Best of Last Week—release of NASA UFO report, chatbots are self-aware, new trigger found for Parkinson's

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It was a good week for physics and unexplained phenomena, as an international team of physicists found that matter constitutes 31% of the total amount of matter and energy in the universe. The remainder is still
under review, with theories for both dark matter and energy being explored. Also, after studying data from the Webb telescope, an international team of scientists and physicists confirmed the accuracy of the universe's expansion rate, and also deepened the mystery surrounding the Hubble constant tension. And NASA officials announced that they were going to publish a long-awaited UFO report this week. An independent team of 16 scientists has been reviewing the evidence and is expected to report that there is insufficient evidence to draw any real conclusions.

In technology news, a team of researchers found reason to conclude that, taken as a whole, chatbots are able to exhibit self-awareness—one of the characteristics used to establish whether something, or someone, is a sentient being. And a team at Rice University found evidence that making hydrogen from waste plastic could pay for itself. Also, a combined team from the University of California-Irvine and Harvard University announced the development of an interactive platform that can explain machine-learning models to users. And a team at Cornell University, working with a colleague from Technion-Israel Institute of Technology, found a way to use tiny combustion engines to power very tiny robots.

In other news, a team at Northwestern Medicine developed an engineered probiotic that can "sense" inflammatory bowel disease. And a team affiliated with multiple institutions in Portugal found a relationship between knowledge and attitudes toward science. Overconfidence, they found, grew faster than knowledge and those with intermediate knowledge and high confidence tended to have the least positive attitude toward science. And finally, another team at Northwestern Medicine discovered a trigger of Parkinson's that upends common beliefs—instead of degeneration of dopaminergic neurons as the first sign of the disease, they suggest it is dysfunction in neuronal synapses.