Massachusetts Institute of Technology



September 3, 1975 Volume 20 Number 5

MIT Welcomes Freshman Class



Freshmen throng the picnic which serves as their official introduction to MIT.

MIT is welcoming a new freshman class of 1,155 students this week, including students from 47 states and 30 foreign countries.

The freshmen began arriving last Friday for the start of Residence/Orientation Week prior to registration for all students Monday, Sept. 8, and the start of regular classes Tuesday, Sept. 9.

This year's freshman Class of 1979 includes 34 students admitted after only three years of high school. Ninty-one percent of the class members ranked in the upper 10 percent of their high school graduating classes.

Among the freshmen are 175 women (15 percent), 30 blacks, and 74 members of other ethnic minorities (American Indian, Mexican-American, Oriental, Puerto Rican and other Spanishspeaking minorities).

The state with the largest number of entering freshmen is New York with 234. Thirty-three percent of the class is from the middle Atlantic states. Eighteen percent come from New England states.

According to Peter H. Richardson, director of admissions at MIT, the class was selected from among 4,700 final applicants.

The incoming freshmen have worked at such diverse jobs as archeolgist, snake keeper for a zoo, conservationist, disc jockey, manager of a lobster business and a crewman on a Japanese oil tanker before coming to MIT.

The freshmen were officially introduced to MIT with a picnic in -Photo by Calvin Campbell

Killian Court last Friday. Academic counselling and social activities will continue through Sunday, Sept. 7, closing with the President's Reception for parents and freshmen at 3:30 at the President's House.

The class is the largest in MIT history-109 more than a year ago-and it represents the first (Continued on page 3)

Technology Studies Program Launches Credit Subjects

The MIT Technology Studies Program will offer its first formal group of subjects to undergraduates this coming academic year.

Technology Studies, under the directorship of Louis L. Bucciarelli, Associate Professor of Engineering and Technology Studies, and guided by a steering committee chaired by Harold J. Hanham, Dean of the School of Humanities and Social Science, brings together faculty from widely diverse fields of scholarship to explore complex issues in the domain of science, technology and culture.

The Program's subject offerings will address the interrelationship of individual and collective social values and the conduct of technical work; how the organization (in professions, faculties, corporations, etc.) of those who work in science and engineering affects what they accomplish, and the impact of technlogical change on society and its members.

These subjects may be used to fulfill MIT's new Field of Concentration requirement in the Humanities, Arts, and Social Sci-(Continued on page 8)

Brilliant x-ray Source Repeats 1917 Display

The brilliant show being put on in the sky by a newly-discovered x-ray source is a repeat performance, scientists have found.

The star, which recently emerged from obscurity by increasing its x-ray and visible radiation by a factor of at least a thousand, gave off a similar outburst of visible light in 1917.

Moreover, the star (or two stars in close orbit) is probably relatively near us in the galaxy-although it still may be several thousand light-years away.

These findings have emerged from a combination of sophisticated instruments and historical sleuthing involving researchers at both MIT and Harvard University.

The new x-ray source-now the brightest source of x-rays in the sky-was discovered in early August by the British satellite Ariel-5. MIT scientists working with MIT-designed equipment aboard SAS-3, NASA's x-ray astronomy satellite, soon confirmed the discovery, and located the

(Continued on page 3)

Four District Officers Named For Leadership Campaign

Appointments of four district officers for MIT's \$225 million Leadership Campaign have been announced by Lt. Gen. James B. Lampert (USA Ret.), '39, vice president for resource development and campaign director.

They are: Robert H. Bliss, '48, Mid-West Region and two Canadian provinces; Kevin J. Kinsella,

Atlantic Sates and South. A fifth officer will soon be named for the New England Region. The district officers will work

with area leaders in contacting (Continued on page 3)

Crime Prevention Notices Issued

The MIT Campus Patrol has begun issuing "Crime Prevention Notices" warnings as part of a program to curtail property losses at MIT.

Patrol officers are leaving notices when they find situations that invite theft. Notices call attention to unlocked areas, unattended valuables, office equipment not bolted down, open or unlocked windows and unsecured motor vehicles or bicycles.

Campus Patrol Chief James Olivieri said MIT property thefts last year nearly doubled when compared to 1973. He said the new program of notices was instituted in an effort to prevent another rise this year.

Chief Olivieri said the patrol is maintaining copies of notices issued to identify areas of the Institute where security is lax and where special prevention efforts are needed.

Scientists Find Evidence of New Nuclear Structure





Mr. Phinney Mr. Singal

'67, Western States; James N. Phinney, Metropolitan New York; and Arnold H. Singal, '63, Middle

By BARBARA BURKE Staff Writer

Evidence for a new nuclear structure has been found by a team of researchers from MIT, the Argonne National Laboratory and the Niels Bohr Institute.

The researchers believe they have created a "nuclear molucule:" two carbon nuclei joined at the surface to form an excited, cigar-shaped magnesium nucleus. Such a structure has been sought by physicists for more than 20 years.

The finding was reported in a recent issue of Physical Review Letters. It is expected to be significant in elucidating the behavior of the nucleus under large deformations and in understanding the basic processes by which two nuclei collide and fuse to form a new nucleus. The study of the nuclear fusion processes, or "heavy ion fusion reactions," is an

active field of nuclear research; among its objectives are the production of superheavy elements which could be important energy

sources, and understanding the synthesis of the elements during the evolution of stars.

The deformed nucleus was

TT Squeezed in Budget Crunch

A space squeeze, caused by budget cuts, has caught up with Tech Talk, forcing reductions in columns given to Classified Ads and Positions Available and in the lengths of most news stories.

Last year, Tech Talk published 516 pages in 50 issues. This year, the numbers will be held to 400 pages in 45 issues. Austerity began this summer when issues were published every other week and held to eight pages.

Starting with this issue, Tech Talk will resume weekly publication, but most issues will continue to be eight pages.

To accomodate the squeeze, Classified Ads will be limited to one page a week and will be run on a first-come, first-served basis. Ad deadline will continue to be noon, Fridays, but available space may be filled before then and latecomers will have to wait a week. Positions Available will be listed for two weeks, then listed by job number and title only until filled.

Persons seeking news stories are urged to consult the editors (Rm. 5-111, x3-2701) before preparing copy. It may have to be condensed or cut.

created by bombarding a stationary carbon nucleus with accelerated carbon nuclei of particular bombarding energies.

Previously, when physicists have observed highly energetic nuclear collisions to combine two nuclei, the nuclei have merged completely, like two drops of water forming a larger drop.

Key to Understanding

At certain "resonant" bombarding energies, however, a carboncarbon nucleus can be formed which is a kind of nuclear Siamese twin with the two carbon nuclei joined at their surfaces. Its structure is determined not only by the "liguid drop" properties of nuclei, but also by the behavior of the individual protons and neutrons at the surface.

The nucleons presumably go into new orbits which stabilize the cigar-shaped nucleus, and permit its fleeting existence. (The nucleus lives about 10⁻²¹ seconds.)

"This interplay of the collective aspects of nuclear motion and the motion of the individual surface nucleons within the nucleus is the key to understanding this new deformed nuclear structure," said Eric R. Cosman, associate professor of physics in the MIT Department of Physics and a member of the staff of the Laboratory for Nuclear Science.

Experimental Work

Authors of the report are Professor Cosman; Thomas M. Cormier and Anthony Sperduto, LNS staff researchers; Karl A. Van Bibber and Glenn R. Young, MIT physics graduate students; J. Erskine and L.R. Greenwood of Argonne; and Ole Hansen of the Bohr Institute.

The work was funded by the federal Energy Research and **Development Administration. The** (Continued on page 6)



CLOUD CLEANING. Workmen at MIT appear to be lost in the clouds while they wash the outer surface of MIT's J.B. Carr Indoor Tennis Center preparatory to painting. The air-inflated structure formed from heavy-duty fabric is 212 feet long, 120 feet wide and 40 feet high and covers four tennis courts. Dedicated in 1971, it was the gift of Mr. and Mrs. J.B. Carr of

Wilkes Barre, Pa., and Palm Beach, Fla., and their son and daughter-in-law, Mr. and Mrs. Davis B. Carr of West Palm Beach, Fla. Painting of the outer surface will protect the fabric from ultra violet light and prolong its expected service life. Workmen tie themselves to the structure's ridge with ropes while wielding long-handled scrub brushes.

Message Unit Costs Rising

Local telephone calls will cost MIT \$316,000 this year, and a proposed rate increase could boost that another 35 percent next year, according to Morton Berlan, MIT telecommunications, superintendent.

As an institutional customer and user of CENTREX, MIT does not benefit from flat rate service or free message units allowed residence customers, Berlan said. Each message unit now costs the Institute 8.25[¢]—the highest unit rate of all major US cities with measured telephone plans.

Proposed rate increases before the Massachusetts Department of Public Utilities would raise the cost-per-unit to 11^t, if approved, according to Berlan.

He urged employees to make

access codes appears in all staff and student telephone directories. "Every call that is dialed 9 plus seven digits costs MIT message units," Mr. Berlan said. "By contrast, the percentage of Cambridge residence telephone customers with free local service is 85 percent."

better use of MIT tie-lines to such

places as Harvard, Wellesley,

Massachusetts General Hospital,

and Draper Laboratory as one

way of curtailing local telephone

costs. A listing of off-campus

INSTITUTE NOTICES

Announcements

Official Notice-Transcripts with summer session 1975 included will be available the week of Sept 22 if orders are placed now.

Students Interested in Applying to Medical School**-Group meeting Mon, Sept 8, 4pm, Rm 3-270. Sponsored by Preprofessional Advising & Education Office.

Action/Peace Corps (Health Care, Education) -New England District Office holding one day luncheon seminar for prospective volunteers Tues, Sept. 9, with assistance of Center for International Education. Need skilled people in health care experienced and scientific fields. Applicants should be available for employment this fall. Contact Preprofessional Advising & Education Office, Rm 10-186, x3-4158.

scenery. Assignments for the design of the same subject in each of the three production styles will demonstrate their differing use of color, texture, and layout. Use of video equipment to document the camera's view of color and surface and effects possible only on videotape. Weekly projects and final major project required. Finished art technique not necessary-however students must be willing to explore suggested collage, color rendering, model working and/or photography techniques. Students will supply their own materials and art supplies. Permission of instructor required. Hours to be arranged. W. Fregosi, Leave name and number in Rm 14N-407 or call x3-4441.

21.116 Nonverbal Communication Fall Prereq .: -3-0-6

Analysis of nonverbal communication as it appears in two main forms: 1) naturally-occurring face-to-face interaction (such as greeting behavior) and 2) more stylized forms of communication (i.e., dance, drama, and mime.) Introduction to the relevant analytical schemes of Birdwhistell, Scheflen, Kendon, Condon, Byers, Erikson, and Lomax. Employing videotape and working closely with the instructor, students will carry out original research of their own choosing. Permission of the instructor required. Hours to be arranged. S. Krebs. Course subject to approval.

of receipt of proposals until we are broke. Availability of Funds: 1) Generally available for materials and supplies requests within reason. 2) Generally available for overhead waiver requests when faculty or departments offer wages to UROP students. 3) Tougher to get if you're asking for significant wages from UROP itself.

Promise: If you've been inventive, resource ful, persistent, and responsible in ekeing out research support for your UROP work but find there's still an honest-to-gosh personal deficit you can't swallow, we'll manage it.

Foreign Studies

Fulbright-Hays Full Grants

Available to US citizens who have completed one year or more of graduate study but will not have the doctorate degree before the beginning date of the grant. The grants offer study in 50 countries, but the applicant must specify only one. Sufficient knowledge of the appropriate language is necessary to communicate with the people of the host country and to carry out the proposed study. The grant covers round-trip transportation, tuition, books, health and accident insurance, and a maintenance allowance for one academic year, based on living costs in the host country. Graduate School Office, Rm. 3-136, x3-4860 Deadline: September 26, 1975.

Winston Churchill Foundation The Winston Churchill Foundation offers

Henry Steele Commager Named Visiting Professor

One of America's most distinguished living historians, Henry Steele Commager, will be at MIT as visiting professor in history.

Professor Commager, emeritus professor and Simpson Lecturer in History at Amherst College, will teach "Foundations of American Nationalism, 1774-1815" (21.413)a new undergraduate subject-in the fall term.

Professor Commager's career spans almost 50 years. He is author or editor of more than 60 books on American intellectual and constitutional history as well as documentary history from the age of discovery to the present.

Professor Commager graduated from the University of Chicago in 1923, and received the master's

and PhD degrees there in 1924 and 1928

Among his best known works are: Documents of American History (1934); Majority Rule and Minority Rights (1943); America in Perspective: The United States Through Foreign Eyes (1947); Freedom and Order: A Commentary on the American Political Scene (1947); The American Mind: An Interpretation of American Thought and Character Since the 1880's (1950), and Freedom, Loyalty and Dissent (1954). His most recent works include: The American Enlightenment (1974); Jefferson, Nationalism and the Enlightment (1974), and Defeat of America: Presidential Power and the National Character (1975).

Pulitzer Winner John Hersey To Teach Here This Fall

John R. Hersey, Pulitzer Prize Hersey are: The Algiers Motel winning novelist and journalist, will teach at MIT during the coming fall term.

Mr. Hersey, a lecturer at Yale University, will be visiting professor in writing and literature in the MIT Department of Humanities and will teach a seminar-"The Writer's Craft" (21.740)-in fiction writing. The subject takes its title from a recent book of essays edited by Mr. Hersey. He will spend three days a week at MIT and his seminar will be limited to 12 to 15 undergraduates.

A writer of what he describes as "contemporary chronicles," Mr. Hersey has written more than 16 books in fiction and journalistic forms. His A Bell for Adano won the 1945 Pulitzer Prize for fiction and Hiroshima was an account of the lives of six atom bomb survivors. Two recent books by Mr. Incident about an incident during the 1968 Detroit riots, and The President recounting a week the author spent with President Ford. His other books include: The Wall (1950), A Single Pebble (1956), The War Lover (1959) and White Lotus (1965)

Born in China, he graduated from Yale in 1936, studied at Cambridge University in England, and worked as an assistant to the late Sinclair Lewis before becoming a war correspondent in World War II.

Close Exhibit

An exhibition of drawings and paintings by artist Cynthia Close is currently showing at the MIT Faculty Club, through Sept. 26. Ms. Close is married to Peter M. Close, athletic instructor and sports information director.

complete descriptions are available in the office, Rm. 3-136.

Amelia Earhart Aerospace Fellowships

The Amelia Earhart Fellowships are awarded to women for advanced study and research in the aerospace sciences. Grants of \$3,000 will be awarded to the best qualified candidates for assistance in the 1976-77 school year. A bachelor's degree in a science qualifying a candidate for graduate work in some phase of aerospace and related sciences is the basic requirement of the fellowship. Applications must be filed by January 1, 1976. Graduate Research Fellowships in Criminal

Justice The National Institute of Law Enforcement and Criminal Justice is making available a limited number of graduate research fellowships to doctoral candidates who are writing their dissertations. Dissertations must be in a major area of criminal justice or topics closely related to criminal justice. Application deadline: November 15, 1975.

The Latin American and Caribbean Learning Fellowship In Social Change

To provide opportunities for scholars to learn from Latin American and Caribbean social change programs, the Inter-American Foundation announces the availability of a small number of pre- and postdoctoral research fellowships. The fellowships are open to doctoral candidates in the social sciences and professions. To be eligible, candidates must have a multidisciplinary academic and experiential background with specialization in at least one academic discipline or problem area (e.g., rural credit, producer and consumer cooperatives, nutrition, housing, regional planning, non-formal education, etc.). Candidates must be able to write and speak a language of the Caribbean or Latin American area. Doctoral candidates must be enrolled in higher educational institutions in the US and have fulfilled all degree requirements other than the dissertation at the time of the award. Stipends for research vary from country to country. Field research is normally supported for a nine-month period after which time the Fellow spends up to three months as an intern under the auspices of the Inter-American Foundation. Deadline: December 1, 1975.

for Double Chorus and Beethoven, Mass in C Major

MIT Concert Band-Short organizational meeting Registration Day, Mon, Sept 8, 5pm, Stu Ctr West Lge. Old & new members asked to attend. Regular rehearsals start Wed, Sept 10, 8pm & Mon, Sept 15, 7:30pm, Kresge. Repertoire of contemporary music includes large number of original manuscripts. Players at all levels welcome.

Strategic Games Society-Sat, 1pm-1am, Walker Rm 309 & 318. Offers opponents and discounts on merchandise to members plus gaming & periodical library. Info: Paul Bean, 266-6108

Student Homophile League*-Gay Lounge, Rm 50-306, open daily for lunch & random other hours, x0745 Dorm (x6745 Dorm after switch-over.) Tom, Contact Line, x3-5440, provides info, referrals counseling or just talking to gay persons. Meetings 1st & 3rd Sun every month, Gay Lge, Consult bulletin board, Bldg 3, for info. Gay pub-crawling tour Thurs, Sept 4, 9:30pm, call Contact Line for place.

Religious Activities

The Chapel is open for private meditation 7am-11pm daily.

Christian Worship Service*-Sun, 10:45am, Chapel. Refreshments following service.

Islamic Society**-Prayers Fri, 1pm, Kresge

Students Interested in Applying to Law School**-Group meeting Wed, Sept 10, 4pm, Rm 3-133. Preprofessional Advising & Education Office.

Student Activities-All presidents of undergraduate student activities should contact Terry at the Undergraduate Association office, x3-2696, to update.

Student Furniture Exchange-Open Tues & Thurs, 10am-2pm. Buy and sell to students, tax-free donations gratefully accepted. 25 Windsor St. x3-4293.

New Course Listings

21.113 DESIGN FOR THE PERFORMING MEDIA Year: U Prereq.: -3-0-6 Analytical breakdown of scripts and forma-

tion of design concepts for stage and studio leading to projects exploring the scale and format of theatre, opera, and television

New UROP Listings

Welcome Freshmen and Other Newcomers.

UROP invites and encourages you to particinate with MIT faculty members in a wide range of research activities both on and off campus. The 1975/76 UROP Directory is now available in the Information Office, Rm, 7-111. To get started, first read the "How to Participate" section of the directory then talk with Coordinators and faculty members; check with the UROP office, Rm. 20B-141, x3-5049 if you have specific questions. Current project offerings will be listed in this weekly column and on the UROP bulletin board in the main corridor of the Institute. The UROP office will be open 10am-4pm this Saturday. So come see us if tomorrow's Open House isn't enough.

Call for Proposals

If you haven't read the "How to Participate" section of the new 1975/76 UROP Directory, do it now. All that information was put together for you with loving care and won't fit in this column. First Term Proposals: Feel free to start submitting them.

General Principles: Don't ask for what you don't absolutely need. Be sure to have submitted your past UROP evaluations. Write a good proposal.

Announcement of Awards: Starting the week of September 29th. Please don't call and bug us that week: answers will get out as fast as we have them. Decisions will be made in order

scholarships in engineering, mathematics and science at Churchill College, Cambridge University, England. About 10 awards are given each year to outstanding men and women who are US citizens between the ages of 19 and 26 and who hold a bachelor's degree from a US college. At the time of application the student must be enrolled at one of the 28 participating universities. MIT nominates two candidates. Churchill Scholars have the option of spending one year at Cambridge working toward a certificate or diploma, or three years for the PhD. Applicants must have taken the Graduate Record Examination no later than October 18, 1975, Graduate School Office, Rm 3-136, x3-4860. Deadline: November 3, 1975.

Marshall Scholarships

The Marshall Scholarships enable US citizens under the age of 26 who are graduates of US colleges and universities to study for a degree of a university in the United Kingdom for a period of at least two academic years Candidates will be selected for distinction of intellect and character, as evidenced by their activities and achievements. A total of 30 scholarships will be awarded. The award averages \$3700 per year. Married persons are eligible for Marshall Scholarships but preference will be given to those who intend to remain unmarried. Graduate School Office, Rm. 3-136, x3-4860, Deadline: October 15, 1975.

The following brief descriptions of selected graduate fellowships have been received recently by the Graduate School Office. More

MIT Club Notes

MIT Baha'i Association*-Meeting Mon, Sept 8, 5pm, Rm 8-105 to get acquainted and make plans for year. Pot Luck picnic 6pm. All are welcome.

MIT/DL Bridge Club**-ACBL Duplicate Bridge. Tues, 6pm, Walker Memorial Blue Rm.

MIT Choral Society**-Directed by John Oliver. Open rehearsals Mon, Sept 8 & Thurs, Sept 11, 7:30pm, Rm 10-250. 1975-76 season will include Brahms, Reguiem; Stravinsky, Mass rehearsal rm B.

Prayer Time**-Lunch hour Bible classes led by Miriam R. Eccles. Fri, 1-2pm, Rm 20E-226. All are welcome.

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Page 2, Tech Talk, September 3, 1975

Time Notes Seismologists

Faculty and alumni in MIT's Department of Earth and Planetary Sciences (Course XII) are prominent among leading seismologists referred to in a major cover story on earthquakes and earthquake prediction in the Sept. 1 issue of Time magazine.

Moreover, the magazine credits MIT research carried out in the 1960s as a key element in seismologists's improving ability to predict some earthquakes

Faculty and alumni cited include: Dr. Frank Press, Robert R. Shrock Professor of Geophysics and head of the department; Dr. William F. Brace, Professor of geology and an alumnus (SB XIII '46, SB I '49, PhD XII '53); Lynn R. Sykes (SB SM XIII '60) and Christopher H. Sykes (PhD XII '67), both now at Columbia University's Lamont-Doherty Geological Observatory; and Amos M. Nur (PhD XII '69) of Stanford University

The magazine said Dr. Brace and associates, while studying reaction of materials to great mechanical strains, discovered that as rock approaches its breaking point, there are unexpected changes in its properties-electrical resistance increases, seismic waves passing through it slow down. This understanding is now proving essential as seismologists develop prediction techniques by watching for the events that signal the coming of an earthquake.

Mime Troupe To Perform

Noon hour events, held weekly in the Rogers Lobby (Bldg. 7), will resume, Wednesday (Sept. 10) with two performances-at noon and again at 12:30pm-by Boston's National Mime Theatre. All lobby events are open to the public free of charge.

The mime troupe-directed by Kenyon Martin, a wellknown figure in American mime, will perform a series of classical mime vignettes from their repertoire work, "Beyond Words."

pointments was made by Provost Walter A. Rosenblith. Those named were: Alan J. Grodzinsky, assistant professor of electrical engineering and computer science; Robert E. Cohen, assistant professor of chemical engineering; and David G. Holmes, assistant professor of

Three young MIT faculty mem-

bers have been appointed Esther

and Harold E. Edgerton Assistant

Professors for two years, effective

Sept. 1. Announcement of the ap-

mechanical engineering. The Edgerton professorships were established by the MIT Corporation in 1973 to honor Institute **Professor Emeritus Edgerton and**

New Deadlines Affect **Registration Procedures**

Several changes in registration procedures will take effect with the start of the fall term.

Class cards replace the former roll cards. The class cards are for the use of instructors only and do not affect registration in a subject.

The end of the fifth week of the term-October 10 this year- will be a major deadline for all students. After that date no subjects may be added. Moreover, credit standing-such as listening or junior/senior pass fail-may not be changed.

An exception to adding subjects will be allowed when an instructor certifies that a subject does not begin within the first five weeks of the term.

The fifth week of the term is also the deadline for undergraduates to register for reduced loads if they expect a reduction in tuition. This includes students registering for thesis only. Students must submit a form for "Application for Light Load Undergraduate Term Program." There will be a \$25 charge for late submission of this form.

The drop date has also been changed. Dropped subjects must be recorded three weeks before the end of the term-November 21 this fall.

A statute of limitations has been adopted by the Committee on Academic Performance for petitions to change student records. Petitions for changes in records more than a year old will be accepted during 1975-76, but normally will be refused thereafter.

Likewise, undergraduates will have 1975-76 to make up any incompletes received in June 1975 or before. After this year, the faculty rule on incompletes will be strictly enforced.

These and other modifications in the registration procedure are given in detail in a Supplement to the Guide for Undergraduates and Faculty Counselors, and the Graduate School Manual September, 1975. Copies of the supplement are available from faculty counselors or in the Committee on Academic Performance office, Rm 10-191.

Obituary Howard J. Werne

Howard J. Werne, 19, a resident of MacGregor House who would have been a sophomore at MIT this term, was killed in an automobile accident in his home town, Evansville, Ind., Aug. 22.

Police said Werne was alone in a car that struck a utility pole on an Evansville street. He died of a skull fracture three hours later. Funeral and burial were in Evansville

his wife, who have been associated with the Institute community nearly 50 years. The three new appointees are the second group of young faculty to hold the two-year appointments

Three New Edgerton Professors Appointed

Corporation Chairman Howard W. Johnson and MIT President Jerome B. Wiesner said at the time the fund was established that it would provide new horizons in research and career development for younger faculty. Concurrently, it also provides funds needed by the faculty members to involve undergraduate students directly in their research.

"There is no more fitting way for us to honor this man and this woman for the devotion, affection and warm friendship they have given freely to young people at this university over a period of nearly half a century," Mr. Johnson and President Wiesner said.

Professor Grodzinsky, 29, of Cambridge, received the Goodwin

Medal for effective teaching as a graduate student and instructor at MIT from 1972-74. He received his SM and SB degrees from MIT in 1971 and the PhD in 1974. His re-

search has been Dr. Grodzinsky mainly on transduction properties of the biological tissue, collagen, and other membrane structures, with application to implantable medical assist devices.

Professor Cohen, 28, of Newton, joined the faculty in 1973 after a

District Officers Named

(Continued from page 1)

MIT alumni, friends, foundations and corporations in support of the Leadership Campaign. The fiveyear effort to raise funds for new teaching and research programs is the largest in MIT history. The campaign total also includes funds to increase MIT's endowment by nearly one-third and money for new classroom, dormitory, laboratory and department facilities.

Bliss, alumnus of the Department of Mechanical Engineering (SB '48) and former Sloan Fellow (SM '58), began his career at the USM Corporation, where he most recently was Planning Director. In MIT alumni activities he served as Downtown Boston Chairman for the Second Century Fund (1961-63), co-founder of the MIT Club of Route 128 (1964), and member of the club advisory board of the Alumni Association.

Kinsella holds the SB in management from MIT (1967) and the MA in international economics (1969) from Johns Hopkins, Following study at the University of Stockholm's International Peace Institute (1970-71), he was deputy diyear of postdoctoral study at Oxford. He received the BS with distinction from Cornell (1968), and the MS degree (1970) and PhD degree (1972) in chemical engi-

neering from Dr. Cohen

California Institute of Technology. His research concerns the physics and chemistry of polymers, and he is a member of MIT's Interdepartmental Committee for Polymeric Materials. He was awarded. the DuPont Young Faculty Award by the Department of Chemical Engineering last year.

Professor Holmes, 32, of Somerville, holds a BA degree from St.

John's College of Cambridge University (1965), and SM from Harvard (1967), and a PhD from MIT (1973). Formerly a high school teacher in Malaya, he began studies of



Dr. Holmes noise control,

outdoor sound propagation and pressure fluctuations as a research associate in the MIT Department of Mechanical Engineering. He was appointed assistant professor in 1973 and last year was awarded a Lilly Post-Doctoral Teaching Fellowship in the Division for Study and Research in Education.

rector of the Latin American Teaching Fellowship Program for the Tufts University Fletcher School of Law and Diplomacy. He has also worked with the US AID mission to Peru.

Phinney, former assistant director of alumni relations and graduate of Johns Hopkins University in 1955, was director of the MIT Alumni Center of New York from its establishment in 1963 to 1972. Previously he was Assistant to the President and director of development at Pacific University (1958-63). Since 1972 he has been Regional Director of the Alumni Fund for the metropolitan New York area.

Singal is a graduate of Harvard 58, Yale Law School '61, and the Sloan School of Management '63. From 1963 to 1968 he was vice president for research, planning and development at Federal Distillers, Inc., in Cambridge. He returned to MIT in 1968 as staff associate for estate and life income plans and in 1972 was appointed Institute Secretary for Charitable Trusts-a position he will retain in part as district officer.

Freshmen Welcomed

(Continued from page 1) step in implementing decisions made last spring to seek to increase the total undergraduate student body at MIT by about 10 percent over the next four years in order to make maximum use of existing facilities. Added to 3,000 upperclass students expected back from last year, the new freshmen will bring total undergraduate enrollment for 1975-76 to slightly less than 4,200. Freshmen classes on the order of 1,100 to 1,150 will be admitted over the following three years so that the undergraduate enrollment will level out at between 4,400 and 4,500 by the 1978-79 academic year.

Chancellor Paul E. Gray, in announcing the growth plan to the Faculty last spring, said MIT will be able to absorb additional students without diluting the quality and effectiveness of teaching

"We will need a small increase in the teaching staff, particularly at the instructor level, to accommodate the additional freshmen," Dr. Gray said. "What we really will be doing is increasing as much as is reasonable and prudent the productivity of our existing facilities and resources-our classrooms, laboratories, libraries, physical plant."

Dr. Gray said an important element in enabling MIT to increase the undergraduate student body starting this year was the recent completion of a new residence building that will provide on campus housing facilities for an additional 300 undergraduate students

J.S. Waugh Wins Langmuir Prize

Dr. John S. Waugh, Arthur Amos Noyes Professor of Chemistry at MIT since 1973 and a member of the MIT teaching staff since 1953, has been named recipient of the 1976 American Chemical Society's \$5,000 Irving Langmuir Award in Chemical Physics for contributions to the analysis technique of nuclear magnetic resonance and its application to chemistry and physics.

The award, recognizing Dr. Waugh's pioneering work with NMR methods-particularly of solids, will be presented at ACS's centennial meeting in New York next April.

Brilliant x-ray Source Made First Appearance in 1917

(Continued from page 1) source, which is in the direction of the constellation Orion, precisely enough so that astronomers working with optical telescopes could find it.

Information on the star's distance comes from studies of its low-energy x-ray emission. MIT researchers pointed SAS-3's unique low-energy x-ray detector at the new x-ray source last Friday and found that it was emitting extremely low-energy x-rays.

Since the few gas atoms between stars in the Milky Way can absorb this low-energy radiation, this indicates that the star may be relatively nearby, says Dr. Saul A. Rappaport, associate professor of physics at MIT.

Information on the star's past

came from historical records of the sky kept at Harvard University. When the x-ray source was sighted optically, and was seen to increase to its optical radiation a thousand-fold, Professor Rappaport suggested to his colleagues at Harvard that they search these records.

The search revealed that the same object had shown a similar outburst of visible radiation in 1917. This suggests, Dr. Rappaport said, that the object may be similar to stars called recurrent novae.

These recurrent novae are believed to be two stars in close orbit, one a regular star and one a highly condensed white dwarf. As gravity pulls matter off the regular star onto the white dwarf,

the density and heat become so great that hydrogen nuclei pulled

onto the dwarf fuse, creating an explosion similar to an enormous hydrogen bomb.

The explosion cools the star, and it then takes years before enough heat builds up to set off another explosion.

Dr. Rappaport believes that in the case of the new x-ray source, the partner to the regular star may be a neutron star rather than a white dwarf. Neutron stars are so dense that the atoms in the center are crushed; the interior of the star is just one giant atomic nucleus

In such a case, matter spiraling onto the tremendously dense neutron star would heat up enough to emit bursts of x-rays as well as

visible light.

The SAS-3 experiments are under the direction of Dr. George W. Clark, professor of physics in the Department of Physics and the Center for Space Research at MIT. Co-investigators are Professor Rappaport; Professors Hale Bradt and Walter H.G. Lewin, of the Department of Physics and the Center for Space Research; and Dr. Herbert H. Schnopper. Also working on interpreting the SAS-3 data is Professor Paul C. Joss.

The star was first sighted optically by Dartmouth College astronomers Forrest I. Boley and Richard L. Wolfson using the McGraw-Hill Observatory at Kitt Peak, Arizona.

The observatory is operated by the University of Michigan, MIT,

and Dartmouth. It was set up primarily to coordinate optical and x-ray study of x-ray sources, and particularly to take advantage of SAS-3's unique ability to locate sources of x-rays to within 10 or 20 arc seconds-five or 10 times more precisely than has been done before.

The rewards of this collaboration have been swift and impressive: the new x-ray source is only one of a series of findings made since the satellite and observatory began operation less than four months ago.

"This has worked exactly the way we dreamed it would," Professor Rappaport said.

Tech Talk, September 3, 1975, Page 3



September 3 through September 14

Events of Special Interest

Blood Drive - Sponsored by TCA. Walk-ins only, help relieve Labor Day shortage. Wed, Sept 3, 9:45am-3:30pm, Stu Ctr Rm 491. Admission: 1 pint. Note: those who gave at July 11 Emergency drive not eligible.

Orientation '75 - Graduate Student Council invites graduate students to meet faculty, administrators, other students. Thurs, Sept 4, beginning 9:30am, Kresge. Welcomed by Dean Kenneth R. Wadleigh, Graduate School, & Dean for Student Affairs Carola Eisenberg. Information Midway with representatives of student organizations 10:30am, Sala. Picnic, Killian Court, 12:30pm; tickets \$2.25. Department open houses, 2pm. Reception 5pm, Bush Bldg Lobby, attended by President, Chancellor, Provost, other members of Academic Council.

Alumni Officers Conference - Fri, Sept 12, opens with reception, 5pm, Stu Ctr; dinner, 7pm, duPont Gym, with Corporation Chairman Howard W. Johnson, co-chairman of Leadership Campaign, speaker. Sat, Sept 13: Welcome by President Jerome B. Wiesner; discussion at Kresge by Vice President Constantine B. Simonides, Chancellor Paul E. Gray, Alumni Association executive vice president James A. Champy. Morning program concludes with panel including Dean Alfred H. Keil of the School of Engineering; Dean Kenneth R. Wadleigh of the Graduate School; Dean Emeritus Irwin W. Sizer of the Graduate School; Dean William L. Porter of the School of Architecture and Planning; & Dean for Student Affairs Carola B. Eisenberg. Awards Program during luncheon, Walker Memorial, presided over by Howard L. Richardson, '31, president of the Alumni Association. Program on "The Human Brain: The Relationship of Physical Structure and Behavior", Dr. Hans-Lukas Teuber, head of Department of Psychology; Dr. Ann M. Graybiel, psychology & brain science; Dr. John Robert Ross, linguistics; 2:30pm, Kresge. Conference concludes with gymnastic team exhibition, duPont Gym, & social hour, Stu Ctr. Conference Chairman, George J. Schwartz, '42.

Community Meetings

MIT Women's Forum** - Meetings Mon, 12n, Rm 10-105 (Tues in case of holiday). Mon, Sept 8: Vera Kistiakowsky will speak on "Women and Physics Internationally: a Perspective on the Edinburgh Conference on Physics Education." Nominations accepted for Women's Advisory Group representatives until Fri, Sept 12, Send names to Betty Campbell, Rm 24-017, x3-6067.

MIT Club of Boston - September Luncheon Meeting with Jonathan Kozol, author. Thurs, Sept 11, 12n, Aquarium Restaurant, 100 Atlantic Ave, Boston. Reservations: Ms. Kiirats, x3-3878.

MIT Diet Workshop** - Thurs, 12n-1pm, Stu Ctr Rm 491.

English Conversation Classes - For wives of visiting faculty, wives of staff and students from foriegn countries, offered by Technology Matrons. Registration Thurs, Sept 18, 10am-12n, Rm 10-240. Classes Tues & Thurs morn for 10 weeks. Fee: \$20. Babysitting provided for additional \$5.

Social Events

MIT Chinese Students' Club Welcome Party - Meet new and old members, find out what CSC does. Informal discussions, Chinese refreshments. Sat, Sept 6, 7:30pm, Ashdown crafts lge. Free.

Rock Revival** - Sponsored by Student Center Committee with Little Walter & his golden oldies. Fri, Sept 12, 9pm, Sala. Admission: \$.75/couple, MIT or Wellesley ID required. Free beer & punch, live DJ.

24 Hour Coffeehouse* - Enjoy relaxing conversation, piano playing, games, inexpensive food, candy, drinks. Open 24 hours per day, 7 days per week, Stu Ctr 2nd fl lge.

Over 30's Singles Club - Lunchtime meeting in Stu Ctr East Lge (small dining room off Lobdell) Fri, 12:30-1:30pm. New members always invited. Look for the table with the red balloon. Erica, x3-2117 or Marty, x8-1206 Draper.

Movies

Mad Adventures of Rabbi Jacob** - LSC. Sat, Sept 6, 8 & 10pm, Kresge. Admission \$.50, free for frosh.

Apna Desh* - Sangam. Indian movie with English subtitles. Sun, Sept 7, 2:30pm, Rm 10-250. Admission \$.50.

The Cheerleaders** - LSC. Mon, Sept 8, 5:30, 8 & 10:30pm, Kresge, Admission \$.50, ID required.

Chinatown** - LSC. Fri, Sept 12, 7 & 10pm, Kresge. ID required.

Paisan (Rossellini)* - Film Society. Fri, Sept 12, 7:30 & 9:30pm. Rm 6-120, Admission \$1.

The Sting** - LSC. Sat, Sept 13, 7 & 10pm, Kresge. ID required.

Klute - MidNite Movie. Sat, Sept 13, 12m, Sala. Free, MIT or Wellesley ID required, 2 persons/ID.

It's a Mad (etc.) World** - LSC. Sun, Sept 14, 7 & 9:30pm, Rm 26-100. ID required.

Theatre and Shows

The Fantasticks* - MIT Musical Theatre Guild. Sept 5, 6, 12 & 13 at 8pm, Sept 13 also at 3pm, Kresge Little Theatre. Tickets: \$1.50, advanced sales & reservations, \$2 at door. Speical free performance for freshmen ONLY Sun, Sept 7, 3pm, Kresge Little Theatre. Info: x3-6294.

MIT Musical Theatre Guild seeks director, music director, designers & tech people for fall show, "South Pacific." Info, x3-6294.

Lobby 7 Events

National Mime Theater* - Wed, Sept 10, 12n. Free.

Exhibitions

Faculty Club Art Exhibit* - Works by Cindy Close exhibited during Sept.

Hart Nautical Museum* - Permanent exhibit of rigged merchant and naval ship models, half models of yachts and engine models, Open daily in Bldg 5, 1 st floor.

MIT Historical Collection* - Permanent exhibition, open Mon-Fri, 9am-5pm, Bldg N52, 2nd floor.

Freshmen are encouraged to attend departmental lectures and seminars. Even when these are highly technical they provide students one means to learn more about professional work in a department and field.

*Open to the public **Open to the MIT community only *** Open to members only

Send notices for September 10 through September 21 to the Calendar Editor, Room 5-111, Ext. 3-3279, before noon Friday, September 5.

IFAC Congress Draws 1,400 from 35 Nations

MIT took on a cosmopolitan air mately 1,400 persons from 35 na- world congress of the Internationlast week (Aug. 24-30) as approxi- tions attended the sixth triennial



Attending the opening session of the sixth world congress of the International Federation of Automatic Control last week are (left to right) Cambridge Major Walter Sullivan; Nathan Cohen, chairman of the US Organizing Committee for the congress; Dr. Hartley Rogers, Jr., associate provost; and US Secretary of Labor John T. Dunlop. The congress attracted 1400 participants from 35 nations.

al Federation of Automatic Control.

The congress, devoted to "Control Technology in the Service of Man," included twice-daily plenary sessions, 63 technical sessions, and a number of round table discussions.

Among those attending the opening session Monday (Aug. 25) were Cambridge Mayor Walter Sullivan; Dr. Thomas E. Crooks, director of the Harvard Summer School; Dr. Hartley Rogers, Jr., associate provost of MIT; and US Secretary of Labor John T. Dunlop, who gave the keynote address.

Dr. Dunlop commended the federation for attention to social concerns. He stressed the importance of automatic control in developing cheaper and more efficient ways of producing and delivering goods and services.

But he warned participants against imputing their own values and assumptions about work to others. He said "most men and women find their real lives in an outside activity," not in their jobs. Several MIT researchers spoke in the technical sessions and round table discussions. In addition, Dr. Jay W. Forrester, Germeshausen Professor of Management in the Alfred P. Sloan School of Management, outlined the case for limits to growth in a talk on "World Dynamics" in the plenary session Monday afternoon.

Chairman of the US Organizing Committee for the 1975 congressthe first held in the United Stateswas Nathan Cohen, a 1927 graduate of MIT in electrochemical engineering and retired vicepresident of Leeds and Northrup Co. of Philadelphia.

Among MIT persons who planned the congress were George C. Newton, Jr., professor of electrical engineering; Henry M. Paynter, professor of mechanical engineering; Wallace R. Vander Velde, professor of aeronautics and astronautics; and John E. Ward, lecturer in the Department of Electrical Engineering and Computer Science.

IFAC officials late in the week issued a resolution encouraging "greater understanding of the world as a dynamic system," so that natural resources can best be used to promote the "life, health, and well-being of all peoples of the world."

IFAC president presiding over the congress was Dr. John C. Lozier of Bell Telephone Laboratories. The new president, who will preside over the next IFAC world congress in Helsinki in 1978, is Dr. U.A. Luoto of Finland.

IFAC, founded in 1957, is a world-wide federation of 38 member organizations, each representing national scientific and engineering societies concerned with automatic control. Previous world

Hardest Part Was Learning English, Cosmonaut Says

The hardest part of preparing for the Apollo-Soyuz flight was not reconciling two different technical systems, but learning English, Soviet cosmonaut Nikolai N.

ican astronauts learning Russian also had a difficult task.

Program Chairman was Boris N. Petrov, member of the USSR Academy of Sciences, and chairAlso participating were Dr.

nautics and Space Administration. tional Measurement Confederation (IMEKO); Dr. Victor P. Walter Haeussermann, associate Legostayev, deputy technical didirector for science at NASA's rector for the USSR of the Apollo-George C. Marshall Space Flight Soyuz program; and Captain

Rukavishnikov, flight engineer for the back-up Soyuz crew, told IFAC participants last week.

Speaking in English, Rukavishnikov explained that it was decided that Soviet cosmonauts should speak English, and the Americans speak Russian, on the theory that it is easier to speak a foreign language than understand

He brought down the house with his imitation of the first attempts of the Soviet cosmonauts to speak English, their heavy accent contrasting strangely with the idiomatic phrasing of "I read you loud and clear."

But eventually, he said, the Russians and Americans even evolved their own language, with expressions like "ochen okay" for "Aokay."

Rukavishnikov conceded Amer-

Page 4, Tech Talk, September 3, 1975

man of InterCosmos, the Soviet equivalent of the National AeroCenter in Huntsville, Ala.; Sam Carlisle, president of the Interna-



Soviet academician Boris N. Petrov (center), chairman of the Soviet space agency, answers questions about US-Soviet space cooperation. Listening intently are (left to right) Dr. Victor P. Legostayev, Soviet deputy technical director of the Apollo-Soyuz program; Soviet cosmonaut Nikolai Rukavishnikov; and Chester M. Lee, US program director for the Apollo-Soyuz program. The four spoke in a morning panel on the Apollo-Soyuz flight last Thursday, during the IFAC world congress.

Chester M. Lee, US program director for Apollo.

Captain Lee showed NASA films of the flight last July, including dramatic shots of docking and shots of the earth. He also mentioned some of the results of the flight's scientific experimentsincluding the discovery of two new sources of extreme ultraviolet radiation, measurements of helium flow in the solar system, the growth of crystals in space, and studies of the solar corona.

Both Soviets and Americans on the program agreed that the Apollo-Soyuz flight was valuable in improving cooperation between scientists and engineers of the two nations.

The technical difficulties that were overcome-particularly developing docking gear-will also improve space flight safety, they said, and could make possible more joint flights in the future.

congresses have been held in Paris, Warsaw, London, Basel and Moscow.

NRP Adds Grad Student Seminar

Selected graduate students will be admitted to continuing work sessions at MIT's Neuroscience Research Program in Jamaica Plain during the coming term. Sessions involve 15 or so invited scientists from throughout the world working on issues at the frontier of neuroscience research.

Any faculty member may nominate graduate students for admission to "Seminar in Neuroscience Research Topics" (20.515). Final selections will be made in early September. Selected students will take part in proceedings and prepare proposals for future sessions. Contact Professor Mac V. Edds at 522-6700.

POSITIONS AVAILABLE

This list includes all non-academic jobs currently available on the MIT campus. Duplicate lists are posted on the women's kiosk in Building 7, outside the offices of the Special Assistants for Women and Work (10-215), and Minority Affairs (10-211), and in the Personnel Office (E19-239) DURING THE SUMMER MONTHS, AN INTER-IM LISTING OF NEW POSITIONS WILL BE POSTED AT THE ABOVE LOCATIONS ON THE WEDNES-DAYS WHEN TECH TALK IS NOT PUBLISHED (JULY 16, 30, AUGUST 13, 27). Personnel interviewers will refer any qualified applicants on all biweekly jobs Grades II-IV as soon as possible after their receipt in Personnel.

Persons who are not MIT employees should call the Personnel Office on extension 3-4251.

Employees at the Institute should continue to contact their Personnel Officers to apply for positions for which they feel they qualify.

| Dick Higham | 3-4278 |
|------------------------------|---|
| | and the second se |
| Pat Williams | 3-1594 |
| (secretary – Dixie Chin) | |
| Virginia Bishop | 3-1591 |
| Mike Parr | 3-4266 |
| (secretary – Joy Dukowitz) | |
| Sally Hansen | 3-4275 |
| Jack Newcomb | 3-4269 |
| Evelyn Perez | 3-2928 |
| (secretary – Susan Bracht) | |
| Ken Hewitt | 3-6512 |
| Carolyn Scheer | 3-6511 |
| (secretary - Ellen Schena) | and the |
| and the second second second | |

Admin. Staff, Asst. Director in the Admissions Office will interview prospective students, assist in review and evaluation of applications, travel to meet with students, high schools, Educational Counselors; aid in preparation of publications, maintain considerable correspondence, participate in planning, with particular emphasis on minority students. Experience in administration or minority programs strongly preferred; a background in high school guidance or math/science teaching will be considered. A75-49 (9/3).

Spons. Res. Staff, Economics/Policy Analyst will conduct analysis of public policies regarding government regulation of private industry and consumer behavior in area of energy and the environment, and also federal expenditure on research, development and demonstration in the energy field. Analysis is to focus initially on the automobile industry; other areas will include synthetic fuels, solar power, conservation practices. Must have training in microeconomics and public policy analysis and/or management of U.S. Federal programs, training and/or experience in microeconomics of public finance and/or industrial organization, and/or training and experience in political science with policy analysis orientation. D75-161 (9/3).

Spons. Res. Staff, Medical Technologist/Technician in Clinical Research Center will perform lab procedures in 12-bed center and for a large volume of out-patients. ASCP registration, experience in clinical chemistry, hematology, and urinalysis and familiarity with lab instruments required. Bachelor's degree in Biology or Medical Technology preferred. D75-109. Spons. Res. Staff, Systems Programmer in Center for Biomedical Engineering, Harvard-MIT Program in Health Sciences and Technology will develop support' software for a laboratory microprocessor which will be basis for clinical instrumentation incorporating dedicated computers; will use highlevel language on a Data General NOVA system. Familiarity with the design of operating systems, assemblers, interpreters and higher-level language, experience in developing such software and in programming small computers in machine language required. Experience with Data General NOVA system preferred. One position includes some teaching duties. D75-149, D75-150 (8/20).

Spons. Res. Staff, Project Engineer, in Biomedical Engineering Center for Clinical Instrumentation, Harvard-MIT Program in Health Sciences and Technology will have responsibility for development of a full-body plethysmograph and respiratory gas analysis system which incorporates a dedicated microprocessor; develop related programming; assist in design and development of lab microprocessor matrix and software system to develop other instrumentation using dedicated microprocessors. Bachelor's degree in Elec. Engineering, substantial graduatecourse work in control and level physiologic modeling required. Candidates should also be experienced in design of complex peripherals for microprocessors and machine-language programming of microprocessors. D75-147 (8/20).

Spons. Res. Staff, Project Engineer, in Biomedical Engineering Center for Clinical Instrumentation, Harvard-MIT Program in Health Sciences and Technology will develop a portable programmable microprocessor and software necessary to analyze cardiac arrhythmias; contribute to design and development of laboratory microprocessor matrix and software system to develop other clinical instrumentation incorporating dedicated microprocessors. Masters degree in Elec. Eng., experience in designing analog-digital systems incorporating microprocessors, and in machine language microprocessor programming required. Experi-ence in real-time instrumentation system, familiarity with medical instrumentation also necessary. D75-148 (8/20).

Spons. Res. Staff, Staff Engineer, in the Biomedical Engineering Center for Clinical Instrumentation, Harvard-MIT Program in Health Sciences and Technology will develop general purpose peripherals for microprocessor systems; write program modules for evaluation and use of peripherals; assist with prototype production engineering, printed circuit design. Bachelor's degree in Elec. Engineering, experience in designing complex peripherals and in programming microcomputers, ability to construct electronic circuits required. D75-146 (8/20).

Spons. Res. Staff, Director of Publications in the Joint Center for Urban Studies: edit Center papers, monographs, books, reports; supervise publication production and distribution; prepare research proposals. 3-5 years experience in professional editing and writing, ability to edit analytical and technical material in social sciences field, Bachelors and Masters degree in field requiring strong language skill required. D75-139 (8/20).

Spons. Res. Staff, in Project MAC Math Lab, will have responsibility for DEC PDP10 hardware maintenance and development of ITS time sharing system software. Two years experience with ITS system and LISP language required. D75-138 (8/20).

Spons. Res. Staff, Nuclear Engineering; will assist in several research projects on nuclear medicine; Duties include responsibility for routine maintenance of counting equipment. BSc or MSc in chemistry, ability to conduct independent research required. Experience in handling of radioisotopes desirable. D75-140 (8/20). converted to part-time to accommodate selected candidate. D75-145 (8/20)

Spons. Res. Staff in Project MAC will be member of 2-person headquarters team which provides overall fiscal support to research lab: contract administration; budgeting; costing; payrolls; invoice administration; report preparation. Relevant experience required. Familiarity with MIT accounting procedures helpful. D75-142 (8/20).

Spons. Res. Staff in Center for Space Research will participate in the analysis and interpretation of data obtained from satellite-borne plasma experiments such as IMP H & J, MVM and MTS. Ph.D. with strength in plasma physics, familiarity with data analysis and interpretation required. D75-143 (8/20).

Admin. Staff, Directory, Secondary Technical Education Project, Office of the President and Chancellor, will assume leadership of MIT's with Boston School collaboration Dept. to develop two magnet technical schools, grades 6-8 and 9-12. Will work of MIT faculty, stufacilitate dents and staff in a variety of areas: long-range planning, identification and evaluation of existing curricular materials, coordination and evaluation of pilot projects, fund-raising, and collaborative planning with Boston school personnel, parents and students. Graduate degree in science or engineering, 10 equivalent experience working knowledge of current develop-ments in technical education, experience with innovations in urban public school system required. A75-48 (8/20).

Acad. Staff, Tech. Asst., in Biology will assist in tissue culture research using chick embryo cells, both fibroblasts and early embryonic mesenchymal cells: prepare cells of culture, media; carry cell lines through 9 subcultures. Will eventually be involved in biochemical analysis of protein and nucleic acid biosynthesis. Experience in related chemistry field required. Lab experience strongly preferred. Knowledce and/or experience in biology, biochemistry, tissue culture desirable. C75-23 (9/3).

Academic Staff, Tech. Asst. in Nutrition and Food Science laboratory of Neuroendocrine Regulation will perform assays of brain neurotransmitters, enzymes and amino acids; teach assay methods to students and others; maintain quality control of lab techniques; oversee lab maintenance. Will use fluorescence assay, scintillation counting and spectrometry methods. Masters degree in biochemistry or related field required. C75-22 (9/3).

Admin. Asst., Exempt, in Medical Dept. Psychiatric Service will assist Psychiatrist-in-Chief in overall administrative operation of service including supervision of 4 departmental secretaries; may perform some confidential secretarial functions. Good organizational skills to coordinate a variety of administrative activities required. Previous supervisory experience and a history of progressively responsible employment desirable. E75-35 (9/3).

Tech. Asst. IV in School of Humanities and Social Science Oral History Laboratory will handle project design, document research, interviews, docu mentation; assist lab director with oral history research; catalogue documents; create and maintain filing system; assist lab director with oral history research; catalogue documents; create and maintain filing system; assist students in research projects. BA in history of science, or History, with strong Science background, experience with historical document research and handling required. Interviewing experience in oral history field desirable. Position is full time, but could be converted to part time to accommodate selected candidate. B75-432 (9/3).

Technical Assistant IV at the Creative Photography Lab, Architecture Dept., will maintain equipment, supplies facilities of the Lab during evening hours; prepare set up equipment, chemicals; interact with students. Produce slides, help with exhibitions. Must be a working photographer. Duration of psoition renewed each academic term. B75-462 (9/3).

to five years secretarial experience, including two at high level. Excellent typing technical preferred, shorthand, ability to organize, set priorities. MIT experience valuable; ability to handle pressure and volume important. B75-457 (9/3).

Secretary IV, in Resource Development, Office of the Vice-President, will perform general secretarial duties under supervision; shorthand and dictaphone skills and error-free typing required. Busy office, must be able to work under pressure. B75-451 (9/3).

Secretary IV to Associate Professor in the Optical and Infrared Laser Research Group; will type correspondence, manuscripts (some technical), arrange meetings, and travei arrangements. Good shorthand and excellent typing required. Ability to communicate and to deal with students and staff important. B75-384.

Secretary IV, headquarters secretary in Ocean Engineering will perform secretarial duties for Department Head, Admin. Officer and several students; arrange appointments, travel; maintain confidential files; answer phones. Excellent shorthand skills, familiarity with MIT procedures required. Technical typing skill desirable. B75-436 (9/3).

Secretary IV to two faculty members in Civil Engineering, Water Resources Division: perform general secretarial duties including typing of correspondence, reports, theses; maintain files and accounts; answer phones. Typing skill and willingness to learn technical typing required. B75-357.

Secretary IV, to Executive Director, System Dynamics Group, Sloan School, will type varied material from draft, machine, and shorthand dictation; organize and maintain files. arrange travel and appointments; research subject material. Excellent typing, organization and English grammar skills, initiative required. Applicants should have previous secretarial experience and flexibility to work overtime. Shorthand or speedwriting helpful. B75-351.

Secretary IV, to the Institute Secretary for Foundations will be responsible for office purchases, budget accounting; travel arrangements, itineraries; will maintain file on philanthropic foundations; research and reference materials; maintain communications with top level Institute offices. Excellent secretarial skills; ability to organize; discretion. Knowledge of MIT is desirable. B75-455 (9/3).

Secretary IV in Civil Engineering Transportation Systems Division will perform general secretarial duties for faculty member: type correspondence, reports; maintain files and accounts; edit; share office duties with other secretary. Position includes student contact. Good typing skill required. B75-296.

Secretary IV, at the Committee on the Visual Arts will type general correspondence, manuscripts, keep records, take minutes. Will also take notes at seminars, do library research, coordinate seminar activities and field work, handle independent correspondence. Will assist CVA project coordinator; schedule meetings, prepare written material: reports, grant applications, and research findings. High level of independent work; good judgment, excellent typing, research writing graduate seminars, solid background in the history of Art or of French literature preferred. B75-460 (9/3).

Secretary IV to Harvard-MIT Program in Health Science & Technology will perform secretarial duties for interinstitutional research group working on health care technology project. Transcribe from oral and machine dictation; arrange travel; administer grant; edit and type manuscripts. Excellent secretarial skills including shorthand/ speedwriting, interest in health care required. College training, familiarity several years experience required. Public contact background helpful. B75-380 (8/20).

Secretary IV, to 2 Political Science faculty members. Duties include typing varied material and answering routine correspondence independently; order books, films; maintain records; student contact. Excellent secretarial skills plus 2 years responsible secretarial experience required. College and/or secretarial school training preferred. B75-382 (8/20).

Secretary IV, to several academic staff members and others involved in Center for Policy Alternative Programs related to industrial and shcial application of technology: take shorthand dietation, type varied material; compose routine letters; arrange appointments and travel; act as key operator for xerox machine; assist other secretaries as required. Excellent shorthand, typing skills, previous secretarial experience required, Bachelors degree, facility with French language helpful. B75-387 (8/20).

Secretary IV, to academic staff member and others working on Center for Policy Alternatives programs related to industrial and social applications of technology: take shorthand dictation; type varied material; compose routine letters; arrange appointments and travel; assist other secretaries as required. Excellent shorthand, typing skill required. Bachelor's degree, 3 years secretarial experience desirable. B75-388 (8/20).

Secretary IV in Department of Athletics will handle varied secretarial duties including some work for faculty members; will type correspondence and reports; provide information about the athletic program to students and others. Ability to deal well with all types of people, excellent typing skill required. B75-402 (8/20).

Secretary III-IV, Analytical Studies and Planning Group, to work on various projects for central administration and faculty committees, type reports, schedule meetings, maintain files and financial records, general project assistance. Excellent typing, proofreading skills. Ability to set priorities and work under pressure. Will work with several staff members. 37½ hours week. B75-441 (9/3).

Secretary III-IV, temporary, will assist Industrial Liaison Officer in preparation of Directory of Current Research; coordinate incoming correspondence; maintain records and files; assist in preparation/typing of manuscripts; proofread. Organization, communication, typing skill required. Keypunching ability, or willingness to learn, preferred. Must be able to structure workload to meet publication schedule. 20 to 40 hours/week, depending on workload. B75-439 (9/3).

Secretary III or IV, for the Creative Photography Lab will type course materials, manuscripts, correspondence; provide information to students and visitors help with budgets and payroll reports; help organize, publicize and install exhibitions. Familiarity with field of photography very useful. Position renewable at the end of each academic year. B75-463 (9/3).

Secretary III-IV, to faculty members and several graduate students in Ocean Engineering: type varied material including technical reports, class notes; arrange travel and appointments; maintain files and records on research accounts; monitor monthly statements. Excellent technical typing skill, ability to work independently and under pressure required. 2-3 years secretarial experience, including some at MIT, desirable. Shorthand preferred. B75-438 (9/3).

Secretary III or IV, in Physical Plant will handle requests for use of the Student Center, Kresge and the Chapel. Type, answer phones, bill for LSC movies, other events. Assist students; keep records; Ability and attitude to deal with members of the MIT community and others using the facilities. Good typing important. B75-444 (9/3).

Spons, Res. Staff, Applications Programmer in the Lab for Nuclear Science will develop, write, de-bug and test computer programs for analyzing data on reactions of high energy elementary particles; adapt and test other MIT lab programs; produce and maintain group program documentation and develop system management for large-scale computer jobs. Bachelors or graduate degree in Physics, Math, Computer Science or Elec. Eng., familiarity with relativistic kinematics, properties of elementary particles, Fortran IV programming, IBM System 360 Assembly Language required, D75-153 (9/3).

Spons Res. Staff, Programmer, for Computer Music Project in Humanities: develop a musical score editor using high resolution graphics (System has a PDS-4 display interfaced to a PDP-11/50.) Practical experience in PDP-11 assembler programming, working knowledge of music creativity in area of person-machine communications required. Degree in computer science and/or music helpful. D75-156 (9/3). Spons. Res. Staff, Executive Editor, in the Meteorology Dept, will be responsible for preparation and completion of second draft and final copy of physical oceanography atlas; will work with board of editors and scientific editor, but will have responsibility to complete project without detailed direction. University training in oceanography or related field, previous work experience among scientists required. Familiarity with oceanographic terminology, editorial work and graphic material layout also necessary. Position is for 1 year, but may be extended. D75-144 (8/20).

Spons. Res. Staff, Tech. Asst., in School of Humanities and Social Science Oral History Laboratory will handle project design, document research, interviews, documentation; assist lab director with oral history research; catalogue documents; create and maintain filing system; assist students in research projects. BA in history of science, or history with strong science background, experience with historical document research and handling required. Interviewing experience in oral history field desirable. Position is full time, but could be Accounting Asst. V in Comptroller's Acctg. Office, Benefits Accounting Section, will process pension accounts and payments; handle member billing; maintain relevant information in payroll system; calculate benefits due members. Accuracy with figures, some typing skill, ability to use adding machine, calculator, knowledge of accounting and general office procedure required. B75-404 (8/20).

Secretary V, in Mechanical Engineering to the MIT-Industry Polymer Processing Program will coordinate workload of two secretaries, independently respond to inquiries about the program: prepare agenda, arrange large meetings and related social gatherings. Handle arrangements, correspondence, publications for international conferences. Monitor accounts; type, edit, proofread technical papers, proposals. Make appts, domestic and foreign travel arrangements, set up files. Three required. College training, familiarity with medical/technical subjects desirable. B75-420 (9/3).

Secretary IV to two Industrial Liaison Officers will handle secretarial duties related to program which provides liaison between private industry and MIT research groups. Position includes frequent contact with member companies. Will transcribe machine dictation; compile statistics; maintain files; fill requests for publications, symposia information. Good typing skill, 1-2 yrs. Secretarial experience required. MIT experience and ability to use dictation equipment desired. B75-426 (9/3).

Secretary IV, in the Medical Department to two physicians. Answer telephones, schedule appointments and travel, type correspondence and transcribe case histories. When necessary, maintain files and records and chaperone pelvic examinations. Excellent typist; previous experience, preferably in medical area, required. B75-447 (9/3).

Secretary IV, to 2 Regional Directors Alumni Fund, will type correspondence and other material; Develop and maintain donor file; arrange travel. assist other secretaries as required. Excellent typing skills and shorthand, Secretary III-IV, Mathematics Department, will provide secretarial support for 10 faculty members. Type mathematical papers, class notes, exams, correspondence. Handle telephone, files, travel arrangements and some records. Excellent typing required; technical typing experience preferred. Typing is bulk of workload. B75-448 (9/3).

Secretary III to 3 faculty members in Organization Studies Group, Sloan School: type correspondence, manuscripts, course material; file; answer phones; arrange travel and appointments. Secretarial training and/or experience required. B75-396 (8/20).

Secretary III, Artificial Intelligence Lab: will provide secretarial support for educational research group; type (Continued on page 6)

Tech Talk, September 3, 1975, Page 5

Positions Available

(Continued from page 5)

manuscripts, proposals; handle some accounting procedures; maintain group library; handle large volume of phone calls and messages; act as receptionist. Typing, organization skills, ability to deal with other people required. Secretarial experience and/or college training required. 35 or 40 hr/wk. B75-386 (8/20).

Secretary III-IV, to faculty and staff member in Artificial Intelligence Lab: will compose short memos, letters; type proposals, manuscripts; organize and maintain files; will assist other secretaries in publication typing and maintenance of library. Typing, organi-zation skills required. Will be trained to computer-edit manuscripts. Editing and/or proofreading skill desirable. 35 or 40 hours week. B74-385 (8/20).

Secretary III-IV, to faculty and other members of research group in Electrical Engineering and Computer Science: type course material, proposals, reports, including technical material; arrange travel, meetings; perform other general secretarial duties. Technical typing, shorthand or machine dictation skill required. B75-389 (8/20).

Secretary III (Floater) in the Medical Department will have primary responsibility for relieving absent secretaries in department. Will help out with work loads - transcribe case heavy histories, handle correspondence, files, mailing. May also work for and part-time staff and help out in department business office. Flexibility, good typing and ability to learn medical terminology required. Some previous experience. B75-450 (9/3).

Secretary III in Aeronautics and Astronautics will type correspondence, technical reports, and other material for faculty, research staff, students, perform varied other secretarial duties; arrange travel, maintain files; act as library distribute receptionist; materials. Ability to work indepen-dently and under pressure, good typing skill required. B75-424 (9/3).

Secretary/Receptionist III, in Office of the President and Chancellor will share duties of reception area, typing, mail, xeroxing, and telephones, on a weekly rotation basis between reception desk and secretarial area. Excellent opportunity to learn secretarial procedures. Good accurate typing necessary; flexible, pleasant personality to deal with visitors to the offices. 371/2 hour work week. B75-458, B75-459 (9/3).

Secretary III to two faculty members, in the fields of management science and marketing, Sloan School: will take and transcribe dictation; type course material, manuscripts; file; answer phones; other secretarial duties as required. One secretary office; applishould have excellent typing, cant shorthand/speedwriting, organization skill and ability to meet deadlines. B75-367.

Secretary III, part-time, in 2-person office in Operations Research Center: perform general secretarial duties for faculty member; assist Admin. Asst. in performing general office functions: coordinate seminars, workshops, type technical reports. Ability to handle detailed work, technical typing skill, or willingness to learn required. 20 hrs/wk. B75-417 (9/3).

Secretary III in Materials Science and Engineering will handle varied duties related to administration of academic program: type brochures, correspon-dence to prospective students, other material; arrange committee meetings; handle varied admissions procedures; maintain student records. Typing and organization skill, ability to transcribe dictation and to handle machine work required. B75-394 detailed (8/20).

Library Asst. IV, part-time, in the

Sr. Library Asst. IV, in the cataloguing section will catalog monographs in all languages, all fields, using LC copy from OCLC data base using OCLC terminal, or from NUC. Will implement MIT cataloging practices and proce-dures; catalog added, second copies. Recatalog books from Dewey Decimal system to LC classification. Maintain files and records. College grad, library experience of value, not essential. Accurate; some typing, ability to interpret complex directions. B75-461 (9/3).

Library Gen. Asst. III in Science Library will perform circulation desk duties (charge books, provide procural information to users; file and type cards); sort, distribute and receive material; maintain statistics. High school graduate or equivalent with good clerical aptitude, typing skill, ability to handle strenuous activity required. Some college training desirable. Afternoon and night shifts, varying schedule including weekend duty. B75-428 (9/3).

Technical Artist IV, in Graphic Arts: will size photos, paste up copy and prepare finished mechanicals for black and white and color separations for offset printing; make pencil and ink drawing changes; operate headliner and typesetting machine. 1-2 years working experience in above areas, strong paste-up skill, knowledge of printing processes, type and leroy lettering required. 40 hr/wk B75-390 (8/20).

Computer Operator IV in the Office of Administrative Information Systems will operate IBM Model 145 and associated peripheral equipment under DOS/VS. Must have good knowledge of DOS job control, multiprogramming experience and ability to follow standardized operating instructions. Minimum 1 year experience required. midnight-8am shift, B75-195 (5/21), B75-427 (9/3).

Acctg. Clerk IV in Graphic Arts to handle all accounts payable functions including billing and related clerical Thorough knowledge of duties. accounts payable procedures (invoicing, pricing, etc)., facility in working with figures, ability to use calculators required. Accounting or business school graduate or 3 yrs. related experience also necessary. B75-422 (9/3).

Senior Clerk IV, in Telecommunica-tions Office will prepare, issue and follow-up telephone orders, provide information to users, maintain inventory of telephone equipment, handle other clerical duties. Experience in office work, familiarity with a tele-phone company helpful. B75-443 (9/3).

Acctg. Clerk III in Nuclear Engineering will assist Admin. Officer and Admin. Asst.: type, file; compile data; prepare records and reports; maintain budget records; check and process statements; prepare cash vouchers; collect and deposit xerox charges. Ability to perform complex work with minimum supervision, accurate typing, organiza-tion skill required. Previous secretarial and/or clerical working experience required. B75-413 (9/3).

Accounts Payable Clerk III in Comptrollers Acctg Office will process invoices: apply discounts; audit invoices; prepare records for keytape entry. Candidates should be proficient with figures and with use of adding machine. B75-425 (9/3).

Sr. Clerk III, in Comptrollers Accounting Office, Transfer Voucher Section: will type vouchers; charge and credit projects; file; research problems; reconcile accounts. Working knowledge of bookkeeping, typing skill required. B75-431.

Sr. Clerk III, Alumni Assoc. will assist in processing, billing, mailing of Technology Review subscriptions. Process special orders, reconcile checks. Typing, general office skills. Accuracy, altertness essential. Some telephone work. B75-440 (9/3). required. Office experience, ability to react effectively in emergency/situa-tions required. 40 hr/wk. B75-407 (8/20).

Senior Clerk III in Purchasing will maintain requisition log; type purchase orders; numeric and alphabetical filing; may operate folding equipment. Accurate, fast typing, ability to handle detailed work required. B75-362 (8/6).

Clerk Typist II, part-time, in Lab of Animal Medicine, Medical Department will assist secretary with general clerical duties (type, file, answer phones, do errands). Good typing skill required. 15 hours/wk. B75-435.

Messenger II part-time in OAIS will deliver computer input and output material from computer facilities to programming area. Perform miscel-laneous tasks such as filing, xeroxing, answering phones. 25 10am-3pm. B75-453 (9/3). 25 hrs/wk.:

Jr. Comp. Op. II, in Center for Space Research will operate Minicomputer system used to support satellite operations: data reception; program processing; maintain associated log books, tape libraries, hardcopy files. High school graduate or equivalent required. Some college training and computer experience helpful. Candidates should be able to follow instruction and adapt to procedure changes. B75-416.

Clerk-Messenger II in Office of Sponsored Programs will perform messenger duties between OSP and several campus locations twice daily, and make additional deliveries as required; handle office incoming and outgoing mail; maintain xerox machine and postage meter; file; record and mail notices; type forms. Dependability, flexibility to perform various duties, typing skill required. B75-395 (8/20).

Waitress/Waiter, Set tables, take orders, serve food and beverages on banquet trays. Clear and reset tables. Dust chairs, wipe table clean. Experience is helpful but not necessary. 11:00am-3:00pm M-F (6 positions: H75-110, H75-111, H75-112, H75-113, H75-114, H75-115 (9/3).

Laboratory Asst. in the Cell Culture Center will wash laboratory glassware and utensils (by hand or machine); may involve the use of chromic acid cleaning solutions. 20 hrs/wk. H75-93 (9/3).

The following positions have been FILLED since the last issue of Tech Talk:

Sec V

B75-356

C75-19

B75-359

B75-341

D75-101

B75-398

D75-116

B75-379

B75-376

B75-368

B75-365

B75-364

B75-391 B75-234

D75-123 D75-145

B75-397

B75-360

B75-314

B75-299 B75-331

B75-371

B75-372

B75-343

B75-346

B75-361

B75-345

B75-378

B75-364

D75-103

B75-401

B75-392

B75-412

B75-405

B75-408

B75-293

B75-400

B75-373

| Sec. V |
|--------------------------|
| Acad. Staff. |
| Sr. Clerk IV |
| Sec. IV |
| Spons. Res. Staff(Cncld) |
| Sec. IV |
| Spons. Res. Staff |
| Sr. Clerk III |
| Sec. IV |
| Tea Host/Hostess II |
| Sr. Clerk III |
| Sec. IV |
| Sr. Clerk Recep. III |
| Sec. IV |
| Tech. Asst. |
| Spons. Res. Staff(Cncld) |
| Sec. IV |
| Sec. III |
| Sec. III |
| Sec. III-IV |
| Keypunch Oprtr |
| Sec. III-IV |
| Sec. IV |
| Sec. IV |
| Sec. V Sec. III-IV |
| Sec. III-IV |
| Sec. IV |
| Sec. IV |
| Sec. IV |
| Spons. Res. Staff |
| Sec. IV |
| Sec. V |
| Sec. III |
| Sr. Clerk III |
| Sec. IV |
| Sec. IV |
| Sec. III (Cancelled) |
| Sec. IV |
| |

New Nuclear Structure

(Continued from page 1) experiments were conducted at Argonne near Chicago and at the Brookhaven National Laboratory in New York.

Details of the shape of the deformed nucleus are still to be worked out.

"We can't tell exactly what it looks like-it may be more like a pear or a dumbbell than a cigar," Dr. Cosman said. "That will be a challenge for nuclear theorists and for continued experimental work.'

Other Reactions

Also still to be answered is why such a nucleus ever exists. If two nuclei are intimate enough to join at the surface, why would they hold back from total fusion?

As two nuclei approach, they experience opposing forces: they are attracted by the very strong nuclear forces that operate between protons and neutrons, and they are repelled by their like electrical charges and by the centrifugal force as they begin to orbit one another.

Normally, once the nuclei get close enough, the nuclear forces win out, and the nuclei merge to arrive at the lowest energy level. Possibly the deformed nucleus is created when the outer-most neutrons and protons rearrange themselves into new orbits to reach a preliminary low energy state. To get to the still lower energy state of complete merger (or complete separations), they would need an extra shove of energy.

"Although the deformed state lives only for an extremely short time, it is a fascinating object in itself and by understanding its unusual structure and formation it may serve as a guide to what will happen in other interesting nuclear fusion reactions," Dr. Cosman said.

The stabilizing effects of individual surface nucleons in a nucleus, which could explain the carbon-carbon state, has been theorized to give rise to similar, much longer-lived and even stable states in very heavy nuclei. The theoretical model is the basis on which physicists for years have predicted the existence of stable d) superheavy elements, much heavier than uranium. If superheavy nuclei can be made in a nuclear fusion reaction, they could serve as extremely compact sources of "The insights we gain by fusing

two light nuclei like carbon and carbon could certainly be helpful when someday we try to fuse two heavy nuclei like uranium and uranium to produce a superheavy element," Dr. Cosman said.

Accelerated Cargon Nuclei

energy for nuclear reactors.

Further studies of the carboncarbon fusion reaction may also help astrophysicists understand the evolution of stars, he said. Since the deformed nucleus can be created at relatively low bombarding energies, it could help astrophysicists determine the probability that two carbon nuclei will fuse at low stellar energies.

This in turn could help them predict the density of other elements created in a chain of reactions in which carbon plays a key role.

Evidence of the existence of the short-lived nuclear molecule is based on studies of protons given off as it dies. Stationary nuclei lodged in carbon foil were bombarded with accelerated carbon nuclei from a Van de Graaff type particle accelerator, with bombarding energies ranging from 12 MeV to 65 MeV (million electron volts).

Corroborates Recent Finding

Using an instrument designed by MIT Professor Harald A. Enge, the researchers then studied the protons produced-protons which they believe are given off as the deformed nucleus disintegrates into a sodium nucleus plus a free proton.

By studying the increased yields of protons by collisions at specific resonant bombarding energies, they could deduce the "signature" of a deformed, rotating nucleusits rotational band spectrum, a unique sequence of its angular momentum plotted against the bombarding energy.

To prove the existence of the new structure, scientists will have to repeat the experiments, studying the other ways in which the nucleus can decay.

Dr. Cosman already has some evidence-from data 15 years old-that such studies will corroborate the recent finding.

"People saw it then," he said. "They just didn't realize what they were looking at."

| BIWEEKLY: | SPONS. RES. STAFF | |
|-------------------------------------|-----------------------------------|--|
| B75-190, Tech. Asst. IV, Arch. | D75-8, Biophysicist, Nat. Nagnet | |
| (6/25) | Lab (6/25) | |
| B75-263, Sec. IV, Div., for Stdy. & | D75-48, Economist, Energy Lab. | |
| Res. in Ed. (6/25) | (6/25) | |
| B75-267, Sec. IV, Res. Lab. of | D75-70, Electrical Engineer, Lab. | |
| Elec. (6/25) | for Nuc. Sc. (6/25) | |
| B75-273, Sec. IV, Mt. SC. & Eng. | D75-93, Comp. Linguist, Res. Lab | |
| (7/9) | of Elec. (6/25) | |
| B75-281, Sec. III, Alum. Assn., | D75-106, postdoc. res., Lab for | |
| (7/9) | Nuc. Sc. (6/25) | |
| B75-289, Sec. IV, Energy Lab. | D75-107, postdoc. res., Lab. for | |
| (7/23) | Nuc. Sc. (6/25) | |
| B75-290, Sec. III-IV, Energy Lab. | D75-111, Programmer, Artificial | |

(7/23) Intell. Lab. (6/25) B75-306, Sec. IV-V, Physics (7/23) D75-112, Engineer, Energy Lab. B75-308, Sec. IV, Tech. & Culture (6/25) D75-114, Asst. Director, Cntr. for Seminar, (8/6) B75-318, Sr. Clerk IV, MIT Press Inf. Systems. Res. (7/9) (8/6) D75-120, Systems Programmer, B75-320, Sec. III-IV, Chem. Eng. Lab. for Nuc. Sc. (7/23) (8/6) D75-124, energy conversion, B75-334, Sec. IV, Humanities (8/6) Energy Lab. (8/6) D75-125, energy modeling, Energy B75-338, Sec. III, Alum. Assn. Lab. (8/6) (8/6) B75-339, Sec. IV, Mech. Eng. (8/6) D75-126, postdoc. res., Energy Lab (8/6) D75-127, postdoc. res., Energy Lab B75-342, Sec. IV, Jnt. Cntr, Urb. St. (8/20) B75-349, Sec. IV, Sloan (8/20) (8/6) B75-354, Sec. IV, Sloan (8/20) B75-358, Sec. V, Resource Dev. D75-129, Proj. Mngr, Cntr, for Trans. St. (8/20) D75-131, independent research, (8/20)Cntr, B75-362, Sr. Clerk III, Purchasing for Cancer Res. (8/20)(8/20) B75-363, Secretary III, Libraries, D75-133, Res. Engineer, Chem. Eng. (8/20) D75-134, nuclear medicine, Nuc. (8/20) B75-366, Secretary IV, Chemistry Eng. (8/20) (8/20) B75-375, Tech. Asst. IV, RLE (8/20) EXEMPT E75-14, Nurse, Clin. Res. Center ACAD STAFF: C75-14, Asst. to Dir., Cent for Adv. (8/20)Eng. Study (6/25) C75-17, Admin. Off., Mech. Eng. (8/6) HOURLY C75-18, Admin. Off., Hlth, Sc. & Tech. B. Lab for Nuc. Sc. H75-55 Tech. (8/20) (6/25) C75-20, Tech Asst., Nutrition & H75-65, Tech. A., Lab for Nuc. Sc. Fd. Sc. (8/20) (6/25)

Energy Labo ading have responsibility for organization of facility: complete circulation file; prepare publications for library system; recall books for classification. Duties after organization phase will include file maintenance, new acquisition processing. Typing skill required. College training, science and language (French, German) background preferred. Interest in energy and some familiarity with subject area helpful. Position is for 20 hrs/wk during organization phase (approx. 3-6 months), and will be reduced to 8-10 hrs thereafter. B75-409 (8/20).

Asst. IV, in Barker Sr. Library Engineering Library Processing Office: will have responsibility for cataloging monographs, serials and MIT report series. Verify and prepare catalog records; supervise card corrections and card catalog filing, theses processing; maintain processing file; prepare display; assist at catalog information Desk. Previous library experience in cataloging/processing department, some graduate library science courses, organization and typing skill required. College degree preferred. B75-429 (9/3).

Page 6, Tech Talk, September 3, 1975

Sr. Clerk III, in the Registrar's Office will assist in student registration, verification of student status, registration corrections, student requests and filing, using IBM terminals. Type notices to degree candidates. Excellent typing, accuracy with figures. B75-449 (9/3).

Sr. Clerk III in Student Loan Section, Comptroller's Acctg. Office: will type all office correspondence; maintain address records; record payments; prepare notes; answer borrower inquiries on phone and in person; file; verify accounts; typing experience, grammar skills, ability to operate adding machine, legible printing required. B75-393 (8/20).

Sr. Clerk III in Physical Plant Work Control Center will prepare work orders, process requisitions, accept and process work requests via telephone and personal contact; disburse petty cash; clear utility shutdowns; monitor Autocall alarms, receive and dispatch page messages; occasionally use 2-way radio equipment. Ability to type and use adding machine, good telephone manner and some familiarity with maintenance/construction terminology

The following positions are on HOLD pending final decision: Sec. III B75-330 B75-352 Sr. Clerk III D75-23 Spons. Res. Staff B75-253 Sec. IV Sr. Clerk IV B75-254 Sec. IV-V B75-265 Spons. Res. Staff D75-130 Sec. III-IV B75-399

The following positions were still available at Tech Talk deadline. The date following each position is the date of the most recent Tech Talk issue in which the position was described.

ADMINISTRATIVE STAFF:

A75-23, Regional Rep., Alum. Assn. (6/25) A75-26, Dist. Officer. Resource Develop. (7/9) A75-27, Director, Development Off. (6/25) Regional Rep., Alum. A75-35. Assn. (6/25) A75-38, Operations Mngr., Medical (7/9) A75-41, Proj. Mngr., Off. of Admin. Inf. Syst. (8/6) A75-44, Proj. Planner, Planning Office (8/20)

CLASSIFIED ADS

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Only Institute exten-sions may be listed. Members of the community who have no extensions may submit ads by coming in person to the Tech Talk office, Room 5-111, and presenting Institute identification. Ads may be telephoned to Ext. 3-3270 or mailed to Room 5-105. Please submit all ads before noon, Friday, September 5. They will be printed on a first come, first served basis as space permits.

For Sale, Etc.

Dbl bd, hdbrd, dress, dsk, chr, shlvs. Neil, x8241 Dorm.

Swim pool, 18x4", Bauer 99 hcky skates, sz 9½; hcky pants; Stingray bike; swim fins, sz 9-10; GE record trntbl; GI Joe collection. x8-1418 Draper.

Maple twin bd, nw, \$65. Chin, x8-4604 Draper.

Precision Rieffler draft set, 24 pc, 30 yrs, \$100 or best; 7" reel tapes; assort hseplnts. Diane, 536-5889.

Lg colonial sofa, \$70; K tbl, leaf, \$45; armchr, \$15; lamps, \$10; end tbls, \$3; 3 K chr, \$7.50; bkcses, \$5, \$2; makeup mirror, \$5; plant 1mp, \$15, groc cart, garb can, free. Call, 536-0158 evgs.

Acco Press printout binders; shelving for printout, cards; magnetc computer tapes, racks; bk shlvs; packing boxes; notebk cvrs & misc office supplies. Call, 547-3336.

Lg solid, expand DR tbl w/mtch chrs & cab, \$50, \$35 w/o cab; solid sofa, free, take it away; dresser. Call, 492-0776.

Hand made wint steeple clock, chimes hr & 1/2 hr, \$200. Tony, x8-4602 Draper.

TV, 19" b&w, UHF, VHF, w/std, \$65. David, x3-3408.

Nikon telephoto lens, 300 mm f4.5 w/UV fltr, leath case, \$225 or best; Nikon slide copier & bellows, \$75 or best. Jim, 861-0211, aft 6pm.

Pr f ski boots, sz 81/2-9 N, \$5; guitar, \$5; hamster Habitrail set, \$8. Joan, 262-3192.

Lvg state, must sell: 8,000 BTU AC, \$120; 20" fan, \$5; 2 snows, J78x14, mtd, \$15/ea; rnd dining tbl, 4 chrs, \$40; 2 desks, rugs, etc. Ehud Zamir, x3-2517.

DR tbl, lg w/3 lves, fruitwd, carved, \$90; dbl bed w/matt, spr, frame, nrly \$170; wardrobe, \$15. Gail, 965-5277.

Tires, Seberling G78x15 mud-snow, fit Toyota Land Cruiser, less 5 K, \$155 nw, best. x3-2765.

Magic Chef 20" gas stove, oven nds thermo control, \$25. Izzy, x8-2878 Draper.

Playpen, 37" x40", \$15; blu conv sofa, 57", \$50. Bob, x3-7085.

Lg mtł desk; cabinet; vac; carpet sweeper; sm bkcse; fluor lites; pots & Port 19" Sylvania color TV, gd cond, \$149; rotating TV tbl, \$6; indr RCA tape player, \$200. Betty, x7289 Linc.

color TV antenna, \$13. Jose, x3-6466.

Maytag auto washer & dryer, exc cond,

Dbl bed, box spr & matt; tbl & 2 chrs.

Pr Dunham hiking boots, sz 11 M, nw

\$55, worn once, \$25. Dick, x5548

HP 45, mint cond, yr old. Jane Dennis

Admiral 12 cu ft ref/frzr, \$100; wint

Sp desk/bkcse unit w/chr, \$150; GE 6,000 BTU AC, \$125; other hshld items. Mike, x5773 Linc.

Attractive dresser w/mirror, \$20; painting NY skyline, \$15. Jane,

Bikes: Raleigh 10 spd, \$65; f & m 3

Beyer M-500 mic, omnidirectional, ideal for rock band, close miked

rcrding, vocalist, interviews, films, \$70.

Sears Allstate nw mtl stud XST snows,

2. G78x14 or 8.25x14, blk wall, exc

cond, 3K, \$69; 4 alum trlr jacks, \$12;

2 stl trlr jacks, \$6; old hand push mower, \$4. Call, 862-5585.

Pool fltr; 19 & 23" color TV. Paul,

Scope cart: HP testmobile mdl 116-A,

Mod sofa & 2 ottomans, 3 mos, \$1,200. Jackie, x3-5116.

Bikes: m 10 spd, \$60; f 3 spd, \$40. Dr.

Gilsen 8 hp snowblow, 3 frwd spds,

rev, lk nw, best. Mike Flynn, x3-6275.

'71 Alcourt AMF sunfish, gd cond, incl

sails, rudder, daggerbrd, Hosclaw trlr w/lites & lic plate, best over \$500. Jeff,

Gold 9x12 shag carpet, \$25; refrig,

CCM Super Tacks skates, sz 3, used 1

Sears AC, 3 yrs, 6,000 BTU, \$65. Yves,

Lafayette Criterion 25A 2 way spkrs,

Alum screen storm door, 36x80, \$10;

GE stainless stl 4 brnr cook top w/26" w/wall oven, \$35/ea. Charles, x5332

Push along baby walker, w/blks, \$5; baby wood rock horse, \$5; toddler

seat, fits most carriages, \$5; Ford "Tot-Grd" safety car seat, \$5; b&w all

Stereo sys, Scott 299 amp, Rec-O-Cut

trntbl, 2 spkr sys, best. Bob, x3-3990.

Radial, 4, mtd Saab 96 whls, 2 Pirellis,

Long dresses, sz 10 & 16, \$8; f wht tap

dance shoes, asst sz, \$4; hifi w/amfm

tuner, 4 spd trntbl, blond cab, \$70.

Integrated stereo amp, 75 W, \$75 or

Upright piano, gd cond, \$200. Gary,

Hanhart stopwatch, 0-30 sec, 0-15 min,

accurate to 1/10 sec, shock, dust, water protected, \$25; 15 yr old TV,

nds antenna, no UHF, best. Gary,

Wrought iron K set, tbl w/leaf, 6 chrs,

Veith, all v gd cond, \$100. David

chnl TV, \$30. Jeff, x3-7001.

Morse, x3-1795.

x8-4095 Draper.

x8-3216 Draper.

267-7416.

best, Paul, 536-5146.

8" woofer, 2" tweeter, 25 W, cond, 2 pr, \$25/ea. Al, x149 Linc.

yr, \$45 nego. Gene, x7736 Linc.

\$175/both. x7771 Linc.

Stavros, x3-7107.

Linc.

484-8932.

x3-4911.

spds, \$25. x3-5117.

Tim, x7569 Linc.

x8-1357 Draper.

Lo, x3-4659.

x3-6726.

x3-7006.

Linc.

\$45. Tony, x3-4622.

\$15. Call, 547-1834.

Plant sale today, tomorrow pm. Steve, Rm 13-4078.

Armstrong flute, nw pads, exc cond, \$120; m sz 6½ hiking boots, worn once, \$5. Carol, x3-1332.

Radio amateur rcvr, AX-190, w/orig box, lk nw, \$95. Melvin, 492-7141, evgs.

Wd desk w/glass top, 32x17x27 hi, 4 drwrs, \$17 incl chr; blu-grn uphol platform rocker, w comf, \$15. Keith Stevenson, x3-1357.

Fuji finest bike, 25', Phil Woods hubs, Gran Compe brakes & endshifters, \$325 firm. Call, 522-7044.

Hammond L112 organ, dbl keybrd, full stops, bench for music, exc cond, best. Lorraine, x3-1601.

Moving: baby things, incl carriage, inf seat, johnny pump up, playpen. Call, 492-6042, aft 6pm.

Mastrwrk Sol State stereo, w/ am/fm, \$15; dbl bd w/ hd & ftbrds, box spr, firm foam matt, \$40; bureau w/mir, \$15; dish drain, \$.50; cinder blks, \$.50/ea. Sharon, x3-6695.

F 3-spd Phillips bike, gd cond, \$30. Chris, x3-5922.

Bed w/matt & box spr, \$30; nite tbl, \$5; lamp, \$5; chr, \$4. Spiro, x3-6780.

Playpen, crib, baby carriage. Semira, 494-8444.

TV, \$20; 2 side tbls, \$3/ea; sm radio, \$6. Call, 646-9437.

Raleigh 5 spd 26" bike, v gd cond, \$60 or best. Call 734-2340, evgs.

Remington man typwrtr, \$25: Magnavox port stereo, \$30; antique oak desk, \$65; golf clubs, \$75. Call, 536-2558 evgs.

TV, b&w, RCA 16", \$40; lamp, \$2; hotplate, \$5; lg wd crate, \$5; toaster, free w/TV purchase, x3-5602.

'71 Camel Oasis III tent trailer, slps 6. incl 11x14 screened canvas rm, used no reas offer refused. Phyllis, 6X x3-1351 Draper.

Camera, Graphic .35mm, w/50mm f3.5 lens, \$20. Paul, x8-4374 Draper.

Twn beds, matt, box spr, frames, hdbrds, \$40/ea; 90" brn contemp LR couch, lk nw, \$150. Bill, x8-4422 Draper.

Vehicles

W, exc

'65 Chevy, 6 cyl, auto, 4 dr, nw tires, nw tune-up, \$200 or best.' Tom, x8-3969 Draper.

'65 VW bus, conv camper, reblt eng, blower, \$450 or best. Peg, x8-1592 Draper.

66 Chevy Malibu, auto, 4 dr, 6 cyl, nw exc cond, \$400 or best. Call, tires, 354-6360.

'66 Olds F-85, 20 mpg, V8, b nw brakes, runs well, smooth ride, nw tires, \$350 or best. Call, 868-3704.

'66 Mustang, w/Sears AC unit, \$250. x3-1718.

'66 VW, gd run cond, nds minor work, \$400. Call, 628-4876.

'69 Merc Cougar, blu w/wht hrdtp, p st & br, snows, exc cond, \$1,090. Call, 926-9884.

'69 Chevelle, 6 cyl, 2-dr, hrdtp, auto, p str, radio, blue w/wht vinyl top, gd run cond, snows, \$800. Alberto, 625-2819.

'69 Pont Cat, 2 dr, p st & br, auto, 4 exc tires, eng perf, \$800 or best. Tom, x3-6291.

'71 Capri, 80 K, exc int, rt rear qrtr argued w/truck, still gd run cond & used daily, \$975. C, O'Neal, x3-4301.

'71 Ford wgn, cntry sed, sm V8, auto, p st & br, \$1,200. x422 Linc.

'71 Tbird, 4 dr, lt gold w/wht roof, all power, ac, stereo, leath, 53 K, 16 mpg on trips, exc cond, \$2,200. x7500 Linc.

'72 Vega htchbk, nw eng still under wmty, amfm, nw ww tires, exc cond, 38 K, \$1,500. Call, 494-9038.

'72 Pinto, auto, 20 mpg, exc cond, 30 K, sgl ownr, \$1,750. Paul, x3-3418.

'72 Mustang Grande, metallic blu, p st & disc br, am, 30 K, nw shocks, exc cond, best. x3-3312.

'72 VW sed, blu, v gd cond, orig ownr, serviced dealers schedule, nw tires, 50 K, 30 mpg, must sell, \$1,850 or best. Juan, x3-6726.

'73 Ford Torino, V8, auto, p st, lo mileage, exc cond, best. Bill, x366 Linc.

'74 Mustang II Ghia, under 10 K, amfm stereo, sunrf, defogger, red/blk vinyl, std; compl furn for sm apt; reas. Call, 237-4033, evgs.

'74 Toyota land cruiser, 4 dr wgn, 4 whl drive, 4 spd, 6.5 K, lk nw, 7 tires, \$5,100. Landry, x5857 Linc.

'71 Honda SL100 mtrcycl, 5 spd, 3 K, beaut str & trail bike, carrier, \$395. x3-4360.

'73 Yamaha 350, recent eng ovrhl, all stock & gd cond, \$650. Nelson, 782-7689.

'73 Honda CB175, 2.8 K, exc cond, \$575. x113 Linc.

'74 Yamaha 500, 6K, perf cond, luggage rack, sissy bar, \$1,400 or best. x3-3880.

'74 Yamaha 250NY, lites & title, exc cond. Call, 581-0774.

'73 ATCO travel trlr, lk nw, slps 6, reas. x8-1243 Draper.

Housing

Camb, 1¹/₂ BR, lg LR, K, full B, reas rent, avail aft 9/15. Call, 662-7876.

Camb, BR, LR, K, B, spac, safe nbrhd w/TV security sys, ac, terrace, lg closets, sub 9/8-10/31 w/opt, \$240 incl ht. x3-7329.

Hyde Park, apt in home, Cleary Sq area, 4 rms, mod, ww, nw cab K w/stove & refrig, nw tile B, nr T, qt cpl pref, \$180. Harold, x7505 Linc.

Malden, 8 5rm 5 BR, lg cabinet K. LR, DR, full bsmnt, sgl garage, mint cond, 4050 Indscaped lot, walk Brown & Linden Sch, ask \$36,000. x3-1466.

Nwtn Ctr, rent entire hse (\$450) or indiv BR's (\$100/ea) w/K priv, 9/1-12/1. Rene, x3-7026.

Stoughton, 4 yr old twnhse, 3 BR, 11/2 B, AC, patio, garage, pool, tennis, clubhse, \$36,000 or lse opt \$395. Steve, x8-4321 Draper.

Madison, NH, Eidelweiss yr rnd home, cath ceils, LR, DR, K, 4 BR, 2 B, fully insulated, \$36,500. June, x7103 Linc.

Highland Lake, Stoddard, NH, 2 seclu lkfrnt cott, all facil, frpl, elec, scr rowboats, avail Labor porch, Day. Columbus Day, wken \$100/wk. Call, x3-1566. wkends, \$125 &

Owl's Head, Penobscot Bay, Me., cottage avail 9/7, \$100/wk. Tom, x613 Linc.

Animals

Nd prsn to do body work on rusting auto. x8-1584 Draper.

Full sz cello, exc cond. Ruth, x8-3637 Draper.

Porsche 914 repair info: maint U hv done, or name of a reliable, cheap mech. Ken, 492-6983.

Intermed tennis partners, play wkdays c. noon. Marie, x3-6208.

VW mechanic to help me learn about car. Rosalie, x3-2480.

Tires, H78-15, belted. Larry, x7500 Linc.

Liv-in child care, It hsekpg, in exch for sep quarters (K & B) in oceansd home, 30 min MIT, full or pt-time, cpl or sgl. Marilyn, x3-1385.

Pt-time research asst/typist, pref w/Spanish ability. Kevin Kinsella, x3-6580.

Driving to San Fran mid-Nov, nd riders to share exp & driving, allow 6 dys travel. Terry, x3-7135.

F looking for sgl apt, max 30-40 min commute to Linc. Barbara, x7436 Linc.

WI pay about \$20 for old, beat up banjo. x3-3282.

Cheap bikes, 2. Pervez, x3-4897.

Apt in Arl, Lex, Woburn, 2 BR, by 11/1, \$180-\$200 incl ht. x3-7163.

KLH 42, whole or part, working or not, price depends on cond; solenoid cassette drive; cheap computer; ni-cads; photovoltaic cells; lg Kelty Serac backpack; wl pay cash. Call, photovoltaic 494-8888.

VW eng for bug, 6 V. Doug, x8-1376 Draper.

Adults to provide after sch care for kindergarten chldrn, Morse Sch (nr Westgate), approx 5½ hrs daily, nd car. Child Care office, x3-3953.

Roommates

F rmmate, 20+, share lg mod 2 BR Bklne security apt nr T & Cldg Crnr shops, pkg space safe lot, \$140 + util. x3-5264.

M or f to share sunny 6 rm apt, qt st nr Oak St, Bri, w/post-doc, d & d, pkg, no smokers pls, \$125 + util. Marvin, x3-1660.

F Iran grad sks f grad w/apt to share nr MIT. Manzar, 494-8467.

M grad stu, 1 or 2, shr nw renov apt, Som, 4 BR, w/2 others, \$275 heated. Kim, x3-6050.

First-yr EE grad stu sks f rmmate,

F sks f w/apt to shr, Tang or Ashdown.

MIT grad stu sks 2 qt m for mod apt,

Wtrtwn Sq, ww, d&d, AC, nr T. Jerry,

M or f, own BR in 3 BR Beac apt nr

Bklne, avail 9/1, lg rms, K frpl, qt, blk T & shops, 15 min walk MIT, pref

non-smoker, \$110 + elec. Steve,

F, 25 or +, non-smoker perf, share 51/2

rms w/30 yr f grad stu, compl furn exc

2nd BR, 25 min walk MIT, nr T, Cambport, \$105 + ht & util. Joan,

M, working or grad stu, share lg 4 BR

Bklne apt w/3 others, 24 +, AC, mod K w/dw, nr T, groc, Indry, tennis, \$95.50

(415)-443-6617 aft 11.

Katerina, x3-5327.

923-1686, evgs.

x3-7220.

x3-6737.

+ util. Call, 566-7095.

quiet,

non-smoker. Karen, collect,

| sweeper; sm bkcse; fluor lites; pots & | Wrought iron K set, tbl w/leaf, 6 chrs, | | Beaut snow wht m Grmn shep, 8 mos, | Own rm in semi-furn 3 BR apt nr Cent |
|---|---|--|---|--|
| pans; plates; all cheap. Bill, x3-3512. | \$50. Bob Raddocchia, x3-7914. | '69 Olds Delta 88 conv, p st & br, 350 V8, gd mileage, well cared for, \$400. | all shots, nds nw home, pls, owner | Sq & T, mod K, qt rmmates, 2 m, pkg |
| Design Research crib & matt, 1k nw, | Old Towne 19' canoe, \$125. Lou, | Cara, x3-4076. | became seriously ill. Ariana, 284-5651, evgs. | avail, \$112 incl ht, Alan or Mike, 868-3564, aft 8pm. |
| \$70. x3-7330. | x8-3584 Draper. | '69 Triumph TR6, amfm, gd run | Nice cat, b&w m, 8 mos, nds nw home, | Did and MITHAN M. d. B. |
| Furn: rugs; tbls; chrs; dresser; lamps; | Computer card file cabs, 12 drwr A card, nw \$900/ea, \$25/ea. Furn Exch, | cond, \$1,000 or best. Call, 547-1637. | not allowed in our apt bldg, free. Call, | Ride wanted MIT-Hanover, Ma, daily 5pm, wl share exp. Donna, x3-6947. |
| low prices. Len, x3-7653. | 25 Windsor St, open Tues & Thurs, | '69 VW sqbk, 38 K, auto, nw tires, gd mech cond, \$1,100; 8 bkcses, 36-80, | 494-8720. | |
| Lt oak dinette set, Drexel, lovely buffet, 4 chrs w/grn uphol seats, drop | 10am-2pm, x3-4293. | adjust, \$35/ea; humidifier, \$20; roll- away bed, nrly nw, \$25; Burroughs add | Gldn rtrvr m pup, whelped 6/27, AKC, | Miscellaneous |
| leaf tbl seats 6, \$150 or best. Call, | Sgl matt & frame, \$10; chrs. Call, | frame \$10: chrs Call much \$20 M Fraaman 484 2017 Champ Okgind, life Ch, wondern | champ bkgrnd, lite clr, wonderful disposition. x356 Linc. | Resp prson to drive std VW from |
| 862-8315. | 734-5392. | '69 Saab, V4, 2 dr, 4 cyl, 4 stroke, 4 | 김 양 일을 감독하는 것을 걸었는 것 | Birmingham, Ala, to Bos. Paul, |
| Rugs, nylon shag w/pads, 9x12, 1 red, | F bikes, gd cond, blu: 3 spd, 26" whls, \$30; sgl spd, 24" whls, \$20. Jim, | spd std, 42 K, exc mech cond, around | Free kittens, gray f calico, blk f, b&w m, mother a gd mouser. Carrie, | x3-6407. |
| 1 gold, just clned, still rolled \$95/ea. Joyce, x3-3525. | 358-7659 Wayland. | \$1,000. Call, 492-8065. | x 3-3871. | Guitar lessons, \$5/hr, beg to adv. Arthur, 267-3994, evgs. |
| Riding lawn mower, 5 hp Briggs & | Sears Kenmore port auto dishwasher, lk | '69 Ply Road Runner, 383 cu in eng, 4 barrel carb, nw 4 spd trans, reblt | Free kittens, esp bred for affection & | |
| Stratton eng, \$100. Larry, x3-4749. | nw, orig \$170, \$100. x0272 Dorm. | motor, hi perf parts, bckt seats, nw int | | Parent-coop nursery sch, 2½-5 yrs, 9-12n or 9-2, Harv Sq. Stu, x3-1418. |
| M 3 spd bike, ugly but working, w/chn, | Hi qual qn sz matt, box spr, frame, 2 | rug & console, must see, \$2,500 or best. Bob Saliga, x7454 Linc. | | |
| \$18.50. Susan, x3-6737. | yrs, exc cond, \$90 or best. Larry, x3-7578. | | Toots, yng blk f cat, avail for adoption, wl be spayed if nw ornr desires, present | Alterations done, clothing made (speciality gowns), reas prices. Marie, |
| Marantz 1060 stereo amp, 30 W | | ²⁷⁰ MGB-GT, wht, 55 K, exc cond, \$2,000 or best. Joanne, x3-4791. | ownr allergic. Eileen, x3-1782. | x3-1473. |
| RMS/ch, less 0.5% THD, smooth cln power, perf cond, best. Mark, x3-3157. | Twn bed, matt, box spr & frame, exc cond, \$30; dbl gooseneck flr lamp, \$3; | '70 Maverick, 60 K, 2-dr, auto, 6 cyl, | F cat, spayed; 4 m kittens; free. | W1 type theses, manu, etc, IBM Correct |
| and the second of the second second second | tbl lamp, \$3; end tbl, \$3; bdsprd | blk vinyl rf, 2 nw tires, 2 snows, nw br, | x3-7968. | Selec. Phyllis, x3-4237. |
| Matt & box spr, dbl sz \$50; 3 drwr bureau, \$12; port stereo phono, \$20. | w/mtch covered blstrs, \$5. Sharon, x196-342 EDC. | nw elec sys, perf cond, \$780 or best. Call, 661-1548 aft 6. | Last and Found | Learn to weave, beg & intermed |
| x7618 Linc. | Pr E78x15 Kelly-Springfield bias | '70 Ply Duster, v gd cond, radial snows, | Lost and Found | weaving lessons on indiv flr looms, Newton Ctr. Call, 965-6217. |
| Fold-up bed, \$25; dining tbl w/6 chrs, | belted tires, ¼" tread left, \$35 or best. | ac, 47 K, \$1,200. Booky, x3-1658. | | |
| cupbrd, \$175. Per, x3-3920. | x3-6823. | '70 Olds Cutlass, 4 dr sed, ac, amfm, | Found: calico f kitten, about 8 wks, nr Eastgate, can't keep. Linda, 494-8256, | the second s |
| Slp bags; typwrtr tbl; crtns. x3-7902. | Wint stereo console w/amfm, radio, | runs well, \$1,000 or best. x3-2772. | evgs. | Tech Talk, September 3, 1975, Page 7 |
| | | | | |

Magnetic Technique Aids Surgery

A Massachusetts General Hospital-MIT Francis Bitter National Magnet Laboratory team has developed a new method to correct certain cases of a congenital defect which prevents babies from swallowing food.

The method, described in the latest New England Journal of Medicine, offers a new approach for some babies born with esophageal atresia, a blockage of the tube which carries food from the mouth to the stomach.

Esophageal atresia occurs about once in every 2,000 to 3,000 births. In about 80% of babies born with this malformation it can, in the first few days of life, be repaired directly by major chest surgery. However, in about 20% of such newborns the ends of the esophagus are too far apart to be joined safely.

For these unfortunate babies, the problem has been managed in recent years by a lengthy, major operation that involves constructing an artificical esophagus from a piece of large intestine, or from a section of the stomach, brought up into the chest, usually at about a year of age.

Neither of these methods, however, has proven as satisfactory as swallowing in the natural manner, through one's own esophagus. Therefore, Dr. W. Hardy Hendren, MGH Chief of Pediatric Surgery and Professor of Surgery at Harvard Medical School, developed in collaboration with J. Richard Hale a new method for treating infants with these problems not suitable for direct repair. Hale is a staff scienists at the MIT Bitter National Magnet Laboratory.

A metallic "bullet" was inserted into each end of the esophagus, the ends of which were initially several centimeters apart. The patient was then placed in an electromagnetic field arranged to draw the two metal "bullets" together, thereby stretching the

Seminar Offered On Simone Weil

An undergraduate seminar (21.935) on Simone Weil (1911-1943), whose philosophical writings, journals and social activities in France attracted widespread intellectual attention in the 1930s and early 1940s, will be offered in the Department of Humanities during the Fall term. George Abbott White, visiting lecturer and an authority on Miss Weil's life and work, will direct the seminar.

In conjunction with the department seminar, meanwhile, the MIT Seminar on Technology and Culture headed by the Reverend John Crocker, Jr., MIT Episcopal chaplain, will sponsor during 1975-76 four public lectures dealing with Miss Weil's work. Among lecturers will be the writer-psychiatrist Robert Coles and Miss Weil's brother, the distinguished mathematician Andre Weil of the Institute for Advanced Study at Princeton. Lecture dates will be announced later.

esophageal ends so that they could be safely joined at a surgical operation several weeks later.

In collaboration with colleagues Norton Pierce, Lawrence Rubin and Robert Weggel at MIT, Hale constructed the magnet device complete with a small crib which could fit into the center of a large magnet. The first relatively crude machine required the space of two hospital beds. Since then a smaller unit has been constructed.

The magnet machine was timed to go on and off intermittently, painlessly pulling the ends of the esophagus together for 60 seconds and relaxing the pull on the "bullets" for 90 seconds. Thus in a period of 24 hours this stretched the two ends of the esophagus approximately 600 times.

The esophageal ends moved steadily closer to each other during a period of weeks. Subsequent exploration through the chest revealed that the esophagus could be safely joined, resulting in normal swallowing for the babies. Before that date they had been fed artificially by a tube through the abdominal wall into the stomach.

The first infant to undergo the new procedure died eight months later from unrelated causes. A second patient, Chad Stephen, son of Mr. and Mrs. John Stephen of South Attleboro, is thriving. He is now a robust, healthy, 13-monthold baby.

Sometimes, Dr. Hendren said, babies esophageal atresia have multiple malformations, but generally speaking, an infant with a successfully repaired esophageal atresia can lead a normal life.

Success in treating this condition has more recently led to the use of this electromagnetic stretching procedure to facilitate repair of a second malformation termed imperforate anus. This condition, like esophageal atresia, occurs once in every 2,000 to 3,000 births.

In the most severe cases the rectum ends blindly several centimeters above the baby's bottom and is frequently complicated by a second problem, an abnormal communication with the urinary tract. Treatment has usually involved a temporary colostomy on the first day of life, diverting the colon (large intestine) to the abdominal wall, and then repairing the defect at six months to a year of age. Results have not always been satisfactory.

Innovation Show

The MIT Innovation Center will hold its second annual exposition Wednesday, Sept. 10, from 2-5pm in the Marlar Lounge (37-252).

Center projects to be displayed include a new type of frame for racing bicycles, an electronic game package for home television, a new method of cleaning oil tankers and a new process for testing the purity of gold bullion. Faculty and participating students will be on hand to answer questions. Admission will be restricted to members of the MIT Community.

Using the same electromagnetic device which successfully stretched the esophagus in two babies, the lower colon was stretched down to the bottom permitting a more simple correction of the malformation from below

The MGH-MIT team believes this will give a more satisfactory functional result but emphasizes that a greater experience with this method will be needed before hard and fast conclusions can be reached. This work was supported in part by the MGH Pediatric Surgical Research Fund and the National Science Foundation's program of Research Applied to National Needs (RANN).

McLellan Named In Admissions

Julia C. McLennan, who has been associated with the MIT Admissions Office for 30 years, has been appointed associate director of admissions, effective July 1.

Announcement of the appointment was made by Peter H. Richardson, director of admissions

"The promotion of Ms. Mc-Lellan recognizes the increasingly active role she has taken in the admissions process over the past several years,"

said.

Mr. Richardson Ms. McLellan

"She has played an instrumental part in a variety of special recruiting programs, such as careers conferences for minorities and women. Her support in arranging programs introducing young people and their advisors to educational opportunities offered at MIT has been invaluable," he said.

In her new position, Ms. McLellan will continue as the senior administrative staff member in admissions, but she will become increasingly more involved in other aspects of the admissions process.

Ms. McLellan has been assistant director of admistration of the office since 1970.

Strobe Stolen

A strobe light and water drop machine were stolen from a popular stroboscopic display in the lobby of the Fairchild Bldg. (Bldg. 36) recently. Campus patrol placed value of the equipment at \$500. The display belonged to Dr. Harold E. Edgerton, Institute Professor Emeritus and director of the Stroboscopic Light Laboratory

APS Elects Shapiro

Softball Champions



Metallurgy emerged this season as the overall winner of the MIT Summer Softball League, beating Haley's Train, composed of players from throughout the university, in the final playoff game. The overall champion was picked from a playoff among teams that played during the summer in the League's East and West Divisions. Metallurgy tied for first with Ashdown and Chemistry in the regular season East Division. Transportation won the regular season in the West Division with an undefeated record. The Summer Softball League, with Sam Benichasa of the Draper Laboratory as commissioner, has grown from 12 teams in two divisions to 38 teams in five divisions in just three years. Members of the winning Metallurgy team (shown above) are: front L-R, Tom Tiearney, Jerry Moscovitz, Steve Hansen, Steve Warner and Bob Fontana; standing L-R, Bill Sherry, Nick DeCristoforo, Jim Carisella, Tom Pollak and Dick Salzbrenner. -Photos by Calvin Campbell



Champion in the intermediate competition playoffs in this year's MIT Summer Softball League was Toxicology, a team drawn from the MIT Department of Nutrition and Food Science. Toxicology defeated the Cosmic McMuffins, drawn primarily from people who work in Bldg. 13. Regular season winner in the intermediate division, known as the Central Division, were the Leftovers, made up of players from throughout the university. Another team from the Department of Nutrition and Food Science, this one known as the "Food and Nuts" with Mary Montgomery as captain, won playoffs in the League's "picnic style" slow pitch competition, known as the South Division. Regular season winner in the South Division were the Smokers, all ex-Burton House residents. Toxicology included (above): front L-R, Rich Saunders, Bill Thilly, John Groopman, Mike Arnold, and Jim Flink; standing L-R, Tom Hansen, J.P. Montgomery, Bob Reynolds, Wayne Siegel, Tom Kensler, Dennis Moran and Ken Grant.





Dr. Irwin I. Shapiro, professor of geophysics and professor of physics in the Department of Earth and Planetary Sciences and the Department of Physics, is among 46 scientists recently elected Fellows of the American Physical Society.

Credit Subjects TSP Launches

(Continued from page 1)

ences and several are available for Distribution credit. Subject descriptions are included under Course XXI listings in the MIT Bulletin for 1975-76.

Included among these offerings are:

"Chinese Science and Natural Philosophy" taught by Professor Nathan Sivin, will use historical and anthropological studies of medicine and other achievements of traditional China to understand

modern-day Western Science.

"Emergence and Growth of New Research Fields: A Social History," taught by Professor Charles Weiner, will explore the interaction of individuals, ideas, institutions and national environments in the formation and development of research fields. The focus is on developments since 1930.

"History of Nuclear Engineering: A Case Study in the Interaction between Technology and Society" taught by Professor Irving Kaplan, presents the physical basis of the large-scale applications of nuclear energy and of the problems arising from these applications.

"Alternative Technologies" taught by Professor Langdon Winner, contrasts present assumptions about technology and social relations with theories of past cultures and experiments in progress.

"Growth and Sructure of Urban Environments" taught by Professor Joel Yellin is designed as an upper-class seminar addressing historical and theoretical perspectives on urban structure and growth as affected by technological change.

Champions in the Summer Softball League's slow-pitch North Division were the Tubers, a team made up primarily of people from the Theta Delta Chi fraternity house. They defeated the Flying Freaks, primarily civil engineering graduate students, in the final game of the playoffs. The Tubers also finished first in the division's regular season play. Tubers (above) included: front L-R, Alan Weinstein, Dave Fox, Howard Herzog, Bob Webber and Jim Fisher; standing L-R, Bob Schreiber, Peter Terwilliger, Mike Eissenstat, Dan Geer and Dave Wall.

Page 8, Tech Talk, September 3, 1975