

The Meteoritical Bulletin, No. 95

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(Received 25 February 2009)

Abstract—The Meteoritical Bulletin No. 95 reports 1093 (282 non-Antarctic and 801 Antarctic) newly approved meteorite names and their recovery histories, macroscopic descriptions, petrography, mineral compositions and geochemistry. Meteorites reported include lunar meteorites, eucrites, mesosiderites, angrites, ureilites, an acapulcoite, and H, L, LL, R, CO, CM, CK and CV chondrites. Three new falls, the Bunburra Rockhole (Australia) eucrite and the recent (Nov., 2008) Buzzard Coulee (Canada) H4 chondrite, and Tamdakht (Morocco) H5 chondrite are reported.

INTRODUCTION

This issue of The Meteoritical Bulletin reports 1093 newly approved meteorites including 3 from specific locations in Africa (Table 1), 128 from Northwest Africa (Table 2), 6 from North America (Table 3), 12 from South America (Table 4), 801 from the Grove Mountains, Antarctica, collected by the China Antarctic Research Expedition (Table 5), 3 from Australia (Table 6), 139 from Oman (Table 7) and 1 from Thailand (Table 8). Included are three falls: the 2007 Bunburra Rockhole (Australia) eucrite, the (Nov. 2008) Buzzard Coulee (Canada) H4 chondrite and the (Dec. 2008) Tamdakht (Morocco) H5 chondrite. The meteorites reported in this bulletin span a wide range of achondrite and chondrite groups.

Featured in full written descriptions are the three new falls, as well as finds from Algeria and South Africa, a new CO3 from Chile, a CM-like meteorite with an anomalous oxygen isotope composition, 3 ungrouped achondrites, 5 lunar meteorites, a shergottite, and an unusual ureilite from Oman. In the tables are new ureilites, an angrite, an acapulcoite, eucrites, a howardite, mesosiderites, a pallasite, CV3, CO3, and CK4 chondrites, and an R3.7 chondrite. This bulletin also marks a slight change in format in which more

meteorites are reported in table format only and fewer in full written descriptions. Additional full written descriptions for some entries may be found in the online database, <http://tin.er.usgs.gov/meteor/metbull.php>.

AFRICA

Algeria, Morocco, and Other Locations in Africa

El-Oued

Algeria

Found 1952

Ordinary chondrite (H4)

31°32'N, 8°53'E

History: The meteorite was recognized by Smail Mostefaoui in his hometown El-Oued at the regional Museum “Le petit Musée du Monde.” The present director of the Museum, Mr. Ahmed Chaouki Bouclifa, explained that the meteorite was discovered in 1952 by the French army during their patrol in Zemoul el Merkr dunes Southeast of the El-Oued city.

Physical characteristics: The total mass = 2.305 kg in two pieces (1.485 and 0.820 kg). The fusion crust in both fragments is incomplete and has little rust and brownish color. The interior is darker.

Petrography (M. Bourot-Denise, *MNHNP*): The chondritic texture is clearly visible. The metal is almost completely altered. The silicates show cracks filled with Fe-hydroxide. Some melt pockets are present; one thin section is crossed with a cm-sized vein of polycrystalline sulfide. Some olivine grains contain sulfide-filled cracks.

Mineral compositions and geochemistry: Olivine: mean $Fa = 20.1 \pm 0.8$; low-Ca pyroxene: mean $Fs = 17.3 \pm 0.6$. The magnetic susceptibility value ($\log \chi = 4.61$) measured by J. Gattacceca (CEREGE) is consistent with a high weathering degree.

Classification: Ordinary chondrite H4; W3/W4; S3.

Type specimens: A total of 30 g (2 pieces and two thin sections) is on deposit at *MNHN*. The Museum in El-Oued holds the main mass.

Morokweng **26°22'20.89"S, 23°31'26.24"E**
Northwest Province, South Africa, near the small town of Morokweng
Find June 2004
LL6 ordinary chondrite

History: The meteorite was found by Dr. Marco Andreoli in June 2004 while conducting a detailed petrographic description of the M3 borehole. The M3 borehole had been drilled in 2000 to investigate the mineral potential of the ~30 km meltsheet of the ~144 Ma Morokweng impact crater. The meteorite was intersected at a depth of ~766 m within the 870 m thick meltsheet. Petrographic and compositional evidence indicates the presence of many other, smaller fragments in various stages of recrystallization (Hart et al. 2002).

Physical characteristics: The main mass is ~750 g. The meteorite is mostly unaltered, apart from a thin (~1 mm) brown corona containing unidentified Fe silicates and K-rich sheet silicates interpreted to be the result of alteration by the meltsheet.

Petrography W. D. Maier (*UQué, Pretoria*), M. A. G. Andreoli (*SANEC, Wits*), I. McDonald (*Cardiff*), M. D. Higgins (*UQué*), A. J. Boyce (*SUERC*), A. Shukolyukov (*Scripps*), G. W. Lugmair (*Scripps*), L. D. Ashwal (*Wits*), P. Graeser (*Pretoria*), E. Ripley (*Indiana*), and R. Hart (*Ithemba*): Apart from the thin (1 mm) corona containing brown alteration minerals, the meteorite is seemingly unaltered. Petrographic study revealed diagnostic features of a highly equilibrated chondrite breccia, including numerous subangular chondrite fragments, and several well-preserved chondrules of porphyritic pyroxene, barred olivine, and radial pyroxene. The number of preserved chondrules is relatively low. Both minerals commonly show undulatory and mosaic extinction. The matrix material has a well-developed granular texture with 120° triple junctions.

Geochemistry: Both olivine (Fo_{67-70}) and orthopyroxene (En_{69-73}) are homogenous within individual grains and throughout the meteorite. Plagioclase is mostly An_{33-50} , some to An_{17} , chromite has 44–48% Cr_2O_3 . Pyrrhotite has

composition $Fe_{0.85-0.87}S$ and pentlandite $(Fe,Ni)_{1.02-1.10}S$. The bulk chemistry of the large clast is chondritic, although U, Th, La and Ce are enriched and Na, K are depleted compared to the average compositions for ordinary chondrites. Absolute PGE (Ir = 234 ppb; Ru = 351 ppb; Rh = 81 ppb; Pt = 478 ppb; Pd = 361 ppb), Ni (5850 ppm) and Co (326 ppm) concentrations are ~30–40% lower than in average LL chondrites. Despite the absence of metal, the bulk Fe content of the clast is chondritic. Bulk S isotope analyses yielded $\delta^{34}S$ values of -0.1‰ and -0.4‰ , and individual sulphide minerals analysed by in situ laser combustion revealed a range of values from -0.9‰ to $+0.1\text{‰}$. $^{53}Cr/^{52}Cr$ ratio in the large clast is $0.38 \pm 0.05\epsilon$.

Classification: LL6 chondrite, shock stage S5, weathering grade W0.

Specimens: A total of ~20 g is on deposit at the Transvaal Museum, Pretoria, South Africa. Dr. W. D. Maier holds the main mass. Dr. M. Andreoli holds 4 small pieces (between 2 and 22 g).

Tamdakht **31°09.8'N, 7°00.9'W**
Tamdakht, (Ouarzazate) Morocco
Fall: 20 December 2008, 22:37 hrs (local time; UT+00)
Ordinary chondrite (H5)

History (H. Chennaoui-Aoudjehane): On December 20, 2008, witnesses from a number of locations in Morocco (Agadir, Marrakesh, Ouarzazate) observed a meteor with a W to E trajectory. According to the local newspaper, *Al Massae* (of December 27th), people from the high Atlas Mountains (between Marrakesh and Ouarzazate) heard a sound and felt an aftershock. Due to the high relief in this mountain region, covered with snow at this time of the year, searching for the meteorite was a difficult task. The first reports on finding pieces of a meteorite came a couple of weeks later. The largest impact pit is located near Oued Achir (1.10 m diameter and 70 cm depth, $31^{\circ}09.8'N$, $7^{\circ}00.9'W$), with a stone exceeding 30 kg and many small fragments. A second one is smaller, (about 20 cm diameter and 10 cm depth; $31^{\circ}09.9'N$ $07^{\circ}02.3'W$) located 2 km W from the first one; the main mass from the second impact was probably about 500 g. Nine new impact coordinates have been reported by S. Buhl and M. Aid, and P. Thomas reported 3 other impacts. A strewn field of at least 25 km long and 2 km wide has been outlined.

Physical characteristics: Total weight is presently estimated to be 100 kg. Pieces recovered as of February 15, 2009, are 30 kg, 1.5 kg, 3.8 kg, 3.69 kg, 2.4 kg, 1.5 kg, 1 kg, 800 g, and 399 g. One major fragment of 1.7 kg and many small pieces from the same stone (ranging 500 to below 1 g) were also recovered. The largest fragment shows a nearly complete dull gray fusion crust, other pieces are 90% crusted to free of crust, often broken along preexisting fractures. Thick fusion crust, locally more than 1 mm.

Petrography (Albert Jambon, Omar Boudouma, D. Badia *UPVI* and M. Denise, *MNHNP*): Abundant chondrules with visible but not well-delimited outlines. Chondrule size is

0.1 to 1.5 mm. Dominant olivine and orthopyroxene. Abundant chromite, rare clinopyroxene and ilmenite. Numerous pockets with chromite, plagioclase and phosphate (merrillite and Cl-apatite). Kamacite, with deformed Neumann bands, and taenite, twinned troilite. Copper. Mode: metal+troilite 10%.

Mineral compositions and geochemistry: $\log \chi = 5.3$. Olivine $\text{Fa}_{18 \pm 0.5} \text{Opx} = \text{En}_{83} \text{Fs}_{16} \text{Wo}_2$. Minor calcic pyroxene. Plagioclase is $\text{Ab}_{83-86} \text{An}_{5-15} \text{Or}_{7-2}$. Ca-phosphate (merrillite and Cl-apatite). Chromite: $\text{Cr}\# (100 \times \text{molar Cr}/[\text{Cr} + \text{Al}]) = 82$. Metal: kamacite with 5% Ni and taenite with 36–47% Ni. Oxygen isotopes (C. Suavet, J. Gattacecca *CEREGE*): $\delta^{17}\text{O} = 3.26\%$, $\delta^{18}\text{O} = 5.01\%$, and $\Delta^{17}\text{O} = 0.65\%$. Magnetic susceptibility is $\log \chi = 5.3 \times 10^{-9} \text{ m}^3/\text{kg}$.

Classification: Ordinary chondrite (H5), S3, W0.

Type specimens: A mass of 21 g and one polished section provided by P. Thomas are on deposit at *UPVI*. 1 piece of 15.8 g provided by L. Labenne and small fragments totaling 20 g at *UHAC*. Two pieces 10.4 g and 8.6 g at *NMBE* (B. Hoffman), Svend Buhl 2 kg; Meteoritica (*PThomas*) 2.65 kg; M. Zeroual 20 kg, main mass anonymous finder.

Table 1 lists all newly approved meteorite names and relevant data from specific locations within Africa.

NORTHWEST AFRICA

Northwest Africa 2990

Morocco

Find: 2007

Achondrite (Martian, basaltic shergottite)

History and physical characteristics: This single, 363 g stone was recovered in Morocco (Western Sahara) in 2007 and purchased by Adam Aaronson in July 2008. The stone is 65% covered by very fresh, dark fusion crust; areas without fusion crust show a deeply etched surface from wind ablation. A few, thin shock veins are evident on the etched surface.

Petrography (T. Bunch and J. Wittke, *NAU* and A. Irving, *UWS*): A very fine-grained basaltic shergottite with small, zoned olivine phenocrysts (mean = 0.27 mm) that are set in a fine-grained groundmass (<0.12 mm) of olivine, twinned tabular pigeonite, augite, maskelynite, chromite, titanomagnetite, ilmenite, FeS, and merrillite. The weathering grade is very low and the shock level is moderate.

Mineral compositions: Olivine phenocrysts are typically zoned from cores of $\text{Fa}_{37.6}$ to rims of $\text{Fa}_{47.9}$ (mean $\text{FeO}/\text{MnO} = 53$), groundmass olivine is $\text{Fa}_{45.8-49.7}$. Maskelynite is $\text{An}_{64.3-66.2} \text{Or}_{2.7}$. Pigeonite cores are $\text{Fs}_{32.2} \text{Wo}_{8.6}$, rims are $\text{Fs}_{41.1} \text{Wo}_{10.8}$ ($\text{FeO}/\text{MnO} = 33$). Augite is $\text{Fs}_{26} \text{Wo}_{28.8}$ ($\text{FeO}/\text{MnO} = 29$). Ilmenite contains 2.72 wt% MgO and chromite $\text{Cr}/(\text{Cr} + \text{Al}) = 0.81-0.85$.

Bulk Composition: Powder prepared from a ~1 gram representative interior piece was analyzed by XRF (M. Gellissen and H. Palme, *UCologne*) and INAA (R. Korotev,

WUSL): wt% SiO_2 51.08, TiO_2 0.62, Al_2O_3 9.24, FeO 16.42, MgO 8.06, CaO 11.67; ppm Sc 57.4, Cr 830, La 1.46, Sm 1.05, Eu 0.48, Yb 1.22, Lu 0.192. These data signify an enriched type of olivine-phyric shergottite, somewhat like NWA 1068.

Classification: Achondrite (Martian basaltic shergottite).

Type sample: A total of 21.1 g is on deposit at *NAU*. The main mass holder is Mr. Adam Aaronson.

Northwest Africa 2996

Algeria

Find: 2006

Achondrite (lunar, feldspathic breccia)

History and physical characteristics: A 968 g, partially crusted stone, was purchased in Morocco in November 2006 by Adam Aaronson and sold to a private collector in 2007. The weathered crust shows a color range of vermilion to dark brown to black. Several anorthositic clasts exposed on broken surfaces are as large as 3 cm.

Petrography (T. Bunch and J. Wittke, *NAU*): This feldspathic breccia has an extensive melt matrix with prominent entrainments of tiny bubbles. Lithologies include anorthosite, medium-grained gabbros, anorthositic norites and troctolites, in addition to mineral fragments, shocked clasts, and devitrified glassy clasts.

Mineral compositions: A medium-grained gabbroic clast contains plagioclase ($\text{An}_{92.1}$), olivine ($\text{Fa}_{32.4}$, $\text{FeO}/\text{MnO} = 110$), Ca pyroxene ($\text{Fs}_{22.4} \text{Wo}_{19.1}$), chromite ($\text{cr}\# = 61$) and ilmenite ($\text{MgO} = 5.3 \text{ wt}\%$). Anorthositic norite low-Ca pyroxene is $\text{Fs}_{28.6} \text{Wo}_{3.1}$ ($\text{FeO}/\text{MnO} = 64$), troctolitic olivine is $\text{Fa}_{31.9}$, $\text{FeO}/\text{MnO} = 104$ and plagioclase clasts range from $\text{An}_{91.8}$ to $\text{An}_{97.4}$.

Bulk chemistry (R. Korotev, *WUSL*): $\text{TiO}_2 = 0.68 \text{ wt}\%$, $\text{Al}_2\text{O}_3 = 20.7 \text{ wt}\%$, $\text{FeO} = 9.7 \text{ wt}\%$, $\text{MgO} = 8.0 \text{ wt}\%$, Ni = 184 ppm, Sm = 4.6 ppm and Th = 1.6 ppm.

Classification: Lunar (feldspathic breccia).

Type specimen: A total of 20.3 g is on deposit at *NAU*. The main mass holder is anonymous.

Northwest Africa 4284

Algeria

Find: 2005

Achondrite (ungrouped)

History: A 137 g partial stone with partial crust was purchased in Erfoud, Morocco in 2005.

Petrography (T. Bunch and J. Wittke, *NAU*): Igneous textures include hypidimorphic-granular, ophitic, and poikilitic (orthopyroxene oikocrysts enclose olivine). NWA 4284 is composed of mm to submillimeter-sized grains of (in order of abundance) orthopyroxene, olivine, plagioclase, Ca pyroxene, FeS, and chromite. Taenite metal occurs in rare, isolated clusters of coarser-grained orthopyroxene-olivine-plagioclase-taenite.

Geochemistry: Orthopyroxene, $\text{Fs}_{24.5} \text{Wo}_{3.5}$, $\text{FeO}/\text{MnO} = 28-30$;

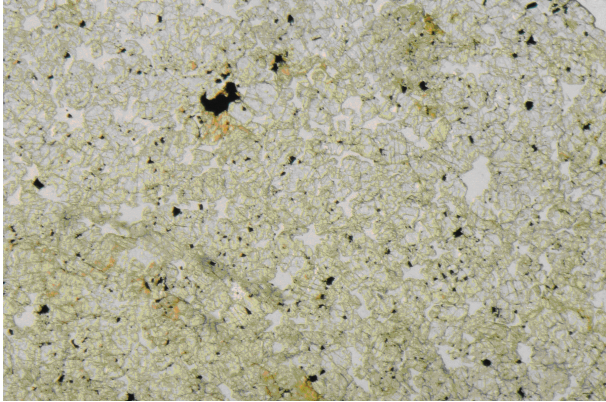


Fig. 1. NWA 4284 showing hypidimorphic-granular texture. Plane light; base width = 24 mm; dark grains are FeS and chromite.

olivine, $Fa_{24.6}$, FeO/MnO = 46–54; plagioclase, $An_{11}Or_{5.3}$; Ca pyroxene, $Fs_{8.2}Wo_{44.2}$; chromite, Cr# = 0.88; and taenite, Ni = 21.5 (no kamacite was found).

Oxygen isotopes (D. Rumble, CIW): a cleaned and metal-free sample was analyzed by laser fluorination. Replicate analyses are, respectively, $\delta^{17}O = 3.253, 3.227\%$; $\delta^{18}O = 4.195, 4.247\%$; $\Delta^{17}O = 1.046, 0.993\%$.

Classification: Achondrite (ungrouped). Mineral compositions and oxygen isotopes indicate that this stone has an L chondrite heritage, but the lack of chondrules and obvious igneous textures, indicate a later melt origin.

Specimens: type example, 21 g and one thin section, *NAU*; main mass holder is *Edwin Thompson*.

Northwest Africa 4936

Morocco

Find: September 2007

Achondrite (lunar, feldspathic breccia)

History: Purchased by an anonymous dealer in Siksou, Morocco, in September 2007.

Physical characteristics: Two dark gray, mostly very fine grained stones (72 g and 107 g) exhibiting hackly fracture and lacking obvious fusion crust. The interior is very dark gray, and resembles devitrified glass with dispersed small white clasts.

Petrography (A. Irving and S. Kuehner, *UWS*): Both specimens are composed of small mineral clasts and sparse lithic clasts in a very fine-grained matrix (which has heterogeneous glass). Mineral clasts include anorthitic plagioclase, pigeonite, augite, sparse olivine, Mg-bearing ilmenite, kamacitic metal and troilite. Lithic clasts include troctolite and probable mare basalt.

Geochemistry: Low-Ca pyroxene ($Fs_{25.7}Wo_{4.6}$, FeO/MnO = 56.8), pigeonite ($Fs_{42.0}Wo_{10.2}$, FeO/MnO = 63.1), olivine ($Fa_{29.1}$, FeO/MnO = 75.2), plagioclase ($An_{95.4-98.2}Or_{0.2-0.0}$). Bulk composition (R. Korotev, *WUSL*): FeO 6.1 wt%, Th 1.85 ppm.

Classification: Achondrite (lunar, feldspathic breccia).

Specimens: A total of 20.1 g, one polished thin section and one polished mount are on deposit at *UWS*; a further 20 g sample is on deposit at *UAz*. The main mass is held by *Schrader*.

Northwest Africa 5400

Algeria

Find: June 2008

Achondrite (brachinite-like, ungrouped)

History: Purchased by Greg Hupé in June 2008 from a dealer in Er Rachidia, Morocco.

Physical characteristics: A single dense, dark brown, rounded stone (4818 g) is about half covered with weathered fusion crust and exhibits several narrow fractures. Dimensions are 19.5 cm × 16.0 cm × 9.7 cm.

Petrography: (A. Irving and S. Kuehner, *UWS*) Coarse-grained rock (mostly 0.2–0.8 mm) with protogranular texture, composed predominantly of olivine (79 vol%) with subordinate orthopyroxene (10.5 vol%), clinopyroxene (8.9 vol%), chromite (1.4 vol%), Cl-rich apatite, troilite, kamacite (altered to iron hydroxides) and minor taenite. No plagioclase was observed despite a careful search.

Geochemistry: Olivine ($Fa_{30.1-30.4}$, FeO/MnO = 56.1–70.8), clinopyroxene ($Fs_{9.4}Wo_{45.1}$, FeO/MnO = 25.5, $Cr_2O_3 = 0.74$ wt%, $Al_2O_3 = 0.74$ wt%), orthopyroxene ($Fs_{24.4}Wo_{2.1}$, FeO/MnO = 34.2), chromite [Cr/(Cr+Al) = 0.821, Mg/(Mg+Fe) = 0.236, $TiO_2 = 1.4$ wt%, ZnO = 0.30 wt%].

Oxygen isotopes (D. Rumble, CIW): clean, acid-washed silicate material from two separate portions of the type specimen analyzed in duplicate by laser fluorination at different times gave consistent results: respectively, $\delta^{18}O = 5.061, 5.223, 4.486, 4.880$; $\delta^{17}O = 2.681, 2.741, 2.367, 2.525$; $\Delta^{17}O = 0.019, -0.006, 0.008, -0.042$ per mil.

Classification: Achondrite (brachinite-like, ungrouped). In texture, mineral assemblage and mineral compositions, NWA 5400 is similar to brachinites, but the oxygen isotopic compositions plot essentially on the terrestrial fractionation line.

Specimens: A total of 22.4 g of sample and one polished thin section are on deposit at *UWS*. Mr. G. Hupé holds the main mass.

Northwest Africa 5406

Morocco

Find: July 2008

Achondrite (lunar, feldspathic breccia)

History: Purchased by Greg Hupé in July 2008 from a dealer in Ouarzazate, Morocco, who reported that these stones were found in the same area as NWA 4936 near Siksou Mountain in southern Morocco.

Physical characteristics: Six, dark gray, mostly very fine-grained stones (total weight 281 g) with hackly fracture and lacking obvious fusion crust. The interior of each stone resembles devitrified glass with dispersed small white clasts.

Petrography: (A. Irving and S. Kuehner, *UWS*) All specimens

are composed of small mineral clasts and sparse lithic clasts in a very fine-grained matrix (which has the texture of an impact melt with heterogeneous, “swirly” glass). Mineral clasts include anorthite, olivine, pigeonite, subcalcic augite, ilmenite, troilite, and irregular-shaped grains of kamacite.

Geochemistry: Pigeonite ($\text{Fs}_{34.7}\text{Wo}_{9.8}$, $\text{FeO/MnO} = 59.9$), augite ($\text{Fs}_{55.8}\text{Wo}_{26.4}$, $\text{FeO/MnO} = 72.6$), olivine ($\text{Fa}_{25.7-27.0}$, $\text{FeO/MnO} = 85.3-120$), plagioclase ($\text{An}_{96.2-97.2}\text{Or}_{0.0}$). Bulk composition (R. Korotev, *WUSL*): FeO 5.8 wt%, Th 2.0 ppm, Sc 9.1 ppm, Ni 520 ppm, Sm 6.3 ppm.

Classification: Achondrite (lunar, feldspathic breccia). These stones have essentially the same distinctive textures, mineral compositions and bulk composition as NWA 4936, and are almost certainly paired with the latter stones.

Specimens: A total of 20.0 g of is on deposit at *UWS*. The main masses are held by Mr. G. M. Hupé.

Table 2 lists all newly approved meteorite names and relevant data from Northwest Africa.

THE AMERICAS

North America

Canada

Buzzard Coulee 52°59.76'N, 109°50.89'W

Wilton Rural Municipality, Saskatchewan, Canada

Fall: 20 November 2008; 17:26:45 MST (UT + 7)

Ordinary chondrite (H4)

History: A bright fireball was widely observed across Alberta, Saskatchewan and Manitoba during late twilight on November 20, 2008. The fireball and subsequent dust trail, or shadows cast by the fireball, were recorded by all-sky and security video cameras establishing that its brightest portion occurred from 17:26:40 to 17:26:45 MST. The fireball traveled approximately north to south with an elevation angle of $\sim 60^\circ$. Abundant sonic phenomena were reported including anomalous sounds, explosion booms, sonic booms from individual fragments and whirring sounds interpreted as produced by individual fragments falling to ground; the fireball's explosions were also widely recorded by Comprehensive Test Ban Treaty infrasound stations establishing an energy release of approximately one third of a kiloton, indicating an original meteoroid mass of ~ 10 tons. Interviews of eyewitnesses and crude calibrations of security cameras constrained the fall region and the first search attempt led to meteorites being recovered off the ice of a manmade pond late on November 27, 2008. Subsequent searches led to recovery of more than one hundred individual fragments before December 6 when increasing snow cover made further searching unproductive. A strewn field at least seven kilometers long and approximately three km wide with a wind drift tail of an additional three km eastwards has been crudely outlined.

Physical characteristics: A total of 129 well-substantiated pieces totaling ~ 41 kg have been recovered, but dozens of additional recovered specimens are indicated. The meteorites are distinguished by the large number of specimens with immature ablation surfaces (angular shapes with numerous small piezoglypts); up-range in the strewn field a larger proportion of mature ablation surfaces and oriented individuals are found. The fusion crust is a typical dark gray for an ordinary chondrite fall. The fall is also distinguished by the large proportion of meteorites that exhibit freshly broken surfaces with no fusion crust; broken surfaces with variable amounts of “painting” by fusion crust are also common.

Petrography (M. Hutson and A. Ruzicka, *Cascadia*; E. Milley and A. Hildebrand, *UCalg*): Most surfaces show no brecciation, but one surface has a slightly lighter gray angular clast in a uniform gray matrix. Two different chondrite textures are visible in one thin section, but boundaries between the two regions are indistinct. One area has well-defined chondrules. The other region has more opaques with fewer easily visible chondrules, but has numerous smaller cryptocrystalline chondrules and chondrule fragments. Another section contains a light colored, coarse grained, pyroxene-rich inclusion with an igneous texture.

Mineral compositions and geochemistry: Olivine ($\text{Fa}_{17.8 \pm 0.3}$) with PMD $\text{Fa} = 1.3$, low-Ca pyroxene ($\text{Fs}_{16.6 \pm 0.8}$, $\text{Wo}_{1.87 \pm 0.8}$) with PMD $\text{Fs} = 3.9$, high-Ca pyroxene ($\text{Fs}_{12.4 \pm 3.3}$, $\text{Wo}_{20.1 \pm 11.2}$). The composition of high-Ca pyroxene is suggestive of pigeonite, but may be an intimate mixture of low- and high-Ca pyroxene.

Classification: Ordinary chondrite (H4), S2, W0.

Type specimens: A mass of 39.1 g and two thin sections are on deposit at *UCalg*. The strewn field is almost all private land so that much of the meteorite mass is currently owned by private individuals; specimens totaling > 1 kg include ~ 13 kg, 6.99 kg, 1.607 kg, 1.306 kg, 1.201 kg, and 1.082 kg; three of these specimens were recovered during searches organized by *UCalg* and collaborating institutions.

Table 3 lists all approved meteorite names and relevant data from North America.

SOUTH AMERICA

Chile

The present bulletin lists 10 new finds from the San Juan collection area in Chile (Table 4).

San Juan 009 ~25°30'S 69°50'W

Area San Juan, Comuna Taltal, Provincia Tocopilla, región Antofagasta, Chile

Find: 23 July 2007

Type: CO3

History: A single stone was found in a deflation surface of

the San Juan area, in the Atacama Desert, northern Chile, by the 2007 CEREGE-Universidad de Chile scientific expedition (Millarca Valenzuela, Jerome Gattacceca and Clement Suavet). This is the first carbonaceous chondrite found in the Chilean territory.

Physical characteristics: (J. Gattacceca, *CEREGE*) A single stone of 45.56 g without fusion crust and a smooth dark brown outer surface. The interior has the same dark brown color. Grain density is 3.25 g/cc. $\log \chi = 4.69$ indicate maximum metallic Fe-Ni content of 8.9 wt%.

Petrography (M. Valenzuela *U. Chile*, M. Bourot-Denise MNHNP, J. Gattacceca, C. Suavet *CEREGE*): Sharply defined type I chondrules are dominant (~50% vol) and range in size from few tens of microns to 1 mm, with average ~200 μm . Type II chondrules are scarce (~2% vol), CAIs and AOIs account for ~5 vol% of the meteorite, dark matrix is ~30% vol, and the rest correspond to olivine, pyroxene fragments (~8% vol) and opaques phases (5% vol) as nodules of Fe-Ni and troilite and possible magnetite.

Mineral compositions and geochemistry: Olivine ranges from $\text{Fa}_{0.27}$ to $\text{Fa}_{57.4}$ (mean value $\text{Fa}_{17.3}$, $n = 29$). Low-Ca pyroxene is $\text{Fs}_{0.76-3.39}$ (mean value $\text{Fs}_{1.68}$, $n = 19$). Terrestrial age obtained by ^{14}C measurements (*UAz AMS* laboratory, T. Jull, M. Leclerc, M. Valenzuela) is less than 1.3 ka. The average of two oxygen isotope analyses of acid-washed 1.5 mg bulk samples (C. Suavet, C. Sonzogni, A. Alexandre, J. Gattacceca, *CEREGE*) is $\delta^{17}\text{O} = -7.98\%$, $\delta^{18}\text{O} = -4.78\%$, and $\Delta^{17}\text{O} = -5.49\%$.

Type specimens: 38 g and one polished-thin section are on deposit at *U. Chile*, 4 g and one polished section at *CEREGE*, and one polished section at *MNHNP*.

Classification: Carbonaceous chondrite (CO3). The meteorite is basically unshocked (S1) and has minor weathering.

Table 4 lists all newly approved meteorite names and relevant data from South America.

ANTARCTICA

CHINARE

Grove Mountains 052483 72°46'47"S, 75°18'58"E

Grove Mountains, Antarctica

Find: 17 January 2006

Ordinary chondrite (L-related impact-melt rock)

History and physical characteristics: A stone of 162.84 g was recovered on blue ice by J. Hu during the 22nd Chinese Antarctic Research Exploration in Grove Mountains, Antarctica. The hand specimen exhibits an irregular shape mostly covered by a brown fusion crust.

Petrography (C. Li and G. Zhang, *NAOC*; A. Rubin, *UCLA*): In thin section, the sample shows a recrystallization texture. Most euhedral to subhedral olivine crystals are set in a

mesostasis of fine-grained olivine, pyroxene, and tiny spheres of Ni, Fe-rich metal and sulfides. The dominant silicate phases are olivine, orthopyroxene, plagioclase and rare clinopyroxene. Metal and sulfides are FeNi metal (kamacite, taenite) and troilite. Minor phases are chromite and apatite. Some impact-melt veins are also present. The texture is not particularly chondritic and chondrules are not observed.

Mineral compositions and geochemistry: (G. Zhang, C. Li, Z. Liu and Z. Ouyang, *NAOC*) Most Olivine compositions in olivine crystals or fine-grained matrix is homogeneous ($\text{Fa}_{24.7}$, $n = 13$). Low-Ca pyroxene are dominantly bronzite ($\text{Fs}_{21.1}$ $\text{Wo}_{1.5}$; $n = 18$).

Classification: Ordinary chondrite (L-related impact-melt rock), W1.

Type specimen: All of the sample mass and a polished thin section are on deposit at PRIC.

Approved (801) meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains, Antarctica, between 2002 and 2006 and submitted through the Polar Research Institute of China (*PRIC*) are reported in Table 5. All type specimens and main mass are on deposit at *PRIC*.

AUSTRALIA

Bunburra Rockhole 31°21.0'S, 129°11.4'E

Nullarbor Region, South Australia, Australia

Fall: 21 July 2007 04:43:56 local time (UT + 9:30)

Achondrite (eucrite)

History: A bright fireball was recorded over southwestern Australia by observatories of the Desert Fireball Network. A fall position was pinpointed by triangulation, and a search was mounted. Fragments were recovered within 100 m of the predicted fall site.

Physical characteristics: Two specimens with a total mass 324 grams were recovered: one 150 g fragment; one 174 g fragment. The smaller is an oriented stone, discus-shaped, and completely fusion crusted. The larger is ~90% fusion crusted, and more irregular in form. The small internal area that is exposed on the second stone is pale grey in color. Fusion crust on both stones is bright, shiny, and fresh.

Petrography (G. K. Benedix *NHM*; P. A. Bland *ICL*): The meteorite is a basaltic eucrite monomict breccia with the majority of the sample exhibiting subophitic texture. Fine-grained clasts are irregularly distributed throughout the sample. The sample contains mm-sized orthopyroxene and plagioclase. Low-Ca pyroxene contains thin exsolution lamellae of Ca-rich pyroxene. The meteorite also contains silica and minor ilmenite.

Mineral compositions: Pyroxene, $\text{Fs}_{62.5}\text{Wo}_{3.6}$ (Fe/Mn-31.1) with augite ($\text{Fs}_{27.7}\text{Wo}_{43.0}$) lamellae; plagioclase, $\text{An}_{84.1}$ to $\text{An}_{88.2}$.

Classification: Achondrite (eucrite) minimal shock and no weathering.

Type specimens: Both stones (main mass) and one thin section are on deposit at *WAM*.

Table 6 lists all newly approved meteorite names and relevant data from Australia.

ASIA

Oman

Dhofar 1434 18°21.405'N, 54°1.555'E

Dauka, Thambreyt, Dhofar, Oman

Find: 6 February 2007

Carbonaceous chondrite (CM anomalous)

History: On 6 February 2007, Rainer Bartoschewitz (*Bart*) discovered the meteorite while passing the desert from the UNESCO world cultural heritage Ubar (Shiṣr) to the sea near Shu'aymiah.

Physical characteristics: One fragment partly covered with fresh black fusion crust (0.2 to 0.5 mm thick) and weighing 40.6 g plus three splinters weighing 0.7 g, 0.4 g, and 0.3 g were recovered.

Petrography (R. Bartoschewitz, *Bart*): Irregular-shaped olivine aggregates (0.1–0.7 mm), chondrules (0.2–0.7 mm) and CAIs up to 0.2 mm are set in a fine-grained matrix consisting of phyllosilicates and isolated olivine fragments up to 0.2 mm in size and sulphides (dominantly pentlandite and pyrrhotite). Kamacite occurs in olivine aggregates and chondrules. CAIs are spinel-rich. Magnetic susceptibility is $\log \chi = 3.97 \times 10^{-9} \text{ m}^3/\text{kg}$.

Mineral composition (R. Bartoschewitz, *Bart*; P. Appel, B. Mader, *Kiel*): Olivine has mean Fa_{10} ranging from $\text{Fa}_{0.6-44}$ ($n=48$). Chromite, TiO_2 0.5–1.6, Al_2O_3 0.1–13.8, MgO 0.8–9.9 and kamacite Ni 5.4–6.3, Co 0.4, P 0.2–0.8 (all in wt%).

Oxygen isotopes (I. A. Franchi and R. C. Greenwood, *OU*): $\delta^{17}\text{O} = 9.22$, $\delta^{18}\text{O} = 21.85$, $\Delta^{17}\text{O} = -2.55$. The oxygen isotopic composition is anomalous for CM chondrites, but plots close to the anomalous Dhofar 225, Belgica-7904, Yamato-82162, and Yamato-86720.

Classification (R. Bartoschewitz, *Bart*): carbonaceous chondrite (CM anomalous), S1.

Type specimens: A total of 7.0 g is on deposit at *Kiel* and 1.1 g on deposit at *OU*. *Bart* holds the main mass and one thin section.

Dhofar 1441 18°26.16'N 54°29.03'E

Dhofar, Oman

Find: 2003

Achondrite (ungrouped)

History: Two fragments of a meteorite were found by an anonymous collector in the Dhofar province of Oman.

Physical characteristics: The dark-brown stones of 267.85 g total weight have irregular shapes. The fusion crust is not preserved.

Petrography (C. A. Lorenz, *Vernad*): The meteorite is a breccia, consisting of rock and mineral clasts embedded in a

well crystallized melt matrix. Lithic clasts are basalts, gabbros, norites, metamorphosed pyroxene-feldspar rocks, clastic breccias, melts and rare glasses. Major phases are pyroxene and feldspar. Some pyroxenes have fine exsolution lamellae. Silica, olivine, chromite, ilmenite, troilite and metal Fe-Ni are rare phases. The matrix is fine-grained aggregate of pyroxene and feldspar.

Mineral compositions and geochemistry (N. N. Kononkova, *Vernad*): Pyroxene is $\text{En}_{35.3-72.5}\text{Wo}_{1.4-5.0}$ ($\text{Fe}/\text{Mn} = 36.3$); feldspar $\text{An}_{92.2}\text{An}_{7.6}$, rare $\text{An}_{74.4}\text{Ab}_{23.6}$; olivine is $\text{Fa}_{28.8}$ ($\text{Fe}/\text{Mn} = 50.4$). The bulk composition (I. A. Roshina, *Vernad*.) XRF (wt%): $\text{SiO}_2 = 47.83$, $\text{TiO}_2 = 0.30$, $\text{Al}_2\text{O}_3 = 10.41$, $\text{Na}_2\text{O} = 0.32$, $\text{K}_2\text{O} = 0.04$, $\text{CaO} = 6.5$, $\text{MgO} = 10.88$; $\text{MnO} = 0.52$; $\text{FeO} = 20.28$, $\text{Cr}_2\text{O}_3 = 0.53$. Oxygen isotopes (Franchi I., *OU*): $\delta^{17}\text{O} = 2.675$; $\delta^{18}\text{O} = 5.508$.

Classification: Achondrite (ungrouped, impact melt breccia) with minor weathering.

Type specimens: A total 28.3 g and one thin section are on deposit at *Vernad*. An anonymous collector holds the main mass.

Dhofar 1442 19°17.5'N 54°34.4'E

Oman

Find: 2005

Lunar (KREEP-rich? impact melt breccia)

History: This meteorite was found in the desert of Oman.

Physical characteristics: Five brownish to dark green stones weighing 106.5 g in total, with no fusion crust were located within two meters of each other.

Petrography (Ivanova M. A., Lorenz C. A., and Nazarov M. A., *Vernad*): This meteorite is an impact melt breccia containing lithic clasts, mineral fragments, glassy spherules, granulites and melt breccias embedded in a fine-grained melt matrix. The breccia is polymict; matrix/clasts ratio varies from sample to sample of the meteorite. The lithic clast population includes anorthosites, gabbros, olivine gabbro-norites, gabbro-norites and norites. KREEPy and mare basalt clasts are present. The size range of the clasts is 0.02–8 mm; major minerals are pyroxene and feldspar; minor minerals are olivine, silica, chromite, ilmenite, Ca-phosphate, troilite and FeNi metal.

Geochemistry (Ivanova M. A. and Kononkova N. N. (*Vernad*): Feldspar is $\text{An}_{73-96}\text{Ab}_{3.7-24.8}$; clinopyroxene $\text{En}_{2.6-69.5}\text{Wo}_{5.6-42.8}$ ($\text{Fe}/\text{Mn} = 64$ at.), orthopyroxene $\text{En}_{60.8-77.1}\text{Wo}_{1.2-4.1}$ ($\text{Fe}/\text{Mn} = 69$ at.), olivine $\text{Fo}_{39.9-72.2}$ ($\text{Fe}/\text{Mn} = 93$ at.); ilmenite (MgO 5.5 wt%); FeNi metal (Ni 8.0 wt%; Co 0.6 wt%). Average glassy matrix composition (wt%): SiO_2 49.6; TiO_2 1.76; Al_2O_3 17.4; Cr_2O_3 0.20; FeO 10.7; MnO 0.15; MgO 7.16; CaO 11.1; Na_2O 0.88; K_2O 0.76; P_2O_5 0.84.

Classification: Lunar (KREEP-rich impact melt breccia) with minor weathering.

Type specimens: A total of 21.8 g and two thin sections are on deposit at *Vernad*. An anonymous buyer holds the main mass of the meteorite.

Dhofar 1443 18°25.00'N 54°25.50'E

Oman

Find: 12 April 2001

Lunar (anorthositic breccia)

History: On April 12, 2001, one stone was found by an anonymous finder in the Dhofar region, Oman. Some years later three further tiny fragments were found within a few feet. The total mass of all stones is 36.7 g.

Physical characteristics: The rock is slightly weathered and relatively dark in hand specimen.

Petrography and mineralogy (A. Bischoff, *IfP* and E. H. Haiderer, *Vienna*): typical anorthositic breccia with light anorthositic clasts and abundant impact melt clasts embedded within a tough, partially molten matrix. This mostly devitrified matrix contains abundant vesicles and schlieren. Based on the optical appearance the rock has some similarities with Dhofar 081, however, the coordinates do not favor pairing. Mineral compositions: feldspar ranges from An_{83-98} with a mean of $An_{94.8 \pm 3.5}$; pyroxene is Fs_{12-49} ; mean: $Fs_{30 \pm 9}$; and olivine is Fa_{19-52} ; mean: $Fa_{35.5 \pm 9}$.

Classification: Lunar (anorthositic breccia).

Type specimens: 7.4 g and one polished thin section (*IfP*, *Mün*); an anonymous collector holds the main mass.

Jiddat al Harasis 348**19°32'02"N, 55°07'13"E**

Oman

Find: 6 March 2006

Lunar (feldspathic fragmental breccia)

History and physical characteristics: A small (18.4 g), complete stone with no remaining fusion crust was recovered from the Jiddat al Harasis region of Oman on March 6, 2006, by Robert Ward.

Petrography (J. Wittke and T. Bunch, *NAU*): Clast-rich, fragmental breccia with sparse vesicles (<0.3 mm) that is dominated by many varieties of quench-textured impact-melt breccias and plagioclase fragments. Minor amounts of anorthositic olivine gabbros, troctolites, and olivine/pyroxene fragments are also present.

Mineral compositions: Anorthositic gabbro olivine ($Fa_{28.4-32.2}$, $FeO/MnO = 89$ to 98 ; Ca-rich pyroxenes, $Fs_{10.1-25.7}Wo_{40.6-13.0}$; plagioclase, $An_{95.2-97.7}$), troctolite olivine ($Fa_{17-24.3}$, $FeO/MnO = 96 - 103$), plagioclase, $An_{96.5}$.

Classification: Lunar (feldspathic fragmental breccia).

Type specimens: A total of 3.7 g is on deposit at *NAU*. Robert Ward holds the main mass.

Jiddat al Harasis 422**19°50.357'N, 56°28.762'E**

Oman

Find: 3 March 2007

Achondrite (ureilite impact melt breccia with dunite clasts)

History: A single stone was found during a search for meteorites by M. Eggimann, E. Gnos, E. Janots, B. Hofmann, L. Huber and F. Zurluh.

Physical characteristics: Rounded reddish-brown single

stone with a mass of 61.48 g, no fusion crust preserved, wind polished surface. Heterogeneous surface with protruding clasts.

Petrography (E. Janots, *IMM*; E. Gnos, *MHNGE*; B. Hofmann, *NMBE*): The rock is a dimict breccia and shows a thorough fine-grained, equigranular recrystallization/reequilibrium texture of clasts and matrix. Dunite clasts (~50%) are up to 14 mm long, nearly free of carbon platelets, secondary iron hydroxides and large pores. The dunite clasts consist of nearly pure, homogeneous olivine (Fa_{19-21}) with triple joints. The groundmass, ~50% of the stone, consists of olivine (Fa_{10-17}), orthopyroxene ($Fs_{9-12}Wo_{0.5-5.0}$) and augite ($Fs_{9-12}Wo_{20-35}$), abundant carbon platelets (up to 1 mm) consisting of graphite and diamond and Fe-oxyhydroxides. At the contact with pores and carbon/Fe-hydroxides, olivine and pyroxene show a narrow reduction rim depleted in Fe. The groundmass contains numerous pores up to 1 mm in size, partially filled with secondary bassanite (based on Raman spectroscopy). The groundmass is interpreted as ureilite impact melt with residual carbon phases.

Geochemistry: Oxygen isotopes (I. A. Franchi and R. C. Greenwood, *OU*) of dunite clast $\delta^{17}O = 2.87$, $\delta^{18}O = 7.57$, and $\Delta^{17}O = -1.07$ (mean of two replicates). Oxygen isotopes of matrix: $\delta^{17}O = 3.31$, $\delta^{18}O = 8.31$, and $\Delta^{17}O = -1.00$ (mean of two replicates) ($\Delta^{17}O = \delta^{17}O - 0.52 \delta^{18}O$). Both, clast and matrix analyses plot within the ureilite field.

Classification: Ureilite (impact melt breccia with dunite clasts)

Type specimens: All at *NMBE*.

Shiřr 161**18°36.25'N 18°36.25'N**

Oman

Find: January 2008

Achondrite (lunar, feldspathic fragmental breccia)

History: One stone of 57.2 g found by Michael Farmer and later sold to Philip Mani.

Physical characteristics: The meteorite lacks an obvious fusion crust but has the frosted, ablated exterior typical of Omani lunar stones. The interior is light brown with few fractures, and terrestrial weathering is negligible.

Petrography (A. Foreman, *WUSL*; A. Irving and S. Kuehner, *UWS*): The meteorite is a fragmental breccia composed of a variety of lithic clasts (3–7 mm) and mineral fragments (0.3–0.4 mm) of olivine, plagioclase, augite, and pigeonite set in a fine-grained matrix with some glass veins. Lithic clasts include feldspathic granulitic breccia (plagioclase matrix with interstitial grains of granoblastic olivine), spherulitic basalt consisting of dominantly lath-shaped plagioclase and pyroxene, fragmental breccia with 0.3–0.4 mm clasts of plagioclase, olivine, augite, and pigeonite set in a fine-grained light-brown/gray matrix, and a granophyre composed of plagioclase, pigeonite, chromite, and ilmenite. No regolith components (glass spherules) have been identified. Very minor FeNi metal.

Geochemistry (A. Foreman, *WUSL*): Feldspathic granulitic

breccia: olivine (Fa_{20.9–37.2}, FeO/MnO = 73–115), plagioclase (An_{94.5–97.7} Or_{0.0–0.3}); basaltic clast: 60.0% plagioclase (An_{94.5–96.7} Or_{0.2–0.5}), 34.8% orthopyroxene (Fs_{41.7–47.1} Wo_{2.5–3.9}, FeO/MnO = 55.2–59.4), 3.9% augite (Fs_{14.9–26.6} Wo_{30.7–41.9}, FeO/MnO = 46.3–62.5), 0.3% ilmenite, fragmental-breccia clast: plagioclase (An_{96.6} Or_{0.4}), olivine (Fa_{35.4–39.3}, FeO/MnO = 82–95), augite (Fs_{16.4–16.9} Wo_{38.9–39.8}, FeO/MnO = 40.6–41.0); mineral fragments: plagioclase (An_{93.9–98.6} Or_{0.0–0.6}), olivine (Fa_{17.4–62.5}, FeO/MnO = 75–101), augite (Fs_{10.3–51.4} Wo_{21.4–42.4}, FeO/MnO = 29.5–88.2), pigeonite (Fs_{27.6–47.3} Wo_{8.1–19.5}, FeO/MnO = 49.9–63.1). Bulk composition (R. Korotev, *WUSL*): FeO 5.6 wt%, Sc 13 ppm, Ni 90 ppm, Sm 0.64 ppm, Th 0.16 ppm.

Classification: Achondrite (lunar, feldspathic fragmental breccia).

Specimens: A total of 11.5 g is on deposit at *UWS*. Thin section at *WUSL*. The main mass is held by Mr. P. Mani.

Table 7 lists all newly approved meteorite names and relevant data from Oman.

THAILAND

Table 8 lists all newly approved meteorites from Thailand.

Renaming

The Ulasitai (China) IIIIE iron meteorite (Connolly et al. 2006, *The Meteoritical Bulletin* No. 90) has been shown to be paired with Armanty (Xu et al. 2008). Therefore the name Ulasitai is abolished as a formal meteorite name, and becomes a synonym for Armanty.

Reclassification

Asuka-882039 has been re-classified as an EL6 because it contains ferroan alabandite and 1.0 wt% Si in the FeNi metal (A. E. Rubin, personal communication).

ERRATA

Errata to previous editions of *The Meteoritical Bulletin*.

The Meteoritical Bulletin 95

Erratum for Twannberg: the total weight is 20.689 kg.

ABBREVIATIONS

Classifiers, Type Specimen Locations, Finders and Holders of Main Masses

A key to abbreviations for addresses used in *The Meteoritical Bulletin* is found at our web site, <http://tin.er.usgs.gov/meteor/>

MetBullAddresses.php. Tables 1–8 also contain a key to the abbreviations used.

Cardiff–School of Earth, Ocean & Planetary Sciences, Cardiff University, Cardiff CF10 3YE, UK.

Pretoria–Department of Geology, University of Pretoria, Pretoria 0002, South Africa.

SUERC–Scottish Universities Environmental Research Centre, East Kilbride G75 0QF, UK.

Indiana–Department of Geological Sciences, Indiana University, Bloomington, Indiana 47405-7000, USA.

Ithemba–Ithemba LABS - Gauteng, Wits 2050, South Africa.

SANEC–South African Nuclear Energy Corporation, Pretoria 0001, South Africa.

Scripps–Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California 92093, USA.

UQué–Sciences de la Terre, Université du Québec à Chicoutimi, Chicoutimi, Quebec G7H 2B1, Canada.

Wits–School of Geosciences, University of the Witwatersrand, Wits 2050, South Africa.

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Acknowledgments–The Editor wishes to thank his Associate Editors, the Nomenclature Committee and all submitters, classifiers, collectors and dealers of meteorites who contributed to this issue of *The Meteoritical Bulletin*. The Editor is especially grateful to Drs. K. Righter, J. Zipfel, and J. Grossman for their discussions on nomenclature issues and producing the bulletin. J. Grossman is also thanked for his efforts in maintaining the Meteorite Database. The Editor is also very grateful to the Editor of *MAPS*, Dr. T. Jull and the Managing Editor, A. Baier, for their efforts in preparing the bulletin.

Table 1. Meteorites from specific locations in Africa.

Name	Location of recovery	Date of recovery	Find/Fall	Latitude	Longitude	Mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	Weathering grade	Fa mol%	Fs mol%	Magnetic sus. (log χ)	Location of specimen and classifier(s)	Location of main mass	Comments, additional data
El-Oued	Algeria	1952	Find	31°32'N	8°53'E	2305	2	H4	30	S3	W3/4	20.1±0.8	17.3±0.6	4.61	MNHN/	<i>The Museum in El-Oued</i>	***
Morokweng	Northwest Province, South Africa, near the town of Morokweng	Jun-04	Find	26°22'20.88"S	23°31'26.24"E	750	1	L1.6	20	S5	W0	30-33	27-31		TRMP/	<i>Dr. W. D. Maier</i>	***
Tamdakht	Tamdakht, (Ouarzazate) Morocco	20-Dec-2008**	Fall	31°09.8'N	7°00.9'W	~100,000	Many	H5	21	S3	W0	18±0.5	16	5.3	UPVI	Aron. ^a	***

MNHN/—Type specimen at MNHN, characterized by M. Bourd-Denise.

TRMP/—Type specimen at TRMP (Transvaal Museum, Pretoria, South Africa). Classified by W. D. Maier, M. A. G. Andreoli, I. McDonald, M. D. Higgins, A. J. Boyce, A. Shukolyukov, G. W. Lugmair, L. D. Ashwal, P. Graeser, E. Ripley and R. Hart.

TRMP/—Transvaal Museum, Pretoria, South Africa.

** Date of fall.

*** See detailed written description.

^aSvend Buhl 2 kg, Meteoritica *Phnomas* (Philip Thomas) 2.65 kg, M. Zeroual 20 kg, main mass anonymous finder.

Table 2. Meteorites from Morocco and other Northwest Africa regions.

Name	Location of recovery or purchase	Date of recovery or purchase	Total known mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	Weathering grade	Fa mol%	Fs mol%	Wo mol%	Magnetic sus. (log χ)	Location of specimens and classifier information	Location of main mass	Comments
NWA 2105	Morocco	2003	168	1	CV3	22.2	S2	W2/3	1.5-46	6.1-36.6			NAU/Bunch	Farmer	
NWA 2106	Morocco	2003	322	1	Eucrite	22.8	S1		30.5	36.1-39.5	4.8-7.4		NAU/Bunch	Farmer	
NWA 2107	Morocco	2003	491	1	L1.6	32	S1	W1	24.6				NAU/Bunch	Farmer	
NWA 2108	Morocco	2003	385	1	H4	23.8	S4	W2	17.6	15.6			NAU/Bunch	Farmer	Shock darkened
NWA 2109	Morocco	2003	62.1	1	L1.3	12.9	S2	W1	30.6	24.8			NAU/Bunch	Farmer	
NWA 2115	Morocco	2003	642	Several	Diogenite	21.5	S2		27.7	22.9	1.5		NAU/Bunch	Oakes	
NWA 2117	Morocco	2002	197	1	H5	20.9	S4	W2	19.3	16.3			NAU/Bunch	AHupé	Shock darkened
NWA 2118	Morocco	2002	42	1	L3.1	9.6	S2	W3	2.7-29.6	1.4-24			NAU/Bunch	AHupé	Shock darkened
NWA 2119	Morocco	2002	41.9	1	L3.8	8.4	S2	W3	22.6-26.6	20.1-23.3			NAU/Bunch	AHupé	Olivine, mean Cr ₂ O ₃ = 0.48
NWA 2120	Morocco	2002	702	1	L3.5	20.7	S2	W2	6.2-32	15-22.5			NAU/Bunch	AHupé	
NWA 2121	Morocco	2002	24.5	1	CO3.2	6.4	S1	W1	34.1-54				NAU/Bunch	AHupé	Olivine, mean Cr ₂ O ₃ = 0.14 wt%
NWA 2122	Morocco	2002	1020	1	L5	22.9	S5	W1	21.7	18.1			NAU/Bunch	AHupé	
NWA 2123	Morocco	2002	351	1	H4	21.8	S2	W2	18.4	16.3			NAU/Bunch	AHupé	
NWA 2124	Morocco	2003	67	1	Eucrite	13.3	S2			38.4	1.9		NAU/Bunch	Oakes	Plagioclase, An _{80.3} ; chromite, cr# = 70.1
NWA 2125	Morocco	2003	7000	1	L1.6	26.1	S3	W2	28.1	23.8			NAU/Bunch	Oakes	
NWA 2126	Morocco	2003	227	1	Eucrite	26.2	S2			35.9-56	1.9-6.6		NAU/Bunch	AHupé	Plagioclase, An _{80.6}
NWA 2127	Morocco	2003	45	1	L4	9.7	S2-4	W1	23.6	20.1			NAU/Bunch	AHupé	Complex polymict breccia
NWA 2128	Morocco	2004	40	1	Eucrite	8.4	S1			56.3-62.4	2.3-8.9		NAU/Bunch	Oakes	Plagioclase, An _{80.1}
NWA 2129	Morocco	2003	994	1	CK4	23.4	S2	Low	30.3-33.9	61.9	1.9		NAU/Bunch	Boswell	Plagioclase, An _{88.3} ; Minor chromite, cr# = 88.3; Minor silica, metal and limonite.
NWA 2130	Morocco	2003	506	1	Eucrite	21.7	S2						NAU/Bunch	Boswell	
NWA 2131	Morocco	2003	596	1	CO3.8	21	S2	W2	25.6-30.7	30.5-60.7	2.4-6.7		NAU/Bunch	Boswell	Plagioclase, An _{81.1} ; chromite, cr# = 84.8
NWA 2132	Morocco	2003	1006	1	Howardite	20.9	S2						NAU/Bunch	Boswell	
NWA 2133	Morocco	2003	120	1	R3.7	21.6	S2	low	39.3-41.9				NAU/Bunch	Boswell	
NWA 2138	Morocco	2003	144	1	L1.4	20.2	S3	W2	27.5	23			NAU/Bunch	Olsen	
NWA 2139	Morocco	2003	146	1	L1.6	20.3	S3-6	W2	29.4	24.6			NAU/Bunch	Olsen	
NWA 2140	Morocco	2003	314	1	CV3	20.6	S1	W2	1.6-46	2.3-39			NAU/Bunch	Olsen	
NWA 2141	Morocco	2003	145	1	CV3	21.1	S1	W0/1	0.5-45.3	1.1-34.5			NAU/Bunch	Olsen	Allende-like, very fresh
NWA 2142	Morocco	2003	421	1	Eucrite	21	S2			43-47.7	2.2-3.2		NAU/Bunch	Boswell	Plagioclase is An _{83.8-84.5} ; chromite, cr# = 67.8 to 73.5.
NWA 2201	Erfoud, Morocco	2005	27	1	Eucrite	5.5	S2			55	9.3		NAU/Bunch	Gregory	Plagioclase is An ₈₁ and chromite Cr/(Cr+Al) = 0.79
NWA 2204	Erfoud, Morocco	2005	5587	1	L1.3.8	28	S2	W1	24.6-31.4	23.8	1.6		NAU/Bunch	Gregory	

Table 2. *Continued. Meteorites from Morocco and other Northwest Africa regions.*

Name	Location of recovery or purchase	Date of recovery or purchase	Total known mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	Weathering grade	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log χ)	Location of type specimens and classifier information	Location of main mass	Comments
NWA 2205	Erfoud, Morocco	2005	1247	1	LL5	22	S3-5	W2	28.6	24.1	1.5		NAU/Bunch	Gregory	Polymict breccia
NWA 2206	Erfoud, Morocco	2005	182	1	LL6	22.1	S2-5	W2	29.1	24.9	1.7		NAU/Bunch	Gregory	Polymict breccia
NWA 2207	Erfoud, Morocco	2005	1060	1	LL5-6	22.3	S2-5	W2	27.6	23.8	1.7		NAU/Bunch	Gregory	Polymict breccia
NWA 2208	Erfoud, Morocco	2005	243	1	CK5	21	S2-6	W2	28.7	24.1	2		NAU/Bunch	Gregory	Magnetite Cr ₂ O ₃ = 3.71 wt%
NWA 2209	Erfoud, Morocco	2005	146	1	LL3.7	21.3	S3-6	W1	20.1-33	22.5	1.5		NAU/Bunch	Gregory	Monomict breccia
NWA 2221	Northwest Africa	2005	37.6	1	Ureilite	7.1			24.7 ± 0.6	16.5 ± 3.2	7.1 ± 3.1		UWO/Gregory	Gregory	Highly shocked and brecciated diogenite that is plagioclase rich
NWA 2824	Morocco	2005	485	1	Diogenite	32				31.2-33.8	3.1-3.8		PSF/NAU	Anonymous	***
NWA 2990	Morocco	2007	363	1	Shergottite	21.1			37.6-47.9	32.2-41.1	8.6-10.8		NAU/Bunch/Irving	Adam Aaronson	***
NWA 2996	Algeria	2006	968	1	Lunar	20.3			32.4	22.4	19.1		NAU/Bunch	Anonymous	Feldspathic breccia, ***
NWA 3158	Tagounite	Aug-2004	681	1	ANG	20.1			39.7	10.1	53.2		UWS: G Hupe	GHupé	Paired with NWA 2999
NWA 3166	Erfoud, Morocco	2005	135	1	LL5	27.2	S5	W2	27.4	22.8	1.5		NAU/Bunch	Gregory	Shock-veined
NWA 3332	Midelt	2005	21	8	LL6	4	S3	W2	27.8	22	1.2		PSF/NAU	Koblitz	
NWA 4241	Northwest Africa	2003	15	1	CV3	3.1	S3		6.05	4			Hamb-1		
NWA 4245	Northwest Africa	2003	21	1	CV3	9.8	S2		4.22	1.85			Hamb-1		
NWA 4284	Algeria	2005	137	1	Achondrite (ungrouped)	21			24.6	24.5	3.5		NAU/Bunch	Kasper von Wuthenau, Techn	***
NWA 4460	Algeria	Jun-2006	1584	1	L3	37	S4	W1	24.5 ± 0.4	16.2-21.7 (19.2 ± 1.4)		4.89	MNHN/Bourrot-Denise	PThomas	Melt pockets; native Cu; estimated subtype: >3.5
NWA 4767	Morocco	May-2007	101.52	1	CV3	20.4	W2	W2	0.4-19.2 (4.3 ± 4.4)	0.9-3.3 (1.7 ± 0.5)		4.34	MNHN/Bourrot-Denise	Phomas	In magnetite, mean wt% Cr ₂ O ₃ =1.46, MgO=0.22; estimated subtype: >3.5
NWA 4768	Boudinh, Morocco	May-2007	369.12	68	CO3	20.6	S3	W2	0.3-59.1 (18.9 ± 21.9)	1.2-51.8 (9.9 ± 16.6)		4.54	MNHN/Bourrot-Denise	PThomas	Complete stone; olivine mean wt% Cr ₂ O ₃ =0.38; estimated subtype: <3.5
NWA 4769	Algeria	May-2007	332	1	LL3	23.4	S1	W1	0.5-32.9 (20.4 ± 12.1)	1.1-27 (15.2 ± 8.1)		4.1	MNHN/Bourrot-Denise	PThomas	Estimated subtype: >3.5
NWA 4770	Talsint, Morocco	May-2007	88.01	1	CK4	20.1	S1	W3	31 ± 0.3	26.8 ± 0.3		4.56	MNHN/Bourrot-Denise	PThomas	Paired with NWA4422; magnetite mean wt% Cr ₂ O ₃ =4.8, MgO=0.22
NWA 4771	Hamada du Guir, Morocco	May-2007	224.62	1	LL7	22.9	S3	W0	32.5 ± 0.3	26.5 ± 0.4		3.68	MNHN/Bourrot-Denise	PThomas	Ca-pyroxene = Fs _{32.4} ; Wo ₆₉ ; Plagioclase = An _{10.8} ; metal is rare. Chondritic texture is absent.
NWA 4779	Erfoud, Morocco	Oct-2006	250	1	H3	22.8	S2	W3	18 ± 0.7	6.5-16.0 (12.6 ± 2.9)		4.9	MNHN/Bourrot-Denise	AHabibi	Estimated subtype: >3.5
NWA 4780	Erfoud, Morocco	Oct-2006	1100	2	EL4	20	S3	W1	0.2 ± 0.1	0.9 ± 0.6		5.45	MNHN/Bourrot-Denise	AHabibi	0.94 wt% Si in kamacite
NWA 4781	Erfoud, Morocco	Oct-2006	163	1	CH3	20.7		W4	1.6-48.4 (17.6 ± 16.6)	1.3-30.5 (5.1 ± 6.9)		5.12	MNHN/Bourrot-Denise	AHabibi	Highly weathered, 3/4 of metal oxidized
NWA 4782	Erfoud, Morocco	Oct-2006	1500	3	LL3	33.7	S4	W3	9.4-28.9 (21.6 ± 6)	6.8-26.9 (16.1 ± 5.2)		4.54	MNHN/Bourrot-Denise	AHabibi	Melt pockets; estimated subtype: >3.5
NWA 4798	Zagora	Feb-2007	487	1	L4	20.8	S2	W2/3	24.4-25.2	20.8	1.3		UWS/Irving	GHupé	Magnetite Cr ₂ O ₃ 3.7 wt%**
NWA 4800	Tagounite	Jun-2007	152	1	CK4	20.0	S2	W1	30.5-31.1	6.4	47.1		UWS/Irving	GHupé	Feldspar = An _{90.4} and An _{90.9}
NWA 4856	Talsint, Morocco	Jul-2007	578	1	Messosiderite	25.77	S1	W1	32.8	Pigeonite + augite		5.79	MNHN/Bourrot-Denise	Thomas	
NWA 4928	Tucson Gem and Mineral Show	2007	45.6	1	Ureilite	9.3			18-20	17	5.5		NSMT/Takeda	Hori	
NWA 4936	Morocco	2007	179	2	Lunar	40.1			29.1	25.7	4.6		UWS/UAE/Irving	Shrader	Feldspathic breccia, ***
NWA 5086	Algeria	2001	116	1	H4	29	S3	W2	18.8	16.8	2		PSF/NAU		
NWA 5087	Morocco	2001	81	1	H5	20	S3	W1	19.1	16.4	1.5		PSF/NAU		
NWA 5088	Morocco	2001	135	1	L4	27	S2	W2	24.8	21.1	1.6		PSF/NAU		

Table 2. *Continued.* Meteorites from Morocco and other Northwest Africa regions.

Name	Location of recovery or purchase	Date of recovery or purchase	Total known mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	Weathering grade	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log χ)	Location of type specimens and classifier information	Location of main mass	Comments
NWA 5089	Morocco	2001	92	1	L4	23	S2-4	W2	24.4	20.7	2		PSF/NAU		Large amounts of maskelynite
NWA 5090	Morocco	2001	49	1	L4	12	S2	W2	24.8	20.8	1.8		PSF/NAU		
NWA 5091	Morocco	2001	86	1	L4	16	S2	W2	24.5	20.8	2		PSF/NAU		
NWA 5092	Morocco	2001	42	1	L4	14	S2	W2	24.9	20.9	1.2		PSF/NAU		
NWA 5093	Morocco	2001	43	1	H4	12	S2	W2	18.8	16.5	1.2		PSF/NAU		
NWA 5094	Morocco	2001	45	1	H4	14	S3	W1	18.9	16.3	1.5		PSF/NAU		
NWA 5095	Morocco	2001	42	1	L4	11	S3	W2	24.9	21.2	1.8		PSF/NAU		
NWA 5096	Morocco	2001	37	1	L4	9	S2	W2	25.7	21.8	1.5		PSF/NAU		
NWA 5097	Morocco	2001	23	1	L5	10	S3	W3	25	21.8	1.4		PSF/NAU		
NWA 5099	Algeria	2001	44	1	L5	9	S2	W2	24.8	21.8	1.7		PSF/NAU		
NWA 5100	Morocco	2001	31	1	L4	8	S3	W2	24	20.7	0.9		PSF/NAU		
NWA 5102	Morocco	2001	13	1	L4	6	S3	W2	24.9	20.8	1.6		PSF/NAU		
NWA 5103	Morocco	2001	17	1	L4	8	S3	W2	24.4	20.9	3.1		PSF/NAU		
NWA 5104	Morocco	2001	29	1	L5	7	S2-4	W2	25.2	21.4	1.4		PSF/NAU		Polymict
NWA 5105	Morocco	2001	26	1	L4	7	S3	W2	23.9	20.2	1.7		PSF/NAU		
NWA 5109	Morocco	2001	28	1	L4	6	S3	W3	24.1	21.1	1.7		PSF/NAU		
NWA 5110	Morocco	2001	24	1	L4	5	S3	W2	24.6	21.4	1.7		PSF/NAU		Crushed
NWA 5112	Morocco	2001	17	1	L4	4	S3	W2	24.8	20.2	1.5		PSF/NAU		Crushed
NWA 5113	Morocco	2001	23	1	L5	7	S3	W2	26	21.8	1.1		PSF/NAU		
NWA 5118	Morocco	2001	21	1	L5	5	S3	W3	25.8	22	1.5		PSF/NAU		
NWA 5125	Morocco	2001	9	1	L5	3	S2	W2	24.4	20.8	1.5		PSF/NAU		
NWA 5210	Erfoud, Morocco	2007	28.8	1	Lodranite	5.8			13.4	14.6	2.7		NAU/Bunch	Gregory	
NWA 5229	Ensisheim	Jun-2007	648	1	Eucrite	22.65				63.5	2.1		UWS/Irving	Space Jewels Swzd.	FeO/MnO in opx = 28.3–29.9
NWA 5232	Mali	2008	18535	1	Eucrite, anomalous	20.1				61.2–61.5	1.7–1.8		UWS/Gregory	Gregory	
NWA 5233	Tucson	Feb-2008	25	1	Eucrite	5.0				63.2	1.5		UWS/Irving		
NWA 5235	Tucson	Feb-2008	70	1	Eucrite	14.0				58.6	5.3		UWS/Irving	AHupé	
NWA 5236	Tucson	Feb-2008	48	1	CK4	9.6	S2	W1	29.6–30.1	25.8	0.5		UWS/Irving	AHupé	FeO/MnO in opx = 37.0
NWA 5248	Munich	2004	74	1	L4	15.2	S1	W3	23.8	22.2	3.1		Vernad-I	M. Bandti	FeO/MnO in pigeonite = 29.1
NWA 5249	Munich	2004	84	1	L-chondrite impact melt	17.1		W4	23.1	19.1	1.5		Vernad-I	Stehlik	Magnetite, C_2O_3 , 3.3 wt%
NWA 5250	Munich	2004	32	1	L1.5	6.65	S3	W3	29	24.2	2.8		Vernad-I	Stehlik	
NWA 5251	Munich	2005	740	1	H4	37.68	S1	W3	17.5	15.4	0.7		Vernad-I	Stehlik	
NWA 5252	Munich	2005	150	1	L5	21.1	S2	W4	24.1	20.3	1.6		Vernad-I	Stehlik	
NWA 5253	Munich	2005	90	1	L6	18	S2	W2	24.9	20.7	1.7		Vernad-I	Stehlik	
NWA 5254	Munich	2005	560	1	H5	28.15	S1	W4	18.4	39	3.5		Vernad-I	Stehlik	
NWA 5255	Munich	2005	2900	12	H5	52.26	S4	W1	17.8	16	1.4		Vernad-I	Stehlik	
NWA 5256	Munich	2004	230	1	L5	20	S1	W3	24.2	20.7	1.5		Vernad-I	Stehlik	
NWA 5257	Munich	2004	90	1	H5	27.97	S1	W3	18.5	16.6	1.3		Vernad-I	Stehlik	
NWA 5285	Munich	2005	450	1	L4	20	S1	W2	23.7	20.1	1.1		Vernad-I	Stehlik	
NWA 5286	Munich	2005	289	1	L4-5	21	S2	W1	23.9	21.2	1.4		Vernad-I	Stehlik	
NWA 5287	Morocco	2003	1070	1	H5	20	S1	W1	18.2	16.2	1.5		Vernad-I	Horst	Breccia
NWA 5288	Bou-Arfa, Morocco	2002	360	1	L6	20	S2	W4	24.7	23.1	2		Vernad-I	Horst	
NWA 5307	Erfoud	2006	83	1	L5	17.68	S2	W3	24.3	22.9	2.1		PSF/NAU		
NWA 5308	Erfoud	2007	117	1	L5	20.53	S2	W3	24.8	20.9	1.7		PSF/NAU		
NWA 5309	Erfoud	2007	120	1	L4	21.09	S3	W2	25.6	21.7	1.6		PSF/NAU		
NWA 5310	Casablanca	2006	25	1	CR2	5.15	S3	W3	1.8–5.6	2.0–3.9	0.5		PSF/NAU		Cpx = $Fe_{8.0}Wo_{37.6}$ plag = An91
NWA 5311	Midelt	2007	147	1	Mesosiderite	19.83	Low	Moderate	27.7	23.8	1.8		PSF/NAU		Plag = 95.5: metal Ni = 6.2 wt%
NWA 5312	Rich	2007	354	1	Diogenite	21.17			22.1	20.6	1.5		PSF/NAU		S ¹⁷ O: 1.545 and 1.484; S ³⁴ O: 3.364 and 3.149

Table 2. Continued. Meteorites from Morocco and other Northwest Africa regions.

Name	Location of recovery or purchase	Date of recovery or purchase	Total known mass (g)	Number of pieces	Type	Shock stage	Weathering grade	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log X)	Location of type specimens and classifier information	Location of main mass	Comments
NWA 5315	Erfoud	2007	35	1	Diogenite				33	3.6		PSF/NAU		Plagioclase is An ₅₅ ; chromite Cr/(Cr+Al) = 0.81
NWA 5316	Erfoud	2007	1500	1	H3.8	S2	W2	16-21.2	14-21.1	2.2		PSF/NAU		
NWA 5400	Morocco	2008	4818	1	Brachinite-like			30.1-30.4	24.4	2.1		UW/S/Hupe	GHupé	***
NWA 5405	Algeria	2008	323	1	Diogenite			28.5	23.6-24.0	1.7-2.5		UW/S/Maani	P. C. Maani	
NWA 5406	Morocco	2008	281	6	Lunar feld. breccia			25.7-27.0	34.7-55.8	9.8-26.4		UW/S/Hupe	GHupé	***
NWA 5438	Tucson	2006	87.5	1	LL5	S1	W0	27.8 ± 0.1				UCLA/Rubin	Matson	Purchased 2007
NWA 5461	Algeria	2003	136.3	1	H5	S2	W3	20.0 ± 0.8	18.2 ± 0.9		4.6	MNHN/Bourrot-Denise	Labenne	
NWA 5462	Algeria	Feb-2003	1200	1	LL6	S4	W3	30.8 ± 0.2	26.3 ± 0.1		3.46	MNHN/Bourrot-Denise	Labenne	Veins of melted silicates
NWA 5463	Talsint, Morocco	May-2007	67.1	1	L6	S4	W1	24.9 ± 0.4	21.6 ± 0.3			MNHN/Bourrot-Denise	Philomas	Paired with NWA 1766
NWA 5464	Ei-Rachidia, Morocco	Dec-2003	41.7	1	Eucrite, polymict		W2		52.8 ± 1.8	11 ± 2.1	3.56	MNHN/Bourrot-Denise	Kuntz	Brecciated, with completely recrystallized clasts of small equant grains (20-40 µm) and coarse-grained clasts with ophitic texture
NWA 5465	Morocco	Jun-2006	1357	1	L6	S3	W2	25.1 ± 0.4	21.3 ± 0.4			MNHN/Bourrot-Denise	Franco	Fresh crust
NWA 5466	Algeria	2003	688	2	L5	S4	W2	25 ± 0.5	21.1 ± 1.1		4.58	CEREGE/Bourrot-Denise	Franco	Pervasive shock blackening
NWA 5467	Erfoud, Morocco	Jun-2006	229	1	CV3	S1	W3	0.2-42.2 (6.2 ± 7.1)	0.5-7.2 (2.5 ± 2.1)			MNHN/Bourrot-Denise	Hmani	Magnetite, mean wt% Cr ₂ O ₃ = 0.26, MgO = 0.2; estimated subtype: <3.5. Oxygen isotopes of one acid-washed 1.5 mg bulk sample (C. Sauer, J. Gattacceca, CEREGE) δ ¹⁷ O = -7.19‰, δ ¹⁸ O = -3.48‰, Δ ¹⁷ O = -5.37‰.
NWA 5480	Mali	2008	4912	7	Diogenite			30.2	24.8	1.8		UW/S/Hupe	GHupé	
NWA 5481	Purchased by Richard Kowalski in Tucson, Arizona	11-Feb-2006	120.31	1	H5	S2	W5	18.42 ± 0.61 PMD = 2.6	16.31 ± 0.42 PMD = 2.6	1.43 ± 0.46	N/A	UAz/DHill	R. Kowalski	
NWA 5482	South West of Algeria	2002	33.1	1	H5	S2/3	W3/4	18.47	16.93	1.31		MNHN-2	UJN	
NWA 5483	South of Morocco	2002	47.62	1	H5	S2/3	W5	18.63	16.62	1.56		MNHN-2	Toulouse	

T. Boswell—no address given. CEREGE/Bourrot-Denise—Type specimen at CEREGE (Centre Européen de Recherche et d'Enseignement de Géosciences de l'Environnement, Université d'Aix-marseille III, Europôle Méditerranéen de l'Arbois—BP 80-13545 Aix en Provence, Cedex 4, France), classified by M. Bourrot-Denise, MNHN, France. Hmani—Michael Farmer, P.O. Box 86059, Tucson, AZ 85754-6059, USA. Franco—Michel Franco (of Caillou Noir), 100 Chemin des Campenes 74400 Les Pratz de Chamoniex, France. AHupé—A. Hupé, address not given. Hmani—Ali Hmani Moroccan Imports Asnières. Horst—Burkard Horst, Germany. AHupé—Adam C. Hupé, 8440 8th Ave., #8, Tacoma, WA 98465, USA. GHupé—Gregory M. Hupé, 9003 Placid Lakes Blvd., Lake Placid, FL 33852, USA. Gregory—David Gregory, 230 First Avenue, Suite 108, St. Thomas, Ontario N5R 4P5, Canada David Gregory, 230 First Avenue, Suite 108, St. Thomas, Ontario N5R 4P5, Canada David Gregory, 230 First Avenue, Suite 108, St. Thomas, Ontario N5R 4P5, Canada. HAMB—Type specimen as HAMB (Mineralogisches Museum, Universität Hamburg, Grindelallee 48, D-20146 Hamburg, Germany), classified by J. Schlüter (HAMB), Koblitze—Jörn Koblitze, Benquestrasse 27, D-28209 Bremen, Germany. Kuntz—Fabien Kuntz, France. Labenne—L. Labenne, 8, rue Martin Bernard, 75013 Paris, France. MNHN/Bourrot-Denise—Type specimen at MNHN (Muséum National d'Histoire Naturelle, Rue Buffon, Paris, 5ème, France), classified by M. Bourrot-Denise, MNHN. MNHN-2—Classified by A. Seddiki UO, B. Moine and Cottin, UJM, M. Denise MNHN, NAU/Bunch—Type specimen at NAU (Northern Arizona University, Flagstaff, AZ 86011, USA), classified by T. Bunch and J. Wittke, NAU. NAU/Bunch/Tring—Type specimen at NAU (Northern Arizona University, Flagstaff, AZ 86011, USA), classified by T. Bunch (NAU) and T. Irving (UW/S). Oakes—Nelson Oakes, Route 1, House 50C, Uniondale, PA 18470, USA. Olsen—no address given. PSF/NAU—Type specimen at PSF (Planetary Studies Foundation, Harper College, Schmitt Meteorite Research Group, 1200 W. Algonquin Rd., Palatine, IL 60067, USA), classified by T. Bunch and J. Wittke, NAU. NSMT/Takada—Type specimen at NSMT (National Science Museum, 3-23-1 Hyakunin-cho, Shinjuku-ku, Tokyo, 169-0073, Japan), classified by H. Takeda, Chiba, Matsuo—Rob Matsuo, 8 Merano Ct., Newport Coast, CA 92657, USA. UCLA/Rubin—Type specimen at UCLA, classified by A. Rubin, UCLA. T. Boswell—no address given. Stehlik—Harald Stehlik, 1220 Wien, Austria. PThomas—Philippe Thomas, Meteoriteca, La Chave, 07690 St. André en Vivarais, France. Thompson—Edwin Thompson, 5150 Dawn St., Lake Oswego, OR 97035, USA. Toulouse—No contact information provided. France. UAz/DHill—Type specimen at UAz (Lunar and Planetary Laboratory, University of Arizona, 1629 E. University Blvd., Tucson, AZ 85721, USA), classified by D. Hill, UA. LUM—Université Jean Monnet, Saint-Etienne, France. UW/S/Tring—Type specimen at UW/S (University of Washington, Department of Earth and Space Sciences, Box 351310, Seattle, WA 98195, USA), classified by T. Irving, UW/S. Iernad—I—Type specimen at Iernad (Vernadsky Institute of Geochemistry and Analytical Chemistry, Russia), classified by C. Lorenz and N. Kononkova, Iernad.

***See detailed written description.

Table 3. Meteorites from North America.

Name	Location of recovery	Date of recovery	Find/Fall	Latitude	Longitude	Mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	Weathering grade	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log Z)	Location of specimen and classifier(s)	Location of main mass	Comments, additional data
Buzzard Coulee	Wilson Rural Municipality, Saskatchewan, Canada	20-Nov-08	Fall	52°59.76'N	109°50.89'W	41,000	129	H4	39.1	S2	W0	17.8	16.6	1.9		<i>UCalg-1</i>	<i>Anon.</i>	***
Desert Willow	Tucson, Pima County, Arizona	16-Mar-2007	Find	32.319°N	111.077°W	11.3	1	H4/5	2.4	S1-2	W2	17.3	15.3			<i>UAz/DHill</i>	<i>Paris</i>	Olivine, $Fe_{17.3} \pm 0.80$ (PMD=4.62); pyroxene, $Fe_{15.3} \pm 0.67$ (PMD=4.37)
Grandview	Dawson County, Texas	3-Mar-2008	Find	32°47.3'N	101°56.3'W	6400	1	L5	392	S1	W2	24.4	21			<i>TCU</i>	<i>Crossland</i>	Kamacite has 5.8 wt% and taenite has 23.8 wt% Ni
Jay Bird Springs	Dodge County, Georgia	2003	Find	32°08'N	82°59'W	292	1	Pallasite	20.7			11.9-12.9				<i>NAU</i>	<i>Anon.</i>	
Naviska	Tucson, Pima County, Arizona	25-June-2004	Find	32.5°N	111.28°W	147	1	IAB	26							<i>UAz/DHill</i>	<i>Sahlin</i>	
Nuevo Mercurio (c)	Nuevo Mercurio, Zacatecas State, México	Unknown	Find	24°15'36"N	102°8'27"W	16.80	1	H 5-6	0.94	S3	W2	20.02	17.65	1.64		<i>Igeol-UAM-1</i>	Eduardo Castelum's collection, Mexico City	Genomictic breccia, coarse metal-ironite aggregates and a dark inclusion
Winterhaven	Imperial County, CA	2002-03	Find	32° 57'N	114°40'W	2100	1	Howardite	83				33.5-21.8	1.3-40.8		<i>AMNH/Boes</i>	<i>Bill Szykowiec</i>	

AMNH/Boes—Type specimen at *AMNH* (Department of Earth and Planetary Sciences, American Museum of Natural History, New York, NY 10024, USA), classified by J. Boesenberg.

Crossland—Bobby Crossland, no contact information given.

Paris—Mark and Judy Paris hold the main mass (6150 N, Desert Willow Dr, Tucson, AZ 85743, USA).

TCU—Oscar E. Mornig Collection, Department of Geology, Texas Christian University, Ft. Worth, TX 76129, USA.

UAz/DHill—Type specimen at *UAz* (Lunar and Planetary Laboratory, University of Arizona, 1629 E. University Blvd., Tucson, AZ 85721, USA), classified by D. Hill, *UAz*.

Sahlin—Pat Sahlin and Kate Ruel hold the main mass (5135 W, 11th Street, Shawnee, OK 74801).

UCalg-1—M. Hutson and A. Ruzicka, *Cascadia* (Cascadia Meteorite Laboratory, Portland State University, Department of Geology, Room 17 Cramer Hall, 1721 SW Broadway, Portland, OR 97201, USA); E. Milley and A. Hildebrand, *Ucalg* (University of Calgary, Calgary, Alberta T2N 1N4, Canada).

Abbreviation for Nuevo Mercurio (c) is NM (c).

*** See detailed written description.

Table 4. Meteorites from South America.

Name	Abbrev.	Location of recovery	Type of find site	Date of recovery	Find/Fall	Latitude ² (^{**})	Longitude ² (^{**})	Total known mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	Weathering grade	Fa mol%	PMD Fa	Fs mol%	PMD Fs	Wo mol%	Magnetic sus (log χ)	Location of type specimens, main masses, and classifier information ³	Main mass	Comments
Los Cerrillos		Los Cerrillos, Santiago del Estero, Argentina		Jan-2006	Find	28°58'21"S	69°20'28"W	1000.00	1	H4	20	S2	W2	17.3±0.5	15.1±0.4	0.9±0.1			UCLA/Rubin	Morgan		
San Juan 003	SJ 003	Area San Juan, Comuna Talal, Provincia Tocopilla, región Antofagasta, Chile	Deflation surface	19-Jul-2007	Find	25°34.53'S	69°47.7'W	209.90	1	H5	181.6	S3	W2	19.6±0.55	0.36	16.8±0.32	1.65	5.18	CEREGE-1	UdeChile		
San Juan 004	SJ 004	-	Deflation surface	19-Jul-2007	Find	25°34.53'S	69°47.7'W	229.30	1	L4	165.16	S3	W2	25.6±1.18	2.53	19.4±3.96	16.25	4.78	CEREGE-1	UdeChile		
San Juan 005	SJ 005	-	Deflation surface	20-Jul-2007	Find	25°34.53'S	69°47.7'W	186.10	6	H6	52.22	S3	W3	19.4±0.1	0.36	17.3±0.61	2.34	4.50	CEREGE-1	UdeChile		
San Juan 006	SJ 006	-	Deflation surface	21-Jul-2007	Find	25°34.53'S	69°47.7'W	242.10	1	H3.6	187.46	S2	W2	19.0±0.74	2.76	13.1±6.42	30.00	4.90	CEREGE-1	UdeChile		
San Juan 007	SJ 007	-	Deflation surface	21-Jul-2007	Find	25°34.53'S	69°47.7'W	398.90	1	H6	330	S2	W2	20.5±1.11	3.64	17.4±0.63	2.37	5.14	CEREGE-1	UdeChile		
San Juan 008	SJ 008	-	Deflation surface	22-Jul-2007	Find	25°34.53'S	69°47.7'W	103.78	1	LL6	85.35	S3	W3	30.6±0.65	1.56	25.8±0.45	1.24	3.18	CEREGE-1	UdeChile		
San Juan 009	SJ 009	-	Deflation surface	23-Jul-2007	Find	25°34.53'S	69°47.7'W	45.56	1	CO3	40.56	S1	W2	11.5±12.08	87.51	14.8±3.82	42.99	4.69	CEREGE-1	UdeChile	***	
San Juan 010	SJ 010	-	Deflation surface	24-Jul-2007	Find	25°34.53'S	69°47.7'W	21.06	1	H3.8	17.6	S2	W3	19.5±1.07	3.23	16.7±2.31	7.39	4.64	CEREGE-1	UdeChile		
San Juan 011	SJ 011	-	Deflation surface	24-Jul-2007	Find	25°34.53'S	69°47.7'W	33.66	1	H4	30.06	S2	W2	18.9±0.24	1.05	16.9±0.44	1.83	5.04	CEREGE-1	UdeChile		
San Juan 012	SJ 012	-	Deflation surface	25-Jul-2007	Find	25°4.53'S	69°47.7'W	66.79	1	H5	59.79	S2	W2	19.9±0.24	0.93	17.5±0.17	0.78	5.06	CEREGE-1	UdeChile		

UdeChile—Depto. Geología, U. de Chile, Santiago, Chile.
 CEREGE-1—Type specimen at CEREGE (Centre Européen de Recherche et d'Enseignement de Géosciences de l'Environnement, Université d'Aix-marseille III, Europôle Méditerranéen de l'Arbois—BP 80-13545 Aix en Provence, Cedex 4, France), classified by M. V. Millarca Valenzuela (UdeChile), P.R. Pierre Rochette (CEREGE), J.G. Jerome Gattacceca (CEREGE), C.S. Clement Suavet (CEREGE), M.D. Michele Denise (MNFN).
 Igeol-UNAM-1—Type specimen at Igeol-UNAM (Instituto de Geología, Universidad Nacional Autónoma de México), classified by Karina Cervantes, Posgrado en Ciencias de la Tierra, Instituto de Geología, Universidad Nacional Autónoma de México.
 ** See detailed written description.

Table 5. Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 020067	01/02/2003	72°59'10"	75°13'55"	0.94	1	H4	S2	W1	20.1	17.8	1.4	IGCAS	
GRV 020141	01/06/2003	72°58'39"	75°15'50"	0.92	1	L6	S2	W1	26.3	22.4	1.5	IGCAS	
GRV 020171	1/7/2003	72°58'34"	75°15'59"	0.55	1	Mesosiderite	S3	W2		33.3 (24.3–56.6)	3.0 (1.8–6.6)	BeiAP	
GRV 020180	01/07/2003	72°58'39"	75°15'51"	0.55	1	H5	S2	W1	19.0	16.9	1.6	PMO	
GRV 020183	01/07/2003	72°59'41"	75°15'48"	0.85	1	L6	S4	W1	26.0	21.8	1.7	IGCAS	
GRV 020197	01/08/2003	72°59'33"	75°12'23"	0.52	1	H5	S2	W2	18.5	16.7	1.7	PMO	
GRV 020198	01/08/2003	72°59'33"	75°12'23"	0.56	1	H4	S1	W2	18.0	16.5	1.3	GIGCAS	
GRV 020201	1/8/2003	72°59'33"	75°12'23"	0.68	1	H5	S2	W1	19.4	16.9	1.3	BeiAP	
GRV 020203	01/08/2003	72°59'33"	75°12'23"	0.85	1	H4	S2	W1	18.0	16.5	1.3	GIGCAS	
GRV 020204	1/8/2003	72°59'33"	75°12'23"	1.22	1	H5	S2	W2	19.1	17.1	1.3	BeiAP	
GRV 020217	01/08/2003	72°59'33"	75°12'23"	2.65	1	H4	S1	W2	19.4	16.7	1.3	IGCAS	
GRV 020222	01/08/2003	72°59'14"	75°12'35"	6.24	1	L5	S2	W2	25.2	21.5	1.2	PMO	
GRV 020227	01/09/2003	73°00'03"	75°13'02"	1.10	1	H4	S1	W1	19.7	17.8	1.5	IGCAS	
GRV 020232	01/09/2003	72°58'59"	75°13'45"	1.35	1	H5	S2	W1	18.9	16.9	1.1	PMO	
GRV 020237	01/09/2003	72°58'59"	75°13'45"	77.60	1	H4	S4	W1	17.8	15.8	1.5	GIGCAS	
GRV 020238	1/9/2003	72°58'59"	75°13'45"	24.00	1	H5	S4	W1	19.1	16.9	1.2	BeiAP	
GRV 020242	01/09/2003	72°58'59"	75°13'45"	8.43	1	H5	S4	W1	17.9	16.3	1.2	GIGCAS	
GRV 020245	1/9/2003	72°58'59"	75°13'45"	1.77	1	H5	S2	W1	19.0	16.8	1.1	BeiAP	
GRV 020249	01/09/2003	72°58'59"	75°13'45"	1.06	1	H4	S1	W1	19.6	17.1	1.2	IGCAS	
GRV 020250	01/09/2003	72°58'59"	75°13'45"	92.30	1	H4	S3	W1	17.8	15.5	1.2	GIGCAS	
GRV 020251	01/09/2003	72°58'59"	75°13'45"	1.53	1	H4	S2	W1	19.1	17.2	1.1	IGCAS	
GRV 020253	01/09/2003	72°58'59"	75°13'45"	1.54	1	H5	S2	W1	19.1	17.9	1.1	PMO	
GRV 020257	01/09/2003	72°58'59"	75°13'45"	0.92	1	H6	S4	W1	17.8	16.1	1.3	GIGCAS	
GRV 020258	1/9/2003	72°58'59"	75°13'45"	0.84	1	H5	S2	W2	18.8	16.8	1.3	BeiAP	
GRV 020259	01/09/2003	72°58'59"	75°13'45"	0.89	1	H5	S4	W1	17.3	15.7	1.3	GIGCAS	
GRV 020261	1/9/2003	72°58'59"	75°13'45"	0.68	1	H5	S4	W1	19.2	16.7	1.2	BeiAP	
GRV 020274	01/09/2003	72°59'18"	75°12'13"	4.39	1	H4	S2	W2	20.4	17.1	1.3	IGCAS	
GRV 020275	01/10/2003	72°59'18"	75°12'05"	1.36	1	H5	S1	W1	18.9	16.8	1.0	IGCAS	
GRV 020276	01/10/2003	72°59'23"	75°13'03"	68.70	1	H5	S2	W3	19.0	17.0	1.3	PMO	
GRV 020280	01/10/2003	72°58'44"	75°15'39"	3.27	1	H5	S2	W2	18.5	16.6	1.5	GIGCAS	
GRV 020281	01/10/2003	72°58'44"	75°15'39"	1.79	1	Mesosiderite				25.8–40.6	1.7–4.0	PMO	
GRV 020284	1/10/2003	72°59'02"	75°14'47"	9.73	1	L6	S2	W1	25.0	21.4	1.6	BeiAP	
GRV 020287	01/10/2003	72°59'02"	75°14'47"	3.33	1	H4	S2	W1	18.3	15.9	1.0	GIGCAS	
GRV 020291	1/10/2003	72°59'02"	75°14'47"	4.57	1	L6	S2	W1	24.8	20.9	1.6	BeiAP	
GRV 020293	01/10/2003	72°59'02"	75°14'47"	6.79	1	L5	S2	W1	25.4	21.6	1.5	IGCAS	
GRV 020301	01/10/2003	72°59'02"	75°14'47"	1.58	1	L5	S2	W1	25.3	21.3	1.4	PMO	
GRV 020303	01/10/2003	72°59'02"	75°14'47"	1.30	1	L4	S2	W1	26.1	22.1	1.3	IGCAS	
GRV 020304	01/10/2003	72°59'02"	75°14'47"	2.11	1	L5	S3	W2	26.0	22.1	1.2	PMO	
GRV 020311	01/10/2003	72°59'02"	75°14'47"	1.20	1	L5	S2	W1	23.2	20.6	1.9	GIGCAS	
GRV 020314	1/10/2003	72°59'02"	75°14'47"	1.86	1	L4	S4	W1	24.9	21.3	1.6	BeiAP	
GRV 020315	01/10/2003	72°59'02"	75°14'47"	1.29	1	L5	S4	W1	23.0	20.0	1.5	GIGCAS	
GRV 020318	1/10/2003	72°59'02"	75°14'47"	1.09	1	L6	S3	W1	24.9	21.1	1.5	BeiAP	
GRV 020323	01/10/2003	72°59'02"	75°14'47"	1.06	1	L6	S3	W1	25.7	21.4	1.4	IGCAS	
GRV 020325	01/10/2003	72°59'02"	75°14'47"	1.35	1	L6	S2	W1	25.3	21.4	1.4	PMO	
GRV 020327	01/10/2003	72°59'02"	75°14'47"	1.34	1	L5	S2	W1	26.0	21.9	1.6	IGCAS	
GRV 020331	01/10/2003	72°59'02"	75°14'47"	0.98	1	L5	S2	W2	24.6	21.3	1.4	PMO	
GRV 020334	01/10/2003	72°59'02"	75°14'47"	0.69	1	L5	S4	W1	23.5	20.1	1.5	GIGCAS	
GRV 020339	1/10/2003	72°59'02"	75°14'47"	0.64	1	L5	S2	W1	25.0	21.1	1.5	BeiAP	
GRV 020340	01/10/2003	72°59'02"	75°14'47"	0.84	1	L5	S5	W1	23.2	20.1	1.6	GIGCAS	
GRV 020351	1/10/2003	72°59'02"	75°14'47"	0.64	1	L6	S1	W1	24.4	20.6	1.4	BeiAP	
GRV 020566	01/11/2003	72°59'00"	75°15'04"	21.30	1	H4	S1	W2	19.2	17.4	1.2	IGCAS	
GRV 020572	01/11/2003	72°59'03"	75°14'49"	25.00	1	L5	S2	W1	25.3	21.3	1.4	PMO	
GRV 020573	01/11/2003	72°59'03"	75°14'49"	20.23	1	L5	S4	W2	23.3	20.0	1.4	GIGCAS	
GRV 020581	01/11/2003	72°59'01"	75°14'50"	1.77	1	L5	S2	W1	25.9	21.7	1.4	IGCAS	
GRV 020583	01/11/2003	72°59'01"	75°14'50"	1.85	1	L5	S3	W1	24.4	20.5	1.3	PMO	
GRV 020586	01/11/2003	72°59'01"	75°14'50"	1.16	1	L5	S3	W2	23.7	20.0	1.3	PMO	
GRV 020590	01/11/2003	72°59'02"	75°14'47"	1.06	1	L5	S3	W3	22.4	19.5	1.3	PMO	
GRV 020595	01/11/2003	72°59'02"	75°14'47"	1.01	1	L5	S4	W1	23.8	20.7	1.3	GIGCAS	
GRV 020601	1/11/2003	72°59'02"	75°14'47"	0.59	1	L6	S4	W2	24.6	20.5	1.5	BeiAP	
GRV 020700	1/11/2003	72°59'02"	75°14'44"	21.69	1	L6	S2	W1	24.9	21.1	1.7	BeiAP	
GRV 020802	01/11/2003	72°59'02"	75°15'00"	0.59	1	L5	S5	W3	23.5	20.3	1.5	GIGCAS	
GRV 020808	1/11/2003	72°59'00"	75°14'58"	2.09	1	L6	S3	W1	24.9	21.2	1.5	BeiAP	
GRV 020809	01/11/2003	72°59'00"	75°14'58"	2.19	1	L5	S2	W1	25.8	21.3	1.5	IGCAS	
GRV 020811	01/11/2003	72°59'00"	75°14'58"	0.92	1	L5	S2	W2	24.8	20.8	1.4	PMO	
GRV 020823	01/11/2003	72°59'00"	75°14'58"	0.55	1	L5	S2	W3	23.7	20.0	1.5	PMO	
GRV 020919	01/11/2003	72°59'02"	75°14'47"	1.85	1	L6	S3	W1	25.0	21.2	1.3	PMO	
GRV 020921	01/11/2003	72°59'02"	75°14'47"	1.20	1	L5	S4	W1	23.2	20.2	1.5	GIGCAS	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 020922	1/11/2003	72°59'02"	75°14'47"	1.18	1	L6	S2	W1	25.1	21.1	1.4	BeiAP	
GRV 020925	01/11/2003	72°59'02"	75°14'47"	0.82	1	L6	S4	W2	23.4	20.4	1.4	GIGCAS	
GRV 020926	1/11/2003	72°59'02"	75°14'47"	0.70	1	L5	S3	W1	25.1	21.6	1.6	BeiAP	
GRV 021179	01/11/2003	72°59'02"	75°14'48"	2.63	1	H4	S1	W3	17.9	16.0	1.7	GIGCAS	
GRV 021184	01/11/2003	72°59'01"	75°14'45"	2.18	1	L6	S3	W1	25.5	22.1	1.4	IGCAS	
GRV 021188	01/11/2003	72°59'01"	75°14'45"	0.89	1	L6	S5	W1	25.0	21.0	1.3	PMO	
GRV 021189	01/11/2003	72°59'01"	75°14'45"	1.16	1	L5	S4	W1	26.2	21.7	1.4	IGCAS	
GRV 021201	01/11/2003	72°59'01"	75°14'45"	0.56	1	L5	S3	W3	24.5	20.9	1.3	PMO	
GRV 021213	01/11/2003	72°59'01"	75°14'45"	0.55	1	L5	S4	W1	23.5	20.7	1.5	GIGCAS	
GRV 021216	1/11/2003	72°59'01"	75°14'45"	0.89	1	L6	S2	W1	25.0	21.0	1.6	BeiAP	
GRV 021494	1/13/2003	72°56'33"	75°17'59"	8.39	1	L6	S2	W1	25.5	21.8	1.6	BeiAP	
GRV 021497	01/13/2003	72°56'33"	75°19'00"	1.36	1	L6	S2	W1	26.8	22.2	1.7	IGCAS	
GRV 021507	01/13/2003	72°56'46"	75°16'09"	9.33	1	H6	S2	W2	19.0	16.7	1.3	PMO	
GRV 021520	01/14/2003	72°57'12"	75°13'41"	0.56	1	H6	S2	W1	21.1	18.2	1.5	IGCAS	
GRV 021528	01/14/2003	72°57'39"	75°13'31"	2.49	1	H3	S1	W2	0.8–23.0	2.6–18.1	0–1.7	PMO	
GRV 021535	01/14/2003	72°57'45"	75°13'33"	0.70	1	H4	S1	W1	17.7	16.0	20.6	GIGCAS	
GRV 021562	1/14/2003	72°56'07"	75°19'00"	4.40	1	L4	S2	W1	25.1	21.0	1.3	BeiAP	
GRV 021568	01/14/2003	72°56'18"	75°17'25"	9.34	1	H4	S1	W2	17.4	15.9	1.5	GIGCAS	
GRV 021585	1/14/2003	72°57'48"	75°15'21"	4.16	1	L6	S2	W1	26.1	21.8	1.8	BeiAP	
GRV 021588	01/14/2003	72°57'41"	75°13'29"	9.58	1	L6	S2	W2	26.8	22.4	1.6	IGCAS	
GRV 021596	01/17/2003	72°49'29"	75°17'31"	8.36	1	L6	S5	W1	26.5	22.1	1.6	PMO	
GRV 021601	01/17/2003	72°49'30"	75°21'22"	0.85	1	H6	S1	W3	20.5	17.9	1.5	IGCAS	
GRV 021605	01/18/2003	72°57'46"	75°13'32"	6.51	1	L6	S5	W1	26.0	21.8	1.5	PMO	
GRV 021609	01/18/2003	72°58'39"	75°13'01"	3.26	1	H4	S1	W1	17.1	15.4	1.2	GIGCAS	
GRV 021613	1/20/2003	72°46'26"	75°20'13"	1.30	1	L6	S2	W1	24.7	21.1	1.6	BeiAP	
GRV 021619	01/20/2003	72°47'38"	75°16'55"	1.85	1	H5	S1	W1	17.8	16.3	1.1	GIGCAS	
GRV 021621	1/20/2003	72°47'00"	75°16'55"	1.20	1	H5	S2	W1	18.9	17.0	1.2	BeiAP	
GRV 021622	01/20/2003	72°47'01"	75°17'51"	0.55	1	H5	S3	W1	19.7	17.8	1.3	IGCAS	
GRV 021631	01/20/2003	72°47'29"	75°17'50"	0.70	1	H4	S2	W1	18.1	16.2	2.0	GIGCAS	
GRV 021633	01/20/2003	72°47'25"	75°17'00"	1.18	1	L6	S5	W1	23.1	20.0	1.8	GIGCAS	
GRV 021634	01/20/2003	72°47'06"	75°18'08"	0.92	1	L6	S2	W1	26.3	22.3	1.7	IGCAS	
GRV 021635	1/20/2003	72°47'05"	75°17'56"	6.55	1	L6	S2	W1	25.0	21.0	1.8	BeiAP	
GRV 021636	01/20/2003	72°46'55"	75°19'17"	4.14	1	L6	S2	W1	25.8	22.6	1.6	IGCAS	
GRV 021650	01/20/2003	72°46'37"	75°19'51"	0.89	1	L6	S5	W2	25.4	21.7	1.6	PMO	
GRV 021663	01/20/2003	72°46'25"	75°20'23"	2.19	1	Acapulcoite	S2	W3	5.4	4.7	3.1	IGCAS	
GRV 021665	01/20/2003	72°46'22"	75°20'16"	1.29	1	H6	S2	W1	19.7	17.3	1.2	PMO	
GRV 021681	01/20/2003	72°46'33"	75°19'50"	9.72	1	L6	S5	W1	23.0	20.1	1.7	GIGCAS	
GRV 021682	1/20/2003	72°46'32"	75°19'45"	9.04	1	L6	S3	W1	25.4	21.7	1.7	BeiAP	
GRV 021684	01/20/2003	72°46'30"	75°19'15"	6.65	1	L6	S5	W1	23.8	20.5	1.6	GIGCAS	
GRV 021689	1/20/2003	72°46'28"	75°20'44"	2.59	1	H5	S2	W1	19.9	17.5	1.4	BeiAP	
GRV 021690	01/20/2003	72°46'26"	75°20'11"	0.93	1	H4	S1	W2	19.2	16.5	1.4	IGCAS	
GRV 021698	01/20/2003	72°46'24"	75°21'36"	0.66	1	L6	S2	W1	26.2	22.6	2.1	IGCAS	
GRV 021701	01/20/2003	72°46'24"	75°20'59"	1.02	1	L6	S5	W1	25.0	21.3	1.5	PMO	
GRV 021704	01/20/2003	72°46'24"	75°20'15"	6.20	1	L5	S4	W1	23.6	21.5	1.6	GIGCAS	
GRV 021707	01/20/2003	72°46'25"	75°19'20"	0.99	1	H5	S2	W2	18.9	16.8	1.0	PMO	
GRV 021727	1/20/2003	72°47'24"	75°17'53"	9.17	1	L6	S2	W1	25.1	21.3	1.8	BeiAP	
GRV 021728	01/20/2003	72°47'23"	75°17'04"	2.19	1	H5	S3	W2	18.2	16.7	1.3	GIGCAS	
GRV 021730	1/20/2003	72°47'26"	75°17'56"	9.72	1	L6	S2	W1	25.9	22.2	1.5	BeiAP	
GRV 021733	01/20/2003	72°47'20"	75°17'45"	4.14	1	H4	S1	W1	19.9	17.4	1.2	IGCAS	
GRV 021736	01/20/2003	72°47'22"	75°17'32"	6.11	1	L6	S4	W2	23.9	21.2	1.6	GIGCAS	
GRV 021737	1/20/2003	72°47'21"	75°18'03"	2.65	1	L6	S4	W2	24.9	21.3	1.8	BeiAP	
GRV 021738	01/20/2003	72°47'17"	75°18'14"	2.59	1	H4	S3	W2	16.8	16.6	1.0	GIGCAS	
GRV 021739	1/20/2003	72°47'17"	75°18'15"	2.11	1	L6	S2	W1	23.7	20.0	1.7	BeiAP	
GRV 021754	01/20/2003	72°47'13"	75°18'55"	0.68	1	L5	S3	W2	22.5	18.7	1.3	PMO	
GRV 021768	1/20/2003	72°47'04"	75°19'33"	1.00	1	CR	S2	W1	1.4 (0.4–2.7)	2.8 (1.3–6.3)	0.8 (0.3–1.6)	BeiAP	
GRV 021772	01/20/2003	72°46'30"S	75°19'58"	4.41	1	L6	S2	W1	26.1	22.1	1.6	IGCAS	
GRV 021776	01/20/2003	72°46'27"	75°19'32"	19.63	1	L6	S5	W1	24.1	20.7	1.3	PMO	
GRV 021808	01/20/2003	72°46'29"S	75°19'51"	2.44	1	H5	S2	W1	20.1	17.0	1.4	IGCAS	
GRV 021816	01/20/2003	72°46'30"	75°20'28"	1.01	1	H4	S3	W2	18.1	17.4	1.4	GIGCAS	
GRV 021821	1/20/2003	72°46'38"	75°20'17"	1.17	1	L6	S3	W1	23.6	19.9	1.4	BeiAP	
GRV 021826	01/20/2003	72°46'38"	75°20'20"	1.06	1	H5	S2	W2	18.5	16.4	1.3	PMO	
GRV 021829	01/20/2003	72°46'43"	75°19'49"	0.64	1	H4	S2	W2	19.5	17.2	1.2	IGCAS	
GRV 021833	01/20/2003	72°46'43"	75°19'53"	1.29	1	H6	S2	W3	17.7	15.9	1.3	GIGCAS	
GRV 021835	1/20/2003	72°46'55"	75°19'20"	1.22	1	H5	S1	W2	18.4	16.6	1.3	BeiAP	
GRV 021837	01/20/2003	72°46'55"	75°19'22"	1.01	1	L5	S2	W1	25.1	21.4	1.5	IGCAS	
GRV 021838	01/20/2003	72°46'55"	75°19'23"	0.99	1	L6	S5	W1	24.8	21.3	1.5	PMO	
GRV 021840	01/20/2003	72°46'42"	75°19'31"	0.92	1	H4	S2	W1	20.5	17.6	0.9	IGCAS	
GRV 021865	01/20/2003	72°46'31"	75°20'15"	1.28	1	CV3	S3	Wi-1	10.8 (0.6–51.7)	1.3 (1.1–1.7)	2.6 (0.9–5.6)	GIGCAS	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 021868	01/20/2003	72°46'31"	75°20'17"	1.59	1	H5	S2	W2	19.2	17.3	1.2	PMO	
GRV 021873	01/20/2003	72°46'40"	75°19'40"	0.92	1	H4	S3	W2	18.1	16.6	1.2	GIGCAS	
GRV 021878	1/20/2003	72°46'40"	75°19'42"	1.30	1	H4	S1	W1	18.7	16.6	1.2	BeiAP	
GRV 021884	01/20/2003	72°46'40"	75°19'48"	0.88	1	H5	S4	W2	18.3	16.5	1.2	GIGCAS	
GRV 021885	1/20/2003	72°46'40"	75°19'49"	1.09	1	H5	S2	W2	18.7	16.9	1.2	BeiAP	
GRV 021889	01/20/2003	72°46'41"	75°19'32"	0.82	1	H4	S2	W1	19.7	16.9	1.2	IGCAS	
GRV 021893	01/20/2003	72°46'41"	75°19'36"	0.56	1	H4	S2	W2	18.5	16.5	1.5	PMO	
GRV 021896	01/20/2003	72°46'41"	75°19'39"	0.89	1	H5	S1	W1	19.6	17.9	1.2	IGCAS	
GRV 021900	01/20/2003	72°46'37"	75°19'24"	0.55	1	H5	S2	W2	19.2	17.2	1.1	PMO	
GRV 021905	01/20/2003	72°46'37"	75°19'29"	0.56	1	H4	S1	W3	18.3	16.7	1.1	GIGCAS	
GRV 021914	1/20/2003	72°46'37"	75°19'38"	0.59	1	H5	S1	W1	18.1	16.2	1.1	BeiAP	
GRV 021919	01/20/2003	72°46'39"	75°20'03"	0.56	1	H5	S2	W2	17.9	16.6	1.0	GIGCAS	
GRV 021933	01/20/2003	72°46'35"	75°19'09"	6.01	1	L5	S4	W1	26.4	22.9	1.5	IGCAS	
GRV 021936	01/20/2003	72°46'35"	75°19'12"	2.60	1	H5	S4	W2	17.9	16.2	1.3	GIGCAS	
GRV 021947	1/20/2003	72°46'23"	75°20'25"	7.87	1	H4	S1	W1	17.4	15.7	0.8	BeiAP	
GRV 021948	01/20/2003	72°46'23"	75°20'26"	8.00	1	L6	S5	W2	23.5	20.7	1.7	GIGCAS	
GRV 021952	1/20/2003	72°46'23"	75°20'30"	3.50	1	L6	S2	W1	23.9	20.6	20.6	BeiAP	
GRV 021953	01/20/2003	72°46'23"	75°20'31"	3.26	1	H6	S1	W3	19.5	17.2	1.6	IGCAS	
GRV 021954	01/20/2003	72°46'23"	75°20'32"	4.57	1	L6	S5	W1	24.5	20.6	1.4	PMO	
GRV 021957	01/20/2003	72°46'23"	75°20'35"	4.15	1	L6	S2	W1	26.8	22.1	1.7	IGCAS	
GRV 021958	01/20/2003	72°46'23"	75°20'36"	3.26	1	L6	S5	W1	25.7	21.9	1.5	PMO	
GRV 021965	01/20/2003	72°46'23"	75°20'43"	4.12	1	L6	S5	W1	23.5	20.7	1.6	GIGCAS	
GRV 021972	1/20/2003	72°46'26"	75°20'29"	1.85	1	L6	S1	W1	24.0	20.8	1.6	BeiAP	
GRV 021975	01/20/2003	72°46'26"	75°20'32"	1.80	1	H5	S2	W3	17.6	15.9	1.2	GIGCAS	
GRV 021976	1/20/2003	72°46'26"	75°20'33"	8.36	1	L6	S4	W1	25.3	21.3	1.7	BeiAP	
GRV 021982	01/20/2003	72°46'26"	75°20'36"	2.44	1	L5	S2	W2	26.0	23.2	1.7	IGCAS	
GRV 021989	01/20/2003	72°46'31"	75°20'45"	1.58	1	L6	S2	W1	25.4	21.5	1.4	PMO	
GRV 021990	01/20/2003	72°46'31"	75°20'46"	1.30	1	L6	S3	W1	27.1	23.3	1.6	IGCAS	
GRV 021992	01/20/2003	72°46'31"	75°20'48"	1.10	1	CV3		W2	2.1–55.7	1.1–3.2	0.4–7.7	PMO	
GRV 021995	01/20/2003	72°46'31"	75°20'51"	3.48	1	H6	S2	W2	17.4	16.0	1.6	GIGCAS	
GRV 022002	1/20/2003	72°46'35"	75°20'52"	0.99	1	H4	S1	W1	18.1	16.3	1.1	BeiAP	
GRV 022003	01/20/2003	72°46'35"	75°20'53"	0.81	1	H4	S3	W2	17.2	16.2	1.3	GIGCAS	
GRV 022004	1/20/2003	72°46'35"	75°20'54"	0.59	1	H5	S2	W1	18.9	16.8	1.3	BeiAP	
GRV 022005	1/20/2003	72°46'35"	75°20'55"	8.93	1	L6	S2	W1	25.3	21.3	1.8	BeiAP	
GRV 022011	01/20/2003	72°46'50"	75°20'43"	2.63	1	L5	S2	W1	25.0	21.3	1.8	IGCAS	
GRV 022012	01/20/2003	72°46'52"	75°19'03"	1.29	1	L6	S5	W2	24.8	20.7	1.6	PMO	
GRV 022018	01/20/2003	72°46'52"	75°19'09"	3.50	1	LL6	S2	W1	29.6	24.1	1.6	IGCAS	
GRV 022048	01/20/2003	72°46'43"	75°18'55"	4.19	1	L6	S5	W2	24.5	20.5	1.6	PMO	
GRV 022049	01/20/2003	72°46'43"	75°18'55"	3.44	1	L6	S5	W1	23.3	19.9	1.6	GIGCAS	
GRV 022052	1/20/2003	72°46'43"	75°18'55"	2.48	1	L6	S2	W1	25.0	21.3	1.6	BeiAP	
GRV 022053	01/20/2003	72°46'43"	75°18'55"	2.10	1	L6	S5	W1	23.5	20.7	1.6	GIGCAS	
GRV 022068	1/20/2003	72°46'43"	75°18'55"	1.07	1	L6	S2	W1	24.2	20.5	1.6	BeiAP	
GRV 022096	01/20/2003	72°46'45"	75°18'38"	0.64	1	LL4	S2	W1	28.9	23.6	1.3	IGCAS	
GRV 022137	01/20/2003	72°46'44"	75°18'49"	6.59	1	L6	S2	W1	26.0	22.5	2.4	IGCAS	
GRV 022152	01/20/2003	72°46'44"	75°18'49"	6.24	1	L6	S2	W1	24.5	20.9	1.5	PMO	
GRV 022180	01/20/2003	72°46'52"	75°17'32"	8.44	1	L6	S3	W1	26.0	22.9	1.6	IGCAS	
GRV 022187	01/20/2003	72°46'52"	75°17'32"	9.74	1	L6	S5	W3	24.6	20.7	1.5	PMO	
GRV 022188	01/20/2003	72°46'52"	75°17'32"	9.68	1	L6	S5	W1	23.6	21.1	1.7	GIGCAS	
GRV 022197	1/20/2003	72°46'53"	75°18'20"	1.10	1	L6	S2	W1	24.0	20.4	1.8	BeiAP	
GRV 022198	01/20/2003	72°46'53"	75°18'20"	0.66	1	L6	S3	W1	24.2	21.2	1.7	GIGCAS	
GRV 022214	1/20/2003	72°46'42"	75°19'15"	9.00	1	L6	S1	W1	25.3	21.7	1.6	BeiAP	
GRV 022215	01/20/2003	72°46'42"	75°19'15"	9.08	1	L5	S2	W1	25.8	23.0	2.0	IGCAS	
GRV 022217	01/20/2003	72°46'42"	75°19'15"	6.00	1	L6	S5	W2	24.4	20.9	1.5	PMO	
GRV 022231	01/20/2003	72°46'43"	75°18'55"	9.62	1	L6	S3	W1	26.1	21.8	1.8	IGCAS	
GRV 022232	01/20/2003	72°46'43"	75°18'55"	9.42	1	L6	S4	W2	24.4	21.2	1.4	PMO	
GRV 022234	01/20/2003	72°46'43"	75°18'55"	7.84	1	L6	S4	W1	24.2	20.4	1.6	GIGCAS	
GRV 022235	1/20/2003	72°46'43"	75°18'55"	5.92	1	L6	S2	W1	24.1	20.6	1.8	BeiAP	
GRV 022239	01/20/2003	72°46'43"	75°18'55"	8.48	1	L6	S5	W2	23.9	20.7	1.7	GIGCAS	
GRV 022241	1/20/2003	72°46'44"	75°18'40"	3.34	1	L6	S3	W1	23.7	20.4	1.9	BeiAP	
GRV 022245	01/20/2003	72°46'44"	75°18'40"	1.85	1	H6	S2	W1	20.9	18.4	1.2	IGCAS	
GRV 022247	01/20/2003	72°46'44"	75°18'40"	1.54	1	L6	S5	W2	24.4	20.0	1.4	PMO	
GRV 022250	01/20/2003	72°46'44"	75°18'40"	2.19	1	L6	S2	W1	26.0	21.1	1.8	IGCAS	
GRV 022252	01/20/2003	72°46'44"	75°18'40"	1.77	1	L6	S5	W2	22.9	19.0	1.6	PMO	
GRV 022254	01/20/2003	72°46'44"	75°18'40"	2.62	1	L6	S5	W1	23.3	20.4	1.6	GIGCAS	
GRV 022255	01/20/2003	72°46'44"	75°18'40"	2.18	1	L5	S2	W1	26.3	21.9	1.8	IGCAS	
GRV 022259	01/20/2003	72°46'44"	75°18'40"	3.45	1	L6	S5	W1	24.4	20.8	1.6	GIGCAS	
GRV 022265	01/20/2003	72°46'42"	75°18'43"	2.18	1	L6	S5	W1	23.4	20.9	1.6	GIGCAS	
GRV 022268	1/20/2003	72°46'42"	75°18'43"	8.45	1	L6	S2	W2	25.7	21.7	1.9	BeiAP	
GRV 022271	01/20/2003	72°46'42"	75°18'43"	5.94	1	L6	S5	W1	23.8	21.5	1.6	GIGCAS	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 022274	1/20/2003	72°46'42"	75°18'50"	3.21	1	L6	S2	W1	25.6	22.0	1.7	BeiAP	
GRV 022276	01/20/2003	72°46'42"	75°18'50"	2.09	1	L6	S2	W1	26.1	22.1	1.8	IGCAS	
GRV 022281	01/20/2003	72°46'42"	75°18'50"	4.09	1	L6	s2	w2	24.4	20.6	1.6	PMO	
GRV 022283	01/20/2003	72°46'47"	75°17'34"	8.40	1	L6	S2	W1	26.1	22.4	1.7	IGCAS	
GRV 022295	01/20/2003	72°46'45"	75°17'57"	1.30	1	L5	S5	W2	24.4	20.9	1.5	PMO	
GRV 022296	01/20/2003	72°46'45"	75°17'58"	1.57	1	L5	S5	W2	23.7	20.3	1.4	PMO	
GRV 022298	1/20/2003	72°46'45"	75°18'00"	1.02	1	L6	S2	W1	25.4	21.8	1.7	BeiAP	
GRV 022301	01/20/2003	72°46'44"	75°18'05"	1.02	1	L6	S5	W1	25.4	21.3	1.6	PMO	
GRV 022308	1/20/2003	72°46'44"	75°18'05"	0.60	1	L6	S2	W1	25.8	21.7	1.7	BeiAP	
GRV 022319	01/21/2003	72°46'25"	75°19'57"	4.53	1	L6	S4	W1	25.2	21.7	1.8	IGCAS	
GRV 022324	01/21/2003	72°46'29"	75°19'50"	8.36	1	H5	S4	W2	16.5	14.7	0.7	GIGCAS	
GRV 022325	1/21/2003	72°46'30"	75°18'56"	1.01	1	L6	S4	W2	24.7	21.0	1.7	BeiAP	
GRV 022327	01/21/2003	72°46'22"	75°20'25"	0.69	1	L6	S5	W2	23.9	21.4	1.5	GIGCAS	
GRV 022334	01/21/2003	72°46'32"	75°19'07"	2.20	1	L6	S5	W1	26.3	22.5	1.7	PMO	
GRV 022339	01/21/2003	72°46'46"	75°17'57"	1.00	1	H4	S2	W1	17.9	15.7	0.8	IGCAS	
GRV 022343	01/21/2003	72°46'22"	75°21'19"	0.61	1	L6	S5	W2	25.0	21.0	1.6	PMO	
GRV 022355	01/21/2003	72°46'42"	75°18'08"	1.60	1	L6	S5	W2	24.2	20.5	1.5	PMO	
GRV 022357	1/21/2003	72°46'43"	75°18'15"	1.22	1	L6	S2	W1	25.4	21.7	1.8	BeiAP	
GRV 022360	01/21/2003	72°46'44"	75°18'21"	0.92	1	L6	S5	W1	24.7	20.9	1.6	PMO	
GRV 022361	1/21/2003	72°46'40"	75°19'14"	0.66	1	L6	S2	W1	24.4	21.0	1.6	BeiAP	
GRV 022369	01/21/2003	72°46'45"	75°18'22"	0.65	1	L5	S4	W1	25.6	21.1	1.8	IGCAS	
GRV 022380	1/21/2003	72°46'52"	75°17'13"	1.53	1	H5	S2	W1	18.8	16.6	0.9	BeiAP	
GRV 022383	01/21/2003	72°46'49"	75°16'56"	0.89	1	H4	S2	W1	19.2	16.4	1.6	IGCAS	
GRV 022387	01/21/2003	72°46'49"	75°17'10"	2.26	1	L5	S4		21.0	21.0	1.6	GIGCAS	Sample is a single chondrule
GRV 022389	01/21/2003	72°46'30"	75°19'53"	4.56	1	L6	S5	W2	25.2	21.0	1.5	PMO	
GRV 022390	01/21/2003	72°46'25"	75°20'31"	4.53	1	L5	S4	W1	25.0	21.2	1.8	IGCAS	
GRV 022391	01/21/2003	72°46'29"	75°19'20"	3.49	1	H5	S2	W1	18.5	16.4	1.2	PMO	
GRV 022393	01/21/2003	72°46'29"	75°19'30"	2.48	1	H5	S4	W1	19.9	16.7	1.2	GIGCAS	
GRV 022399	1/21/2003	72°46'39"	75°19'08"	0.70	1	H4	S2	W1	19.8	17.5	1.4	BeiAP	
GRV 022402	01/21/2003	72°46'30"	75°19'21"	63.22	1	L6	S5	W1	22.9	20.8	1.6	GIGCAS	
GRV 022403	01/21/2003	72°46'30"	75°20'27"	386.30	1	H4	S4	W1	18.5	17.3	1.5	GIGCAS	
GRV 022404	1/21/2003	72°46'25"	75°20'34"	6.85	1	L6	S2	W1	25.4	21.8	1.6	BeiAP	
GRV 022407	01/21/2003	72°46'23"	75°21'03"	25.99	1	L6	S4	W1	25.6	21.8	2.0	IGCAS	
GRV 022409	01/21/2003	72°46'30"	75°20'52"	18.82	1	H4	S2	W1	18.3	16.2	1.3	PMO	
GRV 022412	01/21/2003	72°46'35"	75°18'59"	6.08	1	L6	S4	W3	24.4	20.6	1.5	IGCAS	
GRV 022416	01/21/2003	72°46'36"	75°20'12"	4.13	1	L5	S4	W1	25.6	21.7	1.6	IGCAS	
GRV 022420	01/21/2003	72°46'34"	75°20'02"	1.78	1	L6	S3	W2	25.4	21.4	1.5	PMO	
GRV 022421	01/21/2003	72°46'35"	75°19'34"	1.84	1	H4	S2	W1	17.5	16.1	1.0	GIGCAS	
GRV 022424	1/21/2003	72°46'32"	75°20'51"	1.22	1	L4	S3	W1	23.1	19.7	1.3	BeiAP	
GRV 022425	01/21/2003	72°46'25"	75°19'26"	1.16	1	H6	S2	W2	19.3	17.4	1.4	GIGCAS	
GRV 022431	01/21/2003	72°46'24"	75°21'09"	1.34	1	H5	S2	W1	20.9	18.3	1.6	PMO	
GRV 022434	1/21/2003	72°46'27"	75°19'30"	1.22	1	L6	S2	W1	24.2	20.6	1.8	BeiAP	
GRV 022435	01/21/2003	72°46'33"	75°20'20"	0.92	1	L6	S4	W1	25.7	21.5	1.9	IGCAS	
GRV 022461	01/21/2003	72°46'26"	75°19'37"	3.33	1	L6	S2	W3	26.2	22.0	1.5	PMO	
GRV 022485	01/21/2003	72°46'30"	75°20'24"	1.78	1	H4	S2	W2	18.1	16.3	1.1	GIGCAS	
GRV 022487	1/21/2003	72°46'30"	75°20'26"	1.84	1	H5	S2	W2	19.2	16.9	1.2	BeiAP	
GRV 022488	01/21/2003	72°46'30"	75°20'27"	0.55	1	H5	S1	W1	18.0	16.1	1.1	GIGCAS	
GRV 022497	1/21/2003	72°46'32"	75°19'46"	2.59	1	H5	S3	W1	19.6	17.1	0.9	BeiAP	
GRV 022499	01/21/2003	72°46'28"	75°19'06"	0.81	1	H5	S2	W2	19.1	16.9	1.2	IGCAS	
GRV 022509	01/21/2003	72°46'27"	75°19'52"	1.77	1	H4	S2	W2	19.0	16.9	1.2	PMO	
GRV 022527	01/21/2003	72°46'23"	75°19'25"	1.17	1	H6	S3	W1	19.2	16.8	1.6	IGCAS	
GRV 022542	01/21/2003	72°46'24"	75°18'55"	3.28	1	L6	S2	W1	25.1	22.0	1.8	IGCAS	
GRV 022544	01/21/2003	72°46'24"	75°18'57"	3.28	1	L5	S2	W2	25.0	21.3	1.4	PMO	
GRV 022545	01/21/2003	72°46'25"	75°20'21"	2.20	1	L6	S5	W1	24.1	21.1	1.4	GIGCAS	
GRV 022551	1/21/2003	72°46'25"	75°20'27"	0.85	1	H6	S2	W2	18.6	16.8	1.3	BeiAP	
GRV 022553	01/21/2003	72°46'25"	75°20'29"	2.12	1	H4	S2	W1	19.1	16.8	1.1	PMO	
GRV 022556	01/21/2003	72°46'26"	75°20'32"	1.09	1	H5	S3	W2	17.6	16.0	1.1	GIGCAS	
GRV 022557	1/21/2003	72°46'26"	75°20'33"	0.98	1	H5	S3	W2	18.6	16.6	1.0	BeiAP	
GRV 022559	01/21/2003	72°46'26"	75°20'35"	2.61	1	L5	S4	W2	23.9	21.1	1.2	GIGCAS	
GRV 022569	1/21/2003	72°46'28"	75°18'26"	0.60	1	L6	S2	W1	25.7	21.8	1.7	BeiAP	
GRV 022595	01/21/2003	72°46'57"	75°16'45"	0.66	1	H4	S2	W1	19.0	16.4	1.1	IGCAS	
GRV 022596	01/21/2003	72°46'57"	75°16'46"	0.66	1	L6	S5	W1	26.5	22.5	1.5	PMO	
GRV 022612	01/21/2003	72°46'57"	75°16'55"	1.55	1	L5	S2	W1	25.7	21.1	1.7	IGCAS	
GRV 022618	01/21/2003	72°46'57"	75°16'37"	1.36	1	L6	S5	W2	24.3	20.4	1.7	PMO	
GRV 022620	01/21/2003	72°46'57"	75°16'37"	0.68	1	L6	S5	W1	24.3	21.8	1.6	GIGCAS	
GRV 022627	1/21/2003	72°46'57"	75°16'40"	0.82	1	L6	S1	W1	24.0	20.4	1.7	BeiAP	
GRV 022631	01/21/2003	72°46'58"	75°16'38"	0.60	1	L6	S5	W1	23.5	21.1	1.7	GIGCAS	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 022632	1/21/2003	72°46'58"	75°16'38"	1.16	1	L6	S2	W1	25.3	21.4	1.9	BeiAP	
GRV 022633	01/21/2003	72°46'58"	75°16'38"	0.68	1	L5	S2	W1	25.5	21.3	1.7	IGCAS	
GRV 022636	01/21/2003	72°46'58"	75°16'38"	0.89	1	L6	S5	W1	24.9	21.1	1.5	PMO	
GRV 022640	01/21/2003	72°46'58"	75°16'42"	0.82	1	L6	S2	W1	25.8	21.4	1.6	IGCAS	
GRV 022650	1/21/2003	72°46'55"	75°17'11"	0.55	1	L6	S2	W2	25.5	21.8	1.6	BeiAP	
GRV 022663	01/21/2003	72°46'50"	75°17'13"	0.68	1	H5	S2	W2	18.5	16.3	1.0	PMO	
GRV 022666	01/21/2003	72°46'50"	75°17'16"	1.00	1	H4	S1	W1	19.4	17.3	1.1	GIGCAS	
GRV 022667	1/21/2003	72°46'53"	75°16'41"	0.60	1	H6	S2	W2	19.5	17.1	1.5	BeiAP	
GRV 022676	1/21/2003	72°46'53"	75°16'46"	1.58	1	H5	S2	W2	18.2	16.3	1.2	BeiAP	
GRV 022758	01/21/2003	72°46'40"	75°16'46"	0.66	1	H6	S4	W1	18.8	17.3	1.5	GIGCAS	
GRV 022780	1/22/2003	72°46'30"	75°19'50"	4.13	1	H5	S3	W1	19.4	17.0	1.1	BeiAP	
GRV 022781	01/22/2003	72°46'30"	75°19'51"	6.58	1	L6	S4	W1	24.8	21.3	1.8	IGCAS	
GRV 022782	01/22/2003	72°46'32"	75°20'13"	6.17	1	L5	S2	W2	25.6	21.9	1.3	PMO	
GRV 022784	01/22/2003	72°46'32"	75°20'15"	2.48	1	L5	S2	W1	25.6	21.1	1.8	IGCAS	
GRV 022793	01/22/2003	72°46'32"	75°20'19"	0.66	1	LL6	S3	W2	27.9	23.7	1.6	PMO	
GRV 022796	01/22/2003	72°46'32"	75°20'19"	1.60	1	H4	S2	W2	18.3	16.5	1.1	GIGCAS	
GRV 022807	1/22/2003	72°46'31"	75°19'45"	0.68	1	H5	S2	W1	19.3	17.1	1.2	BeiAP	
GRV 022832	01/22/2003	72°46'25"	75°20'21"	0.84	1	H4	S3	W1	18.9	16.6	1.7	IGCAS	
GRV 022841	01/22/2003	72°46'24"	75°19'37"	1.01	1	H5	S2	W2	19.5	17.2	1.1	PMO	
GRV 022855	01/22/2003	72°46'25"	75°20'32"	0.81	1	H4	S1	W1	19.4	17.7	1.1	IGCAS	
GRV 022865	01/22/2003	72°46'26"	75°20'00"	0.64	1	H5	S2	W2	19.3	17.3	1.2	PMO	
GRV 022873	01/22/2003	72°46'26"	75°20'07"	1.10	1	H6	S3	W2	19.2	17.0	1.3	GIGCAS	
GRV 022874	1/22/2003	72°46'26"	75°20'08"	1.06	1	H5	S1	W2	19.6	17.1	1.4	BeiAP	
GRV 022876	01/22/2003	72°46'26"	75°20'10"	0.68	1	H5	S4	W3	18.1	16.5	1.1	GIGCAS	
GRV 022888	01/22/2003	72°46'29"	75°18'44"	0.64	1	Ureilite						IGCAS	
GRV 022891	01/22/2003	72°46'29"	75°18'47"	2.49	1	L6	S3	W2	24.0	21.3	1.6	GIGCAS	
GRV 022892	1/22/2003	72°46'29"	75°18'48"	1.85	1	H5	S2	W2	19.1	17.3	1.4	BeiAP	
GRV 022900	01/22/2003	72°46'30"	75°18'21"	0.61	1	H5	S2	W1	20.6	17.1	1.5	IGCAS	
GRV 022901	01/22/2003	72°46'30"	75°18'22"	0.68	1	H4	S2	W1	18.2	16.3	1.3	PMO	
GRV 022904	01/22/2003	72°46'30"	75°19'00"	6.64	1	L6	S4	W1	26.1	21.9	1.5	IGCAS	
GRV 022908	01/22/2003	72°46'30"	75°19'04"	7.93	1	H5	S2	W2	20.5	18.0	1.4	PMO	
GRV 022912	01/22/2003	72°46'30"	75°19'08"	8.50	1	L6	S5	W1	23.8	21.5	1.6	GIGCAS	
GRV 022913	1/22/2003	72°46'30"	75°19'09"	6.63	1	L6	S2	W1	24.5	20.8	1.6	BeiAP	
GRV 022914	01/22/2003	72°46'30"	75°19'10"	6.59	1	H6	S4	W2	19.5	17.4	1.3	GIGCAS	
GRV 022916	1/22/2003	72°46'30"	75°19'12"	3.48	1	L5	S2	W1	24.5	21.0	1.5	BeiAP	
GRV 022923	01/22/2003	72°46'29"	75°19'24"	3.47	1	H3	S2	W2	17.9	16.7	0.9	IGCAS	
									(3.8–22.9)	(15.8–17.6)			
GRV 022926	01/22/2003	72°46'29"	75°19'27"	3.47	1	H6	S2	W2	20.3	17.6	1.3	PMO	
GRV 022929	01/22/2003	72°46'29"	75°19'30"	2.11	1	H5	S2	W1	20.3	17.4	1.6	IGCAS	
GRV 022930	01/22/2003	72°46'28"	75°19'10"	2.12	1	H5	S2	W2	19.9	17.7	1.3	PMO	
GRV 022932	01/22/2003	72°46'28"	75°19'12"	4.18	1	H5	S4	W2	18.4	16.4	1.3	GIGCAS	
GRV 022933	1/22/2003	72°46'28"	75°19'13"	3.45	1	L5	S3	W2	24.2	20.9	1.7	BeiAP	
GRV 022935	01/22/2003	72°46'28"	75°19'15"	1.55	1	H4	S2	W2	17.6	15.6	0.9	GIGCAS	
GRV 022936	1/22/2003	72°46'28"	75°19'16"	1.54	1	L6	S1	W2	24.2	20.7	1.8	BeiAP	
GRV 022938	01/22/2003	72°46'28"	75°19'18"	1.02	1	H4	S2	W3	19.8	17.1	1.2	IGCAS	
GRV 022940	01/22/2003	72°46'28"	75°19'20"	0.70	1	H5	S2	W2	19.4	17.4	1.1	PMO	
GRV 022942	01/22/2003	72°46'28"	75°19'22"	0.66	1	H6	S2	W3	19.2	16.7	1.4	IGCAS	
GRV 022962	1/22/2003	72°46'27"	75°18'55"	1.09	1	H6	S2	W2	18.9	16.6	1.1	BeiAP	
GRV 022964	01/22/2003	72°46'27"	75°18'55"	1.54	1	H4	S3	W1	19.3	17.8	1.2	IGCAS	
GRV 022969	01/22/2003	72°46'26"	75°19'12"	1.16	1	H5	S2	W2	19.1	17.6	1.1	PMO	
GRV 022971	01/22/2003	72°46'26"	75°19'12"	1.09	1	H4	S2	W2	19.0	17.3	1.2	IGCAS	
GRV 022982	01/22/2003	72°46'26"	75°19'19"	0.56	1	H4	S2	W2	19.4	17.1	1.2	PMO	
GRV 022983	01/22/2003	72°46'26"	75°19'20"	0.61	1	H5	S2	W2	17.6	16.9	1.1	GIGCAS	
GRV 022984	1/22/2003	72°46'26"	75°19'21"	0.56	1	H6	S4	W2	18.6	16.6	1.3	BeiAP	
GRV 022989	01/22/2003	72°46'25"	75°20'37"	0.55	1	H5	S4	W2	17.7	17.3	1.2	GIGCAS	
GRV 022994	1/22/2003	72°46'25"	75°20'41"	0.64	1	H5	S1	W2	19.0	17.0	1.1	BeiAP	
GRV 023042	01/22/2003	72°46'24"	75°19'25"	0.90	1	H5	S2	W2	19.4	17.1	1.1	PMO	
GRV 023085	01/22/2003	72°46'32"	75°19'27"	1.55	1	H4	S2	W1	17.7	16.9	1.2	GIGCAS	
GRV 023087	1/22/2003	72°46'32"	75°19'29"	1.07	1	H4	S3	W2	18.3	16.0	1.0	BeiAP	
GRV 023090	01/22/2003	72°46'33"	75°18'53"	1.16	1	H5	S2	W2	19.0	17.1	1.2	IGCAS	
GRV 023091	01/22/2003	72°46'33"	75°18'53"	1.35	1	H6	S2	W1	19.0	16.9	1.2	PMO	
GRV 023096	01/22/2003	72°46'33"	75°18'53"	0.61	1	H5	S1	W1	19.2	16.9	1.1	IGCAS	
GRV 023098	01/22/2003	72°46'33"	75°18'53"	0.92	1	L4	S2	W2	22.7	21.1	1.3	GIGCAS	
GRV 023100	1/22/2003	72°46'28"	75°19'18"	2.11	1	L6	S2	W1	24.8	21.0	1.6	BeiAP	
GRV 023101	01/22/2003	72°46'28"	75°19'18"	1.07	1	L6	S2	W1	25.7	22.2	1.7	IGCAS	
GRV 023109	01/22/2003	72°46'28"	75°19'21"	1.60	1	H4	S2	W3	19.2	16.9	1.2	PMO	
GRV 023114	01/22/2003	72°46'28"	75°19'26"	0.70	1	H4	S4	W1	18.8	16.4	1.5	IGCAS	
GRV 023115	01/22/2003	72°46'28"	75°19'27"	0.99	1	L5	S2	W1	25.7	21.5	1.3	PMO	
GRV 023117	01/22/2003	72°46'28"	75°19'29"	1.31	1	L6	S4	W1	23.3	20.9	1.6	GIGCAS	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 023118	1/22/2003	72°46'28"	75°19'30"	0.85	1	L6	S3	W1	25.1	21.5	1.7	BeiAP	
GRV 023122	01/22/2003	72°46'27"	75°19'03"	0.65	1	H4	S1	W1	18.9	17.4	1.3	GIGCAS	
GRV 023124	1/22/2003	72°46'27"	75°19'05"	0.61	1	L6	S2	W1	25.3	21.3	1.7	BeiAP	
GRV 023125	01/22/2003	72°46'27"	75°19'06"	0.61	1	L6	S2	W1	25.5	21.3	1.7	IGCAS	
GRV 023132	01/22/2003	72°46'27"	75°19'13"	0.61	1	L6	S2	W1	24.0	20.3	1.5	PMO	
GRV 023138	01/22/2003	72°46'24"	75°20'11"	4.52	1	L4	S4	W3	24.5	21.1	2.0	IGCAS	
GRV 023141	01/22/2003	72°46'24"	75°20'12"	1.79	1	L4	S2	W3	24.5	20.8	1.5	PMO	
GRV 023144	01/22/2003	72°46'24"	75°20'15"	0.99	1	L4	S2	W2	24.3	20.4	1.3	PMO	
GRV 023145	1/22/2003	72°46'24"	75°20'16"	0.82	1	L6	S2	W1	25.6	21.5	1.3	BeiAP	
GRV 023149	01/22/2003	72°46'23"	75°20'17"	603.70	1	L6	S5	W1	23.9	20.7	1.5	GIGCAS	
GRV 023150	1/22/2003	72°46'37"	75°16'56"	82.16	1	H4	S2	W2	19.4	17.1	1.2	BeiAP	
GRV 023151	01/22/2003	72°46'30"	75°20'20"	84.73	1	H4	S1	W2	19.3	16.6	0.8	IGCAS	
GRV 023152	01/22/2003	72°46'30"	75°20'20"	1.80	1	L6	S5	W2	25.6	21.5	1.5	PMO	
GRV 023154	01/22/2003	72°46'25"	75°20'19"	1.20	1	CV3	S3	Wi1	22.6 (1.6–54.1)	1.5 (1.1–1.9)	0.9 (0.5–1.2)	GIGCAS	
GRV 023158	01/22/2003	72°46'26"	75°20'21"	1.18	1	CV3		W2	1.2–55	1.2–17.5	1.8	PMO	
GRV 023159	01/22/2003	72°46'26"	75°20'21"	1.31	1	CV3						IGCAS	
GRV 023163	01/22/2003	72°46'26"	75°20'22"	9.25	1	H4	S1	W1	19.7	17.6	1.3	IGCAS	
GRV 023170	01/22/2003	72°46'26"	75°20'22"	4.47	1	L5	S5	W2	25.1	21.6	1.7	PMO	
GRV 023224	01/22/2003	72°46'24"	75°20'19"	0.65	1	L6	S3	W1	25.1	21.3	1.5	PMO	
GRV 023225	01/22/2003	72°46'24"	75°20'19"	0.68	1	H5	S3	W2	18.0	16.2	1.1	GIGCAS	
GRV 023244	01/22/2003	72°46'25"	75°19'12"	2.45	1	L6	S5	W2	24.4	21.6	1.4	GIGCAS	
GRV 023246	1/22/2003	72°46'25"	75°19'12"	0.90	1	L6	S3	W1	25.6	21.7	1.6	BeiAP	
GRV 023248	01/22/2003	72°46'25"	75°19'12"	1.22	1	L6	S5	W2	24.8	21.5	1.6	GIGCAS	
GRV 023261	1/22/2003	72°46'25"	75°19'13"	1.22	1	L6	S1	W1	25.2	21.6	1.7	BeiAP	
GRV 023262	01/22/2003	72°46'25"	75°19'13"	1.36	1	H4	S2	W1	18.0	17.2	1.1	GIGCAS	
GRV 023266	1/22/2003	72°46'25"	75°19'13"	0.82	1	H5	S2	W2	19.0	16.7	1.7	BeiAP	
GRV 023280	1/22/2003	72°46'25"	75°19'15"	2.20	1	H6	S2	W1	20.1	17.9	1.3	BeiAP	
GRV 023284	01/22/2003	72°46'25"	75°19'15"	1.59	1	H6	S1	W1	20.6	17.8	1.4	IGCAS	
GRV 023306	01/23/2003	72°46'30"	75°20'20"	0.52	1	L6	S2	W2	26.6	21.8	1.4	IGCAS	
GRV 023311	01/23/2003	72°53'22"	75°54'38"	21.43	1	L6	S2	W1	25.1	21.3	1.3	PMO	
GRV 023312	01/23/2003	72°53'27"	75°54'40"	2.47	1	L5	S3	W3	27.0	22.9	1.4	IGCAS	
GRV 023561	01/31/2003	72°59'03"	75°14'47"	0.70	1	L5	S2	W1	25.3	21.5	1.3	PMO	
GRV 023563	01/31/2003	72°59'03"	75°14'47"	0.55	1	L5	S4	W1	25.5	21.7	1.4	IGCAS	
GRV 023576	01/31/2003	72°59'03"	75°14'48"	0.82	1	L5	S2	W1	25.7	21.4	1.2	PMO	
GRV 023590	01/31/2003	72°59'02"	75°15'05"	1.00	1	LL6	S2	W2	27.6	23.6	1.5	PMO	
GRV 023593	01/31/2003	72°59'02"	75°15'05"	1.85	1	L5	S5	W1	23.9	21.1	1.5	GIGCAS	
GRV 023601	1/31/2003	72°59'02"	75°15'05"	2.46	1	L6	S2	W1	24.9	21.3	1.6	BeiAP	
GRV 023714	01/31/2003	72°59'02"	75°15'03"	0.60	1	L5	S4	W2	24.3	21.4	1.5	GIGCAS	
GRV 023756	01/31/2003	72°59'03"	75°15'08"	2.09	1	L5	S4	W1	23.9	20.3	1.4	GIGCAS	
GRV 023758	1/31/2003	72°59'04"	75°15'00"	1.35	1	L6	S2	W1	24.7	21.0	1.6	BeiAP	
GRV 023776	02/01/2003	72°59'04"	75°15'09"	0.66	1	L5	S5	W1	23.5	21.1	1.4	GIGCAS	
GRV 023778	2/1/2003	72°59'04"	75°15'09"	1.02	1	L6	S2	W1	24.7	21.2	1.5	BeiAP	
GRV 023779	02/01/2003	72°59'04"	75°15'09"	1.09	1	L6	S3	W1	25.4	21.2	1.4	IGCAS	
GRV 023780	02/01/2003	72°59'04"	75°15'09"	0.56	1	L5	S2	W2	24.7	20.7	1.3	PMO	
GRV 023784	02/01/2003	72°59'05"	75°14'58"	0.66	1	L5	S3	W1	26.2	22.0	1.4	IGCAS	
GRV 023787	02/01/2003	72°59'05"	75°14'59"	0.61	1	L5	S2	W1	25.6	21.5	1.3	PMO	
GRV 023789	02/01/2003	72°59'05"	75°14'59"	0.61	1	L5	S4	W1	24.1	20.8	1.3	GIGCAS	
GRV 024006	2/1/2003	72°59'01"	75°15'08"	0.60	1	L6	S2	W1	25.1	21.1	1.6	BeiAP	
GRV 024008	02/01/2003	72°59'01"	75°15'08"	0.85	1	L5	S4	W1	24.9	21.7	1.4	GIGCAS	
GRV 024009	2/1/2003	72°59'01"	75°15'08"	0.85	1	L5	S2	W1	24.6	20.6	1.6	BeiAP	
GRV 024016	02/01/2003	72°59'01"	75°15'08"	1.06	1	L5	S2	W1	25.4	21.3	1.6	IGCAS	
GRV 024060	2/1/2003	72°58'55"	75°14'47"	200.20	1	H5	S2	W1	19.2	17.1	1.1	BeiAP	
GRV 024129	02/01/2003	72°59'06"	75°15'23"	24.00	1	H6	S1	W2	20.8	18.1	1.5	IGCAS	
GRV 024131	02/01/2003	72°59'05"	75°15'24"	1.58	1	L5	S3	W2	24.8	20.6	1.3	PMO	
GRV 024153	02/01/2003	72°58'57"	75°15'07"	1.54	1	L6	S2	W2	24.5	20.8	1.4	PMO	
GRV 024237	02/01/2003	72°58'57"	75°15'00"	1.14	1	Ureilite	S1	W3				GIGCAS	
GRV 024244	02/01/2003	72°58'57"	75°15'00"	0.65	1	L6	S4	W2	25.6	21.6	1.5	IGCAS	
GRV 024245	02/01/2003	72°58'57"	75°15'00"	0.70	1	LL5	S5	W3	27.7	23.8	1.3	PMO	
GRV 024249	02/01/2003	72°58'57"	75°15'01"	1.07	1	H5	S3	W2	18.8	17.0	1.3	GIGCAS	
GRV 024258	2/1/2003	72°58'57"	75°15'01"	0.56	1	L6	S2	W2	25.0	21.6	1.5	BeiAP	
GRV 050001	12/31/2005	73°06'47"	75°09'35"	2.41	1	L3	S2	W1	22.1 (9.3–40.8)	16.8 (3.6–28.6)	2.9 (0.27–9.94)	GUT	
GRV 050002	01/01/2006	73°6.0'50"	75°9.0'57"	2.03	1	L3	S2	W1	21.7 (10.1–37.2)	13.1 (0.9–21.3)	1.2	IGGCAS	
GRV 050003	12/31/2005	73°5.0'40"	75°12'12"	6.40	1	LL6	S2	W1	27.6	27.5	4.0	IGGCAS	
GRV 050005	01/02/2006	73°06'50"	75°10'18"	1.15	1	L4	S2	W1	23.5	19.6	1.2	GUT	
GRV 050006	1/1/2006	73°6'48"	75°9'52"	2.60	1	L3	S2	W1	23.4 (4.4–39.9)	9.1 (2.0–17.9)	0.5 (0.1–1.7)	NAOC	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 050007	01/01/2006	73°5.0'20"	75°13'22"	11.08	1	LL5	S2	W1	30.8	25.9	2.4	IGGCAS	
GRV 050008	01/04/2006	72°59'45"	75°11'07"	1.82	1	L4	S2	W1	23.1	19.8	1.1	GUT	
GRV 050009	01/04/2006	73°05'32"	75°11'36"	2.58	1	H3	S2	W1	1.4–29.4	1.5–51.2	0–7.3	NU	
GRV 050011	01/04/2006	72°59'44"	75°11'35"	7.34	1	H4	S3	W2	18.7	16.7	1.3	IGGCAS	
GRV 050012	01/01/2006	73°6.0'45"	75°9.0'34"	0.80	1	L3	S2	W1	23.6 (3.3–37.3)	7.7 (2.5–19.5)	0.4	IGGCAS	
GRV 050013	1/1/2006	73°6'49"	75°9'41"	1.13	1	L6	S2	W0	25.3	21.2	1.4	NAOC	
GRV 050015	01/01/2006	73°06'50"	75°09'57"	2.23	1	L3	S2	W1	21.9 (8.6–38.3)	12.0 (1.2–36.1)	1.3 (0.2–6.0)	GUT	
GRV 050016	01/02/2006	73°06'48"	75°06'14"	0.63	1	H3	S1	W1	3.83–28.31	1.96–24.44	0–2.66	NU	
GRV 050017	1/2/2006	73°6'27"	75°10'25"	0.31	1	LL4	S3	W1	29.3	24.4	1.6	NAOC	
GRV 050018	01/02/2006	73°6.0'51"	75°9.0'55"	0.69	1	L3	S2	W1	21.2 (0.7–36.9)	10.7 (2.3–22.7)	1.7	IGGCAS	
GRV 050022	1/3/2006	73°4'28"	75°10'49"	3.58	1	H5	S2	W1	18.3	16.2	1.0	NAOC	
GRV 050023	01/03/2006	73°6.0'27"	75°9.0'9.3"	0.03	1	L6	S2	W1	24.4	20.8	1.4	IGGCAS	
GRV 050024	01/03/2006	73°06'01"	75°12'00"	1.51	1	L3	S2	W1	20.3 (0.5–33.7)	13.1 (1.1–21.9)	1.5 (0.1–10.6)	GUT	
GRV 050031	01/04/2006	73°06'14"	75°10'12"	31.59	1	H4	S1	W1	20.1	18.1	1.0	NU	
GRV 050038	1/5/2006	72°59'54"	75°12'56"	12.69	1	L6	S2	W2	25.1	21.2	1.8	NAOC	
GRV 050040	1/5/2006	72°59'55"	75°11'37"	5.17	1	H4	S2	W1	17.4	15.5	0.9	NAOC	
GRV 050044	01/05/2006	72°59'48"	75°13'5.0"	66.72	1	L4	S3	W2	24.1	21.0	1.4	IGGCAS	
GRV 050045	01/05/2006	72°59'49"	75°13'04"	36.65	1	L5	S5	W2	24.0	20.4	1.4	GUT	
GRV 050046	01/05/2006	73°06'18"	75°10'17"	20.43	1	L5	S2	W1	24.9	21.0	1.4	NU	
GRV 050050	01/05/2006	72°59'49"	75°13'06"	11.90	1	L5	S4	W1	24.1	20.5	1.5	GUT	
GRV 050051	01/05/2006	72°59'49"	75°13'6.0"	5.08	1	L5	S4	W2	23.8	20.8	1.8	IGGCAS	
GRV 050057	01/05/2006	72°59'30"	75°14'5.0"	11.92	1	L5	S3	W2	23.9	20.0	1.8	IGGCAS	
GRV 050058	1/5/2006	72°59'31"	75°14'4"	8.62	1	L6	S3	W1	24.6	21.0	1.5	NAOC	
GRV 050062	01/05/2006	72°59'36"	75°14'3.0"	1.60	1	L5	S3	W1	23.7	20.4	1.5	IGGCAS	
GRV 050077	01/05/2006	73°05'37"	75°11'26"	2.98	1	L6	S3	W1	25.6	21.7	1.4	NU	
GRV 050080	01/05/2006	73°05'10"	75°14'03"	1.33	1	H5	S2	W3	19.5	17.1	1.4	NU	
GRV 050084	1/5/2006	72°59'43"	75°12'21"	423.00	1	L6	S1	W1	25.2	21.3	1.7	NAOC	
GRV 050091	01/05/2006	73°00'06"	75°10'49"	1.33	1	L5	S3	W1	25.0	21.1	1.8	GUT	
GRV 050095	01/05/2006	73°04'30"	75°15'19"	1.55	1	H6	S2	W2	19.2	17.0	1.3	NU	
GRV 050106	01/06/2006	72°58'43"	75°15'53"	9.13	1	L6	S3	W2	25.6	21.7	1.8	IGGCAS	
GRV 050114	1/6/2006	72°58'41"	75°16'10"	2.96	1	L5	S2	W1	24.4	20.8	1.4	NAOC	
GRV 050118	01/06/2006	72°58'51"	75°15'37"	45.87	1	L4	S2	W1	23.3	19.9	1.5	IGGCAS	
GRV 050121	01/06/2006	72°58'34"	75°16'08"	21.91	1	L5	S5	W1	23.9	20.1	1.6	GUT	
GRV 050125	01/06/2006	73°05'09"	75°13'12"	2.25	1	L5	S2	W2	24.9	20.7	1.4	NU	
GRV 050135	1/6/2006	72°58'30"	75°15'38"	1.45	1	H6	S2	W2	20.1	17.7	1.4	NAOC	
GRV 050184	01/07/2006	72°57'50"	75°13'05"	2.17	1	L6	S3	W1	24.1	20.5	1.6	GUT	
GRV 050185	01/07/2006	73°06'29"	75°12'15"	2.25	1	H6	S2	W2	20.0	17.8	1.3	NU	
GRV 050201	01/07/2006	72°58'26"	75°16'30"	72.26	1	L3	S1	W2	24.1 (14.8–29.5)	18.7 (12.4–22.4)	1.8	IGGCAS	
GRV 050202	1/72006	72°59'0"	75°15'8"	51.20	1	L3–6	S1	W1	23.7 (18.7–33.8)	17.0 (6.9–21.4)	0.7 (0.2–1.8)	NAOC	Breccia
GRV 050218	01/08/2006	72°58'50"	75°15'4.0"	1.81	1	L5	S3	W1	23.2	19.7	1.4	IGGCAS	
GRV 050232	01/08/2006	72°58'50"	75°15'40"	1.32	1	L5	S5	W3	24.2	20.3	1.6	GUT	
GRV 050384	01/08/2006	72°53'17"	75°12'21"	0.76	1	CM2						NAOC & UCAL	
GRV 050391	01/08/2006	72°57'35"	75°13'18"	2.18	1	L6	S3	W1	24.0	20.3	1.7	GUT	
GRV 050396	01/09/2006	72°59'15"	75°15'42"	3.88	1	L5	S4	W3	23.8	20.1	1.4	GUT	
GRV 050399	1/9/2006	72°59'9"	75°15'37"	8.70	1	L6	S2	W0	25.3	21.5	1.7	NAOC	
GRV 050414	01/09/2006	72°59'12"	75°11'02"	1.54	1	H5	S2	W2	18.9	16.7	1.4	GUT	
GRV 050579	01/09/2006	72°59'55"	75°14'10"	2.43	1	L6	S2	W1	23.6	19.8	1.4	NU	
GRV 050702	01/09/2006	72°59'2.0"	75°14'44"	2.26	1	L5	S3	W1	24.1	20.6	1.5	IGGCAS	
GRV 051092	1/9/2006	72°59'3"	75°14'43"	1.29	1	H5	S1	W1	18.9	16.7	1.2	NAOC	
GRV 051219	01/09/2006	72°59'2.4"	75°14'44"	1.76	1	H6	S2	W2	18.5	16.4	1.1	IGGCAS	
GRV 051220	01/09/2006	72°59'02"	75°14'44"	1.40	1	L5	S3	W2	24.1	20.5	1.5	GUT	
GRV 051524	01/11/2006	72°59'59"	75°12'35"	262.00	1	H4	S2	W2	19.7	17.5	1.1	NU	
GRV 051531	1/11/2006	72°56'56"	75°19'9"	2.87	1	H5	S2	W1	19.4	17.5	1.5	NAOC	
GRV 051532	01/11/2006	72°56'08"	75°18'47"	4680.00	1	H5	S1	W2	18.7	16.6	1.4	GUT	
GRV 051537	01/11/2006	73°01'02"	75°15'20"	20.49	1	H4	S1	W2	17.9	16.4	1.0	NU	
GRV 051542	01/11/2006	72°56'7.0"	75°19'19"	12.76	1	H6	S2	W2	17.1	15.8	1.7	IGGCAS	
GRV 051549	1/11/2006	72°56'7"	75°19'19"	5.20	1	H5	S2	W2	18.5	15.8	1.8	NAOC	
GRV 051550	01/11/2006	73°00'36"	75°13'40"	2.43	1	H4	S2	W3	19.4	16.9	1.6	NU	
GRV 051552	01/11/2006	72°56'07"	75°19'19"	1.55	1	H4	S2	W2	18.6	16.3	1.3	GUT	
GRV 051564	01/11/2006	73°00'58"	75°11'10"	47.92	1	H3	S1	W3	19.4–27.4	9.4–31.5	0–16.8	NU	
GRV 051565	1/11/2006	72°56'6"	75°18'51"	22.63	1	H6	S2	W2	19.8	17.3	1.4	NAOC	
GRV 051575	01/11/2006	72°55'46"	75°20'19"	3.27	1	H5	S2	W2	19.5	16.6	1.4	GUT	
GRV 051581	01/11/2006	72°59'56"	75°11'50"	2.16	1	H5	S2	W2	19.3	17.2	1.1	NU	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 051582	01/11/2006	72°55'48"	75°20'32"	1.32	1	L6	S4	W2	23.3	19.9	1.6	IGGCAS	
GRV 051593	1/12/2006	72°56'7"	75°19'11"	5.18	1	H6	S2	W1	19.8	17.5	1.4	NAOC	
GRV 051601	01/12/2006	72°56'3.0"	75°19'12"	52.51	1	H4	S2	W1	18.5	16.2	1.3	IGGCAS	
GRV 051608	01/12/2006	72°56'03"	75°19'12"	1.32	1	H4	S2	W1	18.6	16.4	1.4	GUT	
GRV 051622	01/16/2006	72°59'40"	75°12'20"	233.00	1	L5	S4	W2	24.8	20.7	1.4	NU	
GRV 051634	1/16/2006	72°46'43"	75°19'38"	50.69	1	L5	S2	W1	24.5	20.9	1.8	NAOC	
GRV 051639	01/16/2006	72°46'43"	75°19'16"	47.78	1	L6	S5	W1	23.8	20.0	1.7	GUT	
GRV 051643	01/16/2006	72°59'39"	75°12'19"	31.07	1	L5	S3	W2	25.3	21.7	1.6	NU	
GRV 051644	01/16/2006	72°46'43"	75°19'52"	28.45	1	H6	S2	W2	18.5	16.2	1.3	IGGCAS	
GRV 051649	1/16/2006	72°46'52"	75°19'15"	28.72	1	L6	S3	W1	24.6	20.8	1.7	NAOC	
GRV 051658	01/16/2006	72°46'43"	75°19'16"	2.59	1	L4	S2	W1	24.0	20.4	1.6	IGGCAS	
GRV 051660	01/16/2006	72°46'43"	75°19'38"	1.59	1	L6	S3	W1	23.7	20.0	1.9	GUT	
GRV 051668	01/16/2006	72°59'57"	75°13'40"	1.54	1	L5	S3	W2	25.2	21.3	1.4	NU	
GRV 051670	1/16/2006	72°46'46"	75°19'47"	1.33	1	L6	S2	W1	24.9	21.1	1.7	NAOC	
GRV 051675	01/16/2006	72°46'44"	75°19'47"	28.06	1	L6	S3	W1	24.0	20.4	1.8	GUT	
GRV 051691	01/16/2006	72°59'50"	75°13'10"	8.51	1	L5	S3	W2	25.3	21.6	1.7	NU	
GRV 051694	01/16/2006	72°46'43"	75°20'0.0"	21.98	1	L6	S2	W2	23.4	20.4	1.7	IGGCAS	
GRV 051700	1/16/2006	72°46'39"	75°19'48"	15.67	1	L6	S2	W0	25.4	21.6	1.7	NAOC	
GRV 051706	01/16/2006	72°46'49"	75°19'35"	20.43	1	L4	S3	W1	23.7	20.7	1.6	IGGCAS	
GRV 051716	01/16/2006	72°46'40"	75°19'37"	11.95	1	L6	S4	W1	23.6	20.8	1.7	GUT	
GRV 051721	01/16/2006	72°59'40"	75°13'00"	7.22	1	L5	S4	W2	25.2	21.4	1.5	NU	
GRV 051727	1/16/2006	72°46'42"	75°20'0"	2.25	1	L6	S2	W0	24.9	21.4	1.6	NAOC	
GRV 051728	01/16/2006	72°46'43"	75°19'58"	1.30	1	L6	S3	W1	23.3	19.7	1.7	GUT	
GRV 051734	01/16/2006	72°58'38"	75°15'37"	1.76	1	L4	S5	W2	25.5	21.6	1.4	NU	
GRV 051752	01/16/2006	72°46'52"	75°18'19"	47.61	1	L6	S2	W1	25.0	20.8	1.6	IGGCAS	
GRV 051756	1/16/2006	72°46'52"	75°18'19"	12.62	1	L6	S1	W1	25.0	21.2	1.8	NAOC	
GRV 051763	01/16/2006	72°46'43"	75°19'3.5"	31.46	1	L5	S3	W1	23.4	20.5	1.7	IGGCAS	
GRV 051767	01/16/2006	72°46'43"	75°19'04"	9.33	1	L6	S5	W1	23.7	20.3	1.7	GUT	
GRV 051780	01/16/2006	72°58'39"	75°15'39"	1.60	1	L5	S3	W2	25.1	21.2	1.5	NU	
GRV 051793	1/16/2006	72°46'41"	75°20'9"	2.61	1	L6	S1	W1	24.9	21.0	1.6	NAOC	
GRV 051814	01/16/2006	72°46'46"	75°18'46"	11.90	1	L6	S3	W2	23.6	19.8	1.8	GUT	
GRV 051820	01/16/2006	72°58'53"	75°15'50"	1.76	1	L6	S6	W3	21.5	17.8	1.4	NU	
GRV 051822	01/16/2006	72°46'42"	75°19'23"	0.70	1	L5	S2	W1	23.4	20.3	1.6	IGGCAS	
GRV 051824	1/16/2006	72°46'43"	75°19'58"	2.48	1	L6	S2	W1	25.1	21.4	1.6	NAOC	
GRV 051833	01/16/2006	72°46'48"	75°18'43"	75.40	1	L5	S2	W1	24.2	21.0	1.6	IGGCAS	
GRV 051835	01/16/2006	72°46'48"	75°18'43"	47.64	1	L6	S4	W1	23.7	20.4	1.7	GUT	
GRV 051844	01/16/2006	72°58'48"	75°15'32"	22.21	1	L6	S5	W1	25.2	21.3	1.7	NU	
GRV 051854	1/16/2006	72°46'48"	75°18'43"	9.29	1	L6	S2	W1	25.2	21.0	1.8	NAOC	
GRV 051863	01/16/2006	72°46'32"	75°20'03"	882.00	1	L6	S3	W1	23.8	20.3	1.6	GUT	
GRV 051864	01/16/2006	72°58'45"	75°15'46"	432.00	1	L6	S2	W1	22.3	19.4	1.6	NU	
GRV 051872	01/16/2006	72°46'50"	75°18'29"	76.18	1	L5	S3	W2	23.1	20.0	1.7	IGGCAS	
GRV 051879	1/16/2006	72°46'50"	75°19'53"	32.28	1	L5	S2	W1	25.4	21.4	1.8	NAOC	
GRV 051881	01/16/2006	72°46'49"	75°19'53"	22.14	1	L6	S3	W1	23.7	20.6	1.8	IGGCAS	
GRV 051883	01/16/2006	72°46'44"	75°19'53"	29.11	1	L6	S3	W1	23.9	20.1	1.8	GUT	
GRV 051897	01/16/2006	72°58'50"	75°15'30"	8.59	1	L6	S5	W2	25.3	21.2	1.5	NU	
GRV 051900	1/16/2006	72°46'49"	75°19'9"	8.71	1	L6	S2	W1	24.7	21.1	1.8	NAOC	
GRV 051925	01/16/2006	72°46'51"	75°19'09"	71.65	1	L6	S4	W2	23.9	20.1	1.8	GUT	
GRV 051926	01/16/2006	72°58'43"	75°15'18"	51.50	1	L6	S5	W2	24.8	21.0	1.5	NU	
GRV 051927	01/16/2006	72°46'40"	75°19'22"	51.75	1	L5	S3	W1	24.5	21.3	1.8	IGGCAS	
GRV 051932	1/16/2006	72°46'49"	75°19'42"	46.15	1	L6	S1	W1	25.2	21.1	1.7	NAOC	
GRV 051934	01/16/2006	72°46'48"	75°19'39"	21.90	1	L5	S3	W1	23.9	21.2	1.8	IGGCAS	
GRV 051938	01/16/2006	72°46'49"	75°19'24"	11.97	1	L6	S3	W1	23.7	20.2	1.8	GUT	
GRV 051981	01/16/2006	72°58'42"	75°15'26"	52.86	1	L6	S2	W3	25.3	21.7	1.4	NU	
GRV 051990	1/16/2006	72°46'51"	75°18'19"	2.24	1	L6	S2	W1	24.5	21.0	1.7	NAOC	
GRV 051992	01/16/2006	72°46'51"	75°18'19"	1.29	1	L6	S3	W1	24.5	20.3	1.8	GUT	
GRV 052003	01/16/2006	72°58'38"	75°15'31"	75.60	1	L5	S5	W1	24.7	21.0	1.6	NU	
GRV 052022	01/16/2006	72°46'55"	75°17'58"	74.48	1	L5	S3	W2	24.0	21.1	1.8	IGGCAS	
GRV 052025	1/16/2006	72°46'55"	75°17'58"	28.23	1	L6	S3	W1	25.2	21.5	1.7	NAOC	
GRV 052037	01/16/2006	72°46'42"	75°19'4.6"	31.74	1	L5	S2	W1	23.6	20.3	1.8	IGGCAS	
GRV 052038	01/16/2006	72°46'42"	75°19'05"	31.60	1	L6	S3	W1	23.8	20.4	1.8	GUT	
GRV 052042	01/16/2006	72°58'40"	75°15'28"	12.76	1	L6	S4	W2	25.5	21.4	1.6	NU	
GRV 052059	1/16/2006	72°46'29"	75°20'12"	0.82	1	H5	S2	W1	19.3	16.8	1.2	NAOC	
GRV 052073	01/16/2006	72°46'31"	75°20'15"	242.00	1	L6	S4	W1	23.7	20.6	1.8	GUT	
GRV 052078	01/16/2006	72°58'37"	75°15'25"	0.76	1	H6	S2	W1	19.4	17.3	1.2	NU	
GRV 052090	01/16/2006	72°58'40"	75°15'42"	0.71	1	H5	S3	W2	19.2	17.0	1.1	NU	
GRV 052098	1/16/2006	72°46'30"	75°20'23"	0.84	1	H6	S2	W1	19.5	17.4	1.1	NAOC	
GRV 052110	01/16/2006	72°46'48"	75°19'25"	2.26	1	L6	S2	W2	23.6	20.2	1.8	IGGCAS	
GRV 052111	1/16/2006	72°46'48"	75°19'38"	2.17	1	L6	S3	W1	24.9	21.4	1.8	NAOC	
GRV 052113	1/16/2006	72°46'44"	75°19'37"	0.77	1	L5	S2	W1	24.9	21.2	1.7	NAOC	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 052115	01/16/2006	72°46'20"	75°20'10"	440.00	1	L6	S4	W1	24.2	20.2	1.6	GUT	
GRV 052121	01/16/2006	72°58'39"	75°15'19"	73.88	1	L6	S5	W1	24.9	21.4	1.5	NU	
GRV 052127	1/16/2006	72°46'24"	75°20'24"	20.26	1	L6	S3	W1	24.9	21.2	1.9	NAOC	
GRV 052133	01/16/2006	72°46'31"	75°19'05"	9.35	1	L6	S3	W2	23.8	20.0	1.7	GUT	
GRV 052135	01/16/2006	72°58'35"	75°16'02"	12.74	1	L6	S5	W1	25.5	21.4	1.5	NU	
GRV 052140	01/16/2006	72°46'30"	75°20'7.0"	0.77	1	H4	S2	W2	18.5	16.6	1.2	IGGCAS	
GRV 052141	1/16/2006	72°46'30"	75°20'7"	0.82	1	H5	S2	W1	18.7	16.5	1.2	NAOC	
GRV 052145	01/16/2006	72°46'30"	75°20'7.0"	0.70	1	H4	S3	W2	18.9	16.6	1.3	IGGCAS	
GRV 052159	01/16/2006	72°46'19"	75°20'41"	1.20	1	L6	S4	W2	24.6	20.8	1.5	GUT	
GRV 052160	01/16/2006	72°58'39"	75°15'55"	1.30	1	H5	S1	W1	19.3	17.1	1.2	NU	
GRV 052163	1/16/2006	72°46'19"	75°20'41"	0.77	1	H5	S2	W0	19.0	16.8	1.3	NAOC	
GRV 052183	01/16/2006	72°46'23"	75°20'17"	1.84	1	L6	S5	W2	23.4	20.1	1.6	GUT	
GRV 052191	01/16/2006	72°58'39"	75°15'57"	1.19	1	H3	S3	W3	10.49–20.28	3.16–25.34	0–5.26	NU	
GRV 052214	01/16/2006	72°46'21"	75°20'48"	1.76	1	L4	S1	W1	24.1	20.5	1.9	IGGCAS	
GRV 052216	1/16/2006	72°46'21"	75°20'48"	0.95	1	L6	S1	W1	25.0	21.0	1.9	NAOC	
GRV 052222	01/16/2006	72°46'16"	75°20'17"	0.76	1	L5	S2	W1	23.4	19.9	1.5	IGGCAS	
GRV 052243	01/17/2006	72°46'59"	75°18'01"	438.00	1	L6	S5	W2	23.9	20.1	1.7	GUT	
GRV 052250	01/17/2006	72°58'37"	75°16'03"	8.68	1	L5	S5	W1	24.5	20.7	1.7	NU	
GRV 052259	1/17/2006	72°46'34"	75°20'4"	29.00	1	L6	S2	W1	25.1	21.2	1.8	NAOC	
GRV 052265	01/17/2006	72°46'34"	75°20'04"	2.26	1	H4	S2	W2	18.3	16.3	1.3	GUT	
GRV 052271	01/17/2006	72°58'40"	75°15'56"	2.98	1	H4	S1	W2	17.5	15.5	1.1	NU	
GRV 052272	01/17/2006	72°46'41"	75°19'14"	1.83	1	L5	S3	W2	23.8	20.3	1.6	IGGCAS	
GRV 052284	1/17/2006	72°46'35"	75°19'20"	9.51	1	L6	S2	W1	25.2	21.5	1.9	NAOC	
GRV 052288	01/17/2006	72°46'44"	75°19'29"	8.61	1	H4	S2	W2	16.7	15.1	0.9	IGGCAS	
GRV 052299	01/17/2006	72°46'56"	75°18'42"	1.76	1	L5	S3	W1	23.9	20.3	1.7	GUT	
GRV 052301	01/17/2006	72°58'47"	75°15'48"	1.16	1	L6	S3	W1	24.6	20.7	1.6	NU	
GRV 052305	1/17/2006	72°46'54"	75°19'26"	9.36	1	L6	S2	W1	25.1	21.3	1.7	NAOC	
GRV 052311	01/17/2006	72°46'57"	75°19'30"	2.99	1	H5	S3	W2	18.5	16.0	1.4	GUT	
GRV 052314	01/17/2006	72°58'47"	75°15'49"	46.18	1	H5	S3	W3	19.4	17.2	1.5	NU	
GRV 052320	01/17/2006	72°46'39"	75°19'36"	22.10	1	H5	S3	W1	23.3	21.0	1.8	IGGCAS	
GRV 052334	1/17/2006	72°46'44"	75°18'35"	0.82	1	L5	S2	W1	24.9	21.3	1.5	NAOC	
GRV 052343	01/17/2006	72°46'51"	75°18'36"	0.82	1	H4	S2	W1	17.6	15.6	1.2	IGGCAS	
GRV 052348	01/17/2006	72°46'56"	75°19'18"	0.77	1	H4	S3	W2	18.4	16.4	1.0	GUT	
GRV 052351	01/17/2006	72°58'41"	75°15'37"	0.74	1	H5	S3	W1	19.0	16.7	1.2	NU	
GRV 052356	01/17/2006	72°46'59"	75°19'6.0"	0.74	1	LL6	S2	W0	30.8	25.3	2.0	IGGCAS	
GRV 052361	01/17/2006	72°46'58"	75°17'56"	2.60	1	L6	S3	W1	23.8	20.2	1.6	GUT	
GRV 052370	01/17/2006	72°58'39"	75°15'47"	0.95	1	H5	S3	W2	19.0	16.7	1.2	NU	
GRV 052376	01/17/2006	72°46'55"	75°18'53"	28.07	1	L5	S2	W1	23.4	20.5	1.7	IGGCAS	
GRV 052383	1/17/2006	72°47'15"	75°16'38"	2.88	1	H6	S2	W2	19.6	17.5	1.2	NAOC	
GRV 052390	01/17/2006	72°47'13"	75°16'22"	1.30	1	H4	S2	W2	18.2	16.2	1.1	IGGCAS	
GRV 052408	01/17/2006	72°47'02"	75°16'18"	0.77	1	Ureilite						GUT	
GRV 052409	01/17/2006	72°58'35"	75°15'50"	0.82	1	L6	S5	W1	25.0	20.5	1.5	NU	
GRV 052415	1/17/2006	72°46'45"	75°19'53"	12.12	1	L6	S2	W1	24.9	21.2	1.4	NAOC	
GRV 052416	01/17/2006	72°46'44"	75°19'50"	9.48	1	L6	S4	W1	23.7	20.1	1.6	GUT	
GRV 052425	01/17/2006	72°46'54"	75°18'10"	9.45	1	L6	S5	W1	25.3	21.7	1.6	NU	
GRV 052430	01/17/2006	72°46'55"	75°19'27"	5.19	1	L6	S4	W1	24.3	21.1	1.7	IGGCAS	
GRV 052437	1/17/2006	72°46'55"	75°19'23"	5.11	1	L6	S3	W1	25.3	21.5	1.8	NAOC	
GRV 052440	01/17/2006	72°46'55"	75°19'23"	2.85	1	L5	S3	W1	24.0	20.6	1.8	IGGCAS	
GRV 052441	01/17/2006	72°46'55"	75°19'23"	2.44	1	L6	S4	W2	23.7	20.2	1.8	GUT	
GRV 052444	01/17/2006	72°58'45"	75°15'42"	2.18	1	L6	S5	W1	24.1	20.6	1.4	NU	
GRV 052445	1/17/2006	72°46'42"	75°19'7"	2.98	1	L6	S2	W1	24.9	20.9	1.8	NAOC	
GRV 052450	01/17/2006	72°46'42"	75°19'07"	1.59	1	L6	S3	W1	23.4	19.8	1.8	GUT	
GRV 052455	01/17/2006	72°58'41"	75°15'43"	1.60	1	L6	S5	W1	25.5	21.7	1.7	NU	
GRV 052461	01/17/2006	72°46'34"	75°18'50"	1.59	1	L5	S1	W1	24.3	21.0	1.8	IGGCAS	
GRV 052464	1/17/2006	72°47'2.7"	75°18'31"	0.76	1	L6	S2	W1	25.3	21.4	1.8	NAOC	
GRV 052466	01/17/2006	72°47'2.7"	75°18'31"	0.76	1	L5	S3	W1	22.6	19.9	1.4	IGGCAS	
GRV 052468	01/17/2006	72°47'03"	75°18'31"	0.76	1	L6	S3	W1	23.3	19.9	1.7	GUT	
GRV 052470	01/17/2006	72°58'45"	75°16'01"	0.76	1	L6	S5	W1	24.5	21.0	1.4	NU	
GRV 052476	1/17/2006	72°47'1"	75°17'54"	0.67	1	L6	S2	W1	26.0	21.8	1.7	NAOC	
GRV 052483	01/17/2006	72°46'47"	75°18'58"	162.84	1	L-related impact melt rock		W1	24.7	21.1	1.5	NAOC& UCAL	**
GRV 052490	01/17/2006	72°46'47"	75°18'58"	7.14	1	L6	S4	W1	23.7	20.2	1.9	GUT	
GRV 052500	01/17/2006	72°59'40"	75°15'52"	12.05	1	L6	S5	W1	25.6	21.1	1.5	NU	
GRV 052505	01/17/2006	72°46'47"	75°18'17"	2.49	1	L5	S2	W1	23.9	20.9	1.7	IGGCAS	
GRV 052527	1/17/2006	72°47'11"	75°17'48"	0.70	1	H5	S3	W1	18.5	16.3	0.8	NAOC	
GRV 052529	01/17/2006	72°47'11"	75°17'48"	0.75	1	H5	S5	W1	17.8	15.9	1.0	IGGCAS	
GRV 052541	01/17/2006	72°47'06"	75°17'41"	0.70	1	L6	S5	W2	23.8	20.5	1.6	GUT	
GRV 052566	01/17/2006	72°59'40"	75°15'49"	2.88	1	L6	S5	W1	24.9	21.2	1.6	NU	
GRV 052570	1/17/2006	72°46'51"	75°18'13"	1.55	1	L6	S1	W1	25.0	20.9	1.6	NAOC	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 052574	01/17/2006	72°46'43"	75°18'09"	1.83	1	L5	S3	W1	23.8	20.4	1.5	GUT	
GRV 052577	01/17/2006	72°58'41"	75°15'47"	1.30	1	L6	S5	W1	25.0	21.3	1.5	NU	
GRV 052578	01/17/2006	72°46'42"	75°18'9.0"	0.83	1	L6	S2	W1	24.0	20.8	1.6	IGGCAS	
GRV 052582	1/17/2006	72°46'42"	75°18'9"	0.82	1	L6	S1	W1	24.9	21.3	1.7	NAOC	
GRV 052583	01/17/2006	72°46'42"	75°18'9.0"	0.76	1	L5	S2	W1	24.1	20.8	1.8	IGGCAS	
GRV 052584	01/17/2006	72°46'59"	75°17'50"	0.74	1	L5	S3	W1	23.6	20.0	1.7	GUT	
GRV 052590	01/17/2006	72°58'39"	75°16'02"	0.75	1	L6	S5	W1	24.7	20.7	1.6	NU	
GRV 052592	1/17/2006	72°46'59"	75°17'50"	0.67	1	L6	S2	W1	24.9	21.3	1.8	NAOC	
GRV 052604	01/17/2006	72°47'01"	75°17'58"	0.67	1	L6	S3	W1	22.5	20.5	1.8	GUT	
GRV 052605	01/17/2006	72°58'43"	75°15'33"	0.67	1	L6	S2	W1	24.5	20.8	1.5	NU	
GRV 052653	01/17/2006	72°47'7.0"	75°17'59"	0.75	1	L4	S1	W0	23.6	20.3	1.7	IGGCAS	
GRV 052662	1/17/2006	72°46'43"	75°18'55"	2.87	1	L6	S2	W1	25.3	21.5	1.8	NAOC	
GRV 052665	01/17/2006	72°46'46"	75°18'42"	28.60	1	L5	S3	W2	24.1	21.2	1.7	IGGCAS	
GRV 052668	01/17/2006	72°46'45"	75°18'47"	2.85	1	L5	S3	W1	23.6	19.9	1.7	GUT	
GRV 052677	01/17/2006	72°58'48"	75°15'34"	3.27	1	L5	S3	W2	24.4	21.0	1.4	NU	
GRV 052690	1/17/2006	72°46'45"	75°18'48"	2.86	1	L6	S3	W1	25.0	21.0	1.7	NAOC	
GRV 052699	01/17/2006	72°46'56"	75°18'24"	9.14	1	L6	S3	W1	23.6	20.1	1.7	GUT	
GRV 052704	01/17/2006	72°59'04"	75°13'30"	0.67	1	L6	S5	W3	23.4	20.3	1.6	NU	
GRV 052713	01/17/2006	72°46'48"	75°19'5.0"	5.06	1	L5	S2	W1	24.1	20.6	1.6	IGGCAS	
GRV 052724	1/17/2006	72°47'5"	75°17'21"	1.82	1	L6	S2	W1	25.2	21.3	1.9	NAOC	
GRV 052725	01/17/2006	72°47'5.0"	75°17'21"	2.25	1	L5	S4	W1	24.3	20.9	1.6	IGGCAS	
GRV 052729	01/17/2006	72°47'21"	75°16'20"	1.19	1	LL6	S5	W2	28.5	19.8	1.7	GUT	
GRV 052744	01/17/2006	72°56'45"	75°16'00"	2.19	1	L5	S2	W3	24.5	20.8	1.3	NU	
GRV 052745	1/17/2006	72°47'0"	75°17'43"	1.55	1	L6	S2	W0	24.8	21.1	1.8	NAOC	
GRV 052746	01/17/2006	72°47'00"	75°17'43"	1.20	1	L5	S3	W2	23.3	19.9	1.7	GUT	
GRV 052775	01/17/2006	72°56'30"	75°17'31"	22.00	1	L5	S2	W3	25.3	21.6	1.5	NU	
GRV 052793	01/17/2006	72°46'31"	75°20'19"	31.44	1	L5	S4	W2	23.2	19.9	1.8	IGGCAS	
GRV 052800	1/17/2006	72°49'31"	75°21'13"	2.44	1	H5	S2	W1	20.1	17.7	1.1	NAOC	
GRV 052820	01/17/2006	72°49'31"	75°21'13"	1.46	1	H4	S1	W2	16.9	15.3	0.9	IGGCAS	
GRV 052822	01/17/2006	72°49'31"	75°21'13"	0.77	1	L6	S3	W2	23.7	20.2	1.8	GUT	
GRV 052834	01/17/2006	72°57'53"	75°12'59"	2.62	1	H5	S2	W2	20.9	18.5	1.4	NU	
GRV 052835	1/17/2006	72°49'31"	75°21'13"	1.77	1	H5	S2	W2	18.9	16.6	1.0	NAOC	
GRV 052860	01/17/2006	72°49'31"	75°21'13"	1.60	1	L6	S3	W2	24.2	20.4	1.8	GUT	
GRV 052863	01/17/2006	72°46'41"	75°20'14"	1.30	1	L5	S5	W2	23.4	20.0	1.5	NU	
GRV 052869	01/17/2006	72°49'31"	75°21'13"	0.83	1	L5	S2	W1	24.1	20.7	1.6	IGGCAS	
GRV 052871	1/17/2006	72°49'31"	75°21'13"	0.75	1	L6	S1	W1	24.9	20.9	1.8	NAOC	
GRV 052883	01/17/2006	72°49'31"	75°21'13"	0.95	1	L5	S3	W1	24.0	20.8	1.8	IGGCAS	
GRV 052884	01/17/2006	72°49'31"	75°21'13"	1.83	1	L6	S3	W2	23.9	20.6	1.8	GUT	
GRV 052889	01/17/2006	72°46'41"	75°20'05"	1.56	1	L6	S4	W2	25.8	21.7	1.4	NU	
GRV 052892	1/17/2006	72°49'31"	75°21'13"	5.27	1	L6	S2	W1	24.9	21.2	1.7	NAOC	
GRV 052894	01/17/2006	72°49'31"	75°21'13"	5.07	1	L6	S3	W2	24.0	20.5	1.7	GUT	
GRV 052911	01/17/2006	72°46'40"	75°19'56"	28.12	1	L5	S5	W3	24.3	20.7	1.4	NU	
GRV 052914	01/17/2006	72°46'45"	75°18'59"	20.32	1	L5	S3	W1	24.0	20.5	1.6	IGGCAS	
GRV 052917	1/17/2006	72°46'45"	75°19'0"	1.19	1	L6	S2	W1	25.4	21.1	1.7	NAOC	
GRV 052919	01/17/2006	72°47'2.0"	75°18'32"	1.46	1	L5	S5	W2	24.2	20.6	1.7	IGGCAS	
GRV 052920	01/17/2006	72°46'50"	75°18'49"	0.94	1	L5	S3	W1	24.0	20.3	1.5	GUT	
GRV 052934	01/17/2006	72°46'40"	75°19'57"	2.86	1	L6	S5	W1	24.3	20.9	1.5	NU	
GRV 052938	1/17/2006	72°46'49"	75°17'12"	0.74	1	L6	S2	W1	24.8	20.9	1.9	NAOC	
GRV 052946	01/17/2006	72°46'53"	75°17'50"	1.40	1	L6	S3	W2	23.8	20.2	1.8	GUT	
GRV 052957	01/17/2006	72°46'38"	75°20'16"	0.76	1	L6	S5	W1	25.0	21.3	1.6	NU	
GRV 052959	01/17/2006	72°46'58"	75°17'54"	699.00	1	L5	S4	W1	24.0	20.5	1.8	IGGCAS	
GRV 052968	1/17/2006	72°46'39"	75°18'20"	75.56	1	L6	S1	W1	25.2	21.0	1.7	NAOC	
GRV 052970	01/17/2006	72°46'40"	75°18'22"	50.80	1	L5	S2	W1	24.0	20.4	1.8	IGGCAS	
GRV 052971	01/17/2006	72°46'46"	75°18'31"	45.73	1	L6	S5	W2	24.0	20.2	1.6	GUT	
GRV 052974	01/17/2006	72°46'38"	75°20'20"	31.33	1	L6	S6	W1	24.8	21.1	1.5	NU	
GRV 052991	1/18/2006	72°46'41"	75°18'37"	5.11	1	L6	S3	W1	25.4	21.5	1.8	NAOC	
GRV 052996	01/18/2006	72°46'58"	75°17'48"	0.94	1	L6	S3	W2	23.7	20.1	1.8	GUT	
GRV 053006	01/18/2006	72°46'38"	75°20'27"	1.20	1	L6	S5	W1	24.8	21.2	1.6	NU	
GRV 053007	01/18/2006	72°46'42"	75°18'36"	1.20	1	L6	S2	W2	24.2	20.7	1.8	IGGCAS	
GRV 053026	1/18/2006	72°47'24"	75°17'0"	2.24	1	H5	S2	W1	19.6	17.1	1.1	NAOC	
GRV 053041	01/18/2006	72°47'35"	75°16'44"	1.20	1	H5	S5	W2	18.5	16.7	1.8	IGGCAS	
GRV 053045	01/18/2006	72°47'35"	75°16'44"	0.74	1	H5	S2	W3	18.8	16.6	1.4	GUT	
GRV 053047	01/18/2006	72°46'24"	75°20'54"	0.82	1	H5	S2	W1	19.1	17.0	1.2	NU	
GRV 053049	1/18/2006	72°46'58"	75°17'23"	0.67	1	H5	S3	W1	18.8	16.6	1.3	NAOC	
GRV 053076	01/18/2006	72°46'45"	75°18'56"	53.58	1	L6	S5	W2	23.7	20.2	1.7	GUT	
GRV 053081	01/18/2006	72°46'25"	75°19'11"	28.10	1	L6	S5	W1	24.7	21.3	1.5	NU	
GRV 053083	01/18/2006	72°46'45"	75°18'56"	22.71	1	L5	S5	W1	24.4	21.2	1.8	IGGCAS	
GRV 053085	1/18/2006	72°46'45"	75°18'56"	20.28	1	L6	S2	W1	25.0	21.5	1.7	NAOC	
GRV 053088	01/18/2006	72°46'45"	75°18'56"	12.67	1	L5	S3	W2	24.6	21.0	1.8	IGGCAS	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 053089	01/18/2006	72°46'45"	75°18'56"	5.01	1	L6	S3	W1	23.9	20.2	1.8	GUT	
GRV 053090	01/18/2006	72°47'23"	75°17'25"	8.68	1	L6	S2	W1	26.3	22.3	1.6	NU	
GRV 053093	1/18/2006	72°46'45"	75°18'56"	2.62	1	H5	S3	W1	18.1	16.2	1.0	NAOC	
GRV 053114	01/18/2006	72°46'51"	75°18'24"	0.70	1	L6	S3	W2	23.6	20.2	1.8	GUT	
GRV 053151	01/18/2006	72°46'29"	75°20'24"	1.33	1	H5	S2	W2	18.1	16.2	1.2	IGGCAS	
GRV 053171	01/18/2006	72°46'57"	75°18'01"	0.94	1	H5	S1	W1	19.6	17.2	1.3	NU	
GRV 053176	1/18/2006	72°46'29"	75°20'24"	0.95	1	H6	S2	W1	19.2	17.0	1.2	NAOC	
GRV 053180	01/18/2006	72°46'29"	75°20'24"	0.77	1	H5	S2	W2	18.1	16.5	1.4	IGGCAS	
GRV 053183	01/18/2006	72°46'29"	75°20'24"	0.75	1	H5	S3	W2	17.5	15.5	1.4	GUT	
GRV 053201	01/18/2006	72°46'29"	75°20'24"	3.01	1	H4	S1	W2	19.9	17.6	1.7	IGGCAS	
GRV 053211	1/18/2006	72°46'29"	75°20'24"	1.41	1	H6	S2	W1	21.0	18.5	1.3	NAOC	
GRV 053213	01/18/2006	72°46'29"	75°20'24"	1.40	1	H5	S3	W2	19.0	16.7	1.3	GUT	
GRV 053214	01/18/2006	72°46'57"	75°18'01"	0.70	1	H4	S2	W2	18.2	16.1	1.0	NU	
GRV 053227	01/18/2006	72°46'29"	75°20'24"	1.77	1	L5	S3	W2	24.5	20.6	1.6	IGGCAS	
GRV 053229	1/18/2006	72°46'29"	75°20'24"	2.18	1	L6	S4	W2	24.6	20.8	1.9	NAOC	
GRV 053289	01/18/2006	72°46'57"	75°18'02"	0.82	1	L6	S5	W1	25.3	21.3	1.5	NU	
GRV 053294	01/18/2006	72°46'29"	75°20'24"	0.75	1	L5	S3	W1	23.5	20.2	1.7	GUT	
GRV 053297	01/18/2006	72°46'57"	75°18'06"	0.82	1	L6	S5	W1	25.0	20.9	1.4	NU	
GRV 053347	1/18/2006	72°46'46"	75°18'48"	0.67	1	L6	S2	W1	24.8	21.2	1.8	NAOC	
GRV 053397	01/18/2006	72°46'46"	75°17'55"	0.83	1	L6	S3	W1	24.1	20.4	1.7	GUT	
GRV 053424	01/18/2006	72°46'56"	75°18'08"	0.83	1	L6	S3	W2	24.1	20.5	1.5	NU	
GRV 053425	01/18/2006	72°47'37"	75°17'5.0"	0.75	1	H4	S2	W2	18.5	16.4	1.1	IGGCAS	
GRV 053441	1/18/2006	72°47'29"	75°16'51"	0.83	1	L6	S3	W1	25.0	21.5	1.9	NAOC	
GRV 053462	01/18/2006	72°47'26"	75°16'47"	0.67	1	H4	S2	W2	18.2	16.3	1.3	IGGCAS	
GRV 053474	01/18/2006	72°47'29"	75°16'54"	12.67	1	L5	S3	W1	23.4	20.0	1.8	GUT	
GRV 053479	01/18/2006	72°46'55"	75°18'09"	2.47	1	L6	S5	W1	24.0	20.2	1.6	NU	
GRV 053486	1/18/2006	72°47'16"	75°16'13"	0.76	1	L6	S2	W1	25.4	21.1	1.7	NAOC	
GRV 053489	01/18/2006	72°46'52"	75°18'21"	456.00	1	L6	S5	W2	23.7	20.4	1.5	GUT	
GRV 053490	01/18/2006	72°46'55"	75°18'07"	254.00	1	L6	S5	W2	25.5	21.8	1.6	NU	
GRV 053492	01/18/2006	72°46'3.0"	75°19'5.0"	240.00	1	L4	S4	W2	24.3	20.5	1.8	IGGCAS	
GRV 053494	1/18/2006	72°46'44"	75°19'0"	11.94	1	L6	S3	W1	25.2	21.5	1.8	NAOC	
GRV 053496	01/18/2006	72°46'44"	75°19'0.0"	1.77	1	L5	S3	W1	24.1	21.0	1.7	IGGCAS	
GRV 053498	01/18/2006	72°46'44"	75°19'00"	0.82	1	L6	S3	W1	23.6	20.3	1.7	GUT	
GRV 053507	01/18/2006	72°46'55"	75°18'07"	46.85	1	L6	S2	W2	25.5	21.7	1.5	NU	
GRV 053508	1/18/2006	72°46'43"	75°19'7"	53.24	1	L6	S2	W1	25.4	21.2	1.9	NAOC	
GRV 053524	01/18/2006	72°46'44"	75°18'56"	31.81	1	L5	S3	W2	24.8	20.7	1.5	GUT	
GRV 053530	01/18/2006	72°46'56"	75°18'04"	225.00	1	L6	S5	W2	25.8	21.7	1.5	NU	
GRV 053565	01/18/2006	72°46'54"	75°18'0.0"	12.63	1	L5	S2	W1	23.7	20.2	1.5	IGGCAS	
GRV 053569	1/18/2006	72°46'56"	75°18'31"	8.45	1	L6	S2	W1	24.8	21.1	1.6	NAOC	
GRV 053589	01/18/2006	72°46'57"	75°18'1.0"	1.40	1	L5	S3	W2	23.7	20.5	1.7	IGGCAS	
GRV 053591	01/18/2006	72°46'57"	75°18'01"	0.77	1	L6	S3	W1	23.9	20.3	1.7	GUT	
GRV 053596	01/18/2006	72°46'45"	75°18'38"	8.39	1	L6	S5	W1	24.1	20.5	1.5	NU	
GRV 053610	1/18/2006	72°46'50"	75°18'27"	5.01	1	L6	S3	W1	24.8	21.2	1.8	NAOC	
GRV 053616	01/18/2006	72°46'50"	75°18'27"	2.96	1	L5	S3	W1	23.9	20.3	1.7	GUT	
GRV 053617	01/18/2006	72°46'45"	75°18'38"	2.61	1	L6	S5	W1	24.3	20.5	1.7	NU	
GRV 053623	01/18/2006	72°46'55"	75°18'2.0"	1.45	1	L5	S3	W1	23.4	20.2	1.5	IGGCAS	
GRV 053629	1/18/2006	72°46'55"	75°18'2"	0.70	1	L6	S2	W1	25.1	21.0	1.8	NAOC	
GRV 053630	01/18/2006	72°46'55"	75°18'2.0"	0.77	1	L5	S2	W1	24.3	20.3	1.6	IGGCAS	
GRV 053632	01/18/2006	72°46'55"	75°18'02"	0.70	1	L5	S3	W2	23.5	20.0	1.6	GUT	
GRV 053640	01/19/2006	72°46'45"	75°18'38"	20.23	1	H5	S3	W1	19.1	17.2	1.4	NU	
GRV 053641	1/19/2006	72°47'2"	75°16'10"	12.91	1	H5	S2	W1	17.7	15.9	1.0	NAOC	
GRV 053643	01/19/2006	72°47'02"	75°16'10"	2.86	1	H5	S1	W1	18.2	16.2	1.5	GUT	
GRV 053654	01/19/2006	72°46'45"	75°18'38"	1.59	1	H4	S1	W3	18.4	16.3	1.3	NU	
GRV 053662	01/19/2006	72°46'59"	75°16'36"	12.02	1	L5	S1	W1	24.9	21.6	1.7	IGGCAS	
GRV 053683	1/19/2006	72°47'12"	75°17'11"	0.67	1	H5	S2	W2	18.0	15.7	0.9	NAOC	
GRV 053688	01/19/2006	72°47'11"	75°17'37"	2.98	1	L5	S4	W1	25.3	22.0	1.6	IGGCAS	
GRV 053690	01/20/2006	72°49'32"	75°21'28"	1730	1	H4	S3	W1	16.2	14.8	0.8	GUT	
GRV 053695	01/20/2006	72°46'44"	75°18'49"	12.08	1	H3	S1	W2	5.4–21.9	6.1–32.6	0.4–3.1	NU	
GRV 053703	1/21/2006	72°47'19"	75°16'59"	2.59	1	L6	S3	W1	26.5	21.9	1.7	NAOC	
GRV 053708	01/21/2006	72°49'30"	75°21'15"	1.34	1	L5	S4	W2	24.2	20.5	1.7	GUT	
GRV 053714	01/21/2006	72°46'44"	75°18'49"	0.82	1	H6	S3	W2	18.5	16.7	1.1	NU	
GRV 053725	01/23/2006	72°46'47"	75°16'33"	54.15	1	L5	S1	W2	23.7	20.2	1.7	IGGCAS	
GRV 053732	1/23/2006	72°46'41"	75°16'22"	20.21	1	H5	S3	W1	20.0	17.5	1.5	NAOC	
GRV 053736	01/23/2006	72°46'42"	75°16'24"	1.86	1	H5	S1	W1	18.0	16.1	1.6	IGGCAS	
GRV 053748	01/23/2006	72°46'53"	75°16'17"	1.40	1	L6	S3	W1	23.7	20.2	1.6	GUT	
GRV 053751	01/23/2006	72°46'44"	75°18'49"	1.56	1	H6	S5	W3	19.4	17.4	1.1	NU	
GRV 053754	1/23/2006	72°46'53"	75°16'17"	0.76	1	L6	S1	W1	18.4	16.4	1.1	NAOC	
GRV 053755	01/23/2006	72°46'53"	75°16'17"	0.77	1	L5	S3	W1	23.9	20.2	1.7	GUT	
GRV 053756	01/23/2006	72°46'44"	75°18'49"	0.76	1	H4	S2	W2	19.4	17.2	1.2	NU	

Table 5. *Continued.* Meteorites collected by the China Antarctic Research Expedition (CHINARE) to Grove Mountains.

Name	Date of recovery	Latitude (S)	Longitude (E)	Mass (g)	No. of pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Info	Comments
GRV 053791	01/23/2006	72°47'6.0"	75°16'17"	1.41	1	H4	S2	W1	17.6	15.9	1.1	IGGCAS	
GRV 053792	1/23/2006	72°47'6"	75°16'17"	0.96	1	L6	S3	W1	24.8	21.2	1.4	NAOC	
GRV 053797	01/23/2006	72°47'6.0"	75°16'17"	0.76	1	L5	S1	W1	18.4	16.5	1.2	IGGCAS	
GRV 053836	01/23/2006	72°47'02"	75°16'21"	1.41	1	H4	S3	W2	16.9	15.2	1.2	GUT	
GRV 053837	01/23/2006	72°46'44"	75°18'49"	1.29	1	L6	S5	W2	24.7	20.8	1.7	NU	
GRV 053857	1/23/2006	72°47'2"	75°16'21"	0.83	1	H6	S1	W1	25.7	21.8	1.7	NAOC	
GRV 053862	01/23/2006	72°47'11"	75°16'35"	0.76	1	H4	S2	W1	17.9	15.8	1.3	GUT	
GRV 053880	01/23/2006	72°46'44"	75°18'49"	0.82	1	H5	S2	W3	18.5	16.4	1.1	NU	
GRV 053921	01/23/2006	72°47'13"	75°16'25"	2.46	1	L4	S2	W1	23.8	20.6	1.6	IGGCAS	
GRV 053978	1/23/2006	72°46'18"	75°19'31"	7.08	1	LL6	S3	W1	32.3	25.9	2.4	NAOC	
GRV 053979	01/23/2006	72°46'3.0"	75°25'7.7"	5.07	1	L5	S1	W1	25.2	21.5	1.8	IGGCAS	
GRV 053984	01/23/2006	72°46'46"	75°17'09"	2.19	1	L6	S3	W1	24.0	20.3	1.6	GUT	
GRV 053988	01/23/2006	72°46'44"	75°18'49"	0.76	1	H6	S5	W3	18.7	16.9	1.0	NU	
GRV 053996	1/23/2006	72°47'4"	75°16'49"	1.46	1	L6	S2	W1	25.3	21.5	1.7	NAOC	
GRV 054003	01/23/2006	72°47'04"	75°16'49"	1.60	1	L6	S3	W1	23.2	19.8	1.7	GUT	
GRV 054005	01/23/2006	72°46'23"	75°20'21"	0.96	1	L6	S5	W2	24.4	20.8	1.5	NU	
GRV 054018	01/23/2006	72°47'25"	75°16'23"	0.94	1	L5	S1	W1	23.8	20.8	1.8	IGGCAS	
GRV 054048	1/23/2006	72°47'14"	75°16'28"	0.96	1	H6	S3	W1	19.4	17.2	1.3	NAOC	
GRV 054051	01/23/2006	72°47'14"	75°16'28"	0.77	1	H4	S3	W2	17.8	16.2	1.2	IGGCAS	
GRV 054063	01/23/2006	72°47'06"	75°17'00"	1.61	1	H5	S3	W2	18.0	16.2	1.3	GUT	
GRV 054066	01/23/2006	72°46'23"	75°20'21"	0.94	1	H6	S2	W2	18.9	16.7	1.3	NU	
GRV 054097	1/23/2006	72°47'15"	75°16'13"	1.47	1	L6	S4	W1	25.9	21.8	1.5	NAOC	
GRV 054104	01/23/2006	72°47'12"	75°16'44"	1.47	1	L5	S3	W2	23.4	20.1	1.5	GUT	
GRV 054133	01/23/2006	72°46'23"	75°20'21"	1.29	1	L6	S5	W1	25.6	21.4	1.5	NU	
GRV 054138	01/23/2006	72°47'34"	75°16'29"	0.84	1	L5	S3	W1	24.1	20.8	1.8	IGGCAS	
GRV 054144	1/23/2006	72°47'34"	75°16'29"	0.77	1	L6	S2	W1	25.4	21.2	1.6	NAOC	
GRV 054174	01/23/2006	72°46'47"	75°17'43"	1.20	1	H4	S1	W1	18.7	16.5	1.4	IGGCAS	
GRV 054230	01/23/2006	72°47'05"	75°17'49"	2.45	1	L6	S3	W1	24.1	20.0	1.7	GUT	
GRV 054235	01/23/2006	72°46'23"	75°20'21"	0.83	1	L6	S3	W3	24.6	21.3	1.5	NU	
GRV 054239	1/23/2006	72°46'56"	75°17'45"	0.95	1	L6	S2	W1	25.0	21.3	1.7	NAOC	
GRV 054242	01/23/2006	72°46'51"	75°17'48"	1.47	1	L6	S4	W1	23.8	20.4	1.8	GUT	
GRV 054248	01/23/2006	72°46'23"	75°20'21"	1.33	1	H5	S2	W2	18.4	16.4	1.0	NU	
GRV 054256	01/23/2006	72°46'45"	75°18'9.5"	0.84	1	L4	S3	W1	24.2	20.6	1.6	IGGCAS	
GRV 054298	1/23/2006	72°46'48"	75°16'46"	1.17	1	L6	S4	W1	24.9	21.2	1.8	NAOC	
GRV 054307	01/23/2006	72°46'34"	75°20'3.0"	5.27	1	L5	S1	W1	24.1	21.7	1.6	IGGCAS	
GRV 054309	01/23/2006	72°46'34"	75°20'03"	1.83	1	L6	S3	W2	23.7	20.2	1.8	GUT	
GRV 054311	01/23/2006	72°46'23"	75°20'21"	1.45	1	L6	S5	W2	25.0	21.4	1.4	NU	
GRV 054321	1/23/2006	72°46'47"	75°17'53"	425.00	1	L6	S2	W1	25.0	21.4	1.8	NAOC	
GRV 054327	01/23/2006	72°46'50"	75°17'58"	12.81	1	L6	S5	W2	23.4	19.9	1.7	GUT	
GRV 054333	01/23/2006	72°46'23"	75°20'22"	76.41	1	L6	S5	W2	25.0	21.4	1.5	NU	
GRV 054336	01/23/2006	72°46'48"	75°17'52"	1.84	1	H impact melt	S7	W2	18.7	16.8	1.3	IGGCAS	
GRV 054347	1/23/2006	72°46'30"	75°20'9"	2.84	1	L6	S2	W1	25.2	21.5	0.8	NAOC	
GRV 054366	01/23/2006	72°46'34"	75°20'5.5"	0.77	1	H5	S3	W2	19.4	17.4	1.4	IGGCAS	
GRV 054413	01/23/2006	72°46'56"	75°17'49"	0.78	1	H5	S2	W3	18.6	16.4	1.7	GUT	
GRV 054465	01/30/2006	72°46'24"	75°19'43"	3.01	1	H4	S2	W3	19.9	17.4	0.8	NU	
GRV 054491	1/30/2006	72°54'58"	75°6'1"	1.78	1	H5	S2	W1	19.0	16.6	1.1	NAOC	
GRV 054522	01/07/2006	72°59'56"	75°11'14"	1.20	1	L6	S5	W1	23.8	20.4	1.5	GUT	
GRV 054610	01/08/2006	72°46'24"	75°19'43"	5.20	1	L5	S2	W2	25.0	21.2	1.3	NU	
GRV 054612	01/08/2006	72°59'56"	75°11'14"	5.19	1	L4	S3	W1	23.5	20.2	1.2	IGGCAS	
GRV 054615	1/8/2006	72°59'56"	75°11'14"	1.33	1	L6	S3	W1	24.5	20.9	1.3	NAOC	
GRV 054623	01/08/2006	72°46'24"	75°19'43"	1.55	1	L5	S2	W1	25.4	21.6	1.4	NU	
GRV 054625	01/08/2006	72°59'56"	75°11'14"	2.59	1	L5	S3	W2	24.0	20.4	1.6	GUT	
GRV 054627	01/08/2006	72°46'24"	75°19'43"	1.41	1	L5	S5	W3	25.1	21.3	1.4	NU	
GRV 054633	1/8/2006	72°59'56"	75°11'14"	1.40	1	L6	S3	W1	25.2	21.1	1.5	NAOC	
GRV 054638	01/08/2006	72°59'56"	75°11'14"	1.55	1	L5	S3	W1	24.0	20.2	1.5	GUT	
GRV 054639	01/08/2006	72°46'26"	75°19'37"	1.45	1	L5	S2	W2	24.9	21.0	1.3	NU	
GRV 054646	01/08/2006	72°46'26"	75°19'37"	2.60	1	L5	S2	W2	25.6	21.6	1.3	NU	
GRV 054647	1/8/2006	72°59'56"	75°11'14"	2.19	1	L6	S4	W1	25.0	21.3	1.4	NAOC	
GRV 054859	01/09/2006	72°59'56"	75°11'14"	1.31	1	L4	S3	W1	24.2	21.3	1.4	IGGCAS	

Note: GUT: Guilin University of Technology; NAOC: National Astronomical Observatories, Chinese Academy of Sciences; UCLA: Institute of Geophysics & Planetary Physics, University of California, Los Angeles, CA 90095-1567, USA; IGCAS: Institute of Geochemistry Chinese Academy of Sciences, Guiyang, China; NU: Nanjing University, China; GIGCAS: Guangzhou Institute of Geochemistry Chinese Academy of Sciences; IGGCAS: Institute of Geology and Geophysics Chinese Academy of Sciences; PMO: Purple Mountain Observatory, Nanjing, China; BeiAP: Beijing Astronomical Planetarium.

**See detailed written description.

Table 6. Meteorites from Australia.

Name	Location of recovery	Date of recovery	Find/Fall	Latitude (S)	Longitude (E)	Mass (g)	Number of pieces	Class	Type specimen mass (g)	Shock stage	WG	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log χ)	Location of specimen classifier(s)	Location of main mass	Comments, additional data
Bunburra Rockhole	Nullarbor Region, South Australia, Australia	Oct-2008*	Fall	31°21.0'	129°11.4'	324	2	Achondrite (Euclerite)	324			62.5	3.6			W/M-1	W/M	**
Eldée 001	Eldée Station, Broken Hill region of New South Wales, Australia	9-July-06	Find	31°40'11.9"	141°14'32.4"	4514	14	L6	4200	S3	W1-2	24.6	20.4	1.5		Monash	Tomkins	
Eldée 002	—	15-Oct-06	Find	31°39'51"	141°14'01.52"	101	1	L6 (melt breccia)	60	W2	W2	25.4	21.2	1.8		Monash	Tomkins	Glass cataclastic, Fe-Ni metal and FeS spheres along fracture zones that separate breccia clasts.

Monash—Type specimen at Monash (Monash University, Australia), photography by Dr. Andrew G. Tomkins, Monash.

W/M-1—Type specimen at W/M (Western Australian Museum), classified by Gretchen K. Benedix, N/M and Philip A. Bland, ICL.

*Fall date is 21 July 2007.

**See detailed written description.

Table 7. Meteorites from Oman.

Name	Abbreviation	Location of recovery	Type of find site	Date of recovery	Find/Fall	Latitude	Longitude	Total known mass (g)	Number of pieces	Class	Shock stage	WG	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log χ)	Type specimen mass (g)	Location of specimen classifier information ¹	Location of main mass	Comments
Al Huqf 062	AlHuqf	AlWusita, Oman	Desert plain	24-Feb-2001	Find	19°24.463'N	57°17.927'E	50.7	1	H4	W1-2					4.98	11	Kiel/Bart	Anonymous	
Al Huqf 064	AlHuqf	AlWusita, Oman	Desert plain	27-Mar-2002	Find	19°24.247'N	57°16.498'E	12834	58	H4	S2	W3-4	18.5	16			32	I/P-1	Anonymous	
Al Huqf 065	AlHuqf	AlWusita, Oman	Desert plain	07-Mar-2007	Find	19°19.255'N	57°13.786'E	2084.2	41	L6	S5	W2	23.8	20.1	1.6		2084.2	BE-13		
Al Huqf 066	AlHuqf	AlWusita, Oman	Desert plain	08-Mar-2007	Find	19°30.632'N	57°07.752'E	150.1	1	L4	S1	W2	22.4	18.1	0.9		150.1	BE-13		Paired with AH 003
Dhofar 1434	Dho	Zufar, Oman	Desert plain	2007	Find	18°21.405'N	54°1.555'E	42	3	CM anomalous	S1		0.6-44				7 plus 1.1	Kiel/OU	Bart	**
Dhofar 1437	Dho	Zufar, Oman	Desert plain	2003	Find	18°55.6'N	54°34.0'E	324	1	H5	S2	W4	17.4	16.2	1.15		106.3	Vernad-1	Anonymous	
Dhofar 1438	Dho	Zufar, Oman	Desert plain	2003	Find	19°10.0'N	54°40.4'E	54	1	L6	S2	W4	24.3	20.6	1.73		20.98	Vernad-1	Anonymous	
Dhofar 1439	Dho	Zufar, Oman	Desert plain	Mar-2003	Find	18°35.3'N	54°27.3'E	5132	1	Eucrite (mononict)			34.7	4			20.4	Vernad-1	Anonymous	Melt breccia. Augite lamellae in pyroxene (En _{78.6} Wo _{1.1}); feldspar is Ab _{99.3} An _{0.3}
Dhofar 1440	Dho	Zufar, Oman	Desert plain	2003	Find	18°20.3'N	54°12.3'E	30	1	Polymict eucrite			56.3-66.2	2.1-4.5			7.4	Vernad-1	Anonymous	Melt breccia
Dhofar 1441	Dho	Zufar, Oman	Desert plain	2003	Find	18°26.16'N	54°29.03'E	267.8	2	Ungrouped achondrite			28.8	27.5-64.7	1.4-5		28.3	Vernad-1	Anonymous	*** Feldspar, An _{7.6-9.2} ; Oxygen isotopes, d18O=-5.51, d17O=-2.67
Dhofar 1442	Dho	Zufar, Oman	Desert plain	2005	Find	19°17.5'N	54°34.4'E	106.5	5	Lunar (KREEP impact melt breccia)			27.8-60.1	22.9-39.2	1.2-4.1		21.8	Vernad-2	Anonymous	***
Dhofar 1443	Dho	Zufar, Oman	Desert plain	2001	Find	18°25.00'N	54°25.50'E	36.7	4	Lunar (anorthositic breccia)			19-52	12-49			7.4	I/P-2	Anonymous	*** Feldspar, Ab ₈₃₋₈₈
Jiddat al Harasis 348	Jiddat al Harasis	AlWusita, Oman	Desert plain	6-3-2006	Find	19°32.02'N	55°07.13'E	18.4	1	Lunar	High	Low	28.4-32.2	10.1-25.7	13.0-40.6		3.7	NAU/Bunch	Hart	*** Trocolite olivine, Fa _{7.24.3} feldspar, Ab _{96.5}

Table 7. *Continued. Meteorites from Oman.*

Name	Abbreviation	Location of recovery	Type of find site	Date of recovery	Find/ Fall	Latitude ²	Longitude ²	Total known mass (g)	Number of pieces	Class	Shock stage	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log Z)	Type specimen mass (g)	Location of main mass	Comments
Jiddat al Harasis 396	JaH 396	AlWusta, Oman	Desert plain	25-Dec-2002	Find	19°59.725'N	56°23.516'E	122.6	2	LL5	S3	29.1	22.9	1.6		122.6	BE-5	
Jiddat al Harasis 397	JaH 397	AlWusta, Oman	Desert plain	25-Dec-2002	Find	19°58.084'N	56°25.294'E	139.1	1	H4	S2	17.9	16.5	1.0		139.1	BE-5	
Jiddat al Harasis 398	JaH 398	AlWusta, Oman	Desert plain	25-Dec-2002	Find	19°57.955'N	56°25.606'E	262.3	1	H4	S2	18.6	17.1	1.0		262.3	BE-5	Cpx, paired with JaH 228
Jiddat al Harasis 399	JaH 399	AlWusta, Oman	Desert plain	25-Dec-2002	Find	19°58.186'N	56°25.046'E	90.0	1	H4	S2	18.5	16.2	1.0		90.0	BE-5	Cpx, paired with JaH 397
Jiddat al Harasis 400	JaH 400	AlWusta, Oman	Desert plain	25-Dec-2002	Find	19°58.185'N	56°25.030'E	70.8	1	H4	S2	18.4	17.2	1.5		70.8	BE-5	Paired with JaH 269
Jiddat al Harasis 401	JaH 401	AlWusta, Oman	Desert plain	27-Dec-2002	Find	19°59.846'N	56°24.640'E	49.3	5	L6	S5	25.0	22.1	1.6		49.3	BE-6	
Jiddat al Harasis 402	JaH 402	AlWusta, Oman	Desert plain	27-Dec-2002	Find	19°59.962'N	56°24.426'E	81.6	2	H5	S3	19.3	16.5	1.7		81.6	BE-6	Paired with JaH 271
Jiddat al Harasis 403	JaH 403	AlWusta, Oman	Desert plain	27-Dec-2002	Find	19°58.541'N	56°25.142'E	153.3	1	Mesosiderite	S1				4.57	153.3	BE-6	Paired with JaH 203
Jiddat al Harasis 404	JaH 404	AlWusta, Oman	Desert plain	24-Mar-2006	Find	19°40.812'N	56°36.605'E	341.0	1	A-Euc	S4		45.2	2.5		341.0	BE-8	
Jiddat al Harasis 405	JaH 405	AlWusta, Oman	Desert plain	24-Mar-2006	Find	19°41.147'N	56°37.441'E	980.0	1	A-Euc	S4		49.2	5.3		980.0	BE-8	Paired with JaH 404
Jiddat al Harasis 406	JaH 406	AlWusta, Oman	Desert plain	28-Mar-2006	Find	19°31.961'N	56°52.335'E	33000	2	L6	S2	24.2	20.7	1.2		27.5 g	BE-15	
Jiddat al Harasis 407	JaH 407	AlWusta, Oman	Desert plain	06-Dec-2006	Find	19°48.091'N	56°36.618'E	7000	7	H6	S2	19.6	17.0	1.9		80.5 g	BE-16	
Jiddat al Harasis 408	JaH 408	AlWusta, Oman	Desert plain	22-Feb-2007	Find	19°44.083'N	56°27.335'E	281.0	4	L5	S3	24.2	20.0	1.9		281.0	BE-9	
Jiddat al Harasis 409	JaH 409	AlWusta, Oman	Desert plain	24-Feb-2007	Find	19°40.607'N	56°36.235'E	283.6	1	Eucrite	S4		49.2	6.0		283.6	BE-9	Paired with JaH 404
Jiddat al Harasis 410	JaH 410	AlWusta, Oman	Desert plain	24-Feb-2007	Find	19°41.159'N	56°37.362'E	529.6	1	Eucrite	S4		55.8	8.2		529.6	BE-9	Paired with JaH 404
Jiddat al Harasis 411	JaH 411	AlWusta, Oman	Desert plain	25-Feb-2007	Find	19°40.645'N	56°36.231'E	159.4	3	L6	S2	24.2	20.7	1.2		159.4	BE-9	
Jiddat al Harasis 412	JaH 412	AlWusta, Oman	Desert plain	26-Feb-2007	Find	19°57.979'N	56°13.053'E	14.7	2	H6	S3	19.0	16.8	1.4		14.7	BE-9	
Jiddat al Harasis 413	JaH 413	AlWusta, Oman	Desert plain	28-Feb-2007	Find	19°49.795'N	56°34.619'E	172.6	1	H4	S1	18.7	15.9	0.7		172.6	BE-11	
Jiddat al Harasis 414	JaH 414	AlWusta, Oman	Desert plain	01-Mar-2007	Find	19°49.620'N	56°33.940'E	27.3	1	H6	S2	19.2	16.9	1.4		27.3	BE-11	
Jiddat al Harasis 415	JaH 415	AlWusta, Oman	Desert plain	01-Mar-2007	Find	19°48.877'N	56°31.799'E	304.2	1	H6	S1	18.4	16.5	1.5		304.2	BE-11	Paired with JaH 414
Jiddat al Harasis 416	JaH 416	AlWusta, Oman	Desert plain	01-Mar-2007	Find	19°47.232'N	56°25.294'E	18.8	1	L6	S5	26.1	21.3	1.5		18.8	BE-11	
Jiddat al Harasis 417	JaH 417	AlWusta, Oman	Desert plain	01-Mar-2007	Find	19°47.097'N	56°25.317'E	36.1	3	H4-5	S3	17.3	15.4	1.5		36.1	BE-11	Brecciated
Jiddat al Harasis 418	JaH 418	AlWusta, Oman	Desert plain	01-Mar-2007	Find	19°47.540'N	56°25.575'E	205.9	1	H4	S3					205.9	BE-11	Paired with JaH 417
Jiddat al Harasis 419	JaH 419	AlWusta, Oman	Desert plain	01-Mar-2007	Find	19°47.851'N	56°26.395'E	111.2	2	H4	S2	17.5	15.9	0.8		111.2	BE-11	
Jiddat al Harasis 420	JaH 420	AlWusta, Oman	Desert plain	02-Mar-2007	Find	19°57.459'N	56°10.661'E	25.1	1	H3-4	S1	12.9-30.0	5.5-27.6	0.3-2.0	4.94	25.1	BE-11	Mean chondrule size 0.35 mm
Jiddat al Harasis 421	JaH 421	AlWusta, Oman	Desert plain	02-Mar-2007	Find	19°55.449'N	56°20.210'E	47.9	1	L6	S2	24.2	20.6	1.7		47.9	BE-11	
Jiddat al Harasis 422	JaH 422	AlWusta, Oman	Desert plain	03-Mar-2007	Find	19°50.357'N	56°28.762'E	61.5	1	Ureilite		10-17.0	9-12.0	0.5-5.0		61.5	BE-12	***Impact melt breccia dunitelast olivine, Fa ₁₉₋₂₁
Jiddat al Harasis 423	JaH 423	AlWusta, Oman	Desert plain	06-Mar-2007	Find	19°46.997'N	56°24.836'E	1457.3	1	H4	S3	17.8	15.1	1.1		1457.3	BE-12	
Jiddat al Harasis 424	JaH 424	AlWusta, Oman	Desert plain	08-Mar-2007	Find	19°55.369'N	56°21.070'E	160.3	1	Ureilite	S1	14.8	11.7	5.8		160.3	BE-13	
Jiddat al Harasis 425	JaH 425	AlWusta, Oman	Desert plain	08-Mar-2007	Find	19°54.700'N	56°20.154'E	257.3	1	H3-4	S2	12.1-16.7	4.5-15.8	0.2		257.3	BE-13	

Table 7. *Continued. Meteorites from Oman.*

Name	Abbreviation	Location of recovery	Type of find site	Date of recovery	Find/ Fail	Latitude ²	Longitude ²	Total known mass (g)	Number of pieces	Class	Shock stage	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log Z)	Type specimen mass (g)	Location of specimens and classifier ³	Location of main mass	Comments
Jiddat al Harasis 426	Jah 426	AlWusta, Oman	Desert plain	09-Mar-2007	Find	19°56.272'N	56°23.733'E	11170.1	2	L6	S3	24.1	20.8	1.8		11170.1	BE-13		
Jiddat al Harasis 427	Jah 427	AlWusta, Oman	Desert plain	09-Mar-2007	Find	19°55.493'N	56°24.293'E	16.7	1	H4/5	S2	18.1	16.3	1.1		16.7	BE-13		
Jiddat al Harasis 428	Jah 428	AlWusta, Oman	Desert plain	09-Mar-2007	Find	19°56.187'N	56°21.635'E	131.4	1	H6	S2	18.7	16.5	1.4		131.4	BE-13		
Jiddat al Harasis 429	Jah 429	AlWusta, Oman	Desert plain	09-Mar-2007	Find	19°56.250'N	56°28.440'E	36.7	1	H4	S3	18.9	16.5	1.3		36.7	BE-13		
Jiddat al Harasis 430	Jah 430	AlWusta, Oman	Desert plain	09-Mar-2007	Find	19°56.253'N	56°28.442'E	5.8	1	L4/5	S2	23.7	20.8	1.2		5.8	BE-13		
Jiddat al Harasis 431	Jah 431	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°45.771'N	56°23.991'E	18.3	1	H4	S2	18.2	16.2	1.2	4.60	18.3	BE-14	Paired with JahH 419	
Jiddat al Harasis 432	Jah 432	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°45.401'N	56°20.153'E	345.3	3	H6	S2	18.7	16.5	1.4	4.80	345.3	BE-14		
Jiddat al Harasis 433	Jah 433	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°45.911'N	56°20.339'E	661.9	8	H6	S2	18.0	16.3	1.6		661.9	BE-14		
Jiddat al Harasis 434	Jah 434	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°45.367'N	56°18.988'E	186.4	1	L6	S3	24.0	20.3	1.6		186.4	BE-14		
Jiddat al Harasis 435	Jah 435	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°41.563'N	56°22.639'E	353.2	1	L6	S4	24.0	20.6	1.6		353.2	BE-14		
Jiddat al Harasis 436	Jah 436	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°37.572'N	56°30.559'E	308.7	1	L6	S4	24.2	21.7	1.5		308.7	BE-14	Ringwoodite; paired with JahH 435	
Jiddat al Harasis 437	Jah 437	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°34.864'N	56°28.328'E	364.0	1	H5	S1	16.2	14.8	1.2		364.0	BE-14		
Jiddat al Harasis 438	Jah 438	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°34.723'N	56°26.705'E	658.0	1	H4	S2	17.7	15.9	1.2		658.0	BE-14		
Jiddat al Harasis 439	Jah 439	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°34.890'N	56°26.438'E	1024.3	1	H4	S2	17.1	15.6	1.1		1024.3	BE-14	Paired with JahH 438	
Jiddat al Harasis 440	Jah 440	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.001'N	56°25.920'E	32.2	1	L4	S4	22.2	18.1	1.2	4.54	32.2	BE-14		
Jiddat al Harasis 441	Jah 441	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.358'N	56°25.782'E	513.8	32	L4	S4	22.4	18.5	1.0	4.53	513.8	BE-14	Paired with JahH 440	
Jiddat al Harasis 442	Jah 442	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.334'N	56°25.711'E	287.5	1	L4	S4	22.4	18.5	1.0	4.58	287.5	BE-14	Paired with JahH 440	
Jiddat al Harasis 443	Jah 443	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.215'N	56°25.646'E	759.8	11	L4	S4	22.4	18.5	1.0	4.57	759.8	BE-14	Paired with JahH 440	
Jiddat al Harasis 444	Jah 444	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.112'N	56°25.549'E	68.0	1	L4	S4	22.4	18.5	1.0	4.45	68.0	BE-14	Paired with JahH 440	
Jiddat al Harasis 445	Jah 445	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.278'N	56°25.647'E	94.0	4	L4	S4	22.4	18.5	1.0	4.50	94.0	BE-14	Paired with JahH 440	
Jiddat al Harasis 446	Jah 446	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.475'N	56°25.903'E	210.6	2	L4	S4	22.4	18.5	1.0	4.51	210.6	BE-14	Paired with JahH 440	
Jiddat al Harasis 447	Jah 447	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°36.999'N	56°25.384'E	3.6	1	L4	S4	22.4	18.5	1.0	4.52	3.6	BE-14	Paired with JahH 440	
Jiddat al Harasis 448	Jah 448	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°35.974'N	56°25.925'E	275.8	14	L4	S4	22.4	18.5	1.0	4.49	275.8	BE-14	Paired with JahH 440	
Jiddat al Harasis 449	Jah 449	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°38.681'N	56°26.426'E	73.6	2	L/L/L4	S2	26.6	21.7	1.0		73.6	BE-14	Cathodolumin. classif. brecciated	
Jiddat al Harasis 450	Jah 450	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°44.420'N	56°18.179'E	217.7	1	H3.7-5	S2	17.5-20.2	15.3-21.9	1.0		217.7	BE-14		
Jiddat al Harasis 451	Jah 451	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°44.447'N	56°18.407'E	334.3	1	H6	S2	18.7	16.4	1.6		334.3	BE-14		
Jiddat al Harasis 452	Jah 452	AlWusta, Oman	Desert plain	11-Mar-2007	Find	19°44.998'N	56°18.575'E	100.6	1	L4	S2	22.7	21.3	1.0		100.6	BE-14		
Jiddat al Harasis 453	Jah 453	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°45.403'N	56°17.432'E	48.3	1	L5	S2	25.4	21.3	1.2		48.3	BE-14		
Jiddat al Harasis 454	Jah 454	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°44.468'N	56°18.553'E	417.2	1	H5	S2	19.6	17.5	1.8		417.2	BE-14		
Jiddat al Harasis 455	Jah 455	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°45.636'N	56°18.487'E	88.1	1	H6	S2	17.7	16.2	1.5	4.51	88.1	BE-14	Paired with JahH 452	

Table 7. Continued. Meteorites from Oman.

Name	Abbreviation	Location of recovery	Type of find site	Date of recovery	Find/Fail	Latitude ²	Longitude ²	Total known mass (g)	Number of pieces	Class	Shock stage	WG	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log Z)	Type specimen mass (g)	Magnetic classifier ³	Location of main mass	Comments
Jiddat al Harasis 456	JaH 456	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°44.268'N	56°19.286'E	264.7	2	H6	S2	W4	18.9	16.9	1.4	4.72	264.7	BE-14	Paired with JaH 432	
Jiddat al Harasis 457	JaH 457	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°43.910'N	56°19.755'E	6442.0	1	L6	S4	W1	24.2	20.3	1.5		6442.0	BE-14		
Jiddat al Harasis 458	JaH 458	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°46.050'N	56°20.095'E	3092.1	4	H4	S2	W3	18.6	16.4	1.2		3092.1	BE-14		
Jiddat al Harasis 459	JaH 459	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°43.951'N	56°20.500'E	138.8	1	H6	S2	W3	18.9	17.0	1.4	4.63	138.8	BE-14	Paired with JaH 432	
Jiddat al Harasis 460	JaH 460	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°45.240'N	56°20.543'E	204.2	1	H6	S2	W3	19.1	17.0	1.3	4.53	204.2	BE-14	Paired with JaH 432	
Jiddat al Harasis 461	JaH 461	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°46.238'N	56°21.140'E	3308.7	11	L6	S4	W2	24.0	19.8	1.6		3308.7	BE-14		
Jiddat al Harasis 462	JaH 462	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°46.535'N	56°21.213'E	106.1	2	L6	S3	W4	23.8	19.8	1.6		106.1	BE-14		
Jiddat al Harasis 463	JaH 463	AlWusta, Oman	Desert plain	12-Mar-2007	Find	19°47.148'N	56°21.405'E	83.6	1	H5	S1	W3	17.6	15.7	1.6		83.6	BE-14		
Jiddat al Harasis 464	JaH 464	AlWusta, Oman	Desert plain	18-Feb-2007	Find	19°51.854'N	56°22.507'E	86.0	1	L4	S4	W1	23.8				86.0	BE-9	Fa by XRD	
Jiddat al Harasis 465	JaH 465	AlWusta, Oman	Desert plain	20-Feb-2007	Find	19°53.024'N	56°20.191'E	30.6	1	L6	S4	W4	24.3	20.3	1.6		30.6	BE-9		
Jiddat al Harasis 466	JaH 466	AlWusta, Oman	Desert plain	21-Feb-2007	Find	19°48.622'N	56°27.198'E	9.0	1	H6	S1	W3	20.0				9.0	BE-9	Fa by XRD	
Jiddat al Harasis 467	JaH 467	AlWusta, Oman	Desert plain	22-Feb-2007	Find	19°48.584'N	56°27.282'E	24.9	2	H5	S2	W3	18.2				24.9	BE-9	Fa by XRD	
Jiddat al Harasis 468	JaH 468	AlWusta, Oman	Desert plain	25-Feb-2007	Find	19°48.864'N	56°28.453'E	1064.1	1	L6	S3	W2	25.8				1064.1	BE-9	Fa by XRD	
Jiddat al Harasis 469	JaH 469	AlWusta, Oman	Desert plain	04-Mar-2007	Find	19°49.334'N	56°26.511'E	5.3	1	L6	S4	W2	23.2			4.80	5.3	BE-12	Fa by XRD	
Jiddat al Harasis 470	JaH 470	AlWusta, Oman	Desert plain	03-Mar-2007	Find	19°50.335'N	56°26.335'E	267.9	14	L4	S2	W4	25.2				267.9	BE-12	Fa by XRD	
Jiddat al Harasis 471	JaH 471	AlWusta, Oman	Desert plain	04-Mar-2007	Find	19°50.633'N	56°27.024'E	9.0	1	L6	S4	W2	24.0	20.0	1.7	4.46	9.0	BE-12	Paired with JaH 469	
Jiddat al Harasis 472	JaH 472	AlWusta, Oman	Desert plain	04-Mar-2007	Find	19°50.133'N	56°26.816'E	140.6	1	L6	S5	W2	24.3	20.5	1.7	4.40	140.6	BE-12	Paired with JaH 469	
Jiddat al Harasis 473	JaH 473	AlWusta, Oman	Desert plain	04-Mar-2007	Find	19°49.163'N	56°26.566'E	25.5	1	L6	S4	W2	25.5			4.51	25.5	BE-12	Fa by XRD, paired with JaH 469	
Jiddat al Harasis 474	JaH 474	AlWusta, Oman	Desert plain	04-Mar-2007	Find	19°48.851'N	56°26.737'E	226.8	1	LL3.7-6	S2	W3	24.9-28.9	22.3-24.5	1.8		226.8	BE-12	Cathodolumin. classif. brecciated	
Jiddat al Harasis 475	JaH 475	AlWusta, Oman	Desert plain	04-Mar-2007	Find	19°50.713'N	56°28.165'E	125.7	2	H5	S2	W3	18.1				125.7	BE-12	Fa by XRD	
Jiddat al Harasis 476	JaH 476	AlWusta, Oman	Desert plain	06-Mar-2007	Find	19°49.556'N	56°24.269'E	453.3	1	L6	S3	W3	25.3	21.5	1.5		453.3	BE-12		
Jiddat al Harasis 477	JaH 477	AlWusta, Oman	Desert plain	10-Mar-2007	Find	19°52.407'N	56°23.123'E	493.8	3	H4/5	S2	W4	18.8	16.4	1.2		493.8	BE-12		
Jiddat al Harasis 478	JaH 478	AlWusta, Oman	Desert plain	03-Mar-2007	Find	19°47.900'N	56°29.304'E	180.5	4	L5	S3	W3	25.8				180.5	BE-12	Fa by XRD	
Ramlat as Sahmah 264	RaS 264	AlWusta, Oman	Sahmah oil facility	Dec-1989	Find	20°42.33.23'N	55°25.43.52'E	1074	1	L6	High	Med	25.6	22			23.16	N/M-1	S. Hazzwell	
Ramlat as Sahmah 265	RaS 265	AlWusta, Oman	Desert plain	24-Dec-2002	Find	20°01.781'N	56°25.992'E	101.2	2	L3	S2	W2	11.9-26.3	11.7-22.9	0.5-2.4		101.2	BE-5		
Ramlat as Sahmah 266	RaS 266	AlWusta, Oman	Desert plain	21-Mar-2006	Find	20°00.482'N	56°23.941'E	5130.0	170	Mesosiderite						4.56	5130.0	BE-8	Paired with JaH 203	
Ramlat al Wahbah 043	RaW 043	AlWusta, Oman	Desert plain	14-Mar-2007	Find	22°01.926'N	58°11.813'E	97.9	1	H5	S2	W3	17.5	15.4	0.9		97.9	BE-14		
Ramlat al Wahbah 044	RaW 044	AlWusta, Oman	Desert plain	14-Mar-2007	Find	22°01.657'N	58°12.632'E	27.9	1	H4-5	S2	W4	18.1	16.5	1.1		27.9	BE-14	Brecciated	
Sayh al Uhaymir 284	SaU 284	AlWusta, Oman	Desert plain	13-Feb-2004	Find	21°06.818'N	56°48.662'E	253.9	1	H4	W4			1		4.89	21.1	Moscow/Barr	Barr	

Table 7. *Continued. Meteorites from Oman.*

Name	Abbreviation	Location of recovery	Type of find site	Date of recovery	Find/ Fall	Latitude ²	Longitude ²	Total known mass (g)	Number of pieces	Class	Shock stage	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log Z)	Type specimen mass (g)	Location of classifier information ³	Location of main mass	Comments
Sayh al Uhaymir 286	SaU 286	AlWusta, Oman	Desert	21-Feb-2004	Find	21°0.177'N	57°19.418'E	2.6	1	H4	W3-4				4.72	0.6	VI Moscow/ Barto	Kurtz	
Sayh al Uhaymir 297	SaU 297	AlWusta, Oman	Desert	22-Feb-2004	Find	20°59.903'N	57°19.183'E	1.6	1	H5	W4				4.80	0.5	VI Moscow/ Barto	Bart	
Sayh al Uhaymir 298	SaU 298	AlWusta, Oman	Desert	15-Nov-2004	Find	20°47.452'N	57°11.011'E	221.5	1	H5	W3/4	18.8-19.4	16.5-17.1		4.58	21.2	VI Moscow/ Barto/Appel	Bart	Merrillite-Na ₂ O 2.8%, MgO 3.8%
Sayh al Uhaymir 301	SaU 301	AlWusta, Oman	Desert	16-Nov-2004	Find	21°03.368'N	57°17.546'E	32.5	1	H/L4	S3	19.0-20.0	16.6-19.2		4.99	7.3	VI Moscow/ Barto/Appel	Bart	Kamacite 0.61-0.73% Co/ pyroxene with poikilitic olivine
Sayh al Uhaymir 439	SaU 439	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°32.70'N	56°40.45'E	37.9	5	LL5	W2				4.25-4.30	7.6	Kiel/Bart	Bart	
Sayh al Uhaymir 440	SaU 440	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°33.094'N	56°40.985'E	5.9	1	LL5	W2				4.49	1.2	Kiel/Bart	Bart	
Sayh al Uhaymir 441	SaU 441	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°33.053'N	56°41.012'E	11.70	1	LL3	W2				4.43	2.3	Kiel/Bart	Bart	
Sayh al Uhaymir 442	SaU 442	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°32.473'N	56°40.833'E	28.60	1	L6	W1				4.82	5.7	Kiel/Bart	Bart	
Sayh al Uhaymir 443	SaU 443	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°32.326'N	56°40.445'E	4.70	1	LL5	W2				4.32	0.9	Kiel/Bart	Bart	
Sayh al Uhaymir 444	SaU 444	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°31.908'N	56°40.122'E	17.40	1	LL5	W2				4.41	3.5	Kiel/Bart	Bart	
Sayh al Uhaymir 445	SaU 445	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°31.93'N	56°40.31'E	31.30	3	LL5	W2				4.41-4.46	6.3	Kiel/Bart	Bart	
Sayh al Uhaymir 446	SaU 446	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°31.843'N	56°40.258'E	15.10	1	LL3	W0-1				4.43	3.0	Kiel/Bart	Bart	
Sayh al Uhaymir 447	SaU 447	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°33.022'N	56°41.124'E	32.80	1	LL3	W0-1				4.31	6.6	Kiel/Bart	Bart	
Sayh al Uhaymir 448	SaU 448	AlWusta, Oman	Desert plain	1-Feb-2007	Find	20°32.70'N	56°40.40'E	2.50	3	LL5	W2				4.30-4.39	0.5	Kiel/Bart	Bart	
Sayh al Uhaymir 470	SaU 470	AlWusta, Oman	Desert plain	10-Feb-2001	Find	21°05.272'N	56°56.477'E	127.3	2	H4	S2	17.4	16.0	1.0		127.3	BE-1		Fa by XRD, brecciated, paired with SaU 185
Sayh al Uhaymir 471	SaU 471	AlWusta, Oman	Desert plain	16-Jan-2002	Find	20°30.679'N	57°17.572'E	2081.8	1	L4-6	S2	23.2				2081.8	BE-2		
Sayh al Uhaymir 472	SaU 472	AlWusta, Oman	Desert plain	19-Nov-2002	Find	20°23.167'N	56°56.330'E	1031.4	1	H5	S2	19.0	16.8	1.5		1031.4	BE-3		
Sayh al Uhaymir 473	SaU 473	AlWusta, Oman	Desert plain	24-Dec-2002	Find	20°03.101'N	56°30.350'E	3016.7	16	L4	S2	25.0	20.4	1.5		3016.7	BE-5		
Sayh al Uhaymir 474	SaU 474	AlWusta, Oman	Desert plain	26-Dec-2002	Find	20°05.845'N	56°37.711'E	355.5	1	L5	S3	24.3	20.8	1.5		355.5	BE-5		
Sayh al Uhaymir 475	SaU 475	AlWusta, Oman	Desert plain	26-Dec-2002	Find	20°09.935'N	56°37.682'E	32.1	1	L4	S3	24.1	17.9	0.7		32.1	BE-5		
Sayh al Uhaymir 476	SaU 476	AlWusta, Oman	Desert plain	26-Dec-2002	Find	20°14.724'N	56°30.953'E	86.5	9	L5	S3	24.8	20.7	1.3		86.5	BE-5		

Table 7. Continued. Meteorites from Oman.

Name	Abbreviation	Location of recovery	Type of find site	Date of recovery	Find/Fail	Latitude ²	Longitude ²	Total known mass (g)	Number of pieces	Class	Shock stage	WG	Fa mol%	Fs mol%	Wo mol%	Magnetic sus (log Z)	Type specimen mass (g)	Magnetic sus (log Z)	Location of specimens and classifier information ³	Location of main mass	Comments
Sayh al Uhaymir 477	SaU 477	AlWusta, Oman	Desert plain	25-Feb-2005	Find	20°00.613'N	56°31.131'E	73.8	2	L5	S3	W4	24.7	21.8	1.6		73.8		BE-7		
Sayh al Uhaymir 478	SaU 478	AlWusta, Oman	Desert plain	26-Feb-2007	Find	20°55.354'N	57°08.170'E	135.9	1	H4	S2	W4	15.6	13.2	1.0		135.9		BE-10		
Sayh al Uhaymir 479	SaU 479	AlWusta, Oman	Desert plain	13-Mar-2007	Find	20°15.314'N	56°32.486'E	75.9	4	H5	S1	W4	18.1	16.0	1.6		75.9		BE-14		
Sayh al Uhaymir 480	SaU 480	AlWusta, Oman	Desert plain	13-Mar-2007	Find	20°23.718'N	56°35.329'E	108.7	3	H4	S2	W3	18.1	15.9	1.2		108.7		BE-14		
Sayh al Uhaymir 481	SaU 481	AlWusta, Oman	Desert plain	13-Mar-2007	Find	20°26.574'N	56°39.253'E	52.4	1	L6	S4	W3	23.9	20.1	1.6		52.4		BE-14		
Sayh al Uhaymir 482	SaU 482	AlWusta, Oman	Desert plain	13-Mar-2007	Find	20°26.723'N	56°39.325'E	157.5	1	L6	S4	W3	24.1	20.4	1.5		157.5		BE-14		Paired with SaU 481
Sayh al Uhaymir 483	SaU 483	AlWusta, Oman	Desert plain	13-Mar-2007	Find	20°35.873'N	56°58.729'E	49.3	1	H5	S2	W4	18.5	16.5	1.5		49.3		BE-14		Paired with SaU 259
Shihr 112	Shihr 112	Zufar, Oman	Desert plain	3-Feb-2007	Find	18°14.99'N	53°59.782'E	36.80	1	L6	W1					4.99	7.4	Kiel/Bart		Bart	
Shihr 137	Shihr 137	Zufar, Oman	Desert plain	3-Feb-2007	Find	18°15.259'N	53°59.84'E	150.90	1	L4	W4					4.63	20.0	Kiel/Bart		Bart	
Shihr 138	Shihr 138	Zufar, Oman	Desert plain	3-Feb-2007	Find	18°15.261'N	53°59.697'E	17.40	2	L6	W1					4.85	3.5	Kiel/Bart		Bart	
Shihr 139	Shihr 139	Zufar, Oman	Desert plain	3-Feb-2007	Find	18°15.236'N	53°59.818'E	17.20	2	L6	W1					4.90	2.0	Kiel/Bart		Bart	
Shihr 144	Shihr 144	Zufar, Oman	Desert plain	4-Feb-2007	Find	18°15.102'N	53°59.886'E	10.20	1	L6	W1					5.00	20.0	Kiel/Bart		Bart	
Shihr 159	Shihr 159	Zufar, Oman	Desert plain	5-Feb-2007	Find	18°15.546'N	53°59.523'E	113.80	3	H5	W2					4.98	20.0	Kiel/Bart		Bart	
Shihr 160	Shihr 160	Zufar, Oman	Desert plain	15-1-2008	Find	18°20.18'N	53°20.01'E	100.86	1	Lunar	Low		25.8-53.2	43.3	4		20.1	NAU/Bunch	DPtit	Breccia	
Shihr 161	Shihr 161	Zufar, Oman	Desert plain	Jan-2008	Find	18°36.25°N	18°36.25°N	57.2	1	Lunar feldspathic breccia				41.7-47.1	2.5-3.9		11.5	#USL -I		**	
Shihr 163	Shihr 163	Zufar, Oman	Desert plain	21-Dec-2002	Find	18°33.427'N	53°54.829'E	1872.3	18	H4	S2	W4	18.5	16.2	1.6		1872.3		BE-4		

BE-1 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders M. Hauser, L. Moser.
 BE-2 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders A. Al-Kathiri, E. Gnos, B. Hofmann.
 BE-3 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finder L. Moser.
 BE-4 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders A. Al-Kathiri, E. Gnos, M. Eggmann, S. Lorenzetti.
 BE-5 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders A. Al-Kathiri, M. Eggmann, S. Lorenzetti.
 BE-6 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders A. Al-Kathiri, M. Eggmann.
 BE-7 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders J. Bühler, M. Eggmann, E. Gnos, R. Wieler.
 BE-8 : Deposited at Natural History Museum Bern; classifiers E. Gnos, B. Hofmann; finders M. Eggmann, E. Gnos.
 BE-9 : Deposited at Natural History Museum Bern; classifiers E. Gnos, E. Janots, B. Hofmann; finders M. Eggmann, F. Zurluh.
 BE-10 : Deposited at Natural History Museum Bern; classifiers E. Gnos, E. Janots, B. Hofmann; finder B. Hofmann.
 BE-11 : Deposited at Natural History Museum Bern; classifiers E. Gnos, E. Janots, B. Hofmann; finders M. Eggmann, B. Hofmann, F. Zurluh.
 BE-12 : Deposited at Natural History Museum Bern; classifiers E. Gnos, E. Janots, B. Hofmann; finders M. Eggmann, E. Gnos, E. Janots, B. Hofmann, L. Huber, F. Zurluh.
 BE-13 : Deposited at Natural History Museum Bern; classifiers E. Gnos, E. Janots, B. Hofmann; finders E. Gnos, E. Janots, B. Hofmann, L. Huber.
 BE-14 : Deposited at Natural History Museum Bern; classifiers E. Gnos, E. Janots, B. Hofmann; finders A. Al-Kathiri, E. Gnos, E. Janots, B. Hofmann, L. Huber.
 BE-15 : Type specimen at NMBE, main mass: Ministry of Commerce and Industry, Muscat, Oman; classifiers E. Gnos, B. Hofmann; finders A. Al-Kathiri, E. Gnos, M. Eggmann.
 BE-16 : Type specimen at NMBE, main mass: Ministry of Commerce and Industry, Muscat, Oman; classifiers E. Gnos, B. Hofmann; finder A. Al-Kathiri.
 DPtit—Darryl Pitt, 225 West 83rd Street, New York, NY 10024, US.
 #USL—Type specimen at IFP (Institut für Planetologie, Wilhelm-Klemm-Str. 10, 48149 Münster, Germany), classified by A. Bischoff and E.H. Haiderer, IFP.
 Kiel(OU)—Type specimen at IFP (Institut für Planetologie, Wilhelm-Klemm-Str. 10, 48149 Münster, Germany) and OU (Planetary and Space Sciences Research Institute, The Open University, Milton Keynes, MK7 6AA, UK), classified by Barr (R. Bartoschewitz), P. Appel, B. Mader, I. Franchi, R. Greenwood.

Table 7. *Continued. Meteorites from Oman.*

Name	Abbreviation	Type of recovery	Date of find site recovery	Find/Fall	Latitude	Longitude ²	Total known mass (g)	Number of pieces	Class	Shock stage	WG	Fa mol%	Fs mol%	Wo mol%	Magnetic susceptibility (log χ)	Type specimen mass (g)	Location of specimens and classifier information ³	Location of main mass	Comments
<i>Kiel/Bart</i>	—	Type specimen at Kiel (Abteilung Mineralogie, Universität Kiel, D-24098 Kiel, Germany), classified by R. Bartoschewitz, <i>Bart</i> .																	
<i>Kurz</i>	—	M. Kurz, Schillerstrasse 7, D-34626 Neukirchen, Germany.																	
<i>NHM-1</i>	—	Type specimen at NHM (Department of Mineralogy, The Natural History Museum, Cromwell Road, London SW7 5BD, UKC), classified by Smith and S. Russell, <i>NHM</i> .																	
<i>Bart</i>	—	Bartoschewitz Meteorite Laboratory, Lehmweg 53, D-38518 Gifhorn, Germany.																	
<i>NAU/Bunch</i>	—	Type specimen at NAU (Northern Arizona University, Flagstaff, AZ 86011, USA), classified by T. Bunch.																	
<i>WUSL-1</i>	—	Type Specimen at WUSL (McDonnell Center for Space Sciences, Washington Univ., One Brookings Drive, St. Louis, MO 63130, USA), classified by P. Mami and T. Irving.																	
<i>Vernad-1</i>	—	Type Specimen at Vernad (Vernadsky Institute of Geochemistry and Analytical Chemistry, Russia), classified by C. Lorenz and N. Kononkova, <i>Vernad</i> .																	
<i>Vernad-2</i>	—	Type Specimen at Vernad (Vernadsky Institute of Geochemistry and Analytical Chemistry, Russia), classified by M.A. Ivanova, C. Lorenz and N. Kononkova, <i>Vernad</i> .																	

²—See detailed written description.

Table 8. *Meteorites from Asia.*

Name	Location of recovery	Type of find site	Date of recovery	Find/Fall	Latitude	Longitude	Total known mass (g)	Number of pieces	Class	Shock stage	Weathering grade	Fa mol%	Fs mol%	Wo mol%	Magnetic susceptibility (log χ)	Type specimen mass (g)	Location of specimens and classifier information	Location of main mass	Comments
BanCho Lae	BanCho Lae, Thailand	Jungle	Feb-1975	Find	19°05'18.00"N	99°00'50.00"E	3354	1	H5	S0	W1	20	17	2	5.38 (10 ⁻⁹ m ³ /kg)	23.3	UPVI-1	Jack Schrader	