MAGMA GENERATION AND DIFFERENTIATION
IN THE TERRESTRIAL PLANETS - A REVIEW OF
THE CONTRIBUTIONS OF MICHAEL J. O’HARA

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During the course of the 20th century Earth Scientists argued, seemingly incessantly, about the processes of magma generation and differentiation within the Earth, Moon and other planetary bodies. Whilst N.L. Bowen’s (1928) classic publication "The evolution of the Igneous Rocks" undoubtedly represents a benchmark in our understanding, it was not until the mid 1960s that the complexity of these processes was appreciated fully. The fact that we are still debating many of the key issues, forty years later, reflects the scale of the problem; each new step in our understanding seems to generate more questions!

2003 marks the 70th birthday of Michael J. O’Hara, and the 35th anniversary of the publication of two of his classic papers, which influenced the thinking of a generation of petrologists: (1) "The bearing of phase equilibria studies in synthetic and natural systems on the origin of basic and ultrabasic rocks" [Earth Sci. Rev., 4, 69-133; 1968]; (2) "Are ocean floor basalts primary magmas?" [Nature, 220, 683-686; 1968]. Since 1960, Mike has been the first, sole or joint co-author on over 120 publications, directly or indirectly related to magma generation and differentiation. His contributions have encompassed a diverse range of topics including: high P-T experimental petrology, the CMAS projection, the origin and evolution of basic and ultrabasic magmas, upper mantle petrology and dynamics, geothermometry-geobarometry of mantle rocks, RTF magma chambers and the mechanisms of dyke intrusion. Mike played a leading role in the Lunar Science Programme in the early 1970s and is still "stirring the lunar pot" [3]. (3) "Flood Basalts, Basalt Floods or Topless Bushvelds? Lunar Petrogenesis Revisited" [J.Petrology 41, 1545-1651; 2000].