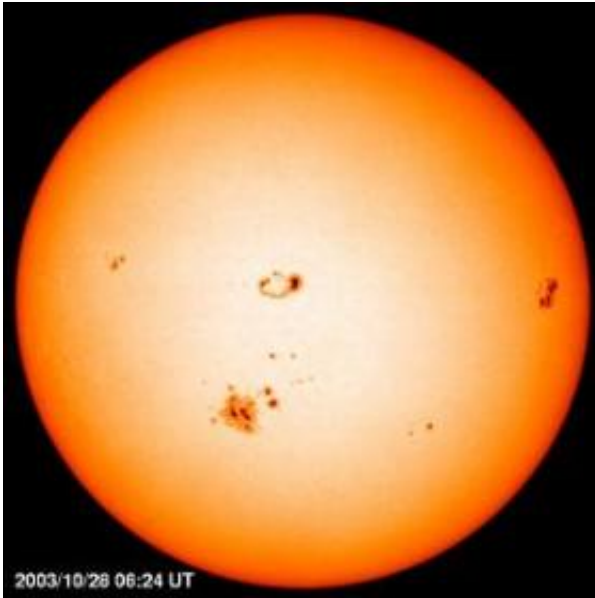


Sun's constant size surprises scientists

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The sun's disk showing active region 10486, which became the largest sunspot seen by SOHO, the satellite Dr. Kuhn and collaborators used to monitor the sun's diameter. Courtesy of SOHO/MDI consortium.

(PhysOrg.com) -- A group of astronomers led by the University of Hawaii's Dr. Jeff Kuhn has found that in recent times the sun's size has been remarkably constant. Its diameter has changed by less than one part in a million over the last 12 years.

“This constancy is baffling, given the violence of the changes we see every day on the sun's surface and the fluctuations that take place over an 11-year [solar cycle](#),” commented Kuhn, the associate director of the

University of Hawaii Institute for Astronomy (IfA) who is responsible for Haleakala Observatories.

Kuhn's work is part of worldwide efforts to understand the influence of the sun on Earth's climate. “We can't predict the climate on Earth until we understand these changes on the sun,” he said.

Kuhn and his colleagues used NASA's long-lived Solar and Heliospheric Observatory (SOHO) [satellite](#) to monitor the sun's diameter, and they will soon repeat the experiment with much greater accuracy using NASA's new Solar Dynamics Observatory (SDO), which was launched on February 11.

According to Kuhn, the ultimate solution to this puzzle will depend on probing the smallest observable scales of the solar surface using the Advanced Technology Solar Telescope (ATST), which is scheduled for completion on Haleakala in 2017.

“To be able to predict what the sun will do, we need both the big picture and the details,” said Kuhn. “Just as powerful hurricanes on Earth start as a gentle breeze, the analogs of terrestrial storms on the [sun](#) start as small kinks in the sun's magnetic field.”

More information: Scientific article:
adsabs.harvard.edu/abs/2010IAUS..264...21E

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