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# SPACE

## A CONVERSATION WITH BUZZ ALDRIN:

The Apollo astronaut outlines his plan to save the space station

By Brenda Forman

**M**aybe we should call it the Once and Future Space Station. When President Reagan first announced plans for space station *Freedom* in 1984, it was to be flying in 1992. Instead, political battles over its funding, purposes, and design have raged almost continuously. Congress has mandated some half-dozen redesigns thus far. Even so, the House of Representatives almost killed its funding in 1991, and further funding cuts appear quite possible.

Coming from the second American to leave his footprints on the moon, Aldrin's views carry weight. "Congress is only being given all-or-nothing choices for the space station," he told *Omni*. "I'm trying for something in between, putting the pieces together in more cost-effective ways."

The end of the Cold War has helped by opening up some options that were once unthinkable. The Russians have formidable assets that could complement our own in important ways.

Aldrin suggests that we start by teaming our launch capabilities. The Russians' huge *Energia* rocket can lug a whopping 220,000 pounds to low Earth orbit (LEO). That's more than four times the capacity of either the shuttle or the *Titan 4*, our largest rocket. But the Russians have no working equivalent of the shuttle. "*Energia* and the shuttle could take payloads up in tandem," Aldrin explains. "*Energia* would do the heavy lifting, and the shuttle would then rendezvous with those payloads, bringing astronauts up to assemble them."

Aldrin sketches out possible launch and assembly sequences for the station. "Right now, we're going to need about thirty shuttle launches to get the baseline station into orbit, because you have to break up station components to fit inside the shuttle bay. But with the *Energia*, we could launch those pieces in bigger chunks and get them up a lot faster—and at the prices the Russians are quoting these days, a lot cheaper, too—while the shuttle could do what it does best: bring humans up to put it all together and deal with the unexpected."

Aldrin envisions a series of four *Energia*-followed-by-shuttle launches to loft the station's main elements. "We could take the station truss [the crosspiece

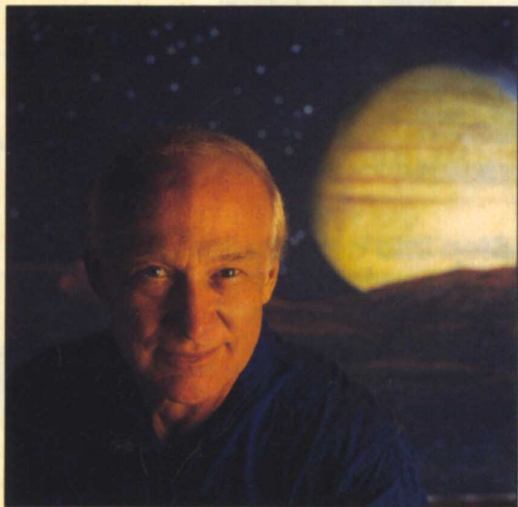
on which the station's pressurized modules, solar panels, radiators, and external experiments are hung] up first. Next would be the U.S. lab and habitation modules. After that, we'd take the JEM [Japanese Experimental Module] and the [European Space Agency's] Columbus module."

Eventually, Aldrin would also like to see a new large-volume, single-launch version of *Skylab*, staffed continuously, added to the station.

"In theory," Aldrin continues, "we could do all that by ourselves in a low-inclination orbit"—the station's planned inclination of 28.5 degrees. The optimal inclination for the *Energia* is 51.6 degrees, where the Russian space station *Mir* orbits. "But whatever you decide to do, you need everything to be in the same orbit," Aldrin says. "And the trouble is that the booster capable of putting all that up faster, cheaper—and maybe safer—doesn't belong to us. Furthermore, it would take at least five years and billions of dollars to develop it.

"If we went for the higher-inclination orbit and used Russian assets together with our own, we could all benefit," he says. "We could either construct a facility to co-orbit with the *Mir* or join forces with the Russians to upgrade the *Mir*'s capabilities and attach *Freedom*'s habitation module to it and triple its capacity."

Aldrin's proposals may meet with skepticism from U.S. firms worried about losing business to the Russians. However, unless we do something along the lines that Aldrin proposes, the space station's steady downward spiral will continue, and eventually, Congress will simply kill off the station, wasting years of effort and billions of dollars without ever having actually flown anything in space. **DD**



**The second man on the moon, Buzz Aldrin, wants the United States to cooperate with Russia on the space station.**

In space parlance, this is a de-caying orbit.

Apollo astronaut Buzz Aldrin views this deteriorating situation with increasing alarm. Recognizing that the station's cost is the central issue, he has been trying to enlist support for options that would preserve as much as possible of what the United States and its international partners in the space station—the European Space Agency, Japan, and Canada—have already developed, while adding up to a faster, less-expensive, and therefore more politically viable program.