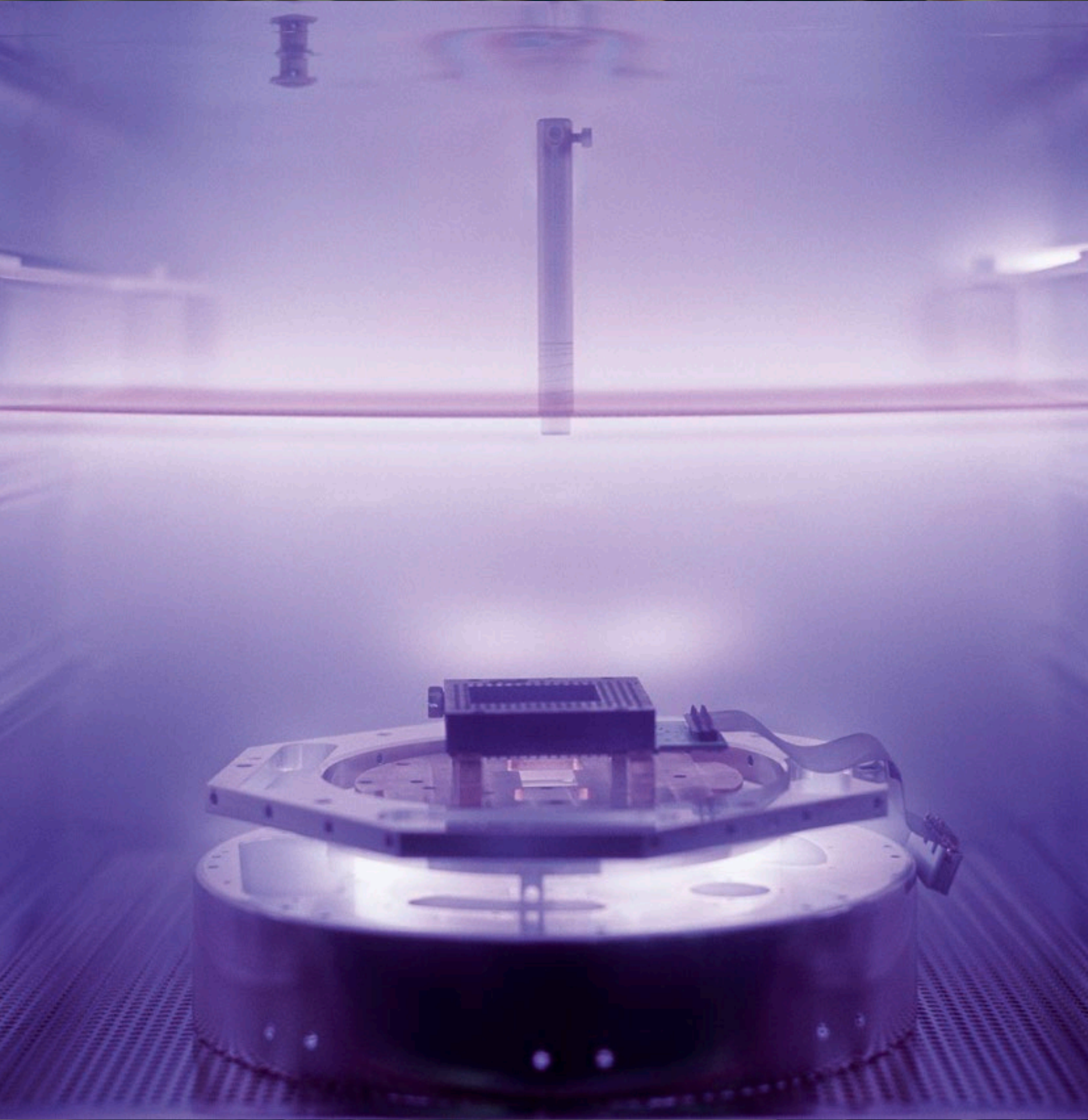


ESO and Industry

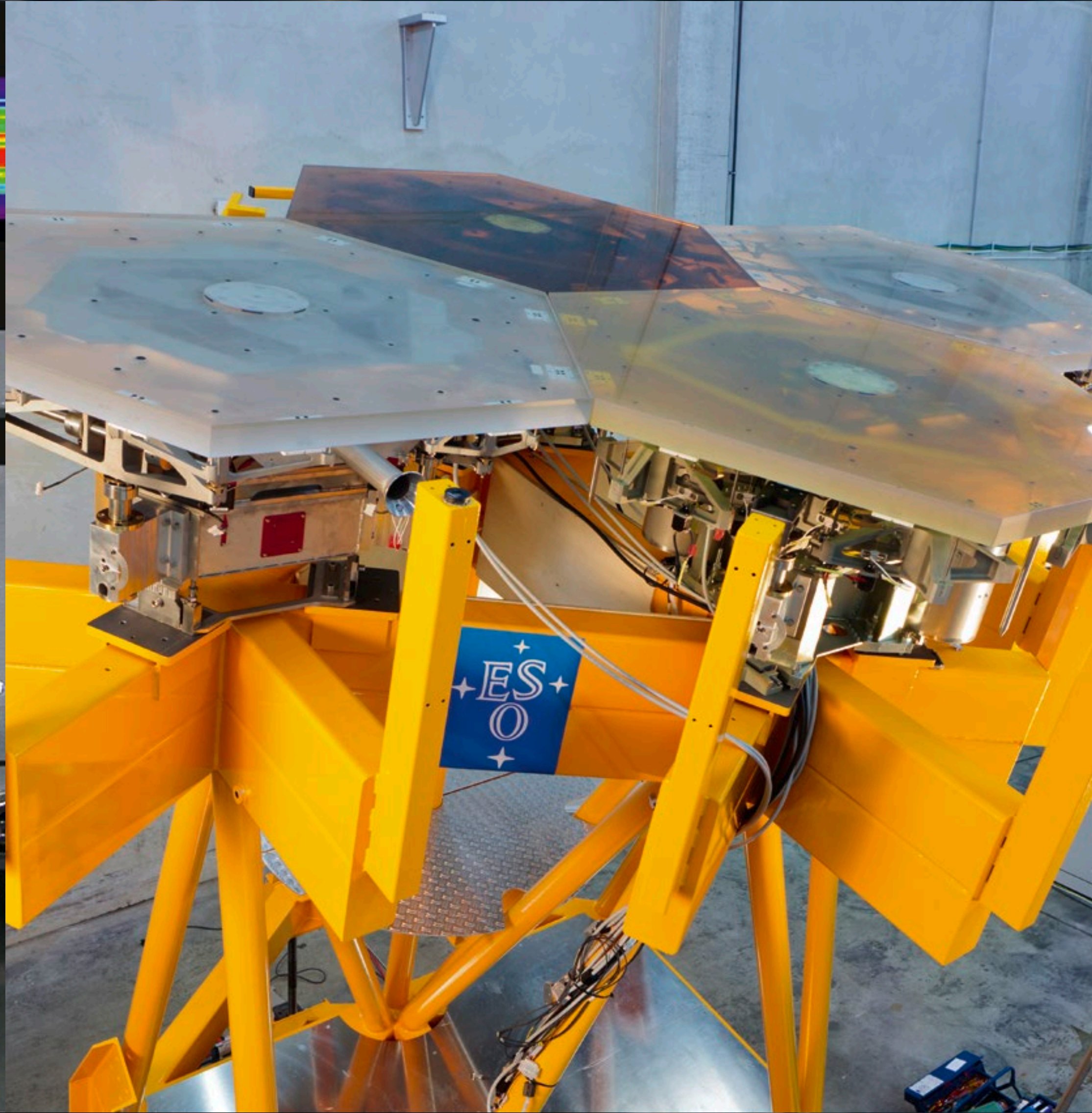
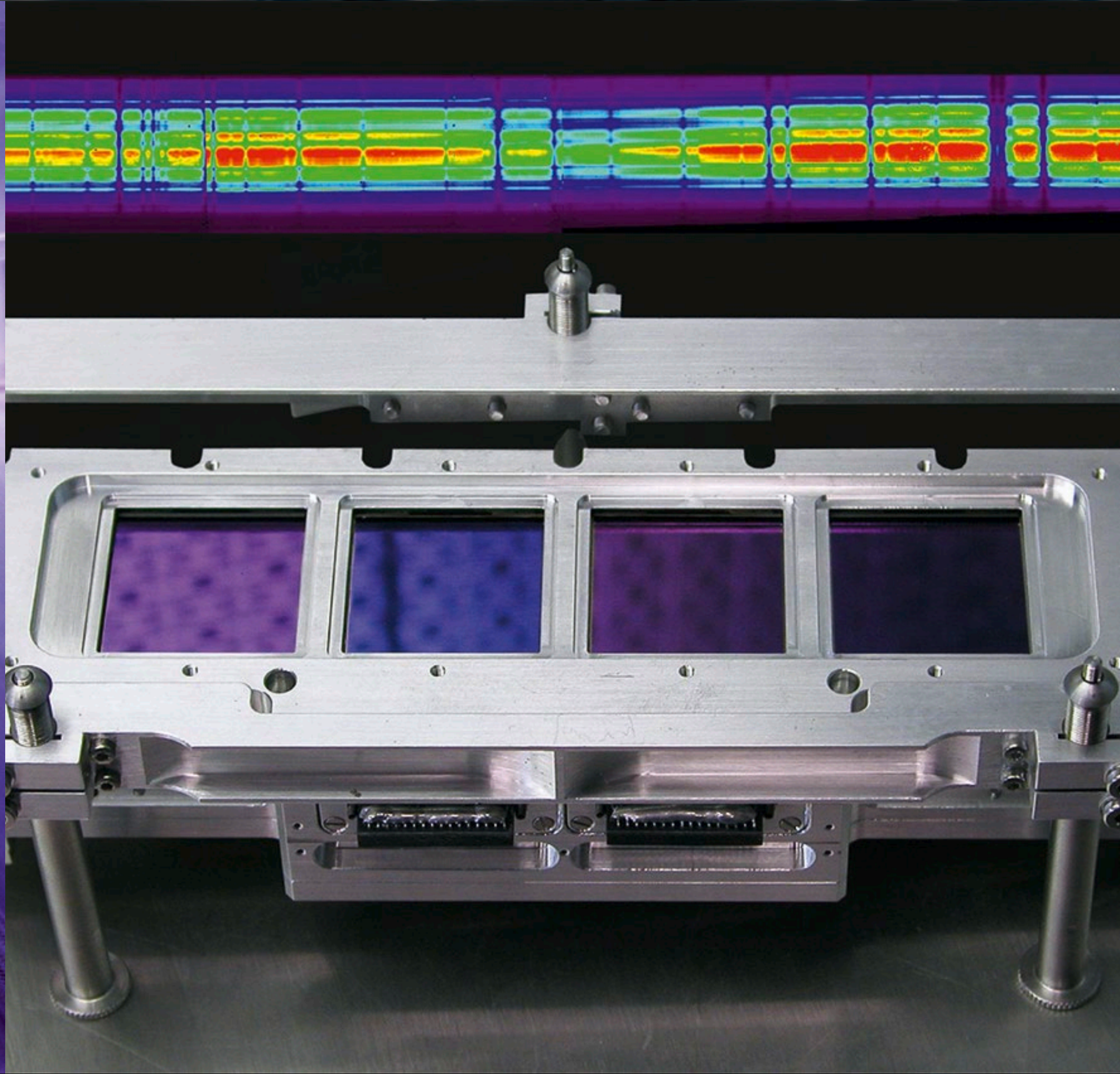
Industry plays a key role in ESO projects and its involvement right from the earliest phases of a new project is considered an essential part of keeping ESO at the forefront of innovative telescope design and development. Industry deserves substantial credit for the record-breaking performance of ESO's Very Large Telescope (VLT). The VLT project has been equally beneficial to suppliers, by generating profitable spin-offs and branding them as world leaders in their respective fields.

The future 39-metre European Extremely Large Telescope (E-ELT) will be the largest optical/near-infrared telescope in the world. The challenges involved in the construction and development of the E-ELT will be great, requiring the best engineering talent to develop the new technologies needed to see the E-ELT become a reality.

Leadership of this major flagship project will raise the scientific, technological and industrial profile of the ESO Member States. More than thirty scientific institutes and high-tech companies have developed crucial technologies within the E-ELT Design Studies. The green light for the start of E-ELT construction was given in late 2014, and first light is targeted for 2024. This has created many opportunities for high technology contracts and technology spin-offs and transfers, while providing a dramatic showcase for industry.



ESO has accumulated considerable practical experience in the design and use of liquid nitrogen cryostats for CCD detectors and has decided to manufacture and sell the ESO dewar under licence.



Experimental segments of the giant primary mirror of the E-ELT undergoing testing. Credit: ESO/H. H. Heyer

At the Forefront of Technology

Among the many innovative technologies that have been developed by ESO, and pushed beyond customary limits or combined in novel ways are:

- Active optics
- Large metal blanks
- Shack-Hartmann wavefront sensors
- Real-time processors
- Fibre lasers
- Time reference systems
- Data archive systems
- Virtual observatories
- Cryogenic bearings
- Thermally controlled cabinets