

Geotechnical Properties of Lunar Soil –the four things you need to know

Seminar by Dr David Carrier

Synopsis:

Extensive field and laboratory investigations were run on lunar soil during the Luna, Surveyor, and Apollo programmes. The purpose of these investigations was to insure the safe landing of the Apollo 11 Lunar Module (and subsequent spacecraft), as well as to develop appropriate parameters for rovers and future construction on the Moon, such as habitats, observatories, etc. Four geotechnical parameters are of special interest: particle size distribution, particle shapes, bulk density, and relative density. These four properties will be discussed in the lecture, as well as the historical context of the Apollo 11 landing 50 years ago this past July.



Venue: SKEM 207

**Date: 23rd Sept
2019 (Monday)**

Time: 16:00

Presenter's Bio:

Dr David Carrier was at the Johnson Space Center, NASA, during the Apollo programme, where he was responsible for the development and performance of lunar soil experiments. His activities included laboratory testing of returned lunar soil, design of lunar surface experiments, and Astronaut training. He told Neil Armstrong and Buzz Aldrin how deep they were going to sink into the lunar surface; and he asked them to take the now-iconic footprint photograph, as part of a simple geotechnical experiment. Dr Carrier was a member of the science support team in Mission Control and a member of the Lunar Sample Preliminary Examination Team in the Lunar Receiving Laboratory during each of the Apollo missions. Some of the lunar equipment that Dr Carrier helped to develop (core tubes; cone penetrometer) is on display at the National Air and Space Museum of the Smithsonian Institution in Washington, DC.