The Basics for a Night of Visual Observing



March 7, 2025 Brett Hardy

Location, Location

Where to Observe?

- Convenience & Safety
 - backyard
 - have an observing buddy
- Light Pollution
 - local green space out of town
 - scout potential sited during daylight
 - Harold Town Conservation Area
- PAA Organized Events
 - Members' Nights
 - Dance Nature Preserve
 - Public Outreach
- PAA Dome



Cedar Knoll Observatory
Image courtesy: Rick Stankiewicz

Plan for Success

- Dress appropriately
- Have a goal and observing list
- Allow your eyes to dark adapt
- Protect night vision
 - avoid white lights
 - utilize a red light for reading charts, etc.
- Sketch and make notes

Relax

- lounge chair
- hot/cold beverages
- blanket

Things to Bring

- Observing list
- Planisphere & sky chart
- Red light
- Insect repellant/Thermacell
- lounge chair & blanket
- Snacks, hot or cold beverages
- Binoculars
- Tripod



Binoculars

- Ideal starter instrument
- Use what you already have
- Eyes ~ 120°
- Binoculars ~ 6° and less

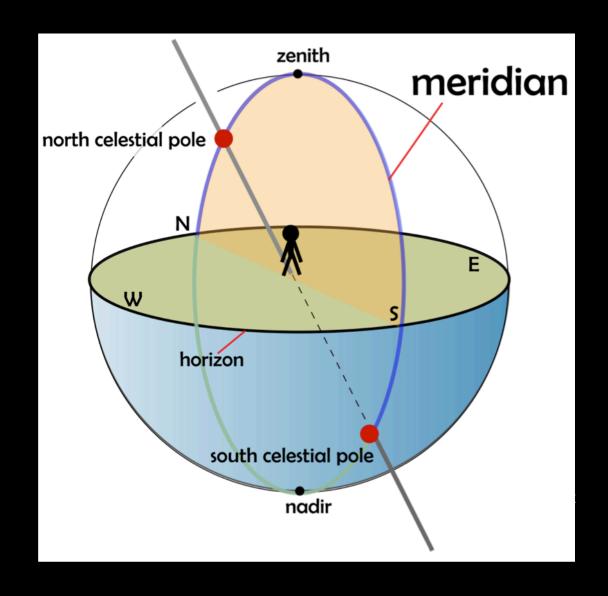
Benefits of Binoculars

- Simple to use
- Images are right side up
- Large field of view
- Inexpensive first instrument
- Two eyes are better than one
- Highly portable
- Short duration viewing

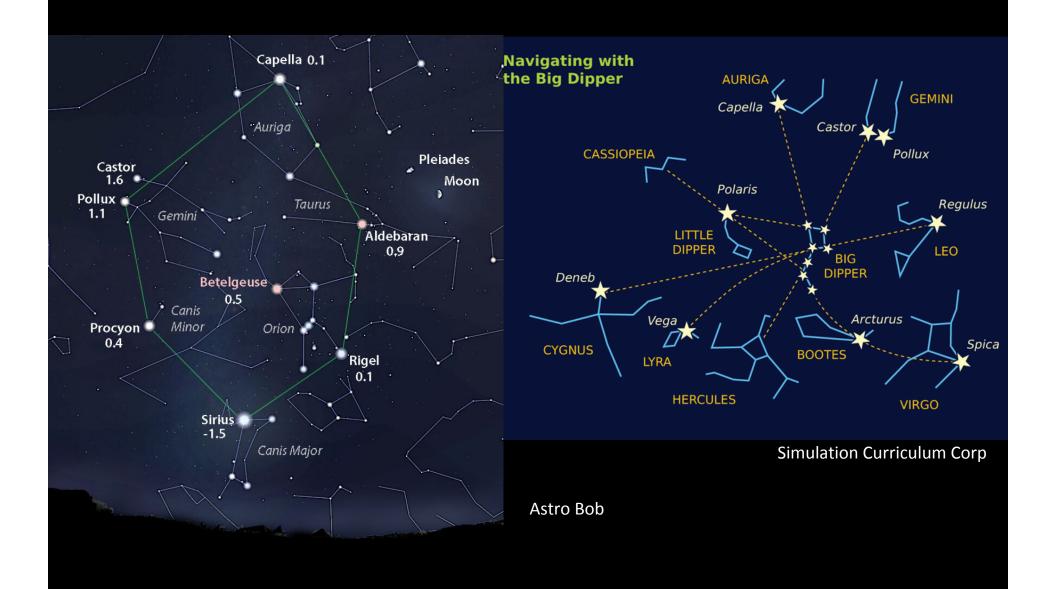


Celestial Sphere

- Cardinal directions
- Meridian
- North Celestial Pole
 - Polaris (North Star)
- Zenith
- Horizon

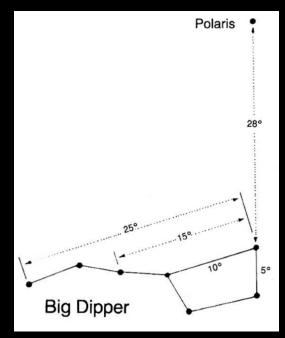


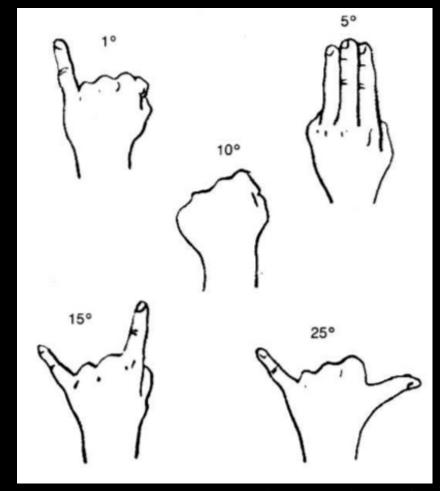
Constellations as Pointers



Navigating the Night Sky

- Distance measured in degrees
- Azimuth is direction in degrees
 - North = 0°
 - East = 90°
 - South = 180°
 - West = 270°
- Altitude is height above the horizon in degrees
- 1° = 60′
- Moon = $1/2^{\circ} = 30'$
- Polaris (North Star) = observer's latitude: 44° above north horizon





Terrance Dickinson: Night Watch

Terrance Dickinson: Night Watch

Observation Planning

- Sky Maps
 - skymaps.com/downloads.html

Home | Services | Store | Downloads | Articles | Help



Skymaps.com/store -- Recommended Books & Products for Skywatchers

New Books • Star Atlases • Planispheres • Getting Started • Observing Guides • Telescope Books • Kids Books • Sky Myths
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PLANISPHERES & STAR ATLASES

All sky watchers need a planisphere to quickly show the location of stars and constellations for any date and time. Star atlases provide much greater detail and thousands of celestial objects.



The Night Sky Planisphere View Detail

A popular and inexpensive 8-inch diameter, two-sided planisphere designed to depict the night sky with less distortion than regular planispheres. Available for several latitudes, and in a smaller 5-inch

edition.

More info

Buy at Amazon

1,000+ Customer Reviews

Night Sky Editions

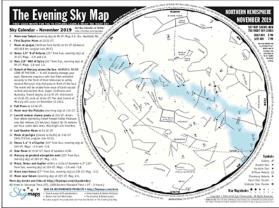
Note: Planispheres are designed
or specific latitudes so be sure to

select one for your latitude. Latitude 20° to 30° North Latitude 30° to 40° North Latitude 40° to 50° North Latitude 50° to 60° North Southern Hemisphere



The Evening Sky Map

The Evening Sky Map (PDF) is a 2-page monthly guide to the night sky suitable for all sky watchers including newcomers to Astronomy



t the Celestial Objects

About the Colestial Objects. Under at this page are wared of the brighter, more interesting calestial objects which is the avening size this month; carbo to the amouthy six may. The objects grapated into three categories. These that can be easily usen with the scale of size in, whost optical oid, those analy seen with binaction, and these requiring a feature size of the carbo of the scale of the scale of the scale of the carbon appear more trapectable when when thereof through a telescope or very large throughout. The scale content of the scale of the scale of the scale of the scale throughout. These or convenit in this was to habilitate dischals that can be used as

Tips for Observing the Night Sky

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tronomical Glossary

Coefunction - An alignment of two celestial bodies such that they present the is ampulse represent as remed from Earth. Coestellarities - A defined area of the sky containing a star pattern. Different Natural - A closed of our illuminated by rearing stars.

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Telescopic Objects

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STARGAZING BOOKS & GEAR

Not sure where to start. Here are some recommended books, binoculars and telescopes for

5th Edition • BEST SELLER



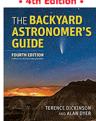
Nightwatch: A Practical Guide to Viewing the Universe

Best first Astronomy book for newcomers. All time best seller in this category. Includes a set of updated star charts.

More info
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1600+ Customer Reviews

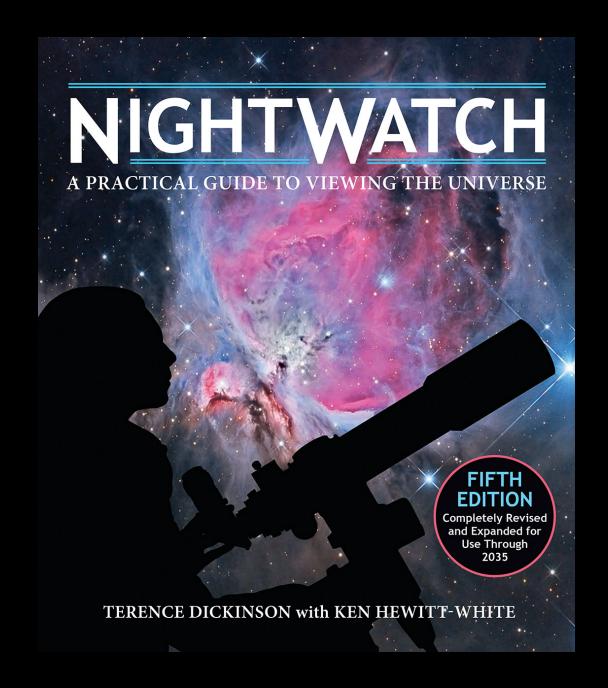
• 4th Edition •



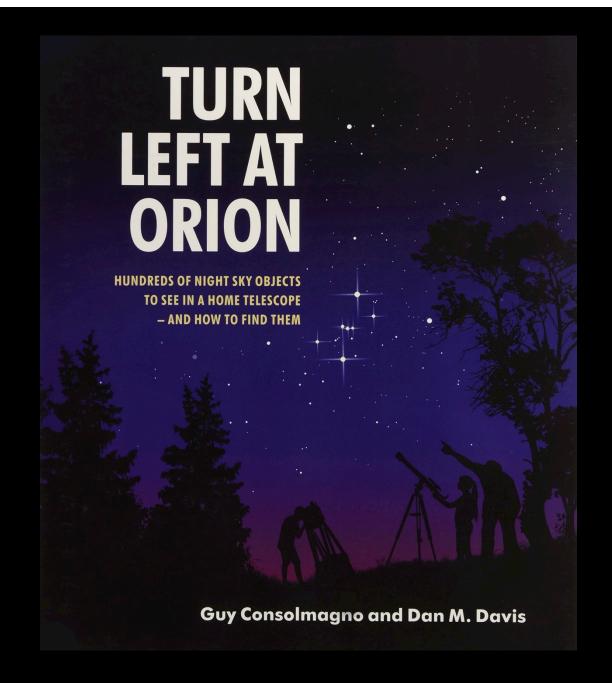
The Backyard Astronomer's Guide

A detailed and very well illustrated guide for beginners and more experienced amateur astronomers. Covers many topics from getting started, different types of equipment, observing, and astrophotography

- NightWatch: A Practical Guide to Viewing the Universe
- Terence Dickinson & Ken Hewitt-White
- Spiral bound
- Firefly Books
- ISBN: 978-0228104391
- \$38.96



- Turn Left At Orion
- Guy Consolmagno & Dan M. Davis
- Hard cover or spiral bound
- Cambridge University Press
- ISBN: 978-0521781909
- \$34.97



- Sky & Telescope
- Astronomy Magazine

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BY: ALAN MACROBERT | FEBRUARY 28, 2025

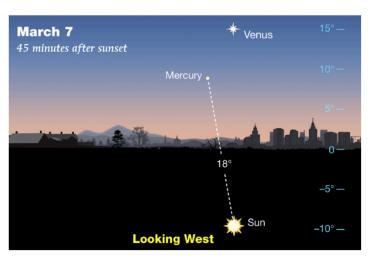


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Asteroid Won't Hit Earth, But Might Hit Moon — a Potential Science Bonanza

BY: DAVID L. CHANDLER | FEBRUARY 28, 2025





OBSERVING 🖂

MARCH PODCAST: PLANETS, STARS, AND ECLIPSES!

BY: J. KELLY BEATTY | MARCH 1, 2025

This month we'll mark two seasonal transitions, watch eclipses of the Moon and Sun, track down the elusive planet Mercury, and trace out the Winter Hexagon. So grab your curiosity, and come along on this month's Sky Tour.

CONTINUE READING

EYE ON T CORONAE BOREALIS

Find out if the "Blaze Star" is about to blow:

★ Latest AAVSO data ♂

* What to look for

ASTRONOMY & OBSERVING NEWS

Second Intuitive Machines Mission Heads to the Moon

BY: DAVID DICKINSON | FEBRUARY 27, 2025

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Why Is Mars Red?

BY: JEFF HECHT | FEBRUARY 26, 2025

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Record-breaking Ghost-like Particle Found in the Mediterranean Sea

BY: COLIN STUART | FEBRUARY 25, 2025

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Window into Hot Jupiter Reveals Multilayered Winds

BY: MONICA YOUNG | FEBRUARY 24, 2025

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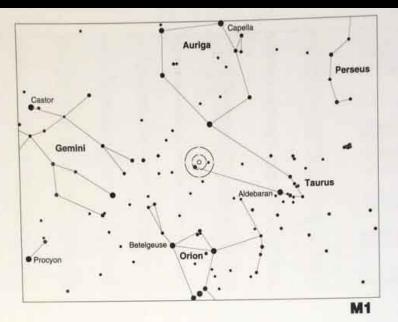
This Week's Sky at a Glance, February 21 – March 2

BY: ALAN MACROBERT | FEBRUARY 21, 2025

ASTRONOMY & OBSERVING NEWS □

Euclid Discovers Einstein Ring Around Nearby Galaxy

- Messier object finder charts
- Two volume set
- Spiral bound & laminated
- sky-spot.com
- \$39.99 USD



M1

NGC Description: Very bright, very large, extended along position angle 135, very gradually brightening a little toward the middle, mottled.

The Crab Nebula's history is better known than that of any other planetary nebula, for it is the remnant of the supernova of 1054 AD. M1 appears in small telescopes as an elongated smudge, but in apertures of 16 inches or greater the filamentary detail begins to appear.

M1 has been intensely studied by professional astronomers. It is the sight of the discovery of the first visual pulsar.

NGC	TYPE	MAG.	DISTANCE	SIZE	DIAMETER
1952	Di	8	6,300 l.y.	6' x 4'	11 l.y.

1

Online Planning

The Sky Live

- No registration required
- Select your location

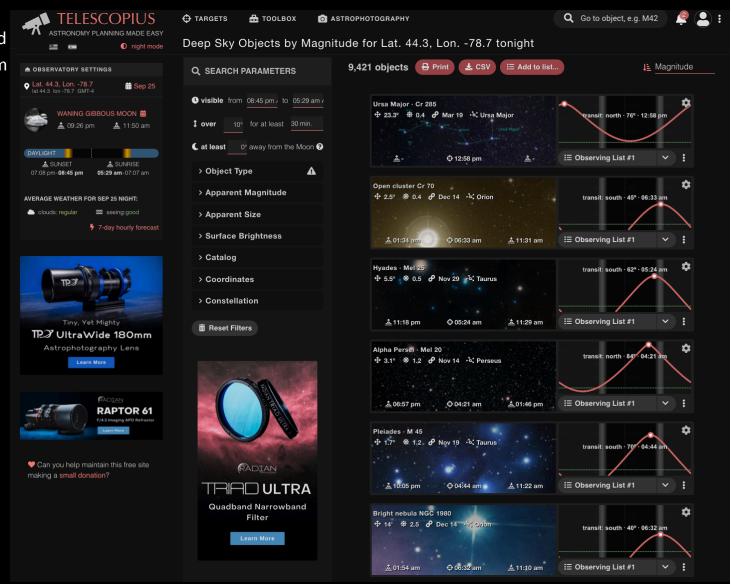
URL: theskylive.com



Online Planning

Telescopius

- Registration required
- URL: telescopius.com



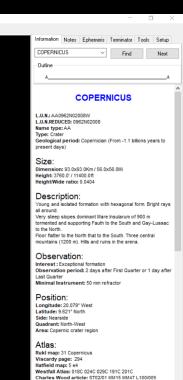
Computer Software



stellarium.org

- Cartes de Ceil
 - https://www.ap-i.net/skychart// en/start
- Virtual Moon Atlas
 - https://ap-i.net/avl/en/download



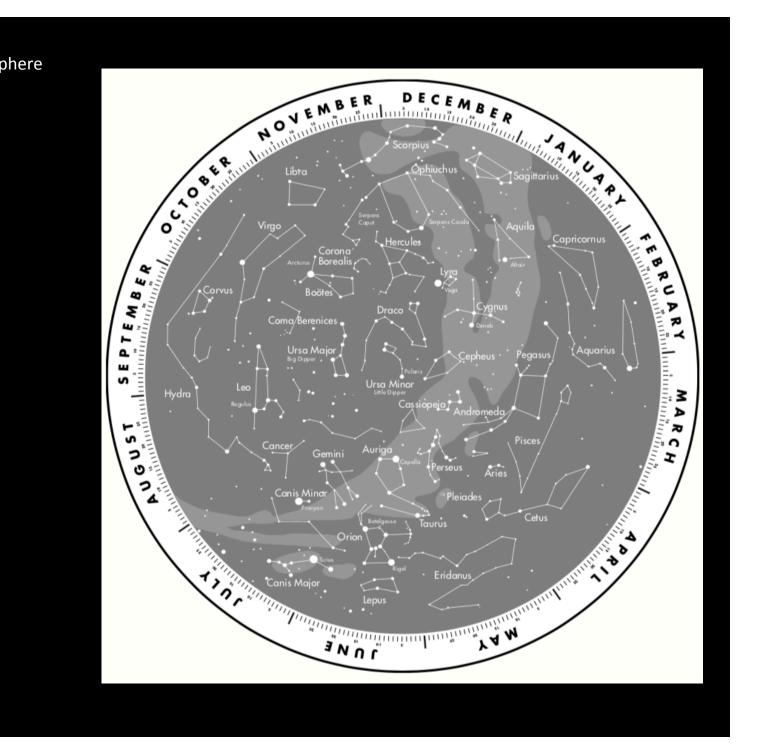


Phone & Tablet Apps

- Many to choose from
 - Sky Safari 7
 - Night Sky 11
 - Stellarium Mobile
 - Star Walk 2



Make Your Own Planisphere



Novice Astronomy Class Solar System Series: Mercury April 4, 2025 NASA