



WHY WE SHOULD  
CONTINUE TO EXPLORE  
SPACE



WHY WE SHOULD SAVE  
EARTH BEFORE  
COLONIZING MARS

## COMPARE NONFICTION

The argumentative essay you are about to read offers a different perspective on exploring and colonizing space. Pay attention to the similarities and differences in how this author advances his argument.

## About the Author



### Bruce Dorminey

(b. 1959) is a longtime journalist from Georgia who has written extensively about science and space exploration. His work has appeared in *Scientific American*, *Astronomy*, *Forbes*, and several other publications. Dorminey is the author of the book *Distant Wanderers: The Search for Planets Beyond the Solar System*.

## Concept Vocabulary

As you read, you will encounter these words. After reading, work with your group to identify what these words have in common.

ominously

anxious

calamitous

**Reference Materials** A **thesaurus** provides a word's part of speech, its synonyms (words with similar meanings), and its antonyms (words with opposite meanings). When you encounter an unfamiliar word, looking up these details can help you determine its meaning.

### EXAMPLE

**verdant** *adj.* *synonyms:* lush, leafy, green; *antonyms:* barren, leafless

In this example, familiar synonyms (*leafy*, *green*) and antonyms (*barren*, *leafless*) give clues to the meaning of the less familiar word *verdant*. The abbreviation *adj.* indicates the word's part of speech: adjective.

**PRACTICE** As you read the article, use a print or online thesaurus to help you determine the meanings of unfamiliar words. Write the definitions in the open space next to the text.

## Reading Strategy: Make Connections

You can gain insight into a text by **making connections** to other texts you have read on the same subject. Analyze the text by asking yourself, *How is this text similar to and different from other texts?* These connections will deepen your understanding of the text you are reading now and the subject as a whole.

Consider these textual elements as you make connections:

- claims, reasoning, and supporting evidence
- how individuals, events, and ideas interact in a text
- writing style and word choice

**PRACTICE** As you read the article, use the open space next to the text to note connections you make to other texts.

# Why We Should Save Earth Before Colonizing Mars

Bruce Dorminey

## BACKGROUND

This article was written for *Forbes* magazine just after the European Space Agency announced the building of a new telescope. Bruce Dorminey, who has written a great deal about space science, chose this moment to publish his thoughts about space settlement. He quotes a well-known twentieth-century actor, Charlton Heston.

- 1 **U**pon hearing NASA's confirmation that Mars has complex organics, a reader took heart that someday soon we would be colonizing the world next door. But my first thought was why don't we simply start by cleaning up this one? That is, ridding our oceans of the islands of plastic and our planet's atmosphere of its sulfuric acid rain and nitrogen dioxide.
- 2 That includes becoming smarter about how and why we build infrastructure and the resulting traffic congestion that usually goes with unbridled development.
- 3 What's with this guy, you may be thinking? Why would someone who's long advocated space exploration and astronomy suddenly turn inward?
- 4 Maybe it's because no matter how we spin the data, of the several thousand planets now confirmed to be circling other suns, precious few seem to resemble our own. And although Mars might eventually be a candidate for terraforming,<sup>1</sup> why not simply take that energy and rectify our own Earth back to its former glory?
- 5 Although we may be capable of searching out biosignatures<sup>2</sup> of life on nearby extrasolar earths, we won't be capable of journeying there anytime soon.

1 **terraforming** (TEHR uh fawr mihng) *v.* transforming a planet so that it can support human life.

2 **biosignatures** (by oh SIG nuh churz) *n. pl.* chemical or physical markers that provide scientific evidence of past or present life.

## READ TO UNLOCK MEANING

1. First read the text for comprehension and enjoyment. Use the **Comprehension Check** question to support your first read.
2. With your group, apply the vocabulary strategy to unlock word meanings.
3. Find other details in the text you find interesting. Ask your own questions and draw your own conclusions.

Use a thesaurus or indicate another strategy you used that helped you determine meaning.

**ominously** (O muh nuhs lee)  
*adv.*

MEANING:

**anxious** (ANGK shuhs) *adj.*

MEANING:

**calamitous** (kuh LA muh tuhs) *adj.*

MEANING:

## COMPREHENSION CHECK

According to the author, why don't we need to worry about an impactor destroying life on Earth?

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- 6 Thus, I'm increasingly becoming more and more appreciative of what Earth offers and why we should be doing more to protect it; including its disappearing species of rhinos, elephants, tigers, lions, dolphins and whales.
- 7 This generation is certainly the tip of the spear that's ever slowly moving its way into the cosmos. But we live in an era of strange dichotomies. We remain fixated on finding life off-planet when we still haven't cataloged all of our own Earth's biota.<sup>3</sup>
- 8 We also need to think about planetary defense.
- 9 As the late Charlton Heston intoned during the opening moments of the 1998 film *Armageddon*, during the age of the dinosaurs, Earth was lush and verdant. Then their reign was interrupted by a six-mile-wide rock that unleashed the force of 10,000 nuclear weapons in our atmosphere; kicking up a trillion tons of dirt and dust to go with it. A thousand years of nuclear winter followed. And then most **ominously**, Heston pauses for effect and repeats: "It happened before. It will happen again."
- 10 As the B612 Foundation<sup>4</sup> and others like it warn, humanity must get off this planet for good. Perhaps. But arguably in the nearer term, we need to ensure that the planet we are so **anxious** to leave is also one in which we would want to return.
- 11 As for tracking potential space hazards?
- 12 NASA's Jet Propulsion Laboratory (JPL) already tracks some 7,000 potentially hazardous Near-Earth Objects (NEOs). But just today, the European Space Agency (ESA) announced plans for a new automated telescope, the first in a future network that would completely scan the sky to identify NEOs for follow up. ESA says that like the insect, the "Flyeye," can expand and compound its field of view into a diameter some 13 times that of the Moon, as seen from Earth.
- 13 Thus, the biggest current blindside may be simply not taking care of planet Earth. In terms of **calamitous** impactors, the odds remain in our favor. After all, it's been 65 million years since such a civilization-ending impactor.
- 14 Our species is less than 250,000 years old. What we learn from cleaning up our own planet and preserving its flora and fauna will only help us when terraforming the world next door.
- 15 And if we aren't out terraforming nearby star systems in another half million years, our civilization may have long disappeared anyway. Thus, we should deal with our own environmental issues here first. Then worry about terraforming Mars. 🌌

3 **biota** (by OH tuh) *n.* plant and animal life of a particular place, habitat, or time.

4 **B612 Foundation** nonprofit foundation dedicated to planetary science and planetary defense against asteroid and other near-Earth object impacts.