



Nesting in AGS Test Beam

Some bird is causing a good deal of flap over at the Alternating Gradient Synchrotron (AGS) these days. Though known as EGRET, it's not your usual white heron.

EGRET, or Energetic Gamma Ray Experiment Telescope, is one of four NASA telescopes scheduled to be launched by the space shuttle in 1990. The four complementary detectors make up the Gamma Ray Observatory (GRO), a free-flying satellite that will orbit 400 kilometers above the earth.

The GRO satellite will be in space for a minimum of two years, to map the sky and study objects emitting only gamma rays in much more detail than ever done before. The mission is slated for four years, but may be extended to a maximum of ten years, or the satellite could be retrieved and redeployed.

Before NASA/Goddard Space Flight Center, Stanford University, the Max Planck Institute for Extraterrestrial Physics (West Germany) and Grumman Aerospace Corporation send EGRET off on its maiden flight, they want to know how protons from outer space will interact with its instrumentation. Hence, EGRET was nested in the A2 test beam of the AGS, so it could be bombarded with one- to ten-billion-electron-volt protons for three weeks.

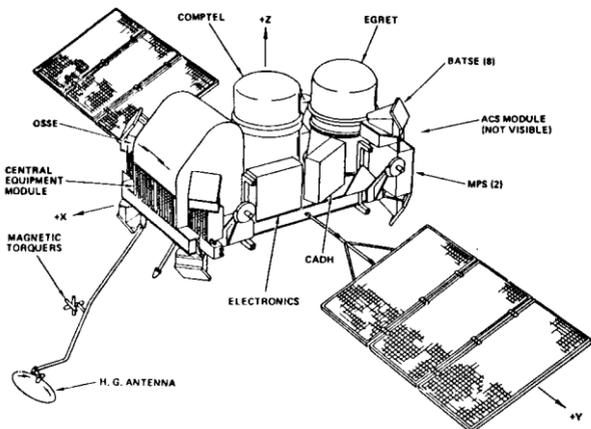
"Because protons interact with

EGRET's outer layer and since gamma rays are produced by this interaction, we want to be able to determine how much gamma ray background is produced by the protons in space," explains Astrophysicist David Thompson, of NASA/Goddard Space Flight Center, whose EGRET duties include calibration and testing.

Adds his colleague, Astrophysicist David Bertsch, Assistant GRO Project Scientist, "At the AGS, we know the dose of protons and measure the resulting gamma rays. Once the EGRET is in space, we will use the AGS data to determine the proton background so we can subtract it from our results."

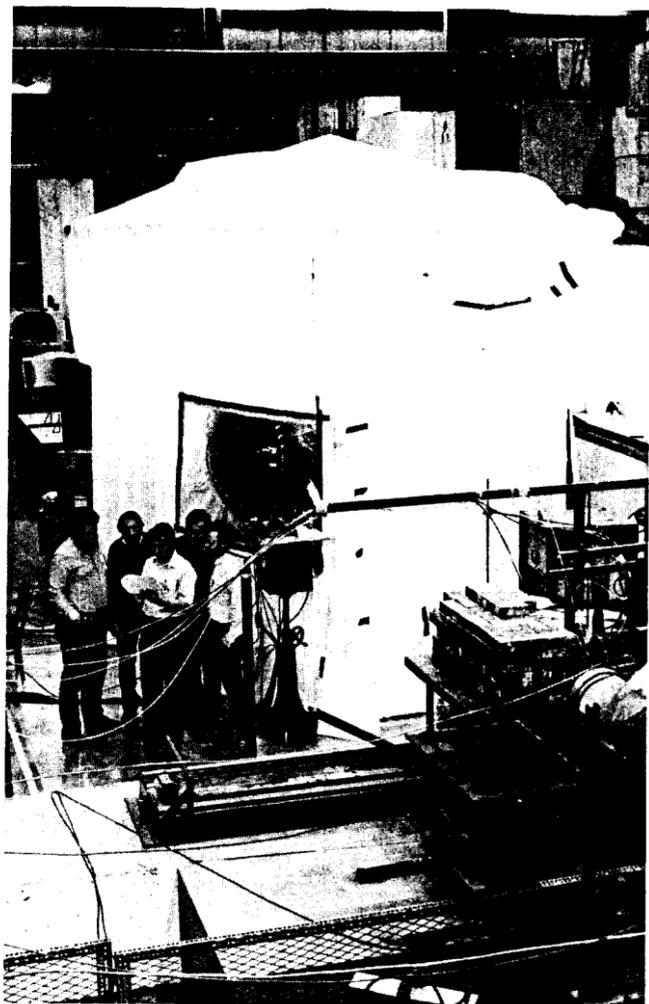
EGRET weighs 1,830 kilograms and measures 1.6 meters in diameter by 2.1 meters in height. Because it can't fly, getting the big bird into place proved a challenge — like threading the needle through a crowded canyon. Since EGRET is fragile and worth about \$40 million, the AGS staff performed the task gently and with great care — as if they were handling a giant egg.

Wrapped in dust covers and packed in a shockproof crate complete with heating and air conditioning units, EGRET arrived at the AGS on New Year's eve from Greenbelt, MD, the home of the NASA/Goddard Space Flight Center. To get it to the A2 test beam, the AGS was shut down so that



A drawing of the Gamma Ray Observatory satellite, showing how EGRET will be situated in relation to the three other gamma ray telescopes.

On the AGS A2 test beam line, EGRET peers out the window of its plastic tent at (center) Astrophysicist David Bertsch, who is conferring with his colleagues (from left) Michael Lynch, NASA/Goddard; Michael Sommer, Max Planck Institute; Stan Hunter, NASA/Goddard; and Patrick Nolan, Stanford University. To control the air quality, temperature and humidity to which it is exposed, EGRET is confined to a clean tent at the AGS.



Mort Rosen

roof beams and shielding blocks overlying the big bird's flight path through Bldg. 912 could be removed.

While EGRET's keepers videotaped its flight via a crane, AGS riggers slowly and carefully maneuvered their cargo up and over and around and down and through "one of the most tortuous paths," reports Liaison Engineer Thomas Blair, who coordinates the setups of AGS users' experiments. "We went through some real contortions to set that telescope properly in the beam line.

"And we get to do it all over again to get EGRET out," adds Blair. At the end of its exclusive use of the test beam on Sunday, January 18, the telescope had been irradiated for 200 continuous hours. On January 27-28, the telescope is expected to be returned to its crate and shipped back to Maryland via a lowboy trailer with special shock absorbers.

When EGRET takes flight in space, it will examine gamma rays ranging from 20 million electron volts to 30 billion electron volts. The telescope's sensitivity is so great that it will be able to detect sources of gamma rays two orders of magnitude fainter than the Crab Nebula, a diffuse body, 100-light years in diameter and composed of highly rarified gas and dust, that is a remnant of a supernova explosion that occurred in 1054.

Supernovae, neutron stars, black holes, cores of galaxies and quasars are some of the astrophysical sites whose major energy releases are gamma rays. They are emitted from the most energetic astrophysical processes, including nuclear reactions, matter-antimatter annihilations and elementary particle decays.

Though gamma rays are very penetrating and can reach our solar system from any part of the universe, the Earth's atmosphere is opaque to gamma rays. Therefore, observations of the highest energy, electromagnetic radiation from the cosmos must be made from space.

The GRO mission will undertake the first comprehensive and coordinated observations, covering the spectrum of gamma rays. The four detectors, including EGRET, are quite different and specialized. The others are called OSSE (Oriented Scintillation Spectro-

meter Experiment), COMPTEL (imaging Compton Telescope) and BATSE (Burst & Transient Source Experiment).

GRO will focus on one spot in the sky for two weeks and cover the sky in a year. In the following year, targets identified in the survey to be of interest will be studied in greater detail.

"This mission is exciting because these instruments will be probing the most extreme processes in the universe," concludes Bertsch. "We thank the AGS staff for their cooperation — they really have been most helpful."

— Marsha Belford

Patent Awarded

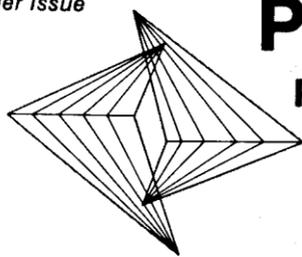
Meyer Steinberg and Coimbatore R. Krishna, both in the Department of Applied Science, were awarded U.S. Patent #4,602,918 for inventing a method of stabilizing coal-water mixtures with portland cement. (Such mixtures are the main way that coal is transported from mine to site of use, but a major problem is that the coal particles tend to settle out.)

In the past, a variety of organic and inorganic stabilizers have been studied in efforts to extend the storage time of coal-water mixes. Those that are useful for this purpose are often expensive or burn with the production of by-products that are toxic or interfere with the smooth operation of the boiler equipment.

Steinberg and Krishna have discovered that portland cement is useful to stabilize coal-water mixes, particularly high sulfur coal where the cement serves not only to stabilize the mix, but also to reduce the sulfur oxide emissions. The invention is applicable to all coal-water mixes, which typically contain 50-70% by weight of coal.

Almost any amount of portland cement, even as low as 1% by weight based on the weight of the coal, will appreciably enhance the storage life of coal-water mixes. The stabilized mixtures may be formed merely by adding the cement of the mix with moderate agitation.

Premier Issue



PATHWAYS

Positive Approaches To Health

Health Promotion Program • Brookhaven National Laboratory

"You're never too old to benefit from exercise" is the lead article in a new newsletter that will soon arrive in your mail box from the Health Promotion Program of the Occupational Medicine Clinic. Called Pathways, for Positive Approaches to Health, this four-page monthly stresses ways to achieve better health and fitness.

The lead article of this issue goes on to discuss how exercise may protect you from heart attack and how any type of regular exercise can help you become healthier. The premier issue also includes a column entitled "Eat Well," which talks about how a healthy diet will positively influence your future health.

As Health Promotion Specialist Elaine Friedman has received numerous inquiries from employees about many health and fitness issues, she thought that having this newsletter distributed to all employees might answer some questions and encourage everyone to undertake healthier lifestyles. The newsletter is published in Atlanta, Georgia, by American Health Consultants, Inc.

Friedman invites employees to contact her with their comments, pro or con, about this newsletter. She can be reached at Ext. 2699, Tuesdays and Thursdays.

Success Means You Don't Hear About It

When the Employee Relations Committee (ERC) successfully resolves a problem, few are aware that anything happened. Explained Edward McFadden, member of the committee since 1982 and Chairman from 1984-1986, "When people come to us for help, the case is usually private and personal. The less anyone hears of us, the better we're doing."

The ERC is appointed by the Laboratory Director and is responsible to him for helping non-bargaining, non-scientific employees with work-related problems that have not been resolved with their supervisors. There may be difficulty over a work-performance appraisal or the amount of a raise. Sometimes there is a personality clash. Said McFadden, "We try to hear all sides of the problem from everyone concerned, but in a low-key manner, with as little disturbance as possible."

"People often just need a trustworthy listener," McFadden added. "Talking things over relieves the pressure. Then they can handle it themselves. Action is never taken except at the wish of employee involved. No committee member wants to take over anyone's life. We act by request only."

McFadden also pointed out the advantage of the close relationship between the ERC and other parts of the Employee Relations Program. Depending on the particular problem, the Affirmative Action Office or Employee Relations Counselor Susan Foster may be able to help. Or Employee Assistance Coordinator Janifer Hill or Women's Program Coordinator Gail Williams might be more appropriate.

When McFadden, who is a computer analyst in the Applied Mathematics Department (AMD), first came to the Lab 22 years ago, "None of these programs existed. Now, together with Tune In!, and most of all, the strong commitment from the Director's Office, they fulfill a need that can keep working hours going smoothly for everyone."

McFadden stepped down in December after four years on the ERC, and incoming ERC Chairman José Medina took over. "The Employee Relations Committee is grateful for the job Ed has done and for the course he charted for us," said Medina. "I just want to let everyone know that the same consideration and sensitivity demonstrated under Ed's chairman-

ship will be exhibited by this committee."

Problems are expected to be resolved within 30 days of being referred to the committee. Current members are: Carolyn Albert, Ext. 3137, Phys.; April Donegain, Ext. 4425, DNE;

Susan Eng, Ext. 7126, AMD; Annette Gremme, Ext. 3638, Med.; Michele Haller, Ext. 3173, DCP; José Medina, Ext. 7636, PE; Vincent Racaniello, Ext. 7336, NSLS; Michael Zguris, Ext. 4728, AGS.

— Liz Seubert



In December, Edward McFadden (standing, third from left), Chairman of the Employee Relations Committee (ERC) since 1984, handed over the reins to incoming Chairman José Medina (seated, left). Standing by for the occasion are the retiring, continuing and new members of the ERC: (standing, from left) Jim Costanzo, April Donegain, McFadden, Carolyn Albert, Vincent Racaniello, Susan Eng, (seated, from left) Medina, Michele Haller, Michael Zguris and Annette Gremme. Newly appointed members Albert, Gremme and Haller replace Costanzo, McFadden and Betty Heldman (not pictured).

Dry Goods Delivery

The problem was, it had to be hung. And should never be jolted. And never, ever, get damp. Yet this 1x1.2 meter, 380 kilogram, sodium iodide calorimeter was going to travel from CERN, Switzerland, all the way to Bldg. 510, BNL, U.S.A.

The calorimeter was the crucial equipment needed by the Omega Group of the Physics Department. They are collaborating with eight other universities on E814, an experiment that will measure transverse energy produced in a heavy ion collision at the AGS. The calorimeter contains 600 sodium iodide crystals, specially grown in Russia for an earlier experiment at CERN, the European Center for Particle Physics. To replace it would cost three-quarters of a million dollars, plus the time to re-grow the crystals. It must not break.

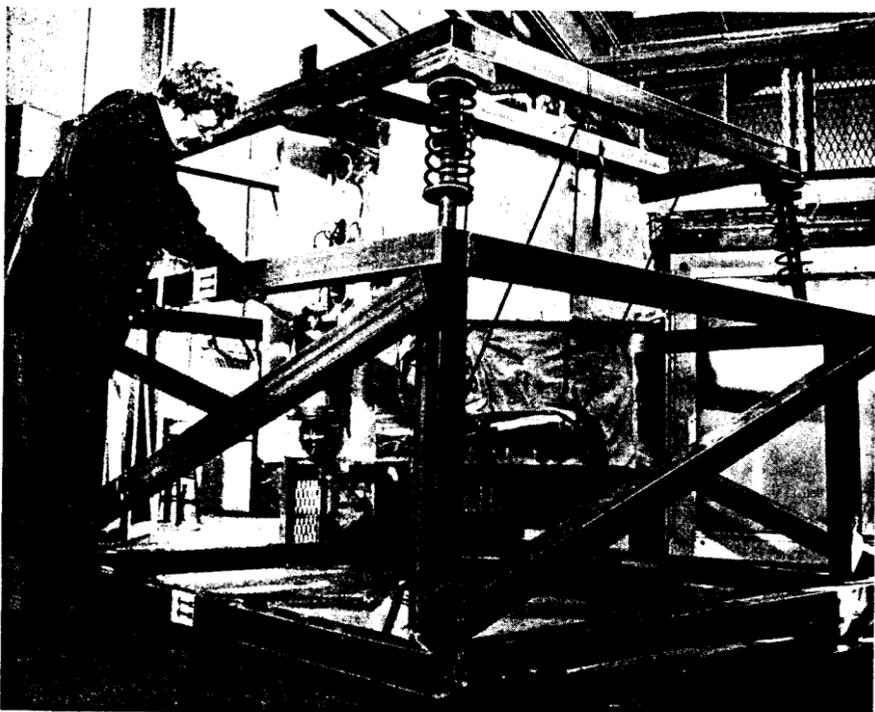
Transportation problems were enormous. The calorimeter's crystals are so brittle that it cannot bear its own weight — a structure had to support it from above. Thermal shock could also cause the crystals to crumble, so sheets of insulation were arranged as protection. To solve the problem of

dampness, a molecular sieve system allowed for changes in surrounding atmospheric pressure while drying incoming air to less than 1% humidity.

As the calorimeter crossed the Atlantic late last year, Johanna Stachel and Laurie Waters, collaborators from the State University of New York at Stony Brook, waited at Kennedy airport. U.S. Customs had been alerted, and a fork-lift crew was ready. Since 2 p.m., the plane's scheduled arrival, movers had been on call with a large air-bed truck.

At 6:30 p.m., the plane landed, and eventually, the box was loaded onto the truck. "Our 15 mph anti-jolt speed meant we had to go on Route 25," said Waters. "But a magnificent 3-car police escort got us through in 4 1/4 hours, even though at each border, they all had to be replaced by police in the next county. At BNL, just before 2 a.m., the Lab police took over."

The calorimeter is now safely hanging in a very dry atmosphere in Physics. And the group working on E814 is bracing itself, because in a few days, a second sodium iodide calorimeter will be on its way. — Liz Seubert



Safe and sound at BNL, the 600-crystal sodium iodide calorimeter hangs in an arrangement of McPherson struts and insulation which protect it from mechanical and thermal shock. Thomas Throwe, a State University of New York at Stony Brook collaborator working with the Omega Group, Physics Department, checks the molecular sieve system controlling air pressure and humidity around the calorimeter.

BNL's Fabulous Forty

This is the second in a series of interviews with employees who will observe their 40th service anniversary during 1987, BNL's 40th anniversary year.

On March 12, 1947, Arnold Benson was issued life number 305 when he accepted a drafting position at Brookhaven. "I took the job because I wouldn't be stuck behind a desk all day — I would be in the field. And I liked the diversity of the work — I

such specially designed, newly built buildings as Chemistry, Bldg. 555; Physics, Bldg. 510; and Berkner Hall, Bldg. 488. "With each old building removed, something was lost, but we established something new in its place. In progress, there is change — and that is what the Lab is all about," reflects Benson.

He is glad that researchers and their families from all over the country and the world visit the Lab. "Most people on Long Island only read about different people, their dress and customs, or see them on a newsreel — but I got to meet many," says Benson.

The most challenging assignments Benson remembers were first modifying an Army rehabilitation hospital, then located in what is now the apartment area, to become a civilian research hospital, and then renovating the old hospital into apartments when the new medical research hospital was built. Benson performed the detailed architectural design of cabinet work — first for medical, then for domestic use.

"I have been proudest of the medical research at the Lab involving cancer patients and people with Parkinson's Disease," says Benson. "I thought they accomplished a lot and helped a lot of sick people."

Though not directly involved in research, Benson keeps up with the scientific happenings and personalities at the Lab through the Bulletin. However, he reports, "In all my years here, this is the first time I have been personally interviewed for a story."



Arnold Benson

wouldn't be locked in a monotonous routine." He says all this nearly forty years later from behind a desk, instead of a drafting table, as General Supervisor of Building Maintenance, Plant Engineering. Benson climbed the career ladder at BNL, going from a clerk in the then Architectural Planning & Plant Maintenance Division to his present position in 1974.

The biggest change on site that Benson recalls is the removal of old, renovated barracks to make way for

In Memoriam

John Scandizzo, who was General Supervisor of Refrigeration and Air Conditioning in the Plant Engineering Division, died on January 16, at the age of 62. He had been at BNL for almost 40 years, since June 30, 1947. He was a resident of Medford and is survived by his wife Edith and two daughters, Christina and Joan.

Coming Up

A celebration to honor Ernest Courant, recipient of the 1986 Enrico Fermi Award, will be held on Thursday, January 29, in Berkner Hall. At 3:30 p.m., Courant will present a lecture, "The Early History of the AGS and Cosmotron," and a reception will follow in the lobby of Berkner Hall.

BERA News

Bowling

Red/Green League

J. Roesler rolled a 243, H. Marshall 233, S. Dimaiuta 226/205/604 scratch, C. Bohnenblusch 225, J. Petro 212, W. Kristiansen 208, H. Arnesen 202.

Pink League

High games were bowled by Donna McCambridge 200, Ellie Kristiansen 200, Renie Rosati 196, M-G Meier 194, Louise Chinn 182, Maria Apelskog 181.

White League

Ken Riker bowled a 243, Carl Murray 213/201, Bob Jones 200, Sharon Moore 197/194, Sharon Smith 196, Elsie Murray 184, Maria Apelskog 182, M-G Meier 182.

New Class Begins At Nursery School

A new class for three-year-old children has just begun at the Upton Nursery School, meeting on Tuesday and Thursday mornings for the remainder of the school year. Class registration is open to three-year-olds not currently enrolled in the Upton Nursery School. There are also openings in the current class for four-year-olds. For application forms and information call Enrollment Chairperson Marietta Veligdan, 874-3447.

Volleyball

Standings - Week of 1/12/87

League I	
Upfagrabs	23-4
Dinkers	22-5
Xrayted	15-12
Phoubars	10-17
Net Results	6-21
Bumpers	5-22
League II	
Nuts & Bolts	20-4
Cannonballs	17-7
Fossils	17-7
TNT	15-6
Chunga's Revenge	8-16
Upton Ups	3-18
Misfits	1-23
League III	
Floaters	17-7
Printouts	15-9
Foul Ups	13-8
Screwballs	11-10
Sourcerers	10-11
Not Yets	9-15
Odd Couples	6-18
Open League	
Phoenix	24-3
Dakota	23-4
Odds & Sods	16-11
Court Jesters	14-13
Rowdy Radicals	13-14
Target	11-16
Duituits	4-23
Out of Control	3-24

Swim Club

As usual, a practice will be held on Thursday, January 29, at 5:15 p.m. at the BNL pool. Regardless of your speed or skill, if you can swim two laps of the pool without stopping using the crawl stroke, you are invited to workout with us. For more information, call Marsha Belford, Ext. 5053, or Peter Heotis, Ext. 2304.

Swim Meet

Tomorrow is the BNL Swim Meet, which is sponsored by the Swim Club from 11 a.m. to 1 p.m. at the pool. All adult BERA members are welcome to attempt personal bests and age group records for our 33.3-yard pool in any of the 17 scheduled events. The last records set at the pool were in 1947, including one for 100-yard breast-stroke established by Ernest Courant. Entries will be accepted at the meet. For more information, call Marsha Belford, Ext. 5053.

Basketball

Game 1 Longshots 73

L. James	3
J. Garrison	6
L. Walcott	10
W. Cummings	17
J. Cyr	23
F. Molone	6
R. Rowley	4
S. Springstan	4

Hollywood 70

G. Mack	13
G. Smith	0
L. Lawrence	8
E. Meier Jr.	33
R. Domenech	16

Game 2 Runaways 59

G. Shepherd	1
J. Desmond	18
S. Gilbert	12
T. James	14
R. Moran	14

Celtics 57

P. Browne	4
J. Gaeta	13
P. Ratzke	4
R. Garapolo	23
T. Mendez	3
M. Falkersen	6
N. Schaknowski	4

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, January 26, at 6 p.m., in the Knights of Columbus Hall, Railroad Avenue, Patchogue. On the agenda will be regular business, committee reports and the president's report.

NYC Train Trips

Long Island Railroad (LIRR) trips to New York City are sponsored by Brookhaven Lab and organized by Adrienne Usher. We travel into the city as a group from the Patchogue LIRR station; on the way, you are given return-trip tickets, which you may use any-time that day.

The fare for Wednesday trips is \$5.25; Saturdays, \$6.75. Children under five years ride free. Make reservations by sending a check (made out to BNL or Cash) to P.O. Box 322, Upton, NY 11973. For the Wednesday trips, checks must be received by the Friday preceding the trip; for Saturdays, by the Wednesday preceding the trip. Put your telephone number and the date of the trip on the back of the check.

When the railroad strike is over, we will depart on Wednesdays at 7:55 a.m.; Saturdays, 8:41 a.m. Train trips scheduled for the remainder of 1987 are:

Wednesdays (odd-numbered)	Saturdays (last of the month)
Jan.	31
Feb. 4, 18	28
March 4, 18	28
April 1, 15, 29	25
May 6, 20	30
June 3, 17	27
July 1, 15, 29	25
Aug. 5, 19	29
Sept. 2, 16, 30	26
Oct. 7, 21	31
Nov. 4, 18	28
Dec. 2, 16, 30	12, 19

Software Demo

On Friday, January 30, at 2:30 p.m., in the Applied Mathematics Department Seminar Room, KGK Automated Systems, Inc., will present their Automated Programmer System. The system allows the computer to recognize and process mathematical, engineering and scientific specifications. Conventional formulas, written as they might appear in a textbook, are the input, and the system then translates them into a Fortran program. The system currently runs on an IBM PC, but will be probably become available for mainframe computers.

Correction

Last week's Bulletin carried a photo of Ken Batchelor, BNL, and Millard Fuller, founder of Habitat for Humanity, with former President Jimmy Carter. Batchelor and Fuller were identified incorrectly: Batchelor was on the right and Fuller on the left.

Cafeteria Menu

Week of January 26

Monday, January 26

Chicken noodle soup	(cup) .75
	(bowl) .90
Baked herbed chicken w/1 veg.	2.65
Skinless baked herbed chicken w/1 veg. (lite-weight)	2.65
Beef noodle casserole w/1 veg.	2.55
Hot Deli: French bread pizza	2.60

Tuesday, January 27

U.S. Senate bean soup	(cup) .75
	(bowl) .90
Pot roast of beef w/1 veg.	2.65
Scalloped ham & potatoes w/1 veg.	2.60
Chicken salad oriental (lite-weight)	2.35
Hot Deli: Grilled Reuben	2.55

Wednesday, January 28

Turkey rice soup	(cup) .75
	(bowl) .90
Roast pork loin w/apple & prunes	2.65
Cheddar broccoli quiche w/1 veg. (lite-weight)	2.60
Hot Deli: Turkey garden club	2.60

Thursday, January 29

Purée of split pea soup	(cup) .75
	(bowl) .90
Vegetarian lasagna w/diet garlic bread (lite-weight)	2.65
Chicken & broccoli stir-fry over rice	2.65
Hot Deli: Pastrami	(bread) 2.45
	(roll) 2.60
	(hero) 2.65

Friday, January 30

New England clam chowder	(cup) .75
	(bowl) .90
Broiled fish w/1 veg. (lite-weight)	2.85
BBQ spareribs w/1 veg.	2.75
Hot Deli: Fishwich sandwich	2.55

The Housing Market at BNL

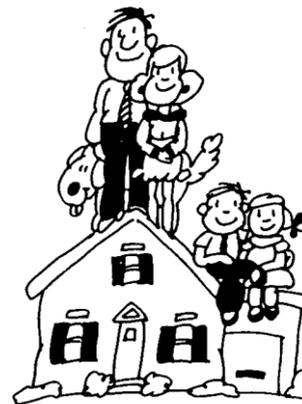
There's more than one way to sell a house at BNL. One way for employees to do so, of course, is through the Brookhaven Bulletin's classified real estate ads. The other is by listing the property in the "For Sale" book maintained by the Housing Office in the Staff Services Division.

There are good reasons for an employee who is selling a home to do both. While Bulletin ads enjoy a wider circulation, the housing book is often the first thing new arrivals consult in their quest for shelter. With Bulletin ads, the seller has only about 30 words with which to tout the virtues of the property; in the housing book, the seller has room to list every feature, as well as to include pictures of the house. The Housing Office also maintains two books for rentals — one for furnished and one for unfurnished properties.

Bulletin ads are for the use of Lab employees, and, for most ad classifications, this benefit is extended to immediate family as well. In the case of real estate, however, the property for sale or rent *must* be the property of the active or retired employee. So if family members, friends or anyone else want to sell real estate to the Lab community, the housing books provide the only available route — other than bulletin boards, which include those in the BERA Sales Office and the U.S. Post Office.

The housing books may be doubly useful for employees who are looking for places to rent or buy. Again, Bulletin ads include only properties owned by employees. Since the housing book listings come from many sources, there are many more of them, and a seeker often can find several possibilities in a given area.

To submit a listing or to browse through the housing books, just stop by the Housing Office, Bldg. 179, or call Ext. 2541 or 2551, for a blank form. To submit a real estate ad to the Brookhaven Bulletin, special Real Estate Ad Forms are available at the Bulletin office, Bldg. 134, Ext. 2345. A new form must be submitted for each week the ad will run.



Equipment Demo

OPTECH (Optimum Technology) Sales, Inc., in association with Instrumentation Products, Inc., will display their various instrumentation and control systems on Tuesday, February 10, from 11 a.m. to 2 p.m. in Berkner Hall. These include laser alignment systems, fiber-optic temperature monitoring systems, portable TEMPEST computers, dataloggers, power and energy monitoring/control systems, gas analyzers, test equipment, pressure/temperature transmitters and sensors.

Arrivals & Departures

Arrivals

Charles S. Schuster	Plant Eng.
Chi-Yeung Suen	DNE
Michael Villaran	DNE

Departures

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

Nam Z. Cho	DNE
Christopher G. DeRubio	S&SD
Michael T. Foran	S&SD
Alice J. Pitt	S&EP
Clifford J. Schnepf	DNE

BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

ANITA COHEN, Editor
MARSHA BELFORD, Senior Reporter
LIZ SEUBERT, Reporter

35 BROOKHAVEN AVE., UPTON, N.Y. 11973
Telephone (516)282-2345

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.

2527. SECRETARIAL POSITION - Requires excellent secretarial and communication skills and a good knowledge of office procedures. Duties include the preparation of technical reports and correspondence on a word processor (MICOM), travel arrangements and maintenance of group files. Structural Analysis Division, Department of Nuclear Energy.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2528. TECHNICAL POSITION - Requires an AAS or equivalent with experience in the fabrication, testing, and troubleshooting of various electronic devices. Must be familiar with construction techniques, P.C. boards and have experience with analog and digital circuitry. (Reposting of Job No. 2517). Alternating Gradient Synchrotron Department.

2529. TECHNICAL POSITION - Requires an AAS degree with an emphasis on engineering or physical sciences (AAS in health physics is desirable.) Responsibilities include routine radiation and contamination surveys around the AGS experimental areas. Requires participation in respirator, industrial hygiene and general safety training programs. Safety & Environmental Protection Division.

2530. ENGINEERING POSITION - Requires BSEE and a minimum of 5 years experience in fast pulsed power devices and high voltage techniques. Responsibilities include design of line modulators, pulsed magnet and regulated power supplies for AGS Booster. Duties will involve design of analog circuits, instrumentation, and computer interface electronics. Booster Project, Accelerator Development Department.

2531. ENGINEERING POSITION - Requires BSEE and a minimum of 5 years experience in the design of power electronics, multikilowatt power supplies and power filter techniques. Responsibilities include design of multimegawatt power supply modules and feedback controls with computer/power supply interface. Will prepare specifications for power supply modules and provide technical liaison with manufacturers. Booster Project, Accelerator Development Department.

Autos & Auto Supplies

73 HONDA 750 - runs, parts bike, \$500. Ext. 4612.

75 MERCURY MONARCH - a/t, p/b, p/s, am/fm, new tires, reliable transp., \$475. 878-1731 after 5 p.m.

82 CHEVY CHEVETTE - a/t, good cond., \$2,300. 475-3238 after 5 p.m.

78 PONTIAC PHOENIX - V6, a/t, p/s, 2 dr., sedan, runs well, asking \$600. Ext. 7593 or 878-0653.

79 TRAILDUSTER - 4WD, a/t, a/c, 55k mi., good cond., asking \$4,500. 874-2989, eves.

81 FORD ESCORT - htchbk, am/fm cass., 4 spd., 37k mi., excel. cond., \$2,000. 878-1283.

MOTORCYCLE - 200cc Honda, needs work, \$50. Rich, Ext. 7148 or 588-9452 after 5 p.m.

81 CHEVETTE - all-weather radials, am/fm cass., new clutch, brakes, muffler, starter, \$1,500. Ext. 5288 or 878-8177.

75 JEEP CJ - 3 spd., 71k mi., excel. cond., am/fm, new top, \$4,000. Al, Ext. 4636 or 231-4613 after 5 p.m.

RIMS - w/tires, 13", 4 lug; 14", 5 lug; 16", 5 lug. Ext. 2950.

84 CHEVY CELEBRITY - wagon, excel. cond., a/c, am/fm. Ext. 7759.

85 FORD TEMPO GLX - 12k mi., all power, golden bronze, beaut. cond., \$7,500. John Schuller, Ext. 3082 or 727-9197, eves.

74 PLYMOUTH SATELLITE - engine good, new battery & alternator, needs trans., best offer. Ben, 928-0284 after 4 p.m.

75 DATSUN B210 - runs, good for parts, \$100. Ext. 3080.

TIRES - B.F. Goodrich A/T radials, (4) 33x12.5x15, (2) 31x10.5x15, make offer. Mike, Ext. 2841.

78 COUGAR XR-7 - 351, excel. cond., blue, am/fm cass., a/c, new tires, \$2,300. Bert, Ext. 2050.

CAMPER CAP - fiberglass, Glastite, fits 8' truck bed, full size, double rear doors, \$400. 286-3906 after 7 p.m.

79 TOYOTA COROLLA - wagon, 5 spd., rebuilt carb., good rubber, \$1,000 neg. 399-2531 after 6 p.m.

76 CHEVY IMPALA - excel. cond., 4 dr., a/c, am/fm, a/t, brakes, trans., starter replaced, \$1,350. 475-2075.

79 PLYMOUTH VOLARE - a/t, p/s, p/b, 73k mi., good cond., \$1,500. Kumar, Ext. 3945.

77 MERCURY COUGAR - V8, a/t, a/c, p/s, p/b, good cond., must sell, as is, \$450. John, Ext. 3292 or 286-1348.

82 CHEVY S10 - V6, utility cap, fair cond., \$975 neg. Mark, 939-0267.

83 HONDA CIVIC - 4 spd., 35 mpg, new clutch, suspension, starter, brakes, battery, etc. 286-8718.

84 DODGE - ES series, 4 dr., p/w, p/s, orig. owner, 40k mi., A-1 appearance & cond., \$5,300. 924-3236.

79 DODGE OMNI - a/t, am/fm stereo, new tires, excel. running cond., mint, \$1,100. 472-4833, eves.

80 TOYOTA CELICA - 5 spd., htchbk, am/fm cass., p/s, p/b, a/c, 2 new tires, new brakes, excel. cond., \$3,100. Yu, 246-9189.

79 CHEVY MALIBU - wagon, 6 cyl., fully equipped inc. a/c & trailer hitch, high mi., \$1,750 or best offer. 261-5735.

81 TOYOTA PICKUP - long bed, diesel, 5 spd., cap, \$3,000. Chris, 567-6267 after 5 p.m.

83 HONDA - Urban Express class B, 49cc, silver, excel. cond., \$385. 472-1283, between noon & 3 p.m.

75 CAMARO - 6 cyl., rebuilt engine, radio, wire wheels, tires w/raised lettering, \$2,500. Ext. 2529.

81 CHEVY - 4 dr., 4 cyl., am/fm, a/c, \$1,000; 82 Dodge Aries Wagon, 4 cyl., am/fm, cb, a/c, trailer hitch, \$3,500, both good cond. 654-1146 after 5.

72 PLYMOUTH - full-size station wagon, reliable car. Ann, Ext. 2022 or 744-8386.

77 CHEVY CAMARO - blue, 8 cyl., a/t, p/s, a/c, am/fm cass., excel. tires, new paint. Melanie, Ext. 2456.

72 MUSTANG - fastback, a/t, 302 c.i., runs well, needs front-end work (frame), \$500. Janice, Ext. 3711 or 589-4153.

86 JEEP CJ7 - Renegade, Blaupunkt, 3 yr. warranty, 4 spd., 6,500 mi., mint cond., \$10,900. John, 549-4900, ext. 250.

80 DATSUN - htchbk, a/t, 4 dr., needs work. Ext. 4615 or 928-8522.

76 LTD - 4 dr., a/t, am/fm, new tires, exhaust system, water pump, make offer. Ext. 3202.

74 DODGE DART - for parts, \$50. Jurg, Ext. 3422 or 7980 or 821-3243.

RADIO - am/fm for Mazda pickup, SE-5, 1 yr. old, \$50. Joe, Ext. 4661.

77 ELDORADO - new tires, exhaust system, paint & vinyl roof, stereo w/tape, good cond., \$2,500. Ext. 7732.

80 TOYOTA COROLLA - htchbk, 5 spd., am/fm stereo cass., a/c, sunroof, excel. cond., clean, \$3,000 neg. Jeane, 475-0386.

85 OLDSMOBILE - Royale Brougham, 26k mi., most options, mint cond., must be seen, \$9,400. Ext. 2981 or 473-7809.

86 JEEP CHEROKEE - 4 cyl., 5 spd., a/c, stereo, Laredo package, 3k mi., \$14,800. 475-4792 after 5 p.m.

8' CAP - for pickup, excel. cond., asking \$175. Joe Bush, Ext. 4638 or beep # 572.

70-80 CAMARO PARTS - rims, tires, very good, leaf springs, misc. Ken, 473-7460 after 6 p.m.

82 DATSUN - King Cab Pickup, w/cap, excel. cond., \$3,200. Joe, Ext. 2575 or 281-2767, eves.

81 CHEVETTE - a/t, radials, am/fm cass., sunroof, new exhaust, waterpump, brakes, very good cond., \$1,800. Gary, 758-5592.

67 CHRYSLER - convertible, 383 V8, a/t, p/w, p/s, p/b, new top & seats. Tony, 698-9274.

81 CHEVETTE - 4 dr., htchbk, a/t, a/c, am/fm, \$1,395. 242-3805 eves. or leave message.

81 ESCORT - htchbk, a/t, a/c, am/fm stereo deck, excel. running cond., \$1,600. Vic, Ext. 2173.

PARTS - 73 Volvo, alt., air filt., short bend exh. pipe; 74 VW Bus, new tires, a/t, brakes, heat. sys., engine shot, \$400. Steve, Ext. 3988 or 286-2151.

71 CHEVY MALIBU - good running cond., orig. owner, \$550. Gordon, Ext. 3216.

78 OLDSMOBILE - Cutlass Supreme, 2 dr., 6 cyl., excel. body, engine good, \$1,500. 821-1468 or 924-2814.

70 DODGE - camper/pickup truck pkg.: truck, depend., many new parts, camper sleeps 4, gas heat & stove, reasonable. 286-0064.

68 MUSTANG - 289 8 cyl., a/t, 2 dr., body very good cond., mint interior, runs very well, must see. Joan, 331-9264 after 6 p.m.

83 YAMAHA - Virago 750, black, garaged, \$2,000; 80 Honda CX500, low mi., \$1,000, both mint cond., extras. Charles, Ext. 7749 or 789-1744.

76 DODGE ASPEN - wagon, good station car, new tires, water pump, \$500. Allen, 286-2265 after 7 p.m.

83 RELIANT - 4 dr., 2.2 liter eng., new tires, exhaust, brakes, MacPherson struts, very good cond., Ext. 4428 or 467-4222.

79 OLDSMOBILE - Cutlass Calais, runs like new, all power, positraction, very clean, asking, \$2,500. 475-6056, eves.

SLIDE-ON CAMPER - 8', heat, icebox, sink, \$400. Jack, Ext. 4660.

77 DATSUN B210 - 4 spd., 2 dr., 4 cyl., 60k mi., med. blue, like new cond. in/out, \$1,300 neg. 757-3712 or 698-0576.

ROLL BAR - for wired lights w/hardware, \$75. Al, Ext. 4636 or 231-4613 after 5 p.m.

Boats & Marine Supplies

21' BAYLINER CIERRA - 1986, sleeps 5, 135 h.p. Volvo, i/o, full canvas, excel., \$19,000. 878-0480, eves.

28' OWENS - 1963, wood, tight hull, engine needs work, \$500, forced to sell. Bert, Ext. 2050.

17' GLASPAR - 1971, fully equipped, 1970 55 h.p. Evinrude w/Cox trailer, excel. cond., \$2,650. 286-5809 after 5 p.m.

28' OWENS - 1965, inboard, glass f/b, new upholstery, motor not running. Ray, Ext. 3536, 289-7615 or 727-0842.

Miscellaneous

MOVING SALE - Bassett dining, excel., \$300; antique hutch, asking, \$300. Helen, Ext. 7791.

TICKETS - L.I. Philharmonic, 2 each, avail. Jan. 31, Feb. 28, Mar. 14, April 11, May 2 performances, \$15/ea. Ext. 4690 or 265-5218.

MOVING SALE - Trundle bed, dresser, mirror, couches, 4-poster double bed, armoire, more. Joan, 475-8252.

PUPPIES - Pit Bull w/papers, 2 light brown, 1 dark brown, \$300/ea. Ext. 2075 or 281-6617 after 5 p.m.

ROCKER - swivel, contemp., matching footstool, walnut trim, chrome base, black Naugahyde, \$65; rocker, wood, maple, excel. cond., \$20. 722-4489.

RUNNING SHOES - Brooks, brand-new, never used, size 9, best offer. Jerry, beeper 509.

PLAYPEN - never used, high chair. Ady, Ext. 4531 or 331-3785.

OVERCOAT - leather, size 42L, good cond., \$40; suede fur lined vest, size 44, \$35. Neil, Ext. 2023.

JALOUSIE WINDOW - glass, replacement slats, various lengths. Ext. 2543.

PUPPIES - yellow Labrador Retrievers w/shots, AKC registered. 698-5295.

SOFA - 118", circular, salmon velvet w/glass table, asking \$200. Ted, Ext. 5555 or 286-0065.

WALLPAPER - 5 double rolls, beige pattern, each roll will do 8'x8' wall. Susan, Ext. 4267.

GENERATOR - Sears Craftsman, 1350 watts, Briggs & Stratton engine, like new, \$295. Joe, Ext. 2898.

SKI BOOTS - Women's size 7 1/2, 5 buckles, Munari, \$10. Ext. 2906 or 929-6189.

DRUMS - 8 pcs., 3 toms, 2 fl. toms, 2 bass, 1 snare, new paste cymbal, crash ride, all hardware, \$500 neg. 924-3136.

APPLE IIe - 128k, 2 drives, monochrome monitor, Imagewriter printer. 286-8229 after 6 p.m.

COSTUME JEWELRY - rings, necklaces, earrings, coral & shells. Whitey, Ext. 2913.

COMPLETE DARKROOM - en-larger, timers, tanks, trays, tongs, filters, thermometers, \$60. Ralph, Ext. 2591.

MEN'S SKIS - 205 cm; 200 cm; boots, size 10 med; women's ski's, Harts, 185 cm boots 7 & 8; Faberware convection oven; dinette set. 475-0509.

JACUZZI - 3/4 h.p. convertible deep/shallow, well pump, new, new \$380, \$300. 298-4172.

BOY SCOUT JACKETS - wool, 3 red, 1 green, men's 38-40-42, excel. cond., \$20 ea. Ext. 2529.

FIREPLACE DOORS - brass finish, \$45; assorted mahogany, \$35; attic vent fan, \$25. 722-3338.

T.V. - 19", black & white, Zenith, excel. cond., \$40. Ext. 7941.

G.E. IRON - cordless, used once, excel. cond., prefer old iron, \$15. Ellen, 399-2813 after 6 p.m.

PUPPIES - Gordon Setter, AKC reg., field dogs, family pets, excel. temperament, \$300. 736-4886.

WINDOWS - double hung, thermopane, wood frame, twin R.O., 44"x68" w/screens, good cond., \$100. Victor, Ext. 2395.

12-CHANNEL MIXER - Fender & case, \$900; Bose 901 speakers, \$300; Onkyo dual cassette deck, \$50. 789-1944 or 427-2544.

HEADBOARDS - (2) Maple, twin size. Tony, Ext. 2050.

REFRIGERATOR - Kenmore, 2.5 cu. ft., like new, \$100. Howard D. Olson, 744-3203 after 5 p.m.

L/R FURNITURE - sofa, 2 lamps, coffee table w/stone tops, \$400. Steve, Ext. 3988 or 286-2151.

PUPPY - Jack Russell Terrier, born 12/15, weaned approx. 2/25, male, adorable. 286-0064.

REEL-TO-REEL - Sony, 7"; Realistic cass. player-recorder; Zenith receiver-amp; Gerrard turntable, \$100. Ext. 4428 or 467-4222.

KITCHEN TABLE - white enamel top, slide-in leaves, \$20; sled, \$3.50; 4 old sturdy chairs, \$50. 878-6637.

REEL MOWER - Sears, battery powered, self-prop. w/charger and grass catcher, excel. cond.; Bilco basement doors, \$25. Victor, Ext. 2395.

Car Pool

LIE EXIT 24-36 - rider/driver wanted, to BNL daily, 8:30 a.m. to 5 p.m. Gus, Ext. 7982.

Free

HORSE MANURE - bring your own buckets. 727-5194.

Classified Ad Policy

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

- The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
- All items for sale or rent must be the advertiser's property.
- Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
- Ads for the sale or trade of firearms will not be accepted.
- Ads not carried because of space restrictions will be held for publication in the next issue.
- Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.
- 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).