

DEREK W. G. SEARS
PUBLICATION LIST – SEPTEMBER 2006
PEER-REVIEWED ARTICLES

1973

- [1.](#) Sears, D.W. and Mills, A.A. (1973) Temperature gradients and atmospheric ablation rates for the Barwell meteorite. *Nature Physical Science*, **242**, 25-26.

1974

- [2.](#) Sears, D.W. and Mills, A.A. (1974a) Thermoluminescence studies of the Allende meteorite. *Earth Planet Sci. Lett.*, **22**, 391-396.
- [3.](#) Sears, D.W. and Mills, A.A. (1974b) Thermoluminescence and the terrestrial age of meteorites. *Meteoritics*, **9**, 47-67.
- [4.](#) Sears, D.W. and Mills, A.A. (1974c) Existence of two groups in the thermoluminescence of meteorites. *Nature*, **249**, 234-235.

1975

- [5.](#) Sears, D.W. (1975a) Thermoluminescence studies and the preatmospheric shape and mass of the Estacado meteorite. *Earth Planet Sci. Lett.*, **26**, 97-104.
- [6.](#) Sears, D.W. (1975b) Temperature gradients in meteorites produced by heating during atmospheric passage. *Mod. Geol.*, **5**, 155-164.
- [7.](#) Sears, D.W. (1975c) Interplanetary dust on the Earth's surface. *J. Brit. Astron. Assoc.*, **85**, 115-119.
- [8.](#) Sears, D.W. (1975d) Sketches in the history of meteoritics 1: The birth of the science. *Meteoritics*, **10**, 215-225.
- [9.](#) Sears, D.W. and Axon, H.J. (1975a) Metal of high cobalt content in LL chondrites. *Meteoritics*, **11**, 97-100.

1976

- [10.](#) Sears, D.W. (1976) Edward Charles Howard and an early British contribution to meteoritics. *J. Brit. Aston. Assoc.*, **86**, 133-139.
- [11.](#) Sears, D.W. and Axon, H.J. (1976) Nickel and cobalt contents of chondritic meteorites. *Nature*, **260**, 34-35.

1977

- [12.](#) Sears, D.W. (1977a) Meteorites and the origin of the solar system. *J. Brit. Interplan. Soc.*, **30**, 344-348.
- [13.](#) Mills, A.A., Sears, D.W. and Hearsey, R. (1977) Apparatus for the measurement of thermoluminescence. *J. Phys. (E): Sci. Instrum.*, **10**, 51-56.
- [14.](#) Sears, D.W. and Sears, H. (1977) Sketches in the history of meteoritics 2: The early chemical and mineralogical work. *Meteoritics*, **12**, 27-46.

[15.](#) Vaz, J.E. and Sears, D.W. (1977) Artificially induced thermoluminescence gradients in stony meteorites. *Meteoritics*, **12**, 47-60.

P4. Sears, D.W. (1977c) Chemical Petrology - with applications to the Terrestrial Planets and Meteorites, by R.F. Mueller and S.K. Saxena. *J. Brit. Interplanet. Soc.*, **xx**, xx-xx (Book review).

1978

[16.](#) Bagolia, C., Doshi, N., Lal, D. and Sears, D.W. (1978) Preatmospheric size of the Barwell meteorite: Cosmic ray track, fusion crust and thermoluminescence studies. *Nucl. Track Det.*, **2**, 29-35.

[17.](#) McKeever, S.W.S. and Sears, D.W. (1978) Thermoluminescence and the terrestrial age of the Estacado meteorite. *Nature*, **275**, 629-630.

[18.](#) Rogers, P.J. and Sears, D.W. (1978) A study of the thermoluminescence of fluorites. *Mercian Geologist*, **6**, 271-280.

[19.](#) Sears, D.W. (1978a) Condensation and the composition of the iron meteorites. *Earth Planet Sci. Lett.*, **41**, 128-138.

[20.](#) Sears, D.W. (1978b) Thermoluminescence dating of meteorites. *P.A.C.T. Journal*, **2**, 231-239.

1979

[21.](#) McKeever, S.W.S. and Sears, D.W. (1979) Meteorites and thermoluminescence. *Meteoritics*, **14**, 29-41.

[22.](#) Melcher, C.L. and Sears, D.W. (1979) The thermal stability of thermoluminescence in meteorites. *Meteoritics*, **14**, 249-253.

[23.](#) Sears, D.W. (1979a) Did iron meteorites form in the asteroid belt? Evidence from thermodynamic models. *Icarus*, **40**, 471-483.

[24.](#) Sears, D.W. (1979b) The composition of iron meteorites: A study by factor analysis. *Meteoritics*, **14**, 297-306.

1980

[25.](#) McKeever, S.W.S. and Sears, D.W. (1980a) Natural thermoluminescence of meteorites - A pointer to orbits? *Mod. Geol.*, **7**, 137-145.

[26.](#) Rambaldi, E.R., Sears, D.W. and Wasson, J.T. (1980) Si-rich grains in highly unequilibrated chondrites. *Nature*, **287**, 817-820.

[27.](#) Sears, D.W. (1980a) The formation of E chondrites - A thermodynamic model. *Icarus*, **43**, 184-202.

[28.](#) Sears, D.W. (1980b) Thermoluminescence of meteorites; relationships with their K-Ar age and their shock and reheating history. *Icarus*, **44**, 190-206.

[29.](#) Sears, D.W. and Durrani, S.A. (1980) Thermoluminescence and the terrestrial age of meteorites: Some recent results. *Earth Planet. Sci. Lett.*, **46**, 159-166.

- [30.](#) Sears, D.W. and McKeever, S.W.S. (1980) Measurement of thermoluminescence sensitivity of meteorites. *Mod. Geol.*, **7**, 201-207.
- [31.](#) Sears, D.W., Grossman, J.N., Melcher, C.L., Ross, L.M. and Mills, A.A. (1980a) Measuring the metamorphic history of unequilibrated ordinary chondrites. *Nature*, **287**, 791-795.
- 1981
- [32.](#) Chou, C.-L., Sears, D.W. and Wasson, J.T. (1981) Composition and classification of clasts from the St. Mesmin meteorite. *Earth Planet. Sci. Lett.*, **54**, 367-378.
- 1982
- [33.](#) Sears, D.W., Grossman, J.N. and Melcher, C.L. (1982a) Chemical and physical studies of type 3 chondrites - I: Metamorphism-related studies of Antarctic and other type 3 ordinary chondrites. *Geochim. Cosmochim. Acta*, **46**, 2471-2481.
- [34.](#) Sears, D.W., Kallemeyn, G.W. and Wasson, J.T. (1982b) The compositional classification of chondrites: II. The enstatite chondrite groups. *Geochim. Cosmochim. Acta*, **46**, 597-608.
- 1983
- [35.](#) Sears, D.W.G. and Ross, M. (1983) Classification of the Allan Hills A77307 meteorite. *Meteoritics*, **18**, 1-7.
- [36.](#) Sears, D.W.G. and Weeks, K.S. (1983a) Chemical and physical studies of type 3 chondrites - II: Thermoluminescence of sixteen type 3 ordinary chondrites and relationships with oxygen isotopes. *Proc. 14th Lunar Planet. Sci. Conf., part 1, J. Geophys. Res.*, **88**, B301-B311.
- [37.](#) Sears, D.W., Kallemeyn, G.W. and Wasson, J.T. (1983a) Composition and origin of clasts and inclusions in the Abee enstatite chondrite breccia. *Earth Planet Sci. Lett.*, **62**, 180-192.
- [38.](#) Sparks, M.H., McKimney, P. and Sears, D.W.G. (1983) The thermoluminescence carrier in the Dhajala chondrite. *Proc. 13th Lunar Planet. Sci. Conf. Part 2, J. Geophys. Res.*, **88**, A773-A778.
- 1984
- [39.](#) Guimon, R.K., Weeks, K.S., Keck, B.D. and Sears, D.W.G. (1984a) Thermoluminescence as a palaeothermometer. *Nature*, **311**, 363-365.
- [40.](#) Sears, D.W.G., Ashworth, J.R., Broadbent, C.P. and Bevan, A.W. (1984a) Studies of an artificially shock-loaded H group Chondrite. *Geochim. Cosmochim. Acta*, **48**, 343-360.
- [41.](#) Sears, D.W.G., Bakhtiar, N., Keck, B.D. and Weeks, K.S. (1984b) Thermoluminescence and the shock and reheating history of meteorites: II. Annealing studies of the Kernouve meteorite. *Geochim. Cosmochim. Acta*, **48**, 2265-2272.
- [42.](#) Sears, D.W.G., Sparks, M.H. and Rubin, A.H. (1984c) Chemical and physical studies of type 3 chondrites - III: Chondrules from Dhajala H3.8 chondrite. *Geochim. Cosmochim. Acta*, **48**, 1189-1200.

- [43.](#) Sears, D.W.G., Weeks, K.S. and Rubin, A.H. (1984d) An EL5 chondrite and its significance. *Nature*, **308**, 257-259.

1985

- [44.](#) Carr, C. and Sears, D.W.G. (1985) Toward an analysis of the exchange of meteoritic iron in the Middle Woodland. *Southeastern Archaeology*, **4**, 79-92.
- [45.](#) Guimon, R.K., Keck, B.D. and Sears, D.W.G. (1985) Chemical and physical studies of type 3 chondrites - IV: Annealing studies of a type 3.4 ordinary chondrite and the metamorphic history of meteorites. *Geochim. Cosmochim. Acta*, **19**, 1515-1524.
- [46.](#) Rubin, A.E., James, J.A., Keck, B.D., Weeks, K.S., Sears, D.W.G. and Jarosewich, E. (1985) The Colony meteorite and variations in CO₃ chondrite properties. *Meteoritics*, **20**, 175-196.
- [47.](#) Weeks, K.S. and Sears, D.W.G. (1985) Chemical and physical studies of type 3 chondrites - V: The enstatite chondrites. *Geochim. Cosmochim. Acta*, **49**, 1525-1536.

1986

- [48.](#) Guimon, R.K., Sears, D.W.G. and Lofgren, G.E. (1986a) The thermoluminescence-metamorphism relationship in ordinary chondrites: Experimental data on the mechanism and implications for terrestrial systems. *Geophys. Res. Lett.*, **13**, 969-972.
- [49.](#) Hartmetz, C.P., Ostertag, R. and Sears, D.W.G. (1986a) A thermoluminescence study of experimentally shock-loaded oligoclase and bytownite. *Proc. 17th Lunar and Planet. Sci. Conf., Part 1, J. Geophys. Res.*, **91**, E263-E274.
- [50.](#) Hasan, F.A., Haq, M. and Sears, D.W.G. (1986a) Thermoluminescence and the shock and reheating history of meteorites - III: The shergottites. *Geochim. Cosmochim. Acta*, **50**, 1031-1038.
- [51.](#) Hasan, F.A., Keck, B.D., Hartmetz, C.P. and Sears, D.W.G. (1986b) Anomalous fading of thermoluminescence in meteorites. *J. Luminescence*, **34**, 327-335.
- [52.](#) Keck, B.D., Guimon, R.K. and Sears, D.W.G. (1986) Chemical and physical studies of type 3 chondrites, VII. Annealing studies of the Dhajala H3.8 chondrite and the thermal history of chondrules and chondrites. *Earth Planet Sci. Lett.*, **77**, 419-427.
- [53.](#) Recca, S.I., Scott, E.R.D., Keil, K., Clayton, R.N., Mayeda, T.K., Huss, G.J., Jarosewich, E., Weeks, K.S., Hasan, F.A., Sears, D.W.G., Wieler, R. and Signer, P. (1986) Ragland, an LL3.4 chondrite find from New Mexico. *Meteoritics*, **21**, 217-229.
- [54.](#) Sears, D.W.G. and Hasan, F.A. (1986) Thermoluminescence and Antarctic meteorites. *Proc. 2nd Workshop on Antarctic Meteorites* (J.O. Annexstad, L. Schultz, and H. Wanke, eds.), 83-100. LPI Technical Rept. 86-01. Lunar and Planetary Institute, Houston.
- [55.](#) Sears, D.W.G. and Weeks, K.S. (1986) Physical and chemical studies of type 3 chondrites VI: Siderophile elements in ordinary chondrites. *Geochim. Cosmochim. Acta*, **50**, 2815-2832.

1987

- [56.](#) Hasan, F.A., Haq, M. and Sears, D.W.G. (1987a) Natural thermoluminescence levels in meteorites, I: 23 meteorites of known Al-26 content. *Proc. 17th Lunar and Planet. Sci. Conf., Part 2, J. Geophys. Res.*, **92**, E703-E709.
- [57.](#) Keck, B.D. and Sears, D.W.G. (1987) Chemical and physical studies of type 3 chondrites, VIII: The CO chondrites. *Geochim. Cosmochim. Acta*, **51**, 3013-3022.
- [58.](#) Sears, D.W.G. and Hasan, F.A. (1987) Type 3 ordinary chondrites: A review. *Surv. in Geophysics*, **9**, 43-97.

1988

- [59.](#) Guimon, R.K., Lofgren, G.E. and Sears, D.W.G. (1988) Chemical and physical studies of type 3 chondrites, IX: Thermoluminescence and hydrothermal annealing experiments and their relationship to metamorphism and aqueous alteration in type <3.3 ordinary chondrites. *Geochim. Cosmochim. Acta*, **52**, 119-127.
- [60.](#) Haq, M., Hasan, F.A. and Sears, D.W.G. (1988) Thermoluminescence and the shock and reheating history of meteorites - IV: The induced TL properties of type 4-6 ordinary chondrites. *Geochim. Cosmochim. Acta*, **52**, 1679-1689.
- [61.](#) Lipschutz, M.E., Verkouteren, R.M., Sears, D.W.G., Hasan, F.A., Prinz, M., Weisberg, M.K., Nehru, C.E., Delaney, J.S., Grossman, L. and Boily, M. (1988) Cumberland Falls chondritic inclusions - III. Consortium study of relationship to inclusions in Allan Hills 78113 aubrite. *Geochim. Cosmochim. Acta*, **52**, 1835-1848.
- [62.](#) McSween, H.Y., Dodd, R.T. and Sears, D.W.G. (1988) Thermal metamorphism. In *Meteorites and the Early Solar System* (J.F. Kerridge and M.S. Matthews, eds.), Univ. of Arizona Press, Tucson AZ, 102-113.
- [63.](#) Sears, D.W.G. (1988a) Thermoluminescence of meteorites: Shedding light on the cosmos. *Nucl. Tracks Radiat. Meas./Int. J. Radiat. Appl. Instrum., Part D*, **14**, 5-17 (invited paper).
- [64.](#) Sears, D.W.G. (1988b) Chemical processes in the early solar system: A discussion of meteorites and astrophysical models. *Vistas in Astronomy*, **32**, 1-21 (invited paper).
- [65.](#) Sears, D.W.G. and Dodd, R.T. (1988) Overview and classification of meteorites. In *Meteorites and the Early Solar System* (J.F. Kerridge and M.S. Matthews, eds.), Univ. of Arizona Press, Tucson AZ, 3-31.
- [59.](#) Guimon, R.K., Lofgren, G.E. and Sears, D.W.G. (1988) Chemical and physical studies of type 3 chondrites, IX: Thermoluminescence and hydrothermal annealing experiments and their relationship to metamorphism and aqueous alteration in type <3.3 ordinary chondrites. *Geochim. Cosmochim. Acta*, **52**, 119-127.
- [60.](#) Haq, M., Hasan, F.A. and Sears, D.W.G. (1988) Thermoluminescence and the shock and reheating history of meteorites - IV: The induced TL properties of type 4-6 ordinary chondrites. *Geochim. Cosmochim. Acta*, **52**, 1679-1689.
- [61.](#) Lipschutz, M.E., Verkouteren, R.M., Sears, D.W.G., Hasan, F.A., Prinz, M., Weisberg, M.K., Nehru, C.E., Delaney, J.S., Grossman, L. and Boily, M. (1988) Cumberland Falls

chondritic inclusions - III. Consortium study of relationship to inclusions in Allan Hills 78113 aubrite. *Geochim. Cosmochim. Acta*, **52**, 1835-1848.

- [62.](#) McSween, H.Y., Dodd, R.T. and Sears, D.W.G. (1988) Thermal metamorphism. In *Meteorites and the Early Solar System* (J.F. Kerridge and M.S. Matthews, eds.), Univ. of Arizona Press, Tucson AZ, 102-113.
- [63.](#) Sears, D.W.G. (1988a) Thermoluminescence of meteorites: Shedding light on the cosmos. *Nucl. Tracks Radiat. Meas./Int. J. Radiat. Appl. Instrum., Part D*, **14**, 5-17 (invited paper).
- [64.](#) Sears, D.W.G. (1988b) Chemical processes in the early solar system: A discussion of meteorites and astrophysical models. *Vistas in Astronomy*, **32**, 1-21 (invited paper).
- [65.](#) Sears, D.W.G. and Dodd, R.T. (1988) Overview and classification of meteorites. In *Meteorites and the Early Solar System* (J.F. Kerridge and M.S. Matthews, eds.), Univ. of Arizona Press, Tucson AZ, 3-31.

1989

- [66.](#) Haq, M., Hasan, F.A., Sears, D.W.G., Moore, C.B. and Lewis, C.F. (1989) Thermoluminescence and the origin of the dark matrix of Fayetteville and similar meteorites. *Geochim. Cosmochim. Acta*, **53**, 1435-1440.

1990

- [67.](#) Sears, D.W.G., DeHart, J.M., Hasan, F.A. and Lofgren, G.E. (1990a) Induced thermoluminescence and cathodoluminescence studies of meteorites: Relevance to structure and active sites in feldspar. In *Spectroscopic Characterization of Minerals and Their Surfaces* (L.M. Coyne, S.W.S. McKeever and D.F. Blake, eds.), 190-222, American Chemical Society, Symp. Ser. 415.
- [68.](#) Sears D.W.G., Hasan F.A., Myers B.M. and Sears H. (1990b) Comment on "Update on terrestrial ages of Antarctic meteorites" by K. Nishiizumi, D. Elmore and P.W. Kubik, *Earth Planet. Sci. Lett.* **99**, 380-382.
- [69.](#) Sears D.W.G., Myers B.M., Hartmetz C.P. and Hasan F.A. (1990c) Structural state and anomalous fading of thermoluminescence of oligoclase. *Nucl. Tracks Radiat. Meas., Int. Jour. Radiat. Appl. Instrum, part D*, **17**, 583-586.

1991

- [70.](#) Batchelor, J.D. and Sears, D.W.G. (1991a) Metamorphism of eucrite meteorites studied quantitatively using thermoluminescence. *Nature*, **349**, 516-519.
- [71.](#) Batchelor J.D. and Sears D.W.G. (1991b) Thermoluminescence constraints on the metamorphic, shock and brecciation history of basaltic meteorites. *Geochim. Cosmochim. Acta* **55**, 3831-3844.
- [72.](#) Benoit, P.H., Sears, D.W.G. and McKeever, S.W.S. (1991a) The natural thermoluminescence of meteorites - II. Meteorite orbits and orbital evolution. *Icarus* **94**, 311-325.
- [73.](#) Benoit P.H., Sears H. and Sears D.W.G. (1991b) Thermoluminescence survey of 12 meteorites collected by the European 1988 Antarctic meteorite expedition to Allan Hills

and the importance of acid washing for thermoluminescence sensitivity measurements. *Meteoritics* 26, 157-160.

- [74.](#) Sears, D.W.G., Hasan, F.A., Batchelor, J.D. and Lu Jie (1991a) Chemical and physical studies of type 3 chondrites XI: metamorphism, pairing, and brecciation of ordinary chondrites. *Proc. Lunar Planet. Sci. Conf.* **21**, 493-512.
- [75.](#) Sears D.W.G., Benoit P.H. and Batchelor J.D. (1991b) Evidence for differences in the thermal histories of Antarctic and non-Antarctic H chondrites with cosmic ray exposure ages <20 Ma. *Geochim. Cosmochim. Acta* **55** 1192-1197.
- [76.](#) Sears, D.W.G., Benoit, P.H., Sears, H., Batchelor, J.D. and Symes, S. (1991c) The natural thermoluminescence of meteorites: III. Lunar and basaltic meteorites. *Geochim. Cosmochim. Acta* **55**, 3167-3180.
- [77.](#) Sears, D.W.G., Lu Jie, Keck, B.D., Batchelor, J.D. (1991d) Metamorphism of CO and CO-like chondrites and comparisons with type 3 ordinary chondrites. *Proc. NIPR Symp. Antarct. Meteor.* **4**, 1745-1805.

1992

- [78.](#) Benoit P.H. and Sears D.W.G. (1992a) The breakup of a meteorite parent body and the delivery of meteorites to Earth. *Science* **255**, 1685-1687.
- [79.](#) Benoit, P.H., Sears, H. and Sears D.W.G. (1992a) The natural thermoluminescence of meteorites - IV: Ordinary chondrites at the Lewis Cliff ice field. *J. Geophys. Res.* **97**, 4629-4647.
- [80.](#) DeHart, J.M., Lofgren, G.E., Lu Jie, Benoit P.H. and Sears D.W.G. (1992) Chemical and Physical Studies of chondrites - X: Cathodoluminescence studies of metamorphism and nebular processes in type 3 ordinary chondrites. *Geochim. Cosmochim. Acta* **56**, 3791-3807.
- [81.](#) Hasan F.A., Score R., Myers B.M., Sears H., Cassidy W.A. and Sears D.W.G. (1992) Natural thermoluminescence levels and the recovery location of Antarctic meteorites. In *Field and Laboratory Investigations of Antarctic Meteorites Collected by United States Expeditions, 1985-1987*. (eds. U.B. Marvin and G.J. MacPherson), *Smithson. Contrib. Earth Sci.* **No. 30**, 57-68.
- [82.](#) Ninagawa, K., Nishimura S., Kubona N., Yamamoto I., Kohata M., Wada T., Yamashita Y., Lu J., Sears D.W.G., Matsunami S. and Nishimura H. (1992a) Thermoluminescence of chondrules in primitive ordinary chondrites, Semarkona and Bishunpur. *Proc. NIPR Symp. Antarctic Meteor.* **5**, 281-289.
- [83.](#) Sears, D.W.G., Lu Jie, Benoit, P.H., DeHart, J.M. and Lofgren, G.E. (1992a) A compositional classification scheme for meteoritic chondrules. *Nature* **357**, 207-210.

1993

- [84.](#) Benoit P.H. and Sears D.W.G. (1993a) Breakup and structure of an H-chondrite parent body: The H-chondrite flux over the last million years. *Icarus* **101**, 188-200.
- [84a.](#) Benoit, P. H.; Sears, D. W. G. (1993b) A recent meteorite shower in Antarctica with an unusual orbital history. *Earth and Planetary Science Letters* 120, 463-471

- [85.](#) Benoit P.H., Sears H. and Sears D.W.G. (1993a) The natural thermoluminescence of meteorites - V: Ordinary chondrites at the Allan Hills vicinity. *J. Geophys. Res.* **98**, 1875-1888.
- [86.](#) Benoit P.H., Jull A.J.T., Mckeever S.W.S. and Sears D.W.G. (1993b) The natural thermoluminescence of meteorites VI: Carbon-14, thermoluminescence and the terrestrial ages of meteorites. *Meteoritics* **28**, 196-203.
- [87.](#) Benoit P.H., Sears D.W.G. and McKeever S.W.S. (1993c) Natural thermoluminescence and terrestrial ages of meteorites from a variety of temperature regimes. *Radiat. Detect. Dosimet.* **47**, 699-674.
- [88.](#) Lipschutz M.E., Wolf S.F., Vogt S., Michlovich E., Lindstrom M.M., Mittlefehldt, D.W., Schultz L., loeken T., Scherer P., Dodd R.T., Sears D.W.G., Benoit P.H., Wacker J.F., Burns R.G. and Fisher D.S. (1993) Consortium report on the ancient H chondrite regolith breccia Noblesville. *Meteoritics* **28**, 528-537.
- [88a.](#) Matsunami S., Ninagawa K., Nishimura S., Kubon N., Yamamoto I., Kohata M., Wada T., Yamashita Y., Lu Jie, Sears D. W. G., and Nishimura H. (1993) Thermoluminescence and compositional zoning in the mesostasis of a Semarkona group A1 chondrules and new insights into the chondrule-forming process. *Geochim. Cosmochim. Acta* **57**, 2101-2110.
- [89.](#) McCoy T.J., Keil K., Ash R., Morse A.D., Pillinger C.T., Wieler R., Mayeda T.K., Clayton R.N., Benoit P.H., Sears D.W.G., Casanova I., Muenow D.W., Moore C.B., Lewis C.F. and Wilson I.R. (1993) Roosevelt County 075: A petrologic, chemical and isotopic study of the most unequilibrated known H chondrite. *Meteoritics* **28**, 681-691.
- [90.](#) Sears D.W.G., Benoit P.H. and Lu Jie (1993a) Two groups each with distinctive rims in Murchison recognized by cathodoluminescence. *Meteoritics* **28**, 669-675.
- 1994
- [91.](#) Benoit P.H. and Sears D.W.G. (1994a) A recent meteorite fall in Antarctic with an unusual orbital history. *Earth Planet. Sci. Lett.* **120**, 463-471.
- [92.](#) Benoit P.H., Roth J., Sears H. and Sears D.W.G. (1994a) The natural thermoluminescence of meteorites 7: Ordinary chondrites from the Elephant Moraine region, Antarctica. *J. Geophys. Res. - Planets*, **99**, 2073-2085.
- [92a.](#) Ninagawa K.; Nakagawa, M.; Matoba, A.; Yamaguchi, H.; Yamamoto, I.; Wada, T.; Yamashita, Y.; Huang Shaoxiong; Sears, Derek W. G.; Matsunami, S.; Nishimura, H. (1994) Red thermoluminescence of enstatite from the Chainpur meteorite. *Eighteenth Symposium on Antarctic Meteorites. Proceedings of the NIPR Symposium*, No. 7, held May 31-June 2, 1993, at the National Institute of Polar Research, Tokyo. Editor in Chief, Keizo Yanai, with Hirokazu Fujimaki, Hideyasu Kojima, Masamichi Miyamoto, Nobuo Takaoka, and Yoshio Yoshida. Published by the National Institute of Polar Research, 1994, p.217.

1995

- [93.](#) Chen Jiangfeng, Sears D. W. G. and Benoit P. H. (1995) Thermoluminescence property, petrologic type and shock facies assignment of Boxian chondrite. *Jour. China Univ. Sci. Tech.* **25**, 11-14.
- [96.](#) Guimon R.K., Symes S.P., Sears D.W.G., and Benoit P.H. (1995) Chemical and physical studies of type 3 chondrites XII: The metamorphic history of CV chondrites and their components. *Meteoritics* **30**, 707-714.
- [94.](#) Sears D.W.G., Huang S. and Benoit P.H. (1995a) Chondrule formation, metamorphism, brecciation, an important new primary chondrule group, and the classification of chondrules. *Earth Planet. Sci. Lett.* **131**, 27-39.
- [95.](#) Sears D.W.G., Morse A.D., Hutchison R., Guimon R.K., Lu Jie, Alexander C.M.O'D., Benoit P.H., Wright I., Pillinger C.T., Xian Tian and Lipschutz M.E. (1995) Metamorphism and aqueous alteration in low petrographic type ordinary chondrites. *Meteoritics* **30**, 169-181.
- [97.](#) Simon S. B., Grossman L., Casanova I., Symes S., Benoit P., Sears D. W. G. and Wacker J. F. (1995) Axtell, a new CV3 chondrite find from Texas. *Meteoritics* **30**, 42-46.
- [98.](#) Yanghong Zhang, Benoit P.H. and Sears D.W.G. (1995a) The classification and thermal history of enstatite chondrites. *Jour. Geophys. Res. - Planets* **100**, 9417-9438.

1996

- [99.](#) Benoit P. H. and Sears D. W. G. (1996a) Rapid changes in the composition of the meteorite flux: The irradiation, orbital, and terrestrial history of Antarctic H chondrites and modern falls. *Meteorit. Planet. Sci.* **31**, 81-86.
- [100.](#) Benoit P. H., Sears D. W. G. and Symes S. J. K. (1996) The thermal and radiation exposure history of lunar meteorites. *Meteorit. Planet. Sci.* **31**, 869-875.
- [101.](#) Huang Shaoxiong and Sears D. W. G. (1996) Metal-silicate fractionation in the surface dust layers of accreting planetesimals: Implications for the formation of chondrites and the nature of asteroid surfaces. *J. Geophys. Res. - Planets* **101**, 29,373 - 29,385.
- [102.](#) Huang Shaoxiong, Lu Jie, Prinz M., Weisberg M.K., Benoit P.H., Sears D.W.G. (1996) Chondrules: Their diversity and the role of open-system processes during their formation. *Icarus* **122**, 316-346.
- [103.](#) Sears D.W.G., Huang S. and Benoit P.H. (1996a) Open-system behavior during chondrule formation. In "Chondrules and the Protoplanetary Disk", (eds. Hewins, R., Jones R. H. and Scott E. R. D.), pp. 221-231. Cambridge University P.
- [104.](#) Yanghong Zhang, Benoit P.H. and Sears D.W.G. (1996a) Pyroxene structures, cathodoluminescence and the thermal history of the enstatite chondrites. *Meteorit. Planet. Sci.* **31**, 87-96.
- [105.](#) Yanghong Zhang, Benoit P.H. and Sears D.W.G. (1996b) The paleothermometry of enstatite chondrites: A brief review and update. *Meteorit. Planet. Sci.* **31**, 647-655.

1997

- [106.](#) Batchelor J. D., Symes S. J. K., Benoit P. H. and Sears D. W. G. (1997) Thermoluminescence constraints on the thermal and mixing history of lunar surface materials and comparisons with basaltic meteorites. *J. Geophys. Res. (Planets)* **102**, 19,321- 19,334.
- [107.](#) Benoit P. H. and Sears D. W. G. (1997a) Orbits of meteorites from Natural TL. *Icarus*, **125**, 281-287.
- [108.](#) Huang Shaoxiong and Sears D.W.G. (1997) Formation and metamorphism of group A5 chondrites in ordinary chondrites. *Geochim. Cosmochim. Acta* **61**, 4689-4704.
- [109.](#) Schneider D. M., Benoit P. H., Sears D. W. G. and Jull A. J. T. (1997a) The Kansas University meteorite. *Meteorit. Planet. Sci.* **32**, A149-A150.
- [110.](#) Sears D.W.G. (1997a) Enstatite meteorites. In *Encyclopedia of Planetary Science* (eds. J.H. Shirley and R.W. Fairbridge), pp. 234-236. Chapman and Hall, New York, London and others.
- [111.](#) Sears D.W.G. (1997b) Chondrites (ordinary). In *Encyclopedia of Planetary Science* (eds. J.H. Shirley and R.W. Fairbridge), pp. 105-110. Chapman and Hall, New York, London and others.
- [112.](#) Sears D. W. G., Symes S. J. K., Akridge D. G., Batchelor J. D., and Benoit P. H. (1997a) The metamorphic history of eucrites and eucrite-related meteorites and the case for late metamorphism. *Meteorit. Planet. Sci.* **32**, 917-927.

1998

- [113.](#) Akridge D. G., Benoit P. H. and Sears D. W. G. (1998a) Regolith and megaregolith formation of H-chondrites: Thermal constraints on the parent body. *Icarus* **132**, 185-195.
- [114.](#) Ninagawa K., Hoshikawa Y., Kojima H., Matsunami S., Benoit P. H., and Sears D. W. G. (1998) Thermoluminescence of Japanese Antarctic ordinary chondrite collection. *Antarct. Meteorit. Res.* **11**, 1-17.
- [115.](#) Sears D. W. G. (1998a) The rarity of chondrules and CAI in the early solar system and some astrophysical consequences. *Astrophys. Jour.* **498**, 773-778
- [116.](#) Sears D. W. G. and Akridge D. G. (1998) Nebula or parent body alteration of chondritic material: neither or both? *Meteorit. Planet. Sci.* **33**, 1157-1167
- [117.](#) Sears D. W. G. and Kral T. A. (1998) Martian "microfossils" in lunar meteorites? *Meteorit. Planet. Sci.* **33**, 791-794.
- [118.](#) Sears D. W. G., Lyon I., Saxton J. and Turner G. (1998a) The oxygen isotope properties of olivines in chondrules in ordinary chondrites. *Meteorit. Planet. Sci.* **33**, 1029-1032.
- [119.](#) Symes S. J. K., Sears D. W. G., Taunton A., Akridge D. G., Yanghong Zhang and Benoit P. H. (1998) The crystalline lunar spherules: Their formation and implications for the origin of meteoritic chondrules. *Meteorit. Planet. Sci.* **33**, 13-29.

1999

- [120](#) Akridge D. G. and Sears D. W. G. (1999) The gravitational and aerodynamic sorting of meteoritic chondrules and metal: Experimental results with implications for chondritic meteorites. *J. Geophys. Res. (Planets)* **104**, 11853-11864.
- [121](#) Benoit P. H. and Sears D. W. G. (1999) Accumulation mechanisms and the weathering of Antarctic equilibrated ordinary chondrites. *J. Geophys. Res. (Planets)* **104**, 14159-14168.
- [123](#) Kochan, H.W., Huebner W. F., and Sears D.W.G. (1999) Simulation experiments with cometary analogous material. In *Laboratory Astrophysics and Space Research*, edited by P. Ehrenfreund, C. Krafft, H. Kochan and V. Pirronello, pp. 623-665, Kluwer Academic Publishers, Netherlands.
- [124](#) Sears D. W. G., Kochan H. and Huebner W. F. (1999) Simulation experiments and surface processes on comets. *Meteorit. Planet. Sci.* **34**, 497-525.
- 2000
- [126](#) Akridge J.M.C., Benoit P.H., and Sears D.W.G. (2000) Terrestrial age measurements using natural thermoluminescence of a drained zone under the fusion crust of Antarctic ordinary chondrites, *Meteorit. Planet. Sci.* **35**, 869-874.
- [127](#) Benoit P.H., Sears D.W.G., Akridge J.M.C., Bland P.A., Berry F.J., and Pillinger C.T. (2000) The non-trivial problem of meteorite pairing. *Meteorit. Planet. Sci.* **35**, 393-417.
- [128](#) Krot A.N., Brearley A.J.,Petaev M.I., Kallemeyn G.W., Sears D.W.G., Benoit P.H., Hutcheon I.D., Zolensky M.E., and Keil K. (2000) Evidence for low-temperature growth of fayalite and hedenbergite in MacAlpine Hills 88107, an ungrouped carbonaceous chondrite related to the CM-CO clan. *Meteorit. Planet. Sci.* **35**, 1365-1386.
- [129](#) Ninagawa K., Soyama K., Ota M., Toyoda S., Imae N., Kojima H., Benoit P.H. and Sears D.W.G. (2000) Thermoluminescence studies of ordinary chondrites in the Japanese Antarctic meteorite collection, II: New measurements for thirty type 3 ordinary chondrites. *Antarct. Meteorit. Res.* **13**, 112- 120.
- 2001
- [130.](#) Akridge J.M.C., Benoit P.H., and Sears D.W.G. (2001) Determination of trapping parameters of the high temperature thermoluminescence peak in equilibrated ordinary chondrites. *Radiat. Meas.*, **33**, 109-117.
- 2002
- [131.](#) Benoit, P. H., Akridge, G. A., Ninagawa, K., Sears, D. W. G. (2002a) Thermoluminescence sensitivity and thermal history of type 3 ordinary chondrites: Eleven new type 3.0-3.1 chondrites and possible explanations for differences among H, L, and LL chondrites. *Meteoritics and Planetary Science* **37**, 793-806
- [132.](#) Ferko, T. E. ; Wang, M.-S. ; Hillemonds, D. J. ; Lipschutz, M. E. ; Hutchison, R. ; Franke, L. ; Scherer, P. ; Schultz, L. ; Benoit, P. H. ; Sears, D. W. G. (2002) The irradiation history of the Ghubara (L5) regolith breccia. *Meteoritics and Planetary Science* **37**, 311-328.

- [133.](#) Schneider, D. M., Symes, S. J. K., Benoit, P. H., Sears, D. W. G. (2002) Properties of chondrules in EL3 chondrites, comparison with EH3 chondrites, and the implications for the formation of enstatite chondrites. *Meteoritics and Planetary Science* **37** 1401-1416.
- [134.](#) Sears, D. W., Benoit, P. H., McKeever, S. W., Banerjee, D., Kral, T., Stites, W., Roe, L., Jansma, P., Mattioli, G. (2002a) Investigation of biological, chemical and physical processes on and in planetary surfaces by laboratory simulation. *Planetary and Space Science* **50**, 821-828
- 2003
- [137.](#) Franzen M. A., Nichols S., Bogdon K., White C., Godsey R., Napieralski N., Benoit P. H., and Sears D. W. G. (2003) The origin of chondrites: Metal silicate separation experiments under microgravity conditions. *Geophys. Res. Lett.*, 30, Issue 14, pp. SSC 7-1, Cite ID 1780, DOI 10.1029/2003GL017659.
- [138.](#) McKeever, S.W.S., Banerjee D., Blair M., Clifford S.M., Cloudsley M.S., Kim S.S., Lamothe M., Lepper K., Leuschen M., McKeever K.J., Prather M., Rowland A., Reust D., Sears D.W.G., Wilson J.W. (2003) Concepts and approaches to *in situ* luminescence dating of martian sediments. *Radiat. Meas.* **37**, 527-534.
- [139.](#) Moore S. R., Franzen M., Benoit P. H., Sears D. W. G., Holley A., Myers M., Godsey R., and Czapinsky J. (2003) The origin of chondrites: Metal-silicate separation experiments under microgravity conditions - II. *Geophys. Res. Lett.* **30**, Issue 10, pp. 29-1, Cite ID 1522, DOI 10.1029/2002GL016860.
- [140.](#) Schneider, D.M., Benoit, P.H., Kracher A., and Sears D.W.G. (2003) Metal size distributions in EH and EL chondrites. *Geophys. Res. Lett.* **30**, Issue 8, pp. 2-1, Cite ID 1420, DOI 10.1029/2002GL016672.
- 2004
- [142.](#) Akridge, D. G.; Akridge, J. M. C.; Batchelor, J. D.; Benoit, P. H.; Brewer, J.; DeHart, J. M.; Keck, B. D.; Jie, Lu; Meier, A.; Penrose, M.; Schneider, D. M.; Sears, D. W. G.; Symes, S. J. K.; Yanhong, Zhang (2004) Photomosaics of the cathodoluminescence of 60 sections of meteorites and lunar samples. *Journal of Geophysical Research*, Volume 109, Issue E7, CiteID E07S03. ([Also auxiliary publication](#)).
- [143.](#) Sears, Derek; Allen, Carl; Britt, Dan; Brownlee, Don; Franzen, Melissa; Gefert, Leon; Gorovan, Stephen; Pieters, Carle; Preble, Jeffrey; Scheeres, Dan; Scott, Ed (2004a) The Hera mission: multiple near-earth asteroid sample return. *Advances in Space Research*, Volume 34, Issue 11, p. 2270-2275.
- [144.](#) Sears, Derek; Franzen, Melissa; Moore, Shauntae; Nichols, Shawn; Kareev, Mikhail; Benoit, Paul (2004b) Mission operations in low-gravity regolith and dust. In *Mitigation of hazardous comets and asteroids*. Edited by M. Belton, T. H. Morgan, N. Samarasinha, and D. K. Yeomans. ISBN 0 521 82764 7 hardback; QB651.M57 2004 523.44 dc -- 22 2003065427. Published by Cambridge University Press, Cambridge, UK, 2004, p.337
- [145.](#) Sears, D. W. G.; Allen, C. C.; Bell, M. S.; Bogard, D.; Britt, D.; Brownlee, D. E.; Chapman, C.; Clark, B. C.; Dissley, R.; Franzen, M. A.; Goldstein, J.; Nishiizumi, K.; Nyquist, L.; Pieters, C. M.; Scheeres, D.; Scott, E. R. D.; Treiman, A. (2004c) The Hera

near-Earth asteroid sample return mission: science requirements of the sample collector. *Advances in Space Research*, Volume 34, Issue 11, p. 2276-2280.

2005

- [146.](#) Kracher, Alfred; Sears, Derek W. G. (2005) Space weathering and the low sulfur abundance of Eros. *Icarus*, Volume 174, Issue 1, p. 36-45.
- [147.](#) Sears, Derek W. G.; Chittenden, Julie D. (2005) On laboratory simulation and the temperature dependence of the evaporation rate of brine on Mars. *Geophysical Research Letters*, Volume 32, Issue 23, CiteID L23203
- [148.](#) Sears, Derek W. G.; Moore, Shauntae R. (2005) On laboratory simulation and the evaporation rate of water on Mars. *Geophysical Research Letters*, Volume 32, Issue 16, CiteID L16202

2006

- [149.](#) Moore S. R. and Sears D. W. G. (2006) On laboratory simulation and the effect of small temperature oscillations about the freezing point and ice formation on the evaporation rate of water on Mars. *Astrobiology* **6**, 644-650.