A new network of faint calibration stars from NIRS/IRTS

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Abstract

We describe the network of stellar calibrators of the NIRS/IRTS, covering the spectral range between 1.4 to 4 μm. The NIRS detectors were very stable in their responsivity (to within a few %) during the whole mission, allowing us to easily compare the in-flight, and the pre- and post-flight laboratory measurements to determine the beampattern and the absolute calibration of the NIRS. We have validated the accuracy of the spectral shape and absolute values of calibration stars provided by the NIRS/IRTS. The primary calibrators are from a network of bright calibrated templates, created from the same 183 templates provided to ISO prelaunch. We expect to ultimately achieve self-consistent absolute calibration levels of about 3% among these calibrators, with important implications for a unified network of calibrators for IRTS, ISO and future missions like SOFIA and SIRTF. Finally, we discuss strategies to extract several hundred new "faint calibration stars" from the NIRS/IRTS data, with a precision of order a few percent absolute.