

Electronic-Annex 1: Backscattered electron images of sulfides and host chondrules

Schrader et al.

The background temperature of the protoplanetary disk within the first four million years of the Solar System

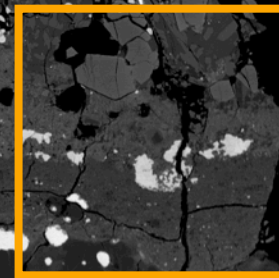
CR2 CHONDRITES

- 4 CR chondrites
 - EET 92048,7
 - Gao-Guenie (b)
 - MIL 090657,6
 - PCA 91082,15
- key:
 - pn = pentlandite
 - po = pyrrhotite
 - Ch = chondrule; AO = agglomeratic olivine chondrule
 - A or OA = Opaque Assemblage

EET 92048,7

EET 92048 AO1

OA3



X 50

15.0kV COMPO

100μm JEOL

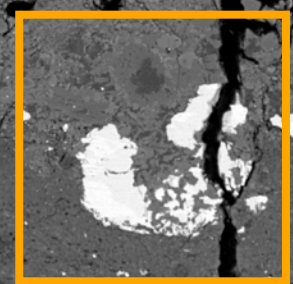
1/23/2017

NOR

WD 10.8mm 13:08:33

EET 92048 AO1

OA3



X 150

15.0kV COMPO

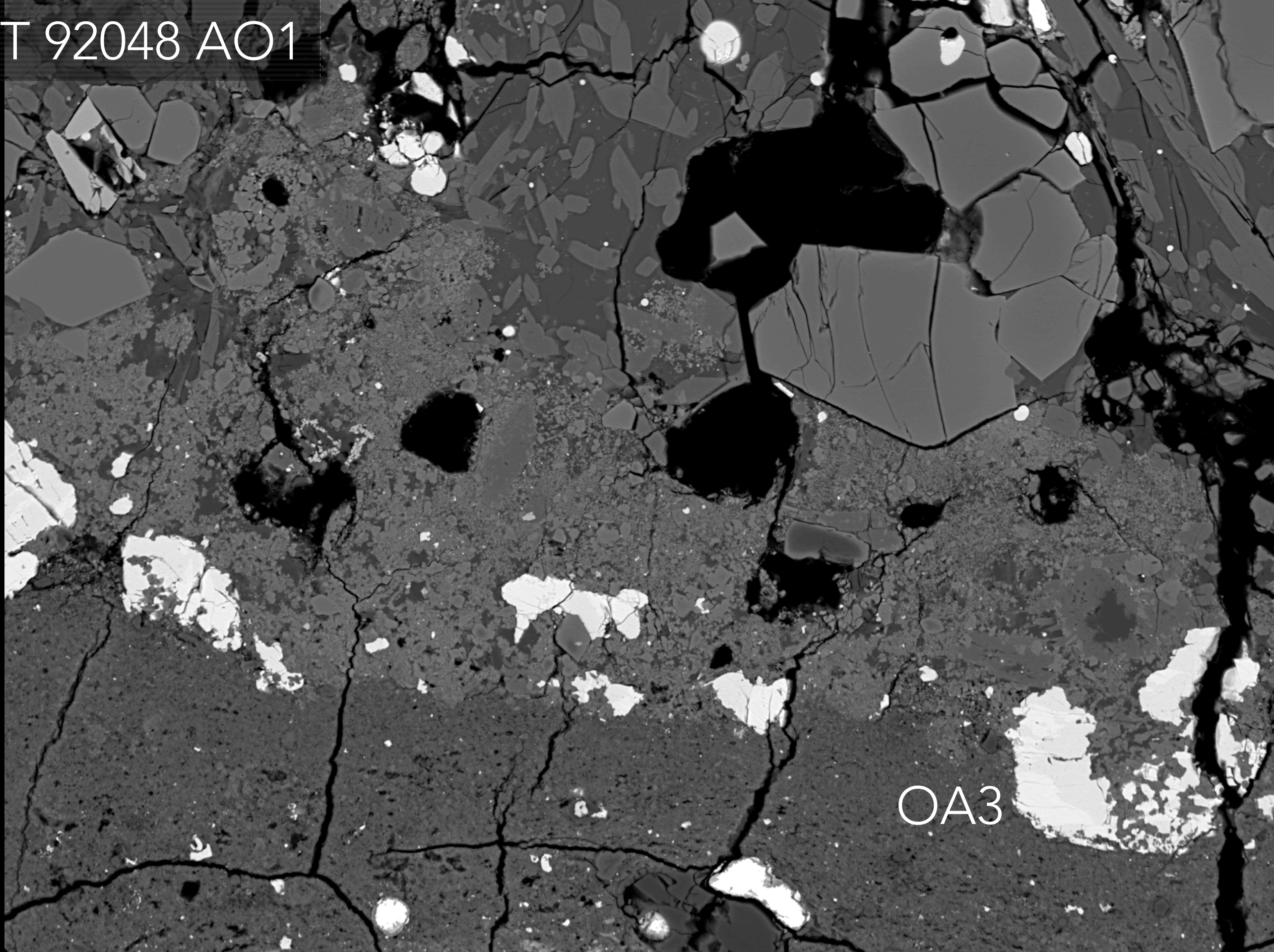
100μm JEOL

NOR

1/23/2017

WD 10.8mm 13:11:12

EET 92048 AO1



X 450

15.0kV COMPO

NOR

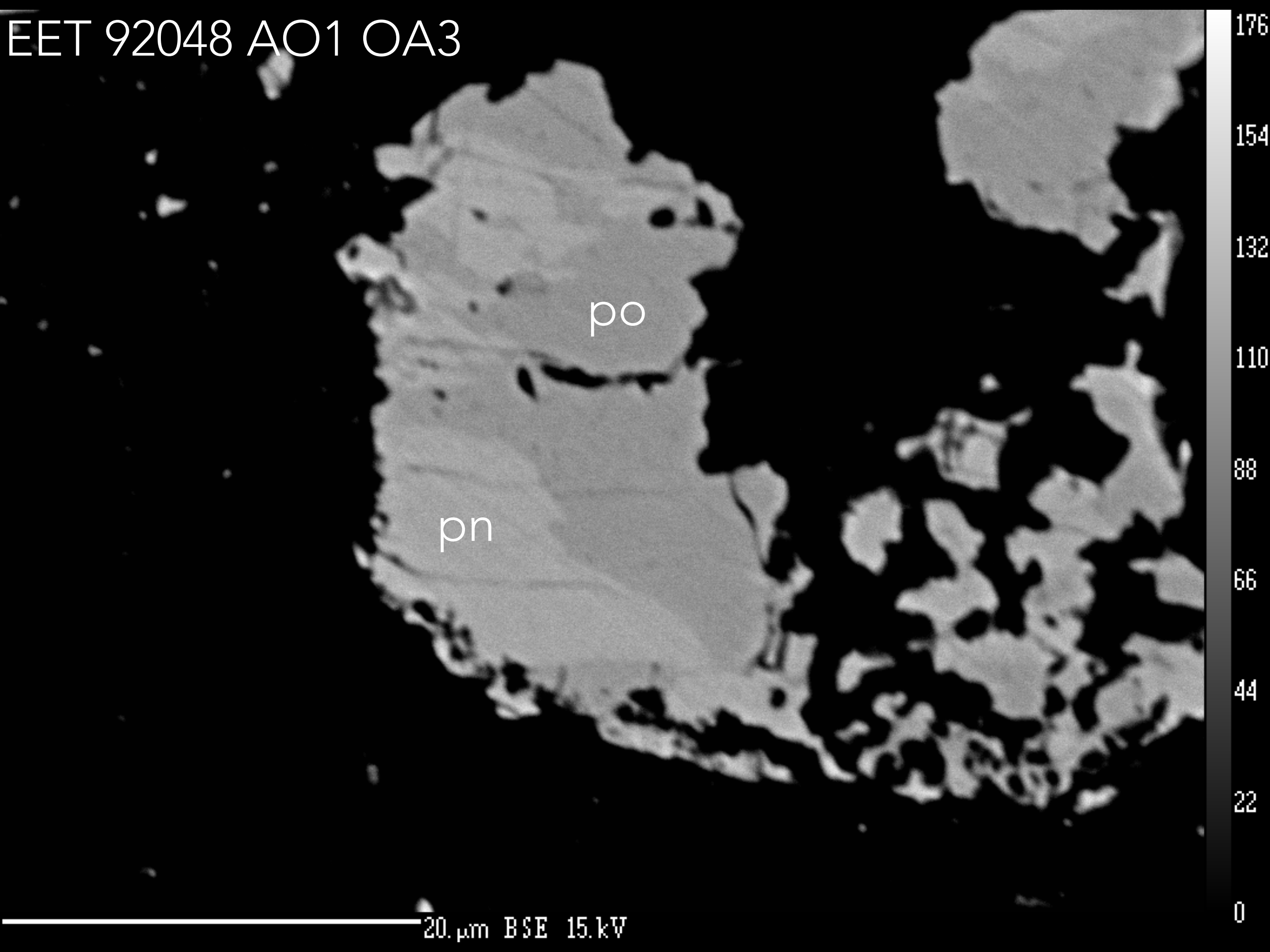
10μm

JEOL

1/23/2017

WD 10.8mm 13:13:52

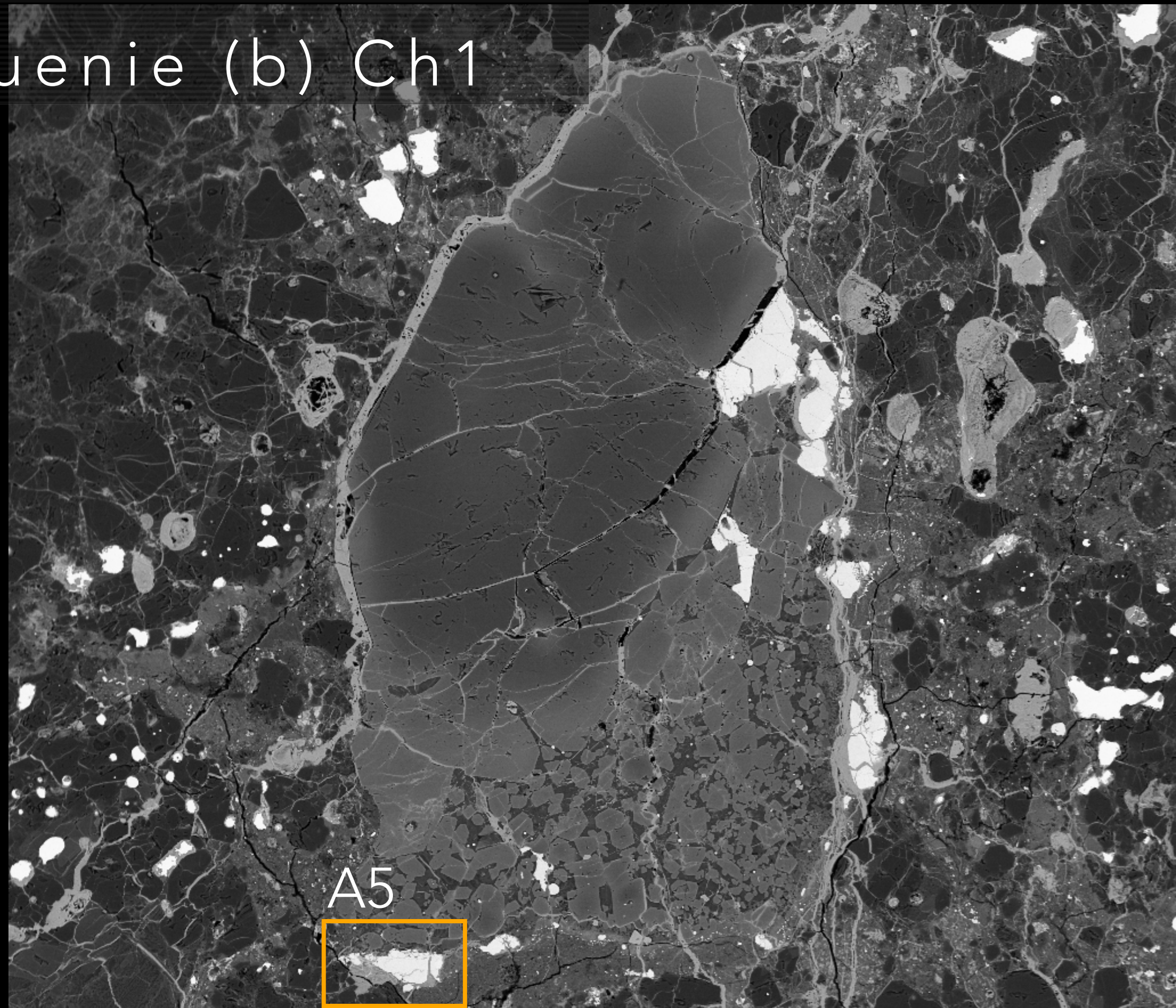
EET 92048 AO1 OA3



20. μm BSE 15.kV

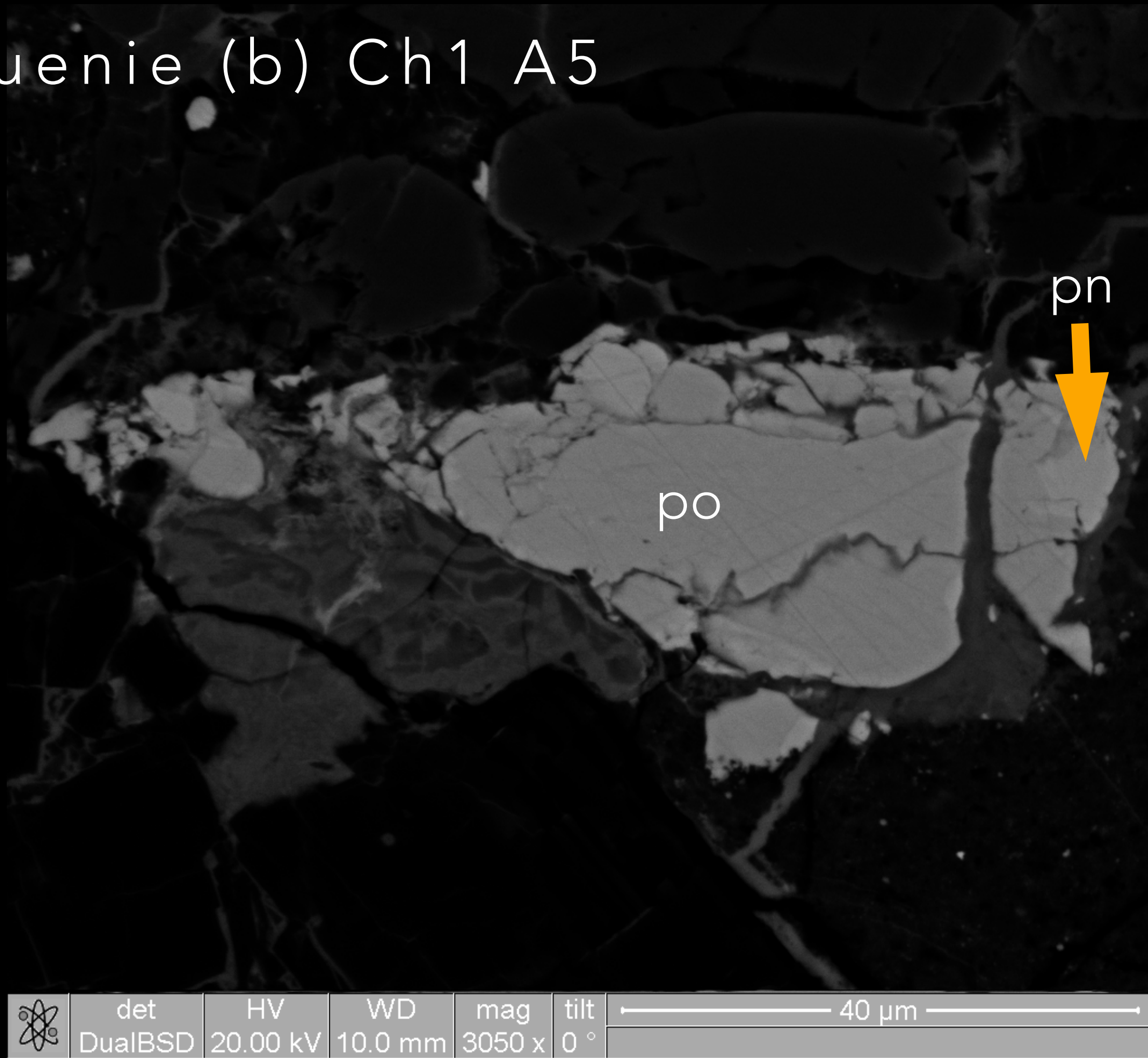
GAO-GUENIE (B)

Gao-Guenie (b) Ch1

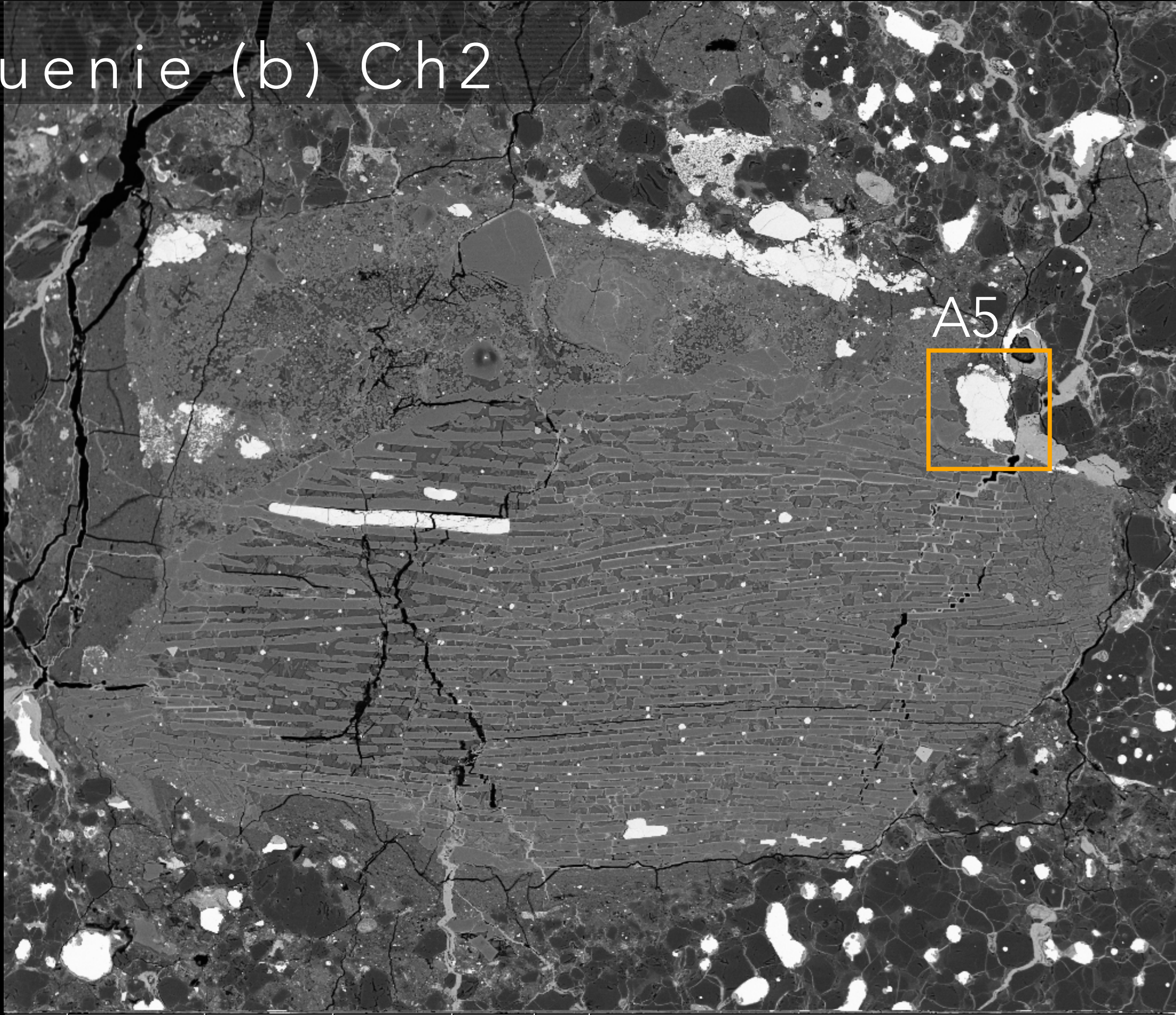


	det	HV	WD	mag	tilt	 400 μm
	DualBSD	20.00 kV	9.8 mm	145 x	0 °	

Gao-Guenie (b) Ch1 A5



Gao-Guenie (b) Ch2



det
DualBSD

HV
20.00 kV

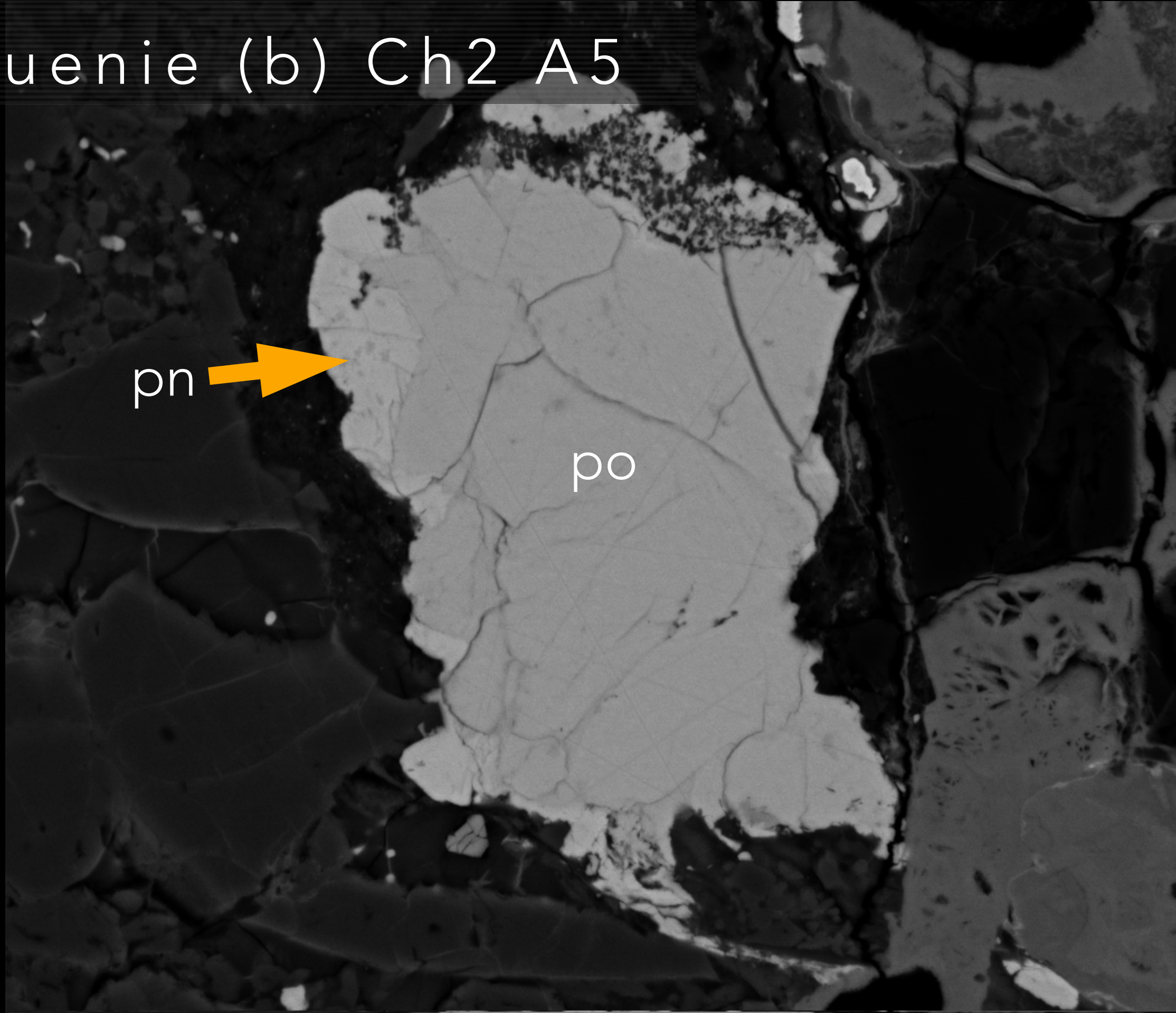
WD
9.8 mm

mag
281 x

tilt
0 °

400 μm

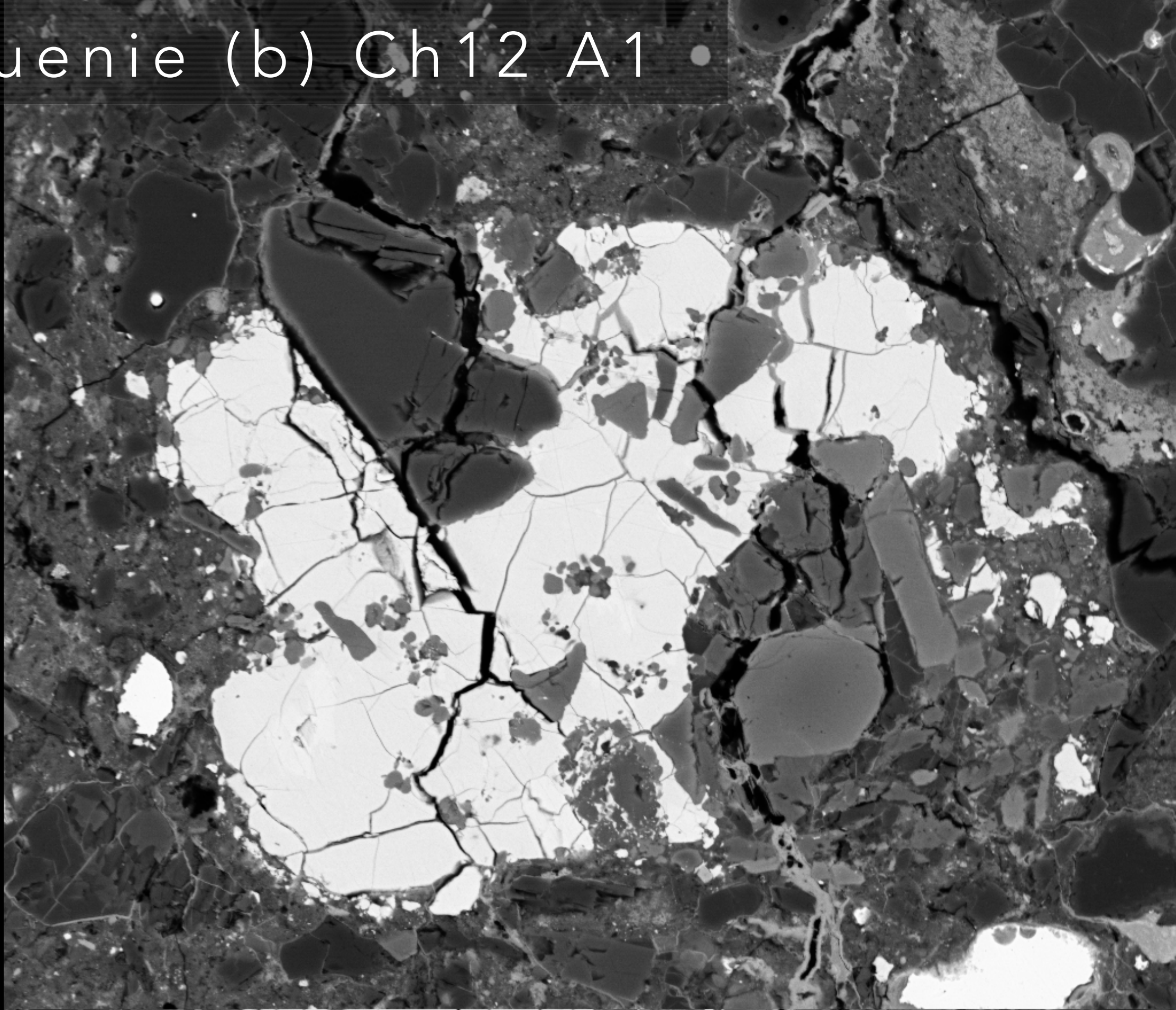
Gao-Guenie (b) Ch2 A5



	det	HV	WD	mag	tilt	 40 μm
	DualBSD	20.00 kV	9.9 mm	2766 x	0 °	

Gao-Guenie (b) Ch12 A1 •

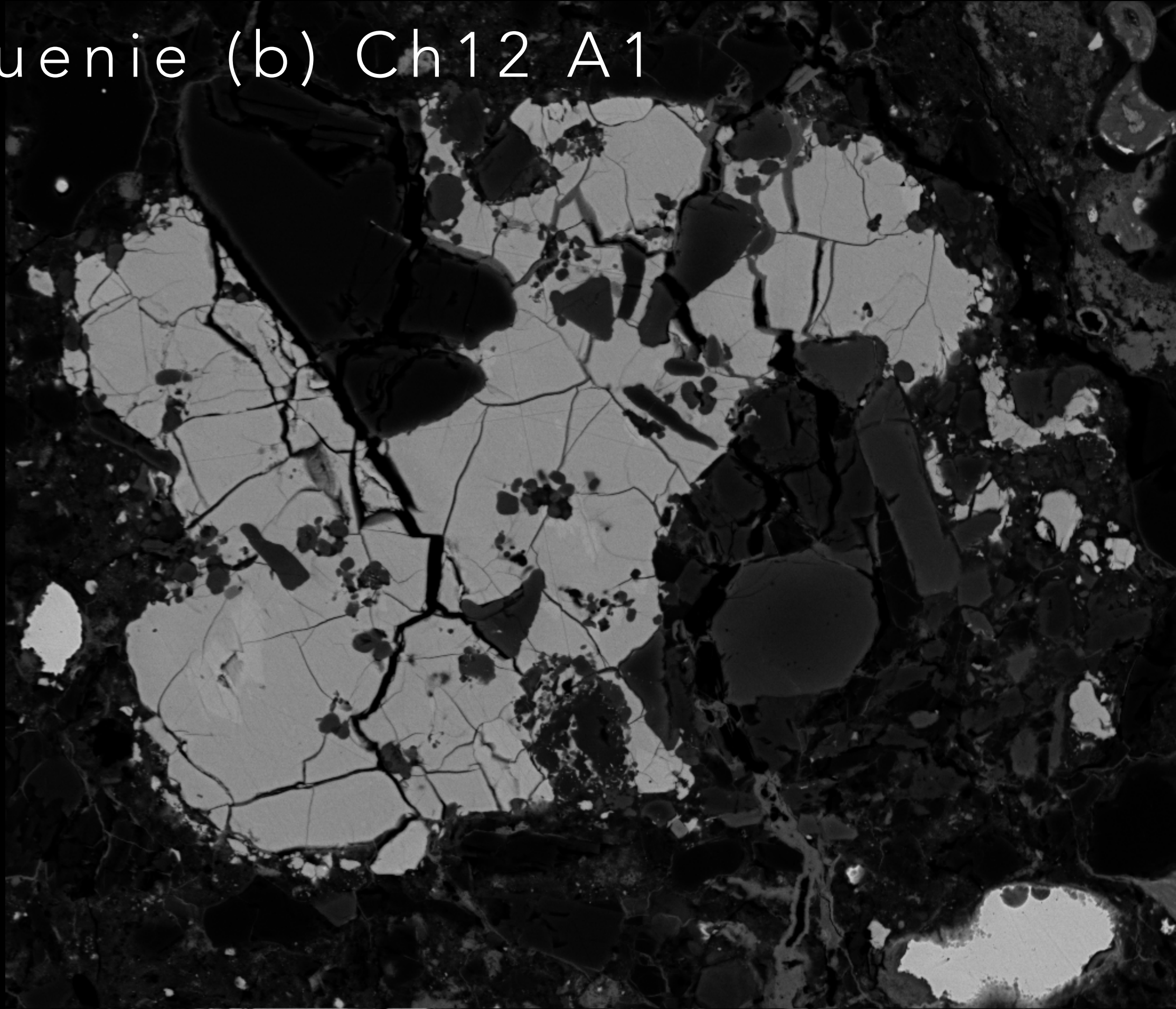
sulfide
spans
entire
chondrule



	det	HV	WD	mag	tilt
	DualBSD	20.00 kV	9.8 mm	1125 x	0 °

100 μm

Gao-Guenie (b) Ch12 A1



det
DualBSD

HV
20.00 kV

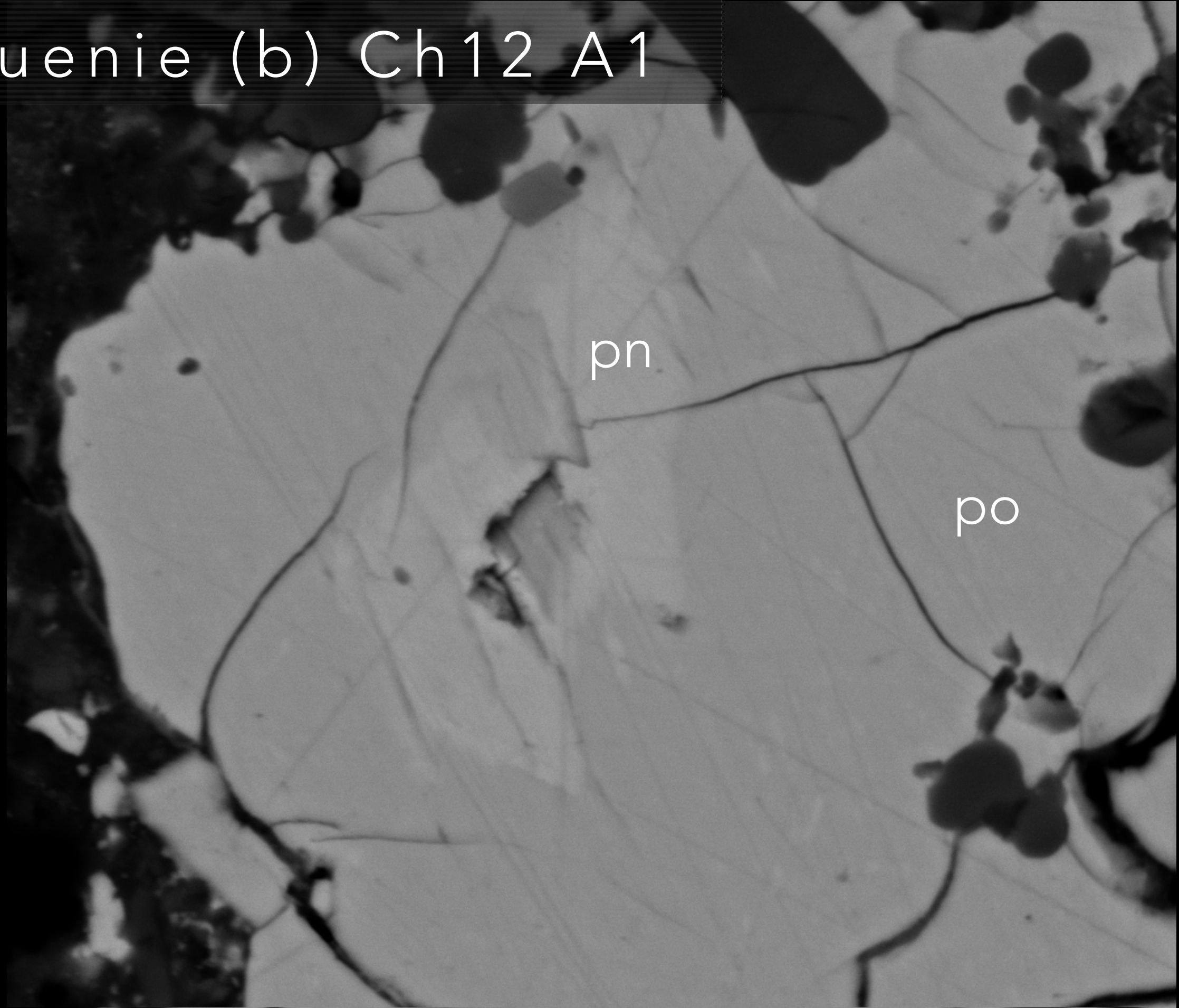
WD
10.0 mm

mag
1258 x

tilt
0 °

100 µm

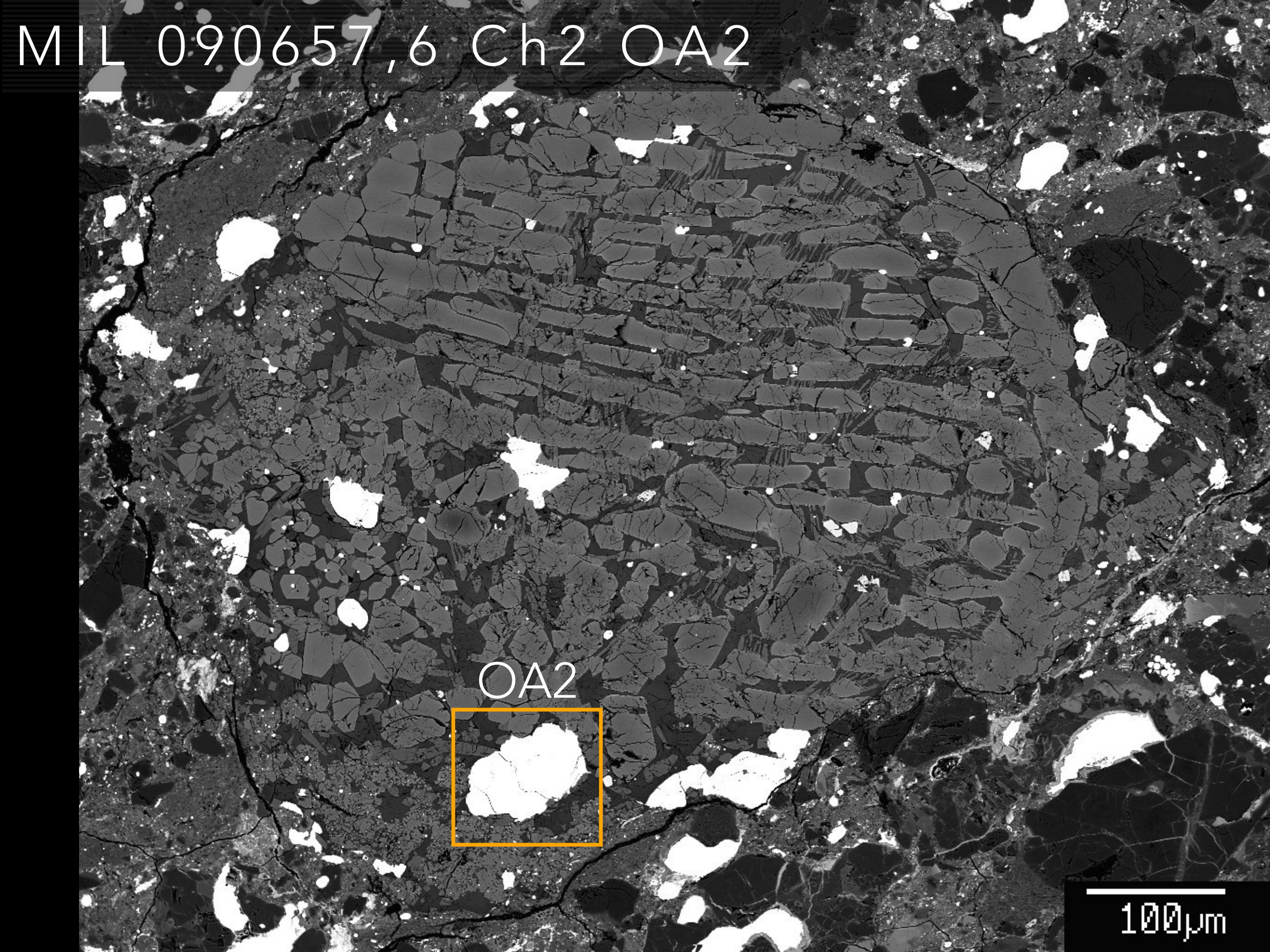
Gao-Guenie (b) Ch12 A1



pn

po

	det	HV	WD	mag	tilt	 20 μm
	DualBSD	20.00 kV	10.0 mm	5677 x	0 °	

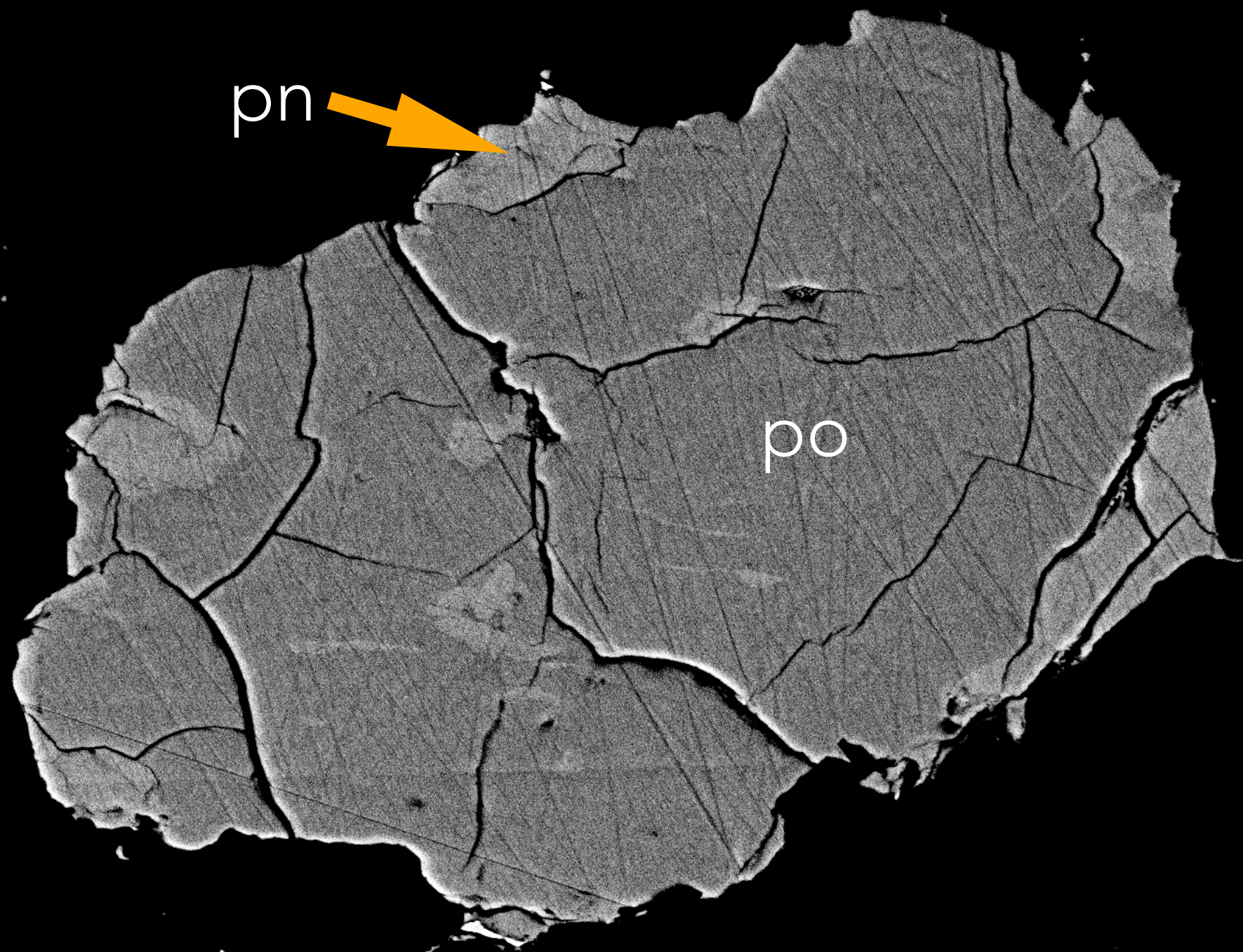


MIL 090657,6 Ch2 OA2

OA2

100μm

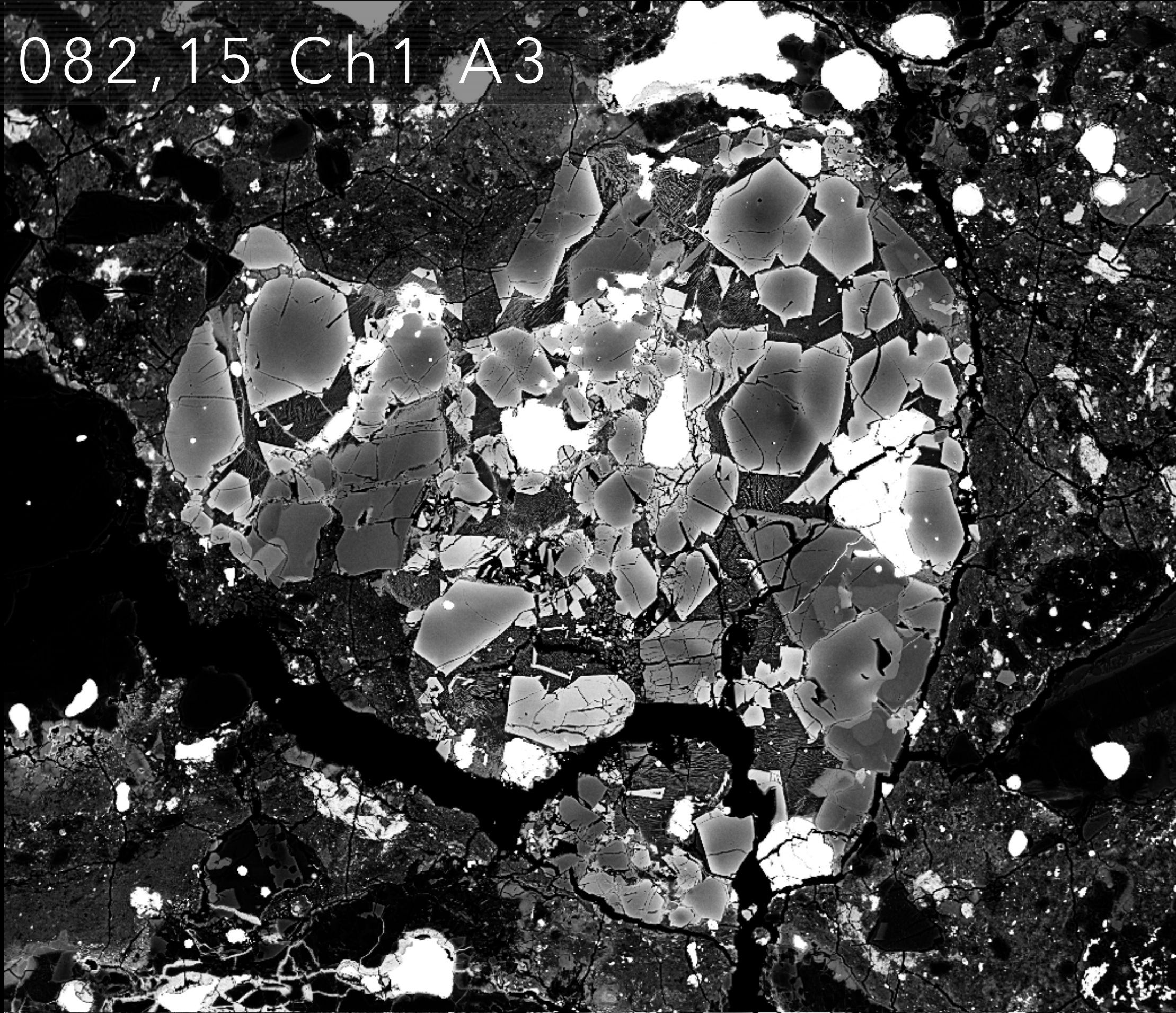
MIL 090657,6 Ch2 OA2



50 μm



PCA 91082,15 Ch1 A3



5/29/2008
11:02:44 AM

det
DualBSD

HV
20.00 kV

mag
352 x

WD
7.5 mm

— 200 μ m —

PCA 91082,15 Ch1 A3

Fe,Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM det DualBSD HV 20.00 kV mag 3564 x WD 7.5 mm

PCA 91082, 15 Ch 1 A3

Fe,Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM	det DualBSD	HV 20.00 kV	mag 3564 x	WD 7.5 mm	20 μm
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PCA 91082, 15 Ch 1 A3

Fe, Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM	det DualBSD	HV 20.00 kV	mag 3564 x	WD 7.5 mm	20 μm
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PCA 91082, 15 Ch 1 A3

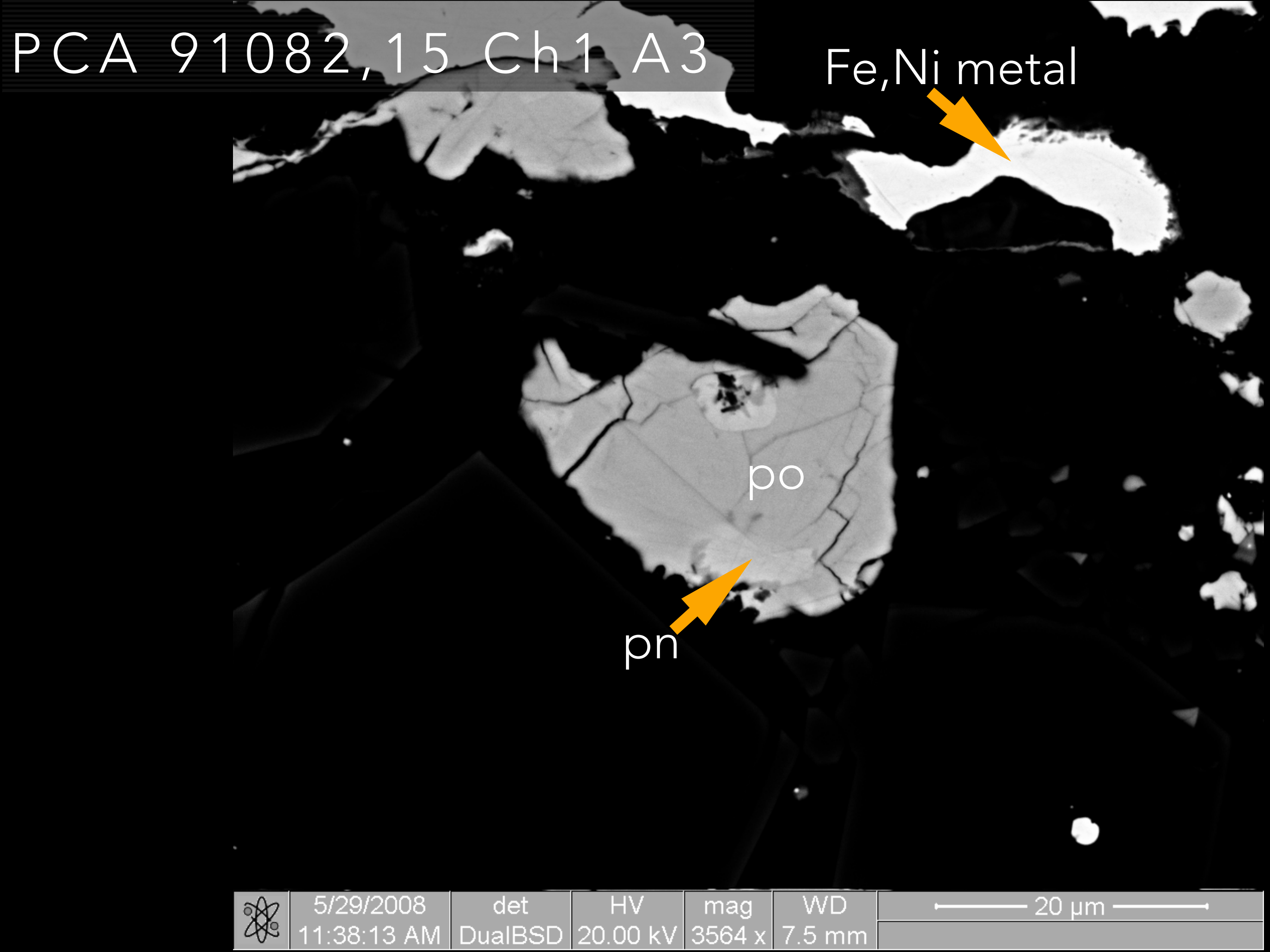
Fe, Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM	det DualBSD	HV 20.00 kV	mag 3564 x	WD 7.5 mm	20 μm
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PCA 91082, 15 Ch 1 A3

Fe, Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM	det DualBSD	HV 20.00 kV	mag 3564 x	WD 7.5 mm	20 μm
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PCA 91082, 15 Ch 1 A3

Fe, Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM	det DualBSD	HV 20.00 kV	mag 3564 x	WD 7.5 mm	20 μm
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PCA 91082,15 Ch1 A3

Fe,Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM det DualBSD HV 20.00 kV mag 3564 x WD 7.5 mm

PCA 91082,15 Ch1 A3

Fe,Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM det DualBSD HV 20.00 kV mag 3564 x WD 7.5 mm

PCA 91082,15 Ch1 A3

Fe,Ni metal

po

pn

20 μm

5/29/2008 11:38:13 AM det DualBSD HV 20.00 kV mag 3564 x WD 7.5 mm

PCA 91082,15 Ch1 A3

Fe,Ni metal

po

pn

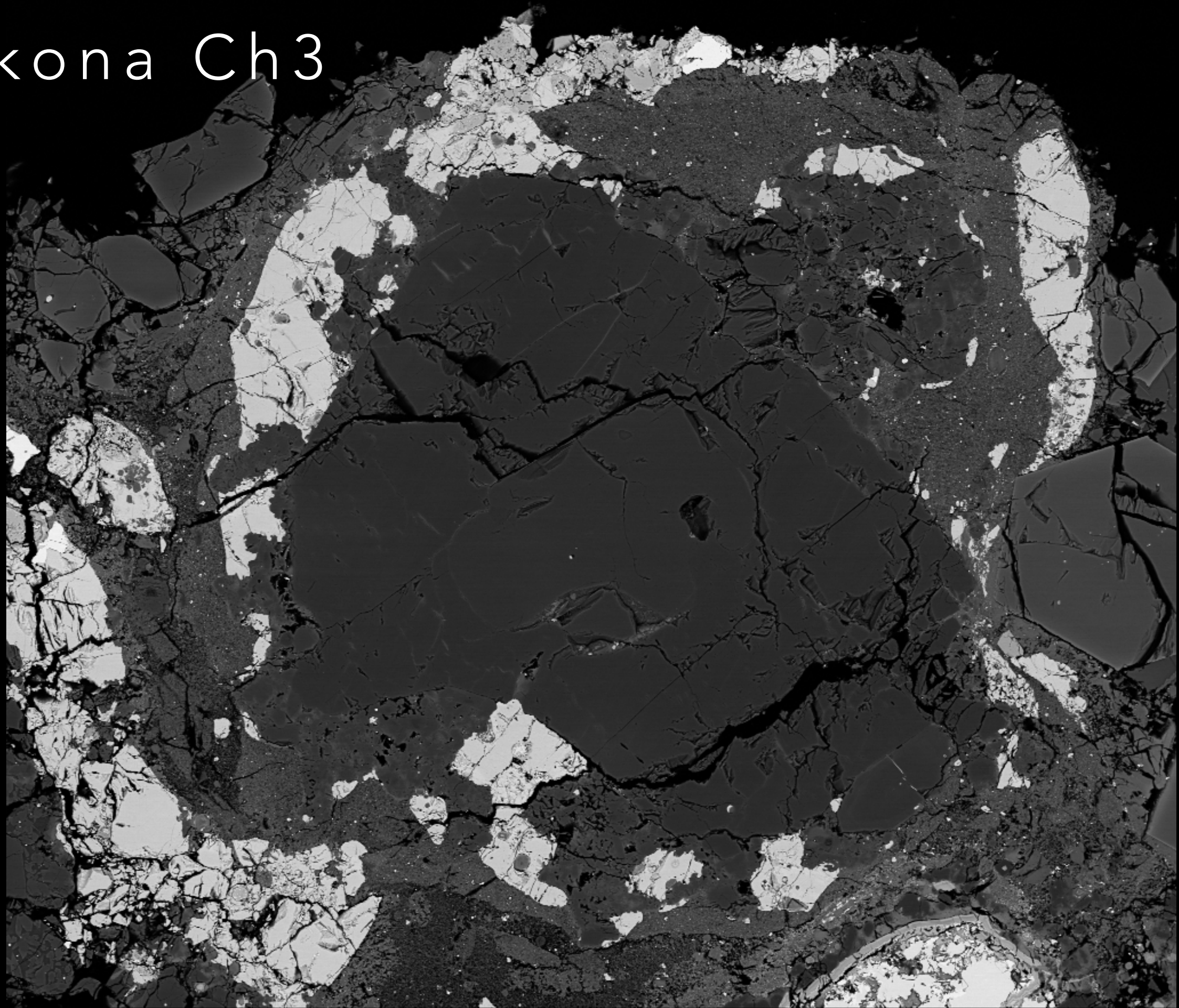
20 μm

5/29/2008 11:38:13 AM det DualBSD HV 20.00 kV mag 3564 x WD 7.5 mm

LL3.00 CHONDRITE

- Semarkona USNM 1805-7

Semarkona Ch3



det
BSED

HFW
544 μm

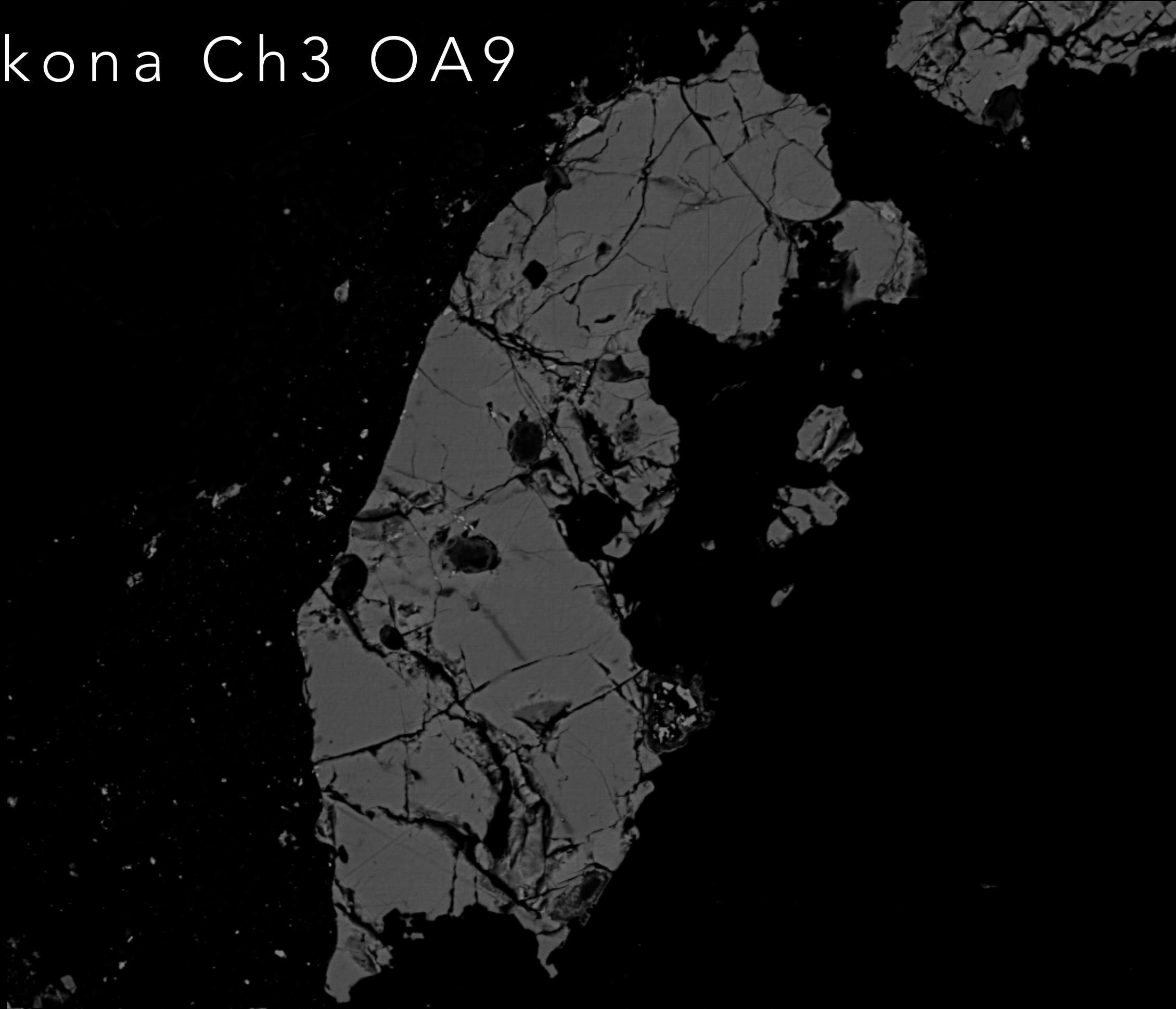
HV
15.0 kV

WD
6.9 mm

mag
558 x

200 μm

Semarkona Ch3 OA9



det
BSED

HFW
162 μm

HV
15.0 kV

WD
6.9 mm

mag
1.879 x

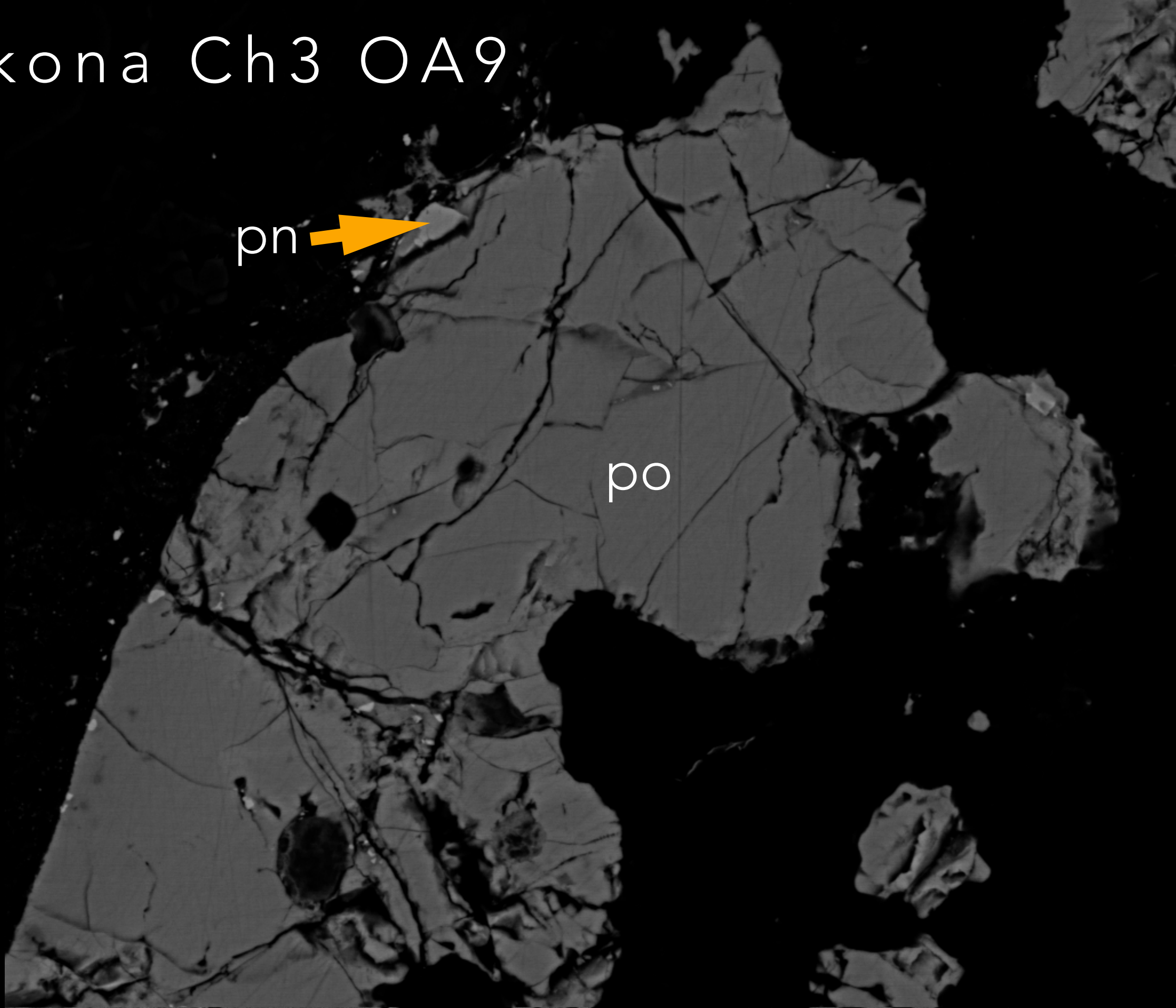
50 μm

Semarkona Ch3 OA9

pn



po



det
BSED

HFW
80.9 μm

HV
15.0 kV

WD
6.9 mm

mag
3 757 x

30 μm

Semarkona Ch3 OA10



det
BSED

HFW
125 μm

HV
15.0 kV

WD
6.9 mm

mag
2 436 x

50 μm

Semarkona Ch3 OA10

