

OMEG School

Introductory lectures on Nuclear Astrophysics

October 23 – 24, 2022 at VNU-HUS, Hanoi, Vietnam

Our universe has begun about 13.7 billion years ago with Big Bang, and developed through a variety of phenomena till present, our rich world now. To learn the mechanism of the evolution of the universe as well as various phenomena requires scientific efforts from many fields. Visible matters of the universe are made of elements of about 100 species which were also produced along the evolution of the universe. Nuclear reactions produce new elements as well as anomalous energies, and play a key role in various stellar phenomena along the evolution. Nuclear physics study together with observations of elements as well as neutrinos and photons of various wave-lengths opens up a new scope to understand “our universe”. Introductory lectures of nuclear astrophysics will be provided for studying the universe.

October 23 (8:00 – 11:30)

1. Introduction to nuclear astrophysics (60 min.)

Prof. Shigeru KUBONO (Univ. Tokyo/RIKEN)

2. Astronomical observations I: Stellar chemical composition to constrain nucleosynthesis in the universe (60 min.)

Prof. Wako AOKI (Nat'l Astronomical Observatory, Japan)

October 23 (13:00 – 16:30)

3. Experimental approach to explosive nuclear burning in the universe (60 min.)

Prof. Shigeru KUBONO (Univ. Tokyo/RIKEN)

4. Astronomical observations II: Novae and r-process (60 min.)

Prof. Wako AOKI (Nat'l Astronomical Observatory, Japan)

October 24 (8:00 – 11:30)

5. Theoretical approach in nuclear astrophysics I: Big-Bang cosmology (60 min.)

Prof. Taka KAJINO (Beihang Univ., China)

6. The experimental methods for nuclear astrophysics (60 min.)

Prof. Yury Panebrattsev (JINR, Russia)

October 24 (13:00 – 16:30)

7. Theoretical approach in nuclear astrophysics II: Supernovae and the origin of nuclei (60 min.)

Prof. Taka KAJINO (Beihang Univ., China)

8. Free discussion and a short lecture on hot topics



Registration fee: Free

Format: Hybrid, Hanoi University of Science and Online

Registration: <https://indico.maygiatoc.com/e/omeg16school>

by October 20, 2022

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