

## Construction of water reservoirs alters Earth's spin

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**GREENBELT, Md.** -- The natural rotation of the Earth has been altered slightly by some 10 trillion tons of water stored in reservoirs over the past 40 years, according to a study at NASA's Goddard Space Flight Center.

The reservoir storage has shifted water from the oceans to the continents, tending to reduce mass around the equator while increasing mass in the northern part of the globe, NASA researchers observed. The overall effect has been to quicken the Earth's spin by placing water close to the axis of rotation, much as a skater coils arms and legs into a tight spin, said

Benjamin Fong Chao, a geophysicist at the Goddard Flight Center. Changes in the Earth's spin are measured in terms of length of days. A faster spin shortens the length of daylight. "Due to the reservoir effect," said Chao, "the day 40 years ago was longer than today by about 8 millionths of a second." More significant, he said, is the fact that the sporadic spacing of water reservoirs has changed the Earth's axis. Since 1940, water impoundment has pushed the axis of rotation about 60 centimeters away from the North Pole toward western Canada, he said.

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