

Design of the MagAO-X Pyramid Wavefront Sensor

mardi 23 octobre 2018 15:30 (20 minutes)

Summary

Adaptive optics systems correct atmospheric turbulence in real time. Most adaptive optics systems used routinely correct in the near infrared, at wavelengths greater than $1\mu\text{m}$. MagAO-X is a new extreme adaptive optics (ExAO) instrument that will offer corrections at visible-to-near-IR wavelengths. MagAO-X will achieve Strehl ratios greater than 70% at $H\alpha$ when running the 2040 actuator deformable mirror at 3.6 kHz. A visible pyramid wavefront sensor (PWFS) optimized for sensing at 600-1000 nm wavelengths will provide the high-order wavefront sensing on MagAO-X. We present the optical design and an update on the alignment of the MagAO-X pyramid wavefront sensor.

Auteur principal: Mlle SCHATZ, Lauren (University of Arizona)

Co-auteurs: HEDGLEN, Alexander (University of Arizona College of Optical Sciences); RODACK, Alexander (University of Arizona College of Optical Sciences); BOHLMAN, Chris (University of Arizona); Dr MALES, Jared (University of Arizona Steward Observatory); LUMBRES, Jennifer (University of Arizona College of Optical Sciences); LONG, Joseph (University of Arizona Steward Observatory); KNIGHT, Justin (University of Arizona College of Optical Sciences); MILLER, Kelsey (University of Arizona College of Optical Sciences); VAN GORKOM, Kyle (University of Arizona College of Optical Sciences); Prof. CLOSE, Laird (University of Arizona Steward Observatory); JEAN, Madison (University of Arizona College of Optical Sciences); KAUTZ, Maggie (University of Arizona College of Optical Sciences); Prof. HART, Michael (University of Arizona College of Optical Sciences); DURNEY, Olivier (University of Arizona Steward Observatory); Prof. GUYON, Olivier (Subaru Telescope / University of Arizona)

Orateur: Mlle SCHATZ, Lauren (University of Arizona)

Classification de Session: Pyramid Wave-Front Sensor