

THE POTENTIAL USE OF METEOR BURST COMMUNICATION SYSTEMS
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Currently we are entering a period in the exploration of earth's near solar planetary bodies where rapid and reliable long distance communication is becoming a necessity. The emplacement of satellites on other planetary bodies for the purposes of data relay between ground stations can become a very expensive endeavor. All planetary bodies with extensive atmospheres produce the ablation of incoming meteors and the resulting ionization trails which can be used in the propagation of radio signals. The basic propagation characteristics would be altered on other planetary bodies because of different atmosphere densities and composition but the ablation and resulting ionization trail should propagate radio signals. The atmosphere of such a body as Mars being substantially less dense than Earth's should have trails forming at lower altitudes with a resulting decrease in the distance at which signals can be transmitted and received. On a planetary body such as Venus with an atmosphere substantially denser than the Earth's, this would result in the altitude at which the ablation of incoming meteors is at a higher altitude than on Earth. Consequently there should be longer distances of radio signal propagation. On bodies such as Jupiter little has even been thought of the characteristics of incoming meteors as a potentially primary or secondary communication system. Currently all plans for solar system exploration only envisage the use of satellite links.

In the case of Mars Meteor burst, communication might provide an inexpensive alternative to orbiting systems for the relay of various small sampling stations to one central link. It could be envisaged as being similar to the organization to the SNOTEL system in the United States of America. It might also provide a valuable backup communication system for a manned mission to Mars. It is the author's opinion that in the years to come meteor burst communication might serve mankind on the frontiers of solar system exploration.