# Create the First 3D Global Cloud Atlas

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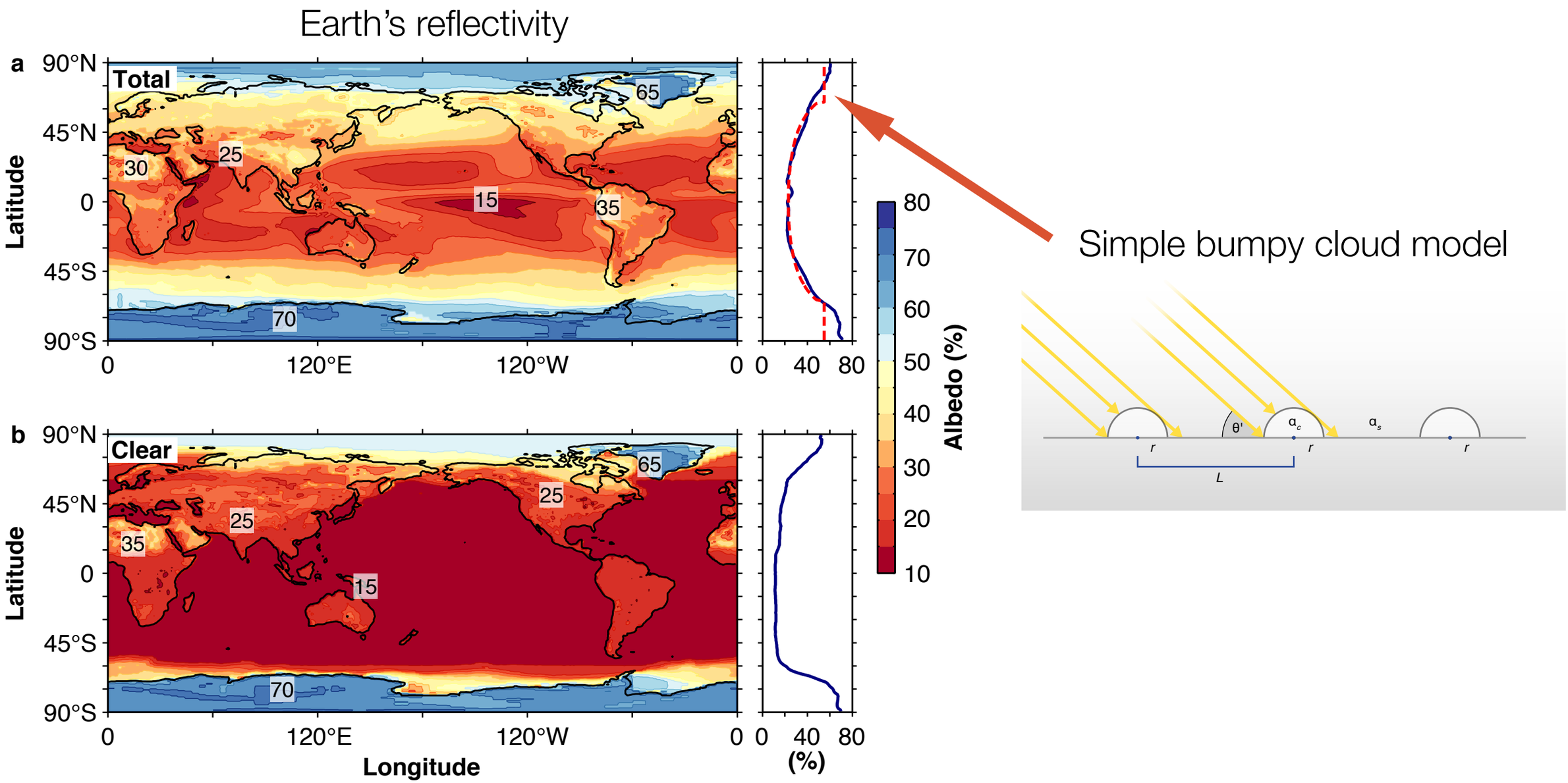
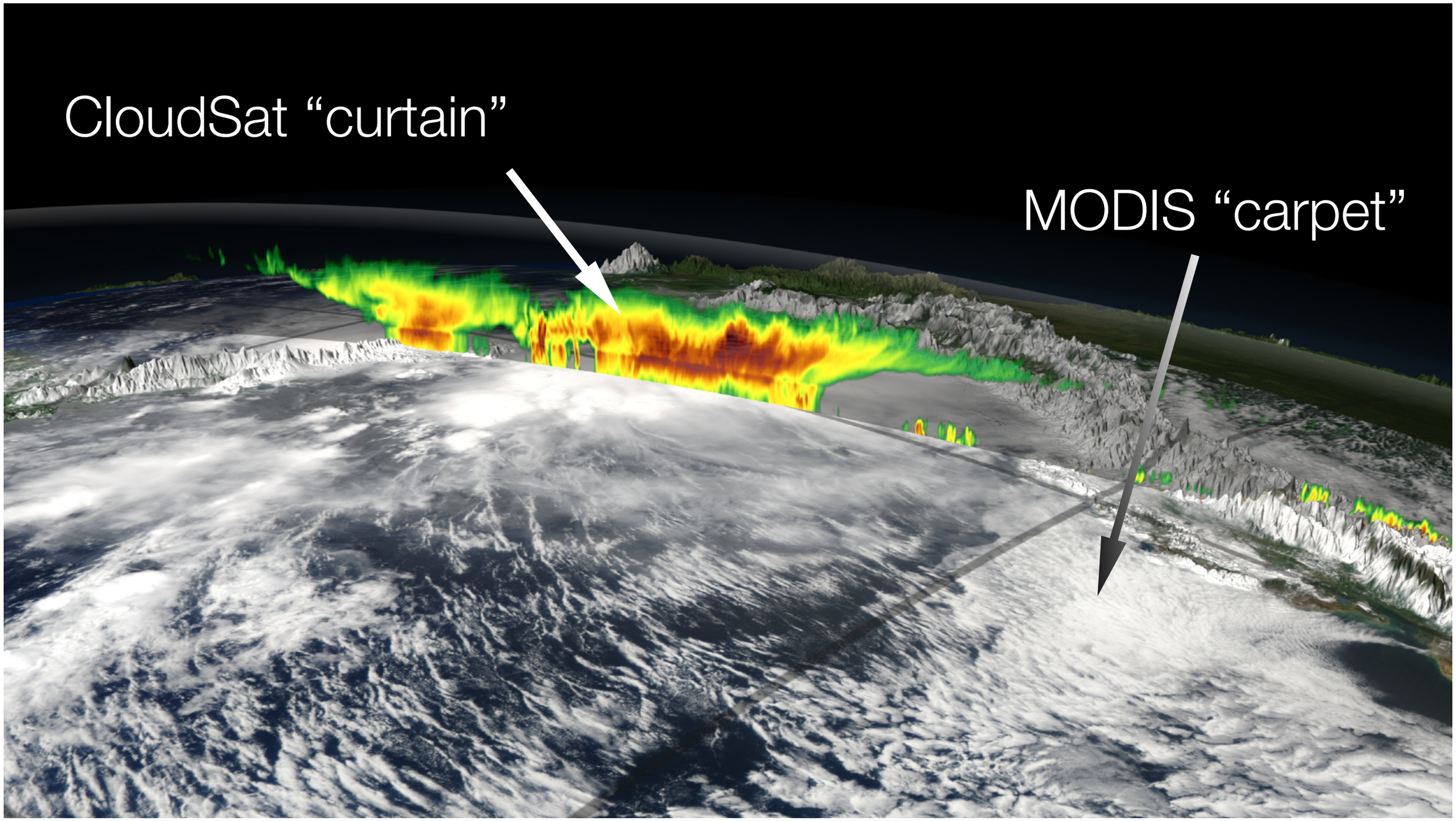
# 3D structure of clouds likely is important for reflection of incoming sunlight back to space




*But climate models represent clouds as pancakes*

# Goal of this project is to reconstruct 3D cloud structures globally by correlating 2D datasets



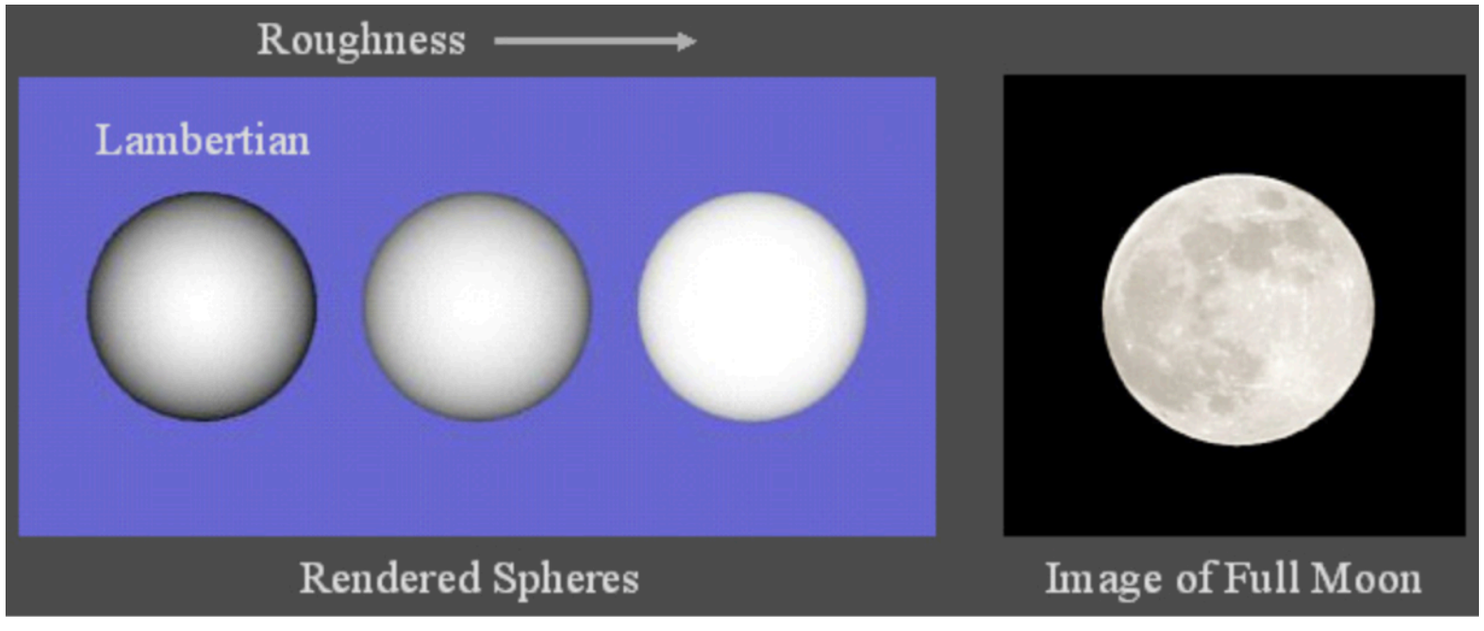

NASA GSFC Visualization

# From the 3D cloud atlas, we can calculate optical effects of 3D structure, and develop models for it

Random texture models from computer graphics can guide cloud ‘texture’ models, for example, the classical Oren-Nayar reflectance model (1995)

Vase


Sphere




http://www.cs.columbia.edu/CAVE//projects/oren/images/spheres.jpg