

## Release of GREAT Cycle 3 Calibrated Data Product

From: Rolf Güsten (GREAT Principal Investigator)  
To: P. Goldsmith, General Investigator of Cycle 3 proposal # 03\_0012  
Cc: Erick Young, Göran Sandell, Ed Chambers  
Date: 03.02.2016

Ref.: release of GREAT Cycle 3 data

Dear Dr. Goldsmith –

Please find attached the validated, calibrated GREAT science data that was obtained for your project 03\_0012 during SOFIA's cycle #3 flights in December 2015. With this distribution the data will also be ingested into the SOFIA data archive.

Your data has been processed with the latest version of the GREAT calibrator. Spectra are presented on the  $T_A^*$  scale ( $\eta_{mb} = \eta_{for} = 0.97$ ). For main beam coupling efficiencies we recommend to use  $\eta_{mb} = 0.69$  for the GREAT channel L1, and the following values for the GREAT LFA.

Vertical polarization:  $\eta_{mb} = (0.67, 0.71, 0.71, 0.70, 0.65, 0.66, 0.71)$

Horizontal polarization:  $\eta_{mb} = (0.66, --, 0.60, --, 0.66, 0.68, 0.70)$ . Pixel 1 and 3 are not included

The data package (attached as .tar file) does contain

- an overview, providing basic information about your project
- data product level 3, containing
  - (a) the calibrated spectra in standard CLASS format, and
  - (b) the final data product: the summed spectrum or a "lmv"-data cube.
- the \*.class script used in CLASS to process the data.
- a read-me file with details of the data reduction (as appropriate)
- a brief log of the observations.

The "project\_ID.great" file contains the science data of your target (identified by source name), but also the receiver (Trec) and system (Tsys) temperatures across the IF band. You will receive data processed by the 4GFFT spectrometers.

All spectra have been calibrated for the transmission in the signal band. Should there be a line in the image band that you want to calibrate, make us of the Tcal arrays (provided for both detector bands). Spectra of Tsky-THot (observed and modeled) shall enable you to assess the quality of the fit to the atmospheric transmission [see Guan et al. (2012, A&A 542, L4) for details].

If you have questions about the data, the way they were processed or the observations proper, feel free to contact D. Riquelme ([riquelme@mpifr-bonn.mpg.de](mailto:riquelme@mpifr-bonn.mpg.de)), your data processing liaison.

With best wishes,

Rolf Güsten (for the GREAT consortium)