32.8	36.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												((δ)
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 55.9	50.8						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 61.8	58.2						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 62.2	58.6						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 13.8	10.4						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 45.4	40.9						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 8.8	5.0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 46.0	40.0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 46.0	40.0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 14.0	8.4						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 44.0	39.6						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(32)

Date$_1$ = 1871 Feb. 22 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T	Runs
1769	7 1 32	52 31	8.5	0	44.9 / 46.8	1 24.2	32.3	36.5	40.5	44.7				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_1													
1770	3 23	52 53	8.5	2	37.3 / 40.5	3 13.4	21.6	25.7	29.8	34.0				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_2													
1773	4 45	52 46	7.0	5	6.0 / 10.0	—	4 43.7	47.7	51.9	55.9				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_1													
1776	7 35	52 20	6.5	6	59.4 / 2.5	7 25.2	33.2	37.4	41.4	45.4				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_2													
1781	10 56	52 29	8.3	10	20.2 / 22.1	46.8	54.8	58.8	2.7	7.0				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_1													
1782	11 38	52 29	8.8	12	2.7 / 4.6	11 37.0	39.1	43.2	47.1	51.2				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_2													
1785	13 15	52 31	8.0	12	38.8 / 42.5	13 7.4	15.6	19.3	23.6	27.7				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_1													
1786	14 35	52 57	8.5	14	0.8 / 2.3	26.0	34.0	38.1	42.1	46.4				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_3													
1789	15 56	52 57	9.2	15	9.8 / 12.2	47.8	56.2	0.2	4.3	8.7				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_1													
1790	17 54	52 36	8.7	17	12.0 / 13.5	43.7	51.7	56.0	0.0	4.0				
	κ													
	((δ) — D) $\frac{\kappa'}{100}$													((δ)
	α_2													

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 63,1	58,0						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 55.0	50,0						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 51,2	45,2						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 52,3	47,0						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 65.7	60.3						49 probably error for 50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 65.7	60.3						49 probably error for 50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 4.5	0.0						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 12,0	7.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 12,0	7.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 56,2	50,8						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.426A

(32) (37)

Date$_1$ = 1871 Feb. 22 / March 7 Observer E P A H.G. Date$_2$ = Observer
Recorder A S Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
1794	7 21 30	52 54	7.7	21 4.2 6.5	21.1	27.2	33.1	37.6	41.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
1797	25 40	52 28	8.8	24 52.6 54.4	25 30.7	38.6	42.7	46.6	50.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
1800	7 27 24	52 29	8.8	26 44.1 46.5	27 15.3	23.2	27.6	31.4	35.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
March 7 (37)													
2111	18 36 15	53 8	9.5	35 16.8 19.7	36 6.8	15.4	19.4	23.6	27.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2112	37 15	53 31	8.3	36 52.0 53.6	37 6.0	14.2	18.3	22.6	26.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2113	39 19	53 24	8.5	38 37.6 39.5	39 19.5	18.6	23.0	27.0	31.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2114	42 28	52 58	9.0	41 40.7 42.4	42 22.0	30.1	33.8	38.2	42.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2115	45 40	53 26	8.0	44 37.5 39.6	45 31.2	39.4	43.6	47.8	51.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2117	46 55	53 32	8.8	46 29.5 30.6	46 48.2	56.9	1.1	5.0	9.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 63.8	59.1						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 21.1	17.2						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 60.0	56.9						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 50.6	44.8						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 11.6	5.9						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 12.6	8.8						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 48.9	44.0						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 60.2	55.3						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 14.9	10.1						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.1426A

37

Date$_1$ = 1871 March 7 Observer Recorder

Date$_2$ = Observer Recorder

Runs

Star.	α	δ	Mag.	T_s	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2124	8 57 13	53 45	9.0	56 57.1 58.8	57 5.9	14.2	18.5	22.5	26.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2126	57 45	52 59	8.8	58 28.1 29.8			57 51.8	55.8	0.1				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2128	8 59 15	53 47	8.5			59 16.8	21.0	25.1	29.4				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2129	9 2 39	53 16	8.8	1 43.5 45.1	2 33.6	41.8	46.0	50.1	54.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2130	4 12	53 32	9.0	3 37.7 39.6	4 7.2	14.8	19.0		27.6				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2131	4 28	53 34	8.5	5 2.3 4.2		4 25.2	29.0	33.3	37.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2135	7 17	53 9	8.7	7 35.0 37.4	7 10.1	18.4	22.7	26.8	30.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2137	8 19	53 26	8.2	8 52.1 53.4	8 11.1	19.6	23.6	27.6	31.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2139	9 56	53 1	8.7	9 34.9 35.7	9 49.2	57.2	1.4	5.4	9.6				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2141	11 32	53 0	7.5	10 52.2 53.4	11 25.4	33.6	37.8	41.8	45.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		2 53.7	49.6						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 16.7	11.6						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		not recorded						not recorded			
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 21.6	17.0						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 34.4	29.6						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 42.2	38.2						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 28.4	25.2						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 25.2	19.9						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 10.9	6.2						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 44.4	40.4						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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37

Date$_1$ = 1871 March 7 Observer / Recorder

Date$_2$ = Observer / Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2142	9 13 35	53 28	8.5	12 58.6	13 30.0	38.2	42.3	46.5	51.0				
				0.4									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
2143	14 20	53 50	8.5	15 4.7	14 23.9	27.8	32.1	36.4					
				7.3									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2144	19 12	53 5	9.0	18 30.5	19 6.4	14.8	18.8	22.8	26.9				
				33.0									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2145	21 44	53 21	8.3	20 5.7	21 39.1	47.3	51.2	55.3	59.1				
				59.1									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2146	23 22	53 28	9.0	22 45.5	22 56.0	0.5	4.5	8.8	16.9				
				47.6	Wires a b c d m								
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2147	23 39	53 40	8.7	24 16.2	23 33.3	41.5	45.8	50.0	54.3				
				17.8									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2149	25 4	53 0	8.0	25 31.5	24 56.1	4.2	8.1	12.4	16.6				
				32.8									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2150	26 52	53 53	8.2	26 23.3	26 46.8	54.8	58.9	3.3	7.7				
				24.5									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2151	27 16	53 53	8.5	26 31.0	27 17.3	21.5	25.6	30.1					
				32.5									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2152	32 20	53 12	8.5	31 35.2	32 14.4	22.7	26.7	31.0	35.1				
				36.4									
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 16.7	11.2						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 42.8	38.5						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 29.1	24.9						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 16.0	11.9						0		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 51.6	47.8						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 15.0	10.7						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 39.8	34.4						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 7.0	2.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 7.0	2.8						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 10.8	6.4						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.4226A

37

Date$_1$ = 1871 March 7 Observer / Recorder — Date$_2$ = Observer / Recorder — Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2153	9 33 2	53 46	8.3	38 25.5 27.2	32 55.3	3.8	8.1	11.7	16.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
2155	34 32	53 42	8.7	35 12.1 13.7	34 24.8	33.0	37.1	41.3	45.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_2												
2157	35 59	53 23	8.5	36 31.3 33.9	35 53.5	1.7	5.8	10.0	14.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2159	41 9	53 29	7.8	40 27.4 28.2	41 3.5	11.8	16.0	20.1	24.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2161	42 30	53 48	8.8	42 49.3 50.8	42 22.6	30.8	35.0	39.0	43.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2162	43 30	53 44	8.0	43 51.1 59.1	43 25.2	33.6	37.8	41.6	46.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2165	50 34	53 53	8.0	51 6.0 7.3		50 38.1	42.4	46.4	50.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2166	51 40	53 10	9.5	52 13.7 16.0		51 44.2	48.1	52.1	56.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2168	52 24	53 44	8.0	52 55.2 56.5			52 31.4	35.3	39.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2172	56 49	52 58	7.5	56 14.5 16.3	56 43.1	51.4	55.3	59.5	3.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 22.8	18.0						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 17.7	13.9						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 34.5	31.5						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 66.8	53.1						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 39.1	33.1						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 42.3	36.8						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 50.2	46.4						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 24.9	20.1						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 56.2	51.2						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 35.0	31.0						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.1426A

(37)

Date$_1$ = 1871 March 7 Observer / Recorder

Date$_2$ = Observer / Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2173	9 59 21	58 50	8.0	58 45.7 47.7	58 55.0 Wire	59.2 a b	3.2 c d	7.5 m	15.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
2174	9 59 55	53 42	8.2	0 19.4 21.3	59 49.0	57.2	1.7	5.7	10.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_2												
2176	10 0 55	53 28	9.5	1 36.4 38.5		1 1.9	6.7	10.4	14.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2177	2 13	53 40	9.4	2 50.2 52.7	2 10.0	18.0	22.1	27.0	31.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2178	5 39	53 10	9.2	4 58.0 2.0	5 35.8	44.1	48.3	52.2	56.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2179	9 20	52 56	8.3	8 50.1 51.1	9 15.0	23.2	27.2	31.4	35.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2181	15 41	53 42	9.0	16 28.2 29.4	15 37.6	46.3	50.5	54.8	59.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2182a	17 57	53 17	8.0	17 32.0 33.2	17 51.0	59.1	3.4	7.4	11.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2182b	17 57	53 17	8.1	17 32.0 33.2	17 51.4	59.4	3.6	7.6	11.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2183	19 30	53 17	9.0	19 55.6 56.5	19 28.0	36.5	40.5	44.6	48.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		3 50.0	46.0						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		0 20.6	15.4						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 32.6	28.6						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 60.6	56.2						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 7.5	2.3						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 31.3	25.7						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 62.0	57.6						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 35.7	30.9						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 35.7	30.9						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 12.2	6.0						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae..proj..426A

(37) (39)

Date$_1$ = 1871 March 7,24 Observer H. G.
Recorder s M. CSP.

Date$_2$ = Observer
Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2086	10 21 5	53 17	8.8	21 35.4 36.6	21 0.8	9.3	13.4	17.3	21.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
c_1													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
c_2													
March 24 (39)													
2095	8 16 27	53 4	9.0	15 50.5 51.5	16 8.8	17.0	21.0	26.2	29.4				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
2096	18 18	53 53	8.0	17 31.1 33.1	17 58.2	6.6	10.6	14.8	19.3				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
2098	19 20	53 24	8.8	18 44.5 45.7	19 1.9	10.2	14.2	18.4	22.6				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
2099	21 51	53 34	8.7	21 8.2 10.2	21 31.1	38.4	43.4	47.6	51.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
2100	23 2	53 33	7.5	22 18.4 19.5	22 44.2	49.8	53.5	57.7	2.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
2101	27 39	53 3	8.8	26 52.7 54.3	27 19.5	27.7							
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													
2103	28 51	53 49	7.5	28 56.0 58.3	28 32.9	41.5	45.3	49.5	53.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_1													
2106	29 51	53 9	8.0	30 7.2 9.9			29 44.9	49.2	53.2				
Gr. 1460													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
a_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 58.8	53.1						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 37.2	35.6						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		5 30.3	26.2						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 51.4	51.0						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 59.3	57.2						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		5 9.9	4.6						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 61.9	57.7						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 38.9	34.7						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 42.0	36.9						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(39)

Date$_1$ = 1871 March 24 Observer / Recorder

Date$_2$ = Observer / Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2113	8 39 19	53 24	8.3	38 40.8 41.8	38 59.0	7.2	11.5	15.4	19.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2114	42 28	52 58	9.5	41 54.1 56.1	42 10.4	18.8	23.0	26.8	31.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2115	45 40	53 26	8.0	44 51.4 53.5	45 19.7	28.0	32.3	36.5	40.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2117	46 55	53 32	8.5	46 22.1 24.8	46 37.2	45.5	49.2	53.6	58.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2119	51 0	53 49	8.3	50 11.9 14.2	50 43.3	52.0	56.0	0.0	3.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2120	51 51	53 10	9.3	52 21.0 22.1	51 36.8	43.7	47.4	51.7	56.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2121	54 1	53 16	9.2	53 28.0 29.2	53 46.9	54.7	59.1	3.5	7.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2127	8 58 56	53 46	8.8	58 17.3 19.0	58 40.0	48.3	52.8	57.0	1.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2129	9 2 39	53 16	9.3	1 49.8 51.0	2 21.9	30.6	34.6	38.5	42.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2132	5 43	53 14	8.3	6 2.6 4.6	5 23.8	32.1	36.2	40.6	44.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 59.2	56.8						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 26.5	22.4						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 39.6	36.7						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		5 10.1	5.3						45		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 27.5	23.6						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 29.9	25.0						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 5.9	0.7						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 35.8	32.3						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 0.2	57.2						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 10.3	6.0						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj..4264

(3)

Date$_1$ = 1871 March 24 Observer / Recorder

Date$_2$ = Observer / Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2133	9 5 45	53 14	8.0	5 49.6 49.9	5 25.9	34.1	38.6	42.3	46.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_1												
2139	9 56	53 1	9.0	9 5.5 7.4	9 37.4	46.0	49.6	54.0	58.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	c_2												
2141	11 32	53 0	7.0	10 50.5 51.5	11 14.3	22.4	26.5	30.5	34.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2142	13 35	53 28	8.8	13 59.1 0.3	13 18.4	26.7	30.7	35.2	39.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2144	19 12	53 5	9.0	18 33.6 34.8	18 54.9	3.0	7.2	11.4	15.4				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2145	21 44	53 21	8.8	21 0.2 3.2	21 27.5	35.5	40.0	44.0	48.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2149	25 4	53 0	8.0	24 13.9 15.3	24 44.8	52.7	56.9	0.9	4.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2150	26 52	53 53	8.3	26 11.0 12.7	26 35.3	43.7	47.8	52.0	56.5				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												
2151	27 16	53 53	8.6	26 18.0 20.1	26 58.0	6.1	10.3	14.4	18.6				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_1												
2152	32 20	53 12	8.8	31 41.2 42.3	32 3.2	11.3	15.4	19.7	23.7				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	a_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
d		3 10.3	6.0						5		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2 18.9	14.0						20		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		3 34.3	31.2						20		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		4 20.6	16.8						50		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		2 17.7	13.2						15		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2 1.8 (notch	57.2 doubtful)						0		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		2 24.8	21.2						20		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		1 5.0	0.4						30		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		1 5.0	0.4						30		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		0 5.1 seems doubtful	51.1						10		
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj.426A

(40) (41)

Date$_1$ = 1871 March 24, 28 Observer H Recorder G P

Date$_2$ = Observer Recorder

Runs

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2176	10 0 55	53 28	9.5	0 15.8 17.7	0 42.5	50.9	55.1	59.4	3.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
2177	2 13	53 40	9.0	2 31.9 33.8	1 58.5	6.9	11.1	15.1	19.5				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
2178	5 39	53 10	8.8	4 58.1 3.0	5 24.6	32.6	36.6	40.8	45.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
2179	9 20	52 56	8.3	8 40.4 43.3	9 3.5	12.0	16.0	20.0	24.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
2182a	17 57	53 17	8.2	17 13.8 15.6	17 39.6	47.7	52.0	56.0	0.3				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
2183	10 19 30	53 17	9.3	19 2.3 3.5	19 16.6	25.1	29.0	33.2	37.3				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
March 28 (41)													
2184	10 19 54	53 27	9.5	18 58.8 0.8	19 36.6	45.0	48.9	53.0	56.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													
2191	25 37	53 53	not given	24 51.1 52.0	25 18.2	27.1	31.4	35.4	39.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_1													
2192	26 34	53 48	8.8	26 45.0 46.4	26 18.1	26.3	30.7	35.0	39.3				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
a_2													

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1870phae.proj..426A

Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		4 20.0	16.5						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 63.2	59.2						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 33.0	27.3						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 23.8	20.1						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 35.7	31.9						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 37.9	33.6						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		1 13.3	9.5						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		5 25.0	21.0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 10.6	7.4						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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1870phae.proj..126A

(41)

Date$_1$ = 1871 March 28 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2194	10 30 4	53 52	8.5	29 20.4 21.8	29 45.4	54.1	58.2	2.2	6.6				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
2196	33 26	53 38	8.0	32 42.7 44.3	33 8.0	16.3	20.6	24.9	29.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
2197	35 23	52 58	8.7	34 40.0 40.8	35 4.8	13.1	17.3	21.1	25.5				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
2199	36 39	53 5	8.0	36 7.0 8.8	36 18.8	27.3	31.2	35.5	39.5				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
2200	42 42	52 57	8.0	42 8.7 9.9	42 24.8	32.9	37.0	41.2	45.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
2201	44 52	53 14	7.2	45 34.4 35.4	44 32.4	40.7	44.9	48.8	53.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
2202	44 54	53 11	7.0	45 7.3 8.7	44 34.5	42.8	46.9	51.0	55.2				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
2205	49 2	53 50	8.5	48 28.8 29.9	48 44.7	52.3	56.6	0.9	5.0				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
2210	50 29	53 6	8.5	49 58.5 59.3	50 13.7	21.3	25.5	29.7	33.7				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
~~2210~~	~~50 29~~	~~53 6~~	~~8.5~~	~~49 56.6~~ ~~57.6~~	~~50 13.8~~	~~21.8~~	~~26.0~~	~~30.1~~	~~34.2~~				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		0 27.0	21.3						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 37.5	33.8						40		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		3 33.8	29.1						20		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 56.0	50.2						15		
		notch doubtful									
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 8.2	2.6						25		
		notch doubtful									
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 7.8	3.3						5		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 8.3	4.4						10		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 4.4	0.7						30		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		0 39.0	33.9						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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(41)

Date$_1$ = 1871 March 28 Observer / Recorder

Date$_2$ = Observer / Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2211	10 52 14	52 57	8.5	51 43.0 44.4	51 58.3	6.3	10.5	14.8	19.1				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2212	54 6	53 24	7.8	53 34.0 35.0	53 45.6	54.0	58.1	2.3	6.3				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2214	55 32	52 59	8.6	54 56.7 57.6	55 13.8	21.9	25.9	30.0	34.8				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2215	56 38	53 2	9.0	56 10.5 11.4	56 20.6	28.9	33.1	37.0	41.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2216	58 27	53 1	8.0	57 53.8 55.4	58 8.8	16.9	21.0	25.3	29.2				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2217	10 58 58	53 54	9.0	59 3.2 4.5	58 50.3	54.5	58.9	2.0					
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2218	11 0 14	53 45	8.7	0 24.6 25.8	0 3.7	8.0	12.3	16.3					
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2221	3 59	53 44	8.5	3 28.5 29.3	3 41.2	49.8	54.0	58.2	2.0				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												
2225	4 33	58 54	9.5	5 1.7 3.5	4 23.6	27.9	32.0	36.5					
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_1												
2226	6 15	53 34	8.0	5 52.6 53.9	5 57.3	5.5	9.5	13.7	17.9				
	κ												
	((δ) — D) $\frac{\kappa'}{100}$												
	α_2												

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 21.5	17.3						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 20.9	17.1						55		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		4 36.3	33.4						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 18.4	12.8						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		1 47.3	40.7						50		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		3 30.2	26.0						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 38.5	35.3						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		2 21.2	17.2						35		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
		2 46.6	42.1						25		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
		4 49.9	45.2						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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Date$_1$ = 1871 March 28 Observer / Recorder

Date$_2$ = Observer / Recorder

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2227	11 7 13	53 39	8.2	7 27.3 28.6	6 55.0	3.5	7.4	11.6	15.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2228a	8 43	53 29	8.5	8 14.0 14.9	8 25.3	33.4	37.7	41.9	46.3				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2228b	8 43	53 29	8.0	8 30.6 31.5	8 26.8	33.9	38.1	42.4	46.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2230a	14 25	53 31	9.4	13 35.9 36.9	14 6.6	14.2	19.2	22.3	26.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2230b	14 25	53 31	9.4	14 32.2 33.4	14 7.6	15.2	19.9	23.3	27.9				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2232	23 24	53 19	8.7	22 51.1 52.0	23 5.6	13.8	18.0	22.1	26.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2233	25 57	53 15	8.5	25 21.5 22.8	25 37.1	45.2	49.5	53.5	57.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2234	29 52	53 7	9.0	29 10.4 11.8	29 35.0	43.4	47.4	52.5	55.7				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													
2235	32 25	53 27	9.7		32 8.2	15.8	20.2	24.4	28.2				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_1													
2237	34 35	53 35	9.0	34 50.9 52.2	34 18.4	26.9	31.0	35.1	39.8				
κ													
((δ) — D) $\frac{\kappa'}{100}$													
α_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
d		3	32,1	29.3					40		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		4	26,3	23,2					50		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		4	26,3	23,2					50		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2	16,4	12,4					50		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		2	16,4	12,4					50		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		3	12,8	9,2					0		
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d		3	59,5	65,6					5		
$((\delta) - D)\frac{d'}{100}$		{order of microscopes seems to be reversed}									
δ_1											
d		1	32,6	27,6					15		
$((\delta) - D)\frac{d'}{100}$											
δ_3											
d		not observed							not observed		
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d		2	44,1	40,1					45		
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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Date$_1$ = 1871 March 28 Observer Recorder

Date$_2$ = Observer Recorder

Run

Star.	α	δ	Mag.	T_δ	T_m	T_e	T_f	T_g	T_h	Sum	Mean	Red. to T_m	T
2238	11 36 55	53 7	8.0	36 20.6 21.7	36 39.4	47.6	51.8	55.9	0.1				
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_1													
κ													
$((\delta) - D)\frac{\kappa'}{100}$													
α_2													

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Runs

	$T_m - T$	A	C	Sum	Mean	Red. to m. wire	Red. to h. wire	Red. runs	Stroke	z	δ′
		1 33.1	288						15		
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_1											
d											
$((\delta) - D)\frac{d'}{100}$											
δ_2											

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