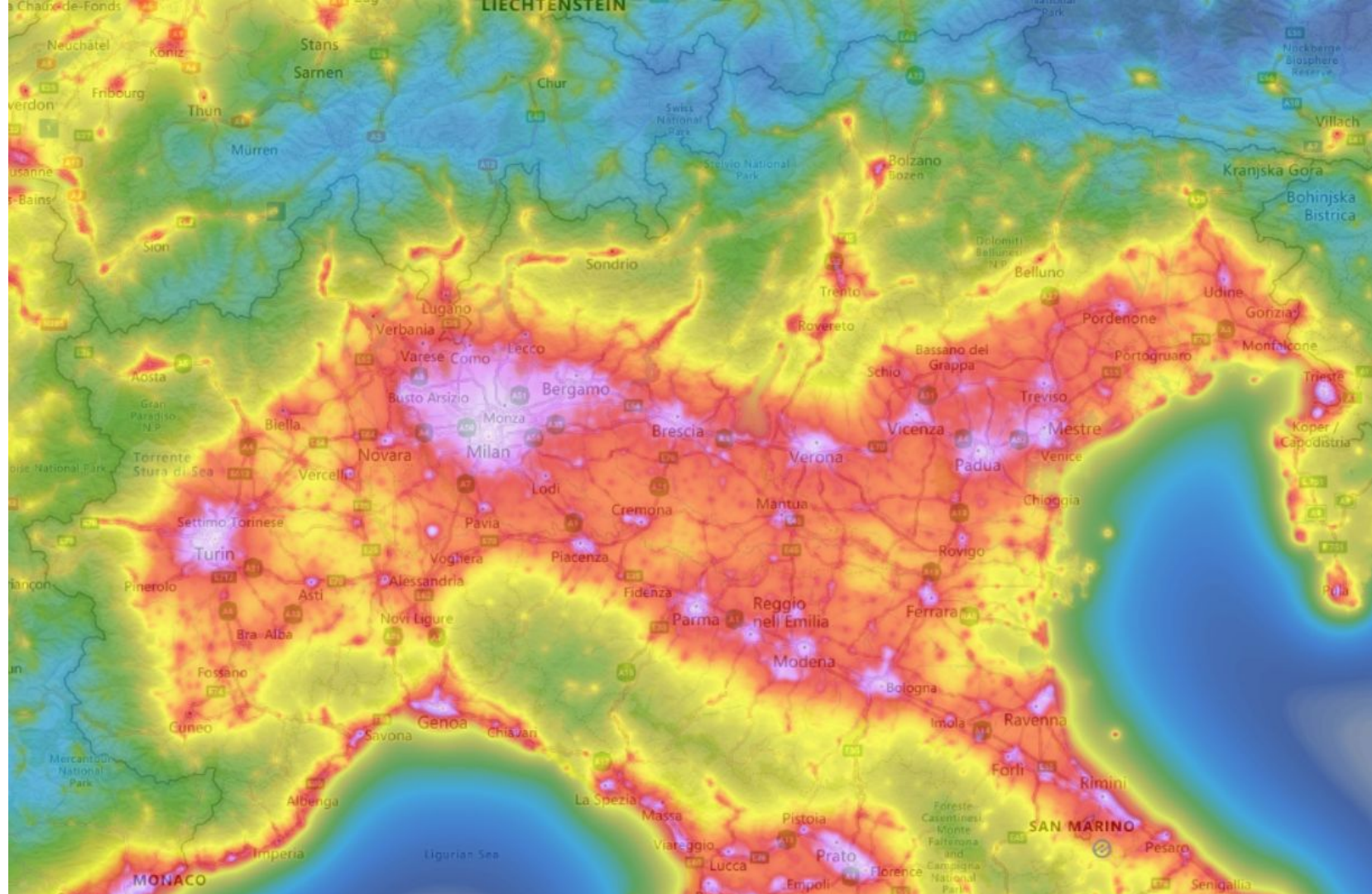


# PRISMA e DARKERSKY4CE

PRISMA DAYS 2024 - La Torre del Sole  
Brembate di Sopra | 5 Ottobre 2024

Daniele Gardiol  
INAF - Osservatorio Astrofisico di Torino







# Project overview

## Duration

Start date **06.2024**

End date **01.2027**

**Interreg**  
CENTRAL EUROPE



Co-funded by  
the European Union

**DARKERSKY4CE**

## Strategic Transnational Approach to Reduce Light pollution in Central Europe

Bright city lights at night can be helpful but also polluting. They negatively affect human health and the environment. Awareness for this problem is still rather low in many central European cities and now addressed by the DARKERSKY4CE project. The partners change the perceptions about light pollution among local policymakers, tourism entities, and citizens. They spotlight the adverse impact of light pollution on ecosystems and promote dark skies as an asset for sustainable development. To this end, the project sets up a transnational network and fosters dialogue to pave the way for a "Dark Skies Macro Region."

**1,79** m €  
Project Budget

**80%**  
of the Budget is funded  
by ERDF

**6**  
Countries

**6**  
Regions

**7**  
Partners

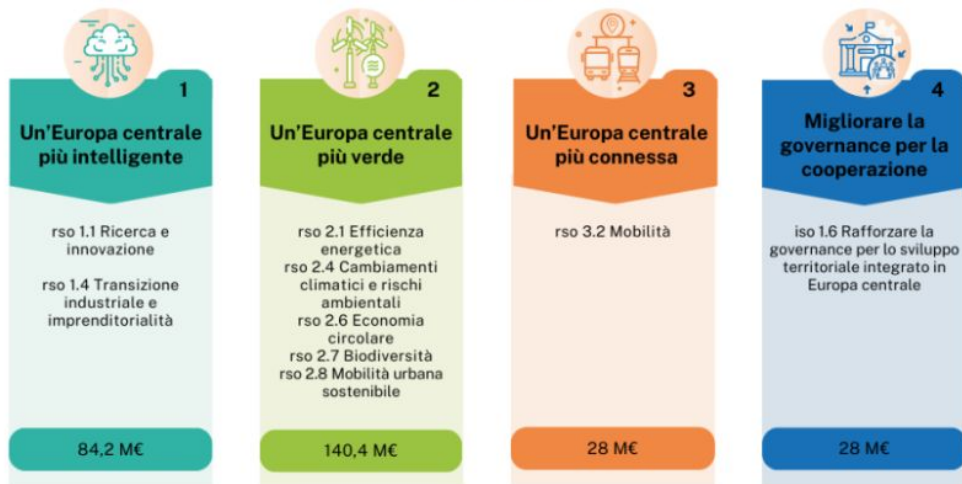
**5**  
Pilots

# Il Programma Central Europe 2021-2027 in breve



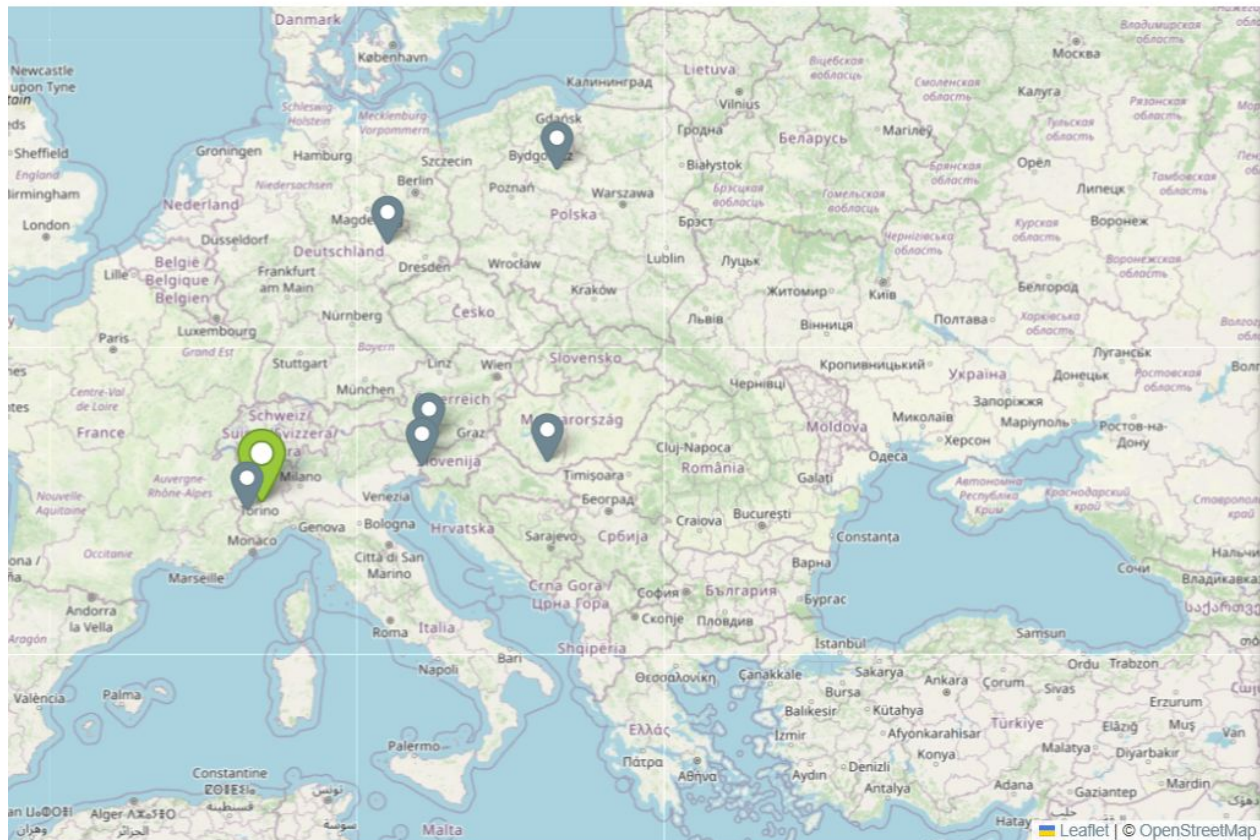
Interreg  
CENTRAL EUROPE  Co-funded by  
the European Union

## Programma Interreg Central Europe 2021-2027 4 priorità



Fonte: programma operativo approvato dalla Commissione europea il 23 marzo 2022

# Project partnership



Lead partner

**National Institute for  
Astrophysics**

Osservatorio Astrofisico di  
Torino - Turin  
Astrophysical Observatory

Address

Via Osservatorio 20  
10025 Pino Torinese (TO)

Country  
Italy (IT)

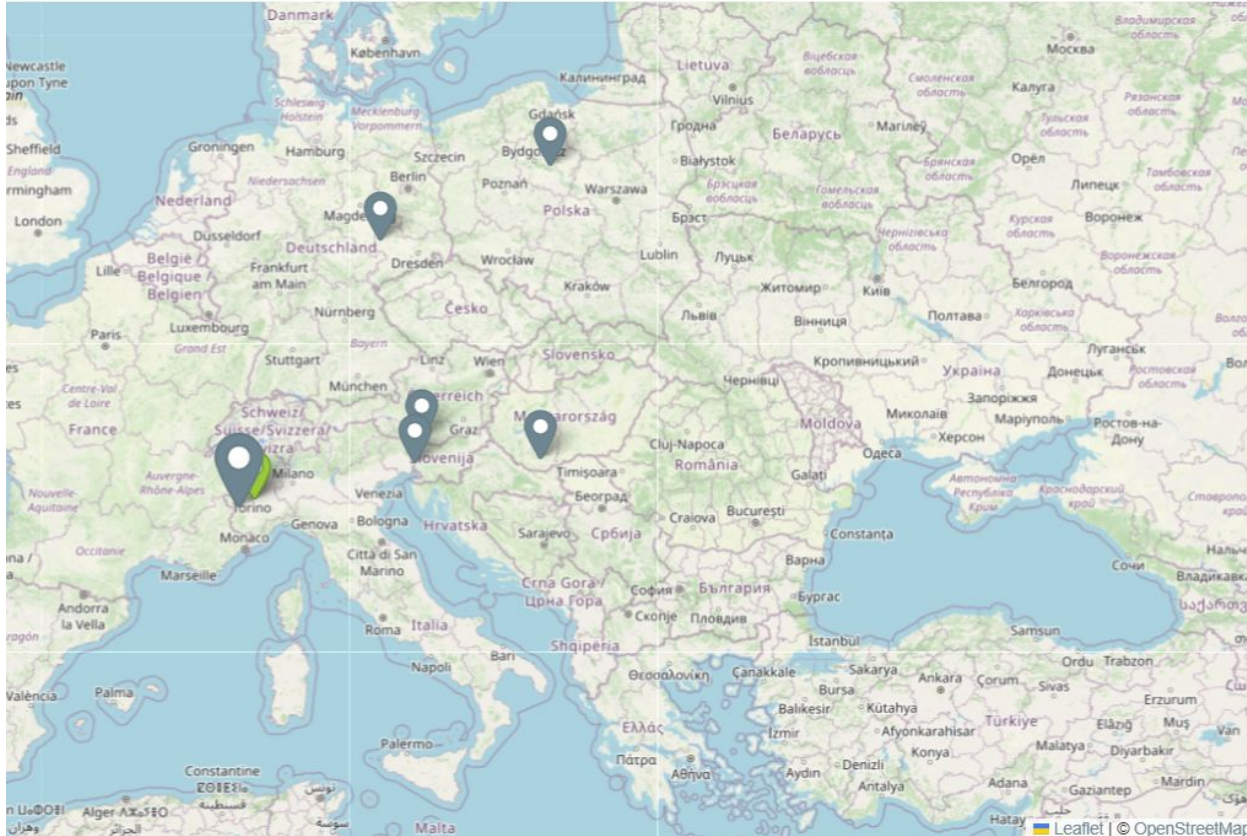
Web

[www.inaf.it](http://www.inaf.it) -  
[www.oato.inaf.it](http://www.oato.inaf.it)

Total partner budget  
**322.798 €**



# Project partnership



Project partner

**Local Action Group  
Escartons and  
Waldensian Valleys**

Address

Corso Jacopo Lombardini 2  
10066 Torre Pellice

Country

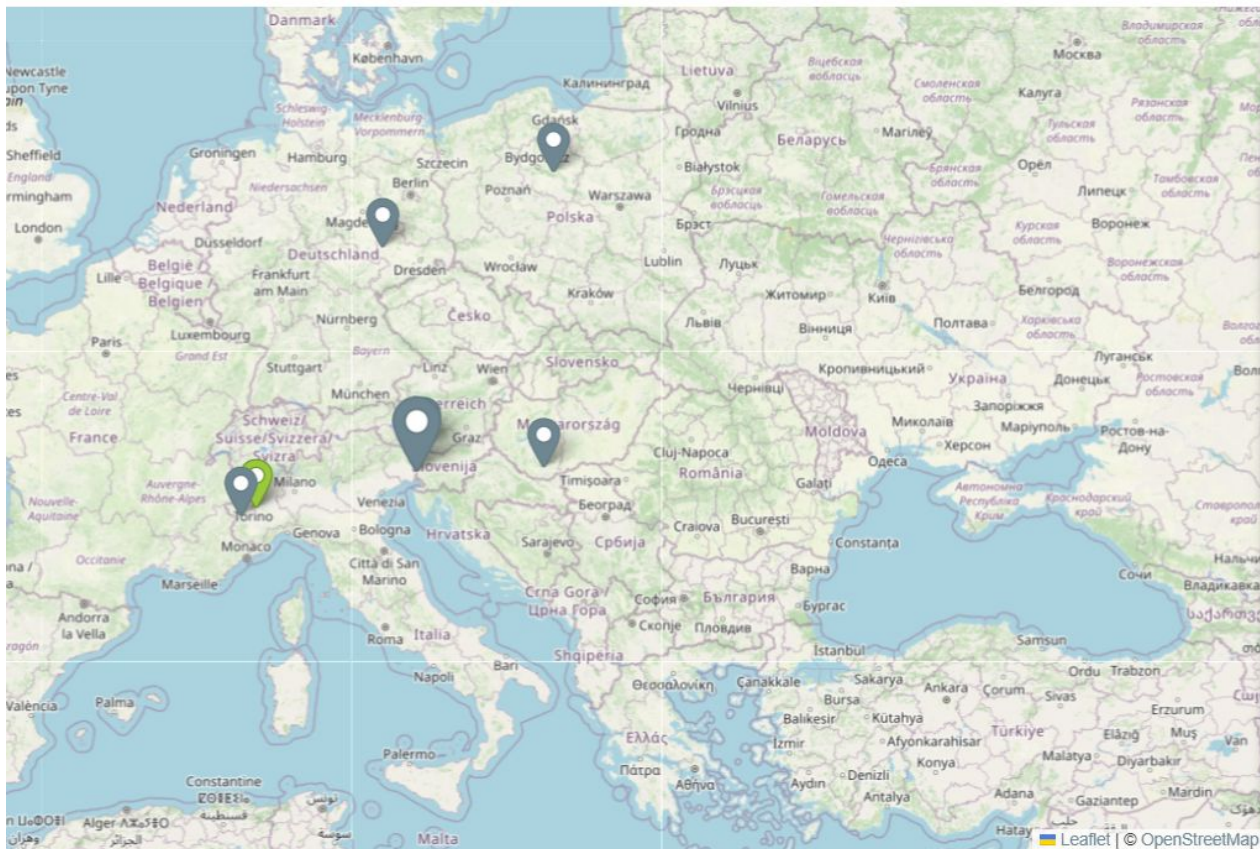
Italy (IT)

Web

[www.ev.it](http://www.ev.it)

Total partner budget  
**253.300 €**

# Project partnership



Project partner

**Regional Development  
Agency of Northern  
Primorska L.t.d. Nova  
Gorica**

Address

Kromberk Cesta 25. Junija  
1F  
5000 Nova Gorica

Country

Slovenia (SI)

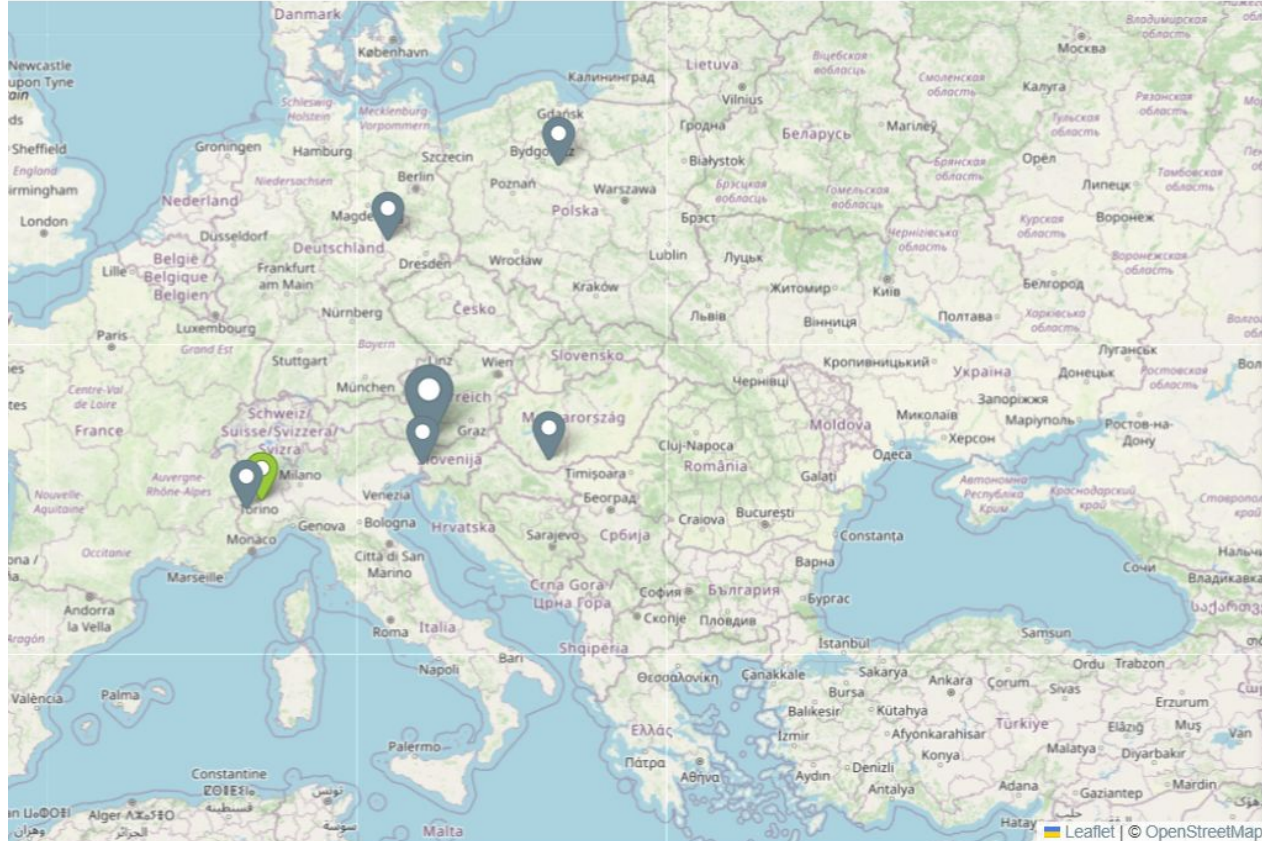
Web

[RRA SP \(rra-sp.si\)](http://RRA.SP(rra-sp.si))

Total partner budget  
**218.670 €**



# Project partnership



Project partner

**Carinthia University of Applied Sciences - non-profit limited liability company**

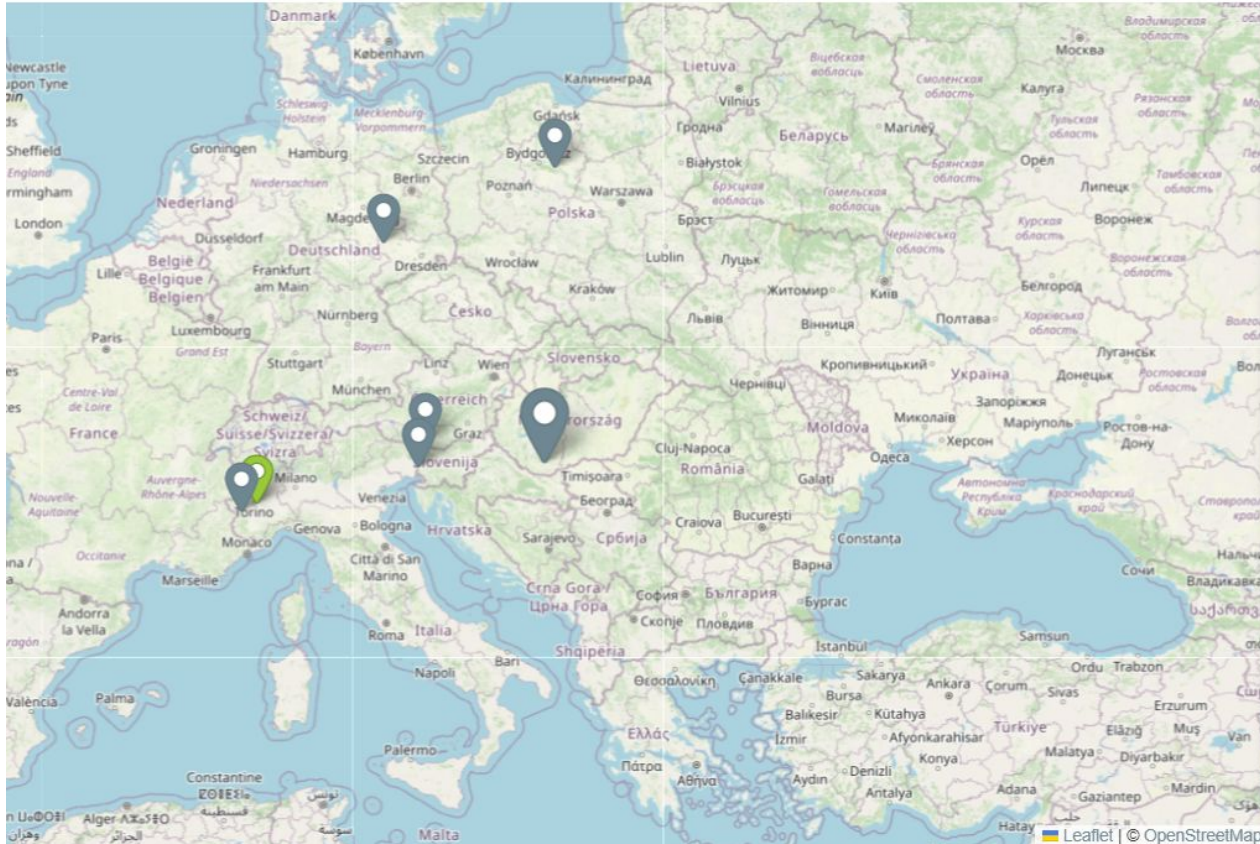
Address  
Europastraße 4  
9524 Villach

Country  
Austria (AT)

Web  
[www.cuas.at](http://www.cuas.at)

Total partner budget  
275.920 €

# Project partnership



Project partner

**"South Transdanubian  
Regional Innovation  
Agency"**

Address

Mária u 3  
7621 Pécs

Country

Hungary (HU)

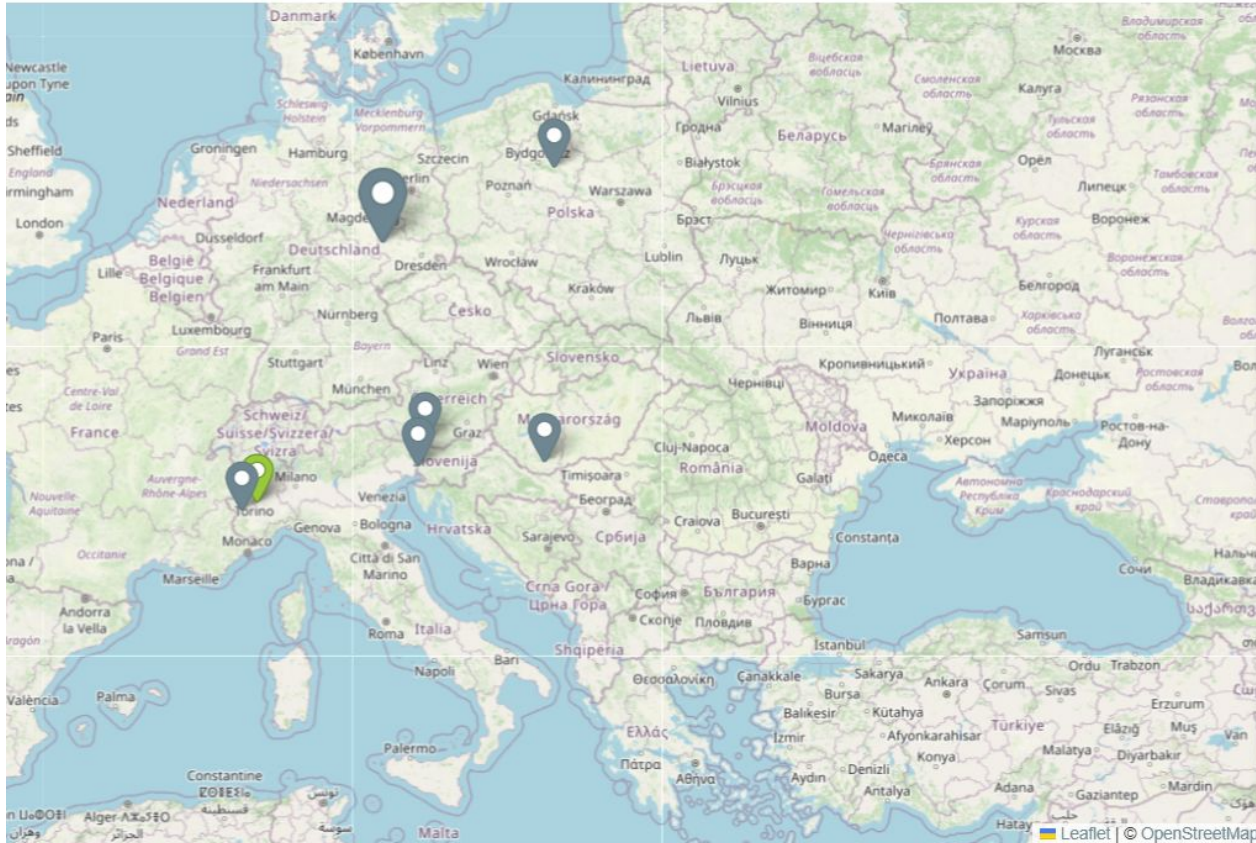
Web

<https://ddriu.hu/en/home/>

Total partner budget  
235.115 €



# Project partnership



Project partner

**Aufbauwerk Region  
Leipzig GmbH**

Address

Otto-Schill-Strasse 1  
04109 Leipzig

Country

Germany (DE)

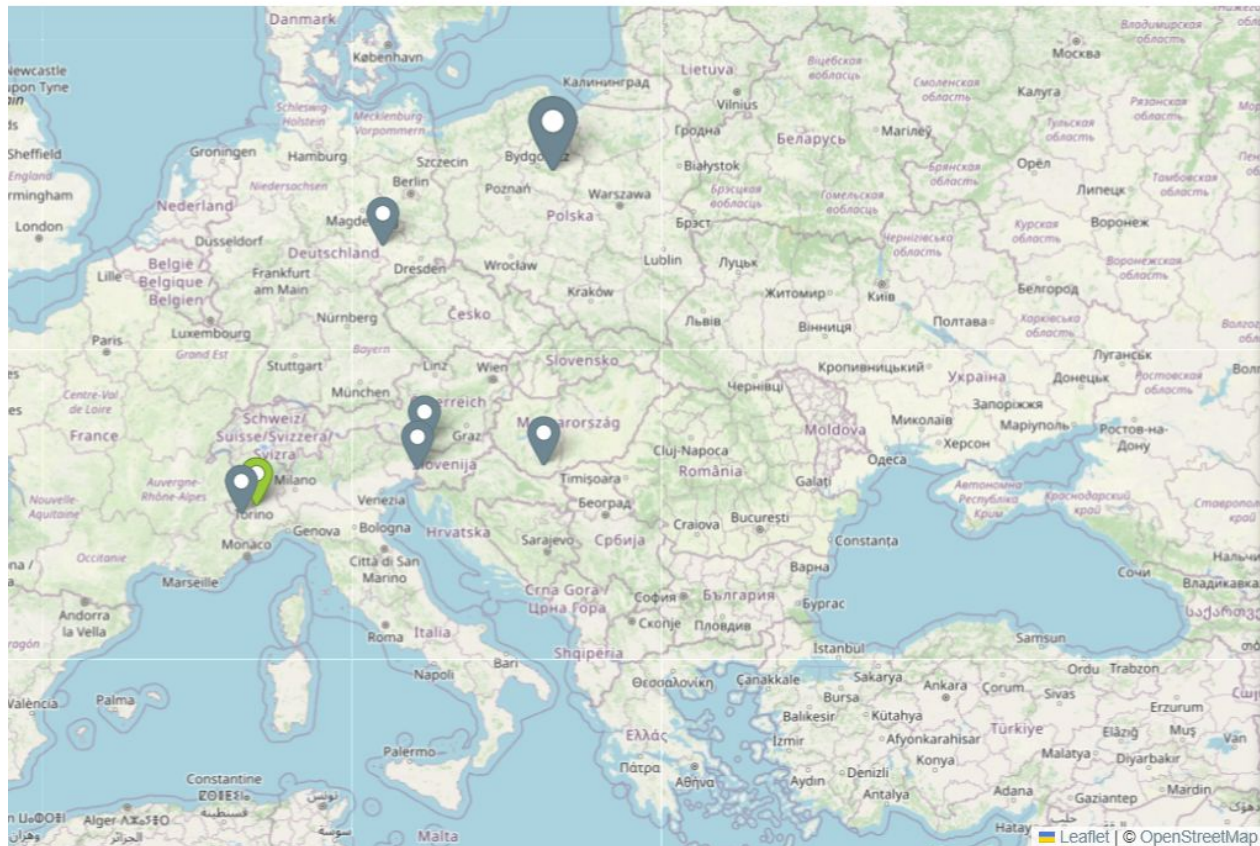
Web

[https://aufbauwerk-  
leipzig.com/](https://aufbauwerk-leipzig.com/)

Total partner budget  
**252.000 €**



# Project partnership



Project partner

**Kujawsko-Pomorskie  
Voivodeship**

Address

Plac Teatralny 2  
87-100 Torun

Country

Poland (PL)

Web

<https://www.kujawsko-pomorskie.pl>

Total partner budget

233.210 €

# 1

## Our challenge



Central Europe is one of the most light polluted areas in the world. Although underestimated, light pollution creates serious problems for ecosystems and biodiversity and, consequently, for humans.

## 2

## Our idea



DARKERSKY4CE aims to reduce light pollution in central Europe by changing how it is perceived by policy makers, tourism facilities, tourists, and locals. The project objective is to raise awareness on the problem and generate a positive, solution-oriented, attitude to preserve ecosystems and biodiversity, highlighting that dark skies can be a competitive asset for sustainable development in non-urbanised areas.



### 3

## Our actions



\* Collecting and making accessible scientific data on the risk and how it affects ecosystems. \* A transnational strategy for the valorisation of dark skies \* 5 Pilot Demo Sites to concretise this strategy. \* A transnational network to share knowledge and elaborate policy recommendations

## 4

## Our solution



We want to support local authorities to be able to see dark skies as an asset to protect biodiversity, while also being able to determine the economic value of different sites, well suited for tourism or astronomy. This will be the first step to a roadmap aimed at creating the first “Dark Skies macro-region” in Central Europe.

# DARKERSKY4CE - KO meeting - Pino Torinese, 24-25 giugno 2024



Chiara Lamberti

Dario Barghini

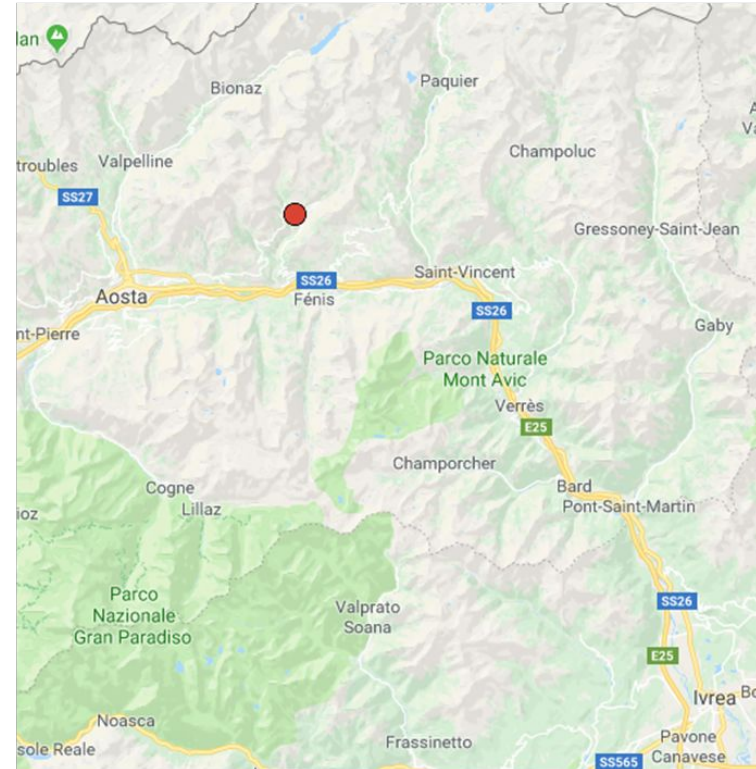
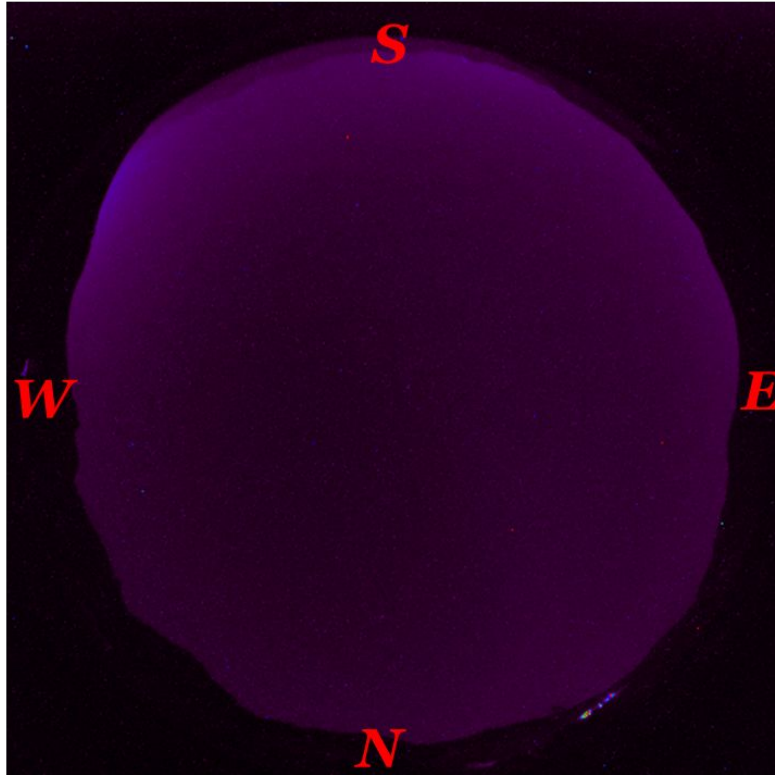
Donata Bonino

Daniele Gardiol

Zlata Petrenko

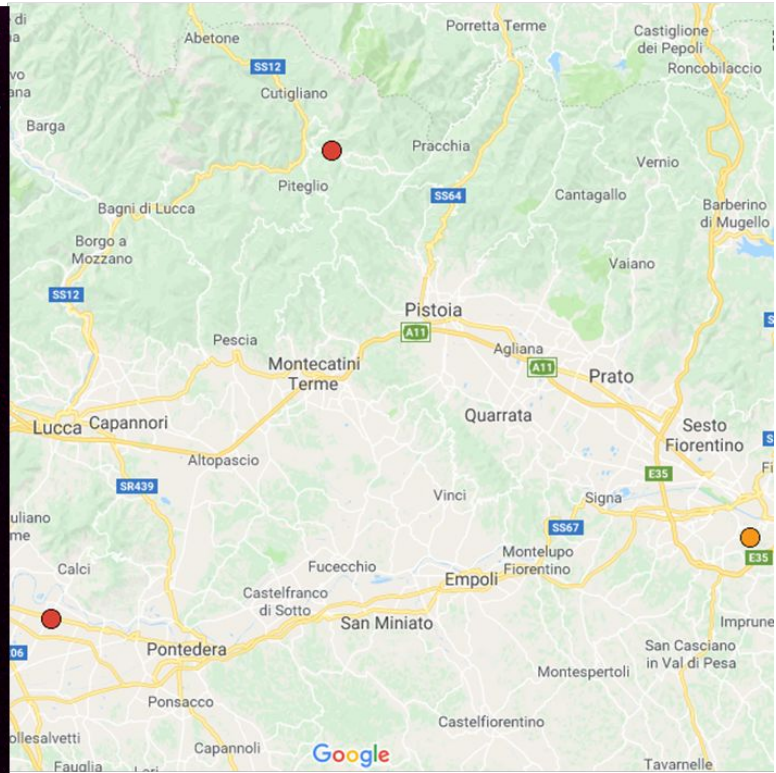
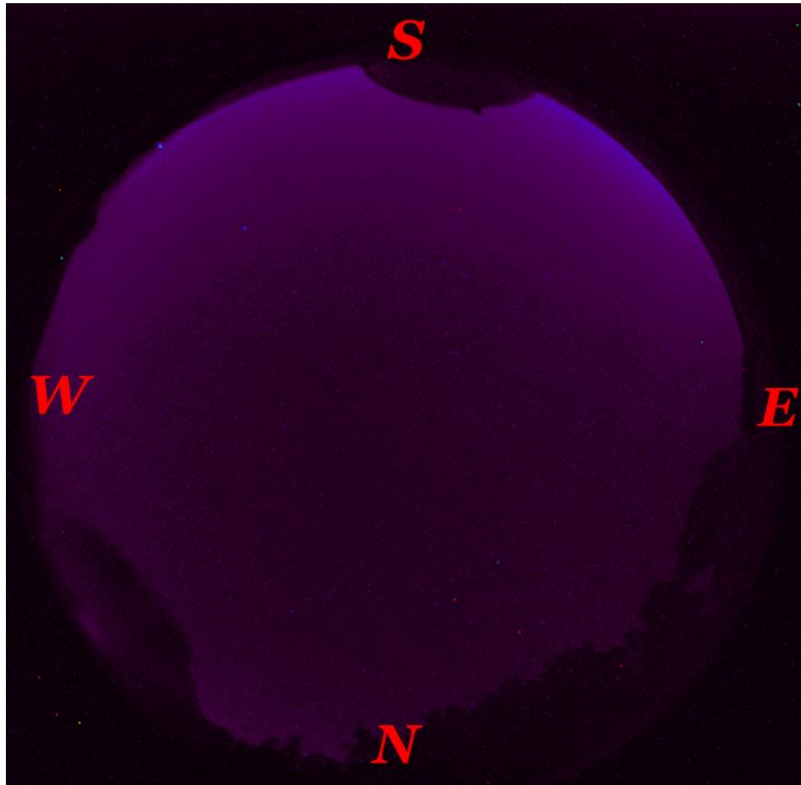


# Inquinamento Luminoso - la rete PRISMA



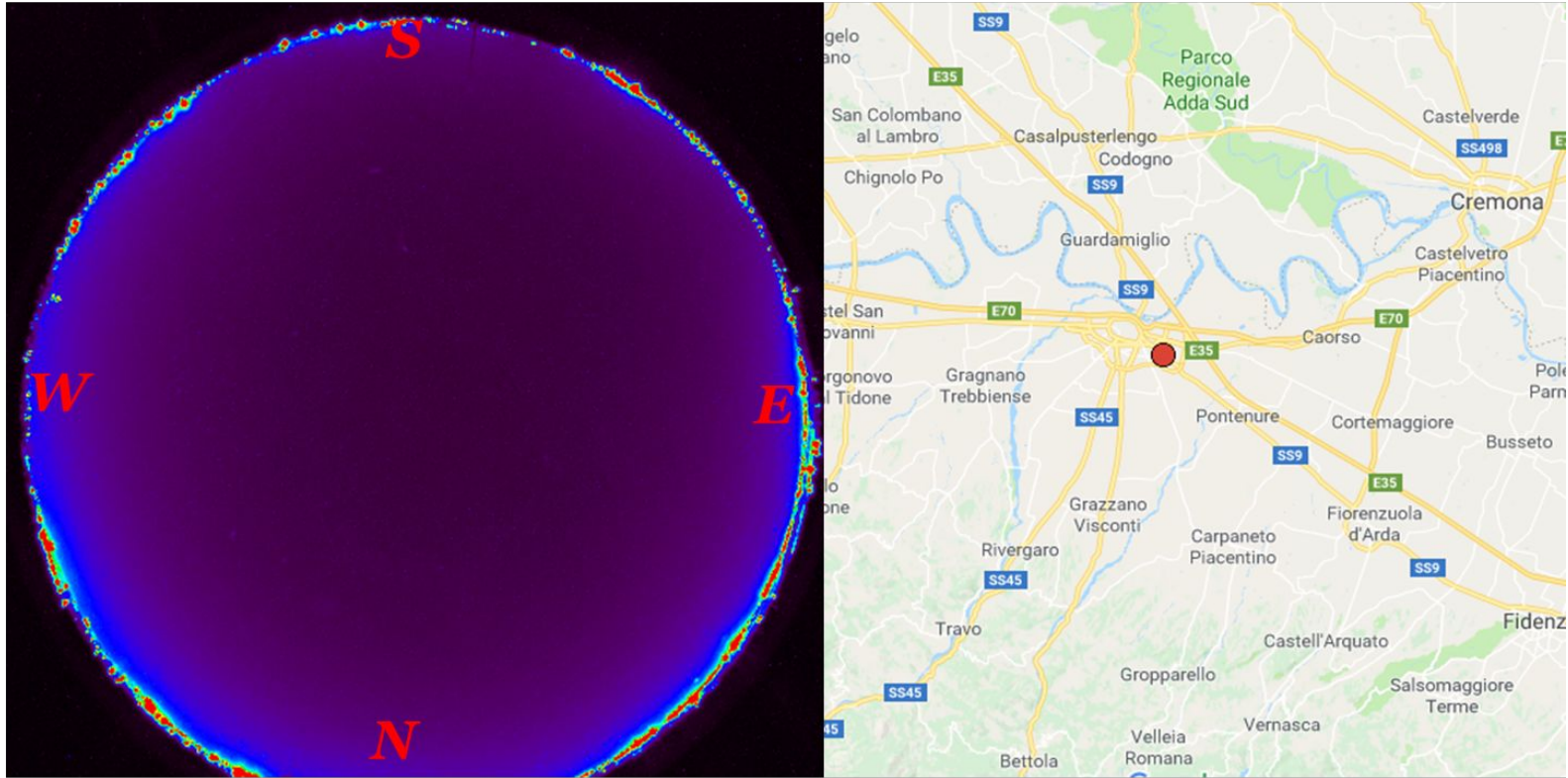
ITVA01 - Saint Barthelemy (Valle D'Aosta)

# Inquinamento Luminoso - la rete PRISMA



ITTO01 - San Marcello Pistoiese (Toscana)

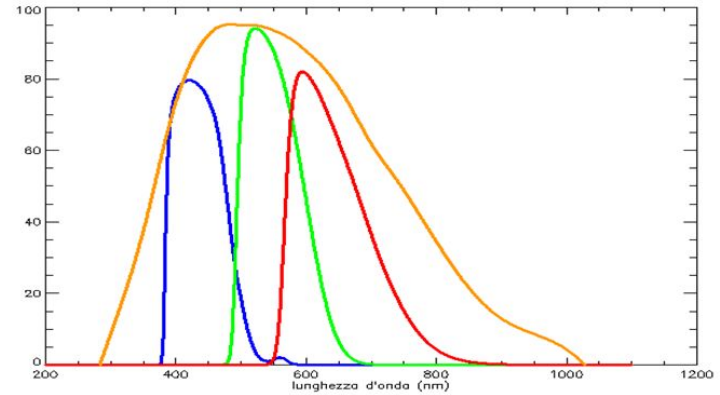
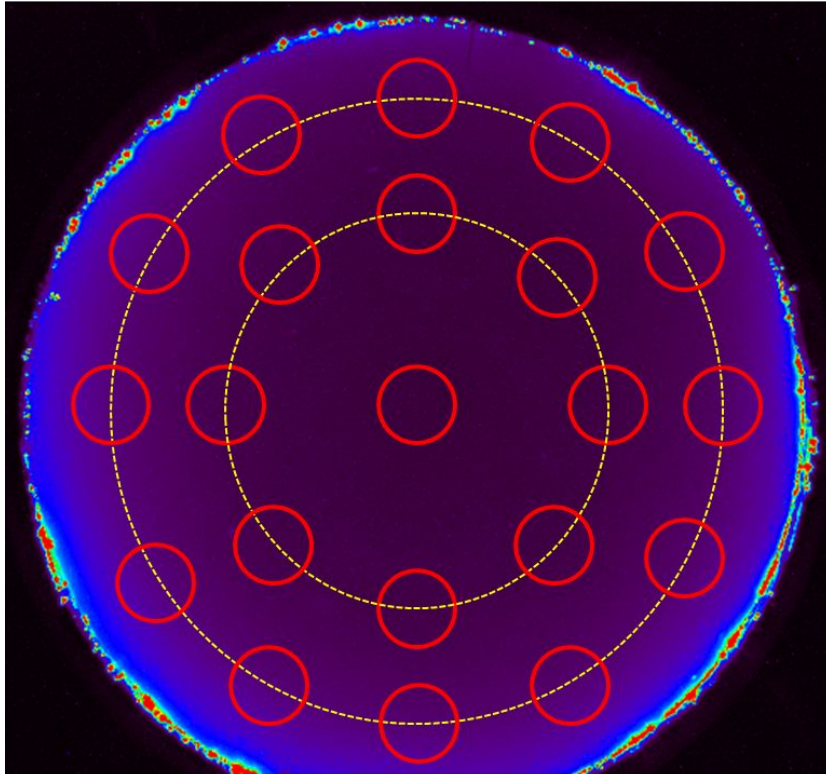
# Inquinamento Luminoso - la rete PRISMA



ITER05 - Piacenza (Emilia Romagna)



# Inquinamento Luminoso - la rete PRISMA

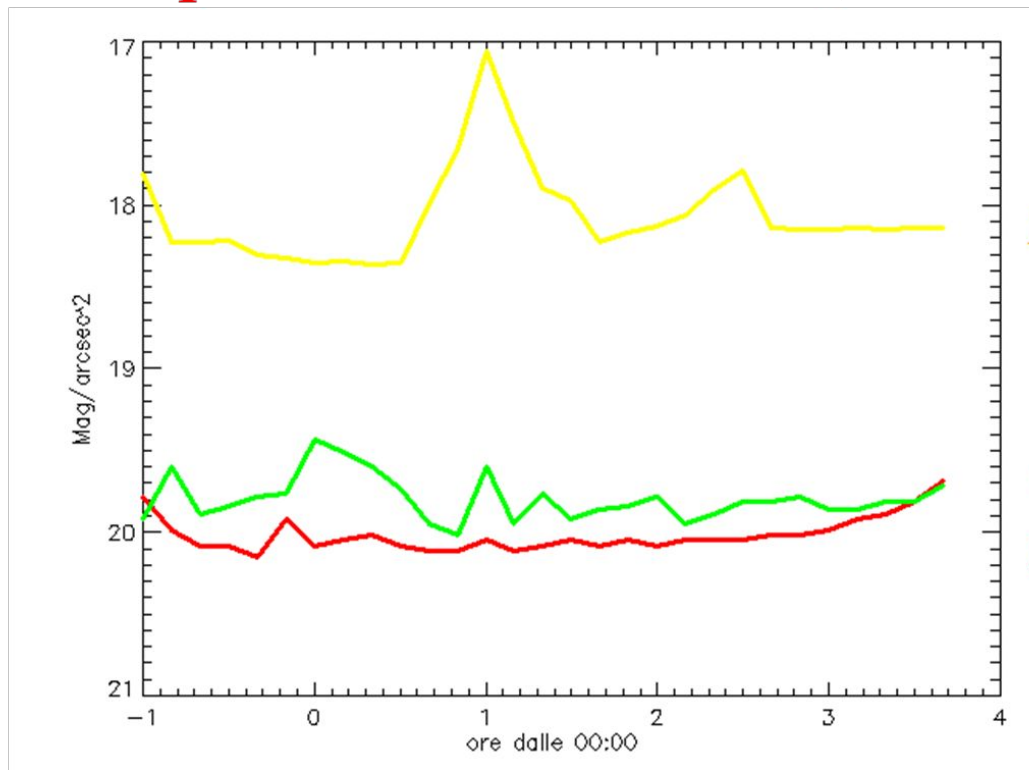


$$m - m_0 = -2.5 \log_{10}(F/F_0)$$

$\Delta m$	$\Delta F$	$\Delta m$	$\Delta F$
0.01	1%	0.5	60%
0.1	10%	1	250%

# Inquinamento Luminoso - la rete PRISMA

*Esempio: una notte allo zenit (senza estinzione!)*



*Piacenza*

*S.Marcello*

*S.Barthelemy*

Misura della luminosità del cielo

**Interreg**  
CENTRAL EUROPE



Co-funded by  
the European Union

**DARKERSKY4CE**



[https://www.interreg-central.eu/  
projects/darkersky4ce](https://www.interreg-central.eu/projects/darkersky4ce)



[daniele.gardiol@inaf.it](mailto:daniele.gardiol@inaf.it)



349 19 77 591



Coming soon!



**Grazie per l'attenzione!**



# DARKERSKY4CE - WORK PACKAGES OVERVIEW

## Main Work Packages - WP managers - Semesters

### WP1

Light Pollution: a threat that calls for action

Italy - INAF (LP)

3 A - 9 D - 3 O

S1-S2 (06/24-05/25)

### WP2

Transnational strategy for the valorisation of dark skies

Poland (PP2)

3 A - 8 D - 1 O

S1-S4 (06/24-05/26)

### WP3

Piloting solutions for darker skies in Central Europe

Hungary (PP3)

4 A - 11 D - 2 O

S3-S6 (06/25-01/27)

# DARKERSKY4CE - WORK PACKAGE 1

## Light Pollution: a threat that calls for action

Activity	P1 (06/24-11/24)	P2 (12/24-05/25)
A1.1 Knowledge base on light pollution in CE and pilot action on harmonised data	D1.1.1 Country-based reports on light pollution (LP + PPs)	D1.1.2 <b>Pilot action</b> on the harmonised light pollution measurements and data gathering (LP + PPs) -> O1.2
A1.2 Dark skies as an ecosystem service	D1.2.1 Dark skies as ecosystem services: groups and calendar (PP6 + PPs + APs)	D1.2.2 Report on dark skies ecosystem services (PP6 + PPs) D1.2.3 Dark skies ecosystem services GIS map (PP3 + PPs)

# DARKERSKY4CE - WORK PACKAGE 1

## Light Pollution: a threat that calls for action

Activity	P1 (06/24-11/24)	P2 (12/24-05/25)
A1.3 Measuring the change	D1.3.1 DARKERSKY4CE Sentinel Alliance -> O1.1 (PP6 + PPs, APs)	D1.3.2 Dynamic Monitoring Tool (LP/PP6 + PPs) D1.3.3 Dark skies in peripheral area: solutions to convey their value (LP/PP6 + PPs) -> O1.3 D1.3.4 Photometer Network (LP + PPs)
OUTPUTS	O1.1 DARKERSKY4CE Sentinel Alliance (D1.3.1)	O1.2 <b>Pilot action</b> on the harmonised light pollution measurements and data gathering (D1.1.2) O1.3 <b>Solution</b> - Dark skies in peripheral area: solutions to convey their value (D1.3.3)



# DARKERSKY4CE - WORK PACKAGE 2

## Transnational strategy for the valorisation of dark skies

Activity	P1 (06/24-11/24)	P2 - P3 (12/24-11/25)
A2.1 Establishing working groups to investigate the future of dark skies	D2.1.1 List of members per group (PP2 + PPs) D2.1.2 Operational guide for group work (PP2)	
A2.2 Implementing working groups to shape the future of dark skies		D2.2.1 Report G1 "Safeguarding the Central Europe nocturnal ecosystems" (PP3, PP4, PP5, LP, APs, SHs) D2.2.2 Report G2 "Transforming dark skies into a sustainable growth asset for tourism" (PP2, PP7, PP6, APs, SHs) D2.2.3 Report G3 "Local participation and transnational cooperation in light pollution reduction" (PP6, PP7, LP, APs, SHs)

# DARKERSKY4CE - WORK PACKAGE 2

## Transnational strategy for the valorisation of dark skies

Activity	P3 (06/25-11/25)	P4 (12/25-05/26)
A2.3 Strategy development via strategic foresight for dark skies	D2.3.1 Merging present and future of dark skies in CE (PP2) D2.3.2 The present of light pollution in CE (PPs)	D2.3.3 Transnational Strategy: the future of dark skies in Central Europe (PP2 + PPs)
OUTPUTS		O2.1 Transnational <b>Strategy</b> : the future of dark skies in Central Europe

# DARKERSKY4CE - WORK PACKAGE 3

## Piloting solutions for darker skies in Central Europe

Activity	P3 (06/25-11/25)	P4-P5 (12/25-11/26)	P4 - P6 (12/25-01/27)
A3.1 Pilot demo sites/ Pilot actions planning	D3.1.1 Pilot Action/ Demonstration sites framework (PP3 + PPs)		
A3.2 Demonstrating the change through pilot actions /demo sites		D3.2.1 Public lighting systems - PA1/PDS1 (PP4 + PP3,PP5) D3.2.2 Astrotourism educational offer - PA2/PDS2 (PP2 + PP6, PP7) D3.2.3 Stakeholders dialogue - PA3/PDS3 (PP6 + PP7)	D3.2.4 Demonstration of monitoring methods - PA4/PDS4a and PDS4b (PP3,PP5 + LP,PP4) D3.2.5 Dark Skies Pilot Actions and Pilot Demo Sites Reports and Description (PP3 + PPs) -> O3.1



# DARKERSKY4CE - WORK PACKAGE 3

## Piloting solutions for darker skies in Central Europe

Activity	P3 (06/25-11/25)	P4	P5 (06/26-11/26)	P6 (12/26-01/27)
A3.3 Shaping the future of the Dark skies' macro region in CE			D3.3.1 Setting up the PDS transnational review (PP3+ PPs) D3.3.2 Transnationally reviewing PDS (PPs +APs,SHs)	D3.3.3 Solutions and policy recommendation for a dark sky macro region (PP3 + PPs) -> O3.2
A3.4 Road show for a dark sky in CE	D3.4.1 Exhibit concept (LP,PP5)		D3.4.2 Exhibit modules (PP2, PP3, PP6, PP7)	
OUTPUTS			O3.1 Dark Skies <b>Pilot Actions</b> and Pilot Demo Sites	O3.2 <b>Solutions</b> and policy recommendation for a dark sky macro region