

Vis/NIR Early Operations

AIRS Science Team Meeting
Solvang, California
2 May 2002

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Vis/NIR Early Operations



Summary

- Vis data expected to start around launch +15 days. Variability index, radiance maps, and NDVI maps available immediately.
- At launch, radiances are not calibrated. First calibrated radiances will start around 1 month after first-light.
- Co-registration of the 4 Vis channels and rough Vis to IR co-registration approximately 1 month after first light.
- Cloud detection over ocean expected to be working two months after first light.
- Improved vicarious calibration, cloud detection over land, and improved co-registration ~4 months after first light.

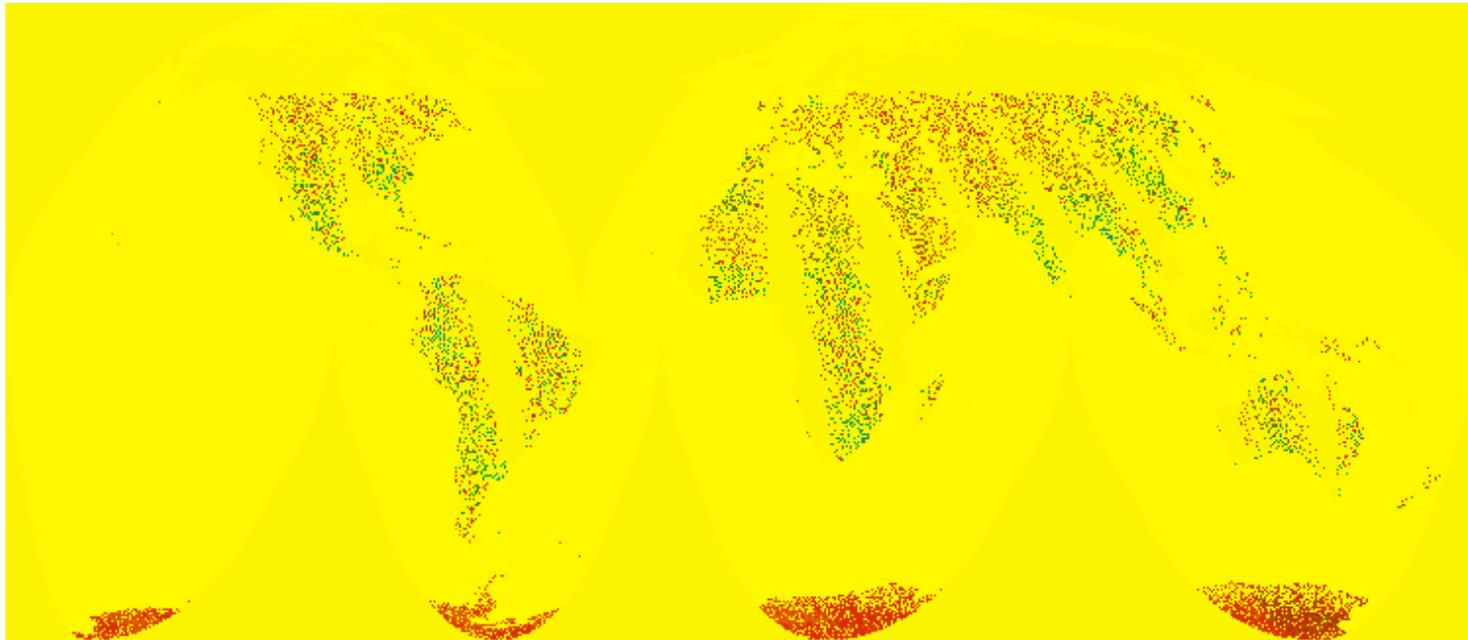


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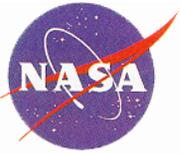


At Launch Products

Vis expected to start around launch +15. Variability indices, radiance maps, and NDVI maps available immediately.

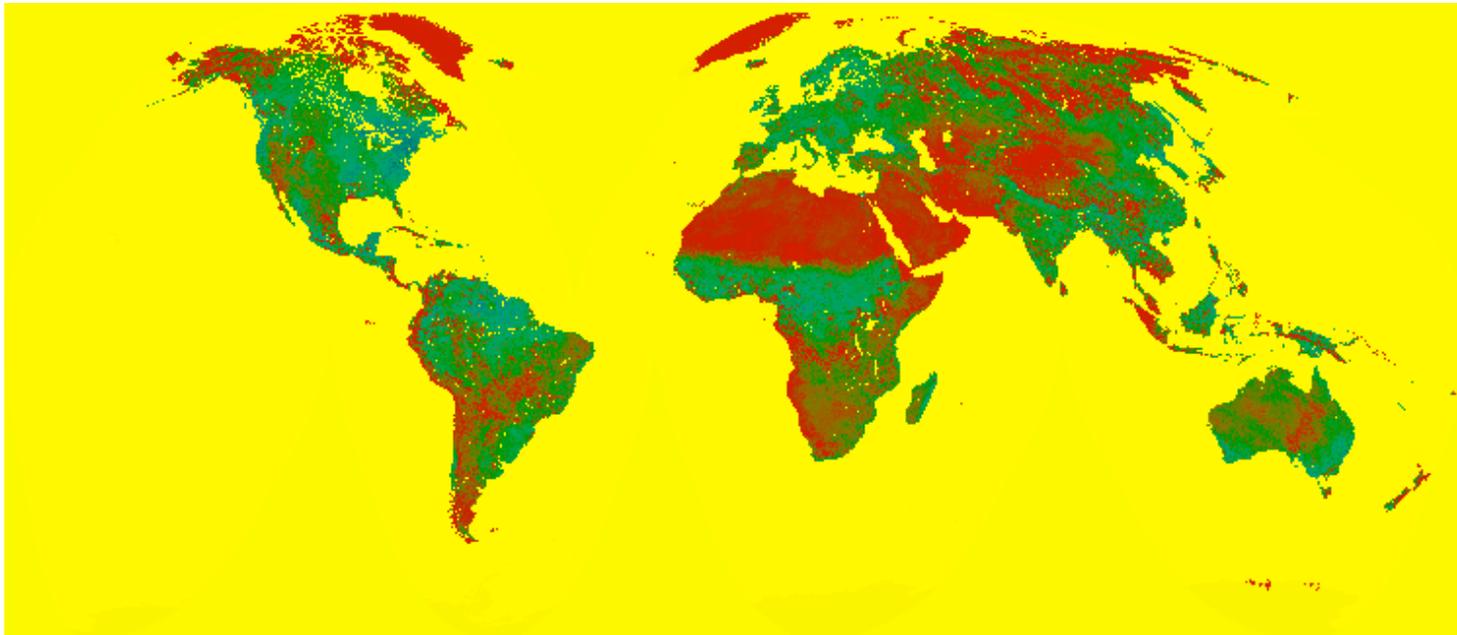


Daily NDVI ("VegMap") Product.

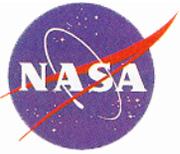


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At Launch Products (Continued)



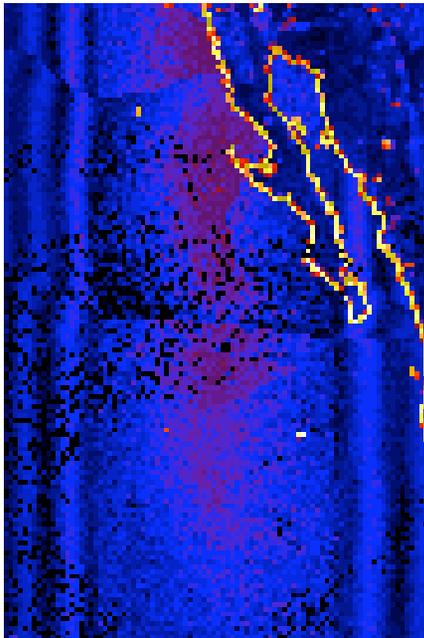
Multi-Day NDVI ("VegMap10X") Product.



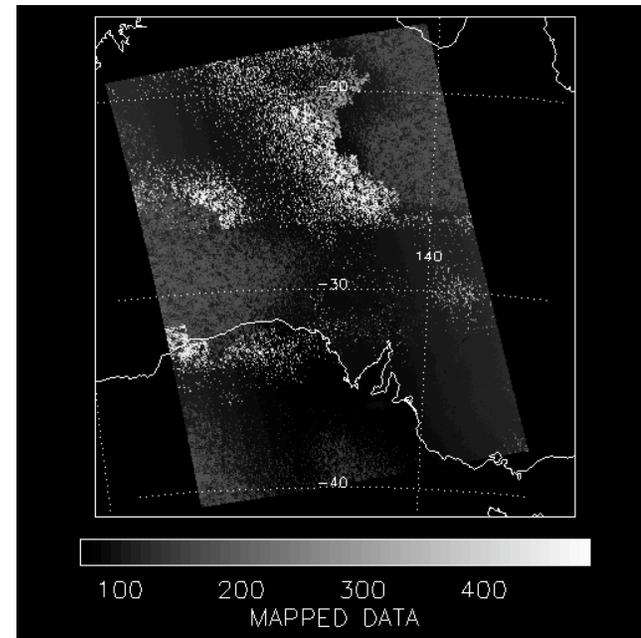
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At Launch Products (Continued)



Variability Index



Radiance maps (Channel 1 shown)



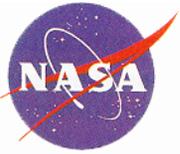
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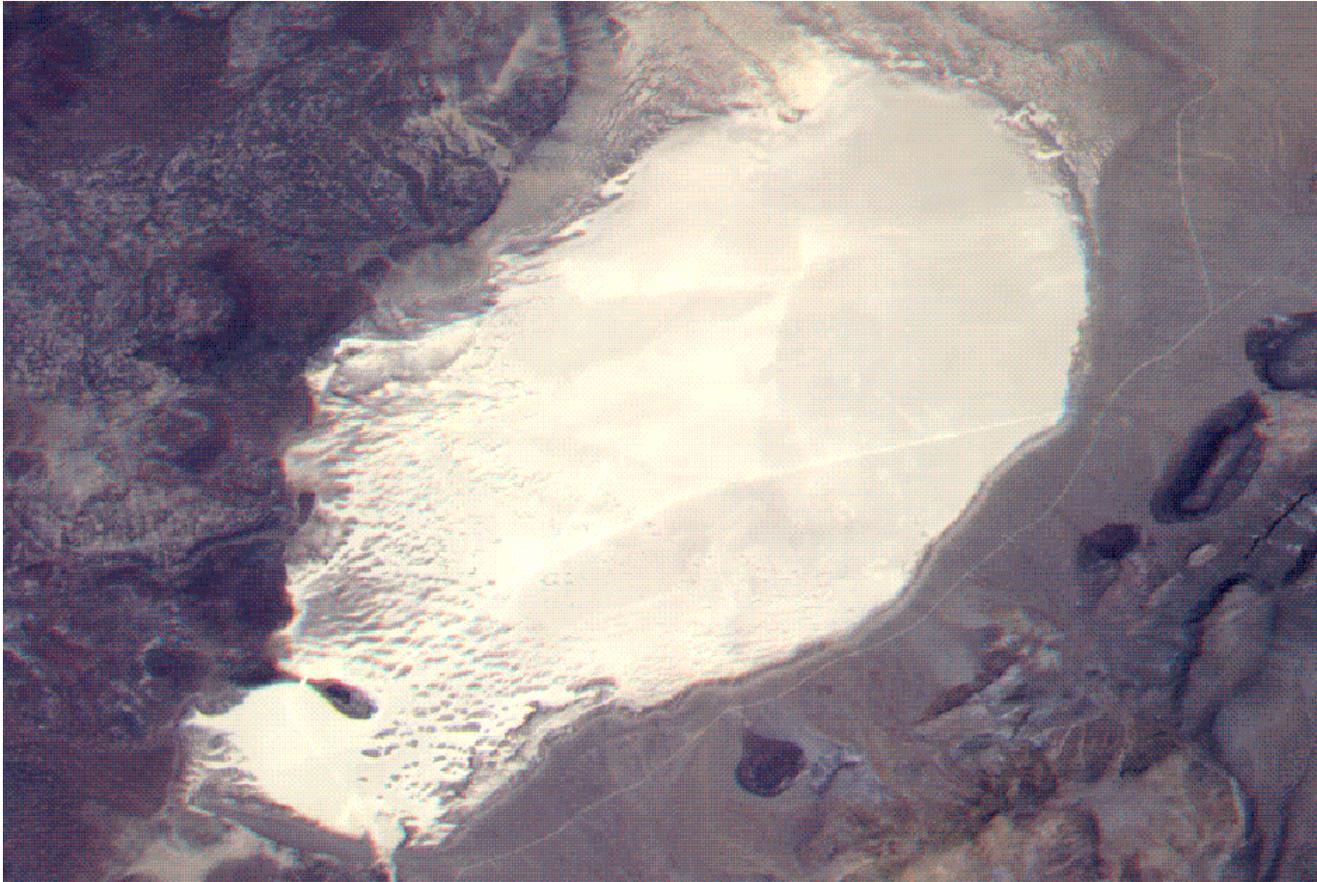
Radiance Calibration

At launch, radiances are not calibrated. First calibrated radiances will start around 1 month after first-light.

- Initial vicarious calibration can use model-predicted surface and cloud reflectivities.
- In addition, a MISR-Terra field campaign expects to be in Railroad Valley Playa, Nevada, from late May to Mid-July. They have agreed to support AIRS-Aqua overflights.



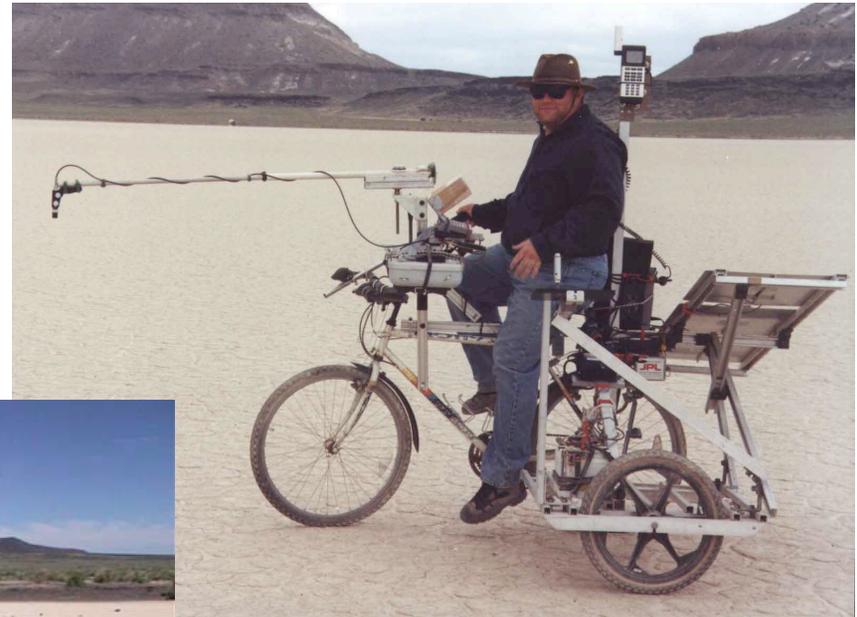
Vis/NIR Early Operations Radiance Calibration (Continued)

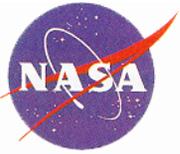


Lunar Lake Playa, Nevada, as seen by AirMISR



Vis/NIR Early Operations Radiance Calibration (Continued)





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Vis/NIR Early Operations



Initial Co-Registration/Geolocation

Co-registration of the 4 Vis channels and rough Vis to IR coregistration approximately 1 month after first light.

- Co-registration initially done “by hand”, using Vendaval tools allowing images to be overlaid and translated with respect to each other.
- Absolute geolocation information from MISR data.
- Expect accuracy ~ 0.5 pixel (1 km) among Vis channels.



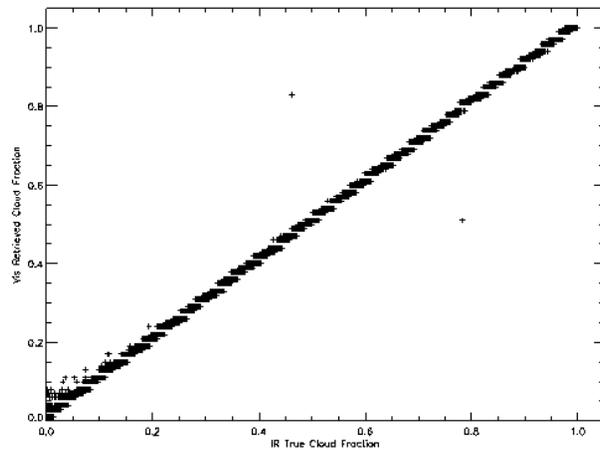
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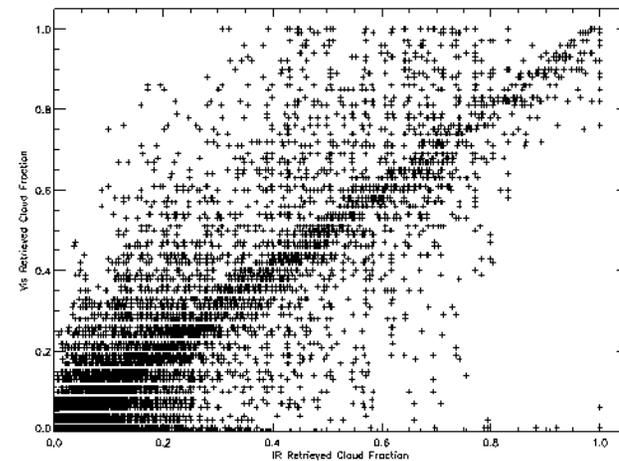
Early Cloud Detection

Cloud detection over ocean expected to be working two months after first light.

- Detailed presentation given by UCSB at last science team meeting.



True vs. Vis retrieved cloud fraction.



Vis vs. IR retrieved cloud fraction.



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Mid-Term Products

Improved vicarious calibration, cloud detection over land, and improved co-registration ~4 months after first light.

- Additional vicarious calibration activities.
- Better radiances and development of surface NDVI maps improve cloud detection.
- Minimization of image differences used to co-register/geolocate images to a fraction of a pixel.