

Calibration and Standardization of Large Surveys and Missions in Astronomy and Astrophysics



Contribution ID : 70

Type : **Paper**

Improvements to the absolute photometric calibration of IRAC

Thursday, April 19, 2012 2:50 PM (0:20)

Abstract content

We have made several significant improvements to the final cryogenic calibration of the IRAC instrument aboard the Spitzer Space Telescope. The final calibration uses the ensemble of calibration data collected over the five-plus years of the cryogenic mission and includes knowledge obtained on intrinsic photometric variations. Photometric variation with location on the array and phase of stellar centroid with respect to pixel center have been characterized and corrected for. The stability of the instrument and large amount of calibration data available permit correction of these effects to better than a percent. The uncertainty in the final calibration is dominated by the uncertainty in calibrating the fundamental photometric calibrators used to provide the zero point of the IRAC photometric system. Planned observations of the calibrators Sirius and 109 Vir will be discussed as well as the current results of several cross-calibration experiments with WISE and HST. This work is based on observations made with the Spitzer Space Telescope, which is operated by the Jet Propulsion Laboratory, California Institute of Technology under a contract with NASA. Support for this work was provided by NASA through an award issued by JPL/Caltech

Summary

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Session Classification : Session 4C