

# A-Level Physics – Wider Reading list

## Essential

- AQA Physics: A Level, Jim Breithaupt, Oxford Press (ISBN 978-0-19-835187-0). Copies to be bought through the school for £35
- You will be provided with specific articles throughout the year by your teachers which you will need to read and summarise

## Recommended

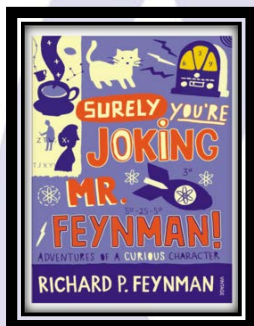
- AQA A Level Physics Year 1 Revision Guide, Jim Breithaupt, Oxford Press (ISBN 9780198351887)
- Physics Review: magazine from Hodder Education. Subscriptions may be purchased either directly with them or through the school at a discount rate
- Physics: A very short introduction, **Sidney Perkowitz** published by Oxford (ISBN 9780198813941)

## Further Reading

An important part of any subject at A-level is reading around the subject – i.e. information not directly on your course.

Below is a selection of books that should appeal to a physicist – someone with an enquiring mind who wants to understand the universe around us. None of the selections are textbooks full of equation work (there will be plenty of time for that!) instead each provides insight to either an application of physics or a new area of study that you will be meeting at A Level for the first time.

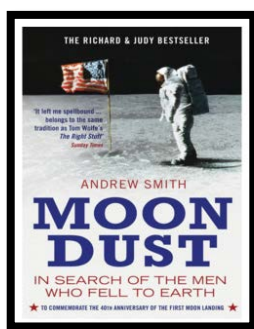
### 1. Surely You're Joking Mr Feynman: Adventures of a Curious Character



**ISBN - 009917331X** - Richard Feynman was a Nobel Prize winning Physicist. In my opinion he epitomises what a Physicist is. By reading this book you will get insight into his life's work including the creation of the first atomic bomb and his bongo playing adventures and his work in the field of particle physics.  
(Also available on Audio book).

<https://www.waterstones.com/books/search/term/surely+youre+joking+mr+feynman++adventures+of+a+curious+character>

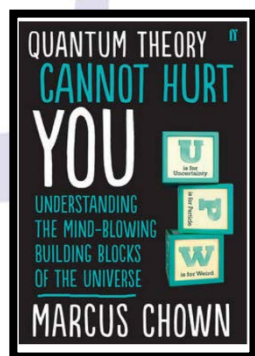
## 2. Moondust: In Search of the Men Who Fell to Earth



ISBN – 1408802384 - One of the greatest scientific achievements of all time was putting mankind on the surface of the moon. Only 12 men made the trip to the surface, at the time of writing the book only 9 are still with us. The book does an excellent job of using the personal accounts of the 9 remaining astronauts and many others involved in the space program at looking at the whole space-race era, with hopefully a new era of space flight about to begin as we push on to put mankind on Mars in the next couple of

decades.

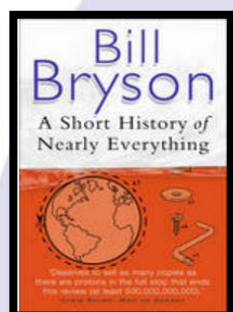
<https://www.waterstones.com/books/search/term/moondust++in+search+of+the+men+who+fell+to+earth>



## 3. Quantum Theory Cannot Hurt You: Understanding the Mind-Blowing Building Blocks of the Universe

ISBN - 057131502X - Any Physics book by Marcus Chown is an excellent insight into some of the more exotic areas of Physics that require no prior knowledge. In your first year of A-Level study you will meet the quantum world for the first time. This book will fill you with interesting facts and handy analogies to whip out to impress your peers!

<https://www.waterstones.com/book/quantum-theory-cannot-hurt-you/marcus-chown/9780571315024>

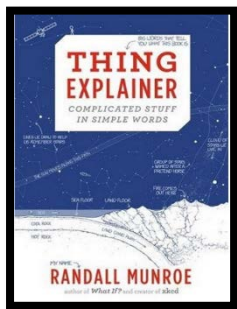


## 4. A Short History of Nearly Everything

ISBN – 0552997048 - A modern classic. Popular science writing at its best. A Short History of Nearly Everything Bill Bryson's quest to find out everything that has happened from the Big Bang to the rise of civilization - how we got from there, being nothing at all, to here, being us. Hopefully by reading it you will gain an awe-inspiring feeling of how everything in the universe is connected by some fundamental laws.

<https://www.waterstones.com/books/search/term/a+short+history+of+nearly+everything>

## 5. Thing Explainer: Complicated Stuff in Simple Words



ISBN – 1408802384 - This final recommendation is a bit of a wild-card – a book of illustrated cartoon diagrams that should appeal to the scientific side of everyone. Written by the creator of online comic XTCD (a great source of science humour) is a book of blueprints from everyday objects such as a biro to the Saturn V rocket and an atom bomb, each one meticulously explained BUT only with the most common 1000 words in the English Language. This would be an excellent coffee table book in the home of every scientist.

<https://www.waterstones.com/book/thing-explainer/randall-munroe/9781473620919>

Notable others (Mr Curnow has read all of these!)

- “Brief history of time” – Stephen Hawking
- “Paradox” – Jim Al-Khalili
- “Why does  $E = mc^2$ ” – Brian Cox & Jeff Forshaw
- “Storm in a teacup: The Physics of everyday life” – Helen Czerski

## Other Sources of Information

### Essential

- AQA Physics Course website: <https://www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408>
- [www.isaacphysics.org](http://www.isaacphysics.org)
- [www.kerboodle.com](http://www.kerboodle.com) – username and password are both first initial and surname, e.g. “hcurnow”. Institution code “pg4”

### Recommended

- [www.advancingphysics.org](http://www.advancingphysics.org)
- [physicsworld.com](http://physicsworld.com) (news + podcasts)
- Hyperphysics <http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html>
- [www.iop.org](http://www.iop.org)

## ***Film / Video Recommendations***

Hopefully you'll get the opportunity to soak up some of the Sun's rays over the summer – synthesising some important Vitamin-D – but if you do get a few rainy days where you're stuck indoors here are some ideas for films to watch or clips to find online.

### **Science Fictions Films**

1. **Moon (2009)**
2. **Gravity (2013)**
3. **Interstellar (2014)**
4. **The Imitation Game (2015)**
5. **The Prestige (2006)**

### ***Online video content***

1. **Minute Physics** – Variety of Physics questions explained simply (in felt tip) in a couple of minutes. Addictive viewing that will have you watching clip after clip – a particular favourite of mine is “Why is the Sky Dark at Night?”

<https://www.youtube.com/user/minutephysics>

2. **Wonders of the Universe / Wonders of the Solar System** – Both available of Netflix as of 17/4/16 – Brian Cox explains the Cosmos using some excellent analogies and wonderful imagery.
3. **Shock and Awe, The Story of Electricity** – A 3 part BBC documentary that is essential viewing if you want to see how our lives have been transformed by the ideas of a few great scientists a little over 100 years ago. The link below takes you to a stream of all three parts joined together but it is best watched in hourly instalments. Don't forget to boo when you see Edison. (alternatively watch any Horizon documentary – loads of choice on Netflix and the I-Player)

<https://www.youtube.com/watch?v=Gtp51eZkwol>

4. **NASA TV** – Online coverage of launches, missions, testing and the ISS. Plenty of clips and links to explore to find out more about applications of Physics in Space technology.

<http://www.nasa.gov/multimedia/nasatv/>

5. **The Fantastic Mr. Feynman** – I recommended the book earlier, I also cannot recommend this 1 hour documentary highly enough. See the life's work of the “great explainer”, a fantastic mind that created mischief in all areas of modern Physics.

<https://www.youtube.com/watch?v=LyqlelXTpw>

Fascinating Youtube channels to help you think a little deeper:

- **Veritasium**
- **Physics Girl**
- **V Sauce**
- **Crash course**
- **Kurzgesagt – In A Nutshell**
- **Numberphile (Physics & maths)**
- **Sixty Symbols (higher level**

