Determine Latitude using Polaris

Using an Artificial Horizon

DR. Latitude	°
DR. Longitude	°
Date of observation	/ /
Time of observation	: :

1- **Hs** (Height of sextant)	° . '
2- IE (Index Error)	° . '
3- Hs + *or* -- IE=	° . '
4-AH (Artificial Horizon / 2= Ha) (divide answer in line 3 by 2)	° . '
5- ACT (Altitude Correction Table)	° . '
6- (Height observed) **Ho** (add result in line 4 to figure in line 5)	° . '

GHA ♈	° . '
GHA ♈ increment	° . '
GHA ♈ sum	° . '
Ap λ *(See Ap λ rules page 2)*	° . '
(See LHA rules page 2) **LHA** ♈	° . '

Ho (copy from Ho above)	° . '
Table 6- Correction (Q) for Polaris using LHA ♈	'
Latitude (add or subtract Q correction to Ho)	° . '
Polaris azimuth TABLE 7- azimuth of Polaris Determined by integral latitude figure and LHA ♈	°

Using ocean horizon

DR. Latitude	°
DR. Longitude	°
Date of observation	/ /
Time of observation	: :

1- **Hs** (Height of sextant)	° . '
2- IE (Index Error)	° . '
3- Dip	° . '
4- Ha (Hs + *or* -- IE -- Dip)	° . '
5- ACT (Altitude Correction Table)	° . '
6- (Height observed) **Ho** (add result in line 4 to figure in line 5)	° . '

GHA ♈	° . '
GHA ♈ increment	° . '
GHA ♈ sum	° . '
Ap λ *(See Ap λ rules on page 2)*	° . '
(See LHA rules page 2) **LHA** ♈	° . '

Ho (from above)	° . '
Table 6- Correction (Q) for Polaris using LHA ♈	'
Latitude (add or subtract Q correction to Ho)	° . '
Polaris azimuth TABLE 7- azimuth of Polaris Determined by integral latitude figure and LHA ♈	°

Get- POLARIS (POLE STAR) TABLE, 2019

Here- https://www.thenauticalalmanac.com/aira19_all.pdf#page=898

LHA ♈ Local Hour Angle Aries rules

In Western longitudes

Subtract Ap λ from the GHA total. Ignore the minutes of GHA. In Western Longitudes if GHA is *less than* the Ap λ first add 360 to the GHA and then subtract the Ap λ from it.

In Eastern longitudes

Round up the GHA ♈ to next highest degree and add the DR. longitude integral degree to it. If the resulting figure is over 360 then subtract 360 from it.

Ap λ- Assumed position Longitude rules

Ap λ in Western Longitudes

Combine the DR. Longitude figure with only the minutes (of arc) of the total GHA ♈ figure. The Ap λ figure will be used when plotting the LOP on the UPS.

Ap λ in Eastern Longitudes

In Eastern longitudes the Ap λ is determined as follows;

DR longitude + (0°60' minus GHA minutes of arc)

Example- E 075° + (0°60' – 0° 24.2')= E 075° 35.8' Ap λ