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**Time: Wednesday, 2:30 PM, Oct. 26th,2022**

Location: A601, NAOC

The Assembly of the Milky Way(s): what we learnt from LAMOST and Gaia, and what we will learn in near future

Prof. Chao Liu (NAOC)

Prof. Chao Liu is a staff member of the National Astronomical Observatories, CAS, since the end of 2011.He obtained his PhD degree in 2008 at NAOC. Then he worked at Max-Planck Institute for Astronomy as a postdoc in Germany. He has been working on Gaia project for more than 3 years. After he joined NAOC, he has been engaging in the stellar and Galactic studies with Gaia-LAMOST survey data. Now, he is the lead designer of the CSST data processing and analysis system. His main scientific interests include stellar populations, stellar evolution, the Milky Way, galactic dynamics, and etc.

Abstract

As the nearest galaxy, the Milky Way is so far the only one that we can conduct detailed studies with almost all kinds of its components: the 3D spatial distribution and motions of all kinds of stars, gas, dust etc. In recent years, the LAMOST spectroscopic survey has published a few millions of low-resolution spectra of stars located from a few hundred parsecs to as far as ~100 kilo-parsecs from the Sun. In the meantime, Gaia is incrementally releasing its catalog. Combining the two powerful surveys together, we are able to provide a new narrative of the homeland galaxy. In this talk, I will show you how we have obtained about some fundamental parameters of the Galaxy, its size, shape, and weight. I will also talk about two of the most popular results, which later on became hot topics throughout the community, initially illustrated by European astronomers: the confusing Gaia-Sausage-Enceladus stream and the mysterious phase spiral known as "snails". What will be the next of the Milky Way? It is hard to say. It seems that the most of the power of Gaia-LAMOST data on the Milky Way studies has already been released. And more and more Gaia-LAMOST work focus on stellar physics and discovery of some rare stellar objects. One opportunity that we can better understand the Galaxy in the post-Gaia era is that we are likely to sample around 100 nearby resolved galaxies with CSST and make detailed statistics using individual stars of these galaxies to answer the question that if our galaxy is common or special.
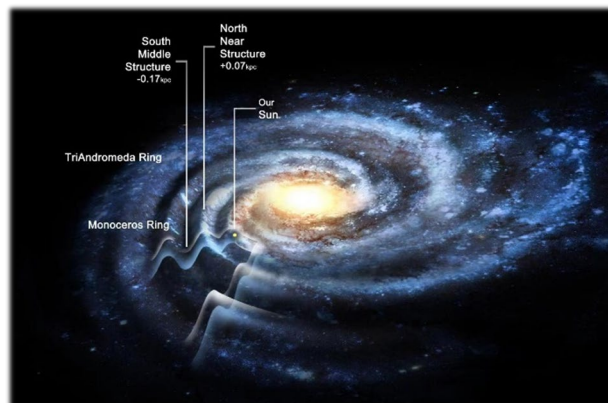
All are welcome！ Tea, coffee will be served at 2:15 PM.