

CHAPTER 48

Magical Moments and Places: Part 3

Viewing the Universe Without Light Pollution

The inspiration for this magical moment remembrance comes from page 7 of the second edition of Brian Green's book *The Elegant Universe*. He discusses the ancient Greeks and wonders why they were so much more interested in the universe than people are today.

This reading prompted me to remember our family's first summer at Rocky Mountain Biological Laboratory (RMBL) at 9,600 feet, where the air was pure and residents enjoyed zero light pollution. I could merely walk outside the cabin at dark and the heavens blazed—a universe I had never seen before! The beauty was stunning, and thoughts about the universe that had never entered my mind flooded in. I was suddenly in the world experienced by the ancient Greeks. My thoughts were probably similar to those they took pleasure in every night.

The summers at RMBL extended intermittently from 1961 through 1994. During this period, the family spent about half the summers at RMBL and the other half at the University of Michigan Biological Station (UMBS). Some light pollution was present at UMBS, and the air was not as clear as at RMBL, but the nightly display of stars was still stunning. One added benefit at UMBS was the *Aura Borealis* display, which usually occurred once or twice each summer.

Light pollution has become an anthropogenic barrier for most of humanity to the daily view of its part of the universe. The mystery has been obscured by light and air pollution. I am reminded of Aldo Leopold's essay "The River of the Mother of God." The river originates on the eastern slopes of the Andes Mountains in South America and disappears into the vast Amazon forest. Where it went and where it entered the huge Amazon River were unknowns. However, scientific exploration disclosed both of these unknowns, and Leopold deplored the loss of the mystery, even though he was a renowned scientist.

I share his regret. I remember when Africa was a mysterious continent. When I was a boy, films such as "Tarzan of the Apes" and "Elephants Graveyard" conveyed some of the mysteries, as did films on hidden treasures, such as "King Solomon's Mines."

I also recall travelogues featuring two zebra striped planes flying over vast herds of game. I cannot recall the names of the husband and wife explorers, but the pictures of the animals and forests remain in my memory. I still enjoy books about the present day Kalahari bushman and their hunter/gatherer counterparts in other parts of the world. However, these memories are of long ago, and most of the present generation will never experience such wonders. Have life's mysteries disappeared?

Even though present and future generations cannot marvel at areas of the world unexplored, fortunately an abundance of new mysteries are discussed in *The Elegant Universe*, and other publications include how the human mind works, speculations on when the present Biosphere will collapse, and what the replacement Biosphere will be like. However, scientific literacy is essential to even being aware that these mysteries exist. The assault on science may be discouraging the present generation from considering a career in science and older generations from becoming more scientifically literate. I hope that this situation will improve.

If inquiring minds and critical, evidence-based thinkers continue to exist, mysteries will be solved and new mysteries identified. However, humanity must be willing to pay a price as new evidence will often be perceived as a threat by special interest groups from horse-whip manufacturers to fossil fuel corporations. New understandings of the universal laws of physics, chemistry, and biology (e.g., anthropogenic greenhouse gases) will alter the way humans live and will be labeled "bad news." Science provides many benefits to humanity, but science is not a risk-free profession, and to nurture the scientific process will require greater public, scientific literacy than exists at present.

If you are concerned that science will replace all the mystery of the universe with scientific evidence, refresh your memory of chaos theory!