

# Planet populations through detection surveys (1/2)

- Where we be post SPHERE/GPI, LBTI, Subaru, and ERIS, Espresso, TESS, Plato ? Cf Raffaele's talk for Direct imaging and Christophe's for transits. Anything more?

- What will we do with the ELT?

- \* Table of Christophe as input: feedback from Pis ?

- \* Ground braking exoplanet *detection* science with HIRES ?

- \* In-depth studies of a limited population of stars vs general surveys?

- \* Surveys on the ELT: what kind of meaningful surveys can we imagine given the expected pressure to study planet populations? Objectives? Sizes of surveys ?

Complementarity with the VLT & with other telescopes & instruments (even small ones, cf Malcom) ?

- \* What is needed to *combine* results from various survey techniques to test the impact of the primary star properties (e.g. masses, ages) or planet formation scenari (CA vs GI)? .  
Some coupling possible in the VLT era; what can we expect in the ELT era ?

# Planet populations through detection surveys (2/2) *more “technical” aspects*

- HIRES and AO
- Detection limits for different techniques: are we talking the same language ?
- Statistical results from DI require lots of assumptions on planet distributions. Approaches to minimize the effects of these assumptions?

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- The metrics used to estimate the detection limits in DI differ from one author to the other; need for more unified approaches ?
- DI surveys detection limits when expressed in masses rely on models that are limited because they are not calibrated by observations. The situation may be even more complex for Earth mass planets. What is needed to calibrate the models in the scope of the ELT data?
- DI surveys detection limits when expressed in masses also rely on assumptions on stellar parameters (e.g. ages, distances); preparatory work to constrain them?