# 65901 and 65920

Soil and rake residue

662 and 12 grams

*Figure 1: Close-up photo of area where 65900 and 65910 were collected. AS16-107-17509.*

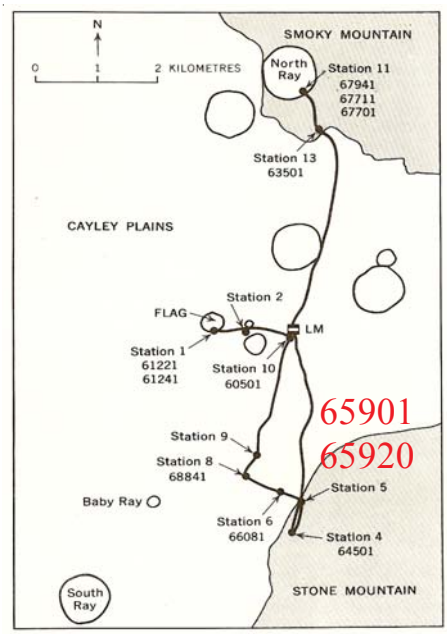



*Figure 2: Map of Apollo 16 site with station 5 indicated.*

## Mineralogical Mode

From Butler et al. 1973

| | |
|---|---|
| Olivine | 0.7 % |
| Pyroxene | 1.8 |
| Plagioclase | 10.9 |
| Glass | 19.7 |
| Rock Fragments | 33.5 |
| Welded Fragments | 44.4 |

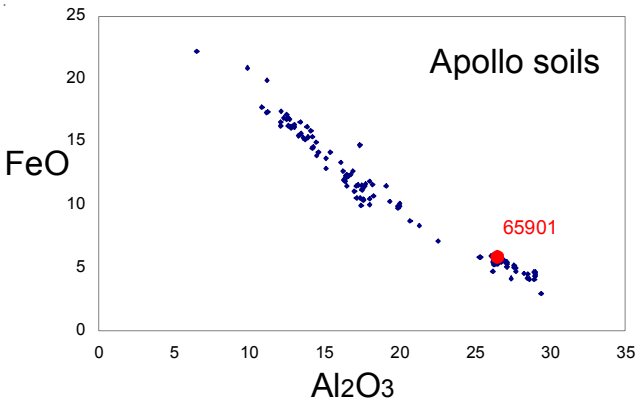



*Figure 3: Composition of 65901 compared with all Appollo soils.*

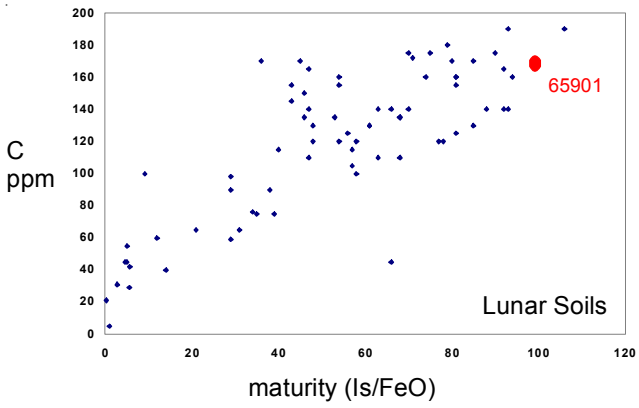



*Figure 4: Carbon content and maturity index for 65901.*

## Introduction

Station 5 was at a small carter on the base of Stone Mountain (figures 1 and 2). 65900 is a sub-surface sample from 5 – 15 cm deep on the inside wall of the small crater. 65920 is the residue from a rake sample at the same location.

## Petrography

65901 is a very mature soil ($I_s$/FeO = 99). It has an average grain size of 85 microns (figure 6). Butler et al. (1973) reported a high percentage of glass.

## Chemistry

The composition of 65901 was reported by Laul and Schmitt (1973) and is similar to the other soils from station 5 (and for most of the Cayley Plain, for that matter).

Moore et al. (1973) determined 170 ppm carbon for 65901 (figure 4). Kerridge et al. (1975) and Moore and Lewis (1975) reported 116 ppm and 115 ppm nitrogen for 65901.

## Cosmogenic isotopes and exposure ages

Eldridge et al. (1973) determined the cosmic-ray-induced activity of $^{26}$Al = 109 dpm/kg and $^{22}$Na = 32 dpm/kg. Clark and Keith (1973) determined the cosmic-ray-induced activity of $^{26}$Al = 124 dpm/kg, $^{22}$Na = 42 dpm/kg, $^{54}$Mn = 30 dpm/kg, $^{56}$Co = 9 and $^{46}$Sc = <7 dpm/kg. Walton et al. (1973) determined a Ne exposure age of 210 m.y.

## Other Studies

Walton et al. (1973) determined the rare gas content and isotopic ratios for 65901.

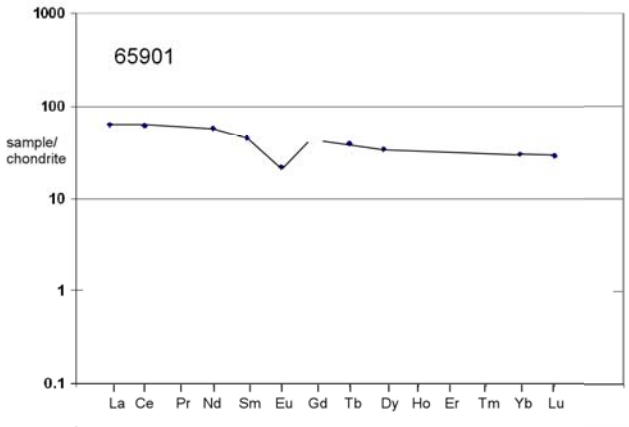
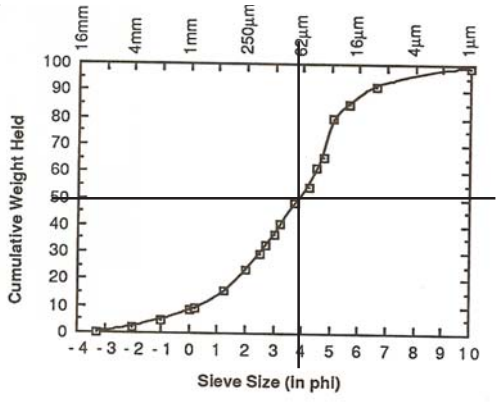



*Figure 5: Normalized rare-earth-element diagram for 65901.*




average grain size = 85 microns

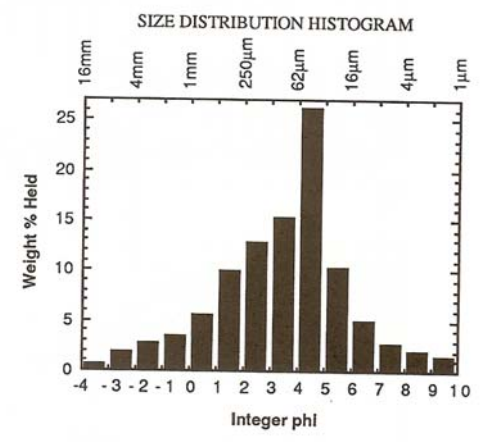
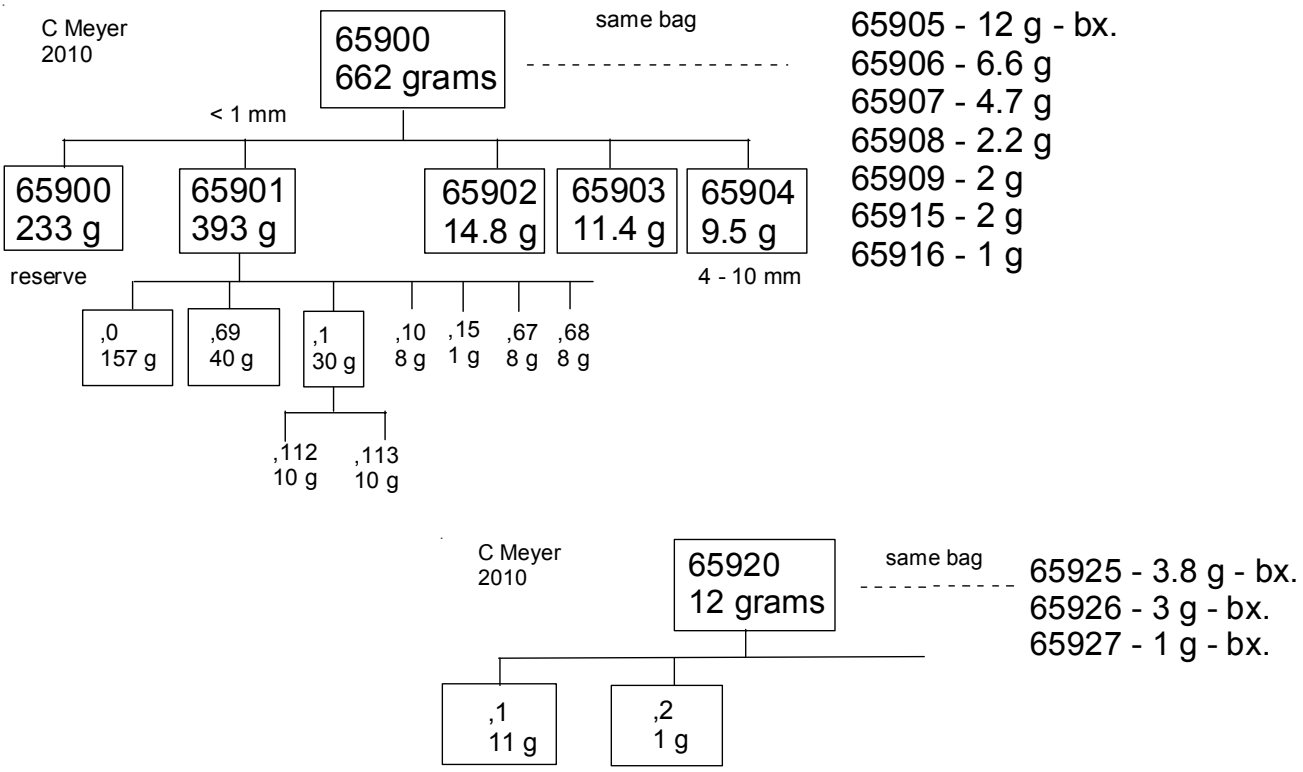



*Figure 6: Grain size distribution of 65900 (Graf 1993, from data by Butler et al.)*



## Table 1. Chemical composition of 65901.

| *reference* | Clark73 | | Eldridge73 | | Laul73 | | ave. st. 5 Korotev81 |
|---|---|---|---|---|---|---|---|
| *weight* | | | | | | | |
| SiO2 % | | | | | | | 45.3 |
| TiO2 | | | | | 0.61 | (b) | 0.65 |
| Al2O3 | | | | | 26.5 | (b) | 26.2 |
| FeO | | | | | 5.8 | (b) | 5.85 |
| MnO | | | | | 0.07 | (b) | 0.075 |
| MgO | | | | | 6.2 | (b) | 6.25 |
| CaO | | | | | 15 | (b) | 15 |
| Na2O | | | | | 0.47 | (b) | 0.45 |
| K2O | 0.13 | (a) | 0.12 | (a) | 0.11 | (b) | 0.134 |
| P2O5 | | | | | | | |
| S % | | | | | | | |
| *sum* | | | | | | | |
| | | | | | | | |
| Sc ppm | | | | | 11 | (b) | 10.1 |
| V | | | | | 25 | (b) | 25 |
| Cr | | | | | 753 | (b) | 780 |
| Co | | | | | 30 | (b) | 31 |
| Ni | | | | | 500 | (b) | 430 |
| Cu | | | | | | | |
| Zn | | | | | | | |
| Ga | | | | | | | |
| Ge ppb | | | | | | | |
| As | | | | | | | |
| Se | | | | | | | |
| Rb | | | | | | | 3.3 |
| Sr | | | | | | | 162 |
| Y | | | | | | | 48 |
| Zr | | | | | 160 | (b) | 205 |
| Nb | | | | | | | |
| Mo | | | | | | | |
| Ru | | | | | | | |
| Rh | | | | | | | |
| Pd ppb | | | | | | | |
| Ag ppb | | | | | | | |
| Cd ppb | | | | | | | |
| In ppb | | | | | | | |
| Sn ppb | | | | | | | |
| Sb ppb | | | | | | | |
| Te ppb | | | | | | | |
| Cs ppm | | | | | | | |
| Ba | | | | | 140 | (b) | 130 |
| La | | | | | 15.1 | (b) | 14.4 |
| Ce | | | | | 37 | (b) | |
| Pr | | | | | | | |
| Nd | | | | | 26 | (b) | |
| Sm | | | | | 6.7 | (b) | 6.7 |
| Eu | | | | | 1.22 | (b) | 1.24 |
| Gd | | | | | | | |
| Tb | | | | | 1.4 | (b) | 1.44 |
| Dy | | | | | 8.2 | (b) | |
| Ho | | | | | | | |
| Er | | | | | | | |
| Tm | | | | | | | |
| Yb | | | | | 4.9 | (b) | 4.9 |
| Lu | | | | | 0.7 | (b) | 0.71 |
| Hf | | | | | 4.7 | (b) | 5.1 |
| Ta | | | | | 0.61 | (b) | 0.54 |
| W ppb | | | | | | | |
| Re ppb | | | | | | | |
| Os ppb | | | | | | | |
| Ir ppb | | | | | 15 | (b) | |
| Pt ppb | | | | | | | |
| Au ppb | | | | | 9 | (b) | |
| Th ppm | 2.7 | (a) | 2.21 | (a) | 2.5 | (b) | 2.2 |
| U ppm | 0.62 | (a) | 0.6 | (a) | 0.8 | (b) | 0.67 |

*technique: (a) radiation count. (b) INAA*

## References for 65901.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