

# LIGO Project Funded

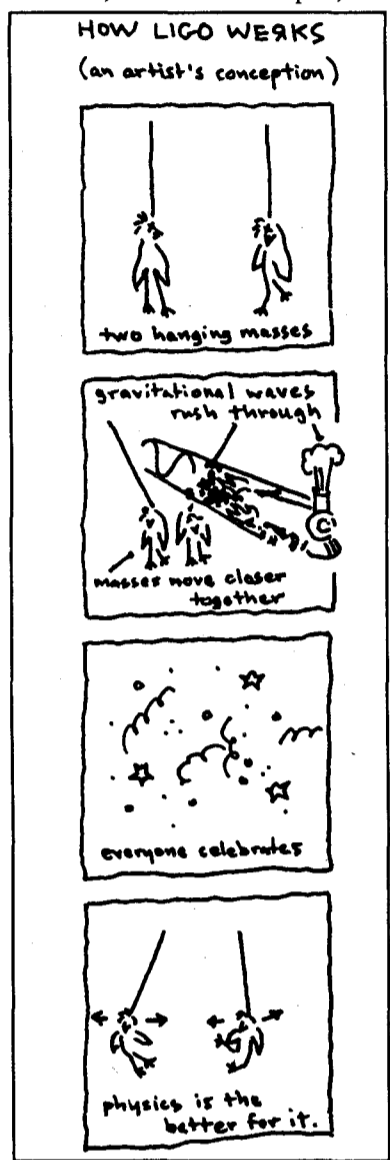
by Jonah Michaud

Cataclysmic explosions. Cannibalistic black holes. Neutron stars locked in a deadly waltz. All this and more will soon be beneath our careful scrutiny with the christening of LIGO five years from now. LIGO, the Laser Interferometry Gravitational-wave Observatory, is just what the name says it is: something with which to observe gravitational waves. These elusive undulations are older than rock and roll: they were predicted by Einstein in 1916, but until recently, the technology (and funding) was not available to observe them. Funding for LIGO was included in the budget bill signed by President Bush on Oct. 28. It is expected to supply about \$23.5 million for the first year, although the actual amount may vary somewhat as the NSF (National Science Foundation) reassesses its priorities. The total price tag will run about \$211 million.

LIGO works by detecting the change in distance between two masses, each at opposite ends of a 4 kilometer tunnel, and each weighing as much as a small automobile. There are two such tunnels, each with its two masses, at a right angle to each other, forming a huge "L"-shaped structure. When a gravitational wave zooms by, it shrinks the distance between the two masses in one tunnel, and lengthens the distance between the two in the other. This change in distance can be measured using laser interferometry. The reason such long tunnels and large masses are required is that gravitational waves do not interact very strongly with matter. In one respect this is convenient: the waves cut through Earth like a hot chainsaw through butter, and LIGO can see just as sharply downward as upward.

The \$211 million purchases exactly two LIGO installations, which will be situated on opposite sides of the United States. Two

detectors is the rock-bottom minimum needed to verify a gravitational wave: if a true gravitational wave passes through the Earth, both detectors, 2400 kilometers apart, will

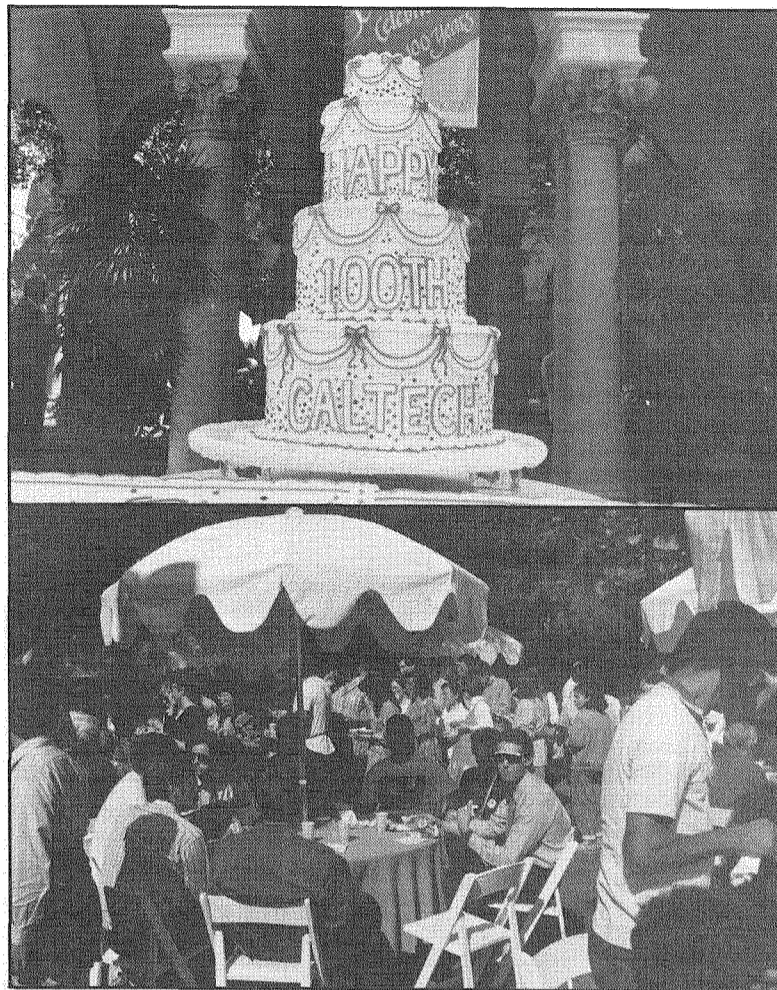


jibber identical gibberish within a fraction of a second of each other. However, with only two detectors, the source of the signal cannot be determined absolutely. We'll know a gravitational wave hit us, but we

won't know what direction the blow came from. Four detectors would be much better—the source could be located to a point in the sky. Fortunately, the leaders of LIGO anticipate that LIGO detectors will eventually spring up all over the world, functioning together in harmony (just like the existing Deep-Space Network.)

But will it work? Is LIGO's hearing acute enough or is there even anything for it to listen to? The answer to the first question appears to be yes, since a working small-scale LIGO facility already exists here at Caltech, next to the Central Engineering Services building. As for the second question, LIGO can theoretically detect a supernova anywhere in the galaxy, two orbiting neutron stars at 200 million parsecs, and two interacting black holes at up to 4 billion parsecs—which is the farthest the Hubble can (or was supposed to) see. For comparison, the Andromeda galaxy is 600 thousand parsecs distant. So if news of anything really remarkable reaches us, we'll be sure to know it, even if the source is rather distant. More importantly, as deputy director Stan Whitcomb was quick to observe, the information LIGO provides will not only be additional but "orthogonal." In other words, LIGO will supply us with information that standard telescopes could never give. Is LIGO worth the money? That depends on one's perspective, although at only \$211 million, the cost of LIGO pales in comparison to a single \$870 million B-2 Stealth Bomber (which definitely isn't worth the money.) For the common man, funding for LIGO is probably desired as much as a swift kick to the shin, but for Techers, at least Techers majoring in physics, it's damn exciting.

The author is indebted to Dr. Stan Whitcomb for all information contained in this article that is correct.



## Caltech Centennial

by Celene Chang

The Caltech Centennial Birthday Party took place last Friday, November 1. The celebration started at 11:30 a.m. on the steps and lawn in front of the Athenaeum. Over 1,000 staff, faculty and students were expected to attend but the crowd was larger than expected. Chairs and tables with umbrellas were put on the lawn. Orange and white balloons were used to decorate the place and a balloon arch was set up on the steps of the Athenaeum.

Entertainment started off with the Caltech Jazz Band performing at 11:45 a.m. The Caltech Jazz Band performed with Angie Whitney as their featured singer. A sketch artist was present. Although he was able to produce 120 sketches in two hours, there was still a long line of people waiting to be drawn. Moreover, an Origami paperfolder dressed in traditional costume has also been invited. The Caltech Beaver also appeared.

Free refreshments were available. Hot dogs, ice cream, lemonade and ice tea were served. Of course, there was also the giant birthday cake. Four serving stations was set up with servers.

The main program began at 12:30 p.m. President Tom Everhart delivered a brief speech. In his speech, President Everhart said that this birthday party would end the year long celebration of the centennial of Caltech. In the past, both the science and the humanities departments were committed to create a bright future and to provide inspiration. Caltech would have to continue to communicate with the public, because Caltech needed the support from the public. Many special things happened to Caltech last year. For example, the fastest supercomputer in the world was installed. Commencement was extremely successful. Many offices have been computerized. And just two weeks ago, President Bush approved the budget for LIGO. The students and the faculty continued to win awards and Caltech had been gaining much notice from the public. The public was impressed by how well kept the campus was. Then Professor Sunney Chan, the Chairman of the Centennial

Committee, explained how the birthday party came to being. He wanted it to be like a family party, and he was glad of the good weather. When he was MOSH, he learned that whenever there was free food, there would be flocks of Caltech people. Then there was the cake-cutting ceremony and Professor Chan cut the birthday cake with a sword. The band played "Happy Birthday" and the audience was showered by colorful confetti. The cake was then served to the community.

There were many give-aways and prizes. 3,000 birthday badges were given out upon arrival. Everyone was able to get one or more. Prizes to celebrate the centennial of Caltech included 140 mugs, 120 sweatshirts and tee shirts of various sizes, twelve visors and one Seiko clock. Other exciting prizes included a one hundred dollar gift certificate for the Bookstore, one night for two at the Albert Einstein Suite at the Athenaeum and prime rib dinner for two at the Athenaeum on Wednesday evening. There were also prizes that would involve going off-campus. These included dinner for two at the Ritz Carlton, one night for two at the Pasadena Doubletree, and one night for two at the Pasadena Hilton. Four tickets to the Universal Studio tour, seven sets of twenty slides each covering JPL spacecraft encounters, two Cross pens and two tickets to Disneyland were also some of the many prizes. There was a display board showing pre-selected winning numbers and this was manned by volunteers. Those who did not win were able to participate in the second round of the lucky draw.

Flyers were sent as invitations and the lottery numbers were on the flyers. Star News was invited and there was a reporter to cover the event. Memos were sent to supervisors urging them to allow staff employees longer lunch periods to attend the birthday party.

Much effort has been put in to organize this event. Many attended and it is hoped that they had enjoyed the program and shared in the joy of celebrating the centennial of Caltech.

## Student-Faculty Conference

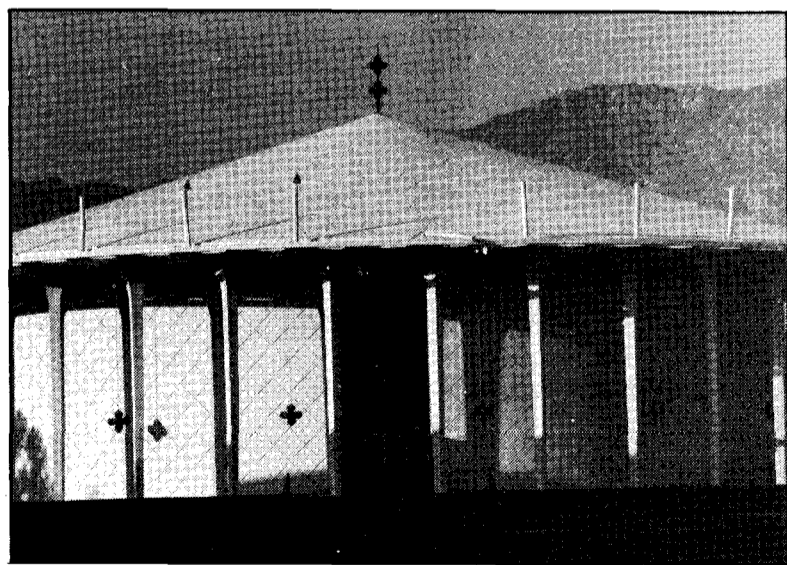
by Maneesh Sahani

and Pamela Ashire

Welcome to the Machine. Insert your add card here. Expect the most intense period of work in your life. The Machine has provided more than adequately for your basic needs. Pursue other interests only at your own academic peril. Expect nothing more. Please refrain from dissing while in the Machine. <crash> The screen fades; in the dim reflection on the CRT one can barely make out the shadowy figures of intrepid activists, somewhere in the bowels of the Caltech campus.

Not that we are advocating dissent, but seriously, someone has to talk about the quality of life around here. More to the point, someone has to do something about it. Try counting the number of times an embittered cog around you says "Life sucks."

For instance, wouldn't it be nice if we had an ATM on campus? or if the faculty were accountable under the Honor System? or if the curriculum actually encouraged undergraduate initiative and research? or if we all had private



Beckman Auditorium mysteriously disappeared last week, and was replaced with a giant birthday cake complete with candles, in honor of Caltech's Centennial Celebration.

phones to use? or if we had a functional community center?

A bunch of us sat down around the conference table (or in the conference hall) last year and talked about what could be done. As a result there are reams (and many cassette tapes) full of ideas. Someone has to do something with those. And even those reams aren't the last word. Someone has to come up with new ideas.

We think you're just the person for the job.

Whether you're here to study,

teach, or work, if you actually care about your life at Caltech try wandering by the Master's Office (ground floor Winnett) at 4:30 PM on Wednesday, November 13. We'll be talking about following up on the ideas from last year's conference and asking how best to continue the good work.

If you're busy next Wednesday, don't despair! We'll be meeting there every week, from 4:30 to 5:30, in the IHC room.

See you there.

Photo by Rajan Ranga

## letters

## Student-Administration Relationships

To the Editors:

As people who have made a commitment to work with undergraduate students at Caltech, it disturbs us to see the growing mistrust between the administration and the students. We have seen this happening with the situation regarding David Goldberg. After reading the letter in last Friday's Tech, and speaking with numerous students, we know that many students are concerned with the situation and frustrated with their lack of factual information.

We are not able to discuss specific information about any student conduct matter because of confidentiality. More specifically, this means that student information that is considered private is not made public unless the student chooses to do so. This includes conduct, academic, health and counseling information. This is a matter of personal and professional responsibility as well as a legal obligation we have. Although this is frustrating in some situations, we believe it is important for students to know that their personal matters will remain confidential.

After discussion with the IHC on Wednesday evening, we are trying to determine a format to enable us to discuss additional information regarding this situation. The House Presidents suggested several options. We are looking into the feasibility of these and are interested in hearing other ideas you have. Your concern over student-administration relationships is shared by us as well.

Kim D. West

Director of Residence Life

Dr. David Wales

Master of Student Houses.

To the Editors:

Last week the *California Tech* published a letter entitled, "Regarding David Goldberg" and, in a footnote, the editors encouraged a response from the administration. Throughout my years in Student Affairs both as Master of Student Houses and more recently as Dean of Students it has been my firm policy not to discuss individual student problems in public. I continue to believe that this policy is in the best interests of all students.

Christopher E. Brennen  
Dean of Students

## Discussion on Credulity

If you are not as gifted in mendacity as you would like to be, consider coming to Baxter Lecture Hall on Tuesday November 12 at 7p.m. The question of how far credulity be stretched will be examined.

To begin with, there will be a free

showing of the documentary *Cover up: Behind the Iran Contra Affair*. Watch carefully as the pros in the White House, CIA and the NSC pull the wool over a nation's eyes. Surely there are lessons to be learned here. Sit comfortably as your favorite technique in fabrication is fully explored. Favorites such as: pile it on thicker and thicker; see, speak and hear no evil; who, me?; and my personal favorite, "I lied. So what!"

After the show there will be a lecture given by Father Bill Davis, co-founder of the Christie Institute. This will be a perfect opportunity for those who do not read the technical literature to catch up on the latest advancements in myth making. This evening is bound to take you to the forefront of technology in verbal creativity. A question and answer session at the end of the lecture might even suggest new avenues of research. This rare event should not be missed.

Larry Kolasa, 253-37

## A Final Word on Motorcycle Helmets

Dear Editors,

I have in my hand a copy of Elliott Andrews' rebuttal to my reply to Marty Gould's letter regarding the mandatory helmet law shortly to come into effect. It is obvious to me that this is quickly degenerating into the kind of shouting match that tends to prevail in discussions of this topic. First, let me say to Marty, I respect you more knowing that you have ridden for some time. However, I also have ridden for seven years, on a variety of bikes, logging some 70,000 miles or so in several different states. I am sorry to say that I found your letter highly inflammatory, but I and many other riders I know did.

As to Mr. Andrews' claim that I distort the facts, I claim that his are also distorted. This is precisely the cause of the current mandatory helmet law debate, as neither side will accept the other's facts.

First, you state that open helmets are readily available. I have been looking for at least three months for a reasonable such helmet. I have yet to find anywhere that stocks such helmets on a regular basis, and am going to be forced to get the rather dubious route of purchasing one mail order. Also, that cost of 100 to 250 dollars IS a lot of money to me, as it represents a sizable portion of my yearly income. Most students do not have this kind of money to toss around.

You also claim that full-face helmets do not noticeably impair peripheral vision or hearing, and that this has been discredited and proven untrue. Regardless of what you may believe, or what your studies say, this statement runs directly counter to the experiences of every rider I know, including those

who do advocate helmet use. I do not know anyone, yourself excepted, who wears or has worn a helmet that doesn't think it impairs their vision and hearing. Claiming that placing a heavy layer of plastic, fiberglass, and padding over your ears improves your hearing is clearly ludicrous. As for the wind noise at over 30 mph, having ridden many bikes, I can say that the degree of wind noise is highly dependent on the style of bike ridden. Besides, around town one generally does 30 mph or less. Also, you DO need your peripheral vision and hearing in order to safely drive a car. The driving conditions are not as dissimilar as you might try to claim.

I do not accept your claims that statistics prove that wearing a helmet is safer. I do not, however, claim that they prove anything at all. ALL such studies are inherently flawed due to selection effects and due to the fact that the police DO NOT KEEP accurate records on helmet use during accidents. As for the need for protective clothing, my argument is that it is illogical to require riders to protect their heads, while it is still perfectly legal to ride in shorts and sandals. Having seen the injuries of many riders, and what they were wearing, I can say that your head will be of very little use if the rest of your body doesn't survive.

Finally, I don't need you, or the federal government, to tell me what decisions I should make. Your statements essentially amount to stating that I am free to choose, as long as I agree with you. I can make

## Ascit Bylaws Explained

Last week three proposed amendments to the ASCIT bylaws were printed. The following is an explanation of what each of these changes really mean and why they are being proposed.

Currently Article VIII, Section 5, Paragraph 1 reads:

"Each voter may cast one vote for each office. In order to be elected in the initial election, a candidate must receive an absolute majority of all correctly-cast non-no votes. If in any election, no candidate receives more than the number of 'no' votes, then there shall be a vacancy in that office on the Board of Directors." The proposed changes would:

1. Remove the inconsistency of a situation where a candidate receives less than the number of no votes and a majority of the non-no votes. Currently he is elected and a vacancy exists in the office.
  2. Allow for the fact that ASCIT elects officers that are not on the Board of Directors.
  3. Eliminate the need for an election every two weeks in the event that 'no' continues to win in an election. (See Section 7)
- Currently there is no Section 12. The proposed Section 12 would allow for a new election following a victory by 'no', if there was enough voter interest in having a new election for that office.

## Editorial

## Jon Liljeblad

For those of you who aren't quite up on current events, Magic Johnson announced yesterday at 3 in the afternoon that he tested HIV+. With the conference room of the Great Western Forum filled to capacity with media, he made his statements regarding his condition and his immediate retirement from the Los Angeles Lakers.

This has shaken up the entire sports community. For such a national figure—for indeed that is what Magic Johnson has become—to be victim to this disease is a shock to the status quo and a major hit to the public perception of an American athletic figure.

So what now?

Without a doubt, this will certainly make waves in the public mind. People will talk about it, and they will think just a little bit more. That an individual whose talents propelled him outside the realm of just mere basketball to unofficial international representative of American culture now finds himself HIV+ points out the vulnerability of the entire population to anyone in the least associated with athletics—if even Magic Johnson can get it, then so certainly can we.

Mr. Johnson says he will now dedicate his efforts to publicizing his condition and letting people become aware of its powers. In particular, he asserted that he will aim primarily at the youth.

This is a revelatory and disturbing event. In many ways it points out the nature of the national attitude towards HIV and our naivete' about it. Indeed, Johnson himself admitted thinking that: "I didn't think it could happen to me...I thought it happened to other people...Just naive I guess."

Hopefully he can help eradicate thoughts like this from the mind of people throughout the country. Hopefully, with his stature and his talents, he can make inroads into parts of society that up until now still viewed HIV and AIDS at arm's length and with little regard.

For us Magic Johnson was in essence the paragon of the American athlete—talented, legendary, charismatic, invincible. For us he was and is an inspiration both as a point guard on a basketball court and as a human being who was well-liked by people he met everywhere. He showed us dedication, skill, and sportsmanship.

Hopefully now he can show us the dangers of the virus that is rapidly becoming one of the most insidious the modern world has encountered. From Showtime to HIV+. Stunning. Absolutely stunning.

my own decisions. Since this has degenerated to a point where it will merely result in unsupportable arguments and accusations, I will write no more on it, seeking to spare the

reader of our ranting, and ourselves of the ensuing degradation.

Respectfully,  
Jason Surace

tion Committee member, or look in your little t. Thank you for your time and please remember to vote on Monday.

Lanny Boswell  
ASCIT Election ChairTHE CALIFORNIA TECH  
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November 8, 1991

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## FRIDAY NIGHT ASCIT MOVIE

Blake Edward's

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"Sex anyone?"

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## Zeitgeist 2: The Meaning of {\it Life}.

by Maneesh Sahani

Browning was wrong. God has left his heaven. He has taken up residence in the *Tech* editors' office. And all is not well with the world. Many of you were no doubt confused by the mindless unfocused scribbles that inhabited the last edition of *Zeitgeist*. I deny all responsibility. A thunderbolt struck the last the last two paragraphs of the piece. The very paragraphs that purported to tell you just where my maniacal ramblings were leading. Ours not to wonder....

I promised last week only that this column would be sporadically weekly. This is one of the sporadic weeks. I do not have the time to complete the line of thought I began a week ago, but I will try to bring the ramblings of a week ago into focus. My argument was that in at least one rather profound situation I have been forced to acknowledge the value of a Grand Goal from which smaller matters could be derived. In particular, I could defend an ethical system with greater certainty if I knew the Meaning of Life. Having acknowledged the utility of such a

goal in one sphere I must then at the very least consider it's value in others.

To quote the missing two paragraphs....

I told you all this because I and many others spent a lot of time last year in a conference designed to discover what should be done at Caltech. I and many others expend many cubic meters of air daily trying to convince various people, students or faculty or administrators, that something should be done. Our task would be easier, I contend, if we knew what the meaning of Caltech's life was. If there were a Grand Goal that all decisions at Caltech were made to advance, we could deduce these decisions by whether or not they furthered that goal.

It is to argue for the creation of such a Goal; or, if it already exists, the condensation and dissemination of such a Goal, that I write. I would like to see the Caltech "Statement of Purpose".

Hence the ramblings.

Another matter needs to be addressed. I do not know the Meaning of Life. The meaning of {\it Life}, on the other hand, is clear. I use the {\it TeX} typesetting system to write these articles. The editors do not. In {\it TeX} {\it Life} will produce emphasized text. That is, *italic* text when the main piece is in roman and {\it vice versa}. Simple? Not when God's about.

## How Fall got its Name

by Zack Berger

Finally, you can see why the fall term got its name. There is a nip in the air. Where I used to live for a little while, in New Jersey, and where my grandparents live, in Colorado, it's not a nip—rather, it's a bite, with sharp teeth and clammy hands which give you goosebumps. It is a three-month, closed-book exam—and Nature's collab policy is very strict.

As the temperature plummets into the merely chilly range (Californians' attitude toward cold reminds me of that held in Eastern Kentucky counties, in which schools are closed when a thirty-second of an inch of snow magically—or so it seems—appears on the ground) shoes have to be worn, cold water in the shower is met with annoyance rather than relief, and the impetus to stay in bed is even more present.

But once I get to class—here I shift into first person, because I don't know what it's like for other people—my mind moves faster and my comprehension increases by

leaps and bounds. Of course, if my comprehension is zero to begin with, then it's no use. But thinking is coming more easily to me now. And that's helped by how the campus looks during this warm-up (or cool-down) for winter.

The air is sharper, the buildings look more imposing, and it's an overload of disappointment not to be able to see the mountains. It seems I can walk places more quickly than I could during the past few weeks.

At night, as always, the sweet smell of Lysol—and, off-campus, the stench of manure—hangs in the air. And, as you walk, the sprinklers go off in front and back and on either side, like the cannons in "Charge of the Light Brigade," reminding you just how driven by convenience is Caltech's commitment to water conservation.

But fall, as you have noticed during the preceding paragraphs, quickens optimism and leaves pessimism behind—to catch up during the occasional moments of ennui

which 1b, 41, Phys, APH 9, and my other classes bring. But classes are inside the buildings. Once you walk outside and feel yourself among the buildings, the feeling of fall surfaces again. It helps that the buildings have names, like people—indeed, if we were to meet today someone named, say, Beckman (sorry Mabel and Arnold), we would think that they were named after the buildings, and not the other way around. So these buildings have personalities—Winnett, dowdy and a little shy; Bridge and Sloan, low-slung and unassuming; Millikan, a big unrubbable nose sticking up into the Pasadena sky; and the noisy, friendly Beckman family.

I'm noticing the passing of seasons, and although my classes do not—their lectures and recitation sections pop up continuously—perhaps, at the end of another century, the buildings, convinced by the cumulative thousands of entering and departing students, will notice the change in the sky above them and the grass around them.

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### Jim's Journal

Today I decided to write down some addresses of people in my new address book.



I wrote down my mom's, dad's, grandma's...



Then Tony's, Ruth's, Steve's...



I suddenly realized that I hardly knew anybody at all.



Jim can be an editorial along with the best of them, ya know!

## CRIME AND INCIDENT BEAT

Crime tip: Remember to lock your bicycles (even if you will be gone for a few moments).

10/29 When the mail was being delivered around 1:30 PM, the deliverer discovered that the mailbox lock and inside latch were missing. Value: \$20

10/30 The victim left his office for a minutes. When the victim returned, he discovered that a brown, leather pouch was missing. Value: \$50

10/31 The victim's vehicle was parked in the west Wilson parking lot overnight. When the victim returned to the car at 3:15 PM, the victim discovered that the car had been broken into and several items had been removed. Value: \$400

10/31 The victim placed his belongings in an assigned locker in the men's locker room in the Brown gym and proceeded to take a shower. After the victim returned from the shower, he discovered that the lock and his belongings had been missing. Value: \$23.50

11/2 The victim was relaxing in the FLEMING lounge when a family approached him. A member of the family asked the victim when is interhouse. The victim told the family that interhouse has been cancelled. After that the family looked around the lounge for awhile and then left.

11/5 The victim's bike was parked in the rear of his residence. When the victim returned, the bicycle was missing. Value: \$100

11/5 A suspect tried to remove an oxygen sensor, which looked like a radio, from a car in the Chester parking lot. The suspect decided not to steal the sensor when the suspect discovered that it was not a radio.

11/5 Students reported a burning smell in Baxter Hall. After a complete search of the building, it was discovered that the fan belt on air handler #1 was rubbing against the casing sending some smoke throughout the building.

Total value: \$593.50

### Jim's Journal

I was walking outside today when I noticed a squirrel by a tree.



He looked at me, then ran up the tree.



Then I came home and saw Mr. Peterson.



She dashed out the door as soon as I opened it.



Sonny Hughes

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All Inside Worlds must include the author's name. Inside Worlds can only be written by current undergraduates. The editors reserve the right to edit any or all parts of an Inside World. No libelous material will be accepted. It is the author's responsibility to check material written about a person to see if they consider it libelous. Please submit a 3.5 inch Macintosh Disk by 8:00 PM Wednesday.

This Week's **Inside World** was written by:  
**Blacker:** Ben Smith  
**Fleming:** Jessica Nichols and Jeff Pasquino  
**Lloyd:** Martin Lin  
**Lloyd2:** Keith Schneider  
**Ruddock:** Hans Hornstein

Blacker	0	0	2	0	1	3
Dabney	0	0	5	0	0	5
Fleming	3	1	3	0	2	9
Lloyd	1	3	1	0	4	9
Page	0	0	4	1	0	5
Ricketts	4	2	0	0	0	6
Ruddock	2	4	0	0	3	9

## BLACKER

Once upon a time in a far (or not so far) away land, there existed a continent which rose out of a sea of heathens and was called Caltech. Caltech had many kingdoms which constantly warred among themselves. And life went on.

Then the day come when all the kingdoms made a temporary cease fire to allow the peoples of this continent to gather together in peace and harmony and celebrate the 100th millennia of the Caltech. Even the fiefdom of Applied Math, located in the broken plains of Firestone, stopped its battles with the peoples of the Seven Undergraduate Kingdoms, to allow them to attend the party. (The war resumed immediately afterwards, and the Commander of the Firestone AMa 95 Shock Troops, the dark Lord Cohen, was happy). Meanwhile, during the celebration, all were happy.

Little did the people know, but a band of four Antisleep Vampires had come to the continent. True Sleep Vampires, beings which distribute their sleep on others so that the Sleep Vampire can stay awake indefinitely, have been know for some time. However, Antisleep Vampires suck sleep out of

all others within a certain radius, causing the people to be eternally tired, but not be able to sleep.

The people never saw the Antisleep Vampires, for the people never looked up. Each vampire latched itself onto a person and followed them home. One took the highest point in Firestone as its lair. One followed a student into the kingdom of the Church and Hovse of Blacker (ttboai). The whereabouts of the other two are unknown.

As it is well known opposites attract (but don't necessarily annihilate), so it wasn't surprising when an Antisleep Vampire followed Lieven (a true Sleep Vampire) into the Kingdom of the Church and Hovse of Blacker (ttboai). The evil behemoth and its twenty or so progeny took residence in the staircase between Swamp and Pub. Immediately, the Vampire showed it's true face and began to suck sleep from the people of Blacker.

Then to compound the Kingdom o' Blacker's problems the Kingdoms of the six Academic Departments (Physics, Math, Chemistry, Humanities and Social Sciences, Biology and the multifaceted Engineers) resumed their war of conquest against the Seven Undergraduate Kingdoms. The Academic Departments released their elite forces, known as Midterms, and casualties on the undergraduate side were great.

Greatly exhausted due to the Antisleep Vampire, the people of Blacker took immense losses, especially from the AMa 95

Midterm. The Air Cavalry Squadron of Blacker Armored Division took the greatest losses. They haven't been to Venice beach in a week!

Seeing that they wouldn't last long, the Blacker Armored Division bravely assaulted the monster's lair for two days. In the end all of the monster's offspring were dead, but the foul beast triumphantly remained in the staircase.

Some of the people of Blacker, due to their sleep deprived state, watched hours of the Simpsons back to back. Many wandered aimlessly until caught in the vortex of a gravity well. The Antisleep Vampire, now deprived of its minions, took to directly attacking Moles in the staircase and lurking just above people's doors. The Moles gathered for another attack, but the beast was only displaced from its roosting place

The Blacker Armored Division temporarily withdrew and concentrated its efforts to offset the midterms. Then on Monday night, 4 November 1991, some of the people of Pub and Swamp discussed tactics and strategies. Both previous attacks had been failures. Many lay in a stunned state. Losses from Midterms were mounting. Blacker could not hold off the Midterms and the Vampire much longer. The Moles, heartened to see that the Antisleep Vampire in Firestone had been slain previously in the day, decided that with support, the great Damage Control himself, the best staple gunslinger of Blacker, Bevan Bennett should take on the monster singlehandedly. Then the Moles told Bevan what he was to do.

"Go to Hell," said Bevan, but he went to the Damage Closet and strapped on his trusty staple gun. Bevan calmly approached the Antisleep Vampire. He whipped out his staple gun and shot the beast. The monster exploded and the remains of the corpse plummeted to the floor. There was much rejoicing.

Bevan, realized the magnitude of his deed (and then adrenaline kicked in), celebrated his victory in a most precipitous manner.

With the great Antisleep Vampire of Pub dead, the residents of Blacker went to sleep, the first real sleep in 82 hours. Blacker resumed military operations a few hours later.

On Tuesday the Kingdom of Ricketts, violating a treaty dating from the reign of King David Kim, suddenly attacked Blacker with artillery fire. The Divisional Artillery Battalion responded. Soon various fruits fell in both courtyards. Later in the day, the Divisional Artillery Battalion practiced with longer ranged weapons. Artillery fire was exchanged throughout the week.

# BLACKER

The combined forces of the Seven Kingdoms, now rejuvenated with the addition of Blacker's forces, set forth in great battle with the Midterms. (Commanders kept the forces of Ricketts and the Blacker AmdDiv on opposite sides of the battlefield) By Friday, the Hovses beat back the foul Midterms of the Academic Departments. All that is left was mopping up and tending to the wounded.

The Academic Departments withdrew to lick their wounds and prepare for the next assault, called Operation Finals, scheduled for mid December. Relative peace descended upon the continent of Caltech. (Except for artillery duels between Ricketts and Blacker) -Duke Zonker Harris (of Blacker)

# FLEMING

Welcome to Fleming House - by Mr. Subliminal

As we start our tour from the lounge (frosh suck), we see some of our lovely first year students (frosh suck) playing pool. Here's Phone Phrosh (buy some real shoes) playing yet another game of frosh pool (get a life!!) with himself (\$80 a week ain't bad).

Entering into the foyer (sodas cost too much), we make a right-hand turn and climb the winding staircase to Alley2 (alley screw). This alley contains only singles (many doubles -poor Frees, Art, and the Hat) and many closed doors (HOT SEX). The Alley 2 bar has become the social mecca of Fleming (NOT!!!) for a modest price for members (upperclassmen = free). As we pass the UCC's room (you spent \$1000 on that??), we can hear the Ride (barely) on our way to Alley 3 (No man's land).

The frosh in Alley 3 (there are seven frosh there ??) have wonderful guidance from their upperclassmen (build Interhouse, Joe!!) and a most scenic view of our neighbors to the South (close the curtains, quick). By far this is the loudest, roudiest (quieter than Lloyd during Finals) alley in the house.

We continue on our tour, hanging a left and ascending into Alley 4 (RA's Alley stands for Random Abnormal Alley). The home of our illustrious Ath 1, and the rule of our kinder and gentler dining room (can you say "Nazi Dining Room??") boys and girls) as well as many upstanding (HOT SEX — STEEVIE, I'm tired!!) members of the house (closed doors everywhere).

Turning the corner, we enter Alley 5, which holds the entire Social team (Soc2's a figurehead) and the Ath 2 (Mr. "I have no money but I have 128 watts peak power"). Avoiding lower 5 (Cliff and Norm—number moving off campus = 3 and counting), we pass through Rm 59 (hallway), saying hi to all of the visitors (but enough about pageboys) and enter Alley 6 (the Alley of the Gods it's not) through the Vice Prez's room (Hobble Hobble) past all of the officers (think they're in charge). Checking on the frosh (squad's alley) we see that "Roxanne" is still playing (get a new CD). Avoiding lower 6, we enter Upper 1, with Phone Phrosh eagerly awaiting our call. Eight-and-a-half (two frosh schmos and a transfer) are playing with their fish (yeah, right guys, get a better excuse) and awaiting another soccer game. Speaking of which, in case you were at the last Soccer game, or have ever been to Cal Lu, check out..

The Top Ten Things That Go Through Thor's Mind..

10. Ball..
9. Kick
8. Kick ball
7. Ugh.
6. Ball
5. Upfield
4. Kick ball upfield
3. Kick.. ball.. player .. kick player??
2. Grunt .. Ball .. Ball
1. I am Thor, Viking master of the Cal Lu Arians

We try to bypass lower 1 (HOT SEX in the library!!), but can still hear another top ten list in the making...

Top Ten Reasons Waiting Is Just Like (HOT) Sex by Cathy

10. TFM doesn't make you wear rubber gloves
9. You get paid to wait
8. It takes at least an hour
7. You get a meal out of it.
6. You do it at least three times a week
5. You'r all wet when you're done
4. Everyone can hear you (watch??)
3. The crowd doesn't just applaud, they bang furniture
2. The more the merrier
1. You hear bells ring at the climatic moment.

As we depart from Fleming, we pay homage to the Mighty Big Red Cannon (phallic symbol - HOT SEX??) and leave you for this week. But, don't forget, Santa's watching, and ... page SUX!!!!

—mom and the guidmeister

# LLOYD2

An eerie silence roared throughout a certain dining hall at a not-so-average institution nestled somewhere beneath a blanket of pollution on the western coast of a particular continent inhabiting an otherwise rather dull planet circling a small star etc. (you get the idea). To the casual observer, the absence of sound might not have been so striking given that the tableware had been removed from the reach of Rohit the Loud, but there were more intricate factors at work on this historical occasion. You see, it was Tuesday and Don North (DO^absent) had not yet arrived to fulfill his duties as the commander of *Lost and Found Corner*. One could sense (nay, feel) the tension growing. How would this dilemma be resolved? Fortunately, when it seemed that I could stand it no longer, John Baker came to the rescue [this guy is too nice... He volunteered to be work chairperson, and he left an immense receptacle of free Halloween candy outside his door. What more could one ask from but a lowly frosh?]. "Lost and found corner is now open!" Phew! I thought I might not live to see this moment. But I digress...

"Christy/Jen, have you lost something?" "Yeah, we wrote an *Inside World* last week, but it seems not to have been published." What happened? Was there an unseen cataclysm that disrupted the magnetic density of the transportation medium (3.5" disk)? Did the copy-card-reader-from-the-SAC-copy-room thief return (everyone knows how much crack the *Lloyd House Inside World* can be traded for)? Did some unnoteworthy administrator mistake it for the initial step of a grievance procedure? Did the Coffeehouse cooks want to add some flavor to their hamburgers? Did an irate house president subdue the *Tech* editors (aka spineless wimps) [Yeah, fuck you, too. -Eds.] with Indian arm burns?

Well, one of the above happened (hint: her name isn't Emmeline). That's too bad, but it brings us to our next point...

"Hello, my name is Christopher Robin and I will be your host for today's edition of *Mister Robin's Neighborhood*. The word for today is **censorship**. Can you say **censorship**? I knew you cou..." SCHWACK! Uh... Sorry about that but Mr. Robin seems to have been knocked unconscious by a severe bullwhip blow to the genitals. A suspect sporting a black miniskirt report-

edly fled from the scene. But that's okay, we will just have to replace that time slot with...

The Frosh Limerick Corner

This week: Rohit

There now is a frosh named Rohit  
who likes his computer (and shows it),  
but of late he's been vexed  
for no slots has his NeXT,  
and Hyong wants to make sure he knows it.

Okay, enough of that. Well, what else has been going on? After innumerable shower wars, this author is covered head to toe with carpet burns. I guess I'll have to sit the next few out, huh, unless I want iodine slime poured on me. That is, of course, if the freshman ever gather the courage to try to shower another upperclassman. This doesn't seem likely since our warlords (who?) are never awake at the same time. Come to think of it, the frosh haven't really done anything impressive all year except putting



# LLOYD2



those candle things on the roof of Beckman. Maybe they'll do (or at least think of) something else interesting soon (then again, maybe not).

Actually, considering some of the other houses' for a moment, our frosh don't really seem that bad. Take those from Page, for instance. As usual, after a narrow victory in softball, the pageboys felt the urge to demonstrate the unison prowess. Amazingly, this event occurred just as I happened to be standing on the Page roof with a loaded garden hose. For some reason, though, these freaks never got close enough. I guess they just don't know what real fun is. I must give them credit, though, they did actually stand in the proximity of our courtyard instead of fleeing to Ruddock like last year's bunch.

Uh oh, my screen saver just kicked in. I guess that means that I have nothing else to say. I'm outta here!

-etalootpu

# LLOYD

It is a rare occasion that I would want to write an Inside World, and maybe it is appropriate that I have decided to take the lyrics of a song and "adapt" them to my purpose. After all, then, these are not really all my words. And I suppose that if I were to write in the style that has dominated for the past few weeks, or better yet, the past few years, then I should have chosen "Get In The Ring" by Guns N' Roses. But that would be too typical. Instead, I have picked "Civil War." To get the full effect, you should read this with the original music. So put on *Use Your Illusion II*, and think of your reality.

Civil Waugh

"What we've got here is failure to communicate.

Some men you just can't reach...

So, you have what we had here last week.

Which is the way he wants it.

Well, he gets it!

N' I don't like it any more than you men."\*

Look at our members fighting.

Look at our Lloydies crying.

Look at our members lying.

And I don't want to tell no more.

Look at the hate we're breeding.

Look at the fear we're feeding.

Look at the lives we're leading.

The way we've never done before.

Our hands aren't tied.

The people shift from side to side,

And the wars go on with brainwashed pride,

For the love of House and our student rights,

And all these things are swept aside

By bloody hands, we can't deny,

That are washed away by a Jenocide,

And we'll all hide the lies of our civil wars.

D'you say "What the Heck!"

When you wrote the *Tech*,

And tried to make it all better?

And in my first memory,

We were so happy.

An' I went numb when I learned to see.

So I hope the youth can forgive the old,

For makin' these things so damn awful.

And

I don't need our civil war.

It feeds the bitchin', and it does no more.

They call 'em "power hungry,"

But they don't do any more.

Ain't that fair?

I don't need our civil war.

Look at the shoes you're filling.

Look at the crud we're spilling.

Look at the House we're killing.

The way we've never done before.

Look at the doubt we've wallowed.

Look at the Lloydies we've followed.

Look at the lies we've swallowed.

And I don't want to hear no more.

Our hands aren't tied.

For all I've seen has changed my mind,

But still the wars go on as the weeks go by,

With no love of House or student rights,

'Cause all these dreams are swept aside

By bloody hands of the way petty,

Who carry the cross of hypocrisy.

And the House bears the scars of our civil wars.

I don't need our civil war.

It feeds the bitchin', and it does no more.

They call 'em "power hungry,"

But they don't do any more.

Ain't that right?

And I don't need our civil war.

Finally, I suppose it is fitting (if this is your illusion, too) to end with more taken words: the epilogue of William Shakespeare's *A Midsummer Night's Dream*.

If we shadows have offended,

Think but this, and all is mended,

That you have but slumbred here,

While these visions did appear.

And this weak and idle theme,

No more yielding but a dream,

Gentles, do not reprehend.

If you pardon, we will mend.

And, as I am an honest Puck,

If we have unearnéd luck

Now to 'scape the serpent's tongue,

We will make amends, ere long:

Else the Puck a liar call.

So, good night unto you all.

Give me your hands, if we be friends:

And Robin shall restore amends.

\*Strother Martin - from the motion picture *Cool Hand Luke*

— Waugh

# RUDDOCK

## RUDDLANDER II: THE QUICKIE

[RUDDLANDER II, THE SICKENING is perhaps more appropriate to the movie...—Eds.]

Scene 1: Subtitle flashes on screen: August, 1990. Grouping of administrators inside of a building shown. A celebratory atmosphere is evident.

ADMINISTRATOR: They'll remember this day for years. The day that we protected Caltech from itself.

SECRETARY: It's almost ready, Ms. East.  
EAST: Thank you. I'll sign it here. (she does). Gentlemen, the DAPAC shield is now in place.  
(cheering)

Scene 2: Subtitle: 25 months later.

RUDDLANDER (voice-over as he trudges to class): The shield is killing us. Draining our social life. Making this one long mid-terms week. 25 months ago it was our savior. Now, things are running down, going backwards. The cure is worse than the disease. (He goes into lecture).  
JUSTIN(voice-over): Remember, Ruddlander, remember how it was in the outside world, 500 days ago.  
RUDDLANDER: Yes! I remember!

Scene 3: A quiet scene in suburban America.  
RUDDLANDER: It is time to party! Graduation is past and we must celebrate.  
JUSTIN: Ruddlander! Look! It is the evil East, come to stop us.  
RUDDLANDER: Let her try. We will strike down her evil reign.

(furious battle scene)  
EAST: So, you are the one called Ruddlander. Your pathetic rebellion has amounted to nothing. For your insolence, I will exile you to Caltech, where you will be Physic majors. You will stay there and never sleep until there is only one of you left. BWAH-HAH-HAH-HAH!

Scene 4: Lecture Hall  
STUDENT: Hans, lecture's over, wake up.  
RUDDLANDER: Uh, OK.

Scene 5: An anonymous office.  
EAST: I want you two to enlist as Phys majors and cut the Ruddlander's throat.  
EEK and OOK: (various disgusting noises and actions)

Scene 6: A room in Ruddock  
RUDDLANDER: So the second diff of e to the shit is shit squared e crap d crap.  
BECKY: Ok, but what about the rho-nought.  
RUDDLANDER: Shit.  
(Transport noises)  
RUDDLANDER: Becky, get back.  
EEK: We've come for you, Ruddlander!  
OOK: d squared psi d t is equal to d squared psi d z!  
(Ruddlander lurches in pain)  
RUDDLANDER: No! Don't cut my throat! Justin!! (A spark flies up in the air)  
EEK: It's too late! We've already enrolled and spiked the curve! You'll flame tomorrow!  
RUDDLANDER: Yeah? But I just burned your homework sets!  
EEK and OOK: AAAAAAAAAAAAAIIIGH!  
(They promptly flame. Nifty Special effects)  
RUDDLANDER: I am Hans Hornstein of the Class of '94. I was exiled here from the outside world in the year 1990. And I cannot sleep.  
BECKY: I'm Becky Zaske from Oshkosh, Wisconsin.  
(They embrace. All of a sudden, Justin

walks in.)  
RUDDLANDER: Justin, I'd thought you'd flamed!  
JUSTIN: Greetings Ruddlander. You called?

Scene 7: An office  
EAST: I suppose I'll have to cut his throat myself.

Scene 8: DRL's office  
RUDDLANDER: Here, East. Here is the final battle.  
EAST: And so it will be. You will flame before the hour is out.  
RUDDLANDER: No! Here! It's a petition from UASH. And it's stamped APPROVED. And here are 800 letters calling for your resignation.  
EAST: Hah! Those have no power at all over me! Here's a certificate from the Registrar's disenrolling Justin from his required classes!  
JUSTIN: Nooo! Ruddlander, here, take this! (He gives Ruddlander a piece of paper and flames)  
RUDDLANDER: Unngh! Ok, East, this is it. Here's a picture of you when you were 19 and at college. What's that in your hand? Is it an OPEN BEER?!

EAST: NOOOOOOOOOO!!! (She dissolves in more expensive special effects).  
BECKY: You're safe now, right?  
RUDDLANDER: Yes, but I must finish this. (Gets a formal stamp from her drawer) This is a statement repealing DAPAC. (Stamps it). Now, it's over.  
JUSTIN: (Voice over) You both still have a full measure of parties left. Attend them well.

Credits  
Final comment: There should have been only one.

INTO BLUES,  
JAZZ, SWING?  
WANNA DO  
MUSIC FROM  
'20s, '30s, '40s?

WANTED: MUSICIANS FOR A  
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IN PARTICULAR NEED A  
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ENTERTAINMENT

North by Northwest in Baxter

by Varoujan Gorjian

This Sunday, November 10, at Baxter Lecture Hall the Caltech Film Club will present the classic Hitchcock film *North By Northwest*, starring Cary Grant, Eva Marie Saint, James Mason, and Martin Landau. This will be the first in a series of classic movies which the film club will bring to the campus. The showings will be at 8:00 and 10:00 p.m.

For those not familiar with *North By Northwest*, it is the story of a regular guy who gets mistaken for a spy. He then has to run for his life, in a generally *North by Northwest* direction, from enemy spies. Along the way he meets a sultry lady who protects him and with whom he begins to fall in love. This is just the barest outline of an engrossingly complex storyline that only

Hitchcock could weave. The movie is filled with action, danger and romance that is rarely scene in modern day movies. After seeing *North By Northwest* you will understand why Hitchcock is known as the master of suspense.

The Caltech Film Club wants to bring classic films, such as *North By Northwest*, to the campus since movies of this caliber rarely get public performances. In this way the movie could be seen in a form that is closer to the one that the filmmaker intended rather than on a nineteen inch screen with a little speaker off to the side. If you have movies that you would like to see on a big screen, then come to the Caltech Film Club meetings, every other Wednesday. Our next meetings will be on November 20 and December 4, in SAC room 35 at 8:00 p.m.



See Cary Grant climbing around on Lincoln's face in North By Northwest.

This Weekend

The Ice House hosts world champion juggler Daniel Rosen Friday (8:30 & 10:00 pm) and Saturday (7:30, 9:30, & 11:30 pm) nights. "Juggles dangerous hardware, tells jokes, does impressions of Hare Krishnas, and even plays a mean banjo." Cover charge \$9.50. 24 N. Mentor, 577-1894.

The Sierra Madre Playhouse presents "The Innocents", Friday and Saturday evenings at 8:00 pm. Sunday matinee at 2:30 pm. Adapted

from James' "The Turn of the Screw." Student tickets \$6.50. 87 W. Sierra Madre, 355-4318.

Dabney Hall presents Claudia Schmidt, a singer, songwriter, and poet, Saturday night at 8:00 pm. Student tickets are available for \$4 at the Ticket Office, or at the door.

The Tiffany Theatre is staging "The Country Girl." Friday and Saturday at 8:00 pm, Sunday at 7:00 pm. 8532 Sunset, (213) 289-2999.

Steve Anderson's Compact Disc Reviews

by Steve Anderson

**Rating system:** After stating the author, title, and publication information, I give the dollar amount that I would pay for the CD if I were going to buy it.

**Frank Sinatra**  
*The Capitol Years* (3 CD set)  
(c) 1990 Capitol Records Inc.  
\$0.50

Frank Sinatra is a little off the path of my normal musical tastes, but I thought it might be an interesting cultural experience. It's actually one of the most annoying albums I've ever heard. Outdated and cerebral, this loser put me into a beta state from the moment the needle connected to vinyl. I was surprised to learn later that they had put this puppy on a compact disc. Probably for the geriatric crowd who have lots of money to spend on these new fangled electronic toys. As an interesting note though, he seems to have a drug problem that is relayed through his lyrics. I passed the time by trying to gauge the extent of Old Blue Eyes' addiction. I noticed in the first song "I Get a Kick Out of You" that at one point he was talking explicitly about cocaine. My personal count got as high as three recreational drugs; if you're interested, buy the album and see if you can find more. Good luck!

**Yanni**  
*Reflections of Passion*  
(c) 1990 Private, Inc.  
\$12.00

All I knew about Yanni before listening to this album was that Barbara Walters once called him the "sexiest man in America". That's may be, but all I know is that he does awesome music. He composes pieces on a synthesizer, and I've never heard a synthesizer used to such incredible effect. Yanni wreaks heartbreaking emotion out of what used to be thought of as a completely emotionless instrument.

There are no lyrics; his music is purely instrumental. Yet it's very expressive. The first track is titled "After the Sunrise", and you hear the triumphant moment in the music when the sun actually rises. Other tracks include "Nostalgia" and "Farewell." All of these emotions come through strongly in the music.

If you need something inspirational to keep you going sometimes, this is it.

The only reason I didn't rate it higher is that I was a little skeptical of its ability to remain fresh to the frequent listener. Some tunes, like most Led Zeppelin, never seem to get old, you can listen to them again and again. I'm not sure this music qualifies.

**Tom Petty and the Heartbreakers**  
*Into the Great Wide Open*  
(c) 1991 MCA Records Inc.  
\$4.50

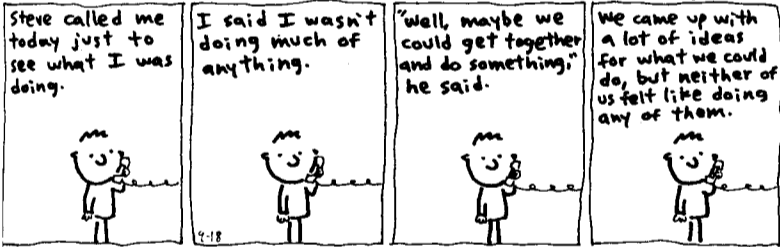
Those few Techers among you who listen to modern radio stations will certainly recognize some of the tracks on this album, especially "Learning to Fly", the first track. While the singing and the instrumentals on that track are first-rate, the melodies are a little vacuous and repetitive. I have to say that I far and away prefer the Pink Floyd song of the same name.

The title track, "Into the Great Wide Open," is an excellent vehicle for Tom Petty's storytelling-style lyrics. It chronicles the rise of a rock star from nowhere, a "Rebel without a clue". The minor chords lent a sense of foreboding to the song from the start, a sense which was mysteriously not followed through on in the lyrics.

I guess I'd best characterize this album as listenable, even enjoyable, but not very significant. The lyrics convey a lot of cool imagery which fails to resolve into any sort of meaningful larger picture. The music is cool, and fairly original, but too repetitive in parts.

Jim's Journal

by Jim



Red Door Adds Wednesday Nights

Hey, hey! The latest is that the Red Door Cafe now opens Wednesday night. We've got jovial ol' Jim behind the counter - come visit him and take a break from all your troubles. Plus, the caffeine jolt from most of our drinks is quite a bonus for late-night studying. I just came from there myself, and things were hoppin'.

So, the current hours are now:  
Wednesday 9:00 - 11:00  
Thurs. & Fri. 9:00 - Midnight

And we're doing our darnedest to keep the entertainment alive on Friday nights. This Friday we've got Rob Navin (from CIT's Phys department) playing some classical guitar. The man has been trained in guitar on 2 continents. His fretwork has been described as heavenly by some - but come and judge for yourself. Plus, I hear he's quite a dude.

As for the future, we are still open for some Friday nights. So, if you play music or have some performance art or whatever, give us a ring. Call Pete at x3956 or Alex at x3769. Get up the gumption and come have some fun on our stage.

The Red Door - Helping save the youth of America . . .

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an Information Session on  
11-13-91 from 4:00pm to 5:00pm  
and 5:00pm to 6:00pm  
(Student Activities Center Rm. 26)

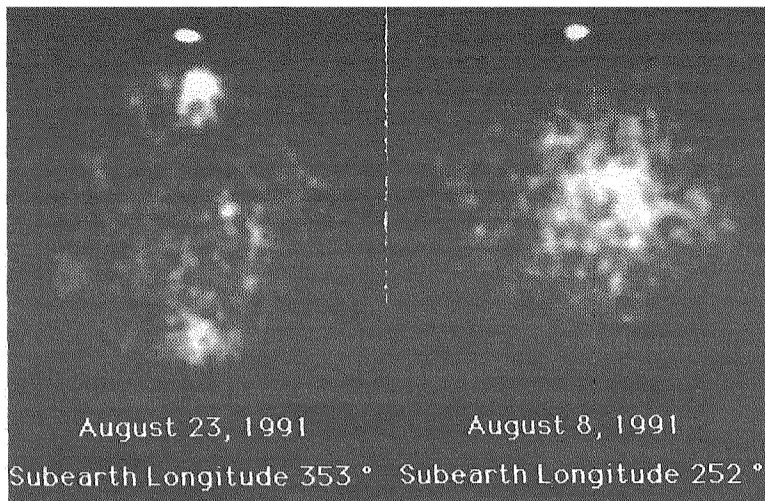
Salary: \$15,000 - \$29,000  
Loans: Deferment (Stafford) or  
Cancellation (Perkins/NSDL)

## Mercury Radar Photographs Made Public

A group of astronomers from Caltech and JPL have made the first radar photographs of an entire hemisphere of the planet Mercury. These photographs reveal that the radar-brightest region on the planet is a heretofore unknown structure on Mercury's north rotational pole. In addition, the researchers found two large structures at almost the same latitudes and longitudes in the planet's northern and southern hemispheres. The researchers presented preliminary results on Wednesday, November 6 at a meeting of the American Astronomical Society's Division of Planetary Sciences in Palo Alto, California.

The experiment was performed by continuously illuminating Mercury for 8 hours with a powerful radio signal (500,000 watts) from JPL's 70-meter antenna at Goldstone, California. The radar echo was received by the Very Large Array (VLA) of radiotelescopes near Socorro, New Mexico.

This experiment is the latest in a series conceived by Duane Muhleman, professor of planetary science at Caltech. The reception of the signals and the image processing at the VLA were carried out by Martin Slade of JPL and Bryan Butler, a Caltech graduate student.



Raymond Jurgens of JPL supervised the operations at Goldstone.

Mariner 10 photographed just half of the surface of Mercury in visible light when the spacecraft made several close passages of the planet in 1974. Images were made on two days—August 8 and 23, 1991—between which the surface of Mercury rotated through 100 degrees as seen from Earth. The pictures show the radar images from the two days. On the left is an image showing

most of the previously unphotographed side of Mercury, and on the right is an image where the photographed side of Mercury is visible in the left hemisphere and the unphotographed side in the right hemisphere.

A remarkable property of the rotation of Mercury is that the sun is always exactly on the equator, and some portion of the sun is always visible from the poles. That small amount of sunlight prevents the

polar regions from being as cold as deep space, but calculations made by UCLA professor David Paige and graduate student Stephen Wood show that the polar regions may be as cold as 125 degrees Kelvin.

On the other hand, regions near Mercury's equator can get as hot as 700 degrees Kelvin during Mercury's closest approach to the sun very 88 days. This high temperature drives volatile substances from the surface, creating an extremely thin atmosphere. Most of this gaseous material escapes the planet, but some of it may be trapped by the cold regions at the poles, where it precipitates as "snow." Once there, these materials would remain in place for the life of the solar system.

Several new features on the unphotographed side of Mercury were also discovered. Two of the structures are very large in extent (800 km) and lie on the same longitude meridian and approximately at the same latitude on either side of

the equator. The latitudes of these two structures correspond very closely to regions where enhanced and variable sodium abundance has been previously measured in the thin atmosphere. This atmospheric anomaly has also been measured above the Caloris basin, a large impact structure 1300 km in diameter. The cause of the enhanced and variable atmospheric sodium is still under debate, but it may be a result of the highly fractured ground in and around the large impact basins, causing enhanced diffusion and degassing of sodium from within the planet.

"I would like to caution that we consider the present results and interpretations to be quite preliminary," said Muhleman. "Once we have processed and interpreted these photos, we might be able to say more about the nature of these strange new features."

*Printed courtesy of the Caltech Office of Public Relations.*

## SPORTS RESULTS

### H<sub>2</sub>O polo

11/6 Caltech 4, Claremont Mudd-Scripps 21

### Undergrad Volleyball

vs. Alumni, Loss, 11-15, 15-10, 11-15, 15-6, 10-15

### Cross Country at SCIAC championships

women 1-6, 185 pts.

men, 6th place 2-5, 134 pts.

### Soccer

11/2, Cal Lutheran 13, Caltech 0

### Football

11/2, Win, Caltech 21, L.A. Mustangs 20

### Hockey

11/6, Win, Caltech 7, Pepperdine 3

## IHC Minutes. 11/6/91

Present: Rob [Da], Andrea [Bl], Emmeline [Pa], Dave Wales [MOSH], Nate [Ri], Kim West [DRL], Aimee [Li], TJ [Ru], Randy [Chairman], and me.  
The meeting began 2109 6Nov91 PST

What about Dave Goldberg... We talked about this issue for about an hour. Part of the problem is that what the students know about about Dave's actions do not justify the punishments that have been given to Dave. From the Administration's point of view, however, there are laws concerning confidentiality and information can not be given out without written consent from the individual involved. (Even to parents) The Administration can't even say if a grievance has been filed. Kim did say that the letter in last week's Tech was factual in how it portrayed some of the events, but it left out or did not completely tell other events.

The presidents felt that overall the students trust the BOC. Students seem to accept peer review because at least students have similar perspective on various issues involved. Some of the presidents felt that

students do not trust the Dean, the DRL or the MOSH. Without trust and with the lack of information, all punishments will seem to be punitive. Somehow this trust must be rebuilt. It was suggested that maybe a group of people like the BOC or the IHC should know about cases such as Dave. These people could, without compromising confidentiality, say to the students that the Administration does have a case and that official actions are justified. Of course, the student would probably have to give permission for such a committee to get any information.

We also brought up that fact that maybe the Deans, the MOSH & DRL and the BOC should have more lines of communication. Maybe cases could be referred from one office to another. It was also noted that someone has to bring a case to the BOC's attention, and if a case is not brought specifically to the BOC then the BOC can not take any action. Also, Andrea reminded us that individuals can bring cases against themselves to the BOC for a peer review.

Yet again, the Dabney Incident of 1st term 1989 was mentioned.

[At 2203 Nate left for lab]

In the last five minutes we quickly mentioned a few topics...

-Ruddock beat Blacker in Ultimate last Sunday. This weekend will be Ruddock vs. Ricketts in Softball. Page is next to challenge.

-Bike rack walk through postponed.

-Pet Policy—Kim has seen a copy of the latest draft and made comments on it. We will find out what these are later. In the meantime, Presidents are to count the number (and types) of pets in their House and let Kim know in the next week or so.

-One of the Presidents asked if they could get a mailbox number list. Stop by the DRL/MOSH office and have a copy run off.

The meeting ended 2208 6Nov91 PST.

*Submitted,  
Benjamin Smith, (IHC Secretary)*

## Technical Opportunities at First Boston

First Boston, a major international investment bank, headquartered in New York City, will be recruiting at the California Institute of Technology for the Technical Associate Program in the Information Systems Department. We are looking for seniors with analytical and computer skills who want exposure to the world of finance. First Boston uses the latest advances in hardware and software technology to create systems crucial to our success in the financial marketplace. If you are interested in helping shape the future of Wall Street through technology, First Boston's Technical Associate Program will be of interest to you.

We will be recruiting on campus for full-time positions on:

Tuesday, December 3, 1991

For more information stop by the Career Development Center.



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## Y News

Now that we have all finished eating our Halloween candy, and (hopefully) survived our midterms, the Caltech Y has a whole month filled with activities and opportunities. We kick off our big November with a Noon Concert today at noon (the timing is an amazing coincidence) featuring the Eastwoods. Come on out, enjoy your lunch on the quad, and listen to free music!

Next week, the fun begins on Tuesday the 12th with a free trip to the "Montel Williams Show." The show is a talk show that actually attempts to move beyond the Oprah, Donahue, et. brand of "entertainment." All you have to do is sign up at the Y (and volunteer to drive if you can) and then meet at the Y at 4 p.m. on Tuesday.

Then, on Thursday the 14th, we kick into high gear with "American Pictures," an award-winning look at American society by a Dutch photographer with a unique perspective. This show has earned rave reviews at colleges all over the country—so it is not to be missed. Plus it's free. The show starts at 7 p.m. on Thursday, in 22 Gates.

The next day, Friday the 15th, Caltech is participating in a nationwide program called Into The Streets. The purpose of the day is to give you the student an opportunity to get involved in community service. Several different programs to participate in are planned, from noon to 4 p.m. For more information, and to sign up to be a part of this day, come by the Y.

After these events on Thursday and Friday, the Y invites you to come to the nth annual Toy Bowl. Featuring the Caltech football in all their earth-pounding glory, make sure and show up at 12 noon for the activities.

And the big November blowout continues with Cats, Bone-crushing Broomball, and much, much more. So stay tuned for more details. As always, come by the Y (in the Winnett center, above the bookstore) for cheap movie tickets and to learn more about anything mentioned here. Or give us a call at x6163. Until next time....

## CETF CONTEST!

The Caltech Environmental Task Force is sponsoring a contest on campus for a slogan and logo to represent the recycling program at CIT. The slogan should be short, catchy, and identifiable in some manner with Caltech. The graphic should be simple and imaginative but related thematically to recycling.

The winning designs will be used by the recycling program to label containers, flyers, and other materials as necessary - they will be a permanent feature on campus.

The winner(s) will receive a dinner for two at the Athenaeum funded by the CETF.

Submissions should be made to the Caltech Y (Mail Code: 218-51) on 8.5" by 11" paper. The contest ends November 22, 1991.

## CLASSIFIED ADS

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Your fraternity, sorority, or other campus group can earn between \$500-1000 in less than 7 days. You pay absolutely nothing. Call: 1-800-735-2077 Ext. 3

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English usage, punctuation, spelling made perfect. Term papers, dissertations, reports, articles, etc. 213-389-5570.

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design involving hydraulics for new health product. Flexible hours, call 213-746-8655.

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## Scholarships

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

**The Data Processing Management Association** is offering three scholarships for \$1,000 each provided by the Bert A. Monaghan Scholarship Fund in the areas of Computer Science or Information Systems Management. The Scholarship Committee must receive the application by Nov. 15, 1991.

**USA Today** is offering twenty \$2,500 cash awards to full-time undergraduates. The awards will be selected based on the student's scholarship as well as leadership roles on and off campus. Each nomination must be signed by a faculty member familiar with the student's work and an administrator. The deadline for completed nominations to be sent is Nov. 15, 1991.

**The American Society of Heating, Refrigerating, & Air-Conditioning Engineers (ASHRAE)** is offering a grant of \$2,500 for the '92-'93 academic year to a full-time engineering student in the final two years of undergraduate study. The applicant must have a GPA of 3.25 or above. The deadline for applications to be received by ASHRAE is Dec. 15, 1991.

**The Society for the Advancement of Material & Process Engineering (SAMPE)** is announcing its 1992 Undergraduate Awards Program for Engineering. Application packages must be submitted postmarked no later than Feb. 1, 1992.

**The American Society of Naval Engineers** is sponsoring a \$2,000 scholarship for students in the final one or two years of undergraduate education who are interested in the field of naval engineering. They also provide support to naval engineers seeking advanced education in the field. Applicants must be US citizens. Financial need is not a requirement but may be taken into consideration. Deadline for receipt of scholarship materials by the ASNE offices is Feb. 15, 1992.

Information and/or applications are available for the **National Academy for Nuclear Training Scholarship Program** for the '91-'92 academic year. Applicants must be a US citizen or US national, must have a minimum GPA of 3.0 and must have remaining at least one but no more than three academic years of study. Postmarked deadline for receipt of scholarship materials by the scholarship program is Feb. 3, 1992.

**The Society of Women Engineers** is announcing its 1992 Spring Scholarship program. The scholarships are open only to women majoring in engineering with a GPA of 3.5. Applications, including supporting materials, must be postmarked no later than Feb. 1, 1992.

The annual **Mensa Scholarship Essay Contest** is here again. The essay should present clearly and concisely the applicants academic, vocational, and career goals. The only requirement is that the student be enrolled at an accredited college/university for the 1992-93 academic year. All entries must be postmarked on or before Jan. 31, 1992.

**American Electroplaters and Surface Finishers Society (AESF)** is offering scholarships for the 1992-93 academic year. Financial need is not a factor. 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, 1992.

**The National Federation of the Blind 1992 Scholarship Program** is once again being offered. Applicants must be legally blind and pursuing or planning to pursue a full-time post-secondary education. All scholarships are awarded on the basis of academic excellence, service to the community, and financial need. The application must be received by the Federation by March 31, 1992. Caltech Y Trip to TJ

The Caltech Y is sending Students to the YMCA de Baja California (Tijuana, Mexico) to assist in the building of a community center. If you would like to be a part of future trips to Tijuana, sign up at the Caltech Y today!

**ME72 Engineering Design Contest**  
Thursday December 5th, 1991  
2:00 PM  
Beckman Auditorium

## Caltech Women's Glee Club Fundraiser

The Caltech Women's Glee Club invites you to see the Rose Parade on New Year's Day 1992. Tickets are \$30, which includes seats and a continental breakfast. Proceeds from this event will provide scholarship help for the Women's Glee Club 20th anniversary trip to Boston in March, 1992.

Ticket order will be taken by mail only, and must be accompanied by a check. For tickets, or more information, send to: WGC Rose Parade, Caltech 2-58, Pasadena, Ca. 91125.

**Gay, Lesbian Discussion Group**  
meets the 1st and 3rd Tuesdays of each month from 7:30 - 9:30 PM in the Health Center. This confidential meeting is open to all members of the Caltech community. The first hour is devoted to discussion of a specific topic, and the remaining hour is open for general conversation and socializing. Refreshments are served. For information please call 356-8331.

## what goes on

**Announcements for What Goes On** may be submitted on forms available outside the Tech office (SAC room 40A) and in the copy/mail room (SAC room 37), or use a plain piece of paper. Send announcements to 40-58, or put them in the IN box outside the Tech office. Announcements should be 75 words or less. Indicate the date(s) the announcement is to run. Announcements for the current issue must be received by 5 pm Tuesday. Announcements will be published as space becomes available and will be chosen according to size and interest to the Caltech community. Announcements for commercial events unrelated to Caltech will not be published.

## Work For the MOSH

The MOSH wishes to hire students to help serve dinners for faculty and students at the MOSH's house. Dinner included. See Jeanine in the MOSH/DRL office if interested.

## Make Money Playing Bridge

The Bridge Club is holding a big event this Tuesday, Nov. 12. Eligible Grads and Undergrads have the opportunity to eat FREE PIZZA from Tarantino's, students or not, win or lose. Come by Chandler on Tuesday at 7:00, have some fun, and try to win the bucks.

## Hey Vegetarians!

Do you dream of vegetables? Are you an Undergraduate student? Are you free for dinner on Tuesday, November 19th? If you have answered YES to all of the above, and would like to have a vegetarian meal with David Wales at the Master's house then call x6194 to make your dinner reservation. NOW. Ask for Jeanine.

## PIG OUT

Pig out with the MOSH and DRL Wednesday, November 13, 4-5 p.m. at the MOSH's Office.

## Noon Concert

The Eastwoods will play at the first Caltech Y noon concert of the year this Friday, November 8. Be there between noon and one o'clock to hear this first-rate band.

## Chandler Bargains

Frequent user cards are now available at the registers. Validate card at time of purchase and receive a \$10 coupon book when completely validated. Also, double entrée deals are now in effect. Receive a double portion of the day's four main entrées for just \$1 extra (does not apply to a la carte). Finally, on Thursday, November 14, enjoy a delicious stir fry lunch cooked to your order by our corporate chef! He'll be back occasionally to prepare fresh dishes from around the world just for you.

## Aero Association of Caltech

The Caltech/JPL will hold their fall general membership meeting on Wednesday, Nov. 13 at 7:30 PM in 306 Firestone. The evening's program will include a talk on "NASA/Ames-Dryden Research Flight Operations" by Ed Schneider of the Dryden Flight Research Facility.

For further information contact Finbar Sheehy (x4848), Thomas Buettgenbach (x3740), or Kevin Condroski (x6061).

## Caltech Canadian Club

The Caltech Canadian Club will be having its second meeting on Mon. Nov. 11 at 9 p.m. in room 35 of the SAC. We will be discussing plans to attend an LA Kings game at the end of the month and organizing a ball hockey league. All members of the Caltech Community are invited to attend. For more info contact Derek @ 795-2953 or J.P. @ 578-9755.

## Muslim Prayers Held

Friday prayers will be held in the Y lounge at 1:15 PM sharply. If you have questions, contact Asim Mughal or Imran Hashim at 564-1701.

## Cartoonist Competition

The Scripps Howard Foundation is accepting entries for the Charles M. Schulz Award to honor outstanding college cartoonists and to encourage them to launch post-graduate professional careers. A cash prize of \$2,000 and a plaque to the winner and a citation to the college publication is offered. The award is sponsored by the Scripps Howard Foundation and is funded by the United Feature Syndicate.

For more information, call Delwyn, Andy, or Jon at x6182 (ask for Tech eds.).

## Follow-up for the 1991 Student/Faculty Conference

If you are interested in the follow-up from the 1991 SFC, meet Wednesday, Nov. 13, from 4:30-5:30 PM in the IHC room of the new Master's Office (ground floor Winnett)—and weekly thereafter. Show up if you care about the quality of life at Caltech. We'll be finalizing recommendations from last year's conference (and acting on them) and discussing new issues as they arise.

## Caltech Management Association

Dr. Roger D. Bourke will be holding a discussion of "Recent JPL Activities in the Soviet Union: Rovers and Coups" on Tuesday, Nov. 12 at 12 PM in Building 167 Conference Room, JPL. The noontime briefing is sponsored by the Caltech Management Association.

## Jim's Journal



by Jim

Jim Goes on too, ya know!

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# SPORTS

## Cross-Country Blasts by La Verne

by Ned Bowden

"What's that awful smell?" Many members of your own Blasting Beaver cross country team were asking themselves that question last Saturday at Prado Park. Prado Park was the site of the SCIAC championship meet, and it is bordered by several cattle ranches.

The men's team repeated their last place performance of the previous year by becoming the spankies of the conference again. Despite that finish by the team, several members were able to put in good performances. The perpetual leader of the squad, Dan Flees, led the Beavers with a time of 27:23, good enough for seventeenth place overall and a slot on the All-Conference second team for the third time in four years! Running a strong race and coming in twenty-first overall (one place away from being an All-Conference runner) was Andy Zug. Despite stopping halfway through the race to eat at a barbecue going

on at the park, Ned Bowden came across the finish line in 28:39. Schuyler Cullen rebounded from a slow performance at the last meet to run a fast 30:34. Jonah Michaud decided to make a move and finished out the men's scoring by running a 31:18. Rounding out the top seven were Ron "800 Meter King" Stieger and A.J. "Have You Seen My Keys" Lavin. A.J.'s time was artificially inflated because he spent the last mile of the race looking for his car key that he lost on the first mile.

The most amazing performance had to have come from Mike Mahon. Mike partied so hard last Friday night that he couldn't crawl out of bed to go to the meet. When O'Brien called Mike's apartment, his roommate told O'Brien that Mike already had left, but Mike was still sleeping comfortably in bed. When asked for a comment, O'Brien replied, "Next time Mike will be there or I'll personally wake him up!" Hear that Mike?

Stunned by their loss to La Verne's team two weeks ago, the

Caltech women's team ran aggressively and defeated them this time. The women improved upon last year's performance by placing seventh out of eight teams. Tobe Corazzini continued to set the standard by flying over the slightly longer than five kilometer course in 22:31. She ran in thirtieth place for most of the race until the end when she smoked her competition in the last few hundred meters. She blasted by several runners to place twenty-sixth overall. After the race and signing all of the autographs that she was hounded for, Tobe commented, "I hope that all this training will pay off in the first Homeboy biathlon". Second place on the team went to Jessie "No More Cross Country For Me" Haldeman. She finished in a strong 24:54. Running in her last collegiate cross country race was Emmeline Naranjo who surprised many pre-race pollsters by coming in third on the team with a time of 25:18. Right behind her was Aimee Smith who finished up in 25:22. Clinching the victory for the women was Tristy Kibbey who performed well with a time of 25:58. Coming in sixth and seventh on the team were Amy Hansen and Betsy Barton.

The cross country season is nearly over. The last meet will be on November sixteenth in beautiful San Diego. The members of the teams will be training hard in order to set personal records and to stay in shape for the first Homeboy biathlon on November 23.

## Beavers Top the Waves

by: Jim Caron

Last Wednesday night at the Pasadena civic center the Beavers beat the Waves from Pepperdine University by a score of 7-3. There was a combined total of seventeen penalties taken in this game. Caltech got a little side tracked to their normal style of play but they were still able to dominate the entire game.

Pepperdine fielded at best a weak hockey team for division I. They more or less looked like a bunch of guys who have been playing pond hockey and were not used to skating as a team in an organized fashion. Very basically they did not skate well, they did not pass well and they were very undisciplined. If anything this game served Caltech well in the sense that it was more like a scrimmage that gave them the opportunity to work on a few of their weaknesses.

The Beavers came out ready to play that night. By the end of the first period Caltech had already scored three goals. The first of which was scored by Jeff Moore and assisted by Jeff Hall and Dale Laird. About four minutes later Jacques Belanger fed Kurt Stephens a pass

that sent him in to score his first of the night. Stephens returned the favor to Max Heitzmann who sank one in the net for his first of the night.

When the second period rolled around the Beavers were a little concerned because that is traditionally their worst period. However, this was not the case against Pepperdine. Caltech ended up scoring three more in that period. The first of which coming from defenseman Herman Cho assisted by Stephens and Heitzmann. Then Stephens and Heitzmann got their second goals assisted by Jacques Belanger and Francois Rozon.

The third period basically turned into a bruise fest. Pepperdine, after being severely outplayed, got very frustrated which resulted in nine penalties being taken in the third period alone.

Caltech is gearing up to play USC on Sunday morning at 11:45 am at home in Pasadena. Caltech has already played USC once and lost to them, but so far the Beavers are undefeated at home. It is going to be interesting to see how USC can adapt to our home rink. This should be a very fast paced game with plenty of hitting. It is definitely a game not to miss.

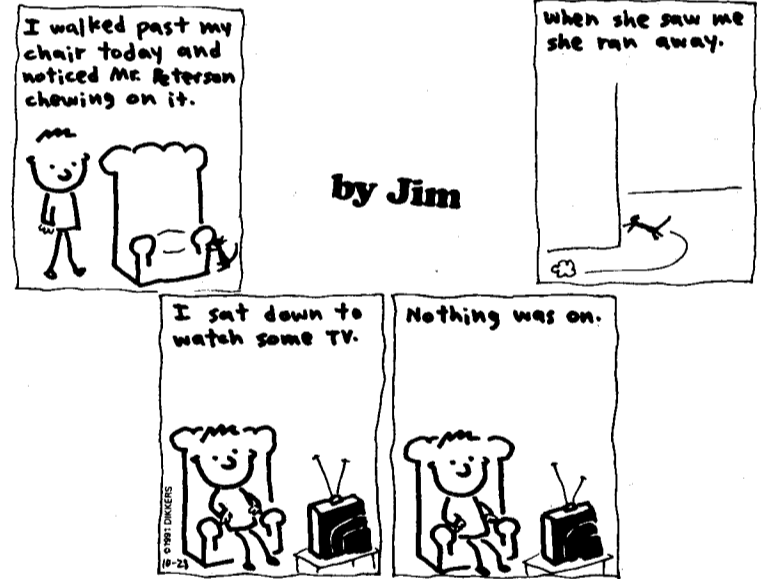
## Weekly Sports Results

Water Polo	November 6	Claremont-Mudd @ Caltech	loss 21-4
Volleyball	November 6	Alumni @ Caltech	loss 11-15, 15-10, 11-15, 15-6, 10-15
Cross country	November 2	Caltech @ SCIAC Finals	Men - 134 pts., 2-5, 6th place Women - 185 pts., 1-6, 7th place
Soccer	November 2	Cal Lutheran @ Caltech	loss 13-0
Football	November 2	L.A. Mustangs @ Caltech	win 21-20

The meetings for *The California Tech* have been moved to Monday nights at 7:30, in SAC room 15. There are no obligations for attending! Come on by and check it out.

—Editors

**Caltech's division I ice hockey team is undefeated at home, where they play USC on Sunday, 11:45 a.m. Go cheer them on!**



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