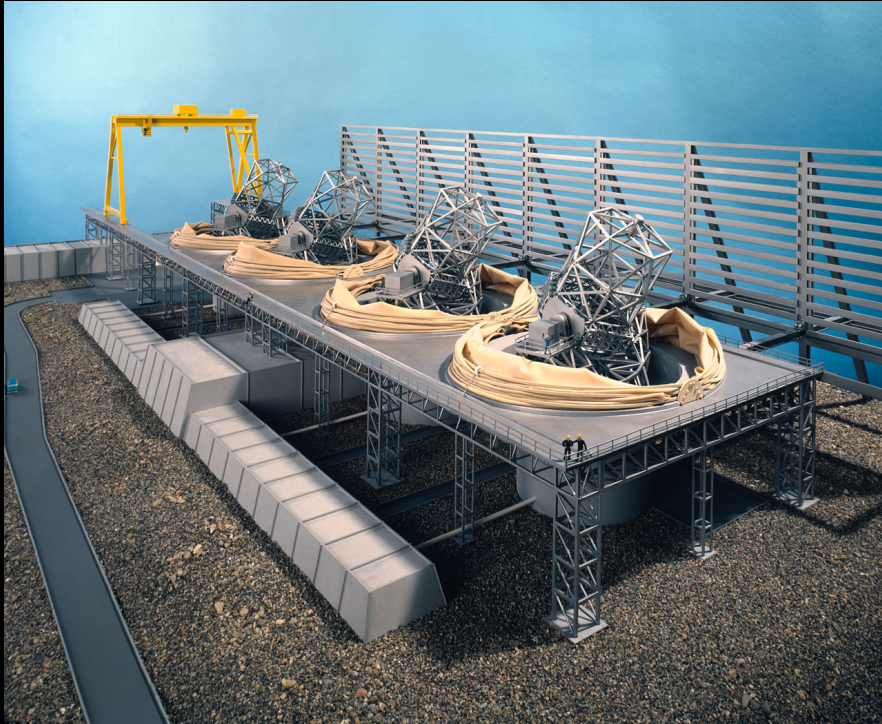


Riccardo Giacconi and the VLT Interferometer

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Freiburg, Germany

The VLT in 1985

- The VLT concept as proposed to the ESO Council included four separate 8m telescopes which can be coherently combined
- Two 1.8m auxiliary telescopes were dedicated to interferometry and feed



Daniel Enard



Fritz Merkle

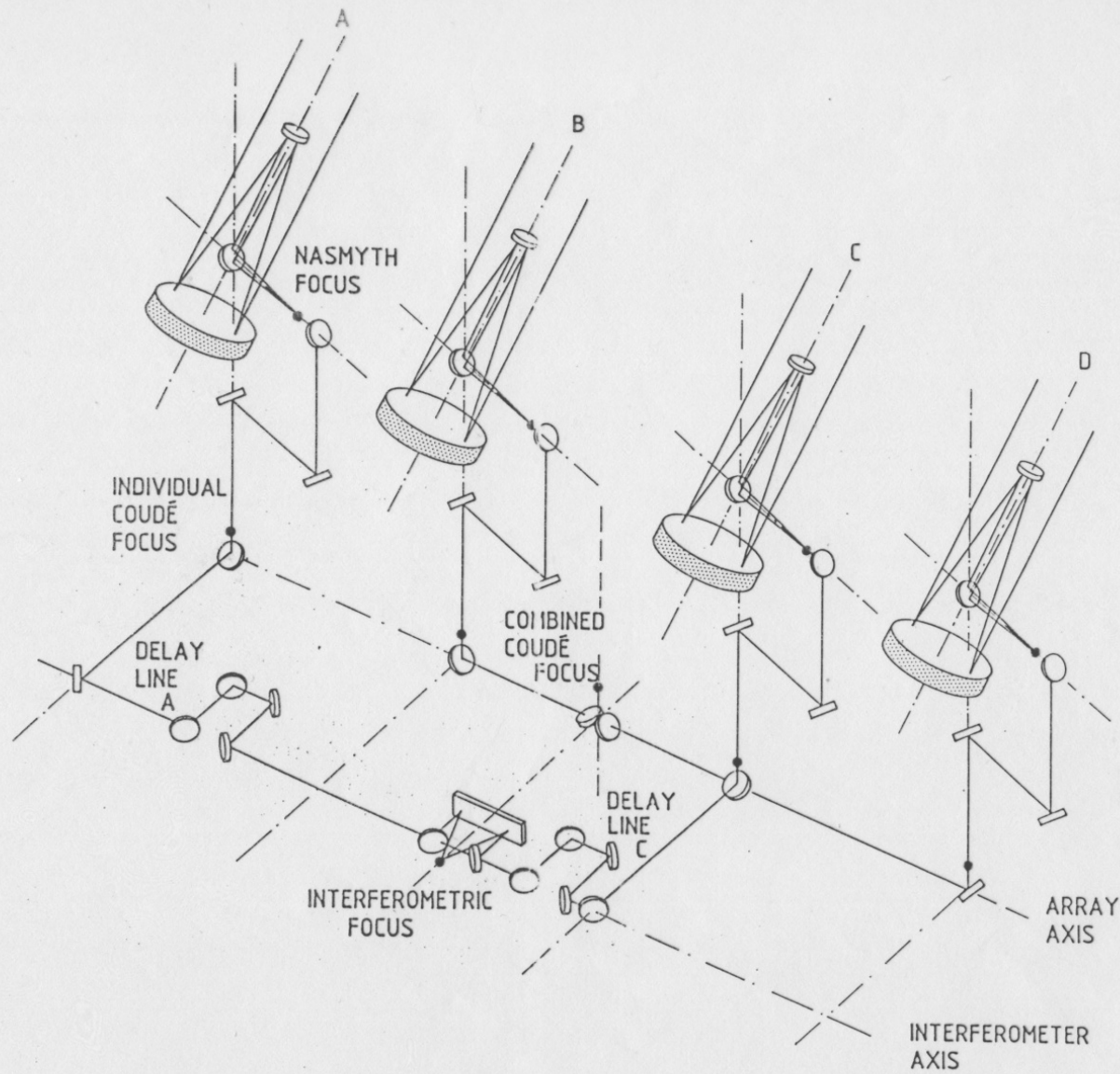


Figure 2.5: Principle of the beam combination.

The VLT Group

- Harry van der Laan appointed Jacques Beckers as head of a dedicated team to implement VLT in 1988. The team consisted of two, then three people.
- Jacques became VLT Project Scientist in 1991. During his time, many of fundamental concepts on which VLT is based today were developed. He was succeeded by Fritz Merkle. I became VLT group head in fall 1992.
- Optical interferometry was considered “avantgardistic” by many inside and outside ESO at the time. The interferometry community was always concerned about their recognition. However, ESO signed an agreement with CNRS and MPG to build a third auxiliary telescope with additional funding.

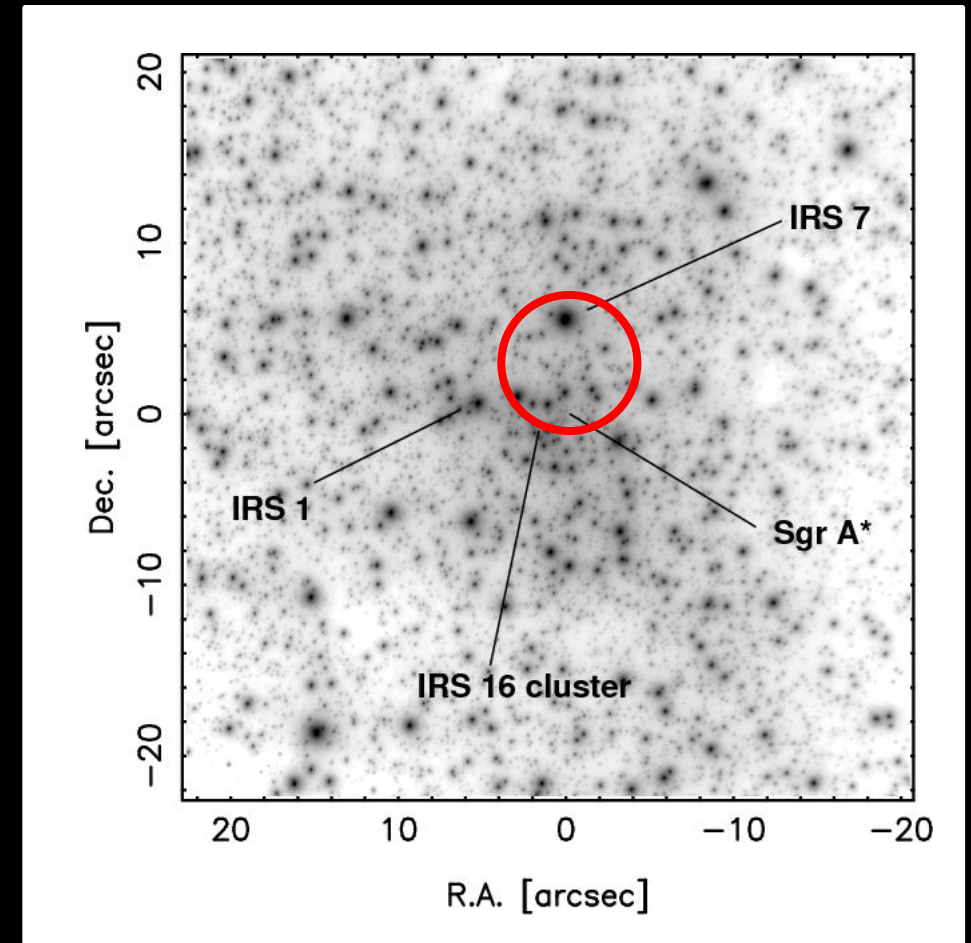


Jacques Beckers



Science Requirements

- One requirement on VLTI was the capability to simultaneously observe IRS7 and the Galactic Center (Sgr A*)
- This means an 8 arcsec unvignetted FOV, requiring delay lines with 80cm optics and a homothetic pupil remapper to turn VLTI into a Fizeau interferometer



The Postponement Crisis

- ESO Council decided in October 1993 to postpone the development of VLTI to a time after the Unit telescopes were completed
- This decision was based on the mismatch between funding and spending profiles for the VLT project, forcing ESO to borrow money in the later 1990s in order to complete the project in time and in budget

The Postponement Crisis

- The postponement of VLTi initially had a devastating effect on the morale of the interferometry community in Europe
- Steps taken by the DG to remedy the situation:
 - Instructed the VLTi group to „continue with research and development“ at a moderate level
 - Entered into negotiations with CNRS and MPG to assure the external financing of a third Auxiliary Telescope
 - Instructed the VLT project to develop a new implementation plan for VLTi

... and its consequences

- VLT became a project with heavy community participation
 - Continuation of VCM and fringe tracker prototype development (the latter became FINITO)
 - Community supplied Auxiliary Telescopes (original ESO proposal included 2 ATs)
 - Beam combination instruments as community contributions (MIDI and AMBER)
 - VLT Steering Committee
- The VLT group increased from 1994 onwards

... and its consequences (contd.)

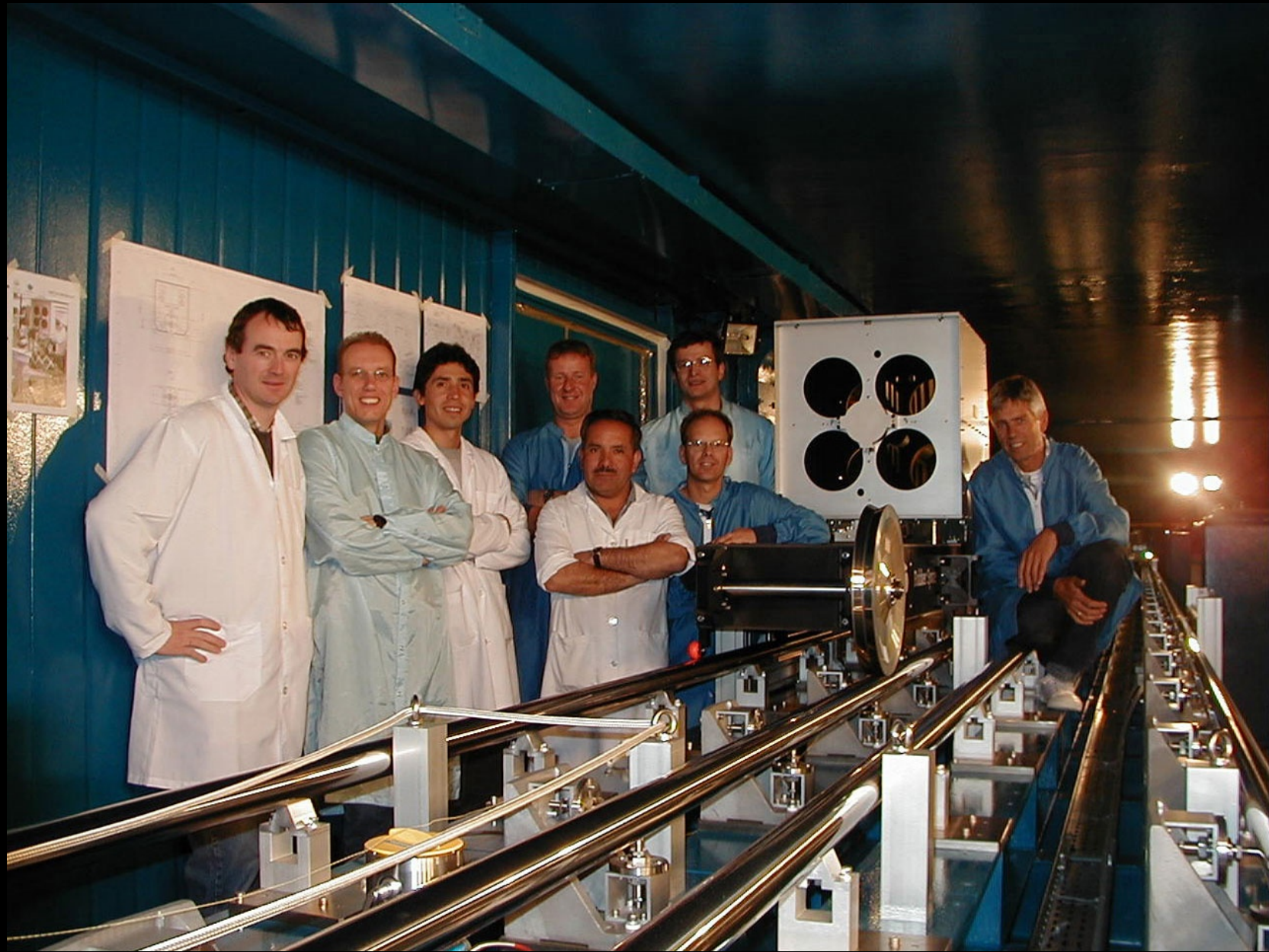
- The VLTI concept was heavily modified to accommodate a given budget envelope
- As a consequence, the 8" FOV was reduced to 2" and the imaging beamcombiner was dropped
- The delay lines became much smaller and simpler
- The delay lines included a second beam (PTI concept)

... and its consequences (contd.)

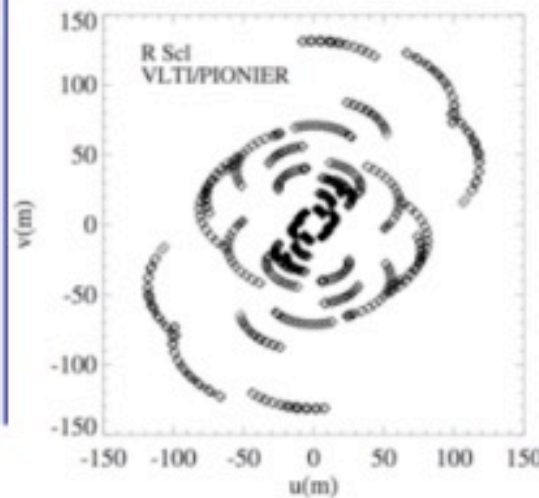
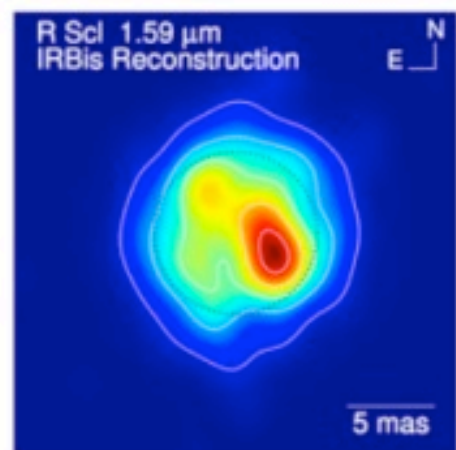
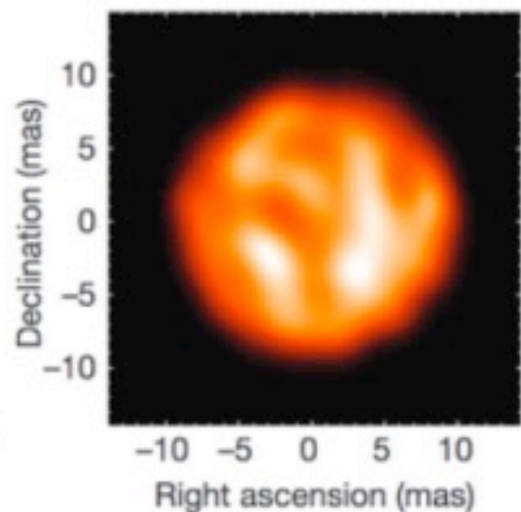
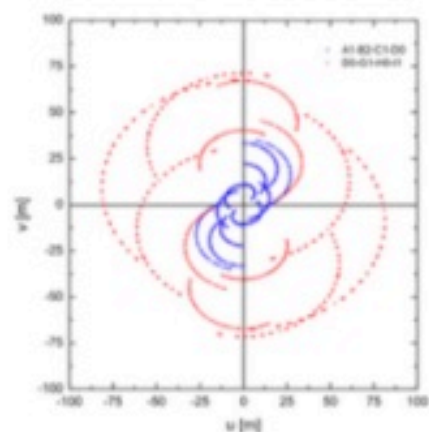
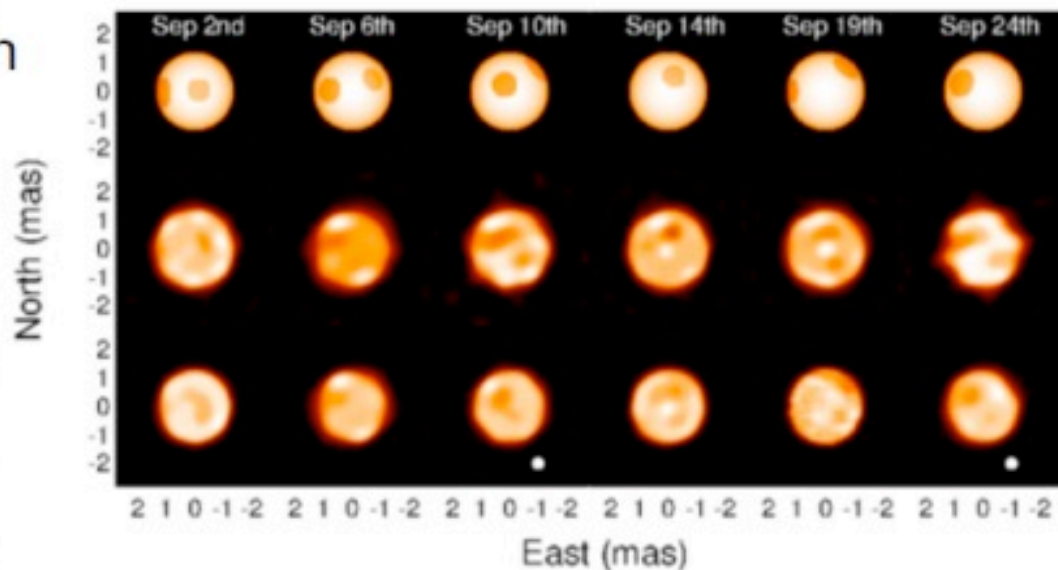
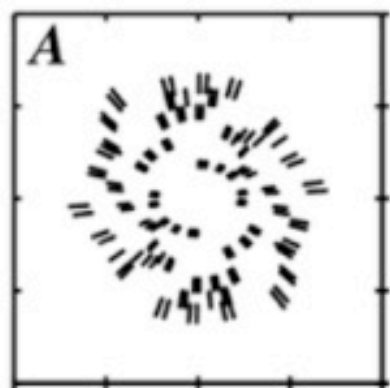
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- Parks+2015, MIRC-4T, 6T positions for 6n
- Paladini+2018, 2n on 2 configs
- Wittkowski+2017, 5n on 3 configs



Conclusions

- Riccardo Giacconi assured that the VLT project, including VLTI, was continued with full scope and a rational phasing of its tasks
- Many aspects of the VLT Interferometer today have their roots in the early 1990s
- VLTI is now a scientific success and continues to be an ambitious endeavor