SIGHT REDUCTION FORM

VARIABLES

L = Assumed Latitude
d = Declination
t = Meridian Angle (computed using LHA)

LHA = Local Hour Angle

L csc = Log10 cosecant
L sec = Log10 secant

If LHA < 90°, then $t = LHA$
If 180° < LHA < 270°, then $t = LHA$ -180°
If 90° < LHA < 180°, then t =180°- LHA
If 270° < LHA < 360°, then t =360°- LHA

CALCULATED ALTITUDE (*Hc*)

TRIG LOG METHOD

L		L csc	
d		+L csc	
		L csc^{-1}	sin
L		L sec	
d		+L sec	
t		+L sec	
		L sec^{-1}	cos
			(1) ±
			sin^{-1}
			Hc = ° ′

COMPUTATIONAL METHOD

L		sin	
d		* sin	
L		cos	
d		* cos	
t		* cos	
			(1) ±
			sin^{-1}
			Hc = ° ′

RULE: (1) If LHA < 90° or LHA > 270°, then L & d same name (+), different name (-)
If 90° < LHA < 270°, then L & d same name (-), different name (+)

CALCULATED AZIMUTH (*Zn*)

TRIG LOG METHOD

d		L sec	
t		+L csc	
Hc		-L sec	
		L csc^{-1}	
		Z =	° ′
		Apply rule for ***Zn*** =	° ′

COMPUTATIONAL METHOD

d		cos	
t		* sin	
Hc		/cos	
		sin^{-1}	
		Z =	° ′
		Apply rule for ***Zn*** =	° ′

RULES FOR *Zn* Assumed Position (AP) verses body (b): ***Zn*** = Azimuth

b is north and east of AP: $Zn = Z$
b is north and west of AP: Zn = 360 - Z
b is south and east of AP: Zn = 180 - Z
b is south and west of AP: Zn = 180 + Z

PRIME VERTICAL (*Pv*)

TRIG LOG METHOD

d		L csc	
L		-L csc	
		L csc^{-1}	
		Pv =	° ′

COMPUTATIONAL METHOD

d		sin	
L		/sin	
		sin^{-1}	
		Pv =	° ′

CALCULATED AMPLITUDE

TRIG LOG METHOD

d		L csc	
L		-L sec	
		L csc^{-1}	
		Z =	° ′
		Apply rule for ***Zn*** =	° ′

COMPUTATIONAL METHOD

d		sin	
L		/cos	
		sin^{-1}	
		Z =	° ′
		Apply rule for ***Zn*** =	° ′

RULES FOR *Zn* Assumed Position (AP) verses body (b): ***Zn*** = Azimuth

b is north and east of AP: $Zn = 90 - Z$
b is north and west of AP: $Zn = 270 + Z$
b is south and east of AP: $Zn = 90 + Z$
b is south and west of AP: $Zn = 270 - Z$