

## Pierre Cartigny

**PERSONNAL INFORMATION** *Born:* 02 January 1972, Charleville-Mézières (France)  
*Nationality:* French  
Married; 2 daughters

**CONTACT INFORMATION** Laboratoire de Géochimie des Isotopes Stables  
Institut de Physique du Globe de Paris  
1 rue Jussieu, Office 511, 75238 Paris Cedex 05, France  
*E-mail:* cartigny@ipgp.jussieu.fr <http://www.ipgp.jussieu.fr/~cartigny/>  
*Tél:* + 33 1 83 95 75 11

**RESEARCH** Diamond formation and origin, Chemical geodynamic of volatile elements (C, N, S, H)  
Mantle and subducted volatile fluxes, Experimental approach of the stable isotope fractionation

**EDUCATION** **2006** Habilitation à Diriger des Recherches, Université Paris 7, (Denis Diderot), France  
**1997** PhD-thesis, Université Paris 7 (Denis Diderot), France  
**1994** - MsC, Université Paris 7, France  
**1994** - Magistère des Sciences de la Terre de Paris [ENS-Paris, Universités Paris 6 et 11]

**FONCTIONS** SEPT. **2010**- CNRS Senior Research (Directeur de Recherches) Scientist at the Institut de Physique du Globe de Paris, France  
FEV. **2000**- FEV. **2010** - CNRS Junior Research Scientist (Chargé de Recherches) à l'Institut de Physique du Globe de Paris  
**1998-2000** Post-doctoral Fellow at the Geochemisches Institut, Göttingen University (Germany)

**DISTINCTIONS** **2007** - E. Roth Medal of the French Academy of Sciences

**SERVICE**

PRESENT 2008- Head of Stable Isotope Group of IPG-Paris (7 researchers, 6 technical staff members, 7 PhD students, 2 postdoctoral fellows)  
2015- Président de la Société Française des Isotopes (SFIS)  
2016- Member of the CNRS panel REGEF (Réseau Géochimique et Expérimental Français)

PAST 2009-2013 - Member of the administration governing council (elected)  
2009-2013 - President of the Scientific Council of the Earth Sciences Department of Paris Denis Diderot University  
2002-2007 - Member of the CNRS-INSU geochemistry instrumentation evaluation panel Géochimie (INSU mi-lourd)  
2000-2006 - Member of the IPG-Paris Scientific Council  
2003 & 2004 - Organisation of the IPGP *general* seminars  
Member of the Clermont Ferrand appointment committee (2006-2008) sections 35 & 36

Referee: Chemical Geology, Comptes Rendus Geosciences, Contributions to Mineralogy and Petrology, Earth and Planetary Science Letters, G-3, Geochimica et Cosmochimica Acta, Geological Magazine, Geology, Lithos, Nature, Nature Geoscience, PNAS, Science, etc...

**PhD AND HABILITATION COMMITTEES**  
PhD thesis committee : S. Delattre (2009), L. Fusetti (IFP, 2009), C. Dufouilly (LEME, 2012)  
Habilitation thesis committee : D. Widory, (BRGM, 2011), A. Landais (LSCE, 2011), J. Sonke (MIP Toulouse, 2012), O. Alard (Montpellier, 2014)

**STUDENTS AND POSTDOCTORATE**

PRESENT Lambert Baraut (Sept. 2014 –) (co-advised with F. Robert)  
*Photochemistry and mass-independent isotope fractionation of oxygen*

David Au Yang (Sept. 2013 –) co-tutelle with l'Université de Québec à Montréal (UQAM) and McGill University (co-advised with D. Widory and B. Wing)  
*Sulfur source and process fingerprint in urban aerosols (PM10) of Paris and Montreal cities*

Amandine Katz (Sept. 2013 –) (co-advised avec M. Bonifacie)  
 *$\Delta^{47}$  paleothermometer: validation and applications to pre-Cenozoic climate and marine paleoenvironment conditions*

- PAST PHD'S
- Vincent Busigny (2000-2004) (coadvised with P. Phillipot and M. Javoy) Geochemical behavior of nitrogen in a cold subduction setting. Now : Assistant Professor at the University Paris Diderot
- Emilie Thomassot (2002-2006) Origin and formation of diamond in the upper mantle : The bearing of a multi-isotope systematics ( $^{13,12}\text{C}$ ,  $^{15,14}\text{N}$ ,  $^{34,33,32}\text{S}$ ). Now : Assistant Professor at the CRPG-Nancy.
- Mederic Palot (2006-2010) Constraints on deep mantle convection from the study of nitrogen isotopes in lower and transition zone diamonds Now :Postdoctoral fellow at the University of Alberta, Canada.
- Matthieu Clog (2007-2011) (co-advised with C. Aubaud) D/H-ratio, concentration and origin of water in the Earth's upper mantle. Now :Postdoctoral fellow at Caltech, USA.
- Jabrane Labidi (2009-2013) Multiple sulfur isotope chemical geodynamics. Now :Postdoctoral fellow at Geophysical Lab, Carnegie Institution of Washington, USA.
- PRESENTS PHD'S
- David Au Yang (Sept. 2013 - ) co-chaired with the University du Québec à Montréal (UQAM) (co-advised with D. Widory)  
*Sulfur isotope tracing of sources and processes in urban aerosols (PM10) from Paris and Montreal.*
- Amandine Katz (Sept. 2013) (co-advised with M. Bonifacie)  
 *$\Delta 47$  clumping thermometer and its application to pre-Cenozoic climate and environment*
- POSTDOCTORATE
- Long Li (2006-2007) Kinetic nitrogen isotope fractionation associated with thermal decomposition of  $\text{NH}_3$  Now :Assistant Professor, University of Alberta, Edmonton, Canada.
- Céline Defouilloy (2012-) Multiple sulfur isotope (re-)investigation of enstatite chondrites & sulfur cycling in the 3.2 Gy Barberton sequence
- MASTER STUDENT (2<sup>ND</sup> YEAR)
- PRESENT Lambert Baraut (co-direction avec F. Robert)  
*Photochemistry of CO and mass-independent isotope fractionations*
- PAST Vincent Busigny, Emilie Thomassot, Médéric Palot, Matthieu Clog, Jabrane Labidi (see subjects above)
- MASTER STUDENT (1<sup>ST</sup> YEAR)
- PAST David au Yang *On the origin of sulfate in carbonaceous chondrites*  
Lambert Baraut (co-advised with F. Robert) (see subject above)

## PUBLICATIONS

### 2016

67. Au Yang D, Landais G, Assayag N, Widory D, Cartigny P. (2016) Improved analysis of sulfur multi-isotope compositions at micro and nanomole levels by gas source isotope ratio mass spectrometry. *Rapid Communications in Mass Spectrometry* 30, 897–907.
66. Ader M., Thomazo C., Sansjofre P., Busigny V., Papineau D., Laffont R., Cartigny P., Halverson G.P. (2016) Nitrogen isotope interpretation in Precambrian sedimentary rocks: assumptions and perspectives. *Chemical Geology* 429, 93-110 (Invited Review Paper).
65. Defouilloy C., Cartigny P., Assayag N., Moynierc F., Barrat J.-A. (2016) High-precision Sulfur isotope composition of enstatite meteorites and implications of the formation and evolution of their parent bodies. *Geochemica et Cosmochimica Acta* 171, 393-409.

### 2015

64. Avice G., Meier M.M.M., Marty B., Wieler R., Kramers J.D., Langenhorst F., Cartigny P., Maden C., Zimmermann L., Andreoli M.A.G. (2015) A comprehensive study of noble gases and nitrogen in "Hypatia", a diamond-rich pebble from SW Egypt. *Earth and Planetary Science Letters* 432, 243-253.

63. Day J.M., Corder C.A., Rumble D., Assayag N., Cartigny P., Taylor L.A. (2014). Differentiation processes in FeO-rich asteroids revealed by the achondrite Lewis Cliff 8876. *Meteoritics and Planetary Science* 50, 1750-1766.
62. Labidi J., Cartigny P., Jackson M.G. (2015) Multiple sulfur isotope composition of oxidized Samoan melts and the implications of a sulfur isotope 'mantle array' in chemical geodynamics. *Earth and Planetary Science Letters* 417, 28-39.
61. Thomassot E., O'Neil J., Francis D., Cartigny P., Wing B.A. (2015) Atmospheric record in the Hadean Eon from multiple sulfur isotope measurements in Nuvvuagittuq Greenstone Belt (Nunavik, Quebec). *Proceedings of the National Academy of Science* 112, 707-712.

#### 2014

60. Antonelli M.A., Kim S.-T., Peters M., Labidi J., Cartigny P., Walker R.J., Hoek J., Farquhar J. (2014) An early inner solar system origin for anomalous sulfur isotopes in differentiated protoplanets. *Proceedings of the National Academy of Science* 111, 17749–17754.
59. Boutoux A., Verlaquet A., Bellahsen N., Lacombe O., Villemant B., Caron B., Martin E., Assayag N., Cartigny P. (2014) Fluid systems above basement shear zones during inversion of pre-orogenic sedimentary basins (External Crystalline Massifs, Western Alps). *Lithos* 206, 435-453.
58. Li L., Zheng Y.F., Cartigny P., Li J. (2014) Anomalous nitrogen isotopes in ultrahigh-pressure metamorphic rocks from the Sulu orogenic belt: effect of abiotic nitrogen reduction during fluid-rock interaction. *Earth and Planetary Science Letters*, 403, 67-78.
57. Eiler J.M., Guo W., Hofmann A.E., Cartigny P., Bourg I., Gagnon A., Halevy I., Schauble E., Levin N., Bergquest B., Farquhar J., Stolper D. (2014) Frontiers of Stable Isotope Geoscience. *Chemical Geology* 372, 119-143 (Invited Review).
56. Cartigny P., Palot M., Thomassot E., Harris J.W. (2014) Diamond formation : A stable isotope perspective. *Annual Review of the Earth and Planetary Sciences* 42, 699-732.
55. Labidi J., Cartigny P., C. Hamelin, M. Moreira, Dosso L. (2014) Sulfur isotope (33, 34, 36) budget in Pacific-Antarctic ridge basalts : a record of source heterogeneity and assimilation. *Geochimica et Cosmochimica Acta* 133 , 47-67.

#### 2013

54. Clog M., Aubaud C., Cartigny P., Dosso L. (2013) The hydrogen isotopic composition of the southern Pacific MORB : a reassessment of the mantle D/H ratio and variability. *Earth and Planetary Science Letters* 381, 156-165.
53. Cartigny P., Marty B., Nitrogen isotopes and mantle geodynamics : The emergence of life and the atmosphere-crust-mantle connection. *Elements* 9, 356-366
52. Bebout G.E., Fogel M.L., Cartigny P. (2013) Nitrogen: Highly Volatile Yet Surprisingly Compatible. *Elements* 9, 333-338.
51. Labidi J., Cartigny P., Moreira M. (2013) Non-chondritic sulphur isotope composition of the terrestrial mantle *Nature* 501, 208-211.
50. Eiler J., Cartigny P., Hofman, A.E. (2013) Mass-anomalous equilibrium isotopic fractionations associated with the vapor pressure isotope effect of SF<sub>6</sub>. *Geochimica et Cosmochimica Acta* 107, 205-219.
49. Shirey S., Cartigny P., Frost D.J., Keshav S., Nestola F., Nimis, P., Pearson D.G., Sobolev N.V., Walter M.J. (2013) Diamonds and the geology of mantle carbon. In *Carbon in Earth* (Hazen R.M., Jones A.P., Baross J.A. Eds) *Reviews in Mineralogy and Geochemistry* 75 355-421. DOI: 10.2138/rmg.2013.75.12.
48. Palot M., Cartigny P., Harris J.W., Stachel T., Kaminski F. (2012) Evidence for deep mantle convection and primordial heterogeneity from nitrogen and carbon stable isotopes in diamond .*Earth and Planetary Science Letters* 357-358, 179-193.
47. Labidi J., Cartigny P., Birck J.L., Assayag N., Bourrand J.J. (2012) Determination of multiple sulfur isotopes in glasses : a reappraisal of the MORB  $\delta^{34}\text{S}$ . *Chemical Geology* 334, 189-198
46. Clog M., Cartigny P., Aubaud C. (2012) Experimental evidence for interaction of water vapor and platinum crucibles at high temperatures: Implications for volatiles from igneous rocks and minerals. *Geochimica et Cosmochimica Acta* 83, 125-137.

45. Busigny V., Cartigny P., Philippot P. (2011) Nitrogen isotopes in ophiolitic metagabbros: A re-evaluation of modern nitrogen fluxes in subduction zones and implication for the early Earth atmosphere. *Geochimica et Cosmochimica Acta* 75, 7502-7521
44. Sansjofre P., Ader M., Trindade R.I.F., Cartigny P., Nogueira A.C.R. (2011) Carbon isotope evidence for low  $P_{CO_2}$  in the aftermath of Neoproterozoic glaciations. *Nature* 478, 93-96.
43. Cartigny P. (2010). Mantle-derived carbonados : Insights from Dachine diamonds (French Guiana). *Earth and Planetary Science Letters* 296, 329-339.
42. Klein-BenDavid O., Pearson D.G., Nowell, G.M., Ottley C., McNeill J.C.R., Cartigny P. (2009) Mixed fluid sources involved in diamond growth constrained by Sr-Nd-Pb-C-N isotopes and trace elements. *Earth and Planetary Science Letters* 289, 123-133.
41. Balan, E., Cartigny P., Blanchard M., Cabaret D., Lazzeri M., Mauri F. (2009) Theoretical investigation of the anomalous equilibrium fractionation of multiple-sulfur isotopes during adsorption. *Earth and Planetary Science Letters* 284, 88-93.
40. Li, L., Cartigny P., Ader M., (2009) Kinetic nitrogen-isotope fractionation associated with thermal decomposition of  $NH_3$ : Experimental results and potential applications to trace the origin of  $N_2$  in natural-gas and hydrothermal systems. *Geochimica et Cosmochimica Acta*, 73, 6282-6297.
39. Palot M., Cartigny P., Viljoen, K.S. (2009) Diamond origin and genesis: a C and N stable isotope study on diamonds from a single eclogitic xenolith (Kaalvallei, South Africa). *Lithos*, 112, 758-766.
38. Cartigny P., Farquhar J., Harris J.W., Thomassot E., Wing B., Masterson A., McKeegan K., Stachel T.S. (2009) A mantle origin for Paleoproterozoic peridotitic diamonds from the Panda kimberlite, Slave craton: evidence from  $^{13}C$ -,  $^{15}N$ - and  $^{33,34}S$ - stable isotope systematics. *Lithos* 112, 852-864.
37. Thomassot E., Cartigny P., Harris J.W., Lorand J.-P., Farquhar J., Chaussidon M. (2009) Metasomatic diamond growth and its implications on diamond dating: A multi-isotope study ( $^{13}C$ ,  $^{15}N$ ,  $^{33}S$ ,  $^{34}S$ ) of sulfide bearing diamonds from Jwaneng (Botswana). *Earth and Planetary Science Letters*, 282, 79-90.
36. De Stefano A., Kopylova M.G., Cartigny P., Afanasiev V. (2009) Diamonds and eclogites of the Jericho kimberlite. *Contributions to Mineralogy and Petrology* 158, 295-315.
35. Burgess R., Cartigny P., Harrison D., Hobson E., Harris J.W. (2009) Volatile composition of Canadian fibrous diamonds: implications for chemical and isotopic heterogeneity in the mantle. *Geochimica et Cosmochimica Acta* 73, 1779-1794.
34. Cartigny P., Pineau F., Aubaud C., Javoy M. (2008) Towards a consistent mantle carbon flux estimate: Insights from volatile systematics ( $H_2O/Ce$ ,  $\delta D$ ,  $CO_2/Nb$ ) in the North Atlantic mantle ( $14^\circ N$  and  $34^\circ N$ ). *Earth and Planetary Science Letters* 265, 672-685.
33. Thomassot E., Cartigny P., Harris J.W., Viljoen, K.S. (2007) Methane-related diamond crystallization in the Earth's mantle. *Earth and Planetary Science Letters* 257, 362-371.
32. Philippot P., Busigny V., Scambelurri M., Cartigny P. (2007) Oxygen and nitrogen isotopes as tracers of fluid activities in serpentinites and metasediments during subduction. *Mineralogy and Petrology* 91, 11-24.
31. Dobrzhinetskaya L.F., Liu Z., Cartigny P., Zhang J., Tchkhetaia D., Hemley R.J., Green II H.W. (2006) Synchrotron infrared and raman spectroscopy of microdiamonds from Erzgebirge, Germany. *Earth and Planetary Science Letters* 248, 340-349.
30. A.V.Spivak, S.N.Shilobreeva, P.Cartigny, Yu.A.Litvin, V.S.Urusov (2006) Diamond Formation in Multicomponent Carbonate-Carbon Media: Boundary Conditions, Kinetic, Nitrogen Admixture. *Journal of Investigation of Surface* 8, 26-30.
29. Gautheron C., Cartigny P., Moreira M., Harris J.W., Allègre C.J. (2006) Reply to: "Recycled" volatiles in mantle derived diamonds - evidence from nitrogen and noble gas isotopic data *Earth and Planetary Science Letters* 252, 220-222
28. Ader M., Cartigny P., Boudou J.-P., Petit E., Oh J.-H., Javoy M. (2006)  $\delta^{15}N$  analysis of metasedimentary carbonaceous matter: methodology and preliminary results. *Chemical Geology* 232, 559-572.
27. Cartigny P., (2005) Stable isotopes and diamond origins. *Elements*, 1, 79-84.

26. Gautheron C., Cartigny P., Moreira M., Harris J.W., Allègre C.J. (2005) Rare gas and stable isotope systematics in polycrystalline diamonds: Further evidence for a mantle-related origin of carbon. *Earth and Planetary Science Letters* 240, 559-572 .
25. Busigny V., Ader M., Cartigny P. (2005) Quantification and isotopic analysis of nitrogen in rocks at the ppm level using sealed-tube combustion technique. *Chemical Geology* 223, 249-258.
24. Cartigny P. , Chinn I., Viljoen K. S., Robinson D. (2004) Early Proterozoic (> 1.8 Ga) ultrahigh pressure metamorphism : Evidence from Akluilák microdiamonds (NW Canada). *Science* 304, 853-855.
23. Busigny, V., Cartigny P., Phillipot P., Javoy M. (2004) Ammonium quantification in biotite using infrared spectroscopy. *American Mineralogist* 89, 1625-1630.
22. Viljoen K.S., Dobbe R., Smit B., Thomassot E., Cartigny P. (2004) A diamondiferous Iherzolite from the Premier diamond mine, South Africa. *Lithos* 77, 539-552.
21. Cartigny P., Stachel, T.S. Harris J.W., Javoy M. (2004) Diamond metasomatic growth: The bearing of C- and N-stable isotopes of diamonds from Namibia. *Proceedings of the 8<sup>th</sup> International Kimberlite Conference Volumes. Lithos* 77, 359-373.
20. Chassefiere E, Bertaux JL, Berthelier JJ, Cabane M, Ciarletti V, Durry G, Forget F, Hamelin M, Leblanc F, Menvielle M, Gerasimov M, Korablev O, Linkin S, Managadze G, Jambon A, Manhès G, Lognonne P, Agrinier P, Cartigny P, Giardini D, Pike T, Kofman W, Herique A, Coll P, Person A, Costard F, Sarda P, Paillou P, Chaussidon M, Marty B, Robert F, Maurice S, Blanc M, d'Uston C, Sabroux JC, Pineau JF, Rochette P (2004) MEP (Mars Environment Package): toward a package for studying environmental conditions at the surface of Mars from future lander/rover missions. *Planetary ionospheres and atmospheres including CIRA* 34, 1702-1709
19. Cartigny P., Ader M. (2003) A comment to "The nitrogen record of crust-mantle interaction and mantle convection from Archean to Present" by B. Marty and N. Dauphas." *Earth and Planetary Science Letters* 216, 425-432.
18. Busigny V., Cartigny P., Phillipot P., Ader M., Javoy M. (2003) Massive recycling of nitrogen and other fluid-mobile elements (K, Rb, Cs, H) in a cold slab environment: Evidences from HP to UHP oceanic metasediments of the Schistes Lustrés nappe (Western Alps, Europe). *Earth and Planetary Science Letters* 215, 27-42.
17. Shirey S. B., Harris J. W., Richardson S. H., Fouch M. J., James D. E., Cartigny P., Deines P., Viljoen S. K. (2003) Regional patterns in the paragenesis and age of inclusions in diamond, diamond composition and the lithospheric seismic structure of southern Africa. *Lithos* 71, 243-258.
16. Cartigny P., Harris J. W., Taylor A., Davies R., Javoy M. (2003) On the Possibility of a Kinetic Fractionation of Nitrogen Stable Isotopes during Natural Diamond Growth. *Geochimica et Cosmochimica Acta* 67, 1571-1576.
15. Busigny V., Cartigny P., Phillipot P., Javoy M. (2003) Ammonium quantification in muscovite by infrared spectroscopy. *Chemical Geology* 198, 21-31.
14. Farquhar J., Wing B.A., McKeegan K.D., Harris J.W., Cartigny P., Thiemens M.H. (2002) Mass-independent sulfur of inclusions in diamond and sulfur recycling on early Earth. *Science* 298, 2369-2371.
13. Shirey S.B., Harris J.W., Richardson S.H., Fouch M.J., James D.E., Cartigny P., Deines P., Viljoen S. K. (2002) Diamond Genesis, Seismic Structure, and Evolution of the Kaapvaal-Zimbabwe Craton. *Science* 297, 1683-1686.
12. Cartigny P., Jendrzewski N., Pineau F., Petit E., Javoy M. (2001) Volatiles (C, N, Ar) variability in MORB and the respective roles of mantle source heterogeneity and degassing: the SouthWest Indian Ridge's case. *Earth and Planetary Science Letters* 194, 241-257.
11. Cartigny P., De Corte K., Shatsky V.S., Ader M., De Paepe P., Sobolev N.V., Javoy M. (2001) The origin and formation of metamorphic microdiamonds from the Kokchetav massif, Kazakhstan : A nitrogen and carbon isotopic study. *Chemical Geology*, 176, 267-283 .
10. Cartigny P., Harris J.W., Javoy M. (2001). Diamond Genesis, Mantle Fractionations and Mantle Nitrogen Content : A Study of  $\delta^{13}\text{C-N}$  Concentrations in Diamonds. *Earth and Planetary Science Letters*, 185 , 85-98.
9. Griffin W.L., Win T.T., Davies R., Wathanakul P., Andrew A., Metaclife I., Cartigny P. (2001) Diamonds from Myanmar and Thailand : Characteristics and possible origins. *Economic Geology*, 96, 159-170.
8. De Corte K., Korsakov A., Taylor W.R., Cartigny P., Ader M., De Paepe P. (2000) Diamond growth during ultrahigh-pressure metamorphism of the Kokchetav Massif, northern Kazakhstan. *The Island Arc*, 9, 428-438 .

7. Cartigny P., Harris J.W., Javoy M. (1999) Eclogitic, peridotitic and metamorphic diamonds and the problems of carbon recycling: The case of Orapa (Botswana). In *Proceedings of the 7th International Kimberlite Conference* (J. J. Gurney, J. L. Gurney, M. D. Pascoe, S. H. Richardson Eds), Red Roof Design, Cape Town, Vol. 1, 117-124.
6. De Corte K., Cartigny P., Shatsky V.S., Sobolev N.V., Javoy M. (1999) Characteristics of microdiamonds from UHPM rocks of the Kokchetav massif (Kazakhstan). In *Proceedings of the 7th International Kimberlite Conference* (J. J. Gurney, J. L. Gurney, M. D. Pascoe, S. H. Richardson Eds), Red Roof Design, Cape Town, Vol. 1, 174-182.
5. Hutchison M., Cartigny P., Harris J.W. (1999) Carbon and nitrogen compositions and physical characteristics of transition zone diamonds from São Luis, Brazil. In *Proceedings of the 7th International Kimberlite Conference* (J. J. Gurney, J. L. Gurney, M. D. Pascoe, S. H. Richardson Eds), Red Roof Design, Cape Town, Vol. 2, 372-382.
4. Cartigny P., Harris J.W., Javoy M. (1998) Formation of eclogitic diamonds at Jwaneng : no room for a recycled component. *Science*, 280, 1421-1423.
3. Cartigny P. , Harris J.W., Philips D., Girard M., Javoy M. (1998) Subduction-related diamonds ? - The evidence for a mantle derived origin from coupled  $\delta^{13}\text{C}$ - $\delta^{15}\text{N}$  determinations. *Chemical Geology*, 147, 147-159.
2. De Corte K., Cartigny P., Shatsky V.S., Javoy M., Sobolev N.V. (1998) Evidence of fluid inclusions in metamorphic microdiamonds from the Kokchetav-massif, northern Kazakhstan. *Geochimica and Cosmochimica Acta*, 62, 3765-3773.
1. Cartigny P., Boyd S.R., Harris J.W., Javoy M. (1997) Nitrogen isotopes in peridotitic diamonds from Fuxian, China : The mantle signature. *Terra Nova*, 9, 175-179.

## JOURNAL INTERVIEWS, PUBLIC OUTREACH

1. Les diamants du manteau (1998). Les diamants du manteau. Pour la Science, 25-26.
2. La genèse du diamant (2002). Pour la Science; Dossier Hors-Série n°35 "Les diamants du coeur de la Terre au coeur du pouvoir (Avril/Juin 2002), 12-16.
3. La genèse du diamant. Un volet des trois émissions consacrées aux diamants sur Radio France Internationale.
4. Cartigny P. (2003). Seeking the origin of carbon in diamonds, *Rough Diamond Review* 3, 39-42.
5. CVD diamonds (2008) Interview ; RTL Radio Program;
6. On the oldest diamonds : Interview, *Science & Vie* (2009).
7. Interview radio (Radio Suisse Romande, Fév. 2013) sur la formation des diamants dans le manteau terrestre
8. Intervention au Journal Télévisé de France 2 de 20 heures sur la découverte de forte teneur en eau dans un minéral de ringwoodite inclus dans un diamant (article de Pearson et al., 2014)
- 9./10. Intervention pour le Journal du Dimanche et Science et Vie sur la découverte de forte teneur en eau dans un minéral de ringwoodite inclus dans un diamant (article de Pearson et al., 2014)
11. Origine(s) de l'Eau dans *L'eau à découvert* éditeurs C. Jeandel, R. Mosseri et A. Euzen [CNRS éditions, 2015]
12. Intervention en Lycée (Lycée Flora Tristan à Champ sur Marne) pour présenter la formation du diamant, 2015.
13. Encadrement de Travaux Pratiques Encadrés, Lycéens 1ere S, Lycée Flora Tristan à Champ sur Marne, 2015
14. Encadrement de Travaux Pratiques Encadrés, Lycéens 1ere S, Lycée Henri Bergson Paris 19, 2015

## INVITED PRESENTATIONS

*presented by P. Cartigny*

- Cartigny P., Labidi J. (2015) Sulfur Geodynamic cycle, Gordon Conference of the Deep Interior of the Earth, Mount Holyoke College, USA.
- Cartigny P., Labidi J. (2015) Sulfur Geodynamic cycle, Gordon Conference of the Deep Interior of the Earth, Mount Holyoke College, USA.
- Keynote [93] Cartigny,P., Palot M., Clog M., Labidi J., Thomassot E., Aubaud C., Busigny V., Harris J.W. (2012) On overview of the deep carbon cycle and its isotope heterogeneity. 22nd Goldschmidt Conference, Montreal, Canada.
- Invited [75] Cartigny P., Farquhar J., Assayag N., Bourrand J.-J. (2008) Experimental evidence for mass-independent fractionation of sulfur isotopes without any UV-photolysis or glow discharges. AGU-Fall Meeting.

- Keynote [56] Cartigny P., Pineau F., Aubaud C., Javoy M. (2006) Carbon flux at mid-ocean ridges and CO<sub>2</sub>/Nb variability in the mantle. 16th Annual V.M. Goldschmidt Conference, Melbourne, Australia. *Geochim. Cosmochim. Acta* 69: A94.
- Invited [52] Busigny V., Cartigny P. (2005) Sediment devolatilisation or preservation during subduction? actually both, it depends. AGU Fall Meeting, San Francisco, USA.
- Invited [34] Cartigny P., Harris J.W., Stachel T., Javoy M. (2001) New data from a new craton : N- and C-isotopes in diamonds from the Panda kimberlite (Canada). AGU spring, Washington, USA.
- Keynote [37] Cartigny P., Aubaud, C., Jendrzewski, N., Harris J.W., Pineau F. and Javoy M. (2002) Carbon in the Earth's mantle : neither Primordial nor Recycled but simply "Mantle"-derived. 12th Annual VM Goldschmidt Conference, Davos, Suisse. *Geochimica et Cosmochimica Acta*. 66 (15) A121.

*presented by my PhD students/co-authors*

- Invited [86]. Labidi J., Cartigny P., Bourrand J.J., Assayag N. (2010) Multiple sulfur isotopes in basalts: Chemical geodynamics in the South Atlantic mantle. Goldschmidt Conference Abstracts Mineralogical Magazine 75 (3),
- Invited [78] Clog M., Aubaud C., Cartigny P. (2009) A DUPAL anomaly for hydrogen isotopes. Présenté à la prochaine 19th Goldschmidt Conference, Davos, Suisse.
- Invited [53] Burgess R., Cartigny P., Harris J. W. (2005) Halogens in diamonds and the origin of their variability AGU Fall Meeting, San Francisco, USA.
- Invited [47] Thomassot E, Cartigny P., Lorand J.-P., Harris J.W., Chaussidon M. (2005) Coupled isotopic study (<sup>33</sup>S, <sup>34</sup>S, <sup>15</sup>N, <sup>13</sup>C) of sulfide-bearing diamonds (Jwaneng, Botswana). 15th Annual V.M. Goldschmidt Conference, Moscow, Idaho, USA. *Geochim. Cosmochim. Acta* 69: A446.
- Invited [40] Busigny, V., Cartigny P., Philippot, P., Javoy M. (2003) Nitrogen recycling in subduction zones. 13th Annual V.M. Goldschmidt Conference, Kurashiki, Japan. *Geochim. Cosmochim. Acta* 67: A51.

## CONFERENCE ABSTRACTS (2015)

### 2015

123. Ader M., Thomazo C., Baton F., Muller E., Chaduteau C., Cartigny P., Vennin E., Buoncristiani J.F., Van Kranendonk M. Philippot P. (2015) Paired carbon isotope from three key intervals of the Turee Creek Group, Pilbara Craton, Australia. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
122. Marin-Carbonne J., Remusat L., Sforza M.C., Thomazo C., Cartigny P., Philippot P. (2015) Evidence of microbial sulfate reduction in nanopyrates enclosed in 2.7 billions year old stromatolitic organic remains. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
121. Busigny V., Marin-Carbonne J., Muller E., Cartigny P., Assayag N., Rollion-Bard C., Philippot P. (2015) Fe and S isotope constraints on redox conditions associated with barite deposits from the 3.2 Ga Mapepe Formation (South Africa). 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
120. Au Yang D., Landais G., Assayag N., Thi Bui H., Wing B., Widory D., Cartigny P. (2015) Multiple sulfur isotope analysis; improvement and application to urban aerosols. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
119. Philippot P., Avila J., Baton F., Cartigny P., Ireland T.R., Van Kranendonk M. (2015) Multiple sulfur isotopes from the 2.45-2.2 Ga old Turee Creek Group and the rise of atmospheric oxygen. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
118. Muller E., Philippot P., Rollion-Bard C., Cartigny P. (2015) Deconvolution of the sulfur cycle in Archean sulfate deposits using quadruple sulfur isotope (<sup>32</sup>S, <sup>33</sup>S, <sup>34</sup>S, <sup>36</sup>S) analyses. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
117. Smart K.A., O'Brien H., Cartigny P., Tappe S., Klemme S., Harris C. (2015) Metasomatic growth of eclogitic diamonds from decoupled volatile sources. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
116. Göpel C., Birck J.L., Assayag N., Cartigny P., Galy A. (2015) Chromites from ordinary chondrites: chronological constraints by the initial Cr method and new oxygen isotope data. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.

115. Cartigny P., Labidi J., Devey C.W., Jackson M.G., Thomassot E., Deloule, E. (2015) On the Archean vs. Proterozoic age of the HIMU mantle component : New  $^{33}\text{S}/^{32}\text{S}$ ,  $^{34}\text{S}/^{32}\text{S}$ ,  $^{36}\text{S}/^{32}\text{S}$ -data from Saint-Helena glasses. 25th Goldschmidt Conference, Prague, République Tchèque, 16-21 Aout 2015.
114. Cartigny P., Labidi J., Devey C.W., Jackson M.G., Thomassot E., Deloule, E. (2015) On the Archean vs. Proterozoic age of the HIMU mantle component : New  $^{33}\text{S}/^{32}\text{S}$ ,  $^{34}\text{S}/^{32}\text{S}$ ,  $^{36}\text{S}/^{32}\text{S}$ -data from Saint-Helena glasses. AGU Spring Meeting, 3-7 Mai 2015, Montréal, Canada.
113. Au Yang D., Landais G., Assayag N., Thi Bui H., Wing B., Widory D., Cartigny P. (2015) Mass-dependent (MDF) and mass-independent (MIF) sulfur isotope compositions of aerosols in the atmosphere of Montréal (Canada). AGU Spring Meeting, 3-7 Mai 2015, Montréal, Canada.
112. Boutoux A., Verlaquet A., Bellahsen N., Lacombe O., Villemant B., Caron B., Martin E., Assayag N., Cartigny P. (2015) Evolution of fluid flow systems during the localization of the deformation: the example of the External Crystalline Massifs, Western Alps. EGU2015-6510.
111. Hewins R.H., Zanda B., Pont S., Humayun M., Assayag N., Cartigny P. (2015) NorthWest Africa 8694, a ferroan Chassignite. LPSC. Abstract#2249.

## Seminars & Thematic Schools

- 2015** ETH Zurich,  
ISTO Orléans  
Harvard  
Caltech  
DCO Workshop Mantle Carbon Degassing – Ingassing (Berkely, June 2015)  
Gordon Conference (Mount Holyoke, MA, USA 7-12 Juin 2015)  
Diamond School - Bressanonne, Italy
- 2014** Univ. de Bourgogne, Dijon
- 2013** Muséum National d'Histoire Naturelle, Paris (24 Avril 2013)  
Laboratoire des Siences du Climat et de l'Environnement (21 Mars 2013),  
Université de Québec à Montreal (3 Mai 2013))  
Ecole Thématique du CNRS Ressources Minérales , Défis Scientifiques  
et Sociétaux (5-7 Janvier 2013) – exposé sur les diamants
- 2012** CRPG-Nancy  
Caltech, USA  
Université Libre de Bruxelles, Belgium
- 2011** Diamond School - Bressanonne, Italy  
CRPG-Nancy, IRMS 1280 inauguration
- 2010** CRPG Nancy
- 2009** LGIT, Toulouse  
Société Française des Isotopes Stables, Paris  
(Finnigan's User Meeting, La Rochelle)
- 2008** Caltech, Californie, USA  
UCLA, Californie, USA  
CRPG Nancy  
Université de Montpellier  
Université d'Alberta, Canada  
ISTO, Orleans
- 2007** Université de Lausanne, Suisse  
Université de Grenoble



- Catlech, Californie, USA
- 2006** Université de Nantes  
Institut de Physique du Globe de Paris
- 2005** Lab. Pierre Süe, Saclay.  
Department of Geology, University of Maryland,  
Université de Rennes I
- 2004** Carnegie Institution (Washington, USA)
- 2003** Université de Lyon/ENS Lyon
- 2002** Mineralogisches Institut, Heidelberg (Allemagne),  
American Museum of Natural History, New York (USA).
- 2001** Université de Clermont-Ferrand
- 2000** Stuttgart Universität (Allemagne),  
Mineralogisches Institut, Frankfurt (Allemagne)
- 1999** GFZ Potsdam (Allemagne),  
Mineralogisches Institut, Frankfurt (Allemagne).

Workshops, conference sessions, special issues.

**2006 : From the mantle to the surface and back again: Deep storage, degassing, and subduction of terrestrial volatiles II**

with M. Hirschmann (Uni. Of Minnesota) and D. Bell (Uni. of Arizona) AGU Fall 2006.

**2007 : The deepest lithosphere and beyond: Diamonds and related research**

with T. Stachel (Uni. Of Alberta, Edmonton, Canada) and L. Jacques (Uni. of Perth, Australia),  
Goldschmidt Conference, Melbourne

**2008 : Isotopic biogeochemical tracers into the ancient rock record**

with G.E. Bebout (Uni. of Lehigh, USA) and J. Farquhar (Uni. of Maryland, USA) Goldschmidt  
Conférence, Vancouver.

**2010 : Mass independent fractionation in nature and in the laboratory**

with J. Eiler (Caltech) and E. Schauble (UCLA).

**2010 : Anomalous isotope fractionations - BES workshop (US Dept. of Energy)**

organised by J. Eiler – Caltech, (J. Farquhar, P. Cartigny co-organisers).

**2011: DCO-Workshop**

organised by P. Cartigny, J. Badro & C. Jaupart.

**2013 : Frontiers in Nitrogen (BioGeoCosmo)Chemistry**

with Gray E Bebout (Uni. of Lehigh, USA) and Marilyn L Fogel (Carnegie Institution of Washington)

**2013 : Frontiers in Nitrogen (BioGeoCosmo)Chemistry – October Elements Issue**

co-edited with Gray E Bebout (Uni. of Lehigh, USA) and Marilyn L Fogel (Carnegie Institution of Washington)