

## MICHAEL STOREY: POSITION, WORK ADDRESS AND CONTACT DETAILS

Director of the Quaternary Dating Laboratory (QUAD-LAB). QUAD-Lab is an independent research laboratory funded by a 12 million Dkr grant from the Villum Kann Foundation and hosted at Roskilde University, Denmark. QUAD-LAB's focus is the application of the  $^{40}\text{Ar}/^{39}\text{Ar}$  dating method to geologically young samples (< 2 million years). More details may be found on the QUAD-LAB website – [www.QuadLab.dk](http://www.QuadLab.dk)

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## FIVE RECENT PUBLICATIONS

Meyzen CM, Ludden JN, Humler E, Luais B, Toplis MJ, Mevel C, Storey M. 2005 - New insights into the origin and distribution of the DUPAL isotope anomaly in the Indian Ocean mantle from MORB of the Southwest Indian Ridge. *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS* 6: Art. No. Q11K11

Storey M., Pedersen A.K., Stecher O., Bernstein S., Larsen, H.C., Larsen, L.M., Baker, J.A., Duncan R.A., 2004, Long-lived post-breakup magmatism along the East Greenland margin: Evidence for shallow mantle metasomatism by the Iceland plume, *Geology* 32, 173-176

Boyet M., Blichert-Toft, J., Rosing, M., Storey, M., Télouk, P., Albarède, F., 2003,  $^{142}\text{Nd}$  evidence for early Earth differentiation. *Earth and Planetary Science Letters* 214, 427-442.

Skovgaard, A.C., Storey, M., Baker, J., Blusztain, J. and Hart, S. R., 2001 Osmium-oxygen isotopic evidence for a recycled and strongly depleted component in the Iceland plume. *Earth and Planetary Science Letters*, 194, 259-275.

Breddam, K., Kurz, M., and Storey, M., 2000, Mapping out the conduit of the Iceland mantle plume with helium isotopes, *Earth and Planetary Science Letters*, 176, 45-55.

## FIVE SELECTED PUBLICATIONS (Cited in brackets: Source - ISI Web of Knowledge, March 21 2006)

(140) Storey, M., Mahoney J.J., Saunders, A.D., Kelley, S., Duncan, R.A. and Coffin, M., 1995, Timing of hot-spot related magmatism and the breakup of Madagascar and India. *Science*, 267, pp 852-855.

(101) Storey, M., Mahoney, J.J., Kroenke, L.W. and Saunders, A.D., 1991 Are oceanic plateaus sites of komatiite formation? *Geology*, 19, pp 376-379.

(95) Tarduno, J.A., Sliter, W.V., Kroenke, L., Leckie, M., Mayer, H., Mahoney, J.J., Musgrave, R., Storey, M., and Winterer, E.L., 1991, Rapid formation of the Ontong Java Plateau by Aptian plume volcanism. *Science*, volume 254, pp 399-403.

(90) Storey, M., Kent, R., Saunders, A.D., Hergt, J., Salters, V.J., Whitechurch, H., Sevigny, J.H., Thirlwall, M.F., Leat, P., Ghose, N.C. and Gifford, M., 1992 Lower Cretaceous volcanic rocks on continental margins and their relationship to the Kerguelen Plateau. *Scientific Results, Ocean Drilling Program*, volume 120, 33-53.

(84) Storey, M., Saunders, A.D., Tarney, J., Gibson, I.L., Thirlwall, M.F., Leat, P., Menzies, M.A., Norry, M.J. and Thompson, R.N., 1989, Contamination of Indian Ocean asthenosphere by the Kerguelen-Heard mantle plume. *Nature*, 338, pp 574-576.

## FUNDED RESEARCH PROPOSALS

- Proposal to the Villum Kann Foundation to establish the Quaternary Dating Laboratory (QUAD-LAB) – 12 million Dkr (August 2004).
- EU Marie Curie Postdoctoral Fellowship for Dr. Christine Meyzen to work on SWIFT samples – 1 million Dkr
- Danish Principal Investigator for the joint Danish-French SWIFT cruise to the SW Indian Ocean

## SCIENCE CRUISES

- 2001 Danish-French SWIFT cruise to the Southwest Indian Ridge (Principal Investigator)
- 1990 Ocean Drilling Program Leg 130 - Ontong Java Plateau, SW Pacific Ocean (Igneous Petrologist)
- 1988 Ocean Drilling Program Leg 120 - Kerguelen Plateau, Southern Indian Ocean (Igneous Petrologist)

PH.D STUDENTS (UNIVERSITY OF COPENHAGEN): Karen Hanghøj (1998), Kresten Breddam (2000), Anna Cecilie Skovgaard (2003)

## PEER REVIEWED PUBLICATIONS

### 2005

Meyzen CM, Ludden JN, Humler E, Luais B, Toplis MJ, Mevel C, Storey M - New insights into the origin and distribution of the DUPAL isotope anomaly in the Indian Ocean mantle from MORB of the Southwest Indian Ridge. *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS* 6: Art. No. Q11K11 NOV 10 2005

### 2004

Storey M., Pedersen A.K., Stecher O., Bernstein S., Larsen, H.C., Larsen, L.M., Baker, J.A., Duncan R.A. - Long-lived post-breakup magmatism along the East Greenland margin: Evidence for shallow mantle metasomatism by the Iceland plume. *Geology* 32, 173-176

### 2003

Boyet M., Blichert-Toft, J., Rosing, M., Storey, M., Télouk, P., Albarède, F -  $^{142}\text{Nd}$  evidence for early Earth differentiation. *Earth and Planetary Science Letters* 214, 427-442.

Hanghøj K., Storey, M., Stecher, O - An isotope and trace element study of the East Greenland Tertiary dyke swarm. Constraints on temporal and spatial evolution during continental rifting. *Journal of Petrology* 44, 2081-2112

Peate D W, Baker J A, Blichert-Toft J, Hilton D R, Storey M, Kent A J R, Brooks C K, Hansen H, Pedersen A K, Duncan R A., The Prinsen af Wales Bjerge formation lavas, East Greenland: The transition from tholeiitic to alkalic magmatism during Palaeogene continental break-up. *Journal of Petrology* 44 (2): 279-304

Charlier B L A, Peate D W, Wilson C J N, Lowenstern J B, Storey M, Brown S J A Crystallisation ages in coeval silicic magma bodies: U-238-Th-230 disequilibrium evidence from the Rotoiti and Earthquake Flat eruption deposits, Taupo Volcanic Zone, New Zealand. *Earth and Planetary and Science Letters* 206 (3-4): 441-457

## 2002

Coffin M.F., Pringle M.S., Duncan R.A., Gladczenko T.P., Storey M., Muller R.D., Gahagan L.A. Kerguelen hotspot magma output since 130 Ma. *Journal of Petrology*, 43 (7): 1121-1139

## 2001

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## 2000

Breddam, K., Kurz, M., and Storey, M. Mapping out the conduit of the Iceland mantle plume with helium isotopes. *Earth and Planetary Science Letters*, 176, 45-55.

## 1999

Larsen, T. B., Yuen, D. A. and Storey, M. Ultrafast mantle plumes and implications for flood basalt volcanism in the Northern Atlantic Region. *Tectonophysics*, 311, 31-43

Walker, R. J., Storey, M., Kerr, A. C., Tarney, J., Arndt, N. T. Implications of 187Os isotopic heterogeneities in a mantle plume. Evidence from Gorgona Island and Curacao. *Geochimica et Cosmochimica Acta*, 63, 713-728.

## 1998

Karson, J. A., Brooks, C. K., Storey, M., Pringle, M. S. Tertiary faulting and pseudotachylyte in the East Greenland volcanic rifted margin: Seismogenic faulting during magmatic construction. *Geology*, 26, pp 39-42.

Sinton, C. W., Duncan, R. A., Storey, M., Lewis, J. and Estrada, J. J. An oceanic flood basalt province within the Caribbean plate. *Earth and Planetary Science Letters*, 155, 221-235.

Tegner, C., Duncan, R. A., Bernstein, S., Brooks, C. K., Bird, D. K., Storey, M. 40Ar - 39Ar geochronology of Tertiary mafic intrusions along the East Greenland rifted margin: Relation to flood basalts and the Iceland hotspot track. *Earth and Planetary Science Letters*, 156, 75-88.

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Graham, D. W., Larsen, L. M., Hanan, B. B., Storey, M., Pedersen, A. K., and Lupton, J. E. Helium isotope composition of the early Iceland mantle plume inferred from the Tertiary picrites of West Greenland *Earth and Planetary Science Letters*, 160, 241-255.

## 1997

Storey, M., Mahoney, J.J. and Saunders, A.D. Cretaceous basalts in Madagascar and the transition between plume and continental lithosphere mantle sources in: *Large Igneous Provinces* (J.J. Mahoney and M. F. Coffin, editors) AGU Geophysical Monograph 100, 95-122.

## 1996

Kent, R., Hardarson, B., Saunders, A.D., Storey, M. Plateaux ancient and modern: Geochemical and sedimentological perspectives on Archaean oceanic magmatism. *Lithos*, 37, pp 129-142.

Kent, R. W., Saunders, A. D., Storey, M., Ghose, N. C. Petrology of Early Cretaceous flood basalts and dykes along the rifted volcanic margin of eastern India. *Journal of Southeast Asian Earth Sciences*, 13, 95-111

## 1995

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## 1994

Saunders, A.D., Storey, M., Kent, R.W., and Gibson, I.L. Magmatic activity associated with the Kerguelen-Heard plume: implications for plume dynamics. *Geological Society of France*, 166, 61-72.

## 1993

Mahoney, J.J., Storey, M., Duncan, R.A., Spencer, K.J. and Pringle, M. Geochemistry and geochronology of Leg 130 basement lavas: Nature and origin of the Ontong Java Plateau. *Scientific Results, Ocean Drilling Program, volume 130*, pp 3-22.

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## 1992

Salters, V.J., Storey, M., Sevigny, J.H. and Whitechurch, H. Trace element and isotopic characteristics of Kerguelen-Heard Plateau basalts. *Scientific Results, Ocean Drilling Program, volume 120*, 55-62.

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Sevigny, J.H., Whitechurch, H., Salters, V.J. and Storey, M. Zeolite facies metamorphism of central Kerguelen Plateau basalts. *Scientific Results, Ocean Drilling Program, volume 120*, 63-69.

Whitechurch, H., Montigny, R., Sevigny, J., Storey, M. and Salters, V.J. K-Ar and 40Ar-39Ar ages of central Kerguelen Plateau basalts. *Scientific Results, Ocean Drilling Program, volume 120*, 71-77.

Kent, R., Storey, M. and Saunders, A.D. Large Igneous Provinces: Sites of plume impact or plume incubation? *Geology*, 20, pp 891-894.

Saunders, A.D., Storey, M., Kent, R.W., and Norry, M.J. Consequences of plume-lithosphere interactions. In *Magmatism and the Causes of Continental Break-up* (volume 68, pp 41-60) *Geological Society of London Special Publication* (B.C Storey, T. Alabaster & R.J. Pankhurst, eds.).

Duncan, R.A. and Storey, M. The life cycle of Indian Ocean hotspots. *American Geophysical Union Monograph 70*, pp 91-103.

Weis, D., White, W.M., Frey, F.A., Duncan, R.A., Dehn, J., Fisk, M., Ludden, J., Saunders, A.D. and Storey, M. The influence of mantle plumes in the generation of Indian oceanic crust. *American Geophysical Union Monograph 70*, pp 57-89.

## 1991

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Tarduno, J.A., Sliter, W.V., Kroenke, L., Leckie, M., Mayer, H., Mahoney, J.J., Musgrave, R., Storey, M., and Winterer, E.L. Rapid formation of the Ontong Java Plateau by Aptian plume volcanism. *Science*, volume 254, pp 399-403.

Saunders, A.D., Storey, M., Gibson, I.L., Leat, P. and Hergt, J. Chemical and isotopic constraints on the origin of basalts from the Ninetyeast Ridge, Indian Ocean: results from the Deep Sea Drilling Projects Legs 22 and 26, and the Ocean Drilling Program Leg 121. *Scientific Results, Ocean Drilling Program, volume 121*, pp 559-590.

**1989**

Storey, M., Wolff, J.A., Norry, M.J. and Marriner, G.F. Origin of hybrid lavas from Agua de Pau volcano, Sao Miguel, Azores. In "Magmatism in the Ocean Basins" (A.D. Saunders & M.J. Norry eds.), *Special Publication Geological Society of London* (Volume 42, pp 161-180).

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**1988**

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**1984**

Wolff, J.A. & Storey, M. Zoning in highly alkaline magma bodies. *Geological Magazine*, 121, pp 563-575.

**1983**

Wolff, J.A. & Storey, M. The volatile component of some pumice-forming alkaline magmas from the Azores and Canary Islands. *Contributions to Mineralogy and Petrology*, 82, pp 66-74.

Wolff, J.A. & Storey, M. The use of tephra studies to determine volatile release during large explosive volcanic eruptions. In "Conference on Planetary Volatiles" (R.O. Pepin and R.O'Connell eds.), pp 194-198. *LPI Tech. Rpt. 83-01*. Lunar and Planetary Institute, Houston.

**1981**

Storey, M. Trachytic pyroclastics from Agua de Pau volcano, Sao Miguel, Azores: evolution of a magma body over 4,000 years. *Contributions to Mineralogy and Petrology* 78, pp 423-432