

## Starpath Short Forms for LAN and Polaris Sights Using *GPS Backup Almanac*\*

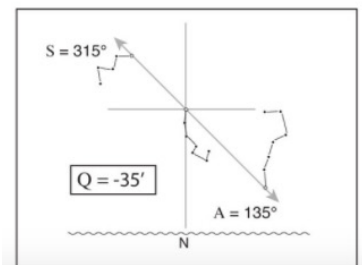
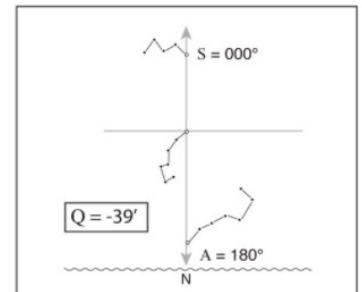
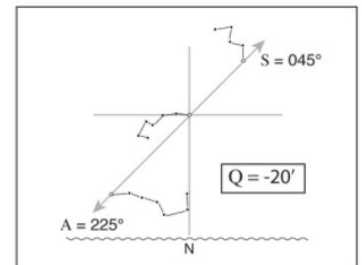
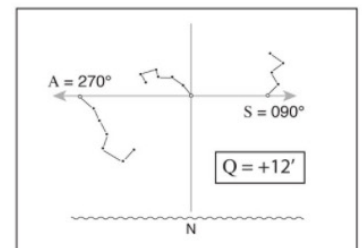
Lat at LAN			
Find Ho		degrees	minutes
(max) Hs =			
(+Off, - On) IC =	±		
(from HE) Dip =	-		
(LL+16; UL-16) SD =	±		
Ref =	-		
(sum above) Ho =			
Find z (90°-Ho)		89°	60.0'
Ho =	-		
z =			
DR (Lat, Lon) =			
<i>Lat = sum or difference Dec and z</i>			
Dec or z =			
z or Dec =	±		
Lat =			

	hr	min	sec
UTC LAN =			

Declination in Sun Almanac at UTC of LAN			
		degrees	minutes
Dec (hr) =	N S		

Lon at LAN = GHA sun at UTC of LAN			
		degrees	minutes
GHA (hr) =			
GHA (m.s) =	+		
GHA =			
<i>If GHA between 0 and 180, Lon W = GHA</i>			
<i>If GHA between 180 and 360, Lon E = 360-GHA</i>			

*LAN Lat Rules. For Contrary Name: Lat = z - Dec. For Same Name: DR-Lat > Dec, Lat = z + Dec; DR-Lat < Dec, Lat = Dec - z. But don't forget the easy rule: add them, and if that is nonsense (compared to your DR Lat), then subtract them. LAN Lon Reminder. LAN Lon is only as accurate as the UTC you assign to the event. The Lon will be uncertain by 15' for each 1 minute of time uncertainty in your choice of peak Hs time.*



Lat by Polaris			
	hr	min	sec
UTC Polaris sight =			
DR (Lat, Lon) =			
		degrees	minutes
Hs-Polaris =			
(+Off, - On) IC =	±		
(from HE) Dip =	-		
Ref =	-		
(sum above) Ho =			
Q =	±		
Lat =			

Polaris Correction		
S	A	Q
180	000	+38'
195	015	+35'
210	030	+28'
225	045	+20'
240	060	+12'
255	075	00'
270	090	-12'
285	105	-20'
300	120	-28'
315	135	-35'
330	150	-38'
345	165	-40'
000	180	-38'

Polaris Correction		
S	A	Q
000	180	-38'
015	195	-35'
030	210	-28'
045	225	-20'
060	240	-12'
075	255	00'
090	270	+12'
105	285	+20'
120	300	+28'
135	315	+35'
150	330	+38'
165	345	+40'
180	360	+38'

Regiment of the Pole	
	Angle 0° to 360°
Begin S =	
Alkaid A =	
Q =	

\* Tables from *GPS Backup with a Mark 3 Sextant*, by David Burch (Starpath, Seattle, 2019)  
If you are using a standard Nautical Almanac, use the form on the next page.

## Short Forms for LAN and Polaris Sights Using Standard Nautical Almanac

Lat at LAN			
Find Ho		degrees	minutes
Hs-max =			
IC (+Off, - On) =	±		
Dip (from HE) =	-		
Ha =			
alt corr (UL-,LL+) =	±		
Ho =			
Find z (90°-Ho)		89°	60.0'
Ho =	-		
z =			
DR (Lat, Lon) =			
<i>Lat = sum or difference Dec and z</i>			
Dec or z =			
z or Dec =	±		
Lat =			

	hr	min	sec
UTC LAN =			

Declination in Nautical Almanac at UTC of LAN				
		degrees	minutes	d-value (±)
Dec (hr) =	N S			
d corr =	±			
Dec =	N S			

Lon at LAN = GHA sun at UTC of LAN				
		degrees	minutes	
GHA (hr) =				
GHA (m.s) =	+			
GHA =				
<i>If GHA between 0 and 180, Lon W = GHA</i>				
<i>If GHA between 180 and 360, Lon E = 360-GHA</i>				

**LAN Lat Rules.** For Contrary Name:  $Lat = z - Dec$ . For Same Name:  $DR-Lat > Dec$ ,  $Lat = z + Dec$ ;  $DR-Lat < Dec$ ,  $Lat = Dec - z$ . But don't forget the easy rule: add them, and if that is nonsense (compared to your DR Lat) then subtract them.

**LAN Lon Reminder.** LAN Lon is only as accurate as the UTC you assign to the event. The Lon will be uncertain by 15' for each 1 minute of time uncertainty in your choice of peak Hs time..

Find LHA Y	hr	min	sec
UTC Polaris sight =			
DR (Lat, Lon) =			

LHA Y = GHA Y - Lon W (or + Lon E)			
		degrees	minutes
GHA Y (hr) =			
GHA Y (m.s) =	+		
GHA Y =			
DR Lon (-W,+E) =	±		
LHA Y =			
LHA Y (deg) =			
<i>Use LHA Y in Polaris Tables to find a0, a1,a2</i>			

Lat by Polaris			
		degrees	minutes
Hs-Polaris =			
IC (+Off, - On) =	±		
Dip (from HE) =	-		
Ha =			
alt corr =	-		
Ho =			
subtract 1°	-	-1°	
+a0 =	+		+
+a1 =	+		+
+a2 =	+		+
Lat =			