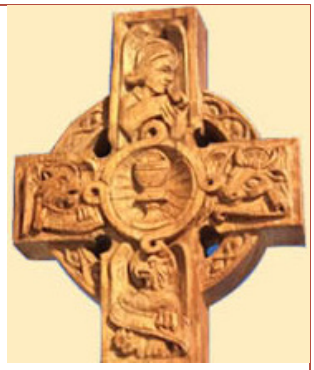
The Pigeon Assembly Goes after Kepler



Who is the Pigeon Assembly?

In the early 17th century, an originally academic and later supposedly religious assault on Galileo was conducted by his enemies, including a fellow named Coulombe, which is Italian for "pigeon". After that, Galileo's followers, the Galileists, called his enemies "the pigeon assembly". I take this name for the assembly of those who conduct a guerilla war on modern science appealing to religion for their motive and to bad science, bad history, and bad theology, for their support.

The Pigeon Assembly has embraced Geocentrism

Geocentrism is a denial of gravity. If the pigeons said, "We don't believe in gravity; the Hebrews didn't have a word for it and we don't need one either; we can fly," then their position would be clear. But they do not say this, so let me make the issue clear.

It was Galileo who asked, as part of a scientific and literary dialogue, the basic question: What is gravity?

In response, his simple-minded persona says, "Easy! It's what makes things fall."

No, but that is just the definition of gravity, answers Galileo. *How* does it make things fall? What is it? We really do not know.

And then Galileo made this incredible statement: if you can tell me how a spoon falls to the ground, I will tell you how the Moon goes round about the Earth. He actually understood that these were the same phenomena. This was an amazing insight! Galileo made the incredible leap of understanding that the physics in the sky is the same as the physics on the ground. Everybody had thought, for thousands of years, that they were different.

Newton built on this specific passage from Galileo. When he said an apple fell on his head and he got to thinking about things falling, he was, in essence, sitting under a tree reading Galileo. This is almost literally true. The Great Fire of London had caused his college to close, and he was living with his mother (who did have an apple orchard) and Galileo's book had just come out. He read Galileo and he made the equations that describe the apple and the spoon and the Moon, and Earth's orbit around the Sun, and a jillion other things.

So here's the point.

Gravity

Once Galileo made that statement, and once Newton followed up with those equations for gravity, we were no longer engaged in mere theories about what might be the center of the planetary system or how many epicycles we should tolerate in our universe imagery. Orbital theory was no longer just about "saving the appearances" — giving diagram that gave a neat accounting of the observations. It was different after Galileo and Newton because now there was a dynamic reason for the Sun to be in the center:

It's bigger.

Or, I should say, it has more mass. It's pulling us in, and the balance between it pulling us in, and us traveling in a straight line East through space, is the curve of our orbit. Putting Earth in the center of the orbit is not even as clever as trying to get your toddler to take Chesterton by the arm and swing him around.

Therefore, let the pigeon assembly consider:

If the Sun goes around the Earth, then gravity is not the reason for our relative motions; indeed gravity does not function at all between the Earth and the Sun. Nor does gravity function in the relative motions of any of the planets. It acts on my spoon, but has no jurisdiction beyond the Moon. Out in the Solar system, there is some other set of physical laws, or none.

This disorderly notion is the reason that many physicists find geocentrism hilarious and others find it horrible, but they will not take it seriously for a moment. No gravity; no physics.

The Pigeon Mapping Project

The Pigeon Assembly says that navigators, including some of our space navigation systems, work from a geocentric perspective. Their cynical conclusion is that our navigators ask the rest of us to believe in heliocentrism when they don't really accept it themselves.

Of course, when you are engaged in exclusively Earth-centered navigation, when you are a ship, for example, or even a spaceship around the Earth, or returning to the earth, it is simplest to talk about the sun rising and setting, as if Earth were in the center. It is the gravity center of your own motion. This simplicity is a fact of math, even for men who are certain that the Sun is in the center or the Earth's orbital motion; the travel-planning equations are not evidence of their cosmology, but only of their practicality.

Similarly, my use of a flat sheet of paper to map my country property does not indicate that I believe the Earth is flat. It's just that the roundness of the Earth is not a factor in such a simple map of such a small property.

Evidently the pigeon assembly wants everyone who believes in the Earth's rotation and orbit to map everything in relation to the center of the Sun, or perhaps more consistently, the galactic center or the center of our galactic neighborhood; otherwise they will call us insincere.

For example, I must be insincere because I use the same map night and day. But I should reverse east for west at nightfall, and west for east at daybreak. Certainly from a heliocentric perspective, we inhabitants of the spinning earth face truly eastward to see the dawn but by late afternoon, the same landward direction is, from a heliocentric perspective, actually westward. But I do not draw maps to be sincere; I draw them to get there. From the perspective of the earth on which I travel, east and west are stable entities and the same map works round the clock.

The heliocentric map is for modeling the solar system, and for mapping travel out beyond the Earth-Moon system, including the travel of the planets in that system. It's just that simple.

By the way, satellites in space can actually provide data to calculate the wobbling of Earth in space from season to season and also when there is a major earthquake. Earth is by no means motionless in space. Let the Pigeon mapper beware!

The Pigeon Assembly Quotes Top Physicists

The Pigeon Assembly says that the top physicists of the 20th century were completely open to geocentrism. If geocentrism is wrong, they wonder, then why did these great men say that one perspective was as good as another?

When physicists since Einstein say that there is no proof for or against geocentrism, they don't mean, "the Bible is as good a physics text as any." What they mean is that the math, the equations that describe motions in the solar system, can be written from any perspective.

This is absolutely true, and includes not just the perspective of the Earth and of the Sun, but of any comet, of any asteroid, and, for the matter, the toe of the ballerina of your choosing. Let the Pigeon As-

sembly acknowledge that the centrality of the Earth, in universe motions, or even just in the motions of the solar system, is on a level with the centrality of a ballerina's toe, and their position will be clear to evaluate.

Furthermore, people would then understand that geocentrism provides no opportunity for an advance in our understanding of the actual constitution of the universe.

Moreover, there is a philosophical issue. Listen carefully, because the Catholic Church, particularly in her endorsement of St. Thomas Aquinas, and generally in her commitment to the Incarnation, embraces philosophical realism. Many physicists, possibly including Einstein and certainly including Stephen Hawking, are philosophically confused about the difference between math and physics. Equations can be written any way at all, but the universe is what it is. The universe is not an equation; it is a reality. It is this way and not another way. The Big Bang may be mathematically described as a probability or a singularity, as Hawking names it, but in fact, it is a certainty, an event. It's not a possibility; it's a done deal.

In time, Einstein got uncomfortable with the mathematical invasion of physical reality and that's why he said, when confronted with equations that described things in terms of random motions and probability, that he did not believe that God played dice with the world. It wasn't exactly because he was a theist; it was because his gut refused to accept theoretical math as a final description of the real universe. The real universe is not a probability, it is a *reality*. It's right here, this way. With relativity, Einstein had opened the door for substituting math for physics, but when he saw the next room, he rejected it. He rejected it by gut, not by philosophy, because he didn't know enough philosophy. We do.

So let us return to the pigeon assembly and lay it out:

Any set of equations which describes the motions of objects in the universe, or even just in the Solar system, without taking gravity into account, is just math; it is not about the universe. And if you choose your math on the basis of the theology of a nation that couldn't pass first year algebra, then you're not a physicist, and not a philosopher, and not a theologian for the faith of the Incarnate Son of God who came to this universe to be with us.

The Pigeons on Humility

The Pigeon Assembly wants all Christians to show their humility and faith by embracing the geocentric perspective of the Bible. This is thematic for Evangelicals: the utter Depravity of Man includes the depravity of man's reason, so following reason is not a virtue.

How soon will logic bring them to embrace the flat-Earth perspective? Let us wait and see; this Biblical perspective will work very well for them as long as they confine themselves to gardening, -- a beautiful, worthy, and essential profession.

I understood their position better when someone told me that, among fundamentalists, the true sign of religious belief is courage, the willingness to be made fun of, to be a "fool for Christ." But for the Galileist, the embrace of the Cross itself is the only "folly" that is perceived as religious. The systematic embrace of ideas contrary to the logical evaluation of sensory data is disrespectful of the human intellect, the very faculty by which we are made in the image of God. It is, to that extent, an error of philosophy and theology.

How fast can stars travel?

There is another problem with geocentrism, one that Ptolemy did not even consider. Keep in mind that his system was not only about the objects we presently understand to be within the solar system; it included the positions of the stars. Now, the stars are very much farther away than he realized; indeed even the closest ones are several light years away — that's several times six trillion miles away.

For example, Sirius, the nearest bright star, is about nine light years away, and this means it takes

nine years for its light to reach us. In a geocentric system, however, the star itself must orbit the Earth every day, traveling the circumference of a circle with a radius of 9 light years. That is pi x 18 light years, or 56.5 light years of travel, every 24 hours. So the limiting speed of light must also be rejected by the geocentrist, and not by some infinitesimal amount, but by a factor of trillions; and this would be another reason for a physicist to find hilarity in the idea.

Humility is not about accepting ridicule so much as it is about obedience, about meekness towards truth, including mental obedience to the discipline of the material facts. This is a right and natural foundation for spiritual obedience to the discipline of spiritual laws.

The Pigeon Assembly Takes Kepler to Court

The Pigeon Assembly says that the Kepler, the heliocentrist, murdered Brahe the geocentrist. They claim that this secret has been guarded for centuries, apparently in case its revelation might cause a return to geocentrism.

How about it? If you knew that Kepler was a murderer, would you conclude that the Sun goes around the Earth?

I have not studied, in detail, the merits of this accusation. It certainly seems that Brahe died of mercury poisoning, and it is certainly true that Kepler, who was furious with him, had somewhat of an opportunity to poison him, for he was living with Brahe, and he did benefit from Brahe's death because he became the new imperial mathematician.

Furthermore, Kepler managed, according to the plan that had supported him through months of desperate misery living as Brahe's assistant, to obtain the records of Brahe's very extensive celestial observations. This was not completely above-board, for Brahe wanted his work to go to his natural heirs, (he had eight children) rather than to the scientific community, or to his professional heir in a position supported by Danish taxpayers; and he wanted this arrangement in part because he feared — correctly — that Kepler would use his data to support a celestial mapping project that he had rejected.

Tycho Brahe

Just a minute. Who was Tycho Brahe? (teeko bra –hee) and why did Kepler want his work?

Brahe was an incredibly keen and ingenious observer, whose accurate plotting of planetary motions was not bettered for 100 years after his death, even by people with superior telescopes. He was meticulous; if you wanted to do a celestial map, there was no better starting place than his records.

He was not exactly a geocentrist, however, not the Ptolemaic sort anyway. He believed that Mercury and Venus and indeed all the planets except Earth went round the Sun, while the Sun, pulling them along — went round the Earth! This was a compromise position, meaning that he caved in on the heliocentrism of all the planets except Earth. Dynamically, this was absurd, and it depended on the notion that celestial motions had no physical laws to follow. This judgment was shortly to be closed out by Newton's laws of gravitation but for the moment it was a proud compromise and it was harmonious with his observations, the best observations of the century.

Kepler rejected Brahe's model. He wanted Brahe's observations, but not his theory. He was willing to subordinate all his personal ambitions to be with the greatest observer of his century, just because he wanted the data. So there was opportunity for Kepler to commit murder, and there was motive. It was in the 1990's that examination of Brahe's hair revealed levels of mercury that confirmed that his death, which was consistent with mercury poisoning, was certainly just that. It would make sense to consider the possibility that Kepler, or someone who sympathized with him, did it.

Nevertheless, Brahe was a self-medicating person, and had mercury in his own possession for that reason and because he was an alchemist. In his mind, alchemy was just as important as astronomy. He should have known better than to poison himself, but then, he had been sick for quite a while — a few weeks or so, when the poisonous dose was taken. Many sick people have impaired judgment, especially if they are already taking mercuty. Furthermore, no thought of murder is reflected in Kepler's very personal diary.

Brahe didn't have many friends. He had lost his nose in a brawl early in life and he quarreled hopelessly with everyone who lived with him. Any Danish taxpayer might have wanted to kill him; for that matter so might his pet moose, who had the run of his castle living quarters but nevertheless broke his ankle and died after getting up into a banquet room and drinking too much beer to get back downstairs safely.

However that may be, opinion on Kepler's guilt has shifted from "certainly" guilty to probably not guilty.

And all of this is *completely irrelevant* to the orbit of the Earth!