Astronomers put forward new theory of galaxy formation

February 2 2005

How and when did galaxies form? How and when did stars form in these island-like universes? These questions are still posing a considerable challenge to present-day astronomers. An international team of astronomers, including CAS researchers from the China's National Astronomical Observatories, presents new convincing answers to such fundamental questions.

For this, they rely on an extensive set of observations of galaxies taken with several space- and ground-based telescopes. In particular, they used over a two-year period, several instruments on Very Large Telescope of

the European Southern Observatory (ESO).

Their observations reveal that roughly half of the present-day stars were formed in the period between eight billion and four billion years ago, mostly in episodic burst of intense star formation occurring in Luminous Infrared Galaxies.

Based on these data, the astronomers devised an innovative scenario, dubbed the "spiral rebuilding". They claim that most present-day spiral galaxies are the results of one or several merger events. If confirmed, this new scenario could revolutionize the way astronomers think galaxies formed.

The research has been reported in a paper titled Did most present-day spirals form during the last 8 Gyrs? - A formation history with violent episodes revealed by panchromatic observations" in the leading astronomical journal Astronomy and Astrophysics, Vol. 430(1).

Source: CAS