NWA 2626
Depleted Olivine-orthopyroxene-phyric Shergottite
31.1 grams

Figure 1: NWA 2626. Nice photo by Michael Farmer. About 3 cm across.

Introduction
NWA 2626 was purchased in Morocco in 2004 by Mike Farmer and Jim Strope. It is a small shocked fragment of olivine-orthopyroxene shergottite (figure 1). According to Irving et al. (2005) it is not paired with other Martian meteorites found in North Africa. It has a thin (mm) weathering rind, but the interior is said to be unaltered. It has not been dated.

Petrography
NWA 2626 is a very phenocryst-rich rock with a basaltic-textured mesostasis made up of intergrown pyroxene and shocked plagioclase (maskelynite)(figure 2). Large olivine phenocrysts are zoned. Elongate, prismatic, phenocrysts of orthopyroxene are aligned, as in a flow pattern (Irving et al. 2005). Papike et al. (2009) compared NWA2626 with other shergottites and Shearer et al. (2008) studied the trace elements in olivine phenocrysts. According to Irving et al. (2005), NWA 2626 has cross-cutting, black-glass, veinlets and glass pockets from shock (figure 5). The plagioclase has been converted to maskelynite by shock.

Mineralogical Mode for NWA 2626

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olivine</td>
<td>46 %</td>
</tr>
<tr>
<td>Pyroxene</td>
<td>44</td>
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<tr>
<td>Maskelynite</td>
<td>39</td>
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<tr>
<td>Ilmenite</td>
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<tr>
<td>Chromite</td>
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<tr>
<td>Phosphates</td>
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<tr>
<td>Pyrrhotite</td>
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Papike et al. (2009)
Mineral Chemistry

Olivine: Large olivine phenocrysts in NWA 2626 are zoned Fo83-57.

Pyroxenes: Phenocrysts of orthopyroxene (Wo2.4 En79.7 Fs17.9), surrounded by pigeonite (Wo4.4 En70.2 Fs25.4), with interstitial pigeonite (about Wo12.7 En60 Fs25) and minor augite (Wo31 En45 Fs24).

Plagioclase or Maskelynite: Plagioclase analyses were An71-66, before being shocked to maskelynite (Irving et al. 2005).

Glass: The glass veinlets appear abundant in slabs (figure 5).

Chromite: Irving et al. (2005) give the composition of chromite and ulvospinel.

Sulfide: Pyrrhotite.

Phosphate: Merrillite

Whole-rock Composition
None, yet

Radiogenic Isotopes
None, yet

Cosmic Ray Induced Isotopes
Berezhnoy et al. (2010) reported $^{26}$Al and Nishiizumi and Chaffee (2006) reported a cosmic ray exposure age of 1.1 m.y. as determined by $^{10}$Be.
References for NWA2626


