

Chinese astronomers discover new evidence of galaxy formation

An astronomical group headed by Zhao Gang, researcher from the National Astronomical Observatory, under the Chinese Academy of Sciences, recently uncovered new clues involved in the galaxy's creation.

To decipher the codes and signals sent from a remote sparkling constellation, Zhao and his team spotted seven new stellar streams, half the number of global discoveries in this regard, and 33 low-alpha abundance stars in chemical space, double the aggregated discoveries in the world.

Unlike ordinary stars, low-alpha abundance stars from dwarf galaxies are hard to find once they disperse under the impact of the gravitational potential of the galaxy closest to them.

Based on their observation, Zhao and his team coined a morphological theory, describing the movements of the tidal stellar streams and dividing them into early, middle and late phases.

According to Zhao, those stars in the stellar streams stay together in the physical space at first, and move to the corners of the galaxy before being completely immersed in the gathering congregation.

While in the late stage, low-alpha abundance stars can only be distinguished by spectroscopic analysis, with their chemical evidence being tested to identify their origins, a process similar to DNA paternity testing.

The observation of the stellar stream in middle and late phases is constructive in decrypting the formation of galaxies and the trajectories of those stars, which, in turn, will help scientists chart an accurate picture of the gravitational potential and quality distribution of the galaxy, Zhao said.

The research published in the Beijing-based journal, "Research in Astronomy and Astrophysics", was based on the use of LAMOST, the world's top spectroscopic telescope made in China.