

Tuesday, April 19, 2011

Black Lab Pub, Churchill Room • 4100 Montrose Blvd.

Social 5:30 p.m., Dinner 6:30 p.m.

Cost: \$25 Preregistered members; \$30 non-members & walk-ups

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476 (include your name, e-mail address, meeting you are attending, phone number and membership ID#).

HGS Environmental & Engineering Dinner Meeting

Charles David Stone, P.G., P.E.

*Technical Support Section, Remediation Division
Texas Commission on Environmental Quality*

Lunar Regolith: Field Methods, Geoscience, and Lunar Myths

The lunar regolith was the object of the earliest direct exploration of the Moon. NASA probes from the Ranger and Surveyor programs collected data that supported the preparation for the manned landings of the Apollo program. Regolith data influenced the design of the Apollo Landing Module and Apollo astronaut training for surface excursions. The advance data also contributed to the development of Apollo field methods and sampling tools, while direct experience resulted in their subsequent evolution.

The lunar regolith provided innumerable individual samples from which unique geoscience has been gleaned. The finest-size fractions of the regolith comprise near-microscopic particles that include glass beads that were formed by surface impact melting and in

lunar volcanic fire fountains. Scanning electron microscope and geochemical data abound for these particles, and a non-destructive method was developed for discriminating the origins of individual particles.

Various myths have existed regarding the Moon. These comprise the gamut from lunar composition to the Apollo "landing hoax." Definitive geoscientific responses are provided. ■

Biographical Sketch

CHARLES DAVID STONE is a licensed Professional Geoscientist and a licensed Professional Engineer in the State of Texas. He received a Bachelor of Science degree in the geological sciences from The University of Texas at Austin and a Master of Science degree in lunar geochemistry from the University of Tennessee at Knoxville. He has served as geologist and/or geochemist with firms in Texas and Hawaii. Prior to his tenure at the Texas Natural Resource Conservation Commission/Texas Commission on Environmental Quality, he managed the Hazardous Waste Division at the Honolulu office of Metcalf and Eddy, Inc.

Charles was a Contract/Project Manager in the Petroleum Storage Tank State-Led Remediation Section before coming to the Technical Support Section. He currently performs technical reviews of groundwater hydrology, environmental modeling and remediation engineering submittals to the TCEQ Remediation Division and contributes to the Texas Risk Reduction Program Guidance Document production effort.