Introduction
Station 5 was located on the rim of Camelot Crater where several basalt boulders were sampled (figure 2). Camelot Crater is about 650 meter diameter and the rim contained samples of the basalt flows in the Taurus-Littrow Valley. Soil sample 75080 was collected from between the basalt boulders and contained several fragments of basalt (75085-89) (figure 1). Basalt fragments from 75083 were dated from 3.67 – 3.75 b.y.

Petrography
The maturity index Is/FeO for 75081 is 40 (submature) (Morris 1978), however there is a substantial agglutinate component. The grain size distribution and modal lithology was determined by Butler and King (1974), Green et al. (1975) and Heiken and McKay (1974). Von Guten et al. (1979) also determined the
grain size and calculated that 75081 was made of about 84% mare basalt, 7.6% anorthosite, 1.4% KREEP, ~7% orange glass and 0.6% meteoritic material. Meyer (1973) tabulated 56 basalt particles, 8 agglutinates, 15 dark matrix breccias and only 2 feldspathic particles in the 4 – 10 mm coarse-fines.

Goldstein et al. (1974) reported the composition of iron particles in 75081 (figure 8).

The maturity of 75081 is $I/FeO = 40$ and the average grain size is 80 microns (Morris 1978, Graf 1993).

Chemistry
Numerous authors reported analyses of 75081 (table 1). Evensen et al. (1973) and Duncan et al. (1974) analyzed numerous size fractions of 75081.

LSPET (1973) and Moore et al. (1974) reported 115 ppm carbon for 75081 (figure 4). Norris et al. (1983) reported carbon $= 81$ ppm and nitrogen $= 39$ ppm in 75080 and DesMarais et al. (1975) reported 105 ppm carbon. Pillinger et al. (1974) found the carbon and metallic iron contents could be correlated. Goel et al. (1975) found 65 ppm nitrogen.

75081 has been used to study the redistribution of volatile elements in the lunar regolith and by a nearby crater (Krahenbuhl et al. 1977, Wegmuller et al. 1980, Cirlin and Housley 1981 and Reed et al. 1977). Von Gunten et al. (1979) carefully studied the composition of 75081 as function of grain size.

Radiogenic age dating
Huneke et al. (1973) and Papike et al. (1974) have reported ages of particles from 75080 (table and figure 7).

Cosmogenic isotopes and exposure ages
The $^{38}$Ar exposure age is 310 m.y. (Huneke et al. 1973). Bull and Durrani (1975) and Goswami and Lal (1974) studied the fossil tracks caused by cosmic rays and solar flares.

Other Studies
Bogard et al. (1974), Hintenberger et al. (1975) and Alexander et al. (1977) reported the isotopic ratios of rare gasses in 75081.

Cirlin and Housley (1981) showed that the Cd and Zn were located on the surfaces of grains in 75081 (figure 9). The optical spectra was obtained by Adams et al. (1974) (figure 10).
Average grain size = 80 microns

Figure 5: Grain size distribution for 75080 (Graf 1993, data from McKay).

Figure 7: Ar release pattern for basalt fragments from 75083 (Huneke et al. 1973).

Figure 6: The trace element pattern for 75081 is like that of the mare basalt.

Figure 8: Chemical composition of iron grains in 75081 (Goldstein et al. 1974).

Figure 9: Cd on surface of soil particle from 75081 (Cirlin and Housley 1981).

Summary of Age Data for 75083

<table>
<thead>
<tr>
<th>Method</th>
<th>Age (b.y.)</th>
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</thead>
<tbody>
<tr>
<td>Ar/Ar Huneke et al. 1973</td>
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</tr>
<tr>
<td>Ar/Ar Papike et al. 1974</td>
<td>3.77 ± 0.05</td>
</tr>
<tr>
<td>Ar/Ar</td>
<td>3.75 ± 0.04</td>
</tr>
<tr>
<td>Ar/Ar</td>
<td>3.67 ± 0.1</td>
</tr>
<tr>
<td>Ar/Ar</td>
<td>3.74 ± 0.04</td>
</tr>
<tr>
<td>Ar/Ar</td>
<td>3.68 ± 0.1</td>
</tr>
<tr>
<td>Ar/Ar</td>
<td>3.68 ± 0.07</td>
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</tbody>
</table>

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Figure 10: Spectra of 75081 (Adams et al. 1974).
Table 1a. Chemical composition of 75081.

<table>
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<tr>
<th>reference</th>
<th>Laul 74</th>
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<th>Korotev92</th>
<th>Duncan74</th>
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<td>9.4</td>
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<td>0.11</td>
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<td>0.16</td>
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sum

| Sc ppm     | 61      | 66.9     | 65.9      | 65.9     |
| V          | 100     | 111      | 103       | 82       | 75        |
| Cr         | 2942    | 3147     | 3079      |          |
| Co         | 27      | 29.9     | 31.2      | 25       |
| Ni         | 100     | 140      | 143       |          |
| Cu         | 3.2     | 4.1      | 5         | 11.5     |
| Zn         | 35      | 31       |           | 12       |

Ga
Ge ppb
As
Se
Rb
Sr
165     159     (a) 170 210     (b) 149 154 164 180     (a) 163 169     (c)
Y
77      73      (a) 73.7 71.2 67.3 65.5     (a)
Zr
230     229 211 (a) 230 180     (b) 241 235 224 238     (a)
Nb
20      19     (a) 20.2 19.8 20.2 20.6     (a)

Mo
Ru
Rh
Pd ppb
Ag ppb
Cd ppb
In ppb
Sn ppb
Sb ppb
Te ppb
Cs ppm

Ba
100     108     95 89 91 112     (a) 83.7 88.8     (c)
La
7.2     8.01    7.91     (b)
Ce
30      24.1    24.2     (b)
Pr
Nd
25      21      23     (b)
Sm
7.6     8.8 8.7     (b)
Eu
1.7     1.75    1.7     (b)
Gd
Tb
2       2.15    2.17     (b)
Dy
12      12      12     (b)
Ho
Er
Tm
Yb
7.3     8.12    7.95     (b)
Lu
1       1.12    1.1     (b)
Hf
7       7.82    7.64     (b)
Ta
1.3     1.38    1.34     (b)

W ppb
Re ppb
Os ppb
Ir ppb
5       5.4 6     (b)
Pt ppb
Au ppb
3       6 7     (b)
Th ppm
0.6     0.75    0.81     (b)
U ppm
1       0.8     0.8     (b)

technique: (a) XRF, (b) INAA, (c) IDMS

Lunar Sample Compendium
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<table>
<thead>
<tr>
<th>Reference</th>
<th>Baedecker74</th>
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<td>S %</td>
<td>0.12 (b)</td>
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<tr>
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</tr>
</tbody>
</table>

Sc ppm | 67 (b) | 66.4 (b) | 67 (b) |
V      |       | 100 (b)  |        |
Cr     | 3000  | 3220 (b) | 2942 (b) |
Co     | 33 (b) | 30.6 (b) | 30 (b) |
Ni     | 125 (d) | 100 (b) | 110 (b) | 113 (d) | 120 (d) |
Cu     |        |         |         |         |         |         |
Zn     | 26 (d) | 33 (b)  | 35 (b) | 27 (d) | 31 (d) |
Ga     | 5.1 (d) | 6.4 (b) |
Ge ppb | 207 (d) |         | 190 (d) |
As     |        |         |         |         |         |         |
Se     |        | 250 (d) | 280 (d) |         |         |         |
Rb     | 1.1 (b) |        | 1.2 (d) | 1.1 (d) |         |         |
Sr     | 164 (b) | 160 (b) |        | 160 (d) |         |         |
Y      | 75 (b)  |        |         |         |         |         |
Zr     | 251 (b) | 220 (b) |        |         |         |         |
Nb     | 20 (b)  |        |         |         |         |         |
Mo     |        |         |         |         |         |         |
Ru     |        |         |         |         |         |         |
Rh     |        |         |         |         |         |         |
Pd ppb |        |         |         |         |         |         |
Ag ppb |        |         |         |         |         |         |
Cd ppb | 32 (d) | 32 (d) | 33 (d) |         |         |         |
In ppb | 2 (d)  |        | 2.7 (d) |         |         |         |
Sn ppb |        |         |         |         |         |         |
Sb ppb |        |         | 0.67 (d) | 1.3 (d) |         |         |
Te ppb | 10 (d) |         |         |         |         |         |
Cs ppm |        | 0.047 (d) | 0.047 (d) |         |         |         |
Ba     | 104 (b) | 100 (b) |         | 95 (d)  |         |         |
La     | 7.96 (b) | 7.7 (b) |        |         |         |         |
Ce     | 23 (b) | 24.2 (b) | 28 (b) |        |         |         |
Pr     |        |         |         |         |         |         |
Nd     | 22 (b) | 25 (b)  |        |         |         |         |
Sm     | 8.78 (b) | 8.4 (b) |        |         |         |         |
Eu     | 1.8 (b) | 1.72 (b) | 1.8 (b) |        |         |         |
Gd     | 2.2 (b) | 2.16 (b) | 2.1 (b) |        |         |         |
Tb     |        |         |         |         |         |         |
 Dy    | 13 (b)  |        |         |         |         |         |
Ho     | 3 (b)  |        |         |         |         |         |
Er     |        |         |         |         |         |         |
 Tm    |        |         |         |         |         |         |
Yb     | 6.4 (b) | 8.04 (b) | 7.4 (b) |        |         |         |
Lu     | 1.11 (b) | 0.98 (b) |        |         |         |         |
Hf     | 8.3 (b) | 7.73 (b) | 7.4 (b) |        |         |         |
Ta     | 1.4 (b) | 1.36 (b) | 1.4 (b) |        |         |         |
W ppb  |        |         |         |         |         |         |
Re ppb |        |         |         | 0.47 (d) |         |         |
Os ppb |        |         |         |         |         |         |
Ir ppb | 5 (d) | 5.7 (b) | 10 (b) | 5.36 (d) | 5.4 (d) |         |
Pt ppb |        |         |         |         |         |         |
Au ppb | 1.4 (d) | 2.1 (b) | 1.7 (d) | 1.7 (d) |         |         |
Th ppm | 0.6 (b) | 0.78 (b) | 0.9 (b) |        |         |         |
U ppm  | 0.2 (b) | 0.25 (b) | 0.24 (d) | 0.26 (d) |         |         |         |

Technique: (a) XRF, (b) INAA, (c) IDMS, (d) RNAA

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References for 75080


Meyer C. (1973) Apollo 17 Coarse Fines (4-10 mm) Sample Location, Classification and Photo Index. Curator Report. pp. 182.


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