

PANORAMA

A Part of the Cosmos Too Empty

When drawing a map of the radio sky, L. Rudnick and colleagues at the University of Minnesota discovered an unexpected cold spot in the Cosmic Microwave Background (CMB). The cold spot suggests the presence in the constellation Eridanus (the river of stars running south from the constellation of Orion) of a huge volume devoid of matter—an empty bubble a billion light years across. Not only is ordinary matter missing, but also the mysterious stuff called “dark matter.” The giant void, however, does contain “dark energy.”

The physics of this cold spot in the CMB involves two factors:

1. Matter, if present, would interact with the CMB and raise its temperature a bit and
2. The presence of dark energy has the opposite effect. According to what is suspected about dark energy, it would siphon a bit of energy from the CMB photons, thus cooling them and creating a cool spot.

The spatial extent of the phenomenon is not necessarily anomalous. However, the suspected void in Eridanus is so large that the best-accepted theory of cosmic evolution cannot account for it.

The Solar System Is Too Full¹

The distances in the solar system are great. Although meteor and asteroid “storms” abound in the movies, no spacecraft has ever accidentally run into an asteroid or been crippled by a meteor. It even takes most of a year to reach one of the nearest planets. How can such an expanse of empty space be called “too full”?

In previous issues we have talked about the stability of the solar system, particularly the role the earth² and Mars³ play in stabilizing the planetary orbits. In each case, gravity is in play. It turns out that gravity decides when a system is too full.

Anyone who has read up on the relationship between Saturn’s rings and satellites has a sense of how gravity regulates material in a gravitational system. The moons shepherd rings, keeping the particles making up the ring system confined to a specific band associated with the shepherding moon’s orbital period. We also find resonances among

¹ Soter, Steven, 2007. “Are Planetary Systems Filled to Capacity?” *American Scientist*, **95**:414.

² Panorama, 1999, “Stabilizing Earth,” **9**(89):26.

³ Panorama, 1993. “The Moon and the Seasons,” **3**(65):21.

the planets, not just in their orbital periods but also in their rotation. The moon, for instance, always keeps the same face pointed to earth. Likewise, when Venus is closest to earth, it, too, presents the same face to the earth.

Computer analysis of the solar system, where planetary orbits are worked backwards or forwards in time, reveals that the solar system is metastable, meaning that it can easily be disrupted. One more object can disrupt the entire system.

A digital computer computes an orbit by breaking it down into short, straight lines that link together to trace the orbit. An orbit of short, straight lines is not the same as a real, smoothly-curving orbit. As a result, inaccuracies enter the model with each short line and with each computation determining that line (rounding and truncation errors, especially in computations involving irrational numbers such as π). Thus a computer's usefulness is limited to a relatively small time span. Its conclusions may be valid for at most a few million years, and that may be optimistic.

Of all the planets in the solar system, and recall that in geocentricity the earth is not a planet, Mercury is most unstable. Mercury has a small but finite probability, based on changes in the eccentricity of its orbit and on gravitational resonances⁴ of colliding with Venus.⁵ If that collision happens, the solar system would probably become chaotic. Stability could only be reestablished by the ejection of a planet.

Once again we see that delicate balance that modern science calls the "Anthropic Principle," which reveals that the universe was made for man. The solar system is in a delicate balance. The distance of the earth from the sun has to be maintained within less than a handful of percents, or all higher-order life on earth will die. If, as your editor believes, the earth is located at the barycenter of the universe, it cannot be ejected from the solar system because the entire power of the universe would hold it in place; but a small planet such as Mercury, the smallest of the planets, is most likely of all the planets to be ejected if the stability of the solar system is to be maintained. The heavens were created for man says the Scripture, and all of impartial science attests to that.

⁴ One expects Mercury to have resonances with Venus, the sun, and earth. The resonance with earth was mentioned in the author's book, *Geocentricity*.

⁵ The spiritual implication of such a collision is the confrontation between Jesus as the true bright and morning star (Revelation 22:16) and Satan's counterfeit morning star, (Mercury or Hermes, the messenger of the gods as in "hermeneutics") overtly found in the NIV in Isaiah 14:12. For more on the matter, see Bouw, G. D., 2001. "The Morning Stars," *B.A.* 11(97):69. By the way, the reading, "Day Star," found in margin notes and modern versions' text of Isaiah 14:12, also attributes a title of Christ (II Peter 1:19) to Lucifer or Satan. In that case, the day star refers to the sun (Psalm 19:1-6).