Subject :

Stars and the Milky Way

Title :

What stars tell us about the history of our Galaxy

Lecturer :

Miho N. Ishigaki

Outline :

Stars and stellar populations are the major constituents of galaxies in the Universe. Low-mass stars like the Sun can live for billions of years and thus can be used as a fossil record of the early universe. Chemical compositions in such stars with different ages or overall metal fractions can tell us how large galaxies like our own Milky Way have formed and evolved. Also, they can be used to identify astrophysical sights responsible for creating different chemical elements in the periodic table over the history of the Galaxy.

Learning objectives :

With this lecture, the students will learn:

(1) The basic structure and evolution of stars with various masses.

(2) Observational techniques to measure the physical properties of stars. We will particularly focus on the surface chemical composition of stars.

(3) How the stellar chemical compositions can be interpreted in terms of the formation and the chemical evolution of our Galaxy.

Textbooks and references :

Carroll, Bradley W, “An Introduction to Modern Astrophysics”

David, F. Gray, “The Observation and Analysis of Stellar Photospheres”