

# Ground based (RSN4-oriented) scientific facilities for the next decades

Marcella Marconi (USC-A)

ASTROFISICA RELATIVISTICA E PARTICELLE

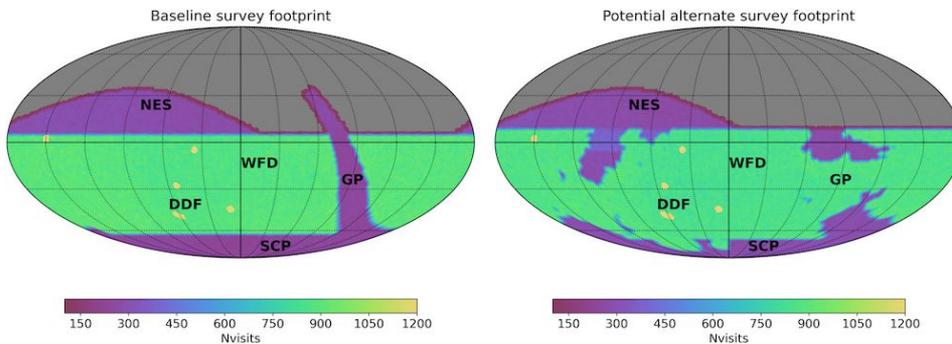


Giornate del Raggruppamento Scientifico Nazionale 4 - seconda edizione

# Ground based (RSN4-oriented) scientific facilities for the next decades

In the context of optical-NIR astronomy:

Southern optical sky sampled to 27 mag and millions of transients with hourly to yearly variability observed by **Rubin/LSST**



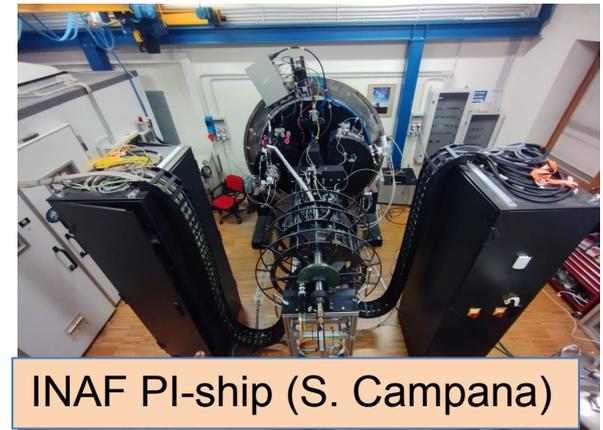
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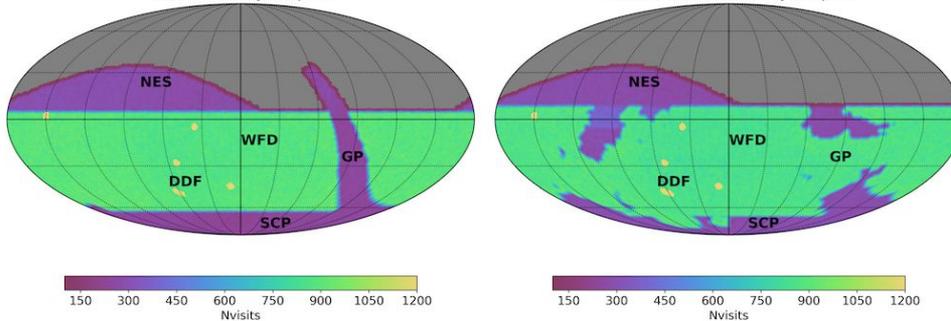
**SOXS@NTT**



INAF PI-ship (S. Campana)

Baseline survey footprint

Potential alternate survey footprint



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- Provide **quick, high-efficiency UV-Vis/NIR spectroscopy**;
- **Follow up of transient events** observed by ongoing and upcoming surveys

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Transient Radio Sky

Extremely High Energy Particles

Fundamental Physics

Synergy with Gamma-Ray Astronomy

Cosmic Magnetism

Cosmic Ray Physics

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## Gamma-Ray Astronomy: The Cherenkov Revolution

**CTAO** will address the key questions:

- **Understanding Relativistic Cosmic Particles**
- **Probing Extreme Environments**
- **Exploring Frontiers in Physics**



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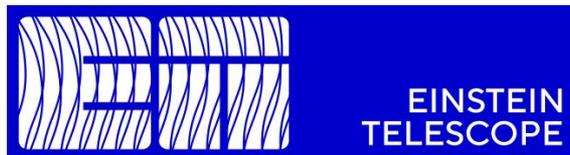
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## Multi-messenger facilities



The **ET** will study the universe **with gravitational waves**, tracing it back to the time when light appeared.

→ **to understand its origin, how it formed and evolved and what its future will be.**

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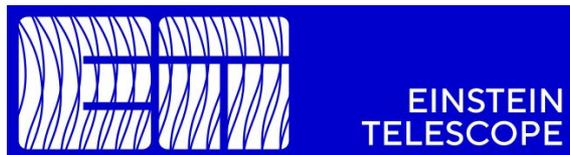
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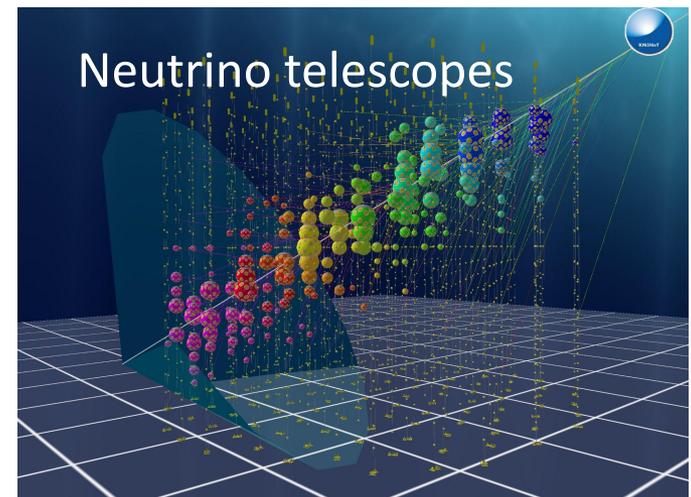
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**VLT BEYOND 2030**  
**26 - 30 JANUARY 2026**

**ESO is issuing a call for white papers for new projects/instruments for VLT/I beyond 2030 with deadline Jan. 2027 (50 pages documents)**

# ESO Expanding Horizons

