



Curriculum Vitae

Education

Name : Jourdan
First Name : Frédéric, Laurent, Gérald

Nationality French
Birth date February 2, 1976

Work Address : Berkeley Geochronology Center & Department of Earth and Planetary Sciences, University of California
Berkeley,
2455 Ridge Road,
Berkeley, CA94709 USA

Phone : 1-510-644-1341
Fax : 510-644-9201
E-mail : fjourdan@bgc.org
Website http://www.bgc.org/people/each_person/jourdan_f.html

2005-present Post-doctorate fellow at the Berkeley Geochronology Center and Department of Earth and Planetary Science, University of California, Berkeley.

2005 Ph.D., Geochemistry and Geochronology
Title: “The Karoo large igneous province: geochronology, geochemistry and geodynamic implications“.

Supervisors : Dr. Gilbert Féraud (CNRS ; University of Nice-Sophia Antipolis) and Dr. Hervé Bertrand (Maître de Conférence ; University of Lyon, ENS)

2001-2004 Teacher (‘moniteur’) at the University of Nice. Supervisor of 3rd year student dissertations.

2001-2005 PhD student at the University of Nice-Sophia Antipolis and the Ecole Normale Supérieure de Lyon.

2000 Teaching assistant, Magmatic Petrology, University of Geneva.

1999-2001 Diploma (M.S) in magmatic geochemistry at the University of Geneva
Title: “ The northernmost CAMP: ⁴⁰Ar/³⁹Ar age, petrology and Sr-Nd-Pb geochemistry of the Kerforne dyke (Brittany, France)“

Supervisors : Dr. Andrea Marzoli and Prof. Mike Dungan

1998 Training in MTA (Ankara, Turkey) in the Petrology Department where I have

also performed some teaching in elementary microscopic petrography for first year students.

1997-1999	'Licence' in Earth Sciences at the University of Geneva
1996-1997	Propedeutique 1- 2 (first selection year of geology in the University of Geneva)
1996	French Scientific Baccalaureate (with mention 'rather good')
1992-1996	Lycée International of Ferney-Voltaire (high school)

Mass spectrometry skills

My diploma, PhD and Post-doctorate studies mainly focused on geochronology and isotopic geochemistry. I therefore have much experience in mass spectrometric analysis and laboratory management.

I mainly worked with:

- A CO₂ Synrad 48-5 laser beam coupled with a VG3600 mass spectrometer and a Daly photo-multiplier (⁴⁰Ar/³⁹Ar, Nice).
- A double vacuum high frequency furnace coupled with a mass spectrometer composed of a 120° M.A.S.S.E. tube, a Baur-Signer GS 98 source and a Balzers electron multiplier (⁴⁰Ar/³⁹Ar, Nice).
- A Thomson 206 TIMS mass spectrometer with a single faraday cup and an electron multiplier (Pb isotopes measurements, Nice).
- A VG plasma 54 Multi collector ICPMS (Hf and Nd isotopes measurements, Lyon)
- Three MAP 215C et 215-50 mass spectrometers with full automated extraction system and electromultiplier detector and Niers source (⁴⁰Ar/³⁹Ar; Berkeley).
- A TIMS micromass sector 54 with ion counting system (U/Pb; Berkeley).

Professional activity

Referee for *Geochimica Cosmochimica Acta*, *Earth and Planetary Science Letters*, *Terra Nova* and *South African Journal of Geology* and member of the American Geophysical Union, European geophysical Union and Geochemical Society.

Publications (15)

W.U. Reimold, **F. Jourdan**, and A. Wittek. Comment on "⁴⁰Ar/³⁹Ar age constraints on low-grade metamorphism and cleavage development in the Transvaal Supergroup (central Kaapvaal craton, South Africa): implications for the tectonic setting of the Bushveld Igneous Complex by Alexandre et al. (2006). (*Submitted to South African Journal of Geology*).

F. Jourdan, G. Féraud, H. Bertrand, M.K. Watkeys, P.R. Renne. Distinct brief major events in the Karoo large igneous province clarified by new ⁴⁰Ar/³⁹Ar ages on the Lesotho basalts. (*Accepted to Lithos, minor revisions*).

F. Jourdan, J.P. Matzel, P.R. Renne, Direct measurement of ³⁹Ar (and ³⁷Ar) recoil ejection during neutron irradiation of sanidine and plagioclase crystals. (*Accepted to Geochimica Cosmochimica acta, major revisions*).

- F. Jourdan**, Bertrand, H., Sharer, U., Blichert-Toft, Féraud, G., Kampunzu, A.B., Le Gall, B., Watkeys, M.K., Major-trace element and Sr-Nd-Hf-Pb isotope compositions of the Karoo large igneous province in Botswana-Zimbabwe. (*Journal of Petrology; in press*).
- F. Jourdan**, P.R. Renne, U.W. Reimold, The problem of inherited $^{40}\text{Ar}^*$ in dating impact glass by $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology: Evidence from the Tswaing crater (South Africa). *Geochimica et Cosmochimica Acta* 71, p.1214-1231, 2007.
- F. Jourdan**, G. Féraud, H. Bertrand, M.K. Watkeys. From flood basalts to the onset of oceanisation: example from the $^{40}\text{Ar}/^{39}\text{Ar}$ high-resolution picture of the Karoo large igneous province. *G-cubed* 8, Q02002, 2007
- F. Jourdan**, P.R. Renne, F. Jourdan, P.R. Renne, Age calibration of the Fish Canyon sanidine $^{40}\text{Ar}/^{39}\text{Ar}$ dating standard using primary K-Ar standards. *Geochimica et Cosmochimica Acta* 71, p. 387-402, 2007.
- F. Jourdan**, Féraud, G., Bertrand, H., Kampunzu, A.B., Tshoso, G. Watkeys, M.K. & Le Gall, B. Reply to Comment on “The Karoo large igneous province: Brevity, origin, and relation with mass extinction questioned by new $^{40}\text{Ar}/^{39}\text{Ar}$ age data” by Teal R. Riley, Philip T. Leat, Michael L. Curtis. *Geology (Accepted, online forum)*.
- F. Jourdan**, C. Verati, G. Féraud, Intercalibration of the Hb3gr $^{40}\text{Ar}/^{39}\text{Ar}$ dating standard. *Chemical Geology* 231, p.177-189, 2006.
- F. Jourdan**, Féraud, G., Bertrand, H., Watkeys, M.K., Kampunzu, A.B., Le Gall, B. Basement control on dyke distribution in Large Igneous Provinces: Case study of the Karoo triple junction. *Earth and Planetary Sciences Letters* 241, p. 307-322, 2006.
- F. Jourdan**, Féraud, G., Bertrand, H., Kampunzu, A.B., Tshoso, G. Watkeys, M.K. & Le Gall, B. The Karoo Large Igneous Province: brevity, origin and relation with mass extinction in question from new $^{40}\text{Ar}/^{39}\text{Ar}$ age data, *Geology* 33, p. 745-748, 2005. [[Citation in Nature](#), Research highlight; vol. 437, sept2005].
- Le Gall B., Tshoso, G., Dymant, J. Kampunzu, A. B., **Jourdan, F.**, Féraud, G., Bertrand, H., Aubourg, C, Structure of the Okavango giant mafic dyke swarm (NE Botswana) and its significance within the Karoo large igneous province of southern Africa, *Journal of structural geology* 27, p. 2234-2255, 2005.
- F. Jourdan**, G. Féraud, H. Bertrand, A.B. Kampunzu, G. Tshoso, B. Le Gall, J.J. Tiercelin, P. Capiez, The Karoo triple junction questioned : evidence from $^{40}\text{Ar}/^{39}\text{Ar}$ Jurassic and Proterozoic ages and geochemistry of the Okavango dyke swarm (Botswana)., *Earth and Planetary Sciences Letters* 222, p. 989-1006, 2004.
- F. Jourdan**, A. Marzoli, H. Bertrand, M. Cosca, D. Fontignie., The northernmost CAMP: Ar/Ar age, petrology and Sr-Nd-Pb isotope geochemistry of the Kerforne dyke, Brittany, France., in: The Central Atlantic Magmatic Province, W. Hames, J.G. McHone, C. Rupel, P.R. Renne, ed. 136, pp. 209-226, *AGU Monograph*, 2003.
- B. Le Gall, G. Tshoso, **F. Jourdan**, G. Féraud, H. Bertrand, J.J. Tiercelin, A.B. Kampunzu, M.P. Modisi, J. Dymant, M. Maia., $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology and structural data from the giant Okavango and related mafic dyke swarms, Karoo igneous province, Botswana, *Earth and Planetary Science Letters* 202, p. 595-606, 2002.

To be submitted soon (5) → *proofs available on demand*

- F. Jourdan**, U.W. Reimold, P.R. Renne, High-precision $^{40}\text{Ar}/^{39}\text{Ar}$ age of the Janisjarvi impact structure (Russia) (*To be submitted to Meteoritics and Planetary Science*).
- F. Jourdan**, G. Féraud, H. Bertrand, M.K. Watkeys, P.R. Renne. $^{40}\text{Ar}/^{39}\text{Ar}$ ages of the sill complex of the Karoo large igneous province: relationship between geodynamics and climate change (*To be submitted to Earth and Planetary Science Letters*).
- F. Jourdan**, P.R. Renne, A method for calculating the ^{40}K branching ratio ($\lambda_{\beta^-}/\lambda_{\text{tot}}$) (*To be submitted to Chemical Geology*).
- A. Marzoli, **F. Jourdan**, M. Chiarada, F. Bussy., The enriched signature of Central Atlantic Magmatic Province basalts; constraints from mineral trace element and isotopic compositions of the Kerforne dike, France. (*To be submitted to Contribution to Mineralogy and Petrology*).
- F. Jourdan**, G. Féraud, H. Bertrand, B. Le Gall, The Proterozoic Okavango dyke swarm of Botswana: Proterozoic to Jurassic mantle source geochemical evolution. (*To be submitted to Journal of African Earth Sciences*)

Conferences (22)

- G. Féraud, **F. Jourdan**, H. Bertrand, M.K. Watkeys, P.R. Renne. Distinct brief major events in the Karoo large igneous province clarified by new $^{40}\text{Ar}/^{39}\text{Ar}$ ages on the Lesotho basalts Geophysical research abstract, AGU fall meeting, 2006.
- F. Jourdan**, P.R. Renne, Age and calibration of Fish Canyon sanidine $^{40}\text{Ar}/^{39}\text{Ar}$ dating standard: Tale from primary standards. Geophysical research abstract, AGU fall meeting, 2006.
- M Chiaradia, A. Marzoli, **F. Jourdan**, F. Bussy. Parental magmas and crustal contamination of tholeiitic basalts from the Central Atlantic magmatic province as revealed by mineral major and trace element and Sr isotopes in Goldschmidt conference, Melbourne 2006
- F. Jourdan**, J.P. Matzel, P.R. Renne, ^{39}Ar and ^{37}Ar recoil ejection during neutron irradiation of sanidine and plagioclase crystals in: Goldschmidt conference, Melbourne 2006
- F. Jourdan**, G. Féraud, H. Bertrand, M.K. Watkeys. From flood basalts to the onset of oceanisation: example from the $^{40}\text{Ar}/^{39}\text{Ar}$ high-resolution picture of the Karoo Large igneous province in: EUG general assembly, Vienna, 2006.
- F. Jourdan**, P.R. Renne, R. Mundil, $^{40}\text{Ar}/^{39}\text{Ar}$ and U/Pb Ages and geochemistry of the Benton Range Dike Swarm, SE California: New Evidence for an “Independence” Poly-phased Dike Swarm, in: Geophysical research abstract, AGU fall meeting, 2005.
- F. Jourdan**, Bertrand, H., Sharer, U., Blichert-Toft, Féraud, G., Kampunzu, A.B., Le Gall, B., Watkeys, M.K., Geochemical and Sr, Nd, Pb, Hf isotope composition of the Karoo large igneous province in Botswana-Zimbabwe: constraints for lithospheric control, in: Goldschmidt conference, Moscow (Idaho), *Geochemica Cosmochimica Acta* 69, A98 Supl., 2005.
- F. Jourdan**, G. Féraud, H. Bertrand, A.B. Kampunzu, M.K. Watkeys, G. Tshoso, B. Le Gall., New age constraints on the Karoo Large Igneous Province: triple junction and brevity questioned, in: Goldschmidt conference, Copenhagen, *Geochemica Cosmochimica Acta* 68, A575 Supl., 2004.

- F. Jourdan**, G. Féraud, H. Bertrand, M.K. Watkeys, A.B. Kampunzu, B. Le Gall, The Karoo triple junction: Proterozoic inheritance rather than Jurassic plume-related pristine structure?, in: 20th Colloquium of African Geology, Orleans, 2004.
- F. Jourdan**, H. Bertrand, G. Féraud, G. Tshoso, B. Le Gall, A.B. Kampunzu, M.K. Watkeys, $^{40}\text{Ar}/^{39}\text{Ar}$ and Geochemical data on the northern Karoo continental flood basalt and dyke swarms: implications for Gondwana breakup., in: 20th Colloquium of African Geology, Orleans, 2004.
- Le Gall B., Tshoso G., Dymont J., Féraud G., Bertrand H., **Jourdan F.**, Aubourg C., Kampunzu A.B., Structure of the Okavango giant mafic dyke swarm from the Karoo magmatic province in NE Botswana., in: 20th Colloquium of African Geology, Orleans, 2004.
- A. Marzoli, **F. Jourdan**; Chiaradia, M.; Bussy, F., The enriched signature of Central Atlantic Magmatic Province basalts; constraints from mineral trace element and isotopic compositions of the Kerforne dike, France, in: Geophysical Research Abstracts, EGS-AGU-EUG. assembly, ed., Nice, 2003.
- B. Le Gall, G. Tshoso, J.J. Tiercelin, J. Dymont, C. Aubourg, G. Féraud, **F. Jourdan**, H. Bertrand., The structure of the Okavango giant mafic dyke swarm in the Karoo magmatic province of North Botswana, in: Geophysical Research Abstracts, EGS-AGU-EUG. assembly, ed., Nice, 2003.
- F. Jourdan**, G. Féraud, H. Bertrand, G. Tshoso, B. Le Gall, A.B. Kampunzu, J.J. Tiercelin., The geochronology of continental flood basalts: example of new $^{40}\text{Ar}/^{39}\text{Ar}$ data on the Karoo magmatic province., in: Geophysical Research Abstracts, EGS-AGU-EUG. assembly, ed., pp. 379, Nice, 2003.
- J. Dymont, T. Gomotsang, C. Aubourg, B. Le Gall, J.J. Tiercelin, **F. Jourdan.**, The Okavango giant dyke swarm (northern Botswana): insights from combined ground-level magnetic and aeromagnetic data, I. 2003, ed., Japan, 2003.
- F. Jourdan**, G. Féraud, H. Bertrand, A.B. Kampunzu, G. Tshoso, B. Le Gall, J.J. Tiercelin., The Karoo triple junction questioned : Evidence from $^{40}\text{Ar}/^{39}\text{Ar}$ Jurassic and Proterozoic ages and geochemistry of the Okavango dyke swarm (Botswana), EGS-AGU-EUG. assembly, ed., pp. 144, Geophysical Research Abstracts, Nice, 2003.
- A. Marzoli, F. Bussy, **F. Jourdan**, Parental magmas and crustal contamination of tholeiitic basalts as revealed by mineral major and trace element compositions, Goldschmidt conference, ed., Cambridge Publications, Davos, 2002.
- F. Jourdan**, G. Tshoso, G. Féraud, H. Bertrand, B. Legall, J.J. Tiercelin, A.B. Kampunzu., New $^{40}\text{Ar}/^{39}\text{Ar}$ radiometric, geochemistry and structural data on the giant Okavango mafic dike swarm and lava-flows from the Karoo province in Botswana: implications for Gondwana break-up., in: Geophysical Research Abstracts, E.G.S. XXVII, ed. 4, pp. 65, Nice, 2002.
- G. Tshoso, J. Dymont, C. Aubourg, B. Le Gall, J.J. Tiercelin, G. Féraud, H. Bertrand, **F. Jourdan**, H. Kampunzu., Magnetic investigation of the Okavango Giant Dyke Swarm (N Botswana), E.G.S. XXVII, ed. 4, Geophysical Research Abstracts, Nice, 2002.
- B. Le Gall, G. Tshoso, J. Dymont, J.J. Tiercelin, G. Féraud, H. Bertrand, **F. Jourdan**, C. Aubourg, A.B. Kampunzu., Structure of the Karoo Giant Dyke Swarm of NE Botswana, in: Geophysical Research Abstracts, E.G.S. XXVII, ed. 4, Nice, 2002.
- F. Jourdan**, A. Marzoli, H. Bertrand, M. Cosca, D. Fontignie., The northernmost CAMP: Ar/Ar age, petrology and Sr-Nd-Pb isotope geochemistry of the Kerforne dyke, Brittany, France., in: EUG XI, Strasbourg, 2001.

F. Jourdan, A. Marzoli, H. Bertrand, M. Cosca, D. Fontignie., The northernmost CAMP: Ar/Ar age, petrology and Sr-Nd-Pb isotope geochemistry of the Kerforne dyke, Brittany, France., in: 6eme Journée Magmatique, Bern, 2001.

Web site contribution

F. Jourdan, G. Féraud, H. Bertrand; Basement control on dyke distribution in Large Igneous Provinces: case study of the Karoo triple junction; <http://www.mantleplumes.org/Karoo.html>; Feb.2005.

