KENNETH WATKINS HUDNUT

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Born: Oklahoma City, 19 April 1961

RESEARCH INTERESTS: Continental active tectonics, fault interactions, earthquake hazards using geodesy and geology

EDUCATION:

Columbia University Ph.D. in Geology, 1989
Thesis Title: *Active Tectonics of the Salton Trough, So. Calif.*
M.Phil. in Geology, 1989; M.A. in Geology, 1986

Dartmouth College A.B. with High Honors in Earth Sciences, 1983
Thesis Title: *Geophysical Survey of Irazú Volcano, Costa Rica*

POSITIONS & AFFILIATIONS:

2002 – present	*Geophysicist, GS-15*	U. S. Geological Survey, Pasadena
2009 – present	*Regional Coordinator, Southern California*	
2004 – 2009	*Geodesy Coordinator, Earthquake Hazards Program Council*	
2002 - 2006	*Chief, So. Calif. Earthquake Hazard Assessment Mega-Project*	
1996 - 2002	*Geophysicist, GS-14* (permanent position)	
1992 - 1996	*Geophysicist, GS-13* (term position)	
1997 - present	*Visiting Assoc. in Geophysics*	Division of Geological & Planetary
1989-1992	*Research Fellow*	Sciences, California Inst. of Technology
1984-1989	*Graduate Research Assistant*	Lamont-Doherty Geological Observatory
1983-1984	*Field Assistant*	USGS Branch of Tectonophysics
1983	*Field Supervisor*	Dartmouth College Volcanology Group

DISTINCTIONS (APPENDIX CONTAINS DETAILS):

U. S. Geological Survey	2009	Shoemaker Award - ShakeOut
U. S. Geological Survey	2009	Pacific Southwest Science Strategy Award - ShakeOut
City of Los Angeles	2009	Certificate of Recognition - ShakeOut
NASA Honor Award	2008	Group Achievement – GPS Satellite Laser Ranging
GPS World	2007	Selected for '50+ Leaders to Watch'
U. S. Geological Survey	1999	Special Act Award for Hector Mine earthquake
U. S. Geological Survey	1997	Exceptional Service Award
American Geophysical Union	1994	Invited Contributor - Quadrennial U.S. National Report to IUGG (1991-1994) Title: *Earthquake Geodesy and Hazard Monitoring*
U. S. Geological Survey	1994	Special Act Award for Northridge earthquake
Dartmouth College	1983	• Upham Geology Prize for Outstanding Senior Honors Thesis in Earth Sciences • Academic Citation for Senior Honors Thesis • Casque and Gauntlet Senior Honor Society

SERVICE:

Southern California Earthquake Center	2009 – present	Board of Directors
	2006 – 2009	Leader, So. San Andreas Fault Evaluation Project
	2001 – 2003; 2006 - 2009	Planning Committee member
	1998 – 2002	Board of Directors
	1996 – 1998	Chair; Crustal Deformation Working Group
	1990 – present	Crustal Deformation & Tectonic Geodesy groups
California Integrated Seismic Network	2010 – present	Steering Committee, Chair
	2009 – present	Steering Committee, Member
Dept. of the Interior	2008 – present	Member of the DOI Remote Sensing Working Group
NAVSTAR Global Positioning System	2002 – present	Project Manager, GPS L1C Signal Design and member of U. S. delegation in international working groups for future signal design of GPS and related systems
California Office of Emergency Services	2008	Scientific Expert for Governor Schwarzenegger & Cabinet Golden Guardian 2008 – ShakeOut Earthquake Scenario
The Great Southern California ShakeOut	2006 – 2009	ShakeOut Scenario Coordinator; Earthquake Designer and ShakeOut Steering Committee member
Los Angeles County Operational Area	2007 – 2009	Golden Guardian 2008 Functional Exercise – Exercise Design Team member
San Bernardino County Operational Area	2007 – 2009	Golden Guardian 2008 – ShakeOut Earthquake Scenario Subject Matter Expert
Southern California Integrated GPS Network	1999 – 2003	Chair (elected position; served four terms)
	1994 – 2003	Executive Committee member and Coordinating Board member
UNAVCO, Inc. University NAVSTAR Consortium (UNAVCO)	2004 – 2008	PBO Transform Site Selection Working Group
	2001 – 2004	PBO Geology Committee (GeoPBO)
	1999 – 2002	PBO Steering Committee member
	2001 – 2004	Board of Directors (elected position; served term limit)
	2000 – 2001	Elected member of Steering Committee
	1995 – 1997	same (served two non-sequential terms)
Amer. Geophys. Union	1992 – 1996	Member of Geodesy Section Executive Comm.
International Assoc. of Geodesy (IAG/IUGG)	1996 – present	International GNSS Service, associate member and IAG affiliate member
California Department of Transportation	1998 – present	Appointed; Caltrans' GPS real-time system development advisory panel
California Spatial Reference Center	1998 – present	Coordinating Council member

EDITORIAL:

2009 – 2011	Editorial Board; Special Issue on ShakeOut	*Earthquake Spectra*

2005 – 2006	Editorial Board; Special Issue on the Great Sumatra Earthquakes and Indian Ocean Tsunamis of 26 December 2004 and 28 March 2005	*Earthquake Spectra* (Earthquake Engineering and Research Institute)
1994 - 1996	Associate Editor; Geodesy	*J. Geophys. Res. - Solid Earth* (AGU)

TEACHING AND RESEARCH:

AT INSTITUTE OF GEOLOGY, CHINA EARTHQUAKE ADMINSITRATION -

2010 - present Dissertation advisor for visiting scientist Ph.D. candidate Chen Tao (student of Zhang Peizhen) on the uses of airborne LiDAR data for earthquake research.

AT UNIVERSITY OF SOUTHERN CALIFORNIA -

2008 - present Dissertation committee member for USC Ph.D. candidate Whitney Behr (student of John Platt) on tectonics of the San Andreas fault and slip rate at Biskra Palms Oasis.

AT UNIVERSITY OF CALIFORNIA, SAN DIEGO -

2000 - 2005 Dissertation committee member for UCSD Ph.D. candidate Adrian Borsa (student of Bernard Minster) on airborne laser swath mapping project, a quantitative study on surface faulting and tectonic geomorphology (also post-doctoral co-advisor).

AT CALIFORNIA INSTITUTE OF TECHNOLOGY -

1992 - present Advising Caltech students on various tectonic and geological projects Ph.D. candidates: D. Zhang, A. Meltzner, T. Melbourne, B. Zajac, R. Wolf, J. Spotilla, J. Zachariasen, D. Yule; Undergraduates: A. Morelan, R. Zitola, C. Machacek

2010 *GE 111* - Applied Geophysics Seminar: Led seminar on GPS & LiDAR

1992 *GE 277* - Quaternary Tectonics Seminar: Led geodesy seminars

1990 - 1992 *GE 177* - Quaternary Geology & Tectonics / Geology of Earthquakes. Lectured on The Earthquake Cycle and on Earthquake Geodesy

AT COLUMBIA UNIVERSITY -

1984 - 1989 Graduate Research Assistant - Advanced Structural Geology and other classes

PEER REVIEWED PUBLICATIONS: (REVERSE CHRONOLOGICAL)

Preprints available upon request

i. Salisbury, J.B., T.K. Rockwell, T.J. Middleton and K.W. Hudnut, LiDAR and field observations of earthquake slip distribution for the central San Jacinto fault (internal review, to be submitted to *Bull. Seis. Soc. Amer.*)

ii. Wei, S., E. Fielding, S. Leprince, A. Sladen, J.-P. Avouac, D. Helmberger, E. Hauksson, R. Chu, M. Simons, K. Hudnut, T. Herring and R. Briggs, Superficial simplicity of the 2010 M_w 7.2 El Mayor-Cucapah earthquake of Baja California (pending revision, *Nature Geoscience*, January 2011)

iii. Porter, K., L. Jones, D. Cox, J. Goltz, K. Hudnut, D. Mileti, S. Perry, D. Ponti, M. Reichle, C. Scawthorn, H. Seligson, K. Shoaf and A. Wein, The ShakeOut Scenario: a

Hypothetical M_W7.8 Earthquake on the Southern San Andreas Fault (accepted, *Earthquake Spectra*)

iv. Graves, R. W., B. T. Aagaard and K. W. Hudnut, The ShakeOut earthquake source and ground motion simulations (accepted, *Earthquake Spectra*)

1. Prentice, C.S., P. Mann, A.J. Crone, R.D. Gold, K.W. Hudnut, R.W. Briggs, R.D. Koehler, P. Jean, Tectonic geomorphology and seismic hazard of the Enriquillo-Plantain Garden Fault in Haiti, *Nature Geoscience*, 24 Oct. 2010, v. 3, pp. 789-793, doi:10.1038/ngeo991
2. Hayes, G.P., R.W. Briggs, A. Sladen, E.J. Fielding, C.S. Prentice, K.W. Hudnut, P. Mann, F.W. Taylor, A.J. Crone, R.D. Gold, T. Ito, M. Simons, Complex rupture during the 12 January 2010 Haiti, *Nature Geoscience*, 10 Oct. 2010, v. 3, pp. 800-805, doi:10.1038/ngeo977
3. Holzer, T. L., A. S. Jayko, E. Hauksson, J. P. B. Fletcher, T. E. Noce, M. J. Bennett, C. M. Dietel and K. W. Hudnut, Liquefaction caused by the 2009 Olancha, California (USA), M 5.2 earthquake, *Engineering Geology,* 27 October 2010, v. 116, no. 1-2, Pages 184-188; doi:10.1016/j.enggeo.2010.07.009
4. Behr, W.M., Rood, D.H., Fletcher, K.E., Guzman, N., Finkel, R., Hanks, T.C., Hudnut, K.W., Kendrick, K.J., Platt, J.P., Sharp, W.D., Weldon, R.J., Yule, J.D., Uncertainties in slip rate estimates for the Mission Creek strand of the southern San Andreas fault at Biskra Palms Oasis, *Geol. Soc. Amer. Bull.*; September 2010; v. 122; no. 9-10; p. 1360-1377; DOI: 10.1130/B30020.1
5. Fletcher, K. E., W. D. Sharp, K. J. Kendrick, W. M. Behr, K. W. Hudnut and T. C. Hanks, ^{230}Th/U dating of a late Pleistocene alluvial fan offset along the southern San Andreas fault, *Geol. Soc. Amer. Bull.*; September 2010; v. 122; no. 9-10; p. 1347-1359; DOI: 10.1130/B30018.1
6. Lynch, D. K., K. W. Hudnut and D. S. P. Dearborn, Low-altitude Aerial Color Digital Photographic Survey of the San Andreas Fault, *Seis. Res. Lett.*, v. 81 (3), May/June 2010, pp. 453-459, 2010.
7. Liu-Zeng, J., Z. Zhang, L. Wen, P. Tapponier, J. Sun, X. Xing, G. Hu, Q. Xu, L. Zeng, L. Ding, C. Ji, K. W. Hudnut, J. van der Woerd, Co-seismic ruptures of the 12 May 2008, Ms 8.0 Wenchuan earthquake, Sichuan: East–west crustal shortening on oblique, parallel thrusts along the eastern edge of Tibet, *Earth Planet. Sci. Lett*. V. 286, pp. 355-370 (2009), doi:10.1016/j.epsl.2009.07.017 [http://dx.doi.org/10.1016/j.epsl.2009.07.017]
8. Graves, R. W., B. T. Aagaard, K. W. Hudnut, L. M. Star, J. P. Stewart, and T. H. Jordan, Broadband simulations for M_w 7.8 southern San Andreas earthquakes: Ground motion sensitivity to rupture speed, *Geophys. Res. Lett.*, 35, L22302, doi:10.1029/2008GL035750, 2008 [http://www.agu.org/pubs/crossref/2008/2008GL035750.shtml].
9. Lynch, D. K. and K. W. Hudnut, The Wister Mud Pot Lineament: Southeastward Extension or Abandoned Strand of the San Andreas Fault? *Bull. Seis. Soc. Amer.*, Vol.

98, No. 4, pp. 1720-1729, doi: 10.1785/0120070252, 2008 [http://bssa.geoscienceworld.org/cgi/reprint/98/4/1720].

10. Shan, S., M. Bevis, E. Kendrick, G. L. Mader, D. Raleigh, K. Hudnut, M. Sartori, and D. Phillips, Kinematic GPS solutions for aircraft trajectories: Identifying and minimizing systematic height errors associated with atmospheric propagation delays, Geophys. Res. Lett., 34, L23S07, doi:10.1029/2007GL030889, 2007 [http://www.agu.org/pubs/crossref/2007/2007GL030889.shtml].
11. Betz, John W., M. A. Blanco, C. R. Cahn, P. A. Dafesh, C. J. Hegarty, K. W. Hudnut, V. Kasemsri, R. Keegan, K. Kovach, L. S. Lenahan, H. H. Ma, J. J. Rushanan, D. Sklar, T. A. Stansell, C. C. Wang, and S. K. Yi, Enhancing the Future of Civil GPS: Overview of the L1C Signal, *Inside GNSS*, Spring 2007 issue, pp. 42-49, 2007.
12. Hudnut, K. W., Earthquake and Tsunami Source, *in* "Summary Report on the Great Sumatra Earthquakes and Tsunamis of 26 December 2004 and 28 March 2005," W. D. Iwan, editor Earthquake Engineering Research Institute, Publication #2006-06, 100 pp., ISBN: 1-932884-19-X, Oakland, CA, August 2006.
13. Hudnut, K. W., Geologic and Geodetic Aspects of the 2004 Great Sumatra-Andaman and 2005 Nias-Simeulue Earthquakes, *Earthquake Spectra*, v. 22 (S3), pp. S13-S42, doi:10.1193/1.2222383, 2006.
14. Alvarado, G. E., M. J. Carr, B. Turrin, C. C. Swisher, H.-U. Schmincke, K. W. Hudnut, Recent volcanic history of Irazú volcano, Costa Rica: Alternation and mixing of two magma batches, and pervasive mixing, *in* Volcanic Hazards in Central America: *Geological Society of America* Special Paper #412, pp. 259-276, doi: 10.1130/2006.2412(14), 2006.
15. Meltzner, A. J., K. Sieh, M. Abrams, D. C. Agnew, K. W. Hudnut, J-P. Avouac, and D. H. Natawidjaja, Uplift and subsidence associated with the great Aceh-Andaman earthquake of 2004, *J. Geophys. Res.*, *111*, B02407, doi:10.1029/2005JB003891, 2006.
16. Aagaard, B. T., G. Anderson, and K. W. Hudnut, Dynamic rupture modeling of the transition from thrust to strike-slip motion in the 2002 Denali Fault earthquake, Alaska, *Bull. Seis. Soc. Amer.*, v. 94, No. 6B, pp. S190-S201, 2004.
17. Ji, Chen, K. M. Larson, Y. Tan, K. W. Hudnut, and K. Choi, Slip history of the 2003 San Simeon earthquake constrained by combining 1-Hz GPS, strong motion and teleseismic data, *Geophysical Research Letters,* v. 31, L17608, doi:10.1029/2004GL020448, 2004.
18. Larson, K. M., A. R. Lowry, V. Kostoglodov, W. Hutton, O. Sanchez, K. Hudnut and G. Suarez, Crustal deformation measurements in Guerrero, Mexico, *J. Geophys. Res.*, v. 109, B04409, doi:10.1029/2003JB002843, 2004.
19. Hardebeck, J., J. Boatwright, D. Dreger, R. Goel, V. Graizer, K. Hudnut, C. Ji, L. Jones, J. Langbein, J. Lin, E. Roeloffs, R. Simpson, K. Stark, R. Stein, J. Tinsley, Preliminary report on the 22 December 2003, M 6.5 San Simeon, California earthquake, *Seismol. Res. Lett.*, v. 75, No. 2, pp. 155-172, 2004.

20. Anderson, G., B. Aagaard, and K. Hudnut, Fault interactions and large complex earthquakes in the Los Angeles area, *Science*, vol. 302 (12 December), pp. 1946-1949, 2003.

21. Celebi, M., W. Prescott, R. Stein, K. Hudnut, J. Behr, and S. Wilson, GPS monitoring of structures: recent advances, Early Warning Systems for Natural Disaster Reduction, *Chapter 7.5 in J. Zschau & A. Kuppers (Eds.), Springer-Verlag, Heidelberg*, ISBN 3-540-67962-6, pp. 709-714, 2003.

22. Hudnut, K. W., A. Borsa, C. Glennie, and J.-B. Minster, High-resolution topography along surface rupture of the 16 October 1999 Hector Mine, California, earthquake (M_w7.1) from airborne laser swath mapping, *Bull. Seis. Soc. Amer.*, v. 92, No. 4, 1570-1576, 2002.

23. Hudnut, K. W., N. E. King, J. E. Galetzka, K. F. Stark, J. A. Behr, A. Aspiotes, S. van Wyk, R. Moffitt, S. Dockter, and F. Wyatt, Continuous GPS observations of postseismic deformation following the 16 October 1999 Hector Mine, California, earthquake (M_w7.1), *Bull. Seis. Soc. Amer*., v. 92, No. 4, pp. 1403-1422, 2002.

24. Hudnut, K. W., Y. Bock, J. E. Galetzka, F. H. Webb, and W. H. Young, The Southern California Integrated GPS Network (SCIGN), Seismotectonics in Convergent Plate Boundary*, Y. Fujinawa and A. Yoshida (Eds.), TERRAPUB, Tokyo, Japan*, ISBN 4-88704-129-2, pp. 167-189, 2002.

25. Bawden, G., W., W. Thatcher, R. S. Stein, K. Hudnut, and G. Peltzer, Groundwater pumping masks tectonic deformation near Los Angeles, Calif., *Nature*, v. 412, 23 August, pp. 812-815, 2001.

26. Scientists from the USGS, SCEC, and CDMG, A preliminary report on the 10/16/99 M7.1 Hector Mine, Calif., earthquake, *Seismol. Res. Lett*., v. 71, No. 1, pp. 11-23, 2000.

27. Deng, J., K. Hudnut, M. Gurnis and E. Hauksson, Stress loading from viscous flow in the lower crust and triggering of aftershocks following the 1994 Northridge, Calif., earthquake, *Geophys. Res. Lett*., v. 26 (1), pp. 3209-3212, 1999.

28. Celebi, M., W. Prescott, R. Stein, K. Hudnut, J. Behr, and S. Wilson, GPS monitoring of dynamic behavior of long-period structures, *Earthquake Spectra*, v. 15, No. 1, pp. 55-66, 1999.

29. Hudnut, K. W. and J. A. Behr, Continuous GPS monitoring of structural deformation at Pacoima Dam, California, *Seismol. Res. Lett.*, Vol. 69, No. 4, pp. 299-308, 1998.

30. Molnar, P., R. A. Kurushin, A. Bayasgalan, and K. W. Hudnut, *Dislocations of the Gobi-Altay (Mongolia) Earthquake of 1957* (in Russian), Siberian Branch of the Russian Academy of Sciences, ISBN 5-7692-0093-6, 147 pp., 1998.

31. Peltzer, G., P. Rosen, F. Rogez, and K. Hudnut, Post-seismic deformation along the Landers 1992 earthquake surface rupture, *J. Geophys. Res*., v. 103, No. B12, pp. 30,131-30,145, 1998.

32. Galloway, D.L., K.W. Hudnut, S.E. Ingebritsen, S.P. Phillips, G. Peltzer, F. Rogez, and P. Rosen, Detection of aquifer system compaction and land subsidence using interferometric synthetic aperture radar, Antelope Valley, Mojave Desert, California, *Water Resources Research*, Vol. 34 , No. 10 , p. 2573-2586, 1998.

33. Savage, J.C., J.L. Svarc, W.H. Prescott, and K.W. Hudnut, Deformation following the 1994 Northridge earthquake (M=6.7), southern California, *Geophys. Res. Lett.*, v. 25, No. 14, pp. 2725-, 1998.

34. Bock, Y., S. Wdowinski, P. Fang, J. Zhang, S. Williams, H. Johnson, J. Behr, J. Gengrich, J. Dean, M. van Domselaar, D. Agnew, F. Wyatt, K. Stark, B. Oral, K. Hudnut, R. King, T. Herring, S. Dinardo, W. Young, D. Jackson, and W. Gurtner, Southern California permanent GPS geodetic array: continuous measurements of regional crustal deformation between the 1992 Landers and 1994 Northridge earthquakes, *J. Geophys. Res.,* v. 102, B8, pp. 18013-18033, 1997.

35. Kurushin, R. A., A. Bayasgalan, M. Olziybat, B. Enhtuvshin, P. Molnar, Ch. Bayarsayhan, K. W. Hudnut, J. Lin, The surface rupture of the 1957 Gobi-Altay, Mongolia, earthquake, *Geological Society of America*, Special Paper #320, 143 pp., 1997.

36. Melbourne, T., I. Carmichael, C. DeMets, K. Hudnut, O. Sanchez, J. Stock, G. Suarez, and F. Webb, The geodetic signature of the M8.0 October 9, 1995 Jalisco subduction earthquake, *Geophys. Res. Lett*., v. 24, No. 6, pp. 715-718, 1997.

37. Hudnut, K. W., Z. Shen, M. Murray, S. McClusky, R. King, T. Herring, B. Hager, Y. Feng, P. Fang, A. Donnellan, and Y. Bock, Coseismic displacements of the 1994 Northridge, Calif., earthquake, *Bull. Seis. Soc. Amer.*, v. 86, No. 1, Part B, pp. S19-S36, 1996.

38. Peltzer, G., P. Rosen, F. Rogez, K. Hudnut, Postseismic rebound in fault step-overs caused by pore fluid flow, *Science*, v. 273 (Aug. 30), pp. 1202-1204, 1996.

39. Bayarsayhan, Ch., A. Bayasgalan, B. Enhtuvshin, K. W. Hudnut, R. A. Kurushin, P. Molnar, and M. Olziybat, The 1957 Gobi-Altay, Mongolia earthquake as a prototype for southern California's most devastating earthquake, *Geology*, v. 24, No. 7, pp. 579-582, 1996.

40. Wald, D. J., T. H. Heaton, and K. W. Hudnut, The slip history of the 1994 Northridge, Calif., earthquake determined from strong-motion, teleseismic, GPS and leveling data, *Bull. Seis. Soc. Amer.*, v. 86, No. 1, Part B, pp. S49-S70, 1996.

41. Hudnut, K.W., Earthquake geodesy and hazard monitoring, *Reviews of Geophysics; Supplement: U. S. National Report to IUGG, 1991-1994*, pp. 249-255, 1995.

42. Bennett, R., R. Reilinger, W. Rodi, Y. Li, K. Hudnut, Coseismic fault slip associated with the 1992 M_W 6.1 Joshua Tree, California earthquake: Implications for the Joshua Tree - Landers earthquake sequence, *J. Geophys. Res*., v. 100, No. 4, pp. 6443-6461, 1995.

43. Hudnut, K. W., Y. Bock, M. Cline, P. Fang, Y. Feng, J. Freymueller, X. Ge, K. Gross, D. Jackson, M. Kim, N. King, J. Langbein, S. Larsen, M. Lisowski, Z. Shen, J. Svarc and J. Zhang, Co-seismic displacements of the 1992 Landers earthquake sequence, *Bull. Seis. Soc. Amer.*, v. 84, No. 3, pp. 625-645, 1994.

44. Peltzer, G., K. W. Hudnut, K. L. Feigl, Analysis of coseismic surface displacement gradients using radar interferometry: New insights into the Landers earthquake, *J. Geophys. Res.*, v. 99, No. 11, pp. 21871-21981, 1994.

45. USGS and SCEC Scientists (Jones, L. et al., including K. Hudnut), The magnitude 6.7 Northridge, Calif. earthquake of 17 January 1994, *Science*, v. *266* (Oct. 21 issue), pp. 389-397, 1994.

46. Bodin, P., R. Bilham, J. Behr, J. Gomberg, and K. Hudnut, Slip triggered on southern California faults by the 1992 Joshua Tree, Landers, and Big Bear earthquakes, *Bull. Seis. Soc. Amer.*, v. 84, No. 3, pp. 806-816, 1994.

47. Johnson, H. O., D. C. Agnew, K. Hudnut, Extremal bounds on earthquake moment from geodetic data, *Bull. Seis. Soc. Amer.*, v. 84, No. 3, pp. 660-667, 1994.

48. Sieh, K., L. Jones, E. Hauksson, K. Hudnut, D. Eberhart-Phillips, T. Heaton, S. Hough, K. Hutton, H. Kanamori, A. Lilje, S. Lindvall, S. McGill, J. Mori, C. Rubin, J. Spotila, J. Stock, H.K. Thio, J. Treiman, B. Wernicke, and J. Zachariasen, Near-field investigations of the Landers earthquake sequence, April to July, 1992, *Science*, v. 260, pp. 171-176, 1993.

49. Bock, Y., D. Agnew, P. Fang, J. Genrich, B. Hager, T. Herring, K. Hudnut, R. King, S. Larsen, J.-B. Minster, K. Stark, S. Wdowinski, and F. Wyatt, Detection of crustal deformation related to the Landers earthquake sequence using continuous geodetic measurements, *Nature*, v. 361, No. 6410 (28 January), pp. 337-340, 1993.

50. Petersen, M.D., L. Seeber, L. Sykes, J. Nabelek, J. Armbruster, J. Pacheco, and K. Hudnut, Seismicity and fault interaction, southern San Jacinto fault zone and adjacent faults, southern California: Implications for seismic hazard, *Tectonics*, v. 10, No. 6, pp. 1187-1203, 1991.

51. Hudnut, K. and J. Beavan, Vertical deformation (1952-1987) in the Salton Trough, California, from water level recordings, *J. Geophys. Res.,* v. 94, pp. 9463-9476, 1989.

52. Hudnut, K. and M. Clark, New slip along parts of the 1968 Coyote Creek fault rupture, California, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 451-465, 1989.

53. Hudnut, K., L. Seeber, and T. Rockwell, Slip on the Elmore Ranch fault during the past 330 years and its relation to slip on the Superstition Hills fault, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 330-341, 1989.

54. Hudnut, K. and K. Sieh, Behavior of the Superstition Hills fault during the past 330 years, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 304-329, 1989.

55. Hudnut, K., L. Seeber, T. Rockwell, J. Goodmacher, R. Klinger, S. Lindvall, and R. McElwain, Surface ruptures on cross-faults in the 24 November 1987 Superstition Hills earthquake sequence, California, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 282-296, 1989.

56. Hudnut, K.W., L. Seeber, and J. Pacheco, Cross-fault triggering in the November 1987 Superstition Hills earthquake sequence, southern California, *Geophys. Res. Lett.*, v. 16, No. 2, pp. 199-202, 1989.

57. McGill, S., C. Allen, K. Hudnut, D. Johnson, W. Miller, and K. Sieh, Slip on the Superstition Hills fault and on nearby faults associated with the 24 November 1987 Elmore Ranch and Superstition Hills earthquakes, southern California, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 362-375, 1989.

58. Lindvall, S., T. Rockwell and K. Hudnut, Evidence for prehistoric earthquakes on the Superstition Hills fault from offset geomorphic features, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 342-361, 1989.
59. Hudnut, K. and J. Taber, Transition from double to single Wadati-Benioff zone in the Shumagin Islands, Alaska, *Geophys. Res. Lett.*, v. 14, pp. 143-146, 1987.

OTHER PUBLICATIONS: (REVERSE CHRONOLOGICAL)

1. Stansell, T.A., K.W. Hudnut and R.G. Keegan, GPS L1C: Enhanced performance, receiver design suggestions and key contributions, *in* Proceedings of the 23rd Technical Meeting of the Satellite Division of the Institute of Navigation (ION GNSS 2010), 21-24 Sept. 2010, Portland, Oregon, pp. 2860-2873, 2010 [http://www.ion.org/search/view_abstract.cfm?jp=p&idno=9393]
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Appendix (Award Details):

U. S. Geological Survey February 2009 USGS Western Region Award - ShakeOut

Pacific Southwest Science Strategy Success Story:

"For Advancing the Goals of the USGS Science Strategy Through the Development and Execution of the 2008 Great Southern California ShakeOut Scenario and Exercise."

City of Los Angeles January 2009 Certificate of Recognition - ShakeOut

Certificate of Recognition is hereby presented to Dr. Ken Hudnut:

"For your service to the City of Los Angeles and all of southern California as a Steering Committee Member for the Great Southern California ShakeOut, a week of earthquake preparedness events, including the largest earthquake drill in U. S. history based on the 7.8 magnitude San Andreas fault earthquake scenario. Your time and dedication to this effort have made our City safer and more prepared."

NASA Honor Award May 2008 Group Achievement Award – GPS III SLR

Group Achievement Award to Satellite Laser Ranging Team:

"For outstanding efforts in defining GPS III geodetic requirements to improve GPS performance and help maintain the system's preeminence for civil, scientific and military goals."

GPS World May 2007 Selected for '50+ Leaders to Watch'

Presented to Ken Hudnut (for leading the GPS L1C signal design):

"In Recognition for Contributions Made to the Global Navigation and Positioning Industry."