**User-Friendly TES "Lite" Products Released**

The NASA Aura TES group has recently released a set of "Lite" products intended to make the TES data easier to use for science analysis.

The current data products include $O_3$, CO, HDO and $H_2O$, $CO_2$, $NH_3$, and $CH_4$.

Future releases will include methanol and formic acid and the TES group is currently assessing the TES capability to measure tropospheric PAN and COS.

The data are available at
http://avdc.gsfc.nasa.gov/index.php?site=635564035&id=10

or

http://tes.jpl.nasa.gov/data/
(along with a README file)

The key features of the Lite products are

1) Each NetCDF Lite product file contains all observations taken during a month. Note: data in each product file are individual observations, not monthly averages.
2) All data come with the constraint vectors, averaging kernels, covariances, and quality flags as in the original hdf files available at the Langley Data Center (http://eosweb.larc.nasa.gov/)
3) Each data type has been re-dimensioned from the original TES forward model 67 pressure level grid to a subset that is sufficient to capture vertical variations in each species. Resulting data sizes are much smaller and therefore easier to manipulate for scientific analysis. Mapping matrices are provided within the Lite product file to change these data back to the TES 67 level pressure grid if needed.
4) Known biases in the $CH_4$ and HDO data have been corrected as discussed in Worden *et al.*, 2012 and Worden *et al.* 2011 (http://tes.jpl.nasa.gov/documents/publications/)
5) Within the HDO lite product files, the HDO and $H_2O$ vectors, averaging kernels, and covariances are packed together to simplify HDO/$H_2O$ profile and model (or in situ) comparisons.
6) Only Version 5 data are provided; updates will be provided at the beginning of each month as the TES record is processed (expected time to finish processing is 10/2012).

Note that while we believe the Lite products are scientifically credible, they should still be considered in beta form. We will attempt to incorporate user feedback into the products on a monthly basis.

Please contact the following TES staff if you intend to use these products:

Ozone (Kevin Bowman: kevin.bowman@jpl.nasa.gov or John Worden: john.worden@jpl.nasa.gov)

CO (Ming Luo: mluo@jpl.nasa.gov)

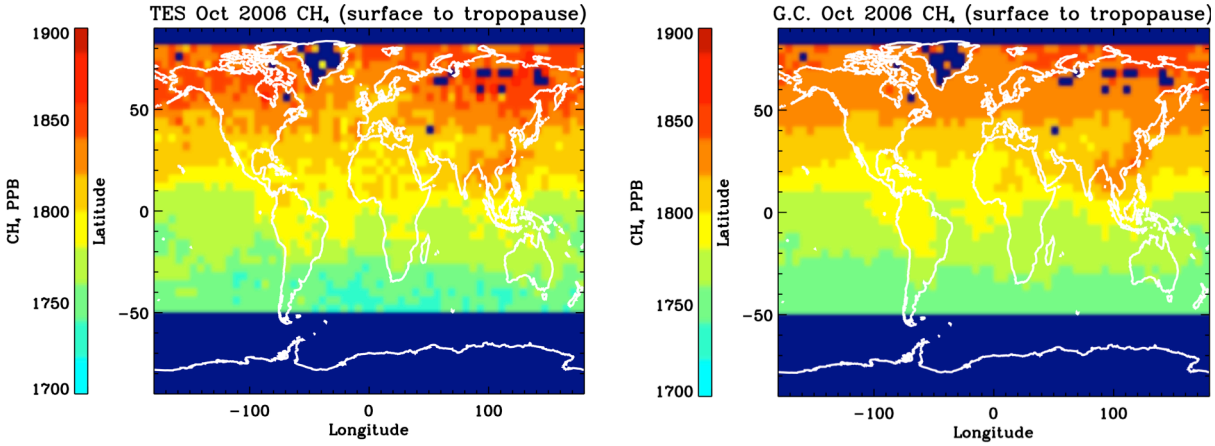
$CO_2$ (Susan Kulawik: susan.kulawik@jpl.nasa.gov)

HDO and $H_2O$ (John Worden: john.worden@jpl.nasa.gov)

$CH_4$ (John Worden:john.worden@jpl.nasa.gov or Vivienne Payne:Vivienne.payne@jpl.nasa.gov)

$NH_3$ (Karey Cady-Pereira: kcadyper@aer.com)

Comparison of TES (Lite-Product) Methane to GEOS-Chem Model




(**Left Panel**) TES free-tropospheric methane estimates using observations from the TES methane October 2006 Lite product file. Individual observations from the product file are averaged in volume-mixing-ratio (VMR) from the surface to the tropopause and then onto the GEOS-Chem 2x2.5 degree horizontal grid. (**Right Panel**). GEOS-Chem model estimates of methane for October 2006. GEOS-Chem model fields have been adjusted by the TES averaging kernel and constraint vector and then averaged from the surface to the tropopause. All matrices, vectors, and quality flags needed for these operations and subsequent comparisons are provided in each monthly Lite product data file (Worden *et al.*, AMT 2012; Worden *et al.*, ACPD 2012).