



THE SECRET OF THE DARK STONE

THAIS RUSSOMANO

THE SECRET OF THE DARK STONE

Thais Russomano

The Secret of the Dark Stone

Author: Thais Russomano

Translated from Portuguese: Mary Upritchard

Published by InnovaSpace Books, London, England

ISBN E-book: 978-1-8382283-4-7

Copyright © 2024 Thais Russomano

Book cover & illustrations by Mary Upritchard

All rights reserved.

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including - editing, copying, publishing, reproducing, communicating, storytelling, recording, transmitting, selling, translating, creating physical, electronic and digital by-products - without the prior written permission of the publisher/author.

For permission requests, please contact the publishers [InnovaSpace](#)

Thank you for respecting the hard work of this author.

This book is dedicated to the children of India and the world who look up at the night sky, dreaming of travelling among the stars and stepping foot on the Moon or Mars.

Dream long and fly high! The future of space exploration is yours!

AUTHOR BIOGRAPHY



Prof Thais Russomano MD MSc PhD

Thais has 30+ years of experience in Aerospace Medicine, Space Physiology, Telemedicine & Digital Health. She is an MD from Brazil, specialised in internal medicine, with an MSc in Aerospace Medicine (USA) and PhD in Space Physiology from King's College London (UK). She worked for 3 years as a researcher at DLR, Germany, before establishing/coordinating the Microgravity Centre, PUCRS-Brazil for 18 years. She is academically linked to several universities worldwide, is an Elected Academician of the International Academy of Aviation and Space Medicine, and the International Academy of Astronautics (Board of Trustees), and Board Member of several companies. Thais holds patents related to Space Sciences, has numerous scientific publications and has acted as a voluntary Mentor for Space4Women, an initiative of the United Nations Office for Outer Space Affairs. She participated in ESA parabolic flight campaigns (2000 & 2006), is a member of ESA Topical Teams and participates in NASA funded projects. In 2021, in partnership with a pharmaceuticals company, she

participated in research at the ISS (Japanese Kibo module). Thais also acts as an educator, researcher and consultant in projects of ESA, NASA, DLR, PT Space, AEB-Brazil, InnovateUK, BlueAbyss, Optmal Cities UK, International Space University, and Prog Oportunidades, El Salvador. Thais is co-founder & CEO of [InnovaSpace](#) (UK), a company dedicated to education, research and innovation linked to human space exploration, aviation medicine and digital health applied to extreme environments.

PREFACE



K. Ganapathy - Distinguished Visiting Professor, IIT Kanpur; Distinguished Professor, The Tamilnadu Dr MGR Medical University; Past President, Telemedicine Society of India & Neurological Society of India; Former WHO Digital Health Expert; Director, Apollo Telemedicine Networking Foundation & Apollo Telehealth Services, INDIA

I first met Prof Thais Russomano at a conference in Rio de Janeiro, Brazil in 2015. Her talk on Space Medicine rekindled what apparently had been dormant in me for many decades – a love of space. It was in 1964 when I was in 9th grade that I had first written a story about space travel in our [school magazine](#). We were living on the Moon at that time in my imagination and my father had been transferred to Earth! Though a septuagenarian now, I am able to relate to Yash and Sahana, the heroes of this book. If such books had been available in the nineteen fifties and sixties, many of the children of then would have represented Earth at interplanetary conferences! “Truth, is stranger than fiction”. This oft repeated phrase is not a cliché. For a Brazilian, working in London to get into the mind of an Indian child is

just amazing. The meticulous attention to minute details, the obsession with accuracy is the hallmark of all space scientists. Passion has to be in their DNA if they are to persist in looking for extraterrestrial life. Prof Russomano is unique in that she has also mastered the science and art of Story Telling. My several interactions with her have convinced me that she is *the evangelist par excellence* to promote Space Science in the minds of those who matter the most – the *Yash* and *Sahana's* of this world. I hope this book will also be read by cousins, uncles, aunts, parents, grandparents, and great-grandparents. Who knows... somewhere, someone, sometime may just meet the Phoenix!

CHAPTERS

- 1 – [Twin Souls](#)
- 2 – [The Secret of the Dark Stone](#)
- 3 – [The Sanskrit Code](#)
- 4 – [The Adventure Begins](#)
- 5 – [On the Back of an Elephant](#)
- 6 – [The Mystery of the Small Cave](#)
- 7 – [Space Wormholes](#)
- 8 – [Uncle Ganapathy's Plan](#)
- 9 – [Indian Skies](#)
- 10 – [Cosmic Mysteries](#)
- 11 – [The Pink Market](#)
- 12 – [The Phoenix Suffering](#)
- 13 – [The Magic of the Virtual World](#)
- 14 – [The Mind of a Genius](#)
- 15 – [Final Calculations](#)
- 16 – [A Brilliant Idea](#)
- 17 – [Building the Catapult](#)
- 18 – [The Catapult Goes Up the Mountain](#)
- 19 – [The Intergalactic Journey of the Phoenix](#)
- 20 – [Time to Leave](#)

CHAPTER 1

TWIN SOULS

When Sahana turned off her bedroom light that night, she felt as if she were cloaked in a huge comforting blanket of happiness, hugging her so tightly that tiny threads of joy were squeezed out and tap-danced on her skin, leaving it tingling with excitement. The next day, very early, her family would set off on a long journey to the north of India, where many of her aunts, uncles and cousins lived. One of these cousins in particular, called Yash, was very special to Sahana. They were the same age, born exactly in the same hour on the same day of the same month and year. For this reason, everyone who knew them always referred to them as twin souls and this label could not have been more accurate, for as Yash and Sahana grew up together, they were inseparable. Every day was spent in each other's company and they played endless games of imagination and fun. Sometimes, Yash pretended to be an Indian king, a Maharaja, who lived in a grand palace with a gleaming golden roof, and Sahana was his beautiful beloved wife, his Maharani. Wrapping themselves in the finest silk cloths belonging to Yash's mother and wearing necklaces and hats found around their homes, the cousins would sit on improvised

thrones, as if they were the two most important children in India. At other times, they would set off on adventures outdoors near their homes in the southern Indian city of Chennai, running barefoot and free from the watchful eyes of their parents. Their favourite places to visit were the markets that were always full of crowds of people out to do their shopping, while in streets filled with a frenzy of traffic and noise. Drivers sat in dust covered vehicles, arm muscles flexing as their hands jabbed away at car horns that loudly beep-beep-beeped, competing with three-wheeled *tuk-tuks* and old battered buses for the same tiny patch of road. Adding to the confusion were animals, such as dogs, cows and even camels, who roamed freely in the roads, causing obstruction and seemingly unmoved by the shouts from frustrated drivers whose paths they blocked.

On the day Yash and Sahana were born, their mothers went to the hospital together, both suffering the painful contractions of the tummy that often signalled the imminent arrival of childbirth. The two women, who were in fact sisters, waited hand-in-hand and anxious, each ready to bring one more child into the world. The sound of the babies' cries filled the hospital corridors at the same moment that day and, consequently, the newly born cousins were cuddled and kissed, and fed and bathed at the same time, while the extended Krishnan family celebrated the arrival of two more of its members. During their

first years of life, Yash and Sahana continued this pattern of doing everything together. Their mothers lived next door to each other and soon understood that for one child to eat, the other had also to be fed. This rule served for everything – from bathing to sleeping, and in time, walking, running, and playing. As a result, the mothers practically lived in each other's homes, realising that life was much easier when they went along with the will of their twin souls.

One day, however, Yash and Sahana's world changed forever. Neither child would later remember the exact date this occurred, but they did recall it as being a hot and rainy morning. A trip to the beach had been cancelled as the dark cloud-filled skies had decided the time was right to release a downpour of rain, soaking much of the city. The children were just 8 years old.

"It's in the north of the country. But we will visit Yash whenever we can" - Sahana's mother had said, trying to console her daughter, who was crying more than the sky itself on that day of torrential rain. In the house next door, Yash had yelled loudly and at length that he didn't want to move to Jaipur – that his life was in Chennai, next to Sahana.

The promises of the parents were of no use, nor the prayers of the grandparents or explanations from the uncles, who with map in hand demonstrated how Jaipur and Chennai were cities in the same

country of India, connected by a railway line, and who promised that at least twice a year the families would spend time together, either in the south or the north.

No amount of protest or tears from the cousins had the power to alter the minds of Yash's parents, whose decision to move home was set as solidly as the huge Himalaya mountains separating India from China. Consequently, just one month later Yash and his family were packed up and ready to leave. Sahana sat in her bedroom, head hung low and quiet. She refused to say goodbye and instead, sat looking out of her window and down to the road below. She watched as Yash entered a large dark car crammed from floor to roof with people, suitcases and bags, and which now held her beloved friend. Car doors finally slammed shut and the vehicle lurched forward and slowly disappeared from view, changing their daily lives forever.

From that day onward began a countdown by the twin souls, each focused on the time when they would be together again. Calendars in two cities, separated by more than two-thousand kilometres, were marked at the end of each day with a cross scratched through another date, as the cousins willed the months and weeks and days to pass by quickly. Finally, when Sahana lay down in bed one night, her heart overflowed with happiness, knowing that early the next day when she and her family awoke they would begin their

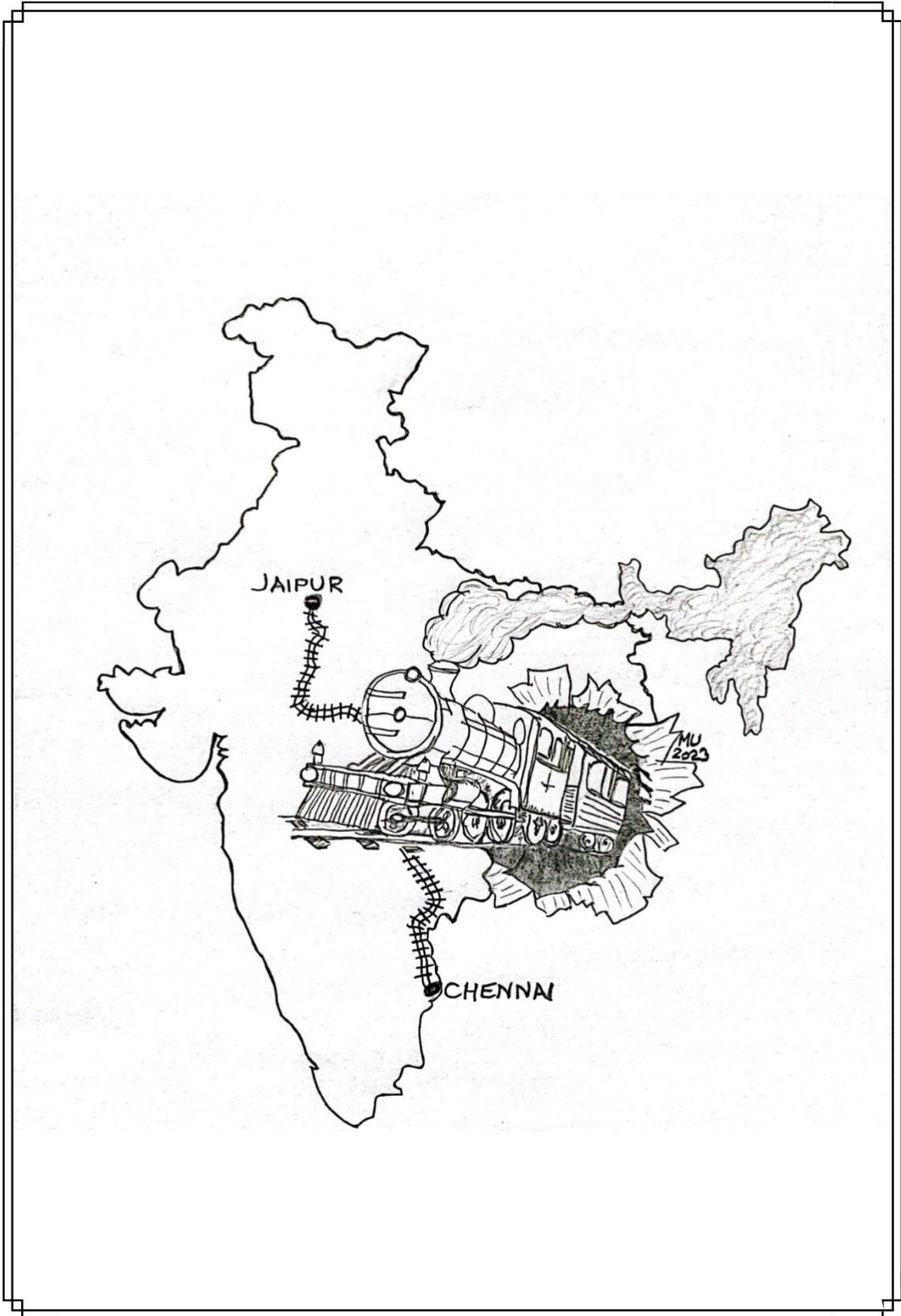
journey north and at its end would be her Yash. Very soon they would be playing together once again, exploring the temples, palaces, and ruins of the ancient city of Jaipur, and in particular she hoped, the famous Pink Market.

Sahana had something very special hidden in her bag - a gift for Yash. One sunny afternoon in Chennai, when walking along the beach in search of seashells, she had noticed a strange looking dark stone on the shoreline. The stone was shaped like a rough, flattened triangle and seemed to have something written on it, etched into the surface in a language she did not recognise. Together with the strange words was also a sequence of numbers and lines that seemed to form a pattern. Sahana had picked up the mysterious dark stone that had been carried by the sea waves and deposited on the beach in the Bay of Bengal. She had dried it well, wrapped it in a cloth and carried it home, placing it inside an old empty shoebox hidden under her bed, in which she kept all of her most precious objects.

The day before their journey to Jaipur, while her mother organised suitcases and packed clothing, spices and a variety of gifts for their northern relatives, Sahana grabbed the dark stone from under her bed and hid it at the bottom of her backpack, unnoticed by her mother.

"This is for you, Yash," she thought, "Maybe it will be useful for one of our adventures in Jaipur."

It turned out that Sahana was right. The dark stone picked up from the chennai beach in the Bay of Bengal was destined to lead the twin souls on a great adventure - but nobody knew this yet.



CHAPTER 2

THE SECRET OF THE DARK STONE

Sahana's family arrived in Jaipur very tired. The train journey between the two cities was very long and took them over 37 hours to complete, but it was the manner of travel that her father preferred. Flying would of course be quicker, but it was also much more expensive. The cost of tickets for all of the adults and children travelling between Chennai and Jaipur at least twice a year would simply be too much, not to mention the mountain of suitcases needed to accommodate all the gifts and treats they took with them.

Sahana ran straight to Yash's room when they eventually walked through the front door of the family home in Jaipur, not forgetting of course to take with her his special present. She could hear the excited chatter and laughter coming from the lounge, as family members embraced and gifts were delivered, but the cousins had agreed in advance to first meet alone.

Rushing through the bedroom door, Sahana stopped abruptly and stood quite still, giving her and Yash a moment to look at each other with curiosity, visually inspecting from head to toe as if conducting a detailed examination of uncharted territory. Yash had

grown more than Sahana since their last meeting, and now, for the first time, they were no longer the same height. What was the same though was the look of joy on their faces as they grinned with delight and launched themselves into a long embrace, hugging tightly and laughing excitedly as they squeezed away the heartache of being separated for so long. Enthusiastic discussions soon followed, with the beginning of plans for all the adventures they would share over the coming month spent together in Jaipur. Suddenly, remembering once more the weight of the dark stone in her backpack, Sahana thrust her hand in and pulled out her cloth-wrapped gift, holding it up to Yash. He took the object in his hands, soon realizing that whatever lay within the cloth was quite heavy, and began peeling back the layer of material to reveal the dark stone underneath.

"I found it on Chennai beach," Sahana said, trying to read the expression on Yash's face, which she classified as something between curiosity and confusion.

"What is written here?" Yash asked, as he used his index finger to trace along the words, numbers and lines engraved on the weathered triangle of stone.

"I don't know", confessed Sahana, feeling a little disappointed that Yash did not seem as excited as she had been when she first saw the stone.

"We can try to find out together. This could be our first adventure", she said excitedly, trying to ignite the enthusiasm of her twin soul.

"Uncle Ganapathy should know", Yash said, wrapping the mysterious gift once more in its cloth and grabbing Sahana's hand. The friends ran out of his room, passed by the door to the lounge where excitable voices could still be heard deep in conversation, and they escaped into the outside world, soon disappearing into a mass of people, cars and *tuk-tuks*.

Yash led Sahana in the direction of a house belonging to one of their grandfather's brothers, a wise old man who could read books in many languages and who regularly stimulated the young boy's imagination with countless stories of ancient Indian history and culture. Yash never tired of listening as his uncle spoke of a distant world, lost in a time full of emperors and maharajas, battles and conquests, and gods and holy places.

Great-Uncle Ganapathy (who they more simply called Uncle Ganapathy) was 90 years old, a fact in itself that amazed Yash and Sahana, whose young minds considered anyone over the age of twenty to be already ancient!

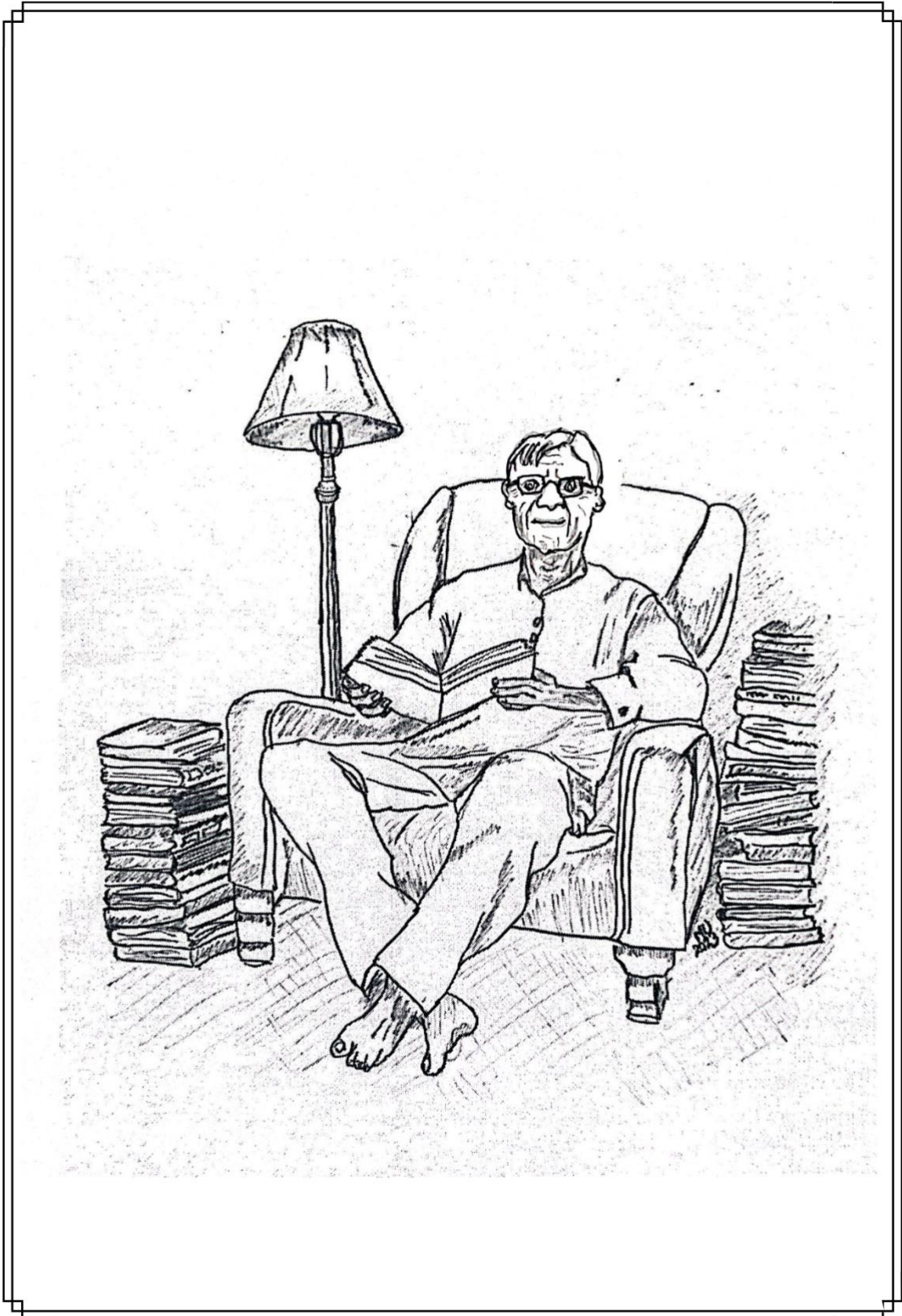
Despite his great age, however, Uncle Ganapathy was a truly remarkable man. A workaholic and bookworm by nature, he seldom

left home and rarely joined in family birthday celebrations or other important events. Although married for more than 65 years to his much loved wife Vijayalakshmi, he was currently spending 6 months at home alone as his wife was in Boston, USA, helping their daughter with a growing family that had recently expanded by one with the arrival of a new baby girl, their great-granddaughter. Though he would never admit it publicly, Ganapathy secretly enjoyed this time on his own. He liked very much to be alone and never felt lonely, always having a good book for company, at least, that is what he said.

Upon arriving at Uncle Ganapathy's house, Yash approached the front door and knocked exactly three times, rat-tat-tat, just as he always did so his uncle would know it was him. The hoarse voice of an old man was soon heard coming from inside the house , "Come in, my boy".

"I'm with Sahana", Yash said as they entered the living room and sat down on the sofa in front of their uncle, who, as always, was seated in a large grey armchair surrounded by piles and piles of books of various shapes and sizes.

"What have you got there?" Ganapathy soon asked, seeing that Yash carried in his hands something wrapped in cloth and looking heavy.



While Sahana told the story of how she found the dark stone that had been washed up on Chennai beach by waves, Yash undid the tangle of cloth and handed the stone to their uncle. Ganapathy examined it closely, passing it from hand to hand as if feeling its weight, before running his forefinger carefully over the words and lines etched into it, exactly as Yash had done. He began making small muttering sounds, umming and ahing to himself for a few moments, before finally saying:

"These words etched into it are written in Sanskrit, a very, very old language - in fact, the oldest of the languages", and he stroked the dark stone with the palm of his hand.

"And what is written? What does it say?" asked Yash, showing a little impatience.

Uncle Ganapathy turned the dark stone over from one side to the other, holding it up in search of better light. The passing of time and impact of the seawater had worn away at the inscription, but it was still possible to make out the lettering and identify the lines etched into its sides.

"This seems to me...", and Ganapathy paused; a pause that seemed far too long to bear.

"Seems like what?" Sahana asked anxiously.

Ganapathy peered more closely at the stone as he held it up in the air once more, turning it over, as if seeking greater certainty for what he was about to say. He traced along one of the lines once again that cut across the stone from side to side, and looking up at his young friends he said, without hesitation,

“This is a drawing of a map”.

“A map!” exclaimed Yash and Sahana together. They looked at each other and smiled broadly, for this was exactly what they needed - a map that would certainly lead them on a new adventure!

“It has some indications here. They are important. We need to decipher them in order to understand the directions...”, murmured Uncle Ganapathy almost too silently to hear, still focused on the dark stone, before abruptly and loudly stating,

“Come back tomorrow so I have more time to better study what is written here”.

“Tomorrow?”, the friends thought, groaning internally, though saying nothing out loud. Tomorrow seemed an eternity away. They must wait for an entire night to pass, a near impossible task, but they knew there was no other option. Uncle Ganapathy needed time to study the dark stone and the secrets hidden in its etchings, so there was nothing more to be done but be patient.

The friends said their goodbyes to their uncle and set off on their way back to Yash's house, running through the streets of Jaipur, passing through the Pink Market and a seemingly endless sequence of narrow alleyways. A few tatty street dogs from the neighbourhood, with nothing better to do, accompanied the children excitedly in their race and for the briefest of moments, Yash and Sahana forgot the long wait till tomorrow, when they would learn more about the map that had washed ashore and ended up in the hands of a wise old man.

CHAPTER 3

THE SANSKRIT CODE

Ganapathy had always been a man dedicated to his studies. He loved to learn new languages, research the origin of words, and memorize military communication codes. He had spent his entire life surrounded by language books, some of them very old indeed and written in languages that were no longer spoken anywhere on the planet, words that time had made disappear forever. Of these centuries-old languages, his favourite was Sanskrit - "the best way to talk to the gods", he always said and often still used in religious rituals in India, for its grammatical perfection.

The old man had no doubt that the words on the dark stone were written in Sanskrit, but even so, there was something strange about the way they were arranged. He spent much of that night trying to decipher what he decided to call the "Sanskrit code", as the language appeared to have been adapted in a way that made it twice as difficult to fully understand the sequence of words and their meaning.

Uncle Ganapathy turned to his book collection in search of an ancient map of the Jaipur region. He patiently compared the marks on

the dark stone with the ancient maps in his collection, looking from one map to another and back again, occasionally running the fingers of one hand along his chin, lost in thought. After much analysis, he could see that two of the lines that came together on the stone identified the top of a mountain, where many years ago the Amer Fort had been built.

"Of course, that's it", reflected the wise old man, "the coordinates match up with the map, 26.9855° N, 75.8513° E – it's right there on the mountain".

Uncle Ganapathy understood now the markings on the dark stone pointed to a location, however the mystery of what these coordinates signified remained. Amer Fort had most likely been built long after the inscription was etched into the dark stone, therefore the coordinates must relate to something else. Ganapathy went through to the kitchen to prepare some tea, something he always did when contemplating a problem.

"Hot water and some herbs always help me think" he reflected, as he placed the kettle on the fire.

Yash and Sahana arrived at precisely that moment, knocking on the door three times, as usual, and waiting for their uncle to respond.

"Come in, I'm in the kitchen!"

The three of them sat around the table, each with a cup of tea in front of them, cloaked in a silence that soon made the cousins feel uncomfortable. The friends were tired. Neither of them had slept well due to a night full of restless dreams, and rising out of bed very early, anxious for their meeting with Ganapathy.

"And the map, uncle, where will it take us?" asked Sahana, unable to keep quiet any longer and trying to hide the excitement in her voice.

Ganapathy went into the living room and returned with the dark stone in his hand. He sat down in front of the cousins, took a long sip of his herb and hot water brew, looked at them both and said:

"The mystery is only partially solved".

Yash and Sahana looked at each other, feeling a little disappointed and very confused.

"It really is a map", continued Ganapathy, "which leads to a mountain where the Amer Fort was built near the top, which is still there today. The coordinates are very precise. I have no doubt about this".

"I know this Fort", said Yash, "I went there on a school trip. It is quite close to where we are".

"Yes, it's about 10km from Jaipur", added Ganapathy.

"So that's it, a map of the Fort?" Sahana asked.

"Yes and no", responded her uncle, leaving the cousins at a loss for words and even more confused. Continuing, he added, "The dark stone has a date and this is much earlier than the construction of the Fort. Therefore, there was something there before the fort, but I don't know what it is".

"Is there anything else written on the stone?" asked Yash, picking it up and holding it at arm's length to get a clearer view of the strange the strange markings.

"Yes, but I do not understand its meaning. To me, they are random words that make no sense when put together. They are phrases that say nothing at all".

"What words?" questioned Sahana.

Ganapathy took the dark stone in his hand and held it closer to the cousins.

"Look here", he said, pointing to the lines and numbers of the coordinates. "This indicates the location, and just over here", he pointed a little lower, "this is a date".



The children stared down at the dark stone, not quite sure how their uncle could gather so much information from the scratched lines that were marked there, but they never doubted the wisdom of the old man.

"What are the words?" Sahana asked again.

"It's something like *worm, cave, sky, and stars*", Ganapathy explained, still with his eyes fixed on the stone. "I can't make any sense of it. It looks like a code".

"Whatever is the relationship between a worm in a cave and the stars in the sky?", questioned Yash.

"I do not know either. Like I said, it makes no sense at all. They seem like random words, but there has to be a relationship between them, a true meaning", their uncle said, lost in his own thoughts.

"What if we went there? Maybe we could discover something that explains everything and solve this mystery, once and for all", concluded Sahana, already imagining her first adventure with Yash. The cousins were already running toward the front door as their uncle took the last sip of his tea. Neither of them wanted to hear any objections their uncle might raise, like, "it is too far" or "it could be dangerous" and "how will you get there?", and the hundred other concerns and questions that Yash and Sahana knew would be voiced.

They already knew what they would do; they would draw up a plan and follow it to the letter, as they always did on their quests. Yash had made sure to note down the coordinates and mysterious words revealed by the dark stone before leaving Uncle Ganapathy's house, so now they were ready to begin another adventure.

CHAPTER 4

THE ADVENTURE BEGINS

Yash awoke and was on his feet very early the next morning. The sun had barely crept up into the cloudless sky, yet his backpack was already prepared for his first adventure with Sahana. In it Yash had put some pieces of fruit, his favourite breakfast roti with sabji, two bottles of water, paper, pen and a compass. Also enclosed was a book he used in his school geography lessons, which had several maps of the local region, and stashed in a zipped pocket inside the backpack were the coordinates to the exact place they needed to go, once they arrived at Amer Fort.

Making as little noise as possible, Yash crept slowly, step by step, to the room where Sahana slept with her aunts and cousins, and he whispered from behind the door,

"Sahana, wake up, wake up, we need to leave soon."

After what seemed like forever, but was in fact just a few seconds, he heard some noises from within, a few footsteps, and the door finally opened, revealing a still sleepy Sahana.

"I have everything ready", Yash said quietly, trying to motivate her. Sahana murmured something about getting dressed and

disappeared, only to re-emerge moments later, barefoot, hair uncombed and wearing the red dress she liked best of all. Gently closing the bedroom door behind her, the children made their way to the front hall.

"Here, eat this", Yash said, handing her two pieces of fruit.

"It will help you wake up".

Sahana, however, was already wide-eyed, her sleepiness thrown off when remembering that very soon her first adventure with her cousin would begin.

"I have everything we need here", Yash commented, showing her his backpack.

"How will we get to Amer Fort?" Sahana asked.

This was a very important question to which Yash had not yet found a good solution. Quite clearly, they could not ask their parents or one of their uncles to give them a lift, as they would normally have done. This adventure was their secret and certainly not for sharing with anyone else. Amer Fort stood about ten kilometres away from where they now were and too far away for the cousins to walk.

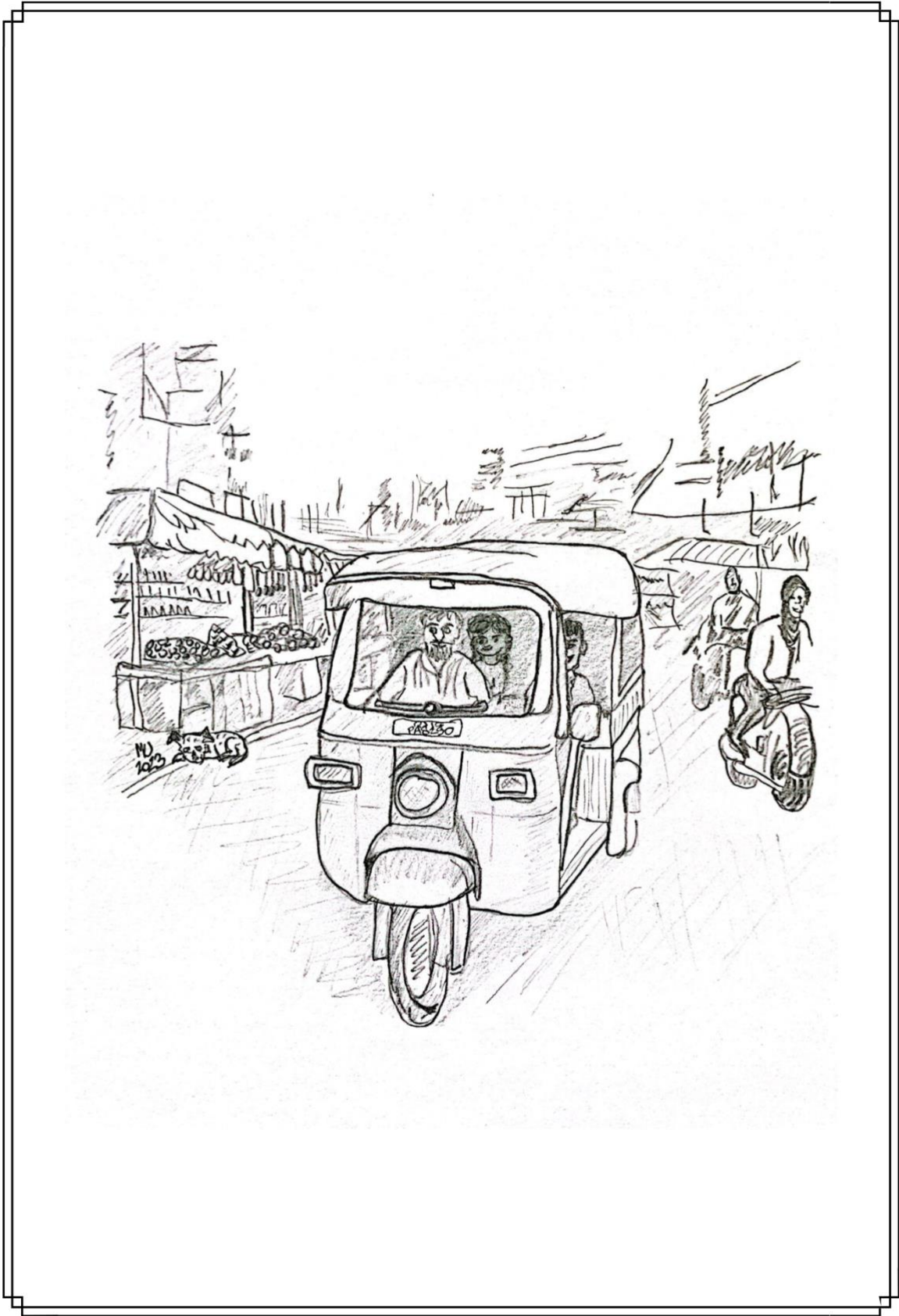
"We must get someone to take us by *tuk-tuk*", Yash thought out loud. Sahana immediately liked the idea. She loved riding in the back

of the brightly painted three-wheeled motor vehicles. Her delight, however, soon faded to concern.

"How are we going to pay the driver?" she asked, already feeling a little disappointed by Yash's idea.

He looked thoughtful for a moment, and then ran to the kitchen. There he picked up some eggs, a sack of rice, some fruit that was scattered across the dining table and crammed all the items into a cloth bag.

"With this !" he replied with a broad grin, wafting the bag in the air and clearly happy with his solution. The cousins wasted no more time and were soon outside, one carrying the backpack and the other clutching the bag full of food that would hopefully pay for their travel. Yash's solution, however, was not well accepted by the *tuk-tuk* drivers who were parked near his home. They wanted to be paid in money and definitely not with a bag of groceries. Undefeated, Yash and Sahana began their walk to the Pink Market, hoping for more success with the larger number of drivers who hung around there, waiting for their next customer. Upon arriving, Yash and his bag made their way along the long line of *tuk-tuks* and drivers, searching for the right person willing to accept a food bag as payment for the journey to Amer Fort.



"It's a 20-minute ride there", said the *tuk-tuk* driver as he examined the contents of the bag.

"Eggs, rice and fruit", Yash declared with a certain enthusiasm in his voice, trying to convince the man that the contents were more than enough to pay for a 10km ride.

"Ok, hop in then" the driver ordered, placing Yash's bag behind his seat.

The young friends did not need to be told twice and both jumped into the *tuk-tuk* and settled themselves on the back seat. The driver started the engine, which coughed and spluttered into life, before pulling away with a familiar putt-putt-putt chugging noise as the motor hauled them on their journey up the road towards the Amer Fort.

Yash and Sahana tried hard to mask their anxiety, talking loudly to each other, laughing and pointing at the various sites they passed. For Sahana, simply being with her cousin on this ride was already a great adventure; the opportunity to go anywhere unaccompanied by her parents or an older brother was rare. The feeling of the warm wind on her face, Yash's conversation, and the driver speeding his *tuk-tuk* up the side of the mountain all made her feel free, a freedom that she enjoyed so much.

White monkeys leaped from branch to branch in the trees, picking at the leaves and shrieking loudly as they tried to catch the

attention of anyone passing by. The cousins laughed at the jumping games of these straggly rascals. Quickly searching in their backpack, they found the fruit Yash had stashed there earlier and threw it to the monkeys, who seemingly whooped with pleasure at this gesture from the cousins.

“We are nearly there”, said the driver, making a final turn and travelling just a little further, before parking his *tuk-tuk* near the main entrance to the Fort.

“From here on, only by foot or elephant”, explained the driver to Yash and Sahana.

The children jumped out of the *tuk-tuk*, thanking their driver and waved him goodbye. They sat on a large rock near a group of trees where more monkeys continued their morning ritual of playing in the branches, screeching at each other and eating everything within reach.

For just one moment, the cousins seemed to forget the reason they had come this far. The beauty of the landscape that stretched out before them for kilometres and the grandeur of the Amer Fort, built so long ago in the 16th century, left the cousins speechless. That is, until Yash grabbed the backpack, rustled around inside to find the maps and coordinates, and began the difficult task of trying to locate the exact point indicated by the dark stone.

CHAPTER 5

ON THE BACK OF AN ELEPHANT

Using his compass and maps of the local area, Yash tried to work out exactly where they should head next, deciphering the coordinates taken from the dark stone, making notes, and occasionally raising his head to look in one direction or another, as if searching for some vital clue. Sahana remained deep in thought, gazing in awe at the dazzling landscape that stretched out before her.

From where she sat, far off in the distance could be seen Jaipur, the capital city of Rajasthan, which she remembered from her geography lessons as being the seventh largest state in India. This city seemed magical to Sahana. Her parents never tired of telling her that Yash now lived in one of the most fascinating and culturally rich Indian states.

“It is the land of the famous maharajas. The name Rajasthan literally means *land of kings*, which is why it is a place with so many palaces, temples, magnificent buildings and impressive forts, like Fort Amer”, her father had once explained to her and her brothers.

Sahana had also learned a lot in school about these noble kings of India, who had ruled over huge regions of the country before the establishment of the British Raj. India had become a great civilization, growing rich in art, culture, mysticism and spirituality through the investments made by many maharajas over the course of its long history. The Indian kings were powerful and each region or great city had its own maharaja. However, with the arrival of British rule, local cultures began to change and the maharajas gradually lost their authority. Although India became an independent country once again in 1947 when the British left, the Indian kings never regained their political or economic influence, although they did keep their titles and the right to continue living in their palaces.

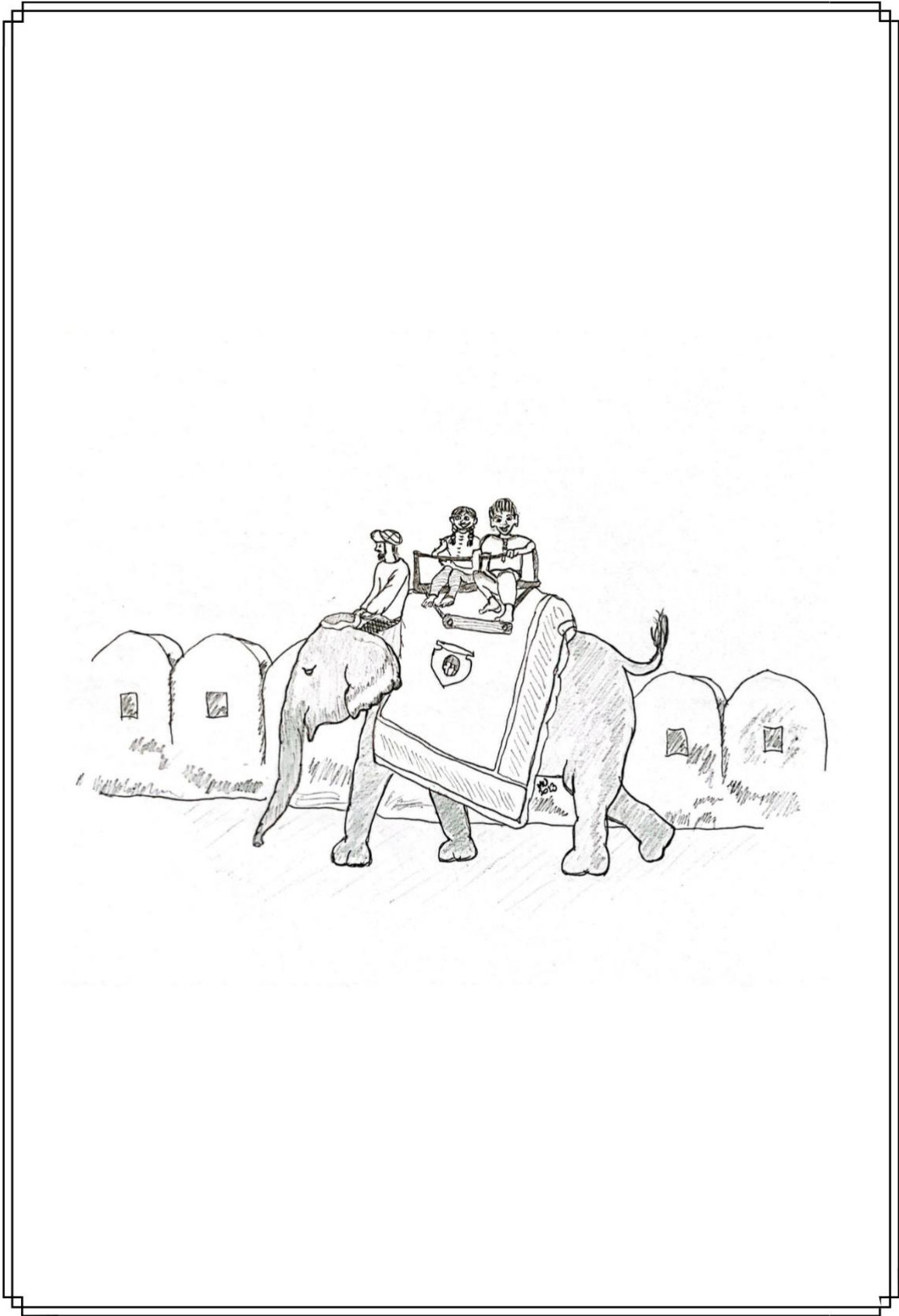
“I think it’s over there”, Yash eventually declared loudly after carrying out his complex calculations, based on the dark stone coordinates. His sudden breaking of the silence and pointing up the mountain, wafting his hand to the right, startled Sahana and she emerged from her thoughts about maharajas and palaces and returned to the reality of the rock on which they sat.

The cousins peered closely at the maps spread out on the floor and then looked up together and into the distance, trying to measure the distance to the point Yash had calculated. It seemed very far

away, but they knew they must somehow find a way to reach that place. Walking would take too long and would be exhausting, as the slope ahead was steep and the ground very uneven. How could they climb up so far? The friends looked at each other for a moment before smiling broadly, as if, at the exact same moment, someone had sparked an idea in their minds. Grabbing the maps and bag, Yash and Sahana ran towards the official entrance to Fort Amer, with the same thought in their heads - to climb the mountain by elephant!

Much talk and pleading took place in the next ten minutes with the elephant drivers, called *Mahouts* Sahana learned, until finally an old man with a kind heart and grandchildren of his own, agreed to give them a free ride! The *Mahout* helped the friends up onto the seat on the elephant's back and they all set off up the mountain in the direction of the Fort.

Sahana was delighted with the experience of riding on the back of an elephant for the first time in her life. Yash had already had this adventure once before when he and some school friends had visited the Fort. Even so, riding up on that particular elephant's back as it slowly plodded upwards, and sitting beside his cousin, his soulmate, was an experience like no other.



“Perhaps there will be nothing to be found up there,” said Sahana, clasping Yash's hand tightly, feeling insecure with the animal's movement as it walked slowly, body swaying from side to side with each step, “but I am already loving this adventure of ours!”.

Just before reaching the very top where Fort Amer was located, Yash asked the *Mahout* to stop the elephant and help them down. Yash had been careful on the way up to keep track of their journey and position on the map, and as far as he could work out, they were now at the exact location where they needed to be.

Glad to be back on solid ground once more, Yash and Sahana patted and thanked the elephant for his hard work and said goodbye to the kindly old man, before leaving the pathway and setting off towards a large tree that served as a reference point for Yash.

“Just after the tree, we go a little to the left”, concluded the young boy, again consulting his maps, the dark stone coordinates, and his compass.

“I wonder what we're going to find there?” Sahana thought out loud, feeling curious but a bit uneasy at the same time. Yash remained silent, keeping his nerves under control and presenting a brave face.

Despite the many adventures they had already experienced together, neither of the cousins could have imagined what was to come next. After walking for a while, passing by the huge tree and veering to the left, the friends suddenly came across what looked like the entrance to a small cave, with the opening nearly hidden by small rocks, tree branches and leaves. The two stopped walking and looked at each other.

"Is this it?" they asked at the same time.

As they edged a little closer, a strange noise emerged from the cave and a strong gust of wind rushed out of its dark entrance, blowing through the leaves and branches. All of a sudden, a thought popped into the heads of both children, just as if someone had spoken it out loud.

"I need help!"

Yash and Sahana gripped each other's hand tightly as a wave of fear passed through their bodies. Instinct made them want to run, to disappear, but they remained motionless, unable to move.

Once again, at exactly the same moment, they heard, or rather, they thought the same thing - "I need help!".

CHAPTER 6

THE MYSTERY OF THE SMALL CAVE

"Did you hear that, Sahana?" whispered Yash.

"Well, yes... uhm... yes... and no... I didn't exactly hear it. It's something inside my head. It's not exactly a sound!"

The cousins looked at each other wide-eyed and fearful, standing in front of the dark entrance to the small cave, frozen to the spot, not a muscle moving. The voice was not heard out loud, it came as a thought, which they both had at the same time.

"And the voice is kind of ... I don't know ... it's kind of ... metallic," said Yash.

"Do you dare go in?", whispered Sahana, enveloped by a mix of opposing feelings. On the one hand, she wanted Yash to say yes, she wanted them to continue their adventure and explore the cave, unravel the mystery. On the other hand, Sahana was feeling very afraid and anxious, wanting to run away from this thing she found difficult to understand.

"After all, it's just a cave. We have had more dangerous adventures than this one", thought the young girl, saying nothing, as she did not want to influence her cousin's decision.



But instead of answering her question, Yash stepped forward and moved even closer to the cave entrance. Sahana hesitated for a moment, before deciding to follow him, stepping slowly forward. They pushed through the dead branches and leaves that partly camouflaged the entrance, climbed up and over some rocks, until they reached the very edge of the opening to the cave.

“It’s very dark,” murmured Sahana, her voice shaking slightly. For a moment she thought it was not a good idea to pursue this adventure.

“Maybe it’s time to give up exploring the cave,” she thought.

“I cannot see anything,” added Yash, feeling a little rattled as he realised, after rummaging through his backpack, that he had forgotten to pack a torch, an indispensable tool for any adventure.

The cousins stood still, backs to the outside world and peering into the darkness that lay ahead, when once again they had the same thought, with a metallic voice saying - "I am here". The two of them simultaneously turned slightly to the right, as if following the sound in their minds and saw what seemed to be two perfectly round white balls with a tiny dark dot in the middle of each, like two large eyes, that opened and closed.

“I need help. I am lost,” the metallic voice spoke again in the thoughts of Yash and Sahana.

The cousins remained completely still, saying nothing and breathing heavily, their hearts beating fast from the fear they felt.

“Let's go!” shrieked Sahana, still motionless.

“No, please stay. I need help. I am lost”, repeated the metallic voice in their minds, while the two white balls, those two large eyes, remained open and fixed, not blinking even once and lighting up a small area of the cave.

Yash secured Sahana's hand, trying to keep both of them calm.

“Let's go!” shouted Sahana even louder, this time turning towards the outside world.

As soon as she turned, the two big white eyes suddenly disappeared, as if they had closed completely and the small cave fell into darkness again.

“No!” Yash exclaimed, “this is our adventure and we have to finish it”, he completed assertively, despite also feeling afraid.

Sahana stopped, breathing heavily as she turned toward her cousin. “I am... I'm scared Yash... really scared!”, she confessed, a little embarrassed.

“You do not need to be afraid. I'm just lost”, spoke the metallic voice in her thoughts and the two white balls reappeared.

"Hmm...he... or she... or it... hears us... and understands us," concluded Yash.

“Who are you? Or... what are you?” Sahana asked with a trembling voice. The two white balls closed again, and no thought came for an answer.

“How can we help? What do you need?” Yash asked loudly, almost shouting, trying to sound much stronger and more confident than he really felt.

"Where are we?" asked the metallic voice.

The cousins looked at each other.

“Where are we?”, they both repeated, not quite understanding the question.

“On the mountain of Fort Amer,” replied Sahana.

“Near Jaipur,” added Yash, with a certain pride in his voice, as he liked very much the city where he lived.

“Jaipur? Is this a planet, a moon, an asteroid or a comet?” the metallic voice asked, sounding confused.

The cousins looked at each other once more, surprised by the question. They knew very well the difference between a planet, moon,

asteroid and comet, as they had studied all the celestial bodies, constellations, and galaxies at school. They knew that planets go around or orbit the stars and have no light of their own, like the Earth, and that moons are the natural satellites of the planets, captured by gravity and revolving around them. They had also learned that asteroids are rocks, like very small planets, nicknamed planetoids, and that comets are the most beautiful of celestial bodies, usually small and made of ice and rocky material, and having a beautiful tail made up of dust and gas. They had even learned that an ancient Greek philosopher and scientist, called Aristotle, had called comets "stars with hair" because of the visual effect of their tail that looked beautiful, like a head with very long hair.

"Jaipur is the capital city of Rajasthan state," explained Yash, a little confused by the metallic voice's question.

"And Jaipur is in India," clarified Sahana.

The metallic voice said nothing for a moment, before asking in their thoughts - "India is a planet?".

The cousins laughed and, for the first time, relaxed a little. The situation was confusing and they continued a little afraid, but it was still funny.

"India is a country that is on Earth," explained Sahana.

“Earth is a planet,” added Yash.

“The third planet in the Solar System,” said Sahana, already adopting the air of being a professor.

“I do not know how I got here. I took the space wormhole and got lost. Something went wrong”, concluded the metallic voice.

“A space wormhole?” the two cousins repeated in surprise and began to laugh at the silly name.

CHAPTER 7

SPACE WORMHOLES

The cousins had studied many things about the Universe at school, but never had they heard of worms making holes in space!

"This has to be a joke," said Yash.

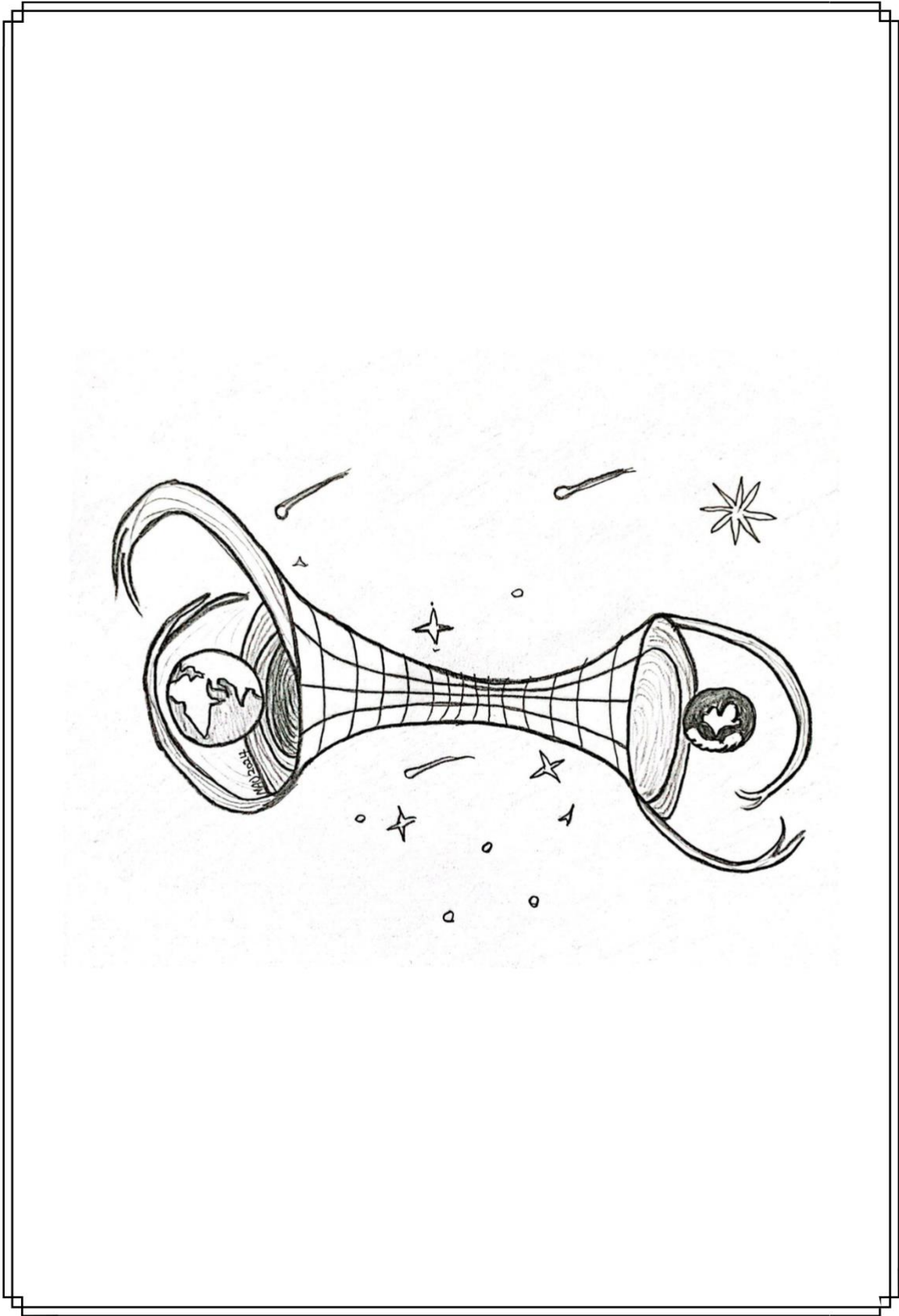
The two white balls lit up and froze, as if staring at the cousins, not blinking, or changing position.

"These holes exist to communicate between distant points in the Universe and can even lead to other Universes", the metallic voice explained in their heads.

"I guess the name must come from a comparison of the hole an earthworm leaves behind when it crosses a piece of fruit from one side to the other", Yash speculated out loud, thinking that this would be an important topic to review and study in detail later.

"So these space wormholes are like shortcuts to other points in our Universe", concluded Sahana, still stunned by the explanation of the metallic voice.

"Yes, a wormhole has an entrance and an exit, it's like a tube that is open at both ends", the metallic voice tried to explain better.



“And...where...where do you come from?” Yash asked hesitantly. “From another Universe?” he questioned, not sure he really wanted to know the answer.

“I’m not from your planet Earth”, the metallic voice said in thought and the white balls closed.

The cousins held hands again, an automatic gesture they always did when they felt the need for support. However, they were now more confused than afraid. The young friends relaxed a little and were able to speak, breathe and move more calmly as their anxiety faded. Nonetheless, the situation was undeniably very strange. In all their adventures, including those they considered a bit dangerous, nothing had ever come close to this mystery in the small dark cave.

“Where do you come from then? If you're not from Earth, what is your planet?” insisted Yash, this time more assertively.

“XPC23145, a planet with a very old civilization that was destroyed many times over the course of millions of years, but it was always rebuilt from its own rubble. It lives in peace now!”.

“Like a phoenix then”, Yash concluded, showing off his knowledge of mythology, as he knew the phoenix was a bird that burst into flames when dying, burning until it was just ash, before rising again from the ashes and being reborn.

“But is your planet in the Milky Way?” asked Sahana, pleased with her astronomical knowledge. She had already learned that our galaxy is full of dust, stars, planets, comets, moons, and gas, all mixed together in the shape of a spiral. Often at night, when the sky was cloudless, Sahana would spend hours staring up at the band of stars that lay over Chennai, awe-struck just thinking about the centre of the Milky Way that supposedly contained around 400 billion stars. She loved to stay there observing the skies and hoped one day to have her own telescope so she could look more closely at the Moon's craters, Saturn's rings, eclipses and, who knows, maybe even see a comet one day flying across the Indian sky.

“No, my galaxy is a different one, called Crater 2”, admitted the metallic voice, as the white balls slowly closed, disappearing.

“No problem”, Yash said hurriedly, having already noticed that this visitor from a space wormhole closed its eyes and disappeared into the darkness when he felt upset, awkward, or embarrassed. “We will help you!”.

Sahana looked at her cousin in disbelief.

“How does Yash think we can help this space being return to a planet in another galaxy through a wormhole? My cousin has lost his mind”, reflected Sahana, not daring to voice her thoughts.

“Thank you”, said the metallic voice and the two white balls reappeared.

“How did you get here? Why can't you go back?” asked Yash, already taking paper and pen from his backpack to write down whatever he considered important.

“Space wormholes are very unstable. The ends open and close at random, for reasons unknown, only permitting communication between two points in the Universe when the path is open”, explained the metallic voice. This time, however, the cousins noticed that the voice seemed more tired, with the words becoming less clear.

“I'm not sure how I arrived here, but the space wormhole closed behind me. I can see it open and close, but I can't reach the entrance to the wormhole anymore as I can't stand, my legs are too weak, and the entrance is too high.” And, once again, the white balls disappeared.

“We need a map of the Milky Way and nearby galaxies to see where Crater 2 is,” Yash said as he noted down the information needed to help the metallic voice return to its world.

“There is only one person who will know how to help us,” Sahana said.

“Uncle Ganapathy!” exclaimed the two friends together.

“Wait here for us Phoenix, we will be back as soon as we can with a solution,” Yash said, surprising his cousin.

“Phoenix?” asked Sahana, not understanding.

“Yes, it didn't tell us its name, so let's call it Phoenix because it said the civilization it comes from...”

“...was destroyed several times and was reborn from its own ashes”, said Sahana, finishing off her cousin's sentence and understanding his thinking.

Before leaving behind the darkness of the small cave, the cousins took one last look inside and saw the white balls staring at them.

“Come back soon,” said the metallic voice in their thoughts, before the white balls disappeared once again, as the friends ran out of the cave and began their long journey home.

CHAPTER 8

UNCLE GANAPATHY'S PLAN

“Aha... so that's it!” exclaimed an excited Ganapathy, as his great-niece and nephew described the mystery of the metallic voice they heard in their thoughts, the huge white eyes that opened and closed, and the space wormholes revealed by the Phoenix. To the surprise of the cousins, their uncle was not in the least bit shocked by their adventure in the cave near Fort Amer, and that was exactly what Yash and Sahana liked so much about him. Ganapathy was a special person and very different from the other grown-ups in the family, who would never have believed in a space wormhole or a Phoenix that needed help to return to its own world, let alone that it could communicate with someone by thought.

“This makes sense of the random words on the dark stone - *earthworm, cave, sky, stars*. I didn't understand their significance, but it really is a code. The coordinates indicate that this cave is part of a space wormhole, which connects different areas of the Universe,” Ganapathy said out loud but lost in thought, giving the impression he

was talking to himself rather than the two youngsters standing in front of him.

“And how can we help the Phoenix?” asked Sahana, already beginning to miss her intergalactic friend.

“We have to come up with a plan - a very careful plan,” Ganapathy replied slowly, accentuating each of the last three words as if to highlight their importance, something he did whenever he wanted to emphasize an action. Sahana knew very well the ways of her uncle and loved hearing him put stress on his words, giving extra weight to each one of them and adding special emotion to the adventure.

While Uncle Ganapathy reflected, Yash began to read out loud from his notes.

“Lack of strength, unstable wormhole, and not enough height”, and he looked at Sahana who nodded in agreement, with nothing more to add.

“Let us think this through one step at a time”, Ganapathy said “the lack of strength must be due to Earth's gravity, the invisible physical force that holds us to the ground and makes things fall to the ground. The rate of this fall, or acceleration to the ground depends on the mass of each planet”.

“Here on Earth the gravity is 9.81 m/s^2 ”, exclaimed Sahana, interrupting her uncle's speech, feeling proud of the knowledge she had recently acquired in physics classes at her school in Chennai.

“That's right,” confirmed Ganapathy.

“The planet the Phoenix comes from then must have a lower gravity, called hypogravity,” added Yash, keen to demonstrate that he also had studied about the force of gravity. He continued, putting on the air of a professor.

“It resembles gravitational pull, just like that on the Moon and Mars, but both of those have a lower gravitational force than we have on Earth, and hence, the weight also changes. Whoever weighs 60 kg here on our planet will weigh about 20 kg on Mars and about 10 kg on the Moon”.

Sahana took hold of a pen and on a piece of paper began to quickly do some calculations. “Hmm... so that means that the gravity on Mars is about one-third of that on Earth, and the Moon has about one-sixth of our gravity”, she concluded happily.

“Exactly right,” said their uncle smiling, unable to hide how proud he was of his adventurous and scientific niece and nephew. “But we don't know the gravity on Phoenix's planet, so we will need to

create a way to... umm... lift him up to reach the wormhole, the gateway to his world”.

“His planet XPC23145 is in the Crater 2 galaxy”, revealed Yash reading his notes once more and he asked, "How can we discover what gravity this planet has?"

“Maybe it is not necessary. We can assume it has a lower gravity but not so low that Phoenix cannot handle Earth's gravity, otherwise Phoenix would have been flattened like a sheet of paper. I think we can assume the gravity is something between the gravity of the Moon and Mars, for example”, stated Ganapathy.

“*Eureka*”, thought the cousins, grinning at each other! There was no need to waste time trying to work out the gravity of planet XPC23145--they just needed to follow the always very logical and precise reasoning of Uncle Ganapathy. They admired and adored even more their historian scientist uncle, who was as adventurous as they were.

"He may be weak from lack of food”.

“You are right, Sahana. We must act fast. In addition to the greater gravity here on Earth, Phoenix may be suffering from a lack of food,” added Yash.

"But we do not even know what it eats or drinks, or even for how long it has been without food or drink," concluded their uncle, leaving Yash feeling a little embarrassed, as he had put no information in his notes about the Phoenix's survival on Earth or how long he had been lost in that small dark cave close to Fort Amer.

Yash blushed a little and hoped that no one had noticed.

"We must look up to the stars for the next few nights", their uncle murmured, pointing upwards, "and try to identify any instability, a gravitational signal, anything that might indicate that a space wormhole is opening."

"And when that happens, uncle, what do we have to do?" asked Sahana.

Ganapathy remained quiet for some minutes, as he spent some time deep in thought, before commenting "we will have to be very quick. These wormholes are very unstable indeed, they can last for just a few hours, or maybe even a day. So we must find a way to help Phoenix reach the wormhole. He'll need to overcome Earth's gravity... uhm... we'll have to lift him up into the air, get him as close as possible to the wormhole entrance. But first we need to find out where the opening to this space wormhole is. Indeed, I do think that we must spend time watching the Jaipur sky".

“Tomorrow we begin!” yelled Yash.

“Yes, tomorrow night. I haven't used my telescope in a while so I will have to find it first,” said Ganapathy, already heading off to begin the search for his astronomical instrument in the other rooms of his home.

“7pm here and not a minute more, be punctual, as time is against us!”.

CHAPTER 9

INDIAN SKIES

It was 7 pm sharp when Sahana and Yash knocked on their uncle's door. Hearing the command to enter, the two ran into the office, where they found Ganapathy carefully cleaning his telescope.

“There is not a cloud in the sky,” exclaimed Sahana, “and it’s full of stars”, added Yash excitedly, showing his great enthusiasm for the astronomical adventure that was about to begin.

“Yes, we're in luck,” their uncle said, looking up at the children for the first time since they arrived. He did not, however, move from his position, much to the disappointment of Sahana and Yash.

Ganapathy maintained his focus on his telescope, a treasured inheritance from his father who had always been passionate about the beauty of the planets, energy of the stars and secrets of infinity. As a boy, Ganapathy used to look out of his bedroom window at night, watching his father, who would be pointing his telescope at the Indian sky. It was in these frequent special moments in time during his childhood that Ganapathy had learned to love the stars, just as his father had, and it was his father who had given him the telescope not long before he died, which seemed the right thing to have done.

“Put it to good use, my son. The skies of India are beautiful” his father had said and Ganapathy did just that. Nonetheless, never before had he been presented with an opportunity for such a cosmic adventure, to help a Phoenix to return to a world in the farthest reaches of the Universe. This new experience excited and thrilled their uncle, though his young relatives would never have guessed this from his calm exterior.

Before heading outside to the courtyard of the house, Ganapathy removed a huge padlock from a very large wooden box and from it he pulled ancient celestial maps, a compass, a calculator, and a very strange looking device the children had never seen before. Seeing the surprised look on the faces of Sahana and Yash, Uncle Ganapathy raised the circular instrument into the air and spoke.

“This is an astrolabe. It belonged to my father, along with these celestial maps,” he explained with a certain sadness in his voice. “I remember him showing me how his astrolabe worked”, he continued, and without being asked, he began describing its functions to his nephew and niece.

“The astrolabe represents the celestial sphere above our planet and is made up of several parts that show, for example, latitudes, stars and constellations in the sky. It is basically a measuring instrument, invented centuries ago and initially used by sailors to

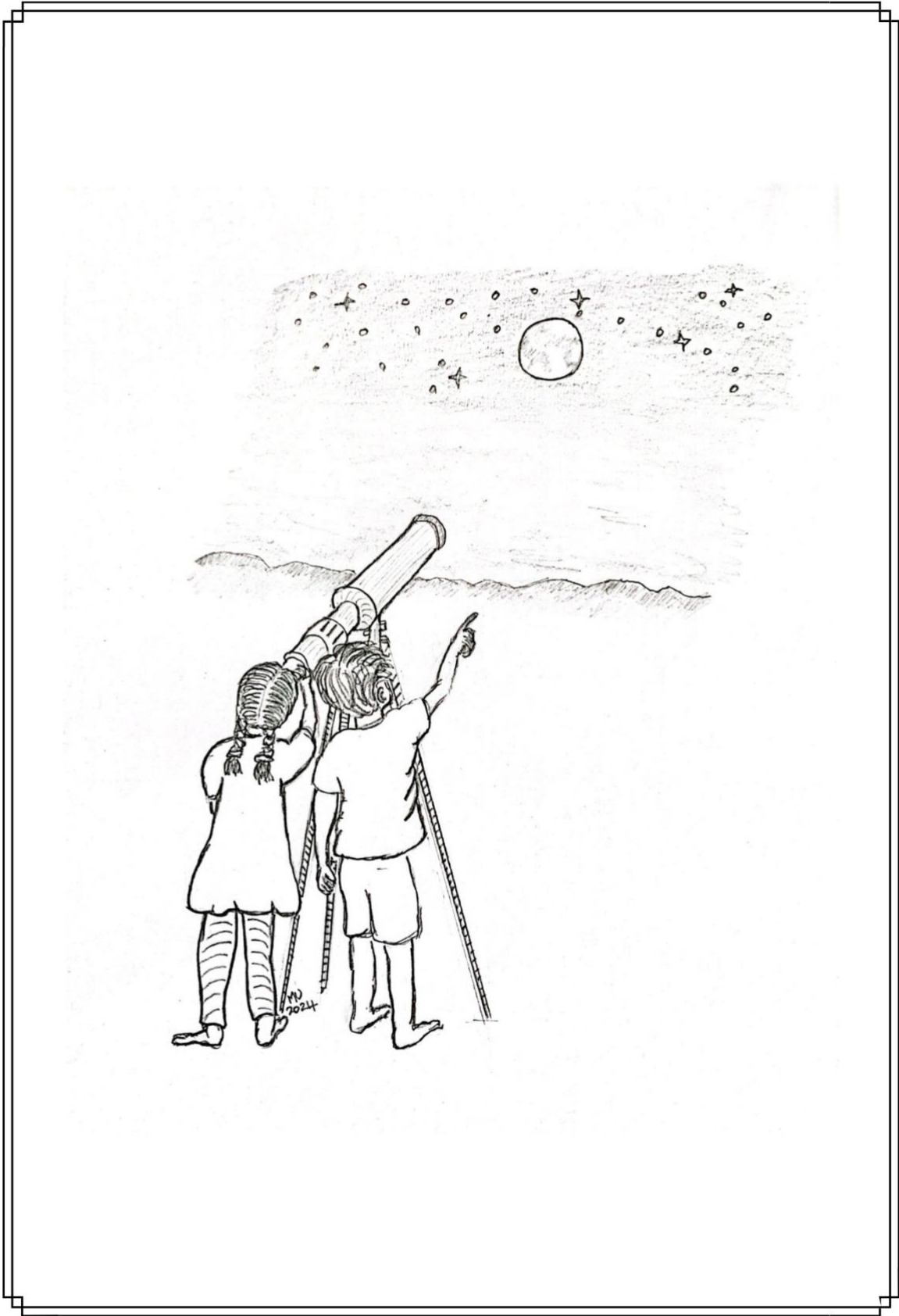
calculate distances travelled at sea. But an astrolabe can do much more... it can also tell the seasons, calculate the height of a mountain or even the depth of a well”.

“And can it identify a space wormhole?” asked Sahana, showing a certain impatience. She was worried about the Phoenix being all alone in the dark cave and far from its world, lost on Earth near Fort Amer.

“Well...” said Ganapathy, thinking out loud, with a note of concern in his voice. “When the astrolabe was invented, no thought was given to the possible existence of these communication pathways between different worlds and universes. But... anyway... this is what we have in hand to help us study the skies of India. I think we'll need a couple of nights of observations and calculations to see if we can identify when the space wormhole will open up again to allow the Phoenix to return to its planet”.

“Two nights?!” exclaimed Yash, also worried about the Phoenix.

“Yes, to be sure” continued Ganapathy, “one observation is not enough. We must have data in order to accurately calculate cosmic phenomena. Astronomy is a beautiful science, but it is not a simple science”.



“So, let's go!” commanded Sahana. "Let's not waste any more time!", she said, heading outside to the courtyard. Ganapathy and Yash followed, carrying all the astronomical equipment that had been pulled out of the big wooden box.

The three spent much of the night pointing the telescope at different points in the Jaipur sky, noting down data, using their uncle's calculator to perform mathematical operations, and looking at the celestial maps.

Sahana and Yash did not touch the astrolabe. Instead, they watched as Ganapathy handled the old relic skilfully and with a certain intimacy that comes from years of practice, muttering all the time to himself in words that seems unintelligible to his young relatives.

It was after eleven o'clock at night when the cousins said goodbye to their uncle to return home. They knew their parents would be worried about them and their lengthy disappearance, although they had by now become accustomed to the long visits to their uncle.

Ganapathy tried to relax but was too agitated by everything that was happening to get any sleep. He was restless in his bed that now felt so uncomfortable, as if it wanted to push him back out again. Accepting his fate of a sleepless night, Ganapathy made the decision to return to his office and continue his painstaking work. Settling back down into his favourite chair, the old man picked up the notes and

data obtained from his observations of the Jaipur sky, and once more began studying the details and calculating astronomical measurements until the first light of day trickled through his office window.

CHAPTER 10

COSMIC MYSTERIES

Unfortunately, the Jaipur skies remained cloudy for the next two nights, blocking further astronomical observations, and Sahana and Yash were not able to visit their uncle due to persistent rain that threatened to last an eternity. The friends were trapped at home, under the watchful eyes of their parents, who claimed that such a climate would make anyone ill who dared to go out onto the streets. The cousins became progressively more anxious and worried as the days passed, remembering one of their uncle's most frequently said warnings that "time is the greatest enemy".

Finally, the sun remembered to shine once again on a beautiful Sunday morning. The temperature rose a few degrees and clouds disappeared from the skies above the busy city. The cousins leapt out of bed early and ran to their uncle's house.

"Good morning," said Ganapathy, smiling broadly, "I was waiting for you. I have good news".

He went to his office and returned with a huge celestial map, which he spread out on the living room table. Sahana and Yash looked on entranced at the drawings of constellations, and distribution

of stars, planets and moons. They could see the once white borders of the chart were now full of complex calculations, scribbled numbers and symbols, with the Jaipur skies divided into sectors, cut up like the slices of a cake.

“I noticed a gravitational alteration just here,” Uncle Ganapathy began to explain, bringing the children back to reality and directing their attention with his pointed finger to a particular point on the map.

“We do need more data to be certain that this is the point where gravity is increased”, he continued, “however, I do think this may demonstrate the presence of a space wormhole right there”.

“A shortcut through space and time,” murmured Sahana, her gaze fixed on her uncle's celestial map.

Yash grabbed his notebook from his backpack and began to read out loud, in much the same way as his teachers did at school.

“It is like the pathway created by a worm when it eats through an apple. Instead of crawling back and forth over the outside skin, it cuts its way through the core of the fruit. For a cosmic traveller, a wormhole is a shortcut for getting around. It is as if they entered a tunnel that connects one side of the Universe to the other”.

“Well done, Yash,” his uncle praised, leaving the boy rosy-cheeked and blushing, but feeling very proud of all the scientific research he had carried out, during the monotonous rainy days.

“There are intra-Universe wormholes, meaning that the tunnel connects two points in the same Universe, and there are also inter-Universe wormholes, which connect two different Universes”, continued Ganapathy.

“And which of these types does the Phoenix need?” asked Sahana, a little jealous of Yash's astronomical knowledge.

The three of them sat around the table, with eyes fixed on the celestial map. Ganapathy took out his astrolabe and began making measurements and calculating distances, muttering numbers and more numbers, until finally he indicated on the map the precise point where Crater 2 was situated.

“This galaxy is about 400,000 light-years from our galaxy, the Milky Way. So you see, Sahana, Phoenix travelled through an intra-Universe wormhole,” replied Ganapathy.

“And... 400,000 light-years... is that very far away?”

“Yes, Yash, very very VERY far! The distances in the Universe are measured in millions, billions, even trillions of kilometres. To make things easier to calculate, the light-year was created. So, each light-year corresponds to the distance travelled by light, at a speed of 300,000 kilometres per second, in a period of 365 days, which means, of course, for a year”, Ganapathy said, taking out his calculator. He began tap-tap-tapping away rapidly at the buttons and the numbers

kept getting bigger and bigger, until he finally concluded, “therefore, each light-year is equivalent to about 9.5 trillion kilometres”.

The cousins were stunned. They couldn't even imagine a distance of that size. The train journey between Chennai and Jaipur had seemed immense enough for Sahana, tediously long and very uncomfortable, and that had just been between two cities in the same country and on the same planet!

“Can you imagine crossing 9.5 trillion kilometres?”, she contemplated out loud.

The cousins looked at each other wide-eyed, as such distances seemed quite incomprehensible.

“Ah, but it's not just 9.5 trillion kilometres”, continued their Uncle, “that simply corresponds to 1 light-year. The Crater 2 galaxy orbits the Milky Way, and so to get there, we must multiply 9.5 trillion kilometres by 400,000 and that's the only way we'll have the correct distance. That is the distance that separates the Phoenix from its planet”.

Hearing the name of their intergalactic friend, Sahana and Yash turned to each other with worried looks. It had now been four days since their discovery of the Phoenix in the small dark cave near Fort Amer, and they knew they must return there as soon as possible, taking something to feed and hydrate it. Once again the cousins were overwhelmed by an intense feeling of uneasiness, both fearing the

Phoenix may already be weak and suffering a lot, or even worse, maybe dead.

“We need to take food and water to the Phoenix straight away, before the worst happens,” Sahana said tearfully.

Ganapathy nodded, took some Indian rupees from his wallet and handed the money to his young friends.

“Go back to Fort Amer, but first stop at the Pink Market and buy some food. Phoenix must be very hungry and thirsty by now. The day is beautifully clear so the night sky should be full of stars and completely cloudless. Return here tonight after you get back from the cave and let’s finish our astronomical observations so we can find a way to help the Phoenix return to its planet in the Crater 2 Galaxy”.

CHAPTER 11

THE PINK MARKET

Sahana and Yash did not hesitate. Within minutes they had left their uncle's home behind them and were running through the alleys of Jaipur, towards the famous central market where virtually every building was painted pink. It was for this reason the capital city of Rajasthan state was best known internationally by its nickname – the Pink City.

Jaipur was founded in 1727 by a Maharaja called Jai Singh, a true pioneer of his time who dreamed of transforming and modernising the architectural style and urban design of the city. Avenues were built to be wide, lined with luxurious mansions, and a magnificent palace was constructed in which the Maharaja and his family lived. A huge market grew rapidly, where products of every shape, size and colour were sold daily by hundreds of merchants scattered in bazaars, arranged side by side along the main avenue.

“Maharaja Jai Singh loved astronomy”, commented Yash with a professorial air. “He liked looking up at the stars so much that he ordered five high-precision astronomical observatories to be built, something absolutely unheard of at that time. The biggest and most

famous observatory is the Jantar Mantar, which has measuring instruments made from stone and marble”, added Yash, pleased to have learned all about it in his history classes and thanks to a visit to the site organized by the science teacher from his school.

The cousins continued walking and talking about the futuristic ideas of Maharaja Jai Singh, until they arrived at Jaipur's central market. Sahana stopped abruptly, looking in amazement at a huge ornate construction on the other side of the road.

"Whatever is that?", she asked, pointing at the magnificent looking building. So far, Sahana had not had time to explore the city with her parents, as the adventure with her cousin and uncle Ganapathy had consumed her days and curiosity.

"It is really beautiful, isn't it? It's called the Hawa Mahal or Palace of the Winds," said Yash, also staring at the impressive building, as he did whenever he saw it.

"It is called so because it has 953 windows on the outside walls, which allows a breeze to blow through them, helping to keep it cooler.

Sahana looked at Yash in surprise, "953 is a very precise number, I suppose it's right?", she wondered quietly to herself, but Yash did not notice his cousin's air of questioning and kept talking, immersed in his own explanations.

"These windows", he said, pointing in their direction and wafting his hand from left to right, "were built so the women of the royal family could observe the life going on outside the palace; however, the windows are designed in such a way that the women could not be seen by the people below in the street".

"I have never seen a building more beautiful than this... and so pink!", Sahana exclaimed, lost in thought and barely aware of her cousin's explanations.

"And do you know why it's all pink?" Yash asked, with the confidence of someone who already knew the answer! Once again, he mimicked his favourite professor's manner of talking, "Prince Albert of the United Kingdom of Great Britain was organizing a visit to India and decided he would include the city of Jaipur. The Maharaja wanted the Prince to be left with a most wonderful impression of Jaipur, as a modern place, already so advanced for its time. So, the Maharaja decided to make Jaipur even more beautiful by painting all the buildings and houses the same colour. Pink was chosen because, historically, the colour symbolizes good hospitality and being welcoming".

"A beautiful and very interesting story, Yash, but do not forget, we are here on a mission. We need to buy food and we still have to take everything up the mountain to the little cave," Sahana said firmly,

perhaps even a little too firmly but she was really worried about what they would find up on the hillside. She had not slept well the previous night, wondering whether the Phoenix would be ok or whether it would be too weak to do anything because of hunger and thirst, or even worse, whether the Phoenix would still be alive!

“Yes, we need to be quick,” replied her cousin, taking from his pocket the money given to them by their uncle. “What should we buy with this?” he continued, showing the money to Sahana.

“Bottles of water, boiled rice, some vegetables, *paneer* cheese, bread and some *curry*”, listed Sahana, a little uncertainly.

Neither cousin really knew what a being from another planet might eat; however, they assumed their list would be good enough and began looking from one market stall to the next, evaluating the quality of food and comparing prices. The entire area surrounding the market was very busy indeed, with people coming and going, motorcycles roaring through the streets, car horns honking noisily to warn pedestrians who might dare to step out in the road, and *tuk-tuks* jostling in the traffic for every inch of space. Sahana and Yash rushed through the intense bustle of the pink city, making sure they achieved their goal of buying what was needed for the Phoenix as quickly as possible. Everything bought was loaded into Yash's backpack, which stretched and sagged as the contents grew heavier.

The sun was shining brightly in the sky by the time the cousins finished their shopping and the morning had flown by, without them noticing. It would soon be time to return home for lunch and their parents would worry if they did not appear, but they could not give up on their plan to help the Phoenix. Although feeling hot and a little tired, Yash and Sahana were happy at the thought of climbing the mountain again, heading towards Fort Amer and the dark cave.

The cousins looked up at the skies once more before leaving the central market. Not a single cloud hovered over Jaipur.

“Let us hope it continues!” muttered Sahana, thinking of the astronomical observations they would need to make that night with Uncle Ganapathy.

"It will", Yash said, with a mixture of conviction and hope.

CHAPTER 12

THE PHOENIX SUFFERING

Sahana and Yash used what was left of Uncle Ganapathy's money to transport their purchases from the Pink Market to the small cave near Fort Amer, catching first a *tuk-tuk* ride and then an elephant. Once there, the cousins ran to the entrance of the cave and stopped, just as they had done before. A mixture of fear and apprehension crept into the minds of the cousins, along with many questions - "Is the Phoenix still here?", "Is he ok?", "Was he suffering and in pain, or hungry and thirsty?"

Soon, however, just as before, a common thought in a metallic voice popped into both Sahana and Yash's minds at the same time.

"I'm so glad you came back. I'm feeling... I'm feeling... very verrrrrrry weak!"

The cousins looked at each other with an air of concern. The metallic voice seemed less intense than before, more hesitant, as if the words in thought form were being spoken as a distant whisper.

"We brought water and food," Sahana said, taking the groceries from Yash's backpack. Still a little afraid, she took a few steps towards the Phoenix and placed the bottles of water carefully in front of the

strange creature. She then laid out the packages of food next to the bottles and opened them up, before taking a large step back.

Silence hung in the air. The metallic voice said nothing, with the Phoenix lost in thought. The cousins fidgeted nervously, not knowing what to do next. Suddenly, they saw a long skinny arm reach out and pick up a bottle with a hand that appeared to have only three fingers. They watched as the bottle was raised up towards the Phoenix's head, expecting the liquid to be poured into what looked like a mouth, but to their surprise a round bendy tube suddenly shot out from the middle of its face and sucked up the contents of the bottle with a whooshing sound, in two seconds flat! The cousins watched in awe as a second bottle was emptied just as quickly, before the bendy tube disappeared again into its position in the middle of the face, just under the large white round eyes.

"Thank you, thank you very much!", the two cousins heard in their thoughts.

Sahana giggled nervously, trying hard not to laugh at the very strange way the Phoenix drank the water. Yash stared at the round end of the tube curiously, which moments before had looked rather like a long elephant's trunk but was now once again positioned nearly flat in the head of the Phoenix. The cousins smiled at their new friend, unable to hide their happiness and feeling a huge sense of relief. They

had been right. Like humans on Earth, this being from planet XPC23145 also needed water to survive.

“These are foods from India,” explained Sahana, pointing to the food she had lined up.

“We bought cooked rice, vegetables, *paneer* cheese, bread and Indian curry,” added Yash.

The round tube from below the white balls shot out once again and the piles of food disappeared one after the other, sucked up and out of sight with just a moments pause between each. The last food to disappear was the curry. The bendy tube quickly disappeared but this time what seemed to be the mouth underneath it dropped open and the large round white eyes grew even bigger. The cousins could not be sure, but to them it looked like their friend was wide-eyed with surprise. A moment later, a bubbling gurgling noise could be heard coming from the Phoenix, and its body began to glow a bright light green, lighting up the darkness of the cave. For the first time, the cousins could see the whole shape of the Phoenix, who had a large round body, like an upside-down balloon and many legs, each looking like a coiled up stripey bendy spring that narrowed to a pointed tip. The outer surface of the body glowed even more brightly and all of the internal structures of the Phoenix could be seen. Yash identified

something that looked like it might be a beating heart attached to a network of little tubes transporting a bluish liquid all over the body. He then noticed a large bag-shaped structure that he guessed must be a stomach, as it was now full of the Indian food they had carried up the mountainside.

The gurgling noises continued for a few moments before the green glow caused by swallowing the curry began to fade. The surface of the Phoenix became darker once more and its inside organs slowly disappeared from view, leaving only the two white round eyeballs remaining visible in the shadowy darkness of the cave.

"What was that?" asked a surprised metallic voice in their thoughts.

Sahana and Yash began laughing and explained to the Phoenix about the Indian spices used to create traditional sauces, called *curry*, a word coming from "kari" in the Tamil language, which is commonly spoken in the south of India.

"Aromatic spices like cloves and cinnamon were originally used and combined, as they are full of flavour. Then peppers and chilli were added to some sauces from the 1500s onwards when European travellers introduced these new ingredients to Indian cooking. They gave a strong flavour that could hide the taste of meat that was

already a bit old. Chilli can make food very peppery, sometimes very VERY peppery indeed!, giggled Sahana.

The young girl liked nothing better than to spend time in the kitchen with her mother and aunts, learning how to create these sauces and traditional meals and sweets, which is how she knew quite a lot about the history of Indian cooking. The talk of curry reminded the cousins that time was passing and the need to return home for lunch. They wanted to spend the evening with Uncle Ganapathy at his house, trying to find a way to return the Phoenix to its galaxy, so they could not make their parents cross and risk not being allowed to visit him.

Sahana and Yash explained to the Phoenix what they were doing with their uncle. They talked about their cosmic observations and detailed astronomical calculations and mentioned that later that night they would be making further observations of the Universe to see how they could pinpoint exactly where and when the space wormhole would reappear.

The Phoenix understood everything and seemed happy with their explanations. He felt much better after drinking plenty of water and eating everything the cousins had brought along, so he was no longer suffering for now.

“We'll be back as soon as possible!” said Yash.

“Don't worry. Uncle Ganapathy will find a way to help you”, added Sahana, in a firm voice, full of belief.

The two white balls closed and opened, as if in approval. “Don't forget to bring more curry,” the metallic voice said in their thoughts.

The cousins ran from the cave laughing and in good spirits. They rode home in the first available *tuk-tuk* and sneaked quietly into their homes, so that at noon sharp, they were seated at the dining table for lunch and their parents suspected nothing of the adventures of the morning.

CHAPTER 13

THE MAGIC OF THE VIRTUAL WORLD

The sun had not fully set by the time Sahana and Yash arrived at Ganapathy's house. Their uncle was in his office, still immersed in the observations they had made, jotting down various numbers and complex mathematical formulae, and again he did not see them enter.

"Uncle, uncle... we delivered the water and food... and... the Phoenix is fine now!", said Yash, anxious to share the news.

"And it loved the curry sauce... the chilli made the Phoenix turn bright green," said Sahana, having a good laugh.

Ganapathy raised his head and looked at the two of them in bewilderment. "Curry... curry... curry !?", he repeated several times, "you took curry for the Phoenix to eat?", asked the uncle, still astonished.

"Yes, and he loved it and asked us to take more next time," Yash said, his voice calmer, trying to regain his uncle's attention.

"But let's get on now with what we have to do... we do not have much time!" interrupted Sahana, looking out the window. The sun had already disappeared over the horizon, making everything darker, and

some stars were beginning to appear. It really was time to return to watching the Jaipur sky.

The three went out into the street, telescope in hand, to try and figure out where and when the next space wormhole would appear in northern India. They remained outside for a long time as Ganapathy pointed the telescope this way and that, trying to identify astronomical phenomena that were relevant to their observations. Yash missed nothing, carefully writing down all the information given by his uncle – numbers, symbols, distances, coordinates! After a few hours of stargazing, they returned once more to the office. Sahana and Yash sat down, watching Uncle Ganapathy for a long time as he performed calculation after calculation.

Suddenly, their uncle stood up and took in his hand a small black control, like something you might use to turn on your television. He pointed it at a small door that was less than three feet high and positioned in the wall opposite the entrance to the office. Pushing a button on the control, a blue light lit up on the lock of the small door, which swung open automatically. Ganapathy handed each child a pair of black glasses fitted with special lenses that enabled them to see in three dimensions and led them to the small door.

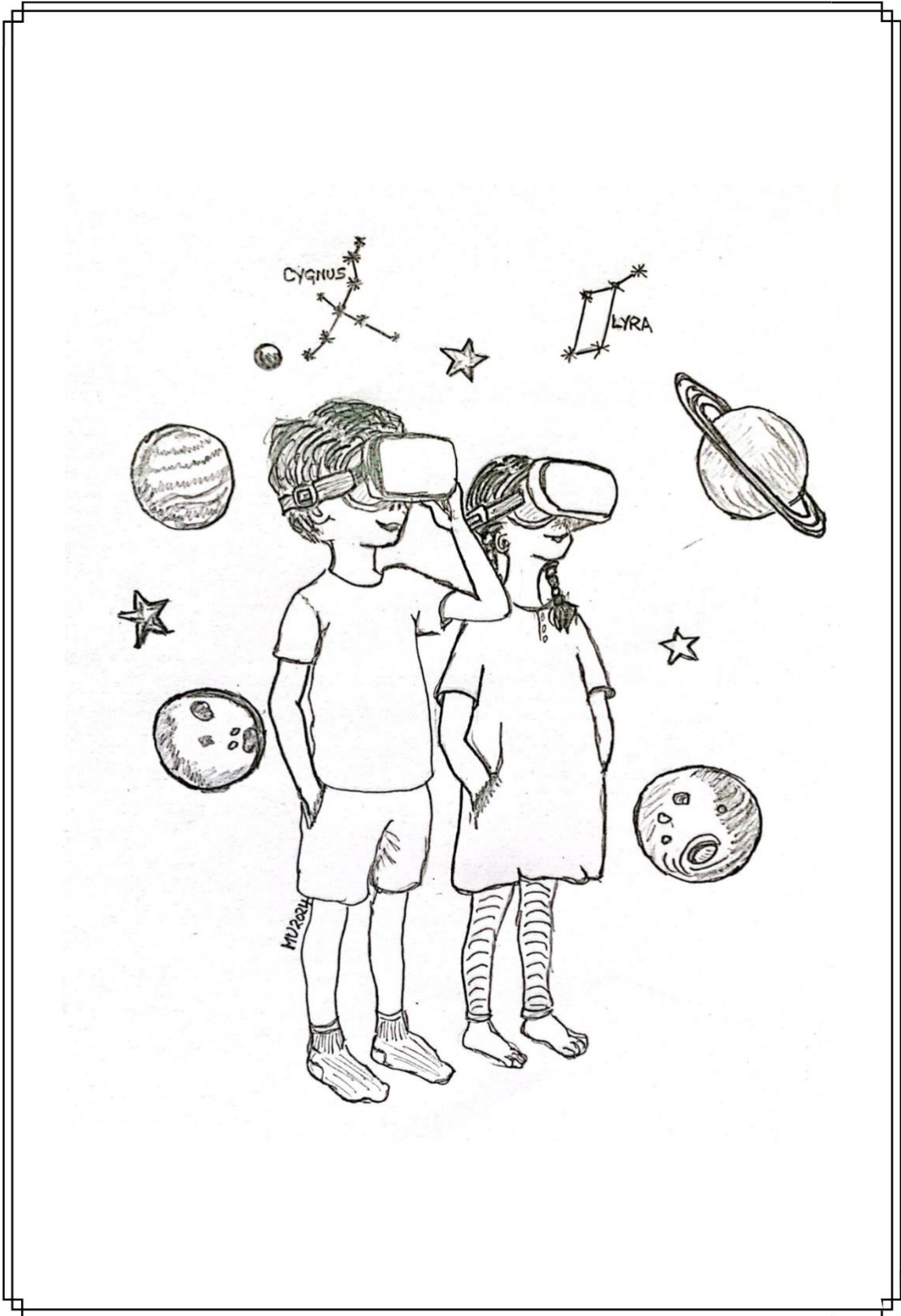
“Let's enter a virtual world... in fact, the Universe I created based on the calculations I have done and redone over these past few days.

With today's observations, I think everything is now complete. I have inserted the missing information into a complex algorithm, which is sophisticated enough to reproduce the Jaipur sky and all its mysteries.” Ganapathy said, as he paused momentarily by the small opening before bending down and easing himself through the door. The cousins looked at each other wide-eyed, full of curiosity as their uncle disappeared from view.

Questions flashed through the young minds of Sahana and Yash - What was on the other side of the door? Complex algorithm? How was it three-dimensional? What virtual world? - but the cousins took a leap of faith and putting on the special glasses, they dipped down and crept through the small door, leaving their uncle's office behind them.

Exclamations of "Wow" and "Awesome" could be heard, as Sahana and Yash were left in a state of total amazement by what they saw. Everything was completely dark and the impression they had was of being somewhere with no floor or ceiling or any walls. It was as if the children were suspended, floating in the Universe.

“Look at the Moon!!” shouted Sahana.



“Stand on it! Jump, jump...” exclaimed Yash as he leaped in the air, as if he really were one of the astronauts from the NASA Apollo missions back in the 1960s and 1970s, exploring Earth's natural satellite. The two friends began jumping and jumping, pretending to have less weight due to the reduced gravity on the Moon.

Suddenly, Sahana pointed to a group of stars.

"And that constellation?"

“It's Ursa Major!” exclaimed Yash, his eyes glued to the virtual sky of Jaipur.

“Yes, indeed it is! So beautiful... Part of this constellation is called the Big Dipper, which is also known in India as Saptarishi. Its seven stars represent the seven great wise men of Hindu mythology - Atri, Bharadvaja, Gautama, Jamadagni, Kashyapa, Vashishta, and Vishvamitra”, Uncle Ganapathy explained patiently.

The cousins continued their extra-terrestrial explorations for a while, immersed in the vastness of the dark sky, and visiting different constellations, planets, and moons. The vision in three dimensions offered a very different and more real perspective to everything, giving the impression you really were there, traveling across the Universe. They couldn't believe their uncle had built this magical world and not told them anything.

“How did you manage to create all this, and all on your own...?” murmured Sahana and Yash, as they continued to contemplate the virtual sky of Jaipur.

“Lots of observations, calculations... and a good dose of creativity!” Ganapathy said, smiling at his surprised young friends, “I followed the same path once taken by the greatest of all mathematicians in India. Like him, I am a self-taught person. In other words, I learned to do all this without the help of anyone. Do you know who I am talking about?”.

“Srinivasa Ramanujan!!!” the two replied together, without hesitation.

CHAPTER 14

THE MIND OF A GENIUS

Ganapathy knew nearly everything there was to know about the life of Srinivasa Ramanujan, having learned from many years of reading and rereading books written in honour of this mathematical genius. Not waiting to be questioned further by his young relatives, Ganapathy began telling them about the man who left his mark in Indian history.

“He was born in 1887 in the city of Erode, in southern India, but soon went to live in Kumbakonam, where he ended up dying of tuberculosis in 1920. Still so young...”, sighed their uncle, visibly moved.

And he continued... “The family was of the Brahmin caste, as you know, often considered the highest and most powerful caste in India, but they had few possessions. Ramanujan’s mother was a cultured woman and motivated her son to study more and more”.

“Was he a good student?” asked Sahana, curious to know more about the life of this famous mathematician.

“Despite his keen intelligence and sharp mind, Ramanujan did not devote much time to his studies in the early years of his school

life” Ganapathy continued, “However, by the age of 11, he had already won awards and his love of mathematics had led him to learn about cubic equations and advanced trigonometry – and all of this at such a young age!”.

Sahana and Yash were temporarily distracted from the virtual sky of Jaipur as they imagined this genius of Indian mathematics, teaching himself about the mysterious ways of numbers in the late 19th and early 20th centuries, with no help from computers or sophisticated calculators.

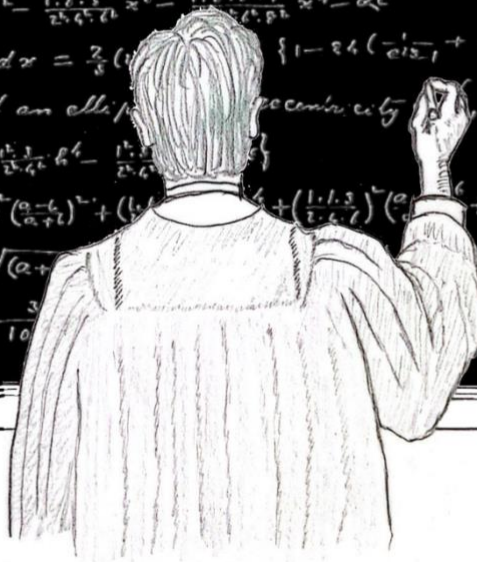
“His passion for mathematics blinded him to all other subjects. He ended up not doing well at his high school and lost his scholarship, so he had to abandon everything. But he could not stop studying numbers and intuitively began defining new formulae and equations... deducing theorems... until a Cambridge University professor invited him to spend time in England. He was very reluctant, because his religious belief initially prevented him from crossing the sea and heading towards other worlds”, their uncle explained.

“But did he go in the end?” Yash asked.

“Yes,” Ganapathy continued, “he spent some years at Cambridge University in England and produced incredible work that is still remembered now by the scientific community.

Srinivasa Ramanujan - Cambridge University - 1914-1919

$$\begin{aligned}
 1. & \quad 1 + \binom{1}{2}x + \binom{1 \cdot 1}{2 \cdot 2}x^2 + \binom{1 \cdot 1 \cdot 3}{2 \cdot 2 \cdot 4}x^3 + \binom{1 \cdot 1 \cdot 3 \cdot 5}{2 \cdot 2 \cdot 4 \cdot 6}x^4 + \dots \\
 & \quad = \pi(1-x) + \int \pi dx = \frac{\pi}{2}(1+x) + \frac{\pi}{2} \left\{ 1 - 24 \left(\frac{1}{c^2} + \frac{\pi}{c^4} + \dots \right) \right\} \\
 2. & \quad 1 - \frac{1}{2}x - \frac{1 \cdot 1}{2 \cdot 2}x^2 - \frac{1 \cdot 1 \cdot 3}{2 \cdot 2 \cdot 4}x^3 - \frac{1 \cdot 1 \cdot 3 \cdot 5}{2 \cdot 2 \cdot 4 \cdot 6}x^4 - \dots \\
 & \quad = \pi(1-x) + \frac{1}{2} \int \pi dx = \frac{\pi}{2} \left\{ 1 - 24 \left(\frac{1}{c^2} + \frac{\pi}{c^4} + \dots \right) \right\} \\
 3. & \quad \text{The perimeter of an ellipse with eccentricity } e \text{ is} \\
 & \quad 2a\pi \left\{ 1 - \frac{1}{2}e^2 - \frac{1 \cdot 1}{2 \cdot 4}e^4 - \frac{1 \cdot 1 \cdot 3}{2 \cdot 4 \cdot 6}e^6 - \dots \right\} \\
 & \quad = \pi(a+b) \left\{ 1 + \binom{1}{2} \left(\frac{a-b}{a+b} \right)^2 + \binom{1 \cdot 1}{2 \cdot 2} \left(\frac{a-b}{a+b} \right)^4 + \binom{1 \cdot 1 \cdot 3}{2 \cdot 2 \cdot 4} \left(\frac{a-b}{a+b} \right)^6 + \dots \right\} \\
 & \quad = \pi \left\{ 3(a+b) - \sqrt{(a+b)^2 - 4ab} \right\} \\
 & \quad = \pi(a+b) \left\{ 1 + \frac{3}{16} \left(\frac{a-b}{a+b} \right)^2 - \dots \right\}
 \end{aligned}$$



Unfortunately, he did not adapt well to the English life and weather, which is much colder than here. He ate poorly and could not tolerate the cold, so he ended up becoming unwell”.

“What did he die from?” asked Sahana in a sad voice.

Ganapathy sighed deeply and answered, “A disease called tuberculosis that mainly affects the lungs and decreases their function, sometimes leading to death. But, despite living for such a short time, he left a very strong legacy, with important contributions to mathematical science, such as Number Theory, Elliptic Functions, Continued Fractions, and Infinite Series! These are very complicated things to explain to you now, but perhaps one day when you are older you will know the importance of these discoveries. Above all else, Srinivasa Ramanujan served as an inspiration to many scholars from around the world, and to many Indians also, like me!”.

“And what does Ramanujan's mathematics have to do with this virtual sky?” asked Sahana.

“I decided one day to dedicate myself to building this magical world in three dimensions to make everything look more real. I made my astronomical observations, immersed myself in the mathematical knowledge and learned a lot of computer science, and little by little I have been constructing the Jaipur sky with a high level of accuracy

and considering the different times of the year. Ramanujan was my inspiration, besides helping me with many of the complicated mathematical calculations”, concluded Ganapathy.

Still wearing their special glasses, Sahana and Yash returned to focusing on the stars, planets and moons of the three-dimensional sky created by their uncle, that is, until Ganapathy brought them back to reality.

“We still need some data to enter into the system. Let us return to our observations of the Jaipur sky – the real Jaipur sky!” said Ganapathy smiling. "This will assist us in identifying the space wormhole that will help the Phoenix return to its planet", he added, uttering each word slowly, in a firm and assertive tone, trying to reduce the excitement of his young friends and increase their concentration on the job in hand.

CHAPTER 15

THE FINAL CALCULATIONS

Many hours were spent with their astronomical instruments focused on the Jaipur sky. Ganapathy noted down everything carefully, not missing a detail from his precise observations. At times he would stop and scribble down calculations using complex mathematical formulae that were far beyond his young relatives' understanding, and only then would he look up at the sky again. Sahana and Yash sat quietly beside Ganapathy, admiring their uncle, who methodically performed this ritual of repeated observations and calculations.

It was almost 10 o'clock at night when the children finally said goodbye to Ganapathy, before stepping out onto the road for the quick walk home. They left with the impression he had not even noticed their departure. The young cousins would have loved to stay longer and continue watching the Jaipur sky, but it was getting late and they knew their parents would worry, and maybe even be angry, if they were not home and settled in their beds soon.

Ganapathy's work, on the other hand, was destined to last for many more hours. He knew the importance of accurately checking the

location and timing of the opening of the space wormhole that would take the Phoenix back to its planet in the Crater-2 galaxy. Hence, he shook off his weariness and continued the painstaking work of astronomical calculations. Once again, Ganapathy did not manage to lie down in his own bed to sleep that night. Instead, as often happened in situations like this, he preferred to rest in his office armchair, surrounded by books and his sheets of paper, on which were scribbled his notes and calculations. Ganapathy was a person dedicated to his work and very proud of it too.

The sun rose early in the sky the next morning. Sahana and Yash were itching to return to their uncle's home, but joining in the traditional family breakfast was first required. The two families sat together daily around a large kitchen table to exchange plans for the day ahead and to feast on delicious Rajasthani breakfast foods, like spicy onion-filled pastries called *pyaaz ki kachori* and *Bajara Roti* flatbreads, with a wonderful *Lahsun* garlic chutney to make everything test even better. Such a morning feast would normally have made the cousins very happy, but today, all they could think about was escaping to help Ganapathy as soon as possible. Yash and Sahana wolfed down just enough pastries and bread to satisfy the watchful gazes of their mothers, before excusing themselves from the table and running for the front door.

They were very curious indeed to see if Ganapathy had come to a decision about where and when the space wormhole would appear in Jaipur.

Arriving breathless at their uncle's house, they headed straight to the office, knowing without shadow of a doubt that Ganapathy would be there, sitting in his favourite chair. Pushing open the door, two anxious little voices asked at the same time:

“Did you work it out?”

"Where and when will the space wormhole appear next?"

Ganapathy peered at them over the top of his glasses, that had slipped halfway down his nose. The ends of his lips twitched upwards, as if considering to smile, but he said nothing. Sahana and Yash looked nervously at each other and then back at their uncle, waiting anxiously for him to speak, to explain what he had accomplished with his meticulous calculations.

Ganapathy prolonged the moment, inwardly amused by the open-mouthed wide-eyed looks of anticipation on his young friends' faces. He sighed deeply and rubbed his fingers back and forth across his chin, as if thinking, before suddenly leaning forward to pick up some papers, saying:

“The coordinates on the stone are quite correct. It is indeed in that cave where you found the Phoenix that there is a weakness in the space-time entanglement, which simplifies the creation of a space wormhole. The correct place is right there. I was even able to calculate, with an error of only a few centimetres, something quite minimal, the height from the ground to where this hole will appear”.

Ganapathy got up and walked to the door leading to his virtual world.

“Come with me,” he said “I have created a virtual map of the cave and space wormhole”.

The friends followed their uncle, already reaching for the special glasses that would allow them to enter the magical world created by Ganapathy. But instead of observing the Jaipur sky, they found themselves in the small cave near Fort Amer, a perfect reproduction based on the children's descriptions.

“Wow, it's the Phoenix cave!” exclaimed Yash in amazement.

“Just like it!!!”, completed Sahana, marvelling at her uncle's work.

The three of them entered the virtual cave, where everything was dark and nothing to be seen.

"We must wait a while for our eyes to get used to the darkness", advised Ganapathy.

Everyone paused, as the seconds that seemed like minutes dragged by, slowed by Sahana and Yash's anxiety to get on with things. Finally, their uncle approached the wall situated on the left side of the cave and said:

"It's here!", and he pointed to a specific spot. "Right in this place, 3 meter 70 centimetres from the ground... maybe with a small margin of error, but this is the most accurate measurement I've been able to reach with my calculations".

The two friends stood thinking for a moment. They had both grown taller than 1 metre high some time ago, but they were not sure how tall the Phoenix was. The only time they had seen its body was when the spicy curry had made it glow. From what they remembered, the Phoenix had looked to be quite short, and definitely much shorter than the two of them.

"And when...?" Sahana began a question, but she was interrupted by Ganapathy.

"In two days... at dawn! At zero 2 hours and 21 minutes to be precise - on the dot!"

The cousins remained motionless, quite speechless and a little worried. Firstly, little time was left to come up with a plan for helping

the Phoenix reach the space wormhole, which would soon be appearing along the left wall of the dark cave. Secondly and most worrying of all was the timing, as they would need to escape the watchful eye of their parents in the middle of the night. They needed to consider what to do, to think a lot... and think fast!

CHAPTER 16

A BRILLIANT IDEA

Upon arriving home once more, the cousins decided to do some research. They busily flicked through books on science, mathematics, physics, astronomy, and history. In fact, every book they had on their bookshelves served as study material. Luckily for Yash, his parents believed in the importance of having good books and encyclopaedias available at home, so there were plenty of options for them to look through. They knew they must come up with an effective plan of action, one that would position the Phoenix at the exact height of 3 meter 70 cm above the floor at that very specific point in the cave calculated by Ganapathy.

Sahana and Yash read through nearly every line of print in the books that were scattered across the floor in front of them. They scanned every figure at dizzying speed, reading through all the information they could, until, after a few hours, a brilliant idea emerged.

“Look at this, Sahana!” exclaimed Yash, opening the pages of a book entitled *World History of Aviation*, and he began to read out loud, excited by what he had found.

“The Wright brothers, Wilbur and Orville, performed their first successful airplane flight in 1903. The plane was unable to take off from the ground with only the thrust of its motor; it needed the assistance of a catapult”, said Yash, pointing to illustrations that displayed the catapult system used by the brothers.

“Ca...ta...pult?!” Sahana repeated slowly, not quite knowing what one was.

Yash continued his reading, “Catapults were used in wars, before the invention of cannons and firearms, to launch projectiles or heavy objects in the direction of the enemy, even when they were a long way off.”

“So, it's just a big slingshot then?” Sahana concluded, simplifying the complex explanation given by the aviation book. Yash looked at his cousin with an air of frustration. He knew they had no time to waste discussing the finer points of catapults, so he decided to simply agree with his cousin. What they needed now was less talk and more action as they would need to build this device quickly!

Yash read on, “The most basic type of catapult is made of a wooden arm with a large holder at one end. The arm is connected to a rotating cylinder or windlass, and generally attached using rope”.

Sahana interrupted, "So... all we need is some wood and rope... hmmm, it doesn't seem that difficult to build this catapult thing of yours."

Yash detected an air of irritation in Sahana's voice but chose to ignore it, for now was not the time to argue over silly details. Instead, the two concluded that Ganapathy's help would be needed once more. The cousins hatched a plan to visit the Pink Market before going on to their uncle's house. They wanted to arrive there already bringing some wood and rope, and, of course, the aviation book!

Money, or at least a lack of it, was the problem as usual. The cousins emptied their pockets of any coins and looked disappointedly at the small pile of change in front of them. Both knew it was not enough to buy all the materials needed. It was then Sahana's turn to come up with a bright idea.

"We have some time to spare so maybe we could do some work at the market, a bit of tidying up or some deliveries for the stall holders - something like that," she explained, "they might give us some money and then we could use it to buy what we need."

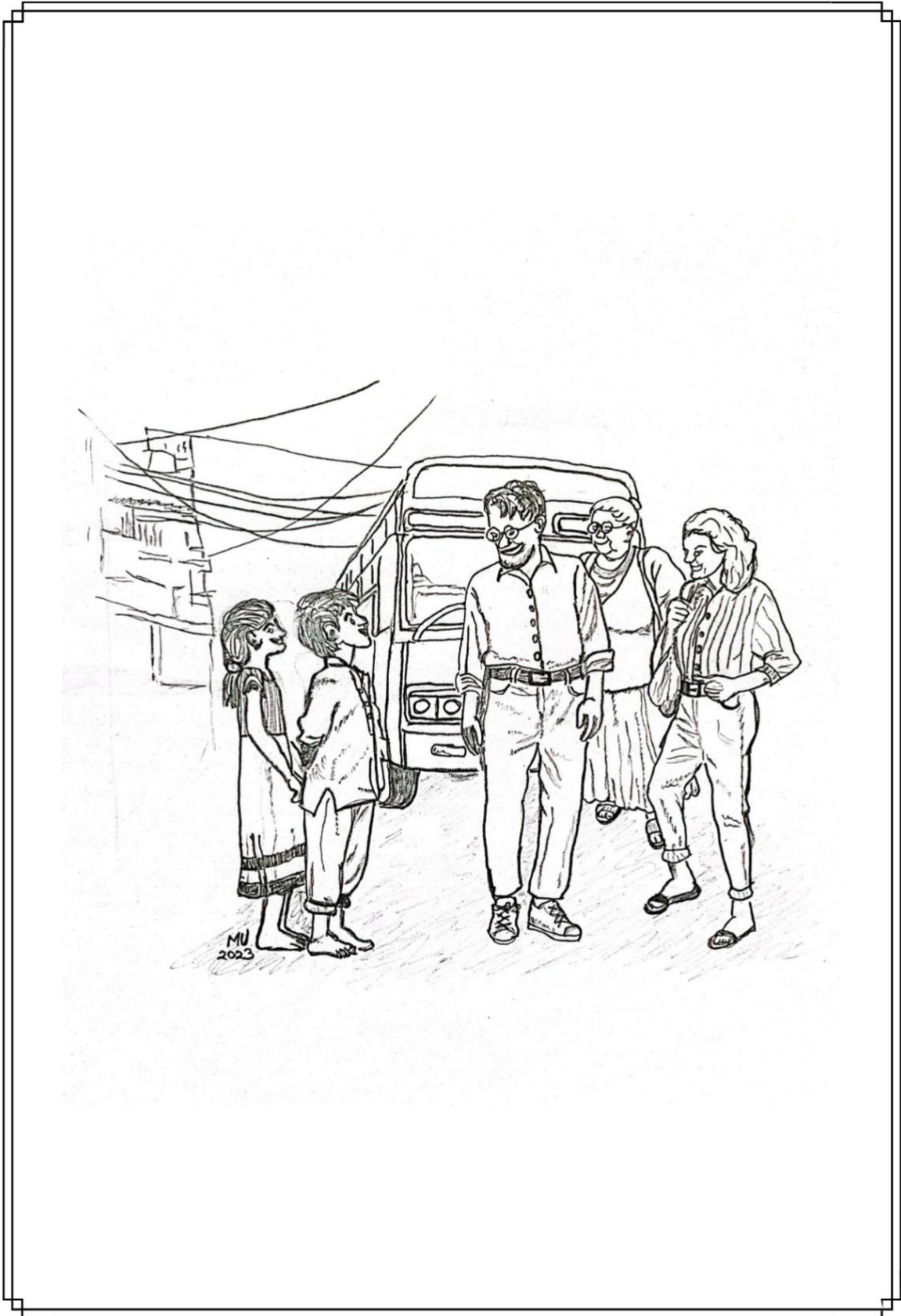
"Without asking our parents!" exclaimed Yash.

"Yes, or they will worry about what we're planning to do and say no", Sahana replied, with a mischievous smile.

Although feeling a little nervous, Yash agreed, and with a sense of determination to help the Phoenix, he and Sahana ran quickly to the market. Their afternoon was spent with the stall holders, persuading them with broad smiles to part with a few small coins in return for work delivering orders, cleaning shelves and running errands for them. Even more rupees filled their pockets when a bus full of foreign tourists stopped in the busy market and a large group of slightly nervous elderly people descended, grateful to be guided through the noise and hubbub by two smiling children. By the end of the day Yash and Sahana were hot and exhausted but bursting with happiness after counting the pile of coins and notes they had gained, both certain they now had enough money to buy lots of wood and rope.

Before going to Ganapathy's house, they stopped at a shop selling construction materials and bought everything they would need to build a catapult for the Phoenix.

The young cousins eventually arrived at their uncle's house exhausted, hungry, and so thirsty they could barely speak. The children knocked on the door and let themselves in.



They first deposited their heavy load of pieces of wood and metres and metres of very colourful and thick rope in the corner of the hallway, before running to the kitchen and emptying the fridge of everything their uncle always kept there for their visits.

Only after drinking many cups of water and wolfing down a mini mountain of delicious Indian snacks did the cousins have enough energy to tell their uncle about their day, their work at the Pink Market, and above all, their idea for building a catapult.

Ganapathy smiled as they recounted the plan.

“So, you are going to catapult the Phoenix into the space wormhole? Hmmm... yes, that's a brilliant idea, spectacular!” said their uncle with enthusiasm and feeling very proud of his two young relatives, Sahana and Yash.

“They certainly will be great scientists one day,” he thought.

CHAPTER 17

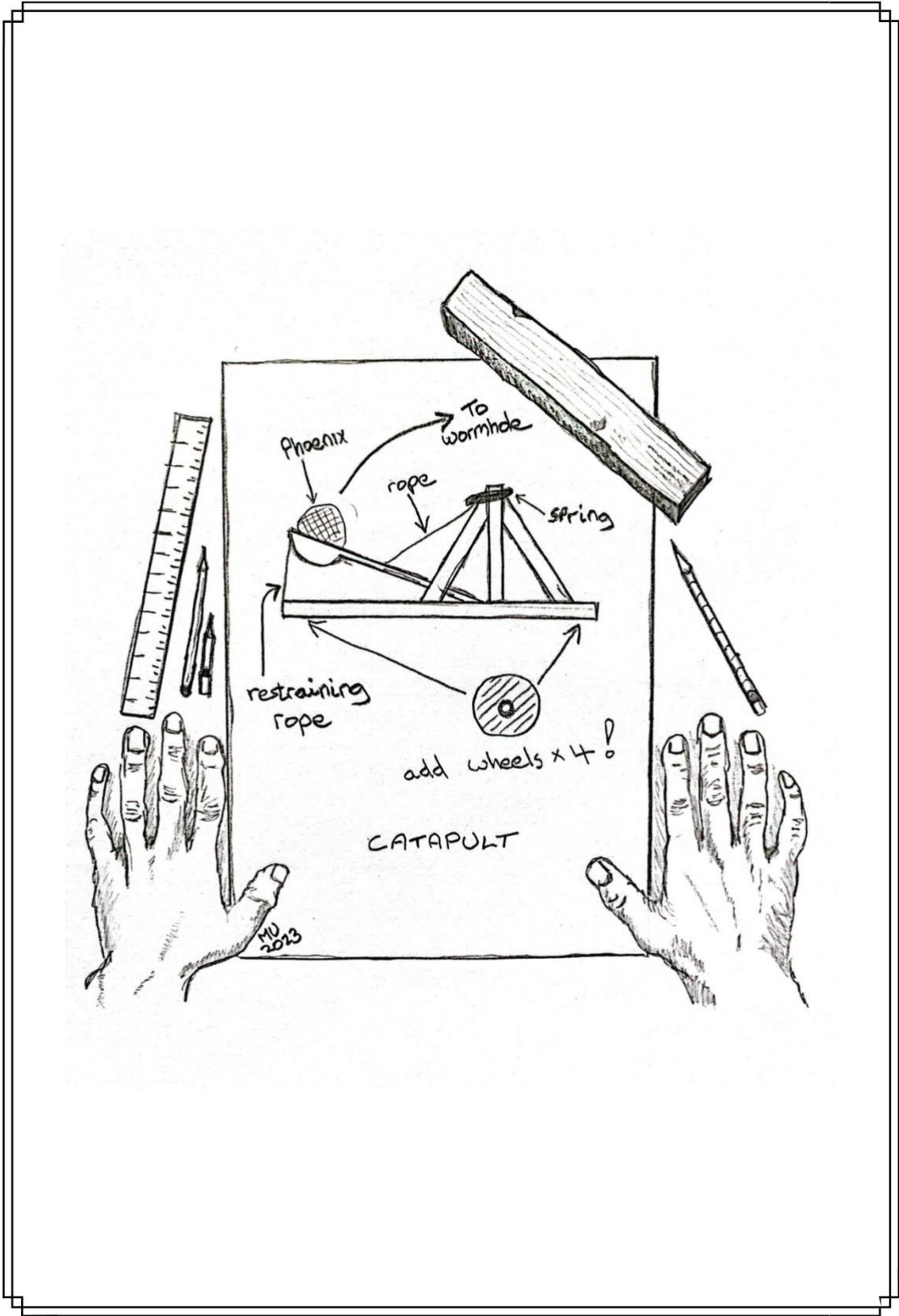
BUILDING THE CATAPULT

Ganapathy and his young assistants headed outside to the rear of the house, where an old wooden garage leaned unsteadily against the end wall of his home. Being nearly as old as Ganapathy himself, its rusty hinges creaked and groaned as the doors opened. It had been many years since the garage had last sheltered a car from the outside world. Nowadays, it had become a storage place for tools, bits of machinery and building materials, it had been transformed into a workshop for Ganapathy's peculiar inventions!

The coloured rope and pieces of wood from the Pink Market now sat in the garage, as the three discussed how to build the catapult that would help the Phoenix return to its planet. Ganapathy began sketching out a detailed plan of the equipment, considering the few materials they had and using a lot of imagination. With his calculator, which the cousins considered to be magic, he tip-tapped on the buttons, scribbled down numbers, and tip-tapped some more, as he defined the required structure, weight-bearing support, amount of rope needed, and the speed at which the projectile (namely, the Phoenix) would leave the catapult. The two cousins, sat on either side

of their uncle, watching his gestures and listening to him muttering quietly to himself, anxiously waiting as time slipped by. Quite suddenly, Ganapathy stood up tall and spun round, waving his design in the air and smiling broadly. With this act, Sahana and Yash knew the next step was about to begin - the construction of the catapult.

Combination of the wood and ropes began to take place following the plan, which was by now pinned to a wall for easy viewing. Ganapathy reached for a saw, drill, hammer and nails, as he skilfully joined together various lengths of wood and rope, measuring each piece precisely, before fixing it in place on a structure that began to look more and more like the catapult in the drawing. The cousins helped their uncle as much as they could, holding parts of the structure up in the air when needed, reaching for nails, turning the drill on and off, and cutting ropes to the exact length, all under the supervision of Ganapathy. After a couple of hours of hard work, the three of them took a step back and looked at the catapult that was now ready. It seemed to be much bigger and heavier than the children had imagined. They stood in silence for a little longer, wondering how they could possibly transport the catapult up the steep slope of the mountain to reach the cave near Fort Amer.



Sahana reached for their book and read out loud, "The first catapults appeared in the 3rd century BC. The ancient Romans improved the equipment and built catapults on wheels to make them easier to move. Look Yash..." she said, pointing at a particular picture, "We need wheels, or to be exact, we need four wheels," she added, waving her index finger in the air to emphasize her point.

"Wheels?!" exclaimed Yash, feeling a little cross with himself for not thinking about how they would actually move the catapult. Wheels had not been on their shopping list at the Pink Market, so no wheels had been purchased.

Ganapathy liked the idea.

"Yes, wheels would be very useful!" he thought, as he began rummaging through some old things scattered around the floor and hidden in large cupboards at the end of the old garage. Finally, he found what he was looking for, emerging slowly backwards from a dark and cobweb-filled space with a smile on his face. Gripped in his hands was the end of a handle and attached to its other end was a dirty old cart that had previously been used to shift sand. The cart's wooden platform was broken and battered; however, it was balanced on top of four large and very sturdy looking wheels. Half an hour later the cart lay in pieces on the dusty floor, while the Phoenix's catapult sat raised up on perfectly round solid wheels. Uncle Ganapathy wiped

his hands and brushed the dust from his clothes, as he and his young friends looked proudly at their finished work.

“Woohoo! We have a catapult on wheels!!!” shouted both Sahana and Yash.

“We'll be able to launch the Phoenix into the space wormhole now,” completed Yash with great satisfaction.

But this was only one part of the solution to the problem. They still needed their parents to permit them to leave their home at night so they could climb the mountain and transport the catapult to the cave. Luckily, Uncle Ganapathy had already worked out a solution. He would ask permission from Sahana and Yash's parents to allow them to visit his home the next night, explaining the need to observe the Jaipur sky at night, but not mentioning their adventure.

“I'm sure they will not mind,” said Ganapathy, after telling his young relatives about his plan. “Then, at 1 am, we will go to the foot of the mountain pulling the catapult. I have a friend whom I have known for many years, who works with an elephant, taking tourists up to Fort Amer. I will arrange for him to meet us. We can ride up the mountain on the back of the elephant and attach the catapult also”.

“So, the elephant will pull the catapult up the mountain?” concluded Yash.

“It will be easy with the help of its wheels”, added Sahana, feeling extremely pleased with herself, as she was the one to find the text in the World History of Aviation book describing the use of wheels to move catapults.

“We still need to take more food up there. The Phoenix needs to be strong to travel through a space wormhole,” said Ganapathy.

“Yes, yes, of course... food and water... lots of water!”

“That's right, Yash. He drinks a lot of water!”

“And curry...we need to be able to see the Phoenix well so we can fit him into the catapult correctly,” Ganapathy recalled.

The three of them laughed a lot, remembering the Phoenix's reaction when he first ate Indian curry.

CHAPTER 18

THE CATAPULT GOES UP THE MOUNTAIN

Uncle Ganapathy was just as excited as Sahana and Yash about the cosmic adventure with the Phoenix that lay ahead. Seeing a being from another galaxy, who had travelled through a space wormhole to reach Earth, was unimaginable to him. The old man had dedicated himself to observing and studying the skies over Jaipur for so many years, and had made thousands of calculations so he could accurately construct his virtual cosmic world. The thought now of actually meeting the Phoenix seemed like an unimaginable dream!

Sahana and Yash's parents happily agreed to let their children stay in the care of their much-loved uncle for the night, and all the travel arrangements with Ganapathy's friend were made to transport them to the cave near Fort Amer on the back of an elephant and pulling the catapult they had built.

The three very happy adventurers ate their dinner early and lay down to rest, wishing the time would pass quickly so their journey could begin later that night. They slept as best they could, barefoot but with clothes on, ready to leave. Uncle Ganapathy set alarms on two clocks to go off at midnight, afraid that one might not be enough

to wake them. He need not have worried for nobody was in the mood for sleep that night. Instead, three sets of eyes accompanied the movements of the hands of the clock as they circled around the numbers, until both the long and short hands pointed vertically to the number twelve. At midnight on the dot, all three members of the Ganapathy family jumped out of their beds, spurred on by the shrill sounds of alarms that screamed at them to be upright and awake.

Sahana and Yash helped their uncle organise the bag of food and water for the Phoenix.

“How long does a trip between galaxies take?” asked Sahana.

Yash looked at her thoughtfully, not knowing the answer, until the silence was broken by Uncle Ganapathy.

"Nobody can say for sure, but theoretically it is the fastest and most efficient way of communication between two points in the Universe, a way of travelling huge distances in a short time”.

As he continued explaining the concept and characteristics of space wormholes to his young relatives, Ganapathy checked that everything they might need was in the bag, especially the Indian curry.

Half past midnight had come and gone by the time the three adventurers pulled the catapult out onto the quiet street in front of Ganapathy’s house. There, waiting patiently in the shadows was a young lad, probably not much older than Yash, perched on the edge

of a flat wooden cart that was attached to a long-legged creature who snorted at them impatiently, clearly tired of standing still for so long.

“Don’t mind my camel, he won’t bite you”, the young lad assured Sahana with a smile, who clearly looked more than a little nervous about being anywhere near this four-legged beast with a hump that towered above her, dark squinty eyes that stared suspiciously from its small head, and with sharp crooked teeth poking out of an overly large mouth. The young lad helped attach the catapult to the back of the cart with strong rope, and they all climbed up onto their transport for the night, holding on tightly to the sides of the cart as they began their journey to the foot of the mountain. The speed of the camel picked up as they left behind the last street lights of Jaipur, and by the light of the Moon, the camel broke into a steady trot with surprising speed. Its long limbs stretched out ahead in a very peculiar manner, with both legs on the left side moving forward together and landing on the ground with a jolt, followed by both legs on the right side doing exactly the same. Faster and faster the camel trotted, with its round body and tall hump rocking from side to side with the change of legs, and the cart pulled behind swaying first left and then right, and left and then right, in a repeated motion that made the passengers on the cart feel quite sick.

Yash and Sahana both looked up at the night sky, focusing on something other than the swing of the camel's rear end in front of them. Countless stars twinkled in the blackness with not a cloud to obscure them, and the moon shone full, lighting up the way for the three cosmic adventurers. They arrived at the foot of the mountain in less than thirty minutes, thankful to be free from the rocking of the cart and camel's bottom, which had periodically gurgled and released a stomach-churning ripple of gaseous stench. Even Uncle Ganapathy agreed that camels were off his list of preferred future transport! The young lad untied the catapult, hopped back onto his cart and waved goodbye, before slapping the camel's bottom hard, encouraging it to begin the journey home to bed.

Only a short time passed until the arrival of their uncle's friend, and of course, his elephant. His friend was a little surprised to see the catapult.

"I've never seen anything like that before," he commented, but asked no questions.

He was, by nature, a peaceful man who lived his own life quietly and never questioned how others lived their lives. Those few words were the only ones he said between leaving the foot of the mountain and arriving near the small cave. Throughout the journey, the man remained silent, lost in thought as he led his elephant along the right

path, making sure it walked safely and securely, without bumps or scares. From time to time, he looked up at the starry sky and smiled at the moon that was helping him and his elephant to see the ground beneath their feet. Ganapathy knew his friend well, having been classmates at school. Theirs was a friendship that had lasted a lifetime and thus, he also kept quiet, respecting his friend's reserved way of being.

The four of them continued in absolute silence for about thirty minutes, slowly climbing the mountain towards Fort Amer. The only noises to be heard were the surprisingly muffled sounds of the elephant's feet as they moved across the ground and the louder jolts of the catapult wheels that bumped over small stones as it was pulled along. Yash concentrated on reading his notes with the help of a small torch, lighting up the calculations and coordinates that would help him identify the exact point on the path where they should end their ride. Suddenly, the silence was broken.

"This is it... it's here... stop, stop!" Yash shouted into the night, making Sahana shriek with fright.

The still silent man showed no interest in the adventure of his friend Ganapathy. He calmly stopped the elephant, helped everyone down from its back, before untying the catapult and retreating a few paces. Nodding a gesture of goodbye in their direction, the old man

sat himself down on a large rock to wait quietly with his elephant, lost in thought.

Ganapathy, Sahana and Yash pulled the catapult between them and carried the backpack of supplies over the last few metres to the cave entrance. They arrived with hearts beating hard and fast, not just from the exertion of the journey, but in nervous anticipation of the adventure that lay ahead.

CHAPTER 19

THE INTERGALACTIC JOURNEY OF THE PHOENIX

Sahana, Yash and their uncle stood nervously at the entrance to the small cave near Fort Amer. It looked really very dark and gloomy inside, but the area surrounding the entrance, where they were now stood, was illuminated by the light of the full moon, enabling the Phoenix to identify the presence of his Earthling friends. At precisely that moment, everyone heard in their heads a metallic voice saying, "I am so glad you came back!".

Uncle Ganapathy's mouth dropped open in disbelief and he was overcome with a great surge of emotion. He had hoped one day to have proof of life outside of planet Earth, this had always been his dream. Never did he really expect, however, that one day he would have the opportunity to communicate with an extra-terrestrial being from another galaxy who had dropped in through a space wormhole! Ganapathy had spent hundreds of long hours as a child looking up at the sky over Jaipur and wondering what different beings could be out there living on other worlds. He often imagined that maybe such a being might also be looking in the direction of Earth at that exact moment, and thinking the same thing. Many times over the years,

Ganapathy and his father had discussed the possibility of extra-terrestrial life existing. He liked to listen to his father, who always gave interesting lectures on how life needs the perfect combination of various physical and chemical elements in order to develop and thrive, such as having access to water and having a suitable atmosphere. This was a topic that always fascinated Ganapathy.

Yash had been careful not to forget his torch this time. He shone it into the cave, lighting up the far wall, and they were able to identify the two white balls, as they opened and closed.

“Phoenix!” Ganapathy exclaimed, in a shaky voice, almost overcome with emotion.

“We brought more water and food,” Sahana quickly added, knowing that her cosmic friend must again be very hungry and thirsty. She felt quite sad after speaking, a heavy and deep sadness weighing on her, as she knew this could be the last time they see and speak to the Phoenix, if their plans went well.

The sound of Sahana's voice shook Ganapathy and brought his mind back to the reality of their situation.

"Yes, it is important not to lose focus", he thought quietly to himself and looked down to check his watch. There was not much time to spare, less than an hour by his calculations, and they could not under any circumstances miss the moment the space wormhole

opened. This was the only chance the Phoenix would have to return to its planet.

Yash took the water and some food out of his backpack, but carefully left the curry hidden inside. He knew they would need that spicy curry a little later on to get a good look at the body of the Phoenix when using the catapult. The children handed the refreshments to their cosmic friend, as they had done before, and all three of them watched as the long bendy tube shot out from the space below the white balls and quickly sucked up the refreshments.

Only then did they hear the metallic voice ask in their thoughts.

"Who is with you?"

Their uncle took a step forward so he could see and be seen better.

"My name is Ganapathy. I am the great-uncle of Sahana and Yash", he went on to explain, not honestly knowing if the idea of an 'uncle' really meant anything to the Phoenix. Nonetheless, he continued with his explanation, "They came to me because they wanted to know how they could..."

"Help me get back to my planet in the Crater 2 galaxy?" interrupted the metallic voice, sounding quite anxious.

"Yes, that's right!", the cousins replied at the same time.

"And have you succeeded in finding a way for me to return?" asked the Phoenix.

Ganapathy, Sahana and Yash turned and took hold of the catapult, between them pulling and pushing it with effort into the small cave, so it could be seen. The two white balls of the Phoenix opened again and remained open, appearing to grow larger and rounder and brighter than the children had seen previously.

"This is a catapult", Ganapathy began to explain, "an instrument that is capable of throwing things a great distance", he added.

Yash positioned the catapult in front of the two white balls and tried to demonstrate how it worked, while Sahana illuminated everything with the torch.

"Do I have to stay there inside this... this catapult?" asked the metallic voice, uncertain of what was going to happen.

"Yes," Ganapathy continued, "but only at the correct moment in time. I have calculated exactly where and when the next space wormhole will appear, and we must make sure you are there when it opens."

Yash began walking around the cave with a tape measure in his hand, as Sahana followed his efforts with the torch, shining it where needed to help with his work. Guided by his uncle who called out numbers from his notes, Yash measured various distances,

rechecking everything twice, and made scratch marks on the floor and walls of the cave to help identify the exact spot where this cosmic event would soon take place.

“One metre... two metres...and a little more...three metres and a half...a bit more and that’s it...three metre and seventy centimetres. That’s the spot... it's right there”, they concluded, satisfied with their measurements, and thankful that Ganapathy had remembered to bring along a long stick to help them reach so high up the wall!

There was, however, still one more important thing to do.

“We must now position the catapult”, said their uncle, with a note of anxiety in his voice, as time was passing and the space wormhole would be opening in less than 15 minutes. Yash took hold of his uncle’s notes and called out the carefully calculated co-ordinates for the precise positioning and direction of the launch instrument. Ganapathy adjusted the catapult, centimetre by centimetre, until it was in exactly the correct location. With everything now ready, Yash reached inside his backpack and pulled out the pot of curry he had kept hidden. Removing the lid, he offered the spicy meal to the Phoenix.

“There's only five minutes to go! Eat the curry quickly!” ordered Yash, though really there was no need to say anything. On hearing the name of its favourite food, the Phoenix flicked open the two white

balls that were its eyes and focused on the pot held in the boy's hand. The bendy tube just below them sprang into action again and devoured the curry in just one go, sucking up every last drop of the hot sauce. Almost at once and just as before, everyone began hearing a bubbling gurgling sound that rippled through the body of the Phoenix, and it began to glow bright green once more. A shocked Ganapathy stood looking in amazement as the shape and details of its body were revealed and he could see everything, even the organs inside. Astounded by the strange beauty of the extra-terrestrial being now lit up in front of him, Ganapathy stood open-mouthed and very still, feeling so lucky to have known this being from another planet.

“Come on uncle, help us!” Yash yelled, trying to bring Ganapathy back to reality. Time was passing quickly and they needed to act now.

Sahana grabbed her uncle by the arm and the three of them approached the Phoenix. She gently took hold of one of the three-fingered hands, while Yash and her uncle carefully gathered up its many strange legs and lifted up the Phoenix by its round body. Together, they carried their cosmic friend over to the catapult and gently placed it on the device, ready to be launched.

“How many minutes left until the wormhole opens?” asked Sahana.

“TWO!” Ganapathy said loudly, almost shouting, unable to hide his anxiety.

Suddenly, at that precise moment, they began to feel the surge of a cold wind that whooshed around the small cave and ruffled through their hair. A strange vibration came from the floor of the cave, rising up their feet and legs with increasing strength. Soon after, the walls also began to tremble, as if a big earthquake were about to begin.

Ganapathy took Sahana's torch and used it to light up his watch so he could see the seconds tick by, while Yash and Sahana gripped each other tightly, steadying themselves as the wind and tremors grew stronger and stronger. The Phoenix lay motionless in the catapult, with the two white balls fixed wide open and what appeared to be something heart-shaped in the centre of its body, beating furiously, contracting and relaxing rapidly.

“THIRTY SECONDS!” shouted Ganapathy.

And everyone heard the metallic voice in their heads saying,

“Thank you! Thank you so much! I will never forget my Earthling friends!”

Nothing more was said. The sound of the seconds ticking by on the watch was drowned out by the noise of the whirlwind spinning

around them and the rumbling of rocks. Emotions too were mixing as fast as the wind, feelings overwhelmed by anxiety about the unknown, excitement to be witnessing this event, and sadness at the thought of never seeing their extra-terrestrial friend again.

“TEN, NINE...” Ganapathy began the final countdown.

“...EIGHT, SEVEN, SIX, FIVE, FOUR, THREE, TWO...”, they shouted together, positioned behind the Phoenix and preparing to initiate the launch of their cosmic friend towards the space wormhole.

Just before the number ONE was called, a white tunnel appeared above, spinning fast, just where Ganapathy had calculated. As the countdown arrived at “ONE”, the catapult was triggered and the Phoenix flew a few metres up into the air, entering and disappearing into the bright tunnel, which closed rapidly behind it, taking also the cold wind and tremors. The cave returned to quiet stillness and darkness.

The three friends walked out of the cave in stunned silence, leaving the catapult behind them. Arriving back at the location where Ganapathy's friend had remained, they noted the old man was still sitting in the exact same spot, motionless and lost in thought, seemingly not having moved at all. Ganapathy, Sahana and Yash remained very quiet, shocked and confused by what they had witnessed. They desperately hoped their plan had been successful,

that the Phoenix at that very moment would be travelling through the Universe, heading towards its planet. All three looked up at the sky briefly, hoping to see a sign, something to indicate that the space wormhole was indeed leading the Phoenix back home to the Crater 2 constellation, but they saw nothing but the twinkling of stars in the Jaipur skies.

Climbing up onto the elephant's back once again, they began the journey back down the mountain. Ganapathy questioned his friend about the cold wind and the trembling earth, but his reply surprised them all. Using few words as usual, he restricted himself to simply saying he had noticed nothing unusual. Sahana and Yash looked at each other, quite shocked, and for a fraction of a second, began to doubt everything that had happened that night on the mountain. The cosmic adventure they lived through really did seem more of a dream than reality.

CHAPTER 20

TIME TO LEAVE

A week later, the time for Sahana and Yash to say goodbye to each other once more was fast approaching. Their time in Jaipur had flown by and, although they would see each other again in just a few months, the moment of farewell was never easy. Sahana and her family would begin the journey home to Chennai that evening, so after lunch the cousins decided to visit Ganapathy's house one last time so Sahana could say farewell. Yash knocked three times on the door and waited for permission to enter. As usual, they found their uncle in his office, sitting in his favourite armchair and almost submerged by his piles of books. The young friends had not visited since that night in the small cave near Fort Amer, where the Phoenix had been catapulted back to its own galaxy. Sahana's last week in the state of Rajasthan had been very busy, with the family wishing for final visits to the famous temples, palaces and markets of Jaipur, before returning south.

“Do you really think the Phoenix returned safely to its planet?” asked Sahana, in a voice reflecting her concern for their new friend.

"I imagine so," Ganapathy said slowly, looking at the children over the rim of his spectacles, before continuing, "We followed our plan step-by-step and I'm sure my calculations were correct. The space wormhole appeared right where indicated."

"I miss the Phoenix," muttered Yash, trying hard to hide his tears.

"Me too," thought Ganapathy, who classified that night as being the most important adventure of his life.

Their uncle stood up, set down his book on the table and approached his great-niece and great-nephew, hugging them both. The three held on to each other in that embrace for quite some time, glued together, each thinking of the Phoenix and feeling more united than ever following their daring adventure. Sahana reached up and kissed the old man gently on each cheek, promising to return and visit him as soon as possible.

Hugs, kisses and tears also marked the departure of Sahana and her family as they prepared to leave for the train station that evening. The cousins promised to stay in touch and talk whenever possible to make plans for the new adventures they would have when they met again.

As for their cosmic adventure with the Phoenix, the friends made a promise, a soulmates' pact, vowing never to tell anyone else about

their cosmic friend, the space wormhole, the catapult, and their adventures in the small cave near Fort Amer. The secret of the dark stone would remain a mystery forever.

Sahana slept deeply as the train rattled its way along the rail lines between Jaipur and Chennai. She was exhausted from all the sightseeing she and her family had crammed into that last week of holidays, and also from the emotional tears she had cried saying goodbye to Yash. Most of all though, she was drained by the excitement and thrills of the adventure they had lived with Uncle Ganapathy and the Phoenix.

As the train continued on its journey through the night and into the dawn of a new day, Sahana was dreaming of the Phoenix. Her cosmic friend seemed very happy to be back on planet XPC23145 in the Crater 2 galaxy, a place that looked very colourful and beautiful in her dream.

“Thank you again”, she heard the metallic voice say, “I am fine and happy to be back in my world, but I do miss my Earthling friends... oh... and curry!” the Phoenix added with a laugh.

Sahana woke up suddenly with the jolting of her carriage, as the train changed from one track to another with a bump. She sat quietly for a moment, feeling confused.

"Was that a dream or an intergalactic communication from the Phoenix?" she asked herself silently.

Her doubt was short-lived, however, and her question answered just a few days later during her first phone call with Yash. Her cousin told her of a dream he had on the night she left for Chennai, describing the same vision of the Phoenix on his planet and hearing the metallic voice saying words of thanks. This was enough to convince Sahana and Yash that the Phoenix was well and had not forgotten their adventure or the enjoyment of eating curry!

Moreover, the cousins now knew that whenever they wanted to talk to the Phoenix, they just needed to close their eyes and let the magic of dreams guide them through the Universe until they reached planet XPC23145 in the Crater 2 galaxy.



THE END

“I started reading the story last night and couldn’t put it down. It is a jewel; a gem. Beautifully written, exciting and creative, with plenty of space knowledge to tease the imagination.”

JOAN VERNIKOS - Former NASA Director of Life Sciences

YASH & SAHANA LOVE AN ADVENTURE!

Join them in India, as a mysterious dark stone leads them to a strange being in need of help. Guided by a wise old man Ganapathy, can Yash & Sahana use their knowledge of the stars to send their new friend on an intergalactic journey home?



innovaspace.org

ISBN 978-1-8362283-4-7



9 781838 228347