THE COSMIC DIARY OF A FUTURE SPACE EXPLORER

TIM PEAKE
With STEVE COLE

Illustrated by Max Rambaldi



Introduction from Tim Peake

When I first looked up at the night sky, my mind was full of questions. Where did we come from? How did we get here? What else could be out there? What secrets of the universe are waiting to be discovered?

Humans have been asking these questions for thousands of years, long before we peered through the first telescope. As our technology has improved, we have been able to see further into space. We have been mesmerised by an incredible universe full of stars, galaxies, black holes, comets and . . . perhaps the most exciting objects of all . . . other **PLANETS**. New worlds!

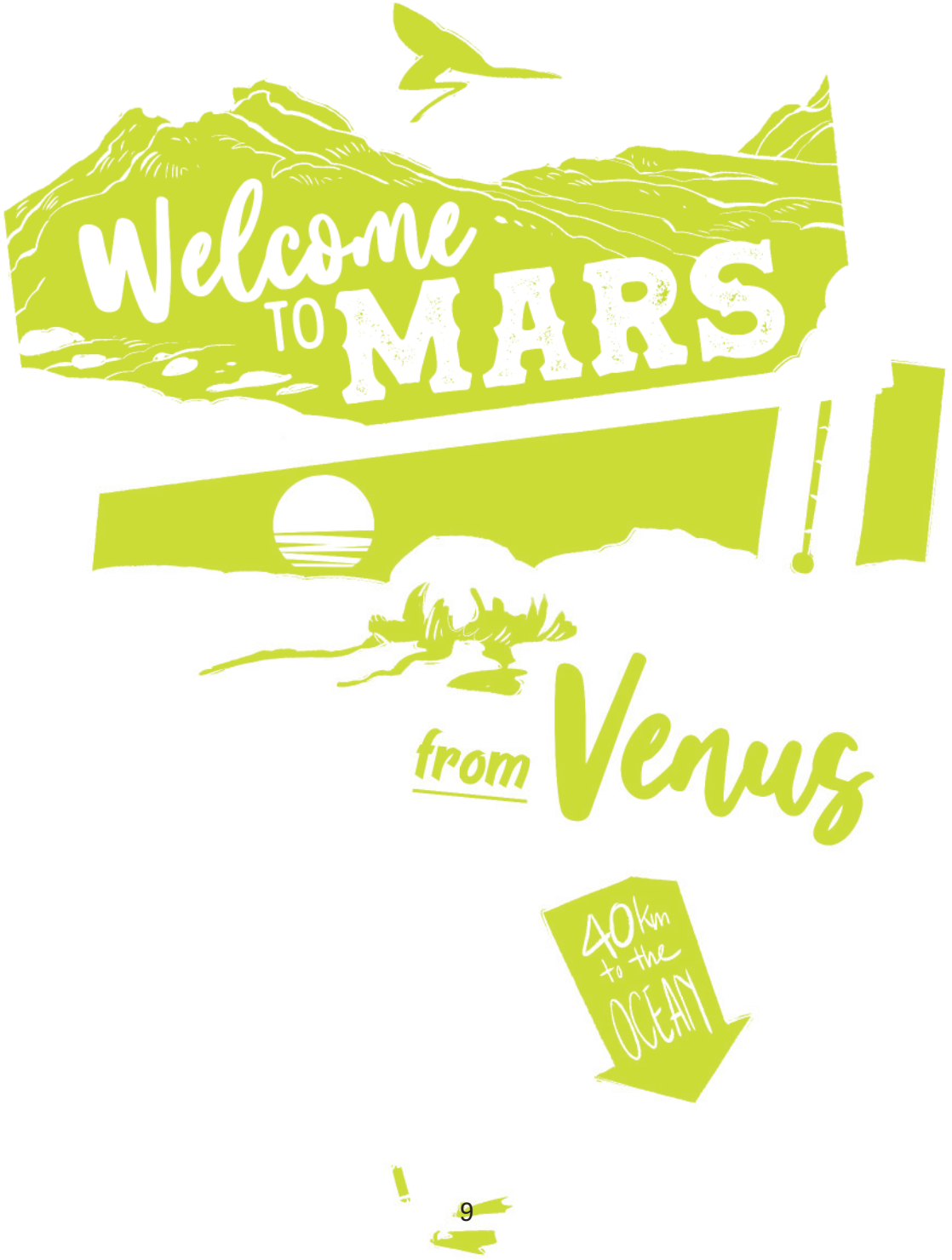
What might we find on these new worlds – could life exist elsewhere in the universe? And could we find another planet where humans might happily survive? In 2011, NASA's Kepler Space Observatory team estimated that there were at least **50 BILLION** planets in the Milky Way alone, and on at least **500 MILLION** of those planets, liquid water might exist. Where there is liquid water, life as we know it has a chance.

We have learned so much and yet we still have so much to discover.

But if there's one thing we humans are pretty good at, it's **exploring**. If there's a mountain to climb, a cave to explore or an ocean to cross, there is always someone determined to get there first and find out what lies beyond. On 12 April 1961, Russian cosmonaut Yuri Gagarin became the first human to travel to space, paving the way for US astronauts Neil Armstrong and Buzz Aldrin to stand on the surface of the Moon just a few years later. Can you imagine what that must have felt like – looking back at Earth instead of standing on it . . . realising just how beautiful and special our **own** planet is?

By exploring, we discover new things. We learn more about the universe around us and more about ourselves. And the more knowledge we gain, the better equipped we are to solve problems here on Earth – for instance, studying the runaway greenhouse effect on Venus can help us avoid a similar fate. One day we may set sail on a voyage to planets outside our solar system, or even to other galaxies. But right now, we have our sights set on some of our closest neighbours. And they are far more exciting places than you might first think.

Do you want to visit a volcano two and a half times the height of Mount Everest? Look no further than Olympus Mons on Mars. How about a storm more than 16,000 km across – bigger than the diameter of Earth? You'll need a ticket to Jupiter. Somewhere nice and hot for a holiday? Try Venus – it's a toasty 475 degrees Celsius, hot enough to melt lead! Too much? Then perhaps cool off on Enceladus, one of Saturn's moons. You could go for a swim there, but good luck – the ocean lies under as much as 40 km of ice in some parts.


Welcome
TO
MARS
from Venus
40km
to the
OCEAN!

But one day, sooner than you think, humans will be making these journeys. We are already close to returning to the Moon, and the first human mission to Mars will follow soon after. But to get there, we will need space explorers – astronauts from all walks of life who are determined to find out what lies beyond that next horizon. And maybe YOU will be one of them!

It's such an exciting time to be a part of this new era of space exploration. There are still many things we need to learn and problems to solve, but this book will guide you through some of the most fascinating places we hope to visit and give you some clues as to how we might get there.

No one knows for certain what will really happen, but until then, this book is our best guess at what future space exploration might be like, using the latest scientific discoveries. So . . . read on to discover some of the amazing technology and imagine what it might be like to visit some of the most exciting places in space. **Are you ready to come with me on my imagined journey through our solar system?**

But before we wave goodbye to planet Earth and start this daring adventure – into space and into the future – we're going to need some help, and I think I know just the thing we're looking for . . .

Greetings from HALLEY – your robot helpmate

Hi there! I'm HALLEY, and I'm an artificial human designed to help astronauts explore the far reaches of our solar system. You might think I'm named after the famous comet that visits Earth about every 76 years – Halley's comet. But I have been built to last for much longer than that! In fact, I like to think my name stands for **Helping Astronauts, Life-Long Explorer – YIPPEE!** I can't wait to help humans build new homes all around the solar system. Yippeeeeeeeeeeeeeeee!

I'm so happy to be joining you on this amazing journey of space exploration. Our solar system is full of incredible places to visit and there are so many **fascinating** things to discover. I can't wait to get started; my computer chips are **fizzing** with so many questions, it's hard to know where to start . . . Maybe:

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Meet the Experts

at SPACE MISSION CONTROL



Astronaut Tim

Hi there, Tim here! I'm a real-life astronaut and I was the first British astronaut to visit the International Space Station (ISS). I'm often asked about what space travel will be like in the future – and through this book I will share my vision with you! And no matter how incredible it seems, don't think that these things can't happen. None of us know what amazing space discoveries will be made in the years ahead, but the journey you'll go on in this book is a best guess using real science from where we stand in the 2020s . . . When you're older, who knows where we might have travelled to? What other planets we might have explored? Or who the astronauts of the future will be? Maybe in years to come, children will be reading a book written by a future astronaut like you . . .

One thing is for certain though – we won't be able to make these journeys without an incredible team of experts supporting us from Earth. There are hundreds of people working at Mission Control – let me introduce you to some of them . . .

Flight Director

Hi, I'm Mission Control's Flight Director. I lead a team of people including engineers, scientists and technicians, who are here to give advice, help plan your missions and keep you safe during your space travels.





Flight Surgeon

Hello, I'm the Flight Surgeon, and I'm here to help you stay fit and healthy in space – in body AND mind.



Psychologist

Hi, I'm the team Psychologist. Space travel involves long journeys cooped up in small spaces, which can be stressful for human beings – so I'm here to help astronauts cope with life on a spaceship!

Chef

Hello, I'm the team Chef – and sometimes a gardener! I'll make sure your meals in space are healthy and tasty. You will grow some of your own food during your space travels, and I'll help you with that as well. Bon appetit!



Design Engineer

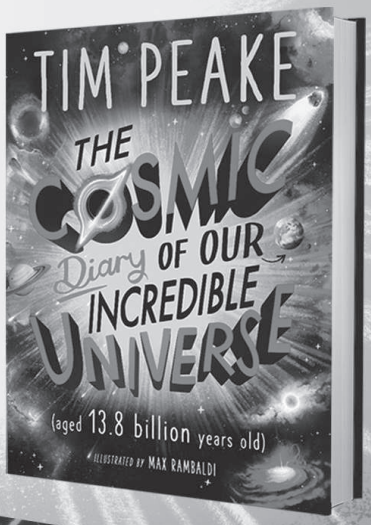
Hi, I'm the Design Engineer. I work with other engineers to imagine, design and build spacecraft and spacesuits – and all the other equipment that gets you into space and keeps you safe. It's an incredible job that literally helps shape humanity's future among the stars!





Out-of-this-world books from astronaut TIM PEAKE for readers 9+

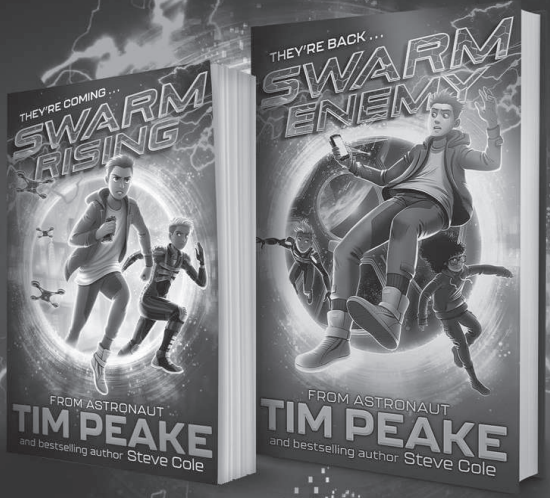
EVERYTHING you need to know about **OUR AMAZING UNIVERSE**



Plus an action-packed adventure series, written with bestselling author Steve Cole

'One of the most exciting books I've ever read . . . like being with your friends in a fast-paced computer game!'

REVIEWER, AGED 11



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