

**Introduction**

76136 is a rare example of a mare basalt that has been transported across the mare-highland boundary at the base of the North Massif, Apollo 17. Its surface is rounded by micrometeorite bombardment (figure 1). It is an ilmenite basalt with olivine phenocrysts.

**Petrography**

Brown et al. (1975) give the modal mineralogy of 76136 and other Apollo 17 basalts. Elongate ilmenite and equant olivine are set in a holocrystalline intersertal matrix (figure 2). Olivine is surrounded by pyroxene. Pyroxene chemistry has not been studied.

Usselman et al. (1975) experimentally reproduced textures and mineral chemistries of high-titanium mare basalts.

**Chemistry**

The chemical composition of 76136 was determined by Rhodes et al. (1976). It is a type A, Apollo 17 basalt (figures 4 and 5).

**Radiogenic age dating**

Nyquist et al. (1976) determined Rb, Sr and Sr$^{87/86}$, but did not determine an age.

**Processing**

There are 7 thin sections.
Figure 2: Photomicrograph of thin section 76136, 28. 2.8 mm across
Table 1. Chemical composition of 76136.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Reference</th>
<th>Weight</th>
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<tbody>
<tr>
<td>SiO2 %</td>
<td>Rhodes76</td>
<td>38.6</td>
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<tr>
<td>TiO2</td>
<td></td>
<td>12.64</td>
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<tr>
<td>Al2O3</td>
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<td>FeO</td>
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<td>MnO</td>
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<td>MgO</td>
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<td>0.18</td>
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<tr>
<td>sum</td>
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</table>

Sc ppm 82 (c )
Cr 3010 (a)
Co 18.7 (c )
Ni Cu Zn Ga Ge ppb
As Se Rb 0.67 (b)
Sr 190 (b)
Y Zr Nb Mo Ru Rh Pd ppb
Ag ppb Cd ppb In ppb Sn ppb Sb ppb Te ppb
Cs ppm Ba 83.7 (b)
La 6.91 (b)
Ce 23.8 (b)
Pr Nd 26.2 (b)
Sm 10.9 (b)
Eu 2.14 (b)
Gd 16.4 (b)
Tb Tb Dy 19.3 (b)
Ho Er 11.4 (b)
Tm Yb 10.2 (b)
Lu 1.42 (c )
Hf 9.4 (b)
Ta W ppb
Re ppb Os ppb Ir ppb Pt ppb Au ppb Th ppm
U ppm

technique: (a) XRF, (b) IDMS, (c ) INAA
References for 76136


LSPET (1973) Apollo 17 lunar samples: Chemical and petrographic description. Science 182, 659-672.


