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METEORITE NEWSLETTER

JAPANESE COLLECTION OF ANTARCTIC METEORITES

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New Lunar Meteorite

Sample Name: Yamato 983885

Location: JARE IV Nunataks

Dimensions (cm): 8.4 x 5.4 x 5.2

Weight (g): 289.71

Weathering: A

Fracturing: B

Meteorite Type: Lunar Anorthositic Breccia

Macroscopic description (Kaiden H.)

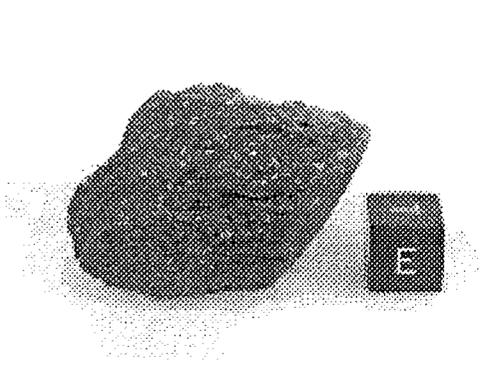
It is a rounded stone with some thin yellowish green fusion crust. Angular white to gray clasts (up to 3 mm in size), white crystalline plagioclases, pyroxenes and dark grains set in a dark fine-grained matrix.

Petrographic Description (Kaiden H.)

A thin section (71-1) shows a polymict breccia containing polyminerally and monomineralic clasts (up to 1.2 mm in size) set in a dark brown clastic matrix. Most of larger clasts are polyminerally, frequently composed of calcic plagioclase pyroxene and olivine, less commonly plagioclase and olivine, or plagioclase alone. Smaller clasts are dominantly mineral fragments of plagioclase, with some pyroxenes and olivines. Glass spherules, up to 0.3 mm in diameter, are also observed.

EPMA analyses show a pyroxene composition range of $\text{En}_{14-85}\text{Fs}_{12-55}\text{Wo}_{2-40}$; a plagioclase range of An_{89-98} ; and an olivine range of Fo_{32-36} .

The average FeO/MnO ratios of pyroxenes (64) indicates that this rock is lunar rock. The oxygen isotopic composition (analyzed by Clayton and Mayeda) of a bulk rock sample that is $\delta^{18}\text{O}=+5.65$, $\delta^{17}\text{O}=+2.89$, $\Delta^{17}\text{O}=-0.05$, also indicates that the meteorite is lunar origin.



Nakhlite

Sample Name: Yamato 000593

Location: JARE IV Nunataks

Dimensions (cm): 29 x 22 x 16

Weight (g): 13713

Weathering: B

Fracturing: B

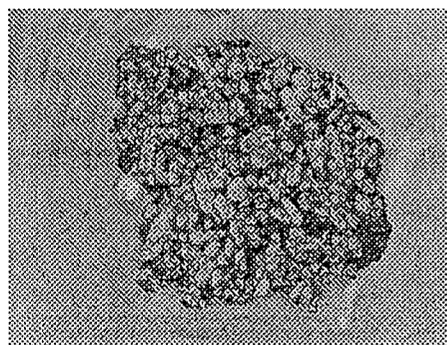
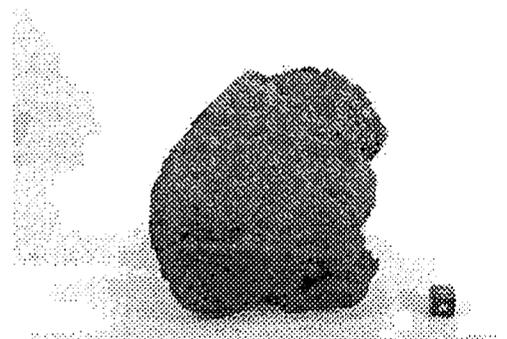
Meteorite Type: Nakhlite

Macroscopic description

This is a subrounded nearly complete stone with one large dented surface. 60% of the stone is covered by shiny black fusion crust. Exposed interior shows medium-grained granular texture and is dark green in color.

Petrographic Description (Imae N.)

The section mainly consists of coarse-grained euhedral and subhedral augite (up to 1 mm x 0.5 mm) showing polythintetic twinning. Minor amount of olivine (up to 0.5 mm) and magnetite (up to 0.1 mm) also observed. Mesostasis includes radial plagioclase crystals. Pyroxene composition is $En_{20-40}Fs_{22-40}Wo_{38-40}$. Olivine composition is Fa_{62-78} . Plagioclase is $An_{26-32}Ab_{63-65}Or_{4-8}$.



Sample Name: Yamato 000749

Location: JARE IV Nunataks

Dimensions (cm): 11 x 10 x 9

Weight (g): 1283

Weathering: B

Fracturing: B

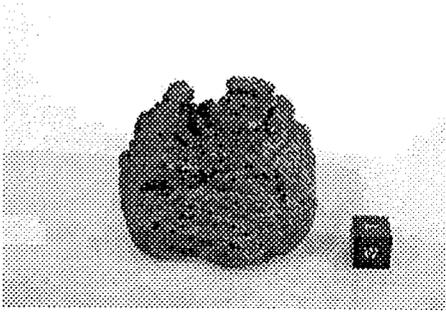
Meteorite Type: Nakhlite

Pairing: Yamato 000593

Macroscopic description

This is pyramidal in shape. Two faces are broken surface. 40% of the surface is covered shiny black fusion crust. Exposed interior shows medium-grained granular

texture and is dark green in color.



Other achondrites

Sample Name: Yamato 980318

Location: Minami-Yamato Nunataks

Dimensions (cm): 6.9 x 4.7 x 3.8

Weight (g): 166.81

Weathering: B/C

Fracturing: B

Meteorite Type: Eucrite

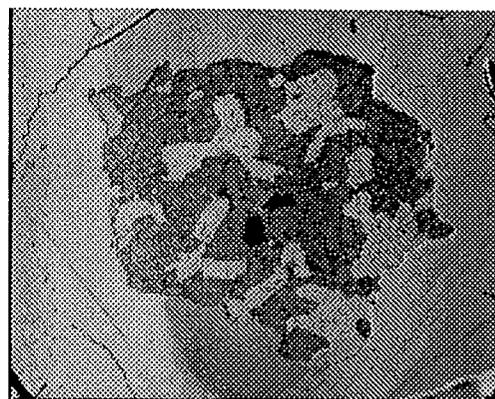
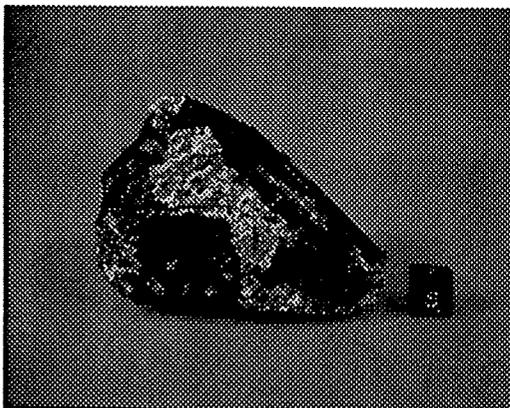
Macroscopic description

This is a subrounded complete stone. 70% of its surface is covered shiny black fusion crust. Exposed interior shows coarse-grained granular texture composed of gray pyroxene and white plagioclase.

Petrographic Description (Yamaguchi A.)

The section consists of coarse-grained low-Ca pyroxene and plagioclase (<5 mm) with minor amount of opaque minerals. The low Ca-pyroxene contains exsolution lamellae of augite (~30 μm thick). Pyroxene compositions cluster around $\text{Wo}_2\text{Fs}_{48-49}$ and $\text{Wo}_{45-46}\text{Fs}_{18-19}$. Plagioclase composition is An_{88-91} . This meteorite is a Mg-rich eucrite.

Oxygen isotopic composition ($\delta^{18}\text{O}=+3.18$, $\delta^{17}\text{O}=+1.36$, $\Delta^{17}\text{O}=-0.29$) analyzed by Clayton and Mayeda indicates that this meteorite is an HED.



Sample Name: Yamato 981651
Dimensions (cm): 8.4 x 5.4 x 3.9
Weathering: A
Meteorite Type: Glassy basalt

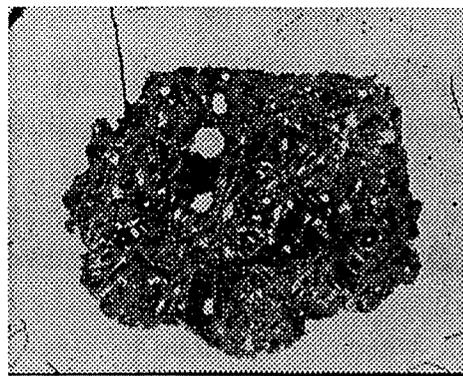
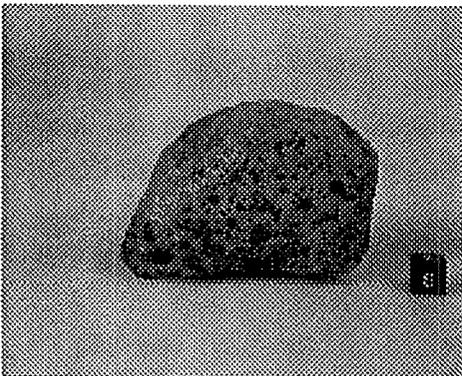
Location: Minami-Yamato Nunataks
Weight (g): 235.88
Fracturing: A

Macroscopic description

This is a subrounded complete stone. Some amount of small patchy fusion crust is remaining. Many rounded vesicles (up to 3 mm) are observed on the half of the surface. Remaining surface is smooth and compact. Exposed interior is fine-grained and dark gray in color.

Petrographic Description (Yamaguchi A.)

The section shows an elongated, hollow skeletal grains of pyroxene (~0.05 x 2 mm) in a glassy matrix. This meteorite contains many irregular to rounded vesicles (<0.6 mm). Pyroxene ($\text{Fs}_{26-33}\text{Wo}_{50-62}$) is rich in Al_2O_3 (7-8 wt%). The FeO/MnO ratios of pyroxenes (25-30) and oxygen isotopic composition ($\delta^{18}\text{O}=+3.55$, $\delta^{17}\text{O}=+1.44$, $\Delta^{17}\text{O}=-0.44$) analyzed by Clayton and Mayeda indicate that this meteorite is an impact melt rock of eucrite.



Sample Request Deadline

Sample requests that are received by the curator before **February 20, 2002**, will be reviewed by the Committee on Antarctic Meteorite Research (CAMR) holding in mid March. Requests that are received after the February 20 deadline may be delayed for review until the CAMR in **September, 2002**.

All sample requests should made in writing to:

Dr. Hideyasu Kojima
Meteorite Curator
Antarctic Meteorite Research Center
National Institute of Polar Research (NIPR)
9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173-8515
Japan
FAX: 81-3-3962-5711
E-mail: curator@nipr.ac.jp

Available information such as NIPR Sample Allocation Policies and Request Form is also shown in following web site.

<http://yamato.nipr.ac.jp/AMRC/index.html>

REQUIREMENTS AND PROCEDURES FOR RESEARCH USING THE JAPANESE NIPR ANTARCTIC METEORITE COLLECTION

Requests for research samples are welcome from all qualified scientists. In general, requests are reviewed and considered by the Committee on Antarctic Meteorite Research (CAMR) of the National Institute of Polar Research (NIPR), which meets one to two times each year. Consortium-type sample requests may also be submitted. After a request is approved, samples are sent to the researcher from the Curator of Antarctic Meteorites, NIPR.

NIPR SAMPLE ALLOCATION POLICIES

I. Basic guidelines for allocation of meteorites at NIPR

1. All samples are provided on a loan basis, and remain the property of NIPR.
2. The pristine mass of the meteorite other than small rare meteorites after allocation must be at least 2/3 of the original mass. Pristine mass is defined as that portion of a specimen which has never been allocated, after initial polished thin section (PTS) preparation.
3. The pristine mass of small rare meteorites (less than 50 grams) after allocation must be at least 80% of the original mass. Rare meteorites are defined as meteorites other than type 4-6 ordinary chondrites, including rare type portions of large meteorites.
4. Allocations of any rare meteorite should generally be limited to samples less than 1 gram.
5. The term of the PTS loan will be for no more than 12 months. PTS should be returned promptly upon completion of the proposed research period.
6. PTS of any small meteorite (less than 5 grams) will not be, in general, loaned out but will be available for on-site use by scientists visiting NIPR.
7. Allocations will not be allowed until the meteorite has been announced and typed (classified) in a published issue of Meteorite News or an NIPR catalog.
8. Allocation from any meteorite that is under consortium study will generally not be permitted.
9. Investigators are strongly encouraged to limit requests to not more than 10 samples per request/review cycle. Higher numbers of samples may be approved, but in general, only 10 samples will be eligible for expeditious allocation processing. Investigators who request more than 10 samples should designate a subset for high-priority processing. A request for a chip for analysis plus a corresponding thin section for petrologic study of the same meteorite or clast will generally be counted as a single request, in relation to the 10-sample limit.
10. Investigators are encouraged to use NIPR sample request forms. However, all sample requests that fully comply with the following guidelines will receive careful consideration. Requests should consist of three parts:
 - a. Background information: title of the research project; for the requesting scientist, his or her name, affiliation and position (e.g., University of Paris, Professor), and office address, including phone and preferably FAX and email; and for any coinvestigators, their name, affiliation, and position.
 - b. A text section, explaining the general nature and purpose of the proposed research, and including details on the justification for each individual sample request.
 - c. A summary table, with columns for each of the following information categories:
 - (1) Specimen name (e.g., Yamato-86032, or Y-86032).
 - (2) Preferred weight (the weight of sample you believe is justified for the proposed research).

- (3) Minimum weight (estimated weight below which the proposed research would not be worth pursuing; in general, approved allocations will be at or very near the *preferred* weight).
- (4) An instruction regarding preferred sampling site (e.g., fusion crust, inner part, outer part, central, etc.).
- (5) Sample form (e.g., single chip, cube, plate, fragments, many grains, powder, PTS, etc.).

II. Guidelines for expedited allocation by the Curator of the NIPR

The following guidelines set forth the conditions under which the Curator of Antarctic Meteorites at NIPR can allocate samples without review and approval by the CAMR. If the Curator has any doubt about the allocation of any sample, the request should be referred to CAMR.

1. Allocation of polished thin sections except for destructive analysis
The original mass of the meteorite must be larger than 5 grams for type 4-6 ordinary chondrites or over 10 grams for all other meteorites.
2. Allocation of samples in a form other than PTS
 - a. The total available pristine mass of the meteorite at NIPR must be larger than 20 grams for type 4-6 ordinary chondrites or over 50 grams for all other meteorites.
 - b. Allocations of up to 5 grams or 1 weight % of the original mass of type 4-6 ordinary chondrites (whichever is less) can be made by the Curator.

SAMPLE DISTRIBUTION

1. Sublease (transfer) of sample is not permitted, except to persons listed as coinvestigators on the written request for samples. If sublease to a person not originally listed as coinvestigator becomes necessary, a new written request must be submitted to the Curator of Antarctic Meteorites.
2. Promptly upon completion of the proposed research, unused or remaining meteorite samples must be returned to the Curator of Antarctic Meteorites, NIPR.

REPORTING RESULTS

1. Research results should be reported promptly, preferably by presentation at the annual NIPR Symposium on Antarctic Meteorites, and/or full-length publication in the Proceedings of the NIPR Symposium on Antarctic Meteorites. The Symposium is held once each year, customarily in early June. Papers submitted to the Proceedings are evaluated by the Editorial Committee of the NIPR, guided by two reviews for each paper.
2. For the reference of the Curator of Antarctic Meteorites, investigators are requested to send three copies of each full-length paper published on allocated samples, and one copy of each abstract about them, to the Curator. Reference copies of articles and abstracts published through NIPR are not necessary.

Mail requests to: Dr. Hideyasu Kojima
 Curator, Antarctic Meteorite Research Center
 National Institute of Polar Research (NIPR)
 9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173-8515, Japan
 Phone: (81) 03-3962-2938, FAX: (81) 03-3962-5711
 E-mail: curator@nipr.ac.jp

No.

NIPR Research Program for Antarctic Meteorites

Research project:

Date:

Period of the project (months):

Principal investigator

Name:

Signature _____

Affiliation & position:

Office address:

Phone: _____ ext. _____

FAX: _____

E-mail:

Coinvestigator(s)

Name(s):

Affiliation(s) & position(s):

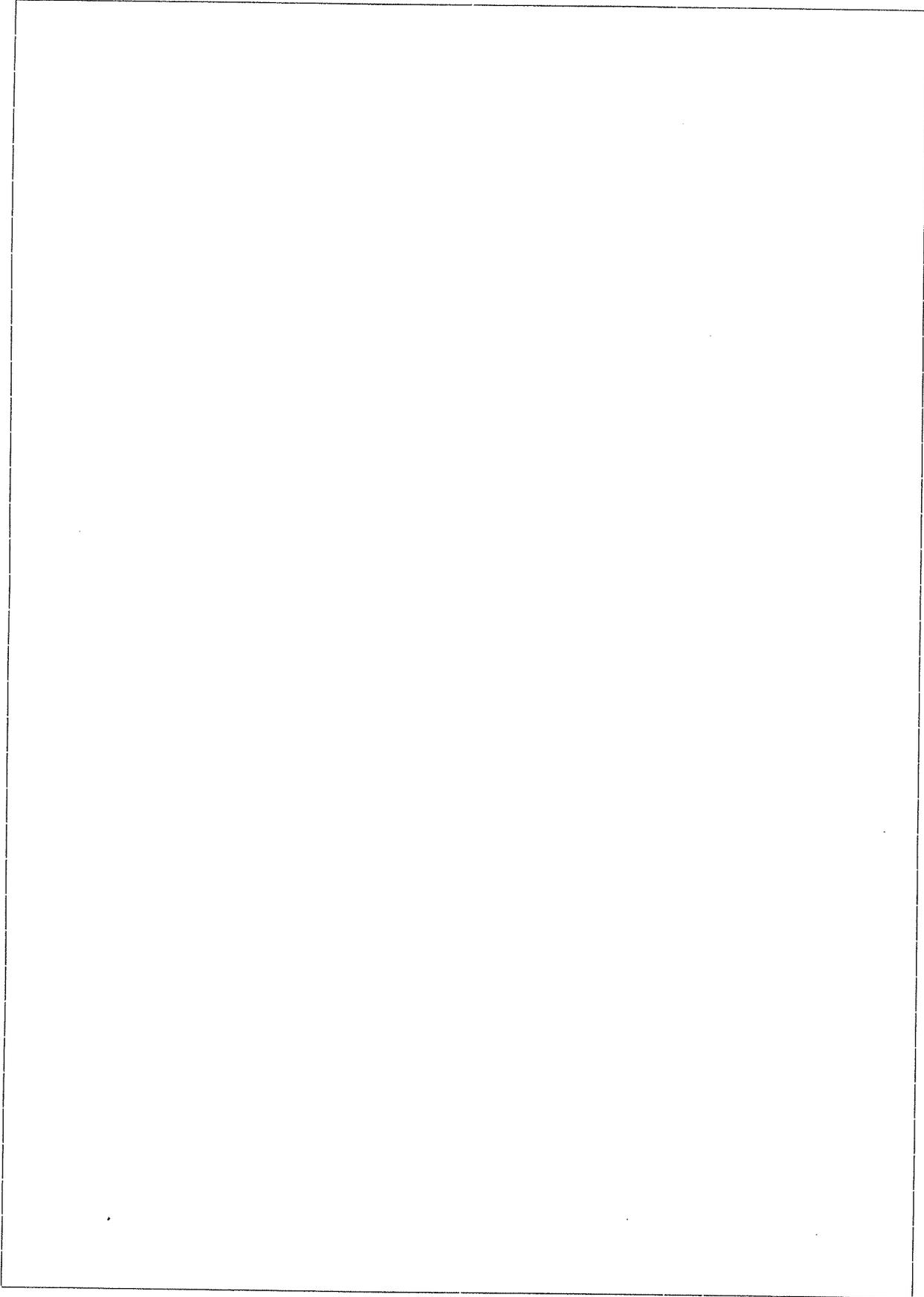
Description of research plan and justification for sample request:

(continue)

	specimen name (e.g., Y-86032)	preferred weight (e.g., 0.25 g)	minimum weight (e.g., 0.1 g)	sampling instructions (e.g., interior)	sample form (e.g., chip(s))
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

received

Send requests to: Antarctic Meteorite Research Center, National Institute of Polar Research, 9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173-8515, Japan, Phone (81) 03-3962-2938, FAX (81) 03-3962-5711, E-mail curator@nipr.ac.jp No.



received

