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Abstract–Meteoritical Bulletin No. 83 lists information for 898 newly described meteorites. These include 473 from Antarctica, 341 from the Sahara, and 22 from dry lakes in the southwestern United States. Seven of the meteorites are falls: Kunya-Urgench (H5), Lohawat (howardite), Ourique (H4), Portales Valley (H6), San Pedro de Quiles (L6), Talampaya (eucrite), and Zag (H3-6). Also included are a dozen new iron meteorites; several mesosiderites; a pallasite; several eucrites, howardites, and a diogenite; several ureilites; a variety of CM, CO, CV, CR, and R chondrites; and numerous unequilibrated ordinary chondrites. All shock classifications are after Stöffler *et al*. (1991) and weathering grades are after Wlotzka (1993), except as noted. All italicized abbreviations refer to addresses tabulated at the end of this document.

Acfer 049 27º25'N 3º43'E
Agemour, Algeria
Found 1989 November 19
Ordinary chondrite (H6)

An 82.9 g stone from the Acfer area has been recently classified (see *Meteoritical Bulletins* 71–74). Classification and mineralogy (H. Schulze, *MNB*): olivine, $Fa_{17.6}$; pyroxene, $Fs_{15.6}$; shock stage, S2; weathering grade, W1. Specimens: *MNB*.

Alkali 37º52'N 117º24'W
Esmeralda County, Nevada, USA
Found 1998 July 20
Ordinary chondrite (H6)

Two stones, weighing a total of 30.47 g, were recovered two miles apart by Nicholas Gessler from the dry surface of Alkali Lake. Mineralogy and classification (A. Rubin, *UCLA*): olivine, $Fa_{19.3}$; shock stage, S2; weathering grade, W2. Specimens: type specimen, 5.4 g, *UCLA*; main mass, *Gessler*.

ANSMET meteorites
(463 meteorites)
Antarctica
Found 1996–1998

Appendix 1 brings up-to-date the list of officially announced meteorites from the U.S. Antarctic Meteorite (ANSMET) program. 7794 meteorites were previously listed in the *Meteoritical Bulletin*, nos. 76, 79, and 82; these meteorites bring the total to 8257. The meteorites in Appendix 1 were published in the *Antarctic Meteorite Newsletter* (AMN), issues 21(2) (1998) and 22(1) (1999). Listed are the classifications, masses, degrees of weathering, olivine and pyroxene compositions, pairing information, ice fields upon which the meteorites were found, and bibliographic information, all sorted by sample name. Note that meteorite pairings may be tentative. A new name plus abbreviation approved for some of these meteorites is **Mount DeWitt** (DEW), with approximate coordinates of 77º12'S, 159º50'E.

Bechar 001 and 002 ~30º50'N 3º20'W
Algeria
Found before 1998 August
Ordinary chondrites (L5 and H6)

Two large stones (39 kg and 12 kg) plus a number of small fragments were sold to Bruno Fectay and Carine Bidaut by nomads. They later recognized that an 18 g piece (now called Bechar 002) was higher in metal than the main masses and therefore was not paired. Classification and mineralogy (P. Sipiera, *Harper*). Bechar 001: olivine, $Fa_{25.3}$; pyroxene, Fs_{20}. Bechar 002: olivine, $Fa_{18.5}$; pyroxene, $Fs_{16.4}Wo_{1.4}$. Specimens: type specimens, 140 g (Bechar 001) and 15 g (Bechar 002), *DuPont*; main masses, *Fectay*.

Beni Semguine ~30º10'N 5º40'W
Morocco
Found before 1998 August
Ordinary chondrite (H5, Willaroy-like)

A 150 g meteorite was brought to the attention of Bruno Fectay and Carine Bidaut by nomads seeking to sell the specimen. Find circumstances are not well known. Classification and mineralogy (P. Sipiera, *Harper*): olivine, $Fa_{14.2\pm0.4}$ (n = 13); pyroxene, $Fs_{12.5\pm0.4}Wo_{1.4\pm0.1}$ (n = 7); mineral compositions similar to Willaroy. Specimens: type specimen, 1.8 g, *DuPont*; main mass, *Fectay*.

Blackwood Creek ~40º30'N ~101º5'W
Hayes County, Kansas, USA
Found 1998 July
Ordinary chondrite (H6)

A 67 g oriented stone was found by Mr. Mike Jones, a student of paleontology at the University of Nebraska, Lincoln, while he was digging for fossils. Classification and mineralogy (A. Rubin, *UCLA*): olivine, $Fa_{19.5}$; shock stage, S2; weathering grade, W2. Specimens: type specimen, 10 g, *UCLA*; main mass, *OShaw*.

Bonnie Claire 001 and 002 37º13'N 117º5'W
Nye County, Nevada, USA
Found 1998 May 2
Ordinary chondrites (H5)

Two meteorite fragments that fit together, weighing a total of 23.03 g (BC 001), and an 80.8 g stone (BC 002) were recovered by Nicholas Gessler from the surface of a dry lake near the town of Bonnie Claire; all three pieces were found within a meter of each other. Mineralogy and classification by A. Rubin, *UCLA*. BC001: olivine, $Fa_{19.2}$; shock stage, S2; weathering grade, W3. BC 002: olivine, $Fa_{18.6}$; shock stage, S3; weathering grade, W2. Subtle chemical and textural differences cast some doubt on the pairing of BC 001 and 002. Specimens: type specimens, 7.6 g (BC 001) and 17.5 g (BC 002), *UCLA*; main masses, *Gessler*.

Dar al Gani 178-609, see Saharan Meteorites from Libya

Dar al Gani 476 27º21.16'N 16º12.04'E
Libya
Found 1998 May 1
Martian basalt (shergottite)

A brownish stone weighing 2015 g was found in Dar al Gani, Sahara. Mineralogy and classification (J. Zipfel and P. Scherer, *MPI*): fusion crust absent; meteorite has a porphyritic texture, consisting of olivine embedded in a fine-grained matrix of clinopyroxene laths (pigeonite and minor augite) and interstitial feldspathic glass; mineral abundances similar to EET 79001 lithology A; Fe-sulfide, Ti-rich chromites, ilmenite and chromite present; shock features include twinning and fracturing of clinopyroxene, mosaicism of some olivine, and plagioclase converted to feldspathic glass; impact-melt pockets abundant; extensive terrestrial weathering resulted in carbonate veins crosscutting the meteorite along grain boundaries and cracks; bulk chemistry intermediate between basaltic and lherzolitic shergottites, with a high bulk Mg/(Mg + Fe), high concentrations of siderophile elements, relatively low abundances of heavy rare earth elements (HREE), and a strong light rare earth element (LREE) depletion; exposure age 1.1 ± 0.2 Ma; $^{36}Ar/^{132}Xe$ and $^{84}Kr/^{132}Xe$ typical of Martian meteorites, and $^{129}Xe/^{132}Xe$ similar to Chassigny. Oxygen isotopes (I. Franchi, *OU*): $\delta^{18}O = 4.57$, $\delta^{17}O = 2.69$ permil rel. SMOW ($\Delta^{17}O = 0.317$). The petrography, mineralogy, and noble gas chemistry of DaG 476 and DaG 489 are very similar, and the two are likely paired (L. Folco, *MNA-SI*, and J. Zipfel and L. Schultz, *MPI)*. Specimens: type specimen, several grams, and one polished section, *MPI*; main mass with anonymous finder.

Dar al Gani 489 ~27°08'N 16°05'E
Libya
Found 1997
Martian basalt (shergottite)

A dark-brown stone of 2146 g was found in Dar al Gani. Mineralogy and classification (L. Folco and B. Anselmi, *MNA-SI*): devoid of fusion crust; porphyritic basaltic texture consisting of millimeter-sized phenocrysts of brown olivine ($Fo_{61–78}$, Mn/Fe = 0.021–0.025 atomic) set in a more fine grained matrix of pigeonite laths ($En_{57–72}Wo_{5–15}$, Mn/Fe = 0.030–0.038 atomic) and interstitial feldspathic glass ($An_{56–67}Ab_{33–43}$); minor mineral components include augite, chromite, Ti-rich chromite, ilmenite, merrillite and pyrrhotite; texture, mineral modes and chemistry close to EETA79001 lithology A; shock deformation features include twinning in pigeonite, strong mosaicism and planar deformation features in olivine, and abundant impact-melt pockets and veinlets; pervasive veins filled in by calcite are due to terrestrial weathering. Oxygen isotopes (A. S. Sexton and I. A. Franchi, *OU*): $\delta^{17}O$ = 2.895, $\delta^{18}O$ = 4.980, and $\Delta^{17}O$ = 0.305 permil. The petrography, mineralogy, and noble gas chemistry of DaG 476 and DaG 489 are very similar, and the two are likely paired (L. Folco, *MNA-SI*, and J. Zipfel and L. Schultz, *MPI)*. Specimens: main mass with anonymous finder, 34.9 g; two polished thin sections, *MNA-SI*.

Drayton 48º40'N 97º7'W
Pembina County, North Dakota, USA
Found 1982 July
Ordinary chondrite (H4/5)

A 2.35 kg stone was found in an otherwise rock-free field by Mr. Phil Raney. Mineralogy and classification (N. Forsman, *UND;* C. Lewis, *ASU;* A. Rubin, *UCLA*): olivine, $Fa_{17.8}$; shock stage, S3. Specimens: main mass, *UND*.

Euclid 47º57.5'N 96º42'W
Polk County, Minnesota, USA
Found 1970 July
Ordinary chondrite (H5)

A 2.5 kg stone was found in a field by Mr. Dan Kopecky and kept for 26 years in a coffee can. Mineralogy and classification (N. Forsman, *UND;* A. Brearley, *UNM*): olivine, $Fa_{18.4}$; pyroxene, $Fs_{16.4}Wo_{1.3}$. Specimens: main mass, Dan Kopecky, RR 1, Box 120B, Euclid, MN 56722; type specimen, *UND*.

Fairfield 39º20'N 84º36'W
Butler County, Ohio, USA
Found 1974 September
Iron, coarse octahedrite (IIICD)

An iron mass of 1600 g was found by Mr. Roy Ballinger among material dredged by the American Materials Company from 120 feet depth in a gravel pit in Pleistocene glacial deposits. Several other iron specimens may have been recovered at later times. Classification and analysis (Choi *et al*., 1995): Ga = 78.4 ppm; Ge = 329 ppm; Ir = 1.79 ppm; Ni = 6.61 wt%. Specimens: 746 g, *MUO*; 152 g, *UCLA*.

Falsey Draw 33º50.6'N 103º56.2'W
Chaves County, New Mexico, USA
Found 1995
Ordinary chondrite (L6)

A 4.18 kg stone was found by Kenneth Shirley. Mineralogy and classification (A. Brearley, *UNM*): olivine, $Fa_{25.2}$; pyroxene, $Fs_{21.4}$; shock stage, S1; weathering grade, W2. Specimens: main mass with finder; type specimen, 6.7 g, *UNM*.

Felt (b) 36º35'N 102º42'W
Cimarron County, Oklahoma, USA
Found 1990 or 1991
Ordinary chondrite (L3.5)

A 5.59 kg stone was found by a farmer plowing a grain field. Mineralogy and classification (A. Brearley, *UNM;* A. Rubin, *UCLA*; P. Benoit, *UArk*): an L chondrite genomict breccia; about two-thirds of the material is L3.5 (based on induced thermoluminescence sensitivity), shock stage, S4; the other one-third is L5, shock stage, S5; black melt veins are abundant; typical olivine composition ~Fa_{25} (range $Fa_{1–31}$); metal abundance, ~9.3 vol%; weathering grade, W1. Specimens: main mass, *Reed*; type specimens, 42.9 g *UCLA;* 37.5 g, *UNM*.

Foum Zguid 30º4'N 6º54'W
Jebel Bani, Morocco
Found 1998
Iron, coarsest octahedrite (IIAB)

A 6 kg iron meteorite was found in the desert by a person hunting for meteorites. Classification and description (J. Wasson, *UCLA*): bulk metal Co = 0.50 wt%, Ni = 5.81 wt%, Ga = 55.5 ppm, As = 9.91 ppm, Ir = 0.021 ppm, Au = 1.078 ppm. Specimens: 191 g, *Cilz*; 483 g, *Schwade*; 34 g, *UCLA*.

Frontier Mountains

(10 meteorites)
Victoria Land, Antarctica
Found 1995

These meteorites (Table 1) were collected during the 1995/1996 PNRA/EUROMET expeditions to the Frontier Mountains. Classifications by R. Carampin, A. M. Fioretti and G. Molin, *UPad*. Specimens: A. S. Sexton, *OU*.

Gan Gan 42º40'S 68º5'W (±5')
Chubut, Argentina
Found 1984
Iron, fine octahedrite (IVA)

An 83 kg iron meteorite was found by a person collecting pine cones. Classification and description (J. Wasson, *UCLA*): bulk metal Co = 0.41 wt%, Ni = 9.12 wt%, Ga = 2.36 ppm, As = 12.1 ppm, Ir = 1.11 ppm, Au = 2.216 ppm. Specimens: 1.74 kg, *Cilz*; 29 kg, *Schwade*; 700 g, *UCLA*.

Gao-Guenie, new name

With the recent paper by Bourot-Denise *et al.* (1998), the Meteorite Nomenclature Committee has decided that a new, collective name, *Gao-Guenie*, will be bestowed upon all meteorites formerly identified as either *Gao (Upper Volta)* (frequently truncated to *Gao*) or *Guenie*. It had been reported that two meteorite showers occurred one month apart in 1960 in the country now known as Burkina Faso. But the new work confirms long-held suspicions that the two meteorites are indistinguishable from each other and that there was most likely only one fall (1960 March 5). The confusion about this meteorite has been compounded by the fact that new stones continue to be found ~40 years after the fall and are given arbitrarily one or the other name. Henceforth, the official name for all meteorites from this shower will be *Gao-Guenie*, with the names *Gao (Upper Volta)* and *Guenie* as recognized synonyms.

Gruñidora 24º10'N 102º0'W
Zacatecas, Mexico
Found 1998 September
Ordinary chondrite (H4)

A 130 g meteorite was found near La Gruñidora by Juan Trejo while searching in the easternmost part of the Nuevo Mercurio strewnfield. Classification and mineralogy (D. Weber, *Mün*): olivine, $Fa_{18.0}$; pyroxene, $Fs_{15.2\pm1.8}$; shock stage, S2; weathering grade, W4. Specimens: main mass, *Heinlein;* type specimen, 1.6 g, and thin section, *Mün*.

Hammadah al Hamra 188-258, see Saharan Meteorites from Libya

Huss meteorites

The meteorites listed in Table 2 were all listed in the catalogs of Huss (1976, 1986). Many of these specimens are noted in Graham *et al.* (1985) under the corresponding entries without the letter in parentheses. It is likely that most are not paired with the other listed specimens. The names of these meteorites have now been formally approved by the Nomenclature Committee. In doing so, several names are abolished: Bethel, Elida and New Moore now become synonyms as shown in Table 3. In addition, Table 3 notes several other synonyms that arise out of issues related to the two Huss catalogs and the Graham *et al.* (1985) listings. See the separate entry concerning the nomenclature of stones from Kress, Texas.

Jabal Akakus, see Saharan Meteorites from Libya

Kaigorod, see Vyatka

Kossuth ~40º40'N 84º21'W
Auglaize County, Ohio, USA
Found 1975
Iron, fine octahedrite (IVA)

A 5.9 kg iron meteorite was found by a farmer in a field. Classification and description (J. Wasson, *UCLA*): bulk metal Co = 0.41 wt%, Ni = 9.27 wt%, Cu = 122 ppm, Ga = 2.56 ppm, As = 12.2 ppm, Ir = 0.87 ppm, Au = 2.25 ppm. Specimens: 241 g, *Cilz*; 279 g, *Schwade*; 741 g, *NHMV*; 64 g, *UCLA*.

Kress (c) and Kress (d), name change

Table 2 lists a 5.6 kg L6 chondrite from the Huss (1986) catalog named "Kress (c)." In *Meteoritical Bulletin* 81, a 57 g H5 chondrite was also listed under this name. Henceforth, the 57 g stone will be called Kress (d), whereas the 5.6 kg stone will retain the name Kress (c).

Kunya-Urgench 42º15'N 59º12'E
Dashkhowus Velayat, Turkmenistan
Fell 1998 June 20, 17:25 local time
Ordinary chondrite (H5)

A large bolide was observed by people in several villages, and a loud whistling followed by a crashing noise was heard. A large mass impacted 30–50 m from several farmers in a cotton field, creating a 6 m wide, 4 m deep crater. A single stone weighing ~900 kg was recovered from the crater, and 1000–1100 kg was recovered in total. Mineralogy and classification (O. Odekov, *Turk;* S. Muhamed-nazarov, *NHCT*; A. Ivanov, *Vernad*): olivine, $Fa_{18.0}$; pyroxene, $Fs_{15.9}$. Specimens: type specimens, *NHCT*, *Vernad*; main mass,

TABLE 1. Meteorites from the Frontier Mountains, Antarctica.

Name FRO	Lat. (+72°S)	Long. (+160°E)	Wt. (g)	Class	shock	Fa mol%	Fs mol%	WG	Comments
95031	57'04"	30'30"	0.5	H4	S3	17.8	15.2	W0	Breccia
95032	59'22"	24'44"	17.4	H4	S3	16.8	14.9	W1	Breccia
95033	57'14"	26'01"	23.9	H5	S2	18.2	16.5	W1	
95034	57'17"	24'32"	1.2	H6	S3	19.0	16.7	W1	
95035	59'22"	24'34"	4.8	L6	S4	24.8	20.8	W1	
95037	57'04"	30'50"	0.5	H6	S6	19.8	17.2	W1	
95038	59'21"	24'32"	2.8	H4	S4	14.7	11.5	W0	Breccia
95039	59'18"	24'31"	1.2	H6	S4	19.3	16.9	W0	
95041	57'17"	26'24"	15.7	H6	S5	19.0	16.5	W1	
95044	57'11"	27'49"	10.7	H6	S4	18.3	15.6	W1	

TABLE 2. Meteorites from the Huss Collections of 1976 and 1986.

Name	County	State	Latitude	Longitude	Group	Found	References*	Original mass	Mass in collection†
Atwood (b)	Logan	Colorado	40°31'N	103°16'W	chondrite	1964	(a)	77 g	3.8 g
Bethel (b)	Roosevelt	New Mexico	34°14.8'N	103°23.7'W	H4	1968	(a)	56.8 g	52.2 g
Bowesmont (b)	Pembina	North Dakota	48°47'N	97°21'W	L5	1972	(a)	1.3 kg	59.6 g
Bronco (b)	Yoakum	Texas	33°16.5'N	102°57.6'W	chondrite	1980	(b)	101 g	94.6 g
Bronco (c)	Yoakum	Texas	33°16.5'N	102°57.6'W	chondrite	1980	(b)	53 g	49.7 g
Brownfield (c)	Terry	Texas	33°8.1'N	102°16.7'W	chondrite	1974	(a)	1.55 kg	1.55 kg
Claytonville (b)	Swisher	Texas	34°20.9'N	101°39.5'W	chondrite	1978	(b)	5.14 kg	5.02 kg
Cope (b)	Washington 454 g		Colorado	39°41'N	102°50.7'W	H5	1967	(a)	817 g
Delphos (b)	Roosevelt	New Mexico	34°5.4'N	103°36.7'W	chondrite	1968	(a)	548 g	547 g
Densmore (c)	Norton	Kansas			chondrite	1956	(a)	3.9 kg	2.51 kg
Dimmitt (b)	Castro	Texas	34°29'N	102°19.7'W	chondrite	1981	(b)	2.8 kg	2.7 kg
Elida (b)	Roosevelt	New Mexico	33°55'N	103°31.1'W	chondrite	1968	(a)	538 g	530 g
Elida (c)	Roosevelt	New Mexico	33°47.4'N	103°33.8'W	H5	1968	(a)	386 g	362 g
Finney (c)	Swisher	Texas	34°17.9'N	101°41'W	chondrite	1978	(b)	492 g	478 g
Happy (b)	Swisher	Texas	34°35.6'N	101°59.6'W	chondrite	1972	(a)	2.50 kg	2.18 kg
Happy (c)	Swisher	Texas	34°35'N	102°3'W	chondrite	1971	(a)	884 g	877 g
Kenna (b)	Roosevelt	New Mexico	33°42.5'N	103°46'W	L	1972	(b)	453 g	28.7 g
Kress (b)	Swisher	Texas	34°21.5'N	101°43.8'W	L4	1966	(a)	2.6 kg	2.51 kg
Kress (c)	Swisher	Texas	34°20.3'N	101°43'W	L6	1978	(b)	5.6 kg	5.4 kg
Leoville (b)	Decatur	Kansas	39°36.5'N	100°28.5'W	chondrite	1969	(a)	2.5 kg	2.16 kg
Loop (b)	Gaines	Texas	32°59.5'N	102°23.3'W	H	recog. 1964	(a)	1.6 kg	1.6 kg
Loop (c)	Gaines	Texas	32°59'N	102°23.3'W	chondrite	recog. 1964	(a)	861 g	146 g
Ness County (c)	Ness	Kansas			chondrite	?	(a)	399 g	399 g
New Moore (b)	Lynn	Texas	33°7.1'N	102°6.8'W	chondrite	1975	(a)	200	182 g
Rolla (d)	Morton	Kansas	37°5'N	101°36'W	H	1942	(a)	50 g	7.2 g
Seminole (b)	Gaines	Texas	32°32.6'N	102°42.3'W	chondrite	1965	(a)	1.18 kg	1.01 kg
Seminole (c)	Gaines	Texas	32°33'N	102°23.5'W	chondrite	1967	(a)	1.71 kg	1.58 kg
Springfield (b)	Baca	Colorado	37°29'N	102°40.6'W	L	1937, recog. 1970	(a)	229 g	74 g
Tokio (b)	Terry	Texas	33°12.3'N	102°39.5'W	chondrite	1974	(a)	823 g	551 g
Tulia (c)	Swisher	Texas			H5-6	recog. 1981	(b)	4.27 kg	60.5 g
Tulia (d)	Swisher	Texas	34°36.4'N	101°46'W	H6	recog. 1981	(b)	17.7 kg	201 g
Tulia (iron)	Swisher	Texas	34°33.3'N	101°37.8'W	Med oct	1969	(a)	190 g	172 g

*Meteorites noted as (a) were originally published in Huss (1976), and the listed masses are at *MPI*. Meteorites noted as (b) were originally published in Huss (1986), and the listed masses are at *NHMV*.
†Additional masses in *AML*: Bowesmont (b), 330 g and 454.5 g; Kenna (b), 165.4 g; Loop (c), 5.2 g; Tulia (c), 35.5 g; Tulia (d), 1.8 g.

TABLE 3. Synonyms related to meteorites in Huss (1976, 1986).

Atwood (a)	Synonym for Atwood
Bethel	Synonym for Bethel (a) and (b)
Bowesmont (a)	Synonym for Bowesmont
Cope (a)	Synonym for Cope
Densmore (a)	Synonym for Densmore (1879)
Elida	Synonym for Elida (a), (b), and (c)
Leoville (a)	Synonym for Leoville
Loop (a)	Synonym for Loop
Myersville (a)*	Synonym for Yorktown (Texas)
Myersville (b)*	Synonym for Myersville
New Moore (c)	Synonym for New Moore (a), (b), and
Rolla no. 4	Synonym for Rolla (d)
Seminole (a)	Synonym for Seminole

*Myersville (a) and (b) appear in Huss (1976), and the same two meteorites are listed in Graham *et al.* (1985) as Yorktown (Texas) and Myersville.

Turk. This meteorite is also known by the name **Saparmurat Turkmenbashy**.

Lahmada ~27°10'N 9°30'W
Western Sahara
Found 1998
Ordinary chondrite (H6)

Many fragments of a chondrite totaling 7.36 kg were found in the Lahmada region near the town of Zag. The three largest pieces fit together forming a mass of 3.08 kg. Classification and mineralogy (A. Bischoff and D. Weber, Mün): breccia containing shock veins; olivine Fa$_{20.4}$, pyroxene Fs$_{18.3}$; shock stage, S3; weathering grade, W3. Specimens: main mass, 7.34 kg, *JNMC*; type specimen, *Mün*.

Lahoma ~36°23'N 98°5'W
Major County, Oklahoma, USA
Found 1963
Ordinary chondrite (L5)

A 21.8 kg stone was found west of the town of Lahoma by a farmer while plowing his field. He believed it was a meteorite and kept the stone in his front yard for 35 years. Description and classification (A. Rubin, *UCLA*): olivine, Fa$_{25.3}$; shock stage, S4; weathering grade, W1; oriented stone; contains black shock veins and many dark inclusions. Specimens: main mass, *ARN*; type specimen, 20 g, *UCLA*.

Las Colonas 22°35'N 101°59'W
Zacatecas, Mexico

Found 1994 November 25
Achondrite (howardite)
A 148 g oriented stone was found by Scott Williams in a corn field. Mineralogy and classification (D. Kring, *UAz*): a breccia dominated by orthopyroxene-rich (diogenitic) material but also containing a few medium-grained pyroxene- and plagioclase-rich (eucritic) clasts; orthopyroxene, Fe/(Fe + Mg) = 0.25 mol%, FeO/MgO = 0.27 g/g; bulk rare earth element abundance 2–3× chondrites. Specimens: main mass with finder; type specimen, 11 g plus two thin sections, *UAz*.

Leeds, discredited name.
Recent work by Kissin *et al.* (1999) has established that the Leeds iron meteorite (group IAB) is actually a misidentified piece of Toluca. "Leeds" is hereby abolished as a unique meteorite name, and now will be a synonym for Toluca.

Lemmon 45º56'N 102º11'W
Perkins County, South Dakota, USA
Found before 1984, recognized 1998
Ordinary chondrite (H5)
An 6.68 kg stone was found beside a fence post by a woman; she placed the stone along her driveway border. It was recognized by Mr. Allen Shaw, who was conducting a house-to-house search for meteorites. Classification and mineralogy (A. Rubin, *UCLA*): olivine, $Fa_{19.1}$; shock stage, S1; weathering grade, W3. Specimens: type specimen, 21 g, *UCLA*; main mass, *AShaw*.

Leslie 34º36'41"N 100º51'18"W
Hall County, Texas, USA
Found ~1968
Ordinary chondrite (H5)
An 895 g stone was found by Mr. John Hancock of Memphis, Texas, in an old native American campsite. It is possible that the stone was transported from its original fall location by the indigenous people. Description and classification (M. Zolensky, *JSC*): stone is extremely weathered, containing abundant Fe oxides and Ca sulfate, and almost no metal; olivine, $Fa_{19.7}$; pyroxene, $Fs_{19.8}$ (possibly too high due to weathering); feldspar, $Ab_{70-75}Or_{3-4}$; shock stage, S2/3. Specimens: 10.8 g and type thin section, *JSC*; main mass with finder.

Lewis Cliff 88021, reclassification
K. Welton (*UCB*) has reclassified LEW 88021 as an H4 chondrite (confirmed by T. J. McCoy, *SI*): average olivine, $Fa_{20.6}$; pyroxene zoned, $Fs_{6.0-17.6}$. The meteorite may be paired with LEW 88174 on the basis of the ^{10}Be, ^{26}Al, and ^{36}Cl concentrations in metal and silicate phases.

Lohawat 26º57'56"N 72º37'36"E
Rajasthan, India
Fell 1994 October 30 (23:45 local time)
Achondrite (howardite)
A stone of ~40 kg fell in an open field, forming a 50 cm deep crater. About 6 kg was collected by the *GSI* after the event was reported in local newspapers. Mineralogy and classification (Chattopadhyay *et al.*, 1998; Singh *et al.*, 1998): a polymict, regolith breccia, containing glassy spherules and anorthositic, dunitic, and gabbroic clasts embedded in a brecciated matrix. Bulk compositional data not yet available to confirm classification. Specimens: 6.245 kg, *GSI*.

Lucerne Valley Meteorites
(17 meteorites)
San Bernardino County, California, USA
Found 1963 to 1999
Since 1963, 17 meteorite specimens have been found on Lucerne Dry Lake (Table 4). The collection of meteorites on this ~3 × 6 km playa is aided by the paucity of terrestrial rocks coarser than small pebbles. These meteorites shall be called Lucerne Valley (abbreviated LV), numbered in the order that they were found. "Lucerne Valley" (Graham *et al.*, 1985) now becomes a synonym for the seven stones included under that name, LV 001–007. Descriptions and classifications by C. Moore (*ASU*) and A. Rubin (*UCLA*). The thirteen specimens that were available for analysis

TABLE 4. Meteorites from Lucerne Valley, California.

Name	Lat* +34ºN	Long* +116ºW	Wt. (g)	Found (1900+)	Class	Fa (mol%)	Shock	WG	Pairings	Finder	Main mass	Type specimen†
LV 001			15.8	7/63	L6	24.3 ± 0.3	~S2	W3	LV 004–005	Ronald N. Hartman	*DuPont*	
LV 002			5.8	8/63	stone					Ronald A. Oriti	with finder	
LV 003			7.5	8/63	H6	18.0 ± 0.4	~S3	W3		Ronald A. Oriti	lost	
LV 004			37.4	10/63	L6	24.2 ± 0.3	~S2	W3	LV 001	Ronald N. Hartman	with finder	*ASU*
LV 005			3.1	10/63	L6				LV 001	Ronald N. Hartman	‡	
LV 006			26.9	11/63	H4	18.2 ± 0.4	~S2	W3	LV 008–010	Roderick W. Leonard	with finder	
LV 007			4.8	11/63	stone					Roderick W. Leonard	with finder	
LV 008			2.0	12/64	H4	18.5 ± 0.4	S2	W3	LV 006	Steve Lieberman	*GO*	*UCLA*
LV 009			3.0	4/65	H4	18.7 ± 0.2	S2	W2	LV 006	Darryl Futrell	*GO*	*UCLA*
LV 010			6.4	12/65	H4	18.2 ± 0.4	S2	W3	LV 006	Alan Crisp	*GO*	*UCLA*
LV 011			3.8	5/68	L6	24.5 ± 0.2	S4	W3		Richard Russell	*GO*	*UCLA*
LV 012			1.2	5/68	H6	19.4 ± 0.3	S2	W3		Darwin Ochs	*GO*	*UCLA*
LV 013			4.1	5/9/92	L6	25.2				Byron Groves	with finder	*ASU*
LV 014	30.08'	57.88'	3.4	9/26/98	L5	25.3 ± 0.2	S2	W3	LV 016	Beth and Bob Verish	*GO*	*UCLA*
LV 015	30.57'	57.35'	12.5	10/25/98	LL6	30.9 ± 0.1	S3	W2		Bob Verish	*GO*	*UCLA*
LV 016	30.75'	57.05'	4.1	11/14/98	L5	25.2 ± 0.2	S2	W3	LV 014	Bob Verish	*GO*	*UCLA*
LV 017			12.8	3/30/99						Ronald N. Hartman	with finder	

*If not specifically listed, the specimen was found at an unknown location on Lucerne Dry Lake (34º30'N 116º57'W ±2' each direction).
†Most type specimens are thin sections.
‡Main mass has been completely consumed. Sample fit together with LV 004.

represent seven separate falls.

Maria da Fé 22º18'S 45º22'W
Minas Gerais, Brazil
Found 1987
Iron, fine octahedrite (group IVA)

An 18 kg iron meteorite was found by Benedito Silva, who was plowing a field. Classification and analysis (M. E. Zucolotto, *Rio*; J. T. Wasson, *UCLA*): bulk metal Co = 0.38 wt%, Ni = 7.45 wt%, Cu = 139 ppm, Ga = 1.68 ppm, As = 2.16 ppm, Ir = 3.78 ppm, Au = 0.615 ppm. Specimens: main mass, D. B. Ninis, Maria da Fé, Brazil; type specimen, 90 g, *Rio*.

Ourique 37º36.5'N 8º16.8'W
Beja, Portugal
Fell 1998 December 28 (00:50 UT)
Ordinary chondrite (H4)

Many stones with a total mass probably near 20 kg were recovered along a rural path after a brilliant fireball and loud noises were observed by several people. Antonio Silva recovered the first fragments two days after the fall and, subsequently, local villagers recovered other pieces. The meteorite made an elliptical crater (60 × 30 cm, 20 cm deep), and most fragments were found within 55 m of the others. Mineralogy and classification (J. F. Monteiro, *ULis*): olivine, $Fa_{18.3}$; pyroxene, $Fs_{16.4}$; chondritic structure well developed. Specimens: 2.6 kg, *MNHNL*; type specimens, ~2 kg, *ULis*.

Page City 39º10'N 101º17'W
Thomas County, Kansas, USA
Found 1980
Iron, fine octahedrite (IVA)

A 13.63 kg iron meteorite was found by Ernest Kistler while he was plowing a field. Classification and description (J. Wasson, *UCLA*): bulk metal Co = 0.42 wt%, Ni = 9.55 wt%, Ga = 2.08 ppm, As = 14.3 ppm, Ir = 0.324 ppm, Au = 2.680 ppm. Specimens: 355 g, *Cilz*; 4 kg, *Schwade*; 403 g, *NHMV*; 78 g, *UCLA*.

Pampa Providencia 24º27.0'S 69º34.3'W
Antofagasta, Chile
Found 1994 October
Iron, medium octahedrite (IIIAB)

A 12.4 kg mass was found in the desert by a geologist doing routine geological reconnaissance. Note that this meteorite has been sold under the unofficial name *Pampas Provenciales*. Classification and description (J. D. Gleason, D. H. Hill, and D. A. Kring, *UAz*): kamacite bandwidth, 0.96 mm; bulk composition, Ni = 8.86 wt%, Ga = 17.8 ppm, Ir = 0.061 ppm, Au = 1.54 ppm; contains 6.5 vol% schreibersite; surface is densely pitted. Specimens: 612 g *UAz;* main mass, *Casper*.

Pampas Provenciales, unofficial synonym for **Pampa Providencia**

Portales Valley fall centroid: 34º10.5'N 103º17.7'W
Roosevelt County, New Mexico, USA
Fell 1998 June 13, ~07:30 MDT (~13:30 UT)
Ordinary chondrite (H6)

After detonations were heard and smoky trails seen in the sky, a shower of meteorites landed near Portales, New Mexico. 53 objects have been recovered, with a total mass of 71.4 kg. The largest pieces weighed 16.5 kg (witnessed to fall by Nelda Wallace and Fred Stafford), 17.0 kg (found by Elton Brown), and at least nine others over 1 kg. A 530 g fragment went through the roof of Gayle Newberry's barn and embedded itself in a wall, indicating a trajectory west to east. The elliptical strewn field is approximately 7.7 × 2 km, trending N60–65ºE, although recent reports may extend this somewhat. Mineralogy (D. A. Kring, J. D. Gleason, and D. H. Hill, *UAz*): olivine, $Fa_{19.3\pm0.4}$; pyroxene, $Fs_{17.2\pm0.3}$ $Wo_{1.36\pm0.27}$; kamacite contains 0.55 ± 0.03 wt% Co; compositions indicate H-chondrite affinity; olivine indicates shock stage S1, plagioclase indicates S2–S3, and abundant opaque shock veins suggest S3 or higher (discrepancies may be due to annealing). Macroscopic description (D. A. Kring, *UAz*): Some individuals are crosscut by an unusually high number of metal-rich shock veins, and some specimens are composed dominantly of metal. These metal-rich samples appear to be large single veins, or pockets of metal produced by intersecting veins. Angular chondritic clasts may have moved a few millimeters along metal-rich veins. Etching of centimeter-sized metal areas reveals a fine Widmanstätten pattern, bandwidth = 0.02 to 0.81 mm (average 0.32 mm). The composition of kamacite in metal-rich regions is the same as metal in chondritic areas (0.56 ± 0.05 wt% Co). The source of the metal in the shock veins appears to be the H-chondrite host, which is depleted in its normal complement of metal (4.4% rather than 15–19%). Specimens: type specimen, 49 g, and thin section, *UAz;* 16.5 kg mass purchased by consortium including *FMNH*, *SI*, *UCLA*, and *UNM*. 17.0 kg mass with finder; much of remaining material is being sold by commercial meteorite dealers.

Powellsville 38º40'N 82º47'W
Scioto County, Ohio, USA
Found 1990
Ordinary chondrite (H5)

A 4310 g stone was found ~40 cm underground by a man digging out a tree stump in his yard. Classification and mineralogy (M. Prinz, *AMNH*): olivine, Fa_{19}; pyroxene, $Fs_{17}Wo_{0.5}$; weathering grade, W3. Specimens: main mass, *AShaw*; type specimen, 30.8 g, *AMNH*.

Primm 35º40'N 115º22'W
Clark County, Nevada, USA
Found 1997 December 23
Ordinary chondrite (H5)

104 meteorite fragments weighing a total of 3.383 kg were recovered by Nicholas, Paul and Ora Gessler and Katherine Hayles after an extensive search of Roach Dry Lake. Many of the fragments could be fit together to form larger pieces. The largest individual fragments weighed 281, 202, 137, 122, 109, and 101 g. The strewn field measures approximately 1 × 2 miles. Mineralogy and classification (A. Rubin, *UCLA*): olivine, $Fa_{18.5}$; shock stage, S2; weathering grade, W3. Specimens: type specimen, 27 g, *UCLA*; main mass, *Gessler*.

Quijingue 10º45'S 39º13'W
Bahia, Brazil
Found ~1984
Pallasite

A 59 kg meteorite was found ~1 m underground by a farmer digging holes to plant trees. It was given by the farmer's son to a miner, Aparecido Crespi, who had the object identified. Classification and analysis (M. E. Zucolotto, *Rio*; J. T. Wasson, *UCLA*): olivine, ~70 vol%; Ni content of metal, 7.5 wt%; weathering grade, W3. Specimens: main mass, A. Crespi, Sao Paulo, Brazil; type specimen, 650 g, *Rio*.

Roach 35º38'N 115º22'W
Clark County, Nevada, USA
Found 1998 January 2

TABLE 5. Meteorites from Roosevelt County, New Mexico.

Name	Latitude	Longitude	Wt. (g)	Found	Class	Fa mol%	Fs mol%	Shock	WG	Finder, main mass	Type spec (*UNM*)
RC 095	34°5.5'N	103°30.1'W	12.1	1995	L/LL5	26.2	22.9	S3	W4	SWilson	0.47 g
RC 096	34°5.5'N	103°40.6'W	212.2	1/96	L5	24.6	21.0	S3	W3	IWilson	1.7 g
RC 097	33°57.5'N	103°56.3'W	56	1996	H4	19.2	17.9	S1	W3	K. Shirley	thin section

Ordinary chondrite (LL6)

Three fresh meteorite fragments that fit together, weighing a total of 10.56 g, were recovered within 25 m of each other by Nicholas and Paul Gessler after an extensive search of Roach Dry Lake. Mineralogy and classification (A. Rubin, *UCLA*): olivine, $Fa_{30.4}$; shock stage, S2; weathering grade, W0. Specimens: type specimen, 3.3 g, *UCLA*; main mass, *Gessler*.

Roosevelt County Meteorites

Roosevelt County, New Mexico, USA
Found 1995–1996
(three meteorites)

These meteorites (Table 5) were found on sand ablation surfaces. Classification and mineralogy by A. Brearley, *UNM*.

Sagd, synonym for Zag

Safsaf ~30º16'N 4º40'W

Near Morocco/Algeria border
Found late 1998
Ordinary chondrite (L6)

Many fragments of a meteorite with a total mass of 11.87 kg were found by local people. Inhabitants consider the site to be in Morocco, although the border with Algeria is uncertain. Classification and mineralogy (A. Bischoff and D. Weber, *Mün*): breccia; olivine $Fa_{25.1}$, pyroxene $Fs_{20.9}$; shock stage, S3; weathering degree, W3. Specimens: main mass, 11.85 kg, *JNMC*; type specimen, *Mün*.

Sahara 98007–98557, see Saharan meteorites from unknown locations

Saharan meteorites from Libya

(308 meteorites)
Libya
Found 1996–1998

At least four different anonymous finders recovered 308 meteorites from various regions of the Libyan Sahara (Table 6). Remarkable findings include two probably paired Martian basalts (shergottites; see separate entries for DaG 476 and DaG 489), five eucrites (DaG 380, 391, 411, 567, and 609), two ureilites (DaG 485 and DaG 494), an iron meteorite falling in the low-Ni trend of IAB-IIICD iron meteorites (DaG 406), four CV chondrites (DaG 521, 526, 533 and 535), one CM chondrite (DaG 557), one CR chondrite (DaG 574), and two C3 chondrites of uncertain classification (DaG 429 and 430).

TABLE 6. Meteorites from the Libyan Sahara.

Name	Found 1900+	Latitude (N)	Longitude (E)	Wt. (g)	Pieces	Class*	Shock†	WG	Fa mol%	Fs mol%	Wo mol%	Comments‡	Info§
Dar al Gani (DaG)													
DaG 178	96	27°08.46'	16°10.07'	640	1	L6	S2	W2	23.9	20			(a)
DaG 179	96	27°09.12'	16°11.82'	72	1	H4	S2	W4	18.8	16.8			(a)
DaG 185	96	27°08.91'	16°05.67'	172	1	LL6	S3	W3	32.2	26.4		sv, br	(a)
DaG 187	96	27°06.40'	16°00.51'	393	1	L6	S3	W3	23.6	20.2		sv, br	(a)
DaG 190	96	27°09.88'	15°56.58'	2550	2	CO3	S2	W2				Prob. paired DaG 005	(a)
DaG 196	96	27°05.48'	16°17.34'	331	1	L6	S3	W4	24.2	20.4			(a)
DaG 197	96	27°02.27'	16°28.11'	46	1	H5	S2	W3	18.8	15.7		sv	(a)
DaG 200	96	27°04.29'	16°05.46'	429	6	H5-6	S3	W2	17.7	16		sv, br	(a)
DaG 201	96	27°05.75'	16°02.21'	129	1	H6	S3	W3	20.1	18.1		sv	(a)
DaG 205	96	27°38.58'	15°54.10'	2195	1	H5-6	S2	W2	17.9	15.9		br	(a)
DaG 208	96	27°37.48'	16°03.27'	113	1	H5-6	S3	W0/1	18.2	16		sv, br	(a)
DaG 209	96	27°37.45'	16°03.59'	184	4	L6	S3	W3	24.7	21		sv	(a)
DaG 210	96	27°37.46'	16°03.74'	182	2	L6	S3	W4	24.5	20.6			(a)
DaG 213	96	27°07.22'	16°03.78'	136	1	H6	S3	W3	19.2	17		sv	(a)
DaG 215	96	27°07.65'	16°06.24'	3600	many	H6	S3	W3	20	17.8		sv	(a)
DaG 216	96	27°07.56'	16°06.39'	95	1	L3	S3	W2	22.3±7.0	12.5±6.7			(a)
DaG 217	96	27°07.85'	16°07.94'	3550	many	H6	S3	W3	19.1	17.3		sv	(a)
DaG 218	96	27°08.49'	16°09.89'	157	2	H5	S2	W4	18.6	17.1			(a)
DaG 219	96	27°15.44'	16°22.93'	174	2	H6	S2	W2	19.1	17.1			(a)
DaG 220	96	27°22.73'	16°27.23'	719	1	H5	S3	W3	18.4	16.9			(a)
DaG 221	96	27°26.59'	16°19.76'	211	1	H4-6	S3	W3	18.3	16.3		br	(a)
DaG 223	96	27°29.70'	16°15.54'	890	27	L6	S3	W1	25.6	21.7		sv, br	(a)
DaG 224	96	27°33.85'	16°09.13'	205	1	H6	S4	W2	18.7	16.3			(a)
DaG 226	97	27°05.16'	16°02.21'	90	1	CO3	S2	W2				Prob. paired DaG 005	(a)
DaG 227	97	27°05.41'	16°01.92'	235	2	CO3	S2	W3				Prob. paired DaG 005	(a)
DaG 228	97	27°08.23'	15°50.67'	728	1	CO3	S2	W2				Prob. paired DaG 005	(a)
DaG 229	97	27°08.43'	15°58.49'	125	1	CO3	S2	W3				Prob. paired DaG 005	(a)

TABLE 6. *Continued*.

Name	Found 1900+	Latitude (N)	Longitude (E)	Wt. (g)	Pieces	Class*	Shock†	WG	Fa mol%	Fs mol%	Wo mol%	Comments‡	Info§
Dar al Gani (DaG)													
DaG 230	97	27°09.17'	15°57.76'	438	1	CO3	S2	W2				Prob. paired DaG 005	(a)
DaG 232	97	27°09.95'	16°05.17'	1338	1	H5	S3	W2	19.1	16.9			(a)
DaG 233	97	27°09.92'	16°12.79'	172	1	L3.9-6	S2	W3	22.6±2.2	4–26		br	(a)
DaG 234	97	27°10.63'	16°16.01'	244	1	L6	S3	W4	26.5	22.7		sv	(a)
DaG 235	97	27°11.14'	16°19.10'	193	1	H5/6	S3	W3	18.2	16.4		sv	(a)
DaG 236	97	27°11.64'	16°21.68'	189	7	H6	S3	W3	19.1	17		br	(a)
DaG 237	97	27°05.96'	16°22.79'	437	1	L6	S3	W4	23.8	20.1			(a)
DaG 238	97	27°09.13'	16°03.41'	134	1	H6	S2	W3	19.3	17.1		br	(a)
DaG 239	97	27°10.96'	16°05.43'	335	7	H6	S3	W3	19	16.6			(a)
DaG 240	97	27°11.69'	16°04.15'	39	1	H4	S2	W4	18.8	16.5			(a)
DaG 241	97	27°11.85'	16°03.72'	24	1	impact melt br.						Paired DaG 242 (see *MB82*)	(a)
DaG 243	97	27°12.96'	16°01.94'	297	1	L6	S3	W2	24.3	20.8		sv	(a)
DaG 244	97	27°11.17'	16°06.67'	115	1	H5	S3	W1	18.4	16.7		sv	(a)
DaG 245	97	27°11.28'	16°07.73'	224	1	H6	S3	W1	19.2	17.1		sv	(a)
DaG 246	97	27°11.31'	16°07.85'	61	1	L6	S3	W3	24.5	20.9			(a)
DaG 248	97	27°12.40'	16°12.27'	1890	many	H6	S4	W2	19.3	17.3			(a)
DaG 249	97	27°12.61'	16°13.25'	62	2	H6	S2	W4	20.2	17.6		sv	(a)
DaG 251	97	27°06.95'	16°22.61'	2412	4	L6	S4	W3	24.8	21.6			(a)
DaG 253	97	27°06.89'	16°20.60'	237	3	L6	S4	W2	24.7	20.8			(a)
DaG 254	97	27°06.76'	16°18.95'	617	1	LL6	S2	W4	30.2	24.6		sv, br	(a)
DaG 255	97	27°06.73'	16°17.78'	374	2	L5	S3	W2	24.6	21			(a)
DaG 256	97	27°03.67'	16°10.69'	7141	15	LL5-6	S3	W3	28	23.5		br	(a)
DaG 257	97	27°04.18'	16°10.05'	135	1	LL5-6	S3	W3	28.3	23.3		br	(a)
DaG 258	97	27°06.44'	16°07.58'	76	2	L6	S3	W3	24.7	21.1			(a)
DaG 259	97	27°08.72'	16°05.02'	578	1	H6	S2	W3	19.4	16.9			(a)
DaG 260	97	27°08.86'	16°04.85'	116	1	H6	S3	W3	19.4	17.6			(a)
DaG 261	97	27°09.90'	16°01.25'	220	1	H5/6	S2	W3	18.4	16.5			(a)
DaG 263	97	27°11.31'	16°18.89'	151	2	H4	S2	W4	17.8	15.9			(a)
DaG 264	97	27°12.16'	16°25.25'	68	1	LL(L)3-6	S3	W1	26.1±6.4	22.6±4.1		sv, br	(a)
DaG 265	97	27°06.23'	16°23.32'	119	3	LL6	S2	W3	30	25.2		br	(a)
DaG 266	97	27°06.38'	16°22.44'	178	1	LL6	S2	W3	30.4	25		br	(a)
DaG 267	97	27°06.68'	16°16.78'	791	1	L5	S3	W2	24.2	20.6			(a)
DaG 268	97	27°07.39'	16°13.38'	128	1	H6	S2	W3	19	16.7			(a)
DaG 269	97	27°07.70'	16°12.58'	307	1	H6	S2	W4	18.8	16.5			(a)
DaG 270	97	27°11.03'	16°07.73'	175	1	H5-6	S3	W2	18.5	16.3		sv, br	(a)
DaG 271	97	27°11.03'	16°07.73'	229	1	L5	S3	W3	25.3	21.4			(a)
DaG 272	97	27°11.03'	16°07.73'	607	3	L6	S3	W3	25.3	20.8			(a)
DaG 273	97	27°11.03'	16°07.73'	58	1	H5	S3	W2	18.7	17		sv	(a)
DaG 274	97	27°15.07'	16°04.40'	657	1	L6	S3	W2	24.8	20.8		sv	(a)
DaG 277	97	27°21.69'	16°12.87'	125	1	L(LL)3-5	S3	W1	26.1±1.9	14.3±5.9		br	(a)
DaG 278	97	27°22.69'	16°18.73'	97	3	L6	S4	W3	24.6	21.5		sv	(a)
DaG 279	97	27°22.69'	16°18.73'	120	1	H5	S2	W3	19	17			(a)
DaG 280	97	27°24.52'	16°19.11'	155	1	L6	S3	W4	24.4	21			(a)
DaG 281	97	27°27.57'	16°04.60'	80	1	L6	S3	W2	24.7	20.9		sv	(a)
DaG 282	97	27°27.58'	16°04.36'	128	1	L6	S2	W3	24.5	20.5			(a)
DaG 283	97	27°28.29'	16°17.76'	145	1	L5	S1	W4	25	21			(a)
DaG 284	97	27°32.29'	16°26.54'	299	1	L4-6	S3	W1	24.9	19.7±2.1		sv, br	(a)
DaG 285	97	27°15.23'	16°18.14'	87	2	L6	S3	W3	25.1	21.8			(a)
DaG 286	97	27°15.71'	16°15.68'	367	1	H5	S3	W2	17.7	15.9			(a)
DaG 287	97	27°17.13'	16°10.56'	337	3	L5	S3	W3	23.7	20.2			(a)
DaG 288	97	27°19.60'	16°05.74'	110	1	LL3	S2	W3	19±13 (peak at 30)	17.5±8.9		br	(a)
DaG 289	97	27°05.25'	16°03.06'	98	1	CO3	S2	W3				Prob. paired DaG 005	(a)
DaG 290	97	27°05.29'	16°03.45'	730	13	L5/6	S3	W3	24.3	19.6			(a)
DaG 291	97	27°05.24'	16°03.48'	55	1	CO3	S2	W2				Prob. paired DaG 005	(a)
DaG 292	97	27°05.98'	16°07.07'	78	1	L5	S3	W3	24.5	21.1			(a)
DaG 293	97	27°06.15'	16°08.04'	285	1	L6	S3	W3	24.7	21.2		sv	(a)
DaG 294	97	27°12.12'	16°22.04'	1616	2	LL4	S3	W3	27.2	22.5			(a)
DaG 295	97	27°13.80'	16°18.73'	190	1	H6	S3	W4	17.7	15.9			(a)
DaG 296	97	27°17.48'	16°12.80'	384	1	H4	S2	W4	17	13.3±4.3			(a)
DaG 297	97	27°19.50'	16°09.90'	255	1	L6	S3	W4	24.4	20.9		sv	(a)
DaG 326	97	27°50.34'	15°52.62'	386.6	1	L6	S3	W1	24.0	20.4		sv	(b)

TABLE 6. *Continued*.

Name	Found 1900+	Latitude (N)	Longitude (E)	Wt. (g)	Pieces	Class*	Shock†	WG	Fa mol%	Fs mol%	Wo mol%	Comments‡	Info§
Dar al Gani (DaG)													
DaG 328	97	27°50.56'	15°53.97'	630.4	1	L6	S3	W1	24.2	20.7			(b)
DaG 337	97	27°10.92'	16°09.01'	142.5	1	H6	S2	W3	18.6	16.3		br, sv	(b)
DaG 338	97	27°10.74'	16°06.76'	131	1	H6	S2	W2	19.0	16.6		sv	(b)
DaG 339	97	27°10.35'	16°04.88'	110	1	H5	S3	W3	18.5	16.5		sv	(b)
DaG 341	97	27°04.97'	16°07.74'	357	1	L6	S3	W3	24.2	20.3			(b)
DaG 344	97	27°11.10'	16°05.97'	57	1	H6	S2	W3	18.7	16.9			(b)
DaG 347	97	27°12.17'	16°03.46'	47	1	H6	S2	W4	19.3	17.1			(b)
DaG 348	97	27°12.13'	16°03.50'	118	3	H4	S2	W3	17.2	15.3			(b)
DaG 351	97	27°10.72'	16°15.54'	858	1+ many	H5	S2	W3	18.3	16.2			(b)
DaG 355	97	27°40.75'	15°51.92'	360	1	L6	S6	W2	24.3	20.6		sv, rw	(b)
DaG 356	97	27°49.17'	15°53.67'	129	1	L5/6	S3	W1	24.1	20.2			(b)
DaG 358	97	28°54.33'	15°49.66'	66	1	L6	S3	W1	24.2	20.4		sv	(b)
DaG 359	97	27°55.42'	15°49.93'	42	1	L6	S3	W1	24.0	20.4		sv	(b)
DaG 360	97	27°55.65'	15°49.87'	87	1	L6	S3	W1	24.0	20.3			(b)
DaG 361	97	27°51.73'	15°52.78'	307	1	L6	S3	W1	24.1	20.6		sv	(b)
DaG 362	97	27°51.53'	15°52.89'	527	1+ many	L6	S6	W1	24.2	20.6		sv, rw	(b)
DaG 363	97	27°50.99'	15°53.15'	639	1	L6	S3	W1	24.2	21.0		sv	(b)
DaG 365	97	27°50.46'	15°52.09'	198	1	L6	S3	W1	24.3	20.3			(b)
DaG 367	97	27°51.58'	15°52.81'	136	1	L6	S3	W1	24.3	20.5		sv	(b)
DaG 368	97	27°51.70'	15°52.99'	263	1	L6	S3	W1	24.1	21.9		sv	(b)
DaG 371	97	27°50.12'	15°50.61'	48	1	H6	S2	W2	19.0	17.1		br	(b)
DaG 372	97	27°52.56'	15°55.04'	414	1	L6	S3	W1	24.1	20.5			(b)
DaG 373	97	27°54.89'	15°57.71'	173	1	H5/6	S2	W3	18.0	16.0			(b)
DaG 375	97	27°53.21'	15°52.29'	188	1	L6	S3	W2	24.2	20.5		sv	(b)
DaG 376	97	27°53.23'	15°51.80'	68	1	L6	S3	W1	24.2	20.6			(b)
DaG 377	97	27°53.67'	15°51.56'	65	1	L6	S3	W1	24.3	20.7		sv	(b)
DaG 379	97	27°52.45'	15°53.23'	875	1	L6	S3	W1	23.8	19.9			(b)
DaG 380	97	27°26.53'	16°04.93'	661	1	Eucrite	S2					br; monomict eucrite	(b)
DaG 382	97	27°25.31'	16°10.69'	247	1	L6	S3	W3	24.1	20.3			(b)
DaG 383	97	27°24.67'	16°12.00'	310	1	L6	S3	W3	24.4	20.6			(b)
DaG 384	97	27°24.73'	16°12.11'	60	1	H4	S2	W2	18.2	15.9			(b)
DaG 385	97	27°26.67'	16°16.46'	447	1	H3-4	S2	W2	15.9	13.9		br	(b)
									2.8–18.2	2.1–16.8			
DaG 391	97	27°21.41'	16°10.02'	1.605	1	Eucrite	S2					pm br; prob. paired DaG 411	(b)
DaG 399	98	27°52.00'	15°56.57'	11455	1+many	L5	S3	W2	23.9	20.2		sv	(b)
DaG 406	98	28°08.42'	15°49.43'	5100	1	IAB[4]							(b)
DaG 407	98	27°24.55'	16°16.08'	157	1	H6	S2	W3	18.6	16.4		sv	(b)
DaG 408	98	27°25.25'	16°17.60'	69	1	L4	S3	W3	25.0	14.8		sv	(b)
										5.7–21.7			
DaG 411	98	27°22.51'	16°11.05'	400	1	Eucrite	S2	W0				pm br; prob. paired DaG 391	(b)
DaG 417	98	27°30.14'	15°54.75'	171	1	R3-4	S2	W3	37.7	21.2		br	(b)
DaG 423	98	27°44.41'	15°56.21'	174	1	L6	S2	W3	24.6	20.9		sv	(b)
DaG 429	98	27°16.88'	16°25.04'	253	1	C3 ungr.						prob. paired DaG 055, 056	(b)
DaG 430	98	27°16.76'	16°24.70'	572	3	C3 ungr.	S1	W1	20.7	7.2		prob. paired DaG 055, 056	(b)
									0.5–30.1	1.1–20.6			
DaG 434	98	27°14.45'	16°24.48'	181	1	LL6	S3	W4	31.2	25.5			(b)
DaG 436	98	26°51.29'	15°58.52'	260	1	H4	S2	W2	17.1	14.8			(b)
DaG 476	5/98	27°21.16'	16°12.04'	2015	1	Martian						see separate entry	(b)
DaG 483	97-98	27°27.92'	16°00.91'	153	1	L6	S1	W2	26	22			(c)
DaG 484	97-98	27°12.00'	16°06.00	786	5	H6	S2	W3	20	18			(c)
DaG 485	97-98	27°01.06'	16°23.30'	596	1	Ureilite	S3	mod.	21	19			(c)
									rr 3	rr 10			
DaG 486	97-98	27°11.03'	16°06.86'	38	2	H4/5	S3	W2	20	18			(c)
DaG 487	97-98	27°23.00'	16°25.00'	8189	2	L6	S5	W3	24	21			(c)
DaG 488	97-98	27°16.00'	16°07.00'	3259	156	L6	S5	W3	26	23			(c)
DaG 489	97-98	~27°08'	~16°05'	2146	1	Martian	S5					see separate entry	(c)
DaG 490	97-98	27°11.31'	16°21.01'	170	1	H5-6	S3	W3	19	18			(c)
DaG 491	97-98	27°16.01'	16°04.01'	16	1	H4	S1	W3	18	16		br	(c)
DaG 492	97-98	27°09.08'	16°07.61'	170	1	LL6	S2	W3	31	26		br	(c)
DaG 493	97-98	26°59.50'	15°46.47'	850	1	H4	S1	W1	18	16			(c)
DaG 494	97-98	27°10.13'	16°08.29'	50	1	Ureilite	S2	mod.	20	17			(c)
							Typical texture:			rr 3	rr 9		

TABLE 6. *Continued*.

Name	Found 1900+	Latitude (N)	Longitude (E)	Wt. (g)	Pieces	Class*	Shock†	WG	Fa mol%	Fs mol%	Wo mol%	Comments‡	Info§
Dar al Gani (DaG)													
DaG 495	97-98	27°12.11'	16°23.01'	21	1	L6	S5	W2	26	22			(c)
DaG 496	97-98	26°57.61'	16°20.42'	78	1	LL6	S1	W3	32	26		br	(c)
DaG 497	97-98	27°12.20'	16°04.29'	1604	1	H5	S3	W2	20	18			(c)
DaG 498	97-98	27°27.26'	16°13.89'	467	1	LL5-6	S2	W4	32	26		br	(c)
DaG 499	97-98	27°20.05'	16°17.24'	172	1	H4/5	S1	W3	20	18			(c)
DaG 500	97-98	27°19.85'	16°16.99'	1030	37	H4/5	S1	W3	20	18			(c)
DaG 501	97-98	27°18.02'	16°10.66'	992	18	L5	S2	W2	24	21			(c)
DaG 502	97-98	27°17.33'	16°06.92'	4242	many	L6	S5	W2	25	22			(c)
DaG 503	97-98	27°15.15'	16°04.18'	680	1	L6	S3	W2	26	22			(c)
DaG 504	97-98	27°15.17'	16°04.30'	415	1	H4	S1	W3	20	18			(c)
DaG 505	97-98	27°16.31'	16°03.21'	240	1	L6	S5	W3	27	22			(c)
DaG 506	97-98	27°16.31'	16°03.21'	98	1	L6	S5	W2	27	23		sv	(c)
DaG 507	97-98	27°16.31'	16°03.21'	56	1	L6	S5	W2	26	22			(c)
DaG 508	97-98	27°16.01'	16°04.01'	103	1	H4	S1	W4	19	17			(c)
DaG 509	97-98	27°16.01'	16°04.01'	51	1	H4	S1	W4	19	17			(c)
DaG 510	97-98	27°16.01'	16°04.32'	90	1	L4	S3	W2	26	22			(c)
DaG 511	97-98	27°16.84'	16°03.71'	90	1	H5	S2	W3	20	18			(c)
DaG 512	97-98	27°11.00'	16°05.00'	94	1	H5/6	S2	W3	20	18			(c)
DaG 513	97-98	27°03.33'	16°08.16'	281	1	H4	S1	W3	19	17			(c)
DaG 514	97-98	27°04.29'	16°06.95'	83	1	H4-6	S1	W2	19	17		br	(c)
DaG 515	97-98	27°05.39'	16°05.20'	894	21	H5	S3	W1	20	17		br	(c)
DaG 516	97-98	27°06.71'	16°05.06'	298	1	H6	S1	W3	18	16			(c)
DaG 517	97-98	27°06.67'	16°05.06'	289	1	H6	S1	W2	20	18			(c)
DaG 518	97-98	27°08.50'	16°05.19'	114	1	H6	S2	W3	20	19			(c)
DaG 519	97-98	27°18.62'	16°13.95'	269	1	H4	S1	W2	19	17			(c)
DaG 520	97-98	27°18.62'	16°13.95'	184	1	H5-6	S1	W3	19	17		br	(c)
DaG 521	97-98	27°18.66'	16°14.04'	1567	22	CV3	S1		21	5			(c)
									chc 8	chc 2			
									mx 34–40				
DaG 522	97-98	27°18.00'	16°12.00'	31	1	L6	S1	W3	27	22			(c)
DaG 523	97-98	27°08.19'	16°05.01'	100	2	L4/5	S2	W2	26	21			(c)
DaG 524	97-98	27°09.11'	16°14.02'	86	4	H5-6	S2	W2	20	19		br	(c)
DaG 525	97-98	27°11.27'	16°08.31'	72	1	H5-6	S2	W1	20	17		br	(c)
DaG 526	97-98	27°04.11'	16°06.42'	49	1	CV3	S1		27	9			(c)
									chc 17	chc 8			
									mx 35–37				
DaG 527	97-98	27°01.09'	16°05.31'	63	1	L6	S5	W2	26	22		sv	(c)
DaG 528	97-98	27°01.04'	16°05.31'	87	1	L6	S6	W4	27	22		sv; rw	(c)
DaG 529	97-98	27°01.12'	16°19.22'	101	1	L6	S5	W5	27	22			(c)
DaG 530	97-98	27°11.32'	16°19.11'	90	1	L6	S5	W3	27	22			(c)
DaG 531	97-98	27°11.32'	16°20.03'	103	1	L6	S6	W4	27	22		sv; rw	(c)
DaG 532	97-98	27°12.01'	16°22.11'	142	1	L6	S5	W3	26	22		sv	(c)
DaG 533	97-98	27°12.34'	16°22.26'	35	2	CV3	S1		22	13			(c)
									chc 8	chc 3			
										mx 34–40			
DaG 534	97-98	27°12.15'	16°22.15'	34	1	L6	S5	W5	27	22			(c)
DaG 535	97-98	27°12.01'	16°21.01'	19	1	CV3	S1		26	8			(c)
									chc 14	chc 6			
										mx 34–40			
DaG 536	97-98	27°12.09'	16°21.31'	60	1	H6	S2	W2	21	18			(c)
DaG 537	97-98	27°11.26'	16°20.10'	46	1	L6	S6	W3	26	22		sv; rw	(c)
DaG 538	97-98	27°11.13'	16°19.01'	39	1	L6	S5	W4	26	22			(c)
DaG 539	97-98	27°11.01'	16°18.16'	28	1	L6	S5	W4	26	22			(c)
DaG 540	97-98	27°11.01'	16°18.10'	33	1	L6	S5	W5	26	22		sv	(c)
DaG 541	97-98	27°11.16'	16°17.22'	21	1	L6	S5	W4	25	22		sv	(c)
DaG 542	97-98	27°11.21'	16°17.28'	6	1	L6	S5	W4	25	22		sv	(c)
DaG 543	97-98			223	1	L6	S3	W3	26	22			(c)
DaG 544	97-98	26°57.80'	16°27.56'	1589	29	H5	S1	W3	19	17			(c)
DaG 545	97-98	27°12.20'	16°04.91'	454	2	H4	S1	W3	19	17			(c)
DaG 546	97-98	27°12.16'	16°07.03'	100	2	L6	S6	W5	26	22		sv; rw	(c)
DaG 547	97-98	27°01.39'	16°24.79'	29	1	H6	S1	W2	20	17			(c)
DaG 548	97-98	27°05.02'	16°08.02'	93	1	H6	S3	W1	19	18		sv; br	(c)

TABLE 6. *Continued*.

Name	Found 1900+	Latitude (N)	Longitude (E)	Wt. (g)	Pieces	Class*	Shock†	WG	Fa mol%	Fs mol%	Wo mol%	Comments‡	Info§
Dar al Gani (DaG)													
DaG 549	97-98	27°16.17'	16°08.27'	50	1	L5	S3	W3	25	21			(c)
DaG 550	97-98	27°25.43'	16°12.27'	34	2	H5	S3	W3	19	17			(c)
DaG 551	97-98	27°16.61'	16°07.54'	5265	many	L6	S5	W2	26	23		sv	(c)
DaG 552	97-98	27°15.16'	16°04.23'	58	1	H5	S3	W1	19	17			(c)
DaG 553	97-98	27°16.82'	16°04.02'	25	1	L6	S5	W4	26	22		sv	(c)
DaG 554	97-98	27°16.31'	16°03.21'	63	1	L6	S5	W3	25	23		sv	(c)
DaG 555	97-98	27°16.31'	16°03.40'	11	1	L6	S5	W4	25	22		sv	(c)
DaG 556	97-98	27°16.31'	16°04.61'	361	1	H6	S3	W2	20	18			(c)
DaG 557	11/97	27°12.66'	16°21.11'	97	1	CM2		W2	0.8–49.4				(d)
DaG 558	11/97	27°32.86'	15°50.82'	1125	19	L5	S5	W2	25.0	21.7	1.6		(d)
DaG 559	11/97	27°11.49'	16°17.62'	403	2	H5	S4	W2	19.6	17.3	1.5		(d)
DaG 560	11/97	27°11.45'	16°17.57'	260.3	5	H4/5	S3	W3	19.0	17.1	1.4		(d)
DaG 561	11/97	27°12.07'	16°19.05'	83.52	3	H4	S3	W2	18.5	16.8	1.2		(d)
DaG 562	11/97	27°05.62'	16°25.23'	373	2	L5	S2	W3	25.4	21.0	1.5		(d)
DaG 563	11/97	27°18.01'	16°08.47'	119.38	1	LL6	S3	W3	31.5	25.7	1.6		(d)
DaG 564	11/97	26°53.71'	16°33.09'	167.69	1	H6	S2	W3	19.5	17.5	1.4		(d)
DaG 566	11/97	27°12.31'	16°08.36'	223.83	1	L6	S1	W3	25.5	21.4	1.4		(d)
DaG 567	11/97	27°14.15'	16°03.62'	21.44	1	Eucrite#		W1		62.5	2.8		(d)
DaG 568	11/97	27°16.70'	16°06.50'	24.70	1	H5	S2-3	W1	18.9	16.3	1.1		(d)
DaG 569	11/97	27°17.47'	16°07.65'	184.95	2	L6		W4	24.7	21.5	1.5		(d)
DaG 570	11/97	27°32.82'	15°51.56'	1250	4	L4/5	S3	W2-3	25.5	21.5	1.6		(d)
DaG 571	3/98	27°25.63'	16°20.03'	307	1	L6	S3	W3	25.1	22.0	1.5	br	(d)
DaG 572	3/98	27°20.67'	16°18.15'	285	1	H5	S1	W2	17.6	16.2	1.5		(d)
DaG 573	3/98	27°23.93'	16°09.57'	661.9	1	L4	S3	W2	24.4	20.5	1.2		(d)
DaG 574	3/98	27°25.93'	16°15.14'	32.5	1	CR	S1	W2	0.9–36.9	1.4–14.0	0.5–2.0		(d)
									cpx:	19.0	47.0		
DaG 575	3/98	27°13.02'	16°23.35'	3200	1	H5	S3	W1	18.5	17.0	0.9		(d)
DaG 576	3/98	27°13.89'	16°19.57'	231.5	1	H4/5	S4	W1	18.9	16.4	0.9		(d)
DaG 577	3/98	27°15.16'	16°16.19'	97	1	H6	S3	W5	19.6	17.7	1.1		(d)
DaG 578	3/98	27°16.28'	16°24.81'	58.10	1	H6	S1	W3	19.5	17.0	1.4		(d)
DaG 579	3/98	27°03.16'	16°25.88'	77.5 + 39	4	H5	S3	W2	19.0	16.9	1.5		(d)
DaG 580	3/98	27°04.55'	16°19.61'	90	2	L5	S4	W2	25.4	21.8	1.6		(d)
DaG 581	3/98	27°05.96'	16°09.32'	48.5	2	H5	S6	W1	19.1	17.2	1.5	Black	(d)
DaG 582	3/98	27°07.02'	16°07.26'	55.10	1	H6	S3	W3	19.4	17.3	1.6		(d)
DaG 583	3/98	27°07.43'	16°06.74'	89.6	1	L6	S2	W3	24.8	21.1	1.4	br	(d)
DaG 584	3/98	27°09.09'	16°04.96'	136.85	1	L6	S3	W2-3	25.7	21.8	1.6		(d)
DaG 585	3/98	27°09.33'	16°04.66'	422.6	3	LL6	S4	W3	33.1	25.9	2.0		(d)
DaG 586	3/98	27°05.19'	16°10.39'	138.6	2	H5	S3	W4	19.0	17.8	1.7		(d)
DaG 587	3/98	27°09.09'	16°04.98'	1105	1	L6	S2	W3	25.7	21.5	1.2		(d)
DaG 588	3/98	27°06.09'	16°08.27'	15	1	H5		W5	18.6	16.5	0.8		(d)
DaG 589	3/98	27°07.87'	16°06.79'	42.5	1	H6	S1	W4	19.2	16.9	1.5		(d)
DaG 590	3/98	27°25.52'	16°05.27'	62	1	H5	S2	W2	18.6	17.0	1.4		(d)
DaG 591	3/98	27°39.32'	15°59.54'	90	1	H(L)6	S2	W3	20.0	17.4	1.5		(d)
DaG 592	3/98	27°38.02'	16°01.71'	182.7	5	L5	S3	W3	20.7	17.3	1.2	br	(d)
DaG 593	3/98	27°38.35'	15°52.86'	1040	1	L6	S2	W2-3	25.3	21.8	1.3		(d)
DaG 594	3/98	27°35.37'	16°07.00'	404.8	1	H5	S3	W4	18.5	17.5	0.9		(d)
DaG 595	3/98	27°38.35'	15°54.08'	14931	3	H5	S3	W2	19.4	17.8	0.9		(d)
DaG 596	98	27°12.82'	16°16.89'	189	1	LL5	S2	W1	29.6	22.5			(e)
DaG 597	98	26°50.15'	16°37.59'	672	1	H5	S2	W2	19.9	17.4			(e)
DaG 598	98	26°55.69'	16°28.56'	103	1	H5	S3	W2	18.5	16.4			(e)
DaG 599	98	26°54.96'	16°40.39'	781	2	LL6	S3	W2/3	32	13.3			(e)
DaG 600	98	26°54.98'	16°40.49'	1190	1	H5	S2	W2	19.5	17.3			(e)
DaG 601	98	27°04.18'	16°04.25'	131	1	CO3	S3	W2	2.0–54.3	2.7–7.2		Prob. paired DaG 005	(e)
DaG 602	98	26°59.59'	16°08.36'	1055	1	L6	S3	W2	24.8	22			(e)
DaG 603	98	26°52.78'	16°40.39'	304	1	H5	S2	W3	19.1	16.9			(e)
DaG 604	98	26°58.74'	16°18.65'	180	1	H4	S3	W2	18.1	16.4			(e)
DaG 605	98	27°01.68'	16°16.97'	161	1	LL5	S2	W4	28.7	22.8			(e)
DaG 606	98	26°52.74'	16°41.87'	1362	many	H5	S3	W3	19.2	17.6			(e)
DaG 607	98	27°18.77'	15°59.61'	161	1	L6	S3	W4	25.1	21.1			(e)
DaG 608	98	26°58.22'	16°21.65'	1870	1	L6	S2	W3	25.1	21.5			(e)
DaG 609	98	26°53.13'	16°34.81'	696	2	Eucrite		W2		27–63		monomict	(e)
DaG 610	98	26°51'	16°44'	44 kg$	many	H4			17.8	16.1			(f)

TABLE 6. *Continued*.

Name	Found 1900+	Latitude (N)	Longitude (E)	Wt. (g)	Pieces	Class*	Shock[†]	WG	Fa mol%	Fs mol%	Wo mol%	Comments[‡]	Info[§]
Hammadah al Hamra (HaH)													
HaH 188	96	28°43.95'	13°06.15'	493	1	H6	S3	W3	19	16.9			(a)
HaH 190	96	28°38.82'	13°23.29'	387	14	H6	S4	W2	17.8	16.2			(a)
HaH 196	96	28°54.66'	12°33.29'	147	1	LL4-6	S2	W2	29.3	24.1		br, im	(a)
HaH 198	97	28°33.00'	13°21.01'	190	1	L6	S3	W3	24.7	21.3		sv	(a)
HaH 199	97	28°34.32'	12°09.15'	140	1	L5	S2	W3	23.9	20.4			(a)
HaH 200	97	28°35.33'	13°06.39'	280	1	H5-6	S2	W3	18.3	16.4		br	(a)
HaH 201	97	28°37.28'	13°15.53'	127	1	H6	S1	W4	18	15.8			(a)
HaH 203	97	28°26.47'	12°58.77'	740	1	L6	S4	W3	24	20.3			(a)
HaH 204	97	28°31.50'	13°11.90'	184	1	L6	S4	W3	23.9	20.4			(a)
HaH 205	97	28°33.91'	13°16.58'	1880	2	H5	S2	W3	18	15.6			(a)
HaH 206	97	28°35.33'	13°20.04'	1100	24	L6	S4	W1	24.3	20.7		sv	(a)
HaH 207	97	28°35.53'	13°20.42'	333	4	L6	S3	W3	24	20.4			(a)
HaH 208	97	28°36.52'	13°26.37'	188	1	L6	S3	W1	24.6	20.7		sv	(a)
HaH 209	97	28°39.13'	13°08.47'	440	1	L6	S3	W1	24.3	20.8		sv	(a)
HaH 210	97	28°33.84'	13°16.72'	403	1	H4	S2	W3	17.2	15.3			(a)
HaH 211	97	28°28.69'	13°15.39'	63	1	H5	S2	W3	18.5	16.5			(a)
HaH 212	97	28°28.93'	13°14.35'	565	1	L5	S3	W2	23.6	19.6		sv, br	(a)
HaH 213	97	28°28.92'	13°19.12'	1209	10	L3-6	S3	W2	22.8±2.0	18.3±3.0		br	(a)
HaH 214	97	28°30.16'	13°13.88'	1637	2	H6	S4	W2	19.2	17			(a)
HaH 215	97	28°30.80'	13°00.30'	88	1	L5	S3	W3	24	20.4		br	(a)
HaH 224	97	29°19.12'	12°00.61'	820	1	L6	S3	W3	23.3	19.8			(b)
HaH 225	97	28°57.56'	12°20.04'	2469	2	H4-5	S3	W2	17.9	16.2		br, sv	(b)
HaH 231	97	29°08.17'	11°55.54'	209	1	L5	S2	W3	24.4	20.6			(b)
HaH 232	97	29°06.53'	12°00.72'	572	2	L6	S3	W2	24.3	20.4			(b)
HaH 236	97	28°31.58'	13°03.91'	8261	many	L4	S3	W3	24.1	20.6			(b)
HaH 239	97-98	28°28.69'	13°08.65'	393	2	H5	S2	W3	19	18			(c)
HaH 240	97-98	29°26.99'	11°21.67'	1624	1	L4	S1	W1	26	23			(c)
HaH 241	97-98	29°26.62'	11°21.23'	1579	4	L6	S2	W3	27	23		br	(c)
HaH 242	10/97	29°02.47'	12° 53' 14	1440	1	L5	S2	W3	24.8	20.9	1.6		(d)
HaH 243	10/97	28°26.25'	12°58' 51	268.08	1	L6		W4	25.3	21.4	1.6		(d)
HaH 244	10/97	28°51.09'	13°24.22'	636.69	1	L5-6	S2	W1	24.3	20.9	1.5	br	(d)
HaH 245	10/97	28°51.27'	12°12.25'	435.80	1	L5-6	S2	W1	25.4	21.2	1.4	br; paired HaH 244?	(d)
HaH 246	11/97	28°25.26'	12°53.21'	796.69	1	LL6	S6	W2-3	32.2	25.6	1.8	br	(d)
HaH 247	11/97	28°51.15'	13°29.01'	288.46	1	LL6	S6	W2-3	32.1	23.8	1.7	paired HaH 246?	(d)
HaH 248	11/97	28°38.58'	12°46.52'	2345	2	H3.9[@]	S1	W2	17.2	13.2–17.7	0.3–1.2		(d)
HaH 249	11/97	28°48.52'	12°54.01'	218.43	4	H5	S3	W2	19.3	16.9	1.4		(d)
HaH 250	11/97	28°49.72'	12°55.70'	2650	1	H5	S1	W2-3	18.7	16.7	1.5		(d)
HaH 251	11/97	28°57.58'	12°52.27'	870	2	L5	S2	W1	25.2	20.8	1.7	br	(d)
HaH 252	11/97	29°00.91'	12°40.07'	195.56	1	L5-6	S2	W3	25.7	21.5	1.6	br; paired HaH 251?	(d)
HaH 253	11/97	29°08.71'	12°02.55'	66.6	1	L6	S3	W2	25.7	21.3	1.5	br; paired HaH 251?	(d)
HaH 254	11/97	29°06.15'	11°57.26'	649.60	1	L5-6	S2	W3	25.5	21.1	1.6	br; paired HaH 251?	(d)
HaH 255	3/98	28°56.98'	13°04.84'	194.5	3	L6		W5	25.2	21.6	1.2		(d)
HaH 256	3/98	28°56.98'	13°04.99'	264.8	4	LL6	S5	W2	30.2	25.8	2.1		(d)
HaH 257	3/98	28°48.27'	12°49.10'	45.80	1	L6		W5	26.2	22.0	1.8	br	(d)
HaH 258	3/98	28°51.51'	11°25.93'	1210	2	L5/6	S3	W2	23.9	20.6	1.1		(d)
HaH 259	98	28°45'	11°34'	5055	17	H5			17.2	15.4	1.5		(f)
Jabal Akakus													
	97-98	~25°	~10°50'	215	1	LL6	S3	W3	32	26	sv		(c)
Sarir Quattusah (SQ)													
SQ 003	97-98	26°25.66'	15°50.90'	428	1	L6	S3	W1	26	22			(c)

Abbreviations: br = breccia; chc = chondrule cores; cpx = clinopyroxene; im = impact melt; mod = moderate weathering; mx = matrix; pm = polymict; rr = reduced rims; rw = ringwoodite; sv = shock veins.

*Slashes (*e.g.*, L5/6) indicate transitional classes, hyphens (*e.g.*, H5-6) indicate breccias, groups in parentheses indicate uncertain assignments.

[†]For measurements done at *MNHNP*, only reflected-light microscopy was used.

[‡]Analysts and locations of type specimens (main masses with finders): (a) classified by D. Weber and A. Bischoff, analyzed by D. Weber, L. Niemann,
K. Pollok, and A. Jäckel (*Mün*), some main masses at *MNB*; (b) J. Zipfel and St. Schiermeyer (*MPI*); (c) L. Folco and B. Anselmi *(MNA-SI)*; (d) classified by C. Fiéni, M. Ghélis, and B. Zanda *(MNHNP)*; (e) A. Sexton (OU); (f) P. Sipiera (*Harper*), specimens in *DuPont* collection.

[§]Dar al Gani 406: Ni = 6.71%, Co = 0.439%, Ga = 91.2ppm, Ge = 305ppm, Ir = 1.76 ppm.

[#]Equilibrated basaltic eucrite; plagioclase, $An_{86–90}$; augite, $Fs_{33.6}Wo_{37.2}$.

[$]Main mass 33.7 kg.

[@]Petrologic subtype was estimated visually in reflected light (see Bourot-Denise *et al.*, 1997).

Saharan meteorites from unknown locations
Sahara, country unknown
Found 1998
(23 meteorites)

These meteorites (Table 7) have been collected by Mr. Marc Labenne and his family in the Sahara. The Labennes will not disclose the exact locations of these meteorites at the present time. They note that the secret origin (w, z) in Table 7 is several hundred kilometers distant from the origin (x, y) given in *Meteoritical Bulletin* 82. Classified by A. Bischoff and D. Weber, *Mün*. Specimens: main masses, *Labenne*; type specimens, *Mün*.

San Pedro de Quiles 31º1'S 71º24'W
Coquimbo, Chile
Fell 1956 October
Ordinary chondrite (L6)

A 282 gram stone fell a few meters from a farm worker around 18:30 on a spring evening (date unknown). It was recovered the next day from the bottom of a small hole after water was poured over the stone, which was thought to be hot. The object was identified as a meteorite by a Sr. Rodriguez in Ovalle, who kept it. Classification and mineralogy (M. Grady, *NHM*): olivine, $Fa_{24.2}$; pyroxene, $Fs_{21.8}$; shock stage, S4; weathering grade, W1. Specimens: type specimen, 1 g, plus thin section, *NHM*; main mass, Sr. L. Arriagada, Ingeniero Quimico U.S.A.CH., La Verbena 4907, Nuñoa, Santiago, Chile.

Saparmurat Turkmenbashy, synonym for **Kunya-Urgench**

Sarir Quattusah 003, see Saharan Meteorites from Libya

Slaton 33º26'N 101º45'W
Lubbock County, Texas, USA
Found 1941, recognized 1994
Ordinary chondrite (L4)

A 1070 gram stone was found by H. M. Cade while he was plowing a cotton field. Mr. Cade kept it on a shelf until his death. Classification and mineralogy (A. Rubin, *UCLA*): olivine, $Fa_{23.1}$; shock stage, S2; weathering grade, W4. Specimens: type specimen, 19 g, *UCLA*; main mass, *AShaw*.

Talampaya exact location unknown
Argentina
Fell ~1995
Achondrite (eucrite)

Stories circulating among meteorite dealers tell of a meteorite that fell in Argentina, producing a sonic boom that scared a mountain climber. The climber eventually found the meteorite somewhere down range. The location of the fall may have been in San Juan or La Rioja province. One 1421 gram stone was recovered, and sold in the United States. Classification and mineralogy (P. Warren, *UCLA*): monomict breccia with a cataclastic texture, containing some millimeter-sized unbrecciated clasts; pyroxenes, $En_{58.6-60.0}Wo_{1.2-1.6}$ and $En_{40.5}Wo_{45.7}$; plagioclase, An_{89-95}, mean An_{92}; chromite contains ~1.26 wt% MgO; very low in incompatible trace elements; bulk Cr content (3400 ppm) typical of cumulate eucrites. Oxygen isotopes (M. Prinz, *AMNH*): typical eucrite composition. Specimens: main mass being sold by commercial meteorite dealers; 530 g, *AMNH*.

TABLE 7. Meteorites from the Sahara, locations unknown.

Name	Found	Latitude*	Longitude*	Mass (g)	Pcs	Class†	Shock	WG	Fa	Fs	Wo	remarks
Sahara												
98007	9/1998	z+0°12'50"	w+0°08'14"	655	1	L5	S4	W0/1	23.5	20.5		sv
98035	9/1998	z+0°07'46"	w+0°08'52"	640	1	LL(L)3	S3	W1	0.7–39	8–40		
98044	9/1998	z+0°06'33"	w+0°09'05"	3145	1	CV	S4	W4	0.2–69	0.6–2.5		mx olivine: $Fa_{49\ (40-69)}$
98067	9/1998	z+0°13'53"	w+0°09'27"	81.2	1	CO	S2	W1	0.1–67	0.9–38		
98088	9/1998	z+0°09'51"	w+0°10'44"	2580	2	Meso				34.5	3.1	Plag: An_{86-92}
98100	9/1998	z+0°05'07"	w+0°13'17"	65	1	H melt br		W1	19.6±1.2	15.0±1.1		
						chondritic inclusions:			17.6	14.9		
98110	9/1998	z+0°13'02"	w+0°14'41"	31	1	Eucrite				59.2	5.2	Plag: An_{80-91}; monomict
98111	9/1998	z+0°13'00"	w+0°14'47"	29	1	Diog				28.3±1.7	1.4	
98175	9/1998	z+0°13'45"	w+0°19'06"	1335	1	LL3.5	S4	W1	22.4±10.4	12.8±6.4		Olivine mode: Fa_{29}
98222	9/1998	z+0°13'17"	w+0°21'44"	192	1	L6	S6	W2	25.3	21.5		rw
98248	9/1998	z+0°10'56"	w+0°22'47"	38.6	1	R4	S2	W2	37.1	26.4±3.1		Cpx: $Fs_{11.5\pm1.7}Wo_{45.3}$
98312	10/1998	z+0°13'34"	w+0°22'54"	23	1	L5-6	S3	W2	24.6	21.5		br; contains melt
98316	10/1998	z+0°07'35"	w+0°22'54"	111	1	LL(L)3	S3	W2	2.5–39	2.1–46		
98323	10/1998	z+0°13'21"	w+0°23'15"	355	1	L3.7	S4	W2	22.7±5.0	17.1±4.9		
98380	10/1998	z+0°04'28"	w+0°23'14"	17	1	LL4-6	S2	W3	28.0	23.2±2.6		br
98404	10/1998	z+0°12'25"	w+0°25'33"	46	1	CO	S2	W1	0.7–45	0.9–7.4		
98430	10/1998	z+0°13'39"	w+0°26'13"	45	1	H4-6	S3	W1	18.5	14.7±3.2		br
98433	10/1998	z+0°06'38"	w+0°26'18"	12	1	H5	S1	W2	19.3	17.4		
98448	10/1998	z+0°07'07"	w+0°26'25"	785	2	Meso				29.3±1.8	3.5	Plag: An_{88-93}
98492	10/1998	z+0°12'45"	w+0°26'57"	138	1	Meso				34.7	2.5	Plag: An_{88-93}
98501	10/1998	z+0°02'14"	w+0°27'08"	123	1	Ureil	medium		15.0±1.3	14.3±0.9		
98505	10/1998	z+0°00'46"	w+0°27'04"	152	1	Ureil	high		18.8±2.0	12.9±2.0		recrystallized olivines
98557	10/1998	z-1°58'26"	w+0°23'09"	8	1	LL6	S3	W3	32.0	26.2		br; im

Abbreviations: br = breccia; cpx = clinopyroxene; im = impact melt; mx = matrix; plag = plagioclase; rw = ringwoodite; sv = shock veins.
*The geographic coordinates of these meteorites have not been disclosed by the finder. Listed are the offsets relative to a secret origin at (w°W longitude, z°N latitude, where w and z are integers that are *not* the same as x and y in Table 7 of *Meteoritical Bulletin 82*).
†Slashes (*e.g.*, L5/6) indicate transitional classes, hyphens (*e.g.*, H5-6) indicate breccias, and groups in parentheses indicate uncertain assignments.

Tan-Tan, synonym for Zag

Tindouf 27°45'N, 8°8'W
Tindouf, Algeria
Found 1997 Winter
Ordinary Chondrite (H6)
Two individuals with a total mass of 1550 g were found near the town of Tindouf in western Algeria. Classification and mineralogy (A. Stucki; *ETH*): olivine, $Fa_{19.0}$; pyroxene, $Fs_{15.9}Wo_{1.3}$; shock stage, S3; weathering degree, W2. Specimens: type specimen, *ETH*; main mass, 920 g, *JNMC*.

Tinnie 33°23'N, 105°15'W
Lincoln County, New Mexico, USA
Found 1978, recognized 1999
Iron meteorite (IVB)
A 15.3 kg iron meteorite was found on a hilltop by a graduate student doing research on Barbary Sheep. Classification and analysis (J. Wasson, *UCLA*): a plessitic ataxite with numerous vugs up to 1 cm in diameter; bulk composition, Co = 0.79%, Ni = 18.4%, Cu = 4 ppm, Ga = 0.34 ppm, Ir = 16 ppm, Au = 0.14 ppm. Specimens: 5.9 kg, *Farmer*; 5.3 kg, *Killgore*; 92 g, *ASU*; type specimen, 53 g, *UCLA*.

Toluca, see entry for Leeds

Toronto find location unknown
Quebec (?), Canada
Found 1970s or 1980s
Iron, coarse octahedrite (IAB)
A 2.715 kg iron meteorite was found by Mr. Karl Heinz, probably while he was on a canoe trip in Quebec. His widow gave the meteorite to Mrs. Hildegard Weltner in 1989. Classification (S. Kissin, *LU*) and petrography (G. Wilson, *UTor*): kamacite bandwidth 1.64 ± 0.56 mm; kamacite polygonal with Neumann bands and abundant rhabdites; troilite nodules present; no heat affected zone; bulk composition, Ni = 7.04 wt%, Co = 4810 ppm, Ga = 87 ppm; Ge = 372 ppm, Ir = 2.55 ppm, Au = 1.91 ppm; probably not paired with Canyon Diablo based on bulk composition; further information can be found in Wilson (1997). Specimens: type specimen, 67 g, contact Dr. Richard K. Herd, *GSC*; main mass with Mrs. Hildegard Weltner, Toronto.

Vyatka, location of main mass
A 32 kg piece of a larger stone was purchased by S. Vassiliev in Prague. The meteorite was reportedly found in the Kirov region of Russia and is undoubtedly the missing main mass of Vyatka, an H4 chondrite (see *Meteoritical Bulletin* 77; Wlotzka, 1994). This material is widely distributed in collections outside of Russia under the name "Kaigorod," which will now become a synonym for Vyatka. Classification and description of "Kaigorod" (J. Otto, *Frei*): an H4/5 chondrite; olivine, $Fa_{17.1}$; pyroxene, $Fs_{15.5}Wo_{0.9}$; shock stage, S3; weathering grade, W1. Comparison of Vyatka and "Kaigorod" (M. Ivanova and A. Skripnik, *Vernad*): texture, shock stage, mineral chemistry, and petrologic type all similar; Vyatka somewhat more weathered. Specimens: main mass, ~10 kg, *Vass*; 9.4 g, *Frei*.

Willow Grove 38º6'11"S 146º10'52"E
Victoria, Australia
Found 1995 October
Iron meteorite (ungrouped)
A 2.7 kg iron meteorite was found in 1995 October by a farmer plowing a field. Another 9 kg individual was found the same way in 1998 July. Classification and analysis (W. Birch, *Vict*; J. Wasson, *UCLA*): ataxite; contains martensite with 24.5 to 29.0 wt% Ni and a few small schreibersite crystals; etching reveals a fine-scale platy structure overlain by a pervasive network of stress corrosion fractures which are in part crystallographically controlled; bulk analysis, Ni = 27.9 wt%, Co = 1.21 wt%, Ga = 0.23 ppm, As = 0.78 ppm, Ir = 17.4 ppm, Au = 0.233 ppm. Specimens: 400 g, *Vict*; main masses with finder.

Zag ~27º20'N 9º20'W
Western Sahara or Morocco
Fell 1998 August 4 or 5
Ordinary chondrite (H3-6)
A meteorite fall was witnessed on a mountain in the vicinity of Zag, Morocco. About 175 kg have been sold by local people to dealers and collectors under the names Zag, Sagd, and Tan-Tan. Classification and mineralogy (A. Bischoff and D. Weber, Mün): a regolith breccia (pers. comm., R. Wieler, *ETH*); olivine, $Fa_{1.6-30.0}$, with peak at Fa_{19}; pyroxene, $Fs_{3.3-26.6}$ with peak at Fs_{17}; shock stage, S3; weathering grade, W0/1. Specimens: 26.6 kg, *JNMC*; type specimens, *ETH* and *Mün*.

Zegdou ~29º45'N 4º30'W
Algeria
Found 1998 August
Ordinary chondrite (H3)
An 6.7 kg stone was found by Bruno Fectay and Carine Bidaut while searching for meteorites. Classification and mineralogy (P. Sipiera, *Harper*): olivine, $Fa_{19.1}$; pyroxene, $Fs_{16.7}Wo_{1.8}$; olivine percent mean deviation is 7% (n = 18); contains dark clasts lacking chondrules. Specimens: type specimen, 150 g, *DuPont*; main mass, *Fectay*.

Acknowledgements–This Bulletin was prepared by the Meteorite Nomenclature Committee of the Meteoritical Society under the Editorship of J. N. Grossman. Members of the committee for 1999 are A. Brearley, M. Grady, M. Ivanova, M. Kimura, D. Kring, J. Koblitz, G. Kurat, T. McCoy (Chair), D. Weber, M. Wadhwa, and B. Zanda.

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APPENDIX 1. Recently described meteorites from ANSMET.*

Name†	Class‡	Mass	Weath	%Fa	%Fs	Pairing	Ice§	Ref
DEW 96600	H6	1644.4	Be	19	17			21(2)
DEW 96601	H3.***8***	17.4	B/Ce	14–21	3–17			21(2)
EET 96021	L6	898.5	C				j	21(2)
EET 96055	H5	205.5	B/C				j	21(2)
EET 96058	H5	185.0	B/C				j	21(2)
EET 96059	H5	4.2	B/C				j	21(2)
EET 96065	H6	3.3	A/B				j	21(2)
EET 96067	H6	8.5	A/B				j	21(2)
EET 96068	L6	8.4	B				j	21(2)
EET 96069	H6	5.0	A/B				j	21(2)
EET 96074	LL5	25.3	A/B				j	21(2)
EET 96077	EH3	0.2	C		0–6		j	21(2)
EET 96080	LL6	28.1	A/B	31	25		j	21(2)
EET 96081	H6	4.4	B/C				j	21(2)
EET 96084	L4	4.6	B/C	24	21		j	21(2)
EET 96085	L6	3.4	B				i	21(2)
EET 96086	H5	4.6	B/C				j	21(2)
EET 96087	H6	13.4	B/C				j	21(2)
EET 96088	L6	40.4	A/B				i	21(2)
EET 96089	L6	8.9	B				j	21(2)

Name†	Class‡	Mass	Weath	%Fa	%Fs	Pairing	Ice§	Ref
EET 96090	LL6	40.0	B				j	21(2)
EET 96091	L6	3.0	Be				j	21(2)
EET 96092	L6	57.1	B/C				j	21(2)
EET 96093	H5	128.1	C				j	21(2)
EET 96094	L6	72.5	B				j	21(2)
EET 96095	L5	31.6	A				j	21(2)
EET 96096	C2	12.7	B	0–32	4	96005	j	21(2)
EET 96097	C2	12.9	B	0–31	1	96005	j	21(2)
EET 96098	C2	15.3	B	0–30	1–6	96005	j	21(2)
EET 96099	H6	5.9	C				j	21(2)
EET 96100	L6	30.0	B/C				j	21(2)
EET 96101	L6	75.4	B/C				j	21(2)
EET 96102	L6	76.8	B				j	21(2)
EET 96103	EH4	4.3	C		0–2		j	21(2)
EET 96104	L4	26.5	B	25	10–18		j	21(2)
EET 96105	H5	21.9	B/C				j	21(2)
EET 96106	L4	21.1	B	24–29	12–21		j	21(2)
EET 96107	L6	1.5	B/C				j	21(2)
EET 96108	H6	1.4	C				j	21(2)
EET 96109	LL3.***4***	0.9	A/B	0–19	3–26	(2)	j	21(2)
EET 96110	L6	2.2	B				j	21(2)
EET 96111	L6	46.3	B				j	21(2)
EET 96112	H6	0.6	B/C				j	21(2)
EET 96113	H6	0.7	B/C				j	21(2)
EET 96114	H6	0.5	B/Ce				j	21(2)
EET 96115	H5	4.4	A/B				j	21(2)
EET 96116	L6	1.5	B/C				j	21(2)
EET 96117	L4	19.0	B/C	25	20–23		j	21(2)
EET 96118	L6	6.3	B/Ce				j	21(2)
EET 96120	L6	0.9	B				j	21(2)
EET 96122	L6	28.9	Be				j	21(2)
EET 96123	H4	8.5	C	16	14	96031	j	21(2)
EET 96124	L5	5.9	A/B	24	20		j	21(2)
EET 96125	H6	0.9	C				j	21(2)
EET 96126	L6	2.4	B				j	21(2)
EET 96127	L6	44.2	B				j	21(2)
EET 96128	H6	6.9	C				j	21(2)
EET 96129	L6	66.7	C				j	21(2)
EET 96130	L6	34.0	B				j	21(2)
EET 96131	L6	1.8	B/C				j	21(2)
EET 96132	L6	97.7	B				j	21(2)
EET 96133	H5	13.8	C				j	21(2)
EET 96134	H5	97.7	A/B				j	21(2)
EET 96135	EH4-5	95.7	B		0–1	(7)	j	21(2)
EET 96136	L6	67.7	B				j	21(2)
EET 96137	LL6	37.0	A/B	30	25		j	21(2)
EET 96138	L6	49.6	B/C				j	21(2)
EET 96139	H6	122.2	B				j	21(2)
EET 96140	L6	45.6	A/B				j	21(2)
EET 96141	LL4	13.9	A/B	29	10–24		j	21(2)
EET 96142	H6	1.9	B/C				j	21(2)
EET 96143	H6	35.7	B/C				j	21(2)
EET 96144	LL6	3.0	A/B	30	24		j	21(2)
EET 96145	L6	4.0	B/C				j	21(2)
EET 96146	L6	2.2	B/C				j	21(2)
EET 96147	H6	2.0	B/C				j	21(2)
EET 96148	L6	0.7	C				j	21(2)
EET 96149	L6	0.4	C				j	21(2)
EET 96150	L6	2.1	A				j	21(2)
EET 96151	H6	1.4	B/C				j	21(2)
EET 96152	L6	63.4	B				j	21(2)
EET 96153	L6	5.3	B				j	21(2)
EET 96154	H6	3.7	B				j	21(2)
EET 96155	L6	17.5	B/C				j	21(2)
EET 96156	L6	74.3	B				j	21(2)
EET 96157	L6	33.2	B/C				13	21(2)
EET 96158	L6	15.3	B				j	21(2)
EET 96159	H4	4.5	B	19	17		j	21(2)
EET 96160	L3.***6***	0.9	C	4–22	13–16		j	21(2)
EET 96161	L6	2.3	A/B				g	21(2)
EET 96162	H6	16.1	B/C				j	21(2)
EET 96163	H6	0.6	B/C				j	21(2)
EET 96164	H6	2.2	B/C				j	21(2)
EET 96165	H6	25.0	B/C				j	21(2)
EET 96166	L6	3.9	B				j	21(2)
EET 96167	L6	40.4	B				j	21(2)
EET 96168	H5	2.6	B		16		j	21(2)
EET 96169	L6	10.3	B				j	21(2)
EET 96170	H5	11.2	B/C				j	21(2)
EET 96171	L6	27.6	A/B				j	21(2)
EET 96172	L6	3.8	B/C				j	21(2)
EET 96173	L6	0.6	B				j	21(2)
EET 96174	L6	14.5	B/C				j	21(2)
EET 96175	H6	1.4	B/C				j	21(2)
EET 96176	L6	19.3	A				j	21(2)
EET 96177	L6	7.8	C				j	21(2)
EET 96178	H6	21.4	C				j	21(2)
EET 96179	L6	5.3	A/B				j	21(2)
EET 96180	H6	8.4	C				j	21(2)
EET 96181	H5	29.1	B				j	21(2)
EET 96182	H5	4.1	B/C				j	21(2)
EET 96183	L6	1.0	C				j	21(2)
EET 96184	L6	15.2	B				j	21(2)
EET 96185	L6	4.5	C				j	21(2)
EET 96186	H6	101.3	C				j	21(2)
EET 96187	H6	0.6	C				j	21(2)
EET 96188	L(LL)3.***2***	16.4	A/B	2–62	7–22	96109	j	21(2)
EET 96189	H5	31.0	A/B	19	17		j	21(2)
EET 96190	H5	60.8	B				j	21(2)
EET 96191	H6	0.7	C				j	21(2)
EET 96192	H5	57.3	B/C				j	21(2)
EET 96194	H6	1.1	B				j	21(2)
EET 96195	L6	1.7	A/B				j	21(2)
EET 96196	L6	0.5	C				j	21(2)
EET 96197	L6	3.2	A/B				j	21(2)
EET 96198	H6	0.3	C				j	21(2)
EET 96199	H6	4.9	C				j	21(2)
EET 96200	L6	65.0	B/C				j	21(2)
EET 96201	H5	8.4	B/C				j	21(2)
EET 96202	EH4-5	3.7	B/Ce		0–1	96135	j	21(2)
EET 96203	L6	0.3	B/Ce				j	21(2)
EET 96204	H5	12.1	B	19	16		j	21(2)
EET 96205	L6	18.8	B				j	21(2)
EET 96206	L6	3.1	B/C				j	21(2)
EET 96207	L6	2.6	B				j	21(2)
EET 96208	L5	14.7	B/Ce				j	21(2)
EET 96209	H6	1.0	B/C				j	21(2)
EET 96210	L6	1.7	C				j	21(2)
EET 96211	L6	113.9	C				j	21(2)
EET 96212	H5	107.1	C				j	21(2)
EET 96213	LL4	19.9	B	30	11–25		j	21(2)
EET 96214	LL4	5.9	B	30	9–24		j	21(2)
EET 96215	L6	15.6	C				j	21(2)
EET 96216	L3.***8***	0.9	Ce	8–28	2–21		j	21(2)
EET 96217	EH4-5	10.1	C		0–2	96135	j	21(2)
EET 96218	L5	16.6	A/B				j	21(2)
EET 96219	L6	18.3	B/C				j	21(2)
EET 96220	H6	2.9	B/C				j	21(2)
EET 96221	L6	24.3	B/C				j	21(2)
EET 96222	L5	8.3	A/B				j	21(2)
EET 96223	EH4-5	2.7	B/C		0–3	96135	j	21(2)
EET 96224	L5	0.6	B	25	21		j	21(2)
EET 96225	L5	1.3	B/C				j	21(2)
EET 96226	C2	2.1	B	0–42		96005	j	21(2)
EET 96227	L5	4.9	B/C				j	21(2)
EET 96228	H6	1.2	B/C				j	21(2)
EET 96229	L6	4.1	B/C				j	21(2)
EET 96230	L6	31.7	C				j	21(2)
EET 96231	H6	73.9	C				j	21(2)
EET 96232	L6	14.3	B/C				j	21(2)

Name†	Class‡	Mass	Weath	%Fa	%Fs	Pairing	Ice§	Ref
EET 96233	L6	0.9	B/C				j	21(2)
EET 96234	L4	2.3	B	25	22–26		j	21(2)
EET 96235	L6	5.7	A/B				j	21(2)
EET 96236	L6	0.3	B/C				j	21(2)
EET 96237	H6	0.4	Be				j	21(2)
EET 96238	CH3	0.4	A	0–40	0–4		j	21(2)
EET 96239	L5	1.0	B				j	21(2)
EET 96240	L4	11.6	B	25	7–21		j	21(2)
EET 96241	LL6	31.2	A/B	30	24		j	21(2)
EET 96242	H6	23.0	B/C				j	21(2)
EET 96243	L4	14.7	B/C	25	21		j	21(2)
EET 96244	H5	20.0	C				j	21(2)
EET 96245	H5	14.4	B				j	21(2)
EET 96246	H5	44.5	B/C				j	21(2)
EET 96247	H5	86.1	B/C				j	21(2)
EET 96248	H5	44.9	B/C				j	21(2)
EET 96249	H6	40.3	B/C				j	21(2)
EET 96250	H6	50.5	C				j	21(2)
EET 96251	H6	100.8	C				j	21(2)
EET 96252	L6	48.9	C				j	21(2)
EET 96253	H4	15.4	A/B	19	16		j	21(2)
EET 96254	H5	6.9	B/C				j	21(2)
EET 96255	L6	17.0	C				j	21(2)
EET 96256	L6	1.2	C				j	21(2)
EET 96257	H5	10.8	B	18	16		j	21(2)
EET 96258	L6	26.6	C				j	21(2)
EET 96259	CR2	12.1	B/C	0–4	1–4		j	21(2)
EET 96260	H5	7.6	A/B				j	21(2)
EET 96261	L6	62.5	A/B				j	21(2)
EET 96262	Ur	54.2	B	14–15			j	21(2)
EET 96263	H5	8.6	A/B	19	17		j	21(2)
EET 96264	H6	3.6	A/B	19	16		j	21(2)
EET 96265	H6	1.0	A				j	21(2)
EET 96266	L6	4.7	B				j	21(2)
EET 96267	L6	106.4	B				j	21(2)
EET 96268	L6	13.1	A/B				j	21(2)
EET 96269	H6	5.9	A				j	21(2)
EET 96270	L6	65.4	A/B				j	21(2)
EET 96271	L6	94.8	C				j	21(2)
EET 96272	L6	13.6	A				j	21(2)
EET 96273	L6	147.2	A/B				j	21(2)
EET 96274	L6	128.1	B				j	21(2)
EET 96275	L6	9.5	B				j	21(2)
EET 96276	L6	8.3	B				j	21(2)
EET 96277	L6	15.8	A				j	21(2)
EET 96278	H6	22.7	C				j	21(2)
EET 96279	LL6	45.3	Ce	28	24		j	21(2)
EET 96280	H6	4.4	B/C				j	21(2)
EET 96281	L6	2.4	B				j	21(2)
EET 96282	L5	0.7	B				j	21(2)
EET 96283	H6	19.4	B/C				j	21(2)
EET 96284	L6	7.6	B				j	21(2)
EET 96285	L6	2.9	B/C				j	21(2)
EET 96286	CV3	12.9	B/C	1–2	1–4		j	21(2)
EET 96287	L6	4.6	B				j	21(2)
EET 96288	H4	33.3	B	19	16		j	21(2)
EET 96289	L6	5.7	B				j	21(2)
EET 96290	L4	28.7	A/B	26	11–20		j	21(2)
EET 96291	H6	0.8	B/C				j	21(2)
EET 96292	L4	13.8	B				j	21(2)
EET 96293	Ur	100.6	B	6–13	11	(3)	j	21(2)
EET 96294	L6	10.4	B				13	21(2)
EET 96295	L6	11.9	B				i	21(2)
EET 96296	H6	2.6	B/C				j	21(2)
EET 96297	H5	2.9	C				j	21(2)
EET 96298	L6	20.7	B				i	21(2)
EET 96299	EH4-5	50.5	B		0–1	96135	j	21(2)
EET 96300	H6	4.8	C				j	21(2)
EET 96301	H6	0.7	C				j	21(2)
EET 96302	H6	15.3	C				i	21(2)

Name†	Class‡	Mass	Weath	%Fa	%Fs	Pairing	Ice§	Ref
EET 96303	LL5	28.3	A/B	30	25		j	21(2)
EET 96304	L6	15.7	B/C				j	21(2)
EET 96305	L6	17.0	B				j	21(2)
EET 96306	H6	1.3	C				j	21(2)
EET 96307	H6	2.4	C				j	21(2)
EET 96308	LL6	14.7	A	30	25		j	21(2)
EET 96309	EH4-5	7.9	C		1–4	96135	j	21(2)
EET 96310	H4	6.8	B	19	17		j	21(2)
EET 96311	LL6	13.1	A	30	25		j	21(2)
EET 96312	L6	1.1	B				j	21(2)
EET 96313	L6	126.6	A/B				j	21(2)
EET 96314	Ur	80.3	B	2–13	11	96293	j	21(2)
EET 96315	H6	46.6	C				j	21(2)
EET 96316	L6	75.3	A/B				j	21(2)
EET 96317	L6	99.9	B				j	21(2)
EET 96318	H6	2.5	C				j	21(2)
EET 96320	L6	36.6	B/C				j	21(2)
EET 96321	LL5	6.3	B	29			j	21(2)
EET 96322	Ur	17.1	B/C	11–15	13	(2)	j	21(2)
EET 96323	L6	1.2	B				j	21(2)
EET 96324	L6	66.8	C				j	21(2)
EET 96325	L6	2.1	C				j	21(2)
EET 96326	L6	1.3	B/C				j	21(2)
EET 96327	L4	1.5	B				j	21(2)
EET 96328	Ur	7.1	B	12–15	13	96322	j	21(2)
EET 96329	L6	10.0	B/C				j	21(2)
EET 96330	L6	75.8	A				j	21(2)
EET 96331	Ur	121.9	B	13	11	96293	j	21(2)
EET 96332	L6	136.5	B/C				j	21(2)
EET 96333	L6	164.1	B/C				j	21(2)
EET 96334	H6	5.6	C				j	21(2)
EET 96335	L5	11.2	B/C				g	21(2)
EET 96336	L6	12.8	A/B				j	21(2)
EET 96337	L6	73.9	B				j	21(2)
EET 96338	H6	62.6	B				j	21(2)
EET 96339	L5	41.3	B				j	21(2)
EET 96340	L6	137.8	B/C				j	21(2)
EET 96341	EH4-5	26.0	A		0–3	96135	j	21(2)
EET 96342	H6	3.9	B/C				j	21(2)
EET 96343	L6	19.7	B				j	21(2)
EET 96344	H6	2.7	B				j	21(2)
EET 96345	L4	15.3	A/B				j	21(2)
EET 96346	L6	97.2	B/C				j	21(2)
EET 96347	H5	115.1	B	19	16		j	21(2)
EET 96348	H6	86.9	Ce	19	16		g	21(2)
EET 96349	L6	25.6	B				13	21(2)
EET 96350	L6	36.5	A/B				j	21(2)
EET 96351	L6	120.8	B				j	21(2)
EET 96352	LL5	21.5	A	31	25		j	21(2)
MET 96502	L6	915.6	Ce					21(2)
MET 96503	L3.*6*	404.0	B	7–32				21(2)
MET 96504	L5	618.2	B					21(2)
MET 96505	L6	289.8	C					21(2)
MET 96506	H6	363.5	B	19	17			21(2)
MET 96507	L5	443.1	A	24	20			21(2)
MET 96508	L6	629.2	A/B					21(2)
MET 96509	L6	896.9	B					21(2)
MET 96510	L5	277.9	A	24	21			21(2)
MET 96511	L6	303.4	B/C					21(2)
MET 96512	L6	2133.5	A/Be					21(2)
MET 96513	L5	153.4	A	24	21			21(2)
MET 96514	L6	193.9	A					21(2)
MET 96515	L3.*5*	308.7	A/B	1–30	3–16			21(2)
MET 96516	H5	108.4	C	19	16			21(2)
MET 96517	L5	126.6	B/C					21(2)
MET 96518	L6	116.8	B/C					21(2)
MET 96519	L6	121.9	B/C					21(2)
MET 96520	H6	172.8	B	20	17			21(2)
MET 96521	H6	131.9	B	19	16			21(2)
MET 96522	L5	141.2	B/C					21(2)

Name†	Class‡	Mass	Weath	%Fa	%Fs	Pairing	Ice§	Ref
MET 96523	L6	100.0	B/C					21(2)
MET 96524	L6	81.5	B					21(2)
MET 96525	H4	110.3	A/B	20	16–21			21(2)
MET 96526	L5	63.5	B					21(2)
MET 96527	H5	15.2	C	17	15			21(2)
MET 96528	H6	14.1	C	19	17			21(2)
MET 96529	LL5	111.6	A	31	25			21(2)
MET 96530	LL6	36.6	A	30	25			21(2)
MET 96531	H5	46.8	B	19	16			21(2)
MET 96532	L5	55.5	B					21(2)
MET 96533	L5	3.2	B					21(2)
MET 96534	H5	51.5	B	20	17			21(2)
MET 96535	H6	45.0	C	19	16–18			21(2)
MET 96536	L6	45.8	A/B					21(2)
MET 96537	L6	31.5	A/B					21(2)
QUE 97001	How	2358.3	A		17–54		Y	21(2)
QUE 97002	How	1384.3	B		54–60		F	21(2)
QUE 97003	C2	0.9	B	0–32	1–2	93004	S	21(2)
QUE 97004	Eu "br"	13.9	A		59		S	21(2)
QUE 97005	C2	0.7	B	0–46	1–2	93004	S	21(2)
QUE 97006	H5	4057.5	C	18	16		S	21(2)
QUE 97007	L5	508	B	23	20		14	22(1)
QUE 97008	L3.4	452.6	A	3–33	3–21		14	22(1)
QUE 97009	L6	377.3	C	23	21		Q	22(1)
QUE 97010	LL6	430.9	B	29	25		Y	22(1)
QUE 97011	LL6	402.7	B	29	25		Y	22(1)
QUE 97012	LL6	1272.5	B	30	25		Y	22(1)
QUE 97013	LL5	706	C	30	25			22(1)
QUE 97014	Eu "ub"	142.3	A		65		F	22(1)
QUE 97015	LL5	101.4	B	30	25		S	22(1)
QUE 97016	LL5	488.9	A	30	25		S	22(1)
QUE 97017	LL5	305.9	A/E	32	27		S	22(1)
QUE 97018	L6	2883.9	B				Y	22(1)
QUE 97019	LL5	236.6	A/E				S	22(1)
QUE 97020	LL5	163.2	A/E				S	22(1)
QUE 97021	LL5	205.7	A				S	22(1)
QUE 97022	L5	206.4	B/C	22	19		14	22(1)
QUE 97023	LL6	394.7	A/B	28	23		F	22(1)
QUE 97024	LL5	348.9	A/B				W	22(1)
QUE 97025	LL5	143.7	A/E				S	22(1)
QUE 97026	LL5	340.3	B/C	28	24		F	22(1)
QUE 97027	L4	375.5	C	23	21		S	22(1)
QUE 97028	LL5	910.9	A	31	26		S	22(1)
QUE 97029	L6	824.7	B				Y	22(1)
QUE 97030	H3.4	413.8	C	4–31	27		S	22(1)
QUE 97031	L5	349.5	C	23	20			22(1)
QUE 97032	L6	434.8	A				S	22(1)
QUE 97033	L6	367.2	A/B				Y	22(1)
QUE 97034	L4	677.2	A/B	23	20			22(1)
QUE 97035	L6	244.9	A/B				Y	22(1)
QUE 97036	L6	182.2	C				S	22(1)
QUE 97037	L6	213.8	B/C				S	22(1)
QUE 97038	L6	266.7	B/C				14	22(1)
QUE 97039	L5	322.4	B	23	20		S	22(1)
QUE 97040	LL5	314.1	A	30	25		S	22(1)
QUE 97041	LL5	272.1	A/E				S	22(1)
QUE 97042	LL5	214.8	B				S	22(1)
QUE 97043	LL5	153.5	A/E				S	22(1)
QUE 97044	LL6	122.1	A	28	24		S	22(1)
QUE 97045	LL5	122.5	A	30	25		S	22(1)
QUE 97046	L6	130.8	C	24	21		S	22(1)
QUE 97047	L5	183.7	C	22	20		S	22(1)
QUE 97048	L5	128.9	A/B				S	22(1)
QUE 97049	L6	143.1	C				S	22(1)
QUE 97050	L6	191.7	B/C				S	22(1)
QUE 97051	LL5	141.3	A/B				S	22(1)
QUE 97052	LL5	139.5	A/B				S	22(1)
QUE 97053	Eu "ub"	75.1	A		41–49		S	22(1)
QUE 97054	L6	179.1	B				S	22(1)
QUE 97055	LL5	32.7	B				S	22(1)
QUE 97056	LL5	36.7	A/B				14	22(1)
QUE 97057	L6	191.8	A				S	22(1)
QUE 97058	LL5	143	A/B				S	22(1)
QUE 97059	LL5	99.4	A/B				S	22(1)
QUE 97060	LL5	60.8	A/B	32	27		S	22(1)
QUE 97061	LL5	27.6	A/B				S	22(1)
QUE 97062	LL5	93.5	A/B				S	22(1)
QUE 97063	LL5	32	A/B				S	22(1)
QUE 97064	LL5	19.8	A/B				S	22(1)
QUE 97065	LL5	57.9	A/B				S	22(1)
QUE 97066	LL5	34.7	A/B				S	22(1)
QUE 97067	LL5	17.4	B/C				14	22(1)
QUE 97068	LL5	66.5	A				S	22(1)
QUE 97069	LL5	94.2	A/B				S	22(1)
QUE 97070	LL5	123.7	A/B	30	25		S	22(1)
QUE 97071	LL5	25	A/B	32	27		S	22(1)
QUE 97072	LL5	37.9	A/B				S	22(1)
QUE 97073	L5	14.4	B/C	23	21		S	22(1)
QUE 97074	LL5	33.5	A/B				S	22(1)
QUE 97075	LL5	91.2	B	31	26		S	22(1)
QUE 97076	LL5	5	B/E				S	22(1)
QUE 97078	L6	82.4	A/B				S	22(1)
QUE 97079	LL5	59.9	B/E	32	27		S	22(1)
QUE 97080	LL6	73.4	C	30	26		F	22(1)
QUE 97081	LL5	39	B				S	22(1)
QUE 97082	LL5	14.9	B				S	22(1)
QUE 97083	LL5	37.6	B				S	22(1)
QUE 97084	LL5	62.5	B				S	22(1)
QUE 97085	LL5	83.9	B				S	22(1)
QUE 97086	LL5	108.5	B	33	27		S	22(1)
QUE 97087	LL5	37.2	B				S	22(1)
QUE 97088	LL4	63.3	A/B	32	13–27		S	22(1)
QUE 97089	LL5	29.2	B				S	22(1)
QUE 97090	LL5	86.3	B	27	22		S	22(1)
QUE 97091	LL5	22.6	A				S	22(1)
QUE 97092	LL5	20.8	B				S	22(1)
QUE 97093	LL5	8.6	B				S	22(1)
QUE 97094	LL5	7.3	B				F	22(1)
QUE 97095	LL5	19.8	B	27	23		S	22(1)
QUE 97096	LL5	11	B				S	22(1)
QUE 97097	LL5	30.8	B				S	22(1)
QUE 97098	LL5	3.9	B				F	22(1)
QUE 97099	LL5	25.5	B				S	22(1)
QUE 97100	LL5	16.3	B				S	22(1)
QUE 97101	H6	70.9	C	19	17		S	22(1)
QUE 97102	LL5	20.5	B				S	22(1)
QUE 97103	LL5	19	B	27	23		S	22(1)
QUE 97104	LL5	17.8	A/B				S	22(1)
QUE 97105	LL5	8.1	B				F	22(1)
QUE 97106	LL5	18	B				S	22(1)
QUE 97107	LL5	15.5	B	28	23		S	22(1)
QUE 97108	LL5	5.7	B				S	22(1)
QUE 97109	LL5	2.7	B				S	22(1)
QUE 97110	H5	55.2	A/B	19	17		S	22(1)
QUE 97111	LL5	12.4	B				S	22(1)
QUE 97112	H5	8.2	B/C	19	17		S	22(1)
QUE 97113	L4	28.1	B/C	24	20		S	22(1)
QUE 97114	LL5	3.5	B				S	22(1)
QUE 97115	L6	18.2	C	24	21		S	22(1)
QUE 97116	LL5	20.4	B				S	22(1)
QUE 97117	LL5	12	B				S	22(1)
QUE 97118	LL5	13.7	B	27	23		S	22(1)
QUE 97119	LL5	8.7	B				F	22(1)
QUE 97120	LL5	25.1	A/B	27	22		S	22(1)
QUE 97121	LL5	24.5	A/B				S	22(1)
QUE 97122	LL5	3.7	A/B				S	22(1)
QUE 97123	LL5	22.9	A/B	27	22		S	22(1)
QUE 97124	LL5	14.3	A/B				S	22(1)
QUE 97125	LL5	3.2	A/B				S	22(1)
QUE 97126	LL5	51	A/B	27	22		S	22(1)

Name†	Class‡	Mass	Weath	%Fa	%Fs	Pairing	Ice§	Ref
QUE 97127	LL5	27.2	A/B				S	22(1)
QUE 97128	LL5	34.5	A/B	27	22		S	22(1)
QUE 97129	LL5	27.6	A/B				S	22(1)
QUE 97130	LL5	12.6	B	27	22		S	22(1)
QUE 97131	LL5	2.2	B				S	22(1)
QUE 97132	LL5	1.5	B				S	22(1)
QUE 97133	LL6	18.2	B	27	23		S	22(1)
QUE 97134	LL5	4.6	B				S	22(1)
QUE 97135	LL5	10	B				S	22(1)
QUE 97136	LL5	7.6	B				S	22(1)
QUE 97137	LL5	16.5	B				S	22(1)
QUE 97138	LL5	13.6	B				S	22(1)
QUE 97139	LL5	20.8	B				S	22(1)
QUE 97140	LL5	24.3	B	27	23		S	22(1)
QUE 97141	LL5	20.9	B				S	22(1)
QUE 97142	LL5	14.1	B				S	22(1)
QUE 97143	LL5	32.9	B				S	22(1)
QUE 97144	LL5	31.5	B	27	22		S	22(1)
QUE 97145	LL5	5.9	B				S	22(1)
QUE 97146	LL5	5.2	A/B				S	22(1)
QUE 97147	LL5	18.5	A/B	27	22		S	22(1)
QUE 97148	LL5	29.1	A/B				S	22(1)
QUE 97149	LL5	0.8	B				S	22(1)

*See "Notes to Table 2" in Meteorite Bulletin No. 79 for explanation of columns.

†Abbreviations for meteorite names: DEW = Mt. Dewitt; EET = Elephant Moraine; MET = Meteorite Hills; QUE = Queen Alexandra Range.

‡Abbreviations for meteorite classes: Ch = chondrite; Br = brecciated; Diog = diogenite; Eu = eucrite; How = howardite; Lod = lodranite; Lun-B = lunar basaltic breccia; Meso = mesosiderite; Ub = unbrecciated; Ung = ungrouped; Uniq = unique; Ur = ureilite.

§Ice field names: F = Goodwin Nunataks Icefields; Q = Foggy Bottom Moraine; S = Mare Meteoriticas; W = Scoraine Moraine Icefield; Y = Tail's End Icefield; g = Elephant Moraine Main; i = Texas Bowl; j = Meteorite City; 13 = Shoodabin Icefield; 14 = Goodwin Nunataks Icefield.