

35°N 67.15°W 150°T @ 6kts

HE = 25ft

IC = -1'

① Venus: June 26 @ 00:24:55 UT
Hs = 23°28.5'

② Polaris: June 26 @ 00:35:00 UT
Hs = 34°28'

③ Venus: June 26 @ 00:45:02
Hs = 19°18'

Venus: averaging time \Rightarrow ~~00:35:02~~
00:35:00
averaging Hs = 21°23.3'

<u>Polaris</u>	
Hs	34°28'
IC	-1
Dip	-5
Ref	-1.4
H ₀	<u>34°21.5'</u>
	34.36°

~~(7.7) = 38.64~~

<u>Venus</u>	
Hs	21°23.3
IC	-1
Dip	-5
Ref	<u>-1.4</u>

H₀ = 21°15.9'
= 21.27°

Z_D = 68.73°

Dip = 0.97' * √HE
= 0.97' * 5 = -5'

Ref = 0.97' / tan(Lat)
= 0.97' / tan(35°)
= 1.39'

Polaris: $H_0 = 34.36^\circ$

~~GHA₀ = 282.64°~~

June 1 $GHA_\gamma = 249.22^\circ$
day 26 24.64°
35 mins 8.77°

$$GHA_\gamma = \underline{282.63^\circ}$$

$$LHA_\gamma = 282.63^\circ - \cancel{35} \cancel{67} 67.25^\circ \\ = \cancel{247.64^\circ} \\ = 215.38^\circ$$

$$SHA_P = 314.5^\circ \quad Dec_P = 89.37^\circ \Rightarrow pd = 90^\circ - Dec = 0.63^\circ$$

$$\rightarrow LHA_{Polaris} = LHA_\gamma + SHA_P \\ = 169.98^\circ \sim 170^\circ$$

$$Q = -pd \cdot \cos(LHA_P) = -0.63' \times \cos(170^\circ) \\ = 0.62$$

$$Lat = H_0 + Q = 34.36^\circ + 0.62^\circ = \underline{\underline{34.98^\circ}}$$

Venus: $SHA_V = 219.85^\circ$ $Dec = 16.62^\circ$ (\rightarrow table p. 10)

$$GHA_\gamma = 282.63^\circ \text{ (see above)}$$

$$GHA_V = GHA_\gamma + SHA_V = 142.48^\circ$$

Lat 35°N: $A = 0.46216$
 $B = 0.20901$
 $C = 0.25315$
 $HA = 75.34^\circ$
 $Lon_0 = GHA_V - HA \\ = 67.14^\circ$

~~Lat~~ $Lat 35.1^\circ N$
 $A = 0.46273$
 $B = 0.20978$
 $C = 0.25294$
 $HA = 75.35^\circ$
 $Lon_1 = 67.13^\circ$

35.1°

35.0

34.9°

Polaris
Lat = 34.98°

Lat = 34.98°
= 34° 59' N

Lon = 67.14°
= 67° 09' W

Fix

Venus

67.13°

67.14°

67.15°

