

The Earth is NOT a Planet

by

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A paper presented to
the St Catharines Torch Club
on April 14, 2011

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A paper presenting historical and experimental evidence for a non-moving Earth, for an Earth that is at or near the centre of the universe. No proof to the contrary has ever been forthcoming, and observational evidence seems to confirm it. Furthermore, all practical considerations lead to the conclusion that the Earth not a planet.

Such a position only seems unthinkable. Throughout this paper I will be referring to current and orthodox scientific texts and papers. I will not be quoting a single geocentric author, or any material of a religious nature. Admittedly, there are philosophical or metaphysical issues at stake, and I regret where sensitive personal beliefs may be challenged. Emphatically, this is a scientific paper throughout, and it is my fervent wish that by the end you will see that it is dealing with real and contemporary scientific issues. Respectfully, I will leave each of you to make your own philosophical or metaphysical conclusions. Those are not a part of this paper.

For the bulk of human history it was believed that the Earth occupies a special and central place in the universe. That Earth-centered model continued to be taught in the world's universities long after Copernicus introduced his Sun-centered model. In the English speaking world the belief in the Earth's centrality held out the longest with educated men such as Sir Francis Bacon and the great 19th century scientist Alexander von Humboldt who confessed:

“I have known too, for a long time that we have no argument for the Copernican system, but I shall never dare to be the first to attack it. Don't rush into the wasps' nest. You will bring upon yourself the scorn of the thoughtless multitude... to come forth as the first against opinions, which the world has become fond of - I don't feel the courage.”¹

In 1971, a Dutch-Canadian educator, Walter van der Kamp, founded the Tychonian Society and awakened the world to *Geocentricity*, the modern version of an earth-centered universe. At the same time, observational scientists were also acknowledging geocentricity in their fashion. In his 1937 book, *The Observational Approach to Cosmology*, the now famous Edwin Hubble wrote, “Such a condition would imply that we occupy a unique position in the universe, analogous, in a sense, to the ancient conception of a central earth.”² In a 1995 article in *Scientific American*, one of the world's leading theorists in cosmology, George Ellis, declared, “I can construct you a spherically symmetrical universe with Earth at its center, and you cannot disprove it

¹ Tischner, August, *The Fixed Idea of Astronomical Theory*, Gustav Fock, 1885, p. 33 (Google book).

² Gibbs, W. Wayt, 1995. “Profile:George F.R. Ellis; Thinking Globally, Acting Universally, *Scientific American* **273** (4):28-29.

based on observations.”³ Even the ultra-renowned physicist Stephen Hawking has said, “all this evidence that the universe looks the same whichever direction we look might seem to suggest there is something special about our place in the universe.... [that] we must be at the center of the universe.”⁴ By the end of the 20th century it was not only geocentricists who were aware of the Earth’s apparent centrality, orthodox scientists were also acknowledging that the universe did appear to be earth-centered.

The observational evidence had become overwhelming. One simple observation is that the number of stars and galaxies increases fairly equally in all directions. That is, if you count all the stars in one direction, and compare it with the count in the opposite direction, the number is always about the same. Similarly, radio sources are *isotropic* or have the same value when measured in every direction. After Hubble discovered the red-shifts, they were whimsically called “the fingers do G-d,” because, as measurements of distance, they show long lines, all pointing inwardly toward the Earth, and from every direction. The mass (matter) of the universe also has a pattern with the Earth seemly at the densest part of the universe. That is, the universe becomes less and less dense as one moves away from the Earth. Quasars, a specific kind of galaxy, form concentric shells around the Earth, or a series of shells all centered on the Earth. The most compelling evidence was discovered in 1965 in a study of the microwave background radiation. A 1976 article in *Scientific American*, acknowledged, “This observation seems to suggest that the universe is remarkably symmetrical and, what is even more extraordinary, that we happen to be at its center”.⁵ What’s more, the universe itself seems to be rotating around a central axis according to the satellite experiment, COBE, launched in 1989. Such observational evidence can be found in standard scientific text books, and while they are open to interpretation, the apparent centrality of the Earth has been widely acknowledged.

Historically, there has never been any proof that the Sun-centered model is actually true, even though it can explain the motion of the Sun, the Moon and planets. I will give three references:

The first is from *The International Encyclopedia of Astronomy*: “At no time did Copernicus have any “proof” of his new cosmology. No available observation could have distinguished between the ancient geocentric scheme and the new heliocentric pattern.”⁶

³ *Scientific American* **273** (4):28-29

⁴ Hawking, Stephen W, *A Brief History of Time*, Bantam Books, 1988, p42.

⁵ Gott, J. Richard, Gunn, James E., Schramm, and Tinskey, Beatrice M., "Will the Universe Expand Forever," *Scientific American*, March 1976, pp. 62-5.

⁶ *The International Encyclopedia of Astronomy*, Edited by Patrick Moore, Orion Books New York, 1987, “Copernicus, Nicholas.”

The second is from *The Milky Way: Galaxy Number One*: “Copernicus could not prove his beliefs. Because no proof was available.”⁷

And the last is from *Watchers of the Stars*: “He [Johannes Kepler]... was well aware that he could give no hard and fast proofs that Copernicus was right and Ptolemy wrong.”⁸

The reality is that the two models, the Earth-centered and the Sun-centered, were regarded as equivalent. That is, neither one was theoretically better than the other, and to this day no one can say that one is correct and the other wrong. Again, this can easily be verified by reading standard publications, and I will give three quotations:

- (1) “The Copernican system as presented in *De Revolutionibus* [by Copernicus] provided no computational advantages when compared to that of the Ptolemaic system.... The computations were neither more accurate nor simpler than those of Ptolemy.”⁹
- (2) “There is one vital point to be borne in mind. Given that the Sun, Moon and planets could in fact behave in the way that Ptolemy expected, *the theory worked*. It could explain the various wanderings, including the retrograde motions, and there was no obvious fault with it.” (Emphasis not added.)¹⁰
- (3) “In determining the order and distances of the planets and accounting for all the unexplained features of geocentric models, it is fully the equal of the Copernican theory, from which it is observationally indistinguishable.”¹¹

I can accept what the scientific literature says on these two points. One, that from 15th to the 17th century there was no proof of any kind that the Earth is in motion; and two, that the sun-centered model and the earth-centered models are basically on par and equally valid theoretically. That is what the scientific literature is saying, and no one has put it more plainly than the late Cambridge astronomer Sir Fred Hoyle when he wrote: “We know the difference between a heliocentric theory and a geocentric theory is one of relative motion only, and that such a difference has no physical significance.”¹² I trust that this audience will not miss this important point. If we take the simplistic position that

⁷ Branley, Franklin M., *The Milky Way: Galaxy Number One*, Thomas y. Crowell Company, 1969, p8

⁸ Moore, Patrick, *Watchers of the Stars*, G. P. Putnam’s Sons, 1974, p145.

⁹ Stief, Paul & Pierce, *Motion in the Heavens*, Holt, Rinehart and Winston of Canada, Toronto, 1976, p27.

¹⁰ Moore, Patrick, *Watchers of the Stars*, G. P. Putnam’s Sons, 1974, p39

¹¹ *Astronomy Before the Telescope*, Edited by Christopher Walker, St. Martin’s Press, New York, 1996, p211. Note: The reference is to the geocentric system developed by Tyco Brahe in 1583 or 1584.

¹² Hoyle, Sir Fred, *Astronomy and Cosmology - A Modern Course*, W. H. Freeman & Co., San Francisco, 1975, p. 416.

the heliocentric model is right and the geocentric model is wrong, then we run counter to the view of many current and respected scientists.

There have been deliberate attempts to prove and measure the Earth's supposed motion. It is at this point that the scientific literature becomes utterly fascinating and revealing. In 1887, Albert Michelson, and later, Edward Morley, performed an experiment that shook the world, metaphorically speaking. With an *interferometer*, they attempted to measure the speed of light in two directions; along the line of Earth's supposed path around the Sun, and at right angles to it. The expected result was that the Earth is traveling at 30 km/sec. But to their astonishment, the experiment showed no motion or only marginal motion at best. The Michelson experiment came to be known as the most successful failed experiment ever attempted because from it came the all the conclusions of modern cosmology. Those conclusions are: there is no *aether* (medium) through which the Earth is traveling; the speed of light is always the same even if the source or the observer is moving; and the universe has no centre or boundary. Very few scientists were willing to admit to the more obvious conclusion that the Earth really isn't moving although they were fully aware that that it is exactly what the Michelson-Morley experiments implied.

Michelson later suggested that the same experiment could be performed to measure the Earth's rotational speed, that is, for the time it takes the Earth to revolve once on its axis. This experiment, when performed by Georges Sagnac in 1913, was equally disturbing, and many scientists scrambled to defend the Theory of Relativity which it clearly seemed to contradict. Sagnac, again by using an interferometer, had shown that the speed of light was different when measured eastward or westward, and that the measured difference was equal to the Earth's 24-hour period of rotation. In classical terms, Sagnac had proved that there is an aether (that the Earth is moving through a medium), and that the speed of light is not a constant. Michelson had been reluctant to do the experiment himself because it would only confirm what is observationally evident, that it takes the Earth twenty-four hours to rotate once on its axis. But, Sagnac had actually measured the Earth's rotational speed against a nonmoving aether, and that implied that Michelson's earlier experiment was correct - that the orbital speed of the Earth actually is zero or close to zero, and that the Earth is not orbiting the Sun.

The point made by the two interferometer experiments cannot be ignored. Using the same technology, it was demonstrated that the Earth has no orbital motion, but does have rotational motion. In other words, the Earth is not orbiting the Sun annually, but is rotating on its axis daily. This is very difficult if not impossible to explain from the heliocentric point of view. But not from the geocentric. All scientists agree that there is relative motion between the Earth and the rest of the universe. And since, to repeat Hoyle, that there is no physical difference between the heliocentric and geocentric models, it is just as accurate to say that the universe is rotating as it is to say that the Earth is rotating. That the Earth is at the centre of a rotating universe is a completely logical conclusion from the interferometer experiments of Michelson-Morley and Sagnac.

There is a practical model of the universe called the Celestial Sphere. In this model the Earth is at the centre of a sphere with the Sun, Moon, planets and stars imprinted on its inner surface. Picture the sky as a huge, hollow sphere turning around the Earth every twenty-four hours, and the sphere dragging all the celestial objects around with it. That is what is known as the Celestial Sphere model. The model is fictitious in the sense that it does not account for distance; that is, all the celestial objects are at the same distance from the Earth. But otherwise, the model accurately represents the changing positions of the Sun, the Moon, the planets and the stars, with the ability to accurately predict their future positions. The Celestial Sphere is in fact the only truly practical model of the universe, and is employed regularly in the sciences in many different ways.

The most obvious example is in marine navigation. Sailors have from ancient times used fixed-earth calculations to navigate the oceans. I was once told by a naval officer - with a twinkle in his eye - how he first has to assume that the Earth is not moving. He frankly found it amusing to assume something that he was so sure wasn't true. Yet, he knew from experience that locating and plotting a ship's position became impossibly difficult when he assumed that the Earth is rotating on its axis. Another example is in explaining lunar and solar eclipses. In the opening pages his book, *Eclipse*, J.P. McCoy makes it very clear that the best way to understand eclipses is to suppose that the Earth is at the centre of the universe, and that the universe is rotating around the Earth every twenty-four hours.¹³ In this way eclipses can be more easily understood, predicted hundreds of years into the future, and even computed backwards into the distant past. In both of these examples, the Earth is assumed to be fixed and motionless for highly practical reasons.

No less astounding is how NASA publishes its *ephemerides*. Ephemerides are tables giving the positions of the objects in the sky at various times. A simple check of the NASA website shows that the tables are geocentric.¹⁴ In the Preface, it is made clear that detailed fixed-earth ephemerides are needed not just for astronomy, but also for interplanetary missions. In other words, NASA uses geocentric calculations to send satellites into space! It is an utter misconception that NASA makes its calculations based on the Copernican model in which the Earth is orbiting the Sun and rotating on its axis. Whenever an astronomer points a telescope at a star, or NASA sends a satellite into space, there is a tacit assumption that the Earth is a fixed object, and that it is the Sun, the Moon and the planets that are in motion. This is confirmed in *Astronomy: A Self-teaching Guide* by Dinah Moche. Her exact words are: "Astronomers use the celestial sphere to locate stars and galaxies and to plot the courses of the Sun, Moon, and planets throughout the year."¹⁵

¹³ McCoy, J P, *Eclipse: The Science and History of Nature's Most Spectacular Phenomenon*, Fourth Estate, London, 1999, p14-15.

¹⁴ www.nasa.gov Type "geocentric" into the search bar to find the 12 Year Ephemeris.

¹⁵ Moche, Dinah L., *Astronomy - A Self Teaching Guide*, John Wiley & Sons, New Jersey, 2009, p 6.

To learn that NASA publishes fixed-earth tables should not be surprising. The Babylonians recorded ephemerides 4000 years ago, and thereby established the basis of Western astronomy. Since ancient times, the locations of the objects in the sky have been determined by only two measurements: their position and the time. In modern times this means a body's position relative to the Earth's equator extended into space and to Greenwich Mean Time, or, where the object is in the sky and at what time of the day. NASA uses this information prepared jointly by the U.S. Naval Observatory and the Royal Greenwich Observatory to publish its *Astronomical Almanac*. Like the Babylonians, NASA's astronomical tables are strictly practical and arithmetical. No philosophical considerations are ever involved, and the Earth's supposed orbital and axial motions are not factored into the *Astronomical Almanac*. The claim, therefore, that NASA's accomplishments in space exploration validates the Copernican model is entirely bogus. NASA's astounding success in sending satellites to all the planets, various planetary moons, and to the edge of the solar system is based on fixed-earth calculations. This is what is so astounding!

Finally, the notion of the Earth as a planet runs counter to our experience. We see the Sun rise and set each day. We see all the stars rotating about the North Star in the night sky. We have no sensation that the Earth is moving. As big as we believe the universe to be, all our experiences are confined to the Earth or very near to the Earth. That is the point that Alan Hirshfeld, an astronomer at the University of Massachusetts, alludes to:

“To believe the heliocentric picture of the heavens, even of a moving, spinning Earth is counterintuitive. Despite decades as an astronomer, I still find it hard to fathom that the Earth streaks through half a million miles of space while we snooze away the night in our beds.”¹⁶

In 2008, an article in *New Science* openly questioned “Copernicus's idea that the Earth was just one of many planets orbiting the sun,” asking if the idea could actually be wrong.¹⁷ In a related article, three Oxford astrophysicists discuss future tests of the Copernican principle.¹⁸ The Copernican principle is an assumption that the universe appears the same when viewed in any direction from every location, or that the universe has no real centre. But, as *New Science* points out, that principle was “introduced into cosmology not because of any observational evidence, but to save face.” Scientists had been forced into that simplifying assumption directly as a result of the Michelson-Morley experiments. Now, four hundred years after Copernicus, scientists are devising ways to test his theory. If it is proven to be wrong, it would “require a seismic reassessment of what we know about the universe.... We would no longer be sure what, if anything we can conclude about the wider universe, its origin, evolution and fate.... leaving us with

¹⁶ Hirshfeld, Alan W., *Parallax*, AW. H. Freeman, 2001, p 16.

¹⁷ Chown, Marcus, “Home Alone: Do We Live in a Giant Cosmic Void,” *New Science*, Nov 15-21, 2008.

¹⁸ Clifton, Ferrari & Land, “Living in a Void: Testing the Copernican Principle with Distant Supernova,” *Physical Review Letters*, 26 September 2008.

the unknown of an entirely new cosmological model.” Similar assessments can be found in many other publications.

In conclusion, it is thinkable that the Earth is NOT a planet, and I invite you to consider the idea without prejudice. Many scientific premises have been overturned in the past, and so too may the Copernican model of the 14th Century. That the Earth might not be a planet is a genuine, scientific possibility.