

SYMPOSIUM ON STEPPING STONES TO THE FUTURE: STRATEGIES, ARCHITECTURES,
CONCEPTS AND TECHNOLOGIES (D3)

Strategies and Architectures to Establish a “Stepping Stone” Approach to our Future in Space (1)

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TO THE FUTURE OF ASTRONAUTICS BY REMEMBERING THE PAST
- A PERSONAL TRAVELOGUE ON THE ROAD TO SPACE DEVELOPMENT

Abstract

Many years ago, Astronautics disappeared from the “future radar,” something unthinkable to the last century’s pioneers. Must humanity truly remain limited to a single planet?

The present analysis reviews different perception periods in the past astronautical development, as well as some recent technological achievements, in an attempt to illuminate a few sign posts for a lasting and prosperous course. The author’s work and experience will add specific details to those way points at which he (tried to) contribute.

One can observe the evolution of the astronautical thought as subdividing into five time intervals:

- 1865-1910 – the time in which stories are written – by the forerunners of both Astronautics. The stories give preeminence to the spirit of exploration travel.
- 1911-1932 – the time of the pioneers – and of the rocket societies. For the pioneers, Astronautics is to enable humans to explore unknown terrains, to add to the people’s economic arena.
- 1933-1969 – the “von Braun epoch” covers the development of rocket propulsion and all technologies for functional launch vehicles, ending with the first lunar landing.
- 1970-1992 – time of crises, illusions, and successive retreats. The explosion of the original SU serves marks the end of this period, as it causes a programmatic crisis at least as strong as the opening one.
- 1993-2009 – two keys may apply to the contemporary interval: the establishment’s malaise, retreat, and “loss of memory” and, OTOH, compelling arguments for development, new commercial initiatives.

Half a century after the Mare Tranquillitatis’ beginning, the journey appears more remote than a century earlier.

An examination of the different intentions, objectives, and economic appraisals characterizing each of these intervals follows.

Von Braun’s contemporaries also viewed the state as the paradigmatic supporter of space, passing this image to subsequent generations: visionary politicians can revive past excitements. In reality, this will not happen. Even the best rationales, like the extraterrestrial imperative for addressing important issues confronting humanity have not moved the establishment. Astronautics can only flourish again if private initiatives can take the risk and create new wealth by using the resources of space.

The paper concludes by examining the urgency argument of the space option to the light of current step further and look at current technology trends. New developments may buy us all some time, but preliminary evidence still support the imperative of expanding the human economic arena to extraterrestrial space.