EDITORIAL

Stars in our eyes...?

Our ancestors surveyed the night sky, creating images from random points of light in order to grasp reason in what appeared to be chaos. For millenniums humankind has done just that—it is our nature to use nature when defining our place in the universe.

During an after-dinner walk one summer evening in A.D. 2020, you raise your head to wish upon a star—[now close your eyes and picture this] and are startled by the appearance of a new star. You observe it wonderingly for some time before deciding that it is a very curious thing...it doesn't dance across the night canopy like the other stars. Mezmerized, you lie down in the grass to watch. Shortly before dawn you realize it has followed your night into day. Why is this, and what is this? You inquire and are told: The star is created of the same materials as are all other stars. But, egad! This one was not only made by man, but placed exactly where he wished it to be, moment by moment. The star is, in fact, a geosynchronous-earth-orbiting (GEO) satellite hovering over a fixed point. It is a direct result of technology perfected from the primitive system of low-earth-orbit satellites in place during the late-1980s to monitor weather and the effects of atmospheric pollution—deforestation, drought, etc. The GEO aids scientists in defining geophysical and climatological trends that may affect human survival.

Now, get this...the GEO transmits ~30 gigabits of data to the earth *every three days*. To put that in perspective—about the same amount as the total of information stored in the United States Government Internal Revenue Service (IRS/taxpayers) files!

The booklet you were given to explain the GEO "star" you discovered, Mission to Planet Earth: Technology Requirements, published by GEO Program developer, the National Aeronautics and Space Administration, Hampton, Virginia, describes and promotes the attitude that missions into space help mankind better understand events happening here on earth. And, what's this? ...Every aspect of the GEO Program is good news to the materials community in that *it requires ongoing development of new materials and innovative advances in processing and fabrication for continual improvement of the operation* of the GEOs, one of which will be strategically placed over each of Earth's seven continents.

Flash-back to today. Not so long ago I received a letter from Carl Sagan—yes, the same of "Cosmos" fame—representing an organization called "Citizens of Planet Earth." Carl included a short questionnaire inviting me to express my opinion on a variety of topics related to the development of space technology for the betterment of mankind. What struck me was that several questions raised the issue of international cooperation in analyzing, sharing, and using data gathered from space. Before marking my answers I paused to think, "Who should lead the organization of this international, global program of establishing data-gathering systems in space, and effect its management; surely not an agency representing any one country?"

Perhaps it is the role of international scientific societies like ASM International® to bring materials engineers and scientists together in organizing projects such as GEO, with trust and teamwork.

Indeed, we might all sleep more peacefully knowing there was a friendly eye in the sky, redefining our nature from competition to cooperation with the earth, and with each other.

John R. Ogren
Editor