SCIENCE NEWS LETTER



EEKLY SUMMARY OF CURRENT SCIENCE



Satellite Preview

See page 346

A SCIENCE SERVICE PUBLICATION



a bargain

XX

Gift-subscriptions to *Science News Letter* are **durable.** They live a whole year long with 52 fact-filled weekly issues.

Practical—the stimulating knowledge brought to your friends, relatives and business associates will last even longer than one year in usefulness.

Complimentary—you praise by giving *Science News Letter*. Your gift recipients realize that you have judged their high quotient of mental curiosity correctly.

And a bargain—you save \$1.50 on each gift after the first, and you can add your own one-year renewal at this money-saving Christmas rate:

To make this Special Christmas rate even better, this year's holiday issue will be included in each gift-subscription. Tear off the coupon at the right, fill it in and mail it back to us, please. And if you like, we will send direct to you for each person a specially designed Christmas Card so that you can announce your gift of *Science News Letter* in your own handwriting.

Clip, fill in and mail, please

To Science News Letter 1719 N Street, N.W., Washington 6, D. C.

Please send Science News Letter every week of 1957 (and include the 1956 Christmas issue) to each of the following:

,
Gift
0 Name
Address
City & State
Gift
To Name
Address
City & State
Send direct to me the specially designed Christmas Card so that I may announce my gift of Science News Letter personally.
O'ft
Gift
To Name
Address
City & State
Send direct to me the specially designed Christmas Card so that I may announce my gift of Science News Letter personally.
THESE GIFTS ARE FROM:
My Name
Address
City & State
 One of these subscriptions is to be a one-year renewal of my own.
☐ I enclose \$
(See Special Christmas Rates at the left) 448

EXCELLENT FOR CHRISTMAS GIFTS!

Photographers!

Adapt your camera to this Scope for excellent Telephoto shots and fascinating photos of moon!



. . . See the Stars, Moon, Planets Close Up! ASSEMBLE A BIG 100 POWER 3" REFLECTING TELESCOPE

. . . with this Complete 87 Piece "Do-it-yourself" Kit **EXCELLENT SCIENCE CLUB PROJECT!**

Get Ready to See the Artificial Satellites!



This is an actual photograph of the moon taken through our Astronomical Telescope by a 17-year-old student.



See a thrilling spark display as you set off a miniature bolt of lightning. Absolutely safe and harmless—perfect for classroom experimentation ideal for Science Clubs, Sturdily made—stands 14" high. Turn the handle and two 9" plastic discs rotate in opposite directions. Metal collector brushes pick up the static electricity, store it in the Leyden jar type condenser until discharged by the jumping spark. Countless tricks and experiments. 24-page instruction booklet included.

Stock No. 70,070-Q..........\$10.95 Postpaid

NEW! STATIC ELECTRICITY GENERATOR

MAKE YOUR SCHOOL A POWERFUL ASTRONOMICAL TELESCOPE Grind Your Own Astronomical Mirror Complete Kits Including Blank, Tool and Abrasives



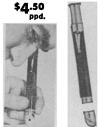
All over America amateurs are grinding their own mirrors and making expensive Telescopes cheaply. You can do the same using our Kits. These contain mirror blenk, tool, abrasives, diagonal mirror and eyepiece lenses. You build instruments ranging in value from \$245 to thousands of dollars.

Stock No.	tock No. Dla. Mirror Thick		D	rice
70,003-Q	4 1/4 "	Thickness	\$ 7.20	postpaid
70.004-Q	ē./*	1 "	11.40	postpaid
70,005-Q	š″	i % "	18.70	postpaid
70.006-Q	1Ŏ"	î ¾ ″	29.45	postpaid
70.007-Q	12"	2 1/k "	51.45	postpaid

INSTRUCTION BOOKLETS

Easy to follow-accurate-8 1/2 x 11		
illustrations. Do-it-yourself—Save!	and ha	ve Fun!
		Price
	Stock N	o. Pstp.
How to Build Projectors	9014-0	30¢
Homebuilt Telescopes	9006-0	
Method to Clean Precision Optics	9024-0	
Homebuilt Riflescopes	9018-0	
All About Telephoto Lenses	9036-0	
How to Condense and Project Light	0000-4	
with Lenses	9044-0	75¢
Reticles and Their Uses	9039-0	
ULTRA CLOSE-UP Photography.	9042-0	
	9040-0	
Infra-red Light and Its Uses	9032-0	
Homemade Stereo-Adapters		
Homemade Stereo-Viewers	9034-0	2 30¢
Photo Micrography with Pen		
Microscope	9029-0	10¢
Dummy Cameras		20¢
Collimating Systems	9047-0	
"Building a Condenser Enlarger"		
FUN WITH OPTICS -New! 32-1		
illustrated! Shows how to build a		
scopes, Viewers, Magniflers, many or		
Tells all about lenses and prisms.		
Stock = 9050-Q	50¢	postpaid

New! 2 in 1 Combination! Pocket-Size 50 POWER MICROSCOPE 10 POWER TELESCOPE ONLY





Useful Telescope and Microscope combined in one amazing, precision instrument. Imported! No larger than a fountain pen. Telescope is Imported! No larger than a fountain pen. Telescope is 10 Power. Microscope magnifies 50 Times. Sharp focus at any range. Handy for sports, looking at small objects, just plain snooping.
Send Cheek or M.O.
Satisfaction Guaranteed

Order Stock No. 30,059-Q......\$4.50

SPITZ MOONSCOPE



SPECIAL SALE 7×50 MONOCULAR

This is fine quality, American made instrument—war surplus! Used for general observation both day and night and to take fascinating telephoto shots with your camera. Brand new. \$95 value.

Stock No. 50,003-Q......\$15.00 Postpald



BUILD A SOLAR ENERGY FURNACE!

It's easy—inexpensive. We furnish instruction sheet. This sun powered furnace will generate terrific heat—produces many unusual fusing effects.

Stock No. 80,040-Q—Freenel Lens, size 11 % " x 16 ½ 'f.l 1 9'.

\$3.50 Pstpd.

SIMPLE LENS KITS!

Fun for adults! Fun for children! Kits include plainly written, illustrated booklet showing how you can build lots of optical items.

Stock No. 2-Q--10 lenses \$ 1.00 Postpaid Stock No. 5-Q-45 lenses \$ 5.00 Postpaid Stock No. 10-Q-80 lenses \$ 10.00 Postpaid

GET FREE CATALOG =Q-World's largest variety of Optical Items. Bargains galore... War Surplus-Imported—Domestic! Microscopes, Telescopes, Hand Spectroscopes, Prisms, Lenses, Retioles, Mirrors and dozens of other hard-orget

Order by stock No. Send Check or M.O. Satisfaction Guaranteed!

STOCK NUMBER . SEND CHECK OR MONEY ORDER. SATISFACTION GUARANTEED! JND SCIENTIFIC CO., BARRINGTON, N. J.

Questions

roper amount p. 338. BIOPHYSICS—What is the proper radiation for a sick person? p. 3

DENTISTRY—What is the effect of fluoridation of water on children's permanent teeth? p. 344.

FORESTRY—How does day length affect the rate of a tree's growth? p. 344.

GEOPHYSICS—From what parts of the United States will the earth satellites be visible? p. 346.

GENERAL SCIENCE—What evidence shows that Russia is determined to be the world's leading technical nation? p. 339.

VETERINARY MEDICINE—How can a pig's fat now to be measured? p. 345.

Photographs: Cover, p. 346, Fremont Davis; pp. 339 and 342, Howard Simons; p. 352, Du Pont Company.

Do You Know?

A machine capable of chewing foot-thick logs, bark and all, into pulp-sized chips at the felling site is being developed for use in California's eucalyptus groves.

Each American uses twice as much lumber as a Russian, four times as much as an Englishman, and six times as much as a Frenchman.

World population is increasing faster now than at any time in history.

Each hospital bed in the U.S. serves 13 patients a year.

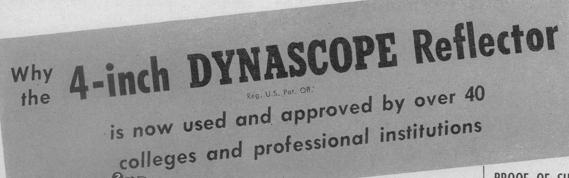
The Pacific Coast as a commercial area for shrimp production is historically one of the oldest in the U.S.; shrimp fishing began about 1869.

Adding fungicidal acids to tung-oil paints may make it possible to produce surface coatings with built-in mold and fungi resistance.

MICROSCOPE SPECIALIST

- Wide choice of high quality used microscopes at fair prices.
- Large selection of unusual prepared slides from many fields of study.
- Mounting media, covers, slides, stains, chemicals, zoological and botanical specimens available.
- New objectives, oculars, mechanical stages, condensers, nose pieces, etc., made to our specifications in Western Germany.

Send for FREE scientific catalog! RESEARCH SCIENTIFIC SUPPLIES, INC. 60 Wall St. New York 5, N. Y.





0

Compare These Advances:

- 1) 4-INCH PARABOLIC PYREX MIRROR aluminized and overlaid with zircon quartz for maximum life!
- 2) 3 ACHROMATIC EYEPIECES 18-mm. Huygens, 9-mm. Ramsden, 7-mm. Ramsden—providing 65X, 130X and 167X!
- 3) RACK & PINION focusing!
- 4) 4-POWER Achromatic FINDER SCOPE!
- 5) NEW IMPROVED MOUNT—fine equatorial with free
- 6) SIMPLE LATITUDE ADJUSTMENT—making your instrument usable anywhere in the world.
- 7) ALL-BAKELITE TUBE, brass-trimmed! 8) CLAMPS ON BOTH AXES—adjust instantly and permit smooth setting of either axis.
- 9) 33" hardwood folding TRIPOD!

A SCIENTIFIC INSTRUMENT OF HIGH CALIBER AT LOW COST!

There's an excellent reason why the 4-inch DYNASCOPE Reflector is now the instrument used, approved and recommended by more and more schools, colleges, planetariums and professional astronomers. It is the remarkable scientific accuracy and engineering balance built into this complete accuracy and engineering balance built into this complete telescope—at an incredibly low price! If you were to purchase the parts and assemble them yourself, you would spend much more than the unheard of low price of this precision increases. And in building your own telescope you could much more than the unitedra of low price of this precision instrument. And in building your own telescope you could never hope to attain the accuracy and co-ordination of parts that have been engineered into the Dynascope.

The 4-inch parabolic mirror produces exquisite definition of all the bright planets and is fully capable of splitting close double stars. (Note: the 4-inch mirror gathers 1/3 more light than a 31/2-inch mirror!) Finished to exacting specifications and guaranteed to perform to the Dawes' limit of resolution for its size! A 4-inch parabolic mirror of such quality has only been obtainable in the highest-priced instruments up to now!

Manufactured and Sold Only By

The Criterion Manufacturing Co.

Manufacturers of Quality Optical Instruments

Dept. SND-26, 331 Church St., Hartford 1, Connecticut. Telephone: Chapel 7-1696 . Cable Address: CRICO

FOR ONLY

F.O.B. Hartford, Conn. Shipping Weight 16 lbs. Express Charges Collect

PROOF OF SUPERIORITY

(On Request - we will send a list of noted institutions now using the 4" DYNASCOPE)

TESTIMONIALS:

From An Observer

On clear "good-seeing" nights my Dynascope easily reveals the Alpine Valley and the Straight Wall on the Moon, as well as three peaks in the floor of the Plato ring plain. It will split the star Mizar into its major components clearly. It will separate Saturn's rings and show six bands on the face of Jupiter. Also it will project a two-foot diameter disk of the sun showing sunspots in vivid detail . . . as an Englishman might express it, "Dynascope optics are a little bit of all right." VICTOR W. KILLICK, in charge of Astronomical Observatory, Sacramento Junior College, Calif. On clear "good-seeing" nights

Many Years of Experience

. . . I have had many years of experience in astronomy, and as junior leader here in Atlanta I always recommend Dynascope. —LEONARD B. ABBEY, Jr., De-

Cannot Be Equaled

I still don't see how you can produce a parabolic mirror of this focal ratio at the price . . . Epsilon Lyra was quite easy . . . on the 130 power ocular. I was more than pleased when it resolved this double double as four tiny, sharp, brilliant gems . . . with the diffraction rings concentric and sharp.

and sharp.
... For the price you ask, I do
not believe that it can be
equaled in any way. The oculars
are excellent, and the entire instrument shows careful workmanship. How you do it is beyond me. -G. N. JOHNSTONE, Albu-querque, N.M.

Criterion	Manufacturing	Company
Dept. SND		

331 Church Street, Hartford 1, Conn.

Gentlemen:

* O

- Enclosed find payment of \$49.95. Please ship me promptly, subject to your money back guarantee, 4inch DYNASCOPE Telescope with 9 advanced features.
- Send me FREE Illustrated Literature on the 4-inch DYNASCOPE Telescope.

Name....

Address..... City.....State.....