



by Daniel Herron

What is Star Hopping?

Using bright stars and star patterns (asterisms) as guidepost to locate objects that are too dim to be seen with the naked eye or through a finder scope.

Consists of successive leaps from a star that is visible either with the naked eye or with a finder-scope, to another star and so forth until the aimed target is reached.

Why Star Hop?

Best way to learn the sky

See more objects than with Go-to scopes

Find more objects quicker than with Go-To scopes

No power worries

More Rewarding

Terms

Telrad/Rigel — a zero magnification finder that projects a series of concentric red rings (4 degrees, 2 degrees, and one-half degree in diameter) on a tilted clear viewing plate at the top of the finder.

Asterism— a grouping of stars that form a familiar shape or pattern not formally recognized as a constellation. (big dipper, summer triangle, etc.)

Field of View - The size of the actual patch of sky being viewed by an instrument

Easiest way to determine field of view is estimate it by comparing telescope view with a star atlas.

Another way is to find a star near the celestial equator (stars in Orion's belt are commonly used) line up the star on the side of your field of view and time how long it takes to traverse the diameter of the field of view.

What Equipment is Needed?

Knowledge of the night sky (constellations, some bright stars)

Eyes — you do not need a scope or even binoculars to do a star hop

Binoculars

A Hand (we all have a spare) at arms length

Index Finger to Pinky = 15 degrees

Closed fist = 10 degrees

Three fingers together = 5

Pinky = 1 degree

Telescope with a Finder scope or Telrad/Rigel or both!

Good Star Atlas

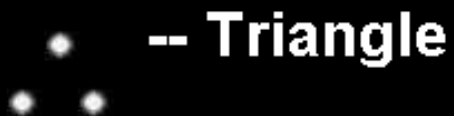
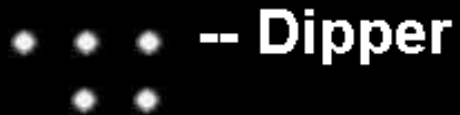
Sky Atlas 2000.0 — (mag 8.5 stars)

Uranometria 2000.0 — (mag 9.75 stars)

Millennium Star Atlas — (mag 11 stars)

Sky and Telescope Pocket Sky Atlas

Helpful Asterisms



Star Hopping Tips

Learn the naked eye sky

Have a good Star Atlas / and use it

Know your equipment

Keep both eyes open!

Be patient

How to Star Hop

let the hunt begin

In your Star Atlas

Locate your target

Find your start point - naked eye star close to your target

Note any asterisms or stars leading from your starting point to your target

From the naked eye star find the next closest star or asterism on your hop

Repeat until you know all the hops along the way

Note any objects nearby that you may want to peek at.

In your scope

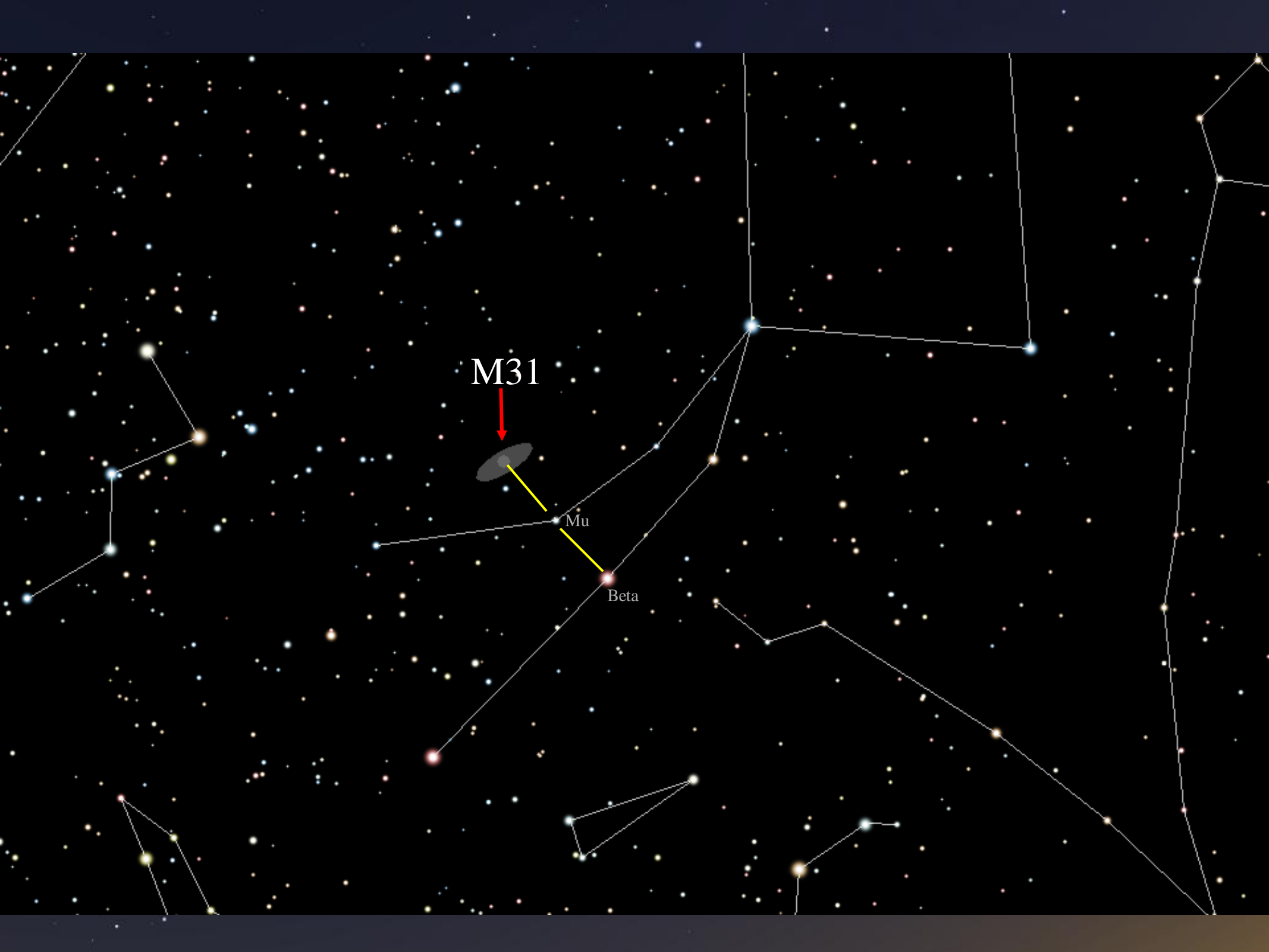
Center your scope on the same naked eye star close to your target

From the naked eye star find the next closest star or asterism on your hop

Repeat until the object is in your field of view

Enjoy your prey before moving onto the next!

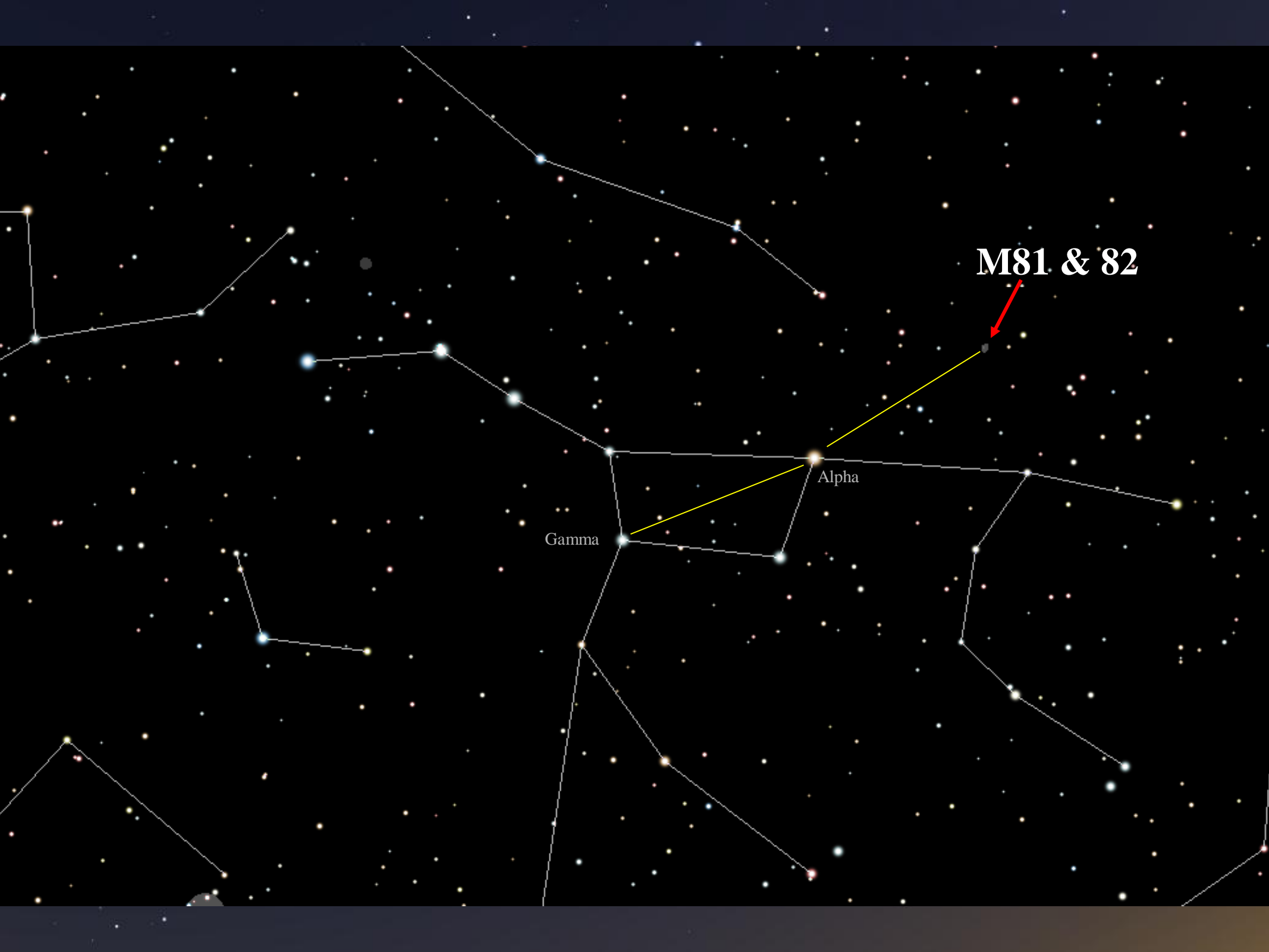
Note any other objects seen on the way!



M31

Mu

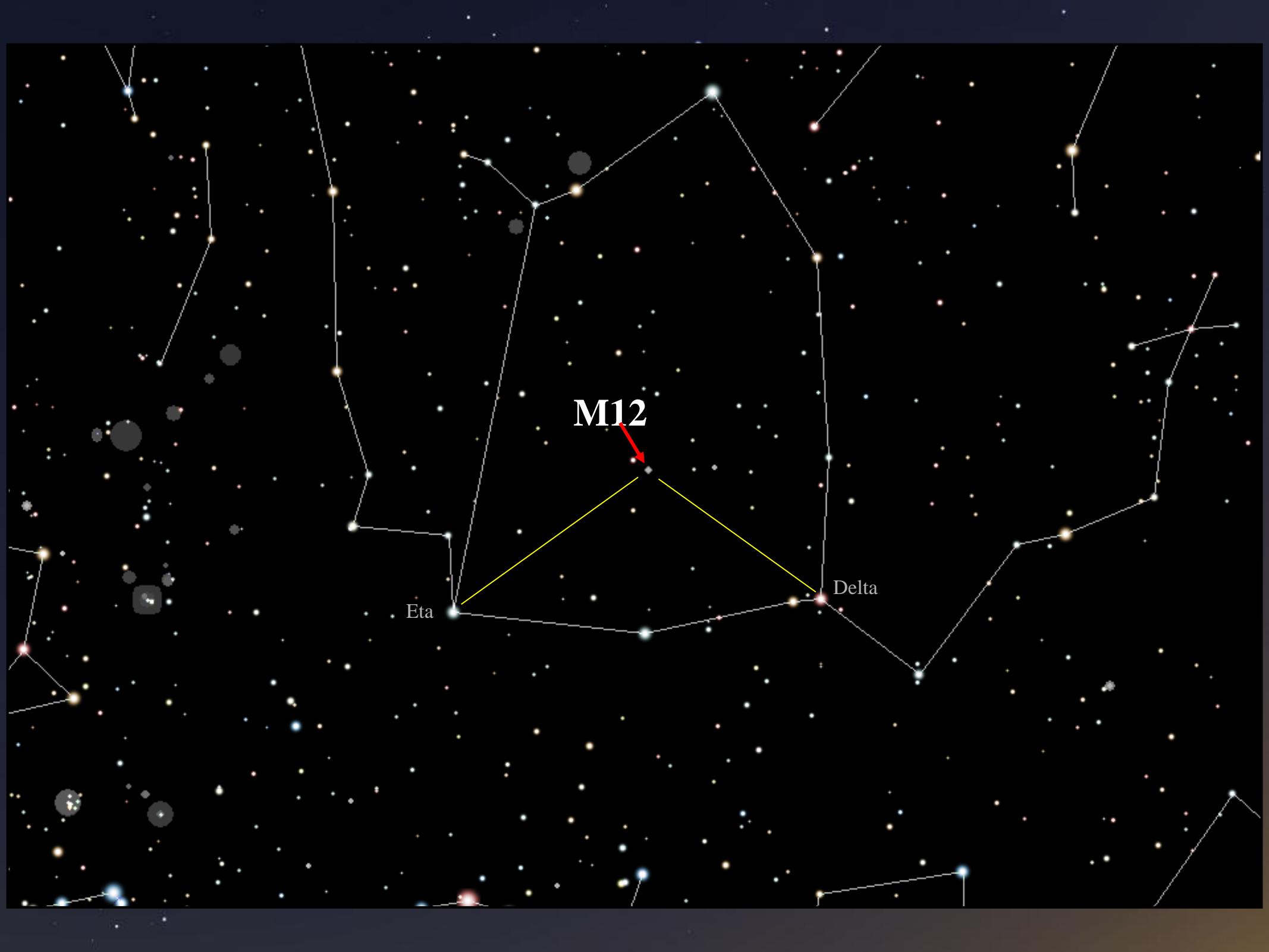
Beta



M81 & 82

Alpha

Gamma



M12

Eta

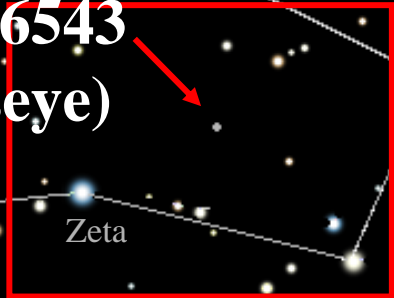
Delta

NGC 6453 - Catseye nebula



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NGC6543
(Catseye)



Delta

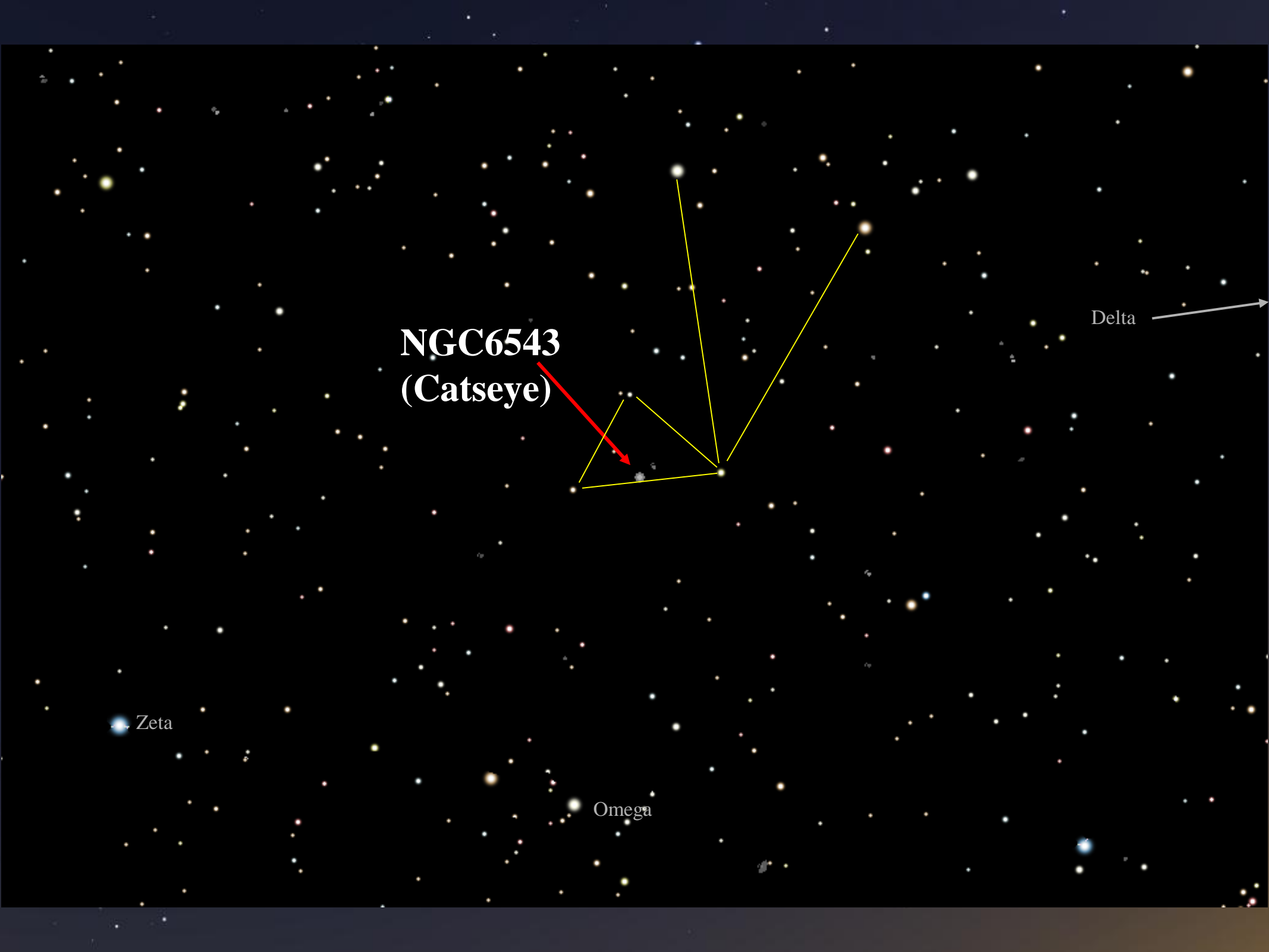
Zeta

**NGC6543
(Catseye)**

Delta

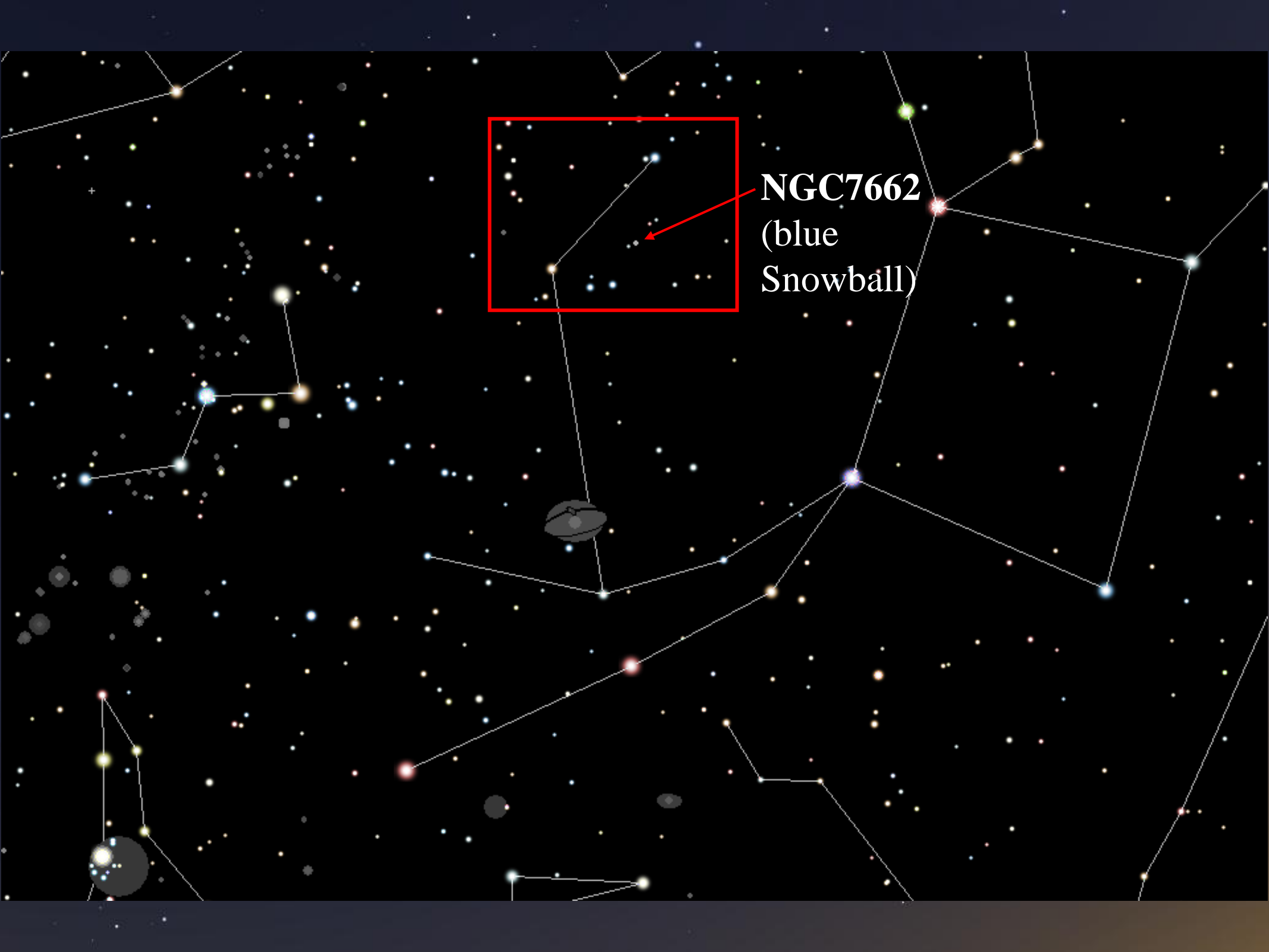
Zeta

Omega

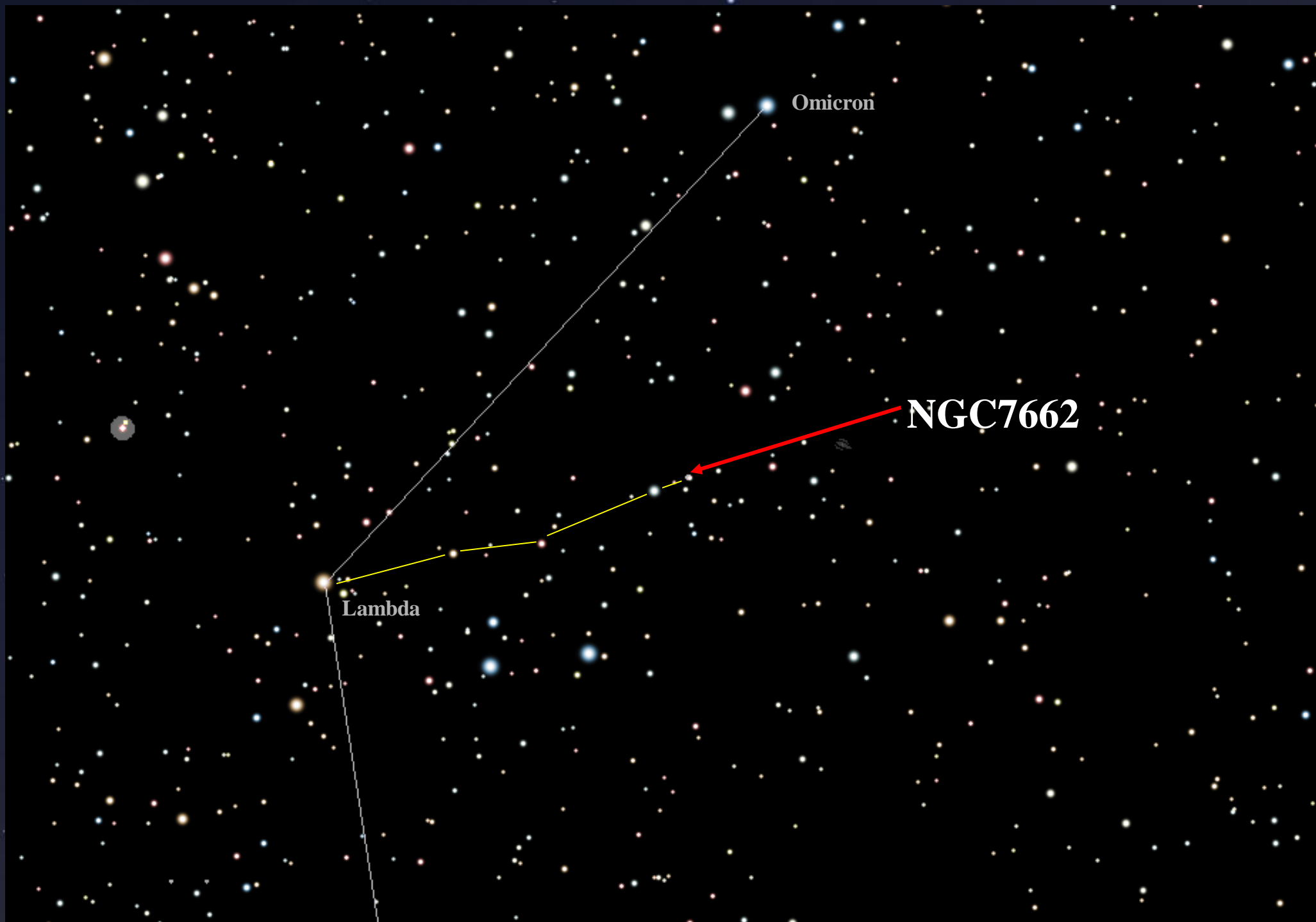


NGC 7662





NGC 7662
(blue
Snowball)



Omicron

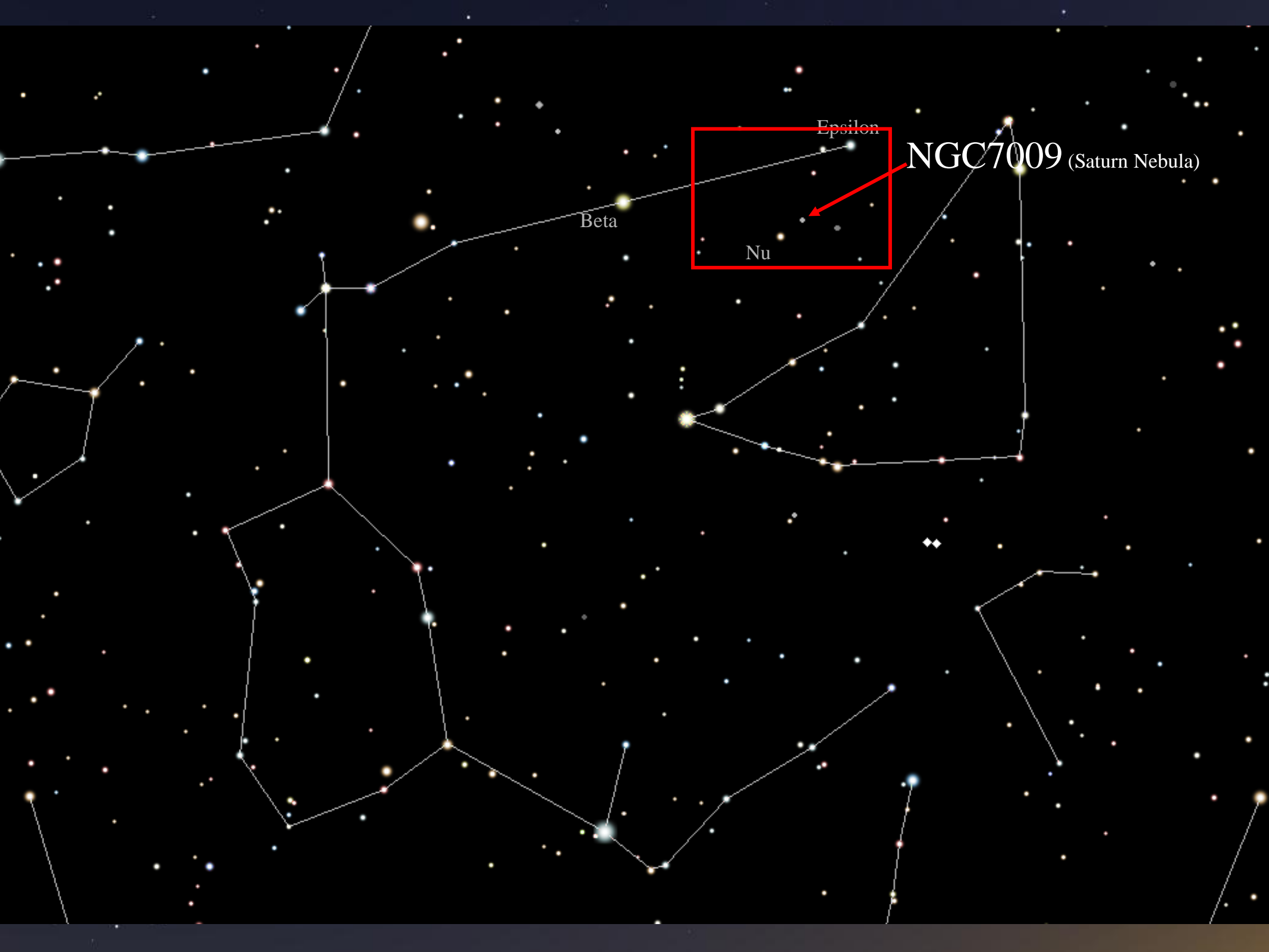
NGC 7662

Lambda

NGC 7009 – Saturn Nebula



Photo Taken by John Ambrose

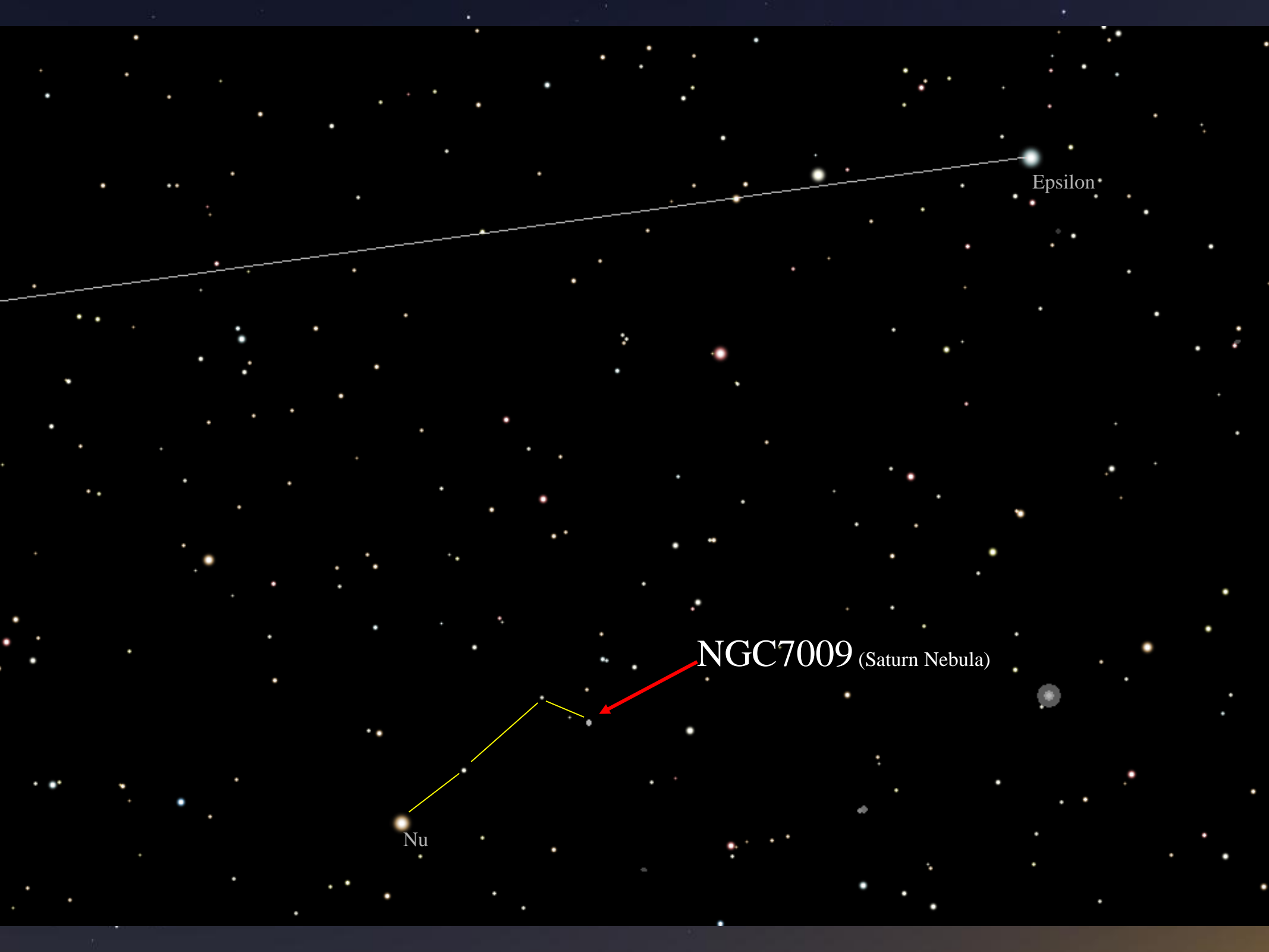


Epsilon

NGC 7009 (Saturn Nebula)

Beta

Nu



Epsilon

NGC7009 (Saturn Nebula)

Nu

NGC 6633

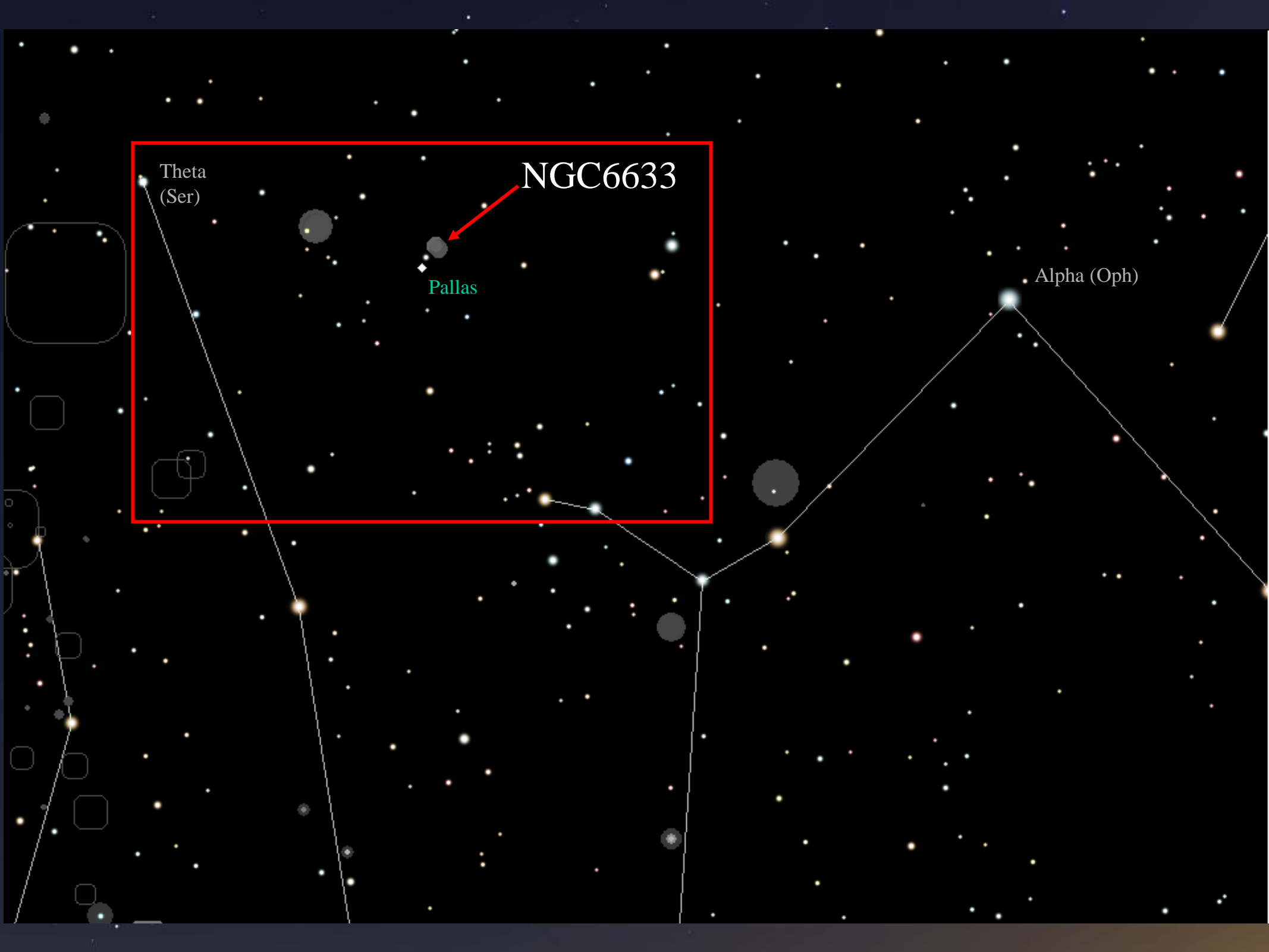


Theta
(Ser)

NGC6633

Pallas

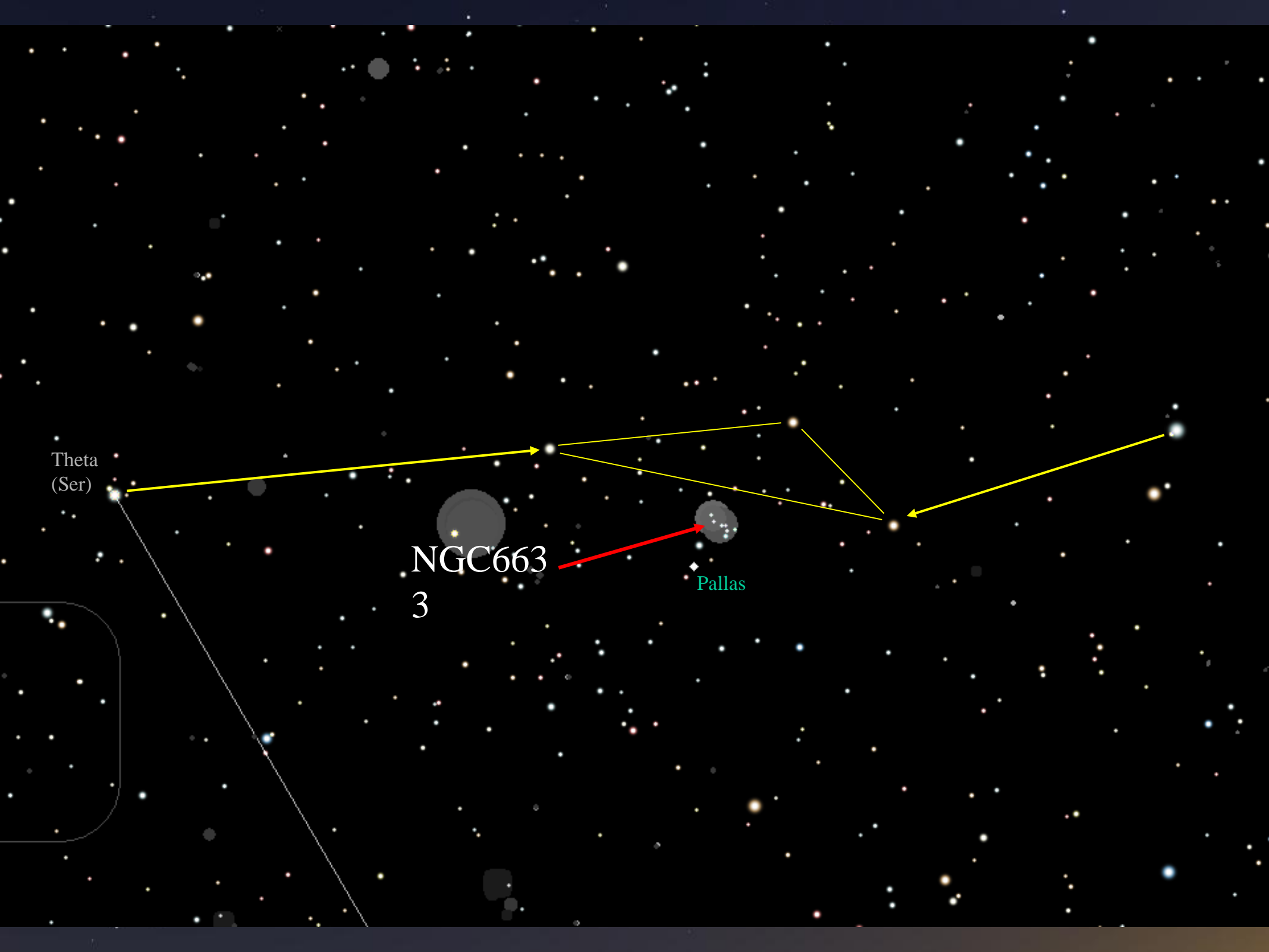
Alpha (Oph)



Theta
(Ser)

NGC663
3

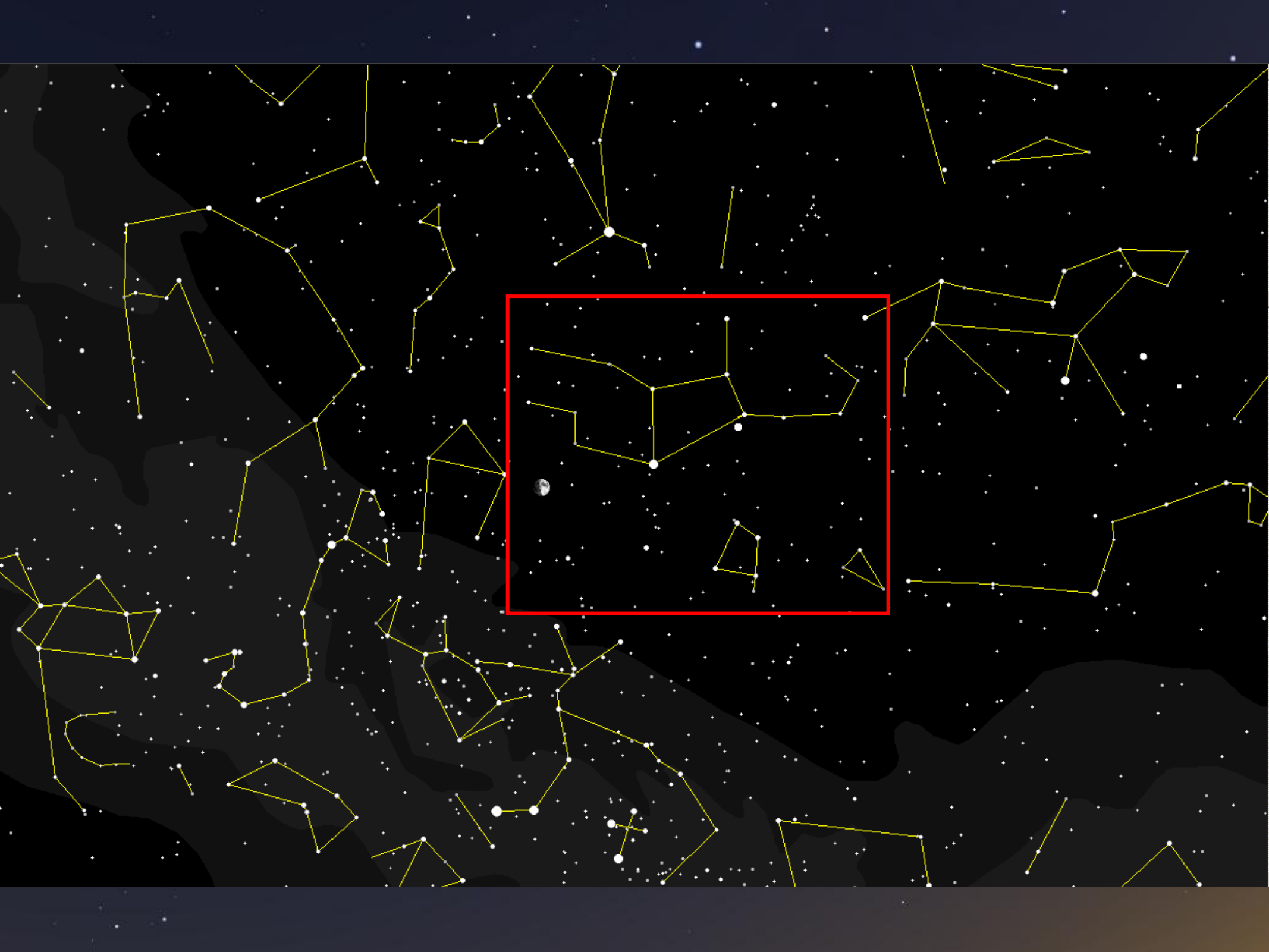
Pallas

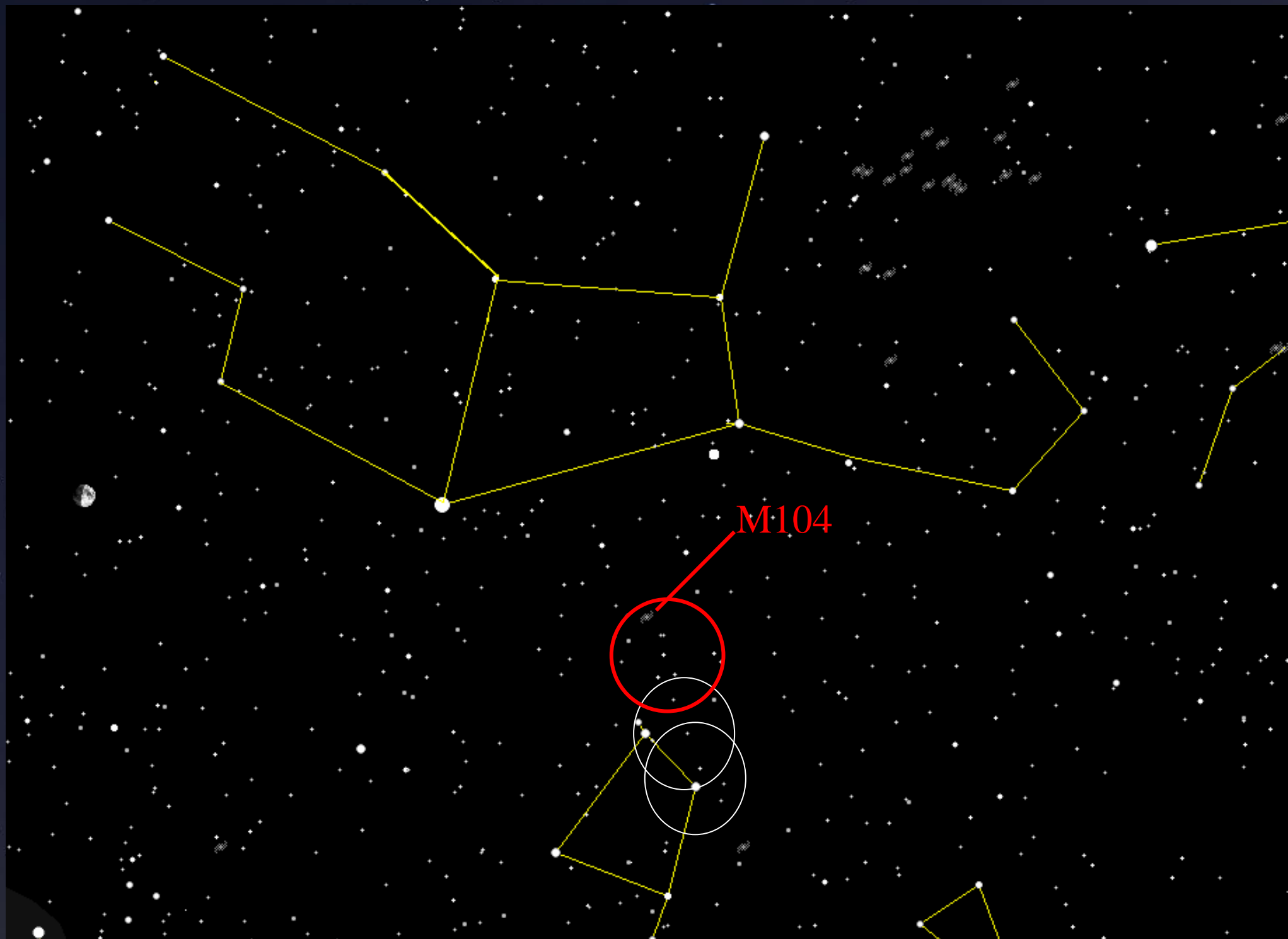


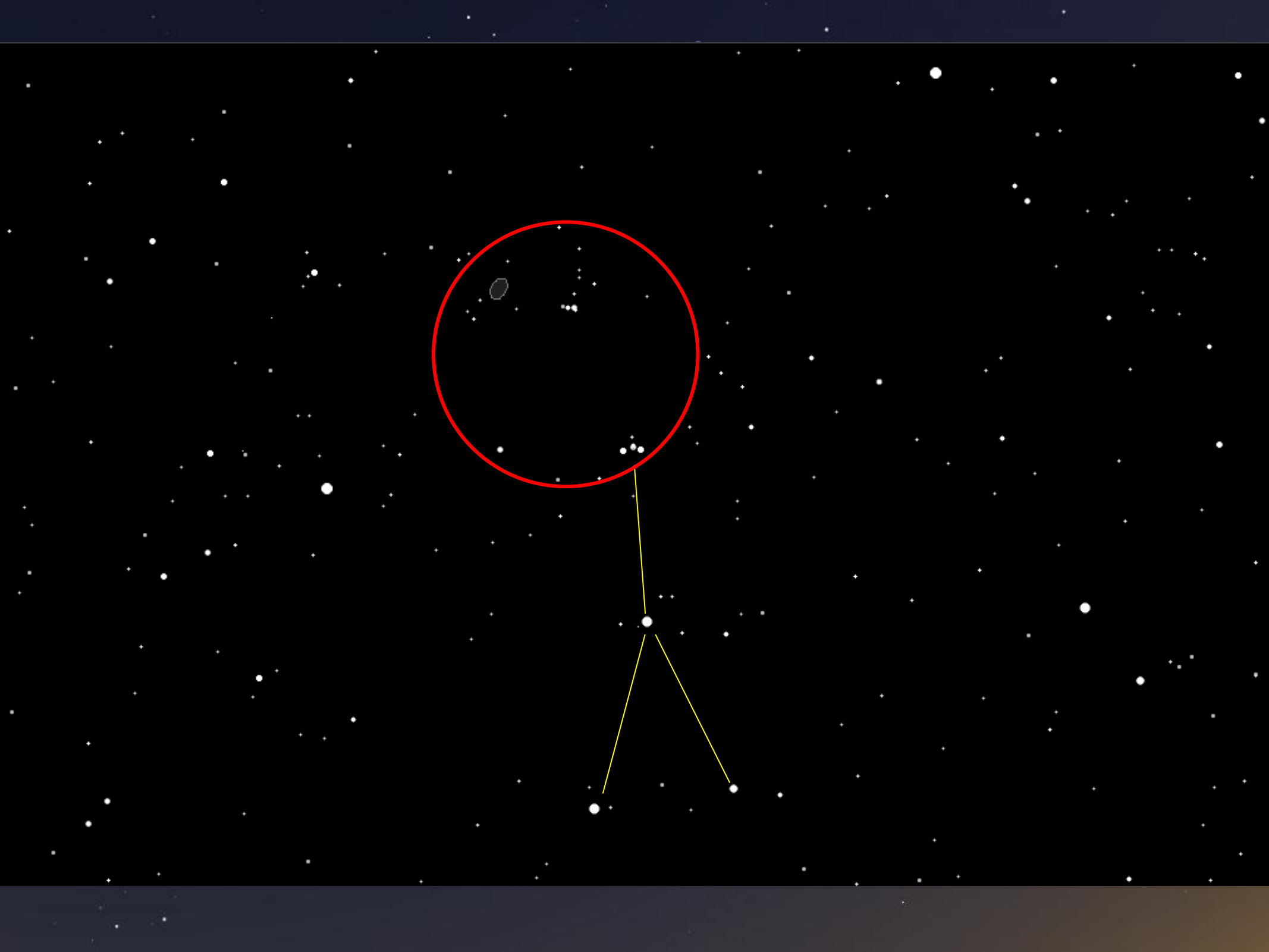
Lets do one together – M104

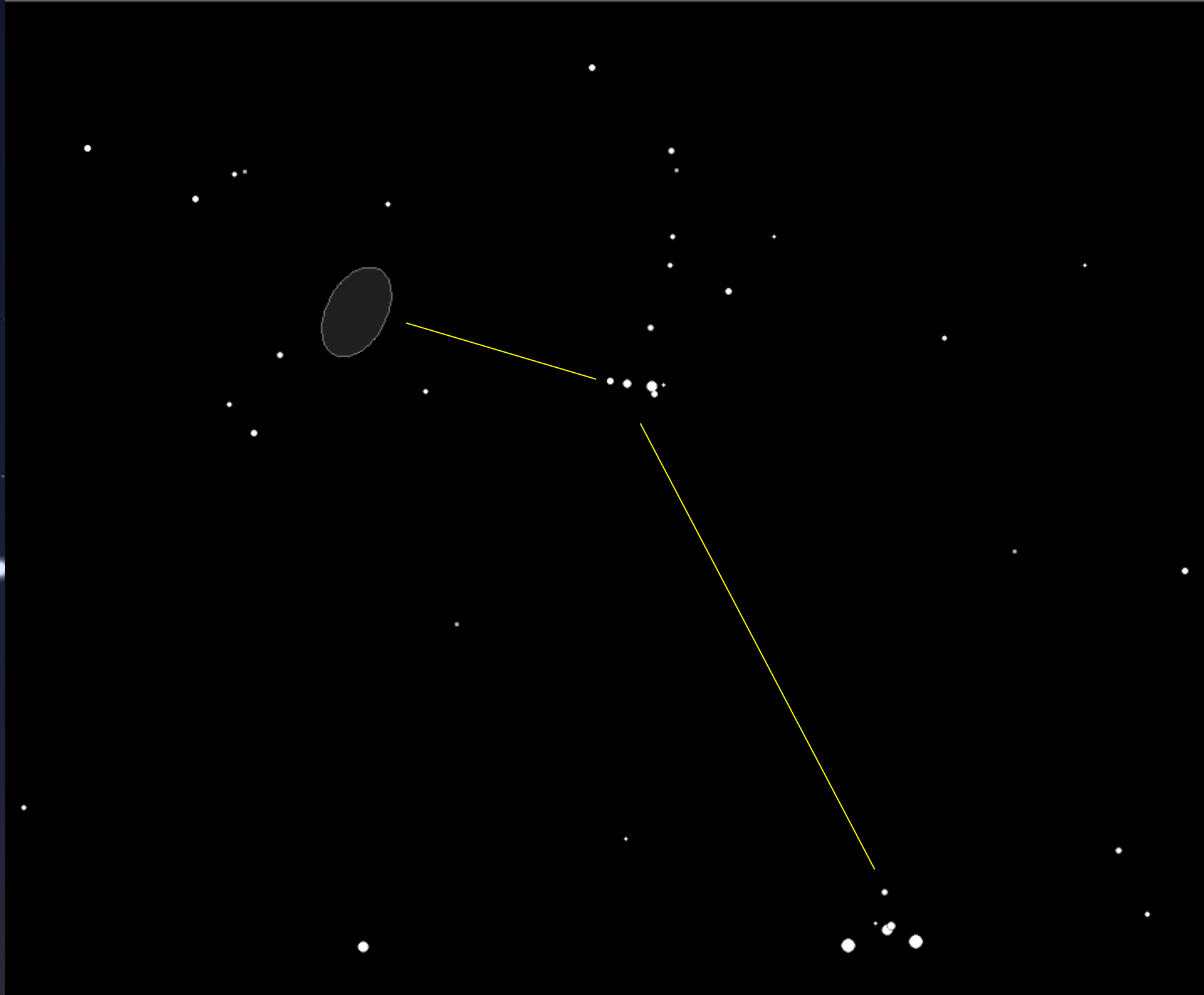






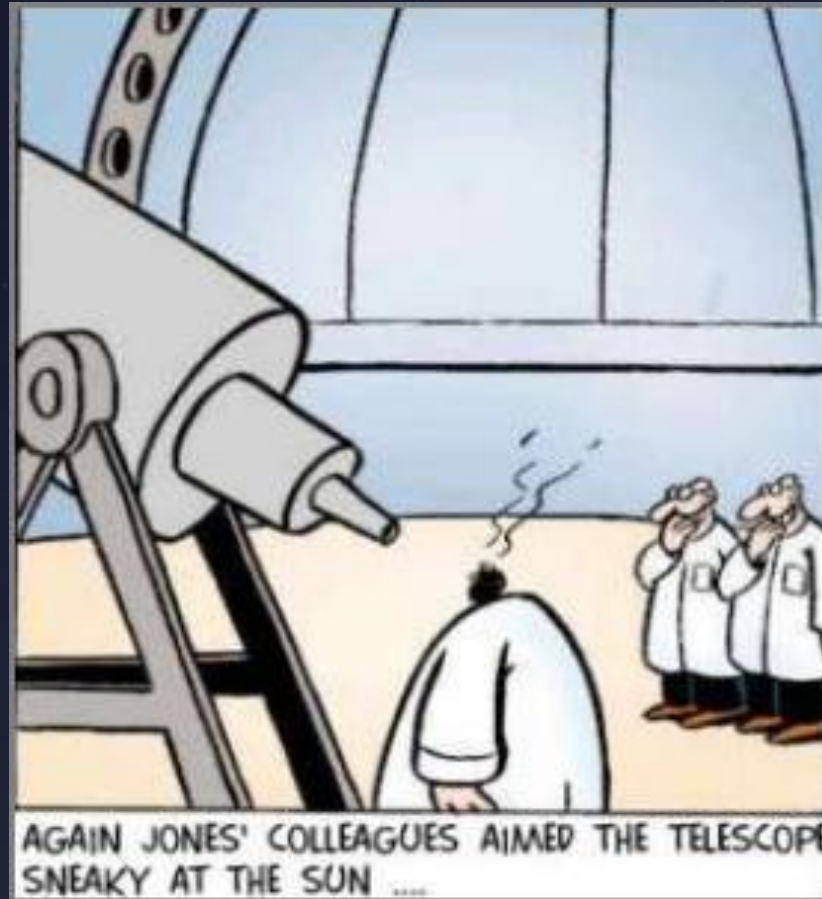






Precautions

Please be careful while daytime star hopping



- Wear shock absorbing shoes
- Stretch occasionally
- Always let others enjoy a peak to show off your hard work!

The End! or is it??

Cloud Cuckoo Land by STAN EALES



Marathon Du Messier



Who is Charles Messier?

- French Astronomer
- Discovered 13 comets from 1760 to 1798
- Has a crater on the moon and an asteroid named after him
- Best known for his list of bright deep sky objects
 - 109/110 Objects
 - 26 Open Clusters
 - 29 Globular Clusters
 - 40 Galaxies
 - 4 Planetary Nebulae
 - 1 Supernova Remnant
 - 7 Star Forming Nebulae
 - 3 non deep sky objects
 - 0 Comets! ☺

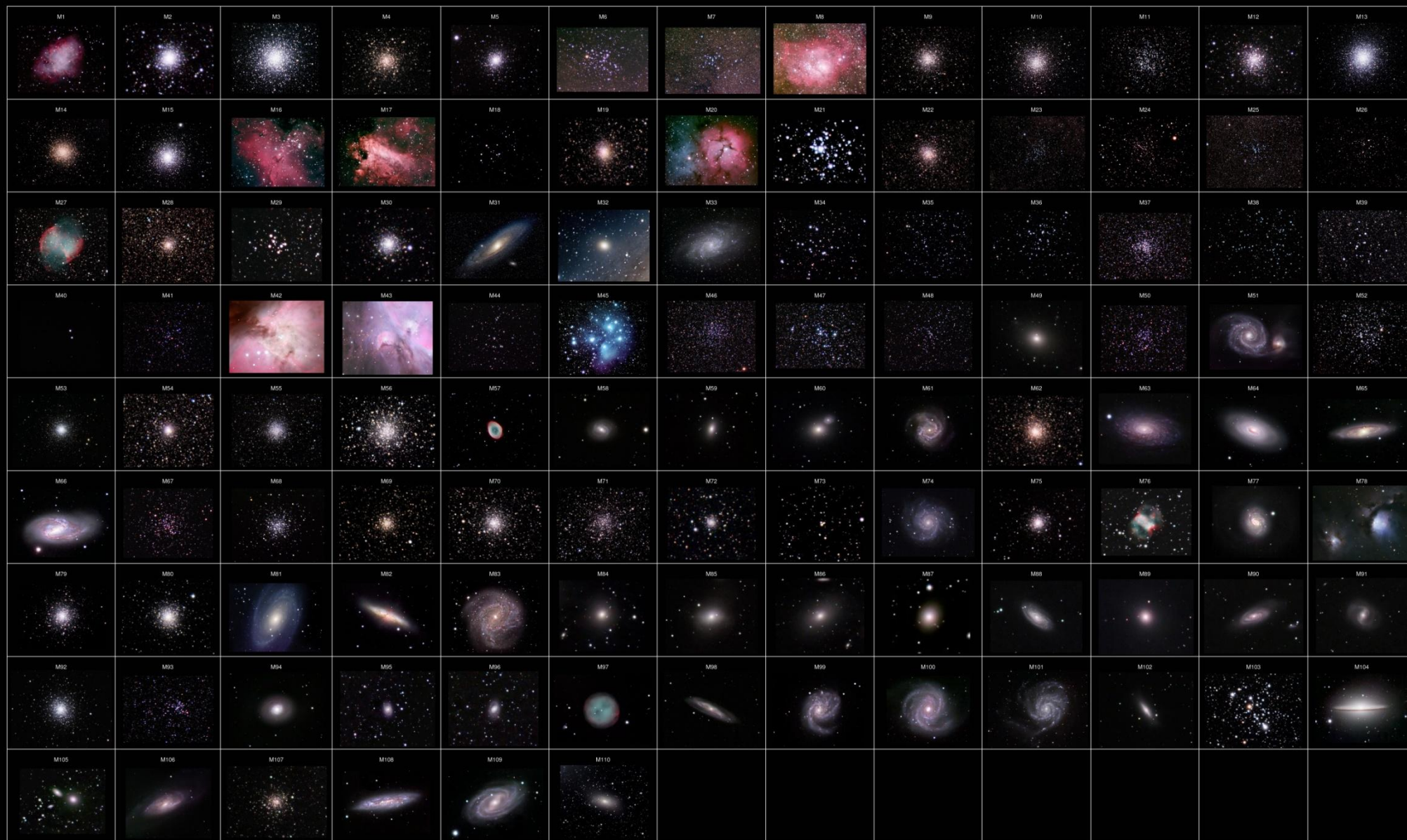


- How we got the list
 - It that a comet?

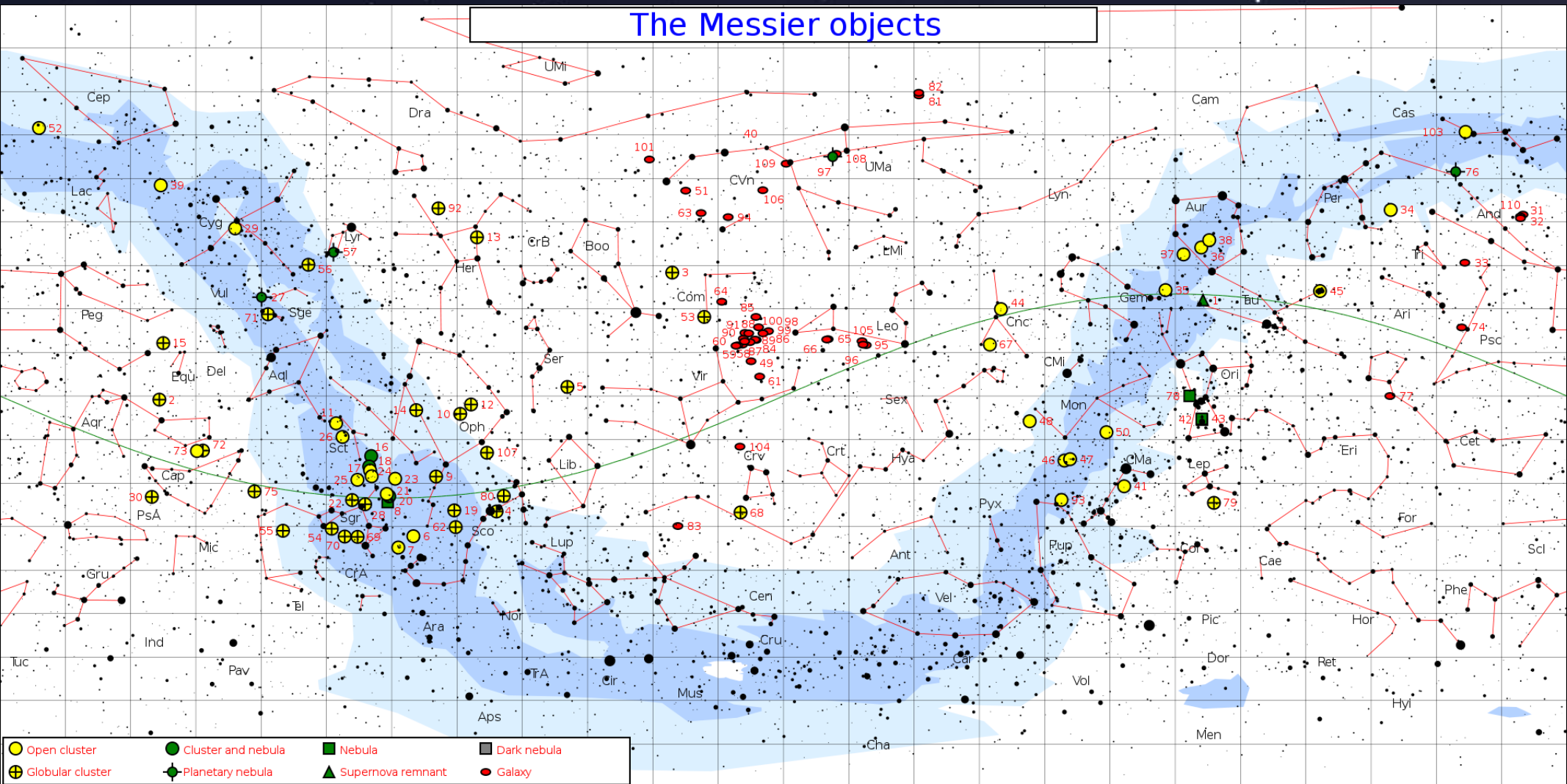


Comet Swan and M13

The Messier Objects



The Messier objects



So, what's this about a Marathon?

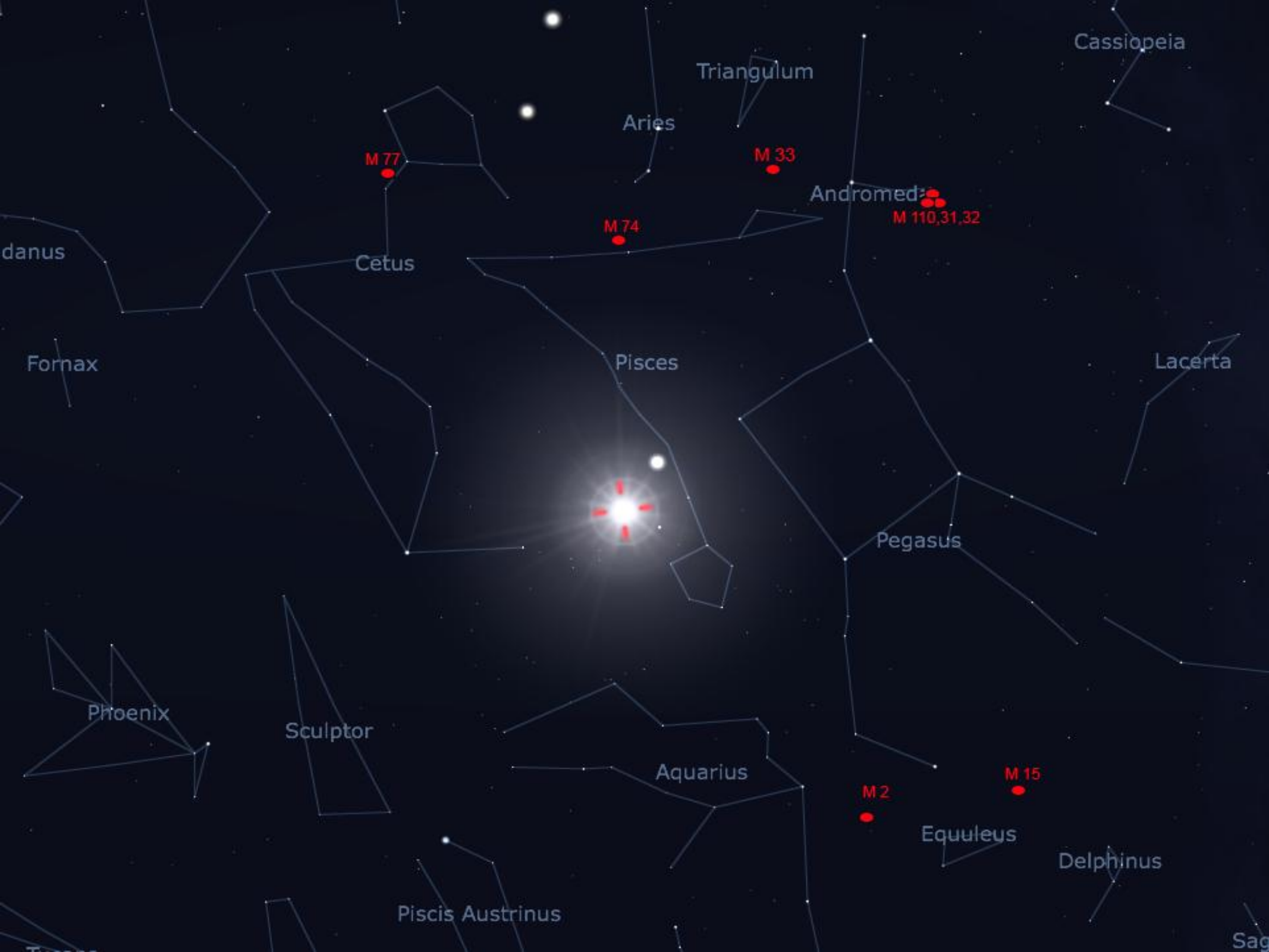
Occurs every march

2 week period where all 110 Objects are visible in one night

A 6 Part Marathon

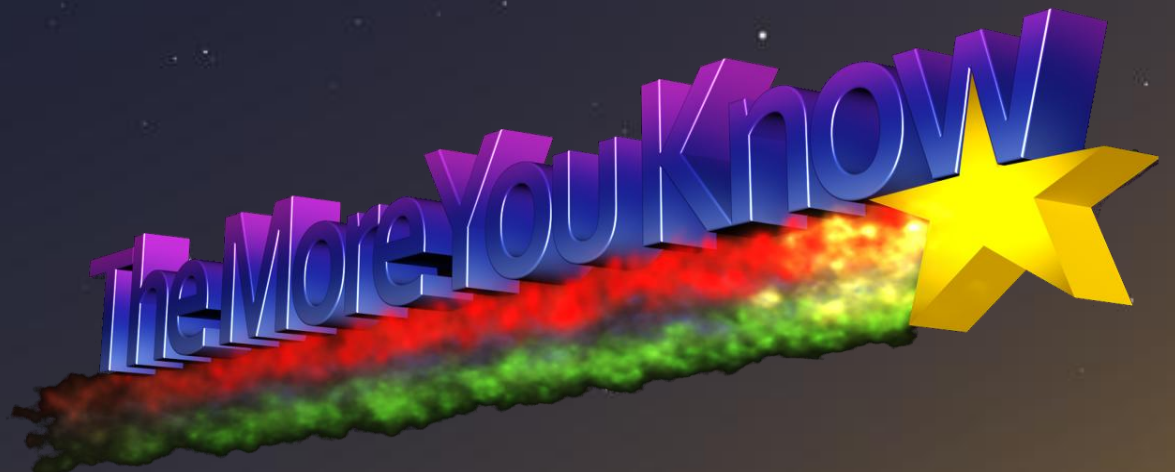
- Evening Rush
- The Cruise
- The Nap
- Heartbreak
- Early Morning
- Mad dash to Finish

Not necessarily in that order! More on that later!



Tips before you begin

- Do the entire marathon (in order) on your charts
- Try a trial run the weekend (or a weeknight) before
- Play the field
- Know the site (horizons, cardinal directions, etc)
- Know the sky
- Not trying for the Astronomical League list (better if you already have that one!)
- Don't do it alone (ie have someone to keep you awake)
- Do it at the Zombie Party! (will have 3 nights to try)
- Bending the rules, the Marathon is a 24 hour event :)



Evening Rush

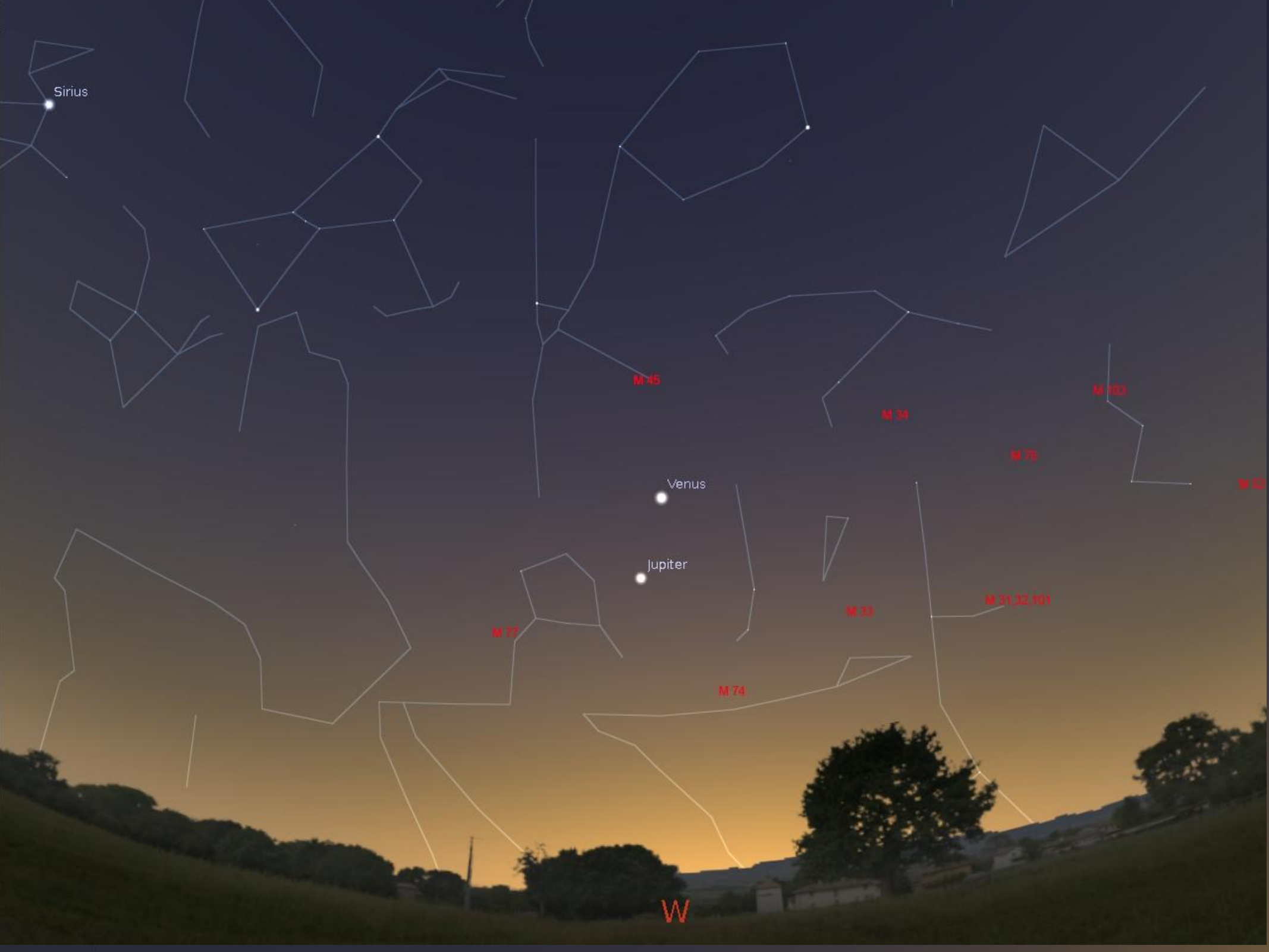
11 Objects you have to get IMMEDIATELY

Start looking for them as soon as the first stars
Begin to appear

Jupiter and Venus will be in the area too but don't be
distracted by them!

Try to get M74 and M77 first thing but don't spend
too much time.

Better to miss 2 objects instead of 3 or 4 because
you were looking for 2 :)



Sirius

M 45

M 34

M 103

M 75

M 50

Venus

Jupiter

M 12

M 33

M 21, 22, 101

M 74

W

• The Cruise

38 Objects from Taurus to Leo

Steady Pace here is best do not burn out!

Eat a snack

Take a few mins to look at Saturn and Mars



S

N

Canopus

Sirius

Procyon

Betelgeuse

Rigel

Capella

Venus

Jupiter

Mars

• The Nap



Heartbreak Hill

17 Objects

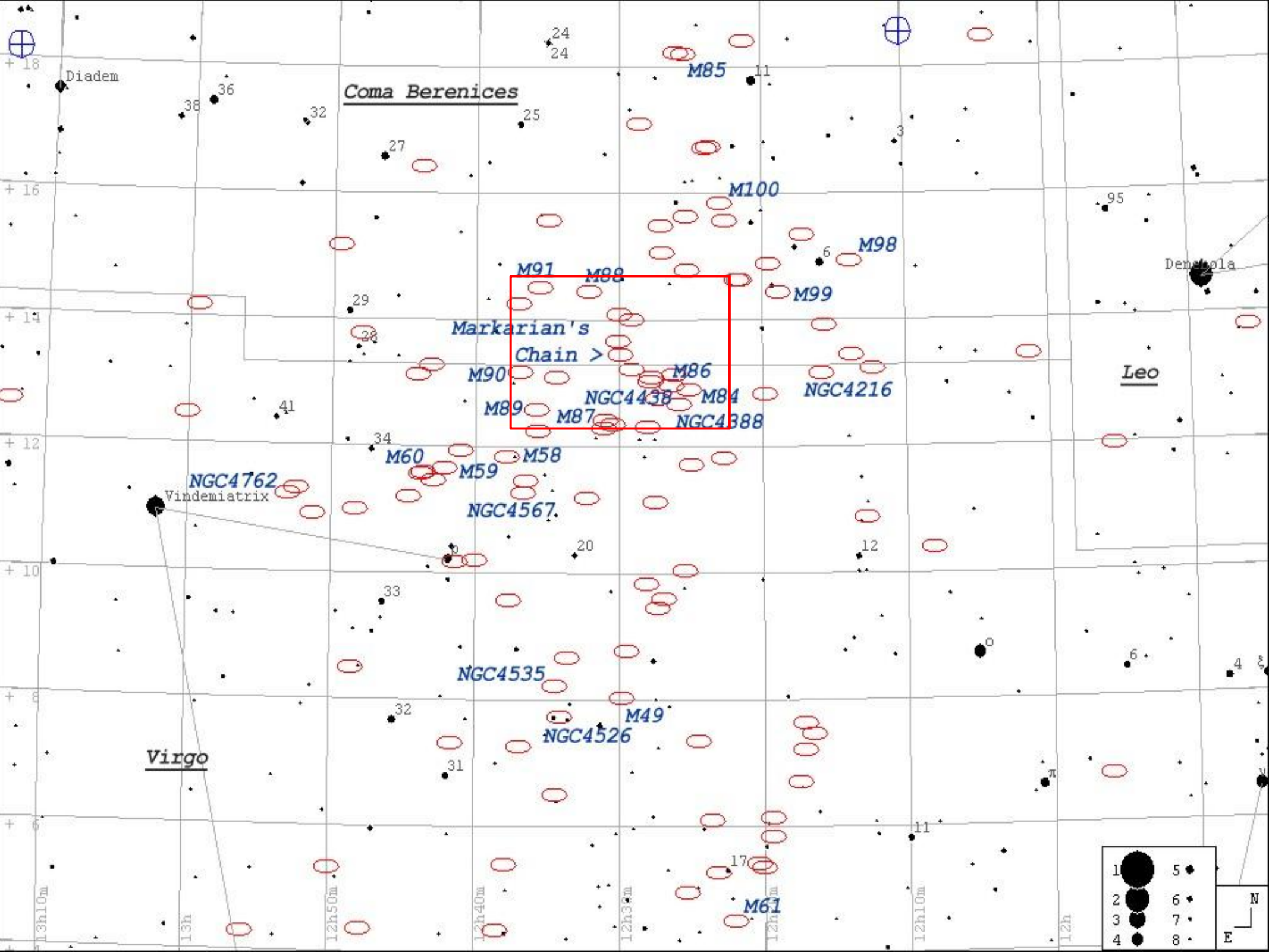
All Galaxies

All in the Coma-Virgo cluster (except M104)

First set of morale boosters

Tips:

- Learn the Cluster before hand (either at the scope or at least on charts)
- Do this area as soon as you see it rising above the trees around 9pm to 9:30





M91

M88

To M100 and
M85

M90

To M99
and
M98

M89

To M60
and
M59

M87

M86

M84

To M58

- Early morning objects

45 Objects from Hydra through Sagittarius to Cygnus

22 of these are in or surrounding Sagittarius

More morale boosters! Just what you need for the following rush to the finish!

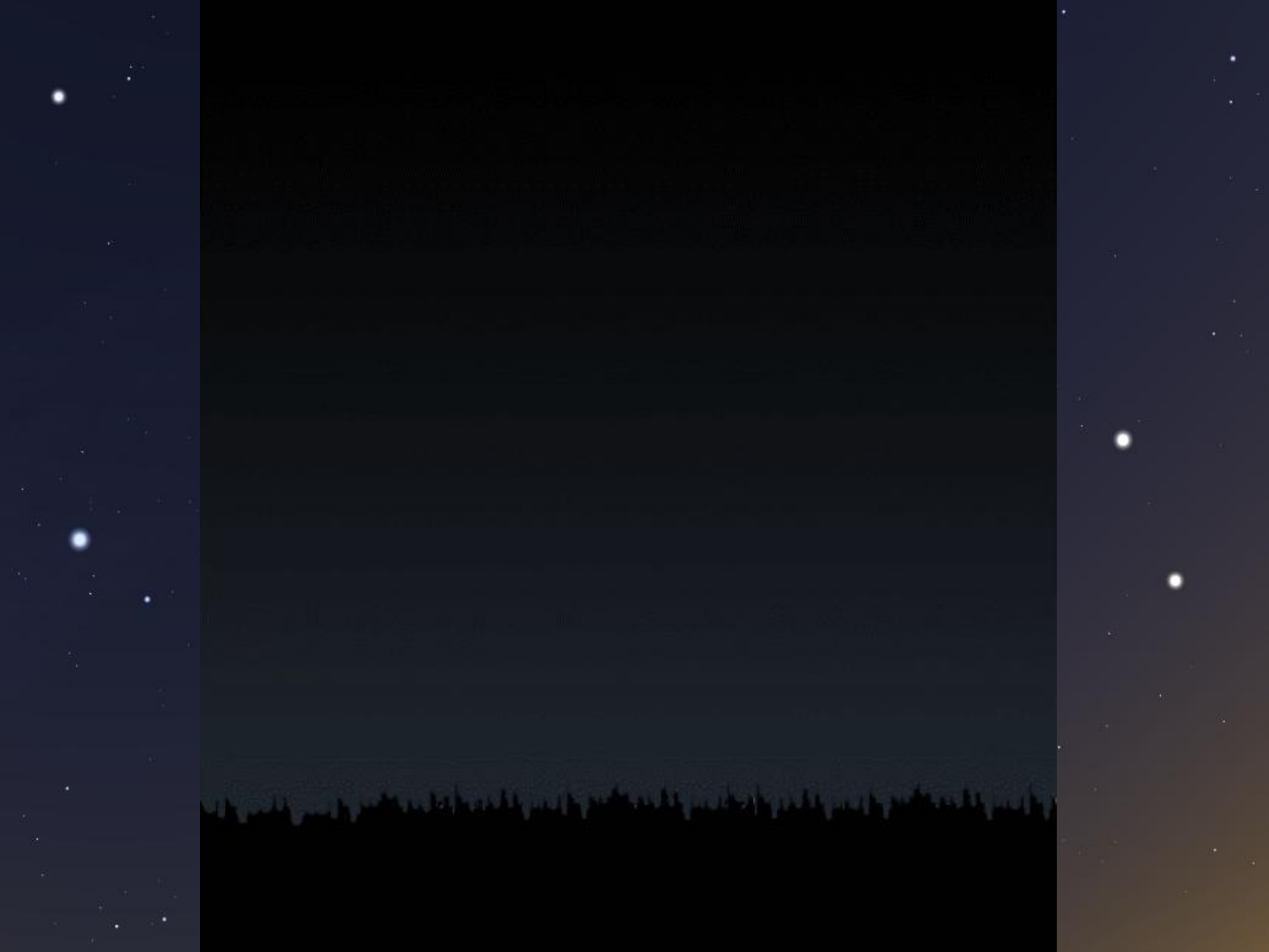


- Mad dash to finish

Six objects left, get'em as they rise!

From Pegasus to the Capricorn-Sagittarius boarder

Luckily they're either asterisms or Globular clusters



Helpful Documentation on the Atlanta Astronomy Club's Site!

QUESTIONS?

email

DanielHerron@theStarHopper.com

www

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