

# East Valley Astronomy Club

Using the Star Wheel

Astronomy with Binoculars

James Yoder



# G.R.C.O.

**Open for Public Viewing  
Friday & Saturday evening  
Sunset – 9:30pm**

**(weather permitting)**

# Beginners Guide to Small Telescopes

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## Choose your Interest

[Beginners Guide to Small Telescopes](#)



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# Observing: Optimize Your Chances

- White Light Ruins Dark Adaption
  - 30 minutes to adapt
  - **Use Red Lights**
  - Turn down brightness of phones/electronic devices
- Light Pollution decreases contrast

## Light Pollution



# Star Wheel (Planisphere)

- Developed around 200 BC
- Latitude specific
- Show what is up in the sky for given location, Date and Time
- Cost \$10-\$15
- Two basic Types



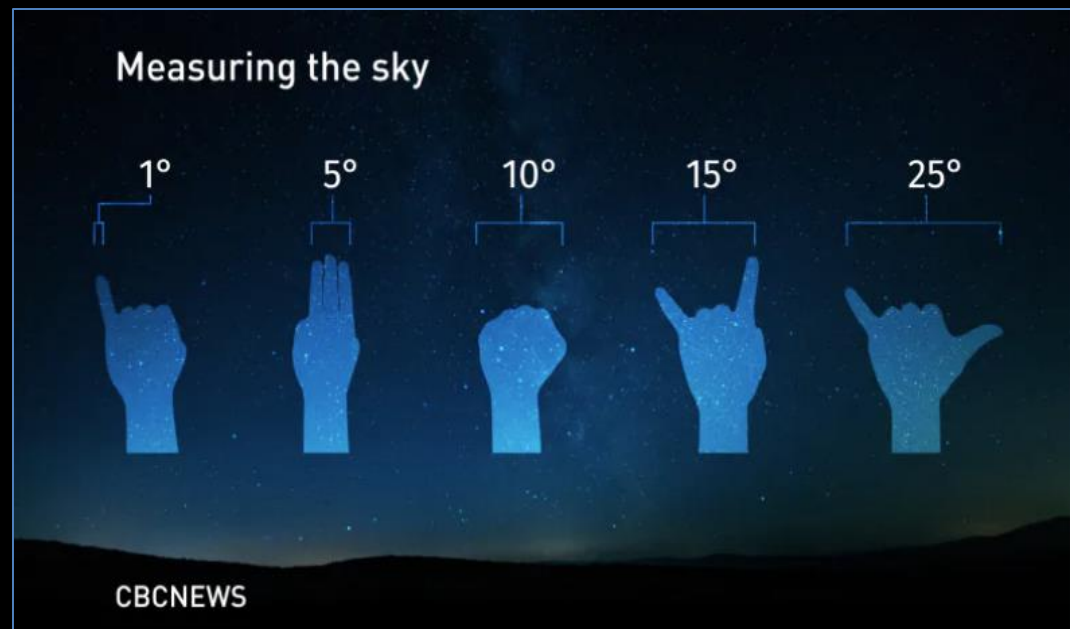
# Star Wheel (Planisphere)

Split View – Front is northern Sky, Back is Southern Sky

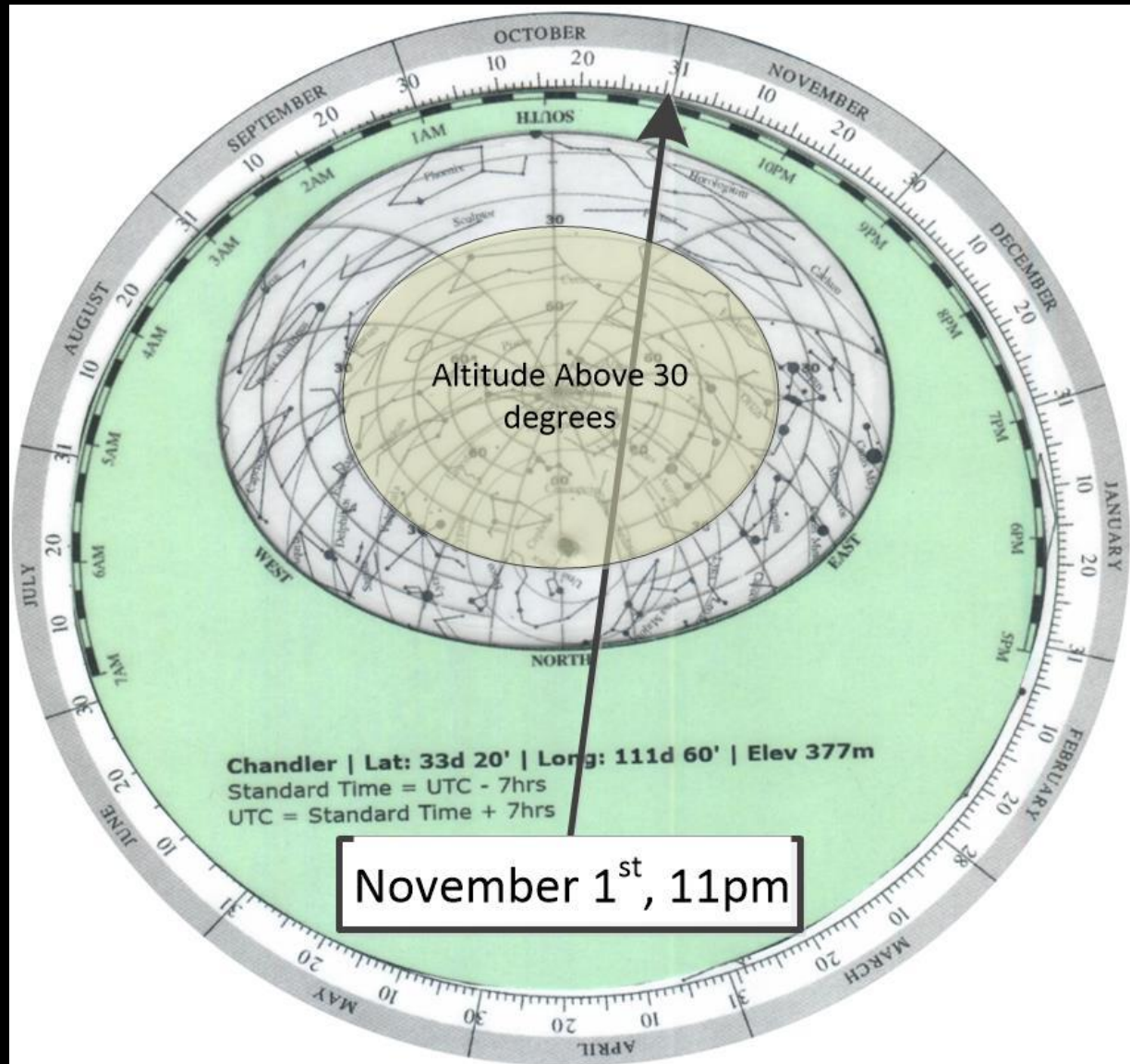


# Using a Star Wheel

- Get Oriented
- Set the Date/Time
- Locate your target
- Hop to it

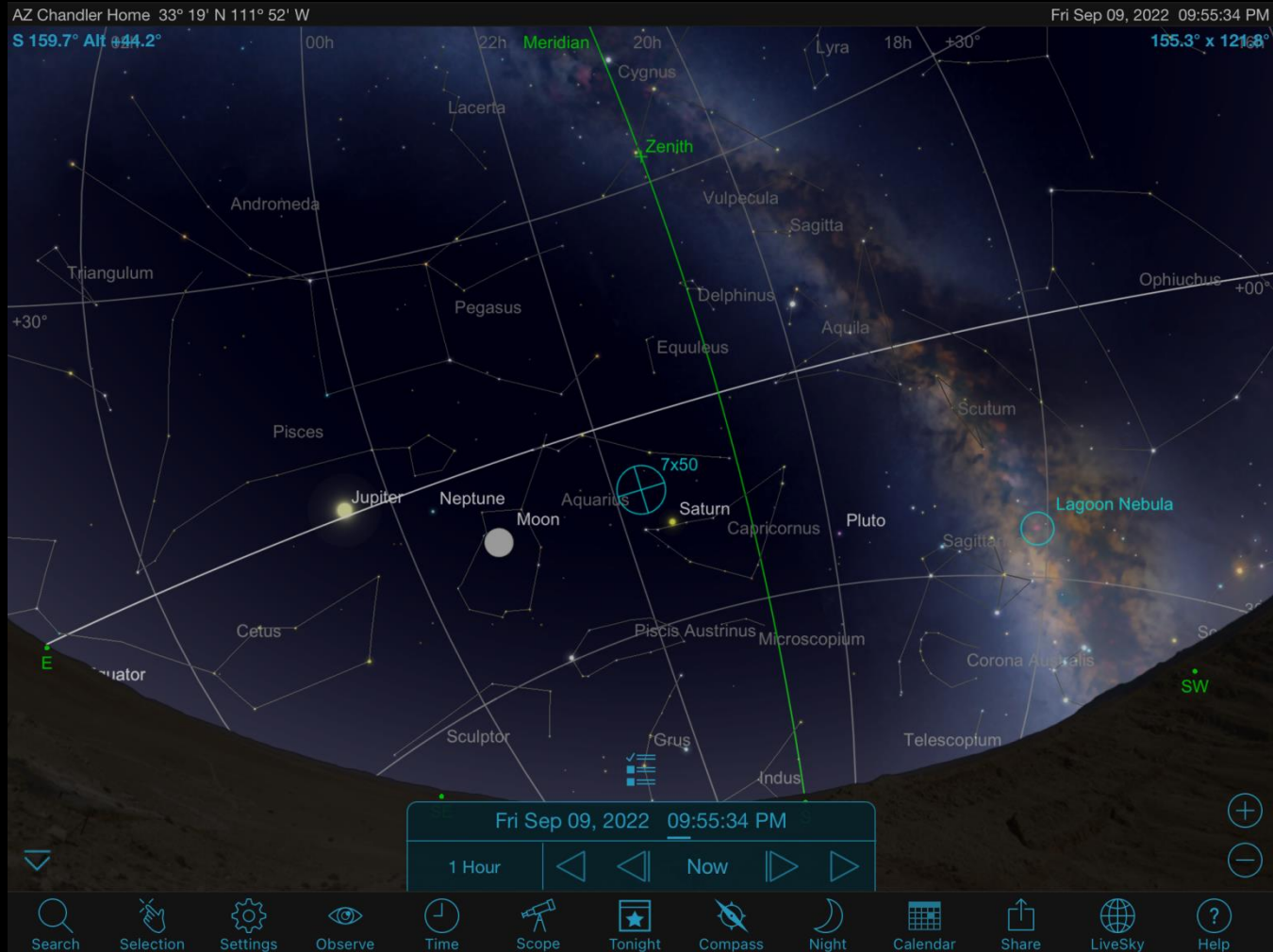


# Using a Star Wheel



# Modern Solutions – Applications

- [SkySafari](#) (\$5 - \$50) – Android, iOS & PC (website)



# Astronomy with Binoculars

## Advantages

- Compact and Portable
- You may own a pair already
- Good for other things
- Wide field of view
- Easier to find objects

## Disadvantages

- Fixed magnification
- No Tracking
- Dim and small objects cannot be viewed

# Appropriate Targets

- Moon
- \*Sun (With proper filters)
- Open Star Clusters
- A few Large Bright Deep Sky Objects
  - **Andromeda Galaxy**
  - Orion Nebula
  - Comets
  - Multiple Star Systems
- Sun/Moon Events
  - [Lunar & Solar Eclipse](#)
  - [Inner Planet Transits](#)
  - [Sunspot activity](#)



Partial Solar Eclipse  
2014-10-23

James Yoder



Venus & Moon

Moon Occults Venus  
9:19am

James Yoder  
2015.12.07



Cedar Mountain, UT

James Yoder



Mizar



Pleiades (M-45)

Pleiades Cluster in Binoculars

© project nightlight

March 10, 2016, La Palma, Spain



Orion Nebula (M-42)



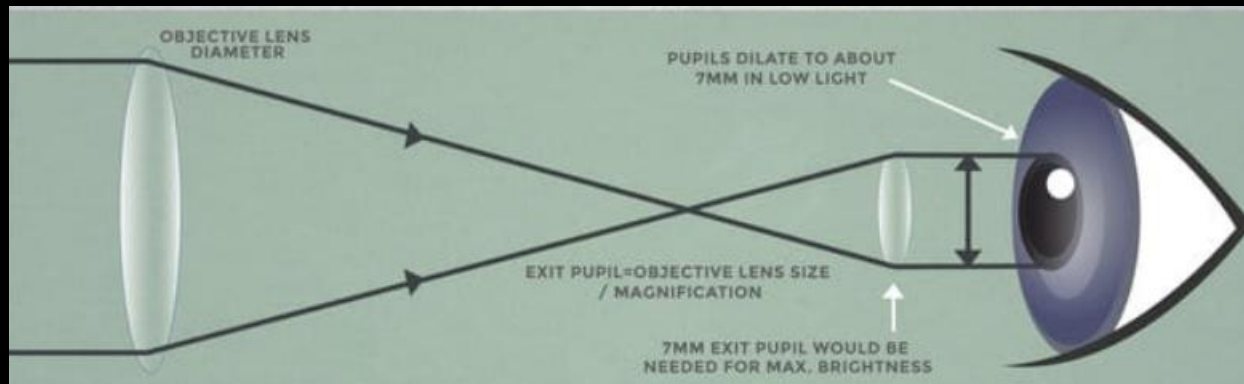
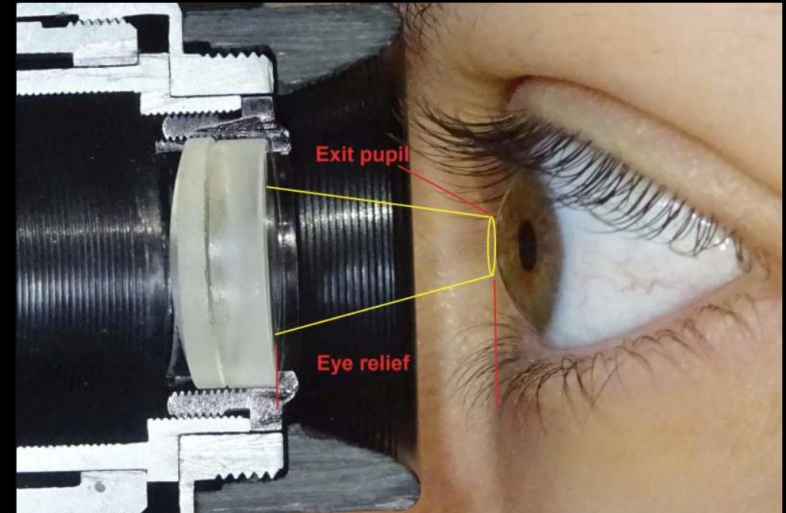
Comet Hyakutake 1996

Comet Hyakutake (C/1996 B2)

James Yoder 1996

## Purchasing Binoculars: Things to Consider

- Eye Relief
- Exit Pupil
- Image Stabilization
- Optics - Coatings
- Weight



# Observation Targets

Object	Comments	Const	RA/DEC
Moon	Examine terminator	Aqarius	
Saturn	Spot the rings?	Pisces	
Jupiter	Spot the moons?	Capricornus	
Mizar (zeta Uma)	Split the Double?	Ursa Major	RA: 13h 24m 50s DEC: +54d 48' 29"
Andromeda Galaxy (M-31)	Galaxy Fuzzy object	Andromeda	RA: 00h 43m 58s DEC: +41d 23' 32"
Hercules Cluster (M-13)	Globular Cluster Fuzzy star?	Hercules	RA: 16h 42m 30s DEC: +36d 24' 59"
Butterfly Cluster (M-6)	Open Cluster Star field	Scorpius	RA: 17h 41m 48s DEC: -32d 15' 44"

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**Contact Info**

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