

# Scientists seeking to identify skull as that of Copernicus

**EDITOR'S NOTE:** The following article is part of an ongoing science series written by Arkansas State University faculty members and published periodically by *The Sun*

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SPECIAL TO THE SUN

**JONESBORO** — Most people are unaware that the origin of the term revolution is purely scientific.

When the astronomer Copernicus published his book "De revolutionibus orbium coelestium" ("On the Revolutions of the Heavenly Spheres") in 1543, his idea that the earth revolved around the sun and not the other way around was considered so heretical that the term "revolution" began to be used to describe anything that meant a radical change with the past.

A month ago another revolution was announced when a team of Polish archaeologists went public with the news

that they had located the grave of the famous astronomer.

The location of the grave, the age of the skull (corresponding to a 70-year-old man), a broken nose and a scar above the left eye, were all characteristics of Copernicus when he died in 1543.

This Polish scientist was a clergyman whose real job was as a government administrator given his mathematical and economics skills. His interest for the planets (or astrology as it was then known) was a hobby. But as he began to make calculations about the orbits of the planets he realized that the old dogma that the earth was the center of the universe was a fallacy.

Not that he had been the first one who considered the sun as the center of the solar system: Some Greek philosophers and Muslim scholars had proposed the same theory but without the scientific elegance that Copernicus provided. Yet, since the idea of the earth revolving around the

sun seemed to contravene conventional wisdom, few people considered it.

Even worse, the idea that the earth represented the center of the universe was so entrenched with the religious beliefs of the time that anyone proposing otherwise would be considered heretical and burned at the stake.

That is exactly what happened to Giordano Bruno, who advanced the heliocentric (or sun-centered) theory of Copernicus years later.

Galileo was luckier having been condemned only to house arrest.

And Copernicus knew of the possible consequences of his theory. That is why his book was not published until after his death.

But Copernicus went well beyond simply enunciating that the earth was just another planet. He also made clear that Earth rotated around the sun once a year and around its axis once a day. He also explained how changes in the angle of Earth's axis dictated

## QuickINFO |

Copernicus died in 1543 at the age of 70.

The Polish scientist was a clergyman who also worked as a government administrator.

His interest in the solar system, which began as a hobby, eventually led him to make calculations about planetary orbits that brought to light the fallacy of the church's dogmatic belief that the Earth was the center of the universe.

Copernicus' heliocentric view of the solar system was so controversial, and potentially dangerous, that his works on the subject were not published until after his death.

the changes of seasons, and why the precise map of stars changes with the rotation of our planet.

He further proposed that the earth's orbit was not circular but an ellipse.

His work remained in obscurity for about 150 years and it was not until Galileo's observations of the phases of Venus with the telescope that observational evidence of Copernicus' theory was provided.

# SCIENCE: Team searching for descendants to match DNA

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Copernicus, was buried at the Roman Catholic cathedral in the city of Frombork, 180 miles north of the Polish capital, Warsaw.

Now the team of Polish archaeologists and forensic scientists are searching for Copernicus' relatives in order to use a modern scientific tool, DNA fingerprinting, to reach final proof that they have encountered the skull of this revolutionary.

DNA fingerprinting is a technique that allows for determining the genetic relationship among individuals. The technique, which is

being employed by scientists at the Department of Biological Sciences at Arkansas State University, will be part of the topics to be taught in the new Forensic Science (crime scene investigation or CSI) major being offered at ASU next year.

For more information contact the ASU Department of Biological Sciences at [biology@astate.edu](mailto:biology@astate.edu).

Dr. Romero is professor and chairman of Biological Sciences, and Dr. Sustich is professor of physics and dean of the Graduate School at Arkansas State University.