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Formation and evolution of carbonaceous asteroid Ryugu: Direct evidence from returned samples

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6
2
1 2 3
4 5
6

200
 CO_2

Ca Al
3

10 126 4
@J-PARC Cl

2 4
 CO_2

25
5

1

0.2 0.2
0.9 2
4

6

1

CT

@SPring-8

1.79 0.08 ³
 30

1.19

1

7

46

200 200
300 500

50

100

1/10

50

10GPa

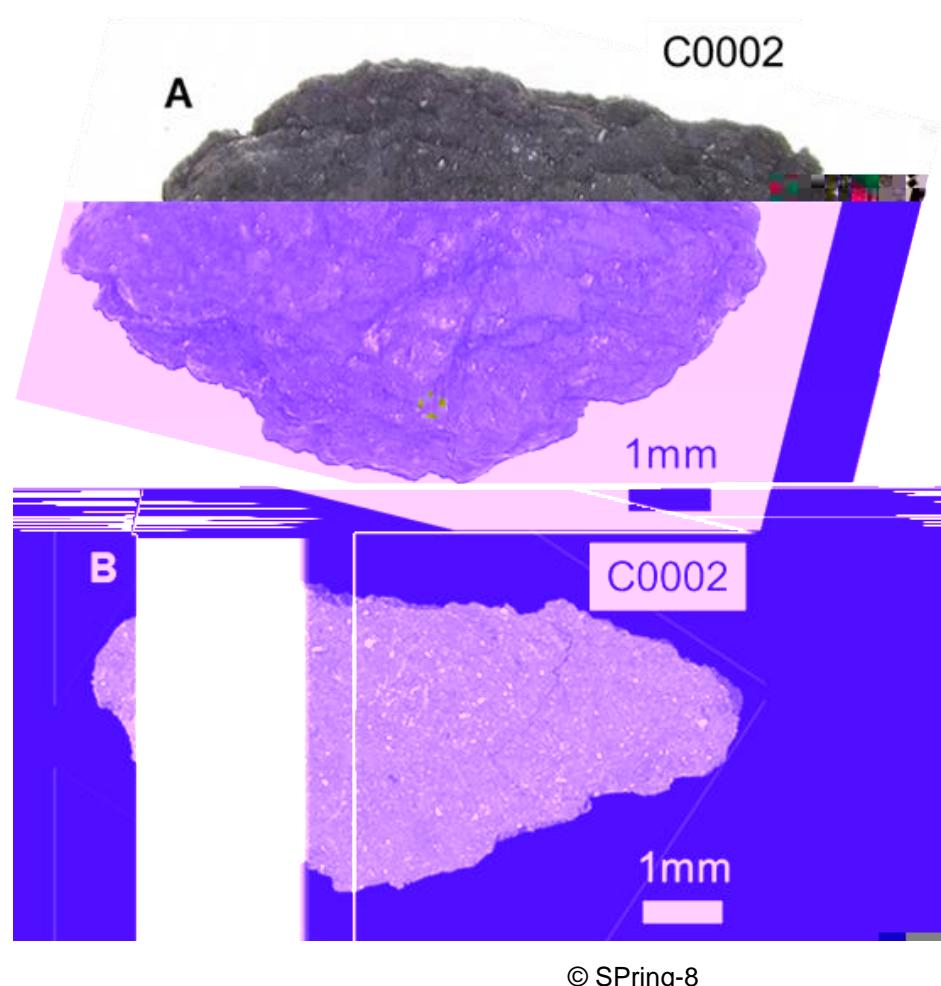
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2

20H00188

A

21H00159



© SPring-8

1 A

C0002

B SPring-8

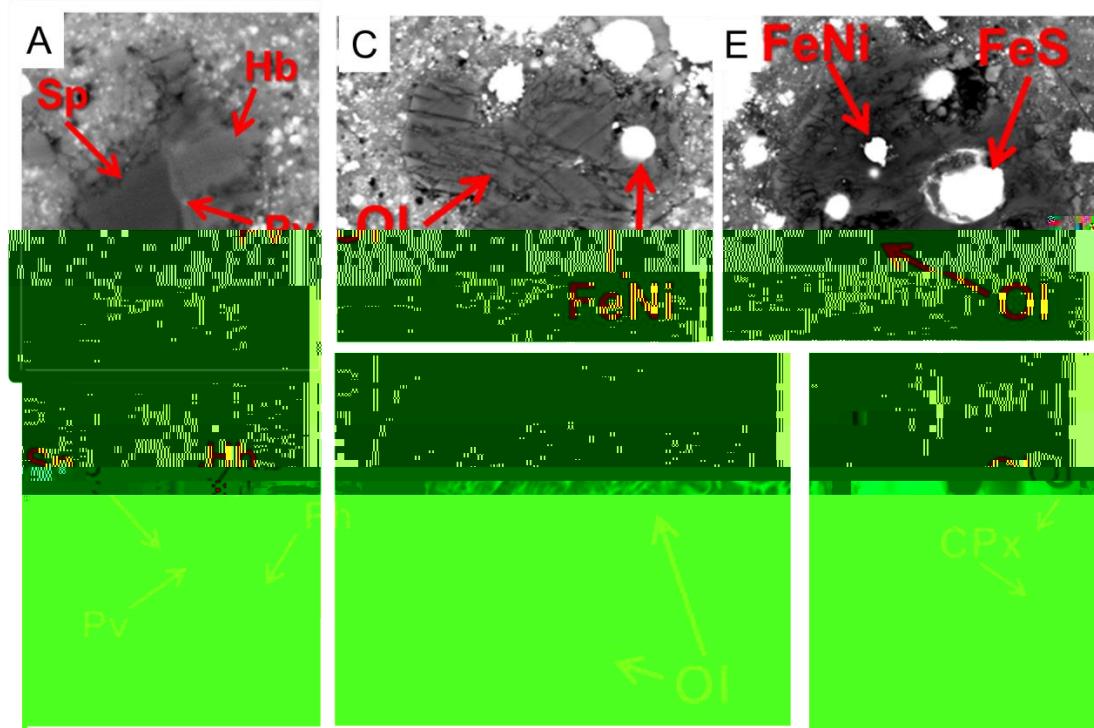
X CT

CT



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2



©

3

1000

A

B) Ca Al

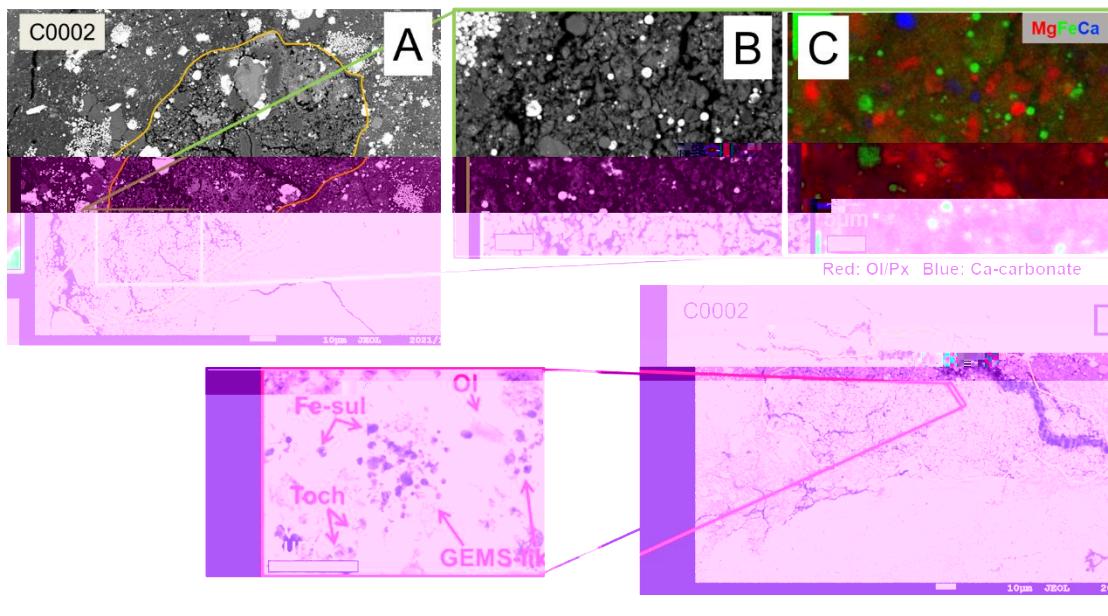
B-D

OI

FeNi

FeS

F



©

4 C0002

A

B

C B

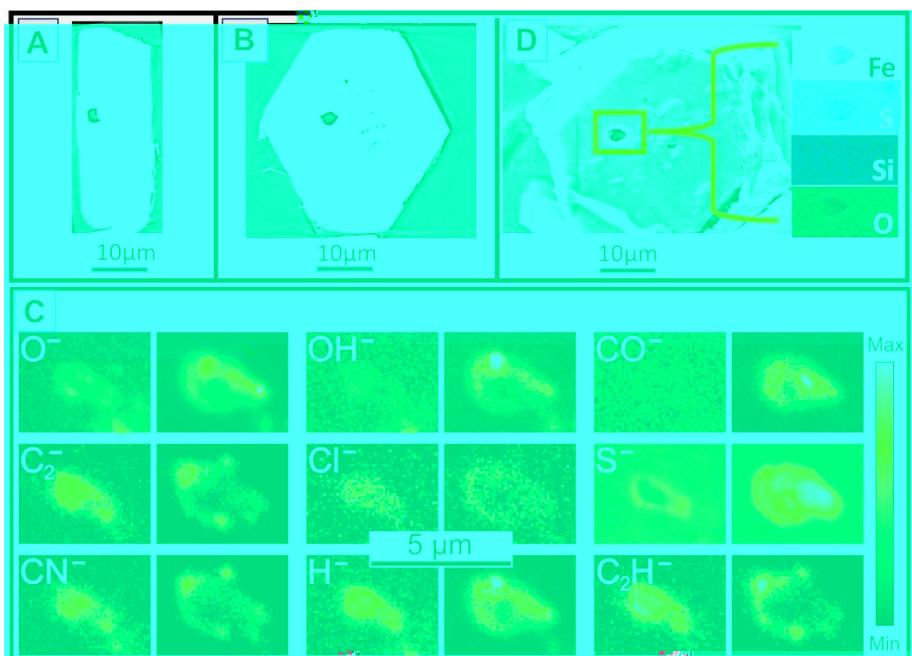
D

E D

GEMS-like

1

Ol



©

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5

6

CT

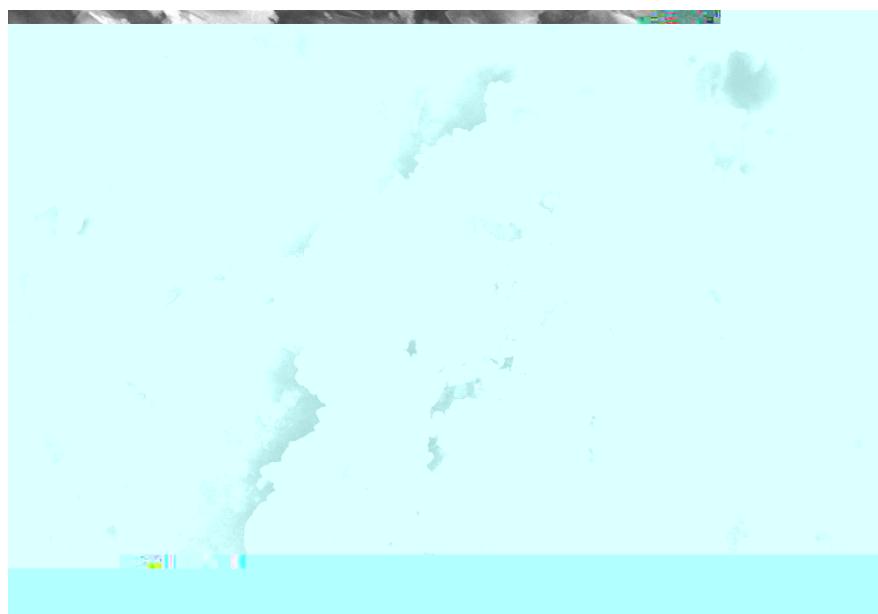
CO₂

A B

C

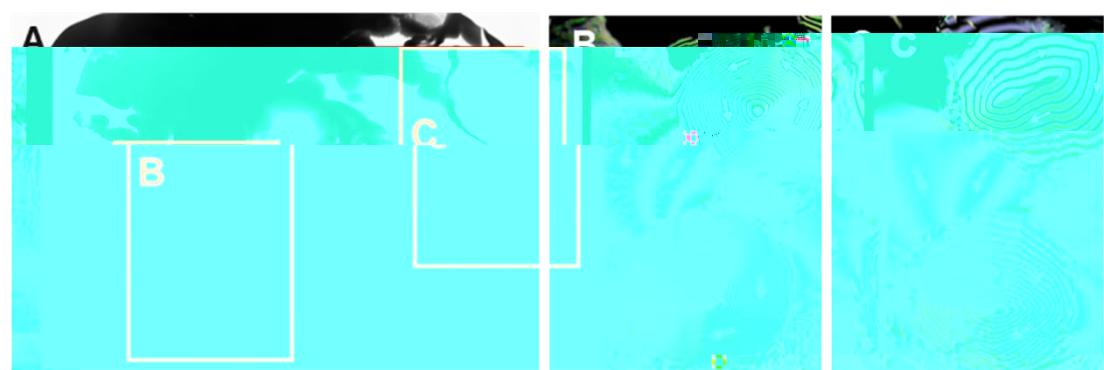
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D



6

©



© JFCC

7

Fe_3O_4

A

B C

1 Ca Al

2

100

3

45 6700

4

200

6 Sugita et al,(2019) Science 364, eaaw0442. doi:10.1126/science.aaw0422/

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【論文情報】

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