

MODIS SCIENCE DATA SUPPORT TEAM PRESENTATION

October 16, 1992

AGENDA

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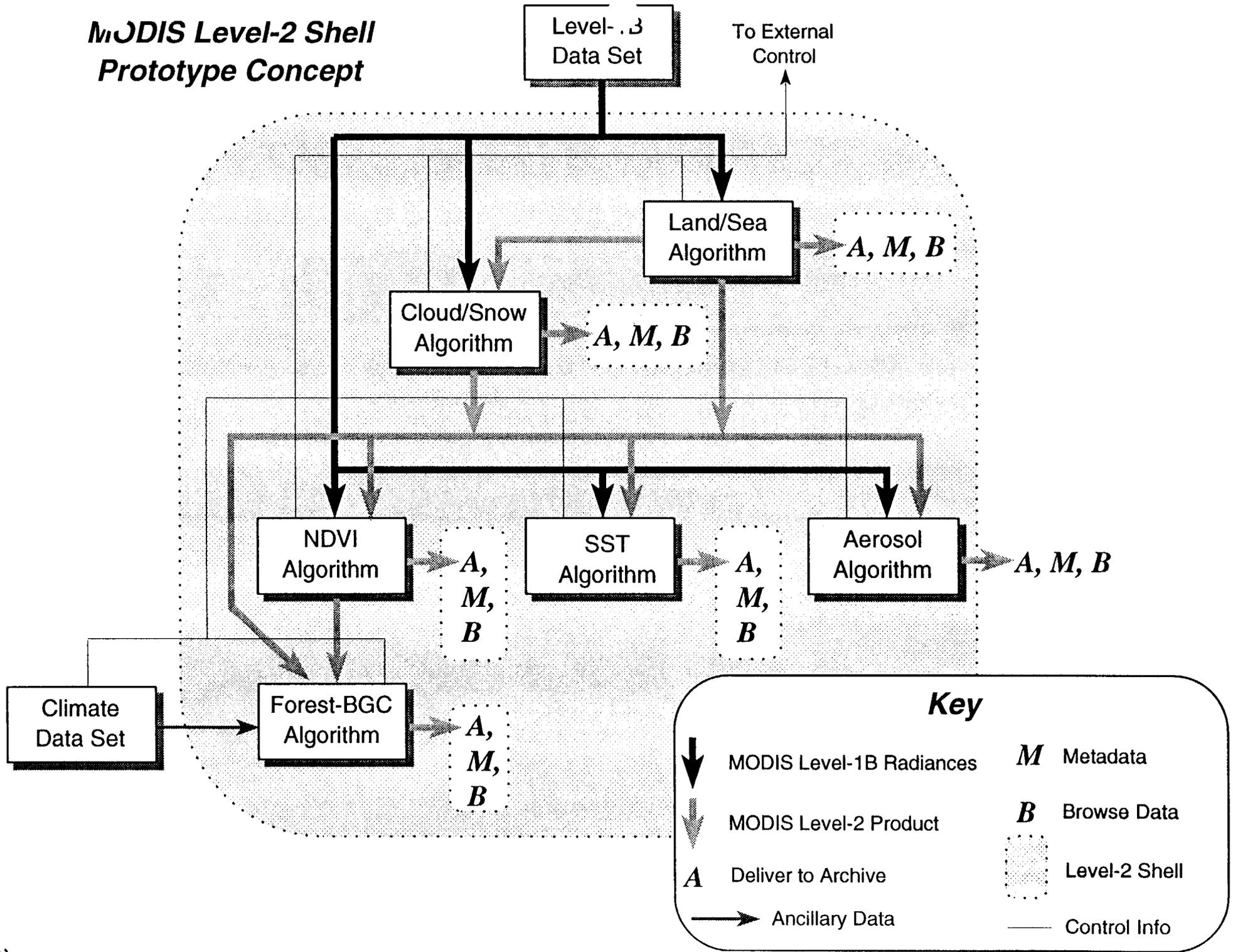
ACTION ITEMS:

06/12/92 [Tom Goff, Carroll Hood] Develop separate detailed schedules using Microsoft Project for Level-1A and -1B software design and development. (Refine the use of Microsoft Project so that it becomes a useful tool rather than an action item.) STATUS: Open. Due Date: 07/10/92

07/31/92 [Tom Goff, Ed Masuoka, Al Fleig] Develop the purpose and requirements for a packet simulator. Get more information on the packet simulator being developed by SBRC. (An updated requirements specification was included in the handout on 09/04/92. A copy, with a cover letter, should be sent to Jerry Hyde of SBRC for coordination with their requirements. Tom arrange a meeting with Ed and Al.) STATUS: Open. Due Date: 09/04/92

10/02/92 [Team] Prepare presentation materials for the MODIS Science Team Meeting. STATUS: Open. Due Date: 10/16/92

MODIS Level-2 Shell Prototype Concept



MODIS Level-2 Processing Shell Prototype

- Explore concepts for MODIS Level-2 processing shell
 - control mechanisms, data flows, algorithm interactions
 - I/O redundancy, process scheduling, process efficiency
- Concept testbed only, not simulation of MODIS science
- MODIS Airborne Simulator (MAS) Level-1B as input
- Use existing algorithms from Science Team in current form
 - Suggested algorithms for first version (by end of 1992):
 - Land/Water, Cloud/Snow (MCST)
 - Aerosol Optical Depth (Atmosphere Group)
 - Normalized Difference Vegetation Index (Land Group)
 - Sea Surface Temperature (Ocean Group)
- Create Level-2 datasets (archive, metadata, browse) in HDF
- Use MODIS specific algorithms as they are developed

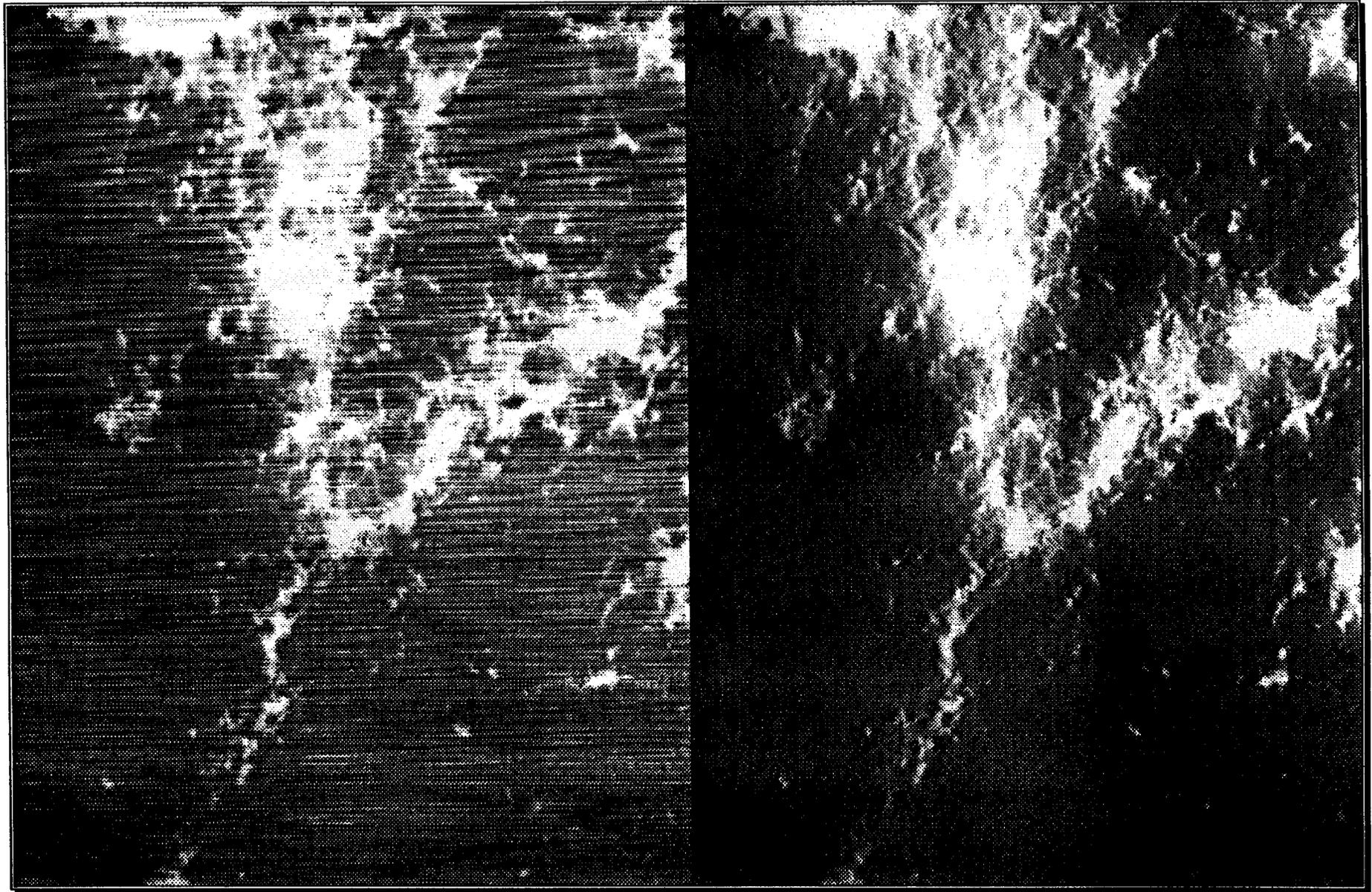


MAS Spectral Channels

Channel	Central Wavelength (microns) FIRE	Central Wavelength (microns) ASTEX	Bit depth
1	—	—	—
2	0.681	0.664	8
3	1.617	0.875	8
4	1.933	0.945	8
5	2.088	1.621	8
6	2.139	2.142	8
7	3.748	3.725	8
8	4.695	13.952	8
9	4.539	8.563	10
10	8.800	11.002	10
11	10.950	13.186	10
12	11.950	12.032	10



MAS Image Filtering Demonstration



J.J. Pan, Liam Gumley, MODIS Science Data Support Team
MODIS Science Team Meeting, 27 October 1992

DRAFT

MODIS Level-2 Processing Shell Design and Development

J. J. Pan

*MODIS Science Data Support Team
(301) 982-3700*

Date: October 12 - October 16, 1992

1. Algorithm Dependency Diagram

Al Fleig, Ed Masuoka, and I revised the algorithm dependency diagram. In this new diagram (version 3.0), data are still distinguished as selected, non-selected, at-launch, and post-launch. According to the diagram, there are 77 data products. Some suggestions have been proposed for further products reduction, the total number of data products could be reduced to 56 if Team Members agree our suggestions.

Brenda Vallette and I are preparing the following six tables for the MODIS Science Team Meeting, October 27-29, 1992:

1. Table 1. Input/Output Data Products used in the Algorithm Dependency Diagram (sorted by the product number).
2. Table 2. Input/Output Data Products used in the Algorithm Dependency Diagram (sorted by the investigator's name).
3. Table 3. Proposed Output Data Products (sorted by the investigator's name).
4. Table 4. Level-3 Products List.
5. Table 5. Questions and Suggestions of Data Products.
6. Table 6. Modifications of Input/Output Data (from Ver. 2.0 to Ver. 3.0).

MODIS Level-1 Earth Navigation Software Evaluation

Paul A. Hubanks

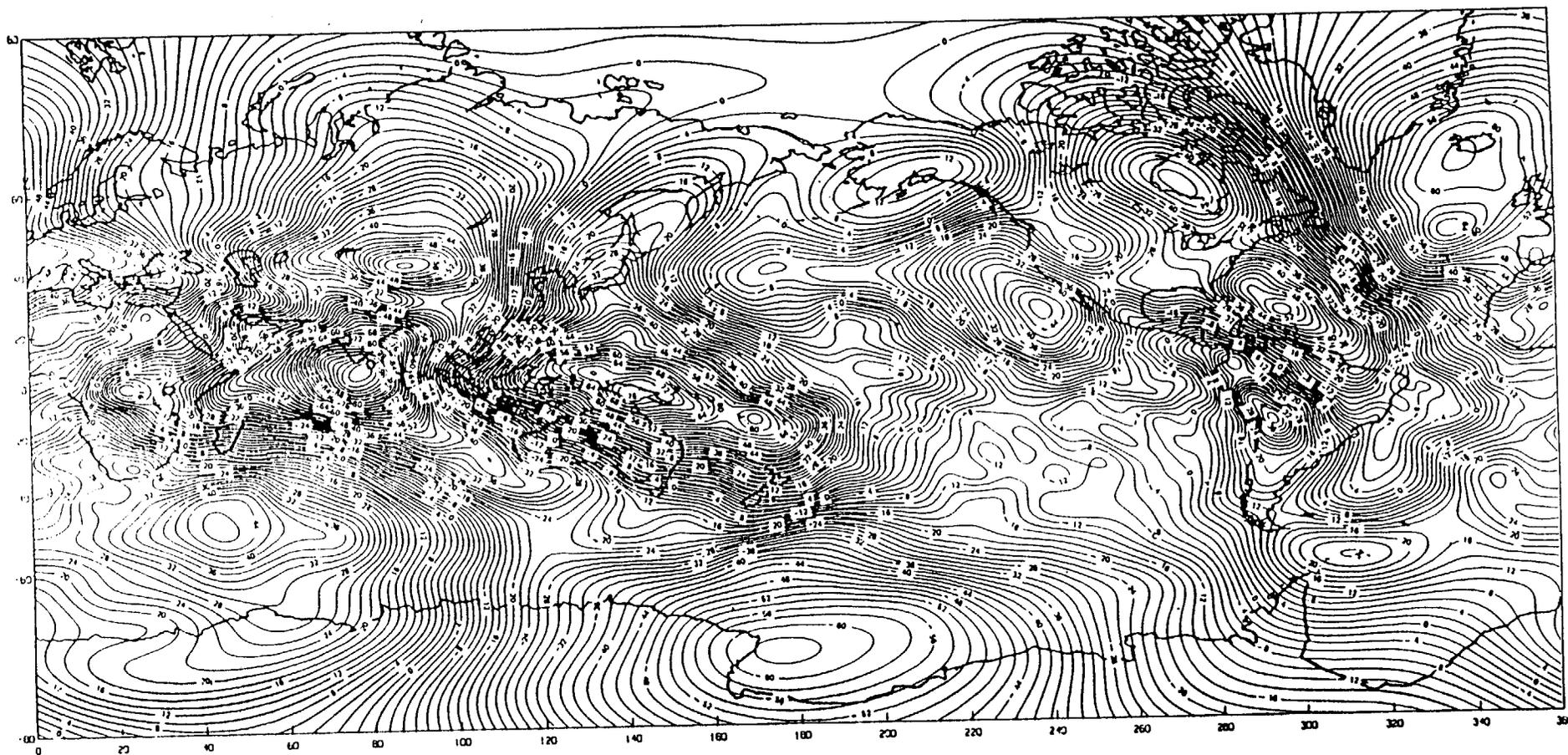
16 October 1992

I began the effort of comprehending the logical flow of and cataloging the USGS software used for the geolocation of AVHRR data. This software consists of over 300 individual C routines. My contact at the USGS EROS Data Center, who ported the software, made it clear that they would not be able to provide support at this time.

I contacted the University of Miami to determine if their current techniques for correcting satellite clock error and improving satellite ephemeris differed from those used at USGS for AVHRR registration. I talked to Dr. Jim Brown on Tuesday he said that they were working on some completely automated techniques for improving satellite ephemeris, but at this point in time the original interactive technique, originally developed at the U. of Miami and currently used by USGS (briefly described in last week's MSDST report), was faster and more accurate.

On Wednesday, Al Fleig asked me to locate a global map showing the difference between an ellipsoid earth model and a geoid earth model (see next page). Specifically, to find out the maximum difference between these two models over the oceanic region (105 meters just south of Cape Comorin, India).

Thursday was spent preparing view-graphs for the Science Team Meeting.

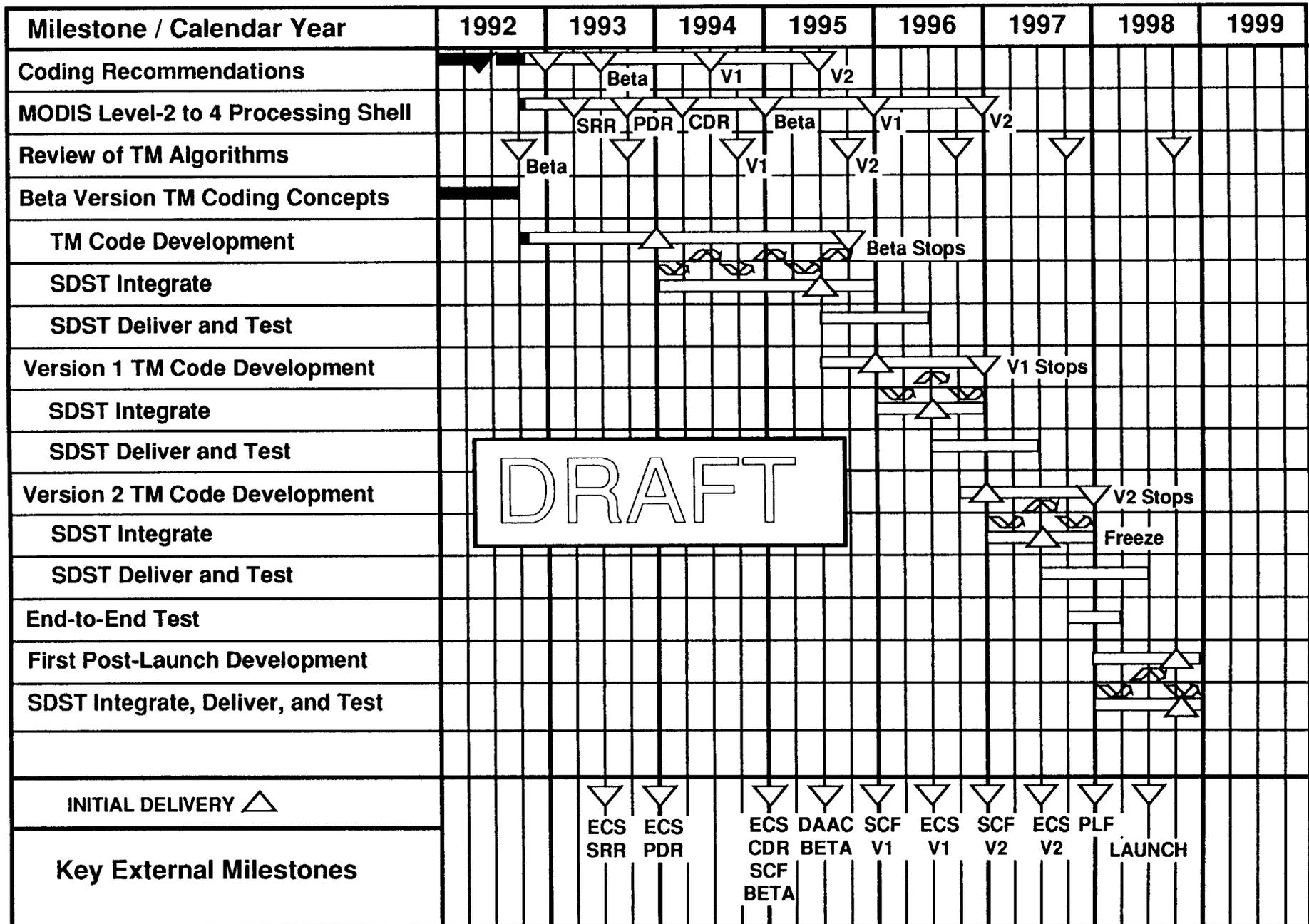


GEOID HEIGHTS

REFERRED TO GRS-80 ELLIPSOID
 $a_e = 6378137 \text{ m}$ $1/f = 298.257$

The GEM-T1 Geoid.

MODIS Level-2 to 4 Science Code Development Schedule



MODIS Level-1 Code Development Schedule

