



Alcohol in Space?

Molecules of ethyl alcohol have been discovered in gas clouds near the center of the Milky Way Galaxy. Here on earth, this type of alcohol is often consumed in cocktails.

The discovery was made using a radio telescope, located at Kitt Peak near Tucson, Arizona, operated by the National Radio Astronomy Observatory (NRAO). Radio emissions with wavelengths characteristic of ethyl alcohol were picked up during two different observing sessions in early October. This brings to 31 the number of known interstellar molecules. Of these, the ethyl alcohol molecule, which has nine atoms, is one of the largest and most complex.

The observation of this molecule leads astronomers to believe that even more complex molecules, such as amino acids (the building blocks of life), may also exist in space.

Ethyl alcohol forms a thin vapor spread throughout interstellar clouds. These gaseous clouds, composed primarily of simple molecules such as hydrogen, cover vast areas. They possibly contain as much mass as one million suns and measure up to 50 light years in diameter. A light year is the distance light travels in one year at 186,000 miles per second. The alcohol is produced within these clouds by chemical reactions which are different from the well-known process of sugar fermentation by yeast organisms.

Another new substance, heavy water, was also discovered at the same time as ethyl alcohol. The research, supported in part by the National Science Foundation, was conducted by observers from the University of Maryland, NRAO, the National Bureau of Standards in Washington, and the Scientific and Industrial Research Organization in Australia in collaboration with the University of Chicago and the Center for Astrophysics in Massachusetts.

Medical Proton Day Friday, November 8

Proton radiation therapy will be the subject of three seminars to be held at BNL on Friday afternoon, November 8.

At 1:30 p.m. an Accelerator Department Seminar on Medical Protons-Accelerator Designs and Radiographics Applications will be led by R. Martin, Argonne National Laboratory.

At 3 p.m. a two-part seminar will be held in the Medical Department. Michael Goitien, Harvard Medical School will discuss Proton Radiation Therapy, and Andreas Koehler, Harvard Cyclotron Laboratory, will discuss Medical Application of Medium Energy Protons.

BERA Concert Series

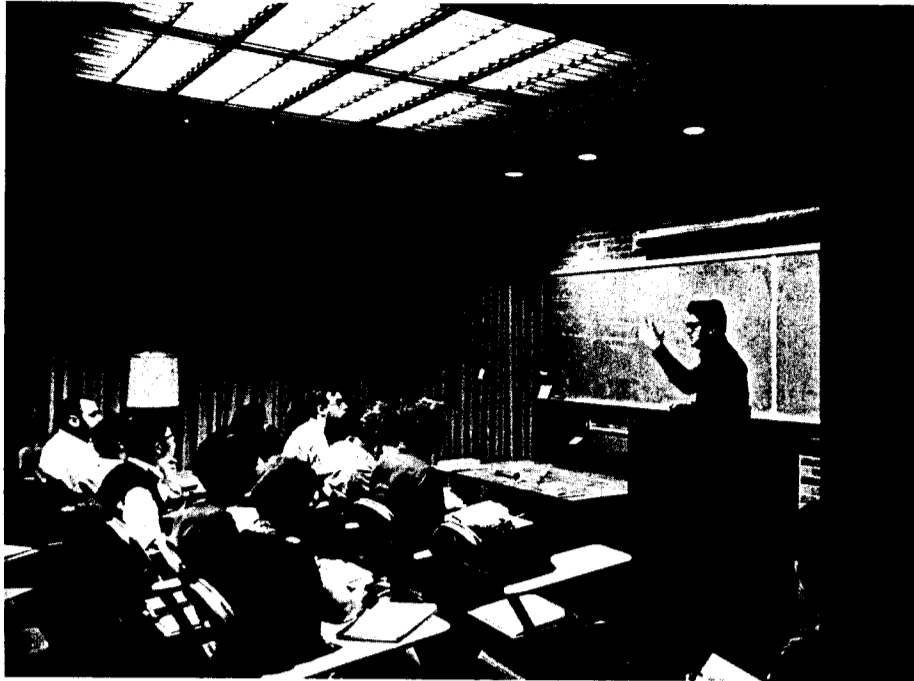
The next concert, to be presented Tuesday, November 12, at 8:30 p.m. in Berkner Hall, will feature the London Virtuosi, a group composed of outstanding instrumentalists. Three of them are principal members of the London Symphony Orchestra (John Georgiadis, the violinist, is the concert master).

The combination of violin, viola, cello, flute, oboe and harpsichord creates endless possibilities of chamber music, ranging from Baroque and Rococo of the 18th century through the classical period. In addition, the group plans to commission new works by contemporary composers. They are currently recording Sir William Walton's Piano Quintet with Andre Previn as assisting artist.

The London Virtuosi debuted in London in 1972 and shortly thereafter signed a contract to record 30 records in five years. They have appeared regularly over radio and TV in Great Britain, and will follow their present first American concert tour with appearances in Japan, Singapore, and several other countries.

The program at BNL will feature baroque music and works by Mozart and Beethoven. Regular admission to the concert will be \$3.50; \$1.75 for those over 65 and students with I.D.; and \$1.00 for those under 18.

BNL Classroom Series



Walter Sevian, DAS, conducts an evening class in "Methods of Applied Mathematics."

Notice to US Mail Users

Effective November 17, 1974, all First Class Mail and Air Mail must be prepaid. If not, it will be returned for postage. If there is no return address on the envelope, it will be sent to the Dead Letter Office, which will probably take a week or two to process, so watch when paying utility and other bills.

TV Programs Lead To Science Appreciation

A series of television programs, aimed at enhancing the public understanding of science, will be shown over Public Broadcasting System (PBS) stations starting November 3.

The programs, collectively called NOVA (new in Latin), are being distributed by the Science Program Group of WGBH, a PBS station in Boston. Some of the programs have been produced by WGBH while others are being shown through an agreement with the British Broadcasting Corporation (BBC).

When the series premiered last spring it was received with such enthusiasm that WGBH decided to produce a new series which would include some of the original programs. The station received numerous letters requesting further information about the subject matter covered in these programs.

To help answer any questions arising from the current series, the American Association for the Advancement of Science (AAAS) is compiling a list of individuals specialized in fields pertaining to the programs.

Brookhaven National Laboratory has agreed to respond to letters concerning "The Hunting of the Quark," which will be broadcast on November 17. Also, BNL's Office of Scientific Personnel is arranging to have copies of the bibliographies used in producing the various programs available for employees and the local community.

The first program on the NOVA 1974-75 schedule will be "Why Do Birds Sing?" The film, to be aired November 3, takes the viewer through the woods and marshes and finally into the laboratory. It explores how and why birds sing, the role of song in territoriality, the language of birdsong and the acoustic properties of call. The program also examines how birds acquire their song, a process of learning that bears some surprising similarities to the acquisition of speech in humans.

The *Brookhaven Bulletin* will provide a short summary of each NOVA program a week before it is broadcast.

Official & Special Events

Thursday, November 7

Hofstra University chemistry student tour
Suffolk County Press Club,
Brookhaven Center

Friday, November 8

Jersey City State College radiation
biology student tour

Registration At Lab For Math Courses

Mrs. Esther Weitzman will be present on Monday, November 4, 1974 in the Seminar Room of Building 515 (Applied Mathematics) to register students for the 1975 Spring Term and to provide information concerning the program. New students as well as students already enrolled in the program are urged to attend.

Courses to be offered at BNL in the 1975 Spring Term will be:

MSA-537, *Methods of Operations Research I - Elementary maxima and minima problems and the Lagrange multiplier. Linear programming including the simplex technique. The transportation problem. Queuing problems under different assumptions on input, service mechanism, and queue discipline. Dynamic programming. Basic ideas of inventory theory.* (4 credits)

MSA-551, *Introduction to Applied Probability and Statistics I - Elements of Combinatorial analysis. Random variables and expectations. Laws of large numbers. The central limit theorem and its applications. Recurrent events and Markov chains. Applications to information theory, methods of coding, queuing problems, theory of games, problems of strategy, decision-making, etc.* (4 credits)

These courses are available to BNL employees, guests, and collaborators, and to a limited number of persons not affiliated with the Laboratory.

If you have any questions concerning the graduate program please phone Mrs. Weitzman at 516-246-5969, or Glen Price at BNL Ext. 3336.

Bank Holiday

The Bankers Trust of Suffolk on site will be closed on Tuesday, November 5, Election Day and on Monday, November 11, Veterans Day.

High School Equivalency Program

There is a possibility that classes leading to a high school equivalency diploma may be offered to Laboratory employees at a nearby school. The program will be offered only if a sufficient number of employees are interested.

It is anticipated that classes would be held two nights a week immediately following the regular Laboratory work days. There will be no charge for these classes.

Interested employees are asked to notify Blanche Laskee, Personnel, Building 185.

I am interested in participating in a high school equivalency program.

Name

BNL Address

Extension

(PLEASE PRINT)

Energy Team Named By President Ford

At a news conference in the White House on Tuesday, October 29, President Ford announced the formation of a new "Energy Team" to implement recent legislation that created ERDA and the NRC.

"Dr. Robert Seamans, former Secretary of the Air Force, and formerly a very high official in NASA," said the President, "will be the new administrator of the ERDA, the Energy Research and Development Agency."

Named to head the Nuclear Regulatory Commission was former AEC Commissioner William Anders, who will be Chairman of a five-member board.

Former AEC Chairman Dixy Lee Ray, was named to be Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs.

All three appointments will require Senate confirmation, as will the appointment of an ERDA Deputy and six Assistant Administrators. Also requiring Senate action will be the appointment of four additional Commissioners to the NRC.

On October 8, the President started the formation of the "Energy Team" with the appointment of Interior Secretary Rogers Morton as head of the Energy Resources Council. Tuesday, John Sawhill, Federal Energy Administrator resigned, and was replaced by Andrew Gibson, former Assistant Secretary of Commerce for Maritime Affairs and for Domestic and International Business.

Seamans, 56-year old President of the National Academy of Engineering, and Vice Chairman of the National Research Council, received his BS at Harvard in 1939 and his MS at M.I.T. in 1942. In 1951 he received his Sc.D. (Instrumentation) also from M.I.T. He served as Professor of Aeronautical Engineering at M.I.T. until 1955 when he went to RCA where he became Chief Engineer, missile electronics and controls. In 1960 he went to NASA where he became Deputy Administrator. In 1969 he was appointed Secretary of the Air Force and subsequently was a member of numerous national and international committees. He is a member of several scientific organizations, and the recipient of a number of awards and honors.

Painting Exchange

Red, yellow, orange, rose, rust, green, gold - these are the colors of fall and the colors of many, many artists in the area. A few weeks ago the first article of the fall appeared concerning the paintings to be loaned again this year to the BNL Hospital. It is hoped that all artists dedicated to this program will heed the pleas again this year. It is truly such a rewarding program.

All artists contributing to the BNL Hospital Exchange of Paintings should bring their paintings to either the Occupational Therapy Room on November 5 and 6, or to the home of Marilyn Shellabarger, 196 South Country Rd., Bellport, on November 8 and 9 (10:00 a.m. to 5:00 p.m.). If there are any last minute questions, please call Mrs. Brooks, 345-3684, or any member of the Committee: Eleanor C. Dahl, 286-1592; Emily Czaja, 286-8448; or Marilyn Shellabarger, 286-8060.

The time for the exchange is drawing near and the patients are looking forward to seeing the new works that will hang on their walls for the coming year.

Mountain Club

The BNL Mountain Club will have a meeting Wednesday, November 6th at 8:00 p.m., upstairs in the Recreation Building. Members and all those interested are urged to attend.

Current activities have included backpacking, canoeing and rock climbing. Future activities will depend on what the BNL staff and families wish to participate in. Plans will be discussed and slides shown at the meeting.

The Spotlight Was On Fashions



The models in the foreground are Sarah Price, Selena Claude, Christine Saitta, and Gisella Murphy. Rear left to right are Carolyn Smith, Joseph Polk, Judith Billingslea, Beverly Bruton, Sharon Rosenhagen, Paul Akins, Rochelle Nash and Janet Collinson.



Janet Collinson, Physical Review



Paul Akins, Plant Engineering



Christine Saitta, Physical Review



Sarah Price, Semester Student



Joseph Polk, Semester Student



Beverly Bruton, Semester Student

Letters To The Editor

Dear Sir:

The Hospitality Committee wishes to extend most sincere appreciations to all those who brought in their treasures for display, baked all the delicious breads, demonstrated crafts, or helped in any other way to make the Colonial Tea Party a success.

Ruth Dimmler

Brookhaven Marathon - 10 Miles

Place	Name	Time
16 - 39		
1	Andrew J. McNerney	62:43.5
2	Paul Kupferman	63:58.2
3	John C. Norvell	67:53.2
4	William Piel	69:55.8
5	Bob Tucker	70:17.8
6	William Thomlinson	73:15.0
7	Bob Bari	75:43.2
40 and Over		
1	Mark Horovitz	68:29.4
2	D.R. MacKenzie	69:03.8
3	V. Racaniello	69:30.8
4	Arthur Harris	72:48.6
5	Arthur Duffy	76:24.6
6	Arthur Scott	77:55.0
7	Stuart Glass	78:37.0
Guests		
1	Martin Brekeller	58:46.6
2	Arthur Duffy	76:24.6
3	Richard Britton	77:55.0

Brookhaven Marathon - 5 Miles

Place	Name	Time
Under 16		
1	Mike Oldham	32:58.4
2	Andrew P. McNerney	33:23.6
16 - 39		
1	Boyd Osgood	35:27.5
2	D. Nordstrom	35:41.6
3	George Oldham	36:27.2
4	Hugh S. Isaacs	37:06.8
5	Peter Adams	42:08.0
40 and Over		
1	Jack Phillips	35:05.2
2	Gerald Farber	37:23.2
3	Gene Rogers	37:46.4
4	J. Detweiler	39:40.0
Women		
1	Kay Norvell	40:30.6
Guests		
1	William Heinrockel	33:17.4

BNL Bike Race - 17.5 Miles

Place	Name	Time
Over 40		
1	John Aggus	58:10
Senior		
1	Jean Bussiere	50:07
2	David Miller	50:35
3	Rick Wetzler	51:27
4	Dennis Greenberg	53:03
5	James Vary	53:40
6	John Elmore	54:39
7	Dan Clipperton	57:35
8	Tom Clifford	58:44
9	Marvin Rorick	64:11
10	John Maddock	68:15
Junior		
1	Phil Watson	56:06
2	Mark Jablonski	59:20
3	Chip Thien	59:26
4	Damian Emery	60:28
5	Martin Aggus	64:07
6	Bob Grego	64:58
7	Laurence Emery	72:49
Girls		
1	Lucy Kinne	62:30
2	Christine Saitta	64:00
3	Lis Carneiro	98:59



David Miller and Phil Watson



The Five-Mile race start showed several under-sixteeners who managed to finish first and third in the overall standings. Kay Norvell was the only girl entry to finish. Mike Oldham, first place overall winner, was entered in the under sixteen class.



Lis Carneiro finished last



On the command "Take your mark" get set to start the 10-mile perimeter competed in three categories. The minutes ahead of the second-place runner.

The Mood Is Colonial But The Year Is 1974.



Ed Hunter, Plant Engineering, was on hand to display his collection of carved birds which are all hand made by him. With him are Joy Dean (left) and Charlotte Price.



Some of the Hospitality Committee Chairladies admire a collection of apple dolls made by Nancy Keer. From left to right are Monica Zanzi, Charlotte Price, Rosemary Jewett and Ruth Dimmler, Chairlady of the Hospitality Committee.



What would a tea party be without the snacks. Carol Leahy, Jeanette Potter, Charlotte Price and Donnie Grand (L-R) marvel at some of the delicacies contributed. The breads they are holding were made by Assistant and Director R. C. Anderson.



Carol McKenzie-Wilson dips a few candles in the old Colonial way.



Eleanor Dahl demonstrates weaving.

Arrivals & Departures

Arrivals

John E. Batey Applied Science
John C. Lee Applied Science

Departures

Charles R. Iden Chemistry
Ross E. Meyer Mech. Engrg.
Shu-ei Shen Accelerator

In Memoriam

Willie Mosley of the Plant Engineering Division who had been employed at the laboratory since August 16, 1965, died on October 23, 1974.

Volleyball Season Begins

Practice sessions were commenced this week for the 1974-75 BNL Mixed and Men's Volleyball Leagues. The first league games will begin the week of November 4. Mixed League will play on Mondays and Men's League on Wednesdays at 5:15 p.m.

There is a need for players in the Men's division. Interested persons contact one of the following officers who were elected at a Captain's meeting held on October 10.

Pat Oster, President	Ext. 4763
Gene Wells, Vice-President	2540
Barbara Sapienza, Secretary	2903
Jerry Levine, Treasurer	4212



Elke Brengard explains how a quilt is made. At the left is Jane Love one of the area chairladies of the Hospitality Committee.



Dwight Trujillo, of the Village Silversmith in Bellport, demonstrates the art of silversmithing.



from starter Bob Powell, runners ace. Sixteen runners started and inner, Martin Brekeller, finished 4 ter.



Martin Brekeller - 58:46.6



The wheelmen (and ladies) entered in the 17.5-mile bike race started at 30-second intervals. The one entry in the "over 40" class was a sure winner. A total of 22 riders finished the race in spite of strong head winds on the Route 25 and Wm. Floyd Parkway stretches.



Andrew McNerney - 62:43.5

