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THE COSMIC Diary OF OUR INCREDIBLE UNIVERSE

TIM PEAKE

With STEVE COLE

Illustrated by Max Rambaldi

wren & rook

If found please return this book to:

Small planet travelling around a middle-aged star called the Sun

Seven other planets also spin around the Sun, along with asteroids, comets and dwarf planets

The Solar System is surrounded by this distant bubble of icy objects

The Sun is one of about 800 million stars in this section of space

This is our galaxy – a group of at least 100 billion stars and 100 billion other planets

The Earth
Solar System
Oort Cloud
Orion Arm
Milky Way
Local Group
Virgo Supercluster
Laniakea Supercluster
The Universe

About 80 small galaxies spin slowly around the Milky Way and the galaxy next door, Andromeda

This contains about 100 small groups of galaxies including the Local Group

Pronounced 'lah-nee-ah-keh-ah' this huge structure contains 100,000 galaxies

Beyond these superclusters, the Universe contains at least 2 trillion other galaxies!

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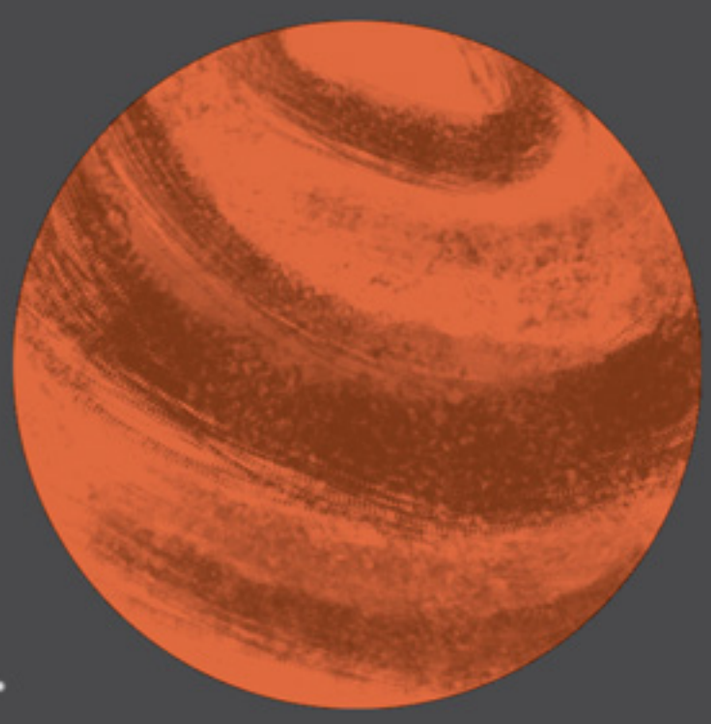
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Introduction

Imagine floating in space, with no forces acting on your body. Your muscles are completely relaxed and there is no sound, except for a small hum from a pump sending oxygen into your spacesuit, keeping you alive. It's the most peaceful feeling imaginable.





Over one shoulder you see a **beautiful planet**, full of colour: blue oceans, white clouds, orange deserts and green forests. That's Earth. That's where you were born. The planet itself looks alive – electrical storms light up the night sky, volcanoes leave trails of smoke, **swirling hurricanes** form over **warm oceans** and the eerie lights of the aurora dance over the poles. It's comforting to look at. It's home.

You look over the other shoulder. It's black. In fact, it's the blackest black you have ever seen. It's so dark you feel like you are falling into it, being sucked towards an **infinite black universe**. It's not comforting to look at. In fact, it's quite scary.

As you **effortlessly** orbit the Earth you pass from daylight to night. The Sun quickly sets and suddenly the Universe comes alive. Stars appear over the horizon and you can see the familiar planets of Venus, Mars, Jupiter and Saturn. Hundreds of billions of stars now come into view, shining their pinpricks of light through the blackness.

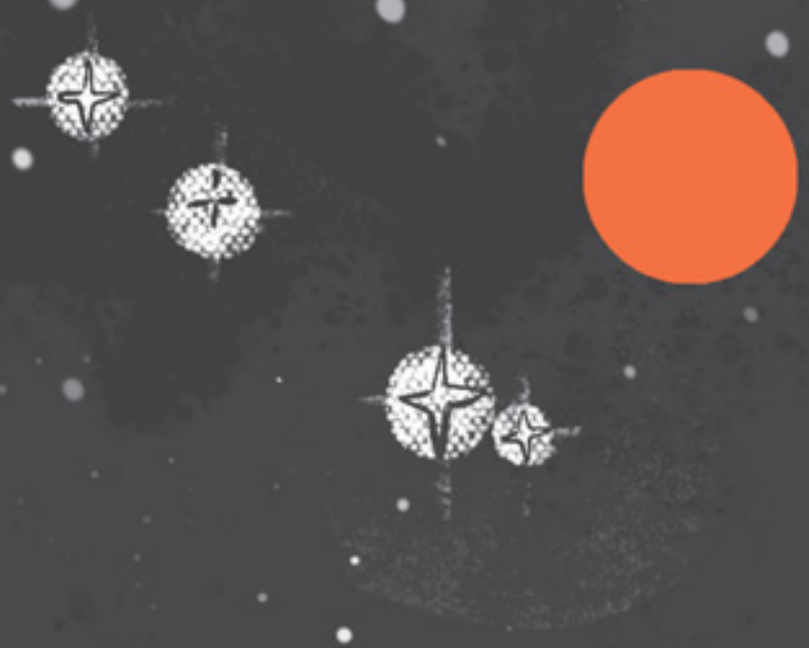
Your mind is trying to make sense of what you are seeing.
On the one hand, looking out into endless space, you feel so **incredibly small**, so insignificant.

After all, **your planet** is just a small lump of rock orbiting a very ordinary star.

We call that star ‘the Sun’ like it’s something special. But in fact the Sun is simply one of at least **100 billion** stars that make up the Milky Way – a very average-sized galaxy, and one of an estimated **2 trillion galaxies** that exist.

The Earth and all its neighbours orbiting the Sun – our entire solar system – could be **snuffed out** and, frankly, the Universe would barely even notice the difference.

Or would it?



To answer that, the first thing we need to do is travel back in time. So jump in, hold on tight, wind the clock back **13.8 billion years**. All the way to the beginning, and **then** pop back just a little bit further. Things are going to get pretty weird, because where we are going it seems that absolutely **NOTHING** exists.



No light.

No sound.

No time.

No space.

No school.

Just, yes – you got it . . .

NOTHING.