

Using the Weems & Plath Star Finder No. 2102-D

This Star Finder is designed to help locate and identify, by altitude and azimuth, the 57 stars listed in the Air and Nautical Almanacs or any other celestial bodies that may be plotted on the star base. Because the unit uses an Azimuthal Equidistant Projection, it can not be compared directly with the heavens due to distortion. The complete unit consists of one star base, ten templates, and these instructions.

TO FIND OR IDENTIFY CELESTIAL BODIES

1. From the Air or Nautical Almanac, or other source, determine GHA Aries for GMT of observation.
2. Convert GHA Aries to LHA Aries by subtracting DR longitude if west, or adding DR longitude if east. When this answer is negative add 360°, or if the answer is over 360° subtract 360°.
3. Select blue-line template for latitude nearest your DR position. Center selected template over star base so that template and star base both conform to hemisphere (N or S) of observer. Rotate template until arrow is over LHA Aries. The approximate altitudes and azimuths of celestial bodies above the horizon are then indicated by the curves.

By Nautical Almanac

Example 1. - Nov. 9, 1961, DR lat. 37°N, long. 70°W. Find alt. and Zn of navigational stars above horizon at ZT 1701.

ZT	1701	No	v. 9
ZD(+)	5		
GMT	2201	No	v. 9
GHA Aries 22	^h 18	°49.7'	
01	^m 0	°15.0'	
GHA Aries 22	^h 01 ^m 19	°04.7'	
long.	70	°00.0' W	(subtr act)
	-50	°55.3'	(negativ e)
(+)	360	°00.	
LHA Ar	ies 309	°04.7'	

Select the template for latitude 35°N, place it over the north side of the star base, and set arrow to 309.1°.

By Air Almanac

Example 2. - Jan. 9, 1961, DR lat. 21°S, long. 145°E. Find alt. and Zn of navigational stars above horizon at GMT 1630 (Jan. 1).

GMT	1630	J	an. 1
GHA Aries 16	^h 30 ^m 348	°35'	
long.	145	°00' E	(add)
	493	°35'	
(-)	360	°00.	
LHA Ar	ies 133	°35'	

Select the template for latitude 25°S, place it over the south side of the star base, and set arrow to 133.6°.

TO PLOT SUN, MOON, PLANETS, OR ADDITIONAL STARS

From the Nautical or Air Almanac, determine the body's declination and right ascension (RA). The body's RA is obtained by:

	GHA Ar	ies	360	°
-	GHA Body (min	us) -	SHA Body (min	us)
=	RA Body	=	RA Body	

When GHA body is zero, GHA Aries equals RA. Center red-line template over star base, use correct hemisphere on both, then rotate until arrow (0°) points to RA body. If the body's declination is the same as the hemisphere in center of base, then position will be plotted towards center from celestial equator. If declination is opposite, then position will be plotted away from celestial equator towards edge of base. With a pencil through the cut-out slot, mark the body's declination.

IDENTIFYING UNKNOWN BODIES

Using the appropriate blue-line template and base side, align index arrow to LHA Aries for the time of sighting. Locate intersection of altitude and azimuth of shot. If no star is near intersection, the body may be a planet or unmarked star. Keeping blue-line template in place, put red-line template on top and rotate until the cut-out slot is over the altitude/azimuth intersection of sight. Determine declination and SHA of body, then refer to Almanac for identification.

Notes:

- 1.) Templates do not include correction for refraction or DIP.
- 2.) Parts of H.O. 2102-D and previous models are not interchangeable because of difference in scale.

Weems & Plath®

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PACKAGING MADE IN CHINA