

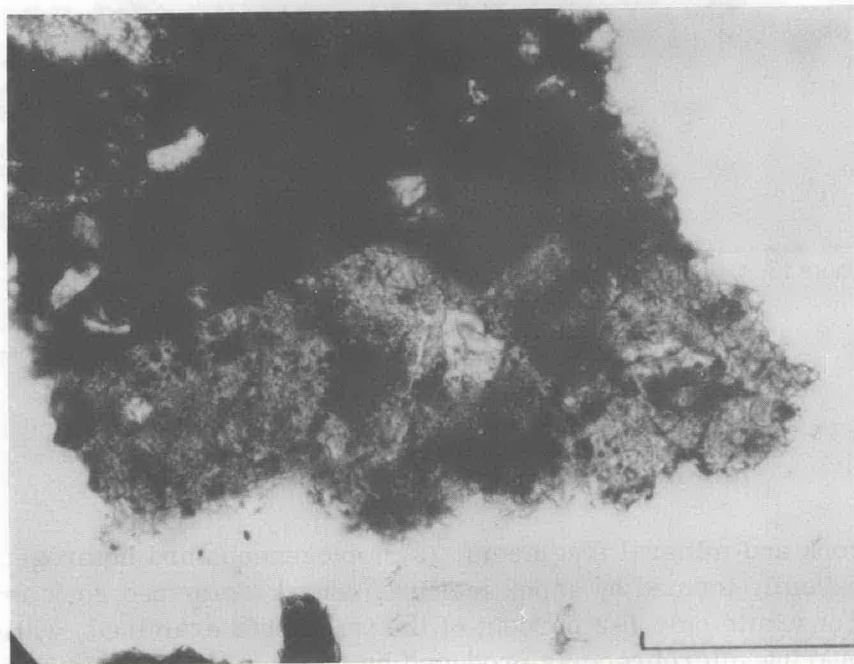


Figure 12. Angular fragments of light microcrystalline feldspathic material enclosed in a matrix of darker microbreccia, probably of basaltic composition. Fragment 301,72; plane polarized light; scale bar 0.1 mm.

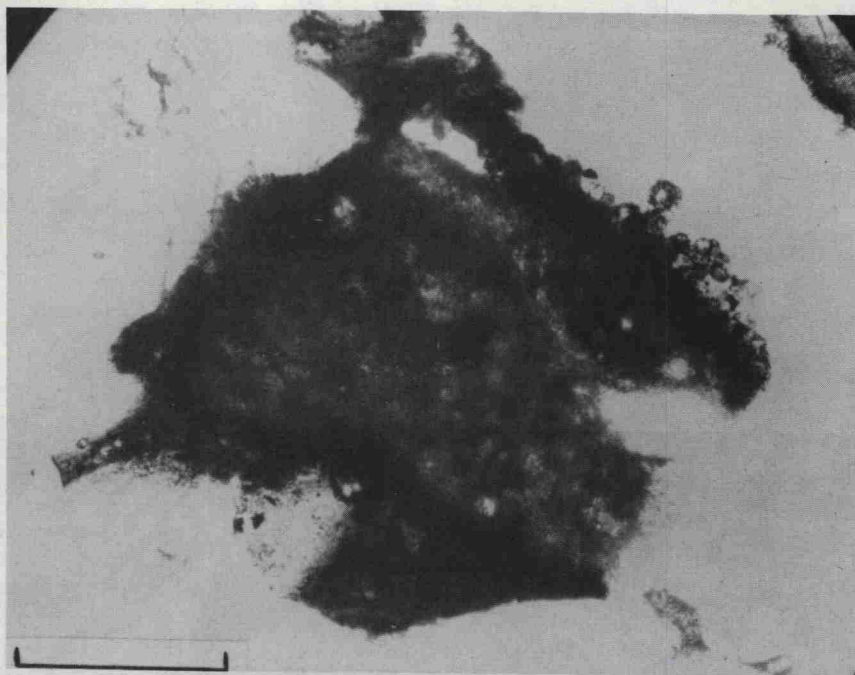


Figure 13. Composite fragment consisting of an angular core of light-brown microcrystalline feldspathic material, surrounded by a thin rim of dark-brown, heterogeneous, flow-banded glass of probable basaltic composition. The texture suggests earlier transport of the feldspathic material to the general area, followed by an impact event which dislodged the feldspathic fragment and coated it with impact-produced basaltic glass produced at the same time. Fragment 301,6; plane polarized light; scale bar 0.1 mm.

individual rock and mineral fragments; (2) homogeneous and heterogeneous glasses apparently formed by shock melting. Shock-deformed rock and mineral fragments constitute only 1-2 percent of the fragments examined, while glasses and glass-bearing microbreccias produced by shock melting and mixing constitute as much as 70-80 percent. Both percentages are comparable to those observed in Apollo 11 samples (2-7, 17, 18).

Shocked Rock and Mineral Fragments

Shock-metamorphic effects observed in rock and mineral fragments from the Luna-16 sample include deformation twinning, development of multiple parallel sets of shock lamellae, partial to complete isotropization of minerals, and selective partial melting.

A relative scale of shock deformation based on plagioclase has been established from the Apollo 11 material (2). However, in the small number of shocked fragments observed in the Luna-16 material, pyroxene grains exhibit the greatest variety of shock-produced deformation effects. In order of apparently