



< Small solar ejection after January 19, 2017 10:00 UTC

Cosmology/Astrophysics News

February 22, 2017

for Rose City Astronomers SIG

<http://101iq.com/RCA>

Science – January 13, 2017

- Observations hint at a new recipe for giant black holes – directly collapsing from clouds of matter
 - <http://www.sciencemag.org/news/2017/01/observations-hint-new-recipe-giant-black-holes>

Nature – January 19, 2017

- NASA to bring back rocks from Mars in 2020 with a rover
 - <http://www.nature.com/news/the-2-4-billion-plan-to-steal-a-rock-from-mars-1.21306>

Science – January 20, 2017

- Your self-driving car could kill radio astronomy
 - <http://science.sciencemag.org/content/355/6322/232>

Nature – January 26, 2017

- Odd dwarf star is a plusar – not a neutron star, but white dwarf – red dwarf pair: AR Scorpii
- Earth's building blocks
 - http://www.nature.com/nature/journal/v541/n7638/fig_tab/541468a_ft.html
 - <http://www.nature.com/nature/journal/v541/n7638/full/nature20830.html>
 - <http://www.nature.com/nature/journal/v541/n7638/full/nature21045.html>
- Observation of the 1S-2S transition in trapped antihydrogen
 - <http://www.nature.com/nature/journal/v541/n7638/full/nature21040.html>

Science – January 27, 2017

- Can dark matter vanquish controversial rival theory?
Challenge from MOdified Newtonian Dynamics
rebutted
 - <http://www.sciencemag.org/news/2017/01/can-dark-matter-vanquish-rival-theory>

Nature – February 2, 2017

- Pluto's dark equator explained
 - <http://www.nature.com/nature/journal/v542/n7639/full/542008a.html>
- Dark-matter signal? 3.5keV x-ray photons might be from sterile neutrino decay
 - <http://www.iflscience.com/space/could-scientists-have-finally-detected-dark-matter-signal/>
 - <https://arxiv.org/abs/1701.07932>
- First trip to the stars
 - <http://www.nature.com/news/what-it-would-take-to-reach-the-stars-1.21402>

Science – February 3, 2017

- Using GPS data to hint for dark matter.. Clocks passing through topological defects in vacuum of space – didn't find anything but occasional $\frac{1}{2}$ nanosecond shifts
- Mars rover steps up hunt for molecular signs of life
 - <http://science.sciencemag.org/content/355/6324/444>

Nature – February 9, 2017

- **Dark matter remains elusive** – WIMPs, or weakly interacting massive particles, are the leading candidates for dark matter, the 'missing' mass in the Universe. An experiment has obtained no evidence for such particles, despite an impressive increase in sensitivity.
 - <http://www.nature.com/nature/journal/v542/n7640/full/542172a.html>
- **Intermediate-mass black hole found**
 - <http://www.nature.com/nature/journal/v542/n7640/full/542175a.html>
 - <http://www.nature.com/nature/journal/v542/n7640/full/nature21361.html>

Science – February 10, 2017

- **Debate heats up over black holes as dark matter ---**

Could dark matter consist of primordial black holes, as numerous as the stars? It's an old, improbable idea, but it made a Lazarus-like comeback a year ago, when the discovery of gravitational waves suggested that the cosmos abounds with unexpectedly heavy black holes. Last February physicists with the Laser Interferometer Gravitational-Wave Observatory (LIGO) announced that they had detected ripples in space from the violent merger of two black holes 29 and 36 times as massive as our sun—more than twice as massive as physicists thought so-called stellar mass black holes could be. If scads of those black holes are out there, then they might account for the 85% of the universe's matter that is missing, one team of physicists argues. However, the idea is now coming under pressure from other directions, including studies of the cosmic microwave background and of tiny dwarf galaxies on the periphery of the Milky Way. And a definitive census of black holes might come in a few years, not from LIGO, but from studies of mysterious fast radio bursts and pulsars.

– <http://science.sciencemag.org/content/355/6325/560>

Scientific American – February 2017

- The Milky Way Transformed – mapping exact positions of billions of stars by Gaia spacecraft – 5 micro-arc-second accuracy
 - <http://www.nature.com/scientificamerican/journal/v315/n6/full/scientificamerican1216-14.html>
 - <https://gea.esac.esa.int/archive/> <- Download data here
- Hope Springs eternal for Easy Access to Water on Europa
 - <http://www.nature.com/scientificamerican/journal/v315/n6/full/scientificamerican1216-20.html>
- Solar System Smashup – planets created in a speedy blur of high energy crashes, destruction and rebuilding
 - <http://www.nature.com/scientificamerican/journal/v315/n6/full/scientificamerican1216-42.html>

Miscellaneous

- 7 Earth size planets in habitable zone around TRAPPIST-1 star (an ultra cool dwarf) about 40 light years away found by Spitzer infrared space telescope
 - <https://www.nasa.gov/press-release/nasa-telescope-reveals-largest-batch-of-earth-size-habitable-zone-planets-around>
 - <https://exoplanets.nasa.gov/trappist1/>