

## MARKET FORCES LAUNCH A NEW ERA OF SPACE FOR ALL MANKIND

*by Dan Garretson*

For a generation raised on the science-reality space race and science-fiction-fueled dreams of off-planet adventures, the last few decades have been deeply frustrating. Between glacial progress in the development of new space launch capabilities and dashed hopes as initiatives like the space shuttle failed to deliver anything like routine access to space, the dream of a life in space or on some other planet or moon seemed to be increasingly in danger of disappearing forever into a black hole.

### THE DREAM LIFTS OFF

But, seemingly overnight, the dream of accessible space flight appears to be turning into reality. Between billionaire joyrides for Richard Branson and Jeff Bezos, real-life space adventures for William Shatner, and the 2-day orbital flight of Inspiration4, led by billionaire Jared Isaacman (purchased on a vehicle built by billionaire Elon Musk's SpaceX), space flight finally appears to be turning into a reality for more than just government-selected astronauts and cosmonauts who previously served as mankind's only emissaries to space.

### THE CRITICS RE-ENTER

Of course, this billionaire-led push into space isn't without its critics. From the LA Times declaration that the "Bezos-Branson-Musk space race is a huge waste of money and scientifically useless"<sup>1</sup> to the New York Times worrying that space tourism may cause significant environmental damage,<sup>2</sup> critics seem to think this new space race highlights the worst of capitalism. In their view, the conspicuous consumption of these few hyper-wealthy individuals apparently comes entirely at the expense of both the oppressed low-paid workers and poor people in the United States and around the world as well as the planet's climate.

Worse, it seems that in the minds of many critics this private sector activity usurps the far more noble pursuits of governments using space for scientific research into issues such as the origin of life, the existence of gravitational waves, or the progress of global climate change.

### THE GOVERNMENT IS LOST IN SPACE

As a former astrophysicist, I am certainly excited at the prospect of better understanding the nature of the universe and life. But the critics of today's space billionaires have it exactly backward: Left as a taxpayer-funded venture to be directed by glory-seeking and/or agenda-driven politicians, the public sector will never deliver on the real potential benefits and excitement of humans finally venturing forth from their terrestrial home. Instead, ongoing government-driven space efforts will be:

- **Politically dependent.** As the last 50 years have shown, government-run space exploration is constantly subject to the whims of ever-shifting budget and political priorities. The space shuttle and, subsequently, the space station represented the bright shiny objects that sucked up the lion's share of resources the government was willing to allocate to civilian space efforts from the 1970s through the early 2000s, limiting the exploration of alternative launch approaches or objectives beyond low-earth orbit.
- **Limited to a few, select individuals.** From the perspective of the public sector, space is seen as a commons to be used only as determined to be acceptable and not overly risky or wasteful in the court of public opinion. And, given the limited funding and resources, only the most-deserving, appropriately vetted (and, therefore,

not particularly objectionable) candidates will be chosen to participate in these efforts. In short, government funders and bureaucrats have little to no interest in opening up space to ordinary people in any way other than as publicity stunts intended to gin up support for additional spending.

- **High cost.** The overseers of government initiatives have little tolerance for failure because it invites unwelcome scrutiny and may curtail additional funding. But any program that effectively explores promising but unproven options as it searches for the best, lowest-cost solutions to the prohibitive challenges of space exploration will inevitably experience failure. The private sector routinely pushes the limits, and many companies and solutions fail even as they contribute valuable knowledge about what went wrong and why. Bureaucrats and government overseers instinctively avoid such failure in favor of consensus-driven and typically higher-cost solutions that occasionally fail anyway.

## MARKETS WORK IN SPACE

By contrast, today's surge in space tourism is driven by real market forces that have the potential to deliver outsized benefits without picking taxpayers' pockets. Specifically, private sector space efforts will be:

- **Market driven and sustainable.** Entrepreneurs ultimately need buyers for their services or they go out of business. While I have no doubt that Richard Branson and Jeff Bezos both enjoyed their trips to space, neither of them got wealthy by squandering their limited resources on products and services that had no hope of generating profits. The explosion of private sector prosperity generated over the past few decades has created a vast reserve of technology enthusiasts raised on dreams of life in space who, by the way, also control enormous financial resources. It is these dreams and resources that today's space entrepreneurs hope to capture as they seek to build profitable space businesses.
- **Broad-based.** Narrowly focused initiatives may be fine for government leaders that simply need the occasional signature initiative and favorable headlines to drive re-election campaigns, but entrepreneurs need as many customers as possible to fund their efforts. To be successful, space entrepreneurs will seek to create an ever-larger market by expanding access to the largest possible pool of potential consumers. This, in turn, will create a virtuous cycle as an ever-expanding customer base helps spread out costs, drives down prices, and further expands the market.
- **Increasingly cost-effective.** Private sector competition is, essentially, a race to find ever-better ways to deliver higher-value services at ever-lower costs.

Entrepreneurs are constantly testing out new approaches that hold the potential of dramatically lower prices and/or higher performance while rapidly moving on from approaches that fail. As a result, any given provider has only a limited window of profitability before competitors figure out how to deliver similar or even better products at lower costs. While today's space joyrides may be limited to billionaires and movie stars, this is only the start of an ever-expanding and increasingly cost-effective market for space tourism.

## CONCLUSION

In short, the critics of today's entrepreneurial space joyrides are, quite simply, missing the big picture. Early adopters of new technologies always pay much higher prices even as they enjoy the benefits of being first. But these well-heeled adopters are critical for launching the market and associated processes that drive down prices over time.

Space tourism will be no different. No one should be surprised or angered that billionaire and celebrity space tourists are the first to go up. But they will merely be the early adopters in a process that will lead to much greater opportunity for many more people to enjoy the excitement, adventure and, ultimately, everyday ordinariness of space in the coming years and decades.

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## ENDNOTES

1. Space race for Bezos, Branson, Musk is a mere vanity project - Los Angeles Times ([latimes.com](https://www.latimes.com))
2. <https://www.nytimes.com/2021/07/21/business/space-tourism-climate-change.html>

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