

Juno spacecraft spots Jupiter's Great Red Spot

July 13 2017



This enhanced-color image of Jupiter's Great Red Spot was created by citizen scientist Jason Major using data from the JunoCam imager on NASA's Juno spacecraft. The image was taken on July 10, 2017 at 07:10 p.m. PDT (10:10 p.m. EDT), as the Juno spacecraft performed its 7th close flyby of Jupiter. At the time the image was taken, the spacecraft was about 8,648 miles (13,917 kilometers) from the tops of the clouds of the planet. Credits: NASA/JPL-

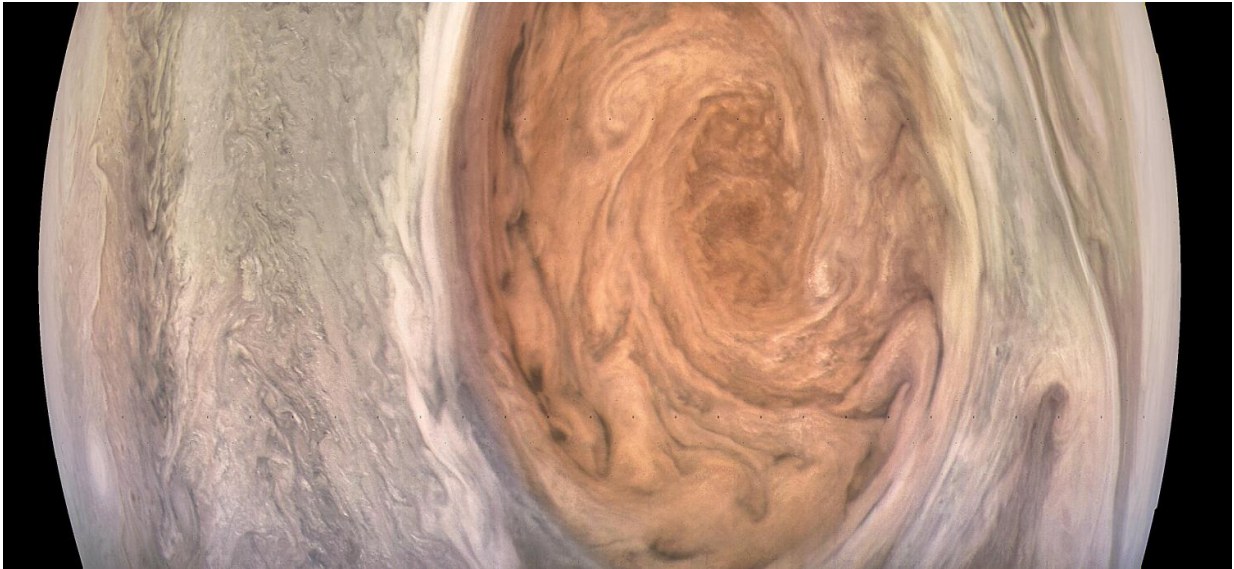
Caltech/SwRI/MSSS/Jason Major

Images of Jupiter's Great Red Spot reveal a tangle of dark, veinous clouds weaving their way through a massive crimson oval. The JunoCam imager aboard NASA's Juno mission snapped pics of the most iconic feature of the solar system's largest planetary inhabitant during its Monday (July 10) flyby. The images of the Great Red Spot were downlinked from the spacecraft's memory on Tuesday and placed on the mission's JunoCam website Wednesday morning.

"For hundreds of years scientists have been observing, wondering and theorizing about Jupiter's Great Red Spot," said Scott Bolton, Juno principal investigator from the Southwest Research Institute in San Antonio. "Now we have the best pictures ever of this iconic storm. It will take us some time to analyze all the data from not only JunoCam, but Juno's eight science instruments, to shed some new light on the past, present and future of the Great Red Spot."

As planned by the Juno team, citizen scientists took the raw images of the flyby from the JunoCam site and processed them, providing a higher level of detail than available in their raw form. The citizen-scientist images, as well as the raw images they used for image processing, can be found at: www.missionjuno.swri.edu/junocam/processing

"I have been following the Juno mission since it launched," said Jason Major, a JunoCam citizen scientist and a graphic designer from Warwick, Rhode Island. "It is always exciting to see these new raw images of Jupiter as they arrive. But it is even more thrilling to take the raw images and turn them into something that people can appreciate. That is what I live for."

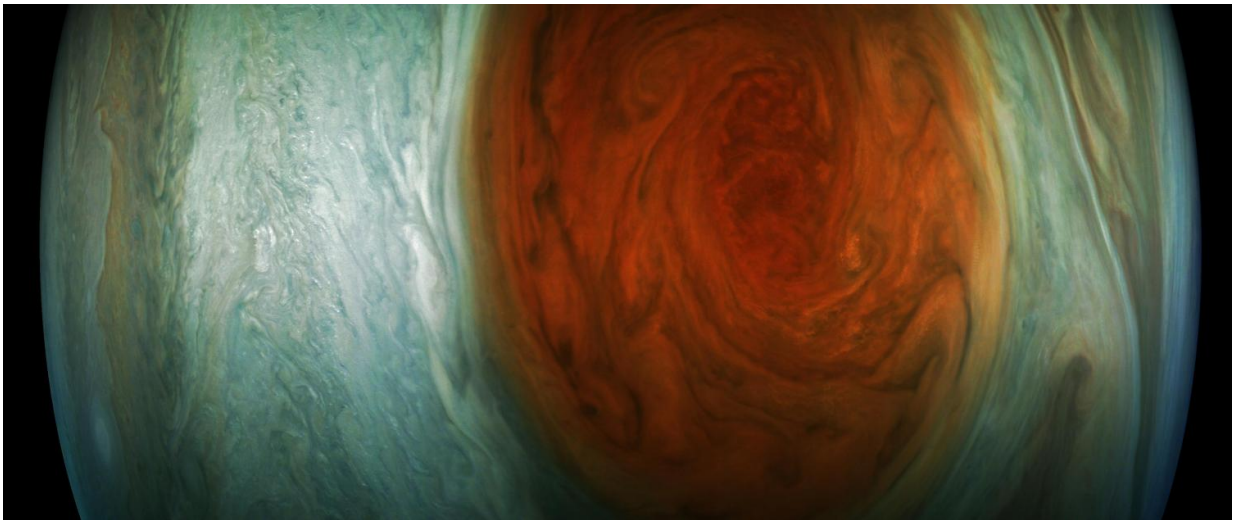


This enhanced-color image of Jupiter's Great Red Spot was created by citizen scientist Kevin Gill using data from the JunoCam imager on NASA's Juno spacecraft. The image was taken on July 10, 2017 at 07:07 p.m. PDT (10:07 p.m. EDT), as the Juno spacecraft performed its 7th close flyby of Jupiter. At the time the image was taken, the spacecraft was about 6,130 miles (9,866 kilometers) from the tops of the clouds of the planet. Credit: NASA/JPL-Caltech/SwRI/MSSS/Kevin Gill

Measuring in at 10,159 miles (16,350 kilometers) in width (as of April 3, 2017) Jupiter's Great Red Spot is 1.3 times as wide as Earth. The storm has been monitored since 1830 and has possibly existed for more than 350 years. In modern times, the Great Red Spot has appeared to be shrinking.

All of Juno's [science instruments](#) and the spacecraft's JunoCam were operating during the flyby, collecting data that are now being returned to Earth. Juno's next close flyby of Jupiter will occur on Sept. 1.

Juno reached perijove (the point at which an orbit comes closest to Jupiter's center) on July 10 at 6:55 p.m. PDT (9:55 p.m. EDT). At the time of perijove, Juno was about 2,200 miles (3,500 kilometers) above the planet's cloud tops. Eleven minutes and 33 seconds later, Juno had covered another 24,713 miles (39,771 kilometers), and was passing directly above the coiling, crimson cloud tops of the Great Red Spot. The spacecraft passed about 5,600 miles (9,000 kilometers) above the clouds of this iconic feature.



This enhanced-color image of Jupiter's Great Red Spot was created by citizen scientist Gerald Eichstädt using data from the JunoCam imager on NASA's Juno spacecraft. The image is approximately illumination adjusted and strongly enhanced to draw viewers' eyes to the iconic storm and the turbulence around it. The image was taken on July 10, 2017 at 07:07 p.m. PDT (10:07 p.m. EDT), as the Juno spacecraft performed its 7th close flyby of Jupiter. At the time the image was taken, the spacecraft was about 6,130 miles (9,866 kilometers) from the tops of the clouds of the planet. Credits: NASA/JPL-Caltech/SwRI/MSSS/Gerald Eichstadt

Juno launched on Aug. 5, 2011, from Cape Canaveral, Florida. During its mission of exploration, Juno soars low over the planet's cloud tops—as close as about 2,100 miles (3,400 kilometers). During these flybys, Juno is probing beneath the obscuring cloud cover of Jupiter and studying its auroras to learn more about the planet's origins, structure, atmosphere and magnetosphere.

Early science results from NASA's Juno mission portray the largest planet in our solar system as a turbulent world, with an intriguingly complex interior structure, energetic polar aurora, and huge polar cyclones.

"These highly-anticipated images of Jupiter's Great Red Spot are the 'perfect storm' of art and science. With data from Voyager, Galileo, New Horizons, Hubble and now Juno, we have a better understanding of the composition and evolution of this iconic feature," said Jim Green, NASA's director of planetary science. "We are pleased to share the beauty and excitement of space science with everyone."

Provided by Jet Propulsion Laboratory

Citation: Juno spacecraft spots Jupiter's Great Red Spot (2017, July 13) retrieved 10 April 2024 from https://phys.org/news/2017-07-juno-spacecraft-jupiter-great-red_1.html

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--