

## Physics

### Wider Reading

- **Forces of Nature** – Brian Cox & Andrew Cohen
- **How to Teach Quantum Physics to Your Dog** – Chad Orzel
- **A Brief History of Time** – Stephen Hawking
- **Quantum Theory Cannot Hurt You** - *Marcus Chown*
- **Why does  $E=mc^2$  ?** - *Brian Cox and Jeff Forshaw*
- **Fizz: Nothing is as it seems** - *Zvi Schreiber*
- **Seven Brief Lessons in Physics** - Carlo Rovelli
- **The Universe in a Nutshell** - Stephen Hawking
- **Six easy pieces** - Richard Feynman
- **Six not so Easy Pieces** - Richard Feynman
- **In Search of Schrodinger's Cat** - Updated Edition by John Gribbin
- **The Elegant Universe** - Brian Greene
- **The Road to Reality: A complete guide to the laws of the universe** - Rodger Penrose

### Physics Articles

Below are some interesting articles about cutting edge physics research, organised into different areas of physics.

#### Gravitational Waves and General Relativity

- Einstein's gravity theory passes toughest test yet: Bizarre binary star system pushes study of relativity to new limits:  
<http://phys.org/news/2013-04-einstein-gravity-theory-toughest-bizarre.html>
- First Direct Evidence of Cosmic Inflation: <https://www.cfa.harvard.edu/news/2014-05>
- This was one of the first articles announcing the discovery of gravitational waves from cosmic inflation in the early universe. However, their experiment was later shown to be flawed – you can read about this in the article below. ☞ Gravitational Waves from Early Universe Remain Elusive: <http://www.jpl.nasa.gov/news/news.php?release=2015-46>
- Crashing Black Holes <http://calteches.library.caltech.edu/4298/1/BlackHoles.pdf> ☞ CERN's new Einstein Observatory to explore black holes, Big Bang:

## String Theory

- New website dedicated to discussion of string theory:  
<http://phys.org/news/2012-10-website-dedicatdiscussion-theory.html>
- ☐ Scientists find a practical test for string theory:  
<http://phys.org/news/2014-01-scientists-theory.html> ☐  
What is string theory?  
<http://www.physics.org/article-questions.asp?id=47>
- ☐ String theory: it's not dead yet:  
<http://www.newscientist.com/article/dn11882-string-theory-its-notdeadyet.html#.VQa6AqzLcjU>
- Finally, a MAGIC test for string theory?:  
<http://www.newscientist.com/article/dn12609-finally-a-magic-testfor-string-theory.html>

## Quantum Computers

- How Quantum Computers Work:  
<http://computer.howstuffworks.com/quantum-computer.htm> ☐ The  
Father of Quantum Computing:  
<http://archive.wired.com/science/discoveries/news/2007/02/72734>
- The Revolutionary Quantum Computer That May Not Be Quantum at All:  
<http://www.wired.com/2014/05/quantum-computing/>

## Materials Science

- Scientists fabricate defect-free graphene, set record reversible capacity for Co<sub>3</sub>O<sub>4</sub> anode in Li-ion batteries:  
<http://phys.org/news/2014-08-scientists-fabricate-defect-free-graphene-reversible.html>
- Theoretical physicists design 'holy grail' of materials science: <http://phys.org/news/2015-03-theoreticalphysicists-holy-grail-materials.html>
- Novel crumpling method takes flat graphene from 2D to 3D: <http://phys.org/news/2015-02-crumplingmethod-flat-graphene-2d.html>

- Stanene is '100% efficient', silicon chips:

<http://www.extremetech.com/extreme/171551-stanene-is-100-efficient-could-finally-replacecopper-wiresin-silicon-chips>

- What is Aerogel? Theory, Properties and Applications:

<http://www.azom.com/article.aspx?ArticleID=6499>

## Particle Physics

- Why particle physics matters: <http://www.symmetrymagazine.org/article/october-2013/why-particlephysics-matters> ☞ It's a boson! But we need to know if it's the Higgs:

<http://www.newscientist.com/article/dn22029-its-aboson-but-we-need-to-know-if-its-thehiggs.html?page=1#.VQfooqzLdVw>

- Particle chameleon caught in the act of changing <http://press.web.cern.ch/press-releases/2010/05/particlechameleon-caught-act-changing> ☞ The search for dark matter at the LHC: <http://www.symmetrymagazine.org/article/theseearch-for-darkmatter-at-the-lhc>

- Could the Higgs Nobel Be the End of Particle Physics?:

<http://www.scientificamerican.com/article/could-thehiggs-nobel-be-the-end-of-particlephysics/>

## Astrophysics

- How do we know dark matter exists?: <http://phys.org/news/2015-03-dark.html>

- The corrugated galaxy: Milky Way may be much larger than previously estimated: <http://phys.org/news/2015-03-corrugated-galaxy-milky-larger-previously.html>

- Solving the riddle of neutron stars: <http://www.sciencedaily.com/releases/2015/03/150310074105.htm>

- Cosmology: First stars were born much later than thought: <http://www.sciencedaily.com/releases/2015/02/150205131233.htm>