

## BIBLIOGRAPHY

- Abbey, S., 1983, Studies in "standard samples" of silicate rocks and minerals, 1969-1982. Geological Survey of Canada Paper, p. 15-83.
- Anders, E., Ebihara, M., 1982, Solar system abundances of the elements. *Geochimica et Cosmochimica Acta*, v. 46, p. 2363-2380.
- Baker, D. R., Eggler, D. H., 1987, Compositions of anhydrous and hydrous melts coexisting with plagioclase, augite, and olivine or low-Ca pyroxene from 1 atm to 8 kbar: application to the Aleutian volcanic center of Atka. *American Mineralogist*, v. 72, p. 12-28.
- Baldridge, W.S., McGetchin, T. R., Frey, F. A., 1973, Magmatic evolution of Hekla, Iceland. *Contributions to Mineralogy and Petrology*, v. 42, p. 245-258.
- Beard, J.S., Lofgren, G.E., 1991, Dehydration melting and water-saturated melting of basaltic and andesitic greestones and amphibolites at 1, 3, and 6.9 kb. *Journal of Petrology*, v. 32, p. 365-401.
- Björnsson, S., 1981, Crust and upper mantle beneath Iceland, from Structure and Development of the Greenland-Scotland Ridge, Bott, M.H.P., Saxov, S., Talwani, M., Thiede, J., editors, p. 31-62.
- Bott, M.H.P., 1981, Deep structure and geodynamics of the Greenland-Scotland Ridge: an introductory review, from Structure and Development of the Greenland-Scotland Ridge, (eds) Bott, M.H.P., Saxov, S., Talwani, M., Thiede, J., p. 3-10.
- Calvert, A. J., Hasselgren, E. A., Clowes, R. M., 1990, Oceanic rift propagation - a cause of crustal underplating and seamount volcanism. *Geology*, v. 18, p. 886-889.
- Campbell, I.H., Griffiths, R.W., 1990, Implications of mantle plume structure for the evolution of flood basalts. *Earth and Planetary Science Letters*, v. 99, p. 79-93.
- Christie, D.M., Sinton, J.M., 1981, Evolution of abyssal lavas along propagating segments of the Galapagos spreading center. *Earth and Planetary Science Letters*, v. 56, p. 321-335.
- Condomines, M., Grönvold, K., Hooker, P. J., Muehlenbachs, K., O'Nions, R. K., Oskarsson, N., Oxburgh, E. R., 1983, Helium, oxygen, strontium and neodymium isotopic relationships in Icelandic volcanics. *Earth and Planetary Science Letters*, v. 66, p. 125-136.
- Dalrymple, G.B., Lanphere, M.A., 1969, Potassium-Argon dating: principles, techniques and applications to geochronology. (ed) Freeman and Co., 258 p.
- Davies, G.F., 1990, Mantle plumes, mantle stirring and hotspot chemistry. *Earth and Planetary Science Letters*, v. 99, p. 94-109.

- Drake, M.J., 1975, The oxidation state of europium as an indicator of oxygen fugacity. *Geochemica et Cosmochimica Acta*, v. 39, p. 55-64.
- Duncan, R.A., Richards, M.A., 1991, Hotspots, mantle plumes, flood basalts, and true polar wander. *Reviews of Geophysics*, v. 29, p. 31-50.
- Einarsson, P., Björnsson, S., 1979, Earthquakes in Iceland. *Jökull*, v. 29, p. 37-43.
- Einarsson, T., Albertsson, K.J., 1988, The glacial history of Iceland during the past three million years. *Phil. Trans. R. Soc. London, B* 318, p. 637-644.
- Einarsson, P., 1991, Earthquakes and present-day tectonism. *Tectonophysics*, v. 189, p. 261-297.
- Eiríksson, J., Geirsdóttir, A., 1991, A record of Pliocene and Pleistocene glaciations and climatic change in the North Atlantic based on variations in volcanic sedimentary facies in Iceland. *Marine Geology*, 101, p. 147-159.
- Elliott, T. R., Hawkesworth, C. J., Grönvold, K., 1991, Dynamic melting of the Iceland plume. *Nature*, v. 351, p. 201-206.
- Faure, G., 1977, 1986, *Principles of Isotope Geology*, (ed) Wiley, 589 p.
- Fisk, M. R., Upton, B. G., Ford, C. E., 1988, Geochemical and experimental study of the genesis of magmas of Reunion Island, Indian Ocean. *Journal of Geophysical Research*, v. 93, no. B5, p. 4933-4950.
- Flanagan, F.J., 1976, Descriptions and analyses of eight new USGS rock standards. *U.S. Geological Survey Professional Paper*, no. 840, 192 p.
- Florenz, O.G., 1980, Seismic structure of the Icelandic crust above layer three and the relation between body wave velocity and the alteration of the basaltic crust. *Journal of Geophysics*, v. 47, p. 211-220.
- Furman, T., Frey, F. A., Park, K-H., 1991, Chemical constraints on the petrogenesis of mildly alkaline lavas from Vestmannæyar, Iceland: the Eldfell (1973) and Surtsey (1963-1967) eruptions. *Contributions to Mineralogy and Petrology*, v. 109, p. 19-37.
- Gerlach, D.C., 1990, Eruption rates and isotopic systematics of ocean islands; further evidence for small-scale heterogeneity in the upper mantle. *Tectonophysics*, v. 172, p. 273-289.
- Gladney, E.S., Burns, C.E., Roelandts, I., 1983, 1982 compilation of elemental concentrations in eleven USGS rock standards. *Geostandards Newsletter*, 7, p. 2-226.
- Graham, D., Lupton, J., Albarede, F., Condomines, M., 1990, Extreme temporal homogeneity of helium isotopes at Piton de la Fournaise, Réunion Island. *Nature*, v. 347, p. 545-548.

- Green, D. H., 1973, Experimental melting studies on a model upper mantle composition at high pressure under water-saturated and water-undersaturated conditions. *Earth and Planetary Science Letters*, v. 19, p. 37-53.
- Griffiths, R.W., 1986, The differing effects of composition and thermal buoyancies on the evolution of mantle diapirs. *Physics of Earth and Planetary Interiors*, v. 33, p. 45-55.
- Griffiths, R.W., Campbell, I.H., 1990, Stirring and structure in mantle starting plumes. *Earth and Planetary Science Letters*, v. 99, p. 66-78.
- Griffiths, R.W., Campbell, I.H., 1991, Interaction of mantle plume heads with the earth's surface and onset of small-scale convection. *Journal of Geophysical Research*, v. 96, no. B11, p. 18295-18310.
- Gudmundsson, A., 1986, Possible effect of aspect ratios of magma chambers on eruption frequency. *Geology*, v. 14, p. 991-994.
- Hackman, M. C., King, G. C., Bilham, R., 1990, The mechanics of the South Iceland Seismic Zone. *Journal of Geophysical Research*, v. 95, p. 17339-17351.
- Hall, A., 1987, Igneous Petrology, (ed) Wiley, 568 p.
- Helgason, J., 1984, Frequent shifts of the volcanic zone in Iceland. *Geology*, v. 12, p. 212-216.
- Helgason, J., 1985, Shifts of the plate boundary in Iceland: some aspects of tertiary volcanism. *Journal of Geophysical Research*, v. 90, no. B12, p. 10084-10092.
- Hemond, C., Condomines, M., Fourcade, S., Allègre, C. J., Oskarsson, N., Javoy, M., 1988, Thorium, strontium and oxygen isotopic geochemistry in recent tholeiites from Iceland: crustal influence on mantle-derived magmas. *Earth and Planetary Science Letters*, v. 87, p. 273-285.
- Hess, P.C., 1989, Origins of Igneous Rocks. (ed) Harvard University Press, 336 p.
- Hey, R.N., Duennebier, F.K., Morgan, W.J., 1980, Propagating rifts on mid-ocean ridges. *Journal of Geophysical Research*, v. 85, no. b7, p. 3647-3658.
- Hey, R.N., Kleinrock, M.C., Miller, S.P., Atwater, T.M., Searle, R.C., 1986, Sea beam/deep-tow investigation of an active oceanic propagating rift system, Galapagos 95.5°W. *Journal of Geophysical Research*, v. 91, no. b3, p. 3369-3393.

- Hilton, D.R., Grönvold, K., O'Nions, R.K., Oxburgh, E.R., 1990, Regional distribution of  $^3\text{He}$  anomalies in the Icelandic crust. *Chemical Geology*, v. 88, p. 53-67.
- Hofmann, A.W., Jochum, K.P., Seufert, M., White, W.M., 1986, Nb and Pb in oceanic basalts: new constraints on mantle evolution. *Earth and Planetary Science Letters*, v. 79, p. 33-45.
- Imsland, P., 1983, Iceland and the ocean floor. Comparison of chemical characteristics of the magmatic rocks and some volcanic features. *Contributions to Mineralogy and Petrology*, v. 83, p. 31-37.
- Irvine, T.N., Baragar, W.R.A., 1972, A guide to the chemical classification of the common volcanic rocks. *Canadian Journal of Earth Sciences*, v. 8., p. 523-548.
- Jaques, A.L., Green, D.H., 1980, Anhydrous melting of peridotite at 0-15 kbar pressure and the genesis of tholeiitic basalts. *Contributions to Mineralogy and Petrology*, v. 73, p. 287-310.
- Jakobsson, S.P., 1972, Recent basaltic rocks in Iceland. *Lithos*, v. 5, p. 365-386.
- Jakobsson, S.P., 1979, Petrology of recent basalts of the Eastern Volcanic Zone, Iceland. *Acta Naturalia Islandica*, v. 26, p. 1-103.
- Jónsson, Jón, 1988, Geological Map of Eyjafjöll, Research Institute Neðri As, Hveragerði.
- Klein, E. M., Langmuir, C. H., 1987, Global correlations of ocean ridge basalt chemistry with axial depth and crustal thickness. *Journal of Geophysical Research*, v. 92, no. B8, p. 8089-8115.
- Korotev, R.L., 1987, National Bureau of Standards coal fly ash (SRM 1633A) as a multielement standard for instrumental neutron activation analysis: *Journal of Radioanalytical and Nuclear Chemistry, Articles*, v. 110, no. 1, p. 159-177.
- Kristjánsson, L., Jóhannesson, H., Eiríksson, J., Gudmundsson, A. I., 1988, Brunhes-Matuyama paleomagnetism in three lava sections in Iceland. *Canadian Journal of Earth Sciences*, v. 25, p. 215-225.
- Kurz, M. D., Meyer, P. S., Sigurðsson, H., 1985, Helium isotopic systematics within the neovolcanic zones of Iceland. *Earth and Planetary Science Letters*, v. 74, p. 291-305.
- Kushiro, I., Syono, Y., Akimoto, S-I., 1968, Melting of a peridotite nodule at high pressures and high water pressures. *Journal of Geophysical Research*, v. 73, no. 18, p. 6023-6029.

- Kushiro, I., Shimizu, N., Nakamura, Y., 1972, Compositions of coexisting liquid and solid phases formed upon melting of natural garnet and spinel lherzolites at high pressures: a preliminary report. *Earth and Planetary Science Letters*, v. 14, p. 19-25.
- Langmuir, C.H., Bender, J.F., 1984, The geochemistry of oceanic basalts in the vicinity of transform faults: observations and implications. *Earth and Planetary Science Letters*, v. 69, p. 107-127.
- Langmuir, C.H., Klein, E.M., Plank, T., 1991, Petrologic constraints on melt formation and segregation beneath ocean ridges. RIDGE short course notes, unpublished manuscript. 104 p.
- LeBas, M.J., LeMaitre, R.W., Streckeisen, A., Zanettin, B., 1986, A chemical classification of volcanic rocks based on the total alkali - silica diagram. *Journal of Petrology*, v. 27, p. 745-750.
- Loper, D.E., Stacey, F.D., 1983, The dynamical and thermal structure of deep mantle plumes. *Physics of Earth and Planetary Interiors*, v. 33, p. 304-313.
- Macdonald, G.A., Katsura, T., 1966, Chemical composition of Hawaiian lavas. *Journal of Petrology*, v. 5, part 1, p. 82-133.
- Macdonald, R., McGarvie, D.W., Pinkerton, H., Smith, R.L., Palacz, Z.A., 1990, Petrogenetic evolution of the Torfajökull volcanic complex, Iceland I. Relationship between the magma types. *Journal of Petrology*, v. 31, p. 429-459.
- McGarvie, D.W., 1984, Torfajökull: a volcano dominated by magma mixing. *Geology*, v. 12, p. 685-688.
- Melson, W.G., Vallier, T.L., Wright, T.L., Byerly, C., Nelen, J., 1976, Geochemical diversity of volcanic glass erupted along Pacific, Atlantic and Indian Ocean sea floor spreading centers, from *The Geophysics of the Pacific Ocean Basin and its Margins*. (eds) Sutton, G., Manghnani, M.H., Moberly, R., Am. Geophys. Union, Geophys. Monogram 4, 351 p.
- Meyer, P.S., Sigurðsson, H., Schilling, J-G., 1985, Petrological and geochemical variations along Iceland's neovolcanic zones. *Journal of Geophysical Research*, v. 90, p. 10043-10072.
- Nielsen, R.L., 1990, Simulation of igneous differentiation processes. *Reviews in Mineralogy: Modern methods of igneous petrology: understanding magmatic processes*, v. 24, p. 67-105.
- Nunns, A.G., 1981, Plate tectonic evolution of the Greenland-Scotland Ridge and surrounding regions, from *Structure and Development of the Greenland-Scotland Ridge*. (eds) Bott, M.H.P., Saxov, S., Talwani, M., Thiede, J., p. 11-30.
- Oskarsson, N., Sigvaldson, G. E., Steinhörsson, S., 1982, A dynamic model of rift zone petrogenesis and the regional petrology of Iceland. *Journal of Petrology*, v. 23, p. 28-74.

- Oskarsson, N., Steinhörsson, S., Sigvaldson, G.E., 1985, Iceland geochemical anomaly: origin, volcanotectonics, chemical fractionation and isotope evolution of the crust. *Journal of Geophysical Research*, v. 90, p. 10011-10025.
- Pálmason, G., 1980, A continuum model of crustal generation in Iceland; kinematic aspects. *Journal of Geophysics*, v. 47, p. 7-18.
- Pálmason, G., Sæmundsson, K., 1979, Summary of conductive heat flow in Iceland, from Terrestrial heatflow in Europe, (ed) Cerniak, V., Ryback, L., p. 218-220.
- Patchett, P.J., White, W.M., Feldmann, H., Kielinczuk, S., Hofmann, A.W., 1984, Hafnium/rare earth element fractionation in the sedimentary system and crustal recycling into the Earth's mantle. *Earth and Planetary Science Letters*, v. 69, p. 365-378.
- Phipps Morgan, Kleinrock, 1991, Transform zone migration. *Tectonics*, v. 10, no. 5.
- Poreda, R., Schilling, J-G., Craig, H., 1986, Helium and hydrogen isotopes in ocean-ridge basalts north and south of Iceland. *Earth and Planetary Science Letters*, v. 78, p. 1-17.
- Presnall, D.C., Dixon, S.A., Dixon, J.R., O'Donnell, T.H., Brenner, N.L., Schrock, R.L., Ducus, D.W., 1978, Liquidus phase relations on the join diopside-forsterite-anorthite from 1 atm to 20 kbar: their bearing on the generation and crystallization of basaltic magma. *Contributions to Mineralogy and Petrology*, v. 66, p. 203-220.
- Richards, M.A., Duncan, R.A., Courtillot, V.E., 1989, Flood basalts and hotspot tracks; plume heads and tails. *Bulletin New Mexico Bureau of Mines and Mineral Resources*, v. 131, p. 222.
- Richards, M.A., Jones, D.L., Duncan, R.A., DePaolo, D.J., 1991, A mantle plume initiation model for the Wrangellia flood basalt and other oceanic plateaus. *Science*, v. 254, p. 263-267.
- Roeder, P. L., Emslie, R. F., 1970, Olivine-liquid equilibrium. *Contributions to Mineralogy and Petrology*, v. 29, p. 275-289.
- RRISP 77, 1980, Reykjanes Ridge Iceland seismic experiment, *Journal of Geophysics*, v. 47, p. 228-238.
- Sæmundsson, K., 1974, Evolution of the axial rifting zone in Northern Iceland and the Tjörnes fracture zone. *GSA Bull.*, v. 85, p. 495-504.
- Sæmundsson, K., 1979, Outline of the geology of Iceland. *Jökull*, v. 29, p. 7-28.
- Schilling, J-G., 1973, Iceland mantle plume: geochemical evidence along Reykjanes Ridge. *Nature*, v. 242, p. 565-571.

- Schilling, J.-G., Meyer, P.S., Kingsley, R. H., 1982, Evolution of the Iceland Hotspot. *Nature*, v. 296, p. 313-320.
- Sinton, J. M., Wilson, D. S., Christie, D. M., Hey, R. N., Delaney, J. R., 1983, Petrologic consequences of rift propagation on oceanic spreading ridges. *Earth and Planetary Science Letters*, v. 62, p. 193-207.
- Sleep, N.H., 1990, Hotspots and mantle plumes: some phenomenology. *Journal of Geophysical Research*, v. 95, p. 6715-6736.
- Stacey, F.D., Loper, D.E., 1983, The thermal boundary layer interpretation of D" and its role as a plume source. *Physics of Earth and Planetary Interiors*, v. 33, p. 45-55.
- Steiger, Jaeger, 1977, Subcommission on geochronology; convention on the use of decay constants in geo- and cosmochronology. *Earth and Planetary Science Letters*, v. 36, p. 359-362.
- Steinthórsson, S., 1964, The ankaramites of Hvammsmúli, Eyjafjöll, Southern Iceland. *Acta Naturalia Islandica*, v. 2, no. 4.
- Steinthórsson, S., Oskarsson, N., Sigvaldson, G. E., 1985, Origin of alkali basalts in Iceland: a plate tectonic model. *Journal of Geophysical Research*, v. 90, p. 10027-10042.
- Steinthórsson, S., Oskarsson, N., Arnórsson, S., Gunnlaugsson, E., 1987, Metasomatism in Iceland: hydrothermal alteration and remelting of oceanic crust, from *Chemical Transport in Metasomatic Processes*, (ed) H.C. Helgeson, p. 355-387.
- Stolper, E., 1980, A phase diagram for mid-ocean ridge basalts: preliminary results and implications for petrogenesis. *Contributions to Mineralogy and Petrology*, v. 74, p. 13-27.
- Sun, S.S., Tasumoto, M., Schilling, J.-G., 1975, Mantle plume mixing along the Reykjanes Ridge axis: lead isotope evidence. *Science*, v. 190, p. 143-147.
- Sun, S.S., McDonough, W.F., 1986, Chemical and isotope systematics of oceanic basalts: implications for mantle composition and processes, from *Magmatism in the ocean basins*, (eds) Saunders, A.D., Norry, M.J., Geological Society Special Publication, n. 42, pp. 313-345.
- Thy, P., 1991a, High and low pressure phase equilibria of a mildly alkalic lava from the 1965 Surtsey eruption: experimental results. *Lithos*, v. 26, p. 223-243.
- Thy, P., 1991b, High and low pressure phase equilibria of a mildly alkalic lava from the 1965 Surtsey eruption: Implications for the evolution of mildly alkalic and transitional basalts in the south-east propagating rift zone of Iceland. *Lithos*, v. 26, p. 253-269.
- Tryggvason, K., Husebye, E.S., Stefánsson, R., 1983, Seismic image of the hypothesized Icelandic hotspot. *Tectonophysics*, v. 100, p. 97-118.

- Vance, J. A., 1969, On Synneusis. Contributions to Mineralogy and Petrology, v. 24, p. 7-29.
- Vink, Gregory E., 1984, A Hotspot model for Iceland and the Vøring Plateau. Journal of Geophysical Research, v. 89, p. 9949-9959.
- Vink, Gregory E., Morgan, W. Jason, Vogt, Peter R., 1985, The earth's hot spots. Scientific American, April 1985, p. 50-57.
- White, W.M., Hofmann, A.W., 1982a, Mantle heterogeneity and isotopes in oceanic basalts. Nature, v. 295, p. 363-364.
- White, W.M., Hofmann, A.W., 1982b, Sr and Nd isotope geochemistry of oceanic basalts and mantle evolution. Nature, v. 296, p. 821-825.
- White, R. S., Spence, G. D., Fowler, S. R., McKenzie, D. P., Westbrook, G. K., Bowen, A. N., 1987, Magmatism at rifted continental margins. Nature, v. 330, p. 439-444.
- White, R.S., 1989, Initiation of the Iceland plume and opening of the North Atlantic, from Extensional tectonics and stratigraphy of the North Atlantic margins. AAPG Memoir 46, (ed) Tankard, A.J., Balkwill, H.R., p. 149-154.
- Whitehead, J.A. Jr., Luther, D. S., 1975, Dynamics of laboratory diapir and plume models. Journal of Geophysical Research, v. 80, no. 5, p. 705-717.
- Williams, H., McBirney, A.R., 1979, Volcanology, (ed) Freeman, Cooper, and Co., 397 p.
- Wood, D. A., Joron, J.-L., Treuil, M., Norry, M., Tarney, J., 1979, Elemental and Sr isotope variations in basic lavas from Iceland and the surrounding ocean floor. Contributions to Mineralogy and Petrology, v. 70, p. 319-339.
- Wood, D. A., 1981, Partial melting models for the petrogenesis of Reykjanes Peninsula basalts, Iceland: implications for the use of trace elements and strontium and neodymium isotope ratios to record inhomogeneities in the upper mantle. Earth and Planetary Science Letters, v. 52, p. 183-190.
- Zindler, A., Hart, S. R., Frey, F. A., Jakobsson, S. P., 1979, Nd and Sr isotope ratios and rare earth element abundances in Reykjanes peninsula basalts: evidence for mantle heterogeneity beneath Iceland. Earth and Planetary Science Letters, v. 45, p. 249-262.

## **APPENDICES**