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DEPARTMENT OF THE GEOPHYSICAL SCIENCES
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RECENT PH.D. THESES

2007

Anderson, Philip S. L., Biomechanics and Functional Diversity in the Feeding System of Late Devonian Arthrodire Placoderms. Advisor: LaBarbera

Barzyk, Julia G., Multi-element Isotopic Analysis of Presolar Silicon Carbide. Advisor: Clayton

Cook, David L., The Nickel Isotopic Composition of Meteoritic Metal from Chondrites, Pallasites, and Iron Meteorites and of Troilite (FeS) from Iron Meteorites. Advisor: Clayton

Gualda, Guilherme A. R., Crystal And Bubble Populations In The Early-Erupted Bishop Rhyolitic Magm: Microscopy, X-Ray Tomography And Microanalysis Of Pumice Clasts. Advisor: Anderson

Lin, Ying , Non-Mass-Dependent Oxygen Isotope Effect Observed In Water Vapor From Alert, Canadian Arctic. Advisor: Clayton

Qin, Liping , High-Precision Tungsten Isotope Measurements Of Iron Meteorites. Advisor: Dauphas

2006

Barzyk, Timothy M., Climatic Effects of Urbanization: Urban, Suburban, and Rural Microclimates in the Chicago Region. Advisor: Frederick

Hannisdal, Bjarte, Inferring Phenotypic Evolution in the Fossil Record by Bayesian Inversion. Advisor: Kidwell

Sabato, Jude S., Baroclinic Instability on Earth and Mars. Advisor: Pierrehumbert

Simpson, Carl G., Levels of Selection and Large-scale Morphological Trends. Advisor: Foote

2005

Mao, Wendy, Geophysics and Geochemistry of Iron in the Earth's Core. Advisor: Heinz

Rothfus, Thomas, Taphonomic Damage, Taxonomic Identifiability, and Preservational Quality: Implications for Bias in Paleocological Data. Advisor: Kidwell

Sergienko, Olga, Surface Melting on Ice Shelves and Icebergs. Advisor: MacAyeal

Sunderlin, David, Permian Phytogeographic Patterns on Northern Pangea with New Data from the Alaska Range. Advisor: Ziegler/Rowley

2004

Edelman-Furstenberg, Yael, Macrobenthic ecology, paleoecology and taphonomy of high-productivity systems: Upper Cretaceous Mishash Formation (Israel) and the modern Benguela system (Namibia). Advisor: Kidwell

Kashiv, Yoav, Trace Element Abundances in Single Presolar SiC Grains by Synchrotron X-Ray Fluorescence. Advisor: Clayton

Liao, Yixiang, Study of Solar Irradiance at High Southern Latitudes over a Decadal Time Scale. Advisor: Frederick

Winiacki, Shelby, A Case Study addressing the Influence of the Urban Boundary Layer on UVB transmission. Advisor: Frederick

2003

Hunt, Gene, Micro- and macroevolution of morphological covariance in ostracodes. Advisor: Foote

Kosnik, Matthew A., Spatial and temporal heterogeneity in late Cretaceous and early Tertiary shallow-shelf benthic marine assemblages. Advisor: Jablonski

McGowan, Alistair J., Macroevolutionary patterns of Triassic ammonoid morphology: Relationships among disparity, morphotypes, and spatio-temporal patterns. Advisor: Jablonski

Peters, Shanan E., Evenness, richness, and the Cambrian-Paleozoic faunal transition in North America. Advisor: Foote

Price, Rebecca M., The Function, Macroevolution and Macroecology of Internal Ornamentation in Neogastropods. Advisor: Jablonski

Sukhatme, Jai S., A Study of Decaying Scalars in Two Dimensional Flows. Advisor: Pierrehumbert

2002

Foley, C. Nicole, Mars Pathfinder APXS Analyses and Interpretations. Advisor: Clayton

Li, Xiaowen, Evaporation in Stratiform Rain and Its Radar Measurement. Advisor: Srivastava

Lin, Jung-Fu, Alloying Effects of Silicon and Nickel on Iron in the Earth's Core. Advisor: Heinz

Smith, Francesca A., Carbon isotope signatures of fossil phytoliths: Dynamics of C3 and C4 grasses in the Neogene. Advisor: Kidwell

Zhang, Hui, Tropical Upper Tropospheric Water Vapor Distribution. Advisor: Pierrehumbert

2001

Goldberg, Karen, The Paleoclimatic Evolution of the Permian in the Perana Basin in Southern Brazil. Advisor: Ziegler

Lockwood, Rowan, Extinction and rebound: evolutionary patterns in Late Cretaceous and Cenozoic bivalves. Advisor: Jablonski

Lyons, Kate, A quantitative assessment of the community structure and dynamics of Pleistocene mammals. Advisor: Foote

Song, Yucheng, A Study on the Extratropical Tropopause and Baroclinic Adjustment. Advisor: Nakamura

2000

Best, Mairi M.R., Fates of Skeletal Carbonate in Tropical Siliciclastic and Carbonate Sediments, Caribbean Panama. Advisor: Kidwell

Brady, Melinda. Patterns of Morphogenesis in Angiosperm Flowers. Advisors: Crane, Foote

Hu, Yongyun, The Advection--Diffusion Problem for Stratospheric Flow. Advisor: Pierrehumbert

Hu, Guixin, Oxygen Isotope Salt Effect at High Pressure and High Temperature. Advisor: Clayton

O'Keefe, Robin. Phylogeny and Convergence in the Plesiosauria (Reptilia: Sauropterygia). Advisors: Hopson, Rieppel

Sims, Hallie J., Diversity, turnover, and seed size evolution in late Paleozoic seed plants. Advisor: Foote

1999

Cipriani, Roberto. Construction, function and evolution of accretionary morphologies: coiling in heterobranch gastropods. Advisor: Bieler

Cziczo, Daniel, Laboratory Studies of Phase Transitions in Common Tropospheric Aerosols. Advisor: Abbatt

Ma, Jun, The Modified Lagrangian-Mean Diagnostics of the Stratospheric Transport and Chemistry. Advisor: Nakamura

Magallón-Puebla, Susana, A Neontological and Paleontological Approach to the Evolution of Floral Form Among Basal Eudicots. Advisor: Crane

Qu, Zheng, On the Transmission of Ultraviolet Radiation in Horizontally Inhomogeneous Atmospheres: A Three Dimensional Approach Based on the Delta-Eddington's Approximation. Advisor: Frederick

Slagel, Matthew M., Experimental Melting of Phlogopite-Calcite Assemblages: Applications to the Evolution and Emplacement of Silicocarbonatite Magmas in the Crust. Advisor: Newton

1998

Bindeman, Ilya N., Trace Element Partitioning Between Plagioclase Feldspar and Melt: A Study of Experiments and Applications to Magmatic Evolution. Advisor: Anderson

Han, Shaoxu, Dimensional Nets in Zeolites and Related Materials: Combination of 3-Connected 2D Nets with 1D Chains. Advisor: Smith

Hulbe, Christina L., Heat Balance of West Antarctic Ice Streams, Investigated With a Numerical Model of Coupled Ice Sheet, Ice Stream, and Ice Shelf Flow. Advisor: MacAyeal

Jackson, Charles, Sensitivity of stationary wave amplitude to Laurentide Ice Sheet topography and the interpretation of the Heinrich Event climate record. Advisor: MacAyeal

Miller, Daniel J., Large-Scale Temporal and Biogeographic Patterns of Evolution in Muricine Gastropods: the Role of Predation. Advisor: LaBarbera

Shea, Michael, Hydrologic, Thermal, and Chemical Processes Related to Fracture Controlled Hydrothermal Water-Rock Interaction. Advisor: Clayton

Xue, Feng, Exhumation of an Ultrahigh Pressure Metamorphic Terrain in the Dabie Shan, China. Advisor: Rowley

1997

Aquino, Nadja Z.W., Measurements of ^{212}Pb and ^{214}Pb in Surface Air around Lake Michigan and Their Implications for Atmospheric Boundary Layer Mixing. Advisor: Barcilon

Eble, Gunther, The macroevolutionary history of diversity and disparity in disasteroid, holasteroid, and spatangoid heart urchins. Advisor: Jablonski

Erlick, Caryn, The Effects of Clouds, Aerosols, and Gaseous Absorbers on the Wavelength Dependence of Atmospheric Transmission. Advisor: Frederick

Huang, Lin, The Abundance and Isotopic Composition of Nitrogen in Mantle Xenoliths: Implications for Mantle - Atmosphere Evolution. Advisor: Clayton

Hulver, Michael, Post-Orogenic Evolution of the Appalachian Mountain System and its Foreland. Advisor: Ziegler

Lupia, Richard, Cretaceous angiosperm diversity, paleoecology and paleobiogeography. Advisor: Crane

Zhou, Yanhua, Thermodynamic and Dynamic Properties of Multicomponent Liquids: A Study by Molecular Dynamics Simulation. Advisor: Miller

1996

Markwick, Paul J., Late Cretaceous to Pleistocene Climates: Nature of the Transition from a 'Hot-House' to an 'Ice-House' World. Advisor: Ziegler

Mickley, Loretta J., Using Tracers to Follow Chemical Change in the Atmosphere: Examples from the Antarctic Spring and the Aftermath of the Mount Pinatubo Eruption. Advisor: Frederick

Soulen, Peter F., Ultraviolet Radiative Transfer in the Troposphere. Advisor: Frederick

Sweeney, Jeffrey S., Irreversible Melting of a Magnesium-Iron-Silicate Perovskite at Lower Mantle Pressures. Advisor: Heinz

1995

LeClair, Elizabeth, Invertebrate vertebrae: evolutionary morphology and experimental biomechanics of Ophiuroidea (Echinodermata). Advisor: LaBarbera

Masterson, Jane, The evolutionary history and significance of polyploidy in angiosperms. Advisor: Crane, Jablonski

Rogers, Raymond Robert, Sequence Stratigraphy and Vertebrate Taphonomy of the Upper Cretaceous Two Medicine and Judith River Formations, Montana. Advisor: Kidwell

Swanson, Kyle Leigh, Dynamics and Mean Flow Interactions of Nonlinear Baroclinic Wave Packets. Advisor: Pierrehumbert

Tian, Lin, Measurement of Microwave Attenuation by a Dual-Radar Method. Advisor: Srivastava

Wagner III, Peter John, The Generation and Maintenance of Morphologic and Phylogenetic Diversity among Early Paleozoic Gastropods. Advisor: Sepkoski

Wang, Jianhua, Chemical and Isotopic Fractionation during the Evaporation of Synthetic Forsterite and Material of Solar Composition. Advisor: Clayton

Yao, Jiping, Approaches to paleoclimatic Reconstructions with Examples from the Mesozoic and Cenozoic of Eurasia. Advisor: Ziegler

1994

Alroy, John, Quantitative mammalian biochronology and biogeography of North America. Advisor: Raup

Humayun, Munir, Potassium Isotope Cosmochemistry: Implications for Volatile Depletion and Origins of the Earth, Moon and Meteorites. Advisor: Clayton

Liang, Yan, Models and Experiments for Multicomponent Chemical Diffusion in Molten Silicates. Advisor: Richter

Puris, Eriks Martins, Quantitative Constraints on Net Fluid Fluxes During Metamorphism Based on Oxygen Isotope Studies of the Kapuskasing Structural Zone, Ontario, Canada. Advisor: Wickham

Qin, Zhenwei, Melting and Diffusive Equilibration in Igneous Processes. Advisor: Monaghan/Anderson

Roy, Kaustuv, Temporal Patterns of Taxonomic, Morphologic and Biogeographic Change in Stromboidean Gastropods and Their Macroevolutionary Implications. Advisor: Jablonski

Santos, Roberto Ventura, Oxygen and Carbon Isotopes in Alkaline Carbonatite Complexes. Advisor: Clayton

Suter, Sherman, Phylogenetic analyses of cassidulid echinoids: Morphology, homoplasy, and stratigraphic data. Advisor: Jablonski

1993

Burr, George S., Assimilation of Amphibolite by Andesite Magma: Physical-Chemical Effects and Petrologic Implications. Advisor: Anderson

Campbell, Andrew, Elasticity of Materials at Mantle Pressures. Advisor: Heinz

Hu, Zailiang, A Numerical Study of the Evolution of Raindrop Size Distribution by Coalescence, Breakup and Evaporation. Advisor: Srivastava

Schneider, Jay, Evolutionary Patterns of Cardiid Bivalves. Advisor: Jablonski

Soden, Brian, Satellite Observations of Water Vapor and Clouds: Implications for GCM Cloud Parameterization. Advisor: Donner/Frederick

Weatherhead, Elizabeth C., The Effects of Tropospheric Pollutants on the Transmission of Ultraviolet Radiation. Advisor: Frederick

Wen, Guoyong, A Study of SBUV Satellite Measurements after the El Chichon Volcanic Eruption. Advisor: Frederick