

The Atlanta Astronomy Club

Charlie Elliot Chapter

Observing 101

Observing 101 – Dec 2010

- Astro Events
- Target List
- Featured Object

Astro Events

Tonight:

- Sunset at 5:29 PM
- Moon sets at 4:34 PM
- Mercury sets 6:48 PM
- Mars sets at 6:26 PM
- Great Red Spot Transit at 8:39 PM
- Jupiter sets at 1:18 AM
- Uranus sets at 1:32 AM
- Neptune sets at 11:03 PM

Astro Events

Tonight:

- Saturn rises at 2:47 AM
- Venus rises at 4:11 AM
- Sun rises at 7:24 AM

Astro Events

This Month:

- Dec 5 – New moon at 12:36 PM
- Dec 6 – Crescent moon 5° N of Mercury
- Dec 13 - 1^{st} Quarter moon 7° N of Jupiter
- Dec 14 – Geminid meteor shower
- Dec 16/23 – Asteroid 7 Iris within 2° of M67
- Dec 18 - Moon passes within 2° of the Pleiades
- Dec 20/21 – Lunar eclipse 1:33 AM EST
- Dec 29 – Jupiter gains a moon (20 Piscium)

Astro Events

Next month's events ...

- Dec 30 / Jan 1 – Waning crescent moon near Venus at dawn
- Jan 1st / 19th - Asteroid 17 Fides passes through the Pleiades
- January 3rd / 4th – Quadrantid meteor shower peaks
- January 4 – New Moon
- January 8 - Next CE Meeting

URSA
MAJOR

Capella

AURIGA

TAURUS

Aldebaran

Radiant

Castor

Pollux

GEMINI

Betelgeuse

ORION

LEO

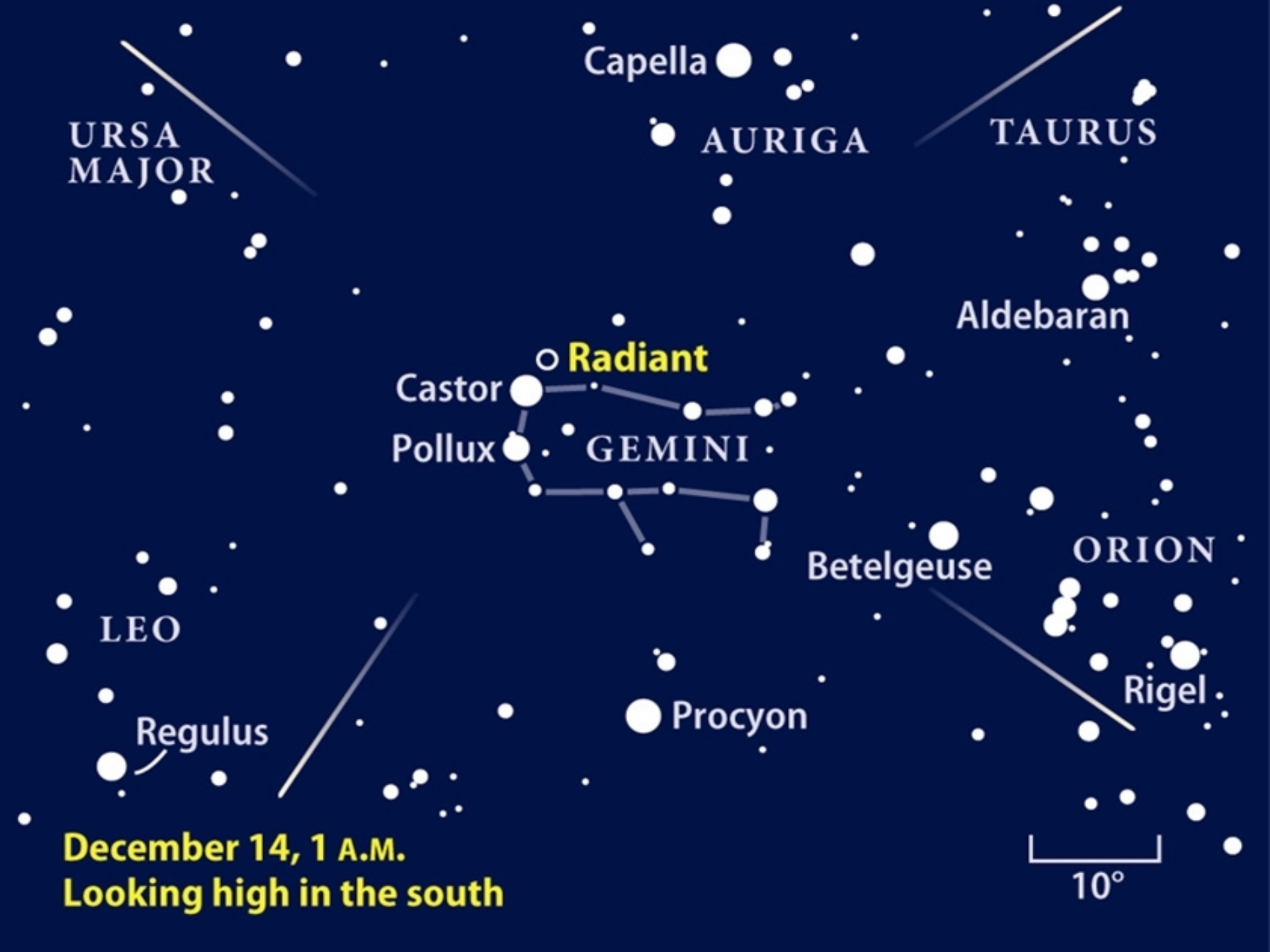
Regulus

Procyon

Rigel

**December 14, 1 A.M.
Looking high in the south**

10°







N

Capella

AURIGA

Castor

Pollux

GEMINI

Eclipsed
Moon

TAURUS

E

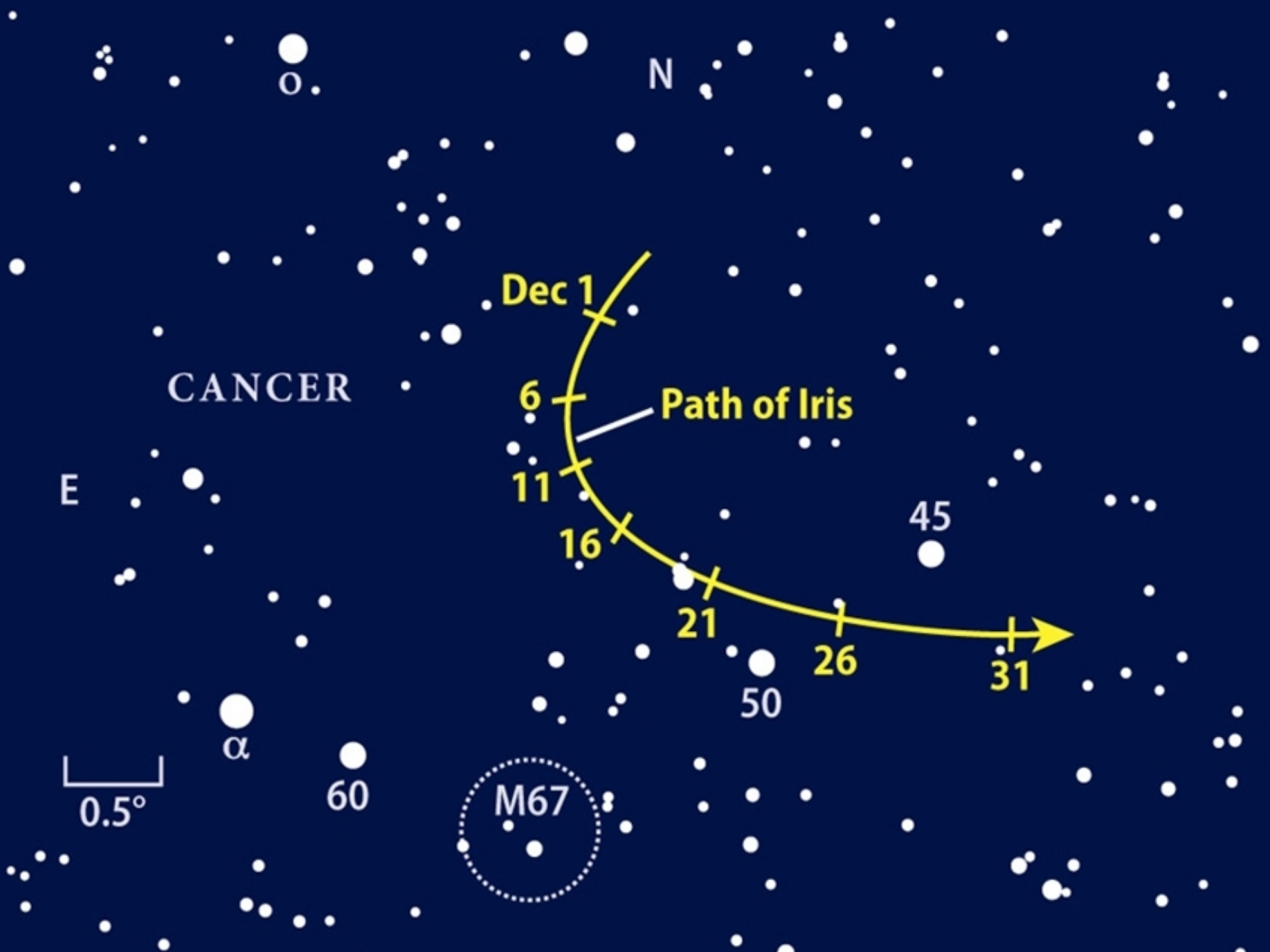
Aldebaran

ORION

Procyon

Betelgeuse

10°



Jupiter on December 29, 10:30 P.M. EST • 20 Piscium

• Callisto

S
↑

W

• Ganymede

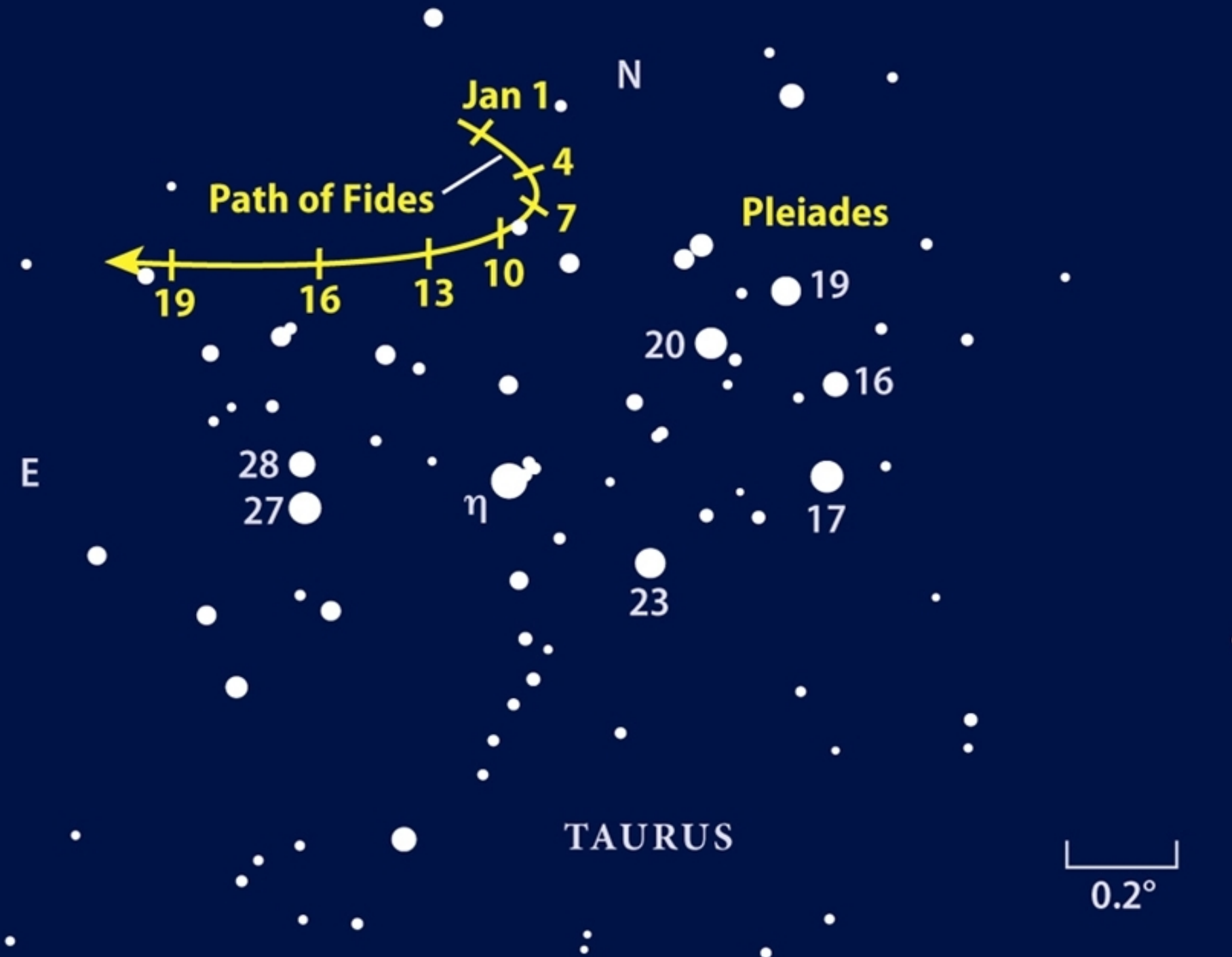
Io •

Jupiter



Europa •







Polaris

URSA MINOR

URSA MAJOR

Radiant

BOÖTES

Arcturus

DRACO

CORONA
BOREALIS

10°

January 4, 2 A.M.
Looking northeast

Target List

Small Telescopes & Binoculars

Object	Type	Mag	Size	Constellation
M31	Galaxy	4.3	189'	Andromeda
M33	Galaxy	6.2	68.7'	Triangulum
NGC253	Galaxy	7.1	26.4'	Sculptor
M2	Globular Cluster	7.5	12.9'	Aquarius
M15	Globular Cluster	7.5	12.3'	Pegasus
M34	Open Cluster	6.0	35'	Perseus
M39	Open Cluster	5.5	32'	Cygnus
M45	Open Cluster	1.6	120'	Taurus
NGC869/884	Open Cluster	5.3	29'	Perseus
M1	SNR	8.4	6x4'	Taurus
M27	Planetary Nebula	7.5	15.2'	Vulpecula

Target List

Intermediate / Advanced

Object	Type	Mag	Size	Constellation
M74	Galaxy	9.8	10 x 9	Pisces
M77	Galaxy	9.7	7 x 6	Cetus
NGC891	Galaxy	10.0	13x13	Andromeda
NGC288	Globular Cluster	8.1	13.8'	Sculptor
NGC129	Open Cluster	6.5	21'	Cassiopeia
NGC457	Open Cluster	6.4	13'	Cassiopeia
NGC663	Open Cluster	7.1	16'	Cassiopeia
NGC1027	Open Cluster	6.7	20'	Cassiopeia
M76	Little Dumbbell	10.1	4.8'	Perseus
NGC246	Planetary Nebula	10.9	4.6'	Cetus
NGC7008	Planetary Nebula	10.7	1.6'	Cygnus

The Crab Nebula - History

- First observed by Chinese astronomers as a guest star in 1054 A.D.
- It was 4 times brighter than Venus or magnitude – 6.0
- It was visible in daylight for 23 days and for 653 days at night with the naked eye
- The supernova remnant was re-discovered by astronomer John Bevis in 1731 added to his night sky Atlas Uranographia Britannica

The Crab Nebula - History

- Independently re-discovered by Charles Messier on August 28, 1758 while searching for the comet Halley on its 1st predicted return
- It was the discovery of this object which caused Charles Messier to begin with the compilation of his catalogue
- Christened the “Crab Nebula” based on a drawing made by Lord Rosse in 1844.
- Many 19th century astronomers thought the object was a stellar system that would be resolvable by larger telescopes

The Crab Nebula – What Is It ?

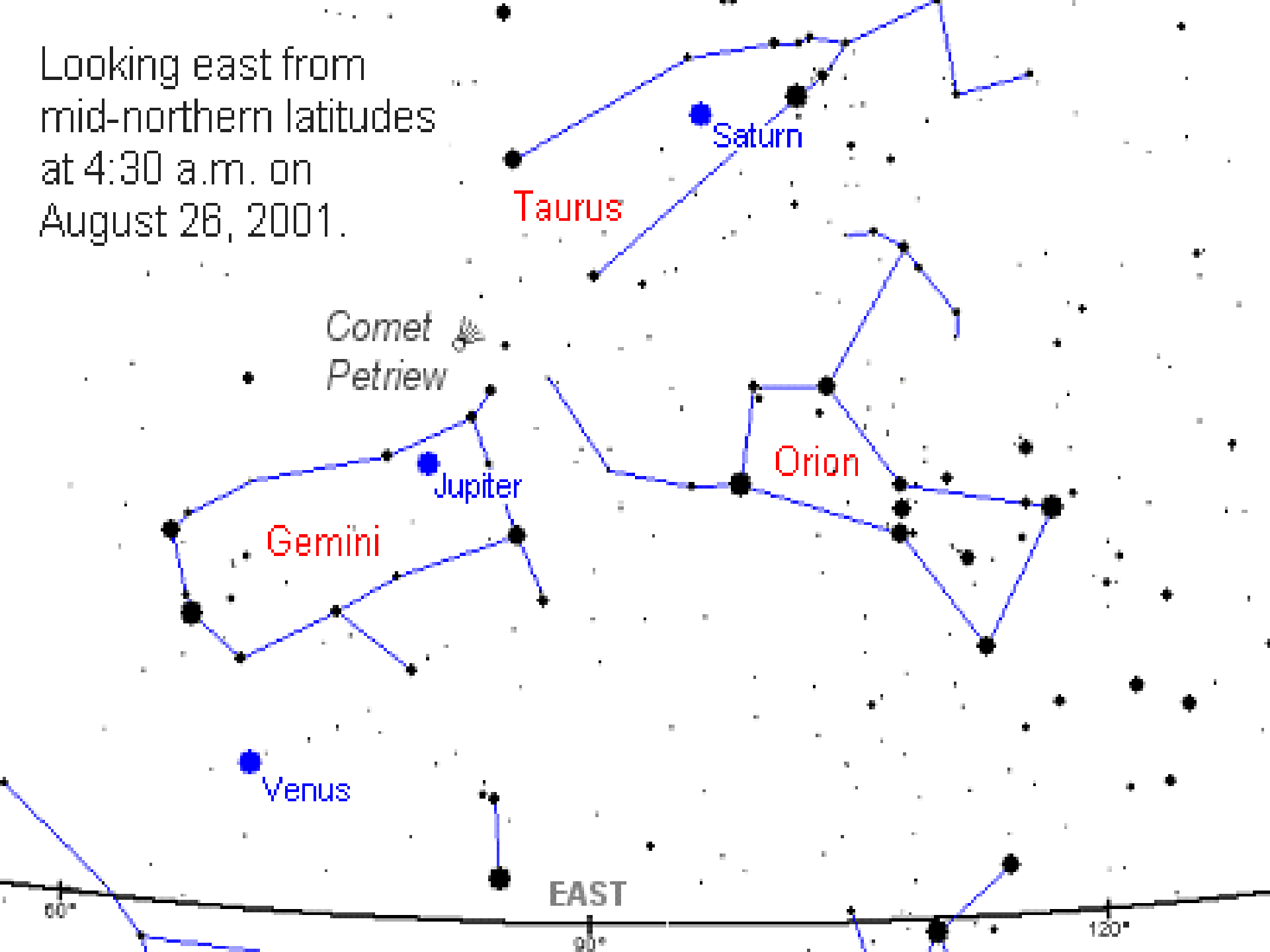
- Supernova Remnant – the structure from the gigantic explosion of a star in a supernova
- The supernova remnant is bounded by an expanding shock wave and consists of ejected material and the interstellar material it shocks and sweeps up along the way
- At the center of the nebula lies a neutron star 12 miles across known as the Crab Pulsar
- The Crab Pulsar spins 30.2 times per second and emits pulses of radiation from Gamma rays to Radio waves.



Finding the Crab Nebula

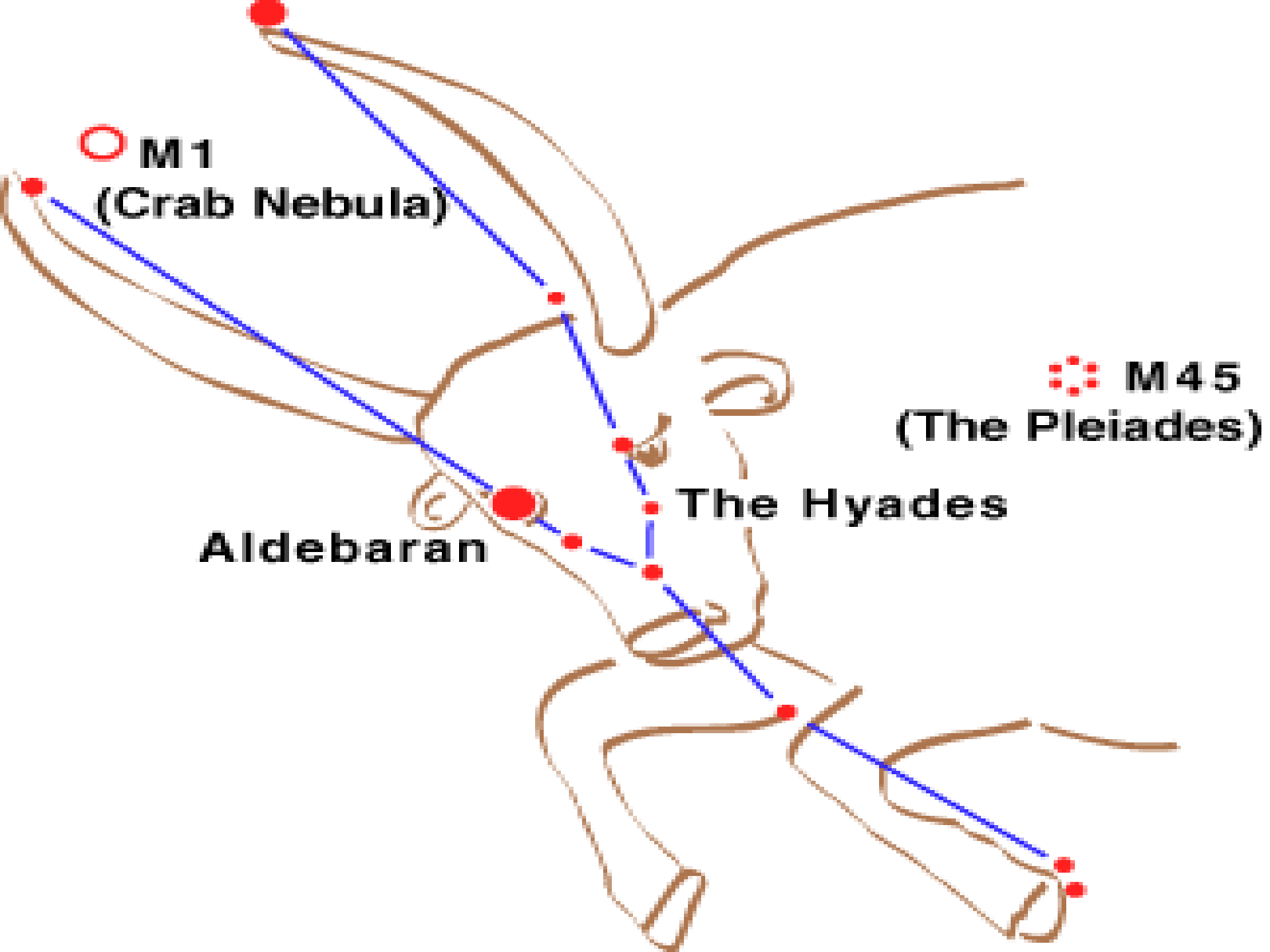
- Locate the constellation Orion
- Identify Betelgeuse – the bright red star that represents the hunters armpit

Looking east from
mid-northern latitudes
at 4:30 a.m. on
August 26, 2001.



Finding the Crab Nebula

- Locate the constellation Taurus
- Identify Alnath – the 2nd brightest star in Taurus that represents the bull's left horn



M1
(Crab Nebula)

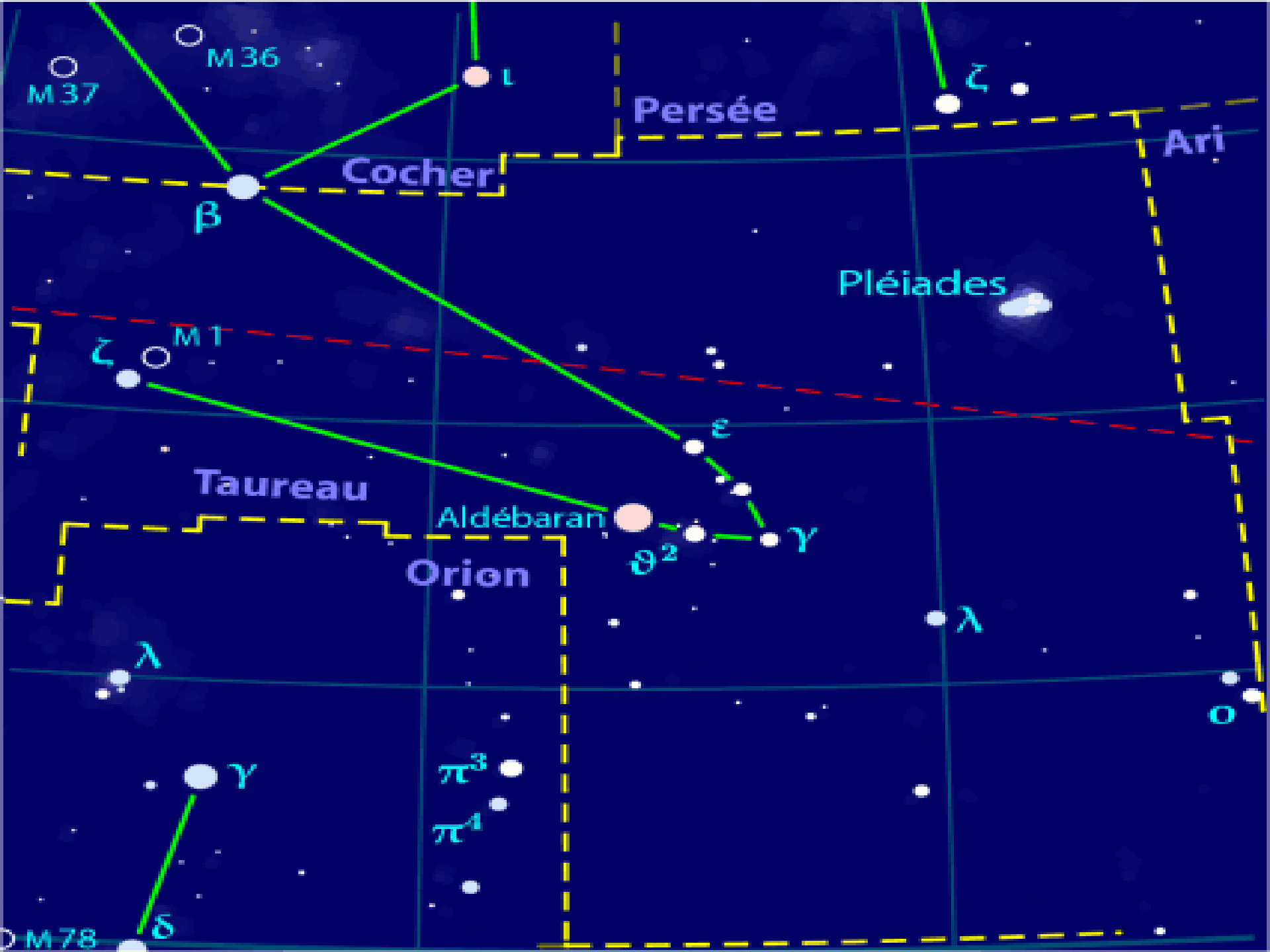
Aldebaran

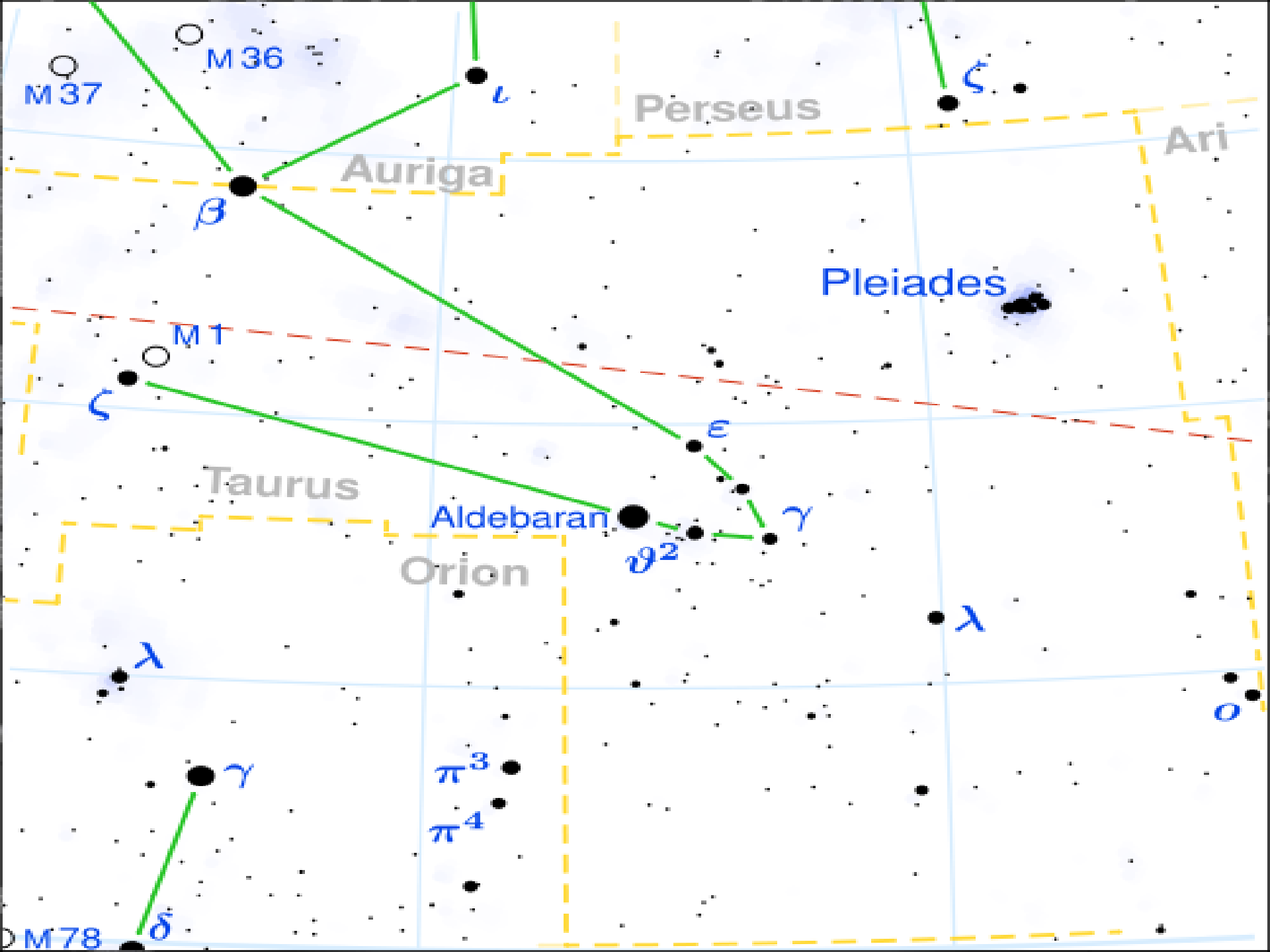
The Hyades

M45
(The Pleiades)

Finding the Crab Nebula

- Draw a line in the sky from Betelgeuse to Alnath
- Approximately 2 thirds of the way from Betelgeuse to Alnath is where you will find the Crab Nebula





M37

M36

Perseus

Ari

Auriga

Pleiades

M1

Taurus

Aldebaran

Orion

M78

Web Links

- Astronomy Magazine
www.astronomy.com
- Sky and Telescope Magazine
www.skyandtelescope.com
- Students for the Exploration & Development of Space
www.seds.org
- Skymap Software
www.skymap.com
- Universe Today
www.universetoday.com
- Wikipedia – The Free Encyclopedia
www.wikipedia.org

Clear Skies!