



STEPHEN HAWKING: A MODERN DARWIN?

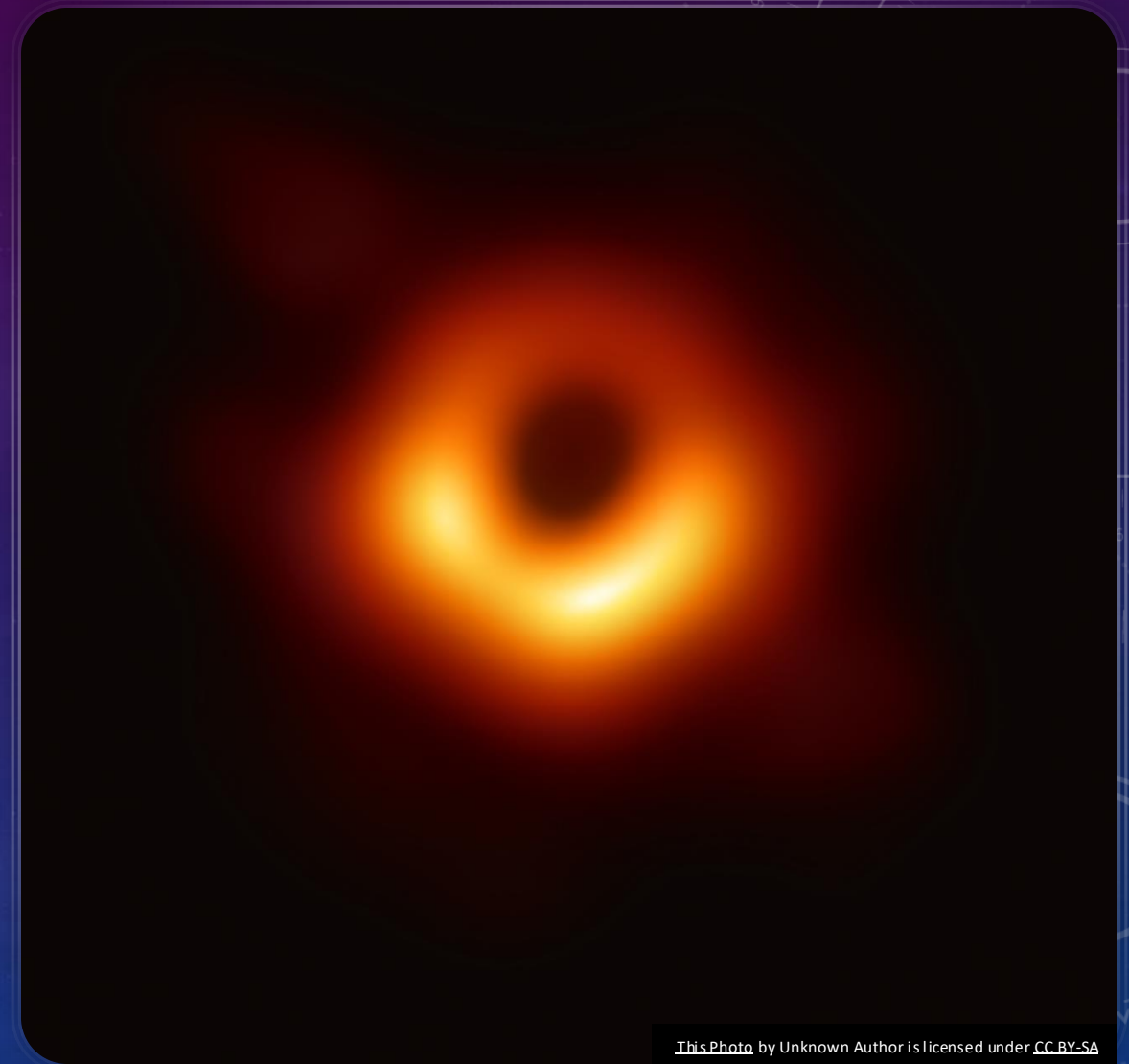
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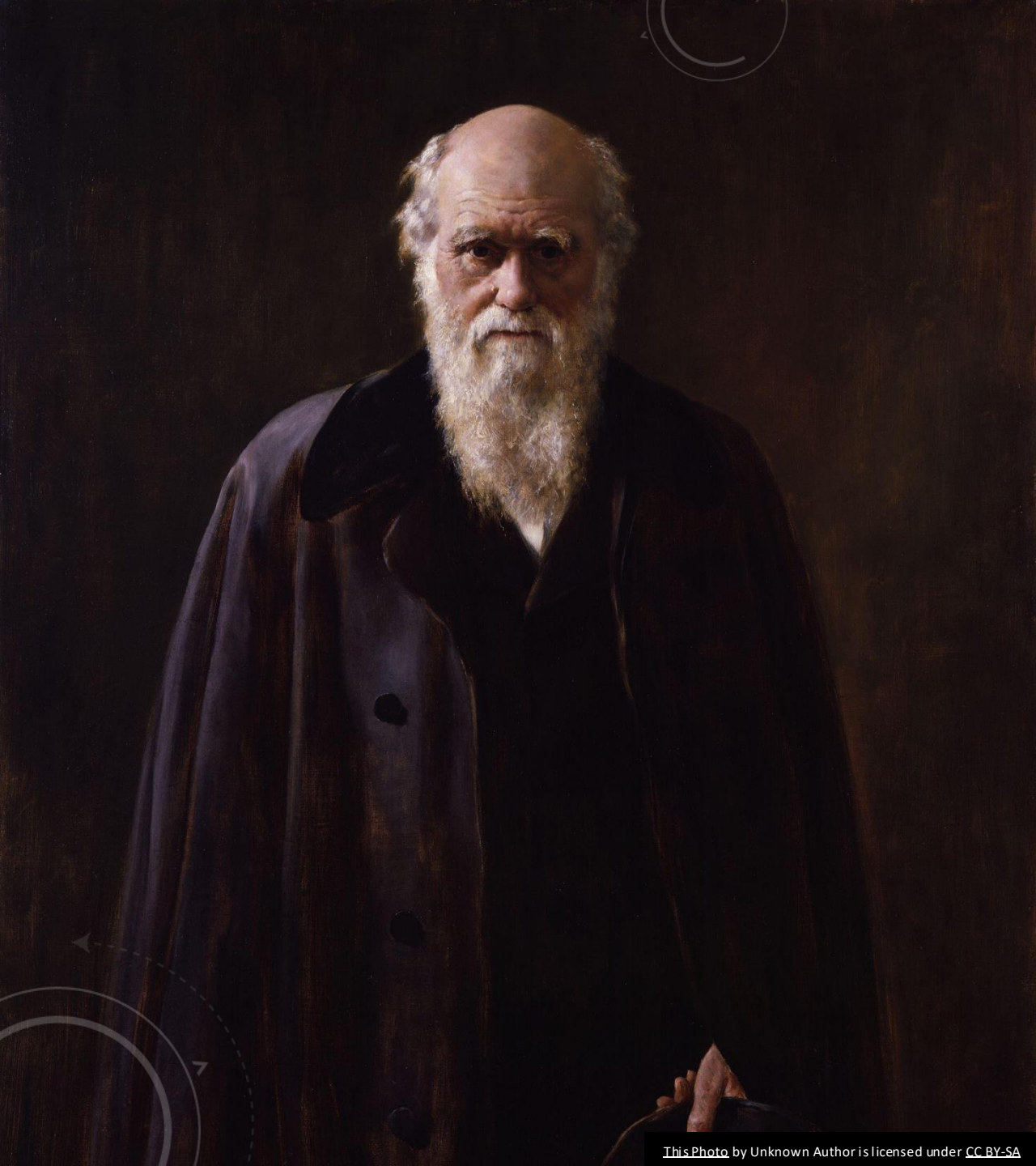
FALL 2023

WHO WAS STEPHEN HAWKING?

- Stephen Hawking was a British **theoretical physicist** and **cosmologist** as well as an **author**
- His scientific contributions include investigating the **origin of the universe** and major advancements in the theory of **black holes**, including **Hawking radiation**
- He was also the author of various popular science books, such as *“A Brief History of Time”*



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COMPARISON TO DARWIN

HOW WAS STEPHEN HAWKING SIMILAR TO
CHARLES DARWIN?

EARLY LIFE



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Hawking

- Born in 1942 in Oxford, England
- Eldest of 4 children
- Father: Dr. Frank Hawking, Oxford graduate and medical researcher
- Mother: Isobel Hawking, Oxford graduate
- Found wonder at the sky and universe
- Did not appear exceptional in school before college

Darwin

- Born in 1809 in Shrewsbury, England
- Second son, 5 siblings
- Father was a physician trained at Edinburgh University
- Dabbled in chemistry as a child
- Did not enjoy learning classics at the Anglican Shrewsbury School

EDUCATION



- Both studied at Cambridge:
 - Darwin switched to Christ's College in Cambridge from studying medicine at Edinburgh, earning a Bachelor of Art's degree
 - Hawking studied physics (natural sciences) and University College, Oxford, earning first class degree
 - Hawking then went to Trinity Hall at Cambridge University to earn a Ph.D. in cosmology
- Neither dedicated too much time to their studies in college:
 - Hawking averaged 1 hour per day of school-related studies at Oxford, but he was still successful at his exams

INTELLECTUAL INFLUENCES

- Darwin was influenced by various mentors/figures:
 - Grant at Edinburgh – invertebrates and origins of creatures
 - Henslow at Cambridge – botany
 - Sedgewick at Cambridge – geology
 - Lyell – geography
 - Malthus – competition
 - HMS Beagle – while not a person, Darwin's experiences traveling enormously influenced his ideas on geography and species
- Hawking:
 - Doctoral training at Cambridge under cosmologist Dennis Sciama
 - Roger Penrose – met at Cambridge, singularities, Einstein's general relativity
 - Remained at Cambridge as a research fellow



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HEALTH

- Both Darwin and Hawking struggled with physics health:
 - Darwin had a mysterious illness that severely limited his ability to work
 - Hawking was diagnosed with amyotrophic lateral sclerosis (ALS) at age 21. He was not expected to survive past another 2 years. He did survive, but he would later be confined to a wheelchair and lost his voice.
 - Hawking's diseases motivated him to dedicate himself to his work

RECOGNITION, AWARDS, AND HONORS

- Darwin: Royal Medal (1852, for barnacles), Copley Medal (1864), Royal Society Fellow
 - “On the Origin of Species”: Natural selection, mixed reception
 - Mostly a private figure
- Hawking: Lucasian Professor of Mathematics at Cambridge, Royal Society Fellow, Copley Medal (2006), Presidential Medal of Freedom (2009), Commander of the British Empire (1982), ...
 - “Black Hole Explosions?”: Nature publication over Hawking radiation, initially controversial and disputed, unifies general relativity with quantum theory
 - No Boundary Proposal: Big bang and early universe
 - “A Brief History of Time”: Best-selling book aimed at public audiences
 - Had a huge public appearance

RELIGION AND PHILOSOPHY

- Darwin: claimed to be agnostic, loss of faith in Christianity
- Hawking: Did not believe in the necessity of God in creating the universe, atheist.
- Both believed in the laws of science rather than a reliance on God to explain phenomena
 - “We could call order by the name of God, but it would be an impersonal God.” (Hawking)
- Search for understanding/origins:
 - “My goal is simple. It is a complete understanding of the universe, why it is as it is and why it exists at all.” (Hawking)

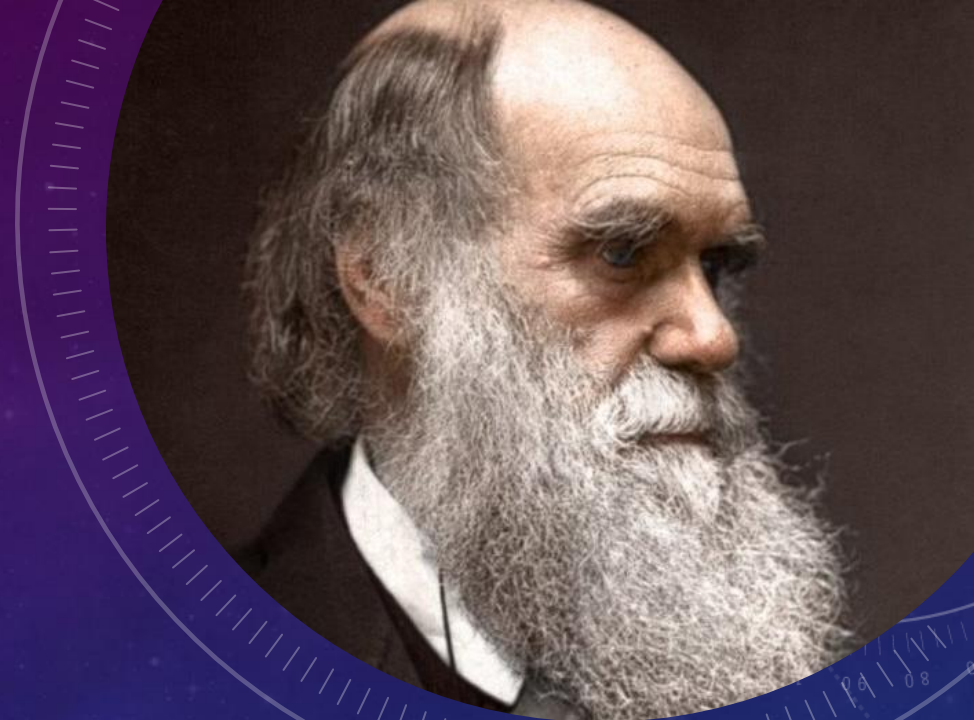


DEATH AND BURIAL

- Hawking died at 76 due to ALS at his home in Cambridge.
- He is buried in Westminster Abbey, next to scientific giants such as Sir Isaac Newton and *Charles Darwin*.

KEY TAKEAWAYS

- Both Darwin and Hawking were monumental figures in their fields and on society in general, though in different ways
- Both were driven in their work for a desire for understanding, but with different approaches
- Both were willing to ask questions and challenge conventional ideas
- Both were very involved with other prominent scientific figures in their fields
- Both had similar aspects in their perspectives on religion



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