

## The moon's former magnetic field—still a huge problem for evolutionists

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Earth's moon generates no magnetic field of its own today. But in the 1970's, *Apollo* astronauts brought back rock samples of the moon's crust that showed they formed in a magnetic field stronger than the earth's magnetic field today.<sup>1</sup> This has posed a huge problem for space scientists who want to believe the solar system is billions of years old. The 'dynamo' theory, their as-yet-unproven explanation of planetary magnetic fields, requires a large fluid core (figure 1) and rapid rotation in order to even have a chance of working ... and the moon provides neither. Hence there has been much scholarly worry over how the moon could possibly have generated a magnetic field in the past, especially a strong one.

Recently two articles<sup>2,3</sup> appeared in the British journal *Nature* that tried once again to solve the problem. Though these have caused a flutter in the pop-science press, a closer examination shows that they haven't solved the problem at all. One suggests stirring of the fluid in the moon's core by tidal forces when the moon was allegedly much closer to the earth (actually tacit support for the creationist argument from lunar recession against billions of years<sup>4</sup>). The other suggests that meteorite impacts stirred up the core.

Given their assumed conditions, a stirring of the moon's core fluid would be a reasonable result. But their next two assumptions are highly questionable:

1. a self-sustaining 'dynamo' (electric generator) exists in the earth's core, and
2. the moon's core emulated the alleged earth-core dynamo, despite much less favourable conditions.

### Can a planetary magnetic dynamo work at all?

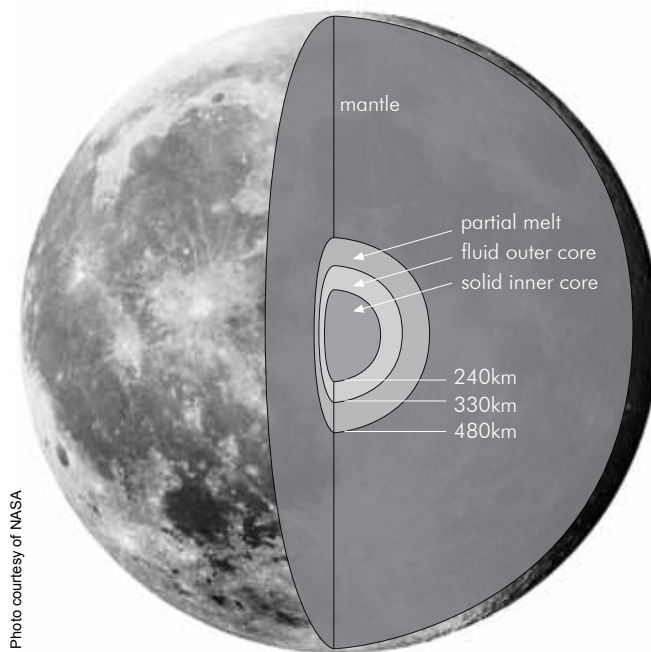
Various versions of the dynamo theory have been with us since 1919, when Sir Joseph Larmor suggested that motions of the fluid in the earth's core might act like an electric generator (or in the UK, a dynamo) to push the electric current that causes the earth's magnetic field.<sup>5</sup> But then a series of 'anti-dynamo' mathematical theorems<sup>6</sup> by well-known scientists showed that no simple configuration of flows and currents could generate the required field. This elimination of simple solutions forced dynamo theories to become more and more complex.

They are now extremely complicated, and the resulting mathematical difficulties have prevented anyone from proving they can actually work under realistic conditions.<sup>7</sup>

Anyone who has seen the contorted winding of insulated copper wire in an electrical generator (figure 2) can get an idea of the theoretical problems with dynamo theories. Lacking wires with insulation, how could a uniform spherical conductor like the earth's core compel electric currents to travel the tortuous paths necessary? Without such guidance, the currents should follow the simplest paths (such as a circle around the rotation axis) and decay away after only thousands of years.<sup>8</sup> Some sort of dynamo is absolutely necessary to maintain a planetary field for the alleged billions of years. So those who assume the billions of years have occurred unthinkingly assume that a dynamo has been at work, maintaining the field all that time.

To circumvent the mathematical complexity of dynamo theories, geophysicists have tried to simulate dynamo action with large computers. However, computers are not yet large

enough to do a realistic simulation of the crucial small-scale turbulence in the fluid, prompting a recent reviewer to say, "Supercomputers still can't simulate the self-[starting and maintaining] of planetary dynamos."<sup>9</sup> The reviewer then described a recent attempt to simulate dynamo action in the laboratory. But that lab experiment and others<sup>10</sup> have much more complex configurations than any structure one could imagine in a planet's core. They are actually just different kinds of artificially constructed electric generators.



**Figure 1.** The moon has a small core, some of which is fluid.



**Figure 2.** Wiring in an electric generator is complex.

So proving that the earth's magnetic field comes from a 'dynamo' is as yet beyond the reach of theory, computer simulation, and experiment. The lack of proof after over 90 years of hard work on the theory, plus considerations of basic physical laws, such as the second law of thermodynamics, lead me to believe that a self-sustaining dynamo in the earth's core is impossible. So assumption (1) of the new moon theories, that Earth has a working dynamo, is very doubtful.

Assumption (2), that conditions in the moon could allow a dynamo to work, is even more doubtful. That is because the moon's core is much smaller than the earth's core, and the moon rotates much slower than the earth. If a dynamo is unlikely for the earth, then how much more unlikely would one be for the moon? The new articles do not address either problem (1) or problem (2). They are only concerned about how to supply mechanical power to a dynamo, not about how to make one work in the moon.

Last, even with the above amount of 'hand-waving' (incomplete solutions), the two new theories only deal with moon rocks recording weaker fields, on the order of one-tenth the earth's field. They fall far short of explaining rocks that recorded fields ten times stronger.<sup>11</sup>

## Magnetic moon is no problem for creation science

Creationists, on the other hand, have no problem with the moon's former field. Decades ago I published a theory, based on Scripture, about how God may have started the electric currents that cause planetary magnetic fields.<sup>12</sup> The theory explains not only the strength of the moon's early magnetic field, but also the present fields of all large bodies in the solar system. Recently I extended the theory to stars and galaxies, finding good agreement there also.<sup>13</sup>

Regardless of whether my theory of the *origin* of the field is correct, however, the *absence* of the moon's magnetic field today is easy to explain. According to simple electromagnetic theory, the decay half-life of electric currents in a core as small as the moon's would be only a few hundred years.<sup>14</sup> After the biblical 6,000 years elapsed, there would be no measureable magnetic field left, which is in agreement with what we observe.

Thus the moon's magnetic data strongly support the biblical record of its recent creation and become a severe stumbling-block for those who want to believe in billions of years.

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