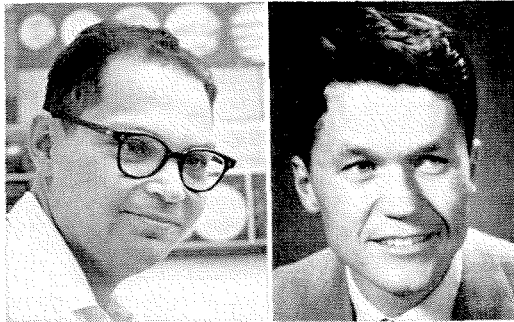


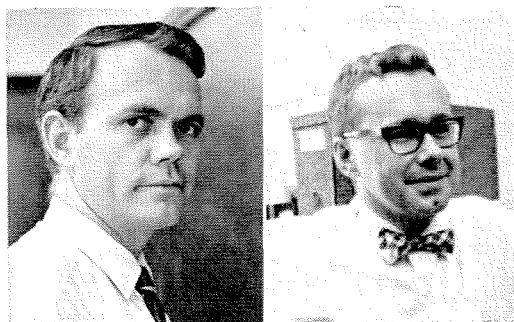
Allen

Goldstein



Burnett

Kamb



Brune

Albee



Anderson

Epstein



Lowenstam

Richter

THIS ISSUE

of *Engineering and Science* magazine is a special report on the nature and scope of geology at Caltech today. The 11 articles in the issue have all been contributed by members of the faculty in the Division of Geological Sciences. The articles and the work they describe are representative of the broad spectrum of research and study in the field of geology at the Institute in 1967.



Sharp

Robert P. Sharp, professor of geology and chairman of the division, on leave, contributes an introduction to this special issue (page 9) and an article on the science of land forms, "Geomorphology in the Space Age" (pages 61-63).

Clarence R. Allen, professor of geology and geophysics and interim director of Caltech's Seismological Laboratory for the past two years, is now acting chairman of the geology division. His "Earthquakes, Faulting, and Nuclear Reactors" is on pages 10-16.

Richard M. Goldstein is manager of the telecommunications research section at Caltech's Jet Propulsion Laboratory and visiting associate professor of planetary science at the Institute. He writes about "The Mountains of Venus" on pages 17-20.

Donald S. Burnett, assistant professor of nuclear geochemistry, tells how the study of "Nuclear Processes in Meteorites" (pages 21-23) can lead to a nuclear history of the solar system.

Barclay Kamb, professor of geology and geophysics, is engaged in the investigation of rock deformation and glacier flow. From these studies comes his article on pages 27-33, "Ice Under Stress and Pressure, Ice in Order and Disorder."

James Brune, associate professor of geophysics, in "The Fault Slips" (pages 36-38), describes the processes which are deforming California along the San Andreas Fault and relates the number of earthquakes and the rate of slip along the fault.

Arden L. Albee, professor of geology, writes about the use of the electron microprobe x-ray analyzer in petrologic and mineralogic investigation in "Rocks—Micron by Micron" on pages 39-42.

Don L. Anderson, associate professor of geophysics and director of Caltech's Seismological Laboratory, in "The Mantle of the Earth" (pages 43-46), describes the efforts to build up an adequate description of the earth's interior.

Samuel Epstein, professor of geochemistry, writes about "The Stable Isotopes" on pages 47-51, which, in part, describes his studies of the variations of oxygen and carbon isotopes in nature.

Heinz A. Lowenstam, professor of paleoecology, conducts ecological studies of recent and fossil marine organisms. His article "Fossil Sensors" is on pages 52-55.

Charles Richter, professor of seismology, is concerned with the magnitude, statistics, and geography of earthquakes. His article "California Earthquakes" on pages 56-60 presents his observations about both historic and recent earthquakes in the state.