



# Cosmology/Astrophysics News

February 18, 2015

for Rose City Astronomers SIG

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

# Nature – January 22, 2015

- Push to find dark matter's darling
  - LHC to try to make WIMPs (weakly interacting massive particles)
  - Heavy sterile neutrinos – another possibility
    - <http://www.nature.com/news/crunch-time-for-pet-theory-on-dark-matter-1.16757>
- Laser Focus – by firing lasers into the sky, Claire Max has transformed the capabilities of current and future telescopes
  - <http://www.nature.com/news/astronomy-laser-focus-1.16741>
- Cosmic fog and smog – most heavier elements reside far from galaxies in ionized gas and dust particles
  - \$ <http://www.nature.com/nature/journal/v517/n7535/full/517444a.html>
- Long-lived magnetism form solidification-driven convection on the pallasite parent body
  - \$ <http://www.nature.com/nature/journal/v517/n7535/full/nature14114.html>

# Science – January 23, 2015

- First light for planet hunter – NGTS (Next Generation Transit Survey) starts operating in Chile
  - <http://scim.ag/NGTSopen>
- Comet 67P close-up reveals a world of surprises: complicated origin
  - <http://www.sciencemag.org/content/347/6220/358.summary>
  - <http://www.sciencemag.org/content/347/6220/387.full>
  - <http://www.sciencemag.org/content/347/6220/aaa1044.abstract>
  - <http://www.sciencemag.org/content/347/6220/aaa3905.abstract>
  - <http://www.sciencemag.org/content/347/6220/aaa0628.abstract>
  - <http://www.sciencemag.org/content/347/6220/aaa0571.abstract>
  - <http://www.sciencemag.org/content/347/6220/aaa0440.abstract>
  - <http://www.sciencemag.org/content/347/6220/1261952.abstract>
  - <http://www.sciencemag.org/content/347/6220/aaa0276.abstract>
  - <http://www.sciencemag.org/content/347/6220/aaa0709.abstract>
- Probing the proton – search for weird new particles predicted by strong force theory
  - <http://www.sciencemag.org/content/347/6220/363.summary>
- The exceptionally powerful TeV gamma-ray emitters in the Large Magellanic Cloud
  - <http://www.sciencemag.org/content/347/6220/406.abstract>
- The imprint of atmospheric evolution in the D/H of Hesperian clay minerals on Mars
  - <http://www.sciencemag.org/content/347/6220/412.abstract>
- Mars methane detection and variability at Gale crater
  - <http://www.sciencemag.org/content/347/6220/415.abstract>
- Shock compression of stishovite and melting of silica at planetary interior conditions
  - <http://www.sciencemag.org/content/347/6220/418.abstract>

# Nature – January 29, 2015

- Stellar Clocks – determining the age of stars
  - <http://www.nature.com/nature/journal/v517/n7536/full/517557a.html>
  - <http://www.nature.com/nature/journal/v517/n7536/full/nature14118.html>
- Relativity tested with a split electron
  - <http://www.nature.com/nature/journal/v517/n7536/full/517559a.html>
  - <http://www.nature.com/nature/journal/v517/n7536/full/nature14091.html>

# Science – January 30, 2015

- Burbling explosions blow metallic bubbles –  
supernova remnant Cassiopeia A

– <http://www.sciencemag.org/content/347/6221/526.abstract>



# Nature – February 5, 2015

- A possible close supermassive black-hole binary in a quasar with optical periodicity
  - <http://www.nature.com/nature/journal/v518/n7537/full/nature14143.html>

# Science – February 6, 2015

- Misfire aside, signs of cosmic inflation could come soon – looking for big bang gravitational waves
  - <https://forum.lulzbot.com/viewtopic.php?f=16&t=979>
- Japanese neutrino physicists think really big – proposing new detector
  - <http://www.sciencemag.org/content/347/6222/598.summary>
- Asynchronous rotation of Earth-mass planets in the habitable zone of lower-mass stars
  - <http://www.sciencemag.org/content/347/6222/632.abstract>

# Scientific American – February 2015

- Can we mine a black hole? – why we won't get energy from a black hole

- <http://www.scientificamerican.com/article/could-black-hole-energy-save-humanity-s-future/>



# Nature – February 12, 2015

- The oldest cosmic light
  - <http://www.nature.com/nature/journal/v518/n7538/full/518170a.html>
- Comet 67P/Churyumov-Gerasimenko sheds dust coat accumulated over the past four years
  - <http://www.nature.com/nature/journal/v518/n7538/full/nature14159.html>