

# Enabling the Transition of CPC Products to GIS Format

PI: Brian Doty<sup>1</sup>

Co-PIs: Jennifer Adams<sup>1</sup>, Michael Halpert<sup>2</sup>, Viviane Silva<sup>3</sup>

Presenter: Jim Kinter<sup>1</sup>

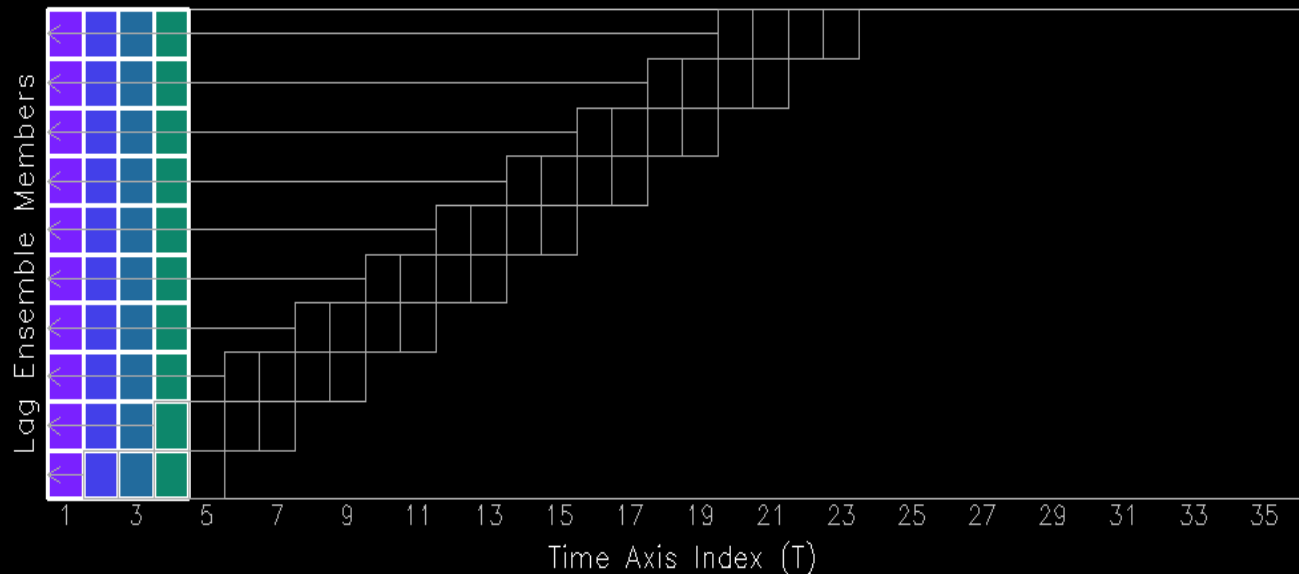
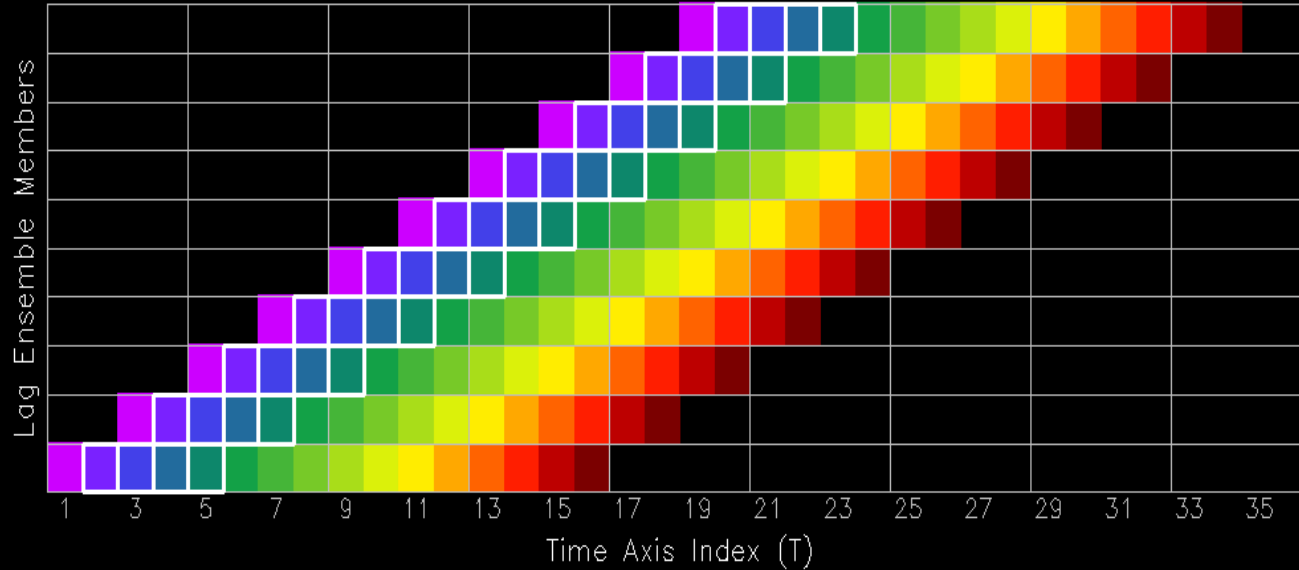
<sup>1</sup>IGES/COLA, <sup>2</sup>NOAA/CPC, <sup>3</sup>NWS/CSD

# About the Project

- The GrADS software package was enhanced
  - New analysis capabilities for ensemble data sets
  - New output formats for use with GIS tools
- CPC enriched its suite of climate monitoring, assessment, and forecast products by providing them in GIS format.

# Enhanced Analysis Capability

## Diagonal Slicing Through a Set of Lag Ensembles



# Create GeoTIFF with GrADS

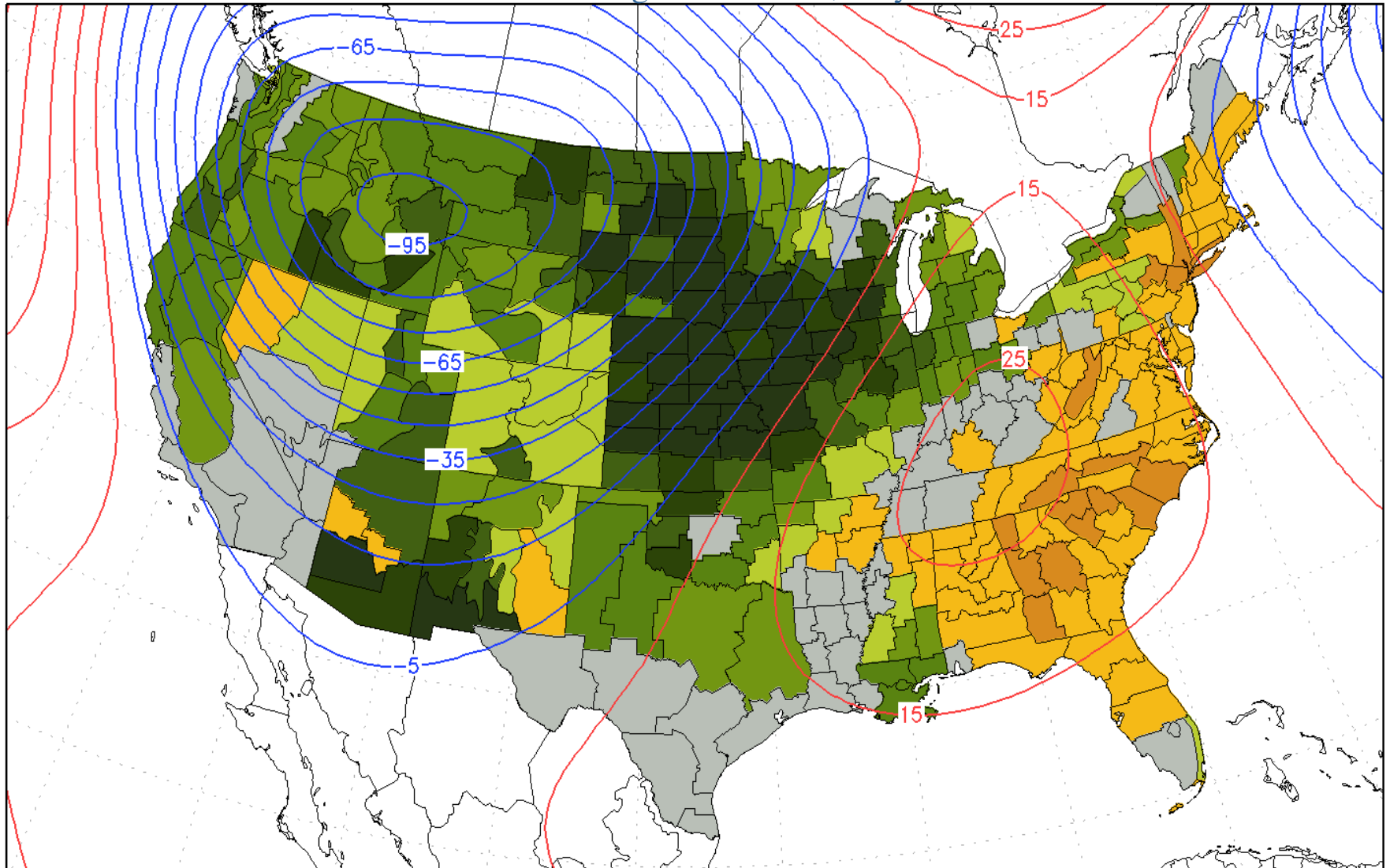
- Write any gridded GrADS expression as a GeoTIFF file
  - georegistered raster image
  - control colors, levels, precision, missing value
  - for display in GIS tools (e.g. ArcMap, Qgis)

# Access Shapefiles with GrADS

- Query the contents of a shapefile
  - get #vertices and boundaries of each element
  - list all attributes
- Draw the contents of a shapefile
  - control mark type, color, and size for points
  - control fill and outline colors for lines/polygons

# GrADS Integrates GIS and Gridded Data Formats

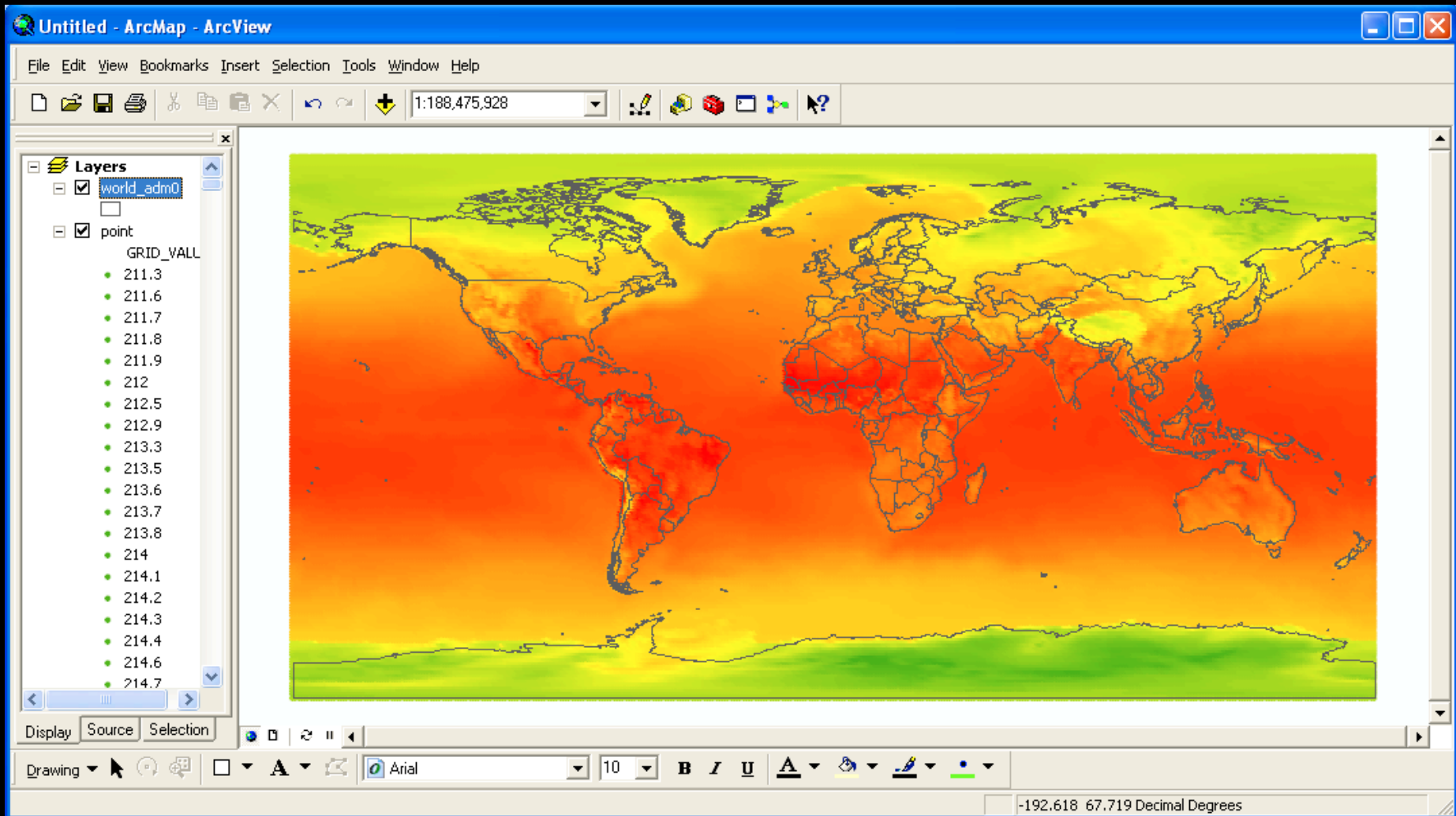
Palmer Drought Severity Index in U.S. Climate Zones  
with 500mb Height Anomalies, July 1993



# Create Shapefiles with GrADS

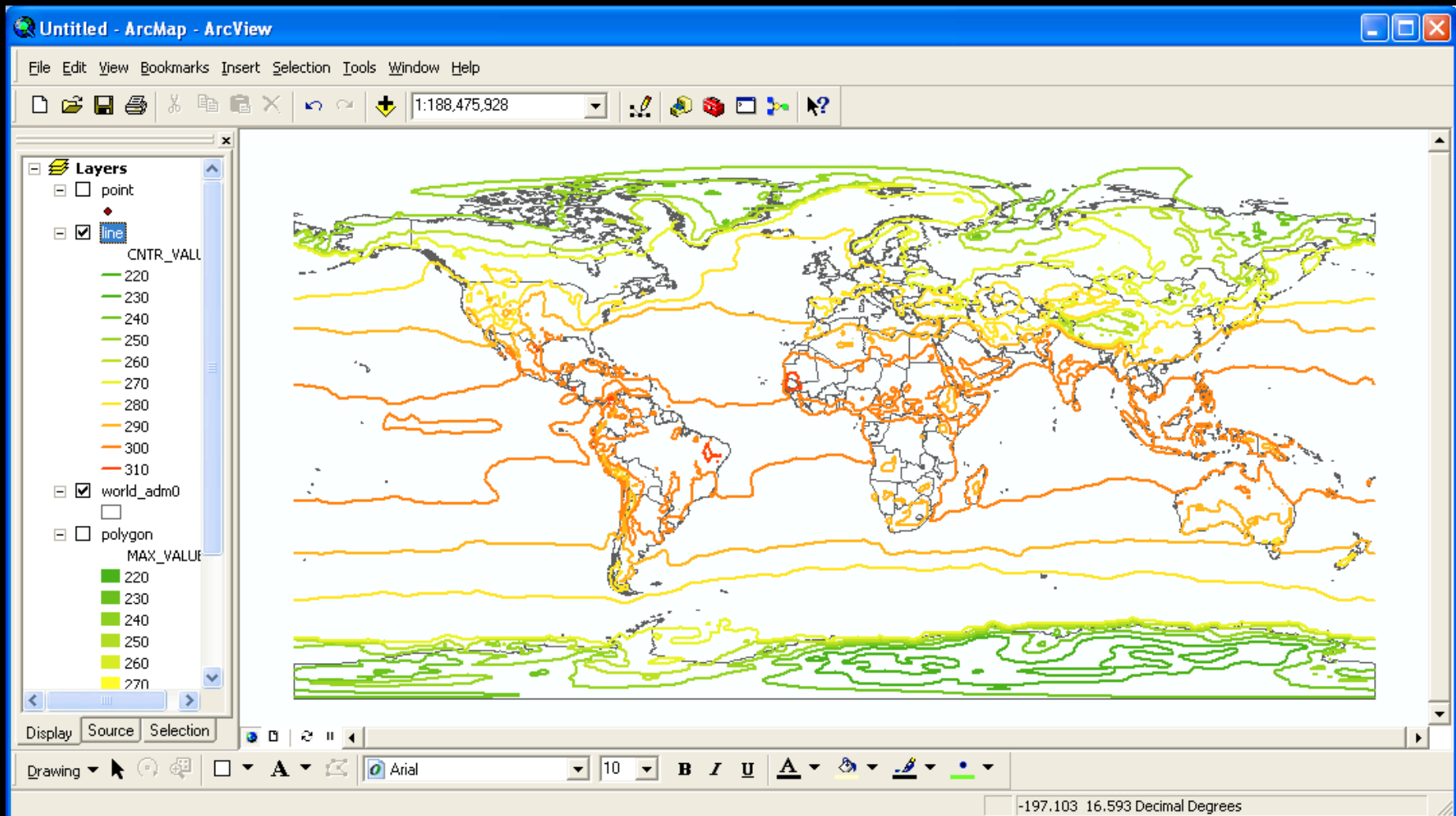
- Write any GrADS expression to a shapefile
  - gridded or station data
- Control shapefile type
  - Point – grid point or station location
  - Line – contours
  - Polygon – shaded contours
- Add attribute metadata
  - Numeric values or character strings

# Shapefiles from GrADS in ArcMap Grid Points



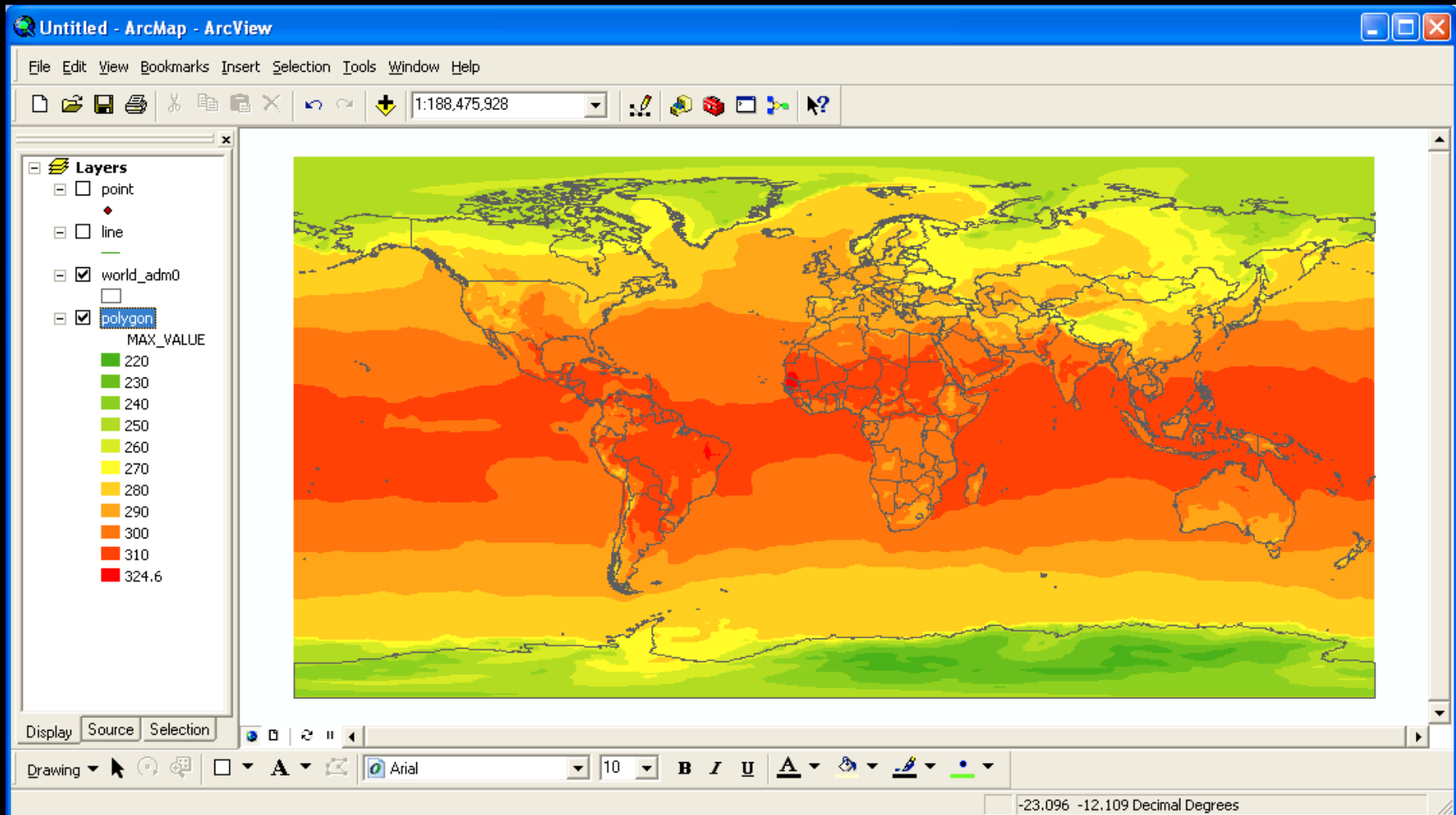


# Shapefiles from GrADS in ArcMap Contour Lines



# Shapefiles from GrADS in ArcMap

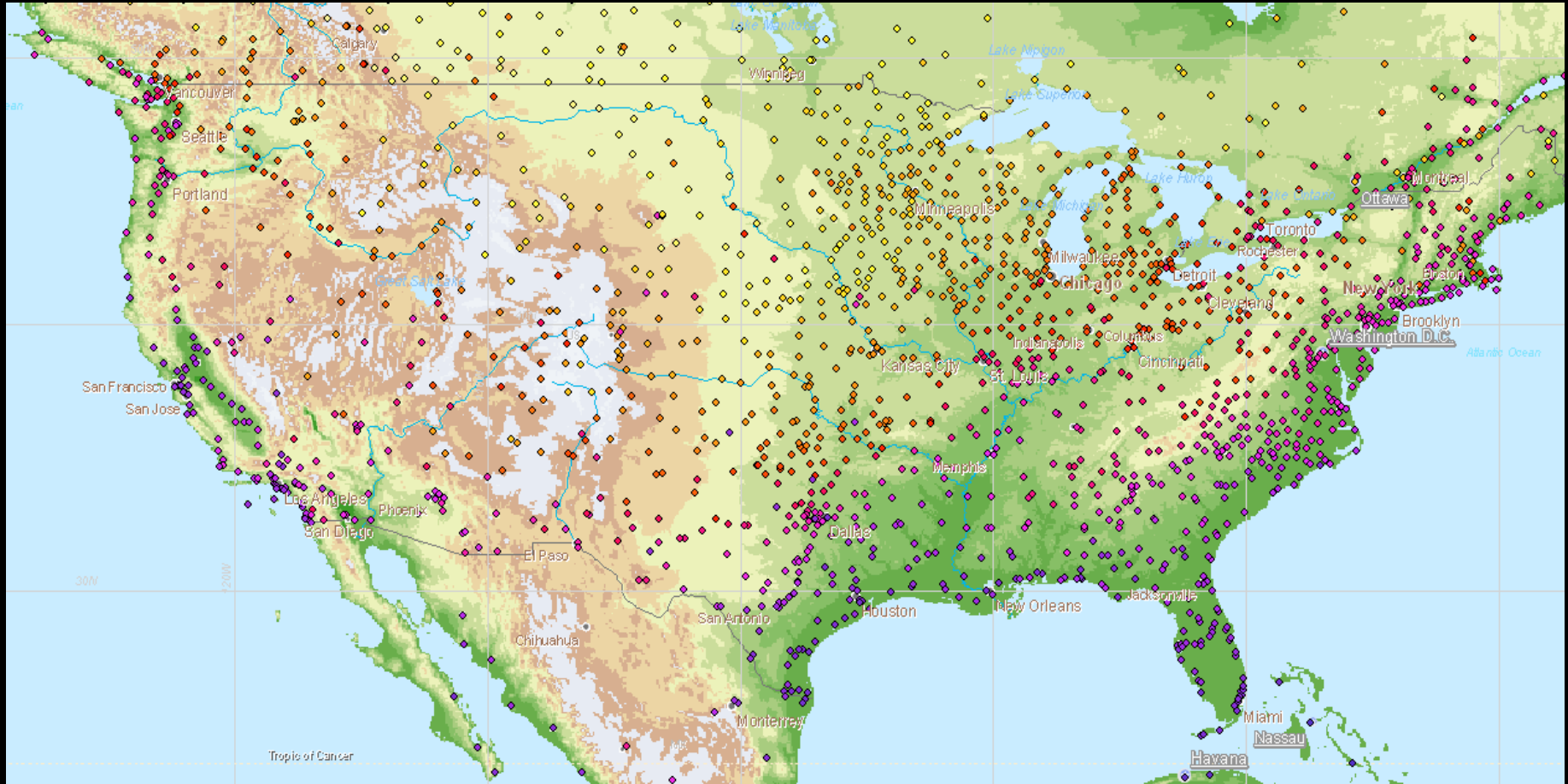
## Shaded Contours



# Shapefiles from GrADS in ArcMap

## Station Data

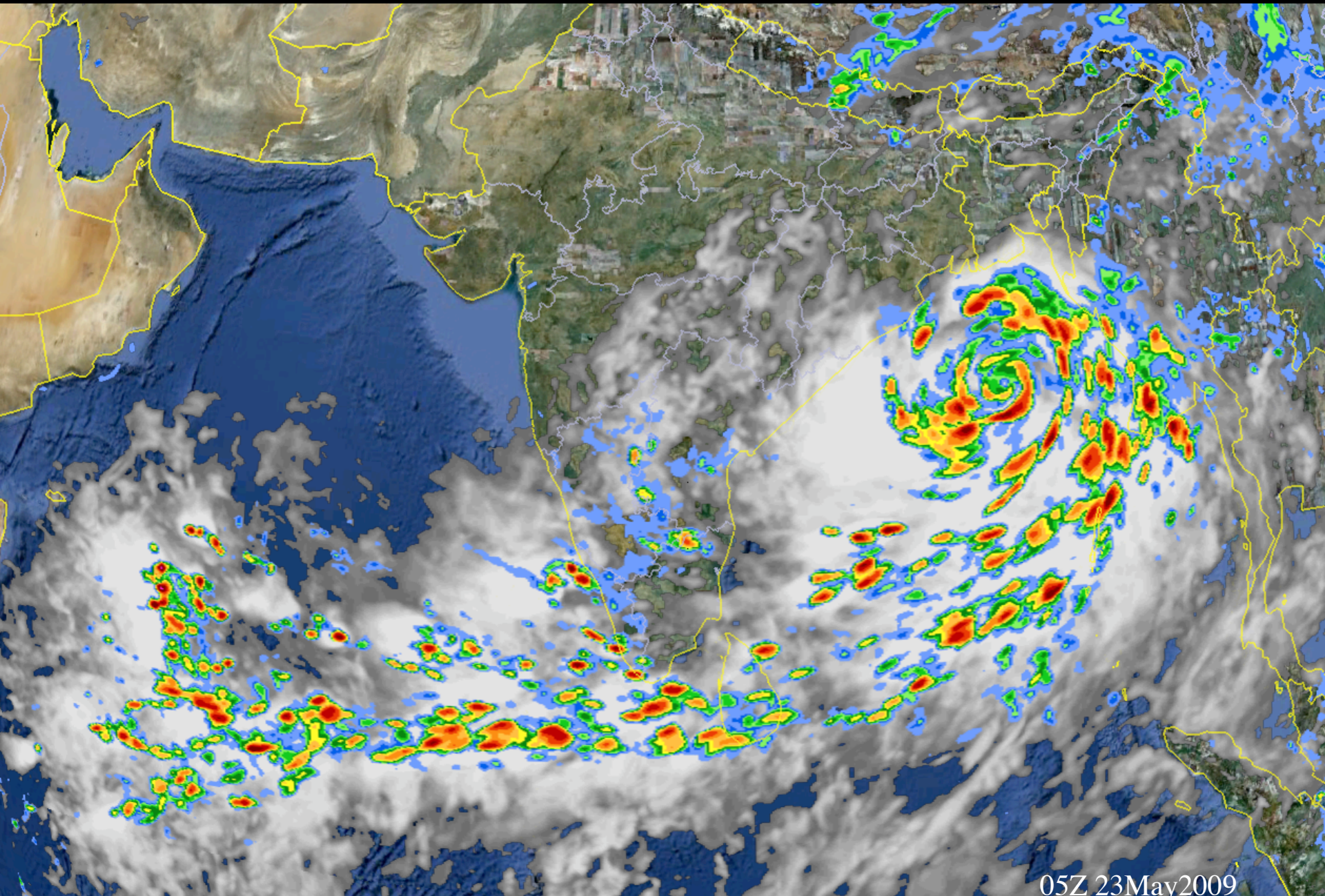
(Dressed up with Topography, Political Boundaries, and City Names)



# Create KML with GrADS

- Write any gridded GrADS expression to a KML
  - Intended for display in Google Earth
- Control KML type
  - Image – creates embedded raster image file
  - Line – contours
  - Polygon – shaded contours

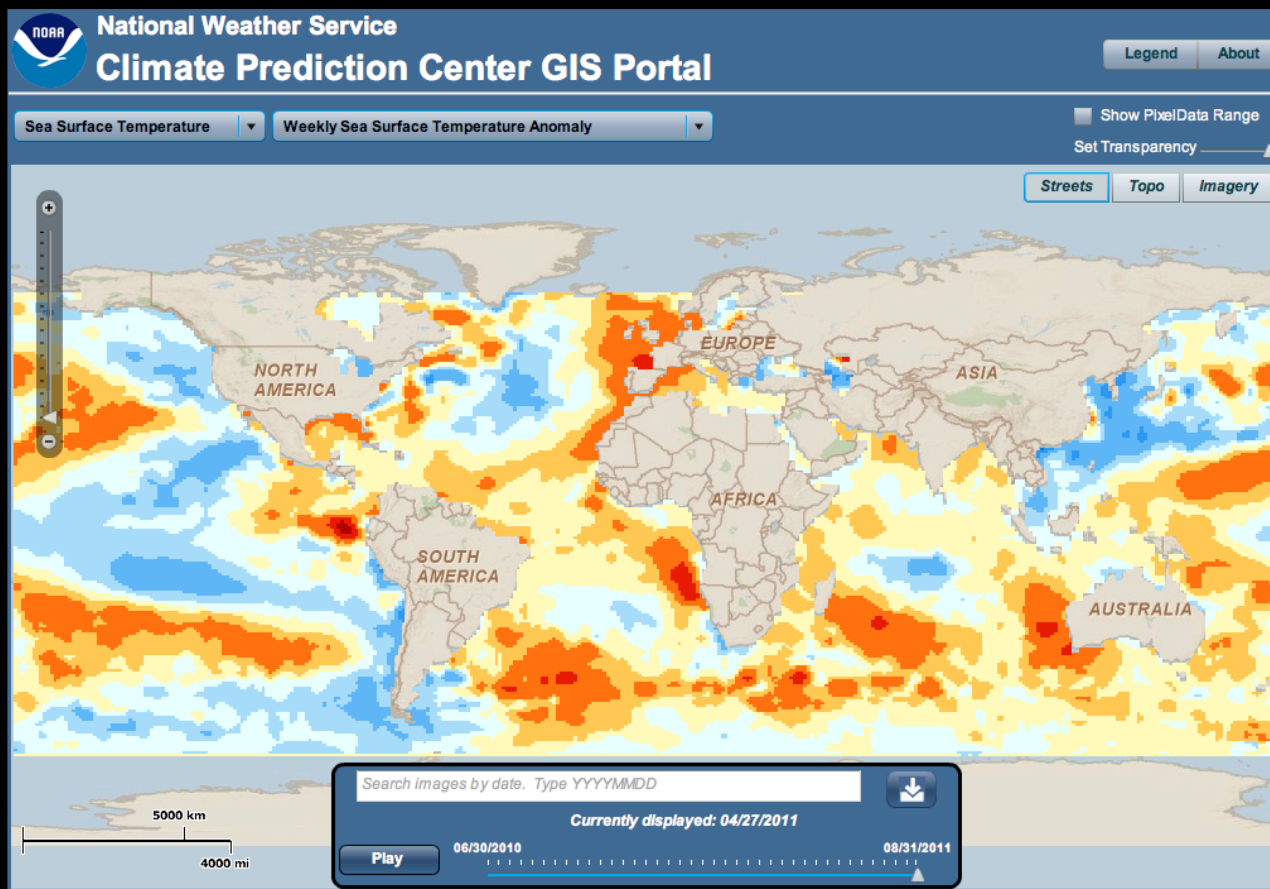
# OLR and Precip Data from GrADS in Google Earth



05Z 23May2009

# Climate Prediction Center's GIS Portal

The initial phase of interactive, web-based system to display CPC products together with supplemental geographical data



# Summary

- Succeeded in bringing research to operations
- Work was targeted for CPC's needs
- Benefits climate research and GIS communities