Mini-Grant INAF 2022 – RSN5

Integration and calibration of the polarimetric unit of the Interferometric BIdimensional Spectrometer 2.0 (IBIS 2.0)

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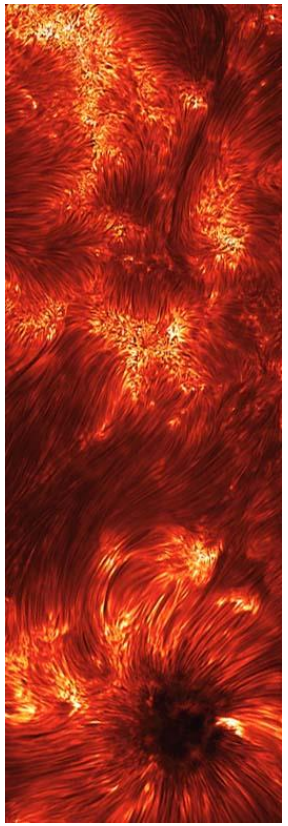
INAF-OAR, INAF-OAC

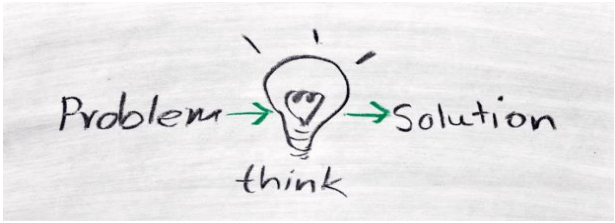
Planned activities (funded 18.4k€):

- Design of IBIS 2.0 Polarimetric Unit (PU)
- Characterization of the Wavefront Distortion of the two Liquid Crystal Variable Retarders (LCVRs) and of the Polarizing Beam Splitter (PBS) at INAF-OAA
- Alignement of the LCVRs and PBS at INAF-OAC using a calibrated polarimeter
- Calibration and tests of the PU at the Vacuum Tower Telescope (VTT)



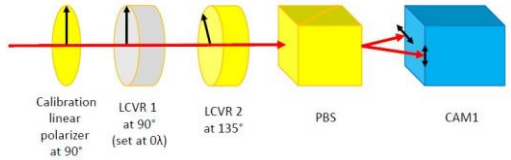
Critical issue:

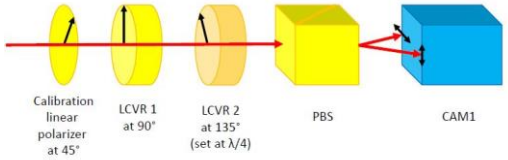
- VTT no more available to host IBIS 2.0 and its PU



Mitigation activities:

- Found a new telescope: THEMIS
- New optical design developed for IBIS 2.0 with its PU

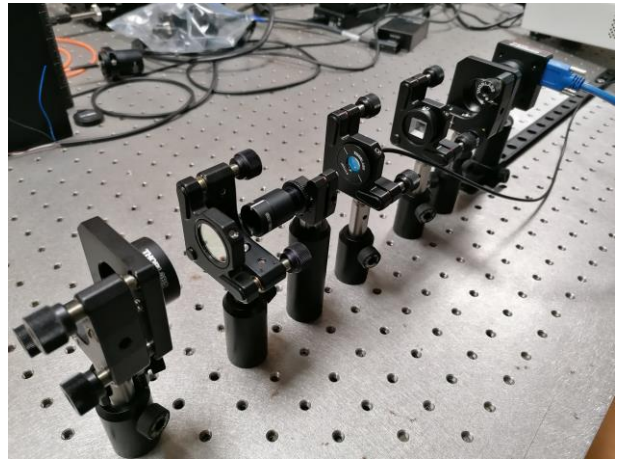




State of progress:

- New design of PU for THEMIS completed
- Preliminary tests of new PU design at INAF-OAR completed
- Test measurement with Thorlabs calibrated polarimeter at INAF-OAC started
- Order placed for the new PBS (Wollaston prism) with B. Halle (~ 4.5k€)
- Order placed for corrective/new lens for IBIS 2.0 at THEMIS with COMAR (~ 0.4k€)
- Order placed for polarimetric optics and optomechanics for the PU with Thorlabs (~ 5.5k€)

Orders' total: ~ 10.4k€



Future planned activities (~ 8k€ remained):

- Assembly, integration and test of the IBIS 2.0 PU (Q1-2024)
- Wavefront characterization of PU's components at INAF-OAA (Q2-2024)
- Optical alignements of PU's components at INAF-OAC (Q3-2024)
- Calibration and test of IBIS 2.0 PU at THEMIS telescope (Q4-2024)