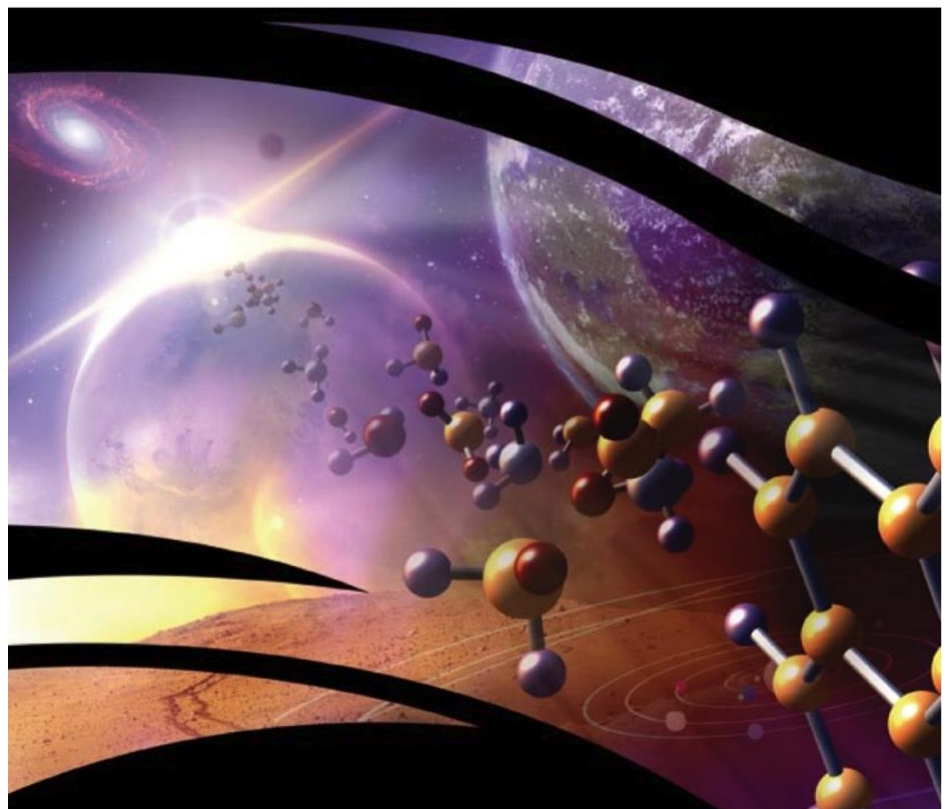


MONTHLY NEWSLETTER

INAF Osservatorio Astrofisico di Arcetri

HIGHLIGHT

Astrobiology: funded projects by ASI



VENOM

Venture the ExtractioN of Organic Molecules

It is a project for the development of an innovative highly sensitive space instrument based on lab-on-chip technology capable of collecting and detecting biological molecules present in the icy moons of Europa and Enceladus.

PI: **John Brucato** (INAF-OAA)

Funding: 492 kEuro/3 years

Node: **INAF-Osservatorio Astrofisico di Arcetri**

Coordinator: **John Brucato**

MIGLIORA

Modeling Chemical Complexity: all'Origine di questa e di altre Vite per una visione aggiornata delle missioni spaziali

It is a collaborative project of four Italian institutes (Uni Tuscia, INAF OAA, Uni PG, CNR). The goal is to define, in the astrobiological context, innovative models in synergy between chemists, astrophysicists, biologists, and bio-informatics to predict and analyse the mechanisms ruling the molecular complexity in our Galaxy.

PI: Raffaele Saladino (UNITUS-DEB)

Funding: 500 kEuro /3 years

Node: **INAF- Osservatorio Astrofisico di Arcetri**

Claudio Codella (coordinator), **Linda Podio**

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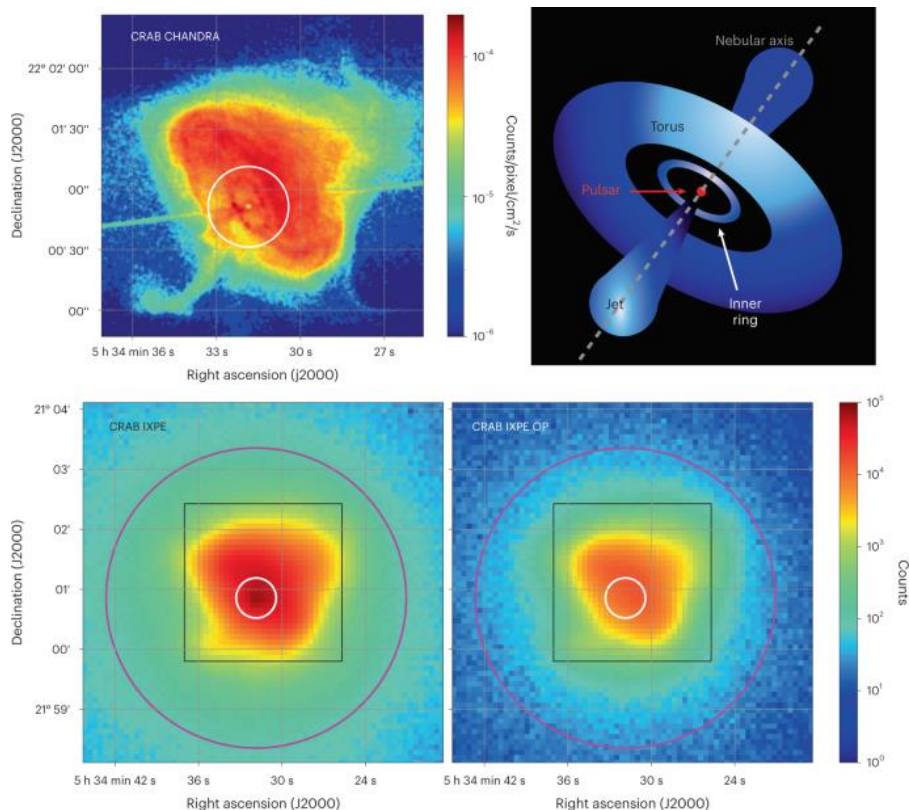
Astronomy & Astrophysics (2023) in press

N. Bucciantini, R. Ferrazzoli, M. Bachetti et al.

Simultaneous space and phase resolved X-ray polarimetry of the Crab pulsar and nebula

Nature Astronomy (2023), in press

[Comunicato stampa INAF](#) | [Media INAF TV](#)



The top left panel shows the Chandra image (intensity map) of the Crab PWN in the [2–8] keV energy range. The top right panel shows a cartoon of the jet torus structure indicating the main features observed in X-rays. The bottom left panel shows the total IXPE count map in the [2–8] keV energy range. The bottom right panel shows the OP only IXPE count map in the [2–8] keV energy range. The white circular region of 20' radius is the one used to do the phase resolved polarimetry of the PSR. The magenta circular region of 2.5 arcmin radius is the one used for spatially integrated measures. The black box represents the region corresponding to the Chandra image. Credits: IXPE/ Bucciantini et al. 2023.

N. Bucciantini, B. Olmi

From young to old: The evolutionary path of Pulsar Wind Nebulae

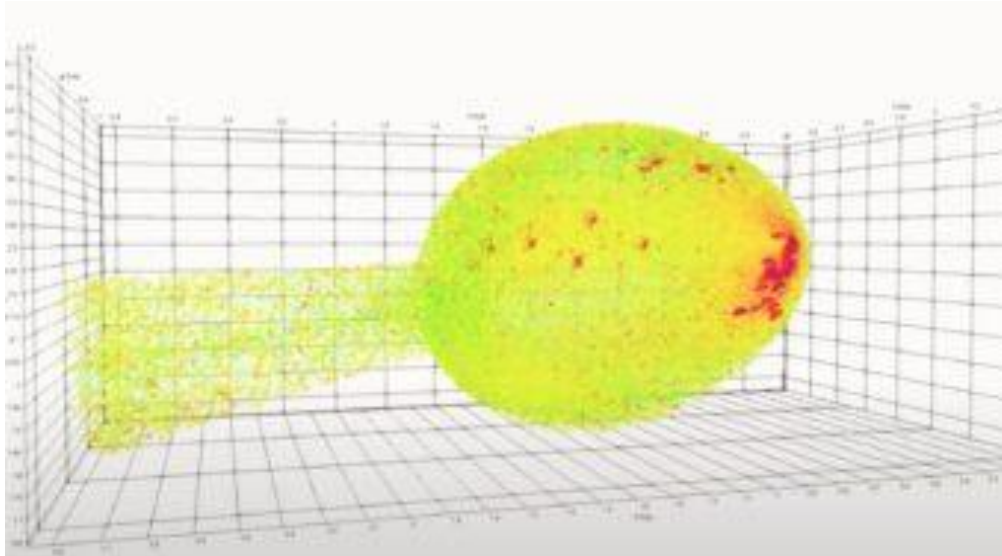
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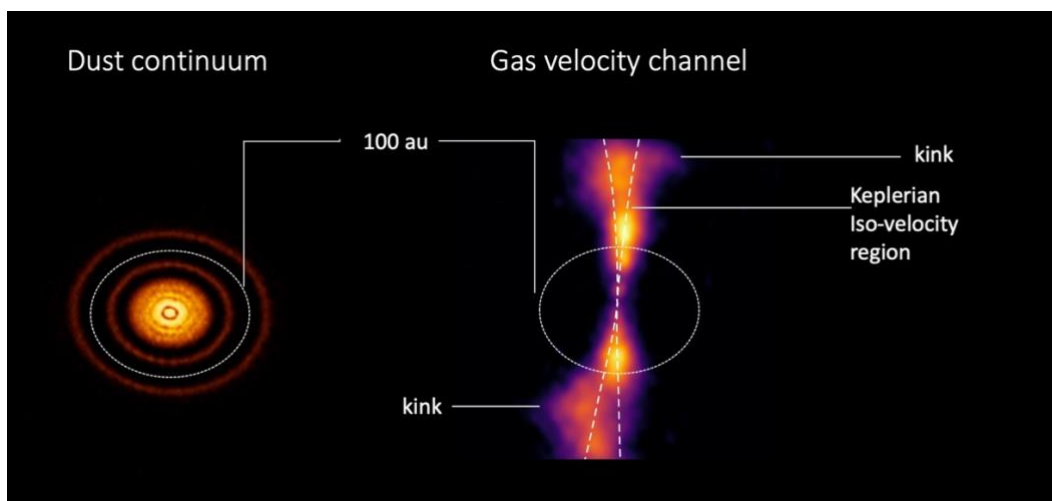


MOKA-3D model. Credits: Marconcini et al. 2023

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Carina Nebula. Credits: Eso/T. Preibisch

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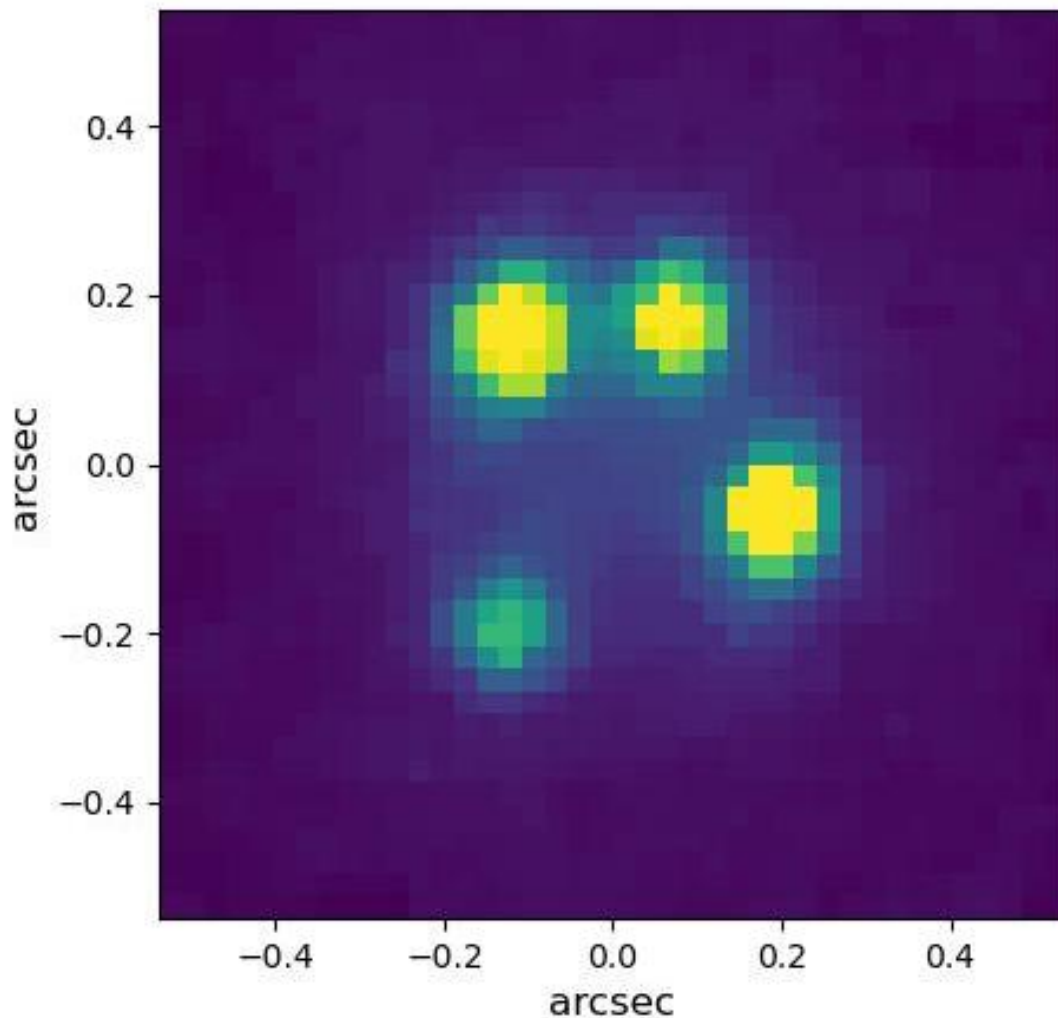
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[Media INAF TV](#)



Spiderweb Galaxy (MRC 1138-262). Credits: ESO/Di Mascolo et al.; HST: H. Ford

ERIS is up and running



Credits: INAF/VLT/ERIS/Mannucci et al. 2023.

After the successful commissioning, ERIS@VLT is now starting its routine observations both as GTO and GO. ERIS is performing as expected and it is already producing wonderful images and stunning scientific results.

For example, during one the first observing nights in April 2023, the INAF Arcetri observing team composed by F. Mannucci and G. Tozzi already discovered a very compact Einstein cross, i.e., four images of a single gravitationally lensed quasar.

NEW ARRIVALS

TECHNOLOGIST



Andrea Meneghin - I am a mechanical engineer, graduated at the University of Florence with a PhD on machine design. After more than ten years spent at the University of Florence, where my research activities mainly focused on mechanical design and the analysis and optimization of management processes, I then moved to INAF- OAA, where I joined the Arcetri Astrobiology Laboratory, led by John Robert Brucato. During my six years post-doctoral research fellow, ended in July 2021, I took part to Marco Polo and Marco Polo-R proposed sample return space missions, to EURO-CARES H2020 project, aiming to define a roadmap for a European Sample Curation Facility, and to AstroBio CubeSat (ABCS) project, an astrobiology mission launched in July 2022. In February 2023 I joined again the group to keep working on astrobiology experiments and payloads for space missions.

EDITOR: Rossella Spiga
rossella.spiga@inaf.it
ufficio-comunicazione.oaa@inaf.it