BROOKHAVEN BULLETIN
Vol. 36 - No. 40 October 8, 1982
BROOKHAVEN NATIONAL LABORATORY

Data Storage To Be Expanded At AMD

One hundred billionth of a billionth of a second may not seem very long. But, in the world of high energy physics, significant events can occur in even smaller tidbits of time.

Summary data relating to millions of particle events that have occurred at BNL over the years have been kept on computer tapes at the Central Scientific Computing Facility in the Applied Math Department (AMD). These data are referred to almost constantly by researchers to help in the analysis of theories under study. And the amount of stored data increases with every experiment performed at BNL. While this growth has added greatly to the world's wealth of scientific knowledge, it has also rendered the tape system used at the CSCF for data storage somewhat cumbersome and inefficient.

This situation did not arise overnight. "For many years, we have recognized the need for a very large mass storage system that could automate the functions of the magnetic tape library," said Arnold Peskin, deputy head of AMD. "We received funding in 1980 and awarded a contract to MASSTOR Systems Corporation. They are a rather small company and they had exactly the right product — one that could not only solve our mass storage problem, but could also give us a network we could use in a more general way. With MASSTOR, we have killed two birds with one stone, gaining both mass storage and networking capabilities."

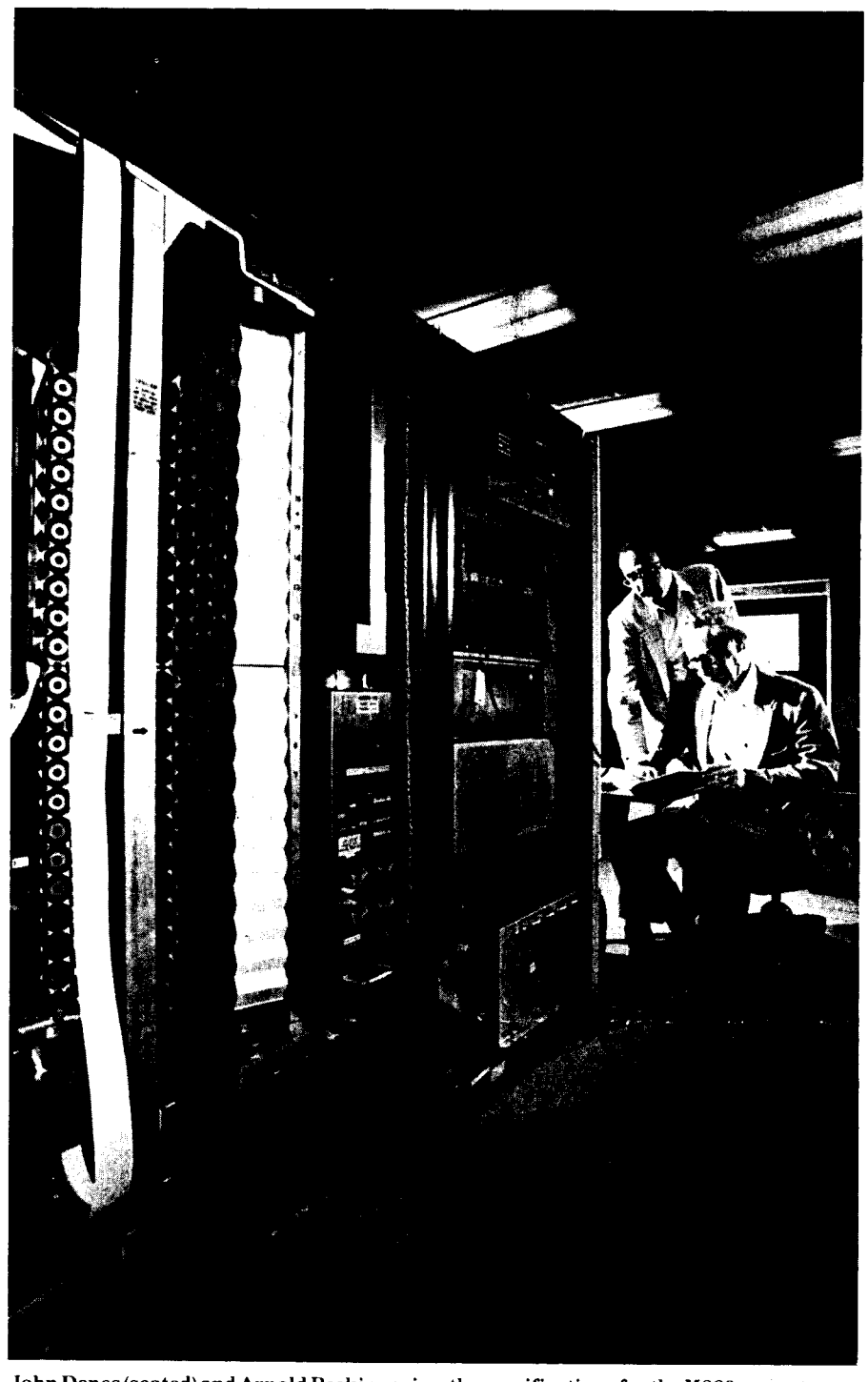
Peskin was referring to the Shared Virtual Storage System (Shared VSS). Stochastic simulation techniques were used to aid in the planning, configuration and testing of the Shared VSS. These methods, which are based upon probabilities, provided answers to theoretical questions by asking, "What if ...?" In essence, the critical questions posed were: "What if our mass storage system were a three component system, consisting of an M860 mass storage subsystem, an MC5 control processor, and a network called MASSNET to interface to the Lab's host computers? And what if we called that system a Shared VSS?" When the simulations provided positive answers to these queries, the three-part system was approved.

The M860 is essentially a library. But in this library data is stored, read and written on 316 magnetic cartridges, each of which contains 175 million bytes. Instead of on shelves, the cartridges are placed in the honeycombed wall of a cylinder. On a pole in the center of the unit is the accessor, in effect, the system's librarian. Shimmying up and down, darting in and out of the honeycomb slots, the accessor can reference 500 cartridges per hour. And if demand for mass storage increases over the years to the point where this is not enough, it can be expanded by just adding on another M860 unit.

The activity in the M860 is controlled by the MC5 control processor, an IBM-compatible, mid-sized computer that drives and manages both the M860 and MASSNET. The data stored in the M860 is only as valuable as its ability to reach those who wish to use it. MASSNET is the highway over which data is bussed between the M860 and the host computers. In the CSCF, these include two Control Data 6600's and, through them, a 7600. Taking advantage of the system's adaptability to a mixed-vendor computer environment, as well as its ability to add other hosts, a VAX/VMS system, located in a room adjoining the CSCF, and a Unix-based PDP 11/44, in the same building, are also being readied for direct access to the Shared VSS.

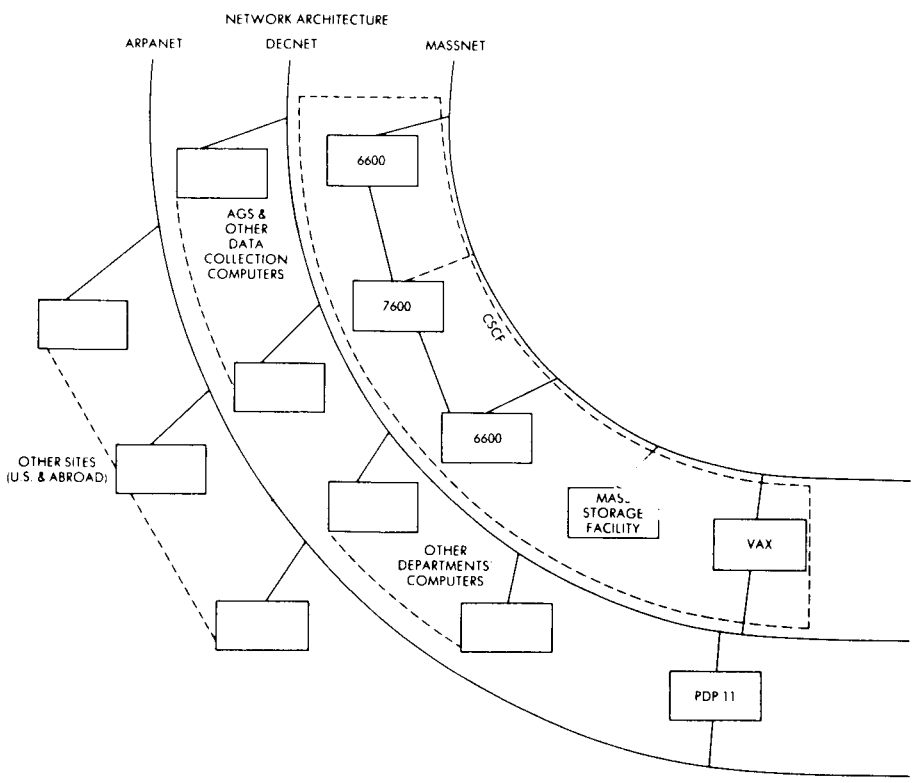
Once on line, these computers will also provide other networks of computers with indirect access to the system. The VAX will serve as a gateway to DECnet, a medium speed, medium distance network that connects computers throughout the Lab. The PDP 11/44 will open the way for all the computers on MASSNET and DECnet to access Arpanet, a low-speed global network that hooks up to over a hundred computing facilities and thousands of potential users throughout the world.

(Continued on page 2)



Doug Humphrey

John Denes (seated) and Arnold Peskin review the specifications for the M860 mass storage system, which stands in front of them. In the foreground is the M860's honeycombed wall, where cartridges are stored and accessed.



The three networks that can be accessed through the Shared VSS are depicted here. The mass storage facility, the M860, sends information along MASSNET to and from the CDC 6600's and 7600 at the CSCF. MASSNET will also connect to a VAX/VMS system and a PDP 11/44. Through the VAX, local computers tied to the DECnet network will be able to use the CSCF facilities, while the PDP 11/44 will connect all these units to the global network Arpanet.

Concerns About Video Terminals Addressed At Users' Meeting

Video display terminals (VDT's) were the subject of discussion last Wednesday, when over 200 people gathered in the Physics Seminar Room to hear Dr. Laura Sbarra, head of Occupational Medicine, and Otto White of the Safety & Environmental Protection Division, address this topic from the standpoints of health and safety.

Dr. Sbarra's talk focused on health effects. Common complaints of those who work at VDT's are eye strain and/or physical discomfort. Although these problems are quite real, Dr. Sbarra emphasized that neither one causes disease nor has any long term effect on health.

While eye strain will not damage the eyes, Dr. Sbarra said that some individuals may experience eye discomfort and irritation after long periods of VDT use. As to muscular aches, these may be related to prolonged sitting in uncomfortable positions rather than the terminal itself.

Some of these problems, Dr. Sbarra pointed out, are simply the result of the stress of automating the workplace, with the consequent pressure to learn new skills and keep up with changes in the pace of the job. But she also suggested that changes in workplace design might provide relief. A workplace that was comfortable with a typewriter can be most uncomfortable with a VDT —unless tables, lighting, seating and habits are modified as needed for the new equipment.

As a general rule, work stations and devices should be adjustable to provide VDT users with independent control of keyboard height, screen height, viewing distance and chair adjustments. To keep glare to a minimum, and reduce strain on the eyes, make sure there is no window right behind the VDT. And always work with a clean screen. Richard Carlsen of Applied Math said that a nylon mesh optical filter can be placed over most screens to cut glare, increase contrast and reduce dust accumulation.

The radiation effects of VDT's were addressed by Otto White. "From an ionizing radiation standpoint, VDT's are basically a non-problem," he said. "The x-rays which can be produced are so soft that they cannot penetrate the cathode ray tube enclosure. And anytime you have electrons flowing through a circuit you can produce

(Continued on page 2)

Arrivals & Departures

Arrivals

Stephen M. Bart	Physics
David P. Belanger	Physics
Zvy Dubinsky	Energy & Env.
Wolfgang Finger	Physics
Janet M. Firriolo	Medical
Brian Flannigan	Accelerator
Patricia A. Knisely	Personnel
Dora B. Krimer	Biology
Jay C. Leonard	Medical
Michael G. Hauptmann	S&E Prot.
Anne F. Meinhold	Energy & Env.
Ronald J. Reyer	Reactor
Pablo Rosas	Accelerator
Daniel P. Sullivan	Accelerator

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:

Diane Bider	Personnel
Robert N. Bright	Energy & Env.
Joe G.Y. Chow	Nuclear Energy
Jaime O. Chua	Energy & Env.
Leo J. Fulhaber	Central Shops
Frank K. German	Biology
Herbert W. Hamber	Physics
Lorraine E. Harty	Staff Services
Andre Kaam	Reactor
Harry H. Maile	Ph. & Gr. Arts
Thomas C. Malone	Energy & Env.
James S. Munson	Ofc. Sci. Personnel
Carl M. Nagle Jr.	Accelerator
Richard J. Newcombe	DEE
Richard W. Rothe	NSLS
Moshe Shmid	Physics
Eric J. Siskind	Accelerator
Andrew Stoddard	Energy & Env.
William A. Tuttle	Accelerator
Evelyn Waldstein	Biology
Yoshiharu Yonekura	Medical

Inside Info

Maurice Goldhaber, AUI Distinguished Scientist, recently returned from a trip abroad where he attended the Conference Commemorating the 50th Anniversary of the Discovery of the Neutron, held at Cambridge, England, September 13-17. He also received a Doctor Honoris Causa degree at the University of Louvain-la-Neuve, Belgium.

At Cambridge, Dr. Goldhaber was asked to talk on his personal reminiscences of the early days of the neutron. The Bulletin will publish extracts from this talk in a future issue.

Other BNL scientists on the program at Cambridge were John Axe (Physics) who spoke on "Incommensurate Structures," Benno Schoenborn (Biology) who lectured on "Neutron Protein Crystallography" and Martin Zucker (DNE) who talked about "Neutron Techniques in Safeguards."

Monday Closings

Although the Lab will be open on Monday, October 11, the on-site offices of Barclay's Bank, the Teachers Federal Credit Union and the U.S. Post Office will be closed in observance of Columbus Day.

The Case For Beer

He's a West Coast native who now lives on the East Coast. But it's the Midwest he praises. Chicago is his kind of town.

What makes the windy city so special to Arnie Moodenbaugh? The solid state physicist, it seems, is also a beer connoisseur. And Chicago, he said, "is the beer capital of the country: not in brewing, but in drinking; not in volume, but in variety." Moodenbaugh's recent visit to his in-laws in Chicago was sprinkled with dinners at "restaurants where they serve good beer."

Moodenbaugh appreciates beer the same way others regard their wine — as a complement to a fine meal. He is truly a connoisseur, as Webster defines the term: "One who understands the details, technique or principles of an art and is competent to act as a critical judge," as well as "one who enjoys with discrimination and appreciation of subleties."

His quest for the perfect beer began when Moodenbaugh was a graduate student at the University of California, San Diego. He and his roommate found little that appealed to their tastes on the shelves of the local liquor stores. So they began brewing their own beer, drinking Ballantine ale ("My thesis includes an acknowledgement to Falstaff Brewing Company," he said.), and collecting and tasting "exotic" beers.

After his graduation in 1975, Moodenbaugh moved to Chicago, then came to Brookhaven in 1977. For beer lovers, he finds a great difference between here and Chicago. Restaurants in Chicago offered a wide variety. Most dining places here, he has found, just carry major brands, like Budweiser and Miller.

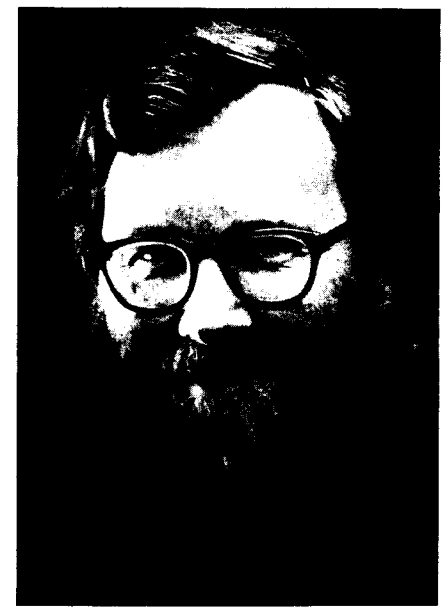
To increase his choices, Moodenbaugh brews his own beer. "In my home brewing," he said, "I don't go for consistency. I just experiment. But lately, I've been setting out to achieve a particular taste." Moodenbaugh is not, however, setting out to imitate anything on the market. "I can make a good tasting beer, but I do not try to duplicate commercial beer. That's almost impossible."

Although home brewing requires only a small investment of money and space, Moodenbaugh warned, "I would not recommend it to anyone who likes American-style beer. The flavor is hard to duplicate. It would be much easier just to go out and buy some Schmidt's. It's as good and as cheap as any American-style beer most people are likely to brew. Brewing homemade ales and dark beers is usually more rewarding."

To the domestic vs. foreign beer debate, Moodenbaugh also added, "Imports tend to be ultrapasteurized and not be representative of what they would taste like in their home country. American beers tend to be blander but they have a fairly good quality. And the use of additives in them has been overstated." Additives, he pointed out, are generally found in beers bottled in either clear or green glass, to protect the beverage from ultraviolet light that, Moodenbaugh explained, "destroys the bitterness so the beer tends to be sweet and unpleasant."

In analyzing the local penchant for Molson's products, Moodenbaugh said, "In my opinion, the reason the Canadian imports are popular is that they taste American — people want the prestige of drinking a foreign beer with the taste of an American beer. Personally, I think Pabst Blue Ribbon tastes better than Molson Canadian Lager and McSorley's Ale tastes better than Molson Golden."

Some of these opinions were printed in Newsday last June 30, in Robert Schoolsky's weekly "On Wine" column. About a year ago, Moodenbaugh said, "Schoolsky was forced to do a beer column, after which I wrote him a letter suggesting improvements for a beer tasting. When he contacted me, I suggested he interview one of the commercial brewers. Instead he interviewed me." The result was "An LI Devotee of Another Quaff."



Doug Humphrey

Arnie Moodenbaugh

One of the reasons Moodenbaugh agreed to that interview, and this one, is because he felt that, "Beer doesn't get any press." He recognizes that there isn't as much to talk about with beer as with wine, which at least has new vintages to discuss every year, but he pointed out, "Beer doesn't have to be treated as seriously as wine, but beer drinkers could be better informed."

Moodenbaugh considers "devotee" a fairly accurate term to describe his involvement with beer. "I'm not really an expert," he said. "When I began, I didn't know anything, and I didn't spend that much time on it. The fact is that there aren't any beer experts outside the industry."

— Anita Cohen

Quartetto Beethoven In Concert

Quartetto Beethoven di Roma will present a concert on Monday, October 18, at 8:30 p.m. in Berkner Hall.

The Quartetto Beethoven was formed during the Beethoven Bicentennial in 1970 by former soloists of the celebrated I Musici. Felix Ayo, violinist in the quartet, was the violin soloist in the recording of Vivaldi's Four Seasons with I Musici that popularized the piece and established I Musici as the world's premiere chamber orchestra in the 1950s.

Although dedicated to Beethoven's memory, the Quartetto plays from a wide repertoire. The program at Brookhaven will include Beethoven's Quartet in E Flat Major, Opus 16; Mahler's Quartettsatz; and Brahms' Quartet in G Minor, Opus 25.

Tickets for the performance will be available at the door the night of the concert. General admission is $7; students and senior citizens, $4; and those under 18, $3.

Terminals (Cont'd)

radiofrequency (RF) radiation. It's a question of how much. RF measurements have not produced readings exceeding background levels. The environmental background consists of RF radiation from sources such as television, radio, radar and C.B. emissions. Basically, a VDT is a black and white TV with a keyboard, and, previously, we had never been concerned with black and white TV in terms of radiation hazards."

In the question and answer session which followed these remarks, it was learned that about 10% of those present spent their entire workday at a VDT, while about 50% used one more than four hours a day. Most people present were surprised at this amount of time and felt that a deeper look at the problems and work habits of Brookhaven's VDT user community would be beneficial. White is now preparing a questionnaire which will be distributed shortly to those who attended the meeting. The questionnaire is designed to identify work places where VDT's may present unnecessary stress. Particular interest will be focused on duration of VDT use, types of complaints and workplace conditions. Anyone who was not at the meeting, but who would like to participate in this survey, should contact either Lavina Richter, Ext. 2905, or Jeannette Thiede, Ext. 4548.

Richter and Thiede, who organized this meeting, are program coordinators for the Micom Users' Group, an organization of people who use word processors and meet regularly to share information. They have made a tape of the meeting. Anyone who was unable to attend and who would like to borrow the tape should contact Richter or Thiede.

Data Storage (Cont'd)

Besides linking many computers to the CSCF, the Shared VSS also helps prevent duplicaton of efforts in activities such as system and library maintenance. All system users are also able to take advantage of the three important aspects of the CSCF: archives of data from large scientific experiments; a data base of general reference material, such as the U.S. census; and provisions for the growth of the programs, libraries, and other software tools, which users at a high technology research installation need at their disposal.

"For an activity of this size," Peskin said, "we obviously had to call upon a lot of people and resources." To ensure that the final system would meet all the requirements demanded of it, Peskin worked closely with MASSTOR during the planning stage. When the Shared VSS was built, planning the logistics of its installation fell to John Denes, who heads the computing center, while Les Lawrence of the CSCF was instrumental in integrating the new system.

Now in the midst of acceptance testing, the Shared VSS will be introduced to the user community within a few months. Even at this stage, Denes and Peskin wrote in a report on the system, "We ended up with more than we expected....we now have the mass storage system we need. In addition, we have the skeleton and quite a bit of the substance of a fairly substantial and reasonably well-organized local network." To that assessment Peskin added, "With this promise of access to so much data so quickly, as well as to other devices and future developments, our old computer system is, in a sense, rejuvenated."

— Anita Cohen

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WIS Election

Election of officers to the Women in Science Executive Board was held on September 16. All of the nominees presented by the Nominating Committee were approved and endorsed. Those elected were: Vicki McLane (DNE) and Eva Bozoki (NSLS), as Group Coordinators; Mary Kinsley (DEE), Program Coordinator; Eena Mai Franz (DNE), Seminar-Lecture Coordinator; Eva Emmerich (ISABELLE), Publicity; Stephanie LaMontagne (Accelerator), Liaison Coordinator; Mary Phillips (DEE), Secretary; and Ellen Gannon (DEE), Treasurer.

Everyone is invited to meet the new officers at the annual WIS Wine and Cheese Party on Wednesday, October 13, between 4 and 6 p.m. in the Recreation Building.

Cooking Exchange

The cooking of Japan will be featured at the Wednesday, October 13 meeting of the BERA Cooking Exchange. The group meets from 12:30 to 2:30 p.m. and the cost is $1.00 per person with babysitting available at 50¢ per child. Employees, spouses and guests of BNL are invited to the Recreation Building for this demonstration and sampling of Japanese foods. For more information, call Bernie Benz, 928-1068, or Adrienne Usher, 289-7658.

Doug Humphrey

Bill Love is sloppy, carefree Oscar, while Bob Kinsey is fastidious, up-tight Felix in the BNL Theater Group's lively production of that beloved Neil Simon comedy, "The Odd Couple." Curtain time is 8:30 p.m. on Friday and Saturday, October 15, 16, 22, and 23 at Berkner Hall. Tickets will be available at the door: $4 for general admission, $3 for those over 65 or under 18. Discount rates of $3 and $2.50, respectively, are available for blocks of 25 or more tickets purchased in advance. Tickets are good for any one of the four performances. For information call 286-8407 or 282-5096.

Winter Tennis And Racquetball

A south shore indoor club offers reduced rates to BNL employees and their families. The membership fee for the 1982-83 season is $45 for renewing members and $50 for new members if paid by October 15, and $55 thereafter (approximately half the regular fee). Call Ed McFadden, Ext. 4188, for further information.

Camera Club

Ray Abbott, a retired employee and a well known photographer will demonstrate the Parr Color Printing Process at the October Camera Club meeting. This process has received praise from all who have used it. The color rendition is comparable or better than other processes currently available. While other processes require close temperature control, Parr color does not and is used at ambient temperature.

The demonstration will take place on Ocober 28, at 6 p.m. in the Recreation Building.

Bowling

White League

D. Adams rolled a 198/221/586 scratch series, R. Fuchs 210, K. Asselta 200, S. Smith 230, J. Griffin 255/621 scratch series.

Purple League

For the prior week M. Austin converted the 3/7 split, R. Sheehan 6/7, J. Austin bowled a 210/579 scrath, B. Barberich 512 scratch, E. Meier 521 scratch. This week C. MacDougall had a 192/521 series, K. Riker 215/546, B. Benson 204/217/592, E. Sperry 213, L. Barberich 495.

Red/Green League

C. Bohnenblusch bowled a 227/210, R. Wiseman 224, J. Connelly 213, H. Arnesen 212, J. Petro 202.

Pink League

R. Rosati had games of 162/183, C. Beckner 163, E. Jacobson 166, D. Johnson 186.

Runners' Corner

On Sunday, October 17, the BNL Roadrunners will hold the 11th Annual Fall Races. There will be a 10 kilometer (6.2 mile) and a 5 kilometer (3.1 mile) fun run starting at 9:30 a.m. (registration 8:00-9:15 a.m.). There will also be a 30 kilometer pace race starting at 8:30 a.m. (registration 7:30-8:15 a.m.).

Registration is free and refreshments will be available to the runners. The courses are accurately wheeled. Runners will receive their finishing places and times.

If you don't want to run for fun, then please consider helping the club on race day. It's always an exciting time. For information call Bill Thomlinson, Ext. 3937, or Gus Prince, Ext. 5079.

NYC Train Trips

The Hospitality Committee is planning a group railroad trip to New York City on Wednesday, **October 20**. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is $3.50; children under six years ride free. Fares must be mailed no later than Friday, October 15.

In addition the Committee will sponsor a group trip to the city on Sunday, **October 24** (New York Marathon Sunday). Departure will be at 8:31 a.m. from the Patchogue LIRR station. Fares are the same, and must be mailed no later than Tuesday, October 19.

Reserve a ticket by sending your fare through the U.S. mail to Hospitality Committee, P.O. Box 322, Upton, New York 11973. Please make checks payable to "Brookhaven National Laboratory," and put the date of the trip, your BNL life number and your telephone number on the check. Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Monday morning preceding the October 20 trip and by the Wednesday morning preceding the October 24 trip.

The scheduled Hospitality Committee LIRR trips to New York City for the remainder of 1982 are as follows:

Wednesday	October 20
Sunday	October 24
Saturday	October 30
Wednesday	November 3
Wednesday	November 17
Wednesday	December 1
Saturday	December 11
Wednesday	December 15

Cafeteria Menu

Week Ending October 15, 1982

Monday, October 11		
Corn chowder	(cup)	.65
	(bowl)	.75
Fresh roasted ham & 1 veg.		1.90
Beef enchiladas & 1 veg.		1.85
Hot Deli: Philadelphia-style steak	(bread)	1.95
	(roll)	2.05
Tuesday, October 12		
Chicken vegetable soup	(cup)	.65
	(bowl)	.75
Roasted top round of beef & 1 veg.		1.95
Baked lasagna & 1 veg.		1.85
Hot Deli: Monte Cristo		1.90
Wednesday, October 13		
Old-fashioned bean soup	(cup)	.65
	(bowl)	.75
Turkey divan & 1 veg.		1.90
Baked meatloaf & 1 veg. w/mushroom gravy		1.85
Fall Special		
Prime rib au jus		
choice of:		
Cauliflower au gratin or string beans almandine		
Baked potato w/sour cream or rice pilaf		
Plain jello		
Coffee or Tea		
$3.85		
Thursday, October 14		
Minestrone soup	(cup)	.65
	(bowl)	.75
Corned beef & cabbage		1.90
Ham & broccoli crepes & 1 veg.		1.85
Hot Deli: Swiss & sour cream chicken fillet	(bread)	1.85
	(roll)	1.95
Friday, October 15		
Manhattan clam chowder	(cup)	.65
	(bowl)	.75
Hungarian beef on egg noodles		1.95
Macaroni & cheese w/1 veg.		1.80
Hot Deli: Baked Ham	(bread)	1.85
	(roll)	1.95

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

LABORATORY RECRUITMENT: Opportunities for present Laboratory employees.

1768. RESIDENCE CUSTODIAN - Staff Services Division

1769. FACILITIES OFFICE ASSISTANT - Plant Engineering Division

1770. TECHNICAL POSITION - Requires AAS in electronic technology or equivalent. Minimum of four years experience troubleshooting electronic equipment is essential. Computer related background desirable. Individual will maintain various computer CPU's and all associated peripheral equipment. Possible four day work-week. Applied Mathematics Department (Reposting of Job #1644)

1771. ELECTRICIAN A - (2 temporary positions) - Under minimum supervision lays out, constructs, installs, maintains, repairs and operates electrical systems, equipment, controls and related devices. Requires miniumum of five years' industrial electrician experience. Plant Engineering Division.

1772. REACTOR OPERATIONS TRAINING SPECIALIST - Requires BS in engineering or science discipline and some teaching experience. Individual will assist in developing and implementing training program for Reactor Operations Personnel. Position includes part-time assignments in QA programs. Reactor Division.

1773. TECHNICAL POSITION - Requires AAS in electronic or mechanical technology or equivalent experience. Background should be in electronics or the assembly, alignment and testing of precision instrumentation. Vacuum experience desirable. National Synchrotron Light Source Division.

SCIENTIFIC POSITIONS OPEN: The following staff positions are open. Candidates may apply directly to the department representative named, or through the office of Scientific Personnel, Ext. 3338.

PHYSICAL CHEMIST - Seek Ph.D. to join program providing technical support to the NRC by evaluating methods for shallow land burial of low level radioactive waste. Techniques for waste solidification and stabilization will be assessed by characterizing the properties of waste forms and containers. Background in nuclear chemistry is desirable. Contact: D.G. Schweitzer, Department of Nuclear Energy.

Autos & Auto Supplies

74 MOTORCYCLE - C.Z., 175cc, road & trail, $275. George, Ext. 7772.

74 GREMLIN - stick shift, am radio, good cond., great mi., good buy. 728-2223.

81 TOYOTA TERCEL - 4 dr. w/safety locks, a/t, a/c, p/b, rear defogger, 11,000 mi., $4,500. 475-1887.

56 FORD - truck (F-100) & parts; 68 GTO parts; 74 Camaro parts, must sell (cheap). Don or Fred Paffrath, 499-1214.

82 FORD FAIRMONT - 4 dr., 2 tone paint, a/c, p/s, p/b, 4 cyl., 6,000 mi., cost $8,300-sell $6,900. 281-8274.

74 DIRT BIKE - DT-100, runs great, new ring, points & plugs, 2-stroke engine, needs nothing, $200. Lou, Ext. 2022.

77 HONDA - motorcycle, 750K, fairing, saddlebags, excel. cond., $1,750. 924-3817 eves.

74 VEGA WAGON - 4 cycle, p/s, a/t, am/fm, rear defroster, good cond., $975. Glenn, 758-7353 eves, 732-3350 days.

78 AUDI 5000 - cruise cont., a/c, am/fm stereo cassette tape deck, reclining buckets, 48,000 mi, like new. 286-3317.

79 CAMARO - 350, 4 sp., silver w/black int., excel. cond., $5,650. 924-3817 eves.

79 HONDA - dirt bike, model Z50R, 50cc, hardly used, excel. cond., must sell. 878-0516 after 3 p.m.

79 T-BIRD - loaded, excel. cond., $4,700. 286-8893 after 6 p.m.

73 BUICK LeSABRE - custom, p/s, p/b, a/c, a/t, 110,000 mi., good cond., $700. Ext. 2226 or 331-3445.

73 OLDS DELTA 88 - a/c, a/t, p/b, p/s, am/fm stereo, new batt., trans., alternator, exhaust, good tech. cond. Felix, Ext. 7757.

79 HONDA HAWK - motorcycle, 400cc, super fine cond., $995. 588-0805 eves & weekends.

GOODYEAR TIRE - 8.00-16.5LT on 8 lug rim, $25. Ext. 5316.

71 PINTO PARTS - John, Ext. 4976 or 744-4386.

73 PLYMOUTH - 4 dr. sedan, auto., a/c, new tires. Ext. 3036 or 427-0768 after 6 p.m.

66 BSA - motorcycle, 440cc, good running cond., very fast, classic British single. Frank, Ext. 2022 or 399-4480.

RIMS - 4-8 spoke, chrome, fits Toyota, Chevy 6 lug, 15", good cond., $80. 265-5218.

63 VW - runs well, new battery, recently inspected, $550. 744-6668.

65 CHEVY CAPRICE - 4 dr., 283 eng., auto trans., good station car, $175; 75 Windsor 351 engine, complete & running, 100,000 mi., $100; 76 Ford C4 auto trans., $100; 75 Elite Ford, 351, auto., am/fm stereo, p/s, p/b, a/c, red w/white top, 2 dr., $1,650. 751-2149.

CAR RADIO - am/fm, with pushbuttons, $25. Ext. 2605 or Ext. 4160.

80 FIAT STRAD - excel. cond., new radials, front wheel drive, Rusty Jones, am/fm, $3,500. Ext. 2231 or 369-1829.

73 VEGA GT - rear starting to go, good for parts, $150. Tom, Ext. 3320.

70 VW - rusty, but running, make an offer. Mike, 289-0494 after 6 p.m. Tuesday on.

69 VW BUG - melt down sale, 6 good tires, good body, no engine, $220. John, Ext. 3675 or 698-7983.

69 OLDS F-85 - 2 dr., V8, a/c, auto, may need valve job, $150. Ext. 3294 or 751-4868.

70 RIVIERA - classic, newly rebuilt engine, excel. cond. in & out, all power, extras, must see, $2,200. Ext. 4303 or 878-1688 eves.

78 CAMARO LT - 37,000 mi., new paint & radials, mags, 350, V8, p/s, p/b, a/t, a/c, am/fm tape, new cond., $4,850. 473-2473.

68 AMC REBEL - 4 dr., auto, 6 cyl., new battery, brakes, 2 tires, 60,000 mi., $450. Ext. 4695 or 744-1917.

VW RABBIT SEATS - bucket, black, best offer. Lloyd Davis, Ext. 3952 or Ext. 4803 or 325-0389.

64 VW BUG - rebuilt engine, 30 mpg, excel. running cond., $300. Ext. 2226 or 331-3445.

81 HONDA CIVIC - low mi., am/fm stereo cassette, (4) new radials, $4,900. Janet, Ext. 4049 or 744-8087 eves.

Boat & Marine Supplies

25' SAILBOAT - Ericson, centerboard, roller jib, Genoa, D/F, RDF, VHF, extras, mint, 17,500. 878-8774 eves.

OUTBOARD MOTORS - 69 Evinrude, 100 HP, V4, runs well, $300; 71 Mercury, 80 HP, cracked block, great for parts, new power pack, $150. Lou, Ext. 2022.

17' VENTURE - 4 HP, Merc., roller furling Genoa, head, lights, trailer, exec., $3,800. 369-2813 days.

78 RENKEN BOWRIDER - 17'4", 1981 80 HP, Merc., full canvas, trailer, excel., $5,250. Ken, 924-3756.

82 CANOE - 12' Sears, fiberglass, value over $300, will sell for $225. 286-9354.

75 CAPE DORY - 25', 5 sails, sleeps 4. 286-1076.

16' SILVERLINE - 65 HP, Mercury eng., equipped with trailer, $1,200. Ext. 2500 or 661-6078.

KAYAK - fiberglass, with paddle & air bags, $180. Ext. 2521 or 928-8379 eves.

Yard Sales

ROCKY POINT - 42 Twilight Rd., 3 family, 10/9, 1-6 p.m., 10/10, 10-4 p.m. 744-5398.

MEDFORD - furniture, household goods, collectibles, misc., Oct. 9 & 10, 10-4 p.m., 30 Lace Bark La., corner Scotchpine. 289-8182.

Free

DUTCH RABBITS - 2, 1 female, plus hutch w/2 separate living areas. Chuck, Ext. 4483 or 567-1272 eves.

Miscellaneous

DINING ROOM SET - trestle table, 2 leaves, 8 chairs, good cond., $275. 581-7656.

SOLAR PANELS - (2) Raypac, never used, $350; Wonder Pony adjustable hobby horse on springs, like new, $9; expansion safety gate, hinged wood, $5; umbrella stroller, lightweight, good cond., $9; toaster oven, brand new, 620 watt, $20. Ext. 7594 or 325-1711.

SECTIONAL - large 3 piece modular, gold, like new, $210; G.E. portable dishwasher, white, excel. cond., $60. 589-2681.

TAPE RECORDER - Grundig reel-to-reel, very good cond., $40; heavy duty ext. tripods, 3-1/2 x 8 thread, $65. Ext. 4058 or 286-0436.

COLOR TV - 19" Admiral in wood cabinet, needs work, $25 or best offer. 567-7334 eves.

GIRL'S BIKE - 24", like new, 1/2 price, $45. Phil, 475-0068 after 5 p.m.

RACING BIKE - 21" Italian, all Campagnolo equip. extra, unused sew-ups, floor pump, $600. Ext. 4738.

FREEZER - Sears Coldspot, 6 cu. ft., used 3 seasons, $175. 924-3817 eves.

ANTIQUE BRASS BED - single size, $175; woman's leather buckskin jacket, size 14, $30. 589-5126.

BEDROOM FURNITURE - white, bed w/canopy, dresser w/mirror, desk w/chair, $150. Pat, 475-2629.

ATARI GAME - hardly used, excel. cond., $110. 878-0516 after 3 p.m.

STERLING SILVERWARE - set of 8, $1,250; woman's diamond set, large size, $350. 475-0144 after 6 p.m.

COAL STOVE - Hans & Sohn 121.12, 38,000 BTU, used 3 weeks, sells for $725, asking $575; speakers, Avid 105, 3-way acoustic suspension w/2 side firing tweeter, list $750/pr., asking $500. Al, Ext. 2072.

CANNING JARS - quarts, glass top; B/W TV; coat. Ext. 2950.

COMPOUND BOW - Ben Pearson "Mirage", 50# peak weight, carrying case, aluminum arrows, book. Stacy, Ext. 3296.

GIRL'S BICYCLE - 26" Ross, compact, tri-matic, 3 speed, handbrake & coaster brake, like new, $50. Jack, Ext. 7942.

CHROME TABLE - formica slate top; hallway, foyer & kitchen fixtures. Ed, 585-2088 after 4 p.m.

POOL TABLE - slate top, new felt, cushions, pockets, 3 x 6 bar table. Sheryl, 924-7610.

79 EMERSON STEREO - am/fm, model # M2460, multiplex receiver, stereo cassette recorder, $100. Don, Ext. 5373 or 286-0999.

PUMP - Burk's, 1/2 HP, 2 stage, deepwell, 3 yrs. old, $125. Harris, 475-8504 after 5 p.m.

MAN'S BIKE - Fuji, Del-Rey, 12 speed, never used, 25" frame, many extras, new $325, sell $265. John, Ext. 4255 or 929-4450.

SCALLOPS - pint, $5; qt., $9; gal., $35. Bill Stars, Ext. 4278/3371 or 298-9648 eves.

COUCH - Castro convertible w/matching recliner, gold crushed velvet, mint cond., $400. 878-2421.

CARPET - thick nylon pile, salmon, outstanding quality, sample avail., 12' x 10'9", $100. Jim, Ext. 3501 or 751-0476.

FREEZER - Whirlpool, upright, 20 cu. ft., 5-1/2 yrs old, asking $250. 751-6418.

ATARI PACKAGE - complete with cartridges, hardly used, reasonable. 744-8063 days.

KITCHEN TABLE - formica, 6 chairs, $40; ping pong table, $25. Bill, Ext. 4068 or 473-3171.

MATTRESS & BOXSPRING - twin size, $35; firewood, 1 cord plus, u-haul, $100. 475-4394.

DOUBLE BED - $15. 286-2155.

CASSETTE TAPES - C-90, BASF Pro II, CrO_2, $2.75 ea; hang glider, Rogallo type with harness & helmet, $250. Ext. 2521 or 928-8379 eves.

FISH TANKS - 20 gal. & 10 gal., w/iron stand, and stow-a-lite covers, also filters, heater, cut glass etc. George, Ext. 4227 or 751-0894 eves.

FIREPLACE INSERT - gal stove, top of line Dare IV, 90,000 BTU, dual blowers & 3 ton custom texture 1-11, coal bin plus 2 tons coal, used only 1 year, total cost, $1,725, you pick up, $995. 654-5888.

CRIB - mattress, bumper pad, sheets, jumper, crib toys, all in good cond. Ext. 3982 or 744-3578.

PORTABLE TYPEWRITER - Remington mechanical w/case, good cond., $17. Jerome, Ext. 4337 or 3107.

SKI BINDINGS - with brakes, Tyrolia 360R, used one season, $65. Mark, Ext. 5350.

MULCHER - Sears, 4 HP, like new, $100; coal & wood stove, Sears, 50,000 BTU, used one season, $200. Dick, Ext. 3499 or 589-9103.

POOL DECK - redwood, 39"x47"x4' high, with ladder, excel. cond., $25. 588-3999.

CHANDELIER - 5 light, Spanish/Mediterranean style, wrought iron, silver. Joe Medina, Ext. 7636 or 924-6971.

ANTIQUE STEINWAY PIANO - upright, circa 1893, claw foot, stool, good cond., needs home, $750. 689-7174.

RECLINER - yellow, not convertible, electric vibrator, very comfortable, best offer. 698-6437 eves.

SKI BOOTS - with rack, Kastinger, excel. cond., size 8, $15. Laura, 924-5533 days.

G.E. DOUBLE OVEN - and range top, Sensi-Temp burner, pink, $20 or best offer. Ext. 3675.

DOUBLE BED - good, $75; 2 unfinished bureaus with desk top, $75. Julie, Ext. 3393 or Ext. 3414.

CAMERA - Vivitar 35EE, $50. Janet, Ext. 2345 or 929-8152.

HEADBOARD - $10; blue bath tub, make offer; snow tires, misc. items. Ext. 2969.

BEDROOM SET - Blonde, full sz., chest, bureau, 2 night tables, $75. 475-1494 after 5 p.m.

DELTA WORKSHOP - 8" saw, extra blades; Dado router disc sander; drill press. Ext. 7611 or 728-2223.

NECKLACE - 30", 14K S chain w/3 small diamonds, $95; 7" braided 14K S chain bracelet, $25. Linda, Ext. 7745.

DRESSER - 5 drawer, 2 matching night stands w/drawers & 2 bdrm. lamps, $100. Rick, Ext. 4100.

STROLLER - Perego (Italy), $45; Samsonite 3" attache case, $15. Fujiki, Ext. 2338.

COLEMAN LANTERN - double mantle, Model 220, good cond., last one $15. George, Ext. 4227 or 751-0894 eves.

SOFA - Danish mod., blk. vinyl, $40; 18" reel mower, $20; couch, brown bolsters, $15, more. Olson, 289-8629.

BASKETBALL NET - & ring, very good shape, $8. Mike Tesla, Ext. 3287.

GIRL'S BIKE - 20", green, excel. cond., $45. Ext. 4164 or 698-4558.

FREEZER - Whirlpool, upright, 20 cu. ft., 5-1/2 yrs. old, asking $250. 751-6418.

ATARI CARTRIDGES - Trick Shot by Imagic (straight pool), Ice Hockey & Grand Prix, $15 ea. 744-8063 days.

LADIES BIKE - Ross Gran Tour II, lightweight, 10 spd., w/rack & generator, asking $190. Ext. 3890 or 924-4250.

COUCH - good cond. w/cover, no reasonable offer refused; Perego stroller, needs 2 tires. Ext. 3596 or 821-1039.

SKI PANTS - men's, stretch, 34-R, dk. blue, brand new, $85. Ext. 4727.

WOMAN'S BICYCLE - 26" Schwinn, coaster brakes; kitchen cabinets, solid pine (base & wall), custom built, wrought iron hardware, porcelain knobs; suspended drawers, excellent cond., simply don't fit new kitchen. David, Ext. 7646, 286-8229.

COAL STOVE - large Petite Godin, incl. inside & outside pipe & base, new $1,100 now $800 firm. Carol, Ext. 5042 or 289-3917.

COAL STOVE - Penn, 60,000 BTU, also burns wood, 1 season old, must sell, best offer; 24 cement blocks, 8x8x16, ideal for coal bin, $15; firewood, 12 ft^3. Ext. 3890 or 924-4250.

KITCHEN SET - from 1930's, tan enamel top w/4 good wood chairs, 2 slide-in leaves, $45; 20" to 46" fire & spruce evergreens, U-dig, 2 for $7; 60 yr. old sit-on grindstone, foot pedal, $50; highchair, $12. 878-6637.

RECORD PLAYER - Philco portable w/Garrard changer, great for child, $30. B. Azzara, Ext. 2050.

ENGAGEMENT RING - Tiffany setting, $550. 589-6151.

PAPER LOG ROLLER - spring loaded, no water needed, payed $40, asking $20; calculators, $8 ea.; pen watches, $5 ea.; quartz desk clocks, $7.50 ea. Pete, 399-2813 after 5 p.m.

MAPLE ARM CHAIR - 3 pc. table set; coffee table; 2 end tables; 2 dressers (ca. 1940); Zenith console radio, multi-band (ca. 1940); 2 table lamps. Irene, 589-6468 after 5 p.m.

STEREO SYSTEM - 20 watt Sansui receiver, Technic quartz direct drive turntable, (2) Bose 400 watt speakers, $1,600; construction material, sheet rock, wall panelling, floor tiles (new) & much more, reasonable; oak desk, heavy wood w/file cabinet, $100. 924-4054 after 6 p.m.

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

WADING RIVER - 90 ft. Clarendon ranch, 1 acre, heavily wooded, 150 ft. off road, fully landscaped, low maintenance, many extras. 929-8464.

BELLPORT/BROOKHAVEN - 4 bdrm. contemporary on wooded 1/2 acre, asking $130,000, owner will consider holding mortgage. 286-2093 or 286-1076.

COLONIAL - 3 bdrm., 2-1/2 baths. l/r, d/r, eik, den, oversized 2 car garage, professionally landscaped, lots of trees, all new w/w throughout & paint, super mint cond. 928-5732 after 3 p.m.

WEST ISLIP - located in private community w/beach, 75' on water, 4 bdrm., 2-1/2 baths, 2 fireplaces, wood-burning stove, 2 zone heat, 3 oil tanks, l/r w/cathedral ceiling. 669-4216.

PORT JEFFERSON STATION - 3 lg. bdrms., roomy eik, full basement, low taxes, 0.36 acre w/adjoining woods on quiet dead-end street, north of 25A, low 50's, by owner. Ext. 3388 or 331-3329.

MEDFORD - Birchwood at Blue Ridge, condominium, 15 min. from Lab, 3 bdrms., many extras, facing golf-course, 50's. 698-7213.

For Rent

BERKSHIRES CHALET - 3 hrs. from NYC, 3 bdrms, 2 baths, fully equipped kitchen, elec. heat, deck w/spectacular view, near lake, hiking trails, avail. weekly or weekends. 929-6946 after 6 p.m.

BROOKWOOD VILLAGE APTS - 1 bdrm apt., quiet end apt., nice setting, $425/mo. heat, gas, water incl. Ext. 4360 or 698-5861.

BAYPORT - 1-1/2 acres, 3 bdrm., bath, l/r, kitchen, 2 car garage, partially furnished, oil hot water, Nov.-May, $600/mo. or for sale, $150,000. Ext. 3420 or 472-9159 after 6 p.m.

Carpools

ELWOOD/E. NORTHPORT - 1 driver needed for 5 person pool. Fred, Ext. 4407.

PLAINVIEW - 3 person pool looking for 4th. Ben, Ext. 5291 or Bob, Ext. 5145.

SO. SETAUKET/TERRYVILLE - fourth driver needed, Strathmore Village/Birchwood/No. Shore/Birchfield vicinity. Barry, Ext. 4118 or Dick, Ext. 2911.

PATCHOGUE - on time pool, opening for paying rider. Alyce, Ext. 2902.

WANTAGH - will drive or ride. 785-2372.

Lost & Found

LOST - bracelet, made of brass & silver colored rings, on 9/16; 5/32 in. dia., sentimental value. Louise, Ext. 4973 or 3397.

Wanted

AIR BALLOONISTS - Are there any on site? Do you know any? Call Janet, Ext. 4049.

GARAGE - to rent for winter months. Toni, Ext. 2907.

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

64 CHEVY CORVAIR PARTS - for young student, restore project. Fred Kuehl, Ext. 7947 or 588-2268 after 5 p.m.

MOTORCYCLES - bent or broken, any age or cond. Kevin, 281-8031.

ATARI - reasonable; also S-100 computer. Jim, Ext. 3372 or 821-0250.

OUTBOARD MOTOR - 6 HP for inflatable boat. 399-2312.

OUTBOARD MOTORS - Johnson or Evinrude, dead or alive, for parts, top dollar paid. 265-5218.

GOOD HOME - for watch dog, gentle, affectionate, mixed shepherd. Lois, Ext. 2959 or 751-0023.

MOWER - power rotary, any cond. Jim, Ext. 3372 or 821-0250.

CEDAR CHEST - and antique blanket chest. Ext. 7637 or 286-4639 after 5.

DRUM SET - for a beginner, inexpensive. Joe, Ext. 7636 or 924-6971.

VACUUM CLEANER - Ext. 4303.

JANE FONDA EXERCISE TAPE - to buy or borrow to record. Pat, Ext. 3565.

HOUSEMATE - female to share 3 bdrm. house, references, no pets, $250/mo. plus 1 mo. security. Karen, Ext. 2950 or 325-1024.

WORKING WOMEN - new members for business & professional women's club, National & International Affiliations. Alyce, Ext. 2902.

GUITAR AMP - with 2 inputs. Gary, 473-2473.

Services

Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the ***Bulletin***.

PAINTING - wallpapering, panelling, references, call for free estimate. John, 924-5012.

PLUMBING AND HEATING - Lab discount. John, 654-8189.

CLEANING SERVICE - office, home, apt., work by owners, free estimate, references. Ray, 732-4885 eves.

CHILD CARE - my home in Bellport, lots of TLC for any age, infants welcome. 286-2435.

BLINDS - vertical, miniblinds, wovenwood shades, complete installation, shop at home service, discount prices. Tony, 928-9241.

GENERAL CONTRACTOR/CARPENTER - extensions, dormers, garage conversions, basements, decks, kitchens, licensed. Jim, 698-2501.

CARPETS INSTALLED - quick dependable service, repairs, free estimates. Jim, 821-0817 after 5 p.m.

TUTORING - N.Y.S. certified elem. teacher, in your home, experienced all subjects, reasonable. Ann, 585-3417.

PROFESSIONAL DJ - avail. for weddings, private parties, fire depts., schools, variety of music for any occasion, fantastic light show. 286-8862.

DOG BOARDING - private kennel, individual attention, inside pens, outside runs, $5 per day. Betty, 924-6981.

CHINESE LESSONS - private or group. 698-6437 eves.

ASPHALT PAVING & SEALING - Bob, 475-4382.

WATERPROOFING - 15 yrs. in the business, all work guaranteed in writing, free estimates, Lab discount. 281-5445.

TRUCK FOR HIRE - moving, clearing, cleaning, & other misc. jobs, Lab discount. 281-5445.

EXTERMINATING - licensed men, all phases of pest control & termite specialists, no job too small, free estimates, Lab discount. 281-5445.

HOUSEWORK/BABYSITTING - H.S. senior at Bonne Vie II (E. Patchogue) or nearby. Cori, 289-5251.

BABYSITTER - certified special/elementary teacher will sit evenings or weekends, experienced, references. Lisa, 654-8289 or 929-3127.

CALLIGRAPHY WORK - many styles, expert quality, reasonable prices, quick service. Susan, Ext. 7759 days or Ext. 3001 eves.

CHILD CARE - my home, full/part-time, TLC for any age. 744-6910.

FIRESIDE CHIMNEY SWEEPS - fireplaces, wood, coal & oil flues, dustless removal, insured, Lab discount. Bill, 584-6425.

FIREWOOD - split, seasoned oak, 4'x16'x18", $110 delivered. 732-2849 after 6 p.m.

OIL BURNER SERVICE - 15 yrs. exp., compl. vacuum of fire box, new nozzle, new filter, 24 hr. service. 286-8862.

BABYSITTER - exper. mother, activities, TLC, hot lunch, in my home in Ridge. Kathy, 929-8809.

TILE SETTERS - ceramic quarry tile, no job too small, free estimates. E. Harris, 475-6460.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.