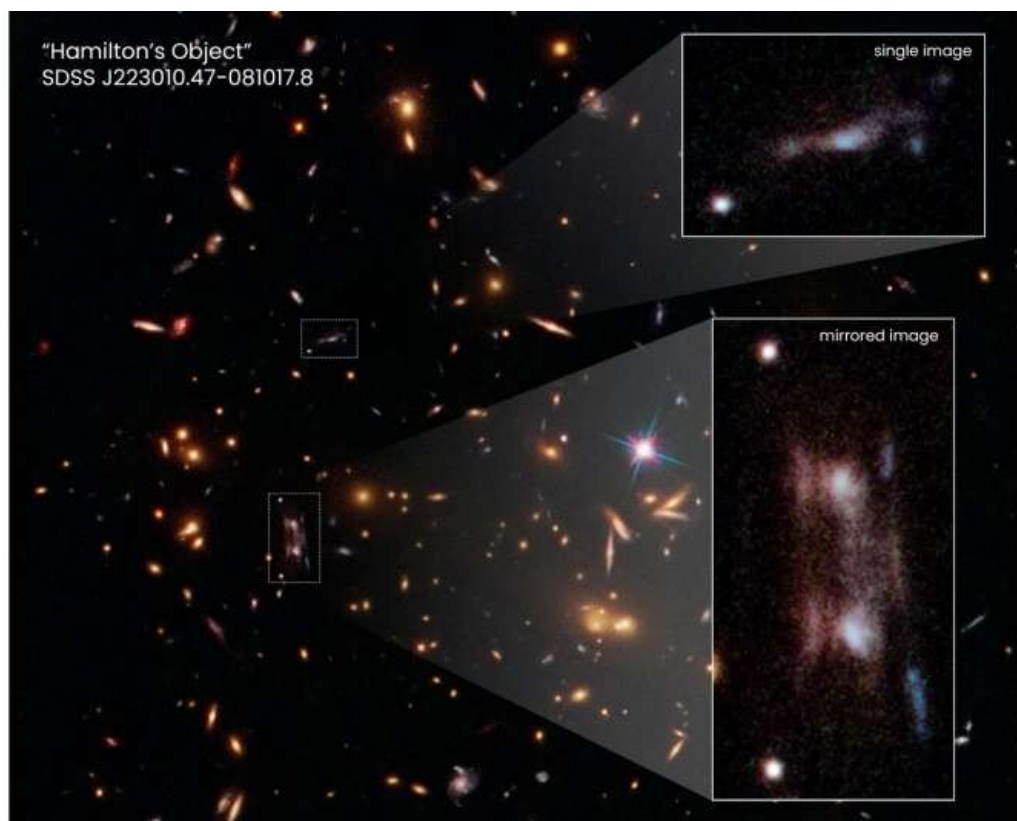


Best of Last Week – Double galaxy mystery, turning books into digital art, evidence of a team brain state

October 11 2021, by Bob Yirka



This Hubble Space Telescope snapshot shows three magnified images of a distant galaxy embedded in a cluster of galaxies. These images are produced by a trick of nature called gravitational lensing. The galaxy cluster's immense gravity magnifies and distorts the light from the distant galaxy behind it, creating the multiple images. The galaxy cluster, cataloged as SDSS J223010.47-081017.8, is 7 billion light-years from Earth. Hubble has observed many gravitationally lensed

galaxies. However, the images spotted in this Hubble snapshot are unique. Two of the magnified images, shown in the pull-out at bottom right, are exact copies of each other. The two bright ovals are the cores of the galaxy. This rare phenomenon occurs because the background galaxy straddles a ripple in the fabric of space. This “ripple” is an area of greatest magnification, caused by the gravity of dense amounts of dark matter, the unseen glue that makes up most of the universe's mass. As light from the faraway galaxy passes through the cluster along this ripple, two mirror images are produced, along with a third image that can be seen off to the side. A close-up of the third image is shown in the pull-out at top right. This image most closely resembles the remote galaxy, which is located more than 11 billion light-years away. Based on a reconstruction of this image, the researchers determined that the distant galaxy appears to an edge-on, barred spiral with ongoing, clumpy star formation. The mirror images are named “Hamilton’s Object” for the astronomer who discovered them. Credit: LEAD AUTHOR: NASA, ESA, Richard E. Griffiths (UH Hilo), CO-AUTHOR: Jenny Wagner (ZAH), IMAGE PROCESSING: Joseph DePasquale (STScI)

It was a good week for space science as an international team of researchers found that [an extreme exoplanet was even more exotic than originally thought](#)—WASP-76b was found to be hotter than expected. Also, [a "double" galaxy is still mystifying Hubble astronomers after years of study](#). Light from two bright, linear objects appears to be mirror images of the same object caused by gravitational lensing, making it difficult to discern the object's true configuration. And a pair of space scientists, Brett Gladman and Kathryn Volk with the University of British Columbia, ran simulations that suggested [an Earth- or Mars-sized planet may be orbiting beyond Neptune](#).

In technology news, a pair of researchers, Milan Janosov with Datapolis and noted digital artist Flora Borsi, developed a way to produce digital art using data from published books—in one demonstration, [they turned Asimov's "Foundation" into a work of art resembling part of the universe](#)

. Also, Bradley Lane, with the University of Kansas, found evidence showing that [the energy revolution involving the transition from internal combustion to electric vehicles will be slow and rocky](#) due to convenience issues. And a combined team from Heidelberg University and the University of Bern developed [a framework to enhance deep learning using spiking neuromorphic substrates](#). Also, a team at the University of Helsinki used artificial intelligence to create [a model that can generate humorous versions of existing headlines](#).

In other news, a team at The Rockefeller University found [differences in the long-term COVID antibodies that are created in the body due to vaccination rather than infection](#). They were less effective at producing antibodies that continue to reproduce over time. And a Medieval Latin literature expert found evidence suggesting that [Italian sailors knew of America 150 years before Christopher Columbus set sail](#).

And finally, if you have ever worked with a group of individuals and have felt the team was in a "groove" of sorts, you might have been on to something. An international team of researchers found [the first neuroscience evidence of team flow as a unique brain state](#)—suggesting that the brain waves of team members working well together are in sync.

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