Cosmology/Astrophysics News

September 23, 2015

for Rose City Astronomers SIG

http://101iq.com/RCA

Science – July 17, 2015

- No cosmology news this issue

Nature – July 23, 2015

- Twin stars orbiting each other in 50 minutes eclipse each other – spotted by amateur astronomers
- Cherenkov Telescope array location set in Paranal Chile and La Palma Spain
  - http://go.nature.com/1yrq9r
- Vibrant Pluto seen in historic fly-by
  - http://www.nature.com/news/vibrant-pluto-stuns-scientists-1.18022

Science – July 24, 2015

- Scientists ponder an improbably active Pluto
  - http://www.sciencemag.org/content/349/6246/352.summary?sid=f31b3426-1802-4147-a859-23152f72a489

  - On 14 July, NASA's New Horizons spacecraft flew past Pluto, the first reconnaissance of a body in the Kuiper belt, the zone of icy objects beyond the orbit of Neptune. With the flyby complete and the data trickling home, mission scientists focused on a new challenge: making sense of an unexpectedly complex and dynamic world. Pluto contains ice mountains and smooth, crater-free plains—features suggestive of active geological processes. But mission scientists are debating whether these are the result of an atmosphere that shapes the landscape from above, or residual heat in Pluto's interior that could be driving fresh flows of ice onto the surface.

Nature – July 30, 2015

- Telescope spies early galaxy's birth
  - Astronomers have spotted the glow from one of the most distant galaxies ever seen in the early Universe. Roberto Maiolino at the University of Cambridge, UK, and his colleagues used the high-resolution Atacama Large Millimeter/submillimeter Array (ALMA) telescope in Chile to observe three faint galaxies that began forming less than one billion years after the Big Bang. In one galaxy they detected clouds of cold ionized carbon that was shifted away from the bright, star-forming centre. This matches models of early galaxy formation, which predict that active young stars disperse such clouds. The data will help to test theories about how the Universe's first stars and galaxies formed, the team says.
- Hazy halo around Pluto
  - http://go.nature.com/bmmldk
- Kepler spies most Earth-like planet yet
  - http://www.nature.com/news/nasa-spies-earth-sized-exoplanet-orbiting-sun-like-star-1.18048
- Half-pipe array to map teen Universe – Canadian telescope aims to chart cosmic expansion rate 8 to 10 billion years ago
  - http://www.nature.com/news/half-pipe-telescope-will-probe-dark-energy-in-teen-universe-1.18088

Science – July 31, 2015

- Most Earth-like planet yet: Kepler 452b, 1.6x diameter of Earth
  - http://scim.ag/_Kepler452b
- Comet lander's scientific harvest may be its last
  - http://www.sciencemag.org/content/349/6247/459.summary
- Ancient planetary dynamos, take two – magnetic studies of Earth and Mercury constrain their ancient core dynamics
  - https://www.sciencemag.org/content/349/6247/475.summary
- Philae's First Days on the comet
  - https://www.sciencemag.org/content/349/6247/493.full
- Cosmic Neutrinos – some up to 1000 TEV, not from gamma ray bursts
  - http://news.sciencemag.org/physics/2015/07/cosmic-convergence

Scientific American – August 2015

- Europa's "Brown Gunk" Suggests a Briny Sea
  - http://www.scientificamerican.com/article/europa-s-brown-gunk-suggests-a-briny-sea/
- In search of alien Jupiters
  - http://www.nature.com/scientificamerican/journal/v313/n2/full/scientificamerican0815-40.html

Nature – August 6, 2015

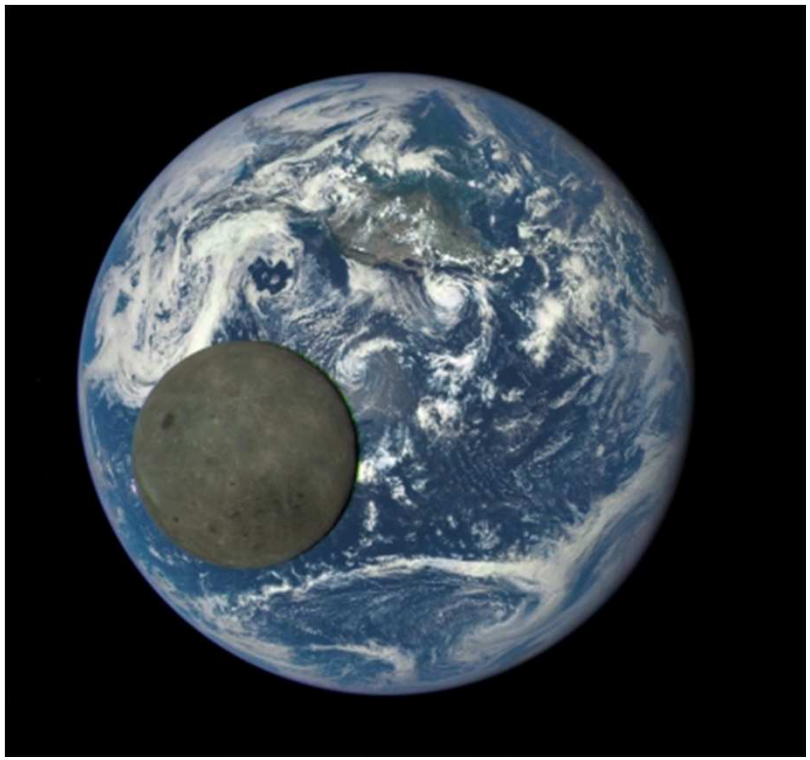
- Only left-handed bottom quarks decay
  - http://doi.org/6kg

Science – August 7, 2015

- Catching cosmic rays where they live – using detectors on ISS
  - http://www.sciencemag.org/content/349/6248/572.summary

Nature – August 13, 2015

- Stars align to show new planet – using microlensing
  - http://www.nature.com/nature/journal/v524/n7564/full/524138d.html
- Moon snapped from its away side
- Age of the Neutrino
  - http://www.nature.com/news/age-of-the-neutrino-plans-to-decipher-mysterious-particle-take-shape-1.18159
- Matter and antimatter scrutinized
  - http://www.nature.com/nature/journal/v524/n7564/full/524168a.html
  - https://www.youtube.com/watch?v=XaXrYLI1ouI
- A giant protogalactic disk linked to the cosmic web
  - http://www.nature.com/nature/journal/v524/n7564/full/nature14616.html
  - https://www.youtube.com/watch?v=XaXrYLI1ouI



Science – August 14, 2015

- No cosmology news this issue

Nature – August 20, 2015

- Mystery survivor of a supermassive black hole
  - http://www.nature.com/nature/journal/v524/n7565/full/524301a.html

Science – August 21, 2015

- How the gas giants got so big
  - http://scim.ag/gasgiants
- Probing the dark side
  - https://www.sciencemag.org/content/349/6250/786.summary
  - https://www.sciencemag.org/content/349/6250/849.abstract

Nature – August 27, 2015

- No cosmology news this issue

Science – August 28, 2015

- No cosmology news this issue

Nature – September 3, 2015

- Pluto pressure data pose an atmospheric conundrum
  - http://www.nature.com/news/pluto-snow-forecast-poses-atmospheric-conundrum-1.18274

Science – September 3, 2015

- Pluto probe picks follow-on target
  - 2014 MU69 – 45km dia. – 10x typical comet

Nature – September 10, 2015

- Glimpse into a primitive stellar nursery
  - The first well-resolved images of local-galaxy stellar nurseries that are poor in elements heavier than helium give the best picture yet of the conditions in which stars may have formed in the early
  - http://www.nature.com/nature/journal/v525/n7568/full/525195a.html
  - http://www.nature.com/nature/journal/v525/n7568/full/nature14901.html

Science – September 10, 2015

- No cosmology news this issue

Nature – September 17, 2015

- Pluto's heart snapped in high resolution
- Hunt for cosmic waves to resume – LIGO
  - http://www.nature.com/news/hunt-for-gravitational-waves-to-resume-after-massive-upgrade-1.18359
- Dates added to meteor calendar – from skywatching Perseids…
  - http://www.nature.com/news/newfound-meteor-showers-expand-astronomical-calendar-1.18360
- Relativistic boost as a cause of periodicity in a massive black-hole binary candidate
  - http://www.nature.com/nature/journal/v525/n7569/full/nature15262.html

Scientific American – September 2015

- Special issue – 100 years of general relativity
- http://www.scientificamerican.com/magazine/sa/2015/09-01/
- **QUIZ: How Well Do You Know Einstein?**
- **Why He Matters**
  - The fruits of one mind shaped civilization more than seems possible
- **How Einstein Reinvented Reality**
  - Albert Einstein created his most famous theory amid personal strife, political tension and a scientific rivalry that almost cost him the glory of his discovery
- **Did Einstein Really Invent $E = mc^2$?**
  - The great physicist was not the first to equate forms of mass to energy, nor did he definitively prove the relationship
- **Head Trip**
  - Einstein's thought experiments left a long and somewhat mixed legacy of their own
- **What Einstein Got Wrong**
  - Everyone makes mistakes. But those of the legendary physicist are particularly illuminating
- **Relativity's Reach**
  - A visualization of recent physics terms affirms the enduring influence of Einstein's 100-year-old masterpiece
- **Relativity's Reach [Interactive Graphic]**
- **Cleaning Up After Einstein**
  - A new generation of physicists hope to succeed where Einstein failed
- **A Brief History of Time Travel**
  - We already have the means to skip ahead in time, but going backward is a different wormhole
- **The Black Hole Test**
  - General relativity has never been tested in places where the effects of gravity become truly extreme—for example, at the edge of a black hole. That will soon change
- **Who was Einstein, *Really?***
  - Sure, he was pretty good at science. But science isn't everything
- **Genius in a Jar**
  - The bizarre journey of Einstein's brain illustrates the pitfalls in science's search for the origins of brilliance
- **Is the Cosmos Random?**
  - Einstein's assertion that God does not play dice with the universe has been misinterpreted