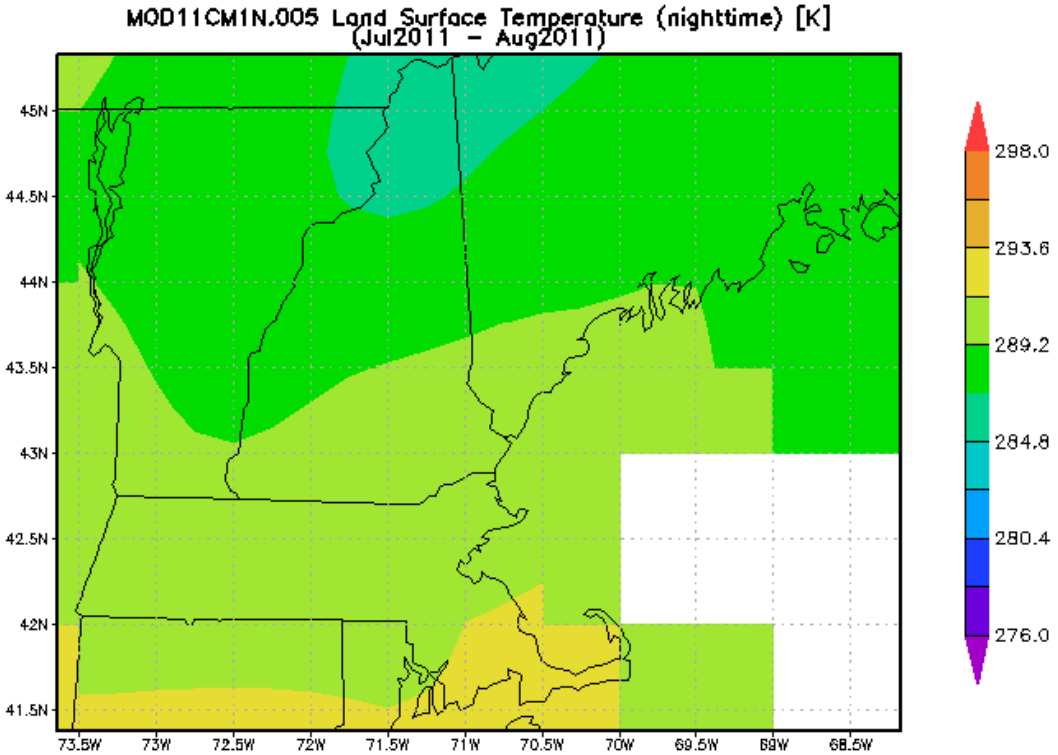
Troubleshooting potential oddities in DICCE Giovanni data visualizations
2/10/2012

When you generate data visualizations in DICCE G, you may see some quirks in how the data are displayed. The purpose of this document it to identify the quirks, explain why they may occur, and what you can do about them.

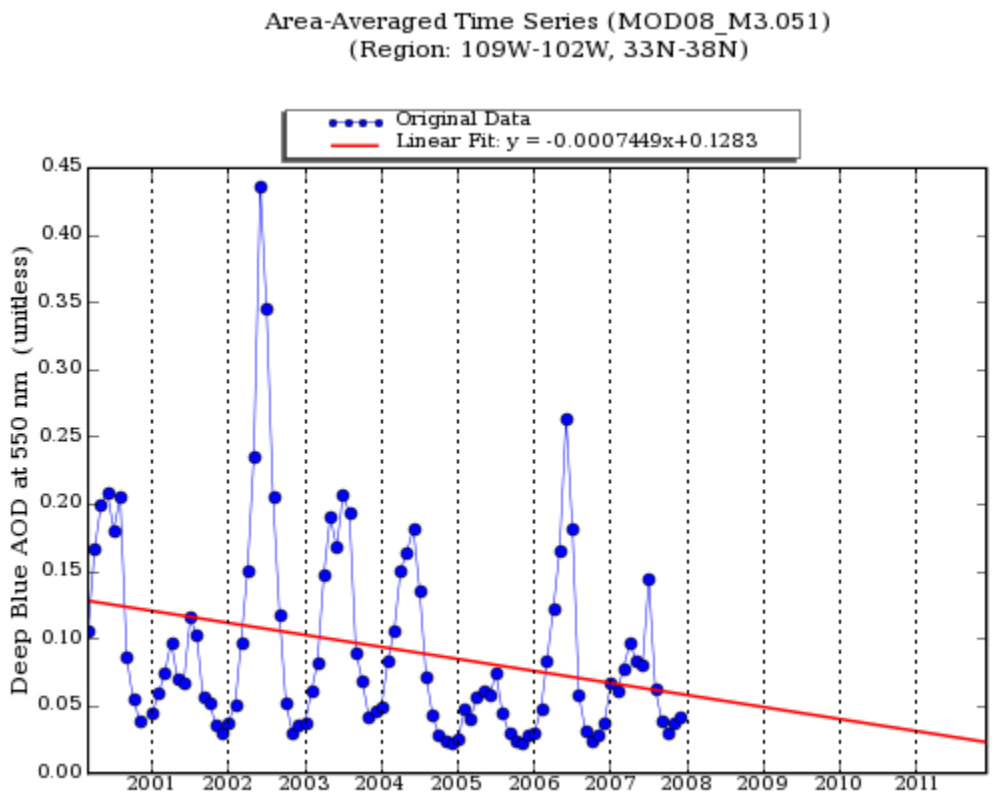
If you come across any of these issues or other issues with the data and you want additional assistance, contact Dan Zalles (daniel.zalles@sri.com) or Ruth Krumhansl (rkrumhansl@edc.org)

A. Problem: A map shows squares in some places but smooth contours in other places
Explanation: Could be a limitation in data representation capability based on the how the data were derived (for example, the algorithms that determine how a particular model-derived data set is represented may be different from how a particular observed data set is represented)
What to do about it: Focus on the areas with the smooth contours or select a different region or data parameter for the variable you are interested in.
Example:

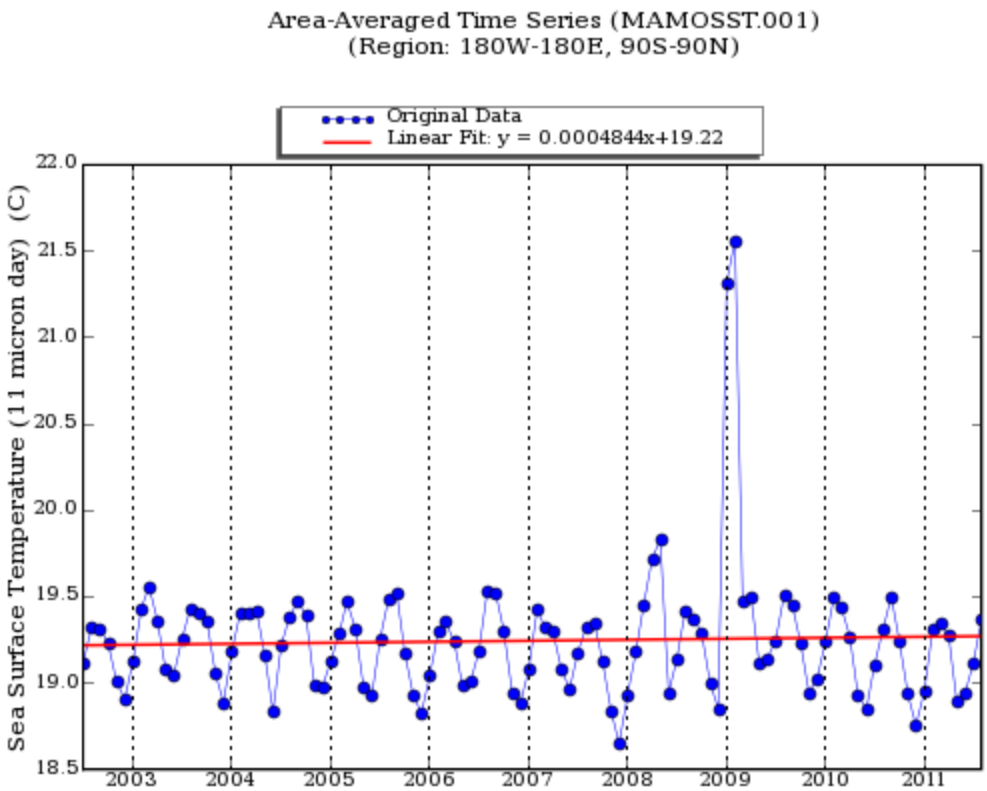


B. Problem: A month or series of months, concurrently or not, in a time period that is supposed to be showing data but shows no data or incomplete data for those periods of time.

Explanation: The data gathering instrument or procedure might have broken down during those periods, hence there are missing data (for example, ocean chlorophyl data for the Arctic Ocean will be missing in the winter because there was not enough sunlight to capture the color from the satellite)
What to do about it: Select different time ranges or different geographical regions to investigate
Example: In the time series below, the trend line continues through 2011 but the data stops after 2007.



C. Problem: There is a big yet temporary spike in the data on a time series graph that seems odd.
Explanation: Could be the result of a processing error by the mission that produced the data.
What to do about it: Think about if there may be a reasonable explanation for the spike. (For example, a spike in precipitation over a small area and a particular month could truly be the result of a major hurricane or other storm passing through yet large spike in sea surface temperatures for a month or two (as in the example below) would be very unlikely and probably the result of a data processing error.
Example:

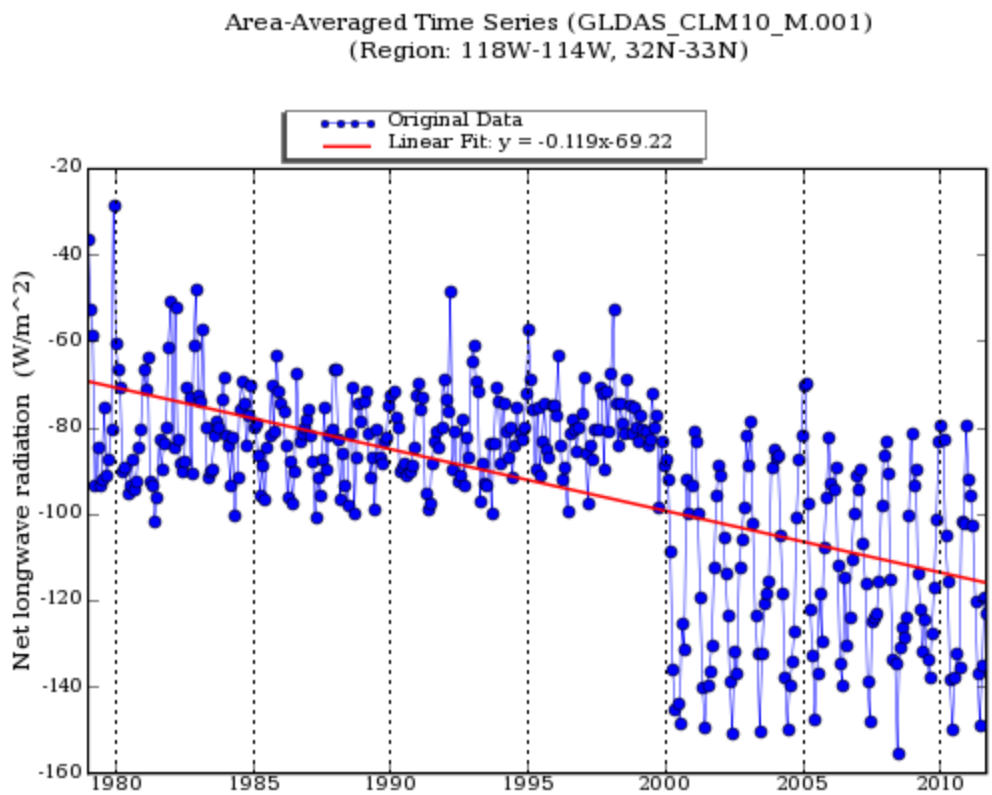


D. **Problem:** There is an odd discontinuity on a time series on a model-derived data parameter (such as from the GLDAS missions) that shows an abrupt change in its distribution

Explanation: The procedures for data processing may have changed because the mission may have changed the way the observed data sets used as inputs into the models were collected or measured.

What to do about it: Run the separate time series graphs for the time before the change and the time after the change.

Example: In this example below, you would want to run two separate time series graphs, one for 1979-1999 and one for 2000-2011.

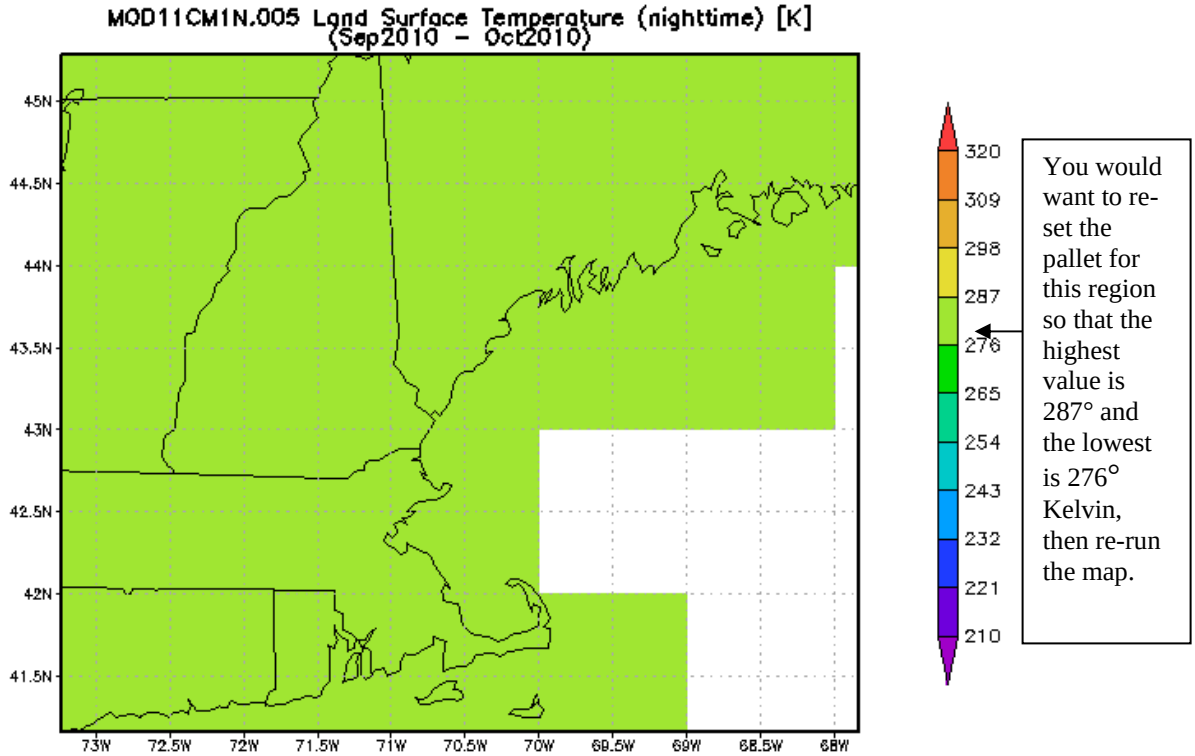


E. Problem: The map has all one color

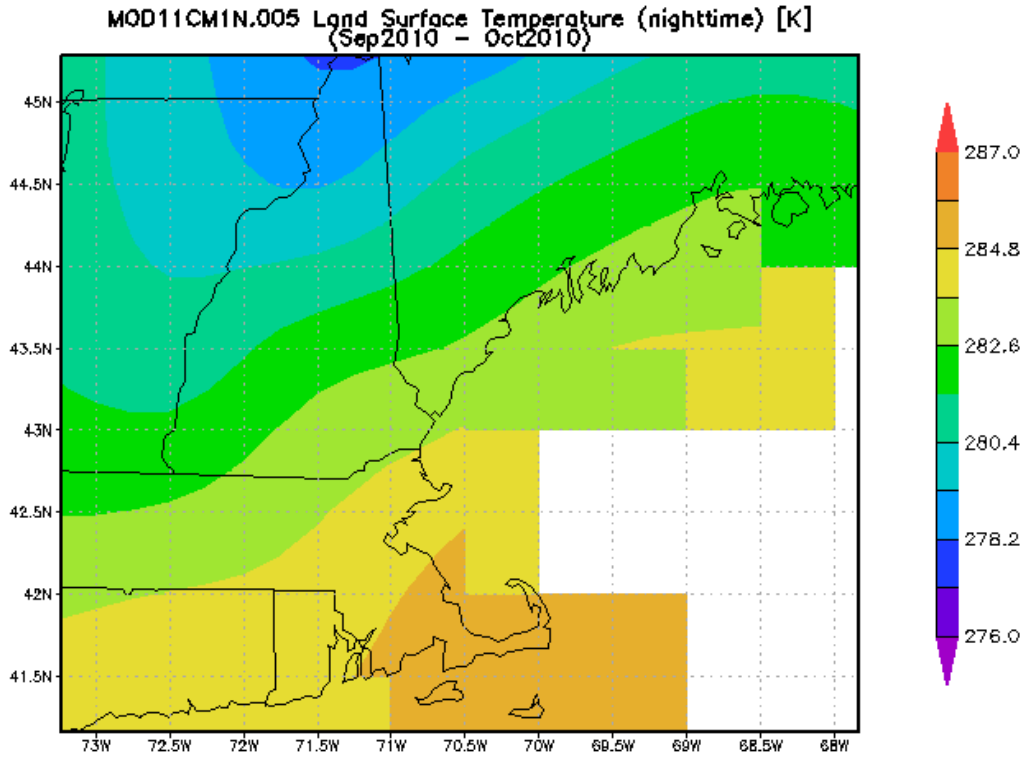
Explanation: The result of setting a customized data range for the pallet that does not reflect the true numerical range of the data in the selected geographical area.

What to do about it: See the video in DICCE-G for how to set appropriate custom pallets that capture the true range of values, from high to low, on the specific map you are investigating

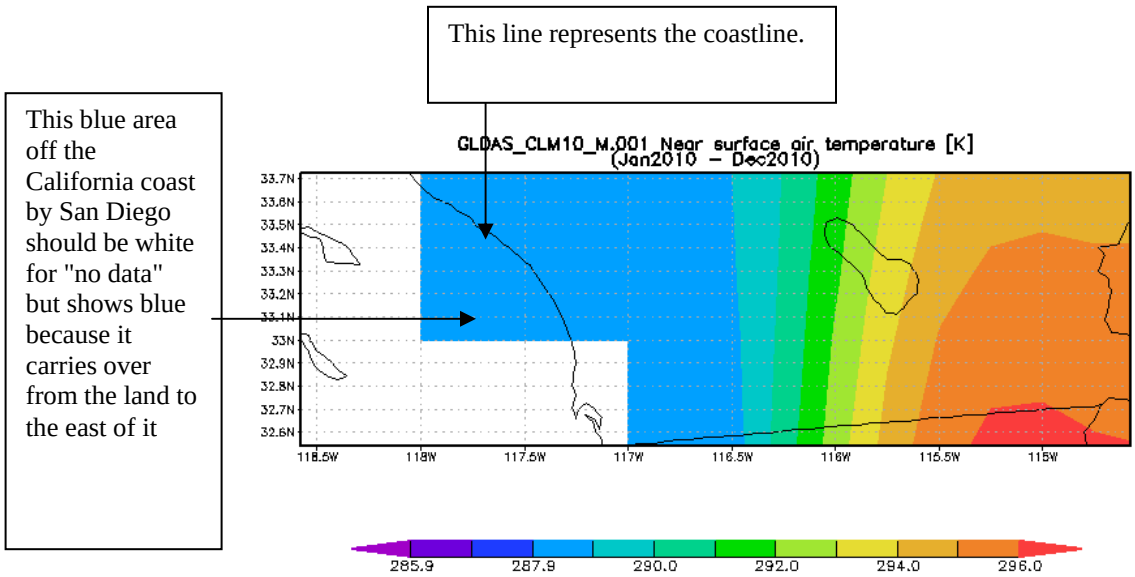
Example:



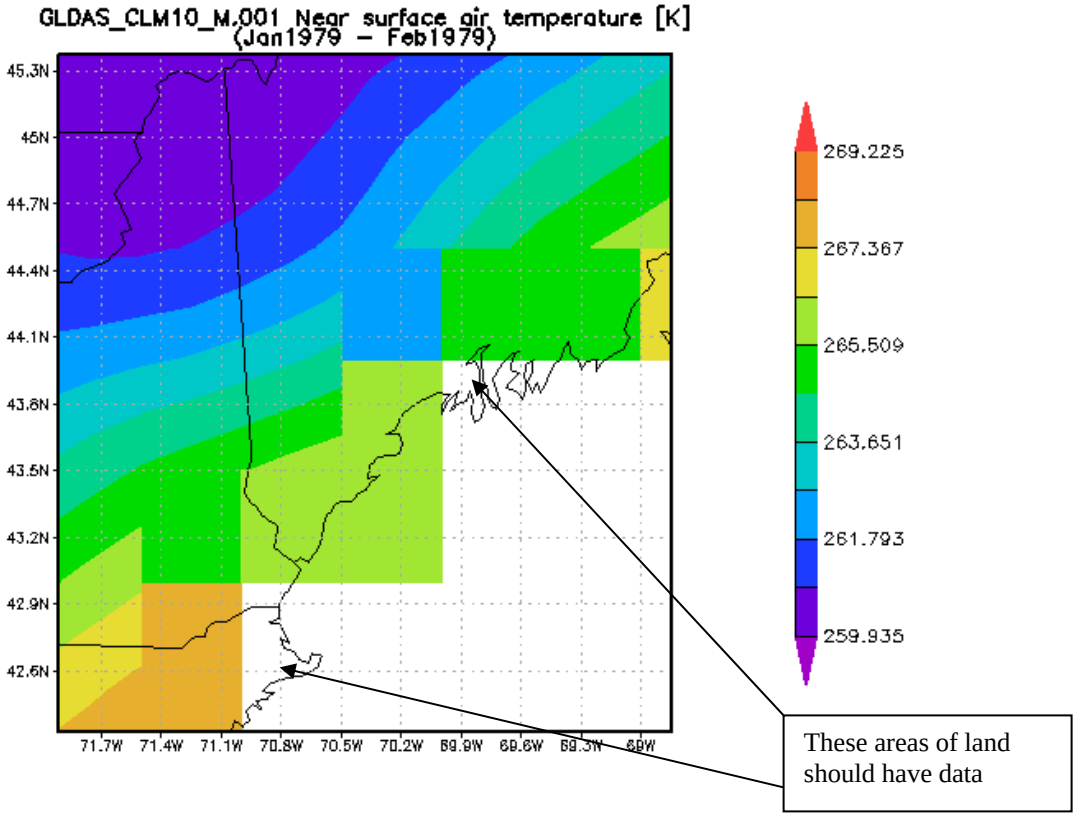
Below is what the map looks like if you re-run it with the appropriate narrower range of values (276 to 287° Kelvin).



F. **Problem:** On a map, a land data parameter shows up with values over the ocean, or an ocean data parameter shows up with values over the land
Explanation: The resolution of the data is so big that the square pixels representing the data spill over onto areas of the map to which the data do not pertain. This may for example happen if you are showing a land variable over a coastal area or over an ocean area with islands.
What to do about it: Ignore these cases. The data are still valid for the ocean or land geographical areas that the data pertain to.
Example: This map presents data about air temperatures measured directly over land surfaces only.



G. **Problem:** A section of the map that should show data is not showing data
Explanation: The area with no data on it could be at the edge of a data set (for example, along a coastline).
What to do about it: Re-draw the map, or ignore in your analysis the area with missing values, or if available, pick a different data parameter that addresses the variable you are interest in (such as a different precipitation variable)
Example:


GLDAS_CLM10_M.001 Near surface air temperature [K]
(Jan1979 – Feb1979)
45.3N
45N
44.7N
44.4N
44.1N
43.8N
43.5N
43.2N
42.9N
42.6N
71.7W
71.4W
71.1W
70.8W
70.5W
70.2W
69.9W
69.6W
69.3W
69W
269.225
267.367
265.509
263.651
261.793
259.935
These areas of land should have data