

Science News

A Science Service Publication
Vol. 106/Aug. 24 and 31, 1974/Nos. 8 and 9
Incorporating Science News Letter

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COVER: The Ring Nebula, in the constellation Lyra, photographed this year by the new 4-meter telescope at Kitt Peak National Observatory. The nebula is a spherical gaseous shell surrounding several central stars. The ring, caused by an explosion far back in time, is expanding at a rate near 1 minute of arc per 100 years. A special report on astronomy begins on page 122. (Photo: KPNO)

Publisher	F. G. Sherburne Jr.
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Art Director	Dale Appleman
Assistant to the Editor	Esther Gilgoff
Books	Margit Friedrich
Advertising	Scherago Associates, Inc. 11 W. 42nd St. New York, N.Y. 10036 Fred W. Dieffenbach Sales Director

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Subscription Department
231 West Center Street
Marion, Ohio 43302

Subscription rate: 1 yr., \$10; 2 yrs., \$18; 3 yrs., \$25. (Add \$2 a year for Canada and Mexico, \$3 for all other countries.)

Printed in U.S.A. Second class postage paid at Washington, D.C. Title registered as trademark U.S. and Canadian Patent Offices.

Published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D.C. 20036. (202-785-2255). Cable SCIENSERV.



NGC 1300/Hale Observatories

Eyes on the Universe

Ever since Galileo turned his newly made telescope to the heavens on the night of January 7, 1610, and discovered to his own astonishment four moons in orbit around Jupiter, astronomy has progressed hand in hand with the development of improved techniques of observation. More than most sciences, astronomy is a science of observation. Scientists in most fields can conduct controlled experiments or analyze tangible research material in their laboratories. But the astronomer's subjects—planets and satellites, stars and galaxies, quasars and pulsars, clouds of interstellar gas and dust, and other things strange and more strange—are beyond his physical grasp. He is dependent upon his astronomical instruments to bring the telltale clues of the cosmos to him. They extend his senses to the outer reaches of the universe.

The special report on astronomy beginning on page 122 is devoted primarily to new breeds of those instruments and how they are changing, or soon will be changing, our views of the universe around us. The coverage was led by Physical Sciences Editor Dietrick E. Thomsen, who spent three weeks in California reporting on new developments at the major observatories and universities there. He returned to Washington to write five articles for the astronomy section: On the universe and us (concerning not instrumentation but what might be called cosmic philosophy), "rubber telescopes" and other such ways to solve the age-old problem of distortion of light by the atmosphere, radar astronomy, infrared astronomy, and a new technique that makes use of objects far beyond our galaxy to help chart movements of our own planet's crust. Then he rushed off to Rochester, N.Y., to cover the meeting of the American Astronomical Society just in time to meet the deadline for our Science News of the Week section. My lifelong interest in astronomy led me to the Plains of San Augustin in western New Mexico for a first-hand look at the site of the Very Large Array radio telescope—the frontier instrument for radio astronomy in the 1980's—on the eve of the initiation of its construction. And Space Sciences Editor Jonathan Eberhart drew on his knowledge and self-confessed fascination with all things concerning space to prepare his report, "Starwatch from Space," on plans and ideas for new astronomical satellites in coming years and decades.

We are sure you'll find our survey of some of the frontiers of astronomical observation informative, and we hope you enjoy reading it as much as we did preparing it.

—Kendrick Frazier

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August 24 & 31, 1974

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