

Is round better
than square?

THE TECH

CALIFORNIA

Usually, we take a little
bit of trouble to think of
something very mildly
amusing to put here.
This week we didn't.

Volume XCIV, Number 15

Pasadena, California

February 5, 1993



341 S. Holliston changed its address after midnight Tuesday night. The house was moved to facilitate the construction of a physical plant tunnel. In years past, the Caltech-owned house was used to house undergraduates, most recently as an off-campus alley of Ricketts House.

Aquaintance Rape Discussions

Catherine Hafer

The Caltech Counseling Center is sponsoring a program in the student houses on acquaintance rape prevention. Kevin Austin, Aimee Ellicott, and Dinah Lee Schaller, from the Counseling Center, and Jackie Holmes, a volunteer at the Pasadena Rape Crisis Hot Line, gave the first of these presentations last term in Winnett Center, and the first house presentation on January 26 in Ruddock. They are scheduled to visit the other six houses on the dates shown; students are invited to attend whichever presentation is most convenient, regardless of house affiliation. The next presentation is Tuesday, after dinner, in Ricketts House.

The program focuses on identifying acquaintance rape, understanding the impact that it has on the victim, and learning what individuals can do to prevent it. In a nation-wide survey of college campuses, 1 in 8 women who responded to the survey said that they had been raped (defined in the survey, and in the law, as forced sexual intercourse), and 1 in 4 women said that they had been victims of attempted

rape. During the presentation in Ruddock House, Ms. Holmes, a Caltech alumna, told the group that she had been raped her freshman year at Tech. Her willingness to talk about her experience helped people understand that acquaintance rape happens at Caltech, and that it happens to their fellow students. In response to questions from the group, she talked about how she felt when she saw the rapist, who was a fellow member of her house, and their mutual friends; and she explained why, at first, she did not seek help or tell anyone about the rape.

Later in the program, undergraduates June Fujimoto, Derek Surka, and Anandi Raman demonstrated ways to avoid situations where rape is likely to occur. They have helped Dinah Lee Schaller develop a series of brief skits that portray prevention techniques in the context of common social situations. Ms. Schaller is looking for more students to participate in the skits in other houses; anyone interested should call the Counseling Center at x8331.

Comments and questions are continued on page 2

Marcus Discusses The Nobel Experience

Kevin Du

It was a grand occasion at Baxter Lecture Hall last Monday, as the majority of Caltech's distinguished Chemistry department gathered to listen to Caltech's latest star — Nobel Prize winner Rudy Marcus — give a presentation of "Electron Transfer and the Nobel Experience". Jack Richards announced with shining eyes the smartly dressed (in blue blazer and tie no less!) Rudolph Marcus, and the presentation began with a truly illuminating video of the extravagant "Nobel Experience".

All I can say to all you young aspiring Nobel Prize Recipients is that, besides the 1.2 million dollars, you're in for one incredible time. The ceremony - a truly fantastic festival of medieval renaissance proportions - takes place in the fairytale-like royal castle - complete with huge ballroom with a grand stairway designed to let people ooh and ah at you as you glide gracefully down its sweeping length. It is a scene dripping with majesty, with pageantry and

costumes, and voices raised in praise of the world's brightest people, as the whole of Stockholm gears up to celebrate. The recipient, namely Rudy Marcus, dressed in a tuxedo, receives the award to the thunderous applause of 1200 privileged guests. Truly wondrous.

The video ends, joining the name of Rudolph Marcus with the names of others who have taught and inspired us.

The presentation continued as Rudy outlined the experiences and serendipitous coincidences that twisted his fate toward forming

Electron Transfer — modestly emphasizing the "luck" factor in this success. Then onto the Electron Transfer Theory itself and its many applications. As the audience listened intently, one could sense the camaraderie of some, the interest of others, and the awe of more than a few at this Nobel Laureate. It was a truly nice change for Rudy Marcus to share his experiences with his friends and colleagues, and, from the look of amusement and humor in many people's eyes, it was a remarkably enjoyable occasion as well.

ASCIT Election News

The ASCIT Presidential election is finally over! The new President is Moeen Abedin. For more details on the protests filed and the Executive Committee decision, contact Paul "Pablo" Thienprasit, Executive Committee Chair for a copy of the minutes, or read the abridged version in this issue of the *Tech*, page 2. Since there was a valid protest for the ASCIT President runoff election, the ASCIT Election Calendar has been pushed back a week. This means that signups for the remaining ASCIT Elected Offices are still open. Signups will close at 10:30 p.m. on Tuesday, February 9. Do not forget to submit a signed statement stating the office you are running for to the ASCIT Secretary, 41-58, by that time. The initial election will be held the following Monday, February 15, and if necessary, any runoffs will be held that Friday.

Remember that you can file an absentee ballot with the Election Chairman for any election as long as it is received by midnight, the night prior to the election. This absentee ballot need not be an "official" ASCIT ballot. If you cannot locate the Election Chairman, simply write your name and who you wish to vote for on a piece of paper and slip it under the door of the Chairman (Ewald Hueffmeier: Page 134).

"Comets, Craters, and Catastrophes"

Shane Sauby

Wednesday afternoon, Dr. Eugene Shoemaker gave a seminar on the connections between comets and catastrophes on a planetary scale. Dr. Shoemaker began the seminar by describing how the original search began for earth-orbit crossing objects. Since then, over a hundred such objects of varying size have been discovered and reported. The number of earth-orbit crossing asteroids is so large that Dr. Shoemaker said that the Earth is in the middle of an "asteroid swarm." Along with asteroids, there are larger objects that cross the Earth's orbit. Comets pass by the Earth less frequently, but are more of a threat due to their greater size.

Dr. Shoemaker also produced graphs and charts showing how often asteroids and comets hit, depending on their size. It is estimated that a small asteroid, of about one kilometer, hits the Earth every million years. The larger comets, however, strike once about once every hundred million years. The recent distress over the Swift-Tuttle comet was more to prod the scientific community to study its orbit closer than to alarm people that a comet strike was imminent.

The seminar then moved on to geological data obtained from sites worldwide. This data was then compared with the possible markings of asteroid and comet strikes. There are several extinction events that match up with the geological markings of an asteroid or comet strike. A recent crater discovered in the Yucatan area may even be the missing piece in the puzzle of what happened to the dinosaurs.

In response to an audience question, Dr. Shoemaker speculated about what atmospheric conditions would arise from an impact of this magnitude. The main idea that he put forward was that a greenhouse effect could be caused by the large amount of carbon sent into the air from a land strike, thus increasing the carbon dioxide content of the atmosphere and causing a Greenhouse effect.

Dr. Shoemaker has been working for the United States Geological Survey in Flagstaff and is a member of the National Academy of Sciences. A Caltech alumnus, a former member of Dabney house, he received his Ph.D. from Princeton and at one point served on the faculty here at Caltech, where he started the asteroid search at Palomar in 1973.

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Abridged Minutes of the ASCIT Executive Committee

Paul Thienprasit

One of the responsibilities of the ASCIT Executive Committee is to determine the validity of protests such as the one submitted recently concerning the ASCIT President runoff election (for more info see the §VI of the ASCIT bylaws on page 264 of the *little t*). The following is the condensed minutes of the meeting about this protest. The complete minutes are posted by the ASCIT minutes at Winnett. For a copy of the complete minutes (email or paper) or any additional information contact Paul "Pablo" Thienprasit (pablo@ugcs, Ricketts Room 63, Box 542, 356-9387). In particular, the complete minutes contain the minority viewpoints on some of these issues as well as some of the specific concerns discussed.

- Protests :
- 1) The ballot boxes were placed in the each of the houses at a time earlier than as dictated by the bylaws.
 - 2) Insufficient information was given for submitting absentee ballots.
 - 3) The difference between the number of preferred votes for each candidate was smaller than the discrepancy between the number of names on the register and the number of votes cast.
- 1) Ballot boxes
- The executive committee felt that while the literal interpretation of the bylaws was violated, the intent of the bylaws was not. The commit-

tee voted (6-1-0) that the election not be invalidated on the grounds of the ballot box protest.

2) Absentee ballots

Since information is available in the *little t*, and an announcement describing absentee voting procedures for the primary election was put in *The Tech*, the committee de-

cided (4-2-1) that the election not be invalidated on the basis of absentee ballots or lack thereof.

3) Discrepancy between registers and ballots

The majority of the committee felt that there was no evidence of malicious efforts to tamper with the election. Moreover, the discrepancy was sufficiently small (five potential missing/stuffed ballots) to be considered

acceptable error, and it is unreasonable to expect better results. Thus, the committee concluded (5-2-0) that the election not be invalidated on the grounds of the discrepancy between the number of ballots counted and the number of signatures collected.

Moreover, the committee rejected (3-4-0) a motion that, on the basis of the entire petition, the election be declared invalid and the runoff election between Derek and Moeen be rescheduled.

With the election being considered valid, it was decided (5-1-1) that, based on the discrepancy between the ballots counted and the signatures collected, it is not possible to determine that either candidate has a majority of the preferred votes and therefore the winner by determined pursuant to Article VIII, §6.c of the ASCIT bylaws.

ASCIT Election Dates

- Feb 9: Nominations close for remaining ASCIT offices.
- Feb 15: Initial election for remaining offices.
- Feb 19: Runoff election for remaining offices.

ASCIT BoD Minutes 2 February 1993

Korhan Gürkan

Present are the BOD, Cathy Hafer, Ewald, Pablo, Moeen Abedin, Mike Brundage.

After a week of absence, the ASCIT BOD Minutes are back.

ASCIT Elections: Pablo presents the ExComm Minutes of today. There was a protest concerning the ASCIT President runoff election. The ExComm found the protest valid, but decided that the election shall be considered valid. So, the new ASCIT President is Moeen Abedin. Congrats, Moeen and Mike! Since there was a valid protest, the ASCIT election calendar has been pushed back a week. This means that the signups for the remaining offices will close on Tuesday, February 9. Pablo also suggests that the BOD propose bylaw changes to the election procedure. He emphasizes that uncertainty and the meaning of cross-outs in a two person election need to be clarified.

UROH: June successfully published the UROH. There should be copies at the houses and some other convenient places. The BOD approves June's salary of \$100 (7-0-0).

Budget Report: Tim submits his final(?) budget report. Well, since there is enough money in the accounts, the BOD decides to go to the Bahamas instead of Hawaii. Thanks for your support.

SWE: SWE requests partial funding of its "Dinner with Industry", where Techers meet with company reps. The BOD decides to give them \$250 (5-0-3).

continued from page 1

Rape Prevention

welcome throughout the presentation. Dr. Ellicott said, in an interview the next week, "We chose to center the program around discussion, because if people are leaving without having said what was on their minds, without having asked their questions, then we haven't really reached them." Dr. Austin added, "We don't want anyone to feel that there is a 'politically correct' thing to say. These are complex issues, things that are not easy to talk about. It's better for people to say what's on their minds, and get it out in the open, then never to examine how they feel or what they think about these things."

Dr. Austin has been doing workshops on rape for about 10 years, starting when he worked as a therapist at the Claremont Colleges. "The first time I did a workshop on rape, I did a workshop on stranger rape. The students [at Claremont] said, 'yes, this is a problem, but we have another problem here, too.' They brought up the topic of ac-

quaintance rape, and made me aware [of that issue] . . . In the beginning, I didn't think about the value [that doing workshops on rape] had for me as a person, or what it meant for me. My understanding has grown; rape involves and affects both men and women, and [the prevalence of rape] changes the nature of relations between men and women."

Acquaintance Rape Prevention Discussion Calendar

Date	House
Tuesday, February 9	Ricketts House
Tuesday, March 2	Dabney House
Tuesday, March 9	Blacker House
Next Term:	
Tuesday, March 30	Page House
Tuesday, April 6	Fleming House
Tuesday, April 20	Lloyd House

Jim's Journal by Jim

Today I was sitting around petting Mr. Peterson.



I scratched up and down her back and she purred like crazy then fell asleep on my lap.



I lifted her up and set her down on the chair, and she stayed in the exact same position she was in on my lap.



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The *Tech* will hold its weekly meeting TODAY at 12.15 PM in the Coffeehouse. Free Pizza. Open positions include Crime & Incident Editor, World News Editor, Staff Photographer, and Off-Campus Distributor.

FRIDAY NIGHT ASCIT MOVIE



Baxter Lecture Hall:
7:30 and 10:00
\$1.50 A.S.C.I.T.
\$2.00 non-A.S.C.I.T.

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Miranda Richardson The Crying Game

Daily 5:00, 7:30, 9:50 p.m.
Sat-Sun Bargain Matinee 2:30 p.m.

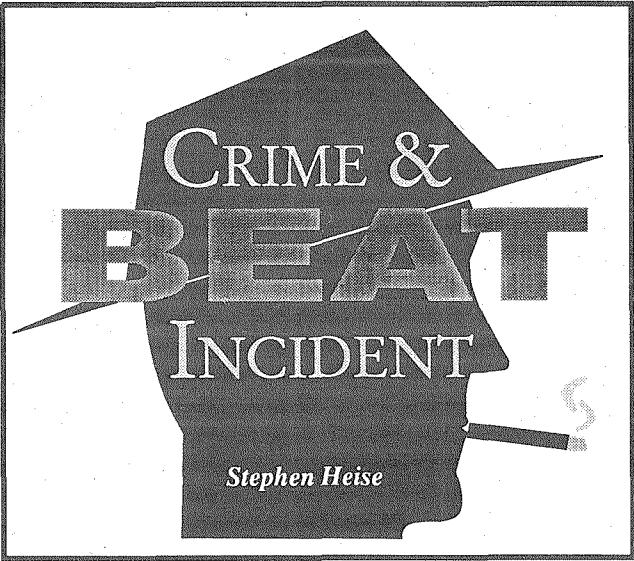
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SATURDAY NIGHT FEVER

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Catherine Deneuve INDOCHINE

Daily 5:30, 8:30 p.m.
Sat-Sun Bargain Matinee 2:00 p.m.



1-28 (10:30am) A staff member in Braun (witness) noticed a suspicious person (suspect) on the third floor of Braun. A few minutes later the witness observed the suspect in the basement. The suspect was carrying a stereo with a the cord dragging on the floor. The witness asked the suspect if it worked in the building. The suspect stated that its friends were waiting for it on the third floor. The suspect then fled the building walking west on San Pasqual. The victim has not yet been found.

1-29 (10:25pm) A grad student walking on Michigan near Grant Park was battered by three teens. One of the threesome punched the victim with his fist in the face and groin. The victim was treated for abrasions and x-rayed.

1-31 (1:15-1:30pm) A red car parked at the Wilson was burglarized. The passenger lock was punched out and the vehicle entered. Stolen were a \$400 Sony stereo cassette player, a \$300 Oki cellular phone, and a \$200 men's leather jacket.



The former site of Frame House.

2-2 (midnight) Two residents of 290 S. Holliston noticed that someone was using a suspiciously large truck to steal the house located at 341 S. Holliston, commonly known as Frame House.

2-3 (6pm) Two Male staff members of PCC (victims) were confronted by three people of a different race and the same sex as the victims. One of the threesome produced a .32 caliber automatic handgun and told the PCC staffers to lie down on the floor. Cash and wallets were taken from the victims. The threesome then took both phones from the wall and fled on foot from the PCC building.

2-4 (censored time) A (censored race) (censored sex) (censored affiliation with a (censored private technical college)) was (censored crime) by (censored method) by (censored number) (censored race) (censored sex) (censored description). It was plus goodtime.
Week Total: \$900.00

ENTERTAINMENT

A Virtual Thrill

David W. Hogg

A favorite late-night activity for Pasadena's idle youth (including us Caltech nerds) is a game or two at the fabulous Pak Mann Arcade [sic] at East Colorado and Allen. Last weekend I went to the Pak Mann to play driving games, and I was not disappointed.

In order to fully appreciate the atmosphere of the Pak Mann arcade, you must go well after midnight. You will find it crowded, noisy, and hazy with stale cigarette smoke. Hundreds of greasy (but rather sharply-dressed) young adults (primarily men, of course) will be furtively pumping quarters into the very wide variety of video games and pinball machines. The stagnant air is a sea of human viruses and all the buttons and joysticks have a vaguely oily feel. In other words, the Pak Mann arcade is the perfect environment for a few hours of computer-assisted entertainment.

When I was in junior high school, video games were just starting to get good (here "get good" means "get color graphics"), and I became addicted. Every penny of my allowance was pumped into the abstract "Centipede," "Ms. Pac Man," and "Defender" games in the donut shop across the street from school. I took little notice of the then-innovative "Pole Position" in the Pizza joint; it was a boring car race. As video games moved in the direction of the more complex "Commando" and "Street Fighter 2" games, I lost interest. Much later in life I picked up pinball, and I still think that is the most noble of arcade skills. Recently, however, I have noticed that driving games have come a long way since "Pole Position."

The primary advance in driving-game technology is the ability for multiple players to compete in the same video race. Driving games of this variety fall into two categories: motorcycle games, in which you

steer by leaning a large motorcycle upon which you sit, and automobile games which have a steering wheel and a foot-pedal accelerator. In the former category, Pak Mann now has only the rather flashy "Suzuka 8 hours," which is not interesting enough to warrant the fifty cents it costs, although you can play with three other enthusiasts.

"Final Lap 3" by Namco (hereafter "FL3") is rather like "Pole Position" and other basic driving games. The steering algorithm is naive, in that straightening the wheel simply aligns the car with the road (note the difference from real driving), but steering the four available courses is not trivial, given sharp turns and competing autos.

Where FL3 surpasses its predecessors is in competition. FL3 can be played by up to eight people simultaneously. There are always eight eager competitors to fill the seats, so don't worry about bringing seven friends. FL3 represents a new era for video games. No longer is playing video games an introverted, socially-stunting activity; now you interact with your opponents as much as with the computer. The computer is just a playing field for human adversaries. The competition is fierce at the Pak Mann arcade, and the atmosphere is (believe it or not) friendly, making FL3 an ideal video game experience.

Moving in another direction is "Virtua Racing" by Sega (hereafter "VR"). It is an incredible simulation of driving. There is mechanical feedback through the seat and steering wheel, so you can feel the terrain you are driving over, and you feel the resistance of the car to turning, different at different speeds. When your front wheels hit a wall or car, your steering wheel jerks away, and when you straighten the wheel you go straight, even if that direction is orthogonal to the roadway. You can steer your car from four different viewpoints, from one

that is in the driver's seat to one that is high overhead. Everything is modelled in three-dimensions, and complete views are computed in real time by a fast computer.

Up to four people can play VR simultaneously, and there is a computer monitor above the four players' screens that shows a simulated television broadcast of the action, with a simulated newscaster, dramatic "camera" locations, and excellent real-time "editing." It is worth going to the Pak Mann Arcade just to see this computational feat.

Although there is not as large a group of competitors, and although it takes a few games to become competent, FL3 soon pales in comparison to the sickening sophistication of VR.

Interestingly, despite the obvious differences between FL3 and VR, the experiences of playing the two games are quite similar. The high speeds are thrilling, even though simulated, and the difficulty of navigating corners and avoiding multi-car pileups is frustrating in both games. I even shouted the same insults at my competitors. The advantages of VR lie entirely in its beautiful and complete human interface.

Of course, the price of that interface is dear. A satisfying game of FL3 is the appropriate price of one quarter, while the short VR games take three. The stupendous "Virtua Racing" is worth the money for a few races, but financial considerations will force you to get most of your electronic driving fix from the excellent "Final Lap 3."

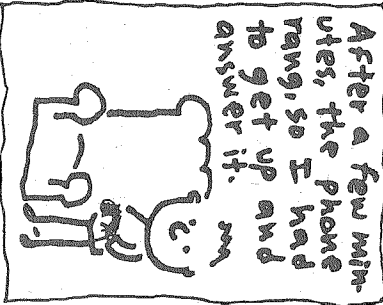
* * *

The Pak Mann Arcade is on East Colorado at Allen, and although there are no hours posted, it is always open when you need it. There is no admission charge, but bring at least five to ten dollars to feed the machines. The games rotate quickly, so go soon if you want to see the games reviewed here. It is a stiff walk back to campus, but after breathing in some Pak Mann atmosphere, you will need it. There is parking out back for those of you with real cars.

YOUR INCOME TAX QUESTIONS CAN NOW BE ANSWERED!

The offices of Financial Aid, Graduate Studies, and International Student Programs, in cooperation with the Faculty Records Office, have arranged for a panel of specialists to address various questions pertaining to the preparation of individual federal and California state income tax returns. International students and faculty with specific concerns about federal and/or state tax preparation are encouraged to attend. The panel's membership will consist of an immigration attorney and three tax attorneys.

Monday, February 22, 1993
(Instructional Recess)
Baxter Lecture Hall
1:30 - 3:00 p.m.



After a few minutes, the phone rang, so I had to get up and answer it.

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"Hello, Dolly!" Comes to Caltech

Elizabeth Sherman

"Money is like manure" according to Dolly G. Levi, meddler-at-large- who ends up with a pile of it by the end of "Hello, Dolly!". The 19th and current musical presentation of Theatre Arts at Caltech, "Hello, Dolly!" will open Friday, February 19th in Ramo Auditorium on the Caltech Campus.

Rich widower, Horace Vandergelder (Bill Salem) of Yonkers, New York, contracts Dolly Levi nee Gallagher (Lynne Cooper), matchmaker and widow, to find him a wife who will "work until infinity" to bring him "the sweet things in life". Dolly finds Irene Molloy (Suzie Follmer). A pretty, young

widow who runs a small hat shop with her assistant Minnie (Leslie Maxfield). Tsk! Horace heads to New York City - purpose: MATRIMONY!

Meanwhile! Horace's employees, Cornelius (Gary Olsen), "I'm 33 years old and never kissed a girl" and Barnaby (Scott Van Essen), "I'm 17 and it's not so urgent for me", decide that if the boss can go to Manhattan for a good time, so can't they. Exploding cans in the basement closes down the store and off they go to New York and the time of their lives, at least as far as they can go on \$1.30.

What will happen to Horace, Cornelius, and Barnaby? Will Irene, Dolly and Minnie Fay? Who is

Ermengarde? What/Where/How is Ambrose going to succeed? and Why is Rudolph shouting at Stanley?

To find out more, come to one of the performances to see other fine student actors such as Dan Dilling as Rudolph, Terrill Ray as Stanley, Anna George as Ermengarde, and Marilena Fitzsimons, Alison Sopher, Chris Springfield, Dave Stevens, Debi Tuttle and Walter Briskin dancing their way around the stage.

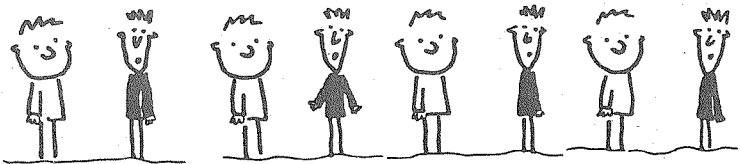
TACIT invites you to "an atmosphere of elegance and refinement" at the presentation of "Hello, Dolly!" Friday's, February 19 and 26, 8:00 pm; Saturday's February 20 and 27, 8:00 pm; Sunday February 21 and 28, 2:00 pm.

Tickets are available through the Caltech Ticket Office at 356-4652. \$10.00 General Admission, \$7.00 for Caltech Students, \$9.00 for Caltech and JPL Staff and Faculty. For Group Discounts call the Ticket Office.



photo by Anoop Sinha

Irene (Suzie Follmer) embraces Cornelius (Gary Olsen) during Act 2 of "Hello, Dolly!"



New Vic Theatre of London Presents "Canterbury Tales"

Cara Stemen

The New Vic Theatre of London starring Mickey O'Donoghue presents a version of Chaucer's "Canterbury Tales" on Saturday, February 6 at 8 pm in Beckman Auditorium. This show is not suitable for children.

In 1973, O'Donoghue was a member of a group of actors under the direction of Michael Bogdanov at the Phoenix Theatre in Leicester. This company showed the seeds of a unique "ensemble" style of theater, with heavy emphasis being placed on audience participation. The first of the "fun" shows to emerge was an adaptation of "Canterbury Tales," the aim being to take a well-known classic and turn it into popular the-

ater.

In 1980, Bogdanov and O'Donoghue formed the New Vic Theatre to develop further this style for theater and make it available to audiences throughout the country. Since then, the New Vic has played to more than 2 million people in the British Isles and the company has gained a reputation for presenting unique "fun" theater of outstanding quality.

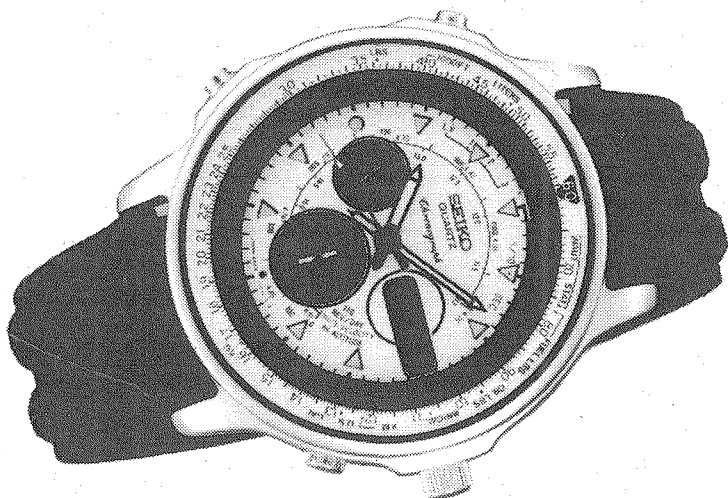
Tickets are priced at \$27.50, \$25.00 and \$22.50. Caltech students can get rush tickets for \$7.50, and Caltech faculty and staff can buy tickets at half price. Tickets can be purchased at the Caltech Ticket Office. For more information call x4652.



photo courtesy of Caltech Public Events

The New Vic Theatre of London presents their ribald rendition of Chaucer's "Canterbury Tales" in Beckman Auditorium on Saturday, February 6 at 8 p.m.

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ENTERTAINMENT

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Jeff Goldsmith

3rd Annual Caltech-UCLA Pro-Am

On Saturday, January 30th, 13 of the area's best players visited Caltech for the third running of the Caltech-UCLA Pro-Am. The game was as an IMP individual with Pros playing in a different direction than the Ams. Mike Shuster, an undergraduate student at UCLA, won the event by two IMPs over Ed Davis, who led the Pros. Mike is also a member of the United States' 2nd Junior team and will compete in the World Junior Championship in Copenhagen, Denmark, in August. After the game, several of the pros stayed around for a panel show and discussed the boards over pizza.

Thanks to Ed Davis, Alan LeBendig, Beverly Rosenberg, Stelios Touchtides, Tom Oakley, Danny Kleinman, Eddie Kantar, David Weiss, Gene Freed, Grant Baze, Leni Holtz, Jan Cohen, and Syd Levey for graciously donating their time and participating in this event. Thanks, also, to Peter Knee who directed the game so smoothly that no problems occurred at all.

The most interesting hand was board 18:

♠ J65
♥ A653
♦ K852
♣ 94

♠ Q109873
♥ J
♦ QJ3
♣ AQJ

N
W E
S

♠ 42
♥ Q102
♦ 1096
♣ 108762

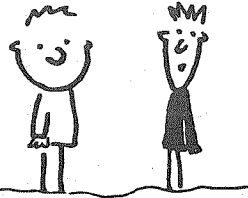
♠ AK
♥ K9874
♦ A74
♣ K53

East	South	West	North
Pass	1 ♥	1 ♠	2 ♥
Pass	2NT	Pass	4 ♥
(All Pass)			

Even though 3NT looks better than 4♥, especially on a spade lead, only one pair managed to get there. That South opened a 16—18 1NT. Everyone else felt that the South hand was too strong for a 15—17 1NT and had auctions similar to the one described above.

Most got the lead of the ♦Q, won in hand with the Ace. Some Easts signaled with the Ten, making the diamond situation much clearer for partner. Declarer had several lines available, most requiring a defensive error. The panel decided that the best line was attempted by Stelios Touchtides, who drew two rounds of trumps, cashed the high spades, and crossed to the ♦K in dummy. He played the ♠J and pitched his losing diamond from hand, hoping to endplay West if he had been dealt 6—1—2—4 distribution. Not this time. Other declarers cashed the other high diamond from dummy early and ruffed the ♠J. When West failed to unblock diamonds, he was thrown in with a diamond to give a ruff and discard or to lead clubs. This had the merit of working when the defense slipped.

I thought that diamonds were 4—2, and that neither of those lines would work, so I drew two rounds of trump and exited with a third. East played a spade and I won the King, trying to show West the ♠AK. When I continued with a low club from hand, West assumed that I did not have the King, but might have tenaces in either pointed suit (his partner failed to play the ♦10 at trick one.) He continued with three rounds of clubs, which I won in hand. On the run of the trumps, East continued to fail to appreciate the value of his diamond spots and discarded one, allowing me to criss-cross squeeze his partner in the pointed suits. The last trick was won by the ♦S7 for a beer.



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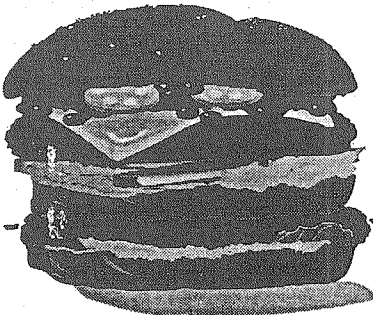
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First round results:

PAGE	62
llame ducks	35
the ruds	21
DAMN SCURVES	175
cannon fodder, inc.	37
GRADS+GHOST	44
wild cards	30
NADS	56

Second round matches:

page (1-0) vs. Damn Scurves (1-0) (for the interhouse trophy)
grads+ghost (1-0) vs. nads (1-0)
llame ducks (0-1) vs. wild cards (0-1)
the ruds (0-1) vs. cannon fodder, inc. (0-1)

The Caltech Bridge Club meets every Monday night at 7:15 in Winnett Lounge. Everybody is welcome; call Jeff Goldsmith at x2818 for details.

YNEWSYNEWSYNEWS

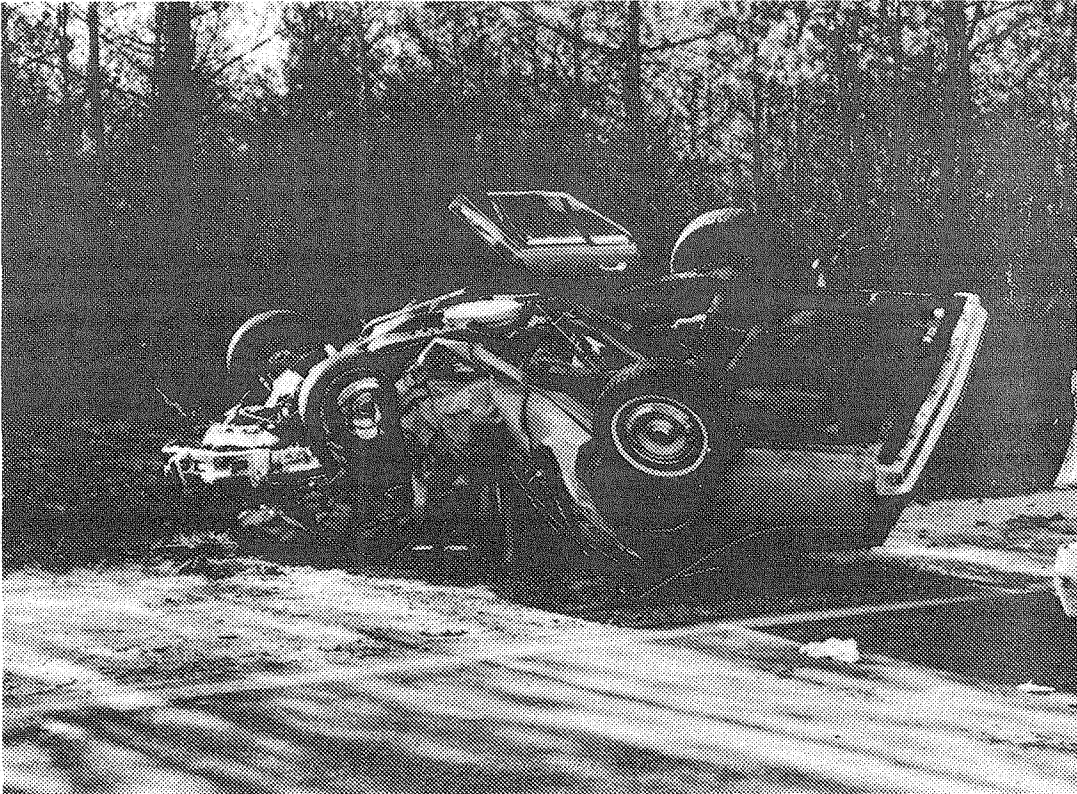
Katy Quinn

Howdy Folks! Your friendly neighborhood Y News editor has returned from the icy seas of Antarctica. Pardon the absence but hey, this is Caltech, the pursuit of science will triumph over all (yeah right). However my flakiness was admirably covered by Clo "El Presidente" Butcher. Thought I might have been out of a job but no such luck.

On to business. Tickets to *Homeward Bound - The Incredible Journey*, a premier of Walt Disney's newest nature film on Sunday Feb. 7th, are on sale for only \$3.50. If you are interested in volunteer work there is going to be a trip to the LA Foodbank Saturday Feb. 6th and volunteers for Union Station are still needed for Mondays and Fridays throughout the term. For you calm and peaceful types, Meditation classes will be starting on the February 15th and every Monday after until March 8th. For you out of control types there is going to be a Mountain Bike trip to Mt. Lukens on February 12th and this Spring Break there is going to be a Canoe trip on the Colorado River - sign up at the Y!

Remember boys and girls, the Caltech Y is a happening place, a shining light in the darkness of Caltech social life. So come on up and find out what goes on, we'll leave the light on for you.

The Caltech Y is open Monday to Friday, 9am to 5pm, and is located on the second floor of the Winnett Student Center. Look for our green flag across from the Red Door Cafe.



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SPORTS

Tennis Triumphant

John Haba

"It should be a good match."

That remark by women's tennis coach Karen Nelson before last Wednesday's season opener at Mt. San Jacinto proved to be an incredible understatement as Caltech pulled out a thrilling 5-4 victory in the final set of the match.

It began as a fine day for tennis in the foothills of the San Bernadino mountains. The Caltech team looked a bit nervous after their almost two hour drive to this first match, but settled down quickly to establish solid singles play. Number one seed Diane Wong set the tone for the afternoon by skillfully picking apart MSJ's Christi Tabor 6-2, 6-2. Despite claiming she "wasn't hitting well at all", Wong played a patient, steady baseline game which completely frustrated a skittish and erratic Tabor. It was apparent from the early moments that Diane had her opponent mentally beaten, as she continually brought Tabor to the net with short dropshots and then proceeded to destroy her with an array of well-placed lobs. The fact that Caltech's best could easily vanquish MSJ's best gave the entire Beaver team a sense of confidence that this match could be theirs for the taking.

Unfortunately for Tech, the other top seeds for the MSJ Eagles were playing incredibly well that day. Number two seed Yu-chien Kuo lost to Jennifer Cook 6-2, 6-1 in a match that was not nearly as lopsided as the score indicates. Kuo played well, but MSJ's Cook played the match of her life: She could probably have counted her bad shots and unforced errors on one hand. Number three Monica Silva also

lost 6-0, 6-3 to power-hitting Celia Chavarin, and number four seed Miran Rhee's devastating backhand was not enough to defeat Eagle Annie Snook, who won 6-2, 6-2. Despite these setbacks, the Beavers' impressive team depth came through as number five Jill Bush and number six Karen Shih dominated their matches completely. Bush defeated Bridgett Duarte 6-1, 6-3, and Shih definitely put down Jeannette Maybee 6-1, 6-0 in what was a veritable tennis clinic. And in a match which did not count in the overall contest, seventh seed freshman Laura Verhoff looked impressive in her Caltech debut, beating Leah Franklin 6-0, 6-3.

After all those contests, things were still just beginning to get interesting. Singles play had left the two teams deadlocked 3-3 going into the three final doubles matches. It was time to find out if Caltech players had taken to heart Coach Nelson's special preseason efforts to improve both mental toughness and doubles play.

Super juniors Jill Bush and Karen Shih picked up where they left off in singles, crushing an intimidated pairing of Duarte and Maybee 6-1, 6-2. It must be noted that these two accounted for three of Caltech's five match victories. This is probably the first of many times this season that Jill and Karen will prove themselves instrumental in Caltech's team success. The Beavers second seeded doubles pairing of Monica Silva and Monica Oei took the court with a determination to stay loose and relaxed. Unfortunately, they were a little too loose, dropping the first set 6-1 before getting down to business. The second set was much closer but Team

Monica fell to Chavarin and Snook again 7-5.

While these two doubles matches were going on, Caltech's #1 team of Diane Wong and Miran Rhee were embroiled in what was definitely the match of the day. Wong and Rhee were locked in such a contest of wills with the Eagles' top players Tabor and Cook, that court-side spectators could almost physically sense the tension being generated. It was fitting that this match would be the only three set contest of the afternoon, and that every player, coach, and fan would be clustered together in the approaching dusk to watch these competitors determine the end result of this day's athletic endeavors. The first set showed the two pairings to be extremely evenly matched. Momentum constantly swung back and forth, but Wong and Rhee eventually prevailed 7-6(8-6) in a tiebreaker. The second set was much the same, but Tabor and Cook took charge late to win it 6-3. In the final set, though, Diane and Miran shook off the cold, the dark, and the pressure of deciding the match before a host of spectators, to put away their opponents 6-4 which gave Caltech a well-deserved victory. Those seeds of "mental toughness" which Karen Nelson had carefully planted did indeed bear bountiful fruit in this opening match.

The undefeated Caltech women next take the court 1:00 PM Saturday at Mount St. Mary's, in what should be another competitive contest. In light of the first match, fans are advised to bring their blood pressure pills, and those of frail constitution might think twice about attending.

Athletics with an attitude. A clearinghouse of Caltech sports info. A forum for news and views about the entire sporting world. From major league baseball to Interhouse competition, from the NBA to the GSC, no sport will be too large or small to escape notice. These are the goals I have as I start this new weekly column,

patterned on disjointed columns like the L.A. Times' Notes on a Scorecard. It will allow me to cover the

world of Caltech sports without the restrictions of the standard article format. Anyone with questions, comments, suggestions, or complaints is encouraged to contact me at Box 935 or email address haba@cco. So without further ado, here are this week's items... The annual match between the mens' tennis team and Caltech faculty members has been rescheduled from last Saturday Jan. 30 to April 10. There is absolutely no truth to the rumor that the undergrad players fearfully begged for more time to

prepare... Anyone with a radio and a few minutes to kill should tune into XTRA AM 690 to hear the best in sports radio. If you're an avid fan, you'll get up-to-the-minute info and intelligent discussion on sporting issues. If you know nothing about sports, you'll definitely learn something and will derive some entertainment

value. The hosts at XTRA are usually gracious, often funny, and always informative... Though I've

been away from Tech for awhile, the Interhouse standings seem to be exactly the same as when I left... Is there a sports-related activity that you feel is grossly neglected by the Tech and/or the Caltech community? Let me know what it is, and we can change that... Rotisserie baseball season is just around the corner. Are there any leagues or team owners out there? ... That's all for this week. I'm open to suggestions for future topics to put on the table... Until next Friday...

John Haba's
SPORTS
SHORTS

Jim's Journal

I made 9,000 copies of an advertising insert today.



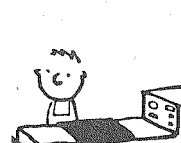
I worked at the copy store again today.



I was making 200 copies of somebody's resume.



I read a little bit of it while it was copying.

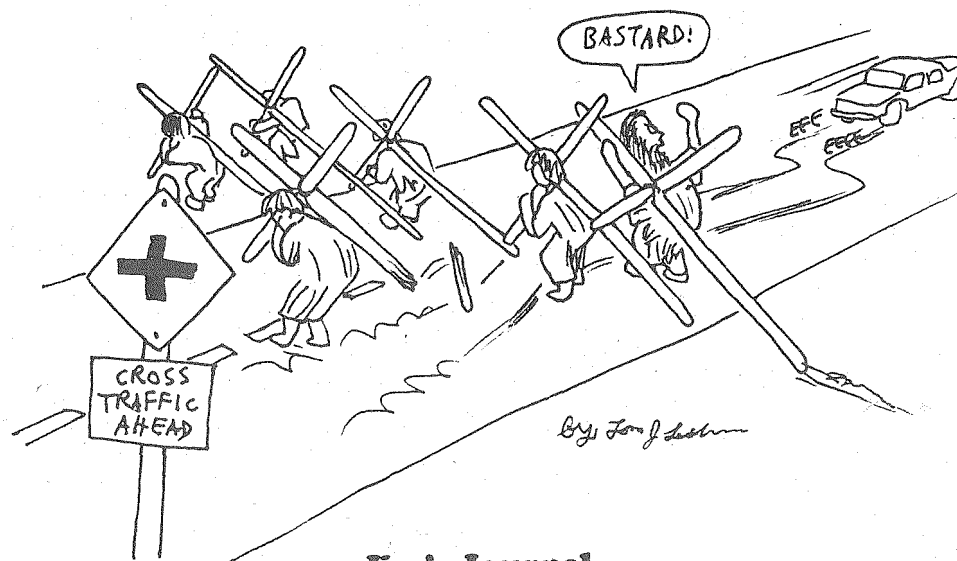


The person's career objective was "a public relations position allowing for skill enhancement and career growth."



by Jim

When I got home I watched TV, ate a peanut butter and jelly sandwich and got really tired.

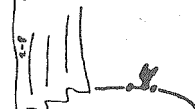


By Tom J. Lash

lechner

Jim's Journal

Today as I was getting out of the shower, Mr. Peterson was looking inside the shower cautiously.



When I stepped out, I must have startled her because she ran away really fast.



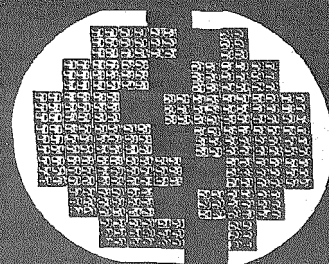
At the copy store today I had to put finished copies into boxes.



The steady hum of all the copy machines makes the copy store sound like a factory sometimes.



by Jim

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Battling Beavers Play Close with Redlands

Jason T. Lee

The varsity Beaver basketball team scored a season high 47 points in the second half of their SCIAC game against Redlands Wednesday night, losing in the end 94-76.

After having been outscored 63-29 in the first half, the Beavers came out tough in the second half with a difficult offense, and that paid off, as they outscored Redlands by 16 points.

George Papa led all scorers with 22 points, while freshman Matt Goff poured in 16 off the bench, including 12 in the second half. John Parks led the team in rebounds with 12, and both Papa and Grant Templin dished out 5 assists.

The Beavers are now 8-8 overall, and 0-7 in SCIAC conference play. They have looked much sharper in the past two games, however, and hope to finish off the season strong.

Tomorrow at 7:30 pm Whittier will be coming to play, and it should be a good contest. Earlier this season, the Beavers lost 81-49 to the Poets, but with 7 SCIAC games under their belts, Caltech should play better.

The Beavers are of course led by George Papa, their leading scorer and rebounder (20; 9), who was recently profiled in the LA Times Sports section. Other top players include John "Big Daddy" Parks (7 ppg; 7 rpg), Keith Oslakovic (6 ppg; 3 apg), Grant "Sonic" Templin

(4 ppg, 2 apg), and their two rookies Matt Goff (6 ppg, 3 rpg) and "Sneaky" Steve Tsai (7 ppg, 4 rpg, 2 apg)

In order to boost home game attendance, a new halftime shooting contest will be tried out on Saturday. Ten fans at the game will be

selected during halftime to participate in a shootout for prizes.

The top prize will be a \$25 gift certificate to Carl's Sporting Goods, and other prizes that will be awarded will be free lunches at Burger Continental and sports bottles. In order to win these prizes, the fan will

shoot the ball continuously for 45 seconds from various places on the court, and the one who gains the most points will win.

So remember to come out to Saturday night's game at 7:30 pm in the Braun gym, and don't forget your shooting shirt.

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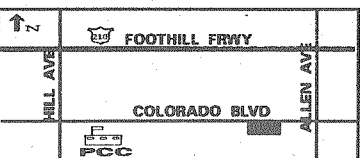
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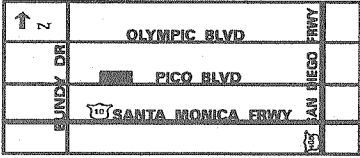
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by Jim

It was nice to get away from everything for a while.

I went to an art gallery and boted at the art.

Today I took a walk around town.

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WHAT GOES ON

NOTICES

Undergraduate Women - We are looking for input from men and women undergrads on the planned Women's Center. Call the DRL's office at x6194 to sign-up for an informal dinner and discussion on the Women's Center. Share your ideas, get answers to your questions, or just listen to what other students have to say about it. Men were invited to the discussion on Thursday, Feb. 4 at 6:30 pm. Women are invited to the meeting on Monday, Feb. 8 at 6:00 pm. Call x6194 to reserve a space or get more information.

Caltech Y ExComm Meeting - The Y invites anyone who wishes to cosponsor an event to attend on the first or third Monday of each month.

Nominations Open - Nominations are open for two Representative at Large positions on the Board of Control. The new Representatives will be chosen on the basis of interviews conducted by Board members. The term of Representatives at Large is for one year, starting March 2, 1993. Sign-ups are available on the MOSH's office until Friday, Feb 12 at 5:00 pm. For more info call x6200.

New Bookstore Hours - Effective February 1, the Bookstore will open at 8:00 and close at 17:30, an hour later than usual.

EVENTS AND SERVICES

Sweet Feast with the MOSH - Bring your sweet tooth with you to the Master's House, at 355 S. Holliston for some homemade sweets on Wednesday, Feb 17 from 9 to 11 pm.

Friday Morning Donuts! - That's right ASCIT and the Caltech Y are bringing back the Caltech tradition of Friday Morning Donuts. Donuts will be served today and every Friday at 8:00 am in front of Lloyd House. Come on out, eat breakfast, read the paper, and meet interesting people. Then, you can go back to bed, but don't miss the donuts.

International Students' Coffee Hour: ISP sponsors the third coffee hour this academic year. Will be held at the Red Door Cafe on Friday, Feb. 5 at 5:45 pm. The theme, this time, will be "India: A Country in Turmoil". Graduate students will speak about the recent unrest in India. Indian snacks will be available. Everyone is welcome.

Friday Prayer - Prayers organized by Caltech Muslim Students are held in the Caltech Y lounge at 12:30 pm every Friday.

Caltech Hillel/ Jewish Community Weekly Meeting - An informal gathering, every Thursday at noon in the Y lounge. For information call Caty Konigsberg at (213)259-2959

Mass - Thursday at 8:15 in the Y lounge and Sunday at 10 am in Winnett lounge. Sacrament of Reconciliation (confession) is given 20 minutes before masses. Refreshments are served after mass.

Bible Study and Discussion - Every Wednesday at noon in the Y lounge. Bring your own lunch. For more information call Mike Gerfen at 356-4886.

Gay, Lesbian, Bisexual Support Group - Meets the first and third Tuesdays at 7:30 pm in the Health Center Lounge. This confidential meeting is open to all Caltech community members looking for a supportive context in which to address questions and concerns about sexual orientation - including coming out, being out, self-discovery, coping with families.... We begin with a focus topic but move to whatever is feeling most relevant to the group that night. Refreshments are served. For information, please call x8331.

Preschool Playgroup - Meets on Tuesday, Feb 9 in the Caltech Villa Apartments from 10 am to noon providing structured activities for mothers and fathers and their children. For more information call Valerie Murray, 287.8960.

Adult Children of Alcoholics - A 12-step group which meets on campus every Tuesday, from 12 noon to 1 pm, in Y club room 2. The group is open to any student, staff or member of the faculty who grew up with family alcoholism and other problems. For more information call Dinah Lee Schaller at x2961.

Open Line - Open Line meets every Tuesday in the Y lounge upstairs during lunch, between 11:30 and 1:00. Topics discussed include developing a youth center for ages 5-12 for tutoring services, activities and cultural development for the children of Caltech students, staff and faculty, developing a multicultural book for the understanding of all nationalities, traditions and customs. Open to all of the Caltech community.

The CIT-KNIT Group meets at noon on Tuesdays in the Benioff Conference Room (Rm. 256 S. Mudd). For all levels of knitters. Come and join us.

Baby Furniture Pool - The Caltech Service League loans out baby furniture to students and postdocs on Wednesday at 324 S. Chester from 10 to 11 am. For more information call 952.1631.

ENTERTAINMENT

"Canterbury Tales" presented by the New Vic Theatre of London - A satirical version of Chaucer's "Canterbury Tales". Not suitable for children. Beckman auditorium on Saturday, Feb. 6 at 8 pm. For information call x4652.

MEN(1985) - This film which was an enormous success in the mid-eighties is both a brash neo-screwball comedy and a gleefully ironic exploration of the male mystique. A sexist, bourgeois businessman finds that his wife is having an affair with a bohemian artist so he moves in with them in disguise to spy on his stray wife. Directed by Dorris Dörrie. The film, part of the German Film Series, will be screened on Thursday, Feb. 11 at 7:30 pm in Baxter Lecture Hall. Admission is free.

International Students' Valentine's Party - Sponsored by FOCUS (Friends of Overseas College & University Students), these informal gatherings bring Americans and Internationals together. Many lasting friendships have begun this way! The Valentine's Party is at 1203 Oakwood Drive, Arcadia on Saturday Feb. 6 from 6-9:00 pm. Sign up at the Caltech Y.

"Scotland" - Sherilyn Menten will personally narrate her travel film "Scotland" on Friday, Feb. 12 at 8 pm in Beckman Auditorium. Menten takes a light-hearted tour of Scotland, from the Borders' gentle hills to the pine forests and bleak moors of the Highland. She visits the lively and colorful city of Glasgow, born during the Industrial Revolution and shaped by Victorian manufacturers. Other highlights include visits to Edinburgh, St. Andrew, the Shetland Islands and Orkney. Tickets are \$8.00 and \$6.50. For more information call x4652.

The Pasadena Folkdance Co-op offers beginning and intermediate instruction every Friday at 7:45 pm in Throop Unitarian Church on the corner of Los Robles and Del Mar. A program of varied international dances follows the instruction at 9:00 and continues until 11:00. Wear soft-soled shoes. A contribution of \$1.50 is requested.

International Folk Dancing - Tuesday nights in the Dabney Lounge. Beginning instruction starts at 7:30 pm; intermediate at 8:00 pm and open dancing takes place from 9:00 until midnight. Donations are accepted. For more information call Mike McKenna at (310) 692.0366.

Israeli Folk Dancing - Sundays in Winnett lounge. Beginning instruction starts at 7:30 pm, intermediate at 8:00 and open dancing goes on from 8:30 to 10:30. For information call Nancy Macmillan at 795.3655. Admission is \$2.00.

Scottish Country Dancing - On Wednesdays in Dabney Lounge from 8 until 10 pm. Beginners are welcome and no partners are needed. For more information call David Hills at 354.8741.

Music with James Boyk! - Pianist James Boyk gives a performance each Wednesday from 4:30 to 6 pm in Dabney Lounge. The performance is open to the public and free of charge. Feel free to come late or leave early. For more information call x6353.

LECTURES AND SEMINARS

"Relationships... How to Create & Maintain a Healthy Relationship" - Wednesday, Feb. 10 at noon in Winnett Lounge. Helen Nedelman will cover such topics as defining realistic expectations of a relationship and key elements of a satisfying partnership. This seminar is presented as part of the Lunchtime Learning Series.

"Traditions in Conflict: The German Reception of Maxwell's Electromagnetic Theory, 1870-1895" - presented by Dr. Olivier Darrigol, Visiting Professor of the Dept. of History UCLA and Professor of History of CNRS at Rehseis in Paris., in the Judy Library on Feb. 11 at 16:00.

"Monitoring the Earth's Capacity to Support Life: Challenge of the Next Century" - The ever increasing impact of humans on the global environment will necessitate a careful monitoring and managing of the global biosphere. Dr. Bruce Murray, Prof. of Planetary Science and Geology at Caltech, will discuss the challenges of handling and making use of the vast amount of information necessary to manage the Earth's environment. Come to this fascinating Watson Lecture on Wednesday, Feb. 10 at 8pm in Beckman Auditorium.

SCHOLARSHIPS, INTERNSHIPS & COMPETITIONS

The Summer Undergraduate Research Fellowship (SURF) program is accepting applications. Application forms and Announcements of Opportunity are now available in the SURF Office, Room 137 Beckman Institute. Application deadline is March 1, 1993.

Summer Student Fellowship Program 1993 - Summer Student Fellowships are awarded to upperclass (juniors and seniors) in any of the fields of science or engineering with at least a tentative interest in oceanography and/or marine policy. Fellowships are awarded to pursue an independent research project chosen by the Fellow under the guidance of a member of the Research staff. The Fellowship stipend is \$3,660 for the 12-week program during the months of June-August. A travel allowance may be provided. The deadline for applications is March 1, 1993. Notification of decisions by April 12, 1993. Further information and application forms: The Fellowship Committee, Education Office, Clark Laboratory, Woods Hole Oceanographic Institution, Woods Hole, MA 02543. (508) 427-2000, ext. 2709.

Eight-Week Summer Internship Program For Underrepresented Undergrads - Established to provide sophomores and juniors with the opportunity to conduct research with prominent faculty members in fields such as the humanities, the biological, physical and social sciences as well as engineering, the program will be offered on a competitive basis to individuals who are citizens or nationals of the US and of Alaska and are Native, American Indian, Black/ African American, Chicano/Mexican American, or of Puerto Rican heritage. Asian Americans pursuing degrees in the social sciences, arts and humanities are welcome to apply. Women, regardless of ethnicity, who are pursuing degrees in the physical sciences or engineering are also strongly encouraged to apply. Applicants should also be full-time students and have a minimum GPA of 2.8. Each student selected for the program will receive a \$1,600 stipend and room and board in one of the UCLA residence halls. Applications are in the Dean of Students Office, 102 Parsons-Gates. The deadline is Feb. 12.

Master-Program - Information Networking Institute of Carnegie-Mellon University. Brochures and information about the Bellcore Graduate Study Program (GSP) are available in the Career Development Center, 8 Parsons-Gates, x6361. This is a company sponsored program where students receive tuition, fees and a stipend and will work for Bellcore during the summer.

Monticello Foundation Internships 1993 - The Deans' Office is accepting proposals for the Monticello Foundation Internship. One to three Caltech undergraduate women (current freshmen, sophomores and juniors) will be given an opportunity to participate in research projects outside the Caltech community for ten weeks during the summer. Each student will receive a \$3,500 stipend. Applicants are required to identify the projects in which they wish to participate. All arrangements with the principal researcher will be the responsibility of the student. Interested? Identify a sponsor for your experience at a research facility for a ten-week period. In a short essay, describe your project, and submit it to the Deans' Office, 102 Parsons-Gates, along with two faculty recommendations. Proposals are due March 1, 1993.

"Progressive Social Change in the 1990's" - *Monthly Review*, an independent socialist magazine, announces an essay contest for people 25 and under. Entries covering such topics as, How can we change progressive change in US society today? Are emerging movements creating new ideas and posing potential solutions? In what ways can new social institutions be constructed?, should be 2000 words or less, written in English and typed double-spaced. First prize is \$500, second \$300 and there is a \$100 third prize. All contestants will receive a free one-year subscription to *Monthly Review*. Send submissions to *Monthly Review*, 122 W 27th Street, New York, NY 10001. For more information call (212) 691-2555. The deadline for submissions is March 1.

The Financial Aid Office has applications and/or information for the following scholarships. All qualified students are encouraged to apply. Our office is located at 515 S. Wilson, second floor.

The Chinese American Faculty Association is awarding scholarships (\$500 each) to undergraduate students. Undergraduate students who are interested in Chinese culture and are enrolled full-time with a GPA of 3.5 or above are invited to apply. Completed applications must be postmarked no later than Feb. 16, 1993.

The SME Manufacturing Engineering Education Foundation is announcing the availability of 4 separate undergraduate scholarships for direct application by the students. These scholarships range from \$500 to \$2,500. For information on scholarship criteria for each scholarship visit the Financial Aid Office. The application deadline is March 1.

The Consulting Engineers and Land Surveyors of California (CELSOC) will award several scholarships for the 1993-94 academic year. Scholarships will range from \$1,000 to \$2,000. Scholarships are available to upper division students in the fields of engineering and/or land surveying with a minimum GPA of 3.5 in their field and a minimum overall GPA of 3.2. Deadline for applications is Feb. 26, 1993.

The American Society of Naval Engineers is a sponsoring a \$2,000 scholarship for the 1993-94 academic year. The candidate must be a U.S. citizen, demonstrate a genuine interest in a career in naval engineering, and be applying for support for the last year of a full-time program or for one year of graduate study. Financial need may also be considered. Deadline for receipt of scholarship materials by the ASNE offices is February 15, 1993.

The American Physical Society (APS) is offering \$2,500 scholarships to African-American, Hispanic-American, or Native-American undergraduate freshman or sophomore students majoring in Physics. The deadline to submit completed applications to APS is February 26, 1993.

The American Scandinavian Foundation of Los Angeles will distribute five \$1,000 scholarships in 1993 to upper division and graduate students with a demonstrated interest in Scandinavia. Applicants must have strong academic qualifications and must show financial need. Two letters of recommendation, a transcript and the completed application are due by March 15, 1993.

The Jewish Community Scholarship Fund is providing scholarships designed to assist Jewish students who are legal residents of Southern California, pursuing post high school training or education on a full-time basis, and able to document significant financial need. Forms may be obtained from the Jewish Vocational Service, Room 303, 6505 Wilshire Blvd., Los Angeles, CA 90048, or call (213) 655-8910. Deadline for submission of completed applications is April 1.

American Electroplaters and Surface Finishers Society (AESF) is offering scholarships for the 1993-94 academic year to students of at least junior standing. Awards are not necessarily based on financial need. Field of study for this scholarship is in chemistry and/or the engineering sciences. The application and all requested information and documentation must be postmarked by April 15, 1993.

For information on the following scholarships please contact the individuals listed at the end of each scholarship.

MPC Summer Research Scholarships 1993 - Advanced materials research and educational programs require the collective talents and expertise of a broad spectrum of disciplines: chemistry; physics; mathematics; chemical, electrical, and mechanical engineering; computer science; as well as materials science and engineering. The Materials Processing Center at MIT seeks undergraduates from any of these disciplines who would like to experience and contribute to advanced materials processing through their summer research program. Participants will work with faculty and staff on current projects. The program is open to students entering their Junior or Senior years in September 1993. Selection is based on an applicant's academic standing and faculty recommendations. The ten-week (June 6 - August 13) program award includes \$3,500, round-trip travel expenses and MIT summer housing and meal plan. For information and an application contact Mrs. Frances Page, Room 12-007, MIT, Cambridge, MA 02139; (617) 253-3217; fax (617) 258-6900. Application deadline is March 15.

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