

the Bulletin Board

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THIRTEENTH BROOKHAVEN LECTURE

By DR. OTTO STRUVE

Director,

National Radio Astronomy Observatory

Title: GALAXIES

LECTURE HALL: 8:00 P.M., WED., JAN. 17

A buffet supper (\$2.75) will be served at the Brookhaven Center before the lecture, beginning at 6:00 p.m. Reservations should be made at least one day in advance by calling Ext. 2302 before 5:00 p.m., or Ext. 2453 in the evenings.

Refreshments will be available in the Research Staff Lobby following the lecture.

BNL RESERVISTS WIN NATIONAL RECOGNITION

The Chief of Naval Research recently announced that Naval Reserve Research Company 3-9, which is based on site, has been named winner of the first national competition among 114 Research Reserve companies for the best scientific study submitted during the year ending June 30, 1961. The award will be in the form of a plaque presented to "Three Dash Nine" for permanent possession. Individual letters of commendation in their official records will also be received by members of the Company.

NRRC 3-9's winning study, entitled "An Evaluation of the Need for Filtration Systems for Protection of Personnel in Structures Against the Acute Hazards of Radioactive Contamination of the Atmosphere" was selected by a special panel of naval and civilian scientists. The study was started by members of NRRC 3-9 in the winter of 1959 and submitted approximately two years later, coinciding closely with awakening national interest in the fallout shelter program.

"Three Dash Nine" was organized at BNL on January 11, 1950. Its object then, as it is now, was to keep the group informed of the latest developments in naval research and military matters, thereby providing each reservist with peacetime opportunities for participation in the research and development activities of the Office of Naval Research. The company has a large measure of autonomy in setting up its own training program, this situation is unique

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THE BNL GAMMA FIELD



**Aerial view of the BNL Gamma Field as it looked some years ago.
The field has since been enlarged.**

A recent BULLETIN BOARD article discussed the BNL Biology Department's use of ionizing radiations in its plant life research program. It was pointed out that several types of ionizing radiations are used to study overall radiation effects, as well as localized changes within plants or plant tissues. These investigations have yielded important information about factors influencing radiosensitivity, and about mutants and the mutation process.

A large percentage of the information accumulated at Brookhaven has been gained from studies utilizing the Biology Department's well-known Gamma Field (or Gamma Garden). The Gamma Field is the senior member of a relatively young family of research tools used in the radiobiology program. When it was set up in 1949, it was the first of its kind in the world. (There are now a number of others, located elsewhere in this country and abroad.) The field is located in the eastern portion of the Laboratory site - an isolated spot was chosen for protection from radiation.

The 15-acre plot is surrounded by a 7-foot woven wire fence at a variable distance (of from 300 to 650 feet) from the source and by a warning fence at the 1-4 mr. per hour range. The field can be entered only through a small control house and gate, and a number of safety devices have been provided to prevent entry by unauthorized personnel or entry while the source is up.

The gamma radiation is emitted from a Co^{60} source which is contained in a metal tube attached to a buried cylindrical lead shield. The source is operated remotely from the house outside the field; it may be raised for irradiation of surrounding vegetation or lowered into the shield so that staff members may enter the field.

(Continued on following page)

The BNL Gamma Field—Cont'd

In the early days of the operation of the Gamma Field, plants were exposed continuously except when it was necessary to lower the source to allow for observation and tending of the plants. In recent years, however, a regular procedure has been established allowing for the exposure of the plants for 20 hours each day, leaving the source shielded for the remaining 4 hours.

Up to 1960, the "season" for the use of the Gamma Field lasted from early spring until October, a little longer than the normal growing season. During the winter the source was returned to the Reactor for further activation. Since 1960 the source has been left in operation all year to facilitate the study of radiation effects on dormant trees.

The planted section of the Gamma Field is circular in pattern, consisting of a series of concentric circles around the central Co^{60} source, which is currently rated at an intensity of 3800 curies. This design, facilitating large plantings at specific distances from the radiation source, makes possible comparison of the tolerances of different plant species to identical radiation exposures, as well as comparison within species to different radiation dose rates.

Over 300 species of plants have been studied in this manner. Observations on these plants show extreme differences in radiation tolerance (as much as 500-fold). Factors influencing this radiation tolerance include a direct relation to chromosome number and an inverse relation to the size of the cell nucleus.

Other investigations include the study of tumor formation in plants of certain tobacco hybrids. Tumors in these plants occur spontaneously, but the number and size can be increased greatly by irradiation. The nature of the tumor-promoting action of the radiation is being investigated.

Brookhaven also operates a somatic mutation program in cooperation with a number of universities and agricultural experiment stations. One of the objectives of this program is to induce useful mutations. Among the plants grown in the Gamma Field for this purpose are apples, peaches, grapes, strawberries, blueberries, roses, snapdragons and carnations. Some of the more promising potential mutations found are: early and late ripening peaches, changes from freestone to clingstone peaches, 3 new carnations which are soon to be released to the trade, and some interesting mutable genes in snapdragons and petunias.

In order to study the effects of long-term, low-level exposures, a new area, extending 450 feet beyond the present cultivated area, was cleared. Controlled plantings may now be made at dose rates as low as 10 mr. per hour. Certain plants are being grown at these low radiation levels to furnish information corresponding to the same species growing in the Gamma Forest, the newest gamma facility, which will be described in next week's BULLETIN BOARD.

BNL Reservists - continued

in that the members, besides receiving training from the Navy, can also make their civilian research knowledge available to the country's defense establishment. Regular drill meetings, held on site, are used for educational purposes, for work on scientific studies, and to plan the Naval Reserve Nuclear Science Seminars presented annually in conjunction with BNL.

Many members take active duty (two weeks per year is generally available, though not required, for research reservists) for training at other locations. In case of mobilization, research reserve

officers would be assigned to duties in connection with conducting or administering research projects, administering research contracts or serving as staff advisors or liaison officers for research and development activities.

NRRC 3-9 has grown steadily during its 12 years of existence at BNL. Membership in the company has always been open to qualified reservists in the area. Information can be obtained from the Commanding Officer, CDR J.C. Austin, Ext. 668, or the Executive Officer, LCDR S.J. Tassinari, Ext. 2149.

You can give the bare credit for having one virtue. He doesn't talk about other people.

BROOKHAVEN VISITORS

Brookhaven will play host to two groups of visitors this week. Suffolk Air Force Base members interested in radiation hazards are on site today. On Wednesday and Thursday, the six-member Steering Committee of the Atomic Energy Commission's Technical Information Panel will meet at the Laboratory.

MICROMET

Micromet, ordered by employees, has been received. It may be picked up at the Personnel Office.

T-100 IS CORRECT!

If you saw last week's BULLETIN BOARD featuring a picture guessing contest of a snow covered building and identified it as T-100, you were right.

The first caller who named it correctly was Martin Van Lith of the Mail Room. Martin, however, already has his family pass to the Pool - so the free family swim went to the next 3 observant employees. They were Jean Hughes (Housing), Alice Trubisz (Fiscal), and Ernest Sykes (Instrumentation). Honorable mention goes to Gus Francois (Supply & Material) and The Boys in the Fire Department.

OPERA CLUB NEWS

Due to the large number of requests for opera tickets it is necessary to ask your cooperation in the following:

Please — — —

1. Order tickets at least two weeks in advance.
2. Place orders in person between 10 a.m. and 12 noon only.

The receptionist in the Personnel Office has the schedule, price list, and seat location chart available to help you in making your selection.

SHELLS AND ARROWS

The Nimrods Archery Club has challenged the Rifle-Pistol Club to a showdown. The two outfits have decided to enter in competition to see who's who.

To answer your question - how? This is the way it will be accomplished. Each club will meet and shoot separately, the Bow and Arrowers in the Gym on January 14, and the "Riflemen" on a shooting range.

The adding machine will act as referee as it totals up scores of both shoots and declares "The Winnah"!

BASKETBALL BATTLE

The first half of the season is almost over: next week's matches end this stanza in a closely contested league. The Old Timers were almost home free, as they were undefeated until the Phoubars upended them last week. The defeat brought them closer to the pack and puts three teams in contention for first-class honors, depending on next week's outcome. With only 2 in the loss column, Metallurgy will take on the Old Timers. A victory for Metallurgy could result in a three-way tie at the half. An Old Timer win would clinch it for them, and the second half would get underway with a clean slate for all teams. At the season's end, the winners of each half will play each other for the championship.

Standings — January 3, 1962

	WON	LOST
1. Old Timers	5	1
2. Phoubars	4	2
3. Metallurgy	3	2
4. Chuckers	3	3
5. Untouchables	2	3
6. Biology	0	6

Games this Tuesday

6:15 Phoubars vs. Untouchables
 7:25 Biology vs. Chuckers
 8:35 Old Timers vs. Metallurgy

SWIMMING POOL ADMISSION

- I. Admission to the swimming pool will be granted only to:
 1. Employees.
 2. Members of employee's immediate family (members of same household).
 3. Guests.
 - a. An employee or a family member will be permitted to bring no more than five (5) guests **per family**.
 - b. Employees must accompany and be responsible for their guests.
 - c. If several employees bring a group of youngsters they must accompany and supervise in the Pool Area.
- II. Admission through the gates of the Laboratory to use the swimming pool is controlled by the Security Office. However, members of employees' family ARE PERMITTED through to use the pool if they:
 1. Are accompanied by an employee.
 2. Are in possession of a Season Pool Ticket.
 3. Are in possession of a Temporary Identification Card issued by the Security Office.

Family members coming to the pool without the employee will be requested to present evidence of the above.

THE SILENT WORLD**FREE SHOWING****FREE SHOWING**

The Brookhaven Divers Club, in conjunction with the BERA Film Study Group, will present a special showing of Jacques Yves Cousteau's underwater film classic, "The Silent World," on Thursday, January 11, at 8:30 p.m. in the Lecture Hall. There will be no admission charge for this film. Everyone is welcome to attend.

"The Silent World" is the first and perhaps the best-known of the undersea films taken since the advent of the Aqua-Lung which was developed by Captain Cousteau in the 1940's. The film is a documentary detailing the expeditions of the ship "Calypso" in the Mediterranean and Red Seas. It contains some of the first and finest underwater color photography ever seen. The dull blues and greens as seen by the human eye underwater are transformed into brilliant yellows, oranges and reds by means of white light, brought by the divers for the first time to a place where sunlight has never penetrated. The film is not only the story of underwater life, but also of the men who made this world available to millions by their daring new approach to undersea exploration. Here is truly high adventure on one of the last frontiers left on earth for man to conquer.

Don't forget, Thursday, January 11, 8:30 p.m. at the Lecture Hall. Bring all the family. Admission is FREE.

FOLK DANCE GROUP

The Brookhaven Folk Dance Group will resume its regular program of weekly dances next Monday, January 15, at the Recreation Hall, 8:00 to 11:00 p.m.

TIME'S AWASTIN'

Only three more weeks left for you Bowling Enthusiasts to enter the BNL Mixed Double Tournament. The closing date for entering is January 26, so get those entries in to the Recreation Office and let's have a "ball." If you need a partner just call our Matchmakers, L. Baker, Ext. 591 or Judy Reidl, Ext. 2245, and we'll make it a date for February 3 at the Port Jeff Bowl.

BERA VALENTINE DANCE

Come One, Come All — to our Valentine Ball, presented by S & M.

There will be contests, prizes and lots of fun and maybe you will be the lucky one!

Don't be late! Remember the date!
FEBRUARY 16

CAMERA CLUB MEETING

The next meeting of the Camera Club will be held on January 17 at 8:30 p.m. at the Recreation Building. The program will include a portraiture session for which a model will pose. Members and non-members are invited to attend the meeting and to test their skill at portrait photography.

SKI CLUB TRIP

There is still time to sign up for the Brookhaven Ski Club trip leaving at 6:00 p.m., January 12. We plan to stay in Rutland, Vermont and ski at the Killington area rather than in Manchester as mentioned previously. You need not be a skier or a club member to go along and have fun. For details call Nancy Ashton, Ext. 2532, or Gene Raka, Ext. 310.

CERAMICS?

Are you interested in Ceramics? Would you like to be a member of the BERA Ceramics Club? BERA has a fully-equipped work room complete with potter's wheel and kiln in the Recreation Building.

A reactivation and reorganization of the club is in the making with you and your ideas as the main ingredients. Whether you are a novice or an old pro - if you have an interest in the activity - call George Sabine, Ext. 391.

Stop by the Recreation Building any evening (except Friday) after 5 p.m. and the attendant will be glad to show you around.



PURPLE LEAGUE

BERA BOWLING

At the end of the first-half of the bowling season, the team standings are:

	WON	LOST
1. Phoubars	40.5	15.5
2. Woodbutchers	39.5	16.5
3. Toppers	35.5	20.5
4. Designers	33	23
5. Scotches	27.5	28.5
6. Fiscal	17	35
7. Bowl Aids	16	36
8. Hopefuls	11	45

High Average: E. Sundberg, 173

High Game: G. Kuzmack, E. Sundberg, 234.

High Series: E. Sundberg, G. Gardenier, 594.

BLUE LEAGUE

The Bubble Boys went up against the Nuclides with only four strong men to take 4 points. They were led on to victory by Captain Spirio who pushed out a 201/467. Frantz helped out his team by rolling a 177/489. O'Donnel and Isler of the Nuclides really tried hard rolling 169 and 166/445 respectively.

The four Leftovers who rolled against the full team of the Alleygators were strong enough to take 3 points. The tough men of the Leftovers were Svoboda with 177 and Uddman who pushed out a 196/521. For the Alleygators, McGovern rolled a 180/484, Watson 189/491, and Stelmaschuk 176.

The Techs ran into a little tough opposition from the Skins this time, losing 3 points. High

men for the Skins were Schroeder, 182, Borzi, 206/522, and Weinmann 203/567. This game should give the Skins "High Series." The Techs had Larsen rolling 214/540, Heins 201, and Hildenbrand 217/540.

The Bubble Finks took on the Sleepers and got 3 points. For the Finks, Brady rolled a

177/451, and Baer rolled a 172/435. The Sleepers had two hot men this time - Streeter with a 174, and Lypecky 165/446.

The Splitters split with the Needlers this time with Carter rolling a 168/468, and Sick rolling a 166/483. For the Needlers, Sunyar rolled a 187/485 and Singer a 174.

CLASSIFIED ADS

FOR SALE

1957 FORD FAIRLANE 500 - Convertible, very gd. cond. New blue nylon top, r&h, blue and white body. Many extras. \$800. F. Kuehl, Ext. 604 or JU 8-2268 after 6 p.m.

1955 PONTIAC - 2 dr., 860 auto. trans., r&h, Best offer over \$450. R. Sollanek, Ext. 311.

1958 CHEV. STATION WAGON - V8, 4 dr., r&h, auto. shift, new tires & battery, trailer hitch. Best offer over \$900. McChesney, Ext. 636 or AT 6-1352.

1951 FORD - 2 dr. sedan, r&h, 3 new tires. \$125. G. Penny, Ext. 2156.

1954 OLDS 88 - 4 dr. hydramatic, r&h, w/w, extra tires, new brake linings, very good cond., must see to appreciate. Owner leaving Lab. \$250. F. Kamiyo, Ext. 680.

RANCH HOUSE - 3 bedrm., large living rm., dine, large eating space in kitchen, garage, storms & screens, stockade fence, venetian blinds. House 1½ yrs. old. Walk to shopping. Very little cash to finance. \$15,500. Evenings, HR 3-0178.

HOUSE - Village of Patchogue, 1 floor, 3 bedrms., living rm., dining rm., enclosed porch, 50x126, finished basement, w/w carpeting, garage, oil hot water base board heat, complete landscaped. \$13,000. Ext. 557 or AT 9-1319.

CRUISE ALONG - 21 ft. 4 in. 2 bunks, stone ice-box, 60 hp Greymarine engine, 230 hours. Fully equipped with extras. R. Aichroth, Ext. 782.

TV - 17" Emerson, overhauled in May. Good picture tube w/high gain travelling wave antenna, \$35. F. Kamiyo, Ext. 680.

HOCKEY ICE SKATES - Size 8, good cond. \$5. Willing to exchange or trade for black figure skates, size 10 or 10½. MO 9-8466.

HEATHKIT - A9A audio amplifier (with built in preamp), 20 watts, \$20. P. Mandel, Ext. 2344.

ROLLER SKATES - Men's shoe. Good shape, size 11. \$5. Ext. 2170.

SCHWINN BICYCLE - Boys, 24", red, good tires, \$10. R.M. Brown, Ext. 455 or AT 6-1214.

TWO WHEELS - For 710-15 tires, \$2. each. Set of tire chains in fair cond., fits 710-15 tires, \$9. M. Hilgemeier, Ext. 2531.

ICE SKATES - Boy's black figure skates, size 6. \$4. Ext. 590.

WHITE FIGURE SKATES - Girls, size 5. \$3.50. Ext. 702.

8MM MOVIE OUTFIT - Complete, including, 8mm Universal Movie Camera with carrying case, 500 watt Universal projector, 5 light "Light Bar" with lamps. This equipment is old but works well. \$40. takes all. J. Chester, Ext. 598.

AM TUNER - Hi-Fi rated (Heath Co.) 550 kc to 1600kc tuning range. 1 yr. old, perfect cond. \$25. Ext. 301-33.

DIVING EQUIPMENT - New last summer, used 3 times. U.S. Divers one hr. tank (K-valve, back pack & straps). U.S. Divers aqua-div. 2 stage regulator. Swim Master weight belt, 6 lbs. New pressure gauge. Complete, \$90. or nearest offer. Kelsch, Ext. 354.

ELECTRIC GUITAR - And amplifier about 1½ yrs. old, asking \$70. B. Nimmo, Ext. 2348.

BOY'S HOCKEY SKATES - Size 3. Boy's figure skates, size 4. Both originally \$10. each, worn four times each and are too small this year. Will sell for \$4. each. G. Cross, Ext. 2260.

MATTERHORN OBERSTDORF SKIS - With CubCo safety bindings and poles, \$40. Ext. 407.

8MM MOVIE CAMERA - Yashica 8EIII. 3 Yashinon F 1.8 lenses, 6.5mm, 10mm and 25mm focusing lens. Camera has all features of most expensive cameras, built in exposure meter, fade in and fade out, lap dissolve, speeds from 8-48 frames/sec, single frame, footage counter, 3 built in filters. Pistol grip handle w/trigger, etc. Camera 1 yr. old, in brand new cond., \$85. R. Young, Ext. 591.

SNOWPLOWING - By appointment. Call HR 2-1151.

BABY-SITTER - Experienced, wishes work evenings. W.G. Creller, Ext. 301-38.

WANTED

FIGURE SKATES - Would like to exchange size 8 women's white figure skates 5 yrs. old, for size 6½. M. Weynand, Ext. 301-6.

STEADY HOUSEHOLD HELP - One day or one-half day per week in Shoreham. SH 4-5096.

FIGURE SKATES - Girl's size 7-8. Ext. 702.

FOR RENT

HOUSE - 5 rooms in Bellport. AT 6-9633 or AT 6-8642.

LOST AND FOUND

BLACK LEATHER GLOVES - Men's. Also women's white cotton stole. Found at Exhibit Hall after Reactor Christmas party. Ext. 798-575.

CHARM BRACELET - Found. Personnel Services, Ext. 2107.

WHITE LEATHER GLOVES - Found at A.G.S. Personnel Services, Ext. 2107.

GRAY ALPACCA COAT - Size 14. Lost at Cosmotron Christmas party. Was accidentally exchanged for similar but smaller coat. Anne Rogers, Ext. 388.

CARPOOLS

Driver needed to complete existing carpool from Patchogue. Ext. 472.