



# Cosmology/Astrophysics News

June 18, 2014

for Rose City Astronomers SIG

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

# Science – May 16, 2014

- No Astrophysics/Cosmology news this issue

# Nature – May 22, 2014

- Out with a bang
  - <http://www.nature.com/news/out-with-a-bang-1.15258>
  - <http://www.nature.com/nature/journal/v509/n7501/full/nature13304.html>
  - <http://www.nature.com/nature/journal/v509/n7501/full/509431a.html>
  - <http://www.nature.com/nature/journal/v509/n7501/full/nature13304.html>
  - Large Wolf-Rayet stars apparently can go supernova
- Star partners form strongest magnet
  - Astron. Astrophys. 565, A90 (2014)
  - In the Westerlund 1 star cluster, a large star transferred its outer layers to a smaller companion star making the small star rotate more rapidly creating an ultra-strong magnetic field, becoming a magnetar
- Pluto-bound probe faces crisis
  - <http://www.nature.com/news/pluto-bound-probe-faces-crisis-1.15261>
  - NASA scrambles to find an object in the Kuiper belt in time for a close-up visit

# Science – May 23, 2014

- Planet hunter gets a second life
  - [http://www.sciencemagazinedigital.org/sciencemagazine/23\\_may\\_2014?pg=12#pg12](http://www.sciencemagazinedigital.org/sciencemagazine/23_may_2014?pg=12#pg12)
  - \$20 million in new funding keeps Kepler mission going for two more years – will use solar radiation to help steer
- NASA planners gear up for Martian sample return
  - <http://news.sciencemag.org/space/2014/05/nasa-planners-gear-martian-sample-return>
  - 2020 rover would drill and collect samples for later return to Earth.
- Blockbuster claim could collapse in a cloud of dust
  - <http://www.sciencemag.org/content/344/6186/790.summary>
  - Cosmic background polarization discovery might be artifact produced by dust in Milky Way... Planck spacecraft results should settle this question
- Southern sky dims
  - <http://www.sciencemag.org/content/344/6186/792.summary>
  - Australian conservative government cutting astronomy and space science funds, closing a radio observatory
- Testing gauge/gravity duality on a quantum black hole
  - <http://www.sciencemag.org/content/344/6186/806>
  - <http://www.sciencemag.org/content/344/6186/882.abstract>
  - A numerical test may show that string theory can provide a self-consistent quantization of gravity

# Nature – May 29, 2014

- Space-probe reboot
  - <http://www.nature.com/news/seven-days-23-29-may-2014-1.15295>
  - NASA grants citizen scientists permission to co-opt 1970's International Sun-Earth Explorer-3 using radio telescope at Morehead State University in Kentucky and crowd sourced funds.
- Complexity on the horizon
  - <http://www.nature.com/news/theoretical-physics-complexity-on-the-horizon-1.15285>
  - <http://www.nature.com/news/astrophysics-fire-in-the-hole-1.12726>
  - Susskind suggests mathematics of computational complexity may be key to unifying gravity and quantum mechanics. Gravity may be due to computational complexity which may be related to time as well.

# Scientific American – June 2014

- Surf's Up on Titan

- <http://www.nature.com/scientificamerican/journal/v310/n6/full/scientificamerican0614-20.html>
- Waves on methane seas photographed by Cassini

- How to Search for Life on Mars

- <http://www.scientificamerican.com/article/how-to-search-for-life-on-mars/>
- Some things learned so far from Mars probes

# Science – May 30, 2014

- No Cosmology/Astrophysics news

# Nature – June 5, 2014

- Big Bang blunder bursts the multiverse bubble
  - <http://www.nature.com/news/big-bang-blunder-bursts-the-multiverse-bubble-1.15346>
  - Paul Steinhardt's personal view on premature hype over gravitational waves
- Big Bang finding challenged
  - <http://www.nature.com/news/big-bang-finding-challenged-1.15352>
  - Signal of gravitational waves was too weak to be significant, studies suggest
- The MAD world of black holes
  - <http://www.nature.com/nature/journal/v510/n7503/full/510042a.html>
  - <http://www.nature.com/nature/journal/v510/n7503/full/nature13399.html>
  - Analysis shows how jets come from supermassive black holes in the center of a galaxy as they accrete matter through Magnetically Arrested Disks



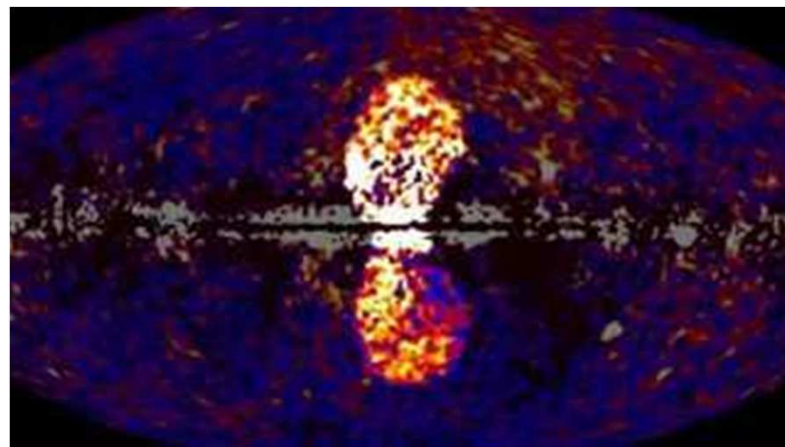
# Science – June 6, 2014

- SpaceX unveils crew capsule
  - [http://www.sciencemagazinedigital.org/sciencemagazine/06\\_june\\_2014?pg=10#pg10](http://www.sciencemagazinedigital.org/sciencemagazine/06_june_2014?pg=10#pg10)
  - May be ready 2017
- China's lunar rover languishes
  - [http://www.sciencemagazinedigital.org/sciencemagazine/06\\_june\\_2014?pg=10#pg11](http://www.sciencemagazinedigital.org/sciencemagazine/06_june_2014?pg=10#pg11)
  - Yutu rover unable to move, not sending useful data. “The end is near.”
- Speed metal
  - <http://www.sciencemag.org/content/344/6188/1086>
  - Meteorite dating reveals planetary core formation is a relatively fast process <100 million years
- Identification of the giant impactor Theia in lunar rocks
  - <http://www.sciencemag.org/content/344/6188/1146>
  - Analysis of lunar rocks supports theory that Mars-sized body “Theia” impacted Earth to create the moon

# Scientific American – July 2014

- Giant Bubbles of the Milky Way

- <http://www.scientificamerican.com/article/giant-bubbles-tower-over-the-milky-way/>
- Fermi Gamma-ray space telescope finds 10,000 light year bubbles of particles and radiation above and below the center of the Milky Way. May have been due to the central black hole's accretion of something a million years ago.



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# Nature – June 12, 2014

- Telescope pull-out
  - Germany removing its funding for square kilometer array radio telescope due to tight budgets
- Space-station science ramps up
  - <http://www.nature.com/news/space-station-science-ramps-up-1.15388>
  - NASA pushes research agenda in face of Russian resistance... to extend Space Station lifetime by 4 years to 2024
- The hunt for Majorana neutrinos hots up
  - <http://www.nature.com/nature/journal/v510/n7504/full/nature13501.html>
  - <http://www.nature.com/nature/journal/v510/n7504/full/nature13432.html>
  - Searching to see if neutrinos are their own antiparticle
- Two gamma ray bursts from dusty regions with little molecular gas
  - <http://www.nature.com/nature/journal/v510/n7504/full/nature13325.html>