CHARA Future Directions

Steve Ridgway

CHARA 2010 Annual Meeting

Suggested Developments

- Improved Tilt Detection

- Adaptive Optics

- More Telescopes
  - Higher angular resolution
  - Better coverage of mid-frequencies
  - Better coverage of low-frequencies

Adaptive Optics Proposal Main Contributors

CHARA Collaborators

- Mike Ireland
- Rafael Milan-Gabet
- John Monnier
- Denis Mourard
- Steve Ridgway
- Laszlo Sturmann
- Theo ten Brummelaar

Community

- Chris Dainty
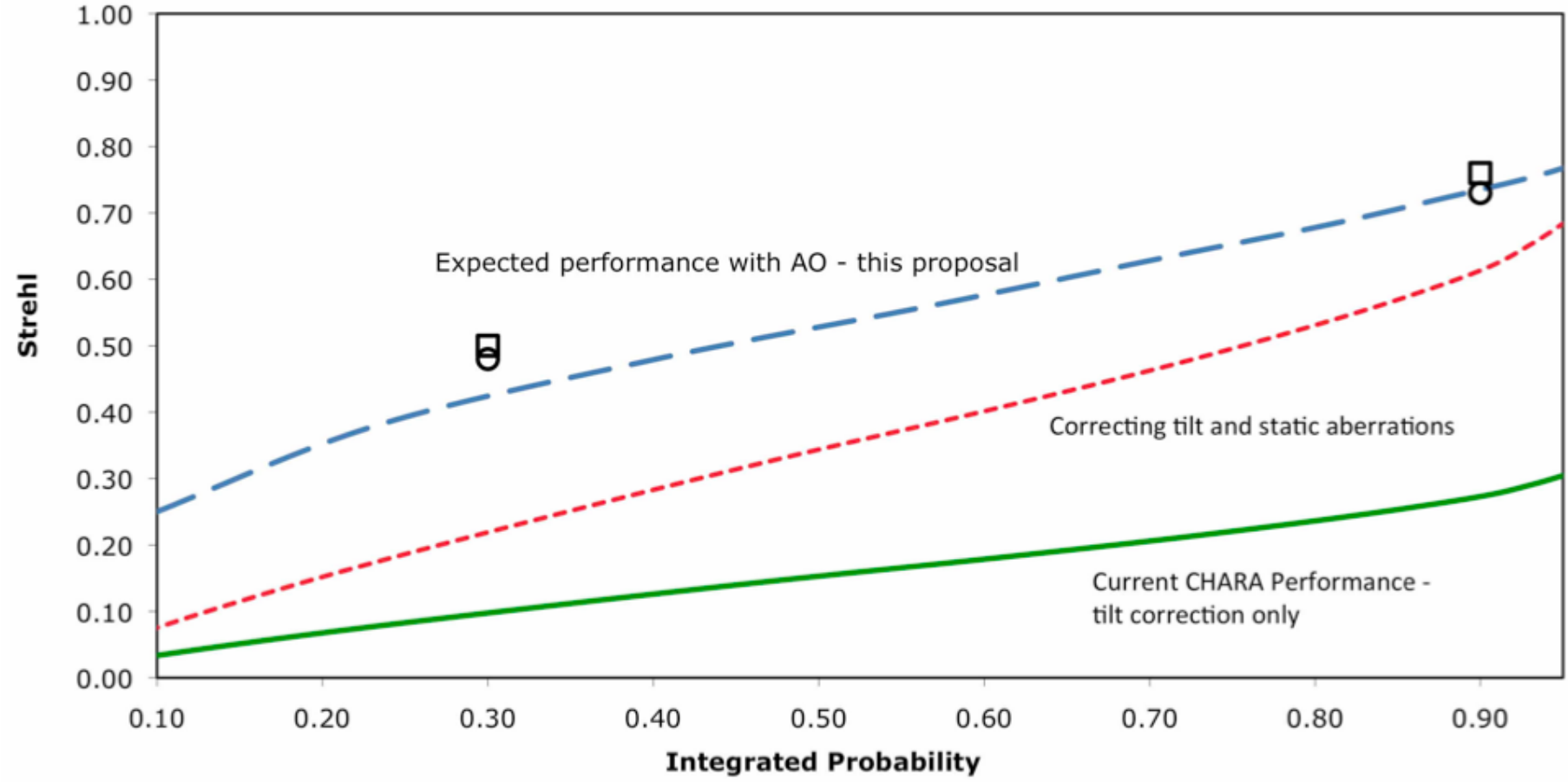- Nick Devaney
- Alexander Goncharov
- Dave Mozurkewich

Why Adaptive Optics? – 1
Better performance across the board
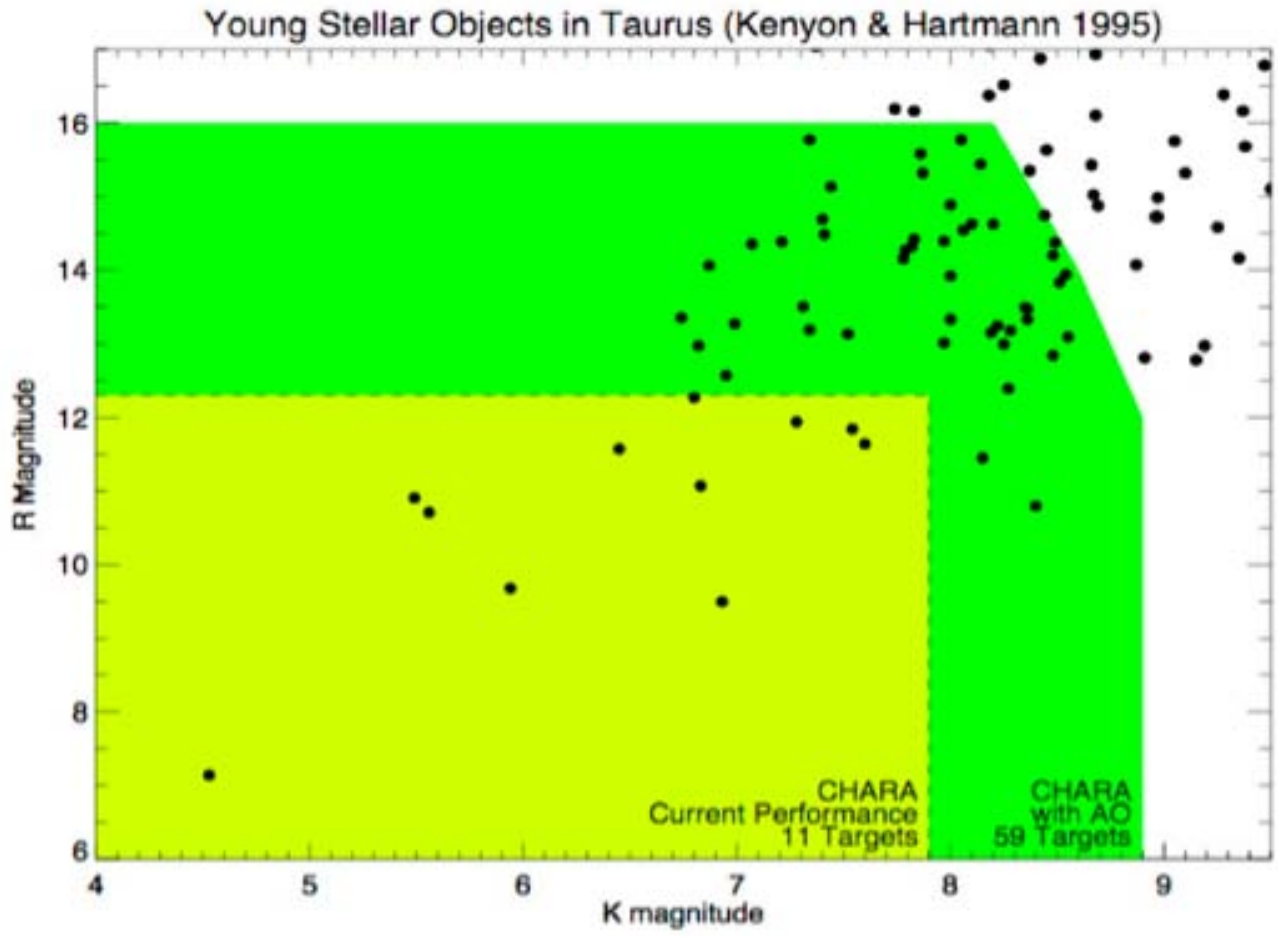
Why Adaptive Optics? – 2
Access to fainter targets
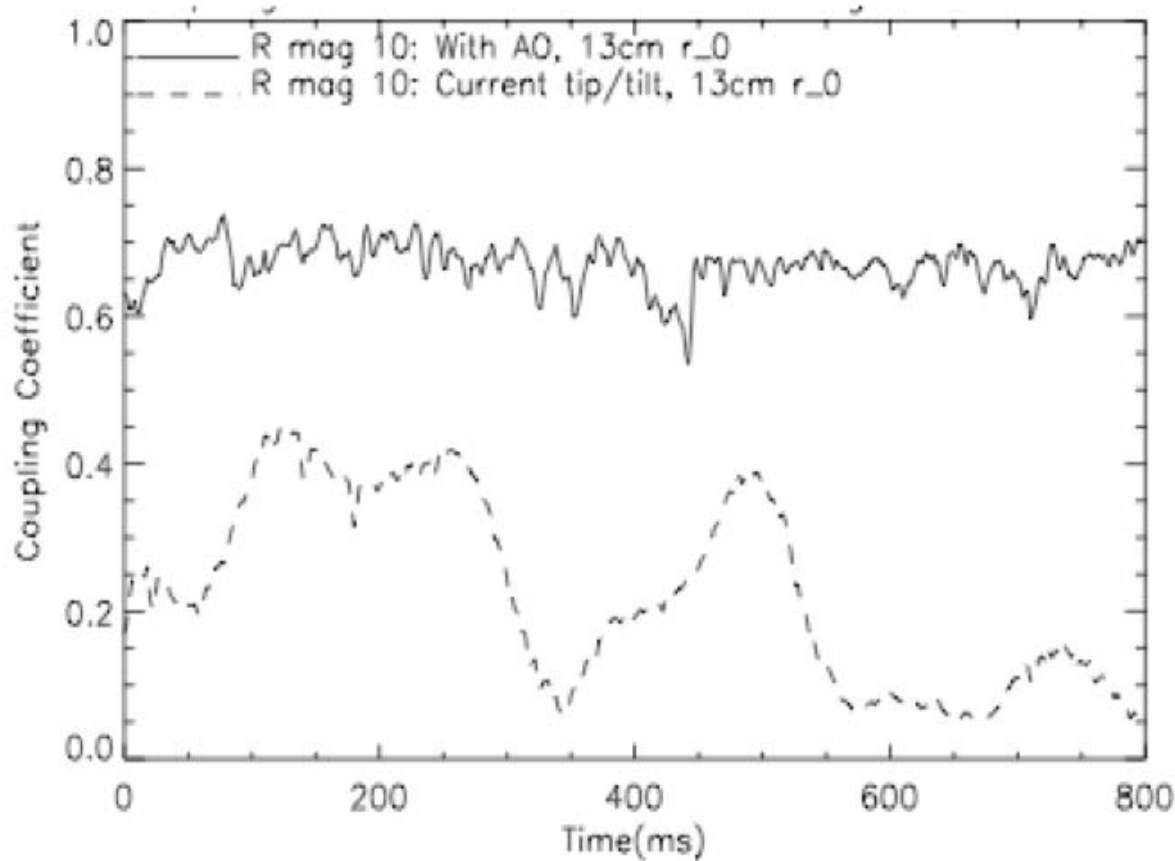

Young Stellar Objects in Taurus (Kenyon & Hartmann 1995)

Why Adaptive Optics? – 3
Improved coupling into fibers

Adaptive Optics Proposal

- Proposal prepared for 2009 MRI^2 opportunity
  - No matching funds needed!
- Proposal did not succeed
  - No feedback yet
- Winning proposals in competition ($1.8M)
  - Beam combiner for NPOI ($609K)
  - GPU Computing Cluster ($444K)
  - Table Mtn AO system for 1m telescope ($637K)
  - Cheap small telescope ($88K)

Next Proposal Effort

- Under discussion
  - Implement new tilt sensors at telescope
  - Much less expensive
  - Use ATI competition – no matching funds
  - Can be designed to pave the way for AO
  - AO demonstrator can then be developed for one telescope at moderate cost