

OBSERVATIONS

FOR

TIME

Maryatt

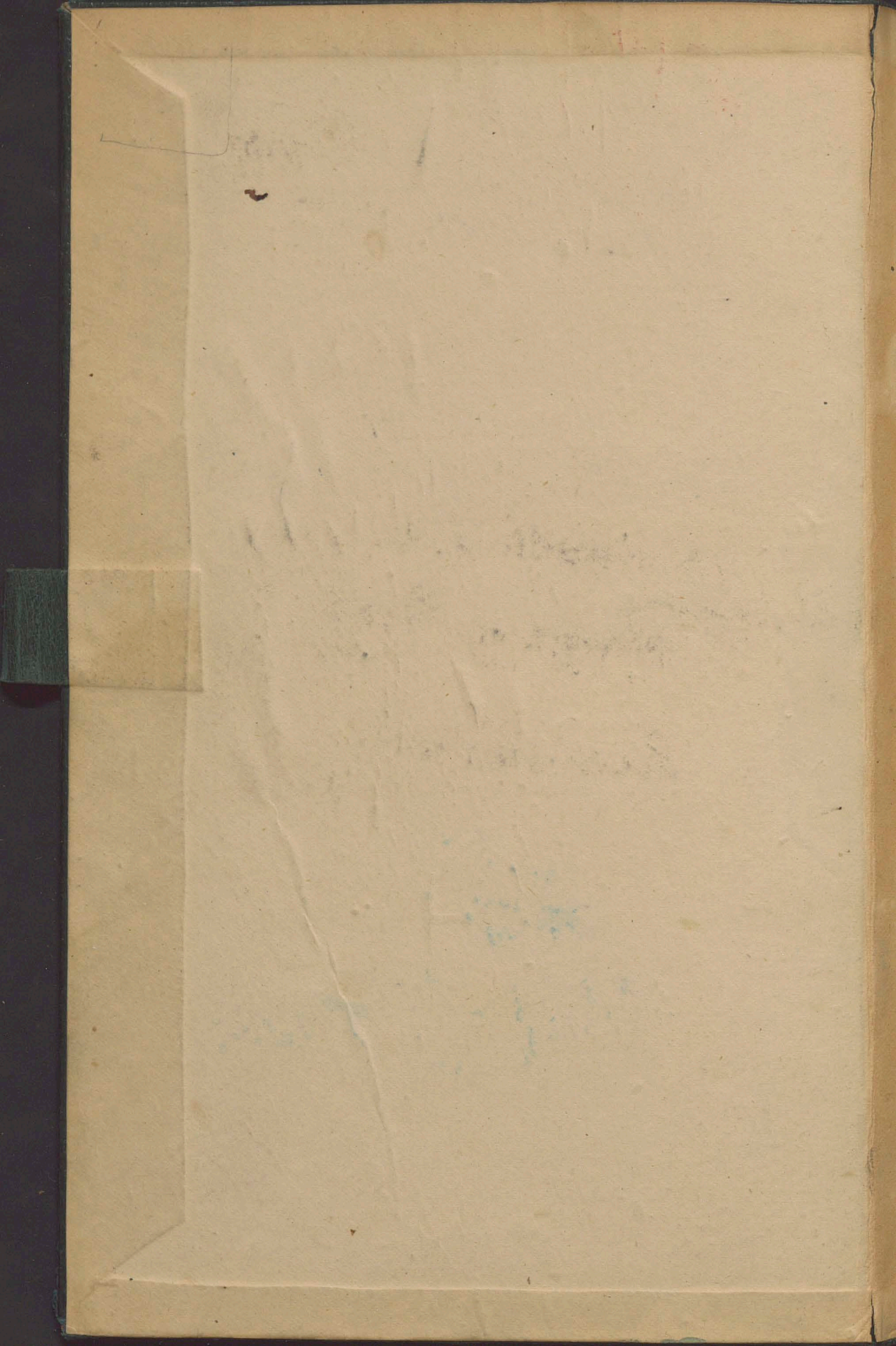
U. S. ENGINEER OFFICE.

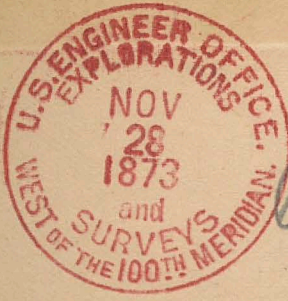
Explorations West of the 100th Meridian.

Pioche

ASTRONOMICAL DEPARTMENT.

No. ~~20~~ 21 1872.





630 Mas.

1129 ENGINEER DEP'T 5072

Capt^l ~~to~~

12 Books like this to
all pages
See Charge of Printing

Full Duty

213

486

Chief of Engineers

2.
Bm

This space to be increased to

Station Chronometer No.				
Object				
Illum. and Description				
Factor	A.	(Azimuth)		
"	B.	(Level)		
"	C.	(Collimation)		
"	F.	(For Broken transits)		
Leve's			E.	W.
"				
Sums				
Threads				
"				
"				
Means.				
Transit mean Thread				
Cor. for Rate				
" " Level				
" " Coll				
" " Azim				
Reduced Transit				
Tabular A. R.				
Error of Chron.				
Observed A. R.				

S. faint
Dans 2

Observer. *[faint signature]*

Same as the others +

x
x

Station
Chron. no.

Pioche, Nevada Sept. 21.
1491.

Object	33° 13' 10"	3 De yrae	5 Aquilae	5 Draconis
Illum. and Description		Lamp East	Lamp East.	Lamp East
Factor	A.	(Azimuth) 0.098	0.422	1.284
" $b = +.377$	B.	(Level) 1.191	0.938	2.267
"	C.	(Collimation) 1.195	1.029	2.266
"	F.	(For Broken transits)		
Level's		E. 28.2 W. 41.3	E. 28.6 W. 42	E. 28 W. 42.5
"		E. 30.0 W. 40.0	E. 30.5 W. 40.5	30.5 W. 40.5
Sums		58.2 81.3	59.1 82.5	83.0
Threads	1	21 ^h 14 ^m 55.1	21 ^h 29 ^m 13.2	21 ^h 41 ^m 02.3
"	2	15 20.9	35.4	59.7
"	3	15 47.0	57.8	42 ^m 56.0
	4	12.3	19.7	51.9
	5	39.1	42.5	44 49.4
Declination	33° 13' 10"	13° 40' 41"	67° 26' 28"	
Means.	21 15 46.88	21 ^h 29 ^m 57.72	21 42 55.92	
Transit mean Thread				
Cor. for Rate		-.02	-.02	-.02
" " Level		+.0	+.35	+.85
" " Coll				
" " Azim				
Reduced Transit				
Tabular A. R.	18 45 22.43	18 59 33.00	19 12 32.03	
Error of Chron.				
Observed A. R.				

1872. Tom. W. Mayatt
 Chron. Negus No 1491

Observer.

δ Aquilae Lamp East	κ Aquilae Lamp East	γ Aquilae Lamp East.	ϵ Draconis Lamp East.
0.575	0.716	0.471	1.545
0.820	0.710	0.901	2.471
1.001	1.008	1.016	2.915
E. 28 W. 43	E. 28.5 W. 44		E. 32.5 W. 41.2
E. 29.5 W. 42.8	E. 29.0 W. 43.5		E. 30.5 W. 42.3
57.5 85.8	57.5 87.5		63.0 83.5
21 ^h 48 45.3	21 ^h 59 ^m 42.9	22 ^h 09 ^m 52.4	22 ^h 16 ^m 53.4
07.2	22 0 04.8	14.8	19 57.1
29.3	26.9	37.0	19 01.0
50.2	48.3	58.3	20 03.1
12.9	10.4	21.1	21 08.3
2° 51' 50"	7° 18' 29"	10° 18' 22"	69° 56' 48"
21 49 28.98	22 0 26.66	22 10 36.72	22 19 00.58
-.01	-.01	-.01	-.01
+ .31	+	+ .34	+ .93
19 19 4.29	19 30 2.07	19 40 12.14	19 48 36.90

Station

Pioche, Nevada, Sept. 21
Chronometer, Negus

Object		α Cephei	Grubdg. 3241	α Lygmi
Illum. and Description		Lamp West	Lamp West	Lamp West
Factor	A.	(Azimuth) 2.891	1.828	0.169
"	B.	(Level) 3.519	2.691	1.399
"	C.	(Collimation) 4.554	3.254	1.410
"	F.	(For Broken transits) -10.92	+10.833	
Leve's		E. 35 W. 39		35 E. 40 W.
"		E. 37 W. 37.3		36.5 39.
Sums		72.0 76.3		71.5 79.0
Threads				
"	1		22 ^h 58 ^m 35.4	23 ^h 07 ^m 29.0
"	2	22 ^h 41 ^m 54.6	59 47.8	0.3
	3	43 32.0	23 0 57.0	30.1
	4	45 12.1	2 06.9	01.6
	5	46 49.2		31.8
Declination		77° 19' 46"	72° 6' 10"	44° 49' 44"
Means.			23 0 57.02	23 8 30.56
Transit mean Thread				
Cor. for Rate			.00	+ .00
" " Level			+1.01	+ .53
" " Coll				
" " Azim				
Reduced Transit				
Tabular A. R.		20 13 11.03	20 30 34.41	20 37 5.90
Error of Chron.				
Observed A. R.				

1872 Wm. W. Marriott

Observer. *Wm. W. Marriott*

No 1491

μ Aquarii	12 yr. cat. 1879	61 Cygni (hr)	1 Pegasi
Lamp West.	Lamp West	Lamp West	Lamp West
0.746	3.890	0.004	0.339
0.186	4.297	1.271	1.003
1.014	5.797	1.271	1.059
	E. 35 W. 40	E. 38.5 W. 38.0	E. 32.3 W. 44.8
	E. 36 W. 39.5	E. 38.0 W. 38.5	E. 32 W. 45.0
	71.0 79.5	76.5 76.5	64.3 89.5
23 ^h 15 ^m 28.7	23 ^h 19 ^m 29.0	23 30 41.4	23 ^h 45 ^m 57.3
57.0	21 36.8	09.2	14.6
13.5	23 41.0	36.5	37.1
35.1	25 48.0	04.6	00.2
16 57.2	27 53.5	31.9	23.4
-9° 27' 34"	80° 4' 91"	38° 7' 30"	19° 15' 45"
23 16 13.10	23 23 41.46	23 31 36.72	23 46 37.32
+1.00	+1.00	+1.01	+1.01
+1.26	+1.62	+1.48	+1.38
		37.21	
20 45 47.07	20 53 21.95	21 1 11.87	21 16 12.16

Station

Piñon Nevada Sept. 21
Chronometer - Regus

Object	β Cephei		Signals.
Illum. and Description	Leamp watt.		Received
Factor	A.	(Azimuth) 1.553	1 3 ^h 0 ^m 28.4
"	B.	(Level) 2.478	2 39.2
"	C.	(Collimation) 2.925	3 49.1
"	F.	(For Broken transits)	4 59.0
			5 1 ^m 09.0
Leve's	E. 36	W. 40.7	6 E. 78.7
"	E. 37	W. 40	7 29.0
Sums	73.0	80.7	8 39.3
Threads			9 49.3
" 1	23 ^h	55 ^m 17.4	10 59.3
" 2	56	22.8	11 2 ^m 09.0
3	57	24.5	12 18.9
4	58	28.7	13 29.3
5	59	32.1	14 39.5
			15 49.4
			16 59.3
			17 3 ^m 09.1
			18 19.1
Declination	70°	0' 12"	19 29.1
			20 39.9
			21 49.6
Means.	23	57 25.10	22 59.7
Transit mean Thread			23 4 ^m 09.5
Cor. for Rate		+ .01	24 19.2
" " Level		+ .93	25 29.8
" " Coll			26 39.3
" " Azim			27 49.9
Reduced Transit	21	26 25.7	28 59.7
Tabular A. R.			29 5 ^m 09.2
Error of Chron.			30 18.4
Observed A. R.			31 29.9

1872, Wm W. Mangatt

Observer. *101112*

No. 1491

Exchange of Signals with Sattlake Obry.

No of Signal.	Received.	Sent.	No Signal
1	3 ^h 28.4 28.5	3 ^h 43 ^m 1.0	1
2	0 ^m 39.2 39.2	11.2	2
3	49.1 49.1	21.1	3
4	59.0 36.0	37.3	4
5	1 ^m 9.0 46.0	41.3	5
6	18.7 51.7	51.1	6
7	01.2		7
8	29.0 16.4	41.4 01.6	8
9	26.3	12.2	9
10	36.4		10
11	46.0	21.3	11
12	56.0	31.6	12
13	2 ^m 06.3	41.1	13
14	16.25	51.2	14
15	26.24	45 01.5	15
16	36.73	11.6	16
17	46.52	21.9	17
18	56.1	31.6	18
19	3 ^m 06.1	41.4	19
20	16.9	51.2	20
21	26.6	46 07.7	21
22	36.7	11.7	22
23	46.5	22.0	23
24	56.2	31.8	24
25	06.9	41.6	25
26	16.3	51.5	26
27	26.8	47 01.7	27
28	36.8	11.8	28
29	46.2	21.8	29
30	55.4	32.1	30
31	5 ^m 06.9	41.8	31
		51.4	

Omitted 31 by mistake

Station

Pioche, Nevada, Sept. 21
 Chronometer, No. 1491

Object	50 Cassiopeae	α Arietis	ξ' Ceti
Illum. and Description	Leamp. West.	Leamp. West	Leamp. West
Factor	A. (Azimuth) 1.785	0.282	0.500
" $b = +.377$	B. (Level) 2.659	1.048	0.878
"	C. (Collimation) 3.203	1.085	1.011
"	F. (For Broken transits)		
Levels		E. 34 W. 46	E. 35 W. 45
"		E. 35 W. 45	34 46
Sums		69.0 91.0	69.0 91.0
Threads			
" 1	4 ^h 19 40.5	4 29 38.1	4 ^h 35 56.9
" 2	21 ^m 17.2	02.3	20.1(?)
3	22 48.0	25.2	41.0
4	24 24.1	48.9	02.8
5	25 ^m 58.6	12.7	37 24.9
Declination	71° 48' 03"	22° 51' 35"	8° 14' 58"
Means.	4 22 51.68	4 30 25.44	4 36 41.14
Transit mean Thread	4 23 01.68	+1.06	-.39
Cor. for Rate	-.01	00	00
" " Level	+1.00	+1.39	+1.33
" " Coll		+1.18	+1.18
" " Azim		-.51	-.90
Reduced Transit		4 30 25.50	4 36 40.75
Tabular A. R.	1 52 37.66	2 0 0.14	2 6 15.33
Error of Chron.		2 30 25.36	2 30 25.42
Observed A. R.			

probae mptake 1-10°
 forward wire

Not good

1872. Wm. W. Meany att.
August 14 91

Observer.

α Cassiopeae	γ Ceti	δ Ceti
Le amp East	Le amp East	Le amp East
1.228	0.577	0.565
2.225	0.818	0.828
2.542	1.001	1.002
- 5.44		
E.27 W.50	E.29 W.51	E.34 W.46
E.33 W.47	E.34 W.46	E.35 W.45
62 97.0	63.0 97.0	69.0 91.0
4 ^h 47 09.1	5 ^h 6 ^m 24.6	5 25 19.5
Dist 2 ^d thread	46.2	41.1
58.7	07.9	03.2
54.0	29.3	24.4
50.2	7 ^m 51.1	26 47.1
66° 49' 31"	2° 41' 59"	2° 35' 26"
4 48 59.17	5 7 07.82	5 26 3.06
+ 2.60	-.91	-.89
0 0.0	0 0.	+ 01
+ .84	+ .31	+ .31
- .46	- .78	- .78
+ 2.22	- 1.04	- 1.02
48 61.77	06.91	2.18
2 18 36.86	2 36 42.42	2 55 37.56
2 30 24.91	2 30 24.49	2 44.62

Piöche, Nevada, Sept. 21

Chronometer, Venus

Station

Object	K Cephei	Grubdg. 3241	o Lygni
Illum. and Description	Lamp west	Lamp west	Lamp west
Factor	A.		
" $t = +377$	B.		
"	C.		
"	F.		
Leve's	E. 35 W. 39		35 E. 40 W.
"	E. 37 W. 37.3		36.5 39.
Sums	72.0 76.3		71.5 79.0
Threads			
" 1		22 ^h 58 ^m 35.4	23 ^h 07 ^m 29.0
" 2	22 ^h 41 ^m 54.6	59 47.8	0.3
3	43 32.0	23 0 57.0	30.1
4	45 12.1	2 06.9	01.6
5	46 49.2		31.8
Declination	77° 19' 46"	72° 6' 10"	44° 49' 44"
Means.		23 0 57.02	23 8 30.56
Transit mean Thread			
Cor. for Rate		.00	+ .00
" " Level		+1.01	+ .53
" " Coll			
" " Azim			
Reduced Transit			
Tabular A. R.	20 13 11.03	20 30 34.41	20 37 5.90
Error of Chron.			
Observed A. R.			

1872 Wm. W. Marriott

Observer.

1872

No. 1491

μ Aquarii	12 yr. Cat. 1879	61 Cygni (m)	1 Pegasi
Lamp West.	Lamp West	Lamp West	Lamp West
0.746	3.890	0.004	0.339
0.186	4.297	1.271	1.003
1.014	5.797	1.271	1.059
	E. 35 W. 40	E. 38.5 W. 38.0	E. 32.3 W. 44.5
	E. 36 W. 39.5	E. 38.0 W. 38.5	E. 32 W. 45.0
	71.0 79.5	76.5 76.5	64.3 89.5
23 ^h 15 ^m 28.7	23 ^h 19 ^m 29.0	23 30 41.4	23 ^h 45 ^m 57.3
57.0	21 36.8	09.2	14.6
13.5	23 41.0	36.5	37.1
35.1	25 48.0	04.6	00.2
16 57.2	27 53.5	31.9	23.4
-9° 27' 34"	80° 4' 91"	38° 7' 30"	19° 15' 45"
23 16 13.10	23 23 41.46	23 31 36.72	23 46 37.32
+1.00	+1.00	+1.01	+1.01
+1.26	+1.62	+1.48	+1.38
		37.21	
20 45 47.07	20 53 21.95	21 1 11.87	21 16 12.16

Station

Piñon Nevada Sept. 21
Chronometer Negus

Object	β Cephei		Signals.
Illum. and Description	Lamp West. ...		Received
Factor	A.	(Azimuth) 1.553	1 3 ^h 0 ^m 28.4
"	B.	(Level) 2.478	2 39.2
"	C.	(Collimation) 2.925	3 49.1
"	F.	(For Broken transits)	4 59.0
			5 1 ^m 09.0
Levels	E. 36	60.40.7	6 E. 18.7
"	E. 37	60.40	7 29.6
Sums	73.0	80.7	8 39.3
Threads			9 49.3
" 1	23 ^h 55 ^m	17.4	10 59.3
" 2	56	22.8	11 2 ^m 09.0
3	57	24.5	12 18.9
4	58	28.7	13 29.3
5	59	32.1	14 39.5
			15 49.4
			16 59.3
			17 3 ^m 09.1
			18 19.1
Declination	70° 0'	12"	19 29.1
			20 39.9
			21 49.6
Means.	23	57 25.10	22 59.7
Transit mean Thread			23 4 ^m 09.5
Cor. for Rate		+ .01	24 19.2
" " Level		+ .93	25 29.8
" " Coll			26 39.3
" " Azim			27 49.9
Reduced Transit	21	26 25.7	28 59.7
Tabular A. R.			29 5 ^m 09.2
Error of Chron.			30 18.4
Observed A. R.			31 29.9

1872, Name W. Maygatt

Observer. [unclear]

No. 1491

Exchange of Signals with Sattlake Obry.

No of Signal.	Received,	Sent,	No Signal
1	3 ^h 28.4 28.57	3 ^h 43 ^{min.} 1.0	1
2	0 ^m 38.2 38.2	11.2	2
3	49.1 49.1	21.1	3
4	59.0 36.0	31.3	4
5	1 ^m 9.0 46.0	41.3	5
6	18.7 55.7	51.1	6
7	01.2	01.6	7
8	29.0 16.4	41.4 01.6	7
9	26.3	12.2	8
10	36.4	21.3	9
11	46.0	31.6	10
12	56.0	41.1	11
13	2 ^m 06.3	51.2	12
14	16.25	01.5	13
15	26.64	11.6	14
16	36.73	21.9	15
17	46.52	31.6	16
18	56.1	41.4	17
19	3 ^m 06.1	51.2	18
20	16.9	01.7	19
21	26.6	11.7	20
22	36.7	22.0	21
23	46.5	31.8	22
24	56.2	41.6	23
25	06.9	51.5	24
26	16.3	01.7	25
27	26.8	11.8	26
28	36.8	21.8	27
29	46.2	32.1	28
30	55.4	41.8	29
31	5 ^m 06.9	51.4	30

Omitted 31 by mistake

Station

Pioche, Nevada, Sept. 21
 Chronometer, No. 1491

Object	50 Cassiopeae	α Arietis	ξ Ceti
Illum. and Description	Leamp West.	Leamp West	Leamp West
Factor	A. (Azimuth) 1.785	0.282	0.500
" $\mu = +.377$	B. (Level) 2.659	1.048	0.878
"	C. (Collimation) 3.203	1.085	1.011
"	F. (For Broken transits)		
Levels		E. 34 W. 46	E. 35 W. 45
"		E. 35 W. 45	34 46
Sums		69.0 91.0	69.0 91.0
Threads			
" 1	4 ^h 19 40.5	4 29 38.1	4 ^h 35 56.9
" 2	21 ^m 17.2	02.3	20.1(8)
3	22 48.0	25.2	41.0
4	24 24.1	48.9	02.8
5	25 ^m 58.6	12.7	37 24.9
Declination	71° 48' 03"	22° 51' 35"	8° 14' 58"
Means.	4 22 51.68	4 30 25.44	4 36 41.14
Transit mean Thread	4 23 01.68	+ .04	- .59
Cor. for Rate	- .01	00	00
" " Level	+ 1.00	+ .39	+ .33
" " Coll	Not good	+ .18	+ .18
" " Azim		- .51	- .90
Reduced Transit		4 30 25.50	30.75
Tabular A. R.	1 52 37.66	2 0 0.14	2 6 15.33
Error of Chron.		2 30 25.36	2 30 25.42
Observed A. R.			

Indicate mistake of 10° forward wire

Not good

1872. Wm. W. Mearns
 August No 1491

Observer.

2 Cassiopeae	γ Ceti	δ Ceti
Le amp East	Le amp East	Le amp East
1.228	0.577	0.565
2.225	0.818	0.828
2.549	1.001	1.002
- 5.44		
E. 29 W. 50	E. 29 W. 51	E. 34 W. 46
E. 33 W. 47	E. 34 W. 46	E. 35 W. 45
62 97.0	63.0 97.0	69.0 91.0
4 ^h 47 09.1	5 ^h 6 ^m 24.6	5 25 19.5
Lost 2 ^d thread	46.2	41.1
58.7	07.9	03.2
54.0	29.3	24.4
50.2	7 ^m 51.1	26 47.1
66° 49' 31"	2° 41' 59"	2° 35' 26"
4 48 59.17	5 7 07.82	5 26 3.06
+ 2.60	-.91	-.89
00.0	00.	+01
+ 84	+ .31	+ .31
- .46	- .18	- .18
+ 2.22	- 1.04	- 1.02
48 61.77	06.91	2.18
2 18 36.86	2 36 42.42	2 55 37.56
2 30 24.91	2 30 24.49	24.62

Station *Pioche Nevada, Sept. 25th*
'Chronometer 'Regisur No 1491

Object	51 Cephei (H.)	50 Draconis	8 Draconis
Illum. and Description	Le amp West.	Le amp West.	Le amp West.
Factor	A.	(Azimuth)	2.386
<i>b = 4.065</i>	B.	(Level)	3.124
<i>" c = 0</i>	C.	(Collimation)	3.931
<i>"</i>	F.	(For Broken transits)	-10.20
Leve's	E. 33 W. 27.7	E. 35 W. 30	34 E. 33 W.
"	E. 30 W. 31.0	E 37.5 W. 28	29 E. 38 W.
Sums	63.0 687	725 58.0	63.0 71.0
Threads			
" 1			21 ^h 41 ^m 2.1
" 2	21 ^h 2 ^m 40 ^s .0	21 ^h 19 ^m 30 ^s .0	42 0.2
3	10 15.0	20 54.5	42 56.0
4	17 33.0	22 20.1	43 52.3
5		23 45.0	44 49.8
Declination	(Lower Culm.) 87° 14' 00"	75° 17' 11"	67° 26' 29"
Means.			21 42 56.08
Transit mean Thread			- .45
Cor. for Rate			- .03
" " Level			+ .15
" " Coll			
" " Azim			- .57
Reduced Transit			55.63
Tabular A. R.	6 39 58.04	18 50 29.06	19 12 31.80
Error of Chron.			2 30 23.83
Observed A. R.			

1872. Wm. W. Mayatt
 Reg. 1491

Observer.

♂ Aquilae	♀ Aquilae	γ Aquilae	ε Draconis
deamp West	deamp West.	deamp West.	deamp West
0.575	0.716	0.471	1.545
0.820	0.710	0.901	2.471
1.001	1.008	1.016	2.915

E. 31 W. 38.	E. 29 W. 41	E. 32 W. 38	E. 36.5 W. 33.5
E. 30 W. 39	E. 29 W. 41	E. 31 W. 39	E. 33.5 W. 36.5
61 77.0	58.0 82.0	63.0 77.0	70.0 70.0

21 ^h 48 ^m 43.8	21 ^h 59 ^m 41.0	22 ^h 9 ^m 51.2	22 ^h 16 ^m 53.9
49 5.9	22 0 03.4	10 14.0	17 59.1
27.1	25.2	35.6	19 0.2
49.2	46.8	57.7	20 4.7
50 10.0	1 8.6	11 19.8	21 7.9

2° 51' 50" - 7° 18' 29" 10° 18' 22" 69° 56' 48"

21 49 27.20	22 0 25.0	22 10 35.66	22 19 1.16
+ .29	.35	+ .26	- .54
- .02	- .02	- .01	- .01
+ .05	+ .05	+ .06	+ .16
+ .26	+ .32	+ .21	- .69
27.49	25.35	22 10 35.92	0.62
19 19 4.22	19 30 2.01	19 40 12.07	19 48 36.65
2 30 23.27	2 30 23.34	2 30 23.85	2 30 23.97

Station *Pioche Nevada, Sept. 25 1872.*
Chronometer 'Regis' No. 1491

Object	τ Aquilae	κ Cephei	π Capricorni
Illum. and Description	Lamp West.	Lamp East.	Lamp East.
Factor	A. (Azimuth)	2.891	0.879
"	B. (Level)	3.519	0.584
"	C. (Collimation)	4.554	1.055
"	F. (For Broken transits)		
Levels	E. 36 W. 34		34 E. 0 36 W. 0
"	E. 39 W. 31.3		35.0 35.0
Sums	75.0 65.3		69.0 71.0
Threads			
" 1	22 ^h 27 ^m 34.7	22 ^h 40 ^m 15.0	22 ^h 49 ^m 39.2
" 2	57.1	41 54.9	50 2.0
3	28 18.5	43 34.8	25.3
4	40.3	45 11.3	47.4
5	29 2.6	46 52.9	51 11.1
Declination	6° 55' 18"	77° 19' 47"	-18° 37' 41"
Means.	22 28 18.64	22 43 33.78	22 50 25.0
Transit mean Thread	+ .29	- 1.06	- .44
Cor. for Rate	0 0	+ .01	+ .01
" " Level	+ 0 6	+ .23	+ .04
" " Coll		Not good (R)	
" " Azim	+ .23	- 1.30	+ .39
Reduced Transit	18.93	- .72	25.44
Tabular A. R.	19 57 54.96	20 13 10.65	20 19 6.73
Error of Chron.	2 30 23.97		2 30 23.71
Observed A. R.			

Mex. R. Mayate
Mexico 1491

Observer.

Grubdg. 3241. Leamp East.	♂ Byggn Leamp East.	♂ Aquari Leamp East.	♂ Byggn (pr.) Leamp East.
1.828	0.169	.746	0,004
2.691	1.399	.686	1.271
3.254	1.410	1.014	1.271
	E.36 W.34.0	E.35 W.36	E.41 W.29
	E.33 W.37.0	E.34.5 W.36	E.37 W.33
	.69.0 71.0	69.5 72.0	78.0 62.0
22 ^{h.} 58 ^{m.} 36.6	23 ^{h.} 6 ^{m.} 28.2	23 ^{h.} 15 ^{m.} 26.3	23 ^{h.} 30 ^{m.} 40.2
59 46.9	58.9	48.7	31 7.9
23 0 59.5	7 29.9	16 10.8	35.7
2 8.0	8 0.0	32.2	32 3.0
3 20.8	31.1	54.9	31.1
72° 6' 12"	44° 49' 44"	9° 27' 34"	38° 5' 37"
23 0 58.36	23 7 29.62	23 16 10.58	23 21 35.58
- .63	+ .04	.41	.12
+ .02	+ .02	+ .63	+ .04
+ .17	+ 0.9	+ .04	+ .08
- .82	- .07	+ .34	.00
57.73	29.66	10.99	25.70
20 30 34.17	20 37 5.81	20 45 47.02	21 1 11.80
2 30 23.56	2 36 23.85	2 80 23.97	2 30 23.90

Station *Pioche, Nevada, Sept. 25. 1872.*
Chronometer, No. 1491.

Object	<i>1 Pegasi</i>	<i>β Cephei</i>	<i>ε Pegasi</i>	
Illum. and Description	<i>lamp East.</i>	<i>lamp East.</i>	<i>lamp East.</i>	
Factor	A. (Azimuth) <i>0.339</i>	<i>1.553</i>	<i>0.485</i>	
"	B. (Level) <i>1.003</i>	<i>2.478</i>	<i>0.889</i>	
"	C. (Collimation) <i>1.059</i>	<i>2.925</i>	<i>1.013</i>	
"	F. (For Broken transits)			
Levels	<i>E. 34 W. 37</i>	<i>E. 38.5 W. 32.5</i>	<i>35 E. 36 W.</i>	
"	<i>E. 32 W. 39</i>	<i>E. 37. W. 34</i>	<i>31 40</i>	
Sums	<i>66.0 76.0</i>	<i>75.5 66.5</i>	<i>66 76.0</i>	
Threads				
" 1	<i>23^h 45^m 50.0</i>	<i>23^h 55^m 19.5</i>	<i>0^h 7^m 35.5</i>	
" 2	<i>46 12.5</i>	<i>56 23.0</i>	<i>57.7</i>	
3	<i>36.0</i>	<i>57 27.0</i>	<i>8 20.0</i>	
4	<i>58.4</i>	<i>58 28.9</i>	<i>41.4</i>	
5	<i>47 21.6</i>	<i>59 33.6</i>	<i>9 4.1</i>	
Declination	<i>19° 15' 46"</i>	<i>70° 0' 14"</i>	<i>9 17 36</i>	
Means.	<i>23 46 35.70</i>	<i>23 57 26.40</i>	<i>0 8 19.74</i>	
Transit mean Thread	<i>.26</i>	<i>-.48</i>	<i>+.34</i>	
Cor. for Rate	<i>+.04</i>	<i>+.05</i>	<i>+.06</i>	
" " Level	<i>+.07</i>	<i>+.16</i>	<i>+.06</i>	
" " Coll				
" " Azim	<i>+.15</i>	<i>-.69</i>	<i>+.22</i>	
Reduced Transit	<i>46 35.96</i>	<i>25 92</i>	<i>20 08</i>	
Tabular A. R.	<i>21 16 12.11</i>	<i>21 26 62.40</i>	<i>21 37 56.16</i>	
Error of Chron.	<i>2 30 23.85</i>	<i>2 30 23.52</i>	<i>2 30 23.92</i>	
Observed A. R.				

Mr. W. Mayate
 Regus 1491

Observer. 10173

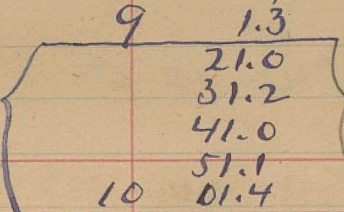
Exchange of Signals with Sate Lake Obry.

Received

Sent

Received	Sent
1 st 51.3	1 st 37 ^{min} 19.5
6 0.8	29.1
10.6	39.9
20.5	49.9
30.8	59.9
40.5	38 09.9
50.6	20.0
7 0.9	30.0
10.9	40.0
20.9	50.0
30.8	39 59.9
40.8	10.2
50.8	20.0
8 1.1	30.1
10.8	40.1
21.2	50.0
31.0	40 50.2
41.0	10.2
51.1	20.2
9 1.3	31.5
21.0	40.4
31.2	49.9
41.0	41 0.2
51.1	10.5
10 01.4	20.1
21.4	30.4
31.5	40.2
	50.5
	42 0.4
	10.9
	20.3

These two omitted:
 They not recorded on the paper.



pen didn't work

In the above list, two were lost at the beginning or end either the 1st + 2^d or the 30th and 31st. Two are also omitted as indicated

Station *Pioche, Nevada, Sept. 25, 1872.*

Chronometer	<i>Wheeler (S) No 1491</i>		
Object	<i>Piscium</i>	<i>Grubdg. 4163</i>	<i>W Piscium</i>
Illum. and Description	<i>Leamp E. & W.</i>	<i>Leamp West.</i>	<i>Leamp West.</i>
Factor + .40	A. (Azimuth) 2.782	2.083	0.529
<i>b = -29</i>	B. (Level) 3.436	2.891	0.855
<i>c = -06 L.E.</i>	C. (Collimation) 4.421	3.564	1.006
"	F. (For Broken transits)	-21.695	-21.695
Levels	<i>E. 38 W. 36</i>		<i>36 E. 37.5 W.</i>
"	<i>E. 39 W. 35</i>		<i>38.5 35.5</i>
Sums	<i>.77.0 71.0</i>		<i>74.5 73.0</i>
Threads			
" 1	<i>2^h 1^m 23.5</i>		
" 2	<i>2^m 59.3</i>		
3	<i>4^m 37.0</i>	<i>2^h 19 08.0</i>	<i>2^h 23^m 10.3</i>
4	<i>Reversed</i>	<i>20 24.5</i>	<i>32.4</i>
5	<i>6^m 13.3</i>	<i>21 42.0</i>	<i>54.6</i>
	<i>7^m 49.1</i>		
Declination	<i>96° 55' 18"</i>	<i>73° 42' 05"</i>	<i>6° 9' 34"</i>
Means.		<i>2 19 07.2</i>	
Transit mean Thread			
Cor. for Rate			
" " Level			
" " Coll			
" " Azim			
Reduced Transit			
Tabular A. R.	<i>23 34 11.81</i>	<i>23 48 42.41</i>	<i>23 52 46.87</i>
Error of Chron.			
Observed A. R.			

M. H. Mayatt

Observer.

γ Andromeda	γ Pegasi	κ Cassiopeae	ζ Cassiopeae
deamp West.	deamp West.	deamp West.	deamp West.
0.188	0.414		2.188
1.121	0.946		2.972
1.137	1.033		3.691
			- 21.695
E. 35 W. 39	E. 44 W. 29	E. 43.5 W. 31.5	E. 36 W. 41
E. 37 W. 37	E. 38 W. 36	E. 41 W. 35	E. 42 W. 35
72.0 76.0	82.0 65.0	84.5 66.5	78.0 76.0
2 ^h 31 ^m 23.3	2 ^h 36 ^m 20.1	2 ^h 54 ^m 38.6	3 ^h 7 ^m 43.2
48.6	43.0	55 26.3	
32 12.4	37 5.1	56 12.9	7 43.2
32 37.5	27.7	59.1	9 5.0
33 02.3	50.2	57 45.7	10 25.5
28° 23' 18"	14° 28' 36"		74° 16' 83"
2 32 12.82	2 37 5.22	2 56 12.52	3 7 44.50
.00	+ .01		+ .02
+ .42	- .27		- .81
+ .08	+ .06		+ .22
+ .08	+ .17		- .88
2 32 12.56	2 37 5.19		0 7 48.00
0 1 49.03	0 6 41.29		0 37 19.23
2 30 23.53	2 30 23.90		2 30 23.67

Station *Picche Nevada* Sept 25 1842
 Chronometer Reg. No. 1491

Object	μ Andromeda & Piscine	β Andromeda	
Illum. and Description	Leamp East.	Leamp East.	
Factor	A. (Azimuth)	0.505	
"	B. (Level)	0.866	
"	C. (Collimation)	1.008	
"	F. (For Broken transits)		
Level's	E. 37 N. 40	40 E. 37.5 W.	
"	E. 34 N. 44	38. N. 40	
Sums	71.0 84.0	78.0 77.5	
Threads	Duct.	7° 12' 19"	
"			
" 1	3 ^h . 19 ^m . 10.5	3 ^h 26 ^m 0.2	3 ^h 32 ^m . 7.7(?)
2	38.3(?)	22.3	32 33.4
3	20 6.0	44.2	33 00.6
4	32.9	27 5.6	26.9
5	21 1.0	28.1	54.4
Means.	3 20 65.74	3 26 44.08	3 33 05.0
Transit mean Thread			
Cor. for Rate		+ .03	
" " Level		+ .25	
" " Coll		- .06	
" " Azim		+ .20	
Reduced Transit		3 26 44.00	
Tabular A. R.		0 56 20.60	
Error of Chron.		23.40	
Observed A. R.			

Mr. W. Mayate

Observer.

38 Cassiopea

dummy art.

1.507

2.442

2.870

+ .047

E. W.

~~E. 46 W. 32~~ = 46.0 32.0

~~E. 37 W. 17~~ = 47.0 31.0

E 77.0 79.0 = 93.0 63.0

69 36 24"

3h. 50^m. 8.8

51 11.3

(Cassiopea) lost

53 15.0

54 18.9

3 52 13.3

+ .05

- .70

- .17

- .60

3 52 12.21

1 21 48.90

30 23.31

Station *Pioche, Nevada Sept. 27, 1872.*

Object	κ Aquilae	γ Aquilae	ϵ Draconis	
Illum. and Description	Le amp East.	Le amp East.	Le amp East	
Factor	A. (Azimuth) 0.716	0.471	1.545	
"	B. (Level) 0.710	0.901	2.471	
"	C. (Collimation) 1.008	1.016	2.915	
"	F. (For Broken transits)			
Levels	E 21 N. 25	E. 21.8 N. 25.7	E. 23 W. 25	
"	E. 25 N. 21	E 19 N. 28	E 25 N. 23	
Sums	46.0 46.0	408 537	48.0 48.0	
Threads				
" 1	21 ^h 59 ^m 39.9	22 9 49.3	22 ^h 16 51.0	
" 2	2 ^t 0 2.0	10 11.8	17 55.0	
3	24.3	34.1	18 59.1	
4	45.5	55.9	20 0.9	
5	1 8.1	11 18.4	21 5.4	
Declination	-7° 18' 29"	10 18 22	69 56 49	
Means.	22 0 23.96	22 10 33.90	22 18 58.28	
Transit mean Thread	- 15	- 11	+ .14	
Cor. for Rate	- .03	- .03	- .02	
" " Level	+ .04	+ .05	+ .12	
" " Coll	- .06	- .06	- .17	
" " Azim	- .10	- .07	+ .21	
Reduced Transit	23.85	33.79	18 58.42	
Tabular A. R.	19 30 1.98	19 40 12.04	19 48 36.51	
Error of Chron.	- 30 21.87	- 30 21.75	- 30 21.91	
Observed A. R.				

Wm. H. Mayhew

Observer.

♄ Aquilae		♁ Aquilae		♃ Cephei		♄ Gombdg. 3241	
de amp East		de amp East.		de amp East		de amp West.	
0.519				2.891		1.828	
0.863				3.519		2.691	
1.007				4.554		3.254	
E. 20.5 W. 28				E. 24 W. 25		E. 27 W. 25	
E. 20. W. 28.5				E. 25 W. 25		E. 31 W. 22	
40.5 56.5				49.0 50.0		58.0 47.0	
22 29 33.2	22 34 22.1	22 40 12.8	22 58 34.5				
55.2	44.2	41 53.0	59 46.9				
28 17.1	35 6.2	43 33.0	23 0 56.0				
28 38.5	27.3	45 9.1	2 7.2				
29 1.0	49.4	46 57.0	3 18.0				
6 55 18		77 19 47	72° 6' 12"				
22 28 17.0	22 35 5.84	22 43 31.78	23 0 56.52				
- 11		+ 31	- 26				
-.02	-.01	-.01	.00				
+ .04		+ .18	- .17				
-.06		-.26	+ .18				
-.07		+ 40	- 29				
16.89		3209	16 26				
19 57 54.93		20 13 10.45	20 30 34.03				
2 30 22.16		2 30 21.64	2 30 22.23				

Station *Pioche, Nevada, Sept. 27, 1892.*

Object		<i>α Cygni</i>	<i>μ Aquarii</i>	<i>β Cygni (pr)</i>
Illum. and Description		<i>Lamp West.</i>	<i>Lamp West.</i>	<i>Lamp West.</i>
Factor	A.	(Azimuth) <i>0.169</i>	<i>0.746</i>	<i>0.004</i>
"	B.	(Level) <i>1.399</i>	<i>0.686</i>	<i>1.271</i>
"	C.	(Collimation) <i>1.410</i>	<i>1.014</i>	<i>1.271</i>
"	F.	(For Broken transits)		
Levels			<i>E. 28 W. 25</i>	<i>E. 31 W. 21.5</i>
"			<i>E. 29 W. 24</i>	<i>E. 27.5 W. 25</i>
Sums			<i>57.0 49.0</i>	<i>58.5 46.5</i>
Threads	(1)	<i>23⁵ 6 26.2</i>		
"	1	(2) <i>57.7</i>	<i>23 16 24.9</i>	<i>23 30 38.2</i>
"	2	(3) <i>27.6</i>	<i>15 47.4</i>	<i>31 6.6</i>
	3	(4) <i>58.5</i>	<i>16 8.9</i>	<i>33.7</i>
	4	(5) <i>29.2</i>	<i>16 31.2</i>	<i>32 1.3</i>
	5		<i>16 53.3</i>	<i>32 29.1</i>
Declination		<i>44° 49' 45"</i>	<i>-9° 27' 34"</i>	<i>38° 6' 97"</i>
Means.		<i>23 7 27.84</i>	<i>23 16 9.14</i>	<i>23 31 33.78</i>
Transit mean Thread		<i>-.13</i>	<i>+.15</i>	<i>+ .01</i>
Cor. for Rate		<i>.00</i>	<i>+.01</i>	<i>+.02</i>
" " Level		<i>-.08</i>	<i>-.04</i>	<i>-.08</i>
" " Coll		<i>+.08</i>	<i>+.06</i>	<i>+.07</i>
" " Azim		<i>-.03</i>	<i>+.12</i>	<i>00</i>
Reduced Transit		<i>27.81</i>	<i>09.29</i>	<i>23 31 33.79</i>
Tabular A. R.		<i>20 37 5.76</i>	<i>20 45 47.00</i>	<i>21 1 11.77</i>
Error of Chron.		<i>22.25</i>	<i>2 30 22.29</i>	<i>2 30 22.02</i>
Observed A. R.				

W. W. Mayall, Observer.

β Cygni	1 Pegasi	β Cephei	11 Cephei
damp West.	damp West	damp West	damp East
0.165	0.339	1.553	1.642
1.139	1.003	2.478	2.547
1.151	1.059	2.925	3.030
	-.047	+ .5352	+ 18.3 21.695
E. 25.5 N. 27		E. 30 N. 23.5	E. 25 N. 30.6
E. 25. N. 28		E. 29 N. 24.0	E 23 N. 32.
50.5 55.0		59.0 47.5	48.0 62.6
23 37 ^m 3.1	23 45 47.6	23 55 16.4	0 8 14.5
28.6	46 11.2	56 22.0	9 22.4
(53.2) 53.2	46 33.9(5)	57 24.5	10 27.1
38 18.3	57.0	(lost in clouds)	
43.1	47 20.3	59 31.5	
29° 41' 88"	19° 15' 46"	70° 0' 14"	70 43 38
23 37 53.26	23 46 33.97	23 57 24.25	0 10 27.07
+ .05	+ .07		
+ .02	+ .02		
- .07	- .06		
+ .07	+ .06		
+ .08	+ 33.89		
13.31	34.04		
21 7 31.24	21 16 12.09	21 26 62.31	21 40 04.95
22.07	2 30 21.95		

Not good

Station *Piöche Nevada Sept. 27, '72.*

Object				
Illum. and Description				
Factor	A.	(Azimuth)		
"	B.	(Level)		
"	C.	(Collimation)		
"	F.	(For Broken transits)		
Levels			E.	W.
"				
Sums				
Threads				
"				
"				
Means.				
Transit mean Thread				
Cor. for Rate				
" " Level				
" " Coll				
" " Azim				
Reduced Transit				
Tabular A. R.				
Error of Chron.				
Observed A. R.				

Exchange of Signals with Sutt Lake Obiz.

(Chron. begins 1491)

No of Sig.	Received.		Sent.	
	1 st	39 ^m	2 nd	Observer
1		51.6		3.0
2				13.0
3	40	1.4		23.4
		11.8		
4		22.3		33.3
5		32.2		43.2
6		42.1		53.7
7		52.0	1	3.4
8	41	2.0		13.2
9		12.4		23.4
10		22.4		33.5
11		32.4		43.3
12		42.1		53.8
13		52.2	2	3.3
14	42	2.1		13.3
15		12.4		23.4
16		22.6		33.4
17		32.3		43.2
18		42.6		53.8
19		52.5	3	3.1
20	43	2.2		13.2
21		12.5		23.8
22		22.7		33.7
23		32.4		43.8
24		42.6		53.9
25		52.6	4	3.7
26	44	2.6	Omitted by accident. (S)	
27		12.7		23.8
28		23.0		33.8
29		32.7		43.7
30		42.6		54.2
31		52.8	5	3.7

Station Pioche, Nevada, Sept. 27, 1881

Object	α Picium	δ Andromeda	γ Ceti
Illum. and Description	Leamp East.	Leamp East.	Leamp East.
Factor	A. (Azimuth) 0.529	0.188	
" $b = +.02$	B. (Level) 0.855	1.121	
" $b = .06 - b.t.$	C. (Collimation) 1.006	1.137	
"	F. (For Broken transits)		
Levels	E. 27 W. 28	E. 30 W. 25	E. 25 W. 30.6
"	E. 25 W. 30	E. 26.5 W. 28.5	E. 27 W. 28
Sums	52.0 58.0	56.5 53.5	52.0 58.6
Threads			
" 1	2 ^h 22 ^m 25. ^s 1	2 21 21.7	2 42 35.0
" 2	47.2	46.4	56.8
" 3	23 9.1	23 11.2	43 19.3
" 4	30.5	35.4	40.4
" 5	52.9	35 0.8	44 03.3
Declination	6° 9' 34"	28° 23' 18"	
Means.	2 23 8.96	2 38 11.10	2 43 18.96
Transit mean Thread			
Cor. for Rate	.00	.06	
" " Level	+ .07	+ .02	
" " Coll	- .06	- .07	
" " Azim	+ .06	+ .02	
Reduced Transit	8.98	11.07	
Tabular A. R.	23 52 46.88	0 1 49.04	
Error of Chron.	2 30 22.10	2 30 22.03	
Observed A. R.			

W. W. Murray,

Observer.

<i>K Cassiopea</i>	<i>21 Cassiopea</i>	<i>Kassiopea</i>	<i>E Picinum</i>
Lamp East.	Lamp East.	Lamp East.	Lamp West.
	2.188		0.515
	2.972		0.866
	3.191		1.008
	-10.883		
E. 27.5 N. 28	E. 31 N. 25	E. 31 N. 25	E. 25 N. 31
E. 26 N. 29	E. 30 N. 26	E. 30 N. 26	E. 25.5 N. 31
√ 3.5 57.0	6 1.0 51.0	6 1.0 51.0	√ 0.5 62.0
2 ^h - -	- -	3 ^h 7 ^m 3.6	3 ^h 25 ^m 58.9
55 23.4	3 ^h 6 ^m 21.8	8 23.4	26 21.3
56 10.6	7 42.3	9 44.0	42.8
56.2	9 0.8	11 1.0	27 04.5
57 43.8	10 22.2	12 23.0	26.9
	74° 17' 83"		7° 12' 19"
	3 7 41.71		3 26 42.88
	- .38		
	+ .07		+ .03
	+ .00		+ .02
	- .22		+ .06
	- 24		- 12
	41.33		42.87
	0 37 19.25		6 56 ^m 20.62
	2 30 22.08		22.25

Station

Pioche Nevada Sept 27th 1892

Object	β Andromeda	38 Cassiopeae		
Illum. and Description	Leamp West.	Leamp West.		
Factor	A.	(Azimuth)	1.507	
"	B.	(Level)	2.442	
"	C.	(Collimation)	2.870	
"	F.	(For Broken transits)		
Levels	E. 26	W. 31	E. 27	W. 30
"	E. 28	W. 30	E. 28	W. 30
Sums	54.0	61.0	55.0	66.0
Threads				
"	1	3 ^h 32 ^m 6.0	3 ^h 50 ^m 4.8	
"	2	32.9	57 9.4	
	3	58.6	52 10.0	
	4	33 25.6	53 12.9	
	5	52.0	54 15.8	
Decl.			69° 36' 24"	
Means.	3	32 59.02	3	52 10.58
Transit mean Thread			+ 62	
Cor. for Rate			+ .04	
" " Level			+ 24	
" " Coll			+ .17	
" " Azim			+ .36	
Reduced Transit			1120	
Tabular A. R.			1	21 48.96
Error of Chron.			2	30 22.24
Observed A. R.				

Station

Pioche, Nevada Sept. 28, 1892.

Object	ϵ Draconis	τ Aquilae	κ Cephei
Illum. and Description	Leamp. West.	Leamp. West.	Leamp. West.
Factor	A. (Azimuth) 1.545	0.519	2.891
" $b = -.05$	B. (Level) 2.471	0.863	3.519
" $c = .06$	C. (Collimation) 2.915	1.007	4.554
"	F. (For Broken transits)		
Levels	E. 25 N. 25	E. 23 N. 28	E. 26 W. 27
"	E. 28 N. 22	E. 23 N. 28	28 N. 25
Sums	53.0 47.0	46.0 58.0	54.0 52.0
Threads			
" 1	22 ^h 16 ^m 51.5	22 ^h 29 ^m 32.6	22 ^h 40 ^m 14.0
" 2	17 56.4	54.6	41 55.8
3	18 58.1	38 16.1	43 32.0
4	20 2.5	38 38.2	45 11.8
5	21 5.6	39 0.3	46 57.2
Declination	69° 56' 48"	6° 55' 18"	77° 19' 47"
Means.	22 18 58.82	22 28 16.36	22 43 32.96
Transit mean Thread	-.80	+.17	-1.08
Cor. for Rate	-.02	-.01	-.01
" " Level	00 - .12	00 - .64	00 - .17
" " Coll	+ .18	+ .06	+ .28
" " Azim	-.66	+ 22	-1.24
Reduced Transit	58.02	16.53	31.88
Tabular A. R.	19 48 36.45	19 57 54.92	20 13 10.35
Error of Chron.	2 30 21.57	2 30 21.61	2 20 21.43
Observed A. R.			

W. W. Mayall,

Observer.

ϵ Delphini	Gmubdg, 3241	+ Cygni	μ Aquarii
deamp treat.	deamp treat.	deamp treat.	deamp treat
0.463	1.828	0.169	0.746
0.907	2.691	1.399	0.686
1.018	3.254	1.410	1.014
	-.948	+5.44	
		E.28 N.27	E.26 N.30
		E.31 N.24	E.29 N.24
		59.0 51.0	55.0 57.0
22 ^h 56 ^m 44.5		23 6 25.7	23 ^t 15 24.2
57 7.3	22 ^t 59 46.5	6 7 57.0	46.4
28.9	23 0 55.9	7 26.9	16 8.2
57.2	2 7.0	doct	30.3
58 13.2		8 28.5	52.6
10° 52' 24"	72° 6' 12"	44° 49' 45"	-9° 27' 34"
22 57 29.02		23 7 27.19	23 16 8.34
+ .15		- .14	+ 29
-.01	-.01	.00	.00
00 -.04	00 .07	00 -.07	00 -.03
+ .06		+ .09	+ .06
+ 20	-.79	- 07	+ .32
29.17		27.05	8.63
20 27 7.65	20 30 33.97	20 37 5.74	20 45 46.99
21.52		21.31	21.64

Station

Piche Kwada Sept. 28, '02

Object		β Cygni		1 Pegasi		β Cephei
Illum. and Description		Lamp East		Lamp East		Lamp East.
Factor	A.	(Azimuth) 0.004		0.339		1.553
"	B.	(Level) 1.271		1.003		2.478
"	C.	(Collimation) 1.271		1.059		2.925
"	F.	(For Broken transits)				
Leve's		E. 27 W. 30		E. 29 W. 29		E. W.
"		E. 28.5 W. 29.5		E. 29 W. 29		" "
Sums		55.5 59.5		58.0 58.0		
Threads						
"	1	23 30 38.0		23 45 47.3		23 55 17.5
"	2	31 5.4		46 10.2		56 21.0
	3	34.0		46 33.4		57 25.2
	4	32 0.6		46 56.1		58 27.3
	5	28.5		47 20.0		59 32.4
	6					
Declination		38° 7' 37"		19° 15' 46"		70° 0' 15"
Means.		23 31 33.30		23 46 33.40		23 57 24.68
Transit mean Thread				+ 09		-.78
Cor. for Rate		.00		.00		.00
" " Level		-.06		-.05		-.12
" " Coll		11 -.07		00 -.06		00 -.78
" " Azim		.00		+ 14		-.66
Reduced Transit		33.24		33.49		23.90
Tabular A. R.		21 1 11.75		21 16 12.08		21 26 62.26
Error of Chron.		2 30 21.49		2 30 21.41		2 30 21.64
Observed A. R.						

W. W. Murray,

Observer.

♏ Cephei	♐ Capricorni	♒ Aquarii
Lamp East.	Lamp East	Lamp East
1.642	0.813	0.604
2.547	0.634	0.797
3.030	1.031	1.000

E. 33 W. 25	E. 33 W. 27
E. 34 W. 24.5	E. 34 W. 26
67.0 49.5	67.0 53.0

0 8 14.9	0 15 57.8	0 48 24.8
9 21.0	16 20.3	46.2
10 27.8	42.9	49 8.3
11 32.4	17 04.7	29.5
12 39.5	27.4	51.9

70° . 43' 38" - 14° 9' 0" 0° 43' 58"

0 10 27.12	0 16 42.62	0 49 8.14
- 82	+ 33	+ 24
+ .01	+ .01	+ .02
- .13	- .03	- .04
10 - 18	00 - .06	00 - .06
- 70	+ 35	+ .26
26.30	42.95	08.38

21 40 4.90	21 46 21.38	22 18 46.73
2 30 21.40	2 30 21.57	2 30 21.65

Prochi, Mex. Sept 28, 1892

Station

Object			
Illum. and Description			
Factor	A.	(Azimuth)	
"	B.	(Level)	
"	C.	(Collimation)	
"	F.	(For Broken transits)	
Levels			E. W.
"			
Sums			
Threads			
"			
"			
Means.			
Transit mean Thread			
Cor. for Rate			
" " Level			
" " Coll			
" " Azim			
Reduced Transit			
Tabular A. R.			
Error of Chron.			
Observed A. R.			

Ex. of Signals with Salt Lake Observatory,
 Chron. Negus, No 1491.

Received

Sent,

	<u>h.</u>	<u>m.</u>	<u>s.</u>	<u>Observer</u>	
1	11		8.4	21	25.5
2			18.4		35.6
3			28.1		45.9
4			38.1		58.2
5			48.3	22	5.8
6			58.6		15.9
7	12		8.4		25.9
8			18.4		35.8
9			28.4		45.7
10			38.3	22	55.9
11			48.5	23	5.9
12	13		58.9		16.0
13			8.6		25.9
14			18.4		35.9
15			28.4		46.0
16			38.5		56.1
17			48.8	24	6.3
18			59.0		16.2
19	14		08.7		26.2
20			18.9		36.1
21			29.1		46.2
22			38.7		56.3
23			49.0	25	6.4
24	15		59.2		16.4
25			9.0		26.2
26			19.0		36.1
27			29.0		46.2
28			38.9		56.2(?)
29			49.1	26	6.4
30	16		59.4	26	16.3
31			9.2		26.3

Pioche Star. Sept. 28th 1842.

Station

Object	72 Pegasi & β Cephei		41 H Cephei	
Illum. and Description	deamp East.		deamp East.	
Factor	A.	(Azimuth)	2.782	
" 6--04	B.	(Level)	3.436	
"	C.	(Collimation)	4.421	
"	F.	(For Broken transits)		
Levels	E. 30 W. 32		E.	W.
"	E. 31 W. 31			
Sums	61.0 63.0			
Threads				
" 1	1 ^h	57 ^m 9.9	2 ^h	1 22.0
" 2		35.4	2	58.9
3	58	0.8	4	37.5
4		25.5	lost.	13 9.8
5		51.2	7	48.0
Declination	28° 22' 28"		76° 54' 79"	
Means.	1 58 0.56		2 12 14.58	
Transit mean Thread				
Cor. for Rate				
" " Level				
" " Coll				
" " Azim				
Reduced Transit				
Tabular A. R.			23 34 11.77	
Error of Chron.				
Observed A. R.				

Wm. W. Murray Observer.

Grubbdg. 4163	α Andromeda	γ Pegasi	κ Cassiopeae
Lamp East	Lamp East.	Lamp East.	Lamp West.
2.083	0.188	0.414	
2.891	1.121	0.946	
3.564	1.137	1.033	
-10.883			
E. 30 W. 32		E. 28 W. 33	E. 27 W. 34
E. 35 W. 27		E. 34 W. 27	E. 33 W. 28
65.0 59.0		62 60	60.1 62.0
Lost.	2 ^h 37 ^m 21.2	2 ^h 36 18.3	2 ^h 54 36.8
2 ^h 17 47.9	45.8	40.2	55 24.4
19 6.0	32 11.0	37 3.1	56 10.0
20 21.0	34.9	34.9	56.9
21 40.5	33 8.4	48.0	57 43.7
73° 41' 65"	28° 23' 18"	14° 28' 36"	
2 19 05.11	2 32 10.66	2 37 29.0	2 56 10.36
-1.17			
-.01	.06	.06	
-.12	-.04	-.04	
-1.04	+.09	+.20	
03.94	10.71	3.06	
23 48 42.40	0 1 49.04	0 6 41.31	
2 30 21.54	2 30 21.67	2 30 21.75	

Pioche, Nev. Sept. 28, 1872

Station

Object	21 Cassiopeae	μ Andromeda	ϵ Piscium.
Illum. and Description	lamp tract	lamp tract.	lamp tract
Factor	A. (Azimuth) 2.188		0.515
"	B. (Level) 2.972		0.866
"	C. (Collimation) 3.691		1.008
"	F. (For Broken transits)		
Levels	E. 27 N. 34	E. 29 N. 32	E. 29 W. 32
"	E. 33 N. 28	E. 32 N. 30	32 29
Sums	60.0 62.0	61.0 62.0	61.0 61.0
Threads			
" 1	3 ^h 5 ^m 1.0	3 ^h 19 8.5	3 25 58.1
" 2	6 23.5	36.5	26 20.3
3	7 42.0	20 3.3	42.1
4	9 3.0	37.2	27 3.9
5	10 22.5	58.8	26.2
Declination.	74° 17' 25"		7 12 19
Means.	3 7 42.40	3 20 36.6	3 26 42.12
Transit mean Thread	-1.21		+ .23
Cor. for Rate	+ .00		+ .00
" " Level	-.12	-.03	-.03
" " Coll	+.7.		
" " Azim	-1.09		+ .26
Reduced Transit	0 37 19.26		0 56 20.62
Tabular A. R.	3 7 41.19		3 26 42.35
Error of Chron.	2 30 21.93		2 30 21.73
Observed A. R.			

Mr. W. Mayall,

Observer.

Andromeda Polaris 38 Cassiopea
 damp west damp west damp west.

1.507

2.442

2.870

E.33 W.29

E.34 W.28

67.0 57.0

3^h 50 6.3

51 10.0

52 11.2

53 14.4

54 16.0

Lost

3 32 32.4

58.3

3^h 43^m 20^s

33 25.2

52.0

69° 36 25

3 52 11.58

1 21 48.96

Station

Pioche, Nev. Sept. 30, 1872.

Object	γ Aquilae	ϵ Draconis	ζ Aquilae
Illum. and Description	damp wet	damp wet.	damp wet
Factor	A. (Azimuth) 0.471	1.545	0.519
" $b = .00$	B. (Level) 0.901	2.471	0.863
"	C. (Collimation) 1.016	2.915	1.007
"	F. (For Broken transits)	-.047	
Levels	E. 21 W. 24	E. 26.5 W. 21.9	E. 22 W. 27.2
"	E. 23 W. 22	E. 27 W. 21.5	E. 23.5 W. 26.3
Sums	44.0 46.0	53.5 43.4	45.5 53.5
Threads			
" 1	22 ^h 9 ^m 46.9	22 ^h 16 51.6	22 ^h 27 30.3
" 2	10 9.8	17 56.2	52.9
3	31.2	lost ^{at transit} interrupted by a	28 14.11
4	53.4	20 2.0	36.2
5	11 16.0	21 5.4	58.2
Declination	10° 18' 22"	69° 56' 49"	6° 55' 18"
Means.	22 10 31.46	22 18 58.66	22 28 14.34
Transit mean Thread			
Cor. for Rate	-.01	-.01	-.01
" " Level			
" " Coll			
" " Azim	+ .61	-1.98	+ .67
Reduced Transit	22 10 32.00	22 18 56.67	22 28 15.00
Tabular A. R.	19 40 11.99	19 48 36.71	19 57 54.88
Error of Chron.	2 30 20.01	2 30 19.96	2 30 20.12
Observed A. R.			

Mr. W. Mayall Observer.

θ Aquilae	κ Cephei	π Capricorni	σ Lygwei
de amp West	de amp West	de amp West.	de amp West
	2.891	0.879	0.169
	3.519	0.584	1.399
	4.554	1.055	1.410
		E.24 W.25	
		E.26 W.23	
		50.0 48.0	
22 ^h 34 19.3	22 ^h 40 ^m 15.5	22 ^h 49 ^m 34.4	23 ^h 6 ^m 24.4
41.7	41 57.0	58.1	56.2
35 3.0	43 33.8	50 20.2	7 25.5
24.9	45 14.0	43.5	57.0
46.6	46 52.4	51 6.7	8 27.7
	77 19 43	-18 37 41	44 49 45
22 35 3.10	22 43 34.54	22 50 20.58	23 7 26.16
	- .07	- .01	- .00
		+ 1.13	- .22
		21.70	25.94
20 13 10.16	20 20 01.66	20 37 5.69	
	2 30 20.04	2 30 20.25	

Station

Pioche, Nev. Sept 30, 1872.

38° 7' 37"

Object		μ Aquarii	β Bygni (hr)	γ Bygni
Illum. and Description		lamp west	lamp East.	lamp East
Factor	A.	(Azimuth) 0.746	0.004	0.165
"	B.	(Level) 0.686	1.271	1.139
"	C.	(Collimation) 1.014	1.271	1.151
"	F.	(For Broken transits)		
Levels		E. 23.2 W. 25.8	E. 23 W. 26.3	E. 21.8 W. 28.7
"		E. 26. W. 23.	E. 29 W. 21	E. 22.4 W. 28
Sums		49.2 48.8	E. 22.3 W. 28 E. 23. W. 27.3	44.2 56.7
Threads				
"	1	23 ^h 15 22.0	23 ^h 30 36.7	23 37 1.3
"	2	44.5	31 4.2	26.2
"	3	16 5.9	32.1	57.2
"	4	28.0	59.1	88 15.9
"	5	50.5	32 27.3	41.6
Declination		9° 27' 34"	after obs. int. pointing north of zenith Reform obs. int. pointing north of zenith.	29° 42' 28"
Means.		23 16 66.18	23 31 31.88	23 37 51.24
Transit mean Thread				
Cor. for Rate		- 00	00	00
" " Level				
" " Coll				
" " Azim		+ 96	00	+ 21
Reduced Transit		07 14	21 88	51 45
Tabular A. R.		20 45 46.96	21 1 11.72	21 7 31.19
Error of Chron.		2 30 20.28	2 30 20.16	2 30 20.26
Observed A. R.				

Wm. W. Mayatt,

Observer.

α Pegasi Camp East.	β Cephei Camp East	η Cephei Camp East.	μ Cephei Camp East.
0.339	1.553	1.642	0.813
1.003	2.478	2.547	0.634
1.059	2.925	3.030	1.031
			-10.883
E.22 N.28.5	E.28 N.22.7	E.20.2 N.31	
E.24.4 N.26.1	E.30 N.21	E.26 N.25	
46.4 54.6	58.0 43.7	41.2 56.0	
23 45 45.7	23 55 17.3	23 ^h 8 15.3	Leost.
46 8.8	56 21.2	9 21.4	23 ^h 16 18.2
32.1	59 25.0	10 28.2	40.9
54.5	58 27.0 (22.0)	11 32.0	17 2.4
47 18.0	59 32.0	12 39.7	25.2
19° 15' 46"	70° 0' 15"	70° 42' 98"	14° 9' 0"
23 46 31.82	23 57 24.50	23 10 27.32	23 16 40.45
00	.00	+ .01	+ .01
+ .44	- 1.99		+ 1.05
32.26	22.51		41.51
21 46 12.05	21 27 2.18	21 40 4.82	21 46 21.37
2 30 20.21	2 30 20.33		2 30 20.14

Station

Pioche, Nev. Sept. 30, 1872.

Object	+ Aquarii			
Illum. and Description				
Factor	A.	(Azimuth) 0.627		
"	B.	(Level) 0.779		
"	C.	(Collimation) 1.000		
"	F.	(For Broken Transits) 2.1764		
Levels		E. 24.5 W. 27.3		E. W.
"		E. 23.5 W. 29.		
Sums		48.0 $\sqrt{63}$		
Threads				
"	1			
"	2			
"	3	23 29 34.3		
"	4		55.8	
"	5	30 18.1		
Decl.		-0° 56' 13"		
Means.		23 29 34.30		
Transit mean Thread				
Cor. for Rate		+ .01		
" " Level				
" " Coll				
" " Azim		+ 81		
Reduced Transit		35 12		
Tabular A. R.		21 59 14.83		
Error of Chron.		2 30 20.29		
Observed A. R.				

Wm. W. Mayall, Observer.

Exchange of Signals with Kato Lake Observatory.

Received.

Sent.

	Received.	Sent.
1	1 ^h - 1 ^m 6.3	1 ^h 17 52.8
2	16.8	18 2.6
3	26.6	12.4
4	36.5	22.8
5	46.5	32.8
6	56.6	42.9
7	2 6.7	52.4
8	16.9	19 2.3
9	26.8	12.6
10	36.6	22.8
11	46.6	32.8
12	56.7	43.0
13	3 6.9	52.7
14	17.1	20 2.8
15	27.0	12.8
16	37.0	23.1
17	46.8	32.9
18	56.9	43.1
19	<u>4 7.3</u>	<u>53.0</u>
20	17.2	21 3.0
21	27.0	12.7
22	37.0	33.3
23	47.0	43.5
24	57.1	53.2
25	5 7.3	22 3.0
26	17.5	13.3
27	27.3	23.5
28	37.1	33.4
29	47.1	43.8
30	57.1	53.4
31	6 7.6	23 3.5

Station

Pioche, Nev. Sept. 30, 1872.

Object	oβephei		γ ₂ Pegasus		γβephei	
Illum. and Description	de amp East.		de amp East.		de amp East	
Factor	A.	(Azimuth) 1.281				2.792
"	B.	(Level) 2.267				3.1436
"	C.	(Collimation) 2.604				4.421
"	F.	(For Broken transits)				+ 21.695
Levels		E. 33 W. 21				E. W.
"		E. 27.8 W. 25				
Sums		608 46.0				
Threads						
" 1	1	41 55.2	1	57 8.7	2 ¹	7 ¹ 23.5
" 2		42 51.3		33.9	2	59.4
" 3		43 50.5		59.4	4	36.3
" 4		44 44.1		8 24.0		
" 5		45 42.0		49.6		
Declination		67° 24' 55"				76° 54' 78"
Means.	1	43 48.62	1	57 59.12	2	4 35.64
Transit mean Thread		-1.64				
Cor. for Rate		-.01		-.01		-.01
" " Level		-.00				
" " Coll		00				
" " Azim		-1.63				
Reduced Transit		46.98				
Tabular A. R.	23	13 26.16	23	24 11.75	23	34 11.75
Error of Chron.	2	30 20.82				
Observed A. R.						

W. W. Mayall,

Observer.

α Piscium	α Andromedae	γ Pegasi	ϵ Casti
deamp East	deamp East	deamp East.	deamp East.

0.529	0.188	0.414	
0.855	1.121	0.946	
1.006	1.137	1.033	

E. 30.2 W. 27		E. 27 W. 31	E. 26 W. 32
E 27 W. 31		E. 29 W. 29	E. 25 W. 33
57.2 58.0		56.0 160.0	51.0 65.0

2 ^h 22 22.8	2 ^h 31 19.8	2 ^h 36 16.1	
44.6	44.5	38.5	2 ^h 42 54.3
23 6.9	32 9.1	37 1.3	43 16.4
28.2	33.5	23.2	38.0
50.6	58.9	46.2	44 0.7

6° 9' 34" 28° 23' 19" 14° 28' 36"

2 23 06.62	2 32 09.16	2 37 01.06
47		
- .04	.00	.00

+ 68	+ 24	+ .53
06.29	09.40	01.59

23 52 46.89	0 1 49.05	0 6 41.31
30 20.40	0 30 20.35	2 30 20.28

Station

Pioche, Nev. Sept 20, 1872

Object	κ Cassiopeiæ	21 Cassiopeiæ	ϵ Piscium
Illum. and Description	damp treat.	damp treat.	damp treat
Factor	A. (Azimuth)	2.188	0.515
" $b=0$	B. (Level)	2.972	0.866
" $c=0$	C. (Collimation)	3.691	1.008
"	F. (For Broken transits)		
Levels	E. 32.5 N. 26.5	E. 28.7 N. 31.2	E. 25 W. 35
"	E. 33.5 N. 25.5	E. 30 N. 30	E. 27 N. 33
Sums	66.0 52.0	58.7 61.2	52.0 68.0
Threads			
" 1		3 5 1.6	3 ^L 25 ^m 56.2
" 2	2 ^m 55 23.6	6 23.6	26 18.5
" 3	56 9.0	7 42.0	40.2
" 4	56.2	9 3.0	27 2.0
" 5	57 43.0	10 23.8	24.1
" 6			
Declination		74° 17' 25"	7° 12' 19"
Means.		3 7 42.80	3 26 40.20
Transit mean Thread			
Cor. for Rate		.00	.00
" " Level			
" " Coll			
" " Azim		-2.80	2.66
Reduced Transit		3 7 40.00	3 26 40.86
Tabular A. R.		0 37 19.29	0 56 20.64
Error of Chron.		3 30 20.71	2 30 20.22
Observed A. R.			

Wm. W. Murray

Observer.

Polaris	38 Cassiopea	o Piscum	β Arietis
damp West	damp West.	damp West	damp West
	1.507	0.496	0.324
	2.442	0.881	1.015
	2.870	1.011	1.065
	- 5.352		

E 27 hr. 28.5
 E 23.5 hr. 38
 50.5 665

3 43 33.0	3 50 5.5	4 8 16.1	4 17 10.2
	51 12.8(S)	38.6	37.6
	52 10.2	9 0.1	56.5
	53 13.4	22.2	18 20.0
	54 16.0	44.3	43.3

88° 37' 44" 69° 36' 25" 8° 31' 02" 20° 11' 08"

3 52	10.92	4 9 0.26	4 17 56.72
	+ .01	+ .01	+ .01
	- 1.93	+ .63	+ .41
	9.00	0.88	57.14

1 12 47.16	1 21 49.04	1 38 40.78	1 47 36.93
	2 20 19.96	2 30 20.10	2 30 20.21

Station

Pioche Nev. Sept. 30 1872

Object	50 Cassiopea.				
Illum. and Description	dwarf west,				
Factor	A.	(Azimuth)	1.785		
"	B.	(Level)	2.659		
"	C.	(Collimation)	3.203		
"	F.	(For Broken transits)			
Levels			E. 29 W. 32	E.	W.
"			E. 37.5 W. 29.5		
Sums			66.5 61.5		
Threads					
"	1		4 20 39.5		
"	2		21 57.6		
	3		22 59.3		
	4		24 9.8		
	5		25 20.0		
Decl.			71° 48' 06"		
Means.			4 23 0.14		
Transit mean Thread					
Cor. for Rate			+0		
" " Level					
" " Coll					
" " Azim					
Reduced Transit					
Tabular A. R.			1 52 38.08		
Error of Chron.					
Observed A. R.					

Station

Picche, Nev. Oct. 2, 1872
 Chronometer N. 2 gun

Object	ε Draconis.		θ Aquilae		κ Cephei	
Illum. and Description	Lamp West.		Lamp West.		Lamp West.	
Factor $\frac{1}{82}$	A.	(Azimuth) 1.545			2.891	
" $b = -.024$	B.	(Level) 2.471			3.519	
" $c = 0$	C.	(Collimation) 2.915			4.554	
"	F.	(For Broken transits)				
Levels	E. 25	W. 28	E. 18.5	W. 26.5	E.	W.
"	E. 28	W. 25	E. 22	W. 33.		
Sums	53.0	53.0	40.5	59.5		
Threads						
" 1	22 ^h	16 ^m 47 ^s .0	22	34 19.4	22 ^h	40 7.8
" 2		17 51.5		41.8		41 49.4
" 3		18 53.4	35	3.1		43 25.3
" 4		19 57.7		24.9		45 6.0
" 5		21 0.9		46.5		46 45.0
Declination	69° 56' 49"			77° 19' 48"		
Means.	23	18 54.10	22	35 3.14	22	43 26.72
Transit mean Thread		+ 1.19				+ 2.27
Cor. for Rate		-.01		-.01		-.01
" " Level		-.06				-.08
" " Coll		.00		0		0
" " Azim		+ 1.26			R.	2.36
Reduced Transit		55.99			22	43 26.99
Tabular A. R.	19	48 36.20			20	13 9.96
Error of Chron.	23	30 19.99			(2 30 19.03)	
Observed A. R.						

Wm. W. Mayall,

Observer.

No 1491

μ lepricorni	ϵ Delphini	σ Bygni	μ Aquarii
lamp wt.	lamp wt.	lamp wt.	lamp wt.
0.879	0.463	0.169	0.746
0.584	0.907	1.399	0.816
1.055	1.018	1.410	1.024
E.27 W.29	E.22 W.34	E.35 W.22	E.28.8 W.28
E.23 W.34	E.24 W.33	E.32 W.25	E.27.5 W.29.3
50.0 63.0	56.0 57.0	67.0 47.0	56.3 57.3
22 ^h 49 34.9	22 56 42.3	23 6 23.4	23 15 22.9
58.6	57 4.9	54.5	45.2
50 20.8	26.8	7 24.6	16 6.7
44.2	49.1	55.3	28.9
57 7.3	58 11.3	8 26.2	57.3
-18° 37' 41"	10° 52' 24"	44° 49' 45"	-9 27 34
22 50 21.16	22 57 26.76	23 7 24.80	23 16 7.00
-.74	-.41	+11	63
-.07	-.01	.06	.06
-.01	-.02	-.03	-.02
00	00	00	.00
-.72	-.38	+14	-61
22 50 20.42	22 57 26.35	24 91	06.37
20 20 16.3	20 27 7.59	20 37 56.4	20 45 46.94
2 30 18.79	30 18.76	2 30 19.27	2 30 19.43

Station

Pioche, Nev. Oct. 2^d, 1872

Object	β Cygnis			γ Pegasi			β Cephei		
Illum. and Description	damp East			damp East			damp East.		
Factor A.	(Azimuth) 0.004			0.339			1.553		
" $b = -0.024$ B.	(Level) 1.271			1.003			2.478		
" C.	(Collimation) 1.271			1.059			2.925		
" F.	(For Broken transits)						5.44		
Levels	<i>Just pointing north of zenith</i> E. 30.1 W. 26.5 E. 29.8 W. 27.						E. 33.5 W. 22.5		
"	<i>Just pointing south of zenith</i> E. 23 W. 34 E. 25 W. 31 <i>after the observation.</i>						E. 28 W. 28		
Sums	59.9 53.5						61.5 50.5		
Threads	48.0 65.0								
" 1	23	30	35.2	23	45	45.3	23	55	12.4
" 2		31	3.1					56	18.5 (S)
" 3			31.0		46	31.7		57	22.6
" 4			58.3			54.2		58	23.5
" 5		32	26.4		47	18.0		59	27.1
Declination	38° 7' 38"			19° 15' 46"			70° 0' 15"		
Means.	23	31	30.80	23	46	31.54	23	57	21.82
Transit mean Thread				30					
Cor. for Rate	— .00			.00			.00		
" " Level	— .03			— .02			— .06		
" " Coll	00			— 28					
" " Azim	00								
Reduced Transit	20.97			31.24					
Tabular A. R.	21	1	11.68	21	16	12.02	21	27	2.07
Error of Chron.	2	30	19.09	2	30	19.22			
Observed A. R.									

Wm. W. Murray,

Observer.

11 Cephei Camp East,	μ Cephei Camp East,	79 Draconis (?) Camp East,	α Aquarii Camp East
1.642	0.813	2.007	0.627
2.547	0.634	2.795	0.779
3.030	1.031	3.441	1.000
		-10.883	
E. 33.7 W. 22		E. 28.5 W. 25	E. 28 W. 27.6
E. 34 W. 22		E. 32 W. 24.6	E. 27 W. 28.6
67.7 44.0		60.5 49.6	55.0 56.2
0 8 10.5	0 15 56.4	5 20 ^{lost} 22.0	0 ^h 28 ^m 51.2
9 16.4	16 19.1	20 22.0	29 13.0
10 22.8	41.7	36.2	35.1
11 27.3	17 3.5	51.0	56.1
12 34.9	26.5	24 6.5	30 18.6
		Very faint.	
70° 43' 39"	14 9 0	73° 4' 6"	-0° 56' 13"
0 10 22.38	0 16 41.44		0 29 34.80
1.29			-.52
+.07	+01	Not good	+.07
-,06	-.02	-.06	-.02
-,+3			
+1.394			+.51
23.67			34.28
21 40 4.71	21 46 21.35	21 51 19.09	21 59 17.81
2 30 18.96			2 30 19.47

Station

Pioche, Nev. Oct 2, 1872.

Object	π^2 Regain			
Illum. and Description	Lamp East			
Factor	A.	(Azimuth)		
"	B.	(Level)		
"	C.	(Collimation)		
"	F.	(For Broken transits)		
Levels			E.	W.
"				
Sums				
Threads				
"	1			
"	2	0	34	14.0
	3			40.1
	4	35	05.3	
	5			31.5
Means.				
Transit mean Thread				
Cor. for Rate				
" " Level				
" " Coll				
" " Azim				
Reduced Transit				
Tabular A. R.				
Error of Chron.				
Observed A. R.				

Mr. W. Murray,

Observer.

Ex. of Signals with Sall Leuka Observatory

	Received.	Sent.
1	1 st 29 ^m 53.2	1 st 36 ^m 27.6
2	30 3.0	37.4
3	13.1	47.6
4	22.8	57.8
5	32.7	37 7.7
6	43.2	17.8
7	53.2	27.9
8	31 3.1	37.7
9	13.0	47.5
10	22.9	57.7
11	33.3	38 7.8
12	43.4	17.9
13	53.2	27.5
14	32 3.0	37.6
15	13.2	47.9
16	23.1	58.0
17	33.2	39 7.3
18	43.4	18.0
19	<u>53.4</u>	
20	33 3.2	<u>27.8</u>
21	13.6	37.6
22	23.3	48.0
23	33.4	58.0
24	43.7	40 7.8
25	53.6	18.0
26	34 3.6	28.0
27	13.7	38.0
28	23.4	47.7
29	33.6	58.4
30	43.7	41 8.3
31	53.8	18.5
		28.2

Station

Piöche, N.W. Oct. 2, 1872
 Chronometer, No. 1491.

Object	41 H. Cephæi		Grubdg. 4163		♄ Andromeda	
Illum. Description	Lamp East.		Lamp East.		Lamp East	
Factor	A.	(Azimuth)	2.083		0.188	
"	B.	(Level)	2.891		1.121	
"	C.	(Collimation)	3.546		1.137	
"	F.	(For Broken transits)				
Levels			E. 36 W. 25		E. W.	
"			E. 31 W. 30			
Sums			67.0 55.0			
Threads						
" 1	2 ^h	10 18.0	2 ^h	16 24.0	2 ^h	31 19.0
" 2		11 14.6		17 42.0		43.7
" 3		12 10.3		19 0.5	32	8.9
" 4		13 5.4		20 16.4		33.1
" 5		14 2.1		34.7		58.0
Declination			73 42 07		28 23 19	
Means.	2	12 10.08	2	18 59.52	2	32 8.54
Transit mean Thread						
Cor. for Rate			- .01		- .01	
" " Level			- .22		- .09	
" " Coll			.00		.00	
" " Azim			+ 2.06		- 18	
Reduced Transit			2	18 11.25	2	32 8.26
Tabular A. R.	59 60.33		23	48 42.35	0	1 49.05
Error of Chron.			2	30 19.00	2	30 19.11
Observed A. R.						

Station

Pioche, Nev. Oct. 2, 1872

Object	α Andromeda	ϵ Piscium	β Andromeda	Polaris
Illum. and Description	Lamp West	Lamp West	Lamp West	
Factor	A. (Azimuth)	0.525		
"	B. (Level)	0.866		
"	C. (Collimation)	1.008		
"	F. (For Broken transits)			
Levels		E. 34 W. 31	E.	W.
"		E. 36 W. 29		
Sums		70.0 60.0		
Threads				
" 1	3 19 5.9	3 25 56.5	3 32 3.3	
" 2	34.2	26 19.0	30.4	
3	20 1.2	40.6	56.3	42 ^m
4	28.9	27 2.6	33 23.3	
5	56.8	24.5	49.8	
Declination		7° 12' 19"		
Means.	3 20 1.40	3 26 40.64	3 32 56.62	
Transit mean Thread				
Cor. for Rate		00	00	
" " Level			-.08	
" " Coll	00		.00	
" " Azim			-.51	
Reduced Transit		3 26 40.05		
Tabular A. R.		0 56 20.66		
Error of Chron.		0 30 19.39		
Observed A. R.				

Wm W. Mayatt,

Observer.

38 Cassiopea	0 Picium	β Arietis	50 Cassiopea
Lamp West	Lamp West.	Lamp West.	Lamp West
1.567	0.496	0.324	1.785
2.442	0.881	1.015	2.659
2.820	1.011	1.065	3.203
E. 36.7 W. 28	E. 35 W. 30		
E. 33 W. 32	E. 30 W. 35		
69.7 60.0	65.0 65.0		
3 50 1.8	4 8 16.4	4 17 10.0	4 20 36.0
51 5.6	39.0	33.9	21 47.1
52 6.5	9 0.3	56.4	22 55.4
53 9.7	22.8		24 5.5
54 12.2	44.6	18 43.0	25 15.6
69 36 26	8° 31' 03"		
3 52 7.16	4 9 0.62	4 17 56.63	4 22 55.92
.00	+ .01	+ .01	+ .01
-.19	-.07	-.08	-.20
.00	.00	.00	.00
+1.48	-.49	-.32	1.76
3 52 8.46	4 09 0.07	4 17 56.24	4 22 57.49
1 21 49.07	1 38 40.80	1 47 26.95	1 52 38.13
2 30 19.39	2 39 19.27	2 30 19.29	2 30 19.36

Station *Pioche Nev. Oct 2 1892*

Object	<i>a Arctis</i>	<i>48 Cephei (H)</i>		
Illum. and Description	<i>Lamp West</i>	<i>Lamp West & East</i>		
Factor	A.	(Azimuth) <i>0.282</i>		
"	B.	(Level) <i>1.048</i>		
"	C.	(Collimation) <i>1.185</i>		
"	F.	(For Broken transits)		
Leve's		<i>E. 35.5</i>	<i>W. 31.4</i>	E. W.
"		<i>E. 36.4</i>	<i>W. 30.5</i>	
Sums		<i>71.9</i>	<i>61.9</i>	
Threads				
"	<i>1</i>	<i>4 29 32.5</i>	<i>5 31 16.1</i>	
"	<i>2</i>	<i>56.8</i>	<i>32 57.0</i>	
	<i>3</i>	<i>30 19.9</i>	<i>34 33.7</i>	
	<i>4</i>	<i>43.9</i>	<i>Reversed</i>	
	<i>5</i>	<i>31 7.3</i>	<i>Lamp East.</i>	
			<i>5^h 36 11.0</i>	
			<i>37 51.4</i>	
<i>Decl.</i>			<hr/>	
		<i>77 15 37</i>		
Means.	<i>4 30</i>	<i>20.08</i>		
Transit mean Thread				
Cor. for Rate		<i>+ .01</i>		
" " Level		<i>- .09</i>		
" " Coll		<i>.00</i>		
" " Azim		<i>- 28</i>		
Reduced Transit	<i>4 30</i>	<i>19.72</i>		
Tabular A. R.	<i>1 59</i>	<i>60.33</i>	<i>3 4 16.89</i>	
Error of Chron.	<i>2 30</i>	<i>19.39</i>		
Observed A. R.				

