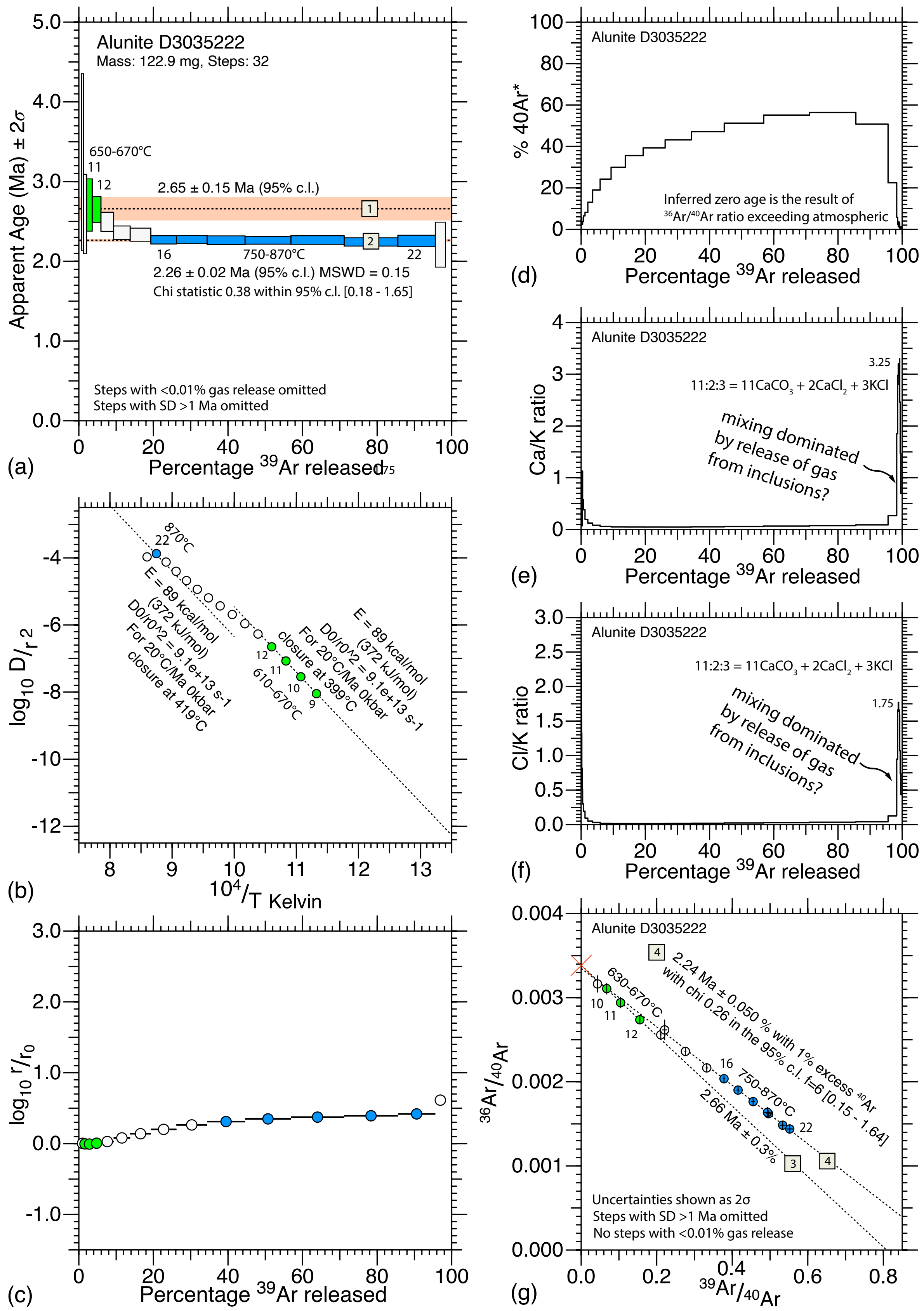
Alunite D3035222
Mass: 122.9 mg, Steps: 32
650-670°C
11
12
2.65 ± 0.15 Ma (95% c.l.)
1
2
16
750-870°C
22
2.26 ± 0.02 Ma (95% c.l.) MSWD = 0.15
Chi statistic 0.38 within 95% c.l. [0.18 - 1.65]
Steps with <0.01% gas release omitted
Steps with SD >1 Ma omitted
Apparent Age (Ma) ± 2σ
Percentage 39Ar released
(a)
Alunite D3035222
Inferred zero age is the result of
36Ar/40Ar ratio exceeding atmospheric
% 40Ar*
Percentage 39Ar released
(d)
Alunite D3035222
11:2:3 = 11CaCO3 + 2CaCl2 + 3KCl
3.25
mixing dominated
by release of gas
from inclusions?
Ca/K ratio
Percentage 39Ar released
(e)
870°C
22
E = 89 kcal/mol
(372 kJ/mol)
D0/r0^2 = 9.1e+13 s-1
For 20°C/Ma 0kbar
closure at 419°C
12
11
10
9
610–670°C
closure at 399°C
log10 D/r2
10^4/T Kelvin
(b)
Alunite D3035222
11:2:3 = 11CaCO3 + 2CaCl2 + 3KCl
1.75
mixing dominated
by release of gas
from inclusions?
Cl/K ratio
Percentage 39Ar released
(f)
log10 r/r0
Percentage 39Ar released
(c)
Alunite D3035222
4
2.24 Ma ± 0.050 % with 1% excess 40Ar
with chi 0.26 in the 95% c.l. f=6 [0.15 - 1.64]
630-670°C
10
11
12
16
750-870°C
22
2.66 Ma ± 0.3%
3
4
Uncertainties shown as 2σ
Steps with SD >1 Ma omitted
No steps with <0.01% gas release
36Ar/40Ar
39Ar/40Ar
(g)