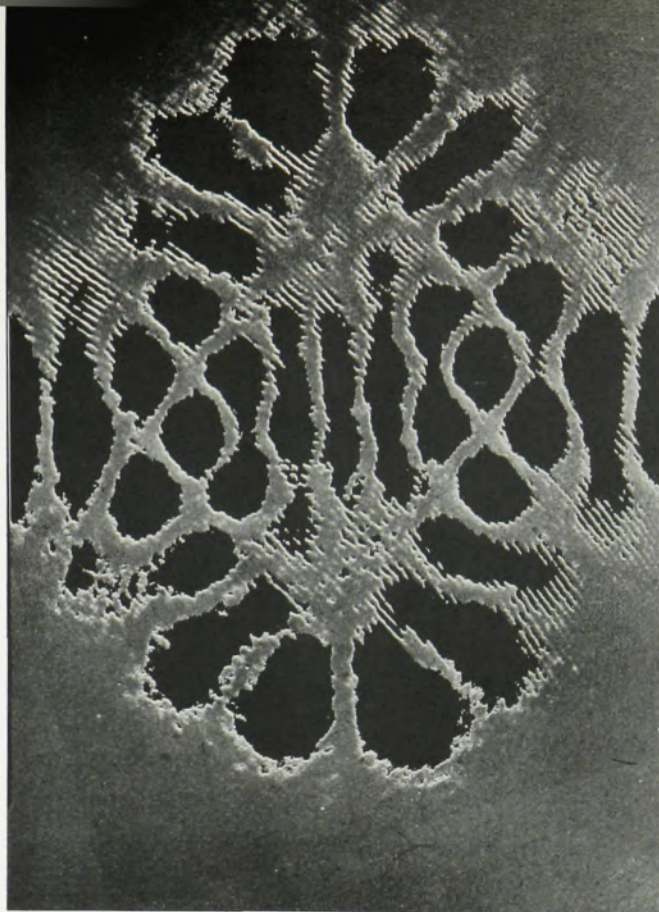


Mode pattern of
coherent light from
a helium-neon laser.
(Bell Telephone
Laboratories
photograph.)



LASERS

Annual instrumentation issue

Since their invention a dozen years ago lasers have become a major subject of interest to physicists. The original interest in laser systems as examples of a new and intriguing physical phenomenon continues unabated and has spurred researchers to develop an impressive assortment of lasers of different types and properties. John Emmett brings us up to date on these activities in his article "Frontiers of laser development" (page 24).

L. A. D'Asaro and José Ripper review an especially intriguing type of laser system ("Junction lasers," page 42) in which laser action is produced from concentrations of electrons and holes in a semiconductor. Besides presenting an interesting problem in solid-state physics, this device, because it can be millimeters in size and yet is highly stable and efficient, promises to find widespread commercial use.

More recently an even broader involvement of physicists with the laser has come about with the growing employment of lasers as tools in physics research. John Armstrong ("Applications in physics research," page 34) explains how the unique properties of laser beams are proving valuable in diverse fields such as atomic and molecular spectra, measurements of fundamental constants, electromagnetic properties of materials, and novel time and distance measurements.