TES Quick Start Guide

The primary location for obtaining TES data is the [Earth Observing System (EOS) Data Gateway](). A secondary location for obtaining TES data is the [Langley ASDC]() data pool. The data pool has space limitations that make it somewhat dynamic, therefore older versions of TES data may not be available there. The [Aura Data Validation Center]() provides information on subsets and validation data.

Documentation is available at the [TES Data Sets]() page at the Langley ASDC and at the [TES website](). Documents useful for the beginning user of TES data include:

- TES [L2 Data User's Guide]() v4.0
- TES [Validation Reports]() v4.0
- TES [Data Product Specification]() document (v 11.8)
- TES [Level 2 Data Quality Statement]() v4.0
- An [Example Use of TES Data]() – explains how to find, browse plots of, download, plot, and do comparisons of TES Level 2 data to sondes or atmospheric model results. This document includes information useful for modelers, and uses IDL as the means for working with the data.
- The [L3 Data/Plot User's]() Guide and the [L3 Algorithms, Requirements & Products]() documents provide a starting reference for using TES L3 data, and provide a good summary of TES L2.

Core TES products are Level 1B Radiances Temperature, O3, CO, HDO, H2O, CH4, SST, Cloud Top Pressure, Cloud Effective Optical Depth, HNO3. Information on their biases and validation are summarized in this [validation table](), and are found within TES [validation reports]() and [validation papers]().

TES web pages useful for a new data user include:

- Details of TES nadir observations at the [orbit and coverage]() page.
- Tables on the [evolution]() of the Global Survey and Special Observation [modes]().
- TES L2 science [browsing plots]() for Special Observations and field campaigns.
- [Measurement records]() for Global Surveys and Special Observations (run ID tables) allow users to map TES run ID numbers to date and observation type
- Visualizations, including collections of [monthly-averaged nadir Global Surveys]() for the various species and pressure levels, daily and monthly averaged [L3 plots]() (including Google Earth kmz format), L2 [regional time trends]() and [Google Earth kmz files]() for all Special Observation L2 vertical profiles, and for selected Global Surveys.

Information on TES sensitivity for various species is different for each profile and can be found as the "diagonal of the averaging kernel". You can see this information on the existing [L2 quick-look plots for Special Observations]() on the TES web site.

TES data fields

TES data fields are listed within the [TES Data Product Specification]() documents (most recent is v11.8). The [TES Read Software]() and accompanying README files explain the syntax for how to call individual IDL programs within the read software. The [Example Use of TES Data]() (Kulawik) can also be referred to when first opening an L2 file in IDL. There is also a page describing the steps needed to [make comparisons of TES nadir retrievals to your profiles with higher vertical resolution.]()

How does TES store vmr and altitude in the database fields within L2 data products?

When you open a TES L2 Data Product file, at least in IDL, you get a structure. Within that structure there is a field called "species" that has dimension (67,n) where n is the number of geolocation points (also known as "TARGETS") sampled by TES in the global survey or special observation. The "species" field contains the retrieved volume mixing ratio (or temperature) profiles measured by TES. A field called "altitude" (67,n) provides the corresponding altitude information for the retrieved profiles. The filed "pressure" (67,n) provides the corresponding pressures for the altitude and species fields.

See also: Summary information on TES [file structure](#).

If you have questions regarding using the TES data, please contact us via the [TES contact form](#), and a TES science team member will endeavor to answer your questions