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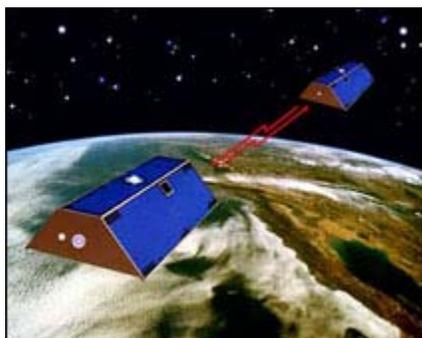
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Twin probes will map Earth's gravity

March 16, 2002 Posted: 6:08 AM EST (1108 GMT)

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(NASA)

By Kate Tobin
CNN Sci-Tech

(CNN) -- NASA and the German Space Agency are preparing to launch two satellites into orbit on Sunday on a five-year mission to study Earth's gravity field.

The Gravity Recovery and Climate Experiment, or GRACE, aims to map variations in the Earth's gravity field as it changes over time in response to shifts in sea levels, the ebb and flow of glaciers, the seasonal melting and freezing of ice sheets, and other such fluctuations.

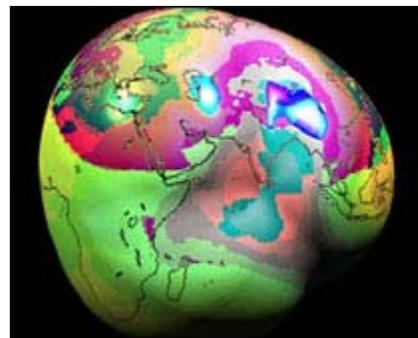
Twin probes will use a microwave beam, depicted by red lines, to track each other.

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The twin satellites -- which had been scheduled to launch on Saturday but were delayed by bad weather -- will fly in tandem about 137 miles (220 km) apart, circling the Earth 16 times a day. Subtle variations in Earth's gravity field will cause tiny shifts in the distance between the two as they orbit.

The satellites' measurements of the distance between the two will be combined with data from the Global Positioning System, allowing scientists on the ground to assemble a composite map of the gravity field.

NASA said that map will help researchers create precise digital global terrain models for use by geologists, oceanographers, hydrologists and glacial scientists.



(NASA)

Exaggerated map of Earth's "bumpy" gravity field

The maps will also be useful to scientists who study global climate change.

The satellites will be launched together aboard a single rocket from Plesetsk, Russia.

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