
Memoon and the
Biggest
Question

MEMUNIC SPACE EXPLORERS

Adventures with Memoon and Friends

Memoon and the Biggest Question

Book 12 · Grade 12 · Ages 17 to 18 · Independent reading

About this book

Published November 2026.

The Memunic characters and world belong to the series creator. The illustrations were made with AI image tools from the series character descriptions and checked by hand against the official reference sheet, so they may differ slightly from the official artwork. The diagrams were drawn for accuracy, and each says what it simplifies.

The science was fact-checked on 3 November 2026 against the sources listed at the back. Measurements such as the expansion rate of the universe are still being refined, so they are printed with their uncertainties and the date. Talking animals and Imagine Mode are only in the story. The galaxy and rotation-curve tables used for practice are invented, and are marked as such.

Safety first. Never look straight at the Sun, and never point binoculars or a telescope near it. Adults should supervise every activity, and night sky-watching always needs an adult. Never shine a torch into anyone's eyes.

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THE CLUB

Meet Memoon and her friends

Memoon is curious and kind. She loves animals and learns by asking questions and trying things out.

Noodles the fluffy cat has big feelings and a silly side.

Kachui the turtle thinks slowly and carefully, and keeps the Question Jar.

Nimo the little fish is wise, and always floats in his bubble.

Beautine the squirrel loves a little drama and a big plan.

Simbha the lion is gentle and affectionate, and loves a challenge.

Guddu is Memoon's older cousin, about sixteen, who joins by video call.

Story note: talking animals are only in the story. Real animals do not talk.

HOW TO READ THIS BOOK

Be a Space Detective

This is the last book of the series, and it asks the biggest question of all: what is light made of, and what can it tell us about the first moment of everything? To work toward an answer, the Club uses measurement, mathematics and honest reasoning.

Two tracks. Every Science Corner has a **maths track** with formulas and numbers, and a **concept track** that explains the same idea in words. You can follow either one and return to the other later.

Known, hint or guess. The Club labels each claim: KNOWN for well-tested results, HINT for evidence that points somewhere, and GUESS for ideas nobody has tested yet. Look for these labels as you read.

Keep a Sky Notebook. In every chapter, notice, ask, predict, test, compare and explain. When a model or analogy appears, ask what it shows well and where it stops working.

The most important rule: we never look straight at the Sun.

CHAPTER 1

The Last Slip

In this chapter: Say what counts as evidence in astronomy, list the four messages light can carry, and use light travel time to show that every telescope looks into the past.

The first evening of December came in cold and clear, and the terrace smelled of Mrs Rao's masala chai. A steel flask and four small cups had arrived by the stairs with a note: "Biscuits are for the Club. Mr Rao's share has already been counted." Mr Rao, sitting on the top step with a biscuit in his hand, pretended not to hear.

Orion was climbing the eastern sky, belt first, and above and to the right of him glowed the orange eye of Aldebaran. Simbha, lying across the warm side of the water tank, had been watching the pair for half an hour without saying a word. He did not need to. Everyone knew what night it was.

Kachui set the Question Jar on the folding table. It was a plain glass jar with a cork lid, and it had been opened twice before. Both times the answer had taken the Club somewhere none of them had planned to go.

"Two slips left," she said. "The one at the bottom is the oldest. We agreed, a long time ago, that it was too big to open early. The one on top is blue. I folded it myself, the night we finished the orbit design."

She unscrewed the lid, lifted out the blue slip with two careful claws and unfolded it. She read it silently, then read it aloud.

"What is light made of, and what can it tell us about the first moment of everything?"



The Last Slip: the Question Jar glows on the terrace

Nobody spoke. A scooter went past in the lane below.

“That is two questions,” said Beautine at last. She leapt onto the table, scattering biscuit crumbs, and spread her arms wide. “And I can answer both at once! Light is light. And it tells us EVERYTHING.”

Memoon looked at her with her chin on her fist. “That is a claim, Beautine. It is not yet an answer.”

“What is the difference?”

“An answer has something under it.” Memoon opened the Sky Notebook. It was a thick book now, and the pages showed its age: first drawings of the Moon, then tables of shadow lengths, then graphs, then pages of equations with Kachui’s neat corrections in the margin. She turned to a clean page and wrote three rules across the top.

Rule 1. Say what was measured.

Rule 2. Say what was assumed.

Rule 3. Label the claim: KNOWN, HINT or GUESS.

“We used the three labels when we studied the red star,” she said. “KNOWN means many independent measurements agree. HINT means the evidence points that way but something could still overturn it. GUESS means we are reaching. We will label every sentence of our answer. If we cannot label it, we do not write it.”

“That will be a very short answer,” muttered Beautine.

“Or a very honest one.”

Noodles had been rolling a pencil across the table with one paw. “Light is a wave,” he announced. “Obviously. Like ripples.”

A gentle voice rose from the tank. Nimo’s bubble drifted up to the surface. “In my tank, ripples need water to travel in. If you take the water away, there are no ripples. Light crosses the empty space between us and the stars. So whatever it is, it is not a water wave, Noodles. That is where my picture stops working.”

“Then it is tiny marbles,” said Beautine, still on the table. “Millions of them. I have counted a few.”

“Both pictures have evidence behind them,” Memoon said. “Over the next ten evenings we will find out why, and whether the question is the right shape at all. But first we need to decide what we are allowed to use. What do we actually have, from beyond Earth?”

Kachui answered slowly. “A few meteorites. Some rocks the Moon missions brought back. A little dust. Mostly we have light.”

“Then everything we say has to arrive by light. What can a beam carry?”

Simbha lifted his head. “Where it came from,” he said. “How bright it is. What colour it is, and the pattern in that colour, the dark lines we saw through the CD. And whether any of that changes with time.”

Memoon wrote them in a table: *direction*, *brightness*, *colour pattern*, *change over time*. She tapped the page. “Four messages. That is our whole toolkit. Everything in this book will be made from those four.”

“There are other messengers,” said Kachui. “Neutrinos. Cosmic rays. Ripples in space itself.”

“True, and they are real and they are wonderful. But we have a terrace and a CD and a phone, so we follow light.”

The next question came from the stairs. Mr Rao, who had been listening with his biscuit halfway to his mouth, called out, “If I may ask something silly. How old is the light?”

“That is not silly,” said Memoon. “That is exactly the right question.” She turned a page. “Light is fast, but it is not instant. Speed equals distance over time, so the time a message takes is the distance divided by the speed of light.”

Maths track: $t = d / c$, with $c = 3.00 \times 10^8$ m/s.

“The Moon is 3.844×10^8 metres away.”

Moon: $t = 3.844 \times 10^8$ m / 3.00×10^8 m/s = 1.28 s.

“So the Moon you see is a second and a bit old,” said Noodles. “Fine. Who cares?”

“The Sun is 1.496×10^{11} metres away.”

Sun: $t = 1.496 \times 10^{11}$ m / 3.00×10^8 m/s = 499 s, about 8.3 minutes.

Beautine sat down. “Then the Sun in the sky is eight minutes old.”

“Yes. And Aldebaran, up there, is about sixty-five light-years away. We worked that out with parallax, remember. A **light-year** is a distance, how far light travels in a year, but it also tells us how long the message took. The light reaching your eyes tonight left Aldebaran about sixty-five years ago.”

“Before the telephones in the building were digital,” said Mr Rao thoughtfully.



A ladder of distances in light-travel time and light-years. Logarithmic scale, distances rounded.

“And the great galaxy in Andromeda is about two and a half million light-years away. That light left before any person had ever lived. A galaxy a hundred megaparsecs away, which is about 326 million light-years, sent its light before the first dinosaurs.”