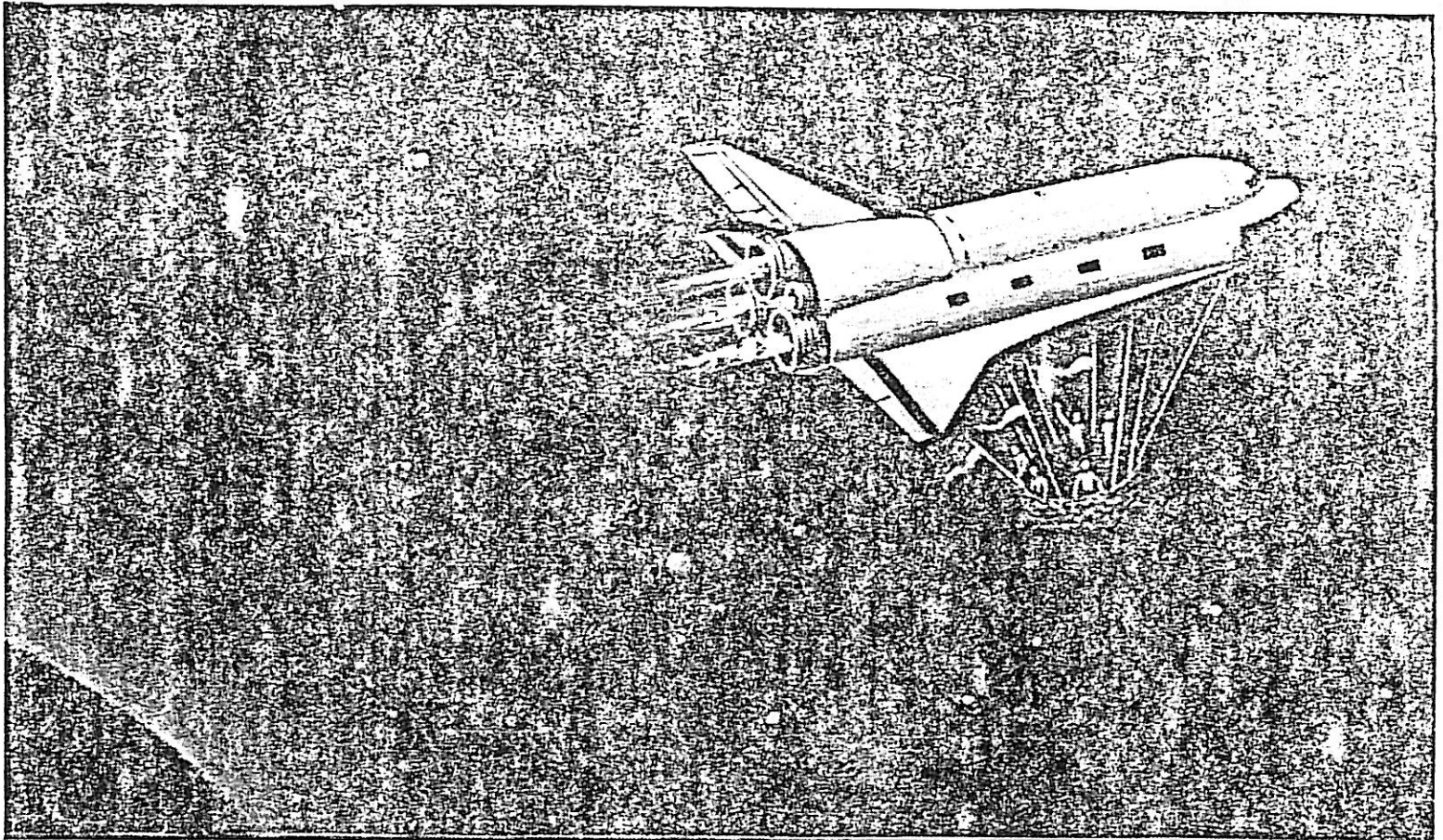


# An Empty Space in the Space Program



Rafal Olbinski

By J. A. Van Allen

IOWA CITY — There is a yawning gap between the two Presidentially appointed commissions scrutinizing the United States' civil space program.

While one commission is looking into the causes of the explosion of the space shuttle Challenger, the other, the National Commission on Space, which is mandated by Congress, is visualizing highly futuristic cost-is-no-object scenarios for the activities of the National Aeronautics and Space Administration over the next 50 years.

I am struck by the fact that no corresponding consideration is currently being given to controversial here-and-now issues that are of central importance in NASA's activities

*J. A. Van Allen, professor of physics in the department of physics and astronomy at the University of Iowa, has been active in the space program since 1946. In 1958, he discovered two radiation belts surrounding the earth that bear his name.*

during the upcoming 10 to 15 years.

Considering the following:

Nearly all of the important scientific results in space and in the civil and military applications of space technology have resulted from the use of unmanned earth satellites and unmanned planetary spacecraft. But more than two-thirds of NASA's budget is devoted to the development and operation of the space shuttle fleet and, prospectively, to a huge permanently manned space station. Is such a distribution of emphasis really in the national interest?

The principal current and planned use of the shuttle fleet is for the launching of commercial communications and military satellites. Such launchings have been conducted successfully for many years and at much less cost by unmanned, expendable launch vehicles, with minimal risk to human life.

However, the National Aeronautics and Space Administration has discontinued the purchase of well-developed expendable launch vehicles — Atlas, Delta, Scout, Titan — in order to capture all available payloads for the shuttle and attempt to make it an eco-

nomically viable system.

Despite that policy decision, the shuttle program continues to wallow in an economic Catch-22, trapped between its own high costs and the impracticality of spreading its overhead costs over a large annual number of launches, on the one hand, and the existence of European competition — the Ariane — and prospective expendable Japanese launch vehicles, on the other.

The Defense Department is returning to primary dependence on expendable launch vehicles in recognition of the fragility and high costs of the shuttle system. Should NASA follow suit?

The vaunted advantages of human crews in space vehicles, derived from a romantic vision of human space flight, have not been sufficiently subjected to critical assessment. Are they immune to full discussion?

"Manufacturing in space" is one of the principal justifications that has been cited by President Reagan and others of like mind for development of a space station or a system of space

stations. Yet the cost of such developments is wildly incommensurate with the state of knowledge of the useful manufacture of specialized pharmaceuticals, crystals, etc. in a space station.

The basic research on such possibilities is still embryonic and can, insofar as it is promising, be profitably pursued in the shuttle itself or in a much more modest space laboratory as exemplified by the recently launched Soviet Mir. Why is the United States rejecting such an approach?

Even before the Challenger disaster, well-founded scientific and utilitarian uses of space technology were suffering severely because of NASA's overriding emphasis on manned flight. Now they are at a standstill for an indefinite period of time. Meanwhile, such Soviet, Western European and Japanese programs are going forward and continuing to erode the United States' leadership in the truly durable products of space exploration and research. Isn't this a matter of national concern?

These issues are, in my view, far more worthy of high-level attention than those currently occupying the National Commission on Space. □