

X-rays Stream Down Beam Line

Just before the Laboratory's shut-down last month, the x-ray ring at the National Synchrotron Light Source (NSLS) came one step closer to full commissioning. On December 16, the safety shutter at beam line X13-A was opened, allowing x-rays to course down a beam line for the first time.

Inside a protective hutch at the end of the beam line, a TV camera was focused on a fluorescent screen designed to light up when contacted by x-rays. Outside the hutch, watching the monitor, were Jerry Hastings and Bill Thomlinson, x-ray beam line physicists at the NSLS. As Hastings described the event, "We watched the monitor as the electron beam was ramped up from 600 MeV in the storage ring. Acceleration took a few minutes, but at about 1.4 GeV we suddenly saw a twinkle. It was at an odd place on the screen — somewhere it shouldn't have been. As the energy rose, increasing the number of x-rays, the spot got brighter. Then we realized why the light was in the wrong place. In order to focus the camera on the fluorescent screen, we had had to lay it in a sideways position which threw our perspective off. When we knew we were truly seeing x-rays, we got very excited."

This excitement came only six days after electron energies in the x-ray storage ring first reached 2 GeV. Thomlinson reflected, "In less than a week we had x-rays down the beam line. In terms of sequencing the installation and commissioning of a facility, I think that's remarkable. The most incredible thing is that we brought this on while the same staff was operating and commissioning a brand-new ultraviolet ring. This success was due to the dedication of the entire NSLS staff."

This feat was complicated by a small change in the x-ray ring's dimensions. In going from a concept to actual construction, the circumference of the x-ray ring was increased by five centimeters (cm). What difference does 5 cm make to a ring with a circumference greater than 17,000 cm? "We're working with very narrow beams of x-rays and we must know

precisely where they are in order to place the beam lines at the tangent of the electron orbit," explained Thomlinson. "The small change in circumference changed all our original calculations. We needed to see the x-rays to gain confidence in our new measurements, and in where we placed beam-defining components in the beam line."

The measurements and alignments for the beam line were made by surveyors Robert Scheuerer and Walter Breck, who joined Hastings and Thomlinson outside the hutch. X13-A was chosen as the first x-ray beam line to be opened because it is a white beam line — one which uses the entire spectrum of light, as opposed to only one wavelength. Basically this kind of beam line is the simplest to get x-rays through, which made it a good candidate for verification of the alignment procedures.

Since X13-A was found to be in nearly perfect alignment, and since the same adjustments to the original calculations were carried out all around the x-ray ring, this is good news for all of the ring's 31 beam lines at 17 beam ports. Said Hastings, "We can now move forward in a very direct way to align front end hardware at the other ports."

The next NSLS x-ray beam line scheduled to be installed is X13-B. More complex than its sister beam line X13-A, X13-B features a monochromator and two mirrors for research into crystallography and diffuse scattering. Beam line installation will begin later this month and, Hastings said, "We expect to get some monochromatic radiation in the spring."

With this kind of progress, Hastings continued, "It seems clear that, in a few months, experiments will begin at the x-ray ring, presumably on a beam line like X-13A." In addition to developing x-ray beam lines, Hastings and Thomlinson are both part of the experimental team which will do powder diffraction studies and material science structural analyses on beam line X13-A. Explaining their involvement, Thomlinson said, "I



Watching the TV monitor intently as the first x-rays come down beam line X-13A are (from left) Robert Scheuerer, Bill Thomlinson, Walter Breck and Jerry Hastings.

think it's very important to understand that you can't do state-of-the-art instrumentation unless you're doing state-of-the-art science yourself. You have to be deeply involved in at least some experimental programs.

"Although we are part of this experiment," he continued, "our primary commitment is to build NSLS beam lines. In addition to our present efforts

in beam line installation and facilities development, we are already designing the next generation of beam lines, seeking more radiation and higher energies by using new devices like wigglers and undulators. Our job is never really completed, since we have to keep moving on to new challenges."

— Anita Cohen

Patents Awarded

Thomas Luhman, a former BNL employee, and Carl J. Klamut, Masaki Suenaga and David Welch, DEE, were awarded U.S. Patent #4,324,842 for inventing a superconducting wire with improved strain characteristics. The addition of an unusually small percentage of beryllium, ranging from 0.01 to 0.2 percent by weight, to a low volume, bronze matrix for a superconducting film adds sufficient tensile strength to the matrix during a heat treating process to hold the superconducting filament under greater compression, both radial and axial, upon its formation than has been obtained previously with a similarly sized matrix. The higher compression increases the strain limits and provides a more rugged wire with a higher useful current carrying capacity.

William G. Wilhelm, DEE, has been awarded U.S. Patent #4,327,707 for inventing a flat plate solar collector that employs high performance thin films. Wilhelm's invention overcomes several problems in this field, such as excessive hardware, cost and reliability. The apparatus features a

(Continued on page 3)

BNL Lecture The Chemistry Of Clouds

Clouds can potentially play a major role in the formation of acidic rain. So says chemist Stephen Schwartz of DEE's Environmental Chemistry Division, who will be giving the next Brookhaven Lecture, on Wednesday, January 26 at 8 p.m. in Berkner Hall. The title of his talk is "Both Sides Now — The Chemistry of Clouds."

Inspiration for the title, says Schwartz, came from the Joni Mitchell song that begins "I've looked at clouds from both sides now." It's a sentiment he feels describes the studies which he and co-workers have been making on the chemistry of clouds by means of laboratory experiments and by aircraft measurement of cloud composition.

According to Schwartz, clouds are an ideal medium for the chemical reactions that transform the precursors of acidic rain — gaseous sulfur and nitrogen oxides — into the sulfuric and nitric acids deposited in precipitation. Clouds supply liquid water which dissolves and dissociates the product acids, thereby providing a

strong thermochemical driving force for reactions. Additionally, the highly dispersed nature of clouds provides good contact between the gas phase, where the reactants are located, and the liquid water, where reaction takes place.

In his talk, Schwartz will briefly review the properties of clouds from the perspective of a physical chemist. Some BNL laboratory studies will be described, with a focus on the solubility and reactions of nitrogen dioxide.

He will also report on some of the recent measurements, made with the BNL airplane, of the composition of liquid-water stratiform clouds. These measurements are beginning to show that cloud water is much more acidic than clear-air aerosol. (Clear-air aerosol consists of suspended particulate matter in non-cloud air, that serves to nucleate cloud droplets.) Schwartz attributes this difference in composition between cloud water and clear-air aerosols to the reactions of sulfur and nitrogen oxides in cloud water, reac-

(Continued on page 2)



Stephen Schwartz

Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, Va. 22161. Staff members should call Ext. 5068.

BNL-51308

Socioeconomic Costs of Prolonged Electricity Shortages. J. Allentuck, et al

NUREG/CR-1890

BNL-NUREG-51328

ABS, SRSS and CDF Response Combination Evaluation for Mark-III Containment and Drywell Structures. A.J. Philippopoulos

NUREG/CR-2039

BNL-NUREG-51366

Dynamic Combinations for Mark-III Containment Structures. A.J. Philippopoulos

BNL-51434

Semiannual Report for the Period October 1, 1980 - March 31, 1981 of work on:

- 1) Superconducting Power Transmission System Development
- (2) Cable Insulation Development Advanced Technology Applications Div., E.B. Forsyth, et al

BNL-51441

Fuel Cell Applied Research: Electrocatalysis and Materials. Quarterly Report April 1 - June 30, 1981. W.E. O'Grady, et al

BNL-51446

Energy Models for Developing Countries: A Comparative Assessment. V. Mubayi, et al

NUREG/CR-2317

BNL-NUREG-51449

Vol. 1 #4

Container Assessment-Corrosion Study of HLW Container Materials. Quarterly Progress Report October - December 1981. T.M. Ahn, et al

NUREG/CR-2331

BNL-NUREG-51454

Vol. 1 #4

Safety Research Programs Sponsored by Office of Nuclear Regulatory Research. Quarterly Progress Report October 1 - December 31, 1981. A.J. Romano, et al

BNL-51471

The Brookhaven National Laboratory/Dale W. Jorgenson Associates Long-Term Energy/Economy Reference Projection. P.A. Dorosh, et al

BNL-51473

Vols. I & II

Transport, Fate and Effects of Energy-Related Pollutants: Evaluation of Surface and Groundwaters. Second Progress Report Sept. 1981. G.R. Hendrey, et al

BNL-51474

Modules for Estimating Solid Waste from Fossil Fuel Technologies. M.A. Crowther, H.C. Thode, Jr., S.C. Morris

NUREG/CR-2616

BNL-NUREG-51514

Evaluation of Isotope Migration-Land Burial. Water Chemistry at Commercially Operated Low-Level Radioactive Waste Disposal Sites. Status Report October 1980 - September 1981. R.F. Pietrzak, et al

BNL-51524

Transverse Coherent Instabilities and a Dipole Feedback Damper for Coexisting Coasting and Bunched Beams. J.M. Wang

NUREG/CR-2685

BNL-NUREG-51529

Evaluation of Concurrent Peak Responses. P.C. Wang, et al

NUREG/CR-2688

BNL-NUREG-51533

Effect of Dispersed Particulate or Droplet Phase on the Rayleigh-Taylor Instability of a Gas-Liquid Interface. J.R., Moszynski, et al

BNL-51534

Effect of Non-Host Plants on Movements of Colorado Potato Beetle, *Leptinotarsa decemlineata* (SAY). R.P. Cort

BNL-51536

A Study on the Conditions Required for Transverse Stability of a Coasting Beam in Proton Storage Rings. M. Cornacchia, C. Pellegrini

BNL-51365

The Time-Stepped Energy System Optimization Model (TESOM) Methodology and Case Study. A.S. Kydes, J. Rabinowitz

NUREG/CR-2193

BNL-NUREG-51410

Vol. 1 #3-4

Properties of Radioactive Wastes and Waste Containers. Quarterly Progress Report Oct.-Dec. 1981. N. Morcos, et al

ANS Meeting

William Higinbotham will speak on "Nuclear Materials Safeguards, Domestic and International" at the next meeting of the Long Island Section of the American Nuclear Society on January 19. The meeting will be held at the Bavarian Inn, Lake Ronkonkoma, and will be preceded by cocktails at 6 p.m. and dinner at 7 p.m. For reservations, call Annamarie Spira at Ext. 2352.

Anti-Jet-Lag Diet

Jet lag may be a thing of the past, thanks to an anti-jet-lag diet developed by Dr. Charles F. Ehret, a scientist in the division of Biological and Medical Research at Argonne National Laboratory.

The diet is helping travelers quickly adjust their bodies' internal "clocks" to new time zones, providing relief from the insomnia, indigestion, and disorientation associated with jet lag. This is accomplished through a feast-fast-feast-fast regimen that begins four days before breakfast time at destination on the day of arrival.

On the first and third days, the traveler feasts on a high protein breakfast and lunch to stimulate the body's active cycle, and a high carbohydrate supper to stimulate sleep. On the second and fourth days the traveler fasts on light meals of salads, soups, fruits and juices to help deplete the liver's store of carbohydrates and prepare the body's clock for resetting. Caffeinated beverages are only allowed between the hours of 3 and 5 p.m. on the first three days. On the fourth day, caffeinated beverages are allowed only in the morning for westbound passengers and between 6 and 11 p.m. for eastbound passengers.

It is important to get a good night's sleep before breakfast on the day of arrival, if possible. Then feast on a high protein breakfast and stay active and awake throughout the day, resuming normal eating patterns.

Clouds

(Cont'd)

tions of the sort that have been studied in the laboratory. At this stage, Schwartz concludes they have a "pretty good idea of what is going on up there, but there are still some mysteries."

Stephen Schwartz has been at Brookhaven since 1975. Prior to that, he was an assistant professor at the State University of New York at Stony Brook for six years.

He holds an A.B. from Harvard College and a Ph.D. from the University of California, Berkeley. He also spent a year as a Fulbright Post-Doctoral Fellow at the University of Cambridge, England.

On the evening of the lecture, a buffet supper will be served at the Brookhaven Center at 6:30 p.m. The price is \$7.50, and reservations should be made by calling Ext. 3541 before 5 p.m. that day.

Volunteers Wanted

The Psychology Department of the State University of New York at Stony Brook is looking for couples planning to marry in 1983. These couples are needed to participate in a survey, conducted by the Marital Research Program, which will contribute to our knowledge of marriage and the family. Volunteers receive \$40 immediately, and \$120 for further participation. For more information, call 246-3403.

Help In Basic Math

The basic mathematics tutorial sessions are being continued through June, 1983. This program is offered to employees who intend to begin college technical mathematics courses and need a refresher course in basic arithmetic, algebra or geometry. The classes are held on Tuesday and Thursday afternoons, beginning at 4 p.m. If you are interested, call June Herbert on Ext. 7631.



Last month, before the Lab went on vacation, a party was held for employees who had been working here for 25, 30 or 35 years. There were 146 employees who had reached these categories in 1982. Supervisors, spouses and friends were on hand to congratulate the honored guests. Here are a few scenes from the party.

—photos by Reben



BROOKHAVEN BULLETIN

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Artists' Alert

The Art Committee announces that the 9th BERA Members' Art Exhibit will open on Monday, February 14 at 4:45 p.m. All BERA members, including employees, immediate family 16 years of age and over, and retired employees, are invited to contribute their work.

Artists may display their most recent work in two categories: pictures or sculpture. (Crafts will not be exhibited this year). Pictures will include water color or oil paintings, drawings and graphics. A form, which must be completed for each work, will appear in a future issue of the Bulletin along with complete details about the exhibit.

Patents

(Cont'd)

substantially rigid planar frame. A thin film window is bonded to one planar side of the frame. An absorber of laminate construction is comprised of two thin film layers that are sealed perimetrically. The two layers define a fluid-tight planar envelope of large surface area to volume through which a heat transfer fluid flows. An absorber is bonded to the other planar side of the frame. The thin film construction of the absorber assures substantially full envelope wetting and thus good efficiency. The window and absorber films stress the frame, adding to the overall strength of the collector.

PINY Spring Term

The Polytechnic Institute of New York will hold registration for the following on-site courses on Thursday, January 27, from 6-7 p.m. in the conference room of Bldg. 318:

- NU 601 Intro. to Nuclear Engineering II
- NU 603 Nuclear Engineering Lab I
- NU 721 Economics of Nuclear Power
- NU 726 Metallurgy of Nuclear Power

Days, times and instructors will be announced later. All classes will begin at 6 p.m. unless otherwise announced. For further information, call Dr. Robert Benenati, (212) 643-5533 weekdays at PINY or Ext. 2044 at BNL on Thursdays.

Arrivals & Departures

Arrivals

Joseph M. Block NSLS
Angela M. Boccio Medical
Yu-Shiaw Chen-Hsieh En. & Env.
Nam Z. Cho Nuclear Energy
Walter Gubler Accelerator
Melanie Meade Medical
Maria G.V. Rosenthal En. & Env.
James P. Wicksted Physics
Eleanore T. Wurtzel Biology

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:
Marion Dorfer Staff Services
Paul Marnell Energy & Env.
Mauro A. Squicciarini Plant Eng.



The Folger Consort will present a tapestry of medieval music at Berkner Hall on Wednesday, January 19 beginning at 8:30 p.m. The Consort is in residence at the Folger Shakespeare Library in Washington, D. C., one of the world's leading centers of Renaissance studies. Tickets may be purchased at the door. General admission is \$7; students and senior citizens, \$4; and those under 18, \$3.

MICOM Meeting

There will be no MICOM meeting for the month of January. The next meeting will be Wednesday, February 16, at 3 p.m. in the Orange Room of Bldg. 510A (Physics). The meeting is open to anyone interested in Word Processing. Suggestions for topics of discussion at future meetings are welcomed. Please call Ellen Citrolo, Ext. 4486, or Nancy White, Ext. 3793.

PSI News

The next meeting of the Professional Secretaries International will be held on Monday, January 17, at 6 p.m. in Room B, Berkner Hall. On the program will be Frances Reitz, Extebank, who will talk on "Establishing Credit In Your Own Name." Dinner is available at the cafeteria and trays may be taken to Room B prior to the meeting. Guests are invited to attend.

Aerobic Dance

Beginning later this month, the Aerobic Dance club will sponsor classes in both Aerobic Dancing and Stretchercise.

Aerobic Dancing will meet twice weekly, on Tuesdays and Thursdays. The twenty lesson session costs \$50. Registration will be held on Tuesday, January 18, at 5:15 p.m. at the Brookhaven Center, followed by the first lesson.

Stretchercise participants will meet on Wednesdays, for a total of ten lessons for \$25. The first lesson will follow registration on Wednesday, January 19, at 5:15 p.m. at the Brookhaven Center.

All classes will meet from 5:15 to 6:15 p.m. Full payment for each class is due at registration. Any questions should be directed to Becky Bishop, Ext. 4386 or 286-0139.

Debts: the certain outcome of an uncertain income.

Air travel: seeing less and less of more and more.

In Stormy Weather

The following radio stations will announce Laboratory closings and delayed openings in the event of storm conditions.

Station	Area	AM	FM
WCTO	Smithtown	—	94.3
WGLI	Babylon	1290	—
WBLI	Patchogue	—	106.1
WLIX	Islip	540	—
WHLI	Hempstead	1100	98.3
WBAB	Babylon	1440	102.3
WLNG	Sag Harbor	1600	92.0
WALK	Patchogue	1370	97.5
WRIV	Riverhead	1390	—
WRCN	Riverhead	1570	103.9
WWRJ	Southampton	—	95.3

Gardeners Wanted

The Cooperative Extension Association of Suffolk County is recruiting volunteers for its 1983 Master Gardener training program. After being trained in early February, the Master Gardeners will help the Cooperative Extension disseminate gardening information to people throughout the county.

Volunteers for the program should not only possess great interest and experience in home gardening, but should also be enthusiastic about working with other people. Anyone interested in becoming a Master Gardener should contact Caroline T. Kiang, Cooperative Extension Agent, 246 Griffing Avenue, Riverhead, N.Y. 11901, phone: 727-7850.

Gym/Pool Schedules

Admission Fees:

Four Month Season (fees not prorated)	
Individual Membership	\$23.00
Family Membership (must be members of employee's household)	33.00
Daily Admission	
Employee/Family Member	1.25
Guest	1.75

Schedule:

Monday through Friday
Employees Only
11:00 a.m. to 1:30 p.m.
Employees/Families/Guests
5:00 p.m. to 9:30 p.m.

Saturday and Sunday
Employees/Families/Guests
1:00 p.m. to 6:00 p.m.

NYC Train Trips

The Hospitality Committee has scheduled group railroad trips to New York City on the following Wednesdays during 1983:

January 19	July 6, 20
February 2, 16	August 3, 17, 31
March 2, 16, 30	September 7, 21
April 6, 20	October 5, 19
May 4, 18	November 2, 16, 30
June 1, 15, 29	December 7, 21

— Tickets are \$3.50 each for adults; children under five years of age ride free.

— Checks should be made payable to BNL and sent to: Hospitality Committee, P.O. Box 322, Upton, NY 11973

— Checks are due the Thursday before the trip.

— Cancellations must be received no later than the Monday preceding the trip. If you fail to cancel on time, or if you miss the train, your money will not be refunded.

— The train leaves at 7:55 a.m. from the Patchogue LIRR station. If you are planning to board at another station, you must indicate this fact when sending in your fare.

— An announcement will appear in the Bulletin if any Saturday trips or special side trips are scheduled during the year.

Cafeteria Menu

Week Ending January 21, 1983

Monday, January 17

Cream of tomato soup	(cup) .65
	(bowl) .75
Cheese omelet & 1 veg.	1.80
Grilled chopped steak w/mushroom & onions & 1 veg.	1.95
Hot Deli: Grilled Reuben	1.90

Tuesday, January 18

Old-fashioned bean soup	(cup) .65
	(bowl) .75
Savory baked boneless breast of chicken & 1 veg.	1.95
Chinese pepper steak on white rice	1.95
Hot Deli: Baked ham	(bread) 1.85
	(roll) 1.95

Wednesday, January 19

Split pea soup	(cup) .65
	(bowl) .75
Baked meatloaf & 1 veg.	1.85
Corned beef & cabbage	1.90
Hot Deli: Chicken pattie parmesan hero	1.95

Thursday, January 20

Minestrone soup	(cup) .65
	(bowl) .75
Stuffed pepper & 1 veg. or w/spaghetti	1.85
	2.05
Sauerbraten & potato pancake	2.00
Hot Deli: BBQ fresh ham	(bread) 1.85
	(roll) 1.95

Friday, January 21

Fish chowder	(cup) .65
	(bowl) .75
Fish & chips	1.85
Ham & potato au gratin & 1 veg.	1.85
Hot Deli: Knockwurst & kraut	(bread) 1.85
	(roll) 1.95

Fruit Tree Tips

When snow covers the ground making food scarce, mice and rabbits often nibble the bark of fruit trees. Apple and pear trees head the list of their favorites, but in severe cold and snow, the bark of stone fruits is also on their menu.

To save a tree, wrap the trunk with aluminum foil. Remove the soil several inches deep from around the trunk. Start wrapping below the soil line and continue to the lowest branch. Alternatively, use quarter-inch mesh wire, often called hardware cloth.

Bowling

White League

High games were bowled by J. Griffin 246/224/659 scratch, J. Roesler 214, B. Belligan 210, G. Fales 211, D. Adams 208, J. Petro 203, S. Smith 203, S. Long 183/195, N. Erickson 171/190, F. Brown 185, P. Manzella 185.

Red/Green League

K. Asselta rolled games of 218/202, E. Meier 214/206, J. Connelly 206, N. Tyler 205, J. Morris 201, J. Petro 200, J. Bohenek 200.

Classified Advertisements

Autos & Auto Supplies

70 VW BUG - semi-auto., 116K, rust, need some work, \$400. Ext. 4741.

73 FORD - F-350 camper special. S. Kiss, Ext. 2674 or 588-1889.

76 FIAT - 131, 2 dr., 5 spd., a/c, am/fm, asking \$1,400. Ext. 2521 or 928-8379 eves.

78 VOLARE - 2 dr., 6 cyl., power s/b, a/c, cruise, 61,000 mi., \$2,700. Kay, 422-6764 after 6 p.m.

81 CHEROKEE JEEP - 6 cyl., 4 spd., low range, H.D. susp. and cooling, a/c, rust-proof, 9,000 mi., as new cond., \$8,500. 286-3298.

80 FORD - F-250 pickup, 4 wheel drive, p/s, p/b, 2 tanks, 3,000 mi., must see. 475-1887.

75 MONTE CARLO - auto., p/s, air, \$1,950. 724-1950.

74 BLAZER - new, 350 cu. in., 2 glass tops, new rear quarters, new 36x15 Q Giants, \$3,500. 744-3968.

72 CAPRI - hi mi., runs well, 26 mpg, \$600. Dennehy, Ext. 2069.

81 HONDA - GL1100 Goldwing, metallic dark blue, crash bars, luggage rack, garaged, mint cond., 3,000 mi., w/full face Bell helmet, \$3,000. 744-6892 eves.

PIRELLI SNOW TIRES - Cinturato steel belted radials, 185/70SR13, both for \$60. Al, Ext. 4301.

67 MUSTANG COUPE - 85% restored, auto., p/s, 6 cyl., 200 cu. in., new rug, bumpers and other parts, \$1,650. 736-3548 after 6 p.m.

58 STUDEBAKER - Silver Hawk, classic car, \$1,500 firm. Bernie, 473-9232 after 6 p.m.

74 DODGE DART SPORT - hi mi., reliable, 6 cyl., 3 spd., am/fm stereo. Ext. 4682 or 698-8740.

80 SUZUKI - GS1000L, shaft drive, luggage rack, many extras, mint, must sell, \$2,500. Ext. 7187 or 981-9474.

CAR AMPLIFIER/EQUALIZER - Pioneer AD-50, 50 watts total power, excel. cond., \$90 or best offer. 744-8063 days.

74 DATSUN - 210, 4 extra wheels, needs work, best offer over \$250. 472-1409.

TIRE RIMS - 13" Datsun, \$4/ea.; P185-13 tire, like new, \$6; A-78-13 on rim, \$2. Brownie, Ext. 4028 or 725-1495.

77 CHEVY SUBURBAN - K-10, 4x4 Silverado, p/s, p/b, a/c, am/fm stereo, much more, \$5,200. Paul, 727-4859.

75 SUZUKI MOTORCYCLE - 185cc, \$200; utility trailer. 821-9086.

74 GREMLIN - 6 cyl., no rust, completely overhauled, new shocks, muffler, starter, \$1,000. Bill, Ext. 3579 or 298-5138 after 6 p.m.

70 FORD FAIRLANE - runs good, needs some body & exhaust system work, \$300 neg. 924-6906 after 6 p.m.

80 SUBARU - Station Wagon DL, metallic silver, 40,000 mi., 33 mpg., roof rack, fog lights, CB, excel. cond., \$5,200. Ext. 3637 or 473-4991.

74 CAPRI - V6, new tires & brakes, \$1,200. Mary Cay, 941-4011 after 7 p.m.

76 FORD TORINO WAGON - 3 new tires, new Diehard battery, \$450 firm. Ext. 7654 or 286-2435.

73 MOTOR HOME - Class A, 20 ft., rear bath, low mileage, good cond., \$5,500. John, Ext. 4520.

71 CHRYSLER NEWPORT - good cond. in & out, auto., a/c, high mileage, must sell. 732-3105 after 5 p.m.

73 FORD PICKUP - F-350, good cond. Steve, Ext. 2674 or 588-1889.

76 CHRYSLER CORDOVA - low mileage, 400 eng., \$1,000 or best offer. Al, 924-0960.

68 BUICK SPECIAL WAGON - 350, V8, auto., it runs, \$250. Lloyd, Ext. 3381.

70 RIVIERA CLASSIC - excel. cond. in & out, \$1,300. Ext. 4303 or 878-1688.

74 IMPALA - a/c, p/s, p/b, 4 new radials plus 2 good snows, some rust, runs good, \$850. Tom, Ext. 4524.

69 VW SQUAREBACK - standard shift, some rust, needs valve adjustment, \$500. 928-5684 eves.

63 FALCON - convertible, top excel., eng. good, needs some body work, make offer. Mac, 929-3455.

79 HONDA - CM400T, 2,000 mi., garaged, must sell, \$1,000. Ext. 7125.

75 PLYMOUTH DUSTER - factory 4 sp. overdrive, radials, vinyl top, excel. cond., asking \$2,195. 588-7058 or 289-8479.

TRAILER AXLES - (2) w/electric brakes, 6,000 lb. capacity w/springs & tires, \$150/takes all; lift gate, 1,500 lb., \$300. 929-8749.

VW PARTS - Bosch tune-up kits, \$22; bumpers, \$27; muffler assemblies, \$28, all brand new. Augie, Ext. 2419 or 325-0594 eves.

Boats & Marine Supplies

KAYAK - fiberglass, w/air bags and paddle, asking \$180. Ext. 2521 or 928-8379 eves.

78 SAILBOAT - 20' O'Day, KCB 3 sails, engine, many extras, like new. 289-0925.

Free

GOOD HOME - for excel. watchdog, Shepherd/Schnauzer, spayed female, good with children. Lois, Ext. 2959 or 751-0023.

NEWSPAPERS - 5' stack, pick up Yaphank. Ext. 4761 or 924-3556 eves.

CAR SEAT - for children, no padding. Mona, Ext. 2347.

Miscellaneous

ATARI - Stampede, \$15, never used, Ext. 2952.

PING PONG TABLE - large, 5'x9', portable, can be folded, on wheels, like new, \$50. 589-2681.

KITCHEN CABINETS - birch with formica top and full backsplash; kitchen sink, white porcelain over cast-iron with Moen single lever faucet; G.E. wall ovens, double, built-in, in birch cabinets; G.E. twin squirrel cage exhaust fan/hood; cassette recorder, Sony TEM-11 mini cassette recorder, all very good cond. 473-8387.

ICE SKATES - boy's figure, size 1, \$7.50, size 4, \$5, double runner, size 1, \$5. Ext. 3642.

WOOD BURNING STOVE - air tight, Earth Stove model. Ext. 4635 or 751-2860 after 6 p.m.

SKI PANTS - men's, dark blue, 34R, Eko Bart, stretch, never worn, \$80. Ext. 4727.

BASF CASSETTE TAPES - C-90, CrO₂ Pro II, \$2.75/ea. Ext. 2521 or 928-8379 eves.

CHILD'S SILVERWARE - silver plated, 6 piece set, \$25; sterling silver set for 8, \$1,250. 475-0144.

HART SKIS - 170 cm, \$25; ski boots, ladies size 6, \$25. Ext. 4312.

GATE WALKWAY - 5' high, chain link, self closing, incl. all mounting hardware, \$40. Victor, Ext. 2395.

JACUZZI - large octagon fiberglass tub, Haywood pumps, Hydro-Mite filter, SpaPax heater, \$1,800. 286-3298.

EXERCISE BIKE - \$20. Saxon, 929-4701.

KEROSENE HEATERS - Radiant King, 8500-20,000 BTU, discount prices, factory-sealed cartons, guaranteed. Jim, 924-7665 eves.

BEDROOM SET - white Provencal, single bed, double dresser w/mirror, night stand, good cond., asking \$200. 286-1097.

G.E. REFRIGERATOR - coppertone with large freezer across top, good cond., \$85. Stan, Ext. 2705 or 286-1062.

LIVING ROOM FURNITURE - sofa, arm chair, hassock, cocktail table, gold/blue vinyl recliner, excel. cond. 698-7358 after 7 p.m.

COLD SPOT FREEZER - chest, 17.2 cu. ft., 6 yrs. old, good cond., \$200. 475-2679 eves.

SUNGLASSES - Ferrari, gold or black frames, \$6/ea. Ext. 4665.

RAIN HAT - Dunn & Co., sz. 7-1/4, never worn, \$10; ice skates w/boots, sz. 4, \$10 or best offer. Ext. 2914.

STEREO - solid wood console, custom made, excel. components, best offer. 878-2233 after 6 p.m.

TICKETS - round trip, to Denver, best offer. Dan, Ext. 3296.

KITCHEN CABINETS - & counters, all formica, various sizes from a 12'x18' kitchen, good cond., all for \$250. Ext. 2492.

RADIAL SAW - Craftsman, 10", heavy duty with many extras, \$275. Tom, Ext. 2613 or 281-4080.

BEDROOM DRESSER - 5 drawers, matching night stands w/drawers & 2 lamps, \$100. Ext. 4100.

SINGLE BED - foam mattress & box spring, G.E. 17" color TV; 3 "swing" albums; Colpak for strain. 281-2002.

SOCKET SET - 1/2", 25 pieces, \$17; LCD watch pens, \$4.50; wrench sets, watches, clocks. Paul, 727-4859.

BABY SWING - new, \$20; baby clothes & other baby items; twin mattress, \$20; car hood rack, \$20; projection screen, \$15; fan, new, \$15; cassette storage box; metal stereo rack, table tray, glassware, garden hose w/sprinkler. Wick, Ext. 4372 or 924-0582.

KITCHEN SET - Butcher block top, 5 chairs, \$75. Ext. 2952.

END TABLES - (2)-two step type. \$20. each. Ext. 2952.

WASHER - dryer, refrigerator, electric range, bedroom set, recliner & more. John, Ext. 3300.

SPEAKERS - (2) Radio Shack, MC600, 40 watt, new, \$40/pr. F. Rumph, Ext. 4581 or 981-2529.

DISHWASHER - good working, \$90. Kathy, 281-5605.

TOASTER OVEN - never used, \$17; high chair, \$7. Saha, Ext. 4339 or 924-6139 eves.

TV - 19" b&w, Zenith, w/stand, \$30; men's car coat, dk. blue, \$25. Ext. 2460 or 744-9822.

CHINA CLOSET - ball foot type, \$495; mirrored dressing table, walnut, \$65; bedroom, \$125; contemporary sofa & loveseat, natural weave, \$400; solid oak coffee table, needs TLC, \$25. 924-4685 eves.

ORGAN - Thomas, 2 octave pedals, built-in Leslie, many features, needs tuneup, \$600. Ext. 4058 or 286-0436.

PLAYPEN - wooden, folding, w/pad, \$15. Mona, Ext. 2347.

DINING RM. SET - walnut table w/leaf, table pad & 4 chairs, \$150; Wilbur upright piano, ivory keys, excel. mech. cond., \$375. George, Ext. 4227 or 751-0894 eves.

BIOFEEDBACK UNIT - for personal use, \$95. Ext. 4058 or 286-0436.

CHAIN SAW PARTS - 120 Mac, new & cheap. Ext. 4539.

PIANO - upright, \$150. Ext. 4028.

TABLES - (3) Lane, contemp., good cond., fruitwood, \$150. Jerry, 475-5591 after 5 p.m.

IRONING BOARD - Procter Silex, w/cover, like new, \$12; electronic flash, new, \$10. 751-1884.

COAL/WOOD STOVE - Warm Morning, used one season, cost \$350, will sell \$175. 821-1525.

FIREWOOD - full cords, 4'x4'x8', \$125 delivered. 467-8976.

SKIS - Rossignol, 190 cm, Look bindings, poles, carrying cases, Nordica boots, men's sz. 11, used 3 times, \$210. 928-8060.

TRANSCIEVER - 2 meter, Yaesu 207R, w/over \$100 of access., \$200 firm. 744-9677.

HI-FI - record player w/S.W. am/fm radio in cabinet, made in Germany, \$50; maple desk, excel., \$65; maple dresser, \$65; 3 pots, heavy club alum, good to cook on wood burning stove, very good, \$15/all. 878-6637.

COLOR TV - 25" RCA XL-100, console, excel. cond., \$150. Ext. 4131.

COUNTER RANGE - Caloric Ultramatic, 4 burners (propane), stainless steel finish, very good cond., \$35 or best offer; Caloric Ultramatic wall oven w/intra-red broiler (propane), stainless steel finish, very good cond., \$75 or best offer. Ext. 2492.

REFRIGERATOR - Westinghouse, frost-free, excel. cond., cheap. Frank, Ext. 3120.

ATTIC FAN - w/automatic louvers, 3ft. diameter, 2 spd. motor, new, never used, \$125. Bill S., Ext. 3848.

FREEZER - Sears Frost-Free, 15.3 cu. ft., upright, good cond., \$150 firm. Ext. 3675 or 744-2581 eves.

BAR SIGNS - lighted Lowenbrau & Magnum beer signs, \$35/\$20. Rich, 363-6845.

WILDFLOWER HONEY - 2 lb. jar, \$2.25. McKenna, Ext. 2350.

TRASH COMPACTOR - Sears Kenmore, gold, automatic deodorizer, new, used 3 months, orig. price \$400, asking \$275. Ext. 4089 or 475-8219.

POWER HACKSAW - \$150; Delta 10" cut-off wheel, \$350. 929-8749.

WASHER/DRYER - approx. 4 yrs. old, excel. cond., \$300. John, Ext. 4520.

Lost & Found

LOST - sweater, hand knit, popcorn stitch, off-white. Karen, Ext. 2950.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.

For Sale

PARR MEADOWS - condo townhouse, close to Lab, 3 bdrms., 1-1/2 baths, 2 separate garages, every appliance, central air, central vacuum, swimming pool, 8-1/2% assumable mortgage. 821-1435.

WADING RIVER - custom built 4 bdrm. colonial, 2 baths, d/r, den, f/p, 2 car garage, full basement, private beach. Ext. 7727 or 929-4631.

For Rent

SOUND BEACH - spacious 1 bdrm. apt., full bath, sun porch, yard, walk to beach, \$430/mo. incl. util. Rose, Ext. 7908 or 744-3160 after 6:30.

BELLPORT - 1 person studio apt., separate kitchen, private entrance, patio, \$300 util. included. Chris, Ext. 2907.

MANORVILLE - Pine Hills, 1 bdrm. chalet, avail. Feb. 1, extras incl. f/p, dishwasher, garage & prime location, 10 mins. to Lab, \$420/mo. incl. heat, golf, tennis, pool. 654-3041.

MASTIC BEACH - 3 bdrm. house, 1/2 mi. to water, encl. porch, large fenced property, \$450/mo. + util., 2 mo. security. Bob, 281-5605, 6-8 p.m.

N. SHIRLEY - mother/daughter house, 3 bdrm./2 bdrm., priv. entrances, garage, avail. March 1, reasonable rent, 2 mo. security. Bob, 281-5606, 6-8 p.m.

VERMONT - 3 bdrm. house, fully equipped, beautiful view, downhill & x-country skiing, reasonable vacation, family oriented, avail. weekly or weekends. 732-6499 after 6 p.m.

PATCHOGUE - 4-1/2 rm., 1 bdrm. apt., includes heat, hot water, laundry, garbage pickup, cable TV, dock space avail., 1st floor, full end apt., \$460/mo., avail. immediately. 286-8368.

BERKSHIRES CHALET - 3 hrs. from NYC, 3 bdrms., 2 baths, fully equipped kitchen, electric heat, deck with spectacular view, near lake, hiking trails, near ski areas, x-country skiing on property, avail. weekends or weekly. 929-6946 after 6 p.m.

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Wanted

CAMARO - 1974-76, less engine, prefer vehicle with 4 spd. body, condition must be good. 744-3968.

TRAINS - Lionel, American Flyer, access., any cond. brings good price. Carole, Ext. 3362 or 924-4097 eves.

DOG HOUSE - for large dog. Pete, Ext. 4028 or 981-4419 eves.

SEWING INSTRUCTOR - to teach beginner class. Ext. 3565 or 878-2233 after 6 p.m.

HOUSEMATE - person to share 3 bdrm. house in Ridge, \$250/mo. includes all. Ext. 7512.

BABYSITTER - loving, nonsmoking person to babysit infant in my home, Mon.-Fri., 8:20-4:20. 744-5285.

MATURE PERSON - for child care & housekeeping in our home, 20-30 hrs./wk., E. Patchogue. 286-2155.

RIMS - 14" for Plymouth Duster, have various 14" & 15" rms to trade. Ext. 4475 or 929-3251.

CAMPBELLS SOUP LABELS - send to F. Chandler, Bldg. T-89, for St. Mary School, East Islip.

PERSONS - interested in skiing Gore, Feb. 25, 2 nights, \$114/couple, free wine on bus. Claire, 689-7770.

WHEEL BARROWS - need several, hardware complete. Ext. 2740.

ROLLER TRAILER - Shoreline EZ, with or without power winch, 21', 2300 capacity, good cond. only. Bob M. Ext. 2514.

TO RENT - 2 bdrm. house in Bellport, near golf course, large property, \$500 fuel incl. 286-0992.

TRAINS - Lionel, any "0" gauge or "027" gauge cars, track & equip. Frank, Ext. 3120.

PLANER - or jointer or any other woodworking tools, any cond. Dick, Ext. 3499 or 589-9103.

SHEET MUSIC - advanced piano, classical, popular, cleaning out your piano bench? Kathy, Ext. 3420 or 924-7665 eves.

NUTRITION MINDED PEOPLE - to form Nutrition Study Group at Lab, plans include discussions, guest speakers, discounts on vitamins, etc. If interested call Fred Usack, Ext