Neal J. Evans

Title: Professor, Chairman of Astronomy Department

Research Topics: Star formation; interstellar medium; radio astronomy; infrared astronomy; extraterrestrial life; NASA Spitzer Space Telescope

Degree: Ph.D., The University of California, Berkeley (1973)

An expert on star formation, Neal Evans has been on the faculty of The University of Texas at Austin since 1975, and currently serves as chair of the Astronomy Department. Currently, he is the principle investigator for "Cores to Disks," a Legacy Science Program study of star formation with NASA's Spitzer Space Telescope. In addition to his research, Neal teaches a popular course on "The Search for Extraterrestrial Intelligence" for non-science majors at UT. Neal is a past member of the National Research Council's Committee on Astronomy and Astrophysics, past chair of the National Radio Astronomy Observatory's Program Advisory Committee, and past chair of the Scientific Advisory Committee for the Atacama Large Millimeter/Submillimeter Array (ALMA), a multi-national observatory now under construction in Chile. He was a Fulbright Fellow at University College in London in fall 1999, and a Visiting Scholar at University of Leiden, Netherlands in spring 2000. Neal is also the author of a review article in the 1999 issue of *Annual Reviews of Astronomy and Astrophysics* on "Physical Conditions in Regions of Star Formation."

Colloquium Title: Star Formation --From Cores to Disks

Abstract:
Observations with the Spitzer Space Telescope and complementary data at other wavelengths have provided more complete samples of star-forming regions. These provide constraints on theoretical models of the origin of the initial mass function and evolutionary stages. The early stages of star formation include the separation of dense cores from the background molecular cloud, the evolution before point source formation, the infall onto the central source, and the formation of the disk. These events are usually associated with changes in the SED associated with the Class System. The large sample available from the Cores to Disks (c2d) program provides good statistics on the numbers of objects in various stages, and these can be used to estimate timescales. The evolution of the disk to planetary systems is probed by studies of more evolved systems. We show that several paths are possible in this evolution. We calculate star formation rates and efficiencies and compare these to those predicted by star formation prescriptions commonly used for extragalactic astronomy. Finally, the evolution of chemical state from molecular cloud to planet forming disk is revealed by infrared spectroscopy.