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Engineering

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Engineering

A group of us recently watched an eclipse, when the moon passed between us and the sun. We were fortunate to be situated where low clouds passed over us that were just thick enough so that we could look directly at the sun rather than needing to peer through extremely dark glass. If a team of engineers had designed the weather pattern that favored our viewing, they could not have done much better. But even more exceptional "engineering" is revealed in the size of the moon relative to the sun, and the distances of the moon from us and the moon from the sun. The shadow of the moon is precisely the size needed to just cover the disk of the sun from our perspective on earth, so that the corona and flares that rise above the body of the sun can be observed. In addition, the orbit of the moon around the earth is so regularly various in its movements that occasional eclipses become not only possible, but predictable.

Over years of observation, scientists of various cultures around the world were able to ascertain the predictability of the moon's orbit around the earth, and from that knowledge, design calendars that were very helpful in building stable civilizations. Much of scientific understanding follows the same pattern of observing phenomena and learning predictable outcomes, so that engineers of various disciplines may apply what is known to the making of the whole range of human-made projects all over the earth.

If we can admire the pyramids of Egypt and Mesoamerica, the huge bridges and immensely tall buildings of our age, as well as orbiting satellites and electronic devices, we can also give some thought to those aspects of the world about us that we humans have neither made nor engineered, but that make our lives not only possible, but worth living. We can decide to take a few moments to engage in a gratifying and often spiritually supportive exercise that does not require either travel or expense, and for which faith, though not a requirement, adds breadth, depth, and the possibility of experiencing joy. We can reflect on what we have observed and learned, at any time and in any place.

How easy it is to appreciate the immensity of the universe, even without a book or an article in our hands, or a video feed from the Hubble telescope before us. We know enough about the speed of light and the fast-moving galaxies that are farthest from us, to wonder how all this came to be, since even a "Big Bang" requires the pre-existence of "something" before the action took place. The sciences can observe what already exists, remaining appropriately silent about the origin of the material out of which space and time came into being. We can reverence the special kind of "engineering" that could imagine and create, from nothing, the tiny but physical

“something” from which has come all that we can now perceive, and all else that we have yet to discover.

Just as we can recall with appreciation the beauty of a spring day, and all the material things and events that we contact through our senses of hearing, taste, touch, sight, and smell, we can also reflect on our internal experiences: we can take joy in acknowledging our freedom to choose, our capability for learning and for understanding, and our spiritual power to believe and to love.

Our observations of all that is praiseworthy need not be limited to the products of human engineering.