

Antarctic Meteorite



Newsletter

Volume 45, Number 1 March 2022

Curator Comments

Kevin Righter, NASA-JSC

This Spring 2022 newsletter will not announce any newly classified and available Antarctic meteorites. Due to the Omicron variant of COVID-19, facilities have been closed or had limited access, preventing us from classifying any new meteorites since the Fall newsletter. We will instead focus on having a robust Fall 2022 newsletter. Please check back here in the Fall for newly classified samples from the Dominion Range 2018-19 and 2019-2020 seasons. For this newsletter we present below some collection reminders and a link to a new XCT scan of lunar meteorite ALH 81005.

Newly Available XCT Scan

During early 2022 we obtained an XCT scan for the lunar meteorite ALH 81005. This brecciated feldspathic sample remains a community resource and we wanted to document the clast types and diversity remaining in this piece to allow more informed responses to future sample requests. The tiff-stack movie is available on its sample description page here:

<https://curator.jsc.nasa.gov/antmet/samples/petdes.cfm?sample=alh81005>

Reclassification

MET 00456 has been reclassified as a L5 chondrite, based on electron microprobe analysis of olivines, which yielded Fa_{25} . This composition places the sample in the L chondrite field, not the LL field.

PI Responsibilities

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

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- If you know you will retire soon or are no longer active in research, please prepare samples for return.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

[Sample Return Information](#)

A periodical to inform scientists of the basic characteristics of specimens recovered in the Antarctic.

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

Inside this Issue

Curator's Comments.....	1
Sample Request Guidelines.....	4
Antarctic Meteorite Laboratory	
Contacts.....	4
Meteorites On-Line.....	5



**Sample Request Deadline
March 25, 2022**

**AMAP Meets
April 2022**

Loan Agreement Renewals

Many investigators have had loan agreements expire in 2021. We will be reaching out to you to get your agreement renewed and updated so that you remain in good standing. When you receive a loan agreement update message from us, please take action as soon as possible, and contact us if there are any issues. There are several ways to complete the loan agreement forms and we are flexible: a) we will send a PDF that can be filled and printed out for scanning, b) you can print it to a PDF file and then fill in the areas using “fill and sign” option in Adobe Reader, or c) you can print, sign and scan the signature pages and email them to us. Any of these options will work; option (b) has been working well for many.

Reminder To Sign And Return Your Annual Inventory

Acknowledgement in publications

When publishing results of your research, please include the split numbers used in the research.

We would like to take this opportunity to remind you to acknowledge the various programs and agencies that have enabled collection, characterization and distribution of Antarctic meteorites for research. We recommend the following acknowledgement statement be used in all publications resulting from research carried out on samples from our collection:

“US Antarctic meteorite samples are recovered by the Antarctic Search for Meteorites (ANSMET) program which has been funded by NSF and NASA, and characterized and curated by the Department of Mineral Sciences of the Smithsonian Institution and Astromaterials Curation Office at NASA Johnson Space Center.”

Astromaterials Data Repository

Investigators who produce geochemical data from meteorites or other astromaterials samples are encouraged to utilize the Astromaterials Data Repository (AstroRepo) to openly share their data in compliance with Open Data policies of funding agencies and publishers. AstroRepo is a trusted repository service for researchers to publish and archive astromaterials sample data. Dataset files can be easily submitted via a web interface, and can be kept under moratorium for up to two years. AstroRepo links the datasets to related publications and NASA award numbers. AstroRepo is part of the Astromaterials Data System (<http://www.astromat.org>), a data infrastructure that stores, curates, and provides access to laboratory data acquired on samples curated in the Astromaterials Collection of the Johnson Space Center. Please feel free to contact us at info@astromat.org with any questions. Astromat data curators are available to help you with publishing your data and provide advise how you can ‘rescue’ personal or institutional legacy data sets that are in danger of being lost and ensure their long-term impact on scientific advances, making them accessible in a sustainable manner.”

Report from the Smithsonian Cari Corrigan, Geologist (Dept. of Mineral Sci.)

As of this report, staff at the Smithsonian remain on extensive telework due to the pandemic. After two months of heavily restricted access (resulting in the lack of new meteorite classifications for this newsletter), however, we will now be able to return to our labs and offices on a more frequent basis. On a personnel note, we welcome Kelsey Falquero, a Collections Technician at the NMNH, to our Division of Meteorites team. Kelsey will be working with us in both the Antarctic and main meteorite collections and we look forward to having her on board!

The new scanning electron microscope that was ordered by our department last year was delivered in 2021 and scheduling is taking place for its installation. This new instrument, once installed and certified, will eventually be used to classify ordinary chondrites using the dual EDS system.

Our collections are still closed to loans and will likely remain so until later in 2022. Once we return to work on a regular basis, we will work diligently to fulfill the recommended requests. We sincerely hope that you and your families are all safe and well.



Kelsey Falquero

ANSMET Report
Jim Karner, University of Utah

At the time of this newsletter, ANSMET is cautiously optimistic for a 2022-23 field season! Our preferred plan would be a return season to Davis Nunataks- Mt. Ward (DW), in order to finish search efforts at this amazingly meteorite-rich location. ANSMET has recovered over 3000 meteorites from the icefields at DW, and we surmise that a couple of weeks are needed to finish the last snowmobile sweeps and to walk a couple of unsearched moraines (Figure 1). Provided we can finish up at DW in a timely fashion, we'd then make a camp move to the nearby Dominion Range Main Icefield (DOM) and resume efforts there (last ANSMET visit in 2003). Again, these are our preferred field plans- NSF is currently evaluating the outlook for the upcoming 2022-23 austral summer in terms of what field science projects it can support, and at what scale. Appropriately, we are developing alternative field plans to different targets with varying logistical needs. Hopefully ANSMET and NSF can agree to a plan that allows us to get into the field in 2022-23, cross your fingers!



Figure 1. The aptly nicknamed "Klondike Moraine" at DW needs just a few more days of searching!

Sample Request Guidelines:

Requests for Antarctic Meteorites are reviewed twice per year, the deadline is posted on-line:
<https://curator.jsc.nasa.gov/bboard.cfm>

Information about requesting samples can be found on-line at:
<https://curator.jsc.nasa.gov/antmet/requests.cfm?section=general>

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

They are also available on-line at:
<https://meteoritical.org/publications/the-meteoritical-bulletin>

The most current listing is found on-line at:
http://curator.jsc.nasa.gov/antmet/us_clctn.cfm

All sample requests should be made electronically using the form at:
<http://curator.jsc.nasa.gov/antmet/requests.cfm>

The purpose of the sample request form is to obtain all information needed prior to deliberations to make an informed decision on the request.

The preferred method of request transmittal is via e-mail. Please send requests and attachments to:
JSC-ARES-MeteoriteRequest@nasa.gov

Type "**Request**" in the e-mail subject line.

Each request should accurately refer to meteorite samples by their respective identification numbers and should provide detailed scientific justification for proposed research. Specific requirements for samples, such as sizes or weights, locations (if applicable) within individual specimens, or special handling or shipping procedures should be explained in each request. Some meteorites are small, of rare type, or are considered special because of unusual properties. Therefore, it is very important that all requests specify both the optimum amount of material needed for the study and the minimum amount of material that can be used. Requests for thin sections that will be used in destructive procedures such as ion probe, laser ablation, etch, or re-polishing must be stated explicitly. Consortium requests should list the members in the consortium. All necessary information should be typed on the electronic form, although informative attachments (reprints of publication that explain rationale, flow diagrams for analyses, etc.) are welcome.

Antarctic Meteorite Laboratory Contact Numbers

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

Kevin Righter
Curator
Mail code X12
NASA Johnson Space Center
Houston, Texas 77058
(281) 483-5125
kevin.righter-1@nasa.gov

Cecilia Satterwhite
Lab Manager/AMAP Secretary
Mail code X12
NASA Johnson Space Center
Houston, Texas 77058
(281) 483-6776
cecilia.e.satterwhite@nasa.gov

Meteorites On-Line

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

JSC Curator, Antarctic meteorites	http://curator.jsc.nasa.gov/antmet/
JSC Curator, HED Compendium	http://curator.jsc.nasa.gov/antmet/hed/
JSC Curator, Lunar Meteorite Compendium	http://curator.jsc.nasa.gov/antmet/lmc/
JSC Curator, Martian Meteorite Compendium	http://curator.jsc.nasa.gov/antmet/mmc/
ANSMET	http://caslabs.case.edu/ansmet/
Smithsonian Institution	http://mineralsciences.si.edu/
Lunar Planetary Institute	http://www.lpi.usra.edu
NIPR Antarctic meteorites	http://www.nipr.ac.jp/
Meteoritical Bulletin online Database	http://www.lpi.usra.edu/meteor/metbull.php
Museo Nazionale dell'Antartide	http://www.mna.it/collezioni/catalogo-meteoriti-sede-di-siena
BMNH general meteorites	https://www.nhm.ac.uk/our-science/collections/mineralogy-collections.html
UHI planetary science discoveries	http://www.psrhawaii.edu/index.html
Meteoritical Society	http://www.meteoriticalsociety.org/
Meteoritics and Planetary Science	https://onlinelibrary.wiley.com/journal/19455100
Meteorite Times Magazine	https://www.meteorite-times.com/
Geochemical Society	http://www.geochemsoc.org
Washington Univ. Lunar Meteorite	http://meteorites.wustl.edu/lunar/moon_meteorites.htm
Washington Univ. "meteor-wrong"	http://meteorites.wustl.edu/meteorwrongs/meteorwrongs.htm
Portland State Univ. Meteorite Lab	http://meteorites.pdx.edu/
Northern Arizona University	https://www.cefns.nau.edu/geology/naml/
Martian Meteorites	http://www.imca.cc/mars/martian-meteorites.htm

Other Websites of Interest

OSIRIS-REx	http://osiris-rex.lpl.arizona.edu/
Mars Exploration	http://mars.jpl.nasa.gov
Rovers	http://marsrovers.jpl.nasa.gov/home/
Near Earth Asteroid Rendezvous	http://near.jhuapl.edu/
Stardust Mission	http://stardust.jpl.nasa.gov
Genesis Mission	http://genesismission.jpl.nasa.gov
ARES	http://ares.jsc.nasa.gov/
Astromaterials Curation	http://curator.jsc.nasa.gov/
Hayabusa2	http://www.hayabusa2.jaxa.jp/en/