

***Herschel* SPIRE fourier transform spectrometer: calibration of its bright-source mode**

**Nanyao Lu · Edward T. Polehampton · Bruce M. Swinyard ·
Dominique Benielli · Trevor Fulton · Rosalind Hopwood · Peter Imhof ·
Tanya Lim · Nicola Marchili · David A. Naylor · Bernhard Schulz ·
Sunil Sidher · Ivan Valtchanov**

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Abstract The Fourier Transform Spectrometer (FTS) of the Spectral and Photometric Imaging REceiver (SPIRE) on board the ESA *Herschel* Space Observatory has two detector setting modes: (a) a nominal mode, which is optimized for observing moderately bright to faint astronomical targets, and (b) a bright-source mode recommended for sources significantly brighter than 500 Jy, within the SPIRE FTS bandwidth of 446.7–1544 GHz (or 194–671 microns in wavelength), which employs a reduced detector responsivity and out-of-phase analog signal amplifier/demodulator. We address in detail the calibration issues unique to the

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N. Lu (✉) · B. Schulz
NHSC/IPAC, 100-22 Caltech, Pasadena, CA 91125, USA
e-mail: lu@ipac.caltech.edu

E. T. Polehampton · B. M. Swinyard · T. Lim · S. Sidher
RAL Space, Rutherford Appleton Laboratory, Didcot, OX11 0QX Oxfordshire, UK

E. T. Polehampton · T. Fulton · D. A. Naylor
Institute for Space Imaging Science, Department of Physics and Astronomy,
University of Lethbridge, AB T1K3M4, Lethbridge, Canada