

KG
11365
305

N 22

Observations of Asteroids
Jan. Feb. 13 1871 to
Aug. 10, 1871.

Sold by T. Groom & Co., Stationers, India Building, 82 State St., Boston.

KG11365.305

15 11 365.305

1

2

KG 11365-303



Thompson

Feb. 13 1871

Camp. # = 11^h 25^m 1^s + 8 35 - 1871

W.M. MAR. 1871

7 25 57.0	33.2	33.0 ^{sc}
(29 35)	33.9	34.1
(27 25.8)		33.1
30 56.7	33.3	33.1
82 2.5	33.7	33.4
83 11.5	33.6	33.5
34 15.9	33.2	33.0
36 19.5	33.2	33.3
731 27	33.44	33.36

33.44	33.36
34.10	34.26
32.66	.90
	.66
	1.56
	78

For ✓

May 13. P = 60 45
P on the wire nearest - M. head.

7 43 00	51.594
7 44 27	740
45 35	86.6
46 16	66.5
47 18	66.0

Per d

7 49 46.1	34.2	34.1
50 42.3	34.3	34.1
51 45.2	34.4	34.6
52 36.8	33.5	34.0
53 28.2	34.1	34.5
7 51 39	34.10	34.26

Times of 424

424 = 11^s slow of

Readings coincidences

a	b	c
24.657	49.810	74.887
666	105	905
657	285	901
640	280	873
640	280	870
635	280	875
641	286	904
653	284	891
631	288	893
650	287	875
	282	
	803	8854
470		
24.647	8683	74.885
	49.882	

H

Greenbridge 1870 36° 54' N.P.D.

21^h 38 32 38 36.2
 39 51 38 45.1
 42 18 40 22
 42 52 37 3.6
 42 59 36 30.1
 42 58 36 41.2
 43 19 38 11.2
 43 25 36 38.6
 45 53 36 12.5
 46 40 36 53.7
 48 15 36 57.9
 48 32 36 43.2
 48 48 37 39.3
 49 40 37 28.5
 50 01 37 26.3
 50 13 40 29.7
 50 47 40 20.6
 53 8 36 30.1
 53 15 36 48.0
 54 8 36 45.1
 54 43 36 55.0
 54 54 38 1.8
 56 3 36 22
 58 00 39 13.1
 59 32 39 7.1
 59 51 37 46.5
 72 0 29 37 37.0
 4 3 38 37.3
 4 27 38 30.2
 6 27 38 32.8
 7 9 38 25.6
 11 18 38 17.6
 11 45 38 16.6
 13 7 40 58.5
 13 20 37 8.3
 16 5 39 45.8
 16 6 38 43.2
 17 28 39 42.4
 17 46 40 33.6
 18 24 37 8.5

22 18 31 37 1.1
 18 36 37 10.9
 18 54 37 8.4
 19 4 36 57.6
 20 7 39 28.4
 20 18 38 23.4
 20 48 39 39.7
 21 17 40 25.6
 21 26 39 27.7
 21 57 36 43.4
 22 19 38 33.3
 23 8 40 27.0
 23 21 40 36.5
 23 29 40 41.5
 23 41 40 22.7
 24 48 36 56.3
 25 17 40 37.2
 26 31 40 45.7
 28 1 40 54.6
 28 3 37 46.8
 29 7 39 52.3
 29 13 36 33.5
 29 26 39 41.8
 29 36 39 26.0
 31 38 39 50.1
 32 13 39 23.1
 32 26 39 26.5
 32 36 37 8.5
 32 11 39 13.9
 33 21 40 3.7
 34 36 37 5.0
 35 10 36 14.1
 35 23 39 30.8
 36 20 39 32.0
 36 42 37 14.3
 36 58 38 28.7
 37 24 39 30.5
 37 33 36 16.6
 37 35 39 40.4
 38 43 36 7.6

22 39 23 26 14.8
 40 56 36 35.2
 41 12 40 1.1
 41 56 36 9.2
 42 03 40 19.6
 44 28 40 18.1
 44 40 40 35.4
 47 20 38 23.8
 48 03 40 28.3
 50 17 40 11.9
 50 59 38 21.8
 50 59 38 42.4
 52 24 40 0.2
 53 00 36 2.3
 53 28 40 10.2
 54 07 37 12.4
 54 31 37 46.4
 55 11 37 93.1
 55 41 40 58.4
 58 47 38 12.5
 23 2 39 37 58.3
 2 42 40 15.5
 3 47 38 45.1
 5 35 40 24.9
 8 5 37 48.5
 10 21 37 48.3
 13 02 36 18.4
 13 44 36 56.0
 14 00 36 49.0
 14 55 37 0.6
 16 48 38 3.8
 17 11 37 51.8
 17 32 37 52.5
 17 06 36 4.2
 18 21 36 10.4
 20 00 37 22.4
 23 38 37 21.4
 25 10 36 58.9
 26 16 38 39.3
 26 22 38 41.6

^{h = 15'}
 23 26 28 37 2.1
 27 51 38 46.9
 29 58 40 34.8
 40 56 39 26.1
 41 15 36 57.3
 44 5 39 32.1
 45 19 37 33.5
 46 00 38 19.4
 46 59 37 20.4
 48 33 40 37.4
 49 6 37 40.2
 49 14 37 23.1
 49 26 37 48.3
 49 36 37 29.6
 49 38 40 31.4
 49 45 40 33.0
 52 42 40 33.5
 53 46 37 44.4
 55 50 37 53.2
 56 18 37 46.9
 58 44 37 48.2

Feb. 21 1871

Therpsichore

Comp # 11 18 47 + 8 49 (1871)

10	57	00	49.7
11	0	00	50.1
1	20		50.5
3	00		50.0

for

11	8	00	82.25
12	00		66.5

Planet on wire fastest from screw head

for ω

11	13	40	50.8
	15	00	50.8
	17	30	50.3

Order P — #

Apparent position

P

Chart of bright stars in vicinity

11 18 25 + 8 36

9.5

11 18 44 + 8 40

8.2

11 18 58 + 8 44

8.8

11 18 47 + 8 49

9.0

Feb. 22 1871

Thermopictore

1st Set of observations
Chronometer 1^m 2^d slow of S.B.

Comp H = ~~on~~ 8^m may. # in A.R. count. 11^m 17^m 6^s
and in S. " 90 4'

Assumed place of Planet = 11 17 12 + 90 1'

Jan 22

R. Obs.	A.M. Obs.
7 18 59 R. # = 6.8	7 23 13 = 6.8
19 17 6.3	23 37 62
19 42 6.3	24 7 60
20 42 6.4	24 41 60
6.45	6.25

7 38 9	6.0
38 39	57
39 8	58
39 38	48
40 12	51
40 37	50
41 2	53
41 27	47
530	

7
ice S

Star on middle wire	
7 58 00	65.554
58 30	510
59 00	560
60 00	575

Sun. Obs.	Ly Obs.	R. Obs.
7 46 43 4.8	7 49 47 = 50	7 52 42 4.9
47 7 45	50 22 49	52 0 4.9
47 29 50	50 36 50	53 16 4.9
47 58 48	51 00 51	53 28 51
48 20 4.4	51 16 52	53 41 52
4.90	51 27 4.8	4.96
	5.02	

R. Obs.	Ly Obs.
8 1 59 ~ 4.8	8 53 38 = 4.9
2 24 4.5	5 54 50
2 40 4.2	6 36 46
2 54 4.9	6 57 48
3 14 4.5	7 17 4.6
4.58	4.78

8

Feb. 22 1891

Thurpsichone

Comp # = 1120 40 + 855 (K)

8 h 19 ⁰⁰	P-# =	for a
28 00		3 28.7
32 00		285
		280
8 26 20		2907

8 39 30

84 321

Poulin mant - saw head

45 30

866

42 00

700

49 10

600

for a

8 58 00

3.30.0

9 3 00

300

7 00

302

3007

Feb. 27 1911
Meridian

Comp^h 11 12 0.9 + 9 2/4 1155-

Chronometer with S.B.
Rds.

7 3900	= 18.8
3930	19
3950	22
40 10	2
20	22
40 40	14
41 10	22
	<u>22</u>
	2.06

Pos Mid. Wire P = 52° 30'

7 4400	29.580
45 10	795-
45 20	613
45 42	500
46 02	490

Rds

S.M. Obs.

7 48 40	24
55-	25
219 04	25-
30	27
410	28
	<u>1</u>
	2.58

558 38	27
56 05-	32
56 25-	26
56 40	26
57 00	27
57 30	<u>2.8</u>
	2.77

10

Feb. 27/1871

Tricilas

Assumed place = $12^{\text{h}} 38^{\text{m}} 32^{\text{s}} - 3^{\circ} 6'$ W 634 Comp # = $12^{\text{h}} 38^{\text{m}} 40^{\text{s}} - 3^{\circ} 11'$ ^{alt.} lower m. of double

For a time separation

8	45 40	138
	45 30	136
	46 00	137
	46 30	141
	46 50	<u>141</u>
		1380

Main the Chronograph.

Obs. for

Obs for

10 12:00
12:20
12:40

34,000
797
995

on wire meant - 5 am hour

10 14:00
14:30
15:10

64,690
720
715

P on for that wire

Mar 1 1871

Cherpaichore

Assumed place = $11^{\circ} 11' 05'' + 9^{\circ} 25'$ Comp # = $11^{\circ} 11' 26'' + 9^{\circ} 20''$ (1841)

R.Ds.	Stop water	A.M. obs.
7 10 35	245	7 14 40 248
11 10	242	15 25 242
12 00	250	16 10 247
	<u>245</u>	<u>245</u>

In

7 24 10	56.947
27 20	57.135
29 10	56.740
30 25	57.540
31 50	56.861
32 40	57.360
33 40	57.525

Planet on wire farther from center

 $P = 326^{\circ} 20'$ The dome times are by 424.
424 is $1^{\circ} 50'$ along S.E.

For a water stop water					
R.Ds.	A.M.	R.Ds.	A.M.	R.Ds.	A.M.
7 35 00	252	7 41 10	258	7 49 7	253
36 00	250	42 06	258	44 55	259
36 48	253	42 55	252	45 38	253
	<u>2517</u>		<u>2553</u>		<u>2550</u>

These were made by throwing the hand of the stop water back

Obs. time. Chirayupur,

24
64
50
6

Mar 1891

Felicitas

Assumed place. 12 3656 -30 1'

Distance from 12 38 39 - 810 d 10 41 = 1^m 43²

Comp # precedes 12 38 39 by 5⁴⁰ and is opp
 nearly 8' below.
 Chart of stars in vicinity.

~~It~~ = comp # (9.5 moy.)

Obs. for a with Chronograph.

For ✓

Pon middle wire

- 59.717

858

856

1074

785

obs for a

Coincidences

a = wire nearest screw head

b = middle wire

c = wire furthest from screw head.

a = 24.671

636

670

698

671

346

24.692

b = 49.814

793

807

784

785

3983

49.797

c = 74.865

857

888

900

878

4408

74.882

By reduction in book N26, this is an observation of Felicitas.

13

Mar 22 1871

P = 12 18⁵⁰
- 1 52

Obs. by L.S. P. with stop watch

Comp. # 70347

May 12^y
P precedes.

By 424

3⁰⁰ = 145.8 Coincidence 2456

424 = 30^s slow of W.C.

4⁰⁰
3 46.1 10 1545-
46.1 20 00
46.3 24 20

4¹⁵
66.13 10 35-10
65.79 39 55
65.32 45-25

3 47.2 10 540
48.2 38.0

#1 = 12 14 22 - 1 42

48.2 11 2 20
348.86

#2 = 12 22 30 - 1 43

stop watch gains 5^s in 12 m

Obs. of N.S.R. with chronograph.

P 58⁴⁰ for 1st w
20 " 1st w
55-40 " 2nd w

clock 13^s slow

Pon w

16 037
387
371

5607
2823
2383

14

Mar 25 1871

16 09
~~5 13~~
~~10 58~~

Peliculus

Assumed place of 9^h

12 16 09 — 1 40'

W362

Comp #2 — 12 22 32 — 14'2 (78)

Comp. #1 precedes #2 ^{8^m} 13' and is 3' north. May (9.3)

Chart

.P

#

#2

Observations of Garnett with stop watch.

T (439) #	4 a. (#1)	T	4 c	T	4 c
9 39 15	2 19.9	9 10 15	42 48.0-67.0	10 35 45	2 22.1
42 20	20.2	10 19 5	42. 441	38 00	22.6
45 25	20.6	29 0	42 77.5-86.3	41 00	23.0
48 40	20.0	Pow b			44
52 10	20.3				22.5
	1010				
	2020				

Rogers Observer with Chronograph
 Obs. for a with #2 ~~Star 2~~

Some meridian circle observations are mixed up, then obs. A short signal before rock set except for # in the 2nd set for a. The last two sets have long strokes. 424 is 1m 30s slow of N.C.

Pow b
 Por

T (424)	#	#2
11 29	43 31.5	58 964
	43.5	
11 30 25	43 39.0	59 100
		25.2

Mar 28 1871

Obs. of (109)

Ephemeris place at 12^h 13^m 21^s - 1° 28'Comp. #^s

1 = 12 1054 - 12^h 13^m 21^s (1171) (87)
 2 = 12 1231 - 1 19 (199)
 3 = 12 1248 - 131 (10)

Reading of Coincidence

a	b	c
74.868	49.821	24.650
895	820	668
880	815	645
888	804	620
888	814	621
896	802	630
884	792	632
868	804	647
884	788	656
	802	640
74.862	49.803	24.653

I Comp. with #3 for a
 II Comp. " #2 for a
 III " " #3 for a
 IV " " #3 for a

Obs. for

#3 on ~~the~~ b
 $P = 73^{\circ} 11.5'$
 74? 351
 196
 410
 .315

Char. of stars p. (apparent)

*

(c)

P

(2)

 $P = 63^{\circ} 30'$

Mar Feb. 29 1871

P. S. Licitas

Comp. # same as Mar 28

Comp. By (424) H24 is 28th Nov. of N.C.

By stop watch.

Companion of (109) with #2

$$\text{Time } 9^h 10^m 30^s \left\{ \begin{array}{l} -104 \\ 104 \\ 103 \end{array} \right. = P \#$$

Comp. of (109) with #3

$$9^h 13^m 0^s \left\{ \begin{array}{l} P \ 0 \ 77 \ 168 \ 277 \\ \# \ 277 \ 345 \ 435 \\ P \ 277 \ 271 \ 267 \end{array} \right\} \quad \begin{array}{l} h \ m \ s \\ 9^h 14^m 0^s = 0 \ 0 \ 7.5 \ 1642 \\ \# \ 272 \ 344 \ 435 \\ \hline 272 \ 269 \ 271 \end{array}$$

$$\begin{array}{r} h \ m \ s \\ 9^h 20^m 0^s \quad P \ 0 \ 78 \ 166 \\ \# \ 278 \ 352 \ 441 \\ \hline 278 \ 254 \ 275 \end{array} \quad \begin{array}{r} 0 \ 78 \ 161 \\ 273 \ 257 \ 425 \\ \hline 273 \ 278 \ 267 \end{array}$$

Obs. for

$$\text{with } \#3 \quad (109) \text{ on } A$$

$$\#3 = \begin{array}{r} 27.454 \text{ at } 9^h 29^m 40^s \\ 346 \\ 560 \\ 570 \end{array} \quad \begin{array}{r} 30 \ 40 \\ 31 \ 15 \\ 31 \ 50 \end{array}$$

$$\text{with } \#2 \quad (109) \text{ on } B$$

$$\#2 = \begin{array}{r} 78.135 \text{ at } 9^h 38^m 30^s \\ 77.760 \\ 560 \\ 610 \\ 655 \end{array} \quad \begin{array}{r} 34 \ 30 \\ 35 \ 10 \\ 35 \ 40 \\ 36 \ 10 \end{array}$$

with #1 on A

$$(109) = 52.621 \text{ at } 9^h 38^m 40^s$$

$$\begin{array}{r} 946 \\ 40 \ 3 \end{array}$$

$$\text{for } \#1$$

$$9^h 24^m 0^s$$

$$\# = \begin{array}{r} 0 \ 7.2 \ 16.2 \\ P \ 1 \ 257 \ 333 \ 420 \\ \hline 1 \ 257 \ 261 \ 258 \end{array}$$

$$9^h 25^m$$

$$\# \ 0 \ 7.7 \ 16.3$$

$$P \ 1 \ 258 \ 332 \ 422$$

$$\hline 258 \ 255 \ 255$$

Apr. 13 1871

Obs. (109) 12 39 45 - 0° 37'

(1)

(2)

(4)

Pl

Comps & s

#1 = 11 56 15 - 0° 42' 9.0 R
 #2 follows #1 about shut. and to in - 0° 3' 6
 #3 follows #1 " " " " " - 0° 3' 2
 #4 " " " " " " " - 0° 3' 7

Obs. a in the following order

#4 2 mins soon

#3 4 " "

#1 & 2 4 " "

P = 145° 00'

Obs. for

#4 on B Pl = 43, 780, 920, 1752 30 Comp.

#3 on B Pl = 67, 923, 930, 68,055 307s.

#2 on B Pl = 49, 078, 48,917, 46,650 3 Ms.

#1 on A 6? Pl = 26, 774, 26,500

P 54.0

Obs. for a P = 325

4

3

1 & 2

Obs for a P 324

1 & 2 last-mining last Obs. for Pl 3' for quads. 12 Comp

3

4

2 comp
2 mins soon

Coincidences

A	24,605	B 49,150	674,740
	665	778	805
	650	774	772
	635	774	767
	635	770	772
	640	751	795
	250	418	4833
	24,642	49,7697	74,805

Aug 6 1871

Obs. of Peter's new planet

Comp. # = 213312 - 1122 (85)

Assuming place of planet 213342 - 1119

Obs. for a (# - planet - order) . #~~P = 56 - 30.5~~for a with 236

on a of 24 57 95 (of 236)

P = 17.685	20	2	40
20.8			
20.5			
20.8	4	5.5	
21.5	5	20	

236 is 41⁸/₁₆ feet of Δ b.
 Δ b is 16 feet.

Obs. for a

Δ	Coincidences	
24.561	49 661	74784
564	700	776
560	680	784
508	675	784
602	675	775
2799	3391	413
24.560	49.678	74.783

Aug 9 / 1971
(114)

19

comp # 21 31 13 - 11° 23'

Inter observation of 424

424 = 205 feet

20 32 40

35 25

87 54

R-X = 2 34

3.6

3.8

18

2 3.60

20

Aug 10/84
 Prof (114)

#₁ = about 12 30 20 - 11 38' (1051) (8.0) mag

#₂ = 12 35 25 - 11 40. (~~1052~~)

Order P. P. - #₁

#1

#2

PPBP # # # #

for S

Pon B	# ₁	20	17 30	58.750
			19 00	.815
			21 00	.730

Pon B	# ₂	20	22 10	78.235
			29 25	77.815
			32 00	77.830

Obs for a in same order as before.

424 is 4^s slow.

N.B. is 22^s fast-y 26
 or 35 fast-y time time

Obs for a with N.B.

Aug 10 1871
(115)

comp # 12 14 43 - 12 15 (A. N. Deserter).
ridu P P P P ~~####~~ "P

Obs @

Obs ✓

P on B

# at 19.33	N (424)	21.635-
35 10		882
37 10		680

Obs. @

2

Rumker 4940 to 58

21 43 15	49 45.2	23 40 18	52 19
51 10	49 42.6	40 18 52	21.7
58 58	50 54.4	40 54 52	17.5
22 19 19	52 59.5	41 39 51	52.2
17 7	51 24.6	42 7 51	54.6
18 25	51 18.1	42 12 50	42.7
18 31	52 26.0	43 54 52	15.8
27 21	52 8.0	44 40 51	56.0
21 49	52 26.2	45 55 51	57.4
22 49	52 11.3	47 5 50	48.8
2 3 9	52 11	47 18 51	49.3
25 30	52 11.3	50 24 52	28.5
25 51	52 22.8	50 36 50	54.8
26 50	52 24.8	51 14 49	55.2
28 23	52 8.7	52 4 51	1.5
29 5	52 21.3	52 22 52	54.6
30 24	51 3.1	52 32 50	45.9
30 39	50 91.9	53 22 51	18.2
33 34	51 25.6	54 9 50	55.0
33 53	52 12.4	56 27 51	4.2
34 01	50 21.8	59 21 50	17.6
36 28	50 37.3	59 45 50	4.4
37 25	50 35.2		
38 29	50 35		
43 05	50 48.4		
43 9	49 48.6		
43 35	50 44.7		
45 12	50 48.2		
45 35	49 50.1		
47 43	50 5.6		
47 51	50 08.0		
50 23	50 44.3		
51 37	50 8.5		
23 05 46	52 23.6		
8 28	52 4.1		
8 40	52 4.0		
9 15	52 19.8		
9 33	52 22.0		
24 51	52 46.9		
39 10	52 21.9		
39 27	52 19.2		

Johnson ~~49° 45' 53"~~ (1145) (1060)

21 39 45 38 26.7
 41 5 38 35.4
 43 34 40 12.5
 44 5 36 53.9
 44 6 36 20.8
 44 11 36 31.4
 44 33 38 1.5
 44 37 38 28.9
 50 4 37 29.4
 50 1 36 43.8
 50 56 37 18.6
 51 15 37 16.5
 51 31 40 14.8
 52 6 40 10.5
 53 35 37 45.9
 56 10 37 57.8
 54 26 37 52.5
 59 18 39 30
 54 41 37 50.7
 22 0 52 38 56.9
 1 7 37 36.6
 1 42 37 26.9
 4 33 39 57.5
 5 9 39 56.4
 5 23 38 27.0
 5 46 38 20.0
 5 55 40 39.0
 7 41 38 12.1
 7 47 38 22.5
 8 6 37 59.8
 8 29 38 15.3
 12 39 38 7.1
 13 6 38 6.1
 14 40 36 57.5
 17 28 39 35.2
 17 28 39 32.7
 18 3 38 25.3
 18 52 39 31.8
 19 10 40 23.1
 19 45 36 58.2
 19 53 36 50.6
 19 57 37 0.3
 20 15 36 57.8
 20 26 36 41.0
 21 31 39 17.8

36° 50' to 40° 30' NPD,
 22 27 42 39 12.8
 2 22 12 39 29.0
 22 41 40 14.9
 22 50 39 17.0
 23 19 36 32.8
 23 21 38 24.2
 23 22 38 18.1
 23 42 38 22.6
 24 33 40 16.3
 24 46 40 25.8
 24 55 40 30.8
 25 06 40 12.0
 25 31 40 26.2
 26 42 40 26.4
 27 57 40 35.0
 29 27 37 36.0
 29 28 40 43.8
 30 34 39 41.5
 30 52 39 31.0
 30 52 39 47.2
 33 5 39 39.2
 33 40 39 12.2
 32 53 39 15.6
 34 01 36 57.7
 34 37 39 3.0
 34 58 39 52.8
 36 01 36 54.1
 36 50 39 19.8
 37 48 39 21.9
 38 7 37 3.3
 38 12 38 11.3
 38 22 38 17.8
 38 52 39 19.5
 39 3 39 29.4
 42 41 39 50.1
 43 32 40 8.5
 48 49 38 12.1
 49 34 40 17.1
 51 49 40 7.8
 52 28 38 10.6
 52 29 38 31.5

22 53 56 39 49.0
 54 59 39 59.0
 55 31 37 1.4
 56 01 37 35.2
 56 42 37 31.8
 23 0 19 38 1.3
 4 12 37 46.9
 4 15 38 18.8
 5 23 38 36.7
 7 10 40 13.5
 9 13 40 21.4
 9 20 40 10.8
 9 39 37 57.3
 10 18 40 11
 10 20 37 32.4
 11 56 37 36.8
 13 18 37 35.1
 13 26 39 19.9
 15 42 36 50.6
 16 31 36 49.2
 18 24 37 52.3
 18 33 37 29.3
 18 48 37 40.4
 19 8 37 41.1
 21 37 37 11.2
 23 59 38 26.5
 25 16 37 10.1
 27 55 38 27.7
 28 7 36 50.5
 28 17 39 35.6
 29 30 38 34.3
 31 38 38 35.7
 31 39 40 23.2
 35 34 37 42.4
 37 20 40 16.3
 38 26 40 11.9
 38 35 40 9.9
 39 18 35 58.9
 42 39 39 14.3
 42 58 36 39.7
 43 24 39 20.3
 45 49 35 20.3

23 47 43 37 21.9
 47 45 38 7.7
 48 43 37 9.0
 50 18 40 25.5
 50 33 39 28.4
 50 43 39 22.3
 50 51 37 28.5
 50 59 37 11.4
 51 11 37 36.6
 51 22 37 17.9
 51 23 40 20.0
 51 30 40 21.3
 52 26 39 56.5
 53 45 29 38.4
 54 28 40 21.8
 55 32 37 33.0
 57 00 39 40.9
 57 32 40 20.5
 57 37 37 41.5
 58 5 37 35.2

Amayk. 1840 N.P.D from 36° 50' to 40° 30'

22 21 19 39 19.2
22 38 39 18.5

1871phw,proj., 305R