III. Recreating debate on ideas, arousing a Resistance

We must stop the drift toward a dictatorship of opinion, the bludgeonings of television, under the control of the "markets," and the generalized poll-taking, pollsters' mania. In a word, we must create free citizens for the common enterprise which alone can open the future to us.

My objective is to bring about a rebirth of representative democracy capable of reestablishing the principle of the participation of each in the elaboration of policies for all, giving each his part to play in the overall growth and experience of our time.

To do that, we need men of resolve, of daring, of foresight, who reject impotence and who reestablish, through their struggles, respect for policy.

I propose some exemplary ways for freeing ourselves from the misery of our civic life:

- Fighting against the ideology of immediate success, of the selection and survival of the fittest and the exclusion of the weakest, by enhancing the creative powers of all and rediscovering the harmony between the conscience of the individual and the common good;
- Defending our republican principle of secularism . . . by enrichment at school through contact with religious and humanist experience and tradition. The difference should inspire more curiosity than fear, if fundamental values are shared;
- Reestablishing the deliberative powers of the National Assembly and the Senate. . . ;
- Reinforcing the power of the judiciary in its legitimate functions, but not permitting it to go beyond them. We need citizens' justice, inasmuch as our system no longer respects the principle of equality before the law: Our system is too slow, too remote, too expensive, and too dependent on the state and the media. It is necessary to ensure the application of existing law and procedures . . . then reinforce the methods.

IV. Mobilization

I know that a tiny minority of Frenchmen, entrenched placeholders, accuse me of being an irresponsible utopian. I answer that, on the contrary, it is their figures and calculations which are worth nothing, absolutely nothing: A breath of crisis—an increase in interest rates or rates of exchange—is enough to wipe out all their value. To be utopian—that's to speechify on the bridge of the Titanic.

My commitment is to draw our country toward the most audacious choices, because today those are the most reasonable choices. It is thus that we may find once more, I hope, that enthusiasm which is love of beauty.

'Let's put space back on the horizon'

Jacques Cheminade is the only French presidential candidate promoting an ambitious space program. Europe should be part of a vast Moon-Mars project, he says, in a campaign pamphlet devoted to organizing support for such a program.

Exploring and colonizing space is one of the grand adventures for humanity that Jacques Cheminade proposes in his platform, both as a means of stimulating new discoveries and of overcoming the economic crisis here on Earth. The other candidates, when they are not ideologically anti-science, seek only immediate advantages in having access to space (telecommunications, industrialization in micro-gravity, etc.). They lack any long-term strategy for conquering and developing outer space, although only such an approach can awaken the enthusiasm of the population and get crowds of people pouring into the space centers today, just as they turned out en masse in the 1930s to meet Mermoz, Saint Exupéry, and other heroes of the first postal flights.

As Cheminade notes in the very beginning of his platform, only an economic policy free of monetarism and unbridled liberalism, could generate the resources necessary for an ambitious space program, an indispensable key to future growth. In times of austerity and crisis management such as we have now, it has no chance.

First of all, writes Cheminade, France would need to reestablish the momentum of the space program of the 1960s, when clearly defined medium- and long-term objectives served as a general orientation for all space activities and were maintained, in spite of temporary setbacks or the arguments of those for whom Europe was doomed to remain a minor actor in space. The Ariane rocket was the product of this voluntarist approach, which has since been lost.

In 1986, Europe adopted a four-point program in The Hague, which would have put the continent on an equal footing with the United States and the U.S.S.R. The program included the heavy launcher Ariane 5, the space plane Hermes, which would have insured European autonomy in manned flight and interventions into orbit, the APM Columbus module, which was to be hooked up to the future American space station, and the autonomous module MTFF as a first step toward a totally independent space station.

Since then, writes Cheminade, the programs were slashed one after the other, for financial reasons and because of a lack of coherence. Hermes and Columbus should have been presented, he argues, as the first indispensable steps

within a broader framework of an ambitious plan for conquering and industrializing the Moon and Mars. The absence of such a plan led the political leaders to adapt to what they conceived to be "financial realities."

The only remaining element from The Hague program is the Ariane 5, which survived because of its usefulness in launching commercial satellites. The consequences have been dramatic: the loss of 1,500 jobs for highly trained space engineers, the splitting up of teams that will never be rebuilt, an enormous lack of knowledge in key sectors, such as modelling hypersonic aerodynamics at Mach 25, heat-resistant ceramics at extremely high temperatures (up to 1,600°C), and experience with manned flight.

The next decisive point will be the European Space Agency conference which is to take place in October in Toulouse. France should insist that the decisions taken there not only keep open the European perspectives for manned flight, but also and especially redefine a long-term perspective to break with the present financial narrowness.

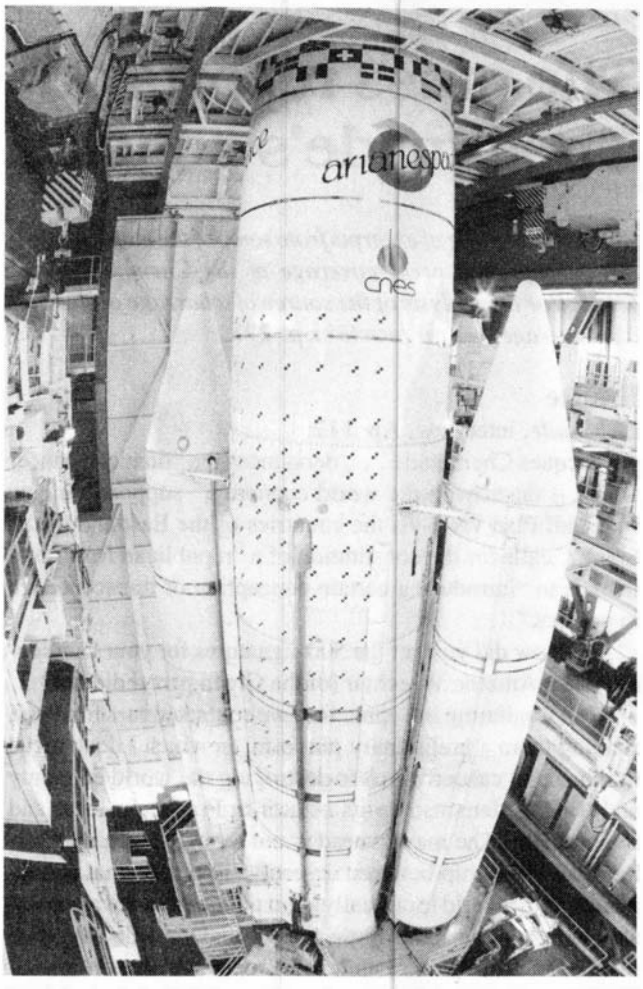
Immediate requirements

In the short term, Cheminade proposes that Europe should roll up her shirt sleeves and start to build:

- A heavy launcher more advanced than the Ariane 5, which is not able to carry the necessary amounts of tonnage for a serious effort at space exploration.
- Prototype engines based on new physical principles (methane, nuclear, ions, thermogenics). France should urgently go into the space nuclear sector, favoring nuclear thermal propulsion and nuclear electric.
- Orbiting space stations, of at least three types. First of all, automatic mini-stations which can serve as platforms for communications and as testing and training centers. Next, a true polytechnical center for research, education, and industrial production in micro-gravity should be set up. Tremendous leaps in productivity are to be expected in the science of materials (crystallography, metallurgy, electronics) and extraordinary progress will be accomplished in the life sciences, both pharmacology and chemistry. A third type of station, a bridgehead, should be associated with the multipurpose station just described, to go from the Earth's immediate environs to interplanetary space.
- A third-generation space plane, fully recoverable, would give quick and regular access to low Earth orbit and could transport some tens of men and women to the space stations, as well as equipment.

Without the combination of these four factors, states Cheminade, Europe will not be in a position to industrialize the Moon and Mars.

Starting today, the European Space Agency member countries should commit themselves to investing in manned flight control at the very minimum 250 billion francs over 15 years ($50 billion), which means for France 5 to 7 billion francs. As for the Moon and Mars program, the first step would require 350 billion francs over 20 years. This investment will not be lost; it will mean skilled jobs, new centers of production, and especially new technologies, which will transform the very structures of the economy (it has been calculated that for the American Apollo program, every dollar invested gave back $10 to the economy).



The Ariane 4 rocket. The Ariane program was the product of the vigorous space program of the 1960s, whose momentum has now been lost. Cheminade is the only candidate calling for an ambitious space effort into the next century.

Cheminade stresses the profound cultural changes that an ambitious science program would instigate, as opposed to the *no future* outlook of youth today:

"Knowing that we are preparing to conquer, to subdue, and to populate the unknown, challenges moral pessimism and instills in man a sense of creative optimism. In this sense, knowing that we can act to expand the limits of human science and actions while at the same time ensuring a decent standard of living for all of humanity, comes back to the same principle: Man is truly man when he strives to put his own action in harmony with the scientific and moral laws of the universe."