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Record of Comp. Stars
for Variables.
with Photometer

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Reduction of Comp. Stars for Variables to Photometric Scale. } p. 100 ff.

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	T Cassiop.	v v
S Cassiop.	S "	v v
R "	S Persei	
Irella Var.	R Aurigæ	v v
T Cassiop.	R Lyncis	v v
S Cephei.	R Ursæ maj.	v v
R Ursæ min.	T. " "	
R Draconis	S. " "	v v
R Lyncis.	S Boötis	v v
R Aurigæ.	R Camelop.	
S Boötis.	R Ursæ min.	v v
S Cygni.	R Draconis.	v v
S Ursæ maj.	S Cygni.	v v
	T Cephei.	
	S "	v v
	R Cassiop.	v v

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T Cassiopeiae	22	S Canis Min.	88	T. Herculis	180
S Cassiopeiae	8 10	R Cancri.	90	R Scuti	
T Persei. }	52	U Cancri.	140	R Sagittarii	124
S Persei. }	52	S Hydrae	92	R Cygni.	170
R Aurigae	36	T "	136	X Cygni.	150 54
R Lyncis	34	R Leonis Min	160	RS "	70
R Ursae maj.	44	R Leonis	142	R Delphini	60
T. " "	46	X Virginis	110	U Cygni.	62
S " "	42	R Comae	94	V "	66
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T Andromedae	26 134	R Canem Ven.	204		
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R Piscium	128	S Serpentis	168		
R Arietis	86	S Coronae.	172		
o Ceti		R Coronae	176		
R "	78	R Herculis	178		
U "	132	R + N Kempfii.	166		
R Tauri }	76	U Herculis	202		
S " }	76	W "	56		
U Orionis	84	S "	174		
R Geminor	98	R Ophiuchi	206		

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Comp. Star c = 7.1v

S Cassiop. ∴ Magn. X = 10.10v

Date.	Comp. Star	Star Meas.	Magn.	Resids	
1898. April. 9	x	u	13.26v	+.07	+3.16
" " 16.	"	"	13.12v	-.07	+3.02v
			13.19v	±.070	
1898. April 9.	x	s	12.v6	+.02	+2.46
" " 16.	"	"	12.v2	-.02	+2.1K2v
			12.vK	±.020	
1898. April. 9	x	r	12.2A	+.0v	+2.18
" " 16.	"	"	12.1A	-.0v	+2.0A
			12.23v	±.0v0	
1898. April 9	c	x	10.13v	+.03	+2.98
" " 16.	"	"	10.06v	-.0K	+2.91v
			10.10v	±.03v	

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Sep. 14.

Means. of comp. stars m, n, o, p. for
N Cassiop. with Phot. I. on East Equatorial,
N Cassiop.

Date. 1895.	Star uses.	Comp. Star.	Diff. Magn.		Mean.
June 20.	m	c	3.26	3.01	3.14
" "	n	c	4.03	3.91	3.97
" "	o	c	3.99	4.01	4.00
" "	p	c	4.46	4.42	4.44
June 26.	m	c	2.93	3.04	2.98
" "	n	c	3.97	4.13	3.99
" "	o	c	3.96	4.00	3.98
" "	p	c	3.69	4.22	3.97
July 10.	m	c	3.07	3.39	3.23
" "	n	c	3.82	4.03	3.92
" "	o	c	3.89	4.09	3.99
" "	p	c	4.34	4.59	4.46
July 10.	m	g	1.57	1.59	1.58
" "	n	g	2.40	2.36	2.38
" "	o	g	2.47	2.57	2.51
" "	p	g	2.83	3.11	2.97

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See p. 14.

Measts. of Comp. Stars m. n. o. p. for
S Cassiop. with Phot. S. con.

S Cassiop.

Date. 1895.	Star meas.	Comp. Star.	Diff. Magn.		Mean.
July 12.	m	c	3.07	3.26	3.16
" "	n	c	3.AK	3.96	3.90
" "	o	c	3.AV	K.06	3.96
" "	p	c	K.K0	K.3V	K.3A
July 12.	m	g	1.VA	1.62	1.60
" "	n	g	2.VK	2.39	2.K6
" "	o	g	2.VK	2.3V	2.KK
" "	p	g	2.AV	2.79	2.A2
July 23.	m	g	1.V7	1.VK	1.V6
" "	n	g	2.K3	2.V0	2.K6
" "	o	g	2.3K	2.VK	2.KK
" "	p.	g	2.79	2.AK	2.A2

See pp. 14-15.

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14
Finial Values.

Means of Comp. stars m. m. o. p. for S Cassiop. with Phot. I. con.

S Cassiop.

Date. 1895	Comp. Star.	Star meas.	Mean Value.	Resids	Date. 1895	Comp. Star.	Star meas.	Mean Value.	
June 20.	c	m	3.14	.04	June 20.	c	p.	4.44	.01
June 26.	c	m	[2.92]		June 26.	c	p.	[3.96]	
July 10.	c	m	3.23	.05	July 10.	c	p.	4.46	.03
July 12.	c	m	3.16	.02	July 12.	c	p.	4.32	.05
			3.18	±.037				4.43	±.030
July 10.	g	m	1.52	.00	July 10.	g	p.	2.97	+.10
July 12.	g	m	1.60	+.02	July 12.	g	p.	2.82	−.05
July 23.	g	m	1.56	−.02	July 23.	g	p.	2.82	−.05
			1.52	±.013				2.87	±.067
June 20.	c	n	3.97	.04					
June 26.	c	n	[3.99]						
July 10.	c	n	3.92	.01					
July 12.	c	n	3.90	.03					
			3.93	±.027					
July 10.	g	n	2.32	−.05					
July 12.	g	n	2.46	+.03					
July 23.	g	n	2.46	+.03					
			2.43	±.037					
June 20.	c	o	4.00	.02					
June 26.	c	o	[3.94]						
July 10.	c	o	3.99	.01					
July 12.	c	o	3.96	.02					
			3.98	±.017					
July 10.	g	o	2.51	+.05					
July 12.	g	o	2.44	−.02					
July 23	g	o	2.44	−.02					
			2.46	±.030					

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Summary, from preceding page, of means with Plat. I. of comp. stars m. m. o. p. for δ Cassiop.

m (comp. with c)	= 3.12 ± .037	10.33	
n " " "	= 3.93 ± .027	11.08	
o " " "	= 3.92 ± .017	11.13	
p " " "	= 4.43 ± .030	11.58	
			mean for cat. g
m (comps. with g)	= 1.72 ± .013	10.22	10.28
n " " "	= 2.43 ± .037	11.07	11.08
o " " "	= 2.46 ± .030	11.10	11.12
p " " "	= 2.07 ± .067	11.51	11.54

Diff. in Brightness between c and g from above.

From m = 1.60 +.06

" n = 1.70 −.04

" o = 1.72 −.02

" p = 1.76 +.02

1.74 +.04

−.06

±.037

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R Cassiop.

Measts. of Comp. Stars m, o, p, q, r, s, t, u, w, for R Cassiop. with Phot. I.

Comp. star used in measts. was m. = 8.72

Date.	Comp. Star.	Star Meas.	Mean Value	Resid.	Date.	Comp. Star.	Star Meas.	Mean Value	Resid.
1895. Dec. 20.	m	n	+0.57	.04	1895. Dec. 20.	m	t	+3.30	.10
1896. Jan. 15.	m	n	+0.65	.04	1896. Jan. 15.	m	t	+3.51	.11
			+0.61					12.12	
			9.33					+3.40	
1895. Dec. 20.	m	o	+1.23	.21	1895. Dec. 20.	m	u	+3.50	.03
1896. Jan. 15.	m	o	+1.65	.21	1896. Jan. 15.	m	u	+3.44	.03
			10.16					12.19	
			+1.44					+3.47	
1895. Dec. 20.	m	p	+2.08	.07	1895. Dec. 20.	m	w	+4.16	.09
1896. Jan. 15.	m	p	+2.22	.07	1896. Jan. 15.	m	w	+4.34	.09
			10.27					12.97	
			+2.15					+4.25	
1895. Dec. 20.	m	q	+2.22	.14					
1896. Jan. 15.	m	q	+2.49	.13					
			11.05						
			+2.36						
1895. Dec. 20.	m	r	+2.45	.04					
1896. Jan. 15.	m	r	+2.53	.04					
			11.21						
			+2.49						
1895. Dec. 20.	m	s	+2.87	.11					
1896. Jan. 15	m	s	+3.10	.12					
			11.70						
			+2.98						

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Trolls Var. (γ Delphini)
Means. of Comp. Stars D. H. H. with Plat. I.
Compared with star A.
For notation, see R. 79. p. 2 (diagram)

Date 1896	Comp Star	Star Meas	Mean Value	Resid.	Date.	Comp Star	Star Meas.	Mean Value	Resid.
Jan. 6.	A a	D d	1.16	.04					
Jan. 11.	A a	D d	1.08	.12					
Jan. 14	a	d	1.36	.16					
			1.20						
Jan. 6.	A a	F f	2.25	.02					
Jan. 11.	A a	F f	2.30	.07					
Jan. 14	a	f	2.15	.08					
			2.23						
Jan. 6.	A a	K k	2.86	.04					
Jan. 11.	A a	K k	2.75	.07					
Jan. 14	a	k	2.86	.04					
			2.82						
Jan. 11.	A a	L c	0.96						

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Comp. Slips for Helle Variable.
(20h 31m +17.8)

Finish Solution.	Finish Plot. Mags.	Finish mags. reduced to Plot. Scale.
a	9.27	9.34
b	9.40	9.64
c	9.46	9.94
d	10.47	10.30
e	10.49	10.72
f	11.50	11.06
g		11.49
h	12.09	11.45
k		12.23
l		12.57
m		12.41
n		13.07

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Wells Var.

Means of diffs. of mags. between +17° K3vv (Pots. 3030) and Intermediate Star – Also between Intermediate Star and Star A. of ~~Aug~~. R 7 a. p. 2.

Date. 1896.	Comp. Star.	Star Meas.	Mean Value.	Resids.
Jan. 3	+17° K3vv	S.S.	3.74	.06
" 4	"	"	3.61	.07
			3.68	
Jan. 3.	Star A.	S.S.	1.87	.01
Jan. 4.	"	"	1.88	.00
			1.88	

∴ Star A is 2.10 mags. ~~fr.~~ than +17° K3vv

~~Value of K3vv in Potsdam~~

Phot. mags. of +17° K3vv assumed to be. 7.17

7.17 + 2.10 = 9.27 = mags. comp. star a.

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Walls Variable.

Mags. of Comp. Stars (red. to Phot. Scale)

Designation	Mags.
a	9.34
b	9.60
c	9.94
d	10.30
e	10.72
f	11.06
g	11.49
h	11.87
k	12.23
l	12.57
m	12.84
n	13.07

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γ Cassiop.

Means. of Faint Comp. Stars with Plat γ.

Comp. star used in means. mas. f. = A.1 A

Date. 1896.	Comp. Star.	Star Meas.	Mean Value.	Resid.
Jan. 16.	f	p	3.03	.01
" 17	f	p	3.05	.01
			11.22	
			~~3.06~~	
Jan. 16.	f	q	F.03	.05
" 17	f	q	F.12	.04
			12.26	
			~~F.08~~	
Jan. 16.	f	r	F.17	.03
" 17	f	r	F.23	.03
			12.34	
			~~F.20~~	
Jan. 16.	f	s	F.56	.04
" 17	f	s	F.67	.05
			12.78	
			~~F.60~~	
Jan. 16.	f	t	5.26	.04
" 17	f	t	5.19	.03
			13.40	
			~~F.22~~	
Jan. 18.	f	p'	3.52	.03
Feb. 8.	f	p'	3.58	.03
			11.73	
			~~3.55~~	±.030

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	1896 Jan. 18.	1896 Feb. 4.	1896 Feb. 12.	
β				
β'	5	4	4.5	.45
γ	3	4	4.	.37

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24

$21^h 37^m$
$+78.0$

δ Cephei.

Meast. of faint comp. star with Polaris.
Comp. Star used was e. = (9.10 ~~9.21 by Vol. 24. pp. 4~~) ~~Adopt value~~

Date 1896.	Comp. Star.	Star. Meas.	Mean Value	Brit.
Feb. 14.	e	m	11.87	.07
Feb. 16.	e	m	11.71	.07
			11.67 ~~11.79~~	
Feb. 14.	e	n	12.03	.05
Feb. 16.	e	n	12.11	.04
			11.96 ~~12.09~~	
Feb. 14.	e	o	12.75	.12
Feb. 16.	e	o	12.51	.12
			12.52 ~~12.63~~	
Feb. 14.	e	p	12.71 ~~12.69~~	.02
Feb. 16.	e	p	12.75	.02
			12.62 ~~12.72~~	
Feb. 14.	e	q	13.11	.05
Feb. 16.	e	q	13.00	.06
			12.95 ~~13.06~~	

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Comp. star a for T Andromedae with Plat. I. Lee R 6 A. p. 151 — also Book 1. Series I. p. 54-9.

Star a with A.A (Feb. 12, 1895) = 2.54
" " " " (Feb. 14, ") = 2.62
Mean = 2.58
Impr. of A.A by M. P. = 9.13
11.71

Star a with A.1 (Feb. 14, 1895) = 3.36
Impr. of A.1 by M. P. = 8.57
11.93
11.71 × 2 = 23.42
3 | 35.35
Adopted value of a = 11.78

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30

16h 32

+72°.6

R Ursæ Minoris.

Meast. of Faint Comp. Stars with Plat. I.

Comp. Star used was d (9.02 ~~9.16~~ = Latest mags.)

Date.	Comp. Star.	Star Meas.	Mean Value.	Resids.
1896. Mar. 12.	d	f	10.04 ~~10.10~~	.00
Mar. 14.	d	f	10.05 ~~10.19~~	.01
			10.04 ~~10.10~~	±.005
1896. Mar. 12.	d	g	10.24 ~~10.36~~	.02
Mar. 14.	d	g	10.27 ~~10.41~~	.01
			10.26 ~~10.30~~	±.015
1896. Mar. 12.	d	h	10.76 ~~10.90~~	.00
Mar. 14.	d	h	10.76 ~~10.90~~	.00
			10.76 ~~10.90~~	±.000
1896. Mar. 12.	d	k	11.03 ~~11.16~~	.02
Mar. 14.	d	k	10.99 ~~11.13~~	.02
			11.01 ~~11.15~~	±.020
1896. Mar. 12.	d	l	11.50 ~~11.64~~	.01
Mar. 14.	d	l	11.52 ~~11.66~~	.01
			11.51 ~~11.65~~	±.010

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32

16h 32m
+67.°1

R Draconis.

Meast. of Faint Comp. Stars with Plat. 7.
Comp. Star used was h (9.13 = Latest measure)

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.
1896. Mar. 14.	h	u	10.43	.01
" Apr. 8.	"	"	10.42	.00
			10.42	
1896. Mar. 14.	h	o	11.07	.07
" Apr. 8.	"	"	11.17	.07
			11.10	
1896. Mar. 14.	h	p	11.43	.00
" Apr. 8.	"	"	11.43	.00
			11.43	
1896. Mar. 14.	h	q	12.23	.07
" Apr. 8.	"	"	12.14	.04
			12.18	
1896. Mar. 14.	h	r	12.71	.01
" Apr. 8.	"	"	12.68	.02
			12.70	

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6h 49m
+55°.5

R Lyncis.

Measst. of Faint Comp. Stars with Chart. I.
Comp. star used was f (8.96 = latest value)

Date.	Comp. Star.	Star Meas.	Mean Value.	Resid.
1896. Apr. 15.	f	w	11.14	.05
" 16	f	w	11.24	.05
			11.19	
" 15	f	o	11.14	.02
" 16	f	o	11.18	.02
			11.16	
" 15	f	p	12.12	.00
" 16	f	p	12.13	.01
			12.12	
" 15	f	q	12.46	.04
" 16.	f	q	12.39	.03
			12.42	
" 15	f	r	12.49	.03
" 16	f	r	12.44	.02
			12.46	

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36

5h 6m +53°.4

R Aurigae.

Least of Faint Comp. Stars with Plot. I.

Comp. Star used was a (6.17)

Date.	Comp. Star.	Star Meas.	Mean Value.	Result.
1896. Apr. 22.	a	k	10.13	
1896. Apr. 22.	a	l	10.98	
1896 Apr. 22.	a	m	11.52	.02
" Apr. 30.	a	m	11.49	.01
			11.50	
1896. Apr. 22.	a	n	11.44	.00
" Apr. 30.	a	n	11.43	.01
			11.44	
1896. Apr. 22.	a	o	11.48	.02
" Apr. 30.	a	o	11.49	.03
			11.46	
1896. Apr. 30.	a	p	12.41	.01
" May 1.	a	p	12.40	.00
			12.40	
1896. Apr. 30.	a	q	12.77	.05
May 1.			12.67	.05
			12.72	

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S Bootis

14h 18m
+54°.5

Measst. of Faint Comp. Star with Phot. S.
Comp. Star used was g (10.38)

Date.	Comp. Star.	Star meas.	Mean Value.	Resid.
1896. May 1.	g	l	11.56	.02
" 7	"	"	11.54	.02
			11.56 ±.020	
" 1	g	m	12.10	.04
" 7	"	"	12.02	.04
			12.06 ±.040	
" 1	g	n	12.59	.01
" 7	"	"	12.61	.01
			12.60 ±.010	
" 1	g	o	12.76	.04
" 7	"	"	12.43	.03
			12.40 ±.035	
" 1	g	p	13.27	.03
" 7	"	"	13.21	.03
			13.24 ±.030	
" 7	f	g	0.65	

The value of g above was obtained by joining it to f which has an assumed value.

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20h 2m
+57°.6

1 Cygni

Means. of Faint Comp. Stars with Plat. 7.
Comp. Star used was a (7.88)

Date.	Comp. Star.	Star Meas.	Mean Value.	Resid.
1896. June 27.	a	m	11.64	+.02
" June 29.	a	m	11.60	−.02
			11.62 ± .020	
" June 27.	a	n	12.14	−.02
" June 29.	a	n	12.23	+.03
			12.20 ± .025	
" June 27.	a	o	12.16	+.02
" June 29.	a	o	12.13	−.01
			12.14 ± .015	
" June 27.	a	p	12.78	−.12
" June 29.	a	p	13.03	+.13
			12.90 ± .125	
" June 27.	a	q	13.34	−.06
" June 29.	a	q	13.51	+.07
			13.44 ± .065	

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12h 38m
+61.°9

N Urs. Majoris.
Measst. of Faint Comp. Star with Plat. I.
Comp. star used was g = 8.81

Date.	Comp. Star.	Star Meas.	Mean Value	Resid.
1896. June 30.	g	l	10.14	+.04
" July 1.	g	l	10.05	−.05
			10.10 ± .045	
" June 30.	g	m	10.65	−.09
" July 1.	g	m	10.83	+.09
			10.74 ± .090	
" June 30.	g	m	10.91	−.02
" July 1.	g	m	10.95	+.02
			10.93 ± .020	
" June 30.	g	o	11.63	−.09
" July 1.	g	o	11.80	+.08
			11.72 ± .085	
" June 30.	g	p	11.93	−.01
" July 1.	g	p	11.95	+.01
			11.94 ± .010	
" June 30.	g	q	12.41	−.02
" July 1.	g	q	12.45	+.02
			12.43 ± .020	

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R Ursæ Majoris.

$10^h\ 34^m$
$+69°.5$

Meast. of Faint Comps. Stars with Plat. 7.
Comp. Star = h = f.o.a

Date.	Comp. Star.	Star Meas.	Mean Value.	Resid.
1896. July 1.	h	f	10.47	-.03
" July 2.	"	"	10.53	+.03
			10.50	±.030
" July 1.	h	g	10.92	-.16
" July 2.	"	"	11.29	+.15
			11.11	±.155
" July 1.	h	k	11.41	-.07
" July 2.	"	"	11.55	+.07
			11.48	±.070
" July 1.	h	s	11.99	+.01
" July 2.	"	"	11.98	.00
			11.98	±.005
" July 1.	h	t	12.36	-.20
" July 2.	"	"	12.76	+.20
			12.56	±.200

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12h 30m
+60°.3

7 Ursæ Majoris

Measst. of Faint Comp. Stars with Prof. V.
Comp. Star for July 9 = K = 9.40
" " " after date = f = 8.30

Date.	Comp. Star.	Star meas.	Mean Value	Resids.
1896. July 9.	K	u	11.24	
" July 10.	f	u	11.67	.13
" July 11.	f	u	11.40	.12
			11.52	
1896. July 9.	K	o	11.44	
" July 10.	f	o	11.70	.05
" July 11.	f	o	11.68	.05
			11.73	
1896. July 9.	K	p	11.75	
" July 10.	f	p	12.09	.01
" July 11.	f	p	12.12	.02
			12.10	
1896 July 10.	f	q	12.40	.09
" July 11.	f	q	12.22	.09
			12.31	
1896. July 10.	f	r	12.34	.06
" July 11.	f	r	12.23	.05
			12.28	
1896. July 10.	f	s	12.70	.04
" July 11.	f	s	12.62	.04
			12.66	

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The comparison star K is rather faint, for the measurement with the meridian photometer. The comparisons with it on July 9 give results +0.31 brighter than those on other nights derived from comparisons with f. Increasing the results by 0.31, we find for n, 11.24+31 = 11.55, for o, 11.75, and for p, 12.06, each of which agree closely with the results for the other nights.

July 13. 1896 Edw C Pickering

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48

21h 8m
+ 67°.9

T Cephei.

Measst. of Harvt Comp. Stars with Phot. I.
Comp. Star = m = 9.64

1896. July 14.	m	p	11.26	+.09
" July 15.	m	p	11.16	-.01
" July 16.	m	p	11.10	-.07
			11.17	±.057
" July 14.	m	g	11.60	.05
" July 16.	m	g	11.50	-.05
			11.55	±.050
" July 14.	m	r	11.72	.10
" July 16.	m	r	11.52	.10
			11.62	±.100
" July 14.	m	v	12.44	.00
" July 16.	m	v	12.44	.00
			12.44	.000
" July 14.	m	t	12.93	.01
" July 16.	m	t	12.94	.00
			12.94	±.005

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50

14h 29m
+84°.5

R Cancelsp.

Measst. of Faint Comp. Stars with Plot. 7.
Comp. Star = c = 8.9

Date.	Comp. Star.	Star meas.	Mean Value.	Result.
1895. July 16.	c	k	11.89	+.07
" July 17.	c	k	11.74	-.02
			11.82	±.07
" July 16.	c	l	12.30	.00
" July 17.	c	l	12.29	.01
			12.30	±.00
" July 16.	c	m	12.72	-.06
" July 17.	c	m	12.84	+.06
			12.78	±.060
" July 16.	c	n	12.58	-.10
" July 17.	c	n	12.78	+.10
			12.68	±.100
" July 16.	c	o	13.21	-.02
" July 17.	c	o	13.25	+.02
			13.23	±.020
" July 16.	c	p	13.48	-.10
" July 17.	c	p	13.67	+.09
			13.57	±.095

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52

$2^h\ 12^m$
$+57.^\circ 9$

ν Persei.

Measmt. of Faint Comp. Stars with Plat. I.
Comp. star = f = 9.1v

Date.	Comp. Star.	Star meas.	Mean Value	Resids	
1896. July 17.	f	k	10.92	+.06	
" July 20.	f	k	10.79	−.07	~~Krueger~~.
			10.86	±.06v	
" July 17.	f	l	11.23	−.03	
" July 20.	f	l	11.30	+.04	~~Krueger~~
			11.26	±.03v	
" July 17.	f	m	11.41	−.01	
" July 20.	f	m	11.43	+.01	~~Krueger~~.
			11.42	±.010	
" July 17.	f	n	12.44	+.02	
" " 31.	f	n	12.41	−.01	
			12.42	±.01v	
" July 17.	f	o	12.94	+.10	
" " 31.	f	o	12.74	−.10	
			12.84	±.100	

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54 $19^h\ 47.^m0$ $+32°\ 33.'0$ (1875) χ Cygni.

Means of Faint Comp. Stars with Plat. 7.

Comp. Star = κ^{κ} = $+32°\ 37'$ Aq. = A.10

Date.	Comp. Star.	Star Meas.	Mean Value.	Resid.
1896. Sept. 15.	κ^{κ}	K^{K}	13.19	-.09
" Sept. 26	κ	K	13.36	+.08
			13.28 ✓ ±.08 ✓	
" Sept. 15	κ^{κ}	ι^{ι}	12.59	-.07
" Sept. 26.	κ	ι	12.72	+.06
			12.66 ✓ ±.06 ✓	
" Sept. 15.	κ^{κ}	ζ^{ζ}	11.62	-.10
" Sept. 26	κ	ζ	11.82	+.10
			11.72 ✓ ±.100	
" Sept. 26.	κ^{κ}	η^{η}	12.32	.00
" Oct. 7.	κ	η	12.32	.00
			12.32 ✓ .000	
" Sept. 26	κ^{κ}	θ^{θ}	12.36	-.15
" Oct. 7.	κ	θ	12.66	+.15
			12.51 ✓ ±.150	

The above notation in black ~~is~~ as well as red, is the final notation.

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		94 Dec. 18.	94 Dec. 19.	94 Dec. 22.	
a	γ				
b	δ				
c	ε				
d	ζ				
e	η				
f	θ				
g	ι				
h	κ				
k	λ				
l	μ				

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56 16h 30.1 +37° 38.1 (1900) Hercules.

Meast. of Faint Comp. Stars.

Comp. Star = d = Sw. +37° 2772 (Av) = 8.60 M.P.

Date.	Comp. Star.	Star Meas.	Mean Value.	Resids.
1896 Oct. 1.	d	x m	10.70	-.07
" 7.	d	x m	10.60	+.03
			10.75	±.050
" Oct. 1.	d	x vs	13.37	+.01
" 3.	d	x vs	13.32	-.02
			13.34	±.015
" Oct. 1.	d	x w	11.03	-.04
" 3.	d	x w	11.11	+.04
			11.07	±.040
" Oct. 3.	d	d-g	12.29	-.01
" " 7.	d	d-g	12.32	+.02
			12.30	±.015
" Oct. 7.	d	x b	12.10	+.11
" " 8	d	x b	11.88	-.11
			11.99	±.110
" Oct. 7.	d	r x l	12.86	-.06
" " 8	d	r x l	12.98	+.06
			12.92	
" Oct. 7.	d	o x l	11.82	+.06
" " 8.	d	o x l	11.66	-.08
			11.74	±.140

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1695phae.proj..4450

		1896 Oct. 7	1897 Sept. 2.	1897 Sept. 6.	1897 Sept. 15.	1897 Sept. 17.	1897 Sept. 18.
k	k			4	5.5	5.5	
l	l			4	4	4	
m	d		4	4	4		
n	β		3	4.5	6		
o	β'	4	6	5			
p	γ	5	3	5			
q	δ	4	4.5	4			
r	δ'	5	6	5			
s	ε	4	3.5	2			
t	η			4.5	4.5	4.5	
u	η'			5	4	5.5	
w	θ			4.5	4	4.5	
x	κ				5	4	4.5
y	λ						

		1897 Sept. 21.	1897 Sept. 24.	1897 Sept. 25.
t =	η	5	5	5
u =	η'			
w =	θ	3	4	3

	1896 Oct. 7	1897 Sept. 2.	mean.
k			5.00 2 1 1
l		4	4.00 0 0 0
d		3	4.50 3 0 3
β	4	6	5.00 2 2 0
β'	5	3	4.33 1 3 1
γ	4	4.5	4.17 0 1 0
δ	5	6	5.33 1 1 1
ε	4	3.5	3.17 2 1 2
			4.50 0 0 0
			4.33 0 1 0
			4.50 1 1 0
			5.00 0 0 0
			3.33 1 1 1

Star η added Sept 6. 1897 and measured below. On Sept. 21. 1897, the interval from η to θ was found to be too large, so that η' was inserted between them.

Date.	Comp. Star.	Star meas.	Mean Value.	Resid.
1897 Sept. 6.	d.	4 t	13.20	.06
" " 15.	d.	4 t	13.09	-.05
			13.14	
1897. Sept. 15.	d	8 w	13.93	-.07
" Sept. 17.	d	8 w	14.07	+.07
			14.00	

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1895phae.proj. .4450

58 20h 42.3 −5° 40.9 (1855.0) ν Aquarii

Faint Comp. Stars.

Comp. Star = m = 4 m. −5° 5393 (8.3) z A.R. 21h 0m

Date.	Comp. Star.	Stat. Mess.	Mean Value Resids.		
~~1896. Oct. 8.~~	~~m~~	~~w~~ ~~n~~	~~11.52 +.06~~	~~−.70~~	This n rejected Sept 5. 1897. and a new one substituted. See bottom of p. 59.
~~" " 9.~~	~~m~~	~~w~~ ~~n~~	~~11.39 −.07~~	~~2.57~~	
			11.46 ±.06		
" Oct. 9.	m	w n'	11.90 −.01	3.02	
" " 10.	m	n'	11.92 +.01	3.10	
			11.91 ±.010		
" Oct. 8.	m	w k	12.32 +.01	3.50	
" " 9.	m	k	12.34 +.03	3.52	
" " 10	m	k	12.26 −.05	3.44	
			12.31 ±.030		
" Oct. 9.	m	k n'	12.42 −.16	3.60	
" " 10.	m	k'	12.75 +.17	3.93	
			12.58 ±.16		
" Oct. 8.	m	y k	13.05 +.11		
" " 10	"		12.84 −.10		
			12.94		
" Oct. 9.	m	z k	13.29 −.17	4.47	
" " 10	m	k	13.62 +.16	4.80	
			13.46 ±.16		

Red indicates facial notation. See p 3.

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	1896 Oct. 9	1896 Oct. 10	1897 Sept. 6	1897 Sept. 15	1896 Oct. 9	1896 Oct. 10	1897 Sept. 6	1897 Sept. 15	1897 Sept. 17	1897 Sept. 18	
ν			4					4.5	6	5.5	5.33
ο											
β			4.5					3.5	3	2	2.83
δ			4.5					3.5	4	3.5	3.67
ε			3.5					5	5	5	5.00
η			4.5				3.5	3	4.5		3.67
η'	4	4	5					4	6	5	5.00
λ	5	4	5					2.5	4	4.5	3.67
λ'	3.5	3.5	3.5		5	4	5				4.67
μ	3	3	3		3.5	3.5	3.5				3.50
ν	3.5	3	3.5		3	3	3				3.00
					3.5	3	3.5				3.33
								4	4	4	4.00

The above sequence revised somewhat on Sept. 15. 1897. Beside one or two other alterations, a new η was substituted and π was added. See R. 92. p. 51.

Date.	Comp. Star	Star Meas.	Mean Value	Resids
1897. Sept. 15.	m	η	11.57	.03
" " 17.	"	"	11.50	-.04
			11.54	
1897. Sept. 17.	m	δ	10.97	.04
" " 18.	"	"	10.89	-.04
			10.93	
1897. Sept. 17.	m	α	10.24	-.04
" " 18.	"	"	10.32	+.04
			10.28	

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60 $20^h\ 7.9^m$ $+8°\ 39'$ (1895) R Delphini.

Faint Comp. Star.

Comp. Star $= +8°\ 4391\ (9.3) = 9.77$

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.	
1896. Oct. 9.	+8° 4391.	0 1	11.03	+.09	1.26
" " 10.	"	"	10.82	-.09	1.08
			10.94		
1896. Oct. 9.	"	7 9	11.59	-.14	1.42
" " 10	"	"	11.90	+.16	2.13
			11.74		
1896. Oct. 10.	"	8 7	11.75	+.03	1.94
" " 31.	"	"	11.70	-.02	1.93
			11.72		
1896. Oct. 9.	"	2 3	12.49	+.14	2.70
" " 10	"	"	12.19	-.14	2.42
			12.33		
1896. Oct. 10.	"	5 4	12.61	-.14	2.44
" " 31.	"	4	12.89	+.14	3.12
			12.75		
" Oct. 10.	"	6 8	13.17	.00	3.40
" " 31.	"	"	13.17	.00	3.40
			13.17		
" Oct. 31.	"	4 5	13.37	+.01	3.60
" Nov. 2.	"	"	13.35	-.01	3.54
			13.36		

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R Delphini.

Faint Comp. Stars.

Phot. magn. of R Del. $+21^\circ 4393$ (6.7) = 6.79 with resids. 2, 3, 1, 1, 0, 1 (Vol. 24)

Date.	Comp. Star.	Star mags.	Mean Value.	Resid.
1896 Oct 8	$+21^\circ 4393$ (6.7)	$+21^\circ 4391$	+3.14	−.04
" " 31.	"	"	+3.18	.00
" Nov. 2.	"	"	+3.22	+.04
			+3.18	∴ magn. of $+21^\circ 4391$ (9.3) = 9.77

Oct 10. Oct 31. Nov 2.

					Mean.
o	d	4.7	6	6	5.57 ± 11
k	a	3	2.7	2	2.57 10 1
q	γ	4.7	4.7	7	4.67 001
r	β	4	4	3	3.67 111
s	f	3.7	3	3.7	3.33 010
t	ε	3.7	3	3	3.17 100
u	ζ				

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62 $20^h\ 1V.1\ (+K)\ 26.3\ (1A\ V)$ 61 Cygni. 4th mag. = +47° 30'4 (A.3) = L

Faint Comp. Stars.

Comp. Star = K = 9.33 = +46° 29'9 (9.K)

Date.	Comp. Star.	Star meas.	Mean Value	Resid.	
1896. Oct. 31.	4th mag. = L	K	9.A)	-.01	+ 2.39
" Nov. 2.	"	"	9.A9	+.01	+ 2.40
			9.A6	±.010	
" Oct. 31.	K		10.13	-.01	0.A0
" Nov. 2.	"	"	10.11	-.03	0.7A
" " 3.	"	"	10.17	+.03	0.AK
			10.1K	±.023	
" Nov. 6.	A0 mag. = D		10.60	+.0r	3.(2
" " 7.	"	"	10.r0	-.0r	3.02
			10.rr	±.0r0	
" Oct. 31.	K		10.A1	+.01	1.K2
" Nov. 2.	K	"	10.7)	-.03	1.KK
" " 3.	"	"	10.A1	+.01	1.K4
			10.A0	±.017	
" Nov. 2.	K		11.07	+.0K	1.7K
" " 3.	"	"	10.99	-.0K	1.66
			11.03	±.040	
" Nov. 2.	K		11.69	-.07	2.36
" " 3	"	"	11.A2	+.06	2.49
			11.76	±.06r	
" Nov. 2.	K		12.13	+.0r	2.80
" " 3.	"	"	12.03	-.0r	2.70
			12.08	±.050	

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1895phae.proj.:4450

2 Cygni.

Faint Comps. Stars.

Date.	Comp. Star.	Star Meas.	Mean Value.	Resids.	
1896. Oct. 31.	K	Eye Meas.	7.49	−.01	−.26 Ruby is brtr. than K. K is 9.4 by −1.44 ps on.
" Nov. 2.	"	"	7.49	+.01	
					Δ mags = C. S. ∠ = +47° 30′ A (A.3)
			7.48 ± .010		
" Nov. 2.	K	B	12.72	+.18	3.39
" " 3.	K	B	12.53	−.09	3.20
			12.62 ± .09		

Oct. 31. Nov. 2. Nov 3. Nov. 6. Mean

m	α	4.5	3	4.5	4.5	4.12
n	β	4	4		4	4.00
o	β′	3	3		3	3.00
p	γ	2.5	2.5	2	2.5	2.30
q	δ	5	5	5	4.5	4.88
r	ε					
s	ζ	3.5	3	3.5	3	3.25
t	θ		6	6	5	5.67

Star α could not be directly compared with K so it was compared with K through the β mags. near var. Star β′ was also compared with K through the β mags. for same reason.

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64 $20^h\ 7.9\ +23°\ 14'$ (1855) R Vulpeculae.

Faint Comp. Star. p = L.S. in finder not.

Comp. Star = L = 9.7α = +23° 42' 29" (9.3)

Date.	Comp. Star.	Star meas.	Check Value.	Resid.	
1896. Nov. 3.	L	s	1.13	−.01	11.31
" " 6.	"	"	1.16	+.06	11.42
			11.36		
" Nov. 3.	L	r	1.07	.00	10.47
" " 6.	"	"	1.07	.00	10.47
			10.47		
" Nov. 3.	L	p	0.65	+.08	10.43
" " 6.	"	"	0.89	−.08	10.27
			10.35		
" Nov. 3.	L	t	2.26	+.08	12.04
" " 6	"	"	2.11	−.07	11.89
			11.96		
" Nov. 3.	p	q	+0.16	−.02	10.51
" " 6.	"	"	+0.20	+.02	10.55
			10.53		
" Nov. 6.	L	u	2.54	+.02	12.32
" " 7	"	"	2.50	−.02	12.28
			12.30		

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Mean.			Star 3.	Star 6.	Star 14.	Mean.
	n	α				
	o	β				
4.33	0.01	p	γ			
4.17	1.00	q	δ	4.v	4.v	4	.43
		r	ε	4.v	4	4	.42
3.83	1.11	s	ζ	3.v	3.v	4.5	.38
3.33	1.00	t	η	3	3.v	3.5	.38
4.17	1.00	u	θ	4.v	4	4	.42

Comp. star q for R Vulpeculae seems to have changed and grown fainter, so that a new star q was substituted Sept. 11. 1901. It is Hagen No. 29.

Sat. Sept. 11. 1901 = p 2.v q, q 2 r.
" " 13. " = p 2 q, q 2 r.
" " 14 " = p 2.v q, q 2 r

2.33	2.00
010	000

As star s was too near r to be compared with it, a comparison was made through comp. star q. See previous page.

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66 $20^h\ 36.^s\!\!\overline{}\ +47°\ 37'.\!\!\overline{}$ (1875) V Cygni.

Faint Comp. Stars.

Comp. Star = g = 4.60 m. P. = +47° 3 N 2 (A.)

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.		
1896. Nov. 6.	g	~~f~~ β'	11.3v	-.01		2.7v
" " 7.	"	"	11.37	+.01		
			11.36v	±.010		
" Nov. 6.	g	~~v~~ γ	11.69v	-.07		3.09
" " 7.	"	"	11.40	+.06		
			11.76v	±.065		
~~" Nov. 6.~~	~~g~~	~~z~~ γ'	~~11.71~~		This γ' abandoned.	3.11
~~" " 7.~~	~~"~~	~~"~~	~~11.64~~		" " "	
~~" " 9.~~	~~"~~	~~"~~	~~11.69~~		This is new and final γ'	
" " 9.	"	"	12.04	+.03	" " " " " "	
" " 10.	"	"	12.02	-.03		
			12.03v	±.030		
" Nov. 6.	g	~~s~~ δ	12.46v	-.07		3.46
" " 9.	"	"	12.60	+.07		
			12.53v			
" Nov. 6.	g	~~t~~ ε	13.04v	-.01		4.44
" " 7.	"	"	13.10	+.01		
			13.09v	±.010		

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Nov 6. Nov 7. Nov 9. Nov 10. Nov 14

Mean. Mean.

7.00 1 01	u	α	4.7	7	7.7	
2.67 1 11	o	β				
4.33 1 00	p	β′	3	2	3	
4.70 0 00	q	γ	4	4.7	4.7	
3.70 1 01	r	γ′			4.7	4.7 4.5
4.70 1 01	s	δ			4	3.7 3
	t	ε	7	4.7	4	
	u		06.6.6 / 2.7	01.9.16 / 3.7	01.9.16 / 3	300 1 10

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68 22h 19m 22s. +9° 17'

R Pegasi.

Faint Comp. Stars.

Comp. Star = h = 22h 16m 22s. +9° 17' 16" (Adopted)

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.
1896. Nov. 9.	h	4 5	13.37	+.07
" Dec. 3.	"	"	13.24	-.06
			13.30	±.06
1896. Nov. 9.	h	4 5	12.82	-.04
" Dec. 3.	"	"	12.90	+.04
			12.86	±.040
1896. Nov. 9.	h	4	12.06	+.10
" Dec. 3.			11.86	-.10
			11.96	±.100
1896. Nov. 9.	h	4	12.14	-.09
" Dec. 3.	"	"	12.32	+.09
			12.23	
1896. Dec. 3.	h	4	11.37	+.04
" Dec. 3.	"	"	11.27	-.04
			11.31	
1897. Sept. 27.	h	4 5	10.68	-.02
" " 27.	"	"	10.73	.03
			10.70	
1897. Sept. 27.	h	4	10.91	±.02
" " 27.	"	"	10.87	-.02
			10.89	

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Nov 7.	Nov 9.	Nov 10.	Nov. 11	Decl.	Means.
	4		3.5	3.8	010
5					
4	4		4	4.0	000
3	4	3.5		4.3	021
3	3.5	3	3.5	3.3	010
4	4	3	4	3.7	111
4	3	3	4	3.3	111
4	3	3.5	4	3.5	101
5	2.5	3	3	2.8	100

1897 Sept. 27.	1897 Sept. 28.	1897 Sept. 29.		
0				
2.5	3	3	.28	100

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70 $20^h\ 8^m\ 7^s$ $+38°\ 17'.4$

R Cygni:

Faint Comp. Star = p (our chart) = Dec. +38° 39'.0 (7.4

Comp. Star = p (our chart) = Dec. +38° 39'.0 (7.4

Date.	Comp. Star.	Star Meas.	Mean Value	Resid.	
1896. Nov. 10.	p	w α	12.95	+.05	.32
" Dec. 1.	"	"	12.84	−.06	.21
			12.90		
1896. Nov. 10.	p	u b	12.79	+.02	.16
" Dec. 1.	"	"	12.75	−.02	.12
			12.77		
1896. Nov. 10.	p	t c	12.22	+.05	.59
" Dec. 1.	"	"	12.12	−.05	.49
			12.17		
1896. Nov. 10.	p	s d	11.43	+.05	3.80
" " 14.	"	"	11.33	−.05	3.70
			11.38		
1896. Nov. 10.	p	r e'	11.07	.00	3.44
" " 14.	"	"	11.07	.00	3.44
			11.07		
1896. Nov. 10.	p	q e	10.61	−.03	2.98
" " 14.	"	"	10.67	+.03	3.04
			10.64		

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Stars 10. Stars 11. Stars 14. Dec. 1. Dec. 3. Remarks.

Dec. +34° 39′ (9.2)

3.67	100	o	f	4	3,5	3,5			.37
3.33	111	p	f'	3	4	3			.33
3.33	111	q	e			3	3	4	.33
4.67	100	r	e'			5	4	4	.47
4.33	111	s	d						
4.17	102	t	c	3	4	4			.43
3.00	000	u	b	3,5	4	5			.42
		w	a	3	3	3			.30

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72 $23^h\ 13^m\ 13^s$
$+A^\circ\ 7.'6$

S Pegasi.

Faint Comp. Star.
Comp. Star = h = 9.22 = $+A^\circ$ .049 (A.)

Date.	Comp. Star.	Star mean.	Value.	Resids.
96.				
1896 Dec. 26	h	π	11.52	+.07
" " 2A.	"	"	11.38	-.07
			11.45	
1896 Dec. 26.	h	t	11.97	-.01
" " 2A.	"	"	12.00	+.02
			11.98	
1896 Dec. 26.	h	u	12.39	-.03
" " 2A.	"	"	12.44	+.02
			12.42	
1896 Dec. 26.	h	w	12.96	+.02
" " 2A	"	"	12.92	-.02
			12.94	
1896 Dec. 26.	h	x	13.46	+.0A
" " 2A.	"	"	13.30	-.0A
			13.38	

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		Jan.	Dec. 11.	Dec. 12.	Mean.	
p	p					
q	q	4	4	3	3	0 0 1
r	r	3	3	3	3	0 1 0
s	s	4	4	4	4	1 0 0
t	t	4	3	3	3	1 1 0
u	u	4	3	3	3	1 0 1
w	w	3	3	3	3	0 0 1
x	x					

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74 $0^h\ 16^m\ 25^s$ R.A. } ~ R Androm.
$+37°\ 46'.4$ Dec. }
Faint Comp. Stars. $= +37°\ v\ K\ (7.0)$
Comp. Star $= 7.0\ v =$ Comp. Star $d =$

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.
'97. Jan. 6.	d	u K	11.vA	.00
" " 7.	"	"	11.v9	+.01
			11.vA	±.00v
'97. Jan. 6.	d	w K	12.03	+.09
" " 7.	"	"	11.Av	−.09
			11.9K	±.090
'97. Jan. 6.	d	x K	12.3v	−.10
" " 7.	"	"	12.vv	+.10
			12.Kv	±.100
'97. Jan. 6.	d	y K	12.76	−.04
" " 7.	"	"	12.84	+.04
			12.80	±.040
'97. Jan. 6.	d	z K	13.Kv	+.03
" " 7.	"	"	13.39	−.03
			13.K2	±.030
'97. Sept. 21.	d	s K	10.99	.03
" " 24.	"	"	10.93	−.03
'97 Sept. 21.	d	t K	11.Kv	.05
" " 24.	"	"	11.06	−.04
			11.10	

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mean.		Dec. 7	Dec. 11.	Dec. 12.	mean.
4.17 v 0 1 0	s s	4	4.v	4	.4 v
4.33 v 1 1 1	t x	v	4	4	.4 3 v
3.v0 v 0 1 1	u y	3.v	3	4	.3 v
3.67 v 0 1 0	w z	3.v	4	3.v	.3 v
3.83 v 0 0 1	x a	4	4	3.v	.3 v
3.67 v 1 1 1	y c	4	3	4	.3 v
4.v0 v 1 1 0	z g	v	4	4.v	.4 v
	a n				

		1897 Sept. 21.	1897 Sept. 24.	1897 Sept. 27.	
4.67 v 1 0 0	g	v	4.v	4.v	.4 v
4.17 v 0 0 1	n	4	4	4.v	.4 v
	s				

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1895phae.proj..4450

76 4h 23m +9° 6'

R + S Tauri.

Faint Comp. Star.

Comp. Star = g² = A.13. = +9° 6' 43 (A.3)

Date.	Comp. Star.	Star mean.	Mean Value	Resids.
'96. Dec. 28.	g²	s	12.07	−.03
	"	"	12.13	+.03
			12.10 ± .030	
'96. Dec. 30	g²	w	13.06	+.06
'97. Jan. 1.	"	"	13.44	−.06
			13.50 ± .060	
'97. Jan. 1.	g²	u	12.90	+.02
" " 5.	"	"	12.89	−.01
			12.89 ± .015	
'97. Jan. 1.	g²	t	12.43	−.07
" " 5.	"	"	12.56	+.06
			12.50 ± .065	
'97. Jan. 1.	g²	z	11.62	−.04
" " 5.	"	"	11.71	+.05
			11.66 ± .045	

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Typical Int.		Dec. 28	Dec. 30	Jan. 1.	Mean.			
o	o	3	4	3.5	.35	1	1	0
p	p	4.5	5	4	.45	0	1	1
q	q	5	3.5	4	.42	2	1	0
r	r	3.5	3	3.5	.33	0	1	0
s	s	4.5	3.5	4	.40	1	1	0
t	t	5	5	4.5	.48	0	0	1
u	u	4	4	3.5	.32	0	0	1
w	w	3.5	4	4	.32	1	0	0
x	x	3	2.5	2	.25	1	0	1
y	y	3.5	4	4	.32	1	0	0
z	z							

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78 2h 19m
−0.8

R Cet.

m = 10.22v

Faint Comp. Stars.

Comp. Star = g = 499 = −1° 32′ (47)

Date.	Comp. Star.	Star mean.	mean hypn.	Resids.	
98 Jan. 24.	m	~~m~~	11.54 −.06	+1.3	
" Feb. 24	"	"	11.66 +.06	+1.44	
			11.60		
98. Jan. 24.	m	~~m~~	11.91 −.01	+1.73	
" Dec. 1	"	"	11.97 +.01	+1.71	
			11.96		
98. Jan. 24.	m	~~m~~	12.42 −.02	+2.23	
" Dec. 8.	"	"	12.49 +.02	2.27	
			12.47		
98. Jan 24.	m	~~m~~	13.09 +.01	+2.47	
" Dec. 10.	"	"	13.00 −.04	+2.38	
			13.04		
98. Feb. 24	g	~~m~~	10.23 +.01	+1.24	
" Dec. 8	"	"	10.22 .00	+1.23	
			10.22		

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Final Rotation.

		'96 Dec. 30.	'96 Dec. 31.	'97 Jan. 1.	Means.	Resids.
A	n	4	4	4	4.00	0 1 0
B	n'	4	3	3	3.33	1 0 1
C	n''	3	3	3	3.00	0 0 0
D	o	4	3	3	3.33	1 1 0
E	p	3	4	3	3.33	0 1 0
F	q	3	3	4	3.33	1 0 1
G	r	3	3	3	3.00	1 0 0

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80

0h 38m

+47°5

U Cassiop.

Faint Comp. Star.

Comp. Star =

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	1896. Dec. 24.	1897. Sept. 3.
π	4	✓
π'	3	3.✓
α	✓	4
ψ	4.✓	4
φ	3	3.✓
δ	3	3
ε	4	4.✓
ζ		

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1h 50m
+54.°1

U Persei.
Faint Comp. Star.

Date.	Comp. Star.	Star meas.	Mean Value	Resid.

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5h 47m
+20.9

U Orionis.

Faint Comp. Star.

Comp. Star = K = 7.9 R = +19° 11' 20" (A.6)

Date.	Comp. Star.	Star used.	Mean Value.	Resid.
1897. Jan. 30.	K	K	10.61	+.07
" Feb. 1.	"	"	10.72	-.04
			10.76	±.042
1897. Jan. 30.	K	R	10.96	-.06
" Feb. 1.	"	"	11.07	+.07
			11.02	±.072
1897. Jan. 30.	K	T	11.60	+.02
" Feb. 1.	"	"	11.53	-.09
			11.572	±.042
1897. Jan. 30.	K	U	12.20	-.01
" Feb. 1.	"	"	12.22	+.01
			12.21	±.010
1897. Jan. 30.	K	W	12.67	-.07
" Feb. 1.	"	"	12.76	+.06
			12.70	±.072
'97. Apr. 3.	K	N	9.44	+.07
" " 12.	"	"	9.30	-.07
			9.37	±.070
'97. Apr. 3.	K	Q	10.18	+.02
" " 12.	"	"	10.14	-.02
			10.16	±.020
'97. Apr. 3.	K	P	9.64	-.04
" " 12.	"	"	9.72	+.04
			9.68	±.040

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Final Notation.		Revised Class.	1897 Jan. 29.	Jan. 30.	Feb. 1.	Mean.	
o	(g.r)	o					
p	=	φ	3	3	4	3.3	1 1 1
q	=	θ	4.r	4	4	4.2	1 0 0
r	=	χ (?)	3.r	4	3	3.r	0 1 1
s			3.r	4	3.r	3.7	0 1 0
t			4.r	4	4	4.2	1 0 0
u			r	4	4.r	4.r	1 1 0
w			3.r	3	4	3.r	0 1 1
x			4	3.r	4	3.8	0 1 0
y			3.r	4	4.r	4.0	1 0 1

	'97. Apr. 3.	'97 Apr. 12.	'97. Apr. 13.	Mean.	
n / m		0.r	1.r	1.0	0 1 1
n 3 0		4	4	3.7	1 1 1

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86

$2^h\ 8^m$
$+24°.4$

R Arietis.

Comp. Star = h = 9.47 = +24° 33′ (9.4)

Date.	Comp. Star.	Star Mean.	Mean Value	Resids.
'97. Jan. 23.	~~A~~ 11	h	10.73	−.02
" " 26.	"	"	10.77	+.02
			10.7 v	±.020
'97. Jan. 23.	~~K~~ 0	h	11.13	+.03
" " 26.	"	"	11.07	−.03
			11.10	±.030
'97. Jan. 23.	~~K~~ 9	h	11.90	−.02
" " 26.	"	"	11.9 v	+.03
			11.92	±.02 v
'97. Jan. 23.	~~K~~ 12	h	12.81	+.03
" " 26	"	"	12.44	−.04
			12.4 a	
'97. Jan. 23.	~~K~~ 11 v	h	12.9 K	−.0 K
" " 26.	"	"	13.03	+.0 v
			12.9 a	±.0 K v

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		Notation our chart.	Jan. 7.	Jan. 9.	Jan. 23.	Mean.			
m		α							
n		β	5	5	6	5.3	1	1	1
o		γ	6	5.5	5	5.5	1	0	1
p	γ′	γ′	~~4.5~~	~~4~~	~~6~~	~~4.8~~			
q		δ	4.5	4.5	4.5	4.5	0	0	0
r		ε	4	4.5	4	4.2	0	1	0
s		ζ	3.5	3	3	3.2	1	0	0
t		η	4	3.5	4	3.8	0	1	0
u		θ	4.5	4	4	4.2	1	0	0
w		ν	4	4	3	3.7	1	1	1
x		ξ							

γ′ inserted between γ and δ Jan. 26. 1897.

		Days	Jan. 26.	Jan. 30.	Feb. 1.	Mean.			
o		γ							
p		γ′	5	5	5.5	5.2	0	0	1
q		δ	3	2.5	3	2.8	0	1	0

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1895phae.proj..4450

88 α^h 25^m
+8.°6

$\mathcal{S}$ Cam. Mm.

Comp. Star = g = 2.96 = +2° 18′ 11″ (9.0)

Date.	Comp. Star.	Star Meas.	Mean Value.	Resids.
'97. Feb. 3.	g	b	11.66	.00
" " K.	"	"	11.66	.00
			11.66	.00
'97. Feb. 3.	g	a	12.24	−.02
" " K.	"	"	12.29	+.03
			12.26	±.02 v
'97. Feb. 3.	g	c	12.64	−.04
" " K.	"	"	12.71	+.03
			12.68	±.03 v
'97. Feb. 3.	g	d	13.20	−.02
" " K.	"	"	13.24	+.02
			13.22	±.020
'97. Feb. 3.	g	e	13.53	−.01
" " 4	"	"	13.54	.00
			13.54	±.00 v

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1895phae.proj..4450

Final Nat.	Long.	1897 Feb. 1.	Feb. 3.	Feb. 4.	Mean.		
k	k						
l	l	4	5.5	5	4.8	2 1 0	
m	m	5.5	5	5	5.2	1 0 0	
n	n	5	4.5	5.5	5.0	0 1 1	
o	o	3	4	4	3.7	1 1 1	
p	p	4	3.5	4	3.8	0 1 0	
q	q	4	4.5	5	4.5	1 0 1	
r	r	3.5	3	3	3.2	1 0 0	
s	s	4.5	5	4	4.5	0 1 1	
t	t	3.5	3	4	3.5	0 1 1	
u	u	4	4.5	5	4.5	1 0 1	

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1895phae.proj..4450

90

8h 9m

+12°.2

A Cancri.

Comp. Star = m = 8.9v = +12° 1406 (9.2)

Date.	Comp. Star.	Star. Meas.	Mean Value.	Resid.
'97. Feb. 23.	m	~~5~~ u	11.32	-.04
" " 24.	"	"	11.47	+.07
			11.40	±.07v
" Feb. 23.	m	~~n~~ w	12.02	+.02
" " 24.	"	"	11.99	-.01
			12.00	±.01v
" Feb. 23.	m	~~d~~ x	12.33	-.01
" " 24.	"	"	12.36	+.02
			12.34	±.01v
" Feb. 23.	m	~~k~~ y	12.70	-.04
" " 24.	"	"	12.87	+.09
			12.78	±.04v
" Feb. 23.	m	~~2~~ z	13.23	+.04
" " 24.	"	"	13.15	-.04
			13.19	±.04o
'97. Mar. 30.	m	~~B~~ 6	10.04	-.02
" " 31.	"	"	10.07	+.01
			10.06	±.01v
'97. Mar. 30.	m	~~y~~ v	10.61	-.01
" " 31.	"	"	10.63	+.01
			10.62	±.01o

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1895phae.proj..4450

Final Notation	Provis. Not.	'97 Feb. 23.	'97 Feb. 24.	'97 Feb. 27.	Mean.
p	p	5	4.5	5	4.8 0 1 0
q	p	4	5	5	4.7 1 1 1
r	γ	3	2	2	2.3 1 1 1
s	ſ	4.5	4	5	4.5 0 1 1
t	ε	5	3.5	4	4.2 2 1 0
u	ζ	4	5.5	5	4.8 2 1 0
w	η	3.5	3.5	4	3.7 0 0 1
x	θ	6	4.5	5	5.2 2 1 0
y	κ	5.5	5	6	5.5 0 1 1
z	λ	4	4.5	4	4.2 0 1 0
a	μ	4	4.5	5	4.5 1 0 1
β	ν				

Final Notation	'97 Mar. 30.	'97 Mar. 31.	'97 Apr. 1.	Mean.
l	4	3.5	4.5	4.0 0 1 1
m	4.5	5	4	4.5 0 1 1
n	4	3	4.5	3.8 0 2 1
o	5	4	5	4.7 1 1 1
p				

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1895phae.proj..4450

92

8h 46m

+3°.6

ν Hydrae.

Comp. Star = h = 9.22 = +3°.2083 (9.3)

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.
'97. 2. 27.	h	0	11.76	-.01
" 3. 6.	h	0	11.78	+.01
			11.77 ±.010	
'97. Feb. 27.	h	6	11.82	-.04
" mean K.	"	"	11.90	+.04
			11.86 ±.040	
'97. Feb. 27.	h	9	12.24	+.04
" mean K.	"	"	12.17	-.03
			12.20 ±.035	
'97. Feb. 27.	h	12	12.90	+.01
" mean K.	"	"	12.88	-.01
			12.89 ±.010	
'97. Feb. 27.	h	15	13.40	-.02
" mean K.	"	"	13.44	+.02
			13.42 ±.020	
'97. mean K.	h	18	13.79	-.01
" mean C	h	18	13.80	.00
			13.80 ±.005	

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1895phae.proj..4450

Final Not.		Feb. 27.	Mar. 4.	Mar. 6.	Mean.			
m	m	4	4.5	4	4.17	0	1	0
n	n	6	6	5	5.67	1	1	1
o	o	3	4	4.5	3.83	2	0	1
p	p	4.5	4	4.5	4.33	0	1	0
q	q	4	3.5	4	3.83	0	1	0
r	r	4.5	5	4.5	4.67	0	1	0
s	s	5	4	4	4.33	1	1	1
t	t							

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1895phae.proj..4450

94

11h 57m
+19.%

A Coronae.

Comp. Star = h = 9.01 = +19° 2r 2K (A.A)

Date.	Comp. Star.	Star Meas.	Mean Value.	Resids.
97. 3. 2r.	h	x[k]	10.79	-.02
" K. 1.	"	"	10.83	+.02
			10.81	±.020
97. 3. 2r.	h	x[q]	11.Kr	+.0r
" K. 1.	"	"	11.36	-.0K
			11.K0	±.0Kr
97. 3. 2r.	h	x[m]	11.6r	-.07
" K. 1.	"	"	11.79	+.07
			11.72	±.070
97. 3. 2r.	h	x[n]	11.99	-.01
" K. 1.	"	"	12.02	+.02
			12.00	±.015
97. 3. 2r.	h	x[t]	12.K3	-.03
" K. 1.	"	"	12.KA	+.02
			12.K6	±.02r
97. K. 1	h	x[o]	10.r7	-.02
" " 2.	"	"	10.61	+.02
			10.r9	±.020
97. K. 1.	h	x[u]	13.2r	+.0r
" " 2.	"	"	13.1r	-.0r
			13.20	±.0r0

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1895phae.proj..4450

Final Notation	Provis. Not.	'97 Mar. 11.	'97 Mar. 24.	'97 Mar. 25.	Mean.
n	n				
o	α	5.5	5	5	5.17 100
p	α	4	3	4	3.67 111
q	ε	3.5	4	5	4.17 102
r	ζ	6	5	5	5.33 111
s	η	4	4.5	4	4.17 010
t	θ	4	4.5	3.5	4.00 011
u	κ	5	4	6	5.00 022

	'97 Apr. 1.	'97 Apr. 2.	'97 Apr. 3.	
m	4.5	5	5	4.83 100
n				

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1895phae.proj..4450

13h 22m
−22° 5′

R Hydrae.

Comp. Star = w = 9.1m = −22° 3603 (9.0)

Date.	Comp. Star.	Star Meas.	Mean Value.	Resid.
'97. Apr. 3	w	ε ~~h~~	13.01	+.03
" " 2d.	"	"	12.9K	−.0K
			12.9A	±.03v
'97. Apr. 3.	w	δ ~~K~~	12.K3	+.0v
" " 2d.	"	"	12.32	−.06
			12.3A	±.0vv
'97. Apr. 3.	w	γ ~~A~~	11.3K	−.0A
" " 2d.	"	"	11.v0	+.0A
			11.K2	±.0A0
'97. Apr. 3.	w	β ~~y~~	10.A2	+02
" " 2d.	"	"	10.77	−.03
			10.A0	±.02v
'97. Apr. 2d.	w	ζ ~~δ~~	10.31	−.03
" May K.	"	"	10.36	+.02
			10.3K	±.02v
'97. Apr. 2d.	w	χ ~~ζ~~	9.KK	.00
" May 4.	"	"	9.43	−.01
			9.KK	±.00v
'97. Apr. 2d.	w	ψ ~~η~~	9.92	−.02
" May 4.	"	"	9.96	+.02
			9.94	±.01

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1895phae.proj..4450

Field Notation	Days.	97. Apr. 2.	97. Apr. 3.	97 Apr. 20.	Mean.		
ζ	ζ	✓	✓	4	4.67 ✓	1	1 ✓
ω	ω	3	3.✓	4	3.✓0 ✓	1	0 1 ✓
χ	α	4.✓	4	✓	4.✓0 ✓	0	1 1 ✓
ψ	β	3	3	4	3.33 ✓	1	1 1 ✓
ζ	χ	2.✓	3	3.✓	3.00 ✓	1	0 1 ✓
α	δ	✓.✓	4.✓	✓	✓.00 ✓		
β	η	4.✓	4	✓	4.✓0 ✓		
γ	θ	✓	✓	4	4.67 ✓		
δ	κ	4	4	✓	4.33 ✓		
ε	λ	3.✓	3	4	3.✓0 ✓		
ζ	μ	4	3.✓	4.✓	4.80 ✓		
η	ν	3	3.✓	4	3.✓0 ✓		
θ	ξ						

Stars beyond ζ not needed and not used.

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1895phae.proj..4450

98

6h 59m

+22°.9

R Geminorum.

Comp. Star = k = A.R.0 = +22° 18' 76 (A.R.)

Date.	Comp. Star.	Star Meas.	Mean Value	Resid.
'97. Apr. 20.	k	R	10.22	+.02
" " 21.	"	"	10.24	-.02
			10.26	±.020
'97. Apr. 20.	k	R'	11.18	+.04
" " 21.	"	"	11.10	-.04
			11.14	±.040
'97. Apr. 20.	k	S	11.66	+.04
" " 21.	"	"	11.58	-.04
			11.62	±.040
'97. Apr. 20.	k	T	11.92	-.04
" " 21.	"	"	12.05	+.03
			12.02	±.035
'97. Apr. 20.	k	U	12.02	-.04
" " 21.	"	"	12.91	+.05
			12.86	±.045
'97. Apr. 20.	k	V	13.22	+.05
" " 21.	"	"	13.12	-.05
			13.17	±.050

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1895phae.proj..4450

Final Notation		'97 Apr. 20.	'97. Apr. 21.	'97. Apr. 24.	Mean.
m	m	2	2	1.5	1.8 0 0 1
n	n	3	3	3	3.0 0 0 0
o	o	4.5	3.5	3.5	3.8 1 1 1
p	α	3	4.5	4	3.8 2 1 0
q	β''	3	3	3.5	3.2 0 0 1
r	β'	4	3.5	3.5	3.7 1 0 0
s	β	5	4	4	4.3 1 1 1
t	α'	5	4	3.5	4.2 2 0 1
u	ε'	3	3	3.5	3.2 0 0 1
w	ε	4	4	3	3.7 1 1 1
x	ζ	3.5	4	4	3.8 1 0 0
y	η				

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1895phae.proj.14450

Reduction of Comp. Stars for Wells Variable to Photometric Scale.

(20h 31m +17.2°)

11-7

1 Variable	2 C.S. Desig.	3 D.M. No.	4 R.A. 1900.	Dec. 1900	6 D.M. Magn.	7 Phot. Magn.	8 Phot. Resids.	9 Mean of W's Est	10 Resids W's Est	11 Provis. Magn. W.		Curve a. W.	W. to K Scale
Wells Var. (20h 31m +17.2°)	a					9.27		.30	00.00	9.27	.00	.07	9.
	b					9.00		.22	03.02	9.17	.23	.11	9.
	c					9.26		.30	00.00	9.19	.07	.17	9.
	d					10.47		.37	05.05	10.09	.38	.21	10.
	e					10.09		.32	03.02	10.44	.47	.28	10.
	f					11.50		.37	00.00	10.76	.26	.30	11.
	g							.32	02.03	11.11		.38	11.
	h					12.09		.32	03.02	11.43	.66	.42	11.
	k							.30	00.00	11.75		.48	12
	l							.20	00.00	12.05		.52	12.
	m							.22	03.02	12.25		.56	12
	n									12.47		.60	13

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1895phae.proj..4450

	Wt. red to Plot Scale.
7	9.34
11	9.68
15	9.94
21	10.30
28	10.72
30	11.06
38	11.49
42	11.85
48	12.23
52	12.57
56	12.81
60	13.07

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1895phae.proj..4450

11-7

Variable	C. S. Desig.	D.M. No	R.A. 1900	Dec 1900	D M Magn	Phot Magn	Phot Resids	Mean + W's Est	Resids W's Est	Provis. Magn W.		Curve a W.

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1895phae.proj..4450

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1895phae.proj..4450

11-7

Variable	C. S. Desig	D.M. No.	R.A. 1900	Dec. 1900	D.M. Magn	Phot Magn	Phot Resids	Means W's Est	Resids W's Est	Provis. Magn. W.		Curve a (W)

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1996phae.proj..445C

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1895phae.proj..4450

Variable	C.S. Design	D.M. No.	R.A. 1900	Dec 1900	DM Magn	Phot Magn	Phot Resids	Mean W's Est	Resids W's Est	Provis Magn W		Curve Ch

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1895phae.proj..4450

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1895phae.proj..4450

108

12h 7m
− 5.°2

7 Virginis. C.V. $\gamma = -5° 34' 7$ (A.A)

Compared with star $m = 10.^{m}2 = -5° 34' 2$ (G.V)

$\gamma = \pm .^{m}01$; $(m - \gamma) = +2.^{m}01$; $\therefore m = 10.^{m}2$

Date.	Comp. Star.	Star meas.	Mean Value.	Resid.	
'97. May 4.	m	a	11.42	−.02	0.60
" " 5	m	"	11.46	+.02	0.64
			11.44	±.020	
'97. May 4.	m	b	11.09	+.09	1.07
" Apr. 30.	"	"	11.02	+.02	1.00
" May 5	"	"	11.70	−.10	0.82
			11.40	±.070	
'97. May 4.	m	g	12.00	−.11	1.12
" Apr. 30.	"	"	12.24	+.13	1.46
" May 5.	"	"	12.06	−.05	1.24
			12.11	±.110	
'97. May 4.	m	k	12.37	−.03	1.55
" " 5	"	"	12.42	+.02	1.60
			12.40	±.025	
'97. May 4.	m	s	12.76	−.02	1.94
" " 5.	"	"	12.80	+.02	1.98
			12.78	±.020	
'97. May 4.	m	t	13.34	+.12	2.52
" June 1.	"	"	13.10	−.12	
			13.22	±.120	
'97. May 4.	m	u	13.53	+.19	2.71
" June 1.	"	"	13.16	−.18	
			13.34	±.180	
'97 May 5.	m	g	10.85	+.03	2.04
" " 7.	"	"	10.79	−.03	1.98

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1895phae.proj..4450

Trial Notation	Desij.	'97 Oct. 30	'97 May 4	'97 May 5	Mean.
m	m	5	5	4	4.67 1 1 1
n	n	4.5	5	4	4.50 0 1 1
o	o	6	5.5	5	5.50 1 0 1
p	β	3	4.5	4	3.83 2 1 0
q	β′	3.5	4	4.5	4.00 1 0 1
r	γ	5	5	5	5.00 0 0 0
s	δ	4	4	6	4.67 1 1 3
t	ε	3.5	4	4.5	4.00 1 0 1
u	ζ	5	3.5	4	4.17 2 1 0
w	η	3	4	3.5	3.50 1 1 0
x	κ	4	3.5	4	3.83 0 1 0
y	ν				

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1895phae.proj..4450

110

$11^h\ 54^m$

$+9.9$

χ Virginis.

Compared with star e = 11h 47m +9° 27' 76 (0.8)

Date.	Comp. Star.	Star Meas.	Mean Value	Resids.
1897. May 19.	e	l	11.01	+.02
" May 29.	"	"	10.87	-.02
			10.93	±.020
" May 19.	e	m	11.21	+.07
" May 29.	"	"	11.11	-.07
			11.16	±.070
" May 19.	e	n	11.61	+.06
" May 29.	"	"	11.49	-.06
			11.55	±.060
" May 19.	e	o	11.71	+.07
" May 29.	"	"	11.60	-.06
			11.66	±.070
" May 19.	e	p	12.13	+.11
" May 29.	"	"	12.31	-.11
			12.22	±.110
" May 19.	e	q	13.13	+.11
" May 29.	"	"	12.91	-.11
			13.02	±.110

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1895phae.proj...4450

Obsrj.	1897 May 18.	1897 May 19.	1897. May 29.	
g	V.V	K	K	K.V 0° 2 1 1 V
h	V	K.V	V	K.A3° 0 1 0 V
k	K.V	6	V	V.17° 1 2 0 V
l	K	K	3	3.67 K 1 1 1 V
m	3.V	K	K	3.A3° 1 0 0 V
n	K.V	K	3.V	K.00° 1 0 1 V
o	6	V.V	—	V.7V° 1 1 V
q p	3	K.V	V	K.17° 2 1 2 V
n q				

	1897 May 29.	1897 May 31.	1897 June 1.	
o o				
p p'	3	2	3	2.67° 1 1 1 V
q p	K	V	V	K.67° 1 1 1 V

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1895phae.proj..4450

12h 26m

−3.°6

γ Virginis.

Comp. Star = k = 9.63 = −3° 33′ (9.2)

Date.	Comp. Star.	Star. Meas.	Mean Value.	Resids.
'97. June 23.	k	l	10.01	−.01
" " 26.	"	"	10.02	.00
			10.02	±.00
'97. June 23.	k	m	10.77	+.01
" " 26.	"	"	10.75	−.01
			10.76	±.010
'97. June 23.	k	o	11.04	+.02
" " 26.	"	"	10.99	−.03
			11.02	±.02
'97. June 23.	k	p	11.78	+.01
" " 26.	"	"	11.76	−.01
			11.77	±.010
'97. June 23.	k	q	11.95	−.04
" " 26.	"	"	12.03	+.04
			11.99	±.040
'97. June 23.	k	r	12.49	−.01
" " 26.	"	"	12.50	.00
			12.50	±.00
'97. June 23.	k	s	12.69	−.09
" " 26.	"	"	12.87	+.09
			12.78	±.090

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1895phae.proj..4450

		1897	1897.	1897.	
	Descr.	May 19.	May 27.	May 29.	Mean.
l	l				4.V 0 V 1 0 1
m	α	K	K.V	V	K V
n	β	K.V	V	K	4.V 0 V 0 1 1
o	γ	2.V	3	3.V	K V V
p	δ	K.V	K	V	3.00 V 1 0 1
q	ε	3.V	K	K.V	3 0
r	ζ	K	K.V	K	4.V 0 V 0 1 1
s	η	V	V	K	K V
t	θ	2.V	2	3	4.00 V 1 0 1
u	κ	K	V	K	K 0
					4.17 V 0 1 0.
					K 2
					4.67 V 1 1 1
					K 3
					2.V 0 V 0 1 1
					2.V V
					4.33 V 1 1 1
					K 3

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1895phae.proj..4450

12h 31m
+7.°8

R Virginis.

Comp. Star m = 9.1 = +7° 2' 8 (9.1)

Date.	Comp. Star.	Star Meas.	Mean Value	Resid.
1897. June 2.	m	p	10.27	+.03
" " 18.	"	"	10.21	-.03
			10.24 ± .030	
1897. June 2.	m	q	10.67	-.01
" " 18.	"	"	10.68	+.02
			10.66 ± .017	
1897. June 2.	m	s	11.30	-.04
" " 18.	"	"	11.47	+.09
			11.38 ± .047	
1897 June 2.	m	t	11.66	+.01
" " 18.	"	"	11.64	-.01
			11.67 ± .010	
1897. June 2.	m	u	12.03	-.01
" " 18.	"	"	12.06	+.02
			12.04 ± .017	
1897. June 2.	m	w	12.70	+.02
" " 18	"	"	12.66	-.02
			12.68 ± .020	
1897. June 2	m	x	12.92	-.10
" " 18	"	"	13.13	+.11
			13.02 ± .107	

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1895phae.proj..4450

Stars.	1897 June 1.	1897 June 2.	1897 June 12.	Mean
p	v.v	v	4.v	v.00 1.0 1 v
q	4	4.v	4	4.17 0 1 0 v
r x	v	4.v	v	4.83 0 1 0 v
s x	v	3	3	3.67 3 1 1 v
t y	v	4	4	4.33 1 1 1 v
u z	4.v	3	3	3.v0 2 1 1 v
w ε	4	3	3.v	3.v0 1 1 0 v
x ζ				

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1895phae.proj..4450

116

12h 44m
+6°.4

u Virginis.

12h 43.2m +6° 25'

Comp. Star = n = 9.70 = +7° 26' (9.4)

Date.	Comp. Star.	Star meas.	Mean Value.	Resids.	
1897. June 26.	n	u	12.20	.00	
1901. July 13.	n	u	12.20	.00	2.70
			12.20		
1897. June 26.	n	t	11.90	+.01	
1901. July 12.	"	"	11.88	-.01	+2.32
			11.89		
1901. June 27.	n	p	10.68	-.01	+0.98
1901. July 12.	"	"	10.70	+.01	+1.00
			10.69		
1901. June 27.	p	g	10.83	+.01	+0.34
1901. July 12.	"	"	10.81	-.01	+0.32
			10.82		
1901. July 13.	p	r	11.16	-.01	+0.66
" " 15.	"	"	11.20	+.01	+0.71
			11.18		

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Designation		1897. June 25.	1897 June 26.	1897. June 28.	mean
o	o	K.r	r	6	r.17 ± 02
p	p	6	K.r	r	r.17 ± 10
q	q	3	3.r	3.r	3.33 ± 1.00
r	r'	3.r	K	3.r	3.67 ± 0.10
s	s	3	3	3	3.00 ± 0.00
t	t	r.r	K.r	r	r.00 ± 1.10
u	u	K.r	3	3.r	3.67 ± 2.10
w	w	K	K.r	K	4.17 ± 0.10
x	x	3	r	K.r	4.17 ± 2.21
y	y	3.r	3	K	3.r0 ± 0.11
z	z				

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1895phae.proj..4450

21h 43m
+42°.9

S S Cygni.

Date.	Comp. Star.	Star mean.	Mean Value.	Remk.
1897. July 31.	m	p	1.66	
1897. July 31.	m	q	1.93	
1897. July 31.	m	r	1.72	

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1895phae.proj..4450

	1897 July 31.	1897 Sept. 6
h		
k	r	
l	4	
m	3r	
n	4r	
o	02m	
p	Imagt	
q	3r	
r	2	
s	3	
t	3	
u		2r

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1895phae.proj..4450

120

$22^h\ 49^m$

-21°

$d = -21^\circ 6334$ (7.5)

$p = -21^\circ 6332$ (9.7)

1 Aquarii.

Comp. Star = p = 10.42 (Star d = 7.56)

The value of star p was obtained by comparison with star d.

Date.	Comp. Star.	Star Meas.	Diff. Magn.	Resid.	Magn.
'97. Sept. 21.	p		1.39	+.03	11.81
" " 24.	"	"	1.33	−.03	11.75
			1.36	±.030	11.78
'97. Sept. 21.	p		1.09	−.01	11.51
" " 24.	"	"	1.12	+.02	11.54
			1.10	±.015	11.52
'97. Sept. 24.	p		+0.82	+.01	11.27
" " 25.	"	"	+0.83	−.01	11.25
			+0.82	±.010	11.26
'97. Sept. 24.	p		+1.64	−.04	12.06
" " 25.	"	"	+1.72	+.04	12.14
			+1.68	±.040	12.10
'97. Sept. 25.	p		+2.18	.00	12.60
" " 27.	"	"	+2.18	.00	12.60
			+2.18	.000	12.60
'97. Sept. 27.	p		+0.30	+.02	10.72
" " 28.	"	"	+0.25	−.03	10.67
			+0.28	±.025	10.70
'97. Sept. 27.	p		+2.57	−.01	12.89
" " 28.	"	"	+2.58	.00	12.90
			+2.58	±.005	12.90
'97. Sept. 27.	d	p	+2.24	−.02	10.50
" " 28.	"	"	+2.27	+.01	10.53

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1895phae.proj..4450

Final Ref.		1897 Sept. 18.	1897 Sept. 21.	1897 Sept. 24.	1897 Sept. 25.	1897 Sept. 27.	mean	mean.
w	w	6	6	6			6	6.00 0 0 0
o	o	4	4	5			4.3	4.33 1 1 1
p	p	4.5	4.5	4			4.3	4.33 0 0 1
q	q	4	4.5	3.5			4.0	4.00 0 1 1
r	r	4	5	3.5			4.2	4.17 0 2 1
t	t	5.5	4.5	5			5.0	5.00 1 1 0
u	u	3	4	4.5			3.83	3.83 2 0 1
w	w'	4						
x	w							
y	x	3	5	5			4.3	4.33 3 1 1
z	y	4	6	5			5.0	5.00 2 2 0
d	z	4	4.5	4.5			4.3	4.33 1 0 0
β	d	5	5	6			5.3	5.33 1 1 1
γ	β			4	4	3.5	3.8	3.83 0 0 1

		1897 Sept. 21.	1897 Sept. 24.	1897 Sept. 25.		
u	u	6	6	4.5	5.5	5.50 1 1 2
w	w'					
x	w	3	4	4.5	3.8	3.83 2 0 1

On Sept. 21. 1897. the interval from u to w was found to be too large, so that u' was inserted between them.

'97. Sept. 27.	d	z	+5.5A	−.04	13.14
" " 28	"	"	+5.66	+.04	13.22
					13.18

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1895phae.proj..4450

δ = −16° 63′0 (A.K)

δ = −16° 63′6 (9.0)

R Aquarii.

Faint Comp. Stars.

Comp. Star = h = 8.7 9 Mag m = 9.4 9

	Comp. Star.	Star meas.	Magn.	Resid.	
'97. Sept. 29.	h	a	10.07	−.02	+1.48
" " 30.	"	"	10.11	+.02	+1.72
			10.09	±.020	
'97. Sept. 29.	h	d	10.93	+.07	+2.34
" " 30.	"	"	10.83	−.07	+2.24
			10.88	±.070	
~~'97. Sept. 29.~~	~~h~~	~~g~~	~~10.27~~		Wrong comp. star.
" " 30.	"	"	11.48	−.04	+2.89
" Oct. 1.	"	"	11.76	+.04	+2.97
			11.72	±.040	
~~'97. Sept. 29.~~	~~h~~	~~k~~	~~9.17~~		Wrong comp. star.
" " 30.	"	"	10.71	−.02	+1.92
" Oct. 1.	"	"	10.77	+.02	+1.96
			10.73	±.020	
'97 Oct. 23.	m	~~l~~	10.79	−.07	+1.30
" " 27.	"	"	10.92	+.06	+1.43
			10.86	±.060	
'97 Oct. 23.	m	t	11.17	+.03	+1.66
" " 27.	"	"	11.10	−.02	+1.61
			11.12	±.020	
'97 Oct. 23.	m	u	11.77	−.01	+2.06
" " 27.	"	"	11.79	+.01	+2.08
			11.76	±.010	

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1895phae.proj..4450

There seems to be something wrong with comp. star m on previous page. Probably it is m in old and n in new notation, and so not $-16° 6\ 3\ 6$ (9.0), but as a sufficient number of stars were measured with comp. star h, those with m have not been used.

Fund. Stat.		1897. Sept. 28.	1897. Sept. 29.	1897 Sept. 30.	1897. Oct. 2.	1897. Oct.	Mean
m	l						
3.67 1 11		3	4	4			3.7
n	m						
4.17 1 1 1		4	3	4			4.2
o	n						
3.67 1 0 0		4	3	3			3.7
p	n'						
3.50 1 0 1		3	3	4			3.5
q	o						
3.67 0 1 0			3	4	3		3.7
r	p						
4.17 0 1 2			4	3			4.2
s	q						
3.33 0 0 1			3	3	3		3.3
t	r						
3.83 0 1 0				4	3	4	3.8
u	s						
4.50 1 1 0				4		4	4.5
w	t						
5.00 1 1 0				5	4	5	5.0
x	u						

	Comp. Star.	Star Meas.	Magn.	Resid.	
97 Oct. 2.	h	w	12.45	+.02	+3.46
97. Oct. 23.	"	"	12.41	−.02	+3.42
			12.43	±.020	
97. Oct. 2.	h	x	12.97	−.03	+4.38
97. Oct. 23.	"	"	13.03	+.03	+4.44
			13.00	±.030	

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1895phae.proj..4450

A Sagittarii.

Comp. Star = k = 8.72 v = −19° v 37′ v (9.1)

Date.	Comp. Star.	Star meas.	Magn.	Resids.	
1894. Sept. 13.	k	b	+1.11 v	−.06 v	9.83 v
" " 14.	"	"	+1.23	+.06 v	9.9 v
			9.89 v		
1894. Sept. 13.	k	g	+1.60 v	+.01 v	10.32 v
" " 14.	"	"	+1.42	−.01 v	10.30 v
			10.31 v		
1894. Sept. 13	k	n	+1.60 v	−.01 v	10.32 v
" " 14.	"	"	+1.62	+.01 v	10.34 v
			10.33 v		
1894. Sept. 13.	k	t	+2.42 v	−.04 v	11.30 v
" " 14.	"	"	+2.6 v	+.03 v	11.37 v
			11.34 v		
1894. Sept. 13.	k	u	+2.60 v	−.03 v	11.32 v
" " 14.	"	"	+2.66	+.03 v	11.38 v
			11.35 v		

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1895phae.proj...4450

		98 Sept. 9.	98 Sept. 12.	98 Sept. 13.	Mean	Mean.
p	p	4.v	v	v	4.8	4.83 v 100 v
q	q	2	2	1.v	1.8	1.83 v 001 v
r	r	6	4.v	v	5.9	v.17 v 210 v
s	s	3	4.v	4	3.8	3.83 v 210 v
t	t	v	4	3.v	4.2	4.17 v 201 v
u	u					

	1901 Sept. 6	1901 Sept. 7.	1901 Sept. 9.	
u	4.v	4	4	4.17
w	3	3	3	3.00
x	4	4	3.v	3.83
y				

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1895phae.proj...4450

ν¹ Cygni.

Comp. star = m e = 8.93 = L = +43° 4030 (A.6)

		Comp. Star	Star mea.	Inspn.	Resids.
97. Oct. 23.		m e	h α'	10.3v	+.19
" " 24v		"	"	10.06	−.10
" " 30.		"	"	10.0A	−.0A
				10.16	±.123
97. Oct. 23.		m e	k ϕ	10.67	+.02
" " 24v.		"	"	10.6A	+.03
" " 30.		"	"	10.61	−.04
				10.6v	±.030
97. Oct. 23.		m e	m q	11.0v	+.07
" " 24v		"	"	10.99	+.01
" " 30.		"	"	10.91	−.07
				10.9A	±.0v0
97. Oct. 23.		m e	l χ	10.v7	−.17
" " 24v		"	"	10.79	+.0v
" " 30.		"	"	10.A7	+.13
				10.7K	±.117
97. Oct. 23.		m e	n β	11.2v	−.0v
" " 24v.		"	"	11.37	+.07
" " 30.		"	"	11.29	−.01
				11.30	±.0K3
97. Oct. 23.		m e	o γ	11.v1	−.19
" " 24v.		"	"	11.77	+.07
" " 30		"	"	11.A1	+.11
				11.70	±.123
97. Oct. 24v.		m e	p δ	12.16	−.04
" " 30.		"	"	12.20	.00
" Nov. 3.		"	"	12.23	+.03
				12.20	±.023

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1895phae.proj..4450

		1897. Oct. 6.	1897 Oct. 13.	1897. Oct. 25.	Mean.	Rmds.
a	h					
b	h'	5	5.5	5	5.2	0 1 0
c	k	3	3	4	3.3	1 1 1
d	l	1	1	2	1.3	1 1 1
e	m	4.5	4	4	4.2	1 0 0
f	n	5	5	5.5	5.2	0 0 1
g	o	2	1.5	2.5	2.0	0 1 1
h	o'	4	3	3	3.3	1 1 1
k	p	3	3	3	3.0	0 0 0
m	q	3	2.5	2.5	2.7	1 0 0
l	r	-1	-1.5	-1.5	-1.3	1 0 0
n	s	3	3	3	3.0	0 0 0
o	t	2.5	3.5	3	3.0	1 1 0
p	u	2	2	2.5	2.2	0 0 1

k	p	2.5	2	3	2.5	0 1 1
l	r					
m	q	2	1.5	2.5	2.0	0 1 1
n	s					

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1895phae.proj...4450

R Piscium.

Comp. star = k = 9.0K = +1° 27' (0.0)

	Comp. Star.	Star meas.	Magn.	Results.
'97. Oct. 25.	k	β	11.22	−.06
" " 26.	"	"	11.3K	+.06
			11.28	±.060
'97. Oct. 25.	k	β'	11.99	−.03
" " 26.	"	"	12.06	+.0K
			12.02	±.03v
'97. Oct. 25.	k	γ'	12.3K	−.0K
" " 26.	"	"	12.K3	+.0v
			12.3K	±.0Kv
'97. Oct. 27.	k	δ'	10.v9	−.01
" " 29.	"	"	10.60	.00
			10.60	±.00v
'97. Oct. 27.	k	ε	11.92	.00
" " 29.	"	"	11.92	.00
			11.92	.000
'97. Oct. 27.	k	ζ	12.K2	.00
" " 29.	"	"	12.K3	+.01
			12.K2	±.00v

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1895phae.proj..4450

		1897 Oct. 23.	1897. Oct. 25.	1897 Oct. 26.	1897 Oct. 27.	Mean Obs.	Resids.
m	m		7	7	6	.67	1 1 1
n	n						
—	o						
p	p'						
q	q						
r	r						
s	s'						
t	t						
u	u'						
w	w						
x	x						
y	y						
z	z						

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1895phae.proj..4450

1st Cate.

Comp. Star = g = 8.71 = 12 -10° 60 (8.5)

Date.	Comp. Star.	Star Nyas.	Nyas.	Resids.
'97. Nov. 4.	g	k'	10.10	+.02
" " 23	"	"	10.08	-.03
			10.09	±.02
'97. Nov. 4.	g	m	10.13	-.11
" " 23.	"	"	10.38	+.11
			10.25	±.110
'97. Nov. 4.	g	n	10.44	-.01
" " 23.	"	"	10.46	+.01
			10.45	±.010
'97. Nov. 4.	g	p	11.23	-.02
" " 23.	"	"	11.27	+.02
			11.25	±.020
'97. Nov. 4.	g	q	11.38	-.07
" " 23.	"	"	11.44	+.06
			11.42	±.06
'97. Nov. 23.	g	t	12.53	+.06
" " 24.	"	"	12.41	-.06
			12.47	±.060
'97. Nov. 23.	g	u	11.78	+.08
" " 24.	"	"	11.64	-.06
			11.70	±.07
'97. Nov. 23.	g	s	12.17	+.01
" " 24.	"	"	12.15	-.01
			12.16	±.010
'97. Nov. 24.	g	u	13.03	+.02
'98 Jan. 14.	"	"	12.99	-.02
			13.01	±.020

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1895phae.proj..4450

		1897. Oct. 30.	1897. Nov. 3.	1897. Nov. 4.		Mean.
k						
m	l	K.V	3.V	4	.40 V	4.00 1 0 V
n	m	V.V	V.V	6	.V7 V	V.67 0 0 1 V
o	n	3	3.V	3.V	.33 V	3.33 1 0 0 V
p	o	3	2.V	3.V	.30 V	3.00 0 1 1 V
q	p	2.V	3.V	3.V	.32 V	3.17 1 1 1 V
r	q	3	V	K.V	.42 V	K.17 2 2 1 V
s	r	3	K	K	.37 V	3.67 2 1 1 V
t	s	K.V	3.V	K.V	.K2 V	K.17 1 1 1 V
u	t	3.V	3.V	3.V	.3V V	3.V0 0 0 0 V
w	u	K	K	V	.K3 V	K.33 1 1 1 V
x	w					

		1897 Nov. 23.				
k	k					
l	k'	V.V	6	V.V	V.67	0 1 0 V
m	l	K.V	K.V	K	K.33	0 0 1 V

		9d Dec. 16.	9d Dec. 17.	9d Dec. 24.		
x		V.V	V	V	V.17 V	1 0 0 V
y		6	V.V	6	V.A3 V	0 1 0 V
z						

On Dec. 16, 1894. variable found to be fbr. than comp. star X, so that y and z were added.

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1895phae.proj—4450

U Cet.

Star e [faint sketch] on Syr. A Chart with wafer = 8.92 mags.
" ½ in final rotation. = 9.00 mags.

Date.	Comp. Star.	Star meas.	mags.	Resid.	
	Old star				
'97. Nov. 24.	e		11.04	+.02	2.16
" Dec. 18.	"	"	11.03	-.03	2.11
			11.06	±.02	
'97. Nov. 24.	e		11.62	+.07	2.70
" Dec. 18.	"	"	11.48	-.07	2.56
			11.55	±.070	
'97. Nov. 24.	e		12.41	+.01	3.49
" Dec. 18.	"	"	12.39	-.01	3.47
			12.40	±.010	
'97. Dec. 18.	e		12.94	.00	4.02
" " 24.	"	"	12.93	-.01	4.01
			12.94	±.00	
'97. Dec. 18.	e		13.21	+.03	4.29
" " 24.	"	"	13.14	-.04	4.22
			13.18	±.03	
'97. Dec. 27.	e		12.15	+.01	1.09
'98. Jan. 18.	"	"	12.14	.00	1.08
			12.14	±.00	
	Old star	Final st.			
1901. Feb. 21.	e	½	8.92	0.00	-0.08
" " "	"	"	8.92	0.00	-0.08
			8.92		

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1895phae.proj..4450

Star ☉ on previous page is N 2 − 13° 4A3 (A.A)

Final Not.		1897 Nov. 3.	1897 Nov. 4.	1897 Nov. 24.	1897 Dec. 16	1897 Dec. 18	Mean	
b	l	4	4	4		4	4.5	0 1 1 2
g	m	3	4	3		4	3.8	2 0 1 1
k	n	4	3	4		2	3.6	See below.
	o		6	4	4	6	5.6	" "
t	p		4	4	4	3	4.0	0 2 0 2
u	q		4	4	4	4	4.1	0 1 0 0
w	r		3	4	3	4	3.9	1 0 2 2
x	s							

		1897 Dec. 27.	1898 Jan. 10.	1898 Jan. 17		
r	n	4	4	5	4.3	0 1 0
s	o					
t	p	4	4	3	3.3	1 0 2

Comp. star a was found to have apparently changed in brightness, so a new star o was selected with above results (as regards estimates).

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1895phae.proj..4450

γ Andromedae.

Comp. Star = Dm. + 26° 37. (A.A.K.) = 9.13 = f.
For notation of comp. stars see R 94. p. 96.

Date.	Comp. Star.	Star Meas.	Magn.	Resids.	
'97. Dec. 18.	A.A. mean.	f u	12.33	-.01	+3.20
" " 23.	"	"	12.35	+.01	+3.22
			12.34		
'97. Dec. 18	A.A. mean.	f w	12.47	-.03	+3.34
" " 23	"	"	12.53	+.03	+3.40
			12.50		
'97. Dec. 24.	A.A. mean.	f x	12.76	+.02	+3.63
" " 27	"	"	12.71	-.03	+3.58
			12.74		
'97 Dec. 24.	A.A. mean.	f y	13.03	+.09	+3.90
" " 27.	"	"	12.85	-.09	+3.72
			12.94		
'97 Dec. 24.	A.A. mean.	f z	13.31	+.05	+4.18
" " 27	"	"	13.20	-.06	+4.07
			13.26		
'97 Dec. 24.	A.A. mean.	f a	13.91	+.02	+4.78
" " 27	"	"	13.87	-.02	+4.74
			13.89		
'98. Feb. 10.	A.A. mean.	f g "c"	11.31	-.01	+2.18
" " 12.	"	"	11.32	.00	+2.19
			11.32		
'98. Feb. 10.	A.A. mean.	f o "a"	10.64	+.02	+1.51
" " 12.	"	"	10.59	-.03	+1.46
			10.62		
'98. Feb. 10.	A.A. mean.	f n "k"	10.56	+.04	+1.43
" " 12.	"	"	10.48	-.04	+1.35
			10.52		

The 3 stars above in quotations, are in the notation of diagram R 94. p. 96.

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		'97 Dec. 16	'97 Dec. 18	'97 Dec. 21.	'97 Dec. 27	~~Mean~~	Mean.
u	d	K	K.V	3		.3A V	3.A3 V 0 1 2
w	e	3	3.V	3.V		.33 V	3.33 V 1 0 0
x	f	3	3	4		.33 V	3.33 V 1 1 1
y	g	K.V	3	K.V		.3A V	4.00 V 1 2 1
z	h	V	V.V	6		.V.V V	V.V0 V 1 0 1
α	k	3.V	3	3		.32 V	3.17 V 1 0 0
β	l	6	6	V.V		.VA V	V.A3 V 0 0 1
γ	m		K.V	K	K.V	.K3 V	K.33 V 0 1 0
δ	n		3.V	4	3.V	.37 V	3.67 V 0 1 0

Intermediate Stars.

		'98 Jan. 18	'98 Jan. 19.	'98 Feb. 10.	'98 Feb. 12.	'98 Feb. 17.	~~Mean.~~	Mean.
m	K		V	K.V	K	V.V	.4A V	K.7V V 0 0 1 1
n	K'		3	2.V	2	3.V	.2A V	2.7V V 0 0 1 1
o	a	4	V	K			.K3 V	K.33 V 1 1 1
p	b	V	K.V	V.V			.V0 V	V.00 V 0 1 1
q	c		K.V	V	V	K.V	.KA V	K.7V V 0 0 0 0
r	c"		3.V	K.V	V	3.V	.A1 V	K.00 V 1 1 2 1
s	c'			K.V	V	V	.KA V	K.63 V 1 0 0
t	c''			K.V	K.V	K	.K3 V	K.33 V 0 0 1
u	d							

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7 Hydrae.

Comp. Star = K = 9.2 K = −0° 2′ 32″ (0.0)

Date.	Comp. Star.	Star meas.	Magn.	Resid.	
96. Feb. 17.	K	p	10.76	−.02	1.72
" " 24.	"	"	10.81	+.03	1.77
			10.78	±.02	
96. Feb. 17.	K	q	11.24	+.01	2.04
" " 24.	"	"	11.26	−.01	2.02
			11.27	±.010	
96. Feb. 17.	K	r	11.36	.00	2.12
" " 24.	"	"	11.37	+.01	2.13
			11.36	±.00	
96. Feb. 17.	K	s	11.90	+.02	2.66
" " 24.	"	"	11.86	−.02	2.62
			11.88	±.020	
96. Feb. 17.	K	t	12.21	+.02	2.97
" " 24.	"	"	12.17	−.02	2.93
			12.19	±.020	
96. Feb. 17.	K	u	12.34	+.02	3.30
" " 24.	"	"	12.30	−.02	3.26
			12.32	±.020	

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		9h. Feb. 12.	9h. Feb. 17.	9h. Feb. 24.	9h. Mar. 3.	
	ν					
	α'	3	6	6	6	.63 001
a	α					
b	β	2	3	3		.30 101
g	γ	3	3	4		.37 001
n	γ	3	3	3		.32 010
s	γ'	3	4	4		.40 220
t	α	4	4	4		.47 111
u	ε	4	4	4		.43 001
w	ζ	6	6	6		.60 000
x	θ	4	4	6		.42 102
y	κ	4	4	4		.43 111
z	λ	3	3	4		.34 101

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1895phae.proj..4450

J. A. Parkhurst Stars.

6.6 = +31° 1049 (6.6)

U Aurigae.

Comp. Star = Dm. +32° 1062 (8.6)

Date.	Comp. Star.	Star meas.	Mag.	Rem.	
9h. Feb. 25.	+32° 1062.	K			+3.4K
" Mar. 4.	"	"			+3.39 v
9h. Feb. 25.	"	a			+2.18
" " 28.	"	"			+2.20
9h. Feb. 25.	"	c			+2.69
" " 28.	"	"			+2.60
9h. Feb. 28.	"	z			+1.21
" Mar. 4.	"	"			+1.28 v
9h. Feb. 28.	"	s			+0.15
" Mar. 4.	"	"			+0.18 v
9h. Feb. 28.	6.6	+32° 1062.			+2.43
" Mar. 4.	"	"			+2.40 v
9h. Mar. 25.	+32° 1062.	L			+3.98
9h. Mar. 25.	+32° 1062.	m			+3.98

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1895phae.proj..4450

J. A. Parkhurst Stars.

N. Ursae Majoris.

Comp. Star = Dm. +74° ν1A (A.3)

Date.	Comp. Star.	Star Meas.	Incpn.	Resid.	
96 Mar. 31.	ν1A.	m			+3.74
" Apr. 1A.	"	"			+3.67
96 Mar. 31.	ν1A.	b			+2.20
" Apr. 1A.	"	"			+2.13
96 Mar. 31.	ν1A.	d			+2.24
" Apr. 6A.	"	"			+2.33
96 Mar. 31.	ν1A.	l			+3.24
" Apr. 1A.	"	"			+3.21
96 Apr. 1A.	ν10	ν1A			+0.9K
" May 9.	ν10	ν1A			+1.0K
96 Apr. 1A.	d	ν19			+1.63
" May 9.	d	ν19			+1.61

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140

(1855)
α = 4h 1K 44.0 +12° 7.9 (A.3) V Bancrii.

e in pencil notation.

Comp. Star = 4 = 4.02 = +12° 1927 (A.3)

Date.	Comp. Star	Star. Meas.	Magn.	Resids.	
9h Apr. 16.	e		11.97	-.01	+3.93
" May 1K.		"	11.96	.00	+3.94
			11.96	±.00	
9h Apr. 16.	e	x	13.62	+.02	+.66
" May 17		"	13.63	-.03	+.61
			13.66	±.02	
9h. May 1K.	e		11.05	+.03	+3.03
" May 13.		"	11.00	-.02	+3.98
			11.02	±.02	
9h. May 1K.	e		12.10	-.10	+K.KK
" " 17		"	12.71	+.11	+K.69
			12.60		
9h. May 1K.	e		12.KK	-.0K	+K.K0
" May 13.		"	12.71	+.07	+K.K9
			12.K6	±.0K	

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Final Nat.	Pencil Nat.	'98 Mar. 11	'98 Mar. 25.	'98 Apr. 11.	'98 Apr. 16	Mean.	Mean
o	l	5.5	6				
	l'	3	2	2		2.67	100
p	m	4	3	3		3.33	111
q	n	5.5	3	3	3.5	3.17	001
r	o'			3	4	4.17	320
s	o	4.5				4.67	001
t	p	4.5	6				121
u	q	3.5				4.17	120
w	r	4					110
x	s	5					021
y	t	3	3	3		3.00	000
z	u	6	6			6.67	111
&	w						

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u = C. S. = +12° 2093 (9.4)

R Leonis.

Comp. Star = u = 2 u. +12° 2093" (9.4) = 8.97"

Date.	Comp Star.	Star. Meas.	Magn.	Residu.	
Mar. 31, 1898.	u	β	11.07"	+.01"	+2.10
April 9, 1898	"	"	11.05"	-.02"	+2.07
			11.06"	±.01"	
Mar. 31, 1898.	u	α	10.69"	+.02"	+1.72
April 9, 1898	"	"	10.65"	-.02"	+1.68
			10.67"	±.020"	

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	1895. Mar. 31.	1895 Apr. 9.	1892 Apr. 11.	1895 Apr. 16.	1892 Apr. 16.	~~Dacon~~ Wilsing.
w			4.5	5.5	5.5	~~5.2~~ 5.17
y			~~2.5~~	2	2.5	~~2.3~~ 2.33
x			4	4.5	4	~~4.2~~ 4.17
z	5	4.5	4			~~4.5~~ 4.50
α	4.5	3.5	5			~~4.3~~ 4.33
β						

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ν Virginis.

Comp. Star = l = 9.23 = −6° 38′ 40″ (9.1)
" " t = 10.70 as determined below.

Date.	Comp. Star.	Star Meas.	Magn.	Resids.	
92. June 21.	l	u	11.97	−.06	+2.74
" " 23.	"	"	12.09	+.06	+2.86
			12.03		
92. June 21.	l	t	11.39	−.07	+2.16
" " 23.	"	"	11.52	+.06	+2.29
			11.46		
92. June 21.	l	r	10.70	.00	+1.47
" " 23.	"	"	10.69	−.01	+1.46
			10.70		
92. July 9.	r	q	10.60	.00	−0.10
" " 14.	"	"	10.61	+.01	−0.09
			10.60		
92. July 9.	r	s	10.96	−.01	+0.26
" " 14.	"	"	10.98	+.01	+0.28
			10.97		

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Final det.		'98. June 24.	'98 June 23.	'98 June 24.		
l	l	3.r	3.r	3	3.3	
m	m	3	3	3.r	8.2	0 0 1
o	o	3	3.r	K	3.5	1 0 1
p	p	K	3	3.r	3.5	1 1 0
q	q	3	K	3.r	3.5	1 1 0
r.	α	2	2.r	3	2.5	1 0 1
r	β	K	K	3.r	3.8	0 0 1
t	γ	3.r	K.r	K	4.0	1 1 0
u	δ					

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R Boötis.

Comp. Star = h = ~~+0.90~~ +0.93 = +27° 2396 (A.3)

Date.	Comp. Star.	Star Mean.	Magn.	Resids.	
98. July 7.	h	~~x~~	~~12.43~~	+.01	
			~~11.90~~	~~+.07~~	+3.50
			~~12.40~~	-.02	
" July 14.	"	"	~~11.87~~	~~-.01~~	+3.47
			~~12.42~~		
			~~11.88~~		
98. July 7.	h	~~s~~ s2	11.71	+.03	
			~~11.68~~	~~+.06~~	+2.72
			11.64	-.04	
" July 14.	"	"	~~11.71~~	~~-.03~~	+2.71
			~~11.68~~		
			~~11.74~~		
98. July 7.	h	~~g~~ g	11.17		
			~~10.64~~	.00	+2.24
" July 14.	"	"	~~11.17~~	.00	+2.24
			~~10.64~~		
98. July 7.	h	~~k~~ k	10.89	.01	
			~~10.36~~	~~.00~~	+1.96
" July 14.	"	"	10.90	.00	
			~~10.37~~	~~+.01~~	+1.97
			10.90		
			~~10.36~~		
98 July 14.	h	~~u~~ t	12.48		
			~~11.97~~	-.01	+3.55
" " 15.	"	"	12.50		
			~~11.97~~	+.01	+3.57
			12.49		
			~~11.96~~		
98. July 14.	h	~~w~~ u	13.13	-.05	
			~~12.60~~	~~-.06~~	+4.20
" " 15.	"	"	13.24	+.06	
			~~12.71~~	~~+.05~~	+4.31
			13.18		
			~~12.66~~		

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		9h June 7.	9h June 9.	9h June 16.	9h June 7.	mean
l	l		4	4.5	5	4.50 1 0 1
m	m		4	4	4.5	4.17 0 0 1
n	n		4.5	4	4.5	4.33 0 1 0
o	o	4	3	3.5		3.50 1 1 0
p	p	4	4	4.5		4.17 0 0 1
q	q	4.5	5	4		4.50 0 1 1
r	r	5	5.5	5		5.17 0 1 0
s	t	4	3	3.5		3.50 1 1 0
t	u		4	4	5.5	4.50 1 1 2
u	w					

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R Corvi.

x comp. with g g = 2.92 = −17° 35′ 96 (A.3)
∴ x = 9.74

	Comp. Star.	Star meas.	Magn.	Resids.	
92. June 14.	g	x	9.74	.00	0.42
" " 15.	"	"	9.73	−.01	0.41
			9.74		
92. June 15.	x	β	10.94	+.02	+1.20
" " 17.	"	"	10.90	−.02	+1.16
			10.92		
92. June 15.	x	ε	12.61	+.03	+2.87
" " 23.	"	"	12.56	−.02	+2.82
			12.58		
92. June 15.	x	ζ	12.38		+2.64
92. June 15.	x	β′	11.30	+.02	+1.56
" " 17.	"	"	11.27	−.01	+1.53
			11.28		
92. June 15.	x	ω	10.14	−.02	+0.44
" " 17.	"	"	10.22	+.02	+0.52
			10.20		

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		9h June 14	9h June 15.	9h June 17.	9h June 22.	Mean
h	g		5	4.5	4.5	4.67 1 0 0
k	h	5.5	6	6		5.83 1 0 0
l	k	2.5	3	3.5		3.00 1 0 1
m	l	3.5	3.5	3		3.33 0 0 1
n	d	5.5	6	5.5		5.67 0 1 0
o	β	3	2.5	3.5		3.00 0 1 1
p	β′	3	4.5	4		3.83 1 1 0
q	γ	5	4	4.5		4.50 1 1 0
r	δ	3	3.5	3		3.17 0 1 0
s	ε	4	4	3.5		3.83 0 0 1
t	ζ	5	4	4		4.33 1 1 1
u	η					

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1895phae.proj..4450

Corrected for Absorption.

with Phot. I.

Means of Faint Comp. Stars for X Cygni.

Comp. Star.		1894 Dec. 18	1894 Dec. 19.	1894 Dec. 22.	Mean Value.	Resids.		
a	γ	11.03	10.85	10.86	10.91	.12	.07	.06
b	δ	11.47	11.50	11.53	11.50	.03	.00	.03
c	ε	12.04	12.11	12.12	12.09	.05	.02	.03
d	ζ	12.19	12.17	12.21	12.19	.00	.02	.02
e	η	12.99	12.93	12.93	12.42	.57	.51	.51
f	θ	12.21	12.30	13.12	12.88	.67	.58	.24
g	ι	13.47	13.35	13.32	13.38	.09	.03	.06
h	κ	13.40	13.43	13.46	13.43	.03	.00	.03
k	λ	14.17	14.19	14.07	14.14	.03	.05	.07
l	μ	—	14.95	15.14	15.04	—	.09	.10
						+.41	+.07	+.46
						-.19	-.48	-.27
						+.22	-.41	+.19
						+.02	+.04	+.02

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Corrected for Absorption.

Measst. of Faint Comp. Stars for R Draconis (Phot. I.)

Comp. Star.	1894 Dec. 12.	1894 Dec. 19.	1895 Jan. 1.	Mean Value.	Resids.		
					.14	.09	.02
n	11.26	11.19	11.14	11.20	.06	.01	.05
					.11	.04	.01
o	12.32	12.37	12.34	12.35	.03	.02	.01
					.11	.14	.02
p	12.63	13.07	12.77	12.82	.19	.13	.07
					.09	.07	.01
q	13.50	13.42	13.70	13.67	.17	.15	.02
					.00	.14	.12
r	13.75	14.09	13.64	13.83	.18	.26	.10
					.01	.00	.17
s	14.14	14.13	14.37	14.21	.07	.08	.16
					.20	.12	.05
t	14.53	14.01	14.44	14.41	.12	.20	.09
					.18	.11	.06
u	14.49	14.92	14.41	14.73	.24	.19	.08
					.13	.24	.14
w	15.44	15.19	15.55	15.39	.05	.20	.16
					.14	.11	.03
x	15.34	15.26	15.31	15.32	.18	.06	.17

−Δ	+Δ	±Δ
+.20	+.11	+.53
−.07	−.27	−.31
±.127	±.138	±.415

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Corrected for Absorption.

Phot. I.

Means of Faint Comp. Stars for T Cephei.

Desig.	1895 Dec. 22.	1895 Dec. 29.	1896 Jan. 1.	Mean.			
r	12.09	11.87	11.88	11.94	.03	-.04	.01
s	12.93	12.83	12.80	12.87	-.04	.03	.02
t	13.57	13.39	13.37	13.44	.01	.00	-.02

Means of Faint Comp. Stars for R Ursæ Min.

	1895 Dec. 22.	1895 Dec. 29	1896 Jan. 1	Mean.			
l	11.87	11.88	11.78	11.84	.17	.00	.12
m	12.13	12.27	12.50	12.30	.01	.07	.04
n	12.37	12.67	12.72	12.57	.06	.04	.03
o	12.73	13.03	13.17	12.98	.09	.01	.07

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Transit of Faint Comp. Stars for R Cassiop.

Desig.	1895 Jan. 2.	1895 Jan. 4.
q	11.77	12.09
r	12.31	12.29
s	12.52	12.66
t	12.75	13.19
u	12.95	13.27
w	13.49	14.20
x	14.24	14.46
y	14.61	14.70
z	14.47	14.47
α	15.09	14.44
β	15.44	15.03

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Phot. I.

Measst. of Faint Comp. Stars for S. Eckler.

Comps. Star.	1894 Dec. 12.	1894 Dec. 19.
k	11.26	10.81
l	11.27	10.82
m	12.12	11.66
n	12.93	12.06
o	13.12	12.60
p	13.20	12.81
q	13.10	13.01
r	14.78	14.34
s	14.29	14.62
t	14.14	14.25
Var.		

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R Leo. Minn.

Comp. Star = m = 9.22 = +31° 20' (9.0)

Date.	Comp. Star.	Star Meas.	Magn.	Resids.	
96. June 14.	m	t	11.91	-.03	+2.69
" " 15	"	"	11.98	.04	+2.76
			11.94		
96. June 14.	m	r	11.03	+.03	+1.41
" " 15.	"	"	10.96	-.04	+1.74
			11.00		
96 June 16.	m	v	11.46	.00	+2.24
" " 17.	"	"	11.46	.00	+2.24
			11.46		
96 June 17.	m	u	12.69	+.07	+3.47
" " 21.			12.60	-.04	+3.38
			12.64		
96. June 21.	m	y	13.11	+.07	+3.93
" July 6.	"	"	13.04	-.06	+3.82
			13.10		
96 June 21.	m	x	12.86	-.04	+3.64
" " 23.	"	"	12.94	+.04	+3.72
			12.90		

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		9h June 14.	9h. June 15.	9h June 16.	Mean	Mean.		
o	o	3.5	3.5	4	3.8	3.67	0 01	v
p	p	4.5	4.5	4	4.3	4.33	0 0 1	v
q	q	5	5.5	4	4.8	4.83	0 1 2	v
r	r	6	6	5.5	5.8	5.83	0 0 1	v
s	s	5.5	3.5	5	4.7	4.67	2 2 1	v
t	t	4	5	4.5	4.5	4.50	1 1 0	v
u	u	5.5	5	6	5.5	5.50	0 1 1	v
w	w	3.5	3	3	3.2	3.17	1 0 0	v
x	x	3	3	3	3	3.00	0 0 0	v
y	y							

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1895phae.proj..4450

V Virginis.

Comp. Star = k = 9.23 = -2° 3689 (9.0)

Gr. Me. T.	Comp. Star.	Star Meas.	Magn.	Resids.
96. July 16. 14h 23m	k	t	12.81	+3.12
			12.87	+3.62
			12.83	
96. July 16. 14h 43m	k	u	12.23	+3.00
			12.20	+2.97
			12.22	
96. July 16. 14h 53m	k	q	11.72	+2.52
			11.73	+2.50
			11.74	
96. July 16. 15h 9m	k	o	10.92 .00	+1.69
" " 20. 14 436	"	"	10.92 .00	+1.69
			10.92	
96. July 20. 14h 31m	k	w	10.77 -.04	+1.54
99. May 10. 14h 17m	"	"	10.81 +.04	+1.62
			10.81	

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		9h July 15.	9h July 16.	9h. July 20.	Mean	Mean.
k	k	r	r	4.r	4.8	4.83 r 0 0 1 r
l	l	4.r	4.r	4	4.3	4.33 r 0 0 1 r
m	m	4.r	4	4.r	4.3	4.33 r 0 1 0 r
n	m	4.r	3.r	4	4.0	4.00 r 1 1 0 r
o	o	r	4.r	r	4.8	4.83 r 0 1 0 r
p	p	3.r	4	4	3.8	3.83 r 1 0 0 r
q	q	r	r	4	4.7	4.67 r 1 1 1 r
r	r	4	3.r	4	3.8	3.83 r 0 1 0 r
s	s	r	r	4.r	4.8	4.83 r 0 0 1 r
t	t	4.r	3.r	4	4.0	4.00 r 1 1 0 r
u	u	6	6	6	6.	6.00 r 0 0 0 r
w	w					

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1895phae.proj..4450

S Librae. V

Comp. Star = L = 9.6 v

Gr. M. T.	Comp. Star.	Star Mean.	Magn.	Resids.	
1901. July 13.	L	m	10.1 v	-.01 v	+0.50 v
" " 15	"	"	10.20	+.01 v	+0.52 v
			10.19 v		
1901. July 13.	L	o	10.3 v	+.03 v	+0.70 v
" " 15.	"	"	10.32 v	-.03 v	+0.55 +0.72
			10.35 v		
1901. July 13.	L	p	10.7 v	-.02 v	+1.10 v
" " 15.	"	"	10.81	+.01 v	+1.13 v
			10.80 v		
1901. July 13.	L	q.	11.18 v	-.02 v	+1.50 v
" " 15	"	"	11.22	+.02 v	+1.54 v
			11.20 v		
1901. July 13.	L	r	11.72 v	+.05 v	+2.04 v
" " 15	"	"	11.62	-.05 v	+1.94 v
			11.67 v		

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		9A July 16.	9A July 20.	9A July 22.	Mean	Mean.
b	b	4	4.v	4	4.2	4.17v 0 1 0 v
m	m	v	4.v	v	4.8	4.A3v 0 1 0 v
n	n	2	2	2.v	2.2	2.17v 0 0 1 v
o	o	4.v	4	v	4.5v	4.v0v 0 1 1 v
p	p	4	4.v	4	4.2	4.17v 0 1 0 v
q	q	v	v	4.v	4.8	4.A3v 0 0 1 v
r	r					

	1901 July 12.	1901 July 13	1901 July 14.		
s	4	v	v	4.67v	1 1 1
v	3	3	3.v	3.17v	0 0 1
t	2.v	4	4	3.v0	1 1 1
u	3.v	3.v	3	3.33	0 0 1
w	4.v	v	v	4.A3	1 0 0
x					

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1895phae.proj..4450

R. A.

α Scorpii.

Comp. Star = f = 2.38

n = 10.87

Gr. M. T.	Comp. Star.	Star mean	Brightness	Resid.	
'98. July 22.	f	u	11.29	+.03	+2.91
'01. July 16.	"	"	11.24	-.02	+2.86
			11.26		
'98. July 22.	f	t	11.32	.00	+2.78
'01. July 16.	"	"	11.32	.00	+2.78
			11.32		
'01 July 16.	f	r	10.82	-.05	+2.28
" " 19.	"	"	10.92	+.05	+2.38
			10.87		
'01 June 11.	n	z	12.59	+.01	+1.72
			12.58	.00	+1.71
			12.58		
'01 June 11.	n	x	12.37	-.03	+1.42
			12.41	+.03	+1.46
			12.38		
'01 June 26.	g	m	9.46	.00	+1.08
" July 30.	"	"	9.46	.00	+1.08
			9.46		
'01 July 30.	g	o	10.06	-.02	+1.68
" Sept. 4.	"	"	10.11	+.03	+1.73
			10.08		
'01 July 30.	g	q	10.69	-.02	+2.31
" Sept. 4.	"	"	10.73	+.02	+2.35
			10.71		

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Final Rot.		9h. July 20.	9h. July 22.	0 h. June 21.		
r	y	2.v	2	2.v	2.33 v	0 1 0 v
s	x	F.v	F	4	4.17 v	1 0 0 v
t	x	3	3	3	3.00 v	0 0 0 v
u	t	v	v.v	4.v	v.00 v	0 1 1 v
w	u	v	6	v	v.33 v	1 1 1 v
x	w	3.v	2.v	2.v	2.83 v	1 1 1 v
y	x	3.v	3.v	2.v	3.17 v	1 1 1 v
z	x		v.v	v	v.2v v	1 1 . v
α	z		4		4.00 v	1 1 . v
β	x					

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1895phae.proj..4450

S Serpentis.

Comp. Star = l = 10.20
b = 7.73

Gr. m. T.	Comp. Star.	Star Meas.	Magn.	Reduct.	
'98. Sept. 21.	l	g	+1.47	+.01	11.67
1901. June 25	"	"	+1.46	.00	11.66
					11.66
'98. Sept. 21.	l	p	+1.47	-.03	11.67
1901. June 25	"	"	+1.54	+.04	11.74
					11.70
'98. Sept. 21.	la	m	+2.64	-.01	10.37
1901. June 26.	"	"	+2.64	.00	10.38
					10.38
'98. Sept. 21.	b	m	+3.16	+.01	10.49
1901. June 26.	"	"	+3.14	-.01	10.47
					10.48
'98. Sept. 21.	b	o	+3.32	-.01	11.11
1901. June 26	"	"	+3.40	+.01	11.13
					11.12
1901. June 26.	b	l	+2.42		10.18

This, combined with previous value (10.21) gives 10.20 as above.

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		9h Sept. 21.	9h Oct. 12.	9h Oct. 13.		Mean
k	k	4	4	4.v	4 2	4.17 ± 001
l	l	4	3.v	4.v	4 0	4.00 ± 011
m	m	v.v	v	v	0 2	v.17 ± 100
n	n	4.v	v	v	4 8	4.83 ± 100
o	o	4.v	4	4	4 2	4.17 ± 100
p	p	4	4.v	4.v	4 3	4.33 ± 100
q	q	v	v	v	5	v.00 ± 000
r	r					

Extension of sequence of comp. stars.

		Oct. 25.	Oct. 26.	Oct. 27.	Mean.
r	v	4	v	4.67	± 111
s					
t	4.v	3.v	4	4.00	± 110
u	4	4	4	4.00	± 000
w	v	v	v.v	v.17	± 001

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1895phae.proj.4450

R Cygni. v

Comp. Star = n = 9.29 v =
= +49° 3073 (9.0)

Gr. Mn. T.	Comp. Star	Star Meas.	Magn.	Resid.
98 Oct. 11.	n	n	1.62 v	+.01
" Nov. 1.	"	"	1.60 v	-.01
			10.90	
			~~1.61~~	/
98 Oct. 11.	n	t	2.82 v	+.01
" Nov. 1.	"	"	2.86 v	-.01
			11.86 v	
			~~2.87~~	
98 Nov. 2	n	w	3.01 v	+.01
" "	"	"	2.98 v	-.02
			12.29 v	
			~~3.00~~ v	
98. Nov. 1.	n	u	2.76 v	-.04
" " 2.	"	"	2.83	+.03
			12.09 v	
			~~2.80~~	
98. Nov. 1.	n	x	3.42 v	+.07
" " 2.	"	"	3.38	-.07
			13.72 v	
			~~3.43~~	

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1895phae.proj..4450

Final Not.		9A. Sept. 21.	9A. Oct. 6.	9A Oct. A.	Mean	
m	m	4.5	5	4	4.50	011
n	n	3	3	3.5	3.17	001
o	o	4	4.5	4	4.17	010
p	p	6	5.5	5	5.50	101
q	q	3.5	4	3.5	3.67	010
r	r	3	3.5	4	3.50	101
s	s	5.5	5	5	5.17	100
t	t	6	5.5	5	5.50	101
u	u	4.5	5	3.5	4.33	012
w	w	3	3.5	5	3.83	212
x	x	5.5	5	6	5.50	011
y	y	5	5	4.5	4.83	001
z	z					

On Sept. 19, 21, 23, 1901, the faint end of the above sequence of comp. stars was revised by H. as follows. x' was inserted between x and y and h was inserted between y and z.

		Sept. 19.	Sept. 21.	Sept. 23		
x	x	4	5	4	4.33	111
y	x'	5	4	5	4.67	111
z	y	4.5	4.5	4	4.33	001
α	h	5.5	5.5	5.5	5.50	000
β	z					

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1895phae.proj.4450

N Coronae. ✓

Comp. Star = K = A ✓ K ✓

Gr. no. I.	Comp. Star.	Star Mean.	Magn.	Resids.
gA. Sept. 21.	K	A ✓	+3.AK	+.02 ✓
" Oct. 3	"	"	+3.A1 ✓	-.01 ✓
			12.36 ✓	
			+3.A2 ✓	
gA. Sept. 21.	K	K 2	+3.12	-.02 ✓
" Oct. 3.	"	"	+3.17 ✓	+.03 ✓
			11.88 ✓	
			+3.1K ✓	
gA. Sept. 21.	K	K A	+2.12	+.01 ✓
" Oct. 3.	"	"	+2.10 ✓	-.01 ✓
			10.65 ✓	
			+2.11 ✓	

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1895phae.proj..4450

Final Not.		98. Sept. 21.	98 Oct. 3.	98. Oct. 6.	mean
m	m	4.5	5	5	4.83
n	n				
o	o	3	3.5	3	3.17
p	p	3	3	4	3.33
q	q	4.5	4	4	4.17
r	r	4.5	5	4	4.50
s	s	4.5	4	5	4.50

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1895phae.proj.4450

ζ Herculis.

Comp. Star = k = 8.92

Gr. M. T.	Comp. Star.	Star Meas.	Magn.	Resids.
9h. Oct. 6.	k	t	+3.70	−.03
" " A.	"	"	+3.76	+.03
			12.46	
			+3.73	
9h Oct. 6.	k	s	+2.74	.00
" " A.	"	"	+2.73	−.01
			11.66	
			+2.74	
9h. Oct. 6.	k	r	+2.44	.00
" " A.	"	"	+2.43	−.01
			11.36	
			+2.44	
9h Oct. 6.	k	q	+2.12	+.02
" " A.	"	"	+2.11	−.01
			11.04	
			+2.12	
9h. Oct. 6.	k	p	+4.64	+.04
" " A.	"	"	+1.73	−.04
			10.49	
			+1.77	

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1895phae.proj..4450

Finish not.

		Oct. 6.	Oct. 8.	Oct. 10.	Mean	
n	n	v.v	v	v	5.17 v	1 0 0
o	o	v.v	v	v	4.83 v	1 0 0
p	p	v.v	v	v.v	4.83 v	0 1 0
q	q	v	v	v	4.33 v	1 1 1
r	r	v.v	v	v	4.50 v	2 1 1
s	s	6	6	v.v	5.83 v	0 0 1
t	t	3	3.v	v	3.50 v	1 0 1
u	u					

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1895phae.proj .4450

R Coronae

Comp. Star = f = 7.46

Gr. Mn. T.	Comp. Star.	Star Meas.	Magn.	Resids.
9h Oct. 6.	f	u	+4.34	-.04
" " 10.	"	"	+4.42	+.04
			11.84	
			+4.34	
9h. Oct. 6.	f	n	+3.72	+.02
" " 8.	"	"	+3.68	-.02
			11.16	
			+3.70	
9h. Oct. 6.	f	t	+3.69	-.01
" " 10.	"	"	+3.78	+.04
			11.20	
			+3.74	
9h. Oct. 8.	f	n	+3.14	-.06
" " 10.	"	"	+3.27	+.06
			10.67	
			+3.21	
9h. Oct. 10.	f	w	+4.77	+.03
" " 11.	"	"	+4.72	-.02
			12.20	
			+4.74	

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1895phas.proj..4450

Final Det.	98 Oct. 6.	98 Oct. 8.	98 Oct. 10.	Mean
q q	6	5.5	5	5.50
r r	6	6	6	6.00
s s	3	3.5	3	3.17
t t	3.5	5	4	4.17
u u	3.5	3	3	3.17
w w	3.5	4	3	3.50
x x	3	3	3.5	3.17
y y				

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1895phae.proj..4450

R Herculis.

Comp. Star K = 9.3K

Gr. Mn. T.	Comp. Star.	Star Mean.	Magn.	Resids.	
gA Oct. 12.	K	g	2.KA	.00	11.A2
" " 13.	"	"	2.KA	.00	11.A2
			11.A2		
gA. Oct. 12.	K	p	2.11	-.0V	11.KV
" " 13.	"	"	2.20	+.0K	11.VK
			11.V0		
gA. Oct. 12.	K	0	1.33	-.03	10.67
" " 13.	"	"	1.3A	+.02	10.72
			10.70		
gA. Oct. 13.	K	V	3.VA	.00	12.92
" " 17	"	"	3.V7	-.01	12.91
			12.92		
gA. Oct. 17.	K	2	2.90	-.06	12.2K
" " 20.	"	"	2.92	+.01	12.26
			12.2V		

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Finish Act.		9h Det. 12.	9h Det. 13.	9h Det. 14.	Mean	Mean.	
o	o						
p	p	2.7	3	3	2.8	2.83	100
q	q	4.7	4	4.7	4.3	4.33	010
r	r						
s	s	4	4	4.7	4.2	4.17	001
t	t	3	3.7	3	3.2	3.17	010
u	u	3.7	4	4	3.8	3.83	100

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1895phae.proj. .4450

T Hercules.

Comp. Star = n = 9.40 = +30° 3136 (9.4)

G. M. T.	Comp. Star.	Star meas.	Mag.	Resids.	
	n	t	+3.14	-.02	13.24
	"	"	+3.12	+.02	13.32
					13.30
1900. Mar. 16.	n	s	+3.12	-.04	12.92
	"	"	+3.19	+.03	12.99
					12.96
1900. Mar. 16.	n	r	+2.32	.00	12.32
	"	"	+2.31	-.01	12.31
					12.32
1900. Mar. 16.	n	q	+1.94	+.01	11.74
	"	"	+1.92	-.01	11.72
					11.73
1900. Mar. 16.	n	p	+1.31	-.01	11.11
	"	"	+1.32	.00	11.12
					11.12

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		9h Oct. 20.	9h Nov. 1.	9h Nov. 2.	Means.		
l	l	5	5	4.5	4.83	0 0 1	5
m	m	5	4.5	5	4.83	0 1 0	5
n	n	4	4	5	4.33	1 1 1	5
o	o	3	3.5	3	3.17	0 1 0	5
p	p	4.5	4	4	4.17	1 0 0	5
q	q	6	6	5.5	5.83	0 0 1	5
r	r	5	4.5	5	4.83	0 1 0	5
s	s	3	3.5	3	3.17	0 1 0	5
t	t						

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X Cati. ✓

Comp. star w =

d r M Time	Comp. star.	star meas	Magn.	Resids.	
98. Dec. 16.	w	h			+2.60.
99. Jan. 7.	"	"			+2.46.
98. Dec. 16.	w	f			+2.93.
99. Jan. 7.	"	"			+2.96.
98. Dec. 16.	w	g			+2.60.
98 Dec. 23	"	"			+2.29.
98. Dec. 16.	w	k			+1.30.
98 Dec. 23	"	"			+1.32.
99. Jan. 7.	w	e			+3.56
99 Jan. 10	"	"			+3.67.

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	'98 Dec. 16.	'98 Dec. 17.	'98 Dec. 24.	'99 Jan. 7.	'99 Jan. 10.	'98 Dec. 23.
p	3	3.v	3			3
o	3	3	4			3.v
n	7	6.v	6.v			7
m	4	v	4			4.v
l	4.v	4	v			4
k	6	6	v.v			v.v
h	2.v	2	2			2
g	4	4.v	4			4
f	v.v	v	v			v
e	4	3.v	4			4.v
d	3.v			4	3	
c	3.v			3	4	
b	v			5	4.v	
a						

Above comparison stars selected from faintest to brightest, star a being the faintest.

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1895phae.proj. .4450

W Cancri.

Comp. Star = 8 m. +25° 20′ 7 (9.0)

Gr. M. Time	Comp. S.	star meas.	Magn.	Residuals
99. Jan. 12.	(9.0)	f		+4.46.
99 Jan. 17	(9.0)	f		+4.28.
" " 18	"	"		+4.47.
99 Jan. 17	(9.0)	k		+ 3.53.
" " 18.	"	"		+ 3.47.
99. Jan. 18.	(9.0)	l		+ 3.61.
" " 19.	"	"		+ 3.68.
99. Jan. 19.	(9.0)	g		+ 3.47.
" Feb. 2.	"	"		+ 3.45.
99. Jan. 19.	(9.0)	h		+ 3.37.
" Feb. 2.				+ 3.32.
99. Feb. 2	(9.0)	e		+4.06.
" " 4.	"	"		+4.94.

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1895phae.proj..4450

	'99 Jan. 12	'99 Jan. 17.	'99 Jan. 19.
p.			
o			
n			
m			
l			
k	3	2 r	2
h	4	3 r	4 r
g	r r	r	r
f.	4	4 r	3 r
e	4 r	4	4
d	3	3 r	4
c	6 r	6	6
b	r	r	4 r
a	3	3 r	3

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1895phae.proj..4450

α Puppis.

Comp. Star = SD. -12° 2291 (9.0/c).

Gr. M. Time	Comp. Star	Star meas.	Magn.	Resid.	
99, Mar. 6.	9.0	b			+4.21
99 Mar 8.	9.0	b			+4.15
99, March 6.	9.0	c			+3.89
99 March 8	9.0	c			+4.02
99, March 6.	9.0	d			+3.65
99. March 8	9.0	d			+3.82
99, March 6.	9.0	e			+3.32
99 March 8	9.0	e			+3.32
99 March 8.	9.0	f			+2.48
" March 16.	9.0	f			+2.27

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1895phae.proj..4450

	'99 Mar. 6.	'99 Mar. 2.	'99 Mar. 16.
k			
h	3	3.r	3
g	3	2	2
f	3	r	4.r
e	5.5	6	6
d	5.5	4	4.r
c	4	3.r	3
b	3.r	2	2
a	4	3.r	4

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1895phae.proj..4450

V Canis Minoris. ✓

Comp. Star = +9° 1520 (9.4)

~~Comp. Star =~~

Gr. M. Time	Comp. Star	Star Meas.	Magn.	Resid.	G. m. T.
'99. Mar. 16.		l		+3.6K	15h 11.7m
" " 17.		"		+3.66	1K 24.0
'99 Mar. 16.		k		+3.16	1Vh 30.Vm
" " 17.		"		+3.20	1K KK.V
'99. Mar. 17.		K		+3.46	1Kh 34.0m
" " 30.		"		+3.40	1K 37.2
'99. Mar. 17.		g		+3.11	15h 05.5m
" " 30.		"		+3.02	1K V2.3
'99. Mar. 17.		f		+2.62	1Vh 17.0m
" " 30.				+2.V7	1V V.V

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	99 Mar. 16.	99 Mar. 17.	99 Mar. 20.
a	r	4.r	r
b	6	6	r.r
c	2	1.r	2
d	r	4.r	r
e	3.r	3	4
f	4	4	r
g	4	3	2
h	3	3	3
k	2	2	2.r
l	3.r	3	3
m			

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– Canis Minoris.

Comp. Star = +5° 1801 (A3)

Yr. M. Time	Comp. Star	Star meas.	Magn.	Resid.		
99. Apr. 1.		d		+2.90	1h	0.2m
" " 3.		"		+2.72	16	7.2
99. Apr. 1.		e		+2.86	1h	39.0s
" " 3.		"		+2.84	1h	0.0
99. Apr. 1.		f		+2.90	1h	20.0
" " 3		"		+2.96	1h	26.0s
99. Apr. 1.		g		+3.4m	1h	29.m
" " 3.		"		+3.40	1h	39.2
99. Apr. 4.		a		+0.90	1h	41.0
" " 5.		"		+0.89	12	3m.m
99. Apr. 4.		b		+1.21	1h	0.0
" " 5		"		+1.04	12	46.0

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	99. Mar. 1.	99. Mar. 6.	99 Mar. 13.	99 Mar. 18
a				
b	6.r	6	6	
c	r	r.r	6	
d	k		6.r	6
e	2.r		2	2
f	k.r		k	k
g	6	r	r.r	

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R Sextantis ✓

Comp. Star = SAO -7° 2467 (A.2)

Gr. M. Time	Comp. Star	Star meas.	Magn.	Resid.	
'99 Apr. 5.	(A.2)	x		+1.06	1V 26.2m
" " 6.	"	"		+0.97	12 V3.2
'99. Apr. 5.	(A.2)	b		+2.2K	1V 33.V
" " 6.	"	"		+2.22	13 4.V
'99. Apr. 5.	(A.2)	a		+2.7K	1V K3.V
" " 6.	"	"		+2.79	12 K0.V
'99. Apr. 5.	(A.2)	y		+1.1A	1V V3.0
" " 13.		"		+1.1K	1V 32.A
'99. Apr. 13		μ		+K.0V	1V V3.V
" " 2A		"		+K.V6	1K KA.0
" " 29		"		+4.06	13 3.V
'99 Apr. 13.		ν		+3.3V	16 3.V
" " 1A.		"		+3.36	1K 13.V
'99. Apr. 19.		ν'		+3.26	12 VA.V
" "		"		+3.37	1V V.A

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	'99 Nov. 18	'99 Nov. 19.	'99 Nov. 20.
α	4	5	4
β	3.5	4	4
γ	1	1.5	1.5
δ	5	4	4.5
ε	5	4	5
ζ	3.5	4	4
η	4	3.5	4
θ	6	5	5.5
ι	2.5	2.5	2
κ	5	5	4.5
λ			
μ			

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– Pupkeo.

Comp. Star = SD −22° 2187 2 (A.9)

G.M. Time	Comp Star	Star meas.	Magn.	Residuals	
'99 Apr. 10.		p		+K.20	13h 0.1m
'99. Apr. 10.		o		+3.1K	13 1.1
" " 13.		"		+3.70	1K 2.1
'99. Apr. 10.		n		+3.3K	13 2.9
" " 13.		"		+3.6[illegible]	1K 11.2
'99 Apr. 10.		m		+2.92	13 K1.0
" " 13.		"		+2.[illegible]3	1K 20.0[illegible]
'99 Apr. 10.		l		+2.6K	13 1-0.0
" " "		"		+2.2K	1K 33.1
'99. Apr. 10.		g		+1.02	1K 3.1
" " 11.		"		+0.91	1[illegible] K[illegible]
'99 Apr. 10.		b		+1.K7	1K 12.[illegible]
" " 11.		"		+1.3K	1K 16.1

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	99. Apr. 6.	99 Apr. 10.	99 Apr. 13.	99 Apr. 14	
h	4.5	5.5	5		5.00 5 10 5
k	4	5	4.5		4.50 5 10 5
l	4	4.5	5		4.50 5 01 5
m	5.5	4.5	5		5.00 5 10 5
n	3.5	2.5	2.5		2.83 5 11 5
o		5	4.5	4.5	4.67 5 00 5
p		3	3	4	3.33 5 11 5
q					

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Comp. Star = 2 Hr. +74° 5'.9 (9.0)

S. Ursae Minoris.

Comp. Star =

Date	Comp Star	Star meas.	Magn.	Residuals		Gr. M. Time
'99. April 10		a			+1.65	15 41.8
" " 12.		"			+1.52	16 2.5
'99. April 10		b			+1.72	15 50.8
" " 12.		"			+1.71	16 11.0
'99. April 10.		E			+2.93	15 59.5
" " 12.		"			+2.87	17 2.2
'99. Apr. 19.		d			+2.63	15 42.5
" " 20.		"			+2.69	17 43.0
'99. Apr. 19.		e			+2.77	15 50.0
" " 20.		"			+2.78	17 9.2

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= +79° 46′ 7 (9.4)

= +79° 46′ 8 (9.4)

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1895phae.proj.4450

3 Hydrae.

Comp. Star = comp. star K + 76.

Comp. Star =

Date	Comp. Star.	Star meas.	Magn	Residuals	Gr. M. Time.
'99. Apr. 29.	K	ρ	+1.25		14h 25.2m
" May 4.	"	"	+1.26		14 47.5
'99 Apr. 29.	K	φ	+1.20		15 7.2
" May 4.	"	"	+1.31		14 54.5
99. May 4.	K	χ	+0.56		15 10.5
" " 5	"	"	+0.52		14 37.5
99. May 5	K	π	+0.40		14 53.0
" " 9.	"	"	+0.76		14 42.0
'99. May 5.	π	γ	−1.14		15 6.5
" " 12.	"	"	−1.04		14 26.0
'99. May 5.	π	χ	−0.72		15 17.0
99. May 12.	π	θ	−1.42		14 41.5

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1895phae.proj..4450

ν Hydrae.

Comp Star =

Date	Comp Star	Star meas	Magn.	Residuals		Gr. M. Time

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1995phee.proj..4450

'99
Aug 30.

h
k 6
l 4
2
m
3
n
3√
0
√
p
3√
q

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1895phae.proj..4450

U Herculis.

Star L = 8.14 v

Comp. Star = Hagen No. 12.

As Hagen No. 12. had not been measured photometrically, its value was obtained from c.s. L

Date.	Comp. Star.	Star Meas.	Mean Value	Resids.	
'01. July 22.	L	H 12	10.87 v	-.03 v	+2.73 v
" " 25.	"	"	10.94 v	+.04 v	+2.80 v
			10.90 v		
'01, July 20.	H 12	~~H 1~~ t	11.64 v	+.04 v	+0.74 v
" " 22.	"	"	11.57 v	-.03 v	+0.67 v
			11.60 v		
'01, July 20.	H 12	~~H 17~~ u	12.16 v	-.01 v	+1.26 v
" " 22.	"	"	12.18 v	+.01 v	+1.28 v
			12.17 v		
'01. July 22.	H 12	~~H 24~~ x	12.68 v	-.04 v	+1.78 v
			12.83 v	+.07 v	+1.93 v
			12.76 v		
'01 July 23.	H 12	~~H 11~~ s	10.78 v	+.03 v	-0.12 v
" " 26.	"	"	10.72 v	-.03 v	-0.18 v
			10.7 v		
'01 July 26.	H 12	R	10.46 v	+.02	-0.44 v
" " 27.	"	"	10.42 v	-.02	-0.48 v
			10.44 v		

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1895phae.proj..4450

Finial Not.	Finial not.	.01.7.19	.01.7.20	.01.7.22		
s	s					
t	t	1.1	1	1	1.17	100
u	u	2.1	3	4	3.17	102
w	w	3	2	2	2.33	111
x	x	1.1	1	1.1	1.00	101
y	y	3	2.1	3	2.03	010
z	z	2	2.1	3	2.10	101

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R Cassiopeiae Variable.

Comp. Star = K [final mag] = 9.86

Date.	Comp. Star.	Star Meas.	Mean Value	Resids.	
'01. July 26.	K	0	10.02	+.02	+0.66
" Sept. 4.	"	"	9.96	-.04	+0.60
" " 5.	"	"	10.01	+.01	+0.65
			10.00		
'01. July 26.	K	β	10.51	-.03	+1.15
" " 27.	"	"	10.56	+.02	+1.20
" Sept. 4.			10.54		+1.22
'01. July 26.	K	γ	11.17	+.03	+1.81
" " 27.	"	"	11.10	-.04	+1.74
" Sept. 4.			11.14		+1.78
'01. Sept. 4.	K	R	11.84	+.02	+2.48
" " 5.	"	"	11.80	-.02	+2.44
			11.82		
'01. Sept. 4.	K	V	12.20	+.02	+2.84
" " 5.	"	"	12.17	-.01	+2.81
			12.18		

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01.7.22 01.7.23 01.7.25.

Final Notation	Provis. Notation				
l	l				
m	m	5	4	5	4.67 5 1 1 5
n	n	2	2	1.5	1.43 5 0 0 1 5
o	o	4	4	4	4.00 5 0 0 0 5
p	p	2	3	1.5	2.17 5 0 2 1 5
q	q	6	6	6	6.00 5 0 0 0 5
r	t	4	3.5	3.5	3.67 5 1 0 0 5
s	u	3.5	4	3	3.50 5 0 1 1 5
t	w	5	4.5	4.5	4.67 5 1 0 0 5
u	x	5.5	6	5	5.50 5 0 1 1 5

Above change in sequence and extension made July 22. 1901.

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R Ophiuchi:

Comp. Star = m = 9.62

Date.	Comp. Star.	Star Mass.	Mean Value	Resid.	
'01. 9. 6.	m	0	10.18	-.04	+0.56
" " 7.	"	"	10.26	+.04	+0.64
			10.22		
'01. 9. 6.	m	p	10.71	+.01	+1.09
" " 7.	"	"	10.70	.00	+1.08
			10.70		
'01. 9. 6.	m	q	11.33	-.03	+1.73
" " 7.	"	"	11.40	+.02	+1.78
			11.36		
'01. 9. 6.	m	r	11.34	+.04	+1.72
" " 7.	"	"	11.26	-.04	+1.64
			11.30		
~~'01. 9. 6.~~	~~m~~	~~s~~	~~11.90~~		~~+2.36~~ Reject. Bright bad. Star. (sequence light diff.)
" " 7.	"	"	12.18	-.05	+2.56
" " 14	"	"	12.08	+.05	+2.46
			12.13		

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Hagen No.	Not.	1901 Sept. 5.	1901. Sept. 6.	1901 Sept. 7.		
12	o	4	5	5	4.67	1 1 1
19	k	5.5	5	5.5	5.33	0 1 0
23	g	3.5	3	2	2.83	1 0 2
28	n	4	3.5	4.5	4.00	0 1 1
31	r	5.5	5	5	5.17	1 0 0
36	t	3	4	2	3.00	0 2 1
40	u	5	5	5	5.00	0 0 0
44	w	3	4	3	3.33	1 1 1
45	x					

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Variables whose comparison stars have been reduced and mags. reduced to photometric scale, obtained.

T Hydrae
X Cygni
R Pegasi.
R Leonis.
S Virginis.
U Orionis.
R Hydrae.
T Andromedae.
R Coronae.
T Aquarii.
T Virginis.
R Canum Ven.
S Pegasi.
S Can Ven.
R Andromedae.
S Ceti.
R Arietis.
S S Cygni.

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Stars to be observed with Phot. I. near the inter-section of the branches of loop.

3 m.	+3v°	K90	2	21	v4.4ᵛ	+3v	2A.0ᵛ (7.v)ᵛ
	+3v	K92	2	22	10.3ᵛ	+3v	4.6ᵛ (9.0)ᵛ
	+3v	K93	2	22	16.6ᵛ	+3v	0.9ᵛ (9.3)ᵛ
	+3v	K9K	2	22	21.4ᵛ	+3v	6.6ᵛ (A.A)ᵛ
	+3K	Kv1	2	23	6.9ᵛ	+3K	v4.vᵛ (A.A)ᵛ
	+3v	K9A	2	23	2v.6ᵛ	+3v	v.0ᵛ (A.0)ᵛ
	+3v	v01	2	2K	21.6ᵛ	+3v	2.1ᵛ (A.9)ᵛ

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1936phae.proj..445O

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List of Parkhurst's (J. A.) stars sent June 26. 1899.

r 4881	– Lyrae	18h	18m	+2°	30′
r 601	5 Ursae Min.	18	33	+78	58
r 798	R H Herculis	16	6	+25	20
6100	R V "	16	57	+31	22
6r 49	4 Lyrae.	18	11	+36	38
6A 71	V "	19	5	+29	30
6A 99	U Draconis	19	10	+67	7
70 Ar	R I Cygni	19	51	+48	32
(72 48)	– Aquilae	20	2	+12	52 (Anderson. A. N. 3r 20)

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