

The background of the slide is a vibrant, colorful nebula or star-forming region. It features a mix of blue, purple, and green hues, with numerous bright, multi-colored stars and glowing clouds of gas and dust. The overall scene is dynamic and visually rich, typical of astronomical imagery.

# Cosmic Origins

Lecture Course Minor Astronomy  
University of Groningen  
November 2016-January 2017



# Exam

- |   |     |
|---|-----|
| 1. Written exam (Jan. 23, 2016)           | 60% |
| 2. Report on specific topic (20-25 pages) | 25% |
| - in groups of 2                          |     |
| - deadline report: Mar. 1, 2016           |     |
| 3. Werkcollege/Tutorial assignments       | 15% |

# Topics/Agenda I.

- **Lecture 1, November 16**

Introduction

Cosmology, the Search for the Origin of our World  
the Fundamental Questions of our Existence

- **Lecture 2, November 18**

Heavenly Rhythms: from Awe to Calendar

- **Lecture 3, November 23**

Gods and Myths: Genesis of our World

- **Lecture 4, November 25, tutorial**

the Fundamental Cosmological Questions: society responds ...

- **Lecture 5, November 30,**

Cosmology: the philosophy of our world

- **Lecture 6, December 2**

Order in the Cosmos:  
how the Babylonians and Greeks rationalized the heavens

# Topics/Agenda II.

- **Lecture 7, December 7**

the Cosmos Mechanized:  
a case study: the Antikythera Mechanism

- **Lecture 8, December 9**

Tutorial: Circles, Epicycles and Ellipses ...

- **Lecture 9, December 14**

the Scientific Revolution  
the Cosmos Mechanized

- **Lecture 10, December 16**

Kant to Hubble:  
on Island Universes and the Size of our World

- **Lecture 11, December 21**

the Universe Expands !

- **Lecture 12, December 23**

Tutorial: a Cosmic Debate between Worldviews

# Topics/Agenda III.

- **Lecture 13, January 11**

the Dynamical Universe  
Einstein, Gravity and the Dynamics of our Universe

- **Lecture 12, January 13**

the Hot Big Bang:  
journey to the very first moments of our Cosmos ...

- **Lecture 14, January 18**

the Cosmic Web  
the emergence of complexity in the Universe

- **Lecture 16 January 20**

Tutorial: the self-conscious Universe

# Literature

- Lecture Notes (ppt slides etc.)
- Cosmos,  
an illustrated history of astronomy and cosmology  
John North, 2<sup>nd</sup> ed., 2008, Univ. Chicago Press (paperback)
- Cosmology, the Science of the Universe  
E. Harrison, 2<sup>nd</sup> ed., 2000, Cambridge Univ. Press
- Conceptions of Cosmos:  
From Myths to the Accelerating Universe: A History of Cosmology  
H. Kragh, 2013, Oxford Univ. Press
- the History and Practice of Ancient Astronomy  
J. Evans, 1998, Oxford Univ. Press
- Ancient Cosmologies  
ed. C. Blacker, M. Loewe, 1975, George Allen & Unwin Ltd.