



# Antarctic Meteorite NEWSLETTER

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

Volume 7, Number 1

February, 1984

Supported by the National Science Foundation, Division of Polar Programs, and compiled at Code SN2, Johnson Space Center, NASA, Houston, Texas 77058

## SAMPLE REQUESTS AND ALLOCATIONS

The Meteorite Working Group will meet in September for the purpose of reviewing requests for Antarctic Meteorites. Requests must be in by March 30, 1984.

Requests for specific samples (including sample name/number, weight requested, a brief description of the intended meteorite investigation, and pertinent sample specifics) should be sent to:

Secretary, MWG  
Planetary Materials Branch, SN2  
NASA, Johnson Space Center  
Houston, Tx 77058 U.S.A.

\* \* \* LISTING \* \* \*

This newsletter contains a complete list of all classified Antarctic Meteorites curated at the Johnson Space Center and Smithsonian Institution. This includes samples from 1976 through 1982 field seasons.

Mailings of the Antarctic Meteorite Newsletter have grown to over 600 per issue. We wish to verify that everyone receiving the Antarctic Meteorite Newsletter wishes to continue to receive it. It is mandatory that you return either this form or the one from the last newsletter if you want to continue receiving the Newsletter.

THIS IS THE SECOND AND FINAL NOTICE BEFORE WE EDIT THE MAILING LIST. Please submit before June 1, 1984. Also, please use the form as an address change if necessary.

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NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
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Please mail to: Secretary, NWG  
Planetary Materials Branch, SN2  
NASA, Johnson Space Center  
Houston, Texas 77058 U.S.A.

\* \* \* ERRATA \* \* \*

In the last newsletter (Vol. 6, No. 2) several plagioclase compositions were recorded incorrectly as Anorthite units rather than Albite units. The following are the correct plagioclase compositions:

EET 82600 - Ab 7-21  
PCA 82501 - Ab 8-20  
PCA 82502 - Ab 8-23  
TIL 82403 - Ab 7-23

In accordance with the Meteoritical Nomenclature Committee's ruling, the field party "A" has been dropped from the sample name as of the 1982 collection. Sample names from the 1976-1981 will remain the same.

The abbreviation for the 1982 Allan Hills meteorites is ALH82XXX, Elephant Moraine is EET82XXX, Pecora Escarpment is PCA82XXX, and the Thiel Mountains is TIL82XXX. The last newsletter (Vol. 6, No. 2) did not reflect this change.

\* \* \* ALHA81009 Clasts \* \* \*

Several interesting clasts were discovered while processing ALHA81009 (Eucrite). They are now available for allocation.

- 1) Dark clast with light inclusions
- 2) Light gray clast with white and yellowish minerals
- 3) Gray area with no clasts

Requests for these specific clasts may be made to the MWG.

Marvin, Ursula B., and Brian Mason (editors). Field and Laboratory Investigations of Meteorites from Victoria Land, Antarctica. Smithsonian Contributions to the Earth Sciences, number 26, 1984.

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This monograph will be published soon. If you wish to receive a free copy, please send your name and address to:

Mineral Sciences (NHB 119)  
Smithsonian Institution  
Washington, DC 20560  
ATTN: B. Mason

Classifications of Antarctic Meteorites 1976 - 1982

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA76001	20151.0	L-6 Chondrite	A	A	25	21
ALHA76002	1510.0	Iron-Group IA				
ALHA76003	10495.0	L-6 Chondrite	A	A	25	21
ALHA76004	305.0	LL-3 Chondrite	A	A	0-34	0-53
ALHA76005	1425.0	Eucrite (polymict)	A	A		37-57
ALHA76006	1137.0	H-6 Chondrite	C	B	18	16
ALHA76007	410.0	L-6 Chondrite	B	A	24	21
ALHA76008	1150.0	H-6 Chondrite	B/C	B	19	17
ALHA76009	407000.0	L-6 Chondrite	B	B	24	21
MBRA76001	4108.0	H-6 Chondrite	B	B	18	16
MBRA76002	13773.0	H-6 Chondrite	B	B	18	16
ALHA77001	252.0	L-6 Chondrite	B	B	25	21
ALHA77002	235.2	L-5 Chondrite	B	A/B	25	22
ALHA77003	779.6	Carbonaceous C30	A	A	4-48	2-25
ALHA77004	2230.0	H-4 Chondrite	C	C	17-20	15-27
ALHA77005	482.5	Shergottite	A	A	28	23
ALHA77007 @	99.3	H-5 Chondrite	B		19.1	16.7
ALHA77008 @	93.0	L-6 Chondrite	A		24.6	20.6
ALHA77009	235.5	H-4 Chondrite	C	A	18	16
ALHA77010	295.8	H-4 Chondrite	C	A	18	15-18
ALHA77011	291.5	L-3 Chondrite	C	A	4-36	1-33
ALHA77012	180.2	H-5 Chondrite	C	A	18	16
ALHA77013 @	23.0	L-3 Chondrite	B		9-28	1-35
ALHA77014	308.8	H-5 Chondrite	C	B/C	18	17
ALHA77015	411.1	L-3 Chondrite	C	B	1-21	4-24
ALHA77016 @	78.3	H-5 Chondrite	B		18.6	17.1
ALHA77017 @	77.9	H-5 Chondrite	B		18.8	16.3
ALHA77018 @	51.8	H-5 Chondrite	B/C		19.0	17.0
ALHA77019 @	59.8	L-6 Chondrite	B/C		24.9	21.4
ALHA77021	16.7	H-5 Chondrite	C	A	18	17
ALHA77022 @	16.0	H-5 Chondrite	A		19.1	17.0
ALHA77023 @	21.4	H-5 Chondrite	B		19.1	16.8
ALHA77025	19.4	H-5 Chondrite	C	B	18	17
ALHA77026 @	20.3	L-6 Chondrite	B/C		24.3	20.7
ALHA77027 @	3.7	L-6 Chondrite	B/C		25.0	21.5
ALHA77029 @	1.4	Carbonaceous C30	A/B		23.0	2.6
ALHA77031 @	0.5	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77033	9.3	L-3 Chondrite	C	B	8-38	8-9
ALHA77034 @	1.8	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77036 @	8.5	L-3 Chondrite	B		n.d.	n.d.
ALHA77038 @	18.8	H-5 Chondrite	A/B		19.0	17.1
ALHA77039 @	8.2	H-5 Chondrite	A/B		18.5	16.3
ALHA77041 @	16.6	LL-6 Chondrite	A		30.7	25.1

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA77042 @	20.4	H-5 Chondrite	A/B		19.0	16.6
ALHA77043 @	11.4	L-3 Chondrite	B/C		1-37	1-28
ALHA77045 @	17.9	H-5 Chondrite	A		18.7	17.0
ALHA77046 @	7.6	H-6 Chondrite	A/B		19.0	16.7
ALHA77047 @	20.4	L-3 Chondrite	C		n.d.	n.d.
ALHA77049 @	7.3	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77050 @	84.2	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77051 @	15.0	H-5 Chondrite	A		18.8	16.5
ALHA77052 @	112.2	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77054 @	10.4	H-5 Chondrite	B		18.5	16.9
ALHA77056 @	12.3	H-4 Chondrite	A/B		18.8	16.3
ALHA77058 @	3.7	H-5 Chondrite	B		18.8	16.1
ALHA77060 @	64.4	LL-5 Chondrite	A		28.1	23.2
ALHA77061	12.6	H-5 Chondrite	B	A	18	17
ALHA77062	16.7	H-5 Chondrite	B	B	18	17
ALHA77063 @	2.9	H-5 Chondrite	B		18.0	16.8
ALHA77064	6.5	H-5 Chondrite	B	B	18	17
ALHA77066 @	4.9	H-5 Chondrite	A		19.0	17.4
ALHA77069 @	0.8	L-6 Chondrite	B/C		25.4	21.4
ALHA77070 @	18.4	H-5 Chondrite	B		18.4	16.8
ALHA77071	10.9	H-5 Chondrite	B	B	18	17
ALHA77073 @	10.1	H-5 Chondrite	A/B		18.8	17.7
ALHA77074	12.1	H-5 Chondrite	B	B	18	17
ALHA77076 @	1.7	H-5 Chondrite	B		19.5	16.1
ALHA77078 @	7.8	H-5 Chondrite	B		19.5	16.7
ALHA77079 @	7.8	H-5 Chondrite	A		18.2	15.8
ALHA77081	8.6	H? Chondrite	B	A	11	11
ALHA77082 @	12.0	H-5 Chondrite	A/B		19.3	16.5
ALHA77084 @	44.1	H-5 Chondrite	A/B		18.8	16.8
ALHA77085 @	45.9	H-5 Chondrite	B		18.8	17.6
ALHA77086	19.4	H-5 Chondrite	C	B	19	17
ALHA77087 @	30.7	H-5 Chondrite	B		19.0	16.7
ALHA77088	51.1	H-5 Chondrite	C	B	19	17
ALHA77089 @	7.8	L-6 Chondrite	B		25.5	21.4
ALHA77091 @	4.2	H-5 Chondrite	B/C		18.9	16.1
ALHA77092 @	45.0	H-5 Chondrite	A		18.5	16.5
ALHA77094 @	6.6	H-5 Chondrite	B		18.5	16.2
ALHA77096 @	2.5	H-5 Chondrite	A		18.7	17.1
ALHA77098 @	8.0	H-5 Chondrite	B		18.7	16.7
ALHA77100 @	8.5	H-5 Chondrite	A/B		19.2	16.4
ALHA77101 @	3.8	H-5 Chondrite	B		18.6	17.0
ALHA77102	12.2	H-5 Chondrite	B	B	19	15
ALHA77104 @	6.3	H-5 Chondrite	A		18.9	16.9
ALHA77106 @	7.8	H-5 Chondrite	A/B		18.8	16.5
ALHA77108 @	0.7	H-5 Chondrite	A/B		18.5	15.9
ALHA77111 @	52.3	H-6 Chondrite	A/B		19.0	16.6
ALHA77112 @	21.7	H-5 Chondrite	A		18.7	16.7
ALHA77113 @	2.0	H-5 Chondrite	B		18.7	17.2
ALHA77114 @	44.5	H-5 Chondrite	B		19.6	17.2
ALHA77115 @	154.4	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77117 @	20.8	L-5 Chondrite	A/B		24.4	21.0
ALHA77118	7.8	H-5 Chondrite	C	B	19	17
ALHA77119	6.4	H-5 Chondrite	C	B	18	17

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA77120 @	3.9	H-5 Chondrite	A/B		18.5	16.0
ALHA77122 @	4.6	H-5 Chondrite	B		19.1	16.8
ALHA77124	4.4	H-5 Chondrite	C	A	19	16
ALHA77125 @	18.7	H-5 Chondrite	A/B		17.2	15.5
ALHA77126 @	25.2	H-5 Chondrite	A/B		18.3	16.2
ALHA77127 @	3.8	L-5 Chondrite	B		25.0	21.1
ALHA77129 @	1.7	H-5 Chondrite	B		18.9	16.6
ALHA77130 @	24.8	H-5 Chondrite	A		18.9	16.5
ALHA77131 @	25.9	H-6 Chondrite	A/B		19.2	16.8
ALHA77132 @	115.4	H-5 Chondrite	A/B		19.0	16.9
ALHA77133 @	18.7	H-6 Chondrite	A		19.0	17.0
ALHA77134 @	19.1	H-6 Chondrite	A		18.9	16.7
ALHA77136 @	3.6	H-5 Chondrite	A/B		19.1	16.4
ALHA77138 @	2.1	H-5 Chondrite	A		19.2	17.0
ALHA77139 @	65.9	H-5 Chondrite	A/B		18.6	16.4
ALHA77140	78.6	L-3 Chondrite	C	B	8-44	2-17
ALHA77142 @	3.1	H-5 Chondrite	A/B		18.9	17.1
ALHA77143 @	39.0	H-5 Chondrite	A/B		18.7	16.2
ALHA77144	7.9	H-6 Chondrite	B	A	19	17
ALHA77146 @	18.2	H-6 Chondrite	A/B		18.9	16.9
ALHA77147 @	18.7	H-6 Chondrite	A/B		19.0	16.6
ALHA77148	13.1	H-6 Chondrite	C	B	18	16
ALHA77149 @	25.6	H-6 Chondrite	A/B		19.1	16.9
ALHA77150	58.3	L-6 Chondrite	C	B	25	22
ALHA77151 @	16.9	H-5 Chondrite	A		18.9	16.4
ALHA77152 @	17.8	H-5 Chondrite	A		18.7	16.9
ALHA77153 @	12.0	H-5 Chondrite	A		19.2	16.7
ALHA77155	305.3	L-6 Chondrite	A/B	A	24	20
ALHA77156 @	17.7	EH-4 Chondrite	B		0.8	1.5
ALHA77157 @	88.3	H-6 Chondrite	A/B		18.6	15.7
ALHA77158 @	19.9	H-5 Chondrite	B		18.9	16.9
ALHA77159 @	17.0	L-6 Chondrite	A/B		24.4	20.8
ALHA77160	70.4	L-3 Chondrite	C	B	3-46	6-40
ALHA77161 @	6.1	H-5 Chondrite	B		19.3	17.1
ALHA77162 @	29.0	L-6 Chondrite	A		25.3	20.9
ALHA77163 @	24.3	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77164	38.1	L-3 Chondrite	C	C	6-39	3-41
ALHA77165	30.5	L-3 Chondrite	C	C	8-33	6-35
ALHA77166 @	138.8	L-3 Chondrite	C		n.d.	n.d.
ALHA77167	611.2	L-3 Chondrite	C	B/C	2-41	3-17
ALHA77168 @	24.7	H-5 Chondrite	B		19.0	16.5
ALHA77170 @	12.2	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77171 @	23.8	H-5 Chondrite	A/B		18.9	17.0
ALHA77173 @	25.8	H-5 Chondrite	B		19.1	17.0
ALHA77174 @	32.4	H-5 Chondrite	A		18.3	16.0
ALHA77175 @	23.3	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77176 @	54.4	L-3 Chondrite	B		0.3-34	1-37
ALHA77177	368.2	H-5 Chondrite	C	A	18	16
ALHA77178 @	5.7	L-3 Chondrite	B/C		1-36	2-40
ALHA77180	190.8	L-6 Chondrite	C	A	24	20
ALHA77181 @	33.0	H-5 Chondrite	B		20.0	17.3
ALHA77182	1134.7	H-5 Chondrite	C	B	19	17
ALHA77183	288.0	H-6 Chondrite	C	A	19	16

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA77184 @	127.6	H-5 Chondrite	B		17.8	15.9
ALHA77185 @	28.0	L-3 Chondrite	A/B		n.d.	n.d.
ALHA77186 @	122.4	H-5 Chondrite	A/B		18.8	16.0
ALHA77187 @	52.2	H-5 Chondrite	A/B		18.1	16.3
ALHA77188 @	109.0	H-5 Chondrite	A/B		18.1	16.1
ALHA77190	387.1	H-4 Chondrite	C	C	17-19	15-22
ALHA77191	642.2	H-4 Chondrite	C	B/C	16-18	14-16
ALHA77192	845.3	H-4 Chondrite	C	C	16-18	15-21
ALHA77193 @	6.7	H-5 Chondrite	A		19.0	15.7
ALHA77195 @	4.7	H-5 Chondrite	A		18.9	16.4
ALHA77197 @	20.3	L-3 Chondrite	A/B		10-27	4-21
ALHA77198 @	7.3	L-6 Chondrite	B		24.4	20.6
ALHA77200 @	0.9	H-6 Chondrite	C		19.7	17.6
ALHA77201 @	15.0	H-5 Chondrite	A		18.8	15.3
ALHA77202 @	2.7	H-5 Chondrite	B		18.6	16.6
ALHA77205 @	3.1	H-5 Chondrite	B		18.8	16.7
ALHA77207 @	4.9	H-5 Chondrite	A/B		17.8	16.7
ALHA77208	1733.0	H-4 Chondrite	C	C	17	14
ALHA77209 @	31.8	H-6 Chondrite	B		18.8	16.4
ALHA77211 @	26.7	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77212 @	16.8	H-6 Chondrite	A/B		18.9	17.0
ALHA77213 @	8.4	H-5 Chondrite	A		18.6	16.5
ALHA77214	2111.0	L-3 Chondrite	C	C	1-49	4-23
ALHA77215	819.6	L-3 Chondrite	B	B/C	22-26	9-21
ALHA77216	1470.0	L-3 Chondrite	A/B	B/C	15-35	14-23
ALHA77217	413.2	L-3 Chondrite	B	B/C	17-25	9-26
ALHA77218 @	45.1	L-5 Chondrite	A		23.4	19.1
ALHA77219	637.1	Mesosiderite	B	B	26	24-28
ALHA77220 @	69.1	H-5 Chondrite	B		17.7	16.0
ALHA77221	229.2	H-4 Chondrite	C	A	15	13-15
ALHA77222 @	125.4	H-4 Chondrite	A/B		18.0	15.3
ALHA77223	207.9	H-4 Chondrite	C	C	17	15-23
ALHA77224	786.9	H-4 Chondrite	C	C	19	17
ALHA77225	5878.0	H-4 Chondrite	C	C	17	16
ALHA77226	15323.0	H-4 Chondrite	C	C	18	16
ALHA77227 @	16.0	H-5 Chondrite	A		18.9	16.6
ALHA77228 @	19.3	H-5 Chondrite	B		18.5	16.3
ALHA77230	2473.0	L-4 Chondrite	C	B	22-25	18-29
ALHA77231	9270.0	L-6 Chondrite	A/B	A/B	24	21
ALHA77232	6494.3	H-4 Chondrite	C	C	17	15
ALHA77233	4087.0	H-4 Chondrite	C	B	14-21	15-17
ALHA77235 @	4.9	H-5 Chondrite	A/B		18.9	16.7
ALHA77237 @	4.1	H-5 Chondrite	A		18.5	15.8
ALHA77239 @	19.0	H-6 Chondrite	B		18.7	15.9
ALHA77240 @	25.1	H-5 Chondrite	A		18.8	16.0
ALHA77241 @	144.1	L-3 Chondrite	C		n.d.	n.d.
ALHA77242 @	56.5	H-5 Chondrite	B		18.8	16.2
ALHA77244 @	39.5	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77245 @	33.4	H-5 Chondrite	A/B		19.2	17.2
ALHA77246 @	41.6	H-6 Chondrite	B		19.2	16.5
ALHA77247 @	44.2	H-5 Chondrite	A/B		18.8	16.4
ALHA77248 @	96.1	H-6 Chondrite	B/C		18.7	16.7
ALHA77249	503.6	L-3 Chondrite	C	C	7-35	2-25



Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA77250	10555.0	Iron-Group IA				
ALHA77251 @	68.8	L-6 Chondrite	B		25.0	21.3
ALHA77252	343.1	L-3 Chondrite	B	C	22-28	2-22
ALHA77253 @	23.6	H-5 Chondrite	A/B		19.2	16.9
ALHA77254	245.8	L-5 Chondrite	A/B	A	23	20
ALHA77255	765.1	Iron-Ataxite (anom)				
ALHA77256	676.2	Diogenite	A/B	A		23
ALHA77257	1995.7	Ureilite	A	B	13	12
ALHA77258	597.3	H-6 Chondrite	B/C	A/B	18	16
ALHA77259	294.0	H-5 Chondrite	C	B	18	15
ALHA77260	744.3	L-3 Chondrite	C	C	7-23	1-28
ALHA77261	411.7	L-6 Chondrite	B	B	24	21
ALHA77262	861.5	H-4 Chondrite	B/C	B	15-19	13-16
ALHA77263	1669.0	Iron-Group IA				
ALHA77264	11.0	H-5 Chondrite	A/B	A	19	16
ALHA77265 @	18.3	H-5 Chondrite	B		17.6	15.9
ALHA77266 @	108.4	H-5 Chondrite	B		19.6	17.7
ALHA77267 @	103.5	L-5 Chondrite	A		24.7	20.9
ALHA77268	272.0	H-5 Chondrite	C	C	18	16
ALHA77269	1045.0	L-6 Chondrite	B	A	24	22
ALHA77270	588.9	L-6 Chondrite	A/B	B	24	21
ALHA77271	609.5	H-6 Chondrite	C	A	18	16
ALHA77272	674.1	L-6 Chondrite	B/C	B	24	20
ALHA77273	492.0	L-6 Chondrite	B	B	24	20
ALHA77274	288.1	H-5 Chondrite	C	A	18	16
ALHA77275 @	24.9	H-5 Chondrite	A		18.3	15.6
ALHA77277	142.7	L-6 Chondrite	A/B	A	24	20
ALHA77278	312.9	LL-3 Chondrite	A	A	11-29	9-21
ALHA77279 @	174.5	H-5 Chondrite	A		18.8	17.1
ALHA77280	3226.0	L-6 Chondrite	B	B/C	24	21
ALHA77281	1231.0	L-6 Chondrite	B	B	24	20
ALHA77282	4127.1	L-6 Chondrite	B	B	24	20
ALHA77283	10510.0	Iron-Group IA				
ALHA77284	376.2	L-6 Chondrite	A/B	B	25	21
ALHA77285	271.1	H-6 Chondrite	C	B	18	16
ALHA77286	245.8	H-4 Chondrite	C	B	17	12-16
ALHA77287	230.1	H-5 Chondrite	C	A	18	16
ALHA77288	1880.0	H-6 Chondrite	C	B	19	17
ALHA77289	2186.0	Iron-Group IA				
ALHA77290	3784.0	Iron-Group IA				
ALHA77291 @	5.8	H-5 Chondrite	A		18.9	15.9
ALHA77292	199.6	L-6 Chondrite	B	A	24	20
ALHA77293 @	109.7	L-6 Chondrite	B		24.7	20.9
ALHA77294	1351.3	H-5 Chondrite	A	A	17	15
ALHA77295 @	141.3	EH-4 Chondrite	B		0.8	1.7
ALHA77296	963.3	L-6 Chondrite	A/B	A	24	21
ALHA77297	951.6	L-6 Chondrite	A	B	24	20
ALHA77299	260.7	H-3 Chondrite	A	A	11-21	15-20
ALHA77300	234.5	H-5 Chondrite	C	B	18	16
ALHA77301 @	55.0	L-6 Chondrite	A		24.9	20.9
ALHA77302	235.5	Eucrite (polymict)	A	A		37-64
ALHA77303 @	78.6	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77304	650.4	L-4 Chondrite	B	B	18-27	13-19

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA77305	6444.0	L-6 Chondrite	B/C	B	24	21
ALHA77306	19.9	Carbonaceous C2	A	A	1-45	1
ALHA77307	181.3	Carbonaceous C3	A	A	1-30	1-12
PGPA77006	19068.0	Iron-Group IA				
ALHA78004 *	35.9	H-5 Chondrite			19.2	
ALHA78006	8.0	Howardite	A	A		25-61
ALHA78015 *	34.9	LL(?L)-3 Chondrite			8-35	
ALHA78019	30.3	Ureilite	B/C	C	22	18
ALHA78027 *	29.2	H-5 Chondrite			19.3	
ALHA78038	363.0	L-3 Chondrite	C	C	4-42	2-19
ALHA78039	299.0	L-6 Chondrite	B	B	24	21
ALHA78040	211.7	Eucrite (polymict)	A	A		33-52
ALHA78042	214.1	L-6 Chondrite	B	A	24	20
ALHA78043	680.0	L-6 Chondrite	B	B	25	21
ALHA78044	164.1	L-4 Chondrite	B/C	B	23-25	19-24
ALHA78045	396.5	L-6 Chondrite	B/C	B	25	21
ALHA78047 *	130.3	H-5 Chondrite	B	B	18.8	
ALHA78048	190.6	L-6 Chondrite	A/B	B	24	21
ALHA78050	1045.0	L-6 Chondrite	B	B	23	20
ALHA78052 *	97.3	H-5 Chondrite	C	B	17.9	
ALHA78053	179.0	H-4 Chondrite	C	B	17	16
ALHA78074	200.2	L-6 Chondrite	B	B	24	21
ALHA78075	280.6	H-5 Chondrite	B/C	B	18	16
ALHA78076	275.6	H-6 Chondrite	B	B	18	16
ALHA78077	330.6	H-4 Chondrite	C	B	19	15-18
ALHA78078	290.3	L-6 Chondrite	A/B	A	24	20
ALHA78081 *	17.8	H-5 Chondrite			19.1	
ALHA78084	14280.0	H-4 Chondrite	B/C	B	18	8-24
ALHA78085	219.3	H-5 Chondrite	B	B	18	16
ALHA78086 *	9.0	H-6 Chondrite			19.0	
ALHA78088 *	5.2	H-5 Chondrite			18.8	
ALHA78090 *	7.5	H-5 Chondrite			18.7	
ALHA78092 *	16.3	H-5 Chondrite			19.0	
ALHA78094 *	4.0	H-5 Chondrite			19.1	
ALHA78096 *	7.5	H-5 Chondrite			18.9	
ALHA78098 *	2.1	H-5 Chondrite			18.9	
ALHA78100	85.0	Iron-Group IIA				
ALHA78102	336.9	H-5 Chondrite	B/C	B	18	17
ALHA78103	589.7	L-6 Chondrite	B	B	24	20
ALHA78104	672.4	L-6 Chondrite	B	A	24	20
ALHA78105	941.7	L-6 Chondrite	B	A	23	20
ALHA78106	464.5	L-6 Chondrite	A/B	A	24	20
ALHA78107	198.4	H-5 Chondrite	C	A	18	17
ALHA78108	172.5	H-5 Chondrite	B	B	18	16
ALHA78109	233.2	LL-5 Chondrite	A/B	A	28	23
ALHA78110	160.7	H-5 Chondrite	B/C	B	18	16
ALHA78111	126.8	H-5 Chondrite	B/C	A	18	16
ALHA78112	2485.0	L-6 Chondrite	B	B	25	20
ALHA78113	298.6	Aubrite	A/B	A	0	0
ALHA78114	808.1	L-6 Chondrite	B/C	B	25	20
ALHA78115	847.6	H-6 Chondrite	B	A	18	16

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA78116 *	127.8	H-5 Chondrite	B	B	18.7	
ALHA78121 *	30.4	H-5 Chondrite			19.2	
ALHA78125 *	18.7	L-6 Chondrite	B	B	25.0	
ALHA78126	606.9	L-6 Chondrite	B	B	25	21
ALHA78127	194.5	L-6 Chondrite	B/C	B	24	20
ALHA78128	154.7	H-5 Chondrite	C	B/C	19	17
ALHA78130	2733.0	L-6 Chondrite	B/C	B	25	21
ALHA78131	268.8	L-6 Chondrite	B/C	A	25	21
ALHA78132	656.0	Eucrite (polymict)	A	A		40-68
ALHA78134	458.3	H-4 Chondrite	B/C	B/C	18	15-20
ALHA78135 *	130.8	H-6 Chondrite	B	B	19.0	
ALHA78139 *	17.0	H-5 Chondrite			19.3	
ALHA78142 *	31.5	L-5 Chondrite			24.2	
ALHA78147 *	30.6	H-5,6 Chondrite			19.4	
ALHA78153	151.7	LL-6 Chondrite	B/C	B	29	24
ALHA78158	15.1	Eucrite (polymict)	A	A		40-68
ALHA78160 *	16.0	H-5 Chondrite			19.3	
ALHA78165	20.9	Eucrite (polymict)	A	A		37-61
ALHA78188	0.9	L-3 Chondrite	C	B	1-34	5-29
ALHA78193	13.3	H-4 Chondrite	B/C	A	18	16
ALHA78196	11.2	H-4 Chondrite	B/C	B	18	16
ALHA78209	12.1	H-5 Chondrite	B/C	B	18	15
ALHA78211	11.5	H-6 Chondrite	B	B	18	16
ALHA78213	9.6	H-6 Chondrite	B	B	18	15
ALHA78215	6.4	H-6 Chondrite	B/C	B	18	16
ALHA78221	5.4	H-5 Chondrite	B	A	18	16
ALHA78223	6.5	H-4 Chondrite	B	B	18	16
ALHA78225	4.6	H-5 Chondrite	B	A	18	16
ALHA78227	2.4	H-5 Chondrite	B/C	B	18	16
ALHA78229	1.9	H-6 Chondrite	B	B	18	15
ALHA78231	1.9	H-6 Chondrite	B/C	B	18	16
ALHA78233	1.3	H-5 Chondrite	B/C	B	18	16
ALHA78251	1312.0	L-6 Chondrite	B	A	23	20
ALHA78252	2789.0	Iron-Group IVA				
ALHA78261	5.1	Carbonaceous C2	A	A	0-50	1-8
ALHA78262	26.2	Ureilite	B/C	A	22	19
BTNA78001	160.7	L-6 Chondrite	B	B	24	21
BTNA78002	4301.0	L-6 Chondrite	B	A	24	20
BTNA78004	1079.0	LL-6 Chon.(brecciated)	B	A	30	24
DRPA78001	15200.0	Iron-Group IIB				
DRPA78002	7188.0	Iron-Group IIB				
DRPA78003	144.2	Iron-Group IIB				
DRPA78004	133.6	Iron-Group IIB				
DRPA78005	18600.0	Iron-Group IIB				
DRPA78006	389.3	Iron-Group IIB				
DRPA78007	11800.0	Iron-Group IIB				
DRPA78008	59400.0	Iron-Group IIB				
DRPA78009	138100.0	Iron-Group IIB				
META78001	624.4	H-4 Chondrite	B/C	B	17	14-21
META78002	542.2	L-6 Chondrite	B	A	23	20

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
META78003	1726.0	L-6 Chondrite	B	B	24	21
META78005	172.0	L-6 Chondrite	B	B	24	20
META78006	409.6	H-6 Chondrite	C	B	18	15
META78007	174.8	H-6 Chondrite	B/C	B	19	17
META78010	233.5	H-5 Chondrite	B	A	19	17
META78028	20657.0	L-6 Chondrite	B	B	25	21
RKPA78001	234.9	L-6 Chondrite	C	B	23	20
RKPA78002	8483.0	H-4 Chondrite	B	A/B	18	15
RKPA78003	1276.0	L-6 Chondrite	C	B	23	20
RKPA78004	166.9	H-4 Chondrite	A	A	17	14-21
ALHA79001	32.3	L-3 Chondrite	C	A	6-39	2-31
ALHA79002	222.8	H-6 Chondrite	C	B	16	18
ALHA79003	5.1	LL-3 Chondrite	B	B	10-38	5-26
ALHA79004	34.9	H-5 Chon. w/Enclaves	B/C	B	16	14
ALHA79005	60.0	H-6 Chondrite	B	B	18	16
ALHA79006	40.9	H-5 Chondrite	B/C	B	18	15
ALHA79007	142.3	L-6 Chondrite	A/B	B	23	19
ALHA79008	12.0	H-5 Chondrite	B	B	17	15
ALHA79009	75.7	H-5 Chondrite	C	A	18	15
ALHA79010	25.1	H-5 Chondrite	B/C	B	17	15
ALHA79011	14.0	H-5 Chondrite	B/C	A	18	16
ALHA79012	191.9	H-5 Chondrite	C	B	17	15
ALHA79013	28.3	H-5 Chondrite	C	B	18	16
ALHA79014	10.8	H-5 Chondrite	B	A	18	16
ALHA79015	64.0	H-5 Chondrite	B	B	17	15
ALHA79016	1146.0	H-6 Chondrite	B/C	B	17	15
ALHA79017	310.0	Eucrite (polymict)	A	A		28-53
ALHA79018	120.7	L-6 Chondrite	B/C	A/B	23	20
ALHA79019	12.1	H-6 Chondrite	B	A	17	15
ALHA79020	4.2	H-6 Chondrite	B/C	B	17	15
ALHA79021	29.4	H-5 Chondrite	B	A	18	17
ALHA79022	31.4	L-3,4 Chondrite	A/B	B	1-28	9-22
ALHA79023	68.1	H-4 Chondrite	B/C	C	17	14-17
ALHA79024	21.6	H-6 Chondrite	C	B	17	15
ALHA79025	1208.0	H-5 Chondrite	C	A	17	15
ALHA79026	572.0	H-5 Chondrite	B	B	18	16
ALHA79027	133.2	L-6 Chondrite	B	A	24	20
ALHA79028	16.2	H-6 Chondrite	B	B	18	16
ALHA79029	505.5	H-5 Chondrite	C	B/C	18	16
ALHA79031	2.7	H-5 Chondrite	C	B	16	14
ALHA79032	2.6	H-5 Chondrite	C	B	16	14
ALHA79033	208.8	L-6 Chondrite	B	A	24	20
ALHA79034	12.6	H-6 Chondrite	B	A	18	16
ALHA79035	37.6	H-4 Chondrite	B	B	17	14-18
ALHA79036	20.2	H-5 Chondrite	B	B	18	16
ALHA79037	14.8	H-6 Chondrite	B	B	18	16
ALHA79038	49.6	H-5 Chondrite	C	B	17	15
ALHA79039	108.3	H-4 Chondrite	B	B	16	15
ALHA79040	13.2	H-5 Chondrite	B	A	18	15
ALHA79041	20.1	H-5 Chondrite	B	B	18	16
ALHA79042	11.4	H-5 Chondrite	B	A	18	16

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA79043	62.2	L-6 Chondrite	C	B	23	20
ALHA79045	115.4	L-3 Chondrite	C	B	2-38	2-29
ALHA79046	89.7	H-5 Chondrite	B	B	18	15
ALHA79047	19.3	H-5 Chondrite	B	B	18	15
ALHA79048	36.7	H-5 Chondrite	B	B	18	16
ALHA79049	54.0	H-6 Chondrite	C	B	18	16
ALHA79050	27.0	H-5 Chondrite	C	B	18	15
ALHA79051	24.0	H-5 Chondrite	C	A	18	15
ALHA79052	22.6	L-6 Chondrite	B/C	B	23	20
ALHA79053	86.0	H-5 Chondrite	B/C	B	17	15
ALHA79054	36.0	H-5 Chondrite	B	A	18	16
ALHA79055	15.2	H-6 Chondrite	B/C	B	18	16
EETA79001	7942.0	Shergottite	A	A	23-27	16-67
EETA79002	2843.0	Diogenite	B	B	24-25	22
EETA79003	435.6	L-6 Chondrite	B	B	24	20
EETA79004	390.3	Eucrite	B	B		30-61
EETA79005	450.9	Eucrite (polymict)	A	B		30-61
EETA79006	716.4	Howardite	B	B		19-57
EETA79007	199.9	H-5 Chondrite	B	B	18	16
EETA79009	140.3	L-5 Chondrite	B	B	24	20
EETA79010	287.3	L-6 Chondrite	B	C	24	20
EETA79011	86.4	Eucrite (polymict)	B	B		30-61
RKPA79001	3006.0	L-6 Chondrite	B	C	23	20
RKPA79002	203.6	L-6 Chondrite	B	B	24	20
RKPA79003	182.2	H-6 Chondrite	B	A	18	16
RKPA79004	370.9	H-5 Chondrite	B/C	B	18	16
RKPA79008	73.0	L-3 Chondrite	B	B	1-29	2-28
RKPA79009	55.0	H-6 Chondrite	C	B	18	16
RKPA79012	12.8	H-6 Chondrite	B	B	18	16
RKPA79013	11.0	L-5 Chondrite	B/C	B	23	20
RKPA79014	77.7	H-5 Chondrite	B/C	B	18	16
RKPA79015	10022.0	Mesosiderite	A/B	A		24
ALHA80101	8725.0	L-6 Chondrite	B	B	24	20
ALHA80102	471.2	Eucrite (polymict)	A	B		34-52
ALHA80103	535.9	L-6 Chondrite	B	A	24	20
ALHA80104	882.0	Iron-Ataxite				
ALHA80105	445.1	L-6 Chondrite	B	B	24	20
ALHA80106	432.2	H-4 Chondrite	C	B	19	16-19
ALHA80107	177.8	L-6 Chondrite	B	B	24	20
ALHA80108	124.5	L-6 Chondrite	B	B	24	20
ALHA80110	167.6	L-6 Chondrite	B	B	24	20
ALHA80111	42.4	H-5 Chondrite	B	A	18	16
ALHA80112	330.7	L-6 Chondrite	B	B	24	20
ALHA80113	312.6	L-6 Chondrite	B	B/C	24	20
ALHA80114	232.8	L-6 Chondrite	B	B	24	20
ALHA80115	306.0	L-6 Chondrite	B	A	24	20
ALHA80116	191.2	L-6 Chondrite	B/C	B	24	20
ALHA80117	89.0	L-6 Chondrite	B	A	24	20
ALHA80118	2.4	H-6 Chondrite	B	A	17	15
ALHA80119	33.7	L-6 Chondrite	B	B	24	20

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA80120	60.0	L-6 Chondrite	B	B	24	20
ALHA80121	39.1	H-4 Chondrite	B/C	C	19	17
ALHA80122	49.8	H-6 Chondrite	B/C	B	18	16
ALHA80123	27.8	H-5 Chondrite	C	A	18	16
ALHA80124	11.9	H-5 Chondrite	B	B	18	16
ALHA80125	139.2	L-6 Chondrite	B/C	B	24	20
ALHA80126	34.5	H-6 Chondrite	A/B	A	19	17
ALHA80127	47.4	H-5 Chondrite	B	A	18	16
ALHA80128	138.2	H-4 Chondrite	B	B/C	18	15-20
ALHA80129	93.4	H-5 Chondrite	B	A	18	15
ALHA80130	5.3	H-6 Chondrite	B/C	A	18	16
ALHA80131	19.8	H-4 Chondrite	B	B	19	16-22
ALHA80132	152.8	H-5 Chondrite	B	B	18	16
ALHA80133	3.6	L-3 Chondrite	B	B	1-35	5-30
OTTA80301	35.5	H-3 Chondrite	B/C	B	17-19	4-19
RKPA80201	813.0	H-6 Chondrite	B	A	19	16
RKPA80202	544.5	L-6 Chondrite	B	A	24	20
RKPA80203	3.8	H-6 Chondrite	C	A	19	17
RKPA80204	15.4	Eucrite	A	A		52-57
RKPA80205	53.8	H-3 Chondrite	B	B	17-20	5-13
RKPA80206	46.6	H-6 Chondrite	C	B	19	17
RKPA80207	17.7	L-3 Chondrite	C	B	15-29	6-28
RKPA80208	10.2	H-6 Chondrite	B	A	19	17
RKPA80209	9.7	L-5 Chondrite	C	B	25	21
RKPA80210	10.6	H-5 Chondrite	B/C	B	19	16
RKPA80211	2.1	H-6 Chondrite	C	B	19	17
RKPA80213	19.1	H-6 Chondrite	B/C	B	19	17
RKPA80214	4.9	H-6 Chondrite	C	B	19	17
RKPA80215	9.0	L-6 Chondrite	C	B	24	20
RKPA80216	44.3	L-4 Chondrite	B	B	23	20
RKPA80217	7.8	H-5 Chondrite	C	A	18	15
RKPA80218	6.7	H-5 Chondrite	C	A	18	15
RKPA80219	21.5	L-6 Chondrite	B	A	25	21
RKPA80220	124.5	H-5 Chondrite	B/C	B/C	18	16
RKPA80221	51.9	H-6 Chondrite	C	B/C	19	17
RKPA80222	6.9	LL-6 Chondrite	B	B	28	23
RKPA80223	25.1	H-5 Chondrite	C	B	18	16
RKPA80224	8.0	Eucrite (unbrecciated)	A/B	A		54
RKPA80225	8.3	L-6 Chondrite	C	A	25	21
RKPA80226	160.3	Iron-Octahedrite				
RKPA80227	7.7	H-5 Chondrite	B/C	A	19	16
RKPA80228	11.1	L-5 Chondrite	C	B	23	19
RKPA80229	14.1	Mesosiderite	C	B/C		24
RKPA80230	58.2	H-5 Chondrite	B	B	18	16
RKPA80231	238.1	H-6 Chondrite	C	B/C	18	16
RKPA80232	80.1	H-4 Chondrite	B	A	18	16
RKPA80233	413.5	H-5 Chondrite	B/C	B	18	16
RKPA80234	136.2	LL-5 Chondrite	B	B	26	22
RKPA80235	261.2	LL-6 Chondrite	A/B	B	30	24
RKPA80236	15.6	H-5 Chondrite	B/C	B	18	16
RKPA80237	22.2	H-4 Chondrite	C	B	18	16

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
RKPA80238	18.4	LL-6 Chondrite	A/B	A	28	23
RKPA80239	5.6	Ureilite	B	B	16	15
RKPA80240	61.4	H-5 Chondrite	C	A	18	16
RKPA80241	0.6	Carbonaceous C3V	B	B	1-6	1-8
RKPA80242	7.3	L-4 Chondrite	B/C	B	22	19
RKPA80243	3.4	H-5 Chondrite	C	A	18	16
RKPA80244	14.2	H-5 Chondrite	C	B	18	16
RKPA80245	36.7	H-5 Chondrite	B/C	B	18	16
RKPA80246	5.8	Mesosiderite	C	C		24
RKPA80247	1.1	H-5 Chondrite	C	B	18	16
RKPA80248	11.3	LL-6 Chondrite	A/B	A	27	23
RKPA80249	9.7	H-5 Chondrite	B/C	A	17	15
RKPA80250	3.9	H-5 Chondrite	B/C	A	17	15
RKPA80251	29.1	H-5 Chondrite	B	B	17	15
RKPA80252	11.2	L-6 Chondrite	A/B	A	24	20
RKPA80253	4.6	LL-5 Chondrite	A/B	A	27	22
RKPA80254	68.5	H-6 Chondrite	C	B/C	19	17
RKPA80255	6.7	H-6 Chondrite	C	B	19	17
RKPA80256	153.2	L-3 Chondrite	B	A	20-25	10-26
RKPA80257	8.5	H-5 Chondrite	B/C	B	17	15
RKPA80258	4.3	Mesosiderite	B/C	B		17-21
RKPA80259	20.2	E-5 Chondrite	B/C	B		0-1
RKPA80260	7.5	H-5 Chondrite	C	B	18	16
RKPA80261	61.6	L-6 Chondrite	B	A	24	20
RKPA80262	32.1	H-6 Chondrite	C	B	19	17
RKPA80263	16.7	Mesosiderite	C	B		24
RKPA80264	23.9	L-6 Chondrite	B	B	24	20
RKPA80265	7.8	H-6 Chondrite	C	B	19	17
RKPA80266	9.8	H-6 Chondrite	B/C	B	19	17
RKPA80267	24.2	H-4 Chondrite	C	A	19	16
RKPA80268	3.4	L-5 Chondrite	B/C	B	24	20
ALHA81001	52.9	Eucrite (anomalous)	A	B		59
ALHA81002	14.0	Carbonaceous C2	A	B	0-52	0-2
ALHA81003	10.1	Carbonaceous C3V	A/B	A/B	0-60	1
ALHA81004	4.7	Carbonaceous C2	A/B	A	0-52	0-2
ALHA81005	31.4	Anorthositic Breccia	A/B	A	11-40	7-47
ALHA81006	254.9	Eucrite (polymict)	A	A/B		35-60
ALHA81007	163.5	Eucrite (polymict)	A/B	A		38-55
ALHA81008	43.8	Eucrite (polymict)	A/B	A/B		32-59
ALHA81009	229.0	Eucrite	A	A		30-63
ALHA81010	219.1	Eucrite (polymict)	A	A		31-57
ALHA81011	405.7	Eucritic Breccia	A/B	A		33-60
ALHA81012	36.6	Eucrite	A/B	A		33-62
ALHA81013	17727.0	Iron				
ALHA81014	188.2	Iron				
ALHA81015	5489.0	H-5 Chondrite	B	B	19	16
ALHA81016	3850.2	L-6 Chondrite	B	A	25	21
ALHA81017	1434.4	L-5 Chondrite	B	A	25	21
ALHA81018	2236.9	L-5 Chondrite	B	B	24	21
ALHA81019	1051.2	H-5 Chondrite	B/C	B	19	16
ALHA81020	1352.5	H-5 Chondrite	B	A	19	16
ALHA81021	695.1	E-6 Chondrite	A	B		0-1

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA81022	912.5	H-4 Chondrite	B/C	A	19	17
ALHA81023	418.3	L-5 Chondrite	B	A/B	25	21
ALHA81024	797.7	L-3 Chondrite	C	B	3-28	2-24
ALHA81025	379.0	L-3 Chondrite	C	B	1-41	3-40
ALHA81026	515.5	L-6 Chondrite	B	A	25	21
ALHA81027	3835.3	L-6 Chondrite	C	A/B	25	21
ALHA81028	80.1	L-6 Chondrite	B	B	25	21
ALHA81029	153.0	L-6 Chondrite	C	A	25	21
ALHA81030	1851.6	L-3 Chondrite	B/C	B/C	1-49	5-33
ALHA81031	1594.9	L-3 Chondrite	C	B/C	1-43	3-35
ALHA81032	726.8	L-3 Chondrite	C	A	0-42	2-14
ALHA81033	252.4	H-5 Chondrite	C	C	18	16
ALHA81034	254.9	H-5 Chondrite	B	B	19	17
ALHA81035	256.1	H-6 Chondrite	C	A/B	19	17
ALHA81036	252.1	H-5 Chondrite	C	A	19	17
ALHA81037	320.3	H-6 Chondrite	B	A	20	17
ALHA81038	229.0	H-6 Chondrite	C	B	19	17
ALHA81039	205.9	H-5 Chondrite	A/B	B	19	17
ALHA81040	194.5	L-4 Chondrite	B/C	A	25	21
ALHA81041	728.8	H-4 Chondrite	C	C	18	15-23
ALHA81042	534.4	H-5 Chondrite	C	C	19	17
ALHA81043	106.0	H-4 Chondrite	B/C	C	18	15
ALHA81044	386.8	H-4 Chondrite	C	C	18	16
ALHA81045	90.2	H-4 Chondrite	C	B/C	18	16
ALHA81046	16.6	H-4 Chondrite	C	B/C	18	16
ALHA81047	81.9	H-4 Chondrite	B/C	B/C	18	16
ALHA81048	190.6	H-4 Chondrite	B/C	B/C	18	16
ALHA81049	8.5	H-4 Chondrite	B/C	B	18	16
ALHA81050	25.7	H-4 Chondrite	C	C	18	16
ALHA81051	43.0	H-4 Chondrite	B/C	B	18	16
ALHA81052	28.7	H-4 Chondrite	C	B	18	16
ALHA81053	2.5	L-3 Chondrite	C	B	1-29	1-42
ALHA81054	2.2	H-6 Chondrite	B	B	19	17
ALHA81055	4.5	H-6 Chondrite	B	A	19	16
ALHA81056	1.4	H-4 Chondrite	B	A	19	17
ALHA81057	8.4	H-4 Chondrite	B	A	19	13-21
ALHA81058	66.2	H-4 Chondrite	C	C	18	15
ALHA81059	539.5	Mesosiderite	C	B/C	28	25-32
ALHA81060	28.3	L-3 Chondrite	C	B	2-28	5-27
ALHA81061	23.7	L-3 Chondrite	B/C	A	3-33	5-27
ALHA81062	0.5	H-5 Chondrite	C	A	18	16
ALHA81063	4.9	H-5 Chondrite	B/C	B	18	16
ALHA81064	191.0	H-5 Chondrite	C	A/B	18	15
ALHA81065	13.1	L-3 Chondrite	B/C	B	10-41	5-24
ALHA81066	8.7	L-3 Chondrite	C	B	1-44	1-25
ALHA81067	227.6	H-5 Chondrite	C	B	19	17
ALHA81068	23.7	H-4 Chondrite	B	A	19	16
ALHA81069	7.2	L-3 Chondrite	B/C	A	4-38	1-31
ALHA81070	3.7	H-5 Chondrite	B/C	A	19	17
ALHA81071	2.5	H-5 Chondrite	B	A	19	17
ALHA81072	3.1	H-5 Chondrite	B/C	A	19	17
ALHA81073	3.3	H-4 Chondrite	B/C	A	19	8-18
ALHA81074	7.9	H-4 Chondrite	B	B	19	16



Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA81075	15.7	H-5 Chondrite	B	A	19	17
ALHA81076	10.3	H-6 Chondrite	B	A	19	16
ALHA81077	4.2	H-5 Chondrite	B	A	19	17
ALHA81078	5.8	H-6 Chondrite	B/C	B	19	16
ALHA81079	7.5	H-6 Chondrite	C	A	19	16
ALHA81080	16.6	H-5 Chondrite	A/B	A	19	17
ALHA81081	5.0	H-5 Chondrite	B	A	19	17
ALHA81082	5.9	H-5 Chondrite	B	A	19	17
ALHA81083	6.6	H-5 Chondrite	B	A	19	16
ALHA81084	15.6	H-5 Chondrite	B	A	19	16
ALHA81085	16.2	L-3 Chondrite	C	B	1-39	2-25
ALHA81086	5.7	H-6 Chondrite	B	B	19	16
ALHA81087	8.4	L-3 Chondrite	B/C	B	2-29	3-31
ALHA81088	3.8	H-5 Chondrite	B	A	19	17
ALHA81089	11.1	H-5 Chondrite	B	A	19	17
ALHA81090	9.5	H-5 Chondrite	B	A	19	16
ALHA81091	12.1	H-5 Chondrite	B	B	19	16
ALHA81092	15.6	H-4 Chondrite	B	A	19	17
ALHA81093	271.0	H-6 Chondrite	A/B	A/B	20	17
ALHA81094	152.0	H-6 Chondrite	C	B	19	16
ALHA81095	58.7	H-4 Chondrite	B/C	C	18	16
ALHA81096	83.0	H-6 Chondrite	B	B	19	17
ALHA81097	79.9	H-4 Chondrite	B	A	18	16
ALHA81098	70.9	Mesosiderite	C	B/C		28
ALHA81099	151.6	L-6 Chondrite	A/B	A	25	21
ALHA81100	154.6	H-5 Chondrite	B	A	19	17
ALHA81101	119.2	Ureilite	A/B	B	10-22	
ALHA81102	196.0	H-6 Chondrite	B/C	A/B	19	17
ALHA81103	136.1	H-6 Chondrite	B/C	B/C	19	17
ALHA81104	183.8	H-4 Chondrite	C	C	19	17
ALHA81105	92.7	H-4 Chondrite	C	B/C	18	16
ALHA81106	48.3	L-6 Chondrite	B	B	24	20
ALHA81107	139.6	L-6 Chondrite	B	A	24	21
ALHA81108	69.1	H-5 Chondrite	B	B	18	16
ALHA81109	1.1	H-4 Chondrite	B	A	19	17
ALHA81110	3.5	H-5 Chondrite	B/C	A	19	17
ALHA81111	210.3	H-6 Chondrite	B/C	B	19	17
ALHA81112	150.3	H-6 Chondrite	B/C	A	19	17
ALHA81113	111.1	H-5 Chondrite	B/C	C	18	16
ALHA81114	79.3	H-4 Chondrite	B/C	B/C	18	16
ALHA81115	154.9	H-5 Chondrite	C	A/B	19	17
ALHA81116	1.7	H-5 Chondrite	B	A	19	17
ALHA81117	32.9	H-4 Chondrite	B	B/C	18	14-21
ALHA81118	84.7	H-5 Chondrite	B/C	A	19	16
ALHA81119	107.4	L-4 Chondrite	B	B	24	21
ALHA81120	13.8	H-5 Chondrite	B/C	B	18	16
ALHA81121	88.4	L-3 Chondrite	B	B	8-40	1-24
ALHA81122	20.9	L-6 Chondrite	B	B	25	21
ALHA81123	2.0	LL-6 Chondrite	B	A	30	25
ALHA81124	9.3	H-5 Chondrite	B	A	19	17
ALHA81125	10.2	H-5 Chondrite	B	A	19	17
ALHA81126	21.5	H-5 Chondrite	B	A	19	16
ALHA81127	15.4	H-6 Chondrite	B/C	B	19	17

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA81128	15.9	H-5 Chondrite	B/C	A	19	17
ALHA81129	31.6	H-5 Chondrite	A/B	A	18	16
ALHA81130	30.0	H-5 Chondrite	B	B	18	16
ALHA81131	12.9	L-6 Chondrite	A/B	B	25	22
ALHA81132	5.4	H-5 Chondrite	B	A	18	16
ALHA81133	20.6	H-5 Chondrite	B	A	18	16
ALHA81134	15.4	H-6 Chondrite	B/C	B	18	16
ALHA81135	9.5	H-5 Chondrite	B	A	19	16
ALHA81136	1.2	H-5 Chondrite	B	A/B	20	17
ALHA81137	9.4	H-6 Chondrite	B/C	A/B	19	17
ALHA81138	4.3	H-5 Chondrite	B	A	19	17
ALHA81139	7.1	H-5 Chondrite	B/C	B	19	17
ALHA81140	14.4	H-4 Chondrite	B/C	A	19	17
ALHA81141	1.5	H-5 Chondrite	B/C	B	19	17
ALHA81142	1.2	H-4 Chondrite	B/C	B/C	18	16
ALHA81143	12.5	H-5 Chondrite	B/C	A	18	16
ALHA81144	3.0	H-5 Chondrite	B	A	19	16
ALHA81145	21.1	L-3 Chondrite	B	B	5-40	3-23
ALHA81146	23.8	H-6 Chondrite	C	B	18	16
ALHA81147	1.6	H-4 Chondrite	B	A	19	16
ALHA81148	13.3	H-5 Chondrite	B	A	19	17
ALHA81149	9.4	H-4 Chondrite	B	B	19	16
ALHA81150	1.9	L-6 Chondrite	C	A	25	22
ALHA81151	5.1	LL-5 Chondrite	B/C	A	28	23
ALHA81152	10.3	H-5 Chondrite	B	A	18	16
ALHA81153	4.2	L-5 Chondrite	B	A	24	21
ALHA81154	1.1	H-6 Chondrite	B	B	19	17
ALHA81155	4.5	H-5 Chondrite	A/B	A	19	17
ALHA81156	19.7	L-3 Chondrite	B/C	B/C	4-42	1-30
ALHA81157	11.8	H-4 Chondrite	B/C	B	19	17
ALHA81158	2.4	H-5 Chondrite	B/C	A	19	17
ALHA81159	10.3	L-6 Chondrite	B/C	A	25	21
ALHA81160	11.7	H-6 Chondrite	C	B	19	17
ALHA81161	122.2	H-5 Chondrite	C	C	19	16
ALHA81162	59.4	L-3 Chondrite	C	C	1-40	4-20
ALHA81163	82.2	H-5 Chondrite	C	B/C	19	17
ALHA81164	20.1	H-5 Chondrite	B	A	18	16
ALHA81165	6.3	H-5 Chondrite	B	A	19	16
ALHA81166	26.3	H-5 Chondrite	B	A	19	16
ALHA81167	58.5	L-6 Chondrite	B/C	B	25	22
ALHA81168	8.2	H-5 Chondrite	C	B	19	17
ALHA81169	5.6	H-5 Chondrite	B	B	18	16
ALHA81170	59.0	H-5 Chondrite	B	A/B	19	17
ALHA81171	23.7	H-5 Chondrite	B/C	B	19	17
ALHA81172	33.4	L-6 Chondrite	C	B	24	21
ALHA81173	25.8	H-5 Chondrite	A/B	A	19	16
ALHA81174	33.3	H Chondrite	B	B/C	19	17
ALHA81175	13.1	H-5 Chondrite	A/B	B	19	17
ALHA81176	94.5	H-5 Chondrite	B	A	19	17
ALHA81177	17.3	H-4 Chondrite	B/C	B	19	16
ALHA81178	29.9	H-5 Chondrite	B/C	B/C	19	17
ALHA81179	13.7	H-5 Chondrite	B	A	19	17
ALHA81251	158.0	LL-3 Chondrite	B/C	B	1-29	2-28

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA81312	0.7	Carbonaceous C2	A	A	1-35	1-31
ALH 82100	24.3	Carbonaceous C2	A	A	1-47	1-2
ALH 82101	29.1	Carbonaceous C30	A	A/B	1-50	1-10
ALH 82102	48.0	Ord. Chon in ice	B/C	A		
ALH 82103	2529.2	H-5 Chondrite	B	B	17	16
ALH 82104	398.8	L-5 Chondrite	A	A/B	25	21
ALH 82105	363.3	L-6 Chondrite	A/B	A	24	21
EET 82600	247.1	Howardite	A	B		22-53
EET 82602	1824.1	H-4 Chondrite	B	B	19	16
EET 82603	8210.0	H-5 Chondrite	B	A	19	17
EET 82604	1570.6	H-5 Chondrite	B/C	B	19	16
EET 82605	499.8	L-6 Chondrite	B	A	25	21
EET 82606	981.9	L-6 Chondrite	B	B	25	21
EET 82607	165.3	L-6 Chondrite	B/C	A	23	20
EET 82609	325.4	H-4 Chondrite	B/C	A/B	18	17
PCA 82500	90.9	LL-6 Chondrite	B	C	31	
PCA 82501	54.4	Eucrite (unbrecciated)	A	A		41-57
PCA 82502	890.4	Eucrite (unbrecciated)	A	A		36-61
PCA 82503	8308.0	L-6 Chondrite	A	B	24	20
PCA 82504	3093.6	L-5 Chondrite	A/B	B	23	20
PCA 82505	3085.5	L-5 Chondrite	B	B	23	20
PCA 82506	5316.0	Ureilite	A/B	A	21	18
PCA 82507	479.8	LL-6 Chondrite	A	A/B	30	25
PCA 82508	389.3	L-6 Chondrite	A/B	B	23	20
PCA 82509	285.6	L-6 Chondrite	B	A	25	21
PCA 82510	254.2	L-5 Chondrite	A	A	24	20
PCA 82513	239.1	L-5 Chondrite	A/B	A	24	20
TIL 82400	220.8	L-5 Chondrite	A/B	B	25	21
TIL 82401	281.6	L-6 Chondrite	A/B	A	25	21
TIL 82402	476.0	LL-6 Chondrite	A/B	A	29	24
TIL 82403	49.8	Eucrite (brecciated)	A	A		43-58
TIL 82404	321.6	L-4 Chondrite	B	B	23	20
TIL 82405	1000.7	H-6 Chondrite	B	A	19	17
TIL 82407	220.8	L-4 Chondrite	B/C	A	23	20
TIL 82409	230.9	H-5 Chondrite	B	A	18	16
TIL 82411	179.5	L-4 Chondrite	A/B	A	24	21
TYR 82700	892.1	L-4 Chondrite	B	A	24	15-23
ALH 83100	434.6	Carbonaceous C2	B	B/C		

### Achondrites

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA81005	31.4	Anorthositic Breccia	A/B	A	11-40	7-47
ALHA78113	298.6	Aubrite	A/B	A	0	0
ALHA77256	676.2	Diogenite	A/B	A		23
EETA79002	2843.0	Diogenite	B	B	24-25	22
EETA79004	390.3	Eucrite	B	B		30-61
RKPA80204	15.4	Eucrite	A	A		52-57
ALHA81009	229.0	Eucrite	A	A		30-63
ALHA81012	36.6	Eucrite	A/B	A		33-62
ALHA81001	52.9	Eucrite (anomalous)	A	B		59
TIL 82403	49.8	Eucrite (brecciated)	A	A		43-58
ALHA76005	1425.0	Eucrite (polymict)	A	A		37-57
ALHA77302	235.5	Eucrite (polymict)	A	A		37-64
ALHA78040	211.7	Eucrite (polymict)	A	A		33-52
ALHA78132	656.0	Eucrite (polymict)	A	A		40-68
ALHA78158	15.1	Eucrite (polymict)	A	A		40-68
ALHA78165	20.9	Eucrite (polymict)	A	A		37-61
ALHA79017	310.0	Eucrite (polymict)	A	A		28-53
EETA79005	450.9	Eucrite (polymict)	A	B		30-61
EETA79011	86.4	Eucrite (polymict)	B	B		30-61
ALHA80102	471.2	Eucrite (polymict)	A	B		34-52
ALHA81006	254.9	Eucrite (polymict)	A	A/B		35-60
ALHA81007	163.5	Eucrite (polymict)	A/B	A		38-55
ALHA81008	43.8	Eucrite (polymict)	A/B	A/B		32-59
ALHA81010	219.1	Eucrite (polymict)	A	A		31-57
RKPA80224	8.0	Eucrite (unbrecciated)	A/B	A		54
PCA 82501	54.4	Eucrite (unbrecciated)	A	A		41-57
PCA 82502	890.4	Eucrite (unbrecciated)	A	A		36-61
ALHA81011	405.7	Eucritic Breccia	A/B	A		33-60
ALHA78006	8.0	Howardite	A	A		25-61
EETA79006	716.4	Howardite	B	B		19-57
EET 82600	247.1	Howardite	A	B		22-53
ALHA77005	482.5	Shergottite	A	A	28	23
EETA79001	7942.0	Shergottite	A	A	23-27	16-67
ALHA77257	1995.7	Ureilite	A	B	13	12
ALHA78019	30.3	Ureilite	B/C	C	22	18

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA78262	26.2	Ureilite	B/C	A	22	19
RKPA80239	5.6	Ureilite	B	B	16	15
ALHA81101	119.2	Ureilite	A/B	B	10-22	
PCA 82506	5316.0	Ureilite	A/B	A	21	18

#### Carbonaceous Chondrites

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA77306	19.9	Carbonaceous C2	A	A	1-45	1
ALHA78261	5.1	Carbonaceous C2	A	A	0-50	1-8
ALHA81002	14.0	Carbonaceous C2	A	B	0-52	0-2
ALHA81004	4.7	Carbonaceous C2	A/B	A	0-52	0-2
ALHA81312	0.7	Carbonaceous C2	A	A	1-35	1-31
ALH 82100	24.3	Carbonaceous C2	A	A	1-47	1-2
ALH 83100	434.6	Carbonaceous C2	B	B/C		
ALHA77307	181.3	Carbonaceous C3	A	A	1-30	1-12
ALHA77003	779.6	Carbonaceous C30	A	A	4-48	2-25
ALHA77029 @	1.4	Carbonaceous C30	A/B		23.0	2.6
ALH 82101	29.1	Carbonaceous C30	A	A/B	1-50	1-10
RKPA80241	0.6	Carbonaceous C3V	B	B	1-6	1-8
ALHA81003	10.1	Carbonaceous C3V	A/B	A/B	0-60	1

Chondrites - Type 3

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA77299	260.7	H-3 Chondrite	A	A	11-21	15-20
OTTA80301	35.5	H-3 Chondrite	B/C	B	17-19	4-19
RKPA80205	53.8	H-3 Chondrite	B	B	17-20	5-13
ALHA77011	291.5	L-3 Chondrite	C	A	4-36	1-33
ALHA77013 @	23.0	L-3 Chondrite	B		9-28	1-35
ALHA77015	411.1	L-3 Chondrite	C	B	1-21	4-24
ALHA77031 @	0.5	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77033	9.3	L-3 Chondrite	C	B	8-38	8-9
ALHA77034 @	1.8	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77036 @	8.5	L-3 Chondrite	B		n.d.	n.d.
ALHA77043 @	11.4	L-3 Chondrite	B/C		1-37	1-28
ALHA77047 @	20.4	L-3 Chondrite	C		n.d.	n.d.
ALHA77049 @	7.3	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77050 @	84.2	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77052 @	112.2	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77115 @	154.4	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77140	78.6	L-3 Chondrite	C	B	8-44	2-17
ALHA77160	70.4	L-3 Chondrite	C	B	3-46	6-40
ALHA77163 @	24.3	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77164	38.1	L-3 Chondrite	C	C	6-39	3-41
ALHA77165	30.5	L-3 Chondrite	C	C	8-33	6-35
ALHA77166 @	138.8	L-3 Chondrite	C		n.d.	n.d.
ALHA77167	611.2	L-3 Chondrite	C	B/C	2-41	3-17
ALHA77170 @	12.2	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77175 @	23.3	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77176 @	54.4	L-3 Chondrite	B		0.3-34	1-37
ALHA77178 @	5.7	L-3 Chondrite	B/C		1-36	2-40
ALHA77185 @	28.0	L-3 Chondrite	A/B		n.d.	n.d.
ALHA77197 @	20.3	L-3 Chondrite	A/B		10-27	4-21
ALHA77211 @	26.7	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77214	2111.0	L-3 Chondrite	C	C	1-49	4-23
ALHA77215	819.6	L-3 Chondrite	B	B/C	22-26	9-21
ALHA77216	1470.0	L-3 Chondrite	A/B	B/C	15-35	14-23
ALHA77217	413.2	L-3 Chondrite	B	B/C	17-25	9-26
ALHA77241 @	144.1	L-3 Chondrite	C		n.d.	n.d.
ALHA77244 @	39.5	L-3 Chondrite	B/C		n.d.	n.d.
ALHA77249	503.6	L-3 Chondrite	C	C	7-35	2-25
ALHA77252	343.1	L-3 Chondrite	B	C	22-28	2-22
ALHA77260	744.3	L-3 Chondrite	C	C	7-23	1-28
ALHA77303 @	78.6	L-3 Chondrite	B/C		n.d.	n.d.
ALHA78038	363.0	L-3 Chondrite	C	C	4-42	2-19
ALHA78188	0.9	L-3 Chondrite	C	B	1-34	5-29
ALHA79001	32.3	L-3 Chondrite	C	A	6-39	2-31
ALHA79045	115.4	L-3 Chondrite	C	B	2-38	2-29
RKPA79008	73.0	L-3 Chondrite	B	B	1-29	2-28

Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA80133	3.6	L-3 Chondrite	B	B	1-35	5-30
RKPA80207	17.7	L-3 Chondrite	C	B	15-29	6-28
RKPA80256	153.2	L-3 Chondrite	B	A	20-25	10-26
ALHA81024	797.7	L-3 Chondrite	C	B	3-28	2-24
ALHA81025	379.0	L-3 Chondrite	C	B	1-41	3-40
ALHA81030	1851.6	L-3 Chondrite	B/C	B/C	1-49	5-33
ALHA81031	1594.9	L-3 Chondrite	C	B/C	1-43	3-35
ALHA81032	726.8	L-3 Chondrite	C	A	0-42	2-14
ALHA81053	2.5	L-3 Chondrite	C	B	1-29	1-42
ALHA81060	28.3	L-3 Chondrite	C	B	2-28	5-27
ALHA81061	23.7	L-3 Chondrite	B/C	A	3-33	5-27
ALHA81065	13.1	L-3 Chondrite	B/C	B	10-41	5-24
ALHA81066	8.7	L-3 Chondrite	C	B	1-44	1-25
ALHA81069	7.2	L-3 Chondrite	B/C	A	4-38	1-31
ALHA81085	16.2	L-3 Chondrite	C	B	1-39	2-25
ALHA81087	8.4	L-3 Chondrite	B/C	B	2-29	3-31
ALHA81121	88.4	L-3 Chondrite	B	B	8-40	1-24
ALHA81145	21.1	L-3 Chondrite	B	B	5-40	3-23
ALHA81156	19.7	L-3 Chondrite	B/C	B/C	4-42	1-30
ALHA81162	59.4	L-3 Chondrite	C	C	1-40	4-20
ALHA79022	31.4	L-3,4 Chondrite	A/B	B	1-28	9-22
ALHA78015 *	34.9	LL(?L)-3 Chondrite			8-35	
ALHA76004	305.0	LL-3 Chondrite	A	A	0-34	0-53
ALHA77278	312.9	LL-3 Chondrite	A	A	11-29	9-21
ALHA79003	5.1	LL-3 Chondrite	B	B	10-38	5-26
ALHA81251	158.0	LL-3 Chondrite	B/C	B	1-29	2-28

Chondrites - Type 4

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA77156 @	17.7	EH-4 Chondrite	B		0.8	1.5
ALHA77295 @	141.3	EH-4 Chondrite	B		0.8	1.7
ALHA77004	2230.0	H-4 Chondrite	C	C	17-20	15-27
ALHA77009	235.5	H-4 Chondrite	C	A	18	16
ALHA77010	295.8	H-4 Chondrite	C	A	18	15-18
ALHA77056 @	12.3	H-4 Chondrite	A/B		18.8	16.3
ALHA77190	387.1	H-4 Chondrite	C	C	17-19	15-22
ALHA77191	642.2	H-4 Chondrite	C	B/C	16-18	14-16
ALHA77192	845.3	H-4 Chondrite	C	C	16-18	15-21
ALHA77208	1733.0	H-4 Chondrite	C	C	17	14
ALHA77221	229.2	H-4 Chondrite	C	A	15	13-15
ALHA77222 @	125.4	H-4 Chondrite	A/B		18.0	15.3
ALHA77223	207.9	H-4 Chondrite	C	C	17	15-23
ALHA77224	786.9	H-4 Chondrite	C	C	19	17
ALHA77225	5878.0	H-4 Chondrite	C	C	17	16
ALHA77226	15323.0	H-4 Chondrite	C	C	18	16
ALHA77232	6494.3	H-4 Chondrite	C	C	17	15
ALHA77233	4087.0	H-4 Chondrite	C	B	14-21	15-17
ALHA77262	861.5	H-4 Chondrite	B/C	B	15-19	13-16
ALHA77286	245.8	H-4 Chondrite	C	B	17	12-16
ALHA78053	179.0	H-4 Chondrite	C	B	17	16
ALHA78077	330.6	H-4 Chondrite	C	B	19	15-18
ALHA78084	14280.0	H-4 Chondrite	B/C	B	18	8-24
ALHA78134	458.3	H-4 Chondrite	B/C	B/C	18	15-20
ALHA78193	13.3	H-4 Chondrite	B/C	A	18	16
ALHA78196	11.2	H-4 Chondrite	B/C	B	18	16
ALHA78223	6.5	H-4 Chondrite	B	B	18	16
META78001	624.4	H-4 Chondrite	B/C	B	17	14-21
RKPA78002	8483.0	H-4 Chondrite	B	A/B	18	15
RKPA78004	166.9	H-4 Chondrite	A	A	17	14-21
ALHA79023	68.1	H-4 Chondrite	B/C	C	17	14-17
ALHA79035	37.6	H-4 Chondrite	B	B	17	14-18
ALHA79039	108.3	H-4 Chondrite	B	B	16	15
ALHA80106	432.2	H-4 Chondrite	C	B	19	16-19
ALHA80121	39.1	H-4 Chondrite	B/C	C	19	17
ALHA80128	138.2	H-4 Chondrite	B	B/C	18	15-20
ALHA80131	19.8	H-4 Chondrite	B	B	19	16-22
RKPA80232	80.1	H-4 Chondrite	B	A	18	16
RKPA80237	22.2	H-4 Chondrite	C	B	18	16
RKPA80267	24.2	H-4 Chondrite	C	A	19	16
ALHA81022	912.5	H-4 Chondrite	B/C	A	19	17
ALHA81041	728.8	H-4 Chondrite	C	C	18	15-23
ALHA81043	106.0	H-4 Chondrite	B/C	C	18	15
ALHA81044	386.8	H-4 Chondrite	C	C	18	16
ALHA81045	90.2	H-4 Chondrite	C	B/C	18	16



Sample Number	Weight (g)	Classification	Weathering	Fracturing	%Fa	%Fs
ALHA81046	16.6	H-4 Chondrite	C	B/C	18	16
ALHA81047	81.9	H-4 Chondrite	B/C	B/C	18	16
ALHA81048	190.6	H-4 Chondrite	B/C	B/C	18	16
ALHA81049	8.5	H-4 Chondrite	B/C	B	18	16
ALHA81050	25.7	H-4 Chondrite	C	C	18	16
ALHA81051	43.0	H-4 Chondrite	B/C	B	18	16
ALHA81052	28.7	H-4 Chondrite	C	B	18	16
ALHA81056	1.4	H-4 Chondrite	B	A	19	17
ALHA81057	8.4	H-4 Chondrite	B	A	19	13-21
ALHA81058	66.2	H-4 Chondrite	C	C	18	15
ALHA81068	23.7	H-4 Chondrite	B	A	19	16
ALHA81073	3.3	H-4 Chondrite	B/C	A	19	8-18
ALHA81074	7.9	H-4 Chondrite	B	B	19	16
ALHA81092	15.6	H-4 Chondrite	B	A	19	17
ALHA81095	58.7	H-4 Chondrite	B/C	C	18	16
ALHA81097	79.9	H-4 Chondrite	B	A	18	16
ALHA81104	183.8	H-4 Chondrite	C	C	19	17
ALHA81105	92.7	H-4 Chondrite	C	B/C	18	16
ALHA81109	1.1	H-4 Chondrite	B	A	19	17
ALHA81114	79.3	H-4 Chondrite	B/C	B/C	18	16
ALHA81117	32.9	H-4 Chondrite	B	B/C	18	14-21
ALHA81140	14.4	H-4 Chondrite	B/C	A	19	17
ALHA81142	1.2	H-4 Chondrite	B/C	B/C	18	16
ALHA81147	1.6	H-4 Chondrite	B	A	19	16
ALHA81149	9.4	H-4 Chondrite	B	B	19	16
ALHA81157	11.8	H-4 Chondrite	B/C	B	19	17
ALHA81177	17.3	H-4 Chondrite	B/C	B	19	16
EET 82602	1824.1	H-4 Chondrite	B	B	19	16
EET 82609	325.4	H-4 Chondrite	B/C	A/B	18	17
ALHA77230	2473.0	L-4 Chondrite	C	B	22-25	18-29
ALHA77304	650.4	L-4 Chondrite	B	B	18-27	13-19
ALHA78044	164.1	L-4 Chondrite	B/C	B	23-25	19-24
RKPA80216	44.3	L-4 Chondrite	B	B	23	20
RKPA80242	7.3	L-4 Chondrite	B/C	B	22	19
ALHA81040	194.5	L-4 Chondrite	B/C	A	25	21
ALHA81119	107.4	L-4 Chondrite	B	B	24	21
TIL 82404	321.6	L-4 Chondrite	B	B	23	20
TIL 82407	220.8	L-4 Chondrite	B/C	A	23	20
TIL 82411	179.5	L-4 Chondrite	A/B	A	24	21
TYR 82700	892.1	L-4 Chondrite	B	A	24	15-23

Irons

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA81013	17727.0	Iron				
ALHA81014	188.2	Iron				
ALHA80104	882.0	Iron-Ataxite				
ALHA77255	765.1	Iron-Ataxite (anom)				
ALHA76002	1510.0	Iron-Group IA				
ALHA77250	10555.0	Iron-Group IA				
ALHA77263	1669.0	Iron-Group IA				
ALHA77283	10510.0	Iron-Group IA				
ALHA77289	2186.0	Iron-Group IA				
ALHA77290	3784.0	Iron-Group IA				
PGPA77006	19068.0	Iron-Group IA				
ALHA78100	85.0	Iron-Group IIA				
DRPA78001	15200.0	Iron-Group IIB				
DRPA78002	7188.0	Iron-Group IIB				
DRPA78003	144.2	Iron-Group IIB				
DRPA78004	133.6	Iron-Group IIB				
DRPA78005	18600.0	Iron-Group IIB				
DRPA78006	389.3	Iron-Group IIB				
DRPA78007	11800.0	Iron-Group IIB				
DRPA78008	59400.0	Iron-Group IIB				
DRPA78009	138100.0	Iron-Group IIB				
ALHA78252	2789.0	Iron-Group IVA				
RKPA80226	160.3	Iron-Octahedrite				

Stony-Irons

Sample Number	Weight (g)	Classification	Weathering	Fracturing	% Fa	% Fs
ALHA77219	637.1	Mesosiderite	B	B	26	24-28
RKPA79015	10022.0	Mesosiderite	A/B	A		24
RKPA80229	14.1	Mesosiderite	C	B/C		24
RKPA80246	5.8	Mesosiderite	C	C		24
RKPA80258	4.3	Mesosiderite	B/C	B		17-21
RKPA80263	16.7	Mesosiderite	C	B		24
ALHA81059	539.5	Mesosiderite	C	B/C	28	25-32
ALHA81098	70.9	Mesosiderite	C	B/C		28

@ Classified by S.G. McKinley and K. Keil.

\* Classified by S.J.B. Reed and S.O. Agrell.

February 1984

It has been known for some time that many of the Antarctic meteorite fragments are pieces from common falls. The list that follows contains those that are believed at the present time to be paired with some degree of certainty. Criteria used to determine this are:

- t Field relations
- v Physical similarities (external morphology)
- w Petrographic and microprobe similarities
- x Metallography
- y Bulk chemistry
- z Trace element chemistry

#### Achondrites

##### Eucrites

1) ALHA81009, 81012. v,w

##### Polymict Eucrites

2) ALHA76005, 77302, 78040, 78132, 78158, 78165, 79017, 80102, 81006, 81007, 81008, 81010. v,w

##### Polymict Eucrites/Howardites

3) EETA79006, 82600. w

##### Ureilites

4) ALHA78019, 78262. v,w

#### Chondrites

##### Carbonaceous C 2

5) ALHA77306, 78261, 81002, 81004. w

##### Carbonaceous C 3

6) ALHA77003, 82101. w

##### EH4 Chondrites

7) ALHA77156, ALHA77295 w

##### H4 Chondrites

8) ALHA77004, 77190, 77191, 77192, 77208, 77223, 77224, 77225, 77226, 77232, 77233. t,w

9) ALHA78084, 81022. w

10) ALHA78193, 78196, 78223. t,x

11) ALHA81041, 81043, 81044, 81045, 81046, 81047, 81048, 81049, 81050, 81051, 81052. w

H5 Chondrites

- 12) ALHA77014, 77264. t
- 13) ALHA77021, 77025, 77061, 77062, 77064, 77071, 77074, 77086, 77088. t,w
- 14) ALHA77118, 77119, 77124. t
- 15) ALHA78209, 78221, 78225, 78227, 78233. t,x
- 16) ALHA79031, 79032. w
- 17) ALHA80111, 80124, 80127, 80129, 80132. w
- 18) RKPA80217, 80218. w
- 19) RKPA80220, 80223. w
- 20) RKPA80250, 80251. w

H6 Chondrites

- 21) MBRA76001, 76002. w
- 22) ALHA77144, 77148. t
- 23) ALHA77271, 77288. t
- 24) ALHA78211, 78213, 78215, 78229, 78231. t,x
- 25) ALHA80122, 80126, 80130. w
- 26) ALHA81035, 81038, 81103, 81112. w
- 27) RKPA80203, 80206, 80208, 80211, 80213, 80214, 80221, 80231, 80254, 80255, 80262, 80265, 80266. w

L3 Chondrites

- 28) ALHA77011, 77015, 77031, 77033, 77034, 77036, 77043, 77047, 77049, 77050, 77052, 77115, 77140, 77160, 77163, 77164, 77165, 77166, 77167, 77170, 77175, 77178, 77185, 77211, 77214, 77241, 77244, 77249, 77260, 77303, 78038, 78188, 79001, 79045, 80133, 81025, 81030, 81031, 81032, 81053, 81060, 81061, 81065, 81066, 81069, 81085, 81087, 81121, 81145, 81156, 81162. w
- 29) ALHA77215, 77216, 77217, 77252. t,v,w

L4 Chondrites

- 30) RKPA80216, 80242. w

L5 Chondrites

31) ALHA81017, 81018, 81023. w

32) PCA 82504, 82505. w

L6 Chondrites

33) ALHA77001, 77150, 77180, 77292, 77293,  
77296, 77297, 77305. t,v,w

34) ALHA77231, 77269, 77270, 77272, 77273,  
77277, 77280, 77281, 77282, 77284. t,v,w

35) ALHA78043, 78045. w

36) ALHA78103, 78104, 78105. t,w

37) ALHA78126, 78130, 78131. w

38) ALHA80101, 80103, 80105, 80107, 80108, 80110,  
80112, 80113, 80114, 80115, 80116, 80117,  
80119, 80120, 80125. v,w

39) ALHA81027, 81028, 81029. w

40) BTNA78001, 78002. v,w

41) RKPA78001, 78003, 79001, 79002, 80202, 80219,  
80225, 80252, 80261, 80264. w

42) EET 82605, 82606. w

LL3 Chondrites

43) ALHA76004, 81251. w

LL6 Chondrites

44) RKPA80222, 80238, 80248. w

Stony Irons

Mesosiderites

45) RKPA79015, 80229, 80246, 80258, 80263. w

46) ALHA81059, 81098. w

Irons

Group IA or Og

47) ALHA76002, 77250, 77263, 77289, 77290. t,x,y,z

Group IIB

48) DRPA78001, 78002, 78003, 78004, 78005, 78006, 78007, 78008, 78009. t,v,x,y

Sample No.: ALH82103  
Field No.: 2907  
Weight (gms): 2529.2  
Meteorite Type: H5 Chondrite

Location: Allan Hills

Physical Description: Carol Schwarz

A slightly weathered fusion crust covers nearly all of this meteorite. Regmaglypts occur on several faces. Surfaces not having fusion crust are weathered but a few small clasts are visible. The interior consists of gray matrix dotted with oxidation. A 1-2 mm thick weathering rind was exposed.

Dimensions: 14 x 11 x 9 cm

Petrographic Description: Brian Mason

Chondrules are moderately abundant but may be poorly defined, tending to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite, and a little fine-grained plagioclase. Moderate weathering is indicated by brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa17; pyroxene, Fs16. The meteorite is an H5 chondrite.

Sample No.: ALH82104  
Field No.: 2993  
Weight (gms): 398.8  
Meteorite Type: L5 Chondrite

Location: Allan Hills

Physical Description: Roberta Score

ALH82104 is mostly covered with thin black fusion crust. Areas not covered are brown in color and rough in texture. The stone's interior is made up of light gray matrix with rounded and irregular shaped inclusions. A few oxidation halos are present as is a continuous weathering rind.

Dimensions: 6 x 6 x 6 cm

Petrographic Description: Brian Mason

Chondrules are moderately abundant, but some of them are poorly defined and tend to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite. Weathering is minor, being limited to brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa25; pyroxene, Fs21. The meteorite is an L5 chondrite.

Sample No.: ALH82105  
Field No.: 2996  
Weight (gms): 363.3  
Meteorite Type: L6 Chondrite

Location: Allan Hills

Physical Description: Roberta Score

ALH82105 is flat with well rounded edges and is totally covered with brown and black polygonally fractured fusion crust. Many oxidation halos are visible on the fusion crust. A continuous weathering rind with thickness ranging from 0.1 to 0.5 cm was exposed when the meteorite was chipped. The center of the stone is whitish-gray in color with few areas of oxidation present. Abundant metal is obvious.

Dimensions: 8 x 7.5 x 3 cm

Petrographic Description: Brian Mason

Chondrules are relatively sparse, most of the section consisting of a granular aggregate of olivine and pyroxene, with minor amounts of plagioclase, nickel-iron, and troilite. Well-preserved fusion crust, up to 0.6 mm thick, rims part of the sections. Minor weathering is indicated by brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa24; pyroxene, Fs21; plagioclase, An11. The meteorite is an L6 chondrite.

Sample No.: EET82602  
Field No.: 2935  
Weight (gms): 1824.1  
Meteorite Type: H4 Chondrite

Location: Elephant Moraine

Physical Description: Roberta Score

Extremely thin black fusion crust covers all of the regmaglypted surfaces of EET82602. Sample broke along a pre-existing fracture exposing both weathered and unweathered material. The overall color of the material exposed is orangish-brown with abundant metal present. Note that this may not be representative of the entire specimen.

Dimensions: 14 x 10 x 8 cm

Petrographic Description: Brian Mason

Chondritic structure is well-developed, with chondrules ranging up to 1.5 mm in diameter; a variety of types is present, including porphyritic and barred olivine (with turbid devitrified glass between the olivine crystals), granular olivine and olivine-pyroxene, and fine-grained pyroxene. Some of the pyroxene is polysynthetically twinned clinobronzite. The chondrules are set in a fine-grained granular groundmass of olivine and pyroxene, with minor amounts of nickel-iron and troilite. Brown limonite staining pervades the section, and veinlets of red-brown limonite are present. Microprobe analyses give the following compositions: olivine, Fa19; pyroxene, Fs16. The meteorite is classified as an H4 chondrite.



Sample No.: EET82603  
Field No.: 2940  
Weight (gms): 8210.0  
Meteorite Type: H5 Chondrite

Location: Elephant Moraine

Physical Description: Carol Schwarz

The specimen is nearly completely covered with black polygonally fractured fusion crust. White salt-deposit occurs on four of the six sides and is quite thick in some places. Most of the deposit formed while the sample was drying in the gaseous nitrogen. This deposit is available for allocations.

EET82603 was difficult to chip, therefore the piece selected for thin section is probably more weathered than other parts of the meteorite. A weathering rind of salt-deposit was exposed. The interior matrix is gray with large areas of having a dark gray to deep reddish-brown color. Extensive weathering has occurred along internal cracks.

Dimensions: 18 x 19 x 14 cm

Petrographic Description: Brian Mason

Chondrules are moderately abundant, and are set in a granular groundmass which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite. A minor degree of weathering is indicated by patchy limonitic staining throughout the section. Microprobe analyses give the following compositions: olivine, Fa19; pyroxene, Fs17. The meteorite is classified as an H5 chondrite.

Sample No.: EET82604  
Field No.: 2961  
Weight (gms): 1570.6  
Meteorite Type: H5 Chondrite

Location: Elephant Moraine

Physical Description: Roberta Score

Thin black fusion crust coats most of this blocky meteorite. The sample broke along a pre-existing fracture exposing mostly weathered material, though metal is still obvious as is a small amount of less weathered material.

Dimensions: 11 x 11 x 8.5 cm

Petrographic Description: Brian Mason

Chondrules are not abundant, and their margins tend to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite. Limonitic staining pervades the section, and small areas of red-brown limonite are present. Microprobe analyses give the following compositions: olivine, Fa19; pyroxene, Fs16; a little fine-grained plagioclase was noted. The meteorite is an H5 chondrite.

Sample No.: EET82605  
Field No.: 2932  
Weight (gms): 499.8  
Meteorite Type: L6 Chondrite

Location: Elephant Moraine

Physical Description: Roberta Score

EET82605 is an angular shaped stone, mostly covered with black fusion crust or remnant fusion crust.

Chipping revealed a discontinuous weathering rind that ranges in thickness from 1.7 to 2 cm thick. The fresher interior is light in color with oxidation scattered throughout. Several inclusions were noted.

Dimensions: 9 x 7.5 x 5.5 cm

Petrographic Description: Brian Mason

Chondrules are sparse and poorly defined, tending to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of plagioclase (maskelynite), troilite and nickel-iron. A minor degree of weathering is indicated by brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa25; pyroxene, Fs21; the maskelynite has CaO (2.2%) appropriate to oligoclase composition, but Na<sub>2</sub>O is low and variable (2.3-7.8%). The meteorite is an L6 chondrite.

Sample No.: EET82606  
Field No.: 2945  
Weight (gms): 981.9  
Meteorite Type: L6 Chondrite

Location: Elephant Moraine

Physical Description: Carol Schwarz

This angular-shaped specimen is smooth and dark reddish brown with remnant fusion crust. Several fractures penetrate the stone. Light grayish-yellow matrix with numerous oxidation halos and veins make up the interior of this meteorite.

Dimensions: 11.5 x 9 x 7 cm

Petrographic Description: Brian Mason

The section resembles that of EET82605 very closely in mineralogy, texture, and degree of weathering, and mineral compositions are the same. They could well be pieces of a single meteorite.

Sample No.: EET82607  
Field No.: 2952  
Weight (gms): 165.3  
Meteorite Type: L6 Chondrite

Location: Elephant Moraine

Physical Description: Carol Schwarz

Judging by the shape of this meteorite, EET82607 appears to be half of a thin oblong shaped specimen. Fusion crust occurs on all but one face. This face is rough in texture and reddish-brown in color. Lighter colored inclusions or chondrules are visible. The interior has weathered to a reddish-brown color but tiny metal flecks are visible.

Dimensions: 5.5 x 4 x 4 cm

Petrographic Description: Brian Mason

The section shows a granular aggregate of olivine and pyroxene, with minor amounts of plagioclase, nickel-iron, and troilite, and only traces of chondritic structure. A small amount of limonite is present in association with metal grains. Microprobe analyses give the following compositions: olivine, Fa23; pyroxene, Fs20; plagioclase, An11. The meteorite is an L6 chondrite.

Sample No.: EET82609  
Field No.: 2919  
Weight (gms): 325.4  
Meteorite Type: H4 Chondrite

Location: Elephant Moraine

Physical Description: Roberta Score

The shape of this stone is angular with rounded corners. Fusion crust or remnant fusion crust covers the entire specimen giving EET82609 an overall brownish-black color.

The interior has a dark colored matrix with reddish-brown oxidation disseminated throughout.

Dimensions: 7.5 x 5 x 3.5 cm

Petrographic Description: Brian Mason

The section shows a close-packed aggregate of small chondrules, ranging up to 0.6 mm in diameter, set in a granular groundmass consisting largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite. Some of the pyroxene is polysynthetically twinned clinobronzite. Brown limonitic staining pervades the section. Microprobe analyses give the following compositions: olivine, Fa18; pyroxene, Fs17 (the pyroxene is somewhat variable in composition). The meteorite is classified as an H4 chondrite.

Sample No.: PCA82503                      Location: Pecora Escarpment  
Field No.: 2757, 2777  
Weight (gms): 8308.0  
Meteorite Type: L6 Chondrite

Physical Description: Carol Schwarz

This specimen consists of two pieces (field numbers 2777 and 2757) which fit together perfectly. The stone has thin black fusion crust except for one fracture surface. The bottom is smooth and has some deep regmaglypts. The fracture surface has weathered to a yellowish-brown color and has a rough texture. The interior is light gray with some oxidation halos. A 1-2 mm discontinuous gray weathering rind is present.

The classification chip was taken from the smaller of the two pieces (field no. 2757).

Dimensions: 27 x 17 x 12 cm

Petrographic Description: Brian Mason

A few chondrules are present, but their margins are diffuse and tend to merge with the granular groundmass, which consists largely of olivine and pyroxene with minor amounts of plagioclase, troilite, and nickel-iron. Minor weathering is indicated by brown limonitic halos around metal grains. Microprobe analyses give the following compositions: olivine, Fa24; pyroxene, Fs20; plagioclase, An10 (some plagioclase grains are deficient in  $Na_2O$ , suggesting partial conversion to maskelynite). The meteorite is an L6<sup>c</sup> chondrite.

Sample No.: PCA82504                      Location: Pecora Escarpment  
Field No.: 2707  
Weight (gms): 3093.6  
Meteorite Type: L5 Chondrite

Physical Description: Carol Schwarz

Fusion crust has been removed from 20% of the surface of PCA82504. The fusion crust is dotted with oxidation. Areas not covered by fusion crust are somewhat weathered but still reveal a grayish matrix. The interior is gray, contains small inclusions and is dotted with oxidation halos.

Dimensions: 18 x 12 x 9 cm

Petrograph Description: Brian Mason

Chondrules are fairly abundant, but some are poorly defined, their margins tending to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite; a little plagioclase in small grains was noted. Limonitic staining and small areas of red-brown limonite is associated with metal grains. Microprobe analyses give the following compositions: olivine, Fa23; pyroxene, Fs20; plagioclase, An10. The meteorite is classified as an L5 chondrite.

Sample No.: PCA82505  
Field No.: 2758  
Weight (gms): 3085.5  
Meteorite Type: L5 Chondrite

Location: Pecora Escarpment

Physical Description: Carol Schwarz

Patches of fusion crust remain on this meteorite. The exterior surfaces are generally reddish-brown in color with lighter colored inclusions evident. One severe fracture divides the specimen in half. The interior is dark with reddish oxidation. No features can be distinguished.

Dimensions: 16 x 11 x 11 cm

Petrographic Description: Brian Mason

This section resembles that of PCA82504 very closely in mineralogy, texture, and degree of weathering, and mineral compositions are the same. The possibility of pairing should be considered.

Sample No.: PCA82506  
Field No.: 2705  
Weight (gms): 5316.0  
Meteorite Type: Ureilite

Location: Pecora Escarpment

Physical Description: Carol Schwarz

Patches of fusion crust cover 75% of this achondrite. In some areas the fusion crust has a blistery texture. Areas with little fusion crust are greenish to brown in color.

The interior is grayish-green to brown in color. The matrix has a blocky texture and many crystal faces are evident.

Dimensions: 22 x 16 x 9 cm

Petrographic Description: Brian Mason

The section shows an aggregate of anhedral to subhedral grains (0.6-3 mm across) of olivine and pyroxene. Individual grains are rimmed by carbonaceous material which includes thin stringers of troilite. Trace amounts of nickel-iron originally present have been largely weathered to limonite. Microprobe analyses show olivine of uniform composition (Fa21) with notable high CaO content (0.3%); the pyroxene is pigeonite with composition  $Wo_{61}Fs_{18}En_{76}$ . The meteorite is a ureilite; some grains show undulose extinction but apart from that the meteorite appears to be relatively unshocked compared to most ureilites.

Sample No.: PCA82507  
Field No.: 2763  
Weight (gms): 479.8  
Meteorite Type: LL6 Chondrite

Location: Pecora Escarpment

Physical Description: Roberta Score

Black fusion crust covers most of the exterior. Areas not covered by fusion crust have a brownish color. Many chondrules (the largest is 5 mm in diameter) are visible. Bluish-gray matrix with white and dark gray inclusions as large as 1 mm make up the interior of this extremely fresh appearing stone. Little metal is obvious.

Dimensions: 6 x 6 x 6.5 cm

Petrographic Description: Brian Mason

Chondritic structure is barely visible, being present only as a few fragments of individual chondrules. The section shows a granular aggregate of olivine and pyroxene, with minor amounts of plagioclase and troilite, and a little (ca. 1%) nickel-iron. The meteorite shows no trace of weathering. Fusion crust, 0.4 mm thick, rims part of the sections. Microprobe analyses give the following compositions: olivine, Fa30; pyroxene, Fs25; plagioclase, An11. The meteorite is an LL6 chondrite.

Sample No.: PCA82508  
Field No.: 2703  
Weight (gms): 389.3  
Meteorite Type: L6 Chondrite

Location: Pecora Escarpment

Physical Description: Roberta Score

PCA82508 is a well rounded oblong shaped meteorite with black fusion crust coating all but one corner. This area is reddish-brown and not too badly weathered.

The interior matrix is light gray with light and dark colored inclusions (chondrules?) and contains some oxidation halos.

Dimensions: 9 x 5 x 4 cm

Petrographic Description: Brian Mason

A few chondrules are present, but their margins tend to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of plagioclase, nickel-iron, and troilite. Limonitic staining and small areas of red-brown limonite occur in association with metal grains. Microprobe analyses give the following compositions: olivine, Fa23; pyroxene, Fs20; plagioclase, An10. The meteorite is classified as an L6 chondrite.

Sample No.: PCA82509  
Field No.: 2712  
Weight (gms): 285.6  
Meteorite Type: L6 Chondrite

Location: Pecora Escarpment

Physical Description: Roberta Score

Blackish-brown fusion crust completely covers this blocky meteorite.

Chipping exposed an area that is mostly oxidized but it is not believed to be representative of the entire specimen. The fresh material that was exposed is light gray in color with abundant fresh metal obvious.

Dimensions: 5 x 5 x 4 cm

Petrographic Description: Brian Mason

Only traces of chondritic structure are present, the section consisting largely of granular olivine and pyroxene, with minor amounts of plagioclase, troilite and nickel-iron. A thin dark veinlet traverses the section, possibly containing ringwoodite and majorite. Fusion crust rims part of the section, and brown limonitic staining is present throughout. Microprobe analyses give the following compositions: olivine, Fa25; pyroxene, Fs21; plagioclase, An10 (but many grains are deficient in Na<sub>2</sub>O, down to 3.3%, due to conversion to maskelynite). The meteorite is an L6 chondrite.

Sample No.: PCA82510  
Field No.: 2719  
Weight (gms): 254.2  
Meteorite Type: L5 Chondrite

Location: Pecora Escarpment

Physical Description: Roberta Score

Some of the blackish-brown fusion crust has been plucked off exposing the clast-rich interior of PCA82510.

The interior matrix is medium gray in color and loaded with inclusions that are both rounded and irregular in shape. This stone is amazingly fresh. Minor pockets of oxidation do occur but they are the exception.

Dimensions: 6.5 x 4.5 x 4 cm

Petrographic Description: Brian Mason

Chondrules appear to be moderately abundant, but many are broken and distorted and tend to merge with the granular groundmass, which consists largely of olivine and pyroxene with minor amounts of nickel-iron and troilite; a little plagioclase in small grains was noted. A small amount of brown limonitic staining is present around metal grains. Microprobe analyses give the following compositions: olivine, Fa24; pyroxene, Fs20; plagioclase, An10. The meteorite is classified as an L5 chondrite.

Sample No.: PCA82513  
Field No.: 2791  
Weight (gms): 239.1  
Meteorite Type: L5 Chondrite

Location: Pecora Escarpment

Physical Description: Carol Schwarz

One face of this specimen is rounded and smooth with a black to weathered and shiny fusion crust. The three other faces have a dull fractured fusion crust that is slightly blistery in areas. Flow lines are present.

The interior is light gray with occasional dark gray inclusions or chondrules. Metal flecks are present. Oxidation halos and a discontinuous weathering rind are also characteristic of the interior.

Dimensions: 6 x 5 x 4 cm

Petrographic Description: Brian Mason

Chondrules are fairly abundant, but their margins are diffuse, tending to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite; a little fine-grained plagioclase was noted. Brown limonitic staining is present around metal grains. Microprobe analyses give the following compositions: olivine, Fa24; pyroxene, Fs20; plagioclase, An10. The meteorite is classified as an L5 chondrite.

Sample No.: TIL82400  
Field No.: 2751  
Weight (gms): 220.8  
Meteorite Type: L5 Chondrite

Location: Thiel Mountains

Physical Description: Carol Schwarz

Meteorite has only a few patches of fusion crust remaining on it. The exterior is friable, has a rough texture and reddish-brown color, and numerous gray-green chondrules (1-3 mm diameter) are present. The interior is light gray with some oxidation.

Dimensions: 8 x 5 x 5 cm

Petrographic Description: Brian Mason

Chondrules are moderately abundant, and are set in a fine-grained granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite. Weathering is limited to brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa25; pyroxene, Fs21. The meteorite is classified as an L5 chondrite.



Sample No.: TIL82401  
Field No.: 2746  
Weight (gms): 281.6  
Meteorite Type: L6 Chondrite

Location: Thiel Mountains

Physical Description: Carol Schwarz

Thin, dull black fusion crust is present on parts of three surfaces of this meteorite fragment. The other surfaces are smooth and reddish-brown. Chondrules (1-6 mm diameter) are visible on the exterior. A wide discontinuous weathering rind was exposed when this stone was chipped, as was fresh gray matrix with a minor amount of oxidation.

Dimensions: 6.5 x 5.5 x 6 cm

Petrographic Description: Brian Mason

Chondrules are sparse and poorly defined, their margins merging with the granular groundmass, which consists of olivine and pyroxene with minor amounts of plagioclase, troilite, and nickel-iron. Brown limonitic staining surrounds the metal grains. Microprobe analyses give the following compositions: olivine, Fa25; pyroxene, Fs21; plagioclase, An10. The meteorite is an L6 chondrite.

Sample No.: TIL82402  
Field No.: 2735  
Weight (gms): 476.0  
Meteorite Type: LL6 Chondrite

Location: Thiel Mountains

Physical Description: Roberta Score

Black fusion crust covers all but the edges of this square meteorite. Light gray matrix with dark and light inclusions (chondrules?) make up the interior of TIL82402.

Dimensions: 7 x 6 x 6 cm

Petrographic Description: Brian Mason

Chondrules are sparse and poorly developed, tending to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of plagioclase and troilite, and a little (ca. 2%) nickel-iron. The section shows a brecciated structure, with medium- to fine-grained clasts. Weathering is minor, being limited to a little brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa29; pyroxene, Fs24; plagioclase, An10. The meteorite is an LL6 chondrite.

Sample No.: TIL82404  
Field No.: 2781  
Weight (gms): 321.6  
Meteorite Type: L4 Chondrite

Location: Thiel Mountains

Physical Description: Roberta Score

Many inclusions are visible in areas devoid of the brownish-black fusion crust which covers TIL82404. The matrix exposed by chipping is dark gray, inclusion- and metal-rich with oxidation evenly disseminated throughout.

Dimensions: 7 x 7.5 x 3 cm

Petrographic Description: Brian Mason

The section shows a close-packed aggregate of chondrules, up to 3 mm in diameter, in a minor amount of groundmass, which consists of olivine, pyroxene, nickel-iron, and troilite. A variety of chondrule types is present, the commonest being granular and porphyritic olivine and olivine-pyroxene, and fine-grained pyroxene. Much of the pyroxene is polysynthetically twinned clinobronzite. The section is pervaded with brown limonitic staining. Microprobe analyses give the following compositions: olivine, Fa23; pyroxene, Fs20. The meteorite is classified as an L4 chondrite.

Sample No.: TIL82405  
Field No.: 2715, 2721, 2750  
Weight (gms): 1000.7  
Meteorite Type: H6 Chondrite

Location: Thiel Mountains

Physical Description: Carol Schwarz

Three perfectly fitting pieces make up TIL82405. The fusion crust contains oxidation halos and is polygonally fractured. The interior is gray with small specs of oxidation. A 1 to 4 mm wide weathering rind was exposed.

Dimensions: 15 x 10 x 14 cm

Petrographic Description: Brian Mason

Chondrules are sparse and poorly defined, tending to merge with the granular groundmass, which consists largely of olivine and pyroxene, with minor amounts of nickel-iron, plagioclase, and troilite. Brown limonitic staining surrounds the metal grains. Microprobe analyses give the following compositions: olivine, Fa19; pyroxene, Fs17; plagioclase, An13. The meteorite is an H6 chondrite.

Sample No.: TIL82407  
Field No.: 2771  
Weight (gms): 220.8  
Meteorite Type: L4 Chondrite

Location: Thiel Mountains

Physical Description: Roberta Score

TIL82407 is an angular, three flat sided, oblong shaped stone that is completely covered with brownish-black fusion crust. Abundant oxidation halos are obvious on the exterior.

What fresh material is present is dark gray in color while most of the interior has weathered to a deep reddish-brown color.

Dimensions: 9.5 x 4.5 x 3 cm

Petrographic Description: Brian Mason

The section shows a close-packed aggregate of chondrules, up to 3 mm in diameter, with interstitial nickel-iron and troilite and fine-grained olivine and pyroxene. A variety of chondrule types is present, including granular and porphyritic olivine and olivine-pyroxene, barred olivine, and radiating pyroxene. Much of the pyroxene is polysynthetically twinned clinobronzite. Brown limonitic staining pervades the section. Microprobe analyses give the following compositions: olivine, Fa23; pyroxene somewhat variable, mean Fs20. The meteorite is an L4 chondrite.

Sample No.: TIL82409  
Field No.: 2704  
Weight (gms): 230.9  
Meteorite Type: H5 Chondrite

Location: Thiel Mountains

Physical Description: Carol Schwarz

A black to slightly weathered fusion crust covers nearly all of the meteorite. The interior has a yellowish tinge and large dark halos from oxidation.

Dimensions: 6 x 4.5 x 4.5 cm

Petrographic Description: Brian Mason

Chondrules are fairly abundant, and are set in a granular groundmass which consists largely of olivine and pyroxene, with minor amounts of nickel-iron and troilite. Remnants of fusion crust are present. Brown limonitic staining pervades the section. Microprobe analyses give the following compositions: olivine, Fa18; pyroxene, Fs16. The meteorite is classified as an H5 chondrite.

Sample No.: TIL82411  
Field No.: 2762  
Weight (gms): 179.5  
Meteorite Type: L4 Chondrite

Location: Thiel Mountains

Physical Description: Carol Schwarz

Specimen is covered with a slightly weathered fusion crust. No fractures are present. The interior is dark and has abundant chondrules 1 to 2 mm in diameter. Weathering is slight.

Dimensions: 6.5 x 4.5 x 3 cm

Petrographic Description: Brian Mason

The section consists largely of chondrules, up to 2.4 mm in diameter, with interstitial olivine, pyroxene, nickel-iron, and troilite. Chondrule types include granular and porphyritic olivine and olivine-pyroxene, barred olivine, and fine-grained pyroxene. Much of the pyroxene is polysynthetically twinned clinobronzite. Microprobe analyses give the following compositions: olivine, Fa24; pyroxene, Fs21. The meteorite is classified as an L4 chondrite.

Sample No.: TYR82700  
Field No.: 2926  
Weight (gms): 892.1  
Meteorite Type: L4 chondrite

Location: Taylor Glacier

Physical Description: Carol Schwarz

Black to brown fusion crust covers 60% of this specimen. The other surfaces are brown with light inclusions. White evaporite deposit dots the exterior. The interior contains much oxidation.

Dimensions: 10 x 8.5 x 7 cm

Petrographic Description: Brian Mason

The section shows a close-packed aggregate of chondrules and chondrule fragments, set in a minor amount of granular matrix. A variety of chondrule types is present: granular and porphyritic olivine and olivine-pyroxene, barred olivine, and radiating fibrous pyroxene. Much of the pyroxene is polysynthetically twinned clinobronzite. Minor amounts of nickel-iron and troilite are present, interstitial to the chondrules. Minor weathering is indicated by brown limonitic staining around metal grains. Microprobe analyses give the following compositions: olivine, Fa24; pyroxene somewhat variable, Fs15-23, mean Fs18. The meteorite is an L4 chondrite.

Sample No.: ALH83100,1  
Field No.: 2126  
Weight (gms): 434.6  
Meteorite Type: C2 Chondrite

Location: Allan Hills

Physical Description: Carol Schwarz

This is one fragment of a multi-fragment sample from the 1983 season.

It is angular, rectangular-shaped, and extremely fractured, with several pieces falling off in handling.

The surface is a dull black and fusion crust cannot be distinguished. Salt deposit has formed in some areas. A few (1 or 2) inclusions are barely discernible on the surface. The interior is dark and featureless.

Dimensions: 8 x 7 x 6 cm

Petrographic Description: Brian Mason

The section shows a large number of clasts (up to 1 mm across) and mineral grains, and a few chondrules, in a minor amount of dark matrix. A little (about 1%) sulfide is present as minute grains, in part concentrated at the margins of chondrules. Nickel-iron occurs in trace amounts, some as small spherules. The clasts and most of the mineral grains consist of a serpentine-like mineral, probably an alteration of olivine. Microprobe analyses show there are a few grains of forsteritic olivine, and calcite grains were also identified. The meteorite is a C2 chondrite.