

# FERMINews

 Fermi National Accelerator Laboratory

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...Team that produced and printed the Science Institute proposal, (l-r, sitting) Betty Bottomley, George Villa (on desk), Donna Bohler, Sybil Krebs and Sue Grommes. Standing (l-r), Larry McCann, John Rauch, Mary Carman Vera, Simmie Meredith, Harry Brown, Claire Gorman, John Kowalski, Millvenia Stiff, Carmen Valdes, Elaine Moore, James Bishop, Al Brenner and John McCook. Not shown are Dick Carrigan and Angela Gonzales...

## URA SUBMITS PROPOSAL TO NASA FOR SPACE TELESCOPE SCIENCE INSTITUTE

Universities Research Association has submitted to the National Aeronautics and Space Administration its proposal to have the Space Telescope Science Institute located here.

Months in preparation at Fermilab, the five-volume proposal was hand-delivered to NASA at its Goddard Space Flight Center, Greenbelt, Maryland, where it and competing proposals will be reviewed. The selection by NASA is expected to be made this summer, with the award coming possibly in the fall.

The institute is expected to be completed before the space telescope is launched in 1983 by NASA from its space shuttle.

The telescope, a 2.4 meter precision instrument, has been hailed by astronomers as a major advance for their field. Wherever the institute is located, it will become the world center for astronomy for possibly the next two decades, scientists say.

Data from the telescope will be transmitted to the Goddard Center and then sent to the institute for processing and analysis. Once the telescope is operational, "we will increase the volume of the universe we can explore by a factor of 1,000; we'll see many more exotic objects; we'll see farther back in time," said Dr. David N. Schramm, chairman of the Department of Astronomy and Astrophysics at the University of Chicago.

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## SPACE SHUTTLE DOORWAY TO SCIENCE OF FUTURE

"All along we are threading the eye in a needle, and we have hundreds of needles here," Dr. Story Musgrave, scientist-astronaut with the National Aeronautics and Space Administration, told an audience at Fermilab.



...Musgrave...

They had come to hear this representative of the new era of astronauts--the ones who will be manning the space shuttles--tell about the shuttle and how it will influence the future of scientific investigation. His appearance here was sponsored by the Fermilab Physics Colloquium Committee.

Musgrave's reference to the needle was his way of saying that this shuttle program is right "on the razor's edge" of science--state-of-the-art technology, where one breakthrough is dependent on another and that on yet another. For the space shuttle to fly, many state-of-the-art technologies must come together at the right time, he said. Fermilab scientists in the audience were sympathetic to his view, because they themselves stand each day on the perimeter of known technology and reach out into the unknown.

The space shuttle is of considerable interest here. It is supposed to put the much heralded space telescope into orbit within the next several years. Musgrave said he expects the first shuttle to "orbit in about a year."

The key point of his talk, however, is that the space shuttle is only a doorway through which space will economically be made available to academia, industry and the government for them to conduct research and development that could lead to the technology of the 21st Century. This is what's coming after the space shuttle has proven itself: a space transportation system, he said. He sees this as emerging in the next 20 years.

The first shuttles that are expected to be launched in the next several years can hold a fully-instrumented scientific laboratory about 18 feet in diameter and 22 feet long. Full-scale laboratories that eventually would go aboard a shuttle and having as many as 40 different experiments are being built and tested at NASA.

## SPACE TELESCOPE EXPECTED TO ANSWER PUZZLING ASTRONOMICAL QUESTIONS

To Dr. Margaret Burbidge and other optical astronomers, the space telescope is expected to bring answers about the puzzling behavior of objects in near and deep space.



...Burbidge...

Addressing the physics colloquium at Fermilab on "Galaxies Near and Far With the Space Telescope," Dr. Burbidge talked about some of her favorite puzzles and explained how she expected the space telescope to help her and other astronomers solve them. She is professor of astronomy in the Department of Physics at the University of California-San Diego as well as the director of the newly established Center for Astrophysics and Space Sciences there.

Her impressive credentials also include serving as a member of the steering committee and member of the instrument team for the space telescope, which she described for her audience along with its goals. Those goals, she said, are thoroughly comprehensive and include determining the constitution and physical character as well as the nature of the dynamics of galactic entities; establishing the history of evolution; and determining if the laws of nature are universal.

The telescope itself contains a 2.4 meter (96-inch) diameter aperture; a 0.1 second arc resolution (this will lead to 10 times better resolution than earth-bound telescopes), and because it will be above the earth's atmosphere, it will cover an extended spectrum from the ultraviolet to the microwave. Atmospheric turbulence and background light (from cities, cars, planes) cut into both ends of the spectrum for earth-based telescopes, she said. All regions will be opened up with the space telescope, she also said. In addition, the telescope will give improved measurements of distances and the size of the universe.

The instrument package of the telescope will contain a wide-field camera, faint object spectrograph, faint object camera, high resolution spectrograph and high speed photometer. Dr. Burbidge is clearly enthusiastic about what this powerful \$400 million telescope will mean to optical astronomy.

#### NEW TRAFFIC FLOW FOR EAST PARKING LOT

Traffic flow in the parking lot immediately to the east of the Central Laboratory has been changed to move counterclockwise only.

This is effective immediately, said John Paulk, head of Site Services. The change was made to relieve traffic congestion, he also said. Furthermore, 11 more parking spaces are being added at the north end of the lot.

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#### CHALLENGING PROGRAM FOR LIN CONCERT

Cho-Liang Lin has selected a musically difficult and variety program for his concert at Fermilab March 15.

The violinist will perform at 3 p.m. in the Central Laboratory auditorium. He is appearing here under the auspices of the Midwest Chinese Student and Alumni Services. General admission tickets are \$5. They may be purchased at the ticket sales desk in the Central Laboratory atrium.

Lin has earned international praise for his performances. "A phenomenon who has the technique and musicality of a consummate master," El Paris in Madrid reported.

The concert, with Robert McDonald accompanying on the piano, will consist of Mozart's Sonata in B-Flat Major, K.454, and Prokofiev's Sonata No. 2 in D-Major, Opus 94a.

After intermission, the program will be Falla's Siete Canciones Populares Espanolas and Wieniawski's Capriccio Valse, Legende and Scherzo Tarantelle, Opus 16.

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#### SUPERCONDUCTIVE ENERGY STORAGE NEW FERMILAB COLLOQUIUM TOPIC

Dr. Roger W. Boom of the University of Wisconsin-Madison will speak about "Superconductive Energy Storage" at the March 19 Physics Colloquium.

Free and open to the public, the session will begin at 4 p.m. in the Central Laboratory auditorium. From 3:30 to 4 p.m. on the west side of the exhibit area, CL2S, the speaker will meet informally with those interested in his topic. Refreshments are available at that time. He plans to discuss the design of a 1,000 storage solenoid and a new joint project with Japanese researchers working with the KEK accelerator.

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#### ISLAMIC REVOLUTION SUBJECT OF SCIENCE AND HUMAN VALUES LECTURE

"The Islamic Revolution" will be the subject of the first 1980 Science and Human Values Lecture.



The talk on March 28 by M. Cherif Bassiouni, professor of law at De Paul University, will begin at 8:30 p.m. It will be held in the Central Laboratory auditorium.

Although the session is free and open to the public, admission is by ticket which may be obtained at the ticket sales desk in the atrium, Ext. 3353.

A multi-faceted revolution, political, cultural and economic, is sweeping through the Islamic world, Bassiouni declares. That world is undergoing dramatic changes, both in its own societies and in its relationship with the West, he also said. As this revolution grows, it is causing parallel dramatic changes in this country's complex relationships with the Islamic societies, he continued. Americans need to know more about the Islamic world and its impact on this country's technology and values, he added.

A frequent lecturer at universities in this country and abroad, Bassiouni is a consultant to the sixth United Nations Congress (1980) and was a consultant to the fifth U.N. Congress on crime prevention.

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#### FERMILAB OFFERS DRIVING COURSE

The National Safety Council's defensive driving course will be offered to interested employees and users March 18-20 by the Safety Section. "This eight-hour program is devoted to behavior modification with respect to driving," said Charlie Bonham of the Safety Section. "It establishes a mental set whereby the student is trained to note, perceive and react to rapidly developing traffic conditions that have a high probability for accidents." This is the same program taught by most state highway patrols to their officers as a means of reducing the effects of their hazardous exposure, Bonham said. "The best thing about the program is that it works," he added.

To enroll and for more information contact the Safety Section, Ext. 3580.

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ANNUAL REPORT PUBLISHED

Copies of the 1979 Annual Report of Universities Research Association, Inc. are available in the Public Information Office, CL-1W. Director Leon Lederman opens the report with a "State of the Laboratory" appraisal; in the rest of the report the major projects of each division and section are described and illustrated.

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CHEZ LEON MENUS

For reservations call Ext. 3524.

Tuesday, March 18, 7:00 p.m. - \$8.00

Smoked salmon  
Pork tenderloin in sour cream  
Potatoes gratin  
Fresh green beans  
Salad  
Cocoa génoise with chestnut butter cream

Wednesday, March 19, 12:30 p.m. - \$4.50

Split yellow pea with ham soup  
Ratatouille with homemade bread  
Fresh salad  
Chocolate souffle with creme anglaise

Thursday, March 20, 7:00 p.m. - \$8.00

Leek and potato soup  
Lamp chops persillade  
Rice pilaf  
Stewed okra  
Salad  
Crepes flambe with rum and fresh fruit

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EASTER EGG HUNT COMING

Fermilab's traditional Easter egg hunt will be held March 29 at 1 p.m. on the grounds outside the Village Barn. The program is designed for youngsters up to age 8.

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BIRTH

Andrew Wesley was born to Hank and Eileen Thacker on March 8 at 6 a.m. in Delnor Hospital, St. Charles. He weighed 6 pounds, 15 ounces. His father works in Theoretical Physics. The Thackers have another son, Russell, age 9.

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ST. PATRICK'S DAY LUNCHEON MENU

The St. Patrick's Day lunch menu will be served March 17 in the Central Laboratory cafeteria consisting of motley salad, soused fish, Irish soda bread, Irish stew and Dublin fruit cake. The price is \$2.00.

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SPRING DANCE EIGHT DAYS AWAY

NALREC will hold its Spring Dance March 21.

The event, which is open without charge to all Fermilab employees and users, will run from 5:15 to 9 p.m. in the Village Barn. Food and beverages will be available. Music will be live.

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"GREASER'S PALACE" AND "PUTNEY SWOPE"

A double feature presented by Fermilab International Film Society

Friday, March 14

8 p.m.

Central Laboratory Auditorium

Famed Robert Downey directed both films, leaving his indelible stamp on them. Putney Swope, a mild-manner token black caught in the world of advertising, finds himself transformed into the chairman of the board of Truth and Soul, Inc. In "Greaser's Palace," Downey tries his hand--and successfully too--at giving his version of "The Greatest Story Ever Told." In this wild west drama, Seaweedhead Greaser is a vicious tryant who collect exhorbitant taxes and who keeps his mother and mariachi band in cages. Into this setting comes a gentle song-and-dance man, Zoot Suit, who proceeds to work improbable miracles and ends up bringing harmony and peace.

Color 175 minutes (total running time)

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Adults - \$1.50

Children - 50¢