

THE PRECESSION OF THE EQUINOXES: AN INTRODUCTION

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David Ulansey, Ph.D., and others propose that the followers of the Mithraic Mysteries worshipped a god who was powerful enough to adjust the positions of the stars, referring to the shift caused by the precession of the equinoxes. Due to the wobble of Earth, the stars that are visible from Earth move .014 degrees west to east each year, or through one constellation in approximately 2,156 years. The iconography of the Mithraic Temples consistently show Mithras—who is associated with Perseus—slaying the bull. Ulansey writes,

This image signified the god's tremendous power, which enabled him to end the Age of the Bull by moving the entire universe in such a way that the spring equinox moved out of the constellation Taurus...the other constellations lying on the celestial equator were then added to show that the god had power not only over the position of the equinoxes but over the position of the entire equator as well.¹

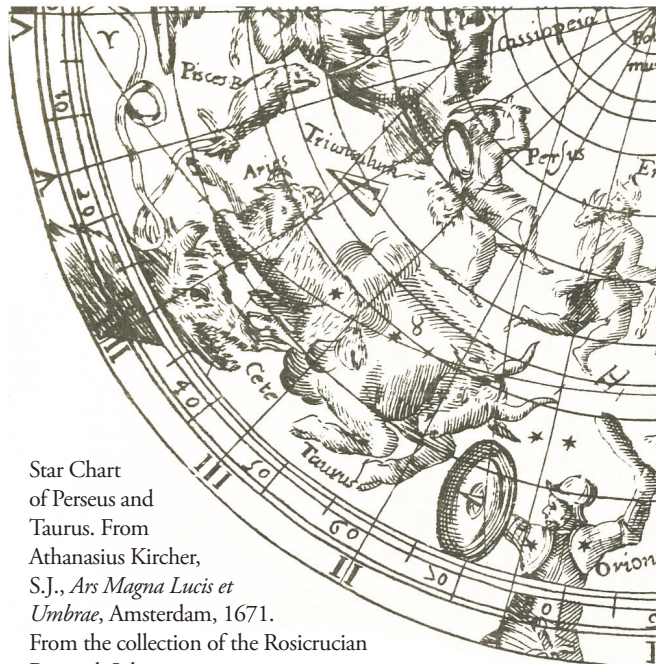
Precession of Earth's Axis

Forces associated with the rotation of Earth cause the planet to be slightly oblate, displaying a bulge at the equator. The Moon's gravity primarily, and to a lesser degree the Sun's gravity, act on Earth's oblateness to move

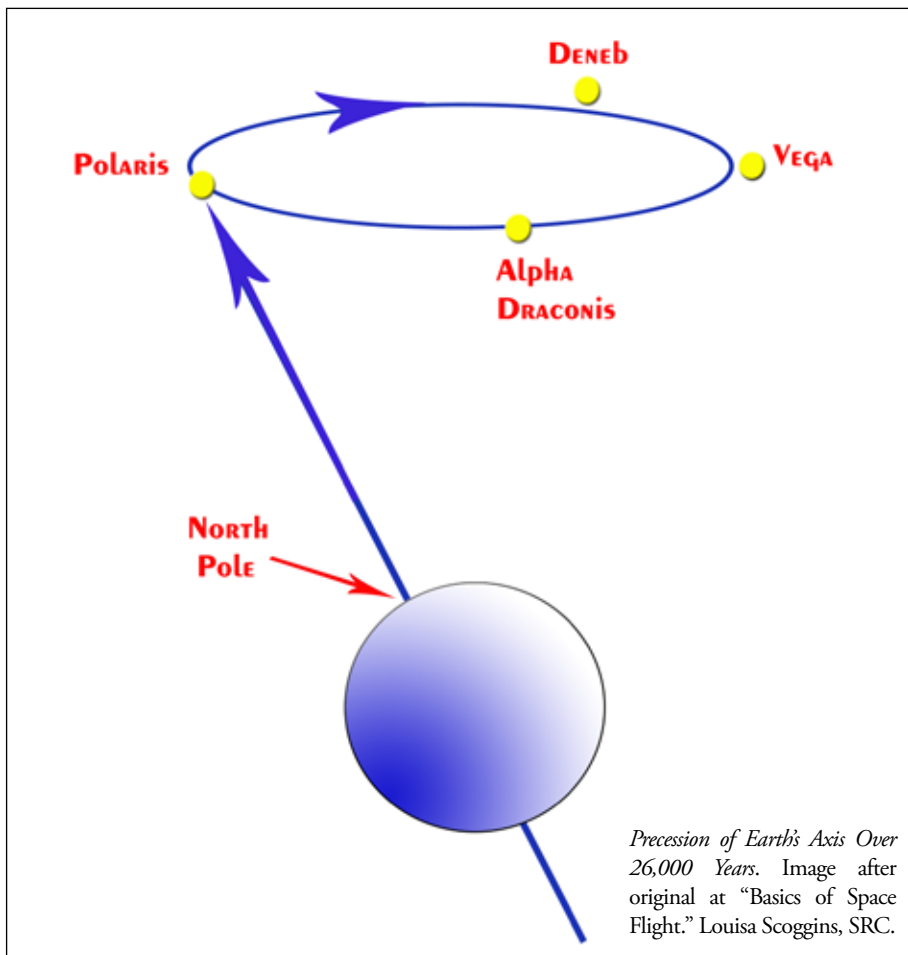
the axis perpendicular to the plane of Earth's orbit. However, due to gyroscopic action, Earth's poles do not "right themselves" to a position perpendicular to the orbital plane. Instead, they precess at 90 degrees to the force applied. This *precession* causes the axis of Earth to describe a circle having a 23.4 degree radius relative to a fixed point in space over about 26,000 years, a slow wobble reminiscent of the axis of a spinning top swinging around before it falls over.

Precession of Earth's Axis Over 26,000 Years

Because of the precession of the poles over 26,000 years, all the stars, and other celestial objects, appear to shift west to east at the rate of .014 degrees each year (360 degrees in 26,000 years). This apparent motion is the main reason for astronomers



Star Chart of Perseus and Taurus. From Athanasius Kircher, S.J., *Ars Magna Lucis et Umbrae*, Amsterdam, 1671. From the collection of the Rosicrucian Research Library.



as well as spacecraft operators to refer to a common epoch such as J2000.0.

At the present time in Earth's 26,000 year precession cycle, a bright star happens to be very close, less than a degree, from the north celestial pole. This star is called Polaris, or the North Star.

Stars do have their own real motion, called *proper motion*. In our vicinity of the galaxy, only a few bright stars exhibit a large enough proper motion to measure over the course of a human lifetime, so their motion does not generally enter into spacecraft navigation. Because of their immense distance, stars can be treated as though they are references fixed in space. (Some stars at the center of our galaxy, though, display tremendous proper motion

speeds as they orbit close to the massive black hole² located there.)³

ENDNOTES

¹ David Ulansey, *The Origins of the Mithraic Mysteries: Cosmology and Salvation in the Ancient World* (New York: Oxford, 1989), 93–94.

² See Max Planck Institute for Extraterrestrial Physics, "Galactic Research Center," Max Planck Institute for Extraterrestrial Physics, <http://www.mpe.mpg.de/ir/GC/index.php>.

³ Text from the NASA, Jet Propulsion Laboratory, California Institute of Technology, "Basics of Space Flight," Section 1, Chapter 2, NASA, Jet Propulsion Laboratory, California Institute of Technology, <http://www2.jpl.nasa.gov/basics/bsf2-1.php>.

