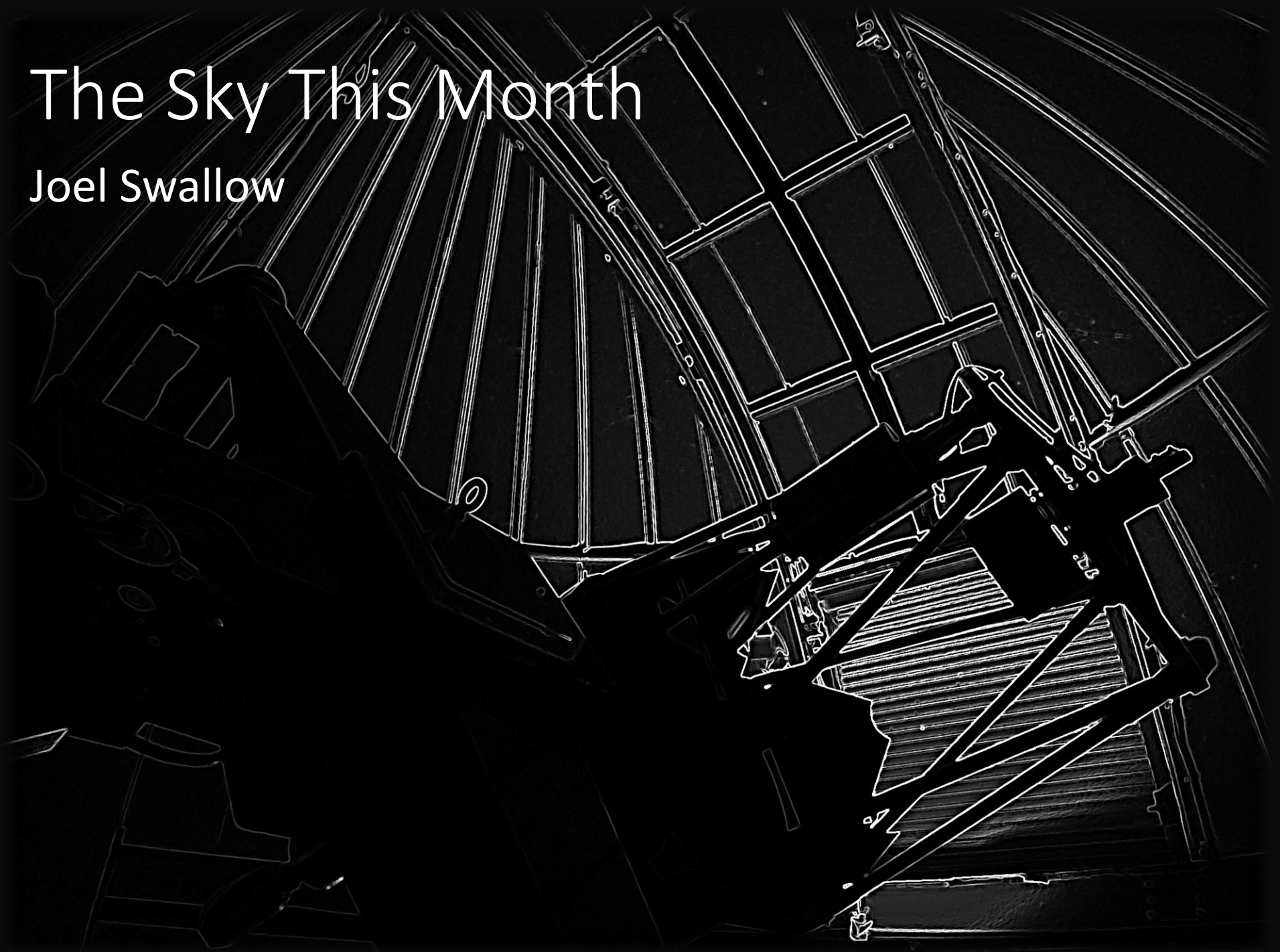




The Sky This Month

Joel Swallow





The Sky This Month

- The Moon this month
- The planets this month
- Eclipses
 - The Penumbral Lunar Eclipse (Visible in UK)
 - Annular Solar Eclipse (not visible in UK)
- Orion: signpost to the winter sky
- Orion Nebula
- (Extra: Deep Sky Objects in Auriga)



The Moon This Month

- Full Moon: January 12th
- New Moon: January 28th
- Full Moon: February 11th

January Full Moon— Wolf Moon



[2]

February Full Moon – Snow Moon



[3]

[1]

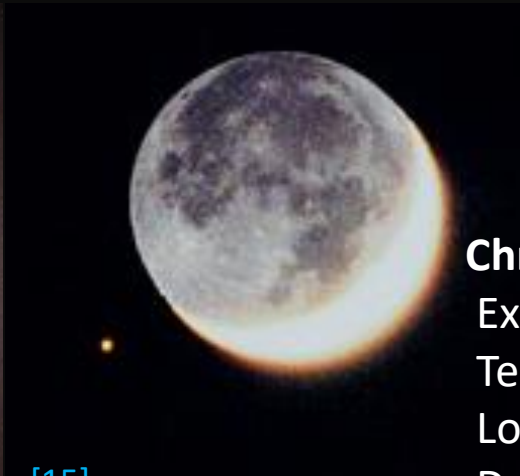


January 25
Waning Crescent
Illumination: 6%



Moon and Aldebaran : 5th February

- Excellent target for a good camera and a tripod!
- See if you can catch Aldebaran as it gets really close to the Moon.
- Aldebaran is actually **occulted** from Paris.



Chris Cook

Exposure: 2 seconds

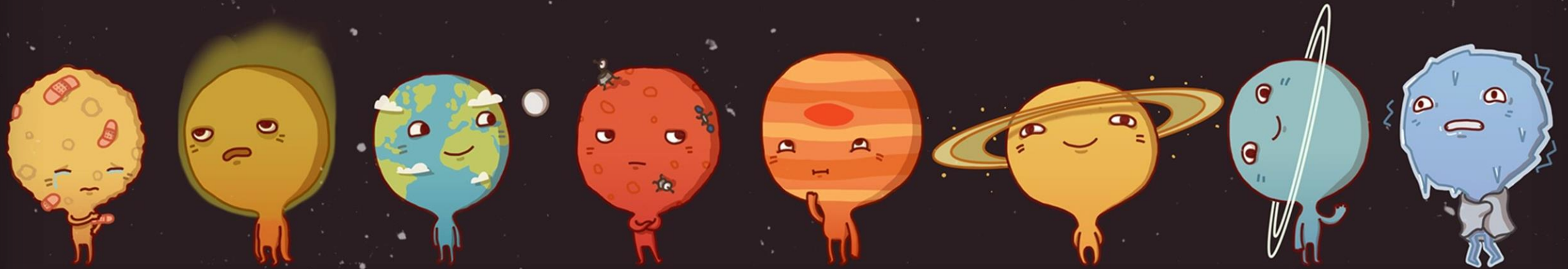
Telescope: TeleVue 85mm f/7 APO refractor @ f/5.6

Location: Laguna Niguel, California

Date: 4/18/99

22:27 5/2/17

The Planets this month





The Planets this month

- Mercury and Saturn – Morning objects low on the SE horizon
 - Look SE just before dawn.
 - Mercury is too close to the sun to be readily visible!



07:30 27/1/17



Mars & Venus (And Uranus)

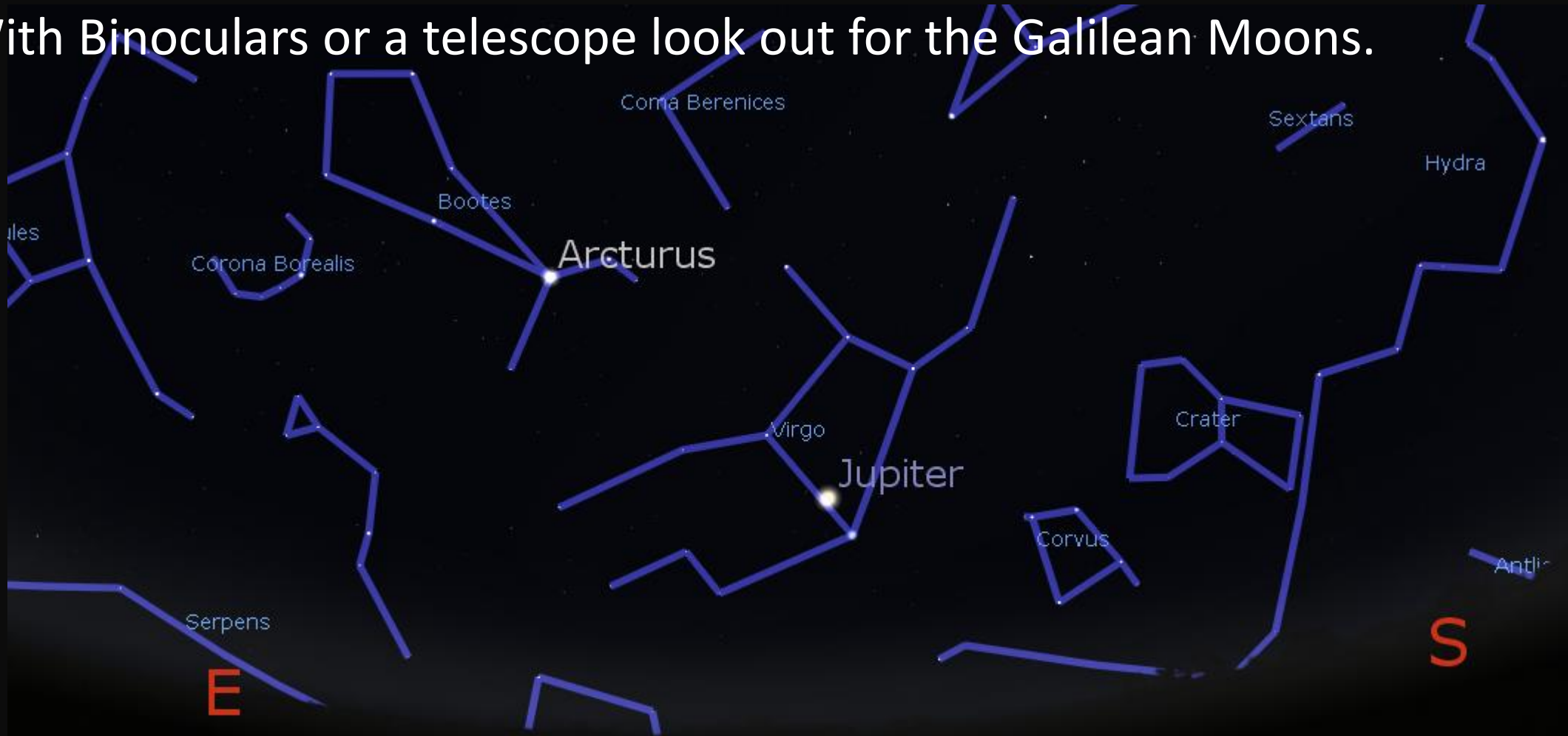
- Remain close together for the next month (closest ~5th February).
- Venus brightens from magnitude -4.4 to -4.7 during February.
- Mars fades slightly from magnitude 0.9 to 1.1.





Jupiter

- Jupiter rises earlier as we go through the month.
- With Binoculars or a telescope look out for the Galilean Moons.



02:00 30/1/17



Vesta – A Minor planet

- Vesta was at opposition on the 19th of January (mag 6.2)
- 25th Jan: mag 6.41
- 1st Feb: mag 6.56
- 7th Feb: mag 6.70
- 15th Feb: mag 6.84
- 22nd Feb: mag 6.98
- 1st March: mag 7.11

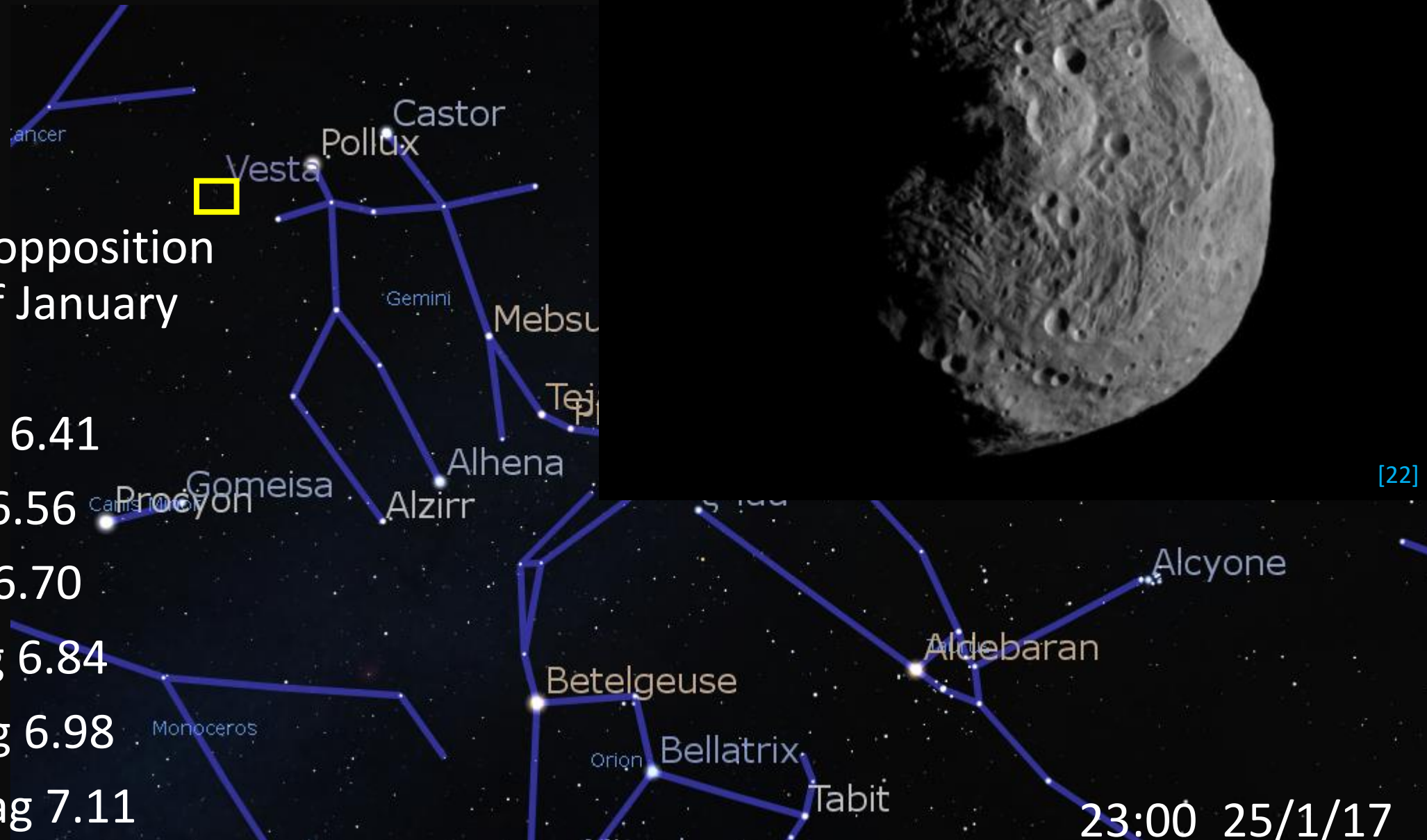


23:00 25/1/17

Vesta – A Minor planet



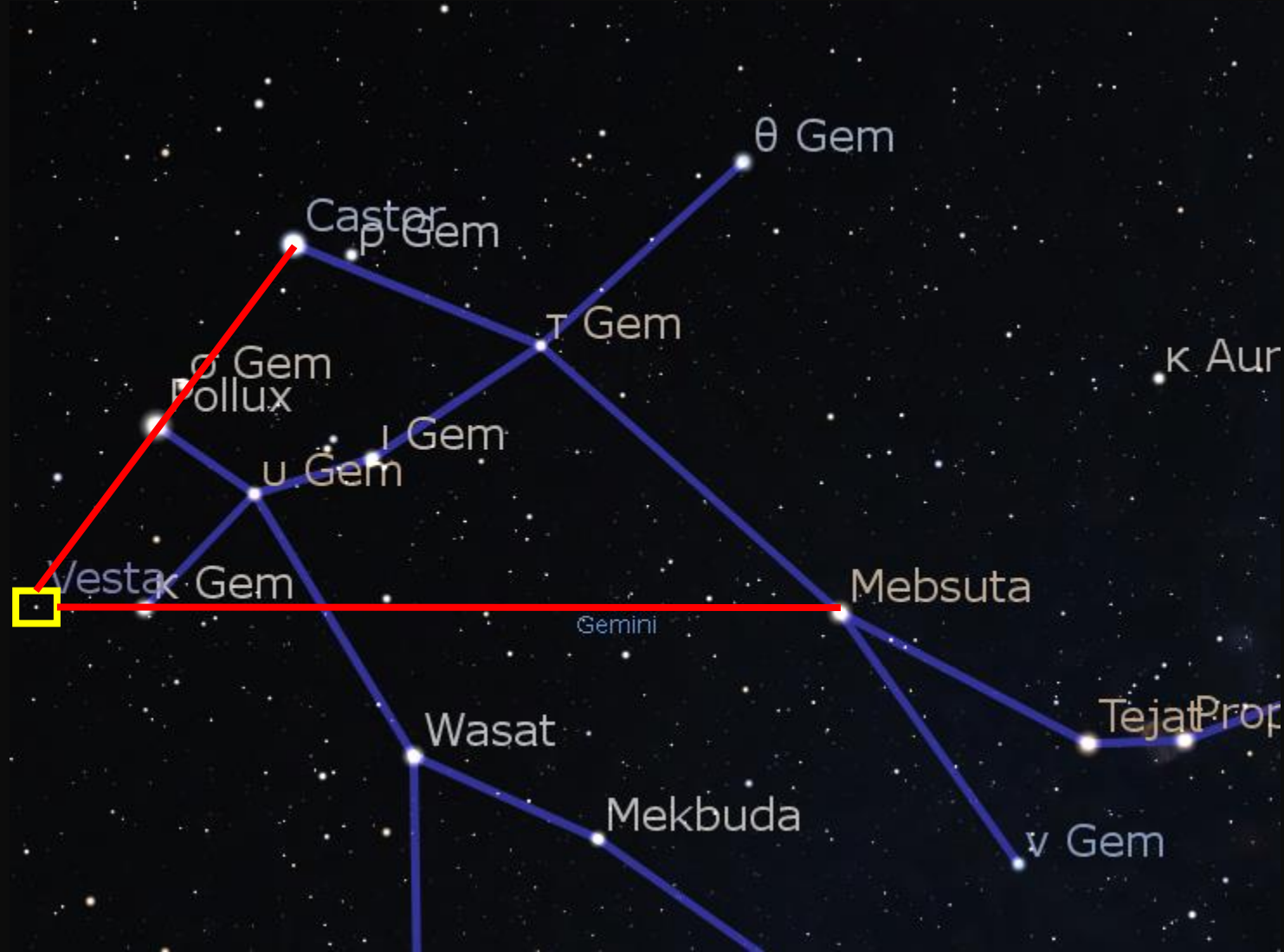
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Vesta – A Minor planet

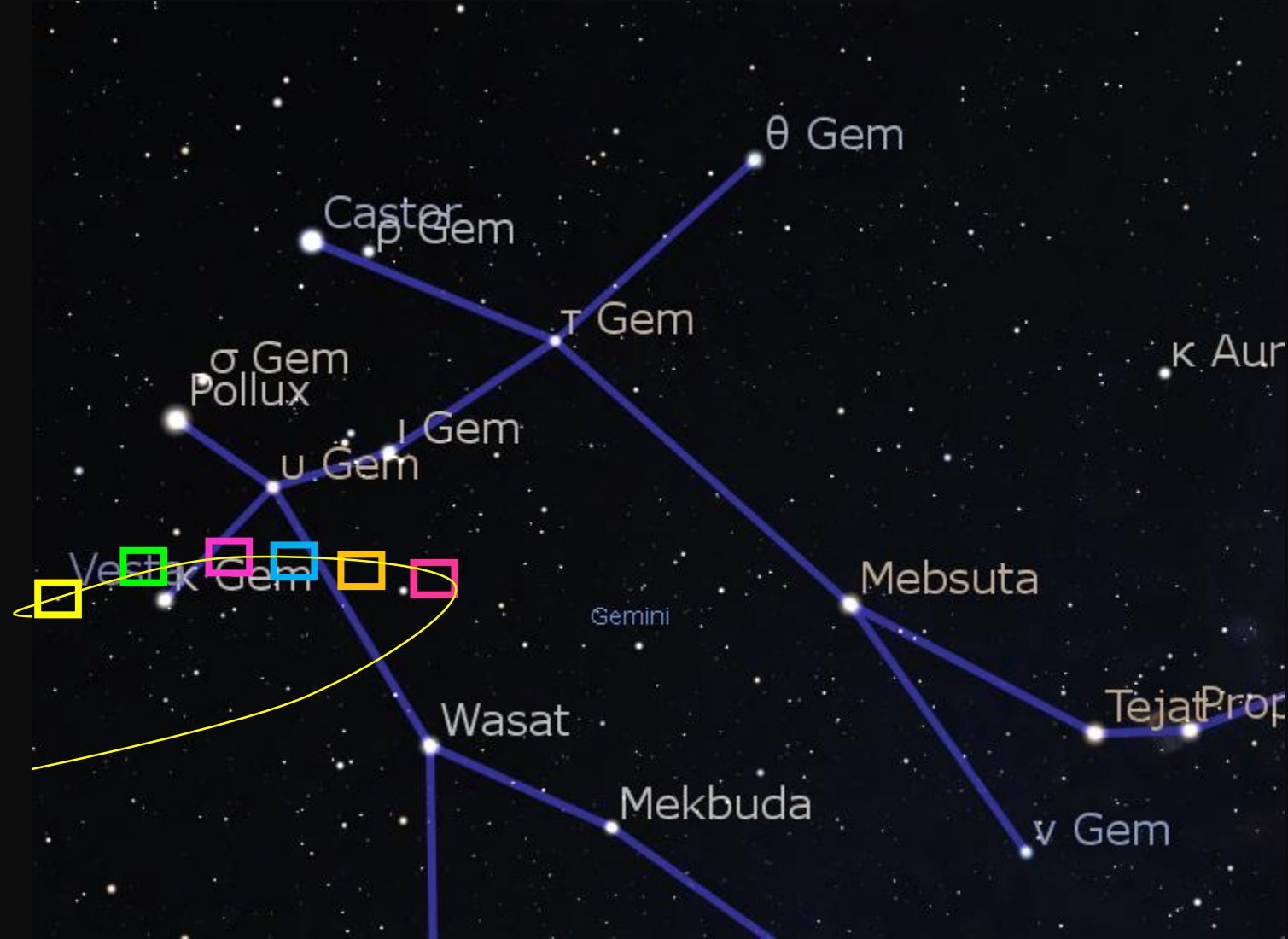
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Vesta – A Minor planet

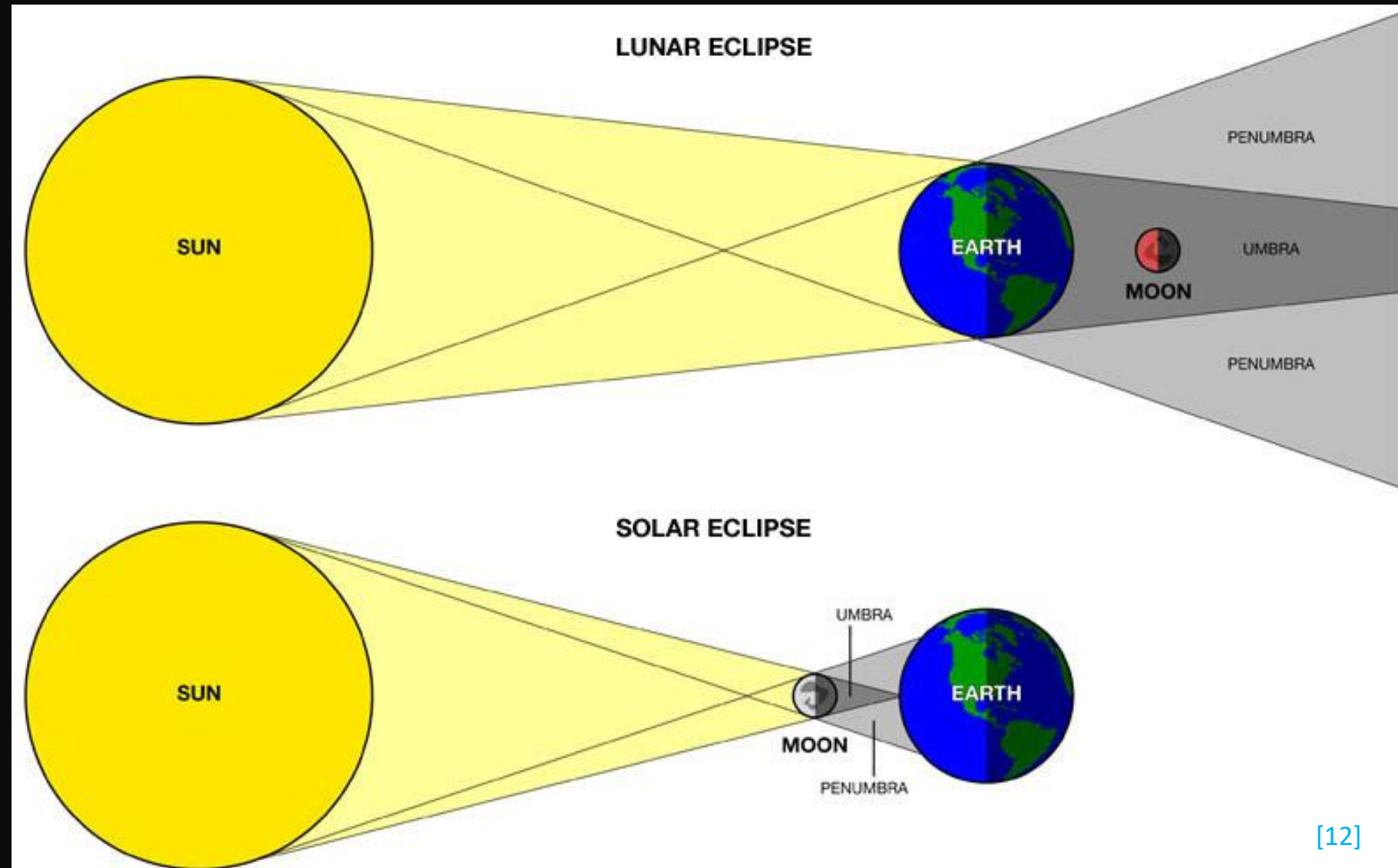
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23:00 25/1/17

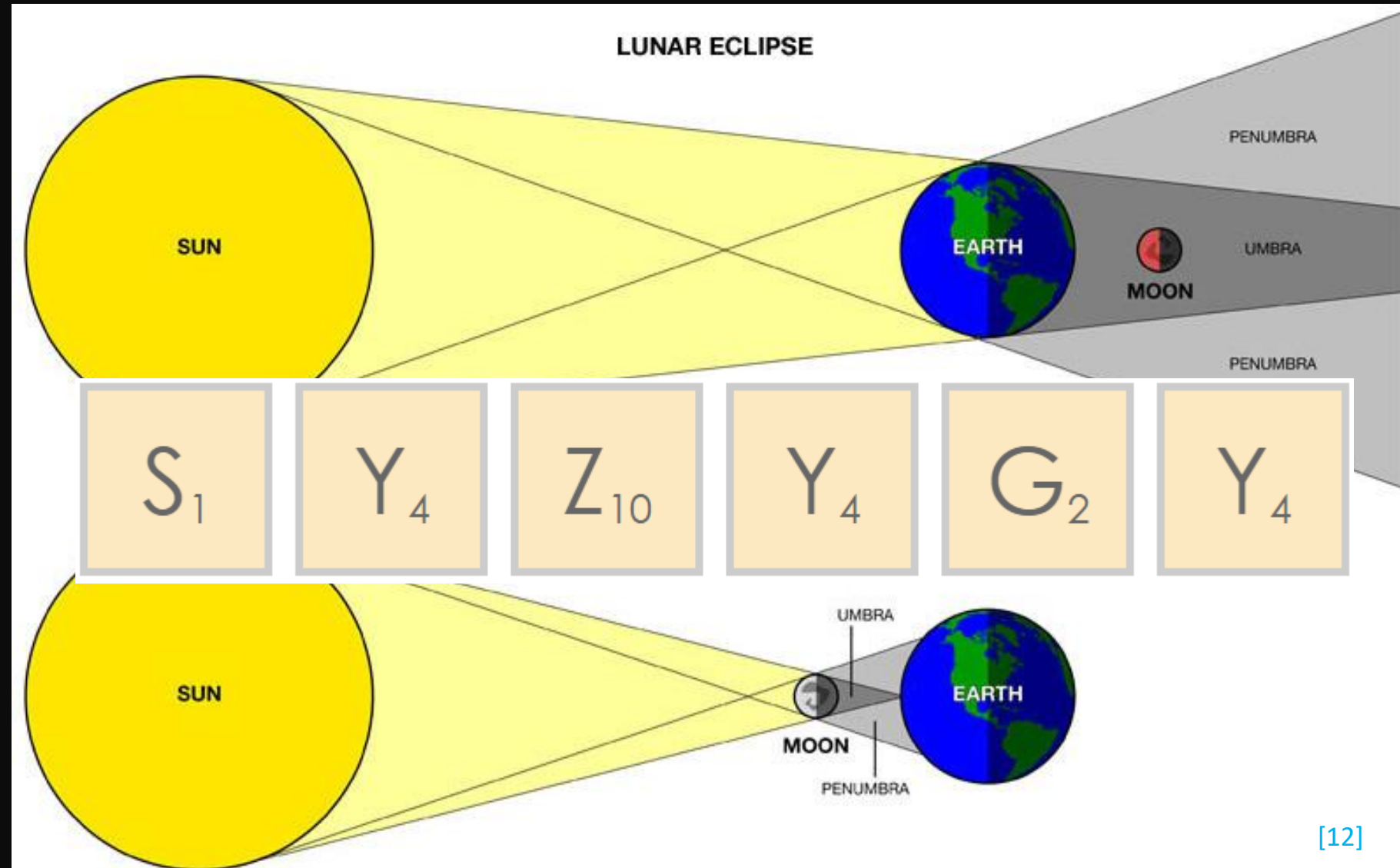
Eclipses : Solar and Lunar

- Eclipses occur when one astronomical object is obscured by another.
- A type of **syzygy** – a really fancy word for 3 astronomical bodies lining up!



Eclipses : Solar and Lunar

- Eclipses occur when one astronomical object is obscured by another.
- A type of **syzygy** – a really fancy word for 3 astronomical bodies lining up!





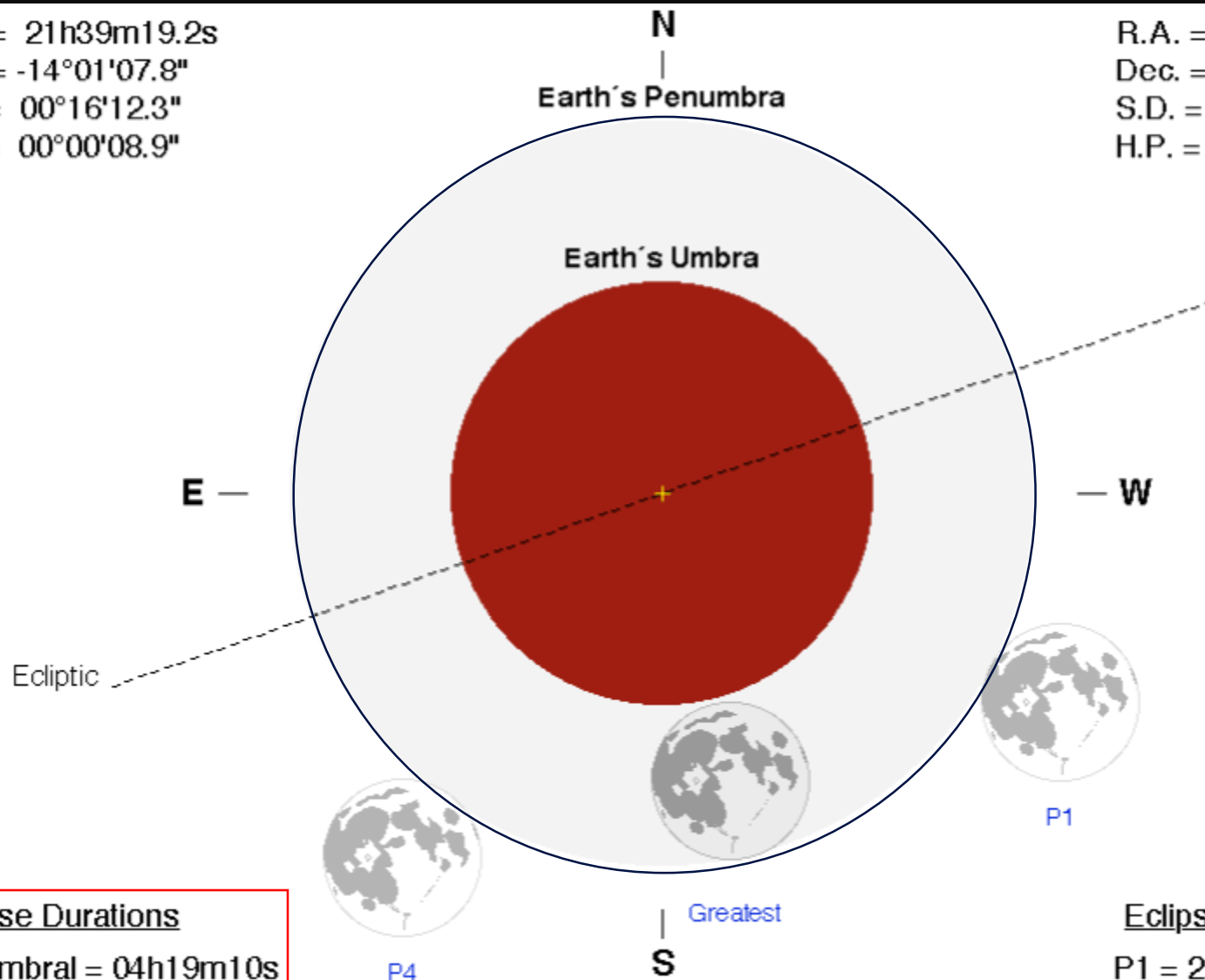
Penumbral Lunar Eclipse: February 10th/11th

- Peak of eclipse at 00:44 on 11th Feb
- 1st contact at 22:34 on 10th Feb



R.A. = 21h39m19.2s
Dec. = -14°01'07.8"
S.D. = 00°16'12.3"
H.P. = 00°00'08.9"

R.A. = 09h38m22.
Dec. = +13°03'10.1
S.D. = 00°15'49.7"
H.P. = 00°58'05.6"



Eclipse Durations

Penumbral = 04h19m10s

Eclipse Contacts

P1 = 22:34:16 UT

P4 = 02:53:26 UT



Penumbral Lunar Eclipse: February 10th/11th

- Peak of eclipse at 00:44 on 11th Feb
- 1st contact at 22:34 on 10th Feb



Before Eclipse



Mid-Eclipse



[23]

©2002 F. Espenak, www.MrEclipse.com

Eclipse Durations

Penumbral = 04h19m10s

[8]



P4

S

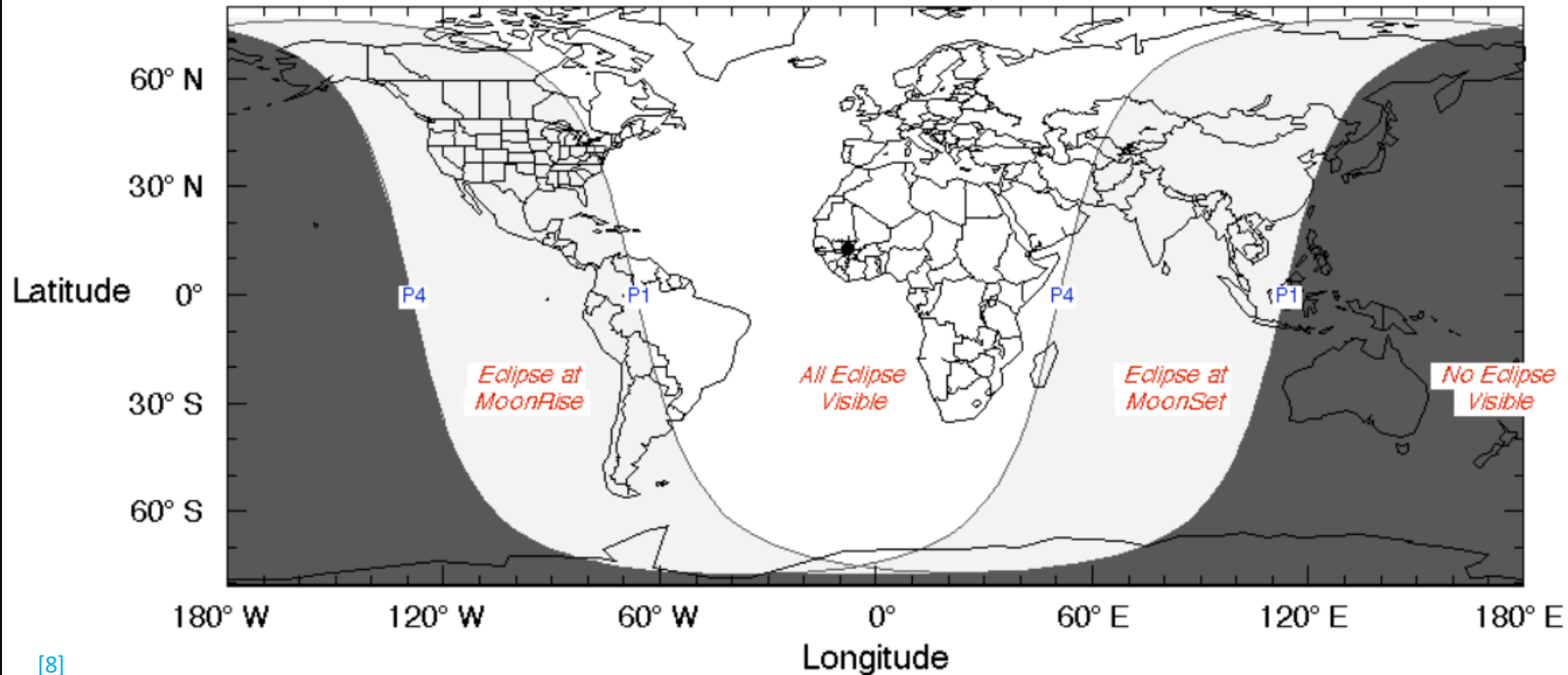
Greatest

Eclipse Contacts

P1 = 22:34:16 UT

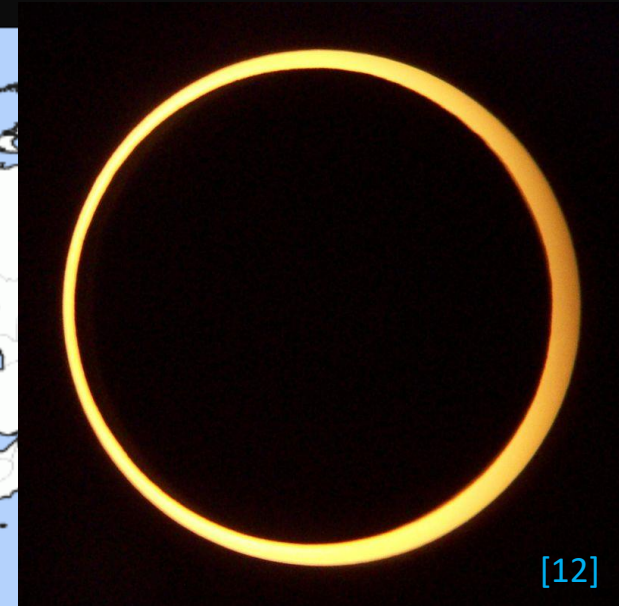
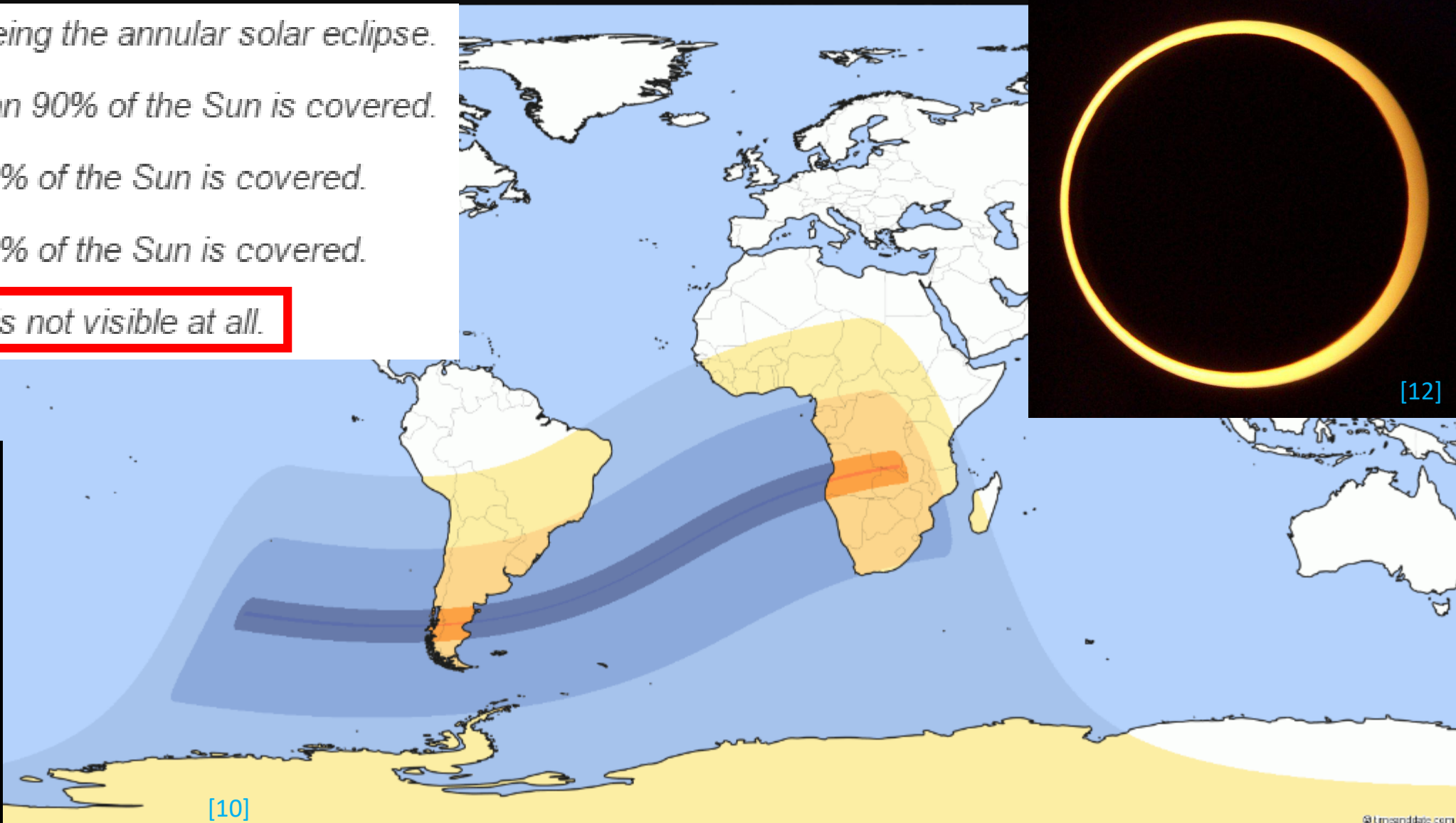
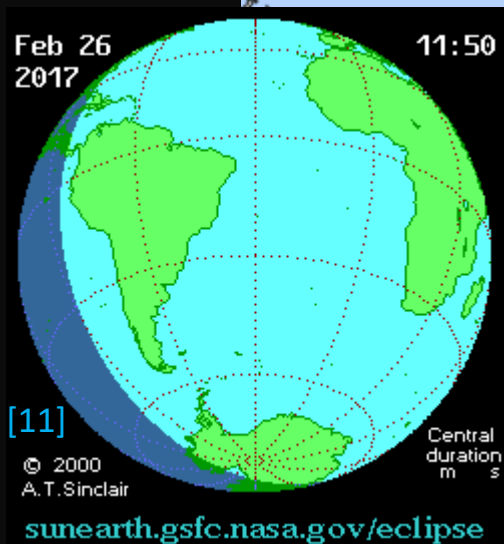
P4 = 02:53:26 UT

Penumbral Lunar Eclipse : February 10th /11th



Annular Solar Eclipse : 26th Feb (14:53)

- Area seeing the annular solar eclipse.
- More than 90% of the Sun is covered.
- Up to 90% of the Sun is covered.
- Up to 40% of the Sun is covered.
- Eclipse is not visible at all.





Orion: Signpost to the Winter Sky

The Winter Triangle

- **Procyon**: mag. 0.35
- **Betelgeuse**: mag. 0.42
- **Sirius**: mag. -1.4





Orion: Signpost to the Winter Sky

The Winter Hexagon

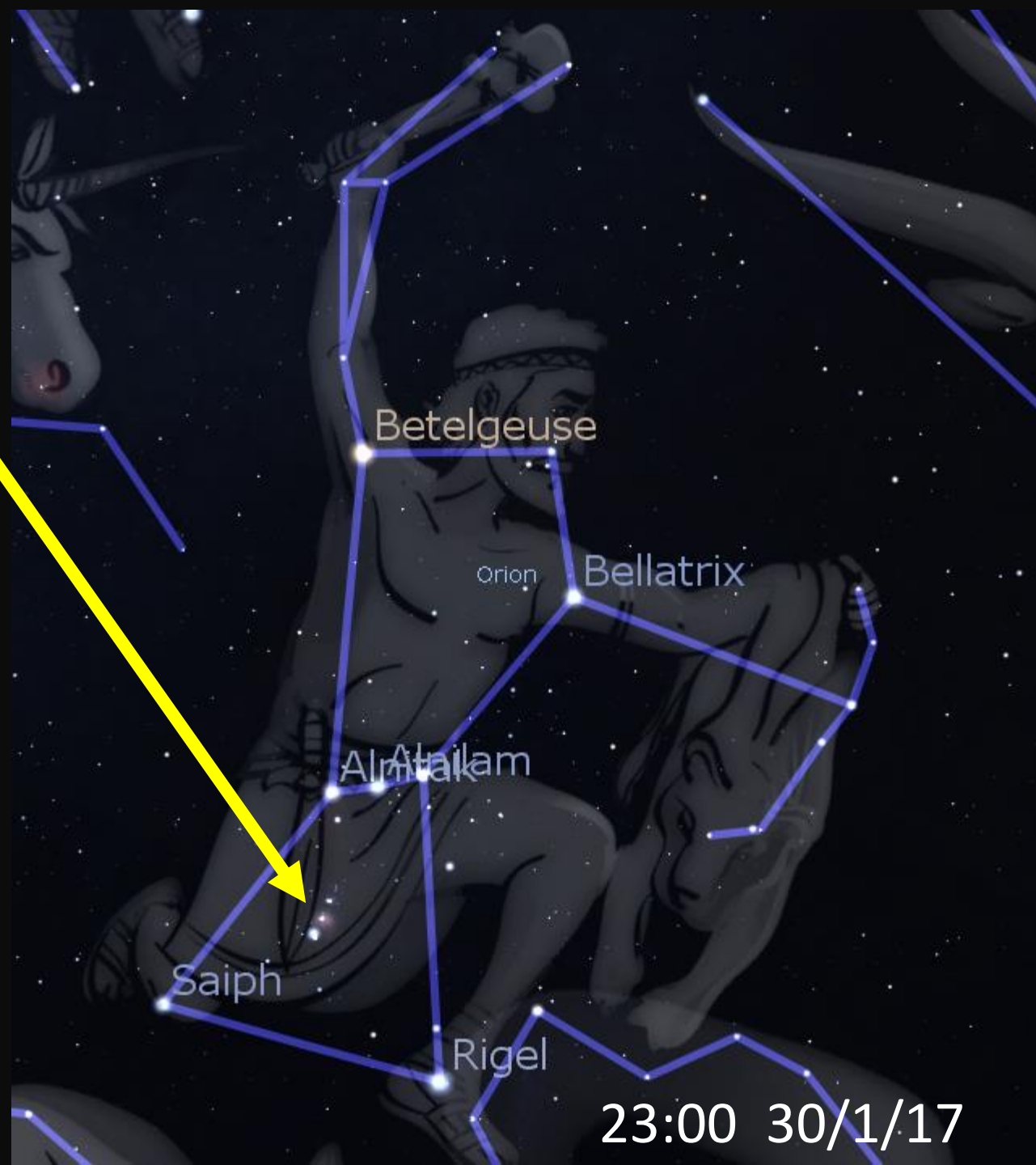
- **Procyon**: mag. 0.35
- **Sirius**: mag. -1.4
- **Rigel**: mag. 0.15
- **Aldebaran**: mag. 0.85
- **Capella**: mag. 0.05
- **Pollux**: mag. 1.15





M42 : The Orion Nebula

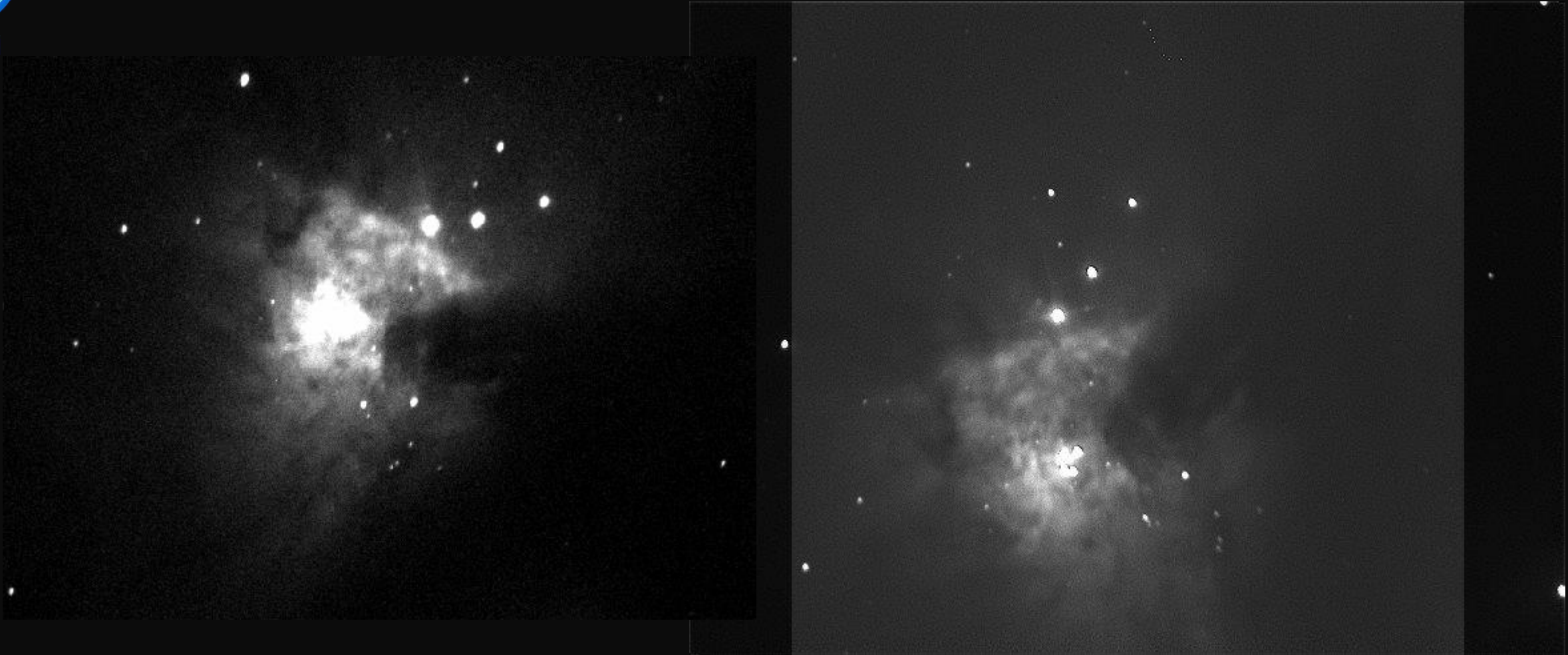
- The middle “star” / “fuzzy thing” in Orion’s sword : **Mag 4.0**.



23:00 30/1/17



AstroSoc and the Orion Nebula – M42



- Taken with AstroSoc's CCD and processed by Nathan Adams



The Orion Nebula – M42

- Easily seen – looks like a middle “star” in Orion’s sword : Mag. 4.0.
- Picture taken by Bob and Janice Fera using a 14” f/8 Ritchey Chretien Cassegrain telescope and a SBIG STL11000M CCD Camera, various filters and 5.4 hours of exposure time.





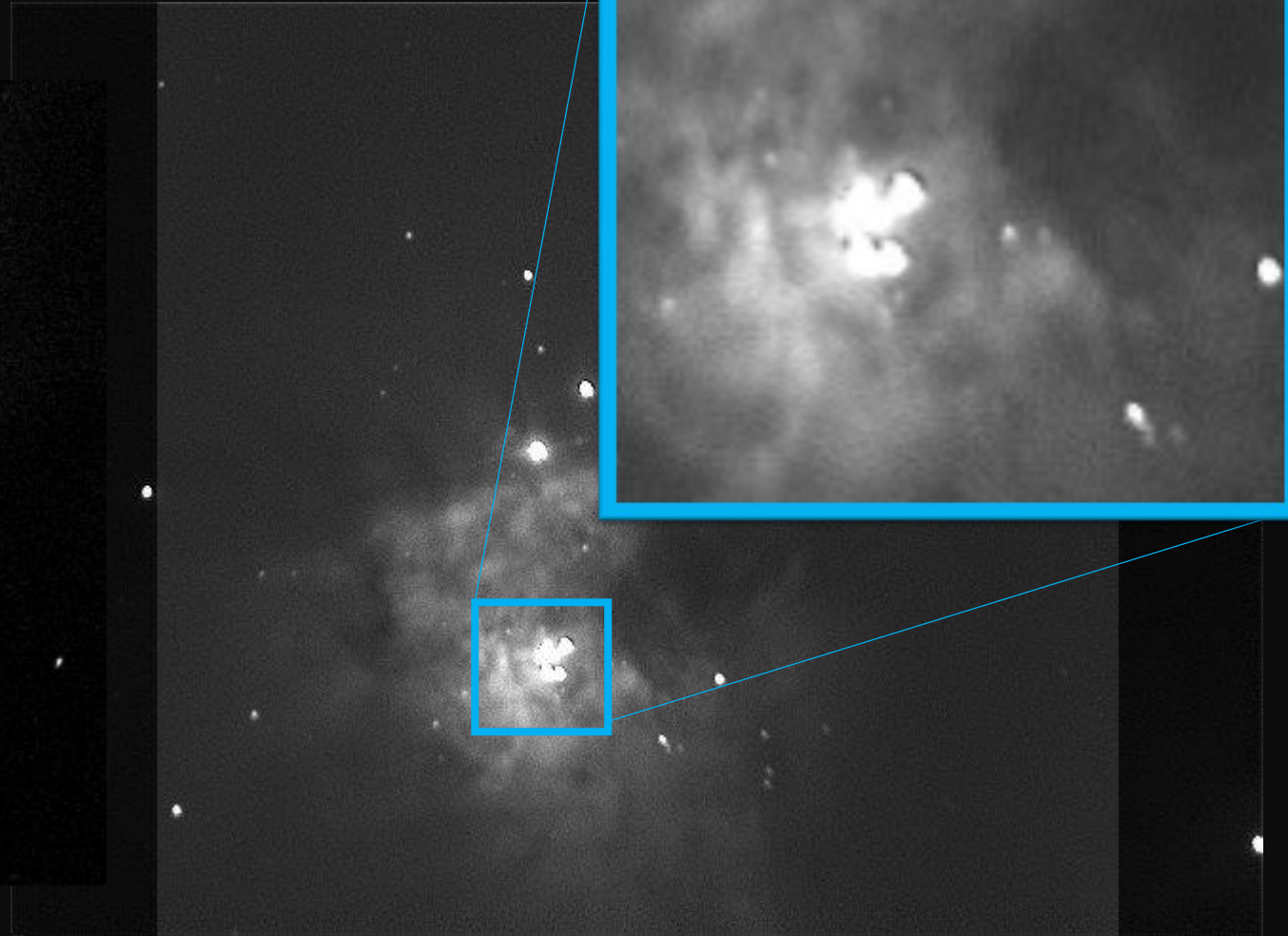
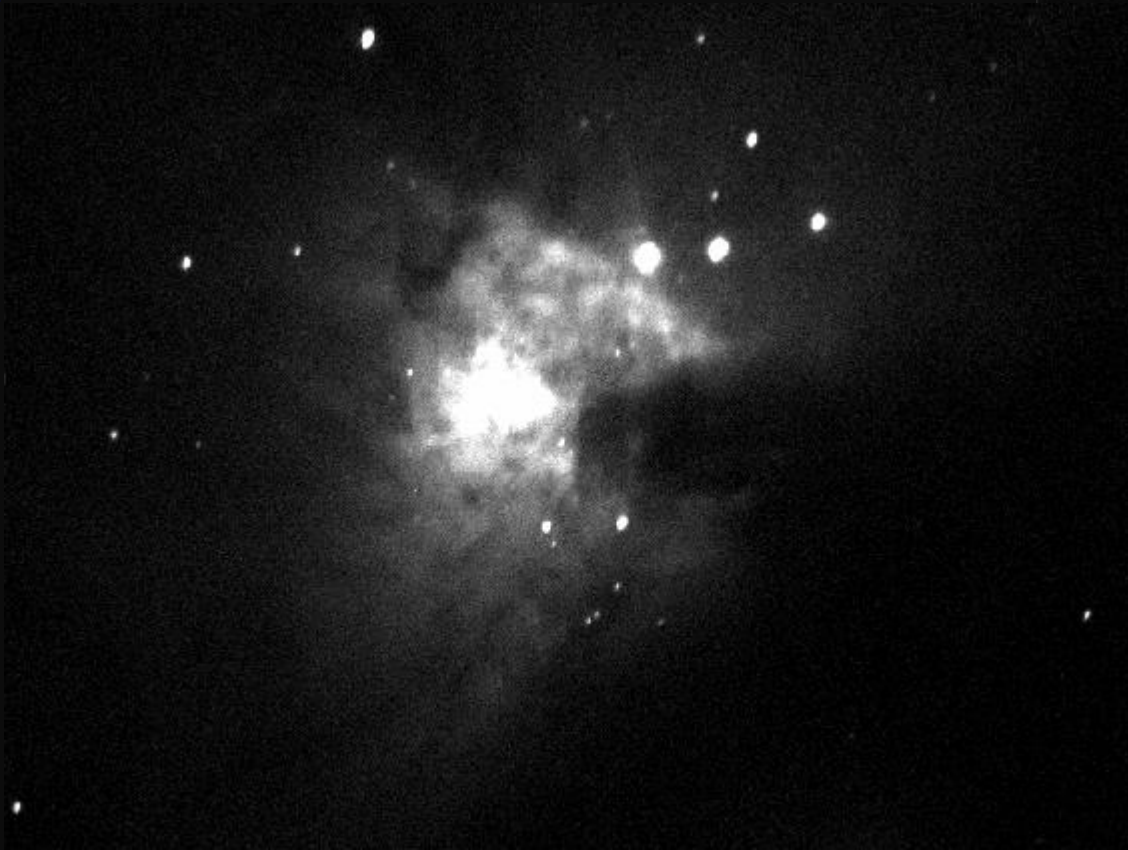
M42 : The Orion Nebula

- The middle “star” / “fuzzy thing” in Orion’s sword : **Mag 4.0**.
- Bright diffuse nebula with brightest central region about 1° across.
- 100 ly away and ~ 60 ly across.
- The **closest known star forming region** – filled with lots of young stars (**Trapezium cluster**).
- Galileo discovered the Trapezium cluster (4/2/1617) but missed the nebula...





AstroSoc and the Orion Nebula – M42



- Taken with AstroSoc's CCD and processed by Nathan Adams



Summary

- **Moon and Planets this month:**

- Look out for **Moon + Aldebaran** on Feb 5th
- Look for **Venus and Mars** just after sunset (W) and **Jupiter** after midnight (SE)
- Good chance to spot **Vesta**!

- **Eclipses:**

- **Penumbral Lunar eclipse** visible from UK on 10/11th Feb (1st contact ~10:30 pm)

- **The Winter Sky and Orion:**

- Look for the **Winter Triangle** and **Winter Hexagon**
- **M42** Orion Nebula

- **Extra slides online !**

- Deep sky objects in Auriga



The Sky This Month

Joel Swallow

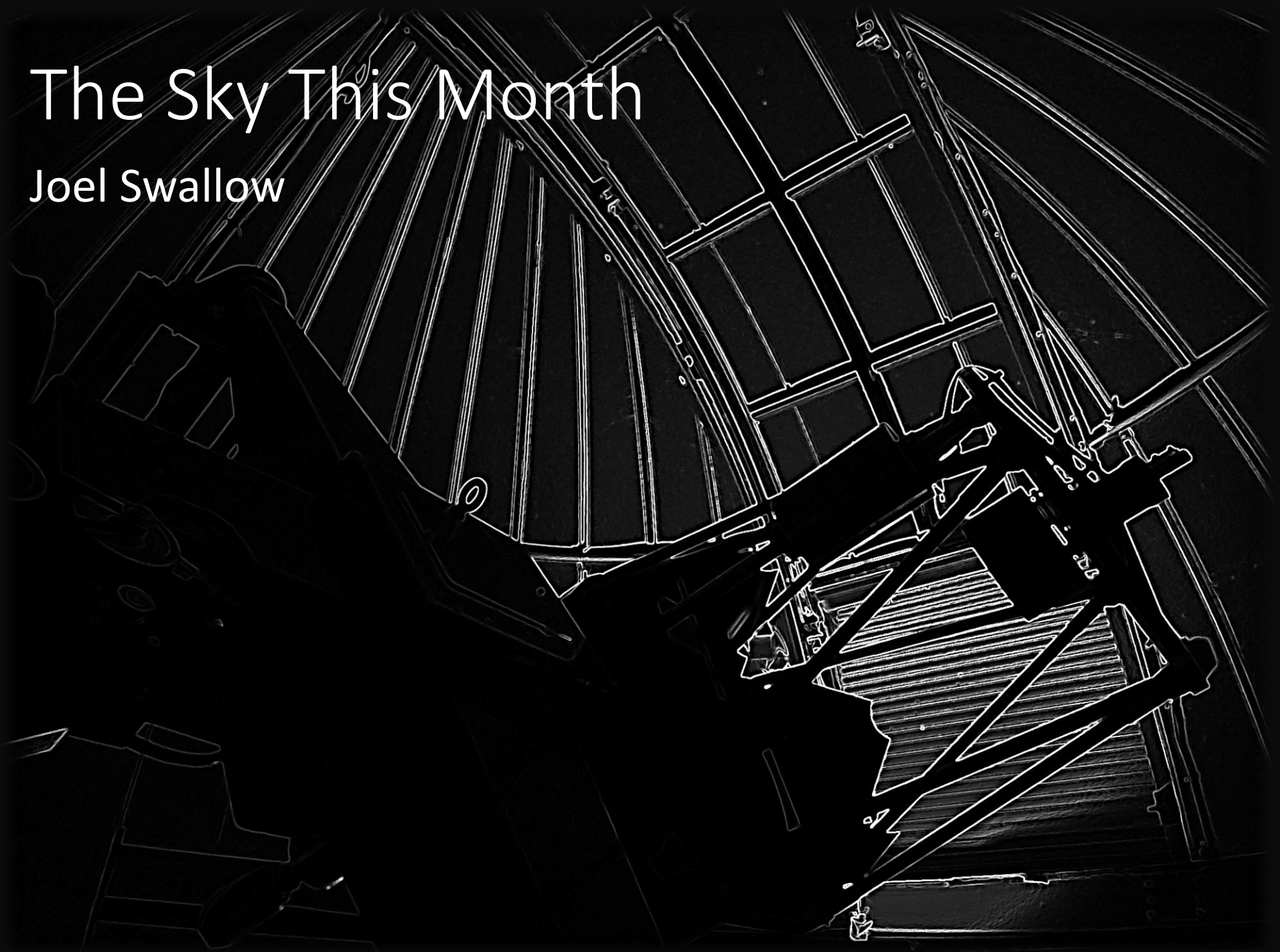




Photo Credit

1. <http://www.moongiant.com/phase/01/25/2017>
2. <https://cdn.shopify.com/s/files/1/0887/0976/files/wolfmoon.jpg?410589517617765376>
3. https://journeyingtothegoddess.files.wordpress.com/2012/03/full_snow.jpg?w=640
4. <https://saviorssoup.files.wordpress.com/2014/10/thief-at-night.jpg>
5. <http://2.bp.blogspot.com/-yrjROnUTRtk/UHugMvnzj1I/AAAAAAAABnQ/1N27MdbNuol/s1600/787px-Galileanasnom.PNG>
6. http://www.paullknight.com/wp-content/uploads/2013/03/K01_8312-2.jpg
7. http://sbo.colorado.edu/SBO_OLD_SITE/sbo/astroinfo/galileo/galileo.voyager.jupiter.jpg
8. <https://eclipse.gsfc.nasa.gov/LEplot/LEplot2001/LE2017Feb11N.pdf>
9. http://www.moongiant.com/Lunar_Eclipse_Calendar.php
10. <https://www.timeanddate.com/eclipse/solar/2017-february-26>
11. https://en.wikipedia.org/wiki/Solar_eclipse_of_February_26,_2017#/media/File:SE2017Feb26A.GIF
12. https://en.wikipedia.org/wiki/Solar_eclipse#/media/File:Annular_Eclipse._Taken_from_Middlegate,_Nevada_on_May_20,_2012.jpg
13. http://space.rice.edu/eclipse/lunar_eclipse_faq.html
14. <http://www.skyandtelescope.com/wp-content/uploads/Aldebaran-and-MoonMichaelStecker.jpg>
15. <http://www.abmedia.com/astro/planets/moon-aldebaran.jpg>
16. <http://www.abmedia.com/astro/planets/1994-eclipse-composite.html>
17. <http://i.imgur.com/rl8qvBD.jpg>
18. <http://www.feraphotography.com/AM14/M42.html>
19. <http://astropixels.com/openclusters/M36-01.html>
20. <http://astropixels.com/openclusters/M37-01.html>
21. <https://amazingsky.net/2013/02/14/a-luminous-starfield/>
22. <http://www.daviddarling.info/encyclopedia/V/Vesta.html>
23. http://en.es-static.us/upl/2012/05/penumbral_eclipse_11-20-2002_Fred_Espenak.jpeg

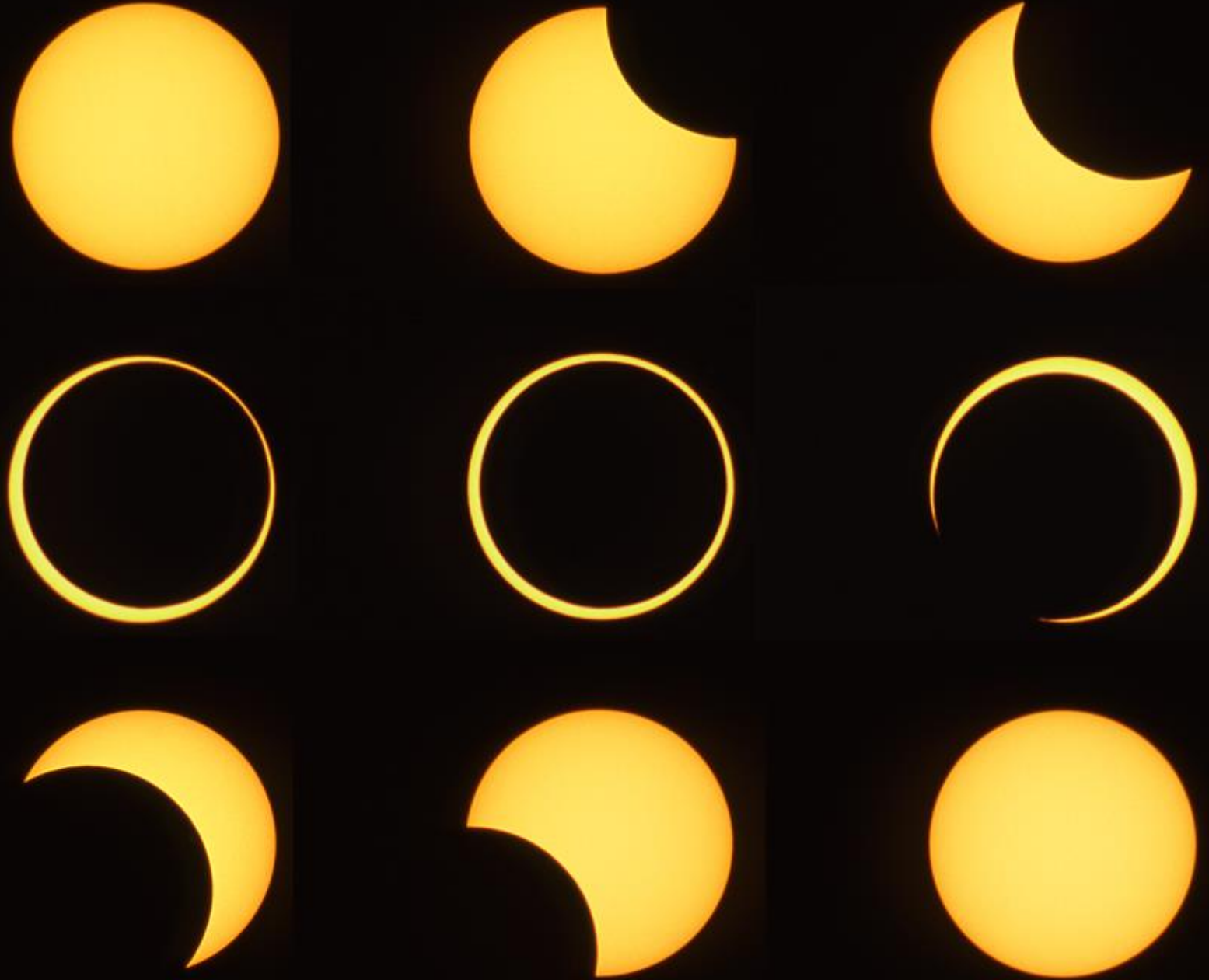


The Moon and Jupiter Meet at Midnight

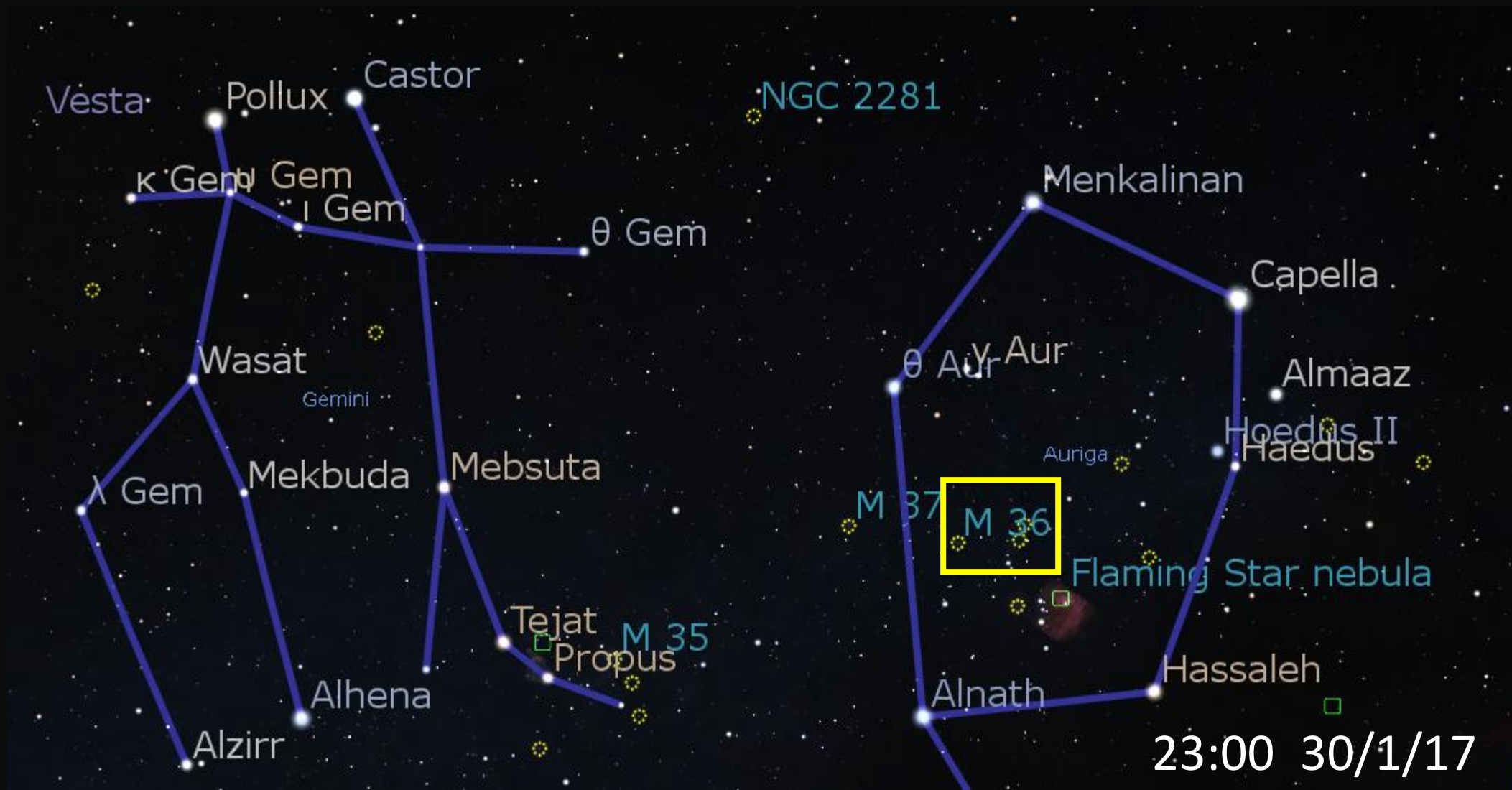


00:00 16/2/17

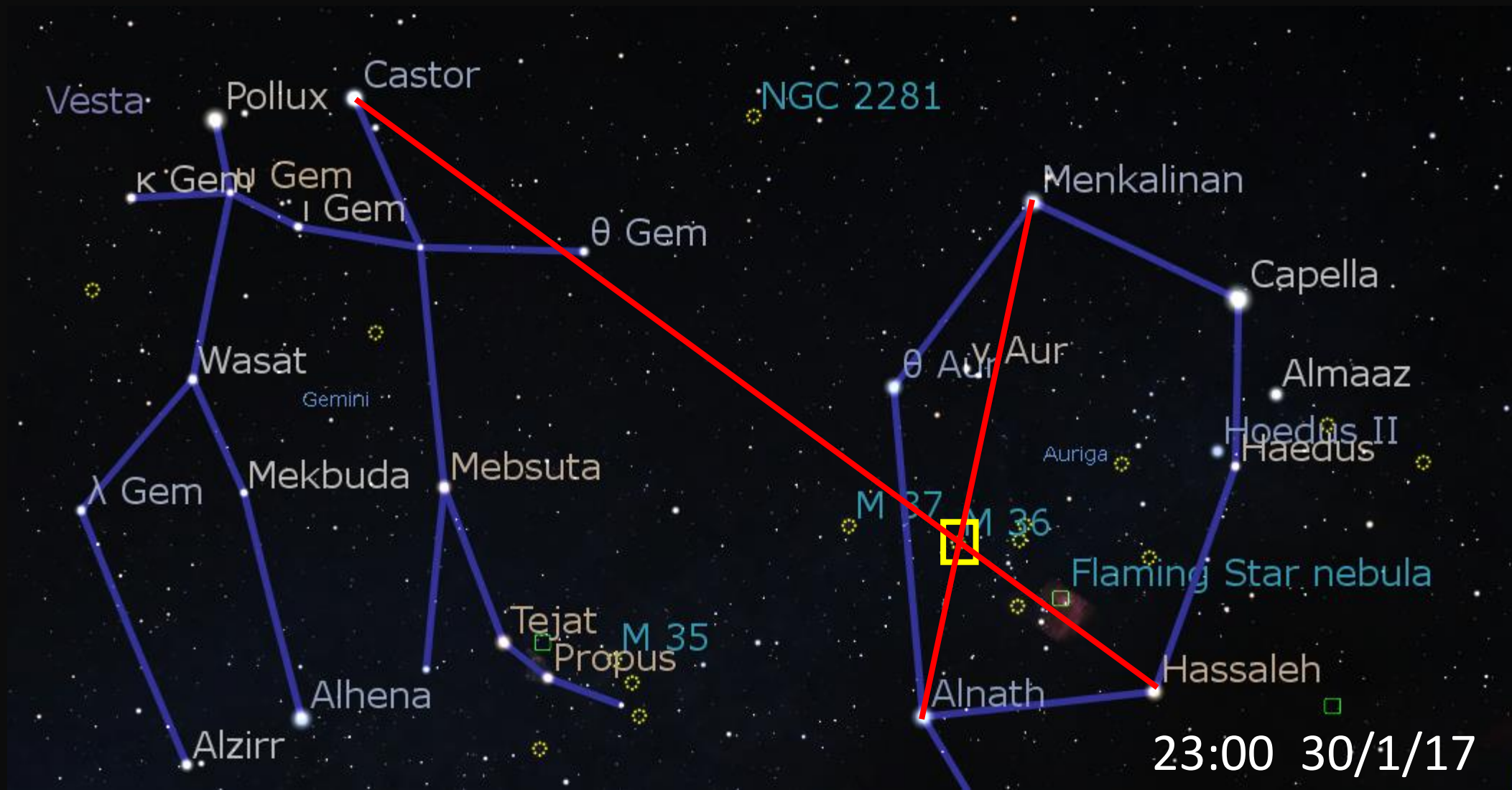
Annular Solar Eclipse 1994



M36 : Open Cluster in Auriga

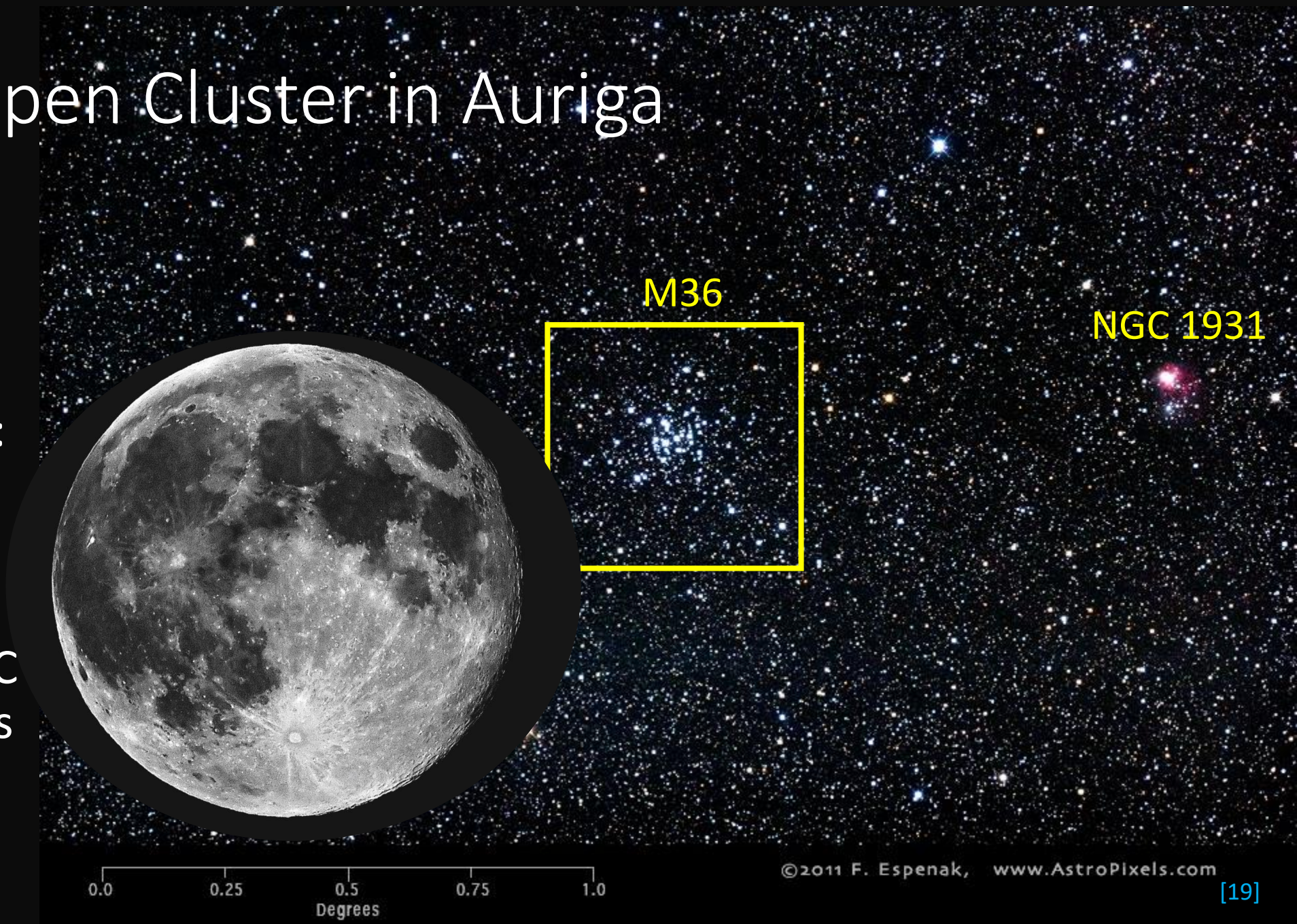


M36 : Open Cluster in Auriga



M36 : Open Cluster in Auriga

- Apparent visual magnitude : 6.3.
- Angular diameter : 12 arc-minutes (~1/2 size of full moon).
- diffuse nebula NGC 1931 (mag. 10.1) is also shown.



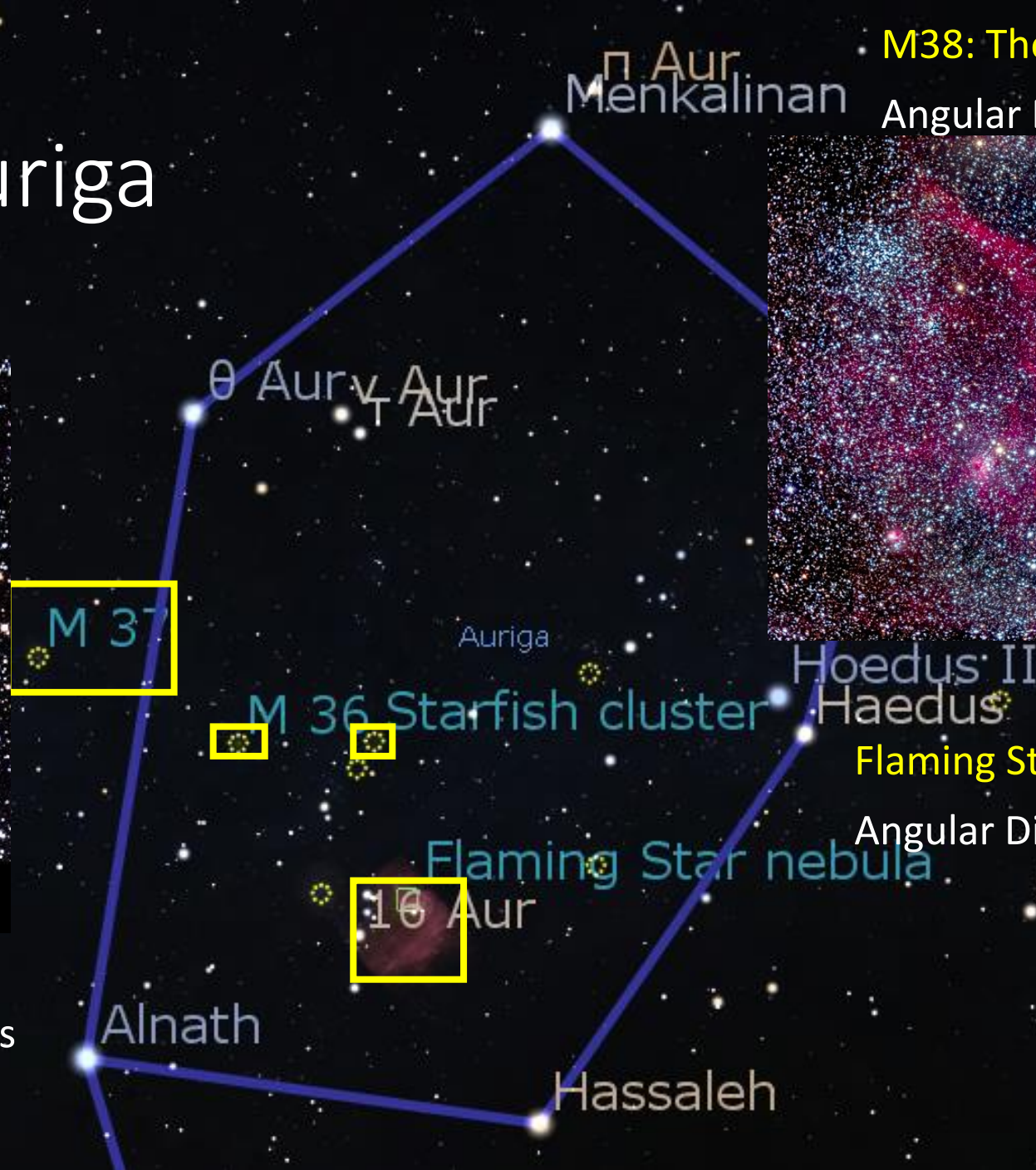


Also in Auriga



M37 : mag 6.2,

Angular Diameter 24 arc minutes



M38: The Starfish Cluster : mag 7.4,
Angular Diameter 21 arc minutes



Flaming Star Nebula: mag 6.0,
Angular Diameter ~30 arc minutes

