

Astrophotonics in infrared long-baseline interferometry

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Talk abstract: Imaging with long baseline interferometry was until recently the unique domain of radio astronomy. The very long baseline interferometer (VLBI) can achieve the highest angular resolution imaging of any telescope at radio frequencies using thousand-kilometre baselines. Optical and infrared interferometers can now achieve imaging with an angular resolution similar to the VLBI but using hundred-metre baselines. I will discuss how improvement in detector technology, fibre optics and integrated optics has allowed the achievement of spectacular results in stellar imaging and how interferometry could benefit from further development in micro-optics, integrated-optics and new detector techniques.

Speaker biography:

Education

* Ph.D. Optical Interferometry, October 2003. Title: "Imaging Systems in Interferometry", Universite de Provence, France.

* M.Sc. Radio Astronomy (By exams and dissertation, February 1999). Title: "Low Noise Amplifiers Bias Optimisation", Jodrell Bank, University of Manchester, UK.

* B.Sc. (hons.) Applied Physics (July 1997). University of Northumbria at Newcastle, UK.

Research interests

* Optical and Infrared interferometry, theory and applications of imaging systems in interferometry.

* Fringe tracking systems, development and implementation.

* Infrared cameras development.

* High resolution observations of evolved stars.

Employment and fellowships

* December 2006-Now University of St Andrews. SUPA advanced fellowship

* December 2003-December 2006 University of Michigan. NASA Michelson fellowship.

* August 2000--October 2003, Harvard Smithsonian Center for Astrophysics. Smithsonian predoctoral fellowship.

* October 1998-- July 2000, Observatoire de Haute Provence. College de France predoctoral fellowship.