

南極隕石資料アーカイブの現状

山口 亮

南極隕石ラボラトリー

極域のオープンデータ・オープンサイエンスに関する研究集会
2018 年(平成 30 年)10 月 5 日(金) 13:00-



隕石探査・キュレーション・研究

南極隕石探査



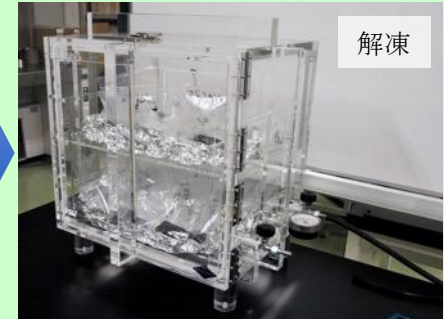
キュレーション

初期処理

一時保管



解凍



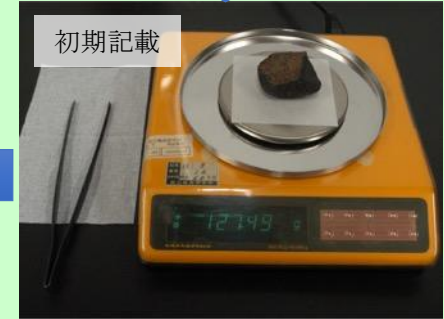
保管



試料分離



初期記載



初期分析



分類



分類データの公表
Meteorite Newsletters
Database
研究者への配分

研究

初期記載

- 命名

- フィールド名称-> 正式名称

e.g., Asuka-12223

- 計測

- 重量、大きさ

- 初期記載

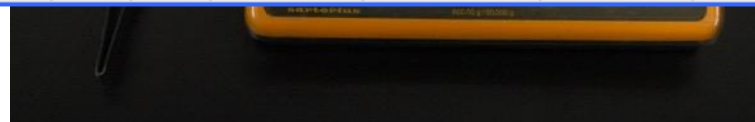
- 破片か完全な
 - 形
 - 蒸発物の有無
 - 溶融皮殻の有
 - 割れの程度

- 写真撮影

- 1-6方向

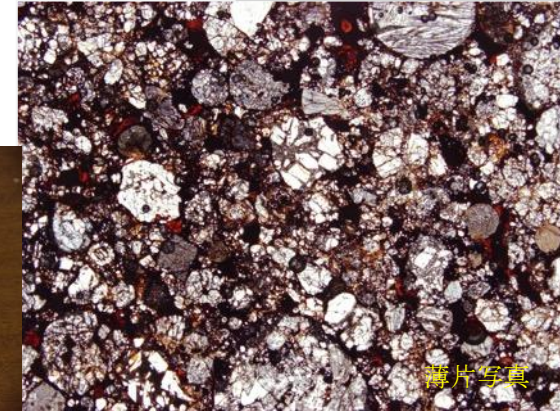
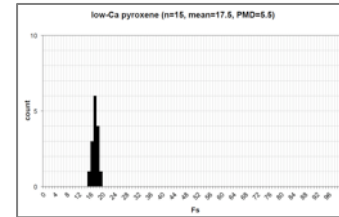


	Field name			Formal name			Size (cm)			Mass (g)	-S	E	H (m)
A	130107	01		Asuka	12222		2.7	1.7	1.3	8.805	-72.8460	24.2916	2829
A	130107	02		Asuka	12223		4.7	4.2	3.1	75.47	-72.8523	24.2711	2809
H	130107	01		Asuka	12224		5.1	3.9	2.7	91.60	-72.8531	24.3198	2865
I	130107	01		Asuka	12225		3.1	3.2	1.7	26.786	-72.8646	24.3354	2900
N	130107	01		Asuka	12226		4.8	4.2	2.8	103.96	-72.8506	24.2647	2818
N	130107	02		Asuka	12227		5.3	3.4	2.6	71.75	-72.8676	24.3214	2902
T	130107	01		Asuka	12228		6.5	5.4	5.1	286.68	-72.8480	24.2578	2794
A	130109	01		Asuka	12229		4.2	3.9	3.3	73.31	-72.8734	24.3125	2900
A	130109	02		Asuka	12230		5.0	3.4	2.7	62.42	-72.8749	24.2634	2871
A	130109	03		Asuka	12231		3.7	2.4	1.9	27.458	-72.8766	24.2111	2857
A	130109	04		Asuka	12232		2.5	2.4	1.2	10.578	-72.8750	24.1153	2848
A	130109	05		Asuka	12233		6.3	4.7	3.5	149.07	-72.8691	24.2915	2878
A	130109	06		Asuka	12234		5.0	2.6	2.3	46.912	-72.8693	24.3021	2881
G	130109	01		Asuka	12235		4.9	4.5	3.2	93.89	-72.8765	24.2015	2858
G	130109	02		Asuka	12236		5.6	4.0	3.0	93.65	-72.8668	24.0176	2831
G	130109	03		Asuka	12237		2.8	2.1	2.1	14.465	-72.8661	24.0178	2830

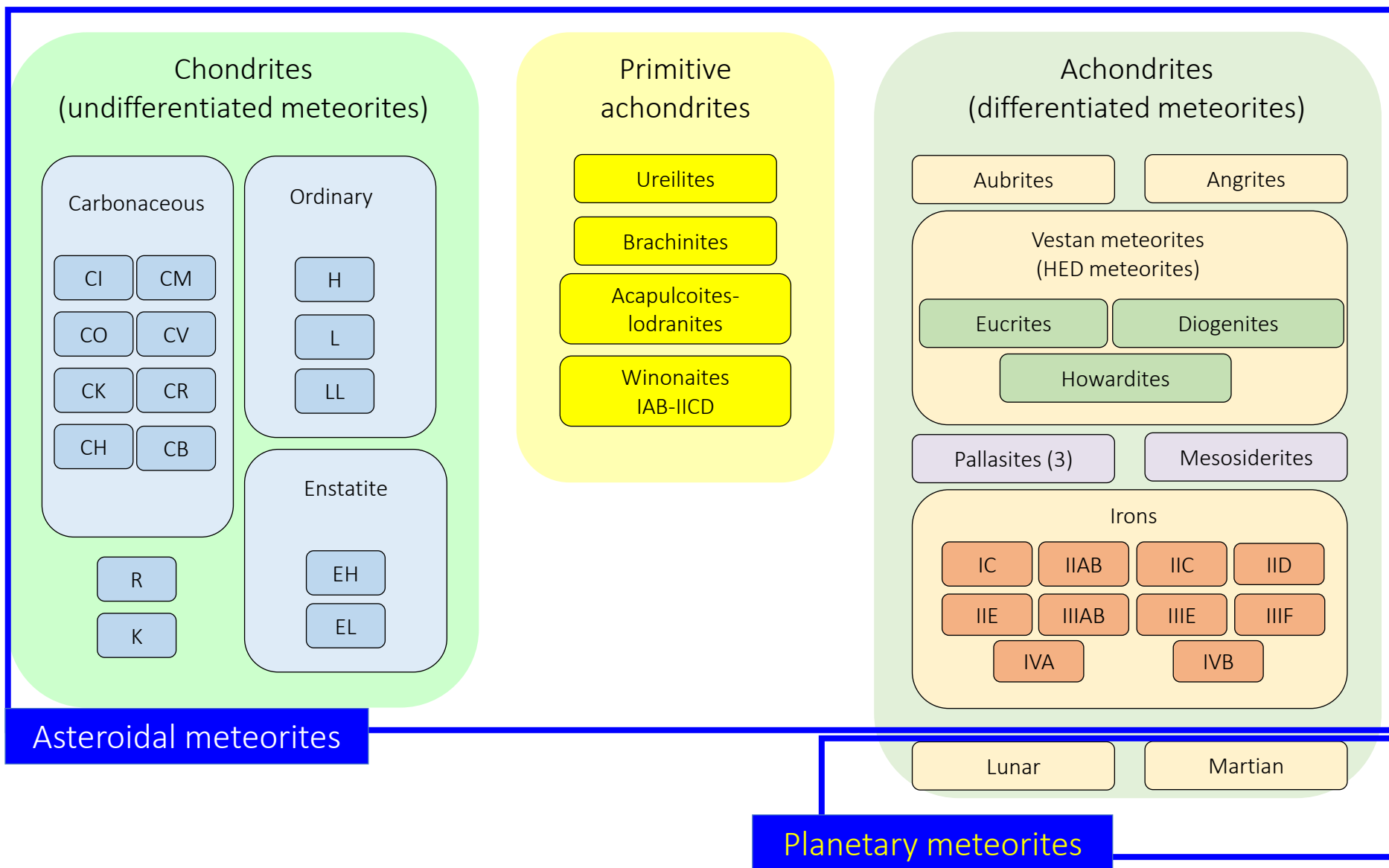


初期分析

- 分析用試料：研磨薄片・厚片
- 鉱物組成分析（かんらん石、輝石）
 - ~20-40 点 / 試料
 - ~8試料/セッション（1回の分析）
- 光学顕微鏡観察
- その他の分析
 - 微量元素組成（ICP質量分析計）
 - 酸素同位体（依頼分析）



隕石の分類



初期分類データ

Meteorite Newsletter, Vol 26

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Introduction

This newsletter reports the classification of meteorites collected from ice fields near the Yamato Mountains and Nansen Ice Field by JARE (Yamato 74, 75, 79, 86, 98, and 00, Belgica 98, and Asuka 87, 88, and 90 meteorites) and meteorites from the Nansen Ice Field by the Japan-Belgium joint expeditions (Asuka 09, 10, and 12 meteorites). Asuka 09, 10, and 12 meteorites are shared by National Institute of Polar Research (NIPR) in Tokyo and Royal Belgian Institute of Natural Sciences (RBINS) in Brussels. This newsletter includes 1,000 meteorite names including 27 carbonaceous chondrites (16 CM, 4 CO, 2 CV, 1 CH, 1 CK, and 2 ungrouped), 2 lodranites, 2 ureilites, 28 HED meteorites, and 1 martian meteorite (shergottite).

Classification

The classification was made with visual inspection of meteorites and petrographic observations of polished thin and thick sections as well as compositions of major minerals (olivine, pyroxene, and plagioclase) obtained by electron microprobes (JEOL JXA 8800 and 8200 at NIPR). Typical numbers of olivine analysis for ordinary chondrites are ~20-30. Enstatite chondrites were classified into EH and EL groups on the basis of Si contents in kamacite. Table 1 presents the results of classifications (groups, averages and ranges of olivine Fa and low-Ca pyroxene Fs, fracturing, and weathering degrees).

Sample requests

Requests for Yamato, Asuka (87, 88, and 90) and Belgica samples will be reviewed in a timely manner by the curator at NIPR and requests of Asuka 09, 10, and 12 meteorites by scientific members at NIPR, RBINS, Vrije Universiteit Brussel (VUB), and Université Libre de Bruxelles (ULB).

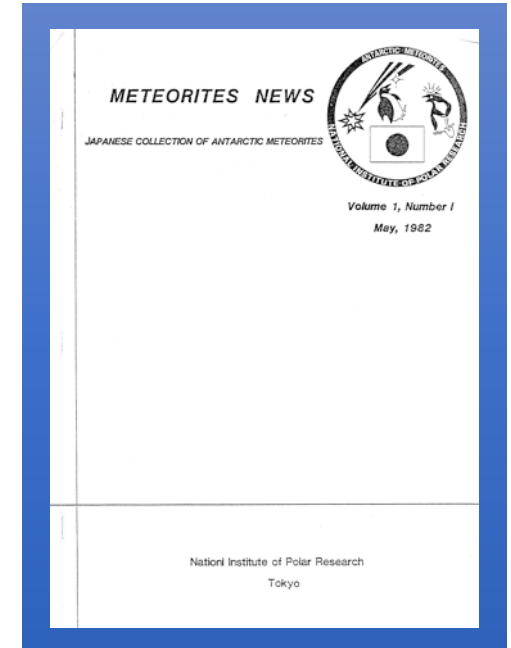
Acknowledgments. We thank T. Ojima and S. Ikadai for sample preparations and technical assistance, M. Shigeoka for preparing polished thin sections, M. Naito, S. Hashimoto, M. Yasutake, and R. Kanemaru for electron microprobe analyses.

Table 1. List of meteorites classified in this volume.

Meteorite	Class	Wt. (g)	Fa	Range	Fs	Range	W	F	Comments
Y-74052	H5	58.180	19.1	17.8-21.2	17.0	16.0-18.6	C	B/C	
Y-74060	H5	17.100	19.1	17.3-21.6	16.8	15.5-18.9	B	B	Breccia
Y-74426	H4	29.800	19.7	18.0-24.5	17.4	16.2-21.6	B	A	
Y-75070	L6	4.750	25.6	24.5-27.5	21.7	20.5-23.4	B	A	Shock vein
Y-790192	H5	12.170	19.3	18.1-21.8	16.8	15.6-17.6	B	C	
Y-790258	H5	21.560	19.3	17.9-20.7	17.3	16.3-17.9	B	B	
Y-790730	L6	58.320	26.0	24.4-33.1	21.5	20.5-23.4	B	B	
Y-791540	LL6	9.950	29.8	28.1-34.3	24.0	23.1-24.9	A	A/B	
Y-791672	L6	5.130	24.9	23.9-26.4	21.7	19.6-25.1	B	A/B	
Y-791739	H4	8.420	18.9	17.6-20.7	17.0	16.3-20.0	B	A/B	
Y-791754	L5	9.250	24.4	22.6-25.8	21.3	20.3-23.7	A	B	
Y-791755	L5	7.700	25.4	24.2-27.9	21.7	20.4-24.5	B	B	
Y-791838	Dio	16.000			24.7	22.2-26.4		A	
Y-791860	H6	25.160	19.3	18.2-20.8	16.7	15.4-17.7	B	B/C	
Y-792555	H6	9.970	19.3	18.3-23.1	16.8	15.7-17.4	C	B/C	
Y-792566	H5	6.080	19.5	18.1-23.4	17.3	15.9-20.8	B	C	
Y-792570	H5	7.630	19.5	18.8-20.6	17.0	16.2-17.9	B	B	
Y-792571	H5	5.140	19.3	18.4-19.8	17.2	16.4-19.5	B	A/B	
Y-792572	H5	6.100	19.4	18.8-21.0	17.1	16.4-18.9	B	B	
Y-794039	Dio	42.720			24.4	22.7-25.6		A/B	
Y-86677	H6	31.810	19.6	17.3-21.1	17.2	16.2-17.6	B	A	
A-87024	H6	8.651	18.8	17.8-19.3	17.1	15.9-20.4	B	A/B	
A-87060	H6	9.078	19.9	18.6-20.7	17.4	16.5-18.2	C	B	
A-87063	H6	9.636	20.1	19.1-21.0	17.4	16.6-17.9	C	B	
A-87065	H5	9.147	18.8	17.7-19.6	16.7	14.6-18.9	C	A/B	
A-87073	H5	8.372	19.9	18.7-24.6	17.7	16.0-22.1	B	A	Slightly brecciated
A-87081	H5	9.030	17.2	15.8-21.7	15.7	13.8-19.5	B	A/B	
A-87083	L6	8.355	25.5	24.5-28.7	21.9	20.7-25.7	B	A	
A-87102	H6	8.995	19.0	18.2-19.9	17.1	16.1-18.7	C	A/B	
A-87301	H6	9.055	19.6	18.1-21.4	17.6	16.3-20.5	B	B	
A-87314	LL6	8.446	31.0	29.5-34.3	24.6	22.3-25.4	A	A	
A-880611	L6	1846.4	25.5	24.3-27.6	21.7	19.7-24.3	A	A/B	Shock vein
A-881188	L6	9.688	25.0	24.2-26.0	21.3	20.6-22.3	B	A	
A-881487	Euc	12.921			64.1	62.0-65.8		A	An85.4-89.3
A-881689	Euc	29.962			39.8	38.6-41.3		A	An92.4-94.1
A-881878	Euc	10.530			61.5	58.4-66.4		A/B	An82.3-91.6
A-881898	Euc	55.820			61.1	58.4-63.0		A	An67.3-92.8
A-9003	C, ungr	1.696	19.3	0.5-31.5	17.1	0.9-9.5	B	A	Y-82094 like
Y 980001	H6	1.551	19.0	17.5-22.0	16.8	15.9-19.0	C	A	

初期分類データ公表と隕石配分

- 初期分類データの公表
 - Meteorite newsletter Vol.1 (1982) – 25 (2016)
 - これまで62% (10563個) の南極隕石が分類された。
最近6年で、4,920個 (~29%) の隕石が分類された。
 - Vol. 26 (2018) (N = 1,000)
 - Vol. 25 (2016) (N = 800)
 - Vol. 24 (2015) (N = 615)
 - Vol. 23 (2014) (N = 437)
 - Vol. 22 (2013) (N = 1,034)
 - Vol. 21 (2012) (N = 1,034)
 - Vol. 1-20 (1982-2011) (N = 6,291)
 - 国際隕石学会 隕石命名委員会
 - 2008年の覚書による
 - 2010年以降に分類された隕石
 - Meteorite Bulletin (Meteorite & Planetary Science)
 - 隕石学会データベース
- 研究者への試料の配分
 - ほとんどの隕石は、キュレーターの判断で配分の可否が決定される。
 - 希少な隕石に関する計画書は外部レビュアーによるレビューを受ける。
 - 南極隕石研究委員会で承認される。

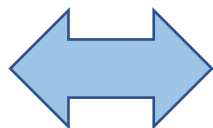
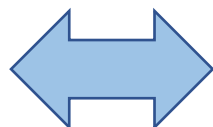


南極隕石データベース

南極隕石ラボラトリ (製作中)

NIPR Meteorite DB

- Chondrite
 - Carbonaceous
 - CI
 - CM 94
 - CO 33
 - CV 9
 - CK 9
 - CR 14
 - CH 2
 - CB
 - Ordinary
 - H 6369
 - L 2529
 - LL 586
 - E chondrite 30
 - R chondrite
 - K chondrite
 - Ungrouped 1
- Achondrite
 - Aca-Lod 18
 - Winonaite 6
 - Ureilite 31
 - Brachinite
 - Angrite 2
 - E achondrite
 - HED
 - Eucrite 157
 - Diogenite 159
 - Howardite 64
 - Ungrouped
- Stony-iron
 - Mesosiderite 7
 - Pallasite 2
 - Ungrouped
 - Iron
 - Planetary
 - Lunar 9
 - Martian 11



隕石学会データベース

THE METEORITICAL SOCIETY
International Society for Meteoritics and Planetary Science

Search the Meteoritical Bulletin Database
Last update: 2 Oct 2018

Search for: Search type: Search limits: Display: Publication:

Names Contains All countries Link to Google Earth All fields

Text Starts with All classes Sort by name

Places Exact 50 lines/page

Classes Sounds like Falls Non-NWAs Normal table

Years Has photo Limit to approved meteorite names

Search text: Y 981031 Search Reset

Yamato 981031

Basic information: Name: Yamato 981031
This is an OFFICIAL meteorite name.
Abbreviation: Y-981031
Observed fall: No
Year found: 1998
Country: Antarctica (Collected by National Institute of Polar Research, Japan)
Mass: 185.8 g




Classification history: MetBase: v.7.1 (2006) Lunar (anorth) Recommended: Lunar (anorth) [explanation]
This is 1 of 71 approved meteorites classified as Lunar (anorth). [show all]

DS統合データベース
(製作中)

NIPR Meteorite DB

Meteorite	Class	Weight (g)	Reference	Images
Yamato-86032	Lunar	648.43	YK95	
Yamato-82193	Lunar	27.04	YK95	
Yamato-82192	Lunar	36.67	YK95	
Yamato-793274	Lunar	8.66	YK95	4
Yamato-793169	Lunar	6.07	YK95	4
Yamato-791197	Lunar	52.40	YK95, MN7	4
Yamato 983885	Lunar	289.71	MN10(2)	4
Yamato 981031	Lunar	185.80	MN09	3

NIPR Meteorite DB

Name	Yamato 981031	Olivine Fa
Abbreviation	Y 981031	Fa Range
Class	Lunar	Pyroxene Fs
Reference		Fs Range
Weight (g)	185.80	Fracturing degree B
		Weathering degree A/B
Comments		
<div></div>		