



## Martin Grove

Professor (Research) of Earth and Planetary Sciences  
Earth & Planetary Sciences

### Bio

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#### ACADEMIC APPOINTMENTS

- Professor (Research), Earth & Planetary Sciences

#### ADMINISTRATIVE APPOINTMENTS

- Teaching Associate, Earth and Space Sciences, University of California, Los Angeles, (1987-1992)
- Research Associate, Earth and Space Sciences, University of California, Los Angeles, (1987-1992)
- Postdoctoral Fellow, Centre National de la Recherche Scientifique/Universite Blaise Pascal, (1992-1993)
- Associate Specialist, Earth and Space Sciences, University of California, Los Angeles, (1993-2000)
- Specialist, Earth and Space Sciences, University of California, Los Angeles, (2001-2008)
- Research Professor, Geological and Environmental Sciences, Stanford University, (2008- present)

#### PROFESSIONAL EDUCATION

- Ph.D., University of California, Los Angeles , Geology (1993)
- M.S., University of California, Los Angeles , Geology (1987)
- B.S., California State University, Long Beach , Geology (1983)

#### LINKS

- Geochronology: <https://geochronology.stanford.edu/>
- SHRIMP-RG: <http://shrimprg.stanford.edu/>
- Noble Gas Lab: <https://noblegas.stanford.edu/>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

##### Research

I study the evolution of the Earth's crust by undertaking petrologic and geochemically-based research that is grounded with fieldwork. I co-direct the Stanford-USGS ion probe laboratory and develop geochronologic methods to constrain crystallization, metamorphic, and metasomatic histories of the middle to deep crust. Similarly, because heat flow characteristically attends mass transfer during crustal deformation, I employ  $40\text{Ar}/39\text{Ar}$  and (U-Th)/He thermochronology to extract thermal history information from minerals to constrain the timing and magnitude of fault slip as well as erosional and tectonic denudation. Finally, I am heavily involved in provenance studies to constrain aspects of crustal deformation and erosion that are only preserved in the sedimentary record.

## Teaching

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### COURSES

#### 2024-25

- Geologic Evolution of the Western U.S. Cordillera: EPS 210 (Win)
- Living on the Edge: EPS 5 (Spr)
- Thermochronology and Crustal Evolution: EPS 283 (Spr)

#### 2023-24

- Interpretative Methods in Detrital Geochronology: EPS 282 (Aut)
- Living on the Edge: EPS 5 (Aut, Spr)

#### 2022-23

- Introduction to Field Methods: GEOLSCI 105 (Aut)
- Living on the Edge: GEOLSCI 5 (Aut, Spr)
- Thermochronology and Crustal Evolution: GEOLSCI 283 (Spr)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Jason Craig, Anna Ruefer

## Publications

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### PUBLICATIONS

- **Evaluating the Impact of Pb Volatilization During 40Ar/39Ar CO2 Laser Fusion upon LA-ICP-MS Measurement of Pb Isotopic Composition of Detrital K-feldspar** *Chemical Geology*  
Shulaker, D. Z., Hourigan, J. K., Grove, M.  
2018; 483: 78-87
- **Geology and  $^{40}\text{Ar}/^{39}\text{Ar}$  geochronology of the Middle Miocene McDermitt Volcanic Field, Oregon and Nevada: silicic volcanism associated with propagating flood basalt dikes at initiation of the Yellowstone hotspot** *Geological Society of America Bulletin*  
Benson, T. R., Mahood, G., Grove, M.  
2017
- **Extreme latest Cretaceous–Paleogene low-angle subduction: Zircon ages from Orocopia Schist at Cemetery Ridge, southwestern Arizona, USA** *GEOLOGY*  
Jacobson, C. E., Hourigan, J. K., Haxel, G. B., Grove, M.  
2017; 45 (10)
- **Deformational history and thermochronology of Wrangle Island, East Siberian Shelf, and coastal Chukotka, Arctic Russia** *Journal of the Geological Society of London*  
Miller, E. L., Akinin, V. V., Dumitru, T. A., Gottlieb, E. S., Grove, M., Meisling, K., Seward, G.  
2017
- **40Ar/39Ar dating and thermal modeling of adularia to constrain the timing of hydrothermal activity in magmatic settings** *Geology*  
Oze, C., Cattell, H., Grove, M.  
2017
- **Argon, oxygen, and boron isotopic evidence documenting Ar-40(E) accumulation in phengite during water-rich high-pressure subduction metasomatism of continental crust** *EARTH AND PLANETARY SCIENCE LETTERS*  
Menold, C. A., Grove, M., Sievers, N. E., Manning, C. E., Yin, A., Young, E. D., Ziegler, K.  
2016; 446: 56-67

- **Cenozoic paleogeographic evolution of the Elko Basin and surrounding region, northeast Nevada** *GEOSPHERE*  
Snee, J. L., Miller, E. L., Grove, M., Hourigan, J. K., Konstantinou, A.  
2016; 12 (2): 464-500
- **Assembling the world's type shallow subduction complex: Detrital zircon geochronologic constraints on the origin of the Nacimiento block, central California Coast Ranges** *GEOSPHERE*  
Chapman, A. D., Jacobson, C. E., Ernst, W. G., Grove, M., Dumitru, T., Hourigan, J., Ducea, M. N.  
2016; 12 (2): 533-557
- **Subduction-related 200 Ma Talun metagranite, SE Taiwan: an age constraint for palaeo-Pacific plate subduction beneath South China Block during the Mesozoic** *International Geology Review*  
Yui, T. F., Chu, H. T., Suga, K., Lan, C. Y., Chung, S. H., Wang, K. L., Grove, M.  
2016
- **White mica trace element and boron isotope evidence for distinctive infiltration events during exhumation of deeply subducted continental crust** *International Geology Review*  
Seivers, N. E., Menold, C. A., Grove, M., Coble, M. A.  
2016
- **A two-stage fluid history for the Orocopia Schist and associated rocks related to flat subduction and exhumation, southeastern California** *International Geology Review*  
Holk, G. J., Grove, M., Jacobson, C. E., Haxel, G. B.  
2016
- **Detrital thermochronologic record of burial heating and sediment recycling in the Magallanes foreland basin, Patagonian Andes** *BASIN RESEARCH*  
Fosdick, J. C., Grove, M., Graham, S. A., Hourigan, J. K., Lovera, O., Romans, B. W.  
2015; 27 (4): 546-572
- **First bedrock samples dredged from submarine outcrops in the Chukchi Borderland, Arctic Ocean** *GEOSPHERE*  
Brumley, K., Miller, E. L., Konstantinou, A., Grove, M., Meisling, K. E., Mayer, L. A.  
2015; 11 (1): 76-92
- **Detrital zircon U-Pb provenance of the Colorado River: A 5 m.y. record of incision into cover strata overlying the Colorado Plateau and adjacent regions** *GEOSPHERE*  
Kimbrough, D. L., Grove, M., Gehrels, G. E., Dorsey, R. J., Howard, K. A., Lovera, O. M., Aslan, A., House, P. K., Pearthree, P. A.  
2015; 11 (5): 1-30
- **Unzipping the Patagonian Andes—Long-lived influence of rifting history on foreland basin evolution** *Lithosphere*  
Malkowski, M. A., Grove, M., Graham, S. A.  
2015
- **Timing and significance of gabbro emplacement within two distinct plutonic domains of the Peninsular Ranges batholith, southern and Baja California** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Kimbrough, D. L., Grove, M., Morton, D. M.  
2015; 127 (1-2): 19-37
- **Detrital zircon provenance of the Late Cretaceous-Eocene California forearc: Influence of Laramide low-angle subduction on sediment dispersal and paleogeography** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Sharman, G. R., Graham, S. A., Grove, M., Kimbrough, D. L., Wright, J. E.  
2015; 127 (1-2): 38-60
- **Experimental and geologic evaluation of monazite (U-Th)/He thermochronometry: Catnip Sill, Catalina Core Complex, Tucson, AZ** *EARTH AND PLANETARY SCIENCE LETTERS*  
Peterman, E. M., Hourigan, J. K., Grove, M.  
2014; 403: 48-55
- **Petrogenesis of metatexite and diatexite migmatites determined using zircon U-Pb age, trace element and Hf isotope data, Higo metamorphic terrane, central Kyushu, Japan** *JOURNAL OF METAMORPHIC GEOLOGY*  
Maki, K., Yui, T., Miyazaki, K., Fukuyama, M., Wang, K., Martens, U., Grove, M., Liou, J. G.  
2014; 32 (3): 301-323

- **The Sierra San Pedro Martir Zoned Pluton, Baja California, Mexico** *GSA Memoir 211, Peninsular Ranges Batholith, Baja California and Southern California*  
Gastil, R. G., Kimbrough, D. L., Kimbrough, J. A., Grove, M., Shimizu, M.  
2014: 739-758
- **Upper Jurassic Peñasquitos Formation – western wallrock of the Peninsular Ranges batholith** *Memoir 211, Peninsular Ranges Batholith, Baja California and Southern California*  
Kimbrough, D. L., Abbott, P. L., Balch, D. C., Bartling, S. H., Grove, M., Mahoney, J. B.  
2014: 625–643
- **KARRAT ISFJORD: A NEWLY DISCOVERED PALEOPROTEROZOIC CARBONATITE-SOURCED REF DEPOSIT, CENTRAL WEST GREENLAND** *ECONOMIC GEOLOGY*  
Mott, A. V., Bird, D. K., Grove, M., Rose, N., Bernstein, S., Mackay, H., Krebs, J.  
2013; 108 (6): 1471-1488
- **The age and composition of the pre-Cenozoic basement of the Jalisco Block: implications for and relation to the Guerrero composite terrane** *CONTRIBUTIONS TO MINERALOGY AND PETROLOGY*  
Valencia, V. A., Righter, K., Rosas-Elguera, J., Lopez-Martinez, M., Grove, M.  
2013; 166 (3): 801-824
- **A reappraisal of the early slip history of the San Andreas fault, central California, USA** *GEOLOGY*  
Sharman, G. R., Graham, S. A., Grove, M., Hourigan, J. K.  
2013; 41 (7): 727-730
- **Is Myanmar jadeitite of Jurassic age? A result from incompletely recrystallized inherited zircon (vol 160, pg 268, 2013)** *LITHOS*  
Yui, T., Fukuyama, M., Iizuka, Y., Wu, C., Wu, T., Liou, J. G., Grove, M.  
2013; 168: 236-236
- **Pressure-temperature structure of a mylonitized metamorphic pile, and the role of advection of the lower crust, Nagasaki Metamorphic Complex, Kyushu, Japan** *LITHOS*  
Miyazaki, K., Ikeda, T., Arima, K., Fukuyama, M., Maki, K., Yui, T., Grove, M.  
2013; 162: 14-26
- **Detrital zircons indicate no drainage link between southern California rivers and the Colorado Plateau from mid-Cretaceous through Pliocene** *GEOLOGY*  
Ingersoll, R. V., Grove, M., Jacobson, C. E., Kimbrough, D. L., Hoyt, J. F.  
2013; 41 (3): 311-314
- **Origin and Tectonic Implication of Ophiolite and Eclogite in the Song Ma Suture Zone between the South China and Indochina Blocks** *JOURNAL OF METAMORPHIC GEOLOGY*  
Zhang, R. Y., Lo, C., Chung, S., Grove, M., Omori, S., Iizuka, Y., Liou, J. G., Tri, T. V.  
2013; 31 (1): 49-62
- **Retroarc deformation and exhumation near the end of the Andes, southern Patagonia** *EARTH AND PLANETARY SCIENCE LETTERS*  
Fosdick, J. C., Grove, M., Hourigan, J. K., Calderon, M.  
2013; 361: 504-517
- **Paleozoic to early Cenozoic cooling and exhumation of the basement underlying the eastern Puna plateau margin prior to plateau growth** *TECTONICS*  
Insel, N., Grove, M., Haschke, M., Barnes, J. B., Schmitt, A. K., Strecker, M. R.  
2012; 31
- **New data on U-Pb dating of zircons and the problem of the duration of the Angara-Vitim granitoid batholith formation** *DOKLADY EARTH SCIENCES*  
Tsygankov, A. A., Udoratina, O. V., Burmakina, G. N., Grove, M.  
2012; 447 (1): 1273-1277
- **Coupled U-Pb dating and Hf isotopic analysis of detrital zircon of modern river sand from the Yalu River (Yarlung Tsangpo) drainage system in southern Tibet: Constraints on the transport processes and evolution of Himalayan rivers** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Zhang, J. Y., Yin, A., Liu, W. C., Wu, F. Y., Lin, D., Grove, M.

2012; 124 (9-10): 1449-1473

- **Palaeogeography and diachronous infill of an ancient deep-marine foreland basin, Upper Cretaceous Cerro Toro Formation, Magallanes Basin** *BASIN RESEARCH*  
Bernhardt, A., Jobe, Z. R., Grove, M., Lowe, D. R.  
2012; 24 (3): 269-294
- **Hf isotope and REE compositions of zircon from jadeitite (Tone, Japan and north of the Motagua fault, Guatemala): implications on jadeitite genesis and possible protoliths** *EUROPEAN JOURNAL OF MINERALOGY*  
Yui, T., Maki, K., Wang, K., Lan, C., Usuki, T., Iizuka, Y., Wu, C., Wu, T., Nishiyama, T., Martens, U., Liou, J. G., Grove, M.  
2012; 24 (2): 263-275
- **Managed Metapopulations: Do Salmon Hatchery 'Sources' Lead to In-River 'Sinks' in Conservation?** *PLOS ONE*  
Johnson, R. C., Weber, P. K., Wikert, J. D., Workman, M. L., MacFarlane, R. B., Grove, M. J., Schmitt, A. K.  
2012; 7 (2)
- **EOCENE DRAINAGE EVOLUTION AND EROSION OF THE SIERRA NEVADA BATHOLITH ACROSS NORTHERN CALIFORNIA AND NEVADA** *AMERICAN JOURNAL OF SCIENCE*  
Cassel, E. J., Grove, M., Graham, S. A.  
2012; 312 (2): 117-144
- **Evidence for Late Riphean Granite Formation in the Polar Urals** *DOKLADY EARTH SCIENCES*  
Soboleva, A. A., Karchevskii, A. F., Efanova, L. I., Kuznetsov, N. B., Grove, M., Sobolev, I. D., Maurin, M. V.  
2012; 442 (2): 181-187
- **Separating metamorphic events in the Fosdick migmatite-granite complex, West Antarctica** *JOURNAL OF METAMORPHIC GEOLOGY*  
Korhonen, F. J., Brown, M., Grove, M., Siddoway, C. S., Baxter, E. F., Inglis, J. D.  
2012; 30 (2): 165-191
- **Calibration of Nu-Instruments Noblesse multicollector mass spectrometers for argon isotopic measurements using a newly developed reference gas** *CHEMICAL GEOLOGY*  
Coble, M. A., Grove, M., Calvert, A. T.  
2011; 290 (1-2): 75-87
- **Origin of similar to 2.5 Ga potassic granite from the Nellore Schist Belt, SE India: textural, cathodoluminescence, and SHRIMP U-Pb data** *CONTRIBUTIONS TO MINERALOGY AND PETROLOGY*  
Kumar, K. V., Ernst, W. G., Leelanandam, C., Wooden, J. L., Grove, M. J.  
2011; 162 (4): 867-888
- **Sockeye salmon (*Oncorhynchus nerka*) return after an absence of nearly 90 years: a case of reversion to anadromy** *CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES*  
Godbout, L., Wood, C. C., Withler, R. E., Latham, S., Nelson, R. J., Wetzel, L., Barnett-Johnson, R., Grove, M. J., Schmitt, A. K., McKeegan, K. D.  
2011; 68 (9): 1590-1602
- **Baltica in the Cordillera?** *GEOLOGY*  
Miller, E. L., Kuznetsov, N., Soboleva, A., Udoratina, O., Grove, M. J., Gehrels, G.  
2011; 39 (8): 791-794
- **Cenozoic tectonic history of the Himachal Himalaya (northwestern India) and its constraints on the formation mechanism of the Himalayan orogen** *GEOSPHERE*  
Webb, A. A., Yin, A., Harrison, T. M., Celerier, J., Gehrels, G. E., Manning, C. E., Grove, M.  
2011; 7 (4): 1013-1061
- **Late Cretaceous-early Cenozoic tectonic evolution of the southern California margin inferred from provenance of trench and forearc sediments** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Jacobson, C. E., Grove, M., Pedrick, J. N., Barth, A. P., Marsaglia, K. M., Gehrels, G. E., Nourse, J. A.  
2011; 123 (3-4): 485-506
- **Sulfur isotopes in otoliths allow discrimination of anadromous and non-anadromous ecotypes of sockeye salmon (*Oncorhynchus nerka*)** *4th International Otolith Symposium*  
Godbout, L., Trudel, M., Irvine, J. R., Wood, C. C., Grove, M. J., Schmitt, A. K., McKeegan, K. D.

SPRINGER.2010: 521–32

- **Growth conditions of symplectic muscovite plus quartz: Implications for quantifying retrograde metamorphism in exhumed magmatic arcs** *GEOLOGY*  
Peterman, E. M., Grove, M.  
2010; 38 (12): 1071-1074
- **Extensional basin evolution in the Cordillera Blanca, Peru: Stratigraphic and isotopic records of detachment faulting and orogenic collapse in the Andean hinterland** *TECTONICS*  
Giovanni, M. K., Horton, B. K., Garzzone, C. N., McNulty, B., Grove, M.  
2010; 29
- **Opposing shear senses in a subdetachment mylonite zone: Implications for core complex mechanics** *TECTONICS*  
Cooper, F. J., Platt, J. P., Platzman, E. S., Grove, M. J., Seward, G.  
2010; 29
- **First Paleoproterozoic ophiolite from Gondwana: Geochronologic-geochemical documentation of ancient oceanic crust from Kandra, SE India** *TECTONOPHYSICS*  
Kumar, K. V., Ernst, W. G., Leelanandam, C., Wooden, J. L., Grove, M. J.  
2010; 487 (1-4): 22-32
- **Geologic correlation of the Himalayan orogen and Indian craton: Part 1. Structural geology, U-Pb zircon geochronology, and tectonic evolution of the Shillong Plateau and its neighboring regions in NE India** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Yin, A., Dubey, C. S., Webb, A. A., Kely, T. K., Grove, M., Gehrels, G. E., Burgess, W. P.  
2010; 122 (3-4): 336-359
- **Decoupling of U-Pb dates from chemical and crystallographic domains in granulite facies zircon** *CHEMICAL GEOLOGY*  
Flowers, R. M., Schmitt, A. K., Grove, M.  
2010; 270 (1-4): 20-30
- **Fluid-rock interaction in orogenic crust tracked by zircon depth profiling** *GEOLOGY*  
Gordon, S. M., Grove, M., Whitney, D. L., Schmitt, A. K., Teyssier, C.  
2009; 37 (8): 735-738
- **Gangdese arc detritus within the eastern Himalayan Neogene foreland basin: Implications for the Neogene evolution of the Yalu-Brahmaputra River system** *EARTH AND PLANETARY SCIENCE LETTERS*  
Cina, S. E., Yin, A., Grove, M., Dubey, C. S., Shukla, D. P., Lovera, O. M., Kely, T. K., Gehrels, G. E., Foster, D. A.  
2009; 285 (1-2): 150-162
- **Time-temperature-fluid evolution of migmatite dome crystallization: Coupled U-Pb age, Ti thermometry, and O isotopic ion microprobe depth profiling of zircon and monazite** *CHEMICAL GEOLOGY*  
Gordon, S. M., Grove, M., Whitney, D. L., Schmitt, A. K., Teyssier, C.  
2009; 262 (3-4): 186-201
- **Miocene-Pliocene exhumation along the west Salton detachment fault, southern California, from (U-Th)/He thermochronometry of apatite and zircon** *TECTONICS*  
Shirvell, C. R., Stockli, D. F., Axen, G. J., Grove, M.  
2009; 28
- **Age trends in garnet-hosted monazite inclusions from upper amphibolite facies schist in the northern Grouse Creek Mountains, Utah** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Hoisch, T. D., Wells, M. L., Grove, M.  
2008; 72 (22): 5505-5520
- **Detrital zircon ages of Neoproterozoic sedimentary successions in Uruguay and Argentina: Insights into the geological evolution of the Rio de la Plata Craton** *PRECAMBRIAN RESEARCH*  
Gaucher, C., Finney, S. C., Poire, D. G., Valencia, V. A., Grove, M., Blanco, G., Pamoukaghlian, K., Peral, L. G.  
2008; 167 (1-2): 150-170
- **Timescales of migmatization, melt crystallization, and cooling in a Cordilleran gneiss dome: Valhalla complex, southeastern British Columbia** *TECTONICS*  
Gordon, S. M., Whitney, D. L., Teyssier, C., Grove, M., Dunlap, W. J.

2008; 27 (4)

- **Detrital zircon provenance of Neoproterozoic to Cenozoic deposits in Iran: Implications for chronostratigraphy and collisional tectonics** *Annual Meeting of the Geological-Society-of-America*  
Horton, B. K., Hassanzadeh, J., Stockli, D. F., Axen, G. J., Gillis, R. J., Guest, B., Amini, A., Faklari, M. D., Zamanzadeh, S. M., Grove, M.  
ELSEVIER SCIENCE BV.2008: 97–122
- **U-Pb zircon geochronology of late Neoproterozoic-Early Cambrian granitoids in Iran: Implications for paleogeography, magmatism, and exhumation history of Iranian basement** *Annual Meeting of the Geological-Society-of-America*  
Hassanzadeh, J., Stockli, D. F., Horton, B. K., Axen, G. J., Stockli, L. D., Grove, M., Schmitt, A. K., Walker, J. D.  
ELSEVIER SCIENCE BV.2008: 71–96
- **The Catalina Schist: Evidence for middle Cretaceous subduction erosion of southwestern North America** *Geological-Society-of-America Penrose Conference*  
Grove, M., Bebout, G. E., Jacobson, C. E., Barth, A. P., Kimbrough, D. L., King, R. L., Zou, H., Lovera, O. M., MAHONEY, B. J., Gehrels, G. E.  
GEOLOGICAL SOC AMER INC.2008: 335–361
- **Non-Laurentian cratonal provenance of Late Ordovician eastern Klamath blueschists and a link to the Alexander terrane** *Symposium on Ophiolites, Batholiths and Regional Geology in Honor of Cliff Hopson*  
Grove, M., Gehrels, G. E., Cotkin, S. J., Wright, J. E., Zou, H.  
GEOLOGICAL SOC AMER INC.2008: 223–250
- **Ridge-trench interactions and the Neogene tectonic evolution of the Magdalena shelf and southern Gulf of California: Insights from detrital zircon U-Pb ages from the Magdalena fan and adjacent areas** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Fletcher, J. M., Grove, M., Kimbrough, D., Lovera, O., Gehrels, G. E.  
2007; 119 (11-12): 1313-1336
- **Late paleozoic tectonic history of the ertix fault in the chinese altai and its implications for the development of the central Asian orogenic system** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Briggs, S. M., Yin, A., Manning, C. E., Chen, Z., Wang, X., Grove, M.  
2007; 119 (7-8): 944-960
- **Boron and lead isotope signatures of subduction-zone melange formation: Hybridization and fractionation along the slab-mantle interface beneath volcanic arcs** *15th V M Goldschmidt Conference/Meeting of IGCP-510*  
King, R. L., Bebout, G. E., Grove, M., Moriguti, T., Nakamura, E.  
ELSEVIER SCIENCE BV.2007: 305–22
- **High resolution Secondary Ionisation Mass Spectrometry (SIMS) delta O-18 analyses of Hulu Cave speleothem at the time of Heinrich Event 1** *CHEMICAL GEOLOGY*  
Treble, P. C., Schmitt, A. K., Edwards, R. L., McKeegan, K. D., Harrison, T. M., Grove, M., Cheng, H., Wang, Y. J.  
2007; 238 (3-4): 197-212
- **Protolith ages and exhumation histories of (ultra)high-pressure rocks across the Western Gneiss Region, Norway** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Walsh, E. O., Hacker, B. R., Gans, P. B., Grove, M., Gehrels, G.  
2007; 119 (3-4): 289-301
- **Late Miocene-Pliocene eclogite facies metamorphism, D'Entrecasteaux Islands, SE Papua New Guinea** *JOURNAL OF METAMORPHIC GEOLOGY*  
Monteleone, B. D., Baldwin, S. L., Webb, L. E., FitzGerald, P. G., Grove, M., Schmitt, A. K.  
2007; 25 (2): 245-265
- **Ridge-trench interactions and the Neogene tectonic evolution of the Magdalena Shelf: Insights from detrital zircon U-Pb ages from the Magdalena fan and adjacent areas** *Geological Society of America Bulletin*  
Fletcher, J. M., Grove, M., Kimbrough, D. L., Lovera, O. M.  
2007; 119: 1313-1336
- **Exhumation of the Orocopia Schist and crystalline hangingwall rocks of southeastern California: Relative roles of erosion, synsubduction tectonic denudation, and middle Cenozoic extension** *Geological Society of America*  
Jacobson, C. E., Grove, M., Vucic, A., Pedrick, J.  
2007: 1-37

- **Thermochronology, geochronology, and upper crustal structure of the Cordillera Real: Implications for Cenozoic exhumation of the central Andean plateau** *TECTONICS*  
Gillis, R. J., Horton, B. K., Grove, M.  
2006; 25 (6)
- **Thermal histories from the central Alborz Mountains, northern Iran: Implications for the spatial and temporal distribution of deformation in northern Iran** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Guest, B., Stockli, D. F., Grove, M., Axen, G. J., Lam, P. S., Hassanzadeh, J.  
2006; 118 (11-12): 1507-1521
- **High-temperature geochronology constraints on the tectonic history and architecture of the ultrahigh-pressure Dabie-Sulu Orogen** *TECTONICS*  
Hacker, B. R., Wallis, S. R., Ratschbacher, L., Grove, M., Gehrels, G.  
2006; 25 (5)
- **Oxygen isotopic disequilibrium in plagioclase-corundum-hercynite xenoliths from the Voisey's Bay Intrusion, Labrador, Canada** *EARTH AND PLANETARY SCIENCE LETTERS*  
Mariga, J., Ripley, E. M., Li, C., McKeegan, K. D., Schmidt, A., Groove, M.  
2006; 248 (1-2): 263-275
- **Structural evolution of the Arunachal Himalaya and implications for asymmetric development of the Himalayan orogen** *CURRENT SCIENCE*  
Yin, A., Dubey, C. S., Kelty, T. K., Gehres, G. E., Chou, C. Y., Grove, M., Lovera, O.  
2006; 90 (2): 195-206
- **Thermal Histories from the \*entral Alborz Mountains, northern Iran: Implications for the Spatial and Temporal Distribution of Deformation in northern Iran** *Geological Society of America Bulletin Bulletin*  
Guest, B., Stockli, D. F., Grove, M., Axen, G. J., Lam, P. S., Hassanzadeh, J.  
2006; 118: 1507-1521
- **Constrasting cratonal provenances for Upper Cretaceous Valle Group quartzite clasts, Baja California** *Using Stratigraphy, Sedimentology, and Geochemistry to unravel the Geologic History of the Southwestern Cordillera*  
Kimbrough, D. L., Abbott, P. L., Grove, M., Smith, D. P., Mahoney, J. B., Moore, T. E., Gehrels, G. E.  
edited by Girty, G. H., Cooper, J. D.  
Society of Economic Paleontologists and Mineralogists.2006: 97–110
- **Nyainqentanglha Shan: A window into the tectonic, thermal, and geochemical evolution of the Lhasa block, southern Tibet** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Kapp, J. L., Harrison, T. M., Kapp, P., Grove, M., Lovera, O. M., LIN, D.  
2005; 110 (B8)
- **Continuous thermal histories from inversion of closure profiles** *LOW-TEMPERATURE THERMOCHRONOLOGY: TECHNIQUES, INTERPRETATIONS, AND APPLICATIONS*  
Harrison, T. M.  
2005; 58: 389-409
- **Thermal structure and exhumation history of the Lesser Himalaya in central Nepal** *TECTONICS*  
Bollinger, L., Avouac, J. P., Beyssac, O., Catlos, E. J., Harrison, T. M., Grove, M., Goffe, B., Sapkota, S.  
2004; 23 (5)
- **Pliocene eclogite exhumation at plate tectonic rates in eastern Papua New Guinea** *NATURE*  
Baldwin, S. L., Monteleone, B. D., Webb, L. E., FitzGerald, P. G., Grove, M., Hill, E. J.  
2004; 431 (7006): 263-267
- **Isotopic and chemical alteration of zircon by metamorphic fluids: U-Pb age depth-profiling of zircon crystals from Barrow's garnet zone, northeast Scotland** *AMERICAN MINERALOGIST*  
Breeding, C. M., Ague, J. J., Grove, M., Rupke, A. L.  
2004; 89 (7): 1067-1077
- **Pb diffusion in monazite: A combined RBS/SIMS study** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Cherniak, D. J., Watson, E. B., Grove, M., Harrison, T. M.

2004; 68 (4): 829-840

- **Thermal structure and exhumation history of the Lesser Himalaya in central Nepal** *Tectonics*  
Bollinger, L., Avouac, J. P., Beyssac, O., Catlos, E. J., Harrison, T. M., Grove, M., Goffé, B., Sapkota, S.  
2004; 23
- **Two phases of Mesozoic north-south extension in the eastern Altyn Tagh range, northern Tibetan Plateau** *TECTONICS*  
Chen, X. H., Yin, A., Gehrels, G. E., Cowgill, E. S., Grove, M., Harrison, T. M., Wang, X. F.  
2003; 22 (5)
- **The Geysers - Cobb Mountain Magma System, California (Part 1): U-Pb zircon ages of volcanic rocks, conditions of zircon crystallization and magma residence times** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Schmitt, A. K., Grove, M., Harrison, T. M., Lovera, O., Hulen, J., Walters, M.  
2003; 67 (18): 3423-3442
- **The Geysers-Cobb Mountain Magma System, California (Part 2): Timescales of pluton emplacement and implications for its thermal history** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Schmitt, A. K., Grove, M., Harrison, T. M., Lovera, O., Hulen, J., Walters, M.  
2003; 67 (18): 3443-3458
- **Thermochronological constraints on two pulses of Cenozoic high-K magmatism in eastern Tibet** *SCIENCE IN CHINA SERIES D-EARTH SCIENCES*  
Wang, J. H., Yin, A., Harrison, T. M., Grove, M., Zhou, J. Y., Zhang, Y. Q., Xie, G. H.  
2003; 46 (7): 719-729
- **U-Pb zircon geochronology of rocks in the Salinas Valley region of California: A reevaluation of the crustal structure and origin of the Salinian block** *GEOLOGY*  
Barth, A. P., Wooden, J. L., Grove, M., Jacobson, C. E., Pedrick, J. N.  
2003; 31 (6): 517-520
- **Late Cretaceous cooling of the East-Central Peninsula Ranges batholith (33°N): Relationship to la posta pluton emplacement, Laramide shallow subduction, and forearc sedimentation** *Geological Society of America*  
Grove, M., Lovera, O. M., Harrison, T. M.  
2003; 374: 355-379
- **Temporal and spatial trends of Late Cretaceous-Early Tertiary underplating of Pelona and related schist beneath southern California and southwestern Arizona** *Geological Society of America*  
Grove, M., Jacobson, C. E., Barth, A. P., Vucic, A.  
2003; 374: 381-406
- **Jurassic peraluminous gneissic granites in the axial zone of the Peninsular Ranges, southern California** *Geological Society of America Bulletin*  
Shaw, S. E., Todd, V. R., Grove, M.  
2003; 374: 157-183
- **The Zedong terrane: a Late Jurassic intra-oceanic magmatic arc within the Yarlung-Tsangpo suture zone, southeastern Tibet** *CHEMICAL GEOLOGY*  
McDermid, I. R., Aitchison, J. C., Davis, A. M., Harrison, T. M., Grove, M.  
2002; 187 (3-4): 267-277
- **U-Pb isotopic behaviour of zircon during upper-amphibolite facies fluid infiltration in the Napier Complex, east Antarctica** *EARTH AND PLANETARY SCIENCE LETTERS*  
Carson, C. J., Ague, J. J., Grove, M., Coath, C. D., Harrison, T. M.  
2002; 199 (3-4): 287-310
- **Records of the evolution of the Himalayan orogen from in situ Th-Pb ion microprobe dating of monazite: Eastern Nepal and western Garhwal** *JOURNAL OF ASIAN EARTH SCIENCES*  
Catlos, E. J., Harrison, T. M., Manning, C. E., Grove, M., Rai, S. M., Hubbard, M. S., Upreti, B. N.  
2002; 20 (5): 459-479
- **O and Pb isotopic analyses of uranium minerals by ion microprobe and U-Pb ages from the Cigar Lake deposit** *CHEMICAL GEOLOGY*  
Fayek, M., Harrison, T. M., Ewing, R. C., Grove, M., Coath, C. D.

2002; 185 (3-4): 205-225

- **Systematic analysis of K-feldspar Ar-40/Ar-39 step heating results II: Relevance of laboratory argon diffusion properties to nature** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Lovera, O. M., Grove, M., Harrison, T. M.  
2002; 66 (7): 1237-1255
- **U-Pb zircon geochronology of rocks in the Salinas Valley region of California: A reevaluation of the crustal structure and origin of the Salinian Block** *Geology*  
A. P., Barth, Wooden, J. L., Grove, M., Jacobson, C. E., Dawson, J. P.  
2002; 31: 517-520
- **Exhumation history of the Orocoopia Schist and related rocks in the Gavilan Hills area of southeasternmost California** *Geological Society of America*  
Jacobson, C. E., Grove, M., Stamp, M. M., Oyarzabal, F. R., Vucic, A., Haxel, G. B., Todsol, R. M., Sherrod, D. R.  
2002; 365: 129-154
- **Geochronologic and thermobarometric constraints on the evolution of the Main Central Thrust, central Nepal Himalaya** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Catlos, E. J., Harrison, T. M., Kohn, M. J., Grove, M., Ryerson, F. J., Manning, C. E., Upreti, B. N.  
2001; 106 (B8): 16177-16204
- **Exhumation of the west-central Alborz Mountains, Iran, Caspian subsidence, and collision-related tectonics** *GEOLOGY*  
Axen, G. J., Lam, P. S., Grove, M., Stockli, D. F., Hassanzadeh, J.  
2001; 29 (6): 559-562
- **Forearc-basin sedimentary response to rapid Late Cretaceous batholith emplacement in the Peninsular Ranges of southern and Baja California** *GEOLOGY*  
Kimbrough, D. L., Smith, D. P., Mahoney, J. B., Moore, T. E., Grove, M., Gastil, R. G., Ortega-Rivera, A., Fanning, C. M.  
2001; 29 (6): 491-494
- **A tectonic model for Cenozoic igneous activities in the eastern Indo-Asian collision zone** *EARTH AND PLANETARY SCIENCE LETTERS*  
Wang, J. H., Yin, A., Harrison, T. M., Grove, M., Zhang, Y. Q., Xie, G. H.  
2001; 188 (1-2): 123-133
- **In situ stable isotopic evidence for protracted and complex carbonate cementation in a petroleum reservoir, North Coles Levee, San Joaquin Basin, California, USA** *JOURNAL OF SEDIMENTARY RESEARCH*  
Fayek, M., Harrison, T. M., Grove, M., McKeegan, K. D., Coath, C. D., Boles, J. R.  
2001; 71 (3): 444-458
- **Thermochronological constraints on the timing of Cenozoic high-potassic magmatism in Eastern Tibet** *Bulletin of Mineralogy, Petrology and Geochemistry*  
Wang, J. H., Yin, A., Harrison, T. M., Grove, M., J. Y., Zhou, Zhang, Y. Q., Xie, G. H.  
2001; 20: 231-233
- **The Zedong Window: A record of superposed Tertiary convergence in southeastern Tibet** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Harrison, T. M., Yin, A., Grove, M., Lovera, O. M., Ryerson, F. J., Zhou, X. H.  
2000; 105 (B8): 19211-19230
- **Ar-40/Ar-39 thermochronology from the northwestern Dabie Shan: Constraints on the evolution of Qinling-Dabie orogenic belt, east-central China** *TECTONOPHYSICS*  
Xu, B., Grove, M., Wang, C. Q., Zhang, L. F., Liu, S. W.  
2000; 322 (3-4): 279-301
- **Thermal evolution of Monte Blanco dome: Low-angle normal faulting during Gulf of California rifting and late Eocene denudation of the eastern Peninsular Ranges** *TECTONICS*  
Axen, G. J., Grove, M., Stockli, D., Lovera, O. M., Rothstein, D. A., Fletcher, J. M., Farley, K., Abbott, P. L.  
2000; 19 (2): 197-212
- **Hot and dry deep crustal xenoliths from Tibet** *SCIENCE*  
Hacker, B. R., Gnos, E., Ratschbacher, L., Grove, M., McWilliams, M., Sobolev, S. V., Wan, J., Wu, Z. H.

2000; 287 (5462): 2463-2466

- **Late Cretaceous protolith age and provenance of the Pelona and Orocopia Schists, southern California: Implications for evolution of the Cordilleran margin** *GEOLOGY*  
Jacobson, C. E., Barth, A. P., Grove, M.  
2000; 28 (3): 219-222
- **A rapid in situ method for determining the ages of uranium oxide minerals: Evolution of the Cigar Lake deposit, Athabasca Basin** *INTERNATIONAL GEOLOGY REVIEW*  
Fayek, M., Harrison, T. M., Grove, M., Coath, C. D.  
2000; 42 (2): 163-171
- **A method for evaluating basement exhumation histories from closure age distributions of detrital minerals** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Lovera, O. M., Grove, M., Kimbrough, D. L., Abbott, P. L.  
1999; 104 (B12): 29419-29438
- **Age and thermal history of the Geysers plutonic complex (felsite unit), Geysers geothermal field, California: a Ar-40/Ar-39 and U-Pb study** *EARTH AND PLANETARY SCIENCE LETTERS*  
Dalrymple, G. B., Grove, M., Lovera, O. M., Harrison, T. M., Hulen, J. B., Lanphere, M. A.  
1999; 173 (3): 285-298
- **Age and stratigraphic relationships of pre- and syn-rift volcanic deposits in the northern Puertecitos Volcanic Province, Baja California, Mexico** *JOURNAL OF VOLCANOLOGY AND GEOTHERMAL RESEARCH*  
Nagy, E. A., Grove, M., Stock, J. M.  
1999; 93 (1-2): 1-30
- **Tertiary deformation history of southeastern and southwestern Tibet during the Indo-Asian collision** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Yin, A., Harrison, T. M., Murphy, M. A., Grove, M., Nie, S., Ryerson, F. J., Feng, W. X., Le, C. Z.  
1999; 111 (11): 1644-1664
- **The origin of Himalayan anatexis and inverted metamorphism: Models and constraints** *JOURNAL OF ASIAN EARTH SCIENCES*  
Harrison, T. M., Grove, M., Lovera, O. M., Catlos, E. J., D'Andrea, J.  
1999; 17 (5-6): 755-772
- **Significant late Neogene east-west extension in northern Tibet** *GEOLOGY*  
Yin, A., Kapp, P. A., Murphy, M. A., Manning, C. E., Harrison, T. M., Grove, M., LIN, D., Deng, X. G., Wu, C. M.  
1999; 27 (9): 787-790
- **Monazite Th-Pb age depth profiling** *GEOLOGY*  
Grove, M., Harrison, T. M.  
1999; 27 (6): 487-490
- **Origin and episodic emplacement of the Manaslu intrusive complex, central Himalaya** *JOURNAL OF PETROLOGY*  
Harrison, T. M., Grove, M., McKeegan, K. D., Coath, C. D., Lovera, O. M., Le Fort, P.  
1999; 40 (1): 3-19
- **The thermal and cementation histories of a sandstone petroleum reservoir, Elk Hills, California - Part 1: Ar-40/Ar-39 thermal history results** *CHEMICAL GEOLOGY*  
Mahon, K. I., Harrison, T. M., Grove, M.  
1998; 152 (3-4): 227-256
- **A model for the origin of Himalayan anatexis and inverted metamorphism** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Harrison, T. M., Grove, M., Lovera, O. M., Catlos, E. J.  
1998; 103 (B11): 27017-27032
- **New insights into the origin of two contrasting Himalayan granite belts** *GEOLOGY*  
Harrison, T. M., Lovera, O. M., Grove, M.  
1997; 25 (10): 899-902

- **Systematic analysis of K-feldspar Ar-40/Ar-39 step heating results .1. Significance of activation energy determinations** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Lovera, O. M., Grove, M., Harrison, T. M., Mahon, K. I.  
1997; 61 (15): 3171-3192
- **Thermal evolution and slip history of the Renbu Zedong Thrust, southeastern Tibet** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Quidelleur, X., Grove, M., Lovera, O. M., Harrison, T. M., Yin, A., Ryerson, F. J.  
1997; 102 (B2): 2659-2679
- **Ar-40(\*) diffusion in Fe-rich biotite** *AMERICAN MINERALOGIST*  
Grove, M., Harrison, T. M.  
1996; 81 (7-8): 940-951
- **Vincent Thrust: role of denudation during shallow subduction** *Subduction Top to Bottom*  
Grove, M., Lovera, O. M.  
edited by Bebout, G. E.  
Wiley.1996: 163-170
- **Cretaceous tectonic evolution of coastal southern California: Insights from the Catalina Schist** *TECTONICS*  
Grove, M., Bebout, G. E.  
1995; 14 (6): 1290-1308
- **A CHLORINE DISINFECTANT FOR EXCESS ARGON RELEASED FROM K-FELDSPAR DURING STEP HEATING** *EARTH AND PLANETARY SCIENCE LETTERS*  
Harrison, T. M., Heizler, M. T., Lovera, O. M., Chen, W. J., Grove, M.  
1994; 123 (1-4): 95-104
- **THE INSTABILITY OF RHABDOPHANE AND ITS UNIMPORTANCE IN MONAZITE PARAGENESIS** *Session on Geochemistry of Accessory Minerals as part of the 3rd V M Goldschmidt Conference*  
AKERS, W. T., Grove, M., Harrison, T. M., Ryerson, F. J.  
ELSEVIER SCIENCE BV.1993: 169-76