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4MOST Milestone: First Major Shipment to Chile

A significant milestone approaches for the 4MOST project as the Leibniz-Institute for Astrophysics Potsdam (AIP) gears up to dispatch the first major shipment of the 4MOST instrument to Chile. On Thursday, February 29, the Cable Wrap, the largest physical subsystem of 4MOST, will commence its journey from AIP's facilities to the European Southern Observatory's (ESO) Paranal Observatory in Chile.

„The decision to ship the Cable Wrap early marks a crucial step forward for the project. Rigorously tested by us and by ESO, and meeting all requirements, the subsystem will be installed on the VISTA telescope ahead of the next major 4MOST shipments to Paranal," says 4MOST project manager Joar Brynneel. "This proactive approach not only optimizes space in the AIP integration hall but also accelerates the overall timeline, ensuring timely integration and deployment."

Two sea containers, meticulously packed and components wrapped to shield against dust and humidity, will be handed over to logistics partner DSV. Equipped with a crane for efficient loading, a large truck will transport the containers to the harbor of Hamburg, where they will be embarked onto a large ship bound for Chile. The voyage, spanning five weeks via the Panama Canal, will then continue on trucks via the Pan-American highway and culminate in the delivery of the Cable Wrap to Paranal Observatory.

To accurately track the rotation of stars and other celestial objects throughout the night, the 4MOST instrument requires a precise connection to a significant number of electrical cables, optical fibers, and cooling fluid lines. To safeguard these connections during observation, a Cable Wrap system is employed. This system features an electrical motor that drives energy chains within two c-shaped channels, effectively organizing, guiding, and protecting the cables and fibers simultaneously.

4MOST principal investigator Roelof de Jong, remarked, „The shipment of the Cable Wrap signifies a crucial step towards realizing the full potential of 4MOST. As we inch closer to full science operations in 2025, we remain committed to pushing the boundaries of astronomical exploration. The exceptional instrument will enable many science goals, and especially complement four key space-based, large-area survey observatories of prime European interest: Gaia, Euclid, eROSITA, and PLATO. The first five-year survey of 4MOST consists of 10 programs developed by the Consortium and 15 programs from the ESO community."

The 4MOST project represents a collaborative effort by the consortium comprising 15 institutes across Germany, Australia, France, the Netherlands, Sweden, Switzerland, and the UK, led by the Leibniz-Institute for Astrophysics Potsdam (AIP). Selected by ESO to furnish the astronomical community with a cutting-edge fibre-fed spectroscopic survey facility, 4MOST will be able to simultaneously obtain spectra of ~2400 objects distributed over a hexagonal field-of-view of 4.2 square degrees.

More information

<https://www.4most.eu>



Media

Images: <https://cloud.aip.de/index.php/s/9djqXdFwCTMaXCy>

The 4MOST Cable Wrap System during its packaging in preparation for shipping.

Credits: AIP/ Allar Saviuk

Video: <https://youtu.be/7i97ZZNsdEM?feature=shared>

A video about the construction of the multi-object spectrograph 4MOST on the YouTube channel: Urknall, Weltall, Leben.

Video: https://youtu.be/IN_wXps5Rg

The 4MOST cable wrap system, packed for shipping.

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The key areas of research at the Leibniz Institute for Astrophysics Potsdam (AIP) are cosmic magnetic fields and extragalactic astrophysics. A considerable part of the institute's efforts aims at the development of research technology in the fields of spectroscopy, robotic telescopes, and e-science. The AIP is the successor of the Berlin Observatory founded in 1700 and of the Astrophysical Observatory of Potsdam founded in 1874. The latter was the world's first observatory to emphasize explicitly the research area of astrophysics. The AIP has been a member of the Leibniz Association since 1992.
