PERTEMUAN PERSATUAN (Meeting of the Society)

Ceramah Teknik (Technical Talk)

MILANKOVITCH CONTROL OF EUSTATIC SEA LEVELS IN THE GEOLOGICAL RECORD

13 April 2006
Geology Department
University of Malaya
(in collaboration with the Dept of Geology, University of Malaya)

PROF. DR ANDREW SCOTT GALE

University of Greenwich United Kingdom

Report

Professor Dr. Andrew Scott Gale from the University of Greenwich, UK who was visiting the Department of Geology, University Malaya as external examiner, presented a talk on "Milankovitch Control of Eustatic Sea levels in the Geological Record". The talk was held at the Geology Lecture Hall, University Malaya on 13 April 2006.

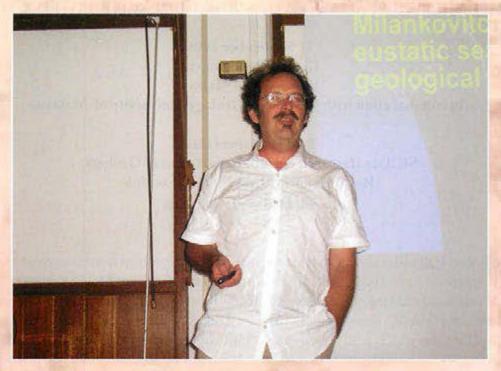
He demonstrated that a clear relationship exists between Milankovitch Cycles brought about by the elliptical orbital motions of the tilted earth as it rotates around the Sun, and sea-level changes. Sea-levels and climate are driven by orbital forcing and form part of an integrated Earth system.

Relative sea-level is composed of the subsidence/uplift history of the area, global sea level or eustacy controlled by ocean ridge volume and ice volume and geoid deformation. These sea-level changes are detected from \(\text{i}^{18}\text{O} \) variations recorded in climatic cycles in Indian Ocean cores, Pleistocene Terraces in Huon Peninsula, Papua New Guinea and \(\text{i}^{13}\text{ C} \) variations in Cretaceous chalk and depth sensitive fossil communities preserved in the rocks.

Relationships between 40 and 100 Ka Milankovitch Cycles and sea-level changes are clearly identified in the Quaternary while 400 Ka cycles are evident in the Pre-Quaternary. Spectral analysis of long time series of ä¹³ C data demonstrates the presence of long eccentricity cycles at 400 Kyr and 2.4 Myr. Identification of these cycles provides a template for developing new Cretaceous timescales.

Prof Dr Lee Chai Peng

MILANKOVITCH CONTROL OF EUSTATIC SEA LEVELS IN THE GEOLOGICAL RECORD - PROF DR ANDREW SCOTT GALE



Prof Andrew Gale presenting his talk



Part of the audience at the talk



Prof Dr Lee, President of GSM, presenting a momento to Prof Andrew Gale