

KG
11365
309

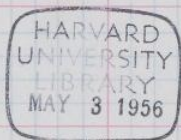
N 26

Differences of α & δ
between asteroids and
comparison stars
1870 - 71.

11365.309

Feb. 13 1871
Merpsichore

RG 11365.309



Feb. 21/871
Merpsichore

Feb. 21 1871
Thurpsichne

Feb. 27 1871
Thurs. morn

Feb. 27/1071
Felicitas
 $\frac{\text{head rate of } \omega}{\text{hour}} = 1.80$
 $\frac{\text{head rate of } \omega}{\text{hour}} = 6.0$

	1	2	3	4
P	10.3 45.0	57.6	58.0	
H	4.0.8 -15.8	13.6 16.0	13.9 15.9	
P	10 4.29.4	33.2	58.0	1.4
H	4-45.3 15.9	48.8 15.6	5-13.8 15.8	17.3 15.9
P	5-27.8	31.3		
H	5-43.7 15.9	47.4 16.1		

P-H	15.8	10 3 50	10 4 42
	16.0		+ 28
	15.9		10 5 10
	15.9		22 28 17
	15.8	4 45	11 36 58
	15.8		1 54
	15.9		11 34 59
	16.0		16 57
	15.9	5 29	11 18 02
	16.1		5 38 6
	16.0		16 56 08
			4 56 8

- 15.90 at 10 04 42

By stop watch

P-H	8 45 30	-13.8
	46 00	13.6
	46 30	13.7
	46 50	14.1

8 46 12 -13.80

 $\frac{H}{P} = 12 38 39.76 - 3 10 48.0$ at 8 46 12
 $\frac{H}{P} = 12.50$
 $P = 12 38 26.96$
 $\frac{H}{P} = 12 38 26.83$

H	12 38 39.76	-3 10 48.0	10 4 42
P-H	-15.0	+ 6 40.0	
	12 38 29.88	-3 04 07.8	10 13 32
	12 38 23.70	-3 04 6.7	10 4 42
		+3.0	
		-3 4 37	

8 46 12	+2 18
8 48 30	
22 28 17	
10 20 13	
10 18 34	
10 0 39	

 $\frac{\text{how mic meant head}}{\text{Time of } \delta \text{ obs.}}$

10 12 0	34.803	34.865
12 20	34.803	24.647
13 10	34.803	10.218
10 12 34	34.865	1.42.2

10 14 00	64.690	64.708
14 30	64.690	14.885
15 10	64.690	10.157
10 14 33	64.708	1.41.8

10 13 32	1.42.0	64.708
	34.865	24.647
	84.885	40.061
	40.020	6 40.6
	+6 40.2	

Mar 1 1871
 Murphysboro,

	1-		2-		3-	
P	8. 4.17.3		28.9		34.0	
H	4.44.3	27.0	55.5	26.6	5.0.9	26.9
P	6.14.2		25.7		30.7	
H	6.41.0	26.8	52.3		57.7	27.0
P	~~7.4.9~~		~~15.4~~		~~21.4~~	
H	~~31.7~~		~~43.0~~	27.0	~~48.2~~	
P	7.8.9		20.0		25.4	
H	7.35.5	26.6	47.0	27.0	52.3	26.9
P	8.4.9		16.4		21.4	
H	8.31.7	26.8	43.0	26.6	48.2	26.8
P	15.24.5		29.8		41.1	
H	15.57.6	27.1	56.9	27.1	16.8.5	27.4
P	16.18.3		23.3		34.8	
H	16.45.3	27.0	50.5	27.2	17.2.2	27.4
P	17.10.0		15.2		26.7	
H	17.37.3	27.3	42.4	27.2	53.9	27.2
P	21.34.9		49.0		56.9	
H	22.0.9	26.0	4.6	25.6	8.8	.
P	~~22.37.0~~		~~52.9~~		~~23.0.8~~	
H	~~23.4.6~~		~~8.5~~		~~12.6~~	

Nov 1 1871

Helicites

Comp # = too faint for observation

R. obs.	P#	P#	P#	P#	P#	P#
	10 41 57	46.0	42 449	45.9	44 233	46.1
	41 57.1		388		5.4	
	21.8	46.4	13	46.2	398	45.9
	8.2		47.5	4	25.8	
	270	46.2	6.4	46.1	447	46.3
	13.2		62.5		31.0	
	38.2	46.5	17.5	46.3	55.9	46.1
	24.4	1	3.8	24.5	42.0	24.4
		46.28		46.12		46.10
		7.2				
		10		10 41 23		
		50		43 03		
		46.17		44 41		
				10 43 02		

For S

10 48 44.0	39.717
50 28.0	858
51 37.0	856
52 16.0	1074
53 38.0	715

10 59 23.0	46.3	11 02 3.2	46.6	38 57.3	46.7
9.3		50.0		4 24.0	
33.8	46.7	13.2	46.8	47.3	46.6
19.5		6.0		33.9	
39.1	46.6	19.6	46.8	33.6	46.9
25.4		6.4		40.5	
55.5	46.9	36.0	46.9	107	46.8
42.4	25	22.9	31	56.9	30
	46.62		46.78		46.75
	7.8				
	7.5				
	21.5				
	46.72				
		10 59 38			
		11 2 18			
		11 3 52			
		11 1 56			

46.17 10 41 23
 .12 43 03
 .10 44 41
 33 10 43 02
 46.12

46.72 11 01 56

	1.	2.	3.	4.
P ₂	11.47.54.9	11.6	27.7	
#2	50.22.0 2.27.1	38.2 2.26.6	54.8 2.27.1	
P	52.9.1	25.0	39.8	41.8
#	54.35.8 2.26.7	52.1 2.27.1	53.6.8 2:27.0	8.6 2.26.8
P	12.15.43.0	48.2	16.46	20.9
#	18.10.5 2.27.5	15.9 2.27.7	32.4 2.27.8	46.7 2.27.8
P	19.34.6	39.7	56.2	20.12.7
#	22.2.2 2.27.6	7.8 2.28.1	24.2 2.28.0	40.5- 2.27.8

2 271
266
271
2 2693 11 4812
2 267
271
270
268
2690 11 5229

2 27.5
27.7
27.8
~~27.8~~
27.9

2 27.6
281
28.0
27.8
27.87 12 19 52

227.35 12 04 28

#	12	21	50.04	-	2	2	52.0
P-#	-2	2	35	-	7	9	46.2
P	12	18	22.69	-	1	63	05.8
H	12	21	1085	-	1	39	539
		2	27.35			9	46.2
	12	18	43.50	-	1	49	90.1
							30
					1	49	38.1

P161	12 18	56.07	223.4
	1.74873		2.34908
	9.42667		9.42667
	1.17540		1.78675
	1487		+ 54.2
12 18	5308	1 51	528
12 18	5308	1 50	58.6
	2.30		
12 18	5533		

$$\begin{array}{r}
 12 \quad 4 \quad 13 \\
 12 \quad 4 \quad 21 \\
 23 \quad 58 \quad 58 \\
 \hline
 13 \quad 06 \quad 23 \quad 13 \quad 05 \quad 23 \\
 12 \quad 54 \quad 52 \quad 2 \quad 09 \\
 4 \quad 59 \quad 13 \quad 03 \quad 19 \\
 \quad \quad 13 \quad 16 \quad 42 \\
 13 \quad 03 \quad 04 \quad C.M.T. \quad 632 \\
 5 \quad 38 \quad 06 \quad 12 \quad 58 \quad 6 \\
 18 \quad 40 \quad 50 \quad 18 \quad 24 \quad 38 \\
 \quad 16 \quad 42 \quad 6 \quad 24 \quad 38 \\
 18 \quad 24 \quad 28 \\
 6 \quad 24 \quad 28 \quad 25000 \\
 25000 \quad 01667 \\
 01667 \quad 44 \\
 32 \quad 26711 \\
 \hline
 26689 \\
 9.42651 \quad 9.42667
 \end{array}$$

Kim stops water by led P. stop water gain 5' in 12' or 33' in 1' or .008275
 aa
 10 15 45 (424) 3 46.1
 20 00 46.1
 24 20 46.3
 10 20 02 3 46.17
 10 54 00 47.2
 10 58 00 48.2
 11 02 20 48.2
 10 58 07 3 47.87
 24.8
 3 47.69 3 47.02
 10 20 02 8 46.43
 10 58 07 8 46.2
 10 39 04 43 3 46.05
 10 39 47 10 39 07 12465
 23 56 55 16 43 4097
 10 40 52 10 27 24 12500
 45 5 38 6 4097 C
 10 39 07 16 00 30 85
 3 46.2
 45
 12 25 10 66.13
 39 55 65.79
 45 25 65.32
 10 40 14 65.447
 24.560
 41.187
 6 51.9
 12 22 3 358 - 143 15
 3 4 540 - 6 51.9
 12 18 48.58 - 149 53.7
 48.18
 45.06
 11 49 50.7
 48.26
 206.3
 1.68913
 2.30814
 2.22164
 2.22454
 0.91098
 1.50908
 5297.8
 12 19 7.99 1 51 52.8
 12 18 58.6 1 51 19.0
 12 18 48.8 0 1 49 50.7
 16632
 11.77
 28.3
 Time for 5 obs -
 12. 3.56 16.037
 7.26 387
 10.24 371
 12 07 48 16.265
 24.647
 8.377
 + 238
 16.265
 74.882
 58.617
 9 46.2 ± 10.0

Mar 23-1891
Felicitas - (109) approx. place - 12 16 15 - - 1° 40'

	1.	2.	3.	4.
P #1	11.3.7.8	19.5	24.2	40.7
P #2	5.30.8 2.23.0	42.7 2.23.2	47.3 2.23.1	6 3.8 2.23.1
		8.32.0 2.49.3	36.7 2.49.4	53.3 2.49.5
		5 12.5	12.5	2 12.6
P #1	9.42.2			
P #2	12 5.8 2.23.6			
P #1	18.42.7	54.6	59.2	19-15.85-
P #2	21.32.0 2.49.3	44.0 2.49.4	48.5 2.49.3	22. 4.9 2.49.4
P #1	11 40.34.4	44.8	50.8	41. 7.2
P #2	42.59.0 2.24.6	43. 9.2 2.24.4	15.6 2.24.8	43.32.0 2.24.8
	47-5.8			
P #1	47-0.8	47 11.1	17.3	33.8
P #2	49.25.8 2.25.0	49 36.0 2.24.9	42.0 2.24.7	58.7 2.24.9
	52.15.0 2.49.2	25.3 2.49.3	31.4 2.49.4	48.0 2.49.3
	5 14.2	5 14.2	5 14.1	5 14.2

For N Powh		
(424)	#1	#2
112400	43.375	58.964
<u>113025</u>	<u>43.380</u>	<u>59.176</u>
112812	43.382	59.070
	49.803	49.803
	6.421	~~0.733~~
	"	9.267
1042		1.327

$$\begin{array}{r}
 11\ 25\ 10 \\
 \quad \quad 13 \\
 11\ 25\ 23 \\
 0\ 10\ 48 \\
 11\ 14\ 35 \\
 \quad \quad 1\ 50 \\
 11\ 12\ 45 \\
 \quad \quad 16\ 42 \\
 10\ 56\ 03 \\
 5\ 38\ 06 \\
 16\ 34\ 9 \\
 4\ 34\ 09 \\
 16666 \\
 2361 \\
 \hline
 19039
 \end{array}
 \begin{array}{r}
 5586 \\
 1,74710 \\
 9,27962 \\
 1,02672 \\
 1,063 \\
 12161953 \\
 \hline
 12\ 10\ 9.30 \\
 -223,1 \\
 2,34850 \\
 9,27962 \\
 1,62812 \\
 425 \\
 1\ 40\ 623 \\
 -1\ 39\ 588 \\
 \hline
 9.27962
 \end{array}$$

$\bar{y} = 12.18 \quad 2151 - 137 \quad 284$
 $P_H' = 2 \quad 2421 \quad -1 \quad 47$
 $13 \quad 15 \quad 5730 \quad -1 \quad 38 \quad 326$
 $+24 \quad +30$
 $12 \quad 15 \quad 5750 \quad 296$

11	25	70	H_2	12	21	1085	-	1	39	529	597
			D_{H_2}			5	13.85		+	1	3.77
			D	12	15	5750	-	1	38	270	

#	12 16	930	/	39	598	248
	12 15	57.50	/	38	296	
		-11.80	-	1	302	
#	12 16	930	/	39	598	
	12 15	57.50	/	38	296	
		-11.80		1	308	

$$\begin{array}{r} 101927 \\ - 101337 \\ \hline 590 \end{array}$$

win stop watch

(474) 9 39 15 2 4 w
1 9 8
42 20 20.2
45 25 20.6
48 40 20.0
52 10 20.3
5 45 34 20.20

(424)
$$\begin{array}{r} 10 \ 35 \ 45 \ 2 \ 22.1 \\ 38 \ 00 22.6 \\ \hline 21 \ 00 28.0 \\ \hline 103815 2257 \\ 20 \ 83 \ 49 42 \ 77 \\ 10 \ 11 \ 34 \ 2 \ 21.38 \\ 1 \ 43 \\ \hline 10 \ 13 \ 37 .14 \end{array}$$

10² 45 Pon h
 10 15 42480
 10 18 05 441
 28 00 778
 19 27 42.667
 45.80 6
 71.36 = 1.114
 10 13 37 1.74710 2,3485
 0 10 48 9.14824 9.14825
 10 02 49 0.89534 1.4967
 1 39 786 + 31.4
 10 01 10 12 16 1893 -140 42.3
 16 42 12 16 1207 -1 40 109
 9 44 28 1 38 37.7
 5 38 06 1 38 38.2
 15 22 34
 3 22 34
 12500
 238
 + 238

Felicitas-

Mar 28/57/ (109)

win Feb,

Rept #3

	1.	2.	3.	4.
$\frac{H}{P_3}$	11.45.40.6 45.59.9	19.3	48.5 46.8.0	19.5
			57.0 16.4	19.4

$\frac{H}{P_3}$	46.27.0 46.46.5	19.5	38.4 54.3	18.9
			43.7 47.2.7	19.0
	47.11.8	19.9	28	

$\frac{H}{P_3}$	47.40.5 48.0.0	19.5	48.3 7.6	19.3
			57.2 16.0	18.8

$\frac{H_1}{P_2}$	48.87.7 50.55.6	19.5	49.76 48.8	15.4 52.8	32.2 32.5
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$\frac{H_1}{P_2}$	55.58.0 57.29.0	2.12.3 36.3	56.1.0 37.3	2.12.1 35.8	9.3 45.6	2.12.1 35.8
	58.5.3		13.1		21.4	

$\frac{H_1}{P_2}$	58.45.2 12 0.21.2	2.11.9 35.9	53.1 29.5	2.12.1 35.7	59.15 37.8	2.11.9 35.6
	0.57.1		5.2		13.4	

$\frac{H_1}{P_2}$	2.30.4 4 6.4	2.12.4 36.4	38.2 14.4	2.12.1 35.9	46.6 23.1	2.12.2 35.7
	4.42.8		50.3		58.8	

$\frac{H}{P_3}$	5.37.1 5.55.3	18.2	45.1 6.3.8	18.7	53.4 12.1	18.7
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$\frac{H}{P_3}$	6 25.8 44.2	18.4	34.0 52.5	18.5	42.0 7-0.8	18.8
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$\frac{H}{P_3}$	7.10.9	14.2	27.5
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$\frac{H}{P_3}$	21.26.3 44.2	17.9	38.5 56.0	17.5	42.7 22-0.5	17.8
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Time of 5 Obs-

H₃ - on 6 H

$\frac{H}{P_3}$	22 10.5 22.28.5	18.0	22.6 40.6	18.0	27.2 45.0	17.8
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12.11-40 73.115

16 28 351

$\frac{H}{P_3}$	22-51.7 23-9.7	18.2	23-3.9 21.5	17.6	8.3 25.8	17.5
-----------------	-------------------	------	----------------	------	-------------	------

17 41 190

18.53 410

815

12/16 10 n! 73.276 = P

48.503

23.473 = +3 54.7

22.47

3 44.7

Felicitas

April 13 1871

(11091)

	1.		2.		1.		2.		3.		4.
#4	12. ^{20.40.0} ~~12. 17. 52.0~~ 50.2	10.2	43.2	#4	23.11.0	23.6	22.8	59.2	26.6	59.2	42.9
			53.0 9.8		24 9.3	59.3			25.8		42.1
											59.2
#4	21.23.5		26.3	#4	25.0.4	13.5			16.5		33.1
	33.0	9.5	36.0 9.7		25.59.5	59.1	26.12.8	59.3	16.0	59.5	32.3
											59.2
#4	21.55.9		58.9	#4	26.47.5	27.0.7			3.8		20.1
					27.46.8	59.3	24.0.0	59.3	3.0	59.2	19.7
											59.6
#4	22.10.3		13.4								
	20.2	9.9	22.3 9.9								
#4	22.35.8		38.9								
	45.6	9.8	48.8 9.9								

	1.		2.		3.		4.	
#1	30.49.9	3.29.3	31 3.3	3.29.3	6.3	3.29.2	22.8	3.29.2
#2	32.33.3	1.45.9	46.5	1.46.1	49.6	1.45.9	33.6.3	1.45.7
#2	34 19.2		32.6		35.5		52.0	
#1	35.14.8		28.0		31.2		47.5	
#1	36.12.8	3.28.9	26.0	3.29.5	29.0	3.29.0	45.6	3.29.0
#2	37.56.1	1.45.6	38.9.5	1.45.5	12.7	1.45.3	29.2	1.45.4
#2	39.41.7		55.0		58.0		40.14.6	
#4	40.45.1	3.28.9	40.58.8	3.28.7	41.1.6	3.29.1	18.1	3.28.8
#4	42.28.3	1.45.7	42.0	1.45.5	44.9	1.45.8	43.1.4	1.45.5
#4	44.14.0		27.5		30.7		46.9	

P-#1	102	12 20 52	P-#4	+9.85	12 21 53	P-#3	+59.28	12 26 15	P-#2	4 45.66	12 39 41	P-#1	+3 29.07	12 39 41
95	21 39		7.68	13 27 40	57.20	13 30 55	48.79	13 39 02		48.79	13 39 02		2.11	13 39 02
98	22 22		17.53	25 49 33	116.48	25 57 10	9.46	26 18 43		9.46	26 18 43		16.18	93
98	22 46		8.76	= 12 54 46	58.24	= 12 58 35	1 44.73	13 09 21		1 44.73	13 09 21		8 28.09	13 09 21
+9.85	12 21 53													

P-#3	59.1	59.3
59.2	59.3	59.3
59.2	59.5	59.2
59.2	59.2	59.6
+59.22	59.28	59.35 = +59.28
12 24 25	26 16	28.03 = 12 26 15

#2	1 45.9	45.6	45.7
	46.1	45.5	45.5
	45.9	45.3	45.5
	45.7	45.4	45.5
+1	45.90	45.65	45.65 = +14.566
12 34 35	39 58	44 31	= 12 39 41

P-#1 +3	28.9	28.3	28.7
	29.0	28.3	28.7
	29.0	28.2	28.1
	29.0	29.2	28.8
	28.98	29.25	28.97 +3 29.07
12 34 35	39 58	44 31	= 12 39 41

Time of D. Obs -

— #4 — B

12.55.11 - 43.780

56 45 = 920

57.32 = 752

— #3 — B

13 1. 11 67.923

3 24 67.930

5. 4 68.055

— #2 — B

13 8. 37. 49.078 B

13 11 42

11. 48 - 48.917

14. 42 - 48.950

— #1 — A

13. 19. 42 =

24. 40

13 22 11

24.642
24.665
20.2349.770
48.918
0.822
8.22

	1	2		1	2	3	4
2.9 2.1 59.2	#4P 13.26.53.4 27.0.0	7.6 56.3 4.0	7.7	#3P 28.36.8 29.34.0	57.2 39.6 37.0	57.4 53.4 50.5	57.1 29.9.8 7.0 57.2
3.1 2.3 59.2	#4P 27.22.3 30.0	7.7 25.4 33.1	7.7	#3P 30.52.1 31.49.5	57.4 55.0 52.2	57.2 31.8.6 5.7	57.1 25.0 22.0 57.0
0.1 9.7 59.6	#4P 27.40.2 48.0	7.8 42.8 50.8	8.0	#3P 33.5.0 34.42.3 36.32.0	3.27.0 1.44.7.2 35.0	3.27.5 4.6 48.4	21.2 3.27.2 1.43.8 1.43.8 37.4.8
	#4P 28.5.9 13.5	7.6 9.0 16.5	7.5	#3P 37.40.3 39.23.6 41.7.2	3.26.9 26.4 10.0	37.1 56.6 39.8 23.4	26.8 38.13.0 56.3 40.2 43.9
	#4P 28.36.8	39.6		#3P 44.26.0 46.9.0 47.52.5	29.0 16.7 55.5	26.5 42.6 25.5 48.9.0	26.4 26.5 43.5 43.5
	#4P 57.23.9 57.30.5	6.6 26.7 33.8	6.9	#3P 48.46.2 50.29.0 52.12.3	3.26.1 31.7 15.0	26.1 48.9 43.3	26.3 26.3 44.9
	#4P 57.44.0 57.52.8	6.8 46.8 53.5	6.7	#3P 53.50.9 54.47.6	53.8 50.5	54.7.6 55.4.0	24.0 20.6
	#4P 58.2.2 58.9.1	6.9 5.1 12.0	6.9	#3P 55.33.0 56.29.5	35.8 32.3	49.4 40.6	56.6.0 57.2.5
	#4P 58.23.2 58.29.8	6.6 26.0 32.6	6.6				
	#4P 58.42.0 58.48.6	6.6 44.9 51.7	6.8				

P-#4	7.6 7.7 7.8 7.6 7.68	13 27 03 27 31 27 50 28 15	27 40
P-#3	57.2 57.4 57.1 57.2 57.22	57.4 57.2 57.1 57.0 57.18	57.20
P-#2	49.1 43.8 43.8 43.9 43.90	43.6 43.6 43.6 43.9 43.68	43.79
P-#1	3 27.0 27.0 27.2 27.2 27.20	26.9 27.1 26.8 27.2 27.2 27.00	27.11
	13 29.47	32 03	30 55
	13 36.45	41 20	13 39.02

P-#2	44.1 43.8 43.8	
P-#3	56.7 56.7 56.4 56.6	56.5 56.3 56.4 56.5
P-#2	1 43.5 43.4 43.5 43.5	43.3 43.3 43.5 43.2
P-#1	3 26.5 26.5 26.4 26.4	26.1 26.1 26.3 26.0
	13 55.01	56.41
	13 48.06	52.25
	1 43.48	43.32
	13 50.15	50.15
	26.83	
	26.50	
	26.65	
	66 68 69 66 6.6 6.70	13 54 32 54 52 58 11 58 30 58 50
	13 58.11	
	56.60	56.48
	56.54	
	56.41	55.51
	26.28	
	13 50.15	

Obs. 1(111) continued from previous books

Sept. 10 1870

	1	2	3	4
P	1934.150	339	359	532
#1	35.0	15.2	17.6	34.4
#2	36.22	36.7	39.0	56.1
#3	37.86	28.3	25.7	42.8

	1	2	3	4
P	38	6.8	21.4	24.2
#1	48.6	39.3	5.4	40.8
#2	40.09	24.5	27.0	43.7
#3	40.56	34.1	11.0	13.2

	1.	2.	3.	4.
P	41.55.0	42.10.1	12.3	29.1
#1	42.37.0	57.3	53.7	43.10.9
#2	43.58.1	44.12.8	14.8	32.2
#3	44.45.0	59.4	45.1.5	18.8

P	50-41.7	57.9	59.3	51	16.5
#1	51.23.4	33.3	40.9	58.8	
#2	52-45.9				

P	53.23.9	32.1	40.4	58.2
#1	54.6.4	15.4	22.7	40.2
#2	55.27.1	3.0	44.1.56	1.5
#3	56.13.9	23.4	30.8	48.2

P	57.29.4	39.3	46.6	58.3.2
#1	58.11.6	21.2		
#2	59-32.8	42.3	50.02	0.17.3
#3	20-0.19.8	29.1	36.4	54.0

P	28.17.0	19.9	33.9	43.0
#1	28.59.8	29.2.4	16.6	
#2	30.4.3	21.2	23.8	30.38.7
#3	30.50.8	7.7	10.4	31.24.8

P	21.27.58	22.1	24.8	38.6
#1	21.52.7	28	9.2	11.6
#2	22.29.24.5	40.7	43.6	57.1

P	30-24.5	41.0	43.5	57.3
#1	31-11.7	28.1	30.6	44.3
#2	32-43.3	59.7	33-2.3	16.2

P	33-34.8	34.0.9	3.4	17.5
#1	34.31.9	48.3	50.7	35-14.6
#2	36-3.7	20.0	22.7	36.4

Time for 5-

20-11-31.0

21-38-27.0

41-50.0

45-23.0

P.W.B. Sub: 8 m for each.

(181) Sept. 12

P	20 45 25.4	28.2	3	41.7	46.02	P.	20 45.25.4	28.1	41.7	60.2
H ₁	20 47 12.8	15.7		29.4	47.0	H ₁	47.12.8	15.8	29.4	46.9
H ₂	20 48 34.0	37.6		50.8	19 58.4	H ₂	48 34.0	37.7	50.8	68.4

P	20 57.89.6	12.9	26.4	44.0	P.	57.34.6	38.4	57.3	56. 09.2
H ₁	52.57.6	53 11.0	18.3	31.5	H ₁	59.22.7	25.6	39.8	57.3
H ₂	54.18.6	22.1	35.9	52.8					

P	21 4 57.3	5. 2.3	16.0	23.6	P.	22.1.27.1	48.2	48.4	2. 1.9
H ₁	6 30.5		3.8	21.4	H ₁	3.16.9	33.9	37.9	57.0
H ₂	8 9.1	11.9	25.5	42.7	H ₂	4 53.2	58.7		

Time of obs —

21- 20-55-

25- 46-

30 54-

33- 43-

42- 56-

43 13-

48- 47

53- 59-

(111) Sept. 13-

Shaky. Sheet all wrong somehow.

	1.	2.	3	4.	
P.	21.14.55.9	15.13.0	16.1	29.8	?
#1	17.13.7	31.0	35.1	47.6	
#2				5.9	
#3	21.6	39.4		19.55.4	
P.	21. 20.28.0	45.2	48.5	21. 2.1	?
#1	22. 46.4	23. 3.2	6.7	20.1	
#2	24. 8.8	24.7	28.0	42.6	
#3	24. 54.3	25. 11.1	14.5	28.3	
P.	26.12.3	29.2	32.4	46.1	?
#1	28. 30.4	47.2	50.7	29. 4.1	
#2	29. 51.8	8.8		25.4	
#3	38.9	55.0	30. 58.6	31. 12.1	
P.	21. 58.21.1	37.5	39.2	55.1	?
#1	22. 0.41.1	55.4	57.2	1. 13.9	
#2	2. 1.4	16.8	18.4	36.2	
#3	2. 47.9	3. 3.1	4.9	21.8	
P.	4. 13.9	29.2	31.2	46.9	?
#1	6. 32.8	47.1	48.9	7. 6.8	
#2	7. 54.2	8. 9.4	11.1	28.2	
P.	9. 0.8	16.1	17.8	34.8	?
#1	11. 19.8	36.1	37.8	58.6	
#2	12. 42.2?	56.2	57.9	13. 15.0	
#3	13. 27.7	42.0			

Time of obs.

21-38-11-

43.33

49-45-

50.17-

50.42-

51.13-

51.46-

51.46-

(III)-

Sept. 14-

1.	2.	3.
21.42.22.8 40.0	25.8 42.9	39.7 56.9
43.17.5 34.9	20.8 37.8	34.5 51.9
44.4.1 21.4	7.1 24.1	~~21.0~~ 21.0 38.2
45.43.2 1.0	46.4 3.3	0.4 17.8
46.29.9 ~~50.2~~ 49.4	32.9 50.2	47.0 47.4.3
55.39.9 34.5	52.6 56.10.0	56.9 14.2
56.27.3 45.2	40.7 57.9	44.8 57-2.1
57.36.6 54.3	49.5 58.06.8	53.7 11.0
58.20.6 38.4	32.5 50.8	37.9 55.0
59.7.2 25.0	20.2 37.5	24.6 41.8

Time of obs. -

21- 48.43.

49.26

50.1

51.21-

52.7

53.3

(III) - Sept. 20 -

	1.	2.	3.
P	22.6.44.6	57.5	7.1.7
H	7.5.2	17.8	22.0
	20.6		
P	7.34.1	46.9	57.0
H	54.6	8.7.1	11.4
P	8.26.2	34.2	43.4
H	46.9	59.7	9.3.8
P	9.14.4	27.4	31.5
H	35.3	47.9	52.3
P	10.5.3	18.4	22.5
H	25.9	38.9	43.0
P	11.5.3	18.1	22.0
H	26.0	38.6	42.8
P	11.5.5	10.0	14.5
H	15.1	30.8	35.0
P	23.5.0	11.6	22.1
H	26.1	32.6	42.8
P	24.0.0	6.6	17.0
H	20.7	27.3	37.6
P	25.41.8	48.5	58.8
H	26.2.6	9.3	19.5
P	26.28.7	35.2	45.8
H	49.5	55.7	27.6.8

Time of obs -

22.15.29.

18.29.

19.9.

19.45.

20.15.

20.44.

(111)

Sept. 21

M. XX 1499.

P	22.45.43.6	55.8	46.0.4	17.4
X	46.22.9	34.8	39.2	56.4
P	47.10.6	23.0	27.6	44.4
X	49.4	48.2.4	6.7	23.6
	48.41.8	54.4	58.8	49.15.8
	21.0	33.7	27.8	55.0

Time of S. Obs -

22.52.9

54.3

54.59

56.14

56.58

(111)

Sept. 22 -

N. XX 1499-

① ✕	19.45.48.5 42.0	46.5.5 57.0	9 47.2.3	22.2 15.6
① ✕	47.29.9 23.4	47.0 40.4	50.4 43.8	3.4 57.6
① ✕	49.31.1 50.24.3	48.0 41.1	57.2 44.6	50.4.7 58.0
① ✕	57.21.0 24.3	38.4 31.6	41.5 35.0	55.0 48.6
① ✕	20.13.4.5 13.58.2	21.2 14.15.3	22.2 17.0	38.3 32.1
① ✕	15.26 15.56.1	19.7 16.13.3	21.4 15.0	36.1 30.5

Time of obs. -

19.56.49

58 41

20 0 1

(III)

Sept. 27-

observations the difference of 11" between the two ΔD 's. Your observations will decide, ⁱⁿ (which of the evenings) ~~is~~ ^{is} wrong. — I have revised the reductions, as also the computation from the Berl. phot. vol.

Yours very truly
C. F. F. Peters

880.6
2.2
878.4
13
2.6
875.8

C. F. F. Peters, Lt. Commr. Naut.,
Sen. Off. present, for Supdt.

(III)

Sept. 27-



2. 271
266 11 4812
271
2 2693

267
271
270
268 11 5229
2670
2750
277
38
2770 12 1559

276
271
260
278
2787
2 2735 12 408

12 21 1085 - 1 39 597

2 2735 9 562
12 15 4850 - 1 49 368 44.8
7.01 3.0
12 18 43.51 - 1 49 429 41.9
42.4 12 7 18
12 4 08

12 4 08 5607 223.4
13 174873 2.34908
12 9 21 835186 9.35186
189 1.10059 1.70094

120222 12.60 302
16.42
11 4840 1219798 151528
5 38 6 12185839 1 51 1.6
17 23 46 43.51 1 49 329
5 23 46 11.88 1 29.2

25833
1597
53
22983
935186

stopwatch gains 15 in 12 min

mini stopwatch of L.S. 10

40 min

10 15 45 3 46.1 10 39 04
20 40 46.1 43
24 20 46.3 10 39 47
10 20 02 3 46.17 23 58 35
10 40 52 1 45

10 54 00 3 46.2 10 39 07
58 00 48.2 16 43
62 00 48.2 10 22 24
10 58 07 48.2 5 38 6
47.7 16 00 30
16 06 67
35

10 39 04 3 46.2
- 3 46.96

16702
9.22278

1.74873 2.34908
9.22272 5.22272
0.57145 1.57180

10 35 10 66.13 - 9.36 + 27.3
3 55 65.79 1218798 151528
45 25 65.32 12185839 - 1 51 15.5

10 40 10 65.747
24.160
41.187.1
6.51.9

12 22 33.58 - 1 43 18
- 3 46.96 6 57.9
12 18 46.72 1 49 53.2
- 0.8 3.0
12 18 46.66 - 1 49 50.4
12 18 58.63 1 51 15.5
11.99 1 24.8

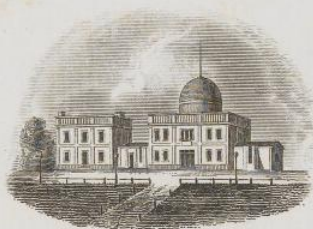
+ 11.63 - 1 31.3

Very respectfully, &c, Yours,

C. T. Pendleton, Lt. Comm'r. N.S.A.,
Sen. Off. present, for Supdt.

(III)

Sept. 27-

U. S. Naval Observatory,
WASHINGTON,

August 5, 1871.

Prof. Wm. A. Rogers,
Harvard College Observatory,
Cambridge, Mass. U.S.

Dear Sir,

The following are our Equatorial
Observations of Helicidas, (109). An observation
of Mar. 24th. is not yet reduced, the star
of comparison not being determined.

1871	Wash. m. t.			α	δ	$\log \mu$	$\log \mu$
	^h	^m	^s	^h	^m	^s	
Mar. 21.	9	53	12	12	19	44.30	(9.447 _n) - 1° 53' 36.1 (0.756)
" 28.	10	37	31	12	13	11.67	(9.148 _n) - 1 27 28.6 (0.755)

Comparisons with the Berlin Jahrbuch.

C — O

+ 11.39 - 1' 28.9

+ 11.63 - 1 31.3

Very respectfully, &c, Yours,

C. T. Henderson, Lt. Comm. U.S.N.,
Sen. Off. present, for Supdt.

(III)

Sept. 27-

	1-	2-	3-	4
$\textcircled{P}$				
$\times$	36.142	21.35.32.0 27.1	36.4 31.6	5 53.2 48.9
$\textcircled{P}$	38.3.3	16.0	20.4	37.8
$\times$	58.7	39.11.5	16.1	33.3
$\textcircled{P}$	42.12.8	25.4	30.2	47.6
$\times$	43.8.3	20.9	25.6	42.9

Sp. 20 Mar 29 1491 1109 / Approp. Nov 12 12 22 - 12.5
comp. its same as Mar 28

$$9 \text{ (424) } 10^m 20^s \quad P-H_2 \quad -10.37 \quad -10.37$$

$$9 \text{ 12 00} \quad P-H_3 \quad -277 \quad 27.17$$

$$9 \text{ 14 00} \quad 272 \quad 269 \quad 27.07 \quad -27.27$$

$$9 \text{ 20 00} \quad -278 \quad 27.57$$

$$9 \text{ 21 00} \quad -273 \quad 27.27$$

$$9 \text{ 24 00} \quad +1 \quad 25.7 \quad 26.1 \quad 25.8 \quad 1 \text{ 25.80}$$

$$9 \text{ 25 00} \quad 1 \text{ 35.5} \quad 25.5 \quad 25.9 \quad 1 \text{ 25.70}$$

$$\begin{array}{l} \#1 \quad 12 \text{ 10 } 55.60 \\ P-H \quad +1 \text{ 35.80} \\ P \quad 13 \text{ 12 } 21.40 \end{array} \quad P-H \quad 24.30$$

$$\begin{array}{l} \#2 \quad 12 \text{ 12 } 31.84 \\ P-H \quad -10.37 \\ P \quad 13 \text{ 12 } 21.47 \end{array} \quad P-H \quad 10.30$$

$$\begin{array}{l} \#3 \quad 12 \text{ 12 } 49.02 \\ P-H \quad -27.27 \\ P \quad 12 \text{ 12 } 21.75 \end{array} \quad 9 \text{ 18 20}$$

long meter in RA 2.28 $\alpha - 9 \text{ 24 30}$

$$\begin{array}{l} \#1 \quad 12 \text{ 12 } 21.40 \quad 21.26 \text{ comp. pan.} \\ \quad -14 \text{ Pan} \\ \#2 \quad 20.95 \quad 20.81 \\ \quad -14 \\ \#3 \quad 21.51 \quad 21.37 \\ \quad -14 \end{array}$$

$$\begin{array}{r} 9 \text{ 24 30} \\ 9 \text{ 25 05} \\ 26 \text{ 30} \\ 8 \text{ 58 80} \\ -1 \text{ 80} \\ 8 \text{ 57 05} \\ -16 \text{ 50} \\ 8 \text{ 40 55} \\ 8 \text{ 38 06} \\ 12 \text{ 18 01} \\ 08333 \\ 1250 \\ 24 \\ T = 0.9604 \end{array}$$

0

$$\begin{array}{l} \text{win H3} \\ 1109 \text{ on A} \quad \alpha - \\ \#3 = 27.457 \quad 9 \text{ 29 40} \\ \quad 346 \quad 30 \text{ 40 } 9 \text{ 30 51} \\ \quad 560 \quad 31 \text{ 15} \\ \quad 570 \quad 81 \text{ 50} \\ \quad 27.467 \end{array}$$

$$\begin{array}{l} 1109 \text{ on B} \\ \#2 \quad 78 \text{ 13 } 9 \quad 33 \text{ 30} \\ \quad 77.760 \quad 34 \text{ 30} \\ \quad 560 \quad 85 \text{ 10 } 9 \text{ 35 00} \\ \quad 610 \quad 35 \text{ 40} \\ \quad 655 \quad 36 \text{ 10} \\ \quad 77.714 \end{array}$$

$$\begin{array}{l} H_2 \text{ on A} \\ 1109 \text{ 52.621 } 9 \text{ 35 40} \\ \quad 946 \quad 90 \text{ 3 } 9 \text{ 39 21} \\ \quad 52.783 \end{array}$$

$$\begin{array}{l} 79.882 \\ \#3 \quad 27.467 \quad 1 \text{ 54} \\ \quad 574.15 = 9 \text{ 54} \end{array}$$

$$\begin{array}{l} 49.803 \\ \#2 \quad 77.714 \quad 1 \text{ 39} \\ \quad 279.911 \quad 9 \text{ 39 21} \end{array}$$

$$\begin{array}{l} 79.882 \\ \#3 \quad 52.783 \quad 2 \text{ 20.95} \\ \quad 3 \text{ 41.0 } 9 \text{ 30 51} \end{array}$$

$$\begin{array}{l} \#1 \quad -1 \text{ 20 } 31.6 \\ \quad -3 \text{ 41.0 } 9 \text{ 30 51} \\ \quad 1 \text{ 24 } 12.6 \end{array}$$

$$\begin{array}{l} \#2 \quad -1 \text{ 19 } 32.3 \\ \quad -4 \text{ 39.1 } 9 \text{ 35 00} \\ \quad 1 \text{ 24 } 11.4 \end{array}$$

$$\begin{array}{l} \#3 \quad -1 \text{ 31 } 15 \\ \quad +6 \text{ 54.1 } 9 \text{ 39 21} \\ \quad 1 \text{ 24 } 7.4 \end{array}$$

$$\begin{array}{l} \#1 \quad -1 \text{ 24 } 12.6 \\ \#2 \quad 1 \text{ 24 } 12.8 \\ \#3 \quad 1 \text{ 24 } 9.0 \end{array} \quad \alpha - 9 \text{ 30 51}$$

$$\begin{array}{l} -1 \text{ 24 } 13.528 \text{ comp. pan.} \\ \quad 13.028 \quad 9 \text{ 24 30} \\ \quad 9.928 \\ \quad 10.7 \\ \quad 10.2 \\ \quad 7.1 \end{array}$$

$$\begin{array}{r} -54.79 \quad +218.2 \\ 1.73870 \quad 2.33885 \\ 8.98259 \quad 8.98258 \\ \hline 72392 \quad 1.82142 \end{array}$$

$$\begin{array}{r} -52.7 \quad +21.0 \\ 12 \text{ 12 } 38.30 \quad -125.580 \\ 12 \text{ 12 } 33.03 \quad 125.370 \quad C=0 \quad 11.77 \quad 1 \text{ 26.3} \\ 12 \text{ 12 } 21.26 \quad -1 \text{ 29 } 10.7 \quad (1222) \quad 26.8 \\ \quad 20.81 \quad 10.2 \quad 11.66 \quad 29.6 \\ \quad 21.37 \quad 7.1 \end{array}$$

(109)
Alp. 13 continued.

$$\begin{array}{rcl}
 \#1 = & 11 & 56 \quad 11.89 \\
 P - \#1 & & + 2 \quad 28.05 \\
 P & 11 & 59 \quad 42.94
 \end{array}
 \quad \text{at-}
 \quad
 \begin{array}{rcl}
 & & -0 \quad 93 \quad 24 \\
 13 \quad 39 \quad 02 & + & 8 \quad 14 \\
 & & 0 \quad 35 \quad 1.0
 \end{array}
 \quad \text{at-} 13 \quad 22 \quad 11$$

$$\begin{array}{rcl}
 \#2 = & 11 & 57 \quad 58.80 \\
 & & 43.79 \\
 & 11 & 49 \quad 42.76 \\
 & & 5.9
 \end{array}
 \quad
 \begin{array}{rcl}
 13 & 39 & 02 - 0 \quad 35 \quad 20.3
 \end{array}$$

$$\begin{array}{rcl}
 \#1 & 11 & 56 \quad 15.89 \\
 & & 3 \quad 26.28 \\
 & 11 & 59 \quad 42.17 \\
 & & + 09 \\
 & & 42.26
 \end{array}
 \quad
 \begin{array}{rcl}
 13 & 50 & 15 - 0 \quad 93 \quad 24
 \end{array}$$

$$\begin{array}{rcl}
 \#2 & 11 & 57 \quad 58.80 \\
 & & 1 \quad 43.40 \\
 & 11 & 59 \quad 42.20 \\
 & & + 09 \\
 & & 42.29
 \end{array}
 \quad
 \begin{array}{rcl}
 13 & 50 & 15 - 0 \quad 95 \quad 25.3 \\
 & & + 8.2 \\
 & & - 0 \quad 35 \quad 12.1
 \end{array}
 \quad \text{at-} 13 \quad 11 \quad 42$$

$$\begin{array}{rcl}
 \#1 & 0 & 35 \quad 10 \\
 & & - 8.3 \quad 034 \quad 58.7 \\
 & & + 3.0 \\
 & & 0 \quad 34 \quad 55.7
 \end{array}
 \quad
 \begin{array}{rcl}
 \#2 & 0 & 35 \quad 12.1 \\
 & & 0.35 \quad 7.7 \\
 & & 0 \quad 35 \quad 4.7
 \end{array}$$

$$\begin{array}{rcl}
 T & 13 & 50 \quad 15 \\
 & & 27 \\
 13 & 1 & 50 \quad 42 \\
 1 & & 26 \quad 39 \\
 12 & & 24 \quad 03 \\
 & & 2 \\
 12 & & 22 \quad 01 \\
 & & 17 \quad 32 \\
 12 & & 04 \quad 28 \\
 5 & & 38 \quad 6 \\
 17 & & 42 \quad 35 \\
 5 & & 42 \quad 35
 \end{array}$$

$$\begin{array}{rcl}
 & 20833 \\
 & 2917 \\
 & 41 \\
 & 23791 \\
 P. & 37639
 \end{array}$$

$$\begin{array}{rcl}
 1.66074 & - 4474 + 46 & + 1660 & - 2.2 \\
 8.37639 & 9.66276 & 3220.8 & 0.34242 \\
 1.02705 & 8.75278 & 8.37639 & 8.75278 \\
 -10.62 & 841534 & 2.59650 & 8.05520 \\
 + 0.03 & .003 & + 35.00 & + 1.2 \\
 -10.61 & & - 12 & \\
 12 \quad 0 & 4.03 & + 38.9 & \\
 11 \quad 58 & 53.32 & - 0 \quad 37 \quad 10.9 & \\
 & & - 0 \quad 36 \quad 32.0 & - 0 \quad 36 \quad 32.0 \\
 & & 0 \quad 35 & 9.9 \quad 34 \quad 55.7 \\
 & & 25.3 & 1 \quad 36.3
 \end{array}$$

Observations of (09) Pelicidas

Date	Mag. M. Line	P-# a	P-# j	a	s	ad(C-o)	ad(C-o)	Comp#
Feb. 27	11 34 59			12 38 23.70	- 3 4 37	—	—	200
	10 18 34			12 38 25.83	—	—	—	20

Dr. Peter's last infant. Aug. 6. 114

precedes.

#	P	19.37.12.5	17.2	15.5	17.2	29.1	17.4	17.27	at 19.37.46	19.40.24
#	P	37.39.7		42.7		56.5				-24
#	P	38.16.4		19.5		33.1				19.40.00
#	P	38.43.5	17.1	46.4	16.9	60.2	17.1	17.03	38.46	8.59.6
#	P	39.11.6		14.9		28.5				10.40.54
#	P	39.38.6	17.0	41.8	16.9	56.3	16.8	16.80	39.44	1.45
#	P	40.9.7		12.9		26.6				1039.9
#	P	40.36.7	17.0	39.9	17.0	53.8	16.9	16.93	40.43	20.32.02
#	P	44.44.0		47.0		45.0.3				27
#	P	45.10.8	16.8	13.8	16.8	27.4	17.1	16.90	45.16	20.31.35
#	P							+17.01	19.40.24	8.59.6
#	P	27.1.8.9		4.7		23.6				11.32.29
#	P	27.2.7	15.4	32.2	15.5	48.6	15.0			1.53
#	P	28.0.7		5.0		21.7				1130.36
#	P	28.25.7	15.0	30.0	15.0	46.7	15.2	15.07	20.28.34	
#	P	28.57.8		29.2.2		18.9				
#	P	29.22.9	15.1	27.4	15.2	44.2	15.3	15.20	29.31	
#	P	31.32.6		37.0		54.0				
#	P	31.57.6	15.0	32.2.2	15.2	19.2	15.2	15.13	32.04	
#	P	32.31.2		35.7		52.4				
#	P	32.56.3	15.1	33.0.8	15.1	17.4	15.0	15.07	33.04	
#	P	33.28.6		33.3		50.0				
#	P	33.53.8	15.2	33.1	14.8	15.0	15.0	15.00	34.01	
#	P	34.27.3		31.8		48.8				
#	P	34.52.2	14.9	36.8	15.0	35.13.5	14.7	14.87	35.00	
#	P							30.34		
#	P							+15.06	20.32.02	

comp. H Schj 8764

21 32 54.20 + 3 235 - 11 24 34 416.06
19.41 + 1 9.2
21 33 13.66 - 11 23 29.8

W 768 30 45.29 3.236 - 11 35 16.2 15.90

For S. 236

$$\begin{array}{r}
 17685 \\
 708 \\
 705 \\
 648 \\
 745 \\
 \hline
 3491 \\
 17686 \\
 74783 \\
 57087 \\
 -9309
 \end{array}$$

Aug 9 171 (114)

abs. p w only

424 = $\frac{5}{20}$ front -

$$\begin{array}{r} 19 \ 33 \ 16 \\ 85 \ 16 \\ 87 \ 10 \end{array}$$

$$\begin{array}{r} 21 \ 635 \end{array}$$

$$\begin{array}{r} 20 \ 32 \ 40 \\ 85 \ 25 \\ 87 \ 54 \\ 16 \ 09 \end{array}$$

$$\begin{array}{r} 20 \ 35 \ 23 \\ 7 \end{array}$$

$$\begin{array}{r} 20 \ 35 \ 30 \\ 9 \ 10 \ 56 \end{array}$$

$$\begin{array}{r} 11 \ 24 \ 34 \\ 1 \ 52 \end{array}$$

$$\begin{array}{r} 11 \ 22 \ 42 \\ -23 \end{array}$$

$$\begin{array}{r} 11 \ 22 \ 19 \end{array}$$

$$\begin{array}{r} 2 \ 3.4 \\ 3.6 \\ 3.8 \end{array}$$

$$2 \ 3.60$$

$$\begin{array}{r} 3m \ 5 \\ +2 \ 3.60 \end{array}$$

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114

114

P #	18	22 330	26.5			
		22 44.9	48.4			
		2 10.9	11.9	11.9	18	22 35
P #		23 55.2	30.2	11.8		24 1
		24 10.8	14.0	11.8		24 25
		11.6	11.8	11.4		24 58
				12.2		25 24
				12.0		12.1 23
P #		24 28.3	24.2	11.7	18	24 17
		24 34.7	38.4	11.9		
		2 11.4	12.2	11.8		
				11.8		
		24 57.4	0.8	15.2	18	24 17
		25 38.4	12.5	11.8		35
		12.0	11.7			
P #		25 33.0	26.0		18	23 42
		34.9	37.8	14.9		9 14 52
		11.9	11.8	15.2		9 08 50
				15.2		130
				15.1		5 220
P #	19	59 57.8	59.8	15.1		19 59 58
		12.7	14.7	15.1		20 00 29
		14.9	14.9	15.1		2 44
				15.5		1 1
P #	20	00 28.6	30.6	15.3		1 27
				15.5		1 54
	2	48.8	48.7	15.3		7 33
		15.2	15.6	15.19		
P #	1	00	11.1			20 1 16
			17.6	-1.519		35
		15.1	15.1			20 0 41
						9 14 52
P #	1	26.5	28.5			10 45 49
		42.0	43.8			1 46
		15.5	15.8			10 44 03
P #	1	53.3	55.1			
	2	28.5	10.4			
		14.8	15.3			
		15.5				

P	18	28	43.7	29	0.4	133	#7	12.2
X	28	43.8	34	6.7	20.4			23.16
X	5	6.1	6.3	6.5				6.4
P	~~25~~	~~38.2~~	~~41.5~~	~~20.0~~	~~5.4~~	~~10~~		
P	25	35.2	51.9	36	5.5			8.8
X	40	41.8	58.5	41	12.5			15.5
	5	6.6	6.6		7.0			6.7
P	20	3.10.7	27.4		44.3			46.0
X		3.20.3	37.2		54.0			55.6
		5.9.0	9.8		9.7			9.6
P	9.23.1		40.0		56.9			58.6
X	14.23.3		50.2		6.7			8.6
	10.2		10.2		9.8			10.0

5 $\begin{array}{r} 6.1 \\ 6.3 \\ 6.5 \\ 6.4 \\ \hline 6.32 \end{array}$ 18 29 12

5 $\begin{array}{r} 6.6 \\ 6.6 \\ 7.0 \\ 6.7 \\ \hline 6.72 \end{array}$ 18 36 04

5 $\begin{array}{r} 9.6 \\ 9.8 \\ 9.7 \\ 9.6 \\ \hline 9.68 \end{array}$ 18 32 38

5 $\begin{array}{r} 10.2 \\ 10.2 \\ 9.8 \\ 10.0 \\ \hline 10.05 \end{array}$ 20 9 45

$\begin{array}{r} 13 \ 19 \\ 20 \ 6 \ 38 \end{array} = 5 \ 9.86$

$\begin{array}{r} 9 \ 17 \ 11 \\ 9 \ 15 \ 40 \\ \hline 10 \ 48 \ 05 \\ 10 \ 48 \ 05 \\ \hline 10 \ 96 \ 08 \end{array}$

$\begin{array}{r} 9 \ 17 \ 11 \\ 9 \ 15 \ 40 \\ \hline 10 \ 48 \ 05 \\ 10 \ 48 \ 05 \\ \hline 10 \ 96 \ 08 \end{array}$

John S

#1

20	17	30	58.730
	18	00	815
	21	00	730
			2255
	57	30	
20	19	10	58.766
		4	49.678
20	19	10	9.088
	9	52	"
11	04	22	+1 30.9
		45	
11	02	34	

$$\text{In } S_{H_2}$$
$$\begin{array}{r} 2210 \\ 2925 \\ \hline 3210 \\ \hline 5335 \end{array}$$

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	1st	2nd	3rd	4th
P	19.24.03.0	49.8	25.3.3	6.5
X	25.37.0	53.8	26.7.4	10.9
	1 4.0	4.0	4.1	4.4
P	26.26.1	53.0	27.6.6	9.8
X	27.40.7	57.4	10.7	14.1
	4.6	4.4	4.1	4.3
P	28.37.9	54.6	29.8.4	11.8
X	29.42.8	57.3	12.6	15.9
	4.4	4.7	4.2	4.1

1.	2	3	4
39.31.3	48.4	5.2	6.9
40.36.4	53.2	10.1	11.8
5.1	4.8	4.9	4.9
41.31.5	48.4	42.5.2	7.0
42.36.4	53.4	43.10.0	12.0
4.9	5.0	4.8	5.0

T for d-

32 58.0

34 56.0

36 51.0

1879phae.proj..309R