

A Reading Guide for *The Solar Sea*

About The Solar Sea:



Humans settled the Moon and satellites orbiting the Earth were a common sight, but when NASA is disbanded in the mid-twenty-first century, humans lost the desire to go further and space exploration died.

Then, a technician from the Very Large Array, a radio telescope in New Mexico, discovers powerful particles orbiting Saturn's moon, Titan, which could be a new energy source. Strangely enough, following the discovery's announcement, whales around the Earth changed their songs overnight.

As scion of the powerful Quinn Corporation, Thomas Quinn builds a solar sail to find the source of these particles in Titan's orbit. He gathers the best and brightest team to pilot his craft: Jonathan Jefferson, an aging astronaut known as the last man on Mars; Natalie Freeman, a distinguished Navy captain; Myra Lee, a biologist specializing in whale communication; and John O'Connell, the technician who first discovered the particles. All together they make a grand tour of the solar system and discover not only wonders but dangers beyond their imagination.

Drawing on his experience as an astronomer, David Lee Summers has created a story that is both exciting and plausible, one that can be enjoyed by both the young and young-at-heart who enjoy looking at the planets on a clear night and dreaming of what could be.

About David Lee Summers:

David Lee Summers is the author of eight novels and numerous short stories and poems. His writing spans a wide range of the imaginative from science fiction to fantasy to horror. David's novels include *The Solar Sea*, which was selected as a Flamingnet Young Adult Top Choice, *Vampires of the Scarlet Order*, which tells the story of a band of vampire mercenaries who fight evil, and *Owl Dance*, which is a wild west steampunk adventure. His short stories and poems have appeared in such magazines and anthologies as *Realms of Fantasy*, *Cemetery Dance*, and *Apocalypse 13*. In 2010, he was nominated for the Science Fiction Poetry Association's Rhysling Award. In addition to writing, David has edited three science fiction anthologies: *A Kepler's Dozen*, *Space Pirates* and *Space Horrors*. When not working with the written word, David operates telescopes at Kitt Peak National Observatory. Learn more about David at davidleesummers.com



Pre-reading activities:

Look up Mars, Jupiter, and Saturn in a book about the solar system or on the internet. What features make each planet unique? How are they like the Earth? How are they different? What are some of the interesting features of Jupiter's moon Io and Saturn's moon Titan?

Read about how solar sails work. If you can't find information easily, the author has summarized information about how solar sails work and some of the real projects at:

<http://davidleesummers.wordpress.com/2014/02/01/solar-sailing/>

<http://davidleesummers.wordpress.com/2014/02/08/solar-sail-projects/>

Questions for Discussion:

Prologue: Thomas Quinn

In the 1960s and 70s, exploring the moon was a priority. Do you think we should continue exploring space? Where should we go and why?

Chapter 1: The Very Large Array

If you received a call asking you to join a space mission, would you go? Why or why not?

Chapter 2: Myra Lee

Humpback whale songs are quite complex and can last up to 30 minutes. Whales will typically sing the same song for hours or days. Many scientists believe whales use the songs to attract mates. What do you think whales sing about? Are they just pretty music? Do they tell stories or write poems? Are they bragging?

Chapter 3: Captain and Colonel

What aspects of Natalie Freeman's childhood prepared her for a career in the military? Are there aspects of her personality that you think make a military career a challenge for her?

Chapter 4: Whale Song

We discover whales communicate with beings from other worlds. How do you think the whales and those beings met? Why do you think alien beings preferred to contact whales over humans?

Chapter 5: The Aristarchus Project

Science and exploration are collaborative ventures. Name some examples of people working together to solve mysteries in the novel. Thomas Alonzo seems like a genius of sorts. Could he have gone to Saturn all by himself? Why or why not?

Chapter 6: A New Age

Like astronauts today, Jonathan Jefferson spent years training for space travel. On the other hand, Pilot looks back and sees over a century of spaceflight experience and feels he can build a ship and travel to Saturn with minimal preparation time. What are some good reasons to take time and train for such a mission? What are some reasons Quinn Corp and Pilot might want to hurry the mission along?

Chapter 7: Communications

According to the Space Treaty of 1967, no country can lay claim to another celestial body, but what happens when private companies get involved? Do you think President Van der Wald is justified in his concern that Quinn Corp might try to lay claim to Titan?

Chapter 8: Assembly

Natalie Freeman suspects Pilot is concealing information from the moment she meets him. Do you think her suspicions are justified? Why or why not?

Chapter 9: Launching the Aristarchus

If you were on a long space mission, what would you miss most about Earth? What would you do to keep yourself from getting bored?

Chapter 10: Underway

In the first months of the *Aristarchus's* voyage, some crew members get along very well, such as Neb O'Connell and Lisa Henry. However, other crew members such as Angus MacDonald and Daryl LaRue are snapping at each other. Do you think Captain Jefferson's suggestion of a card game now and then will help them get along? How else could Jefferson help the crew grow as a team?

Chapter 11: Thomas Alonzo

Thomas Alonzo doesn't resemble his old photos. Meanwhile, Thomas Quinn has gone missing. These two mysteries are perhaps not hard to reconcile. What do you think has happened and why is Jerome Quinn keeping his son's secret?

Chapter 12: Halfway to Mars

A fight breaks out among the crew. Do you think training for the flight ahead of time could have prevented it? Why or why not? Do you think the punishment of working long hours is appropriate under the circumstances? Do you think Daryl and Angus have learned their lesson or could there be more trouble?

Chapter 13: Mount Olympus

Mars has the tallest known mountain in the solar system, a canyon as long as the continental United States, and strange, pyramid-shaped mountains on the Elysium Planitia. Some of these places were hinted at in the chapter. If you could go to Mars, where would you go and why?

Chapter 14: Making Discoveries

Natalie Freeman seems to have discovered who Thomas Alonzo really is. Why do you think she's so worried? What do you think the strange disk is? Is it something left by human explorers or alien explorers? Could it be related to the mysterious chronotons?

Chapter 15: Through the Belt

We now know that Pilot is Thomas Quinn from the beginning of the book. Looking back, what clues pointed to that outcome? Were you expecting it? Do you think Pilot is sensing a real problem with the ship or is he just nervous about something else? Why do you think that?

Chapter 16: Alien Disk

Natalie Freeman decides not to inform the president about the time particles. Does that seem consistent with her character? Do you think she should have told the president about the time particles? Why or why not?

Chapter 17: Drifting toward Jupiter

In *The Solar Sea*, the author imagines that the sails are rigid. A thin layer of aluminum is bonded to a special strong, but lightweight plastic called qunitite. If you read about solar sails in the pre-reading activity, you'll know most of the sails being built today are constructed from thin sheets of lightweight, flexible material. What are some advantages to having a rigid sail? What are some advantages to a thin, flexible sail? What are some disadvantages to each?

Chapter 18: Damage Control

Pilot took an action that risked the lives of the crew in order to save the mission to Saturn. Jonathan Jefferson didn't think he had that right, but everyone who signed up for the mission knew it was dangerous. They also suspect they will meet alien life at the end of the voyage, but if they'd all died, they'd also have lost the alien disk, the only hard evidence of aliens they'd found. Do you think Jefferson was right to chastise Thomas Quinn as he did? Should he have approached the situation differently?

Chapter 19: Whales in the Clouds

The crew of the *Aristarchus* discovers vast, whale-like creatures in the clouds of Jupiter. Like Saturn, Jupiter has a ring. Do you suppose the whales of Earth were singing to the whales of Jupiter? Why or why not? If the whales of Earth were singing to the whales of Jupiter, how did they learn about each other?

Chapter 20: Slingshot

Sir Isaac Newton once proposed a thought experiment. When you fire a cannon into the air, the cannonball will hit the ground. If you fire it with enough force, the cannonball will still fall, but it will miss the ground entirely and zoom back around the other side. The *Aristarchus* gets faster and faster as it falls toward Jupiter. Does this sound dangerous? What things do you imagine they must do in order for this maneuver to be successful?

Chapter 21: Repairs en Route

Why do you think Pilot decided to violate Freeman's trust even though she seemed genuinely interested in returning to Saturn and even though it seems there's a great risk to the ship?

Chapter 22: The Undecipherables

Jefferson stops Pilot from attempting to scoop methane from Titan's atmosphere. Do you think he made the best decision possible? Why or why not? What if Pilot tried his maneuver, failed, but put them out of range for their very fortunate rescue?

Chapter 23: The Keepers of the Rings

Clarke's law says, "Any sufficiently advanced technology is indistinguishable from magic." In what ways do the Titans demonstrate Clarke's law?

Epilogue: Looking to the Future

What do you think will happen next?

Follow-up Activity:

Revisit one of the worlds the crew of the *Aristarchus* visited—Mars, Jupiter, or Saturn's moon, Titan. Tell a story about that world either in words or through pictures. Imagine what it looked like and convey what it would be like to visit that place.