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 fundamental building blocks of galaxies throughout the Universe. Low-mass stars, such as the Sun, can live for billions of years and serve as fossil records of the early Universe. By studying the chemical compositions of stars with different ages and metallicities, we can gain insights into how massive galaxies like our own Milky Way have formed and evolved over cosmic time. Furthermore, stellar abundances provide crucial clues about the astrophysical sites responsible for the synthesis of chemical elements found in the periodic table throughout the Galaxy's history.

Learning objectives :

By the end of this lecture, students will be able to:

- Understand the basic structure and evolutionary pathways of stars with various masses.
- Learn observational techniques used to determine stellar physical properties, with a particular focus on surface chemical compositions.
- Interpret stellar chemical abundances in the context of the formation and chemical evolution of the Milky Way.

Textbooks and references :

- Carroll, Bradley W., An Introduction to Modern Astrophysics
- Gray, David F., The Observation and Analysis of Stellar Photospheres