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**Dr. Jeffrey B. Johnson, Postdoctoral Research Associate**

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**EDUCATION:**

- Ph.D. (2000) Geophysics, University of Washington, Seattle, WA.  
*-Thesis focus: Interpretation of seismicity and infrasound generated by erupting volcanoes, case studies from five volcanoes*
- M.S. (1996) Geophysics, Stanford University, Stanford, CA.  
*-Thesis title: Measuring lava flow output from Hawaii's East Rift using TOPSAR*
- B.S. (1995) Geological and Environmental Sciences, Stanford University, CA.  
*-Honors project focus: Petrologic cross-arc stratification of Holocene volcanics in Ecuador*

**PROFESSIONAL WORK EXPERIENCE:**

- Postdoctoral Research Associate (10/2003), Climate Change Research Center, University of New Hampshire, Durham  
*-Modeling non-equilibrium degassing and fluid dynamics of silicic volcanism*  
*-Investigating volcanic fragmentation/eruption processes using field-based seismo-acoustic observations*
- Postdoctoral Fellow (3/2002-12/2003), Hawaii Institute of Geophysics and Planetology, University of Hawaii Manoa  
*-Interpreted continuous ground based thermal observations of volcanic activity at Pu'u O'o*  
*-Conducted infrasonic / thermal / seismic studies at Kilauea, Stromboli, Villarica, Santiaguito, Fuego, Colima*  
*-Pursued research in volcano seismo-acoustics*
- Instructor (7/2003-8/2003), Center for Study of Active Volcanoes, Volcanoes National Park, Hawaii  
*-Taught seismology and field methods courses to undergraduates*
- Postdoctoral Fellow (9/2002-11/2002), ISLA Infrasound Laboratory, Kona  
*-Developed robust, low-cost portable infrasound array and calibration instrumentation for volcanoes*
- Science and Technical Consultant (9/2001-12/2001), New Mexico Tech / US Antarctic Program  
*-Developed infrasound system for installation at Erebus Volcano and analyzed seismo-acoustic signals produced by Erebus degassing*
- Graduate Research Assistant and Teaching Assistant (1/1997-12/2000), University of Washington Geophysics Program  
*-Pursued PhD focusing on the seismo-acoustic signals generated by Strombolian-type volcanoes*  
*-Assisted with Pacific Northwest Seismograph Network operations*  
*-Installed and troubleshot Pacific Northwest Seismograph stations*  
*-Designed and maintain web pages for Cascade Volcanoes, including Rainier, St. Helens, Hood*  
*-Gave educational talks to school and community groups*  
*-Taught undergraduate class lab for University of Washington earthquakes course*
- Graduate Teaching Assistant (9/1995-3/1996), Stanford University Geophysics Department  
*-Assisted with teaching of two different graduate student courses focused on reflection seismology*

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### FIRST AUTHOR PUBLICATIONS:

- Johnson, J.B., Aster, R.C., Kyle, P.R. Volcanic eruptions observed with infrasound, *Geophys. Res. Lett.*, 2004
- Johnson, J.B. Source location variability and volcanic vent mapping with a small-aperture infrasound array at Stromboli Volcano, Italy, *Bull. Volc.*, 10.1007/s00445-004-0356-8 (online), 2004.
- Johnson, J.B., Harris, A.J.L., Sahetapy-Engel, S., Wolf, R.E., Rose, W.I. Explosion dynamics of vertically-directed pyroclastic eruptions at Santiaguito, Guatemala, *Geophys. Res. Lett.*, L06610, 2004.
- Johnson, J.B. Generation and propagation of infrasonic airwaves from volcanic explosions, *J. Volcanol. Geotherm. Res.*, 121, 1-14, 2003.
- Johnson, J.B., Aster, R.C., Ruiz, M.C., Malone, S.D., McChesney, P.J., Lees, J.M., Kyle, P.R. Interpretation and utility of infrasonic records from erupting volcanoes, *J. Volcanol. Geotherm. Res.*, 121, 15-63, 2003.
- Johnson, J.B. Interpretation of infrasound generated by erupting volcanoes and seismo-acoustic energy partitioning during Strombolian explosions, *Ph.D. dissertation*, University of Washington, Dec. 2000.
- Johnson, J.B., Lees, J.M. Plugs and chugs - Seismic and acoustic observations of degassing explosions at Karymsky, Russia and Sangay, Ecuador. *J. Volcanol. Geotherm. Res.*, 101 67-82, 2000.
- Johnson, J.B., Lees, J.M. Gordeev, E.I. Degassing explosions at Karymsky Volcano, Kamchatka, Russia. *Geophys. Res. Lett.*, 25, 3999-4042, 1998.
- Johnson, J., Klempner, S., Zebker, H. Measuring lava flow output from Hawaii's East Rift. *Earth Observ. Mag.*, 16-20, Aug. 1996.

### FIRST AUTHOR PUBLICATIONS IN REVIEW:

- Johnson, J.B., Harris, A.J.L., Hoblitt, R.P. Periodic gas pistoning – A stable mode of degassing at Pu'u 'O'o, Kilauea Volcano, submitted to *J. Geophys. Res.*, accepted pending revisions.
- Johnson, J.B., Aster, R.C. Volcanic acoustic efficiency of Strombolian eruptions, submitted to *J. Volcanol. Geotherm. Res.*, accepted pending revisions.

### FIRST AUTHOR PUBLICATIONS IN PREP:

- Johnson, J.B., Sahagian, D., Proussevitch, A. On the importance of disequilibrium degassing for volcanic eruptions.
- Johnson, J.B., Harris, A.J.L., others, Three Years Ground-based Thermal Monitoring at Kilauea, to be submitted to *Bull. Volc.*
- Johnson, J.B., Malone, S.D., Ground-coupled acoustic airwaves provide insight into the May 18, 1980 Mount St. Helens eruption, to be submitted to *Bull. Seismol. Soc. Am.*
- Johnson, J.B., Ruiz, M., On the importance of source dimension for volcanic infrasound.
- Johnson, J.B., Harris, A.J.L., Hoblitt, R.P. Three years of thermal monitoring at Kilauea, to be submitted to *Bull. Volc.*
- Johnson, J.B., Harris, A.J.L., Calder, E., Degassing dynamics at Villarica Volcano.

### RECENT CO-AUTHOR PUBLICATIONS:

- Aster, R., B. Bartel, N. Dunbar, R. Esser, B. Johns, J. Johnson, R. Karstens, C. Kurnik, P. Kyle, M. McGowan, W. McIntosh, S. McNamara, C. Meertens, B. Pauley, M. Richmond, and M. Ruiz, New instrumentation delivers multidisciplinary real-time data from Mount Erebus, Antarctica, *Eos. Trans. AGU*, 85(10): 97,100-101, 2004.
- Aster, R., Mah, S., Kyle P., McIntosh, W., Dunbar, N., Johnson, J., Ruiz, M., McNamara, S., Very long period oscillations of Mount Erebus Volcano, *J. Geophys. Res.*, 108(B11), No. 2522, 2003.
- Garces, M.A., Harris, A.J.L., Hetzer, C., Johnson, J.B., Infrasonic tremor observed at Kilauea Volcano, Hawai'i, *Geophys. Res. Lett.* 30(20): No. 2023, 2003.
- Harris, A.J., Johnson, J.B. Pirie, D., Garbeil, H., Horton, K., Flynn, L. Ripepe, M. Ground-based infrared observations provide superior tool for remote interpretation of volcanic activity, *Eos Trans.AGU*, 84(40), 409, 2003.

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### SELECTED COLLOQUIUMS, SEMINARS, AND OUTREACHES GIVEN

- Instituto de Geofísica, National Autonomous University of Mexico (UNAM) (9/2003)  
-invited speaker, ground-based thermal and infrasonic monitoring at volcanoes
- El Centro Nacional de Prevención de Desastres (CENAPRED), UNAM, Mexico City (7/2003)  
-invited speaker, ground-based thermal and infrasonic monitoring at volcanoes
- Facultad de Ciencias, University of Colima, Mexico (9/2003)  
-weekly colloquium, ground-based thermal and infrasonic monitoring at volcanoes
- Hawaii Volcano Observatory, HI (7/2003)  
-invited speaker, ground-based thermal and infrasonic monitoring at volcanoes
- North Andover, MA (5/2003)  
-educational outreach, general volcanology / science talks at various elementary schools
- Santa Clara Colegio, Pucon, Chile (12/2002).  
-public interest seminar on volcanic hazards (in Spanish)
- G&G/HIGP, University of Hawaii, Manoa (7/2002).  
-departmental colloquium on volcanic infrasound
- Invited science speaker, Cascade Volcano Observatory, Vancouver, WA (10/2001).  
-talk on applications of volcanic infrasound for assessing volcanic hazards
- Science Speaker, U.S. Antarctic Program, McMurdo  
-colloquium on the state of the art of volcano monitoring
- Colloquium speaker, Dept. of Geological Sciences, University of North Carolina (9/2001).  
-talk on seismic and acoustic energy radiated by volcanic explosions
- Instituto Geofísico, Escuela Politécnica, Quito, Ecuador (8/1999).  
-seminar on elastic energy radiated during volcanic explosions (in Spanish).
- Working Group Paratunka Conference, Kamchatka, Russia (8/1998).  
-talk on the harmonic tremor generated during volcanic degassing (in Russian/English)
- Speaker at Alaska Volcano Observatory, Anchorage (7/1997)  
-brown bag seminar on explosion earthquakes at Karymsky Volcano

### SELECTED CONFERENCE PRESENTATIONS:

- Johnson, J.B., Proussevitch, A., Sahagian, D., Modeling transient eruptive processes, *American Geophysical Union Spring Meeting*, May 2004.
- Johnson, J.B., Ruiz, M., Aster, R., Sahagian, D. Fragmentation dynamics from an integrated seismo-acoustic approach.
- Johnson, J.B., Aster, R., Constraining volcano eruption dynamics with infrasound, *American Geophysical Union Fall Meeting*, Dec 2003.
- Johnson, J.B., Harris, A.J.L., Two years of thermal monitoring at Pu'u 'O'o, Kilauea Volcano, *Cities on Volcanoes III*, July 2003.
- Johnson, J.B., Harris, A.J., Hoblitt, R., Clabaugh, L.S. (2002) Ground-based Thermal Observations of Gas Pistoning at Pu'u O'o, *American Geophysical Union Fall Meeting*, Dec. 2002.
- Johnson, J.B., Ruiz, M.C., McChesney, P. Low-frequency Acoustic Monitoring and Wind-filtering at Active Volcanoes. *American Geophysical Union Fall Meeting*, Dec 1999.
- Johnson, J.B., Lees, J.M. Integration of Seismic and Infrasonic Data: Essential to the Understanding of Expulsion Source Dynamics at Volcanoes. *Seismological Society of America*, May 1999 (**session chair**)
- Johnson, J.B., Lees, J.M. Plugs and Chugs - Strombolian Activity at Sangay, Ecuador, and Karymsky, Russia. *American Geophysical Union Fall Meeting*, Dec 1998.
- Johnson, J.B., Lees, J.M. Gordeev, E.I. An Explanation for Degassing Explosions at Karymsky Volcano. *Seismological Society of America*, Mar 1998.
- Johnson, J.B., Malone, S.D. Acoustic Air-wave Propagation from the 1980 Mount St. Helens Eruption. *American Geophysical Union Fall Meeting*, Dec 1997.
- Johnson, J.B., Lees, J.M. Infrasonic and Broad Band Signals Determine Source Parameters for Explosions at Karymsky Volcano, Kamchatka, Russia. *American Geophysical Union*, Dec 1997.

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### SELECTED GEOPHYSICAL FIELD EXPERIENCE:

- Popocatepetl Volcano, Mexico (9/2003),  
*installed infrasound sensors in a collaborative monitoring effort with UNAM and CENAPRED*
- Colima Volcano, Mexico (9/2003),  
*installed infrasound sensors in a collaborative monitoring effort with the Colima Volcano Observatory*
- Santiaguillo/Fuego Volcanoes, Guatemala (1/2003),  
*installed thermal/infrasound/seismic experiment to understand explosive degassing*
- Villarica, Chile (12/2002),  
*installed thermal/infrasound/seismic/gas at summit to understand passive degassing*
- Kilauea, Hawaii (11/2002),  
*conducted thermal/infrasound/seismic experiment at Pu'u 'O'o and at upper tube skylights*
- Stromboli, Italy (5/2002),  
*member of international group conducting interdisciplinary geophysical experiment*
- Kilauea, Hawaii (4/2002),  
*led thermal/infrasound/video experiment at Pu'u 'O'o*
- Erebus, Antarctica, (12/2001),  
*responsible for infrasound installation, assisted with power station installation*
- Glacier Peak, WA (9/2001),  
*installed the first permanent seismic station on Washington's most remote volcano*
- Mt. Rainier, WA (7/2000),  
*led team that carried and installed temporary seismic station on summit of volcano*
- Erebus, Antarctica (12/1999-1/2000)  
*member of multidisciplinary geophysical experiment*
- Tungurahua, Ecuador (10/1999),  
*responded to volcanic crisis and installed infrasound at the request of the Escuela Politecnica Nacional*
- Karymsky, Russia (9/1999),  
*member of multi-disciplinary experiment, responsible for infrasound, seismic, and video*
- Pichincha, Ecuador (6/1999-7/1999),  
*installed infrasound sensors at actively erupting volcano outside of Quito*
- Karymsky, Russia (8/1998),  
*set up seismo-acoustic experiment*
- Sangay, Ecuador (4/1998),  
*led expedition to the remote Sangay volcano to set up first-ever seismo-acoustic experiment*
- Mt. Hood, OR (2/1998),  
*assisted with temporary seismic deployment in response to earthquake swarm*
- Karymsky and Klyuchevskoi, Russia (9/1997),  
*member of international expedition, responsible for seismo-acoustic experiment*
- Nanga Parbat, Pakistan (5/1996-7/1996),  
*assisted in 3-month PASSCAL broadband seismic experiment in Himalaya*
- Southern Sierra, CA (9/1993),  
*assisted with seismic reflection survey in Southern Sierra*

### RECENT COLLABORATION:

**Richard Aster**, New Mexico Technological Institute, Socorro, NM. **Eliza Calder**, Open University, Milton Keynes, UK. **Servando de la Cruz**, Instituto de Geofisica, University of Mexico. **Milton Garces**, ISLA, Kona, HI. **Evgenii Gordeev**, Russian Academy of Science, Petropavlovsk, Russia. **Enrique Guevara**, CENAPRED, Mexico City. **Andy Harris**, University of Hawaii, Honolulu, HI. **Rick Hoblitt**, USGS, Hawaii Volcano Observatory, HI. **Philip Kyle**, New Mexico Technological Institute, Socorro, NM. **Johnathan Lees**, University of North Carolina, Chapel Hill, NC. **Stephen Malone**, University of Washington, Seattle, WA. **Patrick McChesney**, University of Washington, Seattle, WA. **Alex Proussevitch**, University of New Hampshire, Durham. **William Rose**, Michigan Technological University, MI. **Mario Ruiz**, Escuela Politecnica, Quito, Ecuador. **Dork Sahagian**, University of New Hampshire, Durham, NH. **Nick Varley**, Universidad de Colima, Mexico

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### HONORS AND AWARDS:

- Fulbright Scholar Award - Ecuador (2004-2005)
- Jack Kleinman Award, USGS (1997)
- Geophysics Program Departmental Scholarship, University of Washington (1997)
- Bachelor of Science with Honors, Geological & Environmental Sciences, Stanford University (1995)
- Undergraduate Research Opportunity Grant, Stanford University (1994)

### PROFESSIONAL GROUPS / SOCIETIES:

- AGU
- SSA
- IAVCEI

### OTHER SKILLS:

- Proficient with MATLAB™, HTML, seismic analysis software, and other programming languages
- Comfortable with both Windows and UNIX operating systems
- Experience with design and construction of analog and digital instrumentation, including telemetry
- Fluent Spanish / conversant Russian
- Wilderness skills / mountaineer

### SUGGESTED REFEREES:

- Dr. Dork Sahagian  
Climate Change Research Center, University of New Hampshire  
Morse Hall, Durham, NH 03824  
603 862-3875, [dork.sahagian@unh.edu](mailto:dork.sahagian@unh.edu)
- Dr. Alexander Proussevitch  
Climate Change Research Center, University of New Hampshire  
Morse Hall, Durham, NH 03824  
603 862-3875, [alex.proussevitch@unh.edu](mailto:alex.proussevitch@unh.edu)
- Dr. Richard Aster  
Dept. of Earth & Environmental Sciences, New Mexico Tech  
MSEC 354, Socorro, NM 87801 USA  
505 835-5924, [aster@ees.nmt.edu](mailto:aster@ees.nmt.edu)
- Dr. Stephen Malone  
Department of Earth and Space Sciences, University of Washington  
63 Johnson Hall, Box 351650, Seattle, WA 98195-1650 USA  
206 685-3811, [steve@ess.washington.edu](mailto:steve@ess.washington.edu)
- Dr. Richard P. Hoblitt  
US Geological Survey, Hawaiian Volcano Observatory  
P.O. Box 51, Hawaii National Park, HI 96718 USA  
808 967-8883, [rhoblitt@usgs.gov](mailto:rhoblitt@usgs.gov)
- Dr. Jonathan M. Lees  
Department of Geological Sciences, University of North Carolina  
CB #3315, Mitchell Hall, Chapel Hill, NC 27599  
919 962-0695, [jonathan\\_lees@unc.edu](mailto:jonathan_lees@unc.edu)