



Tech photo by Sidhu Banerjee

Mrs. Beth Harling demonstrates a rug-weaving technique Friday in the Hayden map room. The IAP activity, a quilt and needlework display and workshop, was sponsored by members of the MIT community.

Shirley Jackson speaks during King celebration

By Earl C. Yen

Blacks and other minorities have advanced in many areas of American society over the last 25 years, but America still has far to go in eliminating racism, according to Shirley A. Jackson '68, the first black woman to earn a doctoral degree from MIT.

Jackson's Jan. 15 speech in Kresge Auditorium highlighted a day-long ceremony at MIT honoring the birthday of civil rights leader Dr. Martin Luther King, Jr., slain by an assassin's bullet 18 years ago. The ceremony was part of the first national celebration of King's birthday.

Blacks have advanced to higher

levels than ever before in many fields, including state and local government, technology and business, Jackson explained.

But the nation has fallen short of Martin Luther King's "yardstick" of an equal society, she said. Minorities represent 19 percent of the total American workforce but only eight percent of all officials and managers, according to the Equal Employment Opportunities Commission, she noted. Black unemployment also remains high, Jackson said.

"The black middle class has grown and become more wealthy," she explained, while "one of two black children live in poverty today."

MIT administrators and faculty have "an implied social contract with minority colleagues and students" to provide them with "real academic and career opportunities," Jackson said.

The composition of the MIT faculty in part reflects the tendency of blacks to avoid careers in academia, she said. Only 14 of MIT's 1100 faculty members are black, although nine of these are tenured, according to Jackson. The Institute has experienced somewhat more success in hiring minority administrators, she said.

Jackson defended the merits of affirmative action programs. "People often forget that affirmative action is a new phenomenon. It gives blacks a chance to perform on an equal basis."

South Africa: time is running out

"The issue of race in South Africa has obvious parallels with

events in US history," she asserted. "The protests of the 1960s lead to a breakdown of the obvious vestiges of enslavement and discrimination."

"But the whites and blacks are becoming more entrenched in their positions in South Africa," she observed. "The violence is escalating and time is running out."

King's belief in non-violent protest was based on the belief that it is wrong to use immoral means to pursue moral ends, she said.

MIT's investments in US companies operating in South Africa are "a moral means for immoral ends," Jackson claimed.

Jackson advises today's students

Students today ought to be aware of the changes taking place in American society, Jackson stressed.

"I challenge you [students] to take advantage of the opportunity for continued change in this country," Jackson said. "Our society is becoming more pluralistic, so a strong sense of self is important."

Today's immigrants are coming from the Third World rather than Europe and are changing the face of the nation, she observed.

"It's necessary to understand the fostering of a common culture as well as the different cultures in this country," she continued. "Those who lack skills will be effectively disenfranchised because they cannot participate fully in national life. You have a

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MIT may reduce class size Undergraduates will keep housing guarantee

By Suzanne J. Sandor

Faced with unusually high undergraduate dormitory crowding, the MIT Admissions Office staff said it would probably aim for a smaller class size, as well as taking extra measures to counter declines in the number of women and minority students.

But MIT's guarantee of eight terms of on-campus housing to

freshmen will not change, despite the crowding problem, according to Associate Dean for Student Affairs Robert A. Sherwood.

Last September, Sherwood speculated that removing the eight-term guarantee might become necessary because fewer spaces were available each year due to the tight off-campus housing market. Reducing the

freshman class size would be preferable to ending the eight-term guarantee, President Paul E. Gray '54 said at that time.

The Admissions Office is likely to aim for 50 fewer freshmen in next year's entering class than it targeted for this year's freshman class, according to Director of Admissions Michael C. Behnke. But "this change may or may not happen," said Marilee Jones, assistant director of admissions.

The Academic Council, which sets the class size target each year, is concerned with the "really extraordinary crowding conditions in the dormitory system," according to its executive secretary, Kathryn Lombardi. The

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Few faculty express concern over effects of military spending at MIT

By Jeffrey C. Gealow

Many researchers are finding that the only way to retain funding for research is to apply for Strategic Defense Initiative (SDI) money, according to Vera Kistiakowsky, professor of physics. Kistiakowsky's comment arose in a Jan. 21 panel discussion sponsored by MIT Student Pugwash and the Program in Science Technology and Society (STS) on the military's influence at MIT.

"The participation of this university [in SDI] is not just research," Kistiakowsky said. "It is a political contribution."

Also, SDI does not represent basic research, she said, but it is rather a development of narrow military applications of science. SDI projects obscure the Institute's focus on basic scientific questions.

Richard A. Cowan G agreed that military funding of research promotes military projects at the expense of other applications of technology. MIT should recognize this distortion of research priorities, and it should find alternative sponsors for militarily funded research, he suggested.

"Lincoln Labs is getting almost one-third of all SDI funds which go to universities and university-run labs," Kistiakowsky pointed out. "Students will increasingly be faced with the choice of taking jobs in the weapons industry or leaving their field of interest," she added.

But Professor Carl Kaysen, STS director and chairman of the Committee on the Military Influence on MIT, said that most of the MIT faculty has not expres-

sed much concern about military influence at MIT. A committee survey indicated that few professors felt that the military influence posed a problem for MIT, Kaysen said.

Most MIT laboratories receive small portions of their funding from the Department of Defense although some, such as the Laboratory for Computer Science, receive most of their support from the military, Kaysen added. The Department of Defense accounts for approximately 16 percent of MIT's federal funding, Kaysen continued.

Daniel J. O'Day '87, member of the Committee on the Military Influence on MIT, added that the committee is concerned about the possibility of restrictions on the publication of military-sponsored research.

Harry A. Atwater G said that many students who accept graduate funding from the Hertz Foundation are not aware of the foundation's bias for military-related research. The Hertz Foundation is a private source of graduate fellowships.

"The administration ought to request information about the Hertz Foundation's operations and goals and make it available to students seeking fellowships," Atwater suggested. "MIT should make other [scholarship] options known to students," he added.

Atwater warned that working in military-oriented research laboratories can affect one's perception of the appropriateness of military projects. "Students should develop political and social perspectives before going to the workplace," he said.



Tech photo by Stephen P. Berczuk

Prof. Carl Kaysen, Dan O'Day '87, and Harry Atwater G answer questions from the audience in yesterday's IAP seminar "The Military Influence and MIT: How Much and Why Should I Care, Anyway?"



Tech photo by Sidhu Banerjee

Assistant Dean for Student Affairs Peter H. Brown.

Brown addresses lack of MIT graduate housing

By Mary Condello

A housing task force composed of MIT administrators and graduate student representatives is exploring ways to address the lack of graduate student housing on campus, including off-campus renovations and a possible housing tenure system. Peter H. Brown, assistant dean for student affairs, formed the task force last fall.

The demand for graduate housing far exceeds the current supply, Brown said. MIT can accommodate approximately 25 percent of graduate students who desire housing.

The housing group will gather input from graduate students, housemasters of the graduate dormitories, and others involved with the housing situation. The group will discuss different housing options and make recommendations to the Office of the Dean for Student Affairs (ODSA).

"Any [housing] policy we'd hope to install would have to have the blessing of the people involved," Brown said.

The members of the group besides Brown are Robert A. Sherwood, associate dean for student affairs; Professor Vernon Ingram, faculty resident of Ashdown

House; Professor Edith Waldstein, faculty resident of Green Hall; Linda Patton, manager of Housing Services; Alison Burgess G, president of Ashdown House; James Hickman G, an off-campus graduate student representative; and Janine Nell G, president of the Graduate Student Council (GSC).

Solutions?

Brown described two possibilities for improving the housing situation:

- MIT could build or renovate off-campus housing. Two problems with building new housing are the lack of available land and the lack of funding.

- The ODSA could change provisions of its on-campus housing policy. It could limit the amount of time graduate students may stay in the housing system through a tenure system, or make special provisions for eligibility for on-campus housing.

For example, a portion of the spaces could be designated for international students, who have more difficulty finding housing in the Boston area. The price of on-campus housing could be adjusted to make it comparable to off-campus costs.

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Human-powered flight: Daedalus seeks record

By Robie Silbergleit

Technology

Daedalus, the archetypal engineer of Greek mythology, escaped the labyrinth of King Minos by flying out with wings he built himself. He was the only mortal in ancient mythology to fly without divine assistance.

Project Daedalus, an undertaking jointly organized by MIT and the Smithsonian Air and Space Museum, may transform the Greek myth into reality. The project's developers seek to construct a craft capable of setting new world records for human-powered flight distance and duration.

"The Daedalus myth represents the dream of flight," said Stephen R. Bussolari '83, assistant professor in the Department of Aeronautics and Astronautics.

The group hopes by the spring of 1987 to make the craft fly 70 miles in about 4.5 hours, according to Bussolari, a member of the Daedalus working group. He dis-

cussed the project in an IAP lecture Jan. 17.

The current record for human-powered flight distance is held by the Gossamer Albatross craft, which flew 22.5 miles across the English Channel. The Monarch B, a human-powered aircraft built at MIT, set the world speed record for human-powered flight — approximately 22 mph — at the Kremer World Speed Competition in 1984.

The Daedalus aircraft, like the mythological character, will fly from the island of Crete to the Greek mainland, Bussolari explained.

The Daedalus project has three goals, Bussolari continued. The first is the study of Daedalus, Western civilization's most prominent mythical engineer. The second is to explore new levels of human physiological achievement. Finally, the project will utilize new advances in aeronautical engineering.

The Daedalus team hopes to take away the distance record from the Gossamer Albatross by designing a better airplane and

by flying in more favorable weather, Bussolari said. The Albatross fought against a substantial head wind during most of its record-setting flight.

The design goals of the Daedalus plane include a 70-mile range, 15 knot speed, the ability to fly at night or in light fog, and a structure that can withstand about three times the force of gravity, Bussolari said. One prototype design of the craft has a wingspan of 31 meters and a mass of only 31 kilograms obtained using an advanced carbon fiber structure.

The pilot will provide three watts per kilogram of body weight. "That's like riding a bicycle on level ground at 20 mph for 4.5 hours," Bussolari observed.

The project will soon finish its feasibility study phase and enter the design phase, he said.

MIT professors discuss future of US economy

By Earl C. Yen

In the coming years, Americans may suffer a decline in how well they live and how many things they can buy, said George N. Hatsopoulos '49, senior lecturer in the Department of Mechanical Engineering.

Hatsopoulos' prediction was one of several gloomy forecasts of the United States' economic future made in a Jan. 14 panel discussion on "American in the World Economy."

"Employment in the manufacturing sector has been declining for several years," Hatsopoulos observed. He predicted that a shift from a manufacturing-based economy to a service-based one would cause a decline in the standard of living.

On the average, service jobs are only half as productive as manufacturing jobs, he estimated. A lower productivity would

reduce America's share of goods produced in the world, he continued, warning that such a reduction would place "our growth in standard of living in a very precarious situation."

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Athens to use RISC machine

International Business Machines (IBM) announced yesterday a "relatively new approach to computer architecture" involving reduced instruction set computers (RISC) technology that will be the basis for the Project Athena Phase II computer architecture, according to Charles Saulson, an IBM research engineer working with Project Athena. The IBM RT PC will be based on the microprocessor technology.

Microprocessors in reduced instruction set computers, such as the Digital Electronics Corporation VAX series, have several hundred instructions. Not all instructions are able to operate in one cycle. RISC machines have a small number of instructions, each executing in one machine cycle. The microprocessor in the RT PC has a little more than 100 instructions. These machines can be easily modified to increase the average computational speed.

Admissions seeks to cut class size while increasing minority enrollment

(Continued from page 1)

council intends to ensure on-campus housing for all freshmen, Lombardi said. "What we do not want freshmen to do is to come to MIT and go off to be by themselves in an apartment in the city," she explained.

The Admissions Office has accepted 421 of 1056 applicants to the Early Action admissions program, of which 35 percent were women and five and one-half percent minorities. Last year, 444 of 1074 early applicants were accepted. The office has released no statistics yet on regular applicants, whose deadline for submitting applications was Jan. 1.

MIT expects about 60 percent of admitted applicants to enroll, according to Jones. Most schools' "yield" is below 50 percent, she noted.

Few minorities attend; Institute's image blamed

The number of black students attending MIT is decreasing, although the admission rates for other minorities are increasing, according to admissions director Behnke.

The Admissions Office increased its staff this year and has hired extra people to help increase the number of women and

minority students at MIT, Jones said. "Our main plan is to do as much personal contact with applicants possible such as more mailings and more direct information than before," she explained.

The Association of MIT Alumnae for the first time called a number of qualified female high school students to urge them to apply this year, Jones said. MIT hopes to increase its female enrollment by increasing the number of women applicants, Jones said. The admissions process is sex-blind.

Increasing the enrollment of minority students, particularly black students, is very difficult, Lombardi said.

"We are not alone in facing this issue of declining enrollment of black students," she said. "We want to take a look at the experiences of minority students here to see if we can get a better understanding about what is good and bad about MIT."

The number of black high school students taking the Scholastic Achievement Test (SAT) has been decreasing for the past few years, Jones observed. "Nobody can explain it [this trend]," she said. "The number of black

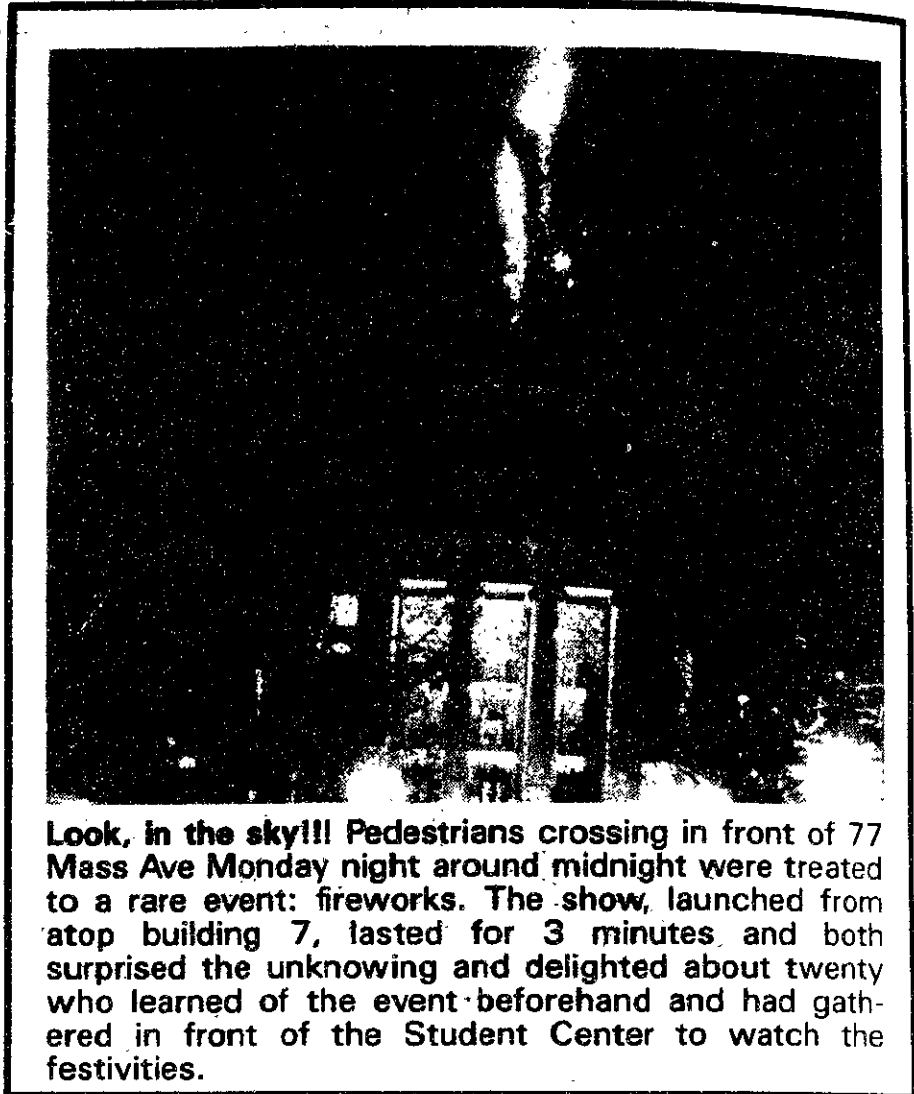
students is not going down, but the number of black students and minority students filling up community colleges is very high."

Jones cited MIT's image as a possible reason for the decline in women and minority students at MIT. "MIT has the reputation of being white, male, and cold," she said. "Among cultures in this country that may not respect coldness, MIT is not the place parents want their children to come for college."

Behnke is considering three questions about the admissions process itself:

- What exactly are MIT's admission criteria?
- Is MIT really getting the kind of students it wants to get?
- Are there ways we can change the admission process to get the kind of students MIT wants to get?

"In general, we are trying to raise the visibility of MIT around the country as a place where a student can come and get a very good education," Lombardi said. "MIT really has to do a much better job at communication of the full image of fields it offers. . . . MIT has a strong image, but it is still one of being extraordinarily difficult to get into."



Look, in the sky!!! Pedestrians crossing in front of 77 Mass Ave Monday night around midnight were treated to a rare event: fireworks. The show, launched from atop building 7, lasted for 3 minutes and both surprised the unknowing and delighted about twenty who learned of the event beforehand and had gathered in front of the Student Center to watch the festivities.

Physicists discover fifth force

By David P. Hamilton

Technology

Physicists at Purdue University believe they have discovered a fifth elementary force of nature. This postulated force, named hypercharge, may oppose the force of gravity.

Dr. Ephraim Fischbach and his colleagues have reinterpreted the results of the experiments of Roland von Eötvös, a Hungarian scientist of the early 20th century. Eötvös' work involved a test of the principle of equivalence, an Einsteinian postulate stating that

gravity affects objects independently of their composition. Eötvös found a small but systematic error in his calculations and declared a null experiment.

The principle of equivalence is one of the fundamental assumptions of Einstein's General Theory of Relativity. Even the verification of hypercharge is unlikely to seriously affect the principle, according to Peter Saulson, a principle research scientist for the MIT Department of Physics.

Fischbach declared in the Jan. 6 issue of *Physical Review Letters* that Eötvös' error is systematic enough to prove the existence of an ephemeral force opposed to that of gravity.

Saulson said that Fischbach had found an "astoundingly good" correlation between the degree of the error and the baryon number of the tested materials. The baryon number of a material is equal to the total number of protons and neutrons in its nucleus.

The extremely localized effect of the hypercharge force would not significantly damage the theory of relativity, Saulson said.

Unlike gravity, whose effects seem to extend to an infinite distance, hypercharge appears to have a finite range of approximately 200 meters, he continued.

Two other elementary forces, the strong and weak nuclear forces, also have finite ranges, although the range of these forces is more on the order of the diameter of the atomic nucleus, Saulson said.

Fischbach also quoted the results of more recent experiments which seem to support the existence of hypercharge, Saulson said.

Experiments conducted as far

as one kilometer underground by Frank D. Stacey of the University of Queensland in Australia indicate that the force of gravity varies by as much as seven-tenths of one percent at different depths in the earth.

Other scientists have reported the apparent effects of another elementary force in experiments conducted at the Fermi National Accelerator Laboratory in Batavia, Illinois, according to a Jan. 8 article in the *New York Times*.

The theory of hypercharge could still face some problems, Saulson claimed. For instance, Eötvös' "systematic trend" of error is greater than Stacey's reported gravimetric anomaly by a factor of more than 20.

Reasonable explanations for this disagreement exist, Saulson suggested. He elaborated on the difficulty of Eötvös' original experiment, which involved the use of a torsion balance which would respond to gravity while taking the rotation of the earth into account.

Interpreting data from a 60-year-old experiment is also rather difficult, Saulson said. In addition, Stacey's work required him to estimate the density of the rock above him as he conducted his experiments. These estimates could easily have been in error, he continued.

If hypercharge actually does exist, it would be a step away from physicists' attempts to mathematically unify the elementary forces of nature, Saulson said. But widespread acceptance of the theory would not threaten any physicist's "dearly-cherished notions," he added.

The theory would still be a "first-rate" discovery if verified, Saulson said.

BSU founder stresses educational importance

(Continued from page 1)

responsibility to fully educate yourself for life."

Jackson, who co-founded the Black Students' Union at MIT, spoke of her later years at MIT as a "difficult but exhilarating period."

She and other black students in 1968 presented a plan to the MIT administration for increasing black enrollment. The plan included the increased recruitment of minorities, better financial aid opportunities, and the establishment of Project Interphase, a summer program to help newly admitted students make a successful transition to MIT.

She described the black students' discussions with the administrators as "often heated,

sometimes nasty." Nevertheless, black enrollment in 1969 jumped to 57 students, compared to an average of five in the previous years.

After receiving her PhD from MIT, Jackson became a research associate at the Fermi National Accelerator Laboratory. She later worked at the European Organization for Nuclear Research (CERN) and the Stanford Linear Accelerator Center. A member of the MIT Corporation from 1975 to 1985, Jackson was recently elected vice president of the MIT Alumni Association.

Jackson, currently a research physicist at AT&T Bell Laboratories, is also the first black woman in the United States to receive a doctorate in physics.

news roundup

Solar System

Voyager 2 approaches Uranus — Voyager 2, the scientific space probe which left earth in 1977, will fly to within 50,000 miles of the cloudtops of the planet Uranus on Friday, and will give scientists many answers about the icy, distant world. Scientists expect the probe to continue working well for the flyby and hope that it will continue working through to the flyby of the planet Neptune in 1989. Members of the MIT community may watch unedited pictures of the flyby Friday at 1 pm in room 34-101.

World

Britain and France plan tunnel — The French and British governments announced plans Tuesday to construct two 31-mile railway tunnels under the English channel, fulfilling the long held dream to connect England to Europe. Express trains will take 30 minutes to carry autos, buses, and trucks. Construction cost is estimated at \$6.6 billion, and begins next year; planned completion is in 1993. The plans also call for construction of a roadway tunnel to begin by 1990.

Explosion may have caused Air India jet crash — A team of five Indian scientists have concluded that a chemical explosion, possibly caused by a bomb, occurred in the front cargo hold of the Air India jet which crashed last year, killing all 329 people on board. Sikhs claimed to have caused the crash by placing bombs aboard.

Nation

Transportation Department will propose to retain lower fuel standard — The Department of Transportation plans to extend last summer's reduction of the required average fuel consumption of 1986 cars from 27.5 to 26 miles per gallon. The proposal could save General Motors and Ford several hundred million dollars in fines. Critics of the program include the Chrysler Corporation, whose fleet was more efficient than the required standard.

Churches sue United States for unreasonable search for illegal aliens — Four Arizona congregations filed suit in Phoenix charging that the government's tape recordings and infiltrations of congregations suspected of harboring Central Americans violated their constitutional rights.

Local

CHC urges historic designation for Harvard Square — The Cambridge Historical Commission (CHC) will submit a list of 12 districts and 36 buildings in the Harvard Square area to the National Park Service to be considered for designation by the National Register of Historic Places.

Weather

Put those overcoats back in the closet — Tomorrow promises to be just a bit warmer than usual with blue skies and highs near 50. Thursday will be colder with highs in the 30s.

Donald Varona
Stephen S. Pao

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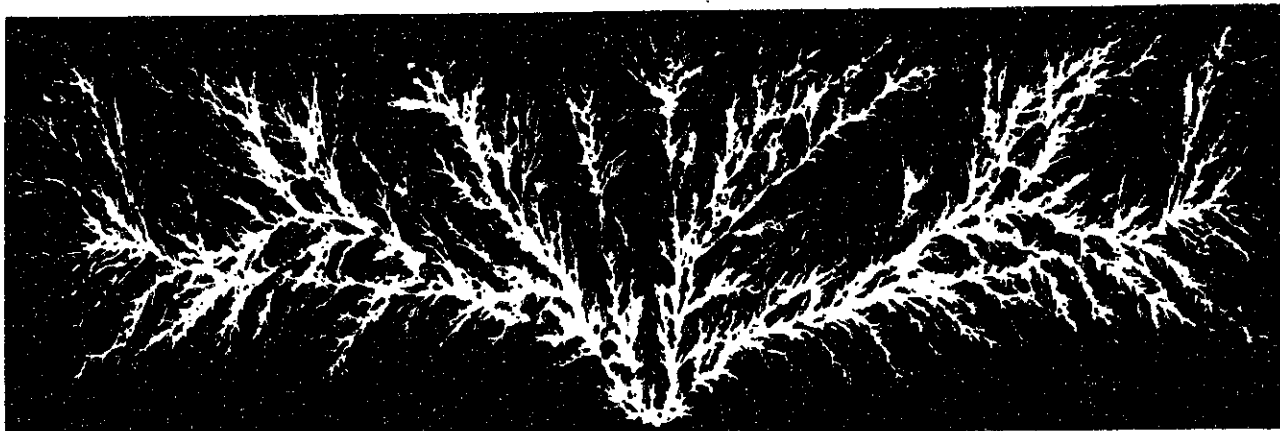
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opinion

Editorial

Question concepts of MIT education

The Committee on the Undergraduate Program (CUP) will meet next week to determine what issues it should consider in the coming year. This agenda-setting meeting comes at a crucial time: MIT is currently in the midst of a critical evaluation of its undergraduate programs. The very theme of an MIT undergraduate education is being scrutinized.

Although the CUP has not disclosed its agenda, we feel the following areas demand its attention:

- **Tenure:** The CUP must address the process by which MIT departments approve tenure for their professors. The Institute proudly advertises the fact that tenured professors teach undergraduate courses, although the Institute's choice of those professors is primarily on the quality of their research. Departments must find a way to select faculty who are recognized as outstanding teachers — especially in core classes — while maintaining MIT's high standards as a research institute.

MIT must ensure that tenured faculty members have a clear commitment to undergraduate education, not just in classes and labs, but also outside the classroom and in community events.

Departments need to find a way to maintain the quality of their research while assembling a faculty which can inspire undergraduates to go beyond the classroom for their education. Departments should reconsider the priorities of research and teaching ability and strike a balance between the two in making tenure decisions. The real sacrifice is the damage done to undergraduate education when great educators become a rare commodity.

- **Humanities and Social Sciences:** Few undergraduates major in MIT's social sciences and humanities programs, even though their high quality is unquestionable. Students majoring in humanities or social sciences add needed diversity to the community. The CUP must examine ways to broaden the emphasis of an MIT education in order to attract a more diverse student body.

- **Courses:** Students need more information about the courses they sign up for. Although MIT has an unusually flexible system for assigning credit to academic subjects, this flexibility is rarely used and often abused. Some subjects require far more work than their unit rating indicates; some require far less. The CUP should enforce a better correlation between a subject's workload, as students experience it, and a subject's unit rating.

To provide more information about courses, the CUP should encourage all departments to release a term guide — similar to the excellent Humanities and Social Sciences guide — detailing the number of assignments and exams for each subject. The CUP should also recommend support services for the revival of an improved Student Course Evaluation Guide.

- **Project Athena:** The CUP must investigate Project Athena's present and future impact on the undergraduate program, taking into account the lasting effects when the project's five-year experimental period ends in 1988. Has Project Athena improved or degraded student access to word processing? Does the specially developed educational software make Athena courses better or worse than their earlier versions?

The CUP should address questions like these in order to understand how a campus-wide computer network can enhance the quality of undergraduate education.

The successful resolution of these issues is essential to MIT's continuation and growth as a top-rate educational institution.



Column/Edward Whang

Students will play important role in shaping MIT's future

Last week, representatives from the California Institute of Technology visited MIT in their continuing effort to reform Caltech's curriculum. Their visit came amid the similar undergraduate educational reevaluation taking place here.

Caltech professor Sunney Chan told *The Tech* that Caltech students are overworked and do not have time to "digest and think." Sound familiar? Faced with a 30 percent dropout rate and a shrinking applicant pool, Caltech's administration has decided that changes must be made.

MIT, too, has realized that its undergraduate program could stand improvement. Students and faculty agree that overwhelming pressure and pace often impede learning. For many students, studying at MIT merely consists of churning out weekly problem sets and papers and cramming for tomorrow's test. The environment permits little love of learning.

Too narrow a focus in education is another problem often cited. MIT graduates will serve as leaders of a technologically advanced world. MIT may not be adequately preparing them for this role. Degree requirements of-

ten leave few opportunities for breadth and diversity.

Dean of Undergraduate Education Margaret L. A. MacVicar '65 has been leading an evaluation of what an MIT education could and should be. The results of this study could mean radical alterations of undergraduate programs — MIT in 15 years may very well be unrecognizable to current students.

Several possibilities are already in the works. The Committee on Integrated Studies will recommend the creation of a four-year program leading to a Bachelor of Science and Arts degree, emphasizing both technical and humanistic concerns. This degree could be the first in a series of alternative degree options.

Another change could be extending the number of years of education, as suggested by Steven R. Lerman '72, professor of civil engineering.

While the faculty is evaluating its offerings, students might do well to look at themselves, to see how much of the pressure is self-inflicted. Many students go far beyond minimum degree requirements. They opt for advanced and graduate courses. Some seem to thrive on pressure and a heavy workload. For the rest, develop-

ing efficient study habits and avoiding unreasonable overloading can do wonders.

Then again, students did choose to come here, realizing that MIT's prestige carries a price. Professor Alvin W. Drake '57, chairman of the Committee on Students Affairs said, "We are a firehose; we want to be a firehose; we will always be a firehose."

As much as students may yell "IHTEP" while here, they are appreciative of MIT's unique assets. When graduates look back on their years at MIT, it is with a sense of pride for having "survived," President Paul E. Gray '54 said.

Keeping MIT's unique assets while eliminating the problems will be difficult. How can intensity be sustained while students are relieved of pressure? How can MIT diversify its educational offerings while maintaining premier science and engineering programs?

We, as undergraduates at MIT, shall be playing a crucial role in answering these tough questions. As the administration's main source of feedback, we are in a position to directly affect MIT's future. This responsibility is one we can't ignore.

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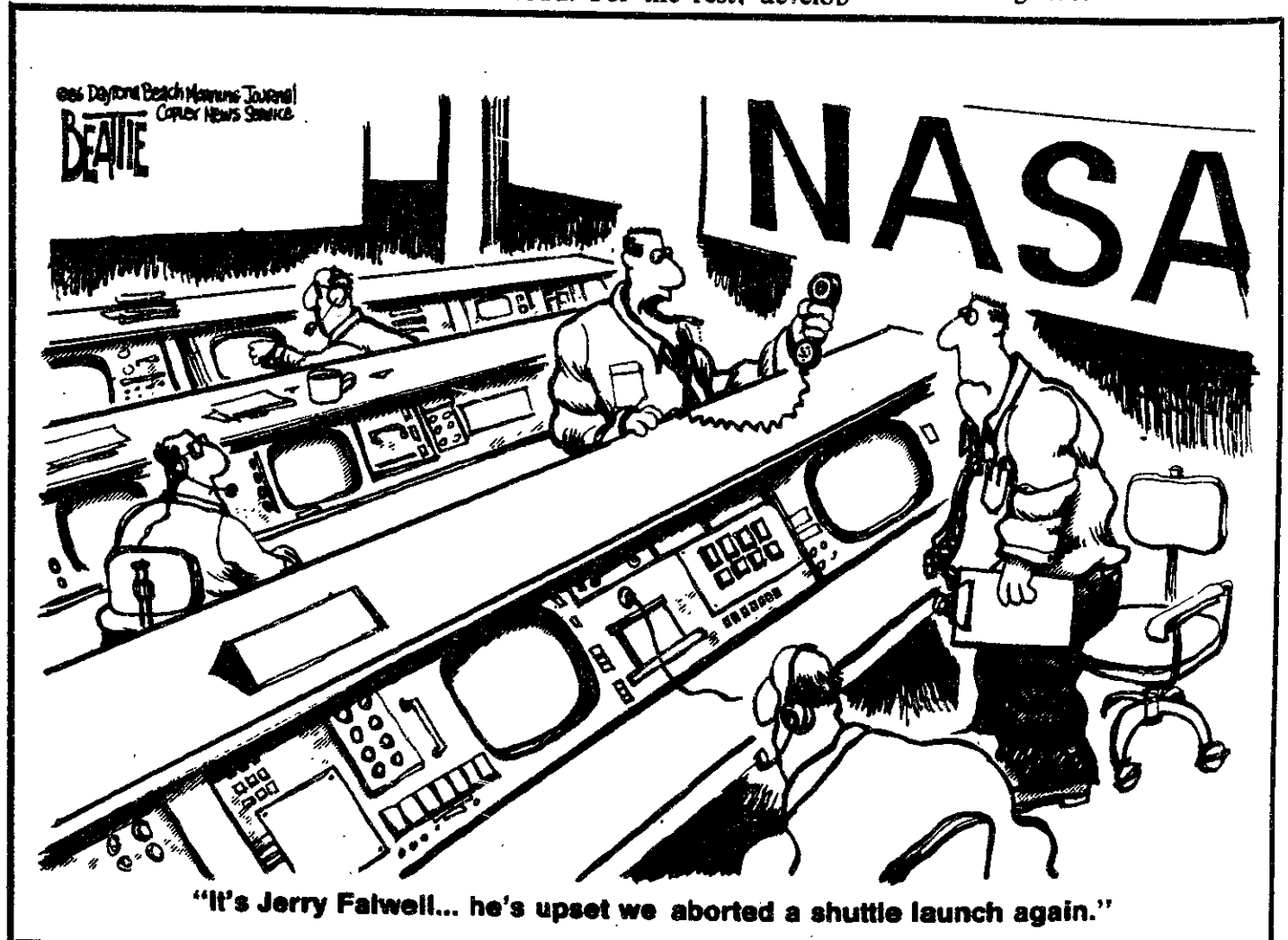
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"It's Jerry Falwell... he's upset we aborted a shuttle launch again."

notices

Listings

Student activities, administrative offices, academic departments and other groups — both on and off the MIT campus — can list meetings, activities, and other announcements in *The Tech's* "Notes" section. Send items of interest (typed and double spaced) via Institute mail to "News Notes, *The Tech*, room W20-483," or via US mail to "News Notes, *The Tech*, PO Box 29, MIT Branch, Cambridge, MA 02139." Notes run on a space-available basis only; priority is given to official Institute announcements and MIT student activities. *The Tech* reserves the right to edit all listings, and makes no endorsement of groups or activities listed.

Wednesday, Jan. 22

Voyager 2 approaching the planet Uranus. Are you ready for the upcoming encounter? Kick-off Jet Propulsion Laboratory press conference live via satellite. 1-3 pm MIT cable TV and in room 37-252.

Illustrated lecture on the technology of the **Pioneer and Voyager missions** to the outer planets. 8 pm, room 26-100.

The Position of Women in Islam, a videotape presented by MIT Islamic Society. 12:30-2 pm, 3-133.

A film, **King: Man of Peace**, will be presented at 12:30 pm in the Boston University School of Theology Oxnham Lounge, 745 Commonwealth Ave., Boston.

Amateur Radio License Exams will be offered at 7 pm in room 1-134. All classes offered, Novice to Extra. Fee \$4.25, two forms of picture identification required. Contact Ron Hoffman x3-5280 or Craig Rodgers dl 6616.

Thursday, Jan. 23

Voyager 2 close encounter with the planet Uranus. Unusual opportunity for experiencing real time slow-scan images direct from Voyager 2, unedited. Also the daily JPL press conference. 1-3 pm, room 34-101.

International students from the Boston University School of Theology will pay tribute to Dr. Martin Luther King, Jr. when they present **The Image of King in the Global Village: Reflections by International Students** in a service at 10 am at March Chapel, 735 Commonwealth Ave., Boston.

In celebration of Christian Unity Week, the Boston Theological Institute is holding an **ecumenical worship service**, to which the public is invited, at 5:30 pm at the Chapel in Saint Mary's Hall, on the campus of Boston College in Chestnut Hill, Massachusetts. Dr. Richard Nesmith, Dean of the Boston University School of Theology, is the homilist for the service. An informal reception with refreshments will follow this celebration, and everyone is encouraged to stay and meet with the liturgists.

Friday, Jan. 24

Voyager 2 close encounter with the planet Uranus. Unusual opportunity for experiencing real time slow-scan images direct from Voyager 2, unedited. Also the daily JPL press conference. 12-4 pm, room 34-101.

Islam and the Gospels, a lecture by Gary Miller, sponsored by MIT Islamic Society. 7:30 pm, 54-100.

Saturday, Jan. 25

Voyager 2 Jet Propulsion Laboratory Press Conference. 1-3 pm, MIT cable TV and room 37-252.

Columbus and Saunders Parks, in South Boston, will be the site of the **Third Annual Sno-Ball Softball Tournament** to benefit the March of Dimes Birth Defects Foundation. The single-elimination, slow-pitch tourney is set to begin at 9 am, with men's, women's, and co-ed divisions represented. Trophies will be awarded to the two top place finishers for each category. The tournament will be played with or without snow.

The entry fee is a \$100 donation per team to the March of Dimes. The deadline to enter is Monday, Jan. 20. For more information or to enter your team, please contact the March of Dimes, Massachusetts Bay Chapter, 865 Providence Highway, Dedham, MA 02026, or telephone 329-1360.

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CAMPUS INTERVIEW DATE:
February 13

Group studies tenure in graduate dormitories

(Continued from page 1)

Burgess said a long-term solution to the housing problem would be to build more housing. But graduate housing is not on the list to receive capital endowment funds, she added.

A tenure system

Hickman favors a two-year tenure system, because students who have been here a year or more know the area and would have less of a problem finding off-campus apartments. Instituting a two-year tenure system would not affect current students, he said.

But other members of the committee are reluctant to limit housing tenure for two years. The problem with a one- or two-year tenure system, Burgess said, is that living in a dormitory for only two years would make the dormitory feel more like a hotel than a home. If students are "passing through a place, they don't respect the property," she said. A two-year tenure might be the fairest solution but would probably not be the best, Burgess explained.

"A short tenure would destroy Ashdown," Ingram agreed. It takes time to build relationships, he said. He pointed out that many of the students who run Ashdown have lived there for over two years. The atmosphere and sense of community would seriously be affected by a tenure limit, he stressed.

In addition, 60 percent of Ashdown residents are foreign students. They need time to adjust to the culture and a short tenure would make this difficult, Ingram explained.

"The reputation of MIT depends on what its graduate stu-

dents do in research as much as it depends on its faculty," Ingram said. Graduate housing and other issues should be of higher concern, he concluded.

Twenty-five admitted graduate students decided not to attend MIT last fall due to housing and the cost of living in the Boston area, Nell said. The GSC Housing and Community Affairs Committee is surveying the faculty to find out if there are more cases they are aware of in which admitted graduate students have decided not to attend MIT because of the housing situation, Burgess said.

The lottery system

Hickman would like to see the present lottery system revised. "The current system doesn't benefit the people who could use it the most [incoming graduate students]," Hickman said.

The 80 percent of incoming graduate students who do not get into on-campus housing in the June lottery have to use their own time and money to find a place to live, he said. Another lottery is held in October to distribute the spaces that open up during the summer. This procedure is not helpful to incoming students who have to find apartments over the summer. They are usually stuck in leases by October when the extra rooms become available, Hickman said.

Hickman also felt it is unfair that graduate students who do obtain on-campus housing can stay on-campus until they graduate.

A questionnaire will be distributed to graduate students by the GSC Housing and Community Affairs Committee asking them if they are satisfied with their housing and if they feel it affects their academics, Hickman said.

Carolyn Lee G said that the housing situation is partly responsible for the lack of "graduate school cohesion." Off-campus students are at a disadvantage, she said.

notices

Monday, Jan. 27

Voyager 2 Jet Propulsion Laboratory Press Conference. 1-3 pm, MIT cable TV and room 37-252.

How to Cope with Adolescents During Divorce and in Stepfamilies is the title of a free lecture to be given by Melissa Powell, a family therapist at Riverside Family Counseling. Sponsored by Riverside Family Institute, a non-profit organization, the lecture will be held at 8 pm at 259 Walnut St., Newtonville, Room 14. No pre-registration is required. For more information, please call 964-6933.

Tuesday, Jan. 28

Voyager 2 Jet Propulsion Laboratory Press Conference. Final wrap-up conference and summary. 1-4 pm, MIT cable TV and room 37-252.

Friday, Jan. 31

Boston University's Center for Adaptive Systems will present Professor Gary E. Schwartz, Yale University, on January 31 on Psychophysiology of Emotion and Health: A Systems Approach on 3:30 pm in Room 241, 111 Cumming St. Refreshments will be offered at 3 pm. The lecture is free and open to the public. For more information, please contact Cynthia Suchta at 353-7857.

The Graduate Student Council presents a **SKATING PARTY** FREE (bring ID)

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Rental Skates — \$1.00

Questions? Call Steve Anderson x5220 or 491-3865, or GSC office.

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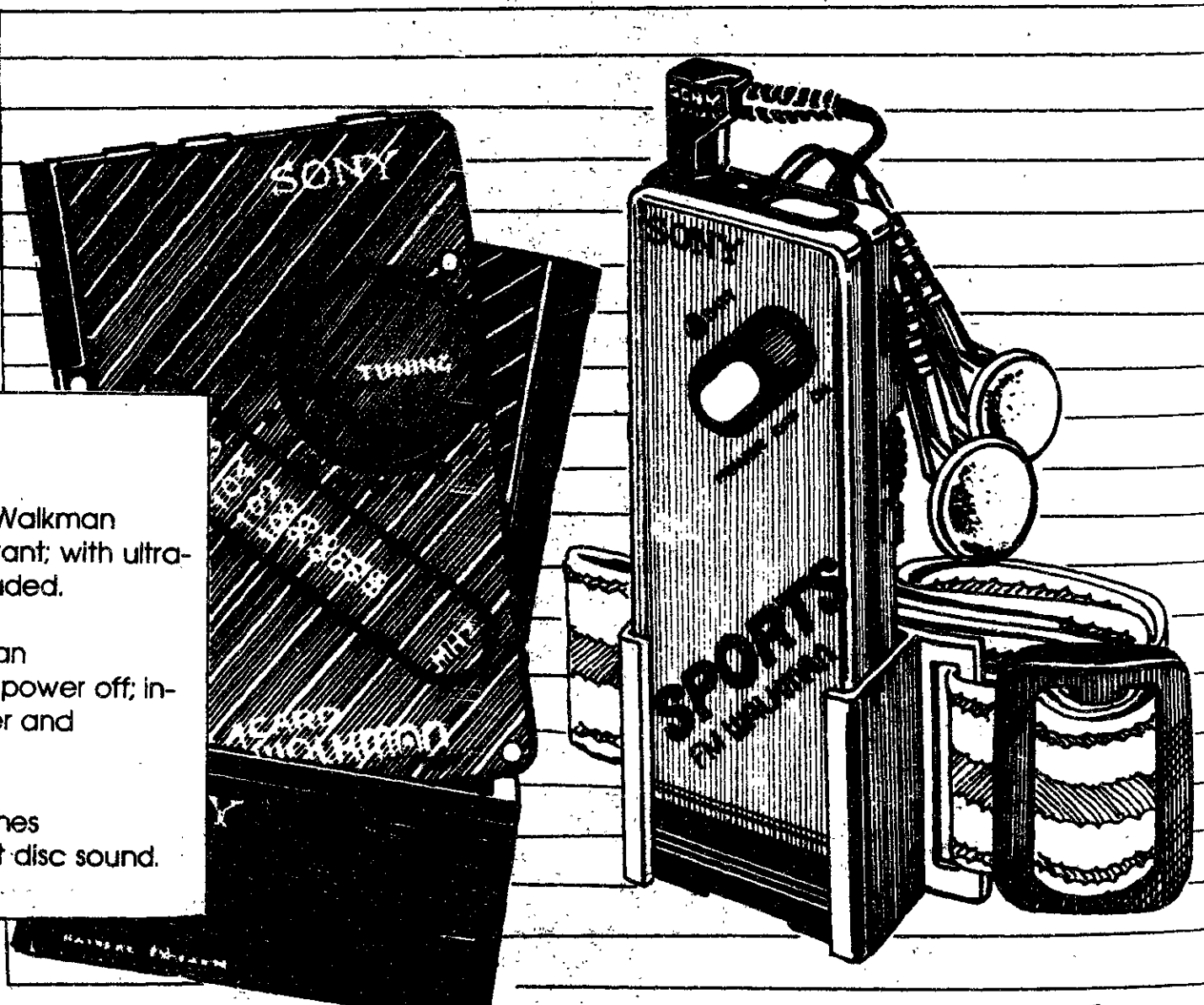
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Photographs from the distant Voyager

WEDNESDAY, JANUARY 22, 1986 The Tech PAGE 7

By Simon L. Garfinkel

Technology

The eight-year journey away from the sun, involving slingshot turns and visits to the colored rings of Saturn and the moons of Jupiter, has brought the traveler three-billion miles from home.

The traveler will visit another world in two days.

The Voyager 2 spacecraft is about to make its closest approach to Uranus, the seventh planet from the sun. On Friday, Jan. 24, at 1 pm EST, the spacecraft will pass within 51,600 miles of the planet's blue-green cloud tops as it travels to the fringe of the solar system.

The MIT community will be able to witness the visit by watching unedited transmissions from the camera-toting Voyager 2 over a slow-scan television link between MIT and the Jet Propulsion Laboratory (JPL) in Pasadena, CA, said John W. Belcher, professor of physics at the MIT Center for Space Research (CSR).

The planet: Uranus is the third largest planet in the solar system, ringed by dark particles and tiny moons. It orbits the sun once every 84 years at a distance 19 times that separating the Earth from the sun. The planet's axis of rotation is tilted 95 degrees from the planet's plane of rotation. During the Voyager 2 encounter, Uranus' south pole will be pointing toward the sun.

The visitor: The Voyager 2 spacecraft carries a 10 kilogram instrument to measure plasma in space, the high-temperature, ionized gas composed of electrons and positive ions that can be found in lightning bolts and cosmic rays, in addition to television cameras and nine other experiments. The instruments will measure the planet's magnetosphere and the solar wind. Herbert S. Bridge PhD '50 heads the team running the experiment.

The \$600 million Grand Tour

The National Aeronautics and Space Administration launched the Voyager 2 on August 29, 1977. The craft flew past Jupiter on July 9, 1979, Saturn on August 25, 1981, and will encounter Neptune on August 25, 1989. The JPL estimated the cost of the Voyager Project, excluding the cost of the launches and tracking, at \$600 million.

Since the 1950s, scientists had been considering the possibility of a "Grand Tour" spacemission to probe the outer planets, according to Belcher. But the outer planets are positioned on the same side of the sun only once every 176 years, making such a mission possible only very rarely.

"It was fortunate that the technology was there in 1977," Belcher said at a lecture on the Uranus flyby. There will not be an opportunity for a similar mission until 2153.

Voyager used the "slingshot" effect to reach the outer planets so quickly. "Everytime you go by a planet, you pick up energy," explained Belcher. Voyager 2 has been traveling on "planet energy" ever since it approached Jupiter, he continued.

The primary purpose of the two Voyager missions was to study Jupiter and Saturn. "Originally, it was called the Mariner Jupiter-Saturn mission," said CSR Assistant Professor Ralph L. McNutt Jr. PhD '80. One of the high-priority science items at Saturn was to examine the atmosphere of Titan, a moon which scientists thought might hold life. A study of Titan would have "kicked [Voyager 2] out of the solar system," as it did Voyager 1, McNutt continued.

Voyager 1 found Titan's atmosphere to be composed of nitrogen and simple organic compounds at one and one-half times the pressure of Earth's atmosphere, according to the JPL. "If Voyager 1 had failed, they would have retargeted Voyager 2, and there would have been no Uranus and Neptune [Voyager 2 missions]," McNutt told the audience.

computers to compensate by sending data in a compressed format which takes less time to transmit.

Plasma: the MIT experiment

"We look at plasma," Belcher said in his Voyager lecture. Between the planets, "you don't see a vacuum — you see solar wind." Belcher said that Voyager will leave the

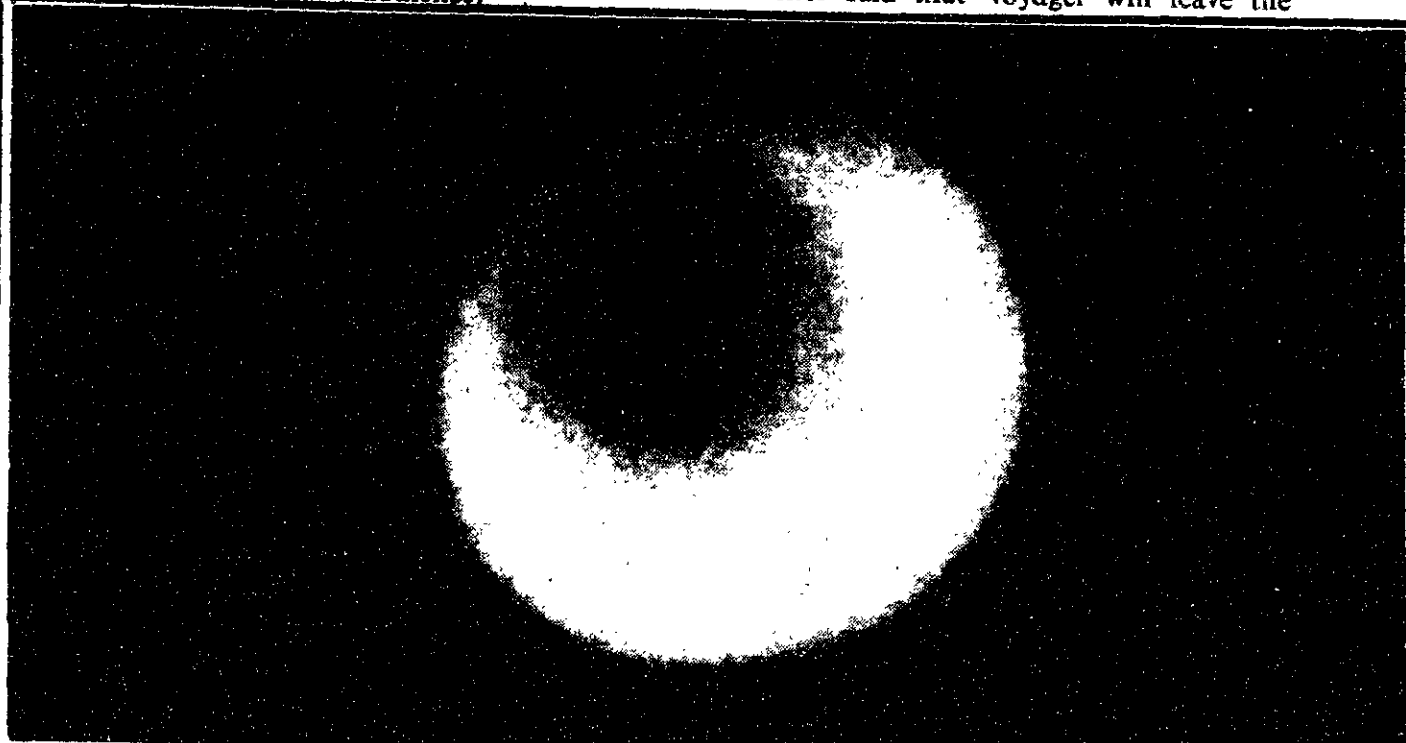


Photo courtesy JPL/NASA

This Voyager 2 photograph of Uranus is the first picture to show clear evidence of latitudinal banding in the planet's atmosphere, and one of the first indicating atmospheric structure of any sort. The computer-enhanced picture is a summation of five images returned Dec. 27, 1985, by Voyager's narrow-angle camera. The spacecraft was 36 million kilometers (22 million miles) from Uranus. At this distance, Voyager's cameras could have detected individual features as small as 660 kilometers (410 miles) across.

The concentric pattern emanates like a bull's-eye from the planet's pole of rotation, which in this view lies left of the center. Clouds in the Uranian atmosphere give rise to the pattern. In the original, unprocessed images, the contrast of the features producing the banding is low.

As Voyager speeds toward its Jan. 24 closest approach, it will return several thousand images of the planet, its moons and thin rings.

"99.9 percent of everything we will know about Uranus will come from this encounter," McNutt explained. "I just want to emphasize how unique this is. If you are very, very lucky, you might get to see Halley's Comet again, but there are currently no plans to go out to this part of the solar system again," he elaborated.

Communicating with an 8-year-old

The Voyager 2 spacecraft was designed for a five-year lifespan. Although the craft has survived in good shape, additional funding was required to receive and process the data the spacecraft is now sending. "Until recently, it wasn't clear" whether JPL would be able to run the mission, said McNutt. "We just got Uranus and Neptune by the skin of our teeth."

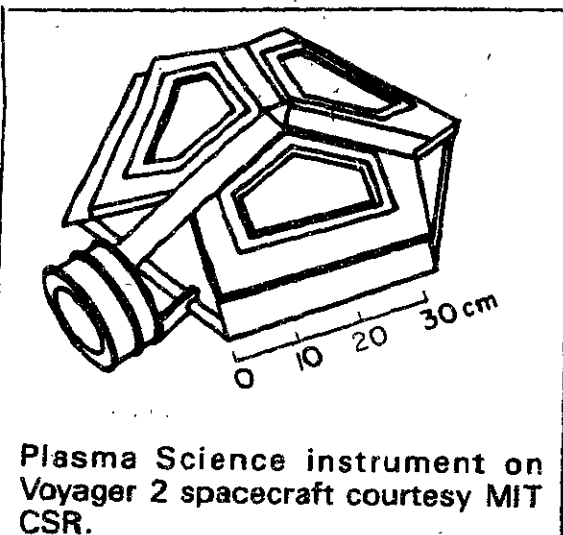
Communicating with an eight-year-old spacecraft 3 billion miles away is one of the continuing challenges of the Voyager program. Failures in both the primary and backup radio receivers prevented Voyager 2 from locking on to the transmission frequency of Earth commands. Voyager's engineers must therefore transmit commands at an exact frequency for the spacecraft to receive the signal, according to the JPL. This frequency depends on the spacecraft's temperature and the radio signal's Doppler shift, a phenomenon caused by relative motion between the Earth and the spacecraft.

Receiving data from the Voyager 2 is also difficult. Voyager's 20 watt X-band transmitter's signal has diminished in power to 10^{-21} watts. Only three receiving stations in the world can detect this signal. These stations, which make up the Deep Space Network, were specially upgraded to receive Voyager 2's Uranus pictures, according to McNutt.

Despite the improvements to the space network, JPL engineers have been forced to slow the data transmission rate of Voyager 2 from 44,800 bits per second at Saturn to 21,600 bits per second to improve the quality of the received signal. The engineers have also programmed Voyager 2's

Sun's "extended atmosphere" in the year 2010.

The MIT Plasma Science Experiment consists of a 30 centimeter box mounted on Voyager 2's scientific arm, explained Frances Bagenal PhD '81, a visiting scientist at the CSR. The experiment is designed to detect low energy charged parti-



Plasma Science instrument on Voyager 2 spacecraft courtesy MIT CSR.

cles, in the energy range of 10 electron-volts to 6 kilo-electron-volts. As Voyager 2 approaches a planet, the device measures the interactions of the solar wind with the planet, Bagenal continued.

These interactions depend on whether or not the planet possesses a magnetic field. Scientists do not know whether Uranus has a magnetic field.

If Uranus has no magnetic field, the MIT experiment will detect "perturbations [in the solar wind] from Uranus. It would be similar to interactions with Venus and Mars, which don't have magnetic fields," Bagenal said, "but with important differences because [Uranus] is much more distant from the sun."

In the past, scientists have found the presence of radio-emissions to be indicative of planetary magnetic fields. Bagenal said she would have expected Voyager 2 to detect radio emissions from Uranus by now if it possessed a magnetic field. Jupiter and Saturn both possess magnetic fields. Like these two planets, Uranus is a gas giant planet.

Pictures from a distant traveler

Uranus has been a faceless stranger to scientists, because Earth-based telescopes cannot see any detail in the distant planet. At this time, scientists have little idea what the final Voyager 2 photographs will look like.

"A lot of people didn't want [the direct transmission] to happen," McNutt said. "All the video images might show is a big silver ball and everybody will think, 'We paid all that money for this? Whether you are going to see five hours of silver balls or one by four by nine monoliths is anybody's guess,'" he said.

Two hours and 45 minutes after Voyager 2 makes its closest approach to the planet

Uranus — the time it takes the radio signal to travel from the craft to Earth — its pictures will be displayed, unedited, at JPL and MIT in 34-101, as well as at several other universities around the country. This is the first time that JPL has broadcast unedited, live pictures, according to Belcher. The viewing has been two years in the planning. "It's a complicated thing to plan and it's amazing it works. You don't make a mistake with a spacecraft three billion miles away," Belcher said.

The photographs will be transmitted from an electronic antenna array consisting of the Australian government's Parkes Radio Observatory 64-meter antenna and the Canberra Deep Space Network complex to JPL in Pasadena, according to the JPL press release. From JPL, the images will be transmitted over telephone lines by slow-scan television to MIT, explained Belcher.

"These will be the raw pictures, not a lot of contrast," Belcher said. "The planet is bland, not like Saturn and Jupiter. . . . [The pictures] may be dull, but you are seeing them at the same time as people at the JPL," he continued.

Even if the photographs appear featureless on the slow-scan television, McNutt said, scientists in the field of imaging processing at JPL will be able to extract hidden detail. "Rest assured that the people in image processing will work around the clock to send pictures to the White House," he said.

MIT Cable TV will broadcast four press conferences from JPL. The lab's staff will explain the significance of the Voyager 2 Uranus expedition and show their best computer-enhanced photographs of the planet. McNutt expects the press conferences on Wednesday, Saturday and Tuesday to be the most interesting.

The CSR has made available a computer simulation of the Uranus encounter on Project Athena. The program is called "/usr/potluck/uranus" and may be run on any Athena graphics terminal in the Student Center cluster.

Voyager 2's Plutonium power supply will have lost enough energy in the year 2010 to render the spacecraft useless, although Belcher believes that it will be possible to track the probe until it is an ancient traveler, 300 AU (47 billion miles) from its creators.

Uranus

Schedule of Events

Wednesday, Jan. 22:

1-3 pm, MIT Cable TV and 37-252.
Kick-off JPL press conference live via satellite.

8pm, 26-100

Illustrated lecture on the science and technology of the Pioneer and Voyager missions to the outer planets.

Thursday, Jan. 23: 1-3pm

Friday, Jan. 24: 12-4pm

Real time slow-scan images direct from Voyager 2, unedited. Videos and films from past encounters. Also, Friday only, the daily JPL press conference.

Saturday, Jan. 25:

1-3pm, MIT Cable TV and 37-252

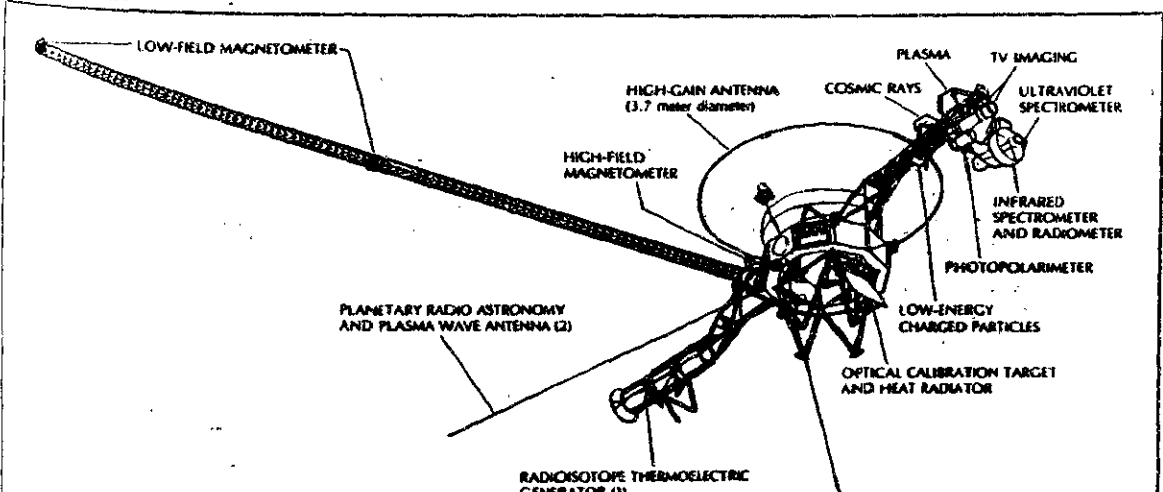
Monday, Jan. 27:

1-3pm, MIT Cable TV and 37-252

Tuesday, Jan. 28:

1-4pm, MIT Cable TV and 37-252

JPL press conferences. The press conference Saturday is the first press conference after closest approach. Final wrap-up conference and summary on Tuesday.



Drawing of Voyager 2 spacecraft courtesy JPL/NASA

arts arts

Jonathan Richmond and Eric Ristad disagreed over the merits of the new American Repertory Theatre production of *The Juniper Tree*. To avert our critics staging a duel, we've decided to print reviews by both and let you be the judge. Go and see the show, then write and tell us who you agree with — we'll look forward to publishing your letters.

Artifice makes reality shine brighter Special Effects with an orchestra and some singing

The Juniper Tree, music by Philip Glass and Robert Moran, libretto by Arthur Yorinks, directed by Andrei Serban with conductor Richard Pittman; *The Balcony* by Jean Genet, directed by JoAnne Akalaitis, both productions in repertory at the American Repertory Theatre, Loeb Drama Center, Harvard.

The American Repertory Theatre World Premiere production of *The Juniper Tree* has its flaws, but must be seen.

onset of light after the banishment of darkness in *The Magic Flute*. From the play of light against darkness, we re-emerge into a new and brighter synthesis: make-believe points to a better possible reality for us all.

There was only one member of the cast — Lisa Saffer — who provided a winning performance on all counts. Saffer sings the role of the son with a compelling, sweet voice, continuing a longstanding operatic

To summarize: the American Repertory Theatre production of *The Juniper Tree* has no redeeming qualities.

All the central aspects of opera and theatre fell by the wayside in classic ART style. The textual source (a simple, unspectacular fairy tale collected by the Brothers Grimm) doesn't deserve dramatic mention. Worse still, the actual textual base of the operatic production was insubstantial, on a kindergarten reading level, and inferior to the original fairy tale.

Arthur Yorinks' text stressed the fairy tale's peripheral elements, e.g. the deliberate, gory, premeditated murder of the son by the stepmother. Indeed, the opera's composers, Philip Glass and Robert Moran, admit to viewing fairy tales as primarily tales of child abuse. Perhaps *Goldilocks and the Three Bears* and *Rumpelstiltskin*, previously my favorite fairy tales, must now be classified as gothic romances?

It is well known that fairy tales are anything but benign: indeed, plots typically include elements of child abuse/molestation, infanticide, and sexual passion. But this production takes an excessively literal approach, and thereby trivializes a fairy tale by reducing the story to its plot devices.

The fairy tale's plot is, in my opinion, one of its less important aspects. Such famed and honored writers and critics as Goethe, Herbert Read, and John Gardner, author of *Grendel*, are in strong agreement on this.

There was no acting in *The Juniper Tree*, only the preprogrammed human motions seen in the ART production of Robert Wilson's *The Civil Wars*. The singers were not a source of relief. They were, as a whole, weak, unable to articulate or dict, incapable of projecting into the acoustically-perfect Loeb Drama Center, and had trouble breathing. At times a spotlight would highlight a singer's tightened neck sinews or expose a chest breath — choking the singer's air, and with it the singer's artistic passion. Most of the time, however, I wanted to put them out of their misery.

Fortunately, 'tis an ill wind that blows none good. The production is surely the stylistic apex of the ART's dramatic accomplishments. That is to say, all the peripheral aspects of truly great opera and theatre were the source of lavish directorial, artistic, and financial attention.

Colossal, unmotivated, costly properties abounded. An eight-foot tall disembodied rhinoceros head makes a lengthy, uncalled for, and unexplained appearance.

The sets changed frequently, with supererogatory rapidity and startling completeness. A singer waters the green astroturf, and small red flowers magically appear. A lavish scene reminiscent of Finian's Rainbow is replaced — seconds later — by an outdoor scene replete with astroturf and a larger and more believable than life juniper tree.

The ART's technical fixation and overall competence would be a source of great theatrical wonder and applause, did it not detract so much from the main job at hand.

Consider the following scenes from the text of *The Juniper Tree*, compared to the scenes as performed at the ART. In the fairy tale, the juniper tree splits open and births a beautiful brightly colored bird. In the ART production, the flawless three-dimensional larger-than-life juniper tree splits in two to (anti-climactically) reveal a small, white bird puppet suspended by wires. The bird is flown away and the tree grinds shut. When the bird is called upon to sing by the text, it is paraded about on the end of a long stick to inharmonious and monotonous vocal accompaniment.

The bird drops a golden necklace around the miller's neck: a colossal yellow neon loop — literally neon and only partially working at the time — descends from the theatre's heavens. The audience, not having read the fairy tale, wonders aloud what this neon sign might represent.

When the fairy tale is interpreted so literally, the singers' and director's roles are correspondingly reduced. They are content to merely watch the technical wonders, and become passive observers of the dramatic work they must give life and passion. The singers become just so much supporting equipment to the show's central technical focus. Given the ART fixation on literal imagery and special effects, one wonders why they don't make movies instead.

To summarize, *The Juniper Tree* is the source of annoyance. Even the *Boston Globe* rated it one of the ten worst plays of 1985. The major blessing of the production was its scandalously short (1.5 hours) running time.

Eric Sven Ristad



A scene from the American Repertory Theatre's production of *The Juniper Tree*.

The opera — based on a tale by the Brothers Grimm — tells the story of a wicked stepmother who decapitates her stepson, cooks him up for dinner, and serves him to his unsuspecting father.

Transformed into a bird, the son flies from the Juniper Tree, his song earning him a millstone with which to crush the stepmother. All ends happily.

Andrei Serban's production and Michael Yeagan's sets which play such an important part in it, have all the elements of a good fairy-tale: there is a heightened sense of the artificial, of the make-believe as we see seasons change and mechanical flowers shoot up with delightfully absurd speed and precision, as we observe the stepmother hack up the stepson's body and the father gnaw at and cast off his son's over-size bones, as we watch the crudely-simple bird emerge from the clockwork Juniper Tree to collect and deliver the equally-unreal fluorescent tubes that represent a golden necklace, red shoes and the death-bringing millstone.

But the symbolism behind each of these events brings out deep realities that transcend the surface imagery. Dark feelings of fear and hate latently lurk and brood in so many of us, but are locked away by the norms of everyday propriety. That which we keep tacit (and often prefer that way) is released to our consciousness in the realized-fantasy of the stepmother: all the people we have quietly wished hacked to pieces fall victim to the stepmother's meat cleaver on the stage. And in the acts of the boy-bird we see the oft-suppressed yearning for both revenge and redemption. Artifice makes reality shine brighter.

The first wife, who dies shortly after giving birth to the son, is always spiritually present, haunting the stepmother, building up her jealous hatred of the symbol of the first marriage — the stepson — that keeps her husband from being wholly hers. But after we see the stepmother descend Don Giovanni-like into Hades, she returns to clasp hands with the first wife on the trunk of the Juniper Tree.

This final moment of the opera, of godly reconciliation, is touchingly human. It has the sublime grandeur of the Countess' quiet forgiveness of the errant Count in Mozart's *The Marriage of Figaro*, or the

tradition of employing females to represent boyish innocence. Janet Brown — as the daughter — put in some creditable singing too.

But there were serious problems of diction with Valerie Walters' performance of the Stepmother's role and S. Mark Aliapoulos' depiction of the Husband. Modern dramatic taste demands that even a trip to *Traviata* nowadays be intelligible.

The lack of vocal clarity evident in so much of this contemporary opera produced by a major drama company is unacceptable. Walters, at least, put some bite into her acting. But Aliapoulos, unfortunately, actually sounded even worse speaking than singing: His words came across as utterly banal.

Richard Pittman directs the music, and draws a sterling performance from the orchestra (which is strangely unidentified in the program). Philip Glass and Robert Moran have written hypnotically psychological music to draw the audience inescapably into the vortex of the plot. There is one theme — pure Glass — that returns again and again, its patient but irresistible tugging propelling the story along. Although musical understatement does play an important role, the score is far from unrelenting. It has powerful spikes for the Stepmother's wicked thoughts — and deeds. It has pathos for the first wife. It provides percussive heart beats for the stillness after the daughter approaches the dead son, and a beautifully simple flute melody to underline the horror. There was humor, also, in the chirpy birdsong which introduces the drama, and it was nicely brought off by the chorus.

The catalyzing Juniper Tree alone remains unchanged. The characters are transformed, and so too are we: entertained, bothered, made to reflect depths off surfaces, we leave the theatre not quite the same as we came in.

* * * *

"The more they're killing in the suburbs, the more men come streaming to my parlors," declares Irma, Queen of the whorehouse in Jean Genet's classic, *The Balcony*. But the American Repertory Theatre's "House of Illusions" is suburban. Genet's creation is supposed to ooze

(Please turn to page 11)

ON THE TOWN

Wednesday, January 22

Choreographer Marc Morris discusses his art at the Museum of Fine Arts, at 8pm. Members of the Boston Ballet will illustrate his work.

Thursday, January 23

The Boston Symphony Orchestra, conducted by Seiji Ozawa, plays Beethoven's Third and Schoenberg's *Erwartung* today at 8pm, tomorrow at 2pm, and Saturday at 8pm, in Symphony Hall. Hildegard Behrens sings soprano in the Schoenberg piece.

Friday, January 24

A mini-festival of films featuring French comedian Jacques Tati begins today at the Museum of Fine Arts. *Jour de Fête* (1948) is shown at 5:30pm; *Les Vacances de Monsieur Hulot* (1953) at 8pm.

* * * *

The Paul Taylor Dance Company gives the first in a series of three performances in John Hancock Hall today, at 8pm. The other performances are tomorrow at 8pm and Sunday at 3pm. The program consists of *Mercuric Tidings*, *From Sea to Shining*

Sea and Cloven Kingdom for today and Sunday, and *Airs, Runes and Esplanade* for Saturday.

Saturday, January 25

The English Concert conducted by Trevor Pinnock performs works of Vivaldi (including *The Four Seasons*), Bach and Corelli at 8pm in Jordan Hall.

Sunday, January 26

An Ode to Joy will sound from members of the IAP Orchestra and Chorus, if not from all the audience, soon after 2pm in Kresge Auditorium. Bits and pieces of rehearsal have taken place, but the basic idea is to read through the score and have some fun. As evidenced by some remarkably telling moments in last IAP's reading of *The Magic Flute*, there can be magic moments in conductor Roland Vazquez's impromptu musical matinees, so this is well worth attending, either as participant or listener.

* * * *

At the same time, the Cracow Philharmonic Orchestra performs Krzysztof Penderecki's *Polish Requiem* in Symphony Hall, conducted by the composer himself.

Jonathan Richmond

arts

arts

Huntington's Birthday Party solid and professional

Harold Pinter's *The Birthday Party*, directed by Ben Levit on the occasion of the 25th anniversary of the work's American premier, Huntington Theatre Company, through February 2.

Harold Pinter's *The Birthday Party* is set in a sea-side boarding house run by Meg and her husband Petey. Stanley has been their sole boarder for the past year. His days begin with Meg's ebullient wake-up attack, a bowl of cornflakes and some cold tea. Stanley does nothing and seldom leaves the house.

One fine summer day that Meg believes, incorrectly, to be Stanley's birthday, Goldberg and Mcann arrive "to do the job." They threaten, accuse, torment, and browbeat Stanley during the day and through the evening's birthday party. Late at night, Stanley has the desired nervous breakdown while playing *Blind Man's Bluff*: he throttles Meg and sexually assaults Lulu, his neighbor. Goldberg and Mcann drag him upstairs, presumably to subject him to in-

products of Stanley's destructive self-hatred, Lulu the unobtainable object of his thereby insatiable lust, driving him to total insanity.

The current Huntington production of this superb, scintillating, multidimensional play is solid overall and spellbindingly acted. Its sole abiding flaw is the lack of directorial vision. The only possible, necessary, or possibly necessary hint of thematic direction is Goldberg's Englishness. More directly, he's such a *Goy*. The script bears the thematic weight of the production all alone. Pinter's visions blur together and the play loses focus. The giddy audience wonders what it all means, but this is not avant-garde and Pinter is not Sartre.

Watching the actors work is a rare and exotic New England treat. Stanley, Petey, and Goldberg don't act, they *are*. From the moment Gary Sloan enters the stage, Stanley's sexual tensions resonate through the unfolding play and throughout the the-



Pat McNamara as McCann and Mary Beth Fisher as Lulu in *The Birthday Party* presented by the Huntington Theatre Company.

tense all-night verbal torture.

In the morning, an incoherent and largely mute Stanley is taken away.

The Birthday Party admits many plausible, complementary interpretations: it is a morality play about oppression. Stanley, the white Englishman, hides by the sea from his historically-oppressed oppressors, Goldberg and Mcann. In the second act the Jew and the Irishman collect their racial debt by inducing Stanley to have a total mental breakdown.

Society is oblivious and unwilling to get involved. Do-Good, in the character of Meg, is willfully blind to the oppression while Do-Well, in the character of Petey, is calmly and passively helpless to prevent it. Poor Stanley, there is no Do-Better in Pinter's world.

Stanley betrays the Organization and seeks asylum by the sea only to have agents Goldberg and Mcann track him down and calmly exact the Organization's overdue revenge.

Consider the Seven Deadly Sins and note that Stanley's sins include Sloth and Lechery. There is no repentance and redemption, only regret and a private hell.

Goldberg and Mcann are the psychotic

ater. Gordon Chater presents us with a complex, subtle, and detailed Goldberg with sexual problems of his own.

The set was sumptuous, costly, spectacular, and inappropriate. Contrary to the play's demands, it bore no hint of seaside or appearance of freedom. We are left wondering why and how Stanley can endure the moody frontier of an English house, the tidy ill-lit hint of oppression within which the production is set. Surely it is not for the cornflakes, fried bread, gravy tea, and sex that Meg serves him? The stage gives no outward indication of season, weather, or even seashore — we only see the sun-marked passage of time. The actors act in a scenic vacuum.

The major problems are minor. Lulu's accent travels around the world in an act, while Mcann's accent is on a more limited budget. The Lulu actress steels herself so that Lulu may enjoy Goldberg's seductive caresses. Meg is alive and acting only for the duration of her lines.

In short, a solid professional production, one of the best I have seen in this metropolitan area. Bravo to the Huntington!

Eric Sven Ristad

The Tech Performing Arts Series presents... AMERICAN REPERTORY THEATRE

The Changeling

Thomas Middleton's Jacobean Tragedy, *The Changeling*, tells of a beautiful virgin corrupted by her passions. Loeb Drama Center, Harvard, January 26 at 8pm and February 1 at 2pm. *MIT price: \$6.*

The Juniper Tree

The American Repertory Theatre is giving the world premiere of *The Juniper Tree*, an opera by Philip Glass and Robert Moran that combines suspense with magic, puppets and haunting music.

Loeb Drama Center, Harvard, February 2 at 8pm. *MIT price: \$6.*

SADLERS WELLS ROYAL BALLET

Sleeping Beauty

Sadlers Wells Royal Ballet — visiting from London — will perform Tchaikovsky's *Sleeping Beauty* in a new production by Peter Wright. Wang Center for the Performing Arts, January 30 at 8pm. *MIT price: \$5.*

COLLAGE

Schuller Birthday Special

Collage will give a performance to commemorate the 60th birthday of Gunther Schuller. The program will include Boston premieres of works by William Doppmann, Will Ogden and 1983 Pulitzer Prize winner Ellen Zwilich. Longy School of Music, January 27, at 8pm.

Student tickets on sale at door for \$5.

Tickets for the American Repertory Theatre and the Sadlers Wells Royal Ballet (available to all members of the MIT community) will be sold by the Technology Community Association, W20-450 in the Student Center, currently open Tuesdays 9-11, Thursdays 12-1, Fridays 3-5 and Saturdays 1-4. At other times please leave your order and your phone number on the TCA answering machine at 253-4885. You will be called back as soon as possible.

Discount tickets for Collage will be sold to students with ID at the door of the concert only.

The Tech Performing Arts Series, a service for the entire MIT community from The Tech, MIT's student newspaper in conjunction with the Technology Community Association, MIT's student community service organization.

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Professor sees decline in US living standards

(Continued from page 2)

The low savings rate among Americans also hampers US productivity, Hatsopoulos said.

Japanese companies have more capital for investment because the Japanese save a greater portion of their personal earnings in banks than Americans do, he explained. This means that Japanese banks have more money to loan to companies, he said. As a result, Japanese companies invest at three-and-a-half times the rate of their American counterparts.

"Japanese companies can explore a much greater range of products and markets than American companies can," he concluded. "The Japanese have the ability to invest in the future. US corporations cannot plan so far ahead."

As an example, Japanese auto companies suffered losses in the American market from the early 1960s to the late 1970s, Hatsopoulos pointed out. No American car company would be able to afford similar long-term losses in order to break into a new market, he claimed.

US economy in "black hole"?

Lester C. Thurow, professor of economics and management, suggested that Congress' recently approved Gramm-Rudman plan for cutting the federal budget deficit "promises to do the absurd."

The plan specifies that the president has the authority to make cuts in an unbalanced federal budget. But because major federal programs such as social security, military hardware and personnel are exempted from the plan, a number of smaller federal programs will have to absorb any budget-balancing measures, Thurow said.

For example, 60 percent of the funds presently going to federal prisons and to the Coast Guard will have to be cut, he claimed. The president will also have to reduce military supplies, such as gasoline, because military personnel and equipment cannot be cut.

Nevertheless, America's economic problems arise from the federal budget deficit as well as the trade deficit, Thurow explained. The US is caught in an economic "black hole" because it cannot decrease one deficit without aggravating the other.

"You can't stay there, but you can't get out," Thurow said. "The American economy is much weaker today than it was in 1926. The banking industry is going bad, farm loans are going bad, oil loans are going bad, and the real estate industry is sagging."

Rudiger Dornbusch, professor of economics, proposed that a reduction in interest rates would

reduce both deficits. "We have a once-in-a-lifetime opportunity to improve the economy," Dornbusch asserted.

But the United States probably will not lower interest rates, he said, because Congress and the Reagan administration want to avoid the inflation that would follow such an action. Lower interest rates would cause inflation to rise to eight or nine percent, he estimated.

Krugman sees isolated economies

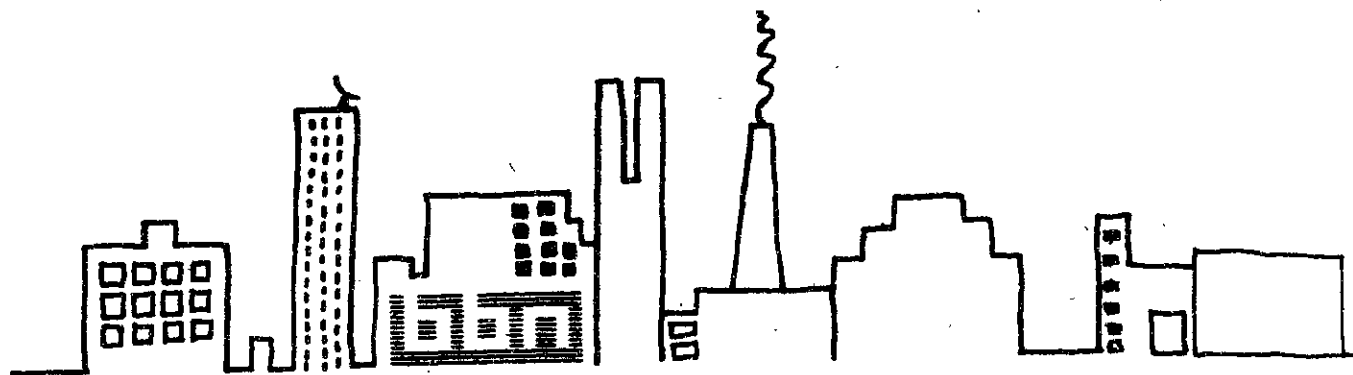
The world is heading toward a less integrated, more divided global economy, as more countries adopt protectionist trade policies, said Paul R. Krugman, professor of economics.

"When things go wrong, people call for the closing of trade," Krugman said. "As the world economic situation worsens, we will see more and more closed, fragmented economies."

Many changes have taken place in the US economy since the late 1970s, he said. "In the later Carter years, we had high inflation and dismal productivity," Krugman remarked. "Inflation went down under Reagan, but we lost a lot of GNP [Gross National Product] to bring down inflation. The growth we have achieved under Reagan is approximately the same as under Ford and Carter."

But the gap has grown between the upper and lower classes of American society, he said. Poverty in the United States has increased.

"We're better off than we were in 1983, but we're also more hopeless," he explained. "We were facing a debt crisis as well as serious trade issues. We still believed that the situation was reversible, that we could somehow bring the economy back. We've pulled the economy away from the brink of disaster, but things went slower than expected. The bounce-back has been very disappointing."



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FINAL DATE FOR RECEIPT OF REQUESTS BY THE GSC IS TUESDAY, FEB. 18th, 1986.

notices

Announcements

MIT Symphony Orchestra announces openings in the following sections: all strings, bassoon (principal and 2nd), oboe, bass trombone. Audition by appointment. Rehearsals begin Feb. 4. For further information please call Maureen Burford at 253-2826 between 1 and 5 pm.

The 1985-86 I. Austin Kelly III Competition in undergraduate humanistic scholarship is now open. Two prizes of \$250 each will be awarded for the best scholarly or critical papers in any of these fields: Literary Studies, History, Musicology, Anthropology, Archaeology. The final deadline is May 1, 1986. The competition is administered by the Humanities Undergraduate Office. Rules and guidelines are available from 14N-409, x3-4446.

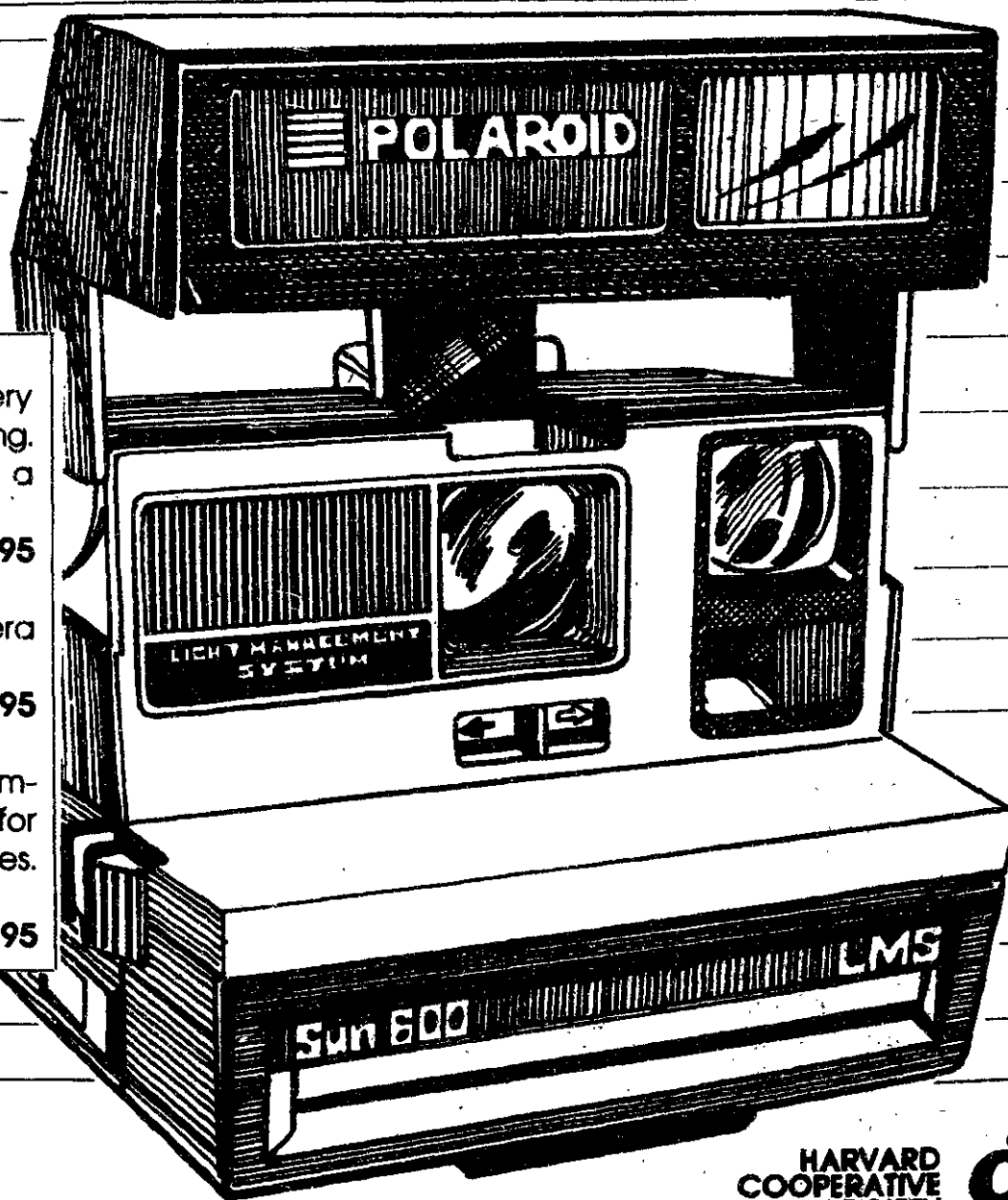
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Intimate Tennessee Williams at Lyric Stage

Cat on a Hot Tin Roof, by Tennessee Williams, with Robert Bouffier and M. Lynda Robinson, directed by Spiro Veloudos. Lyric Stage through Feb. 9.

Seeing a production at the Lyric Stage on Charles Street is an experience in itself. The stage is tiny and flanked on three sides by the audience. The front seating section has only four rows, while each wing section has about fifteen rows apiece. This intimacy seems especially well suited for Lyric Stage's *Cat on a Hot Tin Roof*, set as it is in the bedroom of a troubled married couple.

Cat on a Hot Tin Roof has enjoyed considerable popularity since its opening in 1957, having spawned several stage and TV versions. This latest incarnation features Robert Bouffier as the tortured alcoholic Brick and M. Lynda Robinson as his catty wife Maggie. The two suffer through a marriage torn apart by an unresolved emotional triangle involving them and Brick's now dead best friend.

Bouffier does an admirable job portraying Brick's descent into despair and self-destruction, sweating, cursing, cringing, and putting away an amazing amount of alcohol as he does so without ever breaking into histrionics.

Robinson gives a suitably nervous performance as the unwillingly celibate Maggie, facing on one side a husband who despises her and on the other the prospect of poverty, brought on by the refusal of Brick's wealthy landowning father to leave anything to his drunken younger son. The air of desperation generated by the players is especially sharpened by the close dimensions of the stage; the audience is practically on the stage, intruding on the players' space and adding to the tension. The large, conspicuously unrumpled bed takes up most of center stage, forcing the couple to self-consciously squeeze between it and the front rows.

Bill Barnard gives a charismatic perfor-



A scene from *Cat on a Hot Tin Roof* currently playing at the Lyric Stage.

mance as Big Daddy, the father who finds out he is dying of cancer, although his features and voice have a bit too much of the northerner in them for him to play the ideal Mississippi plantation owner. Patricia Fellows as Big Mama, Jared Swartout as the scheming older brother, and Leslie Harrell as his fertile wife Mae, form a very solid supporting cast.

Perhaps the most interesting and unusual thing about this production is the set design. The plan of the theatre requires that the design work from three extreme angles, and the props themselves are angular and asymmetrical, with mirrors cleverly placed to increase visibility. Lyric Stage tickets are more affordable than most, with prices starting at \$8. Charles Street has several good cafes and a few reasonable restaurants making this a good overall bet for a night out.

Steve Huntley

The Balcony

(Continued from page 8)

with sleaze, but the Boston audience is treated to something almost nice enough for Newton.

There's plenty of kinkiness, true, and some fantastic costumes. Rodney Hudson has a lovely nasty-soothing voice as The Judge, and Eric C. Menyuk makes a lovable Executioner, but Act I took too long to get under way, and became tiresome for stretches at a time. The act ended on a significant note, however, with the Queen of

of the most convincing performances of the evening as The Court Envoy, and Joan MacIntosh grew in character as Irma.

We see illusions confused with reality as actual leaders evaporate and the fetish-fantasy Bishop, Judge and General take their places, Irma preening herself as a real Queen. JoAnne Akalaitis' direction was at its best here, providing sharp images, but also spaces for the imagination to roam.



Ben Halley, Jr. as The General, John Bottoms as The Bishop, and Rodney Hudson as The Judge in ART's production of *The Balcony*.

the Night's aria, *Der Hölle Rache* loudly broadcast as darkness descends.

Things tightened up after the first intermission and, given sharper definition, the play came to life. Jeremy Geidt gave one

You will want to get to the American Repertory Theatre's *The Juniper Tree* and *The Changeling* first, but *The Balcony* has more than enough interest to merit a visit.

Jonathan Richmond

UA NEWS

UA COUNCIL MEETING

Thursday, January 23rd, 7:00pm

Center Lounge, Student Center

All representatives should attend or send proxies.

To be discussed:

referendum on divestment
UA Election Commission
forum on pornography policy

1986

UA ELECTIONS

Wednesday, March 12th

Run for the following positions:

UA President/UA Vice-President
Class Officers: 1987, 1988, 1989

President Vice-President
Treasurer Secretary

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Nomination Petitions and
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the UA office at noon on the first
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W20-401, x3-2696 (that's the fourth floor of the Student Center)

notices

Monday, Feb. 3

A prominent divorce lawyer, Philip D. Woodbury, will describe court procedures and resources in a lecture-discussion entitled **Dealing Successfully with the Divorce Court and Legal Issues**. Sponsored by Riverside Family Institute, a non-profit organization, the presentation will be given at the office of Riverside Family Institute, 259 Walnut St., Room 14, Newtonville, at 8 pm. No preregistration is required. Form more information, call 964-6933.

Wednesday, Feb. 5

VI-A Orientation Lecture for all Course VI and undesignated sophomores interested in applying for the EECS Department's VI-A Program. 3 pm, Room 34-101.

Carlo Ginzburg, a history professor at the University of Bologna, will lecture on **Ritual Pillages in Medieval and Early Modern Italy** at Boston University at 7:30 pm in the East Balcony Lecture Hall, Room 314, George Sherman Union, 775 Common-

wealth Avenue, Boston. Sponsored by Boston University's Interdisciplinary Bachelor of Arts Program in Italian Studies, the lecture is free and open to the public. For more information, please contact Professor Reinhold Schumann at 353-2551.



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Friday, January 24 at 8 PM in Room 4-159

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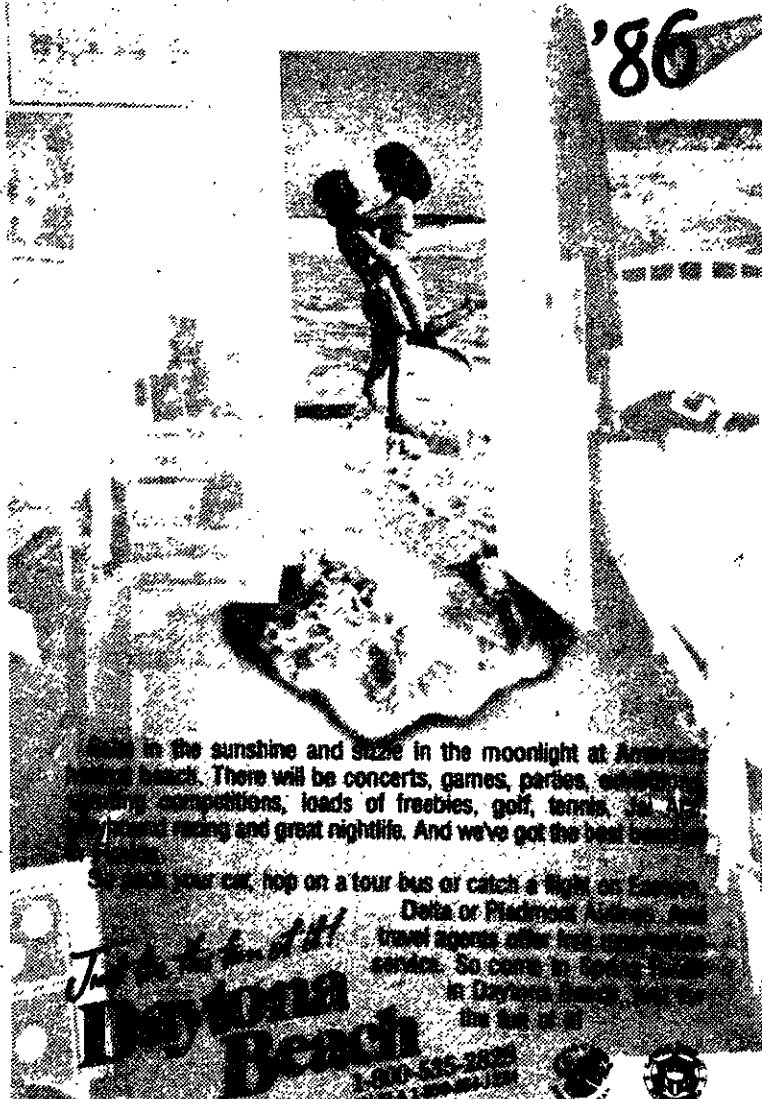
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First Boston will be interviewing on campus on Friday, January 31st at the Office of Career Services.

For further information, please feel free to contact:

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sports

Men's hoopsters lose to Skidmore, Coast Guard

(Continued from page 16)

O'Brien worked McElroy and Bruce Mihura '88 inside, and for a time the Engineers displayed some tenacity on both ends of the court. Mihura got into foul trouble early in the game, however, and was forced onto the bench.

From that point Coast Guard started sinking outside shots, and penetrating the MIT defense for easy layups. Once again poor shooting (37 percent from the field) hurt the Engineers.

Even in the midst of the six

game skid, O'Brien sees light at the end of the tunnel. The coach believes that once Poole and Nelson play up to their potential, things will turn around. In spite of their problems, the players have continued to work hard in practice. "What we need is a win around the corner to get some confidence back," O'Brien said.

The Engineers faced Salve Regina yesterday and will play Curry tomorrow. MIT returns Saturday to Rockwell Cage to face Nichols. Gametime is 2 pm.

Gymnasts place second

By Madeleine V. Biber

The MIT Women's Gymnastics team, in its first meet of the season Saturday, scored 120.3 over Smith and Hunter Colleges despite new, stricter judging requirements. MIT placed second to Bridgewater State in the Northampton quad meet.

Catherine Rocchio '89 easily won the all-around with a score of 28.20 while Debbie Shnek '89 had the best vault of the day, scoring 8.15. Four freshmen joined the squad this year, replacing four seniors who graduated

last year. The freshmen bring with them a plethora of experience, which they showed in their performances.

Evie Vance '86 also had a very good day, especially on the balance beam and floor exercises. Her balance beam score was the second highest of the meet.

Next weekend both the men's and women's teams travel to Connecticut to meet Coast Guard.

(Editor's note: Biber is co-captain of the MIT women's gymnastics team.)

notices

Saturday, Feb. 8

In child abuse there are two victims. Both parent and child need help. You can provide that assistance and help parents to give their children the care they deserve by becoming a Parent-Aide Volunteer. Join the Family Support Network volunteer training workshop on Feb. 8, 12, and 15 at Roxbury Children's Service. Call 445-6655 ext. 56 for details.

Monday, Feb. 10

A lecture-discussion entitled **The Ex-spouse Relationship: How to Reduce Conflict and Strengthen the Remarriage** will be held at 8 pm at the Institute for Remarriage and Stepfamilies.

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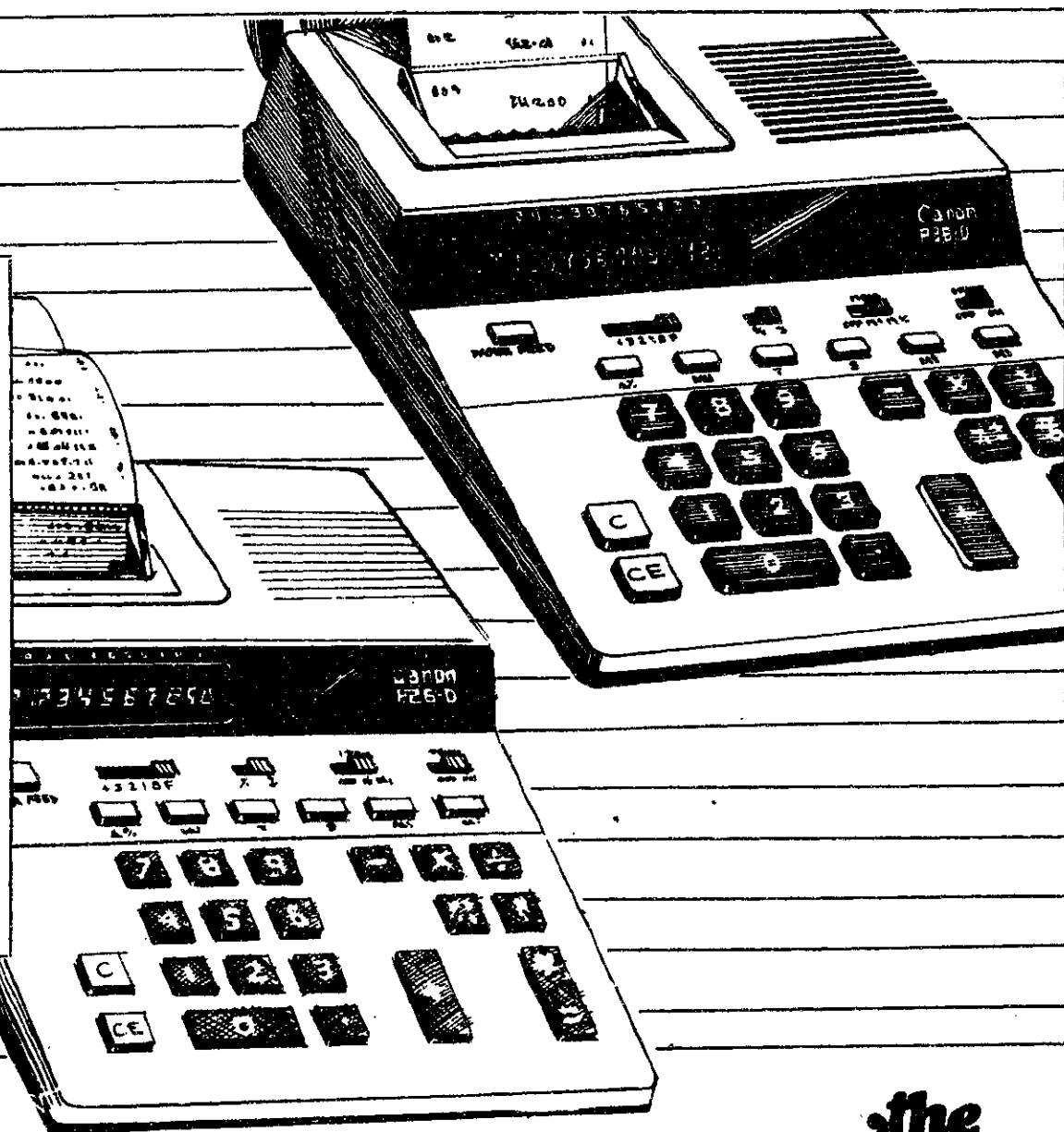
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T.I.M Beaver

By Kevin Burns



notices

Wednesday, Feb. 12

Boston University's American and New England Studies Program will present Tracy Kidder, author of *The Soul of a New Machine* and *House*. Mr. Kidder will deliver his lecture, "Building a House," in Room 112 at 226 Bay State Road at 4 pm. A reception will follow. The lecture is free and open to the public. For more information, please contact Anne DeFelice at 353-2948.

Thursday, Feb. 13

The Everyday World as Problematic: A Feminist Method, a lecture by Dorothy E. Smith of the Ontario Institute for Studies in Education, 8 pm, Northeastern University, Frost Lounge, 360 Huntington Avenue, Boston. This is the fifth lecture of the fifth Boston Area Colloquium on Feminist Theory, sponsored by Northeastern's Center for the Humanities. The lecture is free and open to the public. For more information, call 437-2686.

Ongoing

The Massachusetts Association of Student Financial Aid Administrators, Inc. (MASFAA) will offer its ninth annual toll-free student financial aid hotline service this January and February. MASFAA's telephone counseling service will operate weeknights, 5-9 pm, from Jan. 13 to Feb. 14, 1986, except for Monday night, Jan. 20. Call 1-800-358-5225 to get expert advice from MASFAA volunteers on college financial aid application and eligibility requirements.

Getting High? or Getting Desperate? If drugs are becoming a problem, call or write: Narcotics Anonymous, PO Box 142, New Town Branch, Boston 02258, (617) 569-8792.

DID YOUR PARENTS SEPARATE WHILE YOU WERE IN COLLEGE?

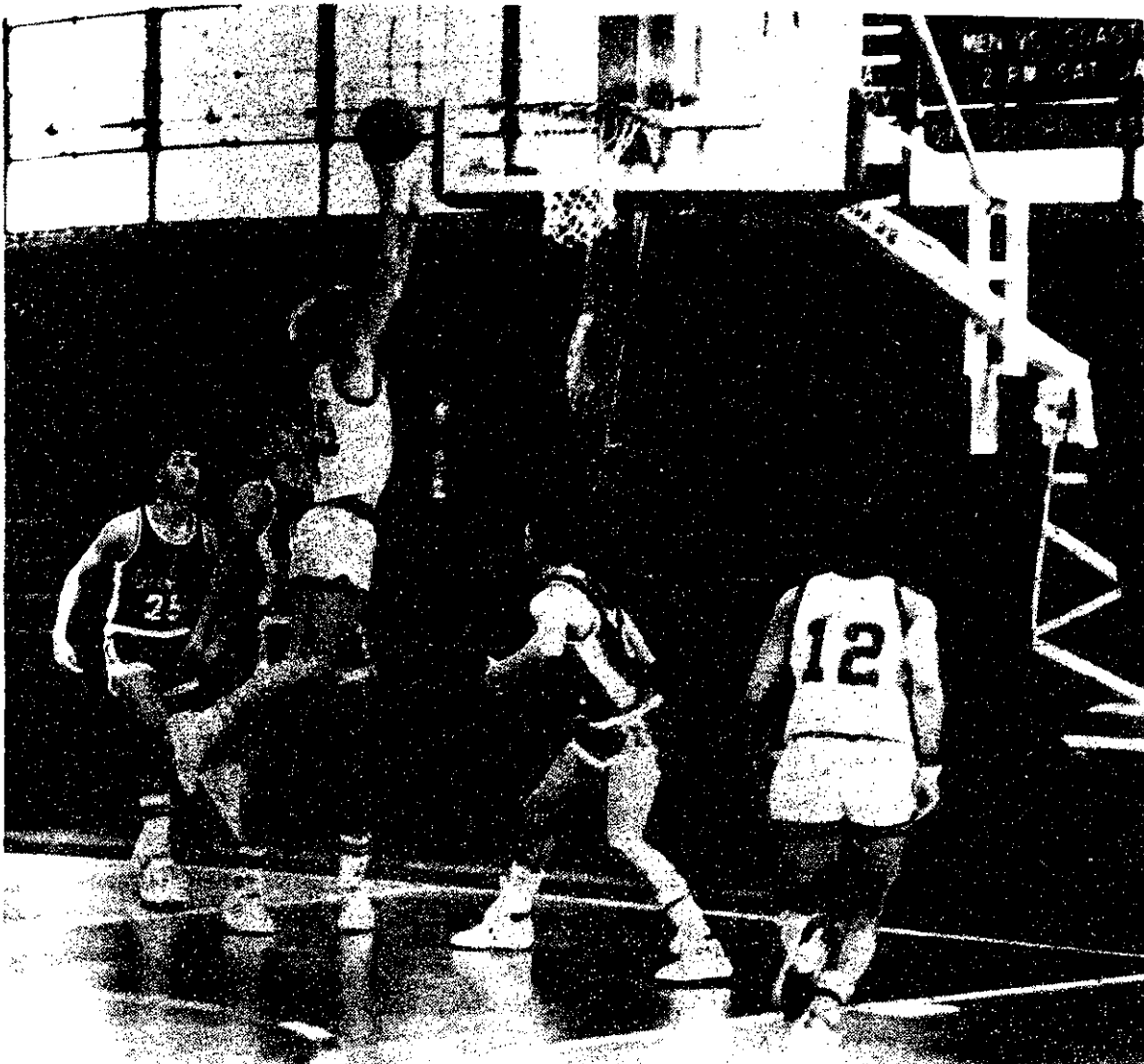
Doctoral student seeks participants for her dissertation research. Subjects will be paid \$10. If you are an undergraduate, 18 to 23 years old, and your parents were in a first marriage for each of them and had never separated before you went to college, please call Kathy, 235-1175.

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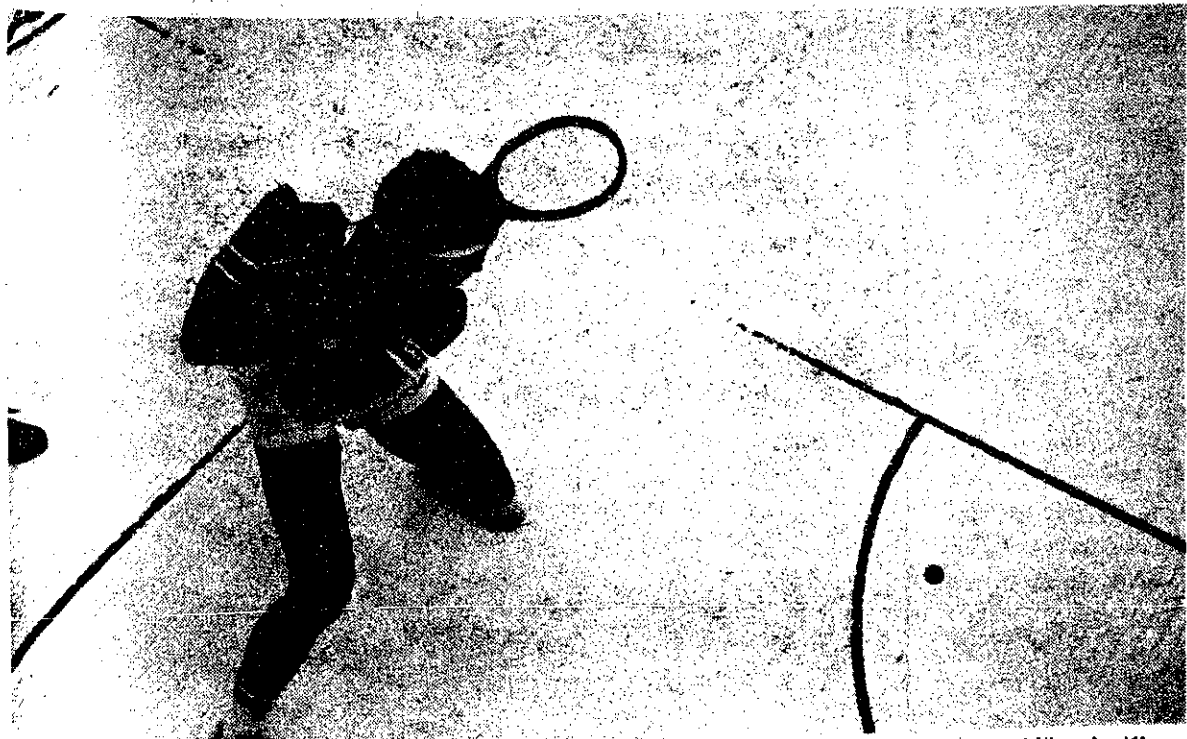
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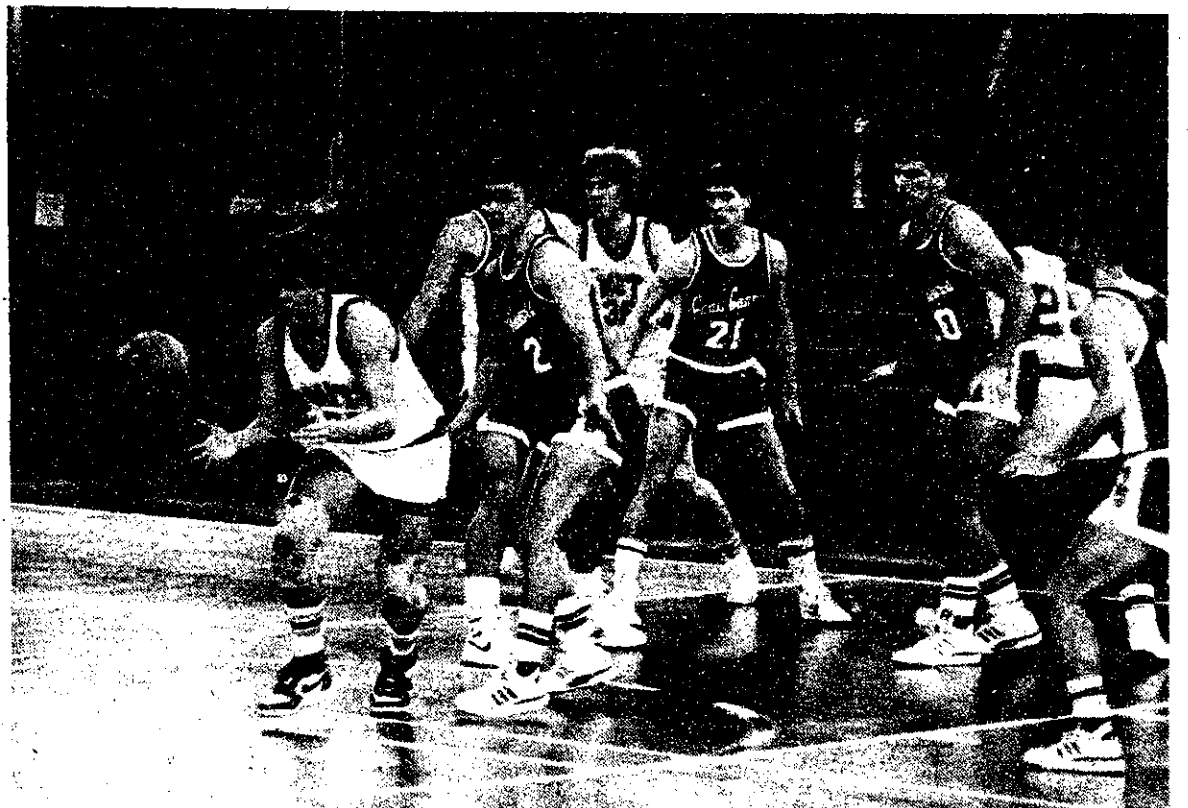
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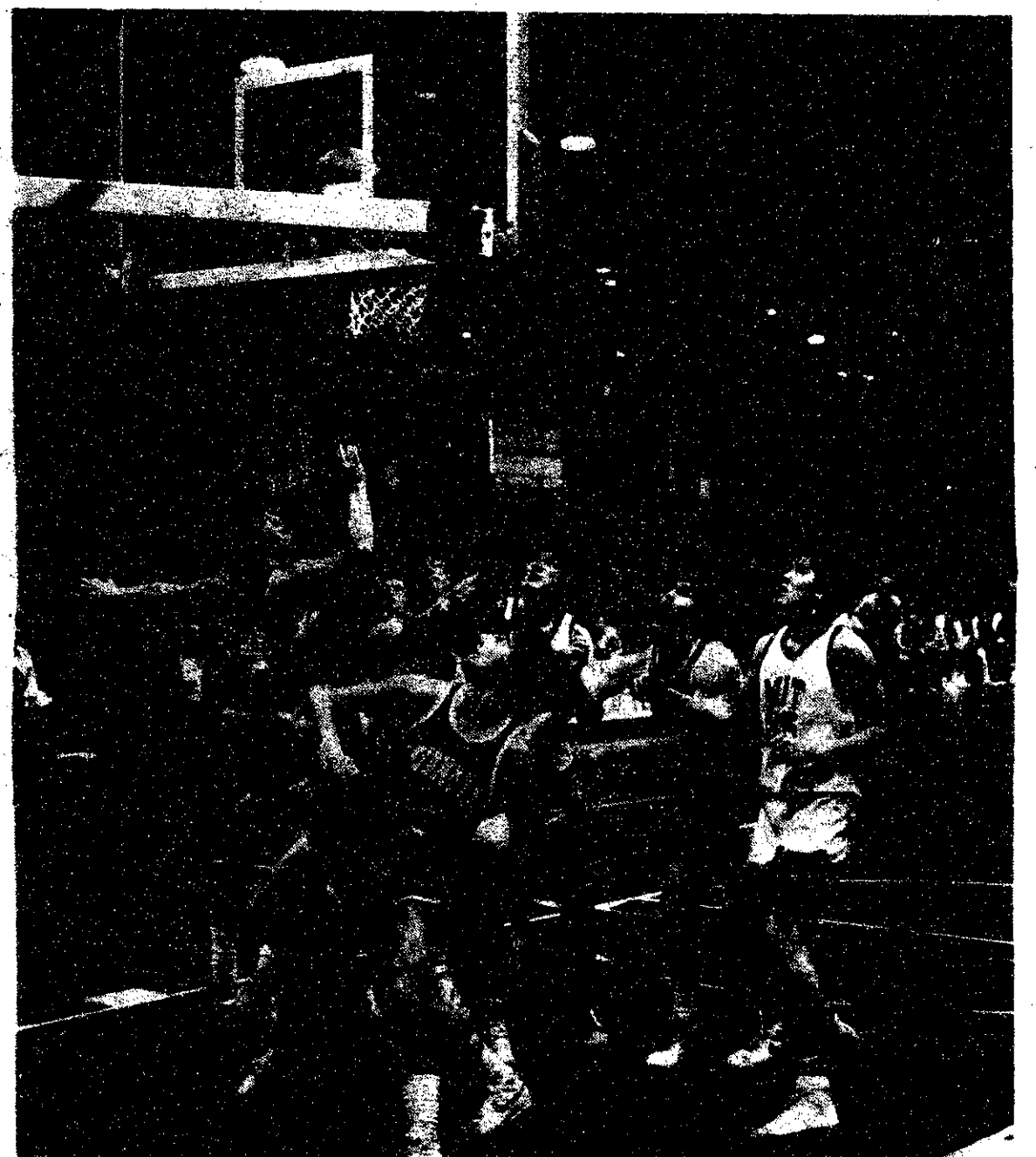


Mike A. Klug



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THE WEEK IN PICTURES



Sidhu Banerjee

Clockwise from upper left: Craig Poole '86 shoots a basket in Saturday's match against Coast Guard; Evan Pratt '87 reaches for the ball; a tense moment before a point Friday against Skidmore; David Evans '88 makes a crucial shot; Omar Masrur '88 serves in his winning squash match Thursday against Colby College; Hunter Hancock '86 prepares to volley in his winning squash match Thursday - MIT won the match 9-0; Daniel Lin races and wins the 500m event Saturday against Coast Guard.



Mike A.

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Basketball drops a pair

By Paul Paternoster

"We're just not hitting on all cylinders." That's how Coach Fran O'Brien described the plight of the men's basketball team after it dropped a pair of weekend home games on Jan. 17 and 18.

The Engineers (3-9) fell to lowly Skidmore College on Friday, 70-66, and were then defeated by highly touted Coast Guard, 83-66 on Saturday. The twin losses, which extended MIT's losing streak to six games, were marked by abysmal shooting and the team's general lack of confidence.

Independent Activities Period has spelled disaster for O'Brien's troops. The team has been unable to put together a full 40 minutes of basketball since returning from the holiday break. O'Brien believes that the squad, which up to this point has been relying on three players, needs to get more people involved.

With Craig Poole '86 and Randy Nelson '86 struggling, Mike McElroy '87 has been forced to carry the team. While McElroy has established himself as a force in New England, it is clear that one man cannot win basketball games.

Against Skidmore, McElroy scored a career high 31 points and grabbed 13 rebounds. Yet only one other Engineer — Poole, with 10 points — scored in double figures. McElroy saw double and triple coverage much of the game, and paid for it as he was fouled numerous times. Fifteen of his 31 points were scored from the line.

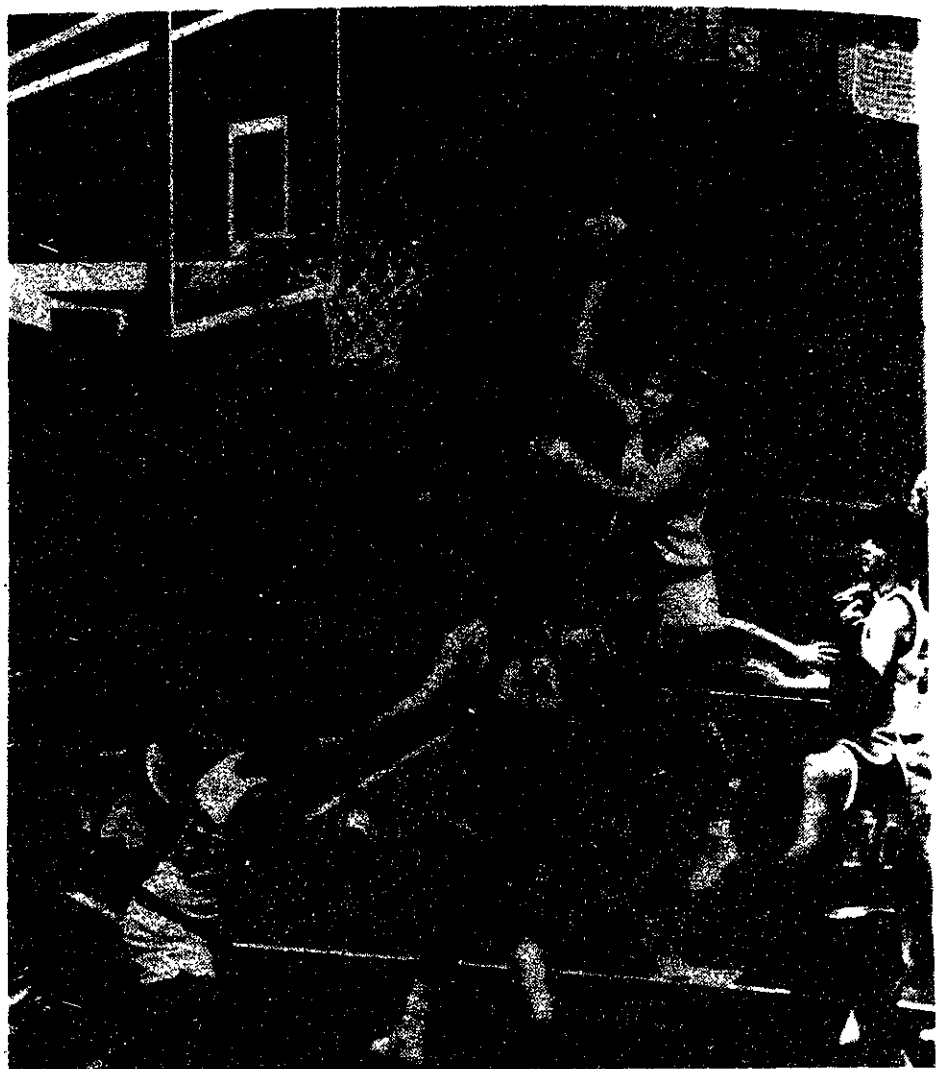
The Engineers shot 35 percent from the floor Friday. With the Thoroughbreds hitting 57 percent of their shots, it seemed that MIT was dueling with an empty gun. But even with this vast discrepancy in shooting, the Engineers were never out of the game.

The first five minutes of the second half epitomized the team's frustrations. MIT looked tense — forcing passes, missing easy shots, and displaying minimal intensity on defense.

After allowing Skidmore to run up its biggest lead of the game 56-43, MIT fought back by pressing the Thoroughbreds. The tide appeared to turn in favor of the Engineers, who were exploiting Skidmore's mistakes. With five minutes to play, MIT was only down by two points, 60-58. The Thoroughbreds were able to regain momentum, and they held on for the win.

MIT faced a more formidable opponent the following afternoon in Coast Guard. While the final score may not have shown it, MIT played a better game than it did against Skidmore.

(Please turn to page 13)



Tech photo by Sidhu Banerjee

Mike McElroy '87 throws for a basket in Friday's game against Skidmore college. MIT lost the game 70-66.



Tech photo by Stephen P. Berczuk

Gordon Holterman '87 rounds the corner in the 1500m run. He went on to win the event.

Track victory extends streak

By Christopher Y. Kim

The men's indoor track team continued to dominate its New England Division III opponents, handily defeating the Coast Guard Bears 92-44 at home Saturday. MIT, who has not lost to a Division III opponent in three years, improved its record to 4-1 with this meet.

The depth of the Engineer team proved too much for the Bears, who mustered more than one placer in only 3 of the 16 events, none of which were running events.

The Engineers' weightmen started the meet off on a high note, led by Scott Deering '89, who captured both the 35-pound weight throw with a toss of 44' 11" and the shot put with a 42' 4 1/2" effort. Mike O'Leary '87, copped a third place finish in the 35-pound weight throw with a hurl of 39' 4 1/2".

The Engineers did not fare as well in the jumping events. Ed Freeman '86 leapt to second place in the long jump with 20' 2" and to third place in the triple jump with 39' 10". Teammate Joe Peters '88 took third in the long jump with 19' 10 1/2". Glenn Hopkins '87 continued to be a powerful weapon in winning the high jump with 6' 2".

The pole vaulters continued to be a force to be reckoned with, as they were one of MIT's four groups to sweep events in the

meet. Bobb White '87 cleared 13' 6" to take first, followed by co-captain Ross Dreyer '86 in second with 13' 0" and Scott Baird '87 in third with 12' 6".

Gordon Holterman '87 led another MIT sweep in the first running event of the afternoon with a relatively easy win in the 1500-meter run in a time of 4:09.41. Dueling close behind was Sean Kelley '89, who barely edged out Bill Mallet '86 for second with 4:10.61. Mallet's third-place time was 4:10.65.

MIT's also demonstrated strength and depth in the short sprints. Sean Garrett '88 remained undefeated this season in the 55-meter high hurdles, capturing it in 7.85 seconds. Vanu Bose '87 glided in second place with 8.59 seconds. Joe Peters '88 edged his way to victory in the 55-meter dash with a time of 6.73 seconds, and teammate Garrett took third in 6.88 seconds.

Despite the injuries of several of its key runners, the intermediate sprinters turned in strong performances. Teddy Bosey '88 was unable to overtake the leader in the 400-meter dash and had to settle for second place with 53.33 seconds. Mike Donohue '87 followed closely behind in third with 53.84 seconds. Co-captain Dan Lin '86 had no trouble in winning the 500-meter dash with 1:06.86, while Charles Parrott '87 took third with 1:09.52.

Kyle Robinson '89 also came up short in the 800-meter run, taking second place with a 2:00.11 time. Teammate Bob Joy '87 finished third with 2:01.41.

Sweeps in the 1000-meter and 3000-meter runs sealed the Engineer victory. Rod Hinman '88 led a come-from-behind sweep in the 1000-meter run, winning in 2:36.58. Anton Briefer '88 and Brian Callaghan vied for the next two spots with Briefer edging Callaghan out by .02 seconds at the finish line with 2:37.51. MIT had no difficulty in capturing the 3000-meter run, as Holterman had an easy win in 8:57.12, followed by Robert Zak G in second with 9:08.13 and Turan Erdogan in third with 9:14.08.

MIT and Coast Guard split the two relays. The 4x400-meter relay of Garrett, Bosey, Parrott and Lin led from the start and had an easy 60-meter victory margin, finishing with a time of 3:33.06. The 4x800-meter relay had a much harder time as a last-lap rally fell short with a time of 8:18.11.

The Engineers will be on the road for their next meet Friday evening against Williams and Tufts at Williams. Tufts is the last Division III team to have beaten MIT in dual-meet competition.

(Editor's note: Christopher Kim '87 is manager of the men's track team.)

The OLYMPIC PRIZES Tech

• 3rd prize: This standard, rugged X-acto knife. Also included - 10 spare no. 11 blades.

• 2nd prize: This X-acto "Super Knife." Features positive toggle lock, quick blade change, and roll resistance. Also included - 10 spare no. 11 blades.

• 1st prize: This X-acto 9RX Knife with retractable blade and pocket clip. We have no replacement blades for this knife, so, instead, this prize includes YOUR RESUME TYPESET FREE (by you)*. We will show you how to use The Tech's equipment to do a class A job on your next resume!

These are the prizes for IAP activity number 4553, "Hairline Extravaganza." You must attend the training session to participate in the contest. Spaces may be limited, please arrive early to assure your place in the contest. The activity should end by 4pm, however if you are in the finals, you may need to stay longer. If you are prone to cutting yourself, you may wish to exclude yourself from competition. The "training session" will be an in-depth look at the "little things" that we do to put out an issue as well as an overview of what it takes to put words into print. Seminar meets in room 483 of the Student Center tomorrow, Thurs. Jan. 23rd at 1pm.

*Certain restrictions apply.