

# Global Land Ice Measurements from Space (GLIMS): Documenting the Demise of Earth's Glaciers Using ASTER

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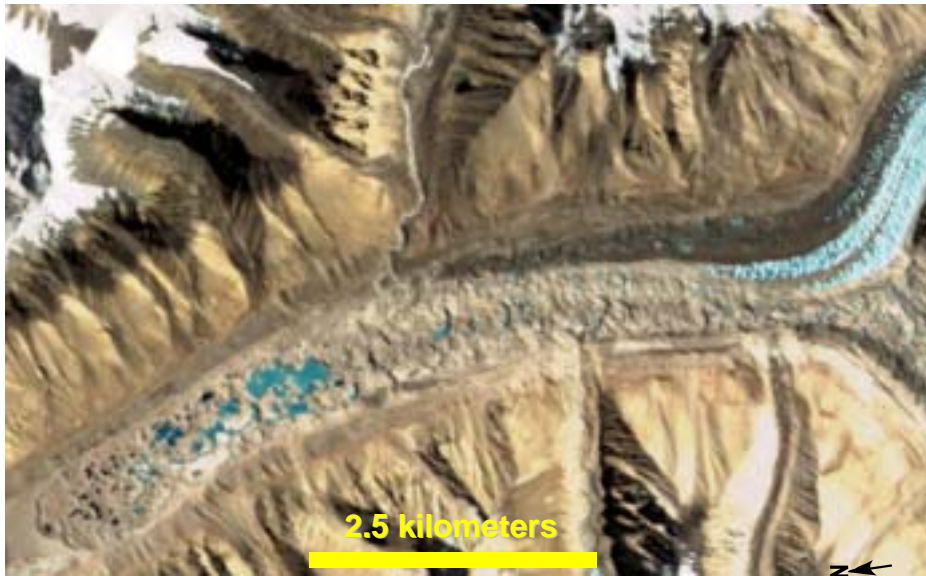
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GLIMS

See [www.GLIMS.org](http://www.GLIMS.org) for more info

**Partners:** NASA, USGS, NSIDC, EDC and more than 50 collaborators in 23 countries



The stagnating terminus region of Rongpu glacier in the Tibetan Himalaya, a valley glacier flowing from the NW flank of Mt. Everest. Glacial lakes have been rapidly forming on the surfaces of debris-covered glaciers worldwide over the last decade.

Image above is a portion of a geometrically-corrected and radiance-calibrated ASTER Level 1B VNIR false-color image (321RGB), acquired on October 30, 2000

## First Results:

- Year 2000 ASTER confirmation of shrinkage in many mountain glaciers
- Coordination of multinational program to begin monitoring the status of all glaciers
- Detection of subtle differences among glacial lakes (both temperature and sediment load)
- Demonstration of detailed glacier mapping algorithms as first step toward partial automation

## Anticipated Future Results:

- Global interactive geographic info system (GIS) database of all existing glaciers (headed by NSIDC)
- Long-term annual assessment and monitoring of glacier hazards

## Project Background:

GLIMS (Global Land Ice Measurements from Space) is a global consortium whose purpose is to determine the extent of the world's glaciers and the rate at which they are changing. GLIMS has requested more than 2000 ASTER (Advanced Spaceborne Thermal Emission and reflection Radiometer) images over the Earth's glaciers and ice sheets where the instrument gain is set to compliment the requested latitude and time of year. We've recently received hundreds of cloud-free, stereo images with 15-meter spatial resolution in visible-near infrared (VNIR) that can resolve ogives, crevasses, and small bodies of water on the surface of glaciers.