



Fig. 2. (Left) Distribution of ray elements (shaded) north of Copernicus. Also shown are the locations of the small areas studied in detail, the Carpathian Mountains (barbed lines) and the edge of the ejecta blanket from the crater Pytheas (dotted line). Mapped from Rectified Lunar Atlas Plate 12.C (solar colongitude 120.6 deg.) of *Whitaker et al.* [1963]. (Right) Location of all secondary craters north of Copernicus in the diameter range 0.5–7.0 km. Area mapped is the same as that shown in Figure 2a. Also shown is the location of an approximate boundary (line) between the titanium-rich basalts to the north and the low-titanium basalts to the south [*Pieters, 1978*]. Map prepared from Lunar Orbiter frames IV 121H2, 121H3, 126H2, and 126H3.

Continuous ejecta deposits occur up to a crater diameter away from the rim of Copernicus, while the ray system extends radially for more than 500 km (5 crater diameters). Associated with the rays are numerous secondary craters, many of which occur in chains or clusters that exhibit a character-

istic V structure, or herringbone pattern [*Guest and Murray, 1971*]. This herringbone pattern is attributed to the near-simultaneous impact and subsequent interference of ejected materials excavated during the formation of secondary craters [*Oberbeck et al., 1975*]. Shown in Figure 2a is a portion of the