

Commentary: America as a space-faring nation Charting the space program's next great leap forward

By William Santiago
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When chunks of the space shuttle Challenger's left wing washed up on Cocoa Beach, Fla., as 1996 drew to a close, they triggered haunting memories for the space program and the nation. But perhaps the corroded scraps of metal were offered up by the sea as testament to how far the space program has come, 11 years after its worst disaster.

Seven astronauts perished on Jan. 29, 1986, in a fireball of debris moments after launch, an image forever seared into the American consciousness.

Then in a rash of headlines last year, the space program, as if to dispel any doubt whether it had fully recovered momentum after its most stagnant decade, boasted a string of triumphs. Indeed, riding and extending that momentum, space shuttle Discovery astronauts are presently on a flash four-spacewalk mission to upgrade the Hubble Space Telescope. If successful, the 10-day overhaul will dramatically improve the orbital observatory, which has already yielded an unparalleled glimpses of the universe, including the first definitive peek at black holes.

It's been a long time. But clearly the space program is on a roll. Things really got going last August when detection of possible microbes on a Martian meteorite rekindled speculation that life on earth is not an accident but a statistic. Within months two more probes, the Pathfinder and Surveyor, were simultaneously making the 310-million-mile trek to the crimson planet, with President Clinton's enthusiastic blessing.

Water on the moon, previously shrugged off as extremely unlikely if not impossible, suddenly verged on fact with the discovery of what scientists believe to be lunar ice. That potential oasis immediately stirred new dreams of a moon colony, from which deeper manned space missions could be launched. Not only could the water help sustain life, but if it were broken up into its component elements of oxygen and hydrogen, it could turn the moon into a lunar gas station to fuel rockets cheaply.

And not to be outdone by our moon, the presence of ice floes on Europa, that far-flung Jovian satellite, were corroborated in January.

Then embodying what portends to be a new era for space exploration, Shannon Lucid was awarded the Space Congressional Medal of Honor for her 188-day sojourn, the longest for an American astronaut, orbiting earth in a joint mission with Russian. She may be just the role model to inspire the next generation of astronauts and their financial patrons.

After Clinton slipped the bulky medal around her neck, Lucid hailed our country's imminent future as "a space-faring nation." With 60 shuttle missions launched successfully since the Challenger tragedy, that may already be a fair description. In the immediate wake of the explosion, however, followed by several explosions of unmanned rockets, NASA – the National Aeronautics and Space Administration – seemed paralyzed. It would be three years before a shuttle would again soar through space.

Critics charged NASA was as unfocused as the Hubble telescope's mirrors. And then the Mars Observer probe ended in an abrupt fiasco when it apparently blew up while trying to establish its reconnaissance orbit. The Galileo probe to Jupiter suffered from a stuck antenna.

But NASA was overhauling itself, going over every shuttle flight rule, looking at every piece of hardware, taking nothing for granted. Management was shaken up and slimmed down. One result was a renewed focus on unmanned missions that may be less ambitious, but can be launched more cheaply and more often.

Last year's impressive feats are just the kind to generate the public support crucial to the fate of the agency's next major goals, particularly its manned missions, which remain decidedly ambitious – and controversial. One on the drawing board are the International Space Station; the Origins Program, which traces through the birth of the universe through the first signs of life on earth; a manned landing on Mars; a lunar base, and replacing the shuttle with the X-33, a single-stage reusable vehicle.

These grand schemes depend on shaking loose more money in times of tight budgets. NASA's future depends on repackaging its venerable argument that its endeavors invariably yield technologies benefiting our everyday lives. For example, a precision, nonsurgical breast biopsy technique derives from technology developed for the Hubble imaging system. It is saving women pain, scarring, radiation exposure, time and money.

And if nuclear fusion should ever become perfected, Helium 3 deposits on the moon could solve energy shortages.

Commercialization of space, experts say, looms as a potential gold mine. But the prospects are not presently tangible enough for the average person to fathom. NASA still needs to sell the spectacular, the notion that great nations do great things.

Putting a man on Mars or building a lunar base would unquestionably be impressive and qualify as great things to a great many people. The first components of the \$17.4 billion International Space Station, a great example of cooperation between 15 nations, are slated for launch in November, although delays in delivery of a Russian service module, a key propulsion and living space component, may postpone that timetable.

Even in times of fiscal sobriety, it's those spectacular feats, the giant leaps toward understanding of our universe, and perhaps advancement of the human species, that draw the most support for expanding our horizons beyond this planet. This year bodes more of the same for our fledgling space-faring nation.

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