

Star Formation and Galaxy Evolution with Radio Surveys- The Promise of the SKA

Abstract:

With one million square meters of collecting area, the Square Kilometer Array (SKA) project is an international effort to build the world's largest radio telescope. About thousands of dishes and up to a million low-frequency antennas of the SKA will enable astronomers to monitor the sky in unprecedented detail and speed. Thanks to its configuration, the SKA will largely exceed the image resolution of the Hubble Space Telescope, while mapping huge areas of the sky with unprecedented sensitivity. The SKA will be at the forefront of transformational science by looking at the cosmic dawn, the very first stars and galaxies, the nature of dark matter and dark energy, the cosmic magnetism, and more. Currently, there are 13 working groups covering science areas that will be addressed with the SKA. The working groups help the design of the SKA by their expertise and experiments with the current pathfinders. As a member of the "Extragalactic Continuum" working group, I will review our research done with the help of the SKA pathfinders and current radio telescopes.