

The LBT suite of operational AO instruments

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The Large Binocular Telescope has been conceived as an adaptive telescope, with two deformable secondary mirrors that can serve every Gregorian foci and a strong vocation towards the development of state-of-the-art AO instrumentation. The combination of superb wavefront control and 22m baseline binocular capability makes of LBT a yet unrivaled machine, particularly in the field of high angular resolution observations. Several instruments already in operation at the LBT benefit from AO correction, and more will come in the next years. In this talk, we briefly review the status of the ones currently offered for scientific observations to the Italian community.

The LUCIs are two identical NIR spectro-imager with MOS capability with 30" narrow-field and 4' large-field modes assisted by two different AO systems: SOUL, the high-Strehl NGS SCAO system, and ARGOS, the wide-field laser-assisted GLAO system. The LUCIs are installed on both eyes of the LBT capable of full binocular observations and are offered to the Italian community as facility instrument through the annual call for proposal.

LINC-NIRVANA is a NIR imager assisted by a twin MCAO system predisposed for interferometric observations. Each MCAO system measures ground and high layer optical turbulence with two NGS multi pyramids WFSs in a layer-oriented configuration and compensate the turbulence using two deformable mirrors. LINC-NIRVANA is under commissioning at LBT and routinely executes MCAO correction achieving peak performances of 20-30% SR in Ks band.

LBTI is the Mid Infrared imager for high-contrast imaging, null-combiner and Fizeau interferometer focused on exoplanets. LBTI completed the NASA's surveys LEECH and HOSTS and it is now offered to the Italian community as an UoFA PI instrument.

Authors: BUSONI, Lorenzo (Istituto Nazionale di Astrofisica (INAF)); PINNA, Enrico (Istituto Nazionale di Astrofisica (INAF)); ARCIDIACONO, Carmelo (Istituto Nazionale di Astrofisica (INAF)); AGAPITO, Guido (Istituto Nazionale di Astrofisica (INAF)); BONAGLIA, Marco (Istituto Nazionale di Astrofisica (INAF)); ESPOSITO, Simone (Istituto Nazionale di Astrofisica (INAF)); PUGLISI, Alfio Timothy (Istituto Nazionale di Astrofisica (INAF)); ROSSI, Fabio (Istituto Nazionale di Astrofisica (INAF)); Dr GEORGIEV, Iskren (Max Planck Institute for Astronomy (MPIA)); Dr GAESSLER, Wolfgang (Max Planck Institute for Astronomy (MPIA)); Dr RABIEN, Sebastian (Max-Planck-Institut für extraterrestrische Physik (MPE)); Dr HINZ, Philip M (Steward Observatory, Department of Astronomy, University of Arizona); Dr ERTEL, Steve (Steward Observatory, Department of Astronomy, University of Arizona)

Presenter: BUSONI, Lorenzo (Istituto Nazionale di Astrofisica (INAF))

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