Magnetic message from Mercury

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A NASA spacecraft is again testing a creationist theory about the magnetic fields of planets. On 14 January 2008, the Messenger spacecraft, made by the Johns Hopkins University Applied Physics Laboratory for NASA, flew by Mercury, the innermost planet of the solar system, in the first of several close encounters before it finally settles into a steady orbit around Mercury in 2011.[1] As it passed, its 'magnetometer' made quick measurements of Mercury's magnetic field and transmitted them successfully back to Earth. It will probably take the Messenger team several months to process the magnetic data accurately.

I'm looking forward to the early results because in 1984 I made creation-based predictions regarding the magnetic fields of a number of planets, including that of Mercury.[2] Spacecraft measurements[3,4] have validated three of the predictions, highlighted in red in the web version of the 1984 article.[2] A fourth prediction, in the conclusion, is this:

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

Of course, no spacecraft visited Mercury in 1990. When (I hope) Messenger orbits Mercury in 2011, 36 years will have elapsed since Mariner 10 measured its magnetic field in 1975. At the above rate, Mercury's dipole magnetic moment would be 4.4 percent lower than it was in 1975.

I arrived at the rate by comparing the 1975 value with the created magnetic moment from my theory, and by using a 6,000 year age for the Solar System. There are two other factors that could affect the prediction, including possible past reversals of Mercury's magnetic field, as happened for the Earth.[5] The two factors would change the amount of decrease slightly. An article[6] I published in 2004 sums up all the effects:

> 'The bottom line is that I think the field that Messenger will measure seven years from now should be between 4 and 6 percent weaker than the field in 1975. More precisely, in 2011 the dipole magnetic moment of Mercury should be between 4.5 and 4.6 $\times 10^{19}$ joules per tesla (ampere–square meters).'

The value in 1975 was 4.8 ($\pm$ 0.26) $\times 10^{19}$ ampere–square meters.[7] Depending on the exact results and accuracy of the 2011 measurements, we may be able to detect my predicted decrease, though not with statistical certainty because of the error limits on the 1975 results. The 2008 results, coming only from several brief flybys, probably won't be accurate enough to detect a decrease clearly. But they might be encouraging enough nonetheless to sustain our enthusiasm for this model of the creation of cosmic magnetic fields.[8]

Note added January 31, 2008: A news conference by the Messenger team yesterday reported that '… the mean dipole has the same intensity to within a few percent and has the same slight tilt'. This is consistent with my prediction. The two more flybys, more extensive analysis and finally the year-long orbit of Mercury in 2011 may reduce the statistical measurement errors enough to resolve whether my prediction is correct.

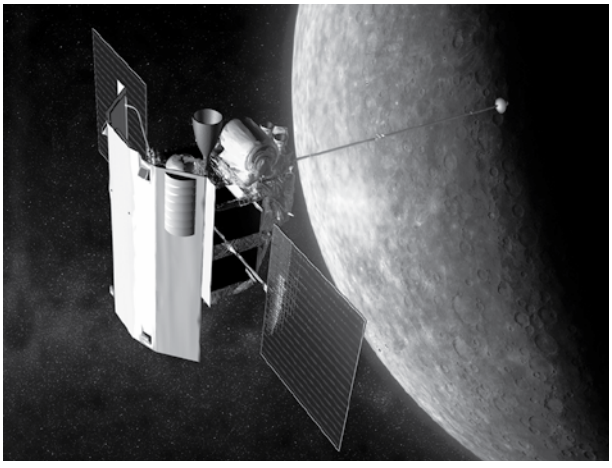

Photo from NASA/APL

Messenger at Mercury.

References

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2. Humphreys, D.R., The Creation of planetary magnetic fields, *Creation Research Society Quarterly* **21**(3):140–149, 1984; <www.creationresearch.org/crsq/articles/21/21_3/21_3.html>.
3. Humphreys, D.R., Beyond Neptune: Voyager II supports creation, *ICR Impact* # **203**, May 1990; <www.icr.org/article/329/>.
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5. Humphreys, D.R., Physical mechanism for reversals of the Earth's magnetic field during the Flood, in *Proceedings of the Second International Conference on Creationism*, edited by Robert E. Walsh, Vol. II, Creation Science Fellowship, Pittsburgh, PA, pp. 129–142, 1990; <www.icc03.org/proceedings.htm>.
6. Humphreys, D.R., Mercury's Messenger, *Creation Matters* **9**(4):1, 9, July/August 2004; <www.creationresearch.org/creation_matters/pdf/2004/CM09 04 low.PDF>.
7. Ness, N.F., The magnetic field of Mercury, *Physics of the Earth and Planetary Interiors*, **20**:209–217, 1979. Use Ness's more accurate result in the second-to-last paragraph of the abstract and express his error bars of ($\pm$ 18) gammas in the form above. 1 A m^2 = 1000 gauss cm^3.
8. Humphreys, D.R., The creation of cosmic magnetic fields, accepted for publication in the *Proceedings of the 6th International Conference on Creationism*, San Diego, CA, July/August 2008.