

## Outlook

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# U.S. love affair with space reborn . . . maybe

By JEFF KRUKIN

**I**N April 1981, I saw the future of the American space program . . . I thought. While completing my graduate studies internship at NASA headquarters, I was present for the maiden flight of the new space transportation system of the United States. I was excited and more than a bit tipsy from champagne as the Space Shuttle Columbia quickly accelerated from the launch pad. For the first time, the nation would soon have a fleet of space vehicles being used on a regular basis. A fleet! Incredible!

In September 1993, I have seen the future again . . . I think. As a columnist for the Journal for Space Development, I was invited to attend the second test flight of the Delta Clipper experimental launch vehicle.

On the morning of Sept. 11 at White Sands Missile Range in New Mexico, the successful flight lasted just over one minute. At 42 feet in height, the DC-X is dwarfed by the shuttle. With a maximum altitude of 300 feet on this flight, the DC-X did not evoke the same feeling of awe as did the first launch of the shuttle in 1981. However, the DC-X accomplished something no other rocket ever has. It launched vertically, hovered, moved sideways and landed vertically. Incredible!

Besides the technical aspects of these two flights, there are other important differences of a grander and more human scale. I am speaking of the emotional and rational aspects stemming from my observation of our space activities during all these years.

In 1981, I was so convinced that the shuttle would be the path to the stars and that the National Aeronautics and Space Administration would take us there. America was back in space, a permanently manned station would soon follow, then back to the moon, then Mars. Since the first landing on the moon in 1969, it seemed we

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had only retrenched. Skylab and Apollo-Soyuz simply did not suffice for those who want humanity to move up and out. We had been to the moon, yet all we were doing now was going around in circles several hundred miles overhead. It seemed, after all, that the sky was the limit.

But now that would all change. I was convinced. I was a believer. The space transportation system. Fifty flights each year.

I was wrong. During the late 1980s after the Challenger accident and into the early 1990s as space station development problems surfaced, I began a very painful re-evaluation of my support for the NASA-aerospace status quo. I slowly realized that my support had been mostly emotional, a love affair that had begun that April morning in 1981. And slowly, painfully I realized the love affair had to end. For while I had invested my heart and soul in that affair, I was empty inside. Nothing had been returned to me to nurture the feelings. I felt betrayed and angry. I began to look elsewhere for sustenance, for some way to regain those feelings about America moving into space. Eventually, I found others with similar feelings who led me to different non-NASA activities.

During that love affair, I had never considered the commercial aspects of human activity in space. I had always focused on the scientific programs. But I have come to accept that commerce/business/profit is the motivator that will take this nation, this world into space, just as it has led to the development of our world.

Not that we won't go for reasons of science, knowledge, philosophy and the like, but those en-

deavors cannot provide the sustained incentive necessary for the human development of space. Rather, those endeavors will be able to continue in space precisely because commercial forces will have provided a sustainable base from which to start. History tells us this. Humanity first had to provide the basic necessities of food and shelter before universities could be developed.

With my strong emotional attachment to the status quo behind me, I was able to evaluate different activities from a more rational standpoint. I learned that one simple capability must be developed to carry us to the stars. Then I remembered that the space transportation system (when was the last time you heard that?) was intended to provide that one capability. I am referring to inexpensive and reliable access to space. In America, this does not exist. Without it, we will never leave this planet in great numbers. Again, consider history. Without the inexpensive and reliable air and ground transportation in existence today, civilization would be much less advanced. And why do we have such a transportation system? Commerce demanded it. Then other endeavors, such as education, arts, sports and leisure, learned to avail themselves of it.

Watching the DC-X hover at 300 feet, I hoped I was seeing the future. I could not be sure so soon, however. That first love affair has left walls around my heart, yet I so badly want to feel that awe again. I want that strong emotional attachment again, but this time I want to be right. We have accomplished so little in the almost 25 years since we first touched the moon. I don't want to be hurt again, to feel betrayed and angry again. NASA and the aerospace corporations have so much to offer, but this time the courtship will take longer. And yet, I am told that is how the best relationships develop.