May 2, 2023 The Sexy Unverse Struggle Stream Show Notes

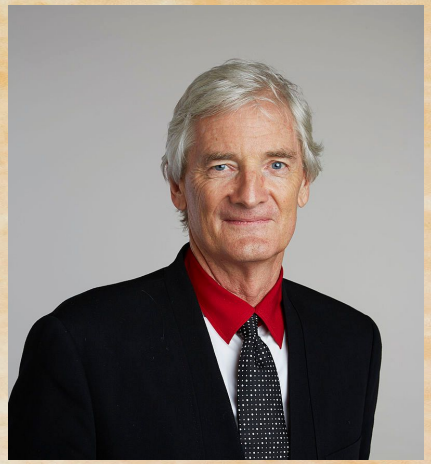
What are the Blue Jellies

- Blue jellyfish looking cnidaria have been washing up on California beaches by the 1000s
- Also docced by CA State Parks of OC
- Species name Velella velella (by the wind sailor)
- It's happened before, last time in 2015
- A few facts:
  - 1½ to 3 inches long
  - The sail catches the wind
  - Inhabit the Pacific Ocean
  - Blue color protects the organism from the sun
  - Predators are molluscs and sea slugs
  - NOT actually jellyfish

More on the Jellies

- Phylum Cnidaria includes jellyfish, gorgonians, some corals, and sea anemones
- Follow the same life cycle as jellyfish, with a few modifications
- Rather than attach to the ocean floor, colonies of polyps form a float and sail, live on the ocean's surface
- Velella velella colonies are genetically identical
- The medusae are tiny, nearly microscopic jellyfish
- Egg-Planula-Polyp-Colony-medusae-Gametes
- Sensors designed at JHU borrow Velella's form

Born this Day



1947 - James Dyson, British Inventor

- Studied Art, Interior Design, and Industrial Design
- Was financially supported by his wife, an art teacher, for 15 years
- First vacuum “dual cyclone design came out in the UK in 1991, eventually entered the US directly in 2001, seizing 20% market share by 2005
- Other inventions include the Air Blade hand dryer, Air Multiplier, and Supersonic hair dryer
- The James Dyson Foundation

Born this Day

1903 - Gladys Isabel Harper (Mackenzie)

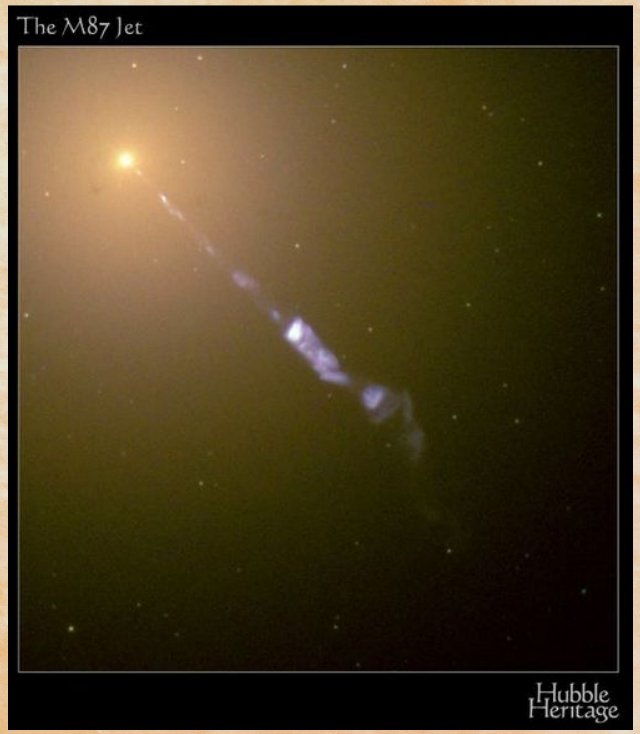
- Born in Edinburgh, Scottland
- Studied physics and mathematics at the University of Edinburgh
- Worked as a professor, teaching physics and mathematics
- Research included the study of velocity and trajectory of Alpha particles through gasses
- Also researched X-ray spectroscopy, which led to X-ray crystallography and the discovery of the structure of DNA
- Passed away in 1989

What is UGC 4211

- Approximately 460 million light years away
- Seyfert 2 galaxy - result of two galaxies crashing into each other, probably happened 1 to 2 billion years ago
- Highly active galaxy, but since it's newness is a product of two older galaxies colliding, most detectable light is in the infrared range
- Two Super Massive Black Holes are in a dance around the galactic core, and were recently mapped

Origins of Quasars

- Quasars are the brightest objects in the universe
- It's the result of the accretion disc and emission jet from the Super Massive Black Hole in a galactic center
- Quasars formed more frequently in the early part of the stelli-ferrous phase of the universe



Type 2 Quasar Formation

- Type 2 Quasars have their light partially obscured by gas and dust
- Typically found nearer to us, meaning they were formed closer to the present time
- A recent study used the Isaac Newton Telescope to study the shapes of nearby Type 2 Quasars
- Researchers found that 65% of Type 2 Quasars examined in the study showed severe warping as would be expected from galactic collisions, while 22% were undistorted.
- It's probable the number is higher since they were unable to get complete resolution on all the images

Will UGC 4211 Become a Type 2 Quasar

- Quasar conditions are difficult to attain:
  - The SMBH needs to consume or disperse, at minimum, 0.2 Solar masses per year
  - Dispersion needs to be sustained for at least a million years to shove occluding dust out of the way
  - Typical lifetime of 1 to 100 million years
- The gas dispersion phase of the SMBH collision in UGC 4211 is at least 900 million years away, so it's possible we could know by then.
- $1 continually reinvested in 30-year US Treasury bonds would be worth about $10^4.3 million

Shoutouts

- Jason K Pargin for his work on Molyneux's Question:
- MadAboutHistory on TikTok for his work on Leonardo Da Vinci
- National Public Radio for their story on Velella Velella, my initial lead
- ThatGoodNewsGirl for her story on the Swedish Moose Cam, my initial lead