

Teesdale U3A Monthly Meeting – February 2020

DR Grenville Holland - Apollo 11 and The Origin of The Moon

The speaker at the February meeting was Dr Grenville Holland and his topic was the Apollo 11 moon landing in 1969. In 1967 Grenville and 3 of his Durham University colleagues had been given responsibility for the analysis of some of the moon rock which was to be brought back from the moon.

Grenville began by showing the 1962 Kennedy speech when the President said ‘... We choose to go to the moon ... not because they (things) are easy but because they are hard...’. Grenville reminded us of some of the initial difficulties eg a technical problem 40 mins before the rocket take off, being off course before landing, limited vision of the landing site, shortage of fuel and the fact that the landing was done manually. He was full of praise for Neil Armstrong and the other 3 astronauts.

Some of the moon rock (£25m worth) was carried to Durham in a briefcase by one of Grenville’s colleagues who became stranded in Darlington Station. He was met with disbelief by the Station Master on saying ‘I have a sample of moon rock in my briefcase and I need to get to Durham urgently.’

Grenville’s particular interest was in geochemistry and initial results were obtained by bombarding the rock samples with X-rays and identifying elements present. They were hindered at first by the lack of international standards and also there were no computer facilities in Durham, so paper tapes had to be sent to London by post.

Analysis of the data has added weight to the theory that the moon was once part of the earth. The earth was struck by a very large meteor which eventually resulted in the moon separating off and the moon is still moving away from the earth. Nevertheless, there are differences in the proportion of certain elements present in the moon and the earth. These can largely be explained by the relative volatility of these elements and the different temperatures which the earth and the moon have experienced over time.

Grenville presented data showing how the temperature of the earth had changed over the last 400,000 years and how the proportion of both carbon dioxide and methane in the atmosphere had changed during this period. The data showed that the earth’s temperature had changed in cycles over time i.e. climate change is not new. The proportion of methane followed the change in the earth’s temperature fairly closely. The data for carbon dioxide showed a similar pattern but lagged behind. This has important implications for the current discussions about the reasons for climate change.

This was an impressive talk at the cutting edge of research, the results of which are feeding into other research on the factors affecting climate change. Grenville was still involved in research but said that if he was starting now he would do things differently.

The vote of thanks was given by Roy Tranter.

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