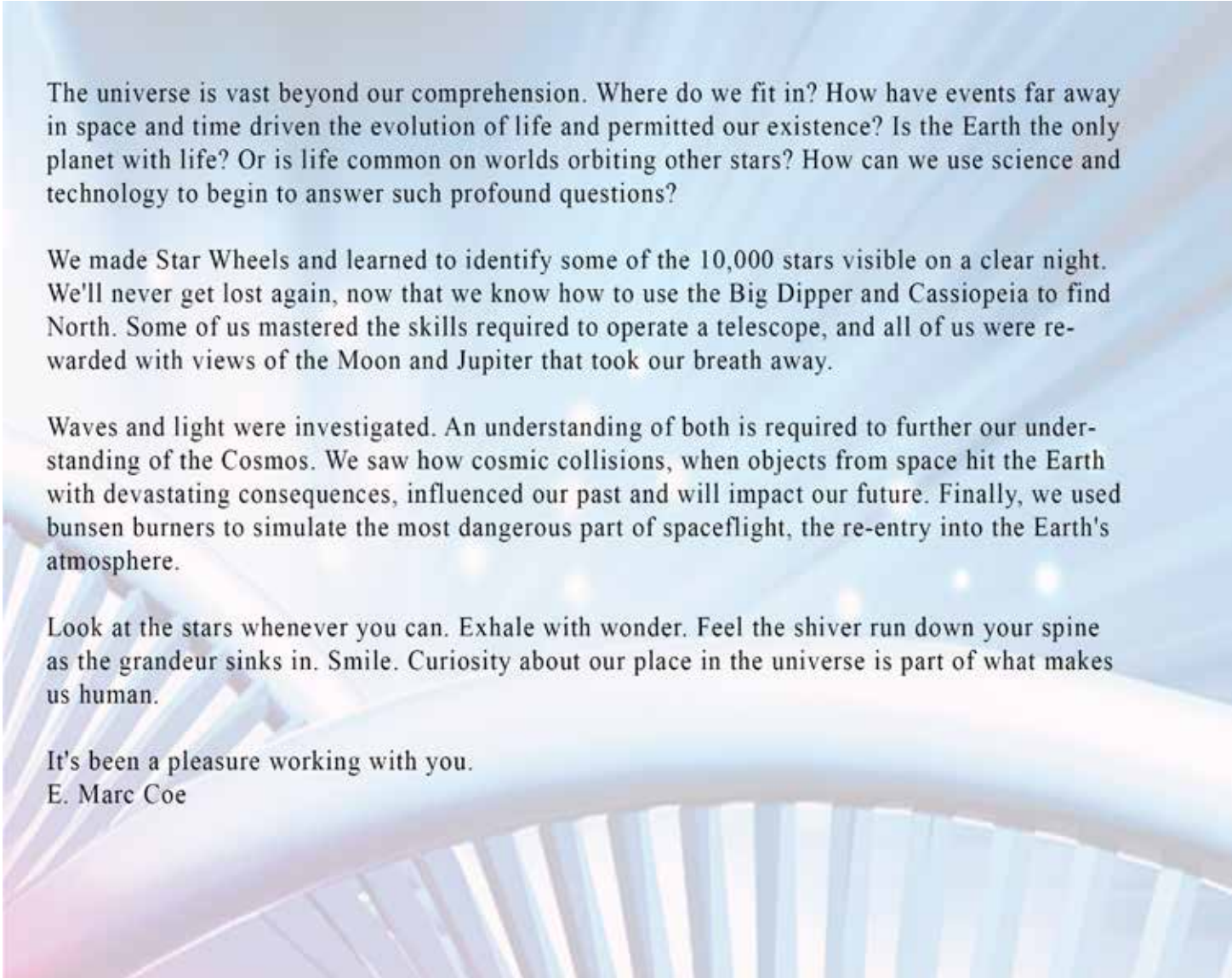




the stars
challenge

Explore the Universe
Winter 2018





The universe is vast beyond our comprehension. Where do we fit in? How have events far away in space and time driven the evolution of life and permitted our existence? Is the Earth the only planet with life? Or is life common on worlds orbiting other stars? How can we use science and technology to begin to answer such profound questions?

We made Star Wheels and learned to identify some of the 10,000 stars visible on a clear night. We'll never get lost again, now that we know how to use the Big Dipper and Cassiopeia to find North. Some of us mastered the skills required to operate a telescope, and all of us were rewarded with views of the Moon and Jupiter that took our breath away.

Waves and light were investigated. An understanding of both is required to further our understanding of the Cosmos. We saw how cosmic collisions, when objects from space hit the Earth with devastating consequences, influenced our past and will impact our future. Finally, we used bunsen burners to simulate the most dangerous part of spaceflight, the re-entry into the Earth's atmosphere.

Look at the stars whenever you can. Exhale with wonder. Feel the shiver run down your spine as the grandeur sinks in. Smile. Curiosity about our place in the universe is part of what makes us human.

It's been a pleasure working with you.
E. Marc Coe



Spacetime fabric allowed us to examine the universe as Albert Einstein envisioned it.



Information about the universe travels to us via waves. Waves were investigated using many activities.



We wrapped up our wave activities by exploring the properties of helium and the properties of waves produced by our own vocal cords.



Technology has been extending the range of human senses for centuries. We are proud to continue the tradition.



Using careful measuring, we constructed functioning telescopes.





Using our star wheels, we learned to identify constellations.





Light was trapped and reflections were explored.



We built spectrometers, which revealed the complexity hidden in a beam of white light.



With the correct tools, we can perceive the invisible phenomena that surrounds us.



Each element has a unique pattern of light it produces. This property allows us to determine the composition of stars and planets many light years away.



In the future, humans may colonize other worlds. We saw that many problems need to be solved for this endeavor to be successful.





Impacts have shaped the evolution of life on Earth. We experimented to determine how the angle of impact influences the destructive potential of the event.



The most dangerous part of spaceflight is re-entering the Earth's atmosphere. We attempted to design capsules that would allow a marshmallow astronaut to survive this intense heat.



