

Online Access, Visualization and Analysis of TRMM Composite Climatology (TCC) Products

Zhong Liu^{1,4}, D. Ostrenga^{2,4}, W.L. Teng^{3,4}, and S. Kempler⁴

Email: Zhong.Liu@nasa.gov

¹George Mason University, ²ADNET Systems, Inc., ³Wyle Information Systems LLC, ⁴NASA/GSFC, NASA Goddard Earth Sciences Data & Information Services Center (GES DISC), Code 610.2, NASA/GSFC, Maryland 20771, USA

ABSTRACT

One of the main goals of the Tropical Rainfall Measuring Mission (TRMM) has been to accurately define the climatological surface rainfall in the tropics. This TRMM Composite Climatology (TCC) consists of a merger of selected TRMM rainfall products over both land and ocean to give a "TRMM-best" climatological estimate. There are 78 data files in this TCC product suite: 13 each (annual and month-of-year) for TRMM data products 2A12, 2A25, 2B31, 3B43, TCC, and standard deviation of TCC.

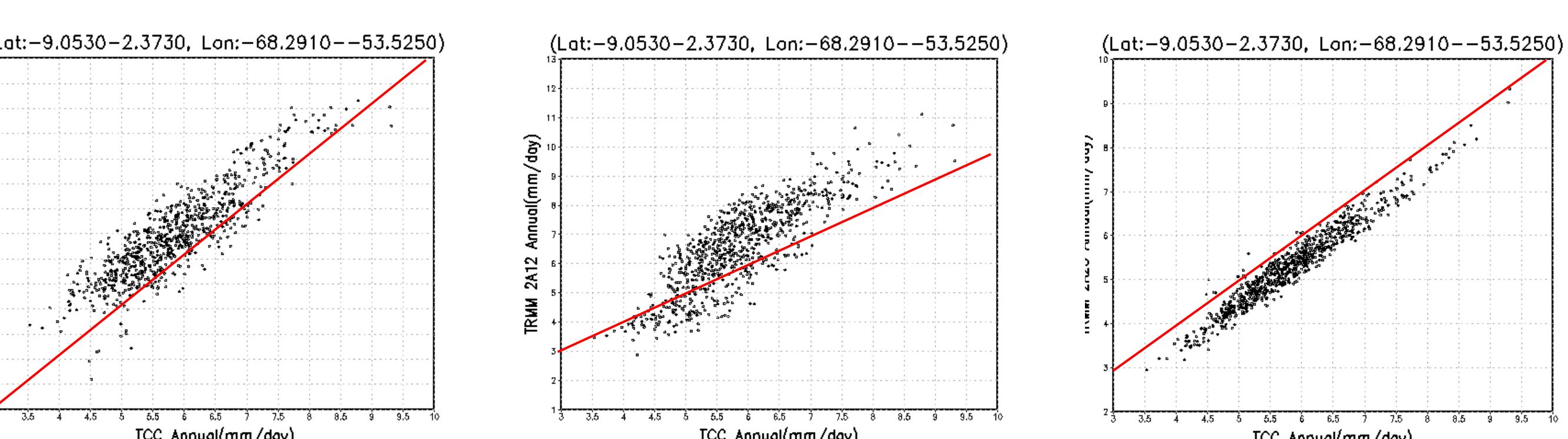
To facilitate data access, the NASA Goddard Earth Sciences (GES) Data and Information Services Center (DISC) has developed data services for the TCC product suite. First, the TCC product suite has been added to Mirador (<http://mirador.gsfc.nasa.gov/cgi-bin/mirador/presentNavigation.pl?tree=project&project=TRMM&dataGroup=Climatology>). Mirador is an Earth science data search tool developed at the GES DISC for accessing data archived at the GES DISC. It has a drastically simplified, clean interface and employs the Google mini appliance for metadata keyword searches. Other features include quick response, spatial and parameter subsetting, data file hit estimator, Gazetteer (geographic search by feature name capability), and an interactive shopping cart. Second, to facilitate data evaluation and discovery, we have developed a web based prototype tool (http://disc.sci.gsfc.nasa.gov/daac-bin/tcc_basic.pl) for visualizing and analyzing the TCC products. There are 9 analytical functions available and users can generate plots such as latitude-longitude maps, time series, scatter plots, etc. without downloading data. A more advanced prototype tool (<http://disc.sci.gsfc.nasa.gov/daac-bin/tcc.pl>) has been developed for those who want to inter-compare different climatology products. Finally, a FAQ page (<http://disc.sci.gsfc.nasa.gov/precipitation/additional/applications/tcc-analysis-tool-faq>) has been developed to provide basic information such as background and future plans.

Search and Download TCC Products from Mirador

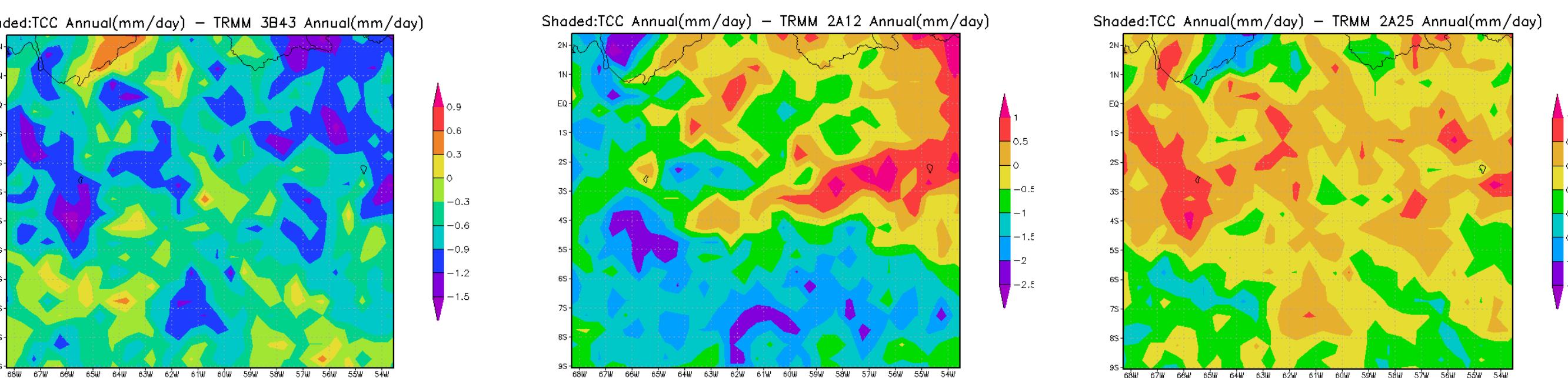
Searching and downloading TCC products are easy. Simply go to Mirador, <http://mirador.gsfc.nasa.gov> and type in TCC (left). The products will be displayed in the search result page (right). Or select "TRMM" from below and go through the drill-down menu.

Online Visualization and Analysis of TCC Products

Coming Soon
The TCC products will be updated with TRMM Version 7.

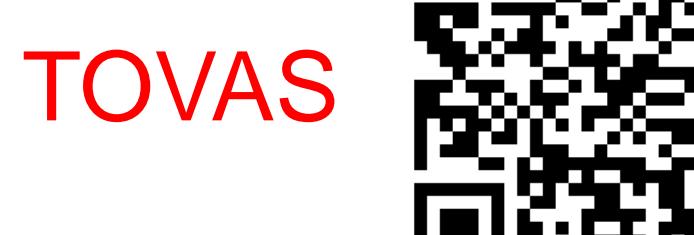


Scatter plots of annual rainfall in Amazon. Left: TCC vs. 3B43; Middle: TCC vs. 2A12; Right: TCC vs. 2A25. It is seen that biases exist in these products. More are below.



Differences of annual rainfall in Amazon. Left: TCC - 3B43; Middle: TCC - 2A12; Right: TCC - 2A25. It is seen that the biases (seen in the scatter plots above) are unevenly distributed and complicated.

- TCC: <http://disc.sci.gsfc.nasa.gov/daac-bin/tcc.pl>
- TOVAS: <http://disc.sci.gsfc.nasa.gov/precipitation/tovas>
- Mirador: <http://mirador.gsfc.nasa.gov/>
- GPCP 2.2 in TOVAS: <http://disc2.nascom.nasa.gov/Giovanni/tovas/rain.GPCP.shtml>
- PDISC Portal: <http://disc.sci.gsfc.nasa.gov/precipitation>
- Hurricane Data Analysis Tool: http://disc.sci.gsfc.nasa.gov/daac-bin/hurricane_data_analysis_tool.pl
- TRMM Near-real-time Product in USDA Crop Explorer: http://www.pecad.fas.usda.gov/cropexplorer/mpa_maps.cfm
- Current Rainfall Conditions: http://disc.sci.gsfc.nasa.gov/agriculture/additional/tools/current_conditions.shtml



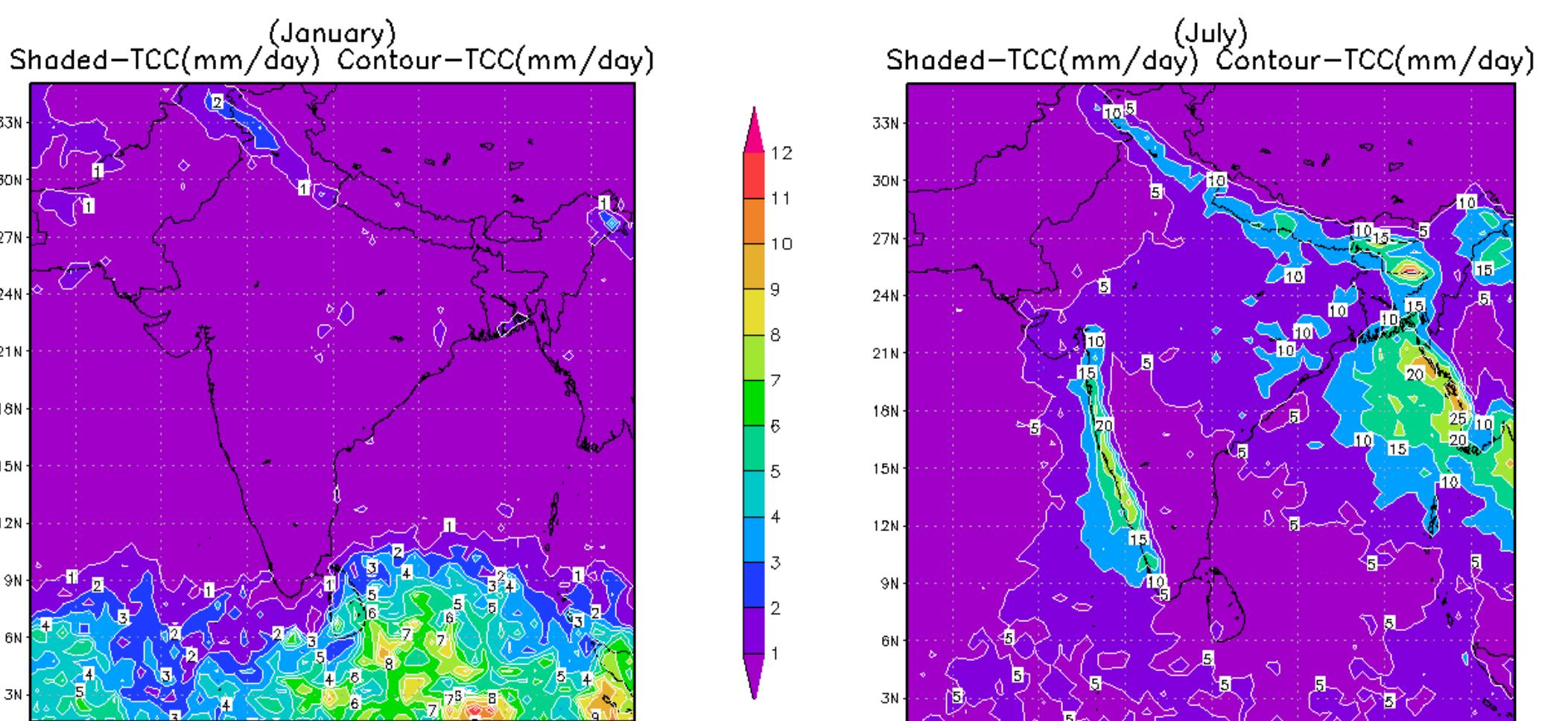
TOVAS

Available Products (Version 6):

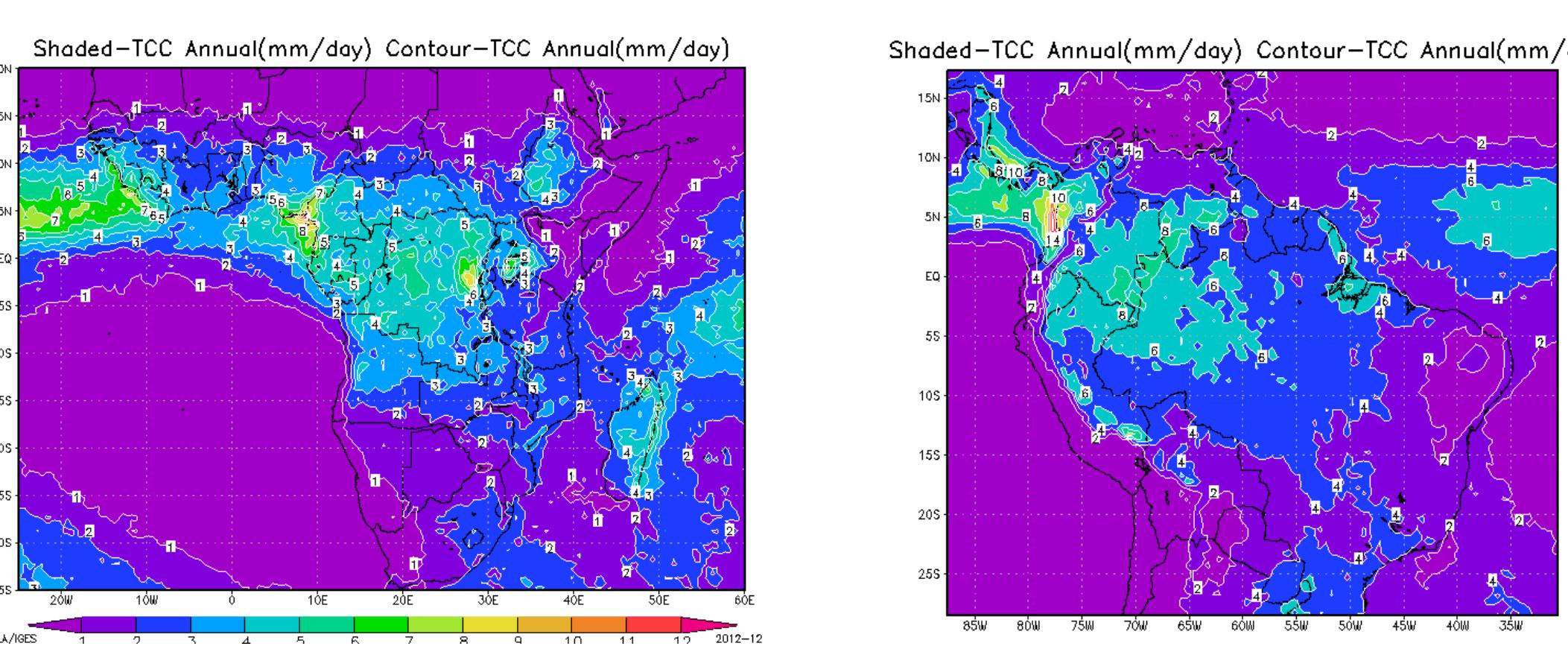
- TRMM 3B43
- TRMM 2A12
- TRMM 2A25
- TRMM 2B31
- TCC
- TCC Std Dev
- TRMM 3B43 Annual Precipitation
- TRMM 2A12 Annual Precipitation
- TRMM 2B31 Annual Precipitation
- TCC Annual
- TCC Std Dev Annual

Available functions:

- Overlay of Lat-Lon Maps
- Difference of Lat-Lon Maps
- Normalized Difference of Lat-Lon Maps
- Overlay of Time Series, Area-Averaged
- Difference of Time Series, Area-Averaged
- Normalized Difference of Time Series, Area-Averaged
- Scatter Plot
- Scatter Plot, Time-Averaged
- Scatter Plot, Area-Averaged



Spatial distribution of TCC rainfall climatology over the Indian continent. Marked contrast is seen during the winter (January) and summer (July) monsoon seasons.



Annual total rainfall climatology. Left: Sub-Saharan Africa; Right: The Amazon basin. The spatial rainfall distribution patterns in both regions are not uniformly distributed.

- Help Desk: gsfc-help-disc@lists.nasa.gov
- FAQ: http://disc.sci.gsfc.nasa.gov/additional/faq/precipitation_faq.shtml
- TRMM Project: <http://trmm.gsfc.nasa.gov/>

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