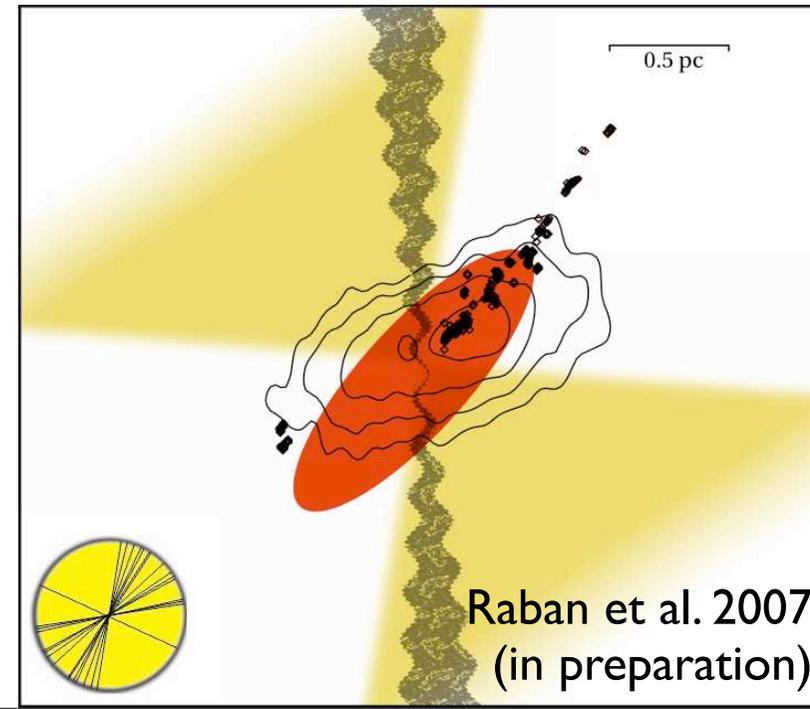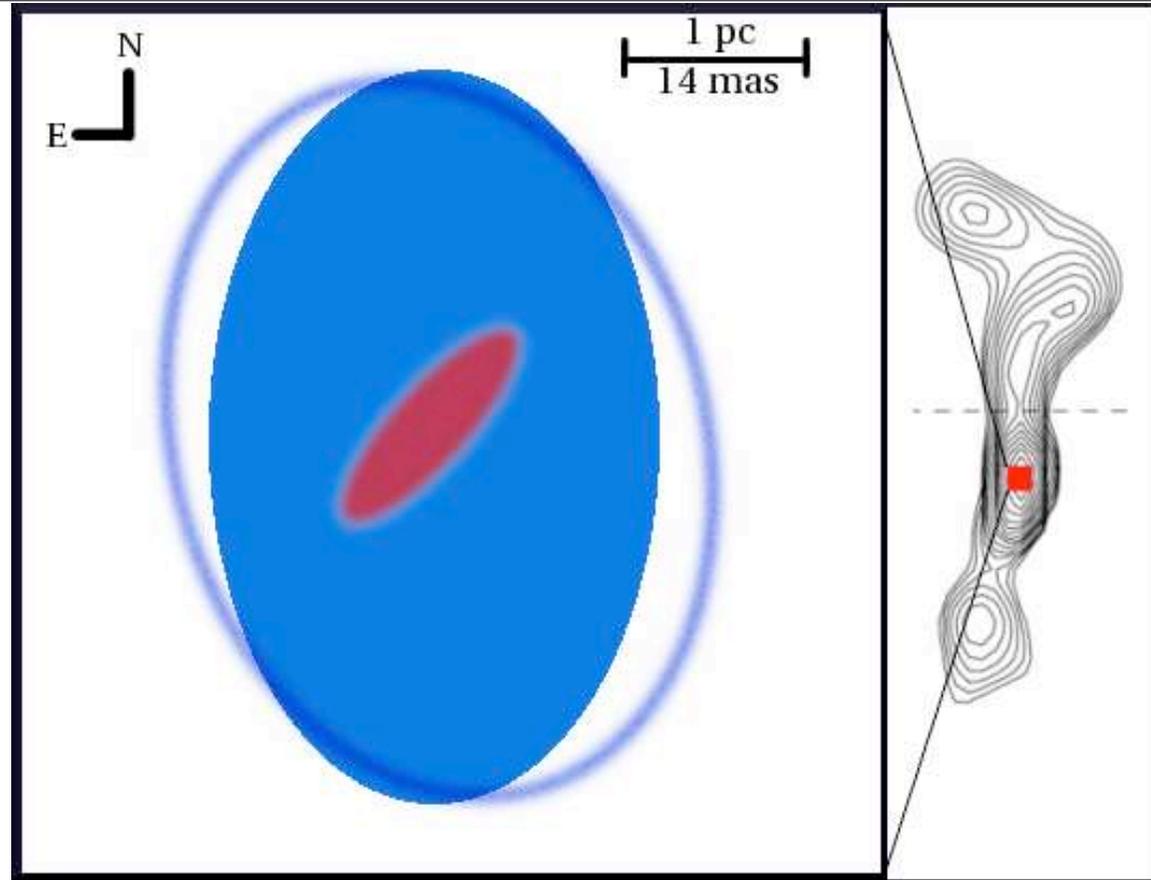# The warm dusty torus around NGC 1068

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VLTI Summer school Torun
August / September 2007

Scope

- Unified AGN model

- NGC 1068 first VLTI target (Jaffe+ 2004)

- Models need to be tested

- Overall geometry: Radio jets, MASERs, hot disk, ionisation cone

1 pc / 14 mas

0.5 pc

Raban et al. 2007 (in preparation)

Idea

Corr. flux [Jy]

D=37m,PA=63

λ [mu]

Raban et al. 2007 (in preparation)

- So far: UT baselines (no short baselines available with UTs)

    → large warm region has been **over**resolved

- Use ATs to get visibility and spectrum from warm extended region
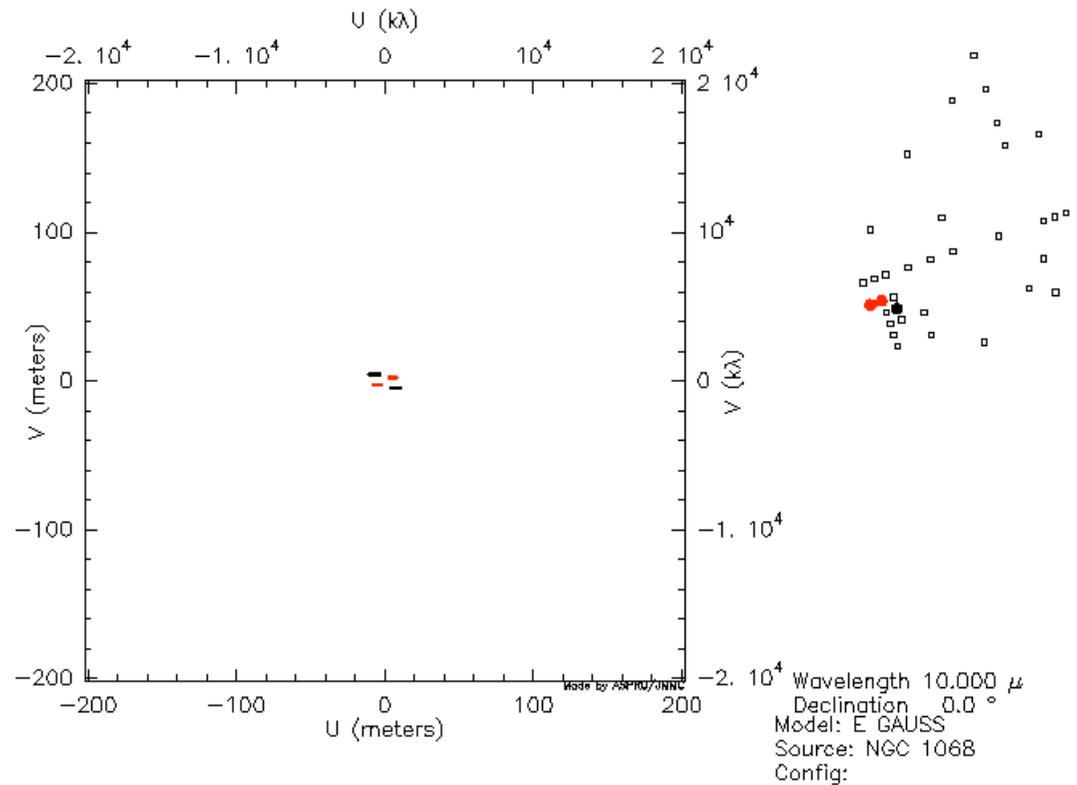
   → determine size and P.A. of outer disk
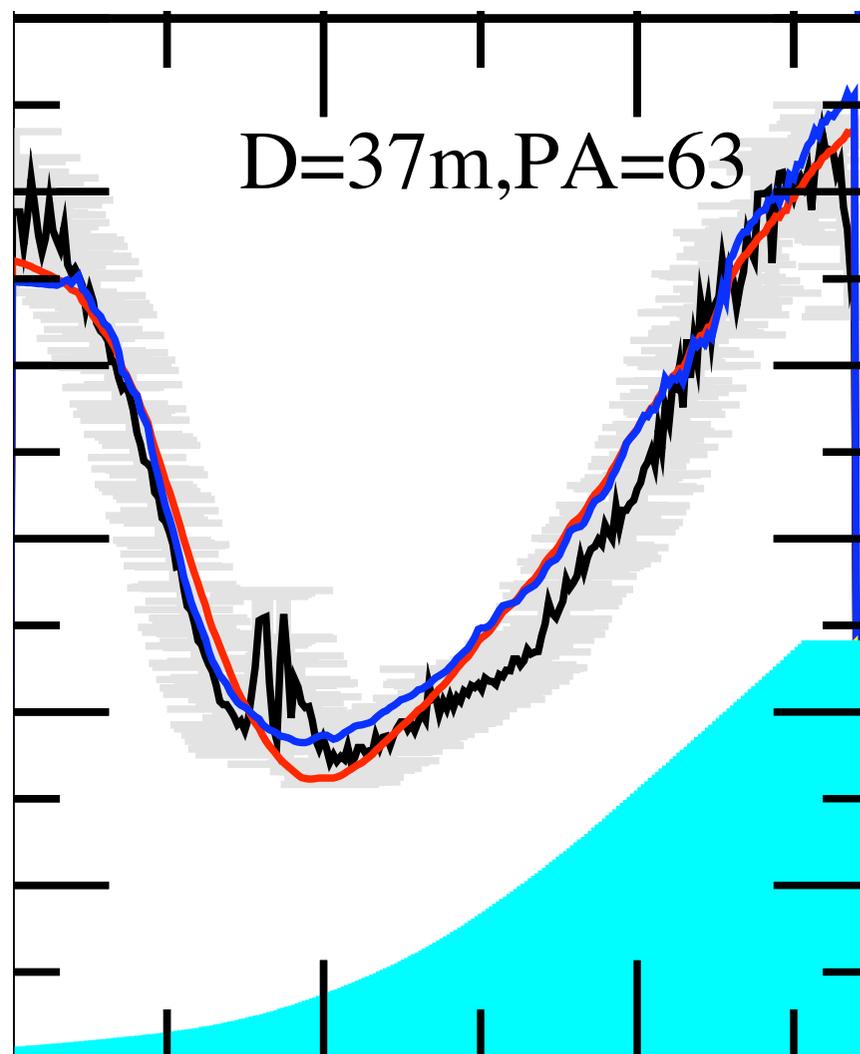
How to observe

- Use MIDI to see warm component (300 K - 10 micron emission strongest)

- UV plot (use multiple baselines: 8 m, 11.3 m, 16 m, 22.6 m), observable on 7 Nov, no constraints for DL

- Tricky: Magnitudes are just out of limits of specifications, i.e. need best conditions!

(Correlated) Fluxes

Total flux from NGC 1068 with UTs

Raban et al. 2007 (in preparation)
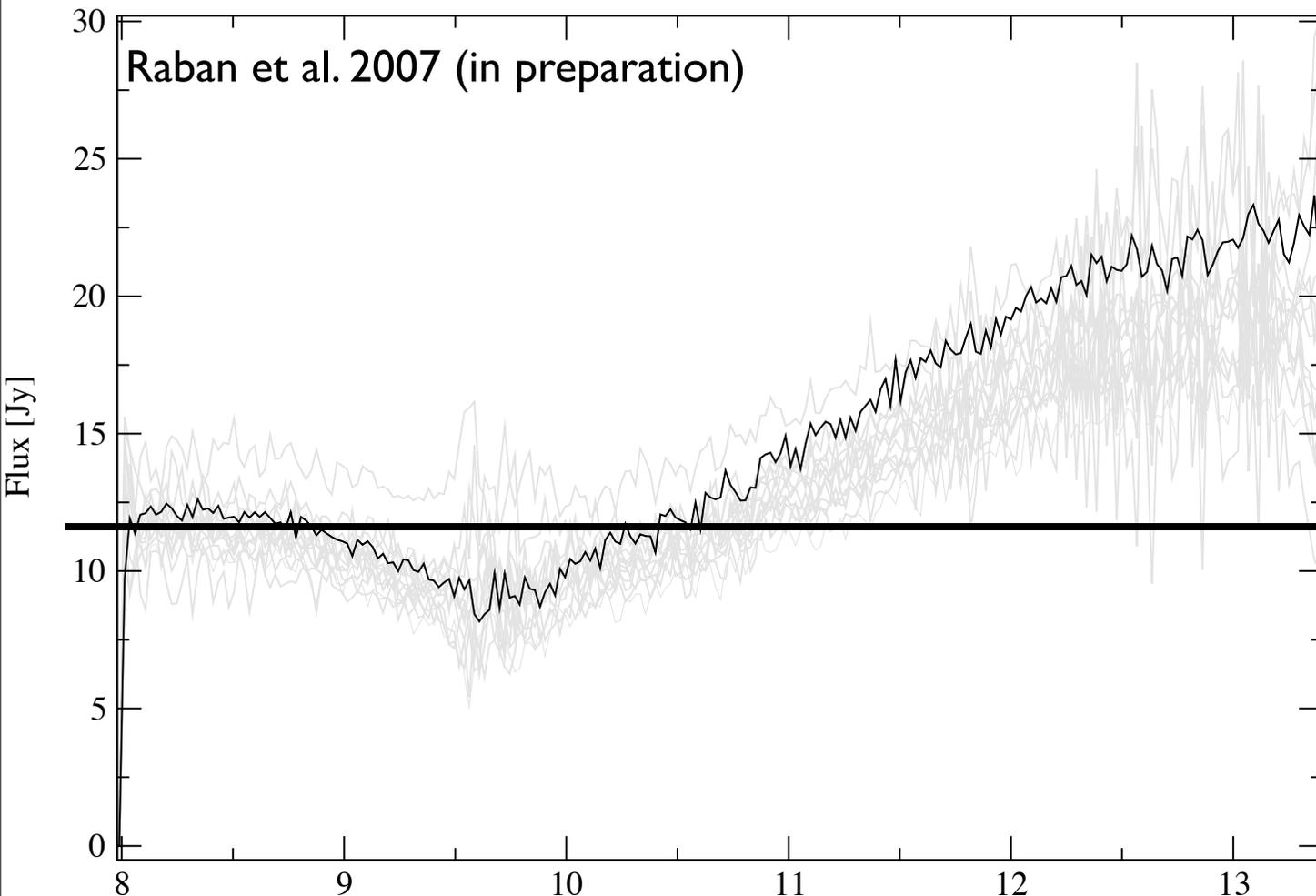
- For ATs, fluxes have to be > 11.8 Jy, i.e. only sensitive to part of the spectrum.

- We get a min. observable visibility, i.e. a max. baseline

Expected Results

- Example model: Elliptical Gaussian disk, T = 300 K, for P.A. 0°, maj./min. axes: 56 / 42 mas

- Better constrain torus models, i.e. axes, P.A., spectrum of warm outer disk
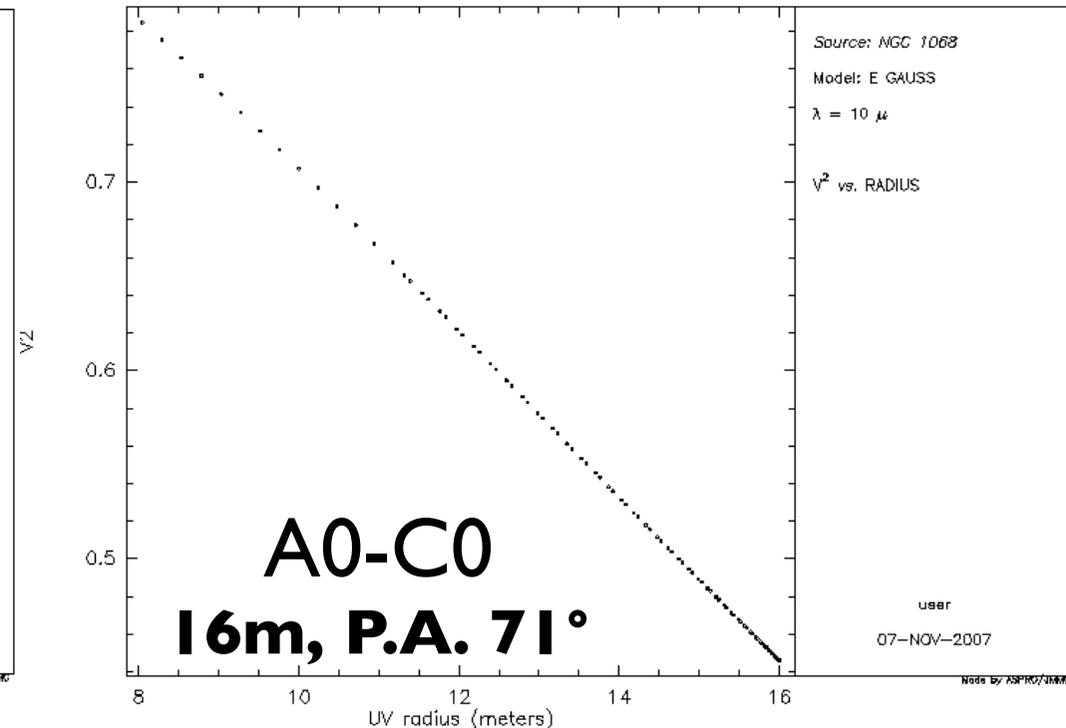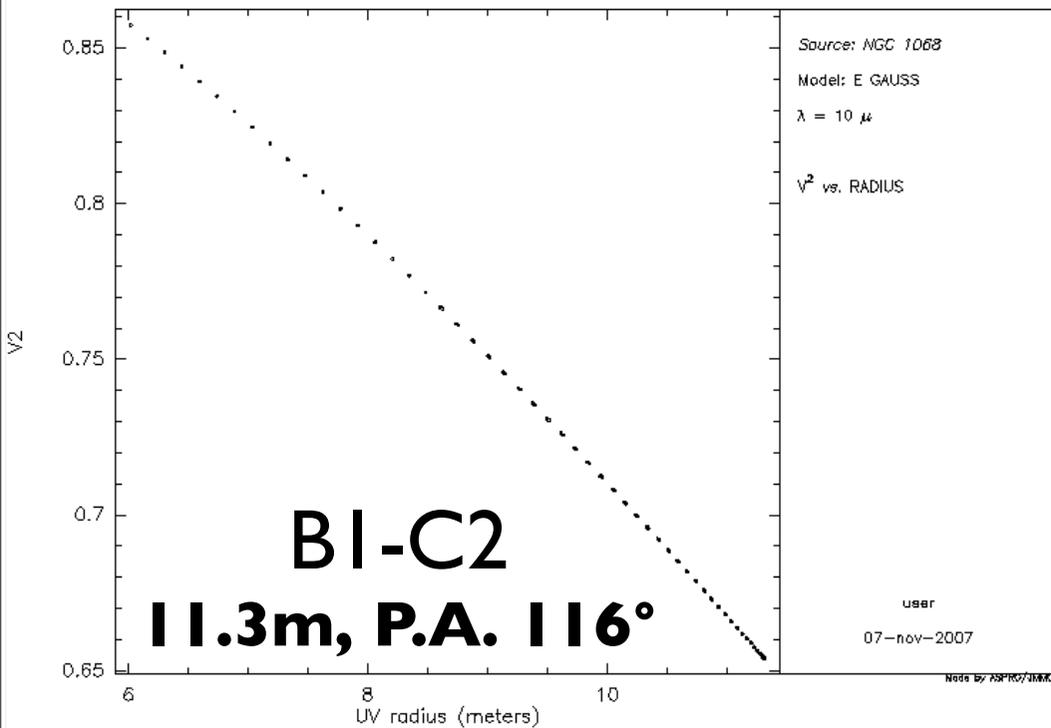
Conclusion

- Smaller baselines needed to resolve (not overresolve) warm torus in NGC 1068

- ATs provide the correct baselines

- Magnitudes tough!

- Might still work under best conditions

- Be able to better constrain dust models

- FINITO will provide more sensitivity (longer integration times) in the near future

ESO VLTI proposal

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Special Thanks to David Raban

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