Cassini Accessibility & Juno Progress

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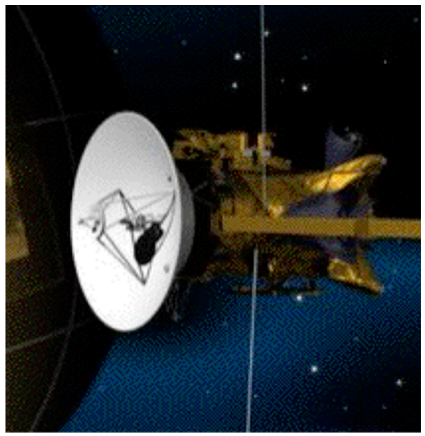

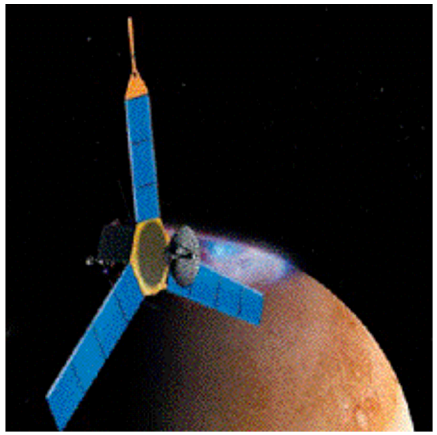

Cassini Accessibility

Long ago when Sue McMahon managed PDS the data management plan was revised by HQ & the mission - eliminating most higher-order products that were in the original that PDS signed off on. Science is funded at a lower level than Voyager was.

Currently Cassini is delivering those contractually required datasets on a regular quarterly schedule.

1. MAG had problems with instrument stability and much of the preliminary data was not usable.
2. We heard about that from Ray Walker last face-to face.
3. CAPS does not deliver moments - not contracted to do so
4. VIMS does not deliver calibrated data - not contracted to do so.
5. At DPS/Rings Advisory Council Meeting - members reported that ISS calibration was off by 20 to 200%
6. Etc.

Current Focus on Quality of Cassini Data

Cassini has completed its primary mission and been granted a 2-yr extension - XM or Equinox Mission

The mission is planning for an XXM but guideline require that that part of the mission be funded at the 50+% level.

Logically, if we are to get better data, the time is now to do something.

Personnel changes

1. Denis Bogan - HQ Mission Scientist retired & Kurt Nieber assumed the role
2. JPL replaced Dennis Matson with Bob Pappalardo as Project Scientist, Cassini Equinox Mission- the extended mission
3. Claudia J. Alexander, Cassini Magnetosphere Discipline Scientist' has been designated to help him carry out studies of how to improve access to the data

Their approach is to go to OPAG and ask the user community for input with the intent of setting up a committee that includes users to identify steps that can be taken or desirable product that could be generated before the knowledgeable personnel move on.

Discussions Preceding OPAG

I discussed their plans and pointed out that this should be a multi-step process

1. Community input to develop oversized shopping list
   a. I warned them that they would get few committed volunteers
   b. They would unleash bitter complaints - some valid -some not
   c. There would be few favorable comments
2. The shopping list should be evaluated by knowledgeable members of the Cassini team and a cut should be made on “do-ability”
3. Those that passed this test should be costed
4. The size of the user community for each product should be determined
5. Priorities should be assigned on these bases
6. Kurt Neiber should use this to distribute the funding he thinks he can get for this task.
7. If this is cut out of the current science & planning component of the Cassini budget, it is questionable whether it will be an effective effort.

Progress in Formulating Committee

Claudia Is formulating a committee with the goal of getting out a preliminary assessment by Jan 31, 2009

1. Three people volunteered at OPAG to serve on a committee being set up by Alexander
2. Alexander is setting up a committee - R. Walker has agreed to serve as a non-Cassini member.
3. Alexander has asked M. Showalter, Melissa McGrath and Fran Bagenal specifying "I am going to limit this discussion to the specific issue of the usability of the Cassini data, and not expand it to discussion of the overall efficacy of the PDS."
4. Alexander has located an APL user who uses both UVIS & VIMS
5. Formulation of the initial users committee continues.
6. Garry Hansen is volunteering and wants to develop a generic VIMS calibration tool.

Recent Responses

1. McGrath rhubarb
2. Connerney OPAG declaration that MAG files PPI was posting were useless according to Post Doc - Check with Post-Doc indicates that Connerney's information was obsolete.
3. Two people had concerns of CIRS calibration.
4. Paul Schenk ISS PDS interface is fine --some labels are labeled SKY instead of satellite - PDS raw image search works to ID satellites. He has downloaded ISS calibration software - works on his lovely MAC -- has some questions about calibration - sees patterns at 1-2 DN level. Notes that Titan radar is lagging. - Wants Iapetus radar data ???? - not currently in production.

Radar Mapping Products*

Mapping Problems

1. Had to wait to get overlapping SAR (image) strips
2. Needed to derive a self-consistent coordinate system
3. Had difficulty in calibrating scatterometry data and defining scattering model
4. Had difficulty in calibrating radiometry data to achieve self-consistent results

Plans

1. Deliver Version 1 containing Primary Mission data(Ta-T30) by 1/1/09
2. Deliver Version 2 containing rest of Prime Mission data later in 2009
3. Periodic deliveries adding Equinox Mission data thereafter.

* These are high-level derived products that are not required as part of the Cassini Archive Plan

CIRS Calibration

1. CIRS is producing data with the highest spectral resolution we will get from Saturn in most of our life-times.
2. CIRS expected to have variable length records and selected the MGS TES vanilla format to save space. This problem, combined with the fact that no “thumb nails” of this data were published caused a major rhubarb which was settled when rings converted the data to fixed length and it was explained that the data needs to be spatially or frequency averaged, depending on the application.
3. Buried in all this was the fact that CIRS has been delivering CALIBRATED DATA.
4. Noise spikes etc. affected the quality of the data and Don Jennings obtained CDAP data to fund a study to improve the data. This study is still underway and team work to further improve the data can continue with Equinox funding.
5. Current data that is being archived contains improved calibration.
6. The team plans to submit a revised version at the end of the Equinox mission (Sept 2010). In the meantime the data will be delivered with best current calibration.

Juno Mission

Goals

- Characterize near-field magnetic field
- Derive gravitational moments to determine internal mass distribution
- Measure water abundance below clouds at 6 longitudes
- Derive vertical and latitudinal cloud distributions at 6 longitudes

Characteristics

- Spin-stabilized & Solar Powered
- 11-day elliptical “near-polar” atmosphere-grazing orbit
- Equal longitudinal sampling in first 16 orbits
- Correction maneuver fills in intervals in next set of orbits
- Orbit is unstable - precesses down into radiation belts

Juno Mission

Datasets

- Atmospheric
- Fields & Particles
- Radio Science data

Instruments

- Microwave Radiometer - JPL
- UV Spec (UVS) - SwRI
- JIRAM - ASI
- Juno Energetic Particle Detector Inst APL
- Waves - U of Iowa
- GSFC Flux Gate Mag GSFC
- Jovian Auroral Dist Exp - SwRI
- JunoCam - MSSS - EPO Camera
- Gravity Science

Juno Data Plans

The Juno plans for processing their data involve

- JPL capturing the data & delivering it to SWRI
- SWRI serving as the data center
- Instrument PIs accessing the SWRI database
- Bill Kurth will head the data management & archiving
- Archiving activities will be centered at SWRI

Juno Progress

Beebe & Huber (ATMOS) & Joy (PPI) attended an early Instrument PI meeting to discuss archiving procedures

Bill Kurth completed a data management plan before PRD

Component CDR Reviews are scheduled 10/08 - 6/09

The Project CDR is scheduled for April 20-25/09. Beebe is on the standing review board.

With the completion of Phoenix that used a similar procedure Payam Zamani and Bill Kurth are interacting with ATMOS & NAÏF to assure the Phoenix/Juno conversion is done correctly for the early phases of acquiring the data.

Next telecon among Beebe, Huber & Kurth concerning MIPL products Nov 24.

Launch - Aug 2011 ????