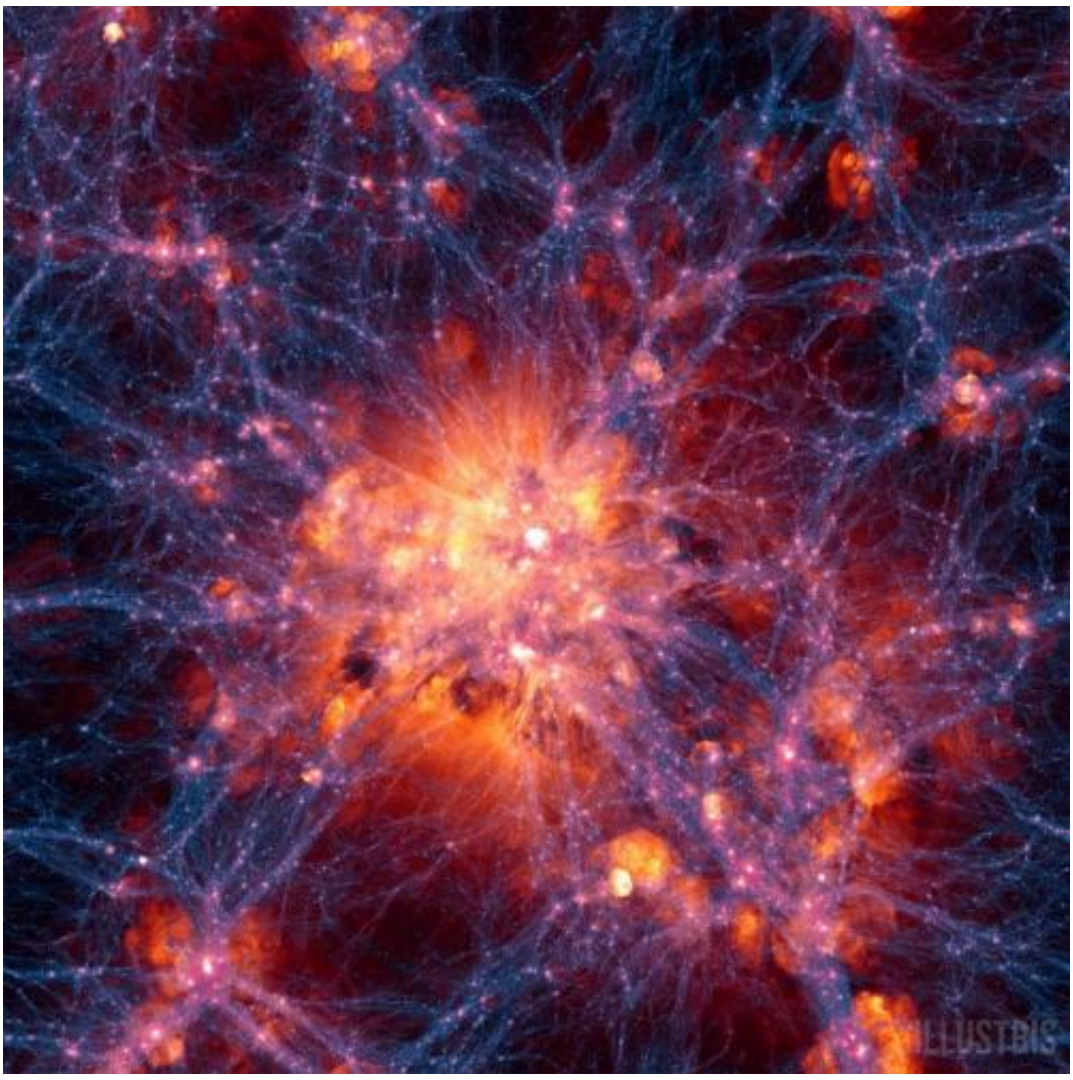
Best of Last Week – Pondering future of inflation theory, an enclosed tube maglev and arguing about contacting aliens

May 12 2014, by Bob Yirka



Large scale projection through the Illustris volume at z=0, centered on the most massive cluster, 15 Mpc/h deep. Shows dark matter density overlaid with the gas

velocity field. Credit: Illustris Collaboration

(Phys.org) —Last week was a big one for space science, as it was announced that astronomers created the first realistic virtual universe—a computer simulation called "Illustris" that is able to recreate 13 billion years of cosmic evolution in a cube, with 350 million light-years represented on a side. Scientists hope to use it like a time machine.

In a more abstract story, a pair of noted physicists contemplate the future of cosmology after detection of primordial gravitational waves—they are hoping to keep expansion theory research on track after the groundbreaking discovery two months ago. On the other hand, some in the science community are wondering: Are we ready for contact with extraterrestrial intelligence? Scientists on the SETI project apparently think so and want to begin sending transmission into outer space giving our exact location. Others, including Stephen Hawking think maybe we should consider the possibility that such a signal could lead a hostile group to attack us.

In other news, transportation technology took a big leap as an enclosed tube maglev system was tested in China—if it's closed, there's less air friction, making it much more efficient. Also, it could conceivably go a lot faster. The test was reportedly successful. Also good news: Scientists have overcome a fundamental atom laser limit to build the brightest atom laser to date—the team with members from Greece and Singapore report their laser is seven times brighter than anything else invented thus far.

Those who have put in the hours to learn how to play an instrument will likely be happy to hear that musical training increases blood flow in the brain—in parts of the brain responsible for both music and language,

which means, if you play, you might be better able to describe the experience to others. In other brain news, researchers at Queens College in New York have found that Asians outperform white students because they try harder—those living in the U.S. that is. Also, scientists created the first living organism that transmits added letters in DNA 'alphabet'—they've engineered a bacterium whose genetic material includes an added pair of DNA "letters," or bases, not found in nature. Also, it looks like researchers are closer to finding a medical marker as at team at Yale reports that in resting brains, researchers see signs of schizophrenia—fMRI scans revealed a disruption of signals, a possible way to prove if a patient has the condition or not.

And finally, a sign that scientists might one day be able to integrate computers and biological beings, as flexible all-carbon electronics were integrated onto plants, insects, and more. Perhaps the folks at SETI should consider the implications of that before giving away where we are to others out there who may be farther along that path than we are.

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Citation: Best of Last Week – Pondering future of inflation theory, an enclosed tube maglev and arguing about contacting aliens (2014, May 12) retrieved 10 May 2024 from https://phys.org/news/2014-05-week-pondering-future-inflation-theory.html

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