Reagan Endorses a Two-Phase Space Station

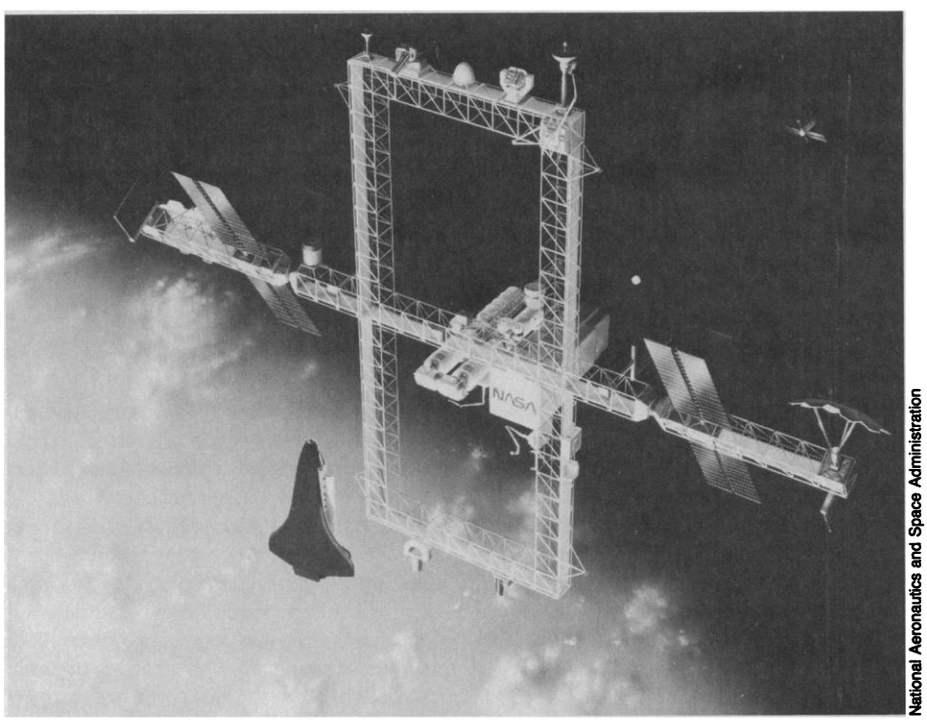
Stretching out construction of the space station will help with NASA's budget problem, but the result could be a serious gap in flight opportunities for space science

PRESIDENT Reagan, responding to recent sharp increases in the estimated cost of the National Aeronautics and Space Administration's (NASA's) space station, has endorsed a plan that will delay the start of the facility and divide the construction into two phases.

The revised plan, announced by the White House on 4 April, grew out of NASA's effort last winter to update the cost estimates of the space station in light of some 3 years of definition studies. Completed in December, the new estimates revealed that the long-promised $8-billion space station would in fact cost at least $14.5 billion (in 1984 dollars), and perhaps as much as $16 billion.

The response at the White House Office of Management and Budget was a high-level review of the whole project. In the final compromise approved by Reagan, NASA promises to keep the space station project within its previous budget projections for the next 3 years, through 1990. This means delaying the first assembly flight from 1993 until 1994, while delaying the permanent habitation of the station until 1996. In return, however, the Administration promises to ask Congress for a 3-year commitment to the station—as well as for a total (and as yet unspecified) cost ceiling on the program.

In addition, NASA has agreed to break construction of the station into two phases. The $10.5-billion first phase will essentially comprise the central horizontal boom of the station: four habitation and laboratory modules in the middle, including one module apiece from Europe and Japan; photovoltaic arrays on each end delivering 50 kilowatts of power; and a Canadian-built, remote-control servicing arm. Phase one will also include an unmanned polar-orbiting platform with remote sensing instruments.



National Aeronautics and Space Administration

The Space Station, circa 2000. *Phase one of the new plan is essentially just the central horizontal boom.*

Phase two, later in the 1990's, will see the addition of an upper boom to the station to hold astronomical instruments; a lower boom to hold Earth-looking instruments; a shed-like facility for servicing free-flying satellites; expanded power; and a "co-orbiting" platform carrying instruments too sensitive for the station itself.

Andrew J. Stofan, NASA's associate administrator for the space station, says he is well satisfied with the new plan. Most important, he says, "the President has strongly reaffirmed his commitment to the space station." If Congress is willing to go along—and Stofan can expect some tough questioning about the skyrocketing cost estimates—the agency will be free to solicit bids for the space station hardware. Stofan says he hopes to award the contracts by 30 September, the end of fiscal year 1987.

Ironically, the slower paced space station plan was announced just as a scientific advisory group was urging NASA to accelerate the project. In an era of crowded shuttle manifests and drastically lowered flight rates, the scientists who are interested in orbital materials processing and biological research, or who rely upon astrophysical or remote sensing instruments that ride in the space shuttle payload bay, see the prospect of a permanent berth on the station as their last best hope; otherwise, they will have only the rarest of opportunities to get data.

A variety of ways have been proposed to address this problem, most notably at the 19 and 20 March meeting of NASA's Task Force on the Scientific Uses of the Space Station. NASA could fly the Spacelab modules more often, for example, or it might upgrade one of the shuttle orbiters to allow it to stay in orbit for 2 weeks or more, instead of the current 7 days. But the most radical solution comes from task force chairman Peter Banks of Stanford University: combine several of the space station modules into one big module similar to the old Skylab, and launch this bigger module with a new heavy-lift launch vehicle derived from the same engines and electronics used in the shuttle. With a concerted effort, Banks maintains, NASA could have such a space station in orbit by 1992.

"Extremely naive," replys Stofan. "Peter has a valid concern. But the only reason to slip the station in the first place is the lack of money. So where is he going to get $1 billion for developing a heavy-lift vehicle?" Other solutions, such as more Spacelab flights, are somewhat more reasonable, but they suffer from the same budgetary problem.

"It's a damn shame we're all caught in this situation," says Stofan. "But there's no quick way out of it." ■

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