



The Caltech Football team can relax for a while after posting a 5-3 season.

—photo by Ron Gieseg

## Star Wars Petition Signed By 300

by Hossein Mohammad

Some three hundred Caltech community members, including several of the Institute's Nobel Laureates, have signed a petition opposing the "Star Wars" program of the Reagan Administration.

The petition calls on elected government representatives to declare an immediate moratorium on the development and testing of all space weapons.

"We believe that technological panaceas to the problem of national defense, such as the Strategic Defense Initiative, rely on assumptions of questionable technical and strategic validity," states the petition. "These programs," it continues, "are at best an enormous waste of scientific and financial resources and could in fact increase the risk of nuclear war de-stabilizing the existing strategic balance."

The Strategic Defense Initiative, commonly known as the Star Wars program, has been the subject of several lec-

tures and public discussions on campus this year. The issue is of particular relevance to Caltech. The Jet Propulsion Laboratory carries on some S.D.I. research on tracking and pointing systems for low-powered lasers. The JPL operation is known as Talon Gold.

The petition has attracted most of its signers from among graduate students and faculty members. Its text was drafted over the summer by the Caltech Space Weapons Study Group, although several other organizations have helped circulate it on the Caltech campus. The petition has not been circulated in JPL. Citing its commitments to NASA to keep its government-owned facilities free of political activity, the Lab has not granted permission for the petition's circulation.

Prof. Richard Feynman and Prof. Murray Gell-Mann, both Caltech Nobel Laureates, are two of the faculty members who have signed the petition.

## Promising Young Scientists Named

by Lily Wu

SCIENCE Digest compiled a list of what they considered to be the most promising 100 young scientists (under 40 years of age) in the United States and only one of them, Michael Cross of Theoretical Physics, is from Caltech.

The magazine contacted a group of 60 senior scientists to nominate and select the group of 100. Of those 60, 5 were Nobel prize winners and 14 were originally part of a FOR-TUNE magazine list of the top 20 scientists of 1954. Among those 55 are Freeman Dyson, Richard Garwin of IBM, and Seymour Benzer, the only one from Caltech. They are mostly national lab directors, eminent academia scientists and industrial researchers.

The top 100 scientists that they chose were ones who have already made discoveries or contributed to their field in some original way. The San Francisco Bay area contains the greatest brain trust with 26 of the top 100. Most of them are from Stanford, UC Berkeley, Lawrence Livermore Labs or one of the silicon valley research companies. California led the nation with 32 scientists; New York had 15, New Jersey 11, and Massachusetts 10.

25 percent of the top 100 are employed by industrial companies, most notably from General Electric, AT&T Bell Labs, Sandia National Labs (an AT&T subsidiary) and DuPont. Those 4 companies ac-

counted for 14 of those 25. The universities most represented by the 52 percent in academia are Stanford and UCB, each with 8, MIT with 4, and Harvard, Princeton and University of Chicago all tied with 3 scientists each.

30 of the top 100 work in research labs run by either the government or universities. (7 of those 30 are counted twice because they hold both university and research lab positions.) The most prominent research labs are Los Alamos National Labs, Argonne National Lab and Lawrence Livermore Labs.

Other statistics generated from the top 100 are as follows: The academic group are paid higher than either of the other two groups. 80 percent of the academics earn more than \$75,000 while only 61 percent of the industrially employed and 42 percent of the laboratory employed do. The highest income in the group (\$150,000) is earned by an academic. The 100 scientists consist of 10 women and 90 men. There are 24 biologists, 22 physicists, 13 computer scientists, 14 chemists, 10 astronomers, 5 mathematicians, 5 psychologists and 3 environmental scientists.

The backgrounds of the 100 also yielded interesting information. 50 percent grew up in rural areas of 50,000 population or less, and only 21 percent in cities of more than one million. 81 percent were educated in public schools and

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### Feature

## Health Insurance Plans Investigated

by Lily Wu

A proposal to update the student health insurance plan to include coverage for pregnancies and elective abortions is presently awaiting an approval decision from the administration. The proposed plan was developed by the Health Committee last term after much research and discussion and, though it has been endorsed by the Committee which includes faculty, graduate, and undergraduate students, it still leaves problems unresolved and parties dissatisfied.

Last fall, the Caltech Women's Club (faculty wives) brought the issue of extending pregnancy benefits to all Caltech students and their spouses. The reasons given for this proposal was to make Caltech more attractive to graduate students (primary beneficiaries of pregnancy benefits), and to help address a recognized health need of students who have limited financial resources.

It was felt that since faculty and staff members were covered for delivery expenses, graduate students should be too. After the first year or two, a graduate student functions more in a faculty or staff research capacity than as a student. Financially, graduate students also have a greater need for coverage because student stipends are much less than faculty or staff salaries. Undergraduate students or even undergraduate spouses rarely have need for such coverage. A high percentage of undergraduate students are also covered by some sort of family plan from their parents, which is again not the case for graduate students. Therefore, the Health Committee felt that a need for such coverage clearly existed.

From an administrative point of view, such a policy

makes a very positive statement about Caltech's attitudes towards the enrollment of women students. To help attract and keep good graduate students, Caltech needs to have stipends and benefits, and working conditions and attitudes which are supportive and competitive with both other graduate schools and industry.

Benefits available here should at least equal those of competitor schools (both MIT and Stanford cover their students (spouses not included) for pregnancies and elective abortions). Though it is recognized that an institute can not come close to matching stipends to industrial salaries, students should not have to sacrifice basic health benefits by being offered a policy which is substantially inferior to ones offered by companies (most cover spouses).

However, after reviewing several possible plans that the Institute could offer to students and spouses, it was found that student coverage, both graduates and undergraduates, was relatively in expensive for Caltech to adopt, while most spouse plans seemed prohibitively expensive. To cover just students, per student insurance cost to the Institute would only increase from \$188 to \$215. For spouses, optional policies can be purchased by a student to cover pregnancies and abortions at a cost range from \$500 to as much as \$1200 a year. Vice President of Student Affairs, James Morgan believed that at such a price, it would no longer be worthwhile for a student to insure. The estimated cost of a delivery is \$3000.

Therefore, the final proposal presented to the Administration by the Health Committee has no provisions worked out for spouse

coverage. It only insures students. (It is estimated that there are approximately 6 cases of deliveries and 6 cases of abortions per year among female students at Caltech). The proposal was presented at the beginning of this term and no decision has been reached yet.

The Graduate Student Council (GSC) endorsed the proposal on November 1, but their Health Committee representative, George Carmen, indicates that the proposal is still less than satisfactory and even disappointing. He expressed dismay that administration reduces the problem to a strictly financial one. Spouse coverage can be obtained at a much lower cost if the Institute self-insured the students rather than obtaining a carrier company to handle the policy.

He also thought that the Institute should help defray the cost of the insurance, in recognition of the health need which requires addressing.

The administration's purely financial frame of mind was manifested in their rebuttal to the grad students - as -employees argument. They mentioned that only 620 of the 950 grad students were employed by the Institute as either a GRA or a CTA. And even they were part - time employees because their GRA or CTA duties do not exceed 15 hours per week. Students therefore can not possibly qualify for the same benefits as staff employees. Carmen addressed the issue as one of equity and fairness though, "graduate students contribute a lot to Caltech and deserve to be treated at least as well as staff."

This present proposal covering only students for deliveries might also be discriminatory. The addition of

continued on page 2

# Live From New York

## An Academic Diet

by Ken Whang

I've been here at Columbia for nearly three months now, and it's still hard for me to pinpoint exactly why I'm happy about transferring here from Caltech. Sometimes big significant - sounding things will irk me, like crime in NYC or the distance between faculty and students here at Columbia, but after considering my overall situation, via some vague, bigger picture which I can't easily break down into individually digestible items, I'm always glad in the balanced that I've changed schools.

I've put in quite a big investment getting where I am, then if based only on such a vague undefinable notion. I've expended a great deal of energy breaking with the status quo by applying to another school, then deciding to come here, finding housing, and settling into a new environment. Never before have I been so personally responsible for my situation, as I am now. Never before has my situation consequently felt so precarious and fragile.

The things that I think have really made being at Columbia worthwhile are not the kinds of characteristics that I looked into when I was comparing colleges in high school. They are not the kinds of items you will find tabulated in statistical summaries of schools; they are

somewhat less tangible. My time is less structured; I have fewer weekly problem sets and spend more of my time on longer term assignments which break down into small, flexible blocks, and a lab project, which is elastic.

I really enjoy being able to do a thorough job on each of my problem sets and papers, something that hardly ever seemed to fit into my schedule at Caltech. Because of the liberal arts environment, I have greater variety available both in the courses I select and in the people I come across. Having NYC at my door step does wonders in the areas of consumer products available and entertainment possibilities. I've actually been really busy lately as the term comes to a close. Even Caltech busy on several occasions. But when there is a lull in my workload, I really appreciate having most of Manhattan less than half an hour and a subway token away.

The characteristics I've mentioned, of course have as much to do with inherent qualities of Columbia as with what I've made with my situation as a student here. What they sum up to psychologically is a feeling of greater independence than I had when I was at Caltech. I can see how another student with a different

outlook from mine might make a completely different situation out of attending the same school, and find himself much freer to do what he wants to do at Caltech than Columbia.

When I think about it, I still miss Caltech in some ways. Maybe it's the same way that Holden Caulfield in *The Catcher in the Rye* ended up missing his school and various other character he had come across, all of whom he really hadn't liked. In retrospect, everything softens a bit and the past can almost always make itself look better than the gritty reality we face day to day. I think I miss what I perceived as the intellect attitude at Caltech.

The emphasis of the conceptual over the factual and idea that we needn't accept things that don't make sense just because they exist, but that we can be innovative and try new things when appropriate appealed to me. I guess that last idea I brought with me as much as it finally brought me here. The educational policies at Caltech struck me as always well - intentioned, but too often misguided, at least for my purposes.

In any case, there were some valuable concepts and ways of thinking that I picked up at Caltech which I doubt I would have gotten at Columbia. Similarly there are mental treasures to partake in here at Columbia that are not available at Tech. I don't regret having spent two years as a Caltech student and I don't regret transferring to Columbia. In fact, the 2-2 plan may turn out for me to be ideal undergraduate diet.

## letters

### More On BOC Inactivity

To the Editor:

It seems that there is a growing amount of dissatisfaction about the BOC and the way that they handle (or don't handle) cases offered before them. I'd still like to add my two bits to the fire.

I observed what I still think of as a rather blatant violation of the Honor System concerning collaboration on homework where none (i.e. none) was allowed. (This course based the final grade on homework alone.) This I called to the attention of the then BOC chairman who promptly did nothing about it.

When Fred Ferrante replaced Eliza Sutton during the middle of the year, I raised the issue with him in the hope that he would act upon it where she did not. There seems to be no hope. This angers me.

I am very respectful of the Honor System, which I see as a real asset to Caltech, if it REALLY WORKED, that is. And I can speak from experience that it does in fact "work" even when the BOC is never involved. But why is it that when the BOC is required to handle a suspected violation, that they do not? (Or more accurately, that the chairmen do not?) They certainly say that it works often enough: there's the little pamphlet, the talks at frosh camp, and the mandatory frosh talks first term.

And I at least have heard enough times from then upperclass students that the thing about it is that it works.

Has it changed since then? Or were they misinformed? Or what? The number of letters to the editor concerning the BOC alarms me. Has the Honor System been entrusted to incompetents? Or is it fundamentally flawed?

I was taken unfair advantage of, of that I have no doubt; yet it seems that these people got away with it; some got grades that I feel they simply do not deserve. I'd certainly like to see justice served, either by adjusting their grades or by vindicating their reputations. (That's a hint to the current BOC, by the way.) But I'd also like the problems I have seen about the BOC to be well known, and to be solved. And if not, why not? Perhaps it isn't all as idyllic as they would have me believe.

In any case, I'd like it to be made clear to the BOC that I am both angered and disillusioned by their decisions to not do anything about what I saw as a clear case of unfair advantage.

-Bruce Tiemann  
Junior, Ricketts

## Plans Reviewed For Students Health

from page 1

a child to a family is a family health and financial burden. Again, as a matter of fairness and equity, one cannot justify covering deliveries for female student families and not male student families.

All these issues were cited by Carmen as causes for dissatisfaction with the present health insurance proposal which makes no mention of spouse provisions, now or in the future. In general, he felt that Caltech's administration needs to be more responsive and receptive towards graduate student problems such as housing, health insurance, and

stipends.

Nonetheless, Bruce Cain, chairman of the Health Committee, feels that it would be significant if this present proposal is approved. With such a complex problem, "sometimes it is easier to solve it pieces rather than not do anything until the entire issue is completely resolved." The spouse issue has no proposed solution in this plan, but both Morgan and Cain indicated that it is not a lost issue. The problem of spouse coverage simply needs more time to be worked out than the student coverage problem.



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Sign up for a Ski Trip, December 16-22. \$90 covers everything except lift tickets.

Tuesday... December 4

Noon Concert, (yes, its on Tuesday this week), Robin Flower, Blue Grass (sort of). At noon on the Quad.

Poetry Reading: Charles Bernstein, a New York poet will give a reading of his work today at 4:00 p.m. in the Judy Library in Baxter. Refreshments will be provided.

Saturday... December 8 and

Saturday... December 9

DECOMPRESSION: food, fun films, games and graffiti. Winnett Lounge. (more info next week)

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For more information, contact the Caltech Y at 356-6163, or just drop by.

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Editor in Chief . . . . . Chris Meisl  
Entertainment Editor . . . Matt Rowe  
Columns/Features Editor . . Lily Wu  
Sports Editor . . . Santosh Krishnan  
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Photographers . . . . . Ron Gidseg, Lawrence Anthony

The Inside World . . . Bob Bolender (Ricketts), Jim Bell (Blacker), Joel Seeley (Dabney), Ravi Subramanian (Lloyd), Chris Mihos (Rud-dock), Warren Goda (Page), Ed Zanelli (Fleming)

Production . . . . . John Beahan, Nick Smith, Lily Wu.

Business Manager . . . Karla Peterson  
Circulation . . . . . Gavin Claypool Paul Gillespie

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## One Tech In Top 100

from page 1

63 percent of their fathers had college degrees, as well as 49 percent of their mothers. 63 percent were either only children, eldest child, or only son or daughter.

Finally, as could have been expected, 92 percent believe science has contributed more good than harm to society and 85 percent believe that this will continue to be the case in the next 20 years.

A biographical sketch is provided on each of the 100 in December's SCIENCE Digest in an article entitled "America's 100 Brightest Scientists Under 40."

## Work For The Tech

Anyone interested in journalism or graphic arts should consider signing up for PA 15 next term and work for *The California Tech*. PA 15 is a 3 unit class that meets every Friday at 12:15 in 127 Baxter for about three-quarters of an hour. Your input to the newspaper is very welcome.

Ascit elections are coming up early in second term. Students interested in editing should consider some advanced experience, especially with the new equipment that has just arrived.

Grad students, get involved too!

## The Inside World

**Lloyd:** Inferno scurried ahead of Tropicalley to win an unusual Alley Challenge. Dave, it takes a person like you to come up with that one (Tiger!). Cave "jello-od" over Virgin Islands in a hilarious challenge. Kaos vs. HQ on Wednesday.

Interhouse soccer is over, and we still don't know where we stand. Nevertheless, it is December now, and obviously, the time to swim. Sign up for Interhouse swimming now, and get wet!

Jay's 15 minute flick on planes and contraptions was pretty disturbing. Maybe one day, Jay will tell us what the heck was going on in the

Christmas "Blow-out" on Saturday - food, movies, and friends. Be there!

Only 2 weeks before Christmas vacation... snow... skiing... good food... the casual life. *-Ravi*

**Ruddock:** Welcome back for another exciting week of the Buddock inside world. Let's see what I have this week...

Well, last week was Thanksgiving and the Budd was kind of mellow since everyone bolted out of Calpeak for a vacation. (Yes, the mountains were pretty cold. But the whiskey helped.)

Anyway, this week the social event is--well, Sherry calls it "tree-trimming." The decorations are preparation for next week's big Christmas and Harmonica (sorry, Phoebes, I just don't know how to spell your holiday) party. (Ho, ho, ho and all that sentimental stuff). So anyway, come out and waste a Friday night decorating the tree.

But the talk of the week is really the new combo locks all over Buddock. Yes, that's right, the locks that we ordered last year are finally in. So hopefully it will keep out all the unwanted element (i.e. thieves, muggers, maids) from our rooms. But, then again, it gonna be a whole lot tougher keeping those hoodlums from doing the hider. Right, Loiper?

A few other things... Pay Sheldon P. for your mugs so she can order them. Pay me for your barbills so I can restock. And last, but most important, Anirvan has a new nickname: Terry. Make sure you call him that from now on.

Let's do it to them before they do it to us. *-Hos*

**Page:** You've got 9 homework assignments to finish, finals are about to crash down over your head, and your girlfriend is now seeing Matt Zell. What do you do?

Drink beer, of course. This weekend will be the second Annual Beer Drink-Off. Athletes from the frosh, sophomore, and junior classes will cool down after the competition by joining the Third Annual John Herndon Handshaking Contest. What about the seniors? If we ever thought about them, they would be invited also.

This is the obligatory athletic message about soccer.

Special thanks to Blacker House. By the way Blacker, keep Glory Anne away from the beer kegs this Saturday.

*-Cyndi LePage*

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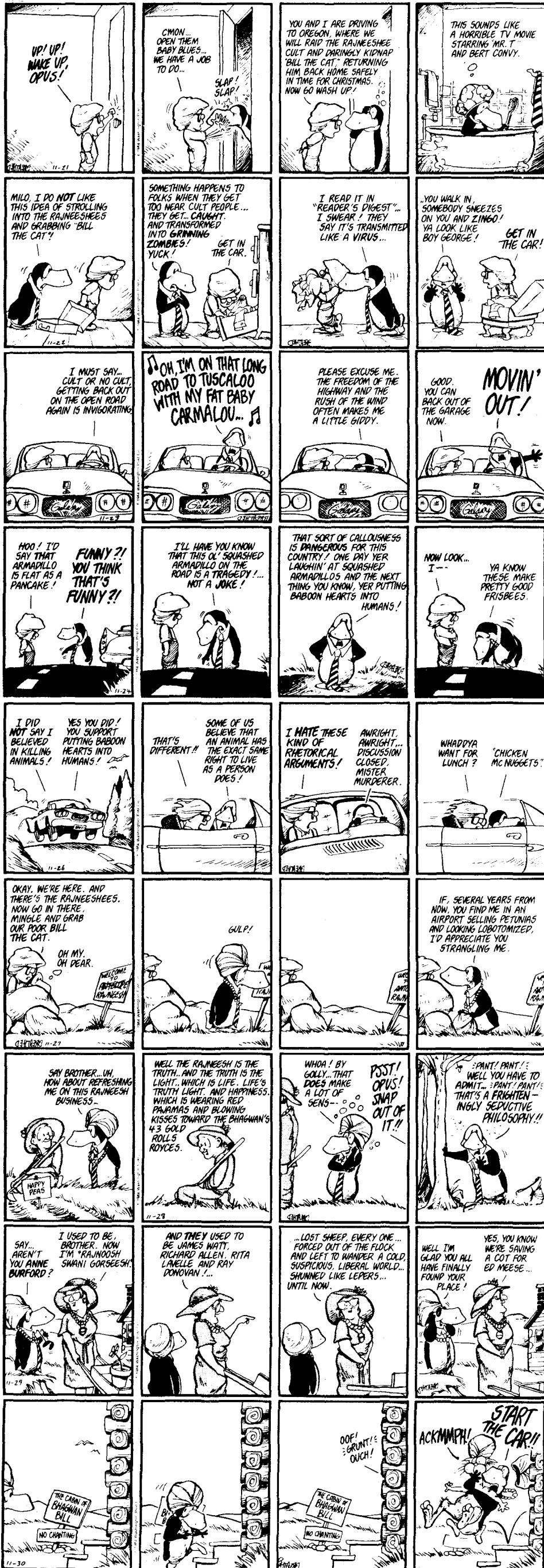
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**BLOOM COUNTY**

by Berke Breathed



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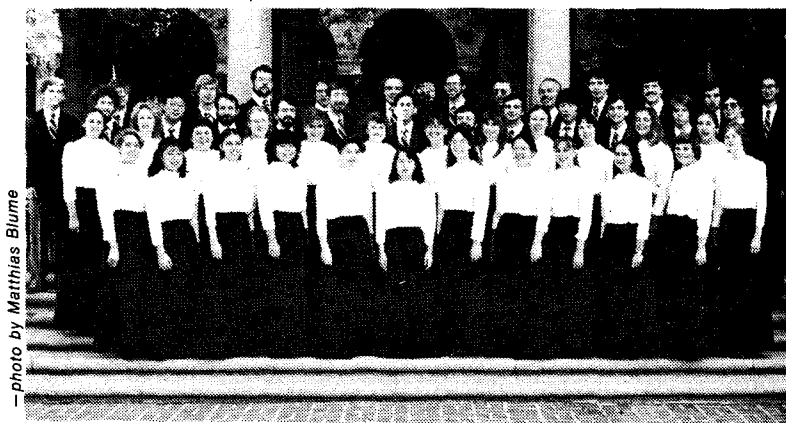
by Michael Chwe  
This weekend the Caltech community celebrates the holiday season with "A Star for Each: A Celebration of Miracles," presented by the Caltech Glee Clubs, directed by Donald Caldwell and Monica Hubbard. There are three performances at Beckman Auditorium, at 8 pm on Friday, Nov. 30 and Saturday, Dec. 1, and at 4 pm on Sunday, Dec. 2. Tickets can be obtained at the door or at the Caltech Ticket Office (356-4652).

munity, including the Caltech Men's and Women's Glee Clubs, the Caltech Chamber Singers, a Chamber Orchestra, and a Double Brass Choir.

The program also features members of the Caltech community in dramatic vignettes, including Huston Horn as Joseph, Susan Cave as Mary, Richard Dean as St. Nicholas, and Mark Goodstein as David. Al Hibbs and Myra Baxter will perform in a vignette concerning the story of Anne Frank, and Chris Brennen will read excerpts from *Les Miserables*.

"A Star for Each" is a distinctive holiday event, featuring music and drama from both the Hanukkah and Christmas traditions. Participating in the music will be many performing groups drawn from the Caltech com-

community, including the Caltech Men's and Women's Glee Clubs, the Caltech Chamber Singers, a Chamber Orchestra, and a Double Brass Choir. The program also features members of the Caltech community in dramatic vignettes, including Huston Horn as Joseph, Susan Cave as Mary, Richard Dean as St. Nicholas, and Mark Goodstein as David. Al Hibbs and Myra Baxter will perform in a vignette concerning the story of Anne Frank, and Chris Brennen will read excerpts from *Les Miserables*. "A Star for Each" offers a rich variety of music and drama which promises to be enjoyable and entertaining. Everyone is invited to come join in Caltech's traditional celebration of the holidays.



Caltech's Men and Women Glee Clubs.

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## entertainment

## Falling In Place

by Charles Barrett

*Falling In Love*  
Paramount Pictures

Whether it is a chance meeting or a surreptitious rendezvous, truly romantic interaction between two people depends heavily on timing. Timing can be the difference between a passionate interlude and a painful fiasco, and yet it is so often left to random chance. For Molly Gilmore (Meryl Streep) and Frank Rافتis (Robert DeNiro) whom we see *Falling In Love* (Paramount Pictures), time and place and manner capriciously conspire to bring them together, and then leave them to their own devices, letting the cards fall where they may.

For the first several minutes of the film, we follow them into New York on the morning train and trace their path from Grand Central Station to a hot-dog stand to Bloomingdale's. Through all of this they are tantalizingly (and coincidentally) near one another in the bustling throng of Manhattan's Christmas shoppers, yet totally oblivious to each other's existence. They meet only after a chance collision in a book store leaves their respective packages strewn on the floor, and even then the event is forgotten until Christmas morning when each discovers that they had taken the other's book. Both Molly and Frank spend a blasé Christmas with their dispassionate spouses, and even

though the mix-up is the most interesting thing that happens that day, it too is forgotten until another chance meeting three months later. At this point the spark of interest is kindled, and soon their meetings are no longer by chance. As their romance proceeds, it is they themselves who must decide what happens next; coincidence and chance, having brought them together, now must be replaced by conscious action if their adulterous affair is to continue.

For a film of this nature to succeed it must engender interest and rapport in the audience. Good writing and realistic portrayals by DeNiro and Streep for the most part combine to overcome the traps of triteness and cliché, and overall the film does succeed. The apprehensions and insecurities of Molly and Frank are universal to budding

romances, and endears them to anyone who has been there him- or herself.

Unfortunately, the film at times is all too much like a real developing romance, moving at an excruciatingly slow pace. This is especially frustrating since the ending is (unlike real romance) quite predictable.

Directed by Ulv Grosbard, this Marvin Worth production features wonderful cinematography and a pleasing musical score that always contributes to the scene at hand. Central to the success *Falling In Love* has in conveying its message is the writing and editing. The visual and spoken juxtapositions, plentiful throughout, drive home the fact that in love, as with most things, timing is everything.

*Falling In Love* is in citywide release, and is playing locally at the Mann 3 at 467 N. Rosemead. Rated PG-13.

## Body Shop

## Ideas For Insomnia

by Miki Goodwin

Different people require different amounts of sleep to feel rested. Some do not function well unless they have at least nine hours of sleep per night, others may thrive on five hours. Sleep patterns also change with age and may range, for example, from 16-18 hours for a baby to only 4-5 hours for elderly people.

Insomnia does not apply to the amount of sleep but encompasses the symptoms of difficulty falling asleep or waking up during the night and not being able to get back to sleep, thus feeling fatigued during the day.

Insomnia is not a disease, it is a symptom of a problem and the best treatment is to overcome the cause. Most common causes of sleeplessness in students include irregular sleep schedules, emotional stress resulting from various crises, daytime naps, use of stimulants such as caffeine or diet pills, and/or chronic use of drugs affecting the central nervous system such as tranquilizers or alcohol. In some rare cases it may be a physical illness that causes sleeplessness.

Often people in this situation resort to sleeping pills or minor tranquilizers in an attempt to cure their insomnia. However, contrary to what many believe, sleeping pills are not a cure. In fact, if taken for a long time sleeping pills have undesirable side effects and may even make insomnia worse. Sleeping pills should be used judiciously for a limited time and only under medical supervision.

Many cases of insomnia, such as stress related sleeplessness, will subside within a few weeks. A few sleepless nights are generally not harmful.

Some methods of self help are listed below. However, if insomnia persists it may be advisable to have a medical consultation about ways of dealing with the cause.

- Review lifestyle patterns, develop a regular as possible sleeping schedule. Avoid daytime naps.

- Avoid stimulants such as caffeine (found in coffee, tea, and soft drinks) and nicotine, particularly before going to bed.

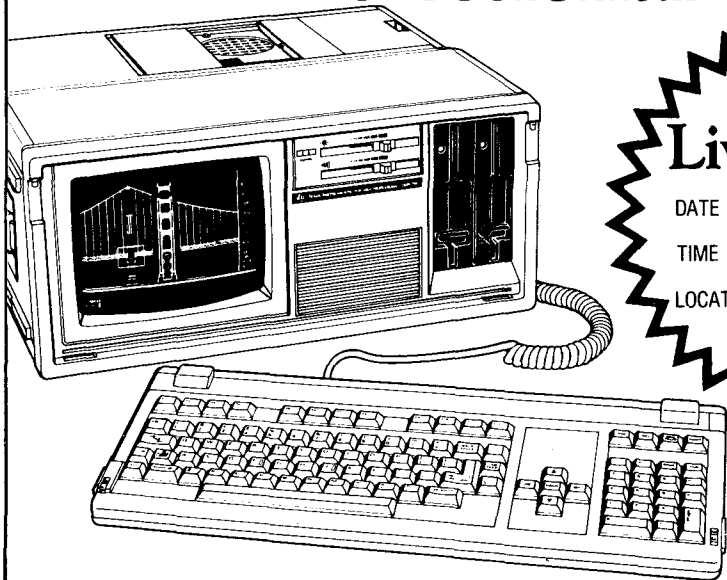
- Avoid alcohol, a leading cause of poor sleep. Although it helps one fall asleep it disrupts sleep continuity and will often cause restless nights.

- Exercise regularly. Vigorous exercise produces greater nighttime relaxation and deeper sleep. However, refrain one or two hours before going to bed.

- Drink a cup of warm milk. There has been some research suggesting that certain ingredients found in milk can have a natural sedative effect.

- If possible adjust environment surroundings so that they are conducive to sleep. Quietness and a comfortable temperature are promoters of restful sleep.

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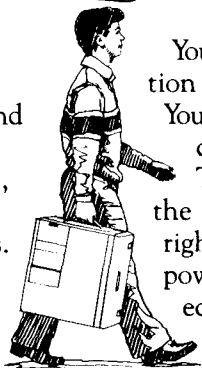


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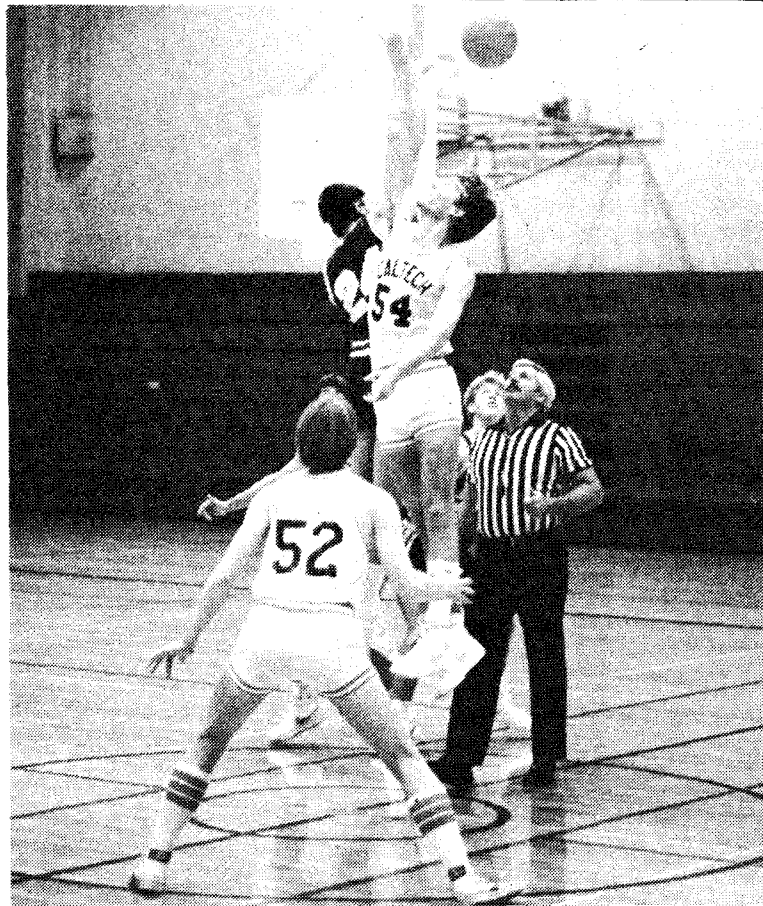
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# sports



Brett Bush jumps for the ball

## Score With Santosh

by Santosh Krishnan

2 Weeks Ago:

W-L: 9-5

Against Spread: 7-7

Last Week's Record:

W-L: 11-3

Against Spread: 8-6

Cumulative:

W-L: 52-31

Against Spread: 40-43

### AFC

**L.A. Raiders (9-4) at Miami (12-1)**

The Raiders have to win this game to stay ahead of New England in the wild-card race. Miami will resort to their characteristic unsportsmanlike conduct and unorthodox field maintenance techniques. The Raiders should be wary of parabolic mikes. Despite Miami's much-vaunted capabilities, the Raider lines will hold firm and return with a win.

*Prediction: Raiders by 2*

**Pittsburgh (7-6) at Houston (2-11)**

*Prediction: Steelers by 9*

**Indianapolis (4-9) at Buffalo (1-12)**

*Prediction: Indy by 4*

**Denver (11-2) at Kansas City (5-8)**

The Broncos were robbed of a victory by evil (Seattle plus referees). The Broncos should win to restrain the anti-social Seattle influences.

*Prediction: Denver by 4*

**Cincinnati (5-8) at Cleveland (4-9)**

*Prediction: Cincy by 2*

### NFC

**New Orleans (6-7) at L.A. Rams (8-5)**

A must-win game for the Rams. Eric Dickerson, who is attempting to break O.J. Simpson's single-season rushing record, will be the person to watch. Should be a good game.

*Prediction: Rams by 5*

**Tampa Bay (4-9) at Green Bay (5-8)**

Green Bay lost to Detroit in a game they should have won. Tampa Bay almost upset the

Rams. Still, Green Bay should win.

*Prediction: Green Bay by 2*

**San Francisco (12-1) at Atlanta (3-10)**

*Prediction: Frisco by 9*

**Dallas (8-5) at Philadelphia (5-7-1)**

Dallas, the former "America's Team", is struggling in its "Silver Season." Philadelphia lost QB Ron Jaworski for the rest of the season last week. Dallas will win in a crucial game for the wicked Cowboys.

*Prediction: Dallas by 5*

### Interconference

**N.Y. Giants (8-5) at N.Y. Jets (6-7)**

A must-win game for the Giants. The Jets have nothing to lose but pride in this heated New York rivalry. The Giants are the visiting team in Giants stadium.

*Prediction: Giants by 4*

**Chicago (9-4) at San Diego (6-7) [Monday night]**

Should be an interesting game to watch. The Chicago defense appeared to overwhelm the Raiders' offensive line. It should be a good game for defense enthusiasts.

*Prediction: Chicago by 6*

**St. Louis (7-6) at New England (8-5)**

St. Louis snapped a 3-game

## Chessatech

# Jungman Leads Chess Club Tourney

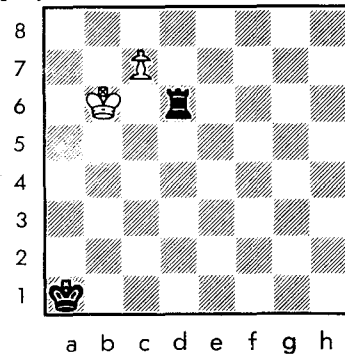
by Doug Dekker

In a crucial third-round encounter, Gerry Jungman (Ricketts) defeated Tim Parrott of Lloyd to take the lead in the ongoing Caltech Chess Club tournament. This interesting game, with notes, will appear in our next full-length column.

This week we turn from analysis of complete games to consideration of a chess ending. Endgame study is usually neglected by beginning players; to an extent, this is justified, because one's early contests are typically decided in the middle-game (through catastrophic blunders or missed defensive opportunities). But as the level of one's competition increases, knowledge of the endgame becomes more and more important, both to secure deserved victories and to escape disadvantageous positions with draws.

Moreover, to ignore the endgame is to remain ignorant of one of the most beautiful aspects of chess. Despite their limited material, the positions reached are frequently as complex and challenging as those of the middlegame and place equal demands upon a player's creativity, tenacity, and insight.

Consider the following classic ending, whose apparent simplicity conceals profound and subtle ideas. White is to play and win:



losing streak with a 17-16 win over Philadelphia last week. New England lost a close defensive struggle to Dallas. Playing in Foxboro, the Pats should roll.

*Prediction: New England by 6*

**Detroit (4-8-1) at Seattle (11-2)**

Seattle won last week in a classic Seattle fashion—slimy and devious. What Seattle lacks in talent, they make up in un-sportsmanlike conduct and a large wallet to decide close games. This rough-hewn and dishonest team, as well as their fans, should be exterminated.

*Prediction: Detroit by 2 [Upset of the Week]*

Of course, if White can promote his pawn to a queen he will win in all but "trick" positions. Black's rook is in terrible shape: it can't control the pawn's queening square (c8) as both d8 and the c-file are inaccessible. Thus, it places the White king in check and hopes for the best.

1 Kb5!

The only move to preserve winning chances. If 1 Ka5??, Black stops the pawn with 1...Rc6 and wins. If 1 Kb7? (or 1 Ka7?), the reply is 1...Rd7, pinning the pawn; Black will capture it next move and draw. 1 Kc5 looks good at first; however, Black draws with 1...Rd1!, since 2 c8Q is met by 2...Rc1+, and on other moves 2...Rc1 happens anyway.

1... Rd5+

Of course, this is the only move to prevent an immediate White victory. If 1...Rd2?? 2 c8Q Rb2+, White plays 3 Ka4 Ra2+ 4 Kb3 Rb2+ 5 Kc3 and wins.

2 Kb4!

Still the only move! 2 Ka6 (or 2 Ka4) allows 2...Rc5, and 2 Kc6 (or 2 Kc4) induces 2...Rd1. Finally, after 2 Kb6, there follows 2...Rd6+ (forced), and White has made no progress.

2... Rd4+

Forced.

3 Kb3

As before. Again, if 3 Kc5, then 3...Rd1!; if 3 Kb5, Black replies 3...Rd5+ and the draw looms. (If you found 3 Kc3 Rd1 4 Kc2!, congratulations; you've reached the position below after White's fourth move.)

3... Rd3+

4 Kc2!

Knocking Black off the merry-go-round. White can invade the c-file because the chessboard is finite; Black's

drawing idea 4...Rd1 is now met by 5 Kd1x. How many of you saw this far? And do you now see Black's resource?

4... Rd4!!

Wonderful! If now 5 c8Q?, Black plays 5...Rc4+! forcing 6 Qc4x, and Black is stalemated! And the draw seems inevitable in any case: 5 Kc3 (5 Kb3 Rd3+) Rd1 (forced) 6 Kc2 Rd4! etc. So what can White do?

5 c8R!!

White promotes to a rook! Now 5...Rc4+?? is busted by 6 Rc4x, and there's no stalemate. In fact, after 6...Ka2 (forced) 7 Ra4, Black is checkmated.

*But isn't the position after 5 c8R a draw?* It sure looks like one, but there's a detail present: 6 Ra8++ is threatened! Thus Black's next move is (you guessed it) forced.

5... Ra4

6 Kb3!

But this brings down the curtain. White threatens both 7 Ka4x and 7 Rc1++, and Black is out of tricks. White wins.

Partial solutions to this ending were submitted by Kent Cantwell of Dabney, James Okamoto of Blacker, Eric Wang of Fleming, and Chris Eich, a grad student in Physics. Eich suggested 1 Kc5 as winning, missing the defense 1...Rd1. Cantwell, Okamoto, and Wang got farther, but all overlooked Black's resource on move 4. After broad hints were supplied by this columnist, Cantwell successfully completed the analysis; the others have not responded as of this writing.

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sports



-photo by Ron Gröseg

Konstantin Othmer demonstrates The Big Black Machine to Fleming in 1-0 interhouse soccer victory.

## Weekly Sports Calendar

### Intercollegiate

DAY	DATE	TIME	SPORT	OPPONENT	LOCATION
Fri.	11-30		TBA Basketball (JV)	Lopota Invitational	St. Louis, MO
Fri.	11-30		TBA Basketball (Varsity)	Lopota Invitational	St. Louis, MO
Tue.	12-4	7:30 pm	Basketball (Varsity)	Christ College	Christ College
Wed.	12-5	11:00 pm	Ice Hockey	Harbor '2	Olympic Ice Arena

### G.S.C. Volleyball

Day	Date	Time	Teams	Referees	Court
Mon.	12-3	6:15 pm	Upsetters vs. Six Hitters	Brute Force	West
Mon.	12-3	7:15 pm	Brute Force vs. Tammy's Team	Upsetters	West
Mon.	12-3	8:15 pm	TAPIR vs. Page	Tammy's Team	West
Mon.	12-3	9:15 pm	Bump 'n' Grind vs. Blockheads	Page	West
Tue.	12-4	10:00 pm	Joy of Sets vs. Jet Setters	Fleming	West
Tue.	12-4	11:00 pm	Fleming vs. Turing Machine	Joy of Sets	East
Day	Date	Time	Teams	Referees	Court
Tue.	12-4	10:00 pm	Coherent Spikers vs. Rotorheads	Derelicks	East
Day	Date	Time	Teams	Referees	Court
Tue.	12-4	11:00 pm	Cubbies vs. Face	Brains not Braun	West

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## Beavers End Upbeat In Upset

by Tom Tysinger

The Caltech football team ended their 91st season two Saturdays ago with a stunning upset over the Silverlake Athletic Club. The Beavers, playing in front of a capacity crowd at the Antelope Valley College stadium, thrilled the fans with their explosive offense and unrelenting defense. The first touchdown of the Beavers' 28-0 victory came when Martin Brouillette drove the Silverlake defenders into the endzone. Brouillette, seeing his receivers covered on the

pass-designed play, quickly tucked the ball away and hurdled across the goal line. The next touchdown brought the crowd to its feet when Beaver running back Vincent Riley took the handoff from Brouillette, smashed through the Silverlake line, danced by the linebackers, and streaked past the safeties for a 65-yard touchdown run, the longest Beaver play from scrimmage this year. Riley, having barely recovered from his sensational run, scored the third Caltech touchdown when quarterback

Brouillette rifled the ball between three Silverlake defenders, hitting Riley in the corner of the end zone. The Caltech defense stifled the Silverlake offense with tight coverage in the backfield, and plenty of pressure from the defensive ends and the rest of the line. Caltech's final touchdown came when Don Thomas drove across the goal line on a three-yard play.

Although the scoring was complete, the action was not. After a Lee Mallory fumble near the Silverlake end zone, some seemingly not-too-friendly words turned into a brawl in the middle of the field. With the aid of the referees and Coach Parker, the escapade soon ended and football continued. On the final series of the game, the Silverlake Athletic Club had control of the football and were driving towards a touchdown. With time for one more play, and with the ball on the Caltech 35-yard-line, the Silverlake team had but one option—to throw into the end zone. With four receivers streaking down the field, their QB dropped back, looked around, and suddenly fell into the hands of five Caltech linemen, preserving the shutout.

With that sack, the 1984 Caltech football season came to a close, leaving the Beavers with a 5-3 record and their second straight winning season.

One final note—this was the final game for Caltech slot-back/running back Larry Sverdrup. Sverdrup, a veteran of seven years and two coaches, plans to end his career with the Raiders.

### Attention Students:

## Study Program in ISRAEL

Total Cost: \$450.00 - including round trip airfare to Israel, food, housing and travel.

### Winter and Summer 1985 Departures

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# announcements

Material for the announcement section of the California Tech must be submitted typed on or with the Announcement Form available at the Tech office by the Tuesday before the Friday of publication.

## Help Soviet Jews

Promote human rights! Come write a letter on behalf of the Refusnik Khasin family and eat a delicious deli dinner. This Sunday, Dec. 2 at 5:30 pm at the Red Door Cafe. Deli dinner \$3.00. Letter writing materials provided by Hillel.

## Attention: Grads

There are plans to create mixed grad-undergrad housing by converting one or possibly two of the smaller Graduate Student Houses for this purpose. Any grad students with ideas along these lines should contact the Master of Student Houses at x6194.

## CLASSIFIED

### FOR SALE—

**FOR SALE:** 1981 Plymouth Reliant, 2.2 liter, original owner, excellent condition, 4-door, auto., stereo-Cass, \$3500 o.b.o. Campus x6489, or 796-4928.

### HELP WANTED—

**NEED CASH?** Earn \$500+ each school year, part-time (flexible) hours each week placing and filling posters on campus. Serious workers only; we give recommendations. 1-800-243-6679.

**TUTOR WANTED:** Need instruction on Apple II + statistical software. I do not have computer. Leave message for Tom 796-2247.

**WORK YOUR OWN HOURS.** Earn extra money. Call Cathy Estrada at (818) 449-3244.

**HELP WANTED:** Z80 Machine language programming—software and hardware. Contact Joe Vu 794-2411 after 5 PM.

### HOUSING—

**APARTMENT OFFERED** Quiet apt. offered to share in exchange for helping an active paralyzed teacher. 1 block west of Caltech w/ own bedroom and bath. Ideal for person who spends most evenings working at home. Reliable, friendly person sought, prefer grad student, non-smoker. Inquire at 449-8928.

**REAL ESTATE** opportunity. Studio condo 2 blocks from campus, only \$2000 cash to move in. Contact Victor Herrell 449-5030. See ad on page 6 for details.

### GENERAL—

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## Christmas Tea

All undergraduates are cordially invited to the Master's Christmas Tea on Thursday, December 6 between 2:00 and 4:00 p.m. in the Master's Office. Come and get an early start on your Christmas calories.

## Open House

All students and faculty are invited to a Holiday Open House sponsored by the Alumni Association. The place is the Alumni House, 345 South Hill and the time is 5:00—8:00 pm on Thursday, December 6. Refreshments will be served. Come one, come all!

## Salvador Refugees

Refugees from El Salvador will describe their experiences, and there will be folk singing and a showing of the film *Roses in December* at a special program on Tuesday, December 4, at 7:00 pm at the Newman Center, SW corner of Hill and Green Streets.

## Elementary Greek

Professor Mac Pigman will offer Elementary Ancient Greek winter and spring quarter. Anyone who would like to take the course should contact him in room 203 Dabney Hall or on extension 3601.

## Co-Ed Triples

The Caltech Men's Volleyball Club is pleased to announce yet another installment of its ever-popular series of co-ed triples volleyball tournaments. The tournament will be held this Sunday, December 2nd, at the Caltech gym, with the festivities starting at the ungodly hour of 8 am. Men, women, grads, undergrads, faculty, staff, and players of all abilities are invited. Teams will be formed the day of the tournament, and prizes will be awarded to the first and second place teams. Call Chad at JPL extension 4253 to reserve your spot, or just show up Sunday morning. See you there!

## Going Home? How?

If you are planning to go home for Christmas, and are in need of rides to either the Huntington or Hilton to catch the Airport Bus to LAX, please contact The Caltech Y office as soon as possible to enable Julie, Huston and Nancy to coordinate transportation schedules. Thank you!

## Jobs

The Caltech Space Radiation Laboratory needs several students for computer programming jobs now. Apply now and avoid the spring crunch for summer jobs. Please check our listing with the Placement Service.

## Attn: Grad Women

The Soroptomist International of Los Angeles is offering its annual fellowship to an outstanding woman graduate student. This student must be a citizen of the United States, a resident of California, and enrolled at an accredited institution of higher education in Southern California. For further information please contact: Career Development, 8—31, x6361.

## Steps to the Stars

Mankind may move into the solar system and then on to interstellar colonization. This will be the emphasis of a lecture entitled "Steps to the Stars" to be given by Eric Burgess on Saturday, December 8, at 7:00 pm at JPL's Von Karman Auditorium. The lecture is free and the public is invited. For more information, call (213) 374-1381.

## Break Out

Tired of worrying about finals? Get down at Winnett Center, tonight at 8:00, for some fast-paced DANCING action. Special guests from off-campus will offer a change of pace to ease you off your feet. Free admission, food, and drinks! Sponsored by the Rud-dock Frosh. Funded by ASCIT and the MOSH.

## Gleeful Singing

The Men's and Women's Glee Clubs join with an instrumental ensemble and Chamber Singers to celebrate both Christmas and Hannukah in a new holiday show, "A Star for Each, A Celebration of Miracles." Performances are scheduled for Friday, Nov. 30 and Saturday, Dec. 1 at 8:00 p.m., and Sunday, Dec. 2 at 4:00 p.m. in Beckman Auditorium.

Tickets may be purchased at the Caltech Ticket Office. For more information, call campus extension 4652.

## Undergrad Women

The Women's Group will be going out to dinner, Saturday Dec. 1 at 5:00 pm. All undergraduate women are invited to come and dine out together, for an evening of conversation and female company. Bring your own money and meet at the Fleming Cannon at 5:00 on Sat. afternoon.

Anyone with any questions should call Felice at x6171. I hope to see you all there. Where we go depends upon who shows up.

## Free Money (Really)

The Student Investment Fund has \$4,000 to disburse this year to campus clubs and organizations. For more information or for application forms contact Mark Adams or Mike Curtin at x6182.

## OWC Winter Party

The Organization for Women at Caltech presents a Winter Holiday Party on Thursday, December 6 from 4:30 to 7 pm in Winnett Center. Enjoy good food, good drink, good people and sing carols with the Women's Glee Club. Open to all. No admission fee, but everyone is encouraged to bring some contribution to the feast of food. RSVP appreciated, along with an indication of what you can bring. Contact OWC, 104—6.

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To allow you the opportunity to apply for overseas employment, we have researched and compiled a new and exciting directory on overseas employment. Here is just a sample of what our **International Employment Directory** covers.

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