

Texas Instruments Voyage 200 Hand Held Computer.
Sight Reduction Program using Law of Cosines Method for calculating Hc, a, & Zn
sr()

Prgm

setMode("Angle","DEGREE")

setMode("Display Digits","FIX 5")

setMode("Pretty Print","ON")

ClrIO

Disp "LHA ="&format(LHA)

If NP=1 Then

Disp "LAT ="&format(LAT)&" N"

If DEC<0 then

Disp "DEC ="&format(DEC)&" S"

Else

Disp "DEC ="&format(DEC)&" N"

Endif

Else

Disp "LAT ="&format(LAT)&" S"

If DEC<0 then

Disp "DEC ="&format(DEC)&" N"

Else

Disp "DEC ="&format(DEC)&" S"

Endif

Endif

$\sin^{-1}(\cos(LHA)*\cos(LAT)*\cos(DEC)+\sin(LAT)*\sin(DEC)) \rightarrow Hc$

Disp "Hc="&format(Hc)

Disp "Ho="&format(Ho)

Abs(Ho -Hc)*60. $\rightarrow a$

setMode("Display Digits","FIX 1")

If Ho>Hc then

Disp "a = "&format(a)" Toward"

Else

Disp "a = "&format(a)" Away"

Endif

$\cos^{-1}((\sin(DEC)-\sin(LAT)*\sin(Hc))/(\cos(LAT)*\cos(Hc))) \rightarrow Z$

If NP=1 and LHA>180.0 Then

Disp "Z = N"&format(z)&"E"

Z \rightarrow Zn

Endif

If NP=1 and LHA \leq 180.0 Then

Disp "Z = N"&format(Z)&"W"

360.0 -Z \rightarrow Zn

Endif

If NP=0 and LHA>180.0 Then

Disp "Z = S"&format(Z)&"E"

180.0 -Z \rightarrow Zn

Endif

If NP=0 and LHA \leq 180.0 Then

Disp "Z = S"&format(Z)&"W"

180.0 +Z \rightarrow Zn

Endif

setMode("Display Digits","FIX 0")

Disp "Zn = "&format(Zn)

setMode("Display Digits","FIX 5")

EndPrgm

To Run TI - Voyage SR Program

Key in value of LHA & Press **STO >** **L** **H** **A** **ENTER**

Key in value of LAT & Press **STO >** **L** **A** **T** **ENTER**

Key in value of DEC & Press **STO >** **D** **E** **C** **ENTER**

Key in value of Ho & Press **STO >** **H** **O** **ENTER**

Key in value of NP & Press **STO >** **N** **P** **ENTER**

All values are entered as decimal degrees & If LAT & DEC have contrary names enter DEC as a negative value.

If LAT is in northern hemisphere, enter NP = 1

If LAT is in southern hemisphere, enter NP = 0

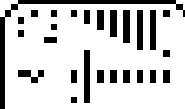
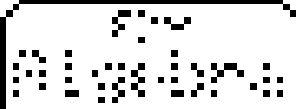
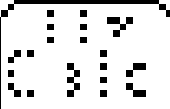
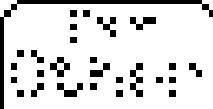

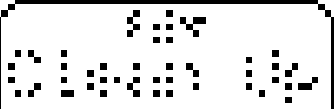

Now Press **S** **R** **(** **)** **ENTER**

The Calculator Screen will then Display the values of LHA, LAT, DEC, Ho, Hc, a, Z & Zn

Sight Reduction Program

For TI – Voyage 200

Output Screen

						
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LHA = 338.76000
LAT = 48.14167 N
DEC = 11.18000 S
Hc = 27.75874
Ho = 27.77667
a = 1.1 Toward
Z = N 156.3 E
Zn = 156.

H0229

DEG AUTO

FUNC 30/30