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Title: The first release of data from the Herschel ATLAS: the SPIRE images
Author: Pascale, E Auld, R Dariush, A Dunne, L Eales, S Maddox, S Panuzzo, P Pohlen, M Smith, DJB Buttiglione, S Cava, A Clements, DL Cooray, A Dye, S de Zotti, G Fritz, J Hopwood, R Ibar, E Ivison, RJ Jarvis, MJ Leeuw, L Lopez-Caniego, M Rigby, E Rodighiero, G Scott, D Smith, MWL Temi, P Vaccari, M Valtchanov, I
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Abstract: We have reduced the data taken with the Spectral and Photometric Imaging Receiver (SPIRE) photometer on board the Herschel Space Observatory in the Science Demonstration Phase (SDP) of the Herschel Astrophysical Terahertz Large Area Survey (H-ATLAS). We describe the data reduction, which poses specific challenges, both because of the large number of detectors which can have noise correlated in each array, and because only two scans are made for each region. We implement effective solutions to process the bolometric timelines into maps, and show that correlations among detectors are negligible, and that the photometer is stable on time scales up to 250 s. This is longer than the time the telescope takes to cross the observed sky region, and it allows us to use naive binning methods for an optimal reconstruction of the sky emission. The maps have equal contribution of confusion and white instrumental noise, and the former is estimated to 5.3, 6.4 and 6.7 mJy beam(-1) (1 sigma), at 250, 350 and 500 mu m, respectively. This pipeline is used to reduce other H-ATLAS observations, as they became available, and we discuss how it can be used with the optimal map maker implemented in the Herschel Interactive Processing Environment (HIPE), to improve computational efficiency and stability. The SDP data set is available from http://www.h-atlas.org/.