

EIR: What do you think of the proposal for sending an unmanned probe to Mars to retrieve soil samples, which would enable us to determine if there is life there?

Dr. Frosch: That is the most probable next large step on the agenda for Mars, although there is a school of thought that would rather put a roving laboratory on the surface. I think myself, though, that the consensus in the scientific community is that the Mars soil retrieval is the right thing to do. That might be about 1986, 1987.

EIR: You think it could be done that soon!

Dr. Frosch: I think it could be done in the next few years. But in the line of priorities, unless there was a great expansion of the program, I don't think it would be started until the mid-eighties.

EIR: What would be the major technological barriers?

Dr. Frosch: I think we have the technology now. There are two problems, both of which are probably solvable. One is that you have to land enough mass on the planet so that you can scoop up the soil and get it back to rendezvous orbit, and then you have to make a real robot rendezvous.

EIR: And the problem of constructing a spacecraft that can blast off again to escape from Mars' gravity is not a

major hitch?

Dr. Frosch: Right; in fact, one interesting idea for conserving mass is just to send the fuel down with the craft and collect the oxygen on Mars. That is, not send liquid oxygen down with the probe, but manufacture it on Mars using oxygen released from the Martian soil. That would save the weight of carrying the liquid oxygen.

EIR: What do you see in the way of future probes to Venus?

Dr. Frosch: Well, in the budget there is the beginnings of an orbiter to look at the surface of Venus with radar. We already had a crude one, but this would be high-quality radar. We know that there is a mountain range the size of the Himalayas, but we don't know anything about its structure. This would give us enough information to tell us a lot about its structure and geology.

EIR: And the outer planets?

Dr. Frosch: There is the Galileo program to put an orbiter around Jupiter for a while and send a probe into it, and take a good look at some of its satellites. And there is a plan, though not for startup until 1986 or 1987, for the Saturn orbiter probe, which would be an orbiter of Saturn, a chemical probe into Saturn, and a chemical probe into Titan.

Heritage Foundation: scuttle the shuttle

Below are excerpts from the Heritage Foundation report, "Agenda for Progress," recently submitted to the Reagan administration. The foundation promotes "free market" economics.

An excellent illustration of the pitfalls of federal intervention at too low level is the space shuttle. . . .

Federal officials talk in terms of a commitment to finish the shuttle development and procurement, but the wisdom of this commitment is not clear. An early item of business for the federal government should be a reexamination of the economics and institutional arrangements for space transportation. In spite of the perceived wisdom that there is no turning back on the shuttle commitment, the alternatives should be reviewed thoroughly and soon. Alternatives to be examined include the discontinuation of the shuttle program. . . .

Since matter is everywhere, it might seem that high-energy physics would have wide practical applications. On the contrary, except for some possible applications of accelerator technology, the processes studied involve conditions so extreme that they seem applicable only to phenomena occurring in the smallest subatomic distances or under the most remote astronomical circumstances. As far as we can foresee, the \$359 million high-energy physics program is, like astronomy and space exploration, the accumulation of knowledge for its own sake—with no immediate practical benefits in sight. . . .

A characteristic of research with no foreseeable objective is that it can be slowed down at no known economic penalty (except for increased costs for changing one's mind and accelerating the research soon thereafter). *The stretchout of expensive undertakings, such as new accelerator projects or spacecraft development, can save hundreds of millions of dollars in early years while the U.S. seeks to negotiate international cost sharing* [Italics in original]. Closing one of the three high-energy physics complexes could save on the order of \$100 million per year.