Sustained production of the International Satellite Cloud Climatology Project (ISCCP) cloud products

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2/28/2014

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Current Support

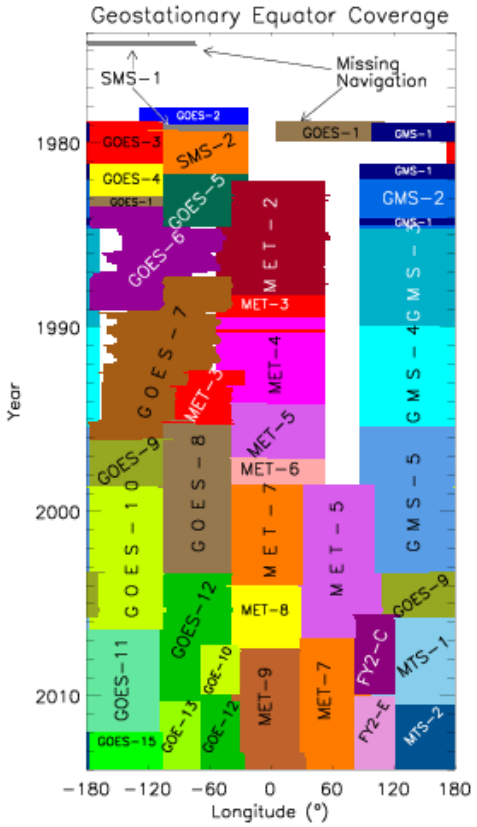
- NOAA Climate Data Record Program
  - Provides some funds to W. Rossow for transfer
- Agency support
  - Each agency has faithfully provided data

Motivation

- Capture capability to process ISCCP
- Extend record of ISCCP Processing
  - (currently 1983-2009)
  - So extend prior to 1983 and beyond 2009
- Increase ISCCP capability
  - Higher spatial resolution than before
- Maintain capability to extend record
  - Develop processes to not only perform initial reprocessing but keep the record current

ISCCP is truly international

- Requires international collaboration
  - Image scene scheduling (3-hr full disk scans)
  - Sharing of …
    - Data
    - Calibration results
    - Processing
    - Format requirements



NEW ISCCP DATA PRODUCTS

- **B1U** Radiances

- **ANCILLARY**:
  - Lnd/Wtr Mask & Topography,
  - Landcover, Ozone,
  - Merged Snow-Ice,
  - Atmospheric Temperature & Humidity

- **Pixel-scale products**
  - **HXS**: high-res, pixel (10 km), single-satellite (like old DX)
  - **HXG**: high-res, pixel, global (global-DX reduced to common variables, in netCDF)

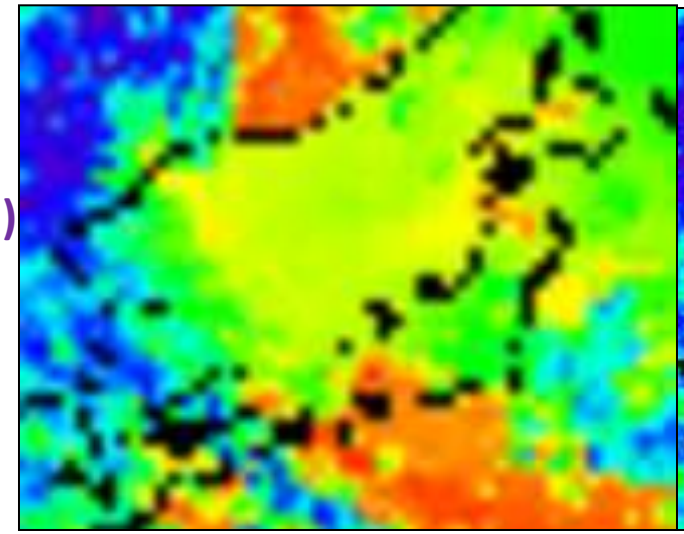
- All gridded products in netCDF
  - **HGS**: high-res, gridded (1°), single-satellite (DS-plus)
  - **HGG**: high-res, gridded, global (like old **D1**, merged DS)
  - **HGH**: high-res, gridded, hourly-monthly mean (like old **D2**)
  - **HGM**: high-res, gridded, monthly-mean (like old **D3**)

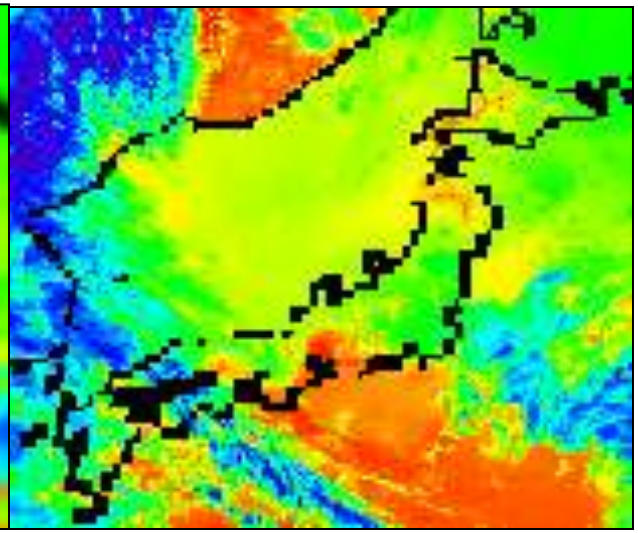
- **FH** Radiative Flux Products (INPUT, PROF, TOA, SRF, MON)

Early Results from B1 processing

IR Window Data processed at different resolutions

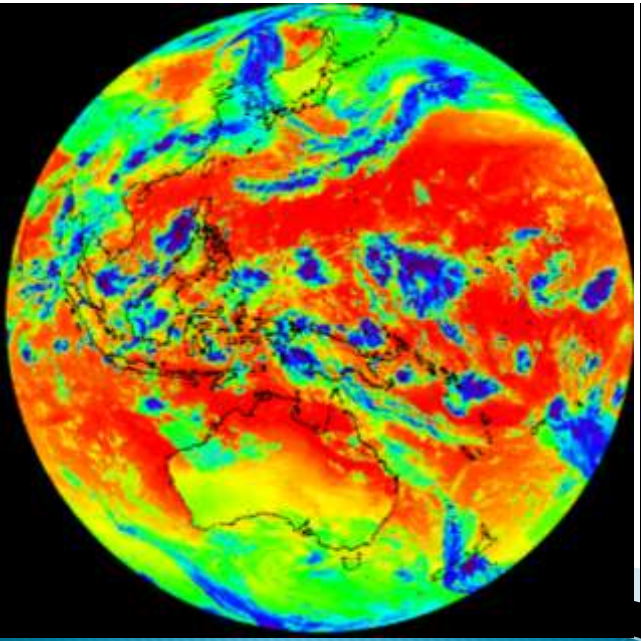
DX (32 km)



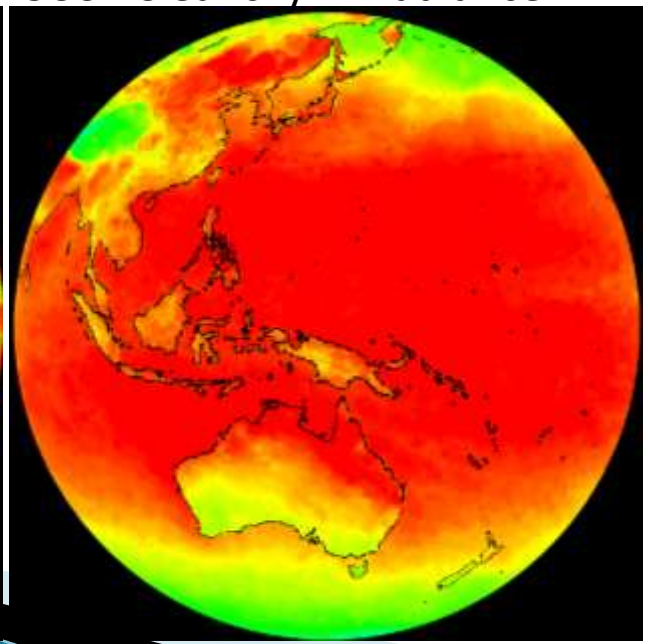


HXS (~10 km)

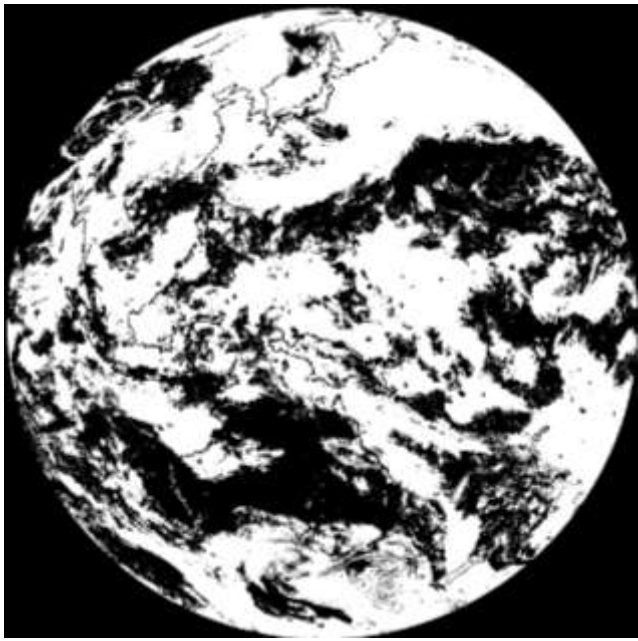
ISCCP B1 IR Radiance



ISCCP Clear sky IR Radiance



ISCCP Cloud Mask



Plans for 2014

- March
  - NCDC test processes 1 year
  - CCNY to perform comparisons between NCDC and CCNY data
- April
  - NCDC begins reprocessing of ’83-’09
- April-July
  - CCNY checks results, identifying issues
  - NCDC reprocesses as needed
  - CCNY produces new calibration information for ’09-’13
- July
  - NCDC reprocesses extended period: 1980-2013
- Aug-Dec
  - Evaluation of ~35 year climatology

New capabilities?

- Currently almost 3 channels have global coverage:
  - IR Window, Visible and Water Vapor*
- Lots of new satellites coming, so potentially more channels will be global
  - MSG – 12 channels (available now)
  - Himawari 8 – 15 channels (launches this summer)
  - GOES-R – 16 channels (launches in 2016)

*NOAA HIRS not actually at the HIRS/2 wavelength anymore, but could be simulated with AIRS and IASI

Summary

- Plan to reprocess ISCCP by end of year
  - Higher resolution
  - Extended period of record
  - More products
  - New ISCCP production site
- Requires continued collaboration
  - Agencies that provide data
- Need to plan for future capabilities
  - New Geostationary satellites may mean more coverage of other channels