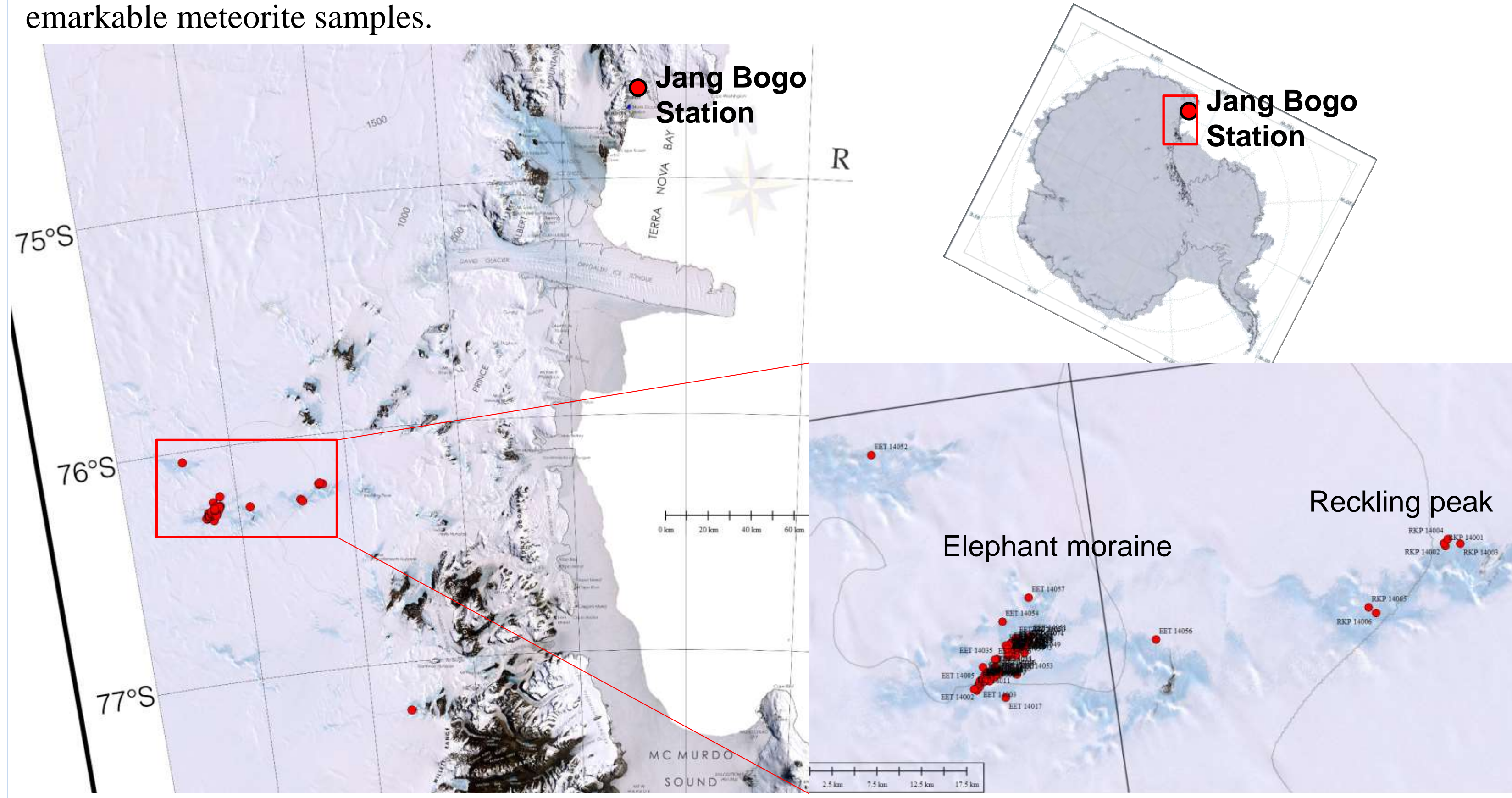


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## Introduction

Korean Expedition for Antarctic Meteorite (KOREAMET) has recovered 81 meteorites from the blue-ice fields of the Reckling Peak (RKP), Mount DeWitt (DEW), and Elephant Moraine (EET) in the Victoria Land, Antarctica, 2014/15 season. Here we report on classification of the meteorites and describe details of some remarkable meteorite samples.



## Classification of 2014/15 KOREAMET Meteorites

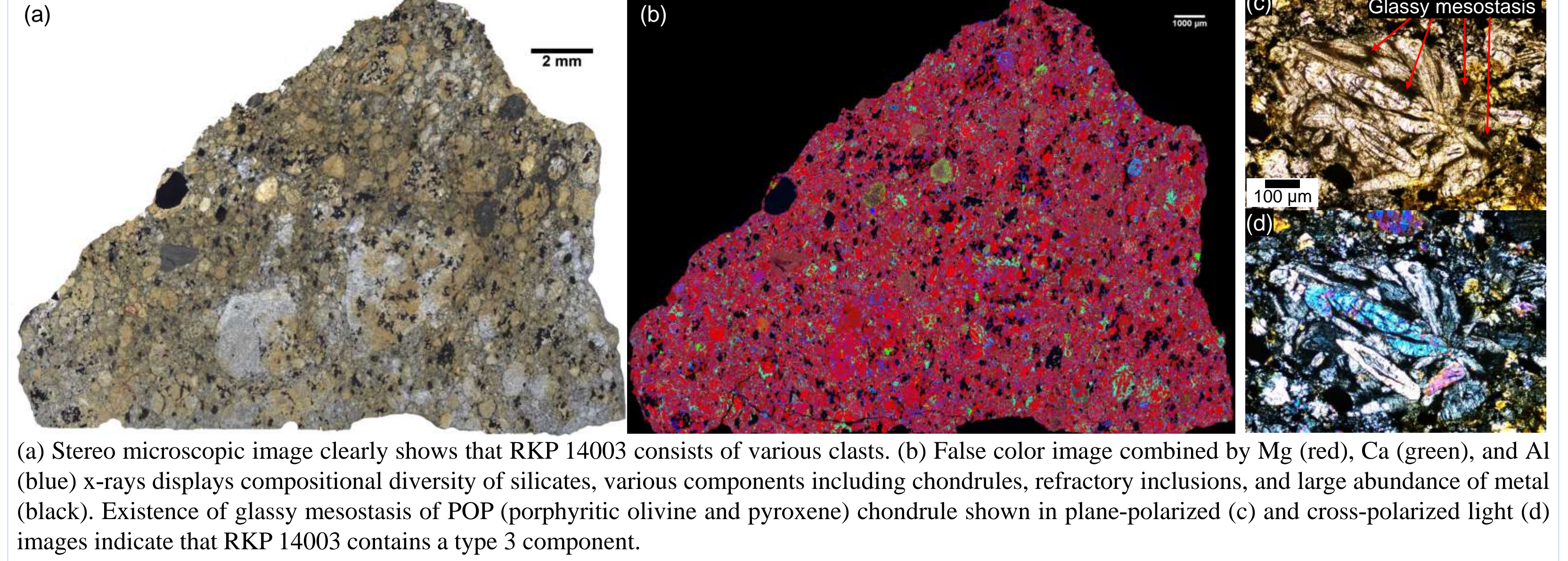
Eighty one meteorites of the 2014/15 KOREAMET season include 72 ordinary chondrites (OCs), 4 carbonaceous chondrites (CCs), 3 eucrites, 1 ureilite, and 1 acapulcoite.

Name	Latitude	Longitude	Date	Mass (g)	Class	Group	Note
RKP 14001	76°12.782'S	158°28.320'E	10-Nov-2014	304	OC	L6	
RKP 14002	76°12.608'S	158°28.086'E	10-Nov-2014	0.2	OC	LL6	
RKP 14003	76°12.744'S	158°32.205'E	10-Nov-2014	231	OC	H3	
RKP 14004	76°12.376'S	158°29.109'E	10-Nov-2014	1.1	OC	H6	
RKP 14005	76°15.954'S	158°07.073'E	16-Nov-2014	33.4	CC	CM2	
RKP 14006	76°16.344'S	158°08.727'E	16-Nov-2014	22.6	OC	H4	
EET 14001	76°17.758'S	156°24.970'E	16-Nov-2014	2.1	OC	L6	
EET 14002	76°17.625'S	156°25.443'E	16-Nov-2014	10	OC	H6	
EET 14003	76°17.517'S	156°25.937'E	16-Nov-2014	0.7	OC	L6	
EET 14004	76°17.132'S	156°26.552'E	16-Nov-2014	6	OC	L6	
EET 14005	76°17.370'S	156°25.744'E	16-Nov-2014	2.9	OC	L6	
EET 14006	76°17.332'S	156°25.913'E	16-Nov-2014	19	OC	L6	
EET 14007	76°17.213'S	156°26.081'E	16-Nov-2014	11.4	CC	CK5	
EET 14008	76°16.407'S	156°27.376'E	16-Nov-2014	27.3	OC	H6	
EET 14009	76°17.133'S	156°27.409'E	16-Nov-2014	26	OC	H6	
EET 14010	76°17.133'S	156°27.409'E	16-Nov-2014	44.2	OC	H6	
EET 14011	76°17.644'S	156°24.290'E	16-Nov-2014	17.2	OC	H5	
EET 14012	76°17.284'S	156°27.039'E	21-Nov-2014	2.6	OC	L6	
EET 14013	76°17.195'S	156°27.181'E	21-Nov-2014	0.3	CC	CM2	
EET 14014	76°17.006'S	156°27.828'E	21-Nov-2014	9	OC	L6	Highly shocked (S4)
EET 14015	76°16.805'S	156°31.060'E	21-Nov-2014	3.6	OC	L6	Type 3.0
EET 14016	76°16.800'S	156°31.487'E	21-Nov-2014	90.6	OC	L6	
EET 14017	76°18.424'S	156°31.991'E	21-Nov-2014	11.8	OC	LL3	
EET 14018	76°17.125'S	156°29.040'E	21-Nov-2014	5.7	OC	L5	
EET 14019	76°17.319'S	156°28.475'E	21-Nov-2014	64.7	OC	L6	
EET 14020	76°17.092'S	156°29.957'E	21-Nov-2014	3.4	OC	L6	
EET 14021	76°17.222'S	156°26.695'E	21-Nov-2014	8.1	OC	L6	
EET 14022	76°17.176'S	156°26.757'E	21-Nov-2014	5.3	OC	L6	
EET 14023	76°17.166'S	156°26.801'E	21-Nov-2014	3.9	OC	L6	
EET 14024	76°17.163'S	156°26.805'E	21-Nov-2014	3.1	OC	H6	
EET 14025	76°17.125'S	156°26.951'E	21-Nov-2014	2.5	OC	L5	
EET 14026	76°16.865'S	156°27.564'E	21-Nov-2014	3.2	OC	L6	
EET 14027	76°16.804'S	156°28.048'E	21-Nov-2014	16.7	OC	L6	
EET 14028	76°17.270'S	156°27.504'E	21-Nov-2014	5	OC	H6	
EET 14029	76°17.187'S	156°27.893'E	21-Nov-2014	6.7	OC	L6	
EET 14030	76°16.980'S	156°30.790'E	21-Nov-2014	10.2	OC	L6	
EET 14031	76°16.968'S	156°30.985'E	21-Nov-2014	75.6	OC	L6	
EET 14032	76°15.448'S	156°38.987'E	3-Dec-2014	11200	OC	H6	
EET 14033	76°16.563'S	156°30.605'E	3-Dec-2014	2.9	OC	L6	
EET 14034	76°16.510'S	156°30.635'E	3-Dec-2014	21.8	OC	L6	
EET 14035	76°16.035'S	156°31.227'E	3-Dec-2014	14.1	OC	L6	
EET 14036	76°16.053'S	156°30.735'E	3-Dec-2014	115.4	OC	H6	
EET 14037	76°16.015'S	156°34.262'E	12-Dec-2014	93.8	OC	L6	
EET 14038	76°15.934'S	156°34.471'E	12-Dec-2014	30.5	OC	L6	
EET 14039	76°15.759'S	156°34.601'E	12-Dec-2014	59.9	OC	H6	
EET 14040	76°15.663'S	156°34.660'E	12-Dec-2014	2.1	OC	H6	
EET 14041	76°15.654'S	156°34.675'E	12-Dec-2014	39	OC	H6	
EET 14042	76°15.573'S	156°34.702'E	12-Dec-2014	1.1	OC	H6	
EET 14043	76°16.028'S	156°36.238'E	12-Dec-2014	36700	OC	H6	
EET 14044	76°15.689'S	156°36.561'E	12-Dec-2014	83	OC	H5	
EET 14045	76°15.683'S	156°36.560'E	12-Dec-2014	4556	OC	L6	
EET 14046	76°15.507'S	156°36.642'E	12-Dec-2014	4.2	OC	H6	
EET 14047	76°15.350'S	156°36.976'E	12-Dec-2014	26.4	OC	L6	
EET 14048	76°15.349'S	156°36.976'E	12-Dec-2014	1.3	OC	H6	
EET 14049	76°15.926'S	156°38.370'E	12-Dec-2014	1121	HED	Eucrite	Polymict
EET 14050	76°15.040'S	156°40.126'E	12-Dec-2014	146.3	OC	L6	
EET 14051	76°14.962'S	156°40.593'E	12-Dec-2014	0.3	OC	H5	
EET 14052	76°02.689'S	156°07.593'E	12-Dec-2014	92.2	OC	H6	
EET 14053	76°17.138'S	156°35.726'E	12-Dec-2014	252.3	Ureilite	Main group Olivine-orthopyroxene	
EET 14054	76°13.852'S	156°34.015'E	12-Dec-2014	463	OC	H5	
EET 14056	76°16.246'S	157°12.207'E	12-Dec-2014	361	OC	L5	
EET 14057	76°12.637'S	156°41.497'E	12-Dec-2014	1220	HED	Eucrite	Cumulate
EET 14059	76°15.899'S	156°34.877'E	12-Dec-2014	10.9	OC	H5	
EET 14060	76°15.921'S	156°34.723'E	12-Dec-2014	0.7	OC	H4	
EET 14061	76°15.878'S	156°34.859'E	12-Dec-2014	1031	OC	L6	
EET 14062	76°15.784'S	156°35.092'E	12-Dec-2014	849	OC	L6	
EET 14063	76°15.602'S	156°35.553'E	12-Dec-2014	2.6	OC	H6	
EET 14064	76°15.553'S	156°35.571'E	12-Dec-2014	1.7	OC	H6	
EET 14065	76°15.280'S	156°35.709'E	12-Dec-2014	1.3	OC	H6	
EET 14066	76°15.224'S	156°35.422'E	12-Dec-2014	23	OC	L3	
EET 14067	76°15.332'S	156°35.220'E	12-Dec-2014	16.3	OC	H6	
EET 14068	76°15.492'S	156°36.556'E	12-Dec-2014	0.4	HED	Eucrite	Polymict
EET 14069	76°15.177'S	156°36.723'E	12-Dec-2014	10.5	OC	H5	
EET 14070	76°14.940'S	156°36.855'E	12-Dec-2014	185.6	CC	CM2	
EET 14071	76°15.244'S	156°39.795'E	12-Dec-2014	36	OC	L6	
EET 14072	76°15.320'S	156°34.040'E	12-Dec-2014	2.2	OC	L5	
EET 14073	76°15.554'S	156°37.010'E	12-Dec-2014	0.8	OC	H6	
EET 14074	76°15.270'S	156°39.601'E	12-Dec-2014	20.2	OC	H6	
EET 14075	76°15.853'S	156°34.258'E	12-Dec-2014	796	OC	L6	
EET 14076	76°15.525'S	156°34.277'E	12-Dec-2014	14.4	Aca-Lod	Acapulcoite	
DEW 14001	77°12.239'S	159°45.123'E	11-Dec-2014	33.7	OC	H6	

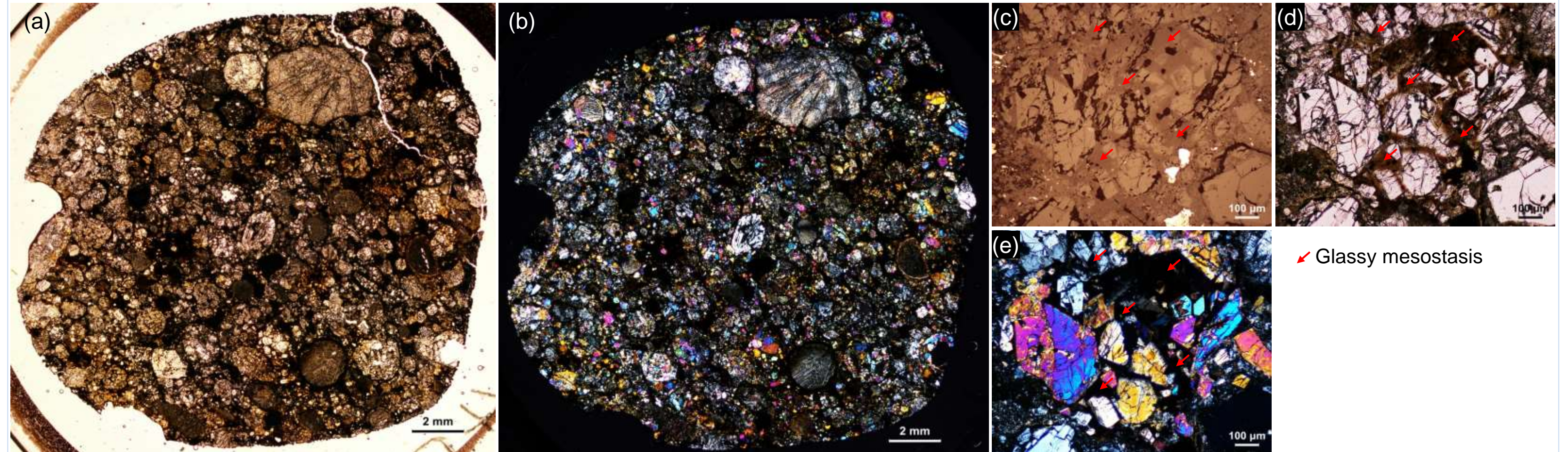
## Ordinary Chondrites

72 ordinary chondrites are classified as 33 H-group, 37 L-group, and 2 LL-group chondrites. Most of them are equilibrated (petrologic type 5 or 6) except RKP 14003 (H3-5 breccia), EET 14066 (L3), and EET 14017 (LL3).

### RKP 14003: H3-5 breccia

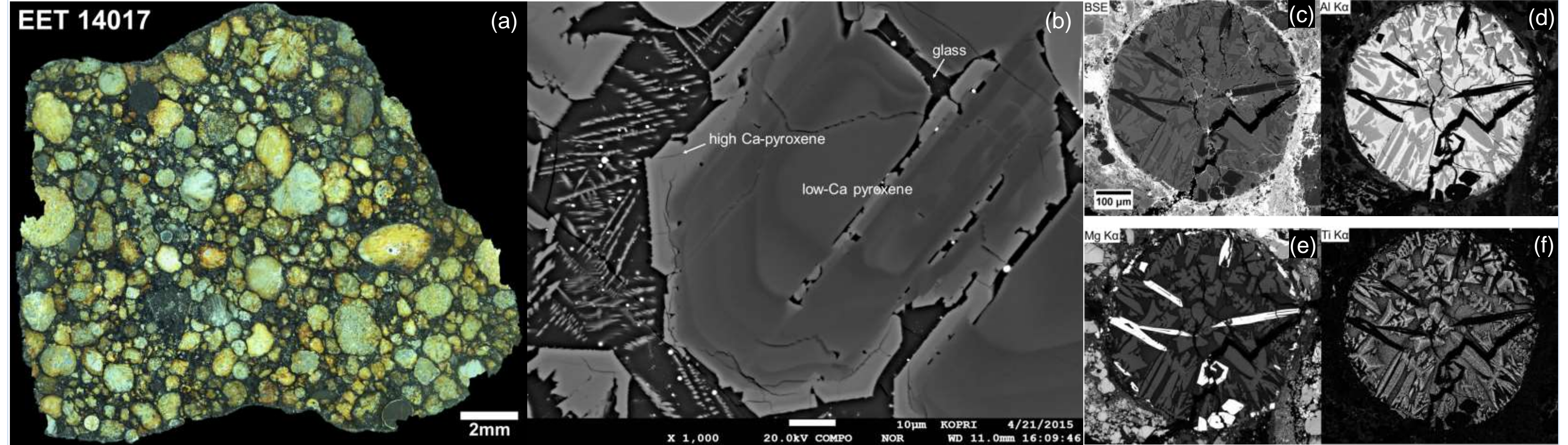


### EET 14066: L3



Chondrules of EET 14066 are relatively large (up to ~3 mm) and clearly defined as shown in plain-polarized (a) and cross-polarized (b) light images. Scale bar is 2 mm. A POP (porphyritic olivine and pyroxene) chondrule well preserves glassy mesostasis as indicated by red arrows in optical images with reflected (c), plane-polarized (d), and cross-polarized light (d). Scale bar is 100 µm.

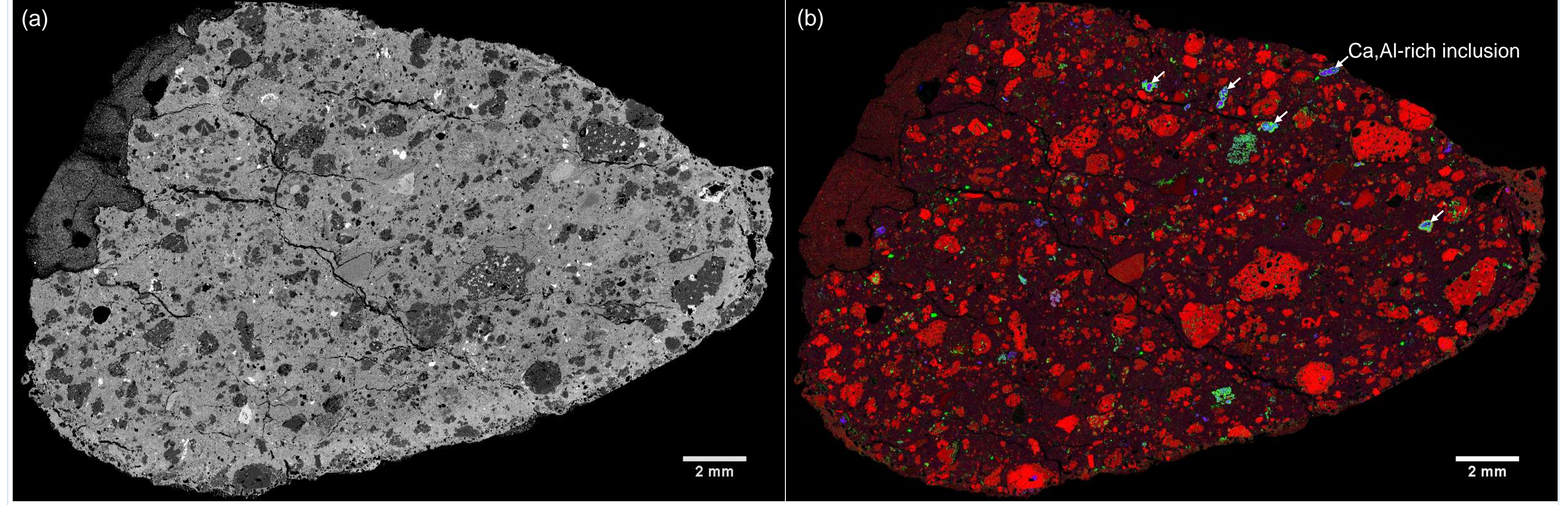
### EET 14017: LL3.0



(a) EET 14017 is the most primitive chondrite ever in KOREAMET collections. Large and abundant chondrules are clearly distinguished as shown in stereo microscopic image. Scale bar is 2 mm. (b) Oscillatory zoning of low-Ca pyroxene and fine (~ tens of nm) nucleates of high-Ca pyroxene within glassy mesostasis in a POP chondrule are indicative of disequilibrium kinetic effects at the crystal/melt interface during rapid cooling. Scale bar is 10 µm. Quenching textures including skeletal forsterite and Ti-rich pyroxene of an Al-rich chondrule in back-scattered electron (BSE) image (c) and elemental x-ray maps of Al (d), Mg (e), and Ti (f) are also primitive features of the EET 14017. Scale bar is 100 µm.

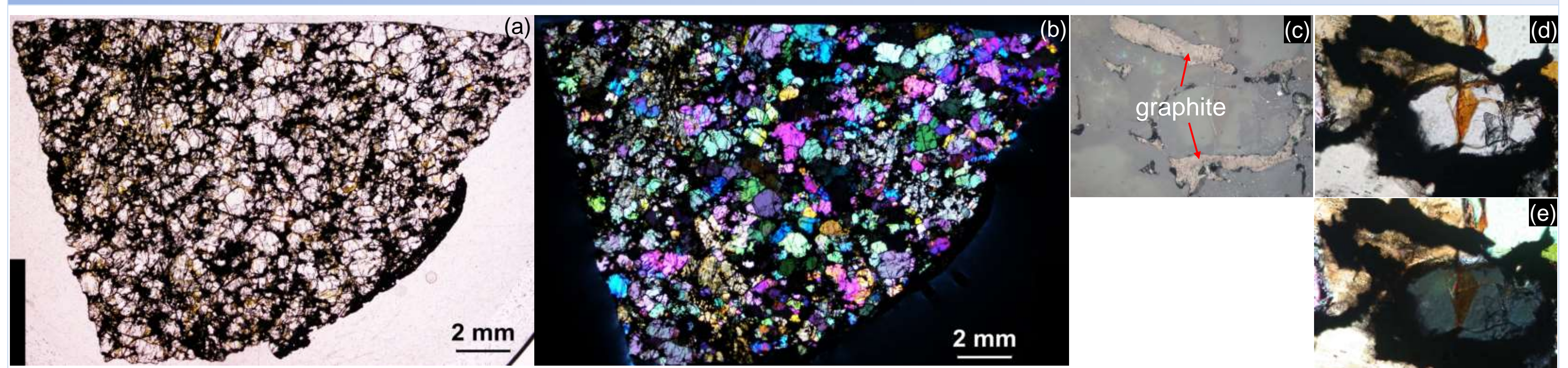
## Carbonaceous Chondrites

Three CM chondrites are heavily altered (type 2) with small amounts of chondrule and CAI and abundant matrix.



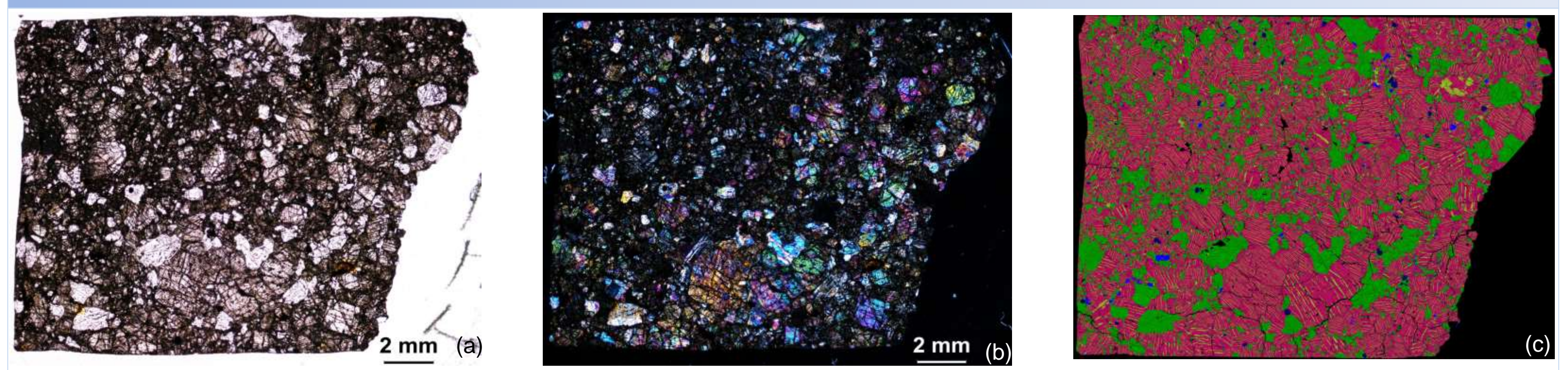
(a) BSE and (b) false color x-ray map combined by Mg (red), Ca (green), and Al (blue) of the CM2 chondrite EET 14013. Matrix is more abundant than chondrules. Ca, Al-rich inclusions (white arrows) are preserved.

## Ureilite



Optical microscope images of EET 14053 in plane-polarized (a) and cross-polarized (b) light. EET 14053 is mostly composed of coarse-grained olivine (Fa14.9±0.6; CaO 0.24 ~ 0.32 wt%; Cr<sub>2</sub>O<sub>3</sub> 0.58 ~ 0.75 wt%) and pyroxene (En82.8±0.3Fs12.8±0.4) grains, and characterized by their reduced rims in contact with carbon-rich matrix (e.g., graphite) (c~e).

## Eucrites



Optical microscope images in plane- (a) and cross-polarized light (b) and false color x-ray map (c) combined by Mg (red), Ca (green), and Fe (blue) of EET 14057, a cumulate eucrite consisted of coarse-grained pigeonite (En52.4±1.3Fs45.9±1.3) with augite lamellae (En39.4±1.0Fs17.2±0.9) and calcic plagioclase (Ab5.8±1.1An94.0±1.1). Pyroxene and plagioclase grains of the EET 14057 show planar deformation features (a, b).