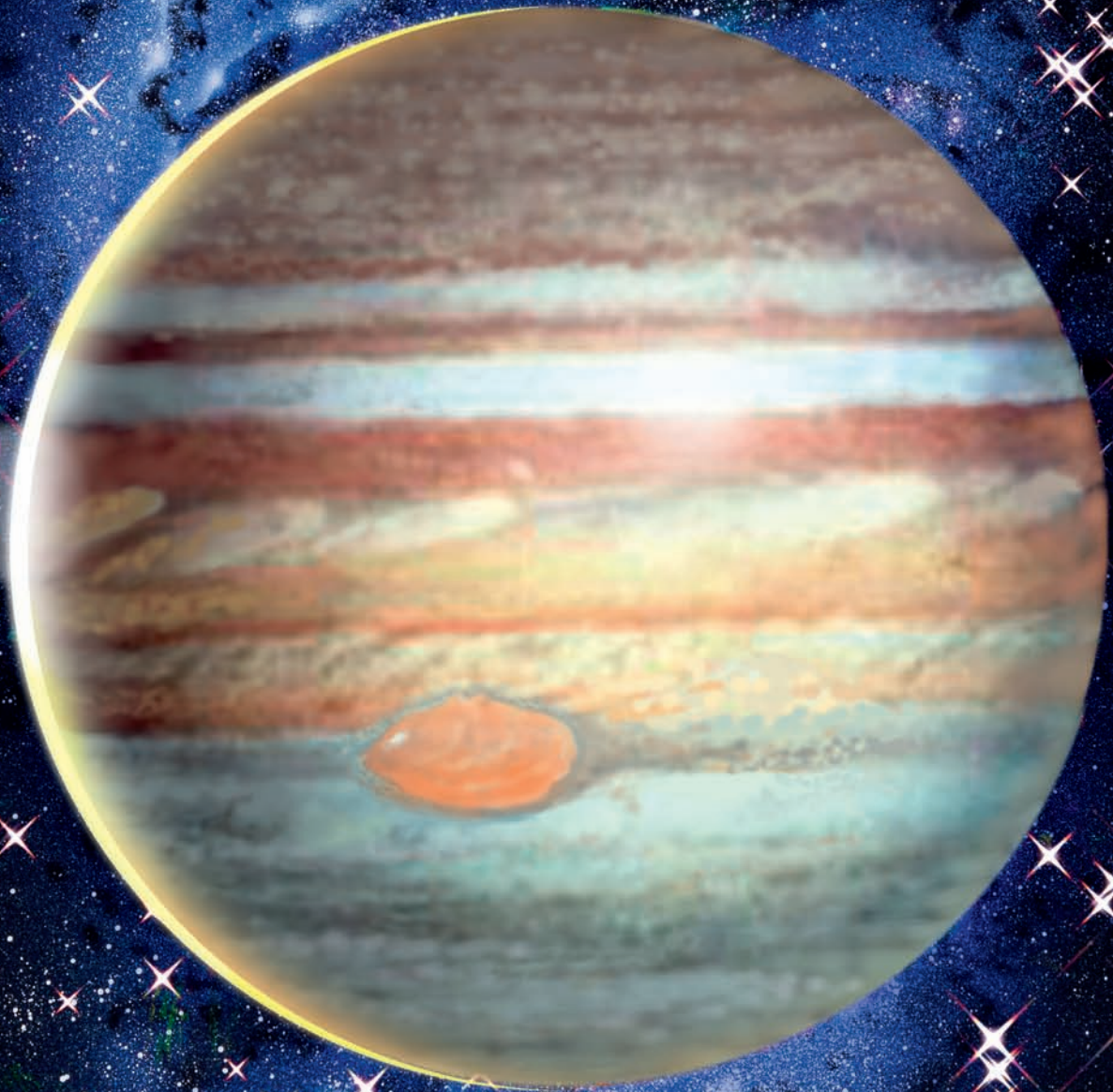


SPACE!

JUPITER



GEORGE CAPACCIO

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Benchmark
New York



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All websites were available and accurate when this book went to press.

Library of Congress Cataloging-in-Publication Data

Capaccio, George.

Jupiter / by George Capaccio.

p. cm. — (Space!)

Summary: "Describes Jupiter, including its history, its composition, and its role in the
solar system"—Provided by publisher.

Includes bibliographical references and index.

ISBN 978-0-7614-4555-5

1. Jupiter (Planet)—Juvenile literature. I. Title.

QB661.C37 2008

523.45—dc22

2008037276

Editor: Karen Ang

Publisher: Michelle Bisson

Art Director: Anahid Hamparian

Series Design by Daniel Roode

Production by nSight, Inc.

Front cover: A computer illustration of Jupiter

Title page: An image of a volcanic eruption of Io, one of Jupiter's moons.

Photo research by Candlepants Incorporated

Front cover: Chris Bjornberg / Photo Researchers Inc.

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Super Stock: Digital Vision Ltd., 1, 8, 14, 15; Pixtal, 58. Getty Images: James Stevenson,
4, 5; Gary S Chapman, 10; 34, 43; Time & Life Pictures, 31, 45, 50; Antonio M. Rosario,
56. Photo Researchers Inc.: Detlev van Ravenswaay, 17; Shigemi Numazawa / Atlas Photo
Bank, 22; Mark Garlick, 25; Science Source, 53. Alamy Images: Science Photo Library, 21.
NASA: JPL, 26; JPL/University of Arizona, 30; JPL/Cornell University, 32; 46, 48, 47;
<http://juno.wisc.edu>, 54. AP Images: NASA, 28, 36, 37, 52, 57; George Frey, 41. The Image
Works: Hervé Champollion / akg-images, 38; SSPL, 39.

Printed in Malaysia

123456

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EXPLORING JUPITER

Long before the invention of telescopes or the age of space exploration, many people knew there were other planets besides Earth. The word “planet” comes from the Greek language and means “wanderer.” To ancient observers of the heavens, the five known planets were wandering objects. Unlike stars, the planets shone with a steady light and changed their positions throughout the year. The largest of the known planets seemed to rule the night sky. The ancient Romans called this planet Jupiter, their name for the king of gods. It is a fitting name for the largest and most powerful planet in our Solar System.

Nobody knows exactly when Jupiter was discovered. However, scientists and historians do know that the Italian astronomer Galileo discovered Jupiter’s four largest moons. In 1610, he

A NASA drawing shows what *Pioneer 10* would look like when it passed by Jupiter in 1973.

JUPITER



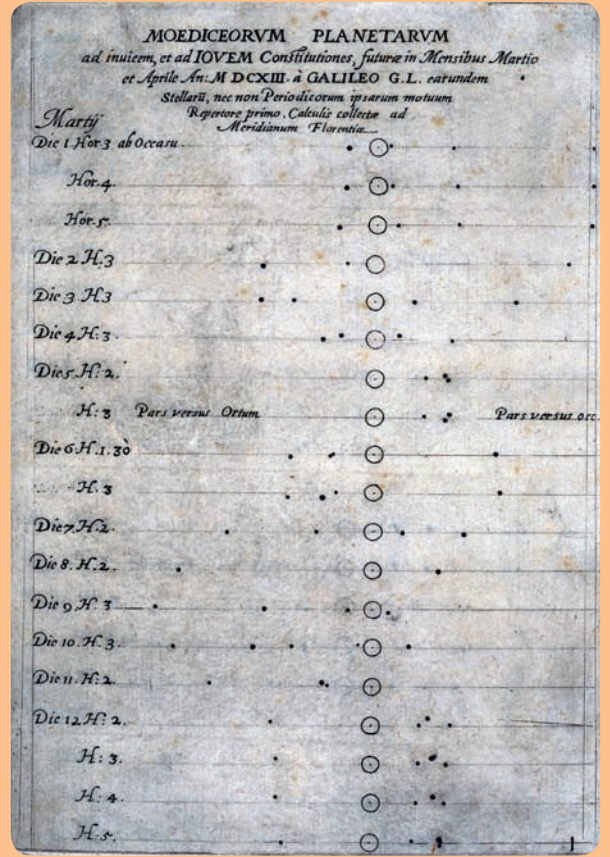
In Greek mythology, the king of gods was known as Zeus. However, the ancient Romans' king of gods, Jupiter, was used as the official name for the largest and most powerful planet in our Solar System.

spotted four objects hovering near the planet. He saw that these four objects were moving along with Jupiter. After several weeks had passed, Galileo realized they were actually moons in orbit around Jupiter. Many scientists think that Galileo's discovery was one of the most important in the history of astronomy.

Galileo published his findings in a book known in English as the *Starry Messenger*. Religious authorities who read Galileo's book thought his ideas went against religious teachings. This did not stop Galileo from continuing his scientific work. But a

rival astronomer, Simon Marius, claimed that he had discovered the moons of Jupiter one month before Galileo. The question over which man had been the first to spot these moons became one of the earliest controversies involving Jupiter. Simon Marius might have been right. But because he did not publish his findings until much later, the credit goes to Galileo.

However, Marius gave names to Jupiter's four largest moons. Galileo had wanted to number them I through IV, using Roman numerals. In 1614 Marius came up with names from mythology. He called three of the moons Io, Callisto, and Europa. These were the names of three Roman goddesses or nymphs. Jupiter, the lord of the gods, was supposed to



Around 1613, Galileo made these drawings to show his observations of Jupiter's moons.

JUPITER

have loved all three. Marius called the fourth moon Ganymede, the name of a handsome young prince in Greek mythology. The moons' names are still in use today.

EXPLORING THE PLANET

Four centuries passed before scientists attempted a serious study of Jupiter. In the 1960s astronomers knew that our Solar System's largest planets were coming into alignment. This meant that the orbits of Jupiter, Saturn, Uranus, and Neptune would put them in line with each other. It was an ideal time to attempt a mission to all four planets. The alignment would start to fade by the end of the 1970s, and would not happen again for another 176 years.

The biggest challenge for scientists was to design a spacecraft that could reach all four planets before the alignment had ended. A University of California in Los Angeles graduate student named Michael Minovitch came up with a way to do just that. His plan was to use the gravity of each planet as a source of energy to power the spacecraft. The gravitational force would act like a slingshot, propelling the craft further along its way, at an increased speed. After visiting Neptune, the outermost planet, the craft would leave our Solar System forever and disappear into interstellar space. In 1965, another graduate student, Gary Flandro, came up with a slightly different plan. He called it the