



# Cleveland Astronomical Society

Thursday, November 7, 2002 Meeting Announcement

CanalWay Center, Cleveland MetroParks, Off E. 49<sup>th</sup> Street, Cuyahoga Heights

**Speaker: Dr. Kul Bhasin**

Manager for Space Communications

Computing, Information, and Communications Technology Program

NASA Glenn Research Center

**"Space Communications Architecture:  
Expanding the Knowledge and Exploration of the Solar System"**

We receive information at rates of a few hundred kilobits/second from Mars and a few kilobits/second from outer planetary missions. In comparison with the revolution in terrestrial communications, this is unacceptably slow. NASA has plans to change this state of affairs. Dr. Bhasin will describe the nature of the changes in technology as well as show how large increases in data rates greatly enhance the quality of science from solar system missions. The impact of expected future advances in both data delivery and spacecraft autonomy will be discussed. Examples of effects of technology change will be applied to Mars, Jovian moon missions, and Saturn. Hear about the search for water under Europa's ice and the rock abrasion tools on the two rovers that will explore Mars in 2003.