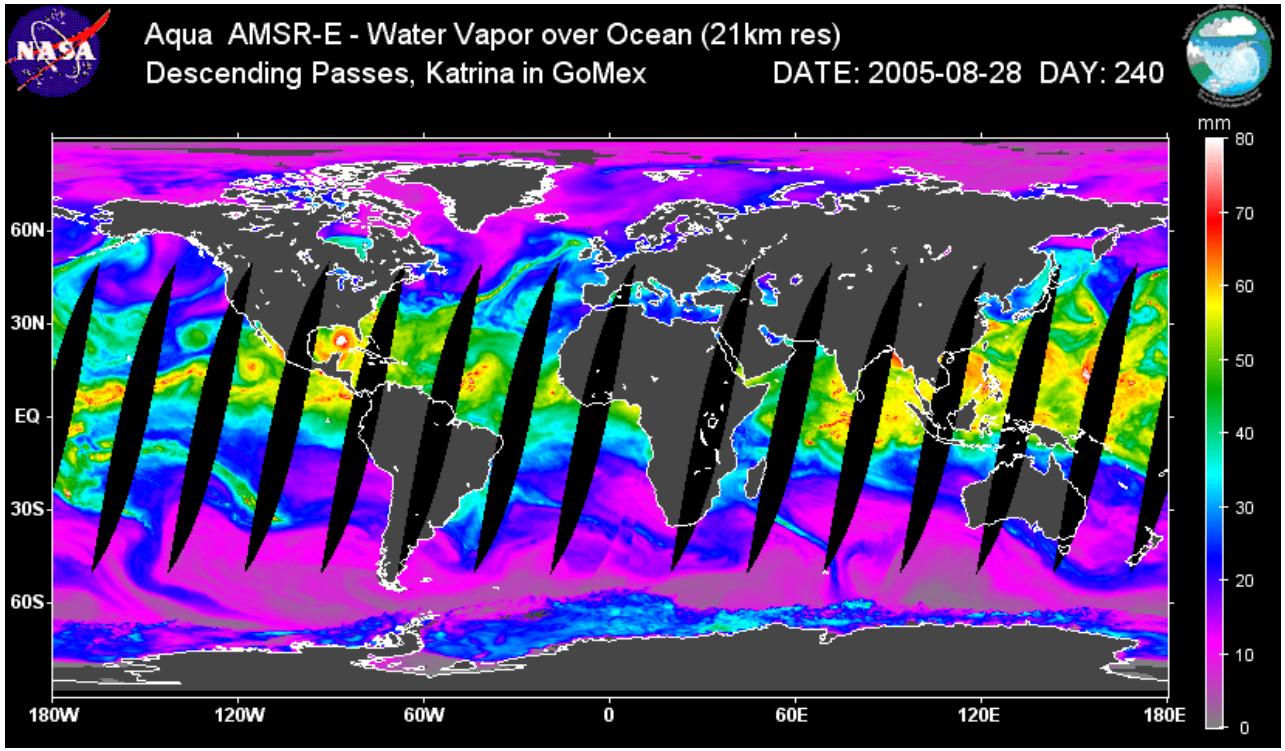
AMSR-E SIPS Processing Status



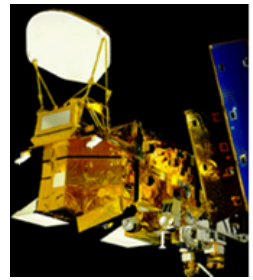
Kathryn Regner

Information Technology and Systems Center

at the University of Alabama in Huntsville

kregner@itsc.uah.edu 256-961-7791 www.itsc.uah.edu

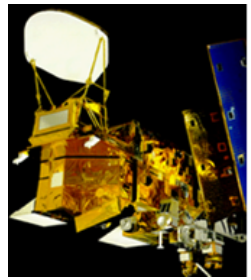
Image provided by Matt Smith 13 September 2005



Outline

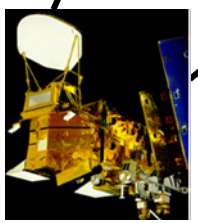
- What's New at the SIPS
- Data Flow Review
- Hardware Update
- Processing and Reprocessing Plans
- FTP Data from Ariel

What's New at the SIPS



- Michael Goodman has completed his assignment at NASA HQ and returned to the GHCC
- Marty Brewer is the new science and operations lead at SIPS-RSS, while Peter Ashcroft is on leave of absence in the Washington, D.C. area

AMSR-E Data Flow

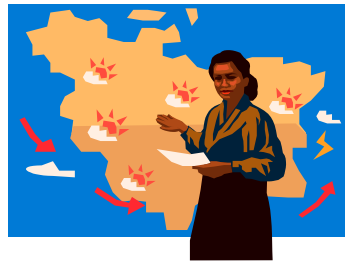


NASA EDOS

L0

JAXA-EOC
L1A Product Generation

L0



Ground Stations

NASA FDF

GBAD

L1

PO.DAAC

L1

NSIDC DAAC
Data Archive and Distribution

L1

TLSCF
Science Software I&T

L2A algorithm

L2 and L3 algorithms

SIPS-RSS
L2A Product Generation

L2 & L3

SIPS-GHCC

Product Delivery Record Server (PDRS)

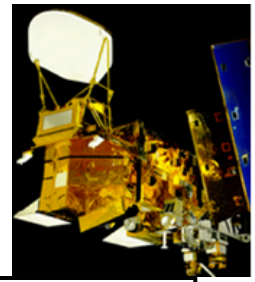
L2B and L3 Product Generation
(science, metadata, qa, ph, subsets, browse)

Science Algorithms

Algorithm Teams
Rain
Snow
Ocean
Sea Ice
Land

Data

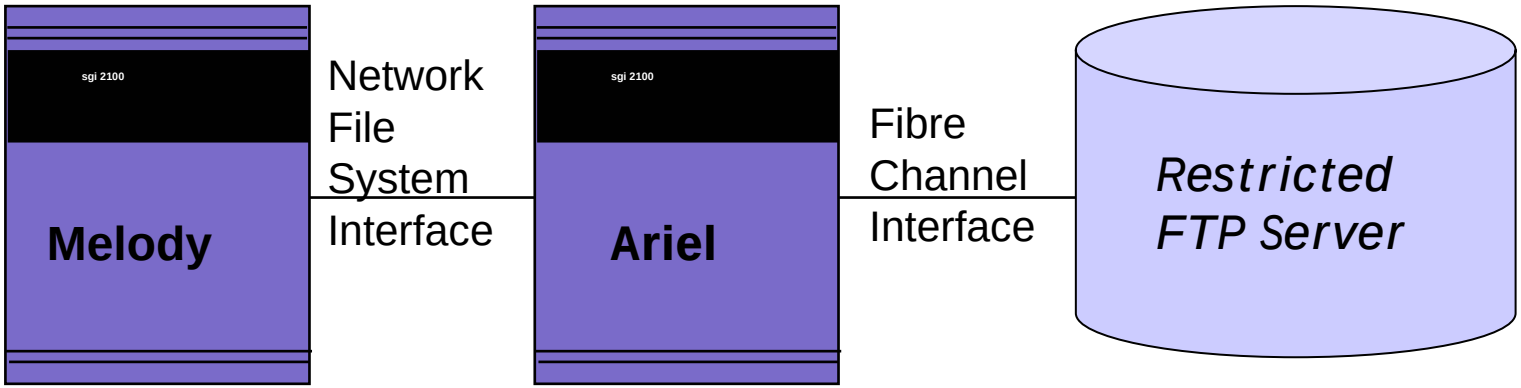
SIPS-GHCC Hardware



SGI Origin 2100
4 x 350Mhz Processors
2GB RAM

SGI Origin 2100
4 x 250Mhz Processors
2GB RAM

2 TB RAID
file system

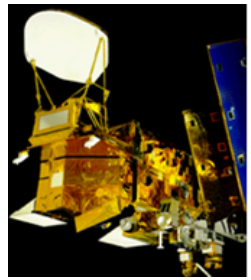


Used for:
- ❖ Reprocessing
- ❖ Special Processing
- ❖ Development
- ❖ Integration & test

Used for:
- ❖ Routine processing
- ❖ Late L2A processing

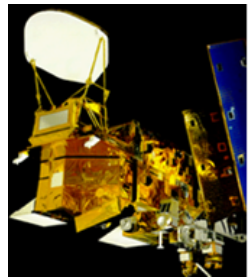
On line storage of most recent six weeks of Level-2 and Level-3 products for
- transfer to DAAC
- science team quality control

Hardware is Aging



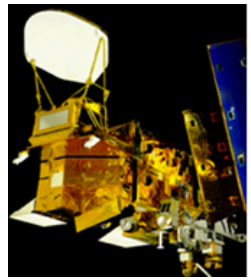
- SIPS-GHCC processing servers were procured in 1999 (Ariel) and 2000 (Melody)
  - *–SGI stopped manufacturing the Origin 2000 class of server on June 30, 2002*
  - *–SGI will continue to support these systems through June 30, 2007 (also known as "end of life")*
- SIPS production systems must be under hardware maintenance plan
  - *–we need a plan to replace this hardware without impact to ongoing operations.*

Upgrade Considerations



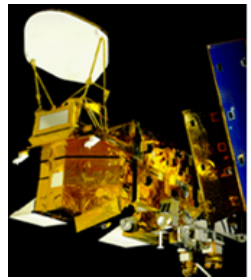
- SIPS is evaluating replacement hardware, possibly LINUX-based
  - *–Major consideration is ease of porting, integration and test of the algorithms, both at TLSCF (MISTY) and with the automation scripts at the SIPS (on Ariel and Melody)*
  - *–Other considerations include enhanced processing capabilities, up front costs, maintenance costs, and ease of administration*
- We will continue to work with TLSCF to find a solution that is most cost effective for the entire AMSR-E team.

Forward Processing



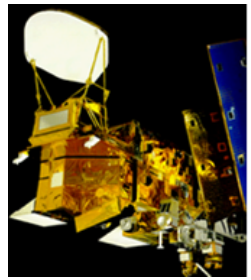
- Routine forward processing is running very smoothly
  - *–automated to run 24 x 7, unattended*
- Nominal near real time ingest of the L2A files at GHCC ranges typically from 13-17 hours after observation
- Still receiving occasional straggler Level-2A files, which requires
  - *–special handling,*
  - *–regeneration of the composite products,*
  - *–replacement files being sent to the DAAC for archive*

Reprocessing



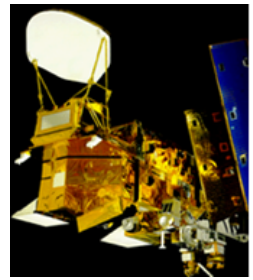
- The SIPS plans to begin reprocessing all standard products this fall, from the beginning of the mission.
  - *–using JAXA Version 2 Level-1A files as input*
  - *–using most current versions of algorithms for Level-2 and Level-3 products*
- At an average reprocessing rate of 4-5x and with a little more than 3 years of data to reprocess, expect to complete reprocessing in about 10 months.
- The reprocessed data will be available to the science and validation teams on Ariel and for public distribution at the NSIDC DAAC.

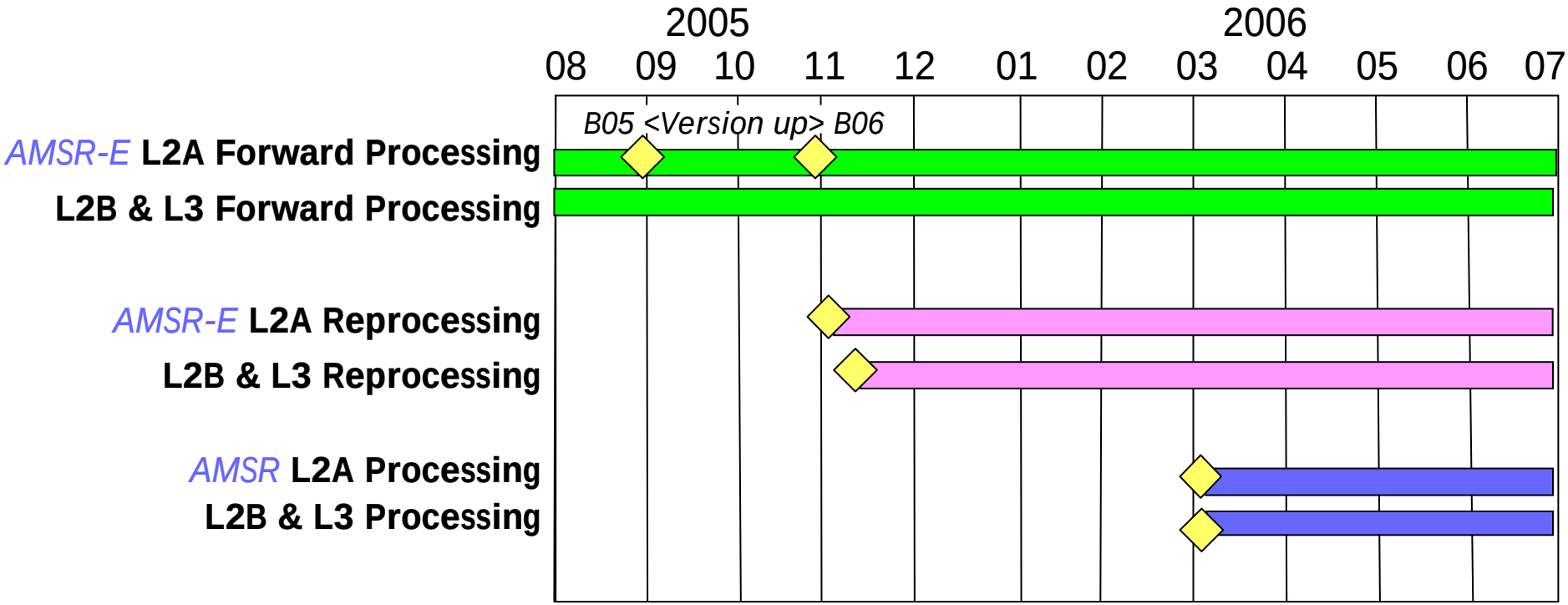
AMSR Processing



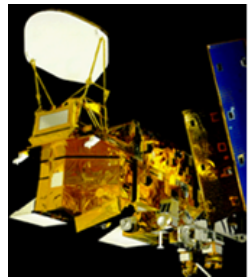
- Next year, SIPS-RSS plans to process the Midori/Adeos II AMSR data, provided by JAXA, to Level-2A
  - *using the latest features of the AMSR-E algorithm*
- Level-2B and Level-3 products will be generated at the GHCC and all products will be made available for public distribution from the DAAC
  - *using latest algorithms, slightly modified to accommodate instrument differences and name changes*
  - *processing automation software will require slight modifications and system checkout with NSIDC*

Processing Plans



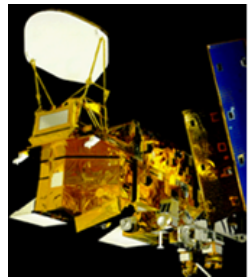


FTP Data from Ariel



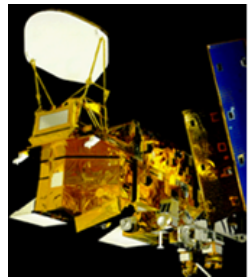
- SIPS-GHCC completed the migration of science team users from Restricted FTP to Secure FTP in January 2005. Thanks to all for working with us to achieve this important milestone!
- If you are new to the team or have not yet made the switch to restricted FTP and wish to be able to retrieve data from Ariel, please contact kregner@itsc.uah.edu

Backup Charts



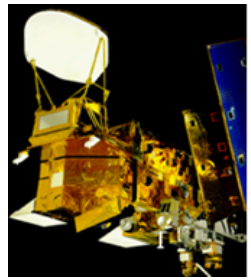
- Algorithm Versions
- Products Retention Plan
- Product Maturity Indicator
- Software Architecture

Algorithm Versions



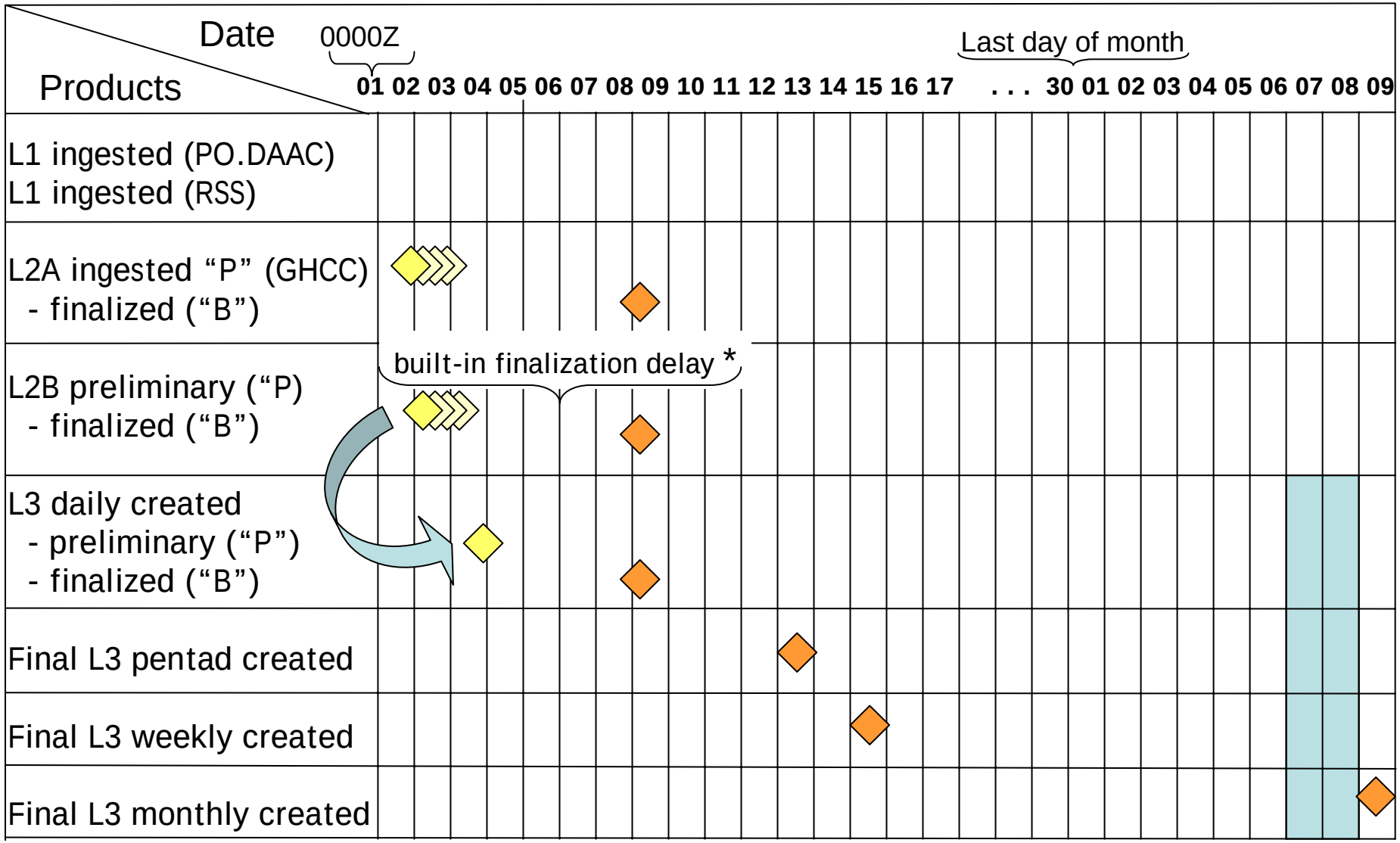
Algorithm	Public Release 9/1/2003	Public Release 3/1/2004	Current Versions 9/9/2005	1st Reprocessing Fall 2005
L2A Tb	B01	B01	B05	***B06***
L2B Land		B01	B04	
L2B Ocean		B01	B03	
L2B Rain		B01	B07	
L3 Land		B01	B03	
L3 Ocean		B01	B02	
L3 Rain		B01	B04	
L3 Sea Ice		B01	B05	
L3 Snow		B01	B04	***B05***

SIPS-GHCC
Products Retention Plan



- These near real time products are kept on line for 60 days (to facilitate product regeneration due to late arriving L2A files):
  - *L2A Brightness Temperatures*
  - *L2B Land, Ocean, and Rain*
  - *L3 Daily Ocean, Snow, and Sea Ice (6, 12, 25km)*
  - *L3 Snow Pentad and Weekly Ocean*
- These products are kept on line for 6 months:
  - *Monthly Ocean, Monthly Snow and Rain Grid*
- Current plans are to keep the latest version of the Browse PNG and subsets on line indefinitely.

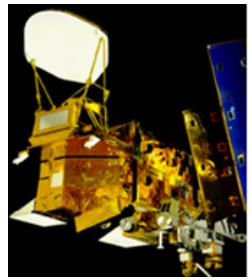
Near Real Time Product Generation Rules Timeline Example



*built-in delay is configurable; currently set to 6 days

Ideal window to *process late files* and regenerate L3 for the previous month

Product Maturity Indicator



- *Excerpt from the AMSR-E Data Management Plan*
- The AMSR-E standard product file names contain a product maturity indicator.
- Valid values for the standard product maturity indicator are "B", and "V" for Beta, and Validated, respectively.
  - *"Beta" product maturity indicates use of NASDA calibrated data in producing the Level 2A TBs; the product maturity will graduate to "Validated" once the science software has been tested and the algorithm validated using the official NASA calibration.*
- One final value for the product maturity code is "P," preliminary, which indicates non-standard near real time preliminary data products available at NSIDC through their Web based non-ECS system. These data are only available until the corresponding standard product ("B" or "V") is ingested at NSIDC. Currently, there is a 4-6 day delay between preliminary products and standard products.

Software Architecture (Nominal Processing)