# The Atlanta Astronomy Club

# Charlie Elliot Chapter

# Observing 101

# Observing 101 – August 2010

- Astro Events
- Featured Objects
- Deep Sky Object Catalogues
- Robert Trumpler
- Target List

# Astro Events

Tonight:

- Moon sets at 6:36 PM
- Sunset at 8:29 PM
- Moonrise 5:01 AM the following day

# Astro Events

Tonight:

- Mercury sets at 9:39 PM
- Venus sets at 10:32 PM
- Saturn sets at 10:45 PM
- Mars sets at 10:48 PM
- Neptune rises at 9:01 PM
- Uranus rises at 10:30 PM
- Jupiter rises at 10:40 PM

# Astro Events

Tonight:

- Neptune Transit at 2:32 AM
- Uranus Transit at 4:34 AM
- Jupiter Transit at 4:45 AM

# Astro Events

This month's events …

- Aug 6 – Mercury Greatest Eastern elongation
- Aug 9 - New Moon
- Aug 11 – Europa / Jupiter Occultation
- Aug 12 - Perseid meteor shower
- Aug 19 – Venus at Greatest Eastern elongation
- Aug 20 – Neptune opposition
- Aug 24 – Full Moon
- Aug 31 – Venus 1 degree below Spica

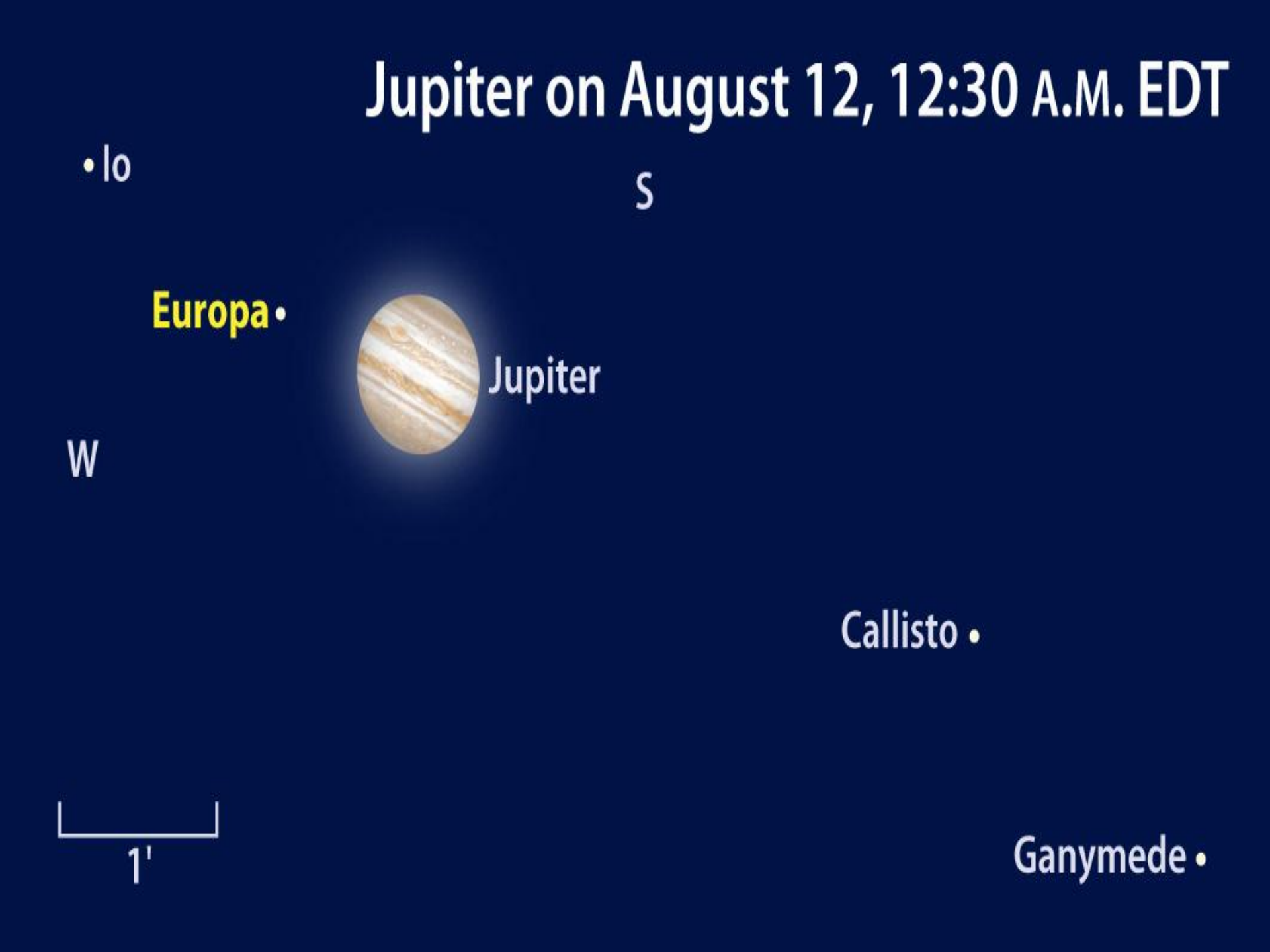
# Astro Events

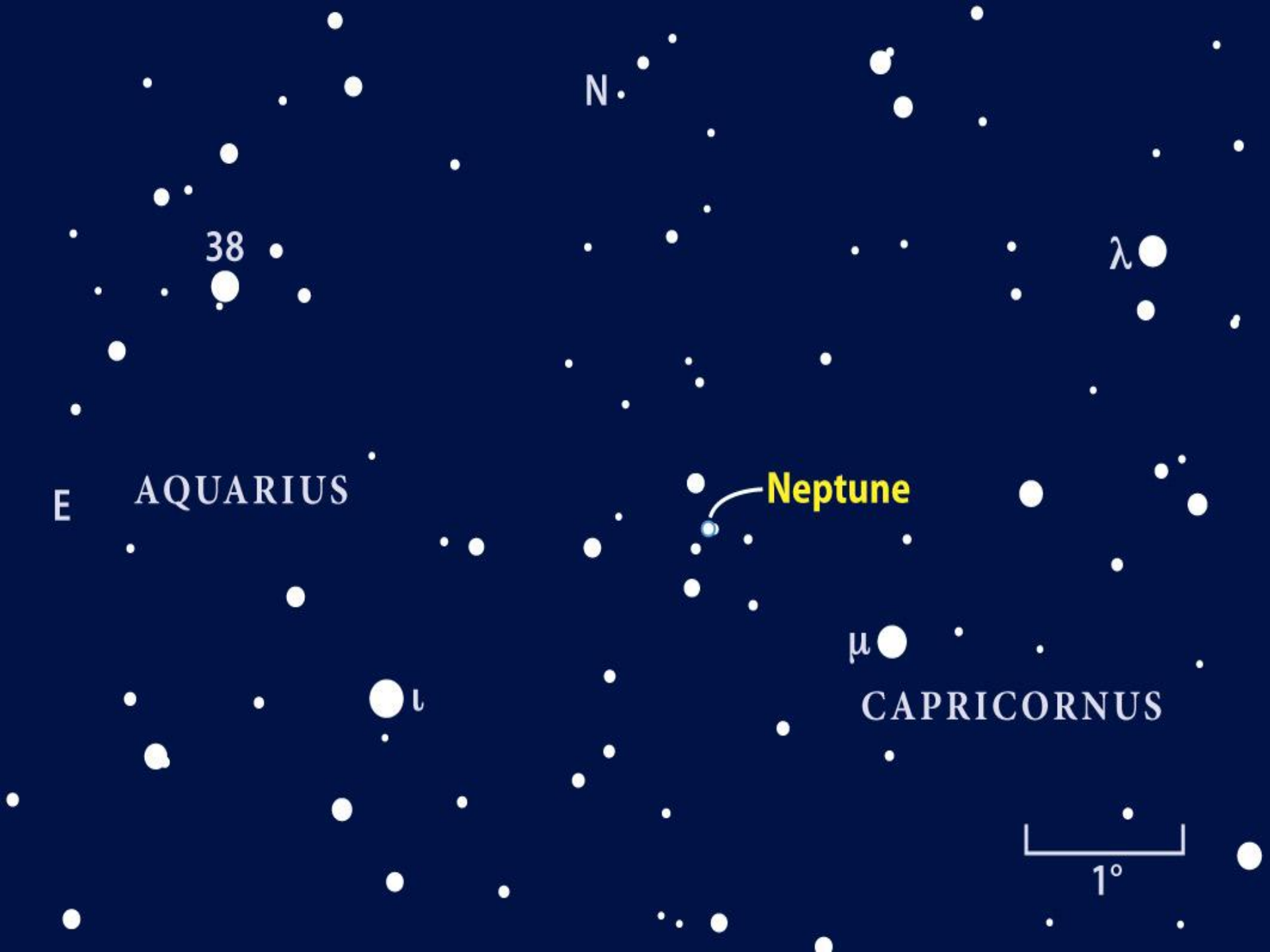
Next month's events …

- Sept 1 – Alpha Aurigid meteor shower
- Sept 8 - New Moon
- Sept 11 – Next CE meeting


Dusk, Aug 8
1 hour after sunset
Spica
γ Vir
Mars
Saturn
Venus
Looking West-Southwest
© 2010 Sky & Telescope


CASSIOPEIA
Andromeda Galaxy
Double Cluster
Perseid radiant
ANDROMEDA
PERSEUS
TRIANGULUM
Capella
Looking Northeast at 11 p.m.
© Sky & Telescope


Jupiter on August 12, 12:30 A.M. EDT
• Io
S
Europa •
Jupiter
W
Callisto •
1'
Ganymede •


N
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AQUARIUS
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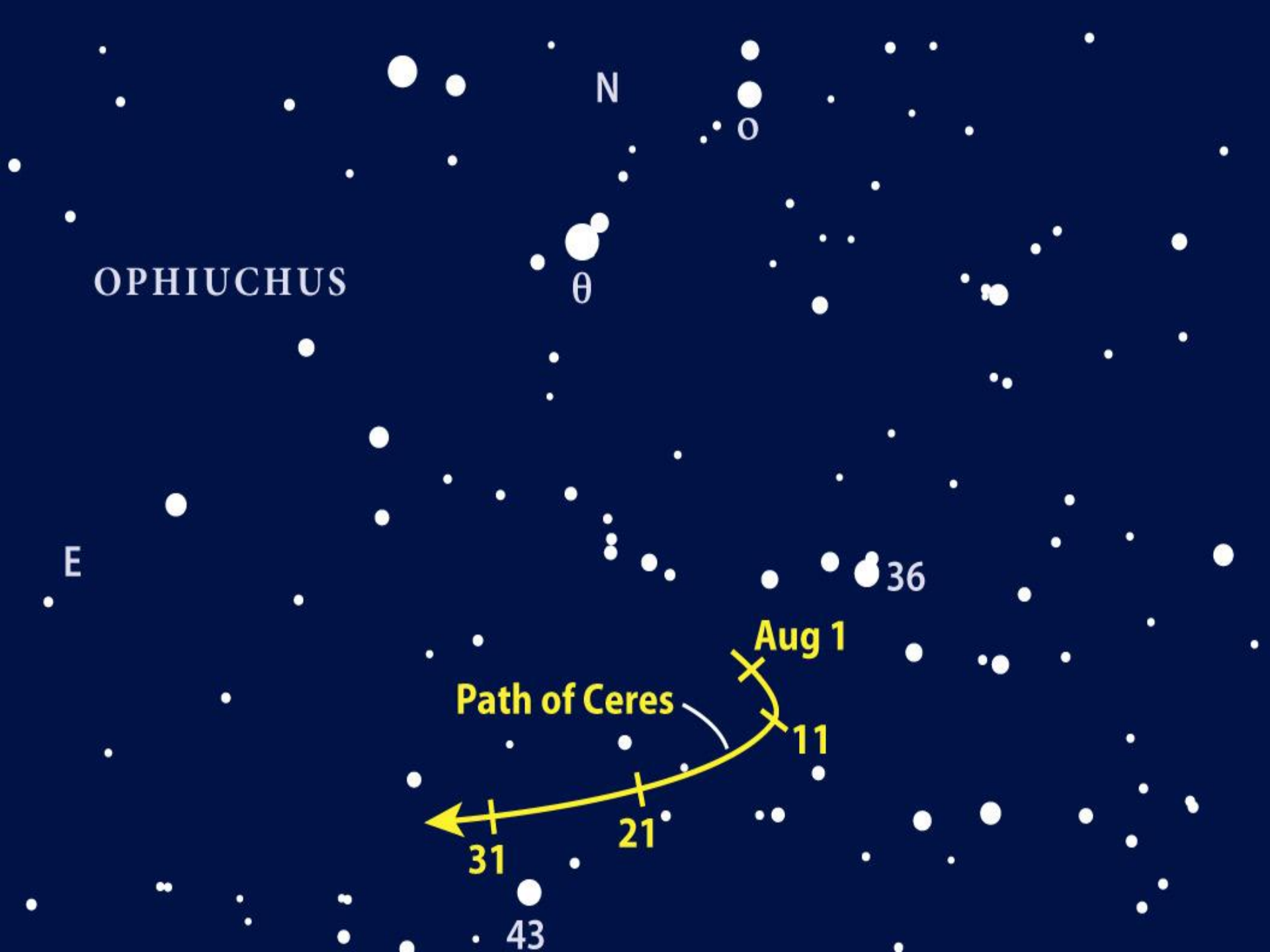
1°


N
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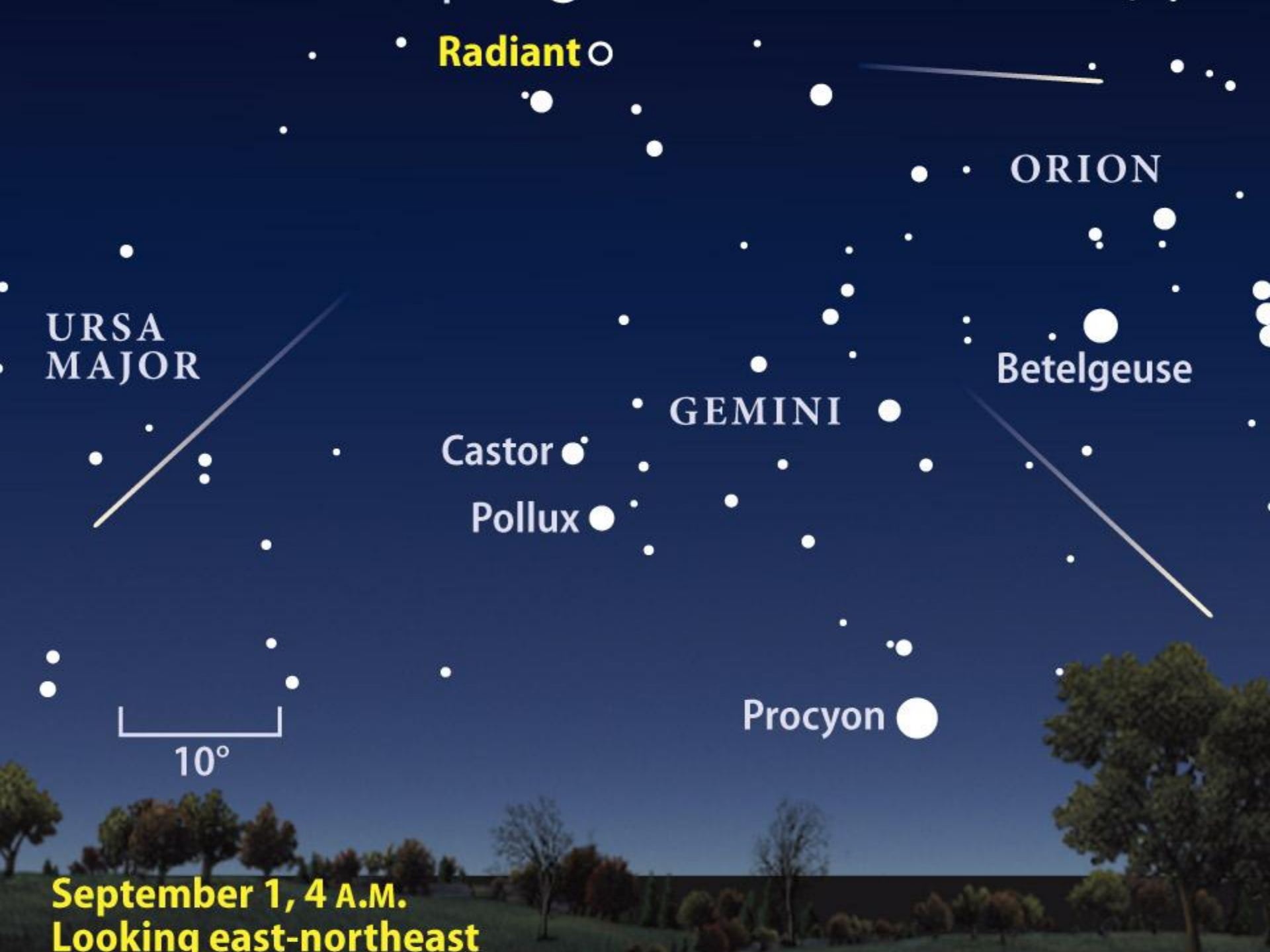
36
Aug 1
Path of Ceres
11
21
31
43


Radiant
ORION
URSA MAJOR
Betelgeuse
GEMINI
Castor
Pollux
Procyon
10°
September 1, 4 A.M.
Looking east-northeast

# Deep Sky Object Catalogues

- Caldwell
- Collinder Open Cluster
- Herschel
- IC (Index Catalogue)
- Melotte Open Cluster
- Messier
- NGC (New General Catalogue)


Robert Julius Trumpler
October 2, 1886 – September 10, 1956

# •Childhood & Education

- Born on October 2, 1886 in Zurich, Switzerland
- He was born into a large family well established in business and manufacturing
- Robert Trumpler decided at the age of 17 to become a businessman but due to his growing interest in science his goals began to change

# •Childhood and Education

- In 1906 he entered the University of Zurich to study astronomy, physics, and mathematics
- In 1908 Trumpler transferred to the University of Gottingen where he studied with some of the leading scientists of his time and completed his Ph.D degree magnum cum laude

# •Early Career

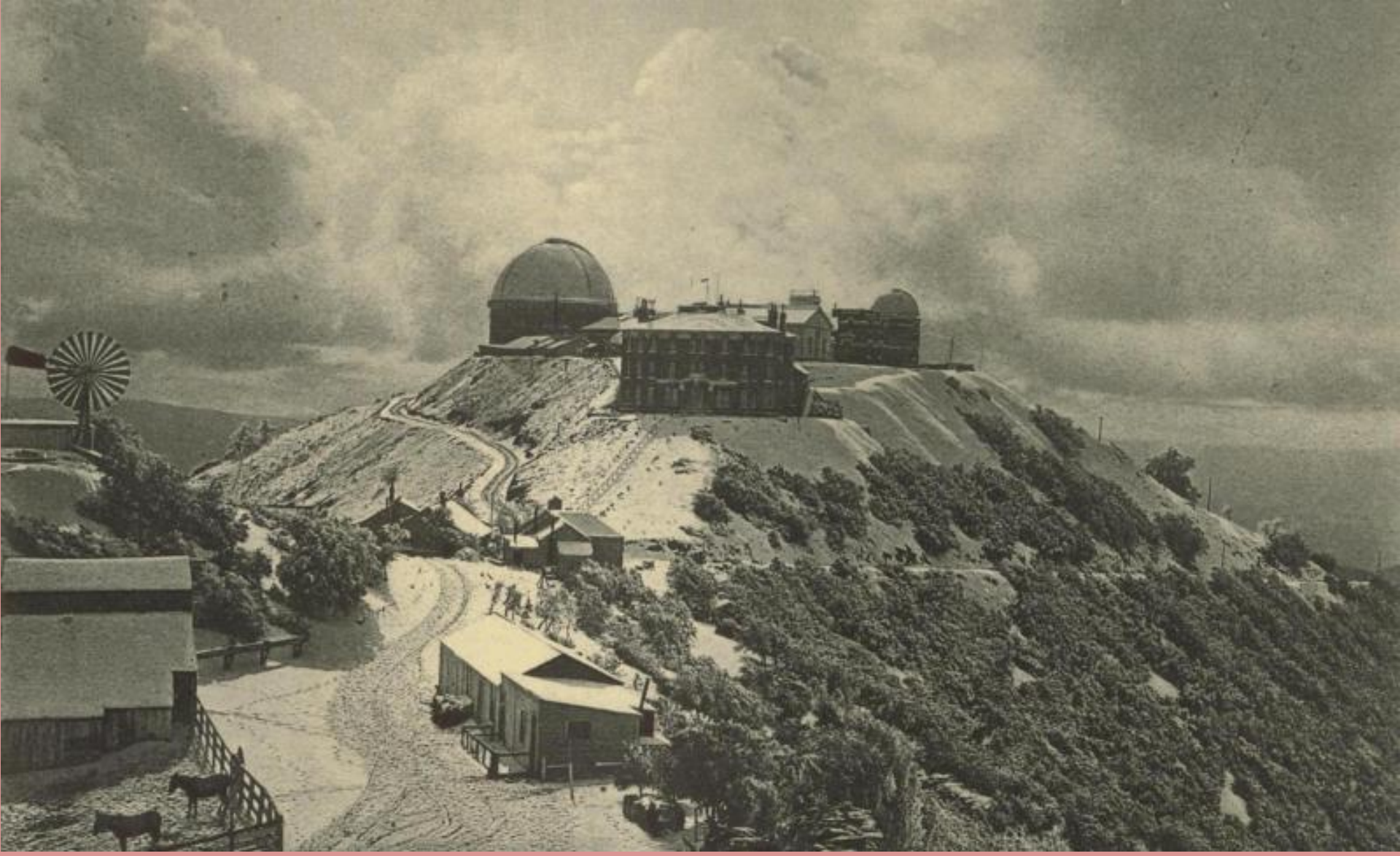
- In 1913 Trumpler met many of the leading American astronomers and discussed a plan he had developed to deteremine the proper motion of the Pleiades.
- 1914 he became a 1st lieutenant in the Swiss army
- 1915 he became an assistant astronomer at the Allegheny observatory

- Allegheny Observatory

- Thaw 30” Refractor

# •Early Career

- Invited to Lick Observatory as a Martin Kellogg fellow in 1919
- Appointed as an assistant astronomer at Lick Observatory in 1920
- Became a naturalized citizen in 1921
- In 1922 he took part in an expedition to study the solar eclipse in Wallal, Australia and to test Einstein's theory of General Relativity



- Lick Observatory

# •Important Scientific Work

- Interstellar extinction describes the absorption and scattering of electromagnetic radiation emitted by astronomical objects by interstellar dust and gas.
- Interstellar extinction varies with wavelength – the shorter the wavelength the stronger extinction.
- Extinction causes astronomical objects to appear to be redder than expected
- Trumpler noted that the brightness of the more distant open star clusters was less than expected and red stars appeared to be more numerous.

# •Important Scientific Work

- Trumpler measured the effects of interstellar extinction on estimates of stellar distances, the size of the Milky Way galaxy, and the scale of our Universe.
- Trumpler determined the distances and dimensions of numerous galactic open star clusters. This work includes 37 new open clusters now known as the Trumpler Catalog.
- Trumpler devised a system for classifying open star clusters based on the number of stars observed within them, their concentration in the center of the cluster, and their range of apparent brightness. This system is now know as the Trumpler Classification.

# Target List

## Trumpler Catalogue

| Object | Type | Mag | Size | Constellation |
|---|---|---|---|---|
| TR 26 | Open Cluster | 9.5 | 17’ | Ophiuchus |
| TR 27 | Open Cluster | 6.7 | 6‘ | Scorpius |
| TR 28 | Open Cluster | 7.7 | 7’ | Scorpius |
| TR 29 | Open Cluster | 7.5 | 9’ | Scorpius |
| TR 30 | Open Cluster | 8.8 | 10’ | Scorpius |
| TR 31 | Open Cluster | 9.8 | 8’ | Sagittarius |
| TR 32 | Open Cluster | 12.2 | 4’ | Serpens |
| TR 33 | Open Cluster | 7.8 | 6’ | Sagittarius |
| TR 34 | Open Cluster | 8.6 | 7’ | Scutum |
| TR 35 | Open Cluster | 9.2 | 9’ | Scutum |
| TR 36 | Open Cluster | 13.1 | 9’ | Cygnus |
| TR 37 | Open Cluster | 3.5 | 50’ | Cepheus |

# Web Links

ASTRONOMY MAGAZINE

www.astronomy.com

SKY & TELESCOPE MAGAZINE

WWW.SKYANDTELESCOPE.COM

THE NATIONAL ACADEMIES PRESS

www.nap.edu

THE ALLEGHENY OBSERVATORY

www.pitt.edu

UNIVERSITY OF CALIFORNIA OBSERVATORIES

www.ucolick.org

# Clear Skies!