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Venue: 18/03/2015 at 12:00 in the old Auditorium (Telescopium)

Title: Commissioning progresses of ARGOS: the laser guide star ground-layer AO system at LBT

Abstract:

ARGOS is the Laser Guide Star and Wavefront sensing facility for the Large Binocular Telescope. With first laser light on sky in 2013, and first GLAO closure on sky in fall 2014, the ARGOS commissioning is well underway. After presenting the goals and overall design of ARGOS, we discuss the current commissioning effort and the first preliminary on-sky results.

Aiming for a wide field ground layer correction, ARGOS is designed as a multi- Rayleigh beacon adaptive optics system. A total of six powerful pulsed lasers are creating the laser guide stars in constellations above each of the LBTs primary mirrors. With a range gated detection in the wavefront sensors, and the adaptive correction by the deformable secondaries, we expect ARGOS to enhance the image quality over a large range of seeing conditions. With the two wide field imaging and spectroscopic instruments LUCI1 and LUCI2 as receivers, a wide range of scientific programs will benefit from ARGOS. With an increased resolution, higher encircled energy, both imaging and MOS spectroscopy will be boosted in signal to noise by a large amount.

The first on-sky GLAO closure has been achieved in fall 2014 producing preliminary on-sky results for performance analysis. While more sub-systems, an increase software automation, and more improvements are still to be commissioned, the first results are very encouraging and match the predicted performances: a decrease of a factor 2 to 3 in FWHM over the full 4'x4' LUCI FoV. We present the current status and results, discuss some aspects of the commissioning during the year 2014, and present shortly our forthcoming plan for the coming year.