

2021-22 T1

Perspectives in Astronomy and Astrophysics

Chapters

1. The universe at different scales
2. The Earth and the sky
3. Lunar phases, tides and eclipses
4. Theory of motion and gravitation
5. The Solar System
6. Measuring stars
7. Birth of stars
8. Structure of stars
9. Post-main-sequence evolution
10. The death of stars
11. Relativity
12. Neutron stars
13. Black holes

General information

The manuscript and slides were modified from the course materials of *Introduction to Astronomy and Astrophysics* taught in The Chinese University of Hong Kong. Over the years, the course materials have been contributed by

Dr. Cheng, K. M.

Prof. Chu, M. C.

Dr. Leung, P. K.

Dr. Pang, K. M.

Dr. Tong, S. S. and

Dr. Wong, W. H.

Students who are interested in non-mathematical discussions of the topics concerned may refer to

- Michael A. Seeds and Dana Backman, *Foundations of Astronomy*;
- Eric Chaisson and Steve McMillan, *Astronomy Today*; and
- Roger Freedman and William J. Kaufmann, *Universe*.

Those who are interested in mathematical derivations may refer to

- Carroll & Ostlie, *An Introduction to Modern Astrophysics* (2nd ed.), 2007;
- Maoz, *Astrophysics in a Nutshell*, 2007;
- Lang 13, *Essential Astrophysics*, 2013; and
- Ryden & Peterson, *Foundations of Astrophysics*, 2010.

The reference, Carroll & Ostlie (2007), is particularly comprehensive and thus is suitable for competent students who are interested in astrophysics.

In addition, astronomy is advancing rapidly, there are significant changes in recent years, including progress in human understanding of cosmology since 1998, a new definition of planets proposed in 2006, and detections of gravitational wave in 2015. Hence, one should be careful when reading an old edition of an astronomy book.