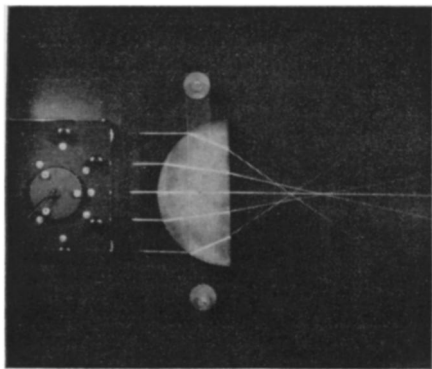


**“---NATURE'S LAWS
LAY HID IN NIGHT---”**



Spherical aberration shown by unequal focal lengths for paraxial and outer beams.

**until KLINGER
stepped in with
BLACKBOARD OPTICS!**

Now as each accessory arrives on the scene, law after optical law moves into daylight. Gloom vanishes. So do your teaching problems.

For instance, take the Multiple-Ray Projector shown in the photograph

Five brilliant, collimated beams from a single tungsten halide lamp are at your disposal. The central beam traces the principal axis, the others are all adjustable for any angle of projection you need. Bright lines on the blackboard trace the refracted paths through Acrylite lenses, prisms, parallelepipeds; reflected rays from plane, convex, and concave mirrors light their own way; chalk lines are added to complete the glowing diagram. What better technique can there be?

We have suction cup clamping for component mounting on standard blackboards, magnetic clamping for steel-based blackboards, lenses of many shapes and focal lengths, diffraction gratings, single slits, double slits, multiple slits . . . we could go on and on. But we have a much better way to get accurate, detailed information into your hands.

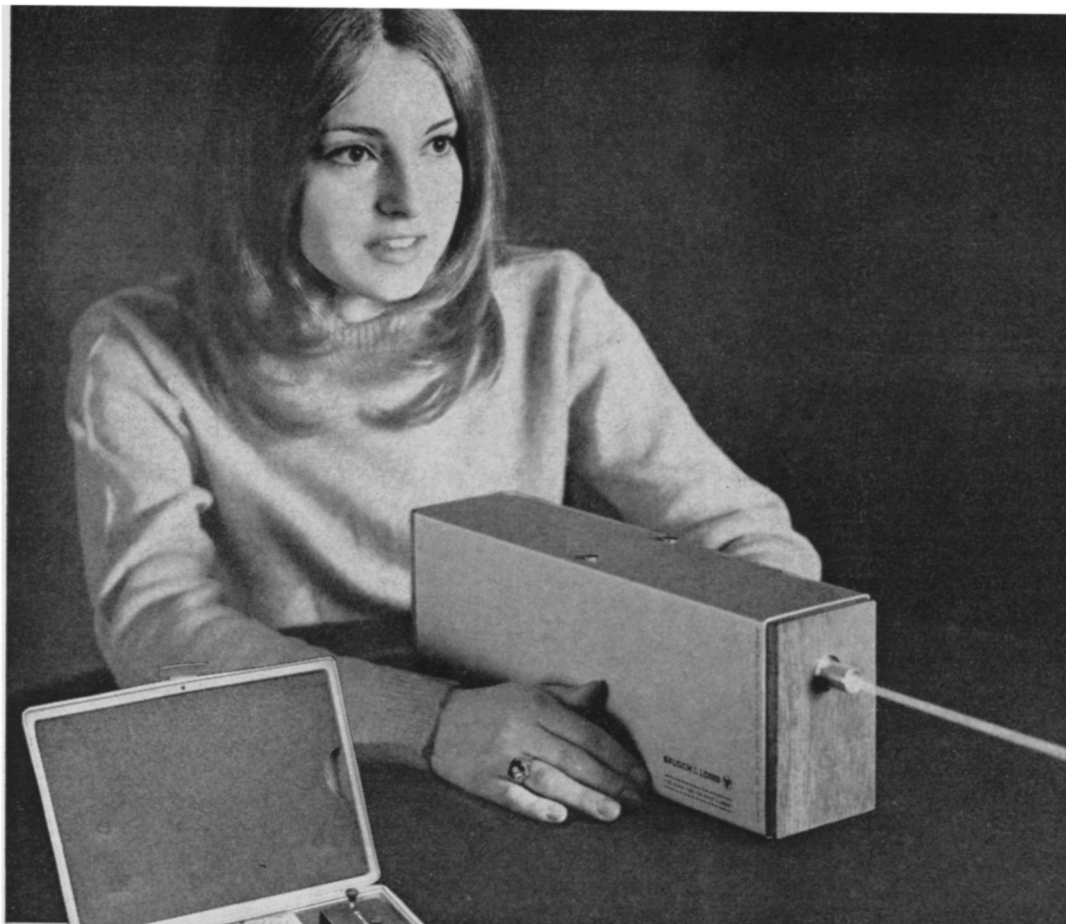
It's our Bulletin #114. A booklet full of illustrations and descriptions relating to superb demonstrations that can be set up in minutes to provide you with hours of teaching material.

A postcard will do. Ask for Bulletin #114. No charge, no obligation.

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properties this
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for less than \$250!**

With Bausch & Lomb's low cost helium-neon gas Laser and Laser Experiment Kit you will teach optical principles most effectually. Furthermore, you'll find your students cooperating most energetically.

Operation of the Laser is uncomplicated and dependable for classroom use. Just plug it in and it begins to lase. Power is .1mw, multi-mode, producing a monochromatic beam at 6358 Angstroms. It's about the size of a shoebox and weighs approximately three pounds.

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AMERICA'S GREATEST VALUES IN SCIENCE LABS AND COURSES!

American Basic Science Club's AMAZING KIT-A-MONTH PROGRAM

You Get ALL the following in ten monthly kits!

NO EXPERIENCE NECESSARY
Everyone can enjoy space age science with this easy-to-use equipment and exciting, learn-by-doing courses. It's easy—it's fun!

DEVELOPED BY TOP SCIENTISTS
The ABS Club program is a real science course developed with famous Southwest Research Institute—a non-profit public service organization, nationally recognized as the center of scientific research in the Southwest.

GOOD QUALITY EQUIPMENT
These kits are not toys. They consist of standard components by Centra-lab, General Electric, Strobelite, Leviton, Precision Tube, Cinch-Jones, Mallory, Lancaster Lens, General Instrument, Trim, RCA, Stackpole, Eastman Kodak, Clarex and other reliable manufacturers.

NO SPECIAL TOOLS REQUIRED
All you need are a screwdriver and pliers. New spring connectors make fast, firm joints—no soldering. Hardware, wire, etc., included.

FUN FOR THE WHOLE FAMILY
This program offers such a variety of activities that every member of the family can find a field of interest. In many homes, working with the kits is a family affair enjoyed by all.

INVALUABLE FOR STUDENTS
Makes school science fascinating and easy. Gives students a head start. The kits are a valuable source of ideas and equipment for school projects.

MANY EXTRA PROJECTS
This new series is much improved and expanded. Many ideas originated by our members have been used to provide extra projects adding variety and excitement to every kit.

MEMBERS ARE ENTHUSIASTIC
Over 50,000 members have successfully used and enjoyed these kits. All the projects are proven and practical.

"Every kit is very complete in explanation, illustrations, materials, hard ware and extras. This is what I like!"
F. Batorick, Manhall, Pa.

"Hard-to-get equipment at a great price. Thanks to your kits I am enjoying new fields of science."
J. Allemong, White Springs, Illinois.

"The ABS Club kits are very practical, interesting and educational... and the projects always work."
Larry Schutts, Eden, New York.

"I have immensely enjoyed every minute with the kits, and eagerly await the postman every month."
Fred Carter, Sanford, Florida.

"A wealth of information presented in an easy-to-learn manner."
Tom Webster, Vidor, Texas.

"It is incredible that we can obtain so much material for such a price. The manuals alone are of great value."
Sister M. Maria, Bishop Dwenger High School, Fort Wayne, Indiana

"I am an electronics student in the Air Force. We have not covered anything in school that your kits have not covered."
John G. Dill, Keesler Air Force Base, Biloxi, Miss.

"When I started your program I knew little about any of the topics that you presented. I now am repairing radios and photography is my main hobby."
Bruce Russell, Denver, Colo.

"A friend of mine is taking a correspondence course in electronics. I've learned more from your first two kits than he has in twenty lessons."
Ray P. Blodeau, Leominster, Mass.

ELECTRICAL LAB

All the equipment for basic electrical experiments with Wheatstone Bridge (measures resistance), Magnetizer and De-magnetizer, Thermocouple, Mystery Shock Box, Continuity Tester, Extinction Voltmeter, Solenoid Coin Toss, Electromagnetic Relay, Neon Lamp, Galvanometer, Induction Coil, Resistors, Chemicals and Electrodes for Plating and Electrolysis. **FOR SAFETY** a step-down Isolation Transformer provides required current.



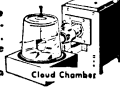
RADIO LAB AND COURSE

YOU BUILD A SHORTWAVE AND BROADCAST RADIO. 3-tube regenerative circuit. Uses 115V AC. CARBON MICROPHONE with AUDIO AMPLIFIER, RADIO TRANSMITTER for code or voice. RIPPLE TANK WAVE GENERATOR with variable frequency. Invaluable in the understanding of wave theory. CODE PRACTICE OSCILLATOR with manual, "Steps to a Ham License." All you need to pass the FCC Ham License Exam.



ATOMIC ENERGY LAB

ATOMIC CLOUD CHAMBER WITH PROJECTOR ILLUMINATOR. See the vapor trails of alpha and beta particles, and of cosmic rays. SPINTRASCOPES. Shows exploding atoms. ELECTROSCOPE—metal housed with Scale and Magnifying Viewer. Measures background radiation and tests sample sources. **SAFE RADIOACTIVE MATERIALS.** Alpha Source in handy container and Uranium Ore. Full instructions and explanations open up the fascinating field of nuclear physics.



STROBE LIGHT

A Neon Lamp that flashes at intervals you can synchronize with the speed of rotating or vibrating objects in order to "freeze" their motion to permit close study and checking frequencies and RPM. Flashes are timed by a variable frequency oscillator with a range of 20 to 600 cycles per second.



RADIO SERVICING TOOLS

SIGNAL TRACER. A valuable trouble shooting tool which permits you to "listen in" as you probe through a faulty circuit until you find the trouble spot. CONTINUITY TESTER. Pinpoints open circuits and test voltages. The use of both pieces fully described in accompanying manual, "Simplified Radio and TV Servicing."



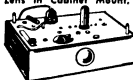
SPECTROSCOPE

Analyze spectra of glowing gases. See and identify the Fraunhofer Lines. A quality instrument featuring an easy-to-read built-in scale and a powerful condensing system for a bright spectrum. Equipment includes Alkaline Burner and a 2 Watt Neon Spectral Lamp. Full instructions cover theory and use.



PHOTOELECTRIC RELAY

Crystal Photo-cell, Electronic Amplifier, Relay, large Condensing Lens in Cabinet Mount. Features automatic on-off or holding circuit operation. Sensitivity Control, Plug-in Outlet for controlled circuit. Use for alarms, counters, etc. Operates on 115V AC. A basic unit for many exciting experiments.



DC POWER SUPPLY

Changes regular 110-120V AC to the direct current required for electronic projects and experimenting. Consists of a Power Transformer, Vacuum Tube Rectifier, 20/20 MFD Capacitor Filter Circuit, and a potentiometer Voltage Selector. A Safe Isolated Power Supply eliminates the need of expensive multi-volt batteries.



ULTRAVIOLET LAMP

140 watt filter type UV LAMP. Heavy metal cabinet, 6 Foot Cord, Rotary Switch. Produces dazzling color effects with invisible black light. Has many uses in the fields of Mineralogy, Crime Detection and Science. Accessories include Invisible Ink, Tracer Pow-er, Fluorescent Crayons.



ANALOG COMPUTER

Electronic Computer multiplies, divides, calculates powers, roots. Set up the problem on the scales of two potentiometers and find the answer on the scale of third potentiometer as indicated by a sensitive meter. Instruction Manual covers computer theory and practical use. Over 150 sample problems and answers demonstrate use with fractions, trigonometry, logarithms, physics formulas, ballistics, etc.



MICROCRAFT LAB

Microprojector shows microscopic subjects enlarged with brilliant detail on wall or screen. Has sturdy Steel Cabinet, large Condensing Lens for extra brightness, and a GE Projection Lamp. Microscope features Ramsden Eye-piece for wide field viewing, Substage Light and Polarizing Filters. Magnifies up to 200X. Includes: Slides, Cover Glasses and Microscopy Manual.



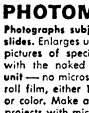
SURVEYOR'S TRANSIT

A practical Transit. 6X erect image telescope with Range Finder Reticle for measuring remote distances and heights. Vernier reading for both horizontal and vertical scales. Leveling Head with Thumb Screw Adjustment and Spirit Level. Clamps under head hold wooden legs of Tripod. (Legs not included.) Instructions cover elementary surveying, range-finding.



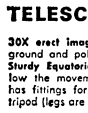
LIGHT AND OPTICS LAB

Exciting optical projects for the study of light. Equipment includes: five Precision Lenses, Prism, Polarizing Filters, Diffraction Grating, Mirror, Telescoping Tubing, Lens Mounts, Tube Holders and Brackets. All the parts and instructions to build a Camera Obscura, Camera Lucida, Polaroscope, and many other optical devices.



PHOTOMICROGRAPHY CAMERA

Photographs subjects mounted on microscopic slides. Enlarges up to 100X. Takes clear, sharp pictures of specimens too small to be seen with the naked eye. A fully self-contained unit—no microscope required. Uses standard roll film, either 120 or 620, black and white or color. Make a photographic record of your projects with microscopic subjects.



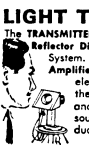
TELESCOPE AND MOUNT

30X erect image. Extends to 30" length. Five ground and polished lenses. Ramsden Eye-piece. Sturdy Equatorial Mount makes it easy to follow the movement of heavenly bodies. Mount has fittings for wooden legs that complete the tripod (legs are regular 1x2 lumber not included).



PHOTOGRAPHY LAB

A PRECISION 35MM ENLARGER... horizontal type with twin condensing lenses and 3" F/L projection lens. Produces quality enlargements up to 8"x10". Contact Print Frame takes negatives up to 3 1/2"x4 1/2". 3 Plastic Developing Trays, Neon Safelight, Tray Thermometer, Film Clips, Developing Chemicals, Printing and Enlarging Paper and Darkroom Handbook. Make quality enlargements for \$6. Make prints for only 2¢. Full instructions.



LIGHT TRANSMITTER-RECEIVER

THE TRANSMITTER consists of a Light Source, a Modulating Reflector Diaphragm and an Optical Projection System. THE RECEIVER is a Two-Stage Audio Amplifier, controlled by a Photo-electric Cell that catches the projected light beam and causes the original sound waves to be reproduced in the loudspeaker.



WEATHER STATION

A REMOTE READING ANEMOMETER AND WIND VANE... Flashing Neon Lights on indoor indicator board show wind speed and direction. Safety Power Card makes all connections safe. 100 ft. of Lead-in Wire. Plus—Air Tank Barometer measures relative humidity. Rain Gage measures rainfall to 1/100 inch. ALSO Cloud Chart and Forecasting Manual—a complete set up for amateur meteorology.



You get ALL the equipment for ALL the above in ten monthly kits

SEND ONLY \$100 TO ENROLL PAY ONLY \$4.95 FOR EACH KIT THAT YOU RECEIVE

Take as few as you wish—or get all ten... it's up to you!

SOME QUESTIONS ANSWERED

Q. How is it possible? It seems incredible to be able to get all the equipment shown above in just ten kits—at only \$4.95 per kit!

A. The direct-to-you, "no middleman", club plan is just part of the answer. The other key is ABS Club's especially designed multi-use equipment. For example: the Microprojector quickly and easily converts into the Spectroscope, Photo Enlarger and Cloud Chamber Illuminator. Similarly, the Transit doubles as a Telescope Mount. Such multi-purpose design... plus club plan economy... makes possible this all-science program at a price everyone can afford.

Q. May members choose the order in which they receive their kits?

A. Yes. With the first kit members receive a list of the equipment and projects contained in each of the remaining nine kits. With this information they are able to choose the kit sequence that best suits their particular interest.

Q. Can members get their kits all at once instead of one-a-month?

A. Yes. At any time members can have the balance of their kits sent in one shipment. We recommend that you start on the kit-a-month plan because the monthly spacing will give you time to get the full measure of knowledge and enjoyment that each kit has to offer.

MAKE SCIENCE YOUR HOBBY!

NO EXPERIENCE NECESSARY—IT'S FUN! IT'S EASY!

Circle No. 145 on Reader Service Card

NO OBLIGATION—NO RISK!

- ★ You take only as many kits as you wish. No minimum—you may cancel anytime.
- ★ Two weeks approval on each kit you take. You may return any kit for full refund.

Send coupon today—get your first kit on its way!

TRIAL MEMBERSHIP COUPON

- I wish to try the Kit-a-Month Program:
- I enclose \$1.00 to enroll and \$4.95 for the first kit postpaid.
- I enclose \$1.00 to enroll. Send first kit COD. I'll pay COD fee.
- I understand if I am not satisfied with the first kit I may return it for a complete refund including the \$1.00 membership fee.

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