

REGULAR EVENING MEETING

GEOLOGY OF MARS

by Elbert A. King



The first looks at the Martian surface that were obtained by unmanned spacecraft gave us the impression that the planet looked very much like the Moon. Later detailed imagery of virtually all of the Martian surface obtained by the Mariner 9 Spacecraft, has demonstrated that Mars is a unique planet in the Solar System. Permanent polar caps of carbon dioxide, immense volcanoes and calderas, huge rift (?) valleys, sinuous rilles, atmospheric water vapor and water ice clouds together with large surface sand dune fields make the planet a much more exciting body than was previously thought. It appears that there may have been an abundance of water on the Martian surface at some time in the past and large deposits of permafrost may still be present. Wind blown sediments are constantly shifting on the surface and changing the albedo of various areas on Mars. The new findings about Mars make the possibility of life on the planet, or possibly fossils, even more likely than was previously hoped for by the scientific community.

BIOGRAPHICAL DATA:

Elbert A. King attended the University of Texas in Austin, Texas, his home town, where he received the B.S. and M.A. degrees in Geology. He served two years active duty in the U.S. Naval Reserve on board the heavy cruiser, Saint Paul. His Ph.D. work was completed at Harvard University where his specialty was tektites.

In 1963, Dr. King joined the NASA, Manned Spacecraft Center and worked in astronaut geology training, Apollo mission planning for scientific activities, and did research with meteorites and tektites. In 1967, he was appointed Curator of the Lunar samples which were returned by Apollo 11. He joined the staff of the University of Houston after the Apollo 11 mission as Chairman of the Department of Geology. Dr. King has continued to work with the lunar samples as well as pegmatite dikes, meteorites and Martian surface geology from the images obtained by Mariners 6, 7 & 9. He is the author of more than 40 technical papers and journal articles.