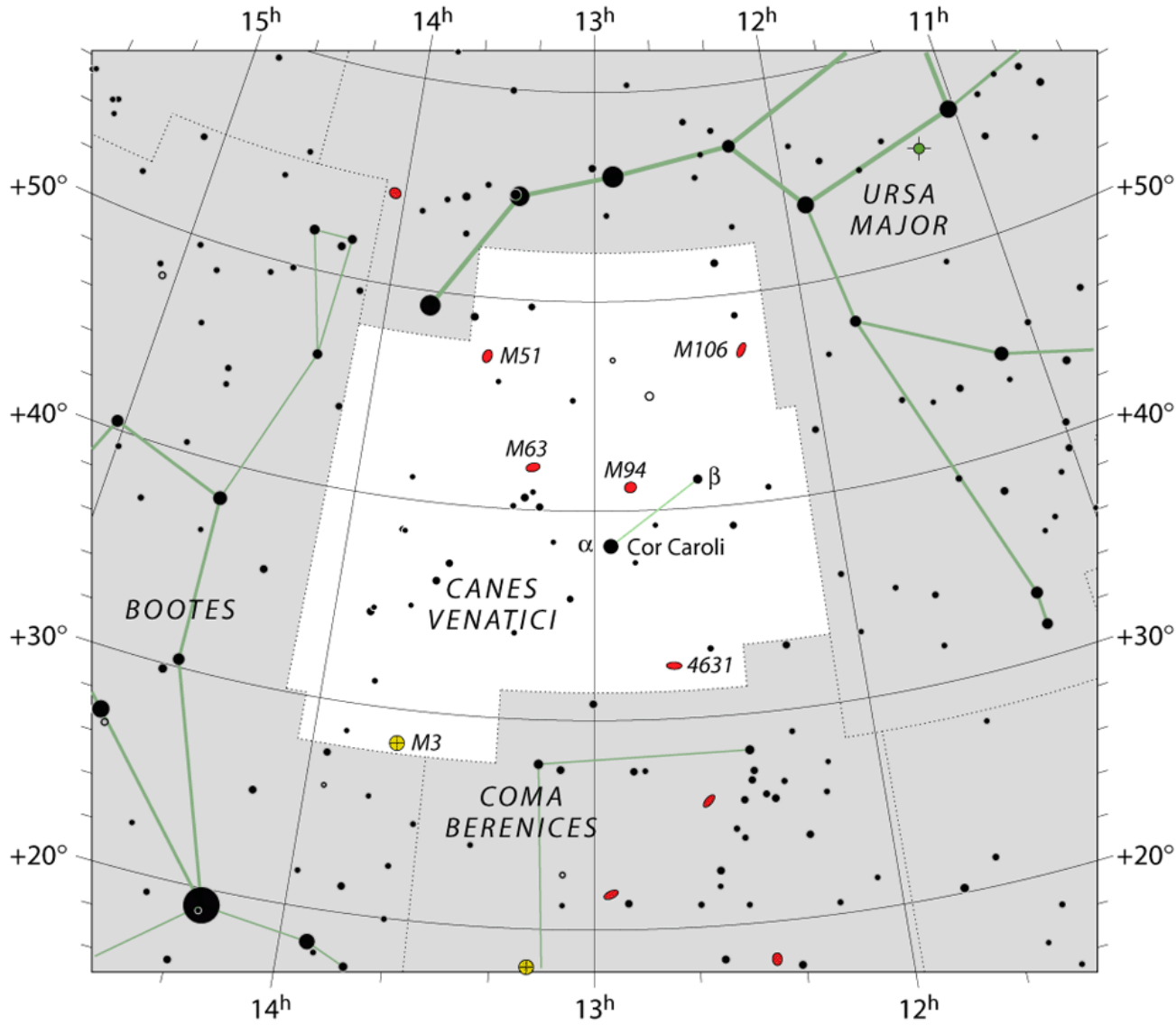


M3 – Globular Cluster

Chart 6 – Canes Venatici

RA 13h 42.2m Dec +28° 23m



Size 18'
Mag 6.3
Difficulty Medium

Equipment
• Requires binoculars

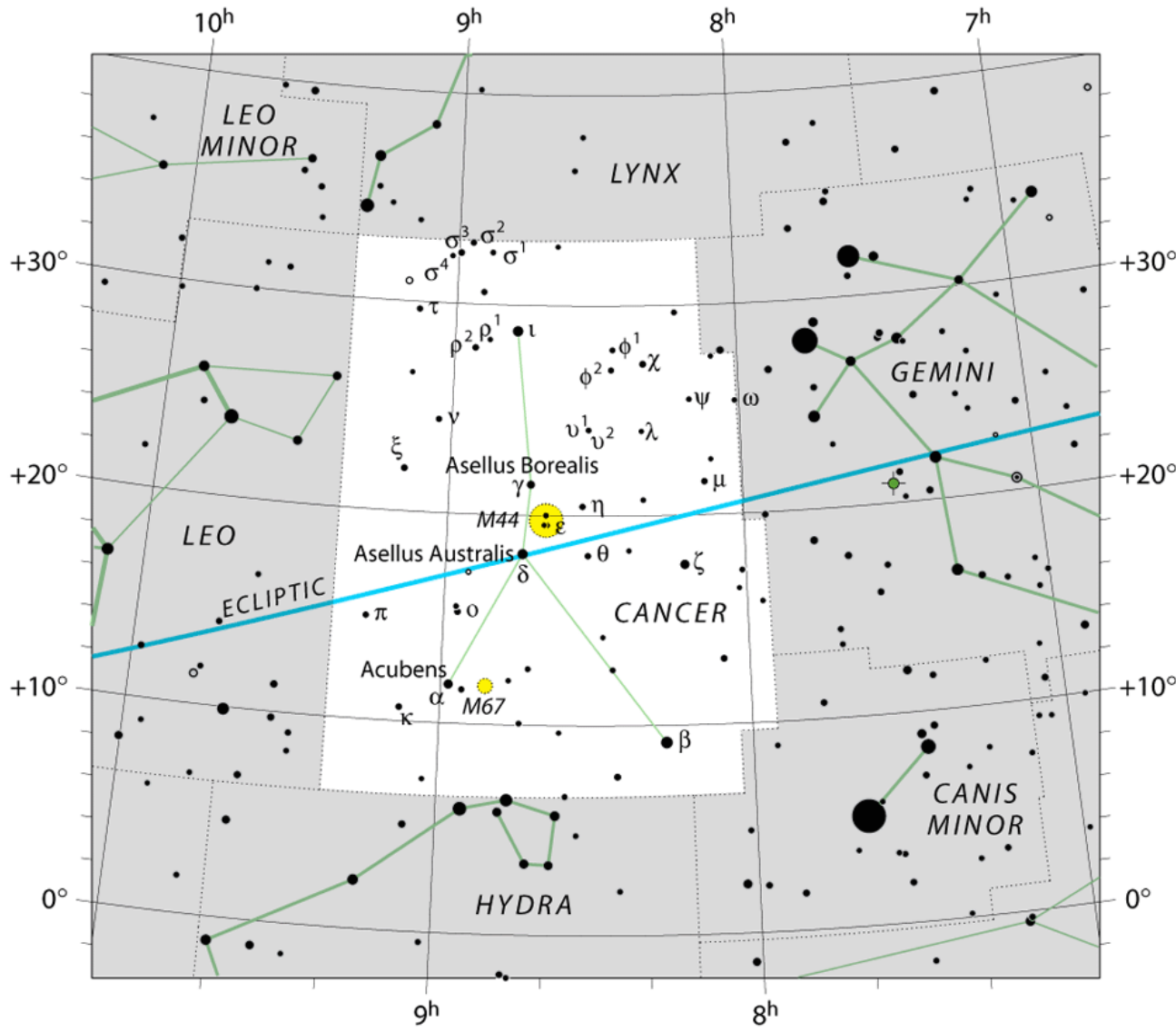
How to find
• Locate Arcturus the brightest star in Bootes
• Locate Cor Caroli the brightest star in Canes Venatici
• M3 is about midway between Arcturus and Cor Caroli

What to look for
• M3 will look like a small, round, hazy patch of light

M44 – Beehive Cluster

Chart 7 – Cancer

RA 08h 40.1m Dec +19° 40m



Size 95'
Mag 3.1
Difficulty Easy / Medium

Equipment

- Naked eye visible (rural)

How to find

- Draw an imaginary line from the top star of the two bright stars in Gemini towards Cancer
- Draw an imaginary line from the bright star in Canis Minor towards Cancer forming a right angle with the first line
- M44 will be at the intersection of the two lines

What to look for

- Naked eye M44 will be barely visible as a fuzzy patch
- Binoculars reveal 10 bright stars plus many fainter ones



Summer Constellation Charts

Chart 8 – Vulpecula
Cr 399 – Coathanger

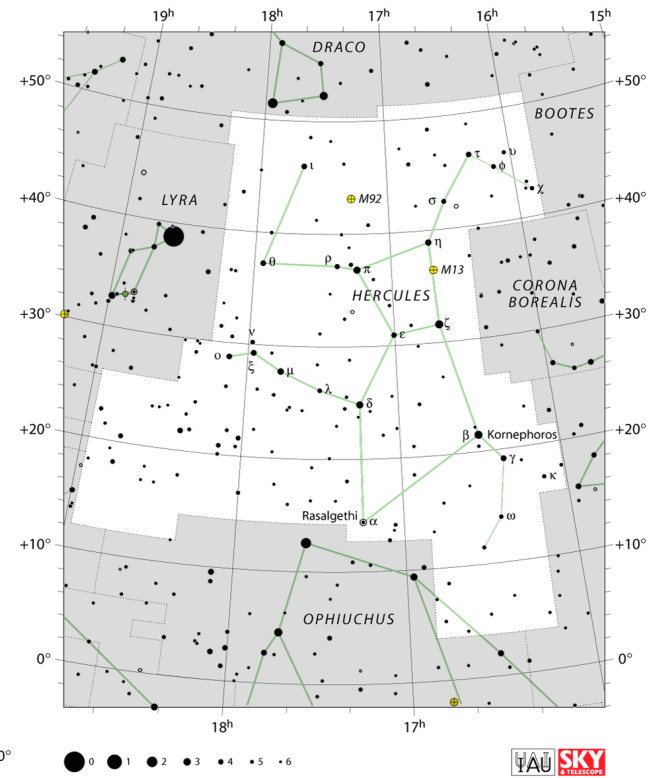
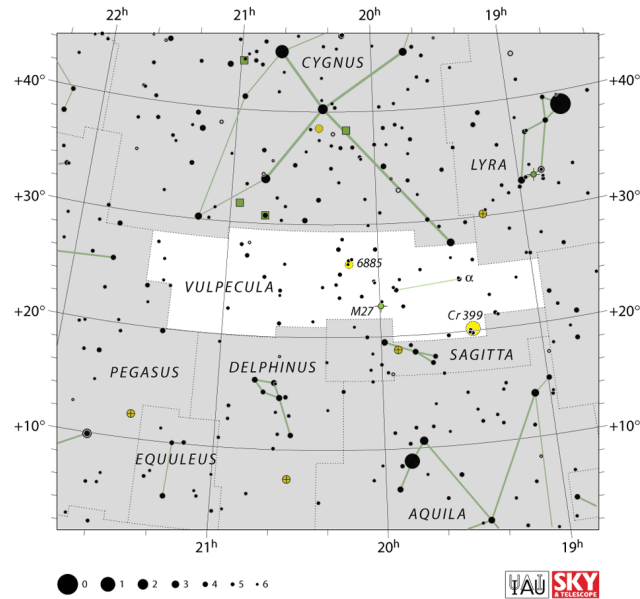


Chart 9 – Sagittarius
M8 – Lagoon Nebula

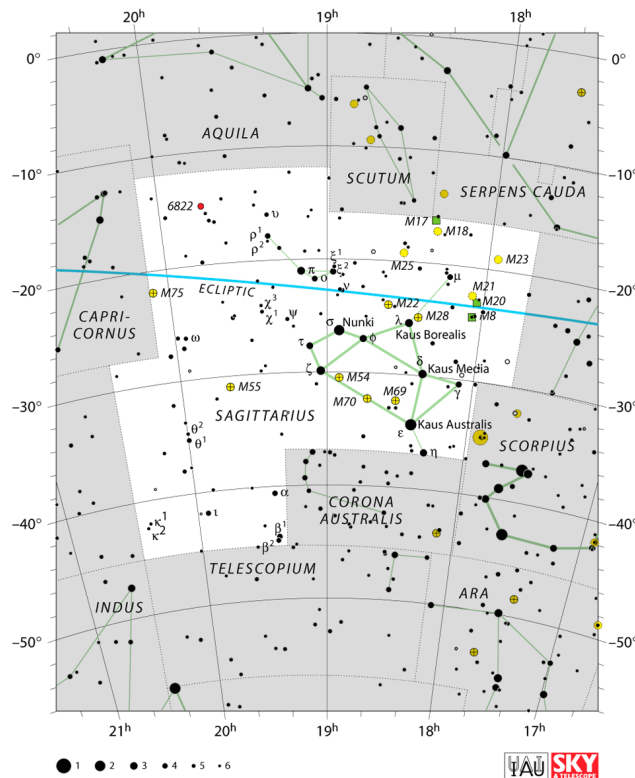
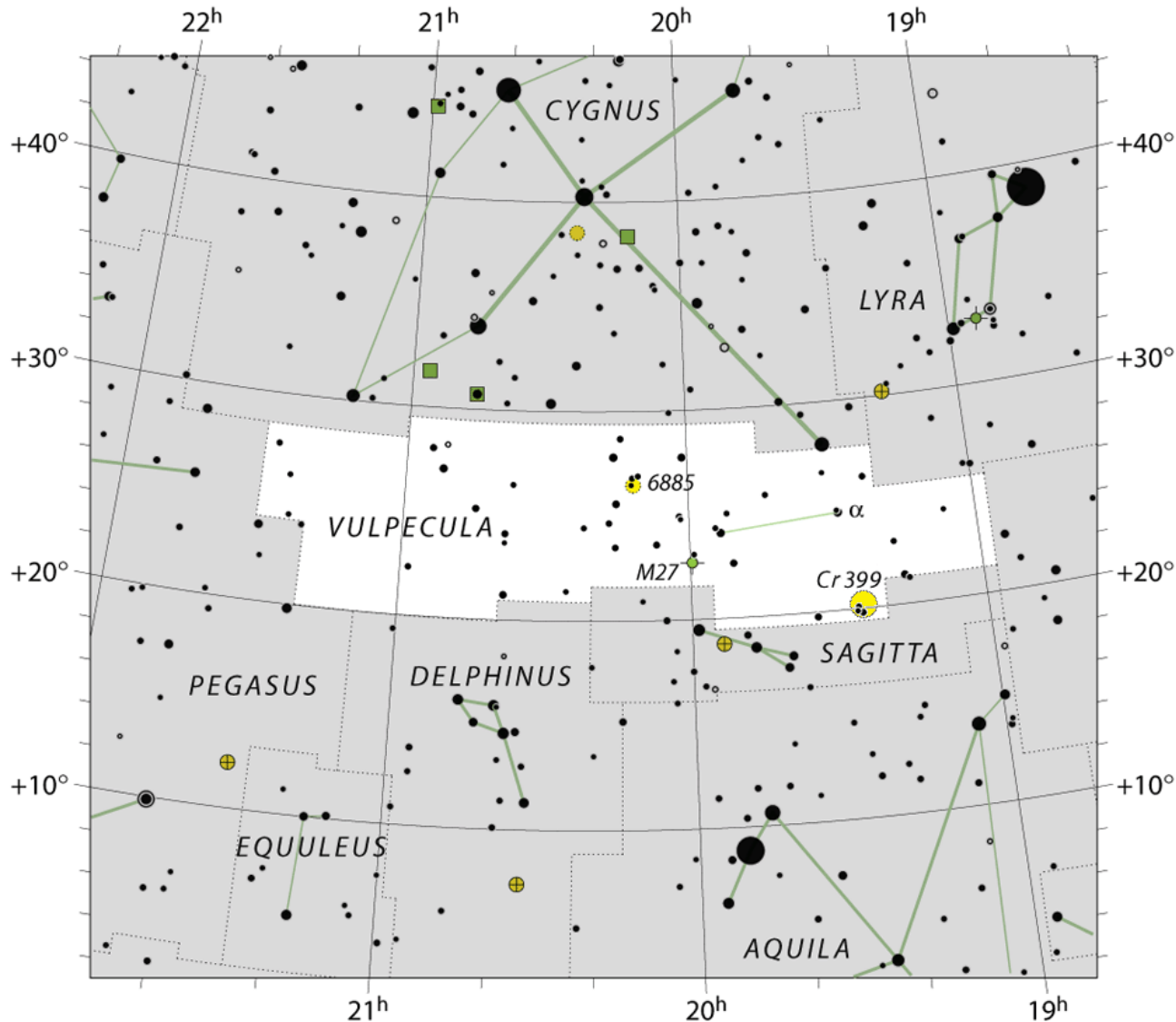


Chart 10 – Hercules
M13 – Hercules Cluster

The charts are laid out based on their relative sky position. Note the scales and constellation overlaps.

Cr 399 – Coathanger
 Chart 8 – Vulpecula
 RA 19h 25.4m Dec +20° 11m

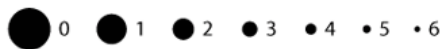


Size 60'
 Mag 3.6
 Difficulty Easy / Medium

Equipment
 • Requires binoculars

How to find
 • Locate Vega (the brightest star in Lyra) and Altair (the brightest star in Aquila)
 • Cr 399 is 60% of the way between Lyra and Altair

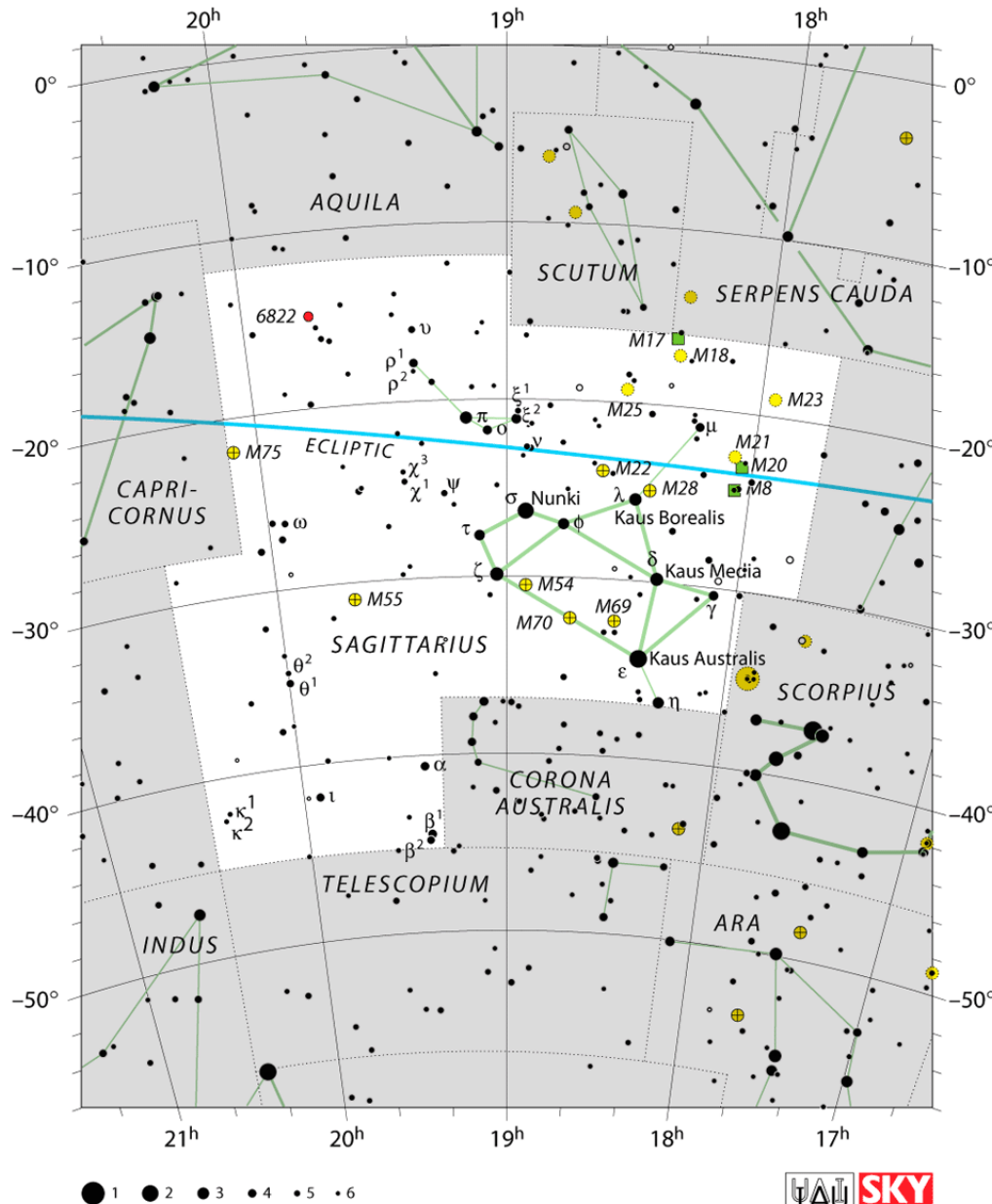
What to look for
 • Cr 399 will look like 10 bright stars in the shape of an upside down coathanger plus many fainter stars



M8 – Lagoon Nebula

Chart 9 – Sagittarius

RA 18h 03.7m Dec -24° 23m



Size 45' x 30'

Mag 5.8

Difficulty Easy

Equipment

- Naked eye visible (rural)

How to find

- Locate the constellation Sagittarius (the teapot)
- M8 is one binocular field (6°) above the right side (spout) of the teapot

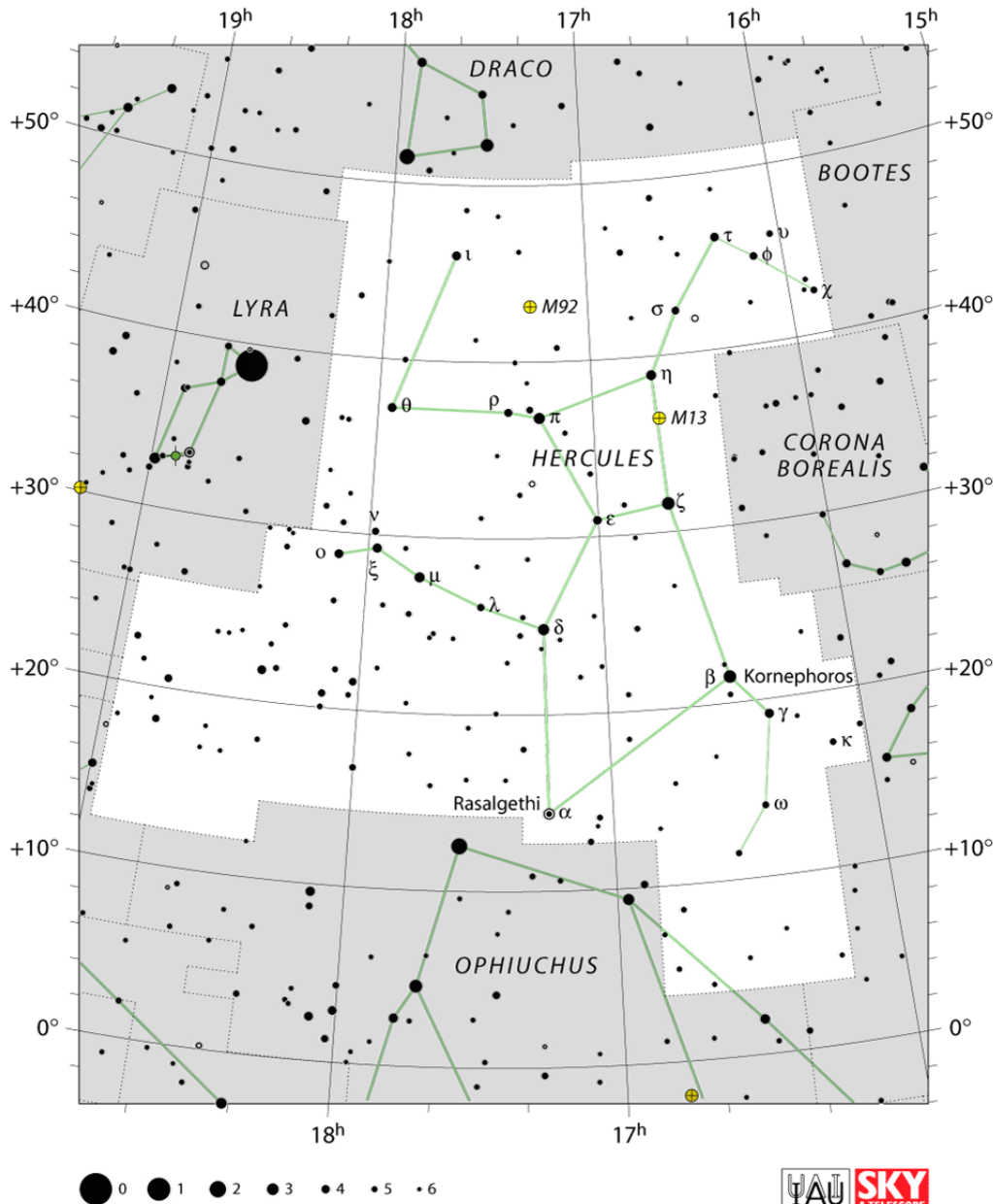
What to look for

- Naked eye M8 will look like a bright spot in the Milky Way
- Binoculars reveal an elongated bright oval nebulous patch of light
- M20 may also be visible right above M8 and is about 1/3 the size

M13 – Hercules Cluster

Chart 10 – Hercules

RA 16h 41.7m Dec +36° 28m



Size 20'
Mag 5.8
Difficulty Easy

Equipment

- Requires binoculars

How to find

- Locate the four bright stars in the shape of a trapezoid in the center of Hercules
- M13 is about 2/3^{rds} of the way from ζ Hercules to η Hercules

What to look for

- M13 will look like a small, round, hazy patch of light

Autumn Constellation Charts

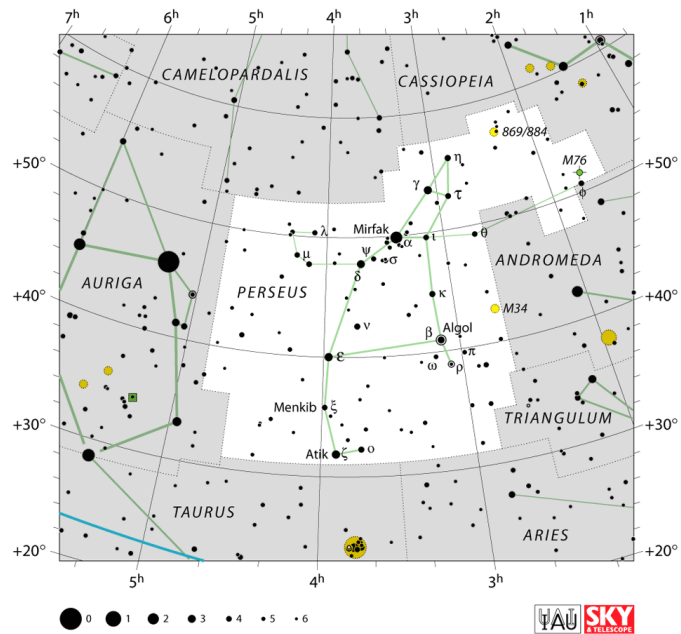


Chart 11 – Perseus
NGC869 / 884 – Double Cluster

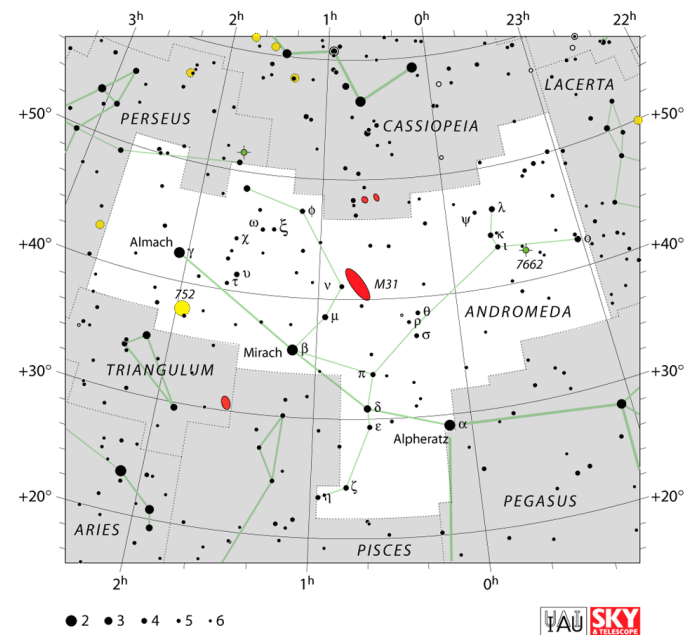


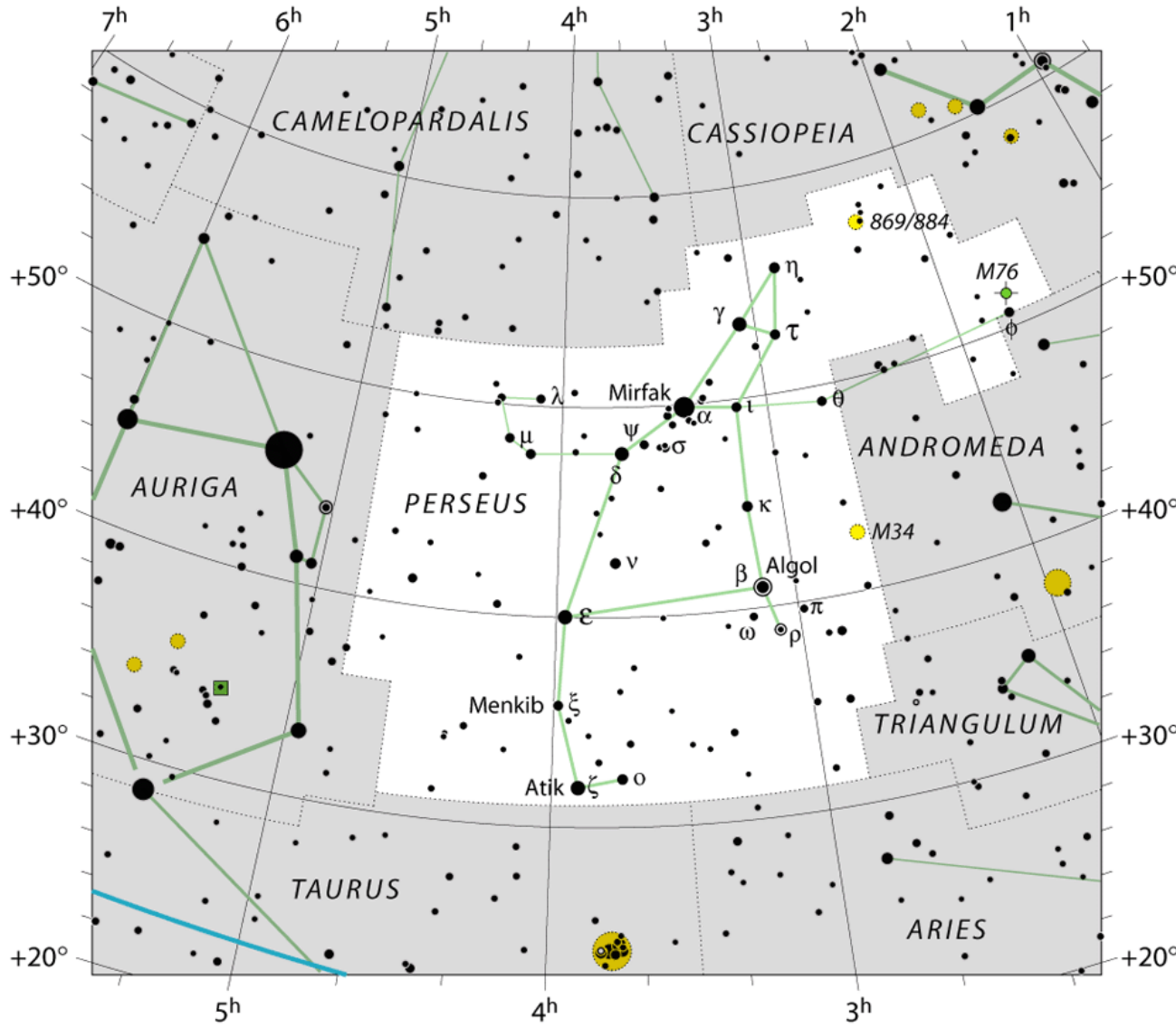
Chart 12 – Andromeda
M31 – Andromeda Galaxy

The charts are laid out based on their relative sky position. Note the scales and constellation overlaps.

NGC869 / 884 – Double Cluster

Chart 11 – Perseus

RA 02h 19.1m Dec +57° 08m / RA 02h 22.5m Dec +57° 08m



Size 30' / 30'
 Mag 5.3 / 6.1
 Difficulty Easy

Equipment
 • Naked eye visible (rural)

How to find
 • Locate the centre star in Cassiopeia (the W shape)
 • Locate Mirfak the brightest star in Perseus
 • The Double Cluster is half way between these two stars

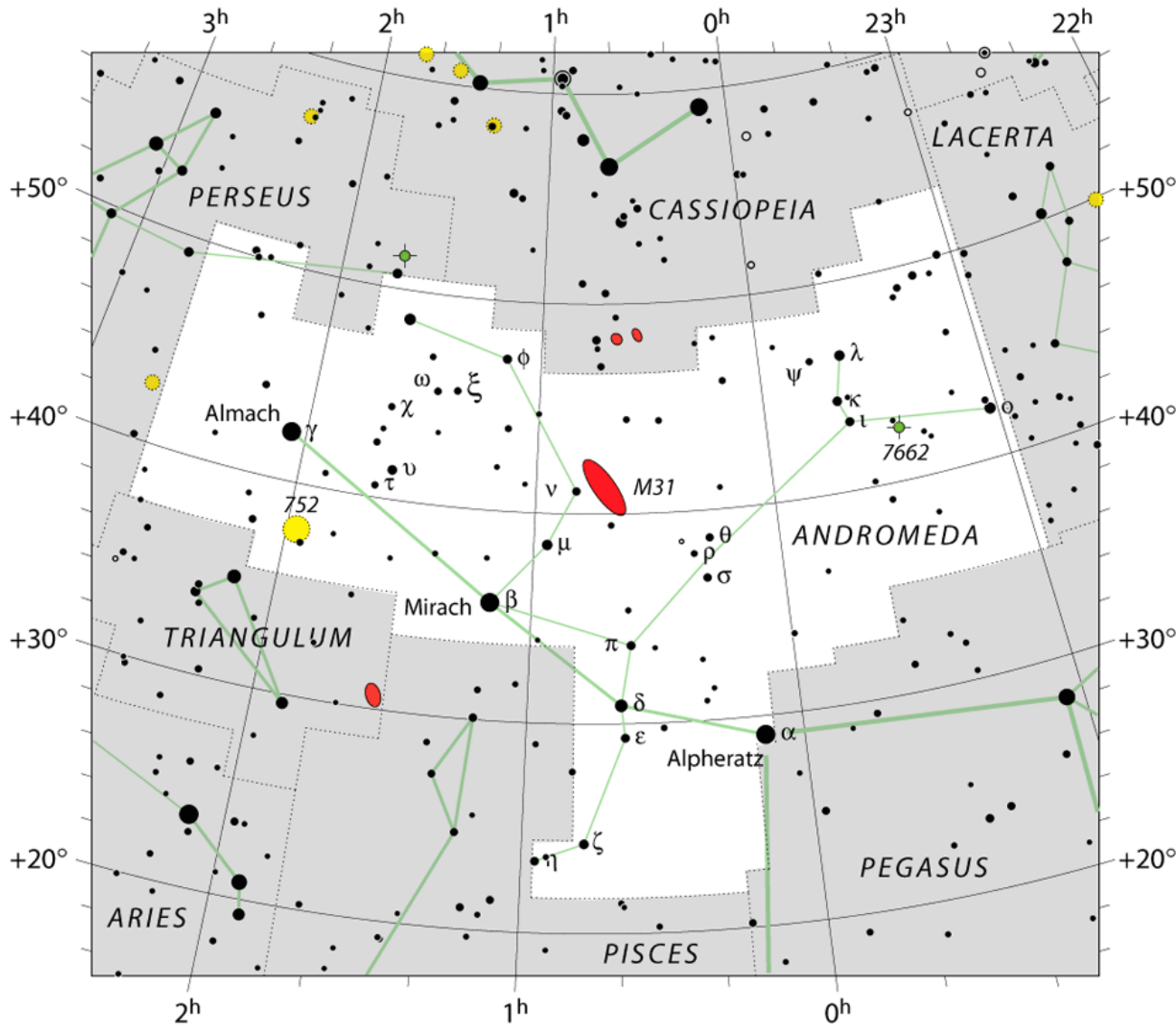
What to look for
 • Naked eye the Double Cluster will look like a bright spot in the Milky Way
 • Binoculars reveal two separate clusters with a large number of bright and faint stars, several orange in colour



M31 – Andromeda Galaxy

Chart 12 – Andromeda

RA 00h 42.7m Dec +41° 16m



Size 189' x 61'
Mag 3.4
Difficulty Easy / Medium

Equipment

- Naked eye visible (rural)

How to find

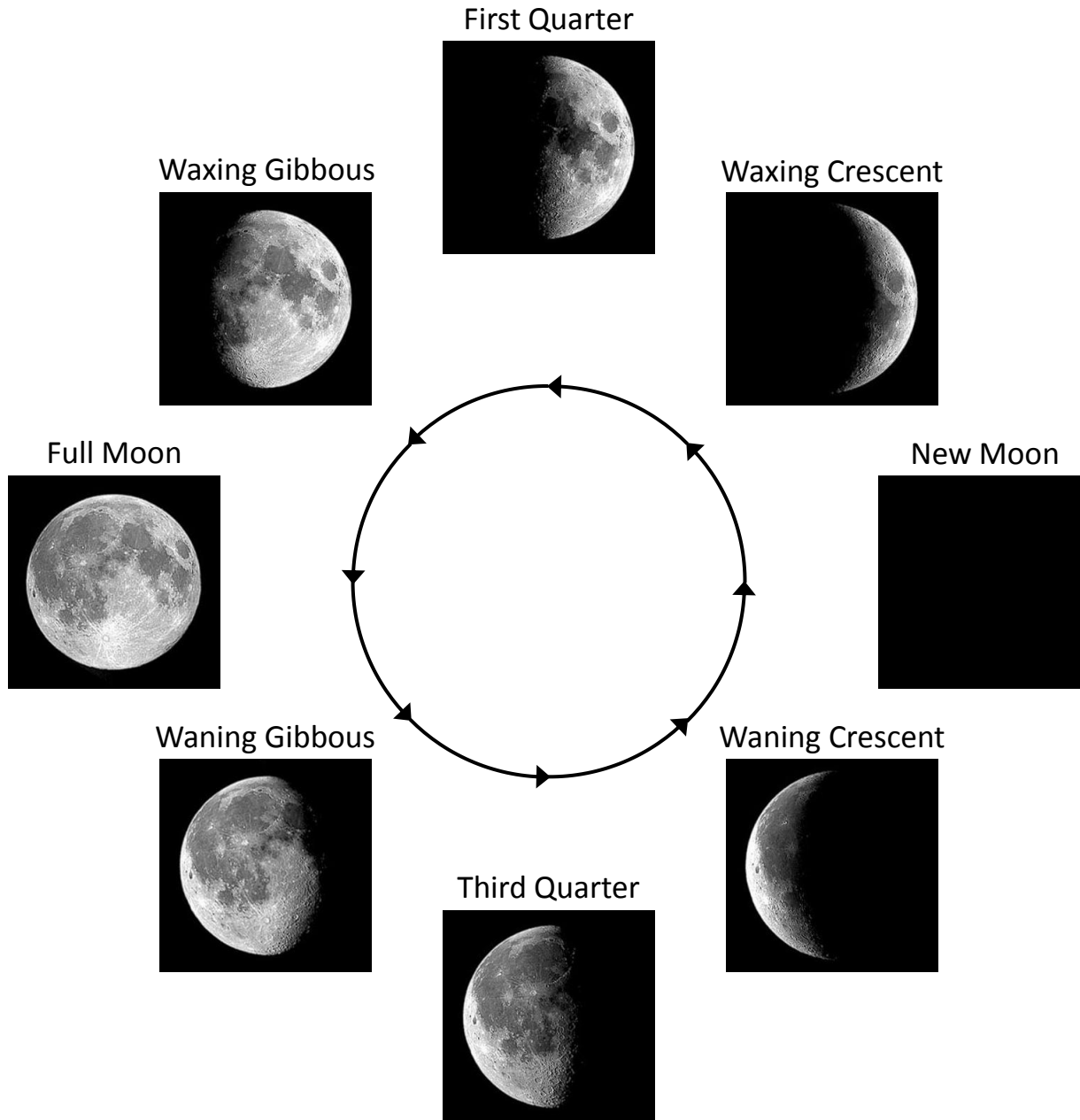
- Follow the right two stars of Cassiopeia down to Almach
- Move east (right) to Mirach, the next bright star
- Follow the stars μ Andromeda and ν Andromeda up to M31

What to look for

- Naked eye M31 will look like a dim fuzzy oval
- Binoculars reveal a large oval glow with a bright core

● 2 ● 3 ● 4 ● 5 ● 6

Moon



Size 29.3' to 34.1'
Mag -2.5 to -12.9
Difficulty Easy

Equipment

- Naked eye visible (city)

How to find

- Simply go outside and look for it in the southern sky
- The moon is so bright it is often visible during the day

What to look for

- The terminator is a moving line that divides the day and night side of a planetary body
- The deep shadows along the terminator show craters better
- First quarter is one of the best times to observe the moon

Waning is left in alphabet and left side of moon is lit. Waxing is right and right is lit.
Waning is decreasing (getting darker) and Waxing is increasing (getting brighter).

Jupiter

Size	0.5' to 0.84'
Mag	-1.6 to -2.9
Difficulty	Easy

Saturn

Size	0.24' to 0.35'
Mag	1.47 to -0.5
Difficulty	Easy

Equipment

- Naked eye visible (city)

How to find

- All of the planets orbit the sun in the same path (or plane) called the “ecliptic”.
- As they orbit the sun they move across the sky changing constellations over time.
- Go to the website <https://in-the-sky.org/whatsup.php> and enter the date and time you plan to observe.
 - The website will produce a star wheel showing which planets are visible and where they are located.
- Hover over the name of the planet in the table on the left and it will tell you more about when it is visible.
 - When you go out Jupiter and Saturn will likely be the brightest object in the constellation.

What to look for

- Naked eye Jupiter will appear like a white star that does not twinkle
- In binoculars Jupiter will look like a round ball
- You should be able to see the four Galilean moons (Io, Europa, Ganymede, and Callisto in order of distance from Jupiter)
- Io orbits in 1.8 days and Callisto in 3.6 days so if you only see two moons they might pop out from behind Jupiter later in the night

What to look for

- Naked eye Saturn will appear like a yellow star that does not twinkle
- In 7 - 8x binoculars you should see a slightly oval ball, increasing to 15x you will see “ears”
- A telescope is required to see Saturn’s rings separate from the planet itself