

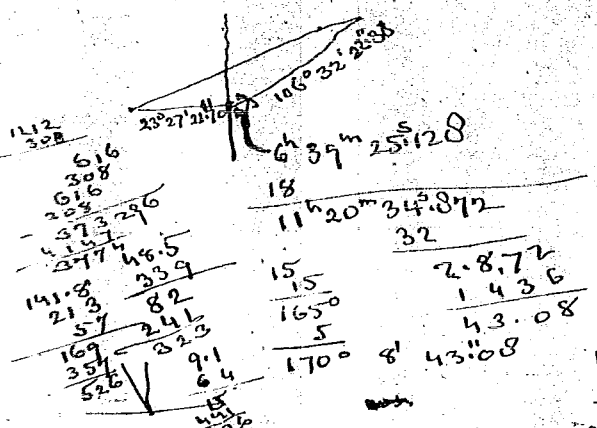
Jothic Period

Where was Sirius AD. 139?

1869.0 Mean R.A. Sirius $6^h 39^m 22.483^s$
 1871.0 27.773
 1870.0 25.128

Dec $-16^{\circ} 32' 17.74''$
 27.02
 22.38

mean obliquity 1869.0 $23^{\circ} 27' 22.16''$
 1871.0 21.23
 1870.0 3.39
 $23^{\circ} 27' 21.70''$



$106^{\circ} 32' 22.38''$
 $23^{\circ} 27' 21.70''$
 $170^{\circ} 8' 43.08''$

$\cos 9.4543526n$ $\sin 9.9816480$
 $\cos 9.9625426$ $\sin 9.5999323$
 $\sin 9.2333774$ $\cos 9.9935442n$

$9.4168952n$
 $9.5751245n$
 $0.1582293n$
 $9.5751245n$
 $9.8042064n$

$\sin -39^{\circ} 34' 32.82''$
 $\sin 9.8869319$

long $102^{\circ} 17' 23.97''$

$120^{\circ} 17' 23.97''$
 $\sin RA 9.2333774$
 9.3464455
 9.9816480
 $\sin long 9.3280935$

Check to recall Dec.

9.9625426 9.5999323
 $9.8042064n$ 9.8869319
 9.9816480
 $9.4168952n$ $9.4767900n$
 $9.7651490n$
 $9.9935442n$ 9.2333774
 9.2333774
 9.3464455
 9.9816480
 9.3280935

$9.7667490n$
 9.123906
 $9.4543584n$

$-16^{\circ} 32' 23.21''$ nearly right

$58n$
 30.4
 2.29
 2.17
 143

Sottiaferus

Precession = $50''.2411 + 0''.0001268 (t-1800)$

$$\begin{array}{r}
 1870 \\
 137 \\
 \hline
 1733 \\
 2009 \\
 t = A.D. 1004 \\
 t - 1800 = -800 \\
 0''.2158 \\
 \hline
 454 \\
 \hline
 -0''.1814 \\
 \hline
 50''.2411 \\
 \hline
 50''.0597
 \end{array}$$

1731 years
5193
10386

$$\begin{array}{r}
 773.190 \\
 50'' \times 1731 \quad 86550'' \\
 \hline
 103.86 \\
 86653.86 \\
 \hline
 52 \\
 \hline
 86653''.34 \\
 \hline
 - 1444' 13.34 \\
 \hline
 - 26^{\circ} 4' 13.34 \\
 \hline
 102 17 23.97 \\
 \hline
 1871 Long \quad 76^{\circ} 13' 10''.63 \\
 AD 135 Long
 \end{array}$$

Sun's long July 22 119.6
 76.2
 43.4

Sirius West of sun
Obliquity $23^{\circ} 27' 54''.22 - 0''.4645 (t-1800) - 0.0000014 (t-1800)^2$

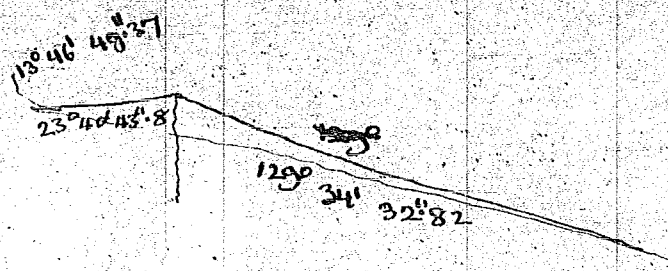
$$\begin{array}{r}
 23^{\circ} 27' 54.2 \\
 51413 \\
 \hline
 4645 \\
 \hline
 123.22 \\
 \hline
 2^{\circ} 9' 27'' \\
 \hline
 23^{\circ} 27'
 \end{array}$$

$$\begin{array}{r}
 4645 \\
 27870 \\
 \hline
 27870 \\
 4645 \\
 \hline
 +771.51 \\
 \hline
 1.9 \\
 \hline
 769.6 \\
 \hline
 12' 49.6 \\
 \hline
 23 27 54.2 \\
 \hline
 23^{\circ} 40' 43.8
 \end{array}$$

$$\begin{array}{r}
 (1661)^2 = 2760321 \\
 64407392 \\
 \hline
 276 \\
 \hline
 1932
 \end{array}$$

Obliquity AD 137 $23^{\circ} 40' 43.8$

Solar Period



Distance from Sun

90° -∞ 0.0000000
 cos lat 9.8869319
 cos diff lat 9.8613
9.7482

Dist from Sun } 55.9

857
~~126~~
039

51.0
~~204~~
72
~~064~~

34.8
~~139~~
49

23° 40' 43.8
 129 34 32.82
 130° 46' 49.27

cos 9.9618050 sin 9.6038039
 9.8042064
9.3769434

9.8869319
 9.9873158

12.4
 31
16

Dec -16° 25' 42.52

9.7660123
 3145049
9.4515074

9.4780516
 9.7660123
0.2879607

sin 9.9818971
 9.3769434
 9.3950463
 9.8042064
9.1992527
 3543

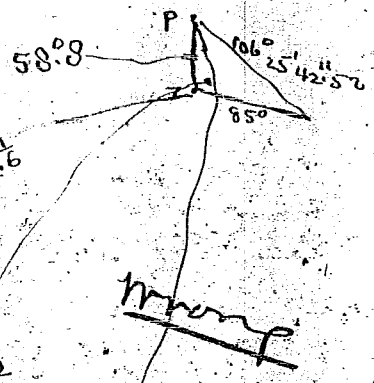
RA and 80° 53' 46.96

58.0
 106.4
 85.0
250.2
 125.4
 66.2
 18.7
 = 40.1

9.91283
 sin 9.96174
 9.50596
 9.88693
9.77071
 9.41881
 0.35190
 132.0

1314
~~82~~
708.4
 1314
~~1314~~
1182.6
 8.3

9.46772
 9.72180
 9.74592
 29° 2.3
 58.2



sin 9.92936 9.87107
 9.99834 9.98196
9.93162 9.86911

Solvet Period

~~1852~~ t = -1710.467
t^2 = 2,925,700

For this case, we find the value of the slope

195 = 390
365 = 730
1460) 1950 (134
1460
4900
14380
5200

182.3 456
546.9
182
528.7
15
529.2

61699.5
431896.5
2701970
617
2468

365) 194.066 (534
1460
1825
1236
1095
1410

250 8' 49.2
21 21.5
280 30 10.7
29 18 55.1

61699.5
43189.65
617.00
24.68
3.70
3.62

1460) 194.711
1460
487

168
0977
3.2331145
6.4662290

Amplitude
M Comp
251 11 30.4
99 35 50.5
-151 35 25.1

105335.1
1758155.1
29 18' 55.1

365) 194.7 (533
1460
12075
109575
11175
109575

1296027678.4
9072193748.8
77761660704
51841107136

110.7
292.57
29.26
322.93

29257
201799
6134

2.82
29257
58514
234056

1296027678.4 M
907219374.80
1296027678
518411.07
77761.66
9072.19

280 46 43.51
280 52 5.44
161 16 14.98
99 35 50.46

5.8514
234056
5851
8.25047

22116812514.98
3694607614.98
3694607614.98
10263
171

87.55
61.285
52530
35010
0.0666196
9.6706640
9.6040444
257
187

3459.28
8.25
3451.03
149.75
3600.78

3694607614.98
10263
171
101

87.55
61.285
875
35
5
11651879

100.0078
3.5563966
4.6856190
8.2420156
7.9194155
11.605554

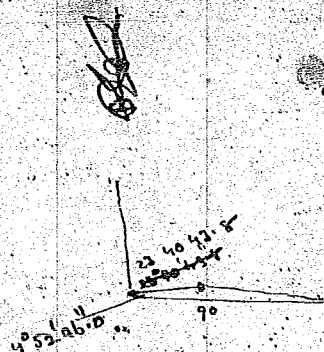
1026
174
3.1
3.2
9.7406114
6.4662290

149.95
151
28
23
25
25
152

3.2329456
1.00020481
1030859
103115494

Solstice Period

~~151° 35' 25.1"~~
 251° 11' 15.6"
 -156 18 29.6
 Long ⊙ 94° 52' 46.0"
 A.D. 139 July 21.7
 Obliquity 23° 40' 43.8"

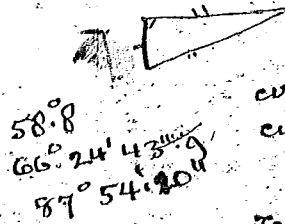
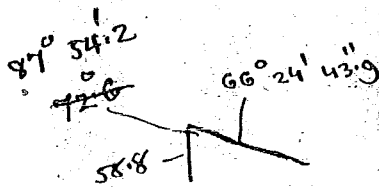


2467
 9868
 857
 182
 939
 2258
 4516
 2258
 451
 134
 56
 078
 987
 8213
 7226

220° 40' 43.8" sin 9.6028039
 4 52 46.0 cos 9.9984253
 ⊙ Dec. +23° 35' 16.1 cos 9.6022271
 sin 1.977

cos 9.9621078
 sin 8.9297296
 294
 289.8
 4.2
 8.9676148
 57.16
 432.8
 225.8
 206.2

⊙ R.A. = 95° 19' 31.0
 Sirius R.A. = 80 53 47.0
 Diff 14 25 45.0
 Sirius hour angle 73 28.24
 Sun hour angle 42.6
 87° 54.2



58.8
 66° 24' 43.9
 87° 54.2
 cos 9.7143524 sin 9.9321511
 cos 9.6022271 sin 9.9621078
 9.3165795
 562910
 9.3728705
 8.4576837
 9.3165795
 0.8588958

Sun's hour angle 76° 21' 3"

Public Record

Recalculating Sun's long. A.D. 139 July 21 sunrise

1850
139
4) 17131
427

1708 Julian years 730 days + days from
July 21 sunrise to Dec 31 noon

Dec 31 = Nov 61 = Oct 92 = Sep 122 = Aug 153 = July 164

874.3 | 2:3937
730.5

21
143.3
730
874.3

- 1 365 1/4
- 2 730 1/2
- 3 1095 3/4
- 4 1461 -
- 5 1826 1/4
- 6 2191 1/2
- 7 2556 3/4
- 8 2922 -
- 9 3287 1/4
- 6.52 1/2

143.8
1095.75
34.225
3287.25

1710.3937 = t

1420000
5041000
2924100
1346454
155
1710
6840
1710
666.90
6.84
673.74
513

182.3

0364 1/2
164 1/2
0364 1/2
091 1/2
072 1/2
533.3004
21.5

61699.5
43189.65
061699
1851
555
1.4

1 6016995
2 1233990
3 1950985
4 2487980
5 3084975
6 3701970
7 4318965
8 4933960
9 5552955
6169950

280 46 43.51
5 23.93
280 52 7.44
25 22 62.28
255 19 14.06
33 46 51.13
247 5 51.29

Mum Long
Long perigee
Mum Long

280 21 554.8
280 21 14.8
280 30 50.4
29 18
25 11
247 45
4 7
4 5
33.1

4.25
105530.4
1758.50.4
29 18 50.4

292545
87763
204782

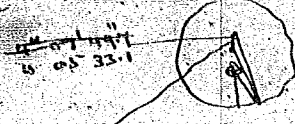
2.82
3.82
25.38
5.64
2.538
5.64
1.41
1.41
87.55
267.45
61.285

3459.28
4.25
3451.03
3607.78
1296027678.4
1296027678
116642470.6
9763972365
296027678
493 27678
8 13 22.71
25 32 53.38
33 46 16.15

1296027678.4
1296027678.4
30880830
8703972
388808
522 90722
221668797338
36947132 53385
615785.52
360
255
385
36
250 32 53.38

110.73
292.5447
29.2545
20478
0978
323.9348
1296027678.4
3888083025.2
9072193748.8

Solar Period



1° 00' 00.78
 3.5563966
 4.6856190
 8.2420156

2742
 8826
 91202
 84
 776

8.8534996
 8.2420156
 7.0955152
 4.6855748
 2.4079424

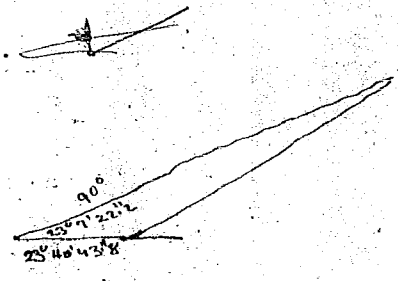
4 17.0
 4 5 33.1
 4 9 50.1

3010300
 8.2420156
 9.9988520
 8.5418976

6.4940312
 1.00030481
 0.3482552
 .96547929

9.9847430
 8.8609970
 8.8762540
 0.567
 1973
 17344
 1886

Anomaly — 40° 14' 46.6
 251 11 24.4
 True Long — 246° 52' 37.8
 27°
 23 7 22.2



23° 40' 43.8 sin 9.6038039
 23 7 22.2 cos 9.9636297
 9.5674336

57
 432
 93

83
 747
 25
 172
 535
 453

Os. Dec AD 139 + 21° 40' 30.2
 cos dec 9.9681453
 sin 23° 7' 22.2 9.5940649
 9.6259196

472
 386
 108
 541
 649

South America

1 01296027678.4
 2 02592055356.8
 3 03888083035.2
 4 051841107136
 5 064801383920
 6 077761660704
 7 090721937488
 8 103682214272
 9 116642491056
 129602767840

1710.3737

01296027678.4
 0907219374.88
 012960276.78
 038880800.30
 116642.49
~~038880800.30~~
~~116642.49~~
~~038880800.30~~
~~116642.49~~
 22167213853.0
 36945364' 33"0
 615756' 4'
 36
 255
 252
 37
 36
 156° 4' 33"0

36944799
 2216687973.38
 29602.77
 2216717576.15

22167213853.0
 12.343835
 74

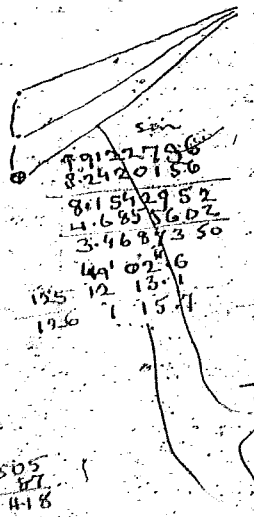
369453292' 56"15
 615754 52'

29602.77
 498 22.77
 33.38
 56.15

36
 255
 252
 37
 36
 1540

29 493
 80 13
 39
 52
 36944799
 615746 39
 36
 255
 252
 37
 36
 146
 6
 1540

154° 52' 56"15
 280 52 7.44
 125 59 11.29
 251 11 24.4
 125° 12' 13"1



Mean long @ 10139
 Long periger

Mean anomaly
 8.2420156
 0.3010300
 9.7694380 n
 8.3124836 n

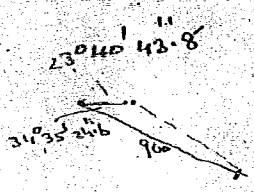
1.00030481
 .02053447
 1.02083928
 .00855768
 .31
 6.00895737
 9.7078418
 7.8978844

True anomaly 126° 35' 59.8
 Mean long 124° 35' 24.6

114
 20
 1647
 113
 360

505
 418

Solstice Period

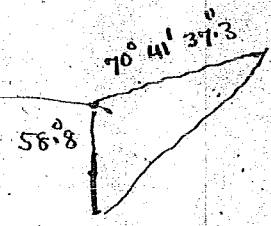


23° 40' 43.8"
34 35 24.6

sin ~~9.5940649~~ 9.6038039
cos 9.9153222
Dec \odot 19° 18' 22.7
9.5193271
1.65
120.2
44.8

RA Dec \odot 126° 58' 45.1
RA Sirius 80° 53' 48.0
Diff. 46° 4' 56.7
Hour angle Sirius -73° 28' 24"
Hour angle \odot -119° 33' 23"

cos Dec 9.9748637
sin 34° 35' 24.6 9.7541191
9.7792554
374
160
148



58.8
70° 41' 37.3
119° 33' 23"

cos 9.7143524 sin 9.9321511
cos 9.5193271 sin 9.9748637
sin 9.9394547 cos 9.6930934
9.2336795 9.6001082
9.6001082 244.7
0.3664287 244.2027
32.2
36
26.4
9.6

Sun below horizon
Azimuths 130° 07' 00.5
9.9805186
9.9394547
9.9509361
9.9748637
9.9257998
Az. N 57° 27' 50.9" E
112 36.2
55° 8.2

15) 120
20) 240
8
44

4 o'clock AM

Sirius