An initial study showed that "some of the clasts and grains experienced generation of modifications," a conclusion that was examined in light of our data. M34-M70 are anorthositic regolith breccias [1]. The petrology and mineralogy of samples of the breccia as located in M34 were reported by [7]. M14 and M70, as an example, show mafic fractionation [4]. The mafic fractionation is suggested by [7]. M14 and M70, as an example, show mafic fractionation [4].

**Figure 2.** Age spectra and data. Figure 2. Ar content and age spectra for M34-M70. Data were presented by [7]. The data were presented by [7].

**Figure 1.** Petrography of anorthositic regolith breccia. Figure 1. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 3.** Petrography of anorthositic regolith breccia. Figure 3. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 4.** Petrography of anorthositic regolith breccia. Figure 4. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 5.** Petrography of anorthositic regolith breccia. Figure 5. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 6.** Petrography of anorthositic regolith breccia. Figure 6. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 7.** Petrography of anorthositic regolith breccia. Figure 7. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 8.** Petrography of anorthositic regolith breccia. Figure 8. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 9.** Petrography of anorthositic regolith breccia. Figure 9. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 10.** Petrography of anorthositic regolith breccia. Figure 10. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 11.** Petrography of anorthositic regolith breccia. Figure 11. Petrography of anorthositic regolith breccia. Data were presented by [7].

**Figure 12.** Petrography of anorthositic regolith breccia. Figure 12. Petrography of anorthositic regolith breccia. Data were presented by [7].
Isochrons. Isochrons for $^{40}$Ar/$^{36}$Ar vs. $^{39}$Ar/$^{36}$Ar were plotted for the high-temperature data after removing a small cosmogenic $^{36}$Ar component ($^{36}$Ar$_c$) calculated using the relation $^{36}$Ar$_c$ = 0.65$^{36}$Ar. The isochron age for M36 is 3.54±0.04 Ga (Fig. 3a), about 2σ less than the high-temperature weighted average above. For M34 we obtain 3.23±0.31 Ga, and for M70 3.05±0.59 Ga (Fig. 3b). The isochron ages cannot be clearly distinguished because of the relatively large uncertainties for the M34 and M70 ages. Nevertheless, the ages of M34 and M36 agree only at the limits of uncertainty, a strong hint that M34, and probably M70 as well because of its strong compositional pairing with M34, experienced a major outgassing event more recently than did M36. Incorporation in the laboratory of 0.5-1.8×10$^{-8}$ cm$^3$ STP/g of atmospheric $^{40}$Ar on the production rate of $^{38}$Ar, $P_{^{38}} = 0.22 \times 10^8$ cm$^3$ STP/(g-Ma) [9], based on a Ca concentration of ~12 wt% in MIL meteorites [10]. The results (Ma) are: 1.3±0.6 (M34) (n=5); 50±10 (M36) (n=5) and 1.6±0.3 Ma (M70)(n=6). (The relative CRE ages in Fig. 4 show individual data). The apparent CRE ages for M34 and M70 are short and agree well within their error limits, suggesting that they were excavated to (or from) the lunar surface at the same time. A low values of “4-π” CRE ages for lunar meteorites rarely exceed 5 Ma [11], suggesting that M36 was excavated to the lunar surface much earlier.

Discussion and Conclusions: The high-temperature Ar/Ar ages of M34, M36, and M70 are much younger than the anorthositic protolith from which they were formed. The ages fall within the range of ages for impact melt clasts from other lunar feldspathic regolith breccias, which indicate a broad Ar/Ar age peak between 3.0 and 3.5 Ga [12]. M34 and M70 are compositionally similar to Apollo 16 FANs; M36 to Apollo 16 soils. One large Apollo 16 FAN (60015) has a similarly young Ar/Ar age [13]. Also, from an Ar/Ar study of 7 ‘rocks’ extracted from Apollo regolith sample 63503, [14] inferred a major impact event in the Cayley plains ~3.3 Ga ago and perhaps a broader bombardment of the Moon at that time. Orbital geochemical data (cf. [1,2]), show central-peak craters in the lunar highlands to be suitable sources for highly aluminous M70 and M34, but higher trace element abundances in M36 suggests an origin in the vicinity of the Procellarum KREEP terrain (PKT).