Antarctic Meteorite Newsletter

Volume 25, Number 2 August 2002

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 Carlton Allen, NASA Johnson Space Center, Houston, Texas 77058

Program News

Carlton Allen
JSC

New Meteorites

This newsletter contains classifications for 283 new meteorites from the 1999, 2000, and 2001 ANSMET collections. They include samples from the Queen Alexandra Range, Bates Nunataks, Meteorite Hills, and Tentacle Ridge sites. Descriptions are given for 13 meteorites; 2 ureilites, 7 carbonaceous chondrites, 1 enstatite and 3 unequilibrated chondrites.

Lab Improvements

The JSC Antarctic Meteorite Lab is a much cleaner place than it used to be. Following replacement of the air handler, cleaning of the ductwork, and installation of HEPA filters the lab consistently meets the requirements for a Class 1,000 cleanroom.

The Lab will soon become a considerably more secure place in which to curate meteorites. In response to a recent theft from a Principal Investigator's lab, the physical security for all of JSC's astromaterials collections is being upgraded.

Antarctic Meteorite Curator

We have recently been given authorization by NASA to hire a permanent Curator for Antarctic Meteorites. We are looking forward, in the near future, to welcoming a new scientist to the JSC Curation team and continuing to improve our service to the meteorite research community.

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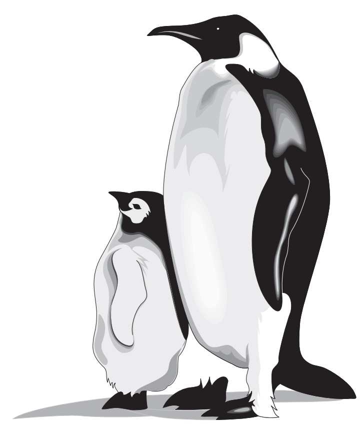
Inside this Issue



Sample Request Deadline
September 20, 2002

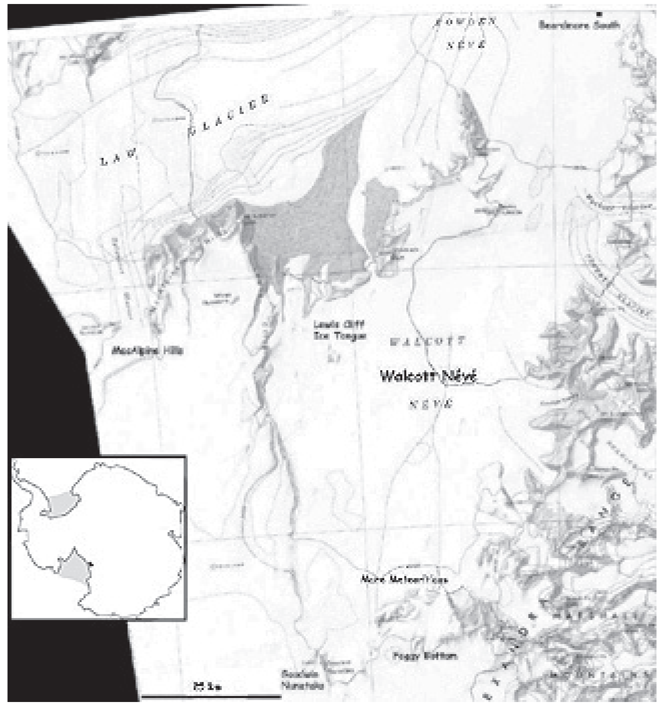
MWG Meets
September 26-27, 2002

Update on the upcoming ANSMET 2002-2003 field season

Ralph Harvey
ANSMET

As of this writing, we plan to operate two independent ANSMET field teams during the upcoming austral summer; one dedicated to systematic meteorite recovery from well-known icefields, and the other dedicated to high-level reconnaissance of some very promising (but difficult to reach) sites. Preparations for the fieldwork are well underway. Field party members have been selected and are undergoing their physical and dental examinations, buying good sunglasses and stockpiling books to read. The preliminary calendar of logistical support needs that Nancy Chabot and I submitted in April has been scrupulously reviewed, and we're actively gathering satellite imagery, maps and air photos of our targets. The situation is only a little more chaotic than normal; I've still not seen it written, on paper, that the second (NASA-funded) field team is approved for deployment by NSF. But unlike last year, everyone is plunging ahead on the assumption we'll make it work somehow. Details of the two field team plans are as follows.

Systematic searching team: NSF funding will support a team of 8 who will fly by LC-130 to paradoxically-named Beardmore South Camp at the north end of the Walcott Névé. This abandoned camp will be the starting point for an all-day snowmobile traverse southward across the Névé to Goodwin Nunataks and MacAlpine Hills. Goodwin Nunataks is one of the several icefields that serve as home for QUE specimens, and was last systematically searched in the 1999-2000 season, recovering more than 400 specimens. Only half of the exposed blue ice in this area was systematically searched. MacAlpine Hills is the home of the MAC specimens, lies to the north and west of Goodwin Nunataks, and was visited in the 1987 and 1988 seasons, with 126 meteorites recovered. However, those visits were short and systematic searching of the MacAlpine Hills icefields was limited. The weather, logistics and the workload will all determine how much time is spent at the various sites. At the end of the season, the team will traverse back to Beardmore South Camp for the pull-out. The systematic search team will be deployed for about 6 weeks, with both put-in and pull-out planned for a few days earlier than the reconnaissance team.



The reconnaissance team: Using support from NASA we are putting together a smaller 4 person team that will be heavily supported by small aircraft (Twin Otter) to allow for a high degree of mobility and flexibility. The focus of this team will be to explore new or poorly known icefields, conducting "survey-level" searching and identifying their potential for future systematic work by a larger team. At the present time, we have not selected final targets; but the general region of activity will be out at the western end of the Transantarctic Mountains, with the team operating out of South Pole Station. Put-in and pull-out of this team will be a few days later than for the systematic searching team. This group will get to see some amazing sights, but will be travelling lean and sharing a heavier-than-normal physical workload.

If all goes as currently scheduled, the field team will depart the US and other points of origin in mid-November, reach McMurdo Station, Antarctica about 4 days later, and get into the field near the first of December. Everyone should be on their way back to civilization by the end of the third week of January, 2003.

New Meteorites

From 1999-2001 Collection

Pages 4-15 contain preliminary descriptions and classifications of meteorites that were completed since publication of issue 25(1), Feb. 2002. 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 inital 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:

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Antarctic Meteorite Locations

ALH — Allan Hills
BEC — Beckett Nunatak
BOW — Bowden Neve
BTN — Bates Nunataks
DAV — David Glacier
DEW — Mt. DeWitt
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
LEW — Lewis Cliff
LON — Lonewolf Nunataks
MAC — MacAlpine Hills
MBR — Mount Baldr
MCY — MacKay Glacier
MET — Meteorite Hills
MIL — Miller Range
OTT — Outpost Nunatak
PAT — Patuxent Range
PCA — Pecora Escarpment
PGP — Purgatory Peak
PRE — Mt. Prestrud
QUE — Queen Alexandra Range
RKP — Reckling Peak
SCO — Scott Glacier
STE — Stewart Hills
TEN — Tentacle Ridge
TIL — Thiel Mountains
TYR — Taylor Glacier
WIS — Wisconsin Range
WSG — Mt. Wisting

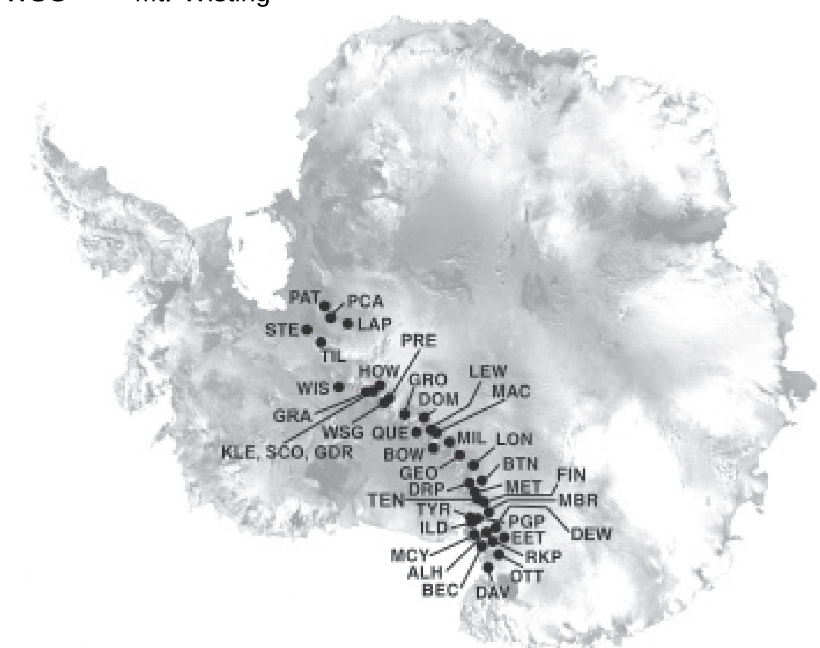


Table 1: List of Newly Classified Antarctic Meteorites**

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
QUE 99 473	0.3	EH CHONDRITE	B/C	A		1-2
QUE 99 610 ~	59.5	L6 CHONDRITE	A/B	A		
QUE 99 611 ~	89.6	L5 CHONDRITE	B/C	A		
QUE 99 612 ~	64.3	LL5 CHONDRITE	A/B	A/B		
QUE 99 613 ~	37.6	LL5 CHONDRITE	A/B	A		
QUE 99 614 ~	31.2	LL5 CHONDRITE	A/B	A		
QUE 99 615 ~	46.9	LL5 CHONDRITE	A/B	A/B		
QUE 99 616 ~	27.8	LL5 CHONDRITE	A/B	A/B		
QUE 99 617 ~	36.3	LL5 CHONDRITE	A/B	A/B		
QUE 99 618 ~	27.0	LL5 CHONDRITE	A/B	A		
QUE 99 619 ~	51.8	LL5 CHONDRITE	A/B	A/B		
QUE 99 620 ~	29.3	LL5 CHONDRITE	A/B	A		
QUE 99 621 ~	21.6	LL5 CHONDRITE	B	A/B		
QUE 99 622 ~	29.8	LL5 CHONDRITE	B/C	C		
QUE 99 623 ~	5.5	LL5 CHONDRITE	B/C	C		
QUE 99 624 ~	4.3	LL5 CHONDRITE	B	B		
QUE 99 625 ~	5.8	LL5 CHONDRITE	B	B		
QUE 99 626 ~	4.9	LL5 CHONDRITE	B/C	B/C		
QUE 99 627 ~	3.4	LL5 CHONDRITE	B	B		
QUE 99 628 ~	9.5	LL5 CHONDRITE	A/B	A		
QUE 99 629 ~	6.2	LL5 CHONDRITE	B/C	C		
QUE 99 650 ~	1.3	LL5 CHONDRITE	B	A/B		
QUE 99 651 ~	3.6	LL5 CHONDRITE	B	B		
QUE 99 652 ~	2.2	LL5 CHONDRITE	B	B		
QUE 99 653 ~	4.8	LL5 CHONDRITE	B	B		
QUE 99 654 ~	5.1	LL5 CHONDRITE	B	B		
QUE 99 655 ~	2.3	LL5 CHONDRITE	B	A/B		
QUE 99 656 ~	3.4	LL5 CHONDRITE	B/C	B		
QUE 99 657 ~	1.4	LL5 CHONDRITE	B	B		
QUE 99 659 ~	7.3	LL5 CHONDRITE	B	B		
QUE 99 660 ~	10.1	LL5 CHONDRITE	A/B	A/B		
QUE 99 661 ~	2.6	LL5 CHONDRITE	A/B	A		
QUE 99 662 ~	12.8	LL5 CHONDRITE	A/B	A/B		
QUE 99 663 ~	24.9	LL5 CHONDRITE	A/B	A/B		
QUE 99 664 ~	4.6	LL5 CHONDRITE	B/C	A/B		
QUE 99 665 ~	6.6	LL5 CHONDRITE	B/C	A/B		
QUE 99 666 ~	10.3	LL5 CHONDRITE	A/B	A		
QUE 99 667 ~	10.1	LL5 CHONDRITE	A/B	A		
QUE 99 668 ~	15.0	LL5 CHONDRITE	A/B	A/B		
QUE 99 669 ~	34.2	LL5 CHONDRITE	A/BE	A		
QUE 99 670 ~	2.4	H5 CHONDRITE	C	B		
QUE 99 671 ~	1.0	LL5 CHONDRITE	B/C	B		
QUE 99 672 ~	1.0	LL5 CHONDRITE	B	B		
QUE 99 673 ~	2.2	LL5 CHONDRITE	B	B		
QUE 99 680	15.7	CK5 CHONDRITE	CE	C	29	21
QUE 99 681	4.0	CK5 CHONDRITE	CE	C	29	23
QUE 99 682 ~	33.4	LL5 CHONDRITE	B/C	B		
QUE 99 683 ~	43.3	H5 CHONDRITE	C	B		
QUE 99 684 ~	63.8	L5 CHONDRITE	C	B		

~Classified by using refractive indices.

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
QUE 99 685 ~	9.0	LL5 CHONDRITE	B/C	B		
QUE 99 686 ~	18.1	LL5 CHONDRITE	B/C	B		
QUE 99 687 ~	11.1	LL5 CHONDRITE	B/C	B		
QUE 99 688 ~	10.6	LL6 CHONDRITE	B	B		
QUE 99 689 ~	7.2	LL5 CHONDRITE	B	B		
QUE 99 690 ~	2.5	LL5 CHONDRITE	B/C	A/B		
QUE 99 691 ~	2.4	LL5 CHONDRITE	B/C	A		
QUE 99 692 ~	3.5	LL5 CHONDRITE	A/B	A		
QUE 99 693 ~	2.3	LL5 CHONDRITE	B/C	A		
QUE 99 694 ~	3.0	LL5 CHONDRITE	B/C	A		
QUE 99 695 ~	0.7	LL5 CHONDRITE	B/C	A		
QUE 99 696 ~	1.7	LL5 CHONDRITE	B/C	A		
QUE 99 697	7.7	H5 CHONDRITE	C	A	19	17
QUE 99 698 ~	3.4	LL5 CHONDRITE	A/B	A		
QUE 99 699 ~	23.5	LL5 CHONDRITE	A/B	A/B		
QUE 99 700	3.8	LL6 CHONDRITE	B	A/B	27	23
QUE 99 701 ~	3.9	LL5 CHONDRITE	B	B		
QUE 99 702 ~	1.6	LL5 CHONDRITE	B	A/B		
QUE 99 703 ~	2.1	LL5 CHONDRITE	B	B		
QUE 99 704 ~	4.2	LL6 CHONDRITE	B	B		
QUE 99 705 ~	8.4	LL5 CHONDRITE	B/C	B		
QUE 99 706 ~	1.9	LL5 CHONDRITE	B/C	B		
QUE 99 707 ~	3.3	LL5 CHONDRITE	C	B		
QUE 99 708 ~	1.9	LL5 CHONDRITE	C	A/B		
QUE 99 709 ~	3.1	LL5 CHONDRITE	B	B		
QUE 99 710 ~	8.4	LL5 CHONDRITE	B/C	A		
QUE 99 711 ~	5.2	LL5 CHONDRITE	A/B	A		
QUE 99 712 ~	1.0	LL5 CHONDRITE	B/C	A		
QUE 99 713 ~	1.5	LL5 CHONDRITE	B/C	A		
QUE 99 714 ~	3.0	LL5 CHONDRITE	A/B	A		
QUE 99 715 ~	2.5	LL5 CHONDRITE	A/B	A		
QUE 99 716 ~	0.7	LL5 CHONDRITE	B/C	A		
QUE 99 717 ~	5.1	LL5 CHONDRITE	A/B	A		
QUE 99 718 ~	2.9	LL5 CHONDRITE	B/C	A		
QUE 99 719 ~	0.5	LL5 CHONDRITE	C	A		
QUE 99 720 ~	23.2	LL5 CHONDRITE	A/B	A/B		
QUE 99 721 ~	14.4	LL5 CHONDRITE	A/B	A/B		
QUE 99 722 ~	15.1	LL5 CHONDRITE	A/B	A/B		
QUE 99 723 ~	7.5	L6 CHONDRITE	A/B	A		
QUE 99 724 ~	3.4	L5 CHONDRITE	A/B	A/B		
QUE 99 725 ~	2.7	LL5 CHONDRITE	A/B	A		
QUE 99 726 ~	0.2	LL5 CHONDRITE	A/B	A		
QUE 99 727 ~	0.5	LL5 CHONDRITE	A/B	A		
QUE 99 728 ~	0.8	LL5 CHONDRITE	A/B	A		
QUE 99 729 ~	0.6	LL5 CHONDRITE	A/B	A		
QUE 99 730 ~	7.3	H5 CHONDRITE	C	A/B		
QUE 99 731 ~	12.4	LL5 CHONDRITE	B	B/C		
QUE 99 732 ~	3.7	LL5 CHONDRITE	C	B/C		
QUE 99 733 ~	9.6	LL5 CHONDRITE	B	A/B		
QUE 99 734 ~	10.9	LL5 CHONDRITE	C	B/C		
QUE 99 735 ~	18.7	LL5 CHONDRITE	B	A/B		
QUE 99 736 ~	5.2	LL5 CHONDRITE	B	B		

~Classified by using refractive indices.

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
QUE 99 737 ~	4.1	LL5 CHONDRITE	C	B/C		
QUE 99 738 ~	6.1	LL5 CHONDRITE	B	B		
QUE 99 739 ~	4.7	LL5 CHONDRITE	C	B/C		
QUE 99 741 ~	0.5	LL5 CHONDRITE	B	A/B		
QUE 99 742 ~	0.3	LL5 CHONDRITE	B	B		
QUE 99 743 ~	1.0	LL5 CHONDRITE	B	B		
QUE 99 744 ~	1.2	L5 CHONDRITE	B/C	A		
QUE 99 745 ~	1.3	LL5 CHONDRITE	B	A/B		
QUE 99 746 ~	3.4	LL5 CHONDRITE	B	A/B		
QUE 99 747 ~	1.0	L5 CHONDRITE	B/C	B		
QUE 99 748 ~	1.1	LL5 CHONDRITE	B	B		
QUE 99 749 ~	2.0	LL5 CHONDRITE	B	B		
QUE 99 760 ~	3.3	H5 CHONDRITE	C	A		
QUE 99 761 ~	5.1	LL5 CHONDRITE	B	B		
QUE 99 762 ~	6.2	LL5 CHONDRITE	B/C	B		
QUE 99 763 ~	1.5	LL5 CHONDRITE	A/B	A/B		
QUE 99 764 ~	0.9	LL5 CHONDRITE	B/C	B		
QUE 99 765 ~	5.3	LL5 CHONDRITE	B	B		
QUE 99 766 ~	2.1	LL5 CHONDRITE	B/C	B		
QUE 99 767 ~	1.3	LL5 CHONDRITE	B/C	B/C		
QUE 99 768 ~	1.5	LL5 CHONDRITE	B/C	B		
QUE 99 769 ~	2.5	LL5 CHONDRITE	B/C	B		
QUE 99 770 ~	0.6	H5 CHONDRITE	B/C	A		
QUE 99 771 ~	0.6	L6 CHONDRITE	B/C	A		
QUE 99 772 ~	3.5	LL5 CHONDRITE	A/B	A		
QUE 99 773 ~	1.4	LL5 CHONDRITE	A/B	A		
QUE 99 774 ~	3.1	LL5 CHONDRITE	A/B	A		
QUE 99 775	1.0	H4 CHONDRITE	B/C	A	18	17
QUE 99 776	3.1	H4 CHONDRITE	B/C	A	19	1-16
QUE 99 777 ~	4.2	LL5 CHONDRITE	A/B	A/B		
QUE 99 778 ~	13.5	LL5 CHONDRITE	A/B	A		
QUE 99 779 ~	6.9	LL5 CHONDRITE	A/B	A/B		
QUE 99 780 ~	136.5	L5 CHONDRITE	B/C	A		
QUE 99 781 ~	69.7	L5 CHONDRITE	B/C	A		
QUE 99 782 ~	39.1	LL5 CHONDRITE	A/B	A		
QUE 99 784 ~	49.0	LL5 CHONDRITE	A/B	A		
QUE 99 785 ~	24.1	LL5 CHONDRITE	A/B	A/B		
QUE 99 786 ~	96.4	LL6 CHONDRITE	A/B	A/B		
QUE 99 787 ~	33.7	LL5 CHONDRITE	B	A/B		
QUE 99 788 ~	15.3	LL5 CHONDRITE	B	A		
QUE 99 789 ~	14.1	H5 CHONDRITE	B/C	A		
QUE 99 800 ~	15.0	LL5 CHONDRITE	A/B	A/B		
QUE 99 801 ~	2.1	LL5 CHONDRITE	B/C	A/B		
QUE 99 802 ~	3.7	LL5 CHONDRITE	B/C	B		
QUE 99 803 ~	2.7	LL5 CHONDRITE	A/B	A/B		
QUE 99 804 ~	2.3	LL5 CHONDRITE	B/C	B		
QUE 99 805 ~	1.5	LL5 CHONDRITE	B/C	B		
QUE 99 806 ~	1.3	LL5 CHONDRITE	B/C	B		
QUE 99 807 ~	22.4	LL5 CHONDRITE	B/C	B		
QUE 99 808 ~	13.9	LL5 CHONDRITE	B/C	B		
QUE 99 809 ~	3.0	LL5 CHONDRITE	B/C	B		

~Classified by using refractive indices.

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
QUE 99 810 ~	10.1	LL5 CHONDRITE	A/B	A		
QUE 99 811 ~	3.6	LL5 CHONDRITE	A/B	A/B		
QUE 99 812 ~	3.6	LL5 CHONDRITE	A/B	A		
QUE 99 813 ~	1.4	LL6 CHONDRITE	A/B	A		
QUE 99 814 ~	2.1	LL5 CHONDRITE	B/C	A		
QUE 99 815 ~	4.2	LL5 CHONDRITE	A/B	A		
QUE 99 816 ~	0.5	LL5 CHONDRITE	B/C	A		
QUE 99 817 ~	0.4	LL6 CHONDRITE	B/C	A		
QUE 99 819 ~	0.6	LL5 CHONDRITE	A/B	A		
QUE 99 820 ~	38.2	LL5 CHONDRITE	B	A/B		
QUE 99 821 ~	40.6	LL5 CHONDRITE	B	B		
QUE 99 823 ~	42.0	LL5 CHONDRITE	A/B	A/B		
QUE 99 824 ~	22.7	LL5 CHONDRITE	B	B		
QUE 99 825 ~	48.9	L6 CHONDRITE	B/C	C		
QUE 99 826 ~	39.8	LL5 CHONDRITE	B	B		
QUE 99 827 ~	54.2	LL5 CHONDRITE	B	A/B		
QUE 99 828 ~	26.0	LL5 CHONDRITE	B/C	B		
QUE 99 829 ~	14.8	LL5 CHONDRITE	A/B	B		
QUE 99 830 ~	5.3	LL5 CHONDRITE	A/B	A/B		
QUE 99 831 ~	9.7	LL5 CHONDRITE	A/B	A/B		
QUE 99 832 ~	6.4	LL5 CHONDRITE	A/B	A		
QUE 99 833 ~	6.8	LL5 CHONDRITE	A/B	A		
QUE 99 834 ~	5.5	LL5 CHONDRITE	B/C	A		
QUE 99 835 ~	1.5	LL5 CHONDRITE	A/B	A		
QUE 99 836 ~	3.7	LL5 CHONDRITE	A/B	A		
QUE 99 837 ~	0.2	LL5 CHONDRITE	A/B	A		
QUE 99 839 ~	1.8	LL5 CHONDRITE	A/B	A		
QUE 99 840 ~	0.4	LL5 CHONDRITE	C	B		
QUE 99 841 ~	0.3	LL5 CHONDRITE	C	B		
QUE 99 842 ~	0.9	LL5 CHONDRITE	C	B		
QUE 99 843 ~	6.4	LL5 CHONDRITE	B	B		
QUE 99 844 ~	0.8	LL5 CHONDRITE	B	B		
QUE 99 845 ~	0.7	LL6 CHONDRITE	B	A/B		
QUE 99 846 ~	1.1	LL5 CHONDRITE	B/C	B		
QUE 99 847 ~	1.2	LL5 CHONDRITE	B/C	B		
QUE 99 848 ~	17.7	L5 CHONDRITE	B/C	B		
QUE 99 849 ~	14.9	LL5 CHONDRITE	B	B		
QUE 99 850	0.7	L5 CHONDRITE	B/C	B	24	21
QUE 99 851 ~	6.0	LL5 CHONDRITE	B/C	B		
QUE 99 852 ~	3.0	LL5 CHONDRITE	B/C	B		
QUE 99 853 ~	3.4	LL5 CHONDRITE	B/C	B		
QUE 99 854 ~	1.3	LL5 CHONDRITE	B/C	A/B		
QUE 99 855 ~	12.1	LL5 CHONDRITE	B	B		
QUE 99 856 ~	2.8	LL5 CHONDRITE	B	B		
QUE 99 857 ~	13.9	LL5 CHONDRITE	B/C	B		
QUE 99 858 ~	28.3	LL5 CHONDRITE	B	B		
QUE 99 859 ~	1.3	LL5 CHONDRITE	A/B	B		
QUE 99 860 ~	0.9	LL5 CHONDRITE	B	A		
QUE 99 861 ~	3.2	LL5-6 CHONDRITE	A/B	A		
QUE 99 862 ~	23.9	LL5 CHONDRITE	B	A/B		
QUE 99 863 ~	15.2	LL5 CHONDRITE	A/B	A/B		

~Classified by using refractive indices.

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
QUE 99 864 ~	3.5	LL5 CHONDRITE	B	A		
QUE 99 865 ~	33.0	LL5 CHONDRITE	B	A/B		
QUE 99 866 ~	4.3	LL5 CHONDRITE	A/B	A		
QUE 99 868 ~	9.5	LL5 CHONDRITE	B	A/B		
QUE 99 869 ~	12.5	LL5 CHONDRITE	B	A/B		
QUE 99 870 ~	4.2	LL5 CHONDRITE	B	B		
QUE 99 871 ~	7.4	LL5 CHONDRITE	B	B		
QUE 99 872 ~	7.0	LL5 CHONDRITE	B	B		
QUE 99 873 ~	0.2	LL5 CHONDRITE	B	B		
QUE 99 874 ~	4.2	LL5 CHONDRITE	B	B		
QUE 99 875 ~	0.8	LL5 CHONDRITE	B	B		
QUE 99 876 ~	7.3	LL5 CHONDRITE	B	B		
QUE 99 877 ~	16.8	LL5 CHONDRITE	B	B		
QUE 99 878 ~	2.2	LL5 CHONDRITE	B/C	B		
QUE 99 879 ~	4.0	LL5 CHONDRITE	B/C	B		
QUE 99 880 ~	5.1	LL5 CHONDRITE	B	A		
QUE 99 881 ~	7.3	LL5 CHONDRITE	B	A/B		
QUE 99 882 ~	30.9	H5 CHONDRITE	B/C	A		
QUE 99 883 ~	4.9	LL5 CHONDRITE	A/B	A		
QUE 99 884 ~	0.5	LL6 CHONDRITE	A/B	A		
QUE 99 885 ~	8.9	LL5 CHONDRITE	A/B	A		
QUE 99 886	15.3	CM2 CHONDRITE	B	A/B	0-43	1
QUE 99 887 ~	13.8	LL5 CHONDRITE	B/C	A		
QUE 99 888 ~	6.1	LL5 CHONDRITE	A/B	A/B		
QUE 99 889 ~	12.3	LL5 CHONDRITE	B	A/B		
QUE 99 890 ~	41.9	LL5 CHONDRITE	B/C	B		
QUE 99 891 ~	47.0	LL5 CHONDRITE	B/C	B		
QUE 99 892 ~	11.4	LL5 CHONDRITE	B	B		
QUE 99 894 ~	14.6	LL5 CHONDRITE	B	B		
QUE 99 895 ~	9.9	LL5 CHONDRITE	B	B		
QUE 99 896 ~	8.8	LL6 CHONDRITE	B/C	B/C		
QUE 99 897 ~	8.3	LL5 CHONDRITE	B	B		
QUE 99 898 ~	6.9	LL5 CHONDRITE	B	B		
QUE 99 899 ~	12.5	LL5 CHONDRITE	B	B		
QUE 99 900 ~	11.5	L5 CHONDRITE	B	A/B		
QUE 99 901 ~	7.7	LL5 CHONDRITE	B	A/B		
QUE 99 902 ~	1.3	LL5 CHONDRITE	B/C	A		
QUE 99 903 ~	0.3	LL5 CHONDRITE	B/C	A		
QUE 99 904 ~	3.7	LL5 CHONDRITE	A/B	A/B		
QUE 99 905 ~	7.0	LL5 CHONDRITE	A/B	A/B		
QUE 99 906 ~	3.0	LL5 CHONDRITE	B	A/B		
QUE 99 907 ~	3.2	LL5 CHONDRITE	A/B	A		
QUE 99 908 ~	0.4	LL5 CHONDRITE	C	A		
QUE 99 909 ~	1.4	LL5 CHONDRITE	A/B	A		
QUE 99 910 ~	0.5	LL5 CHONDRITE	B/C	A		
QUE 99 911 ~	0.8	LL5 CHONDRITE	B/C	A		
QUE 99 912 ~	1.0	LL5 CHONDRITE	B/C	A		
BTN 00 301	33.8	H3.3 CHONDRITE	B	B	8-38	5-21
BTN 00 302	37.1	H3.3 CHONDRITE	B	B	1-32	4-19
BTN 00 303	15.8	H3.3 CHONDRITE	B	B	1-30	2-19
BTN 00 308 ~	10.7	L5 CHONDRITE	C	B		
BTN 00 309 ~	24.1	L5 CHONDRITE	B	B		

~Classified by using refractive indices.

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
MET 00 429	30.5	CV3 CHONDRITE	B	B	1-28	1-3
MET 00 430	151.7	CV3 CHONDRITE	B	B	0-9	0-2
MET 00 452	774.9	H3.5 CHONDRITE	B/CE	B	2-19	7
MET 00 455	489.0	L5 CHONDRITE	B	C	25	21
MET 00 456	575.5	H5 CHONDRITE	A/B	A/B	18	16
MET 00 460	700.5	H5 CHONDRITE	B	B	19	17
MET 00 461 ~	518.0	L6 CHONDRITE	B/C	C		
MET 00 525	135.1	H5 CHONDRITE	B/C	A/B	19	16
MET 00 526	208.2	H3.2 CHONDRITE	B/C	A	1-19	3-28
MET 00 528	104.9	H5 CHONDRITE	B/C	B	20	17
MET 00 529	152.6	H6 CHONDRITE	B/C	B	19	17
MET 00 547 ~	68.5	LL6 CHONDRITE	B	B		
MET 00 548 ~	89.7	L5 CHONDRITE	B	B		
TEN 00 001	11.1	L6 CHONDRITE	B/C	B	24	21
TEN 00 002	19.8	L6 CHONDRITE	B/C	B/C	24	21
MET 01 070	40.6	CM1 CHONDRITE	BE	B		
MET 01 071	4.5	CM2 CHONDRITE	B	B	0-61	2-4
MET 01 072	38.5	CM2 CHONDRITE	B	A/B	0-12	
MET 01 073	15.7	CM1 CHONDRITE	B	B		
MET 01 074	46.2	CV3 CHONDRITE	B	A	0-9	0-2
MET 01 075	29.9	CM2 CHONDRITE	B	B	0-46	
MET 01 076	9.2	CM2 CHONDRITE	B	B	1-36	1-16
MET 01 077	18.9	CM2 CHONDRITE	C	A	0-53	1-8
MET 01 078	19.5	CM2 CHONDRITE	B	B	1-41	
MET 01 079	11.5	CM1 CHONDRITE	B	B		
MET 01 080	3.4	CV3 CHONDRITE	B	A/B	0-24	1-2
MET 01 083	12.6	UREILITE	B	B	8	8
MET 01 085	30.6	UREILITE (ANOMALOUS)	B	B		11

~Classified by using refractive indices.

Table 2: Newly Classified Specimens Listed By Type **

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
		Achondrites				
MET 01 083	12.6	UREILITE	B	B	8	8
MET 01 085	30.6	UREILITE (ANOMALOUS)	B	B		11
		Carbonaceous Chondrites				
QUE 99 680	15.7	CK5 CHONDRITE	CE	C	29	21
QUE 99 681	4.0	CK5 CHONDRITE	CE	C	29	23
MET 01 070	40.6	CM1 CHONDRITE	BE	B		
MET 01 073	15.7	CM1 CHONDRITE	B	B		
MET 01 079	11.5	CM1 CHONDRITE	B	B		
QUE 99 886	15.3	CM2 CHONDRITE	B	A/B	0-43	1
MET 01 071	4.5	CM2 CHONDRITE	B	B	0-61	2-4
MET 01 072	38.5	CM2 CHONDRITE	B	A/B	0-12	
MET 01 075	29.9	CM2 CHONDRITE	B	B	0-46	
MET 01 076	9.2	CM2 CHONDRITE	B	B	1-36	1-16
MET 01 077	18.9	CM2 CHONDRITE	C	A	0-53	1-8
MET 01 078	19.5	CM2 CHONDRITE	B	B	1-41	
MET 00 429	30.5	CV3 CHONDRITE	B	B	1-28	1-3
MET 00 430	151.7	CV3 CHONDRITE	B	B	0-9	0-2
MET 01 074	46.2	CV3 CHONDRITE	B	A	0-9	0-2
MET 01 080	3.4	CV3 CHONDRITE	B	A/B	0-24	1-2
		Chondrites Type - 3				
MET 00 526	208.2	H3.2 CHONDRITE	B/C	A	1-19	3-28
BTN 00 301	33.8	H3.3 CHONDRITE	B	B	8-38	5-21
BTN 00 302	37.1	H3.3 CHONDRITE	B	B	1-32	4-19
BTN 00 303	15.8	H3.3 CHONDRITE	B	B	1-30	2-19
MET 00 452	774.9	H3.5 CHONDRITE	B/CE	B	2-19	7
		E Chondrites				
QUE 99 473	0.3	EH CHONDRITE	B/C	A		1-2

****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.

Table 3: Tentative Pairings for New Specimens

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 issue 9(2) (June 1986). Possible pairings were updated in Meteoritical Bulletin No. 76 (Meteoritics 29, 100-143) and Meteoritical Bulletin No. 79 (Meteoritics and Planetary Science 31, A161-174).

CK5 CHONDRITES
QUE 99681 with QUE 99680

CM1 CHONDRITES
MET 01073 and MET 01079 with MET 01070

CM2 CHONDRITES
MET 01072, MET 01075 and MET 01078 with MET 01071
MET 01077 with MET 01076

CV3 CHONDRITES
MET 00430 with MET 00429
MET 01080 with MET 01074

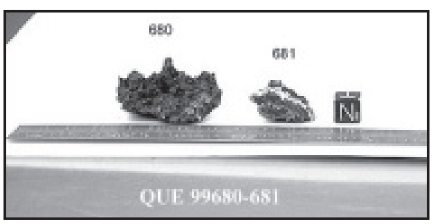
H3 CHONDRITES
BTN 00302 and BTN 00303 with BTN 00301

Petrographic Descriptions

Sample No.:	**QUE 99473**
Location:	Queen Alexandra Range
Field No.:	12707
Dimensions (cm):	0.6 x 0.6 x 0.4
Weight (g):	0.274
Meteorite Type:	EH Chondrite

Macroscopic Description:
Cecilia Satterwhite
98% of the exterior of this meteorite has black fusion crust with oxidation haloes. The interior consists of a brown/black matrix with some metal.

Thin Section (, 2) Description:
Linda Welzenbach, Tim McCoy and Gretchen Benedix
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. Olivine is absent. The matrix has an igneous texture typical of impact-melted enstatite chondrites such as Abee. Weathering is modest, with staining of some enstatite grains and minor alteration of metal and sulfides. Microprobe analyses show pyroxene is Fs_{1-2}. The meteorite appears to be an EH impact melt breccia.



Sample No.:	**QUE 99680, QUE 99681**
Location:	Queen Alexandra Range
Field No.:	12579; 12568
Dimensions (cm):	3.5 x 2.5 x 1.5; 2.0 x 1.5 x 1.25
Weight (g):	15.677; 3.952
Meteorite Type:	CK5 Chondrite

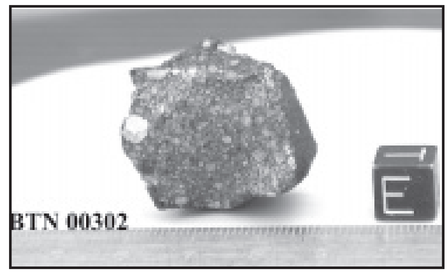
Macroscopic Description:
Kathleen McBride
The exterior of 680 is covered with 50% brown/black fusion crust with polygonal fractures. The interior is a vuggy weathered charcoal gray matrix with evaporites. The rock contains white and gray inclusions, ranging in size from 1-3 mm. 681 has 20% black fusion crust with polygonal fractures and evaporites. The interior is similar to 680 but has more evaporites and, an evaporite material that gives the rock the appearance of being smeared with toothpaste. White and gray inclusions are visible ranging in size from <1 – 2 mm.

Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy
These two meteorites are so similar that a single description suffices. The sections consist of large (up to 2 mm), well-defined chondrules in a matrix of finer-grained silicates, sulfides and very abundant magnetite. The meteorites are little weathered, but extensively shock blackened. Silicates are homogeneous. Olivine is Fa_{29} and orthopyroxene is Fs_{21-23}. The meteorites are CK5 chondrites.

Sample No.:	**QUE 99886**
Location:	Queen Alexandra Range
Field No.:	12924
Dimensions (cm):	2.5 x 2.5 x 1.0
Weight (g):	15.31
Meteorite Type:	CM2 Chondrite

Macroscopic Description:
Cecilia Satterwhite
The exterior is covered with 75% black fusion crust. It appears pitted and frothy on some edges, other areas have a ropy texture. The interior is black with abundant white and gray inclusions.

Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy
The section consists 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_{0-43}, orthopyroxene is Fs_1. The matrix consists dominantly of an Fe-rich serpentine. The meteorite is a CM2.

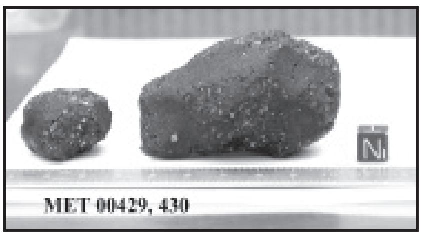


Sample No.:	**BTN 00301, BTN 00302, BTN 00303**
Location:	Bates Nunataks
Field No.:	12006; 12012; 12075
Dimensions (cm):	4.0 x 2.5 x 2.75; 3.0 x 2.5 x 2.25; 2.5 x 2.0 x 1.5
Weight (g):	33.765; 37.060; 15.809
Meteorite Type:	H3 Chondrite (Subtype 3.3)

Macroscopic Description:
Kathleen McBride
The exterior of these chondrites have approximately 50% brown/black fusion crust with polygonal fractures and oxidation haloes. The interiors are composed of a black matrix with numerous chondrules that are gray,

white and rust in color. The size range is 1-2 mm in diameter. There are various odd shaped inclusions 1-3 mm in length of the same colors as well as some that are tan in color. These meteorites are hard.

Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy
These sections exhibit numerous small, well-defined chondrules (up to 1.5 mm) in a black matrix of fine-grained silicates, metal and troilite. Weak shock effects are present. Polysynthetically twinned pyroxene is extremely abundant. Silicates are unequilibrated; olivines range from Fa_{1-38} and pyroxenes from Fs_{2-21}. The meteorites are H3 chondrites (estimated subtype 3.3).



Sample No.: **MET 00429, MET 00430**
Location: Meteorite Hills
Field No.: 13738; 13095
Dimensions (cm): 3.0 x 2.0 x 2.5; 6.0 x 3.0 x 3.5
Weight (g): 30.485; 151.700
Meteorite Type: CV3 Chondrites

Macroscopic Description:
Kathleen McBride
25% of the exteriors have brown fusion crust exhibiting polygonal fractures. The interiors are a charcoal gray matrix with white, light gray and rust colored chondrules, 1-3 mm in diameter. The meteorites are moderately hard.

Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy
The sections exhibit large chondrules (up to 3 mm) and CAIs in a dark matrix. Olivines range from Fa_{0-28} and pyroxenes from Fs_{0-3}. The meteorites are CV3 chondrites.

Sample No.: **MET 00452**
Location: Meteorite Hills
Field No.: 13767
Dimensions (cm): 10.5 x 10.5 x 3.5
Weight (g): 774.9
Meteorite Type: H3 Chondrite

Macroscopic Description:
Kathleen McBride
The exterior has striated brown/black fusion crust with oxidation haloes. Some thin fractures and pits are visible. The interior is black matrix with rust-colored chondrules. Evaporites are visible along fractures. The meteorite is hard.

Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy
The section exhibits numerous small, well-defined chondrules (up to 1.5 mm) in a black matrix of fine-grained silicates, metal and troilite. Weak shock effects are present. Polysynthetically twinned pyroxene is extremely abundant. The meteorite is relatively weathered. Silicates are unequilibrated; olivines range from Fa_{2-19}. Orthopyroxene is Fs_7. The meteorite is an H3 chondrite (estimated subtype ~3.5).

Sample No.: **MET 00526**
Location: Meteorite Hills
Field No.: 13507
Dimensions (cm): 7.0 x 4.0 x 3.5
Weight (g): 208.2
Meteorite Type: H3 Chondrite

Macroscopic Description:
Kathleen McBride
The exterior has very thin black-gray fusion crust with chondrules visible through crust. The interior is composed of a black matrix, with inclusions ranging in size from 3-4 mm and mm-sized chondrules. Chondrules are rust colored and the inclusions are a slightly lighter shade. The meteorite is relatively hard.

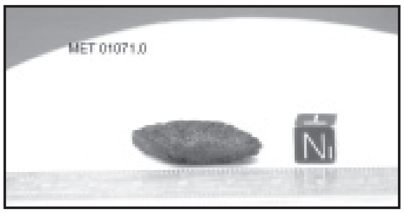
Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy
The section exhibits numerous small, well-defined chondrules (up to 1.5 mm) in a black matrix of fine-grained silicates, metal and troilite. Weak shock effects are present. Polysynthetically twinned pyroxene is extremely abundant. The meteorite is relatively weathered. Silicates are unequilibrated; olivines range from Fa_{1-19} and pyroxenes from Fs_{3-28}. The meteorite is an H3 chondrite (estimated subtype <3.2).

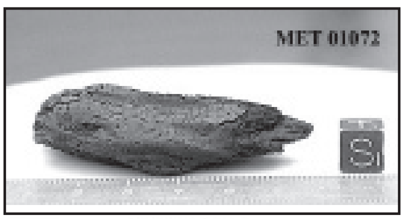
Sample No.: **MET 01070, MET 01073, MET 01079**
Location: Meteorite Hills
Field No.: 13071; 13836; 13017
Dimensions (cm): 4.5 x 2.5 x 3.5; 4.0 x 3.5 x 0.75; 2.5 x 1.75 x 1.25
Weight (g): 40.585; 15.717; 11.510
Meteorite Type: CM1 Chondrites

Macroscopic Description:
Kathleen McBride
The amount of fusion crust varies (from 25-70%) on these meteorites. All have dull purplish black fusion crust with polygonal fractures. The interior is a black matrix with mm-sized white clasts and a brittle texture.

Thin Section (, 2) Description: Gretchen Benedix, Linda Welzenbach and Tim McCoy

The sections consist 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; rare sulfide grains are present. Unaltered olivine or pyroxene grains of sufficient size for microprobe analyses were not found. The meteorites are highly altered CM chondrites probably of petrologic type 1.





Sample No.: **MET 01071, MET 01072, MET 01075, MET 01078**

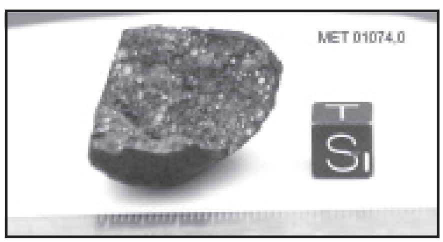
Location: Meteorite Hills
Field No.: 13044; 13027; 13829; 13907
Dimensions (cm): 3.0 x 1.5 x 0.75; 6.0 x 3.5 x 1.5 ; 4.0 x 3.0 x 1.5 ; 4.5 x 3.0 x 1.0
Weight (g): 4.503; 38.501; 29.943; 19.458
Meteorite Type: CM2 Chondrites

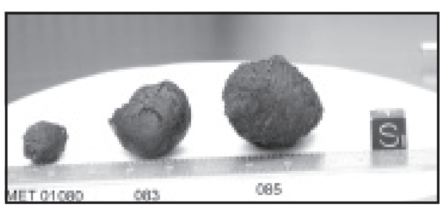
Macroscopic Description: Kathleen McBride

The amount of fusion crust on these meteorites ranges from 30 to 60%. All have purplish fusion crust with polygonal fractures and rust on some surfaces. Interiors reveal a black, platy matrix with 1 mm-sized white inclusions. These meteorites are friable.

Thin Section (, 2) Description: Gretchen Benedix, Linda Welzenbach and Tim McCoy

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_{0-61},with the majority of olivine falling around Fa_1; orthopyroxene is Fs_{1-4}. MET 01072 and 01078 exhibit foliated texture with somewhat flattened chondrules. The matrix consists dominantly of an Fe-rich serpentine. The meteorites are CM2 chondrites.





MET 01080

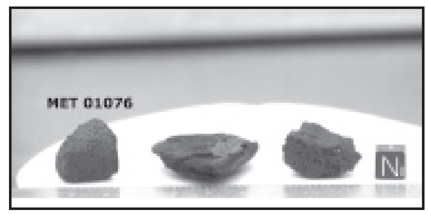
Location: Meteorite Hills
Field No.: 13876; 13026
Dimensions (cm): 3.5 x 2.5 x 2.0; 2.0 x 1.0 x 1.0
Weight (g): 46.198; 3.499
Meteorite Type: CV3 Chondrite

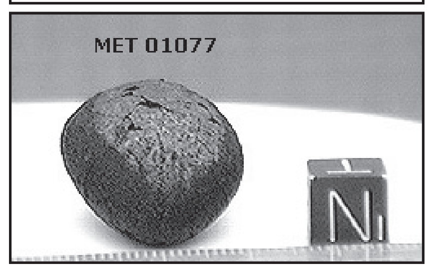
Macroscopic Description: Kathleen McBride

074 has 50% rough brown/black fusion crust with polygonal fractures. 080 only has a small patch of black fusion crust. The interior of each meteorite has a black matrix with white and charcoal gray clasts and light colored chondrules. Minor weathering is visible.

Thin Section (, 2) Description: Gretchen Benedix, Linda Welzenbach and Tim McCoy

The sections exhibit large chondrules (up to 3 mm) and CAIs in a dark matrix. Olivines range from Fa_{0-24} and pyroxenes from Fs_{0-2}. The meteorites are CV3 chondrites.





Sample No.: **MET 01076, MET 01077**

Location: Meteorite Hills
Field No.: 13890; 13900
Dimensions (cm): 3.0 x 2.0 x 1.5 ; 3.5 x 2.0 x 1.5
Weight (g): 9.205; 18.912
Meteorite Type: CM2 Chondrites

Macroscopic Description: Kathleen McBride

The exteriors have dull, rough, black fusion crust with pits and polygonal fractures. The interiors reveal a brown-black matrix with mm-sized clasts and chondrules. Colors range from white to tan.

Thin Section (, 2) Description:
Gretchen Benedix, Linda Welzenbach and Tim McCoy

The sections consist of many small chondrules with some up to 1.5 mm, mineral grains and CAIs set in a black matrix; rare metal and sulfide grains are present. Olivine compositions are Fa_{0-53}, orthopyroxene is Fs_{1-16}, although the majority of orthopyroxene is less than Fs_3. The matrix consists dominantly of serpentine. The meteorites are CM2 chondrites.

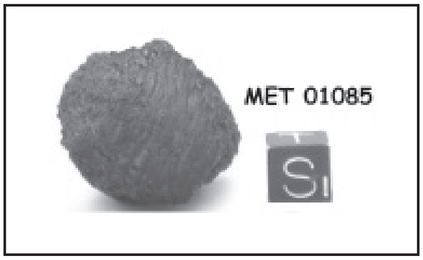
Sample No.: **MET 01083**
Location: Meteorite Hills
Field No.: 13958
Dimensions (cm): 2.0 x 2.0 x 1.5
Weight (g): 12.616
Meteorite Type: Ureilite

Macroscopic Description:
Kathleen McBride

70% of the exterior surface is covered with black, shiny fusion crust. The interior has a crystalline matrix that is dark in color with some rusty haloes. Some slightly lighter inclusions are visible.

Thin Section (, 2) Description:
Tim McCoy, Gretchen Benedix, and Linda Welzenbach

The section consists of an aggregate of olivine and pyroxene grains up to 1 mm across rimmed by carbon-rich material containing traces of metal. The olivines exhibit undulatory extinction. The olivine cores and rims are equilibrated (Fa_8). Pyroxenes are pigeonite (Fs_8Wo_5) and subcalcic augite grains (Fs_5Wo_{37}). The meteorite is a ureilite.



Sample No.: **MET 01085**
Location: Meteorite Hills
Field No.: 13057
Dimensions (cm): 3.5 x 3.5 x 2.25
Weight (g): 30.614
Meteorite Type: Ureilite (Anomalous)

Macroscopic Description:
Kathleen McBride

Slightly shiny, striated fusion crust covers approximately 25% of the exterior. The interior reveals a dark crystalline matrix with some rusty haloes and light colored inclusions.

Thin Section (, 2) Description:
Tim McCoy, Gretchen Benedix, and Linda Welzenbach

During preparation of this thin section, a large (~2 mm) patch of carbonado was encountered and it remains in the potted butt. The section consists entirely of pigeonite grains up to 2 mm across. Feathery graphite is found in aggregates between the pyroxene grains. The pyroxenes exhibit undulatory extinction. Pigeonite compositions are equilibrated with $Fs_{11}Wo_5$. No olivine or subcalcic augite grains were found. The mineralogy and mineral compositions are consistent with classification as a ureilite, although no ureilites composed entirely of pigeonite are known (Mittlefehldt et al., 1998). The meteorite is an anomalous ureilite.

Sample Request Guidelines

All sample requests should be made electronically using the form at

<http://curator.jsc.nasa.gov/curator/antmet/samreq.htm>

(**preferably via e-mail—hard copies are not necessary**). Please type "**MWG Request**" in the subject line.

If necessary, hard copies can be sent to

Secretary, Meteorite Working Group
NASA-Johnson Space Center
ST
Houston, TX 77058 USA
FAX: (281) 483-5347

Requests that are received by the MWG Secretary before **Sept. 20, 2002** will be reviewed at the MWG meeting **Sept.26–27, 2002** in Wash. D.C. Requests that are received after the **Sept. 20** deadline may be delayed for review until the MWG meets again in the Spring of 2003. **Please submit your requests on time**. Questions about sample requests may be directed in writing to the MWG Secretary at the above address or to the curator via phone, fax, or e-mail.

The MWG meets twice a year—each spring in Houston, Texas and each fall in Washington, D.C. The deadline for submitting a request is generally 2 weeks before the scheduled meeting.

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 be accompanied by an e-mail (or an initialed or countersigned hard copy) from a supervising scientist to confirm access to facilities for analysis. All sample requests will be reviewed in a timely manner. Requests that do not meet the guidelines for JSC curatorial allocation will be reviewed by the MWG, a peer review committee that meets twice a year to guide the collection, curation, allocation, and distribution of the U.S. collection of Antarctic meteorites. Issuance of samples does not imply a commitment by any agency to fund the proposed research. As a matter of policy, U.S. Antarctic meteorites are the property of the National Science Foundation, and all allocations are subject to recall.

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 be accompanied by confirming e-mail from the lead member of each group in the consortium or initialed or countersigned hard copies. In most cases, all necessary information should be condensed to a 500–1000 word message, although informative attachments (publications that explain rationale, flow diagrams for analyses, etc.) are welcome. **It is very helpful to include a table summarizing the request and listing each meteorite requested, the type of samples (e.g., interior chip or thin section) and the optimum and minimum masses needed.**

Samples from any meteorite that has been made available through announcement in any issue of the Antarctic Meteorite Newsletter can be requested. 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 February 2002) have been published in several issues of the Meteoritical Bulletin in *Meteoritics* 29, 100-143, and *Meteoritics and Planetary Science* 31, A161-A174; 33, A221-A239; 34, A169-A186; 35, A199-A225; 36, A293-A322; and 37, A157-184. The most current listing is found online at

<http://www-curator.jsc.nasa.gov /curator/antmet/us_clctn.htm>.

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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://www-curator.jsc.nasa.gov/curator/antmet/antmet.htm
JSC Curator, martian meteorites	http://www-curator.jsc.nasa.gov/curator/antmet/marsmets/contents.htm
JSC Curator, Mars Meteorite Compendium	http://www-curator.jsc.nasa.gov/curator/antmet/mmc/mmc.htm
Antarctic collection	http://www.cwru.edu/affil/ansmet
LPI martian meteorites	http://cass.jsc.nasa.gov/lpi/meteorites/mars_meteorite.html
NIPR Antarctic meteorites	http://www.nipr.ac.jp/
BMNH general meteorites	http://www.nhm.ac.uk/mineralogy/collections/meteor.htm
UHI planetary science discoveries	http://www.soest.hawaii.edu/PSRdiscoveries
Meteoritical Society	http://www.uark.edu/studorg/metsoc
Meteorite! Magazine	http://www.meteor.co.nz
Geochemical Society	http://www.geochemsoc.org

Other Websites of Interest

Mars Exploration	http://mars.jpl.nasa.gov
Lunar Prospector	http://lunar.arc.nasa.gov
Near Earth Asteroid Rendezvous	http://near.jhuapl.edu/
Stardust Mission	http://stardust.jpl.nasa.gov
Genesis Mission	http://genesismission.jpl.nasa.gov
Contour Mission	http://www.jhuapl.edu/public/pr/CONTOUR/