

PRO FORMA FOR POLARIS

Date	1 MAY	Watch time	05 52
Approximate Latitude:	51° N	Correction	—
DR Long	20° W	GMT	05 52

GHA Υ (hrs)	293 50.0
+ Increment (mins/secs)	13 02
GHA Υ	306 52
DR Long (approx)	19 52
LHA Υ	287

Hs	51 21.6
Index error	+2.8
Dip	-3.8
Apparent Alt	51 20.6
Star Correction	-0.8
Ho	51 19.8
+ a_0 (LHA Υ 287°)	1 13.3
+ a_1 (Lat 51° N)	0.6
+ a_2 (month MAY)	0.4
Sum	52 34.1
-1°	-1
LATITUDE	51° 34'.1 N

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tables for Polaris immediately before the 'minutes and seconds' increment pages at the back of the almanac (see page 59). The page is divided into three sections, each dealing with a correction factor. These are called a_0 , a_1 , and a_2 .

For a_0 , enter the table with your LHA Aries.

For a_1 , enter with your approximate latitude.

For a_2 you simply need to know what month it is.

The only work required here is to determine the LHA of Aries for your approximate position at the time of the sight – to the nearest minute of time is fine.

In order to keep the arithmetic simple, each of these corrections is made positive. After they have all been added, however, one degree must be subtracted from the final result to produce a latitude. The pro forma puts all this down in step-by-step form and should remove any doubts you may have about it.

Example

1st May. DR 51°N 20°W. Polaris is observed during morning twilight at 0552 GMT. Sextant altitude is 51°21'.6. Height of eye is 15 feet and index error is 2.8 off the arc. What is your latitude?