

How to See Stuff

Practical Suggestions on Using Your Telescope

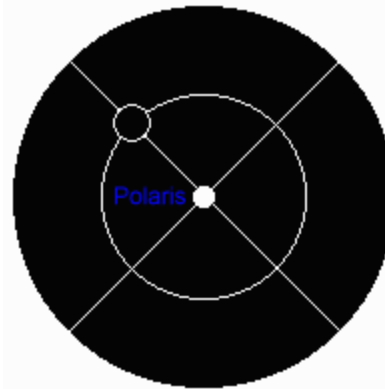
Rob Hawley
SJAA

Agenda

- Quick Polar Alignment
- Filters
- Planning and Object Lists
- Star Hopping
- How to View

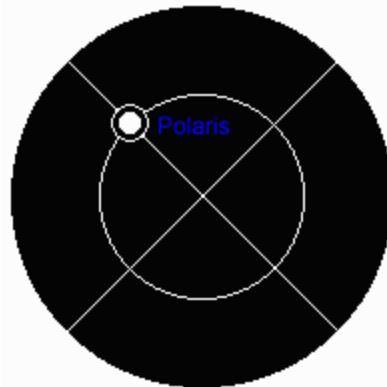
Quick Polar Alignment

- Adequate for Visual Use
 - <http://www.starizona.com/basics/polarg2.html>
- Align Polar scope so all RA settings point at same object
- Level Mount
- Center Polaris



Quick Polar (2)

- Rotate to point to Kochab (β Umi)
- Adjust mount so Polaris in circle.

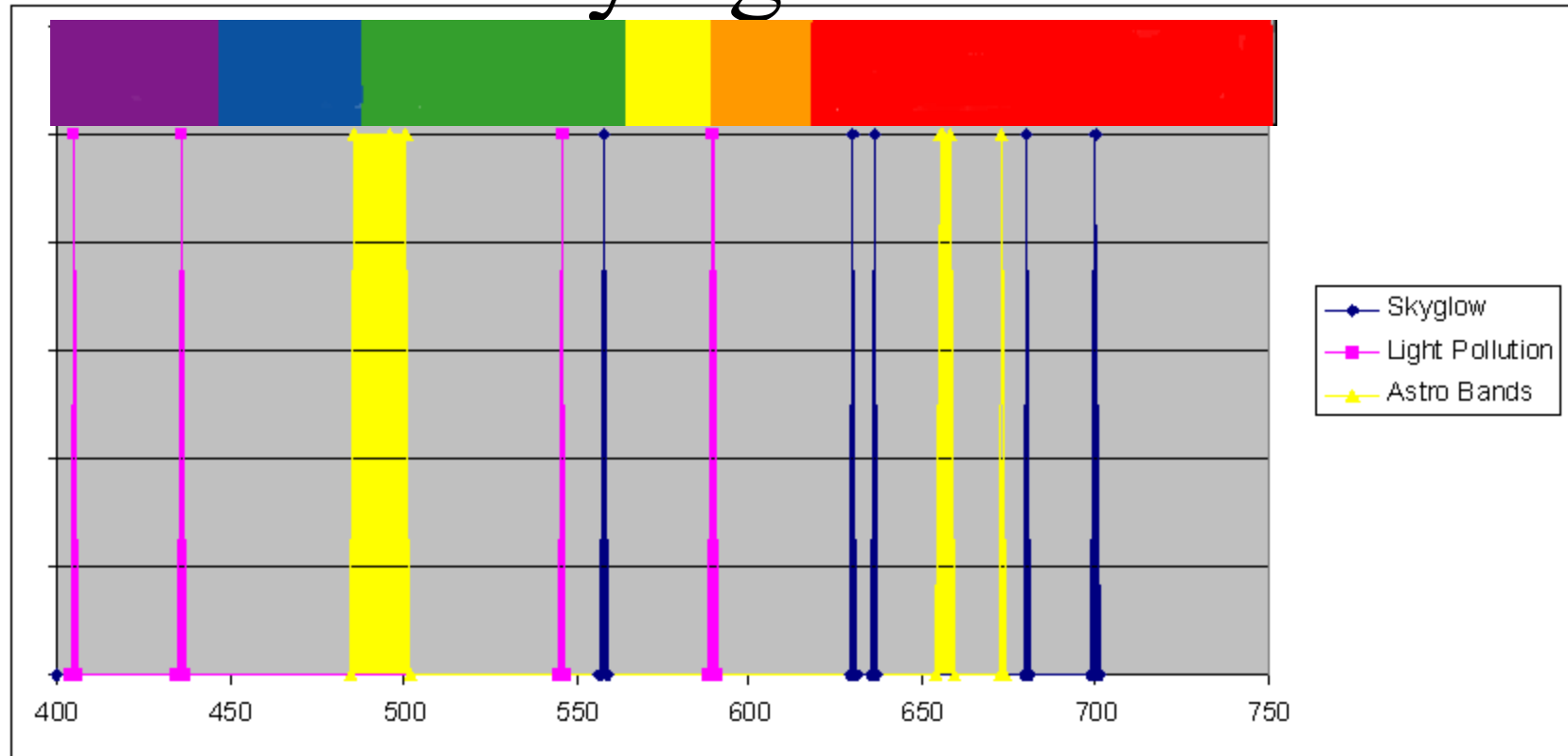


- Drift Align for Photographic Use
 - <http://www.andyshotglass.com/DriftAlignment.html>

Filters

- Problem: Unwanted Light Obstructs View
 - Sky Glow
 - Light Pollution
- Many (not all) Objects emit few bands
- Goal: Remove Unwanted – See More

Background vs. what you are trying to see

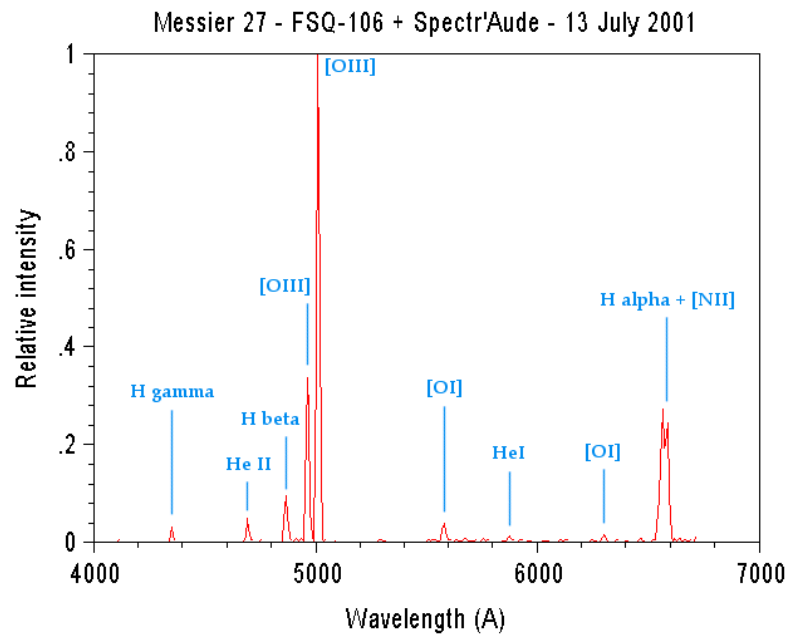


OIII,
Hbeta

Halpha,
N

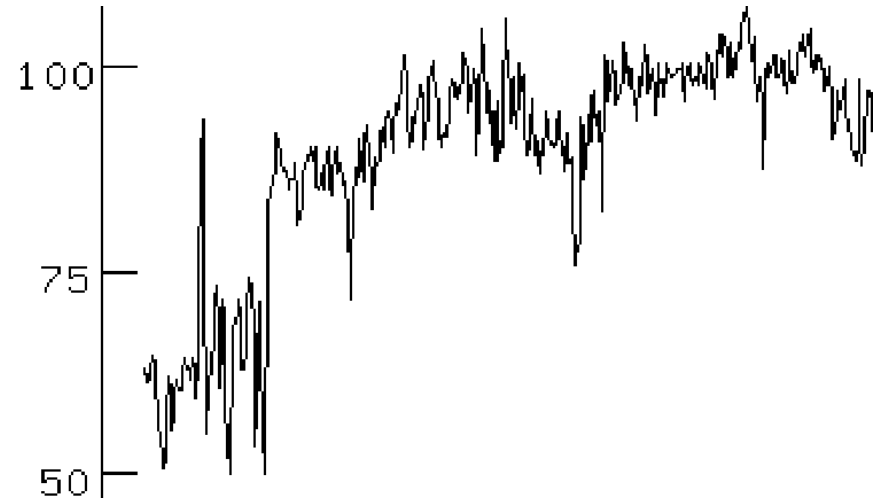
More Info: <http://www.nezumi.demon.co.uk/nonad/spectra.htm>

Examples of DSOs



http://www.astrosurf.org/buil/us/spectro8/spaude5_us.htm

galaxy NGC 3512



<http://zebu.uoregon.edu/n3512.html>

Types of Filters

- SkyGlow & UHC
 - Eliminate most mercury and LPS bands
 - Not as harsh on galaxies
- O III, HBeta
 - Only for nebula
 - Can help even in City
- Planetary Filters
- Exotics

Filters Conclusion

Not a magic bullet – Best solution is to drive to dark skies

Nebula helped more than galaxies and star clusters

Some objects benefit even in dark skies

http://www.cloudynights.com/item.php?item_id=387

Planning your evening

- Where to go
- Weather
- Object lists
- Good Charts are not optional!
- Observing logs

Object Lists

- Lots of object lists available
 - Based on Type of Object
 - Based on Preference
- Best Known is Messier List
- Other Major Lists
 - Herschel 400, Arp Galaxy Clusters, Bernard Dark Nebula, Levy List, SAC Urban, etc.
- See References for List Suggestions

Where to Go; Weather

- Where to Go
 - www.observers.org
 - http://www.sjaa.net/rh/New_Member_Guide.pdf
- Weather
 - www.sjaa.net/weather

Good Charts

- Planetarium Programs
 - SkyMap Pro, theSky, StarryNight, Astroplanner, HnSky
- Paper Charts
 - Uranometria
 - Bright Star Atlas
 - Orion Deep Map 600
 - S&T Charts

Observing Logs

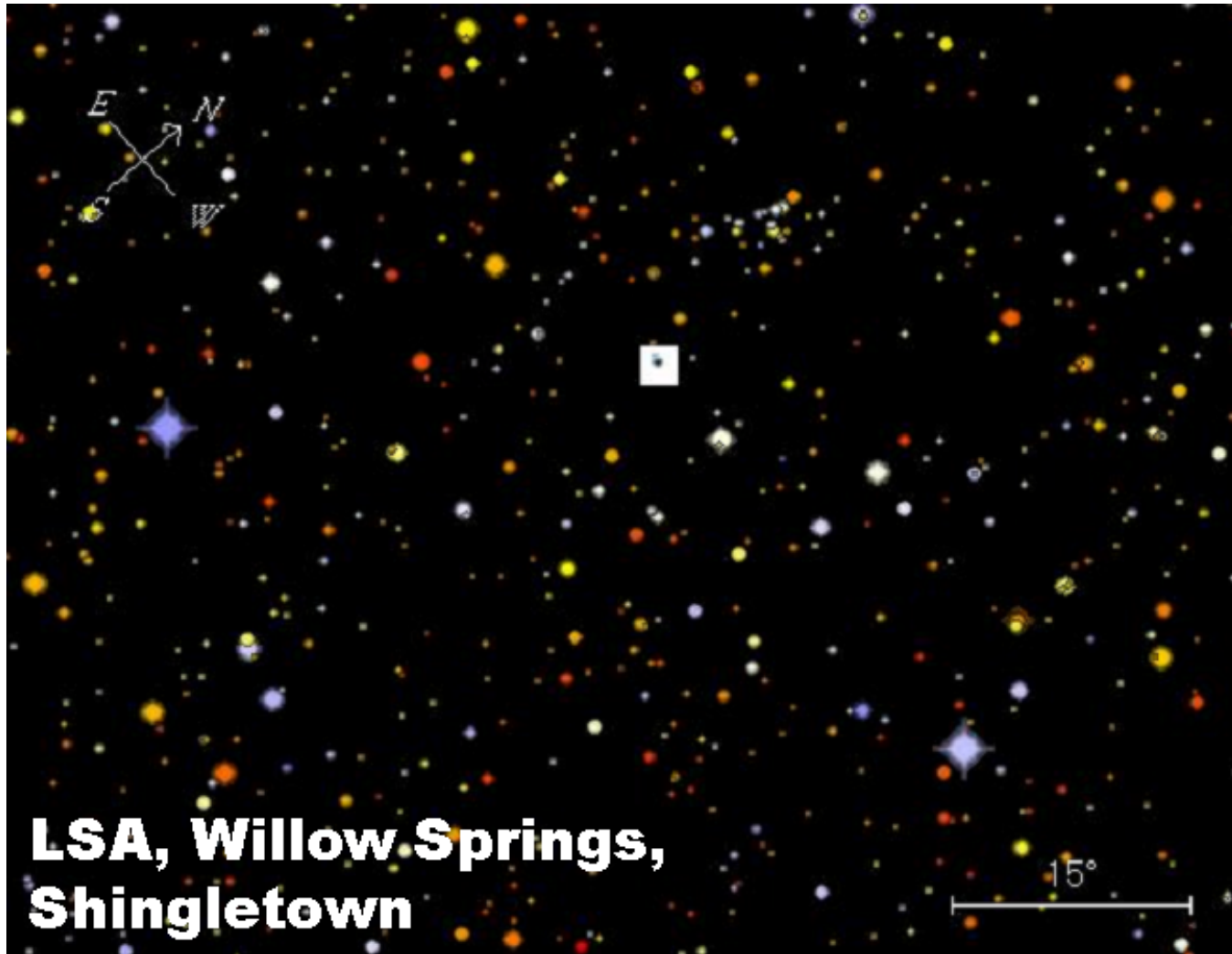
- Helps you keep track of what you have looked at, when, and how
- See Steve Gottlieb posts on TAC for excellent examples
- Some Programs assist in record keeping

How to Find Stuff

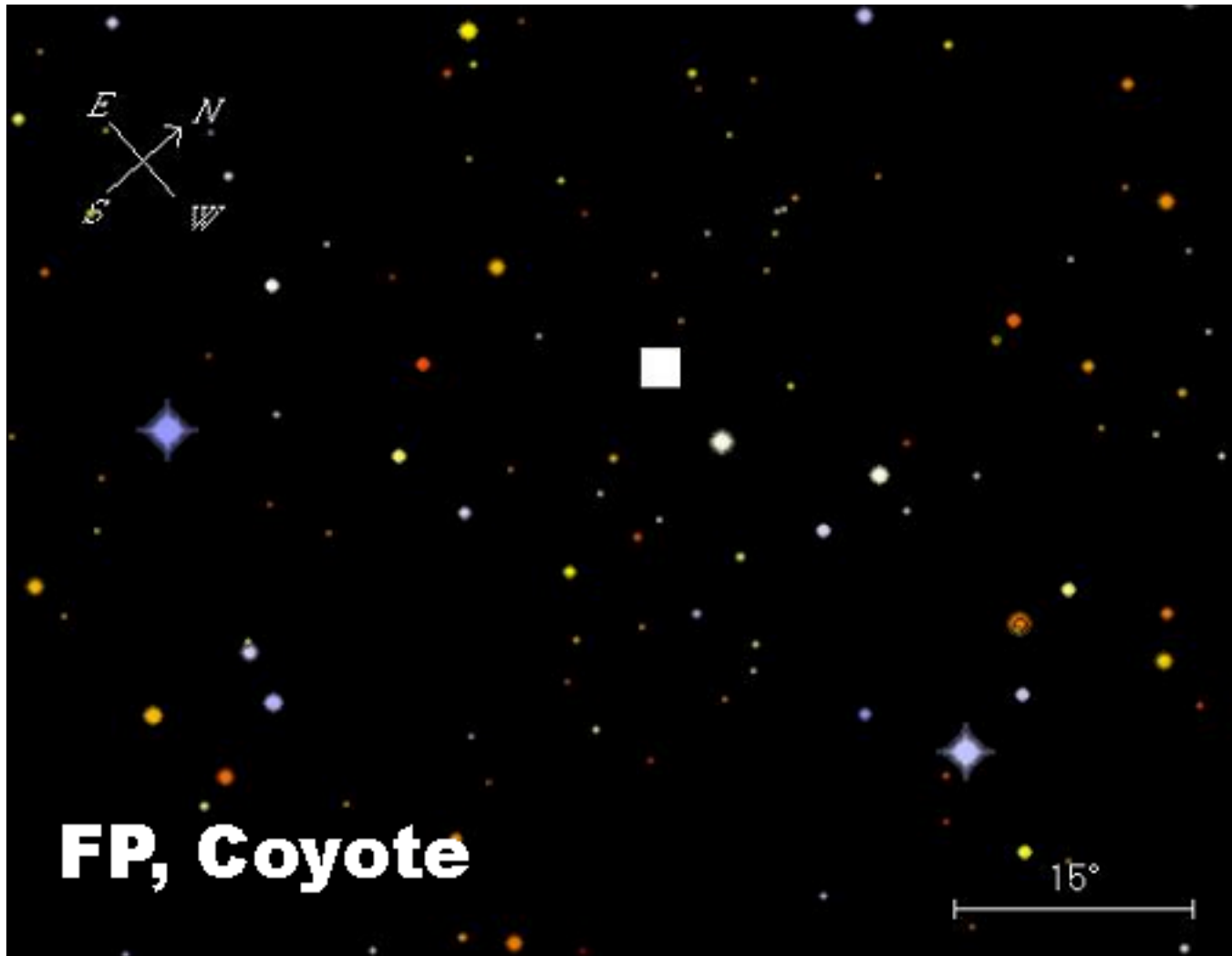
- 3 types of charts
 - Visual view (60°)
 - Finder view (15°)
 - Magnified view (5°)
- Use both red dot and magnifying finder

Easier to Find Stuff in Dark Sky

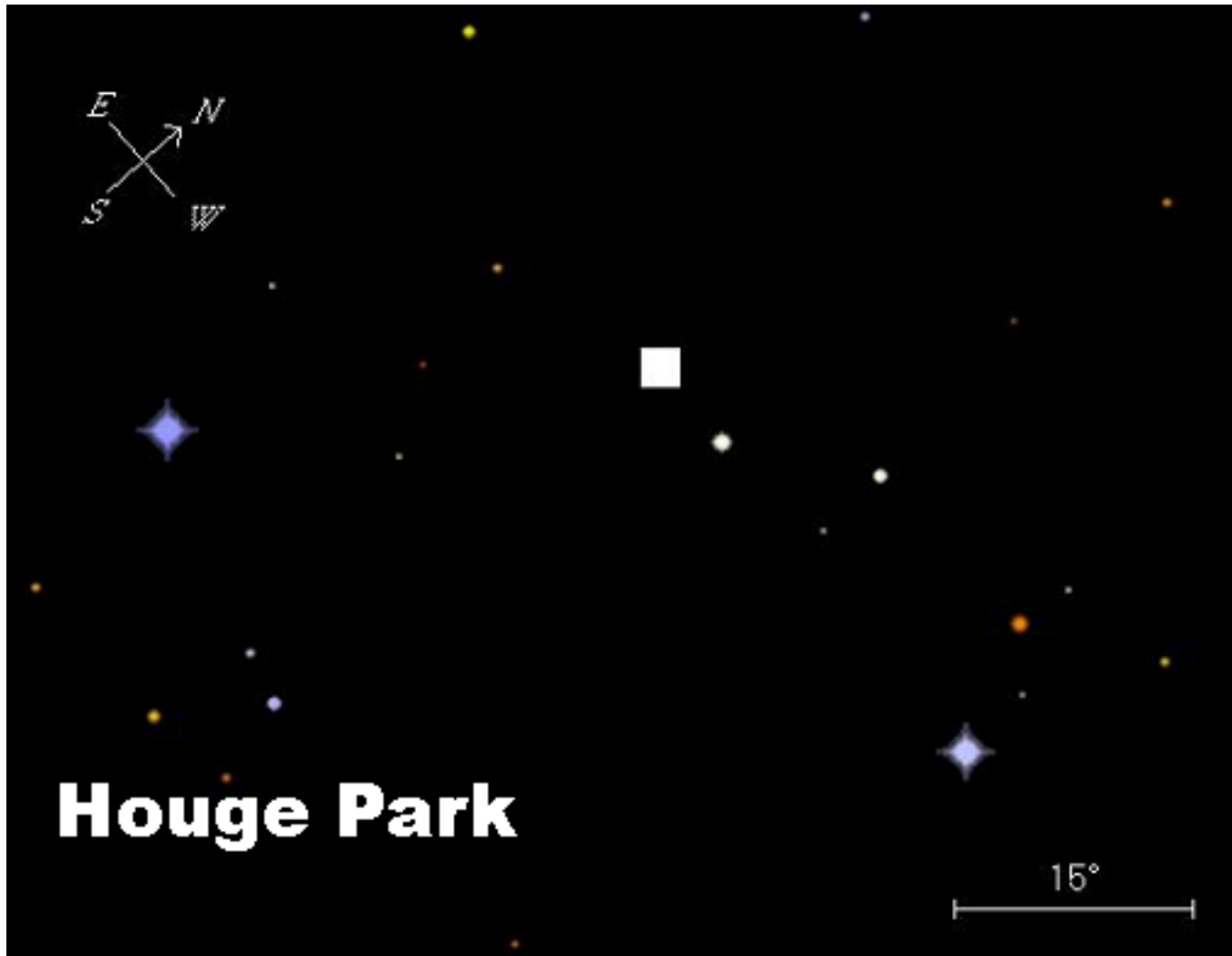
Easier to Find Stuff in Dark Sky



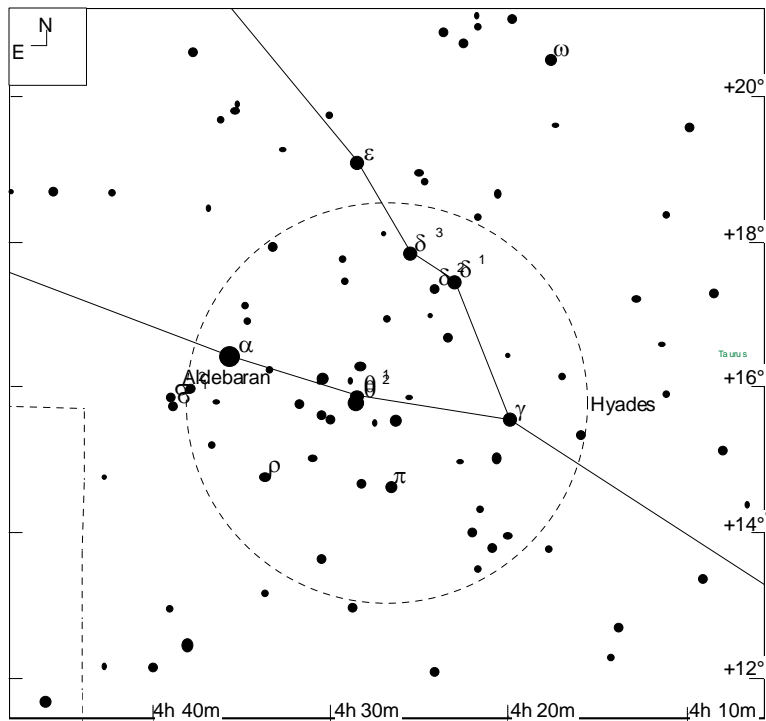
Easier to Find Stuff in Dark Sky



Easier to Find Stuff in Dark Sky

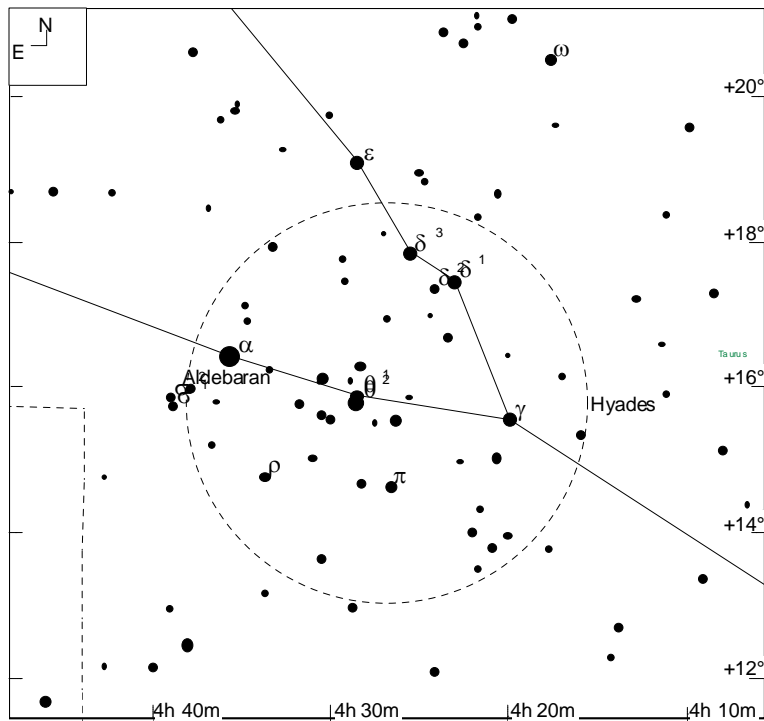


Mapping from Charts to the Sky

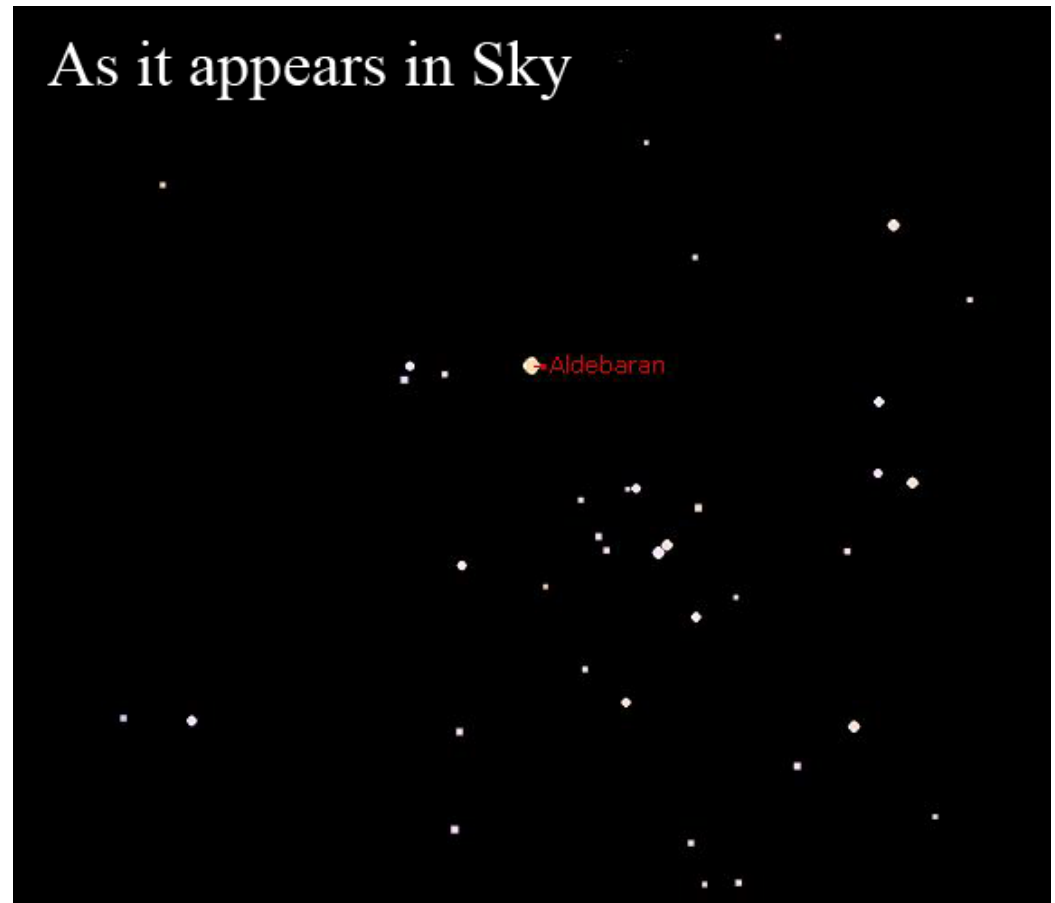


MegaStar

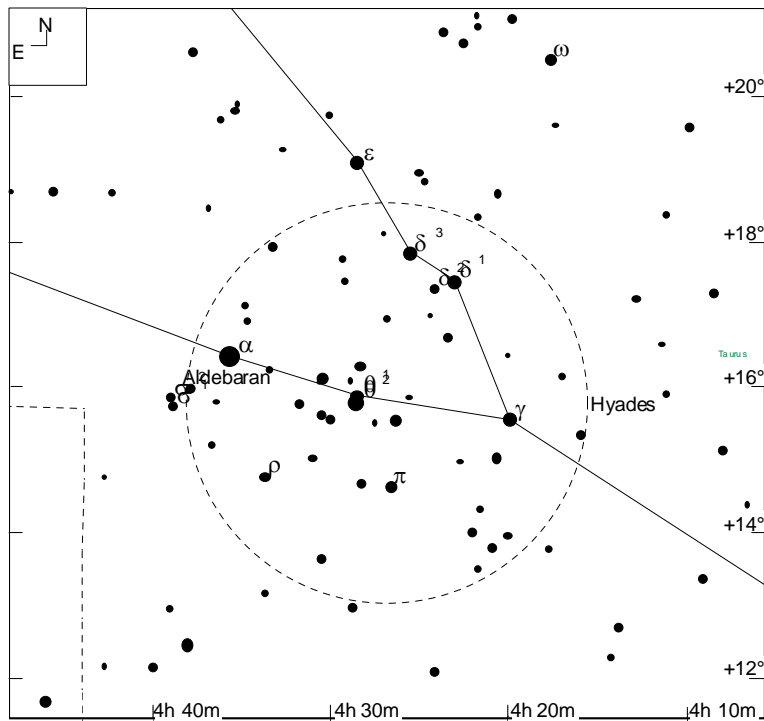
Mapping from Charts to the Sky



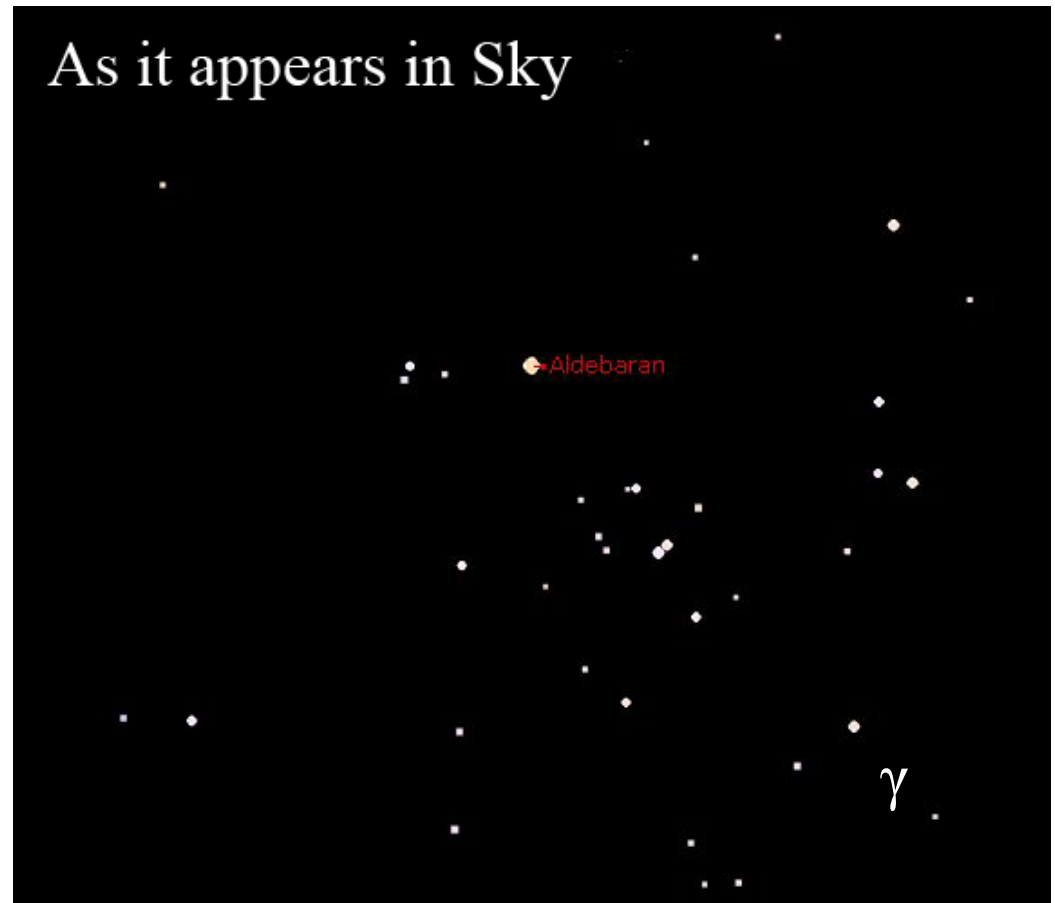
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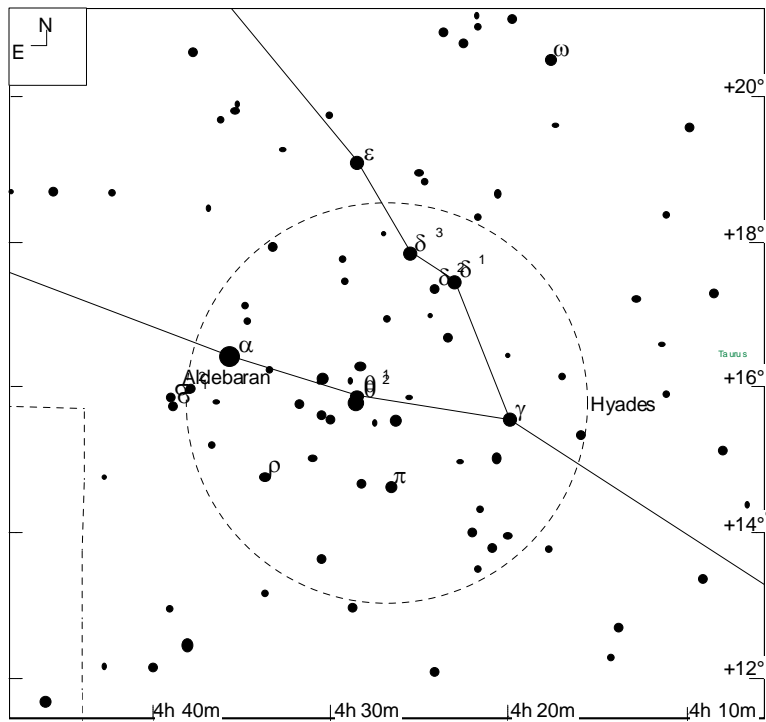
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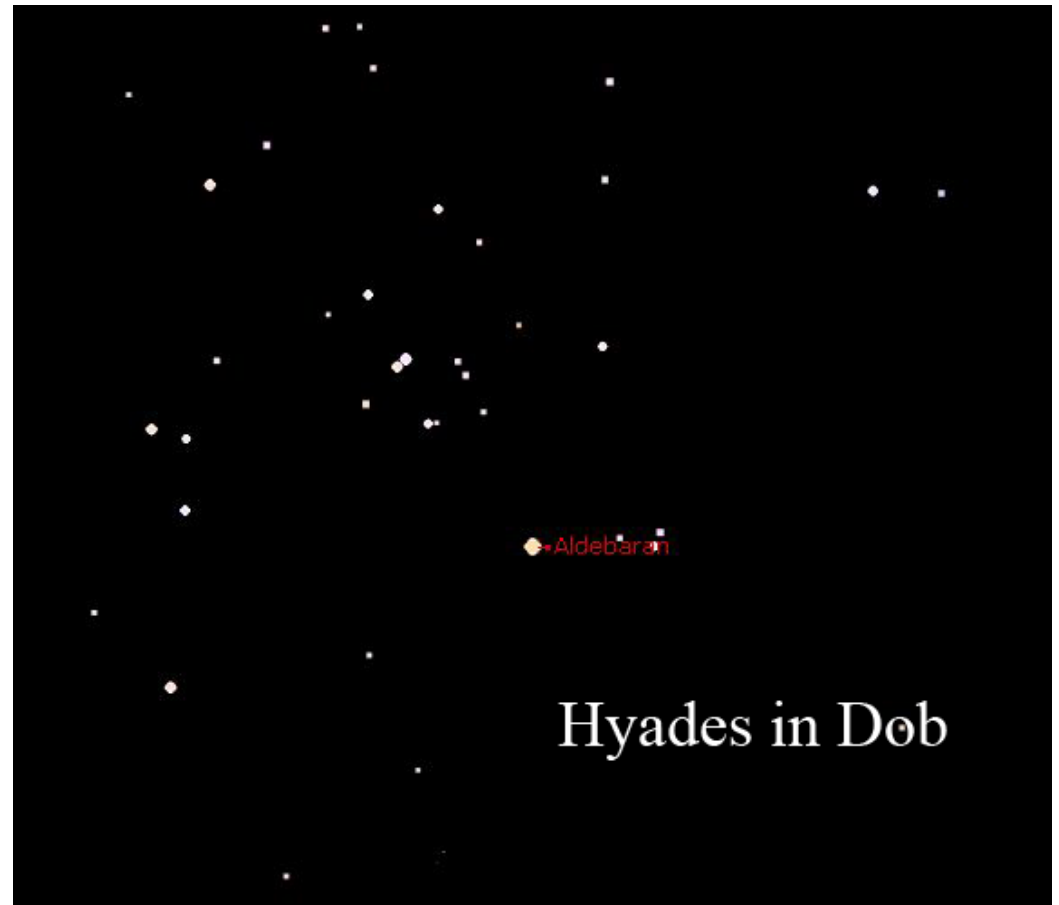
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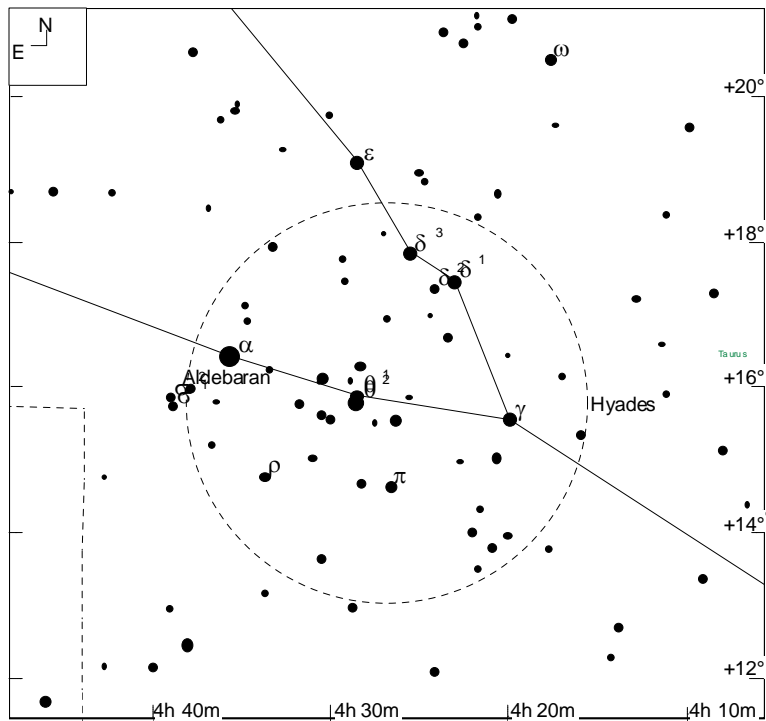
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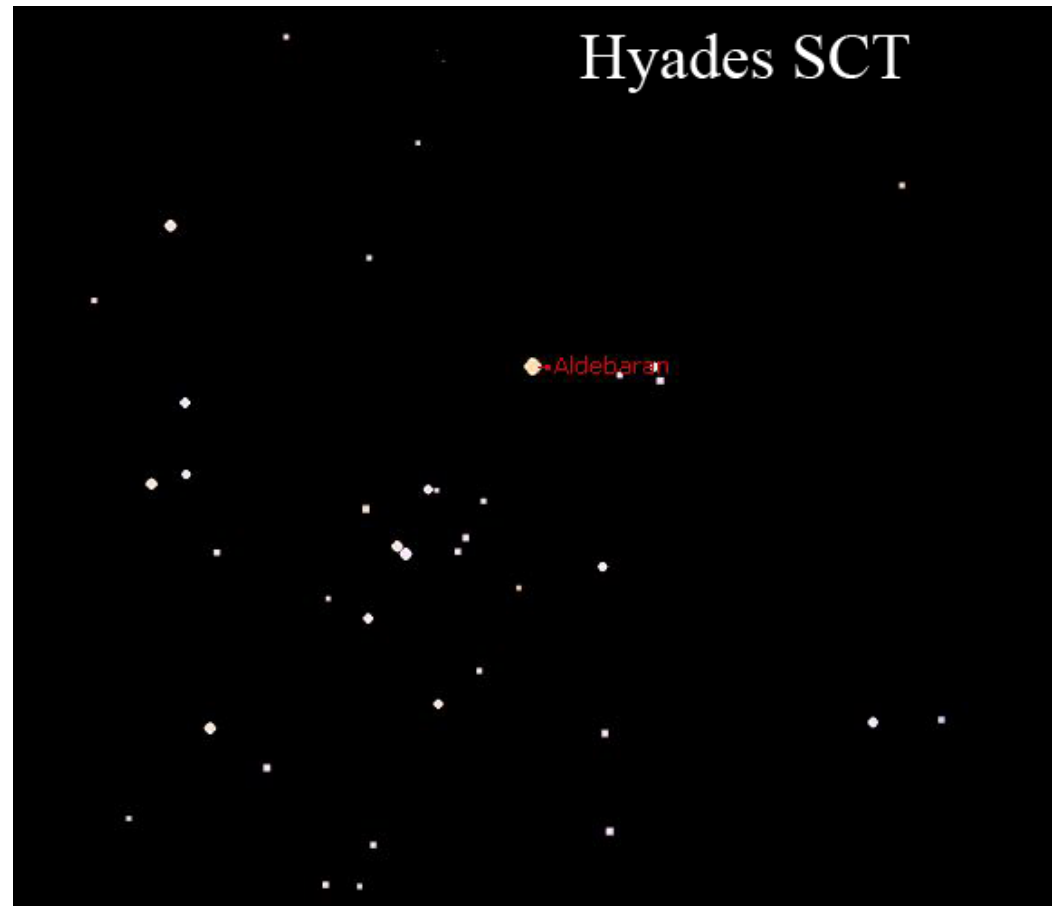
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Mapping from Charts to the Sky



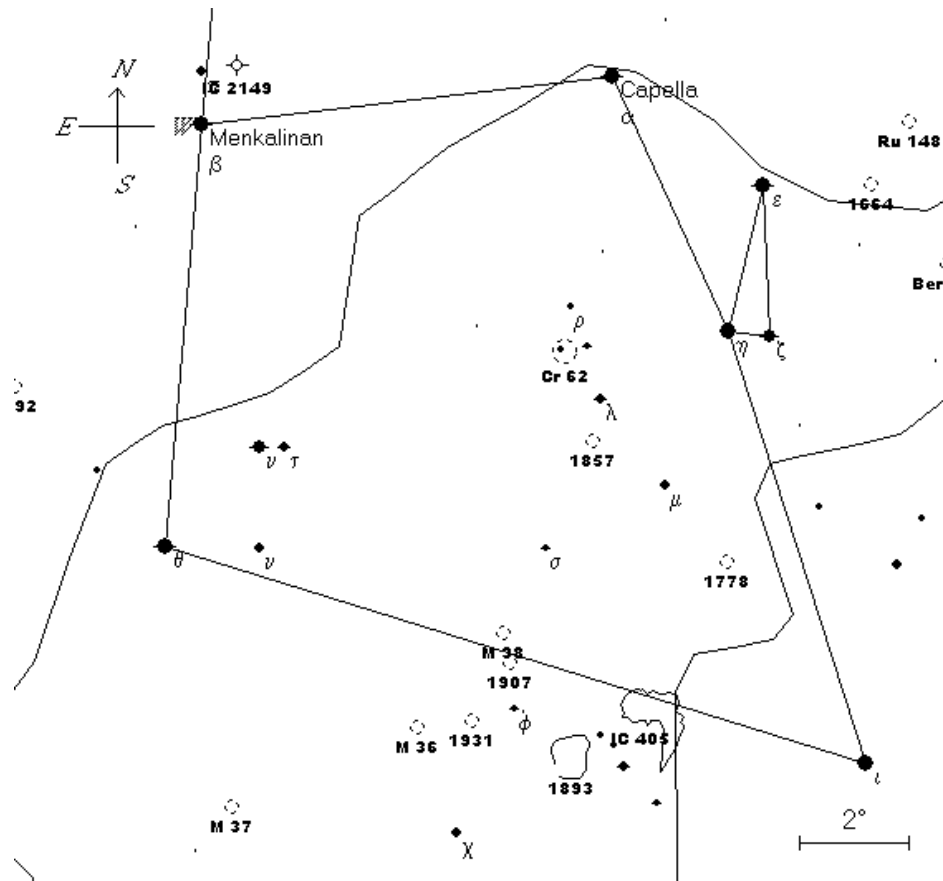
MegaStar



Star Hop Example

- Find M37, M36, and M38
 - Sky Rotation
 - optics mirroring
- First step is to Locate Area Visually
- Guide using Star Patterns and Brightness

Locate Area Visually

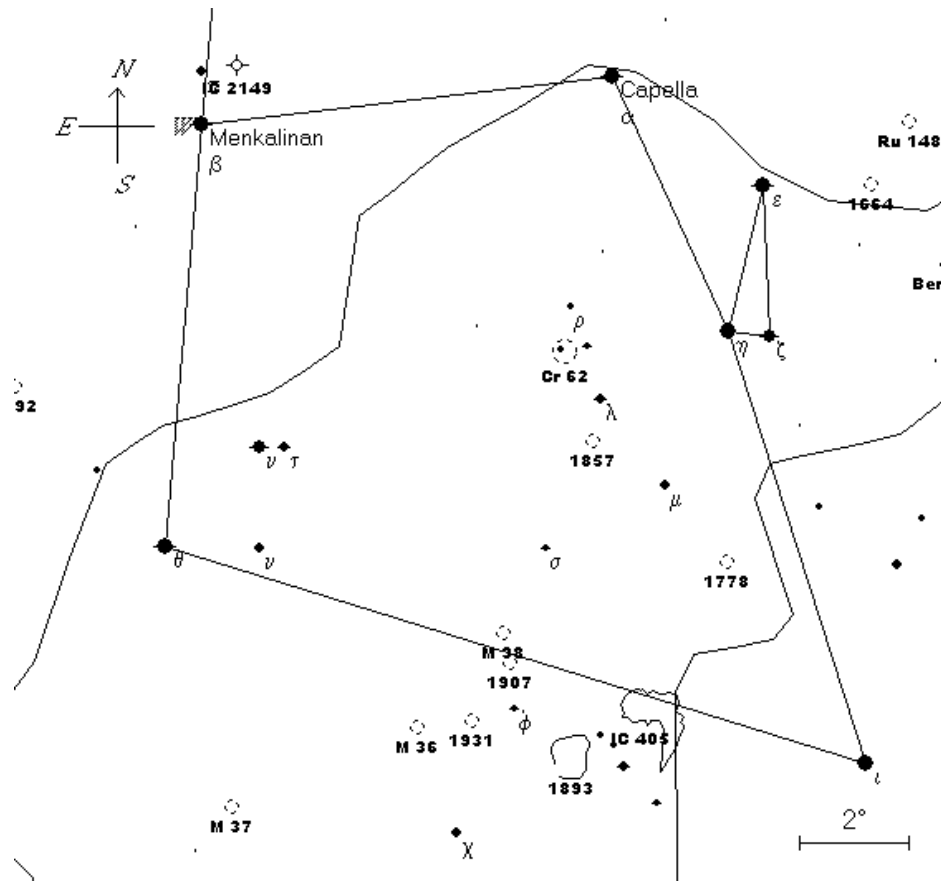


SkyMap Pro

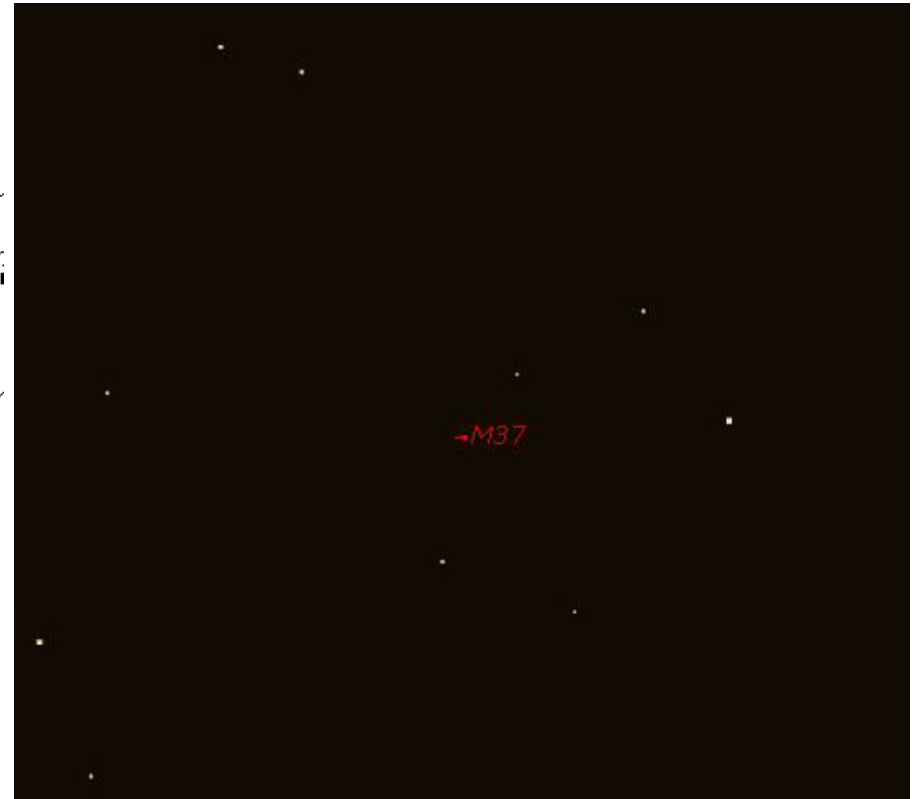
Auriga in City Skies

Drawn by Starry Night 3.1

Locate Area Visually



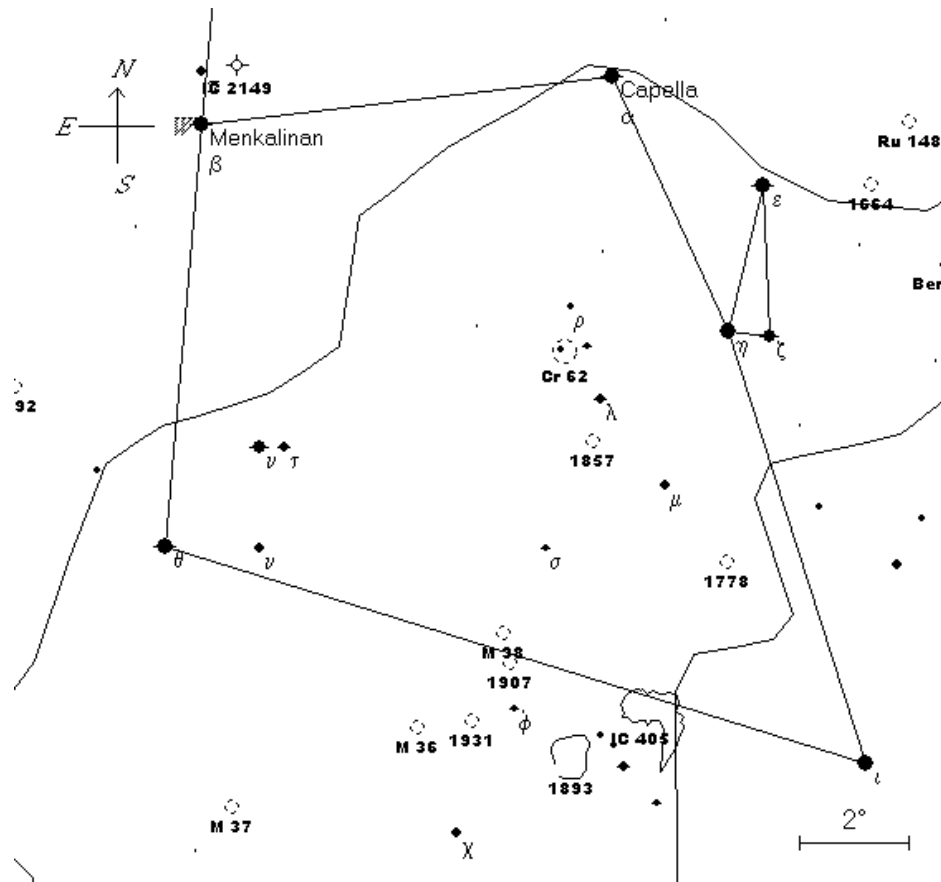
SkyMap Pro



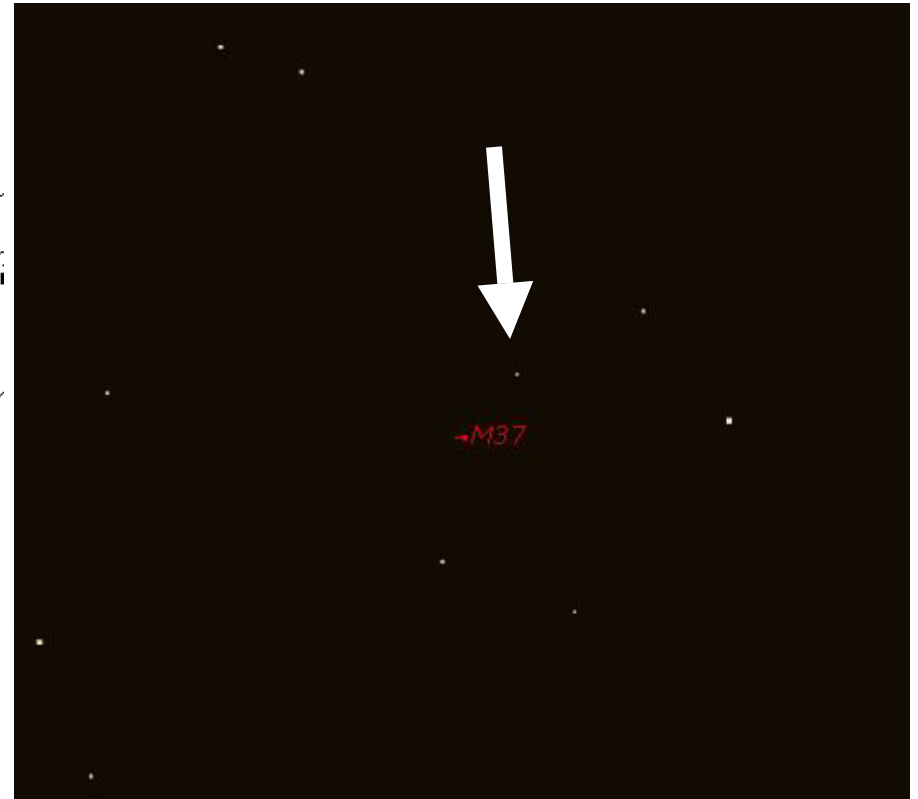
Auriga in City Skies

Drawn by Starry Night 3.1

Locate Area Visually



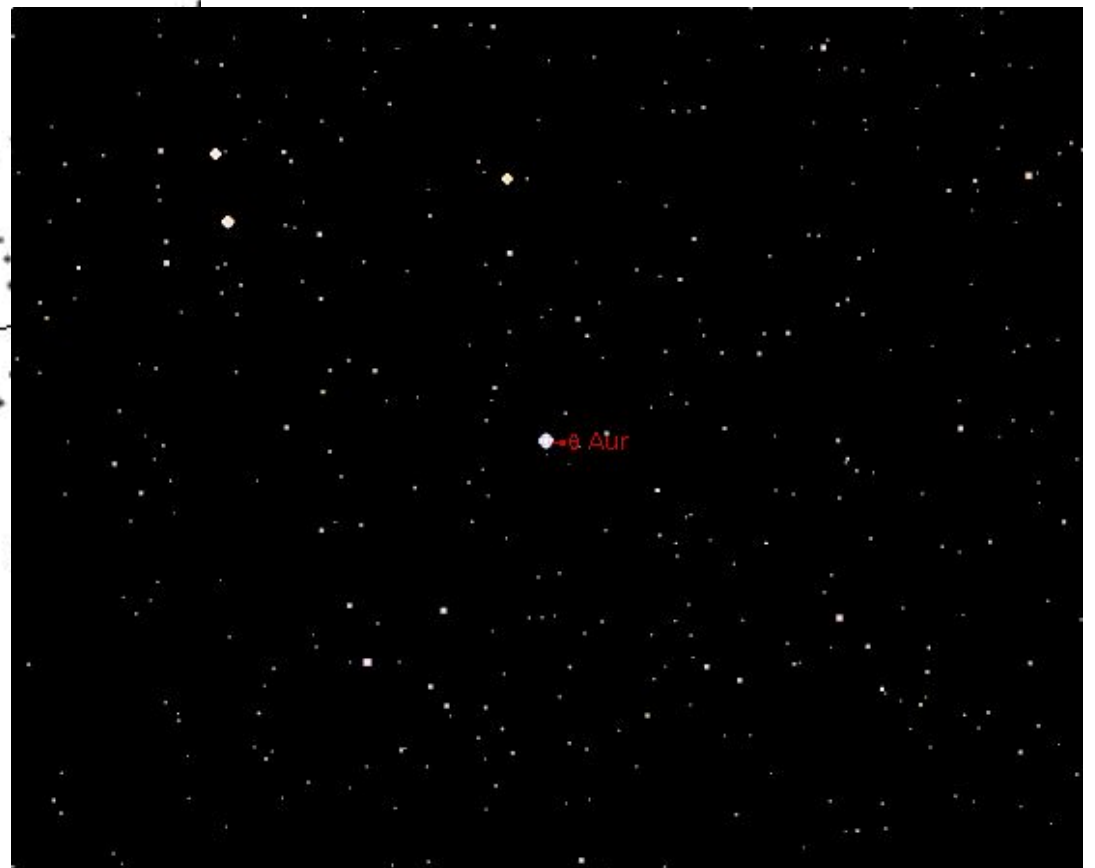
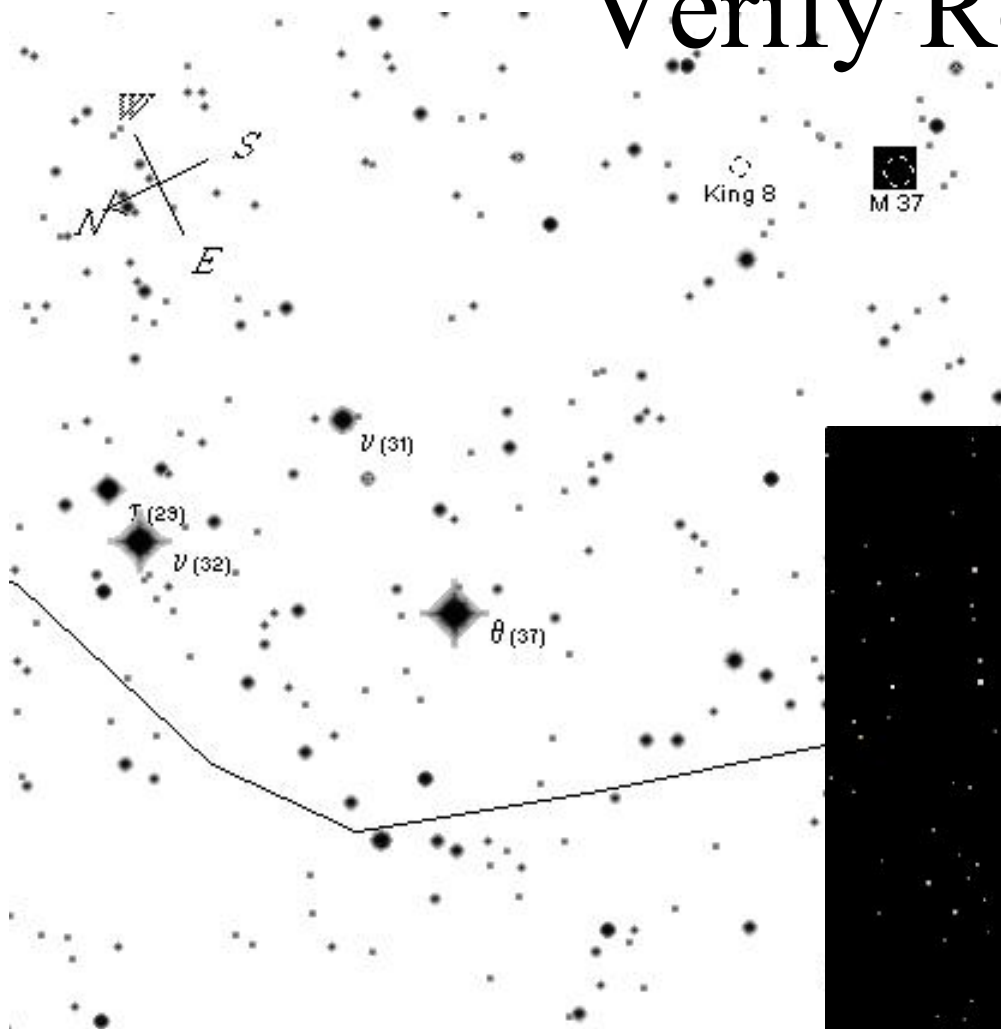
SkyMap Pro



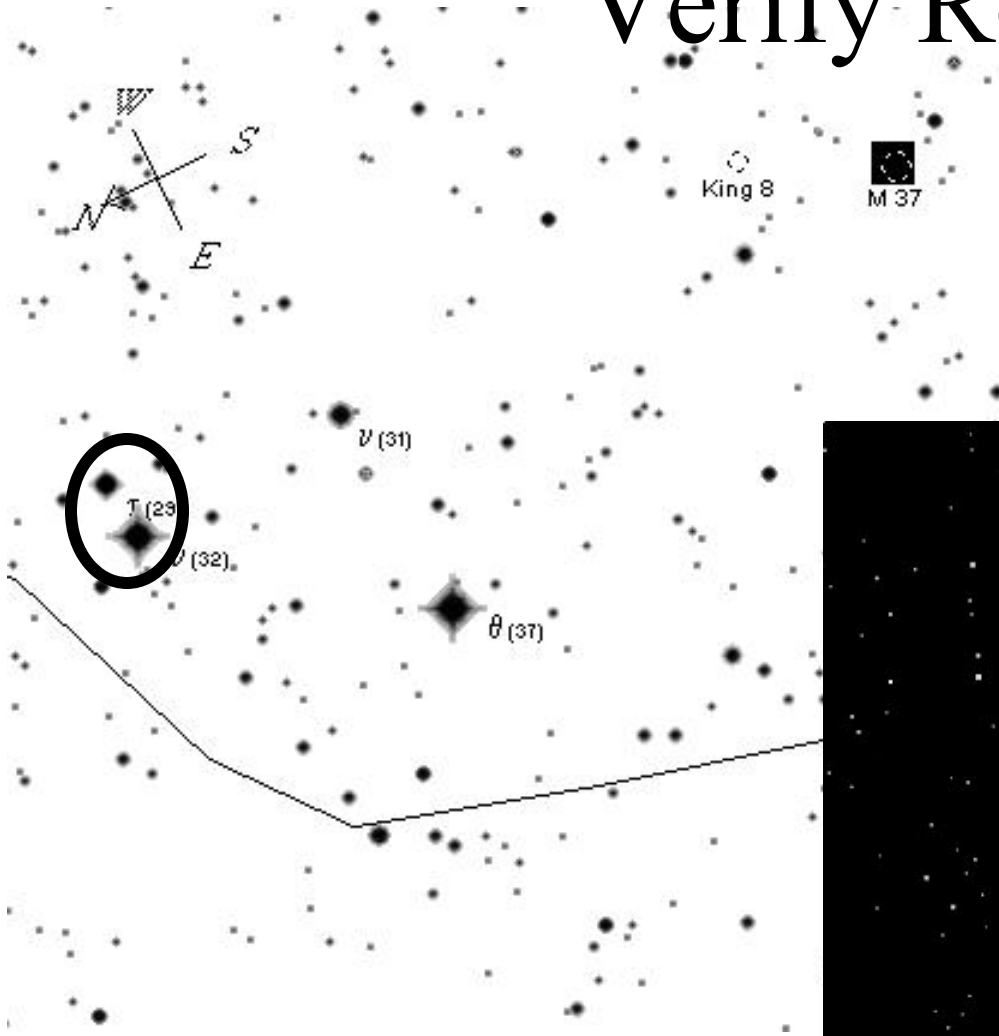
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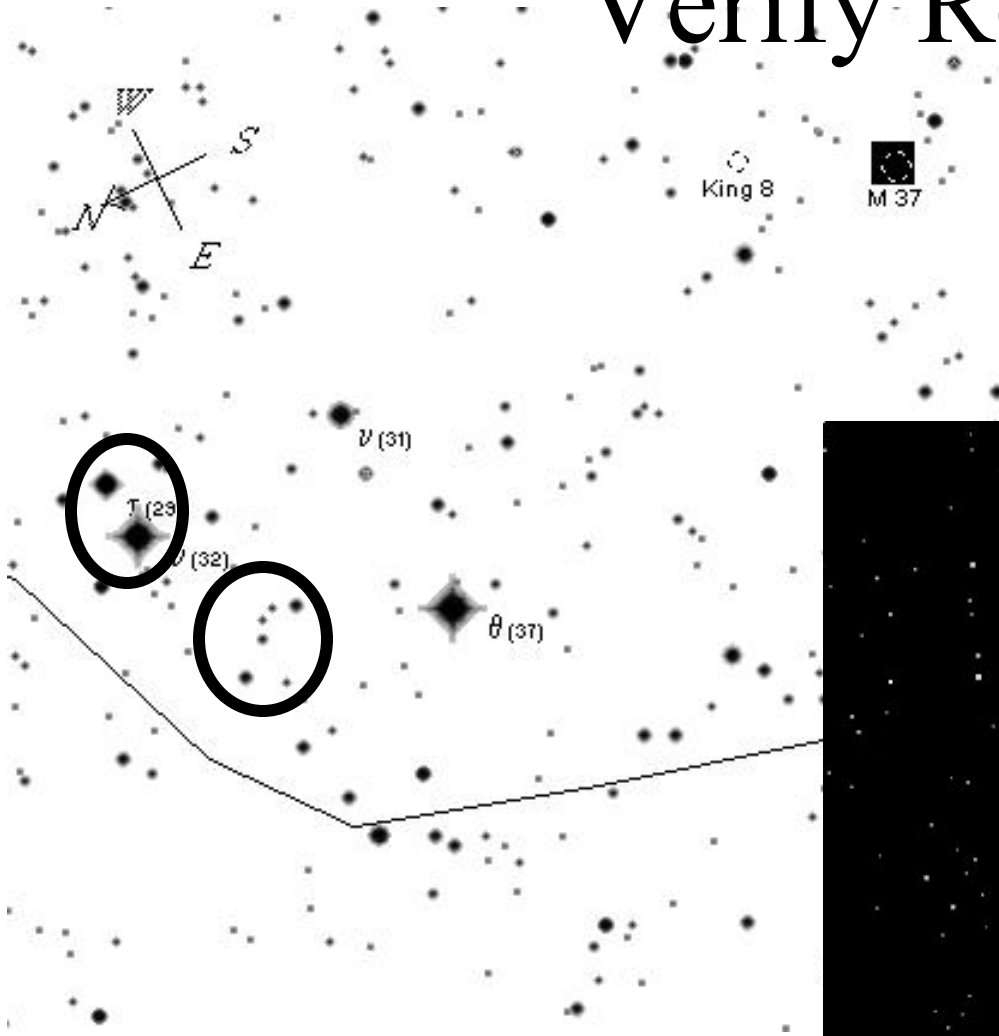
Verify Rotation



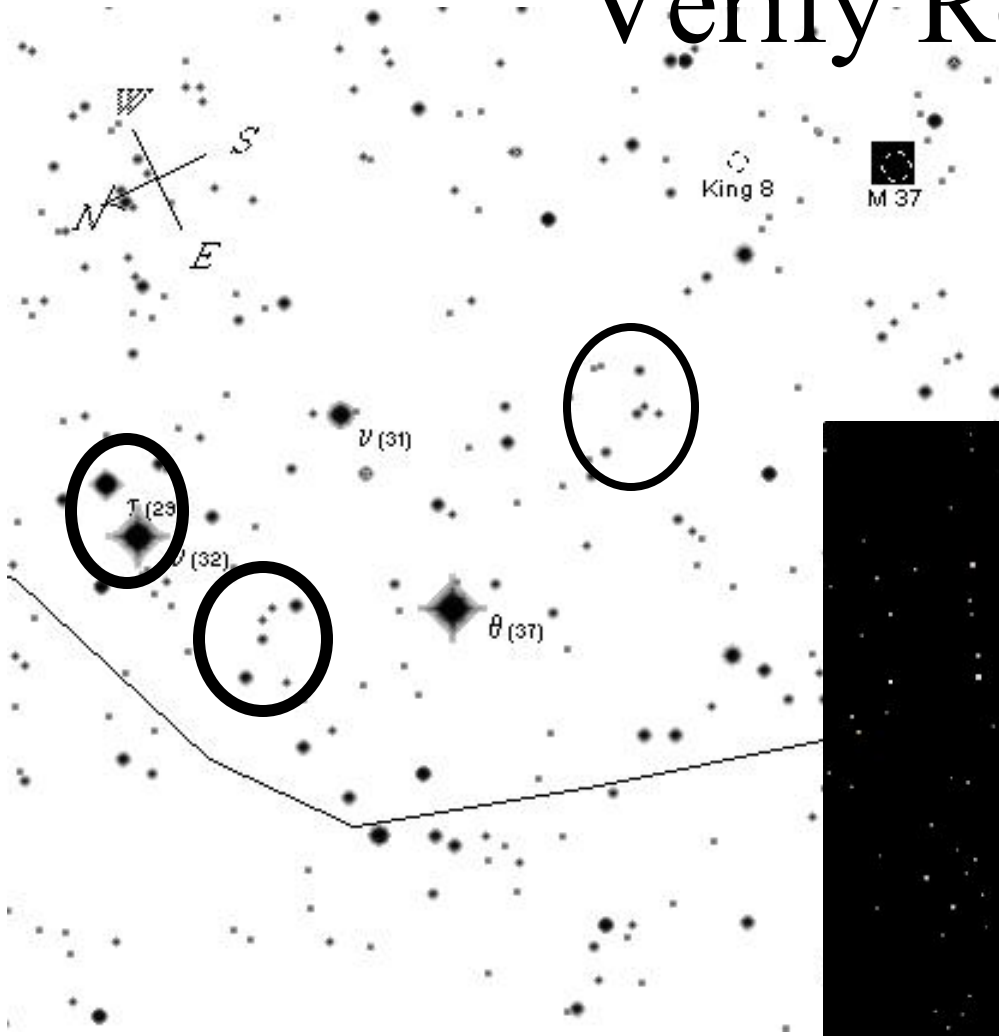
Verify Rotation



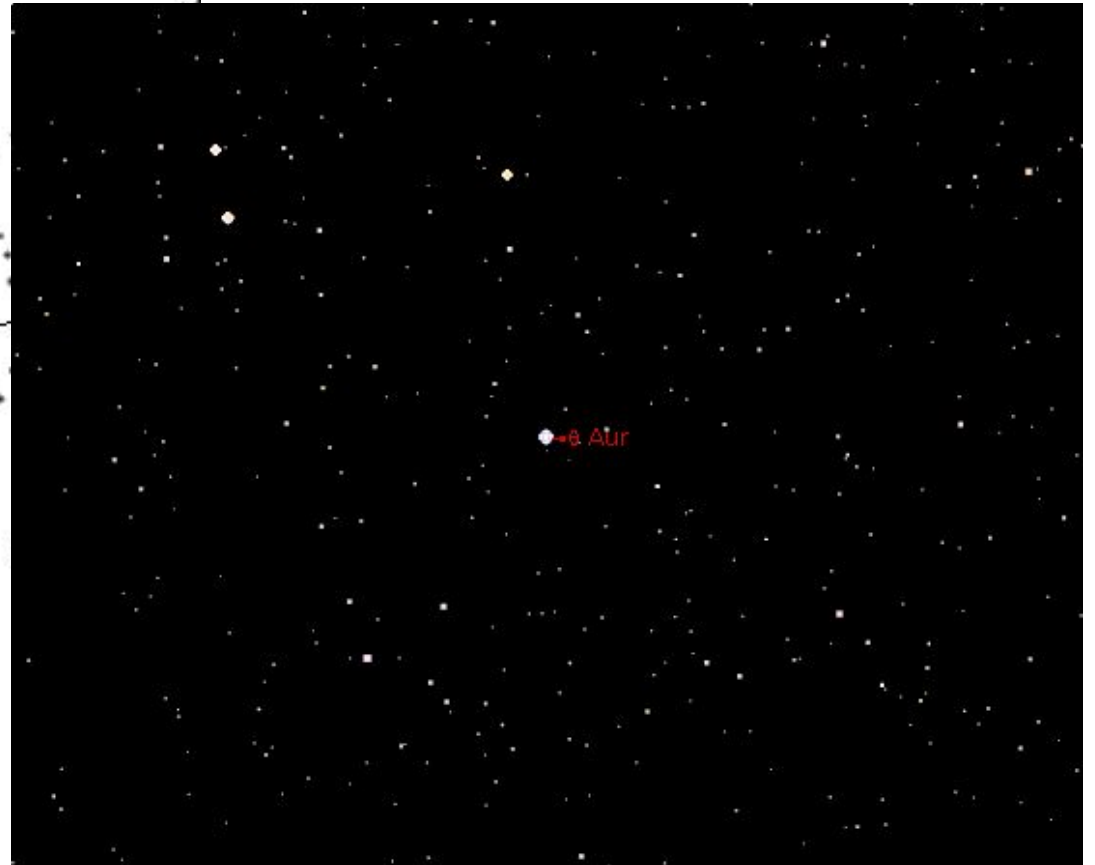
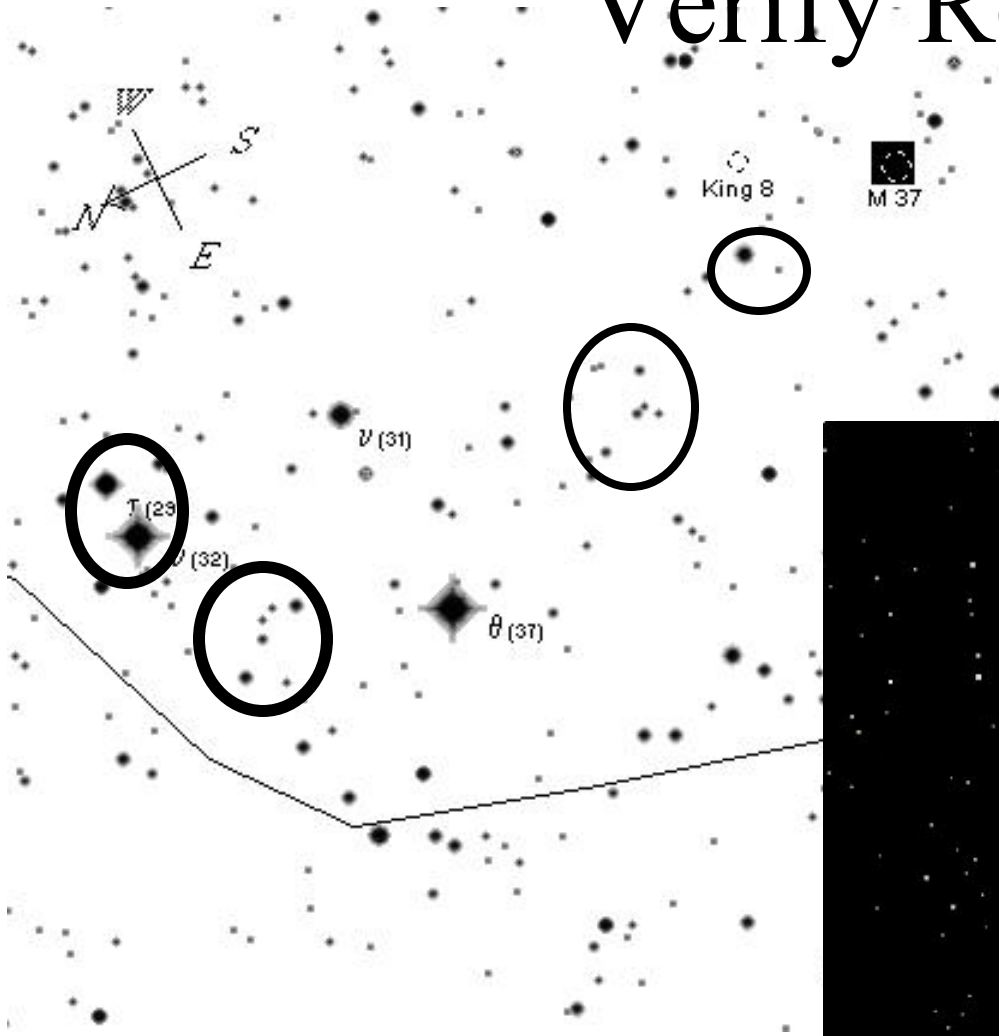
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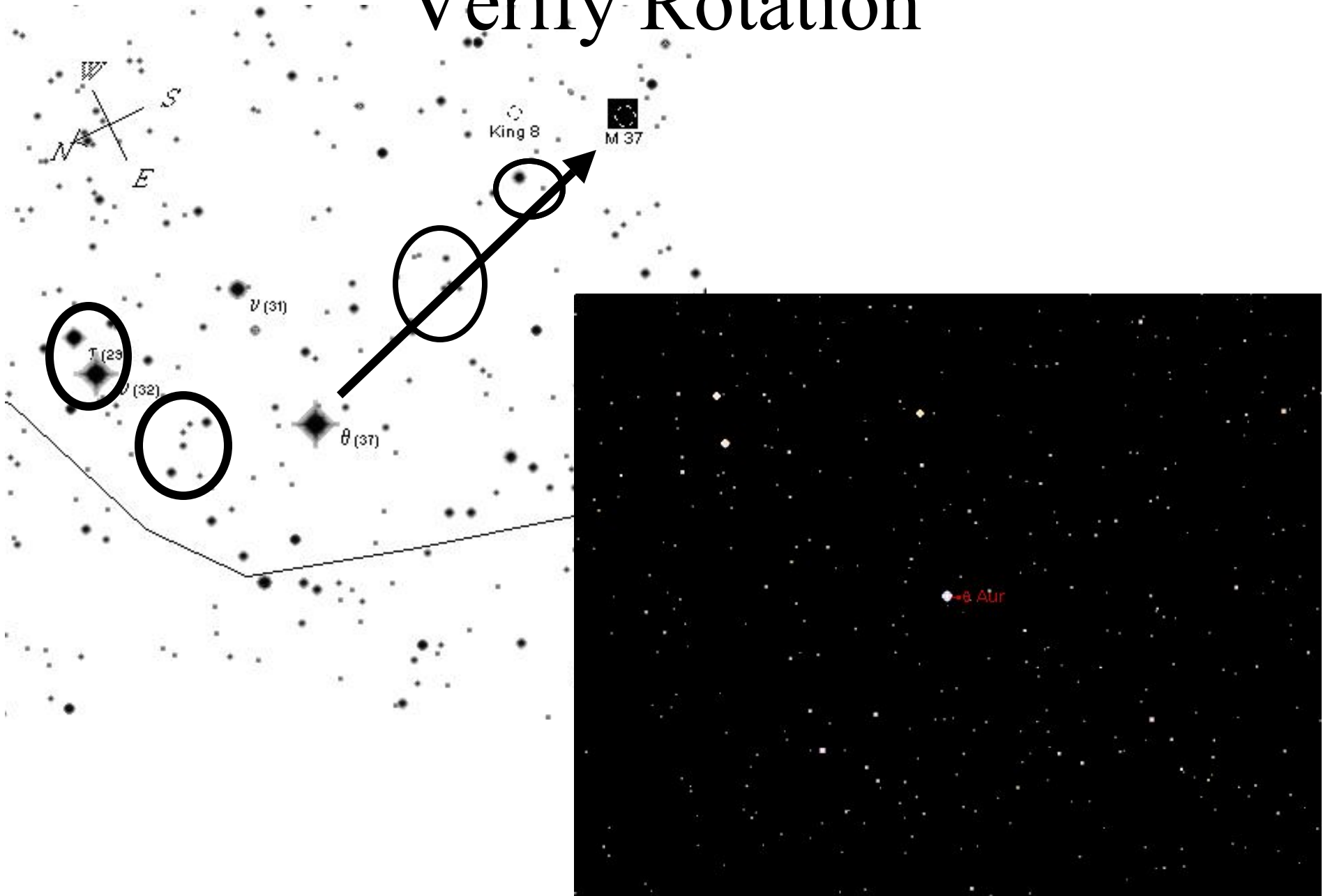
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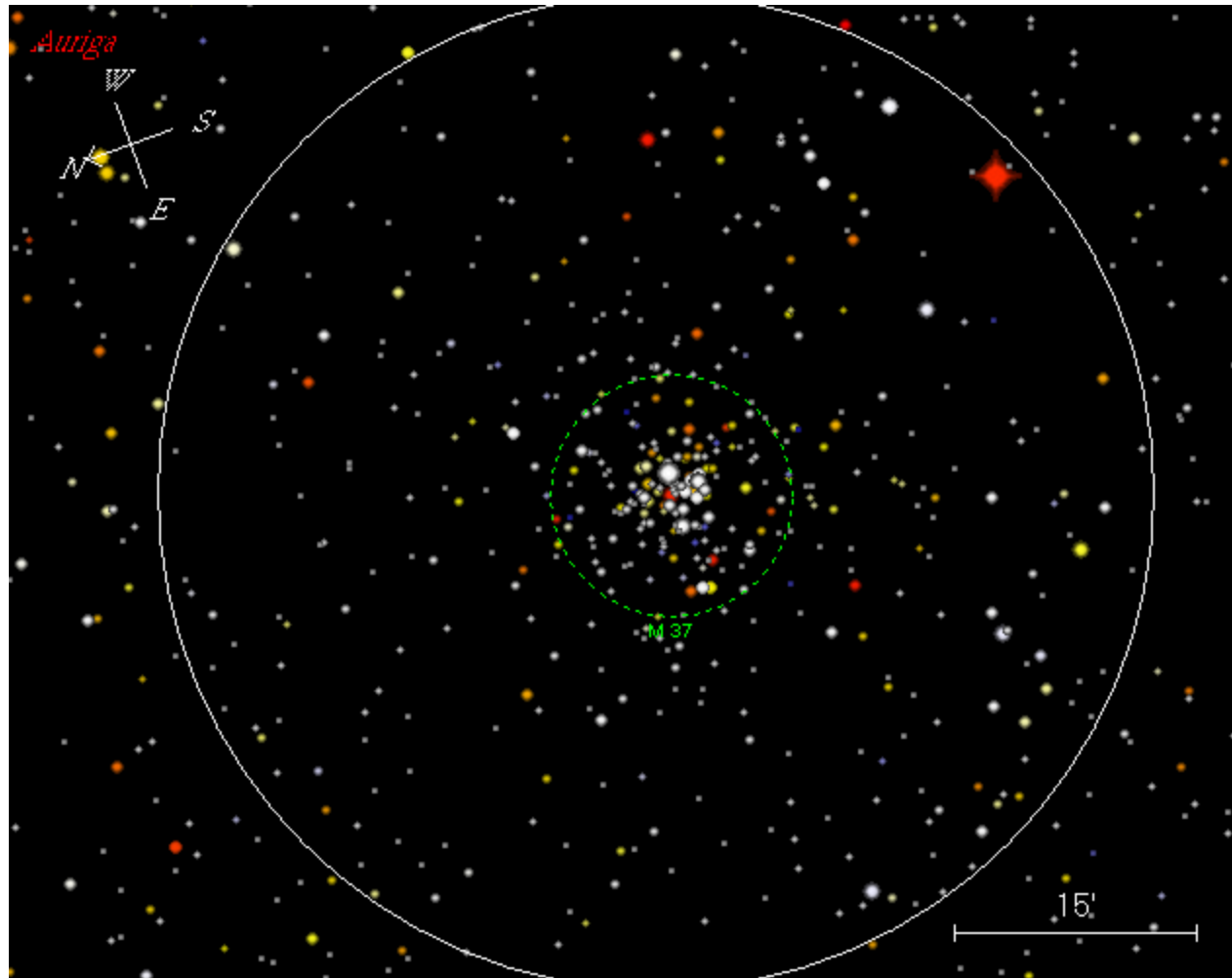
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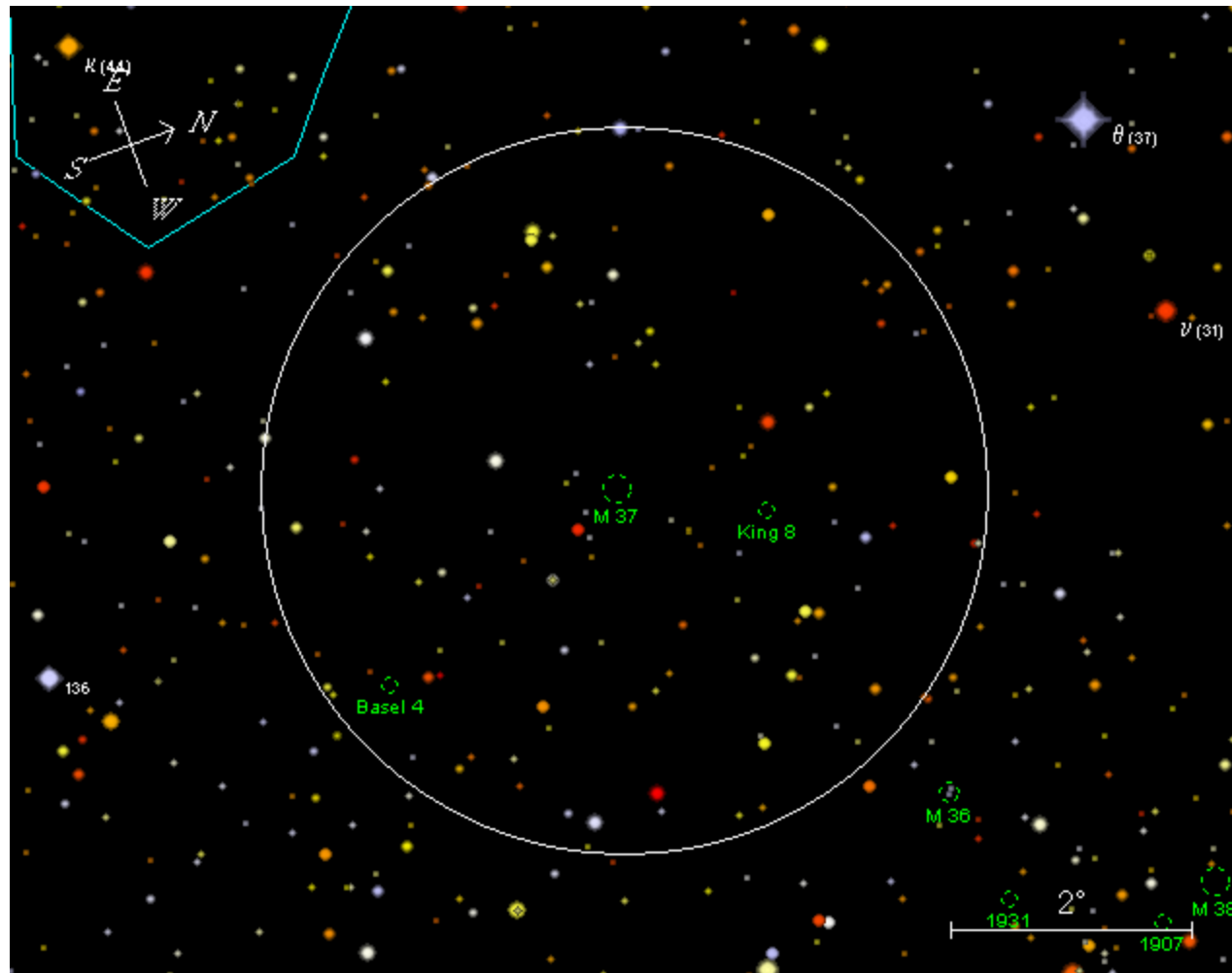
Verify Rotation



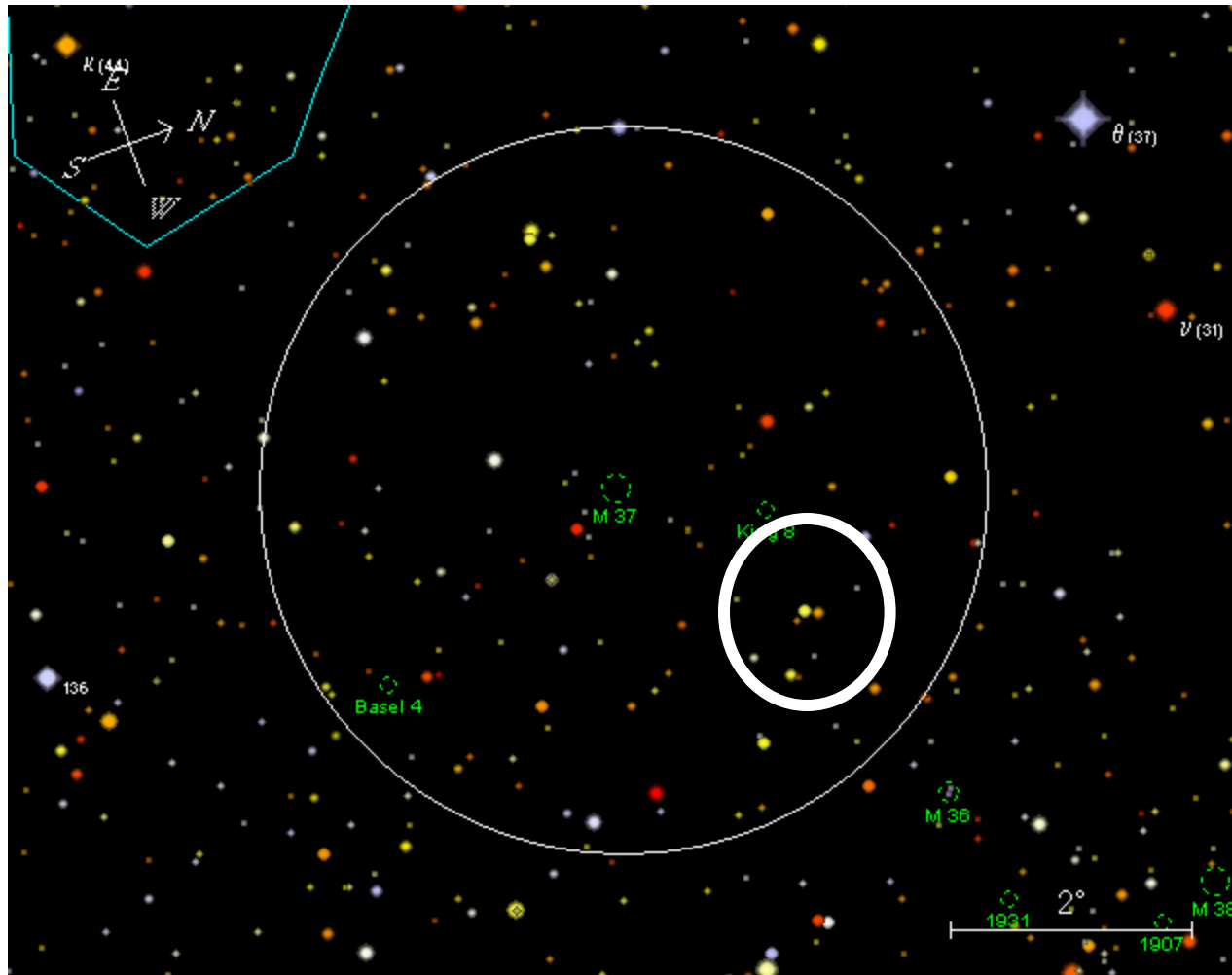
M37 View in Eyepiece



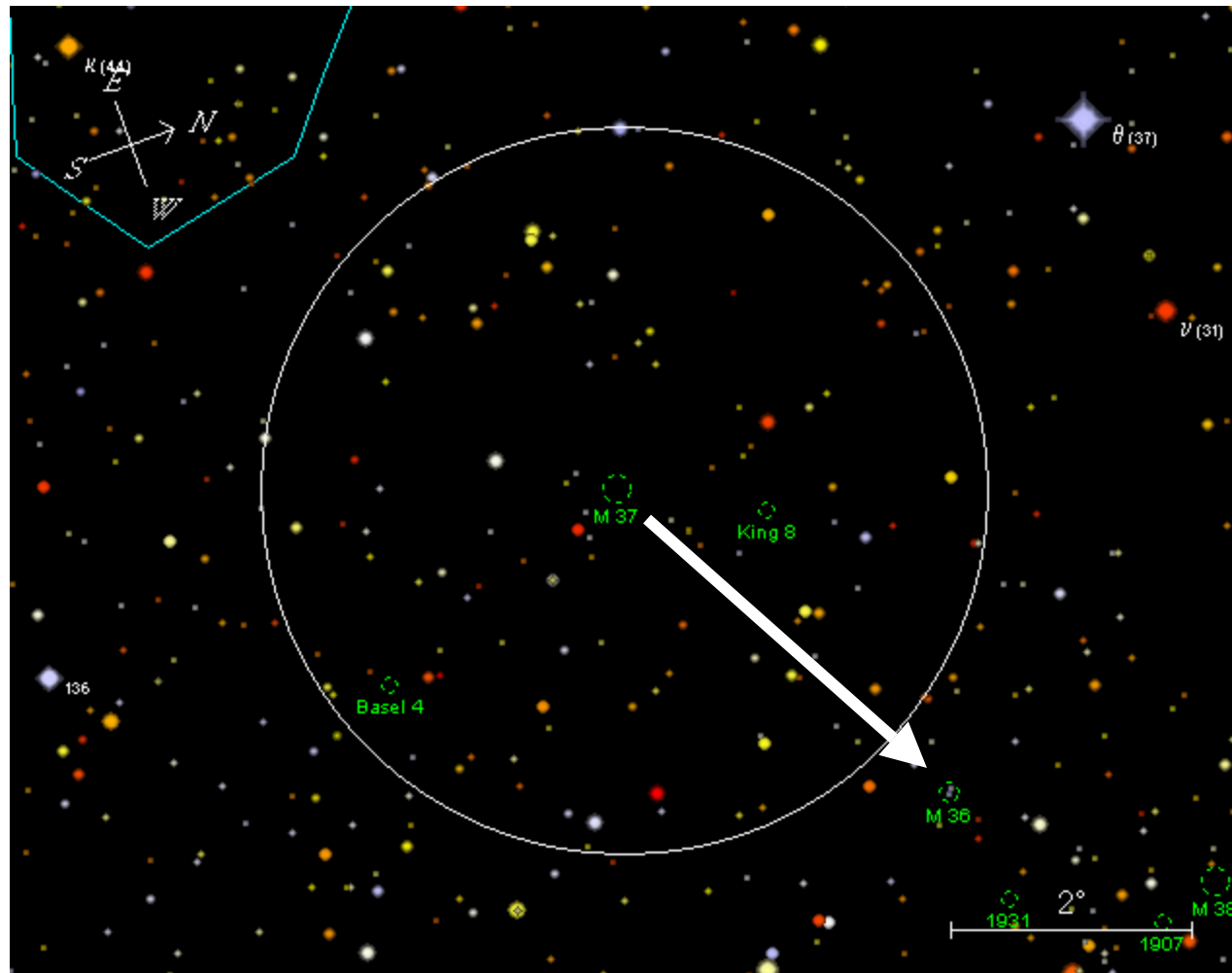
Hop to M37&M38



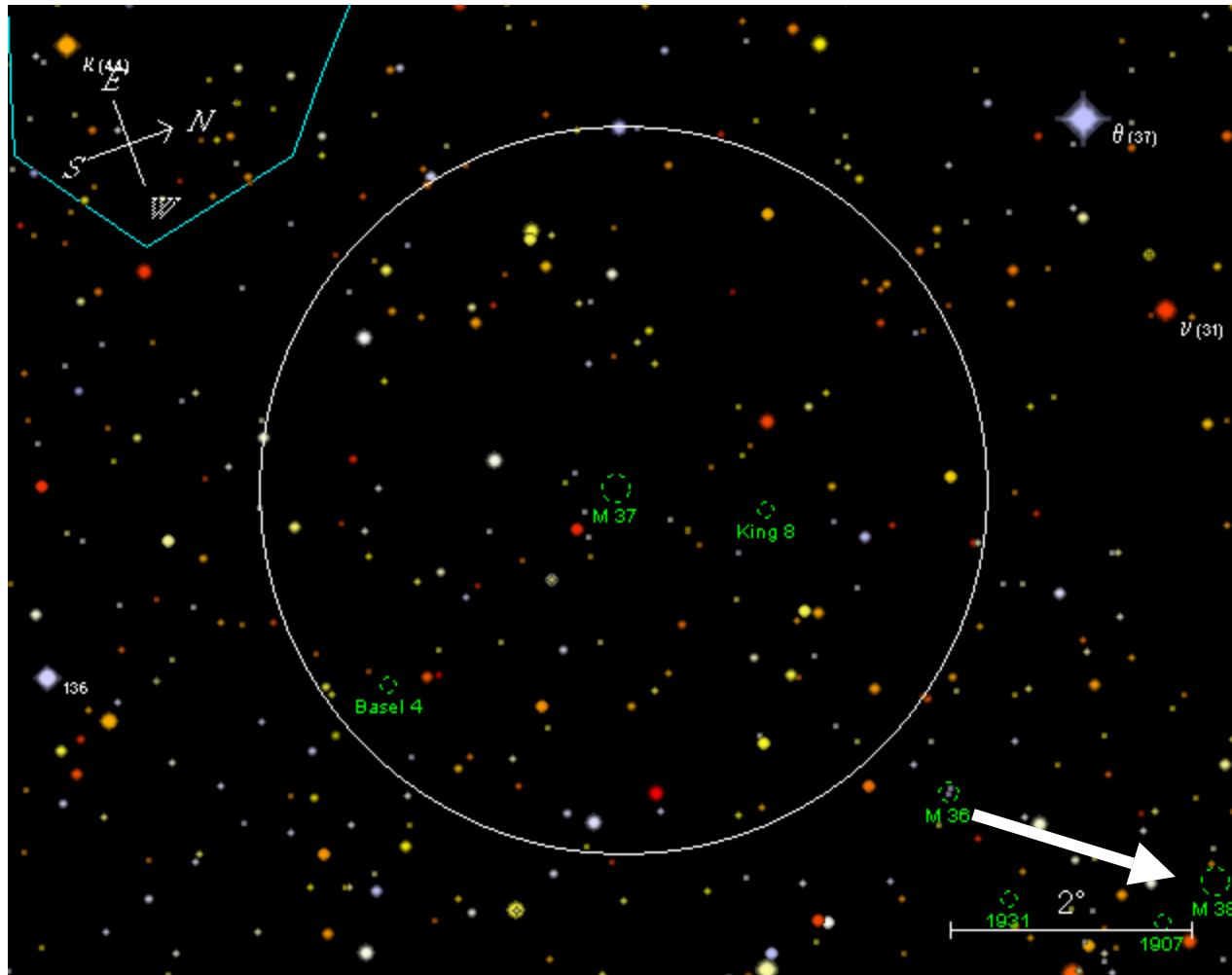
Hop to M37&M38



Hop to M37&M38



Hop to M37&M38



Some other hints

- Orient book to sky
- Plan multiple hops
- Use field of view circles

- Put dot in general area of object
- May require some Star Hopping at eyepiece

How to see stuff

- Averted vision
- Right magnification
- Slow Down and **LOOK**

References

- Object Lists
 - observers.org/observing/
 - tinyurl.com/89ewm
www.jarnac.org/levylist.htm
 - www.skymap.com/smp_target_lists.htm

Planetarium Programs

- www.skymap.com
- www.bisque.com/ (TheSky)
- www.starrynight.com/
- www.ilangainc.com/astroplanner/
- www.hnsky.org/software.htm
- [www.willbell.com/software/megastar/index.
htm](http://www.willbell.com/software/megastar/index.htm)

Paper Charts

- Bright Star Atlas
 - www.willbell.com/atlas/atlas1.htm
- Uranometria
 - www.willbell.com/u2k/index.htm
- Deep Map 600
 - tinyurl.com/ejpw
- S&T Atlases
 - tinyurl.com/8bgg4
 - [**http://tinyurl.com/ph2ma**](http://tinyurl.com/ph2ma)

More References

- How to see stuff
 - clarkvision.com/visastro/