

Campagne Ganymède 2025 octobre 14

Ecole de Photométrie 2025

Thierry Midavaine



SOCIÉTÉ ASTRONOMIQUE DE FRANCE

L'ASTRONOMIE

CALL FOR OBSERVATIONS:

Ganymede Occulting a Magnitude 7 Star - A Call for a European Wide Campaign

Thierry Midavaine · Société Astronomique de France (SAF) · Paris · France ·
thierrymidavaine@sfr.fr

with

Valery Lainey¹ · Josselin Desmars¹ · Miguel Montargès² · Anthony Berdeu² · Arnaud Leroy³ · Stéphane Neveu³

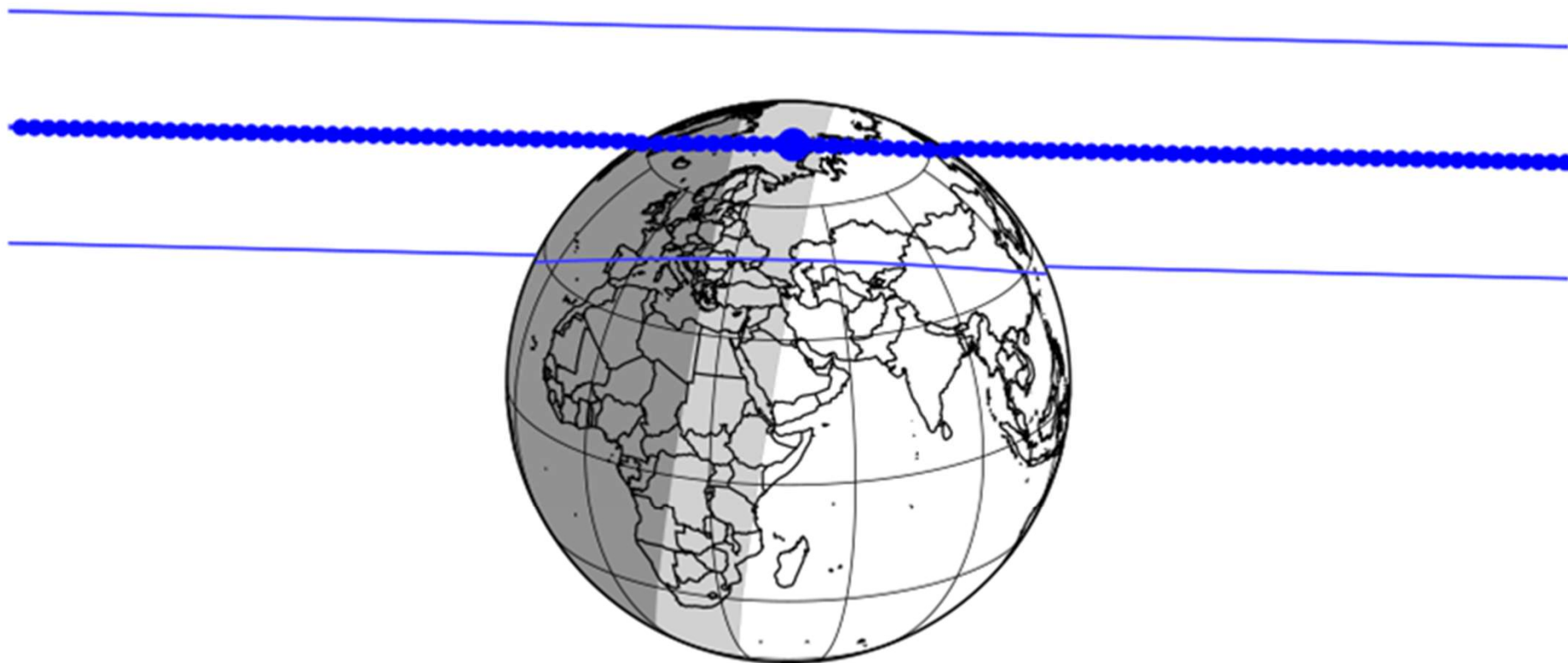
⁽¹⁾ Laboratoire Temps Espace (LTE, previously IMCCE), Paris Observatory

⁽²⁾ LIRA (previously LESIA) Paris Observatory

⁽³⁾ Société Astronomique de France (SAF), Paris, France

ABSTRACT: An exceptional event is scheduled on 2025 October 14. Jupiter's satellite Ganymede III will occult a magnitude 7.5 star for observers in western Europe, causing a small drop in brightness of 0.1 magnitudes for up to 17 minutes. This occultation is motivating a campaign to achieve three ambitions. This paper shares all the data to allow you to join this "2025 Ganymede Campaign". Amateur and professional collaborations on stellar occultations by solar system bodies is a very active field in astronomy. Some of these events are important to motivate a wide mobilisation of the amateur community. Here, Ganymede, the star itself and the network of amateurs are the three targets of this campaign. This event seems obvious and a nice opportunity for a beginner to join the community, in fact this event is elusive to catch with naked eye in using a telescope. It requires a video recording to get the event from the processing and to deliver useful data.

Ganymede, GaiaDR3+pmGaiaDR3, INPOP19a-NOE5-202&app.dis.to planet: 9.3R_p
updated: 2024-08-30 by Lucky Star



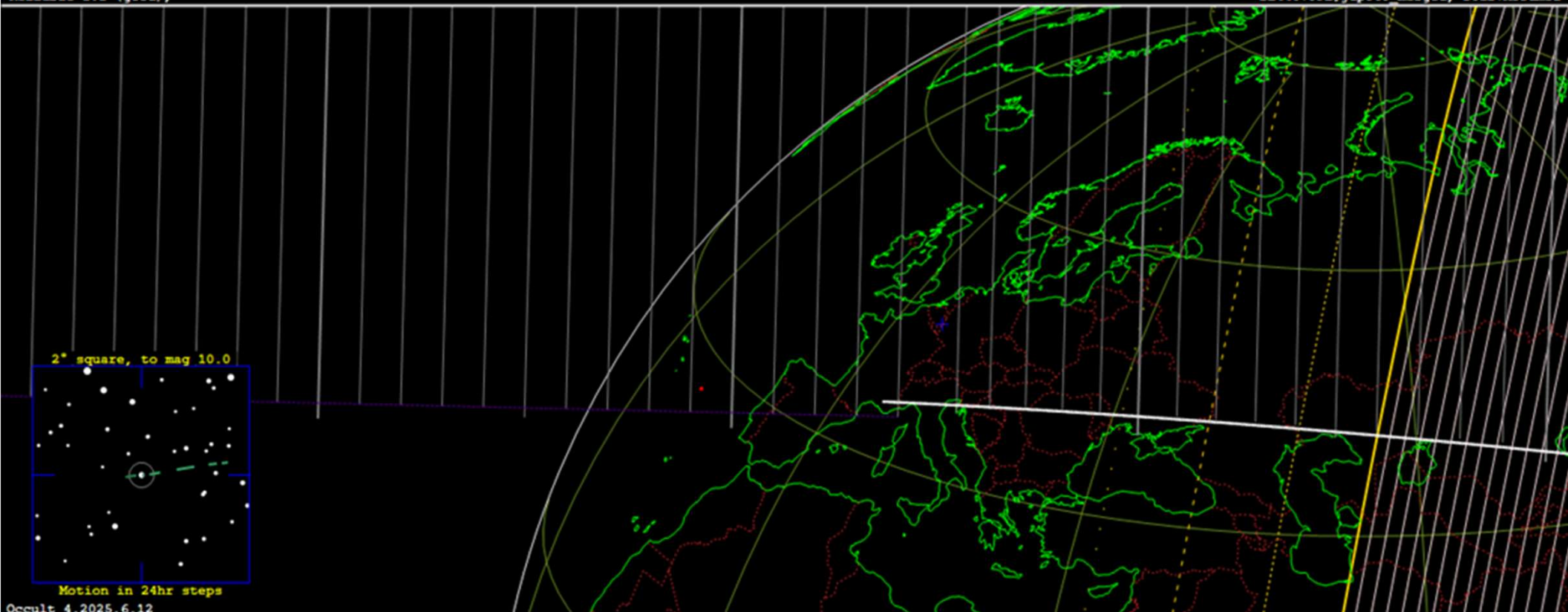
yyyy mm dd hh:mm:ss.s	RA_star_J2000	DE_star_J2000	C/A	P/A	vel	Delta	G	RP	H
2025-10-14 03:04:44.7	07 41 12.7200	+21 26 47.821	1.447	1.43	5.12	5.1298	7.5	6.8	5.3

P5M03 Ganymede (III) occults HIP 37442 on 2025 Oct 14 from 2h 42m to 3h 29m UT

Star: (Dia = 0.1 mas)
Mv 7.5; Mr 7.5; [Mb 8.1]
RA = 7 41 12.7197 (astrometric)
Dec = 21 26 47.821
[of Date: 7 42 44, 21 23 13]
Prediction of 2025 Jun 17.6
Reliable 1.1 (good),

Durations: Max = 1029.3 secs
1km = 0.20 secs, 1mas = 0.73 secs
Mag Drop: 0.10 [9%]
Sun : Dist = 88°
Moon: Dist = 4°, illum = 46%
1σ Err: ±(2.0 x 2.0) mas in PA 0°

Asteroid:
Mag = 5.0
Dia = 5268 ±1km, 1416 mas
Parallax = 1.714"
Hourly dRA = 0.364s
dDec = -0.15"
DE440+JPL#jup365 merged, Start+Assumed



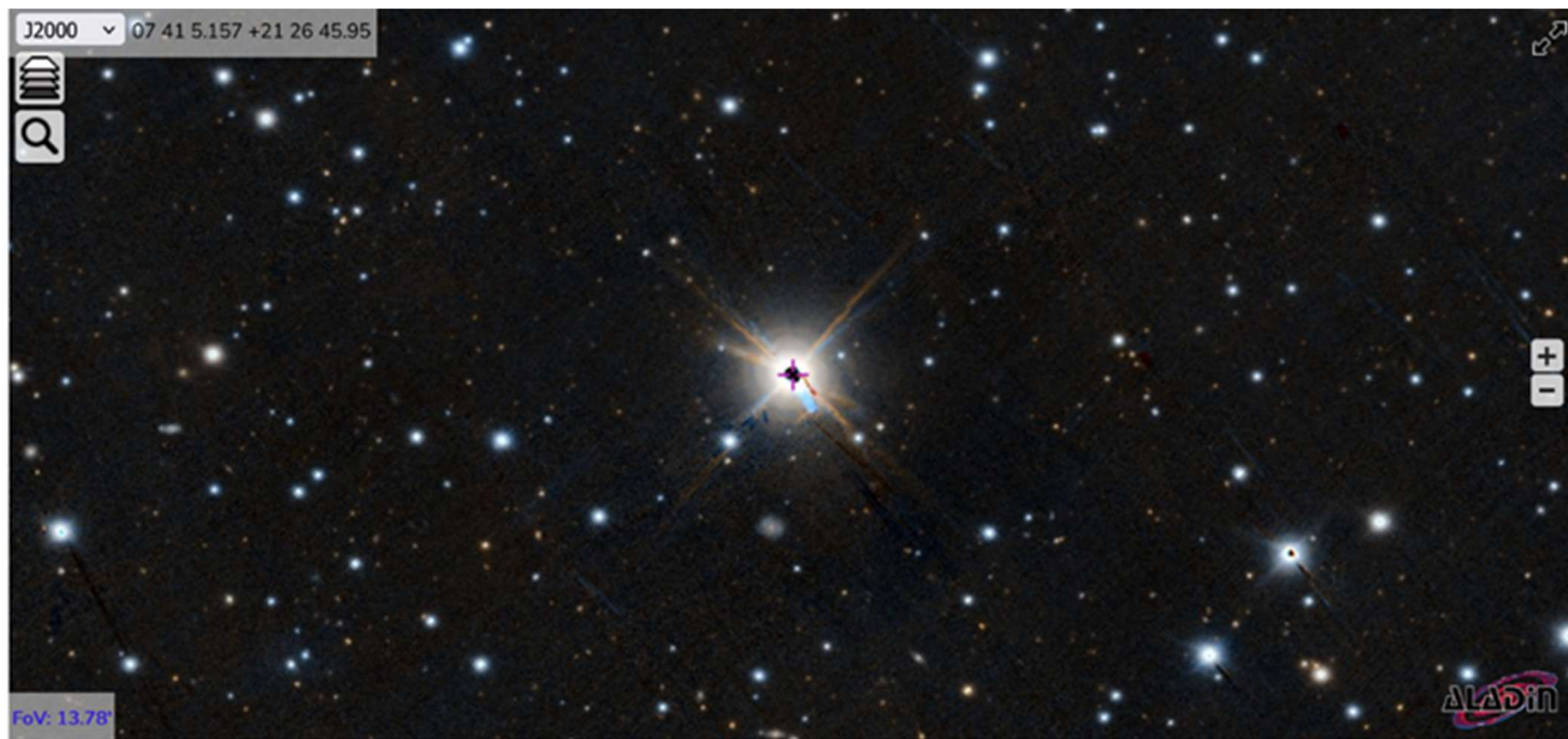


The V magnitudes of the Jupiter satellites are

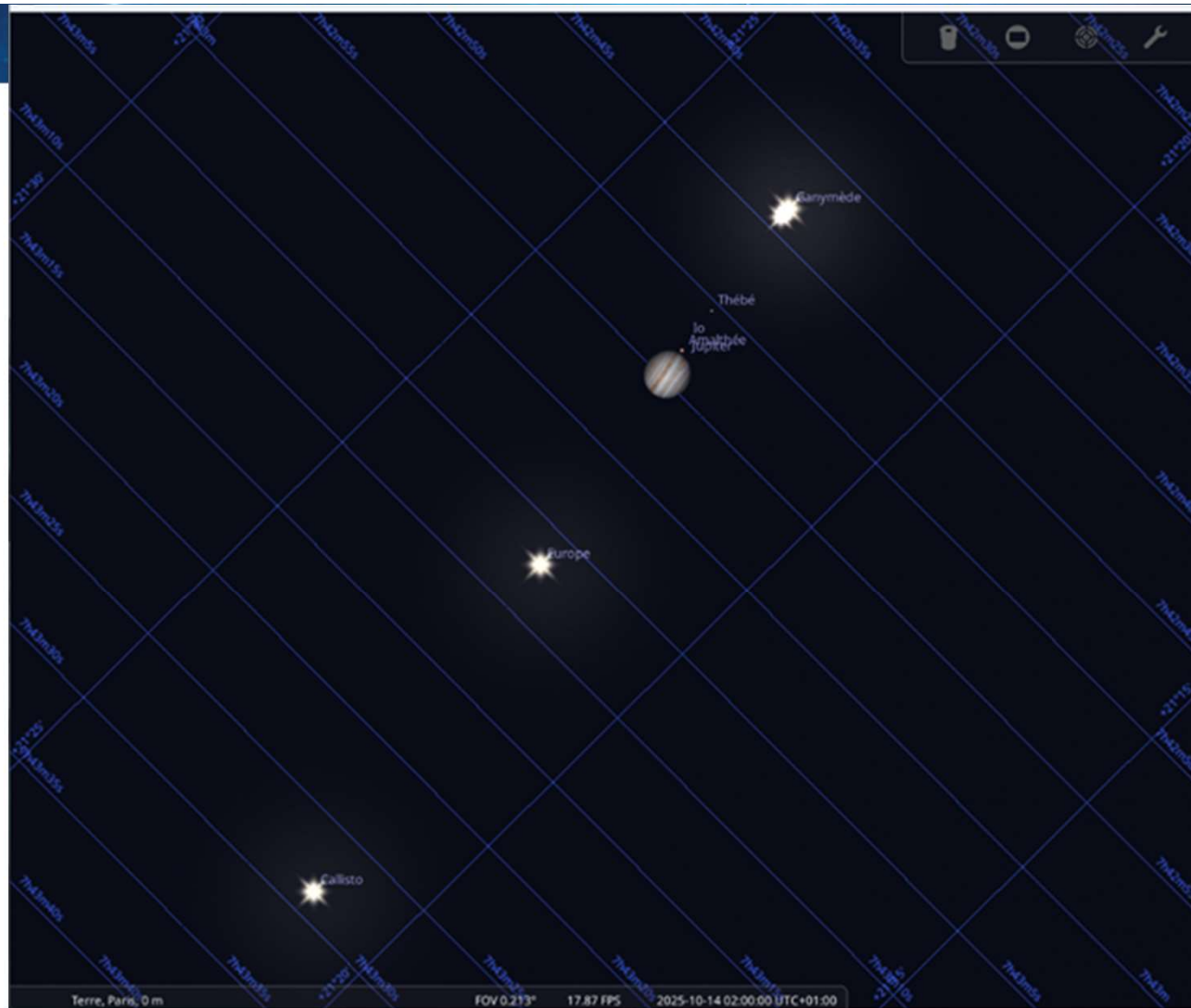
	HorizonJPL	Stellarium	
• Io I			is hide behind the planet during the event
• Europe II	5.8	5.9	the preferred reference satellite to reduce the light curve
• Ganymede III	5.25	5.31	the occulting body (the magnitude during the event)
• Callisto IV	6.5	6.61	useful to record if you have a large field of view

The occulted star magnitude is

• Occulted star	7.5	G mag	
•	6.8	Grp	
•	8.1	Gbp	
• Ganymede+star	5.12	G	or 5.02 Grp (the magnitude before and after the event)



[link to sky-map](#)



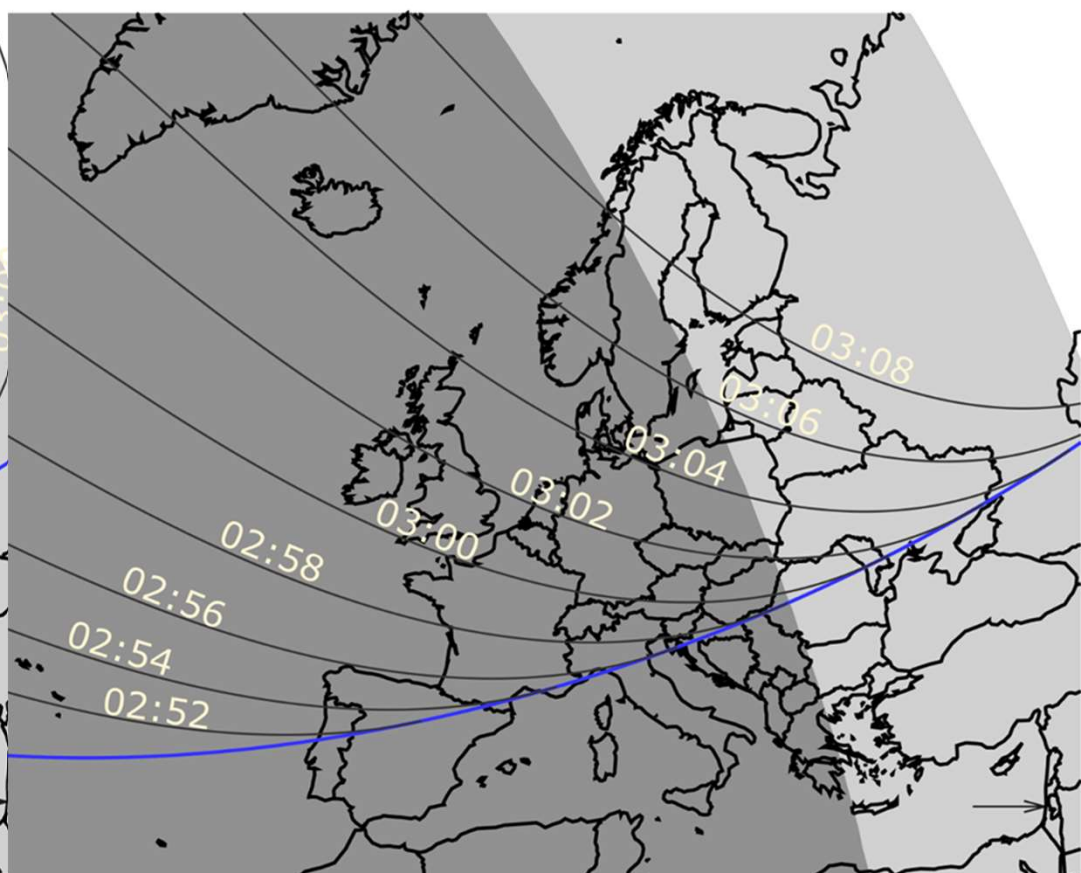
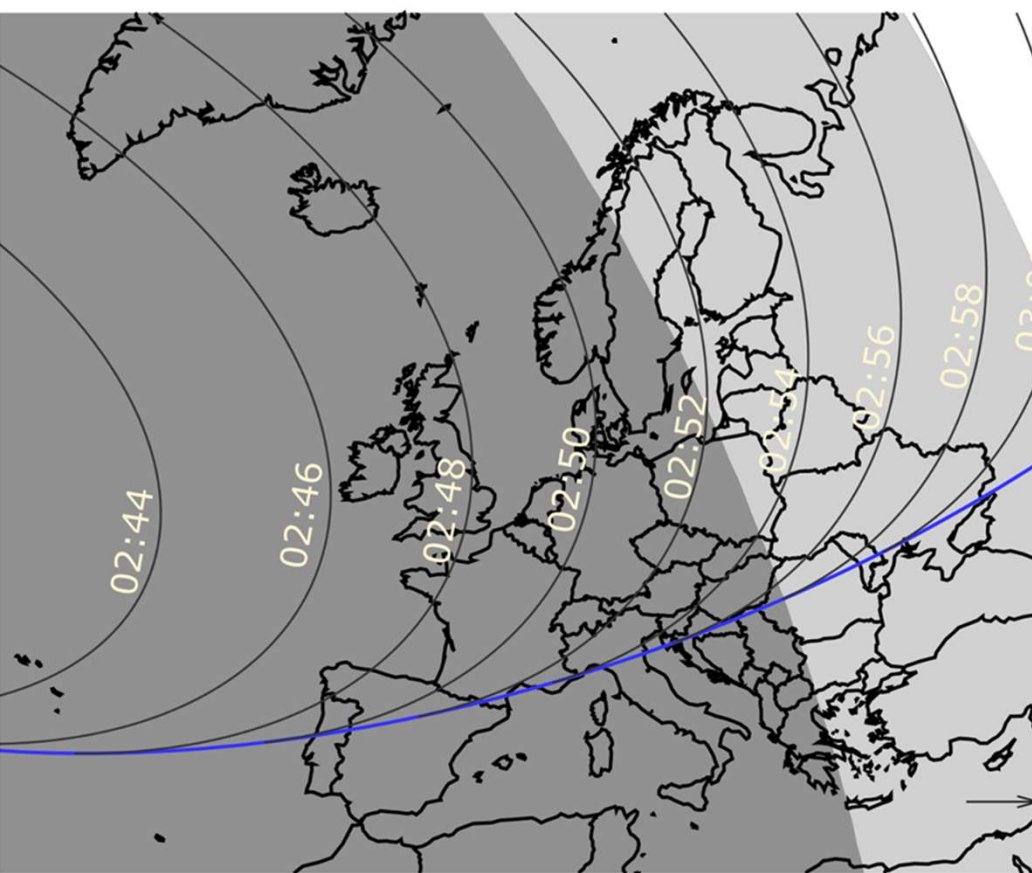
E



Ganymede (III)

Europa (II)

Callisto (IV)



Observers : _____ Page ____ of ____

Telescope : _____ Camera : _____ Laptop : _____ Track : _____

UT date : _____ Site Latitude: _____ Longitude : _____ Altitude : _____

Time setup : _____ Temperature _____ Wind speed / direction _____

Time packed: _____ RH % dew _____ CCD temp _____

Clouds : _____ Barometer _____ Seeing _____

UT folder name	Object Name	Nexp/Duration	Exposure	Gain	Offset	Comments

+ New Entry

All times are entered in UTC.

Read Form Keine ausgewähltOccultation Date Observation Predicttime

Predicted event time for observer position

Additional Obs

Enter only one additional observer

☐ More ObsStar Asteroid No Located near

Enter the nearest town marked on a commercial map

Station Name Country Code of the observation country position Latitude Longitude Altitude

m

Datum Type Telescope Aperture

cm

Effective Focal Length

cm

Obs Method Exp Time

s.sss

Start Obs End Obs D D Time Acc_D

S.sss

Duration

s.s

R R Time Acc_R

S.sss

Time Source Camera Signal/Noise

Observation conditions

Wind Temp

°C

Transparency Seeing

Please provide following files:



yyyy mm dd hh:mm:ss.s	RA_star_J2000	DE_star_J2000	C/A	P/A	vel	Delta	G*	RP*	H*
2025-10-13 10:23:48.5	07 41 12.7200	+21 26 47.821	0.407	190.29	27.38	5.1505	7.9	7.1	5.7

References (bibliography and web links) :

- [1] W. Beisker, K. Guhl, T. Midavaine: contributions of “citizen science” to occultation astronomy. Philosophical Transactions of the Royal Society A : Major advances in planetary sciences thanks to stellar occultations Feb 2025
- [2] D. Herald : presentations to IOTA and TTOA annual meetings and private communications from statistics listing in Occult
- [3] C. Weber : personal communication on SODIS, <https://sodis.iota-es.de>
- [4] Roadies : <https://gemini.obspm.fr/20240701-roadies/>
- [5] Lucky-Star Ganymede event : <https://lesia.obspm.fr/lucky-star/occ.php?p=146057>
- [6] Ganymede event web page on the Gemini portal : <https://gemini.obspm.fr/20250609-occultation-ganymede/>
- [7] Occultation Portal : <https://occultation.trgozlemevleri.gov.tr/>
- [8] SODIS : <https://sodis.iota-es.de/> and https://www.iota-es.de/sodis/IOTA-ES_report.txt
- [9] Lucky-Star Europa event : <https://lesia.obspm.fr/lucky-star/occ.php?p=147471>