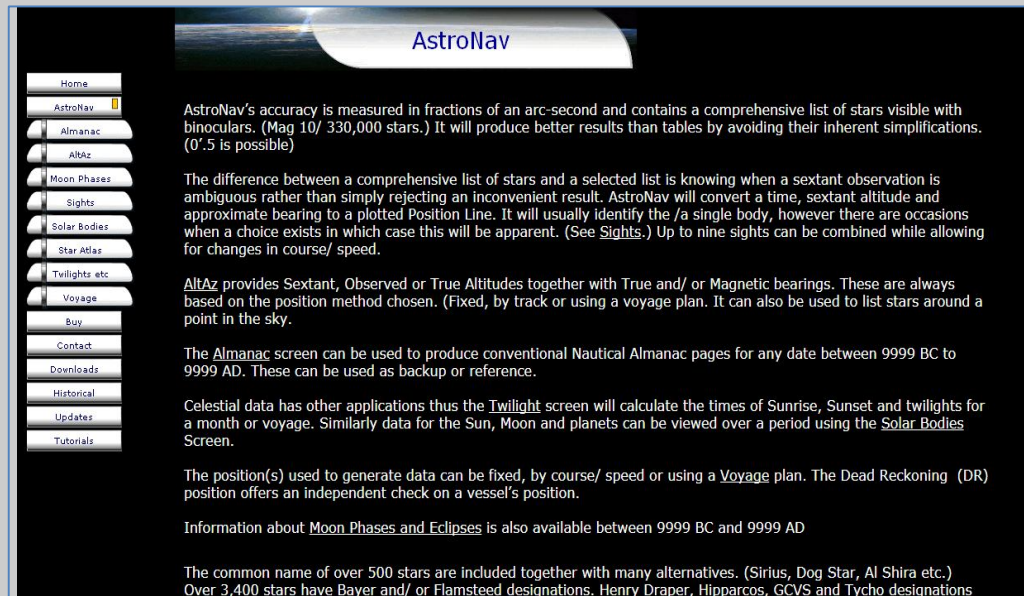


Home Page


AstroNav

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AstroNav's accuracy is measured in fractions of an arc-second and contains a comprehensive list of stars visible with binoculars. (Mag 10/ 330,000 stars.) It will produce better results than tables by avoiding their inherent simplifications. (0'.5 is possible)

The difference between a comprehensive list of stars and a selected list is knowing when a sextant observation is ambiguous rather than simply rejecting an inconvenient result. AstroNav will convert a time, sextant altitude and approximate bearing to a plotted Position Line. It will usually identify the /a single body, however there are occasions when a choice exists in which case this will be apparent. (See [Sights](#).) Up to nine sights can be combined while allowing for changes in course/ speed.

[AltAz](#) provides Sextant, Observed or True Altitudes together with True and/ or Magnetic bearings. These are always based on the position method chosen. (Fixed, by track or using a voyage plan. It can also be used to list stars around a point in the sky.

The [Almanac](#) screen can be used to produce conventional Nautical Almanac pages for any date between 9999 BC to 9999 AD. These can be used as backup or reference.

Celestial data has other applications thus the [Twilight](#) screen will calculate the times of Sunrise, Sunset and twilights for a month or voyage. Similarly data for the Sun, Moon and planets can be viewed over a period using the [Solar Bodies](#) Screen.

The position(s) used to generate data can be fixed, by course/ speed or using a [Voyage](#) plan. The Dead Reckoning (DR) position offers an independent check on a vessel's position.

Information about [Moon Phases and Eclipses](#) is also available between 9999 BC and 9999 AD

The common name of over 500 stars are included together with many alternatives. (Sirius, Dog Star, Al Shira etc.) Over 3,400 stars have Bayer and/ or Flamsteed designations. Henry Draper, Hipparcos, GCVS and Tycho designations

Logo**URL**

<http://navsoft.com/astronav.html>

Subjects

Navigation – Almanacs
Astronautics - Almanacs

Accessibility

On subscription basis

Language

English

Publisher

NavSoft

Scope and Coverage

AstroNav is an electronic Nautical Almanac that includes a comprehensive catalogue of stars.

It covers.....



The common name of over 500 stars are included together with many alternatives. (Sirius, Dog Star, Al Shira etc.) Over 3,400 stars have Bayer and/ or Flamsteed designations. Henry Draper, Hipparcos, GCVS and Tycho designations are also available. Any of these can be used to find a star.

Kind of Information

AstroNav is divided into several categories as mentioned into scope & coverage area.

The **Almanac** screen can be used to produce conventional Nautical Almanac pages for any date between 9999 BC to 9999 AD. These can be used as backup or reference. Part of the comprehensive coverage of AstroNav is its ability to produce conventional Nautical Almanac pages for any year. These can be printed to provide a primary reference source or as backup. Calculations can be followed through from conventional Almanac entries (or even scientific sources,) to a final, best position from the resulting position lines.

Almanac												
Print		Exit		Sunday		19 October 2008		GMT				
GMT	ARIES	VENUS -4.0		MARS +1.6		JUPITER -2.2		SATURN +0.9		STARS		
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec
19 00	27° 50'.5	149° 58'.6	21° 15'.7 S	170° 08'.8	14° 50'.2 S	101° 25'.8	22° 55'.6 S	218° 49'.7	6° 37'.9 N	Acamar	315° 20'.5	40° 15'.0
01	42° 52'.9	164° 57'.9	16'.4	185° 09'.6	50'.8	116° 28'.0	55'.5	233° 51'.9	37'.8	Achernar	335° 28'.5	57° 11'.0
02	57° 55'.4	179° 57'.2	17'.2	200° 10'.3	51'.4	131° 30'.1	55'.5	248° 54'.1	37'.7	Acrux	173° 14'.3	63° 08'.0
03	72° 57'.9	194° 56'.5	17'.9	215° 11'.1	51'.9	146° 32'.3	55'.5	263° 56'.3	37'.6	Adhara	255° 15'.2	28° 58'.0
S 04	88° 00'.3	209° 55'.8	18'.7	230° 11'.9	52'.5	161° 34'.4	55'.4	278° 58'.6	37'.5	Aldebaran	290° 53'.2	16° 31'.0
u 05	103° 02'.8	224° 55'.1	19'.4	245° 12'.7	53'.0	176° 36'.5	55'.4	294° 00'.8	37'.4			
06	118° 05'.3	239° 54'.5	20'.2	260° 13'.5	53'.6	191° 38'.7	55'.4	309° 03'.0	37'.3	Alioth	166° 24'.0	55° 54'.0
07	133° 07'.7	254° 53'.8	21'.0	275° 14'.2	54'.2	206° 40'.8	55'.4	324° 05'.2	37'.2	Alkaid	153° 01'.9	49° 16'.0
08	148° 10'.2	269° 53'.1	21'.7	290° 15'.0	54'.7	221° 43'.0	55'.3	339° 07'.4	37'.1	Alnair	27° 47'.7	46° 55'.0
09	163° 12'.6	284° 52'.4	22'.5	305° 15'.8	55'.3	236° 45'.1	55'.3	354° 09'.6	37'.0	Alnilam	275° 49'.7	1° 11'.0
d 10	178° 15'.1	299° 51'.7	23'.2	320° 16'.6	55'.9	251° 47'.2	55'.3	3° 11'.8	36'.9	Alphard	217° 59'.7	8° 41'.0
a 11	193° 17'.6	314° 51'.0	24'.0	335° 17'.4	56'.4	266° 49'.4	55'.2	24° 14'.0	36'.8			
y 12	208° 20'.0	329° 50'.3	21° 24'.7 S	350° 18'.1	14° 57'.0 S	281° 51'.5	22° 55'.2 S	39° 16'.3	6° 36'.7 N	Alphecca	126° 14'.2	26° 41'.0
13	223° 22'.5	344° 49'.6	25'.5	5° 18'.9	57'.6	296° 53'.7	55'.2	54° 18'.5	36'.6	Alpheratz	357° 46'.9	29° 08'.0
14	238° 25'.0	359° 48'.9	26'.2	20° 19'.7	58'.1	311° 55'.8	55'.1	69° 20'.7	36'.5	Alteir	62° 11'.7	8° 53'.0
15	253° 27'.4	14° 48'.2	27'.0	35° 20'.5	58'.7	326° 57'.9	55'.1	84° 22'.9	36'.4	Ankaa	353° 18'.6	42° 15'.0
16	268° 29'.9	29° 47'.5	27'.7	50° 21'.3	59'.3	342° 00'.1	55'.1	99° 25'.1	36'.3	Antares	112° 30'.9	26° 27'.0
17	283° 32'.4	44° 46'.8	28'.5	65° 22'.0	59'.8	357° 02'.2	55'.0	114° 27'.3	36'.2			
18	298° 34'.8	59° 46'.2	29'.2	80° 22'.8	15° 00'.4 S	12° 04'.3	55'.0	129° 29'.5	36'.1	Arcturus	145° 59'.2	19° 08'.0
19	313° 37'.3	74° 45'.5	29'.9	95° 23'.6	00'.9	27° 06'.5	55'.0	144° 31'.7	36'.0	Atia	107° 36'.4	69° 02'.0
20	328° 39'.8	89° 44'.8	30'.7	110° 24'.4	01'.5	42° 08'.6	54'.9	159° 34'.0	35'.9	Avior	234° 19'.7	59° 31'.0
21	343° 42'.2	104° 44'.1	31'.4	125° 25'.1	02'.1	57° 10'.7	54'.9	174° 36'.2	35'.8	Bellatrix	278° 35'.6	6° 21'.0
22	358° 44'.7	119° 43'.4	32'.2	140° 25'.9	02'.6	72° 12'.9	54'.9	189° 38'.4	35'.8	Betelgeuse	271° 04'.9	7° 24'.0
23	13° 47'.1	134° 42'.7	32'.9	155° 26'.7	03'.2	87° 15'.0	54'.8	204° 40'.6	35'.7			
20 00	28° 49'.6	149° 42'.0	21° 33'.6 S	170° 27'.5	15° 03'.8 S	102° 17'.1	22° 54'.8 S	219° 42'.8	6° 35'.6 N	Canopus	263° 57'.5	52° 41'.0
01	43° 52'.1	164° 41'.3	34'.4	185° 28'.2	04'.3	117° 19'.3	54'.8	234° 45'.0	35'.5	Capella	280° 39'.4	46° 00'.0
02	58° 54'.5	179° 40'.6	35'.1	200° 29'.0	04'.9	132° 21'.4	54'.7	249° 47'.2	35'.4	Deneb	49° 33'.9	45° 19'.0

AltAz provides Sextant, Observed or True Altitudes together with True and/ or Magnetic bearings. These are always based on the position method chosen. (Fixed, by track or using a voyage plan. It can also be used to list stars around a point in the sky. Sight planning using AstroNav allows the information to be tailored. The 270 stars of equivalent brightness to the standard “Selected Stars,” can be included and/ or the list can be simplified by excluding stars less than 10° in altitude. The list can even be sorted by any of the columns for quick identification of stars of interest.

Name	Sextant Altitude	Azimuth	Magnitude
Jupiter	15° 08'.1	191°.5 T	-2.2
Vega	71° 41'.1	234°.6 T	0.1
Arcturus	18° 17'.6	278°.2 T	0.2
Capella	13° 10'.3	026°.8 T	0.2
Altair	47° 39'.5	181°.1 T	1.0
Deneb	80° 11'.4	122°.8 T	1.3

Information about **Moon Phases and Eclipses** is also available between 9999 BC and 9999 AD. The areas affected by a Solar Eclipses can then be stepped through in one minute intervals. A plan view showing the passage of the shadow is also available.

Month	Full	Last Quarter	New	First Quarter	Full	Eclipses
March	4/ 22:12	12/ 19:28	* 19/ 10:29	26/ 10:24		Total Solar Eclipse
April	* 3/ 14:42	11/ 03:36	17/ 19:00	25/ 02:10		Lunar Eclipse
May	3/ 04:45	10/ 09:12	17/ 03:51	24/ 19:07		
June	1/ 16:10	8/ 13:42	15/ 13:49	23/ 12:32		
July	1/ 01:33	7/ 18:33	15/ 01:48	23/ 05:30	30/ 09:57	
August		6/ 01:05	13/ 16:25	21/ 21:05	28/ 18:26	
September		4/ 10:29	* 12/ 09:34	20/ 10:48	* 27/ 03:42	Total Annular/ Lunar Eclipse
October		3/ 23:42	12/ 04:07	19/ 22:34	26/ 14:08	
November		2/ 17:04	10/ 22:25	18/ 08:36	25/ 01:54	
December		2/ 13:52	10/ 15:02	17/ 17:20	24/ 15:10	

Lunar Eclipse of 3rd Apr '33	
<input type="radio"/> Penumbral phase start:	11:46:58
<input type="radio"/> Partial phase start:	13:09:22
<input type="radio"/> Maximim Eclipse	14:34:49
<input type="radio"/> Partial phase end:	15:59:33
<input checked="" type="radio"/> Penumbral phase end:	17:21:45

Multiple **Sights** can be calculated and plotted while allowing for interim track changes. The selection offered is filtered by altitude, azimuth and magnitude limits. Ambiguous sights are immediately apparent as is the quality of the resulting position.

Sight Calculation					
File	Position Options	Sight Options	Detail		
Sight	3	19 October 2008	18:02:02	Course 222.1°T	@ 20.0 Kts
Venus					
Original Position Time	12:00:00	Observed Altitude	11° 47'.4	GHA	59° 46'.2
Run Time (Hours)	6.03	Index Error		Increment	0° 30'.5
Distance Run	120'.6	Dip	-5'.6	v Cor'n	0'.0
		Apparent Altitude	11° 41'.8	GHA	60° 16'.7
Original Latitude	35° 00'.0 N	Refraction	-4'.6	DR Long	1° 37'.4 W
dLat	1° 29'.5 S	True Altitude	11° 37'.2	LHA	58° 39'.3
DR Lat	33° 30'.5 N	Semi Diameter	00'.1	Declination	21° 29'.2 S
Mer Parts (New DR)	2,123.29	Parallax		d Correction	0'.0
Mer Parts (Original DR)	2,231.08	True Altitude	11° 37'.3	Declination	21° 29'.2 S
DMP	-107.79	True Zenith Distance	78° 22'.7	True Zenith Distance	78° 22'.9
Original Longitude	0° 00'.0 E	(TZD Error	0.8")	Calculated Zenith Distance	78° 22'.9
dLong	1° 37'.4 W			Intercept	0'.2 Tow
DR Long	1° 37'.4 W			(Total Errors	- 8'.5)
				A	0.40 S
DR Lat	33° 30'.5 N			B	0.46 S
dLat	0'.1 S			C	0.86 S
ITP Latitude	33° 30'.4 N			Bearing	S 54°.4 W
Departure	-0.2			Azimuth	234°.4 T
Cos(Mean Lat)	0.8338			Position Line	144°/ 324°
dLong	-0.2				
DR Long	1° 37'.4 W				
dLong	0'.2 W				
ITP Longitude	1° 37'.6 W				

Celestial data has other applications thus the **Twilight** screen will calculate the times of Sunrise, Sunset and twilights for a month or voyage. Similarly data for the Sun, Moon and planets can be viewed over a period using the **Solar Bodies** Screen.

AstroNav										
File	Options	Screen	Undo	Redo	Help					
Sunday 19 October 2008 Z+1										
Date	Astro	Nautical	Civil	Sunrise	Noon	Sunset	Civil	Nautical	Astro	ST
19 Oct '08	05:40	06:18	06:57	07:30	12:45	17:59	18:32	19:10	19:49	Z+1
20	05:42	06:20	06:59	07:32	12:45	17:57	18:30	19:08	19:47	Z+1
21	05:43	06:22	07:00	07:34	12:45	17:55	18:28	19:06	19:45	Z+1
22	05:45	06:23	07:02	07:35	12:44	17:53	18:26	19:05	19:43	Z+1
23	05:46	06:25	07:04	07:37	12:44	17:51	18:24	19:03	19:41	Z+1
24 Oct	05:48	06:26	07:05	07:39	12:44	17:49	18:22	19:01	19:39	Z+1
25	05:50	06:28	07:07	07:41	12:44	17:47	18:20	18:59	19:37	Z+1
26	04:51	05:30	06:09	06:42	11:44	16:45	17:18	17:57	18:36	GMT

The position(s) used to generate data can be fixed, by course/ speed or using a **Voyage** plan. The Dead Reckoning (DR) position offers an independent check on a vessel's position. The Voyage Plan is effectively a navigation spreadsheet. Way points can be entered directly or calculated by course and distance from a previous way point. The columns available allow the information to be varied for different types of voyage.

WPT	Description	Latitude	Longitude	Speed	Course	Dist	E.T.A. (GMT)	Ship Time
0	1 Random Start Position	35° 00' 0 N	0° 00' 0 E					GMT
				20.0 Kts	222° 1 T	4,284.7		
	om position	18° 00' 0 S	50° 00' 0 W				28/ 10:14	GMT

Special Features

- ❖ It can be downloaded in pdf format.

Nautical Almanacs in pdf format
2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
- ❖ Some historical events are presented with links. Such as.....
The death of Jesus.
- ❖ The tutorials are intended to compliment and expand on the AstroNav Manual.

Arrangement Pattern

Information is arranged category wise.



Information in PDF is arranged year wise.

Remarks

The latest version of AstroNav is v1.7 dated 7th December 2012. Users can easily download the latest version.

Comparable Tools

➤ The Astronomical Almanac Online (<http://asa.usno.navy.mil>)

Date of Access

22nd August, 2017