Professor Tim Elliott
B.A.(Cantab.), Ph.D.(Open)

Professor

Area of research

Chemical evolution of the Earth

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Summary

My research focuses on the chemical evolution of the Earth. As such I am interested in planetary formation and differentiation, sampling of the hidden Earth via melts, interaction of the deep and surface reservoirs and how this has influenced the terrestrial environment.

My tools of choice are dominantly isotopic, in tandem with elemental abundance measurements and judicious application of petrology and fieldwork. I have developed measurements of novel isotopic systems and am enthused by the new vistas of isotopic determination offered by plasma mass-spectrometry.

Teaching

I convene the following units:

Geochemistry (EASC 20010, Year 2)

Field Skills, SE Spain (EASC 20017, Year 2)

Formation and Evolution of the Terrestrial Planets (EASCM1017, Year 4)

Memberships

Organisations

School of Earth Sciences

Earth Sciences staff

- Earth Sciences academic staff including research fellows

Research groups

- Geochemistry

Research themes

- Dynamics and Architecture of the Solid Earth
- Planetary Formation, Structure and Dynamics

Interdisciplinary groups

- Bristol Isotope Group

Recent publications

- Klaver, M, Ionov, D, Takazawa, E & Elliott, T, 2020, 'The non-chondritic Ni isotopic composition of the Earth's mantle'. *Geochimica et Cosmochimica Acta*, vol 268., pp. 405-421
- Casalini, M, Avanzinelli, R, Tommasini, S, Elliott, T & Conticelli, S, 2019, 'Ce/Mo and Molybdenum Isotope Systematics in Subduction-Related Orogenic Potassic Magmas of Central-Southern Italy'. *Geochemistry, Geophysics, Geosystems*, vol 20., pp. 2753-2768
- Luu, T-H, Hin, R, Coath, C & Elliott, T, 2019, 'Bulk chondrite variability in mass independent magnesium isotope compositions – Implications for initial solar system $^{26}Al/^{27}Al$ and the timing of terrestrial accretion'. *Earth and Planetary Science Letters*, vol 522., pp. 166-175
- Hin, RC, Burnham, AD, Gianolio, D, Walter, MJ & Elliott, T, 2019, 'Molybdenum isotope fractionation between Mo^{4+} and Mo^{6+} in silicate liquid and metallic Mo'. *Chemical Geology*, vol 504., pp. 177-189
- Walowski, KJ, Kirstein, LA, De Hoog, JC, Elliott, TR, Savov, IP, Jones, RE & , 2019, 'Investigating ocean island mantle source heterogeneity with boron isotopes in melt inclusions'. *Earth and Planetary Science Letters*, vol 508., pp. 97-108
- Chen, S, Hin, RC, John, T, Brooker, RA, Bryan, B, Niu, Y & Elliott, T, 2019, 'Molybdenum systematics of subducted crust record reactive fluid flow from underlying slab serpentine dehydration'. *Nature Communications*, vol 10.
- Freymuth, H, Andersen, MB & Elliott, T, 2019, 'Uranium isotope fractionation during slab dehydration beneath the Izu arc'. *Earth and Planetary Science Letters*, vol 522., pp. 244-254
- Chen, HW, Claydon, JL, Elliott, T, Coath, CD, Lai, YJ & Russell, SS, 2018, 'Chronology of formation of early solar system solids from bulk Mg isotope analyses of CV3 chondrules'. *Geochimica et Cosmochimica Acta*, vol 227., pp. 19-37
- Carter, PJ, Leinhardt, ZM, Elliott, T, Stewart, ST & Walter, MJ, 2018, 'Collisional stripping of planetary crusts'. *Earth and Planetary Science Letters*, vol 484., pp. 276-286
- Avanzinelli, R, Casalini, M, Elliott, T & Conticelli, S, 2018, 'Carbon fluxes from subducted carbonates revealed by uranium excess at Mount Vesuvius, Italy'. *Geology*, vol 46., pp. 259-262

View complete publications list in the University of Bristol publications system

Courses

Professor Elliott currently teaches 3 courses: