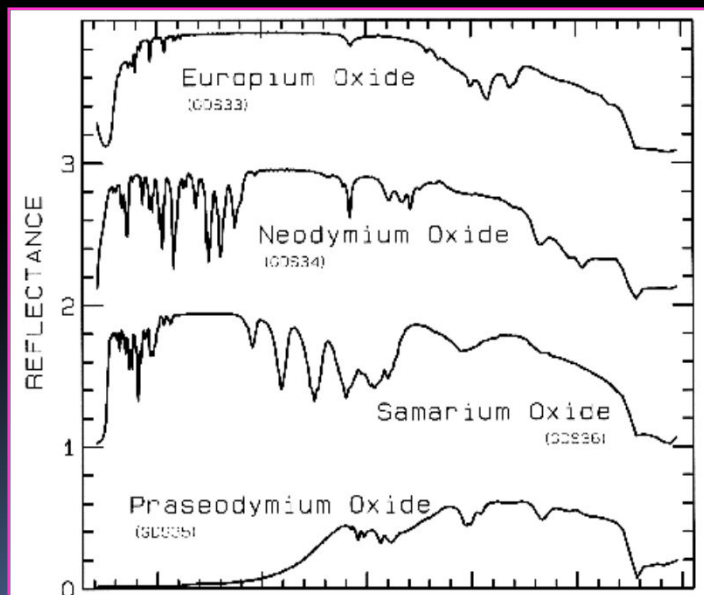




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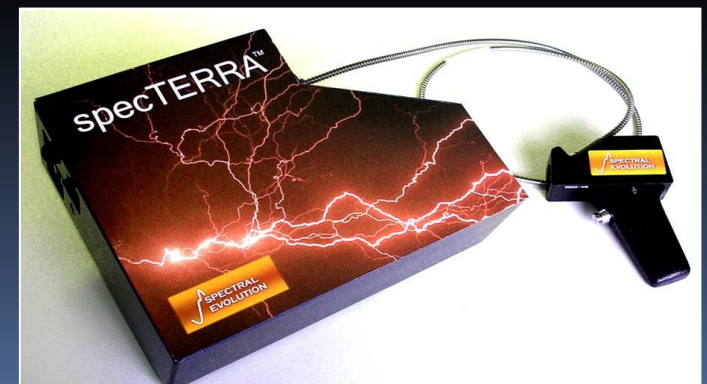
REE IDENTIFICATION

Exploration for REE deposits has become critical in 2010 as demand by the hybrid automobile, ceramics, electronics, laser, wind turbine, clean energy technologies, and defense related industries, has become critical and processed supply is diminishing. The major deposits and potential deposits are shown on the map. However, deposit development and especially REE extraction and refinement are the challenges. Reflectance Spectroscopy can identify elements in the VIS region and minerals in the VIS-SWIR ranges.



Examples of REE Spectra

The Terraspec™ is a Visible-NIR-SWIR region spectrometer uniquely qualified for REE analysis in the field and in the laboratory. It produces spectra in the 400nm -2500nm range.

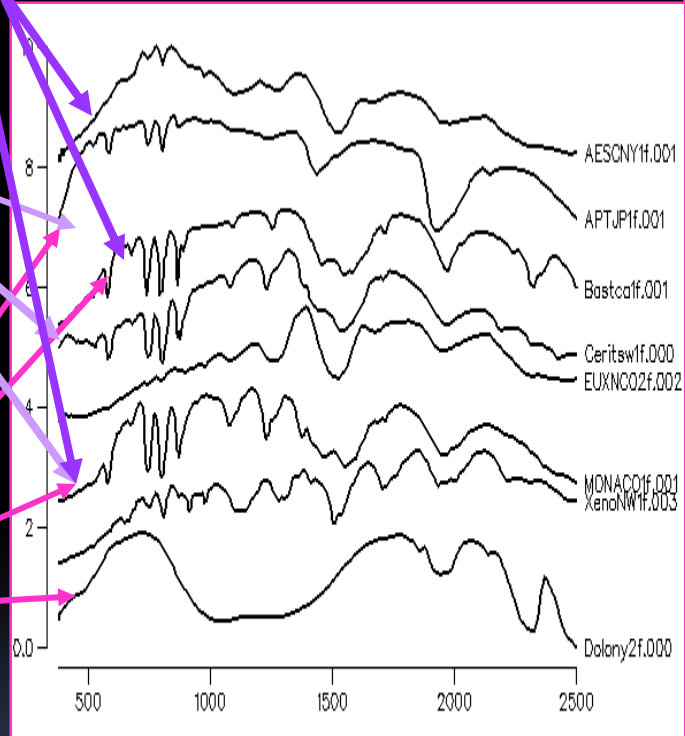




Bayan Obo, China is presently the largest producing REE mine in the world. Ore Minerals and major REE include bastnaesite (Ce, La), monazite (Ce, La) and parisite (Ce, La),



At **Mt Weld**, supergene processes have concentrated REE in various minerals such as monazite, apatite, churchite and crandallite. The laterite has developed over a carbonatite diatreme. The main REE include lanthanum, cerium, and neodymium. Mt Weld has been classified as having the potential to be the largest REE deposit in the world.



Aeschnyite(Ce), Apatite, Bastnaesite(Ce, Y), Cerite(Ce), Euxenite(Y, Ce), Monazite, Xentime(Y).

- Cerium 50.0%
- Lanthanum 34.0%
- Neodymium 11.0%
- Praseodymium 4.0%
- Samarium 0.5%
- Gadolinium 0.2%
- Europium 0.1%
- Others 0.2%