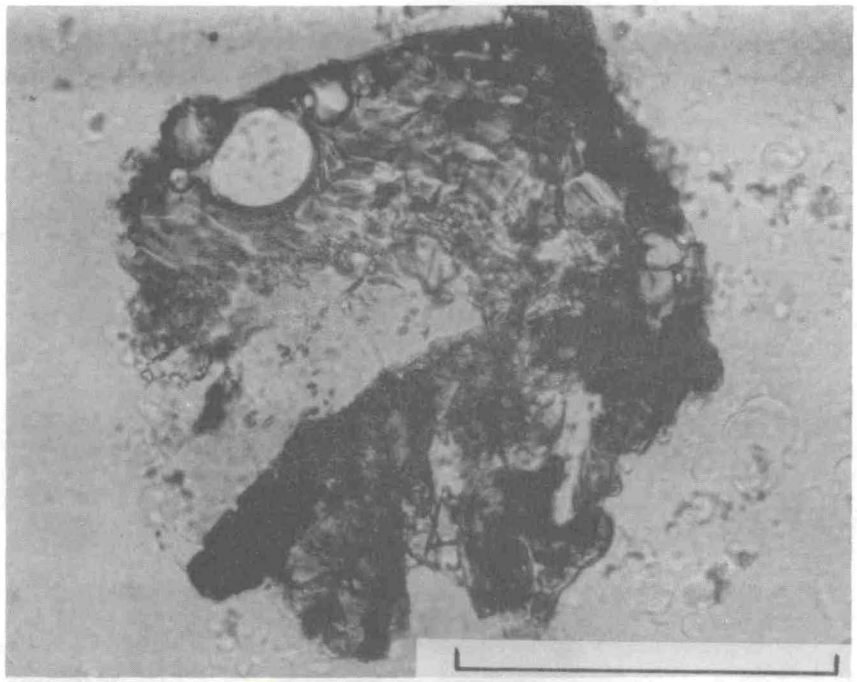

Figure 25A. Partly shock-melted basalt fragment. The unaltered basalt (lower part of fragment), is composed of plagioclase (white), pyroxene (gray), and opaques (black). The crystalline texture of the basalt grades into heterogeneous, vesicular, flow-structured, orange-brown glass (upper part), probably produced by partial melting of opaque phases and plagioclase. The plagioclase grain (white, lower left) is apparently being absorbed into the glass. Fragment 318,460; plane polarized light; scale bar 0.1 mm.

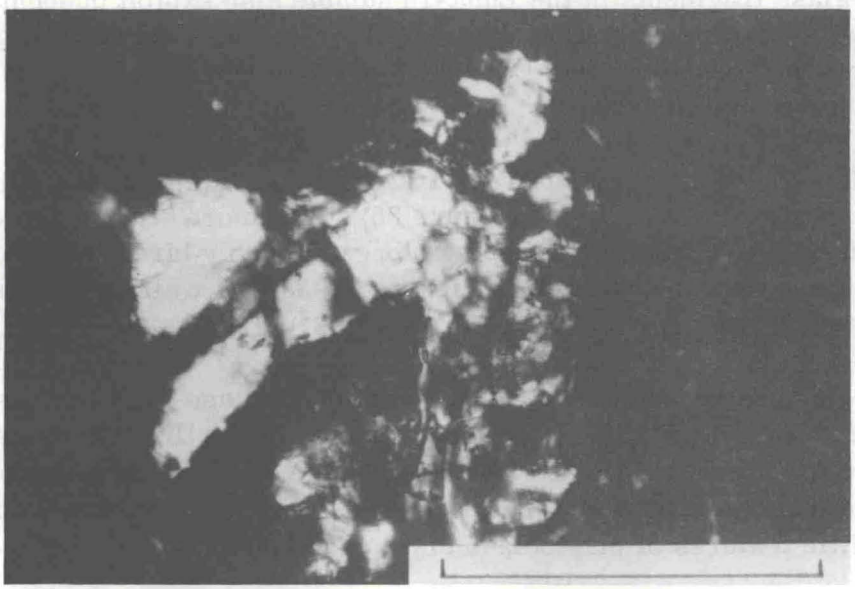

Figure 25B. Same view as Figure 25A; crossed polarizers. The birefringent plagioclase shows two dark isotropic bands across the crystal, possibly produced by shock or by incipient post-shock fusion associated with formation of the glass.

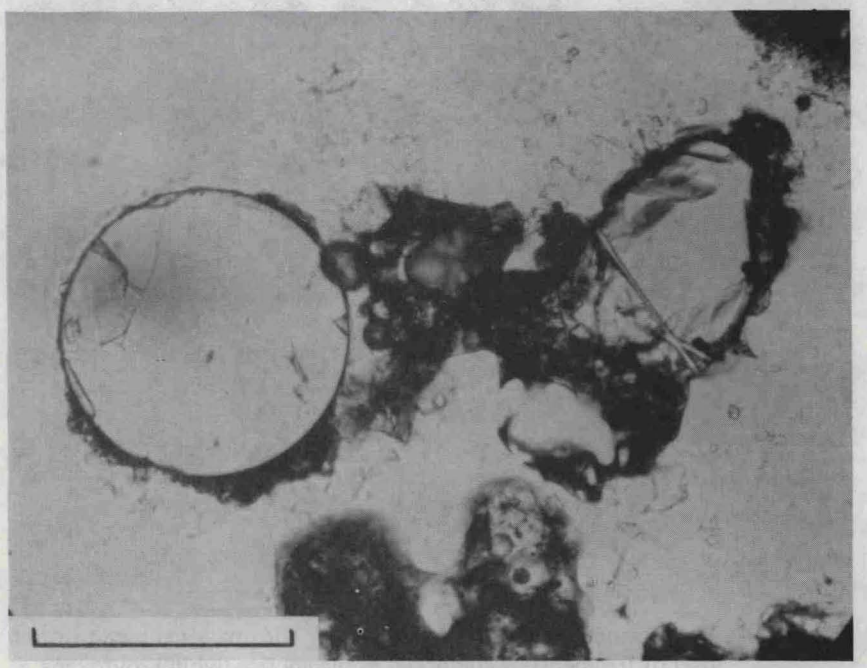

Figure 26. Colorless glass spherule (left) and large pyroxene crystal (right) cemented by dark vesicular filaments of glass containing smaller mineral fragments. Fragment 318,451; plane polarized light; scale bar 0.1 mm.

glasses over shocked rock and mineral fragments is likewise consistent with observations on the returned Apollo samples.

Some glass fragments in the Luna-16 sample also exhibit quenching and devitrification textures similar to those reported in Apollo material (e.g., 2, 3, 4). The textures suggest that crystal growth took place both during rapid cooling in the liquid state (quenching) and in the solid state (devitrification).

The light green to greenish brown fragments contain equant to slightly tabular crystals that may be olivine (Figure 35). The more strongly colored yellow-brown to dark brown fragments display elongate, highly birefringent crystals and microlites, probably pyroxene (Figures 36-38), as well as parallel and dendritic growths of quench opaques (e.g., 3, 27) (Figure 39).

The colorless to pale green glasses with plagioclase-rich compositions (7) are generally less crystallized. Where present, crystallization has apparently taken place in the solid state and is strongly controlled by the shape of the fragment. The most common devitrification effect is the development of radiating or spherulitic textures of plagioclase crystals (Figures 20, 40).