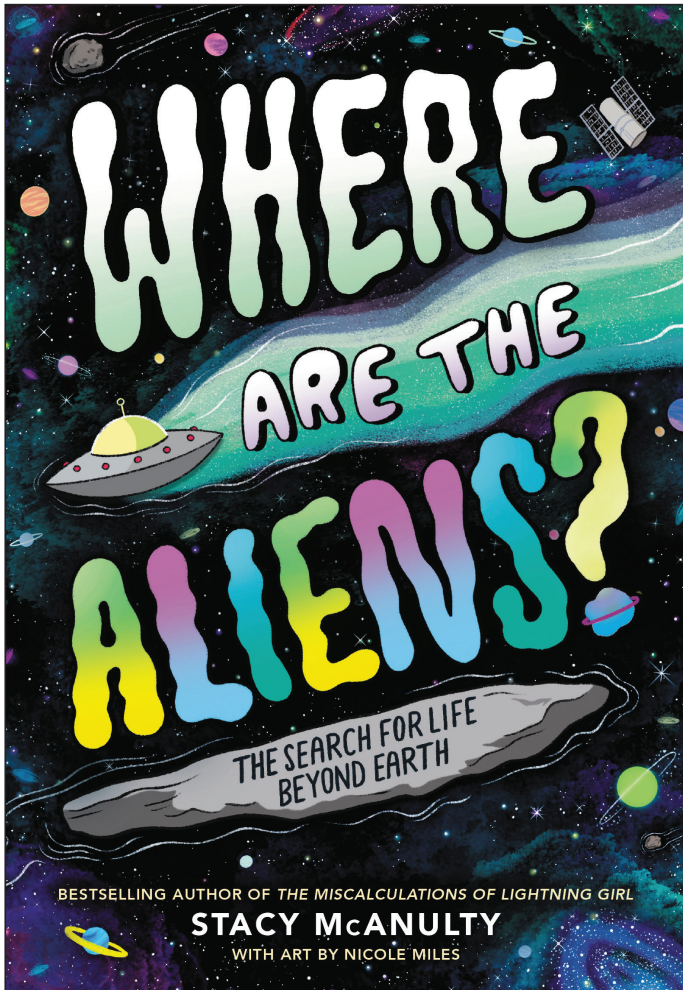


DISCUSSION GUIDE

978-0-7595-5399-6



WHERE ARE THE ALIENS?

THE SEARCH FOR LIFE BEYOND EARTH

By Stacy McAnulty

With art by Nicole Miles

★ “McAnulty lays out breezy but substantial histories of the universe, astronomy, and space exploration, along with logical and mathematical arguments that have been proposed for the probability that we are not (or, conversely, might well be) alone.” —*Booklist*, starred review

“McAnulty’s informal, conversational style keeps the delivery of information entertaining and nicely paced. Terrific science for skeptics and hopeful sky watchers.”

—*Kirkus Reviews*★

SPOILER: SCIENTISTS HAVEN'T DISCOVERED LIFE BEYOND EARTH, not even a single teeny-tiny organism. But there’s a whole lot of outer space, and humans have searched only a fraction of a fraction of it. So, do you believe in the possibility of life out there? Or do you think Earth is perfectly unique in its ability to grow organisms?

Where Are the Aliens? takes readers on a journey of theories and discoveries, from the big bang and primordial soup, to how the ancient Greeks considered the cosmos, to the technology used today to listen and (possibly!) communicate with far-off exoplanets. Packed with playful illustrations and fascinating factoids, this is the perfect book for anyone who has ever looked up and asked, “What’s out there?”



LITTLE, BROWN AND COMPANY

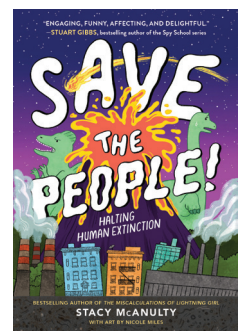
Book cover © 2023 by Hachette Book Group

stacymcanulty.com
LBYP.com

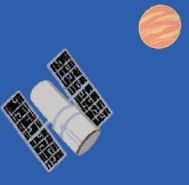
COMPANION BOOK:

★ *School Library Journal*

★ *Kirkus Reviews*

















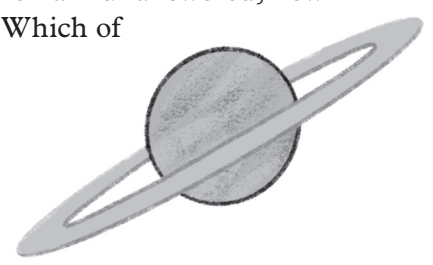
978-0-7595-5394-1



DISCUSSION QUESTIONS



- 
 Before reading, take a class poll: how many students believe that life exists on other planets [Life Beyond Earth-ers], and how many believe that Earth is the only place in the universe that sustains life [Only Earth-ers]? Record these numbers.
- 
 Before reading, look carefully at the information on the front and back covers of the book and read the titles of the chapters listed in the table of contents. What kind of information do you think might be included in the book? Discuss your predictions with a partner.
- 
 Read the author’s letter to the reader entitled, “Dear Inquisitive Reader.” What is the author’s point of view on the topic of life beyond Earth? What do you believe the author wants the reader to learn, think, or do with the information presented in the book?
- 
 What did Enrico Fermi contribute to the conversation about whether extraterrestrials have visited Earth?
- 
 Discuss the possible answers to Fermi’s question/paradox detailed on pages 12–14. Which of the choices makes the most sense to you? Offer reasons for your choice.
- 
 The question of what life might exist beyond Earth is not a new one. Many famous philosophers and scientists have weighed in on the topic of cosmic pluralism with their own opinions. Compare the beliefs of Plato and Aristotle to the beliefs of Copernicus and Galileo.
- 
 The era of aviation started by the Wright brothers eventually included efforts to explore space, specifically the moon. Identify two space missions and describe what important contributions each made to bettering our understanding of the moon and other planets.
- 
 Could there be life on Mars? Many people have offered information and opinions on the topic. Look at the beliefs of Schiaparelli, Lowell, and information gathered from the Viking missions and the Mars rover to compare and contrast what is accurate and what is false about possible life on Mars.
- 
 Why is the habitable zone that describes planets around a star where liquid can exist also called the Goldilocks zone? What qualifies a planet to be in this zone?
- 
 Listening is as important as gazing through a telescope when looking for signs of extraterrestrial life. What is SETI and what are SETI scientists trying to find?
- 
 Why is “Dude! What Was That?” a good title for chapter 10? What is the main idea of this chapter? What details support this idea?
- 
 Why does the author describe some of the reports of alien encounters in Roswell and Area 51 as myths?
- 
 Though many of the questions surrounding the topic of life beyond Earth remain unanswered, new projects are in the works to learn more about our solar system and galaxy. Which of the projects described in chapter 12 interests you the most? Meet with a partner to discuss your favorite project of the future and give reasons for your opinion.
- 
 What did you learn from reading *Where Are the Aliens?* What do you still wonder after reading this book?





ACTIVITIES FOR STUDENTS



THE MOON ACCORDING TO THE SUN

The search for life beyond Earth has established facts and created myths about the possible existence of aliens. Reread the section at the end of chapter three titled “The Great Moon Hoax.” Using the details from newspaper articles in *The Sun* newspaper about John Herschel’s purported sightings of the moon landscape through a telescope, create a colored illustration of what the paper claims Herschel “saw.”

LIFE BEYOND EARTH-ERS VS. ONLY EARTH-ERS

After reading the book, retake the class poll: how many students are Life Beyond Earth-ers, and how many are Only Earth-ers? Compare these results with the poll taken before reading the book. Create a bar graph or pie chart showing the results of your student polls. Were any minds changed by reading the book? Which group prevails in your classroom?

WHERE ARE THE WOMEN?

The author notes the lack of women and people of color working in aerospace and astronomy and highlights an interview with Dr. Jill Tarter describing her contributions to the SETI side of astronomy. Select another female scientist to research about her work and discoveries as they relate to space exploration. Present your facts and findings about your subject in a biographical essay or poster report. Suggested women to research include Sara Seager, Amy Williams, Andrea Ghez, Barbara A. Williams, Ellen Ochoa, Vera Rubin, Nancy Grace Roman, and Katherine Johnson.

WHAT DO YOU THINK?

The last chapter of *Where are the Aliens?* offers a list of lingering questions to ponder about life beyond Earth. Select one of the questions and write an opinion piece to answer it. Include reasons and examples to support your opinion.

OUT-OF-THIS-WORLD SYNOPSIS

Where are the Aliens? includes a glossary with key terms and definitions. Select four words from the glossary to use in a synopsis that might appear on the back cover of the book. Your synopsis should outline major themes and topics in the book as well as entice readers to want to read more. Include your selected vocabulary words in full sentences within your synopsis.



The discussion questions and activities in this guide were created by Leigh Courtney, Ph.D. She teaches in the Global Education program at a public school in San Diego, California. She holds both master’s and doctoral degrees in education, with an emphasis on curriculum and instruction.

Name: _____

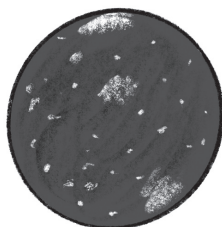
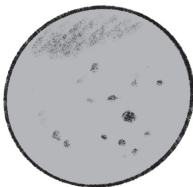
LIFE ON THE MOONS?

According to *Where Are the Aliens?*, Earthly life forms need water, are carbon based, and consume stuff. In general, astrobiologists are on the lookout for these three things:

WATER ★ CHEMICAL ELEMENTS ★ ENERGY

Using information found in chapter five, fill out the chart below to show where life might be possible on various moons in our solar system.

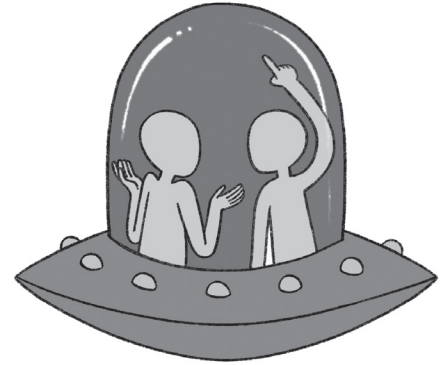
Moon	Possibility of water?	Possibility of chemical elements?	Possibility of energy?	Chance of life existing here?
Europa				
Io				
Ganymede				
Callisto				
Titan				
Enceladus				
Triton				



Name: _____

FIND THE FEATURES

Informational text like we find in *Where Are the Aliens?* is nonfiction writing intended to inform you about a specific topic. **Text features** are all the components of the book that are not the main body of text. These features help you to predict what the book is about, highlight key information, and better understand what you're reading. Hunt through the book to find text features in *Where Are the Aliens?*



Text feature	Found on this page number	Information this text feature provides
Chart		
Heading		
Bold print		
Glossary		
Table of contents		
Caption		
Diagram		

BONUS QUESTIONS:

Which text feature helps you the most? What do you like about it?

Name: _____

EXTRA! EXTRA! READ ALL ABOUT IT!

Re-read the “Worth Investigating?” section of chapter ten about the *Nimitz* or Tic Tac encounter, the sighting of an unidentified aerial phenomenon (UAP) off the coast of San Diego. Complete the graphic organizer below to help you write a newspaper article about the event. News articles include a headline and byline and answer key questions about who, what, when, where, why, and how with regard to the event. Remember to begin your article with a lede, an introductory sentence or paragraph that summarizes the most important aspects of the story.



HEADLINE _____

BYLINE _____

WHO is involved in the event? _____

WHAT happened in the event? _____

WHERE did the event take place? _____

WHEN did the event happen? _____

WHY is this event important? _____

HOW did authorities respond to this event? _____
