

## A losing Mars strategy

by Marsha Freeman

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### **Mars 1999**

by Brian O'Leary  
Stackpole Books, Harrisburg, 1987

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Brian O'Leary's recent addition to the fast-growing literature outlining possible manned missions to Mars, is not really a plan, but a tract which tries to "sell" such a mission, not on its own merits, but to meet some perceived political and economic goals.

The political framework: "parallel U.S. and Soviet manned missions to Mars before the turn of the century as part of a nuclear disarmament package." The "economic" justification: Water (yes, water) mined on the Martian moon Phobos, would be brought back to Earth or lunar orbit, to provide fuel for near-Earth space operations.

Why send people, since the Phobos mining could be more safely done robotically, assuming that was where we decided to get water from? "Only the Mars landing itself would require joint U.S.-U.S.S.R. participation."

O'Leary stresses throughout the book that the "spiritual" is more important than the technological in planning and executing such a mission, and left this reader with the uneasy sense that O'Leary would rather have a guru aboard, than experienced scientific and engineering personnel.

No manned space mission, especially one as perilous as a trip to Mars, will ever be done on the basis of cost-benefit analysis. That method of justifying expenditures on space exploration nearly destroyed the Space Shuttle program, and in reality, there is nothing we can bring back from space that could possibly balance the cost of sending man there to get it. Does that mean there is no economic benefit? Quite the contrary.

Consider the following: If the Apollo program had been a complete disaster within the terms that President Kennedy had set out, and we did not succeed in landing a man on the Moon and returning him safely to Earth, the economic impact of the effort would have been identical to that which resulted from the success.

What the Apollo program created, in addition to scientific knowledge, pride, optimism, and other intangibles, was an entire generation of scientists and engineers, who made many of the technological advances that are the hallmark of the

past two decades.

The fluid flow experts who engineered the artificial heart came from NASA. Second-generation nuclear, solar, plasma, and other potential energy technologies came from solving problems under the stringent constraints of space. The high-temperature materials needed to increase the efficiency of many Earth-bound manufacturing processes, resulted from NASA-sponsored research. Portable electron-beam welding was developed by U.S. industry because the 33-foot-diameter collar for the Saturn V rocket could not be welded with conventional technology.

Estimates vary, but an average would put at a ratio of 10:1 the pay-back to the economy from the money spent to send men to the Moon. This benefit came from the creation of whole new industries and jobs, and the increase in productivity in existing basic manufacturing. For a trip to Mars, both the technological challenge and the economic return, will be orders of magnitude greater.

Vision, commitment, and long-range planning will get us to Mars, not a set of gimmicks to try to convince a hesitant Congress or a budget-weary White House.

More serious work needs to be done on developing the actual life support, propulsion, medical, and other technologies that will make the first human trip to Mars safe and productive. Less material needs to be published on fantastic "scenarios" and political agendas, by technologists and former astronauts.

## What McNamara lost us

by Anthony K. Wikrent

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### **Carrying the Fire: An Astronaut's Journeys**

by Michael Collins  
Random House/Ballantine Books, New York, 1974  
488 pages, paperbound, \$1.95

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Collins—who piloted the Command Module on the first moon landing mission, Apollo 11, 18 years ago—takes us step by step through the intense training and preparation that he went through to qualify as an astronaut, and then takes us along for the ride, describing in magnificent detail his two voyages into space.

Collins is not interested in merely describing for us the wonders of spherical globs of water floating about in zero-G (although he does that). He wants to let us know what it was like, struggling with a sextant to verify his spacecraft's position against that belched out by a recalcitrant on-board computer. Without the benefit of Collins's book, a person

would have had to be an employee of NASA or one of its vendors, to have a real idea of how America's space program operated two decades ago. Watching a space launch on TV, with updates on the progress of the mission sandwiched between "Gunsmoke" and "Bonanza," simply cannot compare with the wealth of information Collins provides.

As he characterizes the news media (which wanted only to know "How did it feel?" and "Weren't you scared?"): "It didn't seem right somehow for the press to have this morbid, unhealthy, persistent, prodding, probing preoccupation with the frills, when the silly bastards didn't even understand how the machines operated or what they accomplished."

It was definitely not as smooth as Walter Cronkite made it sound. After describing the extraordinary contingency planning, Collins quotes Jerry Lederer, safety chief of NASA at the time of Apollo 8 in 1968: A manned space flight involves "risks of great magnitude and probably risks that have not been foreseen. Apollo 8 has 5,600,000 parts and one and one half million systems, subsystems, and assemblies. Even if all functioned with 99.9% reliability, we could expect 5,600 defects" during a flight.

The key sentence in *Carrying the Fire* is: "One nice thing about Apollo was that no one ever told us that we were running the price up too high." Collins and the entire NASA team received the level of national support that they needed, and deserved. Would that the same could be said of America's space program today: Six astronauts and our first teacher in space lost their lives because politicians and cost-accounting bureaucrats forced NASA, over the years, to skimp and save, and make any number of trade-offs between safety, reliability, and cost. The result is that today, America has lost its incontestable lead in space of 20 years ago to the Soviets.

Collins hits at one of the major perpetrators of the cost-accounting mentality that has produced this disaster: the malthusian fanatic Robert S. McNamara, Kennedy's defense secretary. "The Air Force should be able to keep a stable prototype aircraft flying, winnowing, and pruning, and finally selecting only the best for production, but given the McNamaras of this world, the system is not allowed to work that way. McNamara decreed that the F-111 would be a great success before the test program began; in fact, he decreed that it would be everyplane for every purpose, sort of like building a car to drive Daddy to work, or to handle Mom's groceries, and to mix concrete on weekends, except in May when it would be busy practicing for the Indianapolis 500."

This fine sense of irony Collins is able to retain throughout; the only disagreeable part of his book comes near the end, where he feels compelled to acknowledge the "new consciousness" of the counterculture, and speculate about how nice it would be if the world's leaders could view earth's fragile orb from 100,000 miles away. Other than this tedious ending, Collins's narrative moves right along, as it unfolds for us the marvels of man's technology, as applied to space exploration.

## Books Received

**Mayday, The U-2 Affair, The Untold Story of the Greatest U.S.-U.S.S.R. Spy Scandal**, by Michael R. Beschloss. Harper and Row, New York, 1986, 494 pages, \$8.95 paperback.

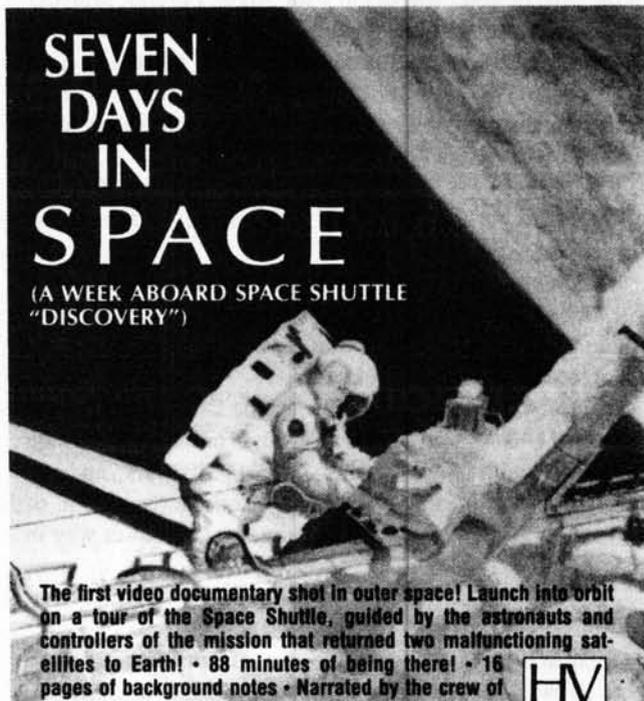
**Armed Truce, The Beginnings of the Cold War 1945-1946**, by Hugh Thomas. Atheneum Publishers, New York, 1987, 667 pages, \$27.50 hardcover.

**Federalism, The Founders' Design**, by Raoul Berger, University of Oklahoma Press, Normand and London, 1987, 223 pages, \$16.95.

**Commander in Chief, Franklin Delano Roosevelt, His Lieutenants and Their War**, by Eric Larrabee, Harper and Row, New York, 1987, 723 pages, \$25.00 hardcover.

**Mortal Splendor, the American Empire in Transition**, by Walter Russell Mead, Houghton Mifflin, Boston, 1987, 381 pages, \$19.95 hardcover.

**The Saudis, Inside the Desert Kingdom**, by Sandra Mackey, Houghton Mifflin, Boston, 1987, 433 pages, \$19.95 hardcover.



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