



# It makes your job a little easier and your students a lot brighter.

Our new planetarium is a perfect classroom aid. It lets you demonstrate the workings of the Universe clearly and completely. It's a 3-dimensional scale model showing Earth, the Moon and Sun exactly as they are. Flip a switch and the class can see the Earth rotate and move around the Sun, and the Moon orbit Earth. (A)

You can demonstrate lunar and solar eclipses, Moon phases, the seasons, polar day and night, the morning and evening Sun, constellations during the seasons, the time of year, position of the solar system and location of stars each night of the year. (B)

Students can see inside through a clear Plexiglas® shell. The top removes for closer viewing. (C) Diagrams of 60 constellations are included. You can attach them to the outer shell and project them onto room walls. (D)

The Astronomics-Baader Planetarium helps make a fascinating subject more understandable. And it's portable so you can move it from room to room as needed. The price, only \$295, complete with instructions. Send the coupon for more information.

Astronomics Inc., A Division of The Craftool Company, Inc.  1 Industrial Road, Wood-Ridge, N.J. 07075	SN-9
Please send literature on your new Planetarium and 25" x 38" Cel Chart.	estial
Name	
School	
Street	
City State ZIp	<del></del>

# astronomics

318 science news, vol. 96

# science news

# **EDITORIAL**

326

321 Simon Ramo on predicting the future

#### OF THE WEEK

322 Amchitka test: debate goes on

323 Man-mouse cells yield enzyme clues

325 Hassle over drug patents Toward a single oceanography agency

> Foundation research threatened News briefs: Defense, NSF budgets; draft change

327 Life Sciences: Testing for Tay-Sachs; Alternative to immunosuppressive drugs; Transforming defective cells; Side effects from epilepsy drug

328 Aerospace: STOL pushed; Apollo rover program; Pitch control for V/STOLs; Concorde cracks sound barrier; Iran, Indonesia get Intelsat stations

329 Chemistry: Silicon carbide for cathode-ray tubes; Coal for gas turbines; Artificial white carbon; Chemosterilization for rats; Zinc recovery method; Stiff coal mine legislation

330 Earth Sciences: Sinking oceanic plate; Red Sea spreading; Age of Bay of Biscay; Glacier-dusting in Chile; Antarctica fossil search

### FROM ABROAD

338 Letter from Sydney: Boosting the tuna catch

### IN SCIENCE FIELDS

331 Space Exploration: Many roads to Mars

332 Nuclear Physics: New machines give new impetus

334 Insect Pathology: Viruses for pest control

320 Films of the Week

320 Letters to the Editor



Nuclear physics looks to a new future with a new generation of equipment: Here a mock-up of Indiana University's projected 200-MeV cyclotron. p. 332 (Photo: Indiana U.)

> A Science Service Publication Vol. 96/October 11, 1969/No. 15 Science News Letter(\*)

Watson Davis, 1896-1967 Publisher: E. G. Sherburne Jr.

Editor: Warren Kornberg

Managing Editor: Carl Behrens

**DEPARTMENTS** 

Aerospace: Jonathan Eberhart

Chemistry and Engineering: Edward Gross

Life Sciences: Barbara J. Culliton

Medicine: Faye Marley

Physical Sciences and Astronomy:
Dietrick E. Thomsen, Kendrick Frazier

Illustrations: Susan Brouwer Production: Marilyn Binn

Production Assistant: Renee Goldberg

Books: Margit Friedrich
New Products: Ruby Yoshioka
Assistant to the Editor:
Nadine Clement

Editorial Assistant: Esther Gilgoff

Advertising: Scherago Associates, Inc.

Circulation: Marcia Nelson

#### SCIENCE SERVICE

Institution for the Popularization of Science founded 1921; a non-profit corporation

Board of Trustees—Nominated by the American Association for the Advancement of Science: Athelstan F. Spilhaus, West Palm Beach, Fla.; Wallace R. Brode (Treasurer), American Chemical Society, Washington, D. C.; Bowen C. Dees, University of Arizona. Nominated by the National Academy of Sciences: Henry Allen Moe, The Clark Foundation; Harlow Shapley, Cambridge, Mass.; Allen V. Astin, Bethesda, Md. Nominated by the National Research Council: Glenn T. Seaborg (President), U.S. Atomic Energy Commission; Leonard Carmichael, National Geographic Society; John R. Whinnery, University of California, Berkeley. Nominated by the Journalistic Profession: O. W. Riegel (Secretary), Washington and Lee University; Gordon B. Fister, Call-Chronicle Newspapers; Peter Clark, Evening News Association, Detroit. Nominated by the Edward W. Scripps Trust; John Troan, Pittsburgh Press; Ludwell Denny, Monterey, Calif.; Edward W. Scripps II (Vice President), Edward W. Scripps Trust.

Director: E. G. Sherburne Jr.; Assistant Director: Dorothy Schriver; Staff: Youth Division, Howard Weisbrod; Things of Science, Ruby Yoshioka.

Newspaper Services: Editor, Warren Kornberg; Managing Editor, Frank Sartwell.

october 11, 1969 319



# OUTER-SPACE MAP

Study the solar system with a 42x33 in. 8-color space map showing entire solar system, all planets orbit size, etc. . . . Only \$1.00 Postpaid

CHESPA SALES -S Barrington, N.J. 08007 P.O. Box 117-S

# MODELS

Send for catalog of low cost molecular and crystal models. DYNA-SLIDE CO.

P.O. Box 1009 Evanston, III. 60204

# LANGUAGES? Easy!

Listen & Learn. Only course designed for travel, everyday life. 3 12" records, full of practical phrases. English & language recorded. Full manual with record text, phonetic transcription. Separate sets: Spanish, French, German, Italian, Russian, Japanese, Portuguese, Greek, Hebrew, 86.95 each. Money-back guarantee. Dept. SNL, Dover, 180 Variek St., N.Y., N.Y. 10014



- you instantly, with extreme accuracy, exactly how much postage is needed! No more putting on that extra stamp just because you "want to
- Tests have actually proven it more accurate than Post Office scales!
- It's also a LETTER OPENER and SEVEN INCH RULER!
- Every <u>home</u> and <u>office desk</u>, every <u>briefcase</u>, every <u>pocketbook</u> needs one!
- Makes a perfectly marvelous personal or business gift! You don't have to worry that they may already have one, because they are always glad to receive another! (We get many orders for a dozen or more at a time. Some people must send them to everybody on their gift lists!)
- Imported from Denmark. Handsomely molded. Will last "forever." No springs never needs adjustment! Satisfaction guaranteed or full refund, including postage.
- Not sold in stores. Please use coupon to order. GEAR FOR GOOD LIVING, Darien, Conn. 06820

_			41	Section 1	1000	
GE	AR	FOR	GOOD	LIVING	. Dep	. 2870
				Darien.		

Please send DANISH POSTAL SCALES by return mail postpaid, as follows: 

1 for \$1.00. 
3 for \$2.80. 
6 for \$5.40. 
12 for \$10.00. Enclosed is cash 
check 
or money order 
.

Name	
Address	
City	State 71-



LAST COMPLETE SILVER SET. Brilliant uncirculated 1964 Phila. or Denver mint with scarce J.F.K. Silver ½ dollars \$2.95 + .25¢ p.p. Free .50¢ gift case. Both mints 10 coins \$55.50 + .25¢ p.p. Free luxurious \$1-Velvet lined, gold embossed presentation case (as illust.) Save 10 sets \$49.50-twenty sets \$95. Fifty sets \$225. Collectors rare 80 yr. old uncirculated silver dollars \$4. each in gift case + .25¢ p.p. Five asst'd dates in luxurious velvet lined presentation case \$19. + .50 p.p. 5 sets (25 coins) \$90. + \$1.00 p.p. Roll of 20 silver dollars \$70. Five rolls (100) coins \$340. ten rolls \$660. Add .50¢ per roll p.p. Money back guarantee. A valuable gift or investment rapidly growing in value. Write for free catalog. Member Retait Coin Dealers Assn.—Amer. Numismatics Assn. Est. 1941. Novel Numismatics, 31-2nd Ave., Dept. 140, N.Y. 10003. Novel Numismatics, 31-2nd Ave., Dept. 140, N.Y. 10003.

...Short Paragraphs! Hundreds of beginners now making money writing short paragraphs. I tell you what to write, where and how to sell; and supply list of editors who buy from beginners. No tedious study. Write to sell, right away. Send for free facts. BENSON BARRETT, Dept. 163-X, 6216 N. Clark, Chicago, Illinois 60626

# TELLS HOW TO SELL YOUR INVENTION

If you have an invention that you believe has merit, write us at once for copy of copyrighted booklet "How to Go About Selling Your Invention." We work with manufacturers, and booklet reveals present markets, qualities of a saleable invention, current royalty rates being paid by manufacturers. Booklet is FREE, is offered to encourage new ideas we might submit to manufacturers. Just send name (no drawings please) to Kessler Sales Corp., Dept. D-4110, Frement, Ohio 43420

# Are You A Bore?

A noted publisher in Chicago reports a simple technique of everyday conversation which can pay you real dividends in social and business advancement and works like magic to give you poise, selfconfidence and greater popularity.

According to this publisher, many people do not realize how much they could influence others simply by what they say and how they say it. Whether in business, at social functions, or even in casual conversations with new acquaintances there are ways to make a good impression every time you talk.

To acquaint the readers of this publication with the easy-to-follow rules for developing skill in everyday conversation, the publishers have printed full details of their interesting self-training method in a new booklet, "Adventures in Conversation," which will be mailed free to anyone who requests it. No obligation. Send your name, address and zip code to: Conversation, 835 Diversey Parkway, Dept. 540-010, Chicago, Ill. 60614. A postcard will do.—(Adv.)

## MICRO ADS

Classified and Employment advertising accepted at general advertising rate of \$23.80 per inch. For frequency discounts write for rate card. Minimum ad accepted is 1 inch. All classiffied advertising is payable in advance. Closing date is 4 weeks prior to issue date. Address all correspondence to: Science News, 11 W. 42nd Street, New York, New York, 1036 York 10036.

CHEMICALS, Biologicals, Botanicals, \$1.00 Quantities Pricelist \$1.00 Deductible from First Order, Dept. S Spectro, 1354 Ellison, Louisville, Ky. 40204.

GOVERNMENT SURPLUS 96-page electronic-optical catalog showing hundreds of bargains galore. Pennies on the dollar. Send 25c. Meshna, Nahant, Mass. 01908.

LIVE SEAHORSES, marine specimens, aquarium supplies. Illustrated catalog 15c. F. F. Marine Life, Box 284-306, Dania, Florida 33004.

MODEL KITS—Scientific, ships, hobbies, engines. New illustrated brochure 25c. Astro Design Co. Box 202B, Maplewood, N. J. 07040.

TRAVEL POSITION wanted. Man and wife, near middle age. Willing to prepare for position that allows much travel and potential. Ask expenses plus opportunity. Jan, 5155 Rinker Rd., Kansas City, Mo. 64129.

PUBLISH your book! Join our successful authors: publicity, advertising, promotion, beautiful books. All subjects invited. Send for free manuscript report and detailed booklet. Carlton Press, (Dept. XNM), 84 Fifth Avenue, New York 10011. age prepaid, Californians add 5%. Marine Bio-

UNUSUAL, UNUSUAL SPECIMENS, minerals, fossils, arrowheads, sperm whale teeth, "maneating" clam shells, plants, jewelry, catalog 25c. Unusual Company, Box 23628N, Ft. Lauderdale Fig. 33307 dale, Fla. 33307.

PLASTIC BINDERS—Bind 25-100 page reports, resumes, theses, etc., WITHOUT staples (no equipment needed). Eight colors, easy to use. Send \$1.00 for eight samples, catalog sheets, prices. Complete line covers, plain or imprinted. INKWELL PRINTING, 1220 Hertel, Ruffalo, N.Y. 14216. printed. INKWELL Buffalo, N.Y. 14216.

SPECIALISTS: ALL SCIENTIFIC & TECHNICAL BOOKS & PERIODICALS. ONE-STOP COM-BINED BOOKSTORE & SUBSCRIPTION AGENCY

No fees for handling periodicals. Still time to handle your 1970 renewals. Business & Personal Professional Discounts. Free order forms & envelopes. Immediate reports. Net items at cost. Serving thousands of clients. References on request. Write for details to-

day. READER-SERVICES COMPANY, The Contribu-tionship Building, P.O. Drawer 120, Morris-ville, Buck County, Pa. 19067, 215—295-6131

## **ENGINEERS**

Looking for a top position? You can find the right one among leading firms advertising in the LOS ANGELES HERALD-EXAMINER'S NATION-WIDE HELP WANTED EDITION. Send for your FREE COPY coming out October 5th. Leading firms thruout the country will be represented. represented

resented.
WRITE L. A. HERALD-EXAMINER
Classified Mail Division, Dept. 15
1111 So. Broadway, Los Angeles 90054

### IS THERE A CHEMIST IN THE HOUSE???

Only \$4.00 Plus \$1.00 p.p.
Will bring 49 "PLUS" individual, assorted, items of standard quality laboratory apparatus: glassware, porcelain, rubber, plastic, etc., etc. Value? 2 to 3 times our offer. None dangerous. No junk. One surprise item.

Pyrex Advanced Student Assort. @ \$10 plus \$2 p.p.



HARRY ROSS Scientific & Lab. Projects 61-L Reade St. N.Y. 7, N.Y.

# SEE MIRACLE OF BIRTH

498 POST PAID WITH
SIX QUAIL EGGS
(\$3.25 Without Eggs.)
You get the new clear plastic dome CHICK-BATOR with 6
Bobwhite Quail Eggs (available year-round) and Egg Hatchers
Guide Book. Complete — nothing else to buy. Send check or Money Order today.

G.Q.F. MFG. CO., DEPT. CL, BOX 152, SAVANNAH, GA.