

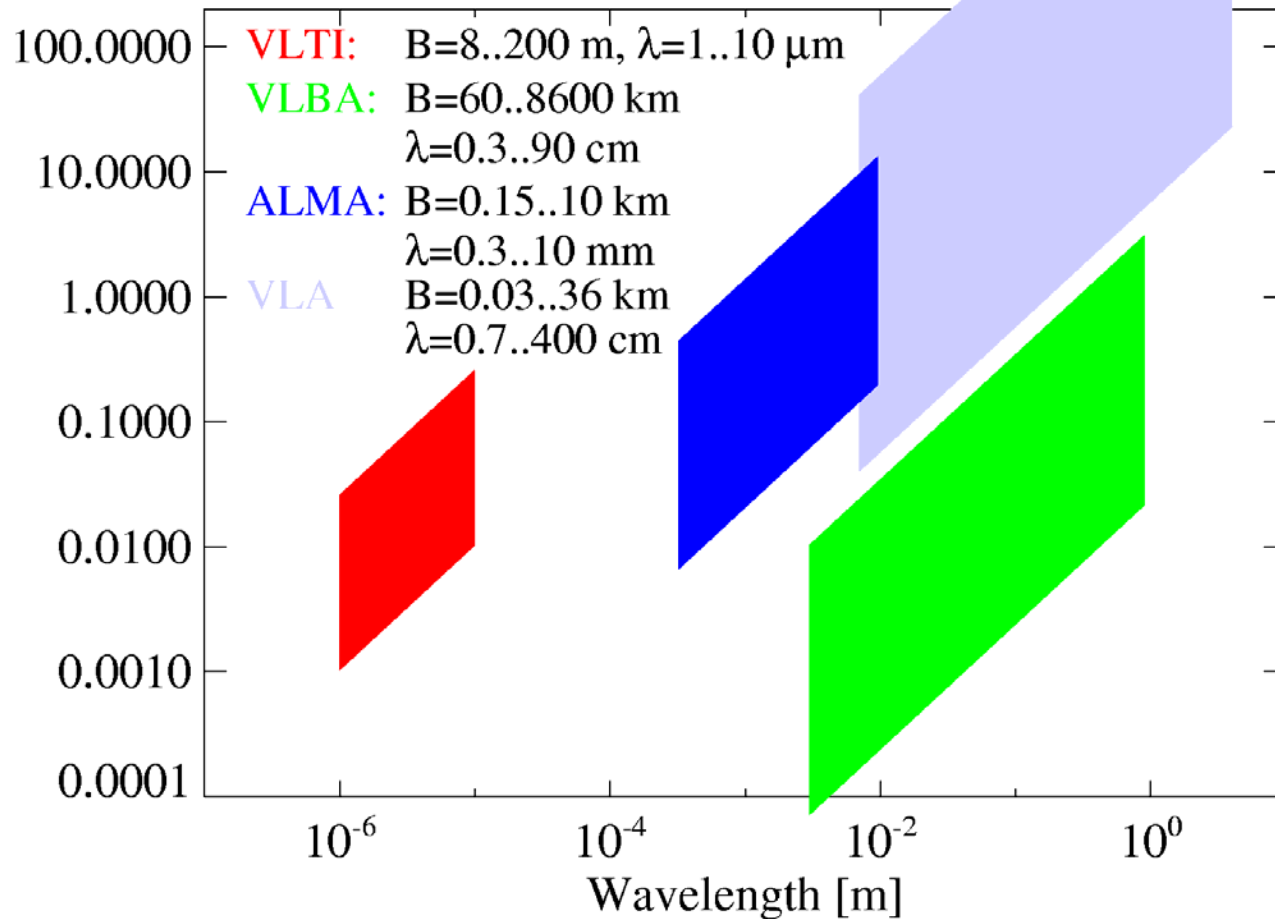
Multiwavelength interferometry of evolved stars using VLTI, VLBA, and ALMA



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Comparison of VLTI, VLBA, and ALMA



- VLTI, VLBA, and ALMA can observe the same targets in terms of angular resolution and sensitivity.
- They provide complementary information on different components.
- It's all interferometry.

Telescopes:

VLTI : 4 x 8m + 4 x 1.8 m

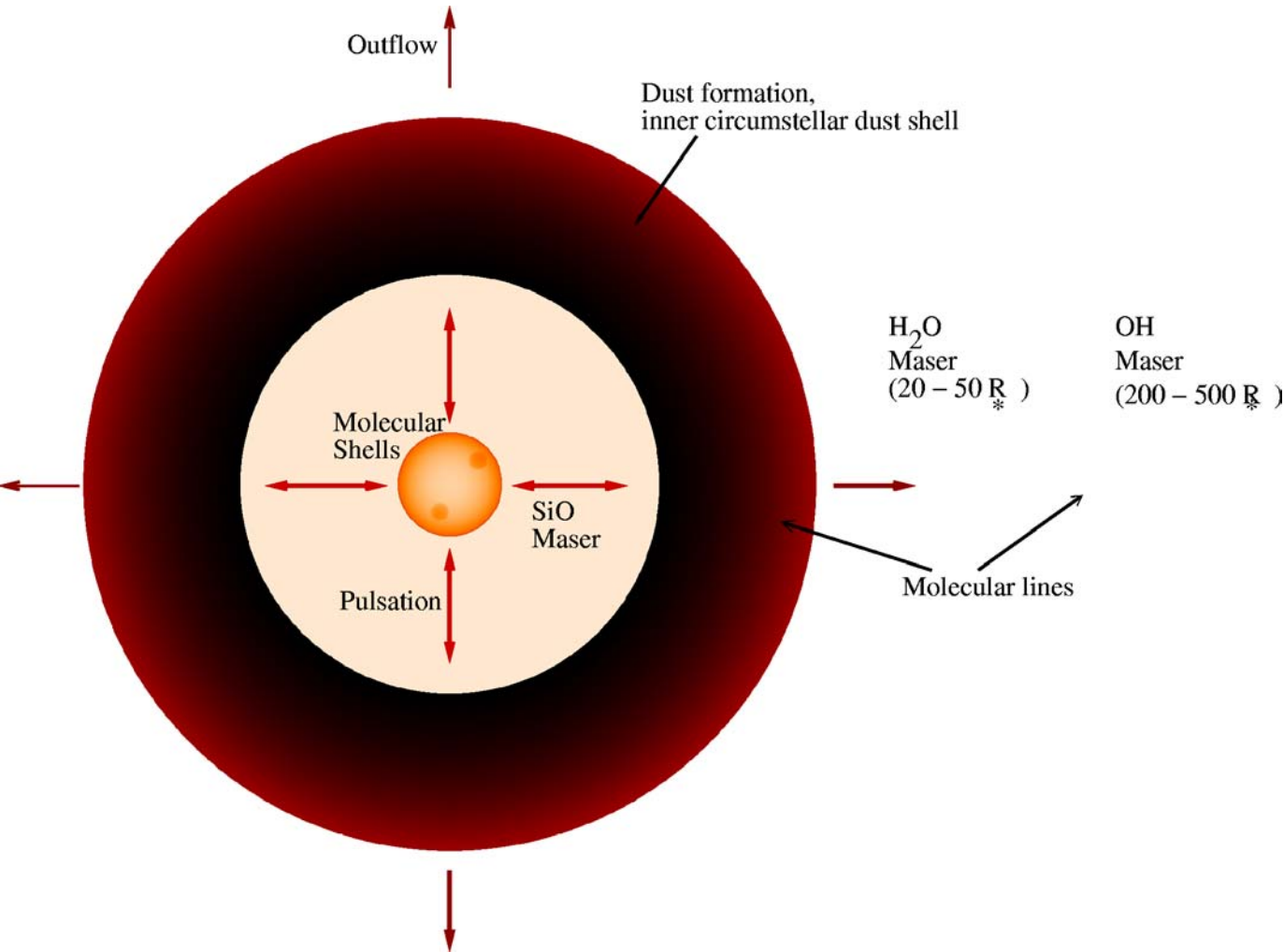
VLBA : 10 x 25 m

ALMA : 64 x 12 m

VLA : 27 x 25 m



Scheme of a Mira star and its CSE



VLTI:

- Size and shape of the NIR and MIR Photosphere.
- CLV with effects by close molecular layers, inhomogeneities.
- Size, chemistry, shape of the inner warm dust shell.

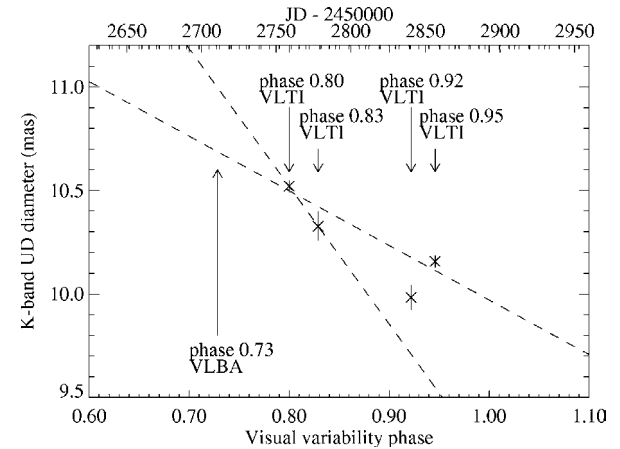
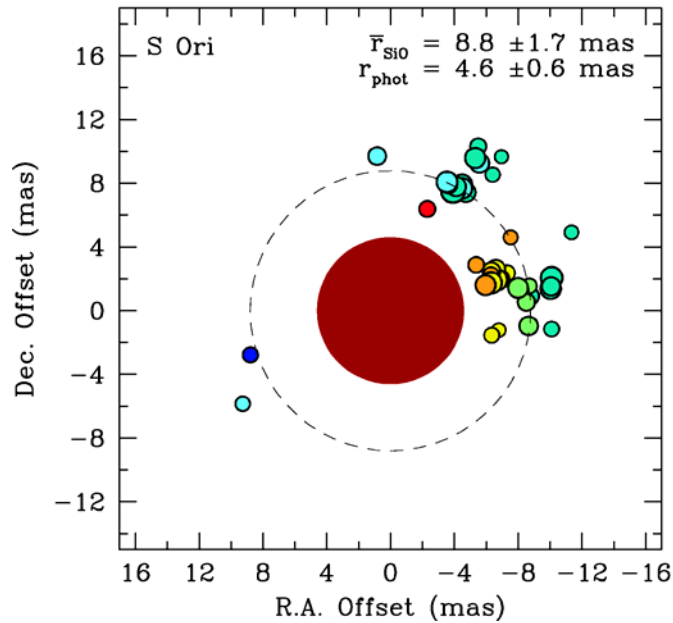
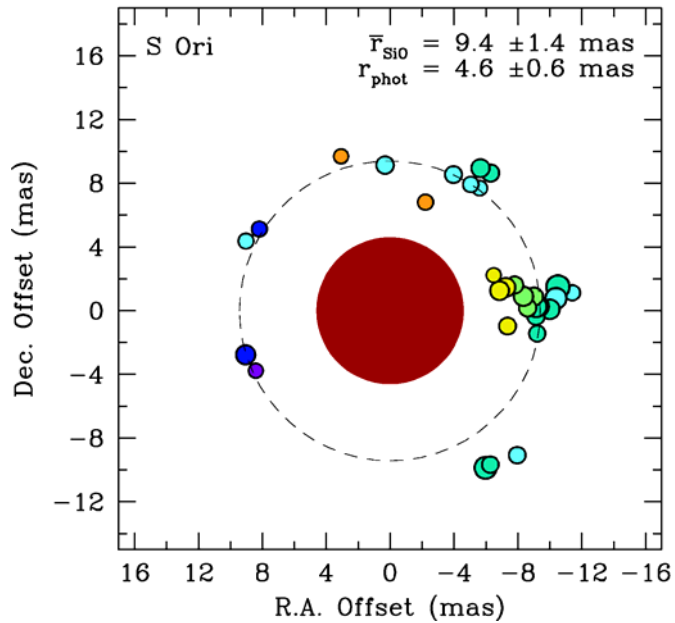
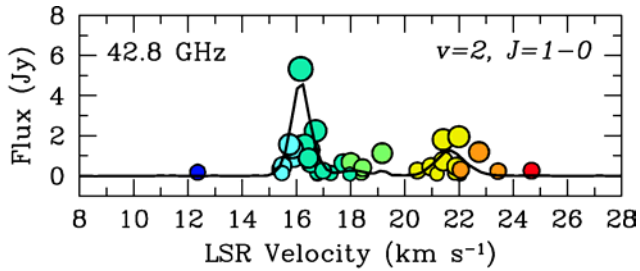
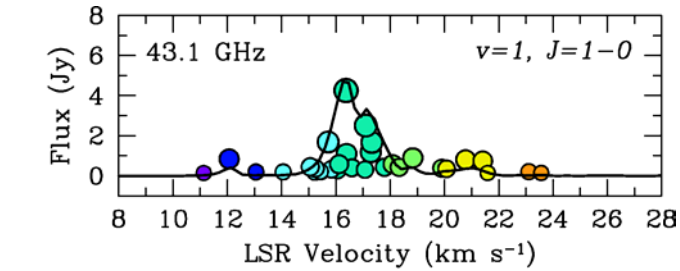
VLBA:

- SiO maser zone inside the dust formation zone: size, shape, kinematics.
- Radio Photosphere.
- Water and OH maser outside the dust formation.

ALMA:

- mm Photosphere.
- Cool dust. Good maps.
- Molecules close to the photosphere, in the dust formation zone, and in CSE.

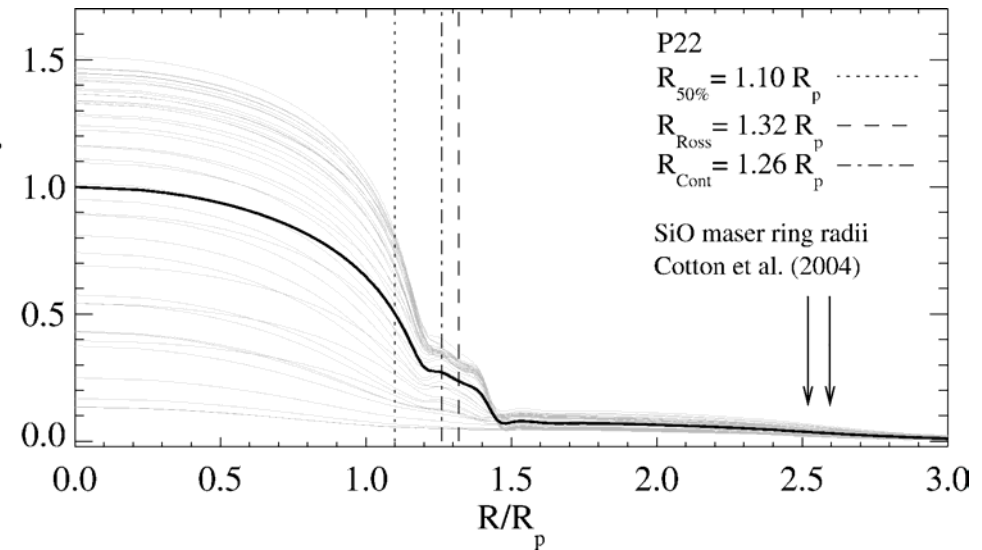
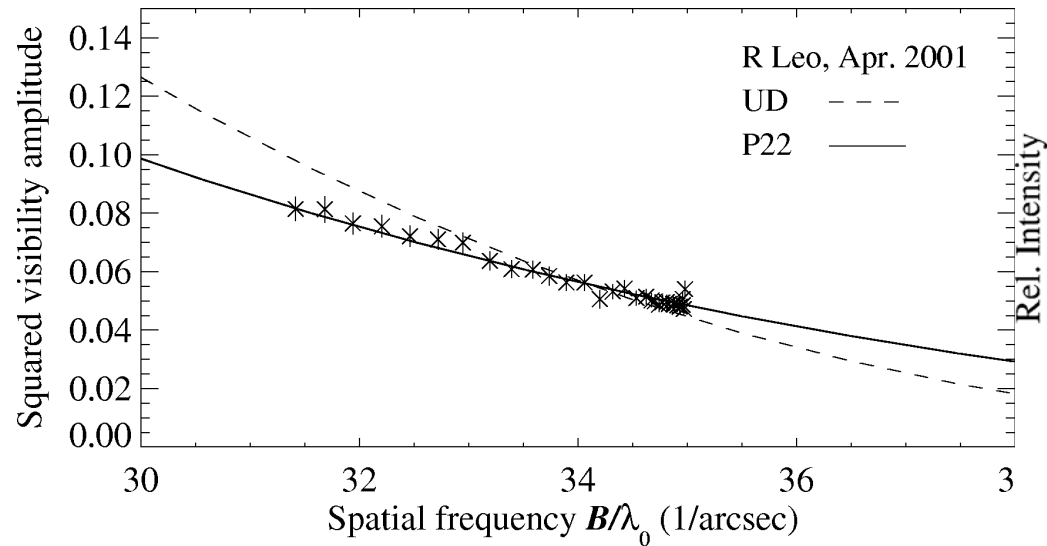
Joint VLT/VLBA observations of S Ori



Boboltz & Wittkowski, ApJ, in press



R Leo: CLV measurements and comparison to Scholz & Wood model atmospheres



Fedele et al, A&A, submitted



Next steps

- Coordinated VLT/MIDI and VLBA/SiO observations in P73 and P74.
- VLT/AMBER observations, coordinated with VLT/MIDI and VLBA/SiO.
- Water maser ?
- Monitoring campaigns of a few sources (cycle and phase dependence).
- ALMA.
- Other classes of sources ?

