

Best of Last Week – Light from behind a black hole, Earth's vital signs worsening, COVID-19 vaccine antibodies wane

August 2 2021, by Bob Yirka

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It was a good week for space science as a small international team of researchers [detected light from behind a black hole for the first time](#)—small flashes gave evidence of reflected X-rays. And another

international team found [the first evidence of water vapor on Jupiter's moon Ganymede](#). By using data from Hubble, the researchers were able to see ice sublimating from the moon's surface. Also, James Meador, an independent researcher at the California Institute of Technology found evidence suggesting that [the Apollo 11 ascent stage may still be orbiting the moon](#). Using recently made maps of the moon's gravitational field, he was able to determine that the craft could have maintained a stable orbit.

In technology news, battery maker Form Energy announced development of [the Iron-Air 100-hour storage battery](#)—a type of battery based on iron instead of lithium that can store huge amounts of electricity when deployed as a giant grid. Also, the governor of Indiana announced [a test project for "magment,"](#) which is a type of magnetized concrete that can be used to charge electric vehicles as they are driving on a road. And a team at Cornell University found that it was [possible to hide malware code inside of AI neural networks](#). Also, a combined team of researchers from the University of British Columbia and the University of Alberta found that at least [some machine learning applications can learn from far fewer examples than has been assumed](#).

In other news, part of a group of 14,000 scientists who signed on to an initiative that warns of an impending climate emergency reported that [Earth's "vital signs" are worsening as humanity's impact deepens](#). They are suggesting that multiple climate tipping points are imminent. Also, an international team of researchers found that [a millet-based diet can lower risk of type 2 diabetes and help manage blood glucose levels](#).

And finally, if you have been vaccinated against COVID-19, you may want to start thinking about getting a booster shot, as a team at University College London, found that [vaccine antibody levels start to wane at around two to three months—and may be reduced by 50% after just 10 weeks](#).

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