



# Private Industry's "Moon Race" Now Underway

With the landing last week of America's last space shuttle, the nation stands at a critical point in the history of space exploration. For some, the last flight of Atlantis — a mission officially designated as STS-135, was "bittersweet," as one writer termed it. The landing of Atlantis may presage a difficult era in the "Space Age," or it may herald the beginning of the end of the government's virtual monopoly on mankind's exploration of the heavens.

As reported previously for The New

American, NASA Administrator Charles Bolden has been marked by significant controversy regarding both the future of his agency, and the future of manned space flight. The Obama administration quickly killed George Bush's "Constellation" program, which had set a return to the Moon and an eventual mission to Mars as part of U.S. space policy. However, NASA's new, Obama-era goals quickly put the Moon and Mars back on the timetable — but pushed them farther away. Meanwhile, NASA's budget remains fundamentally stable, despite the end of a shuttle program which had previously consumed a substantial portion of the budget. As Mike Wall recently wrote in an article for Space.com:



When NASA's space shuttle program was announced back in 1972, it was billed as a major advance — a key step in humanity's quest to exploit and explore space.

The shuttle would enable safe, frequent and affordable access to space, the argument went, with flights occurring as often as once per week and costing as little as \$20 million each. But much of that original vision didn't come to pass. Two of the program's 134 flights have ended in tragedy, killing 14 astronauts in all. Recent NASA estimates peg the shuttle program's cost through the end of last year at \$209 billion (in 2010 dollars), yielding a per-flight cost of nearly \$1.6 billion. And the orbiter fleet never flew more than nine missions in a single year.

In other words, the shuttle was a government program, which means that by definition it came with appropriately astronomical high costs and chronic underachievement — at least in terms of the lofty prognostications of the program's early proponents. The shuttle program carried out at least ten missions for the Department of Defense (a department nearly defined by budgetary bloat) and



### Written by **James Heiser** on July 25, 2011



accomplished numerous scientific achievements, including launching, repairing and maintaining the Hubble space telescope. However, two of the 135 missions ended in disaster, with 40 percent of the fleet — two of the five shuttles — being destroyed. The program has been a powerful reminder that the exploration of space is not without its risks and costs. Still, public opinion has not rejected the concept of manned space flight on the basis of such expenses.

Now, the post-shuttle era begins, and private industry is demonstrating an eagerness to expand its role on the new frontier. *New York Times* writer Kenneth Chang observes that "Now that the last space shuttle has landed back on Earth, a new generation of space entrepreneurs would like to whip up excitement about the prospect of returning to the moon." Google's \$30 million cash prize for the first private venture the Moon has certainly proven a significant incentive, but only insofar as it helps fuel a drive which was already underway to reach out into the heavens without hitching a ride with Uncle Sam. Google's Lunar XPrize provides an incentive to contestants, offering the winner the opportunity to recover some of the expenses for a private sector Moon race. In Chang's words:

Spurred by a \$30 million purse put up by Google, 29 teams have signed up for a competition to become the first private venture to land on the moon. Most of them are unlikely to overcome the financial and technical challenges to meet the contest deadline of December 2015, but several teams think they have a good shot to win — and to take an early lead in a race to take commercial advantage of our celestial neighbor. ...

While NASA had wanted to send astronauts back to the moon, its program was canceled last year, a victim of budget cuts and shifting priorities. But it has awarded \$500,000 each to Moon Express, Astrobotic and a third competitor, Rocket City Space Pioneers, the first installments of up to \$30 million that it will contribute to the X Prize efforts. George Xenofos, manager of NASA's Innovative Lunar Demonstrations Data program, said he expected one or more teams to make it to the moon. "It's definitely not the technical issues that's stopping them," he said. The contestants' goals do not appear to face legal hurdles. The Outer Space Treaty of 1967, ratified by 100 nations including the United States, bars countries from claiming sovereignty over any part of the moon but does not prevent private companies from setting up shop. As for mining the moon, it could fall under similar legal parameters as fishing in international waters.

Given such an understanding of the Outer Space Treaty, private industry may prove that it can "boldly go" where government cannot go: Establishing a human presence off of the Earth's surface and possibly beginning a process which could eventually lead to human settlements throughout the solar system. The first tentative steps were taken being taken even as the shuttle neared its last days; it remains to be seen whether or not such efforts will accelerate and take flight in the days to come.

Photo: The <u>SpaceX</u> Dragon privately built rocket.





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