Antarctic Meteorite Newsletter

Volume 35, Number 1 March 2012

Curator's Comments

Kevin Righter
NASA-JSC

This newsletter reports 308 new meteorites from the 2009 ANSMET season from the Miller Range (MIL). The new samples include 25 carbonaceous chondrites (15 CO, 2 CV, 1 CK, 1 CB, and 6 CM), 1 EH6 chondrite, 1 EL6 chondrite, and an enstatite chondrite impact melt. Among the new achondrites are 1 ureilite, and 1 ungrouped achondrite. We aim to finish classifying the 2009 season samples in the next newsletter. There are a number of additional carbonaceous chondrites already recognized, but too late to be announced for this newsletter, so stay tuned for more Miller Range riches.

The meteorite collection received 93 requests for the Fall 2011 MWG meeting, and although most of the sample chips have been prepared and sent out, there are a number of thin sections that still are being prepared. Thanks for your patience during these busy times for the meteorite collection.

We would like to remind PIs of several of their responsibilities regarding meteorite sample loans:

- Please return any samples that have not been used for > 5 years.
- Please return thin or thick sections at any time when you realize your research on that section is finished.
- If you know you will retire soon or are no longer active in research, please prepare samples for return.
- If you have recently moved or changed addresses, please send us your new contact information, including a new email address.
- Please sign and return the sample assignment forms when you receive samples, that is the only way we know that samples have been received.

Return information can be found at the website below:

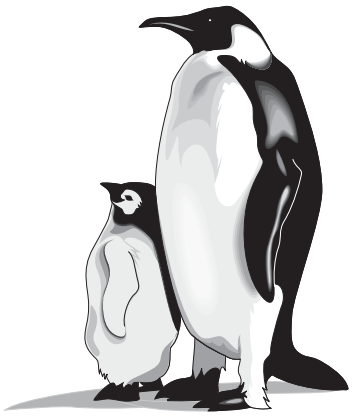
http://curator.jsc.nasa.gov/antmet/returns.cfm

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
March 9, 2012

MWG Meets
March 23-24, 2012

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

Report on the 2011-2012 ANSMET Field Season

Ralph Harvey, ANSMET

The Miller Range icefields are one of the more scenic spots ANSMET has gone to recover meteorites, one of the most productive in terms of unusual specimens, and one of the more unpredictable in terms the weather and where meteorites are found. Roughly 10 days of reconnaissance in 1985, 1999 and 2003 yielded nearly 150 specimens from dozens of icefields of varying sizes stretched over a very large geographical area. Our first season of systematic searching (2005-2006) began with a 7-day storm on arrival, followed by several inches of snow, burying all the meteorites. No wind followed to blow it away, and less than 170 meteorites were recovered. Field teams in 2007-2008 and 2009-2010 enjoyed spectacular weather and together they brought 10x that 2005 haul, including lunar and martians and other fun stuff. In each of those seasons we found meteorites in improbable situations; on the slopes of mountains, on icefields barely the size of a tennis court, and in moraines cut off from the plateau by other moraines.

The recently completed 2011-2012 season continues the trend. Our first days in the field were greeted by heavy snows, limiting our ability to search the icefields at the northern end of the Miller Range, where we had planned to spend about a week. At the end of that week we had been able to search for only part of two days. Tired of waiting for a windstorm to clear the ice, we moved on to our second camp at the Southern icefields. Unfortunately, the snow followed us a few days later, adding a few more inches and making meteorite searches a sisyphean task (I apologize for that word; I guess we played a bit too much Scrabble). Over the holidays several days of 20-30 kt. wind got rid of a decent portion of the snow and created some awesome drifts in camp. I left the team the next day and of course, the weather was fine for most of the rest of the season.

One of many interesting achondrites that will be part of the MIL 11xxx sample collection.

In the end, we managed to search for meteorites on only about 15 days of the 42 we were in the field, not quite what we hoped for. That said, the Miller Range continued to amaze us, with meteorites showing up in yet more unusual settings, such as in windblown "rock dunes" along the edges of a glacier. The season's total was 302, less than half what I would have guessed but still respectable. It does mark a milestone, putting us (barely) over the 20,000 mark for specimens recovered by ANSMET since 1976. We'll go back to the Miller Range sometime soon. Regardless of the weather, it's an amazingly productive site. Here's hoping that our experiences this year paid our weather dues for a while.

A view in camp from the holiday wind storm at the end of 2011, showing snowmobiles on their way to full burial.

From right to left: Jake Maule, Katie Joy, Jesper Holst, Tim Swindle, John Schutt, Christian Schrader, Jim Karner, and Anne Peslier

Clockwise from upper left: Christian Schrader, Jim Karner, Ralph Harvey, Jake Maule, John Schutt, Katie Joy, Jesper Holst, Anne Peslier.

Report from the Smithsonian

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

This newsletter announces the classification of 308 meteorites. Since the last newsletter, a small miracle has occurred and our thin section preparatory has been filled! We are extremely lucky to have been able to bring back Tim Gooding, our former thin section guru, from his brief stint at NIST. This means that with Nicole Lunning (our current contractor) and Tim both on hand, our thin section making capabilities are once again fully operational. You can only imagine what a great thing this is for us, as someone with Tim's expertise (and experience in making meteorite thin sections) is hard to come by.

An important piece of news that affects requests: The new curation facility at our offsite support center is now operational! We are still working out some of the bugs, but for the most part, we are back on track and should be able to fill requests within the next couple of months. Thanks to everyone for their patience during this lengthy construction process. We will now be much better prepared to serve your needs, and the meteorites are being stored in a better environment for future preservation.

Tim Gooding

New Meteorites

2009 Collection

Pages 5-17 contain preliminary descriptions and classifications of meteorites that were completed since publication of issue 34(2), Sept. 2011. 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
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Cari Corrigan, Nicole Lunning, Linda Welzenbach, Emma Bullock, Tim McCoy, and Andrew Beck
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
BUC — Buckley Island
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

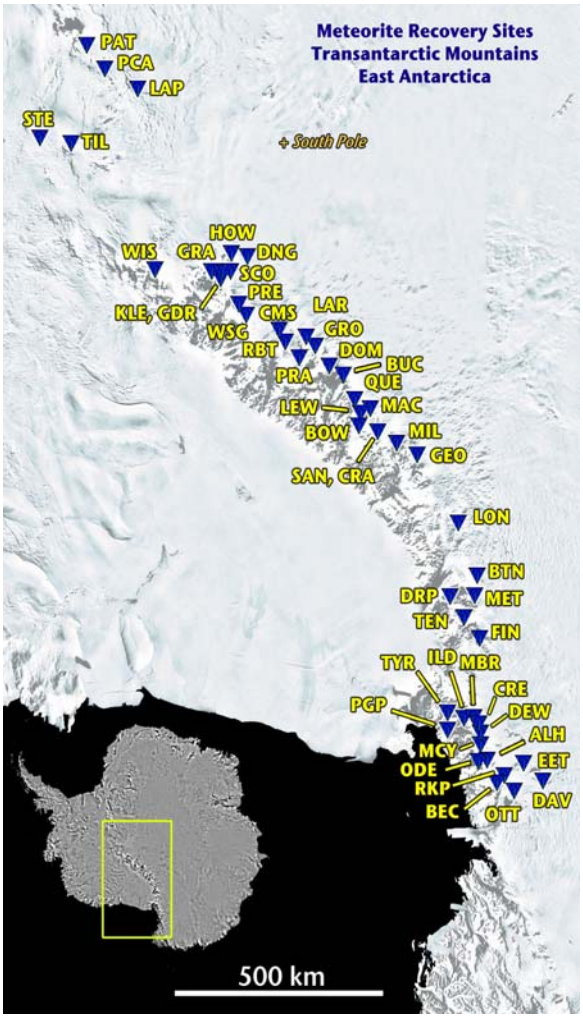

Table 1

List of Newly Classified Antarctic Meteorites **

Sample Number		Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MIL 090005	~	1194.4	L5 CHONDRITE	B/C	A/B		
MIL 090009	~	1246.9	LL5 CHONDRITE	A/B	A		
MIL 090018	~	1112.3	L6 CHONDRITE	A	A/B		
MIL 090232	~	106.0	LL6 CHONDRITE	A/B	A		
MIL 090234	~	104.0	L5 CHONDRITE	B/C	A		
MIL 090237	~	73.4	L5 CHONDRITE	B/C	A		
MIL 090238	~	71.3	LL6 CHONDRITE	B/C	A		
MIL 090239	~	54.3	L6 CHONDRITE	B/C	A		
MIL 090290	~	85.9	L5 CHONDRITE	B/C	A/B		
MIL 090295	~	6.4	L5 CHONDRITE	B	B		
MIL 090296	~	13.9	H6 CHONDRITE	C	B		
MIL 090297	~	16.7	L5 CHONDRITE	C	B		
MIL 090298	~	11.7	L5 CHONDRITE	C	B		
MIL 090299	~	21.0	L6 CHONDRITE	B/C	B		
MIL 090400	~	57.5	L6 CHONDRITE	C	A		
MIL 090401	~	92.3	L5 CHONDRITE	C	B		
MIL 090402	~	85.3	L6 CHONDRITE	B/C	A		
MIL 090403	~	68.8	L5 CHONDRITE	C	A/B		
MIL 090404	~	98.0	L5 CHONDRITE	C	A/B		
MIL 090407	~	52.0	L6 CHONDRITE	B/CE	A		
MIL 090408	~	31.8	L6 CHONDRITE	C	A/B		
MIL 090409	~	50.5	L5 CHONDRITE	A/B	A		
MIL 090441		15.3	EL6 CHONDRITE	Be	B		0-1
MIL 090450	~	98.6	LL6 CHONDRITE	B	B		
MIL 090452	~	46.1	LL6 CHONDRITE	B	B		
MIL 090455	~	82.4	LL6 CHONDRITE	B	A/B		
MIL 090456	~	38.9	LL6 CHONDRITE	A/B	A		
MIL 090460	~	25.7	LL6 CHONDRITE	B	B		
MIL 090471	~	14.1	LL5 CHONDRITE	B	B		
MIL 090472	~	25.4	LL5 CHONDRITE	B	B		
MIL 090475	~	20.0	LL6 CHONDRITE	B	B		
MIL 090476	~	25.9	L5 CHONDRITE	C	B		
MIL 090477	~	25.1	LL6 CHONDRITE	AB	A		
MIL 090479	~	9.2	LL6 CHONDRITE	B	B		
MIL 090490	~	1.6	H6 CHONDRITE	B/C	B		
MIL 090491	~	1.9	H6 CHONDRITE	B/C	B		
MIL 090492	~	2.1	LL6 CHONDRITE	A/B	B		
MIL 090493	~	3.0	L5 CHONDRITE	C	B		
MIL 090494	~	1.9	L6 CHONDRITE	B/C	B		
MIL 090495		1.0	L6 CHONDRITE	B	B	25-2	21-2
MIL 090496	~	1.3	H6 CHONDRITE	B/C	B		
MIL 090497	~	0.6	H5 CHONDRITE	B	B		
MIL 090498	~	0.7	LL5 CHONDRITE	B	B		
MIL 090499	~	2.1	H6 CHONDRITE	C	B		
MIL 090500	~	0.8	H6 CHONDRITE	C	B		
MIL 090501	~	3.2	H6 CHONDRITE	C	B		
MIL 090502	~	3.1	H5 CHONDRITE	C	B		
MIL 090503	~	0.6	H6 CHONDRITE	C	B		
MIL 090504	~	1.5	H6 CHONDRITE	C	B		
MIL 090505	~	9.2	LL5 CHONDRITE	B	B		

Sample Number		Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MIL 090506	~	3.2	H6 CHONDRITE	C	B		
MIL 090507	~	2.5	H6 CHONDRITE	C	B		
MIL 090508	~	1.6	H5 CHONDRITE	C	B		
MIL 090509	~	0.9	H6 CHONDRITE	C	B		
MIL 090520	~	1.8	H6 CHONDRITE	C	B		
MIL 090521		2.7	CK6 CHONDRITE	B	A/B	28	21
MIL 090522	~	0.3	H6 CHONDRITE	B	B		
MIL 090523	~	3.0	H6 CHONDRITE	B/C	B		
MIL 090524	~	2.8	H6 CHONDRITE	B/C	B		
MIL 090525	~	1.9	H6 CHONDRITE	B/C	B		
MIL 090526	~	1.7	L6 CHONDRITE	B/C	B		
MIL 090527	~	0.9	H6 CHONDRITE	B	B		
MIL 090528	~	2.3	H6 CHONDRITE	C	B		
MIL 090529	~	0.9	H6 CHONDRITE	B	B		
MIL 090540	~	0.3	H6 CHONDRITE	C	B		
MIL 090541	~	1.0	L6 CHONDRITE	B	A/B		
MIL 090542	~	0.6	H6 CHONDRITE	Be	A/B		
MIL 090543		4.8	CO3 CHONDRITE	C	A/B	0-39	1-34
MIL 090544	~	3.0	H5 CHONDRITE	C	A/B		
MIL 090545	~	1.3	L6 CHONDRITE	Ce	A/B		
MIL 090546	~	1.7	H6 CHONDRITE	Ce	A/B		
MIL 090547	~	2.4	H6 CHONDRITE	C	A/B		
MIL 090548	~	6.3	H6 CHONDRITE	Ce	A/B		
MIL 090549	~	2.2	H6 CHONDRITE	C	A/B		
MIL 090550	~	13.5	L6 CHONDRITE	C	B		
MIL 090551	~	4.9	H5 CHONDRITE	C	B		
MIL 090552	~	5.2	LL6 CHONDRITE	B/C	A/B		
MIL 090553	~	7.8	LL6 CHONDRITE	A	A/B		
MIL 090555	~	2.6	L5 CHONDRITE	B/C	B/C		
MIL 090556	~	1.3	L6 CHONDRITE	C	A/B		
MIL 090557	~	3.1	L5 CHONDRITE	C	B/C		
MIL 090559	~	8.7	L6 CHONDRITE	C	C		
MIL 090570	~	4.6	LL6 CHONDRITE	B/C	A/B		
MIL 090571	~	6.2	L5 CHONDRITE	A/B	A		
MIL 090572	~	2.9	L5 CHONDRITE	B	A/B		
MIL 090573	~	16.0	L5 CHONDRITE	C	B		
MIL 090574	~	2.9	LL5 CHONDRITE	B	A/B		
MIL 090575	~	7.9	L5 CHONDRITE	A/B	A		
MIL 090576	~	3.6	L6 CHONDRITE	A/B	A		
MIL 090577	~	8.1	LL5 CHONDRITE	B/C	B		
MIL 090578	~	8.3	H6 CHONDRITE	C	B		
MIL 090579	~	9.8	L6 CHONDRITE	B/C	B		
MIL 090580	~	147.2	LL6 CHONDRITE	A/B	A		
MIL 090581	~	88.2	LL6 CHONDRITE	A/B	A		
MIL 090582	~	83.8	LL6 CHONDRITE	B	A/B		
MIL 090583	~	32.7	L6 CHONDRITE	B/C	A		
MIL 090584	~	65.5	LL5 CHONDRITE	B/C	A/B		
MIL 090585	~	56.2	L5 CHONDRITE	B	A		
MIL 090587	~	7.3	LL6 CHONDRITE	A/B	A		
MIL 090590	~	4.7	LL6 CHONDRITE	B	A		
MIL 090592	~	6.7	L6 CHONDRITE	B/C	B		
MIL 090595	~	1.9	L6 CHONDRITE	C	B		
MIL 090599	~	3.0	L6 CHONDRITE	C	A/B		
MIL 090600	~	12.5	L6 CHONDRITE	C	A/B		
MIL 090601	~	1.3	LL6 CHONDRITE	B	A		

Sample Number		Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MIL 090602	~	12.6	L5 CHONDRITE	C	A/B		
MIL 090603	~	15.9	LL6 CHONDRITE	A	A		
MIL 090604	~	7.1	L6 CHONDRITE	C	C		
MIL 090605	~	1.3	LL5 CHONDRITE	B/C	A		
MIL 090606	~	5.7	L6 CHONDRITE	B	B		
MIL 090607	~	0.5	L6 CHONDRITE	B	B		
MIL 090608	~	3.3	L6 CHONDRITE	B	B		
MIL 090609	~	13.8	L5 CHONDRITE	B	B		
MIL 090620	~	93.4	L6 CHONDRITE	B	A/B		
MIL 090621	~	32.9	L6 CHONDRITE	A	A		
MIL 090622	~	152.4	H5 CHONDRITE	C	B/C		
MIL 090623	~	78.0	H5 CHONDRITE	C	A/B		
MIL 090624	~	35.0	L6 CHONDRITE	A/B	A/B		
MIL 090625	~	54.6	L6 CHONDRITE	A/B	A/B		
MIL 090626	~	119.0	H5 CHONDRITE	C	B		
MIL 090627	~	40.4	L5 CHONDRITE	B/C	B		
MIL 090628	~	53.7	L6 CHONDRITE	A	A/B		
MIL 090629	~	30.6	H5 CHONDRITE	C	C		
MIL 090630	~	11.1	L5 CHONDRITE	B	B		
MIL 090631	~	6.9	H6 CHONDRITE	C	B		
MIL 090632	~	0.5	L5 CHONDRITE	B	B		
MIL 090633	~	9.4	L5 CHONDRITE	A/B	A/B		
MIL 090634	~	19.4	L6 CHONDRITE	B	B/C		
MIL 090635	~	10.8	H6 CHONDRITE	C	B		
MIL 090636	~	26.5	L5 CHONDRITE	C	B		
MIL 090637	~	16.4	H6 CHONDRITE	B	A		
MIL 090638	~	24.5	L6 CHONDRITE	B	A		
MIL 090639	~	4.9	L6 CHONDRITE	A/B	A/B		
MIL 090642	~	38.2	LL6 CHONDRITE	A/B	A		
MIL 090643	~	59.7	LL6 CHONDRITE	A/B	A		
MIL 090647	~	85.4	LL6 CHONDRITE	B	A		
MIL 090651	~	116.2	LL6 CHONDRITE	A/B	A		
MIL 090652	~	14.1	H6 CHONDRITE	B/C	A		
MIL 090653	~	87.2	LL6 CHONDRITE	A/B	A		
MIL 090654	~	82.3	L6 CHONDRITE	B	A		
MIL 090655	~	27.4	LL6 CHONDRITE	A/B	A		
MIL 090656	~	19.3	L5 CHONDRITE	B/C	A		
MIL 090658	~	12.8	H6 CHONDRITE	B/C	A		
MIL 090659	~	17.4	L5 CHONDRITE	B/C	A		
MIL 090660		6.5	LL6 CHONDRITE	B	B	30	24-2
MIL 090661	~	3.7	H5 CHONDRITE	C	C		
MIL 090662	~	7.0	H6 CHONDRITE	C	B		
MIL 090663	~	31.6	L6 CHONDRITE	B	B		
MIL 090664	~	5.2	H6 CHONDRITE	C	A		
MIL 090665	~	7.2	H6 CHONDRITE	C	A		
MIL 090666	~	5.5	L5 CHONDRITE	C	B		
MIL 090667	~	1.4	L5 CHONDRITE	C	B		
MIL 090668	~	5.2	L6 CHONDRITE	A/B	A/B		
MIL 090669	~	2.0	H6 CHONDRITE	C	B		
MIL 090670	~	9.2	H6 CHONDRITE	B/C	B		
MIL 090671	~	3.1	H6 CHONDRITE	C	B		
MIL 090673		1.0	L6 CHONDRITE	A/B	A	25-2	8-22
MIL 090674	~	6.6	H5 CHONDRITE	C	B		
MIL 090675	~	13.9	L5 CHONDRITE	B/C	B		
MIL 090676	~	5.1	L5 CHONDRITE	B/C	B		

Sample Number		Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MIL 090677		3.9	CV3 CHONDRITE	B/C	B	4-11	0-8
MIL 090678	~	8.7	L6 CHONDRITE	C	B		
MIL 090679	~	9.8	L6 CHONDRITE	C	B		
MIL 090680	~	20.4	L5 CHONDRITE	C	A		
MIL 090681	~	19.6	H5 CHONDRITE	C	A		
MIL 090682	~	2.6	L5 CHONDRITE	B	A/B		
MIL 090684	~	1.4	L5 CHONDRITE	C	A/B		
MIL 090685	~	2.3	L5 CHONDRITE	B/C	B		
MIL 090689	~	4.9	LL6 CHONDRITE	B	B		
MIL 090690	~	100.5	L6 CHONDRITE	B/C	A		
MIL 090693	~	52.8	L6 CHONDRITE	B/C	A/B		
MIL 090694	~	25.2	L5 CHONDRITE	C	A		
MIL 090697	~	28.9	L6 CHONDRITE	B/C	A/B		
MIL 090698	~	8.9	L6 CHONDRITE	B/C	A		
MIL 090700		2.0	CM2 CHONDRITE	B	B	0-68	2
MIL 090705		4.9	CO3 CHONDRITE	B	B	0-63	10-3
MIL 090740	~	123.0	L5 CHONDRITE	B	A		
MIL 090741	~	129.8	L6 CHONDRITE	C	A/B		
MIL 090742	~	114.3	L6 CHONDRITE	C	B/C		
MIL 090743	~	133.9	L5 CHONDRITE	C	B/C		
MIL 090744	~	47.6	LL6 CHONDRITE	B	A/B		
MIL 090745	~	36.4	L6 CHONDRITE	B	B		
MIL 090746	~	97.5	L6 CHONDRITE	C	B		
MIL 090747	~	67.4	L6 CHONDRITE	C	B		
MIL 090748	~	115.2	L6 CHONDRITE	C	B		
MIL 090749	~	57.1	LL6 CHONDRITE	B	A/B		
MIL 090760	~	70.9	LL6 CHONDRITE	A/B	A		
MIL 090761	~	149.6	H5 CHONDRITE	C	A		
MIL 090762	~	112.7	LL6 CHONDRITE	B/C	A		
MIL 090763	~	65.7	H5 CHONDRITE	B/C	B/C		
MIL 090764	~	68.9	H6 CHONDRITE	B/C	B/C		
MIL 090765	~	86.0	H5 CHONDRITE	B/C	A/B		
MIL 090766	~	69.8	H5 CHONDRITE	B/C	A/B		
MIL 090768	~	28.3	H5 CHONDRITE	B/C	A		
MIL 090769	~	15.9	H5 CHONDRITE	B/C	A		
MIL 090790	~	34.1	L5 CHONDRITE	C	A/B		
MIL 090791	~	19.4	LL6 CHONDRITE	A	A		
MIL 090792	~	17.1	L6 CHONDRITE	C	C		
MIL 090793	~	20.3	LL5 CHONDRITE	A/B	B		
MIL 090794	~	24.7	L5 CHONDRITE	C	B		
MIL 090795	~	24.0	L6 CHONDRITE	B/C	B		
MIL 090796	~	21.3	L6 CHONDRITE	C	B		
MIL 090797	~	43.1	L6 CHONDRITE	B/C	A		
MIL 090798	~	23.4	L5 CHONDRITE	C	C		
MIL 090821		1.3	CO3 CHONDRITE	B	A/B	0-41	1-38
MIL 090831		14.0	H5 CHONDRITE	C	B	19-2	16-1
MIL 090840		0.7	CO3 CHONDRITE	B	B	2-71	0-5
MIL 090846		0.9	EH6 CHONDRITE	B	B		0-2
MIL 090860	~	130.3	L6 CHONDRITE	B	A		
MIL 090861	~	167.7	LL6 CHONDRITE	A/B	A/B		
MIL 090862	~	87.5	LL5 CHONDRITE	B/C	B		
MIL 090863	~	70.9	LL5 CHONDRITE	A/Be	A		
MIL 090864	~	81.8	LL6 CHONDRITE	B/C	A/B		
MIL 090865	~	130.2	LL6 CHONDRITE	B/C	A/B		
MIL 090866	~	24.9	L5 CHONDRITE	A/B	A/B		

Sample Number		Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MIL 090868	~	75.7	H6 CHONDRITE	C	A		
MIL 090869	~	69.3	H6 CHONDRITE	C	A/B		
MIL 090880	~	30.0	LL6 CHONDRITE	A/B	A		
MIL 090881	~	12.1	L5 CHONDRITE	B/C	B		
MIL 090882	~	23.6	LL6 CHONDRITE	A/B	A		
MIL 090883	~	34.1	H5 CHONDRITE	C	A/B		
MIL 090884	~	26.3	LL6 CHONDRITE	A/B	A/B		
MIL 090885	~	14.6	LL6 CHONDRITE	A/B	A/B		
MIL 090886	~	12.3	H6 CHONDRITE	C	B		
MIL 090887	~	5.2	H6 CHONDRITE	C	B		
MIL 090888	~	2.3	L5 CHONDRITE	C	B		
MIL 090889	~	3.7	LL6 CHONDRITE	A/B	A/B		
MIL 090890		5.5	CO3 CHONDRITE	B	A	0-52	1-4
MIL 090891		7.0	CO3 CHONDRITE	B	A	0-47	1-7
MIL 090897		2.5	CO3 CHONDRITE	B	A	1-63	1
MIL 090900	~	6.4	H5 CHONDRITE	C	B		
MIL 090901	~	14.8	H6 CHONDRITE	C	B		
MIL 090902	~	4.1	L6 CHONDRITE	C	B		
MIL 090903	~	6.1	L6 CHONDRITE	C	B		
MIL 090904	~	0.5	LL5 CHONDRITE	B	B		
MIL 090905	~	3.7	H5 CHONDRITE	C	B		
MIL 090906	~	1.3	H6 CHONDRITE	C	B		
MIL 090907		1.8	CO3 CHONDRITE	B	A	1-51	7
MIL 090908	~	0.5	LL6 CHONDRITE	B	B		
MIL 090909	~	1.8	LL5 CHONDRITE	B/C	B		
MIL 090910	~	10.4	LL6 CHONDRITE	A/B	A/B		
MIL 090911	~	9.7	L6 CHONDRITE	B	A/B		
MIL 090912	~	13.8	H6 CHONDRITE	B/C	A/B		
MIL 090913	~	9.5	H5 CHONDRITE	B	A/B		
MIL 090914	~	8.8	LL5 CHONDRITE	A/B	A		
MIL 090915		7.3	CO3 CHONDRITE	B	A	0-51	
MIL 090916	~	5.0	LL6 CHONDRITE	B/C	A		
MIL 090917	~	4.5	LL6 CHONDRITE	A/B	A		
MIL 090918	~	7.6	H6 CHONDRITE	B/C	A/B		
MIL 090919		3.9	CO3 CHONDRITE	B	A	0-43	10
MIL 090931	~	11.9	LL6 CHONDRITE	A/B	B		
MIL 090932	~	76.6	L6 CHONDRITE	B	A/B		
MIL 090933	~	23.4	L6 CHONDRITE	C	B		
MIL 090934	~	33.3	L6 CHONDRITE	C	A/B		
MIL 090935	~	17.9	LL5 CHONDRITE	A/B	A/B		
MIL 090937	~	29.2	LL5 CHONDRITE	C	B/C		
MIL 090938	~	12.2	LL6 CHONDRITE	A/B	A/B		
MIL 090939	~	16.9	LL6 CHONDRITE	A/B	A/B		
MIL 090948		3.6	LL6 CHONDRITE	B	B	29-3	24-2
MIL 090950	~	1.2	LL5 CHONDRITE	A/B	A/B		
MIL 090951	~	2.1	LL5 CHONDRITE	B/C	B		
MIL 090952	~	0.7	LL5 CHONDRITE	B	B		
MIL 090953	~	1.8	L6 CHONDRITE	C	A/B		
MIL 090954	~	0.5	H6 CHONDRITE	B	B		
MIL 090955		0.8	CO3 CHONDRITE	B	B	0-35	
MIL 090956	~	0.7	L6 CHONDRITE	B	B		
MIL 090957		2.9	H6 CHONDRITE	B	B	19	16
MIL 090958	~	1.6	H5 CHONDRITE	C	B		
MIL 090959	~	7.5	H6 CHONDRITE	C	B		
MIL 090960	~	1.7	LL6 CHONDRITE	B	B		

Sample Number		Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MIL 090961	~	1.0	L6 CHONDRITE	B	B		
MIL 090962	~	1.8	L5 CHONDRITE	B/C	B		
MIL 090963		2.5	ACHON. UNGROUPED	C	B	28-3	10-1
MIL 090964	~	0.6	L6 CHONDRITE	B	B		
MIL 090965	~	2.6	LL6 CHONDRITE	B	A/B		
MIL 090966	~	1.2	H6 CHONDRITE	C	A/B		
MIL 090967		0.3	CO3 CHONDRITE	B	B	1-41	1
MIL 090968	~	2.3	L6 CHONDRITE	C	B/C		
MIL 090969	~	1.8	LL6 CHONDRITE	B	A/B		
MIL 090970	~	4.7	H6 CHONDRITE	C	B		
MIL 090971	~	4.8	LL6 CHONDRITE	A/B	A		
MIL 090972	~	8.9	H6 CHONDRITE	C	B/C		
MIL 090973	~	5.6	L6 CHONDRITE	B/C	B		
MIL 090974	~	2.4	LL6 CHONDRITE	B/C	B		
MIL 090975	~	2.8	LL6 CHONDRITE	B/C	B		
MIL 090976	~	4.8	H6 CHONDRITE	C	B		
MIL 090977	~	3.4	H6 CHONDRITE	C	B		
MIL 090978		7.5	E CHONDRITE (IMPACT MELT)	C	B		0-1
MIL 090979	~	1.6	LL6 CHONDRITE	B	B		
MIL 090980		98.1	UREILITE	C	A/B	22	18-1
MIL 090981		38.5	CV3 CHONDRITE	B/C	A/B	0-27	
MIL 090982		1.1	LL6 CHONDRITE	B	B	30-3	
MIL 090983		1.5	CO3 CHONDRITE	B	B	1-46	1-3
MIL 090984		0.8	CM1 CHONDRITE	B	B		
MIL 090985		3.1	CB CHONDRITE	B/C	B/C	3-15	0-25
MIL 090986		1.4	CM1/2 CHONDRITE	B	A/B	0-23	
MIL 090987	~	1.2	LL6 CHONDRITE	B/C	B		
MIL 090988		3.8	CO3 CHONDRITE	B	A	1-43	
MIL 090989		2.1	CO3 CHONDRITE	B	B	1-54	1
MIL 090990	~	21.9	L6 CHONDRITE	A/B	A/B		
MIL 090991	~	36.0	L6 CHONDRITE	B	B		
MIL 090992		4.9	CM1/2 CHONDRITE	B	B	0-52	
MIL 090993		2.0	CM1/2 CHONDRITE	A	B	1-56	1-9
MIL 090994		6.5	CM2 CHONDRITE	A/B	A/B	0-37	2
MIL 090996	~	24.7	L6 CHONDRITE	A/B	A/B		
MIL 090997	~	43.0	L6 CHONDRITE	A/B	A/B		
MIL 090998	~	49.3	L6 CHONDRITE	A/B	B		
MIL 090999	~	41.1	L6 CHONDRITE	A/B	B		

Table 2

Newly Classified Specimens Listed By Type

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
		ACHONDRITE				
MIL 090963	2.5	ACHON. UNGROUPED	C	B	28-3	10-1
MIL 090980	98.1	UREILITE	C	A/B	22	18-1
		CARBONACEOUS CHONDRITE				
MIL 090985	3.1	CB CHONDRITE	B/C	B/C	3-15	0-25
MIL 090521	2.7	CK6 CHONDRITE	B	A/B	28	21
MIL 090984	0.8	CM1 CHONDRITE	B	B		
MIL 090986	1.4	CM1/2 CHONDRITE	B	A/B	0-23	
MIL 090992	4.9	CM1/2 CHONDRITE	B	B	0-52	
MIL 090993	2.0	CM1/2 CHONDRITE	A	B	1-56	1-9
MIL 090700	2.0	CM2 CHONDRITE	B	B	0-68	2
MIL 090994	6.5	CM2 CHONDRITE	A/B	A/B	0-37	2
MIL 090543	4.8	CO3 CHONDRITE	C	A/B	0-39	1-34
MIL 090705	4.9	CO3 CHONDRITE	B	B	0-63	10-3
MIL 090821	1.3	CO3 CHONDRITE	B	A/B	0-41	1-38
MIL 090840	0.7	CO3 CHONDRITE	B	B	2-71	0-5
MIL 090890	5.5	CO3 CHONDRITE	B	A	0-52	1-4
MIL 090891	7.0	CO3 CHONDRITE	B	A	0-47	1-7
MIL 090897	2.5	CO3 CHONDRITE	B	A	1-63	1
MIL 090907	1.8	CO3 CHONDRITE	B	A	1-51	7
MIL 090915	7.3	CO3 CHONDRITE	B	A	0-51	
MIL 090919	3.9	CO3 CHONDRITE	B	A	0-43	10
MIL 090955	0.8	CO3 CHONDRITE	B	B	0-35	
MIL 090967	0.3	CO3 CHONDRITE	B	B	1-41	1
MIL 090983	1.5	CO3 CHONDRITE	B	B	1-46	1-3
MIL 090988	3.8	CO3 CHONDRITE	B	A	1-43	
MIL 090989	2.1	CO3 CHONDRITE	B	B	1-54	1
MIL 090677	3.9	CV3 CHONDRITE	B/C	B	4-11	0-8
MIL 090981	38.5	CV3 CHONDRITE	B/C	A/B	0-27	
		ENSTATITE CHONDRITE				
MIL 090846	0.9	EH6 CHONDRITE	B	B		0-2
MIL 090441	15.3	EL6 CHONDRITE	Be	B		0-1
MIL 090978	7.5	E CHONDRITE (IMPACT MELT)	C	B		0-1

**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 100, which are available online from the Meteoritical Society webpage:

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

CB CHONDRITE

MIL 090985 with MIL 05082

CM1/2 CHONDRITE

MIL 090992 and MIL 090993 with MIL 090986

CM2 CHONDRITE

MIL 090994 with MIL 090700

CO3 CHONDRITE

MIL 090543, MIL 090705, MIL 090821, MIL 090840, MIL 0090890, MIL 090891, MIL 090897, MIL 090907, MIL 090915, MIL 090919, MIL 090955, MIL 090967, MIL 090983, MIL 090988, and MIL 090989 with MIL 07099

E CHONDRITE (IMPACT MELT)

MIL 090978 with MIL 090807

Petrographic Descriptions

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090441	Miller Range	20976	3.0 x 2.5 x 1.0	15.260	EL6 chondrite

Macroscopic Description: Kathleen McBride

This disk shaped meteorite is flat on the bottom and has thick black crust with bubbles around the edges. Evaporites are visible along the top and central bottom faces. The interior is black and white and has no visible inclusions or chondrules.

Thin Section (,3) Description: Cari Corrigan, and Linda Welzenbach

The section shows few chondrules (up to 0.5 mm), chondrule fragments, and pyroxene grains in a matrix with about 30% metal and sulfide. The matrix has been extensively recrystallized. Weathering is modest, with staining of some enstatite grains and minor alteration of metal and sulfides. Microprobe analyses show pyroxene compositions of $Fs_{0-1}Wo_{0-3}$. Si in the metal is 0.23 wt. %. The meteorite is a type 6 enstatite chondrite, probably an EL6.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090521	Miller Range	20706	1.5 x 1.5 x 0.75	2.670	CK6 chondrite

Macroscopic Description: Kathleen McBride

The exterior fusion crust is black with polygonal fractures. The interior matrix is gray with minor rust and vague chondrules.

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

The section consists of only one very relict chondrule in a matrix of finer-grained silicates, sulfides and very abundant magnetite. The meteorite is only slightly weathered. Silicates are homogeneous. Olivine is $Fa_{28,}$ with one at Fa_{53} and one orthopyroxene analysis was $Fs_{21}Wo_{15}$. The meteorite appears to be a CK6 chondrite.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090543	Miller Range	20248	2.0 x 1.5 x 1.0	4.790	CO3 Chondrite
MIL 090705		20261	2.0 x 1.5 x 1.0	4.860	
MIL 090821		20571	1.0 x 1.0 x 0.75	1.300	
MIL 090840		20653	1.0 x 0.75 x 0.5	0.740	
MIL 090890		18837	1.75 x 1.75 x 1.0	5.530	
MIL 090891		18827	2.5 x 1.5 x 1.25	6.950	
MIL 090897		18856	1.25 x 1.25 x 1.0	2.510	
MIL 090907		20163	1.0 x 1.0 x 0.75	1.780	
MIL 090915		20118	1.9 x 1.8 x 1.0	7.342	
MIL 090919		20192	2.4 x 1.0 x 0.8	3.865	
MIL 090955		20181	1.0 x 0.75 x 0.75	0.780	
MIL 090967		20171	0.75 x 0.75 x 0.25	0.310	
MIL 090983		20270	1.5 x 1.0 x 0.75	1.460	
MIL 090988		18806	1.5 x 1.0 x 1.0	3.840	
MIL 090989		20173	1.5 x 1.0 x 0.75	2.090	

Macroscopic Description: Kathleen McBride, and Cecilia Satterwhite

The exteriors of these carbonaceous chondrites have brown/black fusion crust with polygonal fractures. The interiors range from dark gray to black fine grained matrix with minor oxidation and small white inclusions.

Thin Section Description: Cari Corrigan, and Linda Welzenbach (MIL 090705 is ,3; MIL 090890 and 090891 are ,4)

These meteorites 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 are present, as well. Olivine ranges in composition from Fa_{0-71}. Pyroxene analyses range from $Fs_{1-10}Wo_{0.9}$ with one Wo_{35}. These meteorites vary with respect to terrestrial alteration. These meteorites are CO3 chondrites (likely type 3.0-3.2) and are probably members of the MIL 07099 pairing group.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090677	Miller Range	20444	2.0 x 1.5 x 1.0	3.940	CV3 chondrite

Macroscopic Description: Kathleen McBride
30% of the exterior has thin brown/black patches of fusion crust. The interior matrix is dark gray in color and has a high metal content. Some areas reveal rusty patches. White, gray and rusty color chondrules/inclusions are visible within the matrix.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy, and Linda Welzenbach
The section exhibits large chondrules (up to 3 mm) and CAIs in a matrix of very fine-grained silicate and finely disseminated metal. The metal in the chondrules is more altered than the metal in the matrix (which can be described as small, but distinct grains). Olivines range from Fa_{4-11}, and pyroxenes from $Fs_{0-8}Wo_{1-4,}$ with on Wo_{49}). The meteorite is a carbonaceous chondrite, probably a CV3, and possibly a reduced member of the CV3 group.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090700	Miller Range	20250	1.5 x 1.0 x 1.0	2.010	CM2 chondrites
MIL 090994		20125	2.5 x 2.0 x 1.5	6.460	

Macroscopic Description: Kathleen McBride
Fusion crust is present on the exterior surfaces and range in color from brown to purplish black with polygonal fractures. The interior matrices are black with a few lighter gray patches and gray/white chondrules and clasts.

Thin Section (MIL 090700,3 and MIL 090994,2) Description: Cari Corrigan, and Linda Welzenbach
The sections consist of a few small chondrules (up to 2 mm), mineral grains and CAIs set in a black matrix; rare metal and sulfide grains are present. Olivine compositions are Fa_{0-68}, orthopyroxene is Fs_2Wo_{2-44}. Aqueous alteration of the matrix is light to moderate, and the chondrules are unaltered. The meteorites are CM2 chondrites and are likely paired.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090846	Miller Range	18835	1.0 x 1.0 x 0.5	0.880	EH6 chondrite

Macroscopic Description: Cari Corrigan, and Linda Welzenbach
Less than 30% of the exterior is covered with fusion crust. Interior is fine grained and black with minor oxidation staining. No chondrules or metal are visible.

Thin Section (,2) Description: Cari Corrigan, and Linda Welzenbach
The section shows an aggregate of chondrule fragments, and pyroxene grains in a matrix of about 20% metal and sulfide. No chondrules were found, but the section is only 2 mm across and fully fusion-crusted. The groundmass has been extensively recrystallized. Weathering is modest, with staining of some enstatite grains and minor alteration of metal and sulfides. Microprobe analyses show pyroxene compositions of $Fs_{0-2}Wo_{0-0.5}$. Si in the metal is 2.85 wt. %. The meteorite is a type 6 enstatite chondrite, probably an EH6.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090963	Miller Range	20191	1.25 x 1.5 x 1.0	2.510	Achondrite Ungrouped

Macroscopic Description: Kathleen McBride
About 50% of the exterior is covered with rusty brown fusion crust with fractures. The interior is fine grained with a crystalline texture and is rusty black in color. This meteorite is hard and brittle.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy, and Linda Welzenbach
This section consists of an aggregate of equigranular (up to 1 mm) olivine grains. Individual olivine grains are rimmed by dark material containing finely dispersed grains of metal, sulfide, and chromite. Olivine has compositions of Fa_{28-32}. Clinopyroxene analyses are $Fs_{11}Wo_{43}$. This meteorite looks texturally like a ureilite, but given the recent abstract by Warren and Rubin (2012, LPSC 43, #2528) about MIL 090340 (which was originally classified as a ferroan ureilite but has detailed mineral compositions that are distinct from ureilites), we will classify it as an ungrouped achondrite. Further studies are warranted to examine pairing relationship with MIL 090340.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090978	Miller Range	20180	1.5 x 1.5 x 1.25	7.480	E chondrite (Impact Melt)

Macroscopic Description: Kathleen McBride
95% of the exterior is covered with smooth dark brown fusion crust. The interior matrix is rusty. The meteorite has a high metal content and is hard and brittle.

Thin Section (,2) Description: Cari Corrigan, and Nicole Lunning
This meteorite section consists of equigranular crystals (up to 0.5 mm) of polysynthetically twinned enstatite, feldspar, iron-nickel metal, and sulfides. Texturally, this meteorite is similar to Happy Canyon. Microprobe analyses show pyroxene compositions of $Fs_{0-1}Wo_{1}$. This meteorite is an enstatite chondrite impact melt and is likely paired with MIL 090807.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090980	Miller Range	20581	5.0 x 3.0 x 3.0	98.090	Ureilite

Macroscopic Description: Kathleen McBride
80% of the exterior surface has black fusion crust with polygonal fractures. The rusty interior has a granular textured matrix and some rust stained chondrules.

Thin Section (,2) Description: Cari Corrigan, and Tim McCoy
This section consists of an aggregate of equigranular (up to 1 mm) olivine grains. Individual olivine grains are rimmed by carbon-rich material containing grains of metal. Olivine has cores of Fa_{22}. Pyroxene analyses are $Fs_{18-19}Wo_{8}$. This meteorite is a ureilite.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090981	Miller Range	20692	3.5 x 3.0 x 2.0	38.490	CV3 chondrite

Macroscopic Description: Kathleen McBride
The exterior of this meteorite has rough, ropey, dull black fusion crust over half of its surface area. The soft interior is dark gray with rusty areas. Some rust stained inclusions and vague chondrules are visible within the soft, dark gray matrix.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy, and Linda Welzenbach
The section exhibits large chondrules (up to 3 mm) and CAIs in a dark matrix. Some chondrules contain metal. The matrix contains oxides and silicate fragments, some of which are chondrule fragments. Olivines range from Fa_{0-27}. The meteorite is an unequilibrated carbonaceous chondrite, probably a CV3.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090984	Miller Range	20858	1.5 x 0.75 x 0.75	0.770	CM1 chondrite

Macroscopic Description: Kathleen McBride
50% of the exterior has dull black fusion crust with polygonal fractures. The interior is a dark gray matrix with mm sized light colored chondrules and clasts.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy, Emma Bullock, and Linda Welzenbach
This section contains no chondrules or discernable silicates and only contains black matrix and microprobe analyses yielded no usable data. Sulfides and tochilinite are present. This meteorite looks like a CI, but no magnetite exists, so it is probably a CM1.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090985	Miller Range	20212	1.5 x 1.25 x 1.0	3.120	CB chondrite

Macroscopic Description: Kathleen McBride
The exterior surface is rusty gray with no fusion crust. The interior matrix is gray and rusty, containing large chondrules >3mm in size.

Thin Section (,2) Description: Cari Corrigan, and Nicole Lunning
The sections consist of one round metal chondrule (~0.5 cm in diameter) and chondrule fragments. Chondrule fragments up to 1 mm are dominated by radiating pyroxene textures with olivine present. Silicates are magnesian (Fa_{3-15}, $Fs_{0-25}Wo_{1-5}$). The meteorite is a CB chondrite and may be a member of the MIL 05082 pairing group.

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090986	Miller Range	20686	1.5 x 1.75 x 0.75	1.420	CM1/2 chondrites
MIL 090992		20358	2.0 x 1.5 x 1.25	4.890	
MIL 090993		20185	2.0 x 1.25 x 0.5	2.040	

Macroscopic Description: Kathleen McBride
The exterior of these meteorites range from no fusion crust to 50% dull purplish black fusion crust with polygonal fractures. The interior matrices are black with powdery textures and have oxidation rinds. Small light gray chondrules and clasts are visible.

Thin Section (,2) Description: Cari Corrigan, and Linda Welzenbach
The sections consist of a few small chondrules (up to 0.5 mm), mineral grains and CAIs set in a black matrix; rare metal and sulfide grains are present. Olivine compositions are Fa_{0-56}, orthopyroxene is $Fs_{1-9}Wo_{1-4}$. Aqueous alteration of the matrix is substantial, but the chondrules are only modestly altered. These meteorites are CM1/2 chondrites.

RECLASSIFICATIONS:

Sample No.	Location	Field No.	Dimensions (cm)	Weight (g)	Classification
MIL 090154	Miller Range	20347	3.0 x 2.5 x 1.5	16.300	CK6 chondrite

(Originally classified as a LL5 Chondrite)

Macroscopic Description: Kathleen McBride
The exterior surface is charcoal gray in color and has a rough texture. This soft and friable interior is medium gray in color and has gray chondrules.

Thin Section (,2) Description: Cari Corrigan, Tim McCoy, and Linda Welzenbach
The section consists of a few large relict chondrules in a matrix of finer-grained silicates, sulfides and very abundant magnetite. The meteorite is only slightly weathered. Silicates are homogeneous. Olivine is Fa_{31-32}. The meteorite appears to be a CK6 chondrite.

MIL 090001: originally classified as CV3 (AMN 33, no. 2)

New analyses of MIL 090001 indicate that it is a CR2 chondrite. Oxygen isotope analysis (Keller et al., 2012 LPSC abstract; 2065; Alexander et al. 2012 LPSC abstract 2799) and bulk rock analysis (Isa et al. 2012 LPSC abstract; 2809) both indicate overlap with CR chondrites (lower Zn, Sc and Sm than CV).

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 **March 9, 2012 deadline** will be reviewed at the MWG meeting **March 23-24, 2012 in The Woodlands, TX**. Requests that are received after the deadline may be delayed for review until MWG meets again in the Fall of 2012. 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 the Meteorite Working Group (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/antmet/statistics.cfm

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

http://curator.jsc.nasa.gov/antmet/requests.cfm

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/
JSC Curator, HED Compendium	http://curator.jsc.nasa.gov/antmet/hed/
JSC Curator, Lunar Meteorite Compendium	http://curator.jsc.nasa.gov/antmet/lmc/
JSC Curator, Mars Meteorite Compendium	http://curator.jsc.nasa.gov/antmet/mmc/
ANSMET	http://geology.cwru.edu/~ansmet/
Smithsonian Institution	http://mineralsciences.si.edu/
Lunar Planetary Institute	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://www.meteoritemag.org/
Geochemical Society	http://www.geochemsoc.org
Washington Univ. Lunar Meteorite	http://meteorites.wustl.edu/lunar/moon_meteorites.htm
Washington Univ. "meteor-wrong"	http://meteorites.wustl.edu/meteorwrongs/meteorwrongs.htm

Other Websites of Interest

OSIRIS-REx	http://osiris-rex.lpl.arizona.edu/
Mars Exploration	http://mars.jpl.nasa.gov
Rovers	http://marsrovers.jpl.nasa.gov/home/
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/