

When it
rains, it
pours.

THE TECH

CALIFORNIA

Drop Day
Wednesday

Volume XCIV, Number 17

Pasadena, California

February 19, 1993

Beaver Cup VII

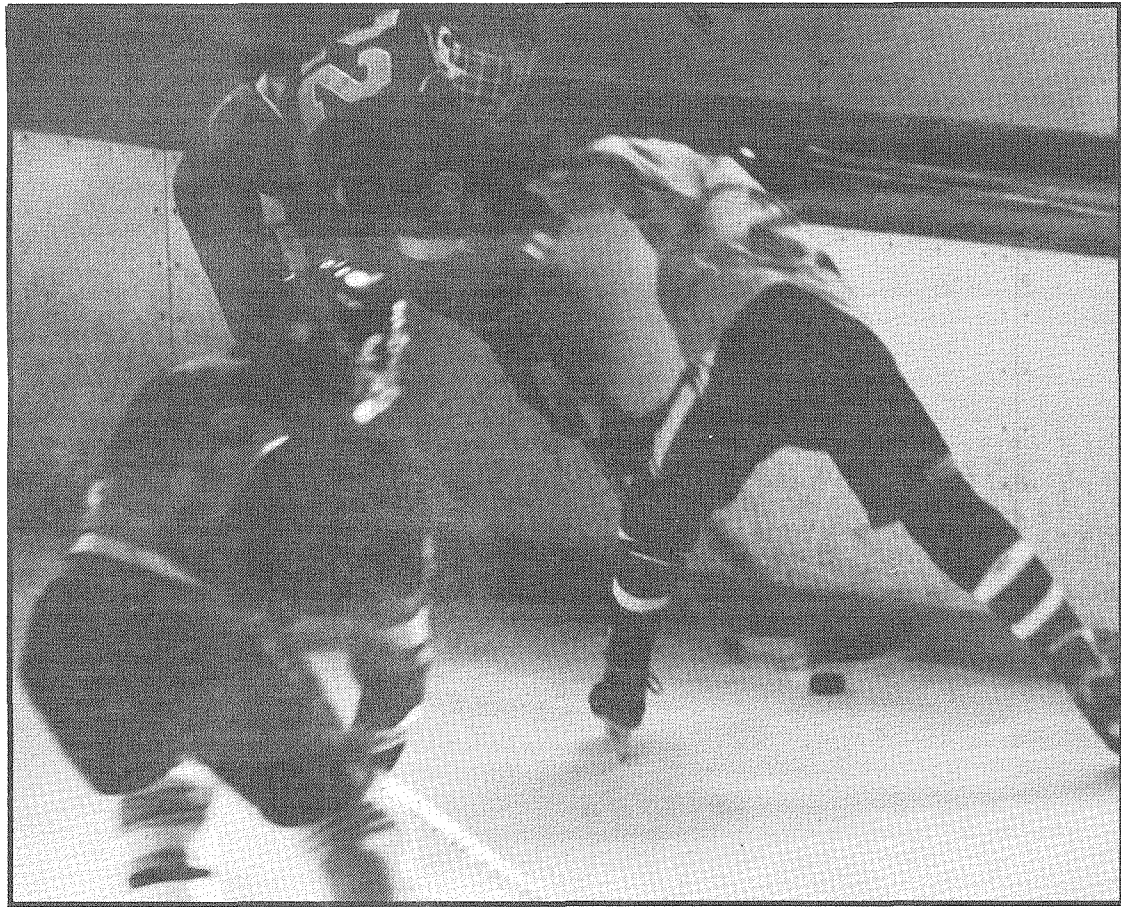


photo by Anoop Sinha

The Caltech Beavers went down to a 0-4 defeat in last Sunday's Beaver Cup VII battle with MIT's alumni club team at the Pasadena Ice Rink. The annual ice hockey game has vexed the Caltech team which has never managed to score a victory against their MIT opponents in the seven year history of the competition.

Boffo Broomball Returns

Amitabh Mehra

This term's second broomball will be held Sunday night - Saturday morning, February 21-22, at the Pasadena Ice Rink in downtown Pasadena from 10:30 p.m. to 3:30 a.m. Bring your own brooms if you can; if not, the Y has a limited supply. We will be providing refreshments at some point during the night. Come and watch even if you don't participate, it's a lot of fun. In addition, it's the inauguration of the new Caltech Y helmets. It's a bold new era in Broomball.

Rules

Show up on time for your game. There will be one one minute timeout allowed per game. No checking, no throwing past the blue line, no throwing of the brooms, wait for the ball to drop on face-offs, and generally be cool. Failure to wear the helmets or using the helmets as weapons will result in deduction of style points. Especially, no kicking

the ball into the goal. The organizers of the tournament have final say over all matters, and their decisions are binding.

Playoffs

The top four teams will advance to the semifinals, which will consist of two twenty minute games. After a break we will have a half-hour

final. The criterion for making the semis are as follows:

1. Won-Loss Record (2 points for a win, 1 point for a tie)
2. Goal Differential
3. Style Points decided by Amit and Seiya
4. Rock, Paper, Scissors by Amit and Seiya

ASCIT Runoff Election To-day

There will be a runoff election for the ASCIT offices of Secretary, Freshman Director at Large, IHC Chair, and Upperclass Director at Large.

VOTE TODAY

This Modern
World

Page 2

John Haba
on Sports

Page 6

ASCIT
Minutes

Page 3

Evolution and Ecology of Digital "Life"

Shane Sauby

Evolution works at a rate beyond measurement. It is such a slow process that man has little living evidence of how it works. All we can study are the results. Dr. Thomas Ray, from the University of Delaware, became frustrated by this problem. He studied the tropical rain forests in Costa Rica for sixteen years, but still couldn't see evolution at work. So he decided that he needed a new approach. What was required was a new ecology and a new time scale in which to examine his ideas of evolution. Dr. Ray turned to one of the few places where he could play god, and it turned out to be his computer.

About four years ago, Ray approached his computer specialist friends and asked what would happen if you started randomly changing bits in a program. They all said that computer programs are too "brittle," that point changes would render the programs useless. Assuming they were right, Ray turned to his biological background to figure out how to tackle this problem. What he came up with was a very simple, self-replicating program, 80 lines long. He then created an environment within the RAM of his computer, set up a few basic rules of the universe, and let the program go. Contrary to what his computer friends said, the results were astonishing.

The first thing that happened was that Ray found a parasite. This was a truncated version of the original program, the only program he has ever written. The parasite was something Ray expected, he had come across the idea while debug-

ging the original. But what popped up afterwards was even more interesting. Soon after the parasites showed up, hyper-parasites showed up. These programs used the parasite's CPU power to replicate themselves and not the parasite. Later, social programs appeared, using the code of other programs to help them.

Ray had produced an entire "ecology" within his computer. He could change, at will, any of the approximately fifty parameters that defined this digital universe. He thus began experimenting with all kinds of interesting ideas. If you increased the mutation rate, what happened? If you started with parasite-resistant programs, did new parasites evolve? What was the smallest sized self-replicating program he could generate? All of these ideas, and more, were tested and tried, sometimes overnight. The best story was about the optimization tests. Given the original code, an M.I.T. computer programmer was able to trim it down, by hand, from 80 commands to 31 commands. Meanwhile, Ray got a good night's sleep while the computer world generated a 22 command version that was completely self replicating.

The next step is going to be even more fascinating. Ray, along with some colleagues, is planning on making the next evolutionary step. Contrasting the programs to single cells, Ray wants to make multicellular organisms now. Using parallel processes, he wants to produce specialized programs that are organized and inter-dependent. Ray has already created three new commands that may help him in his latest endeavor.

Preservation Hall Jazz Band plays at Caltech

Cara Stemen

The Preservation Hall Jazz Band will perform on Friday, Feb. 26 at 8pm in Beckman Auditorium. This event is being presented to complement Caltech's tribute to African-American History Through the Arts.

This ensemble plays New Orleans style jazz, the music of the riverboats, street parades and saloons of the South. It is played by the people who helped to create this art form. "Jass," as it was originally called, is a creative amalgam of marches, quadrilles, blues, spirituals and ragtime.

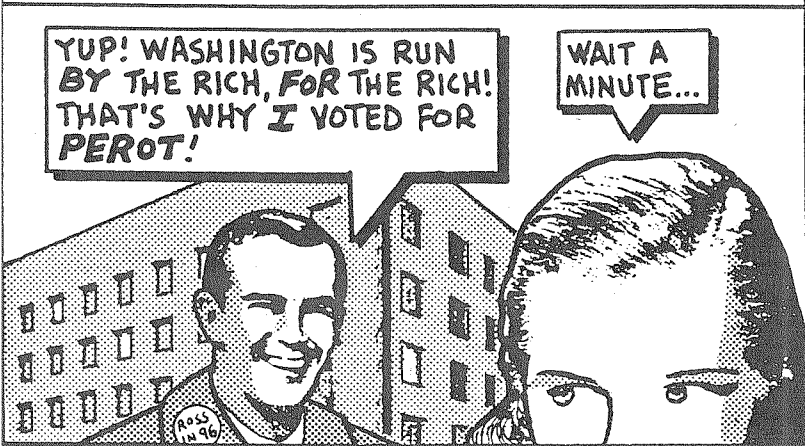
Tickets are available at the Caltech Ticket Office. For more information call x4652.

Inside this week's

THE TECH

This Modern World	2
ASCIT Minutes	3
Election News	3
Y News	3
Review: "Hello, Dolly!"	4
Movie Reviews	4
Bridge w/o Sam	5
Swimming	6
Women's Tennis	7
What Goes On	8

FOR THE PAST FIFTEEN YEARS, THE SUPPOSEDLY POPULIST **DEMOCRATS** HAVE WORKED HAND-IN-HAND WITH THE REPUBLICANS TO **DRASTICALLY** REDUCE UPPER-INCOME TAX RATES...*

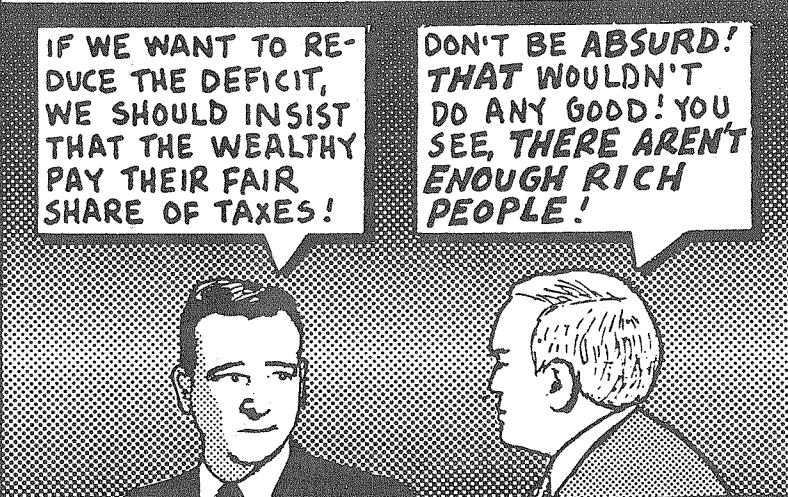


* FOR MORE ON THIS BIPARTISAN BETRAYAL, SEE **WHO WILL TELL THE PEOPLE?** BY WILLIAM GREIDER... ALSO, **AMERICA: WHAT WENT WRONG?** BY BARLETT & STEELE...

IT'S TRUE THAT THE WEALTHY ARE IN THE MINORITY... ACCORDING TO THE FEDERAL RESERVE BOARD, **86%** OF THE INDIVIDUAL NET FINANCIAL WEALTH IN AMERICA IS OWNED BY A MERE **10%** OF THE POPULATION... ADDITIONALLY, THE WEALTHY ARE DISPROPORTIONATELY REPRESENTED IN THE NEW ADMINISTRATION, AS HAS RECENTLY BECOME CLEAR...



HOWEVER, ANYONE WHO NOW SUGGESTS THAT SOMETHING MORE THAN A **TOKEN** TAX INCREASE FOR THE RICH MIGHT BE A GOOD IDEA FACES THE **SCORN** AND **CONTEMPT** OF MAINSTREAM MEDIA PUNDITS...

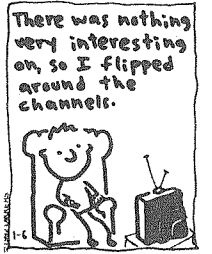


UNSURPRISINGLY, CURRENT DEFICIT REDUCTION PROPOSALS SEEM TO FOCUS ON REGRESSIVE **CONSUMPTION TAXES**... AND A MULTITUDE OF HIGHLY-PAID PUNDITS ARE EAGERLY LECTURING AVERAGE AMERICANS--THE **90%** OF THE POPULATION WHICH OWNS THE REMAINING **14%** OF THE NATION'S WEALTH--ON THE NEED FOR **AUSTERITY**...



THIS MODERN WORLD by TOM TOMORROW

Jim's Journal



by Jim



Boffo-Broomball Schedule February 21, 1993

- | | |
|------------------------|---------------------------|
| 1. Team Howie | 5. Chicks with Sticks |
| 2. Damn Scurves | 6. Plaid |
| 3. Larger than a Truck | 7. Llama Lloydies |
| 4. Ice Weasels | 8. Junior Gang of Junkies |

10:30 - 10:50	4 vs. 3
10:55 - 11:15	8 vs. 1
11:20 - 11:40	2 vs. 7
11:45 - 12:05	3 vs. 8
12:10 - 12:30	5 vs. 2
12:35 - 12:55	6 vs. 4
1:00 - 1:20	7 vs. 5
1:25 - 1:45	1 vs. 6

The California 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.

THE CALIFORNIA TECH

Volume XCIV • Number 16
February 19, 1993

EDITORS
Rajesh "Q" Bilimoria
Michael Oder

CRIME BEAT EDITOR
Stephen Heise

PHOTOGRAPHER
Anoop Sinha

WRITERS
John Haba
Shane Sauby

BUSINESS MANAGER
Khurram Dastgir-Khan

CIRCULATION
John Grade

THE CALIFORNIA TECH
Caltech • 40-58 SAC
1201 East California Boulevard
Pasadena, California 91125
(818) 356-6154

Published weekly except during examination and vacation periods by Associated Students of the California Institute of Technology, Inc. The opinions expressed herein are strictly those of the authors.

Letters and announcements are welcome. All contributions should include the author's name and phone number and the intended date of publication. The editors reserve the right to abridge and edit all submissions for literacy, expediency, or anything else.

Turn in copy (preferably on Macintosh 3.5 inch disk) to the Tech mailbox outside SAC room 40. E-Mail may be sent to editors@tech.caltech.edu. The deadline for copy is Wednesday at noon; for announcements, Tuesday at 5pm.

The California Tech is distributed free. Issues will be mailed off-campus upon receipt of \$10 per year to cover third-class postage and preparation costs.

Printed by News-Type Service, Glendale.

ISSN 0008-1582

FRIDAY NIGHT ASCIT MOVIE

SNEAKERS

Next Week:
The Last of the Mohicans

Baxter Lecture Hall at 7:30 and 10:00
\$1.50 Ascit and \$2.00 non Ascit

LAEMMILE THEATRES

ESQUIRE
2670 E. Colorado Blvd.
(818) 793-6149

Miranda Richardson
The Crying Game

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

COLORADO
2588 E. Colorado Blvd.
(818) 796-9704

Catherine Deneuve
INDOCHINE

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

YNEWSYNEWSYNEWS

Katy Quinn

Next week is National Condom Week and the Caltech Y is joining in the festivities. Thursday the 25th there will be a booth in front of the Winnett Center distributing free condoms. Once you've gotten your own personal condoms, you'll probably go home Thursday night and wonder to yourself, "Now what?" Well we asked ourselves that very same question, so Friday the 26th there will be a demonstration by Planned Parenthood at 12 noon in front of Winnett. So bring your condoms and your sense of humor.

This Sunday there is a Broomball tournament at the Pasadena Ice Rink from 10:30pm to 3am. Team slots are filled but spectating is half the fun, come along and watch your friends. The Third Annual Tribute to African-American History Through the Arts will take place next Friday, Saturday and Sunday in Dabney Hall. Times are 4:00pm to 7:45pm Friday, 12 noon to 7:45pm Saturday, 12 noon to 6:00pm Sunday; please note that there are the corrected exhibition times.

Ongoing volunteer activities are trips every Monday 8:30am to 11:30am and Friday 11am to 2pm to Union Station to help the homeless. There will also be a trip to the LA Foodbank on the 27th. To find out more about the Caltech Y's community service and volunteer activities please call or come up to the Y.

The Caltech Y is located on the second floor of the Winnett Student Center. We are open Monday to Friday, 9am to 5pm. Phone x6163.

ASCIT Minutes

Korhan Gürkhan

Present are the BOD, Cathy Hafer, Ewald, Moeen Abedin, Mike Brundage, Flora, Anandi, Ed, Heath, Ramesh Gopi, Brian McAllister, David Derkits, Eric Hackman, Paquito and his supplier.

Wow, now that are we are about to go out of office soon, a lot of people started to come to our meetings. All of the newly elected BOD members are present. Not so fast, we are still in charge!

OPI: Heath presents a new budget for OPI. The total went up \$500 from last week's figure. Heath claims that this is the budget. OK, the BOD is convinced. The total estimated cost of OPI is \$3400 and Ruddock is requesting \$800 from ASCIT. The BOD approves (6-0-2).

Indian Music: Ramesh requests \$350 for a South-Indian classical music concert in May. The BOD is receptive, but tables the issue for the next BOD (6-2-0).

ACUI: Brian requests the free use of the ASCIT van for a trip to Fresno, where a group of Techers will participate in the annual intercollegiate recreation tournaments. The request is approved (8-0-0).

ASCIT Movies: Eric requests the check for second term. The BOD kindly tells him that the first term report and the second midterm report has not been submitted yet. So, Eric will be back next week.

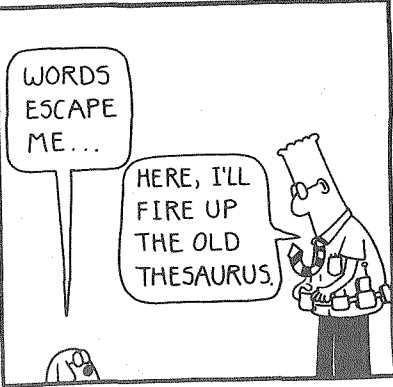
Elections: Ewald goes over the election report. There are four runoff elections, to be held on Friday. Surprisingly, the Election Chairman won his election. Derek has already started training his successor. Meanwhile, I still have to wait.

Women's Center: Cathy reports that Mary Kennedy has noticed the undergraduate response to the Women's Center.

Faculty Board Meeting: Amit briefs the BOD on the meeting. Self help portion of financial aid packages was discussed. The number has steadily increased over the past three years, but it appears that it will not go up next year. The 3-2 program was discussed. Apparently, in January '92, the Faculty Board had voted to end the program. At this meeting, it was decided to continue the program. But there are some changes. The program will expand to all majors at Caltech. Financial aid is not guaranteed. 3-2's cannot change their majors once they get into Caltech. Options can declare themselves closed to the program at the beginning of a year. Basically, the Institute will now have more control on the program. These changes will be in effect starting with Fall '93.

Mike will try to get KKGO to play The Ride again during finals.

Rag Time
on Green
RESALE CLOTHING
for
WOMEN
1136 E. Green St. • Pasadena
(818) 796-9924
Wed 10-6 • Mon-Tue-Thu-Fri 10-5 • Sat 10-3



LORENZO'S BARBER SHOP

Unisex Hairstyling

Regular Cut (men)	\$ 900	\$1 off
Regular Cut (women)	\$ 900	\$1 off
Style Cut	\$1200	\$2 off
Permanent Wave	\$4000	\$5 off

9 a.m. - 6 p.m., Monday - Saturday
14 N. Mentor Avenue, Pasadena
(818) 795-5443
No Appointment Needed

ASCIT Runoffs Today!

Ewald Hueffmeier

That's right, there are four ASCIT Runoffs today, but first the results of Monday's Election:

ASCIT Secretary:
Runoff today between Michelin Aldridge and Karen Shih

ASCIT Treasurer:
Ewald Hueffmeier

Athletic Manager:
Alan "Pinky" Blaine

BOC Secretary:
Dan Millward

Director for Academic Affairs:
Flora Ho

Director for Social Activities:
Anandi Raman

Freshman Director at Large:
Runoff today between Angie Bealko and Renny Talianchich

IHC Chair:
Three-way Runoff today between Jill Bush, Bryce H. Elliott, and Asif Hassan

Upperclass Director at Large:
Runoff today between Ryan Naone and Gisela Rodriguez-Sandoval

Today's runoff will be run somewhat differently from past elections. Rather than sign a register, there will be a blank for your name on a separate section of the ballot sheet. Print your name in the blank and tear the two sections apart, depositing both in the ballot box. This will be more clear when you see the actual ballots.

It is also important to note that in this election, you may cross out candidates' names or circle them. There are no write-ins or "No" votes allowed in this election.

Circling one candidate is NOT the same as crossing the other out, even in a two-person election. To determine the winner in a two OR three person race, the procedure is

the same: the total number of circles that each candidate receives is tabulated. If no candidate receives a majority of all circles, the candidate with the greatest N where N = Number of circles - Number of crossoffs will be declared the winner. Note that in a two-person election, it is rare but not impossible, as was seen in the Presidential election, that no candidate will receive a majority of all circles, in which case, crossoffs will be counted. See the sample ballot for an example of a correctly cast ballot.

Sample Ballot Explanation:

Iama Techer has voted for John Visconti and Boris D. Cat, and has

Boris D. Cat nor Papa John Creach get a majority of all circles, (this could happen if there is a tie or if the results are closer than the margin of error, as in the Presidential race), that candidate with the greatest N, as defined above will win the election. Therefore, *Circles are not the same as Crossoffs, even in 2 person elections!* It is not necessary to both circle and crossoff in order for your ballot to count, however, you are allowed to do both, and there is a difference. Iama Techer should now detach the bottom of the ballot, and put both sections in the ballot box.

Results of the runoff election will be posted in all of the houses and at the ASCIT Meeting Room by 9 AM tomorrow. Any protests against the election must be filed with the

Sample Ballot

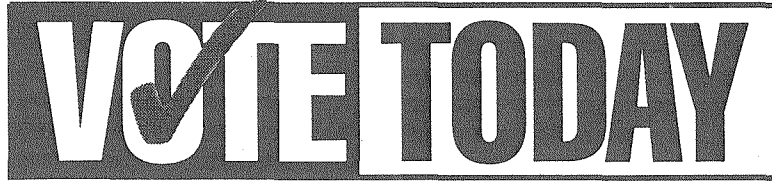
Director for Random Activities	ASCIT Fashion Manager
Angus	Boris D. Cat
Cithulu	Papa John Creach
John Visconti	

(Detach here and Place both sections in ballot box)

Name (Please Print): Iama Techer

voted against Cithulu and Papa John Creach. Note that in the Director for Random Activities race, if neither Angus, Cithulu or John Visconti get a majority of all circles, the candidate with the largest N where N = Number of circles - Number of crossoffs will win the election. Similarly in the two person ASCIT Fashion Manager race, if neither

President: Amit Mehra (Ricketts), the Chairman of the Executive Committee: Pablo Thienprasit (Ricketts), or the Election Chair: Ewald Hueffmeier (Page) by 1 PM tomorrow. Assuming none of the races are protested, numerical results for all elections will be made public Saturday afternoon and will appear in next week's Tech.



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.

ENTERTAINMENT

Hello Company!

Mathew Englander
& David W. Hogg

It is curious that Theatre Arts at Caltech (TACIT) chose to stage "Hello, Dolly!" this term, since the musical is outdated and has a plot about as credible and interesting as an episode of "Three's Company."

"Hello, Dolly!" is the story of a Yonkers, N.Y., widow, Dolly Levi (Lynne Cooper), who is a self-appointed matchmaker, dance instructor, and councillor-at-law. She has been employed by the miserly grocer Horace (Bill Salem) to find him a wife who is beautiful, rich, and willing to clean the house. She has matched him up with a milliner, Irene Molloy (Susie Follmer), but has now decided that she would rather marry him herself, which is odd since Horace has no attractive qualities whatsoever except extreme affluence. When Horace goes to New York City to call on Mrs. Molloy, his exploited employees—Cornelius (Gary Olsen) and Barnaby (Scott Van Essen)—decide to close up the shop and make their own trip to the big city, vowing not to return until they have "kissed a girl." In the big city, Cornelius and Barnaby happen to run into Mrs. Molloy's shop (ignorant of their employer's engagement) and immediately fall in love with her and her assistant

Minnie Fay (Leslie Maxfield). The expected comedic shenanigans ensue, and lead to the expected comedic outcome.

TACIT is ambitious in mounting a musical. Their production is not seriously flawed, but it suffers from many of the problems that amateurs commonly face. For instance, in the dress rehearsal that we saw, some of the actors had difficulty making themselves heard above the orchestra. The choreography was complex and frenetic; often it worked, but the scenes involving the entire cast of 45 (or so) were embarrassingly like dozens of Jacks, Janets, and Chrissys slapsticking all over the stage. Of course, some of the mess may be smoothed out before tonight's performance.

Several of the cast members stood out. Ms. Follmer, Ms. Maxfield, Mr. Olsen, and Mr. Van Essen had good singing voices, and were talented enough to bring their characters to life. They delivered most of the play's funny lines, although David Stevens, in a small role as the Court Clerk, is hilariously dry. Ms. Cooper carries the largest burden in the play, and she lives up to the task. She captures Dolly's insecurities as well as her aura of exuberance and good-natured impertinence. She sings competently, although she faltered once or twice in the high



photo by Anoop Sinha

Lynn Cooper of JPL plays Dolly, the matchmaker for Yonkers & New York in TACIT's production of "Hello Dolly!"

registers.

It is difficult to understand "Hello, Dolly!"'s status as a classic. The script is idiotic; the women are defined by their need for husbands, and the men by their need for housewives. The direction (by Shirley Marneus) is very straightforward, refusing to poke fun at the datedness of the story. The serious lines are delivered with appropriate

comportment, and the comedy is played for the humor that the writers (Michael Stewart and Jerry Herman) intended, not the additional humor that its outmodedness could provide.

If you are a fan of Broadway musicals, then definitely go see TACIT's "Hello, Dolly!" If not, you may find it disturbingly reminiscent of a seventies sitcom.

Theatre Arts at the California Institute of Technology presents "Hello, Dolly!" directed by Shirley Marneus, in Ramo Auditorium, Caltech, Fridays and Saturdays 19, 20, 26, and 27 February 1993 at 8:00 p.m. and Sundays 21 and 28 February 1993 at 2:00 p.m. Admission is \$10, but \$7 for Caltech students.

Movie Reviews

Shane Sauby

Groundhog Day

12345678910

What would you do if you started to relive the same day over and over again? Eventually you would go kind of nuts. That's what happens to Bill Murray in the new film "Groundhog Day." Murray plays Phil, a Pittsburgh weatherman who is self-centered, sarcastic, and almost certain that life should revolve around himself. For the fourth year in a row, Phil is covering Ground-

hog Day in Punxatauney. Only this year is slightly different. He is turned back to Punxatauney by a blizzard he didn't predict and has to stay one more night. Except when he wakes up, it's Groundhog Day, again.

This film shouldn't work. If anything, it should be repetitious and boring, but somehow Murray and director Harold Ramis pull it off. The movie pushes up to the edge of repetition and then turns it into humor. From Ned "The Head," an annoying old schoolmate, to the puddle, to the speech he gives about the groundhog, the movie keeps turning the repetition humorous.

Phil eventually discovers that there are no more tomorrows, only today, and figures its time to indulge himself. He seduces women,

eats anything and everything, and even robs an armored car. Eventually he sets his sights on his new producer, played by Andie MacDowell. He starts by buying her a drink, and then starts to memorize everything he can about her. I'll let you find out what happens.

"Groundhog Day" is very funny. It is mostly light hearted, but it definitely has a darker side to it. There are a few points where Phil is on the edge of sanity, and these sequences exemplify the problems of reliving the same day over and over again. Murray puts in a great performance as the self-centered Phil, controlling the film in every scene. Along with an excellent job as director, Harold Ramis puts in a small cameo as a doctor.

Finally, the one thing that makes this film truly enjoyable is the editing. The pace is kept quick and the scenes are arranged such that the

audience does not get tired or bored of Phil reliving the same day. "Groundhog Day" has all the right elements, in the right amounts, to be an original, funny, and entertaining movie.

National Lampoon's Loaded Weapon 1

12345678910

"National Lampoon's Loaded Weapon 1" is stupid and hardly original and not worth seeing in a theater, even at matinee prices. Well, now that that's out of the way, let's talk about what's right with the

movie.

There are some funny bits in "Loaded Weapon 1," including a great scene with Emilio Estevez's older brother Charlie Sheen. There are a few funny sight gags and a rare humorous line here or there. "Loaded Weapon 1" has cameos by two or three dozen well known stars, including a great cameo appearance by Erik Estrada and Larry Wilcox as John and Ponch from "CHiPs." There is even some decent acting, mostly by supporting characters, allowing the humor to stand on its own instead of being rammed down your throat.

With all these things going for it, "Loaded Weapon 1" should be a decent film, but it fails to pull it together. The over-acting is done to such an extreme that it destroys most of the humor. Many of the sight gags and references are old stuff, lacking the true spark of originality. Compared to the two movies most closely related to "Loaded Weapon 1," "Airplane" and "Naked Gun," it comes up quite short. Both of these predecessors had a lot more going for them and were more consistently funny.

That is what is most annoying about "Loaded Weapon 1." There is some truly funny, original material in the film, but often it is ruined by either the editing or the acting. When something occasionally does work and is funny, it highlights the downfalls of the rest of the film. In general, the audience is left feeling that something is missing and they can't quite describe it. Overall, this film was made for video and should be seen only if you are in a really stupid mood.

Come to the Pride of Texas...

SGS-THOMSON Microelectronics, a leading semiconductor manufacturer, has immediate needs for:

Design Engineers - SRAM

Requires a BSEE in Engineering with knowledge of DIGITAL and SRAM design, design tools for logic/analog simulation, schematic capture layout and design verification. A strong semiconductor orientation is also required.

We offer an excellent compensation and benefits package. For immediate consideration, qualified candidates please FAX your resume to: (214) 466-7196 or send your resume to:

SGS-THOMSON Microelectronics
Attn: Technical Recruiter
M.S. 776, Dept. COL
1310 Electronics Drive
Carrollton, TX 75006

No phone calls please.

SGS-THOMSON
MICROELECTRONICS

Equal Opportunity Employer



PARIAN TRAVEL

Caltech Officially Approved

Most professional, courteous, economical and efficient service for your **official** and **personal** travel needs.

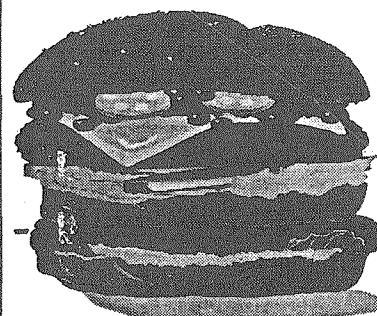
Free service to you.

Airlines, Cruises, Tours, Hotels, Car Rentals.

Individual, Commercial, Groups.

(818) 577-8200

468 S. Sierra Madre Boulevard, Pasadena



★★★★★
Pete's
GRANDBURGER
— THE ORIGINAL —
established in LA since 1950

PETE'S GRANDBURGER
526 So. Lake Street
Pasadena

ENTERTAINMENT

Bridge Without Sam

Jeff Goldsmith

Heat 1

In Zia Mahmood's new book *Bridge My Way*, Zia claims that bridge players seem to operate in streaks. When all is going terribly and nothing seems to work, we are in Heat 3. Normal days are Heat 2, but when everything is wonderful and we cannot touch a wrong card, that is Heat 1. Being in Heat 1 is great feeling. On this hand, declarer has to be in heat 1 to make a close game.

North	South
♠ A875	♠ J92
♥ 642	♥ AJ5
♦ K1095	♦ A32
♣ A3	♣ KQ82

South	North
1NT	2 ♣
2 ♦	3 NT
Pass	

I am South, playing in a regional Flight A pairs event vs. a junior pro on my left and an inexperienced client on my right. The pro, without much thought, led the ♠J.

I have seven tricks on top, with hopes for more in spades and diamonds. Since the red suits are unlikely to supply more than one extra trick, I shall have to play on spades. I win the ♠A in dummy and play a low spade from dummy planning to finesse the 9, making 3 spade tricks against doubleton 10 on the right. RHO wiggles very briefly, flies with the ♠Q and switches to the ♥2.

What is going on? Clearly, RHO has KQx or better in spades. Playing the Queen was a mistake. She should play the King, concealing the Queen, though, unless she has the ten also, she should probably duck. Since she didn't return a club, she is probably short, most likely a singleton. From her heart spot, hearts are probably 4-3, though I cannot tell which way right now, though it seems likely that RHO has the fourth because she is short in clubs.

What can I do about this? I cannot get a spade trick without letting them take three hearts and two spades, unless RHO has KQ alone in spades. I cannot get four diamond tricks unless QJ tight is around, which is unlikely. The heart KQ must be split (or offside) since she'd probably play a high heart from KQxx, and the 9 from 987x or the 10 from 1098x. Conceivably, RHO has 1087x, but most likely, the heart honors are split. If RHO has six clubs and three hearts, he can have either 2-2 or 3-1 in the pointed suits. If he is 2-3-2-6, I need QJ tight in diamonds, but if he is 3-3-1-6, I only need stiff honor to bring me up to 8 tricks. An endplay will get me another.

I duck the heart return to LHO's 10; he returns the King. I am confident now that his original heart holding was K10x, so I win the second heart and play a small diamond from hand. Voila! He plays the Jack. I continue with the ten from dummy, which is not covered. LHO shows out, pitching a club, so I have my 8th trick in the bag. Now, all I have to do is cash my diamond and club winners and see what RHO discards. She follows, of course, to the third diamond and pitches a diamond and a heart on the top clubs, which means she must have been dealt 3-4-5-1 shape and I am going to make this. I exit with my carefully preserved ♥J and RHO wins and cashes a diamond winner. With two cards left, she exits low spade and I put up the Jack, which holds. Making 9 tricks is a complete matchpoint top.

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

Ricketts Wins Interhouse Bridge Tournament

Jeff Goldsmith

Ricketts House's bridge team beat Page in a close match to win the 1993 Interhouse Bridge Trophy.

The trophy is a permanent one and will be held by Ricketts for one year.

This year, four houses, Ricketts, Page, Lloyd, and Ruddock, competed for the trophy. Hopefully, next year, all seven will try. The Ricketts team was Dan Xystus, Jim Schaff, Steve Farris, and Jeff Goldsmith.

Double Knockout Matches:

2nd Round results:

DAMN SCURVES	62	LLAME DUCKS	80
Page	60	Wild Cards	65
NADS	63	CFI	122
Grads&Ghost	56	The Rudds	40

Third Round Matchups:

Nads (2-0) vs. Damn Scurves (2-0)
Llame Ducks (1-1) vs. CFI (1-1)
Grads&Ghost (1-1) vs. Page (1-1)

Today I worked at the copy store almost 9 hours.



Joel was there and said he worked 9 hours today, too.



Julie told us she remembered working 12 hours straight once.



Then Hal said, "None of you have to take this job home with you—I do, and it's like working 24 hours a day."



SPRING RECEPTIONS FOR ADMITTED STUDENTS

The Alumni Association and Admissions Office are hosting receptions across the country for newly admitted students. The receptions will be held over Spring Break. If you can be present at any of the following, please call Karen Carlson at x6593. If you remember, students really want to talk to current students as they make their decisions.

Seattle	Minneapolis-St. Paul	Boston
Portland	Chicago	New York City
Sacramento	Denver	Northern Jersey
East Bay (California)	Dallas-Ft. Worth	Washington, D.C.
Peninsula-San Jose (Saratoga)		Miami

SERVING CALTECH SINCE 1945
Authorized Agents for Airlines, Hotels and Steamships

H.B. BENNETT
The Finest in Professional Travel Services
(818) 795-0291
(213) 681-7885
CAMPUS EXTENSION 5091
TRAVEL AGENCY

690 E. GREEN ST.
PASADENA, 91101
(between El Molino & Oak Knoll)



THEATRE ARTS AT THE CALIFORNIA INSTITUTE OF TECHNOLOGY PRESENTS

HELLO, DOLLY!

Book by Michael Stewart • Music and Lyrics by Jerry Herman
Based on the play "The Matchmaker" by Thornton Wilder
Original Production Directed and Choreographed by Gower Champion
Produced for the Broadway stage by David Merrick and Champion-Five, Inc.

IN RAMO AUDITORIUM ON THE CALTECH CAMPUS, PASADENA

FRIDAY, FEB. 19	8 PM	FRIDAY, FEB. 26	8 PM	TICKETS:
SATURDAY, FEB. 20	8 PM	SATURDAY, FEB. 27	8 PM	GENERAL ADMISSION
SUNDAY, FEB. 21	2 PM	SUNDAY, FEB. 28	2 PM	CALTECH STUDENTS

\$10.00
\$7.00

SPORTS

Swimming Wins Again

Clinton Dodd

The swim team just came off a very successful week packed with swim meets. Saturday the Techers swam Redlands and the perpetually strong Claremont. Redlands took it to Claremont and easily won the meet while breaking Claremont's twelve year conference winning streak. Caltech swam off events and weren't in the picture, losing to both teams by a large margin.

The next day Caltech hosted Trinity University of San Antonio, Texas and Whittier College. The women's team lead by Tamara Tulou and diver Debi Tuttle took it to Whittier 102-71, but came up short to a strong Trinity team 72-

130. The men had an easy time outdistancing Whittier, but needed a superior effort against Trinity. The Wildcats opened a 15 point gap by event number 3. Caltech rallied with touch out wins by Mike Greene in the 50 free 23.12 to 23.96 and Chris Buchner's 200 I.M. 2:17.60 to 2:17.67. The score after the 200 I.M. was Caltech 42, Trinity 41. The lead was exchanged, event by event until consecutive wins by Alan Kulawik (100 backstroke) and Eric Aamot (in the 100 breaststroke) sealed Trinity's fate 119-88. "The swim meet came down to four close races and Caltech swimmers won three. The point swing was enough to close the door on Trinity," related Coach Dodd. Chris Buchner was

singled out for praise for his come-from-behind victory in the 200 I.M. The meet was on performance to pass the competition in the last stroke.

Occidental was next in line as the women came out swimming well. Tamara Tulou won the 50 free just ahead of the competition 27.30 to 27.36. Karen Ross took the 200 I.M. and won a squeaker in the 100 yard breaststroke, while Virginnie Leenknecht won the 100 backstroke. This brought Caltech within two points 73 to 75 with diving and the 200 free relay left. Debi Tuttle and Melinda Au dove well, but fell to the top divers in the conference. The Oxy relay team took a close race from Caltech and the meet 80

to 102.

The men had a much easier time with a small quick Oxy team. Caltech's strengths matched up well against the Oxy swimmers' as the Techers won all but one individual race. Sookatoo Bhuta broke into the winner's circle in the 100 free and came from behind to touch out the Oxy swimmer in the 100 breaststroke 1:12.01 to 1:12.22. Eric Aamot won the one and three meter

diving events and the 50 yards freestyle. Chris Buchner again raced from behind to pass the competition inches from the wall to win 200 I.M. and the 1000 freestyle. The final score was 147-54.

This brings the men's SCIAC Conference record to 2-3 and 5-5 overall and the second place plaque from the Las Vegas Invitational. The women are a respectable 1-4 in conference and 2-8 overall.

Road Warriors

John Haba

What a long strange week it's been for the women's tennis team. Two road matches against P.C.C. and Whittier yielded a shorthanded loss and a technical draw. And this coming weekend promises more interesting circumstances as the Beavers travel to the Bay Area on a three day, three match road trip. Their scheduled opponents are Menlo College on Friday at 2pm, Dominican College on Saturday at 1pm, and Notre Dame College (no, not that Notre Dame) on Sunday at 10am, though Caltech will probably find the ominous spectre of rain to be their more likely foe each day.

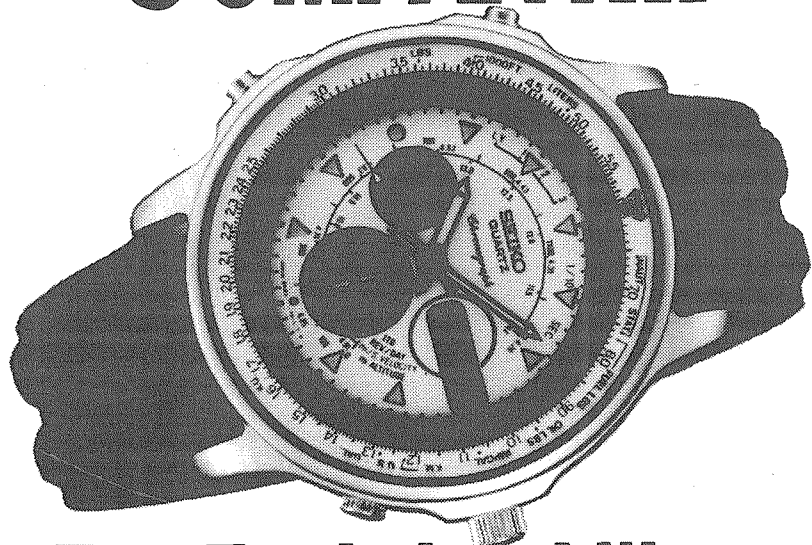
This past week's matches were lengthy, drawn out affairs which took on a surreal quality as darkness set in. A week ago Thursday, Tech traveled all of a few hundred yards down Hill Street for an away match against Pasadena City College; a 6-3 P.C.C. victory which took over five hours to complete. Aside from the exhaust fumes and traffic noise nearby, the players had to adjust to a sharp temperature drop as afternoon turned into evening. A few fans, players, and a Caltech coach who shall remain unnamed were caught completely unprepared for the brisk conditions. Consequently, a collection of shivering huddled masses watched Coach Karen Nelson's squad in action, all the while wishing desperately that some beer-commercial miracle would whisk them away to a tropical island somewhere.

Aimless hordes of P.C.C. tennis class students who wandered around the courts added to the atmosphere of unreality late in the match, as did an apparent tennis instructor who seemingly directed comments at invisible friends. The Whittier match last Wednesday did not have such trying circumstances, but did have an unusual outcome. With Caltech trailing 4-2 after singles, the sun set completely on the Poets' unlit courts and left the match unfinished. In this instance, the contest is considered a draw. This outcome probably suited both teams well, since Whittier was spared an encounter with the Beaver's formidable doubles pairings, while Caltech was spared the possible ignominy of losing to a team called the Poets.

Individually, Caltech competitors put in some fine performances these last two outings. With Diane Wong away at an interview in Minnesota, and Jill Bush recovering from an intense illness, several players climbed the seeding ladder against P.C.C. to play higher-ranked opponents. Yu-chien Kuo moved to #1 seed, and fell 6-2, 6-0 to P.C.C.'s Bertha Escabado, largely because of her two sore ankles. "I hurt one in practice...and the other one started hurting from trying not to walk on the injured one," according to Yu-chien. Changes in speed, ten-story high lobs and a large dose of topspin were not enough to compensate for her lack of mobility. Several days and trips to the training room later, she played some of her best tennis of the year against Whittier's Jessica Sung but lost again 7-6 (7-2), 7-5.

Yu-chien's doubles partner Monica Silva played #2 singles at P.C.C. but didn't have quite enough ammunition to down Joanna
continued on page 7

IF ORACLE IS JUST A DATABASE COMPANY...



THEN THIS IS JUST A WATCH.

It's time we set the record straight. Oracle created the world's first commercially available relational database. Just as Seiko created the world's first quartz watch without a battery.* Both remarkable feats. But our technology didn't stop with database software, any more than theirs stopped with telling the time.

Today, Oracle provides total systems solutions through database, tools, applications, and services. Our products run on more than 100 computer platforms and are currently offered in 92 countries around the world. Imagine applying your skills in advanced networking, CASE, application development, office automation, development tools, multimedia, massively parallel technology, and more.

So when you're ready to transform your education into an exciting career, don't just settle for any software company - choose Oracle.

We are interested in individuals with technical degrees for positions in Software Development, Technical Support, Consulting and Product Management.

Send your resume to Larry Lynn or Lindsay Quintero at Oracle Corporation, 500 Oracle Parkway, Box 659501, Redwood Shores, CA 94065. Phone (415) 506-5060. Fax: (415) 506-1073. E-mail: lslynn@us.oracle.com.

Oracle is an equal opportunity employer and is proud of its workforce diversity.

Oracle will be On Campus

February 16-17

March 2

Contact the Placement Office for details.

ORACLE
Make your vision tomorrow's technology.™

*Depicted, Seiko Sport Tech Advanced Flight Computer - the world's first alarm chronograph that records elapsed time up to 31 days, 23 hours 59 minutes, 59 seconds. Orbital rule on dial indicates relationship between height/velocity and period of revolution of a passing satellite.

GREEKS & CLUBS

\$1,000 AN HOUR!

Each member of your frat, sorority, team, club, etc. pitches in just one hour and your group can raise \$1,000 in just a few days!

Plus a chance to earn \$1,000 for yourself!

No cost. No obligation.
1-800-932-0528, ext. 65

ACADEMY BARBER SHOP

27 N. Catalina Ave., Pasadena
Open Tues.-Sat., 7:30 A.M.-4:00 P.M.
(818) 449-1681



Two-Star Award Winner
by the Southern California
Restaurants Association

2475 EAST COLORADO BLVD., PASADENA

FOR RESERVATIONS: (818) 449-8018

Open 7 Days • Cocktail Lounge • Food To Go Orders Welcome • Free Parking in Rear

MANDARIN CUISINE AND SEAFOOD

LUNCH SPECIAL

Choice of 13 entrees
11:30 a.m.-3 p.m. from 4⁵⁰

EARLY BIRD DINNER SPECIAL
Choose from 13 items
3-7 p.m. DAILY ONLY 5⁹⁵

CLASSIC DINNERS

Sunday-Thursday 3-10 p.m.
Friday-Saturday 3-10:30 p.m.

Between Altadena Dr. & Sierra Madre Blvd.

continued from page 6

Tennis

Buscachi, who won 6-2, 6-4. The Kuo-Silva team fell 7-6 (7-4), 6-0 to their more mobile foes that day as well. Miran Rhee and Karen Shih played up at the number three and four singles slots, falling 6-3, 6-2, and 3-6, 7-5, 6-2 respectively. With the shuffled lineup, Miran and Karen teamed in doubles for the first time ever against P.C.C., and almost pulled off an upset win, barely losing 6-2, 2-6, 6-4 in near-Arctic conditions.

Karen deserves special credit for spending almost five straight hours on the tennis court in her two close matches that day. One would be hard-pressed to think of another sport in which an athlete plays continuously for that length of time. The bright spots on the day for Caltech occurred at the #5 and #6 seeds, where freshman sensation Laura Verhoff and senior veteran Monica Oei triumphed 6-2, 6-4, and 6-0, 6-0 respectively. Oei and Verhoff then teamed for a 6-0, 6-1 victory in doubles to round off an almost perfect day, giving Caltech all three of its victories in the match.

Last Wednesday, Whittier's impressively deep roster provided even stiffer singles competition for the Beavers than the Lancers of P.C.C. had managed. Along with Yu-chien's loss mentioned earlier, Monica Silva, Miran, Jill, and Laura also dropped matches to strong

Whittier opponents. These were without exception hard fought contests, with the Poets having advantages in skill and experience, but not in the "mental toughness" department. Diane Wong, Karen Shih, and Monica Oei turned in well-played two set victories at the #1, #5, and #8 seeds. Diane and Monica both remain undefeated on the season!

Given the events of the past week,

it's impossible to say what next week has in store for the women's tennis lineup. For right now, they're 2-1, and looking forward to good times, if not good tennis, in San Francisco this weekend.

Jim's Journal

I was trying to write something down today, but my pen was out of ink.



I looked around for another pen, but couldn't find one.



I couldn't find a pencil or anything else either.



So I just wrote with the bad pen, hoping it would indent the paper enough to be readable.



PASADENA COMPUTER

Your Best Choice

BUSINESS HOURS:
MONDAY-FRIDAY 9:00-6:00
SATURDAY 10:00-6:00

Leasing Available: 90 days same as cash on approved credit

One Year Parts & Labor Warranty

486DX-33MHz

- *256K CACHE RAM
- *170MB IDE HARD DISK, 13MS
- *INTEL 80486 PROCESSOR W/MATH
- *4MB RAM UP TO 32MB ON BOARD
- *1.2MB & 1.44MB FLOPPY DRIVE
- *DUAL IDE FD/HD CONTROLLER
- *AT I/O: 2 SERIAL, 1 PARALLEL, 1 GAME
- *16BIT SVGA CARD W/1 MB RAM
- *14" 1024 X 768 0.28 DOT SVGA MONITOR
- *101 ENHANCED KEYBOARD

SALE PRICE: \$1445

CASH DISCOUNT: \$1375

486SX-25MHz

(30% FASTER THAN 386)

- *64K CACHE RAM
- *125MB IDE HARD DISK, 16ms
- *4MB RAM UP TO 32 MB RAM ON BOARD
- *1.2MB & 1.44MB FLOPPY DRIVE
- *DUAL IDE FD/HD CONTROLLER
- *AT I/O: 2 SERIAL, 1 PARALLEL, 1 GAME
- *16 BIT SUPER VGA CARD W/1 MB RAM
- *14" 1024 X 768 0.28 DOT SVGA MONITOR
- *101 ENHANCED KEYBOARD

SALE PRICE: \$1150

CASH DISCOUNT: \$1095

386DX-40MHz

- *128K CACHE RAM
- *125MB IDE HARD DISK, 16ms
- *4MB RAM UP TO 32 MB RAM ON BOARD
- *1.2MB & 1.44MB FLOPPY DRIVE
- *DUAL IDE FD/HD CONTROLLER
- *AT I/O: 2 SERIAL, 1 PARALLEL, 1 GAME
- *16 BIT SUPER VGA CARD W/1 MB RAM
- *14" 1024 X 768 0.28 DOT SVGA MONITOR
- *101 ENHANCED KEYBOARD

SALE PRICE: \$1055

CASH DISCOUNT: \$995

EISA 486DX-33/DX-50/DX2-66

*** 486DX + EISA = TURBO COMPUTER ***

- *INTEL 80486 PROCESSOR WITH BUILT IN MATH
- *256K CACHE RAM
- *4MB RAM UP TO 32MB RAM ON BOARD
- *1.2MB & 1.44MB FLOPPY DRIVE
- *DUAL FD/HD CONTROLLER CARD
- *AT I/O: 2 SERIAL, PARALLEL, GAME PORT
- *101 KEYBOARD

*170MB IDE HARD DISK, 13MS

*"ORCHID" EISA SVGA CARD 1280 X 1024 W/1MB

*15" 1280 X 1024 SVGA (.28), FLAT SCREEN

SALE PRICE: \$2095/\$2305/\$2460

CASH DISCOUNT: \$1995/\$2195/\$2340

VESA LB 486DX-33/DX-50/DX2-66

- *170MB IDE HARD DISK, 13MS
- *32-BIT VESA SVGA CARD 1280 W/1MB 16.7M COLORS
- *32-BIT VESA IDE FD/HD CONTROLLER CARD
- *14" VESA (NI) 1280 SVGA MONITOR (.28), 72HZ REFRESH RATE
- *INTEL 80486 PROCESSOR WITH BUILT IN MATH
- *256K CACHE RAM
- *4MB RAM UP TO 32MB RAM ON BOARD
- *1.2MB & 1.44MB FLOPPY DRIVE
- *AT I/O: 2 SERIAL, PARALLEL, GAME PORT
- *101 KEYBOARD

SALE PRICE: \$1675/\$1885/\$2150

CASH DISCOUNT: \$1595/\$1795/\$2045

486DX-50MHz/DX2-66MHz

(25% FASTER THAN 486DX-50)

- *256K CACHE
- *170MB HD, 13ms
- *INTEL 80486 PROCESSOR W/MATH
- *4MB RAM UP TO 32MB
- *1.2MB & 1.44MB FLOPPY DRIVE
- *DUAL IDE FD/HD CONTROLLER
- *AT I/O: 2 SERIAL, 1 PARALLEL, 1 GAME
- *16BIT SVGA CARD W/1MB
- *14" 1024X768 (.28) SVGA
- *101 ENHANCED KEYBOARD

SALE PRICE: \$1630/\$1780

CASH DISCOUNT: \$1550/\$1695

CLASSIFIED ADS

HELP WANTED -

CRUISE SHIPS NOW HIRING. - earn \$2000+/month + world travel (Hawaii, Mexico, the Caribbean, etc.). Holiday, summer, and career employment available. No experience necessary. For employment program, call (206) 634-0468 ext. C5955.

RESEARCH SUBJECTS NEEDED -

HEALTHY NON-SMOKING MALES, ages 18-35, needed for UCLA/EPA air pollution bronchoscopy study. Must reside and exercise regularly outdoors in the San Gabriel Valley area. Attractive participation fees paid. Call Arthur (310) 825-2739, Monday-Friday.

RATES: \$4.00 for first 30 words; 10c for each additional word. Send written ad with payment to 40-58. Deadline is 6 p.m., Monday before issue. No charge for on-campus lost & found.

Mazatlan

\$109*

Honolulu	\$129*
New York	\$159*
London	\$225*
Tokyo	\$290*
Sydney	\$349*

*Fares from Los Angeles and are each way based on a roundtrip purchase. Restrictions apply and taxes not included. Student status may be required.

Call for a FREE copy of the Student Travels Magazine

Council Travel

14515 Ventura Blvd. #250
Sherman Oaks, CA. 91403
1-818-905-5777

America's oldest and largest student travel organization

PRINTER ON SALE!

CANON BJ-10ex PORTABLE Ink Jet Printer >83 Characters/second >360 DPI >Lightweight 4 lbs >Up To 30 Sheets >45 DBA-It's Quiet! >Letter Quality \$245	CANON BJ-200 Ink Jet Printer Laser Quality >Manual & Sheet Feed >248 Characters/second >360 DPI >6.6 lbs >Epson & IBM Emulation >100 Sheets or 10 Envelope >42 DBA-It's Quiet! >Laser Quality \$339	CANON BJ-300 Ink Jet Printer, Laser Quality >300 Characters/second >360 DPI >Epson & IBM Emulation >Any size paper (Envelopes, A4, Legal, Single sheet, Transparencies) >Laser Quality \$339 Limited Quantity Ink Cartridge \$25 ea. (Bundle with 4 ink cartridge)	EPSON LASER NOT ACTION-1000 >6 PAGE PER MINUTE >HP IIP COMPATIBLE >14 RESIDENT FONTS >512K UP TO 6.5MB >150 SHEET TRAY >2 YEAR WARRANTY \$679	EPSON LQ-570 >250 Characters/second >10 Built-in Fonts >2 Scalable Fonts \$245
---	---	--	---	--

PANASONIC (Color 24 Pin)

KX-2123 \$235
KX-2124 \$309
(92" Best Printer)
Color Kit \$45

NOTEBOOK SPECIAL

Manager's PC (International Warranty-Over 30 Countries) >9600Fax/2400Modem(486SLC-25) >10" VGA Display(486SLC-25) >4MB Ram(486SLC-25) >80MB Hard Disk(486SLC-25) >2MB Ram(386SX-25) >60MB Hard Disk(386SX-25) >1.44MB Floppy Drive >3 I/O Ports:VGA,RS-232,Printer >LightWeight 4.7 lbs W/ battery 386SX-25 \$1050 486SLC-25 \$1495	Engineer & CAD PC 486DX-33/486DX2-50 Sale Price:\$2050/\$2160 Cash Discount: D33:\$1950 D50:\$2250 >Intel Math >4MB Ram,Up to 16MB >170MB HD >Backlit 9" VGA Screen >3.5" 1.44MB Floppy Drive >2 Serial,1 Parallel Port >Extra Numeric Keyboard >Extra VGA Monitor Port >Extra Keyboard Port >AC/DC Adaptor >Carrying Bag	COLOR 486SX-25 >Color 9" Passive VGA >Built-in Trackball Mouse >Lightweight 5.7 lbs >4MB Ram,Up to 8MB >120MB HD >3.5" 1.44MB Floppy >Serial, Parallel >Extra VGA Monitor Port >Extra Keyboard Port >AC / DC Adaptor >Carrying Bag Sale Price:\$2615 Cash Discount: \$2395
--	---	--

Pasadena Main Office:
1756 E. Colorado Blvd
Pasadena, CA 91106
TEL: (818) 568-1088
FAX: (818) 568-9132

Los Angeles Branch:
11841 Wilshire Bl.
LA, CA 90025
TEL: (310) 575-4028
FAX: (310) 575-3831

WHAT GOES ON

NOTICES

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.

Women and Men at Work - If you are planning to join the ranks of the employed anytime in the next couple of years, this is a course you can't afford to miss. Dr. Barbara Gutek, visiting professor of management and policy at the University of Arizona, has designed SS 101, offered spring term MW 2:30-4:00, to focus on differential experiences of women and men in science and in management. Factors that determine career choice, selection and placement in organizations, advancement, performance, job satisfaction, and models for change will be covered.

Russia's Transition to a Market Economy - Dr. Paul Teslya, a visiting lecturer from Novosibirsk State University spring term, will be teaching EC 101, Russia's Transition to a Market Economy. The course will survey the structure of centrally planned economies and the problems of their transitions to market economies. Special attention will be paid to the contemporary problems of Russia and other CIS states and to the question of whether such a transformation is possible without political upheaval. Check it out at prereg.

MU 22 - Masterpieces of Choral-Orchestral Literature - A survey of choral-orchestral masterworks spanning the period 1725-1950. Course will include field trips to live performance, in-class listening and video presentations. To include Bach and Handel Passion settings and oratoria; masses by Beethoven and Mozart; requiems by Mozart, Berlioz, Verdi; secular settings by Brahms, Orff, Mahler, Stravinsky, and others. Professor Neenan, M&W, 1-2:30.

Caltech-JPL Flying Club (AACTI) - The Caltech-JPL Flying Club will meet Wednesday, February 24, at 7 pm in Von Karman Auditorium at JPL. The topic of the meeting will be the United Airlines DC-10 accident at Sioux City. The accident was caused by the uncontained failure of the number 2 engine, and resulting complete loss of hydraulic controls. Control of the plane during flight and the subsequent controlled crash was maintained by power adjustments only. Captain Al Haynes will be present, and will give a video presentation documenting the disaster, with discussion afterwards. Captain Haynes will also discuss how cockpit resource management played an important role in dealing with the disaster. Refreshments will be served. Further information can be obtained from Aron Wolf 354-6917 or Paul Carpenter x6126.

The Health Center will be closed after noon today, Friday, Feb. 19. If you have an urgent medical problem, please call 818.796.0301 and ask for Dr. Stuart Miller. In case of an emergency go directly to the Huntington Memorial Emergency Room.

EVENTS AND SERVICES

National Condom Week Display - in Winnett Quad all day, Thursday and Friday, Feb 25 and 26. Free Samples.

Meditation Class - Open to all Caltech students, faculty and staff. On Mondays from 7 to 9:30 pm in Winnett clubroom #2.

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 23 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

Canoe down the Colorado River this Spring Break - The Caltech Y is organizing a canoe trip down the Colorado on March 21st through the 25th. The cost is \$195.00 for five days (This includes everything but personal gear). The deadline for signing up is on Feb. 28th or until all 15 spaces have been filled. (A \$95 deposit is required on the date of sign-up) No experience is necessary.

"Hello Dolly!" - This Caltech musical features students, faculty and staff of Caltech and JPL. Admission is \$10.00. For ticket information call x4652. Show times are Friday and Saturday at 8pm and Sunday at 2pm for the weekends of February 20 and 27.

Shostakovich String Quartet - The Shostakovich String Quartet will give a Coleman Chamber Music Concert on Sunday, Feb. 21st at 3:30 pm in Beckman Auditorium. Included in their program will be Mozart's Quartet in B-flat Major, K. 589; Glinka's Quartet No. 2; and Shostakovich's Quartet No. 8. Fifty free tickets are available to Caltech students with I.D. (limit two per I.D.) from the Caltech Ticket Office. Tickets are regularly priced at \$21.00, \$18.00, \$15.00 and \$12.00.

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

"Einstein the Man Behind the Genius" - A Critically acclaimed one-man show written and performed by Steve Polinsky. This Skeptics Society Lecture will be presented on Sunday, Feb. 21 at 2pm in Baxter Lecture Hall. The lecture is free to Caltech students.

"Proving Environmental Causes of Cancer: Evolving Standards of William Hueper" - Dr. Christopher Sellers of the Humanities Dept. at the New Jersey Institute of Technology will present this seminar as part of Caltech's ongoing series on Science, Ethics and Public Policy. Refreshments will be served. Thursday, Feb 25 at 4pm in the Judy Library.

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.

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.

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.

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.

"Global Leaders of Tomorrow" Essay Contest - The Sunkyoung group of Korea is offering awards of \$5,000 and a one week trip to Korea to each of the top essays in the areas of science, government/law and business. The contest is open to registered undergraduate and graduate students. Contest guidelines are available in the Career Development Center. Entries must be postmarked by March 24.

For Details on the the following five announcements contact the Career Development Center, 08 Parsons-Gates, Ext. 6361.

The National Black Association, Inc., a non-profit organization of minority MBA professionals, is pleased to announce that in 1993 they will be distributing a minimum of twenty \$3,000 scholarship awards. To qualify, applicants must complete the application and return postmarked no later than March 27, 1993. Applications are in the Career Development Center.

The Los Angeles Actural Award announces a \$1000 Actural Award. Send a self-addressed, stamped envelope to: Los Angeles Actural Club, c/o Mr. Eddie Tong, ASA Living Benefits Pricing, T-420 Transamerican Life Companies, P.O. Box 2101, Los Angeles, CA 90051-0101. Information is also available in the Career Development Center.

Malin Space Science Systems has opportunities for grad students in GPS to participate in the operation of the Mars Observer Camera (MOC) in San Diego between September '93 and September '94.

RAND will be sponsoring interns in a wide range of academic disciplines in its Graduate Student Intern Program this year. They are looking for applications from students who have completed 2-3 years in Ph.D. study and are interested in the analysis of public policy problems.

National Institute of Health is seeking Juniors and Seniors who would like to spend Fall 1993 at the NIH Bethesda, MD biomedical research program.

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 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 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 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.

Applications for the ASME Student Assistance Program are now available. Applications must be postmarked no later than March 31, 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.

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.

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.

The Danville-Alamo branch of the American Association of University Women has two \$600 scholarships available. The successful candidates must be female college students from the San Ramon Valley with a junior or senior standing in September of 1993. Applications can be obtained from: Mrs. Janet Lather, 703 Contada Circle, Danville, CA 94526, (510) 831-9355. Completed scholarship applications must be postmarked by Monday, April 5.

The John Gyles Education Fund is offering financial assistance to students in both Canada and the United States. Effective March 1st selected students will receive up to \$2500.00. Deadlines vary. A minimum GPA of 2.7 is required. For details and an application send a self-addressed, stamped (US \$29) No. 10 envelope to, The John Gyles Education Fund, Attention: R. James Cogle, Administrator, P.O. Box 4808, 712 Riverside Drive, Fredericton, New Brunswick, Canada E3B 5G4.

Buy Caltech cards
and save, save, save!

BURGER
CONTINENTAL

Buy Caltech cards
and save, save, save!

TO ALL CALTECH STUDENTS, FACULTY, AND STAFF:

<i>All the time.</i>	BREAKFAST	\$2.19	with soft drink or coffee
<i>Seven days a week.</i>	LUNCH	\$4.95	with soft drink
	DINNER	\$6.25	with soft drink
	<i>Breast of chicken, seafood, lamb, or the day's special</i>		

HEAR THE
WEDNESDAY NIGHT
JAZZ BAND

SPECIALTIES

Shish kebab Shaorma Souvlaki steak
Fresh fish and lamb Baklava
Homemade pizza Gourmet hamburgers

Mondays - Half price margaritas.

Tuesdays - Beer half price.

Wednesdays, Thursdays 3-7 p.m.

- Happy Hour (free hors d'oeuvres with beer purchase).

We cater for all occasions

535 S. Lake Ave.

(818) 792-6634

THE TECH

CALTECH 40-58 SAC
PASADENA, CALIFORNIA 91125