

Supplement to P.L. Ward, 2009, Sulfur dioxide initiates climate change in four ways, Thin Solid Films volume 517, number 11, doi:10.1016/j.tsf.2009.01.005

References for Supplemental Table S1

I began with two databases developed under the International Association of Volcanology and Chemistry of the Earth's Interior (www.volcano.group.cam.ac.uk/database/caldera-results.xls and www.volcano.group.cam.ac.uk/database/ignimbrite-results.xls). These have been slightly corrected and substantially supplemented.

- Allen, S.R., 2001, Reconstruction of a major caldera-forming eruption from pyroclastic deposit characteristics: Kos Plateau Tuff eastern Aegean Sea: *J. Volcanol. Geotherm. Res.*, v. 105 p. 141-162.
- Allowaya, B.V., Pribadib, A., Westgate, J.A., Birdd, M., Fifielde, L.K., Hogg, A., and Smith, I., 2004, Correspondence between glass-FT and 14C ages of silicic pyroclastic flow deposits sourced from Maninjau caldera, west-central Sumatra: *Earth Planet. Sci. Lett.*, v. 227, p. 121-133.
- Arehart, G.B., Christenson, B.W., Woodb, C.P., Foland, K.A., and Browne, P.R.L., 2002, Timing of volcanic, plutonic and geothermal activity at Ngatamariki, New Zealand: *J. Volcanol. Geotherm. Res.*, v. 116, p. 201-214.
- Bacon, C.R., Mastin, L.G., Scott, K.M., and Nathenson, M., 1997, Volcano and earthquake hazards in the Crater Lake Region, Oregon: U.S. Geol. Surv. Open-File Rept. 1997-487, p. 32.
- Bacon, C.R., Sisson, T.W., and Mazdab, F.K., 2007, Young cumulate complex beneath Veniaminof caldera, Aleutian arc, dated by zircon in erupted plutonic blocks: *Geology*, v. 35, p. 491–494.
- Batchelor, R.A., 2003, Geochemistry of biotite in metabentonites as an age discriminant, indicator of regional magma sources and potential correlating tool: *Mineralogical Magazine*, v. 67, p. 807–817.
- Best, M.G., Christiansen, E.H., and Blank, R.H., Jr., 1989, Oligocene caldera complex and calc-alkaline tuffs and lavas of the Indian Peak volcanic field, Nevada and Utah: *Bull. Geol. Soc. Am.*, v. 101, p. 1076- 1090.
- Best, M.G., Scott, R.B., Rowley, P.D., Swadley, W.C., Anderson, R.E., Gromme, C.S., Harding, A.E., Deino, A.L., Christiansen, E.H., Tingey, D.G., and Sullivan, K.R., 1993, Oligocene–Miocene caldera complexes, ash-flow sheets, and tectonism in the central and southeastern Great Basin, *in* Lahren, M.M., Trexler, J.H., and Spinosa, C., eds., *Crustal Evolution of the Great Basin and the Sierra Nevada*, Field Trip Guidebook for Cordilleran/Rocky Mountain Sections of the Geol. Soc. Am.: Reno, University of Nevada, p. 285–312.
- Black, T.M., Shane, P.A.R., Westgate, J.A., and Froggatt, P.C., 1996, Chronological and palaeomagnetic constraints on widespread welded ignimbrites of the Taupo volcanic zone, New Zealand: *Bull. Volcanol.*, v. 58, p. 226-238.
- Bove, D.J., Hon, K., Budding, K.E., Slack, J.F., Snee, L.W., and Yeoman, R.A., 2001, Geochronology and geology of late Oligocene through Miocene volcanism and mineralization in the Western San Juan Mountains, Colorado: U.S. Geol. Surv. Prof. Paper, v. 1642, p. 1-30.
- Braitseva, O.A., Melekestsev, I.V., Ponomareva, V.V., and Kirianov, V.Y., 1996, The caldera-forming eruption of Ksudach volcano about cal. A.D. 240: the greatest explosive event of our era in Kamchatka, Russia: *J. Volcanol. Geotherm. Res.*, v. 70, p. 49-65.

- Braitseva, O.A., Melekestsev, I.V., Ponomareva, V.V., and Sulerzhitsky, L.D., 1995, Ages of calderas, large explosive craters and active volcanoes in the Kuril-Kamchatka region, Russia: *Bull. Volcanol.*, v. 57, p. 383-402.
- Briggs, R.M., Gifford, M.G., Moyle, A.R., Taylor, S.R., Norman, M.D., Houghton, B.R., and Wilson, C.J.N., 1993, Geochemical zoning and eruptive mixing in ignimbrites from Mangakino volcano, Taupo Volcanic Zone, New Zealand: *J. Volcanol. Geotherm. Res.*, v. 56, p. 175-203.
- Bryan, S.E., 2006, Petrology and geochemistry of the Quaternary caldera-forming, phonolitic Granadilla Eruption, Tenerife (Canary Islands): *J. Petrol.*, v. 47, p. 1557-1589.
- Bryan, S.E., Cas, R.A.F., and Martí, J., 2000, The 0.57 Ma plinian eruption of the Granadilla Member, Tenerife (Canary Islands): an example of complexity in eruption dynamics and evolution: *J. Volcanol. Geotherm. Res.*, v. 103, p. 209-238.
- Camp, V.E., and Ross, M.E., 2000, Mapping the Steens-Columbia River Basalt Connection: Implications for the extent, volume, and magma supply rate of CRB volcanism: *Geol. Soc. Am. Abstracts with Programs Annual meeting, Reno*, v. 32, p. A159.
- Chen, C.H., 2003, The Caldera Eruptions in Ryukyu Arc: as inferred the thermal anomaly in Kyushu: *J. Balneological Soc. Japan*, v. 53, p. 90-91.
- Chesner, C.A., and Rose, W.I., 1991, Stratigraphy of the Toba Tuffs and the evolution of the Toba Caldera Complex, Sumatra, Indonesia: *Bull. Volcanol.*, v. 53, p. 343-356.
- Christiansen, R.L., 2001, The Quaternary and Pliocene Yellowstone Plateau volcanic field of Wyoming, Idaho and Montana: *U.S. Geol. Surv. Prof. Paper*, v. 729, p. 146.
- Cocks, L.R.M., and Torsvik, T.H., 2007, Siberia, the wandering northern terrane, and its changing geography through the Palaeozoic: *Earth Sci. Rev.*, v. 82, p. 29-74.
- Courtillot, V.E., and Renne, P.R., 2003, On the ages of flood basalt events: *Comptes Rendus Geoscience*, v. 335 p. 113-140.
- Coxall, H.K., Wilson, P.A., Palike, H., Lear, C.H., and Backman, J., 2005, Rapid stepwise onset of Antarctic glaciation and deeper calcite compensation in the Pacific Ocean: *Nature*, v. 433, p. 53-57.
- Dai, J., Mosley-Thompson, E., and Thompson, L.G., 1991, Ice core evidence for an explosive tropical volcanic eruption 6 years preceding Tambora: *J. Geophys. Res.*, v. 96, p. 17,361-17,366.
- De Rita, D., and Giordano, G., 1996, Volcanological and structural evolution of Roccamonfina volcano (Italy): origin of the summit caldera: Geological Society, London, Special Publications, v. 110, p. 209-224.
- de Silva, S.L., and Francis, P.W., 1991, Volcanoes of the Central Andes: Berlin Heidelberg New York, Springer, 216 p.
- Deal, E.G., Elston, W., E., E., E.E., Peterson, S.L., Reiter, D.E., E., D.P., and Shafiqullah, M., 1978, Cenozoic volcanic geology of the Basin and Range province in Hidalgo County, southwestern New Mexico: *New Mexico Geol. Soc. Guidebook 29th field conference*, p. 219-229.
- Deino, A.L., Orsi, G., M., P., and de Vita, S., 2004, The age of the Neapolitan Yellow Tuff caldera-forming eruption (Campi Flegrei caldera - Italy) assessed by $^{40}\text{Ar}/^{39}\text{Ar}$ dating method: *J. Volcanol. Geotherm. Res.*, v. 133, p. 157-170.
- Egger, H., and Brückl, E., 2006, Gigantic volcanic eruptions and climatic change in the early Eocene: *Int. Jour. Earth Sci.*, v. 95, p. 1065-1070.
- Elston, W.E., Seager, W.R., and Clemons, R.E., 1975, Emory cauldron, Black Range, New Mexico, source of the Kneeling Nun Tuff: *Field Conf Guide, New Mexico Geological Society*, v. 26, p. 283-292.

- Erb, E.E., Jr., 1979, Petrologic and structural evolution of ash-flow tuff cauldrons and noncauldron related volcanic rocks in the Animas and southern Peloncillo mountains, Hidalgo County, New Mexico: Alburquerque, University of New Mexico.
- Erlich, E.N., 1986, Geology of the calderas of Kamchatka and Kurile Islands with comparison to celaderas of Japan and the Aleutians, Alaska: U.S. Geol. Surv. Open-File Rept. 1986-291, p. 300.
- Ernesto, M., Raposo, M.I.B., Marques, L.S., Renne, P.R., Diogo, L.A., and de Min, A., 1999, Paleomagnetism, geochemistry and $^{40}\text{Ar}/^{39}\text{Ar}$ dating of the North-eastern Parana Magmatic Province: tectonic implications: *J. Geodynamics*, v. 28, p. 321-340.
- Farmer, G.L., Broxton, D.E., Warren, R.G., and Pickthorn, W., 1991, Nd, Sr, and O isotopic variations in metaluminous ash-flow tuffs and related volcanic rocks at the Timber Mountains/Oasis Valley caldera complex, SW Nevada: implications for the origin and evolution of large-volume silicic magma bodies: *Contributions to Mineralogy and Petrology*, v. 109, p. 53-68.
- Fedele, F.G., Giaccio, B., Isaia, R., and Orsi, G., 2002, Ecosystem impact of the Campanian Ignimbrite Eruption in Late Pleistocene Europe: *Quaternary Res.*, v. 57, p. 420-424.
- , 2003, The Campanian Ignimbrite Eruption, Heinrich Event 4, and Palaeolithic change in Europe: a high-resolution investigation: *Volcanism and the Earth's Atmosphere*, Geophysical Monograph v. 139, p. 301-325.
- Fedotov, S.A., and Masurenkov, Y.P., 1991, Active Volcanoes of Kamchatka: Moscow, Nauka, V I: 302, VII:415 p.
- Fiske, R.S., and Tobisch, O.T., 1994, Middle Cretaceous ash-flow tuff and caldera-collapse deposit in the Minarets Caldera, east-central Sierra Nevada, California: *Bull. Geol. Soc. Am.*, v. 106, p. 582-593.
- Francis, P.W., Sparks, R.S.J., Hawkesworth, C.J., Thorpe, R.S., Pyle, D.M., Tait, S.R., Mantovani, M.S., and McDermott, F., 1989, Petrology and geochemistry of volcanic rocks of the Cerro Galan caldera, northwest Argentina: *Geological Magazine*, v. 126, p. 515-547.
- Glass, L.M., and Phillips, D., 2006, The Kalkarindji continental flood basalt province: A new Cambrian large igneous province in Australia with possible links to faunal extinctions: *Geology*, v. 34, p. 461-464.
- Goto, Y., Funayama, A., Gouchi, N., and Itaya, T., 2000, K–Ar ages of the Akan-Shiretoko volcanic chain lying oblique to the Kurile trench: Implications for tectonic control of volcanism: *Island Arc*, v. 9, p. 204-218.
- Gregory, K.M., and McIntosh, W.C., 1996, Paleoclimate and paleoelevation of the Oligocene Pitch-Pinnacle flora, Sawatch Range, Colorado: *Bull. Geol. Soc. Am.*, v. 108, p. 545–561.
- Hanley, L., and Wingate, M., 2000, SHRIMP zircon age for an Early Cambrian dolerite dyke: an intrusive phase of the Antrim Plateau: *Australian Journal of Earth Sciences*, v. 47, p. 1029 - 1040.
- Hardyman, R.F., 1981, Twin Peaks caldera of central Idaho: Montana Geological Society 1981 Field Conference on Southwest Montana, p. 317-322.
- Hea, B., Xua, Y.-G., Huang, X.-L., Luo, Z.-Y., Shi, Y.-R., Yang, Q.-J., and Yu, S.-Y., 2007, Age and duration of the Emeishan flood volcanism, SW China: Geochemistry and SHRIMP zircon U–Pb dating of silicic ignimbrites, post-volcanic Xuanwei Formation and clay tuff at the Chaotian section: *Earth Planet. Sci. Lett.*, v. 255, p. 306-323.
- Heiken, G., Goff, F., Gardner, J.N., Baldrige, W.S., Hulen, J.B., Nielson, D.L., and Vaniman, D., 1990, The Valles/Toledo Caldera Complex, Jemez Volcanic Field, New Mexico: *Ann. Rev. Earth Planet. Sci.*, v. 18, p. 27-53.

- Henry, C.D., Kunk, M.J., and McIntosh, W.C., 1994, 40 Ar/ 39 Ar chronology and volcanology of silicic volcanism in the Davis Mountains, Trans-Pecos Texas: *Geol. Soc. Am. Bulletin*, v. 106, p. 1359-1376.
- Henry, C.D., and Price, J.G., 1984, Variations in caldera development in the Tertiary volcanic field of trans-Pecos Texas: *J. Geophys. Res.*, v. 89, p. 8765-8786.
- Hildreth, W., 1979, The Bishop Tuff: Evidence for the origin of compositional zonation in silicic magma chambers: *Geol. Soc. Am. Spec. Pap.*, v. 180, p. 43-75.
- Hodgson, K.A., and Nairn, I.A., 2004, The Sedimentation and Drainage History of Haroharo Caldera and The Tarawera River System, Taupo Volcanic Zone, New Zealand: Environment Bay of Plenty Operations Publication, v. 2004/03, p. 38.
- Hon, K., and Lipman, P.W., 1989, Western San Juan caldera complex, *in* Lipman, P.W., ed., Excursion 16B: Oligocene-Miocene San Juan volcanic field, Colorado, Volume 46, New Mexico Bureau of Mines and Mineral Resources Memoir, p. 350-380.
- Hooper, P.R., 2000, Flood basalt provinces, *in* Sigurdsson, H., ed., *Encyclopedia of Volcanoes*, Academic Press, p. 345-359.
- Horn, S., and Schmincke, H.-U., 2000, Volatile emission during the eruption of Baitoushan Volcano (China/North Korea) ca. 969 AD: *Bull. Volcanol.*, v. 61, p. 537-555.
- Huertasa, M.J., Arnaud, N.O., Ancochea, E., Cantagrelb, J.M., and Fúster, J.M., 2002, 40Ar/39Ar stratigraphy of pyroclastic units from the Cañadas Volcanic Edifice (Tenerife, Canary Islands) and their bearing on the structural evolution: *J. Volcanol. Geotherm. Res.*, v. 115, p. 351-365.
- Huff, W.D., Davis, D., Bergström, S.M., Krekeler, M.P.S., Kolata, D.R., and Cingolani, C., 1997, A biostratigraphically well-constrained K-bentonite U-Pb zircon age of the lowermost Darriwilian Stage (Middle Ordovician) from the Argentine Precordillera: *Episodes*, v. 20, p. 29-33.
- Huff, W.D., Kolata, D.R., Bergström, S.M., and Zhang, Y.S., 1996, Large magnitude Middle Ordovician volcanic ash falls in North America and Europe - dimensions, emplacement and post-emplacement.: *J. Volcanol. Geotherm. Res.*, v. 73, p. 285-301.
- Jarboe, N.A., Coe, R.S., Renne, P.R., and Glen, J.M., 2006, 40Ar/39Ar ages of the Early Columbia River Basalt Group: Determining the Steens Mountain Geomagnetic Polarity Reversal (R0-N0) as the top of the C5Cr Chron and the Imnaha Normal (N0) as the C5Cn.3n Chron: *EOS Trans. AGU*, v. 87, p. Abstract V51D-1702.
- Jourdan, F., Féraud, G., Bertrand, H., Kampunzu, A.B., Tshoso, G., Watkeys, M.K., and Gall, B.L., 2005, Karoo large igneous province: Brevity, origin, and relation to mass extinction questioned by new 40Ar/39Ar age data: *Geology*, v. 33, p. 745-748.
- Kataoka, K., Nagahashi, Y., and Yoshikawa, S., 2001, An extremely large magnitude eruption close to the Plio-Pleistocene boundary: reconstruction of eruptive style and history of the Ebisutoge-Fukuda tephra, central Japan: *J. Volcanol. Geotherm. Res.*, v. 107, p. 47-69.
- Lanphere, M.A., Champion, D.E., Christiansen, R.L., Izett, G.A., and Obradovich, J.D., 2002, Revised ages for tuffs of the Yellowstone Plateau volcanic field: Assignment of the Huckleberry Ridge Tuff to a new geomagnetic polarity event: *Geol. Soc. Am. Bulletin*, v. 114, p. 559-568.
- Larsen, J.F., 2006, Rhyodacite magma storage conditions prior to the 3430 yBP caldera-forming eruption of Aniakchak volcano, Alaska: *Contributions to Mineralogy and Petrology*, v. 152, p. 523-540.
- Larson, R.L., 1991, Latest pulse of the Earth: Evidence for a mid-Cretaceous superplume: *Geology*, v. 19, p. 547-550.

- Latta, J., 1983, Geochemistry and petrology of the ash flows of Chiricahua National Monument, Arizona and their relation to the Turkey Creek Caldera, 194 p.
- Leakey, M.D., and Hay, R.L., 1979, Pliocene footprints in the Laetoli Beds at Laetoli, northern Tanzania: *Nature*, v. 278, p. 317 - 323.
- Lee, M.-Y., Chen, C.-H., Wei, K.-Y., Iizuka, Y., and Carey, S., 2004, First Toba supereruption revival: *Geology*, v. 32, p. 61-64.
- Leonov, V.L., 2003, Quaternary calderas of Kamchatka: overview, classification, structural position: *Volcanol. Seismol.*(in Russian), v. 2, p. 13-26.
- Lerbekmo, J.F., 2002, The Dorothy bentonite: an extraordinary case of secondary thickening in a late Campanian volcanic ash fall in central Alberta: *Canadian Journal of Earth Sciences*, v. 39, p. 1745-1754.
- Lindsay, J.M., de Silvab, S., Trumbulla, R., Emmermanna, R., and Wemmer, K., 2001, La Pacana caldera, N. Chile: a re-evaluation of the stratigraphy and volcanology of one of the world's largest resurgent calderas: *J. Volcanol. Geotherm. Res.*, v. 106, p. 145-173.
- Lipman, P.W., 1975, Evolution of the Platoro caldera complex and related volcanic rocks, southeastern San Juan Mountains, Colorado: *U.S. Geol. Surv. Prof. Paper*, v. 852, p. 1-128.
- , 1976, Caldera-collapse breccias in the western San Juan Mountains, Colorado: *Bull. Geol. Soc. Am.*, v. 87, p. 1397-1410.
- , 1984, The roots of ash flow calderas in western North America: Windows into the tops of granitic batholiths: *J. Geophys. Res.*, v. 89, p. 8801-8841.
- , 2000, Calderas, *in* Sigurdsson, H., ed., *Encyclopedia of volcanoes*: San Diego, Academic Press, p. 643-662.
- Lipman, P.W., and Calvert, A., 2003, Southward migration of mid-Tertiary volcanism: Relations in the Cochetopa Area, North-Central San Juan Mountains, Colorado: *Geol. Soc. Am. Abstracts with Programs*, v. 35, p. 14.
- Lipman, P.W., Dungan, M.A., Brown, L.L., and Deino, A.L., 1996, Recurrent eruption and subsidence at the Platoro Caldera complex, southeastern San Juan volcanic field, Colorado: new tales from old tuffs: *Bull. Geol. Soc. Am.*, v. 108, p. 1039-1055.
- Lipman, P.W., Steven, T.A., Luedke, R.G., and Burbank, W.S., 1973, Revised volcanic history of the San Juan, Uncompahgre, Silverton, and Lake City calderas in the western San Juan Mountains, Colorado: *J. Res. U. S. Geol. Surv.*, v. 1, p. 627-642.
- Lisiecki, L.E., and Raymo, M.E., 2005, A Pliocene-Pleistocene stack of 57 globally distributed benthic $\delta^{18}\text{O}$ records: *Paleoceanography*, v. 20, p. PA1003.
- Lo, C.-H., Chunga, S.-L., Lee, T.-Y., and Wu, G., 2002, Age of the Emeishan flood magmatism and relations to Permian–Triassic boundary events: *Earth Planet. Sci. Lett.*, v. 198, p. 449-458.
- Marzoli, A., Renne, P.R., Piccirillo, E.M., Ernesto, M., Bellieni, G., and Min, A.D., 1999, Extensive 200-million-year-old continental flood basalts of the Central Atlantic Magmatic Province: *Science*, v. 284, p. 616-618.
- Maughan, L.L., Christiansen, E.H., Best, M.G., Grommé, C.S., Deino, A.L., and Tingey, D.G., 2002, The Oligocene Lund Tuff, Great Basin, USA: a very large volume monotonous intermediate: *J. Volcanol. Geotherm. Res.*, v. 113, p. 129-157.
- McDougall, I., Maier, R., Sutherland-Hawkes, P., and Gleadow, A.J.W., 1980, K–Ar age estimate for the KBS Tuff, East Turkana, Kenya: *Nature*, v. 284, p. 230 - 234.
- McHenry, L., 2003, Geochemistry of tephra from Bed I, Olduvai Gorge, Tanzania: Stratigraphic correlations and implications for magmatic evolution: EGS - AGU - EUG Joint Assembly, Abstracts from the meeting held in Nice, France, 6 - 11 April 2003, p. abstract #176.
- McIntosh, W.C., and Chapin, C.E., 2004, Geochronology of the central Colorado volcanic field: *Bull. New Mexico Bur. Geol. Min. Res.*, v. 160, p. 205-237.

- Melekestsev, I.V., Braitseva, O.A., Erlich, E.N., and Kozhemyaka, N.N., 1974, Volcanic mountains and plains, *in* Luchitsky, I.V., ed., Kamchatka, Kurile and Commander Islands: Moscow, Nauka, p. 162-234 (in Russian).
- Millward, D., and Evans, J.A., 2003, U-Pb chronology and duration of late Ordovician magmatism in the English Lake District: *J. Geol. Soc. London*, v. 160, p. 773-781.
- Min, K., Reiners, P.W., Nicolescu, S., Wolff, J.A., Mundil, R., and Winters, L.R., 2004, (U-Th)/He dating of volcanic phenocrysts with high-(U-Th) inclusions, Bandelier Tuff, New Mexico: *EOS Trans. AGU*, v. 85, p. Abstract V43E-1450.
- Moran, K., Backman, J., Brinkhuis, H., Clemens, S.C., Cronin, T., Dickens, G.R., Eynaud, F., Gattacceca, J., Jakobsson, M., Jordan, R.W., Kaminski, M., King, J., Koc, N., Krylov, A., Martinez, N., Matthiessen, J., McInroy, D., Moore, T.C., Onodera, J., O'Regan, M., Palike, H., Rea, B., Rio, D., Sakamoto, T., Smith, D.C., Stein, R., John, K.S., Suto, I., Suzuki, N., Takahashi, K., Watanabe, M., Yamamoto, M., Farrell, J., Frank, M., Kubik, P., Jokat, W., and Kristoffersen, Y., 2006, The Cenozoic palaeoenvironment of the Arctic Ocean: *Nature*, v. 441, p. 601-605.
- Morgan, L.A., Doherty, D.J., and Leeman, W.P., 1984, Ignimbrites of the Eastern Snake River Plain: evidence for major caldera-forming eruptions: *J. Geophys. Res.*, v. 89, p. 8665-8678.
- Morris, G.A., and Creaser, R.A., 2003, Crustal recycling during subduction at the Eocene Cordilleran margin of North America: a petrogenetic study from the southwestern Yukon: *Canadian Journal of Earth Sciences*, v. 40, p. 1805-1821.
- Moye, F.J., Hackett, W.R., Blakley, J.D., and Snider, L.G., 1988, Regional geologic setting and volcanic stratigraphy of the Challis Volcanic Field, Central Idaho: *Idaho Geological Survey Bulletin*, v. 27, p. 87-97.
- Newhall, C.A., and Dzurisin, D., 1988, Historical unrest at large calderas of the world: *Bull. U.S. Geol. Surv.*, v. 1855, p. 1108.
- Newhall, C.G., and Self, S., 1982, The volcanic explosivity index /VEI/ - An estimate of explosive magnitude for historical volcanism: *J. Geophys. Res.*, v. 87, p. 1231-1238.
- Ogorodov, N.V., Kozhemyaka, N.N., Vazheevskaya, A.A., and Ogorodova, A., 1972, Volcanoes and Quaternary Volcanism in the Sredinny Ridge of Kamchatka: Moscow (in Russian), Nauka, 190 p.
- Oppenheimer, C., 2003, Ice core and palaeoclimatic evidence for the timing and nature of the great mid-13th century volcanic eruption: *Int. J. Climatol.*, v. 23, p. 417 - 426.
- Ort, M.H., 1993, Eruptive processes and caldera formation in a nested downsag collapse caldera: Cerro Panizos, central Andes mountains: *J. Volcanol. Geotherm. Res.*, v. 56, p. 221-252.
- Osburn, G.R., and Chapin, C.E., 1983, Ash-flow tuffs and cauldrons in the northeast Mogollon-Datil volcanic field: A summary: *Field Conference Guide of the New Mexico Geological Society*, v. 34, p. 197-204.
- Palais, J.M., Germani, M.S., and Zielinski, G.A., 1992, Inter-hemispheric transport of volcanic ash from a 1259 A.D. volcanic eruption to the Greenland and Antarctic ice sheets: *Geophys. Res. Lett.*, v. 19, p. 801-804.
- Panter, K.S., McIntosh, W.C., and Smellie, J.L., 1994, Volcanic history of Mount Sidley, a major alkaline volcano in Marie Byrd Land, Antarctica: *Bull. Volcanol.*, v. 56, p. 361-376.
- Permenter, J.L., and Oppenheimer, C., 2007, Volcanoes of the Tibesti massif (Chad, northern Africa): *Bull. Volcanol.*, v. 69, p. 609-626.
- Pierce, K.L., and Morgan, L.A., 1992, The track of the Yellowstone hot spot: Volcanism, faulting, and uplift, *in* Link, P.K., Kuntz, M.A., and Platt, L.B., eds., *Regional Geology of Eastern Idaho and Western Wyoming*, Volume Memoir 179, Geological Society of America, p. 1-52.

- Piper, J.D.A., Stephen, J.C., and Branney, M.J., 1997, Palaeomagnetism of the Borrowdale and Eycott volcanic groups, English Lake District: primary and secondary magnetization during a single late Ordovician polarity chron: *Geological Magazine*, v. 134, p. 481-506.
- Purbo-Hadiwidjono, M.M., Sjachrudin, M.L., and Suparka, S., 1979, The volcano-tectonic history of the Maninjau caldera, western Sumatra, Indonesia: *Geologie en Mijnbouw*, v. 58, p. 193-200.
- Pyle, D.M., 2003, Discussion of "The Dorothy Bentonite: an extraordinary case of secondary thickening in a late Campanian volcanic ash fall in central Alberta": *Canadian Journal of Earth Sciences*, v. 40, p. 1169–1170.
- Pyle, D.M., Andel, T.H.v., Paschos, P., and Bogaard, P.v.d., 1998, An exceptionally thick Middle Pleistocene tephra layer from Epirus, Greece: *Quaternary Res.*, v. 49, p. 280-286.
- Ram, M., Donarummo, J., and Sheridan, M., 1996, Volcanic ash from Icelandic ~57,300 yr BP eruption found in GISP2 (Greenland) ice core: *Geophys. Res. Lett.*, v. 23, p. 3167-3170.
- Ratté, J.C., Marvin, R.F., and Naeser, C.W., 1984, Calderas and ash flow tuffs of the Mogollan Mountains, southwestern New Mexico: *J. Geophys. Res.*, v. 89, p. 8713-8732.
- Reichow, M.K., Saunders, A.D., White, R.V., Pringle, M.S., Al'Mukhamedov, A.I., Medvedev, A.I., and Kirda, N.P., 2002, 40Ar/39Ar Dates from the West Siberian Basin: Siberian Flood Basalt Province Doubled: *Science*, v. 296, p. 1846 - 1849.
- Rose, W.I., and Chesner, C.A., 1987 Dispersal of ash in the great Toba eruption, 75,000 years B. P.: *Geology*, v. 15, p. 913-917.
- Sarna-Wojcicki, A.M., Pringle, M.S., and Wijbrans, J., 2000, New 40Ar/39Ar age of the Bishop Tuff from multiple sites and sediment rate calibration for the Matuyama-Brunhes boundary: *J. Geophys. Res.*, v. 105, p. 21,431–21,443.
- Sawyer, D.A., Fleck, R.J., Lanphere, M.A., Warren, R.G., Broxton, D.E., and Hudson, M.R., 1994, Episodic caldera volcanism in the Miocene southwestern Nevada volcanic field; revised stratigraphic framework, 40 Ar/ 39 Ar geochronology, and implications for magmatism and extension: *Bull. Geol. Soc. Am.*, v. 106, p. 1304-1318.
- Sawyer, D.A., and Lipman, P.W., 1983, Silver Bell Mountains, Arizona- porphyry copper mineralization in a late Cretaceous caldera: *EOS Trans. AGU*, v. 64, p. 874.
- Scarpati, C., Cole, P., and Perrotta, A., 1993, The Neapolitan Yellow Tuff- A large volume multiphase eruption from Campi Flegrei, Southern Italy: *Bull. Volcanol.*, v. 55, p. 343-356.
- Schildgen, T.F., Hodges, K.V., Whipple, K.X., Reiners, P.W., and Pringle, M.S., 2007, Uplift of the western margin of the Andean plateau revealed from canyon incision history, southern Peru: *Geology*, v. 35, p. 523–526.
- Schröder, W., and Wörner, G., 1996, Widespread Cenozoic ignimbrites in N-Chile, W-Bolivia and S-Peru 17°-20°S/71°-68°W. Stratigraphy, extension, correlation and origin: 3rd ISAG, St. Malo, Andean Geodynamics, ORSTOM Editions, Collection Colloques et Séminaires, p. 645-648.
- Seager, W.R., 1973, Resurgent volcano-tectonic depression of Oligocene age, south-central New Mexico: *Bull. Geol. Soc. Am.*, v. 84, p. 3611-3626.
- , 1981, Geology of Oregon Mountains and southern San Andreas Mountains, New Mexico: *Memoir of the New Mexico Bureau of Mineral Resources*, v. 36, p. 1-97.
- Self, S., Rampino, M.R., Newton, M.S., and Wolff, J.A., 1989, Volcanological study of the great Tambora eruption of 1815: *Geology*, v. 12, p. 659-663.
- Sharma, S., Dix, G.R., and Villeneuve, M., 2005, Petrology and potential tectonic significance of a K-bentonite in a Taconian shale basin (eastern Ontario, Canada), northern Appalachians: *Geological Magazine*, v. 142, p. 145-158.

- Sherrod, D.R., and Smith, J.G., 2000, Geologic map of Upper Eocene to Holocene volcanic and related rocks of the Cascade Range, Oregon: U.S. Geological Survey Geologic Investigations Series Map I-2569, p. 1.
- Sigurdsson, H., 2000, Volcanic episodes and reates of volcanism, *in* Sigurdsson, H., ed., *Encyclopedia of Volcanoes*, Academic Press, p. 271-279.
- Simkin, T., and Siebert, L., 1994, *Volcanoes of the World: A regional directory, gazetteer, and chronology of volcanism during the last 10,000 years*: Tucson, Geoscience Press, 349 p.
- Smellie, J.L., McIntosh, W.C., Gamble, J.A., Panter, K.S., Kyle, P.R., and Dunbar, N.W., 1993, Preliminary lithofacies assessment and $^{40}\text{Ar}/^{39}\text{Ar}$ ages of Cenozoic volcanic sequences in eastern Marie Byrd Land: *Antarctic Science*, v. 5, p. 105-106.
- Sparks, R.S.J., Francis, P.W., Hamer, R.D., Pankhurst, R.J., O'Callaghan, L.O., Thorpe, R.S., and Page, R., 1985, Ignimbrites of the Cerro Galan caldera, NW Argentina: *J. Volcanol. Geotherm. Res.*, v. 24, p. 205-248.
- Sruoga, P., Llambías, E.J., Fauqué, L., Schonwandt, D., and Repol, D.G., 2005, Volcanological and geochemical evolution of the Diamante Caldera-Maipo volcano complex in the Southern Andes of Argentina ($34^{\circ}10'S$): *J. South American Earth Sci.*, v. 19, p. 399-414.
- Steven, T.A., and Lipman, P.W., 1976, Calderas of the San Juan volcanic field, southwestern Colorado: U.S. Geol. Survey Prof. Paper, v. 958, p. 35 p.
- Steven, T.A., and Ratte, J.C., 1965, Geology and structural control of ore deposition in the Creede district, San Juan Mountains, Colorado: U.S. Geol. Surv. Prof. Paper, v. 487, p. 90
- Taylor, K.C., Mayewski, P.A., Alley, R.B., Brook, E.J., Gow, A.J., Grootes, P.M., Meese, D.A., Saltzman, E.S., Severinghaus, J.P., Twickler, M.S., White, J.W.C., Whitlow, S., and Zielinski, G.A., 1997 The Holocene-Younger Dryas transition recorded at Summit, Greenland: *Science* v. 278, p. 825-827.
- Thordarson, T., and Self, S., 2003, Atmospheric and environmental effects of the 1783–1784 Laki eruption: A review and reassessment: *J. Geophys. Res.*, v. 108, p. 4011, doi:10.1029/2001JD002042.
- Torsvik, T.H., Steinberger, B., and Gaina, C., 2007, North Atlantic plate motions and plumes: *Geophysical Research Abstracts*, v. 9, p. 03964.
- Ukstins_Peate, I., Bakera, J.A., Kenta, A.J.R., Al-Kadasi, M., Al-Subbaryc, A., Ayalewd, D., and Menzies, M., 2003, Correlation of Indian Ocean tephra to individual Oligocene silicic eruptions from Afro-Arabian flood volcanism: *Earth Planet. Sci. Lett.*, v. 211, p. 311-327.
- Vallance, J.W., and Calvert, A.T., 2003, Volcanism during the past 84 ka at Atitlan caldera, Guatemala: *EOS Trans. AGU*, v. Fall Meeting 2003, p. abstract #V32D-1050.
- Valverde-Vaquero, P., Staal, C.R.v., McNicoll, V., and Dunning, G.R., 2006, Mid–Late Ordovician magmatism and metamorphism along the Gander margin in central Newfoundland: *J. Geol. Soc. London*, v. 163, p. 347-362.
- Varga, R.J., and Smith, B.M., 1984, Evolution of the early oligocene Bonanza caldera, northeast San Juan volcanic field, Colorado: *J. Geophys. Res.*, v. 89, p. 8679-8694.
- Volynets, O.N., Ponomareva, V.V., Braitseva, O.A., Melekestsev, I.V., and Chen, C.H., 1999, Holocene eruptive history of Ksudach volcanic massif, South Kamchatka: evolution of a large magmatic chamber: *J. Volcanol. Geotherm. Res.*, v. 91, p. 23-42.
- Ward, P.L., 1995, Subduction cycles under western North America during the Mesozoic and Cenozoic eras, *in* Miller, D.M., and Busby, C., eds., *Jurassic Magmatism and Tectonics of the North American Cordillera*, Geological Society of America Special Paper 299, p. 1-45.
- Waythomas, C.F., Mangan, M.T., Miller, T.P., Layer, P.L., and Trusdell, F.A., 2001, Caldera-Forming Eruptions of the Emmons Lake Volcanic Center, Alaska Peninsula, Alaska:

- Probable Source of the Dawson Creek Tephra in Yukon Territory, Canada: EOS Trans. AGU, v. 82, p. V52A-1041.
- Wilson, C.J.N., 2001, The 26.5 ka Oruanui eruption, New Zealand: an introduction and overview: J. Volcanol. Geotherm. Res., v. 112, p. 133-174.
- Zaretskaia, N.E., Ponomareva, V.V., Sulerzhitsky, L.D., and V.Dirksen, O., 2001, Radiocarbon Dating Of The Kurile Lake Caldera Eruption (South Kamchatka, Russia): Geochronometria, v. 20, p. 95-102.
- Zielinski, G.A., Mayewski, P.A., Meeker, L.D., Whitlow, S., Twickler, M.S., and Taylor, K., 1996, Potential atmospheric impact of the Toba mega-eruption ~71,000 years ago: Geophys. Res. Lett., v. 23, p. 837-840.
- Zielinski, G.A., and Mershon, G.R., 1997, Paleoenvironmental implications of the insoluble microparticle record in the GISP2 (Greenland) ice core during the rapidly changing climate of the Pleistocene–Holocene transition: Geol. Soc. Am. Bulletin, v. 109, p. 547-559.