

The Origin of the World

Cosmos or Chaos?

Wiesław M. Macek

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FIRST EDITION



**Wydawnictwo Naukowe
Uniwersytetu Kardynała Stefana Wyszyńskiego**

Warszawa 2020

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Warszawa 2020

Referees: *Prof. dr hab. Jan Błęcki*

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Corrections: *Philip Steele*

Cover: *Wojciech Bryda*

On cover *The human in space*: NASA to launch new telescope in 2023
to investigate the Universe

ISBN 978-83-8090-686-0

e-ISBN 978-83-8090-687-7

This book was compiled in L^AT_EX 2_ε using cambridge7A.cls 2011/02/28, v3.00 gamma

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Printed by Daniel Krzanowski, volumina.pl
ul. Ks. Witolda 7-9, 71-063 Szczecin, Poland

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Preface

Cosmos is a word used to describe the reality of the existing world. The original Greek *κόσμος* can also denote pattern or even order, which suggests that science can facilitate in grasping ultimate explanations of the origin of the Universe. Conversely, chaos (*χαός*) denotes a state of total disorder, although in contemporary chaos theory this term usually refers to a hidden order resulting from nonlinear dynamics. This book argues that together with the fractal geometry of nature these novel concepts used in mathematics and the natural sciences may be useful for a better understanding of the origin of the world.

Part One: *Science* begins with a chapter introducing some basic philosophical and Biblical concepts of the origin of the world. The Standard Model of the Evolution of the Universe based on the Standard Model of Forces is discussed in Chapter 2, together with selected models of the creation of the world based on quantum theory and modern mathematics. Chapter 3 focuses on nonlinear chaotic dynamics and fractals in a search for implications of an unknown nonlinear law related to a hidden order responsible for the creation of the Cosmos at the Planck epoch. Part Two: *Religion* considers the relation between science and religion in Chapter 4, while Chapter 5 is devoted to the question of the meaning of the Universe and the meaning of life. The most salient points of this monograph are briefly summarized in Chapter 6. The Standard Model of elementary interactions and the structure and history of our Universe are illustrated in Appendices A and B, respectively. Finally, subject and authors indexes with glossary terms are provided at the close of the book on page 89.

Wiesław Macek

Warsaw, March 2020

Abstract

This monograph considers the evolution of the Universe according to the standard Big Bang model, quantum models of creation, and the recent theory of nonlinear dynamics, including deterministic chaos, fractals, and multifractals. It shows that by looking for order and harmony in the complex real world surrounding us these modern studies give new insight into the most important philosophical issues beyond classical ontological principles, e.g., by providing a deeper understanding of the age-old philosophical conundrum: *why does something exist instead of nothing?* The book argues that this exciting question is a philosophical basis of matters that influence our lives. In the belief that the concepts of modern science can bridge science and religion, this treatise discusses the consequences of science and religion for the meaning of human life in the vast Universe. In fact, in the mathematical-natural sciences we ought to look for the meaning of the world in the mystery of rationality; for the meaning of the Universe justifies its existence. This scientific view offers meaning and hope to human existence. Therefore, it seems that both science and religion provide important contributions that shape the feelings we experience in the world in which we are immersed.

Keywords: creation, existence, world, reason, science, religion, theology, reality, meaning

PART ONE

SCIENCE

PART TWO

RELIGION

