

LiteBIRD/MHFT Bread-Board testing

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We present the optical calibration strategy of the Medium-High Frequency Telescope on-board the LiteBIRD satellite, the JAXA's space mission targeting the detection of the imprint of primordial gravitational waves on the Cosmic Microwave Background.

For its purpose, LiteBIRD is endowed with unprecedented sensitivity, guaranteed by two independent instruments, the Low Frequency Telescope (LFT) and Medium-High Frequency Telescope (MHFT), which together accommodate more than 4000 bolometers in their focal planes, spanning a wide frequency range between 34 and 448 GHz.

Such a challenging goal implies tight control of systematic effects and a thorough understanding of the instruments, being the knowledge of the optical response one of the most critical aspects for high precision measurements.

Here we discuss the MHFT's optical calibration philosophy in the laboratory, focusing on its very first steps: the development of a Bread-Board model, a straightforward refractive optics capable of providing valuable clues on our modeling reliability, preferred measurement techniques and the accuracy achievable throughout the MHFT calibration process.

Presenter: Prof. FRANCESCHET, Cristian (Università degli Studi di Milano)

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