Abstract CFHT pour le PNP

CFHT community surveys with Wenaokeao for exoplanet and solar system physics

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CFHT plans to conduct community surveys for five years from 2027 or early 2028. The surveys could use between 800 and 1400 nights over 5 years, with a maximum of 275 nights per year. Around half of this time (~ 140 nights/year) consists of dark nights suitable for MegaCam observations, and the other half of bright nights suitable for Wenaokeao observations. Wenaokeao is the co-mount of CFHT's optical and near-IR spectropolarimeters (ESPaDOnS and SPIRou) that will be commissioned in 2026, enabling simultaneous observations with both instruments over the spectral range 370 nm to 2.44 microns and at a spectral resolution of R ~ 70,000. MegaCam, CFHT's 1-square-degree camera, is arguably one of the most efficient u-band wide-field imagers in the Northern Hemisphere and will remain so for years to come. MegaCam and Wenaokeao both offer unique time-domain observation and monitoring capabilities.
At the recent CFHT Users' Meeting held in May 2025, various proposals were presented for Wenaokeao observations related tosolar system science, stellar physics, stellar magnetism, asteroseismology, planetary formation, galactic archeology, exoplanet detection, characterization and exoplanet atmospheres and the preparation of spectropolarimetric space missions. These observations, combined in the ‘Amakihi survey proposal, exploit the unique capabilities of the Wenaokeao telescope, including its excellent polarimetric capabilities, wide spectral range, high spectral resolution, and exceptional radial velocity accuracy in the near-infrared. The presentation will outline the various scientific cases that were presented at the user meeting and describe the process that will be put in place for the definition, implementation, and scientific exploitation of these important CFHT Community Surveys for the French community.