

# **The Atlanta Astronomy Club**

## **Charlie Elliot Chapter**

### **Observing 101**

# Observing 101 – July 2011

- The Sky Tonight
- Our Solar System This Week
- This Month's Astro Events
- Target List
- Featured object

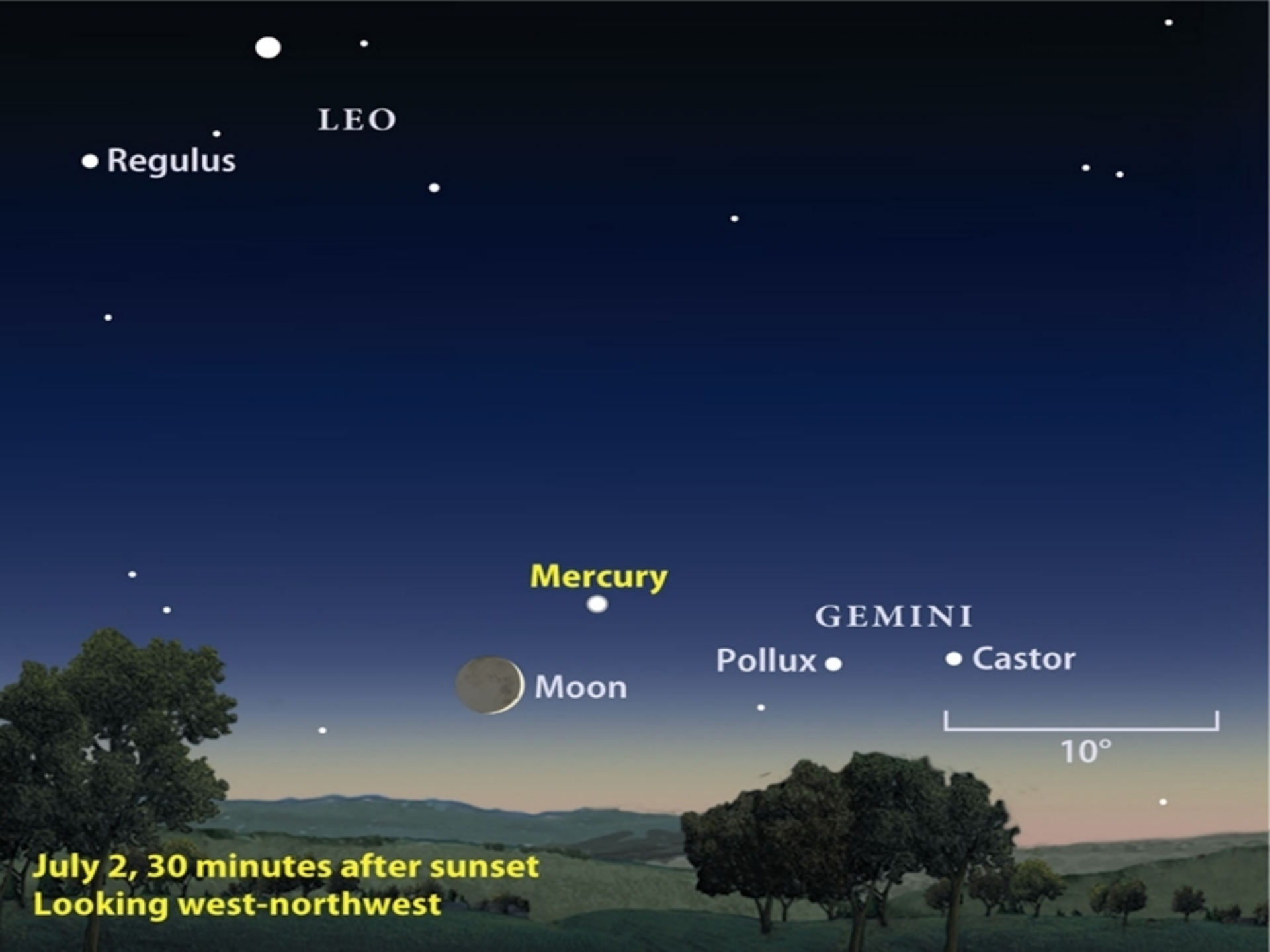
# The Sky Tonight

- Sunset at 8:49 PM
- Moon sets at 9:52 PM
- Mercury sets at 10:12 PM
- Neptune rises at 11:32 PM
- Saturn sets at 1:36 AM

# The Sky Tonight

## Tomorrow morning:

- Uranus rises at 1:04 AM
- Jupiter rises at 2:29 AM
- Mars rises at 4:15 AM
- Venus rises at 5:37 AM
- Pluto sets at 6:27 AM
- Sunrise at 6:29 AM



LEO

• Regulus

Mercury

GEMINI

Moon

Pollux •

• Castor

10°

July 2, 30 minutes after sunset  
Looking west-northwest

# Our Solar System this week

- Mercury - Low in the West/NW after sunset
- Venus - Low in the E/NE just before sunrise
- Mars - Low in the E/NE before dawn
- Jupiter - In the East early morning until dawn
- Saturn - Visible in the Southwest after sunset
- Uranus - In the SE from early morning to dawn
- Neptune - In the South after midnight to dawn
- Pluto - High in the South after midnight

# This Month's Astro Events

- July 2-4      Thin crescent moon near Mercury
- July 6      -      Mars  $5^{\circ}$  North of Alderberan
- July 6      -      Mercury crosses the Beehive cluster
- July 7      -      Crescent Moon below Saturn & Spica
- July 7      -      Purbach Cross on lunar terminator
- July 12     -      Neptune comp 1<sup>st</sup> orbit since discovery
- July 15     -      Full Moon
- July 20     -      Mercury at Greatest Eastern elongation
- July 23     -      Last quarter Moon within  $5^{\circ}$  of Jupiter
- July 27     -      Mars within  $3^{\circ}$  of crescent Moon

**Dusk, July 2–4**  
*45 minutes after sunset*

Regulus

Moon  
July 4



Moon  
July 3



Mercury



Pollux



Moon  
July 2



10°



**Looking West**



**July 6 – 8**

*Shortly after dark*

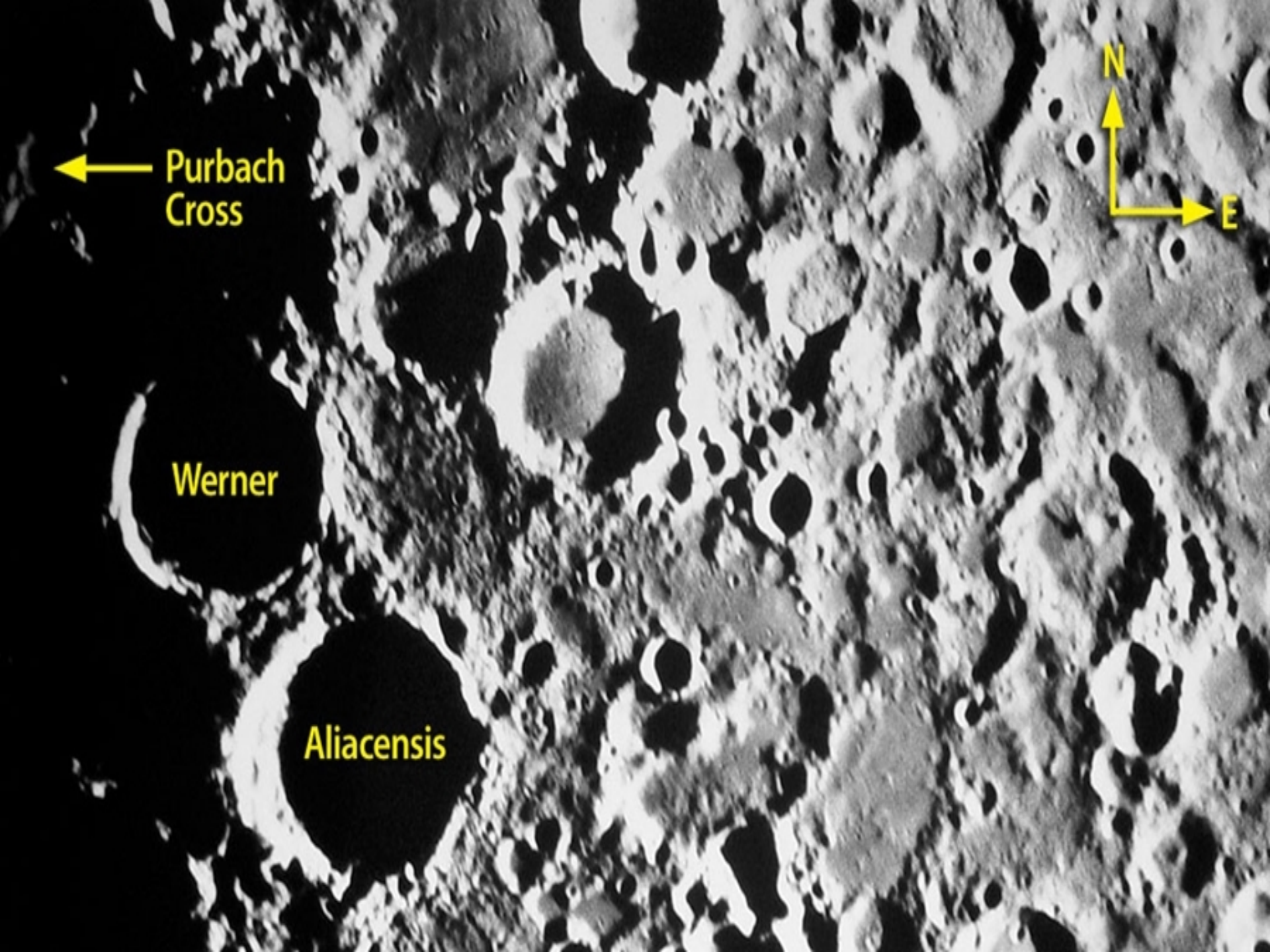


Moon  
July 8

Moon  
July 7

Moon  
July 6

**Looking West-Southwest**



← Purbach  
Cross

N  
E

Werner

Aliacensis



AQUARIUS

E

2°

N

$\theta$

$\sigma$

38

Neptune

$\iota$

$\mu$

CAPRICORNUS

$\delta$

$\gamma$



ANDROMEDA

PERSEUS

Hamal

ARIES

Jupiter

CETUS

Capella

Pleiades

AURIGA

TAURUS

Mars

Aldebaran

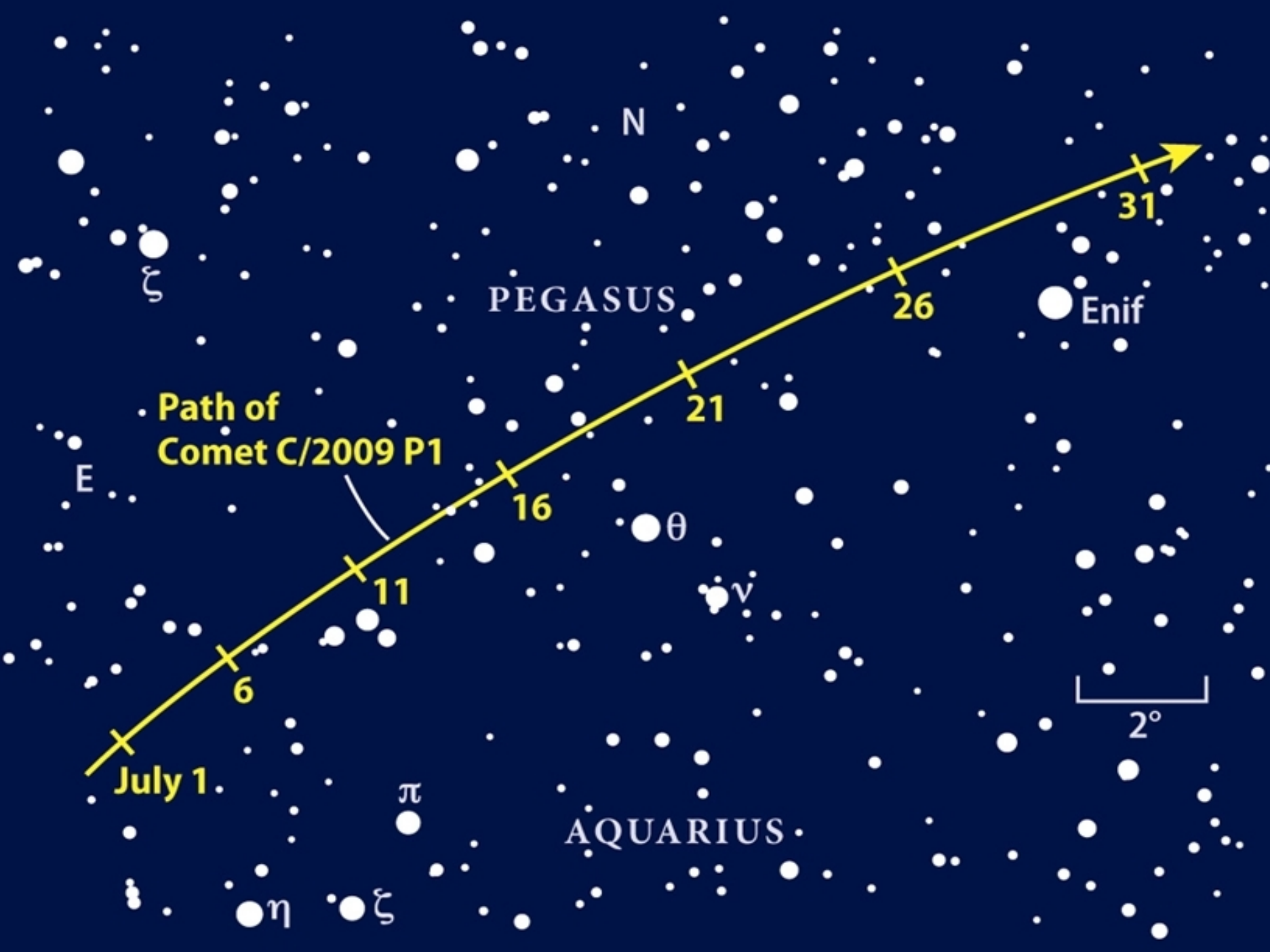
10°

Mid-July, 4 A.M.  
Looking east

# Astro Events

Events visible the entire month of July.....

- Mercury  $8^{\circ}$  above the W/NW horizon after sunset July 1-19
- Comet C/2009 P1 Garradd crosses Pegasus
- Asteroid Vesta slides through Capricornus
- The dwarf planet Pluto crosses northern Sagittarius



CAPRICORNUS



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SAGITTARIUS

SAO  
161442

July 1

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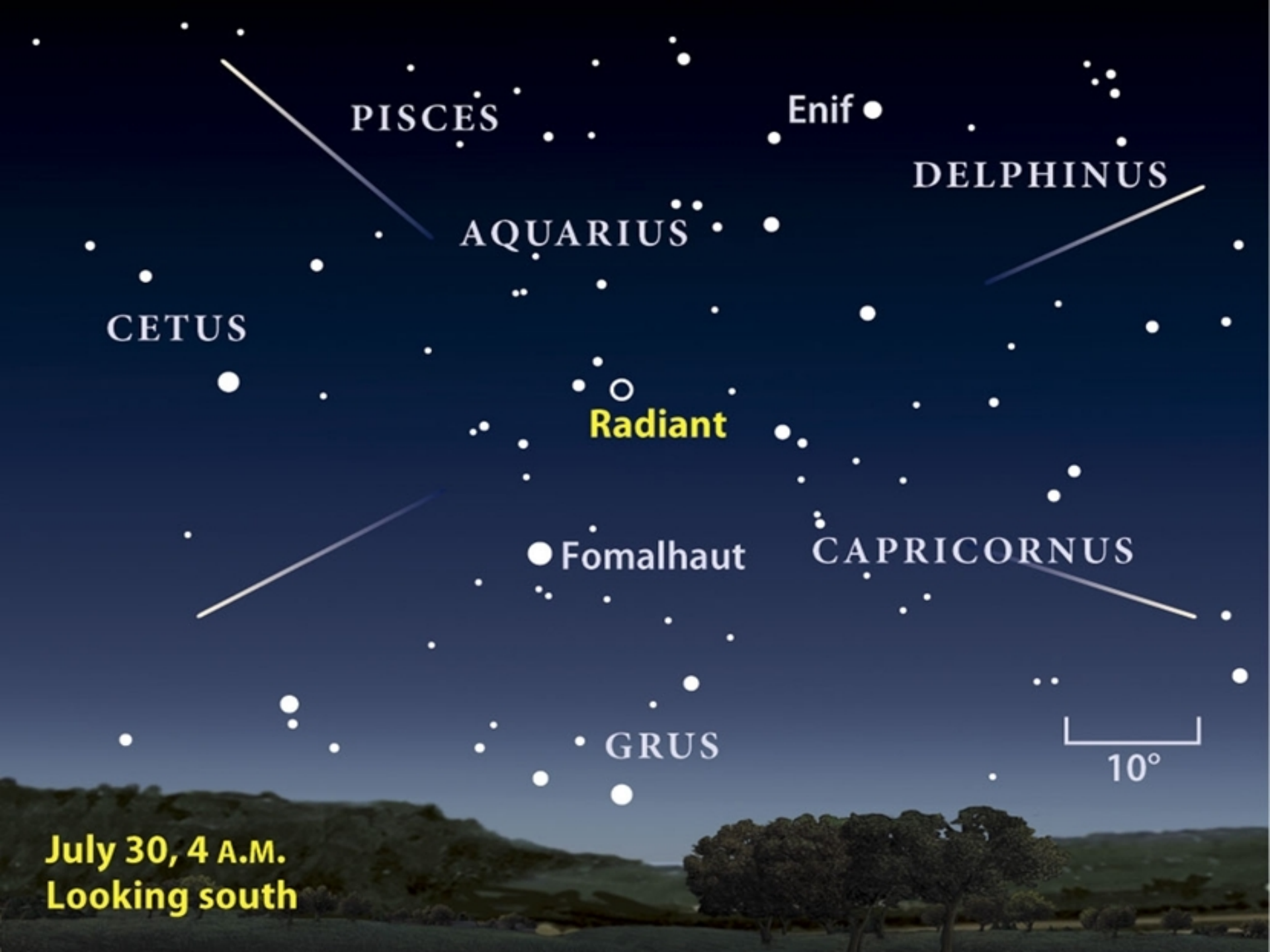
Path of Pluto

0.05°

# Astro Events

## Next month's events ...

- July 30 – New Moon
- July 30 - S Delta Aquarid meteor shower peaks
- July 30 - Next CE Chapter meeting



PISCES

Enif ●

DELPHINUS

AQUARIUS

CETUS

**Radiant**

● Fomalhaut

CAPRICORNUS

GRUS

┌───┐  
10°

**July 30, 4 A.M.**  
**Looking south**

# Target List – Small Telescopes & Binoculars

<b>Object</b>	<b>Type</b>	<b>Mag</b>	<b>Size/Sep</b>	<b>Constellation</b>
M51	Galaxy	8.9	10.8 x 6.6'	Canes Venatici
M63	Galaxy	9.3	12.6 x 7.5'	Canes Venatici
M94	Galaxy	8.9	12.3 x 10.8'	Canes Venatici
M101	Galaxy	8.2	28.5 x 28.3'	Ursa Major
NGC6946	Galaxy	8.8	11.0 x 11.0'	Cygnus
Izar	Double star	2.7	2.8"	Bootes
Porrima	Double star	4.5	3.6"	Virgo
Rasalgethi	Double star	3.5	4.9"	Hercules
M3	Globular	7.0	16.2'	Canes Venatici
M5	Globular	7.0	17.4'	Serpens
M12	Globular	8.0	14.5'	Ophiuchus
M13	Globular	7.0	16.6'	Hercules
M57	Ring Nebula	9.5	2.5'	Lyra

# NGC 6946 – The Fireworks Galaxy

- An intermediate barred spiral galaxy located on the border between the constellations Cepheus and Cygnus.
- Approximate distance is 22 million light years.
- Discovered by William Herschel on September 9, 1798
- This galaxy is highly obscured as it is located (from our perspective) close to the intergalactic plane of our Milky way galaxy.
- At one time it was believed to be a member of our local group of galaxies because it could easily be resolved into individual stars.

# NGC 6946 – Not your typical galaxy

- Numerous supernova and star forming events have been recorded in NGC6946 for the past 60 years
- Normally bursts of star formation occur in galaxies which have nearby companions to lend material.
- NGC 6946 does have 2 small dwarf companion galaxies that appear to be too distant to have a significant effect on star formation and show no signs of creating tidal interaction.
- Research completed by German astronomer Eva Schinnerer at the Max-Planck Institute of Astronomy in 2006 concludes that NGC6946 is a bar-driven nuclear starburst galaxy.
- However, bars in spiral galaxies did not become common in our universe until about 7 billion years ago. Since NGC6946 is approximately 10 billion years old that makes it rare indeed.

# List of 9 Supernova that have been discovered in NGC 6946

- SN 1917A July 19, 1917 George Ritchey
- SN 1939C July 17, 1939 Fritz Zwicky
- SN 1948B July 6, 1948 Nicholas Mayall
- SN 1968D February 29, 1968 Wild & Dunlap
- SN 1969P December 11, 1969 Leonida Rosino
- SN 1980K October 28, 1980 Paul Wild
- SN 2002hh October 31, 2002 LOTUSS project
- SN 2004ET Sept 22, 2004 Stefano Moretti
- SN 2008S February 1, 2008 Ron Arbour





# Web Links

- Astronomy Magazine  
[www.astronomy.com](http://www.astronomy.com)
- Sky & Telescope Magazine  
[www.skyandtelescope.com](http://www.skyandtelescope.com)
- The Old Farmer's Almanac  
[www.almanac.com](http://www.almanac.com)
- Universe Today  
[www.universetoday.com](http://www.universetoday.com)
- Dawn Mission: Dawn  
[www.jpl.nasa.gov](http://www.jpl.nasa.gov)
- Students for the Exploration and Development of space  
[www.seds.org](http://www.seds.org)

**Clear Skies!**