

## ELT Working Group: Preparing Observations

*Tuesday, October 29, 2019 9:00 AM (20 minutes)*

Preparing for ELT Observations In order to get the best out of the future giant ELT, ESO is setting Working Groups that would address (and hopefully optimise) the ELT observations. Toward this objective, (preparing for ELT observations), four WG will be working on: Star catalogues, AO performance and PSF, instrument simulators and ETC preparation. In this presentation, we will present the work that will be carried under the second item: AO performance and simulated PSF. The AO performance of the ELT significantly depends on the available natural guide stars. In each of the observing modes (e.g SCAO, MCAO, LTAO), the brightness of the NGSs, their asterism, and distance from the science target will give significantly different AO performance (quantified by e.g Strehl ratio [SR] or Engircled Energy [EE]). The aim of this WP are: (1) to define an algorithm capable of choosing the best combination of star(s) available in the field of view (provided by the Star Catalogues WG) to give the best AO performance, and (2) generate the Point Spread Function (PSF) expected for the observation for a given observing mode and a given set of environmental conditions (e.g. seeing, Cn2, etc.). Iâ€™ll present the state of the art (whatâ€™s already available), and the strategy (what do we have to do) to fill this task. Comments from the community will obviously be welcomed...

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