



# COMETS, METEORS, AND ASTEROIDS

Voyagers of the Solar System



Ellen Lawrence

[ Intentionally Left Blank ]



# COMETS, METEORS, AND ASTEROIDS

## Voyagers of the Solar System

by Ellen Lawrence

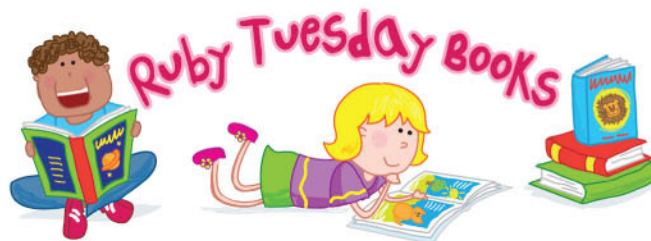
**Consultants:**

**Suzy Gazlay, MA**

Recipient, Presidential Award for Excellence in Science Teaching

**Kevin Yates**

Fellow of the Royal Astronomical Society





Published in 2014 by Ruby Tuesday Books Ltd.

Copyright © 2014 Ruby Tuesday Books Ltd.

All rights reserved. No part of this publication may be reproduced in whole or in part, stored in any retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher.

Editor: Mark J. Sachner

Designer: Emma Randall

Photo Credits:

European Space Agency: 20–21; NASA: Cover, 6–7, 8, 10–11, 13, 14, 15 (bottom left), 19 (top), 19 (bottom right); Public domain: 4–5, 15 (bottom right), 16, 19 (bottom left); Ruby Tuesday Books: 9, 12, 22; Shutterstock: Cover, 17, 18; Superstock: 15 (top).

Library of Congress Control Number: 2013939990

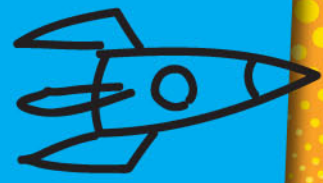
ISBN 978-1-909673-23-6

Printed and published in the United States of America

For further information including rights and permissions requests, please contact our Customer Service Department at 877-337-8577.



# Contents



A Bright Light in the Sky ..... 4

Space Rocks ..... 6

The Solar System..... 8

Asteroids..... 10

Asteroid Giants..... 12

Meteorites ..... 14

Dangers from Space..... 16

Giant Space Snowballs..... 18

A Mission to a Comet..... 20

Get Crafty: Comets and Asteroids Game.....22

Glossary .....23

Index .....24

Read More.....24

Learn More Online.....24

Words shown in **bold** in the text are explained in the glossary.





# A Bright Light in the Sky



Imagine that you're out walking at night.

You look up into the sky and suddenly spot something bright zooming across the darkness.

It looks like a **star**, but it's moving fast.

Then the flash of bright light disappears.

You have just seen a **meteor** streaking across the night sky!



A meteor

People sometimes call meteors shooting stars because they look like stars zooming across space. Meteors aren't really stars, though.





# Space Rocks



The meteor you saw in the sky started out as a rocky space object called a **meteoroid**.

Meteoroids are small pieces that have broken away from **comets** or large space rocks called **asteroids**.

Most are tiny, like grains of sand, but some can be as large as 3 feet (1 m) wide.

When a meteoroid gets close to Earth, it flies into the **gases** surrounding our **planet**.

This layer of gases is called the **atmosphere**.

Once inside Earth's atmosphere, the meteoroid burns up and creates a bright streak of light.

Millions of meteoroids fly into Earth's atmosphere and burn up every day. Some are made of rock, while others are a mixture of rock and metal.





**Atmosphere**

**A meteor**

**Earth**

This photo shows a meteor in Earth's atmosphere. The photo was taken by an astronaut on the International Space Station.

# Index

## A

asteroid belt 8–9, 10,  
12, 16  
asteroids 6, 8–9, 10–11,  
12–13, 14, 16  
atmospheres 6–7, 14

## C

Ceres 12–13  
Chicxulub, Mexico 17  
Comet Holmes 19  
comets 6, 8–9, 18–19,  
20–21  
craters 16–17

## D

dwarf planets 9, 13

## E

Earth 6–7, 8–9, 12–13,  
14–15, 16–17, 20

## H

Hoba meteorite 15

## M

meteorites 14–15  
meteoroids 6–7, 8,  
10–11  
meteors 4–5, 6–7

## P

planets 8–9, 12–13

## R

*Rosetta* 20–21

## S

shooting stars 5  
solar system 8–9  
Sun, the 8–9, 10, 12, 16,  
18–19, 20

## V

Vesta 12–13, 14

## Read More

**Hughes, Catherine D.**  
*First Big Book of Space*  
(*National Geographic Little*  
*Kids*). Washington, D.C.:  
The National Geographic  
Society (2012).

**Rosa, Greg.** *Comets*  
*and Asteroids: Space Rocks*  
(*Our Solar System*).  
New York: Gareth  
Stevens (2011).

## Learn More Online

To learn more about comets, meteors, and asteroids, go to  
[www.rubytuesdaybooks.com/comet](http://www.rubytuesdaybooks.com/comet)



[ Intentionally Left Blank ]



# COMETS, METEORS, AND ASTEROIDS

## Voyagers of the Solar System

Millions and sometimes billions of miles from Earth, icy comets and space rocks called meteoroids and asteroids are circling the Sun. Often we see them as bright lights in the sky, and sometimes they crash into planets and moons.

★ Let's meet the voyagers of the solar system! ★

### Titles in this series

#### COMETS, METEORS, AND ASTEROIDS

Voyagers of the Solar System

#### EARTH

Our Home in the Solar System

#### JUPITER

The Giant of the Solar System

#### MARS

The Dusty Planet

#### MERCURY

The High-Speed Planet

#### THE MOON

Our Neighbor in Space

#### NEPTUNE

The Stormiest Planet

#### PLUTO

and the Dwarf Planets

#### SATURN

The Ringed Wonder

#### THE SUN

The Star of Our Solar System

#### URANUS

The Sideways-Spinning Planet

#### VENUS

The Hot and Toxic Planet

