Best of Last Week: Connecting black holes and dark matter, wooden satellites and drug to treat COVID-19

January 4 2021, by Bob Yirka

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It was a good week for space science as an international team of researchers working on the eROSITA Final Equatorial Depth Survey, discovered a new supercluster—the newly found structure consisted of

eight galaxy clusters at a redshift of 0.36. Also, a team at the Kavli Institute for the Physics and Mathematics of the Universe looked for connections between primordial black holes and dark matter from the multiverse—from before stars and galaxies formed—hoping to account for observed gravitational wave signals. And a pair of researchers, one from the Kavli Institute for Cosmological Physics and Enrico Fermi Institute and the other the Max Planck Institute for Gravitational Physics suggested that ripples in space-time could provide clues to missing components of the universe—Jose María Ezquiaga and Miguel Zumalacárregui suggested that such ripples could be bent by traveling through supermassive black holes or large galaxies on their way to Earth, which might provide clues to explain the missing components.

In technology news, a pairing of researchers from Sumitomo Forestry and Kyoto University looked into the possibility of using wood to build satellites—or at least their outer structures—to reduce the amount of space junk. And San Francisco startup Plenty demonstrated AI-controlled vertical farms that could revolutionize food production. Also, Apple applied for a patent on a keyboard design that featured dynamically changing key functions—a design that would allow for transforming clusters of keys to task-specific functions. And Microsoft announced that the hackers that penetrated several U.S. government computer systems over this past year also hacked company computers and were able to access source code, though they didn't change anything.

In other news, a team at the U.S. National Institutes of Health found that the brain damage experienced by some patients with COVID-19 was due to an immune reaction, not the virus infecting the brain. Also, a team of chemists working at Scripps Research found evidence boosting the theory that life on Earth arose from an RNA-DNA mix.

And finally, a team with members from multiple institutions in China, one in Singapore and one in the U.S. found that a chemotherapy drug

called pralatrexate might be repurposed to treat COVID-19 patients.

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