



ARTS & CULTURE IDEAS

What Moses and NASA's Mars Rover taught me about wonder and awe.

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Mars is on our minds these days. [NASA's Perseverance Rover](#) touched ground on the red planet on Feb. 18 and today NASA [announced some of its first discoveries](#). Meanwhile, [Tianwen-1](#), an explorer from the China National Space Administration, began orbiting Mars on Feb. 10 and will attempt to land a rover later this year. And just the day before, on Feb. 9, the Hope Probe of the [Emirates Mars Mission](#) maneuvered into a high orbit where it can study the whole planet at once.

As an astronomer, I am thrilled at the prospect of learning more about Mars. Even if my field is cosmology—the study of the universe as a whole, in comparison with which Mars is almost an invisible speck—learning more about its geology, atmosphere and weather and (perhaps) figuring out if there has ever been life outside of Earth are amazing prospects.

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I had Mars in the back of my mind when, near the beginning of Lent, I read the story of Moses and the burning bush for the umpteenth time and noticed something that I had never paid attention to before. God counts on Moses' curiosity. The bush is not directly in Moses' path, nor does God call out for Moses to come and take a look. Rather, he waits as Moses says to himself, "Let me turn aside and see this great sight. Why is it that the bush is not burning up?" (Ex 3:3). Moses has to strike off in a new direction—temporarily neglecting his task of herding his father-in-law's flock—to approach this wonder. And it is only after he has done so that God speaks to him. What would have happened if Moses was not interested in exploring something strange and new? Would God have remained silent?

Today, with all the excitement about Mars, many people are briefly turning away from their daily routines to look at a wonder that glows red—not a burning bush, but a planet. Although I do not expect that they will encounter a theophany like the one on Mount Horeb, I reckon the underlying dynamic is analogous. St. Paul said that we could discern God's "everlasting power and divinity" in creation (Rom 1:20). How can we do so unless we exercise our God-given curiosity, look up from our path and spend some time considering the wonders around us? Delightfully, NASA's previous Martian rover is actually named [Curiosity](#), and if you're looking for inspiration, you can experience a virtual "[surface experience](#)" of Mars with its help.

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Curiosity has been running for [more than 3,000 Martian days](#)—over 8 Earth years—so it is fitting that its newest companion on Mars is called Perseverance, a name that was chosen in [a contest](#) open to American schoolchildren. The [winning essay](#) observed that although recent landers and rovers were all named for noble traits—Curiosity,

InSight, Spirit, Opportunity—something was still lacking. “We are a species of explorers, and we will meet many setbacks on the way to Mars,” explained the author, Alexander Mather. “However, we can persevere.” Without perseverance, the initial energy brought on by our curiosity will quickly fade.

Moses certainly knew this. His journey began with curiosity and may never have happened without it, but he and his people had to persevere for many years before reaching the promised land. But here the Moses analogy limps. The Israelites were escaping slavery and spent years as migrants in the wilderness. Their situation, which tragically continues to be lived anew by today’s forced migrants, was not something they wanted, and their perseverance was elicited in the wake of oppression. The perseverance exemplified by Martian exploration, on the other hand, is of a different sort. It is voluntary. True, it is a crucial quality for any scientist. Having a bright idea or a flash of inspiration is one thing; buckling down and putting in the hard work, overcoming the setbacks and false steps, all require perseverance. But it is a perseverance from which one can retire at the end of the day when one returns home for the evening. The Israelites had no home.

Maybe this is an oblique reminder not to restrict the exploration of space to a privileged few. NASA and other space agencies do a great job at public outreach and at generating excitement for science and exploration across the world. However, moving forward, it will be important to ensure that smaller, less wealthy countries can have a stake in space and that corporations operate in space within the bounds of just laws. Already our telecommunications infrastructure relies on satellites, and data from other satellites is crucial for understanding issues like climate change. There may even come a day when material resources can be extracted from asteroids in space. In light of all of this, [the Holy See has advocated for better international laws](#) to ensure that activities in space are peaceful and equitable. It calls for a “space economy” structured for “creating opportunities to engage more actors and opening up new markets for space-derived data and services to meet the needs of the poor in a financially sustainable way.”

In other words, to riff on Mr. Mather’s essay, when we think of Mars and other space activities, we should recall not only [Perseverance](#) and [Curiosity](#), but also the two other NASA rovers of the 21st century, [Spirit](#) and [Opportunity](#). May there be a spirit of opportunity that respects solidarity and the universal destination of goods, including those of space. Then our curiosity—like that of Moses—will be for the benefit of not just a few, but many.

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