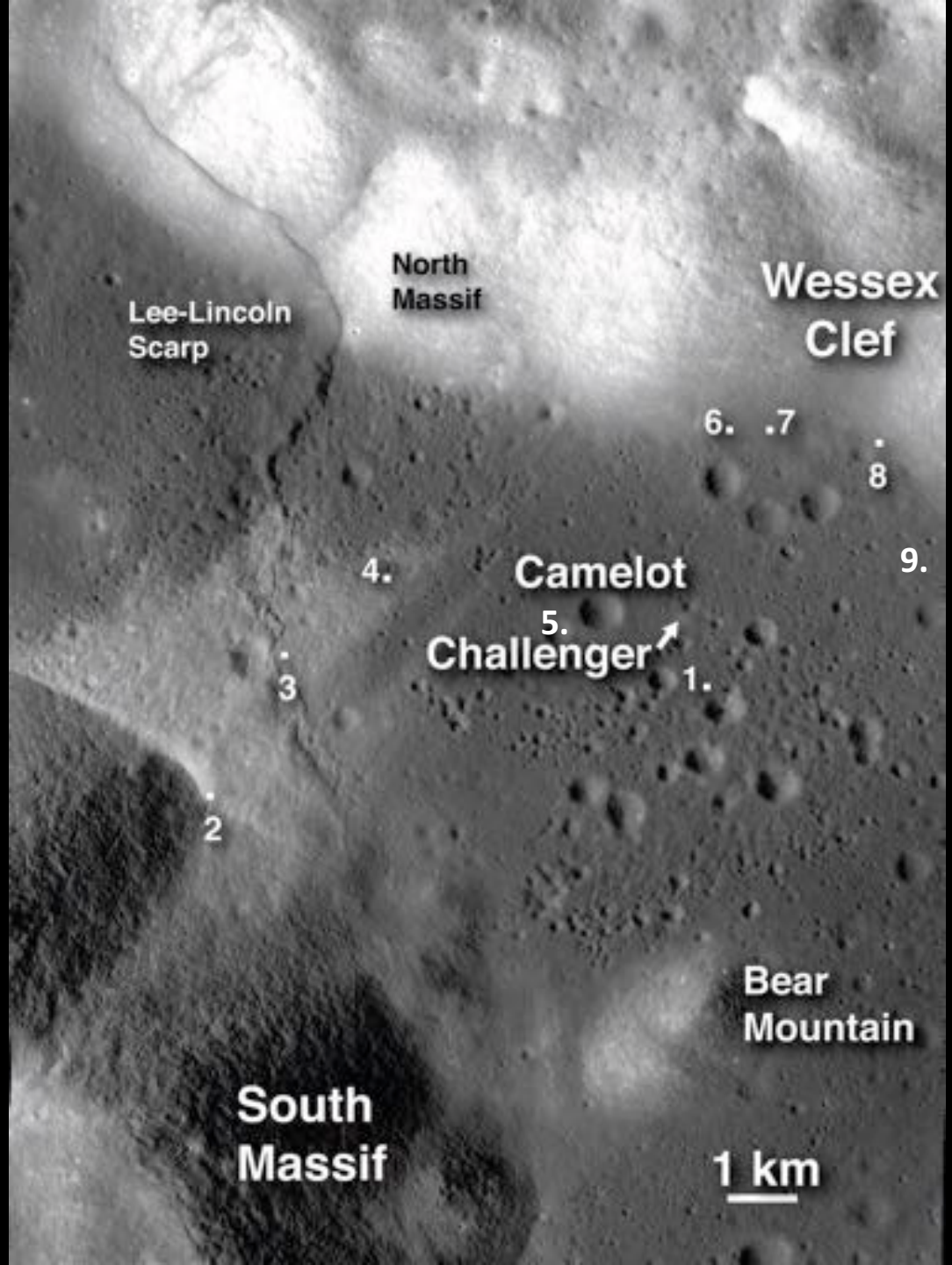
FIELD GEOLOGY
IN THE VALLEY OF TAURUS-LITTROW:
How And Why The Last Lunar Samples Were Collected

Harrison H. Schmitt

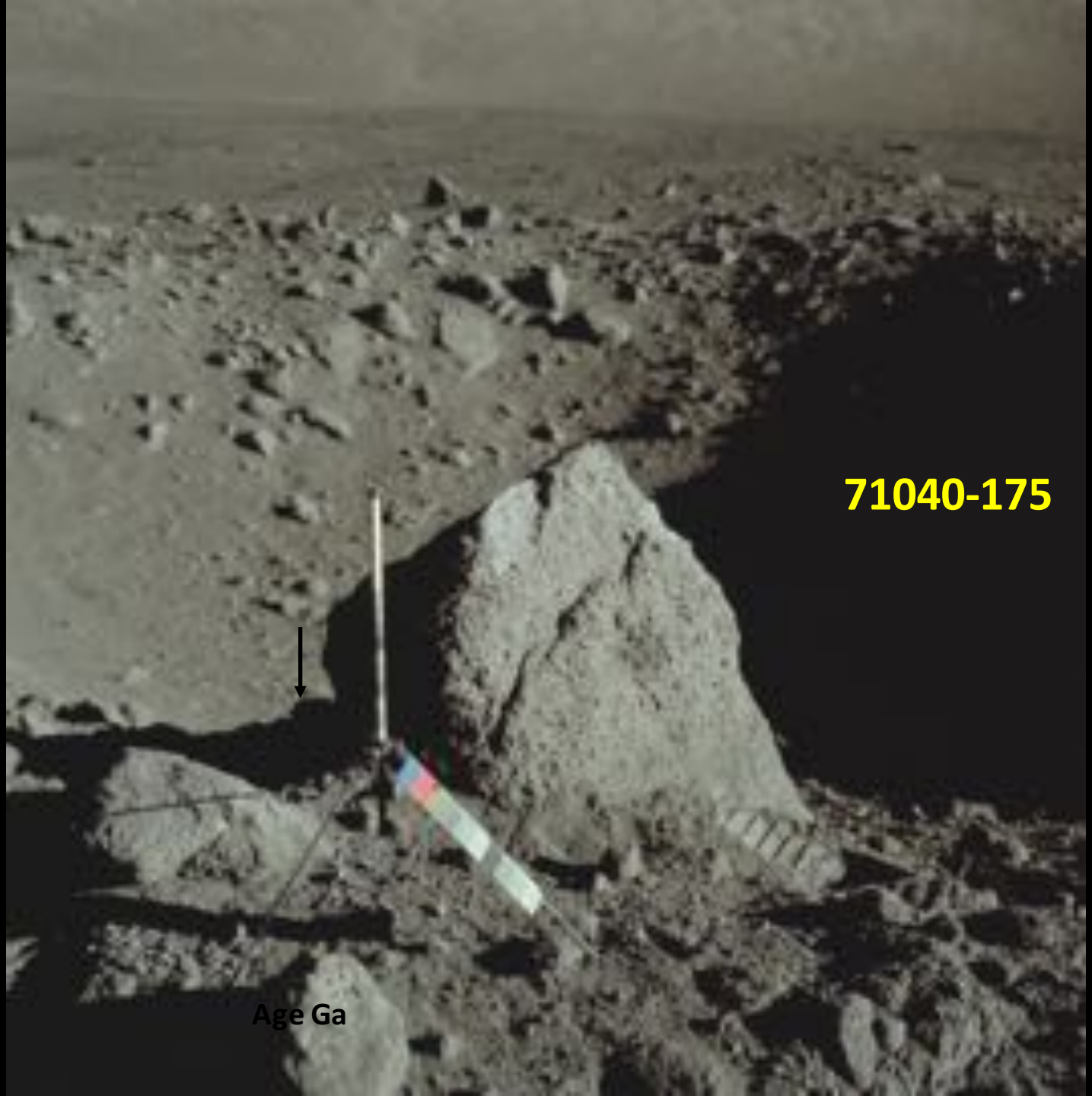
Lunar Science For Landed Missions Workshop

Ames Research Center

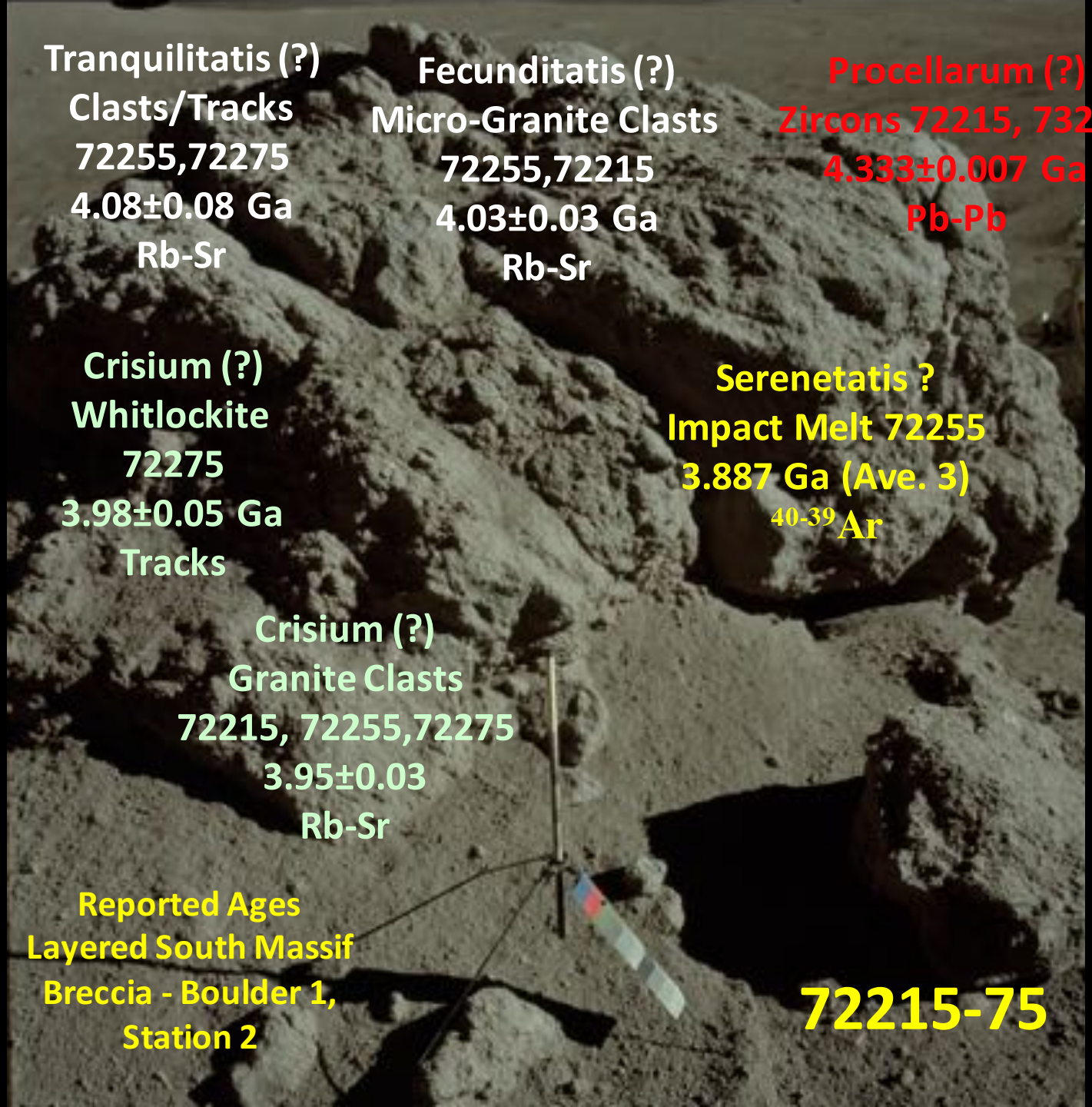
January 10, 2018


North
Massif
Wessex
Clef
Lee-Lincoln
Scarp
6.
.7
8
9.
4.
Camelot
5.
Challenger
1.
3
2
Bear
Mountain
South
Massif
1 km

70001-9, 70011-295

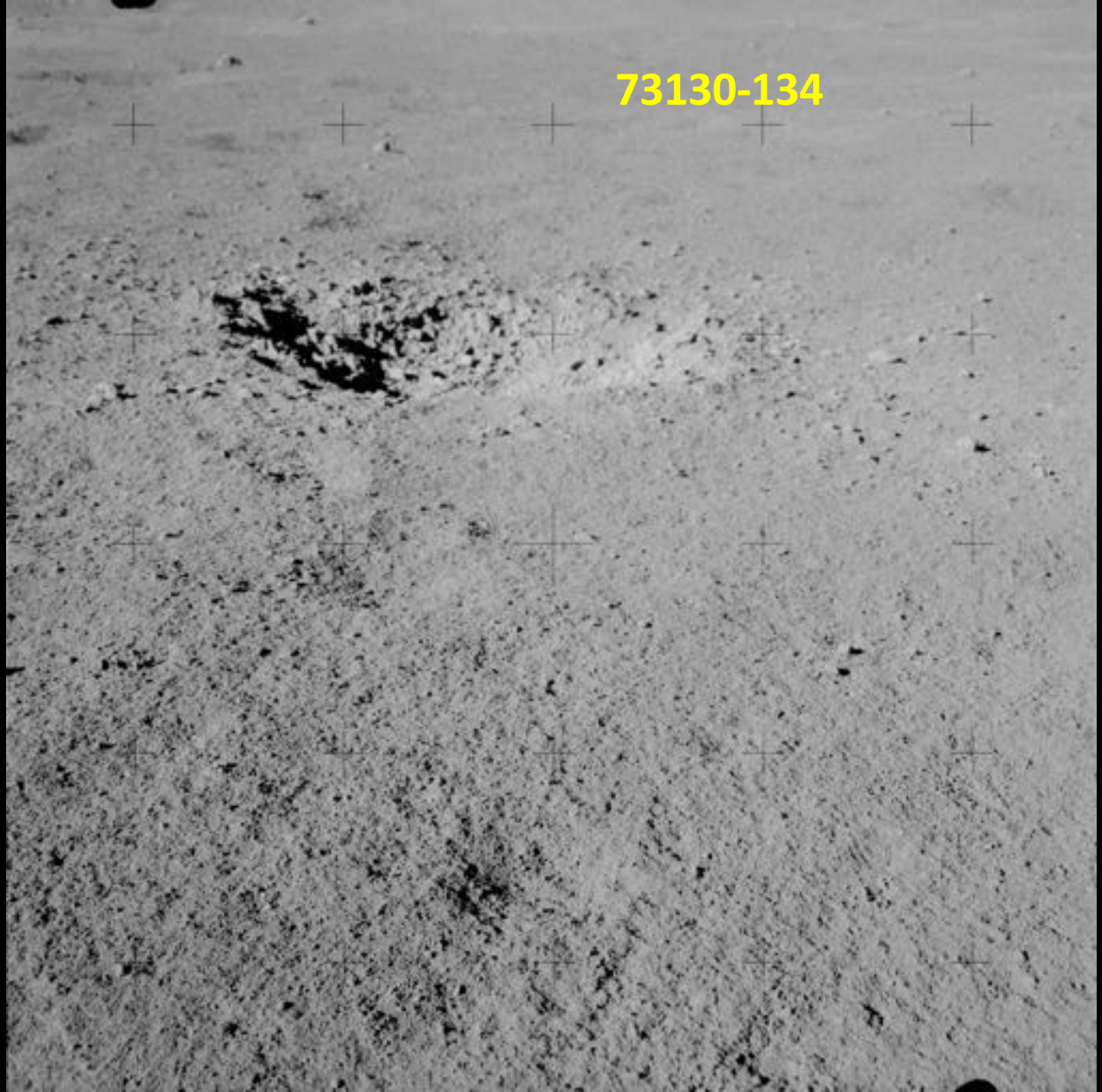

71040-175
Age Ga

71500

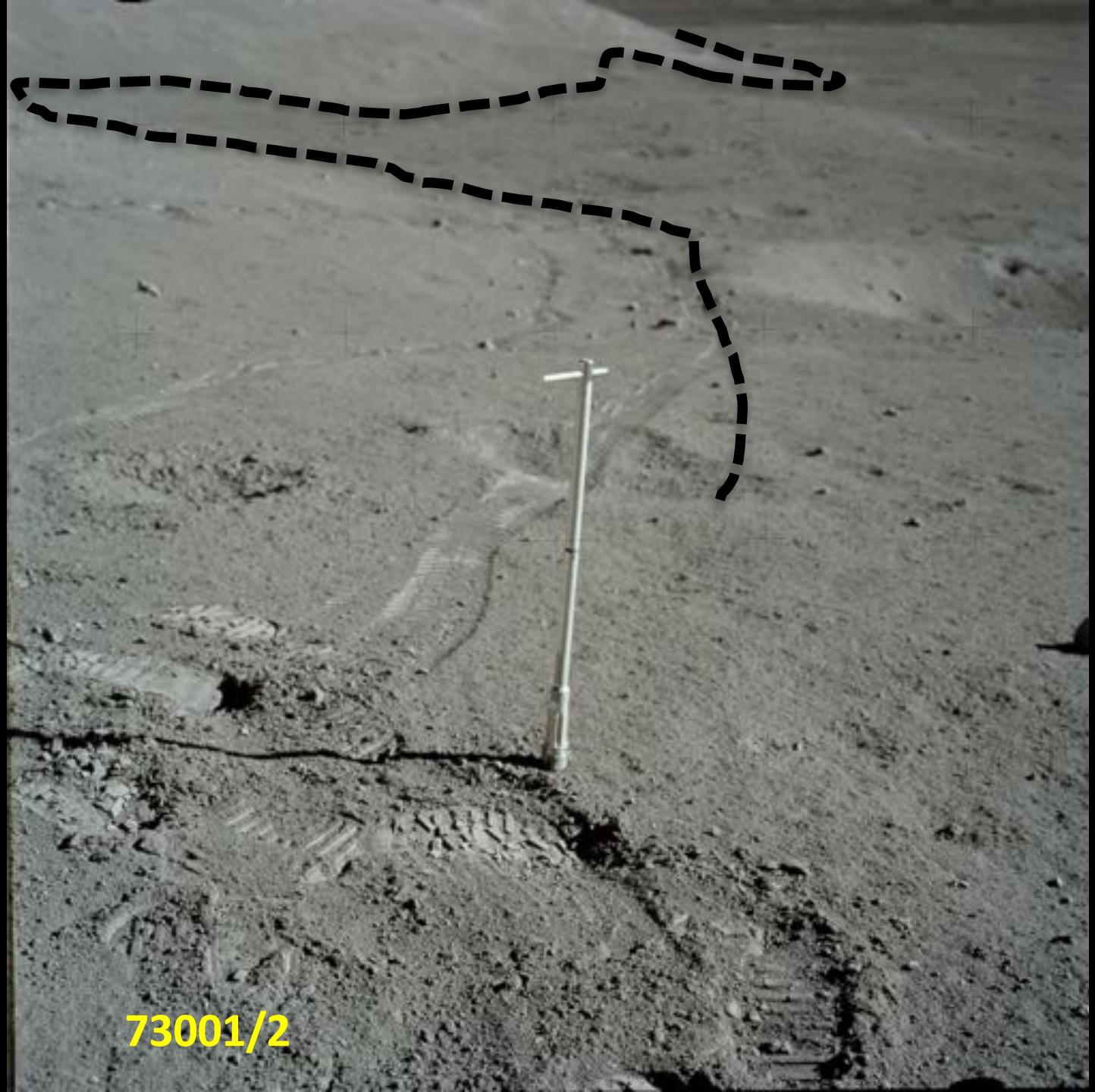

Tranquilitatis (?)
Clasts/Tracks
72255,72275
4.08±0.08 Ga
Rb-Sr
Fecunditatis (?)
Micro-Granite Clasts
72255,72215
4.03±0.03 Ga
Rb-Sr
Procellarum (?)
Zircons 72215, 73217
4.333±0.007 Ga
Pb-Pb
Crisium (?)
Whitlockite
72275
3.98±0.05 Ga
Tracks
Serenetatis ?
Impact Melt 72255
3.887 Ga (Ave. 3)
40-39 Ar
Crisium (?)
Granite Clasts
72215, 72255,72275
3.95±0.03
Rb-Sr
Reported Ages
Layered South Massif
Breccia - Boulder 1,
Station 2
72215-75

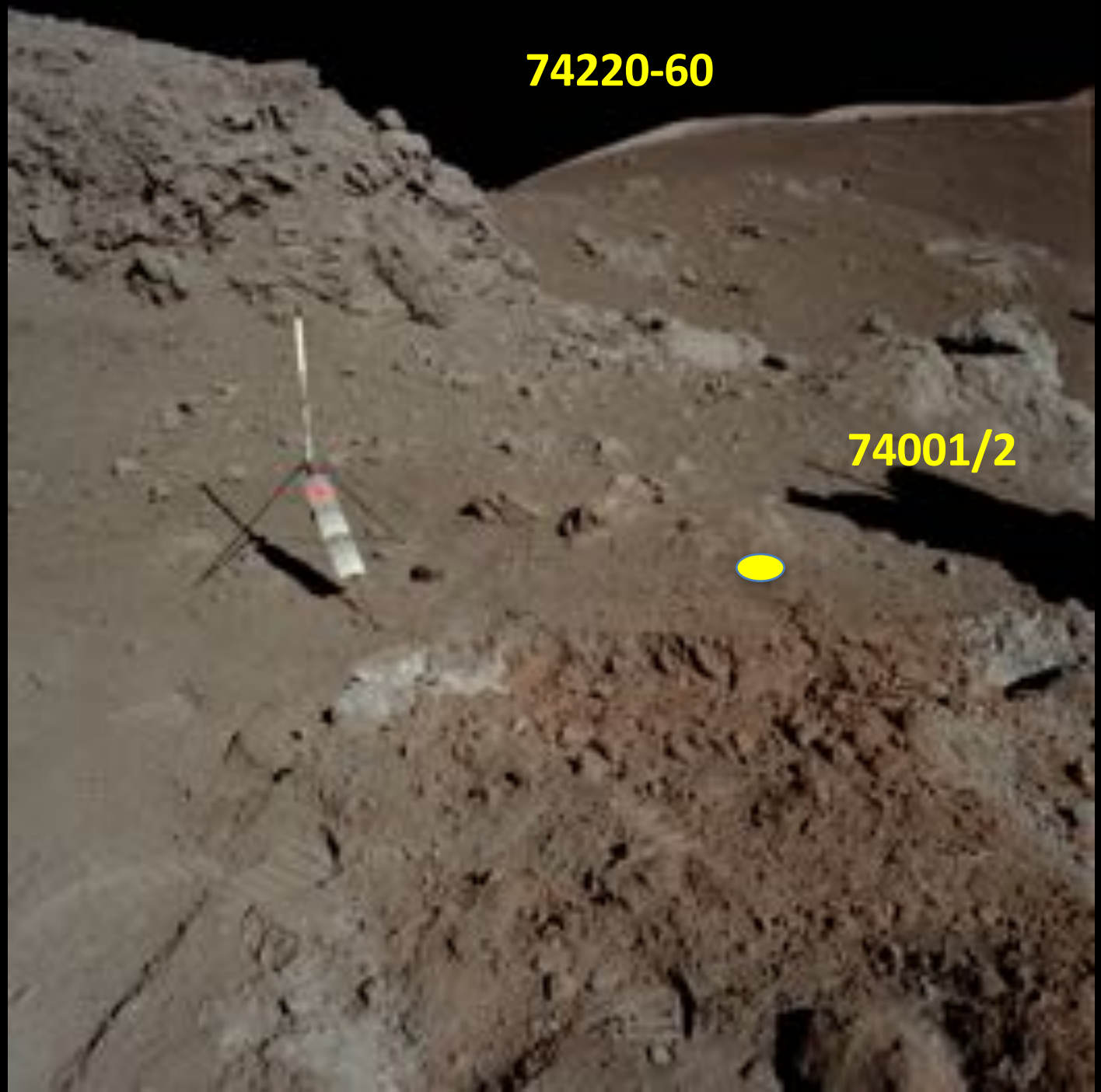
72315-395

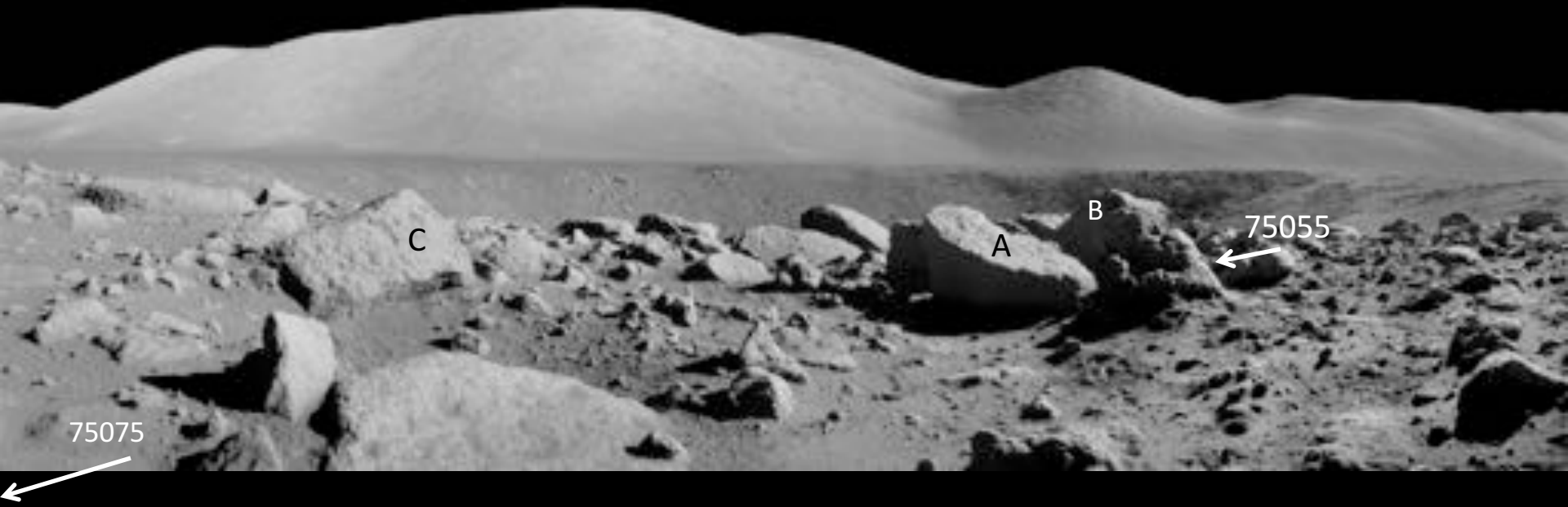
72415
72435
10 CM
72440, 460


73130-134

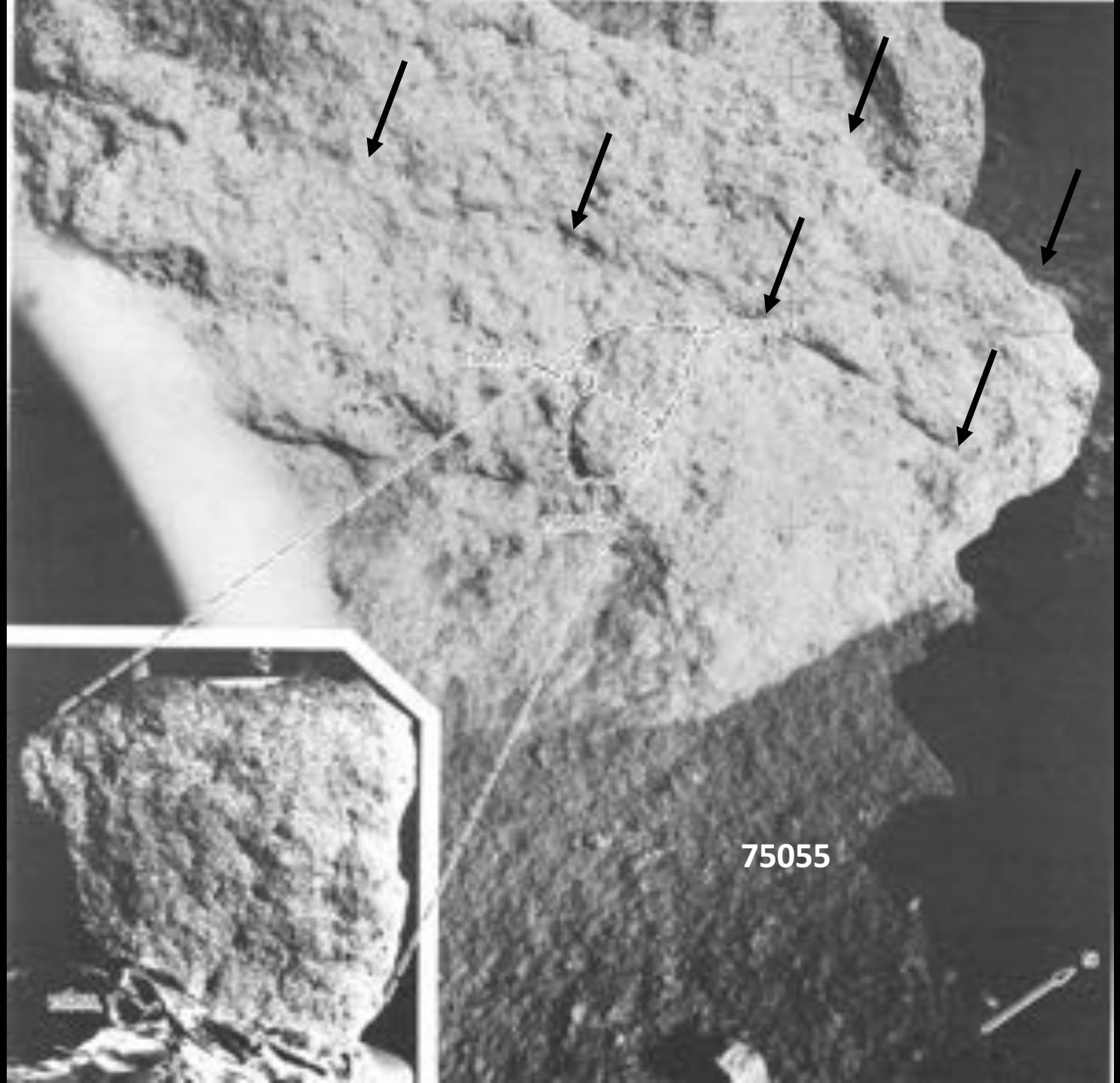
73220-80

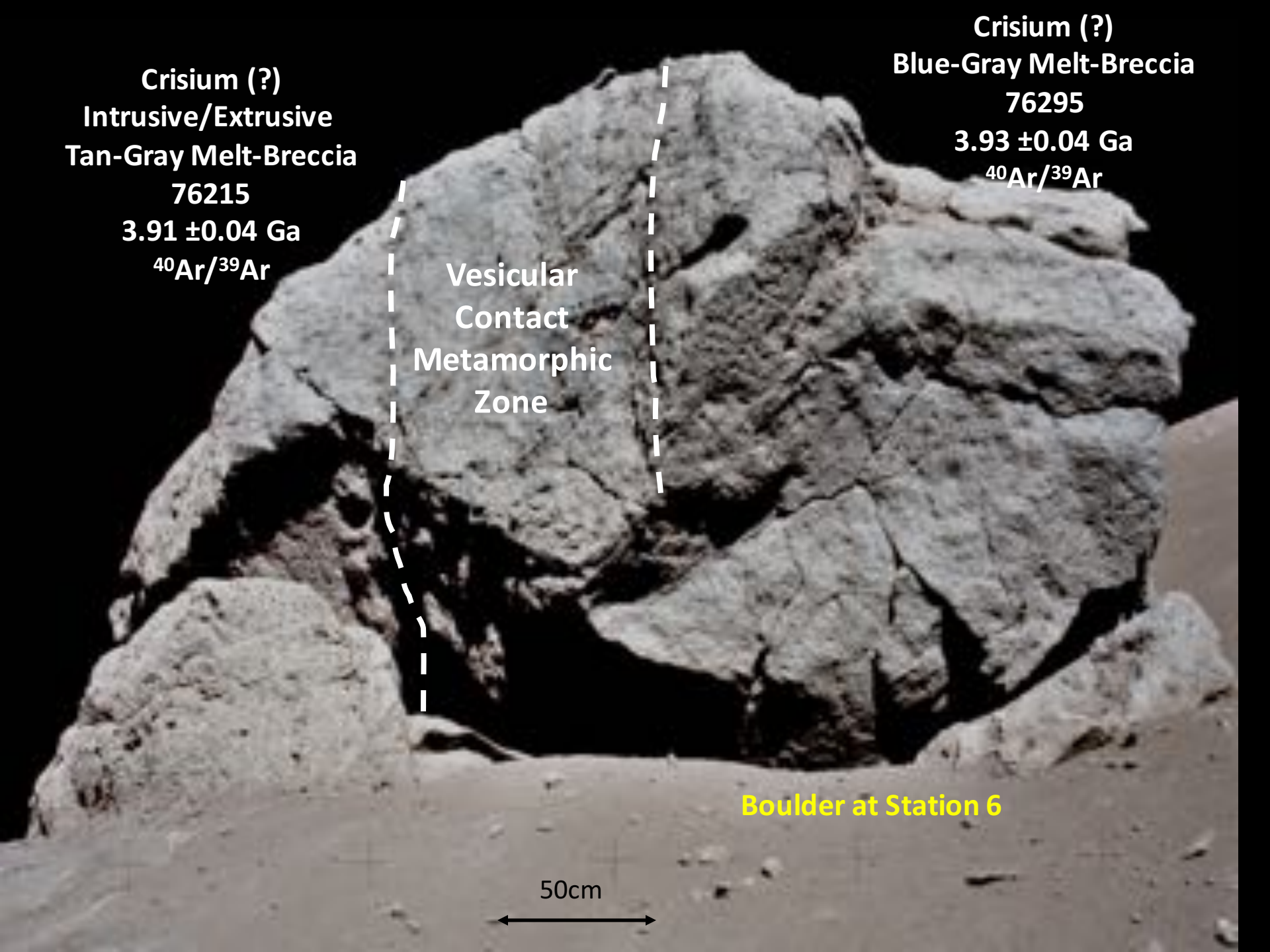

73001/2

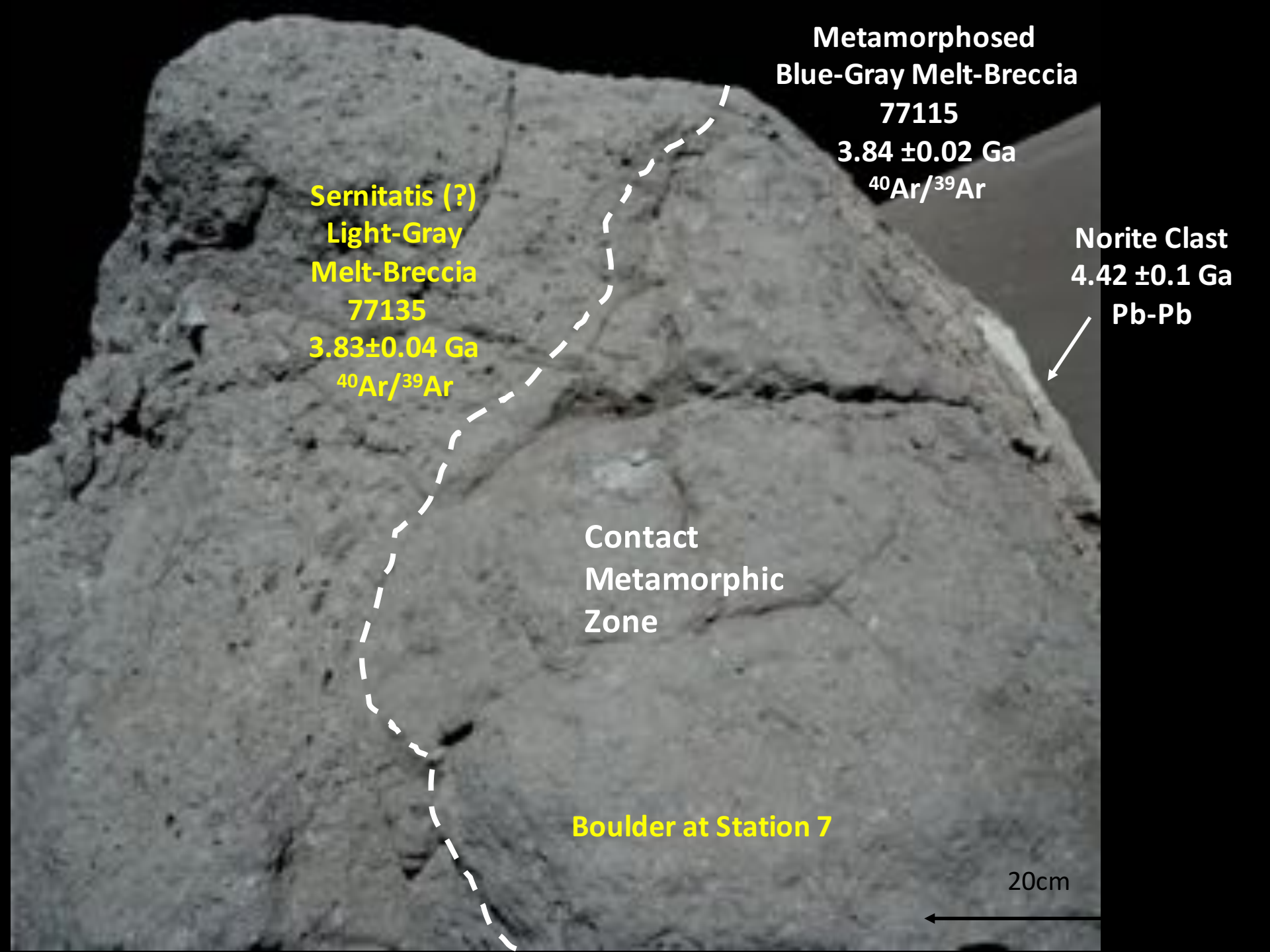

74220-60
74001/2

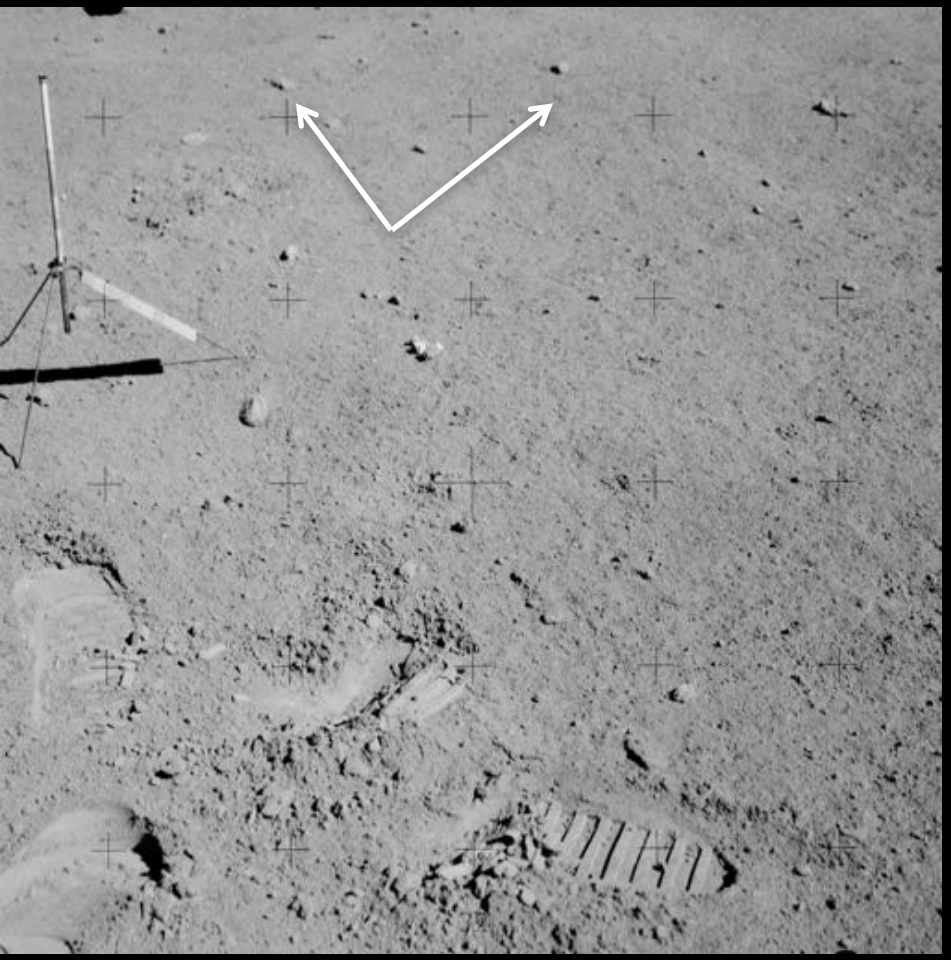

C
A
B
75055
75075

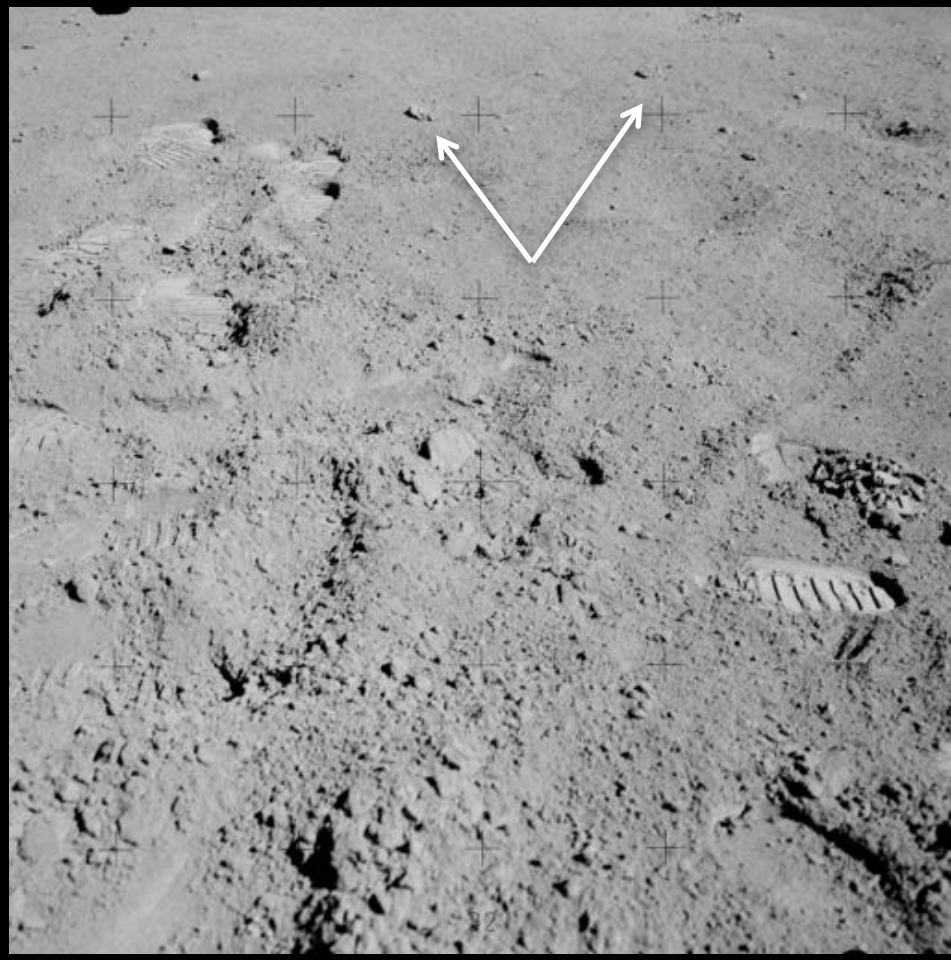
B
A
75055
x
C
75075
x


75055

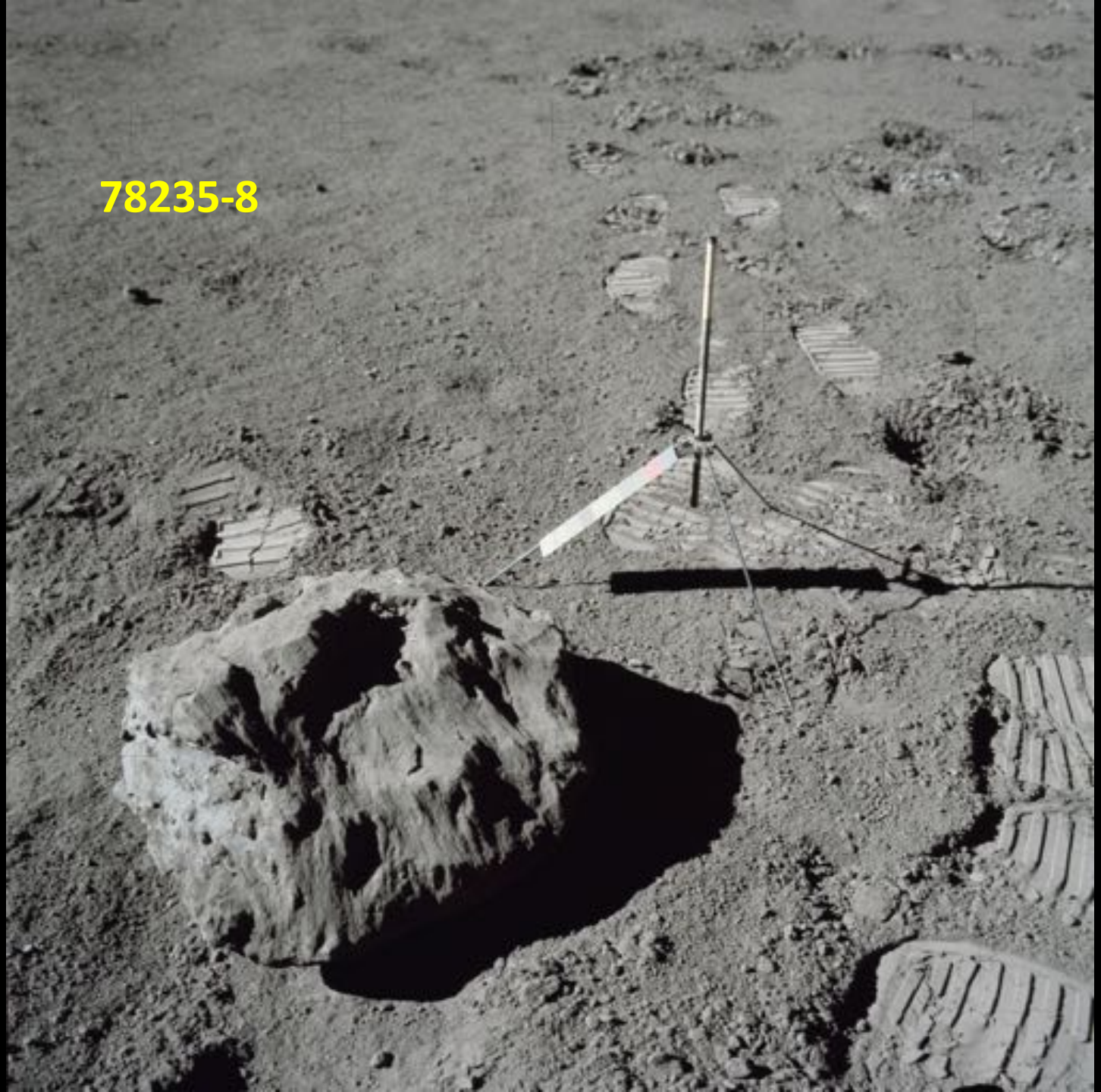

Crisium (?)
Intrusive/Extrusive
Tan-Gray Melt-Breccia
76215
3.91 ±0.04 Ga
$^{40}Ar/^{39}Ar$
Vesicular
Contact
Metamorphic
Zone
Crisium (?)
Blue-Gray Melt-Breccia
76295
3.93 ±0.04 Ga
$^{40}Ar/^{39}Ar$
Boulder at Station 6
50cm

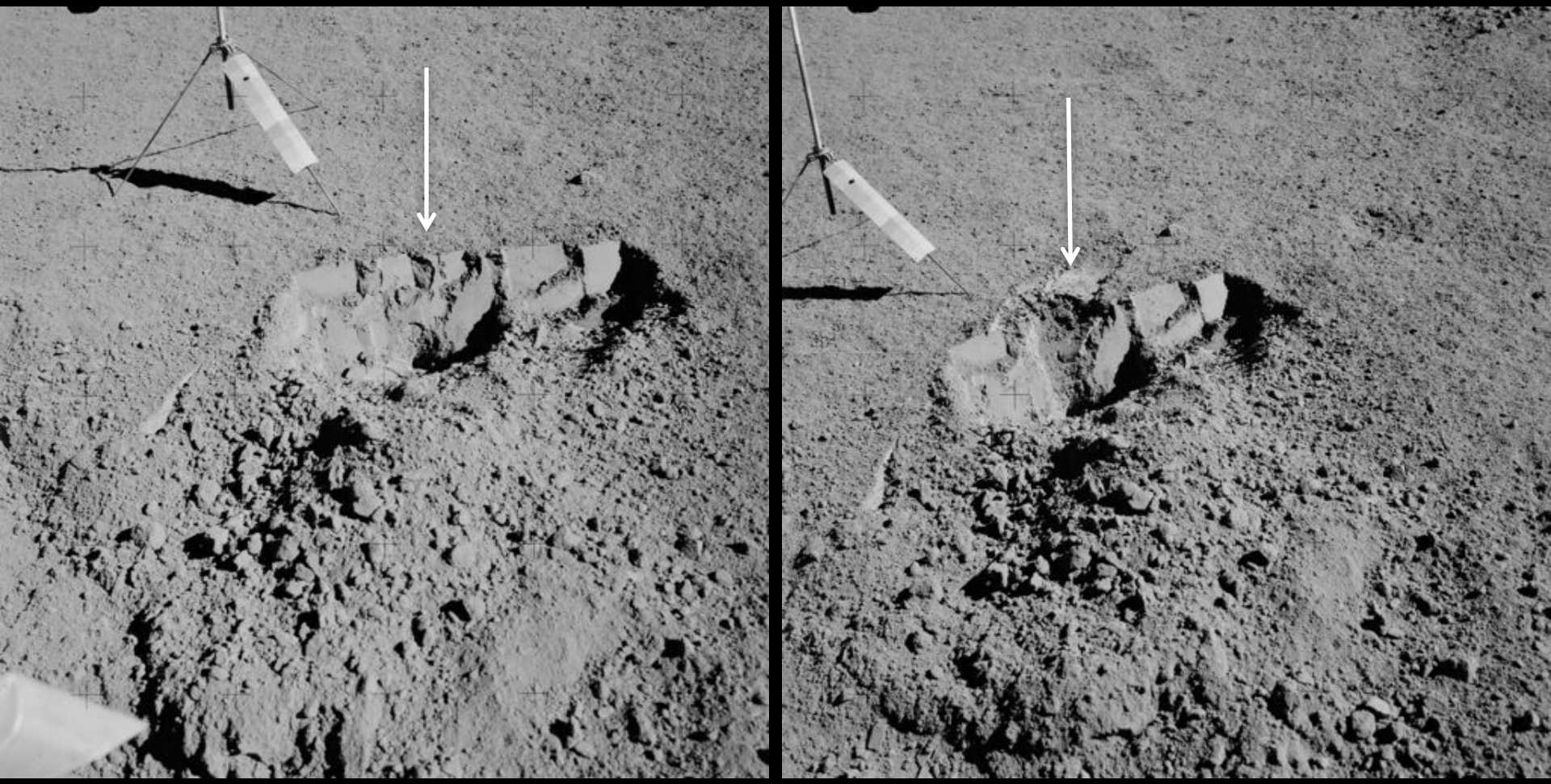

Metamorphosed
Blue-Gray Melt-Breccia
77115
3.84 ±0.02 Ga
$^{40}Ar/^{39}Ar$
Sernitatis (?)
Light-Gray
Melt-Breccia
77135
3.83±0.04 Ga
$^{40}Ar/^{39}Ar$
Norite Clast
4.42 ±0.1 Ga
Pb-Pb
Contact
Metamorphic
Zone
Boulder at Station 7
20cm





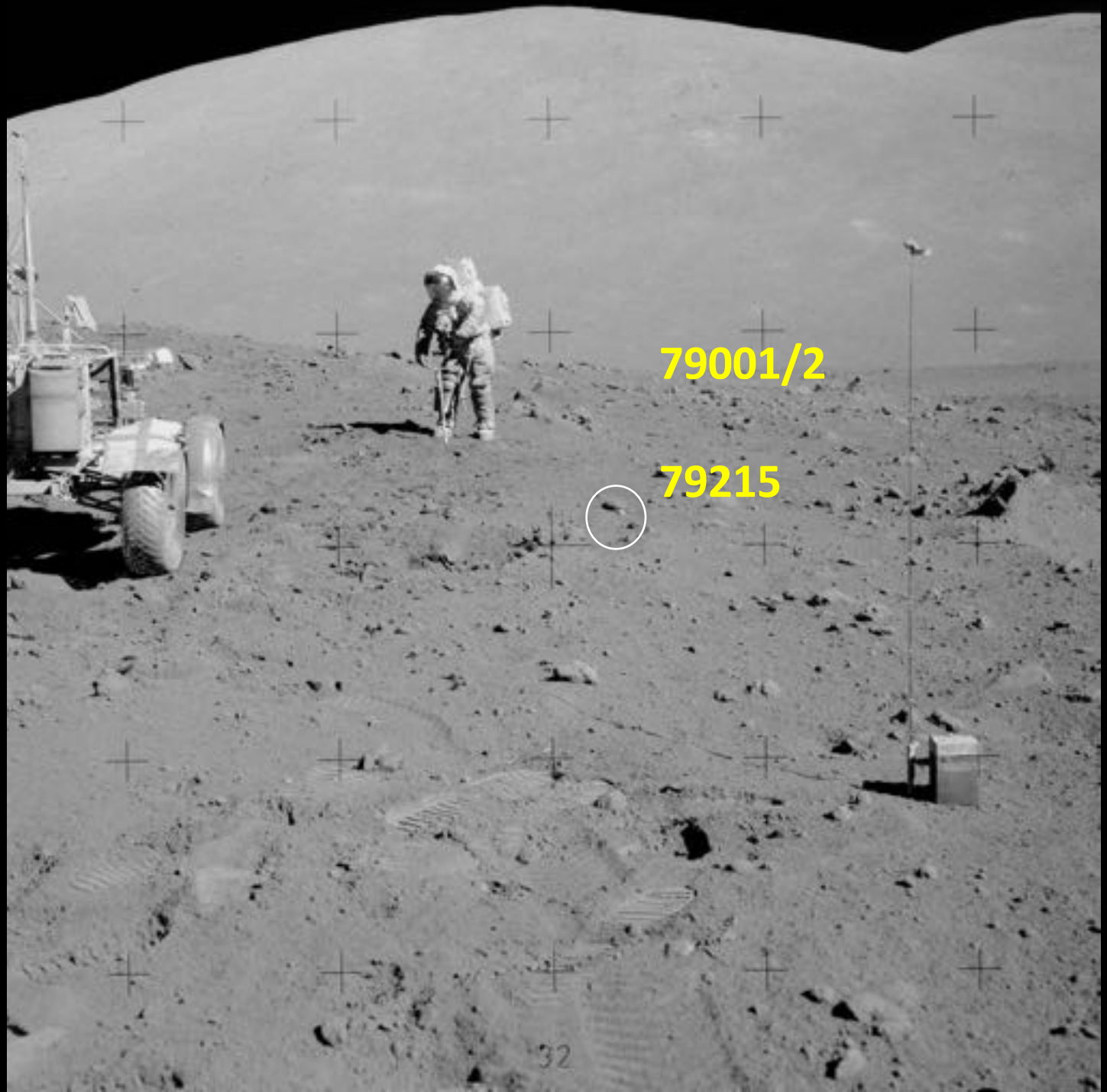
76500


78235-8



78420-80

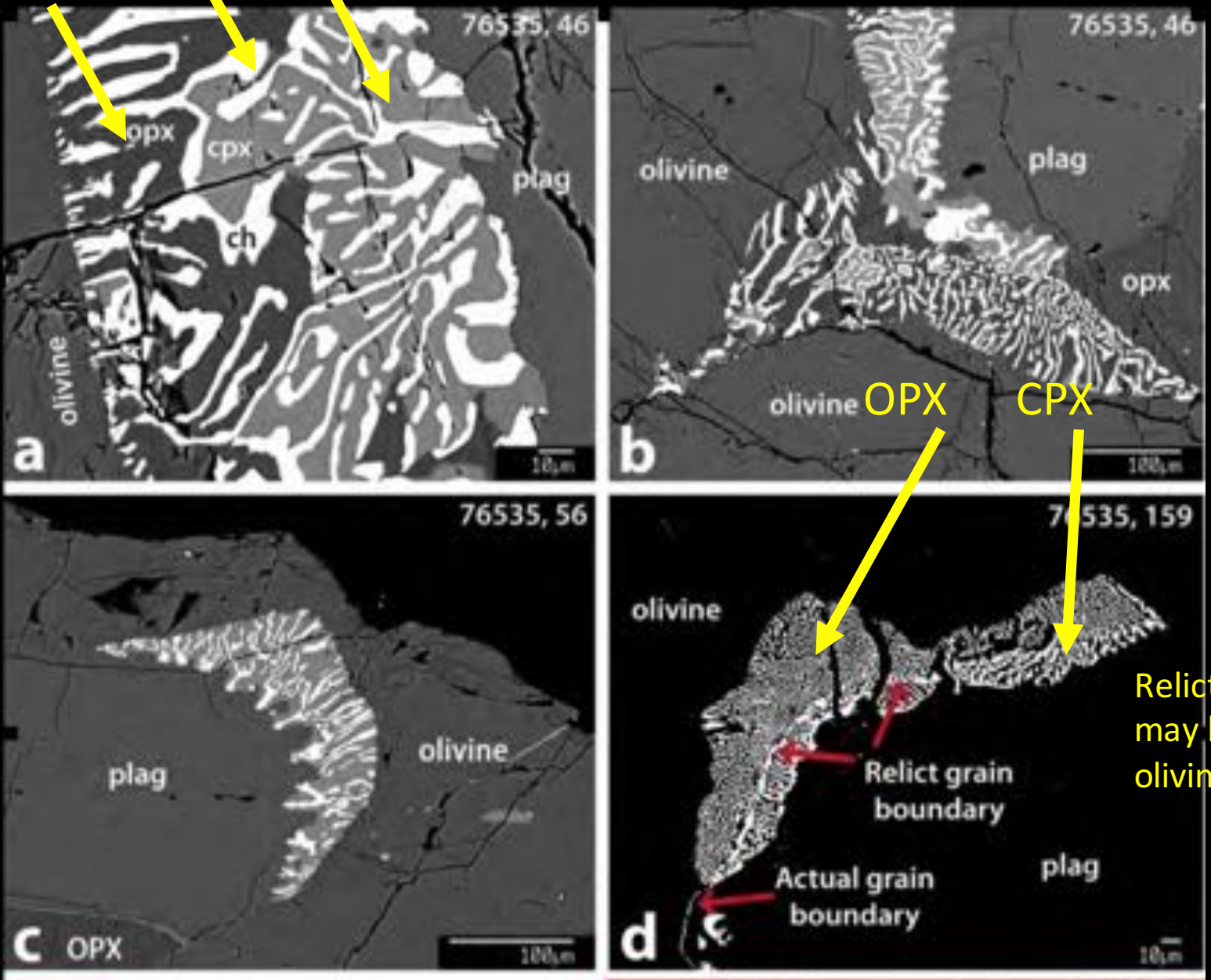
79115-195


79001/2
79215
32

Orientation of 70019

70215

76535
BSE Images from Elardo et al. 2012



Relict grain boundary may be pre-garnet, olivine-plag boundary