

Holiday Toy Bag Candidates

Introduction by Larry Smith

This is a list of some of the online videos I've examined to see if they should be shown at the North York Physics Group meeting of 2023-12-08.

Some of these (in my opinion) are too simple for the group, while others are a bit too complicated or use too much math, aren't clear enough, or whatever.

The actual videos I've chosen are at the bottom of this document.

View at your own risk! 😊

FermiLab w/ Dr. Don Lincoln

- Demystifying the Heisenberg Uncertainty Principle (9:56)
 - https://www.youtube.com/watch?v=luvf_9EaJ0w
- How do magnets work?- (9:38) **MAYBE**
 - <https://www.youtube.com/watch?v=s7ndBIL402Q>
- Twin paradox: the real explanation (13:20)
 - <https://www.youtube.com/watch?v=GgvaiuvSpF4>
- LHC: The Large Hadron Collider(5:49)
 - <https://www.youtube.com/watch?v=debQ60QVtYQ&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=27&t=1s>
- The LHC Experiments (6:54) **MAYBE**
 - <https://www.youtube.com/watch?v=X3tvygyrb2X4&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=28>
- Gravitational Lensing(7:14) **MAYBE**
 - <https://www.youtube.com/watch?v=4Z71RtwoOas&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=31>
- Quantum Field Theory (5:29) **MAYBE**
 - <https://www.youtube.com/watch?v=FBelT3rxEA&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=39>
- QCD: Quantum Chromodynamics (7:03)
 - <https://www.youtube.com/watch?v=df4LoJph76A&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=48>
- If the universe is only 14 billion years old, how can it be 92 billion years wide? (9:46)
 - <https://www.youtube.com/watch?v=vIJTWyOZrGU&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=91>
- Quantum mechanics and the double slit experiment (9:09)
 - <https://www.youtube.com/watch?v=nmxwVU88Bd8&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=104>
- What is the Cosmic Microwave Background? (7:35)
 - <https://www.youtube.com/watch?v=AYFDN2DSVgc&list=PLCfRa7MXBEsoJuAM8s6D8oKDPyBepBosS&index=107>
- Secrets of the Cosmic Microwave Background (8:52)
 - [\(1413\) Secrets of the Cosmic Microwave Background - YouTube](#)

PBS Spacetime w/ Dr. Matt O'Dowd

- See all PBS Spacetime links
 - <https://www.youtube.com/@pbsspacetime>
- Electrons DO NOT Spin (18:09)
 - <https://www.youtube.com/watch?v=pWlk1gLf2Y>
- The Holographic Universe Explained (18:23)
 - <https://www.youtube.com/watch?v=klpDHn8viX8>
- Hawking Radiation (12:05)
 - <https://www.youtube.com/watch?v=qPKj0YnKANw>

Miscellaneous

- The surprising reason behind electron 'spin'! (They don't REALLY spin) (16 minutes)
 - <https://www.youtube.com/watch?v=PdN1mweN2ds&t=715s>

Videos chosen for 2013-12-08

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