

AstroCampania Organization of the Betelgeuse occultation event

Claudio Costa and Alfonso Noschese

ESOP42

42nd European Symposium on Occultation Projects

Armagh

16th – 17th September 2023



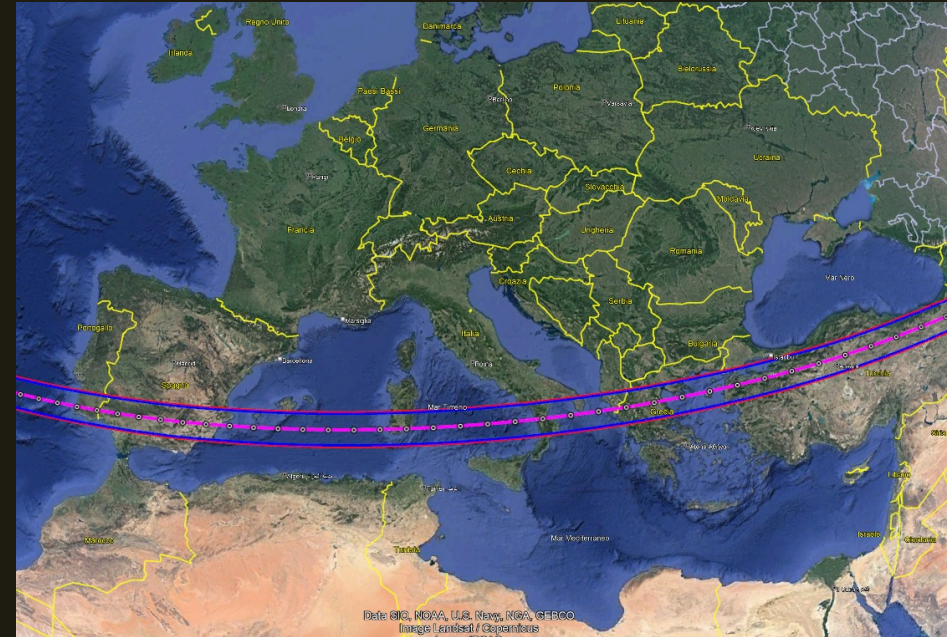
Outline of the talk

- Introduction
- Who we are
- Motivation
- Logistics
- Timeline



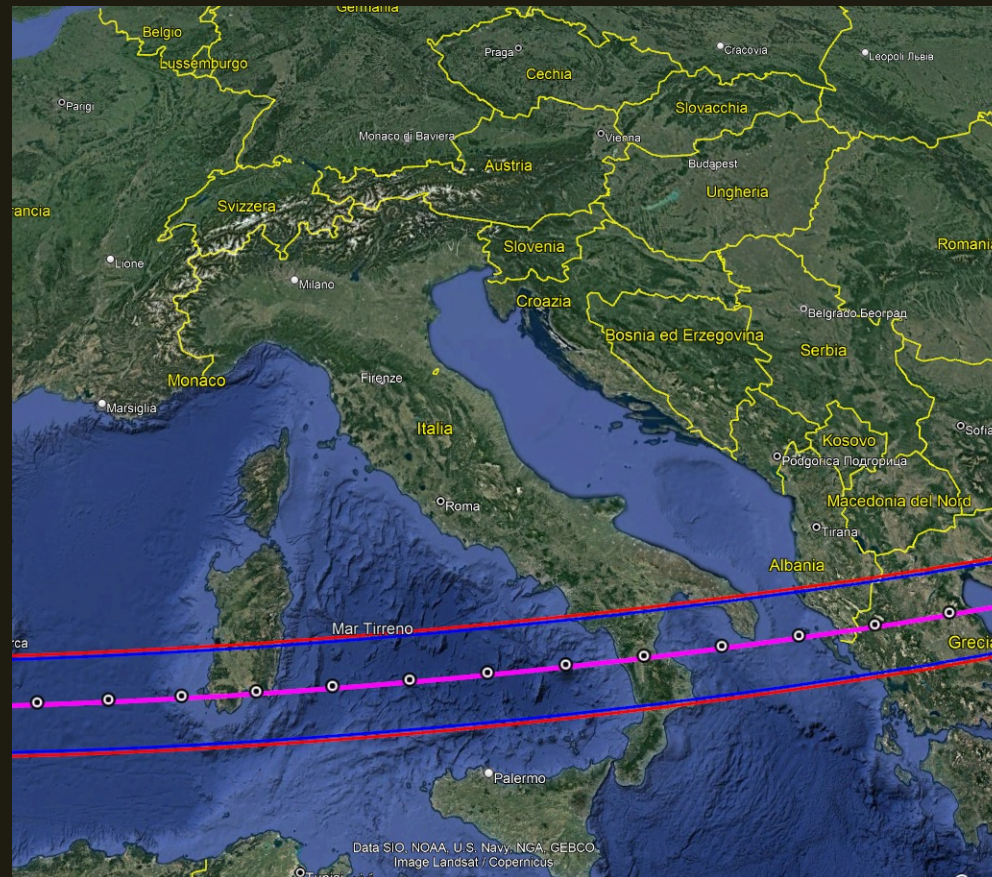
Introduction – the (pretty rare) event

- From 1h08 to 1h26 UTC on Dec 12th, 2023 the main belt asteroid (319) Leona will occult the star Betelgeuse.
- The occultation will be seen from Mexico, Southern Florida, Portugal, Spain, Italy (mainly Calabria region), Greece on to central Asia.
- The occultation by (319) Leona on Sep. 12th (great job of José L. Ortiz team and Agrupació Astronòmica de Sabadell) seems to confirm the prediction



Introduction – the (pretty rare) event

AstroCampania, under the patronage of IOTA-ES, will take care of organizing and coordinating the observations and locations for Italian, European and international observers who would like to attempt the observation of the event.



Who we are



Claudio Costa

SODIS - Reviewer for Italy
UAI – ex Responsable for occultations UAI
Member of the Associazione Tuscolana di Astronomia
SPECOLA VATICANA – Technical assistant of the director for
maintenance of historical telescope and public outreach



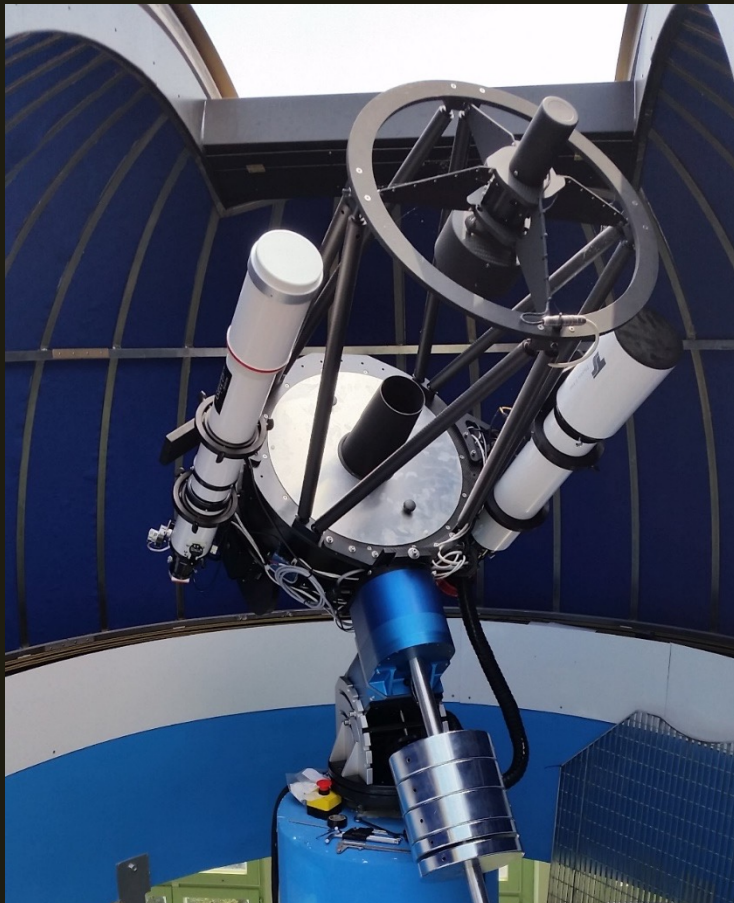
Alfonso Noschese

ASTROCAMPANIA – Research group coordinator
AGEROLA and PETINA OBSERVATORIES – Technical staff member



Who we are - Observatories

Main telescope of Salvatore di Giacomo Observatory – Agerola (MPC L07)

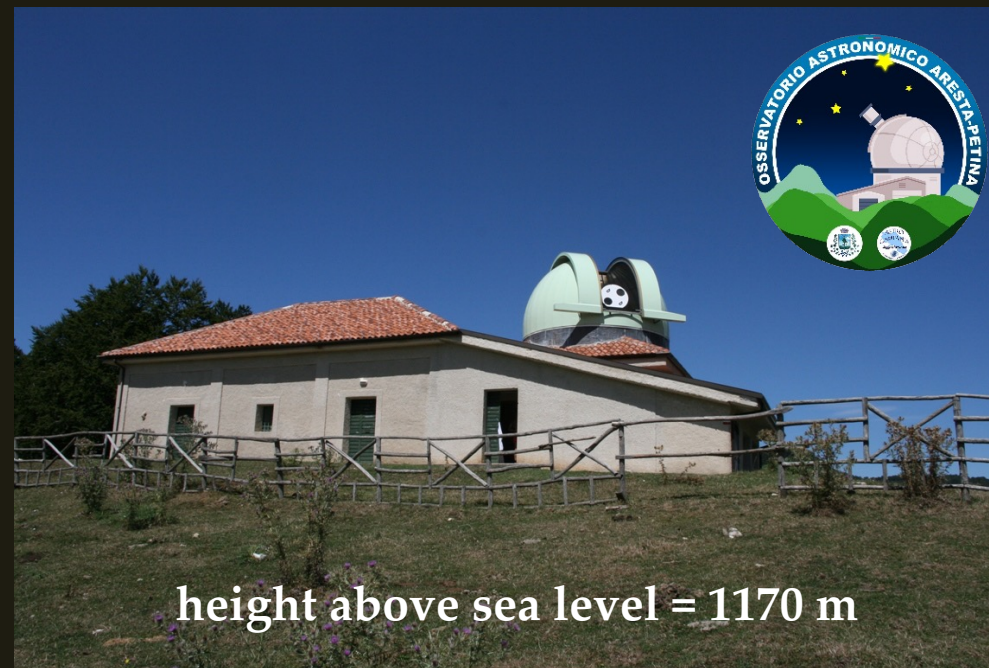


- 0.5 m $f/8$ RC
- 0.13 m $f/7$ Apo
- 0.10 m $f/10$ solar telescope
- NTM 500 Astelco
- Gambato Dome



Who we are - Observatories

Main telescope of Casone d'Aresta Observatory – Petina



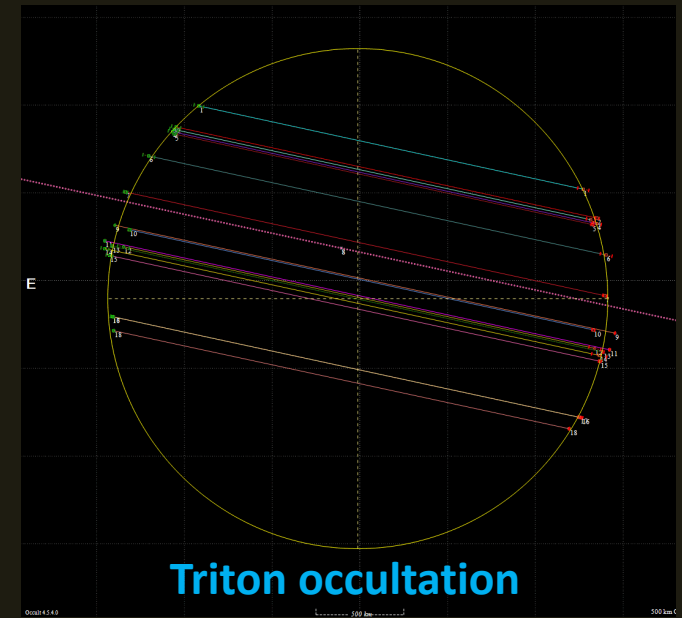
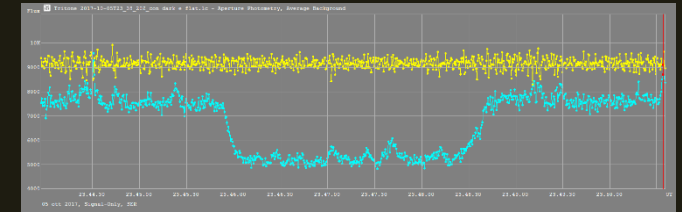
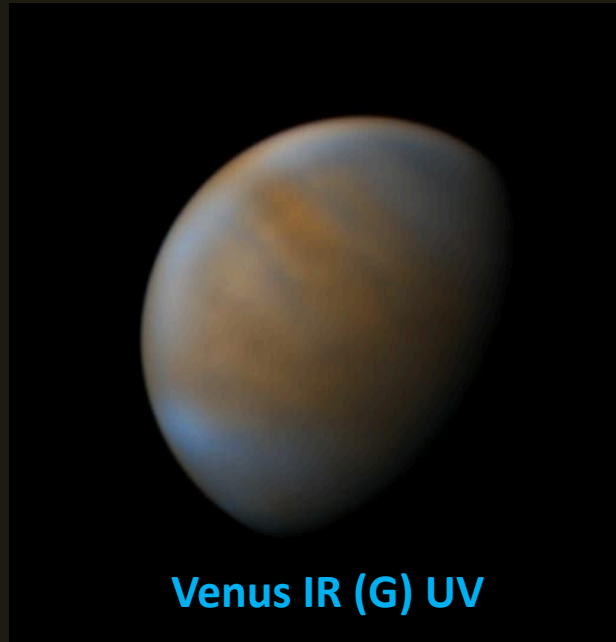
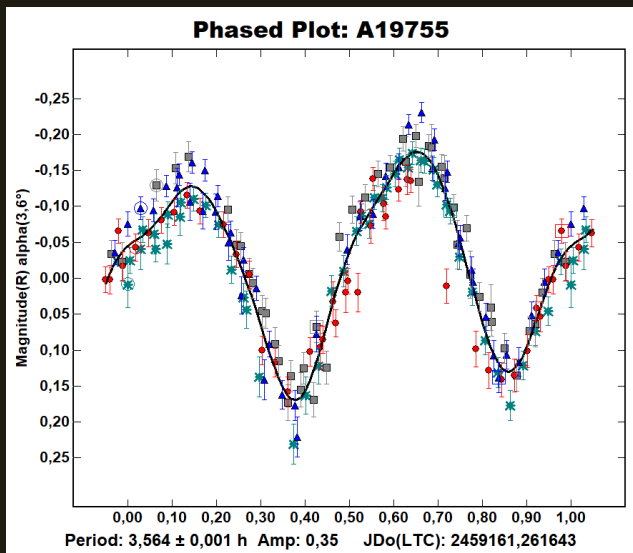
height above sea level = 1170 m

- 0.85 m $f/6.5$ RC
- Equatorial fork mount
- Gambato Dome



Who we are – Main research activities

- Asteroid Photometry and Lightcurves
- Asteroidal Occultations
- Minor body astrometry
- Exoplanets Transits
- Gamma Ray Burst follow-up
- Monitoring of Venus atmosphere



Who we are – Some recent results

A&A 659, A136 (2022)
<https://doi.org/10.1051/0004-6361/202141443>
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**Astronomy
&
Astrophysics**

Constraints on the structure and seasonal variations of Triton's atmosphere from the 5 October 2017 stellar occultation and previous observations*

A&A 639, A134 (2020)
<https://doi.org/10.1051/0004-6361/202038046>
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**Astronomy
&
Astrophysics**

The large trans-Neptunian object 2002 TC₃₀₂ from combined stellar occultation, photometry, and astrometry data*

A&A 672, L2 (2023)
<https://doi.org/10.1051/0004-6361/202244822>
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**Astronomy
&
Astrophysics**

LETTER TO THE EDITOR

Venus cloud discontinuity in 2022
The first long-term study with uninterrupted observations

A&A 625, A42 (2019)
<https://doi.org/10.1051/0004-6361/201834281>
© E. Meza et al. 2019

**Astronomy
&
Astrophysics**

Lower atmosphere and pressure evolution on Pluto from ground-based stellar occultations, 1988–2016

Article

Observation of inverse Compton emission from a long γ -ray burst

Nature, volume 575, pages 459–463 (2019)

THE ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 265:4 (20pp), 2023 March
© 2023, The Author(s). Published by the American Astronomical Society.

<https://doi.org/10.3847/1538-4365/ac9da4>

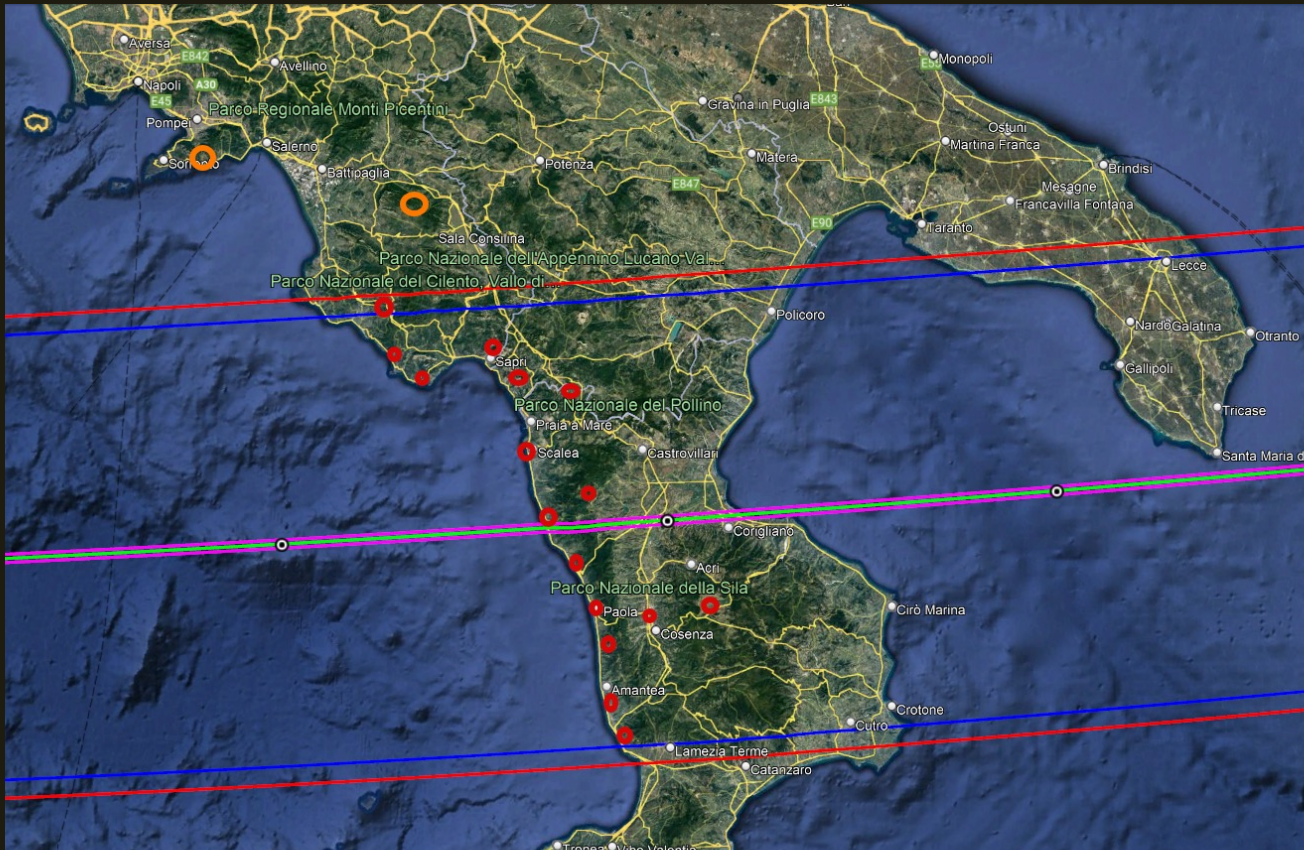
OPEN ACCESS



ExoClock Project. III. 450 New Exoplanet Ephemerides from Ground and Space Observations

Motivation to organize the event

Distribute the observers in a rational way in the area where occultation is expected in order to maximize the possibility of collecting scientifically valid results.



To this aim Astrocampa will help the amateur astronomers to find the suitable accommodation.

For those who intend to participate to the sharing and discussing of preliminary data, we are thinking about an informal meeting the day after the event.



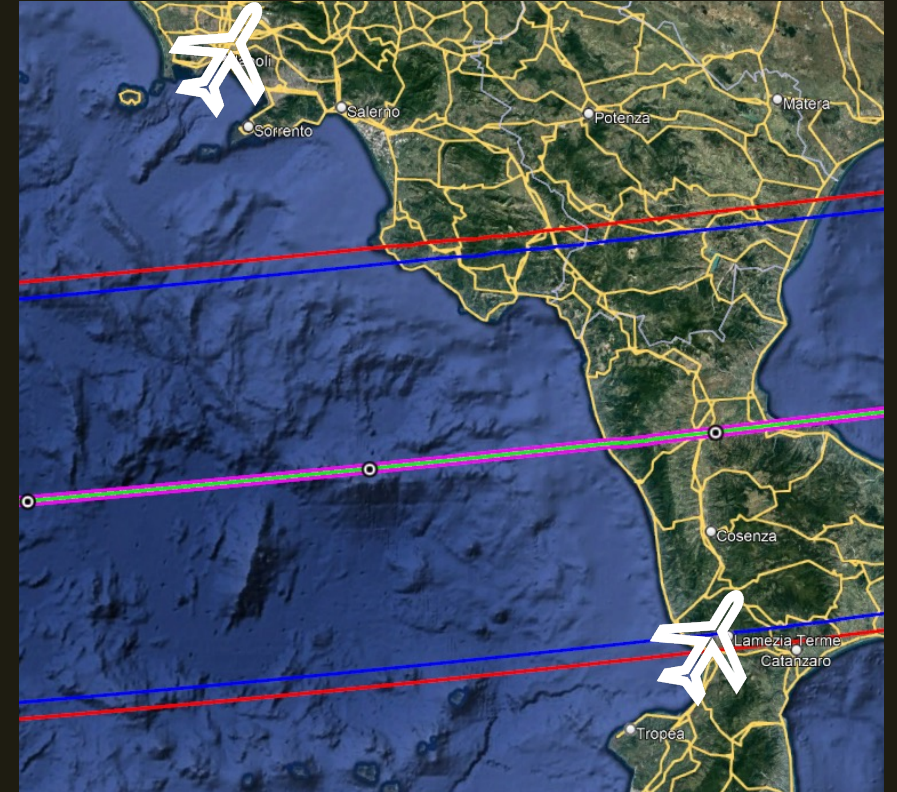
Logistics - Venue

Arriving in Calabria by plane

The most convenient airport is the LAMEZIA TERME international airport, where the traffic of national and low cost airline flights is concentrated. The airport is located 10 km from the city center and 5 minutes by car from the central train station.

The other possibility is the NAPLES airport, further but with more flights from Europe.

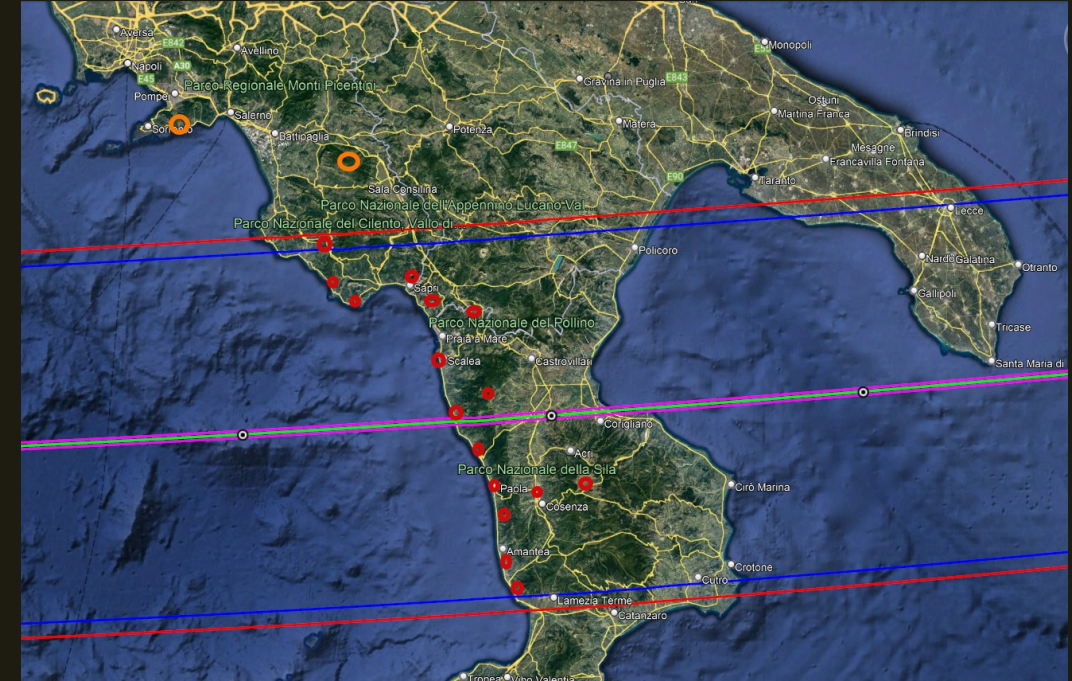
Transfer from airport: we suggest to hire a car, other possibilities can be evaluated on specific needs. Astrocampania will help to choose the best path to reach the selected location.



Logistics -Accomodation

Astrocampania will select a series of hotels and farmhouses with following requirements:

- Open in December (we are almost in Winter, low touristic season)**
- With a good visibility of sky, especially in South direction**
- With possibility to have a comfortable position to observe, with a table, a chair, electrical power if needed, etc.**



Timeline

September

**Choosing the
observing site**

November

**Finalizing list of
participants**

October

**Contacting local
authorities and hosting
structures**

December

**Collecting, sharing
and analysing of
the results**

Registration Deadline: November 15th 2023

email: alfaori2023@astrocampania.it
<https://acgo.it/betelgeuse2023>



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