

SF (MARGINS-related)	Volatile Flux from Active MARGINS: The Central American Volcanic Arc	
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	08/15/2000 - 01/31/2002	EAR 00-79402
<ul style="list-style-type: none"> • To date the most extensive and systematic study of volatile emissions from arc and back-arc volcanic centers, including noble gas, C, N isotopes and volatile flux measurements. • Identified and developed N content of arc magmas as a sensitive tracer of subducted hemipelagic sediments. • Provided new insights on volatile cycling through arcs and showed that N does not get subducted into the deep mantle. This has global implications for the N content and isotopic evolution of the mantle. • Ongoing work is to correlate volatile signatures with other geochemical tracers to better constrain mass and energy transfer in subduction zones. • <i>Website</i>: "Live" report from the sampling expedition to Costa Rica. Informative background on subduction zones, volcanoes, volatiles. Insights into how scientists work in the field to obtain data and samples. <http://www.sio.ucsd.edu/volcano/> 		
Publications and Presentations		
<p>Fischer, T.P., Hilton, D.R., Zimmer, M.M., Shaw, A.M., Sharp, Z and Walker, J.A. (2002) Subduction and recycling of nitrogen along the central American margin. <i>Science</i> 297 pp 1154-1157.</p> <p>Hilton, D.R., Fischer, T.P. and Marty, B. (2002) Noble gases and volatile recycling at subduction zones, in <i>Noble Gases in Cosmochemistry and Geochemistry Reviews in Mineralogy and Geochemistry</i>, Volume 47, Mineralogical Society of America pp 319-370.</p> <p>Shaw, A.M., Hilton, D.R., Fischer, T.P., Walker, J.A., Alvarado, G. (2003) Contrasting volatile systematics of Nicaragua and Costa Rica: insights to C cycling through subduction zones using He-C relationships. <i>Earth Planet. Sci. Let.</i>, 214, 499-513.</p> <p>Zimmer, M.M., Fischer, T.P., Hilton, D.R., Alvarado, G., Walker, J.A. (in revision) Costa Rica arc volatiles: Chemical fluxes and nitrogen isotope systematics. <i>G-cubed, Trench to Subarc Special Issue</i></p> <p>Fischer, T.P. and Marty, B. (in revision) Volatiles in the sub-arc mantle: Insights from volcanic and hydrothermal gas discharges. <i>J. Volcanol. Geotherm. Res.</i></p>		