SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT (D3)
Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development (1)

Author: Mr. Brent Sherwood
Caltech/JPL, United States

WHAT'S THE BIG IDEA? SEEKING TO TOP APOLLO

Abstract

HSF has struggled to find its soul since Apollo. After 1972 spacefaring nations soldiered on: workhorse rockets, first-generation space stations, reusable Shuttles, and ISS. Space-operations capability deepened; becoming more flexible, robust, and diversified; and learning from tragic lessons. This decade another superpower is even joining the club.

But why has none of this captured the attention and adoration of civilization the way Apollo did? Why have the astounding achievements of the world's human space programs over the past 40 years failed to be as inspirational, as gripping, as iconic, or as central to societal identity as Apollo was in the 1960s? Why has the prospect of a lunar outpost, or of touching Mars or asteroids, failed to spark aspiration and commitment? Could there ever again be a "Big Idea" as capable as Apollo of attracting the resources, talent, and cultural momentum of a nation – or of multiple nations? And if so, why can't we find it?

Against the well-documented backdrop of the historically unique circumstances that made Apollo possible, the paper proffers a remedy. The paper analyzes eight factors contributing to the existential crisis of HSF today: (1) the evolving nature of frontiers; (2) a higher and receding threshold of wonderment; (3) technical and financial barriers to deep space; (4) the lifecycle of government agencies; (5) the true nature of the NASA brand; (6) societal motivations likely inside and outside the U.S.; (7) vision-making channeled by past achievement rather than open to present signs and drawn by the future; and (8) the cardinal sin of marketing.

Based on these factors the paper develops a specification for a successful Big Idea that responds to them rather than attempting to change or ignore them. Then it assesses the likely performance against that specification by four hypothetical government-funded HSF goals (Exploration, Settlement, accelerating Commercial Passenger Travel, and enabling Space Solar Power for Earth). The analysis finds that Exploration, traditionally promoted by the primary global spacefaring partners, is the poorest candidate Big Idea; while Space Solar Power is the best. The conclusion is that SPS, in addition to making the other three options more feasible anyway, is itself the best candidate for the space program's next Big Idea.