Antarctic Meteorite Newsletter

Volume 34, Number 1 March 2011

## Program News

## Curator's Comments

*Kevin Righter*, *NASA-JSC*

### New Meteorites

This newsletter reports 498 new meteorites from the 2007, 2008, and 2009 ANSMET seasons from the Miller Range (MIL) and the Dominion Range (DOM). These new samples include one acapulcoite/lodranite, three ureilites, three CB chondrites, two CM1, two CM1/2, 37 CO3 (36 paired with MIL 07099), one CR3, nine CV3 (8 paired with MIL 07590), one H3.5, five enstatite chondrites, two R chondrites, five L chondrite impact melts, and one tiny mesosiderite. The publication of this newsletter completes the classification of the 2007 season meteorites.

The meteorite collection received 74 requests for the Fall MWG meeting, and although all of the sample chips have been prepared and sent out, there are a number of thin sections that still need to be completed. Thank you for your patience in getting all of the new sections made – we had close to 150 new sections and all could not be prepared before the end of 2010.

### Numbering scheme for ALH 09 meteorites

In the Fall 2010 newsletter we announced a new howardite, ALH 090004. The Meteorite Nomenclature Committee has asked us to remove the 6th digit in the ALH 09 series (a total of eleven meteorites from 2009-2010 ANSMET season). Therefore, the new number of this sample is ALH 09004, and all future announcements for ALH samples from 09 series will be 09001 to 09011.

### Meteorites recovered from blue ice

We neglected to include some important information about two samples announced in last newsletter – volume 33, number 2. MIL 07710, a 147.13 g L4 chondrite, appeared in Table 1 without a detailed description. However, it was one of a very small number of ANSMET samples that has been recovered from blue ice. In February 2008 (AMN volume 31, number 2) a call went out to PIs interested in studying the ice and meteorite together. Also announced last year was a second sample recovered in ice by the ANSMET field team – MIL 091010, a 51.66 g CV3 chondrite that is paired with three other Miller Range CV3s. In response to the call for coordinated ice and meteorite studies from the Feb. 2008 newsletter, these two samples were taken to the CRREL labs in New Hampshire so that the samples could be carefully cut out of the ice and pieces of ice removed and subdivided for several PIs. The meteorites were then returned to JSC still frozen since their collection in the

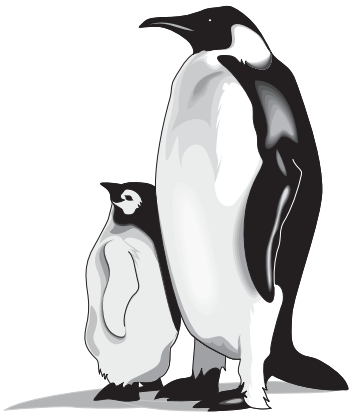
*continued on p.2*

A periodical issued by the Meteorite Working Group to inform scientists of the basic characteristics of specimens recovered in the Antarctic.

Edited by Cecilia Satterwhite and Kevin Righter, NASA Johnson Space Center, Houston, Texas 77058

## Inside this Issue





**Sample Request Deadline**
**Feb. 28, 2011**

**MWG Meets**
**March 11- 12, 2011**



Free publication available at: **http://curator.jsc.nasa.gov/antmet/amn/amn.cfm**

blue ice) and thawed in the JSC meteorite processing lab in the same procedure used for all of our meteorites. We have added some additional description text to the original descriptions posted on our webpage. Also below are a few photos of these samples.

**MIL 091010 in ice block below processing photo JSC**


**MIL 07710 encased in ice**

**MIL 07710 protruding from ice after cut**

## Report from the Smithsonian

*Cari Corrigan, Geologist (Dept. of Mineral Sci.)*

This newsletter announces the classification of 507 rocks (498 meteorites and 9 terrestrial rocks) and closes out the classification of the Miller Range (MIL) '07 season! We are continuing to work on the Dominion Range '08 season (~ 50% complete) and the MIL '09's. The Smithsonian currently has two post doctoral fellows (Karen Stockstill-Cahill and Yulia Goreva) and a contractor who joined us since the last newsletter (Nicole Lunning, MSc, UC Davis, 2009) who have helped make this newsletter the largest in a long time. Dr. Emma Bullock will be joining the museum as a Trust Employee (conversion from Postdoctoral Fellow) and will help in the Antarctic crusade, as well. Thanks go out to Dr. Jeff Grossman for supporting the Antarctic Meteorite classification efforts at the Smithsonian through a NASA Curation Program. On another curation note, our new meteorite facility at our offsite Support Center is almost complete and should allow us to comfortably house incoming Antarctic meteorites through another 20 seasons or so!


**MIL 07710 processing photo at JSC**

## 2010-2011 ANSMET Field Season Report

*Ralph Harvey, Principal Investigator, ANSMET*

The 2010-2011 ANSMET expedition was one of our most active and involved field seasons, with two main parties and three sub-parties deploying to over a half dozen different locations. Our larger field party deployed to the icefields surrounding the Davis Nunataks and Mt. Ward of the Dominion Range of the Transantarctic Mountains, more commonly known as the Davis-Ward icefields. The team included myself, Jim Karner, Shaun Norman, Joe Boesenberg, Rhiannon Mayne, Inge Loes Ten Kate, Ryan Zeigler, Ray Jayawardhana and Bill Satterwhite and was able to conduct systematic searches almost every day, in weather that was sometimes uncomfortable but rarely cruel. Many of the 901 meteorites recovered came from areas with abundant dark fine-grained terrestrial rock, keeping the team on its toes and promising a higher-than-usual rate of false positives. At mid-season I was joined by Karen Hilton from Field Safety and Training Operations in McMurdo, for a three day exploration of the icefields surrounding Mt Darwin in the Buckley Island Region (near the top of the Beardmore Glacier). We recovered 30 specimens and left behind a concentration worthy of a visit by a larger team in the future. Jim Karner and Joe Boesenberg made a similar reconnaissance visit to some icefields near Moody nunatak at the end of the season, but had no luck finding meteorites. They did, however, recover data and sensors left behind at the Miller Range last year.

ANSMET also did some travelling much further afield. Before the fieldwork began, John Schutt and I travelled to South Pole Station where we boarded a Basler turboprop for a very long overflight of potential reconnaissance targets. We had a good look at a number of icefields in and around the Argentina Range, Omega Nunatak and Whichaway Nunataks, as well as a number of previously un-named and unnoticed nunataks along the way. Many of these sites look very promising; but unfortunately their distance from normal US logistical hubs and a surfeit of landing sites will pose challenges for future visits. Our four person reconnaissance team (John, Serena Aunon, Melissa Lane and Stephen Ballou) deployed to some previously-unvisited icefields at the far eastern end of the LaPaz region a few weeks later, recovering a nice collection including some impressively big specimens. At mid-season the team moved to the main icefield of the Patuxent Range, an area visited only briefly 20 years ago. Here too they were successful, bringing the total recovered by the reconnaissance team to 302. In summary, a challenging season resulted in some significant rewards including over 1200 new specimens and several new icefields to explore.

*Recon Team: John Schutt, Serena Anoun, Melissa Lane and Stephen Ballou*

*Joe Boesenberg, Ryan Ziegler, Bill Satterwhite (Penguin beanies made by Rhiannon Mayne)*

*Systematic Team: (standing) Ryan Ziegler, Ralph Harvey, Inge Tenkate (sitting) Ray Jayawardhana, Jim Karner, Rhiannon Mayne, Bill Satterwhite, (on ice) Shaun Norman*

*Systematic Team: (back row) Inge Tenkate, Rhiannon Mayne,Shaun Norman, Bill Satterwhite, Ray Jayawardhana (kneeling) Ryan Ziegler, Jim Karner, Ralph Harvey*

# New Meteorites

## 2007, 2008 and 2009 Collections

Pages 6-20 contain preliminary descriptions and classifications of meteorites that were completed since publication of issue 33(2), Sept. 2010. Specimens of special petrologic type (carbonaceous chondrite, unequilibrated ordinary chondrite, achondrite, etc.) are represented by separate descriptions unless they are paired with previously described meteorites. However, some specimens of non-special petrologic type are listed only as single line entries in Table 1. For convenience, new specimens of special petrological type are also recast in Table 2.

Macroscopic descriptions of stony meteorites were performed at NASA/JSC. These descriptions summarize hand-specimen features observed during initial examination. Classification is based on microscopic petrography and reconnaissance-level electron microprobe analyses using polished sections prepared from a small chip of each meteorite. For each stony meteorite the sample number assigned to the preliminary examination section is included. In some cases, however, a single microscopic description was based on thin sections of several specimens believed to be members of a single fall.

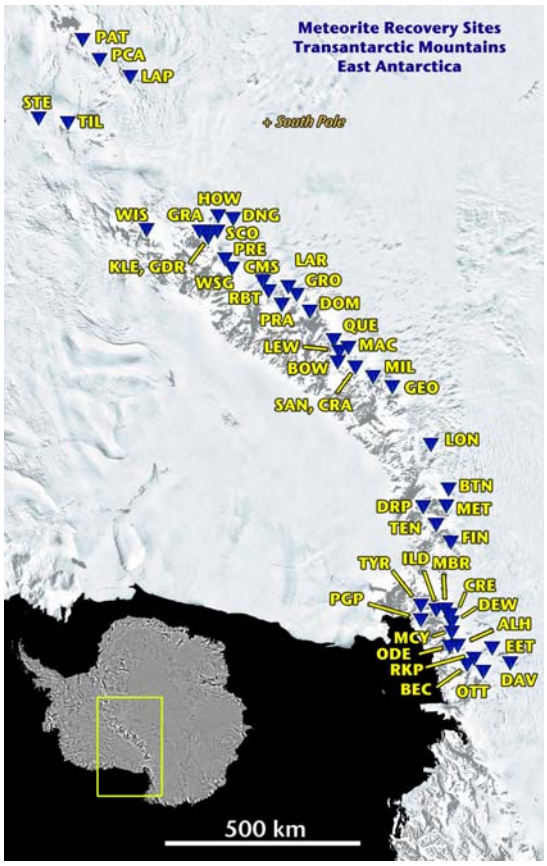
Meteorite descriptions contained in this issue were contributed by the following individuals:

Kathleen McBride, Roger Harrington and Cecilia Satterwhite
Antarctic Meteorite Laboratory
NASA Johnson Space Center
Houston, Texas

Cari Corrigan and Linda Welzenbach
Department of Mineral Sciences
U.S. National Museum of Natural History
Smithsonian Institution
Washington, D.C.

## Antarctic Meteorite Locations

ALH — Allan Hills
BEC — Beckett Nunatak
BOW — Bowden Neve
BTN — Bates Nunataks
CMS — Cumulus Hills
CRA — Mt.Cranfield Ice Field
CRE — Mt. Crean
DAV — David Glacier
DEW — Mt. DeWitt
DNG — D'Angelo Bluff
DOM — Dominion Range
DRP — Derrick Peak
EET — Elephant Moraine
FIN — Finger Ridge
GDR — Gardner Ridge
GEO — Geologists Range
GRA — Graves Nunataks
GRO — Grosvenor Mountains
HOW — Mt. Howe
ILD — Inland Forts
KLE — Klein Ice Field
LAP — LaPaz Ice Field
LAR — Larkman Nunatak
LEW — Lewis Cliff
LON — Lonewolf Nunataks
MAC — MacAlpine Hills
MBR — Mount Baldr
MCY — MacKay Glacier
MET — Meteorite Hills
MIL — Miller Range
ODE — Odell Glacier
OTT — Outpost Nunatak
PAT — Patuxent Range
PCA — Pecora Escarpment
PGP — Purgatory Peak
PRA — Mt. Pratt
PRE — Mt. Prestrud
QUE — Queen Alexandra Range
RBT — Roberts Massif
RKP — Reckling Peak
SAN — Sandford Cliffs
SCO — Scott Glacier
STE — Stewart Hills
TEN — Tentacle Ridge
TIL — Thiel Mountains
TYR — Taylor Glacier
WIS — Wisconsin Range
WSG — Mt. Wisting



# Table 1

## List of Newly Classified Antarctic Meteorites **

| Sample Number | | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|---|
| MIL 07028 | | 1158.9 | EH3 CHONDRITE | B | A/B | | 1-17 |
| MIL 07139 | | 120.3 | EH3 CHONDRITE | B | A/B | | 1-5 |
| MIL 07216 | | 18.4 | L5 CHONDRITE | B/C | A/B | 24 | 8-20 |
| MIL 07218 | | 3.1 | L CHONDRITE (IMPACT MELT) | B/C | A | 24-25 | 20-24 |
| MIL 07236 | | 18.3 | H4 CHONDRITE | B/C | A/B | 11-21 (18) | 6-16 |
| MIL 07259 | | 3.5 | ACAPUL/LODRAN | C | B | 12 | 4-11 |
| MIL 07310 | | 2.5 | CM1/2 CHONDRITE | C | C | 1 | 1 |
| MIL 07314 | | 2.0 | H5 CHONDRITE | C | A | 18 | 16 |
| MIL 07315 | | 0.5 | CO3 CHONDRITE | B | B | 1-61 | |
| MIL 07322 | | 10.3 | CO3 CHONDRITE | C | C | 0-53 | |
| MIL 07342 | | 31.4 | CO3 CHONDRITE | A | A | 0-34 | |
| MIL 07358 | | 6.6 | CO3 CHONDRITE | B | A | 0-44 | |
| MIL 07361 | | 13.9 | CO3 CHONDRITE | B | A | 0-54 | 0-9 |
| MIL 07383 | | 17.8 | CO3 CHONDRITE | B | A | 0-45 | 1-2 |
| MIL 07385 | | 3.8 | CV3 CHONDRITE | B/CE | A/B | 2-29 | 1 |
| MIL 07400 | | 2.1 | CO3 CHONDRITE | B | A | 0-48 | 3 |
| MIL 07401 | | 1.6 | CO3 CHONDRITE | B | A | 4-42 | |
| MIL 07404 | | 0.8 | CB CHONDRITE | B | B | 4-47 | 3-9 |
| MIL 07408 | | 0.6 | CO3 CHONDRITE | B | B | 0-38 | 6 |
| MIL 07417 | | 2.3 | CO3 CHONDRITE | B | A/B | 0-44 | 15 |
| MIL 07418 | | 0.4 | CO3 CHONDRITE | B | B | 1-39 | 1-8 |
| MIL 07420 | ~ | 4.9 | H5 CHONDRITE | C | A/B | | |
| MIL 07424 | | 0.4 | MESOSIDERITE | A/B | A | | 19-27 |
| MIL 07425 | | 0.2 | CO3 CHONDRITE | A/B | A | 1-37 | |
| MIL 07439 | | 4.4 | CO3 CHONDRITE | B | A | 1-40 | 2 |
| MIL 07440 | | 118.5 | R4 CHONDRITE | BE | A | 38 | 10 |
| MIL 07444 | | 15.8 | CO3 CHONDRITE | B | A/B | 0-45 | 0.4 |
| MIL 07445 | | 16.4 | CO3 CHONDRITE | B | A | 1-60 | 1-4 |
| MIL 07451 | | 6.8 | R3 CHONDRITE | BE | B | 24-40 | 9 |
| MIL 07459 | | 18.3 | CO3 CHONDRITE | A/B | B | 0-34 | 2 |
| MIL 07460 | | 2.1 | CM1 CHONDRITE | BE | B | | |
| MIL 07473 | | 0.3 | CO3 CHONDRITE | A/B | A | 0-45 | 1-3 |
| MIL 07485 | | 0.4 | CO3 CHONDRITE | A/B | B | 0-61 | |
| MIL 07487 | | 0.6 | H6 CHONDRITE | C | B | 19 | 17 |
| MIL 07490 | ~ | 0.4 | H5 CHONDRITE | B | B | | |
| MIL 07492 | ~ | 1.2 | H6 CHONDRITE | B | B | | |
| MIL 07500 | ~ | 3.5 | H6 CHONDRITE | B/C | A | | |
| MIL 07501 | ~ | 7.5 | L6 CHONDRITE | B/C | A | | |
| MIL 07502 | ~ | 6.4 | H6 CHONDRITE | B/C | A | | |
| MIL 07503 | ~ | 2.1 | LL6 CHONDRITE | B/C | A | | |
| MIL 07504 | ~ | 25.3 | H6 CHONDRITE | B/C | A | | |
| MIL 07507 | ~ | 7.5 | L6 CHONDRITE | B | A | | |
| MIL 07508 | ~ | 2.4 | LL6 CHONDRITE | A/B | A | | |
| MIL 07509 | ~ | 2.1 | LL6 CHONDRITE | B/C | A | | |
| MIL 07510 | ~ | 1.0 | LL6 CHONDRITE | A/B | A | | |
| MIL 07511 | ~ | 7.2 | LL6 CHONDRITE | A/B | A | | |
| MIL 07512 | ~ | 1.4 | H5 CHONDRITE | B/C | A/B | | |
| MIL 07515 | ~ | 5.7 | L6 CHONDRITE | B/C | A | | |
| MIL 07516 | ~ | 2.1 | L6 CHONDRITE | B/C | A | | |
| MIL 07517 | ~ | 9.2 | H6 CHONDRITE | B/C | A/B | | |

| Sample Number | | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|---|
| MIL 07518 | ~ | 4.3 | H6 CHONDRITE | B/C | A/B | | |
| MIL 07519 | ~ | 9.9 | H6 CHONDRITE | B/C | A/B | | |
| MIL 07520 | ~ | 22.3 | L6 CHONDRITE | B/C | A | | |
| MIL 07521 | ~ | 6.8 | L5 CHONDRITE | A/B | A | | |
| MIL 07522 | ~ | 3.8 | L5 CHONDRITE | B | A | | |
| MIL 07523 | ~ | 3.5 | H6 CHONDRITE | B/C | A/B | | |
| MIL 07524 | ~ | 15.6 | H5 CHONDRITE | B/C | A | | |
| MIL 07525 | | 12.2 | CR3 CHONDRITE | B/C | A/B | 2-6 | 1-2 |
| MIL 07526 | ~ | 23.4 | L6 CHONDRITE | B/C | A | | |
| MIL 07527 | ~ | 2.8 | H6 CHONDRITE | B/C | A | | |
| MIL 07528 | ~ | 2.0 | H5 CHONDRITE | B/C | A | | |
| MIL 07529 | ~ | 26.3 | LL6 CHONDRITE | A/B | A/B | | |
| MIL 07544 | | 3.2 | H5 CHONDRITE | C | B | 18 | 16 |
| MIL 07558 | | 0.7 | CB CHONDRITE | B/C | B | 3-23 | 2-24 |
| MIL 07561 | ~ | 13.5 | LL5 CHONDRITE | B | B | | |
| MIL 07562 | ~ | 5.7 | L5 CHONDRITE | B/C | B | | |
| MIL 07563 | ~ | 8.5 | H5 CHONDRITE | C | B | | |
| MIL 07564 | ~ | 5.8 | L6 CHONDRITE | C | A/B | | |
| MIL 07565 | | 6.5 | H5 CHONDRITE | B | B | 19 | 16 |
| MIL 07566 | ~ | 2.2 | LL6 CHONDRITE | B/C | B | | |
| MIL 07567 | ~ | 2.2 | LL6 CHONDRITE | B/C | B | | |
| MIL 07568 | ~ | 2.5 | L6 CHONDRITE | B/C | B | | |
| MIL 07569 | ~ | 4.6 | H6 CHONDRITE | B/C | B | | |
| MIL 07571 | ~ | 2.5 | H6 CHONDRITE | C | B | | |
| MIL 07572 | ~ | 2.7 | L5 CHONDRITE | B | B | | |
| MIL 07573 | ~ | 6.3 | L6 CHONDRITE | C | B | | |
| MIL 07575 | ~ | 12.2 | L6 CHONDRITE | C | B | | |
| MIL 07576 | ~ | 1.9 | H6 CHONDRITE | B/C | A | | |
| MIL 07577 | ~ | 1.5 | H6 CHONDRITE | C | B | | |
| MIL 07578 | ~ | 1.8 | L6 CHONDRITE | C | A/B | | |
| MIL 07579 | ~ | 9.6 | L5 CHONDRITE | B/C | B | | |
| MIL 07580 | ~ | 14.4 | L6 CHONDRITE | B/C | A | | |
| MIL 07581 | ~ | 16.7 | L6 CHONDRITE | B | A | | |
| MIL 07583 | ~ | 4.6 | LL6 CHONDRITE | A/B | A | | |
| MIL 07584 | ~ | 6.7 | H5 CHONDRITE | B/C | A/B | | |
| MIL 07585 | ~ | 6.4 | L6 CHONDRITE | B/C | A/B | | |
| MIL 07586 | ~ | 1.6 | LL5 CHONDRITE | A/B | A | | |
| MIL 07587 | ~ | 2.6 | L5 CHONDRITE | B | A | | |
| MIL 07589 | ~ | 1.7 | L6 CHONDRITE | B | A | | |
| MIL 07592 | ~ | 1.2 | L5 CHONDRITE | B | B | | |
| MIL 07593 | | 1.8 | L6 CHONDRITE | C | B | 25 | 21 |
| MIL 07594 | ~ | 1.0 | H6 CHONDRITE | B | B | | |
| MIL 07595 | ~ | 1.0 | LL5 CHONDRITE | B | B | | |
| MIL 07596 | ~ | 0.7 | H6 CHONDRITE | B | B | | |
| MIL 07598 | | 1.4 | CB CHONDRITE | C | B | 2-27 | 3-4 |
| MIL 07599 | ~ | 1.6 | LL6 CHONDRITE | C | B | | |
| MIL 07600 | ~ | 0.6 | H5 CHONDRITE | BE | B | | |
| MIL 07601 | ~ | 0.7 | L6 CHONDRITE | B | B | | |
| MIL 07602 | ~ | 1.2 | LL6 CHONDRITE | B | B | | |
| MIL 07603 | ~ | 1.5 | LL6 CHONDRITE | B/C | B/C | | |
| MIL 07604 | ~ | 1.2 | L6 CHONDRITE | C | B/C | | |
| MIL 07605 | ~ | 1.0 | H6 CHONDRITE | B | B | | |
| MIL 07606 | ~ | 0.3 | H6 CHONDRITE | B | B | | |
| MIL 07607 | ~ | 0.2 | L6 CHONDRITE | B | B | | |
| MIL 07608 | ~ | 0.4 | H6 CHONDRITE | B | B | | |

| Sample Number | | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|---|
| MIL 07609 | ~ | 0.3 | L6 CHONDRITE | B | B | | |
| MIL 07616 | | 5.4 | CO3 CHONDRITE | A/B | A | 1-38 | 1-4 |
| MIL 07620 | ~ | 4.8 | H5 CHONDRITE | C | B | | |
| MIL 07621 | | 5.2 | CO3 CHONDRITE | B | B | 0-47 | 3 |
| MIL 07622 | ~ | 7.1 | L5 CHONDRITE | B/C | B | | |
| MIL 07623 | ~ | 3.5 | H5 CHONDRITE | C | B | | |
| MIL 07624 | ~ | 12.3 | H6 CHONDRITE | C | B | | |
| MIL 07625 | ~ | 6.0 | LL6 CHONDRITE | C | B | | |
| MIL 07626 | | 7.2 | CO3 CHONDRITE | B | B | 0-56 | 1 |
| MIL 07627 | ~ | 7.7 | L5 CHONDRITE | C | B | | |
| MIL 07628 | | 4.4 | CO3 CHONDRITE | B/C | B | 1-40 | 1-5 |
| MIL 07629 | | 6.1 | CO3 CHONDRITE | B | B | 0-44 | |
| MIL 07630 | ~ | 4.5 | LL5 CHONDRITE | B/C | A/B | | |
| MIL 07631 | | 3.6 | CO3 CHONDRITE | B | A/B | 0-38 | |
| MIL 07632 | ~ | 7.1 | H6 CHONDRITE | B/CE | A | | |
| MIL 07633 | ~ | 11.1 | H6 CHONDRITE | B/C | A | | |
| MIL 07635 | ~ | 14.5 | L5 CHONDRITE | B/C | A/B | | |
| MIL 07636 | ~ | 3.4 | L5 CHONDRITE | B/C | A | | |
| MIL 07637 | ~ | 2.3 | H6 CHONDRITE | B/C | A/B | | |
| MIL 07638 | ~ | 13.9 | L5 CHONDRITE | B/C | A | | |
| MIL 07639 | ~ | 3.0 | H5 CHONDRITE | B/C | A/B | | |
| MIL 07640 | ~ | 0.9 | L6 CHONDRITE | B | B | | |
| MIL 07641 | ~ | 1.0 | L6 CHONDRITE | B | B | | |
| MIL 07642 | ~ | 1.0 | L6 CHONDRITE | B | B | | |
| MIL 07646 | ~ | 0.8 | L5 CHONDRITE | B | B | | |
| MIL 07647 | ~ | 3.0 | LL6 CHONDRITE | B | B | | |
| MIL 07648 | ~ | 0.7 | L6 CHONDRITE | B | B | | |
| MIL 07649 | ~ | 1.8 | H5 CHONDRITE | C | B | | |
| MIL 07650 | ~ | 4.3 | LL5 CHONDRITE | A | A | | |
| MIL 07651 | ~ | 1.3 | L6 CHONDRITE | B/C | A | | |
| MIL 07652 | ~ | 4.0 | L6 CHONDRITE | C | C | | |
| MIL 07653 | ~ | 3.3 | H5 CHONDRITE | C | B | | |
| MIL 07654 | | 2.0 | EH3 CHONDRITE | C | B | | 1-2 |
| MIL 07655 | ~ | 3.4 | H5 CHONDRITE | C | B | | |
| MIL 07656 | ~ | 5.2 | L6 CHONDRITE | C | B | | |
| MIL 07657 | ~ | 1.5 | H6 CHONDRITE | C | B | | |
| MIL 07689 | | 12.2 | CM1 CHONDRITE | C | B/C | | |
| | | | | | | | |
| DOM 08017 | ~ | 1021.1 | LL5 CHONDRITE | C | B/C | | |
| DOM 08018 | ~ | 1447.8 | LL6 CHONDRITE | C | B/C | | |
| DOM 08020 | ~ | 1020.6 | LL5 CHONDRITE | B/C | B | | |
| DOM 08022 | ~ | 825.3 | LL5 CHONDRITE | BE | B | | |
| DOM 08025 | ~ | 566.1 | LL6 CHONDRITE | C | C | | |
| DOM 08026 | ~ | 222.5 | LL6 CHONDRITE | B | A | | |
| DOM 08032 | ~ | 212.4 | LL5 CHONDRITE | A/B | A | | |
| DOM 08033 | ~ | 319.7 | LL5 CHONDRITE | B | A/B | | |
| DOM 08034 | ~ | 96.9 | L5 CHONDRITE | A/B | A/B | | |
| DOM 08035 | ~ | 251.4 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08037 | ~ | 172.6 | LL5 CHONDRITE | A/B | A | | |
| DOM 08038 | ~ | 131.3 | LL6 CHONDRITE | B/C | A | | |
| DOM 08039 | ~ | 89.8 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08040 | ~ | 106.7 | LL6 CHONDRITE | A/B | A | | |
| DOM 08041 | ~ | 145.8 | LL5 CHONDRITE | B/C | A | | |
| DOM 08042 | ~ | 125.5 | LL6 CHONDRITE | A/B | A | | |
| DOM 08043 | ~ | 83.5 | LL5 CHONDRITE | A/B | A | | |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| DOM 08044 ~ | 124.4 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08045 ~ | 82.9 | LL6 CHONDRITE | B/C | A | | |
| DOM 08046 ~ | 122.4 | LL5 CHONDRITE | A/B | A/B | | |
| DOM 08047 ~ | 78.8 | LL6 CHONDRITE | B/C | A/B | | |
| DOM 08048 ~ | 64.8 | LL6 CHONDRITE | A/B | A | | |
| DOM 08049 ~ | 70.3 | LL5 CHONDRITE | A/B | A/B | | |
| DOM 08050 ~ | 154.2 | LL6 CHONDRITE | B | A | | |
| DOM 08051 ~ | 193.1 | LL5 CHONDRITE | A/B | A | | |
| DOM 08052 ~ | 88.7 | LL5 CHONDRITE | A/B | A | | |
| DOM 08053 ~ | 74.6 | LL5 CHONDRITE | A/B | A | | |
| DOM 08054 ~ | 68.2 | L6 CHONDRITE | B/C | A/B | | |
| DOM 08055 ~ | 44.3 | LL6 CHONDRITE | A/B | A | | |
| DOM 08056 ~ | 65.9 | LL6 CHONDRITE | A/B | A | | |
| DOM 08057 ~ | 44.2 | L6 CHONDRITE | A/B | A | | |
| DOM 08058 ~ | 54.2 | LL6 CHONDRITE | A/B | A | | |
| DOM 08059 ~ | 88.0 | LL6 CHONDRITE | A/B | A | | |
| DOM 08061 ~ | 48.4 | L5 CHONDRITE | B | B | | |
| DOM 08062 ~ | 51.6 | LL6 CHONDRITE | A/B | B | | |
| DOM 08064 ~ | 39.3 | L5 CHONDRITE | B | B | | |
| DOM 08066 ~ | 115.6 | LL5 CHONDRITE | BE | B | | |
| DOM 08077 ~ | 19.4 | LL6 CHONDRITE | B/C | B | | |
| DOM 08080 ~ | 149.9 | LL5 CHONDRITE | A/B | A | | |
| DOM 08081 ~ | 193.5 | LL5 CHONDRITE | A/B | A | | |
| DOM 08082 ~ | 255.2 | LL5 CHONDRITE | A/B | A | | |
| DOM 08083 ~ | 220.1 | LL6 CHONDRITE | A/B | A | | |
| DOM 08084 ~ | 247.9 | L5 CHONDRITE | A/B | A/B | | |
| DOM 08087 ~ | 38.2 | LL5 CHONDRITE | B/C | B | | |
| DOM 08089 ~ | 53.1 | LL6 CHONDRITE | B | B | | |
| DOM 08090 ~ | 33.9 | LL6 CHONDRITE | B | B | | |
| DOM 08096 ~ | 28.1 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08097 ~ | 56.4 | LL6 CHONDRITE | B | B | | |
| DOM 08103 ~ | 14.7 | LL5 CHONDRITE | A/B | B | | |
| DOM 08104 ~ | 28.8 | LL6 CHONDRITE | B | B | | |
| DOM 08110 ~ | 86.0 | L6 CHONDRITE | B/C | A/B | | |
| DOM 08111 ~ | 36.3 | L6 CHONDRITE | B/C | A/B | | |
| DOM 08112 ~ | 30.8 | LL6 CHONDRITE | A/B | A | | |
| DOM 08113 ~ | 58.6 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08114 ~ | 27.0 | LL6 CHONDRITE | A/B | A | | |
| DOM 08115 ~ | 65.3 | H6 CHONDRITE | B/C | A | | |
| DOM 08116 ~ | 95.8 | LL5 CHONDRITE | A/B | A | | |
| DOM 08117 ~ | 43.9 | H5 CHONDRITE | B/C | A | | |
| DOM 08118 ~ | 102.8 | L5 CHONDRITE | A/B | A | | |
| DOM 08119 ~ | 54.7 | LL5 CHONDRITE | A/B | A | | |
| DOM 08200 ~ | 15.9 | LL5 CHONDRITE | A/B | A | | |
| DOM 08201 ~ | 21.1 | LL5 CHONDRITE | A/B | A | | |
| DOM 08202 ~ | 21.8 | L5 CHONDRITE | B/C | A/B | | |
| DOM 08203 ~ | 33.2 | LL5 CHONDRITE | A/B | A | | |
| DOM 08204 ~ | 24.1 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08205 ~ | 17.7 | LL6 CHONDRITE | A/BE | A | | |
| DOM 08206 ~ | 39.0 | LL6 CHONDRITE | A/B | A | | |
| DOM 08207 ~ | 22.6 | LL6 CHONDRITE | B/C | A | | |
| DOM 08208 ~ | 27.1 | LL6 CHONDRITE | A/B | A | | |
| DOM 08209 ~ | 25.4 | L6 CHONDRITE | A/B | A/B | | |
| DOM 08210 ~ | 15.9 | LL6 CHONDRITE | B | A | | |
| DOM 08211 ~ | 12.6 | LL6 CHONDRITE | A/B | A | | |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| DOM 08212 ~ | 8.2 | H6 CHONDRITE | B/C | A | | |
| DOM 08213 ~ | 9.3 | LL5 CHONDRITE | A/B | A | | |
| DOM 08214 ~ | 9.4 | LL5 CHONDRITE | B/C | A | | |
| DOM 08215 ~ | 14.6 | LL6 CHONDRITE | B/C | A | | |
| DOM 08216 ~ | 13.0 | L6 CHONDRITE | A/B | A | | |
| DOM 08217 ~ | 13.4 | LL6 CHONDRITE | B/C | A | | |
| DOM 08218 ~ | 18.3 | L6 CHONDRITE | A/B | A/B | | |
| DOM 08219 ~ | 21.9 | LL6 CHONDRITE | A/B | A | | |
| DOM 08230 ~ | 29.6 | LL6 CHONDRITE | A/B | A | | |
| DOM 08231 ~ | 23.3 | LL6 CHONDRITE | B/C | A | | |
| DOM 08232 ~ | 20.4 | LL6 CHONDRITE | A/B | A | | |
| DOM 08233 ~ | 18.9 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08234 ~ | 37.5 | LL5 CHONDRITE | A/B | A/B | | |
| DOM 08235 ~ | 25.8 | LL6 CHONDRITE | B/C | A | | |
| DOM 08236 ~ | 27.6 | H6 CHONDRITE | C | A/B | | |
| DOM 08237 ~ | 31.3 | LL6 CHONDRITE | A/B | A | | |
| DOM 08238 ~ | 29.9 | LL6 CHONDRITE | A/B | A | | |
| DOM 08239 ~ | 24.2 | H5 CHONDRITE | B/C | A | | |
| DOM 08240 ~ | 37.4 | LL6 CHONDRITE | A/B | A | | |
| DOM 08241 ~ | 20.6 | LL6 CHONDRITE | A/B | A | | |
| DOM 08242 ~ | 25.1 | H6 CHONDRITE | B/C | A/B | | |
| DOM 08243 ~ | 43.2 | LL6 CHONDRITE | B/C | A | | |
| DOM 08244 ~ | 45.4 | LL6 CHONDRITE | A/B | A | | |
| DOM 08245 ~ | 42.2 | LL6 CHONDRITE | A/B | A | | |
| DOM 08246 ~ | 42.3 | LL6 CHONDRITE | A/B | A | | |
| DOM 08247 ~ | 61.7 | LL6 CHONDRITE | A/B | A | | |
| DOM 08248 ~ | 32.9 | LL6 CHONDRITE | A/B | A | | |
| DOM 08249 ~ | 72.2 | LL5 CHONDRITE | A/B | A | | |
| DOM 08306 ~ | 13.3 | L6 CHONDRITE | B/C | B | | |
| DOM 08312 ~ | 12.9 | LL6 CHONDRITE | C | B | | |
| DOM 08316 ~ | 20.3 | LL6 CHONDRITE | B | B | | |
| DOM 08319 ~ | 19.2 | LL6 CHONDRITE | B | B | | |
| DOM 08321 ~ | 14.1 | LL6 CHONDRITE | B | B | | |
| DOM 08325 ~ | 18.9 | LL6 CHONDRITE | B | B | | |
| DOM 08326 ~ | 19.1 | LL6 CHONDRITE | B/C | B | | |
| DOM 08327 ~ | 3.5 | L5 CHONDRITE | B | B | | |
| DOM 08328 ~ | 19.5 | LL6 CHONDRITE | B/C | B | | |
| DOM 08334 | 19.8 | LL6 CHONDRITE | A/B | B | 31 | 25 |
| DOM 08335 | 30.6 | L6 CHONDRITE | C | B/C | 25 | 13-31 |
| DOM 08337 | 27.6 | L CHONDRITE (IMPACT MELT) | C | A/B | 24 | 20 |
| DOM 08343 ~ | 1.0 | LL6 CHONDRITE | B | B | | |
| DOM 08344 ~ | 11.4 | L6 CHONDRITE | B | B | | |
| DOM 08345 ~ | 5.7 | LL6 CHONDRITE | B/C | A/B | | |
| DOM 08346 ~ | 4.1 | LL5 CHONDRITE | C | B | | |
| DOM 08347 ~ | 10.3 | L6 CHONDRITE | C | B | | |
| DOM 08348 ~ | 3.0 | LL6 CHONDRITE | C | B | | |
| DOM 08349 ~ | 6.2 | L6 CHONDRITE | C | B | | |
| DOM 08351 | 26.3 | CO3 CHONDRITE | B | A/B | 0-44 | 1-3 |
| DOM 08353 | 12.7 | L5 CHONDRITE | C | B | 24 | 20 |
| DOM 08372 | 6.6 | UREILITE | C | A/B | 22 | 18 |
| DOM 08377 | 4.2 | H5 CHONDRITE | CE | C | 18 | 15-17 |
| DOM 08378 | 5.5 | H6 CHONDRITE | A/B | A | 18-19 | 16 |
| DOM 08387 ~ | 5.7 | LL6 CHONDRITE | C | A/B | | |
| DOM 08390 | 83.3 | H5 CHONDRITE | C | B/C | 18 | 16 |
| DOM 08392 | 79.1 | L6 CHONDRITE | B/C | B | 25 | 20-23 |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| DOM 08397 | 68.8 | L CHONDRITE (IMPACT MELT) | C | B | 24 | 20 |
| DOM 08440 ~ | 29.7 | L5 CHONDRITE | B | B | | |
| DOM 08441 ~ | 12.7 | L6 CHONDRITE | C | B | | |
| DOM 08442 ~ | 14.2 | H5 CHONDRITE | C | B | | |
| DOM 08443 ~ | 20.1 | L5 CHONDRITE | C | B | | |
| DOM 08444 ~ | 36.8 | L5 CHONDRITE | B/C | B | | |
| DOM 08445 ~ | 12.3 | L6 CHONDRITE | C | B | | |
| DOM 08446 ~ | 25.8 | L5 CHONDRITE | B | B | | |
| DOM 08447 ~ | 18.6 | L6 CHONDRITE | C | B | | |
| DOM 08448 ~ | 57.6 | LL5 CHONDRITE | B | A/B | | |
| DOM 08449 ~ | 40.5 | LL6 CHONDRITE | B | B | | |
| DOM 08450 ~ | 20.4 | LL5 CHONDRITE | B | B | | |
| DOM 08451 ~ | 11.6 | L6 CHONDRITE | C | B | | |
| DOM 08452 ~ | 9.6 | L6 CHONDRITE | C | B | | |
| DOM 08453 ~ | 14.9 | L6 CHONDRITE | C | B | | |
| DOM 08454 ~ | 30.4 | LL5 CHONDRITE | C | B | | |
| DOM 08455 ~ | 19.0 | H6 CHONDRITE | C | B | | |
| DOM 08456 ~ | 10.7 | H6 CHONDRITE | C | B | | |
| DOM 08457 ~ | 17.0 | LL6 CHONDRITE | C | B | | |
| DOM 08458 ~ | 19.2 | LL6 CHONDRITE | C | B | | |
| DOM 08459 ~ | 21.3 | LL6 CHONDRITE | C | B | | |
| DOM 08460 ~ | 53.4 | LL5 CHONDRITE | B | A/B | | |
| DOM 08461 ~ | 122.4 | L6 CHONDRITE | C | B | | |
| DOM 08462 ~ | 133.9 | LL5 CHONDRITE | C | B | | |
| DOM 08463 ~ | 160.9 | LL5 CHONDRITE | B | B | | |
| DOM 08464 ~ | 72.6 | L6 CHONDRITE | C | B | | |
| DOM 08465 ~ | 92.5 | L6 CHONDRITE | C | B | | |
| DOM 08466 ~ | 48.7 | LL5 CHONDRITE | C | B | | |
| DOM 08467 ~ | 82.5 | LL5 CHONDRITE | B | B | | |
| DOM 08468 | 64.8 | H3.5 CHONDRITE | B/C | B | 4-44 | 2 |
| DOM 08469 ~ | 148.8 | LL5 CHONDRITE | B | A/B | | |
| DOM 08470 ~ | 36.3 | LL6 CHONDRITE | B/C | A | | |
| DOM 08471 ~ | 31.3 | LL6 CHONDRITE | C | B | | |
| DOM 08472 ~ | 18.5 | LL5 CHONDRITE | C | A | | |
| DOM 08473 ~ | 14.9 | LL5 CHONDRITE | C | A | | |
| DOM 08474 ~ | 17.4 | LL6 CHONDRITE | C | A/B | | |
| DOM 08475 ~ | 17.9 | L5 CHONDRITE | B/C | B/C | | |
| DOM 08476 | 25.1 | CV3 CHONDRITE | A/B | BE | 1-40 | 1 |
| DOM 08477 ~ | 14.5 | LL5 CHONDRITE | C | A | | |
| DOM 08478 ~ | 21.2 | LL5 CHONDRITE | C | A/B | | |
| DOM 08479 ~ | 11.9 | L6 CHONDRITE | C | A/B | | |
| DOM 08480 ~ | 14.5 | H5 CHONDRITE | C | B | | |
| DOM 08481 ~ | 9.9 | L5 CHONDRITE | C | B | | |
| DOM 08482 ~ | 21.4 | LL6 CHONDRITE | C | B | | |
| DOM 08483 ~ | 19.2 | L6 CHONDRITE | C | B | | |
| DOM 08484 ~ | 22.4 | LL6 CHONDRITE | C | B | | |
| DOM 08485 ~ | 18.3 | LL6 CHONDRITE | B/C | B | | |
| DOM 08486 ~ | 23.0 | LL6 CHONDRITE | C | B | | |
| DOM 08487 ~ | 25.2 | LL6 CHONDRITE | B | A/B | | |
| DOM 08488 ~ | 25.2 | LL6 CHONDRITE | B/C | B | | |
| DOM 08489 ~ | 12.9 | LL5 CHONDRITE | B/C | B | | |
| DOM 08490 ~ | 18.5 | LL6 CHONDRITE | B | A/B | | |
| DOM 08491 ~ | 34.5 | L5 CHONDRITE | B | A/B | | |
| DOM 08492 ~ | 35.7 | LL6 CHONDRITE | B/C | B | | |
| DOM 08493 ~ | 22.8 | LL5 CHONDRITE | B/C | B | | |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| DOM 08494 ~ | 21.2 | L6 CHONDRITE | C | A/B | | |
| DOM 08495 ~ | 38.1 | H6 CHONDRITE | C | B | | |
| DOM 08496 ~ | 15.5 | L6 CHONDRITE | C | A/B | | |
| DOM 08497 ~ | 28.7 | L6 CHONDRITE | B/C | A/B | | |
| DOM 08498 ~ | 16.9 | LL6 CHONDRITE | B/C | B | | |
| DOM 08499 ~ | 55.4 | LL6 CHONDRITE | B/C | B/C | | |
| DOM 08500 ~ | 65.8 | LL6 CHONDRITE | B | A/B | | |
| DOM 08501 ~ | 68.7 | LL5 CHONDRITE | B/C | A/B | | |
| DOM 08502 ~ | 68.8 | LL6 CHONDRITE | A/B | A | | |
| DOM 08503 ~ | 15.3 | LL6 CHONDRITE | A/B | A | | |
| DOM 08504 ~ | 51.2 | LL6 CHONDRITE | A/B | A | | |
| DOM 08505 ~ | 42.4 | L6 CHONDRITE | A/B | A/B | | |
| DOM 08506 ~ | 48.9 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08507 ~ | 37.5 | LL6 CHONDRITE | A/B | A | | |
| DOM 08508 ~ | 28.5 | L6 CHONDRITE | C | A/B | | |
| DOM 08509 ~ | 29.3 | H5 CHONDRITE | B/C | A/B | | |
| DOM 08515 ~ | 16.2 | LL6 CHONDRITE | A/B | A/B | | |
| DOM 08516 ~ | 22.0 | LL6 CHONDRITE | B/C | A | | |
| DOM 08517 ~ | 28.4 | LL6 CHONDRITE | A/B | A | | |
| DOM 08518 ~ | 18.9 | LL6 CHONDRITE | A/B | A | | |
| DOM 08519 ~ | 22.6 | H6 CHONDRITE | B/C | A/B | | |
| DOM 08520 ~ | 31.1 | LL6 CHONDRITE | A/B | A | | |
| DOM 08521 ~ | 16.0 | LL6 CHONDRITE | A/B | A | | |
| | | | | | | |
| MIL 090013 ~ | 890.6 | L5 CHONDRITE | B/C | A | | |
| MIL 090015 ~ | 1105.6 | L5 CHONDRITE | A | A | | |
| MIL 090016 ~ | 1450.7 | LL6 CHONDRITE | B/C | B | | |
| MIL 090017 ~ | 1330.0 | LL6 CHONDRITE | B/C | A/B | | |
| MIL 090020 ~ | 864.3 | L5 CHONDRITE | B/C | C | | |
| MIL 090022 ~ | 851.4 | LL5 CHONDRITE | B | B | | |
| MIL 090026 ~ | 785.6 | LL5 CHONDRITE | B | A/B | | |
| MIL 090027 ~ | 981.2 | LL5 CHONDRITE | C | C | | |
| MIL 090104 | 51.9 | H6 CHONDRITE | A/B | A | 15-18 | 14 |
| MIL 090108 ~ | 204.7 | L5 CHONDRITE | B | B | | |
| MIL 090109 ~ | 210.2 | LL5 CHONDRITE | C | B | | |
| MIL 090150 ~ | 22.6 | LL5 CHONDRITE | A/B | A | | |
| MIL 090151 ~ | 83.3 | L6 CHONDRITE | C | B | | |
| MIL 090155 ~ | 48.1 | L6 CHONDRITE | C | B/C | | |
| MIL 090156 ~ | 76.4 | L6 CHONDRITE | C | B | | |
| MIL 090157 ~ | 60.3 | H6 CHONDRITE | C | A/B | | |
| MIL 090158 ~ | 44.7 | H5 CHONDRITE | C | B | | |
| MIL 090160 ~ | 8.3 | LL6 CHONDRITE | B | A/B | | |
| MIL 090161 ~ | 1.3 | L5 CHONDRITE | C | A | | |
| MIL 090162 ~ | 1.6 | LL5 CHONDRITE | B/C | B | | |
| MIL 090163 ~ | 3.5 | L5 CHONDRITE | C | A/B | | |
| MIL 090164 ~ | 1.2 | LL6 CHONDRITE | B | A | | |
| MIL 090165 ~ | 3.2 | LL6 CHONDRITE | A | A/B | | |
| MIL 090166 ~ | 1.0 | H6 CHONDRITE | B/C | A/B | | |
| MIL 090167 ~ | 3.4 | L6 CHONDRITE | C | C | | |
| MIL 090168 ~ | 1.9 | H6 CHONDRITE | C | A | | |
| MIL 090172 | 0.6 | CV3 CHONDRITE | B | B | 0-13 | |
| MIL 090174 | 0.8 | CV3 CHONDRITE | B | B | 0-43 | 2 |
| MIL 090175 | 2.4 | CV3 CHONDRITE | B | B | 1-11 | 3 |
| MIL 090176 | 3.6 | CV3 CHONDRITE | B | B | 1-34 | |
| MIL 090177 | 1.1 | CV3 CHONDRITE | B | B | 2-18 | |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| MIL 090178 | 0.7 | CV3 CHONDRITE | B | B | 0-14 | |
| MIL 090180 | 7.0 | L CHONDRITE (IMPACT MELT) | C | B | 24 | 20 |
| MIL 090181 ~ | 9.4 | LL6 CHONDRITE | B/C | B | | |
| MIL 090182 ~ | 4.1 | LL6 CHONDRITE | A/B | A/B | | |
| MIL 090183 ~ | 2.8 | L6 CHONDRITE | CE | C | | |
| MIL 090184 | 0.7 | CV3 CHONDRITE | B | B | 0-33 | |
| MIL 090185 ~ | 2.4 | L6 CHONDRITE | C | C | | |
| MIL 090186 ~ | 7.3 | L6 CHONDRITE | C | B | | |
| MIL 090187 ~ | 5.7 | L6 CHONDRITE | C | B | | |
| MIL 090188 ~ | 8.3 | L6 CHONDRITE | C | B | | |
| MIL 090189 ~ | 4.3 | L6 CHONDRITE | C | B | | |
| MIL 090190 ~ | 12.0 | H5 CHONDRITE | C | A/B | | |
| MIL 090191 ~ | 19.2 | H6 CHONDRITE | C | B | | |
| MIL 090192 ~ | 25.7 | L6 CHONDRITE | B | B | | |
| MIL 090193 ~ | 37.9 | LL6 CHONDRITE | B/C | B | | |
| MIL 090194 ~ | 33.3 | L6 CHONDRITE | C | C | | |
| MIL 090195 ~ | 15.5 | L6 CHONDRITE | C | B | | |
| MIL 090196 ~ | 27.7 | H6 CHONDRITE | C | B | | |
| MIL 090197 ~ | 23.6 | H6 CHONDRITE | C | B | | |
| MIL 090198 ~ | 19.9 | L6 CHONDRITE | C | B | | |
| MIL 090199 ~ | 22.2 | L6 CHONDRITE | C | B | | |
| MIL 090200 ~ | 27.5 | L5 CHONDRITE | B/C | A | | |
| MIL 090201 ~ | 28.6 | L5 CHONDRITE | B | B | | |
| MIL 090202 ~ | 24.1 | L6 CHONDRITE | B/C | A/B | | |
| MIL 090203 ~ | 13.1 | L6 CHONDRITE | A/B | A/B | | |
| MIL 090204 ~ | 21.3 | L5 CHONDRITE | B/C | A/B | | |
| MIL 090205 ~ | 6.2 | L5 CHONDRITE | B/C | A/B | | |
| MIL 090207 ~ | 25.1 | H6 CHONDRITE | B/C | B | | |
| MIL 090208 ~ | 30.9 | L5 CHONDRITE | B/C | B | | |
| MIL 090209 ~ | 14.4 | L6 CHONDRITE | B/C | A/B | | |
| MIL 090210 ~ | 6.7 | L6 CHONDRITE | B | A/B | | |
| MIL 090211 ~ | 14.5 | LL6 CHONDRITE | B/C | B | | |
| MIL 090212 ~ | 3.1 | L6 CHONDRITE | C | B | | |
| MIL 090213 ~ | 10.5 | L6 CHONDRITE | C | A/B | | |
| MIL 090214 ~ | 7.1 | LL6 CHONDRITE | B | B | | |
| MIL 090215 ~ | 4.3 | L6 CHONDRITE | C | A/B | | |
| MIL 090216 | 3.6 | CO3 CHONDRITE | B/C | A/B | 0-49 | 2 |
| MIL 090217 ~ | 2.6 | L5 CHONDRITE | B/C | B | | |
| MIL 090218 ~ | 9.1 | L6 CHONDRITE | C | B | | |
| MIL 090219 | 1.4 | CO3 CHONDRITE | B | A | 0-45 | |
| MIL 090222 ~ | 38.7 | LL6 CHONDRITE | C | B | | |
| MIL 090223 ~ | 56.0 | L5 CHONDRITE | B | B | | |
| MIL 090224 | 75.9 | H6 CHONDRITE | C | A/B | | |
| MIL 090225 | 108.0 | H6 CHONDRITE | C | C | | |
| MIL 090226 ~ | 34.0 | L6 CHONDRITE | C | B | | |
| MIL 090228 ~ | 67.2 | LL6 CHONDRITE | A/B | A/B | | |
| MIL 090229 ~ | 38.5 | H5 CHONDRITE | C | B | | |
| MIL 090282 | 43.3 | L6 CHONDRITE | A/B | B/C | 25 | 21 |
| MIL 090300 | 2.0 | EH4 CHONDRITE | C | C | | 1 |
| MIL 090301 | 1.1 | CO3 CHONDRITE | B | B | 1-46 | |
| MIL 090302 ~ | 7.9 | L6 CHONDRITE | C | B | | |
| MIL 090303 ~ | 2.4 | L5 CHONDRITE | A/B | A/B | | |
| MIL 090304 ~ | 3.4 | L6 CHONDRITE | B/C | B | | |
| MIL 090305 ~ | 1.1 | LL6 CHONDRITE | B | A/B | | |
| MIL 090306 ~ | 0.9 | L6 CHONDRITE | B | A | | |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| MIL 090307 ~ | 1.2 | L6 CHONDRITE | B | B | | |
| MIL 090308 | 1.2 | CO3 CHONDRITE | B/C | B | 0-53 | 1-6 |
| MIL 090309 ~ | 2.8 | L6 CHONDRITE | B/C | B | | |
| MIL 090310 ~ | 6.7 | L6 CHONDRITE | C | A/B | | |
| MIL 090311 ~ | 10.0 | LL5 CHONDRITE | B | A/B | | |
| MIL 090312 ~ | 3.1 | L6 CHONDRITE | C | B | | |
| MIL 090313 ~ | 3.0 | L6 CHONDRITE | C | A/B | | |
| MIL 090314 ~ | 6.0 | L6 CHONDRITE | C | A/B | | |
| MIL 090315 ~ | 13.8 | L5 CHONDRITE | B/C | B | | |
| MIL 090316 ~ | 8.0 | L5 CHONDRITE | C | A/B | | |
| MIL 090317 ~ | 14.9 | L6 CHONDRITE | B/C | B | | |
| MIL 090318 ~ | 7.5 | L6 CHONDRITE | C | A/B | | |
| MIL 090319 ~ | 10.2 | L6 CHONDRITE | C | B | | |
| MIL 090320 | 3.6 | EL6 CHONDRITE | C | B | | 0.3 |
| MIL 090321 ~ | 0.5 | LL6 CHONDRITE | B | B | | |
| MIL 090322 ~ | 4.0 | L6 CHONDRITE | C | B | | |
| MIL 090323 | 3.5 | H6 CHONDRITE | C | B | 20 | 17 |
| MIL 090324 ~ | 1.7 | L6 CHONDRITE | C | B | | |
| MIL 090325 ~ | 2.1 | L5 CHONDRITE | C | B | | |
| MIL 090326 ~ | 1.2 | L6 CHONDRITE | B | B | | |
| MIL 090327 | 4.2 | CO3 CHONDRITE | B | A/B | 1-46 | 1-34 |
| MIL 090328 ~ | 5.9 | L5 CHONDRITE | C | A/B | | |
| MIL 090329 ~ | 2.7 | L6 CHONDRITE | C | B | | |
| MIL 090330 | 2.0 | L CHONDRITE (IMPACT MELT) | CE | B | 24-25 | 21 |
| MIL 090331 ~ | 3.9 | L6 CHONDRITE | C | B | | |
| MIL 090332 ~ | 2.1 | L6 CHONDRITE | C | B | | |
| MIL 090333 ~ | 1.7 | L6 CHONDRITE | C | B | | |
| MIL 090334 ~ | 3.0 | L6 CHONDRITE | C | B | | |
| MIL 090336 ~ | 2.5 | LL6 CHONDRITE | A/B | B | | |
| MIL 090337 ~ | 8.6 | L6 CHONDRITE | C | B | | |
| MIL 090338 | 0.5 | LL6 CHONDRITE | B | A | 28 | 23 |
| MIL 090339 ~ | 6.5 | L5 CHONDRITE | C | B/C | | |
| MIL 090340 | 4.7 | UREILITE | C | A/B | 27-30 | |
| MIL 090341 ~ | 0.6 | LL6 CHONDRITE | BE | B | | |
| MIL 090343 | 0.7 | CO3 CHONDRITE | B | B | 1-38 | 1 |
| MIL 090344 ~ | 2.9 | H6 CHONDRITE | B/C | A/B | | |
| MIL 090345 ~ | 1.2 | H6 CHONDRITE | B | B | | |
| MIL 090346 | 2.4 | CO3 CHONDRITE | B | A | 2-38 | 1-4 |
| MIL 090347 ~ | 8.2 | L6 CHONDRITE | B/C | A/B | | |
| MIL 090348 ~ | 1.8 | L5 CHONDRITE | B/C | B | | |
| MIL 090349 ~ | 1.4 | LL6 CHONDRITE | B | B | | |
| MIL 090350 ~ | 0.9 | L6 CHONDRITE | B | B | | |
| MIL 090351 | 1.3 | CO3 CHONDRITE | A/B | A | 1-50 | 12 |
| MIL 090352 ~ | 6.4 | L6 CHONDRITE | C | B | | |
| MIL 090353 ~ | 3.6 | L6 CHONDRITE | C | B | | |
| MIL 090355 ~ | 2.5 | L6 CHONDRITE | B/C | A/B | | |
| MIL 090356 | 3.2 | UREILITE | B | A/B | 28-30 | 10-26 |
| MIL 090357 ~ | 1.6 | L6 CHONDRITE | C | B | | |
| MIL 090358 ~ | 2.9 | LL6 CHONDRITE | C | A/B | | |
| MIL 090359 ~ | 1.6 | L6 CHONDRITE | B | B | | |
| MIL 090480 | 65.4 | CO3 CHONDRITE | B | B | 0-43 | |
| MIL 090481 ~ | 2.0 | LL6 CHONDRITE | A/B | B | | |
| MIL 090482 | 3.4 | CO3 CHONDRITE | B | B | 14-67 | 1-2 |
| MIL 090484 ~ | 15.9 | LL6 CHONDRITE | A/B | B | | |
| MIL 090485 | 4.6 | CO3 CHONDRITE | B | B | 1-30 | 5-36 |

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| MIL 090489 | 1.0 | CM1/2 CHONDRITE | C | B | 0-30 | |
| MIL 090781 ~ | 60.3 | LL6 CHONDRITE | A/B | A/B | | |
| MIL 090782 ~ | 38.3 | L6 CHONDRITE | C | C | | |
| MIL 090783 ~ | 68.5 | L5 CHONDRITE | C | B | | |
| MIL 090784 ~ | 41.3 | L5 CHONDRITE | C | B | | |
| MIL 090785 | 90.3 | CO3 CHONDRITE | C | A/B | 1-44 | 1 |
| MIL 090786 ~ | 110.3 | LL6 CHONDRITE | B | B | | |
| MIL 090787 ~ | 53.8 | L6 CHONDRITE | B | B | | |
| MIL 090788 ~ | 51.0 | L6 CHONDRITE | C | B | | |
| MIL 090789 ~ | 51.3 | L6 CHONDRITE | C | B/C | | |

# Table 2

## Newly Classified Specimens Listed By Type

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| | | **Achondrites** | | | | |
| MIL 07259 | 3.5 | ACAPUL/LODRAN | C | B | 12 | 4-11 |
| DOM 08372 | 6.6 | UREILITE | C | A/B | 22 | 18 |
| MIL 090340 | 4.7 | UREILITE | C | A/B | 27-30 | |
| MIL 090356 | 3.2 | UREILITE | B | A/B | 28-30 | 10-26 |
| | | **Carbonaceous Chondrites** | | | | |
| MIL 07404 | 0.8 | CB CHONDRITE | B | B | 4-47 | 3-9 |
| MIL 07558 | 0.7 | CB CHONDRITE | B/C | B | 3-23 | 2-24 |
| MIL 07598 | 1.4 | CB CHONDRITE | C | B | 2-27 | 3-4 |
| MIL 07460 | 2.1 | CM1 CHONDRITE | BE | B | | |
| MIL 07689 | 12.2 | CM1 CHONDRITE | C | B/C | | |
| MIL 07310 | 2.5 | CM1/2 CHONDRITE | C | C | 1 | 1 |
| MIL 090489 | 1.0 | CM1/2 CHONDRITE | C | B | 0-30 | |
| MIL 07315 | 0.5 | CO3 CHONDRITE | B | B | 1-61 | |
| MIL 07322 | 10.3 | CO3 CHONDRITE | C | C | 0-53 | |
| MIL 07342 | 31.4 | CO3 CHONDRITE | A | A | 0-34 | |
| MIL 07358 | 6.6 | CO3 CHONDRITE | B | A | 0-44 | |
| MIL 07361 | 13.9 | CO3 CHONDRITE | B | A | 0-54 | 0-9 |
| MIL 07383 | 17.8 | CO3 CHONDRITE | B | A | 0-45 | 1-2 |
| MIL 07400 | 2.1 | CO3 CHONDRITE | B | A | 0-48 | 3 |
| MIL 07401 | 1.6 | CO3 CHONDRITE | B | A | 4-42 | |
| MIL 07408 | 0.6 | CO3 CHONDRITE | B | B | 0-38 | 6 |
| MIL 07417 | 2.3 | CO3 CHONDRITE | B | A/B | 0-44 | 15 |
| MIL 07418 | 0.4 | CO3 CHONDRITE | B | B | 1-39 | 1-8 |
| MIL 07425 | 0.2 | CO3 CHONDRITE | A/B | A | 1-37 | |
| MIL 07439 | 4.4 | CO3 CHONDRITE | B | A | 1-40 | 2 |
| MIL 07444 | 15.8 | CO3 CHONDRITE | B | A/B | 0-45 | 0.4 |
| MIL 07445 | 16.4 | CO3 CHONDRITE | B | A | 1-60 | 1-4 |
| MIL 07459 | 18.3 | CO3 CHONDRITE | A/B | B | 0-34 | 2 |
| MIL 07473 | 0.3 | CO3 CHONDRITE | A/B | A | 0-45 | 1-3 |
| MIL 07485 | 0.4 | CO3 CHONDRITE | A/B | B | 0-61 | |
| MIL 07616 | 5.4 | CO3 CHONDRITE | A/B | A | 1-38 | 1-4 |
| MIL 07621 | 5.2 | CO3 CHONDRITE | B | B | 0-47 | 3 |
| MIL 07626 | 7.2 | CO3 CHONDRITE | B | B | 0-56 | 1 |
| MIL 07628 | 4.4 | CO3 CHONDRITE | B/C | B | 1-40 | 1-5 |
| MIL 07629 | 6.1 | CO3 CHONDRITE | B | B | 0-44 | |

# Table 2

## Newly Classified Specimens Listed By Type

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| MIL 07631 | 3.6 | CO3 CHONDRITE | B | A/B | 0-38 | |
| DOM 08351 | 26.3 | CO3 CHONDRITE | B | A/B | 0-44 | 1-3 |
| MIL 090216 | 3.6 | CO3 CHONDRITE | B/C | A/B | 0-49 | 2 |
| MIL 090219 | 1.4 | CO3 CHONDRITE | B | A | 0-45 | |
| MIL 090301 | 1.1 | CO3 CHONDRITE | B | B | 1-46 | |
| MIL 090308 | 1.2 | CO3 CHONDRITE | B/C | B | 0-53 | 1-6 |
| MIL 090327 | 4.2 | CO3 CHONDRITE | B | A/B | 1-46 | 1-34 |
| MIL 090343 | 0.7 | CO3 CHONDRITE | B | B | 1-38 | 1 |
| MIL 090346 | 2.4 | CO3 CHONDRITE | B | A | 2-38 | 1-4 |
| MIL 090351 | 1.3 | CO3 CHONDRITE | A/B | A | 1-50 | 12 |
| MIL 090480 | 65.4 | CO3 CHONDRITE | B | B | 0-43 | |
| MIL 090482 | 3.4 | CO3 CHONDRITE | B | B | 14-67 | 1-2 |
| MIL 090485 | 4.6 | CO3 CHONDRITE | B | B | 1-30 | 5-36 |
| MIL 090785 | 90.3 | CO3 CHONDRITE | C | A/B | 1-44 | 1 |
| MIL 07525 | 12.2 | CR3 CHONDRITE | B/C | A/B | 2-6 | 1-2 |
| MIL 07385 | 3.8 | CV3 CHONDRITE | B/CE | A/B | 2-29 | 1 |
| DOM 08476 | 25.1 | CV3 CHONDRITE | A/B | BE | 1-40 | 1 |
| MIL 090172 | 0.6 | CV3 CHONDRITE | B | B | 0-13 | |
| MIL 090174 | 0.8 | CV3 CHONDRITE | B | B | 0-43 | 2 |
| MIL 090175 | 2.4 | CV3 CHONDRITE | B | B | 1-11 | 3 |
| MIL 090176 | 3.6 | CV3 CHONDRITE | B | B | 1-34 | |
| MIL 090177 | 1.1 | CV3 CHONDRITE | B | B | 2-18 | |
| MIL 090178 | 0.7 | CV3 CHONDRITE | B | B | 0-14 | |
| MIL 090184 | 0.7 | CV3 CHONDRITE | B | B | 0-33 | |
| **Chondrites - Type 3** | | | | | | |
| DOM 08468 | 64.8 | H3.5 CHONDRITE | B/C | B | 4-44 | 2 |
| **E Chondrites** | | | | | | |
| MIL 07028 | 1158.9 | EH3 CHONDRITE | B | A/B | | 1-17 |
| MIL 07139 | 120.3 | EH3 CHONDRITE | B | A/B | | 1-5 |
| MIL 07654 | 2.0 | EH3 CHONDRITE | C | B | | 1-2 |
| MIL 090300 | 2.0 | EH4 CHONDRITE | C | C | | 1 |
| MIL 090320 | 3.6 | EL6 CHONDRITE | C | B | | 0.3 |

# Table 2

## Newly Classified Specimens Listed By Type

| Sample Number | Weight (g) | Classification | Weathering | Fracturing | % Fa | % Fs |
|---|---|---|---|---|---|---|
| **L Chondrites** | | | | | | |
| DOM 08337 | 27.6 | L CHONDRITE (IMPACT MELT) | C | A/B | 24 | 20 |
| DOM 08397 | 68.8 | L CHONDRITE (IMPACT MELT) | C | B | 24 | 20 |
| MIL 07218 | 3.1 | L CHONDRITE (IMPACT MELT) | B/C | A | 24-25 | 20-24 |
| MIL 090180 | 7.0 | L CHONDRITE (IMPACT MELT) | C | B | 24 | 20 |
| MIL 090330 | 2.0 | L CHONDRITE (IMPACT MELT) | CE | B | 24-25 | 21 |
| **R Chondrites** | | | | | | |
| MIL 07451 | 6.8 | R3 CHONDRITE | BE | B | 24-40 | 9 |
| MIL 07440 | 118.5 | R4 CHONDRITE | BE | A | 38 | 10 |
| **Stony Irons** | | | | | | |
| MIL 07424 | 0.4 | MESOSIDERITE | A/B | A | | 19-27 |

## **Notes to Tables 1 and 2:

**"Weathering" Categories:**

A: Minor rustiness; rust haloes on metal particles and rust stains along fractures are minor.
B: Moderate rustiness; large rust haloes occur on metal particles and rust stains on internal fractures are extensive.
C: Severe rustiness; metal particles have been mostly stained by rust throughout.
E: Evaporite minerals visible to the naked eye.

**"Fracturing" Categories:**

A: Minor cracks; few or no cracks are conspicuous to the naked eye and no cracks penetrate the entire specimen.
B: Moderate cracks; several cracks extend across exterior surfaces and the specimen can be readily broken along the cracks.
C: Severe cracks; specimen readily crumbles along cracks that are both extensive and abundant.

The ~ indicates classification by optical methods. This can include macroscopic assignment to one of several well-characterized, large pairing groups (e.g., the QUE LL5 chondrites), as well as classification based on oil immersion of several olivine grains to determine the approximate index of refraction for grouping into H, L or LL chondrites. Petrologic types in this method are determined by the distinctiveness of chondrules boundaries on broken surfaces of a 1-3 g chip. While this technique is suitable for general characterization and delineation of equilibrated ordinary chondrites, those undertaking detailed study of any meteorite classified by optical methods alone should use caution. It is recommended that a polished thin section be requested to accompany any chip and appropriate steps for a more detailed characterization should be undertaken by the user. (Tim McCoy, Smithsonian Institution)

# Table 3

## Tentative Pairings for New Meteorites

Table 3 summarizes possible pairings of the new specimens with each other and with previously classified specimens based on descriptive data in this newsletter issue. Readers who desire a more comprehensive review of the meteorite pairings in the U.S. Antarctic collection should refer to the compilation provided by Dr. E.R. D. Scott, as published in the Antarctic Meteorite Newsletter vol. 9 (no. 2) (June 1986). Possible pairings were updated in Meteoritical Bulletins 76, 79, 82 through 98, which are available online from the Meteoritical Society webpage:

http://meteoriticalsociety.org/simple_template.cfm?code=pub_bulletin

**ACAPULOITE/LODRANITE**

MIL 07259 with MIL 07409

**CB CHONDRITE**

MIL 07404, MIL 07558, and MIL 07598 with MIL 05082

**CO3 CHONDRITE**

DOM 08351 with DOM 08004

MIL 07315, MIL 07322, MIL 07342, MIL 07358, MIL 07361, MIL 07383, MIL 07400, MIL 07401, MIL 07408, MIL 07417, MIL 07418, MIL 07425, MIL 07439, MIL 07444, MIL 07445, MIL 07459, MIL 07473, MIL 07485, MIL 07616, MIL 07621, MIL 07626, MIL 07628, MIL 07629, MIL 07631, MIL 090216, MIL 090219, MIL 090301, MIL 090308, MIL 090327, MIL 090343, MIL 090346, MIL 090351, MIL 090480, MIL 090482, MIL 090485, and MIL 090785 with MIL 07099

**CV3 CHONDRITE**

MIL 07385, MIL 090172, MIL 090174, MIL 090175, MIL 090176, MIL 090177, MIL 090178, and MIL 090184 with MIL 07590

**EH3 CHONDRITE**

MIL 07028, MIL 07139, and MIL 07654 paired with MIL 07241

**L CHONDRITE (IMPACT MELT)**

DOM 08337 with DOM 08397

**UREILITES**

MIL 090356 with MIL 090340

# Petrographic Descriptions

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07028 | 17580 | 9.5 x 7.5 x 7.3 | 1158.920 | Miller Range | EH3 Chondrite |
| MIL 07139 | 18355 | 7.0 x 3.8 x 1.5 | 120.337 | | |
| MIL 07654 | 18137 | 2.0 x 1.0 x 0.5 | 2.000 | | |

Macroscopic Description: Kathleen McBride and Cecilia Satterwhite
Thin brown/black fusion crust is present on the fractured exterior surfaces. Areas without fusion crust have brown oxidation and rusty areas. The interiors are rusty with crystalline texture and visible metal.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
These sections are similar enough that one description suffices. The sections show an aggregate of chondrules (up to 1 mm), chondrule fragments, and pyroxene grains in a matrix of about 30% metal and sulfide, including daubreelite. Microprobe analyses show pyroxene is $Fs_{1-17}$, though most are $Fs_{1}$. Kamacite ranges from 2.4-2.7 wt. % Si. These meteorites are EH3 chondrites and are probably part of the MIL 07241 pairing group.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07218 | 19814 | 1.8 x 1.0 x 1.0 | 3.101 | Miller Range | L Chondrite (Impact Melt) |

Macroscopic Description: Cecilia Satterwhite
The exterior has brown/black fusion crust with rusty areas. The interior is a brown matrix with metal and a few dark gray/black patches and some metal. Small inclusions/chondrules are visible.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section has a comminuted matrix of pyroxene and feldspar, and contains a few chondrule fragments up to 0.5 mm. Metal occurs as small blebs. Olivines are Fa ~25, and pyroxenes range from $Fs_{20-24}$,$Wo_{1}$. This meteorite is an L chondrite impact melt.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07259 | 18332 | 2.0 x 1.5 x 0.5 | 3.510 | Miller Range | Acapul/Lodran |

Macroscopic Description: Kathleen McBride
The rough exterior is covered with rusty fusion crust. The interior is rusty black with some tiny inclusions.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy and Linda Welzenbach
The section consists of an equigranular aggregate of olivine, pyroxene, plagioclase, and metal with minor sulfide and chromite, with an average grain size of 0.5 mm. Olivine ($Fa_{12}$) and pyroxene ($Fs_{4-11}$) are homogeneous. Six calcic pyroxene grains were analyzed ($Fs_{4}$). Feldspars are also homogeneous ($An_{12}Or_{4}$). The meteorite is probably a transitional acapulcoite-lodranite similar to, e.g., GRA 95209. This is most likely paired with MIL 07409.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07310 | 19878 | 1.75 x 1.0 x 1.5 | 2.480 | Miller Range | CM1/2 Chondrite |

Macroscopic Description: Kathleen McBride
30% of the exterior has black fusion crust with polygonal fractures. The interior is black with light <1 mm sized inclusions.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section consists of highly-altered chondrules and matrix with carbonates and rare unaltered mafic silicates. Chondrule outlines are distinct, despite the extensive alteration. Olivine analyses are $Fa_{1}$ and pyroxenes are $Fs_{1}Wo_{35}$. The meteorite is a CM1/2 meteorite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07315 | 19484 | 1.0 x 0.75 x 0. 5 | 0.500 | Miller Range | CO3 Chondrite |
| MIL 07322 | 19123 | 2.5 x 1.25 x 2.25 | 10.320 | | |
| MIL 07342 | 17858 | 3.0 x 2.5 x 2.5 | 31.354 | | |
| MIL 07358 | 17886 | 1.8 x 1.5 x 1.3 | 6.637 | | |
| MIL 07361 | 17876 | 3.0 x 2.5 x 0.75 | 13.940 | | |
| MIL 07383 | 18612 | 2.2 x 2.0 x 2.0 | 17.784 | | |
| MIL 07400 | 18602 | 2.0 x 1.0 x 0.75 | 2.140 | | |
| MIL 07401 | 18619 | 1.0 x 1.0 x 0.75 | 1.610 | | |
| MIL 07408 | 18658 | 0.75 x 0.75 x 0.5 | 0.640 | | |
| MIL 07417 | 18653 | 1.5 x 1.25 x 1.0 | 2.290 | | |
| MIL 07418 | 18665 | 0.5 x 0.5 x 0.5 | 0.360 | | |
| MIL 07425 | 18693 | 0.7 x 0.4 x 0.2 | 0.208 | | |
| MIL 07439 | 19260 | 1.9 z 1.5 x 1.1 | 4.401 | | |
| MIL 07444 | 19692 | 2.8 x 2.0 x 2.0 | 15.772 | | |
| MIL 07445 | 19910 | 2.5 x 2.0 x 2.0 | 16.433 | | |
| MIL 07459 | 18662 | 2.5 x 3.0 x 2.0 | 18.331 | | |
| MIL 07473 | 17524 | 0.7 x 0.5 x 0.2 | 0.290 | | |
| MIL 07485 | 17543 | 0.75 x 0.75 x 0.5 | 0.420 | | |
| MIL 07616 | 18674 | 1.5 x 1.5 x 1.5 | 5.408 | | |
| MIL 07621 | 18641 | 1.75 x 1.25 x 1.25 | 5.210 | | |
| MIL 07626 | 18640 | 2.0 x 2.0 x 1.5 | 7.220 | | |
| MIL 07628 | 18608 | 2.0 x 1.25 x 1.0 | 4.350 | | |
| MIL 07629 | 18667 | 2.0 x 1. 5 x 1.25 | 6.090 | | |
| MIL 07631 | 18652 | 2.0 x 1.5 x 1.0 | 3.562 | | |
| MIL090216 | 20847 | 1.5 x 1.5 x 1.25 | 3.550 | | |
| MIL090219 | 20833 | 1.25 x 1.25 x 0.75 | 1.360 | | |
| MIL090301 | 20608 | 1.0 x 0.75 x 0.5 | 1.120 | | |
| MIL090308 | 20624 | 1.75 x 0.75 x 0.75 | 1.210 | | |
| MIL090327 | 20531 | 2.0 x 1.5 x 0.5 | 4.230 | | |
| MIL090343 | 20527 | 2.0 x 1.0 x 0.25 | 0.719 | | |
| MIL090346 | 20589 | 1.75 x 1.25 x 1.0 | 2.352 | | |
| MIL090351 | 20555 | 1.25 x 0.75 x 0.5 | 1.320 | | |
| MIL090480 | 20078 | 4.5 x 3.0 x 3.0 | 65.418 | | |
| MIL090482 | 20097 | 2.25 x 1.0 x 0.75 | 3.418 | | |
| MIL090485 | 20088 | 2.0 x 1.25 x 1.25 | 4.568 | | |
| MIL090785 | 20684 | 4.0 x 3.5 x 3.5 | 90.340 | | |

Macroscopic Description: Roger Harrington, Kathleen McBride and Cecilia Satterwhite

These carbonaceous chondrites have varying amounts (20-100%) of brown/black fusion crust with oxidation haloes and rusty areas. Some exterior surfaces are pitted. The interiors of these meteorites range in color from brown to dark gray to black. Most have a fine-grained matrix with light colored inclusions.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach

These sections are so similar that a single description suffices. The sections consist of abundant small (up to 1 mm) chondrules, chondrule fragments and mineral grains in a dark matrix. Metal and sulfide occur within and rimming the chondrules. Glass within chondrules appears to be very clear/fresh. CAIs are abundant in many sections (mostly Type A), and range in size up to 1 mm, many containing blue hibonite grains. At least one compound CAI was found. AOAs up to 1 mm exist, as well. Olivine ranges in composition from $Fa_{0-80}$. Pyroxene analyses range from $Fs_{0-44}$ (most from $Fs_{0-13}$). These meteorites are somewhat terrestrially altered. They are CO3 chondrites (likely type 3.0-3.2) and are probably members of the MIL 07099 pairing group

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07385 | 18391 | 2.5 x 1.2 x 0.7 | 3.847 | Miller Range | CV3 Chondrite |
| MIL090172 | 20310 | 1.25 x 1.0 x 0.5 | 0.560 | | |
| MIL090174 | 20304 | 1.5 x 1.0 x 0.5 | 0.780 | | |
| MIL090175 | 20307 | 2.5 x 1.5 x 0.75 | 2.430 | | |
| MIL090176 | 20301 | 2.5 x 1.5 x 1.0 | 3.600 | | |
| MIL090177 | 20305 | 1.5 x 1.0 x 0.75 | 1.090 | | |
| MIL090178 | 20335 | 1.0 x 0.75 x 0.75 | 0.740 | | |
| MIL090184 | 20322 | 1.5 x 1.0 x 0.5 | 0.650 | | |

Macroscopic Description: Kathleen McBride and Cecilia Satterwhite
Some of the exteriors have black patches of fusion crust, some have fractures and evaporites. The interiors range from a gray to black matrix with moderate to heavy oxidation. All have abundant mm sized inclusions and chondrules in various colors.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The sections are so similar that a single description suffices. The sections exhibit large chondrules (up to 3 mm) and CAIs in a dark matrix. Olivines range from $Fa_{0-43}$ and low-Ca pyroxene from $Fs_{1-5}$. The meteorites are unequilibrated carbonaceous chondrites, probably reduced CV3. These are likely paired with the MIL 07590 pairing group previously reported.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07404 | 18622 | 1.0 x 0.75 x 0.5 | 0.800 | Miller Range | CB Chondrite |
| MIL 07558 | 17983 | 1.0 x 0.75 x 0.5 | 0.730 | | |
| MIL 07598 | 17997 | 1.0 x 1.0 x 0.75 | 1.410 | | |

Macroscopic Description: Kathleen McBride
The exteriors are brown with rusty patches. The interiors are rusty with high amounts of metal.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The sections consist of round metal chondrules (up to 1 cm) and chondrule fragments. Chondrule fragments up to 1 mm are dominated by radiating pyroxene textures with olivine present. Silicates are magnesian ($Fa_{4-47}$, $Fs_{2-9}Wo_{0-12}$). The meteorites are CB chondrites and may be paired with the MIL 05082 pairing group.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07424 | 18697 | 0.7 x 0.7 x 0.3 | 0.361 | Miller Range | Mesosiderite |

Macroscopic Description: Cecilia Satterwhite
The exterior has some brown/black fusion crust with rusty areas.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section consists largely of nickel-iron, with a minor amount of silicate material. Much of the silicate material consists of single pyroxene and plagioclase, but with some crystals up to 0.5 mm long; rare olivine crystals are also present. Pyroxene compositions are $Fs_{19-27}Wo_{1-3}$. Plagioclase compositions are $An_{90}$. This meteorite is a mesosiderite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07440 | 17562 | 5.6 x 3.8 x 2.3 | 118.464 | Miller Range | R4 Chondrite |

Macroscopic Description: Cecilia Satterwhite
Exterior has black patches of fusion crust. Most of the exterior is gray with some evaporites. The interior is mottled gray with some darker gray areas and has a coarse grained texture.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section consist of ~50% of well-defined, (up to 1 mm) chondrules and chondrule fragments set in a slightly recrystallized matrix of silicates and sulfides (both troilite and pentlandite). Olivines ($Fs_{10}$) and pyroxenes ($Fa_{38}$) are nearly homogeneous. The meteorite is an R chondrite, probably of petrologic type 4.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07451 | 18716 | 3.0 x 2.0 x 1.0 | 6.760 | Miller Range | R3 Chondrite |

Macroscopic Description: Roger Harrington
80% of the exterior is covered with dull black fusion crust. The interior is a fine-grained tan matrix with some light blue evaporate material on one surface.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section shows well-defined chondrules (up to 1.5 mm across) and silicate grains in a slightly weathered matrix. Iron-nickel metal and sulfides are present but somewhat oxidized. Microprobe analyses show olivine compositions of $Fa_{24-47}$. Pyroxene is present in minor amounts as diopside ($Fs_9Wo_{47}$). The meteorite is an R3 chondrite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07460 | 18389 | 1.75 x 1.25 x 0.5 | 2.140 | Miller Range | CM1 Chondrite |

Macroscopic Description: Kathleen McBride
50% of the exterior has black fusion crust with polygonal fractures. The interior matrix is a black with evaporites and tiny light colored inclusions.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section consists of a few small chondrules (up to 0.5 mm) that have been completely replaced by phyllosilicate set in an Fe-rich serpentine matrix. No isolated mineral grains or CAIs are apparent; sulfide grains are present as are abundant coarse carbonate grains. The section exhibits a strong fabric formed by the alignment of elongated remnant chondrules. Unaltered olivine or pyroxene grains of sufficient size for microprobe analyses were not found. This meteorite is a CM1 chondrite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07525 | 19087 | 2.7 x 2.0 x 1.3 | 12.154 | Miller Range | CR3 Chondrite |

Macroscopic Description: Cecilia Satterwhite
Brown/black fusion crust covers the exterior of this flat meteorite with some iridescent areas. The interior is a black matrix with some metal and some brown weathered areas. Abundant mm sized inclusions are visible, lighter than the matrix, and some are weathered.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section exhibits large (up to 1 mm), moderately-defined, metal-poor chondrules and rare CAI's in a dark matrix of FeO-rich phyllosilicate. Silicate analyses shows olivines $Fa_{2-6}$, and pyroxenes $Fs_{1-2}Wo_1$. The meteorite is probably a CR3 chondrite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 07689 | 18611 | 2.5 x 2.0 x 2.0 | 12.160 | Miller Range | CM1 Chondrite |

Macroscopic Description: Kathleen McBride
The exterior has no fusion crust and is a dull brown/black rusty surface. The interior is grayish brown with lighter oxidation rind.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section consists of a few chondrules (up to 1 mm) that have been completely replaced by phyllosilicate set in an Fe-rich serpentine matrix. No isolated mineral grains or CAIs are apparent; sulfide and carbonate grains are present. Unaltered olivine or pyroxene grains of sufficient size for microprobe analyses were not found. This meteorite is a CM1 chondrite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| DOM 08337 | 17129 | 4.0 x 2.0 x 2.0 | 27.620 | Dominion Range | L Chondrite(Impact Melt) |
| DOM 08397 | 18511 | 5.5 x 2.5 x 2.5 | 68.770 | | |

Macroscopic Description: Kathleen McBride
The exteriors range from 30-100% brown/black fusion crust with oxidation haloes. The interiors are rusty black with high metal content.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
These sections are composed of light colored, recrystallized clasts (up to 5 mm) surrounded by black veins of finely comminuted mixed silicates. Metal exists as individual blebs/grains. Olivines are of composition $Fa_{24}$ and pyroxenes are $Fs_{20}Wo_{2}$.These meteorites are L chondrite impact melt breccias.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| DOM 08351 | 18241 | 5.5 x 1.5 x 1.25 | 26.300 | Dominion Range | CO3 Chondrite |

Macroscopic Description: Kathleen McBride
The exterior is covered with 100% brown/black fusion crust with polygonal fractures. The interior is a black fine grained matrix with light colored inclusions. The meteorite is moderately hard.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section consists of abundant (up to 1 mm) chondrules, chondrule fragments and mineral grains in a dark matrix. Metal and sulfide occur within and rimming the chondrules. Olivine ranges in composition from $Fa_{0-44}$ and pyroxenes range from $Fs_{1-3}$. This meteorite is a CO3 chondrite and is possibly paired with DOM 08004 pairing group.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| DOM 08372 | 18231 | 2.5 x 1.5 x 1.25 | 6.630 | Dominion Range | Ureilite |

Macroscopic Description: Kathleen McBride
The exterior has smooth, black fusion crust with polygonal fractures over most of its surface. The interior is a rusty black matrix with high metal content.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section consists mostly of an aggregate of large pyroxene grains up to 2.5 mm across with some smaller olivines. Individual olivine and pyroxenes grains are rimmed by carbon-rich material containing traces of metal. Olivines have compositions of $Fa_{22}$. Pigeonite ($Fs_{18}$,$Wo_{10}$) grains exhibit irregular lamellae. The meteorite is a ureilite.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| DOM 08468 | 19938 | 4.0 x 4.0 x 2.5 | 64.810 | Dominion Range | H3.5 Chondrite |

Macroscopic Description: Kathleen McBride
The exterior has 40% black fusion crust with pits. The dark gray interior is fine grained and has <mm sized light chondrules, high metal and rusty areas.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section exhibits numerous, well-defined chondrules (up to 1.5 mm) in a black matrix of fine-grained silicates, metal and troilite. Polysynthetically twinned pyroxene is abundant. The meteorite is moderately weathered. Silicates are unequilibrated; olivines range from $Fa_{4-44}$, and pyroxenes are $Fs_{34}Wo_{2.}$ The meteorite is an H3 chondrite (estimated subtype 3.5).

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| DOM 08476 | 18441 | 4.0 x 2.0 x 2.0 | 25.079 | Dominion Range | CV3 Chondrite |

Macroscopic Description: Roger Harrington
This meteorite has dull black fusion crust over 40% of the exterior, with a trace of pale blue evaporites, probably sulfates. The interior is a dark gray fine grained matrix with <1mm light gray CAI's throughout.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
The section exhibits large chondrules (up to 3 mm) and CAIs in a dark matrix. Olivines range from $Fa_{1-40}$ and low-Ca pyroxene is $Fs_1$. The meteorite is an unequilibrated carbonaceous chondrite, probably a reduced CV3.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL090180 | 20334 | 2.5 x 1.5 x 1.5 | 6.950 | Miller Range | L Chondrite (Impact Melt) |

Macroscopic Description: Kathleen McBride
20% of the exterior has weathered rusty brown fusion crust. The interior is a rusty black, fine grained matrix.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section is shock-blackened, and is composed of recrystallized silicate grains. Metal exists as stringers throughout the section. Olivines are of composition $Fa_{24}$ and pyroxenes are $Fs_{20}Wo_2$. This meteorite is an L chondrite impact melt.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL090300 | 20611 | 1.75 x 1.0 x 0.75 | 1.980 | Miller Range | EH4 Chondrite |

Macroscopic Description: Kathleen McBride
The exterior is rusty brown in color with no fusion crust visible. The interior is a brown matrix with metal and white to light gray chrondrules.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section shows an aggregate of chondrules (up to 1 mm), chondrule fragments, and pyroxene grains in a matrix of about 30% metal and sulfide, including daubreelite. Microprobe analyses show pyroxene is $Fs_1$. Kamacite contains from 2.7-3.0 wt.% Si. This meteorite is an EH chondrite, probably a type 4.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL090320 | 20514 | 2.5 x 0.75 x 0.75 | 3.640 | Miller Range | EL6 Chondrite |

Macroscopic Description: Kathleen McBride
20% of the exterior has brown/black fusion crust with polygonal fractures. The interior is a rusty brown with high metal.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy and Linda Welzenbach
The section shows an aggregate of chondrules (up to 1 mm), chondrule fragments, and pyroxene grains in a matrix of about 30% metal and sulfide. Chondrules contain rare olivine grains. Weathering is moderate, with staining of some enstatite grains and minor alteration of metal and sulfides. This meteorite contains sinoite, $Si_2N_2O$. Microprobe analyses show pyroxenes of composition $Fs_{0.3}$. The meteorite is an enstatite chondrite, probably an EL6.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL090330 | 20541 | 1.5 x 1.0 x 0.75 | 2.010 | Miller Range | L Chondrite (Impact Melt) |

Macroscopic Description: Kathleen McBride
Thin black/brown patches of fusion crust covers 40% of the exterior surface. The interior is rusty black in color with evaporites and high metal.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section has a comminuted matrix of olivine, pyroxene and feldspar, and contains a few chondrule fragments up to 1 mm. Olivines are $Fa_{24-25}$ and pyroxenes are $Fs_{21}Wo_{1}$. This meteorite is an L chondrite impact melt.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL090340 | 20519 | 1.5 x 1.25 x 1.25 | 4.687 | Miller Range | Ureilite |
| MIL090356 | 20575 | 1.5 x 1.25 x 1.0 | 3.191 | | |

Macroscopic Description: Kathleen McBride
The exteriors have shiny dark brown fusion crust with some rusty patches and pits. The interiors are dark gray to black with crystalline textures, rust and high metal.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
These sections consist of an aggregate of equigranular (up to 1-2 mm) olivine grains. Individual olivine grains are rimmed by carbon-rich material containing grains of metal. Olivine has cores of $Fa_{27-30}$. Pyroxene grains have compositions of $Fs_{10-26}$ and $Wo_{2-44}$. These meteorites are ureilites.

| Sample No. | Field No. | Dimensions(cm) | Weight(g) | Location | Classification |
|---|---|---|---|---|---|
| MIL 090489 | 20079 | 1.25 x 1.0 x 0.75 | 1.027 | Miller Range | CM1/2 Chondrite |

Macroscopic Description: Kathleen McBride
30% of the exterior surface is covered with brown/black fusion crust with polygonal fractures. The interior is a black matrix, fairly hard with metal and tiny light colored and rusty inclusions/chondrules.

Thin Section (,2) Description: Cari Corrigan and Linda Welzenbach
This section consists of a few chondrules, most of which are highly altered, and matrix with rare unaltered mafic silicates. One CAI was found in the section. Olivine analyses are $Fa_{0-30.}$ No unaltered pyroxenes were found. The meteorite is a CM1/2 meteorite.

# Sample Request Guidelines

The Meteorite Working Group (MWG), is a peer-review committee which meets twice a year to guide the collection, curation, allocation, and distribution of the U.S. collection of Antarctic meteorites. The deadline for submitting a request is 2 weeks prior to the scheduled meeting.

Requests that are received by the MWG secretary by **Feb 28, 2011 deadline** will be reviewed at the MWG meeting **Mar. 11-12, 2011 in Houston, TX**. Requests that are received after the deadline may be delayed for review until MWG meets again in the Fall of 2011. Please submit your requests on time. Questions pertaining to sample requests can be directed to the MWG secretary by e-mail, fax or phone.

Requests for samples are welcomed from research scientists of all countries, regardless of their current state of funding for meteorite studies. Graduate student requests should have a supervising scientist listed to confirm access to facilities for analysis. All sample requests will be reviewed in a timely manner. Sample requests that do not meet the curatorial allocation guidelines will be reviewed by MWG. Issuance of samples does not imply a commitment by any agency to fund the proposed research. Requests for financial support must be submitted separately to an appropriate funding agency. As a matter of policy, U.S. Antarctic meteorites are the property of the National Science Foundation, and all allocations are subject to recall.

Samples can be requested from any meteorite that has been made available through announcement in any issue of the ***Antarctic Meteorite Newsletter*** (beginning with 1(1) in June, 1978). Many of the meteorites have also been described in five *Smithsonian Contributions to the Earth Sciences*: Nos. 23, 24, 26, 28, and 30. Tables containing all classified meteorites as of August 2006 have been published in the Meteoritical Bulletins and *Meteoritics* and *Meteoritics and Planetary Science* (these are listed in Table 3 of this newsletter. They are also available online at:

http://www.meteoriticalsociety.org/simple_template.cfm?code=pub_bulletin

The most current listing is found online at:

**http://curator.jsc.nasa.gov/curator/antmet/us_clctn.htm**

All sample requests should be made electronically using the form at:

**http://curator.jsc.nasa.gov/curator/antmet/samreq.htm**

The purpose of the sample request form is to obtain all information MWG needs prior to their deliberations to make an informed decision on the request. Please use this form if possible.

The preferred method of request transmittal is via e-mail. Please send requests and attachments to:

JSC-ARES-MeteoriteRequest@nasa.gov

Type **MWG Request** in the e-mail subject line. Please note that the form has signature blocks. The signature blocks should only be used if the form is sent via Fax or mail.

Each request should accurately refer to meteorite samples by their respective identification numbers and should provide detailed scientific justification for proposed research. Specific requirements for samples, such as sizes or weights, particular locations (if applicable) within individual specimens, or special handling or shipping procedures should be explained in each request. Some meteorites are small, of rare type, or are considered special because of unusual properties. Therefore, it is very important that all requests specify both the optimum amount of material needed for the study and the minimum amount of material that can be used. Requests for thin sections that will be used in destructive procedures such as ion probe, laser ablation, etch, or repolishing must be stated explicitly.

Consortium requests should list the members in the consortium. All necessary information should be typed on the electronic form, although informative attachments (reprints of publication that explain rationale, flow diagrams for analyses, etc.) are welcome.

## Antarctic Meteorite Laboratory Contact Numbers

Please submit request to**: JSC-ARES-MeteoriteRequest@nasa.gov**

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# *Meteorites On-Line*

Several meteorite web site are available to provide information on meteorites from Antarctica and elsewhere in the world. Some specialize in information on martian meteorites and on possible life on Mars. Here is a general listing of ones we have found. We have not included sites focused on selling meteorites even though some of them have general information. Please contribute information on other sites so we can update the list.

| | |
|---|---|
| **JSC Curator, Antarctic meteorites** | http://curator.jsc.nasa.gov/antmet/index.cfm |
| **JSC Curator, Lunar Meteorite Compendium** | http://curator.jsc.nasa.gov/antmet/lmc/index.cfm |
| **JSC Curator, martian meteorites** | http://curator.jsc.nasa.gov/antmet/marsmets/index.cfm |
| **JSC Curator, Mars Meteorite Compendium** | http://curator.jsc.nasa.gov/antmet/mmc/index.cfm |
| **Antarctic collection** | http://geology.cwru.edu/~ansmet/ |
| **Smithsonian Institution** | http://www.minerals.si.edu/ |
| **LPI martian meteorites** | http://www.lpi.usra.edu |
| **NIPR Antarctic meteorites** | http://www.nipr.ac.jp/ |
| **Meteoritical Bulletin online Database** | http://tin.er.usgs.gov/meteor/metbull.php |
| **Museo Nazionale dell'Antartide** | http://www.mna.it/english/Collections/collezioni_set.htm |
| **BMNH general meteorites** | http://www.nhm.ac.uk/research-curation/departments/mineralogy/research-groups/meteoritics/index.html |
| **Chinese Antarctic meteorite collection** | http://birds.chinare.org.cn/en/yunshiku/ |
| **UHI planetary science discoveries** | http://www.psrd.hawaii.edu/index.html |
| **Meteoritical Society** | http://www.meteoriticalsociety.org/ |
| **Meteoritics and Planetary Science** | http://meteoritics.org/ |
| **Meteorite! Magazine** | http://meteoritemag.uark.edu |
| **Geochemical Society** | http://www.geochemsoc.org |
| **Washington Univ. Lunar Meteorite** | http://epsc.wustl.edu/admin/resources/moon_meteorites.html |
| **Washington Univ. "meteor-wrong"** | http://epsc.wustl.edu/admin/resources/meteorites/meteorwrongs/meteorwrongs.htm |

## Other Websites of Interest

| | |
|---|---|
| **Mars Exploration** | http://mars.jpl.nasa.gov |
| **Rovers** | http://marsrovers.jpl.nasa.gov/home/index.html |
| **Near Earth Asteroid Rendezvous** | http://near.jhuapl.edu/ |
| **Stardust Mission** | http://stardust.jpl.nasa.gov |
| **Genesis Mission** | http://genesismission.jpl.nasa.gov |
| **ARES** | http://ares.jsc.nasa.gov/ |
| **Astromaterials Curation** | http://curator.jsc.nasa.gov/ |