American Leadership in Space: Relishing Memories of a Glorious Past while the Future Eludes Us

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The recent article by Robert Charles (2014), entitled "American Leadership in Space: Now or Never", is well stated overall and even eloquent in characterizing the needs of the United States Space program to regain the lead it once enjoyed since 1957 when the National Aeronautics and Space Act was passed. Unfortunately, like so many other individuals who are or have been historically entrenched in the former and ongoing work of NASA, the Department of Defense, and related US industries, the author states that regaining the lead will "take a remake, rethink, restart, and enlarged budget for NASA".

For fifty years I've been lecturing, teaching, and publishing around the world (Robinson 1986, 2002, 2003, 2012a, 2012b, 2014) to emphasize that during these years international relations have shifted constantly and dramatically; new nations with new objectives have been established; the current and projected global economic infrastructure has evolved in ways that would have been very difficult to anticipate in 1957, and even until very recently; Space activities have become infinitely more important to national defense needs in ways that are itemized and characterized by constantly shifting alliances; the global population has exploded far beyond and much faster than experts anticipated; the minimal needs of the population have been far outpaced by reasonably available and recoverable resources, etc. In short, the world of today is far different from the world of 1957 and it keeps changing at an ever increasing and more alarming pace.

As a consequence, NASA is not about to "cut it" with either the modest or major resource/budget increase our colleagues like Robert Charles are recommending. We urgently need to recognize that we must come to a higher level of understanding about the new and constantly evolving governmental regulatory infrastructures, particularly those of the US and its allies. This includes Space activities that relate directly to migration by humankind into Space. I suggest that we need to have a frank discussion about how and the degree to which the core biological needs of the human population require migration into Space for the survival of the human genome. NASA has far too many diversionary glamour missions (more often than not designed in the first instance to satisfy the political requirements of various members of Congress) that are not dedicated to this all important purpose. Exactly why is the subject of migration of humankind into Space not being discussed with official urgency by NASA, or by the majority of Space agencies of other countries.

While we debate the degree to which NASA funding should be increased, what its core missions should be, and whether NASA should be restructured as a Department of Space (Knuth 2015a), we need to consider that what may in fact be more urgently needed as a first step is a commitment to establish a global and eventually, perhaps, a transglobal organization that is committed to efforts the primary and long-term goal of which is to facilitate the migration of humankind into Space. There is no reason why such a global/transglobal organization could not be managed by and with US private entrepreneurial expertise in a way that embraces relevant principles of the US Constitution, while benefitting the majority of nations as well as an evolving US population and its governing bodies at both State and Federal levels. In this context, some disciplined visionaries are recommending that we consider establishing orbiting LOX depots as a practical first step to building the physical infrastructure needed (Martin 2015).

The idea of salvaging US leadership in Space activities by providing for a somewhat restructured, more well-funded, and more independent NASA is simply not well founded, given the realities of what will be needed for a continuing international collaborative effort if we are to secure a permanent future for humankind in Space. This future cannot be secured by NASA alone, or even by the US Government and private sector acting independently and more often than not alone (Robinson 2014).

I have a great deal of confidence in US business management principles and practices necessary in the real world of 2015 and beyond. We need to think creatively, constructively, and in a fashion that is informed about "what is", and from which we work through to "what ought to be" in terms of envisioning a permanent future for humankind in Space. We should not be afraid of incremental failures along

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the way, and we should not be afraid of turning the effort over to the upcoming generations and their rapidly evolving "techno-thinking" and communication abilities.

More fundamentally, we should not be afraid to discuss this topic and how it affects all humans and, in fact, all life on Earth.

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