PIE IN THE SKY

The facts seem to indicate strongly that the people of the United States do not want Space . . . and do not want a successful space program! Certainly, as of now, we don't have one.

In April 12, 1961, the human race finally broke free of Earth; roaring up from a launching pad somewhere in the Soviet Union, Major Yuri Gagarin fulfilled the hopes of modern man, and went into a true space-flight orbit.

As a human being, I have every reason to be delighted, as an American I have every reason to be disgusted. Nor, let it be clearly understood, with the Russians; I'm delighted indeed that they did a fine job on a problem that had to be licked. I'm thoroughly disgusted with the American people.

This is a drawing of the Farside vehicle which was successfully fired high above the Pacific. The rocket was launched from a balloon in the area over Eniwetok Island. The drawing shows how the rocket, fired directly through the apex of the balloon, rises as the first-stage rocket engine leaves it and the second-stage rocket takes over. The rocket left the balloon at 100,000 feet and rose 4,000 miles above the earth.

The highest hope of the American space program was to get a Mercury capsule into space and back successfully—with a man instead of a chimpanzee aboard. But a Mercury capsule was never intended to go into orbit.

It is not the fault of the United States Government, nor of "top-level brass" decisions; the situation quite clearly results from the fact that the United States has a truly representative government—and when a representative government represents a foolish people, it will be foolish. The American people are, as of this period of history, foolish—i.e., characterized by folly in their attitudes.

There's that noble old sentiment, "Vox populi vox dei," which is, naturally, beloved by the people. "The voice of the people is the voice of the gods." Naturally the people like being deified . . . but men can't be deified; trying to do so destroys the meaning of the term "God."

There is plenty of evidence that the voice of the people today, in this...
country, is quite solidly determined that "We don't want space opened!"

Trying to get some sort of man-in-the-street reaction, I did some personal checking around. In the first days after Major Gagarin's flight, the majority of casual discussion of the subject in New York City, at least, concentrated on the proposition that it was a fake. . . . that it hadn't really happened. In other words, they were grasping eagerly at any wisp of possibility that their dearest hopes were realized—that Space was not opened.

When the atomic bomb went off over Hiroshima, a good many science-fictioners—myself among them—felt that, at last, people would realize that science fiction is not fantasy, that it is a pretty fairly accurate effort to predict the developments of human history. We can't predict the stock market—which would win us devoted followers!—but we can predict the broad trends. I couldn't say, in 1947, when, on what date, and how much, IBM stock was going to rise . . . but I could, and did say it would, inevitably, rise over the next two decades . . . because it was perfectly obvious that automation and computer control was the next major development in industry.

But the fact science-fiction magazines encountered after Hiroshima was that there was less interest in science fiction, not more.

After Sputnik I proved that space-flight was a real—not a fantasy!—possibility, again we felt that science fiction, having proved its ability to predict, would be accepted more widely.

The fact was that many science-fiction magazines were forced to suspend publication.

That wasn't a vote of "no confidence" on the part of the American people; it was a solid vote of "Shut up! I don't want to hear about it. Maybe it'll go away."

Immediately after the Spaceship Vostok carried Major Gagarin around the Earth, the major interest of those New Yorkers who discussed it at all was "Maybe it's a fake! Maybe it never happened at all! Tell me it isn't true!" To hope it is a hoax is dangerous folly indeed.

The Government of the United States—considered as a true, popular democracy—has not failed the American people. It has not done precisely what they wanted nor-done. It has not made any genuine effort to open space for mankind.

Look at it this way: As of this decade, the United States still is the world power having the greatest industrial capacity, the greatest gross national product, the greatest number of scientists, engineers, technicians, and skilled mechanics. We have by far the greatest established and operating system of research laboratories.

In flight over Eniwetok Atoll in the Pacific and on its way to a launching altitude of 100,000 feet, the Air Force's Farside rocket rises, suspended beneath its carrier balloon. Approximate cost per vehicle $20,000.00.
universities, and engineering proving grounds. As of now, Russia is a third-rate technical power.

But Russia has beaten us, hands down, twice running, in the effort to open space!

We've got more, and better of everything it takes to do the job, and do it up brown.

And Russia has consistently outstripped us in applied technology—precisely the area that used to be America's own, vest pocket preserve!

It is not true that Russia has done a fantastically brilliant piece of work; they've done a Grade-A #1 job, pushed through with sound skill, and honest effort.

What is true is that the United States has done a job so startlingly lousy that it couldn't have been that bad without deliberate—if unconscious—intent to fail.

If a two-hundred-pound six-foot adult man struggles to lift a sand bag from the floor, and barely gets one end up, and then a fourteen-year-old, one hundred twenty-five-pound kid comes along, heaves, and walks off with it, it's not necessary to say that the kid is miraculously powerful. The man wasn't really trying.

Now a person with acute claustrophobia is, physically, perfectly able to get into an elevator. It's absolutely true that he could if he wanted to. But it's equally absolutely true that he's completely incapable of wanting to; he can't want to.

The United States could have had a man in space in 1951 instead of 1961, if we'd really wanted to—wanted to the way our pioneer grandfathers wanted to do things. With the available industrial capacity, and the available capital, the available technical man-power, we could have crash-programmed a rocket research through.

The United States did not do so, because we have a representitive government, and it represents their fables, follies and delusions. The defied Common Man has, never in all history, had the slightest desire for really new, breakthrough advances. He hates "eggheads," because they change the Traditional Order of Things. Sure, he wants more chrome on his automobile, he wants softer foam rubber in the seats, and he wants great social improvements like cradle-to-grave security—which the ancient ritual-taboo tribes had two thousand years ago.

But he didn't want automobiles originally, really. Nor as an idea, because they meant a complete upset in his way of life. Well... be wanted an automobile, but he didn't like the idea of just everybody having them.

There are lots of beautiful demonstrations of the fact that the genuinely popular-democratic-representative government of the United States did not want space.

First, there has been a great deal of
wished discussion about whether or not there is a "missile gap"—but no doubt whether there is a "space gap." The missile problem seems important to the American voter—a missile is a practical, useful thing that he can readily understand has real value.

His interest in space is so near zero, however, that his major reaction to the space gap is a sort of "Uh? So what?"

Second, the American government was caught exceedingly flat-footed—completely shocked—by the tremendous world-wide reaction to Russia's Sputnik I. The American people were quite genuinely uninterested in space—it didn't seem important to them. And our government made the egregious error of assuming that all people everywhere felt that space was unimportant.

In consequence, the Vanguard program wasn't given any real push—we weren't really interested. And no effort at all was made to keep track of how the Russians were making out with their space program.

The original attitude of most American officials when Sputnik I went up was a sort of, "Oh . . . they did, huh? That's nice."

Americans, as of 1947, were sitting on top of the world, so to speak. The thing they wanted most of all possible things was nothing new. The development of history had at last reached its long-sought ideal and perfect place; history should stop happening.

There's a missile gap, because Americans didn't want missiles to happen. No more than we wanted Russia to become an atomic power. Those were highly unwelcome changes in the at least perfect situation.

Opening space was another change that wasn't wanted either . . . by Americans.

But 1947 was no perfect-ideal for Russia, Germany, England, France, Italy, and the entire roster of the rest of the United Nations, with the possible exception of Canada and Ireland. The rest of the world's people were most decidedly anxious for change—great changes.

Above all, Russia was anxious for change, of course.

In 1957, ten years later, American officialdom did not appreciate the tenor of world thought, and did not appreciate that to most of Mankind the idea of breaking the ancient chains that held us to Earth was a great, noble, and uplifting achievement. They wanted that high-soaring symbol of a new, wider, different, better future . . .

The psychological impact on the world was far greater than our government—mired by the "divine voice" of our people—had realized. They found, with shocking impact, that everyone but Americans were far from indifferent—everyone but Americans felt it was a magnificent triumph . . . and felt the America's failure to achieve it was a failure of ability-to-do.

It was not a failure of ability-to-do.

The third item demonstrates that conclusively.
very neat and ingenious manner.

It was called Operation Farside; for
a mere twenty thousand dollars, it
was putting four-pound instrumented
packages out four thousand miles aft
er only five tries! (How many of the
fabulous Vanguards flopped? How
much did those over-publicized in
competents cost?)

Farside approached the problem in
a neat, "elegant experiment" manner
—instead of the currently-popular
"sophisticated device" approach. "So
phisticated device" translates to "very
complex and expensive," which makes
them extremely popular with com
plus industry contractors, governmen
tal boondoggles, and people seeking
to increase employment, whether
useful or not.

Farside simply hung some off-the
shelf solid-fuel rockets under a cheap
plastic balloon, hoisted the rockets
through the first twenty miles of
dense atmosphere by making the at
mosphere itself do the work, and
then launched 'em straight up. With
practically all the dense, high-resis
tance atmosphere already below the
vehicle, and the toughest twenty
miles of the gravity well already sur
mounted—they soared out beauti
fully into deep space. Some of the first
evidences of the Van Allen radiation
belts came back from the Farside in
struments.

The research project was launched
within the Air Force Office of Sci
entific Research, largely by Colonel Wil
liam Davis. He had difficulties—one
of them being that Defense Secretary
Charles Wilson outspokenly objected
to "shooting at the Moon," and almost
completely squashed the project early
in its career. In fact, on July 29, 1957
—note that date in relationship to
the date just a few months later the
Sputnik I went up!—the official De
partment of Defense and Air Force
attitude was magnificently expressed
in an order to all Commanders that
"No statements can be made which
might in any way cause the national
news media to describe valid Air
Force projects as efforts to 'fly to the
Moon.'"

In other words the official attitude
was that it was wrong, inappropriate,
nonsensical, to even discuss trying
for a Lunar probe—"in mid-1957?"

The minuscule budget that the
Farside project had been working on
was drastically cut; the government's
attitude was such that it wasn't
wanted. The project would have been
cancelled out entirely at that point—if
private industry hadn't picked up
the tab.

Aeroneutronics, Inc. had been
the prime contractor for the job—and
their project engineer, Dr. Joe
Karsch, recognized the importance
of space research. Aeroneutronics,
Inc., is a Ford Motor Company sub
sidiary; the Ford Motor Company
backed the Farside project, and in
fact, paid approximately two-thirds of
the cost of making it possible for an
American probe to be first in deep
space.

The Farside project worked beau
tifully, when it was tested . . . but
Colonel Davis, who had launched it
was yanked from Entwerek, where the
vehicles were launched, pulled off
the project, and shipped to Dayton,
Ohio, while another man—a com
pletely competent scientist, but to
tally unfamiliar with the project's his
tory and/or its status, was shoved into
his place.

I have made, in past months, some
remarks concerning the government's
A Polaris Missile blasts skyward just after clearing the waves of
the Atlantic. It was launched from the nuclear submarine USS
George Washington fifty feet under the surface, and cruising thirty
miles off Cape Canaveral. The missile came out about fifteen degrees
off vertical and the guidance system is just beginning to correct
here. The launch was completely successful. The Polaris is a solid
fuel rocket which has been highly successful. Unlike most rocket
programs Polaris solid fuel rockets were developed on time ac
nording to schedule. Approximate cost per vehicle $500,000.00

PIE IN THE SKI

The original six vehicles were
launched and tested . . . and then
the whole program quietly died, and
nothing more was done.
unwillingness to look at new potential breakthroughs, in this instance, the government didn’t want to look at a developed and proven technique of deep-space probing that was cheap, quick, and effective—even after it had been tested and proven.

President Eisenhower, in his TV speech after the shock of Sputnik I’s success, cited American achievements in space . . . and the only space achievement he was able to cite was Operation Farmdale’s four-thousand-mile reach into space. Courtesy the Ford Motor Company, not the United States Government, which had moved to throttle it, and would have without the Ford Company’s intervention. And if Ford hadn’t done that, Eisenhower wouldn’t have had one, single true space project to cite. (The nose cone hoover had to do with success with nice, practical, useful things like ICBM’s, that the American people can see some real use for— blowing up somebody else’s cities.

There’s considerable reason to doubt that the Kennedy administration will do much better; we’ve still got a popular-democracy representation government, and the American people don’t want space. Further, while an effort to form a Space Science Advisory Committee for the Kennedy campaign during the election was made . . . it was politely rejected by the Kennedy-Johnson group. They didn’t want any, thank you.

Many times, there’s a difference between what people want and what they need—but the voice of the people, the False Gods, will invariably be utterly certain of its Ultimate Wisdom, and demand what it wants.

In a representative popular democracy—it gets what it wants, until that government is in some manner changed. And changing administrations within that framework does not constitute a change.

As of 1947, the United States was sitting on top of the world, as the one effective world power, we had absolute military, economic, and political domination. We alone had the atomic bomb; we alone had a healthy, vigorously functioning industrial economy, undamaged by the war. We had Security.

The people of the United States, quite evidently, want to return to the Good Old Days of 1947—and if that can’t be quite managed, they want to keep the world just as near the 1947-ideal as they can. And that was a period when Space wasn’t open, and there were no ICBM’s to worry about, and Russia didn’t show signs of a great technology—so let’s deny that any such things exist.

One of the “I don’t want to believe it!” lines that’s going around is that the Russian rocket success was all due to those German scientists they captured after the war.

Well, maybe . . . but two facts
might possibly have some bearing on reaching a judgment on that. We have the man who directed the German program of rocket research—Wernher von Braun. And while V-2's were spectacular . . . does anybody remember what ground up the Nazi divisions on the Eastern front? Russian rocket barrages, Russian rocket artillery. And, by the way, the German's 88mm rifles were justly feared . . . but the Americans developed the bazooka—the rocket gadget that knocked out tanks.

We are, today, engaged in a great Technological War; it's been called a "Cold War," but it is, in practical fact, a technological war . . . and we've been retreating at an unbelievable rate! Technological war necessarily combines, and interacts with, all the other forms of warfare: the military warfare is a threat, rather than an actuality, during a technological war—but the power of its threat varies with technological successes and failures.

Economic warfare, of course, is directly tied to technological warfare; a major technological breakthrough can drastically alter the strategic position at the economic level.

The Minuteman, first solid fuel ICBM. Its solid fuel advantage is that it can stand in readiness for months and be launched in minutes unlike the liquid fuel rockets which have to be fueled just before take-off. Approximate cost per vehicle $1,000,000.00.

Psychological warfare is crucial—that's what's been called "the Battle for Men's Minds." And that, of course, swings widely whenever there's a swing in technological success. The United States suffered a tremendous defeat in psychological warfare when Sputnik I went up—far more drastic than we needed to, because of a simple fact. We don't want space, so therefore naturally, we know the rest of the world isn't really interested in Space, so putting up a satellite isn't going to be important, so . . .

But the rest of the world, the part of the world that didn't consider itself sitting fat and happy on top war interested in Space . . . and did recognize Sputnik I as a breakthrough.

Now one of the characteristics of a technological "front" is that the one who gets there first immediately wins the psychological warfare victory—automatically. Major Gagarin has now made it absolutely, and forever impossible to be the first man into space; that psychological warfare victory is absolute and irreversible.

Even more important, the breakthrough having been achieved, the one who did it starts from that point and goes on, using that breakthrough to lift himself farther. And in any field of science, once it is opened, progress is at first highly exponential. Every achievement immediately gives a major advantage to the next-following achievement.

The runner-up is now forced to match the established achievement—whether that was his desire or not!
and must commit research time, money and manpower to the slow, hard-work side of the breakthrough. He falls more and more behind, because the leader is on a down-hill pull, while he’s still struggling to get up. The leader is using the advantages of new knowledge his breakthrough earned him, and can run faster.

One simple example as applied to the present space front of the technological war. Our scientists dearly love the “sophisticated instruments” they send up—but only someone who is instrument-blinded will overlook the fact that far, far and away the most highly developed data-reducing computer system ever conceived is the human being. One man, making one orbital trip around the Earth, has solved more problems than all the space-probe gadgets and chimpanzee-carrying rockets we’ve sent up. One simple question that’s been bothering people for a long time has now been settled completely, and very quickly and easily. Can a man function adequately in no-gravity? Major Gagarin brought back the answer that all our monkey-carrying capsules only hinted at.

The Vostok was completely automatic. Major Gagarin didn’t fly it, but simply rode it. One extremely good reason was that, until that question was answered, it was insane to send a man up there and expect him to fly the ship. Now the Russians know what a man can and cannot be expected to do when in no-gravity; we don’t. (Is there any reason why the Russian story, in that particular, should be true? That bit of knowledge was hard won, and can be of major value in a technological war. They worked for and earned it; we haven’t. Why should they give it away?) Every advance in a technological war gives you the advantage of know-how that your enemy has to struggle for.

Again: a true breakthrough may involve an unexpected concept—in fact usually does—which means that sheer mass-application of technical brainpower can’t get there. No amount of logical research can equal one true flash of ingenuity. Note that while, in the last century, Europe had all the trained scientists, universities, industrial machinery, and capital... it was America that produced technological breakthroughs in rapid-fire order, and from totally unexpected sources. A portrait-painter developed the telephone; a teacher of the deaf invented the telephone. A schoolteacher invented mass production with interchangeable units, and an uneducated ex-newboy invented electric lights, and about half the basic concepts necessary for electric power distribution.

Not one of those things had yielded to the massive intellects of Europe’s trained scientists. They tried... in a halfhearted sort of way, because, after all, Europe was sitting on top of the whole wide world, and what European wanted to really upset things?

Now it has been quite widely acknowledged that much of Russia's...
success in space has been due to one single factor; they've got an eight hundred thousand pound thrust rocket engine, and we haven't. That one technological breakthrough has given them two highly important psychological victories, and an unknown number of consequent technical advantages. (How do we know what things we've learned with their immense mass satellites? Our little ones have taught us a lot. And more that we can well afford to be self-righteously public about our findings; obviously the Russians can, if they wish, put up any equipment we can . .. and then some.)

They have now put up the ultimate piece of equipment: a living man. A human eye-brain combination can, in a matter of half a second, perceive and interpret a complex pattern that no known technical equipment yet devised could report on. A thing so simple as an Ishihara color-vision test card can defeat any of the space-probe equipment we've yet sent up! And this lovely notion about "instruments are far more reliable than human observers"? Instruments are the ultimate in bigots; they observe only what they intend to observe, and absolutely ignore anything else. They are reliable—as any absolute bigot is. You can be perfectly sure that he will report only what he wants to accept . .. no matter what the evidence may be.

I have read, with considerable irritation, a learned colloquium on the great advantage of sending an instrumented probe, rather than a manned vehicle, to explore the planets. The advantages of not having to ship food, water, oxygen, et cetera, and even more, the advantages of accurate instrument recordings. Man, it seems, really isn't much good . . .

Particularly it will appear that way when you haven't got what it takes to put a man in Space . . . and the other side has.

But the sheer folly of talking about an instrumented probe being better than a manned vehicle for exploring Mars . . . when our Venus probe transmitter cooked out completely after about three transmissions! Component failure.

Any Systems Engineering man can explain the problem. Given ten thousand components, each with a reliability-life of ten years, you'll have one chance in one thousand that the thing will function after one year. It takes about eighteen months to orbit out to Mars; to have a fifty-fifty chance that the instrumented probe would transmit once it got there, you need a component reliability-life of around one million years. Anybody got any million-year guarantee vacuum tubes?

Besides which, half their sophisticated space devices have been going haywire in some ultra-sophisticated ways. Like metal boiling away from where they want it; and recondensing somewhere else that they definitely don't want it. You know how they aluminate mirrors? Heat some aluminum in a vacuum chamber, with the mirror blank cold and nearby; the aluminum sublimes and recondenses on the mirror blank. They've been having fun with their lovely sophisticated printed circuits subliming and recondensing in a new and very original "circuit." Usually a much shorter circuit, naturally.

It's true that cosmic ray and Van Allen radiation may be hard on men; we don't know. But what those radiations do to plastics is very interesting indeed. It'll make polyethylene as brittle as glass.

So, now, the Russians have parlayed their original technological breakthrough—the eight-hundred-thousand-pound thrust rocket engine—into two immense psychological victories in the War for Men's Minds, and into a second technological breakthrough. They can put a human observer up there.

(Note that even if the Mercury project were a one-hundred per cent success, we wouldn't be able to match the advantage of an orbiting observer.)

Once one technological breakthrough is achieved—you have a massive advantage in getting at the next.

When you're behind, as the United States is, an entirely different tactic is required. We do not dare seek to "catch up" with the Russians. Project Star was, the million-pound-plus liquid-fuel rocket engine, should be dropped right now; it's an effort to catch up with something Russia achieved several years ago. That's inherently a false maneuver in a technological war. So long as you keep trying to overtake your enemy, you are committed to second place. If you keep seeking to neutralize his advantages, you're always busy rushing frantically to cover the new place he's broken through . . . and never achieving anything yourself.

One obvious way for the United States to get somewhere is to leapfrog entirely beyond the Russian position. And that will not mean doing what Russia is doing, and doing it better—it will mean doing something Russia is not doing.

If we could come up with a true antigravity device, for example, all the Russian work in rocket drives would be rendered valueless; it would be completely unnecessary for us, or anyone else, to duplicate the Russian achievement.

A leapfrog play in technological warfare means doing something your opponent has not done, but which makes what he has done unnecessary. Russia, for example, has not strung the vast network of telephone wires and cables that the United States has; coming along later, the Russians simply installed microwave relay links, completely by-passing the need for the earlier system of wired cables. The Russians never developed the steam-engine powered factories that the United States did during the latter nineteenth century; they went directly to electric power.

Operation Five Star didn't use a gigantic booster to reach deep space; it by-passed the difficulty with a gigantic, cheap, balloon.

The lovely liquid-fuel rocket engines that we've been working on—
the Russians are ahead of us—are immensely complex, and there are iner- 
vitable System Failures problems. The failure of one one-dollar valve-
seat causes the destruction of a multi-
million dollar rocket, and a multi-
multi-million dollar loss in the psycho-
logical war. (Remember Vanguard 
dumping its grapefruit in the sea im-
immediately after launching?)

Most of the problems in the big 
rockets have been complexity and fail-
ure of components.

Farside used solid-fuel propellants. 
They're not so popular with Big Sci-
ence or Big Business generally, be-
cause they're so much simpler and 
not “sophisticated.” They're made, 
especially, by pouring a rubbery sort 
of gloop into a piece of sewer pipe, 
punching a hole in the gloop, and then 
lighting it off when you're ready. No 
spectacular countdown. No fuming of 
lox. No shrieking turbo-pumps...

Farside got its package four thou-
sand miles out into space with the 
first little “sorcerer’s”—a damn sight 
better record than the liquid fuel 
sooper-dooopers have shown.

The only missile programs that 
have come up with the goods on 
schedules have been Polaris and Min-
uteman... the solid-fuel rockets.

We're way ahead of Russia on 
solid-fuel propellant rockets. This-
ked, the major supplier of solid-fuel 
propellants, has said that, given the go-
ahead, they could get a million-
pound-plus rocket off the ground be-
fore the end of 1961—far ahead of 
the most hopeful date for Saturn. (If 
Saturn does work successfully.)

By doing an all-out job of develop-
ing what Russia has not developed, we'd be in a position to leapfrog 
their work—by-pass completely all 
their technological advantage in li-
quid fuel development.

And there's absolutely nothing to 
prevent our development of a super-
Farside approach. It sounds real or-
gee-gee when you talk about a mil-
lion pounds; it boils down to five 
hundred tons. A cluster of cheap 
polyethylene balloons could lift many 
tons the first twenty miles—and of 
course a five-hundred-ton thrust rock-
et doesn't weigh five hundred tons.

The lighter-than-air ships were 
not successful—but remember that 
their problem was that they were unrea-
listic in storms; they weren't rugged 

t enough to have the endurance a use-
ful ship requires. The maintenance 
costs were crushing.

None of these factors applies to 
the one-time use of plastic balloons as 
a “stage booster.” You don't 
launch space-vehicles in storms any-
way, and rugged endurance isn't in-
volved. Like paper napkins, they 
don't have to stand repeated wash-
ings.

It was the same Colonel Davis who 
launched Farside who proposed the 
development of a shroud-wings-pipe-
rocket vehicle that would constitute 
areally different approach to getting into 
space, as reported in the January 
1961 issue of Analog.

Whether the American people 
want Space opened or not makes no 
difference; it's been opened. Whether 
the American people want it or not, 
Space will be developed. And, wheth-

er the American people like it or not, 
that people which develops Space 
will eventually be the dominant pow-
er of the Solar System. The voice of 
the people is not the voice of God; 
there is no more dangerous delusion 
than to believe “I am God.”

The proper function of a wise gov-
ernment is to lead its people, not 
follow them; whether the people want 
Space or not—they need to develop 
it.

The great difficulty is that a gov-
ernment that runs its opinions down 
the throats of its people may be a 
highly benevolent teacher... and 
may be a ferocious despot.

Right now, then, we have the situ-
ation that the people of the nation do 
ot want Space opened, or devel-
oped, and therefore do not want ef-
effective American—or Russian, of 
course—Space programs.

If our government imposes an ef-
fective, dynamic Space program on 
the nation, it will be acting against 
the desires of the people. (It will be 
acting in the direction the people 
need, but not in the direction they 
want.) It must, then, be a nonrepre-
sentational government—a “tyran-
ny.”

As things are now arranged, how-
ever, this means that America is in-
evitably committed to surrendering 
the future to the Soviets. The Ameri-
can people may feel very strongly 
that that is not true—but the voice of 
the people is not the voice of God.

They are wrong; the future be-
tong to Space.

A very simple illustration of the 
necessity for developing space is the 
banner of natural resources. We're 
consulting minerals at an exponen-
tially increasing rate—particularly the 
fossil fuels. Those fuels are carbon 
complexes; even if the fuel need was 
ninety per cent taken over by nuclear 
fuels, the nuclear fuels can never re-
place the need for carbon complexes 
in organic chemistry—the plastics are 
more and more dependent on.

Deeper mines and wells won't 
solve the problem; the cost goes up 
too fast.

The people that develops Space 
will have available the quite literally 
inhacabable supply of carbon—and 
nitrogen—complexes of Jupiter's at-
mosphere. Since that atmosphere 
alone has greater mass than the en-
tire Earth, Earth can't possibly con-
sume that reserve.

The way America's strength grew 
great was by a system under which 
individuals and small groups were 
free to develop what they believed 
the nation needed, without having to 
impede the people, or forcing 
the people to support it, by decree.

(As of now, our government is a 
“tyranny” in that, whether I like it or 
not, I am forced by the laws of that 
government, to support projects I, 
personally, consider a waste of my 
money.)

In the period 1900-1910, America 
was doing just fine. The living stand-
ard was high—far higher than ever 
before. There was considerable social

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stability, it was a period of The Good Life.  
One technological breakthrough disrupted, beyond hope of recovery, that whole way of life.  The greatest social reformer of the last one hundred years forced a complete change of mores, economics, politics, and social relationships.  Henry Ford introduced a cheap automobile.  
The great railroad networks that had sprung up in the previous century have rapidly fallen deeper and deeper into trouble.  The trolley lines that started after Edison's electric-power systems got going, and, by 1915, linked most of the Eastern part of the nation, have almost totally disappeared.  Billions and billions of dollars have been poured into building roads of a quality and magnitude never imagined before.  The courting customs of a people changed under the pressure of cheap, go-anywhere transportation available to individuals.  
One technological breakthrough utterly disrupted a comfortable, going way of life.  Property values in real estate shifted in a manner no one could have imagined.  

Any dictatorial government which had sought to impose on a people such vast changes in mores, economics, and manners would definitely have been a tyranny of the first order.  Notice that the people of 1910 certainly would not have wanted such things!  There was, of course, plenty of effort to impede those vast changes—plenty of sermons were preached on the evils of "modern youth" and their automobile courtships.  
The essential advantage of the system of Private Enterprise—and the thing that makes it hated by the Vox Populi—is that it permits men to offer their fellow men a sample of what can be!  Americans didn't have to buy Henry Ford's product—but they found they did, in fact, want it—consequent social, economic and political upheavals or not!  

It's quite appropriate that it was the Ford Motor Company that was willing to back two-thirds of the cost of Operation Farside!  It isn't that private industry, today, is unwilling to go ahead and develop Space themselves—the problem is that, under the present governmental-control system, they are not allowed to.  When the Vox Populi syndrome really gets rolling—when the people mistake themselves for God—they "know" in their divine wisdom what should and should-not be done.  And right now, they "know" that Space shouldn't be developed.  Wherefore their government will move to suppress the activity they don't want.  

It wouldn't be so bad if it were only that the government didn't attempt to develop Space; the problem really comes from the fact that the government presents private enterprise with doing so.  

The situation reminds us, on a vast scale, of a weird little business that came up some years back.  The Western Union Telegraph Company has, for many years, run a "night letter" service.  You can send relatively long messages at a special low rate at night, thus allowing the company to get greater utilization of its equipment during the off-peak hours.  But Western Union found that the night-letter business between New York and Washington, D.C., was getting very heavy indeed...and found, presently, a highly efficient way of handling the traffic.  
The night-letter messages for New York were typed out in Washington, loaded into a pouch, and a messenger put on the Pennsylvania Railroad train leaving Washington at midnight.  The night letters were delivered promptly the next morning in New York by about nine o'clock. A similar setup running the other way took care of the reverse traffic. Since one messenger could carry several hundred night letters, the method was eminently practical.  

The Government, however, put a stop to it.  The Post Office Department has a Government monopoly on mail...and no private industry is allowed to compete with the Government.  So Western Union had to go back to the less efficient technique of wire communication...and the Post Office didn't take the hint and do the job themselves!  

Private industry, today, is prevented from doing Space research; it's a Government monopoly.  There's also the matter of the "hiwyr" game system—the "Hands I Win; Tails You Lose" system of Government-financed research.  It's seldom a corporation does what the Ford Company did, and actually finances a research program for the government's benefit!  They'd rather have the government guarantee the cost, and take no risks.  That's not the attitude that built this nation.  

And it is an attitude that makes the divine voice of the people have complete control—which, of course, the people believe they should have!  

Could private industry finance Space research?  
The answer's easy: Not the way the government's doing it!  Not with "so-sophisticated missiles" and the like, and not with the bull-headed approach of "The way to solve an engineering problem is to put more men, more money, and more computers on the job."  Nobody but a government could do it that way.  It's been said that we'd never have gotten atomic power if it weren't for the government-backed Manhattan Project's two billion dollar bulldozer attack on the problem.  

Anybody really want to bet the Germans have, since, developed a neat little low-cost technique for separating U-235 by a centrifuge arrangement.  I've heard of two other techniques, using quite different approaches, that, at least theoretically, should be even cheaper.  One of them sounds like a home-workshop system.  

Project Farside, the first successful deep-space probe in human history was two-thirds financed by private industry.  That private industry could finance Space development is not open to argument; it's an historical fact.
Some months ago, on these pages, I pointed out that Project Echo was the first non-crackpot development of space. Private industry could pay the costs of space development, not merely as research, but as a pay-your-own-way economics system! If our representative government would let it. Which it will not, so long as it represents the will of a people who definitely want space research but not to succeed.

How could private industry finance the cost of space research?

For one thing, notice that Big Science—the lofty universities and technical agencies of the Government—have the general attitude of the Sacred Science approach. Joseph Henry was a brilliant investigator; he was the first to construct a working electromagnetic telegraph system, long before that portrait painter, Samuel F. B. Morse. But Henry was a Scientist, and didn’t believe in commercializing the majestic truths of Science. It was years before Morse got the idea, and did something useful with it. Science isn’t Sacred Cow, despite what some people say—but a lot of Scientists think they’re Sacred Cows.

They lack the old-time—–not to be found in the modern—American characteristics of enjoying the Grand Guignol. Abraham Lincoln wasn’t afraid of a belly-laugh; modern American presidents seem to be. Times have changed.

How could space research be supported? Ha! P. T. Barnum would have loved the chance!

Look—if a mere twenty thousand dollars can put something four thousand miles into space—what could be done for two hundred thousand dollars? And what’s the advertising budget of one of the big United States corporations? The cost of a simple one-hour TV spectacular runs anywhere from two hundred thousand to one million dollars—for one single hour in which the corporation hopes people will watch about it and watch to get the advertising message. Why, for the great, gorgeous hell of it, old P. T. Barnum would have had a Space-balloon up there, shaped like Jumbo, and visible to at least half the whole danged world.

He would, in the process, have knocked the pins right out from under the Russian psychological-warfare advantage; the effect of Sputnik I—which did nothing useful, except be-up-there—would have fallen to near zero if an American industrial outfit had put up an advertisement-satellite.

The Echo satellite was mirrored, so that it couldn’t be seen except as a pinpoint reflection of the Sun. But if a white polyethylene film balloon were put up five hundred to one thousand miles, anyone with a modest telescope could have seen its shape. And anyone could have seen the point of light circling the Earth.

Could modern Big ScienceSacred Science—consider so neat and simple a method of combating Russia’s highly effective psychological warfare advantage? Why . . . that would be Scientific Sacrilege! Commercializing Science!

Joseph Henry would never have appreciated it. Yeah . . . and winning a highly important victory in the psychological war we’re losing steadily. What would the Russian propagandists have had to say of that American advertising satellite . . . that didn’t demean beyond recovery the importance of merely putting handfuls of hardware in the sky? To prove that their satellites were different and better, the Russians would have been forced to publish useful information gained from the satellites . . . which, as things have been, they’ve never done. Colonel Davis has said that, for two hundred thousand dollars, he could have landed a package on the Moon.

Years ago, Dr. Munro of the United States Bureau of Standards, discovered the “Munro Effect”—the effect produced by a shaped charge of high explosive. One demonstration he gave involved putting a lace doily on a pile of armor steel, and a shaped charge on the doily. When the charge was set off . . . lo! a beautiful impression of a lace doily neatly carved in the solid steel.

Could something like that allow a small Space package to drive a mass of aluminum flakes or the like through a template, to put a huge, highly visible splash on the surface of the Moon?

Vandalism! Horrible! Yeah! That aluminum could be just as sterile as any of the oh-so-scientific probes they’ve sent—and it would do a tremendous lot of good for American prestige . . . as a political stunt! America’s high achievement in the past was by getting things done . . . not by being Cultured and Educated. Scientific Europe was Cultured and Educated and Scientific—but it was rude, commercial, uncouth Americans who invented telegraph, telephone, electric power systems, airplanes, and mass production. Who got things done.

To hell with being Scientific—Sacredly—Cultured, and Educated! Europe tried that—and slipped from running the world doing it. Those modern rude, uncouth, uneducated Russians are following the path clearly outlined by America—and now abandoned by us. They are doing things.

One of the greatest propaganda victories imaginable for us right now is knocking the wind out of the stuff-shirt attitude toward Space science. If that could only be done to our own Space Scientists—the Big Science people—we’d have a chance of cutting the Russian position down to size.

We’ll never cut down the great reality of their achievement—getting a man into space as an observer is a terrific, solid technical advantage. But the propaganda advantage of their big satellites would vanish if we sent up some advertising satellites.

The United Fruit Company could afford a balloon shaped like a banana—RCA could readily divert a fraction of their advertising budget to
put a radio tube in orbit. The Coca Cola Company could certainly advantage from putting their familiar shape—already known around the world—onto orbit around the world!

The Ford Motor Company's already got a head start on providing Space vehicles, turn 'em loose, and let 'em show what can be done! Not a multi-million-dollar super-bloop like Vanguard—the cheap, mass-produced vehicles that Ford's been famous for.

The Voice of the People is NOT the Voice of God—it's a deadly delusion. And Science isn't Sacred; that's a delusion—it's the delusion that made Europe, that had everything necessary to do it, fail to develop any of the technical breakthroughs that came in the last century. The Nobel Prizes were all for Science—although Nobel made the money that paid for the prizes by engineering achievement. During the period America was getting things done, no American won a single Nobel Prize. Only since we've settled down to being cultured and educated and scientific have we started collecting Nobel Prizes...and watched Russia make major breakthroughs in the technological war.

No government should be given the power to decide for the people what they want is what they should have or not; that's our objection to the Russian system, essentially. It's not carefully noted, however, that what the Russian government has imposed on their people has, in the light of fact, actually been good for them. That it's a tyrannical system is beyond question; but it is also provable that it has been a benevolent tyranny on the whole—so far. It has converted a population of starving serfs into a great technical nation—and that's a benefit in any terms you care to choose. But tyrannies don't stay benevolent.

The trouble is, our government now is acting to prevent individuals from offering—not commanding, but offering—the people what they need—but don't want. The private enterprise system did that. We didn't have to buy Henry Ford's cars...and we wouldn't have to buy the Ford Motor Company's rocket vehicles. But...it would be nice if we were allowed the chance, wouldn't it?

Big Government and Big Science always want to do things in a big, expensive way.

Private industry succeeds by doing it in small, cheap, and ingenious ways.

The Post Office wouldn't offer the quick, overnight guaranteed message service between New York and Washington; why should Western Union be denied the right to do what people need, and the government won't do?

By using ingenuity, simplicity, and forgetting that Science is Sacred, a unit weighing a couple of pounds could be put into orbit for under one hundred thousand dollars—probably way under.

But...not while the government won't let private enterprise even try to take the lead in the technological warfare for Space!

I have a suggestion: Maybe Aeroneutronics could get together with one of the major advertising agencies, and the government of one of the smaller nations, with a nice convenient island with little or no population, and establish a private-industry Space launching pad. If the American government won't allow Americans to do what they can in their own country—perhaps they can set up and do the job, despite the government, outside of the country.

We don't lack the men capable and willing, we don't lack the industrial ability. What we lack is the freedom to go ahead and do what we can do!

I'd like to quote from a letter received from a friend at one of the top United States Space launching-pads—a man who's been pushing science fiction into reality for years. He was one of the scientists who helped at Eniwetok when the first hydrogen bomb was tested; he was there again when Project Far Side was launched. He's in the Space business now, at one of our major Space bases: "I am nothing and charming here as the typical rebel would. The pace is not completely to my liking, and I feel we could be making better time down the road if we had a little more guts. If the United States policy back in the old days had been as cautious as it is today, we would still be trying to get the first covered wagon across the Missouri!"

A lot of the top United States men who went into the rocket program in the early days, when the first V-2's were brought over for testing, have gotten disillusioned, and gone off to do other things. They're around—and would be happy to get in on a private-industry program that really meant to push for Space!

The men are available, and anxious. It's not a lack of ability, of technology, or anything save the attitude of wanting to do it!

Let's see now...who does own the Galapagos Islands? Must be a lot of convenient islands around that could be used. Oh...but maybe United States governmental interference through diplomatic pressure on our South American neighbors would make it difficult. But say...but the Malagasy Republic would like being one of the foremost centers of Space technology!

That Coca Cola bottle-in-the-sky would be ideal, of course, but if they don't want to...hm-m-m...too bad there aren't any really big pie manufacturers—but who? How about General Mills? They made the plastic balloons for Far Side anyway, and why shouldn't they put pie-in-the-sky for promoting their pie-crust mixes?

The American programs these days are so blasted serious—so sacred about everything—that nobody's having any fun doing it.

Who's for pie-in-the-sky—the kind of pie-in-the-sky that can deflate a propaganda campaign, and really do mankind some good?

The Editor.