

Spica example
page 1 of 2

3/21
worked 3/28

TIME	SIGHT DATA	ALTITUDE																					
Date <u>30 Jun 1972</u>	Sight No. <u>1</u>	Ht of Eye <u>17.0</u> ft																					
WT <u>20-31-42</u>	Body <u>Spica</u>	hs <u>33° 53.1'</u>																					
WE <u>⊕</u> () <u>0-14</u>	DR L <u>39° 50.6'</u> <u>N</u>																						
ZT <u>20-31-28</u>	DR Lo <u>75° 21.2'</u> <u>E</u>																						
ZD <u>⊕</u> () <u>5</u>																							
GMT <u>01-31-28</u>																							
G Day/Mo <u>1 Jul</u>																							
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td>IC</td> <td>1.5'</td> <td></td> </tr> <tr> <td>Dip</td> <td style="text-align: center;">X</td> <td>4.0'</td> </tr> <tr> <td>Total</td> <td>1.5'</td> <td>4.0'</td> </tr> <tr> <td>Corr</td> <td colspan="2">(-) 2.5'</td> </tr> </tbody> </table>		(+)	(-)	IC	1.5'		Dip	X	4.0'	Total	1.5'	4.0'	Corr	(-) 2.5'							
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IC	1.5'																						
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Total	1.5'	4.0'																					
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ALMANAC — LHA SHA * <u>159° 03.6'</u> GHA <u>⊕</u> <u>01</u> hr <u>294° 11.1'</u> <u>31 m 28 s</u> <u>7° 53.3'</u> v () _____ v corr () _____ Tot GHA <u>101° 08.0'</u> DR Lo <u>75° 21.2'</u> <u>E</u> LHA <u>25° 46.8'</u>		ALMANAC — Dec Dec <u>01</u> hr <u>11° 01.3'</u> <u>N</u> d () _____ d corr () _____ Dec <u>11° 01.3'</u> <u>N</u>																					
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		ha <u>33° 50.6'</u> HP C _____ Ho <u>33° 49.2'</u>																					

INTERCEPT and AZIMUTH by CALCULATOR

Make S negative.

Convert to decimals.

a, Zc, Zn to 1 place.

All others to 5 places.

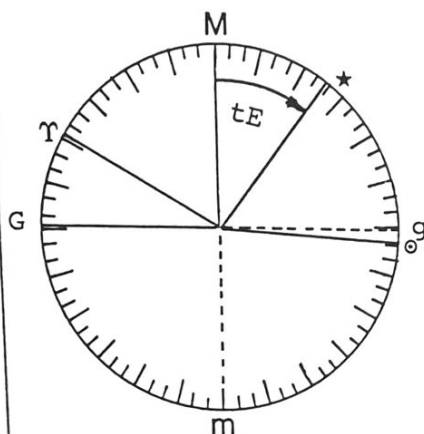
LHA <u>25.78000°</u>	- 3 -	- 2 -
Lat <u>39.84333°</u> <u>N</u>	sin Hc = (cos LHA × cos Lat × cos Dec) + (sin Lat × sin Dec)	
Dec <u>11.02167°</u> <u>N</u>	- 8 -	- 4 -
Hc <u>33.78927°</u>	cos Zc = (sin Dec - (sin Lat × sin Hc)) ÷ (cos Lat × cos Hc)	- 5 -
Ho <u>33.82000°</u>	- 6 -	- 7 -
a <u>- .03073°</u> × 60 = <u>1.8</u> mi		

1 <u>.67863</u>	- 5 <u>.35631</u>	Zc <u>149.1°</u>
+ 2 <u>.12249</u>	= 6 <u>.54749</u>	LHA > 180°, Zn = Zc
- 3 <u>.55614</u>	+ 7 <u>.63811</u>	LHA < 180°, Zn = 360° - Zc
4 <u>.19118</u>	= 8 <u>.85799</u>	Zn <u>210.9°</u>

(T) Observed greater - Toward
A (Computed greater - Away)

Canopus

TIME	SIGHT DATA	ALTITUDE																					
Date <u>23 Aug 1972</u>	Sight No. <u>21</u>	Ht of Eye <u>33.0</u> ft																					
WT <u>05-48-51</u>	Body <u>Canopus</u>	hs <u>37° 43.7'</u>																					
WE $\begin{pmatrix} f \\ s \end{pmatrix} + (-)$ <u>0-02</u>	DR L <u>9° 56 5'</u> $\begin{pmatrix} N \\ S \end{pmatrix}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td>IC</td> <td></td> <td>0.5'</td> </tr> <tr> <td>Dip</td> <td style="text-align: center;">X</td> <td>5.6'</td> </tr> <tr> <td>Total</td> <td></td> <td>6.1'</td> </tr> <tr> <td>Corr</td> <td colspan="2">(-) 6.1'</td> </tr> </tbody> </table>		(+)	(-)	IC		0.5'	Dip	X	5.6'	Total		6.1'	Corr	(-) 6.1'							
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ZT <u>05-48-49</u>	DR Lo <u>89° 18.5'</u> $\begin{pmatrix} E \\ W \end{pmatrix}$																						
ZD $\begin{pmatrix} E \\ W \end{pmatrix} + (-)$ <u>6</u>																							
GMT <u>23-48-49</u>		ha <u>37° 37.6'</u>																					
G Day/Mo <u>22 Aug</u>		HP ζ _____																					
ALMANAC — LHA SHA * <u>264° 10.0'</u> GHA γ <u>23</u> hr <u>316° 20.5'</u> <u>48</u> m <u>49</u> s <u>12° 14.3'</u> v () _____ v corr () _____ Tot GHA <u>232° 44.8'</u> DR Lo <u>89° 18.5'</u> $\begin{pmatrix} E \\ W \end{pmatrix}$ LHA <u>322° 03.3'</u>		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>(+)</th> <th>(-)</th> </tr> </thead> <tbody> <tr> <td>Main</td> <td></td> <td>1.3'</td> </tr> <tr> <td>Addl ζ, PI</td> <td></td> <td></td> </tr> <tr> <td>UL ζ - 30.0'</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>Addl Ref</td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td></td> <td>1.3'</td> </tr> <tr> <td>Corr</td> <td colspan="2">(-) 1.3'</td> </tr> </tbody> </table>		(+)	(-)	Main		1.3'	Addl ζ , PI			UL ζ - 30.0'	X		Addl Ref			Total		1.3'	Corr	(-) 1.3'	
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Main		1.3'																					
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Total		1.3'																					
Corr	(-) 1.3'																						
ALMANAC — Dec Dec <u>23</u> hr <u>52° 40.5'</u> $\begin{pmatrix} N \\ S \end{pmatrix}$ d () _____ d corr () _____ Dec <u>52° 40.5'</u> $\begin{pmatrix} N \\ S \end{pmatrix}$		Ho <u>37° 36.3'</u>																					



INTERCEPT and AZIMUTH by CALCULATOR

Make S negative.
Convert to decimals.
a, Zc, Zn to 1 place.
All others to 5 places.

$$\begin{aligned} \sin Hc &= (\cos LHA \times \cos Lat \times \cos Dec) + (\sin Lat \times \sin Dec) \\ \cos Zc &= (\sin Dec - (\sin Lat \times \sin Hc)) \div (\cos Lat \times \cos Hc) \end{aligned}$$

LHA 322.05500°

Lat -9.94167°

Dec -52.67500°

Hc 37.46452°

Ho 37.60500°

a 0.14048

$\begin{pmatrix} N \\ S \end{pmatrix}$

1 + .47098

+2 + .13729

=3 + .60827

4 - .79521

$\times 60 =$ 8.4 mi

-5 - .10502

=6 - .69019

+7 + .70181

=8 - .88281

$\begin{pmatrix} T \\ A \end{pmatrix}$ (Observed greater - Toward)
(Computed greater - Away)

Zc 152.0°

LHA > 180°, Zn = Zc

LHA < 180° Zn = 360° - Zc

Zn 152.0°

Capella

TIME

Date 29 Mar 1972

WT 19-05-11

WE (+) 0-06

ZT 19-05-17

ZD (+) 5

GMT 00-05-17

G Day/Mo 30 Mar

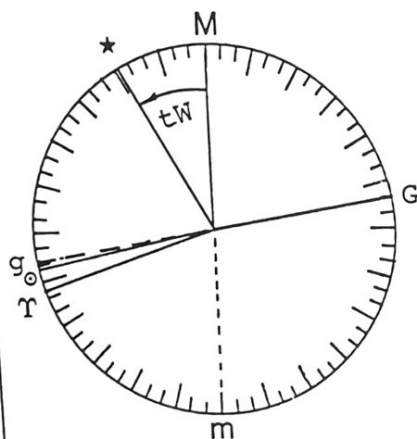
SIGHT DATA

Sight No. 11

Body Capella

DR L 28° 36.4' (N)

DR Lo 80° 50.4' (W)



ALTITUDE

Ht of Eye 8.0 ft

hs 61° 13.2'

	(+)	(-)
IC	1.0'	
Dip		2.7'
Total	1.0'	2.7'
Corr	(-)	1.7'

ha 61° 11.5'

HP

	(+)	(-)
Main		0.5'
Addl C, PI		
UL <u>-30.0'</u>		
Addl Ref		
Total		0.5'
Corr	(-)	0.5'

Ho 61° 11.0'

ALMANAC — LHA

SHA ★ 281° 20.3'

GHA T

00 hr 187° 28.7'

05 m 17 s 1° 19.5'

v ()

v corr ()

Tot GHA 110° 08.5'

DR Lo 80° 50.4' (W)

LHA 29° 18.1'

ALMANAC — Dec

Dec 00 hr 45° 58.5' (N)

d ()

d corr ()

Dec 45° 58.5' (S)

INTERCEPT and AZIMUTH by CALCULATOR

Make S negative.
Convert to decimals.
a, Zc, Zn to 1 place.
All others to 5 places.

$$\sin Hc = (\cos LHA \times \cos Lat \times \cos Dec) + (\sin Lat \times \sin Dec)$$

$$\cos Zc = (\sin Dec - (\sin Lat \times \sin Hc)) \div (\cos Lat \times \cos Hc)$$

LHA 29.30167°

Lat 28.60667° (N)

Dec 45.97500° (S)

Hc 61.20396°

Ho 61.18333°

a 0.02063 $\times 60 = \frac{1.2}{1.25}$ mi (A) (Observed greater - Toward)
(Computed greater - Away)

1 +.53207

2 +.34427

3 +.87634

4 +.71904

5 +.41959

6 +.29945

7 +.42289

8 +.70810

Zc 44.9° 44.919°

LHA > 180°, Zn = Zc

LHA < 180°, Zn = 360° - Zc

Zn 315.1°

315.08°

Venus

TIME

Date 23 Aug 1972

WT 06-01-11

WE (f-)(-) 0-02

ZT 06-01-09

ZD (E-)(-) 6

GMT 00-01-09

G Day/Mo 23 Aug

SIGHT DATA

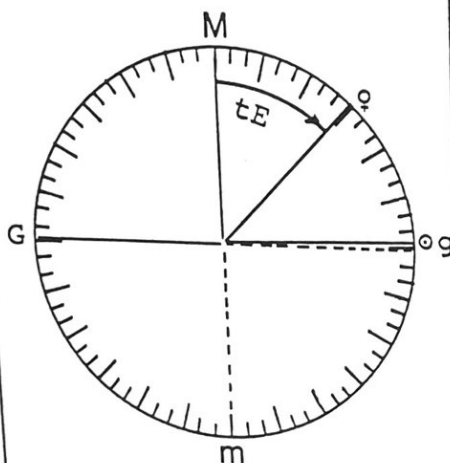
Sight No. 24

Body Venus

DR L 9° 53.8'

DR Lo 89° 15.0'

N
S
E
W



ALTITUDE

Ht of Eye 33.0 ft

hs 37° 33.7'

	(+)	(-)
IC		0.5'
Dip		5.6'
Total		6.1'
Corr	(-)	6.1'

ha 37° 27.6'

HP

	(+)	(-)
Main		1.3'
Addl C, PI	0.2'	
UL C - 30.0'		
Addl Ref		
Total	0.2'	1.3'
Corr	(-)	1.1'

Ho 37° 26.5'

ALMANAC — LHA

SHA ★

GHA

00 hr 226° 17.9'

01 m 09 s 0° 17.3'

v (+) 0.0'

v corr (+) 0.0'

Tot GHA 226° 35.2'

DR Lo 89 15.0

LHA 315 50.2

ALMANAC — Dec

Dec 00 hr 19° 23.8'

d (-) 0.0'

d corr (-) 0.0'

Dec 19° 23.8'

INTERCEPT and AZIMUTH by CALCULATOR

Make S negative.

Convert to decimals.

a, Zc, Zn to 1 place.

All others to 5 places.

LHA 315.83667°

Lat -9.89667°

Dec 19.39667°

Hc 37.55264°

Ho 37.44167°

a 0.11097

$$\begin{aligned} \sin Hc &= (\cos LHA \times \cos Lat \times \cos Dec) + (\sin Lat \times \sin Dec) \\ \cos Zc &= (\sin Dec - (\sin Lat \times \sin Hc)) \div (\cos Lat \times \cos Hc) \end{aligned}$$

1 + .66657

+2 - .05708

=3 + .60949

4 + .33211

× 60 = 6.7 mi

-5 - .10475

=6 + .43686

+7 + .78100

=8 + .55936

(Observed greater - Toward)
(Computed greater - Away)

Zc 56.0°

LHA > 180°, Zn = Zc

LHA < 180°, Zn = 360° - Zc

Zn 056.0°