


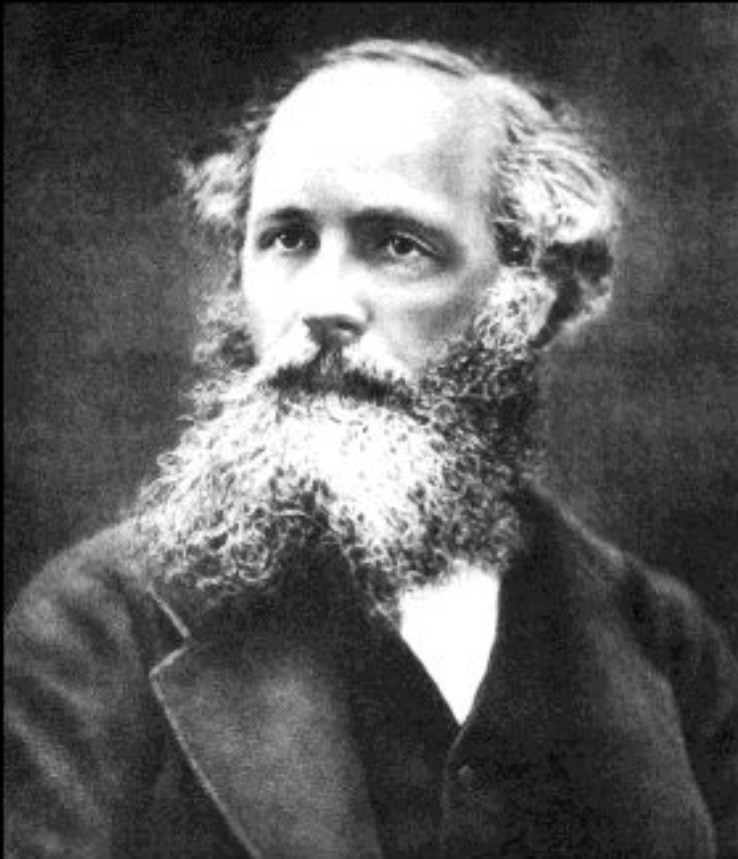
*James Clerk Maxwell*

(1831-1879)



And the Big Four of  
Electromagnetism

# *The Earliest Years*



- Born in Edinburgh, Scotland
- At two, always asked father to “Show me how it doos.”
- Could recite Psalm 119 and large passages of Milton at eight.
- Mother died of cancer that year.



This drawing by James' cousin Jemima Wedderburn depicts the obstinate Maxwell paddling a washtub away from his tutor.

Maxwell was also a poet. This is an example of his Christian faith in poetic form.



234 AARON.

Holiness on the head,  
Light and perfections on the breast,  
Harmonious bells below, raising the dead  
To lead them unto life and rest:  
Thus are true Aarons drest.

Profaneness in my head,  
Defects and darkness in my breast,  
A noise of passions ringing me for dead  
Unto a place where is no rest:  
Poor priest, thus am I drest.

Only another head  
I have, another heart and breast,  
Another music, making live, not dead,  
Without whom I could have no rest:  
In Him I am well drest.

Christ is my only head,  
My alone only heart and breast,  
My only music, striking me e'en dead;  
That to the old man I may rest,  
And be in him new drest.

# *Studies and Positions*

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- At 16, entered Edinburgh University
- Cambridge University undergraduate
- Moved to Trinity College to escape competition in Cambridge
- Studied physics and philosophy
- Professor of Natural Philosophy at Marischal College in Aberdeen

## *Studies and Positions (cont.)*

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- Lost his job at Marischal when the two colleges in Aberdeen merged.
- Had done many experiments and returned to his estate, correspondence, and travel.
- Became the Laird of Glenair where he worked on his famous equations.
- Predicted that electromagnetic waves travel at the speed of light in 1865.

# *Maxwell's Equations*

$$0, \quad \nabla \cdot \vec{B} =$$

$$0, \quad \nabla \times \vec{E} + \partial \vec{B} / \partial t =$$

$$\rho, \quad \nabla \cdot \vec{D} =$$

$$\vec{J}, \quad \nabla \times \vec{H} - \partial \vec{D} / \partial t =$$

## *Other Accomplishments and Such*

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- Made astronomical observations of electromagnetic wavelengths and radiation
- Subscribed to Presbyterian belief that the chief end of man is to glorify God and enjoy Him forever.
- Proclaimed that all things were manufactured according to an intelligent plan