

Title: Atmospheric turbulence profiling

Date: 22<sup>nd</sup> July 2015

Venue: Old Auditorium (Telescopium) with Andrés Guesalaga

Abstract:

The first part of the presentation will focus on turbulence profilers that use on-sky telemetry collected from AO facilities. Data from GeMS, the MCAO system Gemini South telescope, show that besides  $Cn_2(h)$ , the telemetry can also provide on-line estimations of the outer scale in altitude ( $L_0(h)$ ), isoplanatic angle and operational variables to verify the AO loop performance. Variables such as dome seeing, wind profiling in altitude and dynamics of turbulence ("frozen flow" hypothesis) can also be estimated. The application of this technique to other WFAO systems such as Raven and ESO's AOF are also discussed.

The second part of the presentation will address the preliminary results in the design of an integrated MASS/DIMM profiler based on single low noise CCD detectors. Some results using pupil images from the JKT telescope are presented. Advantages, envisioned problems and requirements for such instrument are analyzed.