

CURRICULUM VITAE — PROFESSOR J. ANTON ZENSUS

Global Scientific Leader • Architect of Modern & Space VLBI • Founding Chair of the Event Horizon Telescope Board • Coordinator of European Radio Astronomy



EXECUTIVE SUMMARY

Professor J. Anton Zensus is a world-leading astrophysicist whose pioneering scientific contributions and strategic leadership have fundamentally shaped the field of highest-resolution radio astronomy. Over four decades, he has been at the forefront of research on active galactic nuclei (AGN), extreme physical conditions in the Universe, supermassive black holes, and relativistic jet formation, producing influential discoveries that advanced the understanding of the most energetic processes in the cosmos. His group is one of the world's foremost centers for AGN astrophysics, combining advanced observational methods with major scientific insights. The highly competitive ERC Advanced Grant M2FINDERS underscores the depth, originality, and enduring international impact of his scientific work.

In parallel with his scientific achievements, Professor Zensus has transformed the technical and organizational foundations of ultra-high-resolution radio astronomy. His department at the Max Planck Institute for Radio Astronomy (MPIfR) defined and advanced the state of the art of millimetre and space Very Long Baseline Interferometry (VLBI), a technique that achieves the highest angular resolutions in astronomy. Key milestones included the first European and transatlantic 1.3-mm VLBI detections, the creation of the Global mm-VLBI Array (GMVA), and essential contributions to integrating ALMA into global VLBI. These developments were instrumental in enabling the first images of black holes.

As the Founding Chair of the Board of the Event Horizon Telescope (EHT), a global collaboration linking the world's leading mm-wave observatories, he brought together previously independent international teams and institutions into a coherent and effective collaboration. His scientific vision, diplomatic skill, and ability to build trust and consensus across continents were central to delivering the landmark images of the black hole in M87* (2019) and Sagittarius A* (2022). These achievements represent defining moments in the history of observational astrophysics.

Beyond the EHT, Professor Zensus has played a central role in shaping the European and global landscape of radio astronomy. He strengthened Europe's long-baseline interferometry capabilities through leadership in the European VLBI Network (EVN) and by helping to establish JIV-ERIC, securing a unified and sustainable European framework for VLBI. He initiated the first international LOFAR station at the Effelsberg observatory, laying the foundation for what later became the International LOFAR Telescope (ILT). He also guided Europe's engagement with the Square Kilometre Array (SKA) during its formative decade. His long-term coordination roles within RadioNet have been critical in sustaining and advancing Europe's scientific and technological leadership in radio astronomy.

Professor Zensus has shaped the evolution of global radio astronomy more than any other figure of his generation. He is widely recognized as an outstanding scientific leader, a respected architect of international cooperation, and a driving force behind many of the field's most transformative achievements.

KEY SCIENTIFIC ACHIEVEMENTS

Pioneering Global Ultra-High-Resolution Astronomy

- Advanced VLBI into a global, Earth-sized instrument through leadership in mm-VLBI, space VLBI, and international coordination.
- Achieved the first 1.3 mm VLBI fringes in Europe and across the Atlantic, enabling imaging of two black holes down to their event horizons.

Founding Architect of the Event Horizon Telescope (EHT)

- Unified the global mm-VLBI community into a coordinated collaboration.
- Led MPIfR's foundational technical and scientific contributions to the EHT observations that produced the first horizon-scale images of the black holes in M87* and Sgr A*.

Seminal Research on Relativistic Jets and Black Hole Physics

- Co-discovered double-helical jet structure in 3C 273, supporting magnetohydrodynamic jet models.

- Influential studies of brightness temperatures exceeding theoretical limits.
- Leader of one of the world's foremost AGN research groups, producing major discoveries on jet dynamics and AGN structure.
- Authored and co-authored hundreds of papers on AGN and relativistic jets, shaping the standard observational picture of relativistic jet formation and evolution.

Strategic Leadership in Space VLBI

- Key scientific and organizational roles in VSOP and RadioAstron, enabling unprecedented baselines and high-resolution findings.

Architect of International Radio Astronomy Infrastructure

- Founder of the GMVA; key contributions to the ALMA Phasing Project.
- Initiated the first international LOFAR station at Effelsberg, creating the path toward the International LOFAR Telescope.
- Helped transform the Joint Institute for VLBI in Europe into a European Research Infrastructure Consortium (now JIVE-ERIC).
- Established European coordination via RadioNet and contributed to European VLBI, LOFAR, SKA, and ngVLA development.

LEADERSHIP & GOVERNANCE (SELECTED)

Executive and Institutional Leadership

- Director at the Max Planck Institute for Radio Astronomy (1997–present)
- Executive Director, MPIfR (multiple terms)
- Founding Chair, Event Horizon Telescope Board
- Coordinator, European RadioNet Alliance

Strategic Roles within the Max Planck Society

- Advisor to the MPS President on Transatlantic Cooperation
- Chair, MPS Roundtable North America
- Member: MPS China Council, MPS Roundtable Europe, Open Science Roundtable, MP Academy Scientific Advisory Council

European & International Scientific Governance

- Chair of the European SKA Council for a decade
- Chair, Review Committee of Italian INAF Institute for Astronomy
- Member, Scientific Advisory Board of the Korean KASI Institute
- Member, Senior Review of Manchester University Physics
- Member, UK SRC Advisory Committee on Astronomy
- Member: ngVLA Science Advisory Group; AUI Astronomy Committee; KoWi Council; University of Bonn Scientific Advisory Council
- Member: Shanghai Astronomical Observatory International Committee

Coordination of Radio Astronomy Networks & Missions

- Chair, EVN Board of Directors (2013–2015)
- Council Member, JIV-ERIC
- Member, RadioAstron & VSOP International Science Councils
- Coordinator: RadioNet/FP7, RadioNet/Horizon 2020, ORP

HONORS & DISTINCTIONS (SELECTED)

Major Individual Awards

- Karl Schwarzschild Medal (2024) – highest German prize in astrophysics
- Tycho Brahe Medal (2023) – highest European award in observational astronomy
- ERC Advanced Grant (2021) – most competitive European research grant
- Max Planck Research Award (1999)
- Alexander von Humboldt Research Award (1994)

Awards Associated with EHT

- Frontiers of Science Award (2025)
- RAS Group Achievement Award (2021)
- AAS Bruno Rossi Prize (2020)
- Einstein Medal (2019)

- Breakthrough Prize in Fundamental Physics (2019)
- NSF Diamond Award (2019)

Additional Honors

- CAS President's International Distinguished Scientist Fellowship, China (2025)
- KASI Distinguished Scholar, Korea (2015)
- Golden Medal, Institute of Applied Astronomy St. Petersburg, Russia (2013)
- RadioAstron Bronze Medal, Russia (2012)

CAREER HISTORY

1976–1984 Graduate and doctoral studies in Physics & Astronomy, Cologne, Münster, Bonn

1985–1988 Postdoctoral Fellow, California Institute of Technology

1988–1991 Jansky Fellow, National Radio Astronomy Observatory (NRAO)

1991–1997 Staff Scientist, NRAO (Tenured 1996)

1995–1997 Research Professor, University of Virginia

1997–present Director, Max Planck Institute for Radio Astronomy

2001–present Adjunct Scientist, NRAO

2005–present Honorary Professor, University of Cologne

TEACHING, TRAINING & MENTORING

- Supervised and mentored numerous PhD students and postdoctoral researchers, many of whom now hold senior or permanent positions in leading research institutions worldwide. His scientific school has produced researchers who have become faculty members, observatory scientists, and leaders in major international collaborations.
- Founder and Speaker of the International Max Planck Research School for Astronomy & Astrophysics at the Universities of Bonn and Cologne (IMPRS, 2002-present)
- Mentor: Elisabeth Schiemann Kolleg for female research group leaders

- Certified in systemic supervision (2021, 2023)
- Teaching at University of Cologne

SERVICE TO SCIENCE & THE INTERNATIONAL COMMUNITY

- Leadership roles across Europe, Asia, and the Americas
- Advisor to scientific agencies and research ministries
- Builder of multinational collaborations and advanced research schools
- Shaper of next-generation facilities including SKA, LOFAR, ngVLA

PUBLICATIONS

- Author or co-author of several hundred peer-reviewed publications on radio astronomy, AGN, VLBI, and black-hole astrophysics.
- Full publication list (NASA ADS): <https://tinyurl.com/4777yuua>