

ASTRONOMY-TO-GO

The John J. McCarthy Observatory

LESSON: Our Galaxy in the Universe **(7)** (a follow-on to Our Solar System in the Galaxy)

CURRICULUM: Could be adapted for 5-6 grade as well as high school level

GUEST INSTRUCTOR: Bob Lambert

TIME: 40 minutes

LOCATION: Sarah Noble Planetarium, or a classroom

TEACHING AIDS: Partiview (using real data from current celestial surveys) program, JJMO laptop computer and projector.

DESCRIPTION: Lecture using visualization on the screen, of a tour from our galaxy (as viewed from deep space), through the known universe, with the galaxy's place in the universe graphically depicted throughout the tour.

The session would start with the Partiview simulator visualizing location of our galaxy relative to nearby galaxies and galaxy clusters. The concept of where we are relative to nearby large star aggregates would be demonstrated, with special emphasis on cosmic distance scales. Following this, the students are taken on a tour that shows the large-scale structure of the observed universe, showing the cluster, filaments and voids that exist in all directions and all distances surveyed to date, of both quasars and galaxies.

Finally students fly out beyond the surveyed structure of the universe, and observe the vast dimensions and the actual cosmic background radiation. The repeating structure of matter in the universe is clearly visible in the data visualized – all data come from actual celestial surveys, placed into 3D models that truly depict the scale of our known universe.

ASSESSMENT: Q&A as time permits, and a quiz of top 5 concepts