

# **Best of Last Week—Slow early universe, generating hydrogen on rooftops, using resistance training to slow Alzheimer's**

July 10 2023, by Bob Yirka

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Potential application of the proposed low-cost, high-efficiency photoreactors on the roof top of a low-energy house. Credit: Joule (2023). DOI: [10.1016/j.joule.2023.05.006](https://doi.org/10.1016/j.joule.2023.05.006)

It was a good week for space science, as a pair of astrophysicists, one with the University of Sydney, the other the University of Auckland,

used quasar "clocks" to [observe time dilation in the ancient universe](#). Geraint Lewis and Brendon Brewer have shown that due to universal expansion, time appears to flow five times more slowly. Also, an international team of space scientists observed "[unintended electromagnetic radiation](#)" emanating from large satellite constellations. In studying emissions from 68 of SpaceX's satellites, they found evidence of radiation that could lead to problems for land-based radar telescopes. And a team analyzing data from the James Webb Space Telescope, led by Steven Finkelstein, from the University of Texas at Austin, found evidence of [the most distant active supermassive black hole](#) observed thus far.

In technology news, a combined team from MIT and Inkbit unveiled [a new computational method](#) that can be used to facilitate the dense placement of objects inside a rigid container. And a combined team of researchers from Flinders University in Australia and Zhejiang Sci-Tech University in China developed [a new aluminum radical battery](#) that promises more sustainable power. Another combined team, including engineers from the Karlsruhe Institute of Technology and the University of Toronto, developed [a system that allows for hydrogen generation on rooftops](#). And a team of software engineers at Stanford University developed [a faster, cheaper way to train large language models](#).

In other news, a team of medical scientists at the Swedish School of Sport and Health Sciences found [an association between cardiorespiratory fitness levels and lower death rates from cancer in men](#). Also, a team of animal behaviorists at the Max Planck Institute of Animal Behavior found that [American minks regrow their brains](#) in a rare reversal of the domestication process after escaping back into the wild. And finally, a combined team of neuroscientists from the Federal University of São Paulo and the University of São Paulo found evidence that [resistance training can prevent or delay Alzheimer's disease](#).

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