Final Design and Technologies for the IBIS 2.0

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IBIS 2.0

[Cavallini (2006), Solar Physics, 236, 415-439]
[Ermolli et al. (2020), SPIE proceeding, 11447]

- High resolution solar spectropolarimetric observations

- Upgrade and update the previous version of IBIS (DST from 2003 to 2019) planned for VTT in Spring 2023
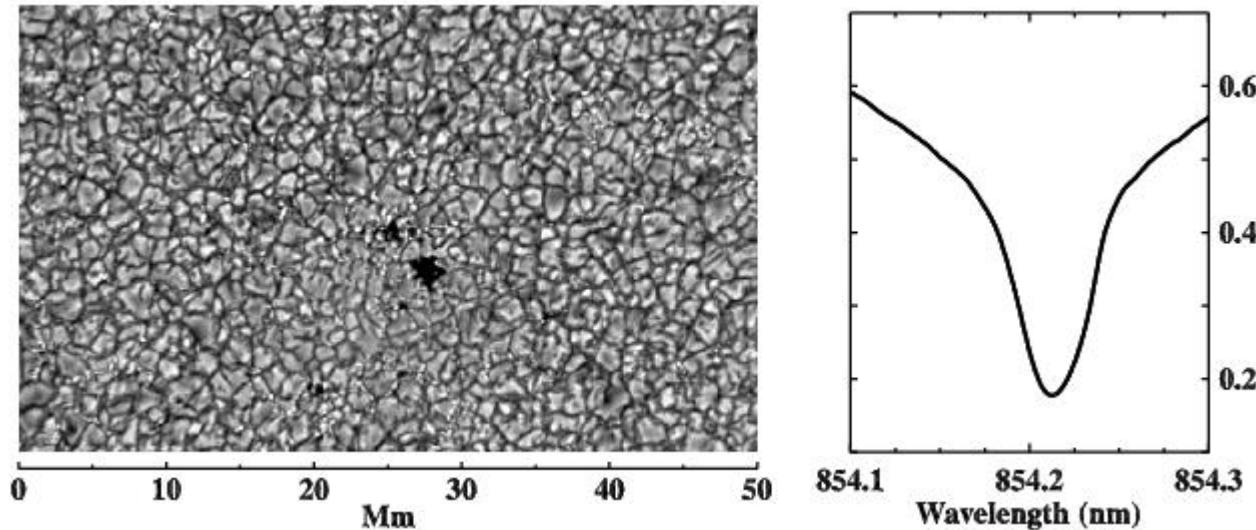
NEW

- Full automation of calibration and observation procedures (ESO VLT standard)

- Polarimetric Unit

Synergies:

- **INAF-OAR** + **INAF-OATs**: PI +PM

- **INAF-OAR**: reassembly in optical lab with a modified layout adapted for VTT

- **INAF-OAA**: dynamical optical aberration tests of critical components

- **INAF-OATs** + **INAF-OAR**: Instrument Control System hardware upgrade

- **INAF-OATs**: Instrument Control Software

- **INAF-OAR** + **INAF-OAC**: new polarimeter design

- **INAF-OACt** + **INAF-OAR**: science cases

- **INAF-OAR** + **INAF-OAB**: optomechanics

- **INAF-OAR**: detector trade-off
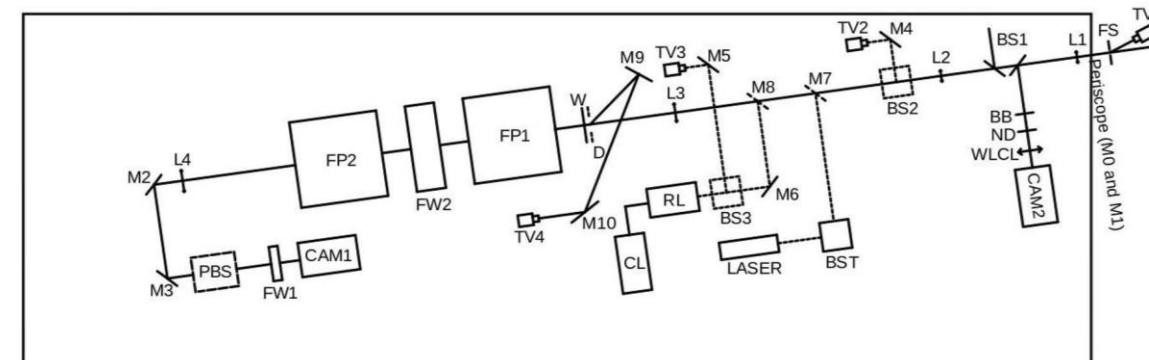
Polarimetric Unit:
6 modulation states

- Optical design and optimization with Zemax OpticStudio

- Fast 4Mpix sCMOS

- WFE characterization of LCVR with interferometer at INAF-OAA

[Viavattene et al. (2022), Conceptual design of the IBIS 2.0 polarimetric unit, INAF Technical Report, Repository Open Access INAF]
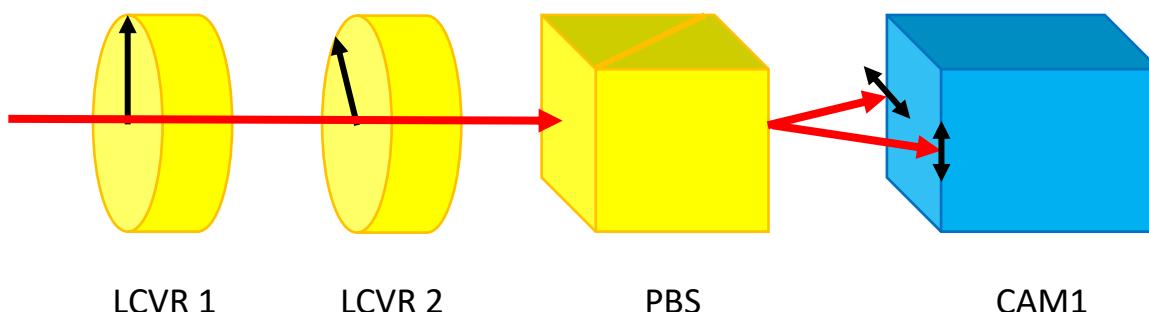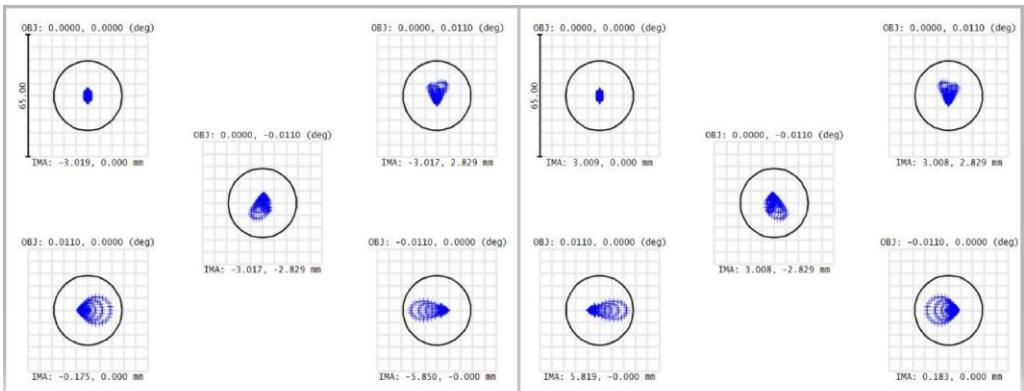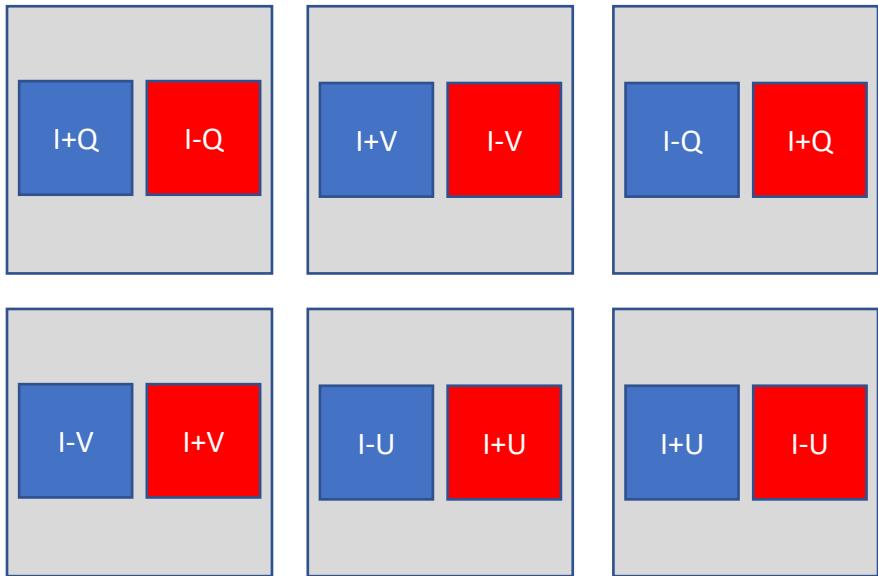
Instrument Control

- New Instrument Control for a full automation of the calibration and observation procedures and remote access

- Beckhoff PLC with dedicated motors, actuators and stages

- First application of the ESO VLT Control Software to solar instrumentation

[Viavattene et al. (2020), IBIS-04: IBIS 2.0 System Design Description, INAF Technical Report, Repository Open Access INAF]
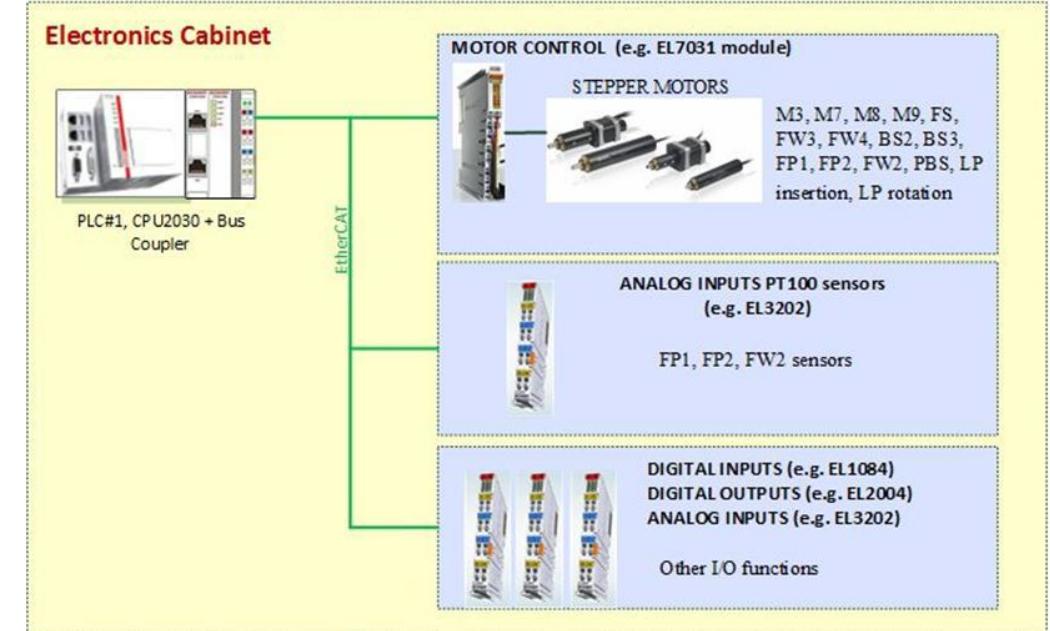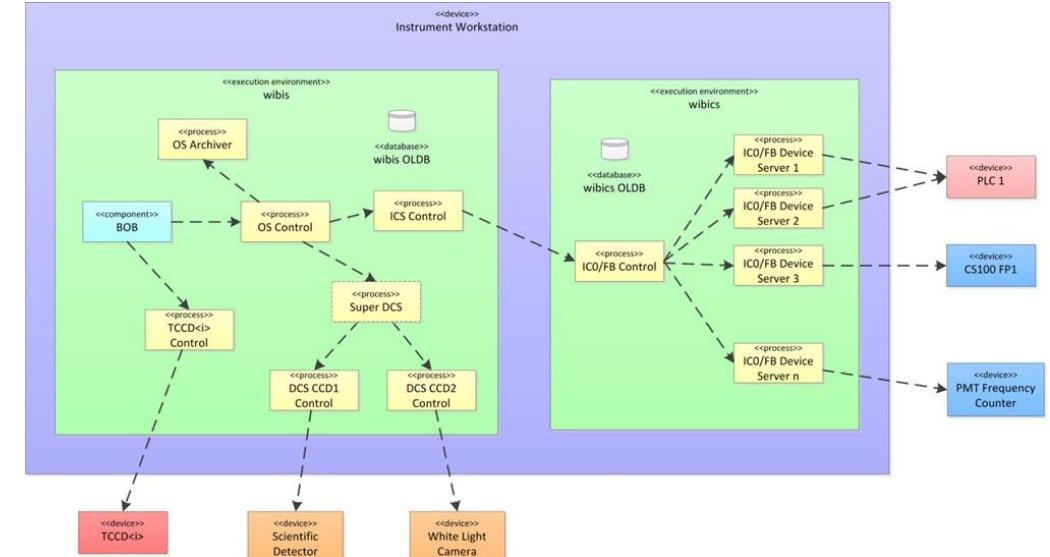
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Thank you for your attention