MEETINGS

HGS LUNCHEON MEETING—APRIL 25, 1990

GARY L. KRATOCHVIL, Lieutenant Colonel, U.S. Army—Biographical Sketch

Gary L. Kratochvil graduated with a BS degree in Geology from the University of Alaska, Fairbanks, Alaska in 1969 and was commissioned to active duty in the U.S. Army. Military duties have included combat in Vietnam as a cavalry lieutenant and subsequent assignments as a staff officer and command of military intelligence companies. The Army afforded him an opportunity to undertake a masters degree in geology at the Colorado School of Mines, Golden, Colorado. Following graduation in 1987, assignments included teaching terrain analysis, geology, and geomorphology at the U.S. Military Academy at West Point and command of the Eighth U.S. Army Tunnel Neutralization Team in the Republic of Korea. That team is charged with the mission to employ geophysical means to search for and locate tunnels constructed by the North Koreans to breach the Korean Demilitarized Zone.

Since June 1987, Gary has been assigned as the Geological Science Advisor to the Astronaut Office and Space Shuttle Operations Program at NASA's Johnson Space Center, Houston, Texas. Duties there have included teaching geology and photointerpretation to astronauts; conducting geotechnical evaluations of Shuttle landing facilities, including the Rogers dry lakebed at Edwards Air Force Base, California; and formulating experiments in Earth observation to be flown aboard the Shuttle.

GEOLOGY AND THE ENVIRONMENT AS SEEN FROM LOW EARTH ORBIT

Astronauts aboard each mission of the Space Shuttle record some 2,000 hand-held 70 mm and 4 inch × 5 inch format still-camera photographs of terrestrial, marine, and atmospheric phenomena. Photographs are taken from flight altitudes of 110 to 330 nautical miles depending upon specific primary payload mission profiles. Variable altitude, coupled with the flexibility to photograph from nadir to Earth limb perspective using a variety of camera lenses and film types, has provided an extensive library of dramatic Earth views. These beautiful photographs, many with ground resolution to less than 10 meters, are public-domain data available to private citizens at little more than the cost to produce a 35 mm slide or color print.

This presentation offers a series of slides to illustrate the dramatic perspective of Earth afforded our astronauts as they orbit in the Space Shuttle. Views include some of the classic geological features on the Earth's surface, immense tropical storms, colorful oceanographic features, and documentation of subjects of environmental concern. Fundamentals of orbital mechanics and Shuttle crew activities will also be discussed to provide an understanding of the geographic distribution of photo coverage and the frequency of site revisit afforded by the Space Shuttle.