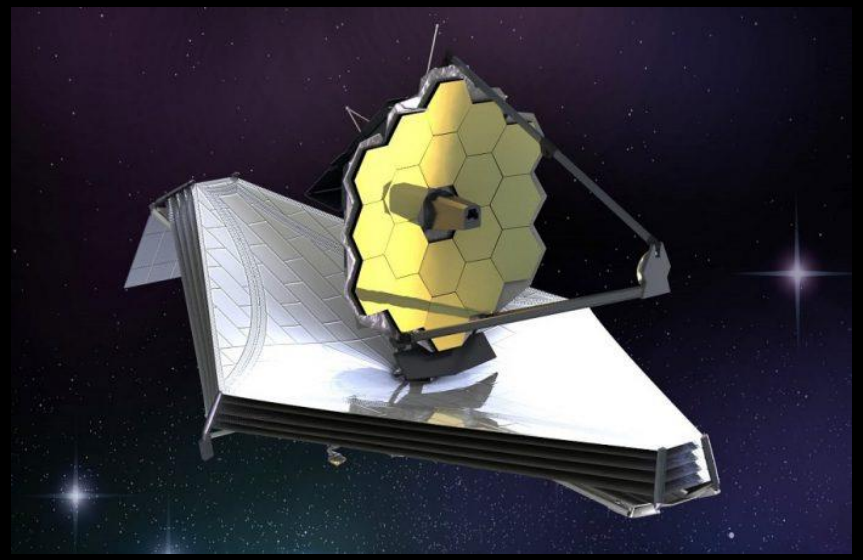

TU 10:12:44
TD -02:07:16
H0 12:20:00
AUTORISATION LANCEMENT
ETAT BASE
ENSEMBLE de LANCEMENT
LOGISTIQUE
LANCEUR
SAUVEGARDE
WEBB SPACE TELESCOPE
MESURES
TELEMESURE
LOCALISATION
TELECOM
METEO
NEC
NEC

James Webb Space Telescope

JWST

NASA • ESA • CSA



Cometa Leonard C/2021 A1

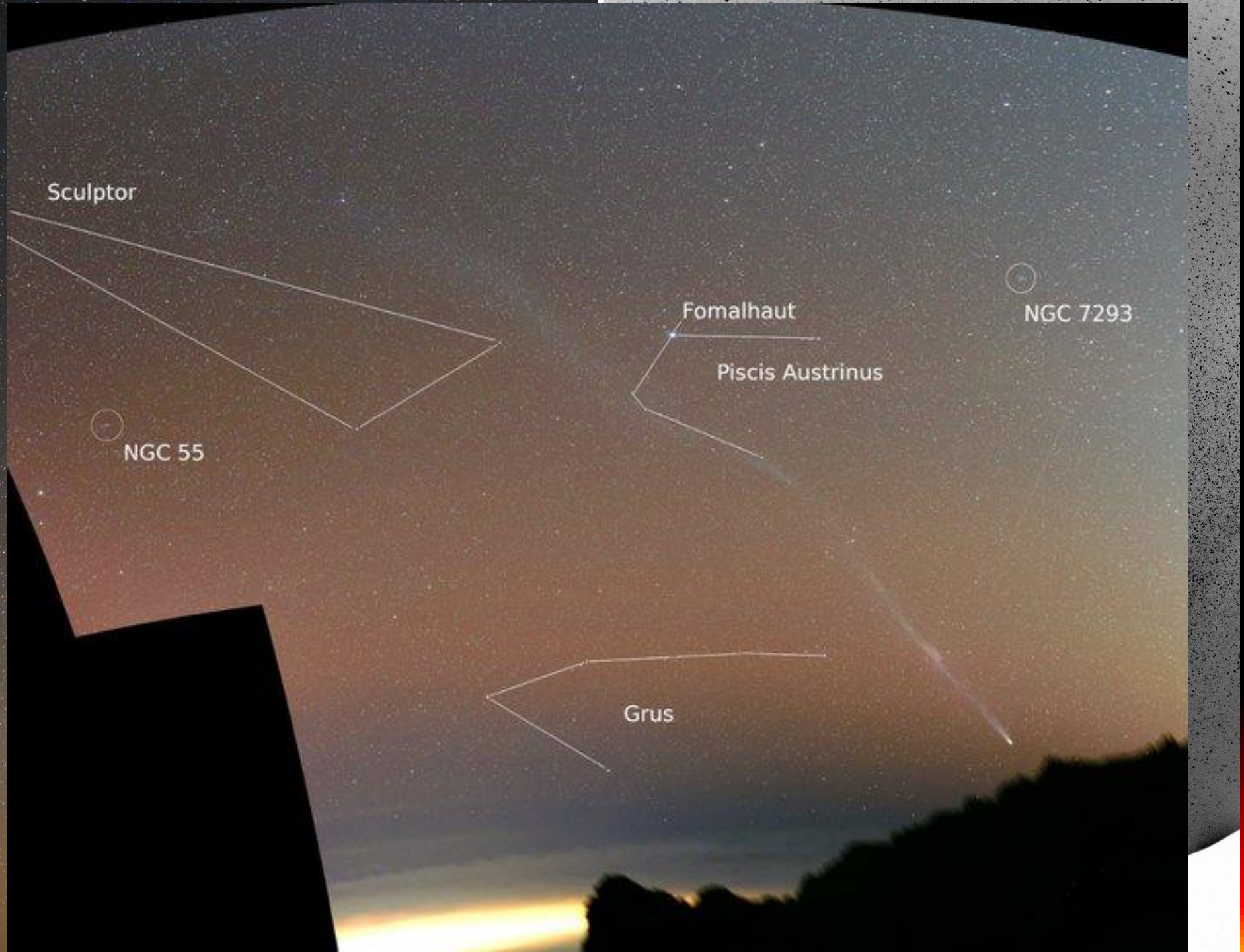
https://youtu.be/74n89eoF7Ww Osservazione della cometa Leonard da Atacama con Daniele Gasparri

La cometa C/2021 A1 (Leonard)
Scoperta il 3/1/2021 con periodo di circa 80000 anni
Afelio a circa 11500 UA (Plutone 40 UA)

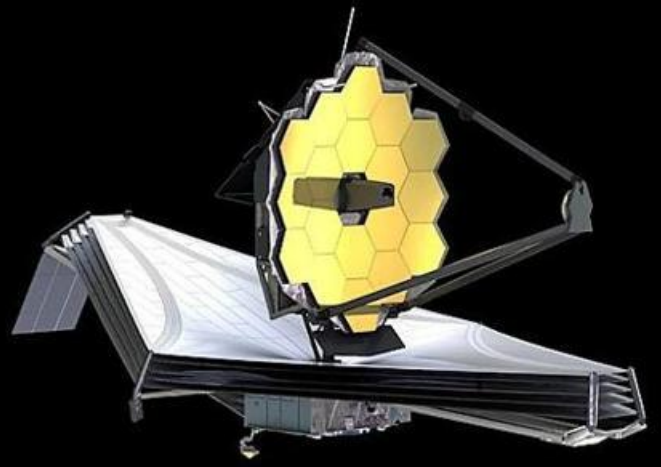
Poco visibile nei nostri cieli a Dicembre, ha dato spettacolo una volta raggiunto il perielio il 3/1/2022 quando era nel cielo australe

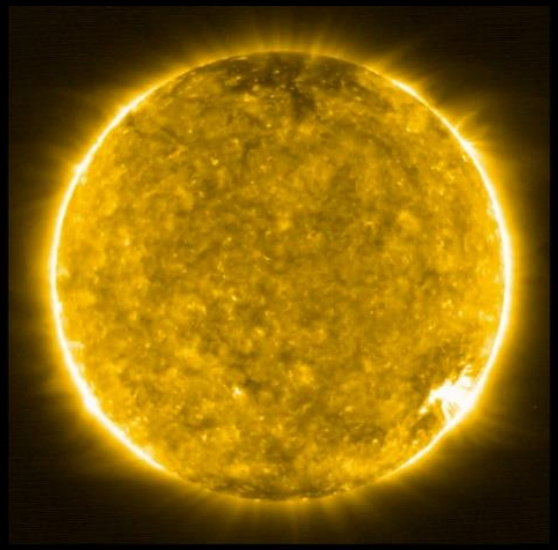
← 24 dicembre il nucleo ha una frammentazione

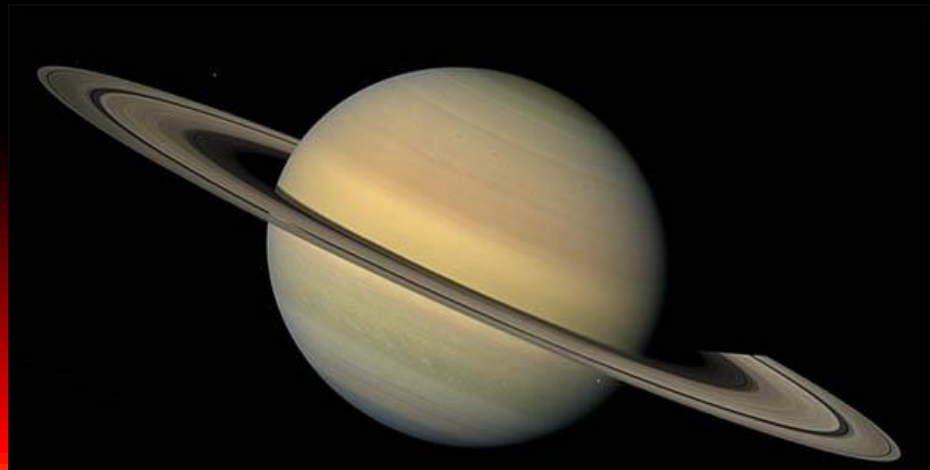
27 dicembre si vedono gli effetti della framentazione →


Sculptor
NGC 55
Fomalhaut
Piscis Austrinus
NGC 7293
Grus

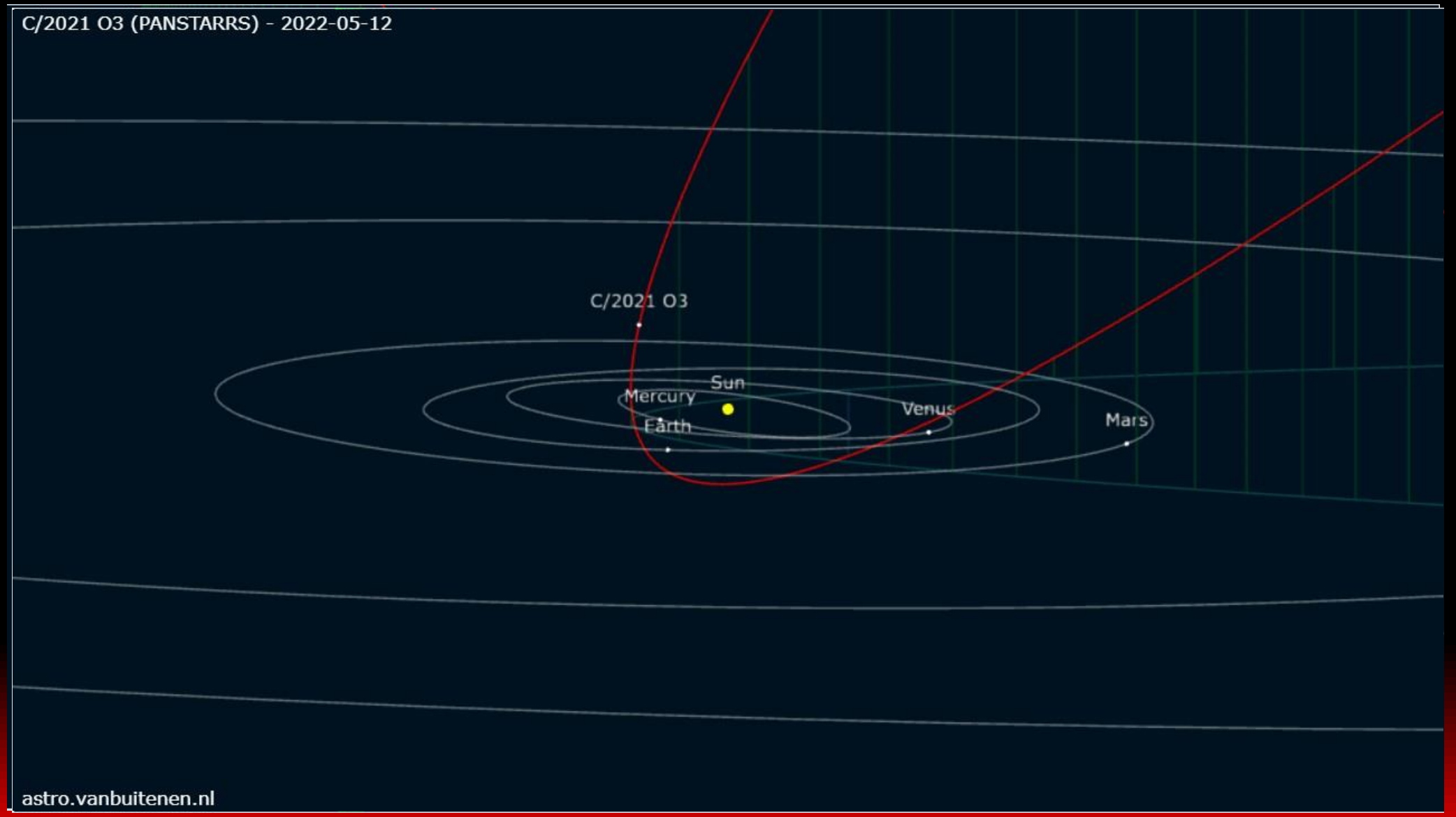
Fenomeni astronomici del 2022

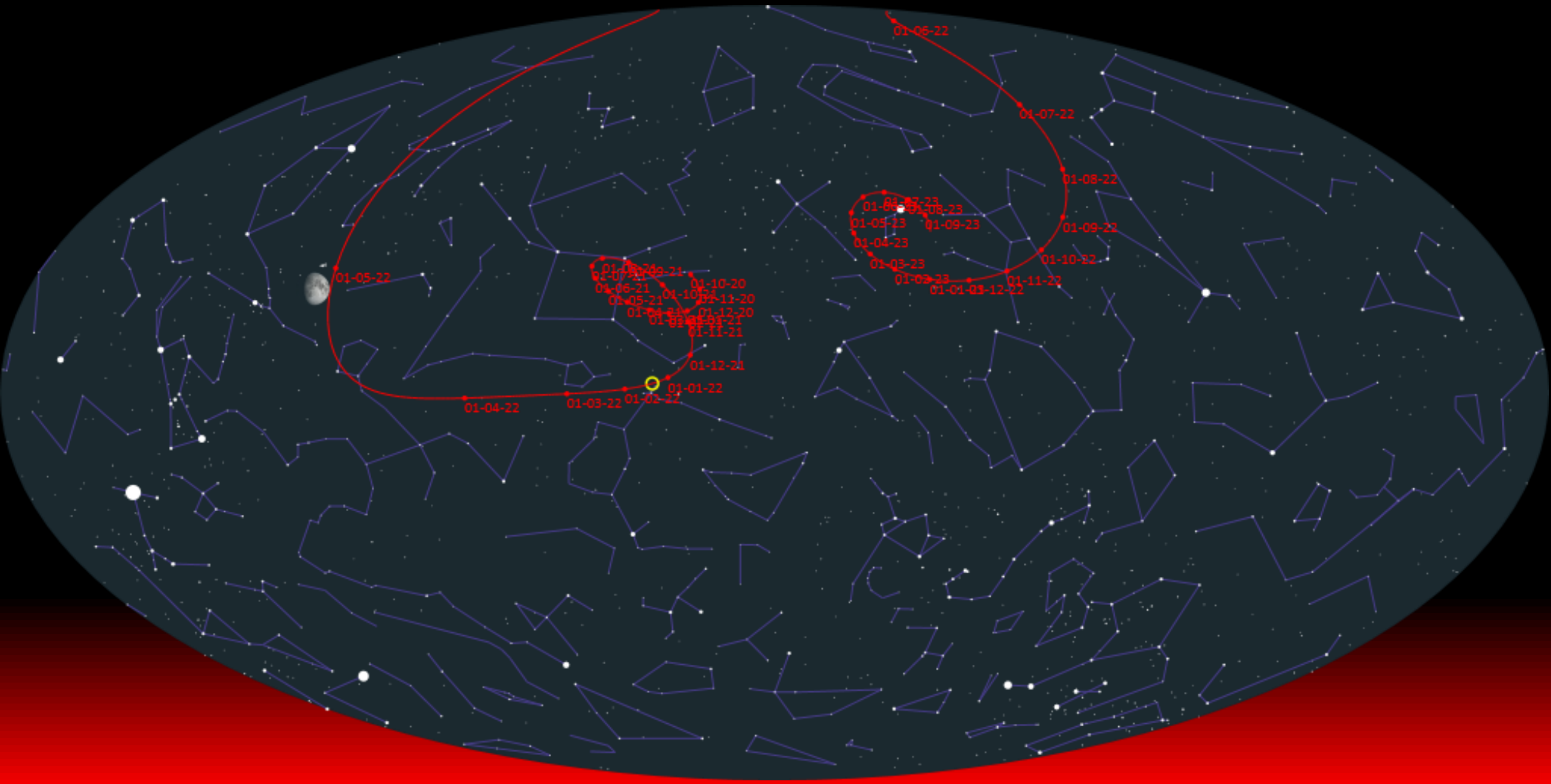






C/2021 O3 (PanSTARRS) scoperta il 26 luglio 2021, ora di mag. 16 fa ben sperare per la prossima primavera,
Il 21 Aprile passa al perielio a 0.2 UA dal Sole




01-06-22
01-07-22
01-08-22
01-09-22
01-10-22
01-11-22
01-12-22
01-01-23
01-02-23
01-03-23
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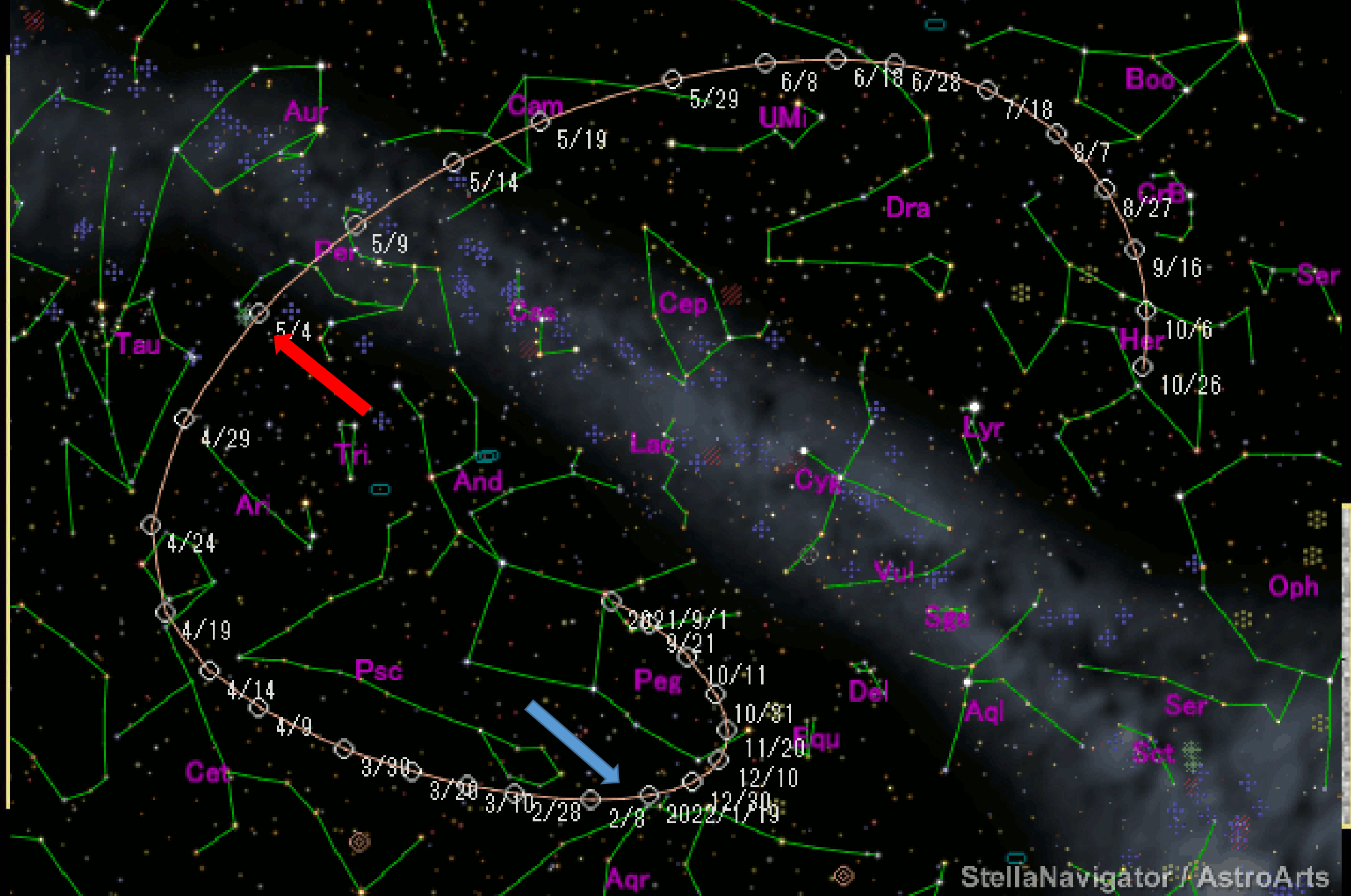
01-12-20
01-11-20
01-10-20


Aur
Cam
UMi
Boo
Dra
CrB
Ser
Her
Lyr
Cep
Cas
Per
Tau
Tri
And
Ari
Lac
Cyg
Vul
Sge
Oph
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Del
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Psc
Peg
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Sct
Aqr
5/4
5/9
5/14
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6/8
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8/27
9/16
10/6
10/26
4/29
4/24
4/19
4/14
4/9
3/30
3/20
3/10
2/28
2/8
2022/1/19
12/30
12/10
11/20
10/31
10/11
9/21
2021/9/1
StellaNavigator / AstroArts

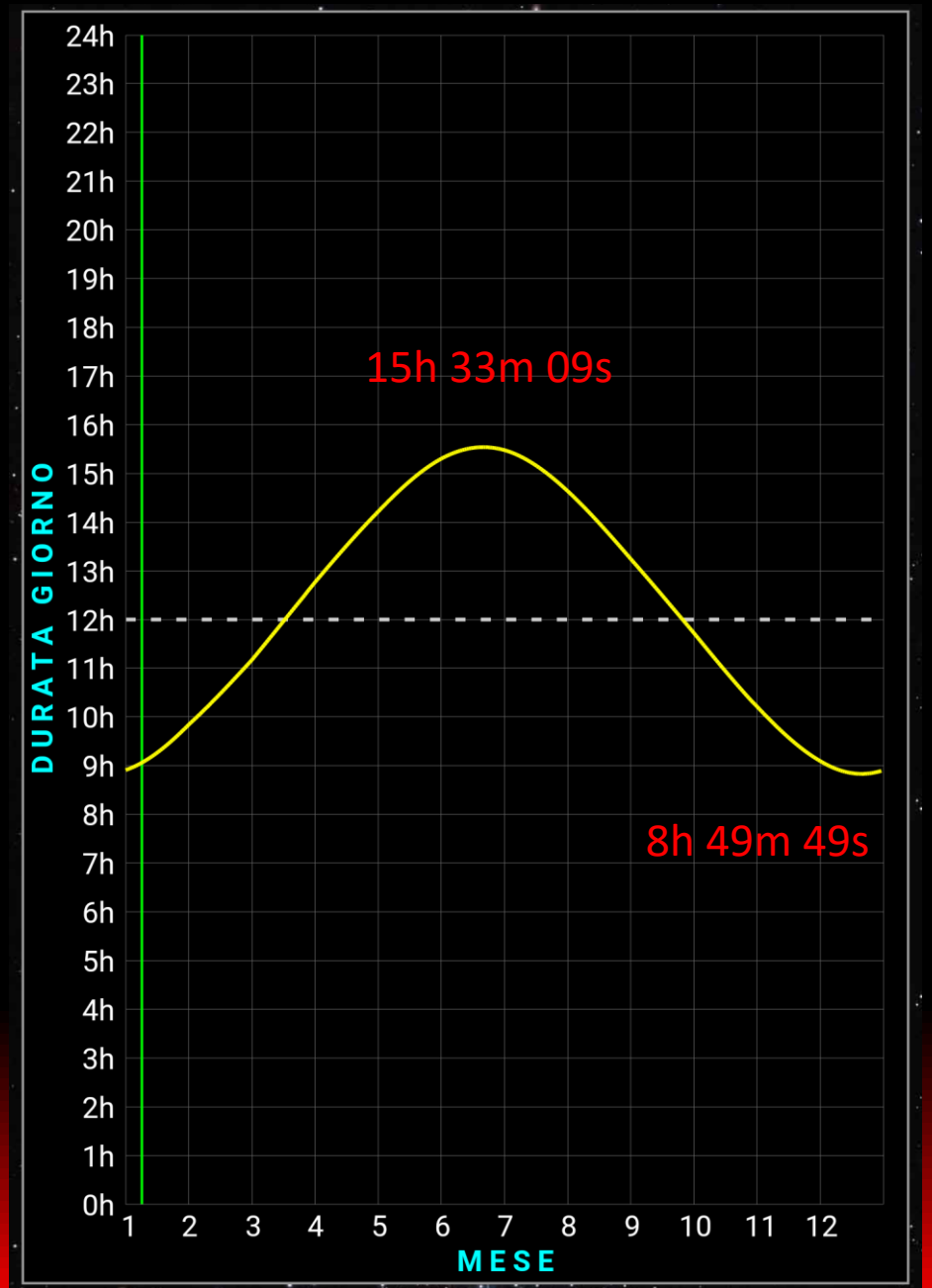
SCIAME	Visibilità	Punto di origine	Data del massimo	Num. per ora **	Progenitore
Quadrantidi	**Prima dell'alba**	**N**	**Jan. 3–4**	**25**	—
Lyridi	Prima dell'alba	S	Apr. 21–22	10	Thatcher
Eta Aquaridi	Prima dell'alba	SE	May 4–5	10	Halley
Delta Aquaridi	Prima dell'alba	S	July 28–29	10	—
Perseidi	Prima dell'alba	**NE**	**Aug. 11–12**	**50**	**Swift-Tuttle**
Draconidi	Tarda serata	NW	Oct. 8–10	6	Giacobini-Zinner
Orionidi	Prima dell'alba	S	Oct. 20–21	15	Halley
Tauridi nord	Late evening	S	Nov. 11–12	3	Encke
Leonidi	Prima dell'alba	S	Nov. 16–17	10	Tempel-Tuttle
Andromeidi	Tarda serata	S	Nov. 25–27	5	Biela
Geminidi	**Tutta la notte**	**NE**	**Dec. 13–14**	**75**	—
Ursidi	Prima dell'alba	N	Dec. 21–22	5	Tuttle

Equinozi e solstizi del 2022

20 marzo alle 16:33	equinozio di primavera
21 giugno alle 11:13	solstizio d'estate
23 settembre alle 03:04	equinozio d'autunno
21 dicembre alle 22:47	solstizio d'inverno

da: greenwichmeantime.com ora TMEC

4 gennaio Terra al perelio - distanza dal Sole 147 MKm (32',5)
4 luglio Terra all'afelio - distanza dal Sole 152 MKm (31',5)



Latitudine: 44°24'29"N

Bologna

Ora standard dell'Europa centrale

	Alba	Tramonto	Mezzog.
Ora:	07:48	16:58	12:23
Azimut:	119,9°	240,2°	180,0°
Altezza:	-0.6°	-0.6°	24,1°

Durata del giorno: 9h 09m 36s

Ieri: +1m 38s

Solstizio d'inverno: +19m 47s

Solstizio d'estate: -6h 23m 33s

Crepuscolo (Inizio / Fine):

Astronomico:	06:05 - 06:39
	18:06 - 18:41
Nautico:	06:39 - 07:16
	17:30 - 18:06
Civile:	07:16 - 07:48
	16:58 - 17:30

Equazione del tempo: -8:40

Declinazione: -21,4°

Distanza: 147.135.840 km

giovedì 13 gennaio 2022

Le eclissi del 2022

30	Aprile	eclisse parziale di Sole	☹
16	Maggio	eclisse totale di Luna	☺
25	Ottobre	eclisse anulare di Sole	☺
8	Novembre	eclisse totale di Luna	☹

Partial Solar Eclipse of 2022 Apr 30

Geocentric Conjunction = 19:40:42.5 UT J.D. = 2459700.319937
Greatest Eclipse = 20:41:20.2 UT J.D. = 2459700.362039

Eclipse Magnitude = 0.6389 Gamma = -1.1900

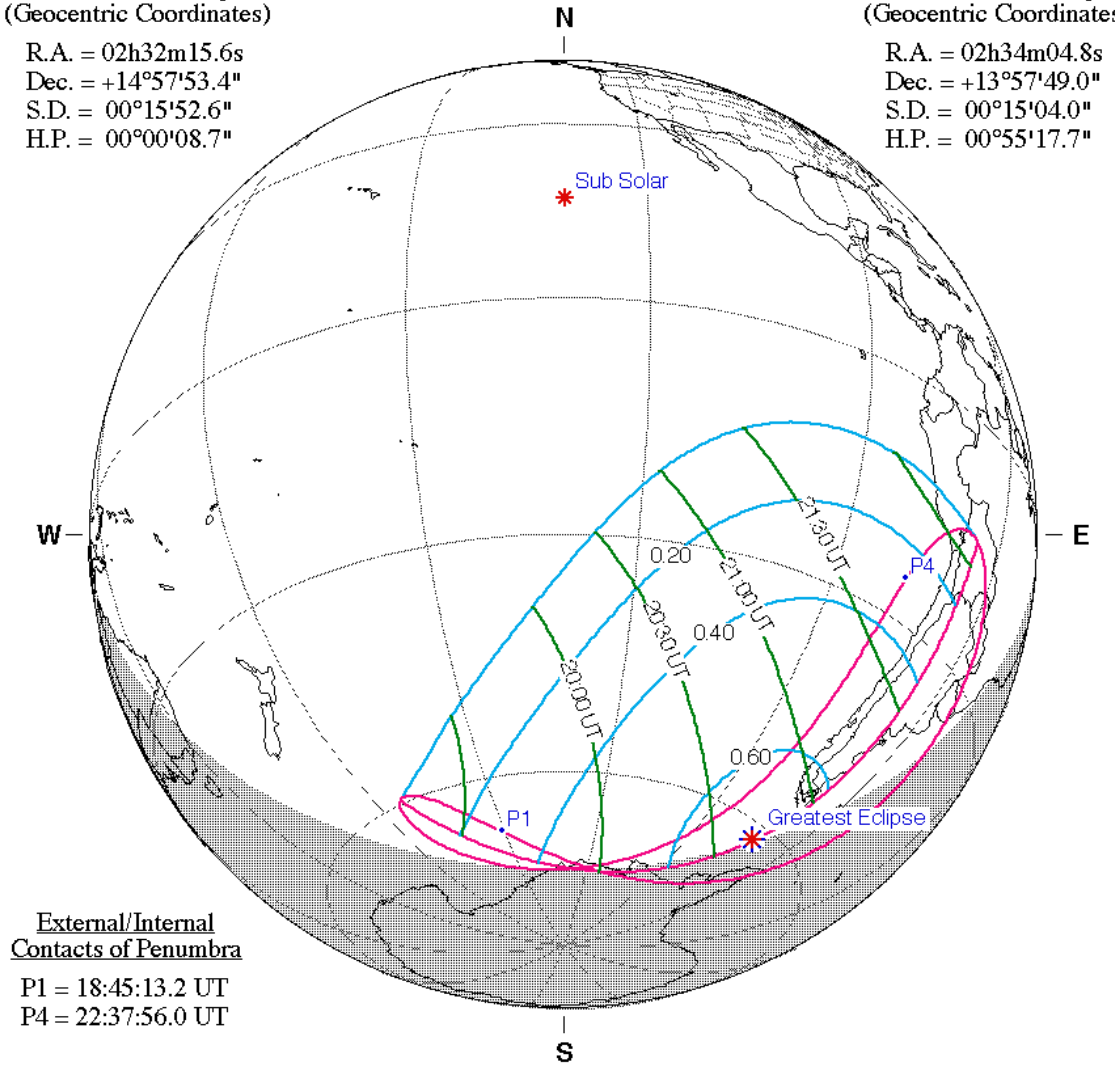
Saros Series = 119 Member = 66 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 02h32m15.6s
Dec. = +14°57'53.4"
S.D. = 00°15'52.6"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 02h34m04.8s
Dec. = +13°57'49.0"
S.D. = 00°15'04.0"
H.P. = 00°55'17.7"



External/Internal
Contacts of Penumbra

P1 = 18:45:13.2 UT
P4 = 22:37:56.0 UT

Total Lunar Eclipse of 2022 May 16

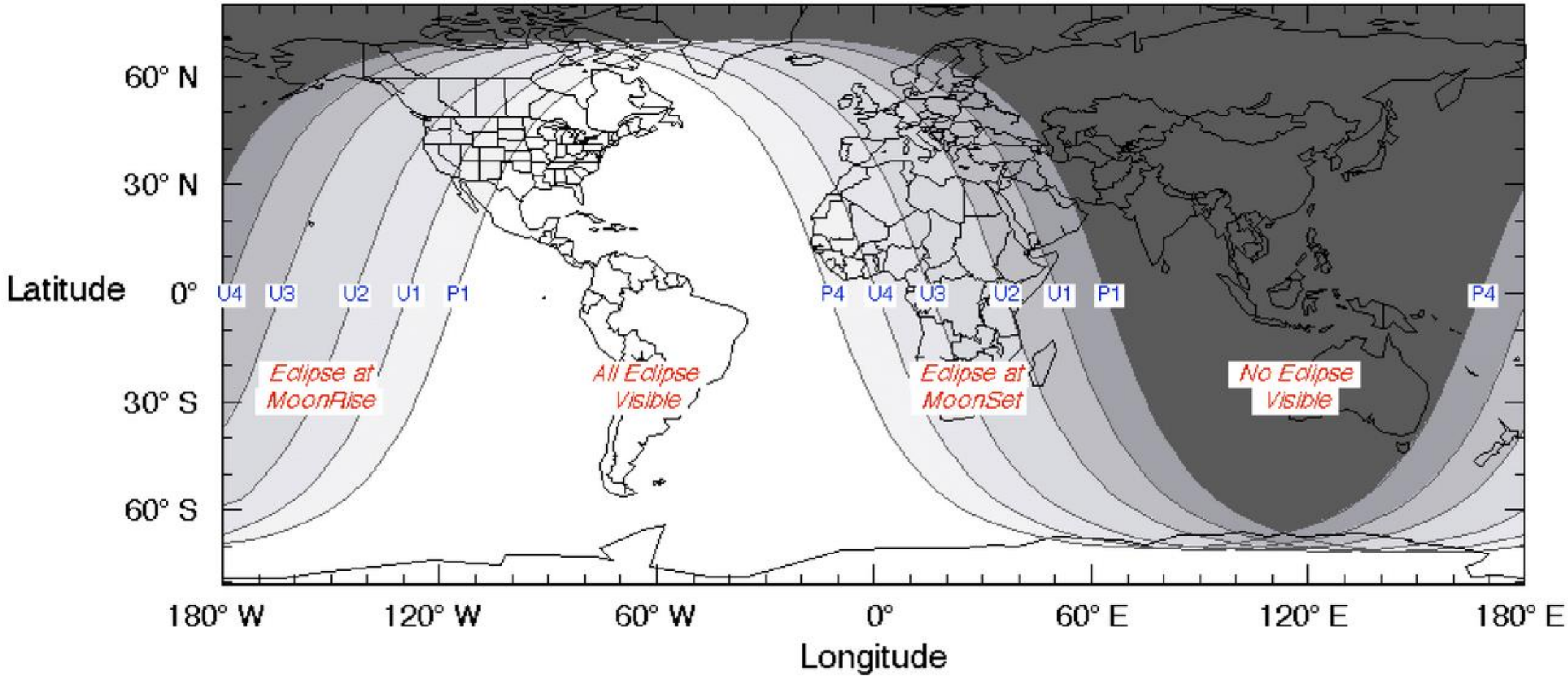
A Bologna inizia alle 4:28 a 11 gradi sull'orizzonte

Totalità alle 5:29 mentre tramonta

Ecliptic Conjunction = 04:15:18.8 TD (= 04:14:06.0 UT)

Greatest Eclipse = 04:12:41.6 TD (= 04:11:28.8 UT)

Penumbral Magnitude = 2.3726 P. Radius = 1.2854° Gamma = -0.2532



Partial Solar Eclipse of 2022 Oct 25

Geocentric Conjunction = 10:03:36.7 UT J.D. = 2459877.919175
Greatest Eclipse = 11:00:00.4 UT J.D. = 2459877.958338

Eclipse Magnitude = 0.8611 Gamma = 1.0700

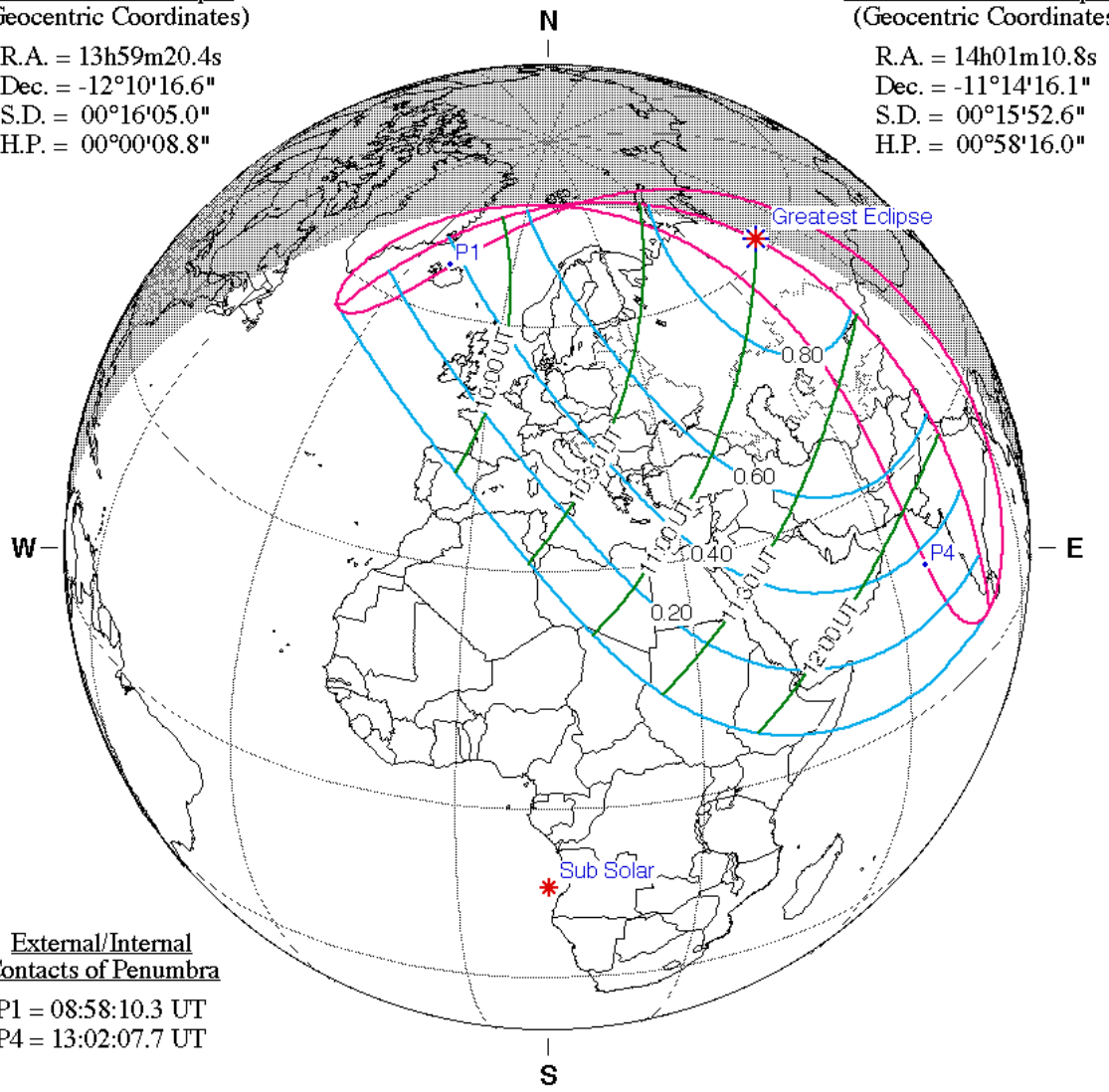
Saros Series = 124 Member = 55 of 73

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 13h59m20.4s
Dec. = -12°10'16.6"
S.D. = 00°16'05.0"
H.P. = 00°00'08.8"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 14h01m10.8s
Dec. = -11°14'16.1"
S.D. = 00°15'52.6"
H.P. = 00°58'16.0"



External/Internal Contacts of Penumbra

P1 = 08:58:10.3 UT
P4 = 13:02:07.7 UT

Bologna (Italy)

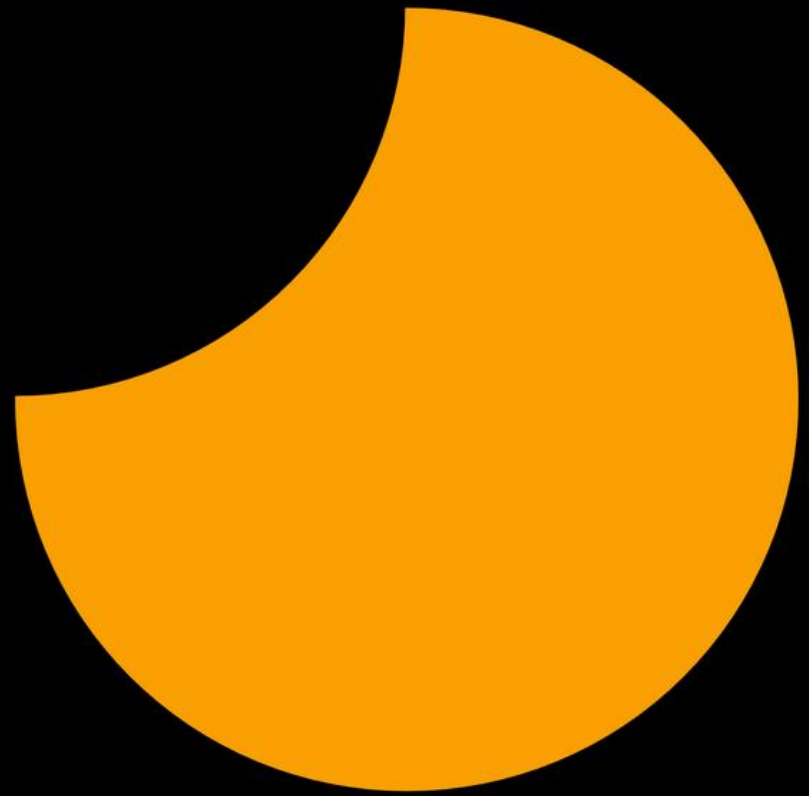
Azi. 167° Alt. 32° Obs (%): 17.8

Time: 12h 14m 32s

Central European Standard Time

Greatest Z Live

Inizio 11:20 → fine 13:15



Total Lunar Eclipse of 2022 Nov 08

Ecliptic Conjunction = 11:03:18.4 TD (= 11:02:05.3 UT)
Greatest Eclipse = 11:00:22.0 TD (= 10:59:08.8 UT)

Penumbral Magnitude = 2.4143 P. Radius = 1.2164° Gamma = 0.2570
Umbral Magnitude = 1.3589 U. Radius = 0.6783° Axis = 0.2404°

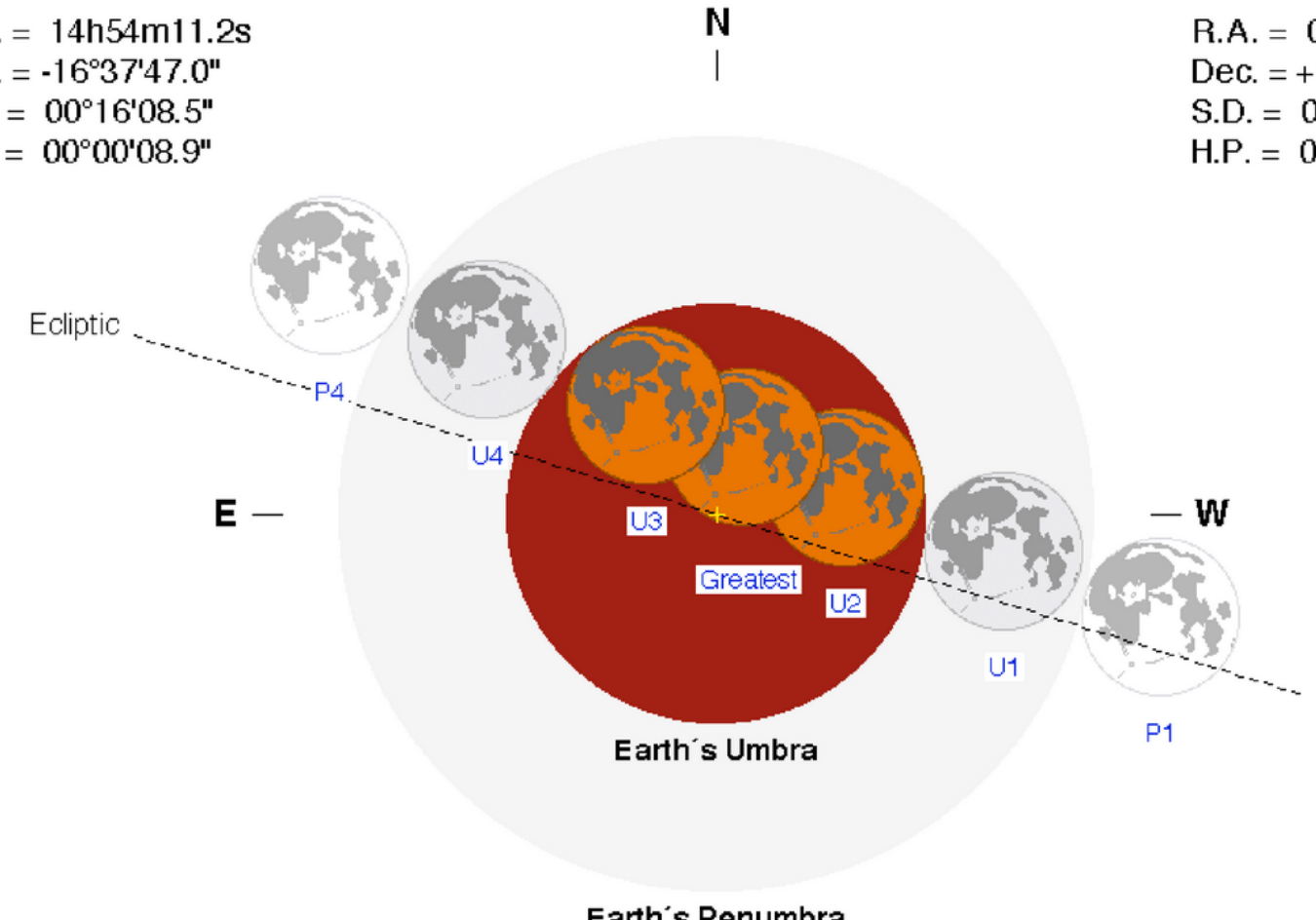
Saros Series = 136 Member = 20 of 72

Sun at Greatest Eclipse
(Geocentric Coordinates)

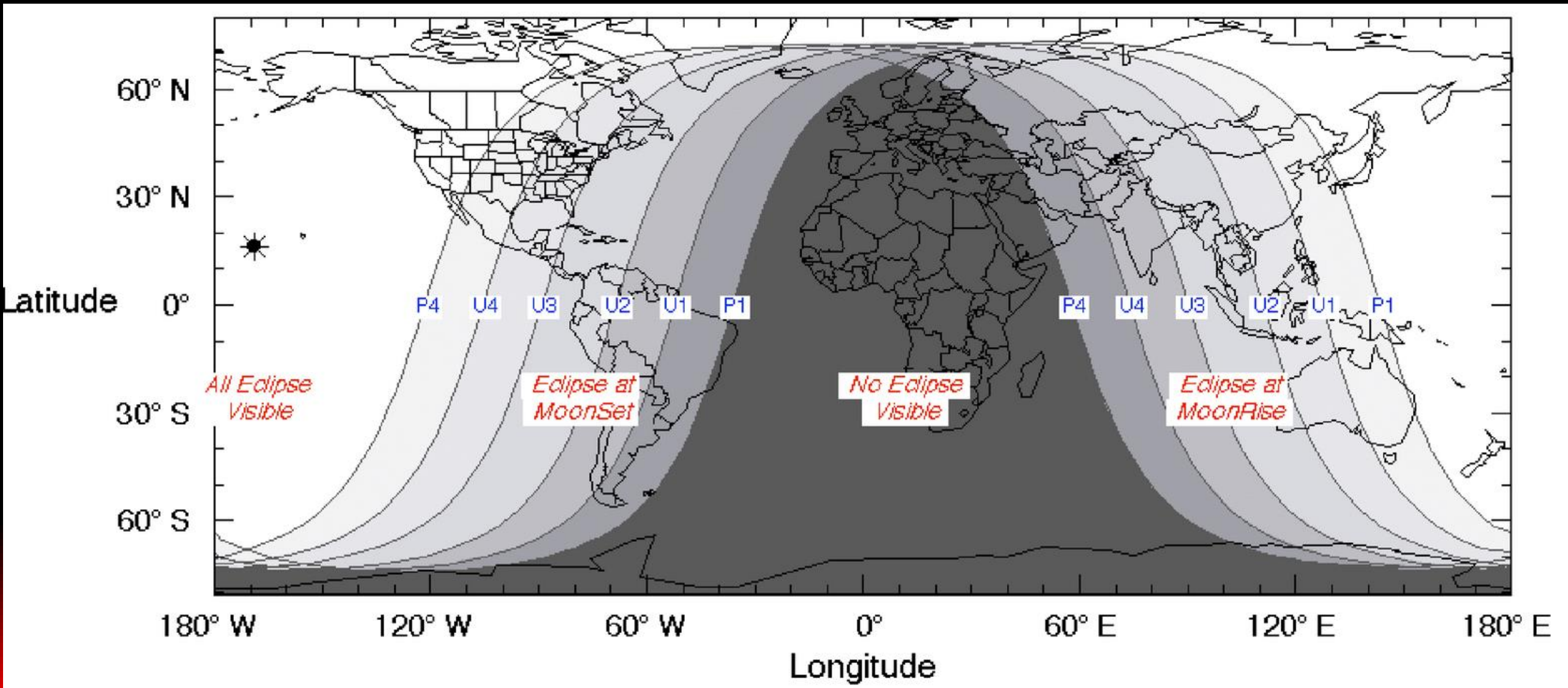
R.A. = 14h54m11.2s
Dec. = -16°37'47.0"
S.D. = 00°16'08.5"
H.P. = 00°00'08.9"

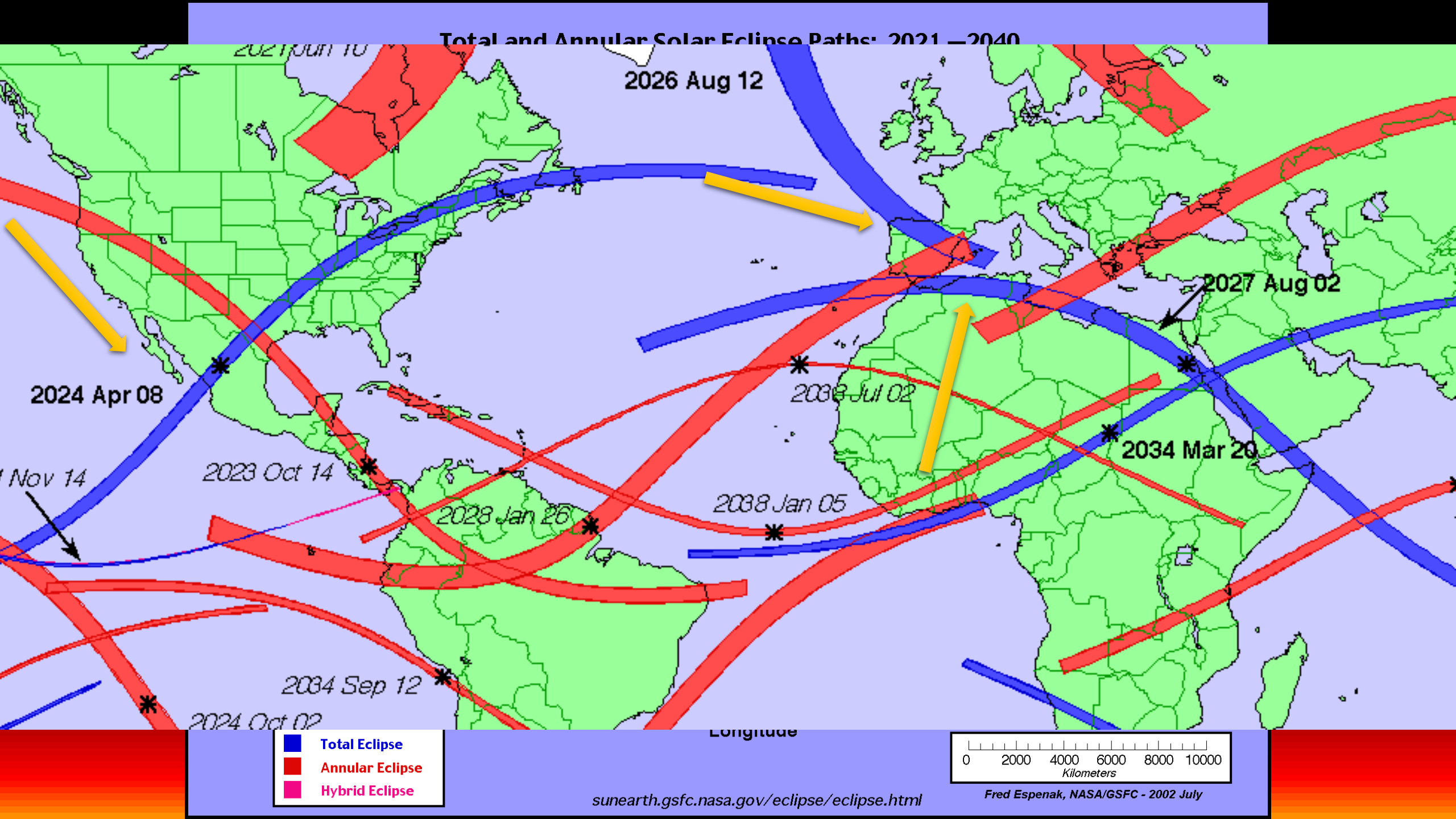
Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 02h53m48.1s
Dec. = +16°51'06.7"
S.D. = 00°15'17.7"
H.P. = 00°56'07.8"

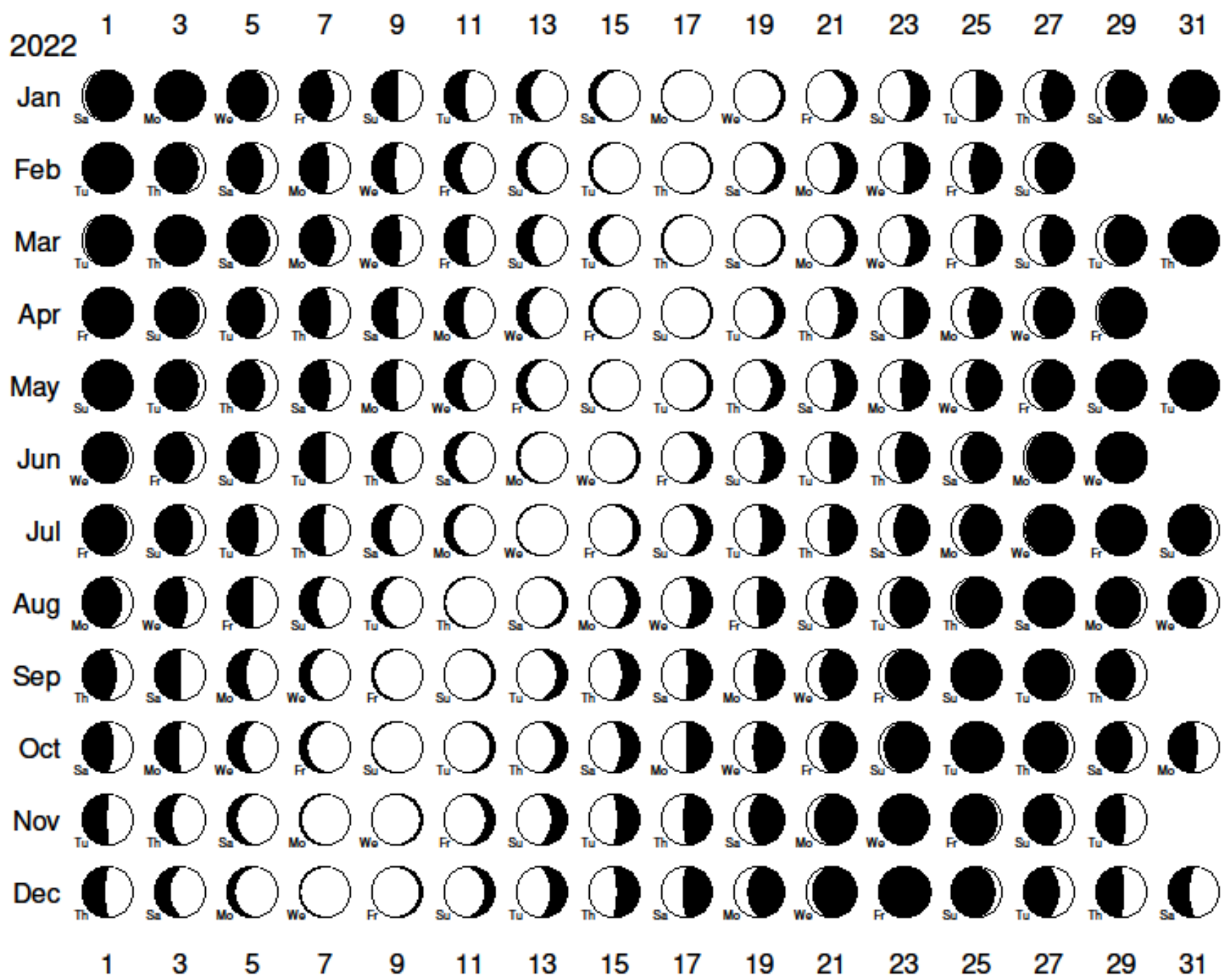


Invisibile dall'Europa !




Total and Annular Solar Eclipse Paths: 2021 —2040
2026 Aug 12
2027 Aug 02
2024 Apr 08
2038 Jul 02
2034 Mar 20
Nov 14
2023 Oct 14
2028 Jan 26
2038 Jan 05
2034 Sep 12
2024 Oct 02
Longitude
Total Eclipse
Annular Eclipse
Hybrid Eclipse
0 2000 4000 6000 8000 10000
Kilometers
sunearth.gsfc.nasa.gov/eclipse/eclipse.html
Fred Espenak, NASA/GSFC - 2002 July

Fasi lunari 2022



Pasqua 2022

Regole fissate dal concilio di Nicea (325)

La prima domenica dopo la prima Luna piena di primavera

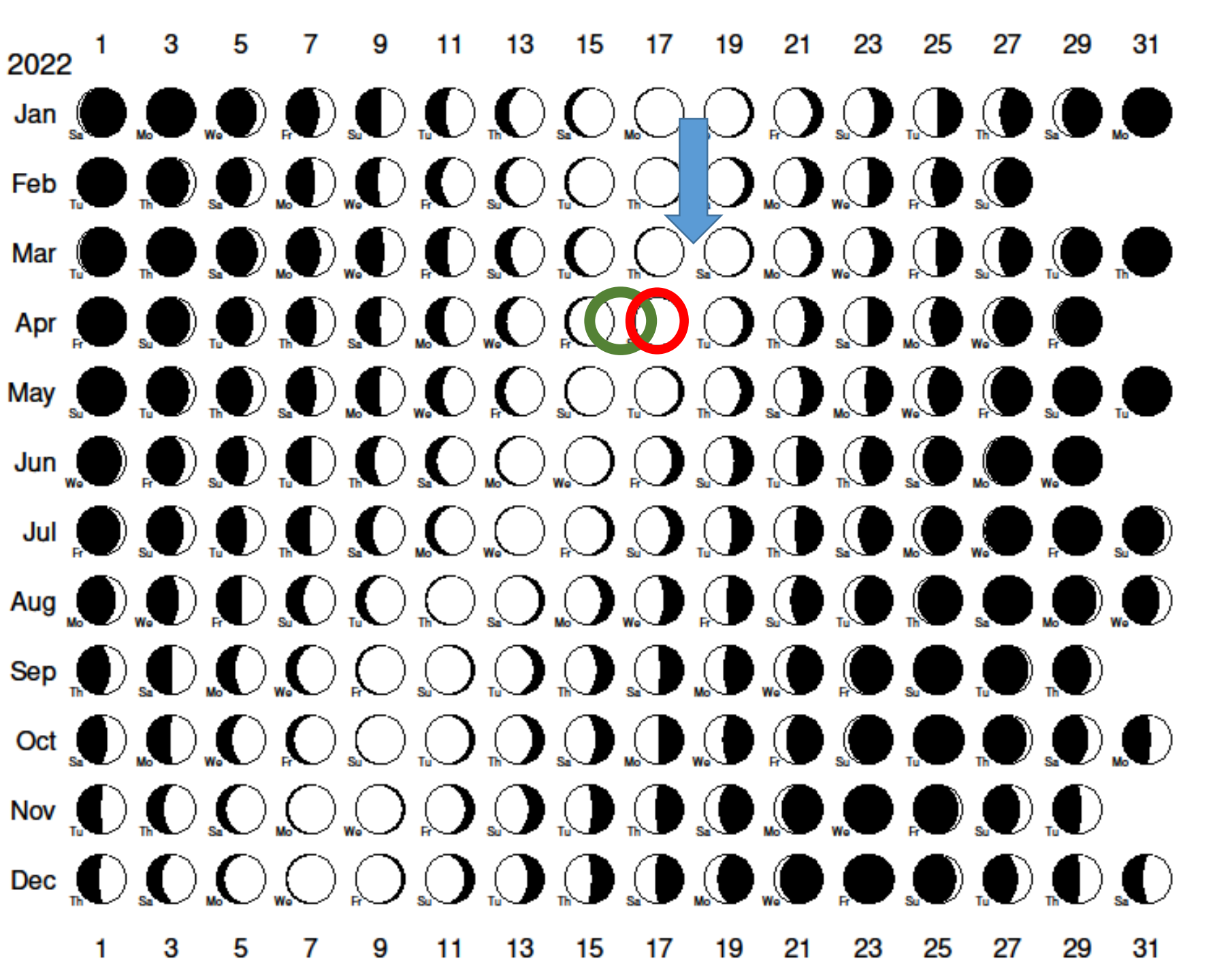
Luna piena il 18 Marzo

Successiva il 16 Aprile

Ma è sabato

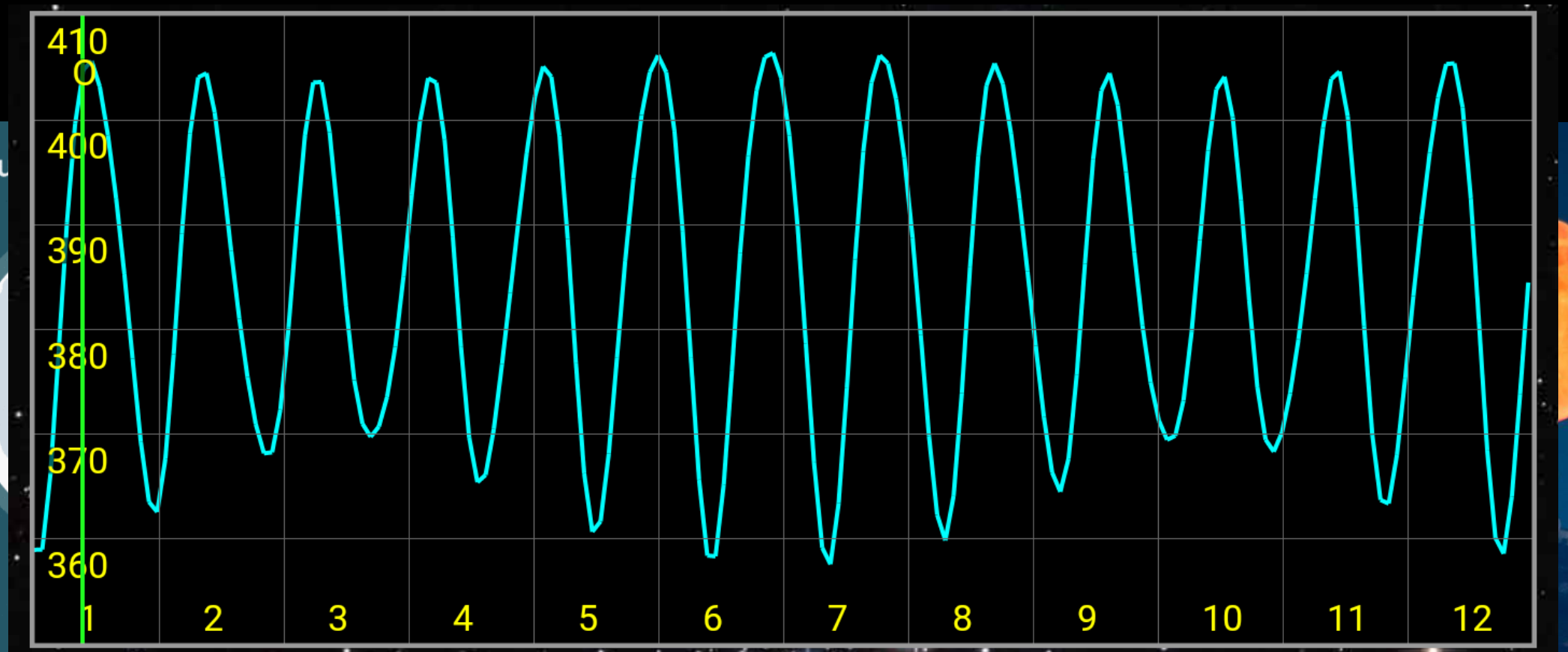
La domenica successiva

Sarà il 17 aprile



Luna piena al perigeo (superlune)

		Km	diam. primi	
Lunedì, 16 Maggio	Luna piena	360291	33,17	perigeo il 17 Maggio
Martedì, 14 Giugno	Luna piena	357426	33,43	perigeo il 15 Giugno
Mercoledì, 13 Luglio	Luna piena	357410	32,43	perigeo il 13 Luglio
Venerdì, 12 Agosto	Luna piena	361402	33,06	perigeo il 10 Agosto



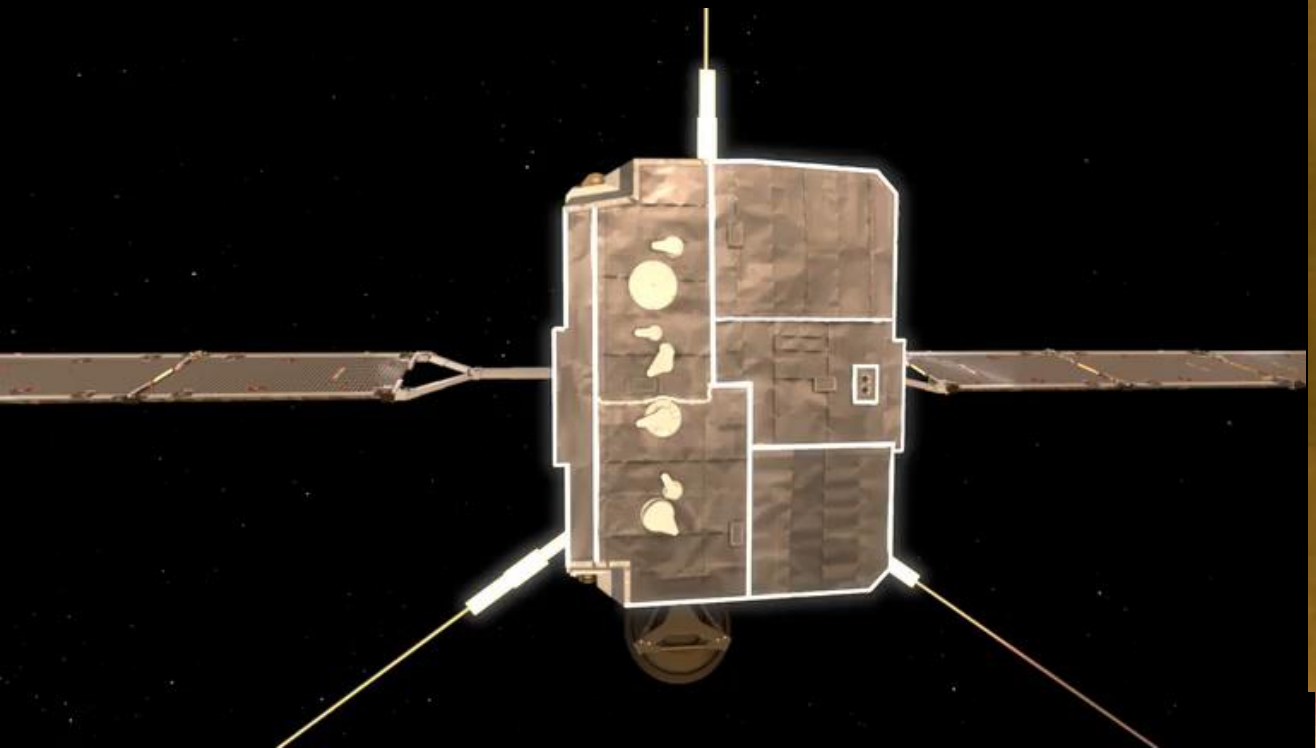
Il ciclo delle macchie solari

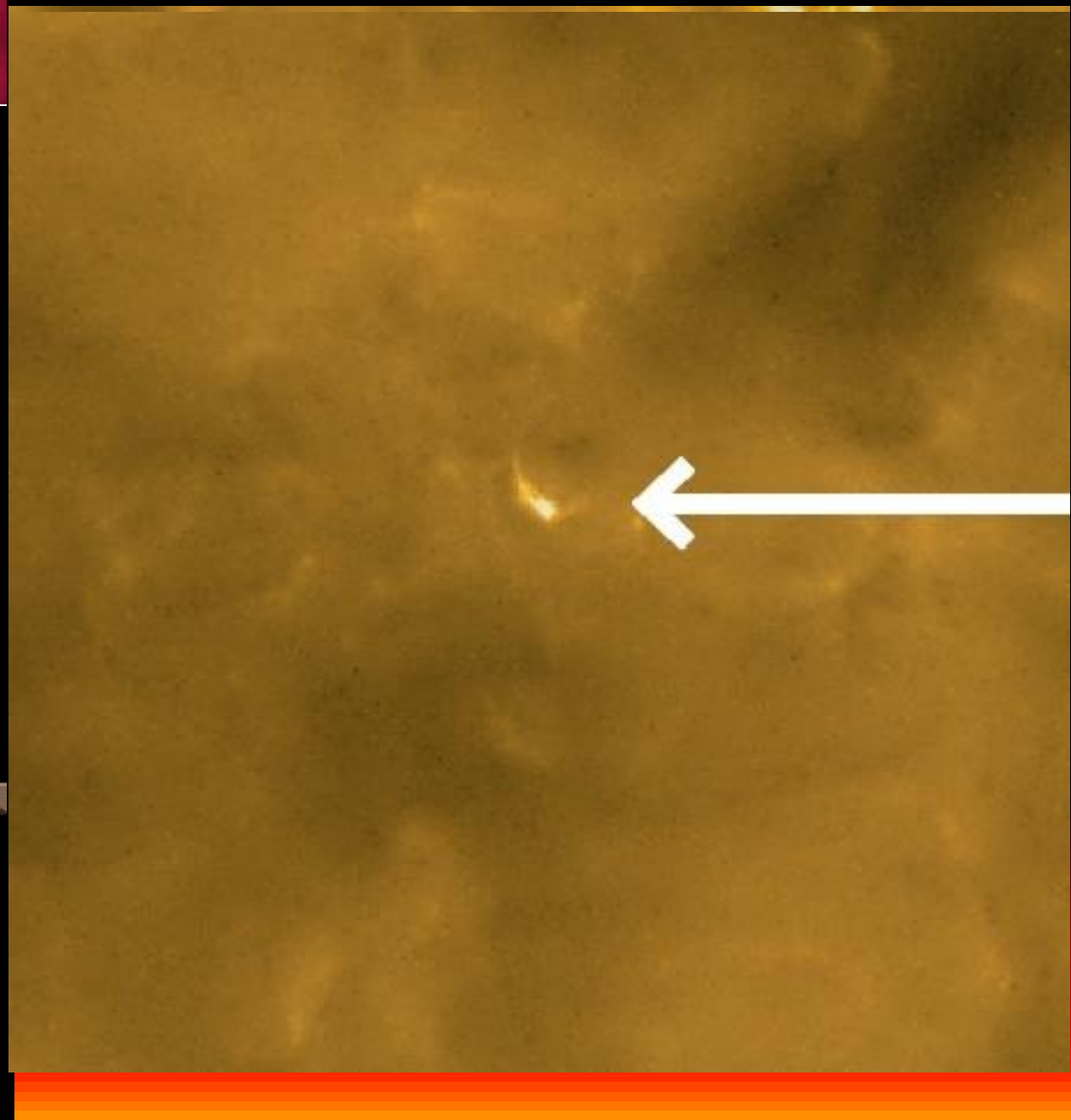
solar orbiter

esa

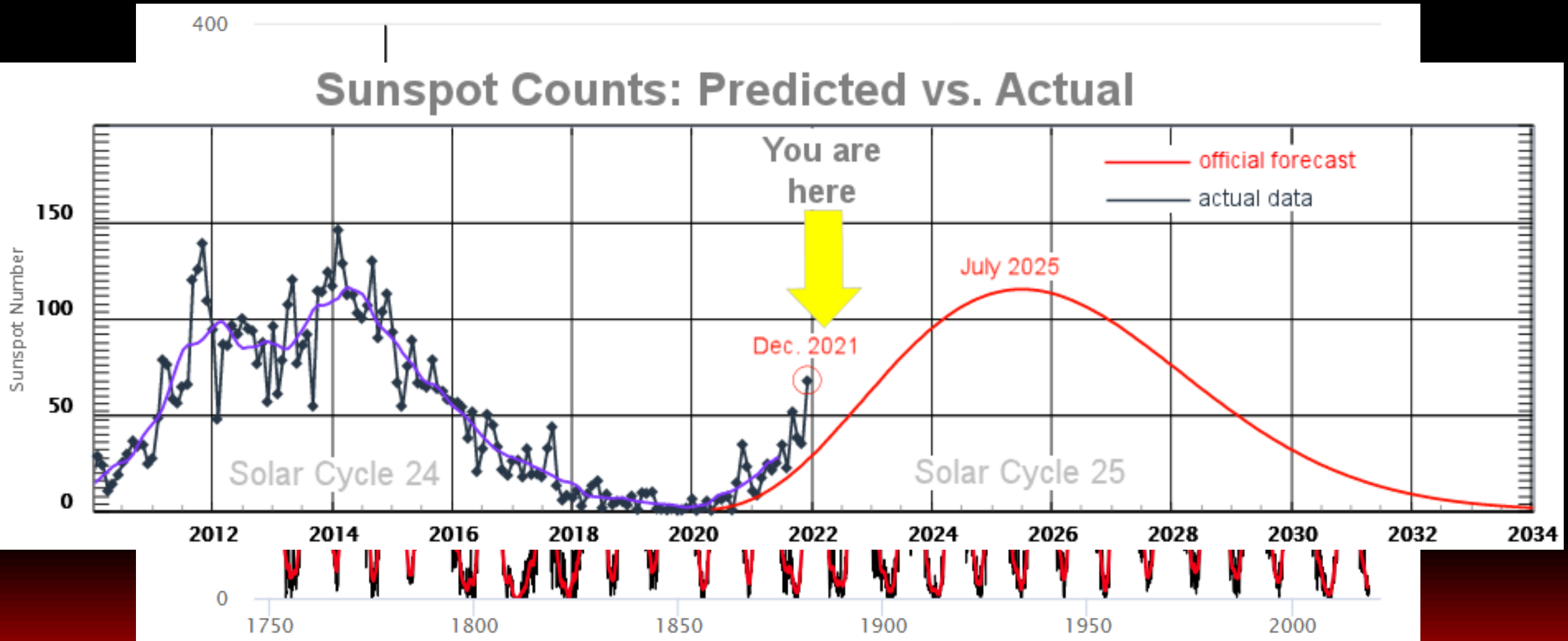
ESA | SCIENCE & TECHNOLOGY | SOLAR ORBITER

https://sci.esa.int/web/solar-orbiter





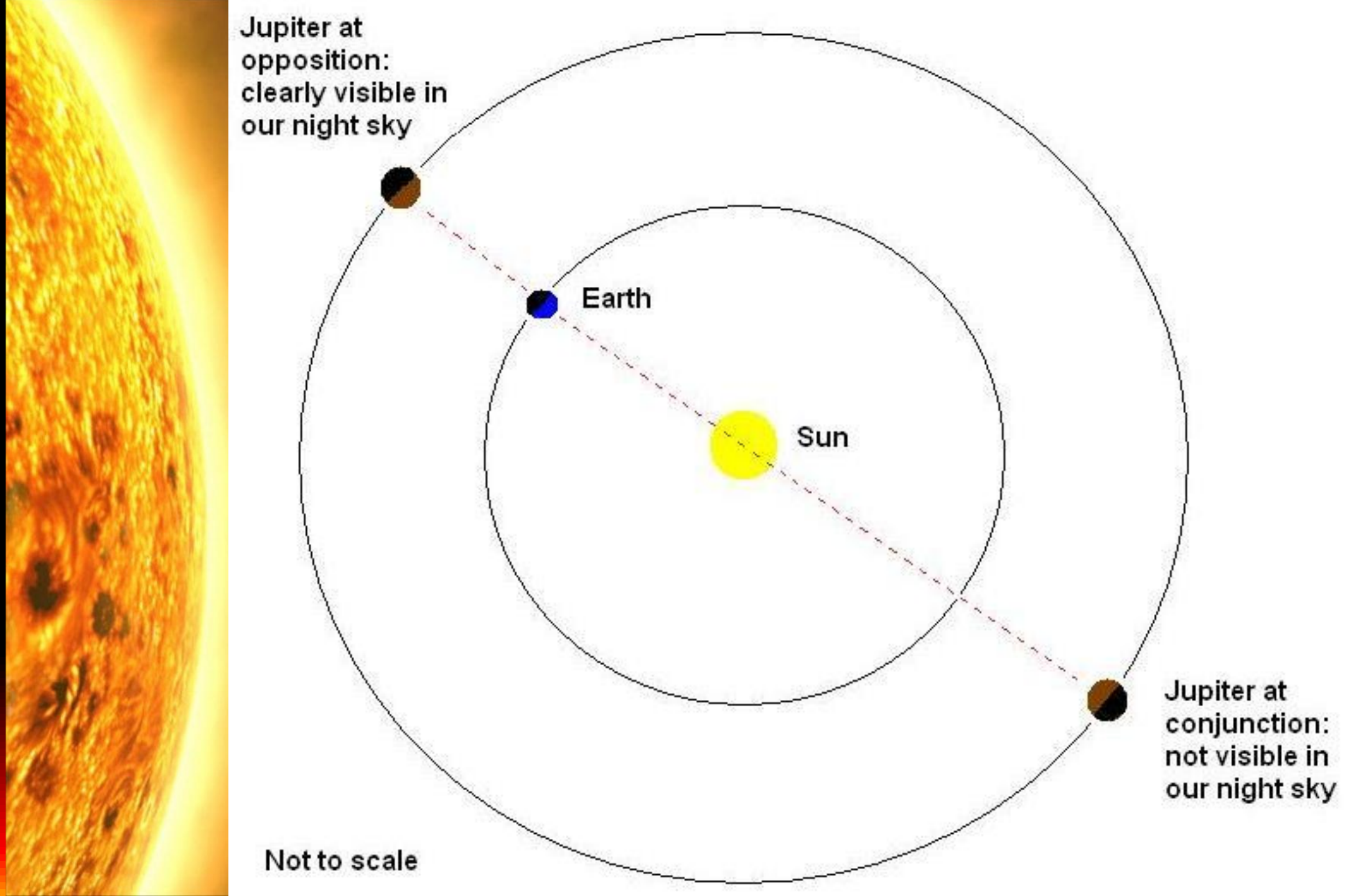
Il ciclo delle macchie solari



Media mensile totale del numero di macchie solari

Numero mensile totale di macchie solari arrotondato per 13 mesi

WDC-SILSO, Royal Observatory of Belgium, Brussels

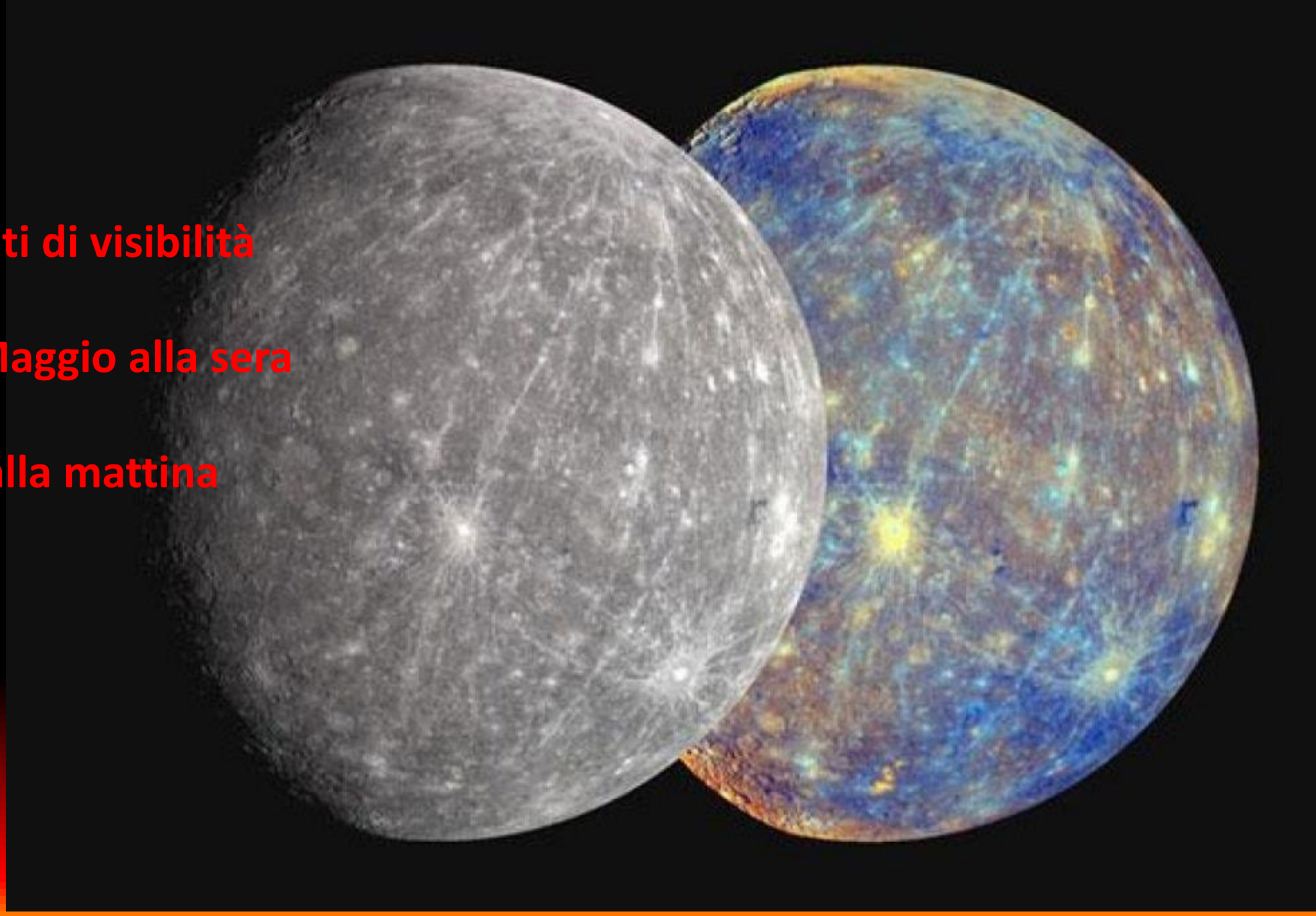

Jupiter at opposition: clearly visible in our night sky
Earth
Sun
Jupiter at conjunction: not visible in our night sky
Not to scale

Mercurio

Migliori momenti di visibilità

18 Aprile – 10 Maggio alla sera

3 – 17 Ottobre alla mattina

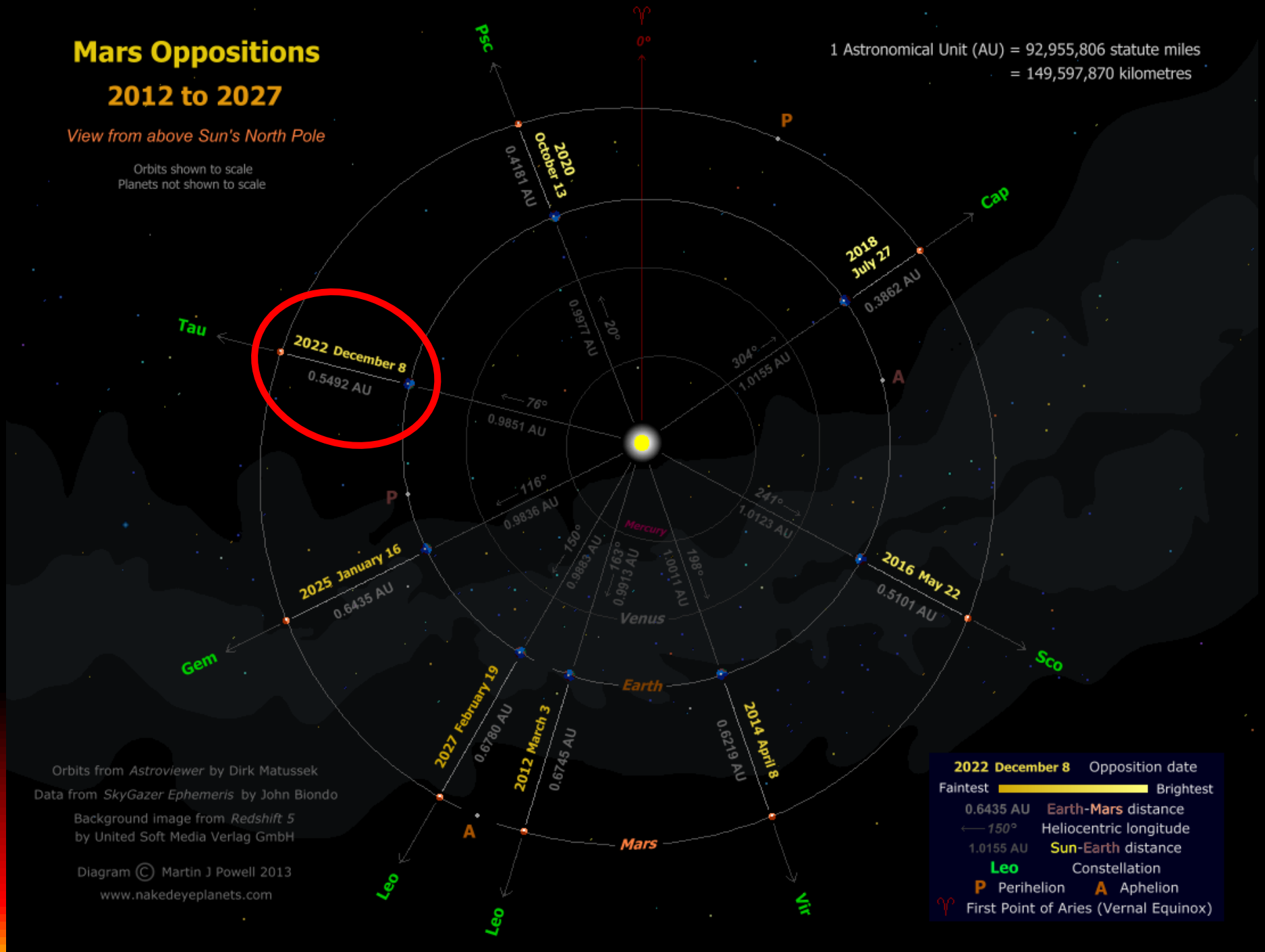


Venere

Migliori momenti di visibilità

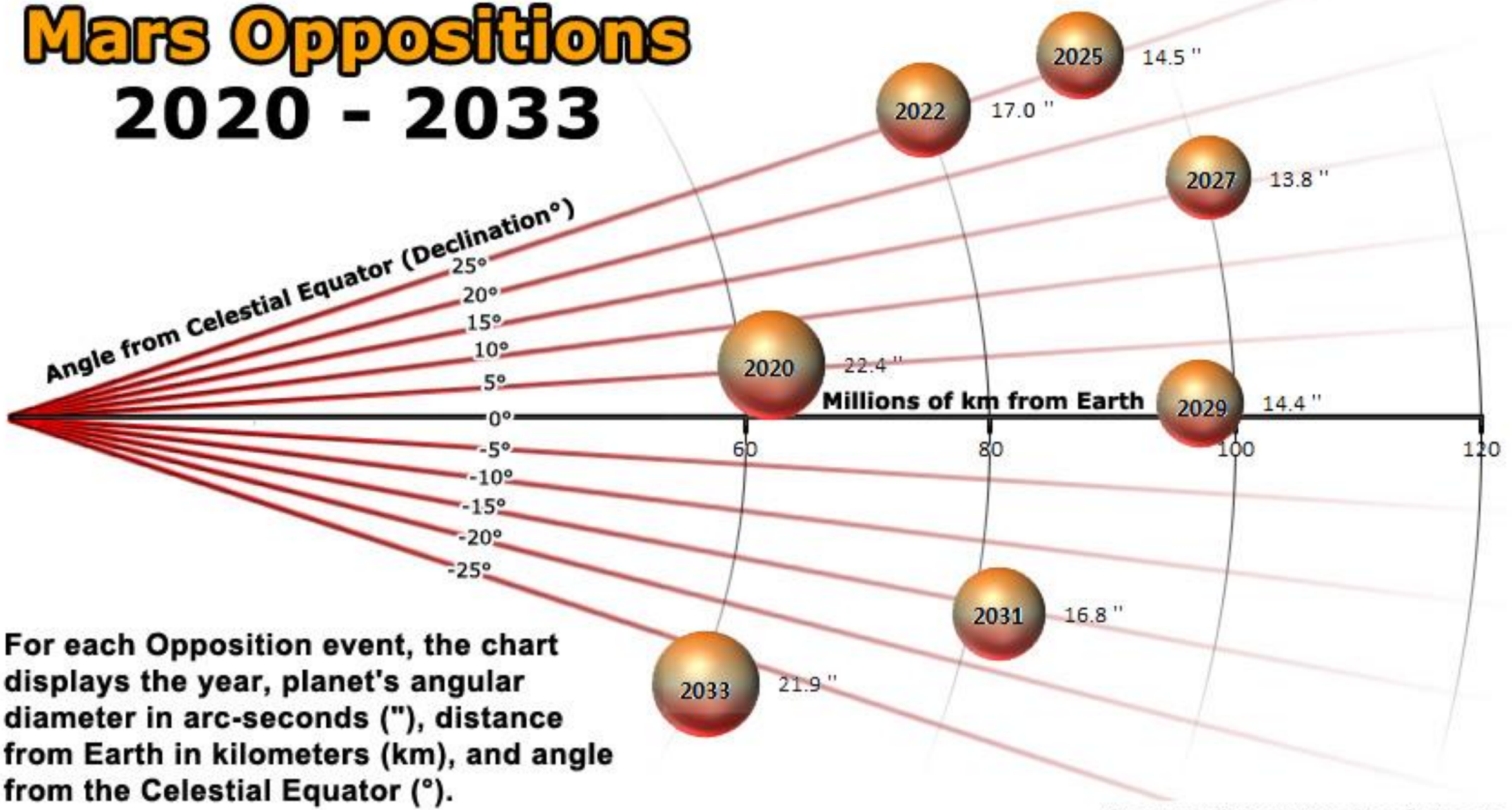
17 Gennaio – 27 Agosto alla mattina
(favorevoli condizioni 29/1 -> 27/2)

23 Dicembre → .... alla sera

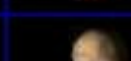
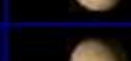
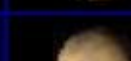

Mars Oppositions
2012 to 2027
View from above Sun's North Pole
Orbits shown to scale
Planets not shown to scale
1 Astronomical Unit (AU) = 92,955,806 statute miles
= 149,597,870 kilometres
0°
Psc
P
Cap
A
Tau
P
Gem
A
Leo
Leo
Vir
Sco
2020 October 13
0.4181 AU
2018 July 27
0.3862 AU
2022 December 8
0.5492 AU
2025 January 16
0.6435 AU
2016 May 22
0.5101 AU
2027 February 19
0.6780 AU
2012 March 3
0.6745 AU
2014 April 8
0.6219 AU
0.9977 AU
20°
304°
1.0155 AU
76°
0.9851 AU
116°
0.9836 AU
241°
1.0123 AU
150°
0.9883 AU
163°
0.9913 AU
198°
1.0011 AU
Mercury
Venus
Earth
Mars
Orbits from Astroviewer by Dirk Matussek
Data from SkyGazer Ephemeris by John Biondo
Background image from Redshift 5
by United Soft Media Verlag GmbH
Diagram © Martin J Powell 2013
www.nakedeyeplanets.com
2022 December 8 Opposition date
Faintest Brightest
0.6435 AU Earth-Mars distance
150° Heliocentric longitude
1.0155 AU Sun-Earth distance
Leo Constellation
P Perihelion A Aphelion
First Point of Aries (Vernal Equinox)

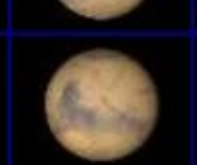
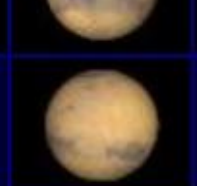
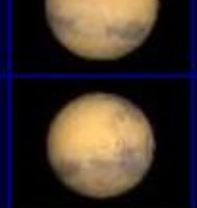
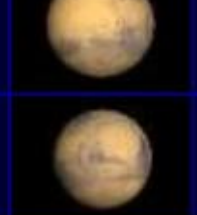
Marte !!

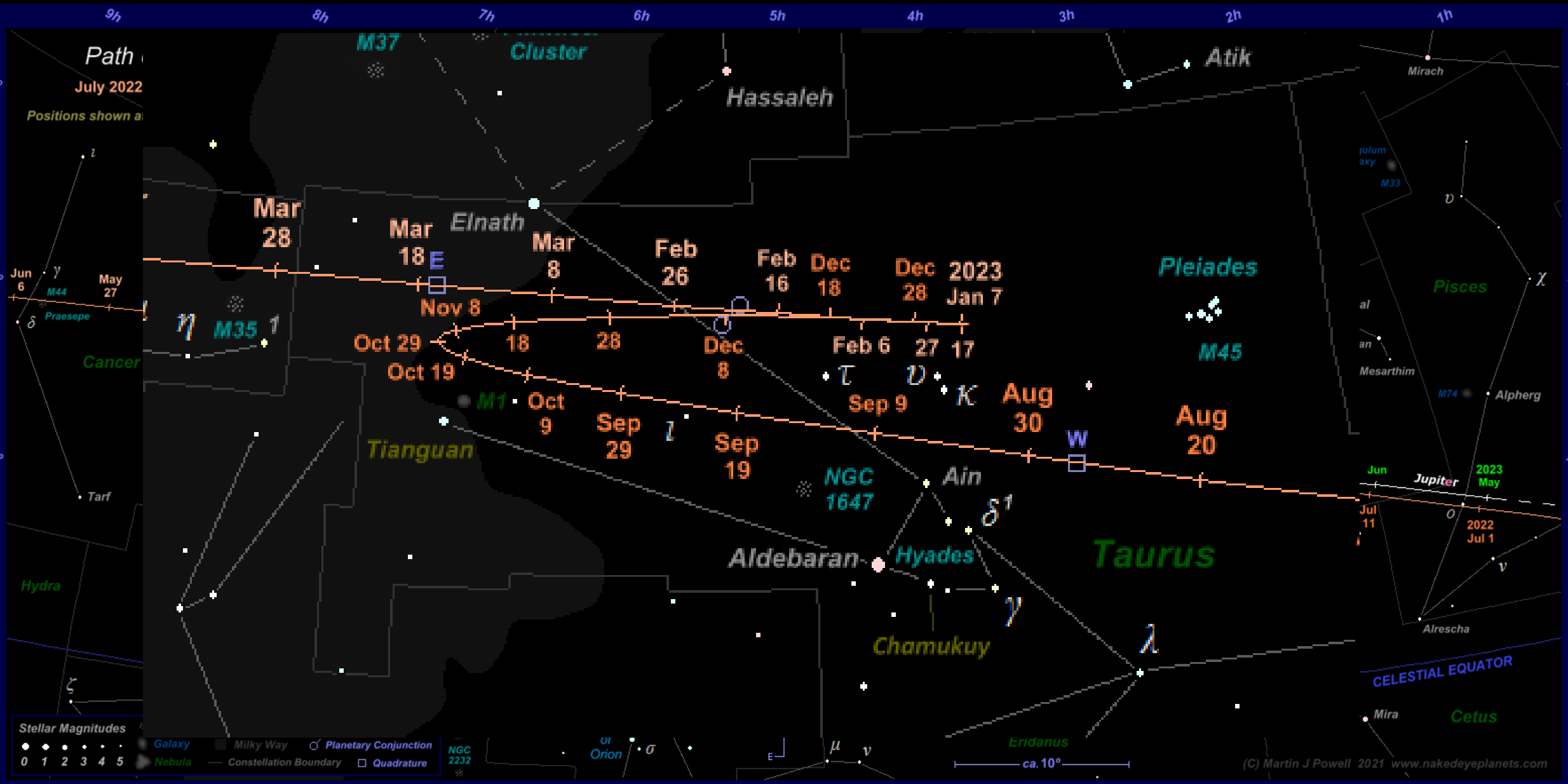
Mars Oppositions
2020 - 2033



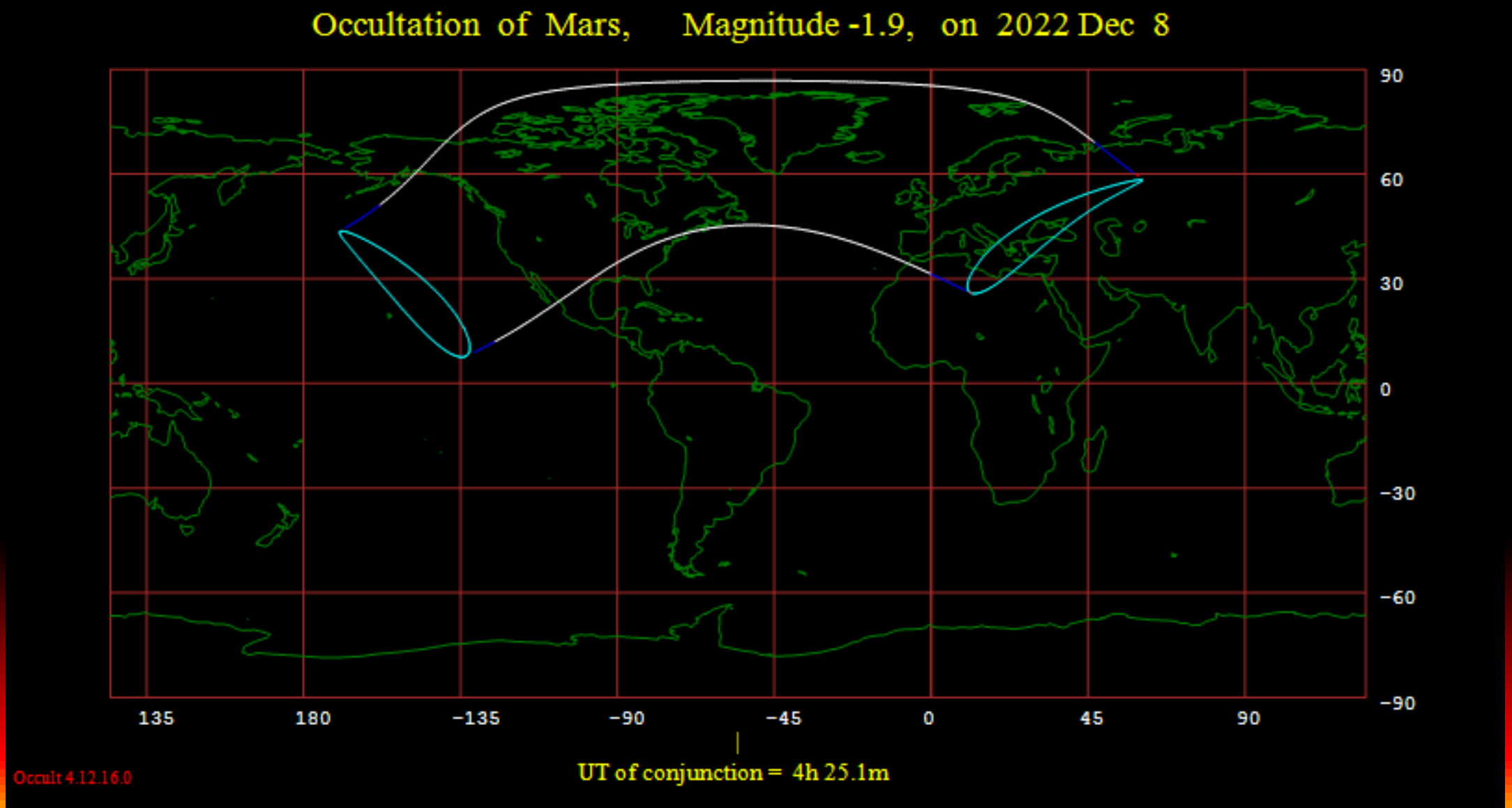
For each Opposition event, the chart displays the year, planet's angular diameter in arc-seconds ("), distance from Earth in kilometers (km), and angle from the Celestial Equator (°).

Date		Constellation		Apparent Magnitude	Apparent Diameter (arcsecs)	Tilt (D_E)	View from Earth (North up)	Distance (AU)* from Earth	from Sun	Solar Elongation	Illuminated Phase	Central Meridian Longitude
2022	Jul 1	♓	Psc	+0.4	7".2	-20°.1		1.2975	1.3819	72ºW	85%	231°
	Jul 11	♈	Ari	+0.4	7".5	-18°.1		1.2446	1.3840	74ºW	85%	133°
	Jul 21	♈	Ari	+0.3	7".8	-15°.9		1.1914	1.3875	77ºW	85%	35°
	Jul 31	♈	Ari	+0.2	8".2	-13°.6		1.1375	1.3923	80ºW	84%	298°
	Aug 10	♉	Tau	+0.1	8".6	-11°.2		1.0827	1.3985	83ºW	84%	201°
	Aug 20	♉	Tau	+0.0	9".1	-8°.9		1.0270	1.4059	87ºW	84%	104°
	Aug 30	♉	Tau	-0.1	9".6	-6°.6		0.9702	1.4143	91ºW	85%	8°
	Sep 9	♉	Tau	-0.2	10".2	-4°.5		0.9124	1.4238	95ºW	85%	272°
	Sep 19	♉	Tau	-0.3	10".9	-2°.6		0.8541	1.4342	100ºW	86%	177°
	Sep 29	♉	Tau	-0.5	11".7	-1°.0		0.7957	1.4453	106ºW	87%	82°
	Oct 9	♉	Tau	-0.7	12".7	+0°.0		0.7383	1.4571	113ºW	88%	348°
	Oct 19	♉	Tau	-0.9	13".7	+0°.7		0.6835	1.4694	121ºW	90%	255°
	Oct 29	♉	Tau	-1.1	14".8	+0°.7		0.6334	1.4820	130ºW	92%	163°

Date	Constellation	Apparent Magnitude	Apparent Diameter (arcsecs)	Tilt (D_E)	View from Earth (North up)	Distance (AU)*		Solar Elongation	Illuminated Phase	Central Meridian Longitude
						from Earth	from Sun			
Oct 19	Tau	-0.9	13".7	+0°.7		0.6835	1.4694	121ºW	90%	255°
Oct 29	Tau	-1.1	14".8	+0°.7		0.6334	1.4820	130ºW	92%	163°
Nov 8	Tau	-1.4	15".8	+0°.1		0.5912	1.4949	140ºW	95%	72°
Nov 18	Tau	-1.6	16".7	-1°.2		0.5605	1.5080	152ºW	97%	343°
Nov 28	Tau	-1.8	17".1	-3°.1		0.5454	1.5210	165ºW	99%	254°
Dec 8	**Tau**	**-1.9**	**17".0**	**-5°.1**		**0.5492**	**1.5340**	**177ºW**	**100%**	**167°**
Dec 18	Tau	-1.6	16".3	-7°.0		0.5731	1.5468	166ºE	99%	78°
Dec 28	Tau	-1.3	15".2	-8°.4		0.6163	1.5593	153ºE	98%	350°

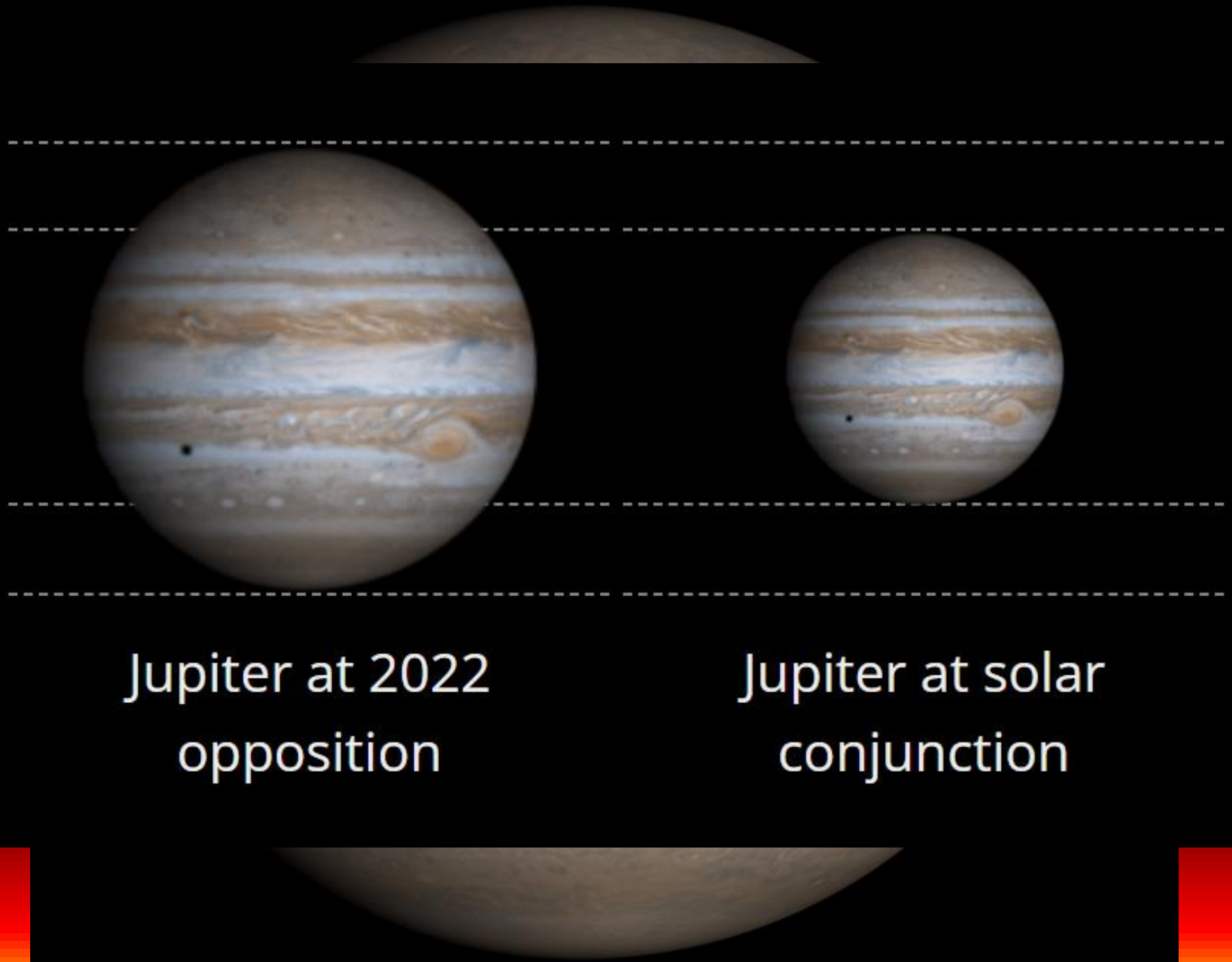

Path
July 2022
Positions shown a
M37
Cluster
Hassaleh
Atik
Mirach
Elnath
Mar 28
Mar 18
E
Mar 8
Feb 26
Feb 16
Dec 18
Dec 28
2023 Jan 7
Pleiades
M45
Pisces
Nov 8
Oct 29
Oct 19
18
28
Dec 8
Feb 6
27
17
Sep 9
Aug 30
Aug 20
W
Oct 9
Sep 29
Sep 19
M1
Tianguan
NGC 1647
Ain
Aldebaran
Hyades
Taurus
Chamukuy
Alrescha
Mesarthim
Alpherg
M74
M33
Jun
Jupiter
2023 May
Jul 11
2022 Jul 1
Jun 6
May 27
M44
Praesepe
Cancer
Tarf
Hydra
CELESTIAL EQUATOR
Mira
Cetus
Eridanus
ca. 10°
Orion
NGC 2232
Stellar Magnitudes
0 1 2 3 4 5
Galaxy
Nebula
Milky Way
Constellation Boundary
Planetary Conjunction
Quadrature
(C) Martin J Powell 2021 www.nakedeyeplanets.com
9h
8h
7h
6h
5h
4h
3h
2h
1h
+30°
+20°
+10°
0°

Istanti per Bologna - mattina di Giovedì 8 Dicembre 2022- Luna piena !
Scomparsa alle 6:12 a 16° sull'orizzonte
Ricomparsa alle 7:06 a 7° sull'orizzonte (Sole a -6 °)



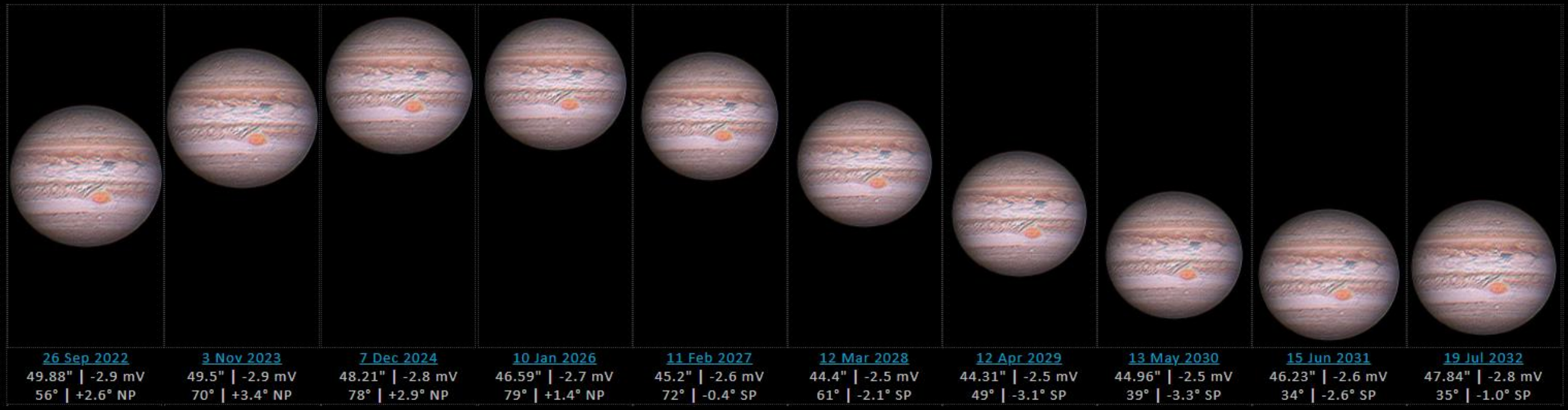
M.Molinari Roma 6 September 2020 8.20 a.m. ECT

Giove !!



Nel 2022 sarà visibile in condizioni favorevoli da fine estate, l’opposizione sarà il 26 settembre 49’’.88

Dimensioni apparenti e altezze sull’orizzonte

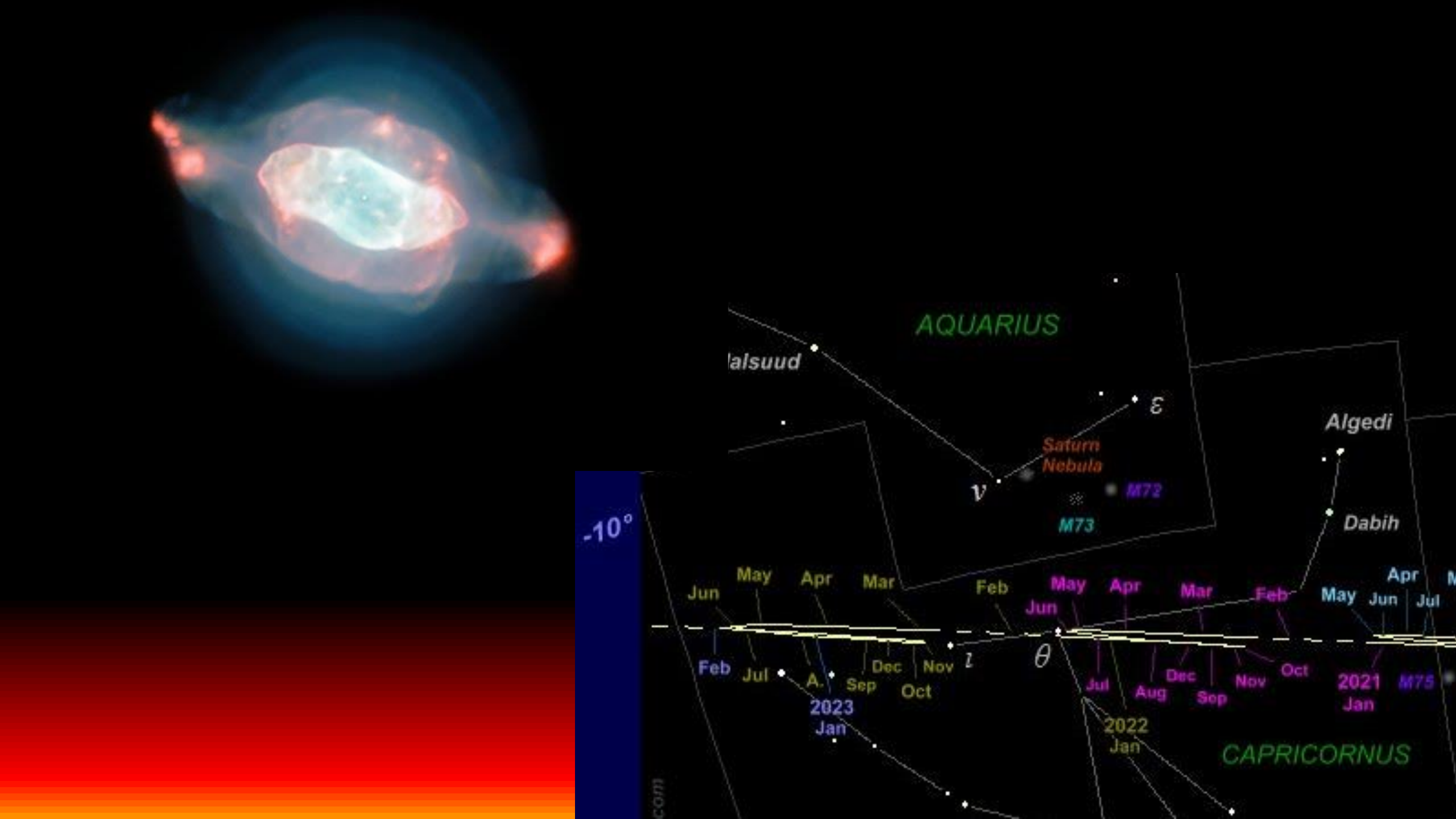


49’’,88

44’’,31

Saturno

Nel 2022 sarà visibile in condizioni favorevoli durante il periodo estivo-autunnale, l'opposizione sarà il 14 Agosto


AQUARIUS
Saturn Nebula
M72
M73
Algedi
Dabih
-10°
Jun
May
Apr
Mar
Feb
Jan
Jul
Aug
Sep
Oct
Nov
Dec
2023
2022
2021
M75
CAPRICORNUS

Grazie per l’attenzione !!!

e…. ora più che mai

Auguri di un sereno 2022