

**EXP#20G13273 > JT40 > Groundmass > HOUCK (19-27)**  
**SOUTH PARK > AGATE MOUNTAIN QUAD**  
**20-OSU-01 (1F50-20) > Incremental Heating > Daniel Heaton**

**Information on Analysis  
and Constants Used in Calculations**

Project = **HOUCK (19-27)**  
Sample = **JT40**  
Material = **Groundmass**  
Location = **Agate Mountain Quad**  
Region = **South Park**  
Analyst = **Daniel Heaton**  
Irradiation = **20-OSU-01 (1F50-20)**  
Position = X: 0 | Y: 0 | Z/H: 65.46161 mm  
FCT-NM Age = **28.201 ± 0.023 Ma**  
FCT-NM Reference = **Kuiper et al (2008)**  
FCT-NM 40Ar/39Ar Ratio = **10.03087 ± 0.01154**  
FCT-NM J-value = **0.00154777 ± 0.00000178**  
Air Shot 40Ar/36Ar = **298.0370 ± 0.2742**  
Air Shot MDF = **1.00043927 ± 0.00034819 (LIN)**  
Experiment Type = **Incremental Heating**  
Extraction Method = **Bulk Laser Heating**  
Heating = **60 sec**  
Isolation = **6.12 min**  
Instrument = **ARGUS-VI-G**  
Preferred Age = **Plateau Age**  
Age Classification = **Eruption Age**  
IGSN = **Undefined**  
Rock Class = **Undefined**  
Lithology = **Undefined**  
Lat-Lon = **Undefined - Undefined**  
Age Equations = **Min et al. (2000)**  
Negative Intensities = **Allowed**  
Collector Calibrations = **36Ar**  
Decay 40K = **5.463 ± 0.107 E-10 1/a**  
Decay 39Ar = **2.940 ± 0.016 E-07 1/h**  
Decay 37Ar = **8.230 ± 0.012 E-04 1/h**  
Decay 36Cl = **2.257 ± 0.015 E-06 1/a**  
Decay 40K(EC,β<sup>+</sup>) = **0.580 ± 0.014 E-10 1/a**  
Decay 40K(β<sup>-</sup>) = **4.884 ± 0.099 E-10 1/a**  
Atmospheric 40/36(a) = **305.78 ± 1.47**  
Atmospheric 38/36(a) = **0.1885 ± 0.0003**  
Production 39/37(ca) = **0.0006425 ± 0.0000059**  
Production 38/37(ca) = **0.0001800 ± 0.0000173**  
Production 36/37(ca) = **0.0002703 ± 0.0000005**  
Production 40/39(k) = **0.000607 ± 0.000059**  
Production 38/39(k) = **0.012077 ± 0.000011**  
Production 36/38(cl) = **262.80 ± 1.71**  
Scaling Ratio K/Ca = **0.430**  
Abundance Ratio 40K/K = **1.1700 ± 0.0100 E-04**  
Atomic Weight K = **39.0983 ± 0.0001 g**

Excess Initial 40Ar/36Ar = 305.78 ± 0.48 (%SD).

| Results          | 40(a)/36(a) ± 2σ      | 40(r)/39(k) ± 2σ           | Age ± 2σ (Ma)        | MSWD        | 39Ar(k) (%n)        | K/Ca ± 2σ   |
|------------------|-----------------------|----------------------------|----------------------|-------------|---------------------|-------------|
| Age Plateau      |                       | 12.31214 ± 0.00364 ± 0.03% | 34.55 ± 0.08 ± 0.23% | 0.46<br>95% | 49.58<br>15         | 4.03 ± 0.12 |
|                  |                       | Full External Error ± 1.79 |                      | 1.76        | 2σ Confidence Limit |             |
|                  |                       | Analytical Error ± 0.01    |                      | 1.0000      | Error Magnification |             |
| Total Fusion Age |                       | 12.43964 ± 0.00342 ± 0.03% | 34.91 ± 0.08 ± 0.23% |             | 39                  | 3.64 ± 0.01 |
|                  |                       | Full External Error ± 1.81 |                      |             |                     |             |
|                  |                       | Analytical Error ± 0.01    |                      |             |                     |             |
| Normal Isochron  | 306.59 ± 2.32 ± 0.76% | 12.31205 ± 0.00433 ± 0.04% | 34.55 ± 0.08 ± 0.23% | 0.47<br>94% | 49.58<br>15         |             |
|                  |                       | Full External Error ± 1.79 |                      | 1.78        | 2σ Confidence Limit |             |
|                  |                       | Analytical Error ± 0.01    |                      | 1.0000      | Error Magnification |             |
| Inverse Isochron | 306.90 ± 2.32 ± 0.76% | 12.31108 ± 0.00433 ± 0.04% | 34.55 ± 0.08 ± 0.23% | 0.46<br>95% | 49.58<br>15         |             |
|                  |                       | Full External Error ± 1.79 |                      | 1.78        | 2σ Confidence Limit |             |
|                  |                       | Analytical Error ± 0.01    |                      | 1.0000      | Error Magnification |             |
|                  |                       |                            |                      | 19%         | Spreading Factor    |             |

