

10.65 μm

15.50 μm

Cosmology/Astrophysics News

A temperate super-Jupiter imaged
with JWST in the mid-infrared



September 2024 for Rose City Astronomers SIG

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



Nature – September 5, 2024

- Countdown to a nuclear clock
 - <https://www.nature.com/articles/d41586-024-02662-5>
- Gravitational instability in a planet-forming disk
 - <https://www.nature.com/articles/s41586-024-07877-0>
- Frequency ratio of the ^{229m}Th nuclear isometric transition and the ^{87}Sr atomic clock
 - <https://www.nature.com/articles/s41586-024-07839-6>

Science – September 6, 2024

- Breakthrough promises new era of ultraprecise nuclear clocks
 - <https://www.science.org/content/article/breakthrough-promises-new-era-ultraprecise-nuclear-clocks>
- How young is volcanism on the Moon?
 - <https://www.science.org/doi/10.1126/science.adr9336>
- Star formation in the Cartwheel Galaxy
 - https://www.aanda.org/articles/aa/full_html/2024/08/aa49070-23/aa49070-23.html
- Returned samples indicate volcanism on the Moon 120 million years ago
 - <https://www.science.org/doi/10.1126/science.adk6635>

Nature – September 12, 2024

- Long sought nuclear clocks are one tick closer
 - <https://www.nature.com/articles/d41586-024-02859-8>
- Swirling star bubbles offer a glimpse of Sun's future
 - <https://www.nature.com/articles/d41586-024-02663-4>
- Spectroscopic confirmation of two luminous galaxies at a redshift of 14
 - <https://www.nature.com/articles/s41586-024-07860-9>
- One month convection timescale on the surface of a giant evolved star
 - <https://www.nature.com/articles/s41586-024-07836-9>
- Chandrayaan-3 APXS elemental abundance measurements at lunar high latitude
 - <https://www.nature.com/articles/s41586-024-07870-7>

Science – September 13, 2024

- What ionized the universe? JWST finds too many culprits

– <https://www.science.org/content/article/after-cosmic-dark-ages-what-burned-away-ubiquitous-clouds-gas-nasa-telescope-finds>

Nature – September 19, 2024

- Entanglement observed in a pair of quarks
 - <https://www.nature.com/articles/s41586-024-07824-z>
- Black hole jets on the scale of the cosmic web
 - <https://www.nature.com/articles/s41586-024-07879-y>
- Observation of quantum entanglement with top quarks at the ARLAS detector
 - <https://www.nature.com/articles/s41586-024-07824-z>

Science – September 20, 2024

- New neutrino detector turns on
 - <https://www.science.org/content/article/news-glance-long-lasting-hiv-prevention-new-neutrino-detector-and-rescuing-scientists>
- Ice skater – Europa and life
 - <https://www.science.org/content/article/nasa-spacecraft-probe-possibility-life-europa-s-salty-ocean>
- Pushing boundaries of gravitational wave detection
 - <https://www.science.org/doi/10.1126/science.ads1544>
- Squeezing the quantum noise of a gravitational-wave detector below the standard quantum limit
 - <https://www.science.org/doi/10.1126/science.ado8069>

Nature – September 26, 2024

- Do tiny black holes rip past the planets?
 - <https://journals.aps.org/prd/abstract/10.1103/PhysRevD.110.063533>
- Quantum feat: Entangled quarks seen for first time
 - <https://www.nature.com/articles/d41586-024-02973-7>
- Oldest and coldest: a first for exoplanet imaging
 - <https://www.nature.com/articles/d41586-024-02804-9>
- A temperate super-Jupiter imaged with JWST in the mid-infrared
 - <https://www.nature.com/articles/s41586-024-07837-8>

Science – September 27, 2024

- Hopes for new physics dashed by ordinary-looking W bosons at CERN
 - <https://www.newscientist.com/article/2448286-hopes-for-new-physics-dashed-by-ordinary-looking-w-bosons-at-cern/>
- Bright unintended electromagnetic radiation from second-generation Starlink satellites
 - https://www.aanda.org/articles/aa/full_html/2024/09/aa51856-24/aa51856-24.html

Miscellaneous

- I will post this monthly news possibly with zero or more videos and links to watch, as for example, these:
 - <https://www.youtube.com/watch?v=bHFejWF7xaI>
 - <https://www.youtube.com/watch?v=HRqBGnSxzyI>
 - <https://www.youtube.com/watch?v=sTLdiB0KShc>
 - <https://www.youtube.com/watch?v=QMaCh38PjIY>