Prototyping Level 2 Swath Data-as-a-Service in GIBS

Charles Thompson, Paulo Penteado, Jeff Hall, Joe Roberts

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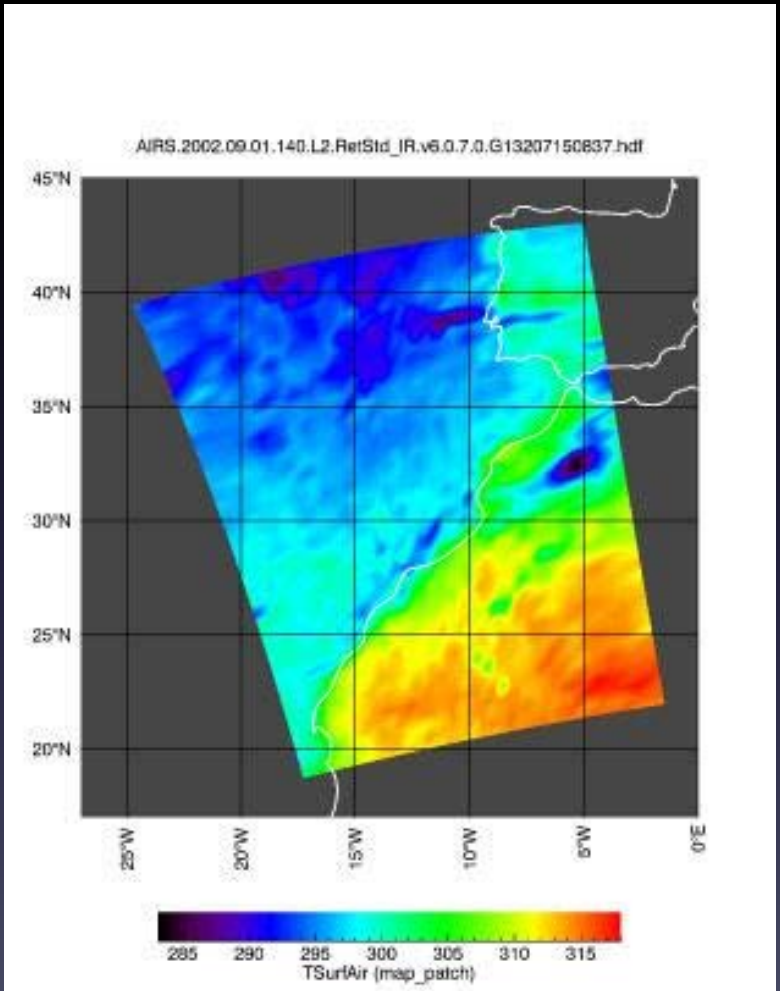
Jet Propulsion Laboratory

California Institute of Technology

About Level 2 Swath Data

- Satellite data in “instrument space”
- Data often arranged in “along-track” and “across-track” axes
- Stored in granule files: data for a portion (or all) of a satellite orbit
- No resampling nor interpolations to a grid
- Geolocated at point of of performing geophysical retrieval
- Typically requires projection to display on map
  - Resampling with interpolation
  - Discrete point-by-point using some symbol (circle, square)

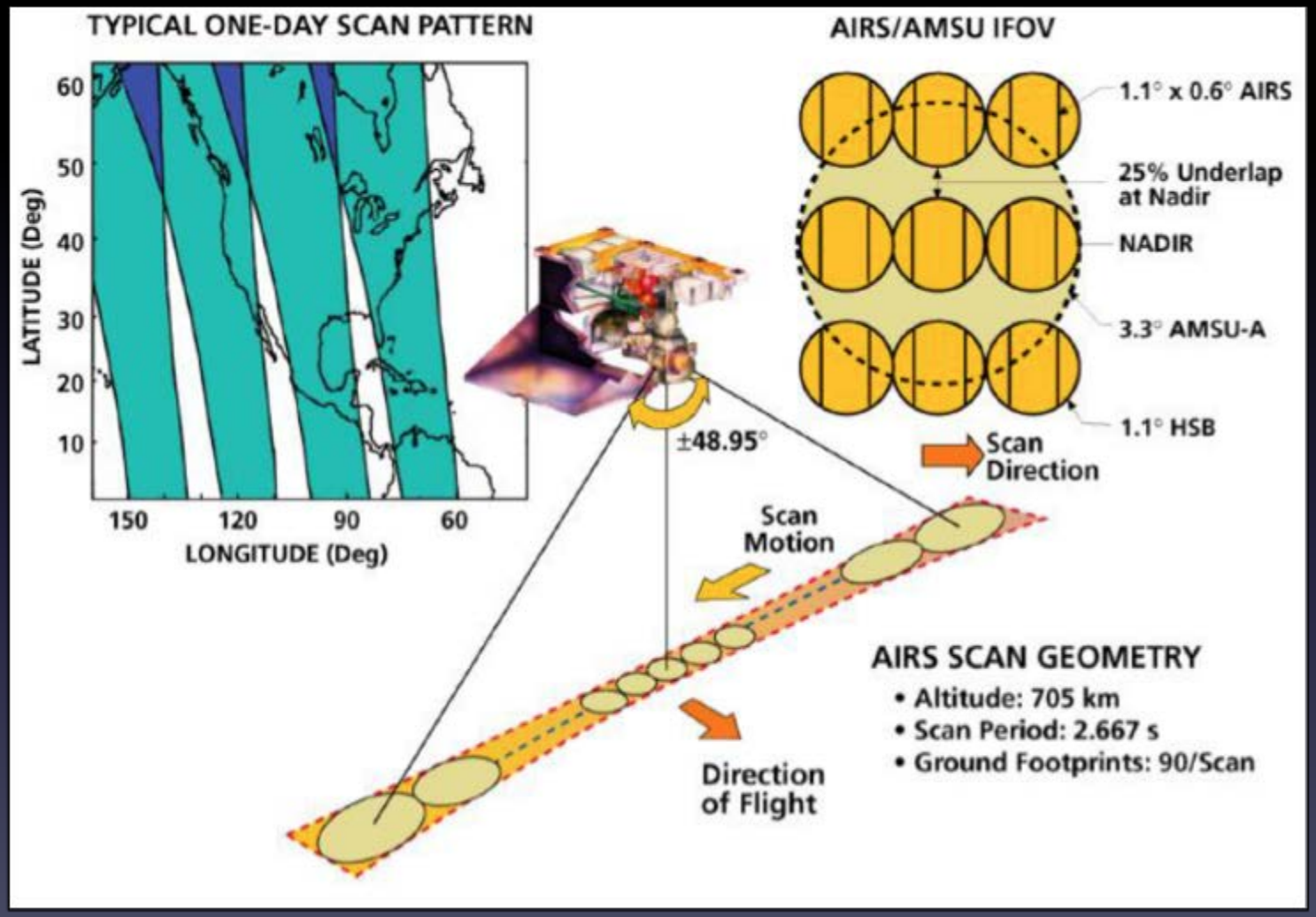
AIRS L2 Standard Product: TSurfAir



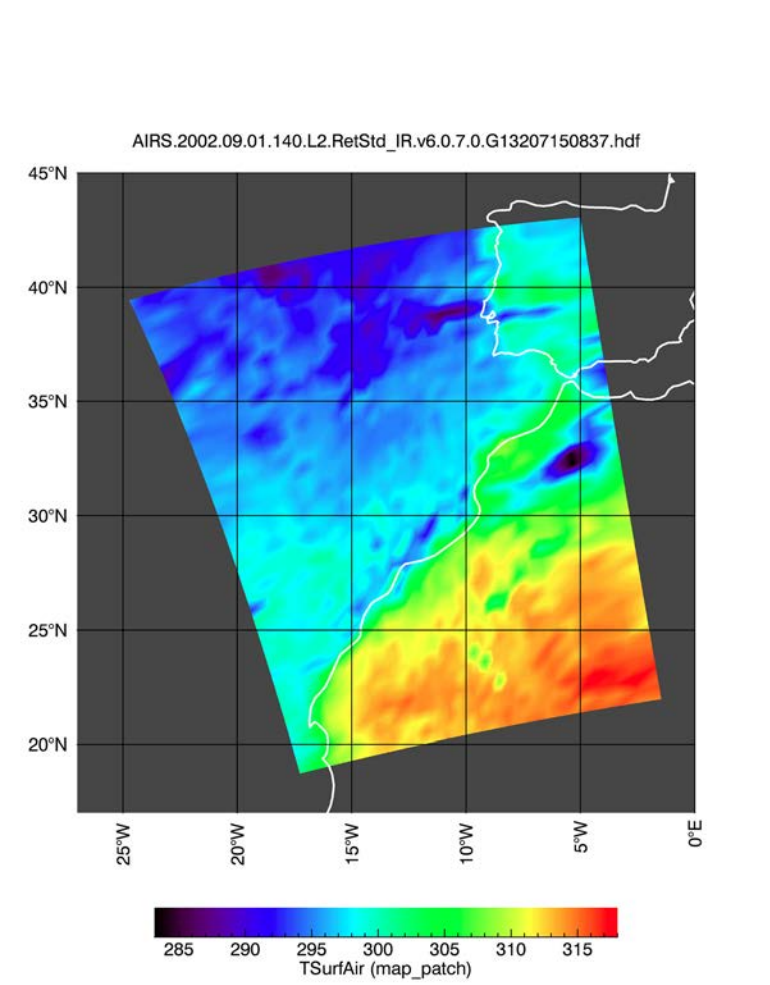
Creating a “Science Image”

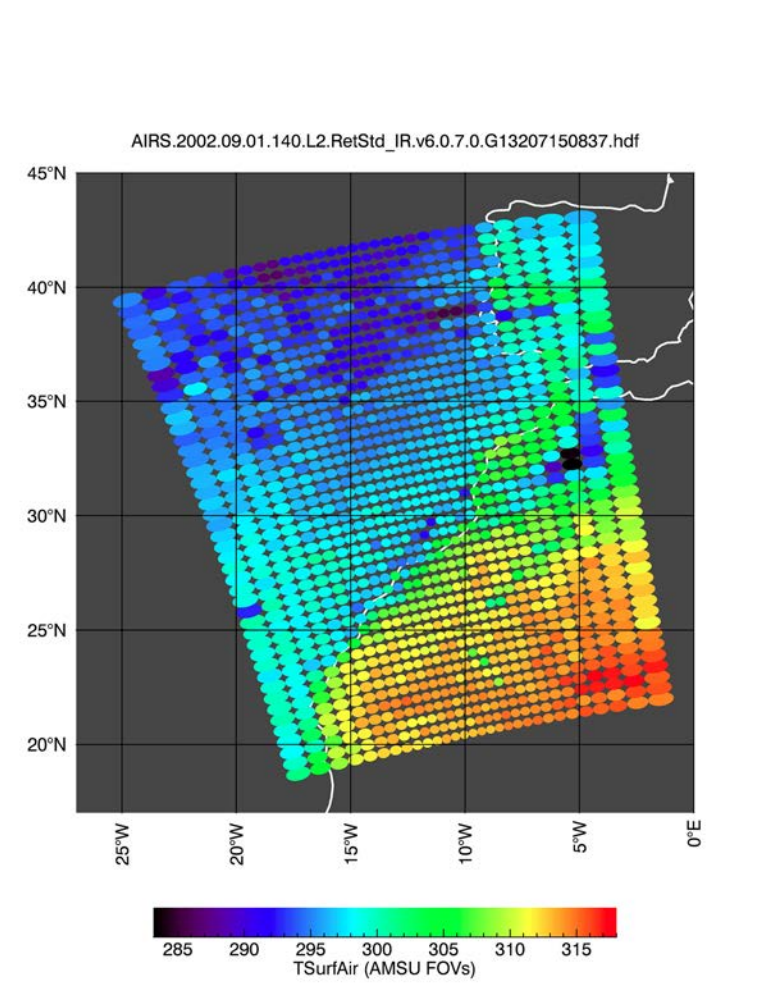
- Calculate the actual shape of each footprint utilizing known geometry (e.g., scan angle, nominal resolution) and geolocation information
- Project the calculated shape
- Utilize projected shape to populate map pixels with data values
- No interpolation
- Accurate placement, size, and shape of each footprint

AIRS Geometry

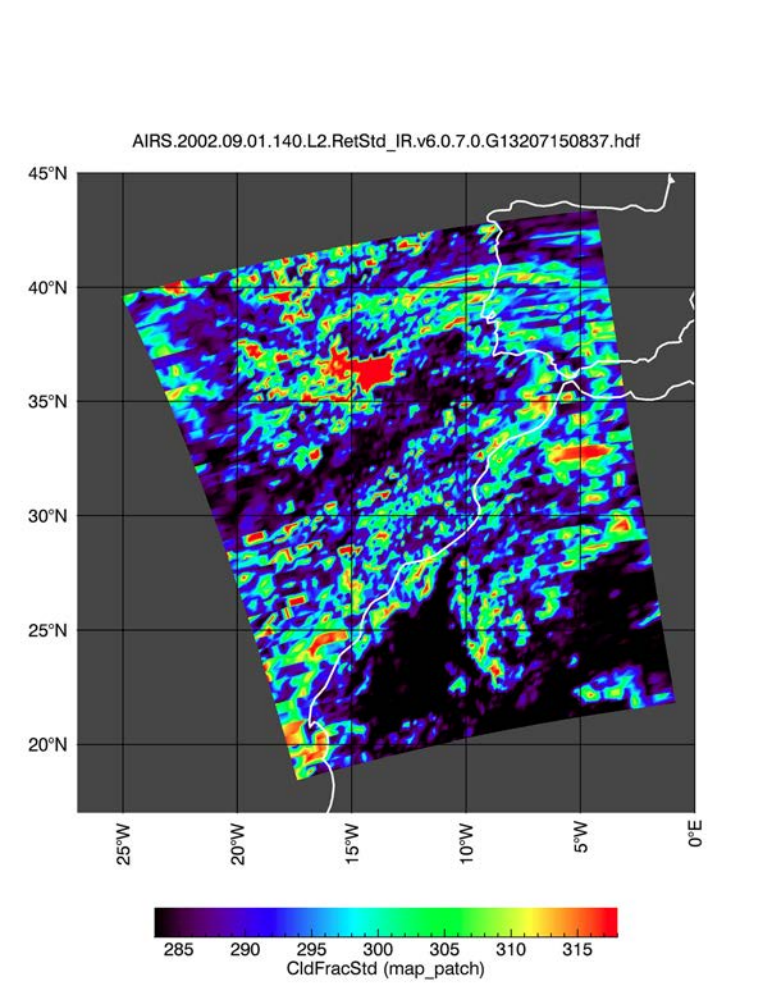


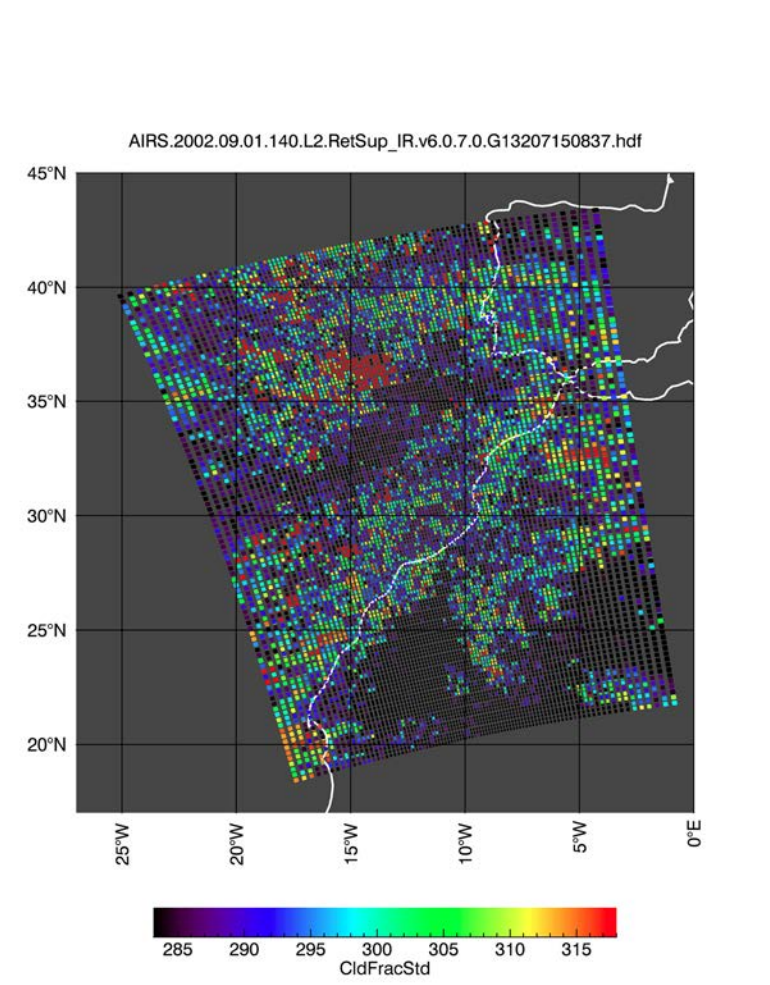
AIRS TSurfStd: Interpolation vs. Indexing (AMSU FOV)





AIRS CldFracStd: Interpolation vs. Indexing (AIRS FOV)

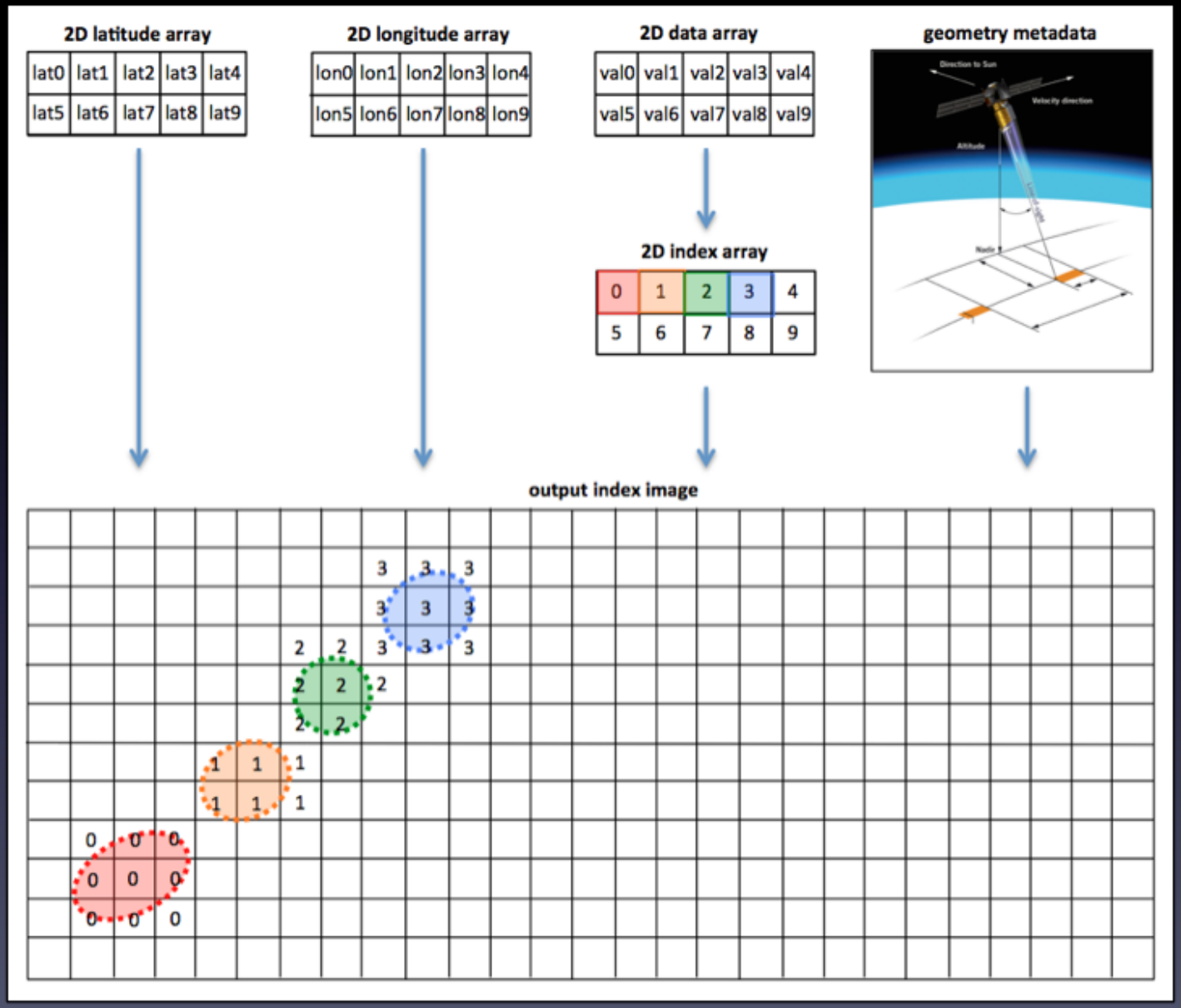




Fitting L2 DaaS Within GIBS Framework

- Generate “index image” which maps locations of data to image space
- Create MRF
- Serve “index tiles” along with w10n URL to data source
- “Reconstitute” data tile on client side
- Index MRF can be used to reconstitute all parameters in granule with same geolocation

Creating the Index Image



Current Status

- Created index-to-MRF process for AIRS L2 data
- Modified OnEarth to include w10n URL when serving tiles
- Building IDL client to allow for analysis
- Investigating browser interface
- Goal: Basic proof-of-concept IDL client (no license required) by October

Thank You!

Questions?