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Cover
Electron micrograph of a fractured quartz crystal, taken as part of a basic study of fracture surfaces being made at the National Bureau of Standards. Fracture surfaces are of considerable interest in determining the mode of energy dissipation once fracture has been initiated. The crystal was fractured in tension parallel to the basal planes. Replicas were made by the collodion-carbon double-replicate technique, with palladium shadowing. The picture shows "steps" meeting at an angle which suggests the presence of a boundary between twin domains. Fracture markings, similar to those occurring in many materials, appear along with cleavage planes, which are of particular interest in view of the extremely poor cleavage of quartz. Such planes are less prominent in fractures propagated along other crystallographic directions. (14,700) [National Bureau of Standards]