are also mapped. Unit Crcc occurs in plumes of ray material radial to the large crater Copernicus north of area.

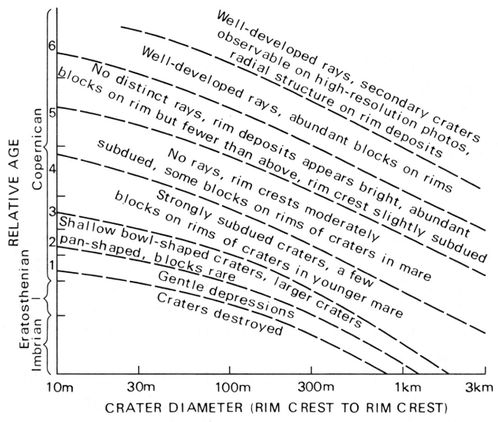

Figure 1.--Relationship between crater morphologies, crater diameters, and postulated ages (modified from Trask, 1969).

Ray material of Copernicus is widespread in the area and occurs as bright plumes trending a few degrees east of south, radial to the primary crater. No Copernicus rays are mappable in the landing site area (1:5,000-scale map, Offield, 1970b) but, if present, their material is probably much thinner than that possibly present as an identifiable layer (Lunar Sample Preliminary Examination Team, 1970, p. 1325) in the area of the conspicuous ray at the Apollo 12 site (Eggleton, 1965; Pohn, 1970). Rays from the crater Lalande (east of the map area) are mapped as elongate patches which occur in crude rows trending about N. 70° W. Numerous clustered individual or barely merging secondary impact craters from 50 to 750 m in diameter, but too small to map, are associated with the Lalande rays. The centerline of one row of Lalande ray patches is 2 km north of the center of Cone crater, which is about 300 m in diameter and is near the landing target; therefore, some Lalande ray material too dispersed to be mappable may be present in the landing site.

Faults are not conspicuously abundant in the Fra Mauro region. However, a sufficient number were recognized to distinguish two dominant structural trends--north-south and northeast-southwest. The former follow the Imbrium radial sculpture pattern (Hartmann, 1963; Strom, 1964), and the latter are related to the northeast component of the lunar grid system (Strom, 1964). In the southeastern part of the map some faults cut the Cayley Formation but are buried by mare material; thus their age is restricted to the time interval between the deposition of these two units. In the northwestern part of the map a north-trending fault system is marked by sharp, sinuous scarps, one of which transects mare material. Their sharpness suggests a Copernican age.

Surface investigation of features around the landing site and analysis of returned samples should provide much additional information about the Moon when evaluated in the context of stratigraphic and structural relations determined from regional geologic mapping programs. It is anticipated that increased knowledge will be gained about (1) the mechanics of deposition of ejecta blanket materials from very large impact craters, (2) the absolute age of the Fra Mauro Formation and, consequently, the time of formation of the Imbrium basin--the largest recognizable impact structure on the Moon, (3) the physical and chemical nature and the geologic history of deep-seated lunar materials excavated from the Imbrium basin and deposited in the Fra Mauro Formation, (4) the nature, age, and origin of the smooth-terrain unit, and (5) absolute ages of individual small craters formed since the Imbrium event.

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