Other claimed feathered theropods are extinct birds

After *Sinosauropteryx* was discovered, other supposed theropod dinosaurs with true feathers were discovered. These discoveries seemed to prove the case. Feduccia writes:

> "In 1998, *Nature* triumphantly announced 'the debate is over' following a cover article describing two 125-million-year old putative dinosaurs, *Protarchaeopteryx* and *Caudipteryx*, with true avian feathers."[3]

Feduccia believes these and other claimed dinosaurs, like the four-winged *Microraptor*, were true birds. It is now believed that the feathers of *Microraptor* were iridescent, like some birds today, and that iridescence evolved more than once.[6]

Some of these fossils were described as birds when first discovered, and there are undisputed birds found with the supposed feathered dinosaurs, suggesting that the so-called feathered theropods were indeed birds. It boils down to a classification problem in which the evolutionary bias for 'feathered dinosaurs' has taken over.

Feduccia concludes there is obvious evidence that there is no such thing as feathered dinosaurs; there are birds and there are dinosaurs.

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Mercury's crust is magnetized—more evidence for a young solar system

D. Russell Humphreys

NASA's *MESSENGER* spacecraft (figure 1) has continued to surprise us analysts with new evidence that Mercury's magnetic field is as young as the Bible says. Since March 2011 the spacecraft has been in a near-polar orbit around Mercury. By now it has orbited the planet well over a thousand times, repeatedly passing over the entire surface. Swooping low over the northern volcanic plains, the spacecraft discovered that the planet's outer crust in that region is strongly magnetized.[1] The strongest magnetization coincides with a broad topographic rise near the centre of those plains. That leads the analyzing team to believe that the magnetization comes from basalt solidified from lava flowing up out of the deeper crust throughout the plain.

The crust magnetization is nearly vertical, just as is the planet's overall magnetic field in those high latitudes. But *MESSENGER* found that the magnetization is *opposite* to the direction of today's field, indicating that Mercury has reversed the direction of its field at least once in the past.[2] The team of analysts says this

> "... implies that the magnetization is a remanent [remaining, permanent] magnetization acquired [in the past] when Mercury's magnetic field was of the opposite polarity, and possibly stronger, than the present field."

Past magnetic field was much stronger

The last phrase in the quote above would have been more accurate if it had said, '... *and very probably much stronger than the present field*.' Here's why: The amount of magnetization depends on the amount and mineral form of iron in the rock, and on the strength of the field when it cools. The analysts conjectured that the iron in the crustal rocks is metallic, uncombined with other elements, and that it is in micron-sized particles.[3] Enough such particles might have allowed the past magnetizing field to be as weak as today's field.[4] However, basalts from the moon, the similar vacuum conditions of which allow some metallic iron to exist, show far too little metallic iron to allow a low-field explanation for the high rock magnetizations on Mercury.[5,6]

In fact, observations with *MESSENGER*'s x-ray spectrometer indicate that the basalts of the northern plain have a rather ordinary composition, between that which is typical of basalts and that in high-magnesium lava with less silicate, such as komatiites.[7] Paleomagnetic studies of basalts[8] and komatiites[9] here on Earth suggest that Mercury's crustal basalts acquired their magnetism in a field at least *ten times stronger* than Mercury's field today.

This adds to the string of surprises Mercury's magnetic field has given uniformitarian[10] space scientists. Before *Mariner 10* zoomed by the planet in 1974 and 1975, experts had expected the planet to have zero field. Instead, those flybys showed that Mercury has a significant magnetic field, about 1% of the earth's. Since then, theorists have tried many versions of the 'dynamo' theory (which imagines a planet's core acting like an electric generator) to explain how Mercury could have a field and sustain it for eons. In the last few years, they have been trying to understand why the field is so low compared to Earth's.[11]

Especially relevant here, all versions of the dynamo theory assert that, except for brief periods when the field might have reversed itself, Mercury's field should have stayed at much the same strength throughout the alleged billions of years of its existence. Evidence for a large decrease of the field sometime in the past adds to the theorists' perplexity. That may be why the analyzing team apparently wanted to dilute that detail.

Magnetized crust validates prediction

In contrast, the above result vindicates one of two scientific predictions about Mercury's magnetic field made by a biblically based creationist theory. I offered it in 1984 to explain how God created magnetic fields of planets in our solar system.[12] If the theory were correct, the article said, then

> "Older igneous rocks from Mercury or Mars should have natural remanent magnetization, as the Moon's rocks do."

By 'older', I meant rocks that formed not long after creation, while the fast-decaying magnetic fields of those two planets would be still moderately strong. I said 'from' because I was picturing that rocks from Mars and Mercury would have to be brought back by astronauts for lab tests, the way they did for moon rocks. I had no idea that low-orbiting spacecraft would someday be able to detect crustal magnetizations. I had even forgotten about this particular prediction until recently. But new space science developments have opened the door to such measurements, in 1997–1999 for Mars,[13] and during the last year for Mercury.

Fast-fading field validates a second Mercury prediction

Measurements *MESSENGER* made from orbit last year, compared with the 1975 *Mariner 10* data, show that Mercury's magnetic field has weakened by nearly 8% in the past 36 years, an astonishingly fast decrease. That supports a prediction in the 1984 paper:

> "Mercury's decay rate is so rapid that some future space probe could detect it fairly soon. In 1990 the planet's magnetic moment should be 1.8 percent smaller than its 1975 value."[14]

The observed rate agrees with Mercury's core having an electrical conductivity close to that of the earth's core.[15] A previous issue of *Journal of Creation* gives more details.[16] The fast rate of decay (half-life of 320 years) implies the crust was magnetized only thousands of years ago.

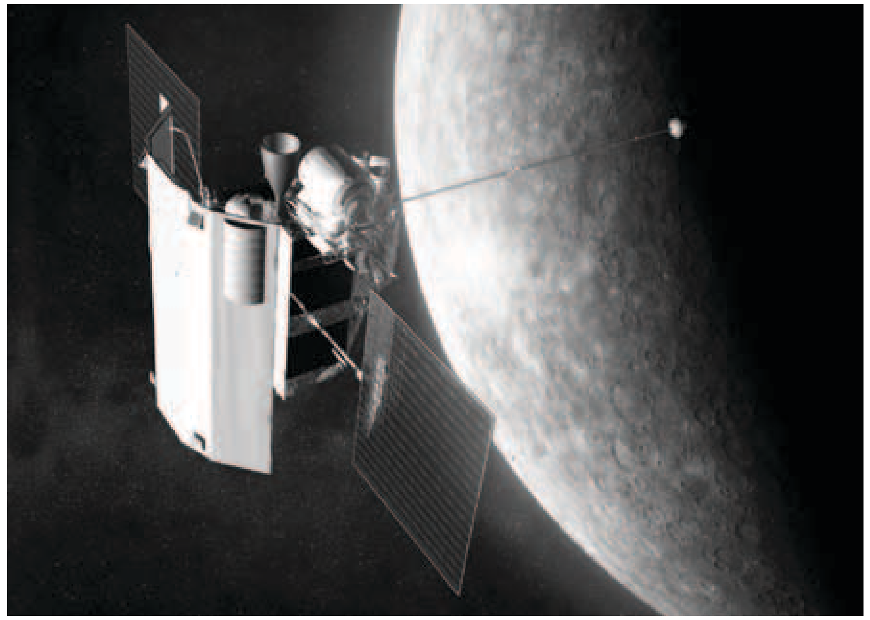

Figure 1. *MESSENGER* spacecraft over Mercury. Magnetometer at end of the long boom to the right.

Valid predictions are important

The above two items for Mercury's magnetic field, its fast fading and its magnetized crust, completes the five predictions in my 1984 paper, all of which spacecraft have now verified.[17] Also, I have extended the application of the theory to other astronomical objects inside the solar system (asteroids, meteorites, moons of other planets) and outside the solar system (stars, magnetic stars, white dwarfs, pulsars, magnetars, galaxies, the cosmos itself). Amazingly, the theory fits these objects well, too.[18]

The main importance of the good fit to known data and the verified predictions[19] is that they support the biblical account of creation and Scripture's young age for the cosmos. The theory could fit the magnetic data we now have for the solar system only if:

1. The original material God created was water (which God then transformed to the present materials), per 2 Peter 3:5 (Greek and NAS) and other passages.[20]
2. The earth and solar system were close to the 6,000-year age given by a straightforward reading of Scripture.

Thus, magnetic fields in the cosmos serve as God's signature on his creation, and like everything in the heavens, they give glory to Him (Psalm 19:1).

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