

WHICH ARE
THE NEXT
WALLS
TO FALL?

KEY RESULTS OF THE ROUND TABLE

“EYES TO THE SKY: THE NEXT GENERATION OF LARGE TELESCOPES”

Panellists: Michael Kramer (Max Planck Institute for Radio Astronomy, DE), David Reitze (Laser Interferometer Gravitational-wave Observatory (LIGO), US), Frank Stietz (Heraeus, DE), Linda Tacconi (Max Planck Institute for Extraterrestrial Physics, DE), Sybille Anderl (Moderation)(ZEIT ONLINE, DE)

Large telescopes are unlocking new insights into the universe, allowing scientists to study early black holes, stars, and exoplanets, and even probe how galaxies and life itself may have formed. The emerging field of gravitational wave astronomy enables scientists to detect subtle space-time ripples caused by oscillating masses, offering a fresh way to observe cosmic events that don't emit light. Together, these advancements hold the potential to transform our understanding of the universe's origins. However, they come with significant challenges, such as high costs, the need for precision materials, and the complex task of processing and managing massive amounts of data. Still, investing in large telescope and astronomy projects is worthwhile because these advancements drive scientific discovery, inspire future innovation, build a skilled workforce, and create valuable technologies with broad applications across multiple sectors.

THE EXPERT PANEL ARTICULATES THE FOLLOWING CALLS TO ACTION:

Address data management challenges.

- 1 — Develop advanced data processing and storage solutions to handle the massive data generated by high-resolution and multi-telescope projects.

Encourage international cooperation.

- 2 — Develop collaborative frameworks that allow countries to share resources and expertise, ensuring sustained progress in large-scale telescope projects and reducing the financial burdens for individual countries.

Support cross-sector innovation.

- 3 — Promote collaboration across astronomy, industry, and technology fields to enhance the practical applications of telescope innovations, creating spillover effects that benefit areas such as climate science and chip development.

Engage future scientists.

- 4 — Leverage discoveries in astronomy to inspire young people, fostering a new generation of scientists and innovators who will contribute to advancements across various fields.

This expert panel is supported by Heraeus and assembled in the framework of the Falling Walls Science Summit 2024 in Berlin. The Falling Walls Science Summit is a leading international, interdisciplinary, and intersectoral forum for scientific breakthroughs. It commemorates the fall of the Berlin Wall and aims to promote dialogue between science and society.

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