

Dark Matter, Bright Future

By Dr. Ronald Polidan

Is the thrill gone? Have we maxed out on space exploration? There was a time when a whole generation of children (myself included) could be enchanted by every space launch.

Of course, it was all part of a larger battle then - America versus Russia, Communism versus capitalism, cosmonauts versus astronauts. Given that ideological theme, many say that fuel independence should be our new Sputnik, that the time for chasing the 1958 Russian satellite that beat us into space is long gone and we should now see our withdrawal from foreign oil as a galvanizing cause.

But something vital is lost when we take our eyes off “the last frontier” and settle for solving only today’s problems. In fact, to judge by the scarce media coverage nowadays of space science and exploration, one can be forgiven for wondering if there is a world outside our own.

Admittedly, there was some excitement over Pluto’s recent demotion to dwarf-planet status, but that was a matter of politics and taxonomy as much as anything else. And while pundits were “roasting” Pluto, some truly spellbinding discoveries did occur, though they were little noticed in the general press.

The Chandra X-Ray Observatory, for example, recently provided some of the most compelling evidence yet for the existence of dark matter, that mysterious mass that has no other property other than to give off a gravitational force. We can’t see it and we can’t feel it, and maybe we shouldn’t even be concerned. But it’s hard to believe that something that takes up roughly 25% of the universe isn’t of prime importance. Sooner or later, it may provide a key to existence itself.

Chandra, along with the Hubble Space Telescope and other observatories, has also rewritten the science on black holes, the formation of galaxies, and the fate of the universe. Concerning the last item, our most recent data tell us that not only is the universe expanding, but that its expansion is accelerating. Most of this space news, however, seems to be flying under our collective radar.

This reaction to science isn’t new. Nineteenth-century England saw little practicality in Michael Faraday’s experiments with electromagnetism. Today, of course, the electric generators he made possible run our world. Similar observations could be made about the discoveries of Niels Bohr and Albert Einstein. Pure science seldom gives clues as to how it will alter our lives.

But in many ways, that is beside the point. Discovery and the lure of a frontier can transform society, just as New World exploration helped usher in an Age of Enlightenment, and just as the frontier culture of the U.S. during the 19th century brought with it an era of progressive populism and innovation. It’s no accident that Dayton, Ohio, a gateway to the West, was also the Silicon Valley of the Wright Brothers’ Day, playing home to such inventions as the refrigerator and the washing machine.

In the next several years, we will have to make some difficult choices regarding our investments in space exploration. And certainly, there are many worthy candidates. But with media interest flagging and budgets being constrained, there may be an unfortunate break between the time when

orbiting observatories, such as Chandra, cease to operate and the next generation of space telescopes is launched.

This would be a shame not only for the great science we would be denying ourselves, but also for the missed opportunities to see beyond the here and now - to be drawn toward the wonders that await us. One may argue that our reach will always exceed our grasp. But it's the reach that counts.

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