BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

New Measurement Sets Half-Life Of Silicon-32 at 172 Years

The earth is roughly 4.55 billion years old. We know that from measurements of natural radioisotopes, like uranium and thorium in rocks. What chronology we have of man's recent history, a mere blink in time of 35,000 years, is largely due to carbon-14 dating, which can measure the remaining amount of that radioactive isotope in all organic matter. Dating works only because the half-lives of radioisotopes are known.

Recently, a Brookhaven team published their measurement of the half-life of silicon-32. They found it to be 172 years. Now, scientists have a new dating method at their disposal. Next to oxygen, silicon is the most abundant element in the earth's crust.

Says Garman Harbottle of the Chemistry Department, who made the measurement along with David Alburger of Nuclear Energy and Elinor Norton, in Chemistry, "Silicon-32 is one of the last natural radioisotopes for which the half-life has been measured. These isotopes have contributed enormously to the study of nature, and we can see that the implications for silicon-32 dating are tremendous. It will give people a handle on the movement and behavior of everything in nature that has radioactive silicon in it."

Silicon-32 was discovered in 1954. Like carbon-14, it was first found in a laboratory and later in nature.

Since 1954, according to Harbottle, there have been about 12 estimates of its half-life (half-life is the time required for half the atoms in a radioactive substance to disintegrate). The numbers include one estimate of more than 60 years and less than 710 years, and other estimates scattered in between. Because of the spread, no one could be sure how to use silicon-32 in dating.

Finally, in 1980, a joint team of Brookhaven and Argonne National Laboratory scientists did an experiment from which they inferred the half-life at 101 years, with an error of plus or minus 18 years. That number was in good agreement with one arrived at independently by a University of Rochester team, which found 108 (±18) years.

Mort Rosen

Garman Harbottle and Elinor Norton, along with David Alburger (not shown), used a device called a differential counter to measure the half-life of silicon-32 to be 172 years.

"At that time," recalls Harbottle, "we thought, great, finished. No point in doing any more work on this."

But he and Alburger, part of that initial team, shared a nagging feeling about their result. For one thing, they didn't like the 18-year error, which was too large for good dating. For another, they didn't entirely trust the experimental method, which relied on making very tricky measurements and then inferring the decay rate.

They decided to repeat the experiment, but in a way that would give them a direct measurement of radioactive decay. Actually, this work had been planned originally, using a sample of silicon-32 — about the size of a pinch of salt — that had been made in 1968 in the 3.5-MV Van de Graaff. That had been done at the suggestion of the late Ken Nagatani, who, with Thomas Tombrello, both then in the Physics Department, recognized the significance of silicon-32 at a time when no actual measurements had ever been made. But in the mid-1970's, accelerator mass spectrometry was developed, and that much quicker method was used instead for the 1980 experiment.

In doing the direct measurement work, Harbottle and Alburger first enlisted Norton's aid to purify the same silicon-32 sample used in 1980. Next, they resurrected an apparatus built in the Chemistry Department many years ago to measure the half-lives of other long-lived isotopes, and put the sample in that machine. Then they began counting disintegrations of silicon-32 and comparing them with a chlorine-36 standard. Compared to the six-month experiment of 1980, this one took four years.

"We knew at the end of the first year that it wasn't going to be 101 years. The rest of the time was spent refining the count," says Harbottle. In the end, they got 172 (±4) years, which is a number they trust. "It's awfully hard to argue with a direct decay measurement," he says.

He thinks the number is good enough that silicon-32 will now be used to study natural inorganic processes. For starters, there will likely be measurements of ocean water mixing and currents, and studies of glacier formation, sediment accumulation and the stability of underground water on a time scale of hundreds of years. Already, there have been proposals to track air movements in the stratosphere and troposphere.

And while one might think that carbon-14 will serve for dating organic matter and silicon-32 for inorganic matter, it turns out that silicon is even present in certain live organisms. For example, saw grass, commonly found in meadows, contains minute grains of glass-like silica that the grass has taken up from the ground. Draw a blade of saw grass across your skin and you'll get a surface cut.

So Harbottle predicts that the half-life measurement they took four years to achieve will be useful. "It's going to be harder to work with silicon-32 than with carbon-14, because you need a lot of silicon to compensate for the very low signal you get when you count it," he says, "but our techniques today are sensitive enough to do it."

— Mona S. Rowe

A Visitor's View
Mark Azbel, Theoretical Physicist

As a summer visitor in BNL's Physics Department, Mark Azbel spends a lot of time discussing solid state physics with other theorists. And when he leaves here at the beginning of September, he'll travel to other U.S. institutions, before returning to Israel's Tel Aviv University, via Paris.

That's a fairly typical agenda for a guest scientist, but it's hardly one that Azbel takes for granted. For until nine years ago, when he left his native Soviet Union to live in Israel, Azbel's experiences as a scientist were vastly different.

When he was a student at the University of Kharkov, from 1948 to 1953, he recalls, access to non-Soviet scientific journals was so limited that, in order to obtain an issue of Physical Review for a seminar, he had to file an application signed by the university's chairman, dean, vice president and science library director.

After the death of Joseph Stalin, in 1953, he says, "There was no problem with access to purely scientific journals, although an issue of a journal involving general topics, could be out of limits."

Gradually, he says, some restrictions were eased. In 1955, the first international conference was held in the Soviet Union, offering Soviet scientists a rare opportunity to talk to their Western counterparts. Some time later, Soviet scientists began traveling abroad for short periods. "My feeling is that during the last ten years, things have changed for the better," says Azbel, "but not such things as a really free exchange of ideas."

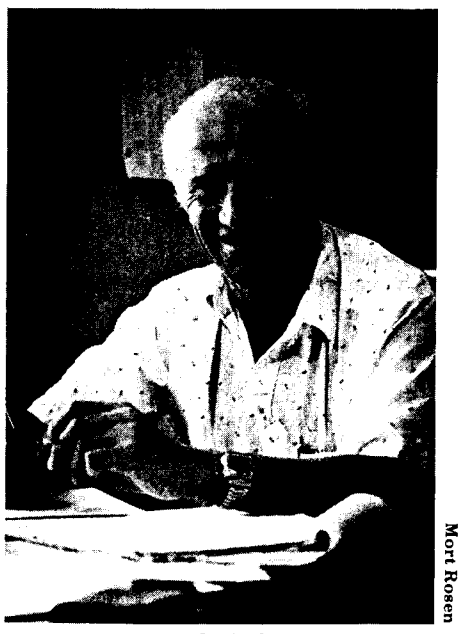
Azbel's knowledge of these changes was firsthand only until 1972, when he applied for an exit visa, to go to Israel. Suddenly, he found himself in scientific limbo. "I had been a professor at Moscow State University and director of the Department of the Landau Institute for Theoretical Physics of the Soviet Academy of Sciences. The moment I applied for my visa, I was fired from both places."

The Soviets, Azbel says, are especially concerned about scientists because of their status in the U.S.S.R. "The position of a highest level scientist in the Soviet Union is far more important than that of a scientist in America," he says. "In the U.S.S.R., it would be equivalent to that of a Congressman or a movie star here."

While awaiting visa approval, Azbel had no access to libraries and could not publish in the Soviet Union. He did manage to publish in Western journals, however, by smuggling his manuscripts out of the country with Western scientists who came to visit.

He was able to meet with other Soviet scientists in the same position as he and chaired a seminar, attended also by hundreds of Western scientists. "I was lucky to get out after that," says Azbel, adding that Victor Brailovsky, the next chairman of the same seminar, was thereafter jailed and exiled and remains in the U.S.S.R. today, after 14 years waiting for his exit visa.

He attributes much of his own good fortune to pressure from American scientists. "It is important that the West show their support for people like Brailovsky, who wish to leave. And if one leaves, things get better for the ones left behind. Though I was fired when I applied for my visa, my colleagues who had not traveled abroad before could suddenly go."



Mort Rosen

Mark Azbel

Shortly after he applied for his visa, Azbel was offered a full professorship at Tel Aviv University, effective immediately. In 1977, when he was finally able to go to Israel and actively assume that position, some things required an adjustment. "In the Soviet Union," he explains, "all the research money comes from the top and everyone is paid the same. You have no

(Continued on page 2)

Petersen Retires Today; Cohen Named Bulletin Editor

Since October 10, 1975, the masthead of the Brookhaven Bulletin has stated, "Bernice Petersen, Editor." But after almost eleven years in that position, Petersen has decided to retire. Today is her last day at the Laboratory, and this is her last issue as editor of the Bulletin.

Replacing Petersen as editor is Anita Cohen, who has been a reporter on the Bulletin for almost six years. The Bulletin staff also includes Marsha Belford, who has written for the Lab paper since 1983, and Liz Seubert, who joins the staff after nine years at BNL, in the Department of Applied Science. Mona Rowe now assumes the editorship of the Brookhaven Highlights. Rowe and Public Relations Manager Anne Baittinger are also responsible for all of the Laboratory's media relations.

—photos by Rosen

Bernice Petersen came to BNL in 1961 and worked as a senior administrative assistant in the Office of Scientific Personnel. As time went on, she began to satisfy an ever-present urge to write by contributing to the Brookhaven Bulletin. In 1970, Petersen's by-line appeared on the first of the witty, satirical pieces that have become her trademark. In October 1975, her status changed from contributor to editor, as Petersen assumed her new position in the Public Relations Office.

Petersen's career in journalism began with college courses at Columbia University and American University. She had come to Washington, D.C. from her native Canada towards the end of World War II. There she worked at the British Ministry of Supply Mission, which was involved in implementing the Lend-Lease Program. After the war, she joined the newly formed Food and Agricultural Organization of the United Nations.

Petersen moved to New York City in 1949 and worked in trade publications for a year. Then she returned to the U.N., to the brand-new Secretariat Building. There, in the Public Relations Office of UNICEF, Petersen was in charge of distribution for the new UNICEF Greeting Card Fund.

She left UNICEF in 1953, to raise her two children, John and Karen, moving to Bayport in 1958. Three years later, when Petersen was ready to return to work, BNL was waiting for her. It has been a productive collaboration.

Anita Cohen received a B.A. in English from the State University College at Oneonta, New York, in 1966, and an M.A. in Liberal Studies from the State University of New York at Stony Brook, in 1970. She has also studied business administration on the graduate level.

From 1966-1973, Cohen taught English in junior and senior high schools. In 1973, she began working for the Sorvall Corporation, Newtown, Connecticut, a manufacturer of laboratory instruments that was soon acquired by E.I. DuPont de Nemours & Co. When she left DuPont in 1980, Cohen was supervisor of technical publications. Throughout her years there, Cohen was editor of the employees' publication, the Newtown Newsletter.

In November 1980, she came to BNL to join the Bulletin staff. Since then, Cohen has written about the Laboratory's research for both the Bulletin and the Brookhaven Highlights. She is a member of the National Association of Science Writers.

Cohen and her husband, Martin Van Lith, Physics, live in Brookhaven Hamlet.

From the Editor's Notebook

After 25 years at Brookhaven, the time has come to call it a day and put the cover on the typewriter. Or, more correctly, put the cover on the computer.

Eleven of those years have been spent as editor of the Brookhaven Bulletin, and the most fitting way for me to say goodbye to this good and decent institution is on the pages of its publication.

Perhaps a retrospective is in order. Back in 1961 when I drove out to a place called Upton and something called Brookhaven Lab to apply for a job, I hadn't the faintest idea what they did out there, except that it was scientific. And science was never my best subject. As far as I knew, it had something to do with turning on the lights and getting the car started.

My introduction to science was by way of the Office of Scientific Personnel (OSP) where they were good enough to hire me. And there I got to know scientists before I became acquainted with their work. It was a good place to start.

I discovered that scientists come in all shapes and sizes, just like the rest of us, but have larger brain capacities for abstract thinking than you'll find elsewhere. At one point in my OSP career, I helped the Brookhaven Council with a survey of the scientific staff, which was done for a purpose I have forgotten. But out of that material, I did my own survey and, of the major disciplines, deduced that physicists and mathematicians were the most "far out" (with mathematicians having the edge) and both liked music; chemists went for art and cooking; and, most suitably, biologists tended to have larger families. But they had one thing in common — they were all smart.

In those early days, I did not get involved much with what they did, but what they needed, like appointments, housing, sometimes visas, and help in getting their families organized in the community.

I appreciated the concerts and lectures the Laboratory sponsored and will long remember, for instance, the gaunt face and lanky figure of J. Robert Oppenheimer as he gave a Pegram lecture outdoors one summer night. The Lab opened its doors to the public on such occasions, and, bit by bit, we all got to know a little more about science.

And, though the Lab is tucked away on its own preserve, the world came in the gate along with the employees. In the early 1970's, tempers flared on site as employees argued about the conduct of the war in Vietnam, but each side was allowed its say and the work of the Laboratory continued without interruption. Also, in this decade, budget cuts and the oil crisis led to the first large reduction in staff and to a greater awareness that energy problems would be forever with us.

During these years, I contributed an occasional piece to the Brookhaven Bulletin. These articles were on the light side and did not venture into the quicksand of science, where I felt I would vanish without a trace. But, in 1975, the opportunity was given me to try my hand at producing the Brookhaven Bulletin, full-time that is, not just a once-in-awhile article.

So in I jumped and, much to my surprise, managed to stay afloat. I was fortunate in that the national trend was toward energy stories. And it was much easier to write about oil shortages and energy-conserving houses than, say, "Optimal L^{∞} Estimates for Some Galerkin Methods for the Dirichlet Problem." But the inevitable was inevitable, and, eventually, I made timid excursions into physics, chemistry and biology. There is one confession I have to make — one cannot hide these things forever — and that is: I cannot write a chemistry story. I make myself invisible if the subject comes up and have been known to threaten a summer student with writing a recommendation that would cripple his career if he didn't finish a chemistry story for me.

Nevertheless, over the last 11 years, some bright staff has been acquired, and all the work of the Lab has appeared in the pages of the Bulletin. It wasn't until I tried to do it myself that I really understood how difficult it is to translate basic research, for instance, into intelligible English for the layman. Sometimes, it just doesn't translate. But the Bulletin staff and many scientists try hard to come to grips with this problem. As the business of this Laboratory is science, it is our fond hope that some day the front page of the Bulletin will be as popular as the ads.

Take it from me, it is possible to learn something about science, even if your training and inclination is elsewhere. No longer are Omega-minus particle, neutrino experiment and DNA repair, for example, words that might as well be written in Sanskrit. I am glad that I am going out of this Laboratory more aware of science than when I entered. The years have been well spent. Good luck to you, BNL.

— Bernice Petersen

Service Awards

The following employees received service awards during the month of August:

Thirty-Five Years

John E. Plonski ..... Physics

Thirty Years

Lois C. Arns ..... Applied Science

Twenty-Five Years

Allen N. Goland ..... Applied Science
Thomas S. Malinowski ..... S&EP
Seymour R. Protter ..... Reactor
Louis P. Remsberg Jr. ..... Chemistry

Twenty Years

Roland J. Baillargeon Jr. .. Staff Ser.
Bernard F. Brehm Jr. ..... Plant Eng.
Santoria Fountaine ..... Plant Eng.
Leigh D. Hawkins ..... Physics
Richard S. Horwitz ..... Applied Math
Robert D. Jansson ..... MIS
Roger J. Kiely ..... Safegrds. & Sec.
Betty A. Organek ... Contracts & Proc.
Muriel I. Pfeiffer ..... Personnel
Augustus Prince ..... Nuclear Energy
Charles R. Wilson ..... Accel. Devel.

Ten Years

Judith G. Bonaduce ... Applied Science
Constantino Economos .. Nuc. Energy
James A. Hanson ..... Plant Eng.
William E. Lenz ..... Physics
John N. O'Brien ..... Nuclear Energy
William T. Pratt ..... Nuclear Energy
Pavel Rehak ..... Physics
Doraliza Tavarez ..... Staff Services
Donna E. Vestal ..... Reactor

Arrivals & Departures

Arrivals

Norman Besemer ..... Plant Eng.
Toni Casoria ..... DNE
Doreen M. Cracco ..... DNE
Laurence G. Lee ..... S&EP
Joseph B. MacKenna ..... NSLS
Charles E. Pearson ..... Accel.
James W. Wright ..... Plant Eng.

Departures

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

Steven Divine ..... Central Shops
Medora M. Hardy ..... Biology
Terry E. Whitledge ..... DAS

Inside Info

Sheila Chaffee, Director's Office, and **Joan Depken,** AGS Department, have been designated Certified Professional Secretaries by the Institute for Certifying Secretaries, a department of Professional Secretaries International. To earn this status, Chaffee and Depken passed a two-day examination, which tested their proficiency in six areas: behaviorial sciences in business, business law, economics and management, accounting, office administration and communication, and office technology.

Visitor's View (Cont'd)

competition, so you do what you like. As far as science is concerned, you're as free as someone here who is retired and wants to do some science."

"In the West," he continues, "everything depends on your immediate achievements. You have to be your best all the time and be acutely aware of what's fashionable. Also, the University's future depends on grants and attracting students. It's not a government business, it's everyone's business. I did not anticipate this situation of absolute personal involvement."

Having made the adjustment, Azbel is once again immersed in solid state theory, and he says, "I am now working on things that did not exist while I was in the Soviet Union." Chief among his interests is the Quantized Hall effect, in which resistance in extraordinarily thin layers of materials may provide information about fundamental interactions in physics. This discovery, the subject of the 1985 Nobel Prize in physics, says Azbel, "was highly unexpected and people are still working to understand it." During his month here, he expects this phenomena to be the focus of his discussions with BNL Physicist Per Bak.

This is Azbel's third visit to Brookhaven. He first came to BNL the year he left the U.S.S.R., to give a talk on phase transitions in DNA, as well as to discuss the situation of scientists in the Soviet Union. He had known of the Lab throughout his career from reading major scientific journals. "The caliber and significance of major scientific institutions was well known," he says, "and Brookhaven was one of them." — Anita Cohen

Stockroom Closing

All Supply & Materiel stockrooms will be closed for inventory on September 11 and 12. Please make all necessary withdrawals of stock prior to 5 p.m. Wednesday, September 10, so the Supply & Materiel Division will have sufficient time to prepare for the inventory. Emergency requirements should be processed through John Scharpeger, Ext. 2974.

CREF Values

August	75.94	September	73.77
October	77.12	November	82.20
December	85.78	January	86.50
February	92.83	March	98.20
April	98.28	May	101.66
June	103.22		

July $98.16

First Chasman Scholar

After working five years to make the Renate W. Chasman Scholarship for Women available, Brookhaven Women in Science (WIS) made the first annual scholarship presentation of $1,000 last Monday.

The 1986 Chasman Scholarship was awarded to Rosemary Baker of West Hempstead, a former homemaker and toy crafter who is a junior-year computer science major at the New York Institute of Technology. After seven years at home, raising two sons and working part-time making soft sculpture, she completed an A.A.S. degree in computer science and elected to go on in school. Baker expects to receive her B.S. degree in January 1988 and, upon graduation, would like to work in the artificial intelligence field.

The scholarship was established to encourage Long Island women to resume their formal education in technical fields. Each year, a Chasman Scholar is selected by a panel independent of Brookhaven WIS.

As Scholarship Committee Chairwoman Eva Bozoki stated at the presentation, "The Chasman Scholarship serves two functions: First, it gives financial and moral support to women seriously pursuing a new career in science. And second, it honors the memory of Renate Chasman, a brilliant physicist who spent her most productive years at the Lab."

Renate Chasman (1932-77) came to BNL in 1963, after a three-year postdoc at Columbia University. She received a Ph.D. in experimental nuclear physics from Hebrew University, Jerusalem. At Brookhaven, she was the chief theorist in the groups that designed and built the 200-MeV linear accelerator injector for the Alternating Gradient Synchrotron. Chasman is most noted for her unique design, in collaboration with the late Ken Green, of an electron storage ring optimized for synchrotron radiation production. The Chasman-Green lattice, as it is called, is the basis for the two storage rings at the National Synchrotron Light Source and other synchrotrons around the world.

In a 1971 interview, Chasman stated, "I feel that many women are frustrated, and that they just stay home because they feel they have to do it. If a woman is satisfied by working in the house, that's fine. When she is no longer satisfied, she should do something about it." To keep Chasman's spirit alive, the scholarship was born, benefiting women studying science after taking time off to be homemakers and to raise their children.

The first $1,000 scholarship was made possible by three corporate contributions and private participation in three fund-raising events held at BNL. Long Island Trust, Garden City, contributed $500; Associated Universities Incorporated donated $1,000; and Custom Computer Specialists, Hauppage, added $100 to the scholarship fund.

Fund-raising for the Chasman Scholarship continues, as Brookhaven WIS has raised only half of its $10,000 goal to perpetuate the scholarship.

Mort Rosen

The 1986 Chasman Scholar Rosemary Baker (center) with members of the Chasman Scholarship Committee: (standing) Eva Bozoki, (seated, from left) Mary Phillips, Mary Kinsley and Gail Williams.

Tax-deductible contributions may be made to the the Chasman Scholarship Fund, P.O. Box 183, Upton, New York 11973. The next fund-raising event, an auction of original artwork and lithography by well-known artists, will take place on Saturday, November 1, at 7:30 p.m., in Berkner Hall.

The Chasman Scholarship Committee in charge of fund-raising includes Eva Bozoki, Penny Baggett, Mary Kinsley, Mary Phillips and Gail Williams. Former BNL Assistant Director R.C. Anderson, Provost of Southampton College Timothy Bishop and businesswoman Evelyn Berzin served as advisors to the committee.

Weight Watchers

If you've been thinking of getting serious about shedding those extra pounds, this may convince you: The Laboratory will again share the cost of the next on-site Weight Watchers program with all new members.

Health Promotion Specialist Elaine Friedman explained that the cost sharing will be $29 for new members, with the Lab picking up the remaining $29. Continuing members (those who have been enrolled in any of the previous sessions held on site) must pay the full cost of $58.

A free, open meeting explaining the on-site Weight Watcher's program will be held on Tuesday, September 9, from noon to 1 p.m., in Berkner Hall. New and continuing members may sign up then for classes on Tuesdays, Wednesdays and Thursdays, beginning September 16, 17 and 18, respectively. All classes will meet from 5:15 to 6:15 p.m., in the Medical Conference Room, Bldg. 490.

For more information, call Elaine Friedman, Ext. 2699.

Bowling

Women bowlers are still needed to complete the Tuesday women's league in Port Jefferson and the Thursday mixed league in Shirley. Contact Maryann Reynolds, Ext. 5241, or Kathy Griffin, Ext. 3420.

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Aerobic Dance

Autumn is a time of changing leaves and changing temperatures. Maybe it's also time for a change of routine, by signing up for some of the exercise classes being offered this fall by the Aerobic Dance Club (ADC).

In a change from previous sessions, stretch classes will be held on Mondays, beginning September 8. Aerobic dance classes will continue to be held on Tuesdays and Thursdays, beginning September 9 and 11. Participants may take any or all of these classes. Those signing up for aerobic dance are encouraged to take it both afternoons, or one class of aerobics and one of stretch.

The fee for each ten-week session (M, T or Th) is $30, payable at registration, which will precede the first classes. Classes are scheduled for the North Room of the Brookhaven Center, from 5:15 to 6:15 p.m.

For more information, call President Paula Bennett, Ext. 3293, or Vice President Bill Leonhardt, Ext. 2378.

Afro-American Club

As you have probably heard, Sandra Dozier and McHarrell Thomas have left the Lab. We would like to wish them well and recognize their contributions to the Afro-American Culture Club and to the Laboratory. So join us at a social gathering in their honor on Friday, September 5, at 5:15 p.m., at the North Room of the Brookhaven Center. The cost is $6.00 per person, and there will be a cash bar. Please RSVP with your cash or check no later than September 3. Contact Barbara Simpson, Ext. 7009, Bldg. 355.

Dowling College Registration

For last-minute registration for the on-site courses being offered by Dowling College this fall, call Pat Knisely, Ext. 7631.

Football

With the softball season drawing to a close, the start of the football season will be soon upon us.

The BNL Touch Football League Committee announces that play will begin in September and extend to the end of October. Games will be played at the BERA Recreation Park on Monday and Thursday at 5:20 p.m.

All interested teams may pick up entry blanks and game rules at the BERA Film Service Office weekdays between 9 a.m. and 2 p.m. New teams are welcome. Individuals who would like to play but are not included on a team roster can sign up for a players pool. Since blocking is not allowed and body contact is limited, players of all ages can take part with little fear of being injured.

Ed Taylor, League Chairman, may be contacted for further information at Ext. 7589.

Astronomical Society

The open observatory night this month is scheduled for Friday, August 29, beginning at dark, with the following Friday as the rain date. Objects of interest include several planets and the moon (on Sept. 5). Admission is $1 for non-members and will be collected at the observatory. Be sure to call Bob Mills, Ext. 5043, or Rick Jackimowicz, Ext. 3803, during the afternoon of the scheduled date for last-minute information.

Food Service

At the Cafeteria, the snack bar will be open from 9 a.m. to 2 p.m. daily on Saturday, Sunday and Monday, August 30 and 31, and September 1.

The Tap Room at the Brookhaven Center Club will be closed on Saturday and Sunday, but will reopen at 5 p.m. on Monday, September 1.

The vended food service in Building 912 will be available throughout the Labor Day weekend.

Upton School Opens

The Upton Nursery School is preparing for its first day of classes on September 8. Enrollment is open to three- and four-year-old children who are related to BNL employees. There are still openings for four-year-olds; to be eligible, the child must be four years of age by December 1.

Classes are held on site in the Recreation Bldg. in the apartment area. For more information and enrollment forms call Marietta Veligdan, 924-4074, or Susan McCafferty, 878-1255.

Cafeteria Menu

Week of September 1

Monday, September 1

Cream of spinach soup	(cup)	.65
	(bowl)	.85
Baked herbed chicken w/one veg. (lite weight)		2.65
Beef noodle casserole w/one veg.		2.45
Hot Deli: Virginia ham & mozzarella melt		2.45

Tuesday, September 2

U.S. Senate bean soup	(cup)	.65
	(bowl)	.85
Red bean, sausage & rice casserole		2.45
Broiled fish w/one veg.		2.65
Ham & potatos au gratin w/one veg.		2.45
Hot Deli: Grilled Reuben sandwich		2.45

Wednesday, September 3

Cream of asparagus soup	(cup)	1.00
	(bowl)	1.25
Cheddar broccoli quiche w/one veg. (lite weight)		2.45
Baked pork chop w/one veg.		2.55
Hot Deli: Garden turkey club		2.45

Thursday, September 4

Garden vegetable soup	(cup)	.65
	(bowl)	.85
Lasagna w/garlic bread		2.45
Beef & broccoli stir fry over rice		2.45
Hot vegetable plate (lite weight)		2.25
Hot Deli: Philly cheese steak sandwich		2.45

Friday, September 5

New England clam chowder	(cup)	.65
	(bowl)	.85
Seafood Newburg over rice pilaf		2.65
Chicken patty Parmesan w/one veg.		2.45
Tuna salad plate (lite weight)		2.25
Hot Deli: 6' Italian Sub		.90 per inch

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 and/or appropriate bargaining unit, 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 Employment Manager, 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 Laboratory employees only.

2477. RESIDENCE CUSTODIAN - Staff Services Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2478. ENGINEERING POSITION - Requires a BSEE (MSEE desirable) and 4-5 years' design experience in one or more of the following: microprocessor systems (hardware and software), digital equipment development, small signal analog and rf circuitry. Will work in the control engineering group. Alternating Gradient Synchrotron Department.

Autos & Auto Supplies

72 MERCURY MONTEGO - 302, a/t, am/fm, runs well. $450. Dan, Ext. 4987 or 698-7322.

77 CHEVY BLAZER - K5, Cheyenne pkg., 2 w/d, new brakes, exhaust, V6, 4 spd. $1,750. Terri, 821-0172.

78 YAMAHA X5400 - 14k mi., good cond. $650. 473-9223 after 5 p.m.

80 DATSUN 210SL - 5 spd., a/c, 69k mi., 40 m.p.g., excel. cond. $2,500 neg. 589-7699.

77 PINTO WAGON - V6, a/c, p/s, p/b, a/t, new tires, 36k mi., orig. owner. $1,800. Ext. 3509.

69 MUSTANG - good running cond. 878-6074.

71 DODGE - 1-ton flatbed truck, good motor. $600. firm. 878-6637.

AUTO PARTS - for Duster & Demo, engine, fenders, drs., hood, glass, etc., low prices. 727-3608 after 5 p.m.

79 AMC SPORT HATCH - a/t, a/c, new tires, brakes, exhaust, runs well. $400. 929-8922.

70 CHEVY MALIBU - V8, a/t, good cond., classic 2 dr. model. $500. Jim, 878-8012 after 6 p.m.

85 NISSAN SENTRA - 4 yr. warranty, am/fm stereo cass., mint. $5,900. Bud, Ext. 3083 or 878-8459.

81 DATSUN 510SW - a/c, p/b, stereo, roof rack, 73k mi., perfect cond., avail. 9/26. $3,200. Dov, Ext. 4552 or Ext. 3105 eves.

MUFFLER - new, for large pick-up. 325-0447 after 6 p.m.

78 DODGE MONACO - 2 dr., 8 cyl., 95k mi. $1,200. or best offer. 924-8722.

74 AMC WAGON - 9 passenger, excel. running cond. $250. Al, Ext. 4215.

75 PONTIAC LEMANS - Sport Coupe, red, 8 cyl., a/t, new Good Year tires, sharp, asking $1,350. Mark, Ext. 4028 or 734-7561.

MOTORCYCLE HELMET - men's large, white. $20. Beeper #266 or 281-0360 after 6 p.m.

86 FORD ESCORT L - alt., a/c, am/fm cass. & more, under 5k mi., mint cond. $7,000. 929-6421.

80 TOYOTA COROLLA - a/t, a/c, 58k mi., new muffler, tires, asking $2,300. Ext. 7578.

76 TOYOTA CORONA WAGON - orig. owner. $850. neg. Brant, Ext. 4552, or 929-3310 before 10 p.m. eves.

SNOW TIRES - (3), size 7.50-16. $5/ea. Ext. 4312.

79 FORD FAIRMONT - 6 cyl., a/t, p/s, p/b, a/c, air shocks, 100+k mi., excel. running. $1,200. 929-8105.

STEP BUMPER - fits 80-85 Ford, p/u, good cond., asking $65. Ext. 7713.

82 PLYMOUTH HORIZON - new starter, good engine, red. $2,500 neg. Carol, Ext. 2907 or 928-8379.

79 TOYOTA COROLLA - a/c, am/fm, 4 dr., excel. running cond., clean in & out. $1,600. Ext. 7148.

70 KARMANN GHIA CONVERTIBLE - also spare engine, trans., wheels, starter and other parts. $1,500. Clem, 473-2645 eves.

83 BMW S28E - loaded, excel. cond., 6 cyl., 25 m.p.g. Al, Ext. 4397.

82 HONDA CIVIC - orig. owner, new car cond., am/fm 8 track stereo. Ext. 2384 or 878-0074.

78 PLYMOUTH HORIZON - am/fm stereo, c.b., new Pirelli tires, asking $500. Ted, Ext. 5555 or 286-0065.

83 HONDA CIVIC - station wagon, mint cond., roof rack, a/c, 5 spd., silver. Ext. 7585.

YAHAMA 70 CLASSIC - many extra parts, good cond. $900. 399-0002 after 6 p.m.

77 CAMARO Z28 - limited edition, V8, p/s, p/b, a/c, runs well. $3,200. Ed, Ext. 2697 or 924-7423.

83 HONDA CIVIC 1500S - new tires, sun rf., stereo, 5 spd., 52k mi., excel. cond. $3,000. Ext. 2183/3192.

81 YAMAHA 750 - Seca, low mi., new custom seat, new tires. $1,400. Ext. 7148 or 588-9452 after 6 p.m.

77 YAMAHA GTR80 - dirt bike, needs minor work. $90. 878-0480 eves.

TIRES - (5) Armstrong Trutrac, w/4 white spoke wheels, fits Ford, jeep, excel., asking $300. Ext. 7713.

78 CAMARO LT - 305, a/t, a/c, stereo, much more, excel. $3,000. 269-9510 after 7 p.m.

66 FORD MUSTANG - not running. $500. 399-0942.

77 DATSUN 810 - station wagon, 4 spd., fully loaded, v.g. cond., high mi., asking $700. 727-7439 Mon., Tue. & Thur. eves.

77 HONDA CIVIC HATCH - 4 spd., new brakes, trans., rebuilt eng. $460. Ext. 3164.

75 CHEVY MALIBU CLASSIC - runs well, needs body work, asking $400. Ext. 2119 or 286-9121 after 5 p.m.

FORD ENGINE - 250 cu. in., straight 6, 70k mi., w/trans. $150 or best offer. Betty, Ext. 2937.

77 PINTO WAGON - 4 cyl., 4 spd., many new parts, am/fm. $300. Dave, Ext. 4428.

75 GRANADA - stick shift, runs very well, radio. $450. neg. Ext. 2455 or 331-1432.

72 FORD LTD. - new trans. $500. Ext. 4995 or 399-1249.

SUZUKI GS250t - counter-balanced drive shaft for minimum vibration and wear, w/manual, helmet, luggage rack & windshield, excel. cond. $499. Ext. 4411 or 929-8287.

79 DODGE CHALLENGER - Mitsubishi, 4 cyl., 5 spd., a/c, am/fm cass., 2 dr. $800. Steve, Ext. 3822 or 929-6527.

83 PLYMOUTH TURISMO - 29k mi., 2.2L/5 spd., sunrf., Shelby sport, stereo/cass., louvers, GT sport, showroom cond. extras. $4,800 neg. Ralph, Ext. 2368 or 928-6654.

80 CHAMP - high mi., excel. cond. $1,200. 765-2953.

82 CHEVY S.W. MALIBU - classic, v.g. cond. $3,500. 475-4596.

77 TOYOTA CORONA WAGON - rusted, excel. running cond. $350. Ext. 4771 or 286-8747.

TIRES - (2), 875 16-5LT, Good Year Tracker II, 6 ply. $40. 475-4591.

OIL FILTER - dual, for Ford products. $2. Morris, Ext. 4192.

Boats and Marine Supplies

19' RENKEN BOWRIDER - 120 h.p., Volvo I/O, full canvas, trailer. Ron, Ext. 7533 or 286-0353 eves.

18' RENKEN BOWRIDER - 1983, 120 h.p., I/O, trailer, full cover. $6,500. Ady, Ext. 4531 or 331-3785.

16' SAILBOAT - fiberglass, new sails, 6 h.p. Evinrude. $1,400. neg. Ext. 2434.

21' BAYLINER CIERRA - 1986, sleeps 6, 135 h.p. Volvo I/O, full canvas. $20,000. 878-0480 after 6 p.m.

20' GLASTRON FISHING BOAT - w/o motor, stored in Mattituck. $1,500. Jim Klein, 298-8805.

JOHNSON OUTBOARD - 40 h.p., elec. start, long shaft, can demonstrate. $250. Joe, Ext. 3464 or 281-7683.

20' FIBERGLASS - trailer, cabin, 50 h.p., in water, will demonstrate. $3,600. 399-3899 after 5:30 p.m.

JOHNSON ENGINE - 1978, 140 h.p., many new parts, must sell, good cond. $600. 589-7699.

Miscellaneous

METS TICKETS - (2), loge box, first base, Tues. Sept. 23, day game, St. Louis. Tony, Ext. 3194.

BABY GRAND PIANO - good practice piano for serious beginner, $1200. Call 751-8351.

MOVING SALE - foam mattress table, tennis table, Hi-fi console, storage racks, chair, games, etc. Ext. 7544.

MOVING SALE - desk, 3 drawer birch, $50; rug, 9'x12', gold tweed shag, $30; Singer sewing machine, portable, $25; bed board, 4'x6' ⅜" plywood, $10. 286-0379.

STEREO CONSOLE - am/fm, 8 track, turntable, good, walnut cabinet, asking $110. Ext. 7148 or 588-9452.

CB ANTENNA - for home w/tripod mount and coax cable $25; copper boiler, large, from 1920's, $35. Gil, Ext. 4043 or 878-6676 after 6 p.m.

DEHUMIDIFER - General Electric, $85; console record player with am/fm radio, $25. 589-2681.

NIKON FA - brand new, w/case, Nikor 35-70mm lens, filter, case and hood. Ext. 2482.

MINOX 35mm PL - w/case, filter, hood, Minox "C" sub-miniature. Ext. 2459.

SIAMESE KITTENS - show quality, from champion lines, ready to leave mother cat. Ramona, 928-3088.

GARAGE DOOR - new, 9', $50; double window 3'6"x5'6", $15; picture window 4'6"x8'6", $25. 878-6637.

GAS RANGE - Hotpoint, avovado, good condition, make offer. Ext. 3260 or 878-6074.

ELECTRIC STOVE - copper tone, G.E., self clean, good condition, $50. 473-3792

CRIB - w/new mattress and matching dresser, yellow, $100; baby carriage, $15. Walter, Ext. 3988 or 567-9025.

TABLE LAMP - $5; electric heater, $5; floor lamp, $10; coffee table, $3. 924-8722.

DARK RANCH MINK COAT - size 10-12, like new, moving to Florida, reasonable offer. 325-9511.

EXERCISE MACHINE - Sear's "Body Shop 360," like new, comp. with rowing access, $50. Harry, 286-3827.

PIONEER STEREO - rec., model #SX5335, w/BIC #912C, turntable, both $75. 924-3236.

TI COMPUTER ACCESSORY - video, modulator, with cable, UM1381. Al, Ext. 4215.

COAL STOVE - Surdiac Southport, MC/C 512, 44,000 btu, auto feed, heats 13,700 cu ft.; wood front door weatherstip w/weather strip jams, 1¾x36x6'8". 475-0509.

BABY STROLLER - bassinet w/umbrella type, plaid, good cond., $20. Beep #266 or 281-0360 after 6.

DINING TABLE - 4 chairs, fine quality, warm brown mahogany, Duncan Phyfe, 40"x60" & 3 12" leaves, & complete set of pads, $800; Hogsman waders, size long, $40; Nordica ski boots, size 7, $15. 286-0379.

POOL FILTER - 1 hp, SS w/backwash, $150; safety ladder, $45, both used one summer. 924-3756.

TV SATELLITE DISH - and accessories, $1850. 399-6518 after 6:00 p.m.

BASSETT SOFA - and loveseat, table, brass lamps, and bedroom set, all like new, reasonable. Call 286-0372.

PEKINGESE PUPPIES - 2-A1 adorable A.K.C. litter, male & female, all colors, shots, health guaranteed. 654-1731.

MICROWAVE OVEN - GE Spacemaker II, model JEM21, almost new, $200. 269-9510 after 7 p.m.

MINI WASHER - apt. size, portable, $75. 399-6318 after 5 p.m.

SNOW PLOW - garden plow & harrow, to fit early Inter. Cub tractors, $150. Call Ext 4043 or 878-6676 after 6 p.m.

MOVING SALE - kitchen table, chairs, couch, bookcase, water filter, cabinet, chest, swag lamp, etc. Carole, Ext. 2907 or 928-8379.

CANNONBALL QUEEN SIZE BED - dk. Pine finish, no bedding, $75. 929-8105.

TOKINA 80-200mm - f2.8 lens for Nikon, w/case, filter and hood. Ext. 5221.

BABY ITEMS - large playpen, walker chair, infant car seat, tub, crib mobiles, all very good. 744-9677.

SEWING MACHINE - in mahogany cabinet, $125; Castro convertible hassock, $25; 3 window fans at $25 ea.; 10-speed bicycle, $125. Harriet, Ext. 4926 or 821-2932 after 6 p.m.

TURNTABLE - Thorens 150, manual, good cond., includes new audiotechnic cartridge, $90 or best offer. Ext. 2914 or 286-3742, eves/wkends.

LABRADOR RETRIEVER PUPPY - yellow, male, AKC European champion lines, shots, ready to go. Call 929-3620.

PA SYSTEM - 4 speakers, 2 amplifiers, cabinet, $150; Dual turntable, $100; mirrors, 6'x6' and 6½'x2', neg. 475-4690.

REFRIGERATOR - 2.8 cu. ft., like new, $100; Colonial love seat, brown plaid, excel. cond., $50. 265-5423.

REFRIGERATOR (2) - Amana, brown, 36" S/S, $100; Philco, gold, 31" D/D, $75; $150 takes both. Anne, Ext. 7814 or 475-8456.

ANTIQUE CHINA CLOSET - hand carved mahogany, curved & beveled glass. c.1900, asking $3,000. 289-3782.

MATERIAL - 50¢ a yard, cotton, taffeta, silk, slipcover, also remnants for quilts, projects, crafts. Ext. 2529.

CHINA CLOSET - large walnut, excel., $200; couch, chair, needs slipcovers, both $50; lounge, $15. Ext. 2529.

GE RANGE - 2 oven free standing unit, self-cleaning, copper tone. 286-9483.

CURTAINS - 7'x8', very good cond., $20. Morris, Ext. 4192.

POOL PUMP - ¾ motor, no filter. J. Medina, Ext. 7636.

SNEAKERS - ladies leather, size 7, like new, $45. Chris, Ext. 2907.

Yard Sales

HOLBROOK - Aug., 30 & 31, 9-3, 32 Laurel St. off L.I. Ave., west of A&P, contents of house, tools.

CENTER MORICHES - 8 Orchard Neck Road, 8/30. 8/31 8 a.m.-6 p.m., furniture, jewelry, tools, radios, clothing.

Car Pools

QUEENS - van pool needs two. Fred, Ext. 3254.

BABYLON VICINITY - 2 riders looking to join or form car pool. Mike, Ext. 2705.

Free

PUPPY - mostly Labrador, beautiful, 4 mo. old, very sweet disposition. 588-3365.

PLAYER PIANO - converted to standard upright, all wood, you pick up, 5 min. from Lab. 399-2566 after 5 p.m.

GERMAN SHEPERD - lovable, fixed, all shots. Ext. 4995 or 399-1249.

Lost & Found

FOUND - gold earring between M.I.S. and Budget Office. Ext. 3304.

Real Estate

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

For Rent

HILTON HEAD, S.C. - 2 bdrm. condo, sleeps 6, many extras, beach, pool, tennis, golf, fall special, Lab employees & families only. $300/wk. 585-9149.

SHIRLEY - 2 rm. apt. w/full bath, walk to beach, $385 incl. util. 744-2821.

YAPHANK - priv., spacious, 3 bdrm. ranch, den, f/p, deck, 1½ acres, avail. 9/15, $900. 924-4872.

E. PATCHOGUE - S. of S. Country Rd., 2nd fl. apt., 2 bdrm., l/r, eik, priv. ent., avail. Oct. 1, $450/mo. + util., no pets. Walt, Ext. 2907 or 698-0576.

HOLLYWOOD BEACH, FLA. - 2 bdrm., oceanview, Sept. 13-20, $400. Ext. 4082.

NORTH SHIRLEY - 3 bdrm. apt., full bath, l/r, appli., 7 min. to Lab., avail. Sept. 1, $700 + util. 395-1084.

SHOREHAM - lovely house, SWR school dist.,4 bdrm., 2 bath, full bsmt., deck, gar. & all appli. 744-5412 between 5-9 p.m.

MEDFORD - large 4 bdrm. home, nice devel., 9/15 occupancy, a steal at $750, 1 mo. sec. 289-9034 or 727-6287.

MT. POCONO, PA. - chalet, summer/winter, 3 bdrm., sleeps 10, furn., lake, pool, tennis, horseback riding, weekly, midweek, wknd. rates. Ext. 3164.

VERMONT - fall vac., 3 bdrm. house, f/p, fully equip., beautiful view, apple picking, foliage, alpine slide, woodland trails, fam. oriented & reas., avail. weekly or wknds. 732-6499 after 6 p.m.

N. GREAT RIVER - cottage, very priv., avail. Sept. 3, near McArthur Airport, incls. util. + heat, completely furn. 234-0538.

For Sale

MASTIC BEACH - frame house, w/2 bdrm., l/r, eik, full bath, 80x100 plot, $63,500. 744-2821.

RIDGE - No. of Rte. 25, 1.12 acre plot, 100+x400+, level, 80% cleared, 20% wooded, in estb. quiet locale, $47,900. 924-3236.

SHOREHAM NORTH - 4 bdrm., Colonial, 2½ baths, den, f/p, bsmt., fenced, patio formal dining rm., $179,000. 744-1750.

BELLPORT - 3 bdrm. split level, eik, dinette, l/r, den, attached gar., all alum. siding, fenced backyd., 80x185' plot. 286-9560 after 6 p.m.

POMPANO BEACH - & Hollywood, Fla., 2 time shares, 2 bdrm, 2 bath. Ext. 4082.

DAYTONA BEACH, FLA. - time shares, efficiency & 1 bdrm., weeks, 14 & 23, assum. mtg. 736-4886.

PORT JEFF STATION N. - energy effic., 3 bdrm. ranch, vinyl siding, Anderson windows, attached gar., lge. deck, full bsmt., 8x12 out bldg., $139,000. 928-6944.

BROOKHAVEN HAMLET - 12 prime acres, estate surroundings, trees & shrubs 4'-40' tall, 14" top soil, lge. barn, sub-division maps avail, 1-1¼ acre plots, terms. Jim, Ext. 4040 or 289-0876.

RONKOKOMA - ½ mi. LIE, across lake, hi-ranch, 2 independent nice apts., 3 & 2 bdrms., l/r, d/r, eik, great income, Connetquot S.D., $140's. Ext. 2830 and 543-0487 eves.

SHOREHAM - 4 bdrm. ranch, 2 bath, eik, l/r, d/r, fam. rm. w/fp, patio, new fence, fully landscaped, must see, $156,900. 744-4288.

Wanted

HOUSE TO SIT - free, responsible, experienced, caring, reliable, any period after Sept. 2, Jack Allentuck, Ext, 2412.

SPANISH SPEAKING BABYSITTER - for 3 yr. old girl, few times a week. Noemi, Ext. 3073.

TEACHER - of Jewish history, culture religion. Elaine, Ext. 3188 or Sondra Korus, 727-3353.

CHILDREN - 5-17 yrs. old, who are interested in learning Chinese at the Center For Chinese Learning at Stony Brook. 689-8548 after 6 p.m. or 751-6436.

ALUM. BRAKE - for siding. Ext. 2674 or 588-1889.

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

FURNISHED HOUSE OR APT. - Sept. 1, BNL couple. Arnold, Ext. 2434.

SET OF ENCYCLOPEDIA — 1969 on, good cond. Mike, 698-0152.

HOUSE OR APT. - to rent to married couple, $800 or less per month. Ext. 5503.

DRIVER - to ferry car to San Francisco. Ext. 2527 or 878-1552.

SKI MAGAZINE - February 1986 issue. Ext. 4727.

In Appreciation

Thanks to everyone at NSLS for their kindness and concern at my recent loss. — Robert Foxworth

Classified Ad Policy

Deadline is 4:30 p.m. Friday for publication Friday of the following week.

1. The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
2. All items for sale or rent must be the advertiser's property.
3. Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
4. Ads for the sale or trade of firearms will not be accepted.
5. Ads not carried because of space restrictions will be held for publication in the next issue.
6. Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.
7. **Property for sale and rent cannot be accepted on this form. Special Real Estate Ad Forms are available at the office of the Brookhaven Bulletin, Building 134.**

☐ For Sale: Autos & Auto Supplies ☐ For Sale: Miscellaneous ☐ Lost & Found ☐ Free
☐ For Sale: Boats & Marine Supplies ☐ Car Pools ☐ Wanted ☐ _____

Please print your ad below in 15 words or less using one word per block. Include name and phone number to call.

Note: The following must be completed for your ad to appear.

NAME (Please Print) .....

Employee's Signature ..... Life No. ..... Ext. .....

Send to: Brookhaven Bulletin, Building 134 (Ext. 2345).