BROOKHAVEN BULLETIN
Vol. 37 - No. 6 February 11, 1983
BROOKHAVEN NATIONAL LABORATORY

BNL Lecture
Particle Physics

Pioneering a new time for Brookhaven Lectures, senior physicist Ling-Lie Chau will present the 197th lecture on Wednesday, February 23 at 4:30 p.m. in Berkner Hall. Chau is group leader of the High Energy Theory Group in the Physics Department. She will speak on "Frontiers in Particle Physics."

She sums up her topic this way: "In trying to understand the physical world there has been a deep belief among scientists that the basic physical laws governing our complex but wonderful world must be simple and elegant. The search has two frontiers: one is to look for the most elementary constituents of matter; the other is to search for a unified view of the various forces, or interactions, that govern our physical world. My lecture is about our present perceptions of these two frontiers."

Chau will discuss major predictions and experiments in these areas, and the scientists who made them, including the recent reports of the discovery of the intermediate boson W particle at CERN, and the latest results on the stability of the proton.

These findings are good illustrations of her subject, notes Chau. "The discovery of the W boson is a positive support of the electroweak unification theory," she says, "and if proton decay is observed, it will give considerable impetus to the idea of strong-electroweak unification." And, according to Chau, there is already the super idea of grand unification which would unify gravitational, strong and electroweak interactions. These theories suggest the possibility of further exotic particles which are partners of some of those already discovered, i.e., the pairing of spin half and spin integer particles. For example, the photon ought to have a spin half partner, the photino; and W's partner would be the wino.

Throughout her lecture, Chau will note Brookhaven's many previous contributions in the search for new particles and new phenomena, and how the planned Colliding Beam Accelerator will continue this exploration into the new territory of 100 GeV and beyond, a frontier now opened up by the discovery of the W.

Ling-Lie Chau was born in China, and educated in Taiwan and the United States. She received her Ph.D. in physics from the University of California at Berkeley in 1966. She spent the following two years as a visiting member of the Institute for Advanced Study. Chau joined the staff of BNL's Physics Department in 1969.

Her research interests include the study of unification theories, and non-abelian gauge theories for strong interactions. With other members of the theory group she has done studies for high energy machines like CBA in calculating, for example, the $W^{\pm}$, Z^{o} production cross sections and their decay properties for the purpose of their detections. She was a member of the organizing committee of the 1981 ISABELLE Summer Workshop and on the editorial staff of its proceedings.

Chau was a member of the Brookhaven Council for three years and chairman for 1980-81. She holds a guest scientist appointment at the State University of New York at Stony Brook.

Under the new schedule selected for Brookhaven Lectures, a coffee reception will be held at 4 p.m. preceding the lecture, and a buffet supper at 6:30 p.m. approximately an hour after the lecture. The price of dinner is $7.50 and reservations should be made by calling Ext. 3541 before 5 p.m. that day.

Doug Humphrey

Ling-Lie Chau

Keeping Watch On Energy

Energy conservation. You may be getting tired of hearing the words, but no doubt about it, it saves money. And that's why a group called energy conservation coordinators is still charged with keeping watch over energy consumption at the Lab.

The energy coordinators were first organized in 1973 by Associate Director Vincent O'Leary. That was two years before the federal energy conservation program got going.

O'Leary remembers sitting in his office with Joe Rose and Ed Shelton of Plant Engineering, all of them shivering in the cold. It was Washington's birthday, the Lab was closed for a long weekend, and there was a fuel shortage. "We talked about ways we could cut down on energy consumption throughout the site," says O'Leary. "We needed to find out what impact these cutbacks would have on department operations. And we needed more specific ideas on saving energy from the people who knew best, people right in the departments." So the idea was born to designate in each organizational unit one person to be in charge of energy conservation for that group.

The coordinators are responsible for monitoring building energy consumption, especially billed electric power; insuring departmental compliance with BNL building temperature policies (in general, winter-time temperatures of 65°F during the day and 55°F at night, 78°F in the summer); watching for and reporting energy wasting problems; and promoting energy awareness among employees. O'Leary also says that this organized group is a good point of contact for getting feedback on energy conservation measures that are taken.

The Department of Energy, through the Office of Project and Facilities Management, Construction and Facilities Management Division, provides federal money for in-house modifications to buildings and equipment for energy conservation. O'Leary reports that since fiscal year 1977 Brookhaven has received eight million dollars for these kinds of modifications. In fiscal '83, the Lab expects to receive an additional 2.1 million dollars for similar retrofit projects. That may sound like a lot of money spent, but the resulting energy savings well exceeds the cost of modifications.

Some of the key projects were suggested by the energy coordinators. Last year, DOE approved $545,000 for a modification to the mechanical/electrical systems that process cooling water for the AGS. The idea came from Frank Heimburger, energy coordinator for the Accelerator Department. The project is in the design stage now, but the projected annual saving is $291,000, making the payback period 1.9 years. A few of the critical changes which will be made are: using cooling tower water for free cooling in the winter on the Linac cooling system, providing variable speed drive for cooling tower water pumps on that same system, and replacing existing single speed motors with two speed motors in the chilled water system.

For fiscal '83, DOE has approved $950,000 for modifications at the Medical Department. That all came about because energy coordinator Ken Mohring, concerned about the department's high electric bill, asked for help in checking into it. An outside consultant did an energy survey and recommended modifications such as insulating the masonry cavity walls along the building perimeter and installing two-speed motors on selected air units that handle heating and cooling. The projected annual saving is $312,000, and the payback period will be three years.

Already proposed to DOE and expected to be approved for next year is another project in the Accelerator Department. Andy Soukas came up with an idea for improving the efficiency of the power supplies for AGS magnets that focus and bend beam lines to experiments. He suggested replacing the magnetic amplifiers with silicon-controlled rectifiers, for an 8-10% improvement in efficiency. Cost of the modification is estimated at $940,000, with an annual saving of $460,000 for a payback time of two years.

Already, department energy coordinators have been asked to forward

(Continued on page 2)

HP3000 Replaces IBM-360 For Administrative Systems

There may have been no difference in the way your paycheck looked last month, but it was issued by a new computer. Payroll was the first of 16 administrative functions to be processed by the new HP3000 Series 64 Hewlett-Packard computer at the Management Information Systems Division (MIS). The systems are being converted from the IBM-360 computer which has been in use since 1967 to execute on any one of the three existing Hewlett-Packard minicomputers at BNL, thus ensuring reliable backup.

The IBM-360 computer is not only obsolete, it is expensive to maintain and replacement parts are hard to find. The IBM is batch oriented, i.e., it produces only paper reports, but the HP's will provide this service as well as on-line access to information.

The conversion to the Hewlett-Packard started in May 1982 and is expected to be complete at the end of March this year. It is being done by the staff of the Systems Development Programming group, under the supervision of Robert Kaszuba. The conversion project team consists of senior systems/DP analysts Jean Lauer and John Bland, together with systems/DP analysts Charles Dodt and Peter McHugh. They have completed the payroll conversion and are now working on such applications as:

- Personnel Forecast system which provides monthly reporting of activity, by department and division, against budget manpower allotments.
- Motor Vehicle system which tracks mileage, utilization, fuel and maintenance activity, and cost, per vehicle, by department.
- FIS/MIS and Grants systems provide specific budget versus expense comparison data as required for DOE reporting and for other funding and grant agencies.

Besides converting established systems, Kaszuba's group also works on the development of systems with new features. In addition to the IPAP system, which already has several functions completed, coming up in Fiscal '83 is one called Job Cost Accounting and Reporting System (JCARS). This system will link the four support divisions — Central Shops, Instrumentation, Photography and Graphic Arts, and Plant Engineering — into one system. This will have the advantage of integrating purchasing and stores issues to provide a complete picture of the charges against a job order, and to assist the support divisions in controlling new and outstanding jobs.

Kaszuba's group is also involved in data base analysis and computer systems management.

Mort Rosen

The MIS team responsible for the conversion project includes, (from left) John Bland, Charles Dodt, Jean Lauer, Robert Kaszuba and Peter McHugh.

After his lecture, Astronaut Allen signs an autograph for Don Marrs, tool maker in the Accelerator Department.

Allen considers a serious question from an admirer.

—photos by Rosen

Back To Planet Earth

Dr. Joseph Allen, Mission Specialist on last November's Columbia shuttle flight, took time on Monday afternoon to sign autographs and chat with old acquaintances. Allen was at Brookhaven on February 7 to talk about the flight, his first into space.

In an interview before the lecture, he described the flight as "a lot of what I expected...but you can't simulate all the mystery. The trip was a remarkable experience, no question about it."

During his talk, Allen described the zero gravity environment in space as a wonderland for someone who likes physics. "It's intellectually curious," he said. "There is no up, there is no down, everything floats." He showed slides of floating, lopsided balls of strawberry juice and orange juice, being pursued by crewmen armed with straws.

Allen presented to the Laboratory a plaque on which is mounted pictures of the shuttle, a patch commemorating the November flight, and a reprint of a paper he co-authored with BNL physicist John Olness, and Allan Bromley and Albert Howard of Yale University. Part of the inscription on the plaque reads: "This patch and reprint of a paper based on experiments done at the Brookhaven Van de Graaff Facility were carried aboard the space shuttle Columbia during its fifth mission into space, November 11 to 16, 1982, by astronaut Joseph P. Allen. They are herewith presented by Dr. Allen to Brookhaven National Laboratory in deep appreciation for the hospitality and guidance shown to him by the research staff of the facility. It should also be noted that, since F still equals dp/dt if one does not overlook the $\dot{m}$ term, both the reprint and Allen survived the two million mile journey in remarkably good condition." The equation, usually written F = ma, is a mathematical statement of Newton's first law of motion, which applies to space travel as well as to motion on planet Earth.

During the 1960s, Allen was a graduate student from Yale, doing part of his research at Brookhaven. The reprint which he took aboard the shuttle is the first paper he published, and it describes a major portion of his thesis project, which was done at BNL's 3.5 MV Van de Graaff accelerator, then under the direction of David Alburger. While at Brookhaven, Allen worked closely with physicists Olness and Ernie Warburton.

Energy (Cont'd)

suggestions of new projects for fiscal 1985 to the Lab Energy Coordinator, Robert Terwilliger in Plant Engineering. Together with Ed Murphy and Mark Culp in Plant Engineering, he will evaluate energy conservation projects for submission to DOE. Energy-saving ideas are always welcome, and if you don't know who your energy coordinator is, here is a list:

Energy Conservation Coordinators

Laboratory Energy Coordinator: Robert C. Terwilliger - Ext. 2542

Department/Division	Coordinator	Phone	Building
Accelerator	Frank Heimburger	4784	911A
Applied Math	Stu S. Rideout	4108	515
(Alternate)	Clarence Pittenger	4128	515
Biology	Neal Tempel	3412	463
Budget Office	Don Robbins	3313	460
Colliding Beam Accelerator	Ed Dexter	4462	902A
Chemistry	Blair Munhofen	4302	555A
Central Shops	Bob Lehn	3351	462U
Contracts & Procurement	A.P. Lewis	3140	355
Director's Office	L.C. Emma	3334	460
Energy & Environment	Dick Krajewski	7619	526
Fiscal	B.J. McAlary	2492	134A
Instrumentation	Jerry Tiller	4228	535B
Management Info. Systems	Robert Bacharach	7653	459
Medical	Ken Mohring	3564	490
NSLS	George Grigg	4837	725B
Nuclear Energy	Tony Romano	4024	197C
Personnel	Bob D'Angio	2113	185
Photography & Graphic Arts	Jack Laurie	7640	197B
Physics	Fred Vandervoort	3718	510A
Plant Engineering	M.J. Rose	2492	134C
	J. Iulo	2480	134C
	A. Mahlmann	2500	134C
	J. Hennessy	3085	326
	B. Medaris	7676	134C
Public Relations	Anne Baittinger	5055	134
Reactor	Gerry Kinne	4061	703
Safety & Environmental Prot.	Roy McWilliams	7936	535A
Staff Services	William Webster	2525	179B
Supply & Materiel	Mike Guacci	2976	211
Technical Information	Ken W. Ryan	3489	477A
Tandem Van de Graaff	Theodore Robinson	4589	901A

Street Scene

If all the paved streets at BNL were laid end to end heading west, the resulting road would reach Huntington. But the Lab's 26.74 miles of paved roadway is really dozens of individual streets. While most of these are easily identified by Brookhaven employees, have you ever considered the origins of those familiar street names?

Many are quite obvious, especially Brookhaven Avenue, the Lab's main street. Equally apparent is Center Street, which runs just about through the center of the main part of the Lab. And for at least half of its length, Railroad Street parallels the tracks on which, until the mid-50's, freight arrived daily.

Upton Road was named when the Lab site was Camp Upton. Other carryovers from that era are the streets with numbered names, such as East Fifth Avenue and Seventh Street. But the names of most roads now have more significance.

Some of the first street names assigned honored the nine universities which form Associated Universities, Inc. (AUI). Hence we have Columbia Street, Cornell Avenue, South Harvard Street, Johns Hopkins Street, (Massachusetts Institute of) Technology Street, Pennsylvania Street, Princeton Avenue, Rochester Street and Yale Road.

With the exception of Cosmotron Road, the only road on site named after one of the Lab's research instruments, the balance of the Lab's streets recall famous scientists. In 1975 a new requirement was established that any new street names should honor deceased American scientists.

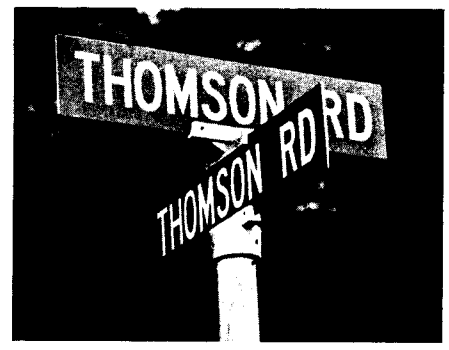
The most recent street namings have occurred since 1979, to correct some inconsistencies. A major confusion was that Technology Street ran north and south, but South Technology Street ran east and west! Now, South Technology Street has been redubbed Rowland Street, to honor Henry A. Rowland, an American physicist who lived from 1848-1901.

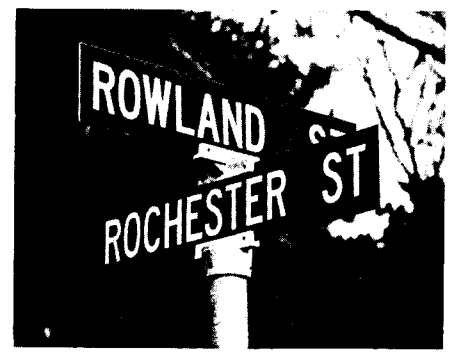
Another inconsistency was that several streets had no name at all, making it rather difficult to direct someone there. So the road connecting the west end of South Harvard Street to Bell Avenue was named Avery Street, after the Canadian-American bacteriologist Oswald T. Avery; while American astronomer Maria Mitchell was honored in the naming of Mitchell Lane, the street in front of the Brookhaven House. And the road that runs behind Bldg. 459, parallel to Brookhaven Avenue, is now Morse Lane, after the American inventor Samuel Morse.

Names have come, but some have also gone. Among those who used to be so honored were Edmund Cartwright, Henry Cavendish, Marie and Pierre Curie, Max Planck and Joseph Priestly. Another was the English astronomer Sir John Herschel whose name identified the street in front of the Chemistry Bldg. until 1967, the year after the new building was completed. The name was changed to Lewis Street in response to the chemists' request to honor American chemist Gilbert Newtown Lewis (1875-1946).

In some cases, records are scanty and it is difficult to determine exactly who or what a street was named after. Particularly elusive are the origins of Temple Place, Woods Road, York Lane and Yule Lane. Anyone with any clues is invited to share them with the Bulletin. And if you're wondering who some of the other streets are named after, why not play the "Name Game" on this page and find out?

—Anita Cohen





—photos by Rosen

The Name Game

The column on the left lists BNL streets that contain the last names of scientists. The column on the right includes first names and other information about those scientists. Match the letters and numbers to find out what scientists our streets honor.

a. ASTON Lane
b. BELL Avenue
c. CARVER Court
d. COCKCROFT Street
e. HENRY Street
f. LAWRENCE Drive
g. MENDEL Lane
h. MICHELSON Street
i. RUTHERFORD Drive
j. THOMSON Road

1. Sir John Douglas, 1897-1967, British physicist
2. Gregor Johann, 1822-1884, Austrian botanist
3. Ernest, 1871-1937, British physicist
4. Francis William, 1877-1945, English physicist
5. Lafayette Benedict, 1872-1935, American physiological chemist
6. Albert Abraham, 1852-1931, American (German-born) physicist
7. Sir Joseph John, 1856-1940, English physicist
8. Ernest Orlando, 1901-1958, American physicist
9. Joseph, 1797-1878, American physicist
10. Alexander Graham, 1847-1922, American (Scot.-born) inventor
11. George Washington, 1864-1943, American agricultural chemist

Answers to "The Name Game" — a-4, b-10, c-11, d-1, e-9, f-8, g-2 & 5, h-6, i-3, j-7

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The Best Of The Limericks

The Bulletin started a contest
For the limerick writers around us.
All verses were dandy,
But we've only one candy
To give to the poet we liked best.

That poet, and the winner of a box of Valentine candy, was Kathy Griffin of Biology. Her submissions were so delightful, we couldn't decide which one was best. So here, for your enjoyment, are four winning Love Limericks by Kathy Griffin:

A Biologist's Wishful Thinking:

Oh darling, I'm glad you're in love with me
But I'm married! We can't live in infamy.
I'll create you a clone
So you won't be alone
We'll be together and they can't call it bigamy.

She wouldn't date men from Brookhaven -
Said they're all pompous, or craven.
Then one night in the dark
He showed her his quark
It so charmed her she finally gave in.

Allow me, dear sir, to reiterate:
Your bombardments of love don't abbreviate.
Your quarks are just charming,
Their color so warming —
Can't you feel my heartbeat accelerate?

Their meeting was totally random
Though physicists had long planned and scanned them.
Their tastes were eclectic
The collision electric
And now they are floating in Tandem.

In addition to the winning limericks, the Bulletin received many other entries. While all of them were most enjoyable, some were not eligible for this contest because they were not in limerick form. Some of the best of the rest are printed here:

This young man was a bachelor one day
Who swore that he'd stay just that way.
But a girl with much charm
Must have twisted his arm
Cause now they're to be married next May.
—D.J. Greco, Contracts & Procurement

He saw her quite often in line,
Or with her own group, at lunchtime.
He wished to say "Hi"
But was just too shy,
So he penned this for his Valentine.
—Saswati Ghosh, Chemistry

No one at the lab here would suit her,
Men outside Brookhaven looked cuter.
At last on the site,
All things were put right,
She was mated real well by computer.
—Jane Setlow, Biology

To write a love poem is hard
For someone who isn't a bard,
So this one must do,
It says "I love you,"
It's better than sending a card.
—Morris Strongson, Applied Math

You may be the girl of my dreams
But candy is not for the seams
But if your love is real
And you heart I could steal,
Let the candy be part of your dreams.
—Ed Pluta, Central Shops

There was an electron from Light Source
Who strayed from his circular course.
He met a sweet proton,
His heart it went "boson!"
His love he proclaimed with strong force.
—Jackie Mirzadeh, Public Relations

Candidates For BERA Board

The BERA Nominating Committee met on February 2 to select a slate of candidates for the 1983 Executive Board Election which will take place between Monday, March 14 and Friday, March 18. Those selected were:

Harriet Fadem,
Technical Information
Mickey Haller,
Contracts & Procurement
Betty Pergan,
Energy & Environment
Ken Sutter,
Nuclear Energy

During election week, on-site employees will be invited to cast their ballots for two of the above four candidates to replace outgoing BERA Board members Dennis Klein and Rosalie Piccione.

Reports Available

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

NUREG/CR-2333
BNL-NUREG-51458
Nuclear Waste Management Technical Support in the Development of Nuclear Waste Form Criteria for the NRC.
Vol. 1
Waste Package Overview. R. Dayal, et al
Vol. 2
Alternative TRU Technologies. G. Bida, et al
Vol. 3
Waste Inventory Review
Part 1 — Inventory of High Level and Transuranic Wastes in the United States. D. Majumdar, et al
Part 2 — Nuclear Wastes from Decommissioning and Dismantling of Nuclear Reactors. P. Indusi, et al
Part 3 — Nuclear Wastes From Decommissioning and Dismantling of Nuclear Facilities. H.K. Manaktala
Vol. 4
Test Development Review. T.M. Ahn, et al
Vol. 5
National Waste Package Program. M.S. Davis

BNL-51482
Solid and Hazardous Waste Disposal at Eastern Coal Gasification and Liquefaction Facilities. B. Royce, et al

BNL-51484
Chemical Heat Pump Cost Effectiveness Evaluation. Final Report. TRW, Inc., et al

NUREG/CR-2453
BNL-NUREG-51485
National Reliability Evaluation Program (NREP) Options Study. A.J. Buslik, et al

BNL-51490
Proceedings of the Conference on Financial Issues for International Renewable Energy Opportunities. USDOE, Wash., D.C. & BNL

BNL-51495
Situation Report for Petroleum Exporting Countries: An Update. A. Hermelee, et al

Cafeteria Menu

Week Ending February 18, 1983

Monday, February 14		
Cream of tomato soup	(cup)	.65
	(bowl)	.75
Roast loin of pork & sweet potatoes		1.95
Cheese omelet & 1 veg.		1.80
Hot Deli: Grilled Reuben		1.90
A purchase at the cafeteria on Valentine's Day gives you a chance to win a "Heart of Chocolate."		
Tuesday, February 15		
Old-fashioned bean soup	(cup)	.65
	(bowl)	.75
Savory baked boneless breast of chicken & 1 veg.		1.95
Chinese pepper steak on white rice		1.95
Hot Deli: Baked ham	(bread)	1.85
	(roll)	1.95
Wednesday, February 16		
Split pea soup	(cup)	.65
	(bowl)	.75
Baked meatloaf & 1 veg.		1.85
Corned beef & cabbage		1.90
Hot Deli: Swiss & sour chicken pattie	(bread)	1.85
	(roll)	1.95
Thursday, February 17		
Minestrone Soup	(cup)	.65
	(bowl)	.75
Stuffed pepper & 1 veg.		1.85
or w/spaghetti		2.05
Sauerbraten & potato pancake		2.00
Hot Deli: BBQ fresh ham	(bread)	1.85
	(roll)	1.95
Friday, February 18		
Fish chowder	(cup)	.65
	(bowl)	.75
Fish & chips		1.85
Ham & potato au gratin & 1 veg.		1.85
Hot Deli: Knockwurst & kraut	(bread)	1.85
	(roll)	1.95

Select A Student

Completed applications for the 1983 Summer Student Program will be available for review in the Office of Academic Relations, 2nd floor, Bldg. 460, from February 22 to March 4.

Guidelines regarding the selection of summer students have been distributed to research department offices. Staff members are invited to review applications to select students to work under their supervision from June 6 to August 19.

Events Reminder

- Photography Exhibit — Today is the last day to view the photographs by Walker Turner, Jr., in Room C, Berkner Hall, from noon to 1:30 p.m.
- BERA Members Art Exhibit — This display of pictures and sculptures by BERA members begins Monday, February 14, in Room B, Berkner Hall at 4:45 p.m. After that the exhibit will be open from 11:30 a.m. to 1:30 p.m., weekdays, through February 25.
- Special Concert — The New Zurich String Quartet will be joined by pianist Lory Wallfisch for a performance of works by Franz Joseph Haydn, George Enesco and Johannes Brahms, on Monday, February 14, at 8:30 p.m. in Berkner Hall. Tickets will be available at the door. General admission, $5; $3 for BERA Concert Series block ticket holders, students, those under 18 and over 65.

Arrivals & Departures

Arrivals

Edward Andersen ..... Plant Engr.
Brenda H. Laster ..... Medical
Eric H. Paffrath .....Central Shops
Claire M. Spettell ..... Nuclear Energy
Judith M. Wieland ..... Medical

Departures

None

Clean Your Plants

Not only do dull, dusty leaves hurt a houseplant's appearance, but they may also interfere with its health. The Cooperative Extension Association of Suffolk County offers these suggestions for cleaning plants.

For large-leaved plants, simply wipe the leaves with a soft, damp cloth. A gentle shower should do the job for small-leaved plants.

Badly water-spotted plants, or those with an oily film on the leaves, may have to be cleaned with a mild soap cloth. Be sure to rinse well to remove all the soap.

African violets and other plants with hairy leaves should not be washed, wiped or polished. Dust them with a camel's hair brush.

Bowling

White League

High games were bowled by J. Petro 221/203, J. Ferrante 203, F. Brown 200, E. Adams 191. K. Griffin converted the 4/7/10. Clearwater is in first followed by the Looney Tunes.

Red/Green League

E. Sperry rolled games of 223/217 for a 605 scratch, G. Meinken 240, E. Sperry IV 232, L. Jacobson 223, A. Almasy 218, N. Tyler 211, R. Wiseman 211, C. Bohnenblusch 204, E. Meier 203, R. Larsen 203, J. Morris 203, R. Jones 202, J. Connelly 202, L. Schairer 201.

Purple League

E. Meier had games of 225/193/188 for a 606 scratch series, K. Riker 211, J. Connelly 205.

Scotch Doubles

Entry forms are available at the BERA Sales Office for the Scotch Doubles Tournament scheduled for Sunday, March 13 at 2 p.m. at Port Jeff Bowl.

Afro-American Club

"Black History - Lost, Stolen Or Strayed" will be shown in two parts on February 16 and 17 in Room A, Berkner Hall, from noon to 1 p.m. The film, sponsored by the Afro-American Culture Club, is narrated by Bill Cosby.

The Club will have a general meeting on February 15 at noon in Room D, Berkner Hall.

Drivers Note

If you rent cars for official or personal use and don't recognize this card, you are missing out. Check with the Travel Office for more information.

BROOKHAVEN NATIONAL LABORATORY

A/A 298900

EUROPE AFR-ME	ASIA PACIFIC	LAT'N AM CARIB	CANADA	U.S. WIZARD
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AVIS

Classified Advertisements

Autos & Auto Supplies

VW PARTS - muffler assemblies, $28; bumpers, $27; repair manuals, $16; 009 distributor, $36; all brand new. Augie, Ext. 2419 or 325-0594 eves.

78 CAMARO LT - 4 spd., 305, jet black/red int., p/s, p/b, a/c, am/fm cassette with equalizer, rear spoiler, mint cont. in/out, $4,900. 981-5993.

BIG BLOCK CHEVY - mechanical CAM w/lifters, good cond., $40; chrome valve covers, $15; Edelbrock intake, $75; Plymouth 318 C.I. engine, will demo., $250; 904 torqueflite, $75; Chevelle 12 bolt posi 336's, $125. John, Ext. 3869, 744-3577.

76 FORD LTD - tan, clean, new tires, excellent, 4/dr., $1,750. Doug, Ext. 5040.

71 FORD VAN - stand., a/c, rear heater, reg. gas. 722-4469.

77 CHRYSLER CORDOBA - p/s, p/b, a/c, s/s wheels, Landau Roof, 6 way power seats, mint., $3,900. 727-0948.

RIMS - (2) 12" for Honda, 4-lug, good cond., $15. Ext. 4238 or 286-3509.

75 MONTE CARLO - a/c, p/b, p/s, am/fm, cassette, good cond. in/out, $1,900. 399-5916.

80 SUZUKI - GS1000L, lugg. rack, c/c, custom seat, many extras, mint, must sell, $2,500. Ext. 7187 or 981-9474.

65 LE MANS - convertible, 326 eng., auto., bucket seats, primed, ready for paint, excel. cond., $1,400. 588-7648.

69 VOLVO - 2 dr. sedan, n/t, 10,000 mi. on reguilt engine, runs well. 288-2120, 10 a.m. to 5 p.m.

80 BUICK LeSABRE LTD - 36,000 mi. diesel, cruise control, p/s, p/b, air, power windows, $5,000 firm. 369-1094.

70 VW BUG - semi-auto., rebuilt engine, new brakes, $625. 543-4531.

82 FAIRMONT - antique cream, 4 cyl., bucket seats, 9,000 mi., a/c, p/s, 4 spd., p/b, radio, 4 door, excel. cond., asking $6,695. 281-8274.

TIRES - (2) H78-14, one on Dodge rim, plus one Dodge rim, all for $30. Tony, Ext. 3658/3637.

327 CHEVY SMALL BLOCK - plus (30) 12-1/2 to 1 Pistons Jack Markel Engine. 727-7099 after 5 p.m.

DUNE BUGGY - many new parts, new paint, mint cond., trade or cash, best offer. 744-0290.

CHRYSLER RIMS - (2) 14 inch. 732-6266 after 5:30 p.m.

CHEVY TRUCK PARTS - 1968-72 running gears and body parts, cheap. Dick, Ext. 3499 or 589-9103.

4 CHROME FACTORY MAGS - for Chevy, $60; 396 heads, new valve job, w/H.D. springs, $150. John, Ext. 3869 or 744-3577.

68 BUICK SPECIAL WAGON - 35, V8, auto., it runs, $250. Lloyd, Ext. 3381.

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

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

72 CUTLASS - new brakes, headers, runs well, asking $800. Joe, 929-4919.

80 HONDA HAWK MOTORCYCLE - Sport Model CB400T, excel. cond., low mileage, extras, $995. 286-8814 after 5:30 p.m.

77 GREMLIN - 76,000 mi., excel. cond., many new parts. Ext. 3449.

74 PINTO - a/c, 4 spd., excel. cond., must be seen, $1,200 neg. Don, Ext. 5329 or 878-2215 after 6 p.m.

76 FIAT - 131S, a/c, am/fm, 5 spd., 26 mpg., asking $1,400. Ext. 2521 or 928-8379 eves.

76 HONDA CIVIC - 4 spd., new tires, great running cond., asking $1,500. Ext. 2520 or 369-2051.

73 GRAND PRIX - good running cond., some rust, new tires, new shocks, $1,300. Ext. 2520 or 369-2051.

69 CHEVY VAN - 8 cyl., a/t, mag wheels, needs work, runs, $300. John, Ext. 4520 or 298-4567.

FORD MOTOR - 302 cu. in., just rebuilt, never run, all receipts avail., $600. Ext. 7978.

79 HONDA MOTORCYCLE - Twin Star, mint cond., low mileage, $725. Ext. 7979 or 261-5030.

79 PLYMOUTH HORIZON - a/t, low mileage, new tires, immaculate, excel. cond. 924-7723 eves.

76 VW RABBIT - 30+ mpg, very good cond., well maintained, 4 spd., must sell. $1850. Chip, Ext. 2256 or 928-5836.

66 VEGA CAMPER TRAILER - excel. cond., sleeps 6, stove, refrig., bath, 12 z/120 VAC. Ext. 4933 or 727-4075.

79 HONDA CIVIC - very good cond., excel. gas mileage, must sell. 878-1804.

OLIVER LOADER - OC46 track machine w/excel. bucket, back-hoe & fork, rebuilt engine, needs left clutch, $1,500. Tom, Ext. 4084 or 878-1060.

69 CHRYSLER NEWPORT - good cond., a/t, a/c, p/s, p/b, $600. 669-2687 eves.

74 OLDS 88 - 4 dr., all power, runs good, asking $1,000. Charlie Ruege, Ext. 4351.

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

75 TRIUMPH - TR6, good cond. $2700. Ext. 5053. 472-1735 after 6 p.m.

Boats & Marine Supplies

17' THUNDERBIRD - cathedral hull, 90 HP Mercury, Trailex aluminum trailer, asking $2,000. Borg, Ext. 3568 or 286-0428.

LIFE RAFT - USCG 2-man, $125; ship to shore radio, $100. Ext. 3433 or 331-3959.

14' MFG RUNABOUT - 10 HP Evinrude, $700. Ron, Ext. 7696 or 289-1003.

16' TRI-HULL - fiberglass Thunderbird, 45 HP, trailer fully equipped, top, jackets, radio, many extras. Charlie, Ext. 4291.

Miscellaneous

GEESE - 1-1/2 yrs. old, $5. 878-6681 after 6 p.m.

COUCH - Chesterfield in burgundy leather, nearly new, $800. Ext. 7141 or 288-3216 eves.

RADIO/RECORD PLAYER - Grundig Hi Fi made in Germany, dark Black Forest cabinet, 43Lx38Hx 14W, wide range shortwave, am/fm, (original $325), now $40 firm; maple desk 47Lx30Hx20-1/2W, 8 drawers, excel., $65; old 47" heavy mahogony desk, 9 drawers (curved), top has a few spots, $65. 878-6637.

WOOD STOVE - Vermont Defiant, can produce 55,000 BUT's, heats up to 10,000 cu. ft., used one season, asking $500. 929-6836.

IRONING BOARD - w/cover, like new, $12. 751-1884.

TV - 15" b/w, $35; toaster oven, new, $17; steel shelves, $20. Saha, Ext. 4339 or 924-6139, evening.

COLD WATER TANK - w/air valve, five years old, converted to city water, $25. Helga, Ext. 2384.

KITCHEN CABINETS - and counters, formica, 20 ft., plus stove & oven, all for $125. 265-0501 after 6 p.m.

MATTEL INTELLIVISION - w/Intellivoice module, 13 cartridges, $325. Ext. 7720.

COMPOUND BOW - Bear Polar LTD, 30" draw, right handed bow, sights, arrows, case, many extras. Hilton, Ext. 4444.

DRAPES - 2 pairs, 1 pr. open weave, 1 pr. thermal lined, 95" x triple width. Ext. 2980 or 289-0532.

BEDROOM SET - 7 piece solid walnut, Sealy posturpedic mattress & box spring, excel. cond., $300. John, Ext. 5171.

ALUMINUM STORM DOOR - white, 1/2 jalousie, cross buck 30", right swing, $75. 281-8274.

SLIDING PATIO DOOR - baked white aluminum, 60" wide, thermopane, like new, $75. Tom, Ext. 5277.

CARRIAGE - Built Rite Coach, avacado green, like new cond., $50. Ray, Ext. 2957 or 669-7418.

DESK - 7 drawer, matching chair, $70; Polaroid SX70 w/flash, $90; child's 5 drawer wardrober, $30. 286-0259.

LAWN MOWER - Sunbeam electric, $50; Scott lawn spreader, $25; Sears radio clock, $15; crib, $10; baby carriage, $10. Ext. 3079/3637.

STEREO - Scott tube, 70 amp tuner, Gerrard changer, walnut cabinet, asking, $125. Ext. 7197 or 821-0705.

GOLF GLOVE - womans, new, $4.50. 878-2239.

LOVE SEAT/COUCH - brown velour, excel. cond., $100. Ext. 7745.

BATAVUS MOPED - deluxe model. Steve, Ext. 2023.

COMPUTER - TRS-80 color, 4K RAM, datacorder, joysticks, 2 program packs, manual, cables, new, $300. 589-8394 eves.

WASHER - 2 speed, good cond., $150. Ext. 3366.

BED - king size, clean, frame included, $225. Bernstein, Ext. 4382 or 286-1339.

REFRIGERATOR - Sears, 19.2 cu. ft., high efficiency power miser, like new, used one year. Eileen, 286-0408.

NATIONAL GEOGRAPHIC MAGAZINES - 1 each. 286-1192.

NEON SIGNS - Lowenbrau & Miller beer, for the home bar, $10/ea. 363-6845.

BLANK CASSETTES - BASF C-90, CrO_2, $2.75 ea. Ext. 2521 or 928-8379.

BASS AMP - Westbury, 50 watts, $275. Mike, 587-6398.

REFRIGERATOR/FREEZER - old but good, asking $75. Ext. 4049.

FIREPLACE INSERT - Scandia, woodburning, filler plates, 2 spd. fan, used one season, new $750, asking $350. Ext. 7978.

DESK - 4'x5' top, seats two, $80. Ray, Ext. 7509 or 924-0569.

SEWING MACHINE - Kenmore, new, $150; ladies winter coat, $15; maternity winter coat, $15; Hamilton Beach blender, 14 spd., new, $15; baby swing, new, $20; drapes, $4. Wick, Ext. 4372 or 924-0582.

HAMS - Heath C.W., tranceiver HW16, with V.F.O. ant., tuner, SWR meter, coax. switch, complete, $200. 589-2648.

KITCHEN CHAIRS - (8) Tubucar w/yellow fabric, $7/ea.; Anderson windows, (1) 2x3, (1) 2x4, $6/ea.; 30 gal. propane water heater, $15. Ron, Ext. 7696 or 289-1003.

TV - Sony Trinitron, 15" 1-1/2 yrs. old, $300; Panasonic turntable, tuner, 8 track, Thruster speakers, $200. Ext. 3637.

RECEIVER - Marantz #2220, $150; Sharp cassette deck #RT-1165, $100; JVC turntable, $50; KLH #17 speakers, $100. Ext. 3433 or 331-3959.

SPEAKERS - new, Radio Shack, 40 watt, $40/pr. Frank Rumph, Ext. 4581 or 981-2529.

STEREO - Sanyo Quadrapholnic Compact w/4 speaker system, cassette, 8-track, turntable, fm/am/sw, excel. cond., $125. R. Hildenbrand, Ext. 3273.

LADIES BIKE - 10 spd., Sutton (by Royce-Union), dual hand brakes, white, 4 yrs. old, hardly used, asking $120; Corona DKB kerosene heater, 22,600 BTU, 55 gal. drum, 5 gnal. can & electric pump, $150. Ext. 3827 or 981-9584 eves.

ROTOTILLER - Ford, for use with 10 HP tractor, never used, $250; spreader, for use with large tractor, shaft drive like new, $50. 929-4522 after 5 p.m.

RUG - Karastan, 12x15, excel. cond., pad, $170. Kathy, Ext. 3652 oar 744-5866 after 6 p.m.

SKI BOOTS - men's sz. 10, Nordica, very good cond., $25. Mary, Ext. 4132.

OIL BURNER - Beckett retention head, asking $90; pair of circulators, best offer. Barry, Ext. 4118.

SEWING MACHINE - Singer, $75; step stool, $20; bookcase headboard, $25; quartz heater, $30; new toaster oven, $45; (2) table lamps, $25 ea.; electric knife, $20. 744-6874.

SUNGLASSES - Ferrari, $6/ea., watch pens, $4.50/ea. Paul, 727-4859.

DENIM JACKET - w/picture of Jim Morrison painted on back; electric guitar w/whamee bar, $20. Rose, 744-5069.

COMPUTER - TRS-80 Model I with 48K memory, 2 disks, printer, voice synthesizer, desk; jointer-planar, 6 in. with motor and stand, $200. Tom, Ext. 2613 or 281-4080.

TABLES - (3) Lane coffee, step & square, fruitwood, good cond., $150. Jerry, Ext. 7427 or 475-5591 after 6 p.m.

CABLE TV DESCRAMBLER - new, $169. 654-1731.

Free

DOG - neutered, 1 yr. old male, mixed breed, found, cannot keep. Sheryl, Ext. 4400.

NEWSPAPERS - five ft. stack, pick up in Yaphank. Ext. 4761 or 924-3556 eves.

KITTEN - 6 mos., male, playful, litter box trained. Ext. 2980 or 289-0532.

DOG - large, male, Gold Retriever/Collie mix, 2 yrs. old, excel. disposition, great with kids, good watch dog, housebroken. Dawn, 698-4882.

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

MANORVILLE - spacious 3 bdrm., 1-1/2 bath, colonial, 1 acre, solar hot water system, wood/coal stove, screened patio, fenced $59,900. 878-4664.

E. PATCHOGUE - 3 bdrm., Cape Cod, full basement, 1 car garage, near bay, marina, $60,000. 289-7858, after 6 p.m.

SHOREHAM - 3/4 acre wooded building plot, $15,000, will hold mortgage. Steve, Ext. 2023 or 744-0047.

ROCKY POINT - 3 bdrm. ranch, l/r, d/r, eik., full bsmt., 1 car garage, assumable 6% mortgage, $59,900. 744-9760.

For Rent

MILLER PLACE - north of 25A, near beach, avail. Feb. 15-Aug. 15, unfurn. or partly furn., prefer couple, or small family, no animals, $450/mo. Ext. 7532 or 282-3070.

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

CENTER MORICHES - 1 bdrm. in house, kitchen privileges. 878-2357.

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

WADING RIVER - 2-1/2 rm. furnished basement apt., beach front, a/c, $300/mo. util. incl. 929-8443.

WADING RIVER - lovely house on wooded acre, 3 bdrm., 2 baths, living rm., formal dining rm., eik, sun deck, finished basement, 2 car garage, energy, efficient, 12 min. to Lab, nice neighborhood, SWR schools, avail. May 1. Ext. 3642/4391 or 751-8224 after 6:30 p.m.

EAST PATCHOGUE - 1 bdrm., bath, kitchen, yard, newly renovated, walking distance to everything, 1 person, quite private home, $285/mo. util. incl. 475-3829 after 6 p.m.

Car Pools

UNIONDALE - have small car, join or form 3-man pool, 8:30-5. Vic, Ext. 2050.

BABYLON/WEST ISLIP - driver needed for 4-person on-time carpool. Ext. 2500.

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

ROCKY POINT - would like to start or join carpool. Chris, Ext. 3744.

WANTAGH AREA - needs 1 driver 1 day per week. Charlie, Ext. 4351.

Wanted

CAMPBELL'S SOUP LABELS - send to F. Chler, Bldg. T89, for St. Mary School (East Islip). Ext. 2311

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

8-TRACK TAPE - SP8T3000 Million Dollar Themes - Warner Special Products. 744-3069.

BICYCLE CHILD CARRIER - w/seat belt. Ken, Ext. 4421 or 744-0722.

TIRE - E78x14 or equivalent, must be better than passing, and not a snow. Morris, Ext. 4192.

HOUSEMATE - to share spacious house, 3 mi. from Lab, very private and unique environment, $300/mo. including util. Gary, Ext. 2066, 924-7480.

DISTRIBUTOR - w/integral tach gear drive for 350 Vette. Bill, Ext. 2171.

ROOMMATE - share comfortable 3 bdrm. condo in Ridge, 5 min. to Lab, w/wr, washer/dryer, cable TV, $210/mo. + 1/2 util. 924-0309.

FLUTE - good condition. 928-0062 after 3:00.

MOTHER'S HELPER - or babysitter, Patchogue, good w/children, week nights and some weekends. Ext. 7264 or 475-2328.

REPAIRMAN - to fix quadrophonic stereo speakers. Vanette, Ext. 7991 or 369-2783, after 5:30 p.m.

POSTAGE STAMPS - used, foreign, don't throw them out, mail to Leonhardt, Bldg. 911A. Thanks!

HOUSE TO RENT - for childless couple, 2 bdrm. between Stony Brook and Riverhead. Kathy, Ext. 3420 or 924-7665.

FURNISHED APT - 1 bdrm. Ext. 3449.

MATURE PERSON - for child care and housekeeping in our home, 20 hrs./wk.,, E. Patchogue. 296-2155.

OUTBOARD - 6-10 HP. 757-1456 after 7 p.m.

PERSON TO SHARE HOUSE - in Eastport, private bath, $280/mo. Ext. 2950 or 325-1024.

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

HOME - for small family from April 1 or May 1 to Aug. 15, close to Lab or Stony Brook. Ext. 4389 or 399-3098.

MANIFOLD - 4 bbl. stock for 1967 Pontiac, 326 cu. in. Frank, Ext. 3120.

FUEL OIL - converted to natural gas heating, will buy your unused fuel oil. Don, Ext. 4167.

WATER HEATER - oil fired, 3 0 or 40 gal. Don, Ext. 4167.

Services

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

VW PARTS - full line of OEM parts & accessories at wholesale prices. Complete machine shop service for VW. Augie, Ext. 2419 or 325-0594 eves.

PROFESSIONAL INCOME TAX SERVICE - by experienced preparer, IRS enrolled, by appointment. Jack, Ext. 7942 or 864-2236.

TRUCK FOR HIRE - no job too small, Lab discount. 281-5445.

EXTERMINATING - licensed men, guaranteed in writing, over 15 years experience, free estimates, Lab discount. 281-5445.

WATERPROOFING - all work guaranteed in writing, over 15 years experience, free estimates, Lab discount. 281-5445.

ELECTROLYSIS - permanent removal of unwanted hair, E.S.A.L.E., physician trained, latest method, free consultation. 331-4768.

CHILD CARE - fenced yard, lunches, snacks, playmates, continuous supervision and TLC, reasonable rates, refs. 399-5407.

HOUSE PAINTING - interiors, winter discount, professional, insured, many BNL references. Bob, 289-7657, after 6 p.m.

LICENSED ELECTRICIAN - reasonable rates, no job too small, spefcializing in service changes. 744-0722.

CHILD CARE - experienced, any age, in my home, Bellport area, references on request. Gloria, 286-4005.

LIMO SERVICE - luxury chauffer driven, for proms, weddings, airports, all occasions. Roy, Ext. 4664 or 744-8779.

INCOME TAXES - prepared by expert tax consultant, low fees. Bob, 286-5829.

PAINTING - panelling, wallpaper, carpentry, references provided upon request, free estimate. John, 924-5012.

HOUSEKEEPER - seeking work in north shore area, thorough, reliable. Ext. 3744 or 821-9781 eves.

EASTER CHOCOLATES - beat the rush, place orders now. Carol, 289-3917 after 6 p.m.

PROFESSIONAL PAINTING - reasonable rates. 878-4599.

SEWING ALTERATIONS - reasonable rates. Sharon, 878-4599.

SPACKLING - & taping, masonry, general contracting, reasonable rates. Walter, 878-8320.

TAXES - prepared by tax consultant, your home or mine, reasonable. 732-2472.

WATER PROOFING - all work guaranteed in writing, over 15 yrs. experience, free estimates, Lab discount. 281-5445.

TRUCK FOR HIRE - no job to small, Lab discount. 281-5445.

EXTERMINATING - licensed men, guaranteed in writing, over 15 yrs. experience, free estimates, Lab discount. 281-5445.

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 or 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: Boats & Marine Supplies ☐ For Sale: Miscellaneous ☐ Car Pools ☐ Lost & Found ☐ Services ☐ Wanted ☐ Free

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).

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