Revealing new findings about the size of the galaxy

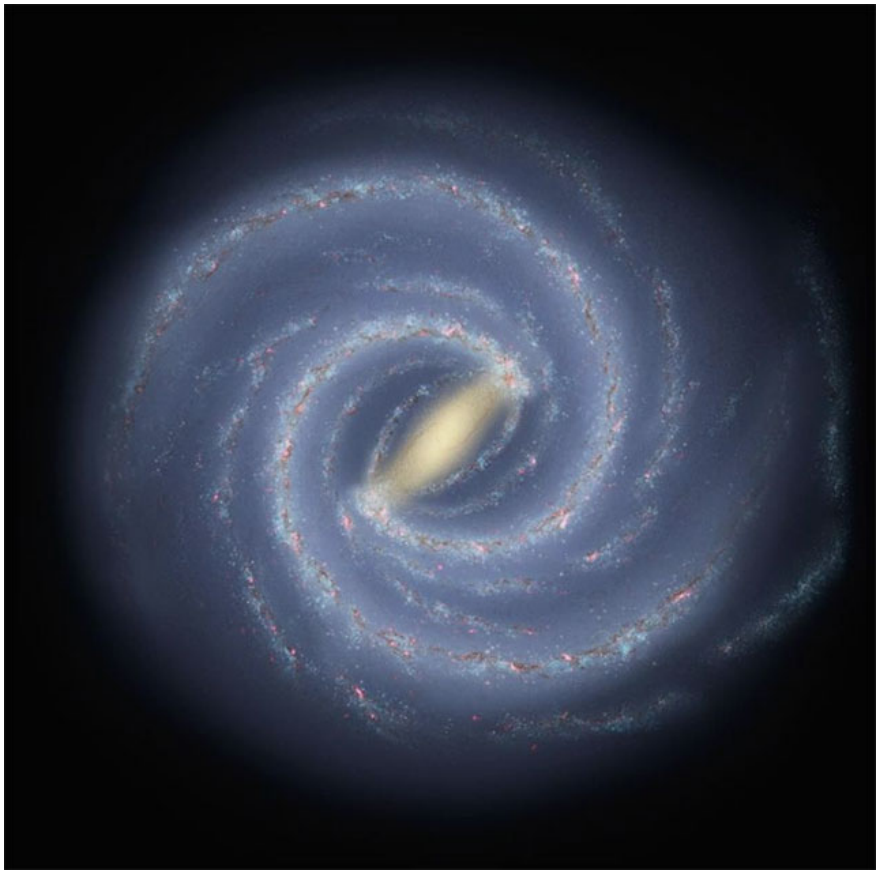
This discovery provides valuable insights into the structure and characteristics of the Milky Way.

Chinese astronomers have just revealed shocking new findings about the size of the Milky Way, suggesting that our galaxy may be significantly larger than previously thought. This. The research, published in the prestigious journal Nature Astronomy, used data from the world's first major near-infrared stellar spectroscopy survey called APOGEE.

Estimated through the distribution of stars in the Milky Way

From the beginning of the research project, Associate Professor Lian Jianhui of Yunnan University and his colleagues determined that the main focus was on dust and other factors that could interfere with measurements. traditional. By analyzing the distribution of stars across the Milky Way, scientists were able to reconstruct a more complete picture of its structure.

The discovery by Lian Jianhui and his research team challenges the long-held assumption that the Milky Way has a single exponential disk – a flat structure in which the density of stars steadily decreases as it moves outward. Instead, the results of the analysis by a team of Chinese scientists showed a more complex structure. The outer disk (more than 24,000 light-years from the galactic center) appears to fit an exponential model. However, the inner disk (between 11,000 and 24,000 light-years) exhibits a flatter distribution, with relatively constant stellar density.



This new discovery has many important implications. Previous estimates based on the exponential disk model have placed the Milky Way's radius at around 10,000 light-years, making our galaxy appear denser than galaxies of similar mass. However, the new data shows a nearly double radius of 19,000 light-years, putting the Milky Way on par with other galaxies of its kind in terms of size.

Professor Lian emphasized the importance of near-infrared observations in overcoming the limitations of traditional methods. Dust particles significantly affect visible light, but their impact on near-infrared wavelengths is much smaller. This allows scientists to get a clearer picture of the distribution of stars, especially in dusty regions within the Milky Way, through near-infrared wavelengths.

This discovery provides valuable insights into the structure and characteristics of the Milky Way, prompting further research to reconsider estimates of our galaxy's overall physical properties.