

Stripper Struts Stuff for Physicists



Physicists go gah-gah as Jamie "throws her tassels" at Berg.

A new dimension to rigid body motion was added to physics on Thursday, October 16, when an unexpected question turned a physics colloquium into burlesque floor show. Howard Berg, professor of biology, was the victim of another Caltech prank.

As Dr. Berg began his seminar entitled "Rotary Motion in Nature," things seemed normal, and he discoursed on such matters as the rotational motion of bacteria. Halfway through the seminar, however, a planted questioner asked, "Is there any example of rotary motion in higher organisms?" Before Dr. Berg could utter a response, the door behind him flew open, a drum roll began, the lights went up, and Jamie the Wonder Stripper popped out to twirl her tassels in his face. The integration of the prank into the seminar was so good that many physicists thought that Berg had deliberately planned it, but his beet-red countenance quickly betrayed his bewilderment.

The stunt was engineered by Steve Block, a grad student in biology, and Beth Nordholt, a grad in physics.

Photo by Tom Harvey



All Dr. Berg could say was, "Someone get her phone number!"

Caltech Building Accelerator

By Richard Pogge

Caltech's nuclear physics program is going in the hole. No, they're not in debt, but they are installing an extension to the Kellogg basement to accommodate their new High-Current, High-Stability Accelerator.

This addition to Caltech's physics lab will have an impact upon undergraduates as well as resident researchers. It will be the only one of its kind in the world, and, according to Dr. C. A. Barnes, it will likely be copied by other institutions. This device, custom designed by Caltech's physicists and an outside engineer, has been under construction by the National Electrostatics Corporation of Middleton, Wisconsin since January, 1980, and should be delivered to Caltech in June of 1981. After completing acceptance tests scheduled for August 1981, the accelerator should be operating around the clock between maintenance periods.

The accelerator itself will cost some \$880,000, a tremendous bargain says Dr. Barnes. Of that cost, \$800,000 is being provided by the NSF, and \$80,000 is from the Sloan Research Funds at Caltech. The new underground laboratory is being funded by grants from Caltech and the W. K. Kellogg Foundation (the cornflake magnate).

Once they've got it, what are they going to do with it? Among the planned projects for the new accelerator is a

study of just how far the Conserved Vector Current (CVC) Theory of weak interactions can be pushed (this theory is a Feynman/Gell-Mann special), studies of the physics of nuclei, nuclear astrophysics, heavy-ion reactions, controlled thermonuclear reaction studies, including "exotic" fusion reactions, radiation damage and sputtering experiments, and super-sensitive mass spectrometry. The latter, super-sensitive mass-spec, is most exciting. The accelerator will allow mass spectrometry of milligram size (and smaller) samples with sensitivities of 1 part in 10^{13} . This is roughly a factor of 10^{10} better than any existing device. This will also allow extremely accurate dating using ^{14}C , ^{10}Be , and ^{36}Cl techniques, therefore the accelerator is of great interest to

non-physicists as well.

One feature that is of interest is the relative ease of use of the new accelerator. Dr. Barnes stated that the design is such that an undergraduate could easily set up and run his own experiment without help. Dr. Barnes indicated that this new device will be available for use by undergraduates in the years to come for SURF projects and others.

This device is unique not in size but in versatility and in its unusual and extreme specifications. The accelerator will allow Caltech to compete effectively in research in nuclear astrophysics, a field which originated at Tech, but became dominated by German and national labs afterward. Says Dr. Barnes, "Now we can get out there and show them how it's done."

Tau Beta ?

By Doug Mackenzie

One of the organizations at Caltech that goes very much unnoticed is Tau Beta Pi, a national society designed to honor eminent engineers and students in related sciences. The purpose of the organization is to honor accomplishment in those disciplines that the better known Phi Beta Kappa does not. Among the prominent members of Tau Beta Pi are Dr. William

Corcoran, Dr. Kip Thorne, and Dr. Linus Pauling.

Each fall the California Beta Chapter of Tau Beta Pi invites students from the top eighth of the junior class and the top fifth of the senior class to become members. Besides maintaining scholastic excellence an electee must show

Decreasing Amount of Responsibility is Weakening Govt.

By Tracy Furutani

Dr. Morris P. Fiorina Professor of Political Science at Caltech, delivered a serious, yet informative lecture on "The Decline of Collective Responsibility in American Politics", second in the series of bi-weekly Watson lectures in Beckman Auditorium.

Dr. Fiorina's main thrust was to expound on his view that American government is weakening, not because of the growth of single-issue politics, but because of the decreasing amount of responsibility at the collective (specifically party) level.

He defined responsibility as the "who will take the blame" in the case of a failure, and collective responsibility as the ability of all members involved to accept blame for a failure. This would best be accomplished by the party system.

The party, he felt, was the ultimate device in maintaining collective responsibility, in its many-fold ability to subordinate politicians under the party and hence forcing their record in civil service to reflect the party's record, frequently practiced in the late nineteenth century by various political machines.

However, now, he continued, through various accidental and intentional acts to curb party power by legislators and citizens, the bond between

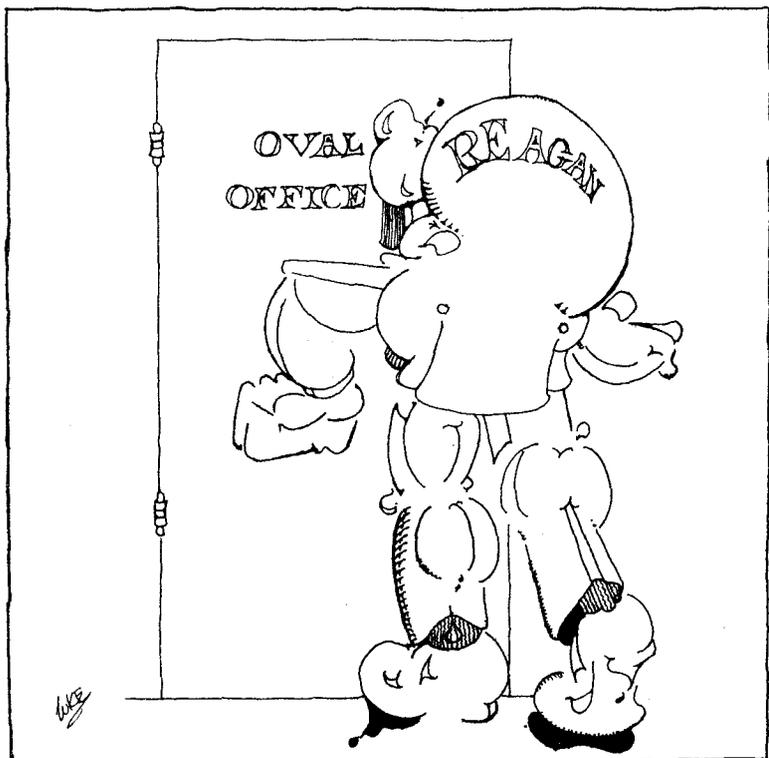
the politician and the party has been all but severed, as evidenced by the growing incidence of independents and split-party voting. It was this breaking of ties that let the usually ineffective political action committees (PAC) wield great weight, putting up single-issue candidates and in pressuring politicians, once shielded by strong parties, to adopt their positions. This in turn gave the appearance that PAC's were running the government, leading to disillusionment with government and especially the parties, leading to further decline in party power.

He concluded with the paradox of collective responsibility vs. citizen participation in government. Too much participation leads to too little collective responsibility, as is today's situation. Too little participation leads to too centralized politics. It is the resolution of this paradox that eludes us.

The lecture was well organized, well delivered, with frequent anecdotes and evidence, and readily understandable.

The next lecture in the series is November 19, at 8 pm, given by Dr. Anthony C. S. Readhead, on "Quasars and Continental Drift".

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TRYING TO PUT A SQUARE PEG IN A ROUND HOLE.

EDITORIALS

Dart, tart, smart, cart. Oh, and fart, which-brings us to the subject of today's editorial: Art. Particularly "The Horizontal Pillar." As most persons at Tech are probably aware, a band of rabid terrorists forcibly abducted this fine example of modern art from its resting place across the Court of Man and thrust it upon the soft turf between Gates and Dabney Hall. Both Michael Smith, the Baxter Art Gallery Director, and Jud Fine, the artificer of the pillar, were outraged by this callous act, and they both suggested that the vandals responsible quickly rectify the situation. Fine said, "...in moving the work, its esthetic and physical determinants were destroyed." When Smith said that the actions of the student-terrorists have become part of the art work, however, we think that he approached the truth of this matter.

Art is more than the whims of an artist. An art object is an independent, organic entity whose symbolic umbilical cord from the artist is severed with that last chisel stroke or with that last batch of hay. For Fine to worry about the "determinants" of his pillar is for him to deny the life he created. And all life must grow and evolve only to decay eventually into dust. We believe that the artist must have felt this truth, though, because why else would the originally straight and firm "Horizontal Pillar" become limp and sag?

The original position of the pillar was intended to represent Western Man and his relationship with other humans on the planet, and to have chosen the Court of Man as the pillar's initial resting place shows an incredible amount of insight and subtlety on the parts of Smith and Fine. They *knew* that by setting the pillar in the way of normal student traffic, a group of students representing traditionalism and conservatism would move it to a different site, thereby jettisoning Western Man into the modern world. By initiating the controversy that they have, Smith and Fine realized that some students would attempt to burn the pillar. What better way to represent the wars that scar the history of the West than with burn marks? With the recent effort to make the pillar horizontal once more, the brilliance of Fine shines through, for here we have a symbolic act that proclaims that man *can* rebuild and that there is a future for Western Man. Instead of complaining about the incomprehensible art that litters the Caltech campus, we should be thankful that we have people like Michael Smith here that are constantly working for our cultural development.

—Stuart Goodnick

Look to Future with Fee in Past

By Lee Sunderlin

If you were told to write this article by Tuesday, would you do it Monday night? Would you worry about it? Would it end up in next week's paper instead of this week's? This was one subject Dr. Phil Zimbardo talked about last Friday. A Stanford psychologist, he has done much research in this and other fields as well as extensive writing.

Children think only about the present. Thus, they make poor decisions for the future but they experience more of what they are doing. Caltech students, on the other hand, are among the most future-oriented in the world. Science and technology depend on con-

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THE CALTECH Y fly-by

Today, Friday, October 24: P. Pat Productions brings you a NOON CONCERT with classical flutist Jean Goodlow, accompanied by classical guitarist Anisa Angarola. Bring your lunch to Winnett and enjoy.

Monday, October 24: A NOON DISCUSSION with pacifist Jack A. Nelson. Jack will speak on the problems of today's militaristic world in his speech entitled "Bread, Not Bombs." Come on up to Clubroom One and give your views.

Wednesday, October 29: A stroke of fortune has allowed our hero P. Pat to bring together The Stick Band and Emmett Chapman for an EVENING CONCERT. At 8:30 P.M. in Dabney Hall.

Wednesday, October 29: The Caltech Y is bringing you a chance to expand your literary expertise. From 7:30-9:30 P.M., science-fiction writer Tim Ferris will give another WRITING WORKSHOP in Clubroom One.

Friday, October 31: Alright, folks, what's special about today? Besides Halloween, dummy. That's right, it's NOON CONCERT day. For lunch-music on the Quad today, P. Pat Productions will bring The Bopkats, rockabilly musicians extraordinaire. And if you're thinking about missing this Noon Concert to get an early start on your trick-or-treating, forget it. We've got a special treat for you at intermission. See you there.

The California Tech

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Members of Dabney House cast thousands of tons of computer scratch into their courtyard in a desperate effort to seek the eternal high.

Up From the Well

Well, it's that time of year again, when the entire population of the student houses is out there, hard at work, trying to consume enough water, by any available means, to help balance the Department of Water & Power's fiscal sheets for the year. Specifically, I am referring to the standing tradition of showering the frosh, showering the upperclassmen (and women!), and in general giving any random person a bathing just for the hell of it. It's a great tradition; it gives all the incoming frosh a proper perspective of the diligent, serious and dignified atmosphere which continually pervades the campus; it keeps the upperclassmen/women from becoming excessively bored (especially those of us who *still* haven't been assigned

any work—ha ha); it provides B&G with an excellent field test of their plumbing, on which they have lavished the same care and excellent service as is their usual style; it marginally raises the level of cleanliness among students, although it usually isn't a problem to be considered; and it gives the struggling frosh an incentive to at least survive their first year at Tech, so that they can do as they have been done unto.

However, if you are a dry frosh, as I once was, and wish to remain so (dry, not froshly), there are some tips to follow. For example, while at other times and places actual provocation is needed to get showered, for now the mere fact that you're a frosh is sufficient. Remain obscure. Stay in your room all day and all night, trolling physics and math. Remain quiet in the presence of your elders. Do nothing to attract attention; if you need help trolling, go ask another frosh (and close the door behind you). Wear water-repellent underwear; failing that, dress as conservatively as possible. Many (although not all) would-be showerings can be avoided if you're wearing a two-piece leisure suit. Obtain a map of showers on campus, noting the routes to your 8:00 classes which may pass perilously close to a convenient water supply. If someone else is getting showered, avoid the scene; there is no incentive to shower someone as having just showered someone else and being in the mood. Bewail and bemoan the fact that you came to Caltech with only two changes of clothing and can't afford to get one wet. (Better yet, tell everyone you've only got *one* set.) Casually let it be known that you're fourth-level black belt in karate, although this can backfire occasionally. Above all, when a group of people cluster around you with a sadistic gleam in their eyes, plead an overdue Lit paper to soften their hearts. (chuckle)

Next week: missing chlorophyll and parking lots, plus what to do now that you're thoroughly soaking wet.

—the realist

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October 27

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Western medicine has recognized a number of causes of debilitating disease, notably hereditary, viral, bacterial, fungal, parasitic, and social. Today I'd like to focus on a social disease of uncommon decimatory power, one which infects and consumes many a brave soul, and claims a disproportionate toll from among our most promising young adults. Friends of the victims have been treated to the macabre sight of heads swollen to twice their normal size and pitiful shrunken bodies. I speak of the heartbreak of nerdism.

Early symptoms of this malady are varied, and onset is often so gradual that the stricken fail to take action before the infirmity reaches an incurable state. Thus it is imperative for each of us to be mindful of the early warning signs. These include unsanitary habits, compulsive industry, contentiousness, bizarre fixations, and generally antisocial behavior. Often secondary symptoms accompany these indicators. The victim of nerdism (or "nerd", by analogy with dwarfism, cretinism, etc.) may undergo a bewildering sequence of changes in his social behavior as he finds himself ostracized from society and concomitantly lured into nerdist subcultures. A study of the social problems associated with leprosy is relevant to the early phases of nerdism, which are, however, mediated by the lack of overt physical symptoms.

Up to the point of physiologic breakdown, nerdism can be treated effectively. It should be pointed out that cure rates are generally low, but newly discovered procedures have brightened the outlook considerably. In the pharmacological arena, psychoenergizers and alcohol seem to antagonize the bizarre fixations. Psychoenergizers are, however, contr-indicated if compulsive industry is poten-

tiated. The most effective measures are, predictably, social in nature. The tendency to quarrel can, for example, be effectively extinguished through avoidance therapy with a trained psychologist. Particularly useful are trips away from the infectious environment, perhaps to the mountains or the beach, where for long periods the nerd can grasp no bone of contention. Also of utility are sessions of nonverbal activity with the psychotherapist, such as dancing and lovemaking, which are generally underdeveloped areas of the personality susceptible to nerdism. It is important to note that intensive therapy can be counterproductive if overdone, however. In this case the nerd may grow restless or whine about imaginary obligations. Detaining him further may result in resentment and gradual erosion of the therapist/patient relationship.

Grisly descriptions of the later stages of nerdism abound in medical journals. I include them here only to stress the importance of early treatment. Most obvious is the complete atrophy of the musculature.

Less noticeable but equally devastating is the loss of all primary sexual characteristics, which predictably exacerbates the behavior symptoms. Also, as mentioned earlier, the victim's cranium gradually swells to enormous dimensions to house the considerable accumulation of non-essential grey matter. Simultaneously, he loses his ability to speak plainly, and eventually adopts a curious-sounding gibberish which has been dubbed "nerdic" by early investigators. As he loses his ability to deal with the real world, it becomes obvious to those around him that he must be sent to an institution to be cared for. Terminal nerds usually live out long and boring lives as wards of the state, apparently oblivious to the indignities

perpetrated upon them.

The Nerd Foundation needs your help. The creative geniuses, the Franklins, the Platos, of tomorrow are succumbing to the horrors of nerdism in increasing numbers. Soon, all art, all philosophy, all music will disappear from the face of the earth. Civilization will certainly fall soon thereafter, as a new generation grows up with no moral or esthetic values, with no guidance from their mental superiors.

Only intensive psychotherapy can save the nerds, and the time to do it is now. Are you ready to flush the world's prodigies down the institutional toilet? Can you turn your back on the likes of Carver and his kids? Don't throw it all away. You can still save civilization. Send a large donation, today, to the Nerd Foundation.

-Chuck Nichols

Fondung

- 2 lbs. Ground Beef
- = cup sliced fresh mushrooms
- 1 tbls. grated onion
- 1 rutebega
- 1 sup crumbled bread
- 1 cup water
- 1 tsp. salt

After frying meat, add onion and crushed rutebega. Stir fry for 5 min. Place in deep fryer, add water, bread, and mushrooms. Serve hot in Fondung pot.



Photo by Paul S. & M.

(Above) - Well, no more witches here. Students happily suck up the fumes from Dabney House's annual bonfire.



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ENTERTAINMENT

MOVIES plays SPECIAL EVENTS

Willie B., The Gobble-Ups, and After Magritte Provide Quality Entertainment

Last Friday night I went to Ramo Auditorium with the idea that I was in for a typically bland evening. What else could I expect? After all, I was on an assignment for *The California Tech* [OK buster, no more editorial comments out of you become a Tech editor-eds.]. Unfortunately for me (or so I thought), my assignment was to sit through a Theatre Arts program and review it. Man, was I wrong!

There were three separate parts to the program. The first part was "Willie B.," an unfinished play about the Vietnam War. The author, Steven Douglass, was experimenting with two ways of doing the play: a monologue where the actor related the events of an ambush and his friend's death to the audience, and a two-scene play with 5 men acting out the story.

Both versions left the audience stunned and not knowing whether to applaud or cry (at least one person *did* cry). All of the actors did fine jobs except for one of the areas where the dialogue bogged down, but most of the credit for the impact of the production has to go to the author for his skill in relating a true story and to the director (James Tarazon) for his experiences in Vietnam and the advice he was able to offer the actors to achieve a realistic portrayal.

Next in the program came a series of bizarre, fable-like stories written by Oscar Mandel, called "The Gobble-Ups". The humor was often rather dry, but most of the

stories got the audience chuckling, which was quite a feat after the gore of Vietnam in the preceding play. The actors did fine jobs of representing the different animals, but I was most impressed by Kim Carr's version of a wimpy, lowly, sniveling rat. The audience enjoyed the light comedy of "The Gobble-Ups" very much, and all the actors should be pleased with their success.

The last item in the program was the major attraction, *After Magritte*, a zany, farcical English sitting-room comedy. Once in a while some of the British humor got past the audience, but the few occasions when that happened were more than made up for by the solemnity and great delivery of totally hilarious lines.

The plot involves an odd

family that is accused of being in league with a strange criminal by an even odder inspector! To say any more would spoil the show for people who haven't seen it (actually, they paid me not to reveal the whole plot).

Altogether, the night was a complete success. A few words of warning, however. Some of the language in "Willie B." is a bit dirty, but it doesn't even come close to the way real Marines talk, so don't worry too much about having your ears singed off, and if you're susceptible to laughing to death because of great comedy, don't attend *After Magritte*.

Remaining performances are October 24 and 25 at 8:00 pm, and Oct. 26 at 7:00 pm.

—Joe Balke

Elephant Man Absorbs its Audience with Heavy Vibes

The Elephant Man, Directed by David Lynch, Produced by Jonathan Sanger, a Brooksfilm Production, is now in general release.

There really was an Elephant Man. His name was John Merrick and he was born in the English Midlands in 1863. At the age of 21 he was on public exhibition in a freak show when a London physician, Frederick Treves, saw him, took an interest in him, and rescued him from his sordid sideshow existence. Under Treves' care the freak turned

into a human being. He died young, at 27.

A very successful play about the Elephant Man opened on Broadway last year and is still running. This film is an independent effort, based on original source material rather than the Broadway play, and the most important difference between the film and the play is the fact that the actor in the play only suggests the physical deformity of the Elephant Man, while in the movie the man is shown in all his monstrosity.

The movie audience doesn't get to see the Elephant Man right away. You see visitors to the sideshow reacting to him with horror and fascination. You see Frederick Treves (Anthony Hopkins) looking at him for the first time, his eyes slowly filling with tears. You see the man's misshapen shadow on a screen as he is displayed by Treves before a medical society. You are given plenty of preparation (along with considerable suspense) before you see the Elephant Man plain. As a result, it's not the shock it might have been—by design.

This is no horror thriller, not even a *Phantom of the Opera*, where the unmasking of the Phantom was the *big* moment. Women screamed, strong men fainted, and white-uniformed nurses were on duty in the lobby. The emphasis here is on compassion, on the need to recognize the true qualities of a man, no matter what his physical form. It's an absorbing picture,

Tempus Fugit

Somewhere in Time. Starring Christopher Reeve, Jane Seymour, and Christopher Plummer. Produced by Stephen Deutch. Directed by Jeannot Szwarc. Screenplay by Richard Matheson, based on his novel, *Bid Time Return*. Running time: 103 minutes. Rated: PG.

There are films you should not see alone. Suspense and horror films have nearly made companionship a requirement for emerging sane from the theatres of terror. As the title role in *Alien* is about to grab its next victim, it's reassuring to reach out and touch someone.

Somewhere in Time is a film you should not see alone, although it is about as far away from a horror picture as you could find in today's cinema. You might need the help for carrying in boxes of Kleenex, since this picture will move you to tears, if you're a Romantic at heart. For those who never cry at movies, the picture still offers credible acting, a gorgeous period setting, and adequate (if low key) suspense.

The story, based on script writer Richard Matheson's own novel *Bid Time Return*, is straightforward enough, considering the available time

paradoxes already well known in the science-fiction field. A young playwright, Richard Collier—played by Christopher Reeve, and easily distinguished from his *Superman* roles—has left Chicago for parts unknown, fleeing writer's block and a break-up with his girlfriend. Stopping for the night in an old hotel, he chances upon a 1912 portrait of the famous American actress Elise McKenna, hanging in the hotel's Hall of History.

Obsessed with this vision of Beauty Incarnate (the portrait has an impact similar to that of the "Mona Lisa"), Collier begins researching her life. He makes a startling discovery: *she* was the old woman (seen earlier in the film) who had attended the premiere of his first play; who had approached him afterwards, and gave him an antique watch and a cryptic message: "Come back to me!"

Other revelations follow. And Collier finds himself in love with a woman who lived/lives in 1912. Somehow, he will find his way back to her.

Reeve clearly had fun with his role, shown in many sharp—perhaps improvised—moments of humor. Jane Seymour, as the worried, yet intrigued, Elise McKenna, is delightful; a fitting recipient of such a great love.

Completing the temporal triangle, Christopher Plummer turns in a splendid performance as William Fawcett Robinson, Elise's business manager. He demonstrates the necessary equal amounts of aristocratic hauteur and single-minded devotion to his goal, without looking silly in the process.

The musical theme, (Rachmaninoff's Rhapsody on a Theme of Paganini (Op. 43, Variation XVIII), is superb. John Barry's original scoring complements it well.

The film does leave matters vague or ambiguous in many ways—the origin of the watch, for instance—but most of the minor puzzles can be resolved upon reflection. Only in the picture-taking theme does director Jeannot Szwarc seem to underestimate his audience's intelligence; the superposition of the destined portrait frame merely points out the obvious.

The film contains two interesting sidelights. Author Richard Matheson has a cameo role: watch for him as Collier leaves the hotel's communal bathroom after shaving; he does a double take, and then comments "Astonishing!" The present-day scenes shot on the site—the Grand Hotel on Mackinac Island—have a fantastic element: Collier can't really drive by the hotel; a 1902 law bans automobiles from the island (the filmmakers received special permis-

continued on page 11

ASCIT MOVIE

Friday Night 7:30 & 10:00

ASCIT Members 50¢ Others \$1.00

Baxter Lecture Hall

Dr. Strangelove

Next Week

Animal Crackers

Niven Suggests an Ideal Society

By Jim Mayhem

Science fiction writer Larry Niven appeared at Baxter Auditorium October 15 to lecture on modern science and technology. Mr. Niven is best known as the author of the Known Space series, which deals with mankind's far future. During his lecture, however, Mr. Niven concentrated on mankind's immediate future, specifically with the necessity for renewed scientific research and space exploration.

Mr. Niven's basic premise is that we cannot afford to be content with our present level of science and technology, though he does admit that the average person is now richer than in all of past history. In the United States, for example, contacting a person usually involves dialing a telephone. Travel is made simple by a huge network of roads and the huge number of cars that exist. Such conveniences, however, are the result of fairly recent technological advances which

enabled people to make use of resources and energy. The problem facing mankind today is that these advances have not included any means for replenishing the stock of natural resources and now the stock is running low.

Mr. Niven has a three-phase program for correcting this situation. First, a series of orbital solar power satellites would be built. Such satellites can collect solar energy and beam energy to Earth in the form of microwaves. Secondly, this energy would be used to power a laser launching system. With such a launching system, it would become relatively simple to establish settlements on the Moon. The Moon could then be mined for the metals and materials man needs. Finally, from bases on the Moon, construction of factories in orbit could begin. These factories would produce items which cannot be made on Earth, or which cause pollution

if produced here.

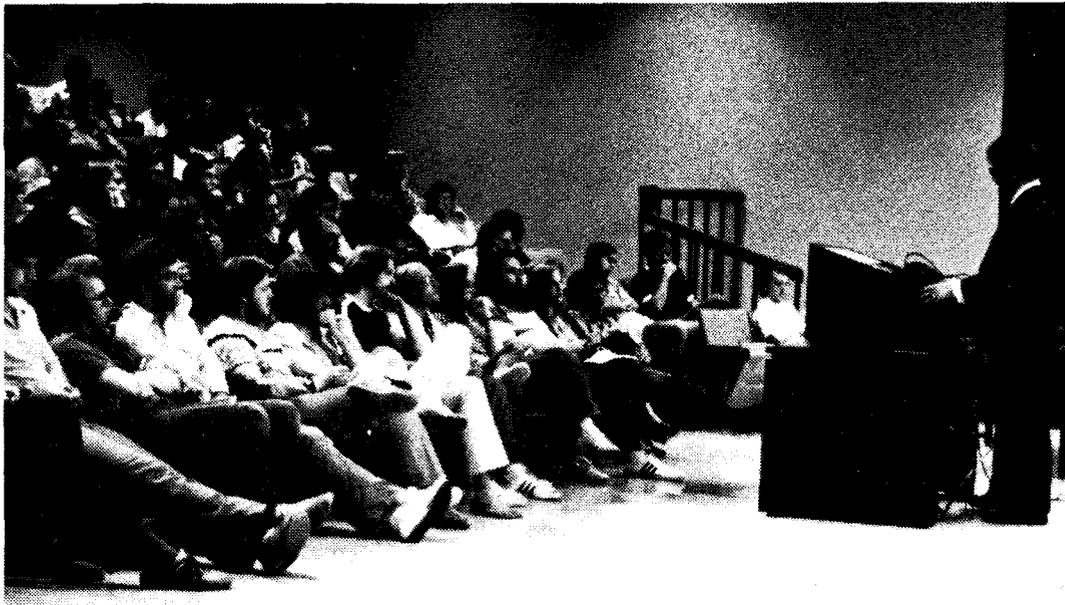
Mr. Niven admits that this program is expensive—on the order of magnitude of an initial investment of 100 billion dollars. However, once in operation, solar power satellites would provide cheap energy for such things as the laser launching of rockets. A

laser launch system would be easy to operate because virtually anything is useful as reaction mass. With a cheap energy supply (i.e., solar satellites) a laser launch system will become practical and so will Lunar mining settlements.

Another way of looking at the cost of Niven's program is

to compare it to present efforts to locate new sources of fossil fuels. Billions of dollars are now being spent every year to discover non-renewable sources of oil and gas which can only postpone the day when the flow of energy runs seriously

continued on page 11



Larry Niven details his proposed plan for the safely insured future of mankind at Baxter Auditorium.

Auditions for Candide Near

By Jeff Eriksen

Ever wanted to sing, act, or dance on stage? Ever wonder how stage sets were built, how stage makeup, costumes, and lights were designed and implemented? Ever seen a live, staged musical comedy? Well, you've come to the right place! Just as Caltech provides you the opportunity to play college football (?), raft down the Colorado, put experiments aboard the Space Shuttle, or build a human-powered airplane, it gives you the chance of a lifetime to participate in the 10th more-or-less-annual (as far as this writer's knowledge extends) Caltech Musical. Whether you have had any experience or not, we can find a place for you involving one to ten hours a week. Call, crew, staff, and orchestra all have big and small roles for YOU!

So what the heck is this "Candide" about? Well, Voltaire's original book was an outrageous satire of a simplistic view of this philosophy of Leibniz, who fathered (or midwived or

something) our beloved Calculus. In this musical version Voltaire appears as narrator, and plays the pedantic Dr. Pangloss who expounds the philosophy that this is the "best of all possible worlds" and that everything that happens is for the best. Our young hero, Candide, tries to live by this philosophy, but finds the going rough through wars, volcanoes, rapes, swindles, abductions, and Inquisitions. He does have some good times, too, as when he and Paquette (the luscious serving maid) discover El Dorado, and when the Old Lady tells how she lost one of her buttocks. Eventually, the wisest man in the world reveals the best of all possible philosophies, and everyone lives happily ever after (except the cow).

Shirley Marneus, Director of Theatre Arts, will again be the Stage Director. Steve Gothold replaces Steve Goodenberger as Musical Director this year, and Duncan Mahoney returns as the

Makeup-Man. Jean Mueller will choreograph the number "I Am Easily Assimilated", Jeff Eriksen is Business Manager, and Chris Linblad is the Producer. Lee Miller and Eric Warren will respectively design the lights and set.

Auditions will be held October 25 and 26, Saturday and Sunday, from 12:30 to 6:00 pm in room 19, Baxter. All Caltech and JPL faculty, staff and students are invited to try out. All parts are open. Come by or call the Theatre Arts office to arrange for an audition time, or simply show up and try your luck. We will hear everyone who arrives before 6:00. Singers are strongly encouraged to prepare a song and bring music for the accompanist. Music and scripts are available for checkout from the Theatre Arts office today and during auditions.

Anyone interested in dancing in the show should come to the separate dance auditions either morning from 10:30 to

noon in room 25. Wear loose clothes for dancing, please.

Instrumentalists are also being asked to come to these auditions and sign up so we can tell what parts we are missing. Orchestra auditions will be held January 10.

Lots of vital staff positions still need to be filled. We need volunteers for makeup crew, assistant producer, assistant business manager, light crew, costume coordinator, costume crew, technical director, set crew, stage crew, properties coordinator, prop crew, assis-

tant director, stage managers, publicity coordinator, and prompter. Come on by auditions and sign up. The more people we have, the more we can spread the work (and the fun!).

We are producing the 1974 revival of the show that won several Tonys. In this version 23 people acted 85 roles. We are expanding to 50 people, but cannot go much higher because of our limited stage facilities.

Performances will be held on February 27, 28, and March 1, 1981.

THERE IS PART-TIME WORK ON CAMPUS...

USHERS

To work at events in Beckman and Ramo Auditoriums. Call Bruce Martin or Mari Peterson, Blacker House, 578-9370.

TICKET SELLERS

To sell tickets out of the Ticket Office and perform general clerical duties. Hours to fit your schedule, between 9:30 AM and 5:00 PM, M-F, 8-12 hrs/wk. Call Chris Harcourt at x1695.

Starting pay: \$3.35/hr (Freshmen apply when eligible)



Emmett Chapman and the Stickband will perform this Wednesday at 8:30PM in Dabney Lounge.

Kinks Aren't Pains in Neck

It's a trifle strange, I think, that Ray Davies has become a well respected man. The original Kink, the one who never conformed, the classic rule-breaking schoolboy in disgrace, is now leader of one of the longest-established bands in the (admittedly short) history of Rock. Since 1963 the Kinks have been pounding it out, and like everyone they've had moments of power, and glory, and disgrace—they were banned from playing in the U.S. because of flagrant drunkenness on stage which resulted in them not being physically able to finish many shows. In fact. The band had practised so little that Ray even forgot the words to "Lola". "I can't remember the fucking words," he shouted at one concert.

But there's something about the Kinks that allows them to transcend all this meaningless bullshit, and become, by some mystical, divine inspiration the greatest rock and roll band playing today. But wait! What about the Stones? Don't they have a traditional claim to that title? Well, if they do it's by squatter's rights, and is of no value anymore. The Stones haven't made a worthwhile sound since *Goat's Head Soup* and even that was a little bit shaky). Now they're my nomination for "the world's most depraved rock band." But the Kinks are a different story....

In spite of all this praise, I was disappointed when the recent "double live" Kinks album appeared. I mean frchrissake, who needs another record like

that? We've had enough with Frampton, Nugent, AC DC, etc. Why another double live, I thought. Well, after listening to the record I'm even more curious about why it was released, because it is doubtless one of the most useless and inane rehashes even encountered: no spontaneity, no life, nothing really new. The audience reacts with frightening predictability to all the big hits, and I'd be willing to bet the "live" sounds are as canned as Campbell's cream of mushroom. No, make that chicken noodle—chicken for thematerial, and limp noodle for the performance.

So it was with inner reservations that I went to see the Kinks at the L.A. Forum on Friday the tenth. But hear me now, all disbelievers and weak

of heart—the Kinks are still the masters that they always have been. Ray's charisma and energy spread throughout the house that night. With hair cut short and sticking up on end, black pants and white shirt, he was transformed from a rock singer into the rock singer. Dave plays like a demon, with a seemingly innate sense of how to get that tough, gritty sound out of his guitar. They are better every time I see them. And although they're a "band", there's really only Ray and Dave. From the opening chords all the way until the end it was them, alone, onstage as living legends. They know all this, but they smile. They have seen the key that most rockers miss: they don't have to sneer all the time because good music, like good sex, can be fun.

The fast-and-hard songs were well performed, starting with "Lola", "A Gallon of Gas", "Attitude", "Superman", etc. and on into a few older songs, but as always the slower songs were best: Dave's guitar lines cut clean and crisp, Ray's voice is more expressive, and the lyrics reflect the sensitivity of the band. Singing "Celluloid Heroes" was a natural choice for an L.A. crowd, and Ray eased every bit of expression out of that beautiful and perceptive song...

Everybody's a dreamer, and everybody's a star, and everybody's in show biz, it doesn't matter who you are---

You can see all the stars as you walk down Hollywood Boulevard/some that you recognize, some that you've hardly even heard of,/People who worked and struggled and suffered for fame,/some who

succeeded, and some who suffered in vain./But celluloid heroes never feel any pain,/and celluloid heroes never really die---

By the time the song ended half the audience was singing along, because, after all "everybody's a dreamer..." They're misfits, this strange band of Muswell Hillbillies.

You've been sleeping in a field but you look real rested/You set out to outrage, but you can't get arrested/You say your image is new, but it looks well tested/You're lost without a crowd, yet you go your own way---

Ray, you're a misfit, thank God for that... But "take a good look around, the misfit are everywhere."

Energy had been building a steady pace. Finally, the crowd had enough, and they overran the security guards who were doing their best to ruin the show by keeping everyone seated. The whole concept of order runs contrary to the basis of rock music, but freeform insanity and the release and rediscovery of oneself through frenzied dancing are way beyond the comprehension of the dull-witted junior-college football tackle types that the producers had hired to police the show.

In fact, Ray was so pissed off at them that he told the security guards up front to "leave them [the audience] alone", and when the band came out again later he said they would never play the Forum again: "next time someplace smaller, and with better attitude". Anyway, the greasy bastards finally got stomped, and the audience surged toward the stage. I passed one of the guards and was tempted to kick him in the nuts, or at least jab my finger into his eyeballs, but I was on crutches, and couldn't move fast enough for that kind of fighting. Besides, from the way they treated other people, I knew they'd get a gang of vigilantes together and either beat the shit out of me, or throw me out in the street without my crutches, or maybe even both. So I reluctantly abandoned the idea.

I half walked, half floated my way up to the stage. As I got there the band lit into a string of greatest hits that was awesome: "Stop Your Sobbing", "All Day and All the Night", "You Really Got Me", "Rock and Roll Fantasy" etc., that got me so worked up I stood there for a full fifteen minutes screaming myself hoarse for "Victoria". The set climaxed with the most searing version of twist and shout ever heard. Mick pounded on the drums like some apeman got amok, John Gosling's bass lines were coming fast and thick, Dave smashed his guitar as though it were the incarnation of some evil spirit he was trying to kill and kiss, while above it all Ray jumped around and danced and cavorted to make Mick Jagger seem like Lawrence Welk.

For a brief moment the world was torn and a mystical inspiration ruled. And that's what rock is all about: Dionysos the drunken dancer. God save the village green—God save the Kinks.

—Bruce San

Heavenly Angels Rescue Theatre Arts Program

By Jim Mayhem

Caltech's Theatre Arts program keeps hanging in there—barely. The program's first show, composed of 3 short plays (reviewed elsewhere in this issue) will close this weekend. Shirley Marneus, the program's director, was very pleased with the first show because students were involved as directors and writers as well as actors. She is very hopeful about upcoming shows, but is facing the perennial problem of lack of funds.

The first show was funded with \$1700 collected over the

summer from "angels", most of whom donated \$25 each. However, these funds are now exhausted and Shirley is looking for help from foundations and some new angels.

According to Ms. Marneus, the program only needs \$15,000 a year to operate. For this reason, the Theatre Arts program lies near the bottom of the Institute's priority list. The Theatre Arts program just cannot compete with million-dollar renovation projects for attention.

Shirley is now looking for

help from the Caltech community at large. Volunteers are needed to contact potential donors and to write to foundations for help. If you think you can help out, drop by the Theatre Arts office in Winnett and let Shirley know.

The program also needs people for actual productions. Auditions for the musical *Candide* begin this weekend. If you have talent or would like to find out if you do, contact Chris Lindblad about auditions. You might even become the star.

RECRUITMENT FOR SHELL COMPANIES OVERSEAS

A service provided to overseas Shell companies by SCALLOP CORPORATION (a Shell company)

OPPORTUNITIES FOR NATIONALS OF WEST EUROPEAN COUNTRIES AND ARGENTINA, BRAZIL, COLOMBIA, INDONESIA, NIGERIA, THAILAND, AND VENEZUELA WHO WISH TO RETURN TO THEIR AREAS OF ORIGIN.

SCALLOP CORPORATION represented by PETER C. VAN KEEKEM will be on campus to interview graduates of above nationalities in the following disciplines:

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Ph.D level Geologists — M.S. or Ph.D Geophysicists.
Ph.D level Chemists.
M.S. or Ph.D level Computer Systems Analysts.
Ph.D level Operations Research specialists.
- ARGENTINA:** M.S. or Ph.D level Petroleum, Mechanical and Mining Engineers, Geologists, Geophysicists and Financial, Economics and Business-oriented graduates.
- BRAZIL:** Appropriate graduates in Economics, Finance and Marketing. Chemical Engineers and Agronomists. Geologists for Billiton Metals Division of Shell.
- INDONESIA:** Appropriate graduates for the Chemicals and Metals Trading Administration.
- NIGERIA:** Appropriate graduates for the Finance Administration.
M.S. or Ph.D level Geologists and Geophysicists.
M.S. level Petroleum, Mechanical and Electrical Power Engineers.
M.S. level Computer Systems Analysts.
- THAILAND:** M.S. or Ph.D level graduates in Finance, Accounting, Economics and Chemical or Mechanical Engineering to become executive trainees.

If you are interested, please contact your Placement Office for an appointment.

CAMPUS VISIT: Thursday, November 6, 1980

Caltech Prepares to Create a Mammoth Radio Telescope

By B. F. Goodrich

An array of ten matched radio dishes has been proposed by a Caltech/JPL group led by Professor Marshall H. Cohen. The radio dishes would operate together in what is called very-long-baseline interferometry, in effect mimicking (in resolution) a single radio telescope of continental dimensions. Other arrays for the same purpose have been proposed by the National Radio Astronomy Observatory (NRAO) and a group of Canadian astronomers. All of the groups involved recently met at the NRAO site at Green Bank, West Virginia to discuss and coordinate their efforts.

Very-long-baseline interferometry (VLBI) involves recording the signal received from a given radio source (including the phase of the signal) and comparing (interfering) the signals from two widely separated radio telescopes. The rotation of the Earth allows the array to build up a radio map of the source from the interference fringes produced. The power of VLBI lies in the very high resolution obtained—present VLBI techniques allow 0.001 arcsecond resolution (1/4,000,000 of a degree!)

Although signals from individual telescopes are compared only two at a time, more telescopes means better coverage of all the possible separations of the telescopes in a given time. This is of prime concern in VLBI, and hence the geographic location of the telescopes is very important. The Caltech proposal would place radio dishes of 25 meters diameter at sites including Anchorage, Honolulu, the Owens Valley Radio Observatory operated by Caltech, and the NRAO's Green Bank installation. The projected total cost of construction of the ten telescopes is \$38.8 million, and operations costs would be \$4.8 million annually. A single

operations center would provide the computers and other equipment needed to analyze the data.

Presently VLBI is accomplished by using existing telescopes, which were originally made for different purposes. They operate at various wavelengths (VLBI must be done with all telescopes at the same wavelength) and their geographic locations are not optimum. They also have many other duties besides VLBI to perform. The technique of VLBI is so powerful, however, that radio astronomers feel a pressing need for a so-called "dedicated array" of telescopes to be built solely for VLBI.

SSO Enters into a New Phase

By Dave LePoire

The Student Space Organization (SSO) is progressing as planned. Team leaders were chosen by Ralph Weeks, Project Manager, and John Whitehead. These two also worked gathering information over the summer.

The SSO has entered a new phase—deciding the feasibility of proposed experiments. The team leaders are to establish enough information on the experiments by midterms so that some experiments which look infeasible can be cancelled or delayed. The purposes of their review are to see if we can understand and interpret the experiment; to see if the experiment is really new via data search; to see if the experiment fit within the requirements of the canister (i.e. size, heat

transfer, power, and safety); to see if any industries are willing to fund some of the research; and to see if we have enough contacts to design the experiment effectively.

Communication in the SSO is maintained by a weekly meeting on Thursdays from 5:15 to 5:30 in Thomas 210. All interested are welcome. In these meetings the team leaders give an update on their investigations, the technical assistant tells of any news in the areas of size, power, thermal problems, and the general news such as progress, funds, time schedules, etc.

WANTED

WISH TO BUY ENCYCLOPEDIA set. Dr. G. J. Wasserburg. Caltech extension 2139 or 2439.

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HELP WANTED

Babysitting in my home. Tuesday, 12:00-5:00. 2 boys (5 & 9 yrs). 1 mile from campus. Call after 7 p.m. 681-8988.

STUDENT SHOP MEMBERS! This is your chance for easy money! The Tech has some small projects requiring carpenter or household construction skills. Small amount of time involved, good money. Better than working on Interhouse. Leave note for business manager in Tech office or call x2154.

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WE NEED YOUR HELP. Learn to earn up to \$500 per thousand stuffing envelopes. We show you how. Details: send 25¢ and SASE to: GELD, P.O. Box 2124, Yorba Linda CA 92686. (Please mark envelope with "G/6".)

Buying or selling something? You, too, can take out an ad in *The California Tech!* \$2.50 per inch plus 40¢ per extra line for Classifieds. Bring ad copy to the Tech office or call extension 2154. O.K.?

Campus Interviews

TI Corporate Research, Development & Engineering

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CAMPUS INTERVIEWS November 5

If unable to interview at this time, send your resume in confidence to: Steve Byars/P. O. Box 225474, M.S. 217/Dallas, TX 75265.



TEXAS INSTRUMENTS INCORPORATED

An equal opportunity employer M/F

GI Joe Goes to Hollywood

By Joe Balke

The Film Club is a loosely organized group of movie makers who have a high interest in many of the aspects of the movie industry, with extra attention being paid to special effects. Their interests range from script-writing and acting to special effects engineering.

The Club has no lack of talented members, but warm bodies with similar interests are encouraged to attend the meetings at Sunny Chan's office on Wednesdays at 5:00 pm (as if any Techer would be capable of moving at 5:00 am!)

Many of the members are involved in individual projects and use the club meetings as a chance to show off their latest footage or get new ideas and techniques. Recently, a new member brought several of his films that he wanted to show off, but he couldn't do it because the projector was being fixed. His films varied from animated GI Joe dolls playing in a rock band to a Star Trek movie.

The Club members are interested in getting the use of a certain part of a building on campus as a soundstage for movie-making, where large effects and permanent sets could be built. Normally, the chances of this happening would be very small, but rumor has it that Dean Wales has been offered a major role in a movie as part of a bribe to get the building, so the Club may get what it wants after all.

MORE SPORTS THAN YOU WANT



Caltech's undergraduate soccer team was tied after regulation play for the 3rd time this year, but managed to lose their 8th game, 3 - 2 to LaVerne last Wednesday.

LaVerne Kicks Beavers in Grass

By Jake

Caltech's undergraduate soccer team was tied after regulation play for the 3rd time this year, but managed to lose their 8th game, 3-2 to LaVerne last Wednesday on the loser's pitch (home field).

The game was hard-fought with the Beavers fighting back from 1-0 and 2-1 deficits on goals by Lance Dixon and John Krehbiel (*Rah Rah Rah*).

The game was marked by many opportunities for both sides. Each team had a shot bounce off the post, and many free kicks were given in front of both goals. LaVerne was awarded two penalty kicks (on somewhat questionable calls) but only managed to convert one. Conversely, the Tech team had to fight for both goals. First, one off a John McNally corner kick, that Dixon kicked out of the goalie's hands, and into the net. McNally also set the 2nd goal with a low, hard, crossing pass that beat the goalie. Krehbiel easily finished the play.

Two of the team's best

games have come against LaVerne, the other being a 3-3 tie. Half of the team's losses have been by one goal or less. With four games remaining, the team is winless and has been outscored by their opponents nearly 2 to 1.

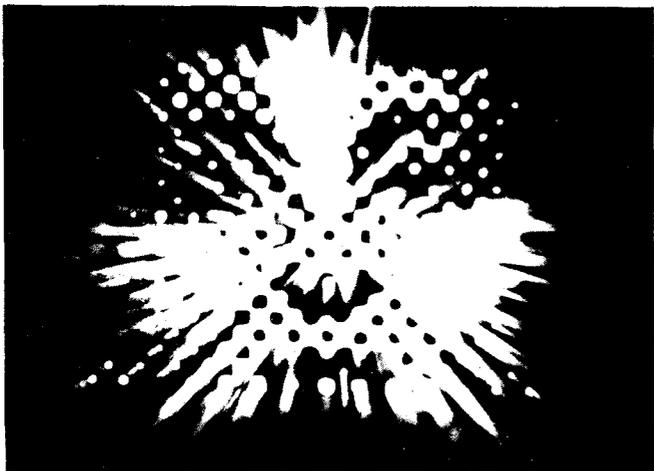
This game was the first all season where the complete starting team was present. According to Coach Don Cameron, injuries and other complications have helped keep the team from realizing their full potential.

All year the team has been plagued by momentary defensive breakdowns which lead to "garbage" goals. Fortunately, none of this type were given up Wednesday.

The defense has improved from earlier in the season. Coach Cameron says the team is due to really surprise somebody.

The four remaining games are all at home. The crowds have been consistently large so the team has a good chance at improving their record.

Photo by Gover



COSMIC COALESCENCE

Where does science fiction end and reality begin? It's all in the mind's eye. Be it the creative imagination used to produce Star Wars, The Black Hole, and The Empire Strikes Back, or the more scientific approach of hypothesis testing and experimentation, the distant galaxies of science fiction coalesce into reality with the advanced technology now being developed at a company called TRW.

It was the Defense and Space Systems Group of TRW who made possible the Viking Lander biological experiment which looked for life on Mars and the High Energy Astronomical Observatory which looks for quasars, pulsars and black holes in deep space. Professionals at TRW-DSSG are now involved in such impressive technologies as high

energy lasers, communications systems, plus other future projects still considered science fiction.

A company called TRW will be on campus...

NOVEMBER 10-11

to interview graduates in scientific and technical disciplines.

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This Week In Sports

Soccer Club:

Saturday, October 25, 2PM
Here:

Caltech vs. Rio Hondo Academy

Soccer:

Saturday, October 25, 10AM,
Here:

Caltech vs USC 'B' team

Wed., October 25, 2:30PM,
Here:

Caltech vs Claremont-Mudd

Football:

Saturday, October 25, 2PM,
Here:

Caltech vs Western California Institute

Cross Country:

Saturday, October 25, 10AM,
at La Verne:

S.C.I.A.C. Finals

Womens Volleyball

Saturday, October 25, 2PM,
Here:

Caltech vs Redlands JV
Thursday, October 30, 8:30PM,
at Claremont:

Caltech vs Claremont - Mudd - Scripps J.V.

Water Polo:

Saturday, October 25, 10AM,
Here:

Caltech vs. Oxy
Wed., October 29, 4PM,
at Whittier:

Caltech vs. Whittier

Cross-Country Team Finishes Season

By Gordo

The Cross Country Team finished its dual meet season last Saturday with races at Whittier. The Women's team again ran only three runners, thus not scoring any meets this season. The Men's team, decimated by injuries, illness, ineligibility, and GREs, lost matches to Claremont and Whittier, while defeating LaVerne. They finished with a record of 3-5.

The seven who did run fared well individually, by and large, but the absence of key people was felt. First for Caltech was Karl Clausing who finished essentially even with the race winner, Calder from Whittier. Shawn Larsen was second for Caltech, coming through when he was needed, with a fine race. The third runner was Paul Eskridge, who ran a 1:06 personal record (PR) despite being sick much of the week. Fourth was Randy Field, another forty seconds back. Fifth was Jim Drake, in only his second meet. Jim managed to run faster per mile at Whittier than at Caltech the previous week, despite the draining hills at Whittier. In sixth spot was Eugene Hu, who keeps plugging away. R. C.

continued on page 11

Page and Fleming Compete Once More

By Tim Brazy

Page House defeated Fleming in Interhouse softball last week by the score of 8-7. Both teams played a fantastic game in what turned out to be a classic confrontation.

R. C. Colgrove led off for Page with a single to right field in the top of the 1st. Stealing second, Colgrove eventually scored on a Bobby Buck single, and it looked as if Page was in control. The tide soon turned, however, with Fleming leading 5-2 at the end of the second inning. Excellent play by both teams left the third inning scoreless, and the stage was set for the inevitable Page comeback.

Solid hitting led to a quick run for Page in the top of the 4th, and with two men on base, Mike Chobotov stepped to the plate. Taking a ball and a strike, Mike blasted a home run into deep center field, sending Page into the lead, 6-5. Trying to regain their composure, Fleming regrouped for the next Page batter. Unbelievably, Colgrove increased Page's lead with a carbon-copy of Chobotov's home run.

Page held the Flems scoreless in the bottom of the 4th, and added another run in the 5th for a three-run lead. The game looked out of reach, but the Flems had one more chance.

Armand Capote led off for Fleming with a single to left, and Jamie Abbott followed with a walk. Fleming got an extra base on a Page error, so there were men on second and third with no one out.

A sacrifice fly scored a man. One out, a man on third, 1-6. Dave Dowling singled, scoring another man. Another fly out and Dowling was on second. Two outs, 8-7, and the tying run was on second base. The pressure was incredible.

With the game on the line, Jerry Grant sent a hot drive into center field for a sure single. As Buck charged the ball, Dowling rounded third. The Flems were in a frenzy, but they had underestimated Buck's arm. Scooping the ball on the run, Buck rifled it home. The throw was perfect, and Colgrove made a fantastic play at the plate to tag Dowling out. The game was over, the Page dynasty preserved, and the Flems were dusted again.

X-Country

from ten

Colgrove was running well when he injured his foot, and had to drop out of the race. The Men's team hopes to recover and regroup for this Saturday's SCIAC Championship meet, to be held at LaVerne. Last season Tech took third in the SCIAC race, but we figure to have a tough time beating Redlands and Claremont again this year, even if the squad is together and healthy.

The Women's team closed their season with no record, but with one of the finest races a team from Tech has ever run. Julie Kornfield finished first for Tech, and fifth overall, only a handful of seconds from her PR. Karen Close was 28 seconds back with a 2:50 PR, and seventh place. Finally Carlotta Paulsen came in third, ninth overall, and only 1:24 behind Julie. That clumping of runners was so close that all three could be seen at once as Julie came across the finish.

MEN'S RESULTS

CIT 43	-	CHM 20
CIT 23	-	LV 32
CIT 40	-	WHITTIER 21
CHM 18	-	LV 45
CHM 20	-	WHITTIER 40
LV 40	-	WHITTIER 21

WOMEN'S RESULTS

SCRIPPS 22	-	WHITTIER 34
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(Neither CIT nor LaVerne finished five runners in the Women's meet. Low total is the winner in each pairing.)

Niven

from seven

low. With solar power satellites, the energy source would still exist a billion years from now and there would never be a serious energy shortage. After all, the sun puts out more energy than mankind could possibly use.

Mr. Niven believes that the alternatives to his type of program are not nearly so pleasant. Cutting back on research and space exploration will lead to a world severely deficient in supplies of energy and materials. By the year 2000, travel will be extremely limited—there will not be any gasoline to operate cars and planes. Communication will still be fairly simple because the present system is well organized and requires relatively little input by way of energy and resources. The world will thus be a curious mix of the 18th and 20th centuries. People will live simply, but be able to contact anyone on Earth.

Mr. Niven is not sure which future mankind will choose: new research and all that can be gained from it, or stagnation and a lower standard of living. He is sure, however, that now is the time we all have to decide. If you prefer the first alternative, as he does, there are some things you can do. Join a pro-space organization and let elected officials know how you feel. With a little luck, we might get a few of the things we need.

Future

from two

sidering what would be useful in times to come. Successful students (those who enter Caltech) are not necessarily the smartest, but those willing to put the most time into long-range goals. Sometimes they do not enjoy themselves as much as "fun-loving" students.

Poor people, Dr. Zimbardo and others believe, are poor largely because they act for the present and have little faith in the future. They do badly on problem solving tests such as mazes, but have more fun doing them. They believe that a bird in the hand is worth two in the bush, since their expectations of the future are often frustrated. Still other societies, lacking the language to consider the abstractions of past and future, pay little attention to anything beyond the immediate future.

Which is better? Obviously, thinking about math on Christmas Day is not good. Neither is playing pool the night before three finals. A strong perception of the future can minimize present pain, but it may also reduce present pleasure. Appropriate mixing of the two results in the most well-adjusted person. Time, like any dimension, requires perspective and balance. The important thing, according to Dr. Zimbardo, is to work when necessary, but not feel guilt or worry when enjoying the present.

TBP

from one

exemplary character. Among the benefits that Tau Beta Pi, the only honor society at Caltech, offers is the opportunity to apply for many of the graduate fellowships that the society offers.

Conducting the engineering course survey is one of the main activities in which the chapter at Caltech participates, although it hopes to play a more prominent role in campus activities in the upcoming year. Hopefully, all those lucky enough to be invited to be life members of Tau Beta Pi will do so.

Somewhere in Time

from six

sion to use them). *Somewhere in Time* is a romantic fantasy, pure and simple. Its simplicity is one aspect that keeps the film from being a soap opera, which are often known for their complexity. The characters, and their story, are larger than life, as expected in the romantic tradition. Its ultimate transcendence, personified as love, is the key to this film. Cynics may just as well stay at home. Everyone else should see it with someone they love.

-Gavin Claypool

Women's Volleyball are Bible Beaters

By Lisa Grenier

The Caltech Women's Volleyball team defeated the L.I.F.E. Bible College team 15-5, 15-6, last Saturday. Caltech dominated throughout the match, and the small but very supportive home crowd saw some notable performances as the outclassed L.I.F.E. team was downed.

Sue Fuhs picked up some quick points for Caltech with her cleanly-executed serve which proved too deadly for L.I.F.E. Lynmarie Thompson and Sandra Loh both played a solid game and Norma Ofsthun helped out with a few well-timed spikes.

The volleyball team's win last Saturday should give them the confidence and momentum needed to achieve future victories.

SNEAK PREVIEW

Don't Miss It!

October 27

Since we opened our doors in 1968, we've developed more than 20 highly innovative products and semiconductor fabrication processes that have made Intel an acknowledged leader in the semiconductor industry and have given us the commanding role in four major product areas: semiconductor memory, memory systems, microcomputer components, and microcomputer systems.

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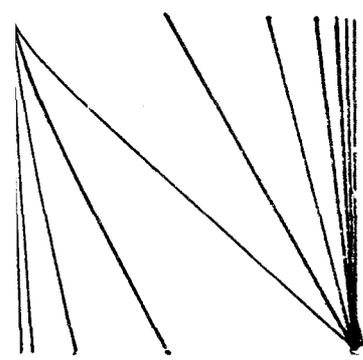
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Please look at that design in the other column. Ugly isn't it?
P.S. We need a business manager!
P.P.S. Did I get you wet John? -GRO



* all the news that fits in print *

FLYING

This weeks CRAS meeting will be at 9:00pm clubroom 2, make sure you bring ideas.

Antedotes to Grover's Gro "Gourmet Goodies"

Have you fallen ill after eating Vomets, Cow Mucus, Fondue Beer Floats, or Steak Shake Well, Theresa in SAC Headquarters has the cure for what ails you, but at a cost!! If you want to be cured you must come down to the Tech office and sign up to be a Tech writer. If you do not like this option, then go to Grover, Fleming House and abuse him

Lost Pair of brown plastic framed glasses, on campus Reward. Contact Charles H. shey, 119 Ruddock House 578 - 9553.

Personal

Is there anyone out there taking the CMAT at UCLA tomorrow and can take another person along? Thanks. 792-0300

Swedish Club Scholarship

Swedish Club of Los Angeles Inc. is sponsoring scholarship for the academic year 1980-81, for full-time students of Swedish ancestry. The deadline is November 1, 1980 and further information may be obtained in the Office of Financial Aid, 208 Dabney.

SAC-Coordinator

BIG T

ASCIT is looking for a person interested in editing the BIG T for this school year. Interested students should sign up at SAC Headquarters on Theresa's door.

little t

ASCIT is looking for a person interested in editing the little t for this school year. Interested students should sign up at SAC Headquarters Theresa's door.

Student Affairs

Placement Services

Job Opportunities

Be Interned As A Spy

The CIA has announced its 1981 Graduate Studies Program for students who will be attending graduate school during the fall of 1981. The program provides the opportunity to work with highly skilled professionals in all fields. Positions are in the Washington, D.C. area and U.S. citizenship is required. Deadline date is January 1, 1981. For further information, please contact the Placement Office, Room 8, Dabney Hall.

Hahvahd Wants You!

A representative from Harvard Business School will be on campus Thursday, October 23 for an informal meeting. Interested students should contact the Placement Office, Room 8, Dabney Hall for appointments. Students in all degrees and all options are welcome to sign-up.

Summer in Plano

Arco Oil and Gas Co., a division of Atlantic Richfield Company, will be accepting resumes from juniors and up in ChE for summer employment at their Plano, Texas location. Interested students should bring their resumes to the Placement Office, Room 8, Dabney Hall no later than October 22, 1980. Permanent visa or citizenship is required.

The GRE Are Coming!

The GRE test dates and registration dates are as follows: December 13, 1980 test, register by November 7, 1980; February 7, 1981 test, register by January 2, 1981; April 25, 1981 test, register by March 20, 1981; June 13, 1981 test, register by May 8, 1981. Test Bulletins are available from the Placement Office, Room 8, Dabney Hall.

MBA Forums

MBA workshops will be offered under the sponsorship of the Graduate Management Admission Council to help students and working people to learn more about graduate management education. Prospective applicants will be able to talk with admissions representatives from MBA programs about admission procedures, curriculum offerings, financial aid and placement, and career opportunities in management. The Los Angeles workshop will be held at the University of Southern California, Town and Gown Room on Saturday, January 10 and Sunday, January 11, 1981. For further information please consult the Placement Office, Room 8, Dabney Hall.

National Science Foundation

The application forms for the Graduate and Post-doctoral fellowships have arrived and may be picked up in the Placement Office, Room 8, Dabney Hall. These applications have early deadline dates, so be sure to pick them up NOW!!!

Livermore Lives!

Yes, all of you underemployed Physics trolls, the Lawrence Livermore National Laboratory is currently accepting applications for summer research appointments at its Livermore, California site. The appointments are expected to be made in these long-range programs: Laser Fusion, Energy and Resource Development, Magnetic Fusion Energy and Whitney (honest, that's what it says). Applications must be submitted by December 1, 1980. For further information (especially about Whitney) and application forms please contact the Placement Office, Room 8, Dabney Hall.

Seniors!!

If you UNDER-UNIT, and your tuition cost is reduced, your financial aid is likely to be reduced also.

Should you plan to register for less than 36 units, or to drop some units, find out from the office of Student Accounts how much your tuition savings will be. Then go to the Financial Aid Office (208 Dabney Hall) and make an appointment with our beautiful directresses, Ruthie Wilson and Linda Berkshire to discuss what changes, if any, will be made in your financial award.

If you register for less than 18 units (a common last-quarter practice for graduating students), aid from most sources is automatically cancelled. CAVEAT SENIORS !!!!

Trick or Treat

Halloween is on its way, so is the first Caltech blood drive. As usual the kind people from the Red Cross will be treating the house which donates the most blood to a keg of beer.

This term the Caltech Red Cross Blood Bank will be available for Caltech donors in Dabney Lounge on Thursday and Friday, November 6th and 7th, from 9:45 am to 2:30 pm. If you want an appointment please call Margaret Collins at ext 2374 (Personnel). Drop-ins are always welcome.

If you have any questions about donating blood a Red Cross representative will be in Winnett Lounge on Oct 30th between 11:30 and 1:30

OVERSEAS

The International Association for the Exchange of Students for Technical Experience is now accepting applications for training abroad. On-the-job training abroad is available for students in Engineering, Mathematics, Architecture, and the Sciences. Application Information can be obtained in the Placement Office, Room 8, Dabney Hall.

Musical Sticks

The Stickband and Emmet Chapman will be giving an evening concert next Wednesday, October 29 at 8:30 pm in Dabney Lounge. The concert is sponsored by the Caltech Y and admission is free.

Attention Chemists!

Mark 7:30 pm, Thursday, October 30 in Clubroom 2 of Winnett Center on your calendar. That's the day when there will be a meeting to inform senior chemistry students about graduate schools. Students who want to find out what types of graduate programs are available to them will be able to listen to various faculty members who represent the different disciplines in chemistry. Guidance and advice will be given regarding the actual application process and the Graduate Record Exams. Also, there will be a faculty member present to give counseling to pre-meds. Although the informal meeting is primarily aimed towards seniors, all undergraduates with an interest in chemistry as well as pre-meds are encouraged to come. Refreshments will be provided.

Watson Fellowships

Seniors: the deadline for Watson Fellowship essays is October 24. Seniors wishing to apply for these travelling fellowships should come to the Deans Office and talk to David Wales or Chris Wood about their plans.

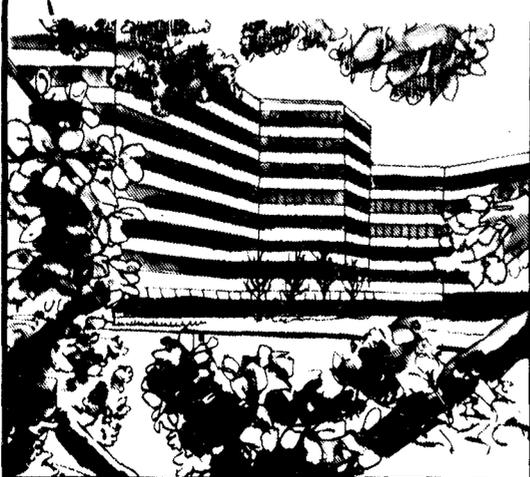
A Festering Appearance

Jackie Coogan will appear in Caltech's Beckman Auditorium on Saturday, October 25, at 8pm. In "An Evening With Jackie Coogan," he will give a personally conducted illustrated tour through his scrapbook of rare photos, clippings, and memories from "The Kid" to "Uncle Fester." For information, phone 793-7043.

Volleyball Personal

Go MINOR BODIES!!!!!!!!!! But look out for those major bodies. Wednesday night was close.

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