

### HIGHLIGHTS

#### SKA inauguration

After more than 30 years of design and prototypes, the construction of the SKA telescopes has started in Australia and South Africa. The official ceremonies for the most important radio telescope in the World took place **on December 5th 2022** in Australia and South Africa. The antenna arrays Ska-Low and Ska-Mid will form the two largest and most complex radio telescope arrays ever built. Italy boasts a long tradition in the field of radio astronomy and through the National Institute of Astrophysics (INAF) is one of the first nations to have taken part to the project. An example of INAF contribution to the project is the antenna solution adopted for SKA-Low.

**Pietro Bolli**, the INAF coordinator of the working group antenna for SKA-Low, says: *"The SKALA4.1 antenna, selected for the SKA-LOW radio telescope, is the result of a long research and development project in which the INAF Astrophysical Observatory of Arcetri, as responsible for this work package, has invested a strong effort. In collaboration with other partners, the Arcetri Observatory has participated in all the most significant actions in the development of the antenna: from design to simulations, from the prototype to the experimental characterization. Currently 78,000 antennas are being produced by a private company, which represents a virtuous example of public-private partnership"*.

**Team INAF-OAA:** Pietro Bolli (INAF coordinator of the working group antenna for SKA-Low), Carlo Baffa, Carolina Belli, Simone Chiarucci, Giovanni Comoretto, Paola Di Ninni, Elisabetta Giani, Georgios Kyriakou, Giulia Macario.



Artistic rendering of SKA radio telescope. Credits: SKAO

## REFEREED PUBLICATIONS

P. Di Ninni, M. Bercigli, P. Bolli, M.G. Labate, S.J. Wijnholds

***Mutual Coupling Mitigation in Array Dense Regime by an Antenna Distribution Optimization in SKA1-LOW***

Radio Science (2022), 57, 11

<https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2022RS007507>

M. Lepore, A. Bongiorno, P. Tozzi, A. Travascio, L. Zappacosta, E. Merlin, R. Fassbender

***Mass assembly and active galactic nucleus activity at  $z \gtrsim 1.5$  in the dense environment of XDCP J0044.0–2033***

Astronomy & Astrophysics (2022), 668, A123

[https://www.aanda.org/articles/aa/full\\_html/2022/12/aa44078-22/aa44078-22.html](https://www.aanda.org/articles/aa/full_html/2022/12/aa44078-22/aa44078-22.html)

G. Tozzi, E. Lusso, L. Casetti, M. Romoli, G. Andreuzzi, I. Montoya Arroyave, E. Nardini, G. Cresci et al.

***The optically elusive, changing-look active nucleus in NGC 4156***

Astronomy & Astrophysics (2022), 667, L12

<https://www.aanda.org/articles/aa/abs/2022/11/aa44987-22/aa44987-22.html>

Media INAF: <https://www.media.inaf.it/2022/11/26/tng-ngc-4156/>



Students of the University of Firenze at the Telescopio Nazionale Galileo, La Palma (Canary Islands), where they enjoyed a study holiday thanks also to the fundings provided by Magini family in the framework of the Magini Prize for the best Master Degree in Astrophysics obtained in an Italian university promoted by INAF Astrophysical Observatory of Arcetri. Credits: TNG/UNIFI.

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L. Pino, M. Brogi, J.M. Désert, V. Nascimbeni et al.

***The GAPS Programme at TNG. XLI. The climate of KELT-9b revealed with a new approach to high-spectral-resolution phase curves***

Astronomy & Astrophysics (2022), 668, A176

[https://www.aanda.org/articles/aa/full\\_html/2022/12/aa44593-22/aa44593-22.html](https://www.aanda.org/articles/aa/full_html/2022/12/aa44593-22/aa44593-22.html)

O. Mousis, [...], J. Brucato, M. Cable, J. Carter, S. Cazaux, A. Coustenis, G. Danger, V. Dehant, T. Fornaro et al.

***Moonraker: Enceladus Multiple Flyby Mission.***

The Planetary Science Journal 2022, 3(12), 268

<https://iopscience.iop.org/article/10.3847/PSJ/ac9c03>

L. Mandon, [...], G. Poggiali, T. Fornaro, S. Maurice, R. Wiens

***Reflectance of Jezero crater floor: 2. Mineralogical interpretation***

Journal of Geophysical Research, in press

<https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2022JE007450>

E. L. Scheller, [...] T. Fornaro et al.

***Aqueous alteration processes and implications for organic geochemistry in Jezero crater, Mars***

Science (2022), 378, 6624

<https://www.science.org/doi/10.1126/science.abo5204>

C. Di Cesare, L. Graziani, R. Schneider, M. Ginolfi, A. Venditti, P. Santini, L.K. Hunt

***The assembly of dusty galaxies at  $z \geq 4$ : the build-up of stellar mass and its scaling relations with hints from early JWST data***

Monthly Notices of the Royal Astronomical Society, in press

<https://ui.adsabs.harvard.edu/abs/2022MNRAS.tmp.3455D/>

F. Annibali, E. Pinna, L. K. Hunt, D. Paris, F. Cusano, M. Bellazzini, J. M. Cannon, R. Pascale, M. Tosi, F. Rossi

***DDO68 C: the actual appearance of a ghost satellite dwarf through adaptive optics at the Large Binocular Telescope***

The Astrophysical Journal Letters, in press

<https://arxiv.org/abs/2212.08679>

D. S. Aguado, E. Caffau, P. Molaro, C. Allende Prieto, P. Bonifacio, J. I. González Hernández, R. Rebolo, S. Salvadori, M. R. Zapatero Osorio, S. Cristiani, F. Pepe, N. C. Santos, G. Cupani, P. Di Marcantonio, V. D'Odorico, C. Lovis, N. J. Nunes, C. J. A. P. Martins, D. Milakovic, J. Rodrigues, T. M. Schmidt, A. Sozzetti, A. Suárez Mascareño

***The pristine nature of SMSS 1605–1443 revealed by Espresso***

Astronomy & Astrophysics, in press

<https://www.aanda.org/articles/aa/pdf/forth/aa45392-22.pdf>

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