

MODIS Near-IR Water Vapor Algorithm and Cirrus Reflectance Algorithm Status

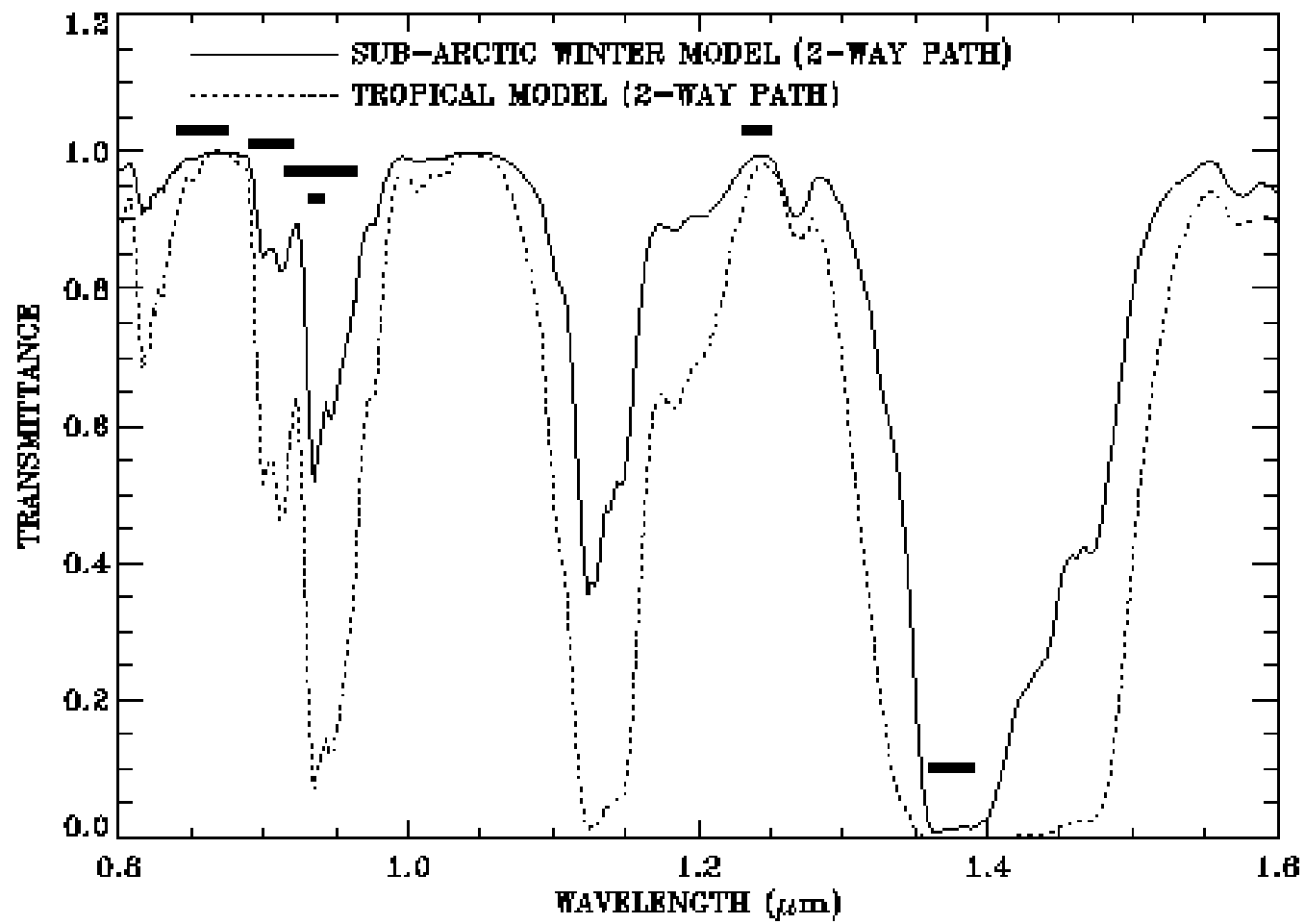
**Bo-Cai Gao¹, Yong Han², Po Li², Ping Yang³,
Yoram J. Kaufman⁴, and Warren J. Wiscombe⁴**

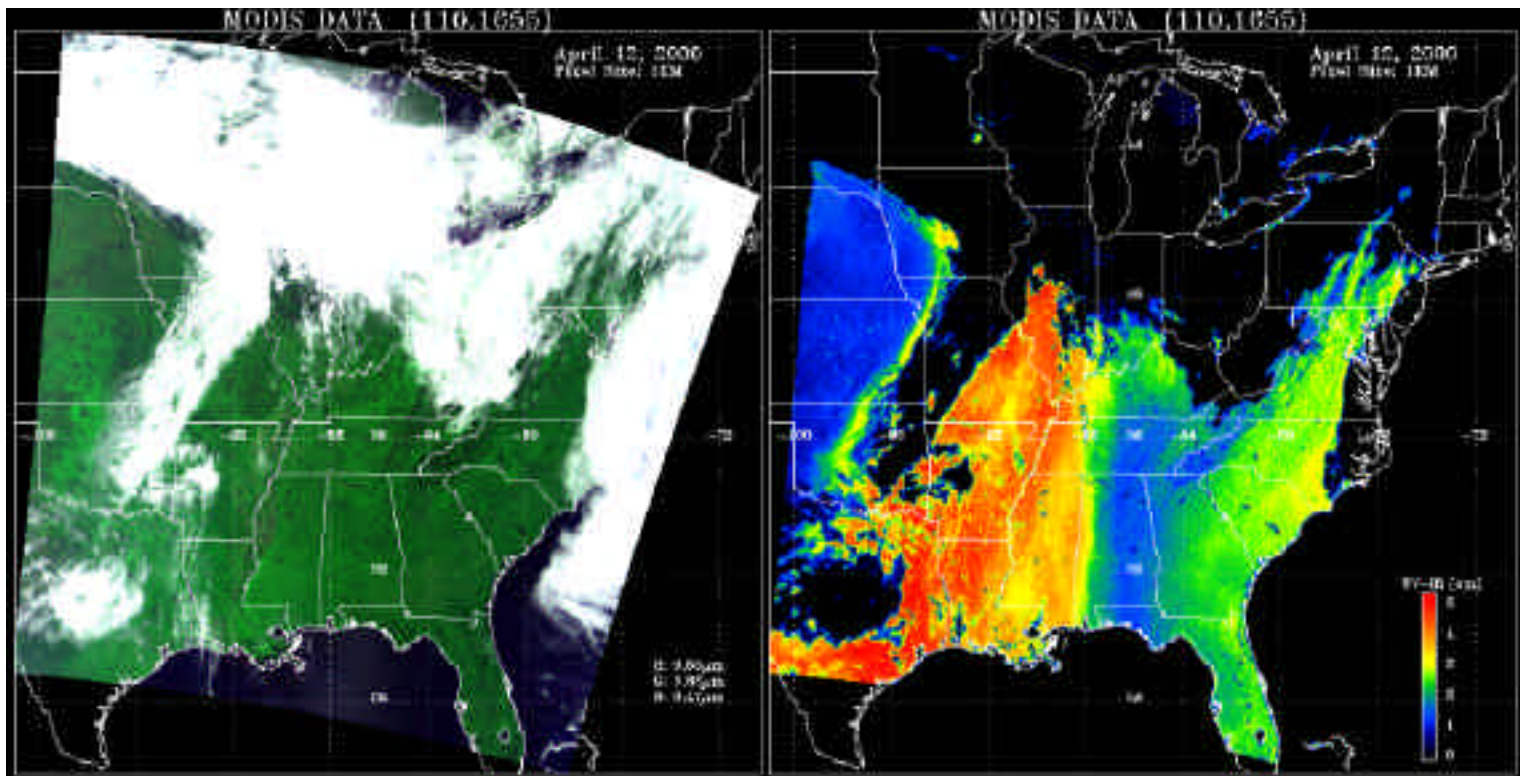
¹Remote Sensing Division, Code 7212, Naval Research Laboratory, Washington, DC

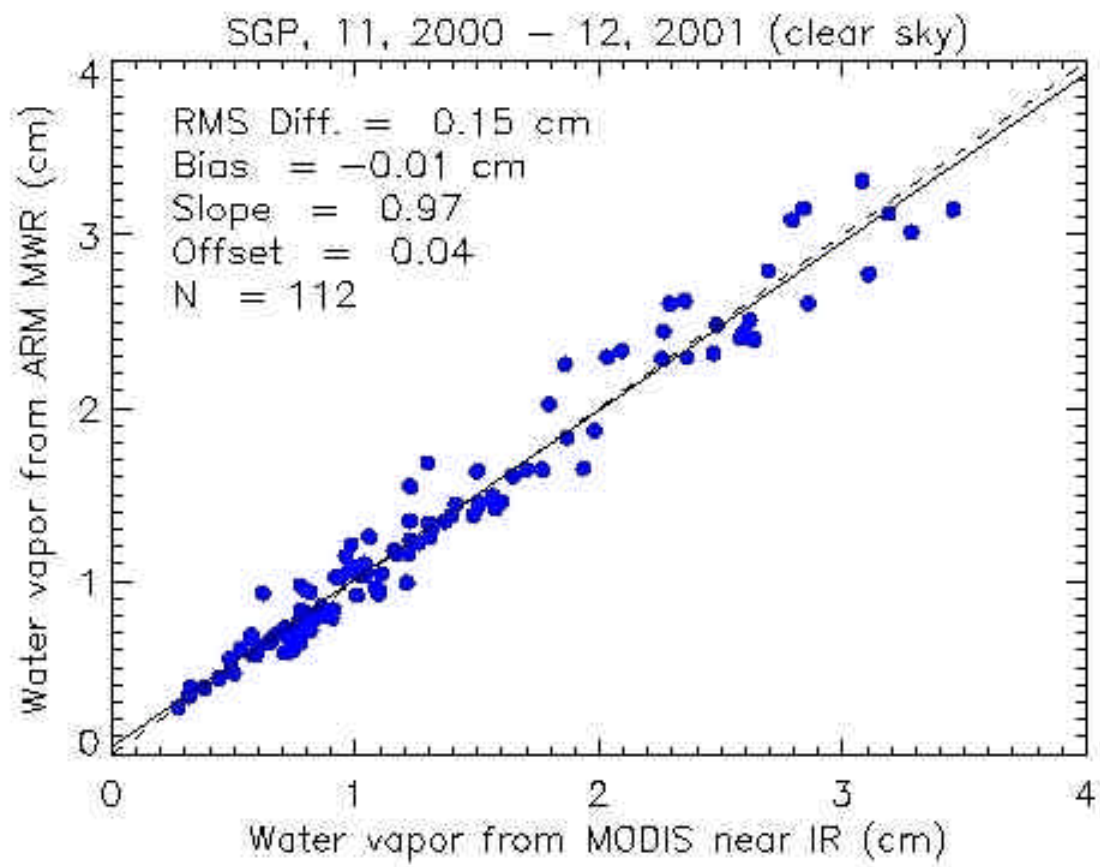
²SSAI and Code 913, NASA Goddard Space Flight Center, Greenbelt, MD

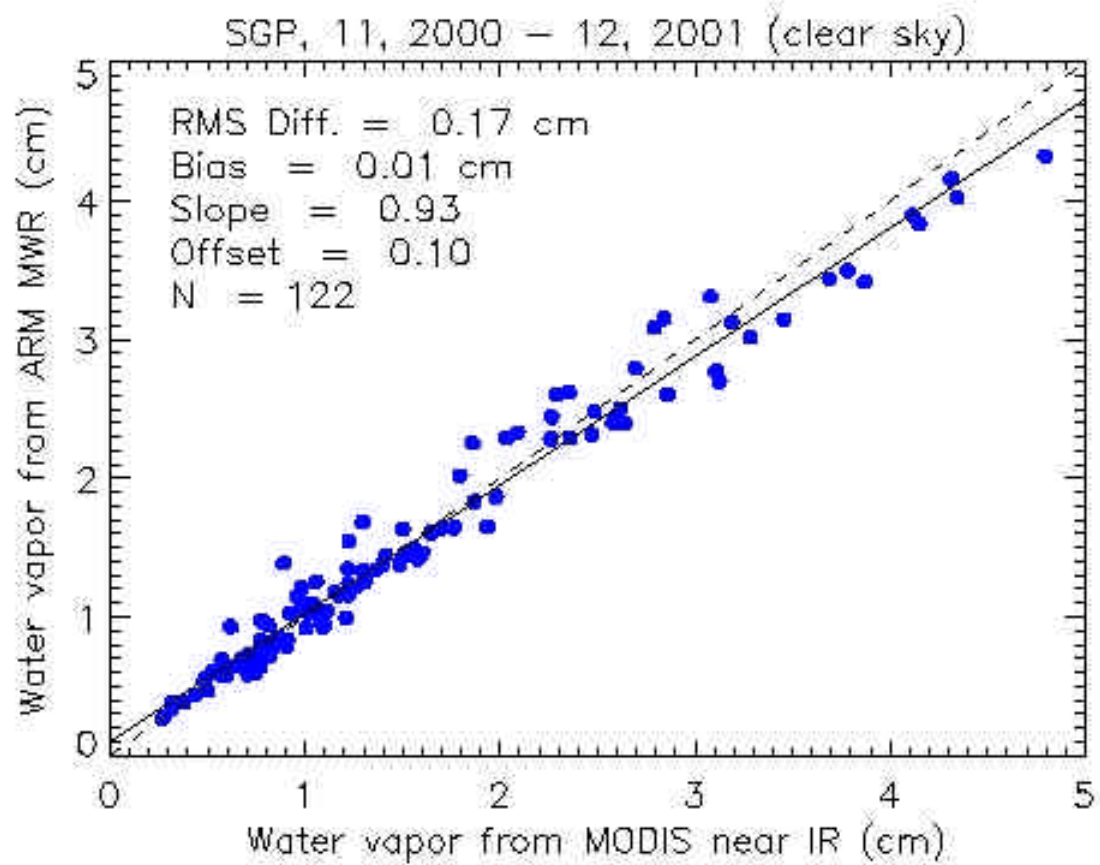
³Department of Atmospheric Sciences, Texas A&M University, College Station, TX

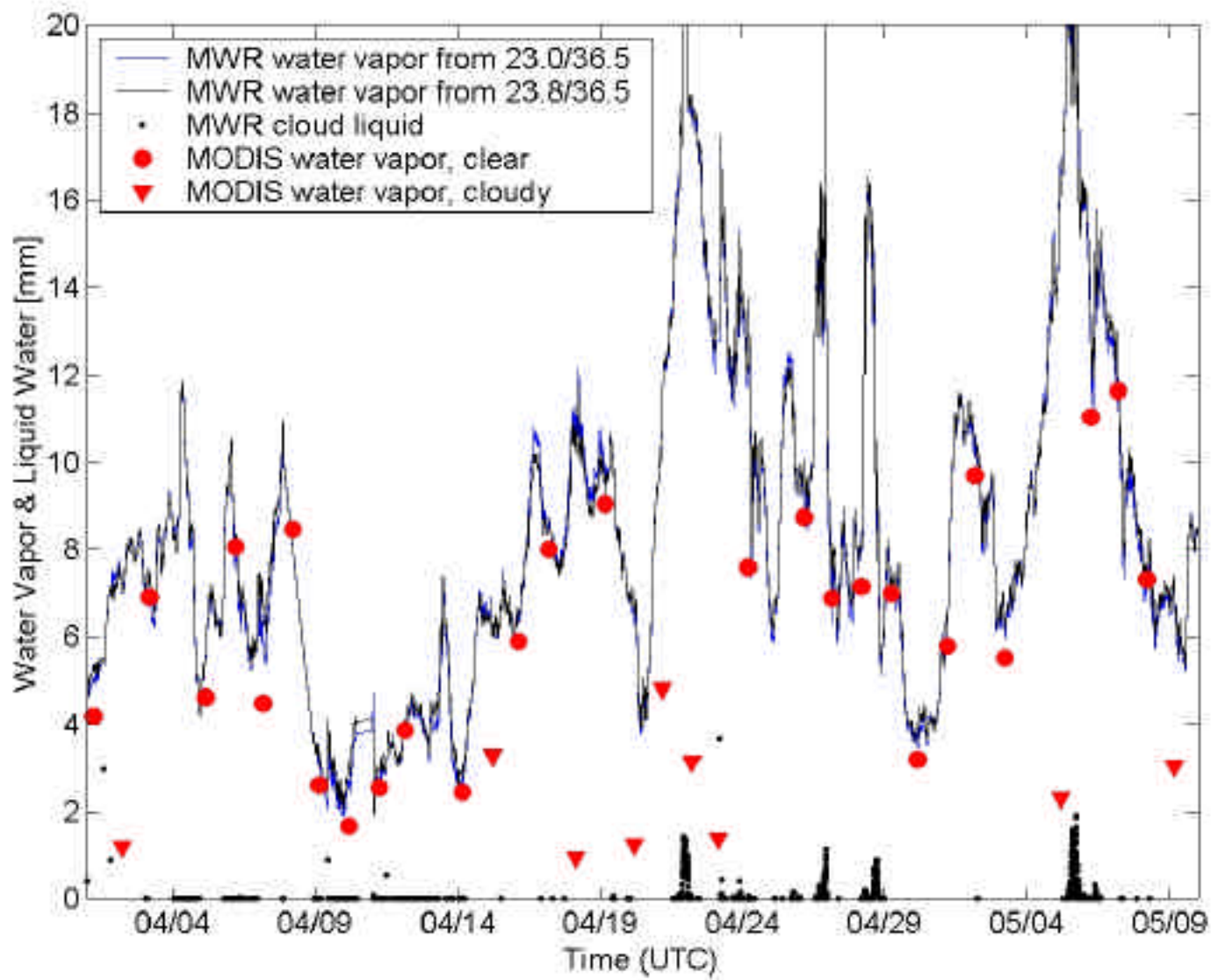
⁴Climate & Radiation Branch, NASA Goddard Space Flight Center, Greenbelt, MD





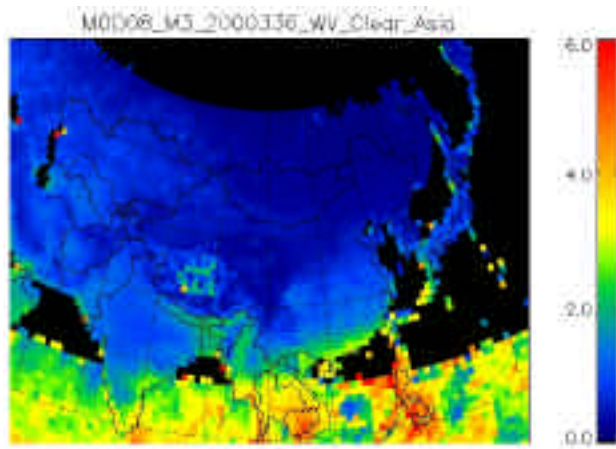




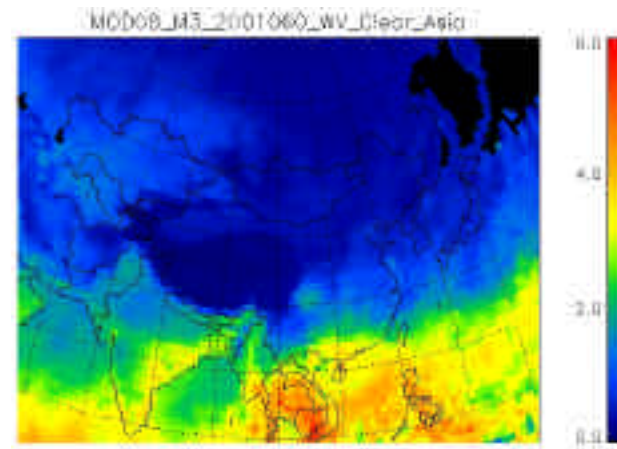


Water Vapor (Asia, near-IR)

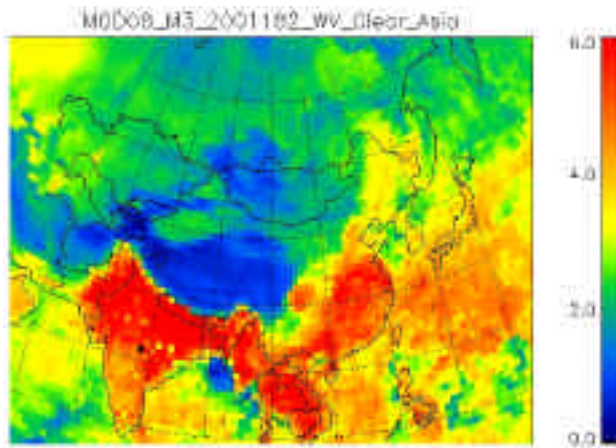
December, 2000



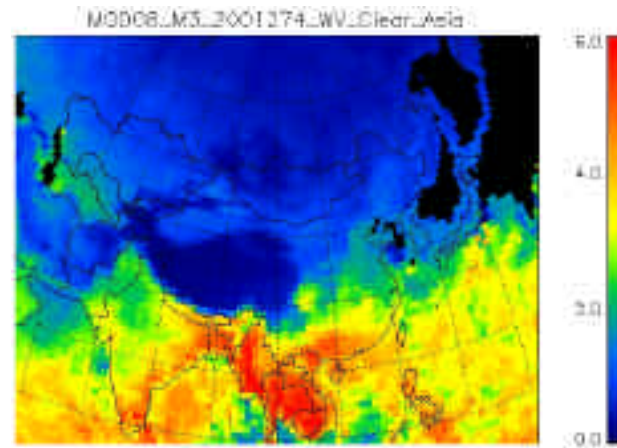
March, 2001



July, 2001

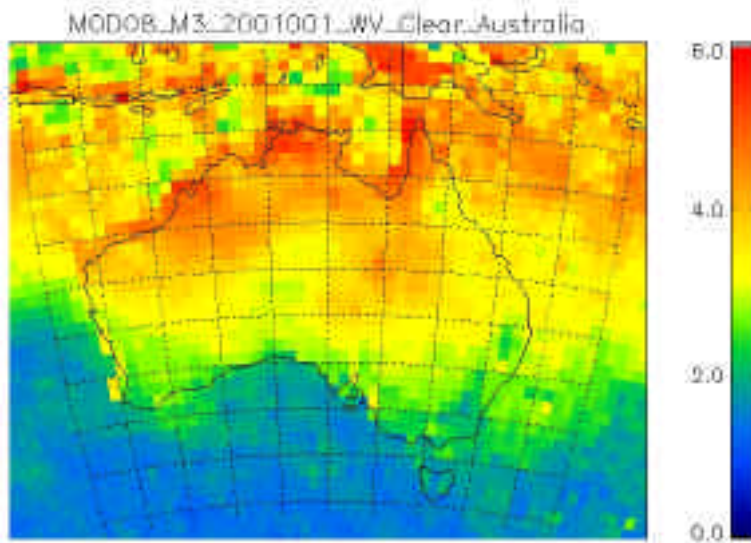


October, 2001

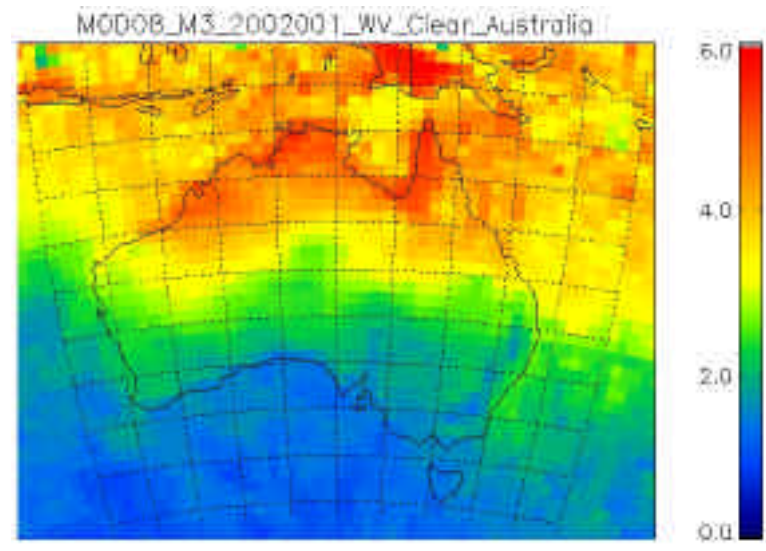


Water Vapor (Australia)

January, 2001

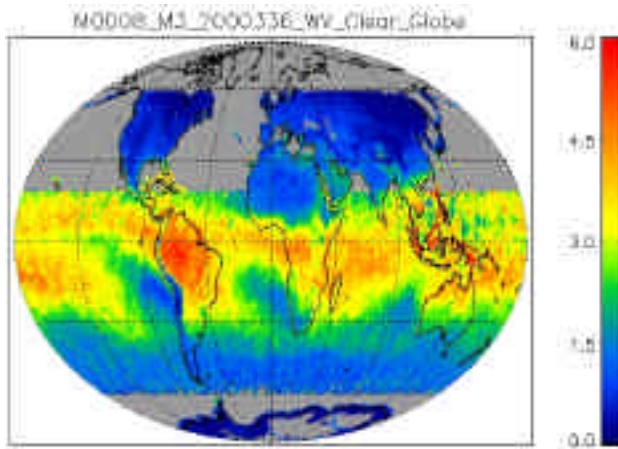


January, 2002

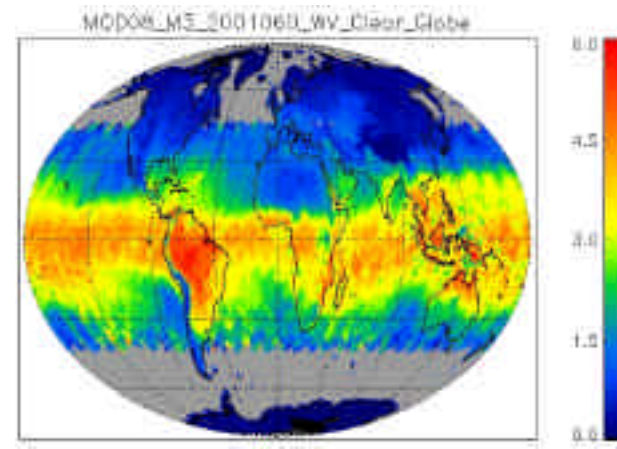


Water Vapor (Global, near-IR)

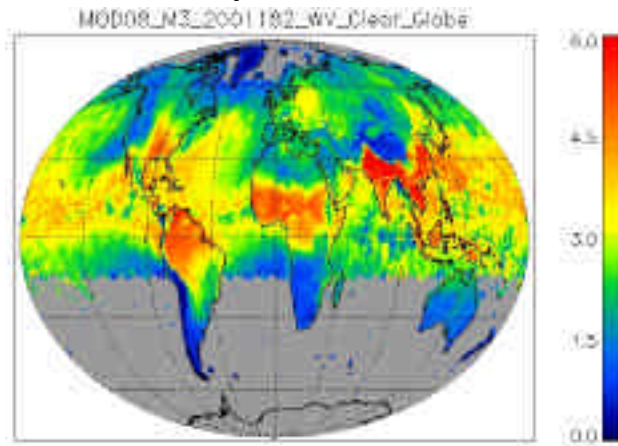
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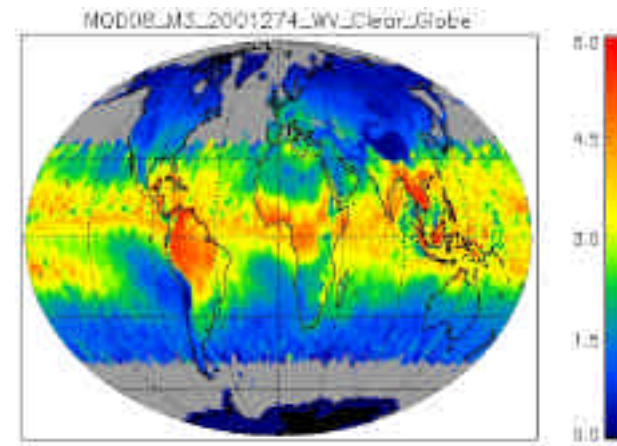
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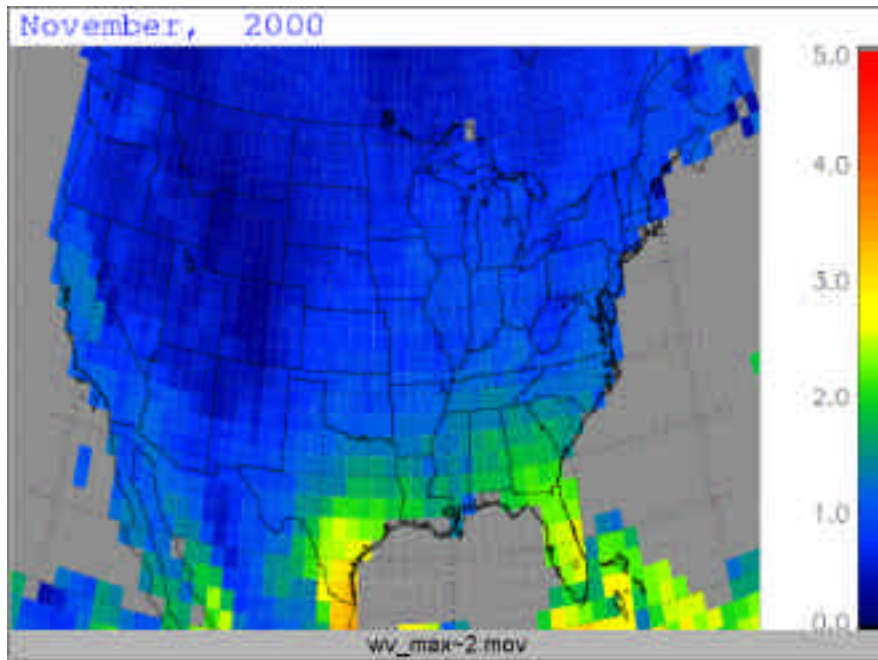


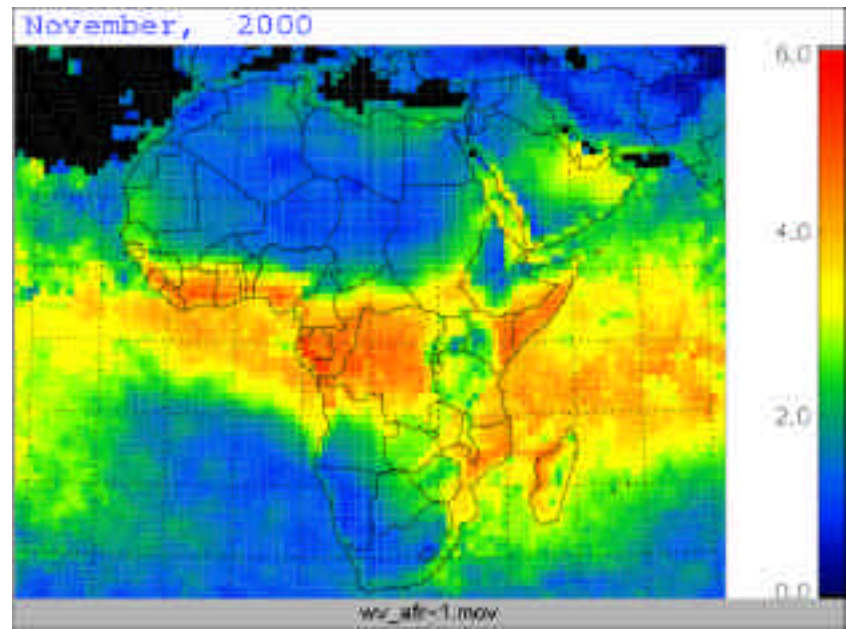
July, 2001

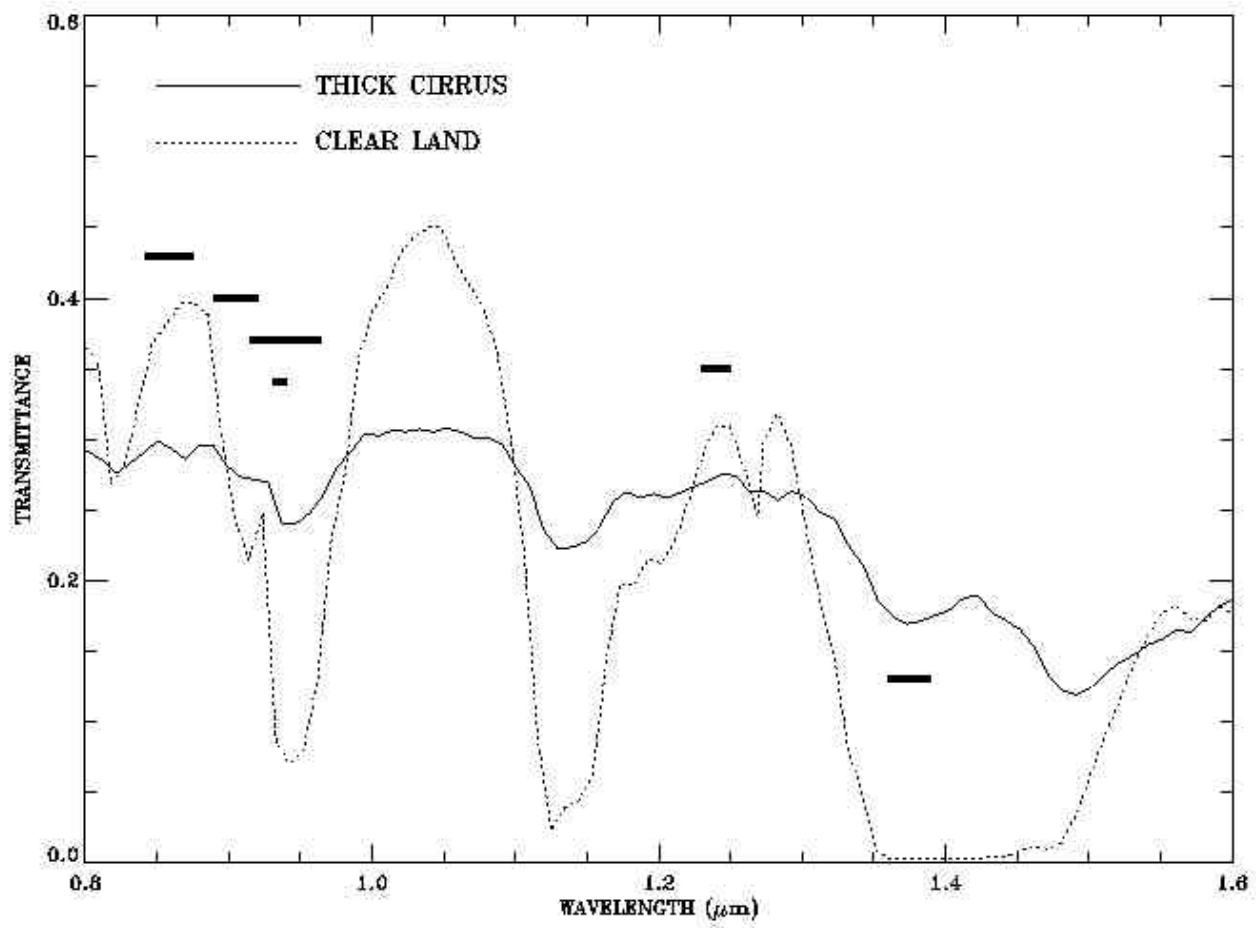


October, 2001





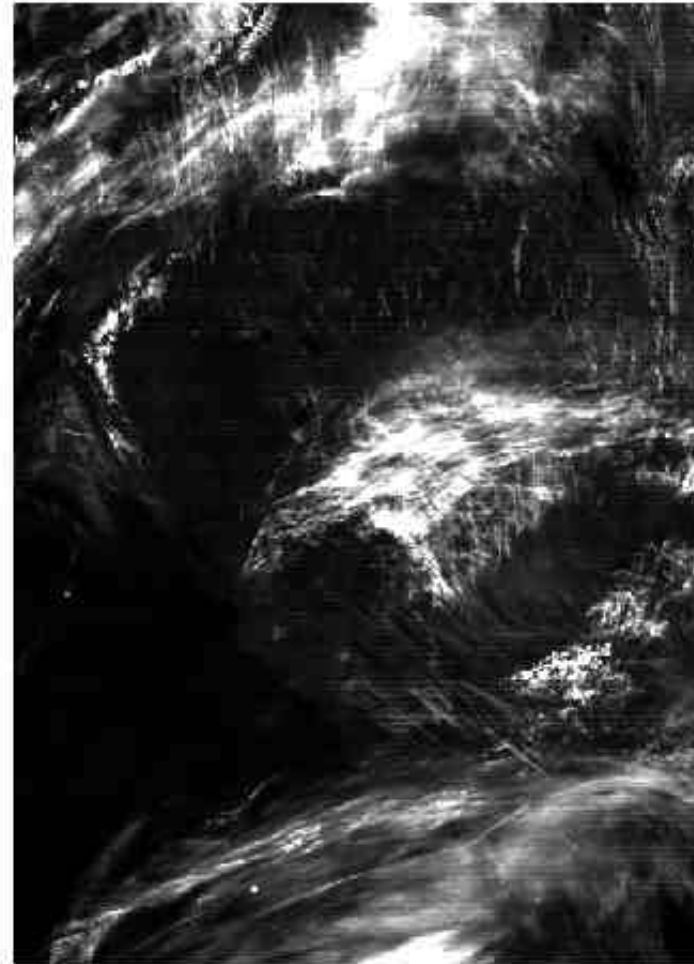
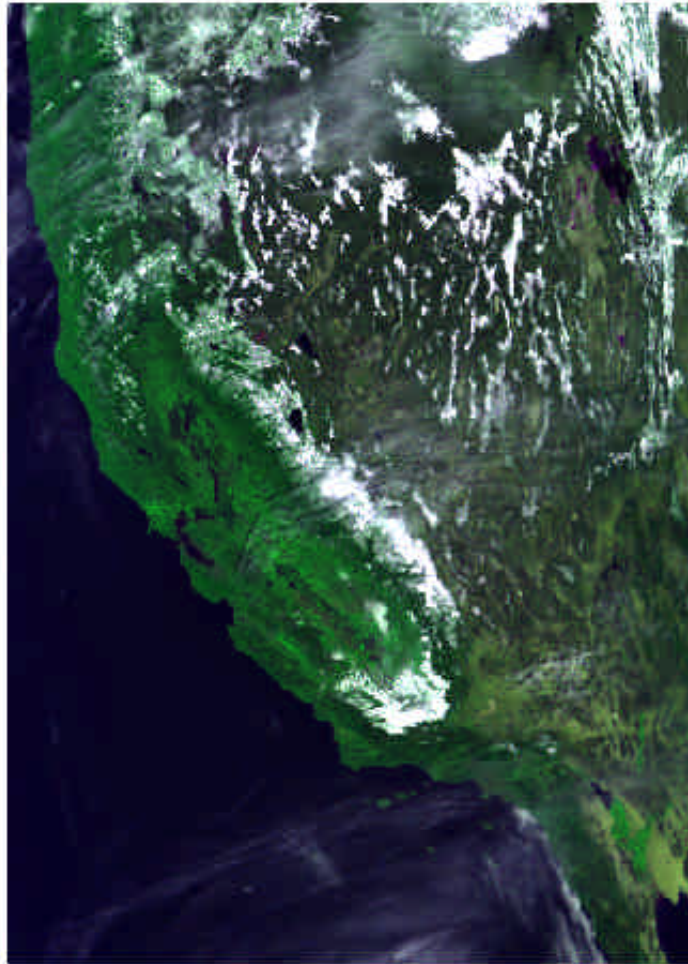




MODIS DATA (072.1910)

R:0.66,G:0.86,B:0.46 μm

1.38 μm IMAGE (Refl. 0 - 0.1)



MODIS Data Over Arctic Region (04/19/2000)

(A)

0.55 μm Image



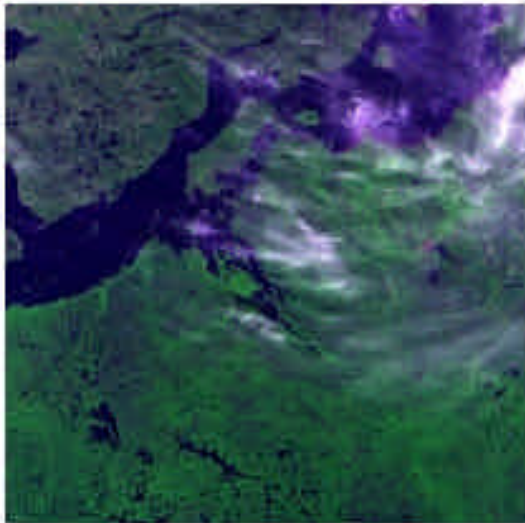
(B)

1.375 μm Image

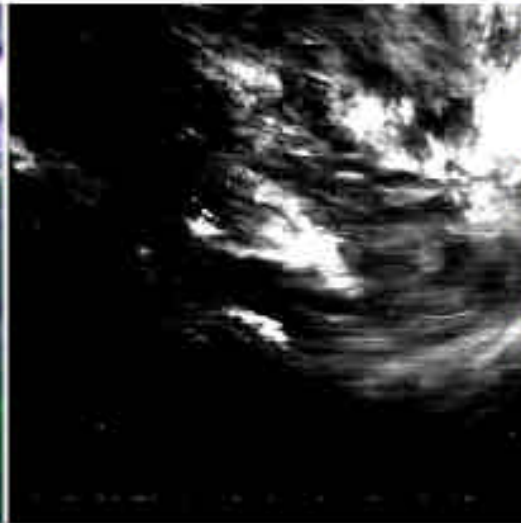


An Example of Cirrus Path Radiance Removal (MODIS Data Over Canada, 9/2/2000)

Uncorrected Image

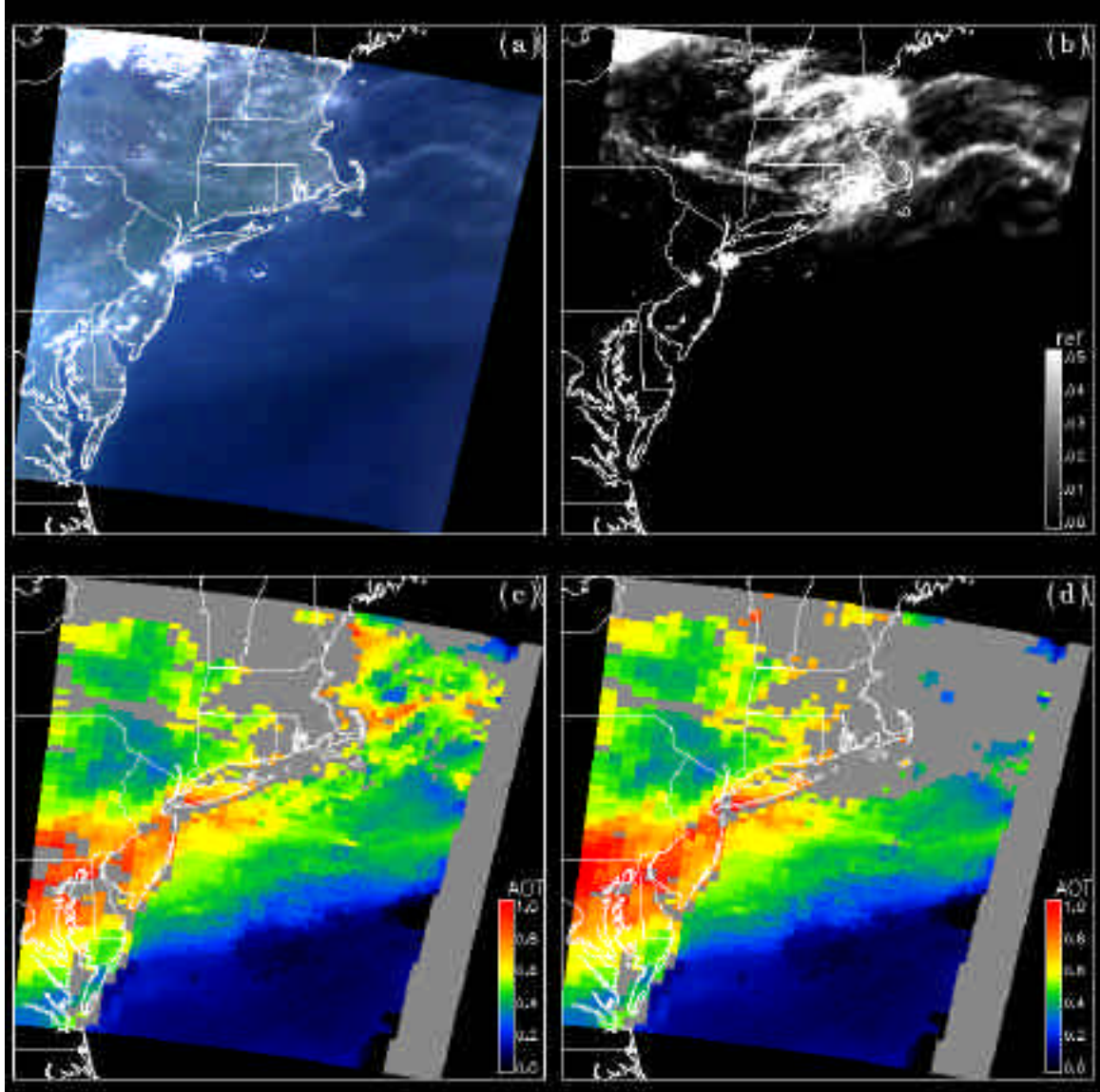


Cirrus Image (1.38 μm)



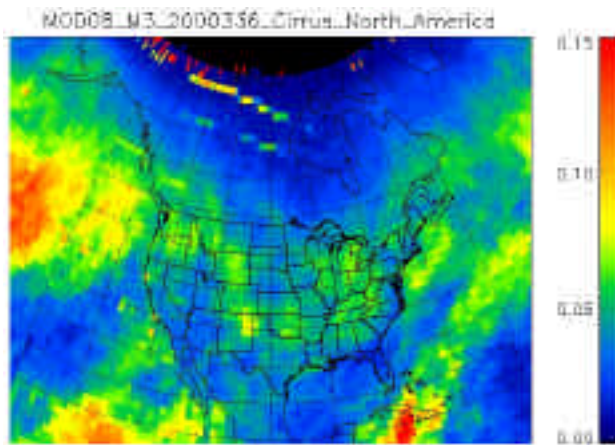
Cirrus Corrected Image



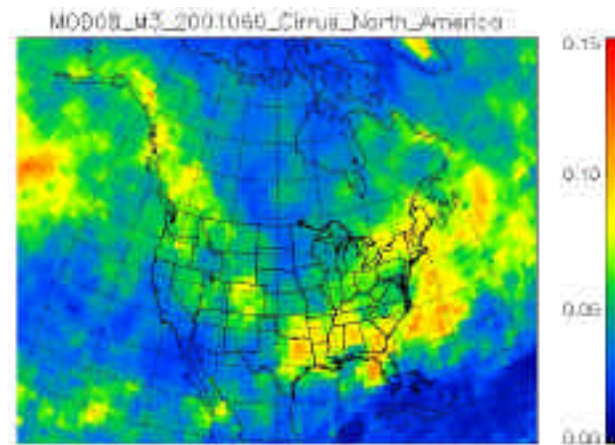


High Cloud (North America)

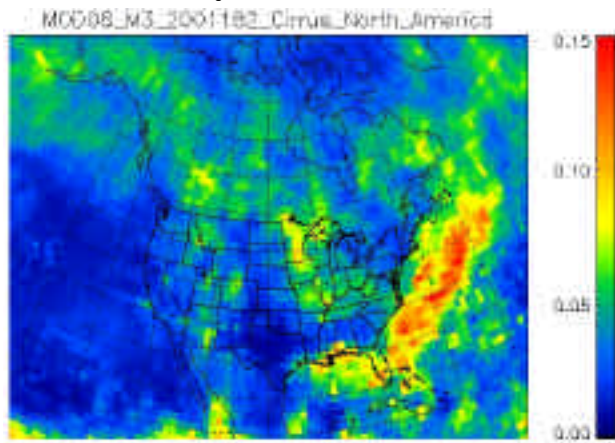
December, 2000



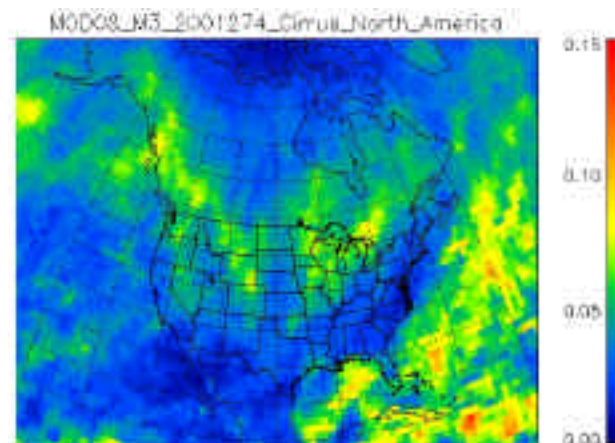
March, 2001



July, 2001

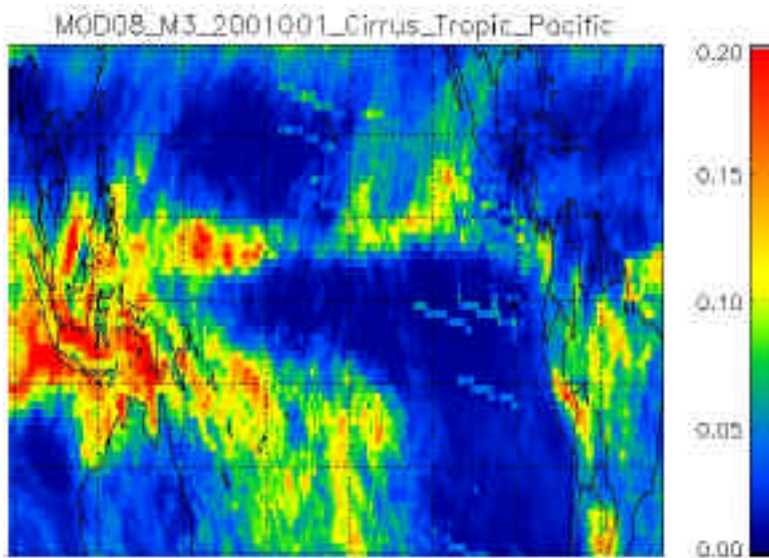


October, 2001

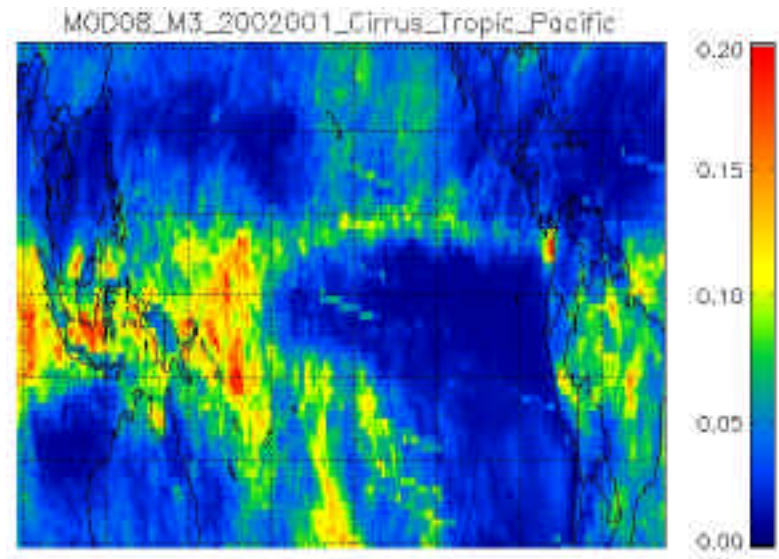


High Cloud (Tropic Pacific)

January, 2001

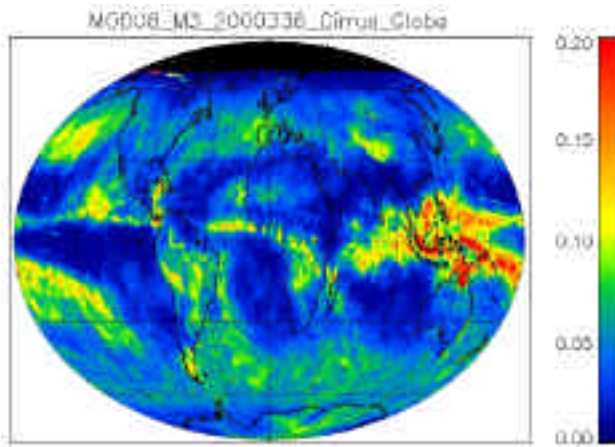


January, 2002

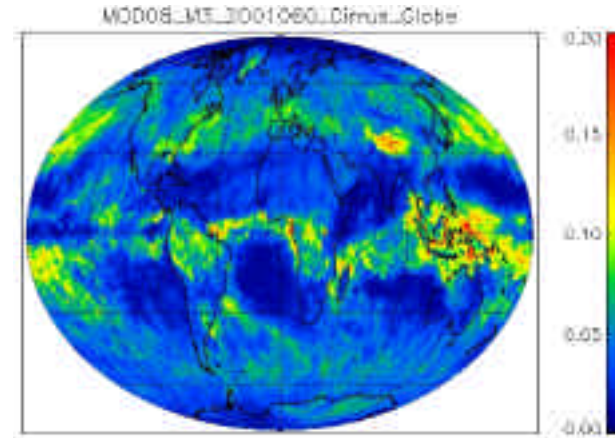


High Cloud (Global)

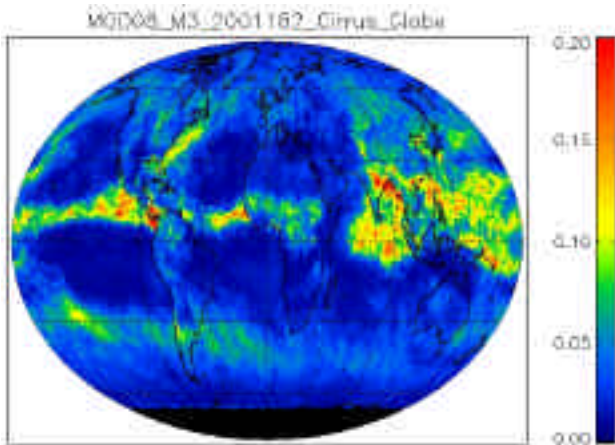
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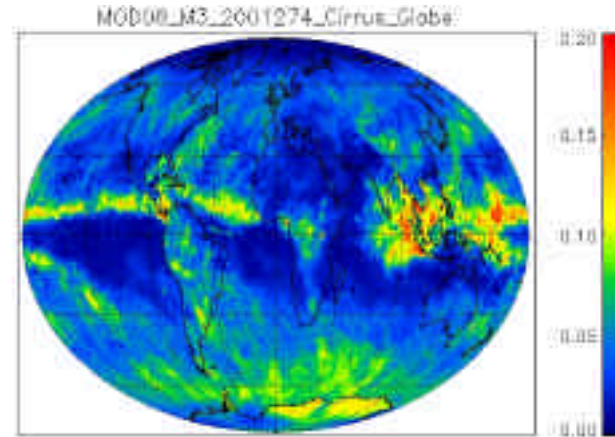
March, 2001

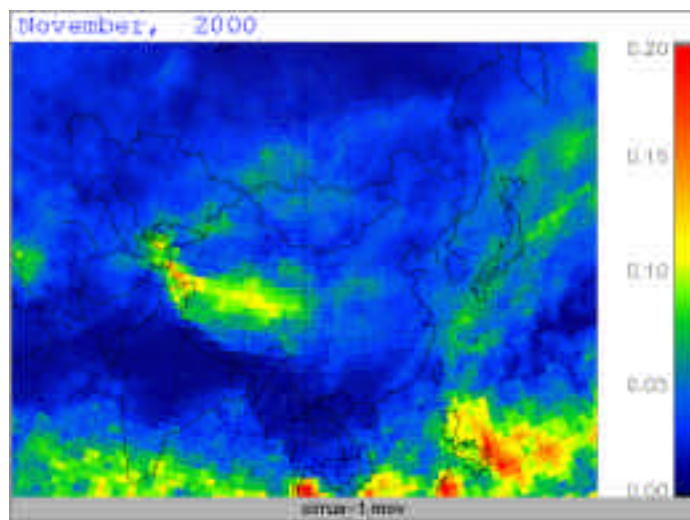


July, 2001



October, 2001





Summary

- Global water vapor and cirrus reflectance products have been derived from MODIS channels in the near-IR spectral region.
- We expect that these data products will have important applications in meteorology, hydrology, and climatology.