



# School of Earth Sciences Seminar Series

**Franco Pirajno**

**Centre for Exploration Targeting, School of Earth Sciences,  
UWA & Geological Survey of Western Australia.**

**Rare Earth Elements (REE) mineralisation in alkaline complexes**

**The School of Earth Sciences is pleased to invite you to a Lecture in the SES Seminar Series given by Franco Pirajno entitled “Rare Earth Elements (REE) mineralisation in alkaline complexes and carbonatites”.**

The increasing importance of rare earth elements in modern technology, makes it appropriate to briefly examine magmas that commonly contain these elements, namely carbonatites. The origin of carbonatite magma is controversial, and at the heart of the controversy is the relationship between carbonatites and the silica-undersaturated rocks with which they are commonly associated. Theories that attempt to explain the origin of carbonatite include fractional crystallisation, contact metasomatism, liquid immiscibility, nephelinitic-phonolitic volcanic plumbing systems. Carbonatites are the main host of Nb-Ta, Fe-apatite, Nb-REE and fluorite mineralisation, both magmatic and hydrothermal. Bastnaesite is one of the more important REE mineral species, together with ancylite, parasite, synchysite and britholite. Apatite is one of the principal accessory minerals in carbonatite and alkaline complexes. In this presentation, I discuss some key examples representing a variety of carbonatite, related intrusions and volcanic complexes, which illustrate the complexity of these rocks; these include: Mount Weld and Gifford Creek carbonatite systems in Western Australia, Bayan Obo in Inner Mongolia (China), carbonatites in Italy, Namibia and South Africa.

Franco Pirajno, has 50 years of experience in tectonics, ore deposit geology and mineral exploration in many countries. Prior to joining the Geological Survey of Western Australia in 1993, Franco worked for the Anglo American Corporation of South Africa Ltd. Promoted to Exploration Manager of the Company's activities in the South West Pacific till 1983, when appointed to the Chair of Economic Geology at Rhodes University, Grahamstown, South Africa. In the last 24 years Franco has worked extensively in Western Australia's Proterozoic terranes and was instrumental in the discovery of a new large igneous province in Australia. Supervised and/or reviewed 60 MSc and PhD theses. Published 20 geological maps (Western Australia, Namibia, Greenland). Appointed Editor-in-Chief of Ore Geology Reviews in March 2012.

**VENUE** Woolnough Lecture Theatre (G.107), Geography and Geology Building  
University of Western Australia, 35 Stirling Hwy, Crawley 6009

**TIME** **4:00 - 4:45pm Thursday 12 October, 2017**

You are invited to join us afterwards for refreshments provided for sale by our local SEG Student Chapter in the Resource Room, Robert Street Building.

