

Meet Faraday

and Maxwell

by Suzanne O. Sbera

One of my greatest joys of the last decade was to discover that two of the greatest scientists Michael Faraday and James Maxwell were also devout Christians. I have since researched them zealously sharing my findings with family, friends, students at church and homeschool co-ops where I teach—as if I were trying to make up for lost time since my college years when I found myself in a tug of war between faith in God and my love for physics. It is my wish, therefore, to inform you as well about these two men whose love for God enhanced, rather than hindered, their understanding of the physical world.

Michael Faraday (1791–1875) was a gifted child, born in England to a loving family where the seeds for his Christian faith were first planted. Although his elementary education was minimal due to the Faraday's extreme poverty, his apprenticeship job as a bookbinder enriched his knowledge of all kinds of subjects, including the latest discoveries in science. His customers

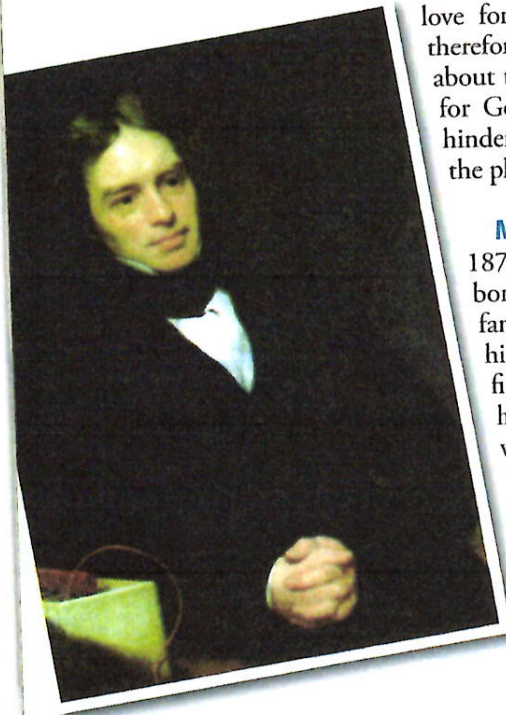
were instrumental in furthering his education by tutoring him and loaning him more books. One of them even gave him free tickets for the Royal Institute lectures to hear Sir Humphrey Davy, the most prominent chemist of those times.

Faraday eventually obtained a job as a lab assistant at the Royal Institute learning from Davy and other scientists, yet in time his intellect and experimental skills proved to be superior. Today he is known as the greatest experimentalist of all time. His discoveries were in chemistry, electricity and magnetism, and he is mostly known for establishing the basis of the electric motor by causing a metallic wire to move around a magnet. He became a fellow of the Royal Society but refused the invitation to be its president (Ludwig, 1978, pg. 199). He received various awards including a doctorate degree from Oxford University, and died at the ripe age of 84, suffering from ill health caused mainly by the toxic gases he was exposed to.

Faraday's Christian character came into play often in his career, especially when his rival Davy attempted to sabotage his reputation. Faraday did not once seek revenge towards his rival; instead he



Photo credit: National High Magnetic Field Laboratory



"The book of nature, which
we have to read, is written
by the finger of God."

—Michael Faraday



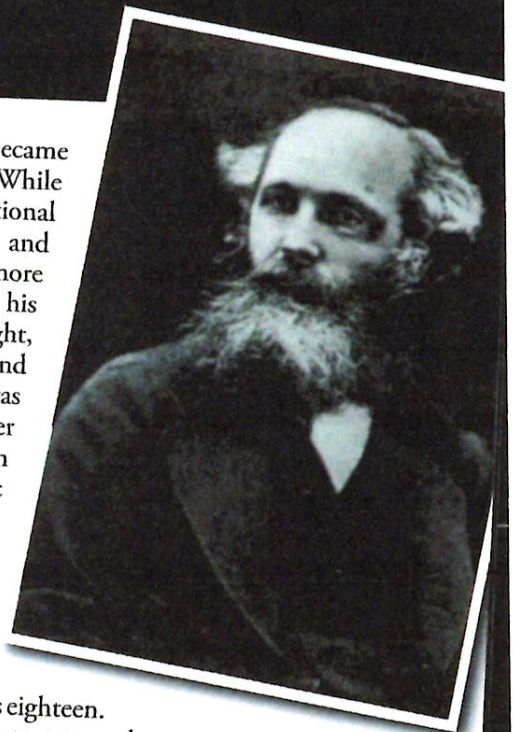
pleaded in prayer to a faithful God. He was content with a humble salary, only accepting a raise in his later years solely to insure his dear wife Sarah financial security after he passed away (Ludwig, 1978, pg. 183). His closest associates described him as having the most noble character that matched Paul's description of an elder (Titus 1:5-9) and a simplicity that paralleled Jesus' statement in Luke 18:17 (Eichman, 1993, pg. 92). Eichman also mentions that Faraday was generous with his money and time, as he would invariably turn down an invitation by a noble person in order to visit someone in trouble (pg. 93). He was an active member of the Sandemanian church where he served as an elder and gave various sermons rich with Scripture and reverence towards his Creator. This is evident in a quotation from his sermons: *"The book of nature, which we have to read, is written by the finger of God."*

James Clerk Maxwell (1831-1879), born in Edinburg (Scotland), showed signs of high intelligence in his early childhood along with an exceptional curiosity about his natural surroundings. His first tutor was his mother who instilled in him the love of God; yet he lost her at a tender age of eight. His father, a Scottish laird and a retired advocate, ran a beautiful farm estate

called Glenlair, which became Maxwell's retreat home. While attending the educational institutes in Edinburg and Cambridge, he was more interested in pursuing his own interests in math, light, electricity, magnetism and thermodynamics. He was also familiar with other subjects ranging from history, literature, music and poetry.

Maxwell published his first paper in mathematics (Oval Curves) when he was only fourteen years old, and presented a scientific paper when he was eighteen. He also used mathematics to prove that Saturn's rings consisted of millions of particles, something that was confirmed by Voyager I over a hundred years later (1980). His passion for color vision led to developing precise mathematical formulas that combine different percentages of RGB colors to produce millions of hues, and he demonstrated the first colored photograph. During his job at King's College in 1858, he met his wife Katherine Dewars who assisted him in his research. His friendship with Michael Faraday

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"I think men of science as well as other men need to learn from Christ, and I think Christians whose minds are scientific are bound to study science that their view of the glory of God may be as extensive as their being is capable."
—Maxwell

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began in 1860 and flourished due to their great intellect and shared faith. Maxwell eventually proved that light was indeed electromagnetic in nature, delighting Faraday who had predicted earlier. He was indeed the father of modern physics, and his theory of electromagnetism made him the scientist of greatest influence on the 20th century technology.

Maxwell remained a devout Christian throughout his life and maintained a deep humility before God in spite of his success in the sciences. He had an extensive knowledge of Scripture since childhood, and it is said that he learned Psalm 119 by the age of eight. As an adult, he attended church regularly and he would often visit the sick to read and pray with them. There were daily prayers in his household and he read the Scriptures with his wife every night (Seeger, 1985, pg. 94). At the same time he had tolerance towards unbelievers and did not force his faith on them. His free lectures were well attended by working poor men; Maxwell said they understood him better than his peers

having fewer preconceptions (Graves, 1996, pg. 152). He also loved children whom he welcomed and entertained at his home, for he himself maintained a childish fascination of the world.

"I think men of science as well as other men need to learn from Christ, and I think Christians whose minds are scientific are bound to study science that their view of the glory of God may be as extensive as their being is capable." (Maxwell)

Faraday's meeting with Maxwell, as depicted in a PBS video excerpt from *Einstein's Big Idea*, never ceases to bring tears to my own eyes as I cheer for the two godly heroes of science. One can see that the

two were close friends who partnered in explaining the nature of light to the world, and the twinkle in their eyes seems to also convey their common faith in the true Light of the World, Jesus. ■

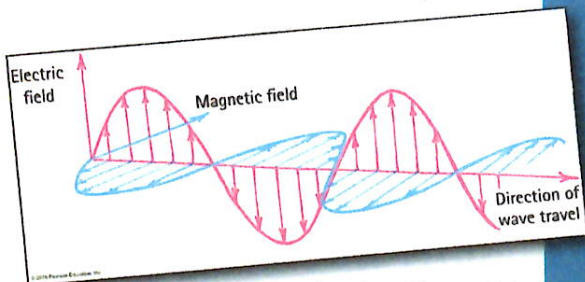


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Video link: <http://www.youtube.com/watch?v=WqefMRAxt2k>



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Works Cited:

- Eichman, P. (1993, June). The Christian Character of Michael Faraday as Revealed in His Personal Life and Recorded Sermon. *Perspectives*, 43, 92-95.
- Graves, D., (1996). *Scientists of Faith*. Grand Rapids, MI: Kregel Resources.
- Ludwig, C., (1978). *Michael Faraday*. Herald Press.
- Seeger, R. J. (1985, June). Maxwell, Devout Inquirer. *The Journal of the American Scientific Affiliation*, 37, 93-96.
- _____. (2005). Faraday's meeting with Maxwell [excerpt]. In *Einstein's Big Idea*. PBS video. <http://www.youtube.com/watch?v=WqefMRAxt2k>.